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Introduction to *The Encyclopedia of Applied Linguistics*

CAROL A. CHAPELLE

The Encyclopedia of Applied Linguistics is a reference work encompassing the range of research on language-related problems that arise in the real-world contexts where languages are learned and used. Because of the wide range of issues that applied linguists work on, a precise definition of the field is difficult to articulate. In his 2007 *Introduction to Applied Linguistics*, Davies points out that one might be tempted to conclude that "because language is everywhere, applied linguistics is the science of everything," but such a conclusion would be neither correct nor useful (Davies, 2007, p. 2). If applied linguistics is not the science of everything, how is it defined?

Simpson, the editor of *The Routledge Handbook of Applied Linguistics*, defines applied linguistics as "the academic field which connects knowledge about language to decision-making in the real world . . . In this sense applied linguistics mediates between theory and practice" (Simpson, 2011, p. 1). In *The Oxford Handbook of Applied Linguistics*, in place of a definition, Kaplan indicates that "Applied linguistics is a difficult notion to define." He goes on to say that the *Handbook* does not "provide a definitive definition of the field," and then explains the historical origin of the field through the efforts of language teachers wanting to distance themselves from their colleagues teaching literature (Kaplan, 2010, p. vi). These two very recent books provide a wealth of examples of work in applied linguistics, which help to demonstrate the difficulty the editors faced in constructing a usefully precise and inclusively accurate definition of the field.

Davies and Elder, editors of *The Handbook of Applied Linguistics* published by Blackwell, present a definition in concrete terms through multiple examples of the types of problems that applied linguists work on:

> Applied linguistics is often said to be concerned with solving or at least ameliorating social problems involving language. The problems applied linguistics concerns itself with are likely to be: How can we teach languages better? How can we improve the training of translators and interpreters? How can we write a valid language examination? How can we evaluate a school bilingual program? How can we determine the literacy levels of a whole population? How can we helpfully discuss the language of a text? What advice can we offer a Ministry of Education on a proposal to introduce a new medium of instruction? How can we compare the acquisition of a European and an Asian language? What advice should we give a defense lawyer on the authenticity of a police transcript of an interview with a suspect? (Davies & Elder, 2004, p. 1)

These examples of questions that applied linguists address begin to rein in the "theory of everything." In the questions one can see applied linguistics in terms of the areas of research it can encompass. At the same time, however, such questions because of their origin in everyday social practices may not reflect the academic and scholarly dimension of applied linguistics. One can easily find instances where someone offers an improvement for foreign-language teaching, translator training, language-test development, and so forth, having no connection whatsoever to applied linguistics. The definition of applied linguistics then needs

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to extend beyond the questions posed because, as Bygate pointed out, "apparently simple questions conceal matters of complexity and sensitivity, which on closer scrutiny raise more general issues, which also characterize the broader field of applied linguistics" (Bygate, 2004, p. 6). Bygate identified five main issues in the broader field including (a) evaluating the appropriateness of the granularity and perspective researchers use to specify a problem under investigation, (b) establishing trustworthiness of data interpretation, (c) creating an appropriate degree of collaboration between researcher and participants, (d) communicating research results to participants in a manner that allows for sufficient follow up, and (e) understanding the best relationship of theory and data collection and interpretation.

These issues underlie the discussion of language-related problems that readers find in the *Encyclopedia*. However, such issues stated generally can be said to underlie any social science more generally. To characterize applied linguistics, one needs to include explicitly the linguistic dimension of the field. The authors of *Mapping Applied Linguistics* accomplish this by defining applied linguistics as a mode of inquiry about language-related problems requiring consideration of "both the social and cognitive nature of language" (Hall, Smith, & Wicaksono, 2011, p. 19). Other ingredients of mode of inquiry are taking into account the needs of clients such as learners, test-score users, and businesses, being responsive to contextual factors affecting research, and engaging in collaboration in the design and evaluation of findings and recommendations (Hall, Smith, & Wicaksono, 2011, p. 19). In short, Hall, Smith, and Wicaksono see applied linguistics as a mode of inquiry engaged with real people and issues arising in a political environment where academic perspectives and research alone may or may not be important in conceptualizing problems and finding solutions. In such an environment, problem solvers must genuinely engage with local knowledge and practice in seeking solutions.

Defining the Boundaries

A reference on applied linguistics needs to contain entries explicating the domains of language problems addressed by applied linguists, detailing the nature of the complexity and sensitivity underlying the research, while portraying applied linguistics as a mode of inquiry that engages with the people and issues connected to real-world problems. Spanning the problems, it needs to cover the complexity of approaches to the study of language, language use, and language learning that applied linguists take. The search for common ground as a basis for categories and boundaries could be undertaken in a number of different ways, but for the *Encyclopedia*, two basic principles outlined by S. Pit Corder in the early 1970s provided useful guidance.

One principle addresses the boundary question. In *Introducing Applied Linguistics*, S. Pit Corder underscored the delicate analysis entailed in selecting the contents. One needs to decide between, on the one hand, the domains of inquiry that could logically be included within the study of language-related problems and, on the other, the reality of the principal topics that appear at gatherings where applied linguists meet, the areas studied by students who obtain degrees in applied linguistics, and the meaning that the term has "in common usage," as Corder put it (1973, p. 7).

The design of the *Encyclopedia* followed the same principle, but many years hence, the outcome in terms of selection of topics is dramatically different. Corder's introduction is focused on applied linguistics as it pertains to second and foreign-language teaching because that was the domain of language problems investigated at that time. Today, language teaching remains extremely important in the field, but applied linguistics has expanded to encompass the variety of empirical and theoretical perspectives pertaining to language teaching in addition to the many other issues and problems within the domains of

education, professions, government, politics and law, and the general workings of society. The *Encyclopedia* includes topics across these areas.

A second principle of boundary was developed by Corder in response to the need to decide how much content in an applied linguistics reference should be devoted to linguistics. Corder's position was that applied linguistics must include analytic perspectives and knowledge from linguistics. However, unlike a work in linguistics, one in applied linguistics must select "what linguistics is about, as seen through the eyes of the applied linguist" (1973, p. 7), rather than present analytic perspectives for studying language with the purely scientific goal of better understanding language. Many years later, Cook expanded on the need to see linguistics through the applied linguist's eyes:

> Linguistic theory and description cannot . . . be deployed directly to solve the problems with which applied linguistics is concerned. One important reason is the nature of the problems themselves. They, too, like models of linguistics, represent certain perspectives on reality. Applied linguistics is not simply a matter of matching up findings about language with pre-existing problems but of using findings to explore how the perception of problems might be changed. It may be that when problems are reformulated from a different point of view they become more amenable to solution. This changed perception may then, in turn, have implications for linguistics. (Cook, 2003, p. 10)

Choices concerning the coverage of linguistic topics in the *Encyclopedia* were guided by this conception of the linguistics–applied linguistics interface. Within the *Encyclopedia*'s boundaries readers will find entries on linguistics as selected for their relevance to applied linguistics. It includes topic areas on the study of phonetics and phonology, lexis, grammar, pragmatics, and discourse, all seen through the eyes of applied linguists. The area editors selected the topics and perspectives that have been useful for addressing real-world problems in which language plays a central role. In order to reflect the interests of applied linguists, the *Encyclopedia* includes not only areas of language study but also sections on language learning and use.

A third boundary issue presents itself today as applied linguistics embodies a mode of inquiry in addition to areas studied: What research methodologies should be included in the *Encyclopedia*? In the years since Corder's work, applied linguistics has developed language-based methodologies for the study of language that are pertinent to particular types of language problems. At the same time applied linguists draw upon and adapt research methodologies from the social sciences. Issues in research methodology appear throughout the *Encyclopedia*, but three topic areas were developed to focus specifically on research methodology.

Creating Areas

The *Encyclopedia* is composed of 27 topic areas, each of which was developed by an area editor or area editors with the appropriate expertise to identify the specific topics and perspectives relevant to applied linguists. Throughout these topic areas, the entries reflect domains of language problems and practice in the following: (a) education, including second/foreign-language education and language issues as they pertain to learning school subjects; (b) society; (c) professions; (d) government, politics, and law. Many of the examples used throughout are English because of the pervasive use of English in applied linguistics, but entries also include examples from languages other than English.

The 27 topic areas were developed within four broad categories defined to ensure appropriate coverage through assignment of an editor or editors to develop that area. The first category, that of areas of research and practice, includes areas in which real-world problems

cluster, research methodologies are shared, and results exist. Many professionals in applied linguistics would associate their particular expertise with one or more of these areas. The second category, analysis of language and communication, contains entries reflecting applied linguists' perspectives on linguistics. The third category, approaches to language use and second language acquisition, includes entries pertaining to methods of analysis arising from particular areas of applied linguistics. And fourth, the category of research methods contains entries on the empirical and analytic methodologies applied linguists adopt and adapt from other social science disciplines.

Areas of Research and Practice

This section of the *Encyclopedia* includes areas of applied linguistics that have developed around particular problems where language expertise is needed to understand and address issues. Continuing the trend set by Corder's presentation of applied linguistics many years ago, the *Encyclopedia* contains a large section on **language learning and teaching**. Entries include descriptions of the knowledge pertaining to the formal study of an additional language—one that is developed after the home language. The problem of learning non-primary languages is a challenge for people worldwide, who tackle it for a wide variety of reasons. Area editor Lourdes Ortega defined the entries in this area to include research aimed at better understanding of both learning (from the student's perspective) and teaching (from the teacher's perspective).

Whereas language learning and teaching are concerned with language study, the entries in the **bilingual and multilingual education** area cover issues concerning the use of two or more languages for instruction across subject areas. In contexts of bilingual and multilingual education, students learn through more than one language in school in order to develop their academic language competence in more than one language and to afford status and maintenance of more than one language in society. The study of **bilingualism and multilingualism** (i.e., multilingualism outside the school setting) involves another set of issues, because it is affected by different factors and can take place in a wide range of situations. The area editors Jasone Cenoz and Durk Gorter designed these areas and commissioned a revealing set of entries covering the issues.

An area of extensive study in settings where bilingual or multilingual education takes place is the development of **literacy** in school and other settings. Although the study of literacy is the concern of many researchers in education beyond applied linguistics, Eva Lam conceptualized this area of the *Encyclopedia* from the perspective of applied linguistics by including facets of the study of literacy relevant to settings of language contact. Moreover, topics include the changing face of literacy as it is affected by globalization and information and communication technology, both of which have changed literacy demands. This section therefore spans literacy in school settings and other areas of society.

The topic area of **language policy and planning** covers the theory, research, and practice of language policy making or deliberate planning. The editor, Joseph Lo Bianco, points out that, despite the long-time reality of societal multilingualism and some form of implicit language policies and planning, only relatively recently have these activities become the object of academic interest. Such interest and input are warranted in view of the consequences of language policy and planning for affected individuals, through policy implementation in education, professional settings, and government.

Another area of applied linguistics, **forensic linguistics**, has developed around the connections between language and the law. Krzysztof Kredens has commissioned a set of entries that introduce and explain two areas of forensic linguistics: the linguistic study of legal texts and processes as well as the provision of linguistic evidence in legal cases. The latter area in particular continues to grow as a result of migration and communication

technologies, both of which create situations for language contact. Legal cases are often based on efforts to obtain human rights which can include language rights.

Translation and interpreting is another area rapidly expanding because of increased language-contact situations, such as new multinational economic and political entities (e.g., the European Union), where access to high-quality communication is expected by participants who are dealing with sophisticated and important topics. These purposes for communication among people of diverse languages are supported technically by the communication infrastructure made possible by the Internet, but the achievement of actual communication is often the result of work by translators and interpreters. Claudia V. Angelelli, Nadja Grbic, and Brian Baer have gathered entries that express today's complex interface between communication needs, technologies, and translation and interpreting.

In all of the areas outlined above, professionals rely on language **assessment and testing** for a variety of purposes. This area in itself encompasses a complex set of issues, research methodologies, and practices. Carol A. Chapelle and Lia Plakans have identified the basic areas of this domain, in which the purpose is to gather systematically language-related behaviors to be used in making inferences about language ability and capacity for language use on other occasions.

Another strand that runs throughout each section of the *Encyclopedia* is how the **technology and language** connection expands, creates, and redefines the problems of concern to applied linguists. The area editor, Thomas Cobb, has assembled entries describing how technology is used in language tasks, many of which involve language teaching and learning. Although computer technology comes into play in many of the entries throughout the *Encyclopedia*, this topic area highlights the complexity of technology issues in a new generation of applied linguistics.

Like technology, **language for specific purposes** is an area of inquiry that spans the entire *Encyclopedia*, but is sufficiently integral to merit an area containing entries that develop the specific purpose–language interface itself. Thomas A. Upton and Ulla Connor have gathered entries that focus on analysis and teaching of language in a manner that meets specific language needs of non-native speakers of the language. Specific language needs cut across academic, vocational, and professional contexts.

Analysis of Language and Communication

The analysis of language and communication underlies language problems such as how to teach an additional language, how to improve translation using computer technology, or how to conduct an analysis that is useful as linguistic evidence in a legal case. The *Encyclopedia* therefore includes sections covering issues of analysis in each of the areas of language relevant to applied linguistics. The concerns in applied linguistics require certain perspectives on language and therefore the entries in this category have defined language and selected perspectives on analysis "as seen through the eyes of the applied linguist," as Corder put it.

In view of applied linguists' concern with language in use, at the broadest level of analysis, language is studied in relation to the **culture and context** in which it is used. Area editor Karen Risager has included entries in this section that reflect the cross-disciplinary influence on the study of culture and context in applied linguistics. Disciplinary perspectives include anthropological linguistics, cultural linguistics, postcolonial studies, and cultural studies, which are used to shed light on concepts such as ethnicity, nation, citizenship education, and intercultural competence as they pertain to applied linguistics.

The primary unit of analysis in applied linguistics, **discourse**, is central to most applied linguistic investigation, and therefore discourse is integral to many of the entries. In this topic area, compiled by Sigrid Norris, entries define discourse as well as the key concepts

applied linguists use to study discourse. Hand in hand with discourse, **pragmatics** is studied to reveal how language users make and interpret meaning in context through language and accompanying nonverbal signals. Marta González-Lloret has included in this topic area entries that explore the aspects of pragmatics that are important in applied linguistics research. Because pragmatics intersects with the technical affordances language users have at their disposal, communication technology comes into play in a number of the entries in this area. However, because of the extensive use and effects of technology in communication, an area devoted to **multimodal communication** has also been compiled. Sigrid Norris developed this area composed of entries that demonstrate the unique and important interface between technology and the linguistic choices language users can make as well as how those choices are realized in technology-mediated form. Entries also cover analytic approaches to the study of how language users make meaning through a combination of language and other semiotic systems.

Grammar is the area of study most central to linguistics, and therefore this is the area in which an enormous set of possibilities exists for inclusion in the *Encyclopedia*. In keeping with Corder's principle of making selections through the applied linguist's eye, Karin Aijmer has crafted a set of entries that covers the important issues and perspectives on grammar in applied linguistics research. In dealing with grammar in the real world, for example, applied linguists need to distinguish "descriptive" and "prescriptive" grammar. In their work on language use, applied linguists are much more concerned with functional grammar, and conversation grammar in particular, than with theoretically abstract formulations of grammar.

Lexis is another area that has been studied from many different perspectives in linguistics, and therefore here too the area editors Brent Wolter and Paul Meara have carefully selected those perspectives on lexis that pertain to applied linguistics. They have identified an important applied linguistic view as one that sees vocabulary in connection with the linguistic context in which words are used and understood. Such contexts are needed to account for the vocabulary choices made by language users in real time. In fact, through the entries in this section readers will see how linguistic description from an applied linguistic lexical perspective makes it difficult to sustain a division between lexis and grammar.

In the topic area of **phonetics and phonology**, John Levis and Murray J. Munro have identified entries that cover applied linguists' use of analytic perspectives on the physical aspects of speech production in addition to the functional and systemic organization of sounds in particular languages. Analysis of speech is critical for the study of such areas of applied linguistics as second language learning and teaching and language assessment. These and more phonology-related problems are included in this area.

Approaches to Language Use and Second Language Acquisition

This category contains entries on particular approaches used to study problems of interest to applied linguists, which pertain to language use and acquisition of an additional language. Each of these areas represents a way of approaching a language-related problem which requires the analyst to take a particular view of language. The research methods connect with one or more other disciplines such as sociology, psychology, or rhetoric. Entries explain epistemological bases, disciplinary links, research methods, and findings.

An empirical, and oftentimes quantitative, approach to the study of language in texts, **corpus linguistics** aims to describe linguistic choices that language users make in constructing their oral and written communication. In contrast to native-speaker intuition or clinically elicited samples of language, the basis for linguistic generalizations made by corpus linguists is linguistic patterns found in large collections of relevant language samples. The source of the data is the basis for claims that findings are authentic and generalizable.

As a consequence, such linguistic descriptions are taken to be useful to applied linguists who are concerned with language as it is used in authentic communication. Michael Stubbs and Dorothea Halbe have gathered entries that explain issues, practices, and findings from corpus linguistics.

An empirical, qualitative approach to the study of language, **conversation analysis** investigates how language users organize naturally occurring social interactions in order to accomplish social actions through talk and bodily conduct such as hand gestures and eye gaze. Rather than generalizability, the claim is that such research provides an accurate description of how language is used to accomplish human social action in specific contexts. Johannes Wagner and Kristian Mortensen have collected entries that present findings from research on conversation analysis in addition to the use of those results and the philosophical basis of this line of inquiry for many areas of applied linguistics.

In contrast to the descriptive stance of both corpus linguistics and conversation analysis is the explicitly ideological basis of **critical discourse analysis**. Critical discourse analysis is an analytic perspective requiring selection of texts for analysis with the aim of demonstrating how the linguistic choices made by authors and speakers create or continue social inequality. The lens for analysis of such texts therefore includes preconceptions about who holds power over whom, in addition to how power might be redistributed. Such an analysis requires effective analysis of the role of language in perpetuating the status quo. Angel Lin has outlined this area through entries that explain the basis for critical discourse analysis as well as describe the analytic methods and findings in some example problems where it has been applied.

Beyond critical discourse analysis, **language ideology** plays a role across applied linguistics, as researchers choose problems to work on and perspectives to use in their analysis. As Cook put it, "Applied linguistics is not simply a matter of matching up findings about language with pre-existing problems but of using findings to explore how the perception of problems might be changed" (Cook, 2003, p. 10). The process of formulating and changing perceptions of problems highlights the ideological nature of some of the choices that researchers make. The entries in this topic area were defined by Patricia Friedrich, Aya Matsuda, and Janina Brutt-Griffler to explain the various dimensions of language ideology and their consequences for applied linguistics research and practice.

One fundamental ideological choice in research on language use is highlighted in the study of **World Englishes**, the varieties of Englishes that are used internationally by people for whom English is not their native language and who do not live in the traditional centers of English use. The applied linguist's study of the actual varieties of Englishes, in contrast to the linguist's study of the idealized native speaker, is highly relevant for issues such as language teaching, language assessment, and language technologies of concern in other areas of applied linguistics. Aya Matsuda, Patricia Friedrich, and Janina Brutt-Griffler developed this section with entries that describe areas of research in World Englishes and their intersection with specific language-related problems.

In view of the central importance of second language teaching and learning in applied linguistics, approaches are needed pertaining specifically to language acquisition. A wide variety of approaches have been undertaken; their key concepts and practices are described in entries in two topic areas of the *Encyclopedia*. In one, the area editor Amy Snyder Ohta has commissioned entries on **social, dynamic, and complexity theory approaches to second language development**. In the other, the area editors Marianne Gullberg and John Williams have commissioned entries on the approaches taken by research on **cognitive second language acquisition**. Entries in the latter area explain researchers' investigations of how the human mind processes language during learning in order to organize and learn the new language. The former includes research that situates human language development within a social interactive process which affects broader aspects of human cognition and

personality. Together these areas of the *Encyclopedia* depict the directions resulting from years of research on second language learning.

Research Methods

Theoretical, analytic, and empirical methods appear throughout the *Encyclopedia*, but in view of the central problem-solving activity of applied linguistics, the *Encyclopedia* organizes and provides greater detail on the nature of the particular research methods that are used in applied linguistics. Most advanced degree programs preparing students to study language problems in the real world would expect students to be familiar with three clusters of research methodologies—analysis of discourse and interaction, qualitative research, as well as quantitative and mixed methods research.

In the section on **analysis of discourse and interaction**, Rodney H. Jones has delineated the domain of research methodological issues, concepts, and practices used primarily in the analysis of synchronous conversation as opposed to monologic text. Entries cover research approaches to investigating how language users select language to construct their social identities, relationships with one another, and realities.

The **qualitative methods** topic area designed by Linda Harklau and Meryl Siegal demonstrates the ways in which qualitative principles and practices shared with others in the social sciences are used in applied linguistics. Entries show how researchers use codes, labels, categorization systems, and narratives, for example, in studying problems in applied linguistics in addition to illustrating the types of problems that are investigated. Qualitative approaches, for example, have helped to document the detail associated with individual language learning and use in a manner that is not revealed in quantitative research.

The topic area of **quantitative and mixed methods** research designed by Joan Jamieson and Kim McDonough demonstrates how quantitative methods from the social sciences are used to address a range of applied linguistics problems in areas such as the study of the effectiveness of particular language teaching practices or the language needs of prospective employees in a business. In addition, it includes entries that explain basic concepts on quantitative research as it is used in applied linguistics. Quantitative approaches have been an important source of new knowledge in applied linguistics as it has been used for describing relevant situations of language use in addition to testing hypotheses about the nature of language use and learning.

Applied Linguistics in the Future

Defining the boundaries of applied linguistics will continue to be a challenge in the future as language contact, language learning, and language technologies expand. More and more people, either by choice or by need, migrate to live in a location where they need to be able to use an additional language. Such movement creates issues that will continue to be recognized as important: How can such transitions be made in a manner that affords new residents and their children a genuine opportunity to succeed? With concerns for human rights more widespread today than ever, such questions demand serious, well-informed attention. Even for people who remain physically within their first language context, their physical linguistic landscape is likely to change as a result of the movement of others; moreover, the Internet will continue to create opportunities for connections across time and space in a manner that will continue to change the way people communicate. The language–technology interface is an area of constant evolution as new forms of communication are taken up by individuals who invent new uses for them. The opportunities for studying human communication will continue to expand. These continuing changes in the external conditions of language use will be accompanied by expanded approaches to

research in applied linguistics, connecting to fields such as neuroscience, computer science, rhetoric, and political science.

Because of the dynamic nature of applied linguistics, the *Encyclopedia of Applied Linguistics* was designed to accommodate such changes in the future. The online format of the *Encyclopedia* will allow for updating and reshaping twice a year. This process of evolution will be guided by the international community of applied linguists that has engaged so productively in shaping the first edition in addition to new applied linguists with new ideas to offer. Numerous suggestions for additional entries have been received, and the first update is under way as research has continued apace during development of the *Encyclopedia*. We are dedicated to keeping the *Encyclopedia* current, and to making it available in different formats, to meet the needs of scholars and students in applied linguistics in addition to those who work with language-related problems beyond applied linguistics.

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Area Editors

Karin Aijmer is professor emeritus of English linguistics at the University of Gothenburg, Sweden. Among her publications are *Conversational Routines in English: Convention and Creativity* (1996), *English Discourse Particles: Evidence From a Corpus* (2002), *The Semantic Field of Modal Certainty: A Corpus-Based Study of English Adverbs* (2007, with Anne-Marie Simon-Vandenbergen). She is coeditor of *English Corpus Linguistics: Studies in Honour of Jan Svartvik* (1991), *Discourse Patterns in Spoken and Written Corpora* (2004), and *Pragmatic Markers in Contrast* (2006). Her work on pragmatics and discourse, learner English, and contrastive linguistics has appeared in *Journal of Pragmatics*, *Linguistics*, *Functions of Language*, *International Journal of Corpus Linguistics*, *Journal of Nordic Linguistics*, and *Studia Linguistica*.

Claudia V. Angelelli is professor of Spanish linguistics at San Diego State University, USA. Her research focuses on cross-cultural communication, specifically on the role of the interpreter and translator as a language mediator. She is the author of *Medical Interpreting and Cross-Cultural Communication* (2004) and *Revisiting the Interpreter's Role: A Study of Conference, Court, and Medical Interpreters in Canada, Mexico and the United States* (2004). She has recently edited a special issue for the *International Journal of the Sociology of Language* entitled *Translators and Interpreters: Geographic Displacement and Linguistic Consequences*. She has coedited *Testing and Assessment in Translation and Interpreting Studi*es (2009, with Holly Jacobson). Her work on interpreting and applied linguistics appears in the *Annual Review of Applied Linguistics*, *Critical Link*, *Interpreting*, the *International Journal of the Sociology of Languages*, *META*, *The Translator*, and *TIS*. She is a coauthor of the "California Healthcare Interpreting Association's Ethical Principles and Standards of Practice." She is the president of the American Translation and Interpreting Studies Association and the director of the Coalition of Distinguished Language Proficiency Centers, and an advisor for the National Council of Interpreters in Healthcare and for Hablamos Juntos. She served as director for the American Translators Association for six years. Currently she is the World Project leader for the ISO Standards on Community Interpreting.

Brian Baer is professor of Russian and translation studies at Kent State University, USA. He is coeditor of Vol.12 of the *American Translators Association Scholarly Monograph Series* and *Beyond the Ivory Tower: Re-Thinking Translation Pedagogy* (2003), and editor of *Contexts, Subtexts, Pretexts: Literary Translation in Eastern Europe and Russia* (2011). He is the author of *Other Russias: Homosexuality and the Crisis of Post-Soviet Identity* (2009) and the founding editor of the journal *Translation and Interpreting Studies* (John Benjamins). His translation of *No Good Without Reward: Selected Works of Liubov Krichevskaya* is forthcoming in the series *Other Voices in Early Modern Europe* (University of Toronto Press).

Jasone Cenoz is professor of research methods in education at the University of the Basque Country, Spain. Her research focuses on multilingual education, bilingualism, and multilingualism. She is the editor (in collaboration with Ulrike Jessner) of the *International Journal of Multilingualism*. Her publications include *Teaching Through Basque* (2008, as a special issue of *Language, Culture and Curriculum*), *The Multiple Realities of Multilingualism* (2009, coedited with Elka Todeva), *Towards Multilingual Education* (2009), and *Focus on Multilingualism in School Contexts* (2011, coedited with Durk Gorter as a special issue of *The Modern Language Journal*).

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Carol A. Chapelle is distinguished professor of liberal arts and sciences and professor of TESL/applied linguistics at Iowa State University, USA. Her research explores issues at the intersection of computer technology and applied linguistics. Her books on technology and language include *Computer Applications in Second Language Acquisition* (2001), *English Language Learning and Technology* (2003), and *Tips for Teaching With CALL* (2008, with Joan Jamieson). Her books focusing on language assessment and research methods include *Assessing Language Through Computer Technology* (2006, with Dan Douglas), *Inference and Generalizability in Applied Linguistics* (2006, coedited with Micheline Chalhoub-Deville and Patricia Duff), *ESOL Tests and Testing* (2005, with Stephen Stoynoff), and *Building a Validity Argument for the Test of English as a Foreign Language* (2008, with Mary K. Enright and Joan Jamieson). She is coeditor of the *Cambridge Applied Linguistics* series. She is past president of the American Association for Applied Linguistics (2006–7) and former editor of *TESOL Quarterly* (1999–2004). She was awarded the 2012 Lifetime Achievement Award in Language Testing by the University of Cambridge and International Language Testing Association and the 2012 Samuel J. Messick Memorial Lecture Award by Educational Testing Service.

Thomas Cobb is associate professor of applied linguistics in the Département de didactique des langues at the Université du Québec à Montréal in Canada. His research in language learning and technology has appeared in *System*, *Language Learning and Technology*, *Reading in a Foreign Language*, and *Calico*. His practical contribution, the Compleat Lexical Tutor Web site for data-driven language learning on the Web (www.lextutor.ca), is widely used.

Ulla Connor is Chancellor's Professor of English, Barbara E. and Karl R. Zimmer Chair in Intercultural Communication, and director for the Indiana Center for Intercultural Communication at Indiana University-Purdue University Indianapolis (IUPUI), USA. She is author of *Intercultural Rhetoric in the Writing Classroom* (2011) and *Contrastive Rhetoric* (1996), and coauthor of *Discourse on the Move: Using Corpus Analysis to Describe Discourse Structure* (2007, with D. Biber and T. A. Upton). Her work on second language writing and intercultural discourse has appeared in *English for Specific Purposes*, *English for Academic Purposes*, *Studies in Second Language Acquisition*, *TESOL Quarterly*, *Journal of Second Language Writing*, *Text and Talk*, and *Communication & Medicine*.

Patricia Friedrich is associate professor of linguistics/rhetoric and composition at Arizona State University, USA. She is the author of *Language Negotiation and Peace: The Use of English in Conflict Resolution* (2007) and editor of *Teaching Academic Writing* (2009). Her work on World Englishes, peace linguistics, and critical applied linguistics has appeared in *World Englishes*, *International Journal of Applied Linguistics*, *Harvard Business Review*, *International Multilingual Research Journal*, and *English Today* among others.

Marta González-Lloret is associate professor of Spanish at the University of Hawai'i at Mānoa, USA. Her work on pragmatics is closely tied with the areas of SLA and CALL and has recently appeared in *CALICO*, and in the volumes *Speech Act Performance: Theoretical, Empirical and Methodological Issues* (by Martínez-Flor & Usó-Juan, 2010) and *Conversation Analytic Studies of L1 and L2 Interaction, Learning, and Education* (by Kasper & Nguyen, 2009).

Durk Gorter is Ikerbasque research professor at the University of the Basque Country, Spain. He conducts research on multilingual education, European minority languages, and linguistic landscapes. His publications include *Multilingual Europe: Facts and Policies* (2008, coedited with Guus Extra), *Linguistic Landscape: Expanding the Scenery* (2009, coedited with Elana Shohamy), *Focus on Multilingualism in School Contexts* (2011, coedited with Jasone Cenoz as a special issue of *The Modern Language Journal*), and *Minority Languages in the Linguistic Landscape* (2012, coedited with Heiko Marten and Luk Van Mensel).

Nadja Grbic has studied linguistics and Slavic languages and is assistant professor at the Department for Translation Studies at the University of Graz, Austria. She teaches translation and interpretation studies and is currently preparing her postdoctoral dissertation (*Habilitation*) on the construction of signed language interpreters as an occupational group in Austria. Research topics include signed language interpreting, social issues of translation and interpreting, translation history, feminist translation, and scientometrics. She has conducted several research projects on signed language interpreting and signed language lexicography, and developed a five-year full-time training program for signed language interpreters at university level, which started in the autumn of 2002 in Graz.

Marianne Gullberg is professor of psycholinguistics, director of the Humanities Lab at Lund University, Sweden, and cofounder of the Nijmegen Gesture Centre, at the MPI for Psycholinguistics, the Netherlands. She is the editor or coeditor of special issues on the role of gesture in SLA (e.g., *IRAL*, 2006; *SSLA*, 2008, with S. G. McCafferty), and coeditor of volumes on *The Cognitive Neuroscience of SLA* (2006, with P. Indefrey), *The Earliest Stages of Language Learning* (2010, with P. Indefrey), and *Gestures in Language Development* (2010, with K. de Bot). Her work on multilingual and multimodal processing has appeared in *Bilingualism: Language & Cognition*, *Brain & Language*, *Language Learning*, *SSLA*, *SLR*, and *IRAL*, among others, and in numerous book chapters.

Dorothea Halbe is postgraduate research assistant and lecturer in English linguistics at the University of Trier, Germany. Her work on business discourse and speech acts has appeared in *Text & Talk* and the *Journal of Business Communication*.

Linda Harklau is professor in the TESOL and world language education program and linguistics program at The University of Georgia, USA. Her research focuses on second language academic and literacy development in adolescent and young adult immigrants. She is coeditor of books including *Generation 1.5 Meets College Composition: Issues in the Teaching of Writing to U.S-Educated Learners of ESL* (1999, with Kay M. Losey and Meryl Siegal), *Generation 1.5 in College Composition: Teaching Academic Writing to U.S.-Educated Learners of ESL* (2009, with Mark Roberge and Meryl Siegal), and *Linguistic Minority Students Go to College: Preparation, Access, and Persistence* (2012, with Yasuko Kanno). She also teaches and publishes regularly in the area of qualitative research theory and methods in applied linguistics, particularly participant observation and longitudinal case studies. She was a contributing author to *TESOL Quarterly*'s 2003 Qualitative Research Guidelines. Her work has appeared in *TESOL Quarterly*, *Linguistics and Education*, *Educational Policy*, *Journal of Literacy Research*, *Journal of Second Language Writing*, *Foreign Language Annals*, *Critical Inquiry in Language Studies*, and *Anthropology and Education Quarterly*.

Joan Jamieson is professor of English at Northern Arizona University, USA, where she teaches courses in research methods and statistical applications for applied linguistics. Her recent work in language testing and CALL has appeared in *Educational Measurement: Issues and Practice*, *System*, and the *Handbook of Research in Second Language Teaching and Learning. Vol.2* (2011).

Rodney H. Jones is associate head of the Department of English at City University of Hong Kong. He is coauthor of *Intercultural Communication: A Discourse Approach* (3rd ed., 2012, with Ron and Suzie Wong Scollon), coauthor of *Understanding Digital Literacies: A Practical Introduction* (2012, with Christoph A. Hafner), and author of *Discourse Analysis: A Resource Book for Students* (2012). His work on mediated discourse analysis and health communication has been published widely in international journals.

Krzysztof Kredens received his MA in English studies and PhD in English linguistics from the University of Lodz, Poland. He is lecturer in applied linguistics in the School of

Languages and Social Sciences at Aston University, UK, where he teaches undergraduate and postgraduate courses in linguistics. He has published and presented widely on socio-legal applications of linguistics; he has coedited *Language and the Law: International Outlooks* (2007, with Stanisław Goźdź-Roszkowski). Krzysztof is deputy director of Aston University's Centre for Forensic Linguistics, member of the executive committee of the International Association of Forensic Linguists and director of the International Summer School in Forensic Linguistic Analysis.

Eva Lam is associate professor of learning sciences at Northwestern University, USA. She studies the social contexts of language learning, new literacies, language varieties, and socialization practices in new media environments. Her work has been published in peer-reviewed journals such as *Reading Research Quarterly*, *TESOL Quarterly*, *Language and Education*, *Review of Research in Education*, *Language Learning and Technology*, and *E-learning and Digital Media*, and in edited volumes including *Computer Assisted Language Learning* (2009) and *Handbook of Research on New Literacies* (2008).

John Levis is associate professor of TESL and applied linguistics at Iowa State University, USA. He is coauthor of *Pronunciation for a Purpose* (2012, with Greta Muller Levis), and organizer and coeditor (with K. LeVelle) of the Pronunciation in Second Language Learning and Teaching Conference (apling.public.iastate.edu/PSLLT/2009). His work on pronunciation teaching and intonation has appeared in *TESOL Quarterly*, *Applied Linguistics*, *TESOL Journal*, *ELT Journal*, *Language Awareness*, *World Englishes*, *System*, and *The Annual Review of Applied Linguistics*.

Angel Lin is associate professor of English language education at the University of Hong Kong. She has co/authored and co/edited six research books, including *Problematizing Identity: Everyday Struggles in Language, Culture, and Education* (2008) and *Race, Culture, and Identities in Second Language Education* (2009, with Ryuko Kubota). Her work on language, discourse, and identity has appeared in *Linguistics and Education*, *TESOL Quarterly*, *Journal of Gender Studies*, and *Inter-Asia Cultural Studies*.

Joseph Lo Bianco is professor of language and literacy education in the Graduate School of Education at the University of Melbourne, Australia. He is president of the Australian Academy of the Humanities. His work on language policy and planning has appeared in *Language Policy*, *Language Problems and Language Planning*, and *Current Issues in Language Planning*.

Aya Matsuda is assistant professor of English at Arizona State University, USA, where she teaches courses in applied linguistics. Her primary research focus has been the global spread of English, its use as an international language, and its implications for pedagogy. Her work has appeared in leading journals including *World Englishes*, *TESOL Quarterly*, and *Written Communication*, as well as in a number of edited collections.

Kim McDonough is associate professor and Canada Research Chair in Applied Linguistics at Concordia University, Canada. Her work on second language acquisition has appeared in *Studies in Second Language Acquisition*, *Language Learning*, and *The Modern Language Journal*.

Kristian Mortensen is a postdoctoral researcher at the University of Luxembourg. His research focuses on social interaction and multimodality in ordinary conversation and institutional interaction, in particular classroom interaction. His work has appeared in journals including *Discourse Processes* and *Journal of Applied Linguistics*.

Murray J. Munro is professor of linguistics at Simon Fraser University, Canada. His research on applied phonetics, much of it carried out with his colleague Tracey M. Derwing, has

appeared in such journals as *Applied Linguistics*, *Journal of the Acoustical Society of America*, *Language Learning*, *Journal of Phonetics*, *Speech Communication*, and *Studies in Second Language Acquisition*. With Ocke-Schwen Bohn, he published *Language Experience in Second Language Speech Learning* in 1997.

Sigrid Norris is associate professor in communication studies and director of the Multimodal Research Centre at Auckland University of Technology, New Zealand. She is author of *Analyzing Multimodal Interaction: A Methodological Framework* (2004) and *Identity in (Inter)action: Introducing Multimodal Interaction Analysis* (2011); and is coeditor of *Discourse in Action: Introducing Mediated Discourse Analysis* (2005, with Rodney H. Jones) and editor of *Multimodality in Practice: Investigating Theory-in-Practice-Through-Methodology* (2011). Her primary research interests are multimodal theory and methodology and the study of identity.

Amy Snyder Ohta is associate professor of applied linguistics and Japanese at the University of Washington, USA. She is coeditor of *Japanese Applied Linguistics* (2008, with Junko Mori) and author of *Second Language Acquisition Processes in the Classroom: Learning Japanese* (2001). Her work has also appeared in journals such as *Applied Linguistics*, *System*, *Japanese Language and Literature*, and *The Journal of Pragmatics*, and in various edited volumes.

Lourdes Ortega is professor of applied linguistics at Georgetown University, USA. She is the author of *Understanding Second Language Acquisition* (2009) and editor of *Critical Concepts in Linguistics: Second Language Acquisition* (2010). Her work on second language acquisition and foreign-language education has appeared in *Applied Linguistics*, *Language Learning*, *The Modern Language Journal*, and *Studies in Second Language Acquisition*.

Lia Plakans is assistant professor in foreign-language/ESL education at the University of Iowa, USA. Her research focuses on assessing integrated skills, test use, and connections in L2 reading and writing. She teaches graduate courses in language assessment, language planning and policy, and second language learning. Lia has been an English-language educator in Texas, Ohio, Iowa, and Latvia.

Karen Risager is professor in cultural encounters at Roskilde University, Denmark. She is the author of *Language and Culture: Global Flows and Local Complexity* (2006) and *Language and Culture: From a National to a Transnational Paradigm* (2007), and coeditor of *Culture in Language Learning* (2006, with H. L. Andersen and K. Lund).

Meryl Siegal teaches English at Laney College in Oakland, California, USA. She is coeditor of *Generation 1.5 in College Composition: Teaching Academic Writing to U.S.-Educated Learners of ESL* (2009, with Mark Roberge and Linda Harklau). Her work on Japanese as a second language and second language pragmatics has appeared in the *Journal of Applied Linguistics*.

Michael Stubbs has been professor of English linguistics at the University of Trier, Germany, since 1990. He was previously professor of English at the Institute of Education, University of London, and lecturer in linguistics at the University of Nottingham, UK. He has been chair of the British Association for Applied Linguistics, and has published widely on applied linguistics and corpus linguistics.

Thomas A. Upton is professor of applied linguistics/TESOL and chair of the Department of English at Indiana University-Purdue University Indianapolis (IUPUI), USA. He is the author of *Reading Skills for Success: Guide to Academic Texts* (2004) and coauthor of *Discourse on the Move: Using Corpus Analysis to Describe Discourse Structure* (2007, with D. Biber and U. Connor). His work on ESP, L2 reading, and discourse analysis has appeared in *Discourse Studies*, *Journal of Corpus Linguistics*, *Language Testing Journal*, *Studies in Second Language Acquisition*, and *English for Specific Purposes*.

Johannes Wagner is professor at the Institute of Business Communication and Information Science at the University of Southern Denmark. He is currently involved in three larger projects: He directs a project on Electronic CA databases which makes first and second language conversations as well as high-quality CA transcriptions available for the research community (www.talkbank.org/samtalebank). He is part of the SPIRE research center on participatory innovation (www.sdu.dk/spire) and of CALPIU (www.calpiu.dk), the Research Center for Cultural and Linguistic Practices in the International University.

John Williams is reader in applied psycholinguistics at the University of Cambridge, UK. He is coeditor of *Statistical Learning and Language Acquisition* (forthcoming, with Patrick Rebuschat). His research on cognitive aspects of second language learning and processing has appeared in *Studies in Second Language Acquisition*, *Language Learning*, *Second Language Research*, *Applied Psycholinguistics*, *Bilingualism: Language and Cognition*, and *Lingua*.

Brent Wolter is associate professor of English and director of the TESOL program at Idaho State University. His work on vocabulary has appeared in journals such as *Applied Linguistics*, *Second Language Research*, *Studies in Second Language Acquisition*, and *System*.

List of Contributors

Argentina	
Mónica Pini	*Universidad Nacional De South Australian Martín*
Armenia	
Hossein Farhady	*American University Of Armenia*
Australia	
Brigitte Elisabeth Lambert	
Maurice Nevile	
Helen Fraser	
Della Goswell	
John Knox	
Jemina Napier	
Brian Paltridge	
Abz Sharma	
Joanne Jung-Wook Hong	
Geoff Brindley	
Theo Van Leeuwen	
Barbara Comber	
Michael O'Toole	
Deborah Cao	*Griffith University*
Rod Gardner	*Griffith University*
Andy Kirkpatrick	*Griffith University*
Michael Haugh	*Griffith University*
David Robert Hall	*Macquarie University*
Annabelle Lukin	*Macquarie University*
Trevor Johnston	*Macquarie University*
Joe Lo Bianco	*Melbourne Graduate School Of Education*
Naomi Kurata	*Monash University*
Jennifer Miller	*Monash University*
Farzad Sharifian	*Monash University*
Tim Hassall	*The Australian National University*
Sue Starfield	*The Learning Centre*
Ghil`Ad Zuckermann	*The University Of Adelaide*
Tim Mcnamara	*The University Of Melbourne*
Catherine Anne Elder	*The University Of Melbourne*
Luke Harding	*The University Of Melbourne*
Neomy Storch	*The University Of Melbourne*
Richard Birge Baldauf	*The University Of Queensland*
Meiyun Chang-Smith	*The University Of Queensland*
David Grant	*The University Of Sydney*
Wei Wang	*The University Of Sydney*

Nick Thieberger	*University Of Melbourne*
Carsten Roever	*University Of Melbourne*
Anna Gladkova	*University Of New England*
Jeff Siegel	*University Of New England*
Gai Harrison	*University Of Queensland*
Kathleen Heugh	*University Of South Australia*
Anthony J. Liddicoat	*University Of South Australia*
William Foley	*University Of Sydney*
Ahmar Mahboob	*University Of Sydney*
James Martin	*University Of Sydney*
Emilia N Djonov	*University Of Technology*
Rick Iedema	*University Of Technology Sydney*
Uldis Ozolins	*University Of Western Sydneyt*
Austria	
Waldemar Martyniuk	*Council Of Europe*
Hanna Risku	*Danube University Krems*
Sonja Pöllabauer	*Graz University*
Gisella Vorderobermeier	*Karl-Franzens Universität Graz*
Nadja Grbic	*University Of Graz*
Ulrike Jessner-Schmid	*University Of Innsbruck*
Barbara Seidlhofer	*University Of Vienna*
Bettina Fischer-Starcke	*Vienna University Of Economics And Business*
Bangladesh	
Amena Mohsin	*University Of Dhaka*
Belgium	
Reine Meylaerts	*Kuleuven*
Erik Hertog	*Lessius University College*
Magali Paquot	*Université Catholique De Louvain*
Jeroen Darquennes	*Université De Namur*
Jack Grieve	*University Of Leuven*
Sylviane Granger	*University Of Louvain*
Brazil	
Tony Berber Sardinha	
Kanavillil Rajagopalan	*Universidade Estadual De Campinas (Unicamp)*
Ana Maria Ferreira Barcelos	*Universidade Federal De Viçosa*
Luiz Paulo Moita Lopes	*Universidade Federal Do Rio De Janeiro*
Lynn Mario De Souza	*University Of Sao Paulo*
Brunei Darussalam	
David Deterding	*Universiti Brunei Darussalam*
Debbie Ho	*Universiti Brunei Darussalam*
Canada	

Bernard Mohan	
Mirela Cherciov	
Jim Cummins	
François Vaillancourt	
Ron Thomson	*Brock University*
Brian Stephen Budgell	*Canadian Memorial Chiropractic College*
Janna D. Fox	*Carleton University*
Donna Patrick	*Carleton University*
Graham Smart	*Carleton University*
Walcir Cardoso	*Concordia University*
Laura Collins	*Concordia University*
Kim Mcdonough	*Concordia University*
Pavel Trofimovich	*Concordia University*
Brian Morgan	*Glendon College*
Joseph-G. Turi	*International Academy Of Linguistic Law*
Fred Genesee	*Mcgill University*
Roy Lyster	*Mcgill University*
Carolyn E. Turner	*Mcgill University*
Elisabet Service	*Mcmaster University*
Merrill Swain	*Oise*
Sharon Lapkin	*Oise/Ut*
Colette A. Granger	*Queen'S University*
Diane Dagenais	*Simon Fraser University*
Lorna Fadden	*Simon Fraser University*
Trude Heift	*Simon Fraser University*
Suzanne Hilgendorf	*Simon Fraser University*
Zita Mcrobbie	*Simon Fraser University*
J. Dean Mellow	*Simon Fraser University*
Murray Munro	*Simon Fraser University*
Yue Wang	*Simon Fraser University*
John Edwards	*St Francis Xavier University*
Luisa Maffi	*Terralingua*
Thomas Cobb	*Univ Quebec A Montreal*
Nina Spada	*Univeristy Of Toronto*
Leila Ranta	*University Of Alberta*
Elana Nicoladis	*University Of Alberta*
Tracey M. Derwing	*University Of Alberta*
Geoff Williams	*University Of British Colombia*
Sandra Zappa-Hollman	*University Of British Colombia*
Patricia A. Duff	*University Of British Columbia*
Ryuko Kubota	*University Of British Columbia*

Duanduan Li	*University Of British Columbia*
Bonny Norton	*University Of British Columbia*
Steven Talmy	*University Of British Columbia*
Robert Tierney	*University Of British Columbia*
Susanne Elizabeth Carroll	*University Of Calgary*
Thomas Ricento	*University Of Calgary*
Marie-Claude L'Homme	*University Of Montreal*
Lynne Bowker	*University Of Ottawa*
Desmond Fisher	*University Of Ottawa*
Sylvie A. Lamoureux	*University Of Ottawa*
Mireille Mclaughlin	*University Of Ottawa*
Jeremie Seror	*University Of Ottawa*
Larry Vandergrift	*University Of Ottawa*
Alister Henry Cumming	*University Of Toronto*
Vedran Dronjic	*University Of Toronto*
Rena Helms-Park	*University Of Toronto Scarborough*
John H. Esling	*University Of Victoria*
Mathias Schulze	*University Of Waterloo*
China	
Jane Jackson	*Chinese University Of Hong Kong*
Huhua Ouyang	*Guangdong University Of Foreign Studies*
Jane Lung	*Macao Polytechnic Institute*
Winnie Cheng	*The Hong Kong Polytechnic University*
David Carless	*The University Of Hong Kong*
Zuocheng Zhang	*University Of International Business And Economics*
Colombia	
Anne-Marie De Mejia	*Universidad De Los Andes*
Côte D'Ivoire	
Paulin G. Djite	
Czech Republic	
Patrick Hanks	*Charles University In Prague*
Jan Chovanec	*Masaryk University*
Olga Dontcheva-Navratilova	*Masaryk University*
Denmark	
Tove Skutnabb-Kangas	
Birte Asmuss	*Aarhus University*
Jakob Steensig	*Aarhus University*
Carmen Daniela Maier	*Aarhus University*
Inger Mees	*Copenhagen Business School*
Robert Phillipson	*Copenhagen Business School*
Hanne Erdman Thomsen	*Copenhagen Business School*

Birgitta Frello	*Roskilde University*
Lise Paulsen Galal	*Roskilde University*
Bent Preisler	*Roskilde University*
Karen Risager	*Roskilde University*
Dennis Day	*Univ. Of Southern Denmark*
Frans Gregersen	*University Of Copenhagen*
Kasper Boye	*University Of Copenhagen*
Johannes Wagner	*University Of Southern Denmark*
Nina Nørgaard	*University Of Southern Denmark*
Teresa Cadierno	*University Of Southern Denmark*
Catherine E. Brouwer	*University Of Southern Denmark*
Maria Egbert	*University Of Southern Denmark*
Kerstin Fischer	*University Of Southern Denmark*
Ben Matthews	*University Of Southern Denmark*
Egypt	
Atta Gebril	*The American University In Cairo*
Estonia	
Mart Rannut	*Integration Research Institute*
Finland	
Sari Pietikäinen	*Jyväsylä University*
Ilkka Arminen	*University Of Helsinki*
Terttu Nevalainen	*University Of Helsinki*
Matti Rissanen	*University Of Helsinki*
Pentti Haddington	*University Of Helsinki*
Hannele Dufva	*University Of Jyvaskyla*
Paula M. Kalaja	*University Of Jyväskylä*
Sirpa Leppänen	*University Of Jyväskylä*
Ari Huhta	*University Of Jyväskylä*
David Marsh	*University Of Jyväskylä*
Siv Björklund	*University Of Vaasa*
Anna Mauranen	*Universiy Of Helsinki*
France	
Geneviève Zarate	
Clinton Robinson	
Robin Setton	
Geoffrey Clive Williams	
Joseph Sheils	*Council Of Europe*
Lorenza Mondada	*Icar Research Lab*
Georges Daniel Veronique	*Université De Provence*
Christine Helot	*Université De Strasbourg*
Germany	

Luis Enrique López	
Lothar Bredella	
Juliane House	
Christiane Nord	
John Bateman	*Bremen University*
Barbara Ahrens	*Cologne University Of Applied Sciences*
Sylvia Kalina	*Cologne University Of Applied Sciences*
Thorsten Piske	*Friedrich-Alexander-University Of Erlangen-Nuremberg*
Dörte Andres	*Johannes Gutenberg-Universität Mainz*
Eva Burwitz-Melzer	*Justus Liebig University*
Christoph Rühlemann	*Ludwig-Maximilians-University*
Begoña Díaz	*Max Planck Institute For Human Cognitive And Brain Sciences*
Wiltrud Mihatsch	*Ruhr-Universitaet Bochum*
Christine Meierkord	*Ruhr-University Bochum*
Peter Doyé	*Technische Universität Brunschweig*
Winfried Thielmann	*Tu Chemnitz*
Jens Loenhoff	*Universitaet Duisburg-Essen*
Jochen Rehbein	*Universitaet Hamburg*
Ulrich Schmitz	*Universität Duisburg-Essen*
Annick De Houwer	*Universität Erfurt*
Christine Dimroth	*Universität Osnabrück*
Margret Selting	*Universität Potsdam*
Andrea Sand	*Universität Trier*
Detmar Meurers	*Universität Tübingen*
Ulrich Ammon	*University Duisburg-Essen*
Eric A. Anchimbe	*University Of Bayreuth*
Chiaoi Tseng	*University Of Bremen*
Christian Mair	*University Of Freiburg*
Wolf-Andreas Liebert	*University Of Koblenz*
Thomas Metten	*University Of Koblenz And Landau*
Manfred Pienemann	*University Of Paderborn*
Friederike Kern	*University Of Potsdam*
Daniela Kolbe	*University Of Trier*
Michael Stubbs	*University Of Trier*
Anita Fetzer	*University Of Würzburg*
Hong Kong	
George Braine	*Chinese University Of Hong Kong*
Jette Gjaldbaek Hansen Edwards	*Chinese University Of Hong Kong*
Peter Skehan	*Chinese University Of Hong Kong*
Jonathan Webster	*City University Of Hong Kong*
Aditi Bhatia	*City University Of Hong Kong*

Kingsley Bolton	*City University Of Hong Kong*
Stephen Bremner	*City University Of Hong Kong*
Rodney Jones	*City University Of Hong Kong*
Jane Lockwood	*City University Of Hong Kong*
Martin Weisser	*City University Of Hong Kong*
Alice Chik	*City University Of Hong Kong*
John Flowerdew	*City University Of Hong Kong*
Jackie Jia Lou	*City University Of Hong Kong*
Christopher Jenks	*City University Of Hong Kong*
Lynne Flowerdew	*Hkust*
Hans Ladegaard	*Hong Kong Baptist University*
Phil Benson	*Hong Kong Institute Of Education*
Martin Warren	*The Hong Kong Polytechnic University*
Leo Francis Paul Hoye	*The University Of Hong Kong*
Ken Hyland	*The University Of Hong Kong*
Janny Leung	*The University Of Hong Kong*
Lisa Lim	*The University Of Hong Kong*
Hungary	
Kata Csizer	*Elte*
India	
Ajit Kumar Mohanty	*Jawaharlal Nehru University*
Udaya Narayana Singh	*Rabindra Bhavana*
Girishwar Misra	*University Of Delhi*
Ireland	
Pádraig Ó Riagáin	
Dorothy Kenny	*Dublin City University*
Peadar Ó Flatharta	*Dublin City University*
David Singleton	*Trinity College*
Tina Hickey	*Ucd*
Helen Kelly-Holmes	*University Of Limerick*
Anne O'Keefe	*University Of Limerick*
Reinhard Schäler	*University Of Limerick*
Israel	
Bernard Spolsky	
Shoshana Blum-Kulka	*Hebrew University*
Elana Shohamy	*Tel Aviv University*
Ofra Inbar-Lourie	*Tel Aviv University*
Zohar Kampf	*The Hebrew University Of Jerusalem*
Larissa Aronin	*University Of Haifa*
Dennis Kurzon	*University Of Haifa*
Batia Laufer	*University Of Haifa*

Italy	
Alan Scott Partington	*Bologna University*
Amanda Clare Murphy	*Catholic University*
Rita Franceschini	*Free University Of Bozen-Bolzano*
Belinda Crawford Camiciottoli	*Università Degli Studi Di Firenze*
Anna Spagnolli	*Università Degli Studi Di Padova*
Marina Bondi	*Università Di Modena E Reggio Emilia*
Delia Chiaro	*University Of Bologna*
Mariachiara Russo	*University Of Bologna*
Gill Philip	*University Of Bologna*
Anna Giacalone-Ramat	*University Of Pavia*
David Katan	*University Of The Salento (Lecce)*
Francesco Straniero Sergio	*University Of Trieste*
Jubin Abutalebi	*University Vita Salute San Raffaele*
Jamaica	
Hubert Devonish	*University Of The West Indies*
Japan	
Satomi Takahashi	
Peter Robinson	*Aoyama Gakuin University*
Andy Barfield	*Chuo University*
Tadayoshi Kaya	*Gakushuin Women'S College*
Noriko Ishihara	*Hosei University*
James W. Tollefson	*International Christian University*
John C. Maher	*International Christian University*
Tim Murphey	*Kanda University Of International Studies*
Gary J. Ockey	*Kanda University Of International Stuidies*
Don Bysouth	*Kansai University*
Tomoko Yashima	*Kansai University*
Jenifer Larson-Hall	*Kyushu Sangyo University*
Joseph Falout	*Nihon University*
Richard Powell	*Nihon Universiy*
Deryn P Verity	*Osaka Jogakuin College*
Keiko Kitade	*Ritsumeikan University*
Frank E. Daulton	*Ryukoku University*
Glenn Toh	*Tamagawa University*
Yukio Tono	*Tokyo University Of Foreign Studies*
Bill Rozycki	*University Of Aizu*
Thomas Orr	*University Of Aizu*
Yasuyo Sawaki	*Waseda University*
Jordan	
Dinha T. Gorgis	*Jadara University*

Korea, Republic Of	
Dan Kim	*Korea Educational Broadcasting System*
Younhee Kim	*Korea University*
Yong-Won Lee	*Seoul National University*
Tom Randolph	*Sookmyung Women'S University*
Luxembourg	
Ingrid De Saint-Georges	*University Of Luxembourg*
Adelheid Hu	*University Of Luxembourg*
Kristian Mortensen	*University Of Luxembourg*
Macao	
Andrew Moody	*University Of Macau*
Malaysia	
Saran Kaur Gill	*Universiti Kebangsaan Malaysia*
Xiaomei Wang	*University Of Malaya*
Mexico	
Donna Jackson-Maldonado	
Rainer Enrique Hamel	*Universidad Autónoma Metropolitana*
Morocco	
Moha Ennaji	*University Of Fez*
Netherlands	
Sybrine Bultena	*Cognition And Behaviour*
Ton Dijkstra	*Donders Institute For Brain*
Daan Hermans	*Kentalis*
Paul Bogaards	*Leiden University*
Beverley Simeon Collins	*Leiden University*
Mirjam Broersma	*Max Planck Institute For Psycholinguistics*
Andrea Weber	*Max Planck Institute For Psycolinguistics*
Alex Riemersma	*Mercator Research Centre On Multilingualism And Language Learning*
Gregory Poarch	*Radboud University Nijmegen*
Guus Extra	*Tilburg University*
Jan Blommaert	*Tilburg University*
Ton Vallen	*Tilburg University*
Daria Bahtina	*Uil Ots (Utrecht Institute Of Linguistics) Trans 10*
Jan D. Ten Thije	*Universiteit Utrecht*
Margreet Dorleijn	*University Of Amsterdam*
Annette De Groot	*University Of Amsterdam*
Jan Hulstijn	*University Of Amsterdam*
Rob Schoonen	*University Of Amsterdam*
Paul Ten Have	*University Of Amsterdam*
Wander Lowie	*University Of Groningen*
Marjolijn Verspoor	*University Of Groningen*

Trevor Benjamin	*University Of Groningen*
Harrie Mazeland	*University Of Groningen*
Monika S. Schmid	*University Of Groningen*
Marijn Van Dijk	*University Of Groningen*
Jacomine Nortier	*Utrecht University*
Tom Koole	*Utrecht University*
Tessa Van Charldorp	*Vu Univeristy Amsterdam*
Netherlands Antilles	
Leah Roberts	*Max Planck Institute For Psycholinguistics*
New Zealand	
Sigrid Norris	
Adam Brown	*Ais St Helens*
Allan Bell	*Auckland University Of Technology*
Jarret Geenen	*Auckland University Of Technology*
Helen Alexandra Sissons	*Auckland University Of Technology*
Philippa Smith	*Auckland University Of Technology*
Fadhil Wong	*Auckland University Of Technology*
Irmengard Wohlfart	*Aut University*
Cynthia Joan White	*Massey University*
Gudrun Frommherz	*Multimodal Research Centre*
Tony Trinick	*The University Of Aucklan*
Rosemary Erlam	*The University Of Auckland*
Helen Basturkmen	*University Of Auckland*
Stephen May	*University Of Auckland*
Miriam Meyerhoff	*University Of Auckland*
John Read	*University Of Auckland*
Jae Jung Song	*University Of Otago*
Paul Nation	*Victoria University Of Wellington*
Stuart Webb	*Victoria University Of Wellington*
Frank Boers	*Victoria University Of Wellington*
Averil Coxhead	*Victoria University Of Wellington*
Peter Gu	*Victoria University Of Wellington*
Meredith Marra	*Victoria University Of Wellington*
C. Joseph Sorell	*Victoria University Of Wellington*
Tatsuya Nakata	*Victoria University Of Wellington*
Nigeria	
Dipo Salami	*Obafemi Awolowo University*
Edmund Bamiro	*Redeemer'S University*
Norway	
Pia Lane	*University of Oslo*
Trine Dahl	*Norwegian School Of Economics And Business Administration*

Emiliano Raul Guevara	*University Of Oslo*
Hilde Hasselgård	*University Of Oslo*
Oman	
Catherine Nickerson	*Gulf School Of Business*
Najma Al Zidjaly	*Sultan Qaboos University*
Pakistan	
Tariq Rahman	*Quaid-I-Azam University*
Poland	
Stanislaw Gozdz-Roszkowski	*University Of Lodz*
Magdalena Bartłomiejczyk	*University Of Silesia*
Portugal	
Maria Manuela Guilherme	*Universidade De Coimbra*
Puerto Rico	
María C. M. De Guerrero	*Inter American University Of Puerto Rico*
Saudi Arabia	
Arieh Sherris	*King Abdullah University Of Science And Technology*
Scotland	
Bernadette O'Rourke	*Heriot-Watt University*
Singapore	
Mark Evan Nelson	
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Martyn Clark	*University Of Oregon*
Susan Guion-Anderson	*University Of Oregon*
Deborah Healey	*University Of Oregon*
Emily F. Rine	*University Of Oregon*
Yuko Goto Butler	*University Of Pennsylvania*
Nancy H Hornberger	*University Of Pennsylvania*
Anne Pomerantz	*University Of Pennsylvania*
Harold Schiffman	*University Of Pennsylvania*
Alan Juffs	*University Of Pittsburgh*
Natasha Tokowicz	*University Of Pittsburgh*
Alba Tuninetti	*University Of Pittsburgh*
Richard Donato	*University Of Pittsburgh*
Barbara Conboy	*University Of Redlands*
Donna M. Brinton	*University Of Southern California*
Conor Quinn	*University Of Southern Maine*
Carl Blyth	*University Of Texas At Austin*
Elizabeth Keating	*University Of Texas At Austin*
Ana Schwartz	*University Of Texas At El Paso*
Francis M. Hult	*University Of Texas At San Antonio*

Shannon Sauro	*University Of Texas At San Antonio*
Rachel Hayes-Harb	*University Of Utah*
Jennifer Andrus	*University Of Utah*
Amanda Kibler	*University Of Virginia*
Andrew Jocuns	*University Of Washington*
Amy Snyder Ohta	*University Of Washington*
Douglas Maynard	*University Of Wisconsin*
Nora Cate Schaeffer	*University Of Wisconsin*
Mai Yamagami	*University Of Wisconsin*
Tammy Gales	*University Of Wisconsin*
Cecilia E. Ford	*University Of Wisconsin-Madison*
Fred R Eckman	*University Of Wisconsin-Milwaukee*
Juliet Langman	*Utsa*
Peter Sayer	*Utsa*
Robert Jimenez	*Vanderbilt*
Robert Godwin-Jones	*Virginia Commonwealth University*
Olgierda Furmanek	*Wake Forest*
David Cassels Johnson	*Washington State University*
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Xiangying Jiang	*West Virginia University*
Deborah Crusan	*Wright State University*
Zambia	
Ernst R. Wendland	*Lutheran Seminary*

Abercrombie, David

ADAM BROWN

David Abercrombie (1909–1992) was born into a family with a literary heritage—his father was the poet Lascelles Abercrombie. When World War I began, his family moved to Liverpool, where his father subsequently became a lecturer at Liverpool University and David was educated at Liverpool College. His father was then appointed professor of English literature at Leeds University and David attended Leeds Grammar School. He went on to Leeds University where he graduated with a third-class honours BA in English. While living with his parents in London, he worked on an MA on i-mutation, which he never completed. As Ladefoged (1997, p. 85) notes, he "never set much store on academic credentials." His father served on the BBC Advisory Committee on Spoken English with George Bernard Shaw and Daniel Jones. When Jones was told of David's interest in speech, he mentored him for the next seven years at University College London (UCL). As a result, David became involved in topics such as spelling reform and the teaching of English to native speakers of other languages.

During two years as an assistant in a Paris lycée, Abercrombie attended classes at the Phonetics Institute at the Sorbonne. On returning to the United Kingdom in 1934 his first appointment was as an English teacher at the London School of Economics (LSE). Just before and during World War II, he taught in Eastern Europe, Greece, Cyprus, and Egypt. After the war, he returned to the LSE, and then Leeds University. During this time, he was strongly influenced by teachers and colleagues including J. R. Firth, Ida Ward, Hélène Coustenoble, Bronisław Malinowski, C. K. Ogden, and Arthur Lloyd James. However, the strongest of these influences was Daniel Jones, the popularizer of the cardinal vowel system. Jones was famous for having little in the way of small talk. On their first meeting, Jones said "How do you do? Come in and sit down. Would you please say a voiced bilabial implosive?" (Abercrombie, 1991, p. 38). Later, after Abercrombie had been working in Jones's UCL department for a time, it is reported that J. R. Firth asked Jones what he thought of Abercrombie. Jones's reply was "Well, his Cardinal Three's not very good" (Abercrombie, 1991, p. 3).

In 1948, he was invited by the University of Edinburgh to establish a Department of Phonetics, where he was appointed professor in 1964 and remained until his retirement in 1980. Notable among his students were Peter Ladefoged, author of *A Course in Phonetics* (2006), and John Laver, author of *Principles of Phonetics* (1994).

Academically, he is remembered for the breadth of his contribution to the field of phonetics, as evidenced by the following aspects.

Phonetics as a Discipline

Abercrombie can be credited with having established phonetics as a separate university discipline. The Edinburgh Phonetics Department was the only one in the United Kingdom outside London. Abercrombie established a one-year Ordinary Course in Phonetics, emphasizing the fundamental importance of ear-training and production (the ability to hear and pronounce sounds, including small differences in sounds, sounds in various accents of

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English, and sounds in non-English languages). He also personally taught much of this course, as he "approved of the Scottish tradition that the Professor should teach first-year students" (Kelly, 1993, p. 69). As Laver and Asher (1992) note, "Abercrombie was by any standards a great teacher, demanding, and inspirational." His broad view of phonetics is embodied in *Elements of General Phonetics* (Abercrombie, 1967).

History of Phonetics

While he was a student in London, Abercrombie read widely in the British Museum about the history of phonetics, assembled a personal collection of early works, and became the leading authority on the subject. In particular, he synthesized the various strands of enquiry and appreciated the continuities over the previous five centuries (Abercrombie, 1949, 1965a, pp. 45–75). In acknowledgment of this, a festschrift for him was entitled *Towards a History of Phonetics* (Asher & Henderson, 1981).

Transcription Systems

The subject of one of Abercrombie's earliest writings (Abercrombie, 1937, 1965a, pp. 92–107) was Isaac Pitman, well-known nowadays as a pioneer in shorthand. Pitman is often described as a phonographer, that is, someone engaged in phonetics-based spelling. Pitman had established the Phonetic Institute and a *Phonetic Journal* at Bath, and produced a phonetic system that was the basis for his shorthand. Abercrombie developed a comprehensive theory of phonetic transcription systems (Abercrombie, 1964a), making various distinctions including simple (using the most Romanic set of letter-shapes) versus comparative transcription, allophonic versus phonemic (using the smallest number of symbols) transcription, symbols versus conventions (the tacit rules interpreting what the symbols stand for), and quality versus quantity transcriptions for certain English phonemes, for example whether the distinction between the vowels of *feet* and *fit* should be represented qualitatively by using different symbols (/i/ and /ɪ/) or quantitatively by using a length mark (/iː/ and /i/) or both (/iː/ and /ɪ/).

Spelling Reform

Related to his interest in transcription was an interest in English spelling, arising from two main people. One was Daniel Jones, who was the president of the Simplified Spelling Society (Abercrombie later became a vice-president), and after 1945 wrote all his personal letters in a reformed system known as New Spelling (or Nue Speling). The other was Robert Bridges, the Poet Laureate, whom he advised on a reformed spelling system he was devising for the publication of his collected essays; Abercrombie was well aware of the reformed systems that had been proposed earlier (Abercrombie, 1981).

Rhythm of English Speech

Abercrombie is perhaps best known for his contribution to the study of the rhythm of English speech (see Abercrombie, 1964b, 1964c, 1965a, pp. 16–25). In this respect he was influenced no doubt by the metrics of poetry, the profession of his father. Basic dichotomies were proposed (a) between those movements of the intercostal muscles that produce syllables, and those that produce stressed syllables, and (b) as a result, between those languages

and accents where syllables occur at roughly equal intervals of time (syllable-timed languages) and those where stressed syllables occur regularly (stress-timed languages). Stress-timed languages such as English could thus be analyzed into feet, as traditionally used in the analysis of poetry. These distinctions are questioned by many writers since conclusive instrumental substantiation is difficult to find. However, Abercrombie had proposed regular feet as a phonological, rather than phonetic, property of English speech.

Voice Quality

A less well-known contribution, but one that is equally far-reaching, is that of voice quality (see Chapter 6 of *Elements of General Phonetics*, Abercrombie, 1967; and Laver, 1980). This refers to the long-term settings of the voice box (larynx) and vocal organs (lips, tongue, nasal cavity) that may characterize individual speakers, or be used for effect, such as whisperiness for secrecy.

Instrumental Phonetics

As Ladefoged (1997, p. 89) points out, "Abercrombie did not do much work in the phonetics laboratory himself." This is not to say that he did not realize the importance of experimental and instrumental techniques in phonetics. He encouraged instrumental phonetics in his Edinburgh department, including PAT (parametric artificial talker), an early project in speech synthesis (creating speech sounds electronically from a nonsegmental input), and purchasing one of the first Kay spectrographs outside the United States. He also wrote an article (Abercrombie, 1957, 1965a, pp. 125–30) on direct palatography, the process of investigating tongue contact with the palate during speech, by spraying the palate with a dark mixture that is then removed by contact with the tongue.

Teaching English Pronunciation

As with many phoneticians before him, Abercrombie's interest in phonetics was not merely from an academic point of view, but also with a view to its practical application in the teaching of English (and other languages) to foreign learners. His book *Problems and Principles* (1956a) is concerned with various aspects of ELT, including the relevance of phonetics to teachers, the use of transcription, and the importance of intelligibility in setting targets for learners. Despite being himself a Received Pronunciation (RP) speaker, he accorded it no special status, noting disapprovingly that it often represented an elitist accent-bar (analogous with color-bar) for employment advancement (Abercrombie, 1956b, 1965a, pp. 10–15, 1965b). Indeed, he often stated that, from a phonetic perspective, Scottish English pronunciation avoided many of the negative connotations that RP carries in some parts of the world and suggested that, being phonetically simpler, it was a viable alternative model for learners.

All those who met him remember him as a very genial man. Laver and Asher (1992) describe him as "gentle, wise and caring." He was hospitable and he and his wife, Mary, held an open house on Sunday mornings for staff, students, and visiting academics. His students (including myself) were all profoundly influenced by him. For instance, Peter Ladefoged, who advised on the phonetic aspects of the film *My Fair Lady*, included the message "Honour to David Abercrombie," written in the phonetic script devised by Henry Sweet, in the credits.

SEE ALSO: Jones, Daniel; Phonetics and Phonology: Historical Overview; Phonetics and Phonology: Overview

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Academies of the Arabic Language and the Standardization of Arabic

DINHA T. GORGIS

The term *academy*, as conceptualized in the Arab world today, is often associated with Bayt al-Hikmah (lit. House of Wisdom), a major intellectual center created by al-Ma'mun in 830 CE. The story of the Arab Language Academy (ALA) cannot be appreciated without taking into consideration Arab achievements in the intellectual domain during the two centuries (c. 750–950) that can be said to be the climax of the Arab world's medieval period, the so-called Islamic Golden Age, which is thought to have started by the middle of the eighth century with the transfer of the Abbasid capital from Damascus to Baghdad. Conservatives often take this period as the impetus for present-day language standardization and cultural revival.

As widely circulated in the relevant literature the House of Wisdom, chaired by the great translator Hunayn Ibn Ishaq (known in the West as Johannitius), became the unrivaled center for science, philosophy, medicine, engineering, and education (cf. Tschanz, 2003). However, the Abbasid rule in Baghdad went into decline with the rise in power of the Turkish army created by the Caliphs and ended in 1258 when the Mongols sacked Baghdad. The Abbasids resumed rule in Egypt in 1261 up until 1519 when power was formally transferred to the Ottomans and the capital moved to Istanbul. During Ottoman rule, which lasted from 1299–1923, the prestige of Arabic dwindled due to the serious threat from Turkish—the administration and the army were mainly run in Turkish, sometimes alongside Arabic in the Arab territories—and French, because of Napoleon's expedition to Egypt in 1798.

Traditionally, Arabic was taught in mosques, houses annexed to mosques, or in other private places. That is, there had been no formal schools run in Arabic. But just a few years before the fall of the Ottoman Empire and the end of World War I, the linguistic scene dramatically changed in the Arab world (cf. Shraybon, 1999). A number of enthusiastic groups of Egyptian intellectuals, who feared that Arabic was losing ground on the national and international linguistic map, had made several attempts to create a language academy following the example of the House of Wisdom and L'Académie française. It wasn't until 1934 that the first Cairo-based ALA was created, although had Syria established the first Arab Science Academy in Damascus (ASAD) as early as 1919, which played a significant role in Arabizing all official documents previously written mainly in Turkish and sciences written in other languages (cf. Fayed, 2004). Since ASAD was more than a science (and language) academy, in fact a mini-ministry of education and information, it was entrusted with the task of appointing teachers of Arabic in schools and taking care of anything related to the Arabic revival, including translation. Its monthly journal, of which the first issue appeared in 1921, became quarterly after 1949. Prior to its renaming as the ALA in Damascus in 1967, ASAD was only a branch of the Cairo-based ALA, following the union between Syria and Egypt in 1960. The Iraqi Academy for Sciences (IAS) was founded in 1947, but the union of all three was not inaugurated and recognized globally until 1971. This union, named the Arab Scientific and Linguistic Academies' Union (ASLAU), commonly known as ALA for short, is based in Cairo. Since then other regional academies

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have joined ASLAU, namely Lebanon, Jordan, Morocco, Tunisia, Libya, Sudan, Palestine, and Algeria, in addition to the Arab League Educational Cultural and Scientific Organization (ALECSO).

Prior to the independence of Arab countries, Arabization was understood as a movement essentially geared toward converting anything Ottoman, that is, Turkish, and English or French into Arabic and taking national pride in the process. In fact, calls for Arabization had then been exploited politically as outcries for both the recognition of national identity and autonomy of the states. Since their independence, and as literacy steadily increased in the Arab world, the meaning of Arabization has become more complex (cf. Sieny, 1988, p. 177). Primarily, it has meant institutionalizing Arabic, that is, maximizing the official usage of Arabic particularly in education, administration, and the media as well as keeping pace with the modern world in Arabic. As such, Arabization and modernization (basically Westernization) have come to be understood as complementary issues (but see Abdulaziz, 1986). Secondarily, Arabization also refers to the spread of Arabic globally.

Whereas the former usage of Arabic necessitates nationally based activities, such as translation and rendering all educational systems into Arabic, the latter goes beyond the Arab territories, especially in Africa, in order to Arabize Roman scripts and help spread Islam. Standardization, on the other hand, entails both modernization and Arabization in that order. The quest for assimilating foreign borrowings, such as those of modern science and technology, into Arabic is one aspect of modernization, but the problem of Arabizing or standardizing borrowed concepts from other cultures, mainly from English and French, will remain unresolved in the long run. Understandably, Arabization is much easier than standardization simply because if a translator cannot find an equivalent term in Standard Arabic, transliterating a Roman form, for example, into Arabic would be necessary. Still, borrowing is widely believed to threaten the standard form, if not the existence of Arabic, no matter how it is accommodated. But what is more threatening is the historical conflict between the colloquial and the standard.

For over a century, there have been numerous attempts to simplify the grammar and lexicon of Classical Arabic in which the Koran and pre-Islamic literature are written. A few other attempts worked in the opposite direction, that is, to elevate a selected spoken variety to the status of a standard. The former attempts, mainly celebrated by lexical reform due to contact with the West (cf. Emery, 1983), produced what we call today Modern Standard Arabic (MSA), which is mostly written or occasionally read out, whereas the latter attempts generated what one may term Middle (or Educated) Arabic, an amalgam of both MSA and a regional spoken variety, and hence conversational rather than written. The observations put elegantly by Altoma (1970, pp. 695–700) four decades ago are true of present-day practices. So against this gloomy picture, standardization becomes an impossible task despite the fact that teachers are officially instructed to use MSA. It goes without saying that preaching, or dictating rules of use, overrides practicing. This perhaps explains why the Saudis are not happy about the achievements of Arab academies.

All ASLAU members, however, have agreed a common agenda, already acknowledged by individual members since their foundation and enriched through several meetings in different Arab capitals. From the beginning, ASLAU has called for updating Arabic; searching for unified terminology based on heritage; translating from mainly English and French; verifying critical texts; simplifying Arabic textbooks, especially those of syntax at all levels; discouraging the use of vernaculars in the media; building a monolingual dictionary to be used as a reference at schools; compiling specialized bilingual and trilingual glossaries and dictionaries for most sciences, including linguistics; Arabizing curricula, especially medical; and enriching children's libraries.

Arab language purists (perfectionists) have since the creation of first private language academies in Egypt been persistently campaigning for political decisions which would

institutionalize standardization. Such attempts amount to asking for the rescue of an endangered species, as if Arabic were dying out or in danger of foreseeable threats. The threats, they believe, are manifold, the most publicized and popularized being

1. globalization and its negative impact on Islam, Arabic culture, and national identity;
2. the spread of vernaculars in mass media and education; and
3. the use of foreign languages in many domains, for example, the family, including baby-sitting, and private schools.

The first potential threat underlies a paradox and a number of pros and cons; for while the West is thought to be marketing English globally, the Arabs have started marketing Islam and culture through Arabic. So far, we are told that 17 African countries have switched from Roman (Latin) script into Arabic (cf. Altwaijri, 2004, p. 62).

The main responsibility for this script change policy in African settings has rested with the Coordination Bureau of Arabization (CBA), established in Rabat (Morocco) under the auspices of ALECSO, which has been involved in translating and supervising the translation of technical terms since its creation in 1969. Although CBA is doing its best "to bring some order out of the previous chaos" (Emery, 1983, p. 87), it still faces difficulties, most prominent of which is the conservatism exhibited by the purists and hence a significant delay in the tasks entrusted. Moreover, duplication in terminology creation presents a serious problem, basically arising from the English versus French orientation and geographical distribution of Arab countries, if not political affiliation of the respective states and multifarious judgments of individual translators. However, efforts in this direction continue; a number of other Arab institutions have been recently working laboriously with foreign agencies, under certain agreements, to develop *term banks* (cf. Sieny, 1988, among others), which is, indeed, a promising sign.

SEE ALSO: Arabic Standardization; Term Banks

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Accent Reduction

RON I. THOMSON

The term "accent reduction" is normally used by individuals or businesses offering to help second language (L2) learners reduce or eliminate their foreign accent. These services are provided under what Derwing and Munro (2009) refer to as a business view of accent, and are often premised on the belief that foreign accents are a negative trait, and a detriment to L2 speakers' ability to establish relationships and find employment. A Google search for the term "accent reduction" results in well over 100,000 hits, primarily linked to Web sites offering courses that promise to rid speakers of a foreign accent, some in as little as 2.5 hours. In this unregulated market niche, no specialized training is required of instructors in accent reduction programs, although some do have backgrounds in English language teaching (ELT) or as speech language pathologists (SLPs). While some accent reduction programs and instructors are well-intentioned, many others appear to be solely profit-driven. This section will contrast accent reduction with related terms and practices, and briefly summarize the perspective of applied linguists and learners.

Related Terminology and Practices

Although the terms "accent modification," "pronunciation instruction," and "accent addition" may sometimes be confused with accent reduction, each tends to be used in different contexts, and with different connotations. Accent modification has the most currency in clinical settings, where staff are usually SLPs. In contrast, the term "pronunciation instruction" is most commonly used in ELT contexts, where pronunciation is not a primary focus of attention, and, when taught, is treated as one language skill among many (Breitkreutz, Derwing, & Rossiter, 2001). The term "accent addition" is used in English as an international language (EIL) contexts, by applied linguists and language teachers who advocate limiting pronunciation instruction to those core features that are most important for international communication. "Accent addition" also conveys the ideological stance that to acquire a new language does not require the abandonment of a learner's identity, but, rather, the addition of a new one (Jenkins, 2004).

Buyer Beware

There is ongoing controversy about the motivation behind many accent reduction programs (Müller, Ball, & Guendouzi, 2000; Schmidt & Sullivan, 2003). Some of the strongest opponents have argued that many accent reduction courses are pure hucksterism, and prey upon unwitting immigrants who are desperate for any strategy that will help them succeed in their new country (Derwing, 2008). A quick examination of promotional materials for accent reduction programs provides strong support for such criticism. For example, one widely advertised company provides a 100% money-back guarantee if a client is unhappy with his or her improvement during the first week. A claim to such rapid improvement contradicts widely accepted research findings that improvement in L2 pronunciation is gradual, taking place over an extended period of time (Piske, MacKay, & Flege, 2001). To an unsuspecting language learner, however, this guarantee may seem compelling. The

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same company warns potential clients not to be fooled by accent training offered by anyone other than a certified SLP, seemingly adding to the company's legitimacy. In fact, there is no published evidence regarding the efficacy of such accent reduction programs. Rather, claims of improvement are largely based on anecdotal evidence and unverifiable customer testimonials.

Concern has also been expressed that accent reduction programs sometimes treat L2 accent as a clinical disorder (Jenkins, 2004). While professional associations such as the American Speech-Language-Hearing Association (ASHA) (2004) and the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) (2008) take an official position that accent is not a disorder, clinical terms are still used to describe it. For example, both ASHA and CASLPA list accent modification as an "elective procedure" and stipulate that this "procedure" should be conducted by qualified SLPs. The clinical view of accent is also often evident in practice. In a survey of 76 ASHA certified, university-based speech clinics offering accent-training courses in 36 states, half reported assessing foreign-accented clients' motor speech ability as part of their diagnostic test (Schmidt & Sullivan, 2003). This test is designed for use in the diagnosis of speech disorders, rather than that of normal speech. In response to criticism, Sikorski (2005) argues for avoiding clinical terminology, and for replacing "patient" with the more business-oriented label "client."

Accent Reduction Training Techniques

Although many accent reduction instructors employ techniques that are commonly used by appropriately trained teachers, others use techniques that are untested, and even bizarre. For example, Derwing (2008) reports that one accent reduction course asks participants to place marshmallows between their lips while reciting "Peter picked a peck of pickled peppers" in order to practice making "p" sounds. Of course, it is quite impossible to produce a "p" when something is blocking lip closure. Another course teaches that the distinction between the sounds "b" and "p" is that speakers use their voice when producing "b," while for "p," speakers should not use their voice. While it appears that this instructor has acquired some phonetic terminology (i.e., "voicing"), she clearly does not understand what this means, and is using the term "voice" in an inappropriate and misleading way. This will likely cause confusion for learners, who will be frustrated in any attempts to make speech sounds without using their voices.

Accent Reduction From an Applied Linguistics Perspective

Applied linguists with an interest in foreign accent generally agree that the aim of instruction should not be to eliminate learners' accents, but, rather, should target specific features that are likely to lead to a loss of intelligibility (Jenkins, 2004; Derwing & Munro, 2009). An often-cited study by Munro and Derwing (1995) provides empirical evidence that the relationship between accent and intelligibility is complex. This research concluded that, despite having a strong foreign accent, some L2 speakers can still be perfectly intelligible. Furthermore, the researchers found that listeners' perceptions of foreign accent is often triggered by segmental errors. Yet there is a broad consensus that suprasegmental errors are more likely to lead to breakdowns in communication, and should therefore be the primary focus of instruction (Levis, 2005; Derwing, 2008). When segmentals are taught, instruction should focus on those phonemic contrasts that occur most frequently in the language (e.g., English "l" and "r"), with less attention to segments that rarely contrast (e.g., English "th" vs. "d").

Some applied linguists also express a concern that pronunciation instruction should be conducted by appropriately qualified teachers. While the most obvious candidates may be those trained to teach English as a second or additional language, research indicates that many such instructors avoid teaching pronunciation, citing a lack of training (Breitkreutz et al., 2001; Macdonald, 2002; Fraser, 2006).

According to Sikorski (2005), a demand for assistance from L2 learners themselves provided the impetus for SLPs to enter the field. Unfortunately, like many ESL instructors, most SLPs also lack appropriate training. For example, in Shriberg and Kent's (2003) popular clinical phonetics text, coverage of accent is limited to two pages in an appendix. Furthermore, most SLPs lack experience with L2 populations. Schmidt and Sullivan (2003) found that, in typical university speech-clinic settings where future SLPs are trained, fewer than 10 clients per year come seeking help with their foreign accent.

Despite a general lack of knowledge about accent and pronunciation by English-language instructors and SLPs, some have obtained training that reflects expert views on accent and pronunciation. They have also developed student materials that reflect these views (e.g., Grant, 2000; Gilbert, 2010).

Accent Reduction and L2 Learners

Behind the debate surrounding accent are the learners themselves, without whom there would be no demand for accent reduction programs. In fact, there are complex social consequences of having an accent, both positive and negative. For example, hearing an accent allows listeners to adjust their speech to better accommodate the accented speakers with whom they are speaking. However, recognition of an accent can also lead to discrimination (Rubin, 2002; Munro, 2003). Müller et al. (2000) argue that denying L2 speakers access to accent reduction programs will perpetuate disadvantages they already face, however unfair those disadvantages may be. Learners themselves often feel the same way. In a discussion of outsourcing the English call-center industry to India, Friedman (2005) describes accent reduction as the price employees are willing to pay for an improved standard of living. Timmis (2002) found that two thirds of 400 English learners surveyed from both English-speaking and non-English-speaking countries desired to speak like a native speaker. In Canada, 95% of immigrants surveyed expressed the desire to have native-like pronunciation (Derwing, 2003). Demand from learners suggests that accent reduction programs will continue to thrive. Given their expertise, applied linguists have a role to play in promoting appropriate research-based approaches to pronunciation instruction that help learners shape realistic goals, and in providing the means to achieve those goals. Until qualified instructors meet this need, the demand for pronunciation instruction will continue to be filled by many who are unqualified to provide such a service.

SEE ALSO: Foreign Accent; Intelligibility; Pronunciation Instruction

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Acculturation in World Englishes

KAMAL K. SRIDHAR

Linguistically and culturally, all varieties of World Englishes are an interesting and a dynamic phenomenon: interesting, because after years of contact of the native languages with English, distinctive varieties are emerging all around the world; and dynamic, because the English language is constantly evolving and changing in many cultures around the world, as the expressive resources of the English language are constantly being used to express nuances of local cultures and sensibilities. Language acculturation consists of a variety of processes of language change by which a language, not one's own, is modified to serve as an effective vehicle for the expression of one's own sociocultural and cognitive experiences. Acculturation, therefore, signifies one, some, or all of the following processes: introduction of loanwords, idioms, and derivational processes from substratum languages; use of calques, or loan translations of phrases, idioms, constructions; intrasentential mixing of units of different levels of complexity from various languages (code mixing); code switching; introduction of language-specific conventions of speech acts and discourse types; and even poetic conventions from other languages. These processes are often at work in the transformation of a foreign language into a second language.

The original "inner circle" of native speakers has spawned an "outer circle" of users of English in former British and American colonies. The majority of these countries still use English as an official language, and consider it their second language. In addition, there is the "expanding circle," constituting countries like China and Japan, where English has acquired the status of the most favored foreign language and is widely taught in schools. It is the users in the outer circle, however, that have had the greater impact on English in recent decades and have precipitated paradigm shifts. The "nativizing" of English will continue, and these variant forms will continue to generate scholarly interest.

This chapter will focus on the influence of local languages and cultures on English that give rise to distinctive varieties of Englishes around the world. As "Englishization" is not just restricted to phonology, grammar, and lexis, it impacts all levels, including discourse, register, styles, and literary genres in "outer circles" writing in English (see K. Sridhar, 1979; B. Kachru, 1983; S. Sridhar, 1992; Y. Kachru & Nelson, 2006).

Using South Asia as an example, where English has permeated all spheres of life, English words are widespread in many domains, such as education and religion (the rituals and religious services are in Sanskrit, but to accommodate the younger generation, sometimes the explanations are given in English). There are more speakers of English in South Asia than in the USA or UK (B. Kachru, 1986, p. 54).

The languages of South Asia have affected South Asian English in many ways. Since South Asian languages are mostly syllable-timed, it is therefore not surprising that South Asian English has its own syllable-timed rhythm, which is perceived by native speakers of English as a sing-song rhythm. The author will provide a few illustrations of the distinctive lexical, grammatical, and pragmatic features of Indian English, though similar examples exist in other varieties of South Asian English.

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Lexical Features

South Asian English is rich and colorful, borrowing extensively from the regional languages spoken in the areas. For a detailed discussion on this topic, see B. Kachru (1983). Words from the local languages express local sensibilities, and are perceived as enhancing the expressive resources of the English language. By the same token, English lexical items are appropriate for use in a range of domains and embedded in other South Asian languages. In all domains, from politics to religion, English words are preferred and used by all South Asians. Here are a few examples from Indian English, as discussed in Gargesh (2006, p. 103): *roti* (unleavened bread), *finger chips* (French fries). "Why can't our *shaadis* [weddings] be something like, 'O.K. bring in the *dulha* [groom] and the *dulhan* [bride], their close friends and relatives: dance, eat, have fun, and that's it'?"

Grammatical Features

In terms of grammar, there are a few characteristics shared by all South Asian users of English. *Reduplication* is a characteristic feature in many languages of South Asia and is used in both spoken and written educated varieties, and includes various classes of words, as in "hot hot coffee," "small small things," "to give crying crying" ("incessantly crying") (B. Kachru 1986, 1994).

Idioms and metaphors are transferred from South Asian languages such as Kannada: "In olden times, *woman just worked like a bullock*" (S. Sridhar, 1996, p. 58; 1992), and "The play had gone bad, *like pickle in the monsoon*" (Roy, 1997, p. 139).

Pragmatic Features

Politeness in Asian society is a conventionalized phenomenon, which is part of the conversational style of South Asian Englishes. In the area of hospitality, it is not sincere enough to say, "Won't you have some more?" One has to say, "Take only this much, just this much" (i.e., "just this much more") (Y. Kachru, 2003). Kinship terms such as "sister," "auntie," "uncle" are also used, as "Mr." or "Mrs." would be considered uppity (K. Sridhar, 1991, p. 311). An example of the use comes in requesting services, such as asking a friend's mother for a glass of water, with the words "Auntie, could I have a glass of water, please?" The author concluded that non-native speakers have partial linguistic/communicative competence in English in particular domains; they do not need English to perform a great many speech functions for which the mother tongue is typically used (K. Sridhar, 1991, p. 317; 1979).

Code mixing and code switching: Anyone who visits any part of South Asia or Africa will notice the ease with which people switch back and forth between languages (code switching), or insert words, phrases, or long strings of speech from another language into their speech (code mixing). In the case of South Asia, one cannot help but notice it. Even formal newscasts on radio and television are not exempt from it. Here are some examples from television shows devoted to tourism, noted down on July 6, 2002, from ZeeTV, a very popular television station. The extent of code mixing is exemplified in this example:

> *Yeh* lake *itna bada hai ki* [This lake is so big that you can't tell] *ki kaha* lake *khatam hota hai aur akash shuru* [you can't tell where the lake starts and ends].

Literary Creativity

Literary creativity in South Asian writers writing in English has been extensive, and is on the increase. There have been discussions about whether Indian writers should write in "proper" British or American English, or in their own variety of Indian English.

Conclusion

As is obvious from the above discussion, English occupies a very special position in the lives of South Asians. As has been often said, English is one of the languages South Asians speak in. As used in South Asia, English has been nativized to such an extent that it is considered not a foreign or an alien language.

One should not be left with the impression that the position of English has been accepted unequivocally by all in South Asia. Periodically, there is strong opposition to the continuation of English as the Associate Official language. But, in this age of globalization, recognition of the leadership position of India in the areas of science and technology, and mathematics, which has been possible due to Indians' proficiency in the English language, has convinced other South Asian countries to introduce English language instruction in the grade schools. English has certainly been instrumental in raising the economic profile of India. Argument opposing English has almost become a moot case. English is clearly here to stay.

SEE ALSO: History of World Englishes; Linguistic Creativity and World Englishes Literatures; Varieties of English in Asia; Varieties of World Englishes

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Acquisition Planning

GABRIELLE HOGAN-BRUN, CLINTON ROBINSON,
AND INGO THONHAUSER

Acquisition Planning (AP) is concerned with the range of language users and the distribution of literacy. As a form of language management (Spolsky, 2004) it complements and interacts with status planning (which is about the social role or function of a language) and corpus planning (used to modify the structure of a language). This interconnection is particularly evident in multilingual contexts, where (monolingual and bilingual) AP often involves status-linked and ideology-driven language aspects of public legitimization and institutionalization (May, 2001, p. 153). AP can be activated in formal and informal settings, at the macro or micro levels of society, and may involve top-down or bottom-up approaches (Kaplan & Baldauf, 1997). This chapter provides a brief overview of approaches to AP and highlights issues arising in postcolonial, post-Soviet, and European settings, exemplified by some current European frameworks which are particularly active in AP.

The term "AP" goes back to Robert Cooper, who conceived it as being "directed towards increasing the number of users—speakers, listeners, writers, or readers" (1989, p. 33). In expanding on Kloss's (1969) earlier distinctions between status and corpus planning, his preliminary framework for AP considered foreign language acquisition, reacquisition, and language maintenance of users as overt goals, and opportunities and incentives to learn as means employed to attain this (Cooper, 1989, p. 160). Hornberger's integrative framework (1994, p. 78) of language planning goals combines approaches taken by Cooper (above), Haugen (1972), and Neustupny (1974) in a matrix that distinguishes between language planning types (i.e., status, acquisition, and corpus planning) and approaches (i.e., policy and cultivation). As AP goals at the (macro) societal language policy level she lists the group, education/school, literature, religion, mass media, and work; at the (micro) level of cultivation planning her focus is on reacquisition, language maintenance, foreign/second language, and shift. Kaplan and Baldauf (1997, pp. 122ff.) use the term "language-in-education planning," with literacy planning as a subset, to extend mother-tongue knowledge to its written forms through schooling. In their model they list curriculum, personnel, materials, community, and evaluation as key education policy development and implementation areas. Spolsky demonstrates through his language policy paradigm (2004, pp. 39f.) how language education (or acquisition) policy as part of language management impacts on language practices and beliefs.

In educational settings AP is primarily concerned with access and literacy. The main tasks are choosing the language of instruction (LoI) as well as the range of second/foreign languages to be offered in the curriculum. Such decisions frequently involve economic (Grin & Vaillancourt, 1997) and language ideological considerations that reflect the perceived market value of language(s) (Bourdieu, 1991). Often AP choices form part of the politics of difference, echoing (changing) relations of power in terms of shifts in the use of formerly dominant and native languages. In many cases policy pressures over struggles for mother-tongue rights for indigenous or immigrant students can engender conflicts with ethnonational ideologies. Overall, AP decisions that pursue the dual objectives of facilitating education in the mother tongue of children from marginalized language communities as well as in the officially sanctioned language of a polity have been proven to have

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positive effects on the learners' sense of empowerment and educational outcomes (Tsui & Tollefson, 2004). Skutnabb-Kangas (2008) has pointed to the human rights aspect of diversity in education, which will be further dealt with below. Of pedagogical importance for AP considerations is research that points to the cognitive benefits of continued instruction in the mother tongue through bilingual programs (Cummins & Swain, 1986).

We now move our focus to issues arising for AP in countries in sociopolitical transition, taking as our starting point postcolonial settings in Africa, and then consider applications in the post-Soviet context.

Postcolonial Settings

In a postcolonial context AP is inextricably intertwined with the historical development of the linguistic situation, and in particular with the imposed dominance of the language of the former colonial power. At the time of independence in Africa, educational systems were in place in which the colonial languages were almost unchallenged as media of instruction. While French and British policies differed with regard to language use in their colonies (Robinson, 1996), the desire to replace colonial administrators at all levels with local personnel, one of the principal aims of education at the time, meant a concentrated focus on the language by which the administration functioned. A concern at that time for nation building, national (rather than ethnic) identity, and the overhang of the European idea of "one nation, one language" provided the underlying principles for AP. It is thus clear that the basis for planning was not the role and functions of language in facilitating communication, development, or education—planning was driven rather by the perceived political interests of the newly independent nation-state.

This is not to say that there was no concern for the use, development, and cultural value of African languages—some colonial functions (such as agricultural extension), some missionary schools, and some local communities had long advocated and adopted the communicative and educational advantages of using the mother tongue. Achieving functional levels of literacy—whether in formal or nonformal programs, for children or adults—provided strong arguments for an initial use of the mother tongue and the subsequent introduction of other languages. These arguments have regained currency in recent years (UNESCO, 2003) and have reshaped policies on language use, particularly in education. An increasing number of African countries have passed legislation, adopted educational reforms, or even amended the constitution so that African languages are recognized as viable and necessary languages of instruction (Djité, 2008). However, the implementation of such changes and the practice of mother-tongue-based multilingual education (MLE) lags behind, and one reason for this is the lack of planning on how to deal with the implications of the new policies.

Political, social, cultural, and educational reasons predominate as the basis for these policies, and the arguments drawn from all these perspectives are both valid and compelling, finding part of their justification in a rights-based approach to governance and development (Skutnabb-Kangas, 2008). However, this has not been followed by adequate *planning*, particularly in education. As the European Framework, cited below, noted, AP affects more than simply levels and standards; it affects also "the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks . . . ," as well as teacher training, school governance, and management of the system.

Nevertheless, whether the approach is based on an understanding of AP or on the need to offer quality education and viable literacy, MLE is gradually gaining ground, with the debate shifting away from whether to adopt MLE to questions of the best models to adopt. The meeting of the Association for the Development of Education in Africa (ADEA) in January 2010 addressed questions of the optimum integration of mother tongues and other

languages (such as official or national languages) over the course of primary and secondary educational cycles (ADEA, 2010). One of the key questions is how far educational considerations—that is, improving the quality of learning outcomes—will predominate in governments' motivation for planning multilingual education. Ager (2001, p. 195) argued that "ideals of social cohesion, elitism or social mosaicity" are likely to prevail as the state's motivation for determining language policy, rather than functional concerns or the perspectives of local communities. Attitudes to the functional aspects of language use as well as the relative neglect of local community perspectives can be understood as manifestations of power—its promotion, imposition, or preservation—with the consequent neglect of how language policy may affect learning in particular communities.

A striking example of the opposite situation was documented in the 1990s in the Democratic Republic of Congo (then Zaïre), where, in the relative absence of government influence or control, a nongovernmental initiative modeled adult literacy acquisition on the patterns of actual language use in the community (Robinson and Gfeller, 1997). As described at the time, the program adopted a three-language approach:

- the local language (Ngbaka) as the language of initial literacy learning and medium of instruction throughout the program;
- the regional language (Lingala), already spoken by adults in the region, with literacy skills extended to Lingala;
- the official language (French), of which adults in the program had no prior knowledge. Literacy in French enabled access to vast amounts of development and other literature. Learners typically accessed a French development handbook, but discussed and applied the knowledge they gained in the local language.

While such a multilingual approach appears to some planners as cumbersome, expensive, and unnecessarily complex to implement and manage, it is in fact the most appropriate and fitting way to use languages in learning, from the perspective of the local people. In terms of AP, it demonstrates the principle that the "plurilingual and pluricultural competence" (from the Common European Framework of Reference, CEFR—cited below) advocated for other settings must start, in postcolonial contexts, not with foreign or official languages, but with the language(s) people actually speak. It is, on the one hand, astonishing that such a principle, taken for granted in European contexts, should have to be argued and demonstrated elsewhere, but, on the other hand, it is also predictable, given the frequent manipulation of language as both an instrument and a symbol of power, particularly during the colonial era.

Post-Soviet Settings

In contrast to the context introduced above, language planning in newly independent post-Soviet settings has aimed since the early 1990s at the substitution of the former "colonial" language (Russian) with the legally reinstituted titular (or state) languages in the public sphere: in official administration, communication, media, and signage in townscapes. The main tendency in language management has been to strengthen the position and raise the prestige of the state language in all domains, particularly in education. In order to increase the number of users of the national languages, governments have prioritized a reduction or elimination of teaching in Russian (for details see Pavlenko, 2008, pp. 282ff.). In the new curricula the national language is a compulsory subject by law, and the status of Russian has been changed from that of a second to a foreign language. National language testing measures have been introduced for school leavers, university entrants, and for job seekers in the public service or in local government, where a good command

of the titular language is required. This has entailed publishing redesigned textbooks, facilitating teacher training and free language courses, and providing translation services.

At the same time, and to reverse the previous Russification of other minorities, particular emphasis has been placed on providing elementary education in a number of non-Russian minority languages. This has led to the development of a variety of bilingual, immersion, and minority-language-medium models of schooling. These achievements have occurred in a context of extreme economic hardship, the need to alter radically many aspects of the Soviet heritage, and incessant pressure from Russia and from various international players. Yet, as can be observed elsewhere in the world, many parents in their pragmatic and instrumental orientation encourage their children to study in the majority language (and English) rather than the one spoken at home (see Hogan-Brun, 2010, p. 8). In terms of Russian itself, in some regions (for instance in the northeastern Ida Varumaa region of Estonia, in eastern and southern Ukraine, or in the Moldovian breakaway republic Transnistria) there has been a continuation of a broad Russian linguistic environment with high language maintenance through the system of schooling as well as appropriate media and cultural institutions.

Apart from substituting Russian in the school curricula with the national language as a compulsory subject and introducing the languages of national minorities as academic subjects, the main focus of AP has been to increase study of foreign languages education. The collapse of the Soviet Union and the political drive to join the European Union (EU) in 2004 had entailed rapid changes of the sociopolitical and linguistic reality. The new era was also marked by new types of migration leading to diverging language behaviors across the countries of Central and Eastern Europe. Hence the need arose to learn different foreign languages, with textbooks often in short supply. Increasing westward orientation means that the teaching of English is constantly expanding, and it predominates in most instances. At the same time, as is shown below, challenges in the West have led to new AP developments.

(Western) European Settings

In a culturally and linguistically diversifying Europe, AP approaches have generally started to focus more on supporting multilingualism. Here, the promotion of plurilingual and pluricultural competence increasingly forms part of the remit of AP and is influenced by frameworks (see below). The fostering of individual plurilingualism is now considered a fundamental principle generally, as in education. As language education policies are being adapted to accommodate the multilingual needs, the idea in education of language as a resource (Ruiz, 1984) is being put into practice through multilingual schooling. This can include the promotion of (two-way) immersion programs (Budach, Erfurt, & Kunkel, 2008). In acknowledging the cognitive, social, and cultural advantages of multilingualism, such models support practices that aim to mobilize children's own linguistic and cultural resources in a flexible educational setting.

Prompted by the EU's promotion of multilingualism, foreign language learning at an early age has been introduced in many member states, usually from the primary level onward. It is compulsory to learn two languages at that stage in Estonia, Latvia, Luxemburg, Sweden, Iceland, and Greece (Key Data, 2008). In several countries (Estonia, Italy, Finland, Sweden, and Norway) students are obliged to choose their first (out of two) foreign language in their initial school year. Whilst this trend represents a less marked change in Eastern European member states where children have had to start learning Russian relatively early up to the late 1980s, such reforms there can entail local positionings ranging from an essentially ethnocentric and nationalist to a multilingualist rhetoric. The positive

political and social trade-offs of early foreign language learning, however, are largely undisputed. Among the claimed social advantages of an early start are that introducing young learners to other cultures equips them better for democratic citizenship and for future professional mobility, and that it helps them overcome narrow-mindedness and ethnocentric thinking.

In the final part we present AP in the context of European frameworks and consider didactic implications.

The Common European Framework of Reference for Languages (CEFR)

In Europe, the Council of Europe's publication of the *Common European Framework of Reference for Languages: Learning, Teaching, Assessment* (2001) marks a significant development in AP. This goes back to an agreement made in 1991 that a "Common European Framework" should be established in order to "promote and facilitate cooperation among educational institutions in different countries" and to "provide a sound basis for the mutual recognition of language qualifications" as well as "assisting learners, teachers, course designers, examining bodies and educational administrators to situate and coordinate their efforts" (Council of Europe, 1992, p. 37). The focus in this section is on the current application of, and issues for, AP of the framework (reviewed in Little, 2006), which has been translated into more than 30 languages.

In the area of AP the CEFR has initially mainly been used as an instrument to set and describe standards of language qualifications (Council of Europe, 2005). However, the intended focus was a more comprehensive description of "what learners have to do in order to use a language for communication and what knowledge and skills they have to develop so as to be able to act effectively" (Council of Europe, 2001, p. 1). While the Framework is influencing curriculum planning in Europe and parts of Asia, its impact on language teaching and learning is more difficult to assess. For AP, the core contribution of the framework is its action-oriented approach with a strong emphasis on plurilingual and pluricultural competence, "to which all knowledge and experience of language contributes and in which languages interrelate and interact" (Council of Europe, 2001, p. 4).

Drawing on work by Coste, Moore, and Zarate (1997), the CEFR describes communicative language competence as dynamic and varied, thereby abandoning the idealized monolingual native speaker as a model. This has to be seen in the context of the two main challenges in educational policy making that have arisen within the EU: the pragmatic need to achieve high levels of proficiency in the context of increasing personal and professional cross-border mobility in Europe and, as a consequence, the construction of plurilingual and pluricultural identities that no longer follows the "one nation, one language" paradigm. The introduction of the European Language Portfolio (ELP) is perhaps the most tangible effort to create an instrument that documents learners' plurilingual competences and promotes self-assessment and autonomy in language learning. For current ELP-related documentation see the Council of Europe's ELP-website (www.coe.int/portfolio). The European Centre for Modern Languages, which is part of the Council of Europe, conducts numerous ELP-related projects (www.ecml.at).

The plurilingual approach adopted by the CEFR has generally been welcomed by the research community in language teaching and learning. There has, however, been substantial criticism in areas that concern AP (Byrnes, 2007). Some fear that the application of the CEFR might lead to disproportionate influence of language testing agencies in curriculum design (e.g., Little, 2007) and produce a backwash on teaching practices (Krumm, in Bausch, Christ, & Königs, 2003, pp. 120ff.). Others have pointed out that generic descriptions

of language use and related competences in the CEFR do not take into account the variety of important target groups in language teaching and learning across Europe. The prototypical learner in the framework appears to be adult, with an interest in tourism or professional language use (see the numerous contributions in Bausch et al., 2003). Krumm, in highlighting this issue, states that the "very heterogeneous groups of migrants are, however, totally different from the learners originally targeted by the CEFR" (2007). Other criticisms concern the validity of underlying theories of second language learning and the fact that the plurilingual approach is rarely visible in the descriptors that illustrate aspects of communicative language competence in the framework. Bilingual or plurilingual ways of communicating are not at the center of descriptions of linguistic competences or domains of usage.

The following section discusses two current developments as efforts to put the plurilingual approach into practice. The first is a "platform of resources and references for plurilingual and intercultural education," set up by the Language Policy Division of the Council of Europe (2009) as an instrument for the purposes of AP in the school context. The second is an effort to create integrated approaches to language teaching and learning in the school context.

Council of Europe: Platform of Resources and References for Plurilingual and Intercultural Education

The platform is introduced on the Web site as a new instrument in AP that enables users to reflect on the complex roles of languages present in educational contexts, possibly as a response to criticisms leveled at the CEFR. The "Common European Framework of Reference for the Languages of Education" is integrated into this new resource, which offers hyperlinked access to the different areas relevant to AP (see Figure 1). This chart illustrates the centrality of language proficiency in all learning contexts, as is reflected in literacy research (Thonhauser, 2008). The hyperlinks lead to collections of documents (e.g., reports, working papers, pilot studies) related to the core themes of the chart. It remains to be seen if this tool, which has been designed to avoid the (perceived) prescriptive nature of frameworks, will replace the CEFR and other frameworks relevant to AP in the work of the Council of Europe.

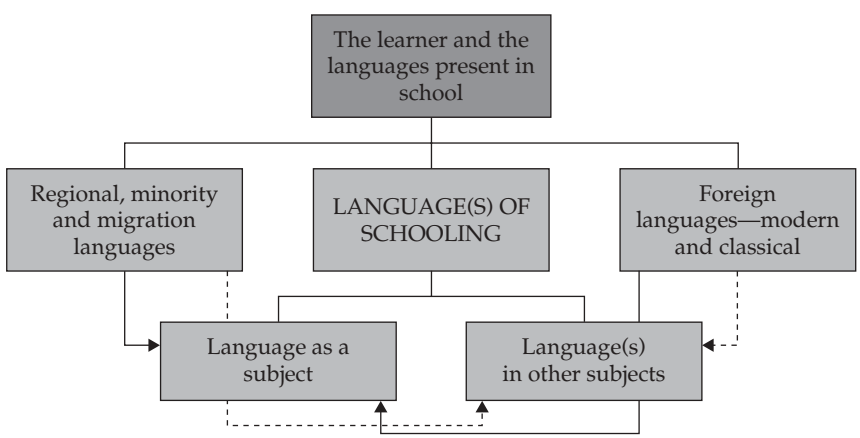

Figure 1 The complex roles of languages present in educational contexts. Reprinted with permission from Council of Europe (2009) © Council of Europe

Mehrsprachigkeitsdidaktik—Didactique intégrée—Integrated Language Learning

The notion of "pluriligual and pluricultural competence" has led to new didactic approaches. Francophone research uses the term "didactique du plurilinguisme," stressing the socio-political aspect of plurilingual education as a right (Moore & Gajo, 2009) and focusing mainly on immersion programs. In the German-speaking community research has mainly been on Third Language Acquisition (Hufeisen & Marx, 2004), and "Mehrsprachigkeitsdidaktik" focuses on developing integrated curricula in the area of language learning (Hufeisen & Lutjeharms, 2005). Jessner (2008) presents an overview of different theoretical approaches to plurilingualism and relates these to issues of AP.

In Switzerland, integrated approaches to language learning form part of official AP policies, as highlighted in a key document of the Swiss Conference of Cantonal Ministers of Education (CDIP, 2004, chap. 4.7). Efforts are under way to implement this in various educational contexts nationally. As pointed out above, the promotion of content and language integrated learning (CLIL) constitutes one of the main strategies in AP on a European level (see European Commission Web site: http://ec.europa.eu/education/languages/language-teaching/doc236_en.htm).

Final Remarks

As this entry suggests, the main issues currently pertaining to AP are: access to literacy and achieving functional levels of literacy (in postcolonial settings); (the facilitation of) mother-tongue-based multilingual education; a focus in planning on the role and functions of language in facilitating communication; adequate planning that goes beyond levels and standards; promotion of plurilingual and pluricultural competence through multilingual schooling in a flexible educational setting; fostering self-assessment and autonomy in language learning; creating integrated approaches to language teaching and learning in the school context.

Concerns at the macrolevel are: a lack of vitality in minority language learning; conflicts between the political and social arenas as a result of shifting ideologies as attempts are made in transitional settings to put policy into practice; the negotiation of language use at the micro level; diverging educational policies and practices to cater for the needs of pluralist societies. Further research is needed to provide knowledge in these areas of application.

SEE ALSO: Bilingual Education; Common European Framework of Reference; Council of Europe Language Policy and Planning; Empowerment and Bilingual Education; Language Policy and Multilingualism; Minority Languages in Education; Mother-Tongue-Medium Education; Multilingualism and Language Rights

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Adverbs

LEO FRANCIS HOYE

Adverbs are the "bête noire" of English grammar. Their use attracts praise or censure in equal measure. Henry James remarked: "I'm glad you like adverbs—I adore them; they are the only qualifications I really much respect" (James, 1920, pp. 214–15), a view not shared by the writer Stephen King: "I believe the road to hell is paved with adverbs" (King, 2000, p. 95). While mostly optional in a grammatical sense, adverbs can add meaning to other clause elements, such as adjectives, other adverbs, nouns, verbs, even entire clauses. Concluding an interview with the wife of a suspect, a detective instructs: "'*Perhaps* you would notify us, if he returns?' 'Oh *definitely*; *surely*, *absolutely*, *no doubt* about it'" (Furst, 2010, p. 23). Cull the adverbs (italicized) and the exchange sounds lame: "'You would notify us, if he returns?' 'Oh yes.'" The oblique command and the unease it engenders are now gone. Adverbs can be persuasive: *The political system is historically good at promoting social over private interests—not immediately, not perfectly, not always, but generally*. And sometimes ironical: "Yes Mr. [French President] we [the UK] *absolutely*, *categorically*, *possibly*, *maybe*, could be going into Europe" (Hoye, 1997, p. 236, 2009, p. 112). Positionally mobile and semantically versatile, adverbs cover a range of meanings and grammatical functions, and several may co-occur. They can be used at best to marked effect; at worst, to create a verbal swamp. Their sheer diversity of use and function has earned them a maverick status as "the most nebulous and puzzling of the traditional word classes" (Quirk, Greenbaum, Leech, & Svartvik, 1985, p. 438). Adverbs are heterogeneous: Their miscellany of assorted features has bolstered the argument that, where a word cannot be assigned to another word class (such as noun, verb, adjective), it must be an adverb by default, rendering this a "catch-all" or "residual" category (Huddleston & Pullum, 2002, p. 563). Such heterogeneity makes for considerable semantic and syntactic diversity—something of a linguistic smorgasbord! In profiling their main features, this entry seeks to highlight the role and significance of adverbs for our everyday spoken or written communication. The examples that follow are given in italics, and the adverb(ial) forms are underlined. Frequent reference is made to three state-of-the-art grammars of contemporary English: Quirk et al. (1985); Biber, Johansson, Leech, Conrad, and Finegan (1999), and Huddleston and Pullum (2002).

Form, Function, and Classification

Form-wise, adverbs are morphologically more complex than the other word classes. Of the three constituent categories, two are closed-class: simple adverbs (*back*; *just*; *well*; *up*; *through*) and compound adverbs (*therefore* [*there* + *fore*]; *somehow* [*some* + *how*]; *nowhere* [*no* + *where*]). Closed classes are fixed or finite and rarely admit new members. The third category, derivational adverbs, is open-class: New adverbs can always be added. Many end in that most productive adverbial suffix *-ly*, which can be glossed 'in an adjective manner/way' (*They should be able to express their views frankly without feeling intimidated* > *They should be able to express their views in a frank manner*; *Each movement must be carefully structured* > *Each movement must be structured in a careful way*) or 'to an adjective degree/

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extent' (*Telephone charges at hotels differ* <u>*considerably*</u> > *Telephone charges at hotels differ* <u>*to a considerable extent*</u>). But there is no regular or necessary correspondence of meaning between adjectives and their *-ly* adverb derivatives: *All references will be included in the* <u>*present*</u> *chapter* versus *The travel industry is* <u>*presently*</u> *experiencing a downturn*; *In most gardens a dining area is an* <u>*absolute*</u> *must* versus *The event had* <u>*absolutely*</u> *no impact on me*. (See further in Huddleston & Pullum, 2002, p. 566; Crystal, 2004, p. 269.)

Adverbs ending in *-ly* sometimes co-occur in complementary opposition: *You can have one life* <u>*publically*</u> *and another life* <u>*privately*</u>; *Too* <u>*carefully*</u> *led or too* <u>*carelessly*</u> *ignored*?; *The good ended* <u>*happily*</u>, *and the bad* <u>*unhappily*</u>. Just occasionally *-ly* attaches to a noun, as in this recipe title for beef tripe: *Offaly-Delicious!*; or to a phrase: *He said it* <u>*matter-of-factly*</u>, *as if it happened all the time*. Adjectives and adverbs (in that order) may act in concert to give emphasis: *X wants to live his* <u>*private*</u> *life* <u>*privately*</u>; *It's about* <u>*absolute*</u> *performance* <u>*absolutely*</u>. As regards usage, adverbial neologisms sometimes attract criticism for stylistic reasons, as in the blending of the adjectives *huge* and *tremendous*: *The breathtaking and* <u>*humongously*</u> *big dancehall*. Alternatively, a simple adjective may be a better choice than (overblown) adjectival–adverbial modification: *The* <u>*cavernous*</u> *dancehall*. Use of *hopefully* as a sentence modifier (e.g., <u>*Hopefully*</u>, *the language police are no longer opinion-formers*) continues to exercise its angst-ridden detractors: "I'm afraid 'hopefully' is here to stay, like pollution and sex and death and taxes"! Yet no voices disparage *certainly* or *surely* so used (*Merriam-Webster*, 1994, pp. 512–13). Advertising copy regularly exploits the creative potential of adverbs: *One "*<u>*Paws-itively*</u>*" Posh Pup* (ad for dog figurine). Dickens could not resist their partnership in collocational deviance: <u>*happily*</u> *hanged*; <u>*nomadically*</u> *drunk*; <u>*exasperatingly*</u> *comfortable* (Hori, 2002, pp. 158, 155, 159). Manner adverbs are a prime powerhouse of figurative wordplay. Note that the *-ly* suffix does not always signal adverbial status; a number of adjectives also end in *-ly*: *the* <u>*early*</u> *bird*; *a* <u>*friendly*</u> *greeting*; *a* <u>*likely*</u> *story*; *the* <u>*ugly*</u> *duckling*. Less common are those adverbs with endings such as: *-wise* > *crabwise*, *counterclockwise*, *edgewise*; *-wards* > *backwards*, *upwards*, *westwards*; *-fashion* > *philosophical-fashion*, *schoolgirl-fashion*. (See further in Quirk, et al. 1985, pp. 438–9; Huddleston & Pullum, 2002, pp. 565–70.)

Adverbs are commonly described as the head of "adverb phrases," either standing on their own or modified by one or more dependents, themselves adverbs: <u>*Recently*</u>, *the area has been redeveloped*; <u>*Very recently*</u> . . . ; <u>*Only very recently*</u> . . . Traditional terminology misleadingly implies that adverbs are primarily verb modifiers, specifying the mode of action of the verb. Adverbs act in a variety of ways: to modify other elements in the clause structure, such as adjectives (<u>*incredibly*</u> *beautiful*); other adverbs (<u>*quite*</u> *seriously*); occasionally nouns (<u>*rather*</u> *an interesting project*; *the* <u>*very*</u> *point I'm making*); verbs (*They have* <u>*completely*</u> *lost their way*); or, often, the clause as a whole (<u>*Fortunately*</u>, *they didn't come*; *They will* <u>*probably*</u> *survive*; *The talk was quite interesting* <u>*really*</u>). They thus differ in their scope and in terms of the clause element(s) they modify.

Syntactically, adverbs can be related to such questions as "where?" (*here*; *there*; *somewhere*; *nowhere*); "when?" (*now*; *tomorrow*; *soon*); "how often?" (*frequently*; *never*; *twice*); "how?" (*well*; *slowly*; *brilliantly*; *carefully*); "to what extent?" (*quite*; *rather*; *fairly*), and so on (Crystal, 2008, p. 14). By relating adverbs to these types of question, their functional correspondence to multiword units, called "adverbials," soon becomes apparent. The query "When are they off?" might elicit: *now / tomorrow* (adverb phrase, with an unmodified adverb as its head); *pretty soon* (adverb phrase, with the adverb *soon* as its head, modified by an adverb intensifier); *in a few days' time* (prepositional phrase, with the preposition *in* as its head); *when I see fit* (finite clause). An adverbial is thus a syntactic unit, distinct from other clause elements—subject, verb, object, and complement. It is the next most frequent constituent after subject and verb (Quirk et al., 1985, p. 478n), and as Quirk et al. remark: "The vast majority of clauses . . . contain at least one adverbial" (1985, p. 478n). When contrived data

are used in sentence grammar or English-language learning and teaching materials, this point is often ignored; adverbs are regularly omitted unless chosen for the purpose of commentary (Crystal, 1980, pp. 160–5).

Adverbs are the most mobile of all clause constituents. They enjoy greater freedom than their structurally more complex multiword counterparts, which generally favor end position. They can appear initially (**I**), medially (**M**: within the clause, in a variety of positions), and finally (**E**), without this affecting the grammatical integrity of the clause: *Possibly they may have been sent to Bucharest* (**I**); *They possibly may . . . ; They may possibly . . . ; They may have possibly . . . ; They may have been possibly . . . ; They may have been sent possibly . . .* (**M**); *They may have been sent to Bucharest possibly* (**E**) (see Quirk et al., 1985, pp. 490–501; Huddleston & Pullum, 2002, pp. 575–8; Crystal, 2004, p. 274). Generally speaking, adverbs at **I** or **E** are peripheral to clause structure—their orientation and scope affects the clause as a whole. Those at **M** tend to be more integrated and restricted in compass, where they highlight the adjacent verb (or verb phrase). Ultimately, adverb(ial) placement is often a matter of focus and stylistic choice. As Huddleston and Pullum (2002, p. 576) remark: "There is a great deal of variation in [adverb] use, and features of context, style, prosody, and euphony play a role in some decisions [on placement and focus]."

Adverbs are usually categorized on the basis of their position and function within the clause. More than any other word class, they demonstrate the interdependency between grammar and meaning, although accounts differ markedly in their classification schemes and terminology. This may lead to terminological confusion (see Hasselgård, 2010, pp. 14–39). Quirk et al. (1985, pp. 438–653) and Crystal (2004, pp. 268–93), in his synopsis thereof, distinguish four classes of adverb divided into two main groups: adjuncts and subjuncts; disjuncts and conjuncts. Adjuncts relate to the verb or "verb phrase" (*She spoke quickly and earnestly with her boss*), or to the clause as a whole (*Nowadays, I take the bus*). They constitute the largest subgroup of adverbs, and include such traditional categories as adverbs of place, manner, and time, sometimes known collectively as "circumstantial adverbs" (Biber et al., 1999). Occasionally, adjuncts may be obligatory (i.e., they are required by the verb to make the clause grammatically acceptable): *Ruth lives in Berlin*; *The speech went all right*; *The bridge was built last year* (Hasselgård, 2010, pp. 46–8; Goldberg & Ackerman, 2001). Subjuncts generally play a more subordinate role in relation either to the clause or to a clause element, especially the verb or verb phrase, here to heightening effect: *I couldn't, literally couldn't, understand what he was saying*. Subjuncts comprise adverbs expressing: viewpoint (*Economically and politically* [*speaking*], *they've been completely disenfranchised*), focus (*Only the lonely know the way I feel tonight*), degree (*You obviously, absolutely must watch this*), and courtesy, where their role is essentially formulaic (*Please*/*Kindly refrain from saying that in public*). In short, subjuncts add the speaker's slant toward the content of the associated clause (Crystal, 2004, pp. 284–5). Disjuncts have a superior role in relation to the clause, by making a judgment, a comment, or an evaluation about what is being said: *I think it's probably different for different people*; *Fortunately, however, there are plenty of cheaper options*; *As for this book, it is regrettably much too long and expensive*. Conjuncts are peripheral to clause structure and have a linking or relational function between clauses when these are viewed as connected discourse: *They gave me the job so they must like me*; *Environment can never completely explain art. I am sure, however, that it plays an important role*; *We have a way of talking, and thus a way of thinking*. In combination with modal verbs, certain types of subjunct and disjunct are significant for the expression of modality: *It may well be difficult to keep you on*; *You really should go along for the ride*; *I think perhaps they could leave now*; *Of course, it may be much older in origin*. (See further Hoye, 1997; see also Simon-Vandenbergen & Aijmer, 2007, pp. 68–9, and Aijmer, 2009, pp. 111–30, on the issue of modal adverbs and modal particles.)

Semantic Roles

Since adverbs express such a wide range of meanings, treatment of their grammar also involves focusing on their semantic roles. Quirk et al. (1985, pp. 479–86) distinguish seven broad categories, often based on a figurative extension of what they call "spatial relations." Space or "place" adverbs refer to position (*Come here*), direction (*They're heading eastwards*), distance (*They're far from home*); time adverbs to temporal distance (*It might have happened yesterday/before/then*), duration (*The meeting went on forever*), frequency (*The alarms need to be tested regularly*), relationship or "temporal continuity" (*Work is already/still in progress* [work has started/is ongoing]); process adverbs refer to manner (*He was casually dismissed from the job*), means (*They should be supported medically*), instrument (*The air pressure should be measured barometrically*), agent (*The device can be connected wirelessly*); respect adverbs convey the sense "in regard to" (*He's being advised legally* [on points of law]); contingency adverbials refer to cause (*She cried from laughter*), reason (*He really married her for money*), purpose (*They stood together in order to be identified*), result (*As a result of careful preparation, the project is on time*), condition (*The military will disclose casualties only if asked*), concession (*Despite a substantial reward, the loot was never recovered*)—where there is no single-word or simple adverb equivalent to the multiword adverbial units or expressions cited; modality adverbs refer to emphasis (*I was absolutely amazed by the results*), approximation (*They were probably working late*), restriction or "focus" (*They alone have the authority*); degree adverbs refer to intensity (*I really don't know what to say* [I haven't got a clue]; *I could barely understand them*). Sometimes medially placed adverbs overlap between two not unrelated readings, here modality (emphasis) and manner: *The government is resolutely opposed to such a solution*; "it is very much opposed and opposed unhesitatingly/in an unhesitant way." The intensive meaning predominates—through a process called "delexicalisation" (Hoye, 1997, *passim*)—while the more lexically loaded, manner reading becomes secondary. Adverb classes are not watertight; their interpretation often depends on recognizing the wider context although, even then, there may be a blending of possible interpretations. In *Look at it medically*, the adverb may indicate manner ("in a medical way"), means ("by invoking medical techniques"), or instrument ("by applying principles of medical ethics").

Conclusion: Adverbs in Discourse

Adverbs are more than mere embellishment; they underpin processes of textual argumentation and provide additional, circumstantial information that helps avoid any sense of anomaly, or incompleteness about what is being said (Goldberg & Ackerman, 2001, p. 798). Pervasive in discourse, adverbs occur across all genres, regardless of levels of formality or medium. Crystal (2004, pp. 279–81, 291–3) identifies very broad correspondences between text types and adverb use in historical, geographical, scientific, and instructional writing; and in courtroom language, sports commentary, and public speaking. For instance, historical writing is characterized by the use of temporal and space (place) adverbs (events have a time and a place); instructions by process adverbs (how and with what is "x" to be done). In their extensive quantitative analysis of adverbial behavior, Biber et al. (1999) explore four registers: conversation, fiction, news, and academic writing. Hasselgård (2010, pp. 7–10, 259–85) additionally covers sports commentary and social letters. Both conclude that, overall, adverbs (adjuncts) are more common in commentary and fiction. However, generalizations are not easy. As Crystal (2004, p. 279) remarks: "[Adverbial] choice and distribution will be influenced primarily by the subject-matter of the discourse." In speech, it is also true that, once uttered, an adverb . . . may trigger a veritable onslaught: "Yes, but even though they *probably* *certainly* know that you *probably* wouldn't [use it], they don't *certainly* know that, although you *probably* wouldn't, there's no probability that you *certainly* would!" (Hoye, 2005, p. 1498).

SEE ALSO: Hedges; Lexical Collocations; Modality; Pragmatic Markers; Pragmatics of Stance; Quirk, Randolph

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Advocacy in Language Teaching

FABIOLA P. EHLERS-ZAVALA

Advocacy in language teaching refers to the act of positively advancing the public and political realities connected to issues in language and language teaching. An advocate in language teaching is someone who espouses and argues for one or more issues in language teaching hoping to positively influence its outcome for the common good. When it is enacted by those who are directly involved with the language teaching profession (e.g., applied linguists, language teacher educators, classroom teachers), such actions represent instances of participatory professionalism.

As Abbott (2009) explains, advocacy work related to language teaching can be carried out at various levels. At the local level, advocacy is put into practice by those who undertake a wide range of actions, from counseling/encouraging students to study languages to organizing college or school-wide programs. At the state level, advocacy may be practiced by those who attempt to influence legislation on language education. At the national level, in the United States, many advocates of language teaching and education may choose to get involved with other organizations that are attempting to advocate on behalf of language teaching and education. Examples of these include the Joint National Committee for Languages (JNCL) and the National Council for Languages and International Studies (NCLIS). At the international level, other organizations such as UNESCO and the Association Internationale de Linguistique Appliquée or International Association of Applied Linguistics also serve as platforms that provide support to the work of advocates in language teaching through the research efforts they make publicly available.

In an era of accountability and scientific-based evidence, an effective advocate is well versed in the current research, and (as relevant to the advocacy effort) in the local, state, national, and international issues affecting language education, policy, and practice. Professionals who choose to become public intellectuals and engage in advocacy make use of a variety of advocacy techniques and strategies to raise awareness of the issues. Thus, effective advocacy in language teaching requires that professionals undertaking this challenge possess a set of specific skills, techniques, and knowledge regarding the issues for which they will advocate, or serve as advocates. An effective advocate is an "articulate spokesperson" who knows how to "speak up for language education" (Abbott, 2009) in a variety of situations. For instance, an advocate may engage in (a) making phone calls; (b) writing persuasive letters or press releases; (c) contributing to, or drafting, position statements that can be adopted by professional organizations in which the advocate holds membership; (d) meeting with stakeholders and key individuals who are in positions of power and have the ability to influence the outcome of an issue pertaining to language/language teaching that is being debated (e.g., colleagues, community members, legislative bodies such as City Councils, State Assemblies, or Congress); (e) giving expert testimony on policy issues in a public forum or at a hearing in front of the legislature; and (f) engaging in outreach activity to build coalitions with other groups or organizations that espouse similar goals, and are advocating on similar topics. Effective advocates are, or actively seek to become, well versed on how to carry out all of these rhetorical/political actions effectively.

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Brand (1996) explains that "to advocate a position is, at the minimum, to state that it is correct and most often additionally to present a defense of the position through the presentation of arguments" (p. 7). He clearly states that when professionals engage in this activity, they are also making a normative judgment by virtue of adopting a side on the issue which they are advocating. Brand, who believes that advocacy is part of the teaching profession, states that advocacy can unfold in the classroom situation in one of two ways: intentionally or unintentionally. He also says that, if it is to happen in the classroom, the former ought to be the preferred mode.

Further, Brand (1996) states that there is a fine line between *advocacy* and *proselytizing*. He argues that this difference matters considerably in professional obligations. The former is carried out in context. The latter is not. Brand explains that the act of advocacy requires that professionals present a balanced approach to the issues as these are situated in the professional dialogic debate at large. As he emphasizes, the act of proselytizing is instead coercive in nature, and does not provide an account of other possible alternatives.

The act of advocacy in the classroom may be further intrinsically challenged in, at least, three aspects (Voll, 1996). First, it may be difficult to distinguish between a mere effective explanation and an act of advocacy undertaken by a professional in front of a class. Second, it may be inherently difficult not to portray an adversary as a "repugnant cultural other" (p. 174). Third, some professionals may be particularly challenged on the bases of their own disciplines. Bérubé (1996) observes that "some forms of advocacy are not merely permitted but positively mandated by certain fields of study" (p. 193). In other words, some disciplines may "represent a form of advocacy." Clearly, this could be easily the case for those involved in any of the social sciences and specifically in applied linguistics. Indeed, one could claim that "advocacy" is integral to applied linguistics and language teacher education, and failure to recognize this could be taken to represent failure to see the social ramifications of one's work. It is therefore encouraging that accreditation standards for teacher education put forward by the National Council for Accreditation of Teacher Education (NCATE), the American Council on the Teaching of Foreign Languages (ACTFL), the National Board for Professional Teaching Standards (NBPTS), and Teachers of English to Speakers of Other Languages (TESOL) require that institutions of higher education ensure that candidates "demonstrate that they possess the knowledge and skills to be effective advocates for language programs" (Abbott, 2009, p. 1).

Professionals interested in advocacy are likely to join, initiate or both join and initiate advocacy groups. Sometimes, these advocacy groups may form within already established professional organizations. For instance, TESOL has a public link in its website titled: US Advocacy Action Center available on-line to TESOL's members and non-members, offers "detailed information on the US Congress including a congressional directory, legislation and bills, and communication tools." Some other times, advocacy groups are newly formed as a result of the need to search for a more focused and direct effort on effective advocacy work, as is the case of the Institute for Language and Education Policy (www.elladvocates.org). Long-standing centers, such as The Center for Applied Linguistics (www.cal.org), also offer a wealth of resources and links to other organizations and centers that engage in advocacy.

Likewise, a number of universities across the United States support advocacy efforts, for example, at Penn State, the Center for Advancement of Language Proficiency Education and Research (http://calper.la.psu.edu/resources.php?page=langadv). At the University of Hawaii, the Language Documentation Training Center (http://www.ling.hawaii.edu/~uhdoc/index.html) assists native speakers of languages that have been historically under-documented learn to document them.

Colorado State University's graduate student association for Teaching English as a Second/Foreign Language (TESL/TEFL GSA) organizes TESL/TEFL Advocacy Week each Spring Semester, bringing to campus a leading expert in applied linguistics for a campus

lecture, in addition to conducting a number of advocacy-related activities on and off campus. Pennsylvania's Juniata College (http://www.juniata.edu/departments/international/lim/index.html) offers "innovative, cooperative, outreach program using study-abroad returnees, international students, and upper-level language students to aid local, rural, K-12 teachers by creating and presenting language and cultural activities in their classrooms."

In higher education, courses in applied linguistics, language teacher preparation, or both are logical places where advocacy can unfold and where learners can be provided with access to research and opportunities to acquire the skills needed to engage in sound advocacy. In an era where service learning is becoming fundamental to the overall educational experience, language teacher education candidates in particular could have an opportunity to gain field-based experiences as they interact with community based-organizations in fulfillment of their service-learning assignments for their courses.

However, as with advocacy in the classroom in a broader and more general sense, the topic of advocacy is still subject to some professional debate. The debate centers around issues of whether or not advocacy (a) has/should have a role in the classroom; (b) is an exercise in academic freedom and, therefore, intrinsic to the academic endeavor; and (c) per se is consistent with, or clashes with, the concept of academic responsibility. One may reasonably predict that such debate is likely to weaken in years to come as an increasing number of professionals continue to adhere to postmodern/poststructural/post-poststructural ideologies, characterized by epistemological skepticism and social transformation goals. Under this ideological orientation, advocacy is practically inescapable, and practiced (consciously or not) by everyone. Thus, the more critical questions that would merit scrutiny would relate to the mode, degrees, and content of advocacy as practiced by individual professionals in individual classrooms or within the profession and society at large or both.

SEE ALSO: Assessment and Testing: Overview; Bilingual Education; Bilingual Education and Immigration; Fairness in Language Assessment; Heritage and Community Languages; High-Stakes Language Testing; Language Policy and Planning: Overview; Linguistic Legislation

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Affect and Language Teaching

JEAN-MARC DEWAELE

Affect is at the heart of the foreign language (FL) learning and teaching process and yet, as Garrett and Young (2009) point out: "affect and emotion are terms that have been in the shadows of discussions of classroom foreign language learning, where the primary focus has been on the development of knowledge and use of the new language" (p. 209). The crucial role of the teacher is to nurture positive affect within the group of learners (Arnold, 1999). This implies a use of teaching techniques to encourage the development of learners' positive attitudes toward the FL and the FL culture, to strengthen their self-belief in their capacity to learn an FL, to increase their motivation to become capable users of the FL, and to control their foreign language anxiety (FLA). Numerous researchers have reflected on the best ways to achieve these goals. I will present a short overview of ways to achieve the goals, and I will reflect on the underlying theories.

Dörnyei and Murphey (2003) reflected on the initial emotions that learners experience during their first class. Initially many of the emotions relate less to the language or the teacher than to the other members of the group: "it is comparable to walking into a party when you hardly know anyone there" (p. 14). Learners are on their guard, unsure of what to expect, observing each other, avoiding embarrassment, wondering what hierarchy will be established within the new group. Learners may have concerns also about their ability to do well in the class, and worry about the fact that the others may be more competent and proficient than themselves. In this stressful first class learners experience general anxiety, social anxiety, and FLA. All this can be coupled to a lack of confidence, a restricted identity, and a certain awkwardness (p. 15). Of course, there are also budding positive emotions such as the expectation and anticipation of learning something new.

The ambiguous emotions that learners experience during the first class have been documented in different studies using different methodological approaches. Garrett and Young (2009) present an analysis of the testimony of the first author, who reported on her own learning process during a Portuguese course for beginners to the second author, in order to understand her "affective responses to the language learning process, the events from which her affect sprang, and her affective trajectory over the 8 weeks" (p. 209). Garrett's affective responses to events were categorized into four groups: (a) her awareness of her own knowledge of Portuguese, (b) her own professional teacher's voice, (c) her responses to the Brazilian culture to which she was exposed, and (d) social relations with other students and teacher (pp. 212–13). Quantitative analysis revealed that Garrett's remarks centered on social relations, followed by her teacher's voice, linguistic aspects of Portuguese, and cultural information. Only the comments on cultural aspects were overwhelmingly positive; the comments in the other categories were more evenly divided (p. 213). One striking finding is how dynamic emotion is and how variable across categories. Interest in the structure of Portuguese language quickly declined after the start of the course, while interest in cultural instruction increased because it allowed her to communicate with more advanced speakers (p. 222). Social relationships with fellow students played a crucial role: Garrett formed a group of "cool women" and reported an improvement in her feeling of general well-being. Her low perceived proficiency did hurt her self-image and she struggled with FLA until the end of the course. Her attitudes toward

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the teaching assistant evolved dramatically over the course: at first she hated his code switching but later on she started to appreciate it more and more. The study shows how the emotional climate in which the learning happens is determined partly by the learner's own emotions, expectations, and effort, and partly by the teaching and support staff.

The early work on emotional matters in SLA focused more exclusively on attitudes and motivation (Gardner & Lambert, 1972). Gardner and Lambert argued that motivation is at the core of SLA. Indeed, a truly motivated student shows a desire to learn the language, is prepared to make an effort in learning, and enjoys the task (Gardner, 1985). Gardner and Lambert (1972) were among the first to point out that learners' levels of motivation are linked to social factors; they originate in and are influenced and maintained by attitudes toward the learning situation and integrative orientation, such as "reflecting a sincere and personal interest in the people and culture represented by the other group" (p. 132). Learners' motivation can also be supported by instrumentality, such as "conditions where the language is being studied for practical or utilitarian purposes" (p. 249). Further research suggested that FL learners with higher levels of integrativeness tend to do better than peers with lower levels (Gardner, 1985). Learners who score high on instrumental motivation also tend to perform well in the FL (Gardner, 1985). The dichotomous view of instrumental and integrative motivation has been criticized in later SLA research. The definition of the integrative concept has also elicited vigorous debates, with some SLA researchers defending a strong version of the concept, namely social identification and integration, while others defended a weaker version, namely a sense of affiliation and interest in the L2 community.

Crookes and Schmidt (1991) presented an alternative, more education-oriented approach to motivation. They argued that motivation could be defined as the choices that learners make in the FL classroom, including experiences, goals, and effort exerted. Crookes and Schmidt distinguished four dimensions: interest, which refers to the student's desire to know (intrinsic motivation); relevance, which reflects the connection between the learner's goals, needs, and values and the course instruction; expectancy, which refers to perceived likelihood of success; and satisfaction, which combines extrinsic aspects such as praise and grades and intrinsic aspects such as pride and fulfillment.

Dörnyei (1994) presented another development of Gardner and Lambert's research. He proposed a more process-oriented approach, focusing more on the social context, and more specifically on the learning situation. He distinguished between different levels of motivational processes, some of which are linked to the enduring social context and quite stable (e.g., the integrative motive) while others are more localized and dynamic, such as the motivation to engage in effortful, task-related behavior within a situation. Learners' motivation will also be influenced by a range of individual psychological and sociobiographical factors in interaction with the wider social, historical, political, and cultural environment (Dörnyei, 2005).

More recently, Dörnyei has suggested abandoning Gardner's concept of "integrativeness" and focusing more on the identification aspects and on the learner's self-concept (Dörnyei, 2005). The "Ideal L2 Self" is the representation of all the attributes that an L2 learner would like to possess, namely becoming proficient in the L2, which Dörnyei interprets as having an "integrative" disposition. Dörnyei (2005) also postulates a second dimension, the "Ought-to L2 Self," namely the attributes that one believes one ought to possess. L2 motivation can then be defined as the desire to reduce the perceived discrepancies between the learner's actual self and his or her ideal or ought-to L2 self. The third dimension is labeled "L2 Learning Experience," which concerns situation-specific motives related to the immediate learning environment and experience.

One negative emotion that has attracted a lot of attention in SLA research is foreign language classroom anxiety (FLCA). Horwitz, Horwitz, and Cope (1986) have defined it as

"a distinct complex of self-perceptions, beliefs, feelings and behaviors related to classroom learning arising from the uniqueness of the language learning process" (p. 128). FLCA is linked to any activity in the FL, but it is typically highest for speaking the FL. It affects learners at all levels and even non-native FL teachers. FL teachers need to be able to recognize explicit anxiety-indicating cues, so as to identify learners who struggle with high levels of FLCA (Gregersen, 2007). This is not an easy task, as some learners are silent because they are frozen with FLCA while others might be shy, introvert, tired, sad, sulking, or simply bored with the topic (Horwitz et al., 1986). Tackling FLCA is very important because it can interfere with learning and performance (Horwitz, 2001). High levels of FLCA in the classroom discourage students from continuing their language study (Dewaele & Thirtle, 2009). However, some researchers have argued that FLCA should not be seen as something entirely negative. Marcos-Llinas and Juan Garau (2009) argue that FLCA can also facilitate FL learning and lead to higher levels of FL achievement. One consistent finding in research on FLCA is the high degree of interindividual variation. This has fostered further research into the possible psychological and sociobiographical antecedents of FLCA. One such study, by Dewaele, Petrides, and Furnham (2008), investigated individual differences in FLA in the various languages of adult multilinguals. Levels of FLA were found to be negatively correlated with levels of the trait Emotional Intelligence. This finding could be related to the fact that speakers with higher levels of the trait Emotional Intelligence are better able to gauge the emotional state of their interlocutor and feel more confident (and hence less anxious) about their ability to communicate effectively. Participants who started learning FLs at a younger age also suffered less from FLA. Participants who had learned a language solely through classroom instruction suffered from higher levels of FLA than those who had also used their language outside the classroom. The knowledge of more languages, a higher frequency of use of a target language, a stronger socialization in that language, the use of that language with a larger network of interlocutors, and a higher level of self-perceived proficiency in a language were also linked to lower levels of FLA (Dewaele et al., 2008).

Other studies have revealed that FLCA and FLA among FL learners and users are linked, to varying degrees, to a variety of higher- and lower-order personality traits, affective factors (attitudes toward the target language, attitudes toward the language teacher), and a range of sociobiographical factors (the knowledge of multiple languages, gender, and age) (e.g., Dewaele, 2007).

So far, I have focused on language learning and mentioned in passing that teachers play a key role in this process. In this final section, I will expand on language teaching.

The teacher's role is to break the ice, to create a "safe" environment where learners are not afraid to speak up and gradually feel they contribute to a collective identity. To attain this, teachers need to make sure they are comprehensible and can convince the learners of the value of learning a language (Arnold & Fonseca, 2007). One way to establish such an atmosphere in the first class is by asking students to briefly interview and then present their neighbor to the rest of the class in the target language. The resulting low hum of conversations and note-taking relaxes the initial tension, and the subsequent short presentations always bring a wealth of rich personal facts, allowing the members of the group to establish their identity and obtain their place within the group. The teacher can joke, gently correct some error, provide a synonym or a translation where needed, and establish links between students with similar interests or languages. In short, this icebreaker allows the teacher to establish a positive emotional environment during the first half-hour of class, and it serves as the basis for all subsequent activities in that class. Indeed, by sharing personal information and jokes, a common identity is created, and by referring back to this shared experience in later classes, the "legend" of the group is created. Research confirms that teachers who manage to create a supportive and friendly classroom environ-

ment, use non-threatening techniques and humor, employ pertinent and appealing subject matter immediately linked to the learners' concerns, and support and promote group solidarity while "having fun" can reduce communicative anxiety in the classroom (e.g., Ewald, 2007) and establish a good "rapport." This rapport is one of the important elements of learner motivation, namely "affiliative drive," that is, the desire to please the teacher (Dörnyei, 1994). Borg (2006) found that one crucial trait of effective language teachers was "an ability to communicate freely and to radiate positive feeling" (p. 23) and to develop close relationships with students.

In sum, emotion and affect are the prime forces that drive the language learning process. FL teachers need to do as much as possible to nurture a positive and stimulating classroom environment, where learners feel that even though the way ahead is long, progress beckons, with a smiling, fluent, ideal L2 self at the end of the road.

SEE ALSO: Individual Differences in the Classroom; Language Learning and Teaching: Overview; Motivation in Second Language Acquisition; Multilingualism and Attitudes; Multilingualism and Emotions; Neurobiology and Motivation in Second Language Acquisition

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African Union

NKONKO M. KAMWANGAMALU

Introduction

The year 2010 marked a milestone for the majority of African nations, as most of them celebrated the 50th anniversary of political independence and liberation from former Western colonial powers. However, as Fishman (1996, p. 5) remarks, "although the lowering of one flag and the raising of another may indicate the end of colonial status, these acts do not necessarily indicate the end of imperialist privilege in neo-colonial disguise." In Africa, imperialist privilege is on display especially through former colonial languages such as English, French, Portuguese, and Spanish, for they remain the chief if not exclusive medium through which African nations conduct official business in virtually all the institutions of the state, including the government and administration, the educational system, and the media. In this regard, Popham (1996) notes forcefully that while the engine of colonialism long ago ran out of steam, the momentum of its languages remains formidable, and it is against their tyranny that smaller languages fight to survive. Colonialism, says London (2003), is a state of mind in colonizer and colonized alike. It does not end when the colonists go home. Instead, it remains an unfinished business and a footprint, impacting as it does all aspects of a postcolonial polity's life, including language policy. This entry reviews the language policy statements that the African continent has made, through its institutions such as the African Union, to change the status quo and carve a place for indigenous African languages, especially in the educational system. This is done against the background of the ideologies that have informed language policies in Africa from the colonial era to the present, especially the ideology of development on the one hand, and the ideology of decolonization on the other. It argues that Africa's language policy statements remain symbolic at best, and that their only merit lies in the fact that they have helped to keep the debate on language policy in Africa alive. It argues further that language policy makers need to do more than merely make policy statements if Africa's indigenous languages are to break through and become free from the shackles of neo-colonialism and former colonial languages. The entry concludes with suggestions as to how the breakthrough can be achieved, drawing on previous work on the role of African languages vis-à-vis former colonial languages in the educational system (Kamwangamalu, 1997, 2004).

Colonialism, Postcolonialism, and Language Policy and Ideologies

The literature indicates that no Western country utilizes a language for education and other national purposes which is of external origin and the mother tongue of none, or at most few, of its people (Spencer, 1985, p. 390). In Africa, however, children receive an education through the medium of an ex-colonial language such as French, English, Spanish, or Portuguese. Although these languages have been used in Africa for almost 400 years, efforts to promote literacy in and make them accessible to the African masses have failed.

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The statistics show that, in 1990, there were 138.8 million illiterate persons in sub-Saharan Africa (UNESCO, 1995). In other words, the social distribution of ex-colonial languages in Africa remains very limited and restricted to a minority elite group, the majority of Africa's population remains on the fringe, language-based division has increased, and economic development has not reached the majority (Alexander, 1997, p. 88). Against this background, Prah (1995, p. 67) notes pointedly that most African states constitutionally create space for African languages but hardly attempt to alter what was handed down through the colonial experience. And since ex-colonial languages are not equally accessible to all, they do not equalize opportunities but rather reproduce inequality. African countries have, for the past 50 years, been grappling with the question of how to remedy this state of affairs and promote the indigenous African languages as the medium of instruction in the educational system. The debate around the medium of instruction is being rekindled by the widening gaps between the elite, who overtly profess the promotion of indigenous languages as medium of instruction while at the same time sending their own offspring to schools where the medium of instruction is a former colonial language, and the masses, who are marginalized because they have no access to ex-colonial languages. Also, this debate is informed by two competing language ideologies: the ideology of development and the ideology of decolonization.

The ideology of decolonization of education requires that ex-colonial languages be replaced with the indigenous African languages as media of instruction, whereas the ideology of development requires continual use of ex-colonial languages in the educational system and other higher institutions of the state. The ideology of development appears to be based on a wanting dichotomy: socioeconomic development is possible only through the medium of European languages versus indigenous African languages are good only for preserving African cultures and traditions. Scholars who subscribe to the use of an indigenous African language as the medium of instruction maintain that colonial schools deprived African children of their cultural heritage (Ngugi wa Thiong'o, 1983; Alexander, 1997). Also, they point to the cognitive advantages associated with the mother tongue of the learners, as highlighted in UNESCO's (1995) report on the merit of vernacular education. Those who subscribe to the ideology of development view instruction in the language of the former colonial power as an approach that will lead to greater proficiency in that language, representing a further step toward economic development and participation in the international global economy (Mfum-Mensah, 2005). It is argued that indigenous languages do not have the linguistic complexity to enable them to be used in technical and scientific contexts (Balfour, 1999, p. 107). Linguistic scholarship has, however, shown conclusively that the notion that some languages inhibit intellectual or economic development is a myth. As McArthur (1983, p. 21) explains, "all languages are equally capable of expressing whatever their users need them to express, and have equal potential, although historical events may significantly benefit or impede a particular language."

In retaining former colonial languages as official languages, language policy makers expected that the adopted European language would develop into a viable medium of national communication, that it would be adopted by the African population, that it would spread as a lingua franca, and perhaps eventually also as a first language by replacing the local languages, as was the case in large parts of Latin America (Weinstein, 1990). However, as the next section explains, those expectations have not as yet been met.

The African Union and Africa's Past Language Policies

The African Union (AU) is an intergovernmental organization consisting of 53 African states. It was established on July 9, 2002 and became the successor of the Organization of

African Unity (OAU). The AU's objectives are to accelerate the political and socioeconomic integration of the continent; to promote and defend African common positions on issues of interest to the continent and its peoples; to achieve peace and security in Africa; and to promote democratic institutions, good governance, and human rights (en.wikipedia.org/wiki/African_Union). With respect to language, the constitution of the AU stipulates that the organization recognizes six official languages: Arabic, English, French, Portuguese, Spanish, and Swahili. In practice, however, the AU uses mostly English and French for the conduct of its business.

This section discusses the AU's efforts to promote the use of the indigenous African languages in the higher domains, with a focus on the educational system. These efforts are made against the failure of ex-colonial languages to meet the goals for which they were retained when colonialism ended, whether in terms of bringing about national unity, national economic development, or literacy. Instead, it has become increasingly clear that ex-colonial languages do not equalize opportunities but rather reproduce socioeconomic inequalities. The essentialist sanction of European languages as the only appropriate languages of schooling has marginalized and precluded the development of African vernaculars. As Spencer (1985, p. 395) remarks, the introduction of the colonial languages into African societies, and their use as media of education and as communicative instruments for the modernizing process, froze not only competition between languages for access to new domains, but also the opportunities for functional development of almost all the African languages. It is this state of affairs that the OAU, the precursor to the AU, tried to change by championing the ideology of decolonization of African education, with the specific goal of promoting the use of the indigenous African languages as the medium of instruction in African schools. OAU (1986) articulated the need for the *decolonization of education* in what the organization called the "Language Plan of Action for Africa," among whose goals were:

a. to liberate the African peoples from undue reliance on utilization of non-indigenous languages as dominant, official languages of the state in favor of the gradual takeover of appropriate and carefully selected indigenous languages in this domain.
b. to ensure that African languages by appropriate legal provision and practical promotions assume their rightful role as the means of official communication in public affairs of each Member State in replacement of European languages which have hitherto played this role (OAU, 1986).

Recent recommendations to promote African languages in education and other higher domains appear in the Asmara Declaration on African Languages and Literatures of January 2000, which reads as follows:

1. All African children have the unalienable right to attend school and learn their mother tongues at all levels of education;
2. The effective and rapid development of science and technology in Africa depends on the use of African languages;
3. African languages are vital for the development of democracy based on equality and social justice;
4. African languages are essential for the decolonization of African minds and for the African Renaissance. (OAU, 2000)

Subsequent efforts to promote the indigenous languages in the higher domains have resulted in the creation of the African Academy of Languages (ACALAN). This is a Pan-African organization founded in 2001 by Mali's then-president Alpha Oumar Konaré,

under the auspices of the OAU, now the AU, to promote the usage and perpetuation of African languages among African people and to serve as a specialized scientific institution of the AU (en.wikipedia.org/wiki/African_Academy_of_Languages). Bamgbose (2006) highlights the goals of ACALAN as follows:

1. To foster the development of all African languages and empower some of the more dominant vehicular languages in Africa to the extent that they can serve as working languages in the African Union and its institutions.
2. To increase the use of African languages in a variety of domains so that the languages become empowered and revalorized.
3. To promote the adoption of African languages as languages of learning and teaching in the formal and non-formal school system.
4. To promote the use of African languages for information dissemination and for political participation to ensure grassroots involvement in the political process and demystification of the elite.

Unlike previous language policies, the AU's policies do not call for African languages to replace ex-colonial languages in education or other domains. Rather, it is expected that ex-colonial languages will assume a new role as partners to African languages, but not in an unequal relationship as is currently the case.

In sum, the policy statements presented previously, namely, the Language Plan of Action for Africa, the Asmara Declaration on African Languages and Literatures, the African Academy of Languages, and related subsequent policies, such as the African Cultural Renaissance Charter and the Statutes of the African Academy of Languages (www.acalan.org) have one goal in common: They all require every member state of the Union to take urgent measures to ensure that local African languages are used as the medium of instruction in education and ultimately as languages of administration along with ex-colonial languages, which henceforth become "partnership languages" to African languages in the enterprise of national development. One notes, however, that not all of these policy statements are matched with practical steps to use the indigenous languages in education. The failure to promote the indigenous languages in education has its roots mainly in the negative attitudes that the policy makers themselves have toward the indigenous languages.

The African Union and Attitudes Toward African Languages

Generally, the attitude of the member states of the AU and the African masses toward the use of the indigenous languages in higher domains such as education and the government and administration is negative. This stems from not only the members' deep-seated perceptions about the status of the indigenous languages vis-à-vis ex-colonial languages in society, but also the policies that govern language use in the higher domains, for they favor ex-colonial languages over the indigenous languages (Mfum-Mensah, 2005). To ensure that the indigenous languages do not compete with ex-colonial languages, policy makers formulate language policies that are either ambiguous or that embed escape clauses. The language clause in the Constitution of the AU itself is a case in point. According to the Constitutive Act of the AU, the working languages (now renamed official languages) of the Union are "*if possible*, African languages, Arabic, English, French and Portuguese" (emphasis added). Swahili and Spanish have since been added to the list of the Union's official languages. Note the escape phrase, "*if possible*." It indicates that although the AU calls on its member states to promote African languages in the higher domains, the AU itself does not seem to be bound to use these languages in the conduct of its own business.

The response of the member states to the AU's call are all too predictable. Consider, for instance, the constitution of countries such as Nigeria and South Africa, as presented in the extracts that follow. In both cases, escape clauses are marked by the use of modal auxiliary verbs such as *may* or *must*, along with complementizers such as *when*, *where*, and *if*. Accordingly, in Nigeria, parliamentary debates are usually conducted through the medium of English, while in South Africa they are conducted mostly in English or occasionally in Afrikaans because the Constitution does not specify which two of the country's 11 official languages should be used in which province or by the national government.

Language clauses in the Nigerian Constitution read:

a. The business of the National Assembly shall be conducted in English, Hausa, Igbo and Yoruba *when adequate arrangements have been made thereof.* (The Constitution, Section 55)
b. The business of the House of Assembly shall be conducted in English *but the House may in addition to English conduct the business of the House of Assembly in one or more languages in the state as the House may by resolution approve.* (The Constitution, Section 97). (Bamgbose, 2001, p. 193, emphasis added)

Language clauses in the South African Constitution read:

> The national government and provincial governments *may use any particular official languages* for the purposes of government, taking into account usage, practicality, expense, regional circumstances and the balance of the needs and preferences of the population as a whole or in the province concerned; but the national government and each provincial government must use *at least two official languages.* (Republic of South Africa, 1996, emphasis added)

In some cases, African countries have adopted overt language policies that constitutionally ban the use of indigenous languages in public domains. In Malawi, Kenya, Sierra Leone, and Uganda, for instance, competence in English rather than in an African language is a requisite for election to public office. In the case of Uganda, it is reported that children must be competent in English to qualify for admission into the nursery schools. In this regard, Kwesiga (1994, p. 58) remarks sarcastically that "African mothers who have knowledge of English start teaching their children this language before they are born."

In other cases, however, policy makers make statements that devalue the indigenous languages vis-à-vis ex-colonial languages. For instance, Bamgbose (2001) reports on the attitude of the legislators in Lagos, Nigeria, to the proposal that Yoruba, one of Nigeria's national languages, be used as the language of debate in the House of Assembly. He notes that the legislators rejected the proposal despite the fact that about 90% of them speak Yoruba as mother tongue. The legislators themselves explain that they rejected Yoruba because its use "*is capable of demeaning and reducing the intellectual capacity of legislators*" (Bamgbose, 2001, p. 190, emphasis added). The elite's contempt for the indigenous languages betray their double-facedness in assigning official roles to these languages and thus suggesting equal status with former colonial languages.

The African Union and Prospects for the Indigenous African Languages

This final section explores the prospects for the indigenous African languages in education and other higher domains in the light of the AU's language policy declarations discussed previously. It argues that the cognitive advantages of mother tongue education cannot

serve as the sole catalyst for promoting indigenous languages as the medium of instruction. Any attempt to promote the indigenous African languages in education must be made against an understanding of why there is such a high demand, whether genuine or artificially created, for former colonial languages in education and other domains. The use of former colonial languages in education is sustained mostly by the socioeconomic value with which these languages are associated. It is not an accident that English, for instance, is spreading around the world, and that many countries, including those with no colonial ties to Britain or the United States, are aggressively promoting the use of English in their educational systems. For instance, Tollefson (2002, p. 333) reports that the governments of capitalist Korea and socialist Vietnam, and one must add communist China to this list, are taking serious steps to increase and improve English-language education as part of broad economic development programs. In Africa, former French, Spanish, and Portuguese colonies are also aggressively promoting English by making the language a compulsory subject in their educational systems. Tollefson (2002) points out that the emphasis on English in these and other countries around the world comes with an implicit promise—that dedicating vast resources to the spread of English will yield concrete economic benefits.

The literature increasingly recognizes the importance of the relationship between language use and material outcomes in the success or failure of language policies (Paulston, 1988; Le Page, 1997; Nettle & Romaine, 2000). For instance, Paulston (1988) remarks that language planning efforts are most likely to be successful if they are supported by economic advantage or similar social incentives for the minority groups. Likewise, Nettle and Romaine (2000) note that true development of a political, economic, or social nature cannot take place unless there is also development of a linguistic nature.

If the African Union is genuinely keen to promote the indigenous languages, it must require its member states to formulate language policies that take into account the relationship between the indigenous languages and the economy and vest these languages with at least some of the privileges and perquisites that are currently the preserve of ex-colonial languages. It is only through the adoption and implementation of such policies that the majority of Africa's population will be able to access functional literacy in the indigenous languages and thus participate in the social, political, and economic development of the continent. As Fardon and Furniss (1994, p. 24) say, "the dialogue between the different discourses on language can be productive to the extent that each can identify with the aims of the others in favor of a broadly conceived program to empower languages users." As long as the ruling African elite do not consider the promotion of the indigenous languages as an integral part of Africa's economic development program, and until these languages facilitate access to the wider society and economic advancement, their prospects will remain bleak, much as they have been throughout the past centuries.

SEE ALSO: Colonialism and Language Policy and Planning; Indigenous Languages in the 21st Century; Language and Identity in Africa; Multilingual Education in Africa; Teaching Indigenous Languages

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Agar, Michael

MICHAEL AGAR AND KAREN RISAGER

Michael Agar is a well-known researcher in linguistic anthropology. In the field of applied linguistics more generally he is especially known for his path-breaking work on "langua-culture," a concept that calls attention to the inextricable bond between language and culture.

He was born in Chicago on May 7, 1945, moving to the San Francisco Bay Area in 1956. That same year his parents decided on a vacation in Mexico where he learned that "being a kid" was different and preferable in that country, an experience to which he attributes his lifelong interest in culture. As a high school student he became an AFS (American Field Service) exchange student to Austria. When he later enrolled at Stanford University and took an oral placement exam, the northern German professor did not know where to place him since he spoke fluently in dialect about soccer, but had never heard of Goethe.

As an undergraduate he majored in anthropology and spent his junior year working with anthropologist Alan Beals in Karnataka (then Mysore State) in southern India. He worked in the Kannarese language. Later, in 1973, he taught at the Central Institute of Indian Languages for the summer in Mysore City and had the odd postcolonial experience of interpreting between local residents and other faculty and students from northern India unfamiliar with Dravidian languages.

Undergraduate work at Stanford, followed by graduate work at the Language-Behavior Research Laboratory at the University of California, Berkeley, connected him with the then exciting development in American cultural anthropology, variously called "ethnoscience," the "new ethnography," and "cognitive anthropology." Cognitive anthropology, in its early form, upgraded the Whorfian tradition of linguistic anthropology with the argument that culture is knowledge and much important knowledge is encoded in lexically labeled categories. His planned return to southern India, though, changed with the Vietnam War when he was offered a commission in the US Public Health Service and sent to work at a national center for narcotics addiction treatment in Lexington, Kentucky. To his surprise, the linguistic ethnography that he had learned worked as well in his new project—ethnography with urban American heroin addicts—as it had in traditional anthropological research. His dissertation, later a book called *Ripping and Running* (1973), presented a lexical study of addict jargon as a means to the end of understanding their world.

He left Berkeley in 1971 for a series of academic positions—University of Hawaii in 1971, University of Houston in 1975, University of Maryland in 1981. Two years of work with the state narcotics treatment agency of New York interrupted the academic trajectory from 1973 to 1975. There were numerous visits, to the Institute in India, described above, as well as to the University of Surrey, the University of Vienna, and the University of California. And in 1995 he resigned his professorship at the University of Maryland, College Park with an emeritus title to work independently as Ethknoworks, first in the Washington, DC area, and since 2005 in northern New Mexico near Santa Fe.

His projects, whether short or long term, have always been linguistic and ethnographic at their core. In writings about ethnography, he introduced the concept of "rich point" (1996), meaning a difference based on experience that indexes a major cultural difference worthy of attention as a research focus. The concept was used by colleagues as part of a

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field-oriented year abroad program for undergraduate language learners (Roberts, Byram, Barrio, Jordan, & Street, 2001). However, this biography will only describe a few periods of concentrated linguistic work.

The first period came courtesy of a Research Career Development Award from the National Institutes of Health (NIH). During research with heroin addicts in New York City in the early 1970s he did an extensive series of life-history interviews with Herbert Huncke, a lifelong heroin addict who was the street connection for the postwar Beat Generation. Agar began collaboration with Jerry Hobbs, a natural language artificial intelligence researcher at Stanford Research International. While both were focused on the problem of how to make background knowledge for text understanding visible, Hobbs worked on axiomatic formalization of a knowledge base for computational implementation, while Agar aimed for interpretive adequacy for a particular social category of outsider/audience in accessible prose. Out of this collaboration came several articles describing an approach to discourse analysis in three dimensions of coherence (or lack of it)—local (utterance by utterance), global (utterance in the context of text as a whole), and thematic (the recurrent threads of particular ethnographic interest). One contribution, "How to Grow Schemas out of Interviews" (1985), summarizes a result of particular interest to anthropologists, something that would later be called the language-based analysis of "cultural models" in anthropology.

A second period of concentrated work resulted from several visits to the University of Vienna, with support from Ruth Wodak, professor in applied linguistics at the Institut für Sprachwissenschaft. During these visits Agar researched, taught, and attended conferences, working in Austrian German, and finished up with a sabbatical year in 1989 where he started his book *Language Shock: Understanding the Culture of Conversation* (1994a). In that book he modified Paul Friedrich's concept of "linguaculture" into the core concept of "languaculture," meant to call attention to the inextricable bond between the two. That concept proved useful as different applied linguistic fields took a "cultural turn," such as second language instruction's move away from a focus on literature and lexicon/syntax to communicative competence in contemporary life. The book from 1994 has gained a wide public in language studies and its interdisciplinary approach and many illustrative examples have been an inspiration for scholars and students alike (see, e.g., Risager, 2006 for a development of the concept of "languaculture" from a sociolinguistic perspective).

The third period of work is now in process. As he phased out of academia in the 1990s, Agar experimented with possible linguistic anthropological applications, reflected in publications on peace negotiation (1996), intercultural communication (1994b), drug research (2005), and organizational discourse (2006). But for many reasons not important for this biography, he spent several years on an NIH-funded project that combined ethnography, economic history, and epidemiology, as well as doing various workshops and consultations around complexity and organizational development for social services. What is relevant to mention is that several projects and presentations took place in Latin American settings, in Spanish, a language he has worked at learning since that childhood trip to Mexico.

Recently, he has returned to language, this time as a central component in human social research, beginning with a public lecture on what makes for a "real" ethnography (later revised and published, 2008). He revisits the notion of ethnography as translation, an interest that dovetails with the exponential growth of the translation field (2011). Courtesy of a reconnection with Jerry Hobbs, mentioned above, he works with a team charged with figuring out how to enrich computer-based language instruction with "culture," the scare quote meant to signal how difficult and contentious that concept has become in our post-structural era. This line of work is ongoing, linked to his general project to "upgrade" the culture concept for use in a globally connected world, with a renewed interest in the mix of human universals and local specifics that makes translation possible at all.

Agar currently lives with his partner Ellen about 15 miles outside of Santa Fe, New Mexico. Beside his work at Ethknoworks and his emeritus appointment at the University of Maryland, College Park, he is an affiliate of the Anthropocaos institute at the University of Buenos Aires and a Distinguished Scholar at the International Institute of Qualitative Methods, University of Alberta. In addition to his current languaculture project, he also works with the biology faculty at the University of New Mexico on the integration of human social research and urban ecology into their program. Information on recent talks and short-term projects can be found on the Ethknoworks website at www.ethknoworks.com. He recently won second prize in the *Santa Fe Reporter* fiction competition.

SEE ALSO: Culture; Intercultural Communication; Linguaculture; Linguistic Relativity and Second Language Acquisition; Sapir, Edward

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Age-Appropriate Instruction and Assessment for School-Age Learners

CARMEN MUÑOZ

The recent trend toward teaching foreign languages in primary and pre-primary school has enriched the education of young populations in many parts of the world while at the same time it has brought about new challenges for teachers, schools, and educational systems. Mainly, the inclusion of young learners in the foreign language teaching agenda has made evident the importance of age-related differences among learners and has emphasized the relevance of research results for the provision of age-appropriate instruction and assessment.

Is Younger Better? Research Perspectives

Studies that have compared younger and older language learners in second language settings show that the former attain higher levels of proficiency than the latter after a long period of immersion, and that their most outstanding advantage is found in the area of pronunciation. The obviously high success rate of those learners who arrive early in the second language country as compared to those learners who arrive at a later age has contributed to extend belief in the maxim "the younger the better." One likely explanation for the young learners' superior language learning potential lies in their use of implicit learning mechanisms (namely, the same learning mechanisms used by children in first language acquisition) to discover grammatical regularities and phonetic patterns merely from language exposure. However, for implicit learning to occur learners require massive exposure to the language, the type of exposure that children learning their first language or learning a second language in an immersion setting have (DeKeyser, 2000). When children have no access to unlimited exposure to target language input, as is typically the case in foreign language settings, this potential advantage cannot be realized, which explains why in instructed contexts with limited input younger starters have not shown superior outcomes when compared with older starters after the same amount of hours of instruction (García Mayo & García Lecumberri, 2003; Muñoz, 2006). Likewise, the young learners' advantage in the perception and production of new sounds may be related to the weaker entrenchment of L1 in children than in adults. However, their age advantage can facilitate phonological acquisition of a new language only in the presence of quality input from which new phonetic representations can be formed. In the absence of quality input the young learners' perceptual and productive advantages have not been observed to be realized either. In sum, research has shown that young age does not automatically confer an advantage on young learners if they do not have the amount and intensity of exposure as well as the quality of input required for their learning potential to be instantiated.

Studies that have compared younger and older language learners in both second and foreign language contexts have yielded another consistent finding: Older learners have a faster rate of learning in the beginning stages and hence they are more efficient learners, particularly in the domain of grammar (Snow & Hoefnagel-Höhle 1978; Krashen, Long, &

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Scarcella, 1979). In foreign language contexts, other studies have compared early starters and late starters at the same age, with the former having had considerably more exposure than the latter. These studies have also shown that late starters are able to catch up with early starters after some time in literacy-related domains (Muñoz, 2008).

Age-Appropriate Instruction and Assessment

Surveys examining early language teaching programs have shown that learners' young age does not guarantee efficient learning by itself (Edelenbos, Johnstone, & Kubanek, 2006). Contrary to the simplistic belief that "younger" is automatically "better," teaching young learners requires extreme care and finely tailored programs. For school-age children to benefit from early instruction in a foreign language they must have age-appropriate instruction in addition to continuous access to meaningful, immersion-type, quality input, and opportunities to engage in genuine interaction.

Age-appropriate instruction is learner-centered. Consequently, learning tasks need to take into account learners' cognitive and affective characteristics, their preferred learning styles, interests, and patterns of interaction (Muñoz, 2007). It is generally agreed that children learn holistically, and a whole-language approach is required when teaching young learners. A number of characteristics have been identified for syllabus, input, tasks, and topics that are appropriate for young children. The syllabus should be theme-based, around either topics, stories, projects, or tasks, to allow the integration of the target language into the curriculum. The input to young learners should be embedded in context; it should present structures and functions in spiral sequence, with frequent repetition of patterns to allow for induction of rules and generalization; and it should offer a high-quality model for the learners to imitate. Given young children's advantage in perceiving and producing new sounds and prosodic patterns, there should be a very strong emphasis on phonetics and prosody in this period. Language learning tasks should have a focus on listening and speaking skills; the tasks should be short and varied because young learners have a short attention span; activities should refer to the "here and now," consonant with children's stage of cognitive development; and there should be an emphasis on hands-on activities because young learners need "to do things." Topics for young learners should motivate children and engage their interest.

On the other hand, the superior efficiency of older learners draws on their advanced cognitive development. Age-appropriate instruction for older learners is tailored to this strength: as learners grow older they develop their analytic ability and are better able to handle an analytical approach of linguistic structure. By the end of primary school, learners can benefit from direct teaching and systematic practice, and input can be disembedded from the immediate context; in particular, learners can benefit from focused phonetic training and from activities that direct their attention to form and improve target language accuracy. Maximum benefit can be derived when this practice is balanced with meaningful language tasks, as in a task-based syllabus. In other words, while maintaining a focus on meaning that satisfies learners' communicative goals, a more explicit focus on form can support learners' receptive and productive abilities as well as foster their metalinguistic awareness. Topics for older learners need to be connected with their age-group interests and possible professional concerns in high school.

Age-appropriate assessment must reflect the approaches used in teaching the different age groups. In particular, assessment for young learners should be supported by tasks that are familiar and cognitively adequate, contextualized and enjoyable, yet challenging at the same time. Assessment for older learners focuses on their communicative abilities while at the same time it challenges learners' knowledge of and reflection on language structure.

At any age, the activities used in assessment of school learners should be designed to highlight what the pupils can do; the activities should be formative and constitute good learning activities in themselves.

The Role of Motivation

Age-appropriate instruction promotes learners' motivation toward the target language. In fact, it has been suggested that the highest benefit of the early introduction of a second language lies in the domain of motivation (Blondin et al., 1998). Motivation may vary also in relation to the frequency of instruction, so a low level of contact with the language does not usually trigger very high levels of motivation. Qualitative and quantitative changes have been observed in learners' attitudes toward the foreign language over the years at school. Young learners show an intrinsic type of motivation, but in the middle years of school education this may wane, and later tends to be replaced by an instrumental type of motivational orientation. This is the case when the target language is English, but learners may vary in their attitudes to other languages and view them differently in terms of their importance as a life skill.

Although studies have provided conflicting evidence regarding the relationship between foreign language "liking" and age, a decrease of positive attitudes after an early start has often been observed around the years of puberty. When learners start secondary school their interest also tends to wane after one or two years. Different reasons may explain these changes over time: the assimilation of the foreign language to other school subjects, especially when lessons become less communicative and more academically demanding; the generally negative attitude toward the school that characterizes the beginning of adolescence; and the disappearance of the novelty factor that inflates motivation at the beginning of instruction (Tragant, 2006).

Conclusion

To guarantee future success, early start programs need to draw on adequately trained teachers and to provide enough contact with the target language and the necessary resources. At the same time, educational and school policies should ensure consistency and continuity from one educational cycle to another. In the end, early start programs need to be accountable for whether the expected learning has taken place, and for the consequences of an early start in more general educational terms.

SEE ALSO: Assessment of Young English-Language Learners; Teaching English as a Foreign Language in Kindergarten to 12th Grade

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Agency in Second Language Acquisition

TOMOKO YASHIMA

Significance of Agency in SLA: An Overview

The concept of learner agency has been significant to applied linguistics and SLA for a long time. This is despite the fact that the term "agency" started to appear in SLA research articles fairly recently, influenced by sociocultural and poststructuralist theories. To understand the significance of agency in SLA, we need to overview the history of SLA as a discipline as well as its development and expansion.

With the advent of the so-called cognitive revolution brought about by Chomsky (1959) and others, research and pedagogy in SLA influenced by behaviorism (e.g., audiolingualism) gave way to cognitive psychological perspectives that regard language acquisition as a cognitive process. Unlike behaviorists, who see our actions as being at the mercy of external forces (that is, as reactions to stimuli and habit formation), cognitive psychology places human cognition at the core: humans think, memorize, and try to understand and make meaning (William & Burden, 1997). Unlike the behaviorists' view of humans as passive or reactive, people are now regarded as active participants in the learning process, that is, as agents who can make choices regarding their behaviors and who have control over their actions and are therefore "agentive." This has influenced research on the psychology of L2 learners, including research in motivation (William & Burden, 1997).

During the 1980s and 1990s, cognitive-interactionist models, which focus on learners' cognitive processes of L2 acquisition through interactions with external factors (Ortega, 2009, p. 55), represented by, for example, the input, interaction, output, and noticing hypotheses, became mainstream in the field. In the mid 1990s a new trend characterized as the "social turn" (Block, 2003; Ortega, 2009) set in, along with calls for research informed by social theories. With this new trend, which encourages researchers to turn to the sociocultural contexts in which language learning takes place, a new conceptualization of agency emerged. Within this broadly social approach, second language learning is seen as embedded in sociocultural and macrosociopolitical contexts. Viewing language learning as purely a cognitive process has been criticized because the approach fails to account for contextual forces and the sociocultural mediation that necessarily affect language learning.

In Vygotskyan sociocultural theory, the development of higher mental functions in a child is seen as originating in his/her interactions with adults, mediated by physical and psychological tools. A child gains agency as he or she develops mental functions that allow for greater self-regulation. Using this approach, SLA research also regards social interactions and guidance by more capable others as significant. As the novice gains greater ability to function autonomously, the experts relinquish control to him/her at the appropriate time (Lantolf & Thorne, 2006, p. 280). Since the social contexts surrounding individuals differ from person to person, the emphasis of research within this framework has shifted from universal processes of SLA toward paying attention to the unique situations in which language acquisition takes place. As a result, individual learners' histories, learning trajectories, and identities are taken into consideration and accounted for.

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Another important factor that has influenced the view of agency in SLA is post-structuralism. As part of a move away from a structuralist (e.g., Levi-Strauss) toward a poststructuralist theorization of human activities and culture, the complete denial of agency, as in structuralist discourses, has been challenged. Although human beings are not free agents but are constrained by social structures and forces, neither are they mindless beings, entirely controlled and structured by these structures and forces. Thus research in SLA informed by poststructuralist thought examines power relations embedded in the sociopolitical contexts in which people learn an L2 as well as the agency they exercise in overcoming the challenges they face in that learning. Within this framework, agency often refers to the ability to analyze the situation critically in which the learner is placed and to resist the forces that obstruct making changes in that situation.

Theoretical Perspectives on Agency in SLA

In the following sections, concepts of agency from: (a) psychological (focusing on learner characteristics including motivation), (b) sociocultural, and (c) poststructuralist/critical perspectives within the field of SLA will be discussed.

Agency in Psychological Research on Learner Characteristics

Within psychological research in SLA, agency is most closely associated with motivation. Motivation research places human agency at its core. In many L2 learning motivation theories, learners' sense of agency is regarded as crucial in enhancing motivation to learn the language. From a self-determination theory perspective, the learners' perception of how much agency they have in choosing to do what they do is vital for sustained motivation. From an attribution theory standpoint, the learners' explanation for the causes of past successes and failures is seen as determining their future course of action, while self-efficacy theory stresses the view that the learners' own evaluation of their ability to perform certain actions will determine the amount of effort exerted (Dörnyei, 2001).

Agency is also conceptualized in terms of self-regulatory capacity, which refers to cognitive, metacognitive, behavioral, and affective processes that learners apply to enhance learning. One aspect of this discussion focuses on the language learning strategies that learners use consciously to plan, execute, and regulate their learning. Within this framework, strategy training, or training learners to rely on greater self-regulation, is not only possible but also desirable because it "can improve learners' sense of agency" as well as their "motivation, confidence, and L2 performance" (Oxford, 2003, p. 85). Like autonomy, agency is regarded as a psychological attribute that affects human behavior.

From this perspective, the social context, also referred to as the "milieu," is considered important and usually regarded as a set of social variables that influence the learner's cognition, affect, and behavior. Since much of mainstream research on motivation and learning styles and strategies has focused on generalizable relations among variables using quantitative methods, it has not necessarily succeeded in describing how an individual learner exercises agency in his or her specific learning context. Recently, however, the SLA field has seen more qualitative studies being published. This is partly because, under the influence of a social orientation, L2 learning is increasingly regarded as embedded in social contexts, and this aspect of L2 development can be more effectively studied through qualitative methods.

Agency From Sociocultural Perspectives

As part of the recent trend toward more socially informed SLA research, sociocultural theory has attracted much attention. According to Wertsch (1991), the goal of sociocultural

analysis is to understand how human cognition is related to cultural, institutional, and historical contexts. To account for agency from sociocultural perspectives, the Vygotskyan theory of mediation, the internalization of self-regulation, and activity theory are taken up in this section.

According to Vygotsky (1997), all forms of higher mental functions are derived from interpersonal interactions mediated by culturally constructed auxiliary tools, whether physical or symbolic, with language as an example of the latter. While physical tools such as a hammer or scissors "extend the reach and power of our bodies" resulting in "a change in the object toward which they are directed" (Lantolf & Thorne, 2006, p. 60), linguistic artifacts are inwardly directed, with the goal of self-regulation (Vygotsky, 1997). At first, children are dependent on assistance from adults when they perform certain tasks, often with linguistically mediated support. Through dialogic interactions with others, children learn to self-regulate their physical and mental activities using mediational devices, and they gradually become independent of adult guidance. This process enhances a child's agency. The distance between what a child can do independently and what he or she can achieve with the guidance of adults or more experienced others is called the "zone of proximal development." According to Lantolf and Thorne (2006), there are no uniquely human actions that are not mediated, and "human agency appears once we integrate cultural artifacts and concepts into our mental and material activity" (p. 63). Agency, in this sense, refers to internalized self-regulation or "the socioculturally mediated capacity to act" (Ahearn, 2001, p. 112). Further, as Newman and Holzman (1993) argue, uniquely human activity mediated by culturally created tools is also transformative and creative as humans constantly make changes in the emerging activity (p. 49). In this sense, agency refers to the mediated capacity of humans to create and make changes.

Extending these perspectives to L2 learning, SLA researchers often examine L2-mediated private speech (externalized inner speech) as well as dialogic interactions between L2 learners and teachers in order to understand the process of how learners learn to self-regulate their second language use and how they mediate their thoughts through a second language by, for example, using concepts learned in an L2.

Activity theory is a framework for studying human practices as developmental processes (Lantolf & Thorne, 2006, p. 209). In other words, activity is a social practice that provides conditions for psychological development. Human beings in every day situations respond to tensions, contradictions, and problems that to some extent change the conceptual, social, and material conditions of their lives. In this sense, tensions, contradictions, and problems create opportunities for human development, often through the creation of new artifacts. While Vygotsky created a model of individuals' goal-oriented, mediated activity that generates higher mental functions, later theorists such as Leont'ev (1981) have stressed the roles that community, rules, and labor-sharing play in structuring the activity. Lantolf and Pavlenko (2001) argue for the importance of using the activity theory framework in discussing agency in SLA. They stress that second language acquisition as activity is "more than the acquisition of forms." Rather, it is about developing "new ways of mediating ourselves and our relationships" (p. 145) with the world. This perspective requires us to respect learners' agency in "constructing the terms and conditions of their own learning" (p. 145) within the social context in which they are placed.

L2 researchers working within this framework try to investigate the unique situation in which each individual is placed when he or she learns the second language and how agency is exercised in that situation. For example, Coughlan and Duff (1994) focus on learners' agency in making sense of tasks used in language classrooms. They show how the objectives of a language-eliciting task designed by researchers are interpreted differently by different learners and that what is conceived as the "same task [leads to] different activities" (p. 173) for different learners based on their learning histories, interests, capacities,

and so on. This means that even though teachers have learners do tasks aiming at the acquisition of certain linguistic features, each individual creates different activities with the personal objectives and meanings that he or she attaches to the task.

Engeström's (1987) activity theory model presents a framework for analyzing the development of a human community, allowing a focus on both systemic and individual transformation. For development to happen, a group of individuals transforms its practices and introduces new ones, overcoming contradictions and creating new tools in the process. For Engeström, agency involves the capacity of human beings to collectively make changes, overcome what is given, and generate something new. In Lave and Wenger's (1991) theory, on the other hand, learning is regarded as a situated activity amounting to legitimately participating in a "community of practice" in which an individual is mediated not only by material and symbolic tools but also by the formation of social relationships that are emergent and contingent. Learning involves changing relationships as well as transforming identities within one's social world. In conceptualizing L2 learning under the influence of activity theory and situated learning theory, a new "participation" metaphor has emerged in addition to the traditional "acquisition" metaphor (Sfard, 1998). Unlike the psychological conceptualization of agency discussed above, agency from this perspective is "never a 'property' of a particular individual: rather, it is a relationship that is constantly co-constructed and renegotiated with those around the individual and with the society at large" (Lantolf & Pavlenko, 2001, p. 148). In this sense, agency is a "culturally (in)formed attribute whose development is shaped by participation in specific communities of practice" (Lantolf & Thorne, 2006, p. 239).

Agency From Poststructuralist and Critical Perspectives

The relationship between social structure and human agency has long been debated in social theories. While phenomenology and ethnomethodology focus on the subjective world of humans and privilege the actor, functionalism and structuralism stress the power of the structure and systems of meaning to control agency. Bourdieu's and Giddens's theories offer concepts that bridge agency and structure, or the gap between the micro and macro perspectives (Smith, 2001). Bourdieu's (1977) concept of "habitus" helps us analyze how the reproduction of social structures is interconnected with individuals' subjective experiences embedded in day-to-day practices and manifested in embodied behaviors and tendencies to act in specific ways as well as in their tastes and emotions, among other factors. In Giddens's (1984) structuration theory, on the other hand, structure and agency are mutually constitutive within social practice. Giddens suggests that humans act using internalized skills and knowledge in every day practice, while cultural patterns are reproduced as humans use their skills and knowledge in social practice. Thus not only is structure the medium for human actions but it is reproduced as a result of these actions. Actors have agency in the sense that they are the source of intended actions, which may result in unintended consequences. In Giddens's view, humans continuously have reflexive moments to monitor the consequences of their actions while engaging in day-to-day practices. Through this reflexivity, humans have agency in that they can make choices and enact changes to their environment.

Both Bourdieu's and Giddens's theories thus provide us with a framework for viewing agency in L2 learners by focusing on the dialectic of social structure and agentive actions. This combined perspective suggests that L2 learners have the power to change the cultural patterns (e.g., power relations) that affect them by being reflexive and changing both themselves (their "habitus") and these patterns.

Within the framework of SLA informed by poststructuralist critical theories, an increasing number of studies have been conducted focusing on L2 learning by immigrants or those who are forced into subject positions in society, demonstrating their struggles in appropriating the new language while fighting social constraints and negotiating an identity (e.g., Norton, 2000; Block, 2007). Researchers discuss how individuals' sense of motivation, anxiety, or willingness to communicate as well as their communicative competence are socially structured in inequitable relationships between native and nonnative speakers or in other power relationships embedded in the context (e.g., Norton, 2000) rather than seeing them as variables that account for individual differences. Researchers also focus on individuals' agency in critically reflecting on the positions in which they are placed and in taking more strategic positions to stand up from marginalized positions and to liberate themselves from imposed identities. These researchers discuss the dialectic of the learners' agency and the structures—or social forces—that constrain their choices, particularly in migrant contexts. In this sense, agency is not a property of free and autonomous individuals. Instead, it describes the human capacity not only to resist imposed subject positions but also to make choices and change the course of one's life, to create new ways of being, and to look for "cultural alternatives" (Pennycook, 1997, p. 35). In other words, agency is the "power to control one's situation, be fully heard, be free from oppression, and have choices" (Oxford, 2003, p. 79).

Agency and L2 Teaching

The concept of agency has carried significance and been appropriated by applied linguists with different theoretical perspectives. In all of them, agency has involved the learners' capacity to make choices and change themselves and/or the environment.

In psychological approaches to SLA, agency is regarded as an attribute of individuals that affects their learning behaviors (Oxford, 2003). In this framework, enhancing agency is equal to increasing the capacity for self-determination or for making choices about learning as well as the self-regulation of learning behaviors. Within the sociocultural framework, on the other hand, agency refers to one's capacity to act through the mediation of culturally created tools as well as guidance by more capable others rather than to a property of individual learners. Therefore, teachers' and co-learners' involvement is regarded as crucial in offering mediation—or scaffolding—to learners in the zone of proximal development that will lead to self-regulation and independence. From an activity theory perspective, learning an L2 is equal to participating in a community, where the L2 mediates the learner's involvement in new activities and in forming new social relationships in the community.

Finally, from a poststructural viewpoint, as in Pennycook's (1997) discussion of autonomy, L2 teaching should "help [their] students become authors of their own worlds" (p. 45). Pennycook calls for socially, culturally, and politically engaged forms of L2 teaching that can help learners exercise agency because learning a language is more than mastering a system: it is also a matter of "struggling to find means of articulation amid the cultures, discourses, and ideologies within which we live our lives" (pp. 48–9). From a postcolonial critical perspective, Canagarajah (1999) points out that those studying English in postcolonial communities in the developing world often find themselves in painful conflict, torn between Western and indigenous cultural values. Among many ways to cope with this situation, Canagarajah calls for teaching practices that encourage learners to "have the agency to think critically and work out ideological alternatives that favor their own empowerment" (p. 2).

Conclusion

As we have seen, agency has been conceptualized by researchers in SLA in different ways, and the evolving nature of the concept represents the development of both applied linguistics and SLA as growing fields. In a globalizing society, in which people increasingly move around the globe for many different reasons and where information technology brings people together in virtual worlds, people's movements and communication often involve second language learning and the reconstruction of selves. Individuals are not entirely free in how they choose ways of life or identities because they are embedded in social structures that constrain their freedom. Yet faced with a variety of choices and constraints, human agency is becoming a key concept for people living in the present world, particularly those who try to craft new identities by learning a second language.

SEE ALSO: Identity and Second Language Acquisition; Motivation in Second Language Acquisition; Vygotsky and Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Alderson, J. Charles

JAYANTI BANERJEE

In a humorous tribute to his parents, the dedication in Charles Alderson's oft-quoted publication *Assessing Reading* (Alderson, 2000) reads: "I only hope they would not have been too disappointed that I did not become the Town Clerk of Burnley, as my mother hoped." Though he failed to follow that exact path, Alderson's mother accurately predicted that his work would have a wide sphere of influence. Indeed, he has been described as "a major force in the advancement of language testing for the past 30 years, particularly in Europe" (ILTA Lifetime Achievement Award Committee, 2008—http://www.iltaonline.com).

After graduating from Oxford University with a BA (Hons) in French and German, Charles Alderson (1946–) worked briefly as a marketing executive for Reckitt and Colman Ltd., selling Colman's mustard. After two years he took a position as *lektor* (language teacher) in English at Düsseldorf University, beginning a distinguished career as an educator and researcher. Alderson first became involved in language testing as a PhD student at Edinburgh University where he was coordinator of the English-language testing service and, among other duties, was responsible for administering the English Proficiency Test Battery (EPTB) (Davies, 1965). During this time he also co-authored version D of the EPTB (Davies & Alderson, 1977).

Since receiving his PhD in 1977, Alderson has worked at three major institutions. He spent approximately two years at the National Autonomous University of Mexico where he was Head of the Research and Development Unit as well as the General Coordinator of the Department of Applied Linguistics for the Modern Language Center (CELE). Following this, Alderson was briefly at the University of Michigan as the Director of Testing in the English Language Institute. Since 1980, he has worked at Lancaster University, where he is Professor of Linguistics and English Language Education and can be largely credited with the growth there of a vibrant and internationally renowned teaching and research program in language testing.

It is hard to adequately summarize the different aspects of language testing to which Charles Alderson has contributed in his career. He has published papers on a variety of subjects including reading assessment, ESP testing, diagnostic testing, politics in language testing, and language-testing standards. Many of his publications have addressed or reconceptualized key issues and concerns. His PhD study of the cloze procedure was not just a leading issue of the day but one that has proved a perennial interest (see Kobayashi, 2002; Dastjerdi & Talebinezhad, 2006). Alderson and Wall (1993) and Wall and Alderson (1993) were seminal contributions to investigations of washback. The former was awarded the ILTA best paper award in 1993; it challenged the prevailing assumptions that bad tests have a deleterious effect upon teaching and that good tests promote good teaching. It completely reframed washback as being far more complex than a simple cause–effect relationship, and this sparked a fascinating body of research including Wall (2006) and Cheng (2006). More recently, in a monograph on diagnostic testing, Alderson (2005) describes DIALANG, a pan-European project to design and deliver diagnostic tests in 14 European languages. This is the most thorough treatment currently available of the practice of diagnosing language development.

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Importantly, Alderson has actively engaged in and initiated debates about language-testing theory and practice. Alderson and Lukmani (1989) and Alderson (1990) critically examined the assumption that items testing higher-order reading skills (such as distinguishing between the main idea and supporting detail) were more difficult for the test taker. They found that expert judges are often unable to agree on what an item is testing. They also found that the skill being tested does not accurately predict the item difficulty. These papers generated much debate in the field, including a response by Lumley (1993) who counterclaimed that, with adequate training, judges could reach substantial agreement on the skills being tested by individual reading-test items. Perhaps more controversially Alderson worked with colleagues at Lancaster University to survey the practices of British examination boards engaged in EFL/ESL testing (Alderson & Buck, 1993). This survey named and shamed a number of well-known examination boards and was the starting point for the now classic text *Language Test Construction and Evaluation* (Alderson, Clapham, & Wall, 1995), which was aimed at helping teachers understand "what constitutes good testing practice . . . [in order] to make more informed choices to suit their purposes" (Alderson et al., 1995, p. 1).

It might even be argued that one of Alderson's key concerns during his career has been to hold professional language testers and educators accountable for their actions. His edited collection *The Politics of Language Education: Individuals and Institutions* (Alderson, 2009b) presents a number of vignettes showing the motivations and agendas of individuals and organizations which can certainly influence and often compromise innovation in language testing and education. Most recently, Alderson has investigated standards of language testing in the field of aviation English testing (Alderson, 2009a, 2010), quite rightly pointing out that every airline passenger has a stake in the quality of aviation English language testing.

In addition to maintaining a prolific publication profile, Alderson coedited (with Lyle Bachman) the influential *Cambridge Language Assessment Series*, the source of key reference books in the field. He also served as coeditor (once again with Lyle Bachman) of the journal *Language Testing* for four years (1997–2001) and as series editor for *Into Europe: Prepare for Modern European Examinations*, a collection of four volumes documenting the Hungarian Examination Reform Project (http://www.examsreform.hu/Pages/Projects.html).

Alderson has led a number of important language-test development projects such as the ELTS Revision Project (1986–9), which resulted in the International English Testing System (IELTS). He was also the scientific coordinator for DIALANG (http://www.lancs.ac.uk/researchenterprise/dialang/about). In addition, he has been a key advisor to test-reform projects in Europe, including the Hungarian Examination Reform Project, the Slovenian Year 9 Test Project, and the Austrian Matura Neu Project. Alderson has also managed significant language-testing research projects, including the development of proficiency tests in Sri Lanka, an investigation into the washback of the revised O-level examination on Sri Lankan classrooms (Wall & Alderson, 1993), and the Dutch CEFR Construct Project (Alderson, Figueras, Kuijper, Nold, & Tardieu, 2006). The latter explored the extent to which the language proficiency scales described in the Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR) (http://www.coe.int/t/dg4/linguistic/cadre_en.asp) could help test developers to construct listening and reading tests. The project team identified many areas in which the CEFR provides insufficient guidance because of inconsistencies, lack of definition of words, and gaps in the description of particular levels. Despite these difficulties, the team was able to develop a rigorous grid (http://www.lancs.ac.uk/fss/projects/grid/) that can help test developers analyze their listening- and reading-test materials in order to estimate the CEFR level being assessed. However, they cautioned against using the grids on their own, reminding us of the importance of pretesting: "to know whether a given item is indeed at the level of difficulty intended, piloting on suitable samples of test-takers is crucial" (Alderson et al., 2006, p. 19).

As is probably evident, Alderson's influence has been particularly felt in Europe, where he has been a leading voice on language-testing matters. He was a consultant to the Council of Europe for the pilot edition of the manual to relate language examinations to the CEFR. He was also the project leader for the ENLTA project (European Network for Language Testing and Assessment), a project funded by the European Commission from 2003 to 2005 with the express purpose of creating the European Association for Language Testing and Assessment (www.ealta.eu.org). The aim of EALTA is to be accessible to anyone engaged in language testing and assessment in Europe in order to encourage the sharing of expertise and information about theory and practice in the field. This aim appears to have been achieved already. Approximately 200 people attend the annual conference, and in May 2010 there were over 1,000 individual members and 52 institutional members.

Finally, as is often the case with exemplary scholars, Alderson has been particularly influential in his role as mentor and teacher. He has supervised 35 PhD students, four of whom have won the prestigious Jacqueline A. Ross TOEFL Dissertation Award (http://www.ets.org/toefl/grants/jacqueline_ross_dissertation_award). A number of other former students have risen to prominence in the field. He has guided a wide variety of student research projects, including Van Moere's (2007) investigation of the group oral, in particular the effect of different tasks upon performance and test scores, Papageorgiou's (2009) study of the role of judges in standard setting, and Hondo's (2009) second language acquisition study of timing in form-focused intervention. In doing so, Charles Alderson's contribution to the field of language testing specifically and applied linguistics more generally is amplified many fold.

SEE ALSO: Assessment of Reading; Washback in Language Assessment

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Allwright, Dick

LEO VAN LIER

Overview of Dick Allwright's Career

Dick Allwright (1938–) is one of the most influential applied linguists in the field. His main areas of interest bridge theoretical and practical concerns in the area of language education and he is the originator of an innovative and increasingly influential pedagogical movement called Exploratory Practice (EP). His work has always been closely connected to the actual language classroom and has probed the intricacies of interaction, relationships of control, and the interface between teaching and learning.

Dick started his career as a language teacher. He originally trained to teach primary French in the United Kingdom, but instead taught English to adults in Sweden for two years (1965–7) before going to study applied linguistics at the University of Edinburgh, where he obtained his MLitt in 1972. From 1969 to 1978 he taught applied linguistics at Essex University. At Essex, Dick pioneered language classroom research, a research interest that he continued after moving to Lancaster University in 1978. At Lancaster his interest in classroom research shifted toward research as a contribution to teacher and learner development, via the notion of EP, a form of practitioner research involving teachers and learners working together, during language lessons, to explore and develop their understandings of their classroom lives.

During his years at Essex and Lancaster universities Dick was a visiting professor in a number of different universities, such as UCLA, University of New Mexico, Teachers College at Columbia University, Michigan State University, Carleton University in Ottawa, and the University of Minnesota.

While at Lancaster University, Dick obtained his PhD in Applied Linguistics in 1992. In the late 1980s he established the Centre for Research in Language Education at Lancaster. More recently he established the Exploratory Practice Centre, also at Lancaster University, but with a steering group membership including researchers in Azerbaijan, Brazil, China, and England. In retirement he continues to help coordinate and in other ways to contribute to the work of the now Rio-based Exploratory Practice Centre, which includes at least one joint teacher and learner conference a year, and the maintenance of a dedicated Web site (http://www.letras.puc-rio.br/oldepcentre/epcentre.htm).

Retired since 2003, he is still actively pursuing his interest in teacher, and especially learner, development. In 2009, with Judith Hanks, he published his third book, *The Developing Language Learner: An Introduction to Exploratory Practice* (2009a). Since 2004 he has been editing the Practitioner Research section of the *Language Teaching Research Journal*.

Classroom Research

Dick Allwright's first major research interest was classroom research. An early paper (1975) looked at the teacher's treatment of learner errors and is still well worth reading for thoughtful and insightful comments on this perennial topic. Another seminal paper is his look at classroom motivation and to what extent this might be the teacher's responsibility

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(1977a). A very influential paper (1980) on the analysis of classroom interaction is often referred to by Dick's students as "TTT" or "Igor" (after a highly active yet not very successful learner in the particular language class that was analyzed). At the time, Dick advanced the (then revolutionary) idea that in classroom research one should not make a priori assumptions about role distinctions between teachers and learners, since these roles should emerge from the data. His approach, therefore, was a strongly emic one that contrasted with most studies of classroom discourse at that time. In 1988 Dick published his influential book *Observation in the Language Classroom* (1988a) and this was followed in 1991 by *Focus on the Language Classroom* (with Kathleen M. Bailey), which is still widely used as a text in graduate applied linguistics programs.

Exploratory Practice

Since the early 1980s Dick's work and thinking has gradually moved toward an integrative EP approach to classroom life, incorporating teachers, learners, and other stake holders in all the activities relating to learning, teaching and researching. While this approach is superficially similar to action research, it actually goes far deeper than the usual applications of action research and rejects a currently common interpretation of action research as an approach to problem solving, or as a tool for teacher training. By regarding action research as a form of activism in the exploration of enduring problems (or "puzzles") of language pedagogy, and not simply as a way of "fixing problems," EP comes close to the ideal of Kurt Lewin's (1951) original conceptualization of this form of research. However, Dick's approach is unique in that it seeks to involve the learners as equals in the research process and rejects treating teachers and learners as "subjects" who are not fully involved as agents in the reasons and practices of the research. In EP, all learning is a form of research, aimed at understanding the full complexity of language learning, in the classroom as well as in the wider context.

SEE ALSO: Classroom Research; Language Teacher Development

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Dick Allwright also publishes under the name R. L. Allwright, especially for his earlier works. However, the chronological order of his works has been preserved regardless of the initials used.

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Analysis of Dialogue

CHRISTOPHER JENKS

A dialogue is broadly defined as an exchange of spoken or written ideas, thoughts, and, opinions between two or more interactants. Dialogues are not monologues in that the former involve reciprocation of communication. For example, if one person speaks, then the other person is expected to respond in turn. Reciprocity within dialogues varies in temporality. A dialogue can take many months or even years to complete, as in the case when one book author responds to another. In other situations—namely face-to-face communication—dialogues can end in a matter of seconds. Although, in practice, dialogues occur in a number of different situations and take place over varying degrees of time, the analysis of dialogues within applied linguistics is typically concerned with concurrent spoken interaction. This entry will discuss dialogues from this narrower conceptualization.

Dialogues

Most interactants go about their daily lives with little thought of how their dialogues with others are organized, and what role communication plays in organizing the world around them. This is because communicative encounters are often so mundane that the complexities of managing a dialogue are taken for granted. The analysis of dialogues is fundamentally concerned with understanding these complexities. Central to the concern for understanding the complexities of dialogues is the empirical issue of how interactants make sense of each other and the context in which they find themselves communicating. In other words, how does human conduct and behavior define communicative contexts, and how do communicative contexts shape the conduct and behavior of people? These questions are theoretically motivated by the work of Bakhtin (1986), who argued that (the utterances within) dialogues comprise a complex interplay between socially and historically established rules of conduct and behavior (i.e., what has been said in the past) and normative expectations co-constructed in situ (i.e., what is being said in the present). An analysis of dialogues begins with this understanding of spoken interaction, and is therefore different from other methodological approaches that adopt a narrower understanding of dialogues (cf. conversation analysis). Accordingly, dialogues are investigated by looking at three interdependent aspects of communication: organization, intersubjectivity, and social context. Organization encompasses the mechanics of spoken interaction (e.g., turn taking); intersubjectivity is related to how interactants jointly construct meaning; and social context deals with the sociocultural issues that influence, and are influenced by, dialogues. Each aspect of a dialogue will be discussed in this order.

Organization

Dialogues require all parties involved in communication to account for what has been said and what will be said. For instance, contributing to a dialogue requires taking into consideration previously said words or utterances, while at the same time speaking according to who is listening. When participants of dialogues account for what has been said and what will be said, they do so—for the most part—by taking turns. Researchers who

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use conversation analysis (CA) to examine dialogues have done the most in terms of investigating the organization of turn taking (e.g., Sacks, Schegloff, & Jefferson, 1974). CA researchers have demonstrated that turn taking is organized according to a basic, but integral and omnipresent interactional feature known as an adjacency pair (Schegloff, 2007). An adjacency pair consists of two parts: a first pair part and a second pair part. Each part represents a turn, spoken by a different speaker. A spoken turn minimally consists of a sound that performs an action (e.g., "oh" and "ah ha"), and maximally comprises many utterances. A classic adjacency pair is a question–answer exchange.

(1) Speaker A: How old are you? (*Question*)
Speaker B: I'm twenty-nine (*Answer*)

The question in the above dialogue represents the first pair part of the adjacency pair, while the answer corresponds to the second pair part. It should be noted, however, that the name "adjacency pairs" is slightly misleading, as first and second pair parts need not be adjacently placed.

(2) Speaker A: How old are you? (*Question 1*)
Speaker B: How old are YOU? (*Question 2*)
Speaker A: Thirty-two (*Answer 2*)
Speaker B: Twenty-nine (*Answer 1*)

Examples 1 and 2 demonstrate that adjacency pairs play an important structural role in dialogues by linking turns together. By taking a turn at talk, a speaker creates a set of conditions for the next turn, but at the same time reveals how the previous turn has been interpreted. In other words, any given turn in a dialogue is conditionally relevant to preceding and subsequent turns. Conditional relevance is a defining feature of dialogues, as put forward in Bakhtin's (1986) conceptualization of social interaction.

Turn taking is also organized according to how one speaker makes the transition to the next. Turn transitions are accomplished in two ways: current speaker selects next speaker or next speaker nominates self (Sacks et al., 1974). Current speaker can select next speaker by, for example, asking a question (see examples 1 and 2), while self-nomination requires the next speaker to interject with a word or utterance. Most research done on turn transitions have used the concept "transition relevant place" (TRP) to understand how dialogues are organized (Sacks et al., 1974). One significant finding in the literature regarding turn transitions is that it is not uncommon for TRPs to occur in overlap (Schegloff, 2000). In other words, overlapping talk is a relatively common phenomenon in dialogues. This is because next speakers speak when provided with sufficient information in the prior turn to take part in the dialogue, and this need not occur at the end of a syntactically complete utterance.

(3) Speaker A: Would you [like to join me?
Speaker B: [Yes, I would love to.

In the above exchange, speaker B has projected the content of the question, and therefore responds to speaker A's invitation in mid-utterance—as indicted with the open brackets. That is to say, the TRP occurs in mid-utterance of speaker A's turn because speaker B has enough information to provide an answer. Examining the sequential location of TRPs can assist in understanding other dialogic issues, for example, whether overlapping talk is considered an interruption (Schegloff, 2000), interlocutors' social relationships (Erickson, 2004), and the institutional nature of talk (Drew & Heritage, 1992).

When taking turns in dialogues with two interactants, the general rule of thumb is that one person speaks at a time (Sacks et al., 1974). For example, when overlapping talk occurs in dyadic dialogues, at least one interactant will stop speaking to let the other continue (see example 3). However, in multiparty dialogues, it is not uncommon for two or more interactants to speak at the same, and for sustained periods of, time (Edelsky, 1981). When analyzing communication with three or more interactants, it is useful to think of dialogues as being organized by conversational floors. A conversational floor (or simply floor) is a larger organizational feature than a turn. Specifically, a floor comprises many turns; these turns contribute to the ongoing development of talk. Therefore, a floor can be characterized as having a thematic or functional direction (Jenks, 2007). For example, a floor can be related to the talk of negotiating a business deal or the teaching of a lesson. Examining dialogues at the floor level has revealed that a turn can be collaboratively constructed, and despite the work of conversation analysts, the direction of a floor need not develop in a linear, one-speaker-per-turn fashion (Hayashi, 1991). In fact, in multiparty dialogues—especially in situations where four or more interactants are present—it is not uncommon for one conversational floor to morph into two or more. This transformational phenomenon is often referred to as a conversational schism (Egbert, 1997). In conversational schisms, many interactants take turns at the same time whilst contributing to different floors, a situation that is even more common in text-based computer-mediated dialogues (Herring, 1999).

Intersubjectivity

In addition to uncovering the organization of spoken interaction, researchers have long been interested in examining how intersubjectivity is achieved in dialogues. That is, how do interactants make sense of each other's turns and floor contributions? Broadly speaking, there are two domains of inquiry regarding the process in which interactants co-construct meaning: resolving troubles and maintaining understanding.

The first domain of inquiry—that is, examining how interactants resolve troubles in dialogues—requires researchers to first identify where the trouble source is. A trouble is an umbrella term that covers all problems, mistakes, slips of the tongue, tips of the tongue, and mishearings that may occur in dialogues. For example, in example 4, speaker B requests for clarification, and as a result, treats speaker A's previous turn as the source of trouble.

(4) Speaker A: I goed to the zoo.
Speaker B: Huh?
Speaker A: I went to the zoo.

Knowing where the trouble source is allows dialogue researchers to investigate many interactional issues. First, researchers can identify the sequential organization in which intersubjectivity is achieved. For example, in example 4, it takes two turns for speaker A to repair the trouble source: speaker B requests for clarification and speaker A repairs the trouble source. Second, it is also possible to identify that a speaker other than the one responsible for the trouble source initiates a request for clarification, and that the speaker of the trouble source is the interactant who corrects the trouble (Schegloff, Jefferson, & Sacks, 1977). Third, the work of linguistic anthropologists and discursive psychologists has shown that the sequential organization of dealing with troubles in communication provides an analytic window into social issues (Edwards & Potter, 1992). That is, how interactants deal with troubles reveals important information regarding the social roles and relationships of the interactants: whether, for example, an institutional role requires

an interactant to overtly correct mistakes in communication, as is the case in many classrooms (see Seedhouse, 2004). For instance, in example 4, speaker B could be a teacher responding to a student's grammatical mistake. Fourth, researchers can examine how interactants account for troubles in communication. For example, speaker B requests clarification, but does not specifically identify where the trouble source is within speaker A's turn. As a result, an analyst can see that while speaker B does not specifically identify the trouble within the previous turn, speaker A interprets the request for clarification as a signal that something is problematic in the conjugated verb.

The second domain of inquiry—that is, examining how interactants achieve intersubjectivity when there are no apparent problems in communication—entails taking the analytic focus away from investigating trouble sources. One way of doing this is to examine how utterances are designed to enhance comprehensibility. In dialogues, both the speaker and listener can design their talk and interaction in order to enhance comprehensibility. In most communicative situations, speakers are in a perpetual state of designing their talk according to the intended audience (Goodwin, 1979). This occurs at the most fundamental level of communication when a speaker uses the language of the recipient. At a more complex, microinteractional level, speakers design their talk in order to maintain meaningful communication. Speakers can speed up or slow down their speech (Miller, Grosjean, & Lomanto, 1984), carefully select or avoid words with special meaning (Stokoe & Edwards, 2007), strategically place stress and intonation (Couper-Kuhlen & Selting, 1996), and raise or lower voice amplitude (Selting, 1994)—to name a few.

Listeners can also design their utterances in order to enhance comprehensibility in dialogues. Verbally, listeners do this by providing feedback while another interactant is speaking. These feedback cues usually come in the form of minimal verbalizations. For example, an "okay" or "mmhm" may signal to the speaker that an utterance has been understood, and at the same time serve the function of active listening (Yngve, 1970). In addition to signaling understanding, these minimal verbalizations also serve the interactional function of letting an interactant know whether or not he or she should continue speaking (Young & Lee, 2004). Therefore, listeners enhance comprehensibility in dialogues at the content level—by displaying understanding (or nonunderstanding)—and at the interactional level—by taking part in the management of turns and floor contributions.

Social Context

The way interactants organize their turns at talk and maintain understanding in dialogues reflects the larger social context in which communication takes place. Social context is important to the analysis of dialogues because communication is fundamentally about people, and the real-life situations people are faced with (Malinowski, 1923). Aspects of social context include anything from the physical settings of dialogue—for example, a hospital or dining room—to the institutional roles and social status of the interactants—for instance, the relationship between doctor and patient or mother and daughter. Aspects of social context shape dialogues in many ways. The physical setting of a dialogue may compel interactants to communicate in a particular manner. For example, being in the confines of a library may oblige interactants to talk quietly, while speaking with increased voice amplitude is more socially acceptable at cocktail parties. Moreover, institutional roles sometimes dictate the flow of information in dialogues. For instance, a judge determines what is said and when it is said during courtroom deliberations. In a similar vein, a moderator during a televised debate allocates turns and organizes the dialogue according to a list of predetermined topics. Many more examples can be given, but the upshot is that everything said and done in dialogues is analyzable in terms of its sociocultural significance. This is true at the most micro levels of dialogue. So, for example, an interactant can

refer to herself or himself as "we"—instead of "I"—to bring authority to what is being said, as in "We do not accept your opinion," as opposed to "I do not accept your opinion." In a different social context, a "we" can be used to displace blame, as in "We have made the wrong decision," as opposed to "I have made the wrong decision." Accordingly, dialogues—including the meanings and functions of language—are intimately connected to social context. The idea that language is both a product of, and catalyst for, social context can be extended to psychological states. The work of discursive psychologists, for example, has shown that a psychological or cognitive state (e.g., anger or recalling an experience) is constituted in and through the moment-by-moment exigencies of dialogic exchange, and reflects the normative actions and activities of a given social context (see Edwards & Potter, 1992).

The methodologies used to understand the relationship between dialogue and social context can be categorized into two domains of inquiry: a priori and data-driven approaches. In a priori approaches, the researcher identifies what aspects of social context are important to the analysis of dialogue. For example, if an interactant comes from a particular geographical location, say Korea, then the researcher will use this identity to inform the analysis of dialogue. That is to say, the dialogue is investigated with the (a priori) understanding that the identity of being Korean is omnirelevant for the interactant(s). Methodologies that are associated with a priori approaches include critical discourse analysis and social psychology. In data-driven approaches, being Korean is relevant if the researcher can show—in and through the talk and interaction—that the interactant orients to this identity during the ongoing management of dialogue. In other words, Korean is only one of many social categories that an interactant belongs to (e.g., male/female, teacher/student, husband/wife, Asian/non-Asian). Accordingly, data-driven approaches require researchers to show how any given social category is relevant to the local, situated practices of participating in a dialogue. Methodologies that are associated with data-driven approaches include, but are not limited to, discursive psychology and conversation analysis.

Conclusion

The analysis of dialogue comprises three intersecting themes: organization, intersubjectivity, and social context. An examination of one theme often requires an understanding of the other two. This is because despite possessing a complex, internal structure for which interaction and meaning are managed, dialogues are situated in the real-life experiences of people. The analysis of dialogue aims to understand this complex interplay between interactional structure and social reality. While investigating the organization of talk and interaction is a discipline in its own right, no examination of spoken interaction is fully complete without an understanding of how people fit into the, as it were, dialogic equation.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Ethnomethodology in the Analysis of Discourse and Interaction; Frame Analysis; Pragmatics in the Analysis of Discourse and Interaction

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Analysis of Discourse and Interaction: Overview

RODNEY H. JONES

When we speak of the study of discourse and interaction, we are mostly concerned with the analysis of synchronous conversation as opposed to written texts, although we might also consider text-based computer-mediated communication. This is not to say that writing is not interactive: people write letters to each other and, more recently, engage in asynchronous written interaction through blogs and social networking sites. The focus of the analysis of discourse and interaction, however, has traditionally been on "real-time" interaction in which participants are temporally copresent (though they may be spatially distant) and jointly engaged in some kind of social action. Examples include face-to-face interactions of various kinds (from religious rituals to casual conversations), telephone conversations, video conferences, chat and instant messaging sessions, and the interaction between avatars in online games or in virtual worlds. Discourse analysts are chiefly concerned with how parties in interaction work together to construct their social identities, their social relationships and their social realities moment by moment through language.

Historical Overview and Major Influences

Apart from linguistics, the study of discourse and interaction has been influenced by work in numerous fields including philosophy, anthropology, and sociology. In philosophy it traces its intellectual roots to the work of Ludwig Wittgenstein who helped to move the philosophical study of language away from earlier rule-based approaches towards a focus on how people actually employ words and sentences in concrete situations. In *Philosophical Investigations* (Wittgenstein, 1958) he argued that, rather than merely being a vehicle for naming things and conveying information, language is an *activity* or "form of life" in its own right. Wittgenstein's emphasis on the role of language in the enactment of social life was a major inspiration for British and American "philosophers of ordinary language" like John Austin (1962) and John Searle (1969) whose speech act theory, along with the work of Paul Grice (1975) on implicature, became the foundation for the development of the field of pragmatics (see PRAGMATICS IN THE ANALYSIS OF DISCOURSE AND INTERACTION).

In anthropology the study of discourse and interaction has been influenced by the work of Bronislaw Malinowski, who was one of the first to acknowledge the importance of social and cultural context in interpreting linguistic behavior, as well as by the symbolic interactionalism of George Herbert Mead, who argued that meaning essentially arises out of social interaction among members of a particular culture. The most profound influence, however, has come from Dell HYMES (1974), who, in the 1960s, at the height of Chomsky's influence on American linguistics, argued that the proper object of the social scientific investigation of language should not be linguistic forms but rather how people actually use language to interact in culturally specific "speech events." His notion of *communicative competence*, the ability not just to speak a language but also to *interact* in that language in particular situations provides an alternative to Chomsky's more abstract idea of linguistic

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competence. Hymes's most significant contribution was an outline for collecting, categorizing, and analyzing the components of social interactions he referred to as the ethnography of communication (see ETHNOGRAPHY OF COMMUNICATION AS A RESEARCH PERSPECTIVE), an outline which is still widely used by anthropologists, communications scholars, and discourse analysts.

The contribution to the study of discourse and interaction from sociology comes from two fronts. One is ethnomethodology, an approach to the study of social life developed by the American sociologist Harold Garfinkel (1967), which concerns itself with the ways people generate order in their social lives based on shared expectations about the procedures for accomplishing everyday activities (see ETHNOMETHODOLOGY IN THE ANALYSIS OF DISCOURSE AND INTERACTION). This preoccupation with the procedural nature of everyday life became the basis for the development of *conversation analysis* (Sacks, Schegloff, & Jefferson, 1974), an approach to discourse and interaction which focuses on how participants create order through the sequential organization of talk. This approach also resonates strongly with Wittgenstein's interest in mapping the orderly linguistic practices of actual language users.

The second influence on the study of discourse and interaction from sociology comes from the work of Erving Goffman, whose dramaturgical approach to social life highlights the nature of talk as a means of self-presentation. For Goffman, social interaction is like a play in which participants simultaneously cooperate in helping one another maintain convincing performances and compete with one another in advancing their particular "lines" or versions of "what's going on." The key ideas Goffman contributed to the study of social interaction are the concepts of "face" (Goffman, 1959)—the negotiated public image people grant to each other in interaction—and "frames" (Goffman, 1974)—the way people strategically organize, communicate or conceal what they are doing when they interact (see FRAME ANALYSIS). These two concepts form the basis for much of the analytical work in INTERACTIONAL SOCIOLINGUISTICS AS A RESEARCH PERSPECTIVE. Goffman also called into question traditional dyadic notions of social interaction, pointing out that people participate in many different kinds of interactions from dyadic conversations to large-scale platform events and take up many different kinds of interactional roles from ratified participants to bystanders (Goffman, 1981) (see PARTICIPATION FRAMEWORKS AND PRODUCTION FORMATS IN THE ANALYSIS OF DISCOURSE AND INTERACTION). Analysts of interaction, he argued, must seek to understand how participants align themselves to their utterances and to the people with whom they are interacting, alignments that are dynamically negotiated in the course of ongoing encounters. In this way, Goffman not only defied the traditional notions of language advanced by structural linguistics, but also challenged the traditional definitions of social roles used in structural sociology. More recently, social psychologist Rom Harré and his colleagues (Harré & Van Langenhove, 1999) have built upon and revised many of Goffman's ideas with their theory of POSITIONING IN THE ANALYSIS OF DISCOURSE AND INTERACTION, an analytical approach which goes even further than Goffman in considering the contingent and dynamic nature of social roles in interaction.

Major Concerns

Although analysts of discourse and interaction approach their object of inquiry from a variety of different traditions, there are a number of concerns common to almost all of them. The first is the fundamentally dialogic nature of all interaction (see ANALYSIS OF DIALOGUE). Interaction is, by definition, a cooperative endeavor, and the way participants conduct themselves and what they are able to accomplish depends upon the conduct of other participants in the interaction. This dialogicality, however, goes beyond the boundaries of conversations; in a sense, conversations also occur in response to previous

conversations and in dialogue with larger cultural conventions, traditions, and ideological formations.

Another central issue in the analysis of discourse in interaction is how people express meanings and accomplish social actions through language. Even a cursory analysis of everyday interaction reveals that the answer to this question is neither easy nor straightforward. Often people do not say what they mean or mean what they say. A large proportion of the meanings and intentions of participants in social encounters are communicated indirectly (through implicature) and subject to multiple interpretations by hearers (through inference). The problem of INFERENCE AND IMPLICATURE is approached differently by different analytical traditions. Pragmatics and ethnography consider how interactants refer to conditions surrounding utterances, including the identities and intentions of speakers, in order to make sense of them, whereas traditions more focused on the microanalysis of talk focus on how people make use of the structural aspects of conversation itself to produce and interpret meanings.

One of the most important debates in the analysis of discourse and interaction concerns the role of context (see CONTEXT IN THE ANALYSIS OF DISCOURSE AND INTERACTION). The debate is not so much whether or not context is important in the analysis of interaction, but rather what should be counted as context. At one extreme, conversation analysts limit their definition of context only to those aspects of the situation made immediately relevant in the talk itself, and at the other extreme, those employing the ethnography of communication and critical discourse analysts tend to take a wider view of context to include broader sets of cultural beliefs and ideological formations within societies.

Another important preoccupation for analysts of discourse and interaction has to do with the way linguistic interaction functions as a site for the production and reproduction of social, cultural, institutional, and organizational identities (see ANALYSIS OF IDENTITY IN INTERACTION). This includes both how particular kinds of social identities are claimed, imputed, performed, and negotiated though interaction (see, for example, ANALYSIS OF GENDER IN INTERACTION and POLITENESS AND FACE RESEARCH), and the role of different speech genres in helping interactants accomplish such performances (see, for example, ANALYSIS OF NARRATIVE IN INTERACTION).

Although most studies of language in interaction take a social rather than a psychological perspective, preferring to focus on discourse rather than make conjectures about mental processes, there is a growing interest in linguistic interaction by cognitive linguists, and a growing interest in cognitive processes by scholars in such fields as pragmatics and conversation analysis (see COGNITIVE MODELS OF INTERACTION).

Many of the interactions discourse analysts study are not face-to-face conversations of the traditional sort, but rather interactions that are mediated through some form of technology such as telephones, computers, or, more recently, mobile digital devices. In fact, the earliest studies in conversation analysis used as their data telephone conversations. The ANALYSIS OF MEDIATED INTERACTION demands that the analyst take into account the ways the medium of communication defines and constrains many of the aspects of interaction discussed above, including the resources available for making meaning and negotiating identity, and the role and definition of context in the interaction.

Finally, there is an increasing awareness among discourse analysts that verbal interaction is never *just* verbal, that interactants deploy a variety of different modes to communicate meanings and manage interactions including rhythm and timing (see RHYTHM AND TIMING IN INTERACTION), silence (see ANALYSIS OF SILENCE IN INTERACTION), and a whole host of visual modes like gesture, posture, gaze, dress, and architectural layout. This awareness has had a profound effect on the way many traditional perspectives on discourse such as conversation analysis and interactional sociolinguistics conduct their analysis, and has also given rise to new perspectives on discourse such as MULTIMODAL INTERACTION ANALYSIS.

Research Methods

Analysts of verbal interaction have used a variety of types of data ranging from naturally occurring conversations to talk elicited in controlled situations. Naturally occurring data, however, is generally seen as the most reliable form of data, and with advances in audio recording over the past fifty years, it has become easier to collect and accurately transcribe.

The reliance on recordings of naturally occurring data, however, has brought with it its own set of dilemmas and debates. One has to do with how naturally occurring data is to be defined, particularly given the fact that as soon as one introduces a recording apparatus into an interaction, it ceases to be "natural." The second has to do with how recorded data is best represented in written form. A whole host of different methods of transcribing interactions have been developed over the years, each reflecting the particular theoretical priorities and limitations of the analyst who uses it. Digital video and computer technology, especially tools for examining large corpora of data, have introduced even more sophisticated ways of capturing, representing, and analyzing interactions.

The most important concerns arising from such technological advances, however, are ethical ones. ETHICAL DEBATES IN RESEARCH ON LANGUAGE AND INTERACTION have focused not just on issues of privacy and informed consent around the collection of data and the reporting of findings, but also on more fundamental questions about the purpose of social scientific research and the responsibilities researchers have towards the people they study.

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Analysis of Gender in Interaction

JENNIFER M. WEI

What Is Gender in Human Interaction?

Our conventional idea of gender can be seen from three major perspectives: biological, social, and cultural. That is, we are born with a set of genes that determine our biological sex—either male or female in most of the clear-cut cases. A male brain is larger than that of a female but that does not make much difference to its overall capacity. Men are also said to be more visual and spatially oriented while women are more audio and emotionally oriented. According to a recent study based on a large corpus of English, the researchers Newman, Groom, Handelman, and Peenebaker (2008, p. 211) found that "Women used more words related to psychological and social processes. Men referred more to object properties and impersonal topics." It can be said also that society sets gendered expectations or gendered roles for boys and girls, men and women, and husbands and wives, roles that we internalize and with which we socialize as we go through schooling, working, and living in a certain society. We learn that, in most societies, women are thought to be cooperative and family-oriented while men seem more aggressive, competitive, and career-oriented. Gender also plays a role culturally as different cultures and the weight of different histories can influence how certain gender traits, especially notions of masculinity and femininity, will interact in our lives.

Seeing gender or gendered behaviors and expectations as embedded in contexts, histories, and cultures helps us remain aware of the dynamics and indeterminacy of this topic. The conventional idea of seeing gender as a fixed and dichotomized category prescribed by a set of patriarchal values might still have strong meaning for some people, allowing their manipulation to advance a political agenda in some contested contexts, but it has been challenged by scholars in fields of applied linguistics and discourse analysis. That is, as individuals we do retain some agency in enacting and negotiating gendered roles and expectations in our mundane interactions with others. Not all of the interactions have a gendered dimension, of course; nor do our actions and intentions necessarily bring us the expected results. Linguists and scholars involved in discourse analyses are interested in how language can interact with these gendered performances, though other variables—such as the clothing we wear and nonverbal behavior—can also facilitate or debase such interaction. Such gendered "acts of identity" are more or less like other social identities subject to a variety of variables such as age, ethnicity, ideology, social status, and so forth.

A particular society might change its ideals about gendered roles, such as being a good mother and father or a filial son and daughter, as it evolves from a traditional society to a modern one. In fact we have seen this in most of the more developed countries, where birth rates have decreased as people no longer see traditional familial rituals such as marriage and giving birth as necessary rites of passage. Nor do individuals in these countries necessarily turn to traditional family and family members as their main or only sources of emotional and financial backup and support in times of trouble. With old familial values being replaced by more global and modern enthusiasms such as consumerism and individualism, customs associated with gendered expectations are also changing.

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Different cultures also modify their ideals of a gendered trait—masculinity and femininity to start with—through time. These ideals are not always in harmony with each other, nor do they stay in fixed contrast to each other. One example of how a culture can change its ideas or ideals for developing men as men and women as women comes from Chinese culture as observed by Brownell and Wasserstrom (2002, p. 34). According to the authors,

> Scholarship on Chinese gender seems to indicate that, before the period of extended contact with the West, (1) gender concepts were anchored in beliefs about family structure and social roles more so than in beliefs about biological sex (and even beliefs that we might call "biological" were based on classical Chinese medicine, not Western science); (2) "men" and "women" were plural categories rather than unified categories opposed to each other; (3) "manhood" and "womanhood" were not directly linked to heterosexuality, and reproducing the lineage was a more important aspect of sexuality than individual pleasure.

Did contact with the West bring changes? Are any of the gendered traits more susceptible to change while others are more resistant? Did other forces such as modernization or nationalism reinforce or relativize Chinese ways of thinking and enacting gendered relations? Again, the authors conclude that

> Chinese gender maintained its own distinctive character—in particular, sexuality did not occupy the central role that it does in Western gender. Sexuality seems to have regained importance in the 1990s, but concepts of femininity and masculinity still seem to be primarily anchored in the roles of mother/father and wife/husband. The main change since the Qing is that femininity and masculinity are less anchored in the roles of daughter/son. (2002, p. 34)

In this entry, we will examine how language can play a role in various gendered interactions by referring to lived experiences from various cultures and societies (as opposed to representations or artifacts). We take our data and analyses mainly from the field of variational sociolinguistics, discourse analyses, and cultural studies. All of these disciplines stress the importance of interdisciplinary studies on how language can be used and analyzed to understand gendered interactions in a specific context. This does not mean that a specific linguistic item—a phonological variable, a lexical choice, or syntactic feature—has determining effects for how gender can be enacted in a specific interaction. Instead, precisely because gender is embedded in a complex web of communicative interaction, a specific use of language rarely yields clear-cut pragmatic or strategic effects. Polysemy and indeterminacy must be dealt with, and they thrive not only in how an individual can or will interpret an interaction but also in how they tie in with other social variables such as power or ethnicity, which are seen differently in various cultures.

The Polysemy of Gendered Language

Much scholarly time has been spent arguing that discussions of gender should be located within particular communities of practice (Eckert & McConnell, 1992). That is, by studying gender in interaction and studying the local meanings attached to interactions, within and among communities, a more flexible understanding of gender can be developed—an understanding that allows for variability of meaning and dimensions. Researchers on language do not always agree on whether gender is the only determining factor for how and why men and women speak differently; some argue that power and domination might be better descriptors for difference. That is, women adopt a more subversive way of

speaking to reflect their subordinate position (mostly true socioeconomically) in a society. Other researchers suggest that the same gendered language can be adopted by either sex for strategic and political purposes. For instance, Lakoff (1990) observes that numerous traits have been said to characterize women's forms of speech in American culture, but not all women use them, and probably no one uses them all the time. (They are, for instance, more likely to show up in informal social settings rather than in business situations.) Men sometimes use "women's forms of speech" either with different meanings or for individual special reasons. In the following section, we will list observations by Lakoff as background to compare with other instances where a similar language use adopted in a different social context yields different meanings. The section will end with examples of men using similar gendered language for strategic and commercial purposes.

First, Lakoff provides the following characteristics (1990, p. 204):

1. Women often seem to hit phonetic points less precisely than men: lisped *s's*, obscured vowels.
2. Women's intonational contours display more variety than men's.
3. Women use diminutives and euphemisms more than men ("You nickname God's creatures," says Hamlet to Ophelia).
4. More than men, women make use of expressive forms (adjectives, not nouns or verbs, and in that category those expressing emotional rather than intellectual evaluation): *lovely*, *divine*.
5. Women use forms that convey impreciseness: *so*, *such*.
6. Women use hedges of all kinds more than men.
7. Women use intonation patterns that resemble questions, indicating uncertainty or need for approval.
8. Women's voices are breathier than men's.
9. Women are more indirect and polite than men.
10. Women will not commit themselves to an opinion.
11. In conversation, women are more likely to be interrupted, less likely to introduce successful topics.
12. Women's communicative style tends to be collaborative rather than competitive.
13. More of women's communication is expressed nonverbally (by gesture and intonation) than men's.
14. Women are more careful to be "correct" when they speak, using better grammar and fewer colloquialisms than men.

The interactional aspect of "gendered" talk can be found in the ideas of Eckert and McConnell (2003) about positioning, and in those of Tannen (1990) on report versus rapport (i.e., women tend to use conversation to establish intimacy and relationships, while men use it to provide information and to seek independence and status). In addition to social practices, positioning, and styles, researchers such as Gal (1991) have suggested that we should not be accounting for these linguistic differences from a one-dimensional gender factor. She uses silence as an example to encompass the complexity of how the meanings of "powerless" can be changed when silence is used in a different context at different times. For example,

> The silence of women in public life in the West is generally deplored by feminists. It is taken to be a result and symbol of passivity and powerlessness; those who are denied speech, it is said, cannot influence the course of their lives or of history. In a telling contrast, however, we also have ethnographic reports of the paradoxical power of silence, especially in certain institutional settings. In episodes as varied as religious confession,

> exercises in modern psychotherapy, bureaucratic interviews, oral exams, and police interrogations, the relations of coercion are reversed: where self-exposure is required, it is the silent listener who judges and thereby exerts power over the one who speaks (Foucault 1979). Silence in American households is often a weapon of masculine power (Sattel 1983). But silence can also be a strategic defense against the powerful, as when Western Apache men use it to baffle, disconcert, and exclude white outsiders (Basso 1979). And this does not exhaust the meanings of silence. For the English Quakers of the seventeenth century, both women and men, the refusal to speak when others expected them to marked an ideological commitment (Bauman 1983). It was the opposite of passivity, indeed a form of political protest. (Gal, 1991, p. 175)

The interactional aspect of "gendered" talk as exemplified by the above example helps us see that the use of "silence" is not a direct index of femininity, but rather represents a kind of stance (subject position) that is taken up by (or imposed on) a variety of less powerful people in society, including, but not limited to, women (see Jaffe, 2009, p. 13). The stress on agency, context, and ideology is very important in understanding how gender is embedded in language variation and social practice. Another intergender and intragender language use is provided by Bucholtz (2009), who analyzes a single slang term popular among many Mexicans and Mexican Americans—*guey* ([gwej], often lenited to [wej])—and argues that, though the term frequently translates as "dude," the semantic multivalence of *guey* allows it to operate (often simultaneously) as a marker both of interactional alignment and of a particular gendered style among Mexican American youth (p. 146). That is, her subjects do not use *guey* because they are male, nor do they use *guey* in order to directly construct a masculine identity. Rather, they are using this term along with other available semiotic resources, such as prosody, gesture, posture, clothing, topics of discourse, and telephones and cameras to establish both status and solidarity in relation to their social group and to index a cool, nonchalant stance all the while (see Bucholtz, 2009, p. 164).

Other scholars, such as Hall and Bucholtz (1995, pp. 183–4), link gendered language to different factors such as the speaker's agency, age, educational background, and ethnicity, and—to the perennial fascination of college students—have even interpreted meanings of gendered language through the prism of the phone sex industry in San Francisco. Hall argues that:

> This high-tech mode of linguistic exchange complicates traditional notions of power in language, because the women working within the industry consciously produce a language stereotypically associated with women's powerlessness in order to gain economic power and social flexibility.

She further argues that:

> The very existence of the term *sweet talk*—an activity that, in the American heterosexual mainstream, has become associated more with the speech patterns of women than those of men—underscores the ideological connection between women's language and sexual language.

In response to economic incentives and requests to reinforce stereotypical gendered images, phone sex workers (both men and women) are exploiting gendered language for their own economic survival. They come from all walks of life, different ethnicities and age groups, and are trying to make a living (and make fun) of the gendered language. They do not naively or passively speak in a language reflecting their subordinate status. Instead, they actively seek out ways to profit from their clientele's lack of imagination by exploiting gendered language.

Indirectness is another common example which should alert us to indeterminacy when we see language used in such a way as to enact gender relations in different contexts. For example, Tannen (1994) finds that both Greek men and Greek women are likely to interpret a question as an indirect request whereas American women are more likely than American men to make such an interpretation. Keenan (1974) finds that, in a Malagasy-speaking village on the island of Madagascar, men use more indirect language while women are more direct, but this does not mean that women have the dominant role in that society. These examples inform us again of the importance of seeing gender in interaction with a specific community practice. Indirectness, then, according to Tannen (1994, p. 34), can be used either by the powerful or by the powerless; the interpretation of a given utterance, and the likely response to it, depends on the setting, on an individual's status, and on the relationship of individuals to each other, as well as on the linguistic conventions that are ritualized in the cultural context.

We will end this section with an example of men adopting women's language for strategic purposes. As Holmes (1992, p. 317) observes, researchers recorded the speech of witnesses in a law court and found that male witnesses used more women's language features than women witnesses with more expertise in court or a higher occupational status. The following example illustrates this.

> Lawyer: And you saw, you observed what?
> Witness C: Well, after I heard—I can't really, I can't definitely state whether the brakes or the lights came first, but I rotated my head slightly to the right, and looked directly behind Mr. Z, and I saw reflections of lights, and uh, very very instantaneously after that I heard a very, very loud explosion—from my standpoint of view it would have been an implosion because everything was forced outward like this, like a grenade thrown into the room. And uh, it was, it was terrifically loud.

In this exchange, the male witness used "women's" language—hedges and boosters—in his account of what happened. Sex (i.e., being a man or a woman) was not a determining factor for this kind of gendered language use. Instead, it was used to enact the "powerless" role of the witness (who is not a woman in this case) in his interaction with the lawyer or in his recounting of what had happened, and may even have other pragmatic effects, such as avoiding accountability or responsibilities and thus expecting leniency or acquittal.

To conclude, gender is a complex social concept embedded in our biological wiring and socialization, as well as in mudane and professional interactions with others. Language can either reflect and reinforce a conventional gendered relationship or subvert stereotypical gendered images, as we see in the sweet talk performed by both men and women in high-tech phone sex industries in San Francisco, or in men's adoption of women's language for courtroom interactions for strategic purposes.

SEE ALSO: Analysis of Identity in Interaction; Conversation Analysis and Gender and Sexuality; Culture

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Analysis of Identity in Interaction

CYNTHIA GORDON

Introduction

The relationship between language and identity has long been a topic of interest in linguistics. In recent years, research on identity "has become increasingly central" (Bucholtz & Hall, 2005, p. 585) to studies of interaction. Yet "identity" remains an ambiguous term. Identity is multifaceted; it can be described from biological, psychological, cultural, and social perspectives (Carbaugh, 1996). The term "refers to core aspects of selfhood" (Tracy, 2002, p. 17) that are presumed to be stable and fixed; identity is thus something a person has or possesses. Identity is also a fluid ongoing accomplishment (e.g., Tracy, 2002), performance (e.g., Carbaugh, 1996), or achievement and tool to be used in interaction (e.g., Antaki & Widdicombe, 1998). Thus Tracy (2002) observes that the language–identity link is studied from two primary perspectives: the *cultural perspective*, which examines how an individual's preexisting identity influences how he or she uses language in interaction, and the *rhetorical perspective*, which focuses on how an individual uses language to construct identities in interaction. These perspectives facilitate investigations of a range of identities: those that are related to broad social categories (like "woman"), to relationships (like "mother"), to specific interactions (like "leader of workplace meeting"), and to the personality traits and opinions that people manifest at particular conversational moments (see Tracy, 2002, chap. 1).

Studies of identity in interaction are methodologically and theoretically diverse. This entry gives an overview of two approaches that have contributed substantially to understanding the complex relationship between who we are and how we communicate: sociolinguistic variation analysis and discourse analysis. Sociolinguistic variation uses primarily quantitative methods to explore language diversity and its relationship to social identity. Discourse analysis is a collection of approaches, including interactional sociolinguistics, conversation analysis, and discursive psychology, to qualitatively explore language in context, including how language use is related to participants' identities. Studies within each of these paradigms that draw on the cultural perspective or the rhetorical perspective (or both) give insights into identity as a somewhat stable, somewhat fluid entity that shapes—but is also shaped by—language use.

The Cultural Perspective: Identity Shapes Discourse

There is much research that investigates how a person's identity—what a person's basic category memberships are, for example—influences how she or he speaks, leading to important insights into language diversity and interactional patterns.

The Cultural Perspective in Variationist Sociolinguistics

Quantitative variationist sociolinguistics investigates linguistic diversity as patterned with various aspects of identity; it thus demonstrates how social category membership affects use of language. As Schilling-Estes (2004, pp. 163–4) explains, the approach traditionally

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focuses on "establishing correlations between aggregate patterns of language use and social categories" such as sex, race, age, class, and ethnicity, that have, for the purposes of analysis at least, "been taken to be relatively fixed." These facets of identity are shown to be patterned with language variation, including uses of phonological, lexical, and morphosyntactic variables. The cultural perspective in variationist sociolinguistics offers insights into why language diversity exists and its relationships to identity; although the focus is not on interaction per se, it lays a foundation for subsequent research in the area.

The Cultural Perspective in Discourse Analysis

Some research in discourse analysis, especially that conducted in the 1980s and 1990s in interactional sociolinguistics, focuses on how speakers' identities influence their discourse in interaction. A basic premise underlying interactional sociolinguistics is that language is a social and cultural phenomenon; thus people from different cultural backgrounds (in other words, with different cultural identities) tend to use (and interpret) language differently. Understanding these differences not only gives insights into how communication works and an explanation for why miscommunication occurs, but also highlights culturally patterned ways of speaking. Naturally occurring interactions constitute the primary data for this body of research, though these are often contextualized by ethnographic observation and interviewing; this approach thus complements quantitative studies.

For example, Gumperz (1982, chap. 8) suggests that feelings of ill will he documented between native Anglo-British baggage handlers at a major urban airport and the Indian and Pakistani women who served them lunch in the cafeteria resulted, in part, from different culturally shaped ways of speaking. In particular, different uses of pitch and other "contextualization cues" that signal how a speaker means what she or he says were found to be of importance. For instance, the women's lack of rising intonation when offering a serving of food, like gravy, was perceived as rude to the baggage handlers, who expected a rising intonation; the women, however, were using intonation in ways that would be considered polite in their cultures. Thus, how one uses language, and interprets the language use of others, is linked to the cultural identity one possesses, in this case either Anglo-British or newly immigrated Indian or Pakistani.

Tannen (1986) also takes the perspective that identity influences how a person interacts; she suggests that "subcultural" differences, such as regional or gender differences, can lead to misunderstandings. Tannen links ways of speaking to certain relatively broad aspects of identity; for instance, she finds that New Yorkers, more so than Californians, use fast-paced personal questions as a means of being friendly when getting to know someone. Many Californians, however, interpret this strategy as aggressive. Tannen's work suggests that sensitivity to a person's social identity may increase understanding of the linguistic strategies she or he uses, and of unfolding conversational dynamics. Further, Tannen emphasizes that each individual has a unique style resulting from the interweaving of the many facets of their identity, including those investigated by sociolinguistic variationists (race, class, ethnicity, etc.).

By viewing identity as relatively stable and as shaping how people communicate, discourse analysts have linked ways of speaking to social group membership, and have thus provided explanations for differences in language use. Further, discourse analytic studies that take the perspective that identity shapes interaction have given insights into how and why miscommunication—and successful communication—occurs.

Summary: Identity Shapes Discourse

In sum, both quantitative sociolinguists and qualitative discourse analysts have taken what Tracy (2002) calls the cultural perspective in arguing that identity influences language use, be it at the level of a single variable (like pronunciation of a consonant) or a broader pattern

of interaction (like question asking). Such studies lend insights into language diversity, and isolate aspects of identity that potentially affect how one uses (and interprets) language, thus contributing to understanding people as social beings who carry their cultural experiences and identities with them as they communicate in their social worlds.

The Rhetorical Perspective: Discourse Shapes Identity

The idea that individuals create identities through language can be broadly described as a constructionist approach, one that treats self and identity as "a consequent of discursive and interactive life," rather than as a given (Carbaugh, 1996, p. 6). Like the cultural perspective, this (rhetorical) perspective is represented in both variationist sociolinguistic and discourse analytic traditions.

The Rhetorical Perspective in Variationist Sociolinguistics

Linguistic flexibility has been of great interest to sociolinguists, especially in diverse, multilingual contexts. Variationist research has emphasized how speakers shift ways of speaking to create different identities at different interactional moments. As Le Page and Tabouret-Keller (1985, p. 181) remark, an individual speaker can alter his or her linguistic patterns to "resemble those of the group or groups with which from time to time he [or she] wishes to be identified, or so as to be unlike those from whom he [or she] wishes to be distinguished." They conceptualize linguistic behavior as consisting of "a series of *acts of identity* in which people reveal both their personal identity and their search for social roles" (Le Page & Tabouret-Keller, 1985, p. 14). This means that people can adjust their language to join with others, a notion similar to accommodation theory (e.g., Giles, Coupland, & Coupland, 1991). Research on code switching and style shifting, for example, suggests that speakers switch between language varieties and styles to portray a range of identities, including those that are often thought of as "fixed," like ethnic identities. Ethnographic methods, often accompanied by both quantitative and qualitative analyses of conversational extracts, are used within this thread of variation research.

Alim (2004), for example, explores language styles used by African American students at an ethnically and linguistically diverse California high school. He considers how students shift styles in ways related to various aspects of their identities. For instance, while third-person-singular -s absence (e.g., *he walk*, a form associated with African American English) can be explained by a speaker's gender, hip-hop knowledge, and (most of all) race (Alim, 2004, p. 164), the students exhibited an immense "stylistic flexibility" (p. 200) in their speech. Alim suggests that this flexibility, rather than simply reflecting identities students possess, enables them to create multifaceted identities. Further, this flexibility is emblematic of an identity disconnect with (the predominantly White) teachers, who neither displayed this flexibility themselves, nor recognized it in their students, perhaps in part owing to a dominant institutional ideology favoring "Standard English" over what Alim refers to as "Black Language."

Eckert and McConnell-Ginet (1995) provide another example of a contemporary sociolinguistic study that investigates identity as fluid. As they explain, people are "continually transforming identities, understandings, and worldviews" as they shift between "communities of practice" or groups of people who share mutual engagement and ways of doing and talking about things (Eckert & McConnell-Ginet, 1995, p. 469; for "community of practice," see Lave & Wenger, 1991). Eckert and McConnell-Ginet's research examines the negotiation of gender, socioeconomic class, and power in linguistic (and other) practices of students at a suburban Detroit high school. Analyzing interview data collected as part of ethnographic fieldwork, they uncover how students define themselves and others in relation to the school's dominant social categories of *jocks* (students oriented to school

activities) and *burnouts* (students oriented toward the local working-class community and its values). Using quantitative methods, they find that students who participate in these two different communities of practice show distinctive uses of grammar, vocabulary, and pronunciation. However, there are also gender differences and variation within each group according to the individual's specialized identity. For example, "burned-out burnout girls" not only claimed they were different from "jocky burnout girls," but their phonology—their pronunciation of certain vowels in particular—helped them create a speech style that constructed a measure of distance or disaffiliation.

Similarly, Bucholtz (1999) investigates how a group of high-school "nerd girls" use language and other social practices to delineate their group and negotiate their individual places within it. Through linguistic choices at multiple levels of language structure, the girls disassociate themselves from non-nerds and construct the central component of a "nerd" identity, an "intelligent self" (Bucholtz, 1999, p. 212), for instance through using sophisticated vocabulary in casual conversation and collaboratively engaging in playful intellectual debate. Importantly, these linguistic practices are considered within the context of the social groupings present in the school, and the students' ideologies about who they are in relation to others. Their identities are not "given"; they are interactionally situated and jointly constructed and negotiated.

In summary, studies of sociolinguistic variation that view identities as rhetorically constructed contribute to understanding linguistic variation as not so much an outcome of category membership, but as a means of achieving membership—a way of creating an identity for one's self.

The Rhetorical Perspective in Discourse Analysis

As many contemporary studies in linguistic variation have adopted a rhetorical perspective on identity, so too has recent discourse analytic research. Discourse analyses of unfolding conversation reveal how interactants' identities are linguistically shifted moment by moment. This scholarship draws on a range of discourse analytic approaches, including interactional sociolinguistics, conversation analysis, and discursive psychology; this highlights the truly interdisciplinary nature of the contemporary study of identity within discourse analysis.

Widdicombe (1998) brings to bear the notion of membership categories to identity-work in interaction. Using conversation analysis and drawing on Sacks's (1992) theorizing, she observes that "categories are conventionally associated with activities, attributes, motives and so on" (Widdicombe, 1998, p. 53). Thus Widdicombe's (1998) analysis of the discursive establishment of membership to youth subculture categories like "punk" or "gothic" highlights strategies used by speakers as they resist (or accept) not only category membership, but also the "inferential consequences of characterizing oneself as a member" (p. 52).

Also examining the discourse of young people, Bailey (2002) explores identity negotiation among second-generation Dominican Americans who attend a multilingual, multiethnic high school in Providence, Rhode Island. His study integrates ethnographic observations and interviewing with discourse analysis of naturally occurring talk to provide insights into a situation where identity is very salient: In the context of the USA, Dominican Americans are often perceived as being Black or African American (based on skin tone and other aspects of physical appearance), which denies their Hispanic ethnicity as speakers of Spanish. Bailey finds that the students draw on different varieties of language to foreground particular ethnic and racial identities in different situations and to accomplish different goals. For instance, a male student uses Dominican Spanish to flirt with a Spanish-speaking female student, and her switch to English not only rebuffs him but also downplays their shared identities as Spanish speakers.

Hamilton (1996) contributes to understanding how identities as created moment to

moment in individual conversations, as well as how relatively stable identities (identities that emerge across conversations) are constructed. She analyzes interactions that occurred between herself and Elsie, an Alzheimer's patient. Hamilton (1996) observes that Elsie used language to portray herself as having a wide variety of identities, including mother, wife, adult, friend, and patient (p. 72); the analysis focuses on how peer versus patient identities are co-constructed and negotiated in interaction, especially through linguistic politeness strategies. Examining interactions separated by time but linked by repeated linguistic material, Hamilton also demonstrates how, as Elsie's condition declines, the language of both parties intertextually establishes for Elsie a relatively stable "patient" identity.

Goodwin (2006) also investigates the idea that identities are created both within and across interactions. She examines children's, and especially girls', playground language practices and how discourse and action are used to constitute children's social worlds and identities. This study is important because participants "come to inhabit particular and ever-shifting positions in the local social organization of situated activity systems through interactive work" (Goodwin, 2006, p. 3). Analyzing girls' participation in speech activities such as making assessments, for example, Goodwin demonstrates how individuals position themselves vis-à-vis others to create not only gendered identities, but also identities related to social class, knowledge, and authority.

Developing the literature on identity in interaction, and especially the discursive portrayal of gendered identities across contexts, Kendall (2003) investigates how one working mother, Elaine, creates authoritative identities at work and at home. To do this, she extends research suggesting that gendered identities are not fixed, but created in interaction (e.g., Tannen, 1994) and on positioning theory, which provides a discursive psychological understanding of how "selves" are produced (Davies & Harré, 1990). Analyzing multiple conversational extracts and integrating quantitative methods, Kendall finds that Elaine, in interactions with her 10-year-old daughter, constructs an explicitly authoritative maternal identity through how she formulates directives (e.g., "Go up and brush your teeth"). In contrast, at work when interacting with two female subordinates, Elaine downplays her authority, creating a manager identity that invokes benevolent authority (e.g., "You might want to mention that to them"). This research contributes to the academic dialogue on language and identity in highlighting the subtle linguistic means by which very specific kinds of gendered identities—like "authoritative mother"—are interactionally constructed.

Summary: Discourse Shapes Identity

In uncovering key linguistic features in identity construction, discourse analytic studies conceptualize identities as multifaceted. In Schiffrin's (1996, p. 199) words, "identity is neither categorical nor fixed: we may act more or less middle-class, more or less female, and so on, depending on what we are doing and with whom." Through its attention to the details of interaction, discourse analysis provides a powerful means of examining how identity construction occurs.

Conclusion

In conclusion, research in sociolinguistic variation and discourse analysis has considered identity as a relatively fixed "possession" (Tracy's cultural perspective) and as a fluid interactional creation (Tracy's rhetorical perspective). Thus scholars have uncovered both how social category membership and background experiences influence language use and how individuals linguistically portray shifting, multifaceted identities. While contemporary research tends to favor the rhetorical perspective, the two perspectives are not necessarily at odds. For example, Schilling-Estes (2004) demonstrates how incorporating social con-

structionist approaches into traditional sociolinguistic variation studies enriches findings and reveals both relatively fixed and fluid aspects of identity (see also Schiffrin, 1996).

In the spirit of interweaving disparate approaches and to achieve complex understandings of identity, Bucholtz and Hall (2005) outline a "sociocultural linguistic approach." This approach emphasizes the multiple layers of any person's identity, ranging from macrodemographic categories to momentary, fleeting positions taken up in conversation. It views identity as co-constructed and draws on the notion of indexing (Ochs, 1992), or the idea that identities are created through the dynamic construction of acts and stances in interaction. Bucholtz and Hall suggest that the "partial accounts" of identity created through studies taking singular approaches are useful. However, they also propose that integrating approaches—"including the microanalysis of conversation, the macroanalysis of ideological processes, the quantitative and qualitative analysis of linguistic structures, and the ethnographic focus on local cultural practices and social groupings" (Bucholtz & Hall, 2005, p. 607)—gives greater insights into the complex nature of identity and its construction. This general perspective is currently the dominant paradigm in the analysis of identity in interaction.

SEE ALSO: Analysis of Narrative in Interaction; Conversation Analysis and Identity in Interaction; Discourse and Identity; Language and Identity

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Analysis of Mediated Interaction

RODNEY H. JONES

Usually when we think of "mediated interaction" we think of interaction that is mediated through some rather conspicuous technology. And so, for example, we speak of "computer-mediated communication" or messages delivered via "mass media" like television, radio, or newspapers. In fact, however, *all* interaction is in some way *mediated*—at the very least through some kind of semiotic system like language.

The traditional definition of mediation is the passing of information through some kind of artifact that is inserted between two or more communicative partners. The problem with this definition is first that it equates interaction with the transfer of "information," and second that it sees the message and the artifact through which it is transferred as two distinct entities, with the information seen as the important thing, and the media through which it passes seen as secondary and neutral, merely a kind of conduit through which messages pass.

The way applied linguists today think of mediation is rather different. Rather than neutral conduits for messages, media are seen as actively shaping our perception of phenomena, our relationships with those with whom we communicate, the meanings we can make and the actions we can take. The idea of what a medium is has also expanded beyond material apparatus like telephones and computers to include psychological, semiotic, and social entities like mental schemas and genres.

Innis (1951/1964) was one of the first scholars to argue that the media though which we communicate have a significant effect on what can be conveyed and how it is understood. All forms of communication, he said, involve a "bias" in terms of the way they handle space and time. McLuhan (1964/2001), building on Innis's ideas, posited that media act as extensions of the human senses and that messages, what they mean and how they affect us, are inseparable from the media through which they are communicated.

Around the same time as McLuhan was revolutionizing the field of communication studies, sociologist Erving Goffman (1959) was pointing out that social interaction was not as simple and straightforward as people imagined. Comparing interaction to theater, he argued that, when we communicate with others, our meanings and identities are mediated through various kinds of "expressive equipment" (including physical props as well as personal attributes such as rank, clothing, sex, or age). Significantly for Goffman, the equipment through which we interact is designed not only to convey messages, but also to conceal information about ourselves or the situation that we do not wish other people to know.

The two most important figures in the sociocultual view of mediation which has most heavily influenced current work in applied linguistics are Mikhail Bakhtin and Lev Vygotsky. For Bakhtin (1981), all of our communication and interaction is mediated through the "voices" of other people. That is, in order to form utterances, we must borrow from previously formed utterances. For Vygotsky, all action in the world is indirect—mediated by various tools which have the effect of either *amplifying* or *constraining* certain social actions. The use of tools is, for Vygotsky, the hallmark of human consciousness and learning: the emergence of higher mental processes is grounded in the phenomenon of mediation. Therefore, tools and tool use provide a link between social and cultural processes and individual mental processes. Because mental functioning is carried out by mediational

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means provided by the society, all thought is essentially social. At the same time, individuals appropriate and adapt mediational means for particular concrete purposes. Therefore, the relationship between individual consciousness and the mediational means provided by society is always dialectical, mediational means acting to both afford and limit actions, and individuals constantly adapting mediational means to fit the contingencies of particular circumstances and goals (Wertsch, 1994).

According to Vygotsky (1981, p. 137), mediational means are of essentially two types: "technical tools," consisting of material objects like a pole-vaulter's pole or a computer, and what he calls "psychological tools": "language; various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes, diagrams, maps, and mechanical drawings; [and] all sorts of conventional signs." When actions are mediated through psychological tools, actors are less likely to be conscious of the fact of mediation (Wertsch, 2007, p. 184). This "transparency" of mediational means is particularly important when considering human interaction, in which often people connect meanings directly to the thoughts and intentions of their interlocutors, without being conscious of how the cultural tools through which meanings are mediated can limit or distort what is expressed or what is interpreted.

Applied linguists have been concerned with the way interaction is mediated through both kinds of tools: how technical tools, like telephones, computers, and the physical tools or "expressive equipment" of face-to-face interaction affect communication, as well as how semiotic systems and modes, rhetorical structures, registers and other ways of speaking and writing, and mental schemas mediate the ways we make and interpret meaning and negotiate our social relationships.

Work in applied linguistics on the effects of technical tools on the mediation of social interaction has become particularly popular with the advent of computers and the Internet (e.g., Herring, 2001). However, even some of the earliest work on the linguistic structure of social interaction focused on technologically mediated conversation. The initial insights of Sacks and his colleagues (Sacks, 1992, vol. I, 3) on the orderliness of conversation, for example, arose from the analysis of telephone calls.

Scholars concerned with technologically mediated interaction have generally focused on two primary media effects: first, the way technology affects spatial presence and visibility and the associated communicative cues, and second, the way it affects temporal and sequential aspects of communication.

Early work on text-based computer-mediated communication (CMC), for example, emphasized how the absence of the kinds of physical cues available in face-to-face interaction influences the ways messages can be delivered and understood. Initial predictions about this were based on a "deficit model" which assumed that fewer cues inevitably lead to less successful transmission of messages and less intimacy between interlocutors (e.g., Daft & Lengel, 1984). Later research, however, revealed the extent to which people are able to adapt to reduced cues and even how the constraints of technological media can actually result in feelings of increased intimacy between interactants (e.g., Walther & Burgoon, 1992).

Another concern of this early work was describing and analyzing the formal aspects of language used in CMC, particularly in relation to earlier work on the difference between spoken and written language. Characterizations of CMC as "interactive written discourse" (Ferrara, Brunner, Whittemore, 1991) that dominated early applied linguistics work on the subject have more recently given way to approaches which recognize the variety and context-specific nature of the genres and registers involved, and the complex, multimodal nature of those genres (especially in recent times) (e.g., Jones, 2005), as well as focusing more on discourse features of interaction along with the formal aspects of language use (e.g., Riva & Galimberti, 1998).

Work focusing on the effects of media on the temporal or sequential aspects of communication has, of course, focused on *asynchronous* interaction like e-mail and text messaging, but also on the more subtle effects of technological mediation on things like turn taking and conversational coherence in more synchronous forms of communication like voice-based telephony, chat, instant messaging, and video conferencing. One major issue has been the effects of temporality on message form, in particular how the pressures of synchronous mediated communication result in reductions in message complexity and the development of shorthand strategies. More relevant to the study of discourse and interaction has been work considering how technology affects the sequential organization of interaction: for example, the disruption of turn adjacency, unexpected overlaps or lengthy gaps between contributions, and the limitations on mutual monitoring of message production that make simultaneous feedback or interruption difficult or impossible (Cherny, 1999). The most important outcome of investigations of this kind has been the realization that, despite these limitations, technologically mediated communication is not interactionally incoherent, but rather participants develop a wide range of strategies to compensate for the apparent limitations and obstacles to interaction management imposed by technology (Cherny, 1999; Herring, 1999). Finally, researchers have explored the ways technologies can alter the participation structures of interactions (Marcoccia, 2004; Jones, 2009), not only allowing for various permutations of participation from one-to-one to many-to-many, but also facilitating multiple, simultaneous interactions, sometimes across multiple media.

Of particular interest for applied linguists has been work on the role of technologically mediated communication in language learning, with researchers examining the effects of mediation on such things as learner participation in interaction (Warschauer, 1996), affect and stress (Chun, 1994), and self-correction and the negotiation of meaning (Smith, 2003).

One problem with many approaches to technological mediation from a Vygotskyian point of view is the tendency of studies to consider technologically mediated interaction as an imperfect replica of face-to-face interaction rather than as a form of interaction on its own terms and with its own goals, which might be quite different from those of real-time face-to-face talk. Such a perspective is particularly dangerous because it blinds researchers to the fact that face-to-face communication is also heavily mediated by all sorts of technologies that are so taken for granted that they have become invisible—technologies like dress, furniture, architectural layout, the human voice, and the various semiotic systems carried by these technologies.

The semiotic systems which mediate interaction are what Vygotsky had in mind when he spoke of "psychological tools." Traditionally, the term *mode* has been used to refer to symbolic systems (writing, speaking, color, gesture) and *medium* for the physical substances through which these systems are transmitted (paper and ink, computer screens, telephones, the human body and vocal apparatus). *Modes* are also, however, themselves *mediational means* with certain built-in affordances for and constraints on the kind of meaning that can be made and the kind of actions that can be taken with them, and these affordances and constraints are often the result of the material dimension of modes.

This can perhaps be seen best in the difference between the spatial-temporal dimensions of language and images. While language is organized temporally, with meaning unfolding over time and the significance of elements (whether they be phonemes, words, clauses, or utterances) depending on the elements that came before and creating a context for those that will come later, visual images are organized spatially, with all of the information being presented simultaneously and their significance based on their placement in spatial relations with other elements (Kress & van Leeuwen, 2001). Another example of the difference between verbal and visual modes can be seen in Lemke's (1999) distinction between *typological* meaning making and *topological* meaning making. Typological meaning is made

through assigning phenomena to culturally meaningful categories, whereas typological meaning is made by degree. Visual modes are more associated with topological meaning making.

The important thing about modes as mediational means is not so much their relationship to meaning as their relationship to action, how interactants use them as cultural tools, and mix them strategically with other cultural tools. In interaction, whether face to face or mediated through technologies like computers, people often shift modes (Jones, 2005) or modulate the degree of saliency of particular modes (Norris, 2004) in order to alter the terrain of affordances and constraints in a particular situation.

There has been increased interest in multimodality in the field of applied linguistics, especially as it relates to new literacies and to the analysis of conversation. Most of these approaches, however, see things like gesture, gaze, and image as supplementing or providing "context" for verbal messages. An approach which orients toward *mediation*, as does Norris's (2004) multimodal interaction analysis, however, does not privilege language, but rather considers it one of many possible mediational means which people draw upon in interaction.

Along with modes and codes—the semiotic systems though which actions are mediated—psychological tools also include various conventional ways of using these systems. While the number of such "rhetorical" mediational means is potentially infinite, Bakhtin divided them into two main types: *speech genres* and *social languages*. Speech genres are the particular forms communication takes in various "typical" circumstances. They direct participants both into particular relationships with their interlocutors and into particular interpretations of what is said. Social languages are tools with which they construct identities. Bakhtin (1981, p. 262) defines them quite broadly as "social dialects, characteristic group behavior, professional jargons, generic languages, languages of generations and age groups, tendentious languages, languages of the authorities of various circles and of passing fashions, languages that serve the specific sociopolitical voices of the day."

The difference between the way an approach focusing on mediation deals with such forms and the way they have traditionally been dealt with in applied linguistics, literary studies, rhetoric, and other language-based approaches is that they are not seen so much in terms of linguistic behavior characteristic of particular groups, or in terms of structures and variation, but rather as tools that people appropriate strategically to perform social actions, negotiate interactions, and enact social identities.

Understanding mediated interaction cannot rely on an approach which focuses solely on the mediational means, whether technological or semiotic, with which people conduct interactions. Such an approach would risk falling into technological determinism or linguistic formalism. Similarly, mediation cannot be understood by focusing solely on the individuals who take actions or on the societies or cultures which supply them with the mediational means with which to do so. This would risk essentialism, psychological conjecture, and stereotyping. The only viable unit of analysis for understanding mediated interaction, or, more properly stated, to understand the mediated nature of all interaction, is the visible, real-time, concrete *mediated action*. A focus on how interactions are made up of mediated actions though which interactants claim and impute identities, and position themselves in relation to their interlocutors and larger social groups, helps to link issues of semiotic form and technological affordance with broader issues of culture and ideology. The concept of mediation also serves to link interaction on the inter-mental plane with that on the intra-mental plane, what Vygotsky (1981) referred to as "inner speech."

In psychology such a perspective has come to be known as the sociocultural approach to mind (Wertsch, 1994; Cole, 1996). In applied linguistics it is best represented by the work of Ron and Suzanne Scollon (Scollon, 2001; Scollon & Scollon, 2004) in their formulation of *mediated discourse analysis*, a framework which has informed the study of interactions in a wide variety of contexts including coffee shops, classrooms, courtrooms,

clinics, and computer terminals. The Vygotskyian notion of mediation has also had a significant influence on research in other domains of applied linguistics, especially language education (Lantolf, 2000).

SEE ALSO: Conversation Analysis and Multimodality; Discourse in Action; Multimodal Interaction Analysis; Pragmatics of Asynchronous Computer-Mediated Communication

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Analysis of Narrative in Interaction

CYNTHIA GORDON

Introduction

Narrative has been widely studied across the social sciences and humanities. This is due to its ubiquity: All human groups have narratives (Barthes, 1977, p. 79). Narrative has also earned scholarly attention due to its fundamental role in sense making: As Georgakopoulou (2007, p. 32) explains, narrating "is invariably thought of as involving meaning making" and the "ordering and structuring" of experience. Due to the multidisciplinary, multifaceted nature of narrative scholarship, the term "narrative" has many meanings, referring to everything from works of art that convey a story to abstract cognitive schemata that help humans interpret experiences. Within linguistics, narrative is typically (but not exclusively) understood as a verbal means of "recapitulating past experience" that invokes the sequentiality of events and makes a particular point (Labov, 1972, pp. 359–60; see also Labov & Waletzky, 1967).

Analysis of narrative in interaction contributes to understanding the complex interplay of story content (what is said), structure (how it is said), and function (what the narrative accomplishes). It is not only the study of particular narrative tellings, however, because narrative plays a key role in understanding how "personal lives and social institutions intersect" (Riessman, 2008, p. 3) and how culture-wide ideologies shape individual conceptualizations and discursive representations of experiences and relationships (Tannen, 2008). Thus the analysis of narrative lends insight into storytelling as a linguistic phenomenon, while also addressing how human beings achieve coherence, meaning, and identity within sociocultural contexts.

This entry first gives a brief overview of two primary meanings of narrative: a concrete telling and an abstract (cognitive) structure. Second, it describes how narratives are collected for analysis and transcribed. Third, it gives an overview of three key narrative elements that have been investigated: narrative structure, linguistic features and narrative functions, and cultural aspects of narrative. The conclusion highlights why the study of narrative is important for applied linguistics.

Basic Definition of Narrative

Based on seminal work in sociolinguistics by Labov (1972; Labov & Waletzky, 1967), narratives—and especially narratives of personal experience—are broadly understood as stretches of talk produced through linking events into a temporal structure that not only conveys what happened, but also the speaker's perspective on the reported sequence of events. These narratives are past-oriented; generally about a specific, actual experience; internally structured; and considered to be the products of individual speakers.

While the Labovian definition of narrative, which emerged out of the analysis of narratives elicited in interviews, is the touchstone for most contemporary narrative research in linguistics, it is not the only one available. A broader definition is needed to encompass narratives that arise organically in everyday talk (e.g., Georgakopoulou, 2007) and across

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cultural groups (e.g., Scollon, 2010). A paradigm known as "small stories" (see e.g., Bamberg, 2004; Georgakopoulou, 2007) investigates nonprototypical stories—those that are minimal, jointly told, hypothetical, untrue, habitual, incomplete, or even only alluded to—arguing that these are important in human meaning making and identity construction. Contemporary understandings of narrative thus tend to move beyond (but not exclude) Labov's seminal definition.

In addition to referring to stretches of talk, the term "narrative" also has abstract meanings. For instance, an individual story might index a larger "cultural narrative," meaning a shared understanding, expectation, or ideology. This meaning is captured in Tannen's (2008) differentiation between three types or levels of narrative, based on Gee's (1999) concepts of big-D and small-d discourse (culture-wide ideology versus specific words spoken, respectively). Tannen (2008) suggests that narrative scholarship can usefully differentiate between small-n narrative (a telling of a particular story), big-N Narrative (an abstract theme realized across small-n narratives), and Master Narrative (a cultural ideology that shapes big-N Narratives and how small-n narratives are told). This terminological distinction captures contemporary uses of "narrative" in the field; for instance, Linde (2009) investigates an insurance company's "stable narrative of identity" (an abstract theme or understanding) via analysis of individual stories told about the workplace and its employees. While the analysis of narrative tends to refer to the detailed examination of what Tannen (2008) calls small-n narratives, "a good narrative analysis" also makes "a move toward a broader commentary" (Riessman, 2008, p. 13), and thus may incorporate more abstract understandings of narrative.

Collecting Narratives for Analysis

Verbal narratives must be collected through audio-recording (and sometimes video-recording) interaction. Some scholars conduct interviews using questions specifically designed to elicit narratives, such as "Were you ever in a situation where you thought you were in serious danger of getting killed?" (Labov & Waletzky, 1967). Others examine narrative segments that emerge in semi-structured sociolinguistic interviews (e.g., Schiffrin, 1996) or in "focused conversations" about a given topic (Tannen, 2008). Narratives that emerge organically in naturally occurring conversations such as family dinners (e.g., Blum-Kulka, 1997) or conversations among friends (e.g., Georgakopoulou, 2007) are increasingly of interest. Another method is comparative: of spoken and written narratives (e.g., Tannen, 1986), of narratives told in different languages (e.g., Tannen, 1986), or of narratives of different cultural groups (e.g., Blum-Kulka, 1997).

Verbal narratives, once collected, must be transcribed, to facilitate systematic, close interpretation (quantitative methods may also be employed, but qualitative methods predominate). Transcription goals and conventions differ across studies. Sometimes a narrative is transcribed as a text produced solely by an individual in response to a researcher's question, especially in early studies (e.g., Labov, 1972); such narratives are occasionally edited or "cleaned up" to highlight story structure (e.g., Gee, 1986). The content of talk is the focus of some transcriptions, producing a paragraph-like representation of narrative (e.g., Linde, 2009), while others aim to capture the rhythm of talk, which results in a poetic representation (e.g., Gee, 1986; Tannen, 2008). In many contemporary studies, especially of conversational narratives, all co-interlocutors' contributions are transcribed in detail (e.g., Blum-Kulka, 1997; Georgakopoulou, 2007) to facilitate examination of narrative co-construction. Such different transcription styles—choices about whether to include copresent interlocutors' talk, how to "chunk" narrative parts, and so on—point to scholars' different perspectives and interests. There is no one "correct" way to transcribe narrative;

however, all transcripts must be accurate and internally consistent.

Analyzing Narratives in Interaction

The analysis of narrative is accomplished through a "family of methods" rather than a single approach (Riessman, 2008, p. 11). This is due to the multidisciplinary nature of narrative inquiry and the variety of interconnected concepts available to linguists who study narrative, including those from literary theory, psychology, sociology, and anthropology. Linguistic analyses of narrative have drawn on these fields in different ways, and to different degrees, over time. Early sociolinguistic research focused on outlining narrative structure. Subsequent research, especially in discourse analysis, moved toward a greater understanding of narrative as embedded in interactional context and of characteristic linguistic devices of narrative. Such studies have also examined narrative functions, and especially how narratives work to construct relationships and identities. Investigations of cultural differences in narrative norms and practices add richness to the field and tend to be informed by anthropological perspectives.

Narrative Structure

The structural approach to narrative in linguistics can be traced to the work of Labov (1972; Labov & Waltezky, 1967). Labov offers what he calls a "formal" approach to narratives of personal experience, exemplars of which he elicited while investigating everyday or "vernacular" language, in particular what was then called Black English vernacular. By eliciting emotionally charged stories, Labov (1972, p. 345) was able to encourage speakers to become "deeply involved" in the telling; he was thus able to collect the relatively unmonitored, casual speech he wanted to study. While Labov did not initially plan to study narratives per se, he found them to be rich evidence for a point he was arguing—that the language of urban Black children and adolescents was not linguistically deficient—and he set out to understand the structural components of narrative more generally.

The clause is identified as the basic structural unit of narrative by Labov and Waletzky (1967); Labov (1972) presents a modified, less formal, and more accessible version of this framework ("The transformation of experience in narrative syntax"). The temporal dimension achieved across clauses is vital: Labov (1972, p. 360, original emphasis) defines a minimal narrative as "a sequence of two clauses which are *temporally ordered*" (and therefore fixed vis-à-vis one another); this means that "a change in their order will result in a change in the temporal sequence of the original semantic interpretation."

Narrative clauses in a "fully developed" narrative are organized into a larger structure, of which each element has its own function (Labov, 1972). The structure provides a vocabulary of narrative parts that has proven useful in subsequent research, even if only as a point of departure. These elements include an *abstract* that summarizes the story's point, an *orientation* which sets the scene, the *complicating action* which consists of the pivotal event around which the narrative is organized, the *result* or *resolution* that tells what finally happened, and the *coda* which signals the narrative's end. *Evaluation*, "perhaps the most important element" along with the temporally ordered clauses (Labov, 1972, p. 366), occurs throughout; it is essential because it works to reveal the point of the story. Evaluation can be embedded within the narrative (*internal evaluation*) or stated by the narrator by stepping outside the telling (*external evaluation*).

The elements outlined by Labov collectively create a coherent narrative and provide researchers with a means of breaking up narratives into analyzable parts. And, while Labov's work has been profoundly influential (see e.g., Bamberg, 1997a), his is not the

only important structural approach. Gee (1986), for example, explores the textual boundaries within narrative discourse by considering pausing and other prosodic phenomena tellers use, rather than the functions of narrative parts. In this way, he views narratives as having somewhat of a poetic structure, being composed of *parts*, *strophes*, *stanzas*, and *lines.* Through this organization, narrative themes become apparent and the units of narrative production can be delineated.

Linguistic Features and Narrative Functions

Linguists have given attention not only to narrative structure or form, but also the linguistic strategies that characterize narrative as a genre and simultaneously accomplish myriad functions. It is widely recognized that narratives are told to remember, to argue, to persuade, to entertain, and to provide accounts, among other things (see e.g., Riessman, 2008). These functions are achieved through a range of linguistic features, including repetition, word choice, and uses of intonation. Creating identities and relationships is the most prominent, and widely studied, function of narrative discourse, and this function is arguably universal.

Narrators tell stories in ways that display themselves as being certain kinds of people, and as having certain relationships with others. Bamberg (1997b) argues that narrators linguistically create identities via accomplishing positioning (Davies & Harré, 1990) between the narrator and the copresent audience, between the narrator as a story character and other characters, and between the narrator as teller and as a character in the story. Also drawing on positioning, Wortham and Gadsden (2006) emphasize how identities are created as speakers position story characters as recognizable types. Thus they demonstrate how one narrator, an urban African-American man who became a father as a teenager, uses linguistic devices like quoted speech and other forms of evaluation to portray his identity change from a kid oriented toward the street to a responsible father oriented toward home. Taking a related approach, Schiffrin (1996) focuses on a broader set of linguistic features used by narrators to metaphorically paint "self-portraits" of themselves in sociolinguistic interview discourse. Thus two women portray their family identities and the complex relationships they have with younger women in their families through metaphor, reported-speech, intonation, terms of personal address, and speech acts.

Relationships are not only constructed between the characters in the told events; they are also created in the interaction between the narrator and copresent interlocutors. Analyzing spoken and written narratives in English and Greek, Tannen (1986), for example, investigates a feature common in many narratives—what she calls "constructed dialogue"—which refers to the creation and animation of character dialogue (sometimes called reported speech). This strategy, often accomplished using paralinguistic features like pitch and volume, contributes to the production of a vivid story and ultimately creates involvement between speakers and their audiences.

Narratives do identity-work and relationship-work for individuals but also for groups. Langellier and Peterson (1993, p. 50), for example, suggest that a family is "one type of small-group culture strategically produced in discourse such as family stories." Ochs and Taylor (1995) too identify narratives as constitutive of families; they suggest that mealtime narratives in American families create shared family beliefs while simultaneously differentiating role identities for family members. Ochs and Taylor's examination of how narratives are introduced, (co)narrated, and evaluated leads them to identify a gendered pattern wherein mothers encourage children to tell stories to fathers, who subsequently judge children's stories (they call this the "Father knows best" phenomenon). Ochs and Taylor underscore how narratives create hierarchical family relationships; however, such family patterns of telling also are oriented toward family solidarity (see Tannen, 2001). In

similar ways, narratives create coherent identities for institutions, both shared values and hierarchical relations among institutional roles (Linde, 2009).

Identity-work is a primary function of narrative, but it is not the only one. Telling narratives can also be therapeutic and can help people manage disruptive life events like infertility and divorce (Riessman, 2008). Narratives too can be used to describe breaking news or to project into imaginary situations that could occur in the future (Georgakopoulou, 2007). Because narratives can be embedded in virtually any type of interaction, can be told using a range of structural forms and linguistic elements, and are co-constructed in interaction, the possibilities for narrative are almost limitless.

Cultural Aspects of Narrative

In addition to highlighting individual differences in narrating (e.g., uses of particular linguistic strategies to portray a specific identity in interaction), linguists have also explored cultural variation. Cross-cultural research has shown how what a story can be about, how it is structured, and so on, can differ. For instance, Scollon (2010) finds that Athabaskan, Chinese, Javanese, and Arabic narratives diverge in consequential ways from Labovian narratives, including the required temporal element. He suggests that diverse uses of rhythm, theme, and so on, provide culturally appropriate (but perhaps not universally recognized) coherence.

Blum-Kulka's (1997) study of family narratives also demonstrates the cultural-embeddedness of narratives. Blum-Kulka examines dinnertime conversations of Jewish American, American Israeli, and Israeli families. While she uncovers similarities—storytelling occurred in all families, and dinner conversation was an important context for children's socialization into narrative and other discourse practices—she also uncovers differences. For example, in American families, children were the primary narrators; in Israeli families, adults were. This fits in with a broader cultural pattern of American families' focusing on children. Another example is Tannen's (1986) comparison of Greek and American English narratives told by women about a time they were molested; Tannen found that the Greek women used much more constructed dialogue than the Americans did. She suggests that this is characteristic of Greek storytelling conventions.

There are also subcultural narrative differences. For instance, Labov (1972) suggests that middle-class speakers are more likely to use external evaluation (state the story's point outright), whereas lower-working-class speakers tend to use internal evaluation (indicate the point in indirect ways). Like Scollon (2010), Gee (1986) suggests that not all cultural groups emphasize narrative temporality. Gee analyzes a young African American girl's classroom "show-and-tell" story in demonstrating how while thematic (rather than temporal) coherence can structure a story, this coherence is not necessarily recognized by members of other groups in the USA (like the girls' White teacher).

These studies suggest that while identifying structural and/or functional commonalities is important in understanding the universal "narrative impulse" (Riessman, 2008, p. 21), studying differences increases understanding of the diversity of narrative forms available, as well as their functions.

Conclusions

Narrative is widely recognized as playing a vital role in human sense-making, as well as the interactional construction of relationships and individual and group identities. It is increasingly suggested that narratives need to be considered as embedded in unfolding interaction, and as diverse: Patterns of telling, linguistic features used to make a narrative point, and how narratives are used in interaction may differ across cultures, small groups

like families and institutions, and individuals. The study of narrative in interaction is thus not only the study of a particular kind of discourse, but a study of how self, meaning, society, and culture intersect in various ways through language.

The analysis of narrative is especially important in the context of applied linguistics, not only for academic, but also for practical and social justice reasons. For example, Gee's (1986) study reveals that the narrative of a child from a racial minority group is not accepted as the "right" way to tell a narrative at school; this can contribute to achievement gaps across groups. More broadly, Scollon (2010) points out that temporal narrative structure is not universal (although it often is treated as such). He suggests that while this has profound implications for how academics understand and study narrative, it also has implications for how narratives—and their tellers—are evaluated in real-world contexts. Thus the study of narrative in interaction has implications not only for our conceptualization of the role of language in meaning making, but also for our understanding of human experience.

SEE ALSO: Analysis of Identity in Interaction; Discourse and Identity; Narrative Discourse; Positioning in the Analysis of Discourse and Interaction

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Analysis of Silence in Interaction

DENNIS KURZON

Introduction

Silence has long been regarded as meaningful in interaction. Since the 1970s, there have appeared studies of silence, which analyze the functions of silence in interaction. At first, there were sporadic publications such as Bruneau (1973), Jensen (1973), and Johannesen (1974), but in the middle of the 1980s the first collection of papers on silence was published (Tannen & Saville-Troike, 1985), which included a broad range of papers on silence not only in, for example, conversation, worship, witness questioning in court, and the classroom, but also from a cross-cultural perspective. This was followed, over a decade later, by a second collection (Jaworski, 1997), which included studies of silence and politeness, markedness theory, and silence in medical interviews as well as silence "beyond language," such as in painting and in music. Furthermore, two monographs (Jaworski, 1993; Kurzon, 1997) were published in the 1990s as well as several other articles. Linguistic research into silence has since expanded with, for example, Cortini (2001), and a further collection edited by Jaworski (2005), which includes papers on silence in institutional settings such as the classroom, television reporting, and antenatal clinics.

One may also speak of silence in computer-mediated communication (CMC). Not only is it often carried out in silence—"silent interactivity" (Rennecker & Godwin, 2003)—but the time it takes for an addressee to respond to a message may allow the addresser to distinguish between a show of interest (a short silence), on the one hand, and a potential end to the interaction (a far longer silence), on the other (Kalman, 2008; Jones, in press).

Silence has also been central to gender studies and critical discourse analysis, especially regarding the silencing of women (from the seminal work of Lakoff, 1975, to Langton, 1997, and Sbisà, 2009).

In order to interpret silence, we always need a context, in which are involved two or more people who interact with each other in one way or another. The prototypical situation is a face-to-face conversation between two people (called dyadic interaction), but conversations do take place where there are more than two people involved (multiparty interaction). Conversations include not only informal encounters but also television interviews, job interviews, or even police interrogations. Not all conversations, however, need be face-to-face; they may also include telephone conversations and radio phone-in shows.

Moreover, interaction among people may also take place in writing where the two or more people involved are not facing each other, but may be far away, and at a considerable time interval from each other. The people involved in this type of interaction are writers and readers, not only those of literary works (where the writer may no longer be alive), but also writers of op-ed articles or editorials in the newspaper and readers who respond by sending letters to the editor, scholars responding to an article in an academic journal, people who communicate by e-mail, and of course by other electronic means of communication which rely on the written language, such as blogs, or tweets on a Twitter network. While participants in a face-to-face conversation may react immediately to what is being said by another participant, and react, too, to facial expressions and gestures of other participants, in written texts the dynamics between writer and reader can vary

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enormously, especially from the perspective of formality. For example, in letters to the editor and in academic articles, the language tends to be standard, while in much electronic communication, conversational style is preferred.

Both in conversation and in written texts, however, language is at the core of the interaction. The dynamics of verbal interaction allow participants to interpret and reinterpret what is being said according to the context. Meaning is created not only by the person who is speaking or writing, but also by those who interact with him or her. If no language is being used, however, what is there to interpret, and furthermore, how is meaning generated? It is therefore paradoxical to regard as interaction a situation in which no words are exchanged—silence.

It should be pointed out that since the focus is on silence in interaction, cases in which a person is on his or her own should not be included. People are not expected to speak to themselves (although this may at times occur with everyone and not only in pathological cases). Therefore, the silence of someone on his or her own may be considered the unmarked case in the sense that speaking to oneself is marked. On the other hand, silence in dyadic or multiparty interaction may be considered marked in that speech is the normal activity in such situations.

Three Types of Silence

There are basically three types of silence (following Kurzon, 2007; 2009), all of which may be timed: conversational, textual, and situational. Silence as in the phrase "she was silent about something" is not considered here a type of silence (see below).

Conversational Silence

Conversational silence is the silence that occurs in cases, as mentioned above, where two or more people are having a conversation. Before looking at specific examples, we have to relate again to formality. That is to say, speech (including writing) may be highly formal, or highly informal, with a large area in which we gradually move from formality to informality. We may illustrate conversational silence by looking at a number of different cases in which informal and more formal conversation takes place. The first subtype of conversational silence, often referred to as a pause, is a very short silence, in which a participant does not respond immediately to what is said, but pauses, for example, to collect his or her thoughts. Here follows an example of this subtype (from Sacks, Schegloff, & Jefferson, 1974, p. 702):

Jeanette: Oh you know, Mittie- Gordon, eh- Gordon, Mittie's husband died.
(0.3)
Estelle: Oh whe::n.
Jeanette: Well it was in the paper this morning.
Estelle: It wa::s,
Jeanette: Yeah.

There is almost a third of a second silence (or pause) before Estelle reacts to the news that Mittie's husband has died. We could interpret this silence as the need for Estelle to digest the news, which seems to be a surprise, before she reacts.

Second, we may have a situation in which at least two persons are having an informal conversation, and one of the participants is asked a question, or a comment is made directly to him or her, and she or he does not answer—is silent. For example:

John: Hi, Pete, who was that woman I saw you with last night?
(4.0)

Pete does not respond to John's question (the four-second silence is an arbitrary length of silence to distinguish it from a pause), since he probably does not want to divulge any information concerning the identity of his female companion.

The third case of conversational silence is where a participant in a multiparty conversation is physically present, but does not say a word—she or he is silent. Such cases require at least three participants, since a conversation is taking place between the two (or more) people who are talking, while the third person is silent.

So far, we have described cases of conversational silence in which the situation is informal; these examples of conversation might take place among family members, friends, or acquaintances. There are occasions when conversations—either dyadic or multiparty—may take place in more formal settings such as police interrogation rooms or job-interview situations. The first situation may be illustrated by the right of silence, known in the USA as Miranda, part of which reads:

> You have the right to remain silent. Anything you say can and will be used against you in a court of law.

A suspect in police interrogation, or even someone who is being arrested, has to be told that she or he may remain silent. So the suspect may refuse to answer any or all of the questions in order not to incriminate himself or herself (e.g., Kurzon, 1995). In the second situation—that of a job interview—a candidate may not answer a question put to him or her by the interviewer or the interview panel for various reasons, but since it is the candidate who has to impress the interviewer(s), it is not to his or her advantage to remain silent.

Much of the research on silence deals with conversational silence. Even early studies of silence in diverse societies tend to relate to this type of silence. Basso (1970), for example, examines cases of silence among Western Apache Indians in the USA, identifying six situations in which silence is preferable to speech. Likewise, Nwoye (1985) looks at the function of silence in conversation among the Igbo of Nigeria. Lehtonen and Sajavaara (1985; revisited in Sajavaara & Lehtonen, 1997) discuss the well-known phenomenon of silence among Finns, in which long periods of silence can occur where in many other cultures silence would not be tolerated.

Textual Silence

The other two types of silence in the typology introduced above relate to situations in which a group of people are silent. We necessarily have to relate to a *group* of people, since we are looking at silence as a type of interaction, in which at least two people have to be present or be interacting in one way or another, though both are silent. In conversational silence, on the other hand, one of the participants may be silent while the other participant or participants are talking. In the first of these two types of silence, the silence is caused by the participants reading a text or reciting a text to themselves; hence the term "textual silence." This silence may be informal when it occurs in a person's living room where two or more members of the family, or friends, are sitting down reading the newspaper, a magazine, or a book. More formal contexts, which also seem to be more prototypical, would be the silence in the library or the silence in a place of worship. The silence of the library derives in part from the wish of each of the library users to concentrate on what he or she

is reading, whether it is a book, an article in a journal, or information on a computer screen. This silence is reinforced by notices put up asking for patrons to be silent.

Silence in a place of worship as textual silence does not refer to the silence that is maintained in a church, for example during a tourist visit, similar to the silence in museums, but to the occasions during a service when silent prayer is called for. That is to say, the silence derives from the fact that worshipers have reached a place in the service in which a silent prayer is recited. This may occur, for example, in a Catholic church in the period of silent reflection before the opening of the mass, or in a synagogue where in each of the three daily services the worshipers have reached the Eighteen Benedictions, which are said in silence. Like conversational silence, textual silence can be timed. The silence may be maintained as long as it takes the reader to read or recite the text, or as long as a person is present in the library.

Situational Silence

The third type of silence relates to a group of people who are not ostensibly reading or reciting a text. It usually occurs in specific formal situations such as war remembrance ceremonies when a minute or two minutes of silence is observed. What happens in participants' minds is not set down. Proposals as to what people should think about have been made, for example when a one-minute silence was established on Armistice Day in Britain in 1919, a year after the end of World War I. Gregory (1994, p. 12) relates to what should go on in people's mind—what they should be thinking of during the silence:

> people were not expected to be empty of all thought and emotion. It was expected that the time would be filled with private contemplation of the meaning of the war, with prayer, with a renewed commitment to certain goals.

This reflects what was written in the newspapers at the time. The *Daily Herald* laid down:

> You will remember, mothers, the gay sons you have lost; wives, you will *think* of the husbands who went out in the midst of the winter morning—the mist that sent cold chills round the heart—never to come back. And brothers will *think* of brothers and friends of friends, all lying dead today under an alien soil. (Gregory, 1994, p. 12; my emphasis)

A one-minute silence is also observed at the beginning of each school day in public schools in over 20 US states. In a number of states, this has been a subject of controversy, reaching the Federal Supreme Court. In those instances in which the law establishing the minute of silence in public schools is considered constitutional (that is to say, as not infringing the establishment of religion clause of the First Amendment), no text is laid down in the statute for the children to think about. As the judge in one of the leading cases on this issue, *Brown v. Gilmore* (in 2001), wrote in his judgment:

> The minute of silence established . . . for each public school classroom is designed to provide each student at the beginning of each day an opportunity to think, to meditate, to quiet emotions, to clear the mind, to focus on the day, to relax, to doze, or to pray—in short, to provide the student with a minute of silence to do with what the student chooses. (258 F.3d 265 (4th Cir. 2001))

This type of silence is also that found, as mentioned above, in museums, art galleries, and places of worship (but not during a service), where people walk around looking at the exhibits or at the architecture in a hush so as not to disturb anyone else. Of course, in

all these instances, people may be found talking, but very often in a whisper, since the convention does lay down silence.

A notorious example of situational silence is that of *4′ 33″*, a work of John Cage, the American avant-garde composer, in which the performer or even the entire orchestra sits still for four minutes and thirty-three seconds, and does not play a note. The only action of the performer is to turn the page after a certain time. The audience is silent, expecting a piece of music as is usual in a concert hall.

"To Be Silent About"

While the typology presented above relates to timed silence—a person does not say anything or does not react—one may also say of a person who is speaking but who omits a topic that is expected that she or he is silent. Politicians in their speeches, for example, may leave out a topic that may be embarrassing. However, "to be silent about" may be argued to be Anglo-centric, since it occurs in some languages such as English, while a different verb or phrase with the meaning "not talk about" has to be used in other languages such as French.

Let us then compare several languages to illustrate the distinction between *to be silent*, meaning 'not to talk', and *to be silent about*, meaning 'not to talk about'. First, languages which use the same basic morpheme (usually an adjective or a verb) will be presented, followed by languages in which different morphemes are used. English uses the same adjective, as mentioned above. In these examples, the verb or adjective meaning 'silent' is underlined:

(1) She is <u>silent</u>.

(2) She is <u>silent</u> about that matter.

Likewise, German:

(3) Sie hat <u>geschwiegen</u>.
'She was silent.'

(4) Er hat diese Sache <u>verschwiegen</u>.
'He was silent on this matter.'

and Japanese:

(5) kanojo wa <u>damatteiru</u>.
she TOP silent (verb).
'She is silent.'

(6) sono koto nitsuite, kare wa <u>damatteiru</u>.
that matter about, he TOP silent
'He is silent about the matter.'

(where TOP refers to the topic of the sentence).

In Russian, however, we have different morphemes:

(7) Ona <u>molchit</u>.
'She is silent.'

(8) Ob etom v dolade ničego bylo skazano.
About this in the report nothing was said
'The report was silent on that point.'

and in Chinese (Mandarin):

(9) Tā baochi chenmo
'She is silent.'

(10) tā meiyou tan zhejian shi
she NEG talk ART.QUANT matter
'She is silent about the matter.'

(where NEG means "Negation" and QUANT means "Quantifier").

Conclusion

Silence as a technical term in applied linguistics and in allied fields is defined here as a situation in which a person or a group of persons who are interacting with others, or, in the case of a group, interacting among themselves, does not say anything. Moreover, the silence in all these cases may be timed—from a pause of a fifth of a second when a person collects his or her thoughts to the duration of a silent prayer or to the conventional one or two minutes of situational silence. On the other hand, since a person who is silent about an issue (as one can say in English) while talking is not silent, such a silence is metaphorical, though it is part of an interaction.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Conversation Analysis and Institutional Interaction; Language of Police Interviews

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Analyzing Spoken Corpora

MICHAEL MCCARTHY AND ANNE O'KEEFFE

Spoken corpora are collections of spoken texts, either in the form of transcripts alone or accompanied by audio or audiovisual recordings, stored in a computer and made available for analysis using customized software programs. Spoken corpora have grown in importance in recent years and a number of major corpora now exist for English and other widely used world languages. Spoken corpora are typically compiled using data from a range of sources, sometimes by very general demographic sampling, or sometimes in more specialized contexts. Transcription of the data may be broad or narrow, but usually includes some kind of nonverbal or nonlinguistic data. The tools of corpus linguistics can be applied to spoken data in a variety of ways, enabling researchers to learn about relative frequencies of words and patterns in different types of spoken data or in contrast with written data.

Introduction

Spoken corpora are collections of transcripts of real speech, typically consisting of speech events recorded on analog or digital recording equipment and then transcribed and stored in a computer as text files. *Spoken corpora* are often distinguished from *speech corpora*: speech corpora are usually collections of speech (which could be anything from transcripts of spontaneous speech to recordings of people reading out loud prepared lists of single words) that are compiled for purposes such as creating automatic voice-to-text applications, telephone technology, or the analysis of the phonetic substance of speech (Harrington, 2010). Researchers who create speech corpora are not necessarily concerned with what is said; they are more concerned with how it is said, that is, the speech signal itself. Researchers who work with spoken corpora are typically interested in what people say, why they say it, and how they use spoken language to communicate their messages and to interact with one another. Spoken corpora are, by definition, a recent development; before tape recorders became common, the only way to record people's natural spoken interactions was by observation (or eavesdropping) and attempting to write down what was said (e.g., Timmis, 2010). Relative to written corpora, spoken corpora are few. However, one of the first computational studies of collocation (Sinclair, Jones, & Daley, 1970/2004) was based entirely on a spoken corpus.

Characteristics of Spoken Corpora

Spoken corpora may be of different kinds and may include anything from formal, monologue events such as lectures and speeches to informal conversations between two or more parties. The settings where recordings are made may vary from people's homes and workplaces to stores, restaurants, broadcasting studios, and classrooms. Another dimension along which spoken corpora may vary is the purpose of the interactions they contain: the conversations might be debates, transactions of information, goods and services, narratives, media interviews, therapeutic sessions, and so forth (see McCarthy, 1998, for a description of the various contextual settings that went into the construction of one spoken corpus). Finally, the participants who agree to be recorded for the corpus may be a cross section

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of the general population (see, for example, information on the demographic sampling that underpinned the spoken segment of the British National Corpus at www.natcorp.ox.ac.uk/corpus/creating.xml), a particular social group, for example, teenagers (as exemplified in the COLT corpus of London teenage speech; see Stenström, Andersen, & Hasund, 2002), or a specialized professional group, for example, business people (Handford, 2010). A spoken corpus will usually have speaker information data linked to each recording which allows for sociodemographic research about language use across age, gender, geographical origin of the speaker, and so on (see Crowdy, 1993). These data provide "metadata" or more information about the speakers stored outside of the corpus.

Understanding the Spoken Transcript

Before a corpus is analyzed, the compilers make decisions about how to transcribe it. Consider this extract from the Limerick Corpus of Irish English (see Farr, Murphy, & O'Keeffe, 2004, for details of the corpus).

<$2> I came up with all kinds of things+
<$1> Umhum.
<$2> +I found that even though I wasn't able to look at my tape I realized that I hadn't eh my instructions were not clear at the+
<$1> Umhum.
<$2> +because they weren't sure exactly what I wanted I didn't check and see to ch= see if they really understood the probability factor and <$02> <$G?> <\$02>+
<$1> <$02> Yes <\$02>.
<$2> + <$G?> and I just kind of went bluh here it is.
<$1> Umhum.
<$2> So it's like I just threw it at <$X> 'em | them <\$X> and I feel badly about that em I let the students distract me with their comments and their ideas.

Everything marked with unfamiliar symbols (such as the diamond brackets < >, the dollar signs, the backslashes, etc.) is there to assist the analyst in some way. The tags <$1> and <$2> mark the individual speakers, numbered in the order in which they first speak. Somewhere in an accompanying database, we can find out their sex, age, social background, where and when the conversation occurred, and so on, and, if necessary, we will find a file number that can take us back to the audio recording. With the latest digital technology, we may also be able to play the audio recording while we read the transcript. The plus signs (+) indicate that someone has not finished what they were saying and that someone else has said something in the middle of the utterance (e.g., *umhum*), which then continues. Symbols such as <$G?> indicate that the transcriber could not make out what the speaker was saying. The backslash \ indicates the end of a numbered overlap, where two speakers speak simultaneously. The vertical line | separates a nonstandard form (in this case *'em* from the standard form *them*). All of these conventions are invaluable to the analyst, for reasons we shall see below. In addition, transcribers have to decide how to transcribe vocalizations that are not usually recognized in the dictionary as "words" (e.g., *umhum*, *bluh*, *eh*), or half-uttered words such as *ch*=. Other decisions may include whether to transcribe the corpus showing intonation and stress patterns (Cheng & Warren, 2000; Warren, 2004; Cheng, Greaves, & Warren, 2005).

The presence or absence of extra levels of detail in a transcript is usually dictated by available time and resources: transcription is time-consuming and expensive, and researchers often have to economize and omit features in the transcript which might have been invalu-

able to the analyst. Whatever the resource limitations, transcribing always involves choices, and no one can transcribe absolutely every relevant feature of a spoken interaction (Cook, 1990). What matters to the analyst is to have important features transcribed so that they are automatically searchable wherever possible. Increasingly, spoken corpora are supplemented by linked video images, which offer further analytical support to the written transcript and audio material (Adolphs & Knight, 2010; Thompson, 2010). Adolphs and Knight (2010) advise that there is a need to follow certain guidelines when transcribing if you want to make your corpus reusable to the wider research community. There are a number of different types of transcription guidelines available, such as those adopted by the Network of European Reference Corpora (NERC). Another set of guidelines is provided by the Text Encoding Initiative (TEI) and has been applied, for example, to the British National Corpus (BNC—see Sperberg-McQueen & Burnard, 1994). As Adolphs and Knight (2010) explain, these guidelines include the representation of structural, contextual, prosodic, temporal, and kinesic elements of spoken interactions and provide a useful resource for the transcription of different levels of detail required to meet particular research goals.

Analytical Tools

Different analytical techniques will provide a range of results which reveal distinct aspects of the spoken material. With free or proprietary software suites, it is usually possible to generate frequency lists which arrange all the words in the corpus in order of frequency, from the most common to the rarest (see Scott, 2010; Evison, 2010). With such lists, we can observe important differences in the distribution of words between, for example, speech and writing, or between different types of speech (e.g., monologue versus dialogue). In the British National Corpus (BNC—a collection of 100 million words of data, of which 10 million are spoken), the noun *kids* is twice as frequent in the spoken segment of the corpus as in the written fiction segment, and almost twenty times more frequent than in the written academic segment. The noun *children* is much more evenly distributed across the three datasets. Conversely, a frequency list can tell us what words are rare in spoken language; for example, the words *vicarious* and *simulacrum*, which occur in academic writing, occur nowhere in the spoken BNC. For further information on the different distributions of words in the BNC, see Leech, Rayson, and Wilson (2001).

It is not only single words that can be analyzed in a corpus, and good software will reveal that spoken language manifests a huge number of ready-made "chunks" (strings of two or more words sometimes referred to as *n-grams*, *lexical bundles*, *lexical phrases*, *clusters*, *multiword units*) which speakers use repeatedly, enabling fast retrieval of items from the mental lexicon and making possible the steady flow of language we associate with fluency (Biber, Johansson, Leech, Conrad, & Finegan, 1999; Carter & McCarthy, 2006; O'Keeffe, McCarthy, & Carter, 2007; Cheng, Greaves, Sinclair, & Warren, 2009; McCarthy, 2010; Greaves & Warren, 2010). The analyst can usually choose the length of the chunks he/she wants the software to retrieve from the data (e.g., all the repeated three-word chunks, or four-word chunks). O'Keeffe et al. (2007) give lists of common chunks and idiomatic expressions in British and North American English spoken data. These lists reveal that the most common chunks (such as *you know*, *I mean*, *that kind of thing*) are highly interactive and paint a clear picture of how speakers take one another into account and work hard to create satisfactory personal relations (see McCarthy & Carter, 2002; see also Shin & Nation, 2008; Martinez & Schmitt, in press). The spoken segment of the American National Corpus (first release) includes in its list of most common three-word chunks *was nice talking*, *I understand that*, *all that stuff*, and *what would you* (to consult frequency data from the American National Corpus, see www.americannationalcorpus.org/frequency.html#).

Other analytical instruments based on word-frequency lists include collocation tools which gauge the likelihood of two words occurring together and then measure the actual co-occurrence and give to the collocation a statistical score of significance. In the case of the spoken language, this may again reveal interesting contrasts both between speech and writing and between different forms of spoken language. In the BNC, for example, the most immediate noun-collocates of the adjective *difficult* in the written academic segment are *question*, *task*, *problem*, and *concept*, while *question*, *situation*, *job*, and *time* dominate the spoken list, revealing the different preoccupations and priorities that occur in speech as compared with academic writing. Another useful technique is to examine keywords, that is to say words which occur with unusual frequency in one corpus or another. McCarthy and Handford (2004) show that the verb *need* is a keyword in spoken business English, and trace its unusually high frequency to its common use in the chunk *we need to*, denoting corporate exigencies and indicating a way of hedging directives by expressing them as collective requirements (i.e., *we need to* said by a senior or powerful person in an organization may be interpreted by subordinates as *you must/should*). By contrast, *can* is the highest ranking modal verb among the top 20 keywords in a corpus of spoken academic English collected in universities in Ireland (LI-BEL, see Walsh, Morton, & O'Keeffe, 2011). This is attributed to its instructional use in this pedagogical context, for example, *can you tell me*, *can you think of*.

Perhaps the most useful and revealing tool for any corpus linguist is the concordance, a computer screen display or printout of a chosen word or phrase in use in numerous different contexts by numerous different users. For spoken language, the concordance can bring together the utterances of many different speakers over many different places and occasions of use, giving to the researcher a powerful instrument for gauging what is typical usage and in what contexts things are said. Most concordance software allows a variable range of context to be viewed, from a single line of text across the screen with the key word(s) centered vertically, to a longer context such as a whole speaker turn. For instance, when exploring concordance lines for the keyword *can* referred to above in the spoken academic corpus LI-BEL, the pattern *can* + *actually* becomes instantly visible once the words that occur after the search word, *can*, are "right-sorted" alphabetically, that is to say all the words beginning with *a*- (such as *actually*) are shown first, then *b*-, and so on (Figure 1). The researcher can then identify, by going back to the source files for extended context, that *can* + *actually* is associated with the marking of new information by lecturers.

And you **can actually** do it you **can actually** do it through what should I say amm
have a history of tuberculosis you **can actually** be refused entry into other states. It's
have it out of synch then maybe we **can actually** build in that delay as well. So that both
ures it can change the figure. You **can actually** change the graph representation to see
people at this point and time. You **can actually** click there on layout. Right? The third
actual ahh P C B. And sometimes we **can actually** consider the actual design of the actual
tion to overload. So here we **can actually** consider aspects like that in that we're
can do an actual performance where **can actually** create the actual workplace and get
mechanisms for the student they **can actually** decide whether or not they need to do a
hree perform. You **can actually** you **can actually** do it that way. Okay? Now let's just say

Figure 1 Extract from concordance lines for "can" in the Limerick-Belfast Corpus of Academic Spoken English (LI-BEL CASE)

Exploiting Distinctive Features of Spoken Corpora

Because written data used in the service of writing dictionaries for so long dominated the study of corpora, linguists tended to focus on words, phrases, and grammatical phenomena in texts. However, as we have already noted above, a transcript may contain a wealth of nonword information (the tags and other conventions we have already looked at) which the spoken corpus analyst can exploit better to understand how common events such as conversations are formulated. We noted that individual speakers were usually designated by a symbol (e.g., a dollar sign with a speaker number). Computer software is impartial to words or nonwords and can be instructed either to ignore such speaker tags (if we are only interested in the words uttered) or to search for them and count them, just like words. This latter option enables researchers to learn a lot about how speakers construct their turns at talk, and can offer powerful quantitative underpinning to the microanalyses of individual conversations provided by researchers working in the conversation analysis (CA) tradition. Simple statistical operations such as counting how many turns take place in a conversation, or what the average number of words per turn is, can provide important insights into particular types of conversations or to talk as a whole. Tao (2003) takes the exploitation of speaker tags further, and provides a frequency list of turn-openers, the first words after speaker tags, as evidenced in a corpus of spoken American English. The words which characteristically open turns are freestanding items such as *yes*, *so*, *right*, *well*, and so on, and they show us that turn-openers predominantly attend to what the speaker has just heard, providing a linking function and contributing to confluence by creating smooth transitions from one turn to the next.

Figure 2 shows part of a concordance for a speaker tag <$*> + *well* (where * is a "wildcard" representing any character) in the five-million word CANCODE spoken corpus. (CANCODE means Cambridge and Nottingham Corpus of Discourse in English. Cambridge University Press is the sole copyright holder. For details of the corpus, see McCarthy, 1998.) The data has been right-sorted.

at rather than me. <$E> laughter </$E> <$1> **Well** actually+ <$?F> <$G?> <$1> +<$=> they d
. <$2> Y= is that you're advice <$G2>? <$1> **Well** actually in in my case it's one of the few wo
> <$=> Because <\$=> Have you been? <$1> **Well** actually it was one of the places I was think
to read this very carefully. <$2> Yes. <$1> **Well** actually no I don't mean that to sound <$E> l
<$?F> How how many people <$G?>? <$1> **Well** actually that that's that's not quite erm the
n people used to leave early didn't they. <$1> **Well** actually <$=> w= you <\$=> in those days you
> or not. <$1> Er <$G?> <$?F> <$G?> <$1> **Well** actually <$=> we'll look </$=> we'll look at
"Oh it's reserved" and that's it. Easy. <$2> **Well** actually I could have called one of <$X> t' l
shower that you put in five years ago." <$2> **Well** actually I decided not to use it. <$1> Yea
at? Or do you prefer this sort of format? <$2> **Well** actually I don't s= I don't suppose No I thin
t <$G?>. So it must be a really big pond. <$2> **Well** actually if you think about it because it's n
he window. I just can never get it <$G?>. <$2> **Well** actually <$=> I'm I'm <\$=> I'm not too bad t
't usually be that cold. <$1> No true. <$2> **Well** actually it might <$G?>. <$1> Mm. Uh-huh.
sorry about that. <$E> laughter <\$E> <$2> **Well** actually one one of the questions that we did
impress people. <$1> Oh right. I see. <$2> **Well** actually that sort of stuff does work in some

Figure 2 Part of a right-sorted concordance for *well* (from CANCODE © Cambridge University Press)

<$E> sound of till <\$E> **Now** two fourteen thanks. <$1> Two fourteen so
<$E> sound of till <\$E> **Now** two fifteen so please <$E> pause <\$E>. <$E> sound of
<$E> sound of till <\$E> **Now** two sixty seven so please. <$2> Now I have the sixty
<$E> sound of till <\$E> **Now** three twenty so please <$E> sound of coins <\$E>. <$2>
<$E> sound of till <\$E> **Now** sixty eight please <$E> pause <\$E>. Thanks. <$2> I don't
<$E> sound of till <\$E> **Now** one twenty please. Thanks. <$2> Thank you. <$1>
<$E> sound of till <\$E> **Now** eight twenty eight so please. <$E> sound of plastic bags
<$E> sound of till <\$E> **Now** and three nineteen okay. <$1> Thank you. <$2> Thank
<$E> sound of till <\$E> **Now** two forty please. <$E> sound of coins <\$E> Thank you very
<$E> sound of till <\$E> **Now** a pound please. <$1> <$E> sound of till
<$E> sound of till <\$E> **Now** six eighty so please thank you. <$2> Thank you.
<$E> sound of till <\$E> **Now** seventy eight so please. <$E> pause <\$E> Thank you very

Figure 3 Extract from concordance lines for *now* in shop recordings from the Limerick Corpus of Irish English (LCIE)

We see here from the tags immediately before it that *well* frequently begins a speaker's turn, and that *well actually* is a frequent chunk: we do not find *actually well* occurring anywhere in the concordance. Some software allows case-sensitive searching, which would enable us to distinguish *Well* from *well*, making it easier to find turn-opening examples if the transcribers followed the convention of using a capital letter at the start of a turn. With most software too, by clicking on any line in the concordance, we can get back at once to the whole text of the conversation to access more context and work out the situations in which people typically respond with *Well actually*.

Another example comes from a subcorpus of grocery shop recordings from the LCIE corpus, where the high frequency discourse marker *now* is frequently preceded by the tags <$E> and <\$E>, used to add extralinguistic information (Figure 3). The extralinguistic information in all cases is the sound of the cash register as money is handed over, annotated as <$E> *sound of till* <\$E>. This allows us to see the contextual pattern whereby the shop attendant rings up the price of the customer's item on the till, and the attendant announces the price of the item to the customer, always preceded by the discourse marker *now*.

Another approach to identifying the distinctive features of spoken language is to compare word and (two to six word) chunk frequencies with a written corpus. This often brings to light how the real-time interactivity of spoken language affects the profile of high frequency words and chunks in spoken corpora. O'Keeffe et al. (2007) discuss this in great detail and show how pragmatic functions of spoken language lie behind many of the high frequency items:

Function	**Example**
Discourse marking	*you know, I mean, You know what I mean, At the end of the day*
Face and politeness	*Do you want me to, I don't know if, Would you mind?*
Vagueness and approximation	*and stuff like that, and so on, and things like that, a couple of*

By isolating words and chunks from specific spoken context an even more refined profile emerges. For example, in a 30,000-word collection of English Language classroom data (a subcorpus of the Limerick-Belfast Corpus of Academic Spoken English—LI-BEL CASE), we find the top 30 most frequent three-word items (see Table 1).

Table 1 Thirty most frequent three-word units in ELT classes taken from LI-BEL

1	I'm going to	16	do you want
2	what do you	17	look at the
3	We're going to	18	this is a
4	you want to	19	use a comma
5	going to do	20	what are you
6	I don't know	21	would like to
7	going to be	22	you have to
8	do you think	23	if you want
9	what did you	24	is going to
10	a lot of	25	not going to
11	I want you	26	we have a
12	did you do	27	you to do
13	want you to	28	you're going to
14	brother lives in	29	a little bit
15	are you going	30	at the end

Here we see evidence of more pragmatically specialized language patterns performing classroom-based speech acts and speech events:

Explaining	*I'm going to; we're going to; look at the; this is a; we have a;*
Instructing	[*I*] *want you to; look at the; use a comma; you have to; you're going to*
Questioning	*do you think; what did you; are you going; do you want; what are you*

Conclusion

Spoken corpora were for a long time seen as appendages to much larger written collections of data. They have moved beyond this status and, aided by digital technology, more and more are emerging. It is an exciting point as we move towards the next generation of spoken corpora. Many challenges still remain, such as the drudge and expense of transcription, and challenges of audiovisual alignment with transcripts (see Carter & Adolphs, 2008). Adolphs and Knight (2010) note that as advances in technology allow us to develop new kinds of spoken corpora, such as audiovisual data streams and much richer descriptions of contextual variables, it will become increasingly important to agree on conventions for recording and representing these kinds of data, and the associated metadata. Adherence to agreed conventions, according to Adolphs and Knight, especially when developing new kinds of multimodal and contextually enhanced spoken corpora, will significantly extend the scope of spoken corpus linguistics into the future.

SEE ALSO: Concordancing; Corpus Analysis of Key Words; Corpus Analysis of Spoken English for Academic Purposes; Corpus-Based Linguistic Approaches to Critical Discourse Analysis; Corpus Linguistics: Overview

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Anthropological Linguistics

WILLIAM A. FOLEY

Anthropological linguistics is the subfield of linguistics (and anthropology) concerned with the place of language in its wider social and cultural context, its role in forging and sustaining cultural practices and social structures. While Duranti (2001) denies that a true field of anthropological linguistics exists, preferring the term linguistic anthropology to cover this subfield, I regard the two terms as interchangeable. With some cogency, Duranti (2001) argues that due to current concerns of mainstream linguistics with the explicit analysis of the formal structures of language in contrast to anthropology's broader approach of looking at how humans make meaning through semiotic systems in cultural practices, this subfield is properly included within anthropology rather than linguistics. However, I beg to differ, believing that the current historical divisions of academic turf are just that—historical and contingent—and subject to change, and I would be loath to institutionalize such divisions by insisting on rigidly labeled compartments. The current disciplinary concerns of linguistics do not reflect its earlier history in which it was firmly enjoined to anthropology (Boas, 1940; Sapir, 1949; Haas, 1977, 1978). It is my firm hope that, over time, this more inclusive view will reassert itself, and hence my preference is to use both terms to cover this subfield, although, as titled, I will stick with the label anthropological linguistics in this article.

Anthropological linguistics needs to be distinguished from a number of neighboring disciplines with overlapping interests; first, its close sister, sociolinguistics. Anthropological linguistics views language through the prism of the core anthropological concept, culture, and as such seeks to uncover the *meaning* behind the use, misuse, or non-use of language, its different forms, registers, and styles. It is an interpretive discipline, peeling away at language to find cultural understandings. Sociolinguistics, on the other hand, views language as a social institution, one of those institutions within which individuals and groups carry out social interaction. It seeks to discover how linguistic behavior patterns with respect to social groupings and correlates differences in linguistic behavior with the variables defining social groups, such as age, sex, class, race, and so on.

While this distinction is neither sharp nor absolute, it is useful and perhaps an example might help in establishing this. Consider the variable pronunciation of the progressive/gerundive ending, so that *running* can be pronounced [rʌnIŋ] or [rʌnIn] (informally described as "dropping the *g*," i.e., "runnin"). If we approach this variable from a sociolinguistic perspective, we will note the correlation between each pronunciation and particular social groupings, for example, the higher frequency of the [In] variant with male speakers, and [Iŋ] with female speakers; or, again, the higher frequency of the [In] variant with speakers of a working- or lower-class background, while higher frequencies of [Iŋ] are correlated with middle- and upper-class backgrounds. Such would be a typical sociolinguistic approach (see, e.g., Labov, 1972). However, an anthropological linguistic approach, while taking note of all these correlations, would ask a further fundamental question: what do speakers mean when they use an [In] versus an [Iŋ] variant? Of course, the answer may vary in different contexts, but one possible answer, following Trudgill (1972), is that the use of [In], considering its link to the social variables of maleness and the working class, could be an assertion of a strong masculine self-identity. Trudgill (1972) points out

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that male, middle-class speakers in Norwich, Britain, often use variables like [In] to stake exactly this claim, regarding the values perceived to be associated with working-class life, such as toughness, struggles against the odds, and physical labor, as indicative of enhanced masculinity.

Because anthropological linguistics seeks to uncover the meaning behind the uses of language within culture, it also presents some overlap with semantics and pragmatics, particularly the latter. Again, without insisting on sharp boundaries, I would like to distinguish among these along the following lines. Semantics (Kearns, 2000; Reimer, 2010) is that subfield of linguistics that studies the meanings of signs, their interrelations and combinations, while pragmatics (Cummings, 2005), albeit a bit hazy in its own delimitations, investigates how speakers create meaning in context in ongoing acts of language use. In view of its definition offered above, anthropological linguistics can be contrasted with these two other fields by the central role that culture and cultural practices play in its descriptions. Consider the word *wampuŋ* from the Yimas language of New Guinea, which can be described semantically as polysemous, with the meanings "heart, care, desire." A pragmatic description will investigate its various uses in differing contexts to determine what extended meanings it can take on in appropriate contextual frames. But an anthropological linguistic description would go farther and explore how this word is central in indigenous conceptualizations of morality and cultural practices of reciprocal gift exchange. Linguistic expressions and metaphors for culturally valorized practices related to generosity and exchange are built on this word (see Kulick, 1992 for similar data). Finally, a detailed anthropological linguistic study will uncover the cultural beliefs and practices which account for why this word has the polysemous meanings it does; what, for instance, connects "heart" with "care" in indigenous ideology?

Humans are by definition social beings and, as emphasized by Geertz (1973), largely fashioned by culture. Culture is transmitted and society reproduced by ongoing interaction between persons. What people do in such ongoing interactions is make meanings, and this process is what we call communication. Cultural practices, then, are nothing other than processes of communication that have become recurrent and stable and hence transmitted across generations, and in so doing, they become pre-reflective practical ways of doing things, a *habitus* (Bourdieu, 1977, 1990). Anthropological linguistics, then, studies how humans employ these communicative cultural practices, or *semiotic* practices, as resources to forge large and small, transient or permanent social groups. In an insightful overview, Enfield and Levinson (2006) argue that all such communicative practices occur at three levels. The first is an individual-based "interaction engine." This is where concerns of anthropological linguistics overlap with cognitive psychology. The "interaction engine" consists of the cognitive and biological abilities that underlie our capacity to communicate, such as the capability to interpret the intentions and mental states of others (the so-called "Theory of Mind"; Carruthers & Smith, 1996). Such substrates make all human communication possible. The second is the interpersonal "interaction matrix." This is an emergent level of behavior formed by coordinated practices of social actors, much of it culturally shaped and habitual, although there are clearly panhuman aspects as well. Examples include turn-taking in conversations and other mechanisms studied in conversational analysis (Atkinson & Heritage, 1984; Sacks, 1992; Sidnell, 2001). Finally, level three is the sociocultural level proper. Included here are the culturally mandated routines or rituals in which particular types of linguistic practices are selected and sanctioned, such as courtroom summations, divination rituals, political oratory, or barroom chitchat. This is the conventional domain for the notions of register and genre, although the interpersonal moves which actually construct a particular register are features of level two, and the cognitive underpinnings which allow us to interpret the intentions of the speaker in using a particular register belong to level one.

We can usefully look at much of the research work done in anthropological linguistics under the banners provided by this schema of the three levels. The breadth of work in this subfield is enormous, and space will only permit the exploration of a few key illustrative areas. Perhaps the most persistently fascinating area within it has been the question of linguistic relativity, whether features of the language we speak influence our cognition. This is a question that spans levels one and three: whether deeply sedimented features of our conventional publicly shared language developed and transmitted over generations (level three) influence the way we cognize the world, make inferences, or remember information (level one). While this has been an area of vigorous speculation over the centuries, nothing amounting to serious empirical work emerged until recently, and here the focus will be on some pioneering work on the language and cognition of space. Earlier work on spatial cognition assumed it to be strongly informed by innate, presumably biologically based, universals, so that it is essentially the same in all languages and cultures. Given these universal conditions and our ecological niche as terrestrial, diurnal creatures, it is claimed that we are predisposed to conceive of space in relativistic and egocentric terms, projecting out from the anatomical patterns of our bodies. Thus, the coordinates through which spatial orientation are established are projected from ego, the deictic, central reference point for all spatial reckoning, along two horizontal axes and one vertical. The vertical one, drawn from our upright position or, perhaps, the experience of gravity establishes the UP–DOWN axis; the horizontal axes are FRONT–BACK, derived from the anatomically asymmetrical division of the body into two halves, and LEFT–RIGHT, from the symmetrical division. The location of objects in space, then, is always determined relative to the orientation of the speaker: if we are standing eye to eye across from each other, my left is your right. There are no fixed, absolute angles used in human spatial orientation.

Recent research has shown these assumptions to be unfounded. Languages (and speakers) actually differ as to whether they employ this speaker-centered relative system of LEFT–RIGHT, FRONT–BACK, or an absolute system based on fixed parameters of geographical space like the cardinal directions or landward/seaward or upriver/downriver. Such absolute systems are in fact very common and occur in Aboriginal Australia, Oceania, and Mesoamerica. A particularly striking example is Guugu-Yimidhirr, of northeastern Australia. This language completely lacks all spatial terms which are relative to body orientation; in particular there are no terms for locating the position of objects in space equivalent to FRONT, BACK, LEFT, RIGHT (e.g., the latter two terms can only be used to refer to the left and right hands and perhaps other symmetrical body parts, like eyes, legs, etc.). Rather, the language heavily employs four words, corresponding roughly to the four cardinal directions. The astounding thing about languages like Guugu-Yimidhirr is that these absolutely based terms are habitually used by speakers to describe location or motion. It is as if in response to the question "Where's the salt?" I responded, "It's there, to the east." In the relativistic, egocentric spatial universe of the English speaker, this is likely to provide little enlightenment and lead to a puzzled look or worse, but this is exactly how a Guugu-Yimidhirr speaker would respond.

Levinson (2003) is a careful, empirical study investigating the core claim of linguistic relativity with respect to Guugu-Yimidhirr, amongst other languages: does the system of spatial categories in that language influence the way its speakers cognize space, as determined by tests that probe spatial reasoning and memory tasks? A number of experiments were carried out testing Dutch speakers in these tasks, who have a relative system of LEFT–RIGHT, FRONT–BACK like English with Guugu-Yimidhirr speakers, and in each case, there were marked differences in the response of the two groups to stimuli. Such results strongly suggest differences in cognition, as measured by differences in memory and reasoning, and these are closely correlated to the different linguistic systems for talking about space in the languages of the two groups of subjects. For instance, in a simple

recall experiment a table facing north was laid out with a line-up of three toy animals, all facing one direction, say east and to the right. The subject was asked to remember it, and it was then destroyed. He was then led into another room, with a table facing south and asked to reproduce the alignment. If he does this task absolutely, he will set up the line facing east, but this time to the left. If, on the other hand, he does it relatively, the line will be set up facing right, but to the west. Results for this test were in line with predictions from the hypothesis of linguistic relativity: nine out of 15 of Guugu-Yimidhirr subjects preserved the absolute eastward alignment of the array, while 13 of 15 Dutch control subjects preserved the relative rightward alignment.

Ways of expressing politeness in language is another domain in which researchers in anthropological linguistics have been active. Politeness is essentially a field in which cultural ideologies about personhood and social roles (level three) are enacted in prescribed rituals and formulas of social interaction between persons (level two). The person may be "inscribed" (Gergen, 1990) in social relationships (level two), but the kind of person he or she can be is determined by macronotions of what are their proper rights and obligations and how these are articulated in the wider sociocultural sphere (level three). Politeness forms in language are the recognition of differential rights and duties amongst the interactants in a social encounter. Typically, those of higher rank are recognized as such through the use of politeness forms by those in lower rank. Rank is mainly established by rights and duties: those of higher rank have rights over those of lower rank, who, in turn, often have duties to those in higher rank, although in many cases higher rank can bring concomitant duties as well. Consider the elaborate ritual of greetings among the Wolof of Senegal (Irvine, 1974) and how their cultural ideology of social inequality is enacted in its performance. A clue is provided by an insightful Wolof proverb about greetings: "When two persons greet each other, one has shame, the other has glory" (Irvine, 1974, p. 175). Wolof is a stratified Muslim society, and greeting rituals are used as a way of negotiating relative social status amongst the interlocutors. The basic dichotomy in Wolof society is between nobles and commoners. The local ideology associates lower status with both physical activity (i.e., movement, and speech activity). Higher-status people are associated with passivity. Because of this, it is the lower-status person who initiates the greeting encounter, by moving toward the higher-status person and beginning the ritual greeting. As a consequence, any two persons in a greeting encounter must place themselves in an unequal ranking and must come to some understanding of what this ranking is; the simple choice of initiating a greeting is a statement of relatively lower status. The form of a greeting encounter is highly conventionalized. It consists of salutations, questions about the other party and his household, and praising God. The more active, lower-status person poses questions to the higher-status one, who in a typical higher-status, passive role simply responds, but poses none of his own. In addition to the typical speech acts performed and their roles in turn-taking, the interactants are also ideally distinguished in terms of the nonsegmental phonological features of their speech. Correlated to the activity associated with lower status, the greeting initiator will speak a lot, rapidly, loudly, and with a higher pitch. The recipient of the greeting, on the other hand, being more passive and detached, will be terse, responding briefly and slowly to questions posed in a quite low-pitched voice. The distinct linguistic practices associated with the interlocutors in a Wolof greeting encounter are linked to the kinds of persons they are. The greeting ritual both enacts the cultural ideology of inequality amongst persons in Wolof and reproduces it every time it is enacted. The linguistic forms used, polite or otherwise, index the kind of persons the interactants are, just as they construct and reconstruct this ideology at every mention.

A final area of research to illustrate the typical concerns of anthropological linguists is the cultural performance of verbal art, or more specifically, culturally valued genre types.

Certain social roles, typically those of higher social status, are marked by their control of particular, also highly valued, genres; think of how a priest is determined by his control of the liturgy, or the shaman by her spells, or even a successful barrister by her stirring summation oratory. The study of genres is clearly a core specialty of this subfield and belongs squarely to level three, the sociocultural matrix. Genres are prototypical cultural practices; they are historically transmitted, relatively stable frameworks for orienting the production and interpretation of discourse. In a word, they are "institutionalized." The capacity to produce and detect genres as models for discourse comes from their "framing devices" (Bateson, 1974) or "contextualization cues" (Gumperz, 1982), such as *once upon a time* for a fairy tale or citations for an academic paper. Such framing devices work to the extent that genres are not so much inherent in the text forms themselves, but in the frameworks and interpretive procedures that verbal performers and their audience use to produce and understand these texts. Genre classifications are not rigidly definable in terms of formal text types, but are the result of applying (sometimes conflicting) interpretive procedures indexed by the framing devices employed.

Framing devices are features of the poetic function (Jakobson, 1960) of language, formal linguistic principles for the enaction of diverse genre types, such as line final rhyme for certain genres of English poetry, like sonnets. Various types of framing devices include special formulas or lexical items, tropes like metaphor or metonymy, paralinguistic features, like drums or singing, and, most importantly, parallelism. This last is recurring patterns in successive sections of text and can be found at all levels of the linguistic system, phonology (rhyme and rhythm), grammatical (repeated phrases or clauses), and lexical (paired words). Genres do not exist as abstract categories, but only as schemes of interpretation and construction, which are enacted in particular performances. Genres can be recontextualized from earlier contexts to new ones with a greater or lesser shift in their interpretation. This opens a gap between the actual performance and the abstract generic model we might have of it from earlier performances. This gap can be strategically manipulated by performers to convey comments about current social happenings or valuations of cultural traditions (Briggs & Bauman, 1992).

SEE ALSO: Analysis of Identity in Interaction; Culture; Ethnicity; Intercultural Communication; Linguaculture; Politeness; Pragmatics in the Analysis of Discourse and Interaction

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Anticipatory Discourse

INGRID DE SAINT-GEORGES

Researchers interested in anticipatory discourse are, generally speaking, concerned with discourses in or about the future. They investigate how individuals, texts, or utterances project representations of future events, states, or relations. Unlike other areas of applied linguistics, the study of anticipatory discourse is still very much in its infancy. As yet, there is no set tradition or school for the study of such discourse, even if it has often been linked with critical discourse analysis. Given this state of affairs, this article focuses on research by authors who take the study of futurity as central to their work, although not all of them designate this work as "anticipatory discourse." The study of anticipatory discourse thus makes a central claim: futurity is an inevitable component of text, talk, and more largely of social life, because human action has an intrinsically forward-looking nature. The study of anticipatory discourse thus proposes to add to the existing body of knowledge in discourse analysis by casting light on this future dimension of text and interaction.

With its focus on the future, the study of anticipatory discourse contrasts with the more well-known field of narrative studies, which has traditionally focused on the recounting of the past and on the historical processes through which events, identities, and actions come to be constructed. Even in this field, however, a number of authors have noted that narratives can be used in reference to the future as well as to the past. For example, research has shown that recollections of the past can be an opportunity for interlocutors to think about what might, could, should, or should not happen in the future (Ochs, 1994). Recounting of past events can also be used as a tactic for co-opting interlocutors into performing actions at a future point in time (Goodwin, 1990). Alternatively, such recollections may serve to explore innovative solutions to old problems or situations (Al Zidjaly, 2006). As used in the more general field of discourse analysis, however, the study of anticipatory discourse typically encompasses a range of linguistic phenomena besides narratives. It potentially includes research on any forward-looking behaviors, such as intention, action, planning, negotiating, decision making, and so forth.

Origin and Scope

The term "anticipatory discourse" was first coined by Scollon and Scollon (2000), who proposed that a theory of anticipatory discourse should be developed as part of a more general theory of human action and agency (see also Scollon, 2001; Scollon & Scollon, 2004). The authors' initial goal was to contribute to an understanding of how individuals take action, how they use discourse and texts to do so, and how (discursive) actions might have the performative function of producing changes in the world. Because social actors predominantly act in anticipation of outcomes, Scollon and Scollon (2000) argued that the work of discourse analysts should adopt a future-oriented perspective, in order to do justice to the actors' perspective at the moment of acting. From their work, several features of anticipatory discourse can be highlighted (Scollon & Scollon, 2000), although not all researchers adopt the same way of defining anticipatory discourse. Depending on the researcher's orientation, one or more of the following aspects are generally emphasized:

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1. First, anticipatory discourse can be defined as the study of texts or utterances that are oriented toward future events, actions, or states.
2. Second, the study of anticipatory discourse is often concerned with discursive strategies which open or shut down particular lines of action at particular moments for particular individuals or social groups.
3. Third, analyzing anticipatory discourse usually involves paying attention to the stances constructed in text and talk regarding two domains: (a) *knowledge* and (b) *agency* asserted in future-oriented propositions:
   (a) Because the future is the domain of what has not yet happened, any statement about the future should, in theory, be hypothetical and marked by epistemic uncertainty, as events can always intervene to derail even the most predictable course of action. In reality, however, speakers have the broader choice of presenting future states of affairs not only as hypothetical, but also as if they were knowable or already known. Because of this, part of the analyst's work is to identify what claims are being made with regard to knowledge of the future, and, more importantly, to investigate for what purposes these claims are being constructed.
   (b) In terms of agency, anticipatory discourse not only reflects how much a speaker feels "in the know" about the future, but also reveals how empowered that speaker feels to act and affect situations to come. Hence, another part of the analyst's work is to investigate whether the speaker's position is portrayed as agentive or fatalistic, regarding the possibility of bringing about a particular outcome at a subsequent point in time.

With this context in mind, then, studying anticipatory discourse amounts to an examination of where the cursor is placed on the knowledge axis (from oracular to agnostic) and on the agency axis (from fatalistic to agentive) in constructing stances about the future (Scollon & Scollon, 2000). Within a critical discourse analysis perspective, this study also includes consideration of who gets to be the primary definer of the future, how it gets to be defined, and what power relations are involved in this definition.

From an analytical point of view, the study of anticipatory discourse often covers a variety of phenomena, ranging from the linguistic structures involved in constructing future representations to the social processes and practices that constitute specific "horizons" for action at a particular time for a particular individual or group. As such, the focus of anticipatory discourse research need not be limited to representations of the future as they are articulated in verbal communication. The analyst can also investigate cultural, material, or social structures and the extent to which they embody specific futures or make (im)possible certain courses of action. Whatever the perspective adopted, the researcher can draw from a variety of sources. For example, many areas of applied linguistics have provided important insights for the study of futurity. These have rarely been brought together as part of a more general theory of anticipatory discourse and are discussed below.

Conversation analysts, for instance, have identified numerous forms of verbal and nonverbal projection-related phenomena in interaction. Gestures, mimics, pre-sequences, prefaces, and so forth can all be means of signaling upcoming actions to interlocutors, in order to give them a chance to anticipate a next turn or production, or to invite preferred turns or reactions (Streeck & Jordan, 2009). Researchers of pragmatics have provided detailed analyses of speech acts that are implicatives (e.g., forecasts, warnings, prescriptions, advice, orders, requests, etc.), as well as discourse markers that are cataphoric (which signal, for example, reorientation toward a new topic or subtopic, such as "so" or "now"). Research on verbal tense, mood, and modality as well as on linguistic and paralinguistic means of expressing (un)certainty (e.g., hedging, hypotheticals) reveals how a speaker might feel about future events (Fleischman, 1982). Studies of genre and rhetoric are likewise useful

for investigating future-oriented types of text (e.g., instructions, procedures, mission statements, policies, laws, fortune-telling, weather forecasting, etc.), and it is also worthwhile to examine how speakers make use of these genres to persuade interlocutors to adhere to some proposed course of action. On a macroscopic level, investigating anticipatory discourse entails consideration of larger-scale, future-oriented projections and how they come to constitute a horizon or matrix for possible actions (Sparke, 2000; Scollon, 2005). For example, the discourse of the slow food movement does not delimit the same kind of attitudes, actions, or daily consumption choices as the discourse of the globalized free market economy. Each of these discourses pre-shapes in part how individuals will position themselves with regard to the future. Finally, multimodal approaches to discourse can also be fruitfully utilized, in recognition of the fact that material structures also influence future behaviors and actions. For example, in a supermarket, the deliberate display of food, sales labels, and aisles converging toward the cashier is intended to generate certain responses from the shopper. This type of material incarnation that is designed to produce preferred lines of action constitutes a way of delimiting possible behaviors in the present or immediate future.

Regarding the domains that have so far been focused upon by researchers of anticipatory discourse, analyses of futurity in "news reporting," "political discourse," "health and counseling," and "education and work" can be singled out. However, since anticipatory discourse is very much an emergent field, its scope should not be regarded as limited to these domains alone. The areas of investigation highlighted here should be viewed as a selection of important contributions to the field rather than an exhaustive review.

Media Discourse

The media is an important source of anticipatory discourse. Events such as upcoming elections, wars, trials, and so forth, the outcomes of which are not fixed or entirely predictable, generate their share of future-oriented discourse on the radio, on television, and in printed news. The reporting of these events requires careful managing of the uncertainty associated with them, and it is this very element of suspense which in part makes these events so newsworthy in the first place. Researchers have thus noted that news reporting often includes as much speculation as it does objective facts. Analysts of this type of anticipatory discourse have paid attention to how different groups comment on events to come (e.g., politicians, experts, media organizations, the general public, etc.), often to fulfill specific agendas or to maintain a plurality of scenarios (Jaworski & Fitzgerald, 2008). This research has focused on the status of assertions about the future and on the authority and reliability of the message (examining, for instance, *hedges, modality*, and *conjectures* in the presentation of news items) (Dunmire, 1997). These analysts have also studied *substitutive discourse*, which is the reporting that occurs when there is not yet reportable information, but there is a demand that events be reported with minimal time delay. This injunction to report events "as they are happening" often leads to the *manipulation of timeframes* (Jaworski, Fitzgerald, & Morris, 2003). Overall, this research has both described media practices and underlined some of the consequences for the democratic process, given how the present, past, and future are dealt with in the media.

Political Discourse

In the field of political discourse, researchers have proposed that an important part of politicians' work is to project their vision of the future, notably through articulating the policies and decisions they plan to enforce (Dunmire, 2005). Moreover, the aim of politi-

cians' rhetoric is usually to enroll the general audience in sharing their positions. One important aspect of political discourse is that the views of the future presented are often consequential, in that the policies articulated may have practical consequences once adopted. They might even lead to wars. In this context, investigations of anticipatory discourse focus on the rhetorical mechanisms through which certain descriptions of the future are promoted over others, contributing to expanding one's area of control. Among the studies conducted, Dunmire (1997), for example, investigates how subjective perspective—representing the views of a few—can be transformed into objective, factual, almost commonsense reality by using linguistic strategies which erase clues indicating the source of the message, the uncertainty of the events presented, or the subjectivity of the view promoted. In the context of the 1990 Persian Gulf conflict, Dunmire's research discusses how, as some futures are presented as inevitable, alternative descriptions disappear, and contexts are created for particular actions and policies (1997). Another line of research has examined how major political changes, because they create unpredictable futures for some of the population, often move individuals caught in these changes toward new learning and improvisation (Scollon, 2001). Overall, research on futurity in political discourse has sought to make visible the ideological stakes intertwined with representing and projecting particular futures.

Health and Counseling

Another area concerned with the study of anticipatory discourse is the field of health and counseling. Many communicative situations involving medical or health professionals have a link to future decisions and behaviors. For example, doctors not only diagnose illness and disease but also prescribe interventions and medications. They sometimes make prognoses about the likely evolution of a condition or about the consequences of medical choices. Counseling sessions, too, often involve conversations about difficult situations to come, such as in genetic counseling or in therapeutic exchanges of all kinds (Sarangi, 2002). Peräkylä (1993), for example, examines sessions between AIDS counselors and their clients, when the counselors need to prepare their clients for sometimes dreadful upcoming phases in their illness, including possible death caused by the virus. The study looks at the design of turns for introducing invocations of the "hostile future" and for creating a favorable environment for discussion. It also investigates the use of hypothetical questions to frame discussion about the unwanted future and explores how counselors, by emphasizing the hypothetical and conditional nature of these futures, manage the epistemological framework of their interventions. More broadly, Peräkylä's study investigates the function of future-oriented discourse in alleviating some of the psychological effects of living with the end in mind. Another line of research has focused on patients' control and agency. Al Zidjaly (2006), for example, documents the interactions between a quadriplegic man and his primary caregivers. She analyzes the verbal tactics he employs to lead others to carry out specific courses of action on his behalf and thus to retain some of his agency despite his handicap. Her study considers the use of "hypothetical future-oriented narratives" to explore best- or worst-case scenarios and to solicit help in fulfilling certain agendas.

Education and Work

Education and work are also fruitful terrains for the study of anticipatory discourse. Concerning education, the purpose of school is usually to prepare learners for future situations and circumstances, most of which are unknown at the time of learning. Curricula, for

example, are generally geared toward making available an ensemble of social, cultural, technical, and linguistic resources meant to facilitate successful trajectories into the future, even when the specifics of that future remain unknown (Kress, 1996). Detailed studies of learning and training contexts have shown, however, that not only do representations of "successful trajectories" vary among the stakeholders involved in the educational process (trainers, learners, institutions, etc.), but also educational practices often serve to exclude or include participation in future contexts (de Saint-Georges, 2008). Some researchers have thus opted to examine "both ends of the trajectory"—not only preparing learners for future circumstances but also adapting social circumstances so that they benefit those learners most likely to be excluded from them (O'Connor, 2008). In the field of workplace studies, although productive actions are always done in anticipation of some outcome, it is only indirectly that the question of anticipatory discourse has been addressed, through studying, for example, operational talk through which things get done (Nevile, 2005) or negotiations and decision making in meetings and how these direct specific courses of action (Holmes & Stubbe, 2003). Another area of research has been document design and, in particular, the study of procedural texts (e.g., prescriptions or instructions) and their association with actual actions (Filliettaz, 2004).

Implications

As researchers begin to integrate the future dimension into their work, many of them find it necessary to stretch this work beyond the traditional boundaries of linguistic analysis. For example, the study of future-oriented discourse often involves an examination not only of unique instances of texts, as is generally the case in discourse analysis, but also of chains of texts constructed over the course of several speech events, in order to trace incremental processes of meaning construction (de Saint-Georges, 2005). Only by considering what actually happened at a given point in time can the researcher unveil whether the discourses previously articulated about that point in time were in sync with reality or not. Likewise, for several researchers the study of anticipatory discourse involves an exploration of how this discourse figures in the production of concrete actions (de Saint-Georges, 2005; Al Zidjaly, 2006). In this way, research on anticipatory discourse goes beyond the study of language alone, exploring the performative functions of communication (its annunciative and constitutive capacities) and not just its referential dimension (Dunmire, 2005). Moreover, the study of anticipatory discourse requires the development of ad hoc and, at times, innovative methodologies. Over time, authors have thus proposed all of the following: auto-ethnographies designed to access the researcher's own intentions and orientations toward the future (Scollon, 2001); multisited ethnographies to trace how a discourse produced in one situation can lead to the performance of linked actions at another place and time (de Saint-Georges, 2005); and, finally, personal engagement by the researcher in actions which document the relationship between future-oriented discourse, agency, and processes of social change (Al Zidjaly, 2006). These methodologies have all added a more dynamic dimension to traditional approaches to discourse analysis. Finally, the study of anticipatory discourse raises in many cases "ethico-practical" questions (Reisigl & Wodak, 2001, p. 34). Because the future is up for the making, studying future-oriented discourse raises the ethical question of responsibility for foreseeable consequences to one's actions (Adam & Groves, 2007). It is both this ethical dimension and the potentially performative dimension of anticipatory discourse which are responsible for the fact that the critical slant has been dominant in research on futurity, although other approaches to future matters in discourse are clearly possible.

SEE ALSO: Critical Analysis of Political Discourse; Critical Discourse Analysis; Discourse in Action; Medical Discourse; Modality; Multimodal Discourse Analysis; Narrative Discourse; News Discourse; Pragmatics in the Analysis of Discourse and Interaction; Scollon, Ron

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Approaches to Second Language Vocabulary Teaching

SUHAD SONBUL

The current view of vocabulary knowledge is that of a complex construct covering a wide range of lexical items (individual words, word families, and various types of formulaic sequences) and involving various aspects. Nation (2001) developed the most comprehensive account of these aspects including the form/meaning link, grammatical function, associations, and register. Two main approaches have been proposed in the second language (L2) vocabulary teaching literature to develop this comprehensive knowledge: an explicit, direct approach and an indirect, incidental approach (i.e., learning vocabulary when the focus is on the lexical item to be learned versus learning as a by-product of any language activity, respectively). Rather than being in opposition, the two approaches are currently considered complementary. Initially, adopting an explicit approach to vocabulary instruction will help learners develop the discrete form/meaning link. Once this link is established, massive exposure to L2 texts can facilitate enhancing and consolidating vocabulary knowledge through the indirect approach. This entry will present an overview of these two main approaches to L2 vocabulary instruction and will demonstrate how they work together in an integrative manner.

The Direct/Explicit Approach to L2 Vocabulary Teaching

Many scholars in the field of vocabulary acquisition (e.g., Nation, 1990, 2001; Schmitt, 2000) have stressed the point that vocabulary learning is an incremental process taking place gradually over time starting with the form/meaning link (i.e., associating the L2 lexical item with its meaning) and going through different stages to develop the various aspects of vocabulary knowledge. To trigger this process most effectively in the L2 classroom, teachers can utilize various form-focused activities (in the field of vocabulary instruction, activities with a specific focus on the individual lexical item to be learned, either in or out of context). Choosing lexical items that should receive this explicit instruction has long been based on frequency lists (lists of lexical items ordered according to frequency of occurrence in the language) such as the "General Service List" (West, 1953) and the "Academic Word List" (Coxhead, 2000). Nation (1990) claims that high-frequency lexical items deserve more explicit focus than low-frequency ones since they occur in a wide range of texts (written and spoken) and are, hence, crucial for the accomplishment of various receptive and productive tasks.

Different methods have been proposed in the literature for communicating lexical meaning depending on the nature of the lexical item and the reason why it should be explained with the golden rules being precision and simplicity (Nation, 2001). These include:

- performing actions,
- showing objects,
- showing pictures or diagrams,
- defining in the first language (translation),
- defining in the second language (Nation, 2001, p. 85).

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In addition to these form-focused activities directed by the teacher, there are others that allow independent self-paced learning such as using "word cards" (cards with the L2 form on one side and its meaning on the other) and keeping a vocabulary notebook. Moreover, in the modern world, technology offers a number of possibilities for autonomous vocabulary learning. These include electronic dictionaries, corpora (i.e., electronic collections of authentic spoken and written texts), and multimedia resources (for an overview, see Groot, 2000). During these various form-focused activities, learners can use a range of strategies to commit lexical items to memory with the choice depending on learners' preferences and their proficiency levels (Schmitt, 2000). Shallow strategies (e.g., memorization, repetition) do not involve complex processing of L2 input and might, thus, fit beginners. However, deep strategies such as the "Keyword Method" (i.e., drawing a mental image to associate the form of the lexical item with its meaning) might well suit intermediate and advanced learners who can cope with, and may even benefit from, the amount of input associated with such strategies (Cohen & Aphek, 1981).

Although the current state of the art in language teaching is task-based, meaning-focused learning (where the focus is on the overall communicative meaning rather than individual grammatical rules or lexical items), Nation (2001) provides convincing arguments why decontextualized form-focused activities might be useful in the L2 classroom. These include practicality, faster and stronger effects, wide applicability, and the sense of achievement they give to beginning L2 learners. On the basis of research evidence showing that more explicit L2 vocabulary tasks lead to higher levels of retention, Laufer and Hulstijn (2001) proposed *The Involvement Load Hypothesis*. According to this hypothesis, any lexical activity that leads to more involvement should lead to faster and more durable gains of vocabulary knowledge.

In spite of its clear efficiency, the direct approach to vocabulary instruction has serious limitations related to time constraints and the complex nature of vocabulary knowledge. First, directly teaching all L2 lexical items is unfeasible. According to recent estimates (Nation, 2006), L2 learners need to know 8,000 word families (i.e., the root form plus its inflections and all regular derivations) to be able to read a wide range of authentic texts. Learning 8,000 root forms is in itself a daunting task, not to mention the various related forms within each family, which are not necessarily implied by knowledge of the base form (Schmitt & Zimmerman, 2002), and the various formulaic sequences associated with each item. Direct vocabulary instruction can only cover a fraction of this huge number of lexical items. Beside this major challenge, the different aspects of knowledge involved within each lexical item make the explicit teaching task almost impossible. Contextualized aspects of vocabulary knowledge, such as intuitions about register (formal/informal usage) and frequency, are not readily amenable to explicit instruction. Finally, even the most explicitly learned lexical item may be easily forgotten if not met several times in context. To sum up, any direct learning activity in the L2 classroom can be seen as a good starting point for L2 lexical development, but vocabulary instruction should not stop there.

The Indirect/Incidental Approach to L2 Vocabulary Teaching

To complement the explicit teaching approach and to overcome its limitations, incidental vocabulary learning should be facilitated through massive exposure to L2 texts. Incidental learning activities can have various receptive and productive forms such as extensive reading (i.e., reading long L2 texts when the main purpose is pleasure) and discussion groups. This indirect approach is particularly valuable in enhancing and consolidating the partial, explicitly learned lexical knowledge.

Early evidence for incidental vocabulary learning came mainly from first language vocabulary acquisition research (see, for example, Nagy, Herman, & Anderson, 1985).

Later, in a review article, Krashen (1989) extended this argument to second language learning even though his review included only three research studies focusing on L2 vocabulary acquisition. This led lexical researchers to start investigating unaided L2 vocabulary acquisition through reading. This research (e.g., Elley & Mangubhai, 1983; Waring & Takaki, 2003) has generally reached the conclusion that uninstructed L2 vocabulary acquisition is possible through reading, though only with small gains (few new form-meaning links built) and after repeated exposure (around ten times). Similar evidence comes from the few studies on incidental L2 vocabulary learning from listening (Ellis, Tanaka, & Yamazaki, 1994). Similarly, research comparing pure L2 incidental vocabulary learning to incidental learning aided by various explicit activities (e.g., Hulstijn, 1992; Sonbul & Schmitt, 2010) has shown the superiority (faster, greater, and more durable initial vocabulary gains) of the latter approach. Despite this obvious advantage of the explicit approach in developing initial knowledge of unknown L2 items (as discussed in the previous section), the essential and unique role of incidental vocabulary learning lies in enhancing known lexical items. A number of recent studies (e.g., Pigada & Schmitt, 2006) have shown that incidental learning opportunities are particularly valuable in enhancing and expanding existing lexical knowledge. When a known lexical item is met several times in context, learners start developing intuitions about various aspects of vocabulary knowledge, especially those not readily amenable to explicit instruction such as acceptable collocations and appropriate register.

In addition to its valuable enhancing role, the indirect approach has three other important benefits. First, the indirect approach has a major value in recycling and consolidating known lexical items. Nation (1990) argues that recycling is essential to L2 vocabulary development—even more important than teaching new items—since neglected old items might be easily forgotten soon after the learning session. To prevent this typical pattern of forgetting, carefully designed incidental learning activities can offer learners a wide range of opportunities to meet known lexical items in context. Second, through incidental learning strategies (e.g., inferencing and guessing from context), L2 learners might start developing knowledge of the low-frequency lexical items difficult to teach in limited classroom time. Finally, there is a motivational value in this approach as it facilitates self-learning and boosts pleasure and enthusiasm. If given the opportunity to choose reading materials, L2 learners will view extensive reading as a pleasant activity and will be motivated to read more and, hence, develop their lexical knowledge further (Thornbury, 2002). To conclude, any opportunity for incidental learning in the L2 classroom should not be viewed only as a supplementary activity, but also as an essential component of any vocabulary development program.

A Principled Scheme for Combining Direct and Indirect Approaches

The direct and indirect approaches to L2 vocabulary instruction work in synergy to facilitate vocabulary learning. Direct vocabulary teaching can be seen as a useful first step in the long journey of developing a large L2 lexical reservoir, but should be followed by contextual information provided through various classroom activities. Conversely, vocabulary met in context can always be usefully followed by explicit form-focused activities to strengthen the form/meaning link. Therefore, any vocabulary development program should keep the balance between the two approaches and see them as complementary rather than in tension. Although, the common practice in many L2 teaching contexts is to combine both approaches, this has not usually been done in any systematic manner. Nation (1996, 2001) proposes a principled and balanced L2 vocabulary development program comprising four main strands, each deserving roughly 25 percent of teaching time:

- meaning-focused input,
- language-focused (form-focused) learning,
- meaning-focused output,
- fluency development.

The minimum 25 percent devoted to form-focused vocabulary exercises in the scheme stresses the fact that implementing the traditional, explicit activities should not be the ultimate aim of the vocabulary lesson. Rather, considerable effort (50 percent of classroom time) should be dedicated to indirect, meaning-focused vocabulary learning activities (both input-based and output-based). Finally, the often neglected fluency development strand (i.e., activities helping learners to achieve fluency in using the lexical items they already know) should also receive no less than 25 percent of L2 vocabulary instruction. This is especially true in the EFL context where learners are not naturally provided with opportunities to practice language outside the classroom, and it is, thus, the job of the teacher to provide them with such opportunities. Nation (2001) stresses the importance of this fluency component without which vocabulary knowledge will be used only laboriously in real time. Keeping the balance between the four strands is indispensable if learners are to achieve an adequate mastery of L2 lexis.

SEE ALSO: Depth of Vocabulary Knowledge; Formulaic Language and Collocation; Incidental Vocabulary Acquisition; Vocabulary Acquisition in Second Language Acquisition; Vocabulary and Reading

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Aptitude in Second Language Acquisition

PETER ROBINSON

Like height, intelligence quotient (IQ), or working-memory capacity, aptitude is measurable, and differs in degree between learners in any population. Unlike height, aptitude cannot be directly observed, but must be inferred from performance on psychological tests designed to measure it. Higher aptitude for second or foreign-language learning predicts more successful adaptation to instructed, or naturalistic exposure to the second language (L2), as measured by demonstrably faster progress in learning, and in higher levels of ultimate attainment in proficiency at the end of a course of instruction, or following a period of naturalistic exposure to the L2. Aptitude is therefore a *theoretical construct* (see Jordan, 2004), operationalized in the form of a test, which aims to predict *phenomena* that characterize second language acquisition (SLA) (such as incidental learning, metalinguistic awareness, fossilization, and others), and the extent to which successful SLA occurs as a result. Although little was known about these SLA phenomena during the period when aptitude tests were first developed (the 1930s to the 1950s), recent attempts to conceptualize and measure aptitude are addressing the extent to which tests of aptitude predict them—including for example, the extent of successful incidental L2 learning (Robinson, 2005a), metalinguistic awareness of the L2 (Roehr, 2008), and the influence of each on levels of ultimate L2 attainment (Abrahamsson & Hyltenstam, 2008). Some of these issues are described below, following a discussion of early developed conceptualizations, and measurement of aptitude for language learning.

The first tests of language-learning aptitude were developed in the early part of the 20th century (Symonds, 1930), at about the same time as tests of general intelligence were developed. These tests were developed largely in response to institutional and educational concerns which continue to influence proposals for operationalizing and using aptitude tests today. One of these concerns was to *select* those people best able to learn languages. For example, in many countries military and diplomatic personnel have to learn other languages. So to select those best able to do this, institutions such as the Defense Language Institute in the United States developed their own aptitude tests (Petersen & Al-Haik, 1976). Another reason for developing aptitude tests is to *diagnose* relative strengths and weaknesses in the abilities thought to contribute to language learning, so as to *differentiate* instruction and exposure to the L2 for individual learners in ways that optimally match their strengths in abilities, and compensate for areas of weakness (Robinson, 2007).

Perhaps the best known test of language learning aptitude, the Modern Language Aptitude Test (MLAT), was developed in the 1950s by John Carroll and Sidney Sapon (Carroll & Sapon, 1959). It is still used widely in SLA research into aptitude today, in its original (e.g., Robinson, 1997) and in translated versions (e.g., DeKeyser, 2000). Using this test, in the 1960s Carroll (1962) showed that students who were successful at learning Spanish and other L2s in schools in the United States were also, largely, those who scored high on the MLAT. The positive correlation between scores on this measure of aptitude, and scores on achievement tests in these programs, was reported as between 0.4 and 0.65. John Carroll argued that the MLAT predicted the *rate* or *speed* of foreign-language learning. He did not claim that those who scored low on aptitude tests could *never* reach high levels

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of ultimate attainment in the L2, but only that they would take *longer* to do this than those who scored high on his test.

Since the MLAT measure of aptitude is very similar to other, currently available tests that have been developed (e.g., Pimsleur, 1966; Petersen & Al-Haik, 1976), and is the measure most widely used, to date, in SLA research, I will describe it, and problems associated with it in some detail. The MLAT is a paper and pencil test, composed of five parts, and three of these are described below.

1. "Paired Associates" requires learners to memorize 24 foreign-language words, which are presented with their English translations. This measures what Carroll called "rote memory."
2. "Words in Sentences." There are 45 items of the following type. Given a sentence such as *Mary is cutting the APPLE*, which of the following underlined words performs the same grammatical function: *My brother John is hitting his dog with a big stick*. And the answer is "dog," the direct object. This measures what Carroll called "grammatical sensitivity."
3. "Phonetic Script" measures whether the person taking the test can match a nonsense word that they hear to its written form on a page. This measures what Carroll called "phonetic sensitivity."

Undoubtedly, being able to memorize foreign vocabulary, and understand grammar, and correctly identify sounds in a language you are studying are all very useful. If you are good at these you should do particularly well in L2 classrooms, because memorizing word meanings, understanding grammar, and correctly identify sounds are often assessed in measures of achievement—particularly those adopted in the audiolingual programs of instruction that were prevalent in the 1960s when the MLAT was developed. However, there are two major problems with the MLAT measure of aptitude:

1. Learning a language involves different abilities at different stages of *development*. The MLAT and other current aptitude tests don't measure these.
2. Learning a language takes place in many different situations and classroom contexts. The MLAT and other current aptitude tests are *insensitive* to these.

These problems of developmental and situational insensitivity are problems of construct validity. Aptitude tests like the MLAT don't actually measure the full range of abilities that contribute to language learning over time, and across settings in which L2 exposure can occur. They measure only a small number of the abilities that are drawn on during SLA. For example, what happens when we *begin* to learn a language? Obviously, we must develop a basic vocabulary. We do this by listening to, understanding the meaning of, and remembering new L2 words. The paired associates subtest of the MLAT measures this ability. We must also begin to understand the order in which words occur in sentences of the L2, and to understand other aspects of grammar. The words in sentences subtest measures this ability too. And finally we must correctly identify new L2 sounds we hear, and the phonetic sensitivity subtest measures this as well.

But what happens *after* these beginning stages of language learning? We must then use words, in the correct order, while speaking to, and managing interaction with others in the L2. There are many abilities for speaking and interacting in an L2, but the MLAT doesn't measure any of them. It has no measure of the ability to *produce* a language in speech or writing. But these abilities are important to *intermediate* success and progress in L2 learning. And at more *advanced* stages of L2 learning, often outside the classroom, we must learn how to *behave* appropriately in the L2, and learn the appropriate formal and

informal phrases and expressions needed at work, and when socializing. The MLAT doesn't measure the abilities for learning these. Based on these considerations Robinson (2005b) has argued that aptitude for language learning develops as the abilities drawn on in the initial stages of language learning reconfigure and are supplemented by abilities drawn on in later stages of learning. No current test of aptitude operationalizes this developmental perspective, though Robinson (2005b) has nominated clusters of abilities that should be important to aptitude for learning at beginning, intermediate, and advanced stages of L2 learning.

The second problem of *situational insensitivity* referred to above concerns the match between the abilities measured by an aptitude test, and the processing conditions under which learners are exposed to L2 input. For example, how do we learn new words or new grammar, or how to pronounce words in the L2? One way, of course, is to listen to a teacher explaining and demonstrating each of these, and then to remember and practice yourself. This is *explicit learning*: it is something you do intentionally and it requires effort and concentration. In contrast, children do not learn their first language (L1) in this way. Very young children have no explicit memory for the past. They have no long-term memory, and very limited short-term memory and attention spans. Consequently, children learn the patterns of the L1 *implicitly* and they are very sensitive to the frequencies with which forms co-occur (Saffran, Aslin, & Newport, 1996). They learn these co-occurring forms and patterns of language from exposure alone, and not as a result of explicit instruction.

There is no doubt that adults learn a lot of the L2 explicitly, by concentrating only on what they have to learn, and then later remembering it. But they also have the ability to learn the L2 *incidentally*, and this is closely related to child L1 implicit learning. Incidental learning is unintentional learning. You go to a birthday party, and next day you can remember names and faces of people you met there that you didn't know before. You read a book in the L2 and afterwards you know the meaning of some new words, but you didn't intend to learn them—you read the book to find out what happens to the main character.

In fact, many *situations* in which the L2 can be learned (like parties, the workplace, watching subtitled movies) require the abilities for incidental learning. One could argue that for advanced L2 learning, the ability to learn incidentally is particularly important. Some adults are good at learning the L2 incidentally, while others need more help in such situations. But the MLAT and other current aptitude tests don't measure ability for incidental learning. They measure only abilities for explicit, intentional learning. Robinson (1997, 2005a) showed that the paired associates, and words in sentences subtests of MLAT do not predict incidental L2 learning, though they do predict explicit instructed L2 learning, and correlate significantly and positively with measures of verbal intelligence. To this extent, measures of aptitude such as MLAT are situationally insensitive, predicting learning under explicit, but not incidental processing conditions.

Clearly, since the 1950s and 1960s when aptitude batteries such as the MLAT were first researched, piloted, and then published there has been a great deal of SLA research (see Ellis, 2008). These early aptitude batteries were developed without the benefit of findings from this research. Similarly, important psychological constructs and phenomena such as priming (Kinoshita & Lupker, 2003), task switching (Monsell, 2003), implicit, episodic, and working memory (Baddeley, 2007), were simply not conceived of, theorized and researched, at that time.

There is therefore a clear need to update our current theories, and measures, of aptitude, accommodating, where necessary, these recent findings from SLA and cognitive psychology research. Skehan (2002) has proposed such an updated theory of aptitude, proposing that processing input for meaning; organizing what has been heard and relating it to what is already known; and producing language in response to task demands, are three differ-

ent stages that correspond to different abilities and aptitudes for successful L2 learning and performance. Robinson (2002, 2007) has proposed a theory of aptitude describing how different clusters of cognitive abilities are related to learning from explicit instruction; incidental learning from written input, and from oral input; and from corrective recasting of output. For example, individual differences between learners in the extent to which prior exposure to a word or form "primes" and so speeds their subsequent recognition of it is proposed to be related to their success in incidental learning from speech or text. On the other hand, the ability to "switch" attention between the communicative content of speech, and a form made salient by recasting or input enhancement is proposed to be related to individual differences in task-switching abilities—those with better task-switching abilities being better able to process and learn the recast or enhanced form. Researching the issues raised by these more recent theories of aptitude is to be encouraged for the light this can cast on explanations of SLA phenomena, as well as for its potential relevance to pedagogy, and the issue of matching learner aptitudes to optimal conditions of instructional exposure.

SEE ALSO: Carroll, John B.; Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Individual Differences in the Classroom; Working Memory in Second Language Acquisition: Phonological Short-Term

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Arabic Standardization

BRAHIM CHAKRANI

History of and Motivation for Arabic Standardization

Understanding the process of language standardization in the Arab world necessitates probing into the sociohistorical factors that motivate the attitudes that Arabs have toward their language. Records of the existence of standardized Arabic dates to the fifth century CE; yet it is unclear whether or not this standard is the literary outcome of many dialects or represents one particular dialect (Hourani, 2002). Local dialects of Arabic within the Arab peninsula contributed to the emergence of a standardized form of Arabic, called *fusha* (Standard Arabic [SA], literally "the eloquent language"). This resulted in an unprecedented amount of knowledge production, using the medium of SA.

Language for the Arabs played a central role in expressing and maintaining their cultural history and was regarded as the *diwan* ('record') of the entire speech community (Cachia, 2002). Some scholars have argued that due to the role Arabic came to play in the construction of the Arabic speech community, the members of that community possessed a more profound and intimate knowledge of their language than did speakers of other languages (Versteegh, 1997). Such in-depth knowledge and development of the language called for the restriction of borrowed words, which are considered *dakhila* ('intruding').

Standardization as a Means of Language Maintenance

With the expansion of the Muslim empire, many non-Arabs adopted Islam. These new Muslims quickly learned SA (Cachia, 2002) as an assertion of their new religious identity. This adoption represented an instance of positive linguistic assimilation with Arabs as they came into contact with local languages and cultures of the new converts (Mansour, 1993). Consequently, Arabic was not only the language of religion but also a literary and scientific language in the Arab world (Hourani, 2002).

Arabs noticed the introduction of *lahn* ('deviant, divergent speech') in the speech of the growing number of non-Arab Muslims. In addition, the expansion of the Muslim empire marked the beginning of the divergence between SA and spoken dialects of Arabic (Versteegh, 1997). In fact, the renowned scholar Ibn Khaldoun, considered by some scholars to be the father of sociology (Kalpakian, 2008), argued that Arabic standardization was introduced due to this divergence from Arabic speech norms. Ibn Khaldoun argued that grammatical rules for SA were introduced given the growing concern for the religious texts becoming incomprehensible due to potential language change, as these linguistic changes occur through hearing (Versteegh, 1997). Therefore, he maintained that Arabs' codification of SA was able to reverse such divergence and maintain linguistic continuity.

The task of standardizing Arabic was given to the famous Arabic scholar Ad-Du'ali by the ruler of Basra, Ibn 'abiihi (Shehadeh, 2007), as well as to Sibawayh, a non-native Arabic speaker, considered the father of Arabic grammar (Versteegh, 1997) and whose influence on grammar continues today. Standardization stems from the need to preserve linguistic

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congruity and continuity of the Arabs with each other and with the past. In light of diverging dialects in the entire Arabic-speaking community, establishing the grammar of SA meant, for the Arabs, maintaining unity, conformity, and stability, rather than asserting linguistic difference.

Dialect Ideology

Access to understanding local Arabic dialects is only possible through the listener's ability to understand SA, as the link between these dialects can only be established through the attainment of the standard language. Greeting expressions such as Iraqi Arabic *Sh lunak?*, its Moroccan equivalent *La bas 'lik?*, or the Levantine expression *Kifak?* (all translated as 'How are you?') are all related to SA. These expressions would be unintelligible or morphophonologically opaque to speakers of other Arabic dialects, unless they possess access to the standard variety.

Many scholars have asserted the importance of investigation of the vernacular languages alongside the standard language in their function and use (Milroy & Milroy, 1999). However, given the diglossic nature of the Arab world (Ferguson, 2000) and due to the covert prestige Arabs attach to their local dialects, the vernacular languages in the Arabic context cannot substitute for the standard language. As with the Swiss German language situation (Watts, 1999), the standardization of any one dialect to the exclusion of others would constitute a disconnect from the wider Arabic-speaking community. Moreover, Arabs, due to their attachment to their local dialects, do not view the standardization of any local dialect, including their own, as capable of representing the entire Arabic-speaking community. In fact, in the 1930s, when a few Egyptians called for the standardization of the Egyptian dialect to replace SA in Egypt (Haeri, 2003), these calls were rejected by most Egyptians, given their attachment to SA and their desire for linguistic unity with the greater Arab community. Arabs view the relationship between SA and the dialects as that of richness and complementation, rather than conflict and opposition.

The Colonial Encounter

The recent colonial encounter of the Arab world with European countries and the contact of Arabic speakers with transplanted European languages have resulted in a linguistic domination of Western languages in the Arab world. The modernization of SA took shape through this language contact. Abdulaziz (1986) argues that the standardization process in the modernization of Modern Standard Arabic (MSA) meant an extensive lexical, morphological, and syntactic influence by and borrowing from Western donor languages, especially English. Colonial language policies in the Arab world led to the strengthening of standardization as an assertion of linguistic independence from the colonial powers (Tazi, 1986). In fact, the rise of Arab nationalism in the postcolonial context increased the need for Arabs to assert their linguistic identity, maintain their linguistic unity through MSA, and implement Arabization policies to assert the presence of SA in functional domains formerly allocated to European languages (Chakrani, 2010). With the standardization of SA and the increasing literacy rate, speakers from different parts of the Arab world are able, with a minimal education, to communicate using the standard language (Abdulaziz, 1986).

SEE ALSO: Academies of the Arabic Language and the Standardization of Arabic; Standardization in Human Language Technology

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Assessing Multilingualism at School

GUUS EXTRA AND TON VALLEN

In this entry, the focus is on assessing both the home- and the school-language repertoires of multilingual school populations in a context of increasing cultural and linguistic diversity of societies and schools—due to processes of globalization and migration.

Assessing the Home-Language Repertoires of Multilingual School Populations

Demographic changes in increasingly multicultural societies have been documented in various ways. Poulain (2008) makes a distinction between nationwide censuses, administrative registers, and statistical surveys. Censuses take place at fixed intervals and result in nationwide databases. Administrative registers are commonly built up at the municipal level, accumulated at the national level, and updated every year. Statistical surveys may be carried out at regular intervals among particular subsets of population groups. Most census data on language use have been collected and analyzed in non-European English-dominant countries like Australia, Canada, and the USA. Most of the research is based on large-scale longitudinal analyses of (home) language use, maintenance, and shift toward English (Clyne, 2003). In Europe, such databases are less common, either because census practices are unfamiliar phenomena or because they do not include language questions (Extra, 2010). If available, non-mainstream language questions in European population research relate commonly to regional languages and rarely to immigrant languages. Finland is a European example with census practices on both types of languages. The UK for the first time has an inclusive question on languages other than English in its 2011 census.

Although an increasing number of school pupils make use of home languages that differ widely from the mainstream or "national" language, primary schools are rather reluctant to change their monolingual *habitus* (Gogolin, 1994). The status of community languages (a common concept in Australia and Canada) in mainstream education is very low, let alone the status of assessing community-language competences (Extra & Yağmur, 2004, pp. 379–92). Community languages are rarely part of mainstream education. If teaching takes place at all, this occurs commonly during out-of-school hours and on the initiative of concerned community members rather than educational authorities. Apart from English in non-English dominant countries, the mainstream language is commonly the only subject and medium of instruction. Educational responses and research focus on learning and teaching the mainstream language as a second language. Community languages are associated with language deficits and learning problems rather than with resources that could be exploited through education.

Against this background, the rationale for collecting, analyzing, and comparing home-language data on multicultural school populations derives from at least four perspectives (Extra & Yağmur, 2004, p. 112):

- Home-language data play a crucial role in the definition and identification of multicultural school populations.

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- Home-language data offer valuable insights into the distribution and vitality of home languages across different population groups, and thus raise public awareness of multilingualism.
- Home-language data are indispensable tools for educational planning and policies.
- Home-language data offer latent resources that can be built upon and developed in terms of economic opportunities.

Most of the research on assessing home-language repertoires of multicultural school populations has been carried out in urban/metropolitan areas. International migration and multilingualism are concentrated in such settings. The same holds for intergenerational processes of acculturation and language shift. Barni and Extra (2008) present case studies on mapping both regional and immigrant languages in Europe and abroad. In accordance with the distinction made earlier between census data, register data, and survey data, we will discuss prototypical examples of large-scale research on home-language repertoires derived from each of these three types of databases, reported by García and Fishman (1997/2002) for New York City, by Baker and Eversley (2000) for Greater London, and by Extra and Yağmur (2004) for six continental European cities.

García and Fishman (1997/2002) focus on how languages other than English (LOTE) have contributed to making New York City a culturally vibrant and linguistically diverse metropolis. Most research evidence is derived from census data on home-language use. The city's largest group of LOTE speakers is still Spanish-speaking. This holds also for NYC school populations, being, in decreasing order, of Puerto Rican, Dominican, and Mexican ancestry. According to census data from the year 2000, three out of five New Yorkers claim to use only English at home, and one out of five speak Spanish. Seven other home languages were reported by more than 50,000 New Yorkers: Chinese, Italian, French, Yiddish, Russian, Korean, and Greek. A total of 52 languages were reported by more than 1,000 speakers. García and Fishman discuss and compare census data from 1990, 1980, and decades before, on reported home languages, reported degree of bilingualism in English and LOTE of different ethnolinguistic groups, and processes of language maintenance and shift to English. In 1993/1994, there were 131 NYC public schools with bilingual programs in 12 different languages; 85% of the students were in Spanish–English programs in which Spanish was commonly taught only temporarily in transitional bilingual programs.

Baker and Eversley (2000) made a reanalysis of the data on home-language repertoires of pupils from public primary and secondary schools collected by the 33 Local Educational Authorities (LEA) in each of their districts in Greater London in 1998/1999. The cumulative database consists of 850,000 pupils' responses and generated more than 350 different home languages. The top five were English, followed at a distance by Bengali, Punjabi, Gujarati, and Hindi/Urdu, all of them originating from the Indian subcontinent. Computerized maps of the spread of the top 30 home languages in Greater London were composed using Geographic Information Systems techniques. Baker and Eversley gave a detailed account of all languages traced, and dealt with methodological issues in analyzing large-scale home-language databases. For complementary in-depth stories of multilingual identities in London we refer to Block (2005).

Extra and Yağmur (2004) report on the Multilingual Cities Project, carried out in Göteborg, Hamburg, The Hague, Brussels, Lyon, and Madrid. Aims of the project were to gather, analyze, and compare multiple data on the status of immigrant minority languages at home and at school, taken from cross-national and crosslinguistic perspectives. The total sample consists of 160,000 pupils' responses for an age range from 6 to 12 years. In analyzing the data, the regularly updated database of the *Ethnologue* (Lewis, 2009) on languages of the world proved to be very helpful. Apart from Madrid, the proportion of primary-school children in whose homes other languages were used next to or instead of the

mainstream language per city ranged from 30 to 50%. The total number of traced "other" languages per city ranged from 50 to 90%. The common pattern was that few languages were referred to frequently and many other languages only rarely. Children in all cities expressed a desire to learn a variety of languages not taught at school. Those children who took part in instruction in non-mainstream languages at school reported higher levels of literacy in these languages than children who did not take part in such instruction.

Assessing the School-Language Repertoire of Multilingual School Populations

Even though the last decades have shown an improvement in school results of second-generation immigrant pupils, these pupils still lag behind their majority peers in school success. Socioeconomic status, home language, ethnocultural background, and school characteristics are important indications for these different results. Few studies have investigated whether differences in test scores, rather than being determined solely by pupils' efforts, might also partly be caused by the test instruments being used. If the mean scores of two subgroups of testees differ, such differences may be caused by differences in the skills to be measured or by specific characteristics of the measurement procedure (Gipps & Murphy, 1994).

If school-language proficiency and achievement tests are meant to differentiate between high- and low-achieving students, one must be sure that the scores of the two subgroups can be interpreted in a similar way. However, research has shown that many tests contain items that function differently for different subgroups, even when the students belonging to these subgroups have the same level of skills. This phenomenon is known as Differential Item Functioning (DIF). It occurs when students of different subgroups (e.g., native vs. non-native students of the mainstream language) do not have the same chances of answering a given test item correctly despite their equal skills in the construct to be measured and their comparable achievement level in a particular domain (Dorans & Holland, 1993). If answering a DIF item correctly requires skills or knowledge (e.g., specific school-language jargon) *other* than those intended to be measured (e.g., arithmetic), the result is unfair item bias (Camilli & Shepard, 1994).

Item-bias research is commonly carried out in three steps (Uiterwijk & Vallen, 2005). First, various statistical techniques are used to detect DIF items. Second, one needs to determine which element(s) in a DIF item may be the cause of DIF. Information has to be obtained from various relevant sources in different ways (e.g., not only by asking judgments from informants but also by conducting experiments such as Think-Aloud procedures and Rewrite procedures), since it is rather difficult to precisely identify the element that causes DIF. Third, one has to decide whether the possible DIF source is relevant to the construct the test claims to measure. If not, the item is biased and should be adapted or removed from the test.

As yet, little research has been done on DIF and item bias in Europe compared to the USA and Australia (McNamara, 1998). Differentiation between groups appears to be caused usually by socioeconomic status, gender, language background, and ethnocultural group membership. In most cases, the focus is on the statistical detection of DIF items only. Some researchers add subjective content analyses in order to find item characteristics that might be responsible for DIF. Controlled experiments to confirm or reject possible DIF sources in relation to the construct measured are rare. All DIF items are commonly removed from the test, although only biased DIF items are unfair to the tested subgroup(s) of students.

A combination of statistical DIF analyses, researcher and expert judgments, and controlled experiments has been applied in a research project with 180 language items, 180 mathematics items, and 180 information-processing items found in several Cito Final Tests of Primary

Education in the Netherlands, all set in Dutch. The results of three subgroups of 12-year-old pupils were investigated: pupils whose parents interact (1) in Dutch, (2) in Turkish or Kurdish (henceforth Turkish students), and (3) in Arabic or Berber (henceforth Moroccan students). The focus was on linguistic sources of DIF and item bias (Uiterwijk & Vallen, 2003, 2005). The following mathematics item may serve as an example where a decision has to be made as to whether or not the item can be considered as biased on the basis of school-language use.

> Father buys a sewing machine. The machine costs €800, VAT not included. The VAT is 20%. How much does Father have to pay including VAT?
>
> ☐
>
> **A** €160 **B** €640 **C** €820 **D** €960

Derived from statistical procedures, it turns out that the item shows DIF to the disadvantage of Turkish and Moroccan students. Expert judgments and controlled experiments provided strong evidence that the item would not have shown DIF if the question had been "What does Father have to pay with VAT?" Although language related, the phrase "including VAT" is not considered to be a central notion in mathematics teaching in primary education. Therefore, it is not part of the construct that the test aims to measure (knowledge of mathematics) and reduces the construct validity of the test: The item is biased and should therefore be adapted or removed.

In the different subtests of the Dutch Cito Final Test of Primary Education, the language subtests contain most DIF items. If linguistic elements that cause DIF belong to the language objectives of the education level, these items do what they should do and do not reduce the test's construct validity. Even so, language items with DIF might be adapted or removed from a language test. Sometimes, reviewers agree that an element most probably responsible for linguistic DIF is actually part of the objectives of secondary rather than primary education. These items thus measure more than they are supposed to at the time and level of test administration.

With respect to the language-proficiency and achievement tests, researchers have to decide which DIF items are biased and which ones are not. The descriptions of the domains the items claim to measure turn out to be very informative and helpful in reaching a decision. While in the above-mentioned study 17% of all items show DIF, only 4% of these items are biased: 1.5% to the advantage of Turkish and Moroccan minority students and 2.5% to their disadvantage (Uiterwijk & Vallen, 2005). The latter can contribute to a less accurate prediction of secondary-school success and lower chances for admission and results at this educational level for non-native minority students than for native majority students.

Conclusion

The data presented in this entry originate from case studies on the assessment of both the home- and school-language repertoires of multilingual school populations. First, the focus has been on prototypical cross-national examples of large-scale research on home-language repertoires derived from different types of databases. Next, item-bias research has been addressed as a crucial ingredient in assessing the school-language repertoire of multilingual non-native speakers of this repertoire. The data presented on item bias originate from case studies on the Netherlands; similar phenomena have been reported in the cross-national studies referred to.

SEE ALSO: Assessment Across Languages; Bias in Language Assessment; Bilingual Education and Immigration; Fairness in Language Assessment; Language Planning and Multilingualism; Language Testing and Immigration; Multilingualism and Minority Languages

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Assessment Across Languages

MARTYN CLARK

When assessing scholastic knowledge of students for international comparisons, assessment facilitators must be sure that the different language versions of the test assess the same content across all the language groups in the comparison. When an educational institution reviews its foreign-language curriculum and compares student progress in the different foreign-language classes offered, it needs to be sure that learners across languages are assessed against the same benchmark. In each of these situations, the same assessment needs to work across language populations. In the first situation, the language is irrelevant to the knowledge being assessed. For example, educational researchers may be interested in students' knowledge of biology in many parts of the world with diverse first languages and they therefore use a common test translated into multiple languages. In the second case, test users are interested in language ability itself, making it necessary to develop ways of comparing students' levels of language ability even when they are studying different languages.

Test Constructs and Construct Irrelevant Variance

The particular ability being assessed on a test is known as the *construct*. Examples of constructs are mathematical ability, the ability to describe the process of photosynthesis, or the ability to speak French. Testing specialists treat a construct being measured as a theoretically posited ability that is not directly observable and must be inferred from the performance of tasks that are intended to rely upon that ability for successful completion (Cronbach & Meehl, 1955). Thus, inferring a particular learner's ability to add two-digit numbers would most likely entail having that learner perform two-digit addition. Inferring ability to speak French would require the examinee speak French under defined conditions.

Because the goal of an assessment is to measure a person's ability with respect to a particular construct, it is vital that score differences on the assessment accurately reflect differences in ability related to the construct, rather than differences unrelated to that construct (AERA/APA/NCME, 1999). An overriding concern in any testing situation is to minimize construct irrelevant variance, the expression used for anything that affects a test score, but which is unrelated to the construct being measured. If the language used in a mathematical word problem is unknown to the student, for example, that student might not be able to understand the question itself, even though he or she possesses the mathematical ability that the question is attempting to measure. In this case, the language of the test question would introduce construct irrelevant variance into the test score. The student's success on that particular item may not be a reflection of the student's mathematical knowledge, as intended. The greater the construct irrelevant variance in a given assessment, the more suspect the student's test score becomes as a measure of the ability the test aims to measure.

The primary issue in assessing across languages, therefore, is to ensure that the various language versions of the assessment instrument are as free from construct irrelevant variance as possible. In cases where the construct of interest is not related to the language of the assessment, such as in international assessments of science ability or a satisfaction

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survey given to hospital patrons of various backgrounds, the goal is to minimize or eliminate the effect of the particular language version of the assessment instrument on the resulting scores. In situations where the goal is to compare relative foreign-language ability across a variety of languages, then the goal is to ensure that similar scores on different language versions of the assessment represent similar levels of foreign-language ability, and not knowledge of the topics that the examinee is asked to speak about on the test, for example.

Adapting Content Tests Into Other Languages

Test adaptation to multiple languages is widely used in international comparisons of educational progress, such as the Trends in International Mathematics and Science Study (TIMSS) or the Program for International Student Assessment (PISA). Researchers also adapt questionnaires and surveys so that they can be used with subjects who do not speak the language of the original version. Political considerations may also play a role, and a particular region may have two or more official languages or language variants with the legal requirement that surveys and other assessment instruments be available in all official languages. In addition, legal rules for standardized testing of school subjects require special accommodations for students from a linguistic minority if they do not yet have sufficient command of the language of the test. In all of these situations, the goal is to minimize the effect of the language of the test on the measurement of the ability of interest.

Historically, several techniques have been employed to adapt content tests and surveys into other languages for use with populations who do not speak the language of the original version (Behling & Law, 2000). The most straightforward adaptation, a forward translation, assumes that a version of the test to be adapted already exists. A person fluent in both the language of the original instrument and the target language is employed to translate each of the items on the assessment instrument into the target language. If the text to be translated is relatively straightforward and consists mainly of simple instructions, then this type of translation can be effective. But if the instrument to be adapted relies more on the particular nuances of the language, such as a survey of attitudes toward education, then slight differences in the wording of the question between the original and translated version can influence the results in unintended ways across the different language versions of the instrument.

In cases where there are few available speakers of the target language and there are few other resources available, the forward translation method may be the only method available. The danger with this method is that there is very little in the way of quality control of the final translation. The ability to translate accurately from one language to another is a specialized skill, and merely knowing the two languages in question does not guarantee that the translated version of the test will be comparable to the original version. The bilingual translator is most likely bicultural as well, and there is no guarantee that the translated version will be appropriate for a monolingual audience of test takers. A preferred variation of this method is to include an expert review of the translation by another speaker competent in both languages (Geisinger, 1994). This review is especially critical in situations in which the assessment includes specialized terms, such as medical terms, which might not be familiar even to competent speakers of the language.

To overcome some of the problems with a single, forward translation, assessors employ a second technique called back translation. In this method, the test to be adapted goes through two rounds of translation. First, the text is translated from the original language into the target language, as in forward translation. Next, the translated text is re-translated into the original language by a second person who has no knowledge of the original text.

Areas of disagreement between the original text and the back-translated text can be scrutinized and rewritten to ensure that the important information of the original is maintained in the translated version. If needed, the process can be repeated several times until the definitive translation is created. Interviews in which participants are asked to verbally express what they are thinking while responding to different language versions of the assessment can help identify problematic items missed by translation.

Translation is not the only method available to develop content tests in multiple languages. Some researchers have investigated concurrent development of multiple language versions of the same assessment instrument (Solano-Flores, Trumbull, & Nelson-Barber, 2002). With this method, two or more versions of the assessment are created at the same time and following the same test specifications, an approach common in language proficiency assessment and discussed later. Concurrent development can be more time consuming, but it has some potential advantages over translation. Typically, translated versions of assessments do not go through the rigorous field testing and revision process of the original language version whereas concurrent development ensures that both language versions go through the same field testing and revision process.

It is often mistakenly assumed that adapted or translated items will be understood exactly as their original counterparts. It is important that this assumption be verified empirically. It is not enough merely to look at the average scores on the individual language versions of the test because lower scores for one language version versus the other may indicate actual differences across the language groups rather than inconsistencies across the versions of the test. Certain statistical techniques and research designs allow researchers to empirically verify that items across languages are behaving in the intended manner (Sireci, 1997). Many of these techniques fall under the label of differential item functioning (DIF). Although statistically complex, the basic idea behind DIF is relatively straightforward: For test takers of the same ability, there should be no statistically significant difference between items for different language groups. If a particular item is significantly easier or more difficult on a particular language version of the assessment, even when ability is held constant, then this suggests that there is something problematic with the item.

Even when due diligence is followed in creating multiple language versions of a test, caution must be exercised when interpreting test results. It is important for test score users to recognize that all test scores contain a certain amount of error. Test scores for individuals are best thought of as ranges around the final score, rather than single points. When comparing performance across different groups whose abilities have been assessed with different language versions of the same assessment, it is vital to recognize that small differences in scores may say more about an error in the test than the construct being assessed (Grisay, de Jong, Gebhardt, Berezner, & Halleux-Monseur, 2007).

The International Test Commission (ITC), established in the 1970s, promotes effective and appropriate testing practices. In 2000, the group produced a set of guidelines for adapting tests in response to the increasing use of assessments internationally (Hambleton & de Jong, 2003). These guidelines focus on the cultural context of the assessment, test development and adaptation, test administration, documentation, and score interpretation.

Assessing Language Ability Across Languages

Testing language ability across multiple languages can be seen as a special case of assessing across languages, and many of the issues discussed above apply. For example, PISA, an internationally standardized evaluation of the scholastic performance of 15-year-olds designed to help facilitate international comparisons of educational achievement, includes a reading literacy component that is developed through a process of rigorous test specifications,

text selection, translation, and cultural appropriateness considerations (McQueen & Mendelovits, 2003). Tests of foreign-language ability have also been created through a process of item-by-item translation (Clark, 1965). But most language educators in the communicative language teaching tradition believe that foreign-language assessments should focus on the examinee's ability to understand and use the language, and are uncomfortable with reducing test development for these purposes to the translation of existing instruments.

For this reason, assessments of language ability across languages often focus on the construct of second or foreign-language proficiency. Language proficiency can be defined as the ability to use a second or foreign-language to understand and create meaning for real-world purposes. These purposes may include tasks, defined as reading a novel in the original language of publication or successfully booking a room in a hotel. Other language uses can be defined abstractly, such as supporting an opinion that has been challenged or tailoring one's language appropriately for a delicate social situation. Regardless of the particular language being learned, learners can be evaluated based on their ability to perform the functions required for real-world language situations, and the results of those evaluations can be compared across languages. One way of framing such comparisons across languages is through the use of theoretical frameworks attempting to characterize this ability (e.g., Canale & Swain, 1980; Bachman & Palmer, 1996).

Another way is the use of one of the several language proficiency scales that have been developed to operationally describe the real-world functional ability of language learners with increasing levels of language proficiency. In the United States, the Foreign Service Institute/Interagency Language Roundtable (FSI/ILR) scale was developed in the 1950s to help define the language ability of government and military employees (Clark & Clifford, 1988). The FSI/ILR scale includes verbal descriptions of the typical language ability profile of a second or foreign-language speaker across five major proficiency levels, from 0 (no functional ability in the foreign language) to 5 (language ability equivalent to that of an educated native speaker). There are also "plus" levels between each of the major levels to indicate persons whose proficiency is considerably above the base level and able to perform some of the tasks indicative of the next higher proficiency level, but is unable to sustain performance at that higher level. Sets of descriptors were also developed for assessing listening, reading, and writing.

The FSI/ILR skill level descriptors are used across the more than 100 languages taught and tested in the US government. For the listening and reading skills, the descriptors are supplemented with a passage rating system based on text typology derived from an analysis of real world texts intended for native speakers (Child, 1987). This typology delineates increasing levels of textual complexity derived from four modes of language realization, ranging from concrete language for immediate use (such as traffic signs) to highly abstract and metaphorical uses (such as literary criticism). This typology is used to inform the content of reading and listening assessments based on the FSI/ILR system. Recently, skill level descriptors have also been developed for translation and interpretation, underscoring the distinction between general language proficiency and these more specialized skills. All of the skill level descriptors are intended to be language neutral and applicable to any foreign language.

The FSI/ILR scale was adapted in the 1980s for use in academic contexts by the Educational Testing Service (ETS) and the American Council on the Teaching of Foreign Languages (ACTFL) (Hiple, 1987). The adaptation included fleshing out the descriptions at the lower end of the scale, truncating the scale at the upper levels, and moving from a number-based labeling system to a more user-friendly labeling system for the level descriptions (novice-low to superior). These modifications were intended to make the scale more usable for the proficiency levels typically achieved by students studying foreign language in the United States.

Both the FSI/ILR and the ACTFL scales are often associated with an oral assessment protocol known as an oral proficiency interview (OPI), a cross-language technique used to assess proficiency. Oral proficiency interviews are intended to elicit language samples matching the descriptions in the proficiency scale by means of a standardized interview procedure conducted in the target language. Raters must be trained in proper elicitation techniques to obtain ratable samples of speech and to ensure that evidence for all important criteria for a given proficiency level are elicited. During the proficiency interview, the tester checks and probes the examinee's proficiency level in a conversational manner. Because the interview is not scripted ahead of time, the tester must consciously guide the discussion through questions that are intended to elicit particular features of the examinee's language. Careful training of testers is necessary if the interview is to be comparable across languages.

Although the ACTFL and FSI/ILR scales are used widely in the United States, other proficiency scales have been developed in other areas to standardize the descriptions of language ability across languages. The FSI/ILR scale provided the foundation for the Australian Second Language Proficiency Rating (ASLPR) (Ingram, 1990), later renamed the International Second Language Proficiency Rating (ISLPR). In Canada, the Canadian Language Benchmarks are intended to provide proficiency descriptions for both French and English ability (Pawlikowska-Smith, 2000).

In Europe, the Common European Framework of Reference (CEFR) has been very influential in providing a public framework to define language proficiency across languages (Council of Europe, 2001). This framework, from which specific proficiency scales can be developed, builds on previous projects that sought to identify the language functions needed to perform at various proficiency levels. The CEFR contains descriptors of what learners can accomplish with their language across three major levels, each with two sublevels, giving a range from basic proficiency (A1) to mastery (C2). Working from its own five-level proficiency scale, the Association of Language Testers of Europe (ALTE) created a set of self-assessment statements to study the relationship between student self-assessed proficiency and performance on ALTE members' exams. These statements, known as "can do" statements, focus on what the learner can do with the language, rather than points of deficiency, and are intended to help learners self-assess their developing proficiency. The ALTE statements have since been aligned with the CEFR, from which another self-assessment scale has been developed.

Linked to the CEFR levels, a European project, DIALANG, was created as a diagnostic assessment of reading, writing, speaking, and listening skills across 14 European languages (Alderson & Huhta, 2005). The items were developed with different language groups all working from the same set of test specifications. The test is ambitious in that test takers are able to choose not only the target language to be tested, but the language of the instructions, as well. Although the test content is linked to the CEFR proficiency levels, the test itself is not intended to certify proficiency, but rather to provide diagnostic information to the learner.

Despite the use of frameworks to assume equivalence, a complicating factor arises due to the differences in the time required to reach a given framework level in different languages. What is intended to have the same meaning, a particular proficiency level, in fact is arrived at in differing amounts of time depending on the language, even when instructional methods are the same. Years of experience in training soldiers in different languages has led the US military to devise a classification scheme for the relative difficulty in attaining particular proficiency levels for native speakers of English learning the languages for the first time. According to this scheme, a monolingual native speaker of English will generally take longer to develop a high level of proficiency in Arabic or Chinese than to develop a comparable level of proficiency in Spanish. This becomes important when

comparing proficiency scores across languages to investigate teacher efficacy, curriculum design, and merit pay for employees, or to set graduation requirements.

Proficiency-oriented tests based on descriptive frameworks and scales are not without their detractors. There have been criticisms of the oral interview process and the descriptions of text levels that comprise the reading proficiency descriptors for the FSI/ILR and ACTFL scales (Lee & Musumeci, 1988). Questions have been raised as to the usefulness of the CEFR for developing comparable tests (Weir, 2005), and though a detailed manual documenting procedures for establishing the validity of local exams intended to link to the CEFR has been developed (Council of Europe, 2009), many tests claim linkage without necessarily providing evidence to support the claim. There is also increasing awareness of the political nature of setting national or international foreign-language standards (Fulcher, 2004).

Not all testing programs with multiple language tests are proficiency based. The Advanced Placement (AP) language tests in the United States, for example, are aligned with performance in college-level language classes, rather than an external global proficiency scale (Bischof et al., 2004). Prototypes have also been developed for cross-cultural assessment of pragmatics (Hudson, Detmer, & Brown, 1995) and second-language task performance (Norris, Brown, Hudson, & Yoshioka, 1998). These projects are useful for informing assessment across languages even though they are not conceptually linked to the proficiency frameworks described above.

There are additional issues that need be considered for tests in multiple languages. For Internet or computer-based tests, the proper display of the target language text may be affected by the particular fonts loaded on the test machine; although, this is becoming less of an issue with increasing acceptance of standards, such as Unicode. A simple text input box, for example, must be set for right-to-left text for languages such as Arabic and Persian, but left-to-right for languages such as French and German. If test takers are not familiar with keyboarding in the target language, or if the keyboard used during test taking is different from what they are accustomed to, the assessment of writing via computer can introduce construct irrelevant variance into the test scores. Such variance would differentially affect test scores across languages.

Regional and dialectical variations in the language, as well as cultural variation in the communities in which the language is spoken, must also be considered when developing tests. In the past, "authenticity" was seen as an ideal in language instruction, with many language educators insisting that materials use in testing be written by native speakers of the language with the intent of being read by other native speakers of the language. In fact, both the ACTFL and FSI/ILR reading and listening proficiency descriptors are explicit in this requirement. However, this notion is called into question when assessing English (or another language) as a lingua franca in situations where neither participant is a native speaker of the language. Additionally, not every piece of "authentic" language is equally appropriate for use in a testing situation. An Indian radio interview with a speaker of Hindi may include some code-switching between Hindi and English, for example. With the increased globalization of the media, a magazine article in an Arab magazine may actually be a translation of a piece originally written in a different language. The suitability of materials like this, given the test purpose, must be taken into account when determining test content. Many of the recommendations made in the literature for adapting non-language content tests into other language formats is relevant to testing across languages, as well.

For foreign-language tests, an additional decision concerns whether to use the target language exclusively for the entire test, including instructions and test questions, or to use a different language, such as English, for the instructions and questions. If the target foreign language is used exclusively for both the reading passages and the test questions,

it can be challenging to determine whether an incorrect answer points to a difficulty in understanding the passage, a difficulty in understanding the question, or both. On the other hand, if the test uses a non-target language, such as English, for the instructions and questions, test takers who are not fluent in that language will be at a disadvantage.

Conclusion

There is little doubt that the need for assessment across languages will continue into the future to meet the needs of linguistically diverse populations and changing demographics. This is already being reflected in the demand for foreign-language instruction and assessment in an ever increasing variety of languages. Although need-driven demand has pushed the development of procedures and frameworks for working across language, much work remains to be done to better understand the extent to which different language forma of tests actually result in comparable sets of test scores. This technical challenge exists alongside the need to recognize the inherently human, and thus political, nature of testing to ensure that assessments across languages appropriately balance the technical requirements of quality assessment development with the ethical responsibility of defensible assessment use.

SEE ALSO: Authenticity in the Language Teaching Curriculum; Bias in Language Assessment; Common European Framework of Reference; English as Lingua Franca; Language Policy and Multilingualism; Language Testing and Accountability; Language Testing in the Government and Military; Tests; Translation Theory; World Englishes and Assessment

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Assessment and Evaluation: Mixed Methods

CAROLYN E. TURNER

This entry describes a study which falls into the category of instrument development for assessment and evaluation purposes using a mixed methods research (MMR) design. Such an approach has often been discussed as the "procedure of choice" for assessment/test instrument construction in research contexts (Creswell, 2009). The discipline of language assessment and testing is no exception. Until the emergence of the third paradigm of MMR (Johnson & Onwuegbuzie, 2004), however, studies describing activity that employed both quantitative and qualitative data were not labeled as MMR, and were therefore difficult to identify through database searches. Presently, as the "third research community" gains ground (Teddlie & Tashakkori, 2009; Creswell & Plano Clark, 2011), we now see an increasing number of researchers situating their studies in MMR claiming pragmatic approaches to research design.

Background of the Study

The study described below is situated within the area of health communication. It was carried out by the author and two colleagues, Michel Laurier and Talia Isaacs, who also contributed to this entry. With the increasing number of diverse linguistic populations living side by side, daily situations often involve interlocutors conversing in their second (or third) language (L2). One situation that is particularly challenging is a conversation between a health professional and a patient (Bender, Clawson, Harlan, & Lopez, 2004). This study arose from within the healthcare community and the desire of health practitioners to linguistically accommodate their patients (see Turner, Isaacs & Laurier, 2010; Isaacs, Laurier, Turner, & Segalowitz, 2011). Language barriers can arise when health practitioners and patients do not speak the same first language (Jacobs, Chen, Karliner, Agger-Gupta, & Mutha, 2006). Direct communication with patients has become a growing interest among health practitioners as opposed to the reliance on third parties (e.g., interpreters, family members, or both) especially in countries where there are two official languages (e.g., Canada, Belgium). This has implications for the development of pedagogical approaches to aid healthcare practitioners improve their L2 language abilities.

This entry reports on the first part of a L2 assessment instrument development project where construct definition was the focus. The purpose was to identify a list of speech tasks and ability levels that are specific and relevant to the nursing profession. In the long term, and not reported here, the results of this study will be used to inform the development of a L2 oral interaction assessment tool for teaching and learning purposes. Motivation came from registered nurses who were interested in a nursing-specific pedagogical tool to help enhance their workplace oral communication (i.e., L2 interactions with patients). This is not to be confused with a certification or licensing test.

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The specific research questions were:

Q1: To what extent do nurses identify, in a consistent and reliable way, specific speech tasks that they perceive as relevant and requiring an appropriate level of language ability in L2 interactions with patients?
Q2: To what extent can the speech tasks so identified be scaled in relation to existing L2 performance benchmarks?
Q3: To what extent do the patterns of speech tasks identified by nurses fall into well defined categories that could serve as the basis for developing a pedagogically oriented assessment instrument for nurse L2 training?

In order to obtain the needed data for the study described here, and in order to help make meaningful inferences, a MMR design was judged the most appropriate. A sequential exploratory mixed methods design (Creswell & Plano Clark, 2007) was employed. It included two sequential phases: a first phase of qualitative data collection and analysis and a second phase of quantitative data collection and analysis that built on the results of the first phase and in addition were informed by the results. There are numerous MMR designs, but when studying a phenomenon (in this case language needed for nurse–patient oral interaction) with the intent of developing an instrument it is recommended to initially collect qualitative data at the source (target population) and expand on the findings through quantitative means with a larger sample of the pertinent population. This study set out to identify the oral communication needs of nurses in the workplace (i.e., nurse-specific speech tasks). It was situated in the province of Quebec (Canada) and in-service registered nurses were the participants. Due to the bilingual nature of the setting (French and English), nurses frequently find themselves dealing with patients whose L1 is not the same as their own.

Several diverse procedures were used across the two sequential phases of this study, including direct input from nurses, that is, indigenous assessment (see Jacoby & McNamara, 1999; Douglas, 2000). The tools/procedures used in the first qualitative phase were: literature review, preliminary questionnaire/working document, focus group, and verbal protocol. The product was a questionnaire for nurses. The second quantitative phase included: descriptive statistics, Rasch analysis, exploratory and confirmatory factor analyses, alignment of resulting speech tasks with the Canadian Language Benchmarks (CLB) scale bands (a previously validated rating instrument commonly used for workplace purposes). The product of the second phase was a list of speech tasks and ability levels that are specific and relevant to the nursing profession. A visual diagram of the research design is seen in Figure 1.

Qualitative Phase

The first step in the qualitative phase was a comprehensive literature review of studies focusing on nurse–patient oral interaction. The literature consulted was: health, communication, language pedagogy, and measurement and evaluation. This content analysis resulted in 22 speech tasks (i.e., the language used in varying interactions between nurses and patients).

The next and second step of the qualitative phase was to devise a preliminary questionnaire with scales for *relevance* and *difficulty* to use as a working document with a small focus group of nurses (see Creswell & Plano Clark, 2007). The group consisted of five first language (L1) French registered nurses ranging from 20 to 35 years of experience (M = 27.8) at a Quebec regional hospital. They represented varying nursing domains. A

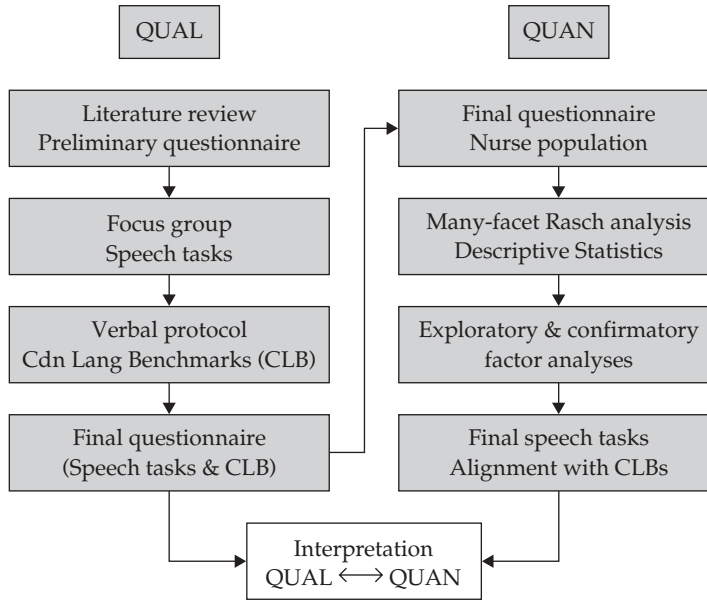

Figure 1 Sequential exploratory mixed methods design: instrument development

two-hour focus group session led by two of the researchers resulted in a final list of 19 speech tasks. Some of the original ones were deleted due to irrelevancy, and new relevant ones were added. In addition, specific contextual examples were provided.

The third step was to refine the list and reflect on the proficiency levels needed to perform the speech tasks when compared to a national standard of 12 band descriptors for L2 proficiency for professional purposes, namely the *CLB* (www.language.ca/display_page.asp?page_id=1). This was done through the use of verbal protocol (as an alternative to piloting for validation purposes) with a domain expert who was an experienced nurse with French as a first language. The data were transcribed and a content analysis was done. This step resulted in two decisions: (a) the 19 speech tasks from the focus group were retained, and (b) only the middle seven band descriptors out of the 12 on the *CLB* were deemed relevant to the nursing context (i.e., levels 4 through 10); thus the beginning (levels 1–3) and advanced proficiency levels (levels 11–12) were eliminated. The English version list of the 19 speech tasks retained was:

1. Check identity over phone.
2. Give directions over phone.
3. Reformulate pain description.
4. Give instructions in person.
5. Give instructions on phone.
6. Give info about services.
7. Summarize health situation.
8. Describe reaction to diagnosis.
9. Describe interventions.
10. Reason with patient.
11. Reassure patient.
12. Show empathy.
13. Clarify doctor's message.

14. Ask routine questions.
15. Refuse unreasonable requests.
16. Apologize to patient.
17. Encourage patient.
18. Manage patient's anger.
19. Inform patient of bad news.

The fourth and final step of the qualitative phase was to develop a questionnaire for the larger population of nurses to examine their perceptions and validate the relevancy of and proficiency levels needed to perform these 19 speech tasks. Two versions (French/English) within two formats (hard copy and online) were developed. The latter employed the tool *Survey Monkey* (www.surveymonkey.com). The 19 speech tasks and the seven middle-level *CLB* descriptors were provided and participants were asked to identify the relevant *CLB* level for each speech task using the prompt, "The person who can perform the following task . . . should at least be at level."

Quantitative Phase

As indicated in Figure 1, the initial step in the quantitative stage was the administration of the questionnaire to 159 registered nurses with a mean experience of 19 years (ranging from 1 to 36 years). The second step was to refine these data and to determine the degree of agreement among the nurses (i.e., to demonstrate convergence). A methodology employed in earlier studies was used, a combination of descriptive statistics (SPSS 14.0) and Rasch analysis (FACETS 3.60) (e.g., Blais, Laurier, & Rousseau, 2009).

A many-facet Rasch model (polychotomous) was used to analyze the ordered categories (Andrich, 1999) obtained from the nurses' ratings, that is, the seven middle-level *CLB* descriptors. The two facets were speech tasks (item indicators) and nurses (rater respondents). The analysis went through three iterations to obtain a good model fit. This process basically helped "clean up" the data. The population was reduced from 159 to 133 nurses. Those removed were due to same ratings on all statements, or erratic ratings.

FACETS provides a graphical summary (the "Rasch ruler") of the calibration results of each facet and its elements (see Figure 2). They are positioned on a common logit scale which appears as the first column in Figure 2, and the zero point is considered the mean. The second column represents the speech tasks and their difficulty level as judged by the nurses, with the most difficult at the top and the least difficult at the bottom. The speech task "Inform patient of bad news" was judged as the most difficult task for nurses in an L2, whereas "Check identity over phone" was the easiest overall. The third column indicates the severity of the nurse respondents with the more severe at the top and the more lenient at the bottom. The fourth/scale column demonstrates where the most likely boundaries between levels are located. It can be seen that mainly only five of the seven middle-level *CLB* descriptors were used in the nurse judgments. Infit mean-square coefficients were the main source of information used. The analysis revealed that all indicators had infit indices below Wright and Linacre's (1994) suggested cutoff value of 1.4, with the expected value of 1. (For further information on Rasch analysis, see *Rasch Analysis Transactions* www.rasch.org/rmt/) This analysis along with consideration of the descriptive statistics led to all 19 speech tasks being retained and to the validation of their proficiency levels as calibrated with reference to the *CLB* (i.e., it demonstrated agreement across the nurses on what should and shouldn't be considered difficult to articulate when interacting with a patient). The procedure confirmed all item behavior to be statistically adequate for the next analysis.

```
+   2 +                                                                  + *.     +     +
|     |                                                                  | *      |     |
|     |                                                                  | **.    |  6  |
|     |                                                                  | *.     |     |
|     | 19.Inform patient of bad news                                    | *.     |     |
|     |                                                                  | .      |     |
|     |                                                                  | *      |     |
|     |                                                                  | **.    | --- |
|     |                                                                  | **     |     |
+   1 +                                                                  + **.    +     +
|     | 13.Clarify doctor's message                                      | **     |     |
|     | 18.Manage patient's anger         8.Describe reaction to diagnosis | **.    |     |
|     | 10.Reason with patient                                           | *****. |  5  |
|     | 11.Reassure patient               7.Summarize health situation   | *****. |     |
|     |                                                                  | ****.  |     |
|     | 6.Give info about services                                       | **.    |     |
|     | 12.Show empathy                   5.Give instructions on phone   | **.    | --- |
|     |                                                                  | ***    |     |
*   0 *                                                                  * *      *     *
|     | 4.Give instructions in person                                    | **     |  4  |
|     | 9.Describe interventions                                         | *      |     |
|     | 16.Apologize to patient                                          | **.    |     |
|     | 15.Refuse unreasonable requests                                  | **     |     |
|     | 3.Reformulate pain description                                   | ***    | --- |
|     |                                                                  | *.     |     |
|     |                                                                  | .      |     |
|     | 17.Encourage patient                                             |        |  3  |
+  -1 +                                                                  + .      +     +
|     | 14.Ask routine questions          2.Give directions over phone   |        |     |
|     |                                                                  | .      | --- |
|     |                                                                  | .      |     |
|     |                                                                  |        |     |
|     |                                                                  |        |     |
|     |                                                                  | .      |  2  |
|     | 1.Check identity over phone                                      |        |     |
|     |                                                                  |        |     |
+  -2 +                                                                  +        +     +
```

Figure 2 Location of the speech tasks (indicators) on the "Rasch ruler"

The objective of the next and third step in the quantitative phase (see Figure 1, exploratory and confirmatory factor analyses, EFA and CFA) was to identify the underlying constructs from the questionnaire data. These in turn would be used in the long-term goal of the project which was to develop a formative assessment tool to help nurses improve their L2 skills when dealing with minority language patients (i.e., a pedagogical tool, and not a high-stakes test for licensing purposes). In order to keep in line with the worldview of MMR and the sequential exploratory model used in this study, it was decided a priori that no speech tasks would be eliminated in the factor analyses. In the qualitative stage these speech tasks had been identified as the most relevant nurse–patient interactive tasks by the domain specialists (i.e., the nurses). Then subsequently in the second step of the quantitative phase, there was evidence that all 19 speech tasks were adequately functioning. These substantive data informed the factor analyses and overrode any statistical expedience of excluding speech tasks (i.e., for reasons of parsimony, better model fit, or both).

The factor analyses proceeded as follows. Using SAS 9.2, an EFA was first performed on the questionnaire data using varimax rotation. Figure 3 is a screenshot of the EFA commands used. When taking into consideration multiple indices (i.e., eigenvalues and screen plot, Kaiser's criterion, overall root mean-square residual), the analysis suggested three underlying factors. Following the worldview of MMR described above and the initial selection of three factors, a CFA was performed on the questionnaire data (for a detailed explanation see Isaacs et al., 2011). Several models were compared and Figure 4 shows the model selected, which was a second order CFA model and included all 19 speech tasks as exogenous variables (for the reasons stated above). Figure 4 only shows the statistically significant factor loadings. The first and higher order factor (labeled health-specific verbal

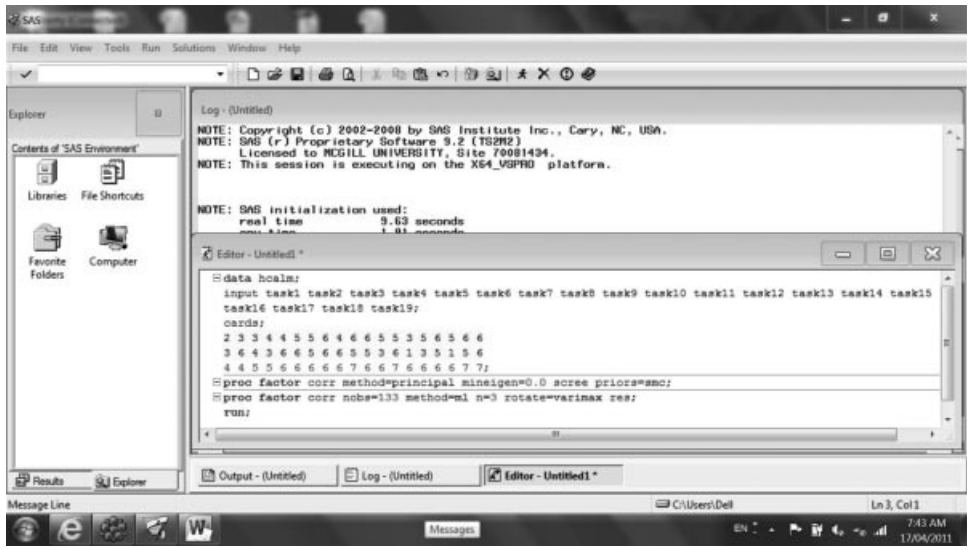

Figure 3 Screenshot of SAS commands for EFA (SAS Proprietary Software 9.2)

interaction with patients) predicted the three second-order factors (F1, F2, and F3), all of which, in turn, predicted the 19 speech tasks. Figure 4 shows the loadings of each item (speech task) on F1, F2, and F3. The latter were labeled respectively: F1—*emotional aspects of caregiving*, F2—*factual aspects related to the patient's medical condition*, and F3—*routine aspects*. It is to be noted that F3 was not significantly associated with F4 (−0.23). Results show that F1 and F2 were identified as being the most demanding in terms of L2 ability, and the most strongly associated with L2 ability required for nurse–patient interactions.

To evaluate the validity of the model, goodness-of-fit statistics were examined (Schermelleh-Engel, Moosbrugger, & Müller, 2003). The fit was not ideal from a statistical viewpoint, but informed by the qualitative phase (i.e., domain specialists, the nurses) which was confirmed by the second step in the quantitative phase, this model was deemed sufficient and the most appropriate for the purpose of a formative assessment tool for pedagogical use. Table 1 presents the goodness-of-fit statistics. It is important to note, however, that for a high-stakes test, other models would need to be considered.

The fourth and final step in the quantitative phase (see Figure 1) was to align the results with the *CLB*. In the third step of the qualitative stage, it was decided that the *CLB* scale would be reduced to the middle seven band descriptors out of the 12 on the *CLB* for the purposes of this study. This was carried into the questionnaire development. Interestingly

Table 1 Fit indices for the confirmatory factor analysis model that was selected

Fit statistics	*Acceptable fit*	*Model fit*
p value (χ^2 test)	$0.01 \leq p \leq 0.05$	<0.0001
RMSEA	$0.05 \leq \text{RMSEA} \leq 0.08$	0.11
NNFI	$0.95 \leq \text{NNFI} \leq 0.97$	0.85
CFI	$0.95 \leq \text{CFI} \leq 0.97$	0.89

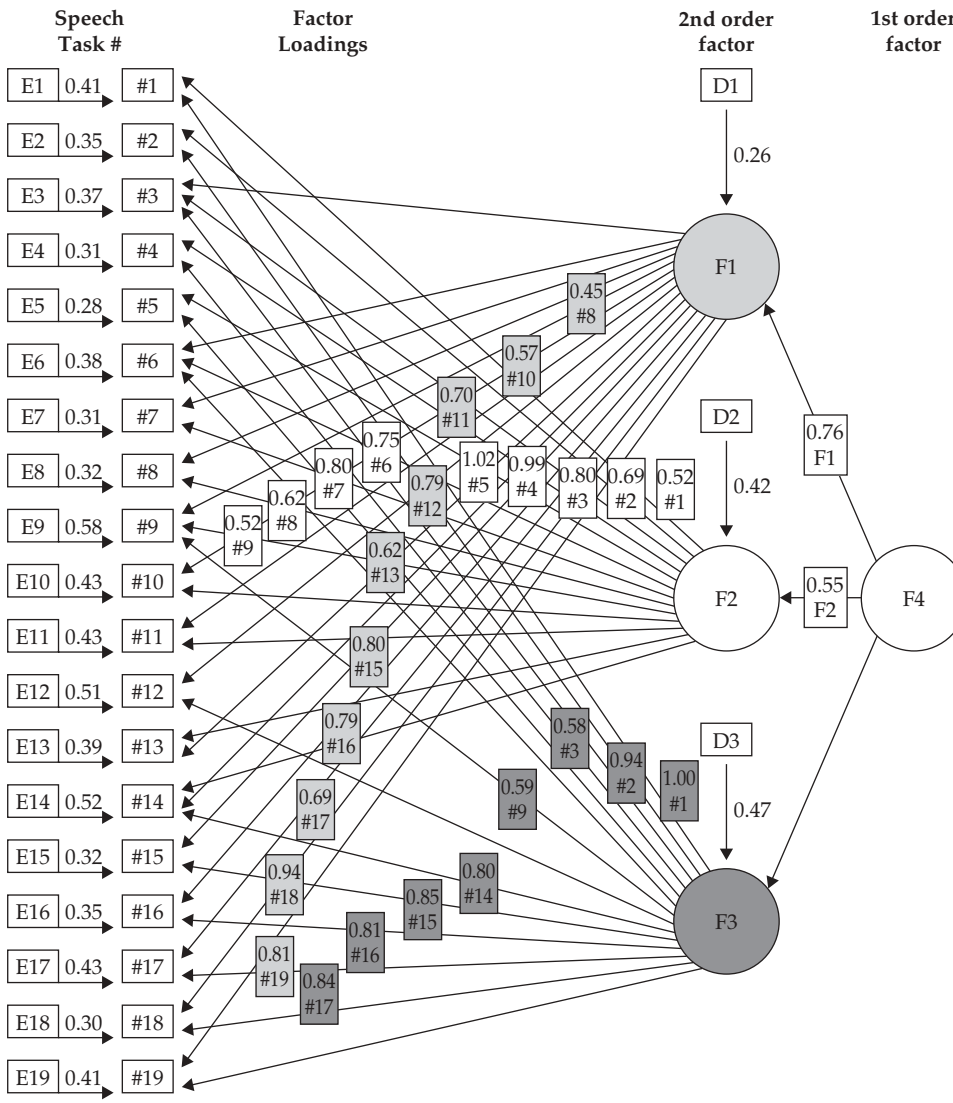

Figure 4 Second order confirmatory factor analysis model
Notes. While the arrows show all of the relationships specified in the structural equations for the confirmatory factor analysis model, only statistically significant factor loadings are shown in the factor loading boxes ($\alpha = 0.01$, two-tailed). The number appearing in the second line of these boxes after the "#" sign refers to the speech act item number that the factor is linked with. Boxes that contain "D"s are the error terms associated with the second order factors. Boxes that contain "E"s are the error terms associated with the speech acts. Notably, there is no correlation between the second order factors (i.e., they are orthogonal). Adopted from Isaacs et al. (2011).

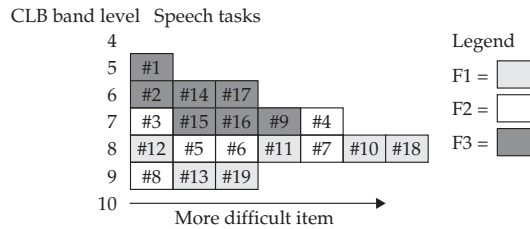

Figure 5 Aligning speech tasks with CLB scale bands

enough, the quantitative analyses showed that the speech tasks were only calibrated onto five *CLB* scale bands, not seven, resulting in a five-point scale (see Figure 5). This had implications for further decision making in terms of the constructs and content to be included in the development of the formative assessment tool.

Issues and Challenges or Implications

This entry has demonstrated the use of mixed methods research for assessment and evaluation purposes, and more specifically for helping define the constructs to be included in the specifications of an instrument development project. It has shown that in a mixed methods sequential exploratory design, the researchers take into consideration the results from both qualitative and quantitative phases (i.e., they are perceptive to how they inform each other). In the study described here, decisions made at the first phase (qualitative) influenced the direction of the second phase (quantitative). In addition, the first phase results helped guide the second phase in instances of quantitative analysis limitations. The purpose and research questions drove the inquiry. This is not to say that MMR does not bring challenges (Greene, 2007; Creswell & Plano Clark, 2007, 2011; Creswell, 2009; Teddlie & Tashakkori, 2009), but, for certain types of research, the combined use provides an important profile of the research problem at hand. In this study, for example, it provided an expanded empirical basis for determining which speech tasks are the most difficult and relevant in a particular context. This not only provided evidence, it also contributed credibility to the task from the viewpoint of the stakeholders involved (i.e., nurses and patients).

SEE ALSO: Describing and Illustrating Quantitative Data; Factor Analysis; Knowledge Claims; Structural Equation Modeling

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Assessment and Evaluation: Quantitative Methods

JAMES DEAN BROWN

The Evaluation Study

In evaluating the English Language Institute (ELI) at the University of Hawai'i at Mānoa (UHM) in the early 1990s, we carefully developed criterion-referenced tests (CRTs) directly related to the objectives of each of our eight courses (for descriptions of all aspects of our curriculum development processes, see Brown, 1995; for much more on these CRTs, see Brown, 1993). The tests for each course were developed in two forms and administered at the beginning of the courses as diagnostic tests (with half the students taking Form 1 and half taking Form 2) and at the end of the courses as achievement tests (with the students taking the other form). We were interested in evaluating the degree to which students had learned or acquired the knowledge and skills represented in the course objectives by comparing their scores at the beginning and end.

We knew from experience that norm-referenced tests (NRT) like the Test of English as a Foreign Language (TOEFL), Test of English for International Communication (TOEIC), the International English Language Testing System (IELTS), and so forth are very useful for proficiency testing (used primarily in admissions decisions and occasionally for comparing programs) and placement testing. However, we also knew that such NRTs should not be used for assessing the learning of the particular objectives within our program because NRTs are (a) not designed for such purposes, (b) not reliable for such purposes, and (c) not sufficiently sensitive to reflect the sorts of learning that go on in short, one-semester courses with only 45 contact hours (for evidence of such problems, see Childs, 1995). We therefore carefully designed in-house CRTs to measure the exact sorts of knowledge and skills the students were learning in each course (as represented by the course objectives). In short, we wanted student learning to show up on our tests, so we used objectives-based CRTs designed specifically to evaluate the effectiveness of our courses (for more on CRTs, see Brown & Hudson, 2002; Brown, 2005).

In making any such pretest–posttest comparisons, one question that inevitably arises is the degree to which any changes observed in the students' scores between the beginning and end of the course could have occurred by chance alone (i.e., are statistically significant). To study that issue, I used repeated-measures analysis of variance (ANOVA) procedures (as did Lynch, 1992, as part of his evaluation study in Mexico). I could also have used a paired *t*-test, but chose to use repeated-measures ANOVA because the statistical program I use provides additional statistics for effect size and power in the ANOVA results that are not available in paired *t*-test results.

Entering the Data

I use a number of different statistical programs in my daily work, so I find it convenient to always enter and store my data in a spreadsheet program. However, researchers who only use SPSS may choose to enter their data directly. In either case, entering data for the

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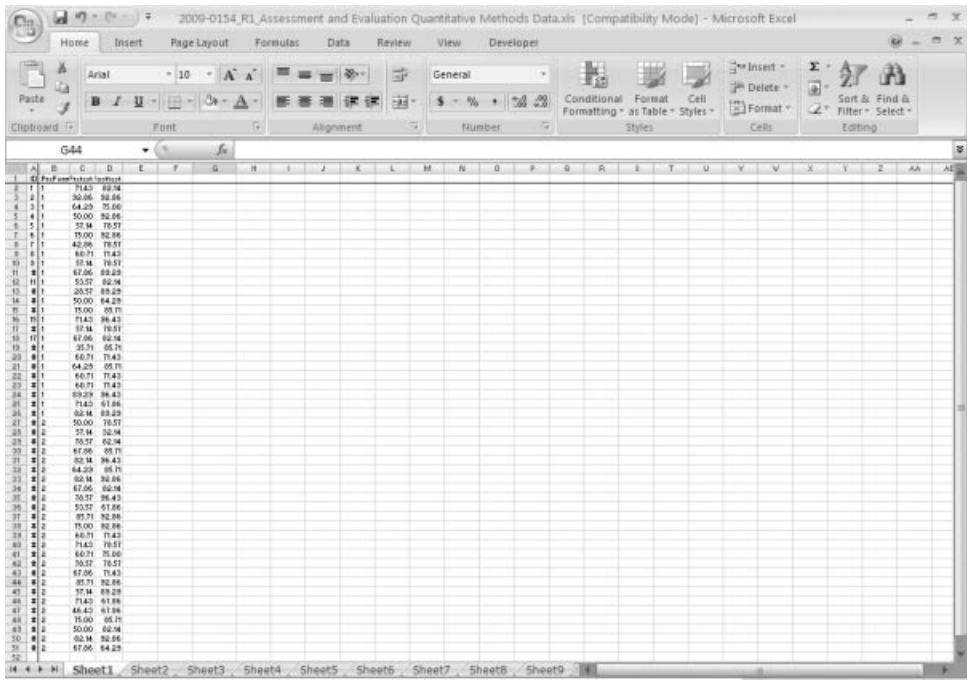


Figure 1 Complete example data set as entered in Excel[tm]

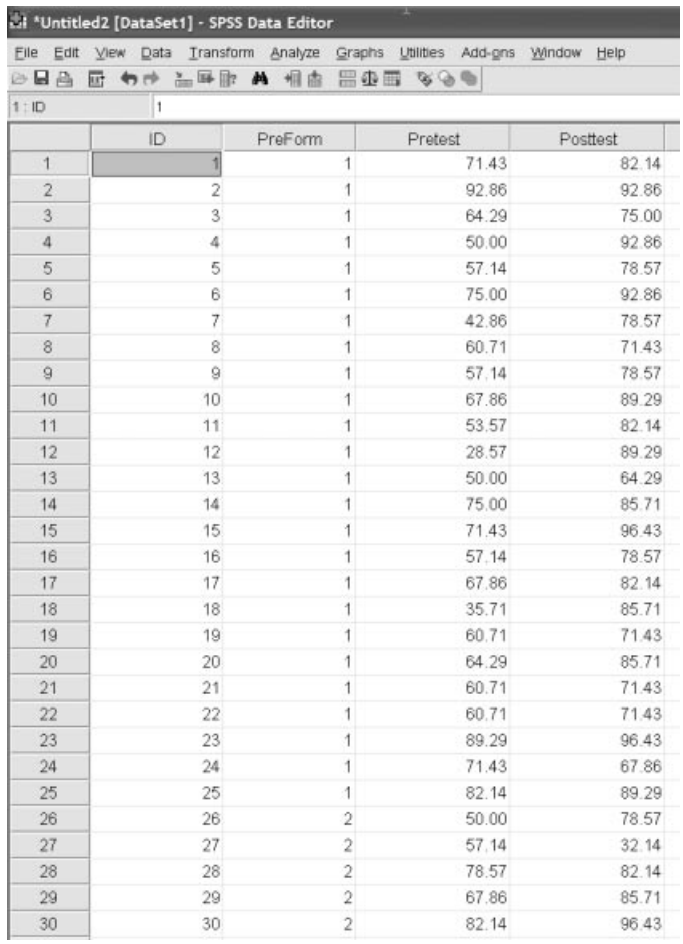
study described here involved recording the students' ID numbers, the form that they took first (PreForm), their pretest scores, and their posttest scores.

Figure 1 shows a simple data set taken from our in-house evaluation of the multiple sections of our ELI 82 (Advanced ESL Reading) course. Notice that the data are entered into the Excel spreadsheet program in Figure 1. Note also that each student's data are put in a single row and that each of the four variables (ID, PreForm, Pretest, and Posttest) is recorded in a separate column.

Next, I saved the Excel spreadsheet data in a file and imported that file into my SPSS program (version 16 in this case). Readers who wish to follow along with this analysis may want to use Excel first as I did or enter the data directly in their own version of SPSS. To enter the data directly, just open the Data Editor in SPSS and click on the *Variable View* tab in the bottom left corner of the screen. Type in the variable names in the first four cells of the first column (labeled *Name*). Then go back to the Data Editor (by clicking that tab in the bottom left corner of the screen) and enter the numbers that you see in Figure 1 into SPSS Data Editor—a part of which is shown in Figure 2.

Running a One-Way Repeated-Measures ANOVA

This ANOVA is necessarily a repeated-measures design because the same people took both the pretest and the posttest. If different people had been involved in the pretest and posttest, an ordinary ANOVA could have been run. But most pretest–posttest analyses like this one will involve the same people. Indeed, in most cases, the researcher will want to check to make sure that all the same people are represented in both tests by eliminating anyone who was absent on one of the testing days. In any case, pretest and posttest scores must be present for every student for the one-way repeated-measures ANOVA to be correctly performed in SPSS.



	ID	PreForm	Pretest	Posttest
1	1	1	71.43	82.14
2	2	1	92.86	92.86
3	3	1	64.29	75.00
4	4	1	50.00	92.86
5	5	1	57.14	78.57
6	6	1	75.00	92.86
7	7	1	42.86	78.57
8	8	1	60.71	71.43
9	9	1	57.14	78.57
10	10	1	67.86	89.29
11	11	1	53.57	82.14
12	12	1	28.57	89.29
13	13	1	50.00	64.29
14	14	1	75.00	85.71
15	15	1	71.43	96.43
16	16	1	57.14	78.57
17	17	1	67.86	82.14
18	18	1	35.71	85.71
19	19	1	60.71	71.43
20	20	1	64.29	85.71
21	21	1	60.71	71.43
22	22	1	60.71	71.43
23	23	1	89.29	96.43
24	24	1	71.43	67.86
25	25	1	82.14	89.29
26	26	2	50.00	78.57
27	27	2	57.14	32.14
28	28	2	78.57	82.14
29	29	2	67.86	85.71
30	30	2	82.14	96.43

Figure 2 Partial view of the example data as they appear in SPSS[tm] Data Editor

The assumptions for repeated-measures ANOVA are multivariate normality, homogeneity of covariance matrices, and sphericity. This type of analysis is robust to violations of the first two assumptions, and the third assumption can be checked by examining Mauchlys's test of sphericity, which is presented automatically in the SPSS output for such designs. After checking these assumptions, enter the data into the SPSS program and do the following (please pay special attention to which table or figure the instructions are discussing; some of them look very similar to each other):

1. Select *Analyze* from the middle of the menu bar near the top of the screen.
2. In the menu that drops down, select *General Linear Model*.
3. From the menu that pops out, select *Repeated Measures* . . . A window should appear that looks like the one in Figure 3a.
4. In the box below *Within-Subject Factor Name* where it says "factor1," type "PrePost" as shown in Figure 3a. Then type "2" in the box next to *Number of Levels*, also as shown in Figure 3a (because there are two occasions Pretest and Posttest).
5. Click on the button that says *Add*. The *Repeated Measures Define Factor(s)* menu should now look like Figure 3b with "PrePost(2)" in the box just below and to the right of *Number of Levels*.

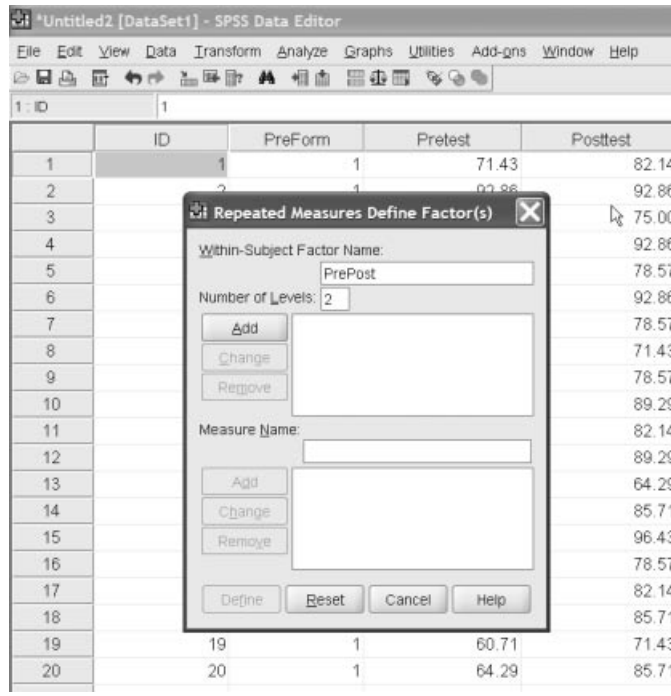


Figure 3a Setting up the factor name and levels in repeated measures in SPSS[tm]

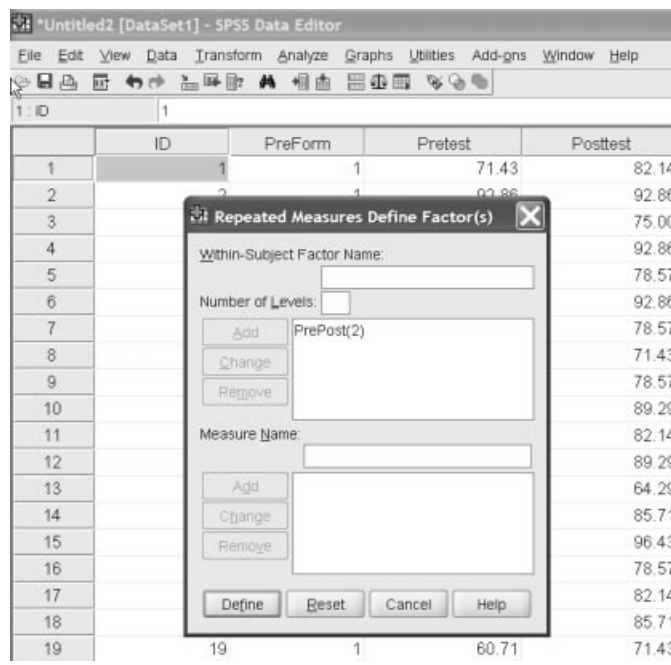


Figure 3b Defining the factor and levels in repeated measures in SPSS[tm]

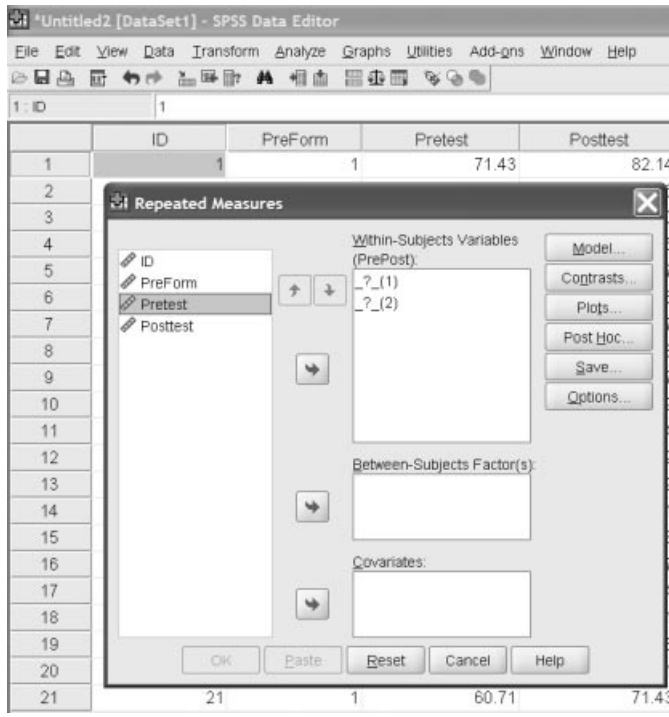


Figure 3c Moving pretest and posttest into the levels in repeated measures in SPSS[tm]

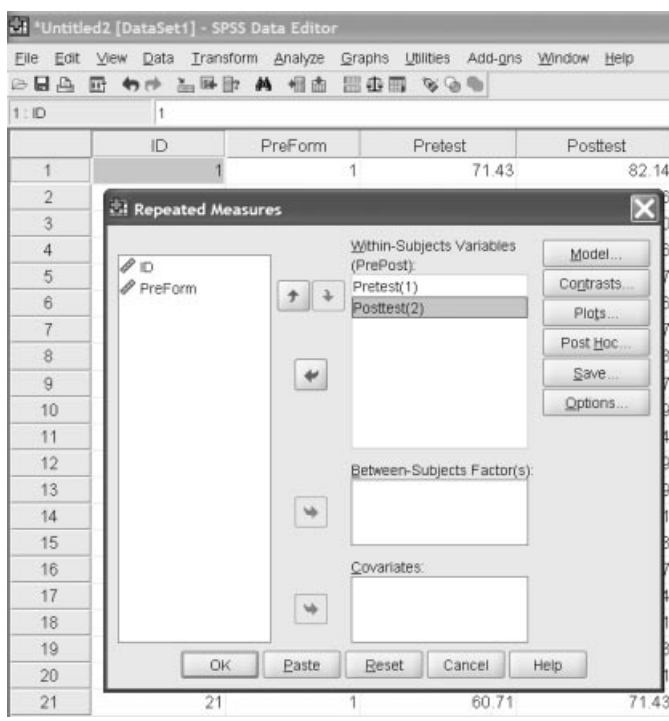


Figure 3d Pretest and posttest moved into the levels in repeated measures in SPSS[tm]

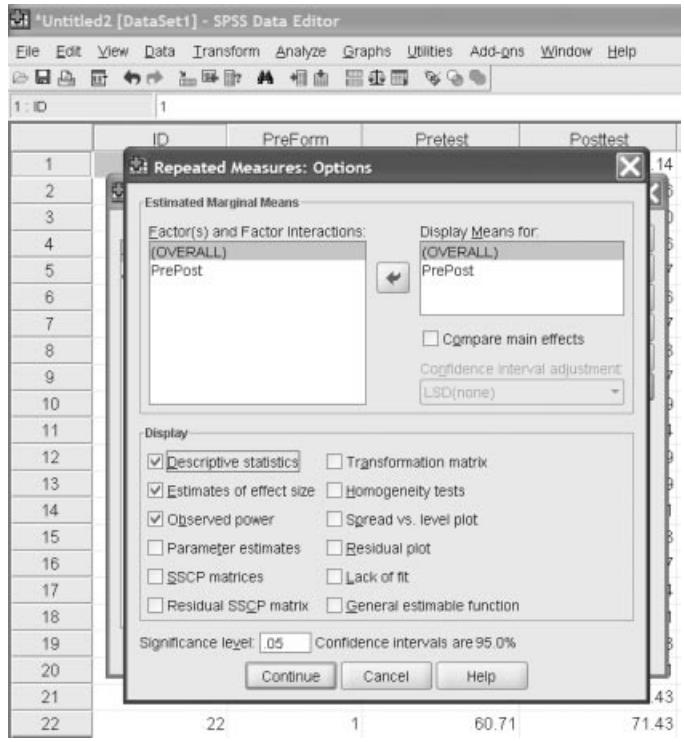


Figure 4 Repeated-measures options in SPSS[tm]

6. Next, click the button that says *Define*. The result should look like Figure 3c with "_?_(1)" and "_?_(2)" in the top box on the right.
7. Now move "Pretest" and "Posttest" from the box on the left in Figure 3c to the top box on the right by clicking on each and using the right arrow button between the boxes to move them. The result should look like Figure 3d with "Pretest(1)" and "Posttest(2)" in the top box on the right.

Now that the variables are arranged, do the following to actually conduct the repeated-measures ANOVA:

1. Click on the *Options* button (like the one shown in Figure 3d). A *Repeated Measures: Options* window should appear as shown in Figure 4.
2. Move "(Overall)" and "PrePost" from the *Factor(s) and Factor Interactions* box on the left to the *Display Means for* box on the right by clicking on each and using the right arrow button to move them. The result should look like Figure 4.
3. Now make a check mark next to *Descriptive statistics*, *Estimates of effect size*, and *Observed power* by clicking on the boxes next to each as shown in Figure 4.
4. Click on the *Continue* button to go back to the *Repeated Measures* window.
5. Now the analysis will actually happen when you click the *OK* button.

Be patient, the program may take a few moments to run. Remember it is doing mathematics that would take you days to do by hand.

Descriptive Statistics

	Mean	Std. Deviation	N
Pretest	65.7143	13.69021	50
Posttest	81.0714	11.77345	50

Figure 5 Descriptive statistics output from repeated-measures analysis in SPSS[tm]

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	PrePost	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PrePost	Linear	5896.046	1	5896.046	59.255	.000	.547	59.255	1.000
Error(PrePost)	Linear	4875.638	49	99.503					

a. Computed using alpha = .05

Figure 6 ANOVA output from repeated-measures analysis in SPSS[tm]

Reporting the One-Way Repeated-Measures ANOVA

Once the program finishes calculating everything, you should see your output on the right side of the screen. Go ahead and have a look. Unless you are long familiar with such output, you will probably find it a bit overwhelming and confusing. The easiest strategy is probably to focus on a few important tables. Figure 5 shows the descriptive statistics for the Pretest and Posttest results as they appear in SPSS output. Figure 6 shows the ANOVA results. Go ahead and find those tables in the output.

Unfortunately, the output tables in Figures 5 and 6 are not formatted as they typically are in published papers. To amend them for inclusion in a paper or report, I usually copy the SPSS output to Excel. With both SPSS and Excel running, click on the Descriptive Statistics table in the SPSS output and then select the *Edit* menu and *Copy*. Next move into the Excel spreadsheet and select the *Edit* menu and *Paste*. The table should appear as shown in the first four rows of Figure 7. Repeat the same process for the Tests of Within-Subjects Contrasts table.

Table 1 Descriptive statistics output after copying from SPSS to Excel to Word

Test time	M	SD
Pretest	65.71	13.69
Posttest	81.07	11.77

Microsoft Excel - Book1

	A	B	C	D	E	F	G	H	I
1		Descriptive Statistics							
2		Mean	Std. Deviation						
3	Pretest	65.714286	13.690212						
4	Posttest	81.071429	11.77345						
5									
6									
7									
8				Tests of Within-Subjects Contrasts					
9	Measure:MEASURE_1								
10	Source	PrePost	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter
11	PrePost	Linear	5896.0459	1	5896.0459	59.255069	5.553E-10	0.5473653	59.255069
12	Error(PrePo	Linear	4875.6378	49	99.502811				
13	a. Computed using alpha = .05								

Figure 7 ANOVA output after being copied from SPSS[tm] to Excel[tm]

The information in Figure 7 is still not ready to report. It is first necessary to delete some things, alter a few labels to fit the requirements of the APA publication manual (American Psychological Association, 2010), and in most cases, modify the number of decimals to two places (again to suit the APA manual), as shown in Figure 8 (see the Excel manual or help screens for more about how to do these things).

Microsoft Excel - Book1

	A	B	C	D	E	F	G	H	I
1									
2		M	SD						
3	Pretest	65.71	13.69						
4	Posttest	81.07	11.77						
5									
6									
7									
8									
9	Source		SS	df	MS	F	Sig.	Partial Eta2	Power
10	PrePost		5896.0459	1	5896.05	59.26	0.00	0.55	1.00
11	Error(PrePost)		4875.6378	49	99.50				
12									
13									

Figure 8 ANOVA output after being trimmed down a bit in Excel[tm]

Table 2 ANOVA output after copying from SPSS to Excel to Word

Source	SS	df	MS	F	p	*Eta*^{2}	*Power*
PrePost	5896.05	1	5896.05	59.26	.00	.55	1.00
Error	4875.64	49	99.50				

Interpreting the One-Way Repeated-Measures ANOVA

After blocking and copying each of the two tables in Figure 8 from Excel (using the *Edit* menu and *Copy*) into Word (using the *Edit* menu and *Paste*) and a bit of formatting, Tables 1 and 2 are ready to include in a paper or report. Table 1 shows the means and standard deviations for the Pretest and Posttest results. From right to left, notice that the standard deviations for the Pretest and Posttest are 13.69 and 11.77, respectively, which indicates that the scores were somewhat more widely dispersed in the Pretest results than in the Posttest, though the difference is not very big. Notice also that the means for the Pretest (65.71%) and Posttest (81.07%) are quite different. Indeed, they are 15.36 percentage points apart. However, such large differences can occur by chance alone, which is why we are conducting the ANOVA procedure.

Table 2 shows the repeated-measures ANOVA results. Let's ignore a great deal of the information in Table 2 and zero in on the crucial information. In the first row of numbers labeled PrePost (in the column labeled *p*), it turns out that $p = .00$ so the difference between the pretest and posttest is significant at below the $p < .05$ level. This means there is less than a 5% probability that the observed difference between the pretest and posttest means is due to chance alone. Note in the next column that the Eta squared (Eta^2) value is .55. This statistic indicates that 55% of the variance in this ANOVA design is accounted for by the PrePost differences (and that the remaining 45% is error, which is to say that variance not accounted for). Thus the pretest–posttest differences are fairly important (55%) relative to other sources of variance (45%) in this study. The power statistic in the last column is 1.00, which is as high as that statistic can go, and means that factors in the research design like *n*-size, measurement reliability, effect magnitude, and so forth were all adequate to detect any differences if they were present. If a significant difference had *not* been found in the ANOVA, the power statistic would have been particularly helpful in understanding whether the *lack* of a significant difference was due to chance fluctuations. That is why I always check the box next to *Observed power* when I do such analyses.

Conclusions

The gain reported here of 15.36% may seem small given that each course involved 45 hours of instruction. However, these data were for the first round of test/curriculum development. Careful CRT item analysis later led to improvements in the tests, objectives, teaching, and learning that in turn resulted in a more clearly defined curriculum in which the tests showed greater gain.

In addition, those familiar with quantitative research may wonder why there was no control group (i.e., a group that received no treatment or had a placebo instead of a treatment) in this evaluation study. Lynch (1992) did have such a control group in the quantitative part of his evaluation study in Mexico. However, as he pointed out in Lynch (1986), having a treatment and control group design simply shows that the treatment (*instruction* in this case) is better than *nothing*. Indeed, control groups are not always necessary or

appropriate (see for instance, US Government Accountability Office, 2009). Nonetheless, in studies of this sort, the practice effect of taking the same test twice may be an important concern. In such cases, a control group may help to dispel that concern or at least to understand the degree to which the practice effect is an issue.

In the ELI evaluation studies, we argued that the practice effect was part of the ELI experience. That is, if the students' scores changed between the pretest and posttest, we took the view that it was due to what happened to them in the ELI, including the course diagnostic test (i.e., the pretest), instruction in the particular course being tested, instruction in their other ELI courses, and the effects of living and studying in Hawaii. In other words, we could not take credit for all of the learning we were able to demonstrate, but we were happy to find that the whole package was having an effect on the academic English of our students.

SEE ALSO: Comparing Two Related Samples; Tests

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Assessment and Testing: Overview

CAROL A. CHAPELLE AND LIA PLAKANS

> What language testing does is to compel attention to meaning of ideas in linguistics and applied linguistics. Until they are put into operation, described, and explained, ideas remain ambiguous and fugitive. A test forces choice, removes ambiguity, and reveals what has been elusive: thus a test is the most explicit form of description, on the basis of which the tester comes clean about his/her ideas. (Davies, 1990, p. 2)

These words express what many applied linguists recognize: that language assessment and testing intersects almost all language-related issues that applied linguists study. These intersections take place at the level of ideas, but typically also in many of the everyday practices in language teaching, certification, and gate keeping, where language tests are used. In an intensive French program, students are tested for their level of French-language ability for placement into an appropriate level of a class. Applicants hoping to be admitted to a university or hired for a job requiring spoken English have to attain a particular score on designated language tests. In some cases, would-be immigrants have to attain a particular score to have their application for immigration to a particular country accepted. In research on second language acquisition, scores on language tests are often used as evidence for learners' development. In the classroom, assessment results provide information to teachers and to students about their learning. In educational testing, language ability is assessed for both native speakers and non-native speakers, but the researchers and practitioners that align themselves with applied linguistics typically work with second language assessment, and therefore so do the entries in the encyclopedia.

Across the many different testing contexts, both the terms "test" and "assessment" are used to denote the systematic gathering of language-related behavior in order to make inferences about language ability and capacity for language use on other occasions. This core meaning of the two terms links them even though each is more strongly associated with certain collocates and contexts of use. The expression "high-stakes testing" is more frequent than "high-stakes assessment" (with a ratio of approximately 3 : 2 based on a Google search of the Web), and the expression "classroom assessment" is more frequent than "classroom testing" (with a ratio of approximately 3 : 1). Throughout the encyclopedia both of these terms are used, sometimes interchangeably, but typically with their preferred collocates. The title of this section contains both terms because of the different meanings that they hold for some people. Although "language testing" is the preferred expression on the Web (with over a million instances), language assessment (with not even a half a million instances) denotes for many people a more varied process of data gathering and interpretation than language testing.

Assessment Uses

The selection of the term—assessment or testing—is often governed by the use of the test, and accordingly assessment uses are described in several entries in the encyclopedia. One entry explains the basic approaches that help users to understand the requirements of different USES OF LANGUAGE ASSESSMENTS. Another entry, HIGH-STAKES LANGUAGE TESTING,

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considers test uses with serious consequences, in education or elsewhere. Test uses in the educational context are described in three entries: ASSESSMENT IN THE CLASSROOM, LANGUAGE ASSESSMENT IN PROGRAM EVALUATION, and LANGUAGE TESTING AND ACCOUNTABILITY. Two entries describe test uses connected to government, LANGUAGE TESTING AND IMMIGRATION, and LANGUAGE TESTING IN THE GOVERNMENT AND MILITARY. One entry describes LANGUAGE TESTING IN SECOND LANGUAGE RESEARCH. The language testing needs across these domains differ, and therefore the specific approaches to and aspects of language tested differ as well.

What Is Tested?

As the breadth of this encyclopedia attests, language is a complex phenomenon that can be conceptualized in many different ways. This complexity is apparent in the many aspects of language that are assessed. Four of the entries describe issues and practices in assessing systems of knowledge: ASSESSMENT OF GRAMMAR, ASSESSMENT OF VOCABULARY, ASSESSMENT OF PRAGMATICS, and ASSESSMENT OF CULTURAL KNOWLEDGE. Entries cover assessment of each one of "the four skills," as they have been traditionally called: ASSESSMENT OF LISTENING, ASSESSMENT OF READING, ASSESSMENT OF SPEAKING, and ASSESSMENT OF WRITING. Recognition of limitations with such a four-skill view of language, however, has prompted test developers to construct tests of combined skills, such as a test that would require the examinee to read a text and then speak about it. Such ASSESSMENT OF INTEGRATED SKILLS has proven to be an important avenue of research and development, particularly in tests of academic language ability whose scores are intended to reflect how well examinees' language will allow them to perform on academic tasks, which typically involve a combination of skills. Regardless of the particular aspect of language tested, the conception of language that underlies a particular test is expressed in a model of language, and the ideas behind construction of models in language assessment are described in MODELING LANGUAGE FOR ASSESSMENT.

Assessment Methods

Language assessment methods have been developed to prompt examinees in a manner that will elicit relevant performance. The entry on LANGUAGE ASSESSMENT METHODS describes the work that has gone into devising appropriate methods to capture the detail of the linguistic knowledge that underlies examinees' performance as well as the performance itself. Whether the examinees' performance is intended to be used as a sign of their language knowledge or as a sample of their potential performances on a similar range of tasks, the methods used to gather the performance are critical in determining what the resulting test score can mean. As a consequence, schemes have been developed to describe the particular facets of language test methods, most notably by Bachman (1990). In addition, new combinations of test method facets have resulted in considerable interest and research into such testing methods as PAIRED AND GROUP ORAL ASSESSMENT, SELF-ASSESSMENT, and TASK-BASED ASSESSMENT. The encyclopedia therefore contains an entry on each of these topics.

One facet of the test methods—evaluation of examinees' language—is an area of central importance. Some aspects of language knowledge can be evaluated through the use of selected-response items (such as multiple choice); however, most language-test uses require a sample of language performance that the examinee produces, whether it be a word, a sentence, a turn in an interactive dialogue, a written essay, or one of many other possibilities. Whereas responses on a selected-response test can be scored as correct or incorrect, rating of linguistic performance is based on a more complex set of considerations. As a

result, research into RATING SCALES FOR LANGUAGE TESTS is an ongoing area of activity in language assessment. Rating of written language is a challenge that is common to both native language and second language assessment, but in second language assessment, tests of oral language ability are also widely used, and therefore RATING ORAL LANGUAGE is an area of particular attention in applied linguistics. With advances of knowledge and practice in computational linguistics, a promising area of inquiry is the study of AUTOMATED ESSAY EVALUATION AND SCORING and COMPUTER SCORING OF SPOKEN RESPONSES.

Developing Assessments

Many applied linguists work in areas where their expertise is in language test development. In this context, knowledge of language, models of language ability, and testing methods are needed in addition to process knowledge about how to design tests using TEST SPECIFICATIONS. Test design often takes place in a context where a test already exists, and therefore one entry examines together the related processes of TEST DESIGN AND RETROFIT. It is commonplace today for language tests to be computer delivered even if the language performance is not automatically scored by computer. Therefore, an important part of test development is an understanding of AUTHORING TOOLS FOR LANGUAGE ASSESSMENT. A final process in moving a new test from development to use is setting CUT SCORES ON LANGUAGE TESTS. This process makes the test results usable because it allows test users to assign meaning to them, typically in terms of what interpretations and actions one should be able to make on the basis of a specific test score. All of these test development processes are critical for developing high-quality tests, but a complementary set of processes are also needed for evaluating assessments.

Evaluation of Language Assessments

Evaluation takes place through validation research which is conducted to support the interpretations and uses of test scores. VALIDATION OF LANGUAGE ASSESSMENTS is described in one entry as the organizing framework for all of the research that supports test score use. This research consists of a vast array of types, not all of which are covered in the encyclopedia. The encyclopedia aims to provide a conceptual overview of the approaches to research to demonstrate how they fit into the process of validation. STATISTICAL ANALYSIS OF TEST RESULTS outlines the fundamental item-level statistics that are typically done to examine the empirical performance of the test and the individual items for each examinee group. RELIABILITY AND GENERALIZABILITY OF LANGUAGE TESTS explains the importance of reliability, or consistency, as a characteristic of test scores and the reliability issues that researchers face in language assessment. Examining another approach to analysis of consistency, GENERALIZABILITY THEORY IN LANGUAGE TESTING, explains an analytic method for estimating consistency that yields an estimate of the amount of error contributing to scores by sources such as raters and tasks.

Two entries provide a basis for understanding some of the other quantitative methods used in validation research: CORRELATIONAL RESEARCH IN LANGUAGE ASSESSMENT and STRUCTURAL EQUATION MODELING IN LANGUAGE ASSESSMENT. Two entries introduce qualitative methods used in validation research: DISCOURSE ANALYSIS IN LANGUAGE ASSESSMENT and QUALITATIVE RESEARCH IN LANGUAGE ASSESSMENT. Finally, two entries explain types of inquiry that require critical and empirical examination of the ideological and consequential basis for test use in a particular context: VALUES IN LANGUAGE ASSESSMENT and WASHBACK IN LANGUAGE ASSESSMENT.

Issues in Language Assessment

The extensive use of assessment in all areas of research and education raises a number of issues that are constant sources of concern for language testing researchers. One such issue is explained in an entry on ENGLISH-LANGUAGE LEARNERS AND SUBJECT AREA TESTS, which describes the difficulty in interpreting scores on school achievement tests of math or science, for example, as indicators of English-language learners' knowledge of those content areas. This issue arises in the context of school-age learners, as does the issue of ASSESSMENT OF YOUNG ENGLISH-LANGUAGE LEARNERS for obtaining scores that reflect their language ability.

The fact that performance on content tests assumes proficiency in English creates a potential for test bias. Another entry describes test BIAS IN LANGUAGE ASSESSMENT, which can also arise in language tests when one group of test takers systematically performs differently than another for reasons unrelated to the ability that the test is measuring. Bias is one of the issues pertaining to FAIRNESS IN LANGUAGE ASSESSMENT, which is discussed more fully in another entry.

Another issue of growing importance related to fairness is STANDARD SETTING ON LANGUAGE TESTS, which entails the concepts and procedures used to make the link between a test score and a particular score meaning. In an environment where educational bodies are generating proficiency level descriptors and test developers are required to demonstrate that test scores can be interpreted on those scales, standard-setting activities are in the spotlight. Research in this area is particularly interesting when researchers investigate ASSESSMENT ACROSS LANGUAGES.

In a context where language assessments are so pervasive and consequential for test takers, the title of Shohamy's (2001) book, *The Power of Tests*, sets the stage for the final two issues. One is LANGUAGE ASSESSMENT LITERACY, the knowledge that applied linguists need to have in order to construct, analyze, and interpret language tests. The second is ETHICS IN LANGUAGE ASSESSMENT, the responsibility to use that knowledge with an awareness of who may benefit and who may be harmed from it.

Research and practice in language testing is constituted from the work of a large and diverse community, whose members span a range of professions from academia to government, to business. The following distinguished scholars were chosen to feature in biographical entries from a much larger set of distinguished members of the profession: Charles J. ALDERSON, Lyle F. BACHMAN, John B. CARROLL, John L. D. CLARK, Alan DAVIES, Robert LADO, John W. OLLER, Jr.; and Charles STANSFIELD. Their biographies reveal a diverse set of backgrounds and different paths that brought them to language assessment, but what they share is a pragmatic motivation driving their scholarship and practice—a motivation to improve professional practices in language assessment.

SEE ALSO: Shohamy, Elana; Spolsky, Bernard

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Assessment in the Classroom

ANNE KATZ AND MARGO GOTTLIEB

The role of assessment in the language classroom occupies an increasingly visible place in the language education literature as teachers, researchers, and test specialists examine how assessment can be woven into instruction to support language development (Davison & Leung, 2009). In this entry, classroom assessment is distinguished from traditional language tests and measurements to encompass a broad conceptualization of what teachers and students do to gather and share information in the classroom. It involves a process of planning, collecting, analyzing, and using information over a period of time, via multiple types of measurement strategies. As a socially constructed activity, classroom assessment is embedded in a context that includes teachers, students, and community members as meaningful partners in the learning process.

This conceptualization is congruent with educational assessment literature that categorizes classroom assessment as an integral component of curriculum design along with teaching and learning (Shepard, 2000; Arkoudis & O'Loughlin, 2004; Cumming, 2009). Figure 1 illustrates how assessment is embedded within instruction and learning.

Within this educational context, theories of instruction and learning inform choices about classroom assessment practice. From a traditional psychometric perspective, testing is viewed as a discrete activity within teaching and learning (Moss, 2008). In language classrooms shaped by this perspective, teachers deliver instruction and, at the end of the lesson, use tests to measure what students have learned, often drawing on test materials provided in commercial course packs or provided by departments or external agencies. In the emerging assessment culture of the 21st century, however, the connection between learning and assessment is more tightly drawn as teachers are challenged to take on a more active role and pay increased attention to students' processes in developing language as well as the products of that learning as students engage in classroom tasks, interact with peers, respond to the teacher, and complete assignments. Shepard (2000) identifies several principles, aligned with reformed views of curriculum and constructivist theories of learning, which form a foundation for these new ways of conducting classroom assessment:

- Using challenging tasks that elicit higher-order thinking.
- Including learning processes as well as learning outcomes.

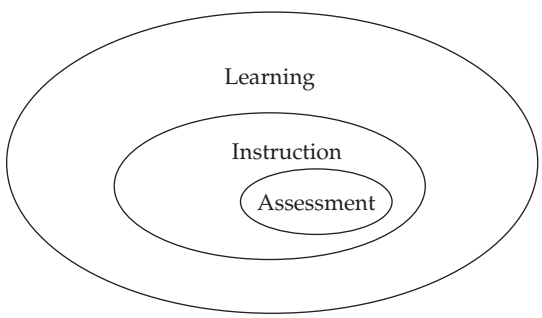

Figure 1 A model of learning, instruction, and assessment © A. Katz and M. Gottlieb

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- Integrating assessment into instruction as an ongoing process.
- Using assessment information to support student learning.
- Engaging students actively in evaluating their work.
- Making expectations or success criteria visible to students.

Congruent with these principles, Moss (2008) draws on sociocultural theory to describe assessment in terms of a range of evidence that can address questions or problems in learning. With learning viewed as an interactive process among learners, activities/tasks, resources, and other people within a specific context, a more adaptive and dynamic notion of assessment is emerging along with an expanded role for teachers in designing and implementing these assessments. Moss identifies three types of assessment integrated within the complex social situation of the classroom: traditional or *documentary* assessments, *inherent* or incidental, nonverbal assessments (e.g., a puzzled look), and *discursive* assessments, when participants talk about an activity in an evaluative way (p. 226). A similar perspective on classroom assessment is appearing in discussions of second language learning as researchers examine the relationship between assessment, feedback, and learning (Davison & Leung, 2009).

Theories of language also play an important role in explaining how assessment is enacted in the language classroom. As Bachman (1990) notes, "advances in language testing do not take place in a vacuum; they are stimulated by advances in understanding of the processes of language acquisition and language teaching" (p. 3). Language teaching methodologies drawing on communicative and learner-centered approaches have focused on how learners communicate meaning, how they recognize and respond to social and cultural cues, and how they manage their own learning.

Types of Language Assessments

The advent of constructivist learning principles, sociocultural views of assessment, and task-based communicative approaches in language teaching has been accompanied by the use of multiple approaches to language assessment that extend the repertoire of tools teachers can choose to use to understand and support classroom learning. These tools go beyond traditional paper-and-pencil tests at the end of a unit to include a broad array of assessment types useful in the language classroom to meet the wide range of purposes and contexts for collecting information (O'Malley & Valdez Pierce, 1996; Brown & Hudson, 1998). The terms *alternative assessment*, *authentic assessment*, and *performance assessment* (here used synonymously to refer to alternatives to conventional testing) are associated with this expansion of types of assessments that move toward instructionally focused ones that "capture significant and enduring educational outcomes" (Herman, Aschbacher, & Winters, 1992). These alternatives to traditional assessment include observation checklists, anecdotal notes, journals, student work samples, and group projects, coupled with accompanying rubrics, which are integrated into and often indistinguishable from learning activities. Additional assessments include portfolios focused on the learning process and tasks embedded within instructional activities.

Figure 2 presents a framework (based on McTighe & Ferrara, 1998) that incorporates a continuum of assessment types and organizes them in light of what learners have to do in order to participate in the assessment. For example, do learners *select* an answer among some choices or do they *construct* a response? Note that when teachers use performance-based assessments—observing what learners do during classroom tasks and then scoring those performances—they incorporate assessment into the flow of classroom activities.

These multiple assessment types highlight the shift in emphasis from externally produced assessments to those created by teachers that more closely reflect the local context of the

Selected-Response Format	Constructed Response Format			
Multiple choice *True/false* *Matching* *Same/different* *Grammatical/ ungrammatical*	Brief Constructed Response	Performance-Based Assessment		
	Gap fill *Short answer* *Cloze* *Label a visual* *Sentence completion*	Product-focused	Performance-focused	Process-focused
		Essay *Story/play/poem* *Portfolio* *Report* *Video/audiotape* *Poster session* *Project*	*Oral presentation* *Dramatic reading* *Role-play* *Debate* *Interview* *Online chats*	*Observation* *Checklist* *Rubric* *Anecdotal notes* *Reflection* *Journal* *Learning log*

Figure 2 Types of language assessments © A. Katz and M. Gottlieb

classroom and the complex learning of language knowledge and skills taking place there (Moss, 2008). Assessments that focus on student performances in the classroom—either products or processes—require a task or activity to elicit the performance as well as scoring criteria or rubrics to gauge the quality of the performance and to record it.

A good deal of the classroom assessment literature for teachers describes various ways of collecting and judging student performances as part of planned assessment activities integrated into instruction (e.g., O'Malley & Valdez Pierce, 1996; Gottlieb, 2006; Coombe, Folse & Hubley, 2007). A sociocultural view of classroom assessment indicates that it also takes place throughout the instructional period as teachers engage with students, guide student-to-student communication, and monitor peer activities. These interactions in real time offer teachers, and learners, opportunities to give and receive immediate feedback relevant to specific language performances. Davison and Leung (2009) describe such a dynamic approach, incorporating both in-class formal and informal performance assessment in a "typology of possibilities" (p. 400) ranging from in-class formative assessments, such as observing learners' language use and asking questions to check for understanding, to more formal assessments, such as portfolios, structured student self- and peer reflections, and the use of rubrics to interpret language performances.

In addition to changing *how* assessment data are collected, emerging practices in classroom assessment have sharpened the focus on *what* will be assessed by aligning assessment more closely to learning. When teachers align assessment to instructional objectives or targets, they emphasize the usefulness of assessment in informing decision making about teaching and learning. Thus, when assessment tasks—such as a short-answer quiz or a role play—are designed in light of specific learning targets, the information collected provides evidence of students' progress toward meeting those learning targets. Classroom assessment practices aligned to instruction can serve two pedagogical purposes: *summative* and *formative*. The following section will explore these two uses for assessment information.

Assessment for Formative Purposes

Classroom assessments that focus on what students have accomplished as a result of a period of instruction have been characterized as *summative* uses of assessment or assessment *of* learning since they act as snapshots documenting accumulated student performances.

A complementary approach focuses on *formative* uses of assessment or assessment *for* learning (Assessment Reform Group, 2002). This approach suggests that assessment can be a means to promote learning, not only to describe or monitor it. From this perspective, then, teachers focus less on such functions of assessment as monitoring and accountability and more on assessment's role in supporting learning by empowering learners and attending to motivational factors. It is important to emphasize that the distinction between summative and formative assessment is not a function of type of assessment (e.g., a multiple-choice test versus a portfolio) but rather of purpose in using assessment tools (Davison & Leung, 2009).

Research suggests that assessment used for formative purposes, or assessment *for* learning, can improve student attainment (Black & Wiliam, 1998) if two conditions are met: the learner perceives a gap between the present and the desired state of knowledge, understanding, or skill and the learner takes action to close the gap and meet the targeted level. Assessment tasks that address these two conditions thus support learner achievement. Harlen and Winter (2004) describe characteristics of classroom assessment in line with these conditions:

- Information about both processes and products of learning is gathered.
- This information is used to adapt the teaching/learning environment and is shared with learners to help them learn and to improve their performances.
- Learners and teachers share a common understanding of the learning targets for instructional activities.
- Learners are active participants in learning and assessing their work through self- and peer assessments.

Several studies have examined how formative assessment is operationalized in language classrooms. In early work in this area, Rea-Dickins (2001) describes formative assessment as "action taken as a consequence of an assessment activity" (p. 432), actions, she notes, that can be taken by any stakeholders in the assessment process and be manifested in multiple ways. For example, she describes both teacher intervention strategies as well as self- and peer-monitoring strategies that contribute to language learning. Noting that formative assessment plays a key role in the language classroom when teachers are skillful in observing and interpreting the progress of student learning, Rea-Dickins cautions that further work is needed to determine what constitutes "quality" in implementing formative assessment, particularly in creating learning opportunities and recognizing evidence of language learning.

In a later study addressing this issue, Rea-Dickins (2006) extends her exploration of interaction in language classrooms as an essential component of formative assessment by examining teacher feedback and student responses. She points out that "feedback is only formative if it brings about a change of some kind for the learner" (p. 168). Her analyses of classroom interactions suggest that both formative and summative purposes for assessment can be interwoven within instruction to provide a balance of assessment types, but for learners to understand how to participate effectively in each type, teachers must make their intentions and expectations explicit.

Also focusing on how teachers implement formative approaches to assessment, Colby-Kelly and Turner (2007) examine the match between curriculum requirements related to assessment and classroom practice. While five types of formative assessment are identified in the curriculum: (a) self-assessments, (b) peer assessments, (c) teacher–student feedback, (d) teacher–group feedback, and (e) teacher–class feedback, teachers primarily utilize teacher–student feedback in the classroom. They also note that several teachers expressed

hesitancy about providing feedback to a student in front of classmates, fearing it might be embarrassing, a view some students may also hold. These studies focusing on classroom interaction highlight the interwoven roles of teachers and students in the learning process and suggest the complexity of implementing formative assessment so that it fulfills its promise of promoting language learning.

In learner-centered classrooms, both teachers and students are expected to assume active roles in designing and implementing assessment practices. Teachers assess and respond to student performances, manage assessment information that has been collected, use the information to respond to students' learning needs and to differentiate instruction, and communicate their findings to interested stakeholders. These activities are often embedded within a multistage assessment cycle. For example, Rea-Dickins (2001) describes the processes and strategies in classroom assessment according to a four-stage model: (a) planning, (b) implementation, (c) monitoring, and (d) recording and dissemination. TESOL (2001) envisions a similar, four-phase iterative cycle for classroom assessment consisting of (a) planning assessments, (b) collecting and recording information, (c) analyzing and interpreting assessment information, and (d) using information for reporting and decision making. Davison and Leung (2009) describe teacher-based assessment in a framework consisting of these steps: plan assessments, collect information about students' learning, make professional judgments, and provide appropriate feedback or advice. Each of these models consists of a series of activities within each stage of the process that conform to the principles of formative assessment outlined above.

The Value of Student Assessment

Students have been expected to step up to new levels of involvement in the assessment process through activities such as self- and peer assessments (Black & Wiliam, 1998; Colby-Kelly & Turner, 2007). For example, some teachers invite students into the assessment design process by engaging them in developing scoring guides with class-generated criteria and then in using the rubrics to assess their own or peers' performances. Learners reflect on their progress in journals and learning logs that document their experiences in learning and using language and create portfolios that illuminate progress in building skills.

Student self-assessment is an outgrowth of classroom assessment in which students create original work products in response to performance activities, tasks, or projects. Having students critically reflect on their own work by matching their performance against preset criteria validates their learning. Other benefits of student engagement in self-assessment include:

- having a venue for students to convey their depth of understanding,
- encouraging students to take responsibility for their own learning,
- honoring student input in the assessment process,
- recognizing students as a data source in making classroom decisions,
- fostering a shared set of expectations between teachers and students,
- motivating students to do their best work,
- helping students set realistic language and learning goals,
- promoting students to become life-long learners (Gottlieb, 2006).

Students can use self- and peer assessment to gather information about specific language performances as well as to generate a picture of a pattern of development over time. These assessments can also guide students in cultivating metacognitive awareness of their language development that helps facilitate the crafting of individual learning goals.

In their study of the effects of incorporating peer-assessment practices into English language programs, Cheng and Warren (2005) confirm that student involvement in assessment benefits learning and development, but caution that students must be prepared to take on the mantle of this new role through explicit training and practice in using assessment techniques. They suggest that including students in the design and development of assessment criteria might help students feel more comfortable in using peer assessment. They further note that such assessment procedures have a better chance of succeeding if teachers commit to using them on a long-term basis by incorporating them into the culture of classroom practice.

The Role of Standards in Classroom Assessment

Although the discussion up to now has centered on decision making related to assessment at the classroom level, all classrooms exist in a wider context—at program, organizational, municipal, or state entity levels—that influences what occurs in the classroom. For more than two decades now, educational programs have witnessed the emergence of standards-based education initiatives that identify the content for instruction, target learning outcomes and specify learner achievement in terms of standards-related criteria as part of system-wide accountability efforts. This phenomenon has made an impact on language classrooms worldwide (Stoynoff & Chapelle, 2005) through major initiatives including the Common European Framework of Reference (Council of Europe, 2001) and the TESOL English Language Proficiency Standards (TESOL, 2006) as well as district, state, and countrywide language standards.

In implementing standards for language education, teachers struggle to reconcile externally developed expectations for learning expressed in standards and large-scale assessments with the pedagogical realities of their classroom contexts (Arkoudis & O'Loughlin, 2004). In some instances, schools have developed standards-referenced tests that teachers use in the classroom on a scheduled basis to track whether students are meeting benchmark criteria and, thus, are on a trajectory for success on year-end tests. However, many teachers continue to question whether assessments for accountability match the needs of learners or their own pedagogical purposes (Stoynoff & Chapelle, 2005).

Despite the challenges, student standards have become integrated into every aspect of educational life and, as such, affect decisions made in the classroom about learning. Although questions have arisen about the validity of the language descriptions contained in standards documents and the appropriateness of their expectations for diverse learners (McKay, 2006), standards have become the basis for creating curricula, aligning them with assessments and reporting classroom and school-wide data as well as grading student progress. In addition, standards-based assessment has become a topic of discussion for sustained professional development and communities of practice.

Conclusion

As the discussion up to now indicates, teachers play a crucial role in translating new ideas for assessment into effective classroom practices. They are expected to adapt emerging theories and techniques in assessment—such as engaging students in developing their skills in self- and peer assessment—to their individual classrooms and the language needs of their students. Emphasizing the importance of their role is the addition of *teacher-based assessment* (Davison & Leung, 2009) to the roster of terms describing alternative methods of language testing. Although teachers are essential to this process of adapting assessment approaches to local instructional contexts, a burgeoning literature has pointed out that

teachers are not necessarily well prepared either through teacher preparation programs or professional development opportunities to take on this role (Cumming, 2009). Thus, it is not surprising that teachers struggle with the competing demands of responsibility for incorporating classroom assessments into instruction while also preparing students for external large-scale tests required for accountability. While classroom assessment offers the promise of enhanced learning opportunities, additional research is needed to describe classroom practices that will help teachers deliver on those promises. These concerns notwithstanding, emerging perspectives on the dynamic interplay between teaching and learning that is mediated through assessment recognize the inherent value in classroom assessment and the formative information it yields. Through a participatory and interactive assessment process, teachers and students play integral roles in promoting meaningful assessment practices as part of students' language development within the classroom.

SEE ALSO: Assessment of Integrated Skills; Assessment and Testing: Overview; Language Assessment Methods; Self-Assessment; Task-Based Assessment; Values in Language Assessment

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Assessment of Academic Language for Specific Purposes

DAN DOUGLAS

A test of academic language ability is one that is intended to assess "the ability to operate successfully in the [language] used in the academic domain" (Davies, 2008, p. 1). Davies goes on to elaborate on academic language proficiency later in the book:

> it is the language of coherent argument where implications are understood and inferences made. It is, above all, a discourse in which, as reader, as listener, as speaker and as writer, the candidate makes sense of what has gone before and responds, and continues to respond appropriately. (p. 113)

Thus Davies does not define academic language in terms of its vocabulary or syntax, but rather in discoursal terms, requiring recognition of implicature and inference. Defining the theoretical construct of academic language more specifically has been problematic, as has defining any branch of language for specific purposes. In a similar conceptualization of specific purpose language as that employed in discourse in academic situations, Bailey (2006a) argues, "In some regard, it is not meaningful to conceive of *language* as either social or academic, rather it is the *situation* that is either predominately social or academic" (p. 9), and she characterizes the language used in academic situations as involving the more frequent use of "complex grammatical structures, specialized vocabulary, and uncommon language functions" (Bailey, 2006a, p. 9). It is important to note, too, that not all language assessments used in academic situations are tests of academic language ability. For example, the National Matriculation English Test (NMET), used in China for purposes of university admission, though given to arguably the largest single language testing population in the world at around 10 million each year, tests the more general English as is taught in schools (Cheng & Qi, 2006) rather than the language used in English-medium academic institutions.

The field of academic language assessment encompasses the language used both in universities and colleges and in primary and secondary schools. The assessment of academic English is dominant in the field, though there are certainly training and assessment programs in academic languages other than English (e.g., Wahba, Taha, & England, 2006). It should be noted, too, that the assessment of *academic* language involves more than the assessment of language for *pedagogical* purposes, which, as Spolsky (1995) puts it, is "any form of testing used by a teacher or learner to check on the learner's progress in order to modify the course or nature of instruction" (p. 7). A major use of tests of academic language is as proficiency measures for admission to university studies. Moreover, with regard to the assessment of academic language in schools (as opposed to tertiary institutions), over the years, it has been particularly susceptible to the "mandating of assessment as a tool for the achievement of specific political goals" (McNamara & Roever, 2006, p. 204). Davies (2008) argues that there are two major traditions in the assessment of academic language, the British/European linguistic/work sample-based tradition, in which test tasks are similar to those involved in the academic situation, and embodied in the International English Language Testing System (IELTS), and the US psychometric-based tradition, exemplified

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by the Test of English as a Foreign Language (TOEFL), although the distinction has become increasingly blurred owing to recent developments in each of these testing programs.

The first part of this entry will discuss current research on the two major tests of academic English, the IELTS and the TOEFL, followed by a review of research into various academic language skills, including reading, writing, listening and speaking, as well as integrated skills tests. After a brief look at academic language tests in schools, it will conclude with a summary of where the field of academic language assessment seems to be moving.

IELTS and TOEFL

There has been a great deal of research in recent years on both of these tests, much of it sponsored by the test development agencies themselves: Cambridge ESOL Assessment in the case of IELTS, and Educational Testing Service in the case of TOEFL. With regard to IELTS, Davies (2008) describes the development of British academic English testing from its inception in the 1950s to its current manifestation in the IELTS program, arguing that academic English assessment has developed along with our understanding of language and language learning and with a recognition that practical matters of test administration, delivery, and analysis are as important as more theoretical concerns. In this regard, a computer-based IELTS became operational in May 2005, though candidates are offered the choice of taking either the computer-based (CB) or the traditional paper-based (PB) version. Even if they opt for the computer version, they may further choose to write their essay by hand (Jones & Maycock, 2007). Both the paper-based and the computer-based tests have been shown to produce equivalent scores, irrespective of computer familiarity: "candidate ability and experience in using computers was not found to have any significant impact on the difference between PB and CB scores for any of the tested skills" (Maycock & Green, 2005, p. 6). The IELTS academic module contains assessments of all four skills, but only the reading and writing tests specifically assess academic English; the listening and speaking tests are common to both academic and general training test takers and are thus not specifically academic in content. The IELTS program publishes a series of research reports, the abstracts of which are available online (IELTS, 2009), and which may be purchased through the same website. Cambridge ESOL publishes a periodical, *Research Notes*, containing articles relevant to IELTS. These may be accessed freely online at Cambridge ESOL (2010). Finally, Cambridge University Press publishes a research series, *Studies in Language Testing*, which contains many titles relevant to IELTS. The IELTS writing test underwent revision, particularly with regard to the assessment criteria and scales, between 2001 and 2006 (Shaw, 2006), focusing on enhancing the validity and reliability of the writing assessment process. Studies by Weir and colleagues (Weir, Hawkey, Green, & Devi, 2009; Weir, Hawkey, Green, Devi, & Unaldi, 2009) investigated aspects of the IELTS reading module with respect to actual reading required of first year students in British universities, and the cognitive processes underlying IELTS reading tasks.

Perhaps the most significant change in the TOEFL program in the last few years was the introduction in 2005 of the Internet-based TOEFL (TOEFL iBT). The result of several years of planning, research, and development, the iBT is more academically oriented than previous versions of the TOEFL (Chapelle, Enright, & Jamieson, 2008; Alderson, 2009) and contains a speaking component in addition to listening, reading, and writing. The test is also characterized by having, in addition to the usual "independent" speaking and writing tasks, *integrated* modality tasks in which test takers listen to or read, or both listen to and read some input and then are prompted to either speak or write a response that integrates information from the input. In addition to independent speaking and writing tasks, there are two read/listen/speak tasks and two listen/speak tasks, and there is one read/listen/write task. The integrated tasks have been shown to tap the intended academic English

constructs of speaking and writing, respectively, very well (Sawaki, Stricker, & Oranje, 2009). Research on the iBT is published in various report series at Educational Testing Service (ETS), including the *TOEFL iBT Research Series*, *TOEFL Research Reports*, *TOEFL Technical Reports*, and *TOEFL Monograph Series* (available online at ETS 2010). The focus of many of these publications is on gathering evidence to support validity claims concerning various components of the TOEFL. With regard to the reading subtest, Cohen and Upton (2007) conducted a study of response strategies employed by test takers, particularly investigating the extent to which they believed they were carrying out *academic* reading tasks as opposed to test tasks. The authors concluded that

> the primary goal of the subjects was to get the answers right, not to necessarily learn, use or gain anything from the texts read. Thus, for these respondents, working their way through the reading sections of the *LanguEdge* test did not truly constitute an academic reading task, but rather a test-taking task with academic-like aspects to it. (p. 237)

Thus, the authors argue that this finding indicates that the TOEFL reading tasks do in fact require test takers to use academic-like reading skills though not truly engaging in academic reading.

There is also, of course, a great deal of research activity in the assessment of academic language outside the IELTS and TOEFL programs. In an interesting study of how the use of multiple-choice questions affects the definition of the academic reading construct, Rupp, Ferne, and Choi, (2006) found that response processes "deviate significantly from those predicted by a model of reading comprehension in non-testing contexts" (p. 469). This finding would appear to complement what Cohen and Upton found in their TOEFL reading study. Gebril (2009), in a study of reading-to-write assessment tasks in Egypt, found that scores on such tasks provided more generalizability than did the use of a single writing task based solely on test takers' background knowledge, providing more support for the use of integrated tasks in writing assessment. Lee and Anderson (2007) conducted a study of the relationship between writing test performance and test takers' academic major and found that major was not related to writing performance, although there was variation more generally in topic difficulty. In a study comparing performance on standard individual writing tasks with that on paired collaborative writing tasks, Wigglesworth and Storch (2009) found that collaboration improved accuracy but did not affect fluency or complexity. Finally, writing about academic language test development, Read (2008) provides a look at the use of assessments to diagnose the academic language needs of students.

Researchers have tackled the difficult issue of the effect of the co-construction of discourse in paired speaking assessment tasks (again, recall the point made in the introduction about academic language as discourse). Brooks (2009) found more complex interaction in paired tasks contrasted with interview tasks which are largely monologic and reactive (recall Davies's characterization above of academic language as discourse). The paired tasks produced more negotiation of meaning, consideration of the interlocutor and more complex output. This may be compared to the paired writing task reported on by Wigglesworth and Storch above, which did not result in more complex output. Following the same theme of paired speaking tasks, May (2009) found that raters viewed the performance of the two test takers as mutual achievements and awarded shared scores as a result. May interprets this as an acknowledgement of the co-constructed nature of the discourse. Taking a different view of co-construction of discourse, Sawaki (2007) studied a criterion-referenced test of Spanish for academic purposes, analyzing two role-play tasks. Her results generally confirmed the highly correlated nature of the analytic rating scale (pronunciation, vocabulary, cohesion, organization, and grammar), highly dependable ratings, and a strong contribution of grammar in the composite score variance, an intentional design feature.

Academic Language Assessment in Schools

In an overview of language assessment in education, Cumming (2009) notes that while academic language tests have traditionally focused on normative proficiency levels for purposes of certifying abilities, screening for admission to higher education, and monitoring the results of education systems, more recently, the focus in many school systems has shifted to a criterion-referenced assessment according to benchmark standards specifying goals for education, achievement, and program accountability. In this regard, it is important to understand more accurately the nature of academic language use in schools, as some of the articles in Bailey (2006a), for example, indicate. In an article urging the reconsideration of the responsibility of test developers and score users for the investigation of impact of tests in schools, Chalhoub-Deville (2009) argues that language test developers should focus on what beneficial impacts they want to achieve with their assessments and then design measures that will achieve those goals. She introduces a concept of *social impact analysis* to promote the proactive rather than a reactive approach to impact.

There are, of course, many studies of language assessments in schools outside of the US context of the No Child Left Behind legislation of 2001. For example, Jones and Saville (2009) report on the proposed use of the Common European Framework of Reference (CEFR) as a model for learning in schools across Europe. They argue that if the framework is used without reference to the diversity of the many European educational contexts, in other words, as a prescriptive agenda for language education, the result will be negative impact on teaching and learning. However, they also argue for the framework's "flexible and context-amenable" nature (p. 51) and look ahead to the use of the CEFR in the achievement of comparability of standards across languages and educational systems.

Conclusion

In this brief review of the assessment of academic language for specific purposes, it is noted that the definition of the academic language construct is really more related to situation than to linguistic features. This suggests that the assessment of academic language involves, as Davies (2009) points out, assessing ability to understand the language of argument and implication, make appropriate inferences, and respond appropriately. Further specifying the language of academic argument, Bailey (2006b) notes that while it contains no *different* features than does more social, non academic language, it does more frequently employ complex structures, technical vocabulary, and uncommon functions. Academic language is found, not surprisingly, in the two domains of colleges/universities and primary/secondary schools, though the purposes of assessment are rather different in the two domains. Tests associated with higher education tend to focus on normative assessment for admission, placement, and progress, while those in schools, particularly more recently, are more likely to emphasize criterion-referenced assessment for administrative benchmarking and public accountability. Another observation is that while there is indeed a broad range of tests of academic languages other than English, English is the dominant language assessed owing to its current place in the world as a lingua franca, particularly among mobile professionals and academics.

Although the two largest academic language assessment programs, IELTS and TOEFL, both maintain a paper-based testing program, both also offer their tests via computer, either locally or on the Internet. Collecting evidence to support the validity of computer-mediated assessment has occupied researchers in both programs in recent years, looking at the relationship between performance on paper-based tests versus that on computer-based tests, the effect of computer familiarity on test performance, and washback and

impact studies. Another area of research in the TOEFL program in particular has involved the use of integrated skills tasks in speaking and writing, where test takers read or listen to input and then speak or write about it. Outside the IELTS and TOEFL programs, recent research has focused on the co-construction of discourse in collaborative writing and speaking tasks and how it affects rating of test taker performance. In school-based academic language assessment in the USA, research has been dominated by the No Child Left Behind legislation and a resulting focus on standards and progress, while elsewhere there has been more interest recently in formative assessment to impact teaching and learning.

What of the future of academic language assessment? As an Arabic proverb has it: he who foretells the future lies, even if he tells the truth. However, there are some areas where one may look forward with some confidence. Davies (2009) draws attention to the growing place in international communication of world Englishes (WE), local varieties of English. WE are often the medium of spoken interaction in academic settings in many parts of the world and logically may well need to be assessed in those settings. A second area that may see an increase in the future is, paradoxically, the assessment of academic languages other than English. As noted in the introduction to this entry, there are already a number of programs and assessments in various academic languages worldwide, and one may imagine the need for such programs increasing as even more students and scholars move more freely about the academic world. Finally, in language assessment generally and particularly in academic language assessment there is a trend toward increased attention to ethics, the use of tests in a gate-keeping function, and impact, the effect tests have on educational, social, and political systems. Academic language tests have a great potential for having life-changing influences on individuals and thus must be developed, administered, and interpreted with great attention to evidence that inferences and decisions made on their basis are appropriate and supported by acceptable evidence. Tests are increasingly being used as instruments as much of political and social power as they are of educational reform and monitoring. We have a responsibility to make our tests of academic language ability as valid, reliable, and fair as we can make them.

SEE ALSO: Assessment in the Classroom; Assessment of Integrated Skills; Assessment of Listening; Assessment of Pragmatics; Assessment of Reading; Assessment of Speaking; Assessment and Testing: Overview; Assessment of Vocabulary; Assessment of Writing; English for Academic Purposes

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Assessment of Cultural Knowledge

R. MICHAEL PAIGE AND ELIZABETH STALLMAN MADDEN

Introduction

This entry examines the ways in which cultural knowledge is currently being defined and how it is being assessed. The context for this entry is the long-standing interest in applied linguistics and related disciplines, such as intercultural communication, education, psychology, and anthropology, in how culture can be taught and learned. The substantial growth in the field of international educational exchange during the past 20 years has heightened this interest in language and culture learning, and the research and applied literatures have expanded accordingly (Lange & Paige, 2003). Related to this growth is the development of new cultural knowledge assessment instruments (Paige, 2004; Fantini, 2009).

In this entry the authors provide a conceptual map of the ways in which cultural knowledge is being defined and assessed. In the "Conceptualizing Cultural Knowledge" section, the literature on cultural knowledge is reviewed to provide a foundation for the discussion of assessment instruments. In the next section, "The Nature of Instruments Assessing Cultural Knowledge," the dimensions being assessed are examined in greater detail and assessment instruments related to those dimensions are identified. In the following section, "Selected Cultural Knowledge Assessment Instruments," five instruments are selected as exemplars of those categories and discussed in greater detail.

It is important to note at the outset that much of what is being discussed in this entry is coming from disciplines other than the applied linguistics or language education fields. This is not to discount the substantial body of knowledge linking language and culture (Kramsch, 1998; Lange & Paige, 2003; Byram, 2008), but to acknowledge the focus of the authors on culture per se. In addition, it needs to be acknowledged that this entry condenses decades of theory and research, hence necessarily simplifies the very complex topic of cultural knowledge and assessment.

Conceptualizing Cultural Knowledge

Paige's (2006) description of *culture learning* serves as one of the frames of reference for this entry. He describes culture learning as a process of acquiring and acting upon five primary dimensions of cultural knowledge including: (a) *cultural self-awareness*—explicit knowledge of one's own preferred values, beliefs, patterns of behavior, and cultural identity; (b) *knowledge of culture*—knowing the elements of culture, both objective and subjective; (c) *culture specific knowledge*—knowing about a particular culture other than one's own; (d) *culture general knowledge*—knowledge about intercultural transitions and experiences, and how to manage them; and (e) *culture learning*—knowing how to learn about another culture (2006, pp. 40–1).

The interrelated concepts of *intercultural sensitivity*, *intercultural development*, and *intercultural competence* (Bennett, 1993; Hammer, 2008a), separate from the five culture concepts mentioned above, are also central to the assessment of cultural knowledge. These terms describe, in various ways, what it ultimately means to be effective in communicating and

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interacting across cultures. For Bennett (1993), intercultural sensitivity "is the construction of reality as increasingly capable of accommodating cultural difference" (p. 24). Bennett's "developmental model of intercultural sensitivity" (DMIS) conceptualizes intercultural sensitivity as a developmental phenomenon consisting of six primary orientations toward cultural difference organized into three "ethnocentric" (Denial, Defense, Minimization) and three "ethnorelative" (Acceptance, Adaptation, and Integration) orientations. According to Hammer (2008a), intercultural competence is "The capability of shifting cultural perspective and adapting behavior to cultural context" (p. 205). Intercultural development refers to the movement through this continuum from ethnocentrism to ethnorelativism and the increasing capacity to shift one's frame of cultural reference, cognitively and behaviorally.

The DMIS has been highly influential and of great value to educators working in culturally diverse settings because it provides a way of (a) understanding the challenges being experienced by persons living in those situations and contexts, and (b) designing programs that will support intercultural development that are relevant to the learners' existing level of competence. The Intercultural Development Inventory (IDI; Hammer, Bennett, & Wiseman, 2003; Hammer, 2008a) described below is a valid and reliable measure of Bennett's developmental continuum.

The Nature of Instruments Assessing Cultural Knowledge

Consistent with the multidimensional ways in which cultural knowledge is being conceptualized, there is a wide variety of assessment instruments that measure different aspects of cultural knowledge. Fantini (2009) identifies 44 "external assessment instruments" that can be used to measure intercultural competence. Paige (2004) describes 35 "intercultural instruments" that are organized into nine culture categories. Five of those are particularly relevant for this section: (a) intercultural development, (b) cultural identity, (c) cultural values, (d) cultural adjustment, and (e) culture learning ("learning styles" in Paige, 2004).

Intercultural Development

Bennett (1993) authored the "developmental model of intercultural sensitivity" that is now considered to be the seminal work on intercultural development. At the Adaptation and Integration levels of development, Bennett theorizes that individuals have the capacity to shift cognitively and behaviorally to another culture's frames of reference, what Hammer (2008a) refers to as "intercultural competence." This concept of intercultural competence has received considerable attention in the literature, valuable recent works being those by Deardorff (2009), Moodian (2008), and Savicki (2008). The best known instrument for measuring intercultural development as represented by the DMIS is the IDI (Hammer, 2008a), which is described in greater detail below.

Cultural Identity

Cultural identity refers to the sense a person has of belonging to and identifying with one or more cultural communities as well as to knowledge of one's own cultural values. Numerous instruments have been developed over the years to assess ethnic-specific forms of identity, such as the Cross Racial Identity Scale (Cross & Vandiver, 2001) and the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Rickard-Figueroa, Lew, & Vigil, 1987). More generalizable scales also have been developed that allow the respondents to identify their primary culture and discuss the strength of their participation in it. Examples include the Multi-Index Ethnocultural Identity Scale (MEIS; Yamada, 1998) and the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992), which is described below.

Cultural Values

A central component of culture is the cultural value system, that is, ideas that are shared by members of a culture group regarding the desired patterns of behavior and belief in their community. Seminal authors in this area include Kluckhohn and Strodtbeck (1961), Hofstede (2001), and Hall (1969). Well-known intercultural instruments measuring cultural values include the Values Orientation Inventory (Kluckhohn & Strodtbeck, 1961), Intercultural Sensitivity Inventory (Bhawuk & Brislin, 1992), and Intercultural Conflict Style Inventory (Hammer, 2008b).

Cultural Adjustment

Cultural adjustment is a core concept in the intercultural field (Ward, Bochner, & Furnham, 2001). Having culture general knowledge about adjustment and adaptation is seen as central to working effectively across cultures. Adjustment and adaptation are such significant aspects of the intercultural experience that a vast training literature has been developed around the issues of preparing and supporting persons experiencing cultural adjustment (Paige, 1993; Landis, Bennett, & Bennett, 2004). Well-known instruments that measure cultural adjustment include the Cross-Cultural Adaptability Inventory (Kelley & Meyers, 1999) and the Sociocultural Adjustment Scale (SCAS; Ward & Kennedy, 1999). The SCAS is one of the instruments described below.

Culture Learning

In recent years, a number of instruments have been developed to assess the skills, strategies, and capacities needed for learning about another culture. Kolb (1984) presents a comprehensive theoretical treatment of culture learning, in which he identifies core learning styles and then discusses their importance in learning about another culture. The Culture Learning Strategies Inventory (CLSI; Paige, Rong, Zheng, & Kappler, 2006) and the Cultural Intelligence Scale (CIS; Earley & Ang, 2003) fall into the culture learning category and are described in the following section.

Selected Cultural Knowledge Assessment Instruments

In this section, five instruments are discussed in greater detail. These instruments were chosen because they each meet four criteria that we deemed critical for a sound assessment or research project. These criteria are: theoretical and conceptual foundation; the aspect of cultural knowledge being assessed; evidence of instrument reliability and validity; and generalizability to a broad and culturally diverse audience. We define generalizability to be the use and application the instrument has for several culture groups, language groups, or both. Table 1 shows a summary of each instrument and how it meets each of these five criteria.

The Intercultural Development Inventory

Conceptual foundation. The IDI is a 50-item measure of intercultural competence that is based on Bennett's (1993) developmental model. The IDI is well known and frequently used for assessing intercultural development and intercultural competence.

Cultural dimension(s) being measured: intercultural development. The IDI assesses the cognitive complexity of one's orientation toward culturally different persons and groups. At higher levels of intercultural sensitivity or competence, this necessarily means possessing cultural knowledge sufficient for shifting cultural perspective and adapting behavior to

Table 1 Culture learning instruments and selection criteria

	Instrument				
Criteria	*Intercultural Development Inventory*	*Multigroup Ethnic Identity Measure*	*Sociocultural Adjustment Scale*	*Culture Learning Strategies Inventory*	*Cultural Intelligence Scale*
Conceptual foundation	Developmental Model of Intercultural Sensitivity (Bennett, 1993)	Ethnic identity development (Phinney, 1989)	Sociocultural adaptation (Ward & Kennedy, 1999)	Multiple: intercultural relations, intercultural communication, international education	Cultural intelligence (Earley & Ang, 2003; Sternberg, 1986)
Cultural category	Intercultural development	Cultural identity	Cultural adjustment	Culture learning	Culture learning
Reliability and validity	+	+	+	+	+
Generalizability	Across culture and language groups	US ethnic minorities	Across culture groups	Across culture groups	Across culture groups

Note. + indicates instrument meets reliability and validity testing. See instrument description for details.

cultural context. Version 3 of the IDI (the current version) generates an overall score for intercultural competence, the "developmental orientation" (DO) score, as well as subscale scores for Denial, Polarization (Defense), Polarization (Reversal), Minimization, Acceptance, and Adaptation. It also produces a distinct "cultural disengagement" (CD) score.

Reliability and validity. There is considerable empirical evidence on the reliability and validity of the IDI (Hammer et al., 2003). These studies show that (a) the items possess strong internal reliability consistency, (b) the IDI is not subject to social desirability bias, (c) the IDI has predictive as well as construct validity, and (d) it is not correlated with standard background characteristics of age, gender, or ethnicity.

Generalizability. The IDI has strong cross-cultural generalizability. The items were originally generated by a culturally diverse sample and the IDI was pilot tested with a culturally diverse group. It has been translated into 12 languages (using a rigorous back translation method).

Multigroup Ethnic Identity Measure

Conceptual foundation. The MEIM (Phinney, 1992) is conceptualized around the multidimensional, social aspects of an individual's ethnic identity, including sense of belonging and affirmation, ethnic identity achievement, ethnic behaviors and practices, and orientation to other groups. Its theoretical base is Phinney (1989) on ethnic identity development.

Cultural dimension being measured: cultural identity. The MEIM measures "that part of an individual's self-concept which derives from [his] knowledge of [his] membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, in Phinney & Ong, 2007, p. 271).

Reliability and validity. The latest research on the MEIM (Phinney & Ong, 2007) has resulted in a six-item measure that meets reliability (alpha > = .83) and validity standards. It is

currently a two-factor model, *exploration* of and *commitment* to one's ethnic identity.

Generalizability. The MEIM is intended to be used (and has been tested with) ethnic minorities in the USA. Such minorities have included Latino, Asian American, African American, European American (such as Armenian), and those of mixed heritage.

Sociocultural Adjustment Scale

Conceptual foundation. The SCAS is a 29-item instrument designed to measure the cognitive and social aspects of sociocultural adaptation (Ward & Kennedy, 1999). Sociocultural adaptation consists of two dimensions: *cognitive adaptation* (the ways in which persons think about a different culture) and *behavioral adaptation* (the ways persons respond to a different culture).

Cultural dimension(s) being measured: cultural adjustment. The SCAS measures cultural knowledge in a general manner; while it is not a measure of concrete culture-specific knowledge, it does ask respondents to evaluate what they know about particular aspects of the specific culture.

Reliability and validity. The reliability and validity of the SCAS have been well established. Ward and Kennedy (1999), summarizing the results from 21 different samples, demonstrate that the instrument has strong internal consistency reliability as well as convergent, factorial, and criterion validity.

Generalizability. The phenomenon of intercultural adaptation has been shown to occur in virtually all cross-cultural transitions and for all culture groups experiencing a new culture (Kim, 2001). The concept is therefore generalizable and the SCAS, through the testing mentioned above, is also generalizable as an instrument for use across culture groups.

Culture Learning Strategies Inventory

Conceptual foundation. The CLSI (Paige et al., 2006) is the first instrument to explicitly identify strategies for learning culture. It includes 60 items that measure the culture learning strategies persons use and the degree to which they use them. Its theoretical framework resides in the intercultural relations, intercultural communication, and intercultural education literatures.

Cultural dimension being measured: culture learning. The CLSI is principally about how elements of culture can be learned. The 60 items pose learning strategy questions related to nine aspects of culture: adapting to culturally different surroundings; culture shock/coping strategies; interpreting culture; communicating across cultures; communication styles; nonverbal communication; interacting with culturally different people; homestay strategies; and reentry strategies.

Validity and reliability. Paige, Cohen, and Shively (2004), report the results of validity and reliability testing of the CLSI. Internal consistency reliability coefficients range from .72 to .86. Confirmatory factor analysis shows that the conceptual structure is a sound fit with the data.

Generalizability. Because of the comprehensive theoretical structure of the instrument, the CLSI should be applicable to diverse audiences.

Cultural Intelligence Scale (CQS)

Conceptual foundation. Cultural intelligence is a multidimensional concept researched and developed by Earley and Ang (2003) and has its roots in intelligence theory as posited by

Sternberg (1986). It is a culture-general construct defined as "an individual's capability to function and manage effectively in culturally diverse settings" where diversity lies in race, ethnicity, and nationality (Ang et al., 2007, p. 336).

Cultural dimension(s) being measured: culture learning. The CQS measures culture in four aspects: (a) strategy, or assessing and analyzing intercultural experiences; (b) knowledge, or understanding of culture as a concept that transcends specific national or ethnic traits; (c) motivation, or desire to interact with people of other cultures; and (d) behavior, or a person's ability to respond appropriately in different cultural contexts.

Reliability and validity. Confirmatory factor analysis results show goodness of fit for the authors' theoretically based, four-factor model (chi-square = 381.28 (164 *df*)) and reliability tests for each factor were at least 0.77. Ang et al. (2007) and Van Dyne, Ang, and Koh (2009) found that the instrument predicts task performance and interactional adjustment.

Generalizability. As a culture-general instrument, the CQS is designed to be used effectively by people of different cultures. It has also been tested with participants from at least 12 countries.

Conclusion

This entry shows that cultural knowledge is a multifaceted concept and that many assessment instruments are available that measure the different dimensions of cultural knowledge. The goal of the authors has been to provide a conceptual map of cultural knowledge, to identify a number of assessment instruments relevant to those categories, and, for illustrative purposes, to describe in greater detail five specific cultural knowledge assessment instruments. It is hoped that this entry can serve as a useful introduction to cultural knowledge and its assessment.

SEE ALSO: Byram, Michael; Culture; Intercultural Competence; Intercultural Learning; Risager, Karen

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Assessment of Grammar

JAMES E. PURPURA

While language educators have always acknowledged the importance of grammar in second language (L2) teaching and testing, the notion of what it means to "know" the grammar of an L2 has evolved in many ways. Consistent with developments in L2 pedagogy, models of L2 proficiency used in assessment have shifted from a primary focus on decontextualized linguistic structures to an emphasis on measuring communicative language ability (CLA) through performance. In assessment, however, language testers have taken the de-emphasis on decontextualized linguistic structures to mean a near complete removal of grammar as a separate and explicit domain of measurement. Evidence of this is seen in the removal of separate grammar sections from the *IELTS* and *ibTOEFL*. Disinterest in separate grammar assessment stems in large part from unsubstantiated beliefs that learners demonstrating "functional" levels of communicative effectiveness do not need to be assessed on the linguistic elements. Other reasons arise from concerns that separate, explicit grammar assessments might lead (a) to teaching and assessment practices prioritizing grammatical accuracy over other components of CLA (e.g., sociolinguistic knowledge) or (b) to a return to measurement practices rooted in structural linguistics and discrete-point measurement of the 1960s.

Arguments against grammar were persuasive to educators including assessment specialists when some researchers (e.g., Krashen, 1982) wrongly discounted the effectiveness of explicit grammar instruction as a means of promoting L2 acquisition (SLA) and advocated for its abandonment. However, such arguments no longer hold given the empirical research showing that learners receiving form-focused instruction are more likely to learn at more accelerated rates and achieve higher levels of proficiency in grammar (Norris & Ortega, 2000; DeKeyser, 2007; Ellis, 2008) and pragmatics (e.g., Lyster, 1994) than learners not receiving form-focused instruction—especially if explicit, corrective feedback is provided (e.g., Russell & Spada, 2006). More recent research shows that grammatical knowledge, when defined in terms of form-meaning mappings, is not only a critical component of L2 knowledge, but also a strong predictor of the ability to communicate in semantically meaningful (Ameriks, 2009; Kim, 2009; Liao, 2009; Dakin, 2010) and pragmatically appropriate ways (Grabowski, 2009).

In assessment, the resurgence of interest in grammar stems from an acknowledgment that grammatical knowledge, defined in terms of form-meaning mappings, is always invoked during language use, and that grammar assessment provides information on the forms that L2 learners are able to use (or not) when they attempt to express meanings in context. Also, grammar assessment has recently been the focus of considerable attention in the use of natural language processing and speech and writing recognition and processing technologies for the purpose of developing automated scoring and feedback systems of writing and speaking assessments (Xi, 2010). Finally, grammar has never ceased to be the mainstay of most L2 classrooms or the central focus of second language acquisition (SLA) research. In short, these factors create opportunities to rethink the construct of grammatical knowledge in SLA and assessment research, and to reconsider ways of measuring this construct.

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Clarifying Key Terms

Knowledge is used here to refer to informational structures stored in long-term memory. These structures exist in concepts, images, networks, representations, propositions, schemas, and representations (Pressley, 1995). Thus, *language knowledge* then refers to an internalized, mental representation of informational structures related to language, and *grammatical knowledge* to representations of form-meaning mappings in long-term memory. *Ability* involves not only informational representations in long-term memory, but also the capacity to *use* or *apply* informational structures to accomplish communicative tasks. This requires *strategic competence*, which involves the ability to use metacognitive and cognitive strategies in learning, use, and assessment (Purpura, 1999). *Language ability* (also *L2 proficiency*), is defined as a combination of language knowledge and strategic competence (Bachman, 1990), and communicative language ability (CLA) refers to the use of knowledge and strategies in context. *Grammatical ability*, defined as the capacity to use grammatical knowledge to accomplish tasks (Purpura, 2004), logically involves grammatical knowledge and strategic competence. *Language skill* references the ability to communicate with automaticity. Finally, *language performance* refers to manifestations of language ability in language use and *grammatical performance* to manifestations of grammatical ability in language use.

Representations of Grammatical Knowledge in SLA Research

The question of how grammar can be represented has been central in the study of SLA, but the approaches taken have been of limited direct use for language assessment. Many researchers, informed by interlanguage theory (Selinker, 1972), view L2 knowledge as an "internal linguistic system that a learner constructs at a single point in time (an 'interlanguage') and as the series of interconnected systems that characterize the learner's progress over time ('interlanguage' or 'interlanguage continuum')" (Ellis, 2008, p. 409). This system has been conceptualized as an *increasingly complex set of grammatical rules* on a proficiency continuum, with beginners' proficiency being characterized in terms of formulaic sequences, structural simplification, and semantic simplification (e.g., omission of articles).

Noting the static approach to representation implied by the interlanguage approach, some SLA researchers, most notably McLaughlin, Rossman, and McLeod (1983) and McLeod and McLaughlin (1986), explained L2 knowledge differentiation through declarative/procedural knowledge and information-processing approaches, based on concepts from cognitive psychology. Building on an information-processing approach, Skehan (1998) proposed an interesting model of L2 learning linked to a limited-capacity information-processing system. He described L2 representation as a dual-mode system involving both rule- and exemplar-based processing. Skehan proposes that the implications of such a processing model is that linguistic competence can be defined in oral production as *fluency* (e.g., number of words per turn), *accuracy* (e.g., percentage of error-free clauses), and *complexity* (e.g., amount of subordination), arguing that these factors align with a theory of language and language processing (Foster & Skehan, 1996; Skehan & Foster, 1997; Skehan, 1998). Such conceptualizations provide little information on how specific L2 knowledge might be defined, but the approach holds potential for describing the sociocognitive underpinnings of learning-oriented L2 assessments and for designing L2 assessments for, of, and through learning (Purpura, 2009; Purpura, Dakin, Ameriks, & Grabowski, 2010).

Another influential perspective on characterizing L2 knowledge of linguistic forms and language differentiation is in terms of explicit and implicit knowledge. Ellis (1994) defined "explicit L2 knowledge" as "conscious, declarative, anomalous, and inconsistent . . . and generally only accessible through controlled processing in planned language use"; "implicit L2 knowledge" referred to "intuitive, procedural, systematically variable, automatic, and

thus available for use in fluent, unplanned language use" (p. 418). Research attempting to find empirical evidence for this perspective has been inconclusive so that the notion of "grammatical proficiency" defined as distinct explicit/implicit knowledge components remains an open empirical question (Ellis, 2006).

Despite the texture and ingenuity of these and other lines of inquiry on grammar in SLA, in the majority of empirical studies in SLA (e.g., DeKeyser, 1995; Ellis, 2005), L2 knowledge is defined mainly in terms of grammatical form (explicit and implicit knowledge of morphosyntax). This syntactocentric depiction of grammatical knowledge raises questions about generalizability as this approach fails to consider other important aspects of grammatical knowledge (e.g., cohesion) as well as other aspects of language knowledge (e.g., pragmatics)—components that would be specified if this research were linked to a model of CLA.

Representations of Grammatical Knowledge in Language Assessment Research

Applied linguists focused on language assessment (e.g., Lado, 1961; Canale & Swain, 1980; Bachman, 1990; Larsen-Freeman, 1991; Bachman & Palmer, 1996; Purpura, 2004) have proposed a variety of models of L2 proficiency, which include a grammatical component. While these models differ, each one conceptualizes grammatical knowledge as a critical communicative resource, whether it is described in terms of form or meaning.

Conceptualizing Grammatical Knowledge in Terms of Form

Rooted in structural linguistics and discrete-point measurement, the "traditional" approach to grammar assessment defines grammatical knowledge solely in terms of linguistic forms. Grammar is viewed on the (sub)sentential levels as a separate body of knowledge with discrete elements, deriving from an ad hoc list of phonological, lexical, and (mostly) morphosyntactic forms.

	Grammatical Knowledge
	Grammatical Form
Subsentential or Sentential Levels	**Graphological or Phonological Forms** (e.g., sound-spelling correspondences, segmental and prosodic forms)
	Lexical Forms (e.g., co-occurrence restrictions—*depend ON*
	Morphosyntactic Forms (e.g., inflections, tense-aspect, word order)
Discourse Level	**Cohesive Forms** (e.g., substitution and ellipsis, deictic forms)
	Information Management Forms (e.g., given/new, clefts)
	Interactional Forms (e.g., discourse markers, fluency markers)

Figure 1 Grammatical knowledge as form. Adapted from Purpura (2004)

Nouns and noun phrases • pre-determiners, determiners, post-determiners • nouns (countability, affixation, compounding)	**Pronouns & reference (cohesion)** • personal, demonstrative, reciprocal • relative, indefinite, interrogative
Verbs, verb phrases, tense & aspect • tense—present, past, future; aspect—progressive, • subject–verb agreement	**Questions & responses** • yes/no, wh-, negative, uninverted • tags
Modals & Phrasal Modals (*be able to*) • forms—present, past, future, perfective, progressive • obligation—*should, supposed to*	**Conditionals** • forms—present, past, future • factual, counterfactual conditionals
Phrasal verbs • form—2-word, 3-word • separability	**Passive Voice** • form—present, past, future, perfective • other passives—*get something done*
Prepositions & prepositional phrases (PP) • co-occurrence w/V, Adj. or N—*rely on, fond of* • spatial or temporal relationships—*at the store at 5*	**Complements & complementation** • V + NP + (PREP) NP • infinitive/gerund complements—*want (him) to; believe him to*
Adjectives and adjectival phrases • formation (*-ous -ive*) • adj order—*the lovely, little, plastic Cher doll*	**Comparisons** • comparatives & superlatives • equatives—*as/so big as*
Logical connectors • relationships of time, space, reason & purpose, • subordinating & coordinating conjunctions	**Adverbials and adverbial phrases** • forms—adverb phrase, clause, PP • placement—sentence initial, medial & final
Relative clauses • Forms: animate, inanimate, zero, place • Subject NP, (in)direct object NP, genitive NP	**Reported speech** • backshifting; • indirect imperatives or questions
Nonreferential *It* & *There* • time, distance, environment—*it's noisy in here* • existence—*there is/are*	**Focus & emphasis** • Emphasis—emphatic *do;* • marked word order—*him I see;*

Figure 2 Taxonomy of grammatical forms. Adapted from Purpura (2009)

To make this approach more useful for assessment, Purpura (2004) proposed a model of grammatical knowledge specifying how forms might be organized on the (sub)sentential and discourse levels. This model accounts for graphological/phonological, lexical, morphosyntactic, cohesive, information management, and interactional forms (Figure 1).

Each category can be further specified to be used in developing content specifications for grammar assessments that aim for content representativeness. Figure 2 presents an abbreviated version of Purpura's (2009) taxonomy of grammatical forms.

This form-based approach to grammar assessment provides the potential for fine-grained information about a wide range of structures across proficiency levels. This approach has, therefore, served well in assessment contexts such as placement into intensive language programs and as a component of proficiency tests aiming to make reliable distinctions among examinees. At the same time, however, a form-based approach is conspicuously narrow in scope because in language use a form can rarely be disassociated from its meaning potential (Jaszczolt, 2002). In other words, a form-based approach fails to address adequately how forms are resources for conveying ideas, information, and other propositions (semantic meaning), or how they encode social status, formality, culture, affect, stance,

or other implied meanings in communication (pragmatic meanings). The limitation with a form-based approach is especially evident in cases where meaning extensions can only be derived from context and are dependent upon an understanding of shared norms, assumptions, expectations, and interlocutor presuppositions. More seriously, the meaning dimension must be considered if the importance of communicating effectively is prioritized over the importance of communicating in flawless grammar. Finally, the meaning dimension must be addressed if assessment is to provide appropriate, corrective feedback since, in some cases, learners may have mastered the form, but not the meaning, or vice versa. Or they might understand the forms and associated semantic meaning without seeing how these meanings can be extended or made intentionally ambiguous as in a joke.

Conceptualizing Grammatical Knowledge in Terms of Meaning

Aiming to include the meaning potential of grammatical knowledge, Purpura (2004) argued that a comprehensive model would minimally include both the form and meaning dimensions of grammatical knowledge, which in turn would provide resources for pragmatic use (Figure 3). Although much of language use involves the conveyance of pragmatic meanings, the current discussion is limited to the assessment of grammatical knowledge.

Grammatical forms encode the following graphological/phonological, lexical, morphosyntactic, cohesive, information management, and interactional meanings, as seen in Figure 4.

Each individual meaning can obviously be tested separately. Consider a context in which a dispatcher calls a doctor asking for emergency medical services. The doctor replies: "I *work* with injured patients" (my regular job is to do this work) instead of "I'*m working* with injured patients" (and am therefore unavailable at the moment). The first response, while accurate, is an example of miscommunication, resulting from a presumed knowledge gap in the connection between morphosyntactic form and meaning (tense-aspect). Pedagogical decisions related to the previous response would be different from those made from the following: "I *working* with injured patients," where the message was communicated despite the inaccurate form. In assessment terms, each response represents a different knowledge gap, which has direct implications for scoring and corrective feedback.

Besides the meanings of the individual components, the collective meaning of an utterance—that is, the learner's ability to get a point across *meaningfully*—can be assessed. When grammatical forms combine with their individual meanings in a well-formed utterance, they express a proposition, referred to as the semantic (or propositional) meaning of the

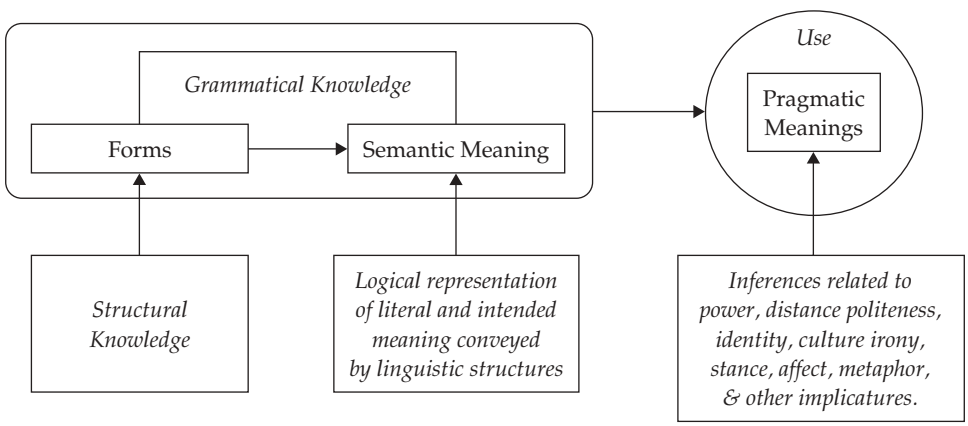

Figure 3 Grammatical knowledge and pragmatic use. Based on Jaszczolt (2002) and Wedgwood (2005)

	Grammatical Knowledge	
	Grammatical Form	**Semantic Meaning**
Discourse <- - - -> (Sub)sentential Levels	**Graphological or Phonological Forms** (e.g., sound-spelling correspondences, segmental and prosodic forms)	**Graphological or Phonological Meanings** (e.g., homophony (their/there), contrastive stress, minimal pairs, tags)
	Lexical Forms (e.g., co-occurrence restrictions—*depend ON*	**Lexical Meanings** (e.g., denotations & connotations, polysemy)
	Morphosyntactic Forms (e.g., inflections, tense-aspect, word order)	**Morphosyntactic Meanings** (e.g., time/duration/completion, passivization)
	Cohesive Forms (e.g., substitution and ellipsis, deictic forms)	**Cohesive Meanings** (e.g., referential links, conclusion/contract)
	Information Management Forms (e.g., given/new, clefts)	**Information Management Meanings** (e.g., emphasis/focus, foregrounding)
	Interactional Forms (e.g., discourse markers, fluency markers)	**Interactional Meanings** (e.g., hedging, alignment, disagreement)
	Low Context <- -> ***High Context***	

Figure 4 Model of grammatical knowledge. Adapted from Purpura (2004)

utterance. Propositional meaning is encoded in all utterances. However, as utterances are expressed in context, characterized by various situational and interpersonal features, utterances also encode the speaker's intended meaning (e.g., compliment), also referred to as the conveyed meaning, speaker's meaning, utterance meaning, communicative intent, functional meaning, illocutionary meaning, or propositional intent. The literal and intended meaning of an utterance may be exactly the same (e.g., direct speech acts). More commonly, they differ (e.g., indirect speech acts), thereby creating the potential for ambiguity in low context situations. The referral here is to an utterance's combined literal and intended meaning as the semantic (or grammatical) meaning. In the situation above, if the doctor had replied: "*I working with some injure patient*," the semantic meaning would have been conveyed, demonstrating communicative success. Communicative precision would then be the focus of further instruction. In sum, the degree to which meaning is conveyed is intrinsically part of grammatical knowledge and should be explicitly assessed, separately or in combination with form.

Measuring Grammatical Knowledge in SLA Research and Language Assessment

To measure grammatical knowledge, learners are presented with tasks allowing them to demonstrate their receptive, emergent, or productive knowledge of grammar. Tasks involve a collection of characteristics that vary on several dimensions (Bachman, 1990). These

Selected-Response Tasks	Constructed-Response Tasks			
	Limited Production	Extended Production		
• noticing (circle the verbs) • matching • same/different • true/false • agree/disagree • judgment tasks (grammaticality acceptability, naturalness, formality, appropriateness) • multiple choice • MC error identification • ordering • categorizing • grouping	• labeling • listing • gap-filling • cloze • sentence completion • discourse completion task (DCT) • short answer	Product-Focused • essay • report • project • poster • portfolio • interview • presentation • debate • recital • play	Performance-Focused Simulation • role-play • improvisation • interview Recasts • retelling • narration • summary Exchanges • information gap • reasoning gap • opinion gap • jigsaw • problem-solving • decision-making • interactive DCT	Process-Focused Observation • checklist • rubric • anecdotal report Reflection • journal • learning log • think aloud

Figure 5 Ways of eliciting grammatical knowledge. Adapted from Purpura (2004)

variations elicit performance variability that can be construct-relevant (i.e., related to grammatical knowledge) or construct-irrelevant (e.g., related to unclear instructions). In other words, since tasks interact with examinee characteristics (i.e., their grammatical knowledge, strategic competence, personal attributes, topical knowledge, affective schemas), they logically impact performance. The choice of grammar tasks should be selected according to the assessment purpose. Labeling task types, such as multiple-choice (MC) tasks, as inappropriate or undesirable is not informative for assessment specialists; instead, assessment tasks need to be designed in view of the assessment purpose.

In designing tasks for grammar, assessment specialists find it useful to categorize them according to the type of elicited response (Figure 5). Selected-response (SR) tasks present input in the form of an item, requiring examinees to choose the response. These tasks aim to measure recognition or recall. While SR tasks are typically designed to measure one area of grammatical knowledge, they may engage more than one area (form *and* meaning). Constructed-response (CR) tasks elicit language production. One type of CR tasks, limited-production (LP) tasks, presents input in the form of an item, requiring examinees to produce anywhere from a word to a sentence. These tasks aim to measure emergent production, and are typically designed to measure one or more areas of knowledge. Another type of CR tasks, extended-production (EP) tasks, presents input in the form of a prompt, requiring examinees to produce language varying in quality and quantity. EP tasks are designed to measure full production, eliciting several areas of knowledge simultaneously.

SR (and some LP) tasks are typically scored right/wrong for grammatical knowledge based on one criterion for correctness (e.g., accurate form). Scoring criteria might include: accuracy, precision, range, complexity, grammatical acceptability, meaningfulness, appropriateness, or naturalness. Dichotomous scoring assumes that an item invokes *only one* underlying dimension of knowledge, that it is measuring full knowledge of the feature,

and that item difficulty resides *only* in the interaction between the stem and key, *but not* with the distractors. In some cases, however, response choices may reflect *complete knowledge* of a form, *partial knowledge*, *misinformation*, or a total *lack of knowledge*. If the distractors represent "partial" knowledge of the feature, the use of *partial credit scoring* should be considered, as dichotomous scoring would deflate test scores by failing to reward examinees for partial knowledge (Purpura et al., 2010). In the case of grammaticality judgments, grammatical acceptability would need to depend on form alone—only one criterion for correctness to score the item appropriately. If meaning is *also* affected, dichotomous scoring is not appropriate.

Partial credit scores with LP responses are based on the dimensions of knowledge being measured (e.g., 1 point for form, 1 for meaning), or they can be linked to an analytic or holistic rating scale and rated by judges. Rating scales provide hierarchical descriptions of observed behavior associated with different levels of performance related to some construct. While rating scales are efficient for many contexts, the information derived from these assessments may be too coarse-grained for others—especially when detailed feedback is required. The more focused the descriptors are for each rating scale, the greater the potential for measurement precision and useful feedback. For further discussion of grammar scoring, see Purpura (2004).

While SLA researchers sometimes use SR and LP tasks to measure grammatical knowledge, the preference is often for EP tasks in which the targeted forms arise naturally and essentially during L2 production. EP tasks have also been used to elicit L2 use under different processing conditions (e.g., planning/no planning) so that a learner's L2 production can be examined under these conditions. Once elicited, the L2 data may then be scored with rating scales, as described above. More commonly in SLA research, however, grammatical knowledge is inferred from L2 production data described in terms of accuracy, fluency, and complexity. In examining the development of writing ability, Wolfe-Quintero, Inagaki, and Kim (1998) provided a comprehensive list of measures to examine written production. They defined *accuracy* as "error-free production" (p. 117), measured by the frequency of occurrence of errors or error types within a production unit (e.g., error-free T-units), by ratios (e.g., error-free T-unit per T-unit) or by accuracy indices (e.g., error index). They defined *fluency* as "the rapid production of language" (p. 117), measured by the frequency of occurrence of specified production units (e.g., words in error-free clauses) or by fluency ratios (e.g., words per T-unit or clause). They defined *complexity* as "the use of varied and sophisticated structures and vocabulary" (p. 117) in production units. Grammatical complexity involved linguistic features (e.g., subordination) in clause, T-unit, and sentence production units, measured by the frequency of occurrence of these features (e.g., clauses), by complexity ratios (e.g., T-units per complexity ratio), and by complexity indices (e.g., coordination index). Lexical complexity was measured by lexical ratios (e.g., word variation/density). Skehan and Foster (1997) produced a similar list of measures for oral production data.

While these measures provide important information on the varied characteristics of L2 production, it is unclear how over a hundred such measures, individually or collectively, relate to a model of grammatical knowledge or how these measures address the conveyance of different types of meaning in communication. Given the seemingly random nature of these atomistic measures, their syntactocentric focus, and the impracticality of using them with large sample sizes, testers have largely ignored these L2 production measures in operational assessment contexts. Nonetheless, for those wishing to characterize features of L2 production data, such as in assessment validation research or in automated scoring contexts, rather than assess knowledge of L2 grammar, these measures serve a valuable purpose.

Conclusion

In examining how grammatical knowledge has been conceptualized and assessed in applied linguistics, this entry has argued that grammatical knowledge defined uniquely in terms of form presents only a partial understanding of the construct, since forms are intrinsically related to the conveyance of semantic and pragmatic meanings. It also argues that in the assessment of communicate effectiveness, the focus might be better placed on the use of grammatical ability for meaning conveyance, rather than solely on accuracy of the form. Finally, test developers need to consider the many options for constructing grammar tasks in view of the intended test score interpretation and use.

SEE ALSO: Assessment and Testing: Overview; Language Assessment Methods; Task-Based Assessment; Teaching Grammar

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Assessment of Integrated Skills

LIA PLAKANS

Assessment of integrated skills refers to the use of test tasks that combine two or more language skills to simulate authentic language-use situations. In such assessment, task demands aim to overlap and synthesize combinations of reading, writing, listening, and speaking. Although possibly more common in classroom assessments, such tasks are now included in large-scale tests, for example:

1. Internet-Based Test of English as a Foreign Language (TOEFL iBT) from Educational Testing Service is employed as a measure of English-language use and comprehension in university classroom contexts for the purpose of admission into English-speaking higher education programs. This test includes tasks that integrate writing with reading and listening as well as speaking tasks that include reading and listening.
2. *Diplôme approfondi de langue française* (DALF), managed by the Centre international d'études pédagogiques, is used as a French-language proficiency measure for university study and employment. The high proficiency level assessment integrates multiple skills—reading, writing, listening, and speaking—with tasks such as summarization, discussion, and argumentation.
3. US College Board's Advanced Placement (AP) Spanish Examination is given to determine if college foreign-language credit in Spanish can be granted to students completing high school. Writing tasks include an integrated essay based on reading two texts and listening to an audio file.

The approach to skills integration illustrated by these three tests differs from "integrative" tests of the past, which aimed to assess a unitary language-proficiency construct that was largely grammatically driven (Oller, 1983; Chalhoub-Deville & Deville, 2005). One well-regarded integrative format popularized in the 1950s is the cloze test (Oller, 1979), which provides a portion of text with certain words removed either mechanically (every nth word) or selectively, and test takers are asked to supply the missing words. For example:

> In addition, many scholars believe that reading ____ a second language parallels reading ____ a first language. Thus if you have ever studied the process _____ native language reading, you will find many similarities _____ this chapter. (Horwitz, 2008, p. 131)

This concept of a unitary construct of language ability competed with the idea that it is valuable to separate language ability into component skills for assessment practices (Lewkowicz, 1997; Chalhoub-Deville & Deville, 2005; Leki, Cumming, & Silva, 2008). The conceptualization of language as four skills, plus grammar and vocabulary, has been a mainstay in language testing for some time. The current trend of integrated skills assessment may on the surface appear to return to the earlier notion of integrative assessment but in fact the construct assessed and the format of the test tasks for integrated tests today are very different from those of integrative testing of the past.

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Test Tasks

A description for an integrated writing task from the Test of English as a Foreign Language Web site clarifies the types of test tasks that allow for skill integration:

> Via computer delivery, examinees are given some time to read and take notes on a reading passage. Then they listen to a lecture and are allowed to take notes on it. Afterward the reading passage reappears and examinees are directed to summarize the points made in the lecture (which they don't see) and explain their relationship to the points made in the reading. They are given 20 minutes to key in their responses. (Retrieved and excerpted from http://www.ets.org/Media/Tests/TOEFL/pdf/ibt_writing_sample_responses.pdf)

As in this example, in most cases, integrated assessment tasks are performance based, leading to writing or speaking, rather than completion of selected response items such as multiple-choice questions. The integration of skills in assessment may occur during the process of composing the constructive response, such as in a speaking task that includes summarization; to complete the task the test taker is required to combine the cognitive processes involved in reading and speaking. Integrated tasks may also require that the final product from the task include integration; for example, the TOEFL task requires that content from the listening and reading texts be combined in the written summary.

Integrated tasks may be categorized into at least three types: text- or content-responsible, stimulus-related, and thematically linked. A text- or content-responsible task (Leki & Carson, 1997; Leki, Cumming, & Silva, 2008) requires the test taker to write or speak about the content of texts. Examples might include an oral summarization task or a persuasive essay that requires test takers to use ideas from source texts for supporting evidence. The prompt below illustrates a content-responsible task.

> Read the following passage that gives an opinion about technology. Then explain the writer's main point and why you agree or disagree with it.
>
> **Computer Madness**
>
> Technology has not fulfilled the promises made when computers were first adapted for personal use. They have made life more complicated and increased the amount of work we do, rather than simplify life or minimize workloads. In one day, I must respond to at least fifty emails. Sometimes these emails are things that would not even warrant a phone call. Instead of meeting face-to-face, my meetings are online involving video cameras, microphone, etc. Time is spent in setting up the technology rather than in making important decisions. I am really starting to wonder if there is any advantage to having modern technology. Where are the benefits?

These tasks are common in assessment for academic purposes as well as in content-based instruction where language is used as a medium for learning, for example in language-immersion programs or sheltered instruction. Such assessment requires that test takers comprehend the reading and incorporate it into their response. If the answer could be completed without reading the text, then it might fall into the second category: stimulus test tasks.

A stimulus task asks test takers to read or listen to a text but does not require that the content be present in their performance. The input texts or visuals, such as lists, charts, or graphs, serve as idea generators or background information (Leki & Carson, 1997). The example below presents a stimulus task given at the end of an ESL course.

Read the following pieces of advice about successful study skills.
General suggestions for study skills

- Write down due dates for all assignments on a calendar.
- Determine weekly goals for studying and focus on meeting them.
- Study in a room where you have complete silence and can concentrate.
- At the end of each study session, plan what to do for your next session.
- Reward yourself for working hard.

Imagine you are writing to a classmate who will take this class in the future. What other study skills will you suggest that are specific for this class? What helped you succeed? Provide three suggestions with some explanation and an example for each. Write approximately 600–700 words on this topic; write essay style, not just listing. Your response will be evaluated on the following: organization, development, clarity, and grammatical accuracy.

These two tasks types, content-responsible and stimulus-related, differ in what they require test takers to do and how the resulting performance is rated. A stimulus task integrates skills in the process only; for example, a test taker may need to comprehend the source texts and plan a response on the topic, but does not have to integrate the texts in the product of the assessment. In content-responsible integrated tasks, both the process and the products require skill integration, and, therefore, the score should include criteria for the use of more than one skill.

The third test type considered is integrated assessment, which includes several test sections that are thematically linked (Esmaeili, 2002). For example, a section assessing reading comprehension would include a text that is also the topic for a subsequent writing prompt. The relationship between the tasks could either be stimulus-related or content-responsible. Several rationales may be provided for thematically linked tasks. First of all, topics in listening or reading tasks that reappear in performance tasks provide test takers with content on which to build their performance. In addition, including reading or listening comprehension questions about a source text can add to the integrated measure information about the test takers' skills in isolation, which may allow efficiency in testing. However, thematically linked tasks that include content-responsible performances have been criticized for twice penalizing test takers with low language-comprehension skills: for example, they will likely receive a low score on reading questions and, due to their low comprehension of the text, may also be limited in their ability to use the content in a performance.

Research in the Assessment of Integrated Skills

Researchers have attempted to understand integrated tasks by comparing test takers' performances on them with their performances on tasks requiring only one skill. Research comparing independent and integrated writing task performance has found that overall scores show similarities (Brown, Hilgers, & Marsella, 1991) and are positively correlated (Watanabe, 2001; Gebril, 2009). Yet closer investigation of discourse features has revealed some differences, such as grammatical accuracy, development, and rhetorical stance (Cumming et al., 2005). For example, in studying the prototype TOEFL iBT task, Cumming et al. (2005) found that integrated task responses were shorter, but used longer words and more variety in words when compared to independent writing tasks. The independent writing responses were scored higher in certain rhetorical features, such as the quality of propositions, claims, and warrants. Watanabe (2001) found that integrated essays were less likely to have an original thesis when compared to an independent task essay.

Studies investigating the test-taking process across tasks types have found evidence that some test takers follow a similar approach for both independent and integrated tasks, while others treat integrated tasks as requiring synthesis and integration strategies, such as scanning the text for ideas to include in their essay (Plakans, 2008, 2009). However, the study of test-taking processes on two different integrated tasks also revealed differences across tasks: Ascención (2005) found that read-and-respond writing tasks required more planning and monitoring than a read-and-summarize task.

Researchers have also attempted to reveal effects of proficiency and task familiarity on integrated task performance. Not surprisingly, higher-proficiency writers produce longer responses to integrated writing tasks than lower-level writers (Cumming et al., 2005; Gebril & Plakans, 2009). Expected differences in grammatical accuracy also occur across levels of proficiency, as well as in organization and the use of integration source texts (Watanabe, 2001; Cumming et al., 2005; Gebril & Plakans, 2009). Research results also suggest that prior experience with integrated tasks, educational level, first-language writing experience, and interest in writing may affect performance (Ruiz-Funes, 2001; Ascención, 2005; Plakans, 2009). In a study of task representation—how writers interpret the demands of a task—Plakans (2010) found that writers with more experience in source-text writing recognized that an integrated task held different requirements than an independent task, compared to writers with less experience.

The role of texts is also important for developing integrated assessment, as well as for understanding scores. In a study of different source texts used in summary writing, Yu (2009) found that source-text characteristics had a significantly greater effect on writers' scores than language proficiency. Although somewhat inconsistently, writers reported that features of the source texts, such as organization, unfamiliar words, length and topic, affected their summarizing. Both Cumming et al. (2005) and Watanabe (2001) found significant differences in how sources are used by test takers across topics and texts.

Benefits of Integrated Assessment

The current interest in the profession for integrating skills for assessment resides in their apparent authenticity. Particularly for specific purposes such as assessing academic language, needs analyses of language use have shown that skills are used in tandem rather than in isolation (e.g., Leki & Carson, 1997). Thus, including this integration as part of assessment creates test tasks that appear authentic in view of their alignment with real language-use contexts (Feak & Dobson, 1996). The connection between the test and the real world is intended to result in a positive impact on test users' confidence in the scores, increase test takers' motivation, and lead to scores that are more predictive of future performance. Also beneficial are integrated assessments that provide test takers with content or ideas for their performances, thus mitigating non-language factors such as creativity, background knowledge, and/or prior education (Read, 1990). Some research has reported that test takers prefer integrated tasks because they understand the task topic better than they do on single skill tasks and may generate ideas from the sources given (Plakans, 2009; Huang, 2010). However, Huang (2010) found that actual performance and anxiety measures did not support test takers' perceptions that integrated tasks lower anxiety in comparison with independent speaking task.

Another advantage with this kind of assessment is the emphasis on the skills working together rather than viewing them as individual components of language ability. Integrated assessment may fit well with current language-teaching approaches, such as task-based language teaching (TBLT), which move away from teaching separated skills to focusing on accomplishing tasks using language holistically. Such tests may also have a positive

washback, or impact, on classrooms that integrate skills, focus on content-based learning, or have goals for specific-purposes language use.

Challenges of Integrated Assessment

Although visible benefits exist with integrating skills in assessment, a number of challenges remain, such as developing high-quality integrated tasks, rating learners' performance appropriately, and justifying the validity of interpretations and uses.

Development

Developing high-quality integrated prompts can be challenging because these tasks are often complex, including multiple steps and texts. The development or selection of source texts requires decisions to be made about the length and level of the text as well as about the content. For example, some tests include multiple texts that give different opinions on a topic while others have one long text that describes a single phenomenon. When test developers aim to produce parallel items these considerations about texts need to be taken into account. Carefully crafted instructions are an important consideration. Test takers need a clear idea of what is expected and, as much as possible, of how to integrate the skills in their process and product. Studies have shown that test takers approach these tasks in a variety of ways, some using both skills to complete the tasks while others use only one skill and thus are not truly integrating. With more frequent use, test takers' confusion may decrease; however, those unfamiliar with the type of assessment may struggle to understand how to complete the task, which can affect their score regardless of their language ability.

Reliability and Rating

Although several studies have found assessment of integrated skills tasks can lead to reliable rating (Ascención, 2005; Gebril, 2009), the issue of scoring these performance-based tasks remains difficult. The rubric for integrated skills assessment needs to reflect skill integration in some way (De Fina, Anstendig, & De Lawter, 1991) unless there is a clearly dominant skill that is of primary concern, such as with stimulus tasks or thematically linked tasks that are not content-responsible. Thus, a clear definition of the role of the integrated skills and the evidence of them in the performance is needed for meaningful scoring. The example below presents a detailed rubric checklist for assessing integrated reading and writing skills.

		No evidence		Highly competent	
1.	Comprehends main idea in the text	1	2	3	4
2.	Distinguishes details and key ideas	1	2	3	4
3.	Paraphrases ideas from source text appropriately	1	2	3	4
4.	Selects ideas from the source text well	1	2	3	4
5.	Connects ideas from source text with own	1	2	3	4
6.	Clearly develops a thesis position	1	2	3	4
7.	Provides support for position	1	2	3	4
8.	Follows logical organization and cohesion	1	2	3	4
9.	Displays grammatical accuracy	1	2	3	4
10.	Uses clear specific vocabulary	1	2	3	4

When test takers are required to draw on texts in their performance, they may copy strings of words verbatim from others or plagiarize (Cumming et al., 2005; Gebril & Plakans,

2009), which makes these tasks difficult to rate and affects score interpretation. For some test takers, such borrowing may be a strategy, needed because of low reading comprehension, hesitancy in expressing themselves in writing, or a lack of experience with source-text integration (Yu, 2008). However, skills required by some types of integrated reading–writing include selecting ideas from texts to include in one's writing, choosing when to paraphrase or quote from the text, and including appropriate citation. Therefore, test developers need to consider how these skills appear in the construct for integrated tasks, and rating rubrics need to address how to score such writing; for example, the rubric above includes the descriptor, "Paraphrases ideas from source text appropriately," which could include source-text copying.

Validity

Validity of test-score interpretation and use needs to be justified on the basis of evidence for a correspondence between test scores and the integrated ability that the test is intended to measure, as well as evidence for the utility of the test scores. Test developers and researchers need to consider how to elicit evidence in order to conduct validation research. When dividing language into skills areas, defining the construct appears manageable; questions arise, however, with the construct underlying integrated assessment. With this goal in mind, several studies have investigated reading-to-write tasks to determine how much of the integrated test score can be predicted by scores on reading-comprehension measures, finding low statistical significance (Trites & McGroaty, 2005; Delaney, 2008). However, in studies of integrated task composing processes, the cognitive processes and strategies involved in reading are clearly employed by test takers to complete the task, suggesting that reading skill is critical (Esmaeili, 2002; Plakans, 2009). The different results on the impact of reading may reflect how writing in integrated tasks is scored as well as the dominance of the performance skill in integrated tasks.

Examining writing processes in a thematically linked integrated assessment, Esmaeili (2002) concluded that reading and writing could not be viewed as stand-alone constructs. In a study of non-native and native English speakers, Delaney (2008) found that reading-to-write tasks elicited processes attributable to unique constructs that were not merely a combination of reading ability and writing skill, but also of discourse synthesis. Plakans (2009) also found evidence of discourse synthesis in writers' composing processes for integrated writing assessment and concluded that the evidence supported interpretation of such a construct from test scores. Using structural equation modeling and qualitative methods, Yang (2009) found complex interrelated strategies used by writers in reading–listening–writing tasks, further supporting the idea that the processes related to discourse synthesis (selecting, connecting, and organizing) improved test performance. While research into validity and integrated assessment is building momentum, a clear definition is yet to be determined and more research is needed.

Conclusions

Integrating skills in assessment will benefit from continued investigation as well as creative innovation. It represents a step away from defining language as four skills plus grammar and vocabulary, which is a familiar way of dividing up the job of evaluating second or foreign languages. Since integration appears in classroom and authentic contexts (Hirvela, 2004), its emergence or re-emergence in testing seemed inevitable. Meanwhile, research should continue to look at the integrated skills as constructs to better understand how they can best be defined and measured and how scores from assessments of integrated skills can be used.

SEE ALSO: Assessment of Speaking; Assessment of Writing; English for Academic Purposes; Language Assessment Methods; Rating Scales for Language Tests; Reading–Writing Connection; Task-Based Assessment

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Assessment of Listening

GARY J. OCKEY

Listening is important for in-person communication with estimates that it accounts for more than 45% of the time spent communicating (Feyten, 1991). Listening continues to become more important in virtual environments with the increase of communication through such technologies as video broadcasting and Skype. It follows that teaching and assessing the listening skill of second language learners is essential. Unfortunately, the assessment of second language listening comprehension has attracted little research attention (Buck, 2001), and as a result, understanding of how to best assess it is limited.

Listening Processes

Current conceptions of the listening process maintain that comprehension results from the interaction of numerous sources of information, including the acoustic input and other relevant contextual information. The mind simultaneously processes these incoming stimuli and other information such as linguistic and world knowledge already present in the mind. Listening comprehension is a dynamic process, which continues for as long as new information is made available from any of these sources (Gruba, 1999; Buck, 2001).

Storage and retrieval of linguistic information are important in understanding listening comprehension. According to Johnson-Laird (1983), linguistic input is stored in the mind, either as propositional representations or mental models. Propositional representations include a concept along with something that relates to it, often a noun accompanied by a verb, whereas mental models are composed of concepts such as events, objects, people, and situations. Because propositional representations require considerable memory, information is stored more frequently as mental models. This means that listeners remember the information in a text—not the specific grammar and vocabulary used to express it.

Listening is multidimensional but is comprised of related discrete lower-level ability components. While agreement on a comprehensive list of these components has not been reached (nor does there exist an agreed-upon theory of how these components operate with each other), some research indicates that listening ability may include three lower-level abilities: the ability to understand global information, comprehend specific details, and draw inferences from implicit information (Min-Young, 2008). Test developers typically draw upon these in defining a listening construct in the first stages of test development.

Factors Affecting Listening

Professionals take into account factors that affect listening comprehension when they design and use listening assessments. One of these factors is rate of speech (Zhao, 1997; Brindley & Slatyer, 2002). When listeners comprehend authentic oral communication, they process a large amount of information very rapidly, which can result in cognitive overload or push working memory beyond its capacity. This means that listeners may not be able to understand input at faster speeds which can, however, be processed at slower speeds. Research also indicates that background knowledge about the topic is important for the message to

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be comprehended. Test takers with background knowledge on a topic related to the input are generally advantaged. Jensen and Hansen (1995), however, found that the effect is not so simple, reporting that particular topics and test tasks can influence the relationship between background knowledge and test performance.

Accent of the speaker is another important factor that affects listening comprehension. Research has shown that it is easier for language learners to understand familiar accents (Pihko, 1997; Tauroza & Luk, 1997), standard dialects (Pihko, 1997; Major, Fitzmaurice, Bunta, & Balasubramanian, 2005), and native speakers (Major, Fitzmaurice, Bunta, & Balasubramanian, 2002).

Other important factors of oral communication known to affect listening comprehension include prosody (Lynch, 1998), phonology (Henricksen, 1984), and hesitations (Freedle & Kostin, 1999). Brindley and Slatyer (2002) also identify length, syntax, vocabulary, discourse, and redundancy of the input as important variables.

Types of interaction and relationships among speakers are also important factors to take into account when designing listening assessment inputs. Monologues, dialogues, and discussions among a group of people are all types of interaction that one would be likely to encounter in real-world listening tasks. Individuals might also expect to listen to input with various levels of formality, depending on the relationship between the speaker and the listener.

Tasks for Assessing Listening

Decisions about the characteristics of the desired listening assessment tasks should be based on the purposes of the test, the test takers' personal characteristics, and the construct that the test is designed to measure (Bachman & Palmer, 2010). Buck (2001) provided the following guidelines concerning listening tasks, which may be applicable to most listening test contexts: (a) listening test input should include typical realistic spoken language, commonly used grammatical knowledge, and some long texts; (b) some questions should require understanding of inferred meaning (as well as global understanding and comprehension of specific details) and all questions should assess linguistic knowledge—not that which is dependent on general cognitive abilities; and (c) test takers' background knowledge on the content to be comprehended should be similar. The message conveyed by the input, not the exact vocabulary or grammar used to transmit the message, as well as various types of interaction and levels of formality should also be assessed.

In practice, listening assessment tasks require learners to listen to input and then provide evidence of comprehension by responding to questions about the information conveyed in the input. The most common types of comprehension questions are selected response items, including multiple-choice, true/false, and matching. For these item types, test takers are required to select the most appropriate answer from options which are provided. These options may be based on words, phrases, objects, pictures, or other realia. Selected response items are popular, in part, because they can be scored quickly and objectively. An important question to answer when designing selected response item types is whether or not to provide people with the questions and possible responses prior to the input, especially since including them has been shown to favor more proficient test takers (Wu, 1998). Some researchers have argued that to have a purpose for listening, test takers should be provided with the questions prior to the input (Buck, 2001), while others argue that providing a preview of questions and answer options may decrease the authenticity of the task by changing the way learners process the input. For instance, when test takers are allowed to preview questions and answer options on multiple-choice tests, they have been found to use a "lexical-matching strategy," in which learners, particularly those who are less

proficient, listen for key words that they see in the distracters rather than striving for general comprehension of the message (Yanagawa & Green, 2008).

Constructed response item types are also commonly used. They require test takers to create their own response to a comprehension question and have become increasingly popular. These item types require short or long answers, and include summaries and completion of organizational charts, graphs, or figures. For example, for summary tasks, test takers listen to an input and then are expected to provide either a written or spoken synopsis of the input. Guidelines for the intended amount of detail to be included in the summary are generally provided. Constructed response item types have been shown to be more difficult for test takers than selected response item types (In'nami & Koizumi, 2009) and may therefore be more appropriate for more proficient learners. Most test developers and users have avoided using constructed response item types because scoring can be less reliable and require more resources. Recent developments in computer technology, however, have made scoring productive item types increasingly more reliable and practical (Carr, 2006), which may lead to their increased use.

Another listening task used in tests today is sentence repetition, which requires test takers to orally repeat what they hear, or the analogous written task of dictation, which requires people to write what they hear. As with constructed response items, computer technology has made the scoring of sentence repetition and dictation more objective and practical. Translation tasks, which require test takers to translate what they hear in the target language into their first language, is also a popular task used for assessing listening, especially when all those being assessed have the same first language.

Limitations of Listening Assessment Tasks

Validly assessing second language listening comprehension presents a number of challenges. The process of listening comprehension is not completely understood, and there are currently no methods which allow a view of the listener's brain to see what has been comprehended. Instead the listener must indicate what has been understood. The medium of this indication, along with other factors, has potential for diminishing the validity of listening assessments.

The majority of listening tasks require test takers to select responses from given choices or to use speaking, reading, or writing skills to demonstrate comprehension of the input. For instance, most forms of multiple-choice, true/false, matching, short-answer and long-answer items require test takers to read the questions and make a selection or provide a written response, while other tasks—such as sentence repetition—require oral responses. The need for learners to use other language skills when their listening is assessed can lead to scores that are not representative of their listening abilities. For example, some people have much more developed aural/oral skills than literacy skills. These individuals may be able to understand oral input but be assigned a lower score than expected on a listening test that requires them to read and respond to written comprehension questions. Moreover, poor oral ability, such as unclear pronunciation, may unfairly impact scores on tests which require provision of verbal responses to indicate listening abilities.

Strategies and other abilities not generally defined as part of a listening comprehension construct may also lead test takers to achieve scores that are not representative of their listening abilities. For instance, some learners may be able to eliminate wrong answer options or even select the correct answer by using test-taking strategies, such as selecting the longest answer to increase their chances of getting an answer to a multiple-choice item correct. Another problem with sentence repetition and dictation tasks is that people with well-developed sound recognition skills may be able to repeat the sounds they hear or write letters that correspond to the words they hear without comprehending the information.

Scores on listening assessments are compromised in various ways depending on the task test developers choose to use. Therefore, listening assessment developers and users should take into account the abilities of the test takers and limitations of the tasks used to best ensure that the test provides a valid indication of learners' listening abilities.

Computers in Assessing Listening

Developments in computer technology expand the potential for different types of listening input and ways of determining comprehension of input. For instance, technology allows acoustic signals to be easily accompanied by various types of input such as visual stimuli, which can make tasks more realistic.

Computers also increase the potential for using test items that require short constructed responses. Developers create model answers and identify the key words and phrases in them, and then these key words and phrases, along with acceptable synonyms, can be used to create a scoring algorithm. Reponses to items that contain part or all of the targeted information can be given partial or full credit (Carr, 2006). Longer constructed item types such as summaries can also be rated by computers, but require more sophisticated programming. Computer-generated scoring systems based on speech recognition technology can be used for this purpose (Zechner, Bejar, & Hemat, 2007).

Computer technology may, however, have a negative effect on the assessment of listening. The tendency to use technology because it is available and attractive may lead to assessments that do not validly measure listening comprehension (Ockey, 2009). For instance, including attractively colored interfaces or interesting sounds, which are not part of the message to be comprehended, may be distracting to some test takers. Such distractions could lead to invalid scores for affected individuals. Moreover, computer scoring systems cannot make human judgments that may be important when assessing language (Condon, 2006). It is therefore important that test developers who use computers to assess listening recognize the strengths and limitations of this technology.

Current and Future Directions in Assessing Listening

An increasing number of researchers support listening assessments which include as much contextual information in the input as possible (Gruba, 1999; Buck, 2001; Ockey, 2007; Wagner, 2010). Of particular interest to most of these researchers is that the acoustic signal be accompanied by associated visual stimuli, such as a video which shows the speaker. To provide guidance to test developers and users, various types of visuals have been distinguished and researched, including context and content visual stimuli. Context visuals are intended only to establish the situation for the discourse and indicate change in speakers, while content visuals provide visual information which coincides with the audio input. Such information includes graphs, charts, and maps that commonly accompany acoustic input when a speaker wants to describe or explain something (Ginther, 2002).

Studies which have investigated people's use of visual information when taking a listening test have been revealing. The results of these studies suggest that individuals make use of visual information to varying degrees. Ockey (2007) found that with context-only video, test takers engaged to vastly different extents, with some reporting a great deal of use of the visuals, others reporting little or no use, and still others indicating that the visuals were distracting them from "listening." Rhetorical signaling cues (movements or expressions of the speaker) have also been shown to be important in listening comprehension (Dunkel & Davis, 1994). Jung (2006) found that second language learners misinterpreted texts more commonly when rhetorical signaling cues were excluded from the input. Wagner

(2010) found that test takers achieved higher scores on video than on audio-only tests when actors used gestures to help with explanations. Ockey (2007) found that individual test takers report using various types of rhetorical signaling cues, including lip movements, facial gestures, and hand movements. Evidence of the importance of these cues for processing information comes from Wagner's (2008) study. He reports that some test takers mimic gestures that they see in video input when they are asked to verbalize what they have heard.

Research which has compared test takers' scores on audio-only assessments with tests that include visual stimuli as well as the audio input have produced mixed results. Some studies have found that including visuals leads to increased scores (Shin, 1998; Sueyoshi & Hardison, 2005; Wagner, 2010), while others have failed to find a difference in scores for the two conditions (Gruba, 1989; Coniam, 2000). Researchers report that some test takers do not even look at visuals accompanying the acoustic input (Gruba, 1989; Ockey, 2007), apparently believing that it will serve them better to devote their full attention to the answer options rather than to the visuals. Further research on the interaction among task and question types, visual inputs, and test taker personal characteristics is needed to steer test developers who are planning to use visuals in their listening assessments.

Not all researchers support the notion that listening assessments should be designed to include context. In fact, some maintain that listening is an aural-only skill which should be tested with the minimum amount of context possible (Choi, Kim, & Boo, 2003). Proponents of this view contend that contextual cues such as visual information should be excluded from listening assessments. Test developers and users need to decide on the degree to which contextual information should be included in listening assessments, based on the construct that the test aims to measure.

Conclusions

Valid assessment of listening comes with many challenges and unresolved issues. A variety of types of input and tasks for assessing comprehension have been used, all of which have strengths and limitations. The quality of listening assessments should be evaluated based on the purpose of the test, the characteristics of the test takers, and the context in which the assessment will be given. Rapidly developing computer technology continues to increase the potential for item types that can better assess listening, but comes with its own limitations and challenges. Because all listening assessments have inherent strengths and weaknesses, test developers and users must agree on the listening construct that they desire to assess, and then use input and item types that will best assess it.

SEE ALSO: Teaching Listening; Technology and Language Testing; Technology and Listening

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Assessment of Pragmatics

CARSTEN ROEVER

The assessment of second language pragmatics is a relatively recent enterprise. This entry will briefly review the construct of pragmatics, discuss some major approaches to testing pragmatics, and highlight some of the challenges for pragmatics assessment.

The Construct

The concept of *pragmatics* is far reaching and is commonly understood to focus on language use in social contexts (Crystal, 1997). Subareas include deixis, implicature, speech acts, and extended discourse (Mey, 2001). In terms of the psycholinguistic structure of pragmatic ability, Leech (1983) distinguishes between sociopragmatics and pragmalinguistics. Sociopragmatic ability describes knowledge and ability for use of social rules, including mutual rights and obligations, social norms and taboos, and required levels of appropriateness and politeness. Pragmalinguistic ability includes knowledge and ability for use of linguistic tools necessary to express speech intentions, for example, semantic formulae, hedging devices, and pragmatically relevant grammatical items.

Assessment instruments in second language (L2) pragmatics do not usually cover all possible subareas of pragmatics, and usually focus on either sociopragmatics or pragmalinguistics. A small number of tests have been developed as general proficiency tests, which are intended to compare test takers to each other and discriminate between test takers of different ability. These tests tend to provide the broadest (though not complete) coverage of the construct.

A second category of instruments are those that have been designed for research studies. They may serve as one-shot instruments to compare participants from different backgrounds (learning in the second vs. foreign-language context), or they may be used to establish a baseline of participants' knowledge of the feature of interest followed by a treatment (an instructional sequence or other exposure to the target feature) and concluding with a measurement of the effect of the intervening treatment phase. These tests tend to be narrower in their construct coverage as they are focused on a specific aspect of pragmatic competence, commonly a speech act (e.g., Bardovi-Harlig & Dörnyei, 1998; Matsumura, 2001; Rose & Ng, 2001; Takahashi, 2005) but sometimes also another feature, like implicature (Bouton, 1994; Taguchi, 2007, 2008b), discourse markers (Yoshimi, 2001), routine formulae (House, 1996; Roever, 1996; Wildner-Bassett, 1994) or recognition of speech styles (Cook, 2001).

The next section will concentrate on proficiency tests, but also discuss some tests from research settings that can inform future developments in the assessment of L2 pragmatics.

Proficiency Tests

The first large-scale test development project for L2 pragmatics was Hudson, Detmer, and Brown's (1992, 1995) test battery. They focused sociopragmatic appropriateness for the speech acts request, apology, and refusal by Japanese learners of English, and designed their instruments around binary settings of the context variables power, social distance,

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You are sharing a house with several people. Today you want to rearrange your room. You need help moving a heavy desk and decide to ask one of your housemates. You go to the living room where your housemate Jack is reading the newspaper.
You say: _____
_____

Figure 1 DCT item

and imposition (Brown & Levinson, 1987). Hudson et al. (1992, 1995) compared several different assessment instruments, but like many studies in interlanguage pragmatics (Kasper, 2006) relied heavily on discourse completion tests (DCTs). A DCT minimally consists of a situation description (prompt) and a gap for test takers to write what they would say in that situation. Optionally, an opening utterance by an imaginary interlocutor can precede the gap, and a rejoinder can follow it. Figure 1 shows a DCT item intended to elicit a request.

Hudson et al.'s (1995) instrument included traditional written discourse completion tests (DCTs), spoken DCTs, where the task input was in writing but test takers spoke their response, multiple choice DCTs, role plays, and two types of self-assessment questionnaires. Test taker performance was rated on a five-step scale for use of the correct speech act, formulaic expressions, amount of speech used and information given, formality, directness, and politeness. This pioneering study led to several spin-offs. Yamashita (1996) adapted the test for native-English-speaking learners of Japanese, Yoshitake (1997) used it in its original form, and Ahn (2005) adapted it for Korean as a target language. In a review, Brown (2001, 2008) found good reliability for the role plays, as well as the oral and written DCTs and self-assessments, but the reliability of the multiple-choice DCT was low. This was disappointing as the multiple-choice DCT was the only instrument in the battery that did not require raters, which made it the most practical of all the components. Liu (2006) tried to develop a multiple-choice DCT for first language (L1) Chinese-speaking learners of English and reports high reliabilities but McNamara and Roever (2006) question whether test takers may actually have reacted to the idiomaticity of the response options rather than their appropriateness. Tada (2005) followed the tradition of investigating speech acts but used video prompts to support oral and multiple-choice DCTs and obtained reliabilities in the mid .7 range. Using conversation analysis as his theoretical basis, Walters (2004, 2007) developed DCTs, role plays and listening comprehension items to investigate learners' ability to comprehend and complete pre-sequences, compliments, and assessments. While innovative, his instrument was hampered by very low reliabilities.

While speech acts have been a feature of focal interest in the assessment of L2 pragmatics, not all work has focused exclusively on them. Bouton (1988, 1994, 1999) did pioneering work in the assessment of implicature, that is, how speakers convey additional meaning beyond the literal meaning of the words uttered. He distinguished two types of implicature, idiosyncratic and formulaic, with the former encompassing conversational implicature (Grice, 1975), whereas the latter includes some specific types of implicature, such as indirect criticism, variations on the Pope Q ("Is the Pope Catholic?") and irony. Bouton's test items consisted of a situation description, a brief conversation with an implicature, and multiple-choice response options offering possible interpretations of the implicature. Using this test, Bouton found that idiosyncratic implicature is fairly easy to learn on one's own but difficult to teach in the classroom, whereas the reverse is the case for formulaic implicature. Taguchi (2005, 2007, 2008a, 2008b) employed a similar instrument and took a psycholinguistic perspective on implicature, investigating learners' correct interpretation in conjunction with their processing speed.

Jack is talking to his housemate Sarah about another housemate, Frank.
Jack: "Do you know where Frank is, Sarah?"
Sarah: "Well, I heard music from his room earlier."
What does Sarah probably mean?
1. Frank forgot to turn the music off.
2. Frank's loud music bothers Sarah.
3. Frank is probably in his room.
4. Sarah doesn't know where Frank is.

Figure 2 Implicature item from Roever (2005)

Jack was just introduced to Jamal by a friend. They're shaking hands.
What would Jack probably say?
1. "Nice to meet you."
2. "Good to run into you."
3. "Happy to find you."
4. "Glad to see you."

Figure 3 Routines item from Roever (2005)

A small number of studies have combined assessment of different aspects of pragmatic competence. In the largest study to date that covers multiple features, Roever (2005, 2006) developed a Web-based test of implicature, routine formulae, and speech acts, and validated it using Messick's (1989) validation approach. Unlike Hudson et al.'s (1995) test, Roever's (2006) instrument focused on pragmalinguistic rather than sociopragmatic knowledge. Roever adapted Bouton's implicature test and a multiple-choice test of routine formulae from Roever (1996). Figure 2 shows an implicature item from Roever's (2005) test. Figure 3 shows a routines item from Roever (2005).

Roever also incorporated a section testing the speech acts request, apology, and refusal. He used rejoinders (responses by the imaginary interlocutor) in his speech act items, which Hudson et al. had discarded in their final version, but Roever argued that rejoinders do not detract from the tasks' authenticity in a pragmalinguistically oriented test because such a test assesses the breadth of test takers' pragmatic repertoire rather than their politeness preferences. Roever's test was Web-delivered with randomized presentation of items, capture of response times, automatic scoring of the implicature and routines section, and rater scoring of the speech act section. He obtained an overall reliability of .91 with a particularly high inter-rater reliability for the speech acts section where the rejoinders made it very easy for raters to assess responses dichotomously as correct (fitting the situation and the rejoinder) or incorrect. The more the score approaches 1.0, the greater the agreement between raters in their judgment of test taker performance. Roever's test covered the construct of L2 pragmatic knowledge in quite some breadth, and had a high degree of practicality due to its web-based delivery. However, like previous tests, it ignored the many other discursive abilities that language users need for successful communication in real time, such as reading and producing contextualization cues.

As part of the development of a comprehensive computer-based test battery, Roever et al. (2009) designed a "social language" section, which included a spoken DCT with requests, apologies, refusals and suggestions, and an implicature section with spoken implicature stimuli.

The instruments discussed above are the only ones to date that were designed as general proficiency tests of second language pragmatics, and none of them have been used on a large-scale operational basis. It is noticeable that they have overwhelmingly focused on speech acts (primarily request and apology) with implicature a distant second, which is probably due to the preoccupation with speech acts in interlanguage pragmatics research.

This focus goes back to the work of Blum-Kulka, House, and Kasper (1989), who developed a comprehensive coding approach for requests and apologies in the Cross-Cultural Speech Act Realization Project (CCSARP). However, their work has recently come under severe criticism (Kasper, 2006) as it was based strongly on the discourse-external context factors identified by Brown and Levinson (1987), atomized speech acts rather than consider them in their discursive context, and used DCTs, which have been shown to be highly problematic (Golato, 2003). This focus on isolated, atomized speech acts is a construct problem for proficiency tests of L2 pragmatics, which cannot be used to make claims about learners' ability to comprehend or produce pragmatically appropriate extended discourse.

A further curious effect of the DCT-based speech act tradition is the prevalence of measurement of productive rather than receptive abilities in L2 pragmatics testing, which is normally the reverse in other areas of second language assessment. Tests designed for research purposes offer some interesting approaches for expanding measurement of receptive skills and larger sequences of discourse.

Different Construct Emphases: Tests in Research Settings

Many tests in research settings used similar instruments as the proficiency tests discussed above, commonly discourse completion tests or role plays. Some projects, however, provide useful extensions to the construct as it has been assessed so far. Taguchi (2007, 2008a, 2008b) added the measurement of processing speed to interpretation of implicature, which is not part of the construct of most pragmatics tests but it is clearly an important aspect of real-time communication.

Other research instruments have examined learners' sociopragmatic judgment. Bardovi-Harlig and Dörnyei (1998) as well as their replications by Niezgoda and Roever (2001) and Schauer (2006) used videotaped scenarios in which the last utterance contained a pragmatic error, a grammatical error, or no error. Learners were asked to judge the severity of the error, and the goal of the study was to establish differential awareness of pragmatic and grammatical norms depending on language learning setting. Some aspects of this study could well be used for more formal assessment purposes: learners' ability to detect that something is pragmatically "off" about an utterance is an important part of metapragmatic awareness that has not been part of the proficiency tests discussed above, and the instrument could be extended to include a productive component where test takers correct or improve the perceived error. This, however, poses a problem of item dependence: if the same items are used for error detection and correction tasks, a correct response on the detection task is a precondition for a correct response on the correction task. Simply put, if a learner does not detect the error, they cannot correct it, and will lose two points. An example of a metapragmatic judgment item is shown in Figure 4.

A completely different approach combining extended discourse and assessment of comprehension was taken by Cook (2001). Instead of concentrating on a specific speech act,

It's 4:30 pm, and Sharon is getting ready to go home. Her boss comes up to her desk.
Boss: "Sharon, I'm sorry, but we have an important project due tonight, and I need you to stay late today. Is that okay?"
Sharon: "No, I can't today."
How appropriate was Sharon's utterance?

totally appropriate	mostly appropriate	somewhat appropriate	mostly inappropriate	totally inappropriate

Figure 4 Metapragmatic judgment item

she worked in an interactional sociolinguistic framework and assessed test takers' comprehension of Japanese as a foreign language (JFL) contextualization cues in extended monologic discourse. As part of a midterm exam, she had 120 second-year JFL students at the University of Hawai'i listen to three recordings from simulated self-introductions by job applicants for a position as a bilingual (English/Japanese) store clerk in a retail shop in Honolulu. This is a realistic situation in Hawai'i where many stores rely on revenue from Japanese tourists and require their staff to speak some Japanese. Test takers were also given a copy of the (simulated) job advertisement and then asked to decide which of the three job applicants was most suited for the position. Two applicants met most of the criteria, and their Japanese was adequate in terms of sociolinguistic features for a job interview setting. One applicant, however, seemed to be a slightly better match to the criteria but used a highly inappropriate speech style, characterized by casualness, self-exaltation, underuse of honorifics, and overuse of emphatic markers. All this is strongly contrary to Japanese conventions, and Cook as well as a group of native and non-native JFL instructors felt that this applicant's blatant inappropriateness would immediately disqualify her. To Cook's surprise and dismay, over 80% of the test takers chose the inappropriate applicant as best suited for the position, citing her enthusiasm, self-assuredness and her own claim that she speaks Japanese well. Cook's test is interesting in its coverage of a different aspect of the construct of pragmatic ability, namely contextualization cues signaling speakers' understanding of the sociopragmatic norms of a given speech situation. While it also concerns sociopragmatic appropriateness, it assesses learners' sociopragmatic judgment of extended discourse, which contains a variety of cues, rather than of an isolated individual speech act. Cook's instrument is, however, essentially a one-item test, and would need to be extended to be used in any larger-scale assessment setting.

Challenges in Testing L2 Pragmatics

Fundamentally, tests of L2 pragmatics have the same requirements and pose the same development challenges as other language tests. They must be standardized to allow comparisons between test takers, they must be reliable to ensure precise measurement, they must be practical so that they do not overtax resources, and above all, they must allow defensible inferences to be drawn from scores that can inform real-world decisions (Messick, 1989).

From a test design perspective, it is also important to know what makes items difficult so they can be targeted at test takers at different ability levels. Findings on this aspect are limited by the small number of existing proficiency tests, but Roever (2004) shows some tendencies, such as formulaic implicature being more difficult than idiosyncratic, high-imposition speech acts being more difficult than low-imposition ones, and low-frequency routine formulae being more difficult than high-imposition ones.

The biggest challenge for pragmatics tests, however, is to extend their construct coverage. As Roever (2010) argues, the focus on atomized speech acts ignores essential features of language use in a social context, like contextualization cues, talk management devices, and Mey's (2001) "pragmatic acts." This means that testing of pragmatics should become more discursive and interactive but a significant challenge is to ensure standardization in discourse settings: How can task demands be kept the same for different test takers under interactive conditions, where context is dynamic and endogenous to interaction (Heritage, 1984; Kasper, 2006)? Additionally, interaction is a co-constructed endeavor, so how can the contribution of the interlocutor be subtracted from the entire conversation to only rate the test taker's contribution? Hudson et al. (1995) avoided this issue in their role plays by eliciting focal speech acts and only rating test taker performance on them but eventually tests of L2 pragmatics will have to seriously tackle interactive language use.

A second challenge that impacts tests using sociopragmatic judgment is establishing a baseline. Put simply, testers need a reliable way to determine correct and incorrect test taker responses. The usual way to do so is to use a native-speaker standard and this has been shown to work well for binary judgments of correct/incorrect, appropriate/inappropriate, and so on. For example, Bardovi-Harlig and Dörnyei (1998) and Schauer (2006) found high agreement among native speakers for the judgment of pragmatic performance as being correct/incorrect, and so did Roever (2005, 2006) for implicature interpretation and situational routines.

However, native-speaker benchmarking is much more problematic when it comes to preference judgments. For example, in Matsumura's (2001) benchmarking of his multiple-choice items on the appropriateness of advice, there was not a single item where 70% of a native-speaker benchmarking group (N = 71) agreed on the correct response, and only 2 items (out of a pre- and posttest total of 24) where more than 60% of native speakers agreed. On 10 items, the most popular response option was chosen by less than half the native-speaker group.

Such a lack of a clear correct response may be acceptable in a survey instrument that elicits preference but would be a serious flaw in a dichotomously scored assessment instrument where one answer must be clearly correct and the others clearly wrong. It might be an interesting approach to use partial credit scoring where scores are assigned based on the proportion of native speakers that chose a particular response option, but this has not yet been done in pragmatics assessment.

Liu (2006) faced a similar problem in the development of his test. Based on responses to a DCT from native and non-native speakers, he created a pilot version with four to eight response options per item, which he gave to two small groups of NS (N = 7 for apology items and N = 6 for request items). For every item, he retained the three options with the greatest native-speaker agreement as to their correctness/incorrectness, of which one was the key and the other two were distractors. He then created a 24-item DCT, which he gave to 5 native speakers. They showed perfect agreement on the key for 12 situations, 80% agreement on 7 further situations, and less agreement on the remaining 5 situations. Liu revised the 5 situations with the least agreement, and gave them to another group of 3 native speakers, who all chose the same key. Liu shows how to develop multiple-choice DCT items with clearly correct/incorrect response options but it is notable that he used very small native-speaker groups, and accepted 70% agreement. Native-speaker benchmarking remains a thorny issue for multiple-choice tests of L2 pragmatics.

Finally, tests of pragmatics have often been designed contrastively for a pair of languages, for example, native-Japanese speakers learning English (Hudson et al., 1995), native-English speakers learning Japanese (Yamashita, 1996), native-English speakers learning Korean (Ahn, 2005), or native-Chinese speakers learning English (Liu, 2006). This necessarily lowers the practicality of tests, as well as the likelihood that they will eventually become part of large-scale international test batteries (like TOEFL or IELTS). Roever (2005) did not limit his test taker population to a specific L1, and used differential item functioning to show that there were some L1 effects but that they were generally minor (Roever, 2007), indicating that limiting pragmatics tests to a specific population is not a necessity.

Conclusion

Tests of L2 pragmatics have seen a great deal of development and focused research in the last two decades. They offer a promising addition to the traditional language tests, which tend to focus on grammar, vocabulary, and skills. However, they pose significant challenges for test design if a complex construct like pragmatics is to be assessed comprehensively and reliably. Research in testing L2 pragmatics is clearly still in its early stages.

SEE ALSO: Assessment of Speaking; Language Assessment Methods; Language Testing in Second Language Research; Paired and Group Oral Assessment

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Assessment of Business and Professional Language for Specific Purposes

JANE LOCKWOOD

Introduction

The use of English in international worksites and across business and professions has grown rapidly since the 1980s. Multinational companies doing business worldwide need to communicate and negotiate with each other; global professionals need to build knowledge together across linguistic and cultural boundaries; governments and NGOs need to keep the peace and help build developing countries; and immigrants with professional and occupational aspirations and qualifications need to find work in their new homelands. These situations predominantly use English as their lingua franca (Graddol, 2006). English-language competency has become a global core skill and a highly valued commodity in today's world of work. Therefore developing and measuring business and professional language competence is understandably in high demand.

This entry will attempt to provide an overview of the key issues in English-language assessment for the specific purposes of business and the professions both now and in the future. The entry starts by describing what sorts of assessments are currently in the marketplace for business and professional English testing and evaluates their strengths and weaknesses. It then goes on to examine some current trends in English for specific purposes (ESP) curriculum pedagogy and finally discusses how this thinking may affect language-assessment practices in the future.

Recent Approaches to Language for Specific Purposes (LSP) Assessment in Business and Professional Contexts

Since the 1980s, and in response primarily to the business and professional needs of prospective employees from non-English-speaking backgrounds, LSP tests have proliferated. The purpose of these tests have, in the main, been to provide governments, educational providers, professional associations, and workplaces with valid, reliable, and practical tools to screen for the language suitability of the LSP test taker for, among other things, employment, promotion, citizenship, and university entrance. They have been developed to provide a one-point-in-time "gatekeeping" benchmarked screening test. These high-stakes screening LSP assessments fall into two broad categories.

First there are the large-scale "specific" language assessments developed by large testing organizations such as Cambridge ESOL, Educational Testing Services (ETS), and Pearson Education. In turn, these assessments fall into two main specialisms: English for tertiary studies and English for business. Over the years, such tests as the International English Language Testing System (IELTS; Cambridge ESOL) have developed a pre-tertiary test of English for non-English-speaking-background (NESB) high-school leavers wanting to gain entrance into English-speaking universities. The Test of English as a Foreign Language

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(TOEFL; ETS) and the Pearson Test of English Academic (PTE Academic) have been developed for this same large pre-university international market.

For the business market, these same large testing organizations, with the exception of Pearson, have developed the Business Language Testing Service (BULATS), the Business English Certificate 1–3 (BEC)—both offered by Cambridge ESOL—and the Test of English for International Communication (TOEIC)—offered by ETS—to name only a few. All these tests, however, face significant development challenges to ensure they maximize their market share of candidates who may have many different reasons for sitting them. For example, the test takers of the business tests are not necessarily interested in using their language-test result to work in a Western English-speaking country or even in a Western English-speaking company. For example, a university business graduate from Korea may want a TOEIC result to do business in Asia where the lingua franca is English. He or she may be communicating most of the time to non-native speakers of English. Because of the need for these business-testing organizations to maximize their market share, they have to ensure that they are not promoting specific business or ethnic cultures, nor specific language varieties and accents within their rubrics and test tasks. For example, asking a Japanese woman in a speaking assessment to recount a time when she lost her temper in a work situation is linguistically and culturally inappropriate, as may be role-play topics that too readily assume aligned views on such things as work–life balances, good parenting, the status of women as managers, and the responsibilities of the wealthy. In one well-known business-English test being administered in Hong Kong, the test task was seriously compromised because the notion of a "conference center" in the UK sense of the term was not readily understood in the Hong Kong context. These large assessment agencies are constantly modifying their tests and to some extent "neutralizing" the task content so that it does not favor or disadvantage any particular LSP business-English test-taking group.

The major benefit of these business LSP tests is that they provide an instantly recognizable international benchmark for language-proficiency level with validity and reliability. This is evidenced by the large number of universities and workplaces that stipulate ETS (TOEFL or TOEIC) or Cambridge ESOL (BULATS) benchmark levels for entry. These tests are what could be termed "generic" LSP tests for business and the workplace.

The other category of more genuinely "specific" language assessments has generally been developed by universities, professional bodies, and private companies, mostly in English-speaking countries in the West, to meet the needs of specific professional groups. The word "genuinely" is used here because these tests have been developed often at the request of clients to test highly specific communication skills for employment. These tests therefore attempt to mirror the communication needs of very specific target-language-use (TLU) situations of a range of professional workers.

These professional entry tests differ from the first category discussed in this entry in two ways. First, they are used for smaller and homogeneous professional and occupational populations; and, second, they use specialized and contextualized knowledge and authentic data taken from an analysis of the TLU situation to inform the test task and rubric development.

> A specific purpose language test is one in which test content and methods are derived from an analysis of a specific purpose target language use situation, so that the test tasks and content are authentically representative of tasks in the target situation, allowing for an interaction between the test taker's language ability and specific purposes content knowledge on the one hand, and the test tasks on the other. Such a test allows us to make inferences about a test taker's capacity to use language in the specific purpose domain. (Douglas 2000: 19)

It is noteworthy that many of these tests have been developed by countries such as the USA, Canada, and Australia—countries with very high immigrant populations seeking work. For example, doctors and nurses in Australia need to pass the Occupational English Test (OET) funded by the Australian government and endorsed by the Australian Medical Association (AMA) in order to become registered health professionals in Australia. McNamara (1990, 1997) has written extensively about the development, implementation, and evaluation of the OET. This test was developed as the result of exhaustive observations of the TLU situation and an analysis of authentic recordings of doctor–patient exchanges. Similarly, school teachers have to pass the Proficiency Test for Language Teachers (McDowell, 1995; Elder, 2001), also funded by the Australian government, to become classroom teachers in Australia. Airline pilots worldwide, as of 2008, need to sit a screening test from a range of English for aviation tests as mandated by the International Civil Aviation Organization (ICAO) to have a certificate attesting to their proficiency level in the language(s) used for aeronautical communication. Even peacekeepers are tested for English before they go on assignments overseas where the common language will be English. In the development of some of these tests, new and innovative linguistic frameworks have been used in linking the test task to the target-language context through using genre studies, discourse analysis, close TLU observations, and corpus studies to inform the test. In this kind of LSP assessment development the immediate language-test-use situation, analyses of the authentic data, and the veracity of the test tools and processes are paramount. However, is this enough? Are these the key requirements for LSP assessment?

Some Issues to Ponder

It is often the case, as reported by Douglas (2001) and Jacoby and McNamara (1999), that, despite passing the specialized test, the candidate still fails to communicate in an appropriate way on the job. What more can be done by the assessment designer to ensure that communication weaknesses are identified and the criteria revisited?

Perhaps there is a need to consider in much more detail the professional contexts, purposes, and stakeholder practices for which these tests are requested. However, to do this, LSP developers need access to the business and professional stakeholder concerns to explore how the requirements of their own (professional stakeholder) evaluation processes can be captured through language assessments. An emerging literature in ESP curriculum development, suggesting that ESP practitioners consider and understand more deeply the concerns of the workplace, is setting a research agenda also for those working in LSP assessment development. Let us first consider the current work in ESP curriculum development as a way into these concerns.

Since the 1980s there has been a proliferation of ESP courses ranging from English for health professionals to English for call-center agents, and the curriculum-development issues are well documented (Hutchinson and Waters, 1987; Johns & Dudley-Evans, 1993; Candlin & Candlin, 2003; Basturkman, 2006; Belcher, 2009; Bhatia, 2008; Bremner, 2008; Lockwood, 2010). Genre-based pedagogies (i.e., the way spoken and written texts are organized), discourse analysis (i.e., the way certain lexico-grammatical linguistic features are reflected and patterned in the text under investigation), and corpus linguistics (i.e., the frequency of occurrence of certain lexico-grammatical items found in the authentic data of the texts) have provided new and exciting linguistic frameworks to probe the specialization of language knowledge, skills, and awareness required in specific worksites and occupational-language texts. This current theory is informing new and innovative curriculum practices. Also, interdiscursivity approaches (i.e., the way texts in professional sites will build in certain ways on each other; Bhatia, 2008; Bremner, 2008) in the work of

ESP specialists are currently being suggested as a means for facilitating the understanding of learners' communication needs in ESP courses. These linguists talk about interdiscursivity and the importance of multiple perspectives for ESP curriculum design, calling for much more than a linguistic analysis of professional genres: "Professional genres have often been analysed in isolation, leaving the study of professional practice almost completely out, except as providing context for specific analyses, thus undermining the role of interdiscursivity in professional genres and practices" (Bhatia, 2008, p. 161). Bhatia defines this concern further when he says in a more recent article:

> Other contributions to the construction of professional artefacts are conventions of the genre in question, the understanding of the professional practice in which the genre is embedded, and the culture of the profession, discipline, or institution, which constrains the use of textual resources for a particular discursive practice. In other words, any instance of professional communication simultaneously operates and can be analysed at the four levels, as text, as representation of genre, as realization of professional practice, and as expectation of professional culture. (Bhatia, 2010, p. 33)

An empirical exploration of the TLU contexts is being suggested in these approaches.

LSP assessment practices appear to have lagged behind the innovations in course development where communicative competency domains (Canale & Swain, 1980; Bachman & Palmer, 1996) have dominated LSP assessment practices across the four skills of listening, speaking, reading, and writing. Douglas (2001) challenges these criteria and has written more recently about what he terms "indigenous criteria" for LSP assessment:

> I want to discuss the theoretical underpinnings of the development of LSP assessment criteria and argue that it is important for us to derive them not only from a theoretical understanding of communicative language ability (Bachman and Palmer, 1996) but also from an empirical analysis of the TLU situation. (Douglas, 2001, p. 174)

Douglas's concern was triggered by reports from subject specialists at his own university that students were judged on criteria other than communicative-competency domains when delivering their presentations, and he was interested to find out why this was the case. How deeply one should conduct an empirical analysis of the TLU situation is an interesting question and Douglas concludes:

> There is a "strong" indigenous assessment hypothesis which would involve employing the criteria derived from an analysis of assessment practices directly in the TLU situation; however, I do not advocate such a strong case. Rather I wish to suggest a weaker indigenous assessment hypothesis in which the indigenous criteria may be used to supplement linguistically-oriented criteria in line with construct definition, and, secondly, to help guide our interpretations of language performances in specific purpose tests. (2006, p. 183)

This is indeed a challenge to the LSP assessment fraternity in selecting, validating, and calibrating new criteria.

Some Challenges Ahead

LSP assessment is an emerging research and development area and provides the testing community with challenges. These are discussed in this part of the entry. First, we must

ask the question about how we ensure that LSP assessment development is context sensitive and to what degree. How does the assessment meet the changing needs within the requirements of the industry, worksite, or educational institution? Are there arguments for using what Douglas (2001) has termed "weak" indigenous assessment criteria as opposed to "strong" criteria in certain contexts? If indigenous criteria for assessments become written into LSP assessments, how is this going to affect the validity and reliability of our assessments?

This then leads to the question of "ownership" of the LSP assessments. Who decides ultimately on the criteria? Coupled with this is the question about who carries out LSP assessments. Conventional practice in LSP testing is that the assessments themselves are carried out by applied-linguistic experts suitably trained as language assessors. However, workplaces are challenging this practice. Why can quality-assurance personnel in banks not assess communication skills? What are the issues in training such personnel to carry out LSP assessments?

Also, given that some workplaces are requiring LSP language assessment to be embedded in their own work practices (Lockwood, 2010), is there an LSP assessment process that might be developed to ensure that ongoing workplace LSP assessment happens in a systematic and thoroughgoing way that remains valid and reliable and embedded in the work flow of that worksite? This would necessitate close stakeholder involvement and ownership and a thorough understanding of the contextual requirements for assessment to be incorporated, end-to-end, into workplace practices.

Another significant challenge for LPS assessment relates to the fact that traditional paradigms for LSP assessment development are also being challenged by the growing acceptance that native-speaker norms are no longer relevant to many (if not most) target-language LSP assessment contexts, especially in international business contexts. So much of the LSP assessment work to date has assumed a native-speaker model. In a world where most of the business communication is conducted between NESB speakers (Graddol, 2006), how can this be relevant and fair? How can the concerns of business English as lingua franca (BELF) be reflected in LSP assessment tools and processes in the future (Nickerson, 2005)?

One final concern for LSP assessment developers is the situation where LSP assessments are used for contexts for which they were not designed. For example, the IELTS academic-paper exam is being used for high-stakes professional employment purposes and for university-graduation requirements in many countries. TOEIC scores for listening and reading are being used to recruit customer-services agents in the burgeoning business-processing outsourcing (BPO) industry in some parts of Asia. How can highly lucrative LSP assessment contracts be regulated for the validity and reliability of the tests they offer?

In conclusion, it would seem that some of the greatest challenges for LSP assessment lie ahead. Gaining access to LSP assessment worksites, listening to and learning about their needs, and keeping an open mind on who needs this assessment expertise and how it can be sensibly transferred and embedded in the workflow of the company are critical.

The need to offer valid, reliable, and practical tailor-made solutions will provide a busy agenda for LSP assessment in the future for businesses and professions.

SEE ALSO: Assessment of Listening; Assessment of Speaking; Assessment of Writing; Douglas, Dan; English for Business; English as Lingua Franca; English for Occupational Purposes; Task-Based Assessment

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Assessment of Reading

KEIKO KODA

Reading comprehension is a complex process, which has been conceptualized from diverse perspectives in first-language (L1) reading research. Reading in a second language (L2) entails even more complexity, but a definition of reading comprehension is needed if developers are to create tests that measure L2 learners' reading comprehension. This entry describes contrasting views of reading comprehension and their relation to reading assessment, and then explains differences between L1 and L2 reading and their relevance to L2 reading assessment.

Multiple Views of Comprehension

The ultimate goal of reading is to construct text meanings based on visually encoded linguistic information. As such, it entails three major operations: (a) *decoding* (extracting linguistic information from printed words), (b) *text-information building* (assembling locally constructed information into larger text units), and (c) *reader-model construction* (integrating background knowledge and assembled text meanings). Because each operation necessitates a unique set of subskills, learning to read occurs in sequential stages, in which new subskills are acquired on the basis of previously established competencies (Chall, 1983).

Over the past five decades, two contrasting views of comprehension have dominated L1 reading research: one seeing comprehension as a *product* of the reader's interaction with a text, and the other as the *process* of such interaction (Johnston, 1984). Reading assessment is grounded in the former view of reading. This view contends that the outcomes of reading are stored in memory, and therefore that comprehension can be estimated by persuading the reader to demonstrate portions of the stored text information. Two assumptions underlie these contentions: Comprehension occurs only if text information is stored in memory—and content retention is only possible when it is adequately understood. Obviously, these assumptions do not distinguish comprehension and memory, as evident in widely used product-oriented assessment tasks, including multiple-choice questions, constructed responses, and free recall. The blurred distinction between memory and comprehension has led to major controversy, however, because any portion of performance variances could be explained by memory alone without comprehension. Another objection is that this view gives little attention to the process through which stored text segments are formed and retained. In the absence of such critical information, assessment results reveal little about sources of reading problems, and therefore preclude any diagnostic test outcomes.

The process view, in contrast, posits that comprehension and memory are separable. It maintains that what is comprehended must be distinguished from what is already stored in memory, and therefore that evolving text understanding should be measured in real time before it is sent to long-term memory. The view underscores the importance of working memory as the space where segmental information is integrated into larger text units. From this view, assessment tasks are designed to capture ongoing operations as they occur in working memory. Online procedures, such as lexical judgment and

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eye-movement tracking, serve as examples. Although these and other process-based tasks yield significant information on the very process of text meaning construction, caution must be exercised in using these tasks. Because many of these tasks demand concurrent engagement in multiple operations, they can cause serious disruption to normal reading processes during comprehension.

However reading is defined, there is a uniform agreement that comprehension is not an all-or-nothing pursuit, but a matter of degree, and therefore distinguishing degrees of text comprehension is vital in assessing reading ability and understanding reading development. However, capturing those differences is methodologically challenging. Because reading cannot be directly observed, comparisons of comprehension necessitate behavioral indicators that stand for distinct levels of text understanding. It is vital to clarify what "comprehending better" means and how "better comprehension" can be indexed through observable reader behaviors.

One way of achieving these clarifications is to use "processing demands" as the basis for differentiating degrees of comprehension. The demands-based approach is advantageous because "processing demands" can be distinguished by identifying the cognitive and linguistic requisites for each assessment task. To illustrate, varying types of comprehension questions demand different levels of text information probing. For example, questions asking about text-explicit information can be answered simply by locating a word or a phrase, whereas those dealing with text-implicit information require deeper levels of understanding because they entail conceptual maneuvers, such as inferring underlying assumptions and evaluating argument plausibility. Thus this approach makes it possible to calibrate correspondence between processing demands and comprehension through systematic comparisons of performances on tasks imposing varying processing demands, and in so doing offers a systematic method of classifying observed behaviors into a set of indicators presumed to correspond to comprehension differences.

Assessment Purposes

Reading assessment entails systematic samplings of reading behaviors which are then scored and those scores are used to make judgments about an examinee's reading ability (Johnston, 1984). The uses of the assessment outcomes should affect what constitutes the behaviors sampled on the test to distinguish among levels of "reading ability." It is critical to clarify how the assessment purposes and intended uses should guide and constrain assessment design and interpretation. Three commonplace assessment uses—administration, diagnosis, and classification—are illustrative.

Administrative decisions include funding allocation and policy implementation. Assessment outcomes must yield information that facilitates the evaluation of a particular educational program, often by comparison to others, or that of educational achievements among learner groups on the basis of factors such as race, gender, and socioeconomic status. The assessment for this use must include learners with a full spectrum of reading abilities, as well as tasks eliciting a broad range of the behaviors constituting the normal act of reading. Thus, by design, administrative assessment informs little about individual readers or disparate subskills.

Diagnostic assessment is used to identify possible sources of reading difficulties. Diagnostic assessment must be sensitive to differences in qualitative and quantitative changes in reading subskills development both within and across individual learners so as to capture the dynamic nature of reading development. So long as the subskills to be measured are clearly specified within well-refined reading models, the assessment can be criterion-referenced, focusing only on the skills considered to be a potential factor

causing comprehension difficulty. Outcomes from such tightly regimented tasks can guide instructional decision making, particularly with respect to programs aimed at overcoming specific reading problems.

Classification decisions are made by collecting information that provides a legitimate basis for comparisons among individuals. The assessment outcomes provide one piece of evidence for such decisions as college admissions, employment qualifications, placement, and course grades. Because the purpose of the assessment is to determine individual learners' reading ability relative to others, reading subskills must be compared on a common yardstick. Such assessments have to be developed using a limited set of tasks and thus cannot identify the specific subskills that differentiate individuals. Instead, outcomes typically consist of a single score for reading ability.

L2 Reading Development

Although the primary objectives do not vary whether reading is assessed in the primary language or an additional language, L1 and L2 reading differ in several ways that are important for assessment. For example, L2 reading encompasses a broad range of learners, including those of different ages and with diverse linguistic backgrounds. In this context, "L2 readers" refers to those who learn to read in a second language after becoming literate in their first languages. For them, learning to read in their L2 evolves through complex crosslinguistic interaction between previously acquired L1 skills and emerging L2 linguistic knowledge (Wang, Koda, & Perfetti, 2003; Hamada & Koda, 2008). L2 reading thus involves two languages and is inherently more complex than monolingual L1 reading. Empirical examinations of L2 reading should incorporate both L1 and L2 factors in explaining and predicting individual differences in its development. Three factors are centrally related to the variances unique to L2 reading: (a) transferred L1 skills, (b) L1–L2 linguistic distance, and (c) underdeveloped L2 knowledge.

Transferred reading skills are a critical source of the unique variances in L2 reading development. Closely attuned to L1 linguistic properties, those skills cope variably with the demands imposed by L2-specific properties (Koda, 2005). Experimental studies have repeatedly shown that L2 learners respond differently to a variety of experimental manipulations (e.g., Brown & Haynes, 1985; Green & Meara, 1987; Koda, 1998, 1999; Akamatsu, 2003); and that those variations are directly associated with the properties of the participants' respective L1s (e.g., Koda, 1989, 1990, 1993; Ryan & Meara, 1991). Spelling regularity, for example, is known to promote decoding performance somewhat uniformly in L1 readers. In L2 reading, however, regularly spelled words induce systematic, but diverse, reactions among learners with diverse L1 backgrounds (e.g., Hamada & Koda, 2008; Wang & Koda, 2005). L2 reading development thus is seriously affected by previously acquired reading skills.

L1 and L2 linguistic distance is another factor contributing to variations in L2 reading development (Muljani, Koda, & Moates, 1998; Koda, 2007; Hamada & Koda, 2010). Linguistic distance refers to the degree of structural similarity between two languages, which directly affects the degree of similarity in the processing demands of each language. When L1 and L2 are closely related, transferred skills can be used with little adjustment. Conversely, when the two are typologically distinct, L1 skills must undergo substantial modification so as to achieve sufficient functionality in the new language. Although crosslinguistic transfer occurs between any two languages, facilitation benefits bought about through transferred skills vary across linguistically diverse learner groups. Hence, linguistic distance is causally related to differences in L2 processing efficiency, and thus constitutes an additional source of the variances uniquely found in L2 reading.

Underdeveloped linguistic knowledge also generates L2-specific variations in reading subskills development. Typically, in the L2, learning to read commences before sufficient linguistic knowledge is acquired. Although L2 learners have well-established reading skills and other cognitive resources, insufficient L2 knowledge can block their access to the previously acquired competencies. As Clarke (1980) put it, "limited control over the language 'short circuits' the good reader's system causing him/her to revert to poor reader strategies when confronted with a difficult or confusing task in the second language" (p. 206). It is hard to determine, however, what constitutes "limited" linguistic knowledge because a number of other factors also explain comprehension failure, and isolating them is methodologically infeasible. Stipulating how much knowledge is necessary for L2 reading acquisition is also problematic because it varies according to linguistic distance between the languages involved. Here again, these disparities unique to L2 reading development demand additional caution in its assessment.

Unique Challenges in L2 Reading Assessment

Given that successful comprehension necessitates a solid linguistic foundation, particularly in a second language, it is not surprising that L2 reading instruction places heavy weight on language elements, rather than on reading skills. The linguistic orientation is clearly shown in widely used instructional activities, such as translation, text glossing, and grammar explanations. Several assumptions lie behind these tactics: (a) reading skills are similar across languages; (b) those skills, once developed in one language, are similarly functional in another language; and (c) L2 linguistic knowledge provides ready access to previously acquired reading skills. Obviously, these assumptions do not take into account crosslinguistic differences in reading subskills and their long-lasting impacts on L2 reading development.

The linguistic prominence is also evident in L2 reading assessment. As in instruction, it focuses more on linguistic sophistication than on reading skills. Seen as an integral aspect of L2 proficiency, L2 reading ability is used as the basis for gauging L2 linguistic knowledge. Linguistic features in texts, such as syntactic complexity and vocabulary density, are therefore treated as the key predictors of comprehension difficulty and are altered by test developers to manipulate processing demands for inducing desired variance in test scores. Thus in this case, the primary assessment goal is to estimate the examinees' L2 linguistic sophistication, through reading ability, based on observable reading behaviors. As such, L2 reading assessment entails two layers of deductions—first, gauging reading ability based on the reading behaviors elicited, and then inferring L2 linguistic sophistication from the estimated reading ability. For assessment results to be reasonably accurate, therefore, manipulated linguistic elements must be unambiguously linked to the intended variances through the manipulation. In practice, however, it is difficult to establish such clear-cut linkages between intended and observed variances. Several factors obscure their relationship, and make outcome interpretation difficult.

One such factor is language selection—that is, decisions regarding the use of either L1 or L2 for nonpassage elements (e.g., test administration and comprehension questions). When the L2 is used for task instructions, for example, there is always a likelihood that some learners pursue the task without understanding what they are being asked to do. Although a clear grasp of the task, when presented in the target language, can be taken as partial evidence of linguistic sophistication, comprehension variances derived from nonpassage elements are unintended and likely to be random. When poor performance occurs, it is less than certain whether comprehension difficulty is attributable to task misconceptions, underdeveloped L2 knowledge, or inadequate reading skills. Conflation of this sort, arising from nonpassage obstacles, is a major threat to accurate interpretation of scores.

Lexical scaffolding, such as glossary and dictionary, also affects the interpretability of assessment outcomes. Because the relationship between vocabulary size and conceptual knowledge varies in L1 and L2 reading, lexical scaffolding has different effects on comprehension performance in L1 and L2 assessment. Although the two are closely related in L1 reading (e.g., Anderson & Nagy, 1991), parallel closeness in their relationship cannot be assumed in L2 learners because their conceptual knowledge generally is far more established than their still evolving L2 vocabulary knowledge. If the assessment objective is to gauge reading competence, as in the case of L1 reading, lexical scaffolding provides ready access to stored conceptual information, and thus reduces the risk of underestimating the intended ability to construct text meanings when dealing with conceptually familiar, but linguistically unfamiliar, passages. If, however, the primary goal is to estimate the examinees' linguistic sophistication, as in the case of L2 assessment, lexical assistance may hamper accurate inference about L2 linguistic sophistication presumed to underlie task performance.

Text modification is yet another factor directly influencing the legitimacy of the two-layered inferences in L2 reading assessment. A text's linguistic features are often modified to reduce tasks demands by, for example, rephrasing syntactically complex sentences, or by using more explicit co-referential forms. Although such linguistic simplification is commonly incorporated in L2 reading instruction and assessment, it is not clear whether modified features are similarly simpler, and thus easier to process, among linguistically heterogeneous L2 learners. Given that transferred skills are in tune with L1, rather than L2, properties, any change in L2 linguistic features could alter processing demands in disparate manners and to varying extents across diverse learner groups. Failure to induce the intended effect is likely to yield random, and thus uninterpretable, results.

Assessment, Research, and Instruction

Reading research and assessment are symbiotic because the two are functionally interdependent. Research, for example, demands valid and reliable information on individuals' reading ability derived from assessment, while assessment depends on research to construe the very construct of reading ability. The mutual dependency is also evident in their objectives. While assessment aims at differentiating individuals on the basis of reading ability, research seeks principled ways to explain those differences. In order to benefit from the reciprocity, assessment specialists must keep pace with continually evolving models of reading, and reading researchers must stay informed about the specific task demands—both linguistic and cognitive—in diverse assessment procedures. Additionally, L2 assessment must allow for the issues specifically related to L2 reading—L1-induced variations, for example—based on empirical findings in L2 research. Accurate outcome interpretation can only result from sustained symbiosis between L2 reading research and assessment.

Ideally, reading assessment and instruction should be mutually enhancing in such a way that assessment shapes instructional approaches, and instruction guides assessment design. Such cyclical enhancement rarely occurs, however, when L2 assessment relies solely on standardized reading tasks. Standardized assessment tasks measure externally determined facets of reading ability without regard for specific instruction-internal goals and approaches. To improve reading test performance through instruction, therefore, a curriculum must be configured for enhancing test scores, rather than for engaging in the variety of activities needed to increase a range of reading abilities. Standardized reading assessment by design indicates individual learners' relative standing using their peer group rather than providing information regarding specific impediments of individual learners that would suggest instructional interventions necessary for alleviating those impediments.

For reading assessment to provide positive washback on L2 instruction, assessment outcomes must be interpretable in relation to the particular reading skill presumed to underlie task performance and the linguistic knowledge necessary for its utilization. If the task requirements are not carefully identified within a sound model of reading, neither assessment nor instruction can propagate long-term gains in L2 proficiency. This is particularly true when instruction involves linguistically divergent learners whose L2 skills build on the distinct linguistic bases formed through L1 reading experience. Assessment results shape instruction most forcefully when they pinpoint the specific needs of individual learners.

Future Directions in L2 Reading Assessment

L2 reading assessment has taken shape following the principles in L1 reading assessment. However, those principles are only partially applicable, because their concerns are fundamentally monolingual. Predictably, current L2 assessment does not adequately address crosslinguistic and other L2-specific issues that are not well articulated in L1 reading assessment. Future agendas can be purposefully built to tackle these additional complexities specifically related to the unique nature of L2 reading and the challenges it imposes.

One way of expanding L2 reading assessment is to incorporate explicitly L1-induced variations in models of reading performance. Although research has shown that previously acquired skills variably facilitate L2 reading development, we know little about how such variations affect the interpretability of assessment outcomes. For example, it is well recognized that decoding competence develops at disparate rates among L2 learners with orthographically similar and dissimilar L1 backgrounds, but it is less known how such disparity predicts L2 text comprehension. We have yet to know to what extent L1-induced facilitation in one operation enhances the execution of other, later occurring, operations. These complex issues have begun to attract serious attention among L2 reading researchers. Findings from this research, if properly incorporated in L2 reading assessment, could substantially enhance the accuracy of its outcome interpretation, and increase understanding of score comparability of readings tests claimed to have equivalent score meaning across languages.

Another way of extending L2 reading assessment is to explore methods of distinguishing two key constructs—linguistic knowledge and reading ability. Because these constructs are both multifaceted, isolating them requires at the minimum clear specification of the reading subskill to be measured and the linguistic knowledge necessitated for its execution. Such clarification can be achieved through a sequence of analyses, including (a) construct analysis (isolating the reading subskill required for performing on a particular assessment task), (b) linguistic analysis (identifying the linguistic facet directly related to the skill under consideration), and (c) crosslinguistic analysis (determining how the linguistic demands vary between two languages). By isolating the two constructs, these analyses make it possible to establish the link between the two constructs based on one set of observable behaviors, and in so doing, to make outcome interpretation meaningful. If L2 reading performance can be predicted on the basis of specific facets of linguistic knowledge, assessment outcomes can be of direct utility to L2 instruction.

Although reading involves both linguistic and conceptual operations, far less attention has been given to conceptual skills in L2 reading assessment. Because the current practice focuses on linguistic knowledge as the primary source of reading difficulty, it mandates little provision for distinguishing reading ability and linguistic knowledge. As a result, L2 reading assessment tends to center on comprehension of conceptually neutral texts

that requires meaning construction of familiar content. However, linguistic processing constitutes only a partial requisite for assimilating new ideas in conceptually unfamiliar texts. A large number of learners—both adults and children—strive to read in a second, or a later acquired, language. Despite its significance, the *reading to learn* capacity is rarely incorporated in L2 reading assessment. It would be useful to explore ways of measuring more conceptual manipulation skills necessary for learning from unfamiliar texts.

SEE ALSO: New Literacies of Online Reading Comprehension; Psycholinguistic Studies of Literacy; Test Design and Retrofit; Test Specifications; Uses of Language Assessments; Validation of Language Assessments

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Assessment of Speaking

APRIL GINTHER

Speaking is seen by language testers as the most difficult of the four language skills to assess. Assessing speaking requires that we either observe a "live" oral performance or that we capture the performance by some means for evaluation at a later time. A method for elicitation must be selected, rating scales must be developed, and interviewers and/or raters must be trained. Therefore, understanding the assessment of speaking requires examination of assessment methods, scales, and raters.

Speaking Assessment Methods

Although in a sense, all language tests are an indirect measure of the ability they measure, Clark's (1979) classification of language assessment methods as indirect, semidirect, and direct has proven useful for understanding speaking assessment methods. Indirect tests evaluate the skills and abilities that underlie an examinee's performance by eliciting performance on item types such as a multiple-choice main idea item to measure reading comprehension. However, indirect methods do not lend themselves well, if at all, to the assessment of speaking.

Direct tests evaluate speaking skills and abilities in actual performance. The classic example of a direct assessment of speaking is an interview in which participants engage in structured or semistructured interaction with an interlocutor/interviewer/rater. Speaking assessment methods centered on interviews are collectively referred to as OPIs or oral proficiency interviews. A very well-known OPI is the American Council of Teachers of Foreign Languages Oral Proficiency Interview or the ACTFL OPI (ACTFL, 2009), and many locally developed OPIs are modifications of the proficiency guidelines and elicitation procedures associated with the ACTFL OPI. Common OPI structures involve a series of warm-up questions followed by a subsequent series of increasingly difficult questions where examinees are expected to display concomitantly increasing levels of complexity in their responses. Interviewers may be required to elicit a preselected set of responses, or may decide to follow up on topics or comments that the participant has introduced, or both. Examinee performance may be rated simultaneously by the interviewer or by additional raters who rate as the interview proceeds. When an audio or video recording is made, responses can be rated after the interview is completed. A variation of the direct method may require the examinee to give a presentation on a selected topic, and presentations often include or require face-to-face engagement with members of an audience who pose follow-up questions.

Direct methods are defined as "procedures in which the examinee is asked to engage in face-to-face communicative exchanges with one or more human interlocutors" (Clark, 1979, p. 36). Direct tests have the perceived advantage of their elicitation of speaking skills in a manner which duplicates "the setting and operation of the real-life situations in which proficiency is normally demonstrated" (Shohamy, 1994, p. 100); that is, direct assessments of speaking abilities have considerable face validity. However, an important but often overlooked caveat is one that Clark (1979) identified early on: "In the interview situation, the examinee is certainly aware that he or she is talking to a language assessor and not a

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waiter, taxi driver, or personal friend" (p. 38). Indeed, the idea of the fidelity of OPIs to natural conversation has been challenged by a number of researchers (Ross & Berwick, 1992; Johnson & Tyler, 1998), leading others to qualify OPIs as a specific genre of face-to-face interaction (He & Young, 1998). Nevertheless, research on actual interaction in such tests indicates the OPI genre does share important characteristics with natural conversation (Lazaraton, 1992, 1997).

While OPIs have traditionally been administered with a single interviewer and a single interviewee, speaking assessment of examinees in pairs, or even groups, has become the object of a growing amount of attention from both researchers and language assessment practitioners (Brooks, 2009; Ducasse & Brown, 2009). The procedure is often referred to as "paired orals" or "group orals." Such formats are argued to hold potential for increased interactivity and authenticity relative to a one-on-one interview; however, the added complexity complicates rating. Nevertheless, paired and group oral assessments have successfully been incorporated into large-scale assessment programs (Hasselgreen, 2005; Van Moere, 2006).

Some large-scale testing programs find any type of direct testing of speaking unworkable, and therefore choose semidirect methods, which do not require the presence of an interlocutor to administer the test. Examinees are presented with a set of prerecorded questions or tasks typically under laboratory conditions, and responses are recorded for subsequent rating. The most obvious advantages of semidirect methods are their potential for efficiency, time and cost savings, and high reliability. The absence of a human interlocutor decreases costs associated with administration which can be considerable when assessments must be conducted and scores reported in tight time frames. Potential savings, however, may only be realized in the long run. The development and maintenance of a semidirect computer-based system requires considerable technical expertise. A more important advantage of the use of semidirect methods is the potential reduction of construct-irrelevant variance associated with interviewer effects. Because speaking performances may be influenced variably and in unintended ways by the interviewer's technique and demeanor, the use of semidirect methods may even the playing field for all examinees.

Researchers comparing direct and semidirect OPI testing methods have reported strong, positive correlations (.89 to .95) leading Stansfield (1991) and Stansfield and Kenyon (1992) to argue that the methods are largely equivalent, statistically speaking. However, qualitative analyses of the language have revealed differences in the language produced. Semidirect responses tend to display greater formality and more cohesion while being accompanied by longer pauses and hesitations (Shohamy, 1994; Koike, 1998). Research investigating examinees' affect and perceptions (Brown, 1993; Qian, 2009) has found that examinees tend to prefer direct methods, reporting that they find interaction with a recorder or computer forced and unnatural. This preference may abate as examinees become more familiar with the large-scale semidirect methods introduced in 2005 in the TOEFL iBT speaking subsection and as the use of software to develop local, semidirect computer-based programs increases. In any case, appropriate examinee preparation is important when any semidirect method is employed. Ultimately, Shohamy (1994) concludes that the selection of a direct or semidirect method is dependent on four related concerns: accuracy (a function of reliability), utility (the assessment's relation to instruction and the difficulties associated with rater training), feasibility (ease and cost of administration), and fairness.

Rating Scales and Scale Descriptors

Assessment of speaking requires assigning numbers to the characteristics of the speech sample in a systematic fashion through the use of a scale. A scale represents the range of

values that is associated with particular levels of performance, and scaling rules represent the relationship between the characteristic of interest and the value assigned (Crocker & Algina, 1986). The use of a scale for measurement is more intuitively clear in familiar domains apart from language ability. For example, we can measure weight very accurately. While the use of pounds or kilograms is usually sufficient for measuring the weight of adults, when measuring babies, we move to smaller and more precise units—ounces or grams. The characteristics of the objects measured and our need for accuracy determine the units of measurement selected, and, in turn, scaling rules describe the units of measurement we employ.

Measurement of a speaking performance, however, requires a different kind of scale, such as those used in rating performance in sports competitions. For example, the quality of a figure skater's performance in the Olympics is based on rank; there is no equal-interval unit of measurement comparable to ounces or pounds that allows precise measurement of a figure skating performance. Likewise, assessing speaking is generally considered an endeavor that ranks students into ordinal categories (often referred to as vertical categories) similar to bronze, silver, or gold; short, medium, and tall; third, second, or first—more familiar in instructional contexts involving language as beginning, intermediate, and advanced.

Such a global assessment of performance would result from the use of a holistic scale. To clarify what such a global assessment means, the abilities associated with scale levels are represented by level descriptors which represent a qualitative summary of the raters' observations. In order to facilitate description, benchmark performances are selected to exemplify the levels and their descriptors. Such descriptors are typically associated with, but are not limited to, descriptions of the following components of a speaking performance at different levels of the scale: pronunciation (focusing on segmentals); phonological control (focusing on suprasegmentals); grammar/accuracy (morphology, syntax, and usage); fluency (speed and pausing); vocabulary (range and idiomaticity); coherence; and organization. If the assessment involves evaluation of interaction, the following may also be included: turn-taking strategies, cooperative strategies, and asking for or providing clarification when needed.

Holistic vertical indicators, even when accompanied by scale descriptors and benchmarks, may not be sufficient for making instructional or placement decisions. In such cases, an analytic rating is done to produce scores on components of the examinee's performance. The specific components chosen, which can include any of the same aspects of performance used in holistic scale descriptors, will depend on the purpose of the test and the needs of the score users.

Score users are of central concern in Alderson's (1991) distinction among three types of scales: user-oriented, assessor-oriented, and constructor-oriented. The language used to describe abilities tends to focus on the positive aspects of performance in user-oriented and constructor-oriented scales where the former may focus on likely behaviors at a given level and the latter may focus on particular tasks that may be associated with a curriculum or course of instruction. Assessor-oriented scales shift the focus from the learner and the objectives of learning toward the rater; the scale descriptors are often negatively worded and focus on the perceptions of the rater. These scales tend to be more useful for screening purposes.

From another perspective, scales for speaking assessments can be theoretically oriented, empirically oriented, or a combination of both. The starting point for all assessments is usually a description or theory of language ability (e.g., Canale & Swain, 1980; Bachman, 1990). These broad theoretical orientations are then narrowed down to focus on a particular skill and particular components of skills. Empirical approaches to the development and validation of speaking assessment scales involve identification of characteristics of interest

for the subsequent development of scale levels (e.g., Chalhoub-Deville, 1995; Fulcher, 1996) and/or explications of characteristics of assigned ability levels (e.g., Xi & Mollaun, 2006; Iwashita, Brown, McNamara, & O'Hagan, 2008; Ginther, Dimova, & Yang, 2010).

Specific-purpose scales are often derived from general guidelines and frameworks. For example, The ACTFL Proficiency Guidelines (2009) serve as a starting point for the ACTFL OPI scale. Another influential framework is the Common European Framework of Reference for Languages (Council of Europe, 2001). The CEFR is a collection of descriptions of language ability, ranging from beginning to advanced, across and within the four main skills. The document is comprehensive and formidable in scope, but in spite of its breadth, the CEFR has been used to construct scales for assessing language performance, communicate about levels locally and nationally (Figueras & Noijons, 2009), and interpret test scores (Tannenbaum & Wylie, 2008).

The most familiar part of the framework presents six stages of proficiency from A1 (Breakthrough) to C2 (Mastery) in general terms. Descriptors are provided in a series of tables for each skill and then each skill is additionally broken down into subskill descriptions that can be adapted for use in the creation of scales for specific purposes within specific contexts. For example, with respect to speaking, the framework presents separate tables for overall oral production standards, for understanding a native speaking interlocutor, for conversation, for informal discussion with friends, for formal discussions and meetings, for goal-oriented cooperation, for transactions to obtain goods and services, for information exchange, and for interviewing and being interviewed. Perhaps of greatest interest here are the "qualitative aspects of spoken language use" in which spoken abilities are additionally divided into CEFR levels in which aspects of range (vocabulary), accuracy, fluency, interaction, and coherence are described.

Raters

In order for raters to achieve a common understanding and application of a scale, rater training is an important part of assessing speaking. As the standard for speaking assessment procedures involving high-stakes decisions is an inter-rater reliability coefficient of 0.80, some variability among raters is expected and tolerated. Under optimal conditions, the sources of error that can be associated with the use of a scale are expected to be random rather than systematic. Therefore, research aims to identify and control systematic error resulting from rater performance.

One type of systematic error results from a rater's tendency to assign either harsh or lenient scores. When a pattern is identified in comparison to other raters in a pool, a rater may be identified as negatively or positively biased. Systematic effects with respect to score assignment have been found in association with rater experience, rater native language background, and also examinee native language background. Every effort should be made to identify and remove as their presence negatively affects the accuracy, utility, interpretability, and fairness of the scores we report.

With fairness at issue, researchers have studied factors affecting ratings. Brown (1995) compared differences across Japanese language teachers and professional tour guides in their assignment of scores to 51 Japanese tour guide candidates. While no differences were found in the scores assigned, the two pools of raters did apply different criteria in their score assignments: teachers tended to focus on grammar, vocabulary, and fluency while tour guides tended to focus on pronunciation. Chalhoub-Deville (1995) examined the performance of three rater groups who differed in professional background and place of residence (Arab teachers residing in the USA and nonteaching Arabs residing in the USA or in Lebanon) and found a tendency for the teachers to rate grammar more harshly in

comparison to the nonteaching groups who emphasized communicative success. Chalhoub-Deville and Wigglesworth (2005) compared native-speaking English raters from Australia, Canada, the UK, and the USA and found raters from the UK harshest while raters from the USA were the most lenient. Differences in raters' application of a scale have been found not only across raters of different backgrounds and experiences, but also across trained raters of similar backgrounds.

Studies comparing native speaker and nonnative speakers as raters have produced mixed findings. While some studies have identified tendencies for non-native speakers to assign harsher scores (Ross, 1979), others have found the opposite to be the case (Winke, Gass, & Myford, 2011). In Winke et al., raters with first language backgrounds that matched those of the candidates were found more lenient when rating second language English oral proficiency, and the authors suggest that this effect may be due to familiarity with accent. In an attempt to ameliorate such potential effects, Xi and Mollaun (2009) provided special training for Indian raters who were evaluating the English language responses of Indian examinees on the TOEFL iBT. While the performance of the Indian raters was found comparable to that of Educational Testing Service raters both before and after the training, the Indian raters showed some improvement and increased confidence after participating in the training. Far fewer studies have been conducted on differences in ratings assigned by interviewers; however, there is no reason to expect that interviewers would be less subject to interviewer effects than raters are to rater effects. Indeed, in an examination of variability across two interviewers with respect to how they structured the interview, their questioning techniques, and the feedback they provided, Brown (2003) identified differences that could easily result in different score assignments as well as differences in interpretations of the interviewee's ability.

These findings underscore the importance of rater training; however, the positive effects of training tend to be short-lived. In a study examining rater severity over time, Lumley and McNamara (1995) found that many raters tended to drift over time. The phenomenon of rater drift calls into question the practice of certifying raters once and for all after successfully completing only a single training program and highlights the importance of ongoing training in order to maintain rater consistency. A more important concern raised by studies of rater variability—one that can only be partially addressed by rater training—is whose standard, whether that of an experienced rater, of an inexperienced rater, of a teacher, of a native speaker, or of a non-native speaker is the more appropriate standard to apply.

Conclusion

Bachman (1990) argued that in order to

> maximize the reliability of test scores and the validity of test use, we should . . . provide clear and unambiguous theoretical definitions of the abilities we want to measure and specify precisely the conditions, or operations that we will follow in eliciting and observing performance. (p. 90)

Choices with respect to methods, scales, and raters are therefore critical in assessment of speaking.

SEE ALSO: Assessment of Listening; Assessment of Reading; Assessment and Testing: Overview; Assessment of Writing; Fluency; Intelligibility; Language Assessment Methods; Pronunciation Assessment; Rating Oral Language; Rating Scales for Language Tests

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Assessment of Translation

SONIA COLINA

Introduction

The focus of this entry is the assessment of translated texts for *summative* purposes; that is, for the purpose of offering a summary recommendation, rather than to provide feedback for learners or as a diagnostic tool (level placement, entrance exams, professional practice, and so forth). Reference, however, will be made to related areas such as the assessment of translator competence, student translation assessment, and so on (for more on areas of evaluation, see Martínez Meliz & Hurtado Albir, 2001). A translated text, also known as the *target text*, is defined here as a text that fulfills or attempts to fulfill a certain function in a target culture (in accordance with a set of explicit or implicit instructions, known as the *translation brief*) and that bears a translation relationship to another text in another language, *the source text* (ST); the specifics of a translation relationship (versus version, adaptation, etc.) can vary from one culture to another. This discussion takes the position that a translated text comes about as the result of the interaction of social participants (minimally, the writer, the target language audience, and the translator) and a purpose (often, but not always, the same as that of the original). While in the educational literature assessment and evaluation often refer to different concepts, here they will be used interchangeably, given that the content and ideas presented apply to both notions.

The assessment/evaluation of translation quality remains a controversial, long-standing issue both in translation studies and in applied linguistics. Despite extensive debate on various fronts, little agreement exists as to how translations should be evaluated. This lack of agreement has come to the forefront in recent publications, no doubt as a result of the increased demand for translations throughout the world. As the volume of translated materials increases, so does the number of translators and language professionals who lament the low quality of the materials published for public consumption (see Colina, 2008 about the *Hablamos Juntos* experience with quality). In some countries, like the United States, federal mandates (e.g., White House Executive Order #13166, 2000) ordering the provision of language services for patients with limited English proficiency have brought the topic of translation quality to wider audiences. Quality acquires even greater significance with respect to the training and education of translators and language professionals. In fact, a systematic, research-based approach to translation quality evaluation has significant implications for a number of areas in applied linguistics because translation quality evaluation plays an important role in the assessment of translator competence, student competence, and language proficiency; translation quality evaluation can also be used to determine the textual adequacy and appropriateness of translated texts as means of intercultural communication, assessing thus the success or failure of a translation.

The lack of consensus amongst existing approaches to translation quality assessment can be partially understood as the result of the elusive nature of quality, and more specifically of a multiplicity of views about translation: an evaluator's approach to quality will generally reflect his/her own views on translation. As Juliane House puts it: "Evaluating the quality of a translation presupposes a theory of translation. Thus different views of translation lead to different concepts of translational quality, and hence different ways of

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assessing quality" (House, 1997, p. 1). Theories of translation are quite diverse, as a quick glimpse at the table of contents of any introductory monograph to translation studies will reveal. Establishing some common ground amongst approaches can also be difficult because some proposals and evaluation tools do not rely on any explicit theory, but rather on unarticulated views of translation passed on through training and professional socialization; furthermore, approaches to quality assessment often reflect varied objects of evaluation as well as unstated priorities responding to different evaluative purposes. Given this scenario, it is crucial to identify and define the purpose and object of evaluation. This entry focuses on the assessment of translation products, and on translation-specific quality, rather than on the business processes that led to it. While one cannot deny that a flawed production process can have a serious impact on the quality of a translation and that translation products constitute one source of evidence for investigating and assessing translation processes and competence (either those of the individual who produced it or those of the organization that commissioned it), establishing the connection between the product and the process that gave rise to it requires additional steps well beyond the objectives of this entry. Thus, the emphasis here is on evaluation of translations as products, independent of the procedures and competencies used to produce them. By "product" it is meant both the written text and its context (linguistic and extralinguistic). The extralinguistic context refers to factors such as the intended audience of the translation, its purpose, medium (verbal, nonverbal, and graphic, etc.), and the motive for its creation.

Major Approaches to Translation Evaluation

Some methods of translation quality assessment are experiential. While they are usually based on a wealth of practical experience, they lack a theoretical or research foundation, often consisting of ad hoc marking scales developed for the use of a particular professional organization or industry, for example, the American Translator's Association (ATA) certification exam, the SAE J2450 Translation Quality Metric for the automotive industry, the LISA Quality Assurance (QA) tool for localization. Experiential methods of evaluation are outside the scope of this entry, which deals with methods framed within a theoretical or empirical approach.

Existing methods of evaluation with either a theoretical or empirical approach tend to focus on the user of a translation or on the text. They have also been classified as equivalence-based or nonequivalence-based (functionalist) (Lauscher, 2000).

Much criticism of equivalence-based models is related to their dependence on the notion of equivalence, a vague and controversial term in translation studies that is probably as difficult to define as quality or indeed translation itself (Hönig, 1997). Furthermore, equivalence-based models do not contemplate translation situations which do not have equivalence as their goal: some translations are commissioned for a somewhat different function than that of the original; in addition, a new audience and time, among other factors, may require a slightly different function than that of the source text (see Hönig, 1997, for more on the problematic notion of equivalence). One can thus say that reliance on an a priori notion of equivalence is problematic and limiting in descriptive as well as explanatory value. Some of the best-known equivalence based-models are reader-response approaches, and textual approaches, such as Reiss (1971) and House's functional pragmatic model (1997, 2001).

Equivalence-Based Approaches

Reader-response approaches evaluate the quality of a translation by determining whether readers respond to it in the same way readers of the source respond to the original (Nida,

1964; Carroll, 1966; Nida & Taber, 1969). More specifically, the quality of the translation of, for instance, a poem would be measured by comparing the responses of the readers of the original poem to those of the translation and establishing their equivalence. In that sense, the reader-response approach is equivalence-based and reader-oriented.

It is not difficult to see the problems involved in trying to measure reader response; one in fact wonders whether it is actually possible to determine whether two responses are equivalent, given that even monolingual texts can trigger nonequivalent reactions from slightly different groups of readers. Since, in most cases, the readership of a translated text is different from that envisioned by the writer of the original, equating quality with equivalence of response seems to pose more questions than answers. Additionally, how a reader responds to a text is not equally important for all texts, in particular for texts that are not reader-oriented (e.g., legal texts); as a result, reader response, as a method of quality assessment, will not be equally informative for all types of translation. Along similar lines, reader response addresses only one aspect of a translated text (i.e., equivalence of effect on the reader), ignoring others, such as the purpose of the translation, which may justify or even require a slightly different response from the readers of the translation. Finally, as with many other theoretical approaches, reader-response testing is time consuming and difficult to apply to actual translations. At a minimum, careful selection of readers is necessary to make sure that they belong to the intended audience for the translation.

Despite being problematic, reader-response methods must be credited with recognizing the role of the audience in translation—more specifically, of translation effects on the reader as a measure of translation quality. This is particularly noteworthy in an era when the dominant notion of "text" was that of a static object on a page.

Another equivalence-based model, Reiss (1971), argues that the text type and function of the source text is the most important factor in translation and that quality should be assessed with respect to it.

House's (1997, 2001) *functional-pragmatic model* relies on an analysis of the linguistic-situational features of the source and target texts, a comparison of the two texts, and the resulting assessment of their match. The basic measure of quality is that the textual profile and function of the translation match those of the original, the goal being functional equivalence between the original and the translation. Perhaps one of the most significant objections to House's functional model is its dependence on the notion of equivalence, which is, as mentioned earlier, a problematic and controversial term in translation studies.

The *argumentation-centered approach* advanced by Williams (2001, 2004) is a textual approach to quality evaluation in which evaluation is based on argumentation and rhetorical structure. This approach is also equivalence-based, as "a translation must reproduce the argument structure of ST to meet minimum criteria of adequacy" (Williams, 2001, p. 336). Argument structure is used in a broad sense that covers not only argumentative texts, but also narratives, dialogue, and descriptions; one of the main contributions of this method is its macro-textual approach to quality evaluation, where an error in argumentation schema is considered a major error. Other equivalence-based models of evaluation are Gerzymisch-Arbogast (2001), Neubert (1985), and Van den Broeck (1985).

Despite the reliance of some on equivalence and the difficulties involved in trying to apply them, the above *textual and pragmatic approaches* to translation quality have made a significant contribution to the field of translation evaluation by shifting the focus from counting errors at the word or sentence level to evaluating texts and textual structure, giving the reader and communication a much more prominent role in the translation process.

Nonequivalence (Functionalist) Approaches

Bowker's *corpus-based model* (2001) uses "a comparatively large and carefully selected collection of naturally occurring texts that are stored in machine-readable form" as a

benchmark against which to compare and evaluate specialized student translations. Bowker (2001) is a novel, valuable proposal for the evaluation of students' translations that does not rely on textual equivalence.

For *functionalism* (also known as Skopos Theory) (Reiss & Vermeer, 1984; Nord, 1997), the text type and function of the translation are the criteria guiding translation decisions; consequently, they should also be the criteria guiding evaluation. In this model, the specifications for the target text, the *translation brief*, are of paramount importance in determining the quality of the translation.

Criticism leveled at textual and functional models of evaluation often has to do with the difficulty involved in applying these models in professional contexts (Lauscher, 2000; Colina, 2008). Corpus-based models can be very time consuming, as they require the preparation of special evaluation corpora. Functional approaches to evaluation remain vague as to how evaluation is to proceed after the function of the translation has been established as the guiding criterion for making translation decisions. Hönig, for instance, after presenting some strong arguments for a functionalist approach to evaluation, does not offer any concrete instantiation of the model. He comes to the conclusion that "the speculative element will remain—at least as long as there are no hard and fast empirical data which serve to prove what a 'typical' reader's responses are like" (1997, p. 32). As part of a critical review of existing translation assessment approaches, Lauscher concludes that in order to bridge the gap between theoretical and practical quality assessment, "translation criticism could move closer to practical needs by developing a comprehensive translation tool" (2000, p. 164). As seen here, many approaches to evaluation center around partial aspects of quality.

Colina (2008) proposes a *functional-componential approach* to translation quality evaluation in which translation products are evaluated relative to the function of the text and the characteristics of the audience specified for the translated text. The model is also *componential* in that it evaluates components of quality separately; Colina (2008) argues that without explicit criteria on which to base their evaluations, evaluators often rely on their own priorities, which may or may not coincide with the requester's. In an attempt to introduce flexibility with regard to different conditions influencing quality and to state explicit priorities regarding various aspects of quality, the functional-componential approach incorporates a user-defined notion of quality in which it is the user or requester who decides which aspects of quality are more important for his or her communicative purposes. This is done either by adjusting customer-defined weights for each component or simply by assigning higher priorities to some components. Customer weighting of components also allows for customization depending on the effect of a particular component on the whole text, which may vary depending on textual type and function. The functional-componential approach does not rely on a point deduction system; rather, it tries to match the text under evaluation with one of several descriptors provided for each category/component of evaluation.

In order to show the applicability of the model in practical settings, and to develop testable hypotheses and research questions, Colina and her collaborators designed a tool based on the functional-componential tool. They also tested it for inter-rater reliability (see Colina, 2008, 2009). Results show good inter-rater reliability for Spanish and Chinese health education materials.

A similar view of quality, as comprehensive and customer-defined, made up of different components and priorities that may vary according to the situation, is presented by Lauscher, who argues that

> the translation process is guided by case-specific values. These values . . . are set and agreed by the interested parties during the translation process. In order to judge the quality of a translation, the values should be made accessible to the evaluator and operationalized

> as evaluation parameters. Because the application of evaluation parameters depends on situational and individual factors, translation quality is ultimately a matter of agreement and consensus. (2000, p. 149)

In sum, some recent quality assessment proposals, such as Lauscher (2000) and Colina (2008, 2009), allow for variable notions of quality, depending on case-specific values and customer-defined and negotiated quality criteria, and may thus be more flexible and adaptable to various purposes and translation views.

Applications

The evaluation of translation texts is one obvious application of the translation assessment models. Yet, as explained above, some approaches have been criticized for being too theoretical and difficult to apply to actual texts. Another area where translation quality assessment has obvious applications is translation teaching, in particular in relation to the *assessment of translator competence*. It is important to note that, while the quality of a translation product constitutes one important source of data to assess translator competence, the quality of a product is only one indicator of competence that needs to be complemented with other types of evidence. Generally, one can safely assume that a good-quality translation is the reflection of a competent translator; however, in translation, errors in various subcomponents of quality do not always translate into lack of competence in the relevant subcomponent. An example is the well-known case of *transfer without ignorance*, where novice translators with native proficiency in the target language have been shown to produce linguistically inadequate translations (Colina, 1999). Novice translators are known to use a sign-oriented approach to translation, focusing on words and small linguistic units (see Colina 2003, p. 34, and references therein), the result being a linguistically deficient target language text.

Among recent proposals for the assessment of translator competence are Colina (2003) and Angelelli (2009); both are componential approaches, based on existing models of translation competence, that evaluate subcomponents of competence. Other proposals for the evaluation of student translations that must be classified as methods rather than approaches are Eyckmans, Anckaert, and Segers (2009) and Waddington (2001). Eyckmans et al. (2009) compare the reliability of holistic, analytical, and "item" methods. In an "item" method, evaluation is carried out by reference to a number of preselected items that constitute the norm or standard. This method is considered less subjective than those based on pre-established criteria because it is norm-referenced. Some disadvantages of an item method are that it is very time consuming and that items need to be selected for each text to be evaluated on the basis of the mistakes made by a representative number of students; the item method, however, can be appropriate for standardized tests in a summative context. With a focus on methods as well, Waddington (2001) tests the validity of holistic, error-analysis, and mixed (holistic plus error-analysis) methods of evaluation, based on pre-established criteria. The approach underlying the criteria, however, is not discussed. Within the context of autonomous learning, some scholars have also proposed peer-to-peer evaluation and self-evaluation methods (e.g., digital portfolio, Rico 2010).

Both translation studies and applied linguistics stand to benefit from theoretical and empirical research in translation evaluation. Given the complexity of the topic and the variety of views and perspectives on quality, for the field to move ahead it is crucial that work in this area include an explicit discussion of the approach used, as well as the purpose and scope of evaluation; it is also important that proposals be subject to empirical verification and can be applied in professional and educational settings, as the potential and need for applications is also significant.

SEE ALSO: Functional Approaches to Translation; History of Translation; Teaching and Learning of Translation; Teaching Translation and Interpreting; Text-Based Approaches to Translation; Translation Theory

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Assessment of Vocabulary

JOHN READ

Introduction

Vocabulary is such an integral component of language use that to some degree any form of language assessment is a measure of vocabulary ability, among other things. However, assessing vocabulary is normally understood to be a process of testing learners' knowledge of a sample of content words, not simply to find out whether they know those particular words but to investigate their ability to understand and use vocabulary in a more general sense.

It is useful to explore a little further what is meant by vocabulary. Most commonly, for assessment purposes, vocabulary is defined in terms of individual words, but the concept of a "word" is itself a slippery one, as is illustrated by the following sets of word forms:

(1)	shout	SHOUT	*shout*	**shout**	
(2)	save	saves	saving	saved	
(3)	product	products	production	productive	productivity
(4)	sea	season	seal	search	seamless

In Set 1 we have different typographic forms of the same word, with the capital letters and the alternative fonts perhaps indicating added emphasis rather than any difference in meaning. Although the word forms in Set 2 are a little more distinct, we can see them as representing different grammatical functions of the same word. In the third set, we can recognize that the words have a common stem form (*product*) and a shared underlying meaning, but the individual items in the list are more like related but separate words (i.e., members of the same family), as compared to the word forms in the first two sets. On the other hand, the items in Set 4 are superficially similar in form, in that they all begin with *sea*–, but they are obviously different words.

From an assessment perspective, there are two points to make here. First, if a vocabulary-test item targets a particular word form and test takers answer correctly, can we also credit them with knowledge of related words? For instance, if learners show that they understand *product*, is it reasonable to assume that they also know *production* and *productive*? The other point is that, even at the level of the individual word, we are not dealing purely with vocabulary; Sets 2 and 3 above show how the grammatical functioning of words is an essential part of vocabulary knowledge.

Moving beyond individual word forms, we increasingly recognize that vocabulary also consists of fixed combinations of words, variously known as compound nouns (*ironing board*) phrasal verbs (*put up with*), collocations (*heavy rain*), idioms (*shoot the breeze*), formulaic sequences (*I declare the meeting closed*), lexical phrases (*as a matter of fact*), and so on. To the extent that these multiword units are included in vocabulary tests, they are often treated as if they were single words, but such items have received little attention in their own right in language assessment.

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Selection of Target Items

Once the lexical units that are the focus of the assessment have been defined, the next step is to select a sample of those units, and the basis for that selection depends on the context. For example, in the classroom situation, the vocabulary that the learners need to know is commonly specified in the coursebook, the syllabus, or other components of the language curriculum. For more general purposes, word-frequency lists are used as a key reference, on the principle that higher-frequency words are more useful to, and more likely to be known by, learners than words which do not commonly occur in the language. The classic sources of word-frequency information for ESL vocabulary tests are West (1953) and Thorndike and Lorge (1944).

With the advent of computer corpus analysis, other influential frequency lists have been published, both for British English in general (e.g., Leech, Rayson, & Wilson, 2001) and for academic writing in particular (Coxhead, 2000). Another recent innovation, going beyond individual words, is the academic formulas list (Simpson-Vlach & Ellis, 2010). The widespread availability of corpus tools means that individual institutions can compile corpora and word lists for their own purposes. Corpus software can not only count the occurrence of words but can also help to identify vocabulary that is distinctive to particular disciplines, genres, or types of text. Although some spoken-English corpora have been produced (e.g., McCarthy, 1998; Simpson, Briggs, Ovens, & Swales, 2002), it remains much more practical to create corpora of written texts and so there is less comprehensive information about the frequency and uses of words in speech.

It should be pointed out, though, that not all vocabulary measures involve preselecting of the lexical items to be assessed. With measures of comprehension and use of vocabulary, described later in this entry, it is texts or tasks that are selected rather than words.

Design of Assessments

Once the target lexical items have been identified, the other main issue is the design of the assessment items or tasks. The choice of design involves a variety of considerations but, to provide a framework for the discussion, let us take the widely recognized distinction between receptive and productive knowledge of vocabulary. Although the exact nature of this division is still debated by scholars, all language users have a strong sense that the number of words they can understand is rather larger than the number that they use actively in their own speech or writing. Read (2000, pp. 154–7) further subdivides the distinction into recognition versus recall and comprehension versus use, which can provide a useful basis for classifying types of assessment and reflecting on what kind of vocabulary knowledge is actually being assessed.

Recognition

The first level of vocabulary knowledge involves whether learners can recognize and attribute meaning to a lexical item when it is presented to them in isolation, based on the idea that the core element of word knowledge is the ability to establish a link (which ultimately should be automatic) between the form of an L2 word and its meaning. This kind of test has often been criticized for a negative effect in encouraging learners to engage in too much supposedly unproductive study of decontextualized word lists, but there is a strong counterargument that the learning of high-frequency vocabulary using effective mnemonic techniques is an efficient means of establishing a foundation for rich vocabulary development (Hulstijn, 1997; Nation, 2001, pp. 297–303). This issue aside, recognition-type tests have been shown to work effectively for a variety of assessment purposes.

The simplest form of recognition assessment is the yes/no format, in which the test takers are presented with a set of words and are simply asked to indicate whether they know the meaning of each one or not. The list might begin as follows:

bag
ill
predict
estle
seminar
broccoli
sanglous

Obviously this format depends on self-report and is unsuitable for higher-stakes assessment situations in which learners have a vested interest in overstating their knowledge. It includes an indirect validity check in that a certain proportion of the items are not actual words (like *estle* and *sanglous* in the list above), which provides a basis for adjusting the scores of test takers who claim knowledge of such words. Research shows that the effectiveness of the format varies to some extent according to the learners' background but it can be a very useful means of estimating vocabulary size and even a quick method of indicating the learner's level of language competence.

A more widely used approach to assessing recognition knowledge is to require the test takers to show that they can associate each L2 word with an expression of its meaning, which may be in the form of a synonym or short definition in L2, or—if the learners share a common language background—an equivalent expression in their own language. The classic format of this kind is multiple-choice, where typically the target word is presented in a short, non defining sentence, together with four possible synonyms or definitions. For young children and other non literate learners, an oral version of multiple-choice is the picture–vocabulary format, in which the test taker listens to a word as it is spoken by the person administering the test and chooses which of four pictures represents the word meaning.

Recall

The second level of vocabulary knowledge involves the ability to recall the target word from memory when prompted to do so. This is the converse of recognition and it is acknowledged to be a more challenging task, requiring a stronger form–meaning link in the learner's mind. Another way in which a recall item demands more of test takers is that, whereas recognition assessment typically requires them to *select* a response from those provided, with recall the test takers must *supply* the target word. Thus, one kind of recall task is simply to present the learners with a set of meanings, perhaps in the form of words or phrases in their own language, and require them to provide the L2 equivalent of each one. Labeling of objects in a picture or processes represented in a diagram are other ways in which the learners' ability to recall vocabulary items can be assessed.

Perhaps the most commonly used form of recall assessment is the gap-filling task. In its simplest form, the items consist of sentences from which one content word has been deleted, like this:

I went to borrow a book from the _____.

The task is to write in the missing word. It should be noted that this type of item is more difficult to score than a selected-response item. First, there are often several possible words

that can fill the blank, some of which may be more acceptable than others. In this case, *library* is the intended answer, but *librarian, teacher*, and *shelf* also fit the gap. Second, having to supply the word means that test takers may misspell it or provide the incorrect grammatical form. This raises the question as to whether the focus of a recall item is simply on meaning, so that a word form which fits semantically is acceptable even if it is in the wrong form, or whether the gap-filling task provides the opportunity to assess various other aspects of word knowledge as well. These include not only spelling and grammar but also, for more advanced learners, aspects such as collocation and idiom, as in these examples:

> To stay awake, they drank several cups of _____ coffee. [*strong*]
>
> Several people claimed to have seen the missing girl, but these were all red _____. [*herrings*]

Recall tasks can be based on paragraphs or longer texts, with multiple deletions, rather than just separate, unrelated sentences with a single gap. Such tasks are often referred to loosely as cloze tests. However, it is important to note that in the standard cloze procedure words are deleted at fixed intervals (e.g., every seventh word) so that all types of word can be omitted, including articles, prepositions, conjunctions, and other function words. A standard cloze obviously draws on vocabulary knowledge but, if a text-based gap-filling task is to assess directly the ability to recall lexical items, it should be nouns, verbs, adjectives, and adverbs that are selectively deleted.

Comprehension

If a gap-filling task may be text-based, can it really be considered a measure of vocabulary, rather than, say, reading-comprehension ability? It may no longer be seen as a pure vocabulary test, but the underlying issue here is whether vocabulary acquisition is an end in itself or a means for the learner to use the second language more effectively for a variety of communicative purposes. At this point we move on to the second way of distinguishing receptive and productive vocabulary knowledge, namely comprehension versus use. The recognition and recall formats we have just discussed are intended to monitor learners' developing vocabulary knowledge, but they provide at best quite indirect evidence of whether learners can access their knowledge of words and exploit them effectively in performing real language-use tasks.

In the case of comprehension, we are interested in the learners' ability to deal with vocabulary in texts which have the characteristics of natural spoken and written discourse. Depending on the learners' goals, the texts may represent conversations, lectures, train-station announcements, or video clips; and newspapers, novels, college textbooks, or e-mails. Comprehension tasks oblige the test takers to process the vocabulary in real time, which means they need both automatic recognition of high-frequency words and the ability to process the input in chunks rather than word by word. This constraint is more obvious with respect to listening tasks, given the fleeting and ephemeral nature of speech, but it also applies to reading if the learners are to achieve adequate comprehension of the overall text. The test takers also need to understand lexical items in a rich discourse context, rather than as independent semantic units.

One important step in selecting texts for comprehension assessment is to evaluate the suitability of the vocabulary content for the learners' level of proficiency in the language, since it is unreasonable to expect them to understand a text containing a substantial number of unknown lexical items. Traditionally, this step is assisted by applying a standard readability formula, such as the Flesch Reading Ease score or the Flesch–Kincaid Grade Level

score (both available on Microsoft Word), incorporating word frequency as a core component. Another approach is to submit the text to the VocabProfile section of the Compleat Lexical Tutor (www.lextutor.ca), which offers both color coding and frequency statistics to distinguish common words from those that occur less frequently. It should be noted that both these approaches are word-based, so they may underestimate the lexical difficulty of texts containing idiomatic or colloquial expressions.

Vocabulary assessment for comprehension purposes is embedded, in the sense that it engages with a larger construct than just vocabulary knowledge or ability. In practical terms, this means that the vocabulary-test items form a subset of items within the test. In addition, the focus of the items changes from simply eliciting evidence of the ability to recognize or recall word meanings to contextual understanding, through reading items like these:

The word "inherent" in line 17 means . . .

Find a phrase in paragraph 3 that means the same as "analyzing."

Items may also assess lexical-inferencing ability by targeting vocabulary items that the test takers are unlikely to know, but whose meaning can reasonably be inferred by clues available in the surrounding text.

By its nature, reading assessment offers more scope for items that focus on individual lexical units in the text than listening assessment, because a written text remains available for review in a way that a spoken text does not. In fact, it may be counterproductive to encourage learners to concentrate on vocabulary in a listening task, as Chang and Read (2006) found in their investigation of various forms of support for EFL learners taking a listening test. Pre-teaching of key lexical items proved to be the least effective form of support, apparently because it drew the test takers' attention away from the propositional content of the text. On the other hand, if spoken or written texts represent a particular discipline, register, or genre, comprehension-test items will provide at least indirect evidence of the ability to handle vocabulary appropriate for that type of text (see Read, 2007, for further discussion of this point), even if none of the test items focus explicitly on vocabulary.

Use

Use refers to the ability of learners to draw on their vocabulary resources in undertaking speaking or writing tasks, like giving a talk, participating in a conversation or discussion, composing a letter, writing an essay, or compiling a report. This represents a more genuine sense of production than a recall task such as supplying a content word to complete a gap in a sentence. One characteristic of vocabulary-use tasks which distinguishes them from the other three approaches outlined above is that the task designer cannot normally target particular lexical items by requiring the learners to incorporate specific words into what they produce. Thus, the choice of words can only be influenced indirectly by the choice of task and topic, or by the selection of appropriate input material: source texts, pictures, diagrams, and so on.

As with comprehension tasks, use tasks can be assessed purely as measures of the learners' vocabulary ability or as measures of a larger speaking or writing construct in which vocabulary is embedded as one component. Vocabulary researchers have devised a variety of statistics to evaluate the lexical characteristics of texts: How many different words are used? What percentage of the words are low-frequency items? What percentage are content words? Until now, the statistics have not been very practical tools for assessment purposes but recent advances in automated writing assessment, in which lexical measures play a

prominent role, mean that automated assessments may quite soon complement human ratings in large-scale proficiency-test programs like TOEFL (Jamieson, 2005).

For now the more common practice in speaking and writing tasks is for the teacher, or the rater in the case of a more formal test, to assess the learners' use of vocabulary by means of a rating scale. For example, in the speaking module of the International English Language Testing System (IELTS; see www.ielts.org), lexical resource is one of four criteria that the examiners apply to each candidate's performance, along with fluency and coherence, grammatical range and accuracy, and pronunciation. Highly proficient candidates are expected to use a wide range of vocabulary accurately and idiomatically, whereas those with more limited speaking proficiency are restricted to talking about familiar topics and lack the ability to paraphrase what they want to say. Thus, such assessments are based on raters' perceptions of general lexical features of the test takers' task performance, rather than on any individual vocabulary items.

Conclusion

Given the central role of vocabulary in language acquisition and use, a whole range of procedures is needed to assess learners' developing vocabulary ability in a second language. Much depends on the purpose of the assessment. For beginning and intermediate learners, who are building their core knowledge of high-frequency words, recognition and recall formats have an important role in monitoring their lexical development. Such formats are also useful in placement and diagnostic tests. However, as learners' competence in the second language advances, we need to assess their ability to draw on their vocabulary resources effectively for functional communication by means of comprehension and use tasks.

SEE ALSO: Computer-Assisted Vocabulary Load Analysis; Corpora in the Teaching of Language for Specific Purposes; Corpus Linguistics: Overview; Formulaic Language and Collocation; Lexical Frequency Profiles; Measures of Lexical Richness

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Assessment of Writing

SARA CUSHING WEIGLE

The importance of writing in the 21st century cannot be overestimated. As globalization brings people together from different linguistic and cultural backgrounds and the Internet and other technologies allow for instantaneous long-distance communication, the written word has taken on increased significance. For those teaching and learning second languages, the need to assess writing ability accurately and effectively has also increased. To address this need, researchers and test developers have devoted much time and attention to improving the practice of writing assessment by investigating the factors that influence performance on writing tests and increase the reliability and validity of these assessments. This entry provides a short summary of this research.

Purposes of Writing Tests

Why do we test writing? Books on language testing (e.g., Brown, 2005) generally distinguish between four main purposes for language tests in academic settings: proficiency, placement, diagnostic, and achievement. A proficiency test is not tied to any particular curriculum but is intended to give an overall assessment of language ability, often to predict how well students will function in academic settings. Writing tests are frequently included as part of a language proficiency test such as the Test of English as a Foreign Language Internet-Based Test (TOEFL iBT®) or International English Language Testing System (IELTS). A placement test is used to determine where a student fits in a particular curriculum. In a general language program writing tests are often used in combination with tests of other language skills for placement; however, writing tests are also widely used in the USA and other countries to place students into first-year composition courses at the university level (see White, 1994). Diagnostic and achievement tests tend to be (although are not always) classroom-based assessments; diagnostic tests are used to identify specific areas of strength and weaknesses, while achievement tests are used to determine whether students have mastered specific skills or knowledge that has been taught. Outside of the academic world, writing tests are often used for job selection or advancement.

The remainder of the entry is organized as follows. First is a discussion on the nature of writing in a second language. Next follows a discussion on research and practical considerations in designing writing assessments, particularly as they relate to task design and scoring procedures. Finally there is a discussion on some recent trends in writing assessment.

The Nature of Second Language Writing

Applied linguistics is traditionally concerned with learning and teaching a second language. Thus, when we discuss writing assessment in applied linguistics, we usually refer to assessing writing in second or foreign language contexts rather than assessing first language writing. Thus assessing second language writing is often a matter of evaluating second language proficiency through the means of writing, as opposed to the degree to which first

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language speakers have mastered writing conventions. However, the two are not always distinguishable; many L1 writing concerns are also issues for L2 writing, particularly in academic settings. The degree to which first and second language writing assessments are distinct is related to a number of considerations, including age, context of learning, and proficiency level, described below.

Age: Because younger learners tend to be learning to write in their first language, they are developing literacy skills in both their first and second language. In contrast, older learners, depending on their background and history, may or may not have literacy skills in their first language. If they do, they can transfer many of the strategies from their first language onto their second; if they do not, then "writing" may simply refer to basic literacy skills.

Context (i.e., second vs. foreign language): Students learning to write in a second language context generally need to write for school or sometimes work purposes. These students have an immediate need to master the genres and conventions of writing in that language. In a foreign language context, writing may be used to reinforce and practice the language structures (grammar and vocabulary) learned in class rather than as authentic communication. In some situations, foreign-language learners may never actually need to write in their second language outside the classroom.

Proficiency level: At the earliest stages of language learning, writing is limited to the specific vocabulary and grammar that have been learned; again, writing at this stage may be more appropriately used for reinforcing and practicing language structures. As students gain proficiency in the language, the focus in writing can be more on content development and organization and less on the specifically linguistic aspects of writing.

These factors, among others, will determine whether language (i.e., displaying language ability by means of writing) or writing (i.e., communicating in writing by means of a second language), or some combination of the two, will be the main focus of assessment (for a relevant discussion of similar considerations from the perspective of performance assessment see McNamara, 1996, chap. 2).

Types of Writing Assessments

One way to think about types of writing assessments is as a continuum from least to most authentic, in terms of the degree to which they simulate real-world writing conditions. At one end of the continuum we can make a distinction between an indirect test of writing and a direct test. An indirect test attempts to measure the subskills involved in writing (particularly grammar and usage) via multiple choice or other selected response measures. Such measures were prevalent in the USA in the 1970s and 1980s (White, 1994). A direct test of writing requires the examinee to produce a continuous piece of prose in response to a set of instructions, and has the following additional characteristics (Hamp-Lyons, 1991): responses are ordinarily at least 100 words; the instructions, or prompt, provides direction but allows the candidate considerable leeway in responding; each response is read by at least one (preferably two) trained raters using a common scale, and the result is a number rather than (or in addition to) a verbal description of the writing. Typical writing tests are also conducted under timed conditions and the topic is frequently, if not usually, unknown to the candidates in advance (Weigle, 2002).

On the other end of the continuum of authenticity is portfolio assessment, which allows writing to be assessed over time and over a range of writing tasks and genres. A portfolio can be defined as "a purposeful collection of student works that exhibits to the student (and/or others) the student's effort, progress, or achievement in a given area" (Northwest

Evaluation Association, 1991, p. 4, cited in Wolcott, 1998). While portfolios have been implemented successfully in large-scale writing, portfolio assessment may be more feasible as a classroom assessment tool (Hamp-Lyons & Condon, 2000; Weigle, 2002, chap. 9).

In between the extremes of an indirect test of writing and a collection of texts written for authentic purposes is a variety of different task types. The impromptu timed essay based on a prompt is the most common writing assessment task, particularly for academic purposes, but by no means the only one. Impromptu writing tasks can take the form of different genres, such as letters, memoranda, or written instructions. Writing can be integrated with listening, reading, or both listening and reading in tasks that require examinees to summarize or otherwise incorporate source material from a reading or listening passage into their writing. Finally, stages of the writing process can be isolated and assessed in tasks such as writing an outline (pre-writing) or editing a paragraph or essay (revision).

Characteristics of Writing Tests: Tasks and Scoring

This section discusses research and practice regarding the most typical form of writing assessment: direct assessment. Considerations for assessing writing can be broadly divided into two categories: tasks (what the writer will respond to) and scoring (how the writing will be evaluated). From a theoretical perspective, scholars have long been interested in questions such as the effects of different task characteristics on writing test performance and how raters from different backgrounds evaluate writing samples. From a practical perspective, considerations of task and scoring provide guidance for teachers and administrators to design their own assessments or adopt commercially available tests.

Task Features

Weigle (2002, p. 63) provides a taxonomy of task dimensions for writing assessment. These can be divided into the features of the writing task itself (what test takers actually respond to) and features of the test, which include administrative and logistical considerations. Some important features of the test task include subject matter, discourse mode, and stimulus material, which are discussed briefly below.

Subject matter. Research on the effects of subject matter is limited, in part because it is difficult to separate subject matter from discourse mode or other topic variables (Hamp-Lyons, 1990). However, two broad distinctions can be made with regard to subject matter. First, some topics are essentially personal (e.g., descriptions of self or family, discussion of personal likes and dislikes) and others are nonpersonal (e.g., argument essays about controversial social issues). Research and experience suggest that nonpersonal topics may be somewhat easier to score more reliably; however, personal topics may be more accessible to all test takers and tend to elicit a wider range of responses. Within nonpersonal topics, and specifically in assessing writing for academic purposes, another distinction can be made between topics that are more general and those that are discipline-specific. Here some research suggests, not surprisingly, that students may perform better on topics related to their disciplines than on more general topics (Tedick, 1990).

Discourse mode. Discourse mode refers to the type of writing that candidates are expected to produce. The term discourse mode subsumes a cluster of task features such as genre (essay, letter, etc.), rhetorical task (e.g., narration, description, exposition), pattern of exposition (comparison/contrast, process, etc.) and cognitive demands (Huot, 1990). Research on the effects of specific features on writing test performance suggests that

these factors may indeed influence performance in systematic ways; however, it is difficult to isolate individual factors or separate the effects of, for example, genre from cognitive demands. For test developers, perhaps the most important advice to keep in mind is to consider the authenticity of the task for specific test takers and, if test takers are offered a choice of tasks or if alternate forms of the test are used, that these discourse variables be kept as parallel as possible.

Stimulus material. While many traditional writing assessment tasks consist merely of the topic and instructions, it is also common to base writing tasks on stimulus material such as pictures, graphs, or other texts. Hughes (2003) recommends that writing tasks be based on visual materials (e.g., pictures) to ensure that it is only writing and not content knowledge that is being assessed. At the other end of the spectrum, many academic writing tests use a reading passage or other text as stimulus material for the sake of authenticity; since academic writing is nearly always based on some kind of input text. Considerations for choosing an appropriate input text can be found in Weigle (2002) and Shaw and Weir (2007).

In addition to factors involving the task itself, a number of other factors that can be considered more logistical or administrative need to be addressed when designing a writing test; some of these include issues such as time allotment, instructions, whether or not to allow examinees a choice of tasks or topics, and whether or not to allow dictionaries. For a summary of research related to these issues, see Weigle (2002, chap. 5). One issue that has gained prominence over the past two decades is whether or not candidates should write responses by hand or by using computers; clearly, the use of computers is much more prevalent than it was even 10 years ago, and several large-scale tests have begun requiring responses to be entered on a computer. Pennington (2003) reviews the literature for handwriting versus word processing; briefly, this literature suggests that, for students who have proficient keyboarding skills, using the computer leads to higher quality writing and more substantial revisions. On the other hand, several studies suggest that raters have a tendency to score handwritten essays higher than typed ones, even if they are otherwise identical (Powers, Fowles, Farnum, & Ramsey, 1994).

Scoring Features

Two important considerations in scoring a writing assessment are (a) designing or selecting a rating scale or scoring rubric and (b) selecting and training people—or, increasingly, machines—to score the written responses. Scoring rubrics can generally be divided into two types: holistic, where raters give a single score based on their overall impression of the writing, and analytic, in which raters give separate scores for different aspects of the writing, such as content, organization, and use of language. A well-known example of a holistic writing scale is the scale used for the TOEFL iBT® writing test (Educational Testing Service, 2008). An example of an analytic writing scale can be found in Lumley (2002) in addition to the references discussed below.

While both scale types have advantages and disadvantages, a holistic scale is generally preferred in situations where a large number of tests need to be scored in a short time, such as in placement testing. On the other hand, for classroom purposes, an analytic scale can provide more useful information to students. Thorough discussions of different types of rating scales can be found in Weigle (2002, chap. 5) and Shaw and Weir (2007, chap. 5).

In analytic scales, there is no consensus about what aspects of writing should be scored. Most analytic scales have at least one subscale for content/ideas, one for organization or rhetorical features, and one or more for aspects of language use. For example, the IELTS has scales for grammatical range and accuracy, lexical range and accuracy, arrangement of ideas, and communicative quality (Shaw & Falvey, 2008). The scale devised by Jacobs,

Zinkgraf, Wormuth, Hartfiel, & Hughey (1981), one of the first well-publicized analytic scales for second language writing, includes the categories of content, organization, vocabulary, language use, and mechanics. The Test of English for Educational Purposes (TEEP) (Weir, 1990) has scales for relevance and adequacy of content, compositional organization, cohesion, adequacy of vocabulary for purpose, grammar, mechanical accuracy I (punctuation), and mechanical accuracy II (spelling).

Selecting, training, and monitoring raters is a central aspect of writing assessment. Useful procedures for rater training and monitoring can be found in White (1994), Weigle (2002), and Shaw and Weir (2007). Recent research has focused on the effects of rater background and training on scores; see in particular Lumley (2005), Barkaoui (2007), and Eckes (2008) for summaries. This research suggests that training can mitigate but not completely eliminate differences in rater severity and consistency due to background variables. For this reason, many programs have begun using test analysis tools such as multi-faceted Rasch measurement (MFRM) to adjust scores for differences between raters (see McNamara, 1996, for an introduction to MFRM, and Schaefer, 2008, for a review of studies in writing assessment that have used this approach).

Another important development with regards to scoring is the use of automated essay scoring (AES) systems such as *e-rater*®, developed by Educational Testing Service (Attali & Burstein, 2006) and IntelliMetric™ and MY Access!® developed by Vantage Learning Systems (Elliott, 2003), in part to contain the costs and time involved in scoring large-scale writing assessments. Research demonstrates that automated systems are at least as reliable in scoring standard essay tests as humans (see Shermis & Burstein, 2003, and Dikli, 2006, for overviews of automated essay scoring). However, the use of AES systems is controversial; many writing instructors, in particular, are opposed to any machine scoring of writing, while others highlight the speed and reliability of AES systems as advantages. A recent review of the arguments in this area can be found in Ockey (2009).

Challenges and Opportunities for the Future

Assessment specialists have focused on designing tasks that reflect real-world writing more accurately while maintaining rigorous standards for scoring. It has long been recognized that a single timed impromptu essay is inadequate for assessing writing. The trend in large-scale writing tests is toward multiple tasks and new genres. For example, the TOEFL iBT® now includes both an independent task and an integrated writing task that is based on listening and reading (Chapelle, Enright, & Jamieson, 2008), while the Cambridge suite of exams is introducing email tasks in some tests (Shaw & Weir, 2007). These new test tasks are bound to stimulate new validity research as they become operational.

At the same time the introduction of more tasks and the need to maintain rigorous standards in scoring add to the human and financial costs of producing and scoring writing assessments. AES systems are an important way to help contain such costs; thus, the ongoing debate about the use of automated scoring is another important issue that is certain to be a focus of debate in the foreseeable future.

The importance of writing in the business world and the growth of instant global communication may also mean that new assessments for business writing will need to be developed that are specifically tailored to the genres and tasks of international business communities. This is an additional area of potential growth in writing assessment (see Katz, Haras, & Blaszczynski, 2010, for an overview of the role of writing in business).

This entry has demonstrated the complexity of assessing writing as well as the opportunities that have emerged in the electronic age. For further information on the development of writing assessment, a useful timeline of important publications in this area can be found in Cumming (2009).

SEE ALSO: Assessment and Testing: Overview; Assessment of Academic Language for Specific Purposes; Assessment of Business and Professional Language for Specific Purposes; Automated Essay Evaluation and Scoring; Rating Scales for Language Tests; Reading–Writing Connection; Teaching Writing; Test Specifications; Writing and Content Area Learning; Writing and Genre Studies

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Assessment of Young English-Language Learners

LINDA ESPINOSA

Introduction

Assessment of young English-language learners (ELL) is an important issue internationally. In the USA, such assessment needs are being driven by the growth of the ELL population in the past two decades. Currently, 1 in 5 children aged 5–17 in the USA has a foreign-born parent, and most of these children are growing up in a bilingual environment (Capps, Fixx, Ost, Reardon-Anderson, & Passel, 2004). Young ELL children present particular assessment challenges because of the unstable nature of early growth and development; moreover, young ELLs can have widely varying levels of English comprehension, which makes it difficult to accurately interpret the assessment results. Despite the tremendous recent growth in the population of young ELL children, the corresponding development of a range of different types of appropriate measures and procedures for ELL children has not kept pace with this growing need. However, recently some positive developments have been made.

Challenges in Young ELL Assessment

Young ELL children, whether simultaneous or sequential second language learners, most likely will have a dominant language (Genesee, Raradis, & Cargo, 2004), even though the differences may be subtle. This is the language the child should first be assessed in to determine the upper limits of the child's linguistic and cognitive ability; however, there are no individual child assessments specifically designed to determine language dominance.

Many of the currently available measures for ELL children have been developed essentially as basic translations or adaptations of existing English-language versions of measures, with varying levels of attention paid to ensuring comparability in the conceptual, linguistic, or semantic content or level of difficulty of the translated items across languages, or both. As such, the content validity and construct validity may not be the same for the two versions of the same measure. Moreover, the actual developmental construct that is being assessed by a measure may vary from one language to the next.

Many standardized assessment measures (both in English and other languages) contain a very small pool of test items to assess a given skill or ability of interest. Since many existing assessments are designed to assess a number of different skills and abilities, the number of items for any given task is small, so as not to end up with an assessment that will be far too lengthy or frustrating for the shorter attention span of most preschool-age children, or both. However, the inclusion of a greater number of items is one way to help to offset this inherent variability and improve the precision of the measures.

Reliability coefficients for many standardized tests are lower for ELL children even if they have been designated as fully proficient in English (Abedi, Hofstetter, Baker, & Lord, 2001). The concurrent validity scores for ELL children have also shown to be substantially lower for ELL students. A small number of studies that examined the psychometric

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properties of wide-scale English reading tests met the criteria for inclusion in the *Developing Literacy in Second Language Learners* report (August & Shanahan, 2006). In general they found the reading tests to be reliable (Davidson, 1994), but to have questionable construct validity for ELL children (Garcia, 1991; Pomplun & Omar, 2001; Abedi, 2004). These researchers have argued that unfamiliar English vocabulary and complex language demands of the test items unfairly depress ELL children's performance. Abedi (2004) further found that ELL scores were higher in mathematics and science and lower in reading, language, and spelling relative to their native-English-speaking peers. He argues that the greater language demands inherent in the reading tests accounted for the discrepancy in scores across domains (Garcia, McKoon, & August, 2006). Abedi then concludes that "language factors may be a source of construct-irrelevant variance in standardized achievement tests, affecting the construct validity of the tests themselves" (p. 232 as cited in Garcia, McKoon, & August, 2006, p. 609).

Unless the test is specifically normed with a sample of similar ELL children who are growing up in a bilingual context, it is less accurate and valid for ELLs who have been judged sufficiently fluent in English to be assessed in English. Unfortunately, information on the specific demographic composition of the normative sample used to develop a given measure may not be in the published assessment manuals, but many normative samples have a smaller than expected representation of young children from low-income and culturally or linguistically diverse population subgroups, as compared with the composition of the total population of young children. If the normative sample for a given measure does not match the demographic characteristics of those children who are being assessed, then the resulting norms may not be appropriate for use with such a group of children.

Advances in Assessments for Young ELL Children

In view of the challenges associated with assessing language dominance, Fred Genesee and colleagues (2004) have recommended that educators ask the parents/family members about the child's earliest language exposure to determine language dominance. Research indicates that the amount of input, frequency of use, and the parents' estimates of language ability highly relate to the level of proficiency in the language (Gutiérrez-Clellen & Kreiter, 2003). One example of a parent report measure of children's English vocabulary development is the MacArthur Communicative Development Inventory (CDI) (Fenson, Pethick, Renda, Dale, & Reznick, 1998). The English version has shown good concurrent validity with other direct measures of English vocabulary (Dale, 1991; Feldman et al., 2000). The *CDI* has also shown very good reliability and predictive validity with other English-speaking cultures (Reese & Read, 2000). The Spanish-language version of the CDI, the MacArthur Inventario del Desarrollo de Habilidades Communicativas: Palabras y Enunciados (IDHC) (Jackson-Maldonado et al., 2003) has been adapted and validated for Spanish-speaking children from Mexico.

ELL children will show uneven progress between the two languages, depending on the language tasks. The most frequent method is to assess each language separately then combine scores from both languages to derive one summary score that represents the child's overall bilingual competence (Gutiérrez-Clellen, 1999; Winsler, Diaz, Espinosa, & Rodriquez, 1999). An example of a test that has been designed to assess both Spanish and English proficiency is the Woodcock-Muñoz Language Survey (WMLS). The WMLS was developed as a test of language proficiency for ELL children (Woodcock & Muñoz-Sandoval, 1993). It is a picture vocabulary test that measures the child's ability to name pictured objects. The English and Spanish scores can be combined to obtain a total vocabulary score, for example, a child who can name both "dog" and "perro" is awarded only one point.

While there are some standardized language fluency instruments commercially available for ELL children who speak Spanish, there are very few for children whose home language is neither Spanish nor English. For these children, it is still recommended that they be assessed in both their home language and English. ELLs may show greater initial progress in the home language and limited progress in the second language. Moreover, when the child's achievements are examined in the home language, teachers can also make fairly accurate predictions about the child's potential for learning in the second language (Gutiérrez-Clellen, 1999). If the ELL child is able to learn age-appropriate concepts in the home language, it is probable he will be able to transfer this knowledge to English-language learning.

Informal, indirect methods of observing ELL children's interactions and language usage can provide important information on the child's level of language proficiency. Research has shown that teachers can be highly reliable in estimating a child's level of proficiency and English usage based on their observations of the child (Gutiérrez-Clellen & Kreiter, 2003). Observations and insights from other staff who speak the child's home language and have contact with the child, such as bus drivers and family or health specialists, also can be collected through the use of standardized forms (Gutiérrez-Clellan, 2002; Espinosa, 2006).

In addition to information from parents, staff, and teachers, language proficiency can be assessed directly by asking children to provide spontaneous narrative samples, or story retellings. ELL children's retellings can provide information about their ability to produce and comprehend a language(s). The Renfrew Bus Story (Cowley & Glasgow, 1997) is one example of a standardized language assessment using story retelling. Adults can model a statement about each picture (e.g., "This is John and his frog"; "One day they went to the park") and then ask the child to retell the story. Through this approach, it is possible to determine if the child has sufficient mastery of the target language to comprehend the parts of the story and use complete sentences to retell it. However, this particular instrument (Renfrew Bus Story) should not be used for identifying ELL children with a specific language impairment because it has been shown to overidentify typically developing children, particularly ELL children (Pankratz, Plante, Vance, & Insalaco, 2007).

Carole Hammer and Adele Miccio from Penn State University are developing home language and literacy tools as part of the Bilingual Preschoolers: Precursors to Literacy project that is one component of the Development of Literacy in Spanish Speakers (DeLSS) initiative that is sponsored by the National Institute of Child Health and Human Development (NICHHD) and the Institute of Education Sciences (IES). More detailed information of the specific projects, research questions, and preliminary findings can be found on the Centre for Applied Linguistics (CAL, 2007) website (http://www.cal.org/delss/resources/measures.html).

A useful compendium of standardized assessment instruments for children aged 3–5 that have English and Spanish versions is in the final stages of completion (Barrueco, Lopez, Ong, & Lozano, 2007). It provides detailed information about the 18 direct child assessment measures that met their inclusion criteria, that is, available in English and Spanish, appropriate for 3–5 year olds, and include language and literacy domains. The psychometric characteristics as well as the cultural and linguistic strengths/weaknesses are carefully described. Of note is the small number of measures that met their criteria for inclusion (18 out of 150). Of the 150 measures identified that were appropriate for the 3–5 age range and assessed development in language, literacy, or English language, only 36 had been used with young ELL children and only 18 of those met all the final inclusion criteria: available in English and another language; direct child assessment; appropriate for the general child population and not just primarily for children with disabilities; standardized in the last decade; and administered by teachers, and examiners or researchers, or both (p. 6).

Conclusion

Teachers, administrators, and researchers who work with young children in early education settings today urgently need to develop effective instructional and assessment approaches that work for all for young children from linguistically and culturally diverse backgrounds. They need to know how best to assess the abilities and learning needs of young children from non-English-speaking and culturally diverse homes. Accurate assessments that include information on the child's home-language fluency as well as stage of English acquisition are critical to the educational decision-making process. Early childhood professionals at all levels will need to understand the linguistic, cultural, economical, and social diversity within the ELL population.

Current assessment strategies, instruments and procedures have many psychometric and practical limitations for young ELL populations. However, the assessment measures and procedures described above can be carefully utilized to gain a better understanding of the language development of ELL children, even as we wait for the continued development of newer and better ELL assessment measures and measurement strategies. Based on this review, several immediate recommendations can be proposed. To more accurately capture young ELL children's language capacity, assessors should

- use multiple measures which may include standardized tests and curriculum-embedded assessments in addition to narrative language samples and observation of children's language usage in natural settings,
- use vocabulary test scores with great caution,
- thoroughly review all psychometric/standardization information provided for any standardized test under consideration and whenever possible only administer those that have been standardized/normed with samples that are similar to the children to be assessed,
- assess each ELL child in both the home language and English over time,
- include the family as important informants on the assessment team, and
- provide intensive and sustained professional development to all early childhood professionals on effective instructional and assessment strategies for children from diverse backgrounds.

In addition, it is important to comprehensively assess each ELL child's development in other domains such as social-emotional functioning, early mathematics, motor development, general knowledge, and conceptual understandings. Many ELL children may be highly competent in areas that are difficult to assess like social-emotional functioning. Young ELL children may also have capacities and abilities that are masked by current testing policies which underestimate their knowledge and potential.

SEE ALSO: Assessment in the Classroom; English-Language Learners and Subject Area Tests; Validation of Language Assessments

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Attention, Noticing, and Awareness in Second Language Acquisition

RONALD P. LEOW

Introduction

The role attention plays in the learning process has almost always been assumed since the earliest studies in the field of second language acquisition (SLA). Any exposure, be it aural or written, manipulated or authentic, to the foreign or second language (L2) is arguably premised on the role of attention on the part of the learner. The SLA field up to the mid-1990s had generally assumed that experimental conditions (instruction or exposure, be it explicit, that is, with awareness, or implicit, that is, without awareness) elicited the required attention paid to the targeted item(s) in the L2 input. This premise is evidenced in the type of research design employed in the studies, which was the classical pretest—experimental condition—posttest design, without any concurrent or online data on learners' actual attention paid to the targeted items in the input.

The early postulations of Schmidt (1990, 1993) and Robinson (1995a) in SLA and Tomlin and Villa (1994) from the field of cognitive science regarding the roles of attention and awareness in input processing arguably propelled several researchers to probe deeper, both methodologically and empirically, into the constructs of attention and awareness. As Schmidt (2001) pointed out, it is quite challenging to separate these two constructs given that in psychology they are commonly viewed as being intrinsically integrated. While the role attention plays is relatively non-controversial in most research fields that include cognitive psychology, cognitive science, and SLA, whether awareness plays a role in learning remains highly debated in all these fields.

This entry presents a concise review of the important tenets of the several major theoretical approaches that have postulated roles for both the constructs of attention and awareness in L2 learning at the initial stage of language processing (e.g., Schmidt, 1990, 1993, 2001; Tomlin & Villa, 1994; Robinson, 1995a). A report of empirical studies premised on some role for attention/noticing are presented followed by those that have isolated the construct of awareness to investigate its effects on L2 learning. Finally, the few current studies in SLA that have empirically probed deeper into the construct of unawareness will be reported.

Theoretical Approaches to the Roles of Attention and Awareness in SLA

While there are several theoretical underpinnings in the SLA field that have postulated an important role for attention at the initial stage of L2 development, only Schmidt's (1990 and elsewhere) noticing hypothesis, Tomlin and Villa's (1994) functional model of input processing in SLA, and Robinson's (1995a) model of the relationship between attention and memory have directly addressed the roles of both attention and awareness. The main tenets of these three approaches are discussed below.

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Schmidt's Noticing Hypothesis

Drawing from works in cognitive psychology and his own personal experience while learning Portuguese, Schmidt's (1990, and elsewhere) noticing hypothesis postulates that attention, which "is necessary in order to understand virtually every aspect of second language acquisition" (Schmidt, 2001, p. 3), controls access to awareness and is responsible for noticing. Noticing is "the necessary and sufficient condition for the conversion of input into intake" (Schmidt, 1993, p. 209). Intake in SLA is usually defined as a subset of the input that has been taken in by the learner but not necessarily internalized in the language system and occurs at a preliminary stage along the acquisitional process (e.g., Leow, 1993). Attention, according to Schmidt, is isomorphic with awareness and he rejects the idea of learning without awareness. In addition, Schmidt proposes a level of awareness that is higher than awareness at the level of noticing, namely, awareness at the level of understanding. Whereas awareness at the level of noticing leads to mere intake, this higher level of awareness promotes deeper learning marked by restructuring and system learning and is underscored by learners' ability to analyze, compare, and test hypotheses at this level.

Tomlin and Villa's Functional Model of Input Processing in SLA

While concurring with Schmidt's noticing hypothesis on the important role of attention in learning, Tomlin and Villa's (1994) model of input processing in SLA differs sharply from Schmidt's regarding the role of awareness in the acquisitional process. Drawing on works in cognitive science, Tomlin and Villa (1994) propose a functionally based, fine-grained analysis of attention. In their model, attention comprises "three separable attentional functions that have also been paired to separate yet interconnected neuroanatomical areas" (Tomlin & Villa, 1994, p. 190): (a) alertness (an overall readiness to deal with incoming stimuli), (b) orientation (the direction of attentional resources to a certain type of stimuli), and (c) detection (the cognitive registration of stimuli). The network hypothesized to be necessary for further processing of input and subsequent learning to take place is that of detection. The other two networks (alertness and orientation) are important in SLA and can enhance the chances that detection will occur, but their role in promoting detection is not crucial. According to Tomlin and Villa, in their model, detection does *not* imply awareness, that is, awareness does not play a crucial role in the preliminary processing of input during exposure.

Robinson's Model of the Relationship Between Attention and Memory

Robinson's (1995a) model of the relationship between attention and memory neatly reconciles Schmidt's notion of noticing (which involves awareness) and Tomlin and Villa's notion of detection (which does not imply awareness). In this model, detection is strategically placed at an earlier stage in the acquisitional process when compared to noticing. In other words, linguistic information may be detected and taken in by the learner but if this information is not accompanied by awareness, then the chance of this information being further processed is relatively minimal. Noticing, according to Robinson, is "detection plus rehearsal in short-term memory, prior to encoding in long-term memory" (Robinson, 1995a, p. 296). Like Schmidt, Robinson assumes that noticing does involve awareness and that it plays an important role in L2 learning.

As can be seen from the tenets of the different theoretical approaches to the roles of attention and awareness in SLA, the facilitative role of attention in L2 development is generally accepted while the role of awareness is not without debate. More specifically, while both Schmidt's noticing hypothesis and Robinson's model posit a crucial role for awareness, Tomlin and Villa's model does not. What is not controversial, then, is that

attentional resources do need to be allocated to specific linguistic (grammatical, lexical, phonological, etc.) information in the input. However, whether these attentional resources need to be accompanied by learner awareness to process the linguistic information in the input for intake and subsequent learning remains debatable in the SLA literature.

Attention/Noticing and Learning: Empirical Evidence in SLA

There are several strands of SLA research that are explicitly or implicitly premised on the role(s) of attention, or noticing (attention plus a low level of awareness), or both, in L2 development. These strands include processing instruction, interaction or feedback, learning conditions, input/textual enhancement, focus on form, and so on. Attention/noticing has been measured by a variety of instruments in SLA studies that include offline questionnaires, online uptake charts, learning diaries, online verbal reports, and offline verbal reports such as stimulated recall protocols. In addition, in some studies students were prompted to take notes while reading an L2 text, to underline, circle, or check targeted linguistic structures in written text, or to make a check mark every time a targeted item is heard.

Quite a large range of linguistic items has also been empirically investigated and these include Spanish imperatives, imperfect and preterit forms, present perfect forms, relative pronouns, past conditional; Finnish locative suffixes; English possessive determiners, relative clauses; French past participle agreement, and so on. Different levels of language experience have also been explored, ranging from beginner learners of an L2 to intermediate to advanced levels. Amount of exposure is also differential, ranging from less than an hour to over several days.

Overall, the findings of these studies provide strong support for the role of attention, or noticing, or both, in L2 development. However, the research designs of many of these studies did not methodologically tease out the specific role awareness played while learners were attending to incoming L2 data. To this end, the next section reports on the definition and operationalization of the construct of learner awareness and empirical studies that methodologically addressed the role of this construct in L2 development.

Awareness and Learning in SLA

Awareness is defined in SLA as "a particular state of mind in which an individual has undergone a specific subjective experience of some cognitive content or external stimulus" (Tomlin & Villa, 1994, p. 193). Awareness, according to Leow (2001), may be demonstrated through (a) some resulting behavioral or cognitive change, (b) a meta-report of the experience but without any metalinguistic description of a targeted underlying rule, or (c) a metalinguistic description of a targeted underlying rule. In addition, the operationalization and measurement of what constitutes awareness in SLA is methodologically thorny and varied. Leow, Johnson, and Zárate-Sández (in press) provide a methodological review of relevant studies in both SLA and non-SLA fields and call for a finer-grained approach to the study of the construct of awareness. This finer-grained approach advocates, in any report on the role of awareness in L2 development careful consideration of several aspects of the research design that include (a) where awareness is measured (at the stage of encoding that is online versus at the stage of retrieval that is offline), (b) what kind of item is being targeted, and (c) how awareness is measured (the measurement instrument).

Whether awareness plays a role during attention to or processing of incoming L2 data has led to a growing debate in SLA. Several researchers have supported a dissociation between learning and awareness in SLA (e.g., Tomlin & Villa, 1994; Williams, 2004, 2005)

while others have rejected this dissociation (Schmidt, 1990, and elsewhere; Robinson, 1995a; Leow, 2000; Hama & Leow, 2010).

Studies addressing the role of awareness in L2 development can be categorized into two methodological approaches, namely, awareness was measured either concurrently or online (e.g., Rosa & O'Neill, 1999; Leow, 2000, 2001; Rosa & Leow, 2004; Martínez-Fernández, 2008; Hama & Leow, 2010) or non-concurrently or offline (e.g., Robinson, 1995b; Williams, 2004, 2005). Concurrent measures of awareness in SLA occur at the stage of encoding or construction, that is, *while* learners are processing the incoming data, and include think aloud protocols or verbal reports. Non-concurrent measures, on the other hand, occur at the stage of retrieval or reconstruction, that is, *after* the data have been processed, and they include questionnaires, offline verbal reports, or oral interviews. Currently, there is some methodological debate regarding the validity of concurrent verbal reports given the potential reactive nature of this measurement. While most of the studies addressing this issue do not report any significant change in learners' processing due to thinking aloud during task performance when compared to a non-think aloud control group, the issue still warrants further empirical exploration. Similarly, non-concurrent measures such as offline verbal reports, oral interviews, or stimulated recasts run the risk of veridicality or memory decay (Leow, 2000; Egi, 2008), that is, the reports provided may not reflect the actual process employed during the initial exposure at the encoding stage.

Empirical Evidence for the Role of Awareness in SLA

Overall, many of the studies that have independently investigated the construct of awareness by employing online verbal reports to operationalize and measure this construct appear to provide empirical support for the facilitative effects of awareness on foreign-language behavior and learning. Several levels of awareness have also been reported that include, for grammatical items, awareness at the levels of noticing and understanding (Rosa & O'Neill, 1999; Leow, 2001; Rosa & Leow, 2004) and an intermediate level of awareness between the levels of noticing and understanding, namely, awareness at the level of reporting (Leow, 2001). For lexical items, Martínez-Fernández (2008) reported two levels: "noticing of one word aspect" (either the word form or the meaning) and "noticing of two word aspects" (i.e., both word form and the meaning). In addition, higher levels of awareness appear to correspond with both higher levels of intake and learning and the presence of hypothesis testing and rule formation, providing empirical evidence for Schmidt's two levels of awareness postulated in his noticing hypothesis.

To date, however, only a very limited number of published SLA studies has directly examined whether language development can occur among *unaware* learners (Leow, 2000; Williams, 2004, 2005; Hama & Leow, 2010). The paucity of studies on this issue in SLA is relatively alarming given that many so-called learning conditions designed to promote either implicit or explicit learning have not gathered empirical evidence that first established the presence of such processing taking place in the experimental conditions before statistically analyzing the effects of type of learning condition on L2 development. The performance on a post-condition task is usually assumed to be based on knowledge gleaned from either explicit (with awareness) or implicit (without awareness) processing of the linguistic information embedded in the experimental input. This assumption has been challenged by several studies (e.g., Rosa & O'Neill, 1999; Leow, 2000, 2001; Rosa & Leow, 2004) that have gathered concurrent data while learners were processing the experimental input. These studies reported that, notwithstanding the experimental condition, some participants did not represent the condition under which they were placed. To this end, the studies on unaware learners are closely examined in the next section.

Learning Without Awareness?

There are currently four published studies that have investigated the performances of learners who have been coded as being unaware of the underlying grammatical rule while exposed to the experimental input (Leow, 2000; Williams, 2004, 2005; Hama & Leow, 2010). Leow (2000) employed a hybrid design that employs both qualitative (based on online think aloud protocols data) and quantitative (based on offline procedures data) analyses. His study addressed the effect of awareness or lack thereof on 32 adult English-speaking L2 learners' subsequent intake and production of L2 forms (third persons of Spanish irregular preterit verbs ending in either *-er* or *-ir* that have a stem change in this tense). His experimental task was a problem-solving one (a crossword puzzle). He reported that learning did not appear to occur among unaware learners.

Williams (2005) reported that unaware learners can provide evidence of learning without awareness. Following up on his 2004 study with methodological improvements, Williams conducted two experiments to test whether participants were able to learn miniature noun class systems without awareness. The 41 participants in his studies were from a variety of language and linguistics-related backgrounds. The noun phrases used for Williams's experiments were four novel determiners, *gi*, *ro*, *ul*, *ne*. *Gi* and *ro* are the English translation equivalence of 'near', and *ul* and *ne* are equivalent to 'far'. These determiners also carry animacy values: *gi* and *ul* are animate and *ro* and *ne* are inanimate. The results revealed that many of the participants who were classified as unaware were able to choose the correct noun phrase during the assessment task at a significantly above-chance level.

The conflicting results reported in the two studies are not surprising given the several differences between Leow's and Williams's studies. These differences include learning measures (a four-option multiple-choice (MC) recognition assessment task versus a two-option MC assessment task), coding of awareness (at the level of noticing versus at the level of understanding), and stage of awareness measurement (the encoding and retrieval stages versus only the retrieval stage).

Hama and Leow (2010) revisited Williams (2005) by employing a hybrid design to gather data at the concurrent stage of encoding, during the testing phase, and after the experimental exposure (retrieval stage). In addition, the study methodologically extended Williams's research design to probe deeper into learners' processes by (a) increasing the number of items (four instead of two) on his MC test to include the presence of distance in learners' selection of options (i.e., animacy *plus* distance) in order to replicate the training context, (b) including a production test in addition to the MC test, and (c) providing the same modality for both the learning and testing phases.

The quantitative analyses revealed that, at the encoding or construction stage, unaware learners do not appear capable of selecting or producing the correct determiner-noun combination when required to do so from options that include both animacy and distance information. This may be due to the type of research methodology employed, the level of cognitive effort required to process the information at a sentential level when compared to a form or noun phrase level, prior knowledge of a foreign language (in Williams's study this variable was correlated with learning effects), the mode in which the assessment prompts were provided, or all of these. The qualitative data underscore the importance of measuring the construct of unawareness from different sources, that is, both online and offline, given that processes demonstrated during different phases of exposure to the input may not be fully reported at the non-concurrent stage of retrieval of such awareness.

As can be seen, preliminary studies in SLA that have investigated unaware learners reveal contradictory findings similar to those reported in cognitive psychology. While the research indicates quite clearly that the presence of awareness (and its corresponding levels) does appear to have a facilitative effect on intake and learning, more research on

the construct of unawareness is clearly needed to address whether learning can indeed take place in an unaware condition.

Conclusion

This entry has presented a concise overview of the theoretical, methodological, and empirical issues surrounding the roles of attention, noticing, and awareness in adult L2 behavior and learning and provided brief reports of empirical studies premised on these roles in L2 development. The overall findings appear to indicate facilitative effects of attention/noticing and awareness on adult L2 learners' subsequent processing, intake, and learning of targeted L2 forms or structures embedded in the L2 data. At the same time, notwithstanding the methodological concerns inherent in both the operationalization and measurement of the slippery construct of awareness, further research on unaware learning is warranted given the central role awareness plays in many major strands of SLA research. While current research findings are indeed promising, more robust research designs are clearly needed to address the issue of L2 development premised on the roles of attention/noticing and (un)awareness given the wide variety of variables that can potentially impact learners' processes while interacting with L2 data. Such findings can only improve our understanding of the attentional and cognitive processes involved in L2 learning.

SEE ALSO: Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Input Processing in Second Language Acquisition; Interaction Approach in Second Language Acquisition; Task-Based Learning: Cognitive Underpinnings

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Attitudes and Motivation in Bilingual Education

DAVID LASAGABASTER

Introduction

Languages play a paramount role in any society in general and in education in particular. A student enrolled in a bilingual school in which different languages are in contact soon realizes that society, family, peers, and school all place importance on these languages. The students' own assessment, together with the context, the information, and the knowledge they acquire will shape their attitudes toward these languages and their motivation for learning them.

Research into attitudes and motivation flourished in the 1950s and, since then, all the major theories and models of second language acquisition have underscored their importance. It has become clear that attitudes affect motivation, and the interrelationship between these two concepts has been widely acknowledged in literature on the subject.

Attitudes

The popularity of the concept of attitude is confirmed by its use in many diverse fields of research: education, sociology, sociolinguistics, social psychology, and political science, to name but a few. Although from an etymological point of view attitude was originally a technical term in art for the posture of a figure in a statue or painting, its current psychological meaning has imposed over the physical one. Among the many available definitions, Ajzen's (1988, p. 4) is probably the most widely quoted one due to its brevity and clarity: "a disposition to respond favourably or unfavourably to an object, person, institution or event."

Attitudes are not innate but rather acquired and can be learned, and through learning they change and evolve. Attitudes are mainly social and we acquire them through direct or indirect social interaction, which is why the social context plays such a significant role in their analysis. Attitudes are determined by such influential factors as the family, work, religion, mass media, friends, or education, to the extent that individuals tend to adjust their attitudes so that they match those of their social group. So the origins of our attitudes and changes in them can be affected by different agents, and among these institutions are powerful influences. Every individual develops in a social context where institutions are very present, and nowadays most people spend a large part of their lives in education-related institutions.

Motivation

Motivation is a complex psychological construct that acts as a direct determinant of second language (L2) achievement, which is why much attention has been paid to this individual variable in second language acquisition literature. Gardner (1985, p. 10) defines motivation

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as "the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity."

Although the factors that may account for individual differences in L2 learning are as manifold as there are people, motivation—forgive the truism—is crucial, especially in classroom language learning. Studies carried out in many different contexts have demonstrated that there is a clear correlation between motivation and language achievement.

For decades motivation was regarded as a relatively stable learner trait, but from the 1990s onwards research on motivation has undergone a shift toward a more dynamic construct. Although language learners are usually highly motivated when they set out to learn a foreign language, the challenge lies in maintaining that motivation. Yet the dynamic character and temporal variation inherent to students' motivation have been somewhat neglected in studies so far. The mastery of an L2 is a long process which usually takes several years and in which students' motivation fluctuates. Research is also currently more grounded in the context where the learning takes place.

Different Motivational Models

The different models of second language acquisition have traditionally highlighted the importance of attitudes and motivation. Due to space constraints, reference will be made to only three bilingual-education-friendly models: Lambert's (1974) model of second language learning, Gardner's (1985) socioeducational model of second language acquisition, and Dörnyei's (2005) L2 motivational self system.

In Lambert's model—the precursor of all others—an individual's aptitude (the inherent ability to learn) and attitudes toward a language are regarded as two major factors which bear on motivation, that is, the readiness to engage in language learning or language activity. These three ingredients (aptitude, attitudes, and motivation) contribute to a learner's bilingual proficiency, which results in higher or lower self-esteem and one's self-concept. This model provides two alternative results as a consequence of the interaction of the previous factors, namely additive (the L2 does not entail any risk to the first language or L1) or subtractive (the L2 replaces or demotes the L1) bilingualism.

Gardner's model has been thoroughly researched and tested. It is divided in four stages, with the individual's social and cultural background (including the home, neighbors, friends, and the wider community) representing its base. The second stage includes four individual variables that will affect language learning: language aptitude, intelligence, motivation or attitudes, and situational anxiety. The third stage distinguishes between the formal and informal language-learning environments and, finally, the fourth stage has to do with the linguistic (bilingual proficiency) and non linguistic (attitudes or cultural values) outcomes. A learner's attitudes can change and are conceived as having both a triggering and a product role, as this is a cyclical—not static—model in which attitudes and motivation can be both a cause and an effect. According to Gardner, motivation involves "the combination of effort plus desire to achieve the goal of language learning plus favourable attitudes towards learning the language" (1985, p. 11). One of the main results of Gardner's and his associates' work was the development of the "Attitude/Motivation Test Battery," a standardised test which encompasses the different components of Gardner's theory of L2 motivation.

Gardner claims that the reasons for learning a second language show two main orientations. The first one is known as integrative orientation, a term coined by Lambert which indicates "a sincere and personal interest in the people and culture represented by the other group" (quoted in Gardner, 1985, p. 133). The second orientation is instrumental, learning the language for pragmatic or useful purposes such as economic advantages or better job prospects and promotion. These orientations are independent of intelligence and

aptitude. Gardner objects to the misinterpretation of his theory as a dichotomy of integrative and instrumental orientation, as this dichotomy is only at the orientation level and is not part of the core motivation component.

Nevertheless, Oxford and Shearin (1994) indicate that there may be other reasons for second-language learning, such as intellectual stimulation or cultural curiosity. They also argue that a distinction should be made between foreign-language learning and second-language learning. The language-learning context and the complexity of the identities of second-language learners vary a great deal in different contexts and, subsequently, the role of integrativeness has been challenged. In bilingual-education programs where a regional language is included the integrative motivation may exert a greater influence on language proficiency, whereas in bilingual programs in English as a foreign language instrumental motives may play a more central role in the learning of English as L2.

The distinction between the integrative and the instrumental orientation is often hard to define. An integrative motive may have instrumental strands or components, making this dichotomy oversimplistic. This is acknowledged in Dörnyei's model, which redefines these motives in terms of perceptions of the self and the ideal self.

Dörnyei's L2 motivational self system, albeit firmly rooted in L2 research, stems from psychological theories of the self and consists of three components (Dörnyei, 2005, p. 106):

1. Ideal L2 self: If the person we would like to become speaks an L2, the ideal L2 self becomes a powerful motivator to learn the L2. This component encompasses the traditional integrative and internalized instrumental motives.
2. Ought-to L2 self: This component refers to the attributes one believes one ought to possess (i.e., various duties, obligations, or responsibilities) in order to avoid possible negative outcomes. It includes the most extrinsic (i.e., less internalized) types of instrumental motives.
3. L2 learning experience: The last component concerns situation-specific motives related to the immediate learning environment and experience (i.e., the influence of the curriculum, the teacher, the peer group, and the experience of success or failure).

In this model, motivation would involve the desire to find harmony between one's current self and the ideal or ought self by reducing discrepancy between our actual and ideal selves. Since young learners cannot consider multiple perspectives of the self, this approach is considered to be appropriate from adolescence onward. It is worth pointing out that this model does not invalidate previous results in the field of L2 motivation research, but rather helps to reframe them.

These three models are not contradictory and their predictions are consistent with each other's.

Minority Languages

The social position of a few minority languages the world over has undergone an enormous change in the last few decades, a period in which, after a mammoth fight to recover their rights, speakers have managed to regain the social representation denied to them for many years. School has thus become one of the main social spaces where minority languages are again taken into account and are playing an active role in preparing the next generation of students. However, the language attitudes held by majority and minority groups have a direct impact on language policy for the minority language.

The importance of institutions' commitment to bilingual education and the latter's impact on language attitudes and motivation is clearly reflected in the case of Basque, a language spoken in two autonomous communities in the north of Spain (Basque Autonomous

Community—henceforth BAC—and Navarre) and the south of France (Northern Basque Country, henceforth NBC). There are important differences between the three regions into which the Basque-speaking community is split and which influence Basque's position in the education system of each of them: Basque is fully co-official with Spanish throughout the BAC, it is fully co-official only in the north of Navarre (it has no official status in the center and south), whereas in the NBC only French is identified legally as the official language.

There are remarkable differences between the regions regarding how much support is given to Basque (Basque Government, 2008). Analysis of the 1996–2006 decade shows that the BAC government's efforts to normalize the situation of Basque have led to a substantial change in the attitudes of the population. In this normalization process the set of rules governing the balanced use of both Basque and Spanish had been previously established, including the implementation of bilingual programs at schools. As a result of this, there was an enviable rise of 18.7% (from 46% to 64.7%) among those positively disposed, especially among the youngest age group (below 25) due to the positive impact of the bilingual programs available. The situation in the NBC is just the opposite, as the 7.8% decrease in positive attitudes (from 49% to 41.2%) is accompanied by a 4.6% increase in negative attitudes. In Navarre, the situation appears to have almost stabilized. Just over 2.2% of Navarrese are now more opposed to these promotion efforts than in 1996, whereas those who support them have slightly decreased (0.3%, from 38% to 37.7%). Although support for efforts to promote Basque is still 3.5% higher in the NBC than in Navarre, the drop in positive attitudes over 10 years in the NBC is sharp.

The Basque case clearly demonstrates how important the combination of speakers' and institutions' efforts is not only to maintain, but also to revive and, above all, normalize a minority language. Regarding bilingual education, the conclusion to be drawn is that, if the regional language has high status in the eyes of the students, they will be more motivated to learn it and will harbor more favorable attitudes. Therefore, the political dimension comes to the fore and the psychological merges with the political, so that attitudes become part of a multilayered and dynamic scenario related to identity construction and language ideologies which has individual, group, and societal dimensions. Nowadays there is no doubt that the political dimension of language motivation has to be considered.

Foreign Languages

Education departments the world over are attaching increasing importance to the implementation of bilingual programs in foreign languages, since there is a widespread desire to educate multilingual and multicultural citizens in a context where the linguistic consequences of globalization are more and more evident. Consequently, an ever-increasing number of schools and universities are offering courses taught in foreign languages, exposing students to teaching through the medium of a foreign language. Since World War II, a global trend has seen English gain importance and replace other foreign languages. In most parts of the world when bilingual education includes the English language, there is generally a consensus support for bilingual education—this is not always the case if the language concerned is a minority language.

Lamb (2003) points out that the spread of English has a direct effect on integrative motivation as it may be more important in English as a Second Language (ESL) contexts like Canada than in many other English as a Foreign Language (EFL) contexts around the world: The contact with L2 speakers and their culture in EFL settings may be more limited and its relevance with younger learners is doubtful. Thus, if our understanding of integrative motivation changes, "we may need to change teaching methods and materials too" (Lamb, 2003, p. 17).

Moreover, many fear that this hegemony of English will make people lazy about learning other languages or simply make all the other languages unnecessary; it may also hasten the disappearance of minority languages and could cause widespread language death. The study carried out by Dörnyei, Csizér, and Németh (2006) highlights this. These authors examined motivation and language attitudes among 13,000 teenage language learners on three successive occasions (1993, 1999, and 2004). The objective was to describe the impact of sociopolitical changes on the various language attitudes prevailing among Hungarian students and their motivation to learn five foreign languages: English, German, Italian, French, and Russian. The authors state that, despite having a small country as their target, the results are not confined to Hungary but have worldwide implications, as their data can provide valuable information into the actual operation of language globalization.

There was a consistent rank order of the five target languages in the three survey phases, in which English always appeared at the top and Russian at the bottom of the participants' preferences. However, the most outstanding finding was the general decline over time. While English maintained its high educational profile, the remaining languages became less and less appreciated. The authors conclude that the learning of languages other than English is impeded by what they label as the "Englishization" process.

Conclusions

The multifaceted nature of attitudes and motivation has precluded the different theories from representing and tackling them in their total complexity. Many questions have been raised by researchers and educators about their role in second-language education, and, in this brief overview, there are several important issues that have not been tackled: the relationship between these concepts and different variables such as gender, the need for greater interdisciplinarity in their study, the need to combine quantitative (self-report surveys still reign supreme) and qualitative approaches in research, the recent trend to analyze attitudes to multilingualism, or the need to track changes over time. Attitudes and motivation are not static and they therefore vary due to the influence of people, learning experiences, and the different contexts.

The study of different language-teaching types of provision and the tasks undertaken presents itself as a potentially very promising field of research regarding the development of motivation. By focusing on different approaches, the researcher can probe their diverse effects and this will certainly be of teachers' interest in bilingual contexts, as the presence of different linguistic models is usually the norm. Similarly, the burgeoning presence of bilingual programs in the current lingua franca, English, demands motivational studies focused on the characteristics of the manifold and different contexts where they are being implemented (Lasagabaster & Ruiz de Zarobe, 2010).

If education authorities intend to implement coherent language policies, it is necessary to know how the different languages in contact are used in the diverse social contexts and how their functions are being extended or restricted. In order to understand this question, we have to know what the linguistic situation of the different languages is, what the existing motivation to learn them is, and which favorable or unfavorable attitudes are held. Although some motivational dispositions appear to be inborn as part of the human condition, high-level dispositions such as motivation to learn are not endowed by birth (Brophy, 2004, p. 17). Therefore, bilingual-education programs have much to say in the development of their dynamic nature.

SEE ALSO: Language Policy and Multilingualism; Minority Languages in Education; Multilingual Identities and Multilingual Education; Multilingualism and Attitudes; Teacher Education for Multilingual Education

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Attrition and Multilingualism

MONIKA S. SCHMID

Introduction

To think "bilingualism" is usually to think "second language" (L2). Virtually all research that is conducted on multilinguals focuses on the way in which they acquire and use the languages which are not their "native" one. Observations gained from that study are then compared to first language (L1) speakers, and attempts are made to pinpoint and explain the differences between the two populations (L1 speakers vs. L2 learners).

The assumption underlying this bias is that once a "native" language has developed to a certain point, it becomes stable and hence uninteresting. Second language learning, on the other hand, is so obviously impacted on by a large number of other factors, such as crosslinguistic influence, age at acquisition, attitude, and motivation, that it is considered a profitable area of research. Bilingual speakers are, in other words, taken to have one language system in which they are identical to monolinguals (their native language) and one which shows influence from that system across all linguistic levels. This view is schematically represented in Figure 1.

On the other hand, there are cases where the presumed stability of the native language apparently can become compromised: speakers who have lived in a migration environment

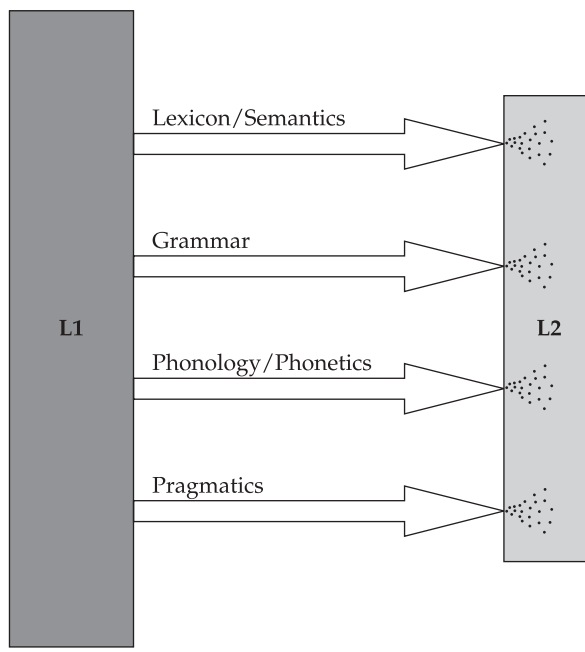

Figure 1 L1 influence on L2 in SLA (Figure 1 from Schmid & Köpke, 2007, p. 2). Used with kind permission by John Benjamins

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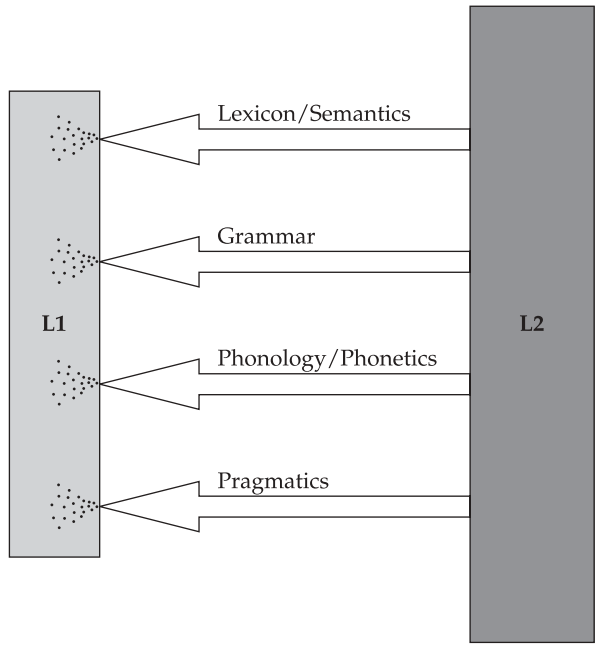

Figure 2 L2 influence on L1 in attrition (Figure 2 from Schmid & Köpke, 2007, p. 2). Used with kind permission by John Benjamins

for a long time can sometimes show signs of "forgetting" their L1. When they attempt to speak it, they may have difficulties in remembering certain words, they may make what appear to be lexical or grammatical "mistakes," or they may speak their native language with a foreign accent. This is usually ascribed to a scenario where the picture represented above has reversed: for these speakers, it is the second language (the language of the country to which they emigrated, and which they speak in daily life) which has become dominant, and which now influences the native language. Originally, this was the view which was assumed to hold true in first language attrition (see Figure 2).

The view of the first language system as something that is stable and invulnerable is extremely pervasive. One's "native" or "mother" tongue may be something that is so intimately linked with early development, identity, cultural roots, and so on that any indication that this fundament may be open to change or crosslinguistic influence, and that native speakers may turn into "foreigners," is often perceived as threatening or shocking. This is evident in the reactions of reproach or even outrage which language attriters are often confronted with. For example, Stolberg and Münch (2010) quote a native speaker of German who had lived in the USA for a long time, and relates how one of her correspondents would minutely go over each letter that she had written, pointing out any "errors" in language use. At some point, her admission that she did not always know how to say certain things in her L1 any more elicited his remonstration that "One does *not* forget one's mother tongue!"

Similar responses abound in popular culture. In the fifth volume of Alexander McCall Smith's *The No. 1 Ladies' Detective Agency* series (*The Full Cupboard of Life*), the protagonist, Mma Precious Ramotswe, reflects on the case of a fellow native of Botswana who had gone to live abroad as a young man and, upon his return many years later, had been unable to understand and interact in Setswana any longer. To the native Setswana, he appears to

have become a foreigner. This experience deeply shocks Mma Ramotswe, who feels that such a thing is "like forgetting your mother, and as sad" (2003, p. 163). The unforgettable title character of Peter Høeg's *Miss Smilla's Feeling for Snow* compares the erosion of her native Greenlandic to stainless steel snaplinks which had been exposed for a few months to the most hostile climate on the planet, the fog of the Arctic Sea, and had corroded to the point that they could be picked apart with a fingernail (1996, p. 105). And a minor character in Stephen King's *Dead Zone*, who escaped from Warsaw as a boy (and alone), calls the fact that he can no longer speak or understand his native Polish "a shameful thing" (1980, p. 121). These examples illustrate the extent to which the native language is commonly felt to be the incorruptible foundation on which identity is built.

Early investigations of first language attrition consequently assumed that this would be a process that would only occur under the most extreme of circumstances, among speakers who had lived in emigration for a very long time, hardly if ever used their L1, and possibly had particularly strong reasons to reject it and acculturate into their new surroundings (e.g., Andersen, 1982; Waas, 1996). Such speakers would then, almost by definition, be particularly successful second language learners.

However, psycholinguistic investigations of the bilingual mind have contributed toward a change in perception, and shown that within the continuum of bilingual proficiency, both of the representations shown above are idealizations which do not obtain in reality. In the mind-brain of any speaker of more than one language, a linguistic supersystem is created, where all languages are merged to some degree. The representation and integration of linguistic categories—semantic, phonetic, or grammatical—within this system may not entirely correspond to or overlap with the way they are represented in the mind of a monolingual native speaker. For example, Pavlenko (2011) mentions the well-known case of the boundaries and prototypes of color categories which appear to differ for monolingual and bilingual speakers of some languages; and Flege (1987) has shown that some phonemes can take on characteristics of the other language in both of a bilingual's languages.

These and other findings strongly suggest that "extreme" cases of language attrition, where speakers become perceptibly different from natives, are merely the more noticeable end of the full spectrum of what Cook (e.g., 2003) has termed "multicompetence." In any such system, even among beginning learners of a foreign language, crosslinguistic traffic can go both ways (see Figure 3).

The Extent of Attrition Effects

Largely anecdotal reports of substantial language attrition—such as the ones quoted above—notwithstanding, corpus-based quantitative investigations of the attritional process have usually found that the actual degree to which the use of a language has changed is surprisingly low—as long as the speaker did not migrate before the age of 12. There is considerable cumulative evidence which suggests that this age is, in fact, a turning point for the development of the first language: among younger speakers, it appears that knowledge of the native language can indeed be lost dramatically or even totally, while post-puberty migrants often perform within the native range on a variety of tasks (for an overview see Köpke & Schmid, 2004, and Schmid, 2009). It has therefore been proposed that the two processes—changes to the first language among children versus adolescents/adults—should be rigorously distinguished: in the former instance, it is more appropriate to speak of *incomplete acquisition*, while the term *attrition* should be reserved for those speakers whose native language acquisition process has been completed prior to migration.

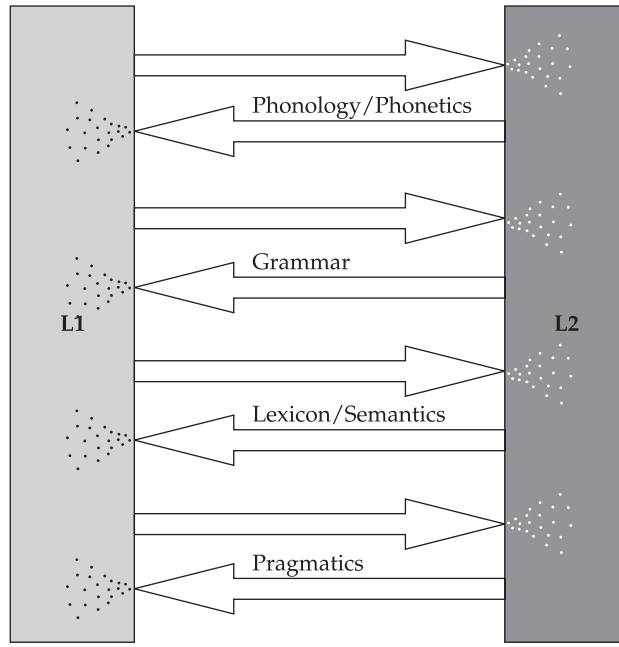

Figure 3 An integrated view of bilingualism (Figure 3 from Schmid & Köpke, 2007, p. 3). Used with kind permission by John Benjamins

Many investigations of this latter process (attrition of a language which has been completely acquired) seek to answer the question of whether it can eventually come to affect the structure or (to use a somewhat old-fashioned term) competence in a native language, or whether it is merely a matter of use or performance. However, while it was proposed that "it is erosion that reaches the level of competence that allows for interesting claims about and meaningful insights into the attrition process" (Seliger & Vago, 1991, p. 7), among mature speakers there are to date no documented instances of such radical processes of deterioration. It has been shown that attrition is more liable to affect features which are preferential or optional, such as the use of null versus overt pronouns, rather than deterministic grammatical relations (Gürel, 2004; Tsimpli, Sorace, Heycock, & Filiaci, 2004; Tsimpli, 2007).

Truly structural changes, such as an overall reduction of a complex case system where some of the cases would become radically underused or disappear completely have never been observed in an attritional setting. On the other hand, investigations such as the ones by Schmitt (2004, 2010) suggest that for younger migrants whose acquisitional process was not completed prior to the change in linguistic environment, such a wholesale simplification can, in fact, occur: her investigations of L1 speakers of Russian who were four years old (Schmitt, 2004) and 8–10 years old (Schmitt, 2010) at migration show a dramatic reduction in the target-like application of all oblique cases, while the nominative seems relatively unaffected by the erosion process.

Schmid (2009) argues that such findings imply that among mature speakers attrition cannot affect the underlying representation of linguistic knowledge, while for incomplete learners, such a reconstruction is possible. She demonstrates that even the most strongly attrited case in her overall corpus totaling some 140 attriters, an L1 speaker of German who left her native country at the age of 11 and made no use of German for five decades,

still compares favorably with a highly advanced L2 learner of German who speaks it daily on a range of grammatical features as well as with respect to perceived foreign accent.

Psycholinguistic Models of Language Attrition

It therefore seems that the indications of "attrition" that are perceived and remarked on by the attriters themselves and by other speakers of their L1 are usually more linked to problems of (predominantly lexical) access and momentary effects of crosslinguistic influence than to an actual restructuring of the underlying language knowledge. Such effects may be best conceived of and explained within psycholinguistic models, such as Paradis' activation threshold (AT) hypothesis (Paradis, 2004). This model holds that any memory trace, such as a word, an expression, or a morpheme, has a certain AT associated with it. The higher this threshold, the more effort it takes to recall the item from memory. The AT is determined by frequency and recency: items that have been very frequently called upon have a low threshold, but if the item is not activated for a long time, the threshold will gradually rise.

Based on this hypothesis, Paradis (2007, p. 121) predicts that it is the disuse of a language which will lead to gradual language loss. This prediction is probably the most intuitively and immediately obvious assumption with respect to language attrition. If two migrants who had left their home country at a similar age and lived in migration for a similar length of time show differences with respect to the degree of erosion and L2 influence that is perceptible in their L1, most people will likely assume that they have had different opportunities to use and "practice" their language skills.

Rather surprisingly, however, such a straightforward correlation between "amount of L1 use" and "degree of L1 attrition" appears to be extremely difficult to establish in actual attrition settings. A number of large-scale quantitative investigations have attempted to determine a link between L1 use in a variety of contexts (interactive exposure, passive exposure such as books and TV, inner speech) and attriters' performance on a number of different tasks and for different populations (Schmid, 2007; Schmid & Dusseldorp, 2010; van der Kooi, 2010; Yilmaz, 2010). These analyses, however, did not yield the expected results: Schmid (2007), for example, finds no impact of the frequency of use of L1 within the family or with friends on any of the linguistic variables of lexical diversity and fluency in free speech which she has measured. The only L1 use setting which has some impact is the use of the L1 for professional purposes. Similar results are found in a number of other ongoing investigations, for example a study of the bilingual development of Moroccan and Turkish speakers in the Netherlands (van der Kooi, 2010; Yilmaz, 2010). Again, the use of the L1 in informal settings plays no role for the task these studies have conducted (a picture naming task), and it is only the use of the L1 at work which is associated with quicker naming times and higher accuracy.

Schmid (2007) therefore speculates that for a mature native speaker who has lived in his or her native environment until puberty, the first language knowledge might have been rehearsed to the point where frequent reactivation is no longer necessary to prevent deterioration. She proposes that in such a case it may be that the problems which attriters can experience are due not so much to the fact that their L1 knowledge has become inaccessible due to a high AT, but to the increase in competition from the second language. In other words, it is not so much that attriters "forget" their L1, but that the competing L2 has become too strong to be entirely inhibited.

This explanation hinges on the fact that, in order to access a certain item of knowledge, it is not only necessary that there be enough stimulation to overcome the AT: At the same time, all other items of knowledge which may be in competition with the target have to be inhibited in order to ensure that they will not be activated by mistake. For a bilingual

who routinely speaks his or her second language and only infrequently uses the first, this may mean that, while the L1 has not become inaccessible or forgotten, the L2 keeps getting in the way, leading to (voluntary or involuntary) code switches, mistakes, or other signs of crosslinguistic influence.

This explanation can account for the fact that informal use of the L1 (with family and friends), although it is probably the most frequent type of exposure, does apparently not impact on attrition: in this type of situation, all interlocutors are typically bilingual, so that the abovementioned indications of crosslinguistic influence do not impede communication, and little effort needs to be made on inhibiting the L2. On the other hand, speakers who use their L1 for professional purposes (whether as a German language teacher in Canada, as a waiter in a Moroccan restaurant, or as service staff in a Turkish supermarket) often find themselves in situations where code switching may not be considered appropriate. Consequently, they may be more practiced at inhibiting the L2 and keeping it from "butting in" when they want to speak their first language. More routine experience with inhibiting L2 may then account for their better performance on L1 tasks.

The Controversy on the Nature of L2 Knowledge

The findings presented above on the restructuring of the L1 system in incomplete learners versus its preservation among attriters may help shed light on one of the most fundamental and controversial issues in the study of multilingual development: whether there are fundamental, underlying, and qualitative differences between languages learned early and later in life, or whether these differences are gradient and quantitative. This question is usually addressed in the context of the impact of age on language learning.

While younger learners tend to be more successful in some areas of language learning than older ones, the question of whether or not the level of proficiency L2 learners can attain is maturationally constrained as a function of the age at which they start acquiring their L2 is highly contested. Early hypotheses (Penfield & Roberts, 1959; Lenneberg, 1967) assume a strongly biological explanation for the lower levels of L2 proficiency typically witnessed in later learners. An evolutionary advantage is ascribed to restricting highly intensive and cognitively costly learning mechanisms triggered by linguistic input to a certain time window, since no more learning is required once the skill has been acquired and the cognitive resources can be more efficiently deployed for other purposes (e.g., Pinker, 1994) This assumption is corroborated by the finding that computer simulations of human evolution end up with "a critical period for language acquisition, centered in early childhood, as the inevitable outcome" (Pinker, 1994, p. 300).

Other views take a less deterministic stance and assume that the fact that older learners rarely if ever attain native-likeness is not due to the total and highly specific "dismantling" of a certain neurobiological prerequisite for language acquisition but to the fact that these learners have a mature and deeply entrenched L1 system that the L2 has to compete with. Furthermore, it is often proposed that overall cognitive development plays an important role: children acquire their first language entirely implicitly, that is, knowledge-building happens unconsciously based on input which is not cognitively and metalinguistically analyzed. Older learners, however, bring cognitive and analytical strategies to language learning, so that at least some of the acquisition process happens explicitly.

The controversy over the impact of age of acquisition in SLA thus centers on whether there is a *qualitative* or a *quantitative* difference between early and late L2 learners, or between L1 and L2 speakers. This leads to two different and competing views of the knowledge of late-learned second or foreign languages: one which takes residual optionality to be an indication of an underlying representational deficit conditioned by maturationally

constrained limitations to language acquisition, and one which assumes that L2 learners can establish native-like underlying knowledge but fail to apply it consistently, due to the cognitive demands engendered by the competition between the two languages.

These two competing models have important implications for our understanding of the human capacity for language and in particular the degree to which the brain is specialized for language and its acquisition. However, investigations have so far found it difficult to establish conclusively which of the two scenarios applies. The findings from such studies are hardly ever deterministically supportive of one or the other point of view, and therefore invariably lend themselves to interpretations from both points of view.

In order to resolve the issue, additional data for comparison are therefore needed which also differ from native speaker data, but for reasons which are known. As was demonstrated above, language attrition data fulfill this criterion and might therefore prove useful in resolving this question.

The Potential Contribution of Investigations of L1 Attrition

L1 attriters have acquired their first language as monolingual native speakers. However, among both attriters and L2 learners, overall proficiency has been observed to differ from that of monolinguals, and a higher optionality in the application of target rules has been found for the bilingual populations. While for L2 speakers the reasons for this variable performance (underlying representational deficit or problems in online integration of linguistic knowledge) are highly controversial, there are clear indications that no representational deficit obtains for L1 attriters. Should principled comparisons of L1 attriters, L2 learners, and unattrited native speakers reveal that attriters differ from monolinguals in the same way as L2 users do, that would therefore provide compelling evidence for a bilingualism effect and against theories which assume L2 acquisition to be governed by a critical period and L2 knowledge to be fundamentally different from L1 knowledge.

Extending the comparison to include incomplete learners may further render the question of whether there is a qualitative change in the capacity to establish native-like knowledge of a language around puberty empirically testable: If there are representational deficits or differences in processing for post-puberty bilinguals, L1 attriters should be most similar to a monolingual reference group, since their acquisition was unconstrained by the critical period. L2 speakers and incomplete learners should also pattern together, revealing their underlying difference in knowledge and processing. If, on the other hand, a more general bilingualism effect, conditioned by the limitation of available cognitive resources, entrenchment of linguistic knowledge, and proficiency level is responsible, L1 attriters, incomplete learners, and L2 speakers should all differ from largely monolingual native speakers, and this difference should be modulated by factors such as amount of exposure to the non-dominant language and proficiency in that language.

Including L1 attriters in the bilingual equation can therefore help us gain insight into how dominant and non dominant languages are processed in the bilingual mind: these speakers have native-like underlying representations in combination with competition from a highly active and strongly entrenched L2 system. Such comparisons therefore have the potential of providing insight into the nature of bilingual language acquisition and knowledge.

Conclusion

L1 attrition has for a long time been a kind of Cinderella of multilingualism studies. It was considered to be a relatively rare case of language development, one which would

only occur after a reversal of language dominance had taken place and the L1 had been used not at all or only minimally for a long period of time. Speakers who would experience L1 attrition were thought to have, to all intents and purposes, become native speakers of their second language and L2 speakers of their first.

The findings from attrition studies, which typically revealed even those speakers who had the longest migration period one might reasonably expect to occur within the lifespan of an adult human being (five to six decades) to have remarkably few signs of deterioration of their first language knowledge, were therefore often regarded with suspicion. However, cumulative evidence is reinforcing the impression that a completely acquired native language system can, in fact, be extremely stable and impervious to "atrophy" or deterioration in any structural sense. Whatever indications of L2 influence there are to be detected are probably the outcome of a temporary or momentary "winning out" of the L2 system in the process of the formulation of utterances.

This implies that the phenomenon which we refer to as "attrition" is not limited to the relatively rare case of the long-term migrant who has not had occasion to use his or her first language in decades: Crosslinguistic interference, not only from L1 to L2 but also from L2 to L1, is something which all bilinguals experience to some degree. In L1 attriters, the process is merely more noticeable than in L2 learners who continue to use their L1 dominantly.

Based on this realization, studies of L1 attrition have the potential to help us resolve one of the fundamental questions about the nature of language learning: whether languages learned later in life are underlyingly represented in the same manner as native languages or not. I therefore propose that investigations of multilingual development should shift their focus of investigation from comparing L1 versus L2 to comparing dominant versus non dominant languages. If language attriters can ever truly become like a "foreigner," in the way that Mma Ramotswe felt it about her compatriot, that indicates that those foreigners, like the attriters themselves, probably also do not have a representational deficit in their L2. If, on the other hand, qualitative differences persist between attriters and L2 learners, then those differences can probably be ascribed to a representational deficit on the part of the L2 speakers.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Bilingual and Monolingual Language Modes; Bilingualism and Cognition; Code Mixing; Dynamics of Multilingualism; Early Bilingualism; Inhibition and Control in Second Language Acquisition; Language Attrition; Multicompetence; Multilingualism and Attitudes; Multilingualism and Emotions; Native Speaker; Second Language Representation in the Brain

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Audiovisual Translation

DELIA CHIARO

Audiovisual translation (AVT) is the term used to refer to the transfer from one language to another of the verbal components contained in audiovisual works and products. Feature films, television programs, theatrical plays, musicals, opera, Web pages, and video games are just some examples of the vast array of audiovisual products available and that require translation. As the word suggests, audiovisuals are made to be both heard (*audio*) and seen (*visual*) simultaneously but they are primarily meant to be seen. We talk of "watching" a movie, a show, or even an opera; we "see" programs that are "shown" on television. However, while the verbal and visual codes in audiovisuals are linked to such an extent that the words naturally tend to rely heavily on the visuals, the translation of these products operates on a verbal level alone.

Precisely because audiovisual materials are meant to be seen and heard simultaneously, their translation is different from translating print. Written works are primarily meant to be read. Illustrations in books, newspapers, journals, and magazines such as photographs, diagrams, and graphs, are there to accompany and enhance the verbal content. On the other hand the verbal and visual contents of audiovisual products function inseparably to create a meaningful whole.

Audiovisuals are made up of numerous codes that interact to create a single effect. On one level, audiovisual products contain a series of verbal messages that will be perceived both acoustically and visually. In filmic products, as well as what the actors say, audiences may also hear the lyrics of songs while simultaneously being exposed to a range of written information such as street signs, billboards, letters, notes, and so forth. Also, at the beginning and end of a program, substantial written information about it, such as the names of the director, producers, the cast, and the production team will also be visible. On a different level, but together with such acoustic and visual verbal input, filmic products also contain nonverbal sound effects and background noises, body sounds (breathing, laughter, crying, etc.), and music. At the same time actors' facial expressions, gestures and movements, costumes, hairstyles, makeup, and so forth convey additional meaning. Furthermore, scenery, colors, special effects, and three-dimensionality are also part of the filmic whole. AVT needs to take all this diversified verbal and visual information into account bearing in mind that this inseparable link between verbal and visual codes may often constrain the translation process.

Multimedia Translation

Audiovisual products are typically created with the support of technological apparatus. Movie making traditionally involves the use of cameras and celluloid, the creation of Web pages requires a computer and specialized software, and so on. Similarly, many audiovisual products are also consumed by means of diverse technological media. Cinema screens, television sets, computers, and video-game consoles are examples of equipment normally adopted in order to make use of audiovisuals. Furthermore, filmic products can be accessed by means of terrestrial, satellite or cable networks, in DVD format or in streaming from a computer connected to the World Wide Web. Likewise, their translations

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are both created and accessed through one or more electronic devices, hence the overlap with the alternative and all-inclusive term, "multimedia translation." For example, an AVT modality such as subtitling involves the use of sophisticated software while dubbing and voice-over require specific hardware. In addition, users access these translations by means of screens (i.e., cinema, TV, and computer screens) hence another overlapping term "screen translation."

However, not all AVT involves screens. Theatrical productions such as musicals as well as opera are examples of audiovisual products that are traditionally performed live on stage. Typically, operas are performed in their original languages while audiences follow the written lyrics in translation in librettos. Speakers of the language in which the opera is performed also resort to librettos to help them understand what the characters are singing as the lyrics may be difficult to understand owing to the particular stress, pitch, and rhythm required by the conventions of the genre. Librettos thus exemplify intralingual translations which, unlike inter-lingual translation that regards language transfer between two different languages, concern the interpretation of verbal signs into a different system of signs in the same language (see Jakobson, 1959). Nowadays, however, opera translation is becoming highly technological with translations projected onto the proscenium in the form of surtitles or else provided in electronic librettos on the back of theatre seats.

Again, while not being strictly audiovisual, in the sense that the reader cannot actually listen to them, comic books have much in common with audiovisual products and the process of their translation involves similar constraints. Comic books consist of a series of framed images with dialogues contained in speech and thought bubbles linked to characters' mouths in such a way that evokes real dialogue. Furthermore, much of the conventional language in comic books has a highly aural flavor reflected in words, often placed outside speech bubbles, such as "boom!," "vroom!," "zoink!," and "zzzzzzzz." Graphic frames and dialogues come together to create a narrative that unfolds in real time rather like that of a film. So although comic book images are static, readers are able to imagine speech and noise while following the sequential framework. Thus they can be placed on the interface between print texts and screen products such as films and video games. Significantly, there is a strong tradition of comic characters that subsequently developed into filmic, animated, or both filmic and animated form (e.g., Batman, Spiderman, etc.) while the late 20th century saw the expansion of traditional Japanese comic books, *manga*, into a new form of animated cartoon known as *anime* which have since flourished into a global industry; for example, *Pokemon* and *Dragon Ball* (see Zanettin, 2008).

AVT Modalities

The main modalities for screen translation of fictional products are dubbing and subtitling. Traditionally, Western Europe has been divided into a subtitling block that included Scandinavian and Benelux countries, Greece and Portugal, while the so-called "FIGS" countries (France, Italy, Germany, and Spain) made up the dubbing block. However, nowadays the situation is no longer so clear-cut. The spread of DVD technology and the cost-effectiveness of subtitling has allowed this modality to enter many dubbing strongholds as an alternative. Furthermore, many cinemas in dubbing countries now also offer screenings with subtitles while digital television provides viewers with the choice of both modalities. In addition, political entities such as Wales, Catalonia, and the Basque country choose dubbing as a support for minority languages (O'Connell, 1996; Izard, 2000) while Scandinavian countries which traditionally only dubbed children's television programs, now also dub some programs for adults (Gottlieb, 2001a). English-speaking countries tend to prefer subtitling for the few foreign language films that enter these markets which tend

to be restricted to educated art-house cinema audiences (Chiaro, 2008, 2009a). Outside Europe, dubbing is strong in mainland China, Japan, Latin America, and Québec while subtitling is the preferred mode in Israel, Hong Kong, and Thailand.

Dubbing

The aim of dubbing is to make the translated dialogue appear as though it is being uttered by the actors in the target language by means of "the replacement of the original speech by a voice track which attempts to follow as closely as possible the timing, phrasing, and lip-movements of the original dialogue" (Luyken, Herbst, Langham-Brown, Reid, & Spinhof, 1991, p. 31).

In the early 20th century, the birth of talking film and the rise of Hollywood led producers to come to terms with the issue of marketing their products in different languages. Initially producers inserted short dialogues in the target language within the English dialogues, but when this proved to be unsatisfactory with audiences, they began producing multiple-language versions of the same film. Paramount Pictures, for example, set up a large studio in Joinville, France, dedicated to the production of these multiple-versions which, however, turned out to be economically unfeasible. The idea of substituting the original voice track with one in another language is generally attributable to the Austrian film producer Jakob Karol, who in 1930 realized that the technology to do this was already available (see Paolinelli & Di Fortunato, 2005, pp. 45–6). At first, dubbing into European languages was carried out in the USA; Hal Roach famously had Laurel and Hardy read off prompts in French, German, Italian, and Spanish, but by the early thirties each European country had begun to set up its own dubbing industries.

According to Danan (1991, p. 612) "dubbing is an assertion of the supremacy of the national language" and is often linked to régimes wishing to exalt their national languages. Indeed it is not by chance that Austria, Germany, Italy, and Spain should opt for dubbing over subtitling while France may well have chosen dubbing to perpetuate its well-established tradition of caring for the French language and protecting it from the onslaught of anglicisms.

Traditionally, the entire process of dubbing a film was overseen by a project manager aided by an assistant who was responsible for negotiating costs, timescales, and general organizational aspects of the process. Dubbing a film began with the literal, word for word, translation of the script. Next, a "dubbing-translator" adapted the translation so that the new target language utterances sounded natural and were in sync with the lip movements of the actors on screen. Dubbing-translators did not need to be proficient in the source language but they did need to be talented in scriptwriting in the target language so as to render the new dialogue as natural and credible as possible. In the meantime, the dubbing assistant would divide the film into "loops" or short tracks and begin organizing studio-recording shifts for the various actors or voice talents. Once recording began, actors watched the film and listened to the original soundtrack through headphones while reading the translated script. However, actors would be free to modify the translated script as they felt fit. The completed recording of the dub was finally mixed and balanced with the international track and musical score. This artisan approach is, however, being largely replaced by digital technology which does away with the need to prepare reels of celluloid into short tracks and for voice talents to perform in a recording studio, as hi-tech allows actors to record from their personal workstations while software will take care of editing different tracks together. Moreover, advances in technology are such that facial and lip movements of actors on film can now be modified to synchronize with the movements of the target language, while other software programs are able to match the voice quality of

the original actor with the recording of the translation giving the impression that it is the original actor speaking (Chiaro, 2009b).

Poland and Russia enjoy a nonsynchronized form of dubbing in which all the different actors, regardless of gender, are dubbed by a single male voice known as a *Lektor*, but may also consist of two voices, one male and one female, voicing-over the male and female characters respectively. This style of dubbing is similar to the modality of voice-over adopted in Europe for nonfiction screen products such as documentaries and news programs. Unlike synchronized dubbing, in voiced-over products the original soundtrack is always discernible and not totally covered by the translated soundtrack. It is also the norm for the initial and final utterances, together with other short pieces of the original speech, known as "sound bites," not to be voiced over. However, at the time of writing, Russia is slowly converting to a more synchronized form of dubbing.

Subtitling

Subtitles consist of "the rendering in a different language of verbal messages in filmic media in the shape of one or more lines of written text presented on the screen in sync with the original message" (Gottlieb, 2001b, p. 87).

Subtitles are an abbreviated written translation of what can be heard on screen and are known as "open" when they are incorporated onto the film itself and as "closed" when chosen by the viewer from a DVD or teletext menu. At film festivals subtitles are generally projected live onto the screen in real time.

Subtitles considerably reduce the actual dialogue simply because viewers need the time to read them without running the risk of missing any of the action on screen (Antonini, 2005, p. 213). Furthermore, ideally, viewers should be unaware of the fact that they are reading and be able to simultaneously watch the film, read the subtitles, and enjoy it. The subtitling process involves three basic steps: elimination, rendering, and condensation. Elimination consists in reducing elements that do not change the meaning of the source dialogue such as false starts, repetitions, and hesitations. Rendering refers to the elimination of taboo items, slang, and dialect and condensation involves the simplification of original syntax in order to render the subs more easily readable (Antonini, 2005, pp. 213–15). Traditionally a technician carries out the spotting or cueing process that involves marking the transcript of the dialogues according to where the subtitles should begin and end. Translators then gauge their work in line with these cues after which subtitles are checked for sync with changes of frames. However, technology now allows translators to work directly onto electronic files that enable them to create complete products from their personal workstations.

Conventionally, subtitles were restricted to 30 to 40 characters including spaces that were displayed at the center bottom of the picture, or else left-aligned (Gottlieb, 2001b). Nowadays, such restrictions are disappearing as subtitling programs working with pixels allow letters to be modified according to space. Furthermore, wider screens tend to have longer lines and DVDs allow viewers to rewind and re-read features they may have missed, while alignment changes according to the directionality of script in individual languages (Díaz Cintas & Remael, 2007). In addition, because of the possibility of placing the titles anywhere on the screen, the term caption(ing) is now becoming widespread.

Accessibility

Accessibility or "inclusion" refers to the provision of audiovisual products such as plays, films, and opera for all members of the public including those who are in some way

sensorally challenged. Thus accessibility endorses intralingual translations in the form of subtitles, sign language interpreting for the deaf and hard of hearing, and audio-descriptions for the blind and visually impaired. A sign language interpreter will translate verbal information (audio) into meaningful hand signals (visual) while subtitles for the hard of hearing, as well as conveying the verbal contents of audiovisuals, will also transmit other nonverbal acoustic information, such as music and sound effects, in writing. Subtitles for the hard of hearing for TV programs are available in Europe by means of each country's individual teletext service.

Audio-descriptions consist of an additional soundtrack especially recorded for the use of blind and visually impaired people to help them enjoy audiovisual products. During breaks in the dialogues, an off-screen voice provides an account of what is happening on screen. Audio-descriptions are especially common in museums and art galleries thus exemplifying a type of intersemiotic translation in which visual signs are transmuted into verbal signs.

SEE ALSO: Commercial Translation; Strategies of Translation

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Austin, John L.

MARÍA DEL MAR TORREBLANCA LÓPEZ

John Langshaw Austin (1911–1960) is considered one of the most influential representatives of postwar Oxford *ordinary language* philosophy. Among his main contributions to the philosophy of language is the analysis of performative utterances and its subsequent development into a general conception of "language as action," which gave rise to *speech act theory*.

J. L. Austin was born in Lancaster, England and educated at Oxford. He started out as a classical scholar, both as a schoolboy and as an early undergraduate, but it was as a philosopher that he was elected to a research fellowship at All Souls, Oxford in 1933 teaching philosophy until 1935 when he became a fellow and tutor at Magdalen, Oxford. His career was interrupted by World War II when he served in MI6 for six years and was decorated for his notable service. After the war, Austin became White's Professor of Moral Philosophy (1952–60), one of Oxford's only three professorships of philosophy. He also worked for Oxford University Press as a delegate in 1952 and as chairman of its finance committee from 1957. He was president of the Aristotelian Society from 1956 to 1957.

In 1941 Austin married Jean Coutts (b. 1918) with whom he had four children: two sons, Charles and Richard, and two daughters, Harriet and Lucy. Austin died in Oxford at the age of 48 of liver cancer.

Although greatly admired as a teacher, Austin published little of his philosophical work during his short lifetime. His reputation grew from his personality and the quality, newness, and originality of his work. He held his famous "Austin's Saturday Mornings" where students and colleagues, such as H. P. Grice, P. F. Strawson, J. O. Urmson, and G. J. Warnock, would discuss language usage and various books. He was a natural leader but not a highly productive or political academic. Austin's primary dedication was to teaching and as a result he published very little. In his lifetime only seven short papers appeared (1952, 1953, 1961a, 1961b, 1961c, 1966, 1971). He had only published three papers and a translation of Frege's *Grundlagen der Arithmetik* (1950/1980) when he was elected as White's Professor in 1952. At his death in 1960 he was still revising and editing for publication his William James' Lectures that he presented at Harvard University in 1955 and which were finally published as *How To Do Things With Words* (1962/1975). His two other books, *Sense and Sensibilia* (1962) and *Philosophical Papers* (1961/1979) also appeared after his death when some of his students gathered his papers and lectures.

In his philosophical work Austin probably owes his originality to his education in classics and linguistics. He used the study of ordinary language as a valuable tool for philosophy. He believed that in any aspect of discourse, ordinary language, unlike philosophical language, contained all the distinctions man needed to draw and that all of them were probably useful. To clarify these distinctions in any domain would contribute to the solution of many philosophical problems. For him, it is the philosopher's duty to understand and investigate that ordinary language by means of which people manage to communicate so well.

His major contribution to the philosophy of language and to language study is his theory of speech acts. After developing the theory, he refined the concepts through a series of lectures, clarifying as he went along. Thus, we find differences and contradictions between the preliminary and final definitions of many of the elements of the theory.

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In *How To Do Things With Words*, his most influential work, Austin reacts against what was at his time a widespread trend in philosophy and semantics: Logical positivism maintained that only meaningful statements could be tested empirically. Truth conditional semantics holds that any sentence states facts and consequently can be evaluated in terms of veracity or falsity.

Austin realized that particular kinds of utterances were not statements and were not subject to truth conditions. Then, he started by studying a type of utterance that he called *performative* utterances. Performatives did not describe or report anything, and consequently they were not true or false; and the uttering of the sentence is, or is part of, the doing of an action

The initial examples of performative sentences Austin gave were these:

- "I do (sc. take this woman to be my lawful wedded wife)"—as uttered in the course of the marriage ceremony.
- "I name this ship the 'Queen Elizabeth' "—as uttered when smashing a bottle against the stem.
- "I give and bequeath my watch to my brother"—as occurring in a will.
- "I bet you sixpence it will rain tomorrow." (Austin, 1962/1975, p. 5)

He took the term "performative" from the verb *to perform* and his first definitions, as we can see in these examples, occur in the first person singular present tense indicative form and often appear with the adverb *hereby*. So in saying "I hereby apologize" you are doing something, namely, apologizing.

Austin first distinguished performatives from constative utterances. He did not want to use the term descriptive because according to him not all of them described something. Constatives were truth evaluable and stated facts whereas performatives completed actions and instead of being true or false, could be happy or unhappy, according to a set of conditions that have to be satisfied for the action to be considered successful.

> A. 1. There must exist an accepted conventional procedure having a conventional effect, that procedure to include the uttering of certain words by certain persons in certain circumstances, and further,
>
> A.2 the particular persons and circumstances in the given case must be appropriate for the invocation of the particular procedure invoked.
>
> B.1 The procedure must be executed by all concerned participants both correctly and
>
> B.2 completely.
>
> C.1 Where, as often, the procedure is designed for use by persons having certain thoughts or feelings, or for the inauguration of certain consequential conduct on the part of any participant, then a person participating in and so invoking the procedure must in fact have those thoughts or feelings, and the participants must intend so to conduct themselves, and further,
>
> C.2 must actually so conduct themselves subsequently. (Austin, 1962, pp. 14–15)

Thus, if one says "I lend you my red Ferrari," and that person does not have a Ferrari, the act would not be happy or felicitous because the person or circumstances would not be appropriate for the performing of that act.

Early in the theory, Austin found it difficult to completely distinguish between performatives and constatives because, after all, to state something was an action itself and that would make all constatives a type of performative.

In Chapter 6, he succinctly introduced the distinction between primary (or explicit) performatives and implicit (or inexplicit) performatives. Primary performatives clearly focus on the act that one is performing by means of a performative verb such as *I apologize*. Implicit or inexplicit performatives function like *Eat!* to perform the act of ordering a child to eat.

For this reason, in chapters 10 and 11, he completely abandoned the original distinction between constatives and performatives replacing it by a more general theory of illocutionary forces. He distinguished between the different kinds of acts one performs in uttering a sentence:

1. the *locutionary act* of using a sentence with a given sense and reference (and within it the phonetic act of making certain noises, the phatic act of uttering certain grammatically well-structured words and the rhetic act of using the words uttered with a certain meaning);
2. the *illocutionary act* performed *in* performing the locutionary act, which has a certain force or intention saying something; and
3. the *perlocutionary act*, which is the achieving of certain effects by saying something.

In other words, what we say, what we mean when we say it, and what we accomplish by saying it, can be described by this threefold distinction: *locution*, the actual words uttered; *illocution*, the force or intention behind the words; and *perlocution*, the effect of the utterance on the hearer.

This view of language as action would be crucial for the development of pragmatics. By using the formula "By saying X I mean Y," Austin includes intention or force in his theoretical description.

He attempted to further classify utterances according to their illocutionary force into *verdictives*, characterized by the giving of a verdict, such as estimating, convicting; *exercitives*, that exercise powers or rights, such as appointing, ordering; *commissives*, that promise or undertake, such as promising, guaranteeing; *behabitives*, that have to do with social behaviors such as apologizing, congratulating; and *expositives*, that express how we are using words such as replying, conceding. Austin himself was not completely satisfied with this classification but it became the preliminary steps toward a more comprehensive theory of speech acts.

After his death, Austin's theory of speech acts was considerably extended and systematized mainly by his American student John Searle but also by François Récanati, Kent Bach, and Robert Harnish.

SEE ALSO: Speech Acts; Speech Acts Research

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Authenticity in the Language Teaching Curriculum

SANDRA MCKAY

Authenticity is clearly a catch term in current language teaching. In the UCLA's Language Materials Project Web site (2009) for less commonly taught languages, one of the major links is for authentic materials that include lesson plans on using such items as signs, postcards, greeting cards, product labels, recipes, menus, and maps for developing language. Indeed there are even entire books devoted to authenticity in language teaching (see Suggested Readings). The popularity and acceptance of authentic materials as a basis for language learning led Day (2003) to refer to the phenomenon as a "cult of authenticity."

In this entry, I begin by explaining the origins of the current emphasis on authenticity in language teaching. I then explore various definitions and views on authenticity and language teaching. In closing I question the current devotion to authenticity as it is presently defined and offer an alternative view of authenticity, one that characterizes the classroom as a community of learners in which students interact with texts and peers about topics/concerns that are important to them.

Communicative Language Teaching and Authentic Materials

The concern with authenticity began in the late 1970s with the development of communicative language teaching (CLT), which evolved largely out of second language educators' discontent with audiolingualism—its behaviorist view of language learning and emphasis on linguistic form rather than meaning. In contrast, CLT, influenced by the work of Hymes (1972), was designed to promote meaningful communication using texts and social situations from the "real" world. For many language educators a central feature of CLT is the use of authentic texts. Nunan (1991), for example, maintains that in CLT there should be the use of authentic texts and an attempt to "link classroom language learning with language activation outside the classroom" (p. 279).

Proponents of CLT encouraged language teachers to use authentic materials as a resource for two main purposes: first, to increase students' motivation by including "real" examples of language use; and second, to illustrate how language is used by a community of first language speakers to serve specific ends. It is important to note that CLT became popular due largely to a rise in the immigrant population in English-speaking countries. In such contexts, texts written for native speakers were readily available in the social environment and students had countless opportunities to observe language use outside of the classroom.

Notions of Authenticity: Content-Based

Definitions of authenticity abound (e.g., Wilkins, 1976; Harmer, 1983; Nunan, 1989) but central to all of them is the idea that authentic materials are written for native speakers with a particular communicative intent. Typically the definition of a "native speaker" is not problematized but taken to be an idealized speaker of the language. Harmer (1983), for example, in the following definition of authentic texts, seems to suggest that language

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students are not speakers of the target language: "Authentic texts (either written or spoken) are those which are designed for native speakers; they are real texts designed not for language students, but for the speakers of the language in question" (1983, p. 146). Even though CLT, with its emphasis on the use of authentic texts from the "real" world, was originally designed for English-speaking environments, soon many foreign language teachers were encouraged by their ministries of education to make use of CLT in their classrooms, for instance in Chile, China, Japan, Korea, and many other countries.

In 1992, for example, the Korean Ministry of Education published a new curriculum, which stated that CLT should replace the audiolingual and translation methods currently used in the schools. Students were encouraged "to learn by means of authentic materials, such as newspapers, magazines, English news on the radio and English TV programs" (Li, 1998, p. 682). In keeping with the wishes of their ministries, conscientious foreign language teachers gathered texts published for "native speakers" to use in their classrooms as a way of implementing CLT.

Few disputed the value of using authentic texts. The one major challenge to their use was Widdowson (1998). Widdowson's major objection to the use of "authentic materials" (i.e., any text designed for native speakers) was his belief that a text needs to be localized to serve a meaningful communicative intent. What makes a text real or authentic is that it is meaningful and appropriate to "a particular set of contextual conditions" (1998, p. 712). For example, a newspaper is real or authentic when it is read by individuals who read it to get news about local and world happenings. Once those conditions are taken away and used for other purposes (e.g., exemplifying a language point) it has lost its genuine purpose of providing information on current news. Widdowson goes on to argue that for texts to be authentic in the language classroom they need to develop from the communicative purposes and discourse of the classroom:

> The communicative approach, if it is really to be concerned with pragmatic meaning, has somehow to come to terms with the learners' reality and somehow create contextual conditions that are appropriate to them and that will enable them to authenticate it as discourse on their terms. The language has to be localized so that learners can engage with it as discourse. (1998, p. 712)

Let us take an example. A language teacher, believing in the value of using "authentic" materials, could bring to her classroom a menu taken from a restaurant. Typically menus are designed for customers for the communicative purpose of placing an order in a restaurant. By bringing the text into the classroom, the contextual conditions for placing an order in a restaurant have been lost and hence the text no longer serves an authentic purpose. What makes a text real or authentic in the context of a classroom is that it serves a communicative purpose for that particular group of learners at that specific moment in time.

By taking a text out of the context for which it was intended and placing it in an entirely different social context with another purpose, educators are using texts in an imaginary way. Authentic language learning texts are not those that serve a nonpedagogic purpose with another community of users but rather those texts that particular groups engage with and create discourse around for meaningful purposes.

Notions of Authenticity: Interaction-Based

Another, and more recent, view of authenticity has to do with the authenticity of the interaction itself and with a desire to prepare learners for "real" interactions outside of the classroom. Roberts and Cooke (2009), for example, illustrate how the pedagogical

presentations of institutional encounters such as doctor–patient interactions and job interviews are not an accurate representation of the discourse structure and turn-taking processes of such interactions in the real world. They suggest a research-based pedagogy that uses corpora and discourse analysis to characterize the features of common institutional encounters, arguing that such materials will help learners develop an authentic voice. While there is no doubt that pedagogical materials should be research-based, I question whether or not such materials will necessarily result in the development of an authentic voice.

As Roberts and Cooke (2009) rightly note, "authentic learning is always less about materials and more about how they are used—no cutting and pasting into the classroom can replicate the lived experience of actual interaction" (p. 622). If research-based materials result in formulaic generalizations about a specific type of discourse, such as job interviews, they do little to promote the development of an authentic voice; rather they result in their own kind of artificiality in which learners believe that by learning a particular formula, they will be successful in institutional encounters.

What is needed in classrooms is practice in interactional encounters in which the learners discuss topics that matter to them in their daily lives. This is the kind of authentic voice that a classroom, with carefully chosen topics and tasks, can engender. Clearly the individuals who are in the best position to develop such interactions are classroom teachers, who know their students' language level and interests, and are fully aware of the role of the target language in the students' lives, communities, and future needs. Knowing this, teachers can design tasks and conditions that will encourage students to meaningfully engage with a text or with other learners in ways that help them develop an authentic voice. When learners "have a need to communicate from within about matters of importance to them they will strive for the linguistic means to do so" (Roberts & Cooke, 2009, p. 637) and, I would argue, begin to develop an authentic voice.

Authenticity in the language classroom, then, has less to do with matching the classroom with the "real" world and more to do with making the classroom a community of learners where students are given the opportunity to interact with a text or with others in the classroom "about matters of importance to them." Classroom teachers are key to providing the tasks that will engender such interactions and to allowing students to express their own meaning in their own voice.

SEE ALSO: History of Language Teaching Methods; Materials Development; Needs Analysis

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Authoring Tools for Language Assessment

GREG KESSLER

Introduction

Authoring tools, which include an array of software designed to create material for computers and the Internet, are ubiquitous throughout the Web development world, including language education. Such tools, designed specifically for language assessment, allow language teachers, material developers, and language department administrators to create a variety of interactive computer-based assessments. These can include embedded media, automated scoring, feedback, and database archival storage of performance. Since the early 1990s a number of such authoring tools have been developed to allow teachers to prepare evaluation and assessment materials for their unique needs. Many of these have become commonplace in classrooms while they may be unfamiliar at institutional levels of assessment, possibly because the assessment needs are different in the classrooms and institutions responsible for test development (Fulcher & Davidson, 2007).

Authoring Tools Commonly Used for Assessment

Authoring tools used in professional test development require technical expertise and have a steep learning curve. These can be considered expert tools. Typically such tools allow developers to customize the tests they create, giving them a great deal of control over the final product. Authoring tools for classroom use are designed to be user-friendly, allowing individuals with limited technical skills to create interactive computer-delivered and Web-based materials. Due to the low level of technical expertise required to use such systems, language assessments can be designed by individuals who focus upon the specific assessment needs of individuals of groups of students.

As Chapelle and Douglas (2006) mention, authoring tools available for computer-assisted language testing (CALT) are too numerous to fully document and "the number and apparent variety of such systems can be overwhelming to developers" (p. 63). Many of these tools are organized into suites, which share many common attributes. These suites typically include common types of questions, the most common of which can be seen in Table 1.

Authoring Tools Within Learning Management Systems

Much can be learned about the range of authoring tools by examining a specific set of tools in detail. This is the approach Chapelle and Douglas (2006) took as they examined WebCT, a commercial learning management system (LMS, also referred to as course management systems). Such systems are commonly used for organizing and delivering instruction. In this examination Chapelle and Douglas discuss the need to align tools with assessment needs and available resources. They also recognize that while being flexible in some respects, these tools often present inherent limitations to design and functionality.

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Table 1 Common authoring tool question types

Gap-fill	Short text with gaps
Cloze	Lengthier text with gaps
Mix	Word, phrase, sentence, or paragraph ordering
Multiple choice	Question with 2 to 99 options
True/false	Question requiring positive or negative answer
Multiple select	Question with multiple correct answers
Short answer	Prompt requiring brief student writing
Essay	Prompt requiring lengthier student writing
Crossword	Definition- or terminology-based game
Matching	Pairing items

These can be overcome with varying levels of programming ability, but such abilities are not common among language teachers (Hegelheimer, 2006; Hubbard & Levy, 2006; Kessler, 2006). Typically these shortcomings result in minimal loss of information, if any. They may also result in a negative aesthetic impact. As Chapelle and Douglas note, WebCT can be adequate for some specific needs, but did not allow developers to create an adaptive test or oral assessment. Recent developments have addressed the issue of oral assessment. WebCT (now Blackboard) and Moodle can be used for oral assessment with the inclusion of Wimba and Gong modules respectively. These tools allow users to record audio and video using Webcams. Similar shortcomings are likely to be true of the majority of authoring tool suites. Adaptive tests can be constructed using programming tools such as Flash or Visual Basic, but such tools generally require technical skills beyond the needs of most language teachers or administrators. Moreover, the decision algorithm for item selection requires statistical expertise.

Test developers responsible for testing programs typically work with suites of authoring tools and individual tools that have been developed commercially, but many language teachers take advantage of freely distributed open-source authoring tools. Unlike commercially developed tools, open-source tools are collaboratively designed, maintained and distributed by a community of users, allowing anyone to contribute to the improvement of the product. They may be stand-alone packages or integrated within LMSs such as Moodle, Blackboard, Desire2learn and systems designed by publishers to accompany or replace language textbooks. Those within LMSs are likely the most commonly used authoring tools today. They include suites of generally similar authoring quiz- and question-type creation tools.

One open source widely used in second language learning and assessment, Moodle, offers a set of quiz tools that allow teachers to create quizzes from a pool of established questions or wholly new questions. The delivery of these questions can be randomized and various question forms can be placed in any order within a test. The quiz tools in Moodle include a number of different question types. These can be organized into categories and exported for archival purposes or later importing into another Moodle context. From this window the user can also preview the quiz and view results as well as other information about the quiz. There is no limit to the number of quizzes or questions within a quiz in this system. Similar self-contained suites are also used frequently in language teaching and assessment.

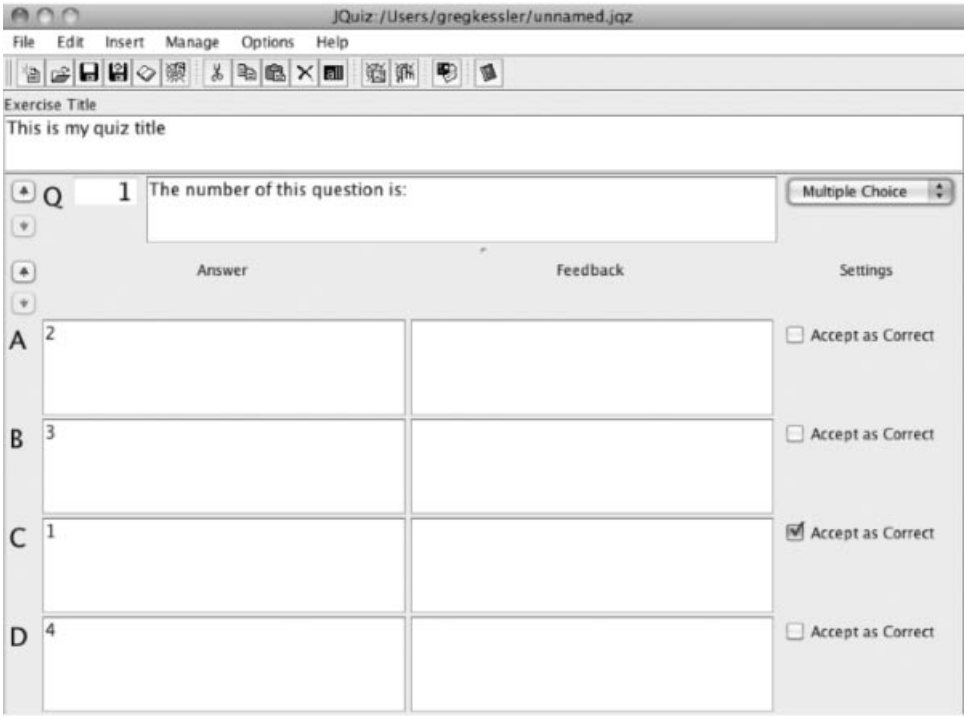

Figure 1 Hot Potatoes jQuiz authoring interface

One Suite of Authoring Tools in Detail

Another well-known open-source tool that has been in use for many years is Hot Potatoes (Half-Baked Software Inc., 2010), a freeware suite of five authoring tools: quiz, mix, crossword, match and cloze. The interface for the Hot Potatoes jQuiz function can be seen in Figure 1.

This figure illustrates the simplicity of Hot Potatoes. All that is necessary to create this test question is to enter a title, a question and the answer options. The correct answer must be identified by checking the "accept as correct" setting. The output of this can be seen in Figure 2.

This quiz type requires students to select a single correct answer. A similar variety allows for multiple correct answers. Hot Potatoes quizzes and exercises also allow embedding a variety of resources, including images, audio, video and emerging forms of technology. Figure 3 demonstrates a Hot Potatoes cloze quiz with a video prompt.

As with all Hot Potatoes quizzes, the author can choose to display the video controller or not, to include clues (author-generated) or hints (a single next letter with each mouse click) for each missing word, and to select from a number of preloaded language interfaces or to create one for an additional language. Other similar sets of tools include Quia (www.quia.com) and Smile (http://clear.msu.edu/teaching/online/mimea/smile/v2).

Recent Developments

These basic examples of authoring language assessments provide a foundation for understanding current developments and extensions that provide more powerful resources to all test developers.

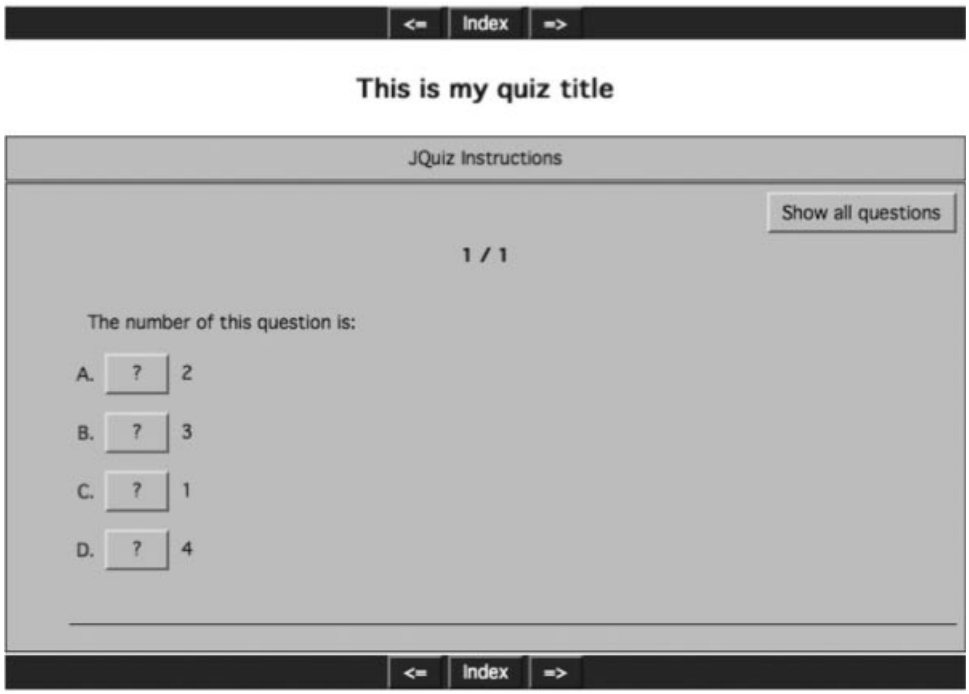

Figure 2 Hot Potatoes jQuiz question

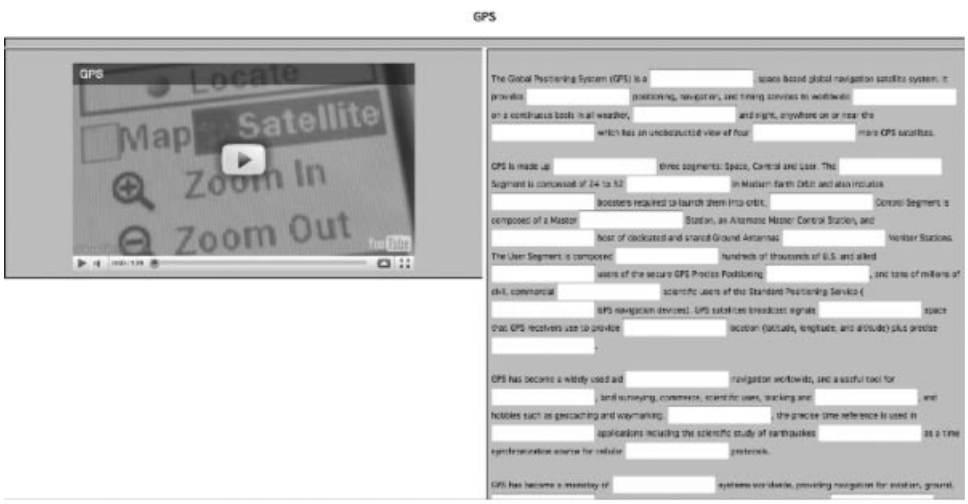

Figure 3 Hot Potatoes cloze with video prompt

Third-Party Hosted Tools

Third-party hosted authoring tools are rapidly increasing in popularity, functionality and use. They can be intended for educational use, but are more often designed for a variety of contexts. One obvious example is the large set of tools offered by Google. Many of the tools within Google's domain are finding their way into the language classroom, but two stand out for their language assessment potential: Forms and Voice. Google Forms is a survey

Figure 4 Google Voice transcribed voice mail

tool that is similar to other online survey tools, although others tend to charge a fee for longer surveys. A summary of results can be viewed immediately upon completion and results are also organized into a flexible spreadsheet format. Google Voice does an exceptional job of transcribing speech into text from calls made from a telephone or computer. Figure 4 is a screenshot from Google Voice.

Figure 4 illustrates transcribed voice mail using Google Voice. Transcribed text that is gray is identified as less accurate than text that is black. This distinction could assist in preliminary evaluation of oral proficiency. Such automated preliminary markup can assist evaluators as they attend to more detailed assessment. Individuals are identified and recordings can be played within the window.

Integration and Mash Ups

Mash ups, the combination of two technological resources that together create a new resource, allow for increased functionality with authoring tools. Although Hot Potatoes has been around for many years, it is flexible enough to be used in conjunction with emerging innovative technologies. Hot Potatoes exercises can be directly embedded within Web 2.0 environments such as blogs, Google sites and Moodle. The Hot Potatoes module for Moodle fully integrates Hot Potatoes data within Moodle courses, logs and grade books. This integration allows for immediate, detailed feedback to students, reflecting their performance, as well as longitudinal data that can be explored for trends over time. Results include each mouse click and entry a student makes in a Hot Potatoes exercise. Such record-keeping can provide vital information for varied assessment purposes. Each item and section can also be automatically scored and weighted within the Moodle grade book as deemed necessary and appropriate.

Other mash ups using authoring tools have allowed material and test creators to overcome inherent limitations and embrace emerging technologies. Just as Hot Potatoes allowed media to be embedded into tests, creators can now embed application program interfaces (APIs) that enable the integration of applications within assessment materials as well as dynamic links and embedded streaming media. This allows the inclusion of Web-based applications within an exercise, so that the video window in a Hot Potatoes quiz can be replaced by, for example, a live navigable version of Google Earth. Or, given the specific needs of oral assessment, audio and video recording can be embedded within assessment materials by using Web-based technologies which allow for streaming recording or recording of the learner's speech.

Practical Issues in Authoring Assessments

Using authoring tools for assessment presents a variety of challenges. Chapelle and Douglas (2006) identify and examine six potential threats to CALT: "Different test performance, new task types, limitations due to adaptive item selection, inaccurate automatic scoring, compromised security, and negative impact" (pp. 105–6). Like any test development efforts, the process of authoring assessments to be delivered by computer requires careful atten-

tion to the guidelines provided to language assessment experts. For example, Brown and Abeywickrama (2010) identify six questions that "should form the basis of your approach to designing, administering, and making maximum use of tests in your classroom" (p. 53). These are:

1. What is the purpose of the test?
2. What are the objectives of the test?
3. How will the test specifications reflect both the purpose and the objectives?
4. How will the test item types (tasks) be selected and the separate items arranged?
5. In administering the test, what details should I attend to in order to help students achieve optimal performance?
6. What kind of scoring, grading, feedback, or all three is expected?

The answers to these questions will influence the types of authoring tools chosen. For example, scoring, grading, and feedback need to be taken into account in choosing to use authoring tools including an LMS like Moodle. Moodle allows scoring and grading to be weighted, or based upon a student's first attempt, final attempt, or average of attempts, or both. For classroom assessment these are automatically recorded to the course grade book. Feedback can be provided to test takers on an item-by-item basis, upon completion of a section or at the end of a test. Feedback can also be made unavailable at any point during the test-taking process. These decisions can be made by test designers as well as instructors within the LMS.

When the test purpose indicates the need for an assessment of work products in portfolios, tools such as Mahara (http://mahara.org) and Linguafolios (http://www.ncssfl.org/links/index.php?linguafolio) may be needed. LMSs such as Moodle also offer portfolio modules. These include the ability for learners to define goals and track their progress toward these goals while constructing an array of examples of their language production. Teachers and administrators can monitor students' progress online, and provide feedback and suggestions to guide students toward their goals.

Planning to use computer-delivered tests, however, opens up another set of issues. CALT can be delivered on a single machine, through a local network, and across the Web. These delivery options result in different data collection, data security, and cheating concerns. Local, or client-side, delivery is extremely secure and requires no reliable Internet connection, but does require that data be gathered from individual machines. Client-side delivered tests require proctoring to address cheating concerns. While it is convenient to collect assessment data over the Internet, the level of security for personal information within locally authored tests can be problematic. Of course, password-protected Internet sites increase security and can even assist in test-taker identification. In fact, in some cases such testing may not be consistent with local, institutional, or governmental privacy policies intended to protect students.

Institutions may prefer to use a local area network (LAN) or intranet as a compromise between these two realities. LAN- or intranet-delivered tests allow for the automated gathering of data while offering a greater level of security than an Internet-delivered test. Proctored testing facilities may also make use of an intranet or rely on tools such as IP blocking to prevent cheating. Systems such as NetSupport School (www.netsupportschool.com) address many of these concerns within an environment similar to the LMS. Of course, these concerns primarily affect administrators of language programs and testing centers as well as test developers. Concerns over using Hot Potatoes-constructed tests for higher-stakes testing have been raised (Winke & MacGregor, 2001), but the ability to combine these with other software has addressed most of these concerns. In view of these test-delivery and data-collection options, an additional set of questions should be pondered as test developers consider CALT:

1. Where and how will the test be delivered?
2. What is the anticipated shelf-life of the test?
3. What are the learner characteristics (first language, age, technical skills, etc.)?
4. How will issues of identity be addressed?
5. What concerns relate to cheating?
6. Is this individual or collaborative assessment?
7. Would items or sections benefit from the inclusion of timers?
8. How many times can the test be taken?
9. Are there platform, browser, or other technical requirements?
10. If multiple attempts are made, how is the test scored?
11. How do media contribute to the test?
12. How do linguistic features of the language being tested inform tool selection?
13. How do compatibility standards such as the Sharable Content Object Reference Model (SCORM) influence tool selection?

Answering these fundamental questions will inform test designers in their use of authoring tools. The questions should also serve to help identify which set of authoring tools will be most appropriate for any given use. Anticipating these conditions should streamline the test-creation process since any tool is most effective when it is used in a manner consistent with expectations. This list is by no means exhaustive and there are concerns that existing authoring tools would not be sophisticated enough for the expectations of many testing experts. An exploration of these concerns can be found in Chapelle and Douglas (2006, pp. 74–7).

Conclusion

The continually evolving authoring options available to all test developers make this area one of the most provocative in language assessment. The ability to customize assessment materials by using a simplified authoring tool or suite of authoring tools allows for assessments that are customized in many ways. These options prompt test developers to consider carefully their assessment needs in order to make good decisions and to use the technology to the best advantage for delivering assessments, gathering assessment data, organizing items, and evaluating data.

SEE ALSO: Assessment in the Classroom; Fairness in Language Assessment; High-Stakes Language Testing; Language Teacher Training in Technology; Test Design and Retrofit; Test Specifications; Uses of Language Assessments; Validation of Language Assessments

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Automated Essay Evaluation and Scoring

JILL BURSTEIN

Automated essay scoring and evaluation technology is now used in instructional and test preparation products and in low- and high-stakes standardized assessments as well as in some public school, community college, and university settings in the USA. Uses include public school state writing assessments (West Virginia Department of Education, 2009). Each year, this technology is used by thousands of classroom students through instructional applications (Burstein, Chodorow, & Leacock, 2004), and by hundreds of thousands of test-takers through standardized assessments (Attali, 2009).

Scores Versus Feedback

From the user's perspective, a distinction needs to be made between *automated essay scoring* and *automated essay evaluation* systems: The former outputs only a score, while the latter offers diagnostic feedback. The development of automated essay scoring technology began in the 1960s with Project Essay Grade (PEG) (Page, 1966). To compute an essay score, PEG relied largely on the number of words in an essay. More recent and widely used automated scoring approaches, specifically e-rater® (Burstein et al., 1998) and Intelligent Essay Assessor™ (Foltz, Kintsch, & Landauer, 1998; Landauer, Laham, & Foltz, 2000), examine richer linguistic information in essays to compute an essay score. Automated essay evaluation technology was pioneered in the Writer's Workbench application, which contained automated editing and proofreading tools, offering automated feedback related primarily to grammar and mechanics (Macdonald, Frase, Gingrich, & Keenan, 1982).

Since Writer's Workbench, the number of editing and proofreading tools available to writers has grown substantially. Newer applications offer a wider array of feedback. Such technology is used in familiar, everyday tools, such as Microsoft Word's grammatical error detection capabilities (Gamon et al., 2008), and therefore automated evaluation has become a normal part of the writing process for many writers. Research and development of editing and proofreading tools has also resulted in automated essay evaluation tools designed for educational settings, as evidenced by Educational Testing Service's (ETS) Criterion® online essay evaluation application (Burstein et al., 2004; Chodorow, Tetreault, & Han, 2007) and similar commercial applications, widely used in classroom settings.

Scoring and evaluation systems that can identify, highlight, and rate the positive linguistic qualities and problems in an essay can provide practical support in low- and high-stakes instructional and assessment settings. In addition, as researchers continue to expand the array of linguistic analyses that can be incorporated into this technology, it will become increasingly helpful to teachers and students in classrooms, and to test administrators and test-takers in assessment settings. In the *classroom*, automated essay evaluation and scoring systems offer students immediate feedback (essay scores and qualitative feedback such as grammatical error detection) that support the revision process (Burstein, Marcu, & Knight, 2003; Burstein et al., 2004). Typically, such systems incorporate functionality for teachers, allowing them to easily assign writing tasks for students, track and review individual

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student writing portfolios and outcomes, and support improvement of student writing with immediate feedback (Foltz, Gilliam, & Kendall, 2000; Attali, 2004; Lipnevich & Smith, 2008). The overall effect is that additional writing practice can be added to the curriculum.

Automated essay scoring has been shown to be at least as reliable as human scoring in a number of studies (Burstein et al., 1998; Foltz, Laham, & Landauer, 1999; Landauer, Laham, & Foltz, 2003; Attali & Burstein, 2006; Attali, 2009). The most sophisticated systems, such as those discussed in this chapter, evaluate many of the features in essays that humans would use in the scoring of writing on standardized tests as well. Therefore, such systems are trusted for use in assessment settings. From a practical perspective, automated essay scoring can reduce score reporting times and the high costs that are often associated with human scoring.

Two Technical Approaches

It has taken some time for researchers to develop commercially available automated essay evaluation and scoring systems because of the complexity of the problem of automatically analyzing students' writing. Among the possible solutions, the most successful systems will, most likely, employ one of two primary approaches to model essay data and to compute essay ratings (scores). Two widely used systems, e-rater and Intelligent Essay Assessor (IEA), are discussed here to illustrate these two main approaches, as well as to discuss technology development in this area.

E-rater®: A Construct-Driven Approach to Automated Essay Scoring

E-rater is a commercial automated essay evaluation and scoring system that was developed at ETS. The computational methodology underlying the system is natural language processing (NLP). NLP uses computational techniques suitable to identify and extract linguistic features from stored electronic text or speech. E-rater has been in use since 1999 (Burstein et al., 1998), when it was first operationally deployed and used to provide one of two scores for essays on the writing section of the Graduate Management Admissions Test (GMAT)—a high-stakes assessment for graduate business school admissions. The second score for each essay was provided by an expert human rater. Prior to e-rater deployment, GMAT essays were scored by two independent human raters to score each essay. Since the first version of e-rater proved to be highly reliable, and the system was shown to agree with an expert rater as often as two expert raters agree with each other (Burstein et al., 1998), it made sense, at least from a cost perspective, to use e-rater to generate one of the two scores. So, essentially, the motivation for the first use of e-rater was a highly practical one.

At the same time, research and development around e-rater has *always* developed e-rater features that reflected the *writing construct.* Such features include aspects of essays that one is interested in measuring for a specific writing task. For instance, in expository writing tasks that are used on assessments, human raters are instructed to focus on features in writing that contribute to a high-quality essay. Depending on the construct, and the scoring rubric criteria, these might include the writer's organization and development of ideas, the variety of syntactic constructions, the use of appropriate vocabulary, and the technical correctness of the writing in terms of its grammar, usage, and mechanics. Human raters need to collectively evaluate these aspects of an essay in order to assign a score that reflects the overall, holistic quality of the essay. Using this approach, raters are supposed to take into account all aspects of writing as specified in the scoring guide, often using a 6-point scale, where a score of 6 indicates the highest-quality essay, and a score of 1 indicates an essay of the lowest quality.

E-rater has gone through a number of changes since its first release to accommodate larger coverage of the writing construct. The system combines NLP (automatic detection of linguistic features in text) with statistical methods to compute an essay score. First, e-rater automatically extracts a set of linguistic features, including errors in grammar, usage, and mechanics, style-related features, discourse structure elements, and vocabulary features. Scoring models are then built using regression methods. The feature weights from the models are used to compute a final essay score (Burstein et al., 2004; Attali & Burstein, 2006). Features used for model building and scoring are designed to capture linguistic characteristics (in essays) that represent various aspects in the *writing construct*. Writing construct features for different writing tasks are typically described in scoring rubric criteria designed for human reader scoring. Many of the linguistic features extracted for e-rater scoring are also used for diagnostic feedback that supports a more detailed evaluation of an essay.

The features e-rater identifies include (a) grammatical errors, (b) word usage errors (e.g., *their* versus *there*), (c) mechanics errors (e.g., spelling), (d) presence of essay-based discourse elements (e.g., a thesis statement), (e) development of essay-based discourse elements, (f) style weaknesses (e.g., *overly repetitious words*), (g) a content vector analysis feature comparing an essay to the set of training essays, (h) a content vector analysis feature comparing an essay to the set of training essays that received a score of 6, (i) average word length, and (j) a word frequency-based feature. The *content vector analysis* used in items (g) and (h) is a statistical modeling technique that, very simply stated, compares the frequency of word use in a document (i.e., an essay response) to the frequency of words as they are used in a set of related documents (i.e., a set of human-scored essays in response to a topic). From this information, a score is computed for an essay based solely on the actual words (content) used in the essay. If, in terms of word use, an essay looks more like essays at score point 5 (on a 6-point scale), then a score of 5 would be assigned by the content vector analysis program to the essay in question (see Burstein et al., 1998, for details). This method, like latent semantic analysis (discussed below), does not take into account the order in which words appear in a text.

E-rater modeling was motivated to assign a *holistic rating.* To build a scoring model that will assign scores similar to those assigned by humans, a random sample of human-scored essays (at least 250 essays) are input to e-rater, which detects a predetermined array of linguistic features relevant to scoring rubrics. Each of the linguistic features is converted to a numerical value. Using a regression modeling approach (Attali & Burstein, 2006), the values from this training sample are used to determine an appropriate weight for each feature in the scoring model. To score a new, unseen essay that may appear in a real test administration, for example, e-rater extracts the set of linguistic features and converts them to a vector (list) of values on a numerical scale; these values are multiplied by the weights associated with each feature, and a sum of the weighted feature values is then computed to assign a final score. This final, single score represents e-rater's estimate of the overall (holistic) quality of an essay.

Two kinds of e-rater models can be built. *Topic-specific models* are built using a set of human-scored essays on a given topic, and all 10 features (listed above) are typically used for these models. A topic-specific model can be built only when a sufficient number of human-scored essays exists for the topic. *Generic models* are built using a set of human-scored essay data written by students sampled from the relevant test-taker population, across a number of essay topics. All features except for the content-specific features created for (g) and (h) (listed above) are used to build these models. These models can be applied to essay responses for any topic written by students without new training when new topics are introduced (Attali & Burstein, 2006).

Currently, e-rater is used in low- and high-stakes settings. The system is integrated into ETS's Criterion, a web-based essay evaluation system widely used as an instructional writing application in K–12 and community college settings. Criterion offers immediate, individualized feedback about errors in grammar, usage, and mechanics, the presence and absence of discourse structure elements (e.g., thesis statement, main points, supporting ideas, and conclusion statements), and style advice. The system also provides advisories if an essay is irrelevant to the topic, has discourse structure problems, and contains disproportionately large numbers of grammatical errors (given essay length). All of the diagnostic feedback can be used by students to revise and resubmit an essay. Resubmissions receive additional feedback.

Intelligent Essay Assessor: Modeling Content in Text

Pearson's IEA is a system that uses the Knowledge Analysis Technologies™ (KAT) engine to provide scores and diagnostic feedback for writing tasks. Latent semantic analysis (LSA; see below) is the primary algorithm underlying the scoring engine, and is used to model vocabulary usage as a primary predictor of essay score. LSA models vocabulary in a text and evaluates its semantic similarity to other text samples written about the same topic (test question) and present in texts from content-based reference sources, such as textbooks (Landauer, Laham, Rehder, & Schreiner, 1997; Foltz et al., 1998; Foltz et al., 2000; Landauer et al., 2000). The IEA scoring method is similar to e-rater only in that it requires samples of human-scored essay data to build models for score prediction; otherwise, the two methods use very different techniques for essay modeling and score prediction.

IEA provides an overall holistic score prediction on a 6-point scale, and diagnostic feedback templates with descriptive feedback about the relative quality of the following component essay qualities: Audience and Purpose, Organization, Elaboration, and Use of Language. An example of the feedback for Audience and Purpose is: "While the prompt may be addressed, the main idea may not be clear." For essay evaluation, IEA also offers diagnostic feedback about errors in spelling and grammar. This aspect of the system, however, does not use LSA, since LSA is designed only to model vocabulary (i.e., essay content).

LSA is a corpus-based statistical modeling approach that uses large corpora to model word usage in a given subject domain. LSA generates information about statistical word usage in a document without regard to word ordering. This information for a single document is compared to other documents to determine the similarity between that source document and a large set of reference documents in terms of vocabulary use. Reference documents used for comparison purposes can be textbook material in a particular domain or a corpus of essays. LSA modeling requires a very large corpus of reference documents (several thousand) to reliably model a given domain. The underlying claim is that if LSA determines that two documents are similar with regard to word usage, then they are likely to be semantically similar (i.e., have the same meaning) (Landauer et al., 1997; Foltz et al., 1998; Foltz et al., 2000; Landauer et al., 2000).

Simply stated, LSA is similar in spirit to the content vector analysis method (described earlier). However, in contrast to content vector analysis, LSA is sensitive to the identification of different words that might be used in the same meaning context (e.g., *doctor* and *nurse* in documents about hospitals). Therefore, LSA is a more robust way to derive document comparisons around text meaning. In the context of essay scoring, LSA is trained on reference documents on a particular topic, such as textbook passages, human-scored essay responses to an essay topic, or both. This training creates a semantic representation of topical knowledge. In this representation, each document has been reduced to a vector (list) of numerical values representing the relative importance of words in the reference documents. Using this representation, once the essays have been reduced to the same

vector-based representation, textual segments (e.g., sentences, paragraphs, full essay) can be compared against textual segments in reference documents. Numerical measures of semantic relatedness reflecting meaning similarity between essays (and various text segments of essays), and reference documents can then be derived and used to offer a score or feedback about an essay. This method focuses on essay content and can be used to score essays that respond to opinion- or fact-based topics.

IEA is currently used in Pearson writing products, including WriteToLearn™ and Summary Street®. WriteToLearn is a writing evaluation application where students can submit essays and summaries and receive relevant scores and feedback. For essay evaluation, students receive a holistic score (on a 6-point scale), as well as scores and template-based feedback about the following aspects of the essay: Ideas, Organization, Conventions, Sentence Fluency, Word Choice, and Voice. Spelling and grammatical errors are highlighted for the student. For summary writing, the content of the submission is evaluated in comparison to the original reference document. Students receive a rating of Poor, Fair, or Excellent with regard to content coverage in their summary, as compared to a reference document that they were instructed to summarize. The system also provides feedback about the segments of the original text that were copied verbatim, and suggests that paraphrasing is preferable. In addition, the system advises the student as to which segments of the text appear unrelated to the reference text. Summary Street offers feedback about a student's summary submission that is similar to the feedback offered about summaries in the WriteToLearn application.

Conclusion

Automated essay scoring and evaluation technologies are now widespread in instructional and assessment settings. The continued development of these applications through advances in related computing fields, including NLP, opens doors for the ability to incorporate open-ended, constructed-response writing tasks on standardized tests as desired. Results from research and development have demonstrated the reliability of sophisticated systems when compared with human raters on standardized exams. Automated scoring and evaluation in classroom applications can allow teachers to offer students an increased number of writing experiences over the school year, as these applications can offer support to teachers in the evaluation of student' writing assignments. Research has also shown that such systems that provide feedback can help students improve their writing (Foltz et al., 2000; Attali, 2004; Lipnevich et al., 2008). Further research and development in this area can ultimately support an increasingly larger array of writing-based tasks across a number of student and test-taker populations.

SEE ALSO: Assessment of Writing; Computer Scoring of Spoken Responses; Rating Scales for Language Tests

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Automatic Speech Recognition

JOHN LEVIS AND RUSLAN SUVOROV

Definition

Automatic speech recognition (ASR) is an independent, machine-based process of decoding and transcribing oral speech. A typical ASR system receives acoustic input from a speaker through a microphone, analyzes it using some pattern, model, or algorithm, and produces an output, usually in the form of a text (Lai, Karat, & Yankelovich, 2008).

It is important to distinguish *speech recognition* from *speech understanding* (or *speech identification*), the latter being the process of determining the meaning of an utterance rather than its transcription. Speech recognition is also different from voice recognition: whereas *speech recognition* refers to the ability of a machine to recognize the words that are spoken (i.e., *what* is said), *voice recognition* involves the ability of a machine to recognize speaking style (i.e., *who* said something).

Historical Overview

Pioneering work on ASR dates to the early 1950s. The first ASR system, developed at Bell Telephone Laboratories by Davis, Biddulph, and Balashek (1952), could recognize isolated digits from 0 to 9 for a single speaker. In 1956, Olson and Belar created a phonetic typewriter that could recognize ten discrete syllables. It was also speaker-dependent and required extensive training.

These early ASR systems used template-based recognition based on pattern matching that compared the speaker's input with prestored acoustic templates or patterns. Pattern matching operates well at the word level for recognition of phonetically distinct items in small vocabularies, but is less effective for larger vocabulary recognition. Another limitation of pattern matching is its inability to match and align input speech signals with prestored acoustic models of different lengths. Therefore, the performance of these ASR systems was lackluster because they used acoustic approaches that only recognized basic units of speech clearly enunciated by a single speaker (Rabiner & Juang, 1993).

An early attempt to construct speaker-independent recognizers by Forgie and Forgie (1959) was also the first to use a computer. Later, researchers experimented with time-normalization techniques (such as dynamic time warping, or DTW) to minimize differences in speech rates of different talkers and to reliably detect speech starts and ends (e.g., Martin, Nelson, & Zadell, 1964; Vintsyuk, 1968). Reddy (1966) attempted to develop a system capable of recognizing continuous speech by dynamically tracking phonemes.

The 1970s were marked by several milestones: focus on the recognition of continuous speech, development of large vocabulary speech recognizers, and experiments to create truly speaker-independent systems. During this period, the first commercial ASR system called *VIP-100* appeared and won a US National Award. This success triggered the Advanced Research Projects Agency (ARPA) of the US Department of Defense to fund the Speech Understanding Research (SUR) project from 1971 to 1976 (Markowitz, 1996). The goal of SUR was to create a system capable of understanding the connected speech

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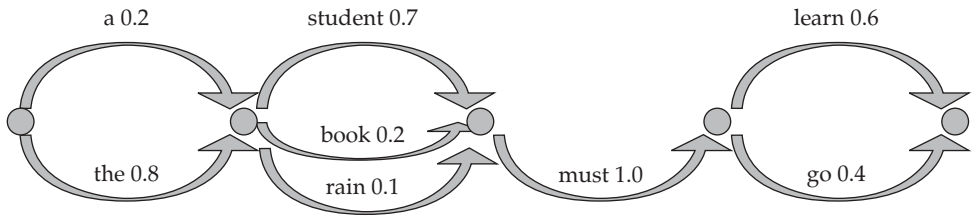

Figure 1 A simple four-state Markov model with transition probabilities

of several speakers from a 1,000-word vocabulary in a low-noise environment with an error rate of less than ten percent. Of six systems, the most viable were *Hearsay II*, *HWIM* (hear what I mean), and *Harpy*, the only system that completely achieved SUR's goal (Rodman, 1999). The systems had a profound impact on ASR research and development by demonstrating the benefits of data-driven statistical models over template-based approaches and helping move ASR research toward statistical modeling methods such as hidden Markov modeling (HMM).

Unlike pattern matching, HMM is based on complex statistical and probabilistic analyses (Peinado & Segura, 2006). In simple terms, hidden Markov models represent language units (e.g., phonemes or words) as a sequence of states with transition probabilities between each state. To move from one state to another, the model will use the highest transition probability (see Figure 1).

The main strength of HMM is that it can describe the probability of states and represent their order and variability through matching techniques such as the Baum-Welch or Viterbi algorithms. In other words, HMM can adequately analyze both the temporal and spectral variations of speech signals, and can recognize and efficiently decode continuous speech input. However, HMMs require extensive training, a large amount of memory, and huge computational power for model-parameter storage and likelihood evaluation (Burileanu, 2008).

Although HMM became the primary focus of ASR research in the 1980s, this period was also characterized by the reintroduction of artificial neural network (ANN) models, abandoned since the 1950s due to numerous practical problems. Neural networks are modeled on the human neural system. A network consists of interconnected processing elements (units) combined in layers with different weights that are determined on the basis of the training data (see Figure 2). A typical ANN takes an acoustic input, processes

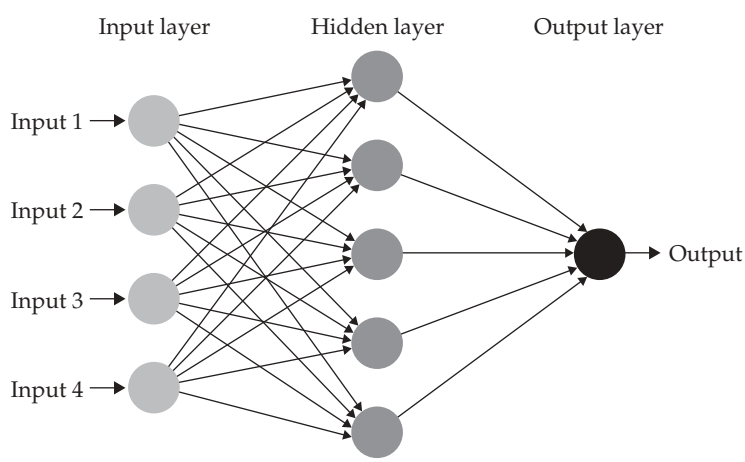

Figure 2 A simple artificial neural network

it through the units, and produces an output (i.e., a recognized text). To correctly classify and recognize the input, a network uses the values of the weights.

The main advantage of ANNs lies in the classification of static patterns (including noisy acoustic data), which is particularly useful for recognizing isolated speech units. However, pure ANN-based systems are not effective for continuous speech recognition, so ANNs are often integrated with HMM in a hybrid approach (Torkkola, 1994).

The use of HMM and ANN in the 1980s led to considerable efforts toward constructing systems for large-vocabulary continuous speech recognition. During this time ASR was introduced in public telephone networks and portable speech recognizers were offered to the public. Commercialization continued in the 1990s, when ASR was integrated into products from PC-based dictation systems to air-traffic-control training systems.

During the 1990s, ASR research focused on extending speech recognition to large vocabularies for dictation, spontaneous speech recognition, and speech processing in noisy environments. This period was also marked by systematic evaluations of ASR technologies based on word or sentence error rates and constructing applications that would be able to mimic human-to-human speech communication by having a dialogue with a human speaker (e.g., Pegasus and How May I Help You?). Additionally, work on visual speech recognition (i.e., recognition of speech using visual information such as lip position and movements) began and continued after 2000 (Liew & Wang, 2009).

The 2000s witnessed further progress in ASR, including the development of new algorithms and modeling techniques, advances in noisy speech recognition, and the integration of speech recognition into mobile technologies. A more recent trend is the development of emotion recognition systems that identify emotions from speech using facial expressions, voice tone, and gestures (Schuller, Batliner, Steidl, & Seppi, 2009).

Characteristics of ASR Systems

Speech recognition systems can be characterized by three main dimensions: speaker dependence, speech continuity, and vocabulary size. According to the speech data in the training database, ASR systems can be *speaker-dependent* (when the system has to be trained for each individual speaker), *speaker-independent* (when the training database contains numerous speech examples from different speakers so the system can accurately recognize any new speaker), and *adaptive* (when the system starts out as speaker-independent and then gradually adapts to a particular user through training). From the dimension of speech continuity, there are (a) *isolated (or discrete) word recognition systems*, which identify words uttered in isolation; (b) *connected word recognition systems,* which can recognize isolated words pronounced without pauses between them; (c) *continuous speech recognition systems*, which are capable of recognizing whole sentences without pauses between words; and (d) *word spotting systems* that extract individual words and phrases from a continuous stream of speech. Finally, ASR systems can be characterized based on the vocabulary size (i.e., small or large vocabulary) to which they are trained.

The performance of speech recognition systems depends on each of the three dimensions and is prone to three types of errors: errors in discrete speech recognition, errors in continuous speech recognition, and errors in word spotting (Rodman, 1999). Errors in discrete speech recognition include deletion errors (when a system ignores an utterance due to the speaker's failure to pronounce it loudly enough), insertion errors (when a system perceives noise as a speech unit), substitution errors (when a recognizer identifies an utterance incorrectly, e.g., *We are thinking* instead of *We are sinking*), and rejection errors (when the speaker's word is rejected by a system, for instance, because it has not been included in the vocabulary). Errors in continuous speech recognition can also involve the same types

of errors. In addition, this group contains splits, when one speech unit is mistakenly recognized as two or more units (e.g., *euthanasia* for *youth in Asia*), and fusions, when two or more speech units are perceived by a system as one unit (e.g., *deep end* as *depend*). Finally, errors in word spotting include false rejects, when a word in the input is missed, and false alarms, when a word is misidentified.

According to another classification, errors in ASR systems can be direct, intent, and indirect (Halverson, Horn, Karat, & Karat, 1999). A direct error appears when a human misspeaks or stutters. An intent error occurs when the speaker decides to restate what has just been said. Finally, an indirect error is made when an ASR system misrecognizes the speaker's input.

Challenges and Applications of ASR

Automatic speech recognition is multidisciplinary. State-of-the-art ASR systems require knowledge from disciplines such as linguistics, computer science, signal processing, acoustics, communication theory, statistics, physiology, and psychology. Developing an effective ASR system poses a number of challenges. They include speech variability (e.g., intra- and interspeaker variability such as different voices, accents, styles, contexts, and speech rates), recognition units (e.g., words and phrases, syllables, phonemes, diphones, and triphones), language complexity (e.g., vocabulary size and difficulty), ambiguity (e.g., homophones, word boundaries, syntactic and semantic ambiguity), and environmental conditions (e.g., background noise or several people speaking simultaneously).

Despite these challenges, there are numerous commercial ASR products, including Dragon NaturallySpeaking, Embedded ViaVoice, Loquendo, LumenVox, VoCon, and Nuance Recognizer. Some of these have applications in computer-system interfaces (e.g., voice control of computers, data entry, dictation), education (e.g., toys, games, language translators, language learning software), healthcare (e.g., systems for creating various medical reports, aids for blind and visually impaired patients), telecommunications (e.g., phone-based interactive voice response systems for banking services, information services), manufacturing (e.g., quality control monitoring on an assembly line), military (e.g., voice control of fighter aircraft), and consumer products and services (e.g., car navigation systems, household appliances, and mobile devices).

ASR in Applied Linguistics

ASR has tremendous potential in applied linguistics. In one application area, that of language teaching, Eskenazi (1999) compares the strengths of ASR to effective immersion language learning in developing spoken-language skills. ASR-based systems can provide a way for learners of a foreign language to hear large amounts of the foreign language spoken by many different speakers, produce speech in large amounts, and get relevant feedback. In addition, Eskenazi (1999) suggests that using ASR computer-assisted language learning (CALL) materials allows learners to feel at greater ease and get more consistent assessment of their skills. ASR can also be used for virtual dialogues with native speakers (Harless, Zier, & Duncan, 1999) and for pronunciation training (Dalby & Kewley-Port, 1999). Most importantly, learners enjoy ASR applications. Study after study indicates that appropriately designed software that includes ASR is a huge plus to language learners in terms of practice, motivation, and the feeling that they are actually communicating in the language rather than simply repeating predigested words and sentences.

The holy grail of a computer that matches human speech recognition remains out of reach at present. A number of limitations are consistently obvious in attempts to apply

ASR systems to foreign-language-learning contexts. The major limitations occur because most ASR systems have been designed to work with a limited range of native speech patterns. Consequently, most ASR systems do not do well in recognizing non-native speech, both at the phone level and for prosody (Eskenazi, 1999). In one study, Derwing, Munro and Carbonaro (2000) tested Dragon NaturallySpeaking's ability to identify errors in speech of very advanced L2 speakers of English. While human listeners were able to successfully transcribe between 95% and 99.7% of the words, the recognition rates by the program were a respectable 90% for native English speakers, but only 71–2% for the non-native speakers. In addition, ASR systems have been built for recognition rather than assessment and feedback, but language learners require feedback on their speech to make progress.

Automatic Rating of Pronunciation

Many studies have examined whether ASR systems can identify pronunciation errors in non-native speech and give feedback that can help learners and teachers know what areas of foreign-language pronunciation are most important for intelligibility. Dalby and Kewley-Port (1999) demonstrate that such diagnosis and assessment are possible (to some extent) for minimal pairs, and that automatic ratings of pronunciation accuracy can correlate with human ratings. However, the kind of feedback given to learners is not usually very helpful. For those systems that attempt to do so, there are two options: giving a global pronunciation rating or identifying specific errors. To reach either of these goals, ASR systems need to identify word boundaries, accurately align speech to intended targets and compare the segments produced with those that should have been produced. A variety of systems have been designed to provide global evaluations of pronunciation using automatic measures including speech rate, duration, and spectral analyses (e.g., Neumeyer, Franco, Digalakis, & Weintraub, 2000; Witt & Young, 2000). All of the studies have found that automatic measures are never as good as human ratings, but a combination of automatic measures is always better than a single rating.

ASR systems also have trouble precisely identifying specific errors in articulation, sometimes identifying correct speech as containing errors, but not identifying errors that actually occur. Neri, Cucchiarini, Strik, and Boves (2002) found that as few as 25% of pronunciation errors were detected by their ASR system, while some correct productions were identified as errors. Truong, Neri, de Wet, Cucchiarini, and Strik (2005) studied whether an ASR system could identify mispronunciations of three sounds typically mispronounced by learners of Dutch. Errors were successfully detected for one of the three sounds, but the ASR system was less successful for the other sounds. Overall, ASR systems still cannot behave like trained human listeners, and the systems remain far more successful for phone-level recognition and assessment than for prosody.

Other ASR Applications in Applied Linguistics

There are other areas in which ASR has been used by applied linguists: reading instruction, feedback for spoken liveliness, and the use of ASR in dialogue systems used with language-learning software.

One use of ASR that seems to have been particularly successful has been in teaching children to read. Mostow and Aist (1999) found that ASR used in conjunction with an understanding of teacher–student classroom behavior was successful in teaching oral reading skills and word recognition. In a more recent study, Poulsen, Hastings, and Allbritton (2007) found that reading interventions for young learners of English were far more effective when an ASR system was included.

An unusual use of ASR in providing feedback is evaluation of spoken liveliness. ASR is particularly ill-suited to providing feedback on prosody, despite moderate success reported by Eskenazi (1999). However, Hincks and Edlund's (2009) ASR recognizer used automatic measures of pitch-range variation to provide feedback to learners of English giving oral presentations in English. Using overlapping 10-second measures of pitch-range variation, learners were given feedback on how much "liveliness" their voices projected. By increasing pitch-range variations, learners were able to control the movement of the feedback display, and thus increase the amount of engagement in their speech.

A third use of ASR technology is in spoken CALL dialogue systems. If a software program for practicing spoken language provides the first line of a dialogue, learners give one of two responses. If these responses are dissimilar, the ASR system can recognize which sentence has been spoken (even with pronunciation errors or missing words). The computer can then respond, allowing the learner to respond again from a menu of possible responses (see Bernstein, Najmi, & Ehsani, 1999; Harless, Zier, & Duncan, 1999). O'Brien (2006) reviews a number of such programs.

Future Directions

Automatic speech recognition holds great promise for applied linguistics, although this promise has not yet been fully realized. ASR research and usability testing is happening in areas likely to impact applied linguistics (e.g., Anderson, Davidson, Morton, & Jack, 2008). For example, the annual INTERSPEECH conference (held through the International Speech Communication Association, or ISCA) and the International Conference on Acoustics, Speech and Signal Processing (ICASSP) bring together those working in areas that will eventually influence linguistic applications.

The connections between ASR and text-to-speech software have been insufficiently explored, but both hold promise for non-native speech applications. Also, the ubiquity of mobile devices that use ASR-based applications will allow L2 learners to practice their L2 speaking skills and receive feedback on their pronunciation. Further progress in ASR will result in interactive language-learning systems capable of providing authentic interaction opportunities with real or virtual interlocutors. These systems will also eventually be able to produce specific, corrective feedback to learners on their pronunciation errors. Additionally, the development of noise-resistant ASR technologies will allow language learners to use ASR-based products in various noise-prone environments such as classrooms, transportation, and other public places. Finally, the performance of ASR systems will improve as emotion recognition and visual speech recognition (based, for instance, on a Webcam's capturing of learners' lip movements and facial expressions) become more effective and widespread.

SEE ALSO: Computer-Assisted Pronunciation Teaching; Emerging Technologies for Language Learning

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Automatization, Skill Acquisition, and Practice in Second Language Acquisition

ROBERT DEKEYSER AND RAQUEL CRIADO

Skill Acquisition (Declarative, Procedural, Automatized Knowledge)

In the last few decades, the study of second language acquisition has been dominated by perspectives from linguistics, in particular syntactic theory, psycholinguistics, and sociolinguistics. Cognitive-psychological perspectives are increasingly common in the study of the mental lexicon and online processing. Given, however, that second/foreign language proficiency implies a set of skills that enable speakers to comprehend and produce messages quickly and efficiently, cognitive psychology in general and skill acquisition theory in particular are also unquestionably relevant to second language acquisition, assuming that one is interested in what students can do with the language at various stages of learning, and not just what the underlying abstract competence is.

The roots of skill acquisition theory are to be found in different schools of psychology, ranging from behaviorism to cognitivism and connectionism. The basic claim of skill acquisition theory is, as stated by DeKeyser (2007a, p. 97), that there exists a series of sequenced stages, from initial representation of knowledge to highly skilled behavior, and a common set of "basic principles" underlying the acquisition of skills. Such "basic principles" must necessarily take into account two aspects: (a) the three types of knowledge involved in the learning of a skill, i.e., declarative, procedural, and automatized; and (b) the actual stages required for attaining full command of a skill—initial acquisition, gradual development, and final consolidation.

Declarative knowledge is "knowing that," that is, knowledge or information about things and facts, which in the case of language is the knowledge of morphosyntactic and phonological rules and word meanings. In declarative processing, the relevant information to perform a linguistic operation is recruited from long-term memory and transferred into working memory, which holds the rule or word meaning while the operation is being executed. Consequently, the latter process "can place a heavy burden on working memory capacity" (Anderson, 1982, p. 381).

Procedural knowledge is "knowing how." It is related to knowledge about how to perform various processes or behaviors, e.g., "our ability to understand language or to apply our knowledge of rules to solve a problem" (O'Malley, Chamot, & Walker, 1987, p. 294). Procedural knowledge is represented in our memory as a set of "productions" (Anderson, 1982), that is a set of if-X-then-do-Y rules, and is associated with implicit, unconscious knowledge. For example, in the formation of the past of the verb "talk," a specific "program" (following a computer simile) leads the student to the past of "talk" via a rule that requires adding the ending -ed to the stem of the verb.

Automatized knowledge is the result of restructuring and fine-tuning of procedural knowledge so that the relevant (linguistic) behavior is displayed correctly and rapidly. This

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restructuring and fine-tuning encompasses both qualitative changes such as putting various often co-occurring production rules together into one chunk, which is then retrieved from long-term memory as a whole, and mere quantitative changes such as speeding up retrieval and adjusting the probability that a rule is activated to minimize errors.

The role of declarative and procedural knowledge in skill acquisition is accounted for in the successive stages distinguished by researchers to explain skill development. Such stages have received different labels: cognitive, associative, and autonomous (Fitts & Posner, 1967); declarative, procedural, and automatic (Anderson, 1982, 1993; Anderson, Bothell, Byrne, Douglass, Lebiere, & Qin, 2004) or, as applied to language teaching, presentation, practice, and production—the three Ps or the Presentation–Practice–Production pattern of activity sequencing (Byrne, 1986; Criado, 2010). This varying terminology does not affect the actual conceptualization of the three stages. First, learners develop a declarative encoding—factual information relevant to the skill—by themselves or, more often, by means of instruction or observation of an expert (e.g., a parent teaching a child how to ride a bicycle). Second comes the phase when declarative knowledge leads to procedural knowledge. Performance in this middle stage is still slower and more imperfect than in the final autonomous/automatic stage, whose outcome, automatized knowledge, does not require any conscious processing. As highlighted by DeKeyser (2007a, pp. 98–9), "A large amount of practice is needed to decrease the time required to execute the task (reaction time), the percentage of errors (error rate), and the amount of attention required (and hence interference with/from other tasks). This practice leads to gradual automatization of knowledge."

Correct proceduralization is vital for successful skill acquisition. For that purpose, two elements are essential. The first of these is a previous declarative base acting as the trigger for procedural knowledge acquisition. Although Anderson and Fincham (1994) acknowledge that not all learning is always supported by an initial declarative base, they also claim that "the research indicates that this is a major avenue for the acquisition of procedural knowledge" (p. 1323). The second essential element is that the specific task or target behavior should include a suitable arrangement of conditions for declarative knowledge to be drawn upon (see The Role of Practice in L2 Skill Acquisition, below).

Automatization

While different characteristics of automaticity have been stressed by different researchers (for overviews see DeKeyser, 2001; Segalowitz, 2003), there is general agreement that the more automatized knowledge is, the less attention it requires and the less error-prone it is. Automaticity is now usually seen as the somewhat idealized end point of the process of automatization. Even highly automatized activities still require some degree of attention and can still interfere with (or be interfered with by) other activities, as driving accidents or arithmetic errors show.

Most researchers nowadays also see qualitative change as a characteristic of automatization, as opposed to mere speeding up. Segalowitz and Segalowitz (1993), in particular, argued that automatization implies elimination or at least reduction of some components of a cognitive process. The components being eliminated tend to be highly variable, so that automatization is characterized not only by a reduction in reaction time (RT), but also by reduced variability. As a result, the coefficient of variation (CV, the standard deviation divided by the mean) becomes smaller during automatization, while many studies have documented a strong correlation between the mean and the standard deviation for RT where cognitive processes merely speed up over time, resulting in a stable coefficient of variation (see especially Wagenmakers & Brown, 2007). Few researchers have adopted change in CV as a criterion for automatization, however, and Hulstijn, van Gelderen, and

Schoonen (2009) argue that, while the proposal "that genuine automatization is characterized by a reduction or elimination of initially highly variable component processes remains a viable hypothesis," the coefficient of variation in itself is an imperfect operationalization, and more sophisticated experimental tasks are needed that are "capable of tapping component processes more directly" (p. 579). A step toward achieving this goal may be to isolate the different strategies that different individuals may use for a given task, because the power law of practice applies to these strategies rather than to tasks as a whole (Delaney, Reder, Staszewski, & Ritter, 1998; Jones, Ritter, & Wood, 2000; Rickard, 1997, 2004).

That qualitative changes of some kind take place is increasingly clear from neuroimaging research. For a variety of tasks, even over a relatively short time span, one sees reduction of activity in some brain areas, in particular the frontal and parietal cortex, showing the diminishing role of attention and domain-general processes. Once a very narrowly defined task is highly practiced, only very small areas show any substantial activation (see e.g., Hill & Schneider, 2006; Schneider & Chein, 2003). After very extensive long-term practice (e.g., spatial navigation in taxi drivers), however, even structural changes in the nervous system can be observed (Maguire et al., 2000).

For the sake of completeness it should be pointed out that a number of researchers hold radically different views of automatization and automaticity from those that see these processes as gradual quantitative and qualitative changes in the use of rules. For Logan (1988, 2002), for instance, automaticity, rather than efficient use of a rule, implies retrieval of an instance from memory that is very similar to the one currently being processed. Paradis (2009), on the other hand, does not accept the notion of various degrees of automatization: "A task component cannot be more or less automatized. It either is automatized or it is not" (p. xi). For him, knowledge originally acquired in declarative form can only be sped up, not automatized, and the only knowledge characterized by automaticity is implicit knowledge (in his view necessarily acquired implicitly).

Leaving some definitional and terminological issues aside, however, it is clear that a certain degree of automatization in a broad sense of the term is an important part of the language-learning process, in particular in the initial stages of instructed language learning (DeKeyser, 2007a). Therefore, an important part of curriculum planning is to figure out how language teaching can provide the kind of practice that is able to bring about a certain degree of automatization. These issues are discussed further below: The Role of Practice in L2 Skill Acquisition provides a sketch of what this means for the concept of practice; and Practice in Context elaborates these notions for various teaching contexts.

The Role of Practice in L2 Skill Acquisition

Many scholars state that reaching automaticity requires massive, repetitive, and consistent practice (Shiffrin & Schneider, 1977; Schmidt, 1992; Segalowitz, 2003; DeKeyser, 2007b). The type of practice activities suitable for developing the three types of knowledge is summarized in the following quotation by DeKeyser (1998, p. 58), focused on grammar: "Explicit teaching of grammar, followed by FonF activities to develop declarative knowledge, and then gradually less focused communicative exercises to foster proceduralization and automatization." The well-known three Ps activity sequencing pattern in foreign-language instruction is implicitly distinguished here. For the relationship between the three Ps and declarative, procedural, and automatized knowledge, see Criado (2010, p. 84).

Declarative Knowledge

The acquisition of declarative knowledge is launched through the initial phase of instruction, which consists of explicit teaching of rules to achieve complete understanding. Sheer

understanding does not mean that declarative knowledge has been fully acquired and consolidated. This is achieved through quite controlled, discrete-item-based practice in the shape of form-focused exercises; for example, fill-in-the-blanks, sentence-combining, some forms of translation, etc. The purpose of this practice is (a) to develop, test, and refine declarative knowledge in long-term memory, and (b) to ensure its correct anchoring in the student's mind so that it can be later drawn upon, helping in the process of proceduralization. Accordingly, learners should have enough time to attain declarative knowledge before engaging in linguistic production; in other words, they should not be pressured into rushed output.

Proceduralization

In instructed second language learning the basic condition for proceduralization is engaging in the target rule-governed behavior while relying on temporary declarative crutches kept in working memory. The repetition of these processes permits "the restructuring (see Cheng, 1985; McLaughlin, 1990) of declarative knowledge in ways that make it easier to proceduralize" and allows "the combination of co-occurring elements into larger chunks that reduce the working memory load" (DeKeyser, 1998, p. 49).

The suitable type of practice in this phase is communicative drills. As opposed to the previous type of practice exercises, communicative drills emphasize content without neglecting attention to form (see Littlewood's (1981) distinction between "precommunicative" and "communicative" activities). Thus, the establishment in long-term memory of form–meaning relationships will start and lead to proceduralization.

Automatization

Finally, in order to attain fluid and error-free automatic language use, the learner should undergo extensive practice of the procedures or target language behaviors in communicative activities that may promote "automaticity in the language learning situation in a manner that respects transfer-appropriate processing and other positive features of communicative practices" (Segalowitz, 2003, p. 402). These activities are open-ended and fully focused on meaning, such as debates, extended role plays, and simulations, essays, etc.

Practice in Context

Given the skill-specific nature of practice documented above (see Skill Acquisition), practice will differ depending on which of the four skills (reading, writing, listening, speaking) is the most immediate or most important goal. At the same time, the nature of practice differs considerably depending on the context. Traditional foreign-language teaching relies heavily on systematic practice in the P-P-P sense described above. Second language learning differs from foreign-language learning in various ways that have an impact on the frequency and usefulness of various forms of practice. On the one hand, the input available from the environment outside school may seem to make classroom practice in the receptive skills somewhat less necessary, but on the other hand, given that practice outside the classroom is easily available, it would be a shame if students could not make the most of it because they are ill-prepared to recognize elements in the input that are not very salient, but important for understanding. That is why systematic practice in the sense of processing instruction (see e.g., VanPatten, 2004) is so important in this context, especially for adults whose capacity for implicit learning is seriously limited (DeKeyser, 2003, 2009). Both input and output practice in a second language learning context should aim to prepare students to learn more from interaction with the out-of-class environment, not

only for the psycholinguistic reason just mentioned, but also to have face validity and not give the impression that classroom practice is an artificial activity with no bearing on real-life communication.

Study abroad, in many ways, is a context that shares characteristics of both foreign-language learning and second language learning, because it is meant to make students make the transition from the foreign-language classroom to the native-speaking environment. Just as for second language learning contexts, then, it is important that students be well prepared for practicing their language skills in interaction with native speakers. DeKeyser (2007c) shows how study abroad can lead to very disappointing results when students are not ready to benefit from this context because of insufficient declarative, let alone proceduralized, knowledge. Similar phenomena can be observed in bilingual education: in spite of the large amount of input and interaction available for years on end, students in bilingual programs often fail to learn certain structures in the absence of enough systematic practice (see e.g., Swain, 1985; Ranta & Lyster, 2007).

It is very important, of course, not to confuse systematic skill development with overly repetitive drills focused on individual forms. Practice, especially at more advanced stages, can take the form of real-world tasks, adapted to the communicative needs (see Long, 2005) and aptitudes for learning (see Robinson, 2007) of individual learners (Norris, 2009). Such tasks are both more motivating and better for transfer to use in the real world than decontextualized practicing of forms. Even at rather basic levels, teachers can play an important role in designing classroom tasks and choosing activities in a way that will help the students to draw on their declarative knowledge in the performance of a communicative task (e.g., Toth, 2006, 2008). In the case of children, special efforts need to be made to make practice age-appropriate and intrinsically motivating, e.g., through various forms of play (Cameron, 2001; Muñoz, 2007).

An important new development in the area of practice is the array of possibilities offered by information technology, from narrowly focused mechanical practice to free communication between learners and native or other non-native speakers. When computer-assisted language learning started out decades ago, it was mostly limited to the very first stage of practice, repetitive drilling. During the 1980s and 1990s, researchers tried to develop very sophisticated forms of learner–computer interaction with the aid of artificial intelligence (AI) tools. While these had the advantage of involving meaning and being to some extent communicative, they still did not imply interaction with other human beings and at the same time were very expensive to design and very rigid to use. As a result, this approach has been overtaken by the boom in Internet technology, from e-mail to instantaneous messaging, which offers learners opportunities to practice L2 with each other or with native speakers under different degrees of time pressure, and with different degrees of attention to form (see e.g., Payne & Whitney, 2002; Fernández-García & Martínez-Arbelaiz, 2002, 2003; Chapelle, 2009). These forms of interaction are sometimes called computer-mediated communication (CMC). Meaning in this context comes from the human beings interacting, and the computer is simply a convenient way of putting them in touch and of putting some constraints on the interaction. Such constraints are often more helpful in the sense of taking some of the pressure off (the communication is not face-to-face, and there is less time pressure than in speaking) than they are artificial (as they coincide largely with many young people's preferred modes of peer interaction). The drawback of CMC is that there is usually no provision for feedback (which means "speakers" are not aware of their errors and "hearers" are exposed to faulty input), and that to the extent feedback can be given, it is very much delayed or incomplete. The ultimate practice of the future may involve CMC monitored by a computer with little AI, except in the area of natural language processing, used both to give feedback to the "speaker" and filtered input to the "hearer," but such technology will require many more years of research in natural language processing.

Summary and Conclusions

While systematic practice is by no means the only mechanism for second language learning, there is no reason to doubt that skill acquisition applies to second language learning just as it does to other cognitive skills. This is especially the case for early stages of language learning and for instructed language learning. The fact that automatization takes a long time and that full automaticity of explicitly learned structures is probably never achieved is no reason to reject explicit learning and practice in favor of nonsystematic implicit learning through large amounts of exposure (especially as quantity and quality of exposure are usually limited for adult learners, and implicit learning does not lead to native-like competence even in the best circumstances). The nature of explicit teaching and practice, however, needs to be adapted to the context of learning and to the goals, aptitudes, and age of the learners. Most importantly of all, if practice is to be maximally effective for skill acquisition, it should try to stay as close as possible to the target skills. In the case of language learning, that means that linking forms and meanings should always be in focus.

SEE ALSO: Explicit Knowledge and Grammar Explanation in Second Language Instruction; Explicit Learning in Second Language Acquisition; Input-Based Instructional Approaches; Instructed Second Language Acquisition; Instructional Computer-Assisted Language Learning; Language Study Abroad; Practice in Second Language Instruction

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Aviation English

CAROL LYNN MODER

Aviation English is a term for the highly specialized language and interactional sequences used by pilots, air traffic controllers, and other aviation professionals. Like other areas of language for specific purposes (LSP), aviation English focuses on the particular pronunciation, vocabulary, grammatical structures, and discourse styles that are commonly used by practitioners in specific work-related contexts. Research and pedagogical materials related to aviation English have typically focused on the communication between pilots and air traffic controllers during all stages of a flight. This is because the International Civil Aviation Organization (ICAO) has established English as the international language of air traffic control. According to ICAO policy, pilots on international flights and air traffic controllers in airspaces that receive international flights must demonstrate the ability to communicate effectively in English, in addition to the language used by the station on the ground.

The language of air traffic control, also called radiotelephony, is distinct from many LSP domains, because it is used for a very restricted set of functions and has a prescribed phraseology with reduced syntax and vocabulary for routine actions. Furthermore, the communication occurs primarily via radio, with no face-to-face interaction between the pilot and the controller. It also involves extensive shared information concerning the aircraft in the area, the parameters of the airport or airspace, and the expected actions at particular points in the flight. Typically pilots have filed a flight plan that identifies the plane with its call number and indicates the destination and preferred route of the flight. They would have familiarized themselves with the codes and radio frequencies for various reporting stations along the route. The controller typically has access to the flight plan, as well as radar that visually tracks the various planes in the airspace. Most communications follow routine and established patterns, and the vast majority of the information conveyed is expected by both participants. However, air safety depends on the ability of aviation professionals to continually monitor the accuracy and effectiveness of all exchanges.

ICAO Standards

The prescribed language and discourse practices of aviation English are governed by professional standards and international policies developed by ICAO. Although there are some regional differences in aviation English across countries, most notably variations in language usage required by the US Federal Aviation Administration and the United Kingdom Civil Aviation Authority, ICAO standards are typically the focus of aviation English testing and curricula. In 2003, in response to accidents and incidents where the language proficiency of pilot and air traffic controller were causal or contributory factors, ICAO implemented more stringent English proficiency standards. The new standards emphasize the ability of aviation professionals to use what ICAO describes as a "dialect or accent which is intelligible to the aeronautical community," to communicate in voice-only situations on "common, concrete and work-related topics," and to use communicative strategies to exchange messages and to recognize and resolve misunderstandings, especially unexpected events within the context of a routine work situation (Mathews, 2004).

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Communication Between Pilots and Air Traffic Controllers

The communication between pilots and air traffic controllers relates to the actions and situations that occur at specific points in an aircraft's flight. The major goal of this communication is to optimize the flow of air traffic while maintaining safety.

At the beginning of a flight all movement in the airport, including the movement of aircraft, service vehicles, and personnel, is monitored by air traffic controllers, who must communicate on established radio frequencies with a member of the flight crew of the aircraft. Aerodrome controllers ensure a smooth flow of traffic on the ground by providing instructions to aircraft for pushback from the gate, taxiing, holding, and takeoff. Ground control operations may be monitored by one set of air traffic control positions, while approach control operations, like takeoff and landing clearances, may be monitored by another set of controllers.

In order to illustrate the distinctive language of air traffic control, we provide examples from transcripts of authentic communication. The names of airlines, airspaces, and reporting points have been altered. The pilot is indicated with a "P" and the air traffic controller with a "C" in this and all subsequent examples. Example (1) shows an exchange between a clearance delivery controller at the "Mountain City" airport and the pilot of Airline 819 prior to startup and pushback.

(1) P: Clearance delivery. Airline eight-one-niner heavy at Bravo one-one with Delta, clearance Southern City
C: Eight-one-niner heavy. Mountain City clearance delivery. Cleared to the Southern City Airport, Mountain City niner departure, then as filed. Maintain one zero thousand. Departure frequency will be one-two-tree decimal eight fife squawk zero six seven fife.
P: Zero six seven fife. Airline eight-one-niner heavy.

In example (1), the pilot first indicates that he is contacting the clearance delivery controller. He then gives the call sign of his airplane ("Airline eight-one-niner"). In order to ensure clearer comprehension, letter and numbers are pronounced using the ICAO alphabet, which is also common to maritime and military contexts. Thus, "B" is read "Bravo," and "D" as "Delta." All numbers are pronounced as single digits; the number "9" is pronounced "niner," the number "5" is pronounced "fife," and the number "3" is pronounced "tree." The specialized pronunciation of certain numbers, though prescribed by the ICAO standard, is often not adopted by native speakers of English, who typically pronounce "3" and "5" in the usual "plain English" way. Note also that "decimal," not "point" is prescribed radiotelephony.

The pilot also specifies that the aircraft is "heavy." This indication alerts the air traffic controller that the aircraft is of the type that generates higher wake turbulence, which will affect the amount of separation that will be required between it and other aircraft. The pilot indicates his current location at the airport ("Bravo one-one") and that he has the Delta version of the Automatic Terminal Information Service or ATIS. ATIS is an automated broadcast of relevant information, including weather, active runways, and other notable information about hazards or special conditions. At busy airports, pilots are expected to listen to the most recent broadcast in order to reduce the information that the air traffic controller must provide. ATIS broadcasts are updated throughout the day with each broadcast labeled using the ICAO alphabet. The first broadcast is labeled Alpha, the second Bravo, the third Charlie, the fourth Delta, etc.

The next example illustrates an exchange between a pilot and an area controller. The area controller is charged with monitoring the progress of all the airplanes in flight within

a given altitude in a specified airspace. In example (2), the pilot contacts the area controller to inform him that she is at a specified reporting point, Sandford, which is on her flight path. After it reaches the position, the plane will be passed from the Canyon Controller to the controller for the next area, Vanna Control, and she must tune her radio to a new frequency, 123.7.

(2) P: Bravo Tango Oscar one niner-eight-eight. Position Sandford.
C: Bravo Tango Oscar one niner-eight-eight. Canyon Control. Roger. Contact Vanna Control one-two-tree decimal seven. So long
P: Bravo Tango Oscar one niner-eight-eight. Vanna Control one-two-three decimal seven. So long.

The exchange in this example again models ATC (air traffic control) phraseology, with its prescribed number and letter readout format, limited syntax, and restricted vocabulary. It also illustrates the distinctive turn-taking identifiers for speakers and addressees. The pilot of the plane begins the exchange by identifying herself with the call sign of the plane, BTO1988. This identification ensures that the controller knows which plane in the airspace is calling in. The pilot then uses standard phraseology to report that she has reached the Sandford reporting point ("Position Sandford"). In his response, the controller repeats the call sign of the plane, indicating who the intended addressee is. Because there are usually multiple aircraft in the airspace and all are tuned to the same frequency, it is essential that all planes know to whom the controller's communication is addressed. The controller then gives his identifier ("Canyon Control"). Having thus established the intended addressee and himself as speaker, the controller acknowledges the information received ("Roger") and then goes on to give the aircraft the instructions for the next part of the flight. He tells the pilot to contact the next area controller ("Vanna Control") and provides its radio frequency ("one-two-tree decimal seven").

The signoff greeting ("So long") is not prescribed phraseology. It is an example of what in aviation is called "plain English." In general, ICAO standards prescribe the use of phraseology whenever possible, with the use of plain English reserved only for unexpected or unusual circumstances. However, both native and non-native English-speaking pilots and controllers regularly use "plain English" in their exchanges. Greetings are very common in ATC communication, indicating the opening and closing of interactions. Since in example (2) the controller is terminating contact with this aircraft, the use of an expression like "So long" or "Good day" is an effective indicator that this will be the final exchange. It is also common for pilots to use greeting expressions like "Buenas dias" or "Good morning" in their initial communication with a particular controller.

The exchange in example (2) concludes with the pilot starting her final turn by again giving her call sign and then doing a "readback" of the key information the controller has given, the identifier of the next area controller and the frequency. She then signs off. The readback is a key aspect of radiotelephony and should be a major focus for teachers and researchers of aviation English. The pilot is required to read back key information, and the controller must listen to that information carefully to ensure its correctness. If the information is incorrect, the controller must correct the pilot immediately. Example (3) shows such a correction.

(3) C: Whiskey Juliet Alpha one-four-six-four. Radar service terminated. Maintain flight level three-niner-zero. Contact Vanna Control one-two-tree decimal seven. So long
P: One-three-two decimal seven. Whiskey Juliet Alpha one-four-six-four
C: Whiskey Juliet Alpha one-four-six-four. Canyon Control. Negative. That's one-**two-three** decimal seven.

The routine nature of the exchanges and the vast amount of expected information communicated sometimes leads pilots and air traffic controllers to "hear" an expected response rather than what was actually said. Some mishearings have led to unfortunate aviation incidents. For this reason, listening and clarification skills are essential for proficiency in aviation English. The controller in example (3) uses standard phraseology for a correction ("Negative") but he adds a plain language phrase ("That's") to highlight the correction, in addition to placing stress on the corrected numbers (indicated in **bold**). Example (4) illustrates a common situation in which phraseology is mixed with "plain language."

(4) P: Canyon Control. Airline three-one-zero. We'll need to deviate for weather about forty miles ahead.
C: Airline tree-one-zero. Roger. Confirm what side, left or right?
P: uh deviation uh left for weather in about uh probably start in about three-zero miles
C: Tree-one-zero. Canyon Control. Roger. Left deviation approved. After deviation fly direct to Cama.
P: Left deviation approved afterwards cleared direct to Cama. Airline three-one-zero
C: Tree-one-zero. Affirm.

Here the pilot of Airline 310 informs the Canyon area controller that he intends to deviate from the prescribed flight path because of bad weather. Although standard phraseology exists for such a request ("request weather deviation"), the native English-speaking pilot frames the request in plain language, "we'll need to deviate for weather." Since this request does not specify the direction of the deviation, the non-native English speaking controller requests a clarification, again using plain language, "what side, left or right?"

Example (4) highlights aspects of aviation English that are important for the LSP professional to understand. One such aspect is the controversy over the use of "plain language" instead of prescribed phraseology in routine exchanges. Many aviation professionals, particularly those who are non-native speakers of English, cite the unnecessary use of plain language as a factor that makes communication more problematic in international settings. On the other hand, all aviation professionals acknowledge the importance of using plain language to deal with unusual or unexpected circumstances. Such uses include the ability to confirm and clarify information, as seen in example (4), and the ability to use plain language questions in emergencies ("Are you dumping fuel?," "Can you give me your souls on board and your fuel on board?").

As the examples we have presented suggest, the prescribed language of aviation English uses a specialized and restricted vocabulary and syntax. Compared to many other LSP contexts, aviation English is unusual in the limitations it puts on syntactic variation. Most exchanges use the prescribed imperative form and the most frequent verb forms are the base form (*confirm*, *request*, *maintain*) and bare participles (*cleared*, *approved*, *terminated*). Auxiliary verbs occur only occasionally in plain language exchanges. However, the ability to adequately control auxiliary verbs to mark tense and ask questions can be critical in unusual emergency situations.

Recent research on aviation English has focused on developing curricula and language tests to meet the new ICAO standards. ICAO Document 9835 provides a thorough overview of the ICAO standards (ICAO, 2004). A number of discourse-based research studies have examined specific aspects of authentic aviation discourse (Linde, 1988; Goodwin, 1996; Sanne, 1999; Mell, 2004; Nevile, 2004; Wyss-Buhlmann, 2005; Hinrich, 2008). These are valuable sources concerning authentic aviation language. In addition, several recent studies have focused on testing aviation English (Alderson, 2009; Estival & Molesworth, 2009; Huhta, 2009; Kim & Elder, 2009; Moder & Halleck, 2009; Read & Knoch, 2009). These studies provide in-depth analysis of proficiency in aviation English and the sociopolitical contexts of assessing it.

SEE ALSO: Assessment of Academic Language for Specific Purposes; Materials for Language for Specific Purposes; Methods for Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes

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Bachman, Lyle F.

ANTONY J. KUNNAN

Lyle Bachman has been one of the leading theorists in the field of language testing for the last three decades. He was born in Iowa, USA, in 1944 and received his BA, MA, and PhD (1971) in English, all from Indiana University. Although his PhD was in English literature, his dissertation was in second language acquisition, and was based on research he conducted with schoolchildren learning English in Thailand. After completing his PhD, he went to the University of Hawai'i as assistant professor in the Departments of English and Second Language Studies. After a year in Hawaii, he took up a position as project specialist with The Ford Foundation in Thailand, where he directed a large-scale longitudinal research and development project in individualized English language instruction for Thai elementary schools. It was while in Thailand that he developed an interest in quantitative research and language testing. In 1976, he took a position in Tehran, Iran as director of a joint University of Illinois–Tehran University project for developing ESP materials for university students. In 1979 he returned to the USA as assistant professor in the division of English as a second language at the University of Illinois, Urbana-Champaign. In 1989, he moved to the University of California, Los Angeles, where he has been since, as professor of applied linguistics teaching courses and seminars in language assessment, language program evaluation, research methods, and epistemology in applied linguistics, and directing student research projects in language testing. He has also held temporary appointments as chair professor and director of the English Language Teaching Unit at the Chinese University of Hong Kong (1994–6) and Fulbright fellow and visiting professor in the faculty of education at the University of Hong Kong (2008–9).

At the time of writing, Bachman had authored and edited 13 books, 35 journal articles and reviews, and 32 chapters in books. He is a frequent speaker at various academic and professional conferences and meetings, and at universities around the world; at last record, he had given 126 presentations. He has provided consultancies for over 60 university departments, government, nonprofit, and commercial organizations; a few of the prominent agencies include the National Research Council's Board on Testing and Assessment, Educational Testing Service, and the Center for Applied Linguistics in the USA, and the University of Cambridge ESOL Examinations in the UK, the University Grants Committee in Hong Kong, the Language Teaching and Testing Center in Taiwan, and the Academy for Continuing Education and Human Resource Management in Germany.

Bachman's major academic contributions have spanned the last 30 years. One of his major areas of interest has been the validity of language tests and validation as a process for not only supporting the interpretations of test scores, but also as a procedure for conducting research into the nature of language ability. His first series of publications in this area included (the first two with Adrian S. Palmer) "The Construct Validation of the FSI Oral Interview" published in *Language Learning* (1981b), and "The Construct Validation of Some Components of Communicative Proficiency" (1982), "The Trait Structure of Cloze Test Scores" (1982), and "Performance on Cloze Tests With Fixed-Ratio and Rational Deletions" (1985) all published in *TESOL Quarterly*. Two book chapters, "Convergent and Discriminant Validation of Oral Proficiency Tests" (Bachman & Palmer, 1979) and "The Multitrait-Multimethod Investigation Into the Construct Validity of Six Tests of Speaking

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and Reading" (Bachman & Palmer, 1981a), and "The Construct Validation of Self-Ratings of Communicative Language Ability" (Bachman & Palmer, 1989), published in *Language Testing*, were all examples of empirical research in language testing using sophisticated techniques such as exploratory and confirmatory factor analysis. They also demonstrated to researchers that a theory of language proficiency could be tested with data using the factor analytic method. These empirical studies were followed by a series of more critical, interpretive studies in validity, including "The Evaluation of Communicative Language Proficiency: A Critique of the ACTFL Oral Interview," with Sandra Savignon (1986), published in *The Modern Language Journal*, "Problems in Examining the Validity of the ACTFL Oral Proficiency Interview" (1988), published in *Studies in Second Language Acquisition*, and "Constructing measures and measuring constructs: a discussion of the research into the nature of language proficiency conducted as part of the Development of Bilingual Proficiency Project" (1990a). His concern with issues of validity and the nature of the constructs we measure have continued with more recent publications, including, "Some Reflections on Task-Based Language Performance Assessment" (2002) and "What is the Construct? The Dialectic of Abilities and Context in Defining Constructs in Language Assessment" (2007).

These investigations into validation and the nature of language ability lead to a series of books, beginning with *Fundamental Consideration in Language Testing* (1990b) which explored these issues in depth. In this first book, he brought to the field Messick's unified view of construct validation, and combined his own concept of test method facets and communicative language ability, building upon Canale and Swain's conceptualization of communicative competence, to formulate a framework for guiding research and development in language testing.

This was followed by *Language Testing in Practice* (Bachman & Palmer, 1996), which applied research findings and theoretical notions to the practical development of language tests. In this book, he and Palmer elaborated the concepts of target language use and test usefulness (composed of reliability, validity, authenticity, interactiveness, practicality, and impact). The latter concept deconstructed Messick's unitary model of validity with the intention of providing practical guidance for test developers in evaluating the validity of score-based interpretations. In *Language Assessment in Practice* (Bachman & Palmer, 2010), he built upon and extended the work of Kane and Mislevy in educational measurement by applying Toulmin's practical argument structure to develop an assessment use argument as the central principal for guiding the development and use of language assessments.

Bachman's work has also made a contribution in the area of statistical analyses and research methodology. Through his empirical research he has demonstrated the usefulness of employing appropriate and sophisticated statistical techniques in the analysis of test content and test results. One of his empirical studies that has been particularly influential, in terms of methodology, is the Cambridge-TOEFL comparability study (Bachman, Davidson, Ryan, & Choi, 1995), in which he and his colleagues investigated the underlying traits of the two EFL test batteries by employing exploratory factor analysis. His book, *Statistical Analyses for Language Assessment* (2004) and the accompanying workbook (Bachman & Kunnan, 2005) attempt to make the tools of statistics accessible to both practitioners and researchers. In his most recent work, Bachman has explored issues in empirical research in applied linguistics. In "Generalizability: A journey into the nature of empirical research in applied linguistics" (2006), he traces the methodological differences in approaches to empirical research in applied linguistics to differences in the epistemological and ontological perspectives of researchers themselves, and lays out an analytic framework for characterizing and understanding these differences.

An additional contribution is Bachman's mentoring of a new generation of language testing researchers, earlier at the University of Illinois and now at the University of California,

Los Angeles. At last count, he had supervised over 30 doctoral dissertations; most of which employed concepts such as communicative language ability, test-method facets, test usefulness, exploratory and confirmatory factor analysis, structural equation modeling, and most recently, an assessment use argument. These studies have typically investigated the underlying traits of tests and the relationships among test-taker characteristics, test-taking strategies, test-method facets, test performance, and test use.

Bachman has received many awards and honors; they include the TESOL/Newbury House Award for distinguished research (1985), president of the American Association of Applied Linguistics (1988), two Kenneth Mildenberger Prizes for outstanding research publication in teaching foreign languages and literature from the Modern Language Association of America (in 1991 for his book *Fundamental considerations in language testing* and in 1997 for his coauthored book with Palmer *Language Testing in Practice*), president of the International Language Testing Association (1996), the Lifetime Achievement Award from the International Language Testing Association (2004), Distinguished Scholarship and Service Award from the American Association of Applied Linguistics (2010) and honorary professorships from the University of Shanghai for Science and Technology and the Guangdong Foreign Studies University.

Bachman's service to the field of language testing has been broad as well: he participated in a meeting of language testers during the TESOL Convention in Boston in 1978. This meeting was the genesis for the Language Testing Research Colloquium (LTRC) which has become the premier international conference in language testing, being held annually in different cities in the world. Bachman has been a co-organizer of LTRC many times in collaboration with colleagues (Adrian Palmer, Antony Kunnan, Bonny Norton Pierce, Jim Purpura, Nathan Carr, and Lianzhen He, to name a few). He was also the coeditor of the journal *Language Testing* and the coeditor of the book series *Cambridge Language Assessment Series* (both with J. Charles Alderson). The book series made available very useful titles on assessing different language use activities (listening, speaking, reading, and writing), components of language ability (grammar, vocabulary), assessing languages for specific purposes, assessing young learners, and assessing language with the use of computers.

SEE ALSO: Language Testing in Second Language Research; Statistical Analysis of Test Results; Task-Based Assessment; Uses of Language Assessments; Validation of Language Assessments

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Baetens Beardsmore, Hugo

OFELIA GARCÍA

I first met Hugo Baetens Beardsmore (1942) in New York City in the mid-1980s. He had come to meet with Joshua Fishman and others, but also to visit bilingual schools. Although I had learned much about bilingualism from Baetens Beardsmore's work and especially his *Bilingualism: Basic Principles*, it was his watch that impressed me most. I accompanied him then on a visit to a bilingual elementary school. There, Hugo sat in children's chairs, as children and teachers spoke Spanish and English. But he was wearing a special watch that he casually displayed for the children. Eventually they noticed and started asking questions. Baetens Beardsmore urged them on, speaking in English, as well as French and Dutch, each time showing them one more fascinating aspect of the special watch. And the children responded by not only speaking English and Spanish, but also by trying out words in his languages. Hugo did not shower the children with questions. Instead, he waited until they asked him questions to which he answered with thorough insights, important details, and yet humor. For me, it is this image of Hugo Baetens Beardsmore (or H.BB. as his students fondly call him) that has forever been imprinted in my memory—a giant able to adapt to small chairs, an intellectual able to have fun with children, a scholar and a profoundly humane person, a humble and engaging person. And precisely these are the qualities that have made Baetens Beardsmore's scholarly work so important, from the very early *Bilingualism: Basic Principles* (1982) to his recent contributions to *Bilingual Education in the 21st Century* (García, 2009).

Baetens Beardsmore was born in the small village of Hever, in Flemish Brabant in Belgium, and presently lives in Brussels. After his father was killed in the chaos that surrounded the end of World War II, his mother settled in England where he went to primary and secondary school. He received his PhD from the University of Wales at Aberystwyth, with a dissertation on the French of Brussels, and returned to Belgium to head the Department of English at the Université Libre de Bruxelles in 1968. When in 1970 the university was split into two linguistic entities, Hugo moved to the Vrije Universiteit Brussel, where he has been chair of the Department of Germanic Philology, Dean of the Faculty of Arts, and professor of English and Bilingualism, and where he continues to serve as emeritus professor. He is also a member of the Belgian Académie Royale des Sciences d'Outre-Mer, where he served as their president in 2001.

During his stellar career Dr. Baetens Beardsmore has published 13 books and over 150 scholarly articles. He has also written reports on education for the Council of Europe, the European Commission, the Ministry of Education of Brunei Darussalam, the education ministries of the Basque Country and Catalonia, and the State of California Department of Education. He is a much sought-after speaker, having lectured extensively throughout the world—in Europe in his native Belgium, but also in Bulgaria, Denmark, Finland, France, Germany, Great Britain, Italy, the Netherlands, Poland, Romania, Russia, Slovakia, Slovenia, Sweden, Switzerland; in Asia in Brunei Darussalam, China, Hong Kong, Indonesia, and Singapore; in the Americas in Canada, Mexico City, and the USA; and in the French island of La Réunion. He has also taught abroad; for example, he held the Peter Paul Rubens Chair at Berkeley. Baetens Beardsmore also serves on numerous editorial boards including the *Journal of Multilingual and Multicultural Development*, the *International Journal of Bilingualism*, and the *International Journal of Bilingual Education and Bilingualism.*

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Bilingualism: Basic Principles (1982; 2nd ed. 1986), first published 30 years ago, has become a classic. It was the first book written for students of bilingualism. With clarity of style, and yet enormous erudition, Baetens Beardsmore presented the conceptualizations of the two pioneers in the field—Weinreich and Haugen—and then introduced the ideas of more contemporary scholars. But *Basic Principles* is also a visionary work. It was here that Hugo first wrote about the "obsession with monoglot norms of reference" (p. 10). In the last chapter, Baetens Beardsmore points out the difficulties that continue to plague bilingual students today. The nature of tests and measurements used with bilingual students are identified as the main culprits (p. 138); and Baetens Beardsmore warns that the Canadian model "may not solve all bilingual education problems" (p. 139). This last chapter sets him apart from other scholars of bilingualism in that he considers, alongside language development, the speakers' identity development. He points out that bilinguals can experience what the pioneer French sociologist Durkheim had called *anomie* (1897), "a feeling of personal disorientation, anxiety and social isolation" (p. 126), if schools do not provide them with adequate support. For this reason, Baetens Beardsmore declares, "bilingual education should be paired with bicultural awareness" (p. 134).

It is this interest in bilingual speakers, and children in particular, that has marked the progression of Hugo's scholarship from one that centered initially on linguistic descriptions to one that focuses on applied linguistics topics, and especially on bilingual learners. An early article, "Aspects of Plurilingualism Among Lower Level Social Groups" (1971), already used the term "plurilingualism" that was to be adopted 30 years later by the Language Policy Division of the Council of Europe to refer to the complex use of several languages. That article explored issues of bilingual development among poorer students. But Hugo was also interested in bilingualism for language majority children. Thus, in 1977 his "An Investigation into Bilingual Education for Children from Favoured Socio-Economic Backgrounds" appeared. And in 1979, he published his "Bilingual Education for Highly Mobile Children." This is indicative of his insistence, prevalent throughout his collaboration in *Bilingual Education in the 21st Century* (García, 2009), that bilingual education is for *all* children—minorities and majorities.

This interest in bilingualism for all is a theme that Hugo has developed especially in his work on European schools, and in his recent work on CLIL/EMILE (content and language integrated learning/enseignement d'une matière intégrée à une langue étrangère), the French acronym added by Baetens Beardsmore as a reminder of Jean-Jacques Rousseau's treatise on education. His scholarly production on European schools started in 1979 and has continued in the last 30 years. In so doing, Baetens Beardsmore has reclaimed a place for the European contribution to bilingual education, distancing it from the Canadian immersion models. With Merrill Swain, Hugo drew differences between the Canadian models of bilingual education and those of Europe in their jointly authored 1985 article. Hugo makes the claim that the explicit language instruction in European schools results in more bilingualism and biliteracy than the implicit language instruction of Canadian immersion programs. His efforts to make intellectual space for European models of bilingual education, in an era that was clearly dominated by North American scholarship emanating from Canada and the USA, culminated in his edited book, *European Models of Bilingual Education* (1993).

In 2007, Baetens Beardsmore co-edited (with Do Coyle) an issue of the *International Journal of Bilingual Education and Bilingualism* devoted to research on CLIL/EMILE. CLIL was a way of bringing together some of the aspects of bilingualism in education that he cared for deeply. As he stated in a 2009 intervention at the International Association of Teachers of English as a Foreign Language (IATEFL), CLIL moves language education out of the isolation of the traditional language class and into the whole school. By using the other language for content instruction, CLIL makes that language immediately pertinent

for the learner. The collaboration between language teachers and content teachers means that students benefit from the focus on accuracy of language teachers, alongside the greater interest on understanding subject matter of content teachers. Thus, unlike Canadian immersion programs where the emphasis is on the production of natural speech, CLIL classrooms also pay attention to precision within the context of fluent exchanges and connected discourse in speech and writing. In CLIL programs, all teachers incidentally become language teachers.

Although a world traveler, Hugo Baetens Beardsmore has never abandoned his interest in the language of Brussels, an interest he has held since his dissertation days and the early publication of *Le français régional de Bruxelles* (1971), as well as in the multilingualism of his native Belgium. Besides important sociolinguistic articles on language contact in Brussels, Hugo has also written on macro sociolinguistic issues such as language and television in Brussels. Moving outwardly from Brussels, he has authored articles on triglossia in Flemish Belgium (1979), and language planning in Belgium (1987). Although his focus is Belgium, evident from the greater number of articles and contributions on the country, Hugo has also written on multilingualism and education in Luxembourg, Brunei Darussalam, Hong Kong, Indonesia, and Singapore.

Hugo Baetens Beardsmore recently collaborated with me on our book *Bilingual Education in the 21st Century*. From the beginning he insisted on what became the main thesis of the book: that bilingual education is *the only way* to educate children today. He pushed me gently whenever he felt I was deviating from a generous stance that included all children, both language majorities and language minorities. He kindly provided information—about Europe, but also about Asia, and even the USA. He showed me how to collaborate in selfless ways, insisting that his name not appear as co-author, even though his contributions deserved it. Baetens Beardsmore's erudition is deep; his insights are fresh and surprising. But it is perhaps his sense of humor that makes him such an accessible and committed scholar, opening up spaces that allow for innovation and fresh insights. When my husband and I recently visited him in his home in Brussels, Baetens Beardsmore told us the history of a fine portrait dating from 1633 that hangs in his sitting room, that of Lady Arabella, one of his ancestors. Of course, the portrait turned out to be one that he had bought as a student, but in his story of Lady Arabella there hangs a tale about Baetens Beardsmore's legacy; one of serious scholarship that questions conventional reality and treats traditional monoglot interpretations as myths and legends. Baetens Beardsmore's scholarship, then, is characterized by an attachment to scientific rigor coupled with an imaginative creative approach that enables him to give pride of place to what is otherwise often hidden from view, naming and exploring a heteroglossic plurilingualism in both society and education.

SEE ALSO: Bilingual Education; Bilingualism and Bilinguality; Content-Based Language Instruction; Content and Language Integrated Learning

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Baker, Colin

W. GWYN LEWIS

Colin Ronald Baker, widely acknowledged as one of the most perceptive leading international scholars in the field of bilingualism and bilingual education, was born on October 1, 1949 to a monolingual English family in Danbury, Essex, southeast England. Having attended the local primary school in Danbury and King Edward VI Grammar School in Chelmsford, he crossed the border to Wales to receive his higher education at Bangor, a university that specializes in bilingualism and which is situated in a city in the heartland of Welsh-speaking Wales where the indigenous population is fluently bilingual in English and Welsh. He graduated with First Class Honors in Educational Studies before obtaining his PhD in Social Psychology. One of his influential tutors at Bangor was W. R. Jones, who had a worldwide reputation for research and writing on bilingualism and intelligence, language attitudes, and the effectiveness of bilingual education, and so the seeds were sown for Baker's distinguished career in this particular field.

Having taught for three years in secondary schools in England, specializing in mathematics and music, as well as children with special educational needs, Baker returned to Bangor University in 1977 as a lecturer in Education before being awarded a professorship (a personal chair of the University of Wales) in 1994, together with a fellowship of the British Psychological Society in the same year. At present he is Pro-Vice-Chancellor (Teaching and Learning) of the University, and Co-Director of the prestigious Economic and Social Research Council (ESRC) Centre for Research on Bilingualism in Theory and Practice at Bangor. The high esteem by which he is also held outside the academic world is reflected in the fact that he has been invited to take up a number of government appointments in Wales. He was a founder council member of the Welsh Curriculum and Assessment Authority and between 1997 and 2007 he served on the Welsh Language Board, a statutory language planning organization sponsored by the Welsh Assembly Government and established in 1993 under the terms of the Welsh Language Act to promote and facilitate the use of the Welsh language in Wales. In 2010 he held a consultancy role with the Welsh Assembly Government in respect of their bilingual services.

It was as a young student in Bangor that Baker met his future wife, Anwen, a local girl from a fluent Welsh-speaking family, which was to have a very positive influence on his career. They have three fully bilingual children and were it not for this bilingual nuclear and extended family, he might never have written so extensively on bilingualism and bilingual education. By his own admission, living in a bilingual household has provided him with the experience, the stimulus for thinking, and a homely "feet on the ground" dimension that balances the academic study of bilingualism. Since 2005, being a grandfather has also allowed him to take a different perspective on childhood bilingual development (Baker, 2007, p. xiii).

The publishing of Baker's first book, *Aspects of Bilingualism in Wales*, in 1985 with Multilingual Matters was to herald a very successful and fruitful relationship between himself and his publishers that has spanned over 25 years. To date, he has over 150 publications, including 15 books and over 50 articles or book chapters on bilingualism and bilingual education, with specific interests in language planning and bilingual education. He has given invited keynote lectures at various academic institutions across the world,

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including City College New York, the State University of California at Long Beach, the University of Pittsburgh, and The Autonomous University of the Basque Country. He has also presented papers to a high-level Irish government meeting of Language Planning organizations, and to the European Union Regional and Minority Languages in Education Systems Conference in Brussels.

Colin Baker is in the rare position for a UK academic of commissioning the most prestigious scholarly publications in his field from international authors, particularly from the USA, with whom he is clearly identified as one of the leading international scholars. He was the founder editor (1994) and now coeditor of an international series of academic books on *Bilingual Education and Bilingualism* with Nancy Hornberger, University of Pennsylvania, a much valued colleague with whom he has worked closely for many years and who has influenced his approach to biliteracy, language planning, and qualitative research. He is also the founding and sole editor (1997) of the *International Journal of Bilingualism and Bilingual Education*. Under his editorship, this journal has been so successful that it has tripled in size, moving from four issues of 80 pages to six issues per year with 128 pages in each issue. He also serves on the editorial boards of the *Journal of Multilingual and Multicultural Development*, *Language and Education*, the *Journal of Language, Identity and Education*, the *Bilingual Research Journal*, *Evaluation and Research in Education*, and the *International Journal of Multilingualism.*

It is widely recognized that Baker's most influential and highly acclaimed book is *Foundations of Bilingual Education and Bilingualism* (1993a; fifth edition, 2011). It has sold over 60,000 copies and been translated into Japanese, Spanish, Latvian, Greek, and Mandarin. The first edition won the 1994 UK Standing Conference in Education Book Prize (for the best book of 1993 by an established author). This scholarly book was the first to integrate international and interdisciplinary research on bilingualism and bilingual education. In the USA, it continues to be one of the most widely read texts on theory and research on bilingualism and bilingual education, with further high sales in most countries of Europe, Canada, Japan, and other Pacific Rim countries—all areas with a crucial and growing interest in bilingualism, multiculturalism, and bilingual education. Ever since the first edition was published in 1993—with its typology of bilingual education distinguishing between "weak forms" and "strong forms"—*Foundations* has defined the field of bilingual education by comprehensively conceptualizing its philosophy, politics, policies, provision, and diverse practices. Another feature of this invaluable text is that it has been consistently updated to include the most recent salient research findings. Two early associations influenced the writing of what has become a classic in the field: first, the Managing Director of Multilingual Matters, Mike Grover, wrote to Baker in 1990 asking him to consider writing the definitive textbook on bilingual education; second, Ofelia García (currently Professor of Urban Education at the Graduate Center of the City University of New York) was appointed as academic consultant for the first edition of the book. García remains one of Baker's most respected colleagues and in her recent book, *Bilingual Education in the 21st Century: A Global Perspective* she pays tribute to his insightfulness and accomplishments by claiming that "no other book on bilingual education has been more influential to my students and to myself than his *Foundations*" (García, 2009, p. xiv).

In 2000, Baker was honored with the California Association for Bilingual Education Special Recognition Award for Research and Scholarly Activity for his "leadership in cutting edge research and for co-authoring the *Encyclopedia of Bilingualism and Bilingual Education,* a powerful resource in the minority community." The 758-pages long *Encyclopedia*, written with Sylvia Prys Jones in a three-year period, and published in 1998, also won the British Association for Applied Linguistics Book Prize Award for 1999.

Not only is Baker considered one of the most discerning scholars in the field of bilingualism and bilingual education, but he is also highly respected for the way in which he applies his research and scholarship in a practical way so that parents and professionals

can take advantage of his vast knowledge and expertise. His clarity and simplicity of style makes his work accessible and user-friendly to a wide audience who come across bilingualism in the course of their everyday lives and he is regularly called upon to address parents and to contribute to media presentations in Wales. Two key texts of his have made a substantial contribution in addressing some of the issues and concerns of today's bilingual families and practitioners. The first, published in 1995, was *A Parents' and Teachers' Guide to Bilingualism* (2007, now in its third edition and also published in Swedish in 1995 as *Barnets Väg Till Tvåspråkighet* and subsequently in Spanish, Mandarin, Estonian, Turkish, and German) and the second is *The Care and Education of Young Bilinguals: An Introduction for Professionals* (2000). Both books are written in a straightforward and easy-to-read format, providing a comprehensive and practical overview of bilingualism for those involved with the day-to-day practicalities of raising children bilingually and who are looking for concise answers to a variety of frequently asked questions.

In 2007, alongside Margaret Deuchar and Ginny Gathercole, Baker was pivotal in attracting five million pound funding to Bangor University for establishing the ESRC Centre for Research on Bilingualism in Theory and Practice (http://www.bilingualism.bangor.ac.uk), the first research center in the UK to focus specifically on bilingualism. The main practical focus of this center is the implications of interdisciplinary research findings for bilingual language policy, planning, and implementation, based around five research groups. Four major research projects undertaken by the Bilingual Education Research Group, led by Baker, focus on Welsh-medium and bilingual development in Wales across different age ranges, encompassing preschool settings, primary and secondary education, higher education, and the teaching and learning of Welsh as a second language among adult learners. Although Welsh-medium and bilingual education has flourished and developed in Wales for nearly 70 years—and taking into consideration that "no existing typology of bilingual education in Wales captures the full kaleidoscope of colours that exist" (Baker, 1993b, p. 15)—these research projects will be a first at aiming to comprehensively define and analyze various teaching and learning methodologies and different models of bilingual education in a country that shares the international leadership of bilingual education policies and practices. Being actively involved in such innovative research within this center is aptly regarded by Baker as the high point of his career to date.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Bilingual Education and Immigration; Bilingual Literacy; Bilingual and Multilingual Education: Overview; Cultural Awareness in Multilingual Education; Early Bilingual Education; Empowerment and Bilingual Education; Immersion Education; Minority Languages in Education

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Bakhtin and Second Language Acquisition

HANNELE DUFVA

> One cannot study grammatical forms without constantly considering their stylistic significance. When grammar is isolated from the semantic and stylistic aspects of speech, it inevitably turns into scholasticism. (Bakhtin, 2004, p. 12)

It may be considered a small miracle that a philosopher like Mihail Bakhtin (1895–1975) now enjoys a reputation that can be called a boom. Bakhtin lived during troubled times, and there have been many controversies around him and his work. Born in Czarist Russia in 1895, young Bakhtin was influenced by German idealist philosophy; still, after the Russian revolution he worked in close cooperation with friends and colleagues many of whom were Marxists. During the Stalinist era, most of Bakhtin's life was spent in places far removed from the leading circles of Soviet academic life, and his academic career was not high-ranking. He worked at the Pedagogical Institute in Saransk where he was a much-liked teacher, but his doctoral thesis was not accepted until 1952—after a series of difficulties and postponements. There have been disputes about the authorship and even potential plagiarism around his works. He was not a lonely genius; the dialogical ideas were inspired by the intellectual atmosphere of the early Soviet era and developed in cooperation with the circle of colleagues now commonly known as the Bakhtin Circle. The most important of these friends is perhaps Valentin N. Voloshinov (1895–1936). All things considered, Bakhtin is undoubtedly a foremost pioneer of dialogical thinking and also one of the key figures in the contemporary discussion on language and mind.

For some time already, Bakhtin has been quite well known in some areas of applied linguistics, particularly in those that deal with texts, intertextuality, literacy, or genres, but now also his potential contribution to SLA is becoming acknowledged (Hall, Vitanova, & Marchenkova, 2004). However, as Bakhtin probably considered himself primarily a literary scholar and philosopher of language, his interests were not directly focused on second or foreign language learning. While he actually wrote one article on language education—where he discussed the role of stylistics in language teaching (Bakhtin, 2004)—it is evident that a contemporary discussion in the context of SLA needs to go beyond what Bakhtin himself wrote and that his arguments need to be recontextualized. Although Bakhtin's work is particularly useful for its theory of language and its philosophy of communication, there are many new developments—theoretical frameworks and research methodologies—that seem to be commensurable with his arguments and that help us further understand the nature of language learning.

What is it that makes Bakhtin's ideas—or, dialogism—so attractive today? One reason is probably just the way in which the Bakhtinian tones resonate with the contemporary approaches that have sprung up since the "social turn" in second language acquisition. Dialogism is a theory that certainly foregrounds the social elements: it argues for the view that both human language and human awareness emerge in social activity. Its chosen focus in the analysis of language is social as well: both Bakhtin and Voloshinov pointed out that language needs to be studied in its concrete social and cultural contexts. It is thus not

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surprising at all that one of the first mentions of Bakhtin in the context of Western language-learning research was made by Courtney Cazden (1989) who pointed out the similarity between Dell Hymes' work and the ideas of Bakhtin and Vygotsky. It is above all the socially and culturally oriented traditions of linguistics that first found Bakhtin.

Thus Bakhtin's ideas were introduced in the Western context as an alternative for the almost exclusively cognitive orientation of early SLA, which until the 1990s had been strongly influenced by Chomskyan linguistics and cognitive psychology. Hitherto, second or foreign language learning had been regarded as an individual process of acquisition that was taking place "in one's head." Hence, social factors and events had had a secondary or auxiliary role only. The methodologies had been almost exclusively experimental. However, since the 1990s, to study language across various social contexts and to develop methods suitable for mapping the social reality has been one of the main concerns of both applied linguistics in general and SLA in particular. Dialogical thinking can add to this a view of language use as a sociocognitive and intersubjective event.

Many contemporary researchers coming from the socially or culturally oriented research traditions (or both) share some arguments with dialogism and often also refer to Bakhtin. Theoretical and methodological frameworks that have in some way embraced Bakhtinian arguments and which also involve language learning include, e.g., language socialization, ethnomethodology, linguistic anthropology, conversation analysis, interaction studies, and ethnography. Most often perhaps, dialogism is combined with sociocultural thinking (Johnson, 2004; Lantolf & Thorne, 2006) and activity theory (Wells, 2002). In a way, contemporary researchers seem to be answering to Bakhtin's and Voloshinov's appeals for a linguistics that would focus on examining actual language use.

While our knowledge of language use at the social level increases and as we have detailed descriptions of language use in various types of situation, there also seems to be a growing understanding that language learning somehow occurs as a "side effect" of social activity by processes such as alignment (Atkinson, Churchill, Nishino, & Okada, 2007). This observation, however, brings us to the second cornerstone of dialogical thinking. While regarding social language use as a primary focus, dialogism does not limit itself to the study of the social, external context alone. Instead, the dialogical approach considers the social and the cognitive aspects as coexisting and coemerging and is thus a sociocognitive view (Dufva & Alanen, 2005).

A stand which aims at intertwining the personal (that is, psychological or cognitive) world of individuals with the social one is typical of dialogism. Bakhtin's arguments indicate that our understanding of who we are and what we are like emerges socially and dialogically in interpersonal relationships (Bakhtin, 1986, p. 167) but he also points out that each person has a particular, unique position and thus a perspective and a true sense of self (Bakhtin, 1993), which also contributes to the particular *voice* of the person (Wertsch, 1991).

Using a slightly different formulation, Voloshinov (1973, pp. 35–9) observes that language use is a continuous interplay that involves both social and individual aspects. That is, the ideologies of the social world and the experienced perspective of each person are present whenever people use language. Thus to engage in a conversation, for example, means that what is personal becomes public, and what is public becomes personal. Put in another way, in using language we each adopt the other's words and make them our own (Bakhtin, 1986, p. 143), a view that is also important for studying language learning. Dialogical thinking indicates that it would be just as big a mistake to study language use—and language learning—exclusively from a social, external point of view as to study it from a purely cognitive perspective. The dialogical sociocognitive argument suggests a research focus where both are considered.

The relationship between cognitive-level phenomena and social-level phenomena can be seen, for example, in language learners' beliefs. Dialogical analysis argues that beliefs

are of social origin and carry ideologies (e.g., language attitudes), but are also based on personal experiences (involving, e.g., language learner identities; Dufva, 2003). Both social and individual aspects contribute to the learners' voices (Aro, 2009). The dialogical, socio-cognitive approach can also be applied to the analysis of interaction with the aim of exploring how cognitive events intertwine with observable social behaviors and events. An example is Suni's (2008) study of non-native–native-speaker conversation where she showed how social interaction functions as a shared cognitive working space in which the native speakers' resources are made available for the non-native speakers' cognizing.

If asked to put the Bakhtinian idea of language learning in a nutshell, one could say that learning does not occur in a person's head nor in the social interaction but in the dialogues that take place within the system that consists of the learners and their environment(s) (van Lier, 2004). In the dialogical approach, language learning does not mean that a certain piece of information is transferred from a source A to a source B (Rommetveit, 1992). Rather, learning means that some sort of change is achieved in the ways a person is able to use language. Learning may mean that language users will be able to expand their repertoire but also will drop inappropriate behavior. It may suggest that they will be able to accomplish something in a more skilled manner, or will be able to express something in a variety of ways. In this, language learning is a continuous dialogue.

Because the starting point of dialogism is social it suggests that the examination of language learning begins with examining the particular social environment where learning is supposed to take place. Thus, one needs to study the activities and events that are present there—whether it be the formal context with its pedagogical practices and classroom interaction or the informal one with its everyday usages. However, in order to truly explain learning one should not stop there but continue speculating on how the cognitive and the social are intertwined in these particular contexts and activities (Platt, 2005) and how learners' voices develop and are recognized (Dysthe, 1996; Ohta, 2010). At present, there are many research methods and analytical tools that have turned out to be successful in analyzing language use at the social level and that are helpful for dialogical analysis as well. It is clear, however, that new theoretical openings and novel research methods are needed to analyze the hidden, cognitive aspects of these socially observable processes.

Further, the contemporary discussion of second and foreign language development needs to reconsider its theory of language. In this the dialogical arguments are most helpful. The picture that Bakhtinian thinking paints of language is rather different from the portrayal given by the mainstream linguistic thought of the 20th century. Dialogical arguments present a challenge to the Saussurean view but also to Chomskyan mentalism, both of which can be seen as representatives of what Bakhtin called monologism.

First, Bakhtin and Voloshinov themselves felt that it was important to analyze language as it actually is used in talk or writing. They did not aim at analyzing the underlying reality of language—as both Saussure and Chomsky would have done—but judged that what we see and hear in language use is more or less the true picture of language itself. Second, the dialogical theory of language is functionalist in character and, hence, a perspective opposite to formalism. Both Bakhtin and Voloshinov argued that the meaning-making nature of language is its primary feature and should duly be seen as the starting point of linguistic analysis. Thus, although the way in which language organizes itself into various forms and structures certainly does matter, this formal aspect is secondary and follows from the primal purpose of human language to act as a medium of meaning-making. Third, the dialogical view of language highlights its dynamicity. In this, dialogism presents an alternative to Saussurean emphasis on invariance.

Let us have a look at what the two theories of language—monological versus dialogical—might mean in the context of language learning. If the monological assumptions of

theoretical linguistics are transferred to applied linguistics and SLA, one consequence is that language learning is seen as a process of internalizing formal knowledge, for example grammatical rules and lexical items. Another consequence is that the knowledge is often represented in a decontextual fashion: language knowledge is detached from the actuality of situated language usages. In this way, the object of language learning becomes identified with memorizing the formal description of language: a grammar, or a list of words. Here, dialogical thinking suggests a different solution.

The Bakhtinian theory assumes that *utterance* is the basic unit of language. However, in calling utterance a unit, one has to observe that it is above all a functional and dialogical unit. First, as Bakhtin (1986, p. 71 & pp. 125–6) notes, utterances always belong to a speaking personality, are addressed to somebody (either to a concrete recipient, or a more abstract addressee), and seek a response from somebody. This means that language use is characterized by other-orientedness. Utterances are part of continuous, ongoing dialogues that refer both to the past (what has been said) and to the future (to the potential response). At the same time, the fact that utterance is a unit related to language use and interaction seems to be another way of saying that all language use is meaningful. When language use is regarded from a dialogical point of view it is not a formal exercise: As utterances are directed to somebody and await response from someone, they are also necessarily *about* something and exist for a purpose.

Further, language is used differently in different contexts: there are "relatively stable types" of utterances that can be called speech genres (Bakhtin, 1986, p. 60). Heteroglossia, the much quoted Bakhtinian concept, indicates that any speech community is characterized by diversity in its use of language (Bakhtin, 1981, pp. 262–3). Language use varies across contexts and situations and also changes and develops over time. Therefore, the Bakhtinian emphasis on taking concrete language use as the starting point of linguistic analysis also suggests that there is no single unified or monolithic language. If concrete language use is heteroglossic, it follows that *language itself* incorporates the multitude of different usages that can be called dialects, variants, registers, modality-specific usages, learner language and so on.

Thus the Bakhtinian formulation is a highly dynamic view of language—a view in which language constantly seems to regenerate and transform itself. This concept is very different from the definitions of language that were typical of theoretical linguistics and second language learning and teaching literature prior to this century. Interestingly, however, Bakhtin's observations are similar to those made today by authors who argue that the traditional concept of *a* language is a social and cultural construct, an artifact that is closely tied to such issues as literacy or ideology of nation-states (Makoni & Pennycook, 2007).

Also in the context of second and foreign language learning, one needs to ask whether there is such a thing as *a* language, or, is there just *communicative activity* to be learned (Thorne & Lantolf, 2007). Or, can language learning be seen in terms of appropriation and use of different *linguistic/semiotic resources*? Or, is there just a continuous process of *languaging*? Bakhtinian notions are compatible with those contemporary approaches where the understanding of language is expanded beyond the traditional view of linguistics (roughly: language as lexicogrammatical system) and also beyond the national language ideology (roughly: language as a monolithic national entity).

Considering second language acquisition and second language pedagogies in particular, it seems that languages are still often understood as monological and monolithic entities. First, the object of learning is often spoken of in terms of *a* language—"English" or "Spanish." Second, this seems to involve the idea that in principle one can learn a language—in its entirety. Third, the notion is involved that one learns this particular language by internalizing its grammar and an amount of lexical elements. However, the Bakhtinian theory suggests a different view. Instead of learning one single "English," people may learn very different "Englishes." Instead of internalizing "grammars," they may appropriate situated

usages that differ in their modality, register, genre, purpose, and so on. Instead of learning a language in its (supposed) entirety, each learner develops individual competences that vary across purposes, modalities, and situations and that are, by definition, always partial.

What we have then is two competing theories of language. One represents language as an elegant formal system that can be—in principle—acquired in its totality. The other theory of language—the dialogical one—regards it as a dynamic system that keeps itself on the move, has only situated rules, and never can be learned in its entirety. Aptly, Voloshinov (1973, p. 81) compared first language learning to entering "upon the stream of verbal communication." The stream of communication is a metaphor that speaks of the dynamicity and fluidity of language use and also suggests a more dynamic metaphor for learning. Here, the concept of *participation,* commonly used in the second and foreign language learning literature today, would seem to be useful. Thus second and foreign language learning would refer to the processes by which beginners learn to participate in the social practices typical of each language community, thus *appropriating* their usages.

Dialogism is a theory hard to present in a short summary. Nevertheless, it can be argued that it is potentially highly useful for such pragmatically involved fields as applied linguistics and SLA. It is inherently contextual in its approach to language and it seeks to understand how various social and cultural factors either provide affordances or set constraints for the learners. Dialogically oriented language learning research asks questions such as who is learning the language, where, when, with whom, for what purpose, by what means, and what societal and ideological forces are at play (Kostogriz, 2005). But being sociocognitive in character, dialogism also entails the view that the research agenda needs to recognize the experiences of learners and listen to their *voices* as research participants. However, the sociocognitive approach logically leads beyond that—to the reanalysis of the cognitive world and cognitive processes of language learners. To summarize, a look back into history—into the arguments the Bakhtin Circle members presented quite a while ago—may turn into a look toward future developments in 21st-century second and foreign language research.

SEE ALSO: Agency in Second Language Acquisition; Bakhtin, Mikhail M.; Beliefs in Second Language Acquisition: Learner; Critical Applied Linguistics; Hymes, Dell; Lantolf, James P.; Sociocultural Theory; Vygotsky and Second Language Acquisition

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Bakhtin, Mikhail M.

LOTHAR BREDELLA

Mikhail M. Bakhtin (1895–1975) has become a dominant figure in various disciplines. In the introduction to *The Bakhtin Reader: Selected Writings of Bakhtin, Medvedev and Voloshino* Pam Morris writes: "His ideas are being utilized not just in literary studies but also in philosophy, semiotics, cultural studies, anthropology, feminist and postcolonial studies, Marxism, ethics, and of course Russian and Slavic Studies" (Bakhtin, 1994a, p. 1). He also had a strong influence on areas like linguistic discourse studies and qualitative socio-linguistics. His thoughts on heteroglossia and the importance of voice had a lasting effect on literary studies and linguistics. His influence is also dependent on *Marxism and the Philosophy of Language*, which was published under the name Voloshinov (for the debate about the authorship of this book, see below).

Bakhtin was born in Oryol (Orel), Russia, near Moscow. As a child he was educated at home by a German governess and as a result grew up bilingual. His father's work as a bank manager took the family to many different cities, hence he attended secondary schools in Vilnius and Odessa, in which several languages were spoken. In 1914 he registered in the classics department at St. Petersburg University, but in the spring of 1918 he moved out to the countryside to escape the chaos that followed the outbreak of the revolution. In Nevel and Vitebsk (from 1919 to 1924) he was a member of a small group of intellectuals who discussed and wrote about such areas as philosophy and literature. From 1924 to 1929 he wrote most of the books which laid the foundation for his later reputation but were not recognized at the time. In 1929 he was arrested and exiled to Kazakhstan but was saved from a labor camp through the influence of his friends. His exile came to an end in 1934 but he remained in the country where life was easier than in the big cities. In 1937 he was able to escape arrest by fleeing to Savelovo, a town on the Volga. After World War II he became a professor of "Russian and world literature" in Saransk. In the 1960s he gained fame after the second edition of the Dostoevsky book (1963) and the publication of the Rabelais book (1965) in Russia. In the 1980s *The Dialogic Imagination* (1981) made him famous in many other countries. Holquist (2004, p. xiii) declares that from now on, as a consequence, Bakhtin "has become a necessary point of reference for serious students of literature around the world." But this fame also led to different interpretations of his work. For Holquist (p. 28) *dialogism* is the central idea in his work. Dialogism posits the importance of the other in understanding oneself: "I see my self as I conceive others might see me. In order to forge a self, I must go outside" (Holquist, 2004, p. 28). With his concept of dialogue Bakhtin intends to overcome the dichotomy between objectivism and subjectivism and to gain a new concept of truth: "Truth is not born nor is it to be found inside the head of an individual person; it is born *between people* collectively searching for truth, in the process of dialogic interaction" (2009, p. 110).

There is a debate concerning the authorship of certain books which were published under the names of Medvedev and Voloshinov, since Bakhtin claimed that he himself wrote them (see Gardiner, 1992, p. 2; Holquist, 2004, p. 8). P. Morris is of the opinion that "the texts themselves are the only hard evidence we have, and, more importantly, they are what really matters" (in Bakhtin, 1994a, p. 4), and that the fact is that these texts are in accordance with Bakhtin's basic ideas. They criticize formalism and structuralism because

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they are unable "to account for the two most fundamental aspects of language: its active creative capacity and the always evaluative nature of meaning" (Morris in Bakhtin, 1994b, p. 4). The critique is argued in *Marxism and the Philosophy of Language*, which helps us to understand the central idea of Bakhtin's aesthetics and his concept of answerability. Voloshinov/Bakhtin criticizes *individualistic subjectivism* and *abstract objectivism*. The former regards language use as a creative act of speech in the individual psyche; the latter considers language to be a system that is beyond the influence of the individual psyche such that "language is an objective fact external to and independent of any *individual* consciousness" (Bakhtin, 1994a, p. 31). Both concepts fail to explain what we experience in producing and listening to utterances: "In actuality, we never say or hear *words*, we say and hear what is true or false, good or bad, important and unimportant, pleasant or unpleasant, and so on. *Words are always filled with content and meaning drawn from behavior or ideology*" (1994a, p. 33). For Voloshino/Bakhtin, language cannot be separated from behavior and ideology, hence we must take the context of an utterance into account: "Any utterance—the finished, written utterance not excepted—makes response to something and is calculated to be responded to in return" (1994a, p. 35). The critique of abstract objectivism and of individualistic subjectivism remains as relevant as it has ever been. Deconstruction in literary criticism treats utterances as if they were part of language as a system. Hence deconstructionists conclude that we do not speak the language but are spoken by it and are the victims of language. But the opposite position, the dominant postmodern constructivism with its emphasis on self-creation, is also insufficient because it assumes that meanings are produced in the individual or collective psyche and can be imposed on others (see Bredella, 2010, pp. 56–68).

Bakhtin's concept of answerability is based on his insight into the dialogical nature of language, enabling him to overcome formalist aesthetics which regards the work of art as autonomous and which erects an unbridgeable gulf between aesthetics and ethics. In *Art and Answerability* Bakhtin (1990, p. 1) writes: "I have to answer with my own life for what I have experienced and understood in art, so that everything I have experienced and understood would not remain ineffectual in my life. But answerability entails guilt, or liability to blame. It is not only mutual answerability that art and life must assume, but also mutuality to blame." Whereas formalism separates art and life and demands from us that we bracket our views and values, Bakhtin stresses that we respond with our views and values so that the work of art can change us: "a pure projection of myself into the other, a move involving the loss of my own unique place outside the other, is, on the whole, hardly possible; in any event it is quite fruitless" (Bakhtin, 2007, p. xiii).

How must the relationship between the work of art and the world we live in be conceived in order to bring about answerability? For Bakhtin the two worlds must be different: "We must never forget this, we must never confuse—as has been done up to now and as is still even done—the *represented* world with the world outside the text (naïve realism)" (1994b, p. 253). This difference between the two worlds is the presupposition for gaining a new perspective and a critical distance from our own world. However, we must not erect an unbridgeable gulf between the two worlds. The aesthetic experience is based on an "uninterrupted exchange" between the two worlds, "similar to the uninterrupted exchange of matter between living organisms and the environment that surrounds them. As long as the organism lives, it resists a fusion with the environment, but if it is torn out of the environment, it dies" (1994b, p. 254). It is the failure of objectivism and subjectivism that they both separate what is essentially interdependent and dialogical: "Art and life are not one, but they must become united in myself—in the unity of my answerability" (Bakhtin, 1990, p. 2).

Bakhtin finds in Dostoevsky's novels "a plurality of consciousnesses, with equal rights and each with its own world" (2009, p. 6) so that the characters are no longer under the

control of the author or narrator. In his introduction to *Problems of Dostoevsky's Poetics*, W. Booth points out that Bakhtin has made us aware of the fact that in Dostoevsky's novels each main character is allowed to develop his or her freedom independently of the novelist's ideology (see Booth in Bakhtin, 2009, p. xxii). In like fashion, Bakhtin would point out the agency of individual language users to use language to select and design themselves within a dialogic system of communication.

SEE ALSO: Bakhtin and Second Language Acquisition; Culture; Intercultural Understanding With Literary Texts and Feature Films

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Bamberg, Michael

LUKE MOISSINAC

Michael Bamberg (1947–) is coeditor of the journal *Narrative Inquiry* through which he supports and encourages theorizing and research into narrative from differing perspectives. In addition, he is the series editor of *Studies in Narrative* consisting of a series of books at the cutting edge of narrative research. Michael Bamberg has been an important figure in the promotion of a series of different genres of applied linguistic and narrative research. From his dissertation work on the acquisition of narratives by young children (Bamberg, 1987), through positioning theory (Bamberg, 1997a, 2003) and analysis of narratives (Bamberg, 2011b, 2012), to identity construction in talk-in-interaction (Bamberg & Georgakopoulou, 2008; Bamberg, 2011b, 2011c; Bamberg, De Fina, & Schiffrin, 2011), he has contributed varied strands to applied linguistics (De Fina, Schiffrin, & Bamberg, 2006; Bamberg, De Fina, & Schiffrin, 2007, 2011; Bamberg, 2011a).

Dr. Bamberg is currently interested in the narrative construction of identities in real-time social interaction, particularly with regard to three challenges that are intrinsic to the achievement of these situated identities. These are (a) the navigation between constancy and change across time, (b) the differentiation between self and other within the interaction, and (c) the management of whether an individual's agency takes precedence over influences from the external world (Bamberg 2011d, Bamberg, et al., 2011). In this thread of his research, he argues for the deprivileging of biographical ("big story") approaches (Bamberg, 2006a, 2006b) in favor of a narrative practice approach that scrutinizes conversational stories ("small stories") that are told in everyday interactions (Bamberg & Georgakopoulou, 2008; Bamberg, 2011b, 2011d). The claim is that it is through the repeated telling and refashioning of these everyday stories that identities are performed, practiced, and appear preset.

A significant proportion of his work on identity construction and development has been on heterosexual boys between the ages of 10 and 15 years. He has been particularly interested in displaying how these boys talk about themselves and their concerns, for example, friends, school, and girls in their own linguistic terms (Korobov & Bamberg, 2004, 2008; Moissinac & Bamberg, 2005). His research has pointed to a shift in the boys' perspective on girls that occurs between the ages of 10 and 12. At 10 years of age, these boys constructed rigid boundaries between themselves and girls, who were depicted as unfathomable and could not be direct objects of desire. At around 12, these boundaries begin to be dismantled and girls are talked about as friends, direct objects of desire, and even potential mates (Bamberg, 2008). It is at this time that it becomes "cool" to have a girlfriend. Dr. Bamberg's work has also revealed that this orientation towards girls becomes more sophisticated at 15 years of age in that one must begin to tread the fine line between desire and desperation (Bamberg, 2004; Korobov & Bamberg, 2004).

Dr. Bamberg is also a proponent of a system of positioning analysis of storytelling that attempts to link the content and evaluation of story events with how people attend to each other in interactional events (Bamberg, 1997a, 2003; Bamberg & Georgakopoulou, 2008). Bamberg's positioning system consists of three levels. The first level is concerned with how a storyteller positions the characters within the story being told. The second level of analysis examines how tellers position themselves with respect to their audience or interlocutors. The third level investigates how tellers position themselves vis-à-vis the master

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narratives or dominant discourses in the culture of the telling. This third level transcends the local context of the telling such that the teller is able to provide an answer to the question "Who am I?" (Bamberg, 2003, 2011c, 2011d). More recently Michael Bamberg has suggested that his system of positioning analysis should be a potent methodological tool to uncover the workings of identity construction in linguistic interaction.

Prior to the theorization of his system of positioning, Dr. Bamberg's research focused on children's abilities to take perspectives in narratives and to display these through the production of evaluative statements. With the support of a Spencer Fellowship, he extended this work to include children's choice of linguistic forms and functions in emotionally charged situations (Bamberg & Damrad-Frye, 1991; Bamberg, 1997b). In doing so, his focus shifted from a primary interest in the linguistic organization of plots to a concern with how these children wanted to be understood in situations in which they were strongly personally invested. It is this work that paved the way to his current interests in identity development and identity transformation.

Michael Bamberg completed the Staatsexamen (master's equivalent) in German linguistics and literature, education and theology at the University of Marburg, Germany, in 1975. He subsequently took a position as a German assistant in the language department of the University of York, UK, and worked part-time toward a second master's degree. While at York, he was influenced towards a pragmatic or social practice orientation of language learning and language use by the sociolinguist Robert Le Page and the language acquisition theorist, Patrick Griffiths. He completed an MPhil with a thesis on language development in 1978 and was accepted as a student of language development into the psychology graduate program at the University of California at Berkeley.

Major influences on his work at Berkeley were Dan Slobin, Susan Ervin-Tripp, and John Gumperz, who were his dissertation advisers. In addition, he took classes with George Lakoff, Charles Fillmore, John Searle, and Jürgen Habermas. Having an early interest in metaphor and membership categorization, his mentor in the first two years was Eleanor Rosch. His interest in metaphor fed into narrative, specifically, how metaphors are used as structuring devices for larger speech units. Early work was based on a number of wordless storybooks about a frog, particularly *"Frog, where are you?"* (Mayer, 1969). His dissertation project (Bamberg, 1987) was further developed by his dissertation mentor Dan Slobin (together with Ruth Berman) into a large crosslinguistic project on children's acquisition of, first, tense and aspect, and then narrative in general (Berman & Slobin, 1994).

In 1981, Michael Bamberg took a lectureship in sociology at the Free University of Berlin where he worked on Martin Kohli's project on retirement using biographic methods. In 1985, while still working on his dissertation, he went to Shanghai, China, to teach German and learn Chinese. With his wife, Dr. Nancy Budwig, he had considered starting a large-scale language acquisition project comparing German, English, and Chinese but returned to the USA in 1986 to work at Clark University in Worcester, Massachusetts. Dr. Bamberg is at present a professor of psychology at Clark University.

SEE ALSO: Analysis of Identity in Interaction; Discourse and Identity; Narrative Discourse; Schiffrin, Deborah

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Basic English

PAUL MEARA

Basic English was developed by C. K. Ogden and I. A. Richards during the 1920s and 1930s. It grew out of an earlier and very influential collaboration which appeared as *The Meaning of Meaning* in 1923. Basic (British American Scientific International Commercial) English was a response to the fact that during the mid-20th century English was rapidly becoming a de facto lingua franca, and was becoming increasingly important as a common language in the commercial, transport, and diplomatic fields (cf. Ogden, 1931). Ogden and Richards saw Basic English as a tool in the development of "world citizenship," and ultimately as part of the effort to develop a single world language which was understood by all citizens. Basic English was not intended as a replacement for real English, however. Rather Ogden and Richards argue that the simplicity of Basic English removed many of the obstacles that plague learners who are trying to acquire ordinary English and that it allowed learners to communicate meaningfully with English speakers relatively quickly. They saw the transition from Basic English to ordinary English as a relatively straightforward task which could be accomplished as needed.

The defining characteristic of Basic English is that it uses a very restricted vocabulary. Ogden and Richards argued that most ordinary uses of English could be accomplished with this minimal vocabulary together with a small set of grammatical rules that English commonly uses. Other work that was being carried out at the same time (e.g., the work of Harold Palmer and Michael West) similarly tried to reduce the vocabulary load for learners. But while Palmer and West did this by rigorous analysis of the frequency of words, arguing that highly frequent words were more likely to be useful for learners than less frequent words, Ogden and Richards took a different approach. They developed a list consisting of only 850 words: 600 "things" (mostly nouns which they divided into 400 general things and a further 200 picturable things), 150 "qualities" (mostly adjectives which they divided into 100 general qualities and 50 opposites), and a set of 100 "operations" (a mixed collection of verbs, prepositions, and adverbs). These words are combined with a very small number of morphological rules: plurals are formed by adding *-s* to the things, adverbs are formed by adding *-ly* to the qualities, and a number of other derivatives can be formed by using the affixes *-er*, *-ing*, *-ed*. Basic English also uses a small number of word order rules covering the formation of questions by inversion and the use of *do*.

The most important simplification implemented in Basic English is that the operator list contains only 16 verbs: *come*, *get*, *give*, *go*, *keep*, *let*, *make*, *put*, *seem*, *take*, *be*, *do*, *have*, *say*, *see*, *send* and 2 auxiliary verbs, *may*, and *will*. More complex verbs are considered to be redundant, as they can almost always be replaced by a combination of simpler words from the Basic list. Ogden and Richards argued that the reduction of verbs to 18 was the key to the discovery of Basic. Most of the irregularity of English is linked to verbs, and by eliminating them, we eliminate a great deal of arbitrariness and difficulty for learners. The remaining 16 verbs are characterized by a strong tendency to combine with other words to express complex meanings. Taken together, the operators and the things can be combined to cover more than 20,000 different meanings. Some examples of this taken from *The General Basic English Dictionary* (Ogden, 1940) are illustrated in Table 1.

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Table 1 Some examples of how complex English words can be expressed in Basic English (Ogden, 1940)

Complex English word	*Basic English words*
agony	great pain
alley	narrow street
alarm	to put in a condition of fear
album	book of pictures
alloy	mixed metal
allude	say something about
ally	supporter; on the same side
alter	to make a change
amaze	to make very surprised
ambulance	hospital automobile

Table 2 An extract from the Gettysburg address and its translation into Basic English (Ogden, 1937, p. 24)

The original text of the Gettysburg address	*Ogden's translation into Basic English*
Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. (54 words)	Seven and eighty years have gone by from the day when our fathers gave to this land a new nation—a nation which came to birth in the thought that all men are free, a nation given up to the idea that all men are equal. Now we are fighting in a great war among ourselves, testing if that nation, or any nation of such a birth and with such a history, is able long to keep united. (78 words)

Table 2 illustrates how Basic English can be used to generate extensive texts. The table contains a short extract from Abraham Lincoln's address at Gettysburg.

There are some obvious points to note here. The Basic text is about 40% longer than the original, but it is considerably easier to read. Nonetheless, it reads like a very natural English text and readers not familiar with the original would probably not be aware that this translation is written in a constrained vocabulary and a simplified syntax.

In practice, the vocabulary of Basic English was allowed to exceed the 850 words which appear in the published accounts. Ogden and Richards also include a set of "international" words whose meaning is widely understood even by non-speakers of English. These international words are forms like: *alcohol*, *automobile*, *bank*, *bar*, *club*, *coffee*, *tobacco*, and *whisky*. There are 50 words of this type. These forms are supplemented by 12 "science" words (*algebra*, *arithmetic*, *biology*, *chemistry*, *geography*, *geology*, *geometry*, *mathematics*, *physics*, *physiology*, *psychology*, and *zoology*), and a list of 12 (now somewhat dated) "special names used internationally" (*college*, *dominion*, *embassy*, *empire*, *imperial*, *king*, *museum*, *president*, *prince*, *princess*, *queen*, and *royal*). Geographical names, days of the week, month names, and a selection of numbers and measures are also included. Ogden and Richards also allow a set of additions for specific sciences which allow Basic English to be extended to cover what we would now refer to as special purposes. These extensions typically consist

of 100 general science words and a further 50 words which are technical words used in the particular specialism. Ogden and Richards argue that most learners will know the international words before they start learning Basic English, and so these words do not need to be included in the Basic English lists. The additional 150 words needed to cover a specialist field brings the total learning load to only 1,000 words—a total which should easily be acquired by any serious student.

Ogden and Richards point out that the main advantage of Basic English is that it imposes a much smaller learning burden on the learner than normal English does. They argue that the limited vocabulary of Basic English, and the tiny number of grammatical rules, can easily be acquired in a matter of weeks, or in exceptional circumstances, in a few days (Ogden, 1939). At the same time, however, the combinatorial possibilities of this basic vocabulary means that learners who have mastered it will rarely find themselves unable to express their intended meanings and native speakers of English will have no trouble understanding them. They also argue that Basic English provides a ready jumping-off point for progression into "fuller English."

The Orthological Institute, where most of the research and development seems to have been carried out, was founded in Cambridge in 1927, and a satellite institute was established in Beijing in 1936. Funding from the Rockefeller Foundation played an important part in these developments. This funding, and an association with the publisher Kegan Paul, allowed a large amount of Basic literature to be produced: even during the war years when paper was strictly rationed, the institute published a dictionary and a set of manuals for teachers, a large number of simplified Basic readers, a series of books "about the world in which we live" aimed at younger readers, a set of serious science books in Basic, adaptations of Shaw and Shakespeare, translations of major works in Russian, German, and Japanese, as well as a complete *Bible in Basic English* (1965), originally published in 1941 (New Testament) and 1949 (Old Testament). Formal government support followed after the war, and eventually resulted in the establishment of a Basic English Foundation, which survived until 1955. Ogden died in 1957, and Richards moved to a post at Harvard University where he continued to work on an extended version of Basic English known as EME (Every Man's English). EME is similar to Basic English in that it has a restricted vocabulary and a simple syntax, but the vocabulary base is fuller: it has 30 verb operators, instead of the 16 listed in Basic English, for example.

Basic English received considerable backing from significant establishment figures of the time: it was formally endorsed by Winston Churchill during World War II, "It would certainly be a grand convenience for us all . . . to find everywhere . . . a medium of intercourse and understanding . . . an advantange to many races and an aid to the building of a new structure for preserving peace" (Churchill, 1943), by the playwright George Bernard Shaw, "a thought out pidgin, . . . [that] gets rid of much of our grammatical superfluities" (Shaw, 1941), and by the novelist H. G. Wells, "one of the unanticipated achievements of the twenty-first century was the rapid diffusion of Basic English as the lingua franca of the world" (Wells, 1933). In spite of this, Basic English seems to have only limited influence on English language teaching practice, and it is difficult to find proper empirical evaluations of its effectiveness. Both Ogden and Richards taught at Cambridge University, but neither had much firsthand experience of language teaching. Ogden was a philosopher by training, while Richards was a specialist in the new field of English Literature. To some extent, Basic English was in competition with an alternative approach to vocabulary load that was being developed by ELT professionals, notably Palmer and West (cf. Bongers, 1947). This work, which largely grew out of Palmer's teaching experience in Japan, was supported by the Carnegie Foundation, and as a result of this it developed strong ties with new linguistic approaches to word frequency which the foundation had funded during the Great Depression. Unlike the Basic English project, Palmer and West's work was very

much in tune with the structural linguistics of the 1950s. *A General Service List of English Words* (West, 1936) dominated the teaching of vocabulary in English in the second half of the 20th century, and continues to be very influential in English teaching syllabuses. Basic English, in contrast, became something of a historical curiosity, treated on the same level as the spelling reform movement, to which it was closely allied. The Basic English Foundation does not seem to have survived long after Ogden's death in 1957, and though Richards lived until 1979, by the mid-1960s, Basic English was no longer a significant force to be reckoned with. An archive of material from the Orthological Institute is housed in the Institute of Education Library at London University.

There are, however, some signs that Basic English might be experiencing something of a revival. Basic English has a significant presence on the Web, notably the Ogden's Basic English site (http://ogden.basic-english.org/) and there are a number of sites offering Basic English lessons for non-native speakers of English. Many of these sites appear to be based in Japan, where Basic English still has a strong following. An important new feature is the development of Basic English dictionaries linked to word processing programs. These allow authors to monitor their output and check whether the words they use conform to the Basic English guidelines. This makes it much easier for writers to adapt their style to the Basic English vocabulary.

SEE ALSO: Core Vocabulary; Graded Readers; Measures of Lexical Richness; Special Purposes Vocabulary; Vocabulary and Reading

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Bateman, John

CHIAOI TSENG

John A. Bateman (b. 1957) has a distinguished research background in applied linguistics and has contributed to a wide range of research areas since the 1980s. He started working on natural language generation in 1982 and was awarded the degree of PhD in artificial intelligence in 1986 at Edinburgh University. Since then, he has engaged in research projects on language generation, translation science, discourse structures, and descriptive linguistics at Kyoto University, the Information Sciences Institute of the University of Southern California, the University of the Saarland in Saarbrücken, the former GMD Institute of Integrated Publication and Information Systems in Darmstadt, and the University of Stirling. In 1999, he was appointed Professor of Applied Linguistics at the University of Bremen within the Department of English, where he has initiated several linguistic projects on ontology, language, and space.

His research interest in multimodality began in the mid-1990s when he worked in a project on automatic multilingual and multimodal document generation. The multimodal study in this project looked into synergies across different modalities useful for automatic generation, particularly the relations between functional linguistic description and its computational instantiation in generation systems.

Beginning in 1998, Bateman and his colleagues, Judy Delin and Renate Henschel, conducted the GeM (Genre and Multimodality) project, specifically focusing on printed documents and investigating the ways in which different document genres use layout, graphics, and text in combination to communicate. Although the theoretical background of the project was linguistics, Bateman adopted a wider range of methodologies which have been applied to investigate printed documents. This encompassed computerized document recognition applied in early work on optical character recognition, eye tracking, rhetorical design theory, mark-up language applications used in publishing and webpage design. All these different methods were synthesized into the overall multimodal framework and the main result of the GeM project is the construction of an annotation scheme useful for preparing and analyzing multimodal corpora (Bateman & Delin, 2003; Bateman, Delin, & Henschel, 2004; Bateman, 2008).

Moreover, in Bateman's GeM framework, the concept and the analytical approach of *multimodal genre* can be seen having an impact on his later development of approaches to genre in film and other media—in his view, the notion of genre functions to constrain the way specific expectations in the readers of documents are raised. Therefore, genre is treated as a means of comparing different dimensions across different kinds of multimodal texts and testing the effectiveness of the model as a tool for prediction and description. Building on this perspective of genre, Bateman proposes an approach to multimodal genres which can be used to empirically examine fine-grained generic features in specific examples.

In the mid-2000s, Bateman extended his research interest of multimodality from documents to the field of film analysis. In 2007 he published a ground-breaking research article, "Towards a grande paradigmatique of film: Christian Metz reloaded" (Bateman, 2007), specifically focusing on semiotics of film. In this study Bateman provides a thorough review of all previous accounts of film montage made within the long debated tradition. He particularly elucidates the weakness of applying older schools of linguistics (such as structuralist and Chomskyan linguistics) to film and explicates how previous semiotic approaches

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are shown to have been restricted to views of compositional semantics only appropriate for syntax. Drawing on advances in formal and functional linguistic theories, in particular the notion of discourse semantics, Bateman proposes a new analytical framework from the perspective of *film-as-discourse*. This perspective supports both the syntagmatic and paradigmatic axes of semiotic description, and filmic code is not restricted to the earlier compositional meaning construction found in syntax.

More importantly, Bateman's discourse approach allows the concept of code to be supplemented with and complemented by inference. Hence, with Bateman's new discourse approach to film meaning, inferential interpretation does not completely rely on the spectator's skill as claimed by the proponents of the problem-solving approach to film. Bateman's development of film discourse provides an appropriate empirical basis for investigating film. In this context, the framework of film discourse is expanded and applied empirically to address film issues such as narratives constructions, cohesion, and coherence of the films with complex chronological structures (Tseng & Bateman, 2010, in press). In 2011, he coauthored a book on multimodality and film, *How Films Mean: Multimodal Film Analysis* (Bateman & Schmidt, 2011), in which his major developments of film discourse are synthesized and systematically correlated to his previous multimodal studies on printed documents, explicitly demonstrating the continuity of his thought in multimodal research.

Bateman's decades-long engagement in the research of multimodal presentation also motivates him to deal with more fundamental yet controversial issues within this discipline. Seeing the term *mode* used in various ways, often loosely and ill defined and tangled with definitions of other terms such as semiotic codes and resources, Bateman (2011) particularly points out the need to consider just what mode and semiotic code in multimodality refers to. He proposes a comprehensive model for semiotic mode drawing on central notions of systemic functional linguistics such as stratification and realization and constructs the strata of semiotic modes which distinguish and interrelate the ground-level material substrate and abstract semantic plane. More importantly, Bateman explicitly unravels just how the stratified model of modes is useful for solving frequently discussed problems in the multimodal literature, for instance, addressing how single material substrates at the lower stratum can support multiple semiotic modes at the higher stratum or how the development of semiotic modes across changes of material substrates can be accounted for.

Through Bateman's dynamic initiation of, and participation in, several ongoing research projects not only on multimodality but also on ontology, artificial intelligence, language, and space, he continues to deepen his theoretical thoughts multidisciplinarily, and his dedication and contribution to multimodality and applied linguistics in general still continues to grow tremendously.

SEE ALSO: Corpora: Multimodal; Corpus Linguistics: Overview; Multimodal Corpus-Based Approaches; Multimodal Discourse Analysis; Multimodality and Film; Multimodality and Systemic Functional Analysis; Multimodality and Technology; Multimodal Text Analysis

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Bazerman, Charles

PAUL PRIOR

Charles Bazerman's foundational contributions to the interdisciplinary field of writing and literacy studies have had a wide influence in applied linguistics. As a writing researcher, rhetorician, and literacy theorist, he is particularly known for his contributions to genre theory, the rhetoric of science and technology, writing across the curriculum/writing in the disciplines (WAC/WID), and theories of literate practice as social action.

Born in 1945 and raised in New York, Bazerman was completing a PhD in literature at Brandeis University in 1971, at a point when the field of writing studies (or composition and rhetoric) was emerging in the USA. His teaching in New York, first in an inner-city elementary school in the late 1960s and then in an open enrollment composition program at Baruch College in the 1970s, focused his attention on the complexity of writing, its relations to social power, and the challenges of writing pedagogy. Combining his interests in genre, the social impact of texts, teaching writing to novices, and the formation and communication of specialized knowledge (particularly around science), Bazerman embraced the new field. Bazerman's early publications, such as his (1981) comparison of writing in three disciplines (biology, sociology, and literary criticism), explored links between writing, knowledge, the individual, and social communities or institutions.

Bazerman's seminal work, *Shaping Written Knowledge* (1988), presented an early but sophisticated statement of what has come to be called North American, or new rhetorical, genre studies, typically traced from Miller's (1984) argument for seeing genres as typified responses to recurrent rhetorical situations. In that book, Bazerman analyzed the early emergence and continuing evolution of scientific report genres, particularly through a historical analysis (text linguistic, rhetorical, and interpretive) of the *Philosophical Transactions of the Royal Society* between 1665 and 1800 along with several studies of physics in the 19th and 20th centuries. Bazerman highlighted the intricate interactions among different genres in different communicative forums and networks. He traced, for example, relations between Newton's private notebooks, university lectures, manuscripts, correspondence with Henry Oldenburg (founding editor of the *Philosophical Transactions*), and publications in the *Philosophical Transactions* and *Optiks, Book 1*.

Consistent with rhetorical approaches, Bazerman's definition of genre drew on phenomenological theory, particularly the sociological work of Alfred Schutz: "Genre is a sociopsychological category which we use to recognize and construct typified actions in typified situations. It is a way of creating order in the ever-fluid symbolic world" (Bazerman, 1988, p. 319). Bazerman argued persuasively for closer attention to historical and situated variations in genre, noting that:

> broad, ahistorical, static identification of features such as the standard five-part structure of the experimental report or the use of passive voice and avoidance of first person, are found inaccurate with the slightest amount of historical digging . . . rather, we need to understand why regularities emerge, evolve, and vanish. (1988, p. 315)

His historical and discourse analyses revealed that early scientific report genres did not simply codify practices for communicating findings. Focused textual dialogue among natural philosophers—initially more chains of correspondence than formal report—did

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push the development of new textual forms. However, Bazerman also showed that as scientists came to anticipate the need to communicate their findings persuasively to absent and skeptical others, they began to develop new kinds of attention to—and changed practices in—the laboratory. Bazerman's research on genre has informed the work of many applied linguists, including Dwight Atkinson, Vijay Bhatia, Ulla Connor, Brian Paltridge, and John Swales.

Methodologically, Bazerman (1988) took up the historical emergence and evolution of genre as a case of Vygotskyan sociogenesis (see Scribner, 1985), tracing the development of experimental reports as a cultural form. His approach here and in later research was grounded in Vygotsky's insight that early stages of development make the full grounds of social practices visible in ways that mature mastery obscures. However, Bazerman's analysis was doubly innovative. Most Vygotskyan work to date had focused on the development of the individual or of psychological systems such as memory rather than on the development of tools or cultural forms. In addition, his blending of phenomenological and Vygotskyan theory became a cornerstone of North American genre studies, seen since in the work of such scholars as Carol Berkenkotter, George Kamberelis, Peter Medway, David Russell, Paul Prior, Clay Spinuzzi, and Christine Tardy. Documenting the coevolution of genre and activity, and linking rhetorical genre theory to activity theory, represented key achievements from Bazerman's research in the 1980s.

Bazerman next worked to detail the ways literate practices participate in complex social systems of science, technology, the economy, and government. Bazerman and Paradis (1991) brought together a number of contributors (including Greg Myers, Jeanne Fahnestock, Cheryl Geisler, and Amy Devitt) to analyze the textual dynamics of contemporary and historical professions. Bazerman's chapter examined how Joseph Priestly constructed a notion of coordinated, literate cooperation as a means to advance scientific and technical knowledge. Bazerman (1993) presented a companion analysis, considering how Adam Smith's early lectures on rhetoric offered critical insights into his later foundational work in economics, *The Wealth of Nations*.

Throughout the 1990s, Bazerman's research focused on the rhetorical, technical, and social practices that Thomas Edison engaged in as he pursued the electrification of society (with the electric light as a wedge technology to enact that vision). In one facet of this research, Bazerman examined how the genre of the patent organized inventive work at the Menlo Park laboratory. Considering the patent led Bazerman (1994, 1999) to ask how speech act theory might handle the complex character of these written performative utterances. A patent application (written as a letter of petition), for example, would typically include verbal descriptions, claims, and drawings. The dialogic nature of the patent (its intertextual relationship to laboratory notebooks, the documentary examination of the patent office, the linkage of petition and grant) led Bazerman (1994) to further develop Devitt's (1991) discussion of *genre sets* (i.e., the repertoire of genres an individual produces in the course of his/her work) and *genre systems* (i.e., linked sequences of genres produced by different individuals, like the patent petition and grant).

This research culminated in *The Languages of Edison's Light* (Bazerman, 1999), a rich historical analysis of the textual and rhetorical practices of Thomas Edison and those around him, of the role of symbolic and discursive systems in development of a new technology. Bazerman noted that a technology needs to not only succeed materially, but "it must also succeed symbolically (that is, adopt significant and stable meanings within germane discourse systems in which the technology is identified, given value, and made the object of human attention and action)" (1999, p. 335). In Bazerman's expansive framework, Edison's rhetorical practices included attracting funding for his Menlo Park laboratory, recruiting and motivating a talented team of inventors, managing relations with journalists, faking technical demonstrations, securing cooperation of city officials through gifts, and

attending to the aesthetics of electric lighting for the home as well as using laboratory notebooks to both support a chain of technical experimentation and document that work for patents. Bazerman highlighted the diverse, often mundane, genres needed to accomplish the work of technological invention and adoption:

> The movement from machine shops to Menlo Park and then to multiple power stations is accompanied by increasingly complex involvement with extensive discursive networks necessary for the production, maintenance, and use of the technology: laboratory notebooks, installation and repair manuals, patents, monthly bills for service, publicity pamphlets, technical journals, city ordinances, and stock reports. (1999, p. 336)

Bazerman's research on Edison helped expand the repertoire of genres considered for study and forged key links between rhetoric, speech act theory, text linguistics, writing studies, and science and technology studies.

In the 2000s, Bazerman's work has continued to address a broad range of literate and rhetorical practices, including questions of the evolution of genres (Bazerman, 2000), the social functions and consequences of literacy (e.g., Bazerman, 2006), the nature of information (e.g., Bazerman, Little, & Chavkin, 2003), the textual forms of scientific argumentation (e.g., Kelly & Bazerman, 2003), and methodologies for writing research (e.g., Bazerman & Prior, 2004; Bazerman, 2008a).

Bazerman has also focused his considerable energy and talents on building an international, interdisciplinary field of writing research through editorial scholarship, organizational leadership, and institution building. He edited the Erlbaum *Rhetoric, Knowledge and Society* series, which published 11 books between 1996 and 2002, featuring cutting-edge research on writing in disciplinary, professional, and scientific/technical contexts by scholars such as Dwight Atkinson, Linda Flower, Aviva Freedman, and John Swales. Aiming to forge deeper connections between writing/genre studies and cultural historical activity theory, Bazerman and Russell coedited a special issue of *Mind, Culture, and Activity* in 1997 and the book *Writing Selves, Writing Societies* (2003).

Two edited collections, *What Writing Does and How It Does It: An Introduction to Analyzing Texts and Textual Practices* (Bazerman & Prior, 2004) and the *Handbook of Research on Writing: History, Society, School, Individual, Text* (Bazerman, 2008b), are of particular interest. *What Writing Does* aimed to promote intensified research on writing across the many disciplines that study discourse by introducing key methods for analyzing written texts and writing practices. It included, for example, chapters on linguistic discourse analysis by Ellen Barton, on code switching and second language writing by Marcia Buell, on multimedia texts by Anne Wysocki, and on tracing writing processes by Paul Prior, as well as two chapters by Bazerman (on intertextuality and on speech acts, genres, and activity systems). Bazerman's organization of the *Handbook of Research on Writing*, editorial introductions for sections, and two chapters with Paul Rogers clearly express his vision for an interdisciplinary, international field of writing theory and research that can examine the powerful role writing has played across human history and in the many social and personal domains of human life. The handbook's sections consider how writing emerged as a material and symbolic technology; how writing has shaped cultural and political histories, influencing social institutions and practices; how writing has been realized in different levels and types of schooling; how writing affects the psychosocial development of the individual; and how writing is encoded in the symbolic and material character of texts. Among the chapters that may be of particular interest to applied linguists are ones on documentary society by Dorothy Smith and Catherine Schryer, on multilingual writing development by Dwight Atkinson and Ulla Connor, on writing and speaking by Douglas Biber and Camilla Vasquez, and on text, genre, and coherence by Christine Tardy and John Swales.

Bazerman has been active in many professional organizations. In the Conference on College Composition and Communication (CCCC), affiliated with the National Council of Teachers of English, he cofounded (with Cheryl Geisler) the CCCC Research Network in 1988 and (with Janice Lauer) the Consortium of Graduate Programs in Composition in 1991. He was elected to chair the 2008 CCCC conference in New Orleans. He also cochaired the Fourth International Symposium on Genre Studies (Simposia Internacional de Estudos de Generos Textuais IV) held in 2007 in Turabo, Brazil. (See select papers from that conference in Bazerman, Bonini, & Figueiredo, 2009.) He founded and led a series of three winter conferences on writing research at Santa Barbara in 2002, 2005, and 2008, the last of which, Writing Across Borders, brought together a large, diverse group of international writing researchers and led to an edited collection (Bazerman, Krut, Lunsford, McLeod, Null, Rogers, & Stansell, 2010) that samples different global traditions of writing research. Bazerman has recently worked to identify new venues and leadership to continue this series of conferences, and a 2011 Writing Across Borders conference is planned.

Charles Bazerman's scholarship has deeply informed and shaped studies of writing and genre over the past three decades. He has melded multiple disciplinary traditions to address critical questions of writing, learning, knowledge, and society. His scholarship and institutional efforts together have done much to forge the international, interdisciplinary field of writing studies research where many applied linguists now routinely work.

SEE ALSO: Discourse in Action; Discourse Analysis in Literacy Research; Historical Development of Literacy Research; Qualitative Literacy Research; Qualitative Research in Rhetoric and Stylistics; Rhetorical Discourse Analysis; Speech Acts Research; Teaching Writing; Writing and Genre Studies

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Belcher, Diane

ALAN HIRVELA

Introduction

Since the mid-1990s it has been impossible to think of work in the domain of language for specific purposes (LSP) without also thinking of Diane Belcher. This has been particularly true in the case of English for specific purposes (ESP), where Diane's voice has resonated strongly, clearly, and persuasively as a scholar and journal editor. In each of these roles she has had a major impact on the development of ESP theory and pedagogy. In particular, she has been a master at synthesizing and interpreting key work in the field and then extracting from it new perspectives and insights that extend the boundaries of the field and challenge how we think about ESP. This has also meant being a leader and a risk-taker, someone willing to question the status quo, to formulate intriguing and valuable new ideas, and to advocate for people not properly represented in ESP.

What stands out in Diane's work is not just her unwavering belief in the importance of linking ESP theory, research, and pedagogy, but her uncanny ability to do so in uniquely perceptive and powerful ways. In her teaching and scholarship she has skillfully articulated the dynamics involved in creating a meaningful, bidirectional relationship between theory and research on one side and classroom practice on the other, with each enriching the development of the other. Also notable is the wide range of theoretical domains she has drawn from, including feminist theory, genre analysis, academic socialization, voice, and sociocultural perspectives on learning.

Diane's contributions to ESP are best seen by looking briefly at the two primary realms in which she has made them, as an author and a journal editor.

Contributions as an Author

Looking at her scholarly work chronologically, Diane's first published foray into the arena of LSP was a 1990 article entitled "The case for teacher–student conferencing in field-specific writing by graduate students." This initial publication featured three of the many hallmarks of her work since that time: an interest in the ESP writing classroom, in academic discourse communities, and in non-native English-speaking graduate students.

Another of Diane's early scholarly contributions can be seen in her groundbreaking 1994 article, "The apprenticeship approach to advanced academic literacy: Graduate students and their mentors," which was her initial appearance in the prominent journal *English for Specific Purposes*, which she later served as editor. In that article, which grew out of a doctoral dissertation writing seminar she had created and taught for a number of years (one of the first of its kind in the world), she described her study of three international PhD students and their interaction with their doctoral advisors using the theoretical framework of legitimate peripheral participation to analyze those relationships. Here she put forth the notion of the advisor–advisee relationship as an *apprenticeship* in which the students and faculty collaborate in initiating students into their academic disciplinary community. While fleshing out that relationship, Diane began to articulate her keen interest in students' experiences with academic discourse and academic discourse communities and her belief

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in understanding the process of socialization into academic discourse from students' perspectives.

Following closely on the heels of this influential article was the 1995 publication of Belcher and Braine's seminal edited collection, *Academic Writing in a Second Language: Essays on Research & Pedagogy*. The book's title once again reflects Diane's core belief in the importance of including pedagogy in discussions of theory and research. In the introduction to the book, Diane and her co-editor, George Braine, offer a learned exploration of academic discourse and its importance in second language writing instruction within the ESP framework. This book featured the key qualities found in her many later books as well: informative and thought-provoking chapters offering valuable insights in their data and perspectives into ways of strengthening ESP theory and pedagogy.

With respect to more recent scholarship, in her 2004 article, which appeared in the *Annual Review of Applied Linguistics* (*IRAL*), "Trends in teaching English for specific purposes," Diane made two notable contributions. First, she carefully synthesized various criticisms of ESP pedagogy and thus brought them into sharper focus while also noting ESP's "ideological permeability," that is, its willingness to "be receptive to criticism and input from a number of philosophical and theoretical fronts" (p. 166). Striking this careful balance between the negative and positive in ESP is another of the key characteristics of Diane's ESP scholarship. Second, she drew attention to ESP's emerging "social situatedness," by which she meant its increasingly deep roots in socially oriented views of learning. To illustrate the growth of the social context in ESP, she explored three domains of this social orientation with respect to the theory and praxis at work within each, as well as the particular strands in which they tend to be applied. As she portrayed the situation, these were: the sociodiscoursal approach: situated genre analysis; the sociocultural approach: situated immersion; and the sociopolitical approach: overcoming the "limit situation." This synthesis of socially oriented approaches to ESP constituted an important formulation of socially driven ESP theory and practice and also illustrated her remarkable ability to apply a wide theoretical lens in interpreting and shaping ESP thought and practice.

In a 2006 article appearing in the *TESOL Quarterly*'s 40th anniversary issue, "English for specific purposes: Teaching to perceived needs and imagined futures in the worlds of work, study, and everyday life," Diane provided another significant synthesis and interpretation of ESP theory and praxis. First, she addressed one of the cornerstones of ESP: its emphasis on conducting analyses of learners' needs. Here she pointed out the limitations of traditional views of needs analysis and proposed a more contemporary, inclusive perspective which moves beyond the original emphasis on specialists conducting needs analyses to a partnership between the various stakeholders involved, including learners themselves. She then addressed the traditional "narrow versus wide angle" views of ESP and showed why such a distinction "is a nonissue because instructional decisions should have more to do with the learners themselves than with instructor preference or beliefs" (p. 139). In the remainder of the article she identified and explored two key strands of theory, research, and practice in ESP: (a) genre theory and the use of corpus data; and (b) critical pedagogy and ethnography. Here, as with her 2004 *IRAL* article cited earlier, she offered new and experienced ESP specialists a learned yet accessible framework from which to view, apply, and adjust trends in ESP theory and praxis. She also illustrated, once again, her role as one of the principal synthesizers of the steadily growing body of ESP theory, research, and practice.

Diane's most recent exploration of ESP's theory–praxis connection, her 2009 edited collection, *English for Specific Purposes in Theory and Practice*, is a state-of-the art examination of the ESP theory–praxis link, as reflected in her introduction to the book as well as in its chapters. In this introduction she once again synthesizes and analyzes ESP literature to offer a comprehensive and contemporary view of the growth of ESP. In this case she

provides an extended examination of themes concerning needs analysis introduced in her *TESOL Quarterly* review article. She begins by discussing various contemporary approaches to conducting needs analyses and employing the kinds of data they produce. She then examines applications of these new forms of needs analysis in the development of what she calls "needs-responsive materials and methods" and "needs-knowledgeable instructors." In this carefully crafted introduction to the book she does what she has throughout her published work: synthesizes and problematizes previous and current practices in ESP theory, research, and practice, while also articulating future directions in these areas.

Contributions as a Journal Editor

In 1998 Diane began serving as one of the editors of the prominent international journal *English for Specific Purposes* (*ESPJ*), widely regarded as the flagship serial publication in the field of ESP. She continued in that role until 2008, when she moved into the editorship of *TESOL Quarterly*. Her selection as an editor of *ESPJ* was an acknowledgement of the landmark contributions she had already made to ESP as a scholar and moved her into an even more important role as a shaping presence in the field. As an editor of *ESPJ*, Diane influenced the evolution of ESP in several ways, beginning with extending the journal's commitment to creating increased opportunities for ESP specialists around the world to publish their scholarship, especially non-native English-speaking professionals in countries where scholarly resources are scarce. Doing so inspired and empowered a new and more inclusive generation of ESP researchers and teachers to share their work and contribute to the field's development. In addition, in her interaction with scores of authors as manuscript review processes unfolded, Diane was able to provide invaluable mentoring to emerging scholars still finding their academic "voice." Diane also wrote numerous thought-provoking introductions to issues of the journal, which broadened the field's horizons and further established *ESPJ* as a leading source of guidance and inspiration in the field's growth.

Conclusion

Through her scholarship and her leadership as a journal editor, Diane has been in the vanguard of a second wave of ESP specialists who followed groundbreaking figures such as Hutchinson and Waters, Johns, Strevens, Swales, and Widdowson. ESP began in the world of pedagogy, and as new trends in theory and research have come along, Diane has sought to ensure that the link between theory and practice remains the centerpiece of ESP. While offering critiques of ESP where necessary, Diane has, at the same time, consistently provided important perspectives on new directions to be followed. In so doing, she has played an invaluable role in shaping the development of ESP at a time when its popularity and influence have spread globally. As a teacher—another domain in which she has pushed and enriched ESP's boundaries—she has contributed creative explorations of theory-driven pedagogical practices. As an author she has produced significant empirical studies and displayed a rare ability to synthesize the field's currents and trends and to generate rich new perspectives that have pushed the field forward. As an editor of the ESP field's most prestigious journal, she helped introduce and instantiate important directions in the field and worked closely with many of its most established scholars, as well as creating opportunities for many new ones. As a scholar and a journal editor, Diane has brilliantly bridged the domains of theory and practice, and in the process has earned a place as one of ESP's most influential and respected figures, someone whose work has made an indelible impression on the world of ESP.

SEE ALSO: Critical English for Academic Purposes; English for Academic Purposes; Language for Specific Purposes: Overview; Teaching Writing

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Beliefs in Second Language Acquisition: Learner

PAULA KALAJA AND ANA MARIA FERREIRA BARCELOS

The Beginnings

Second- and foreign-language learners of all ages, from young children to teenagers and adults, have beliefs about language learning. This is true whether learning takes place in formal contexts such as regular English as a foreign language (EFL) classrooms and immersion programs or informal contexts such as home and workplace. Teachers also have beliefs about teaching and learning processes. It is important to understand how learners' beliefs relate to (a) their approaches to learning languages, including use of learning strategies; (b) their background characteristics, such as language learning anxiety; (c) the approaches, methods, or techniques their teachers use in the classroom; and (d) the possible conflicts arising from the differences in learners' beliefs and those of their teachers.

The interest in learner beliefs about language learning can be traced back to the mid-1970s, and more specifically to the discussion of the good language learner and his or her characteristics: Why do some learners get on in learning languages, while others do not?; What distinguishes good learners from poor learners? In this discussion, beliefs (under various names including *mini-theories* and *learning philosophies*) were put forward as one possible explanation, along with others, such as aptitude, motivation, and learning strategies, for differences in language learning outcomes. These are first attempts at recognizing learners' tacit knowledge and its importance in learning languages without, however, yet calling these "beliefs."

With the consequent launching of communicative language teaching (CLT) in the late 1970s and early 1980s, the focus shifted to viewing language as a means of communication, involving negotiation of meaning and an ability to use communication strategies, and to teaching based on learner needs. Overall learners were assigned a more active role (compared to earlier teaching methods) and thus their expectations, experiences, and understanding of issues in language learning were highlighted. The seeds were sown for research on learner beliefs about language learning to begin.

The Classics

Serious research into learner beliefs began only in the mid-1980s with Elaine Horwitz and Anita Wenden reporting on their pioneering studies. Importantly, the term *beliefs* (also referred to as *metacognitive knowledge*, adopted from cognitive psychology) appears for the first time in applied linguistics in 1985, along with the introduction of the Beliefs About Language Learning Inventory (or the BALLI), an instrument to measure learner beliefs about language learning. In her study Horwitz (1987) wanted to find out how common certain popular beliefs were among a specific group of learners. To this end, the BALLI questionnaire was developed. It consists of 34 statements related to language learning, covering

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1. foreign-language aptitude,
2. the difficulty of language learning,
3. the nature of language learning,
4. learning and communication strategies, and
5. motivation.

The questionnaire was administered to 32 intermediate-level students on an English as a second language (ESL) program at a university in the United States who were asked to indicate whether or not they agreed with the statements on a scale ranging from *I totally agree* to *I totally disagree*. The results showed, among other things, that the majority of the students (75–91%) agreed with the following statements, representing the five areas measured by the questionnaire:

1. It is easier for children than adults to learn a foreign language.
2. Some languages are easier to learn than others.
3. It is best to learn English in an English-speaking country.
4. It is important to repeat and practice a lot.
5. I would like to have American friends.

Overall, this pioneering study can be characterized as descriptive and fairly simple in its design.

With the advocacy of learner autonomy and a consequent boom in providing learners with learning strategy training, the concept of beliefs was further strengthened by the studies carried out by Wenden (1986, 1987). The purpose of her earlier study was to investigate the beliefs about language learning held by learners. A semi-structured interview was used with 25 adult ESL students enrolled in advanced level classes at a university in the United States. The data were subjected to content analysis. The learners were indeed found capable of talking about (a) the language they were learning, (b) their proficiency in the language, (c) the outcome of their learning endeavors, (d) their role in the language learning process, and (e) the best approach to language learning.

At this point (e.g., Wenden, 1991), beliefs about language learning were viewed as *cognitive* entities (and different from facts), based on personal experience or the opinions of significant others (e.g., parents or teachers), characterized as something that learners were aware of and could talk about (statable), stable over time, and potentially right or wrong (fallible). Learner beliefs were further said to concern learners as personalities, the tasks carried out or strategies used and their perceived efficiency or inefficiency. Residing in a learner's mind, beliefs about language learning were considered impossible to observe: they could only be studied by resorting to indirect methods. Typically the two main methods of data collection were either that groups of learners (or teachers) with various backgrounds were asked to fill in a questionnaire, such as the BALLI, in its original or modified format, or they were interviewed.

Continuation of Research Along Two Lines

Research into beliefs about language learning then began to bloom. For the first time, a symposium addressing learner beliefs (Gaies & Sakui, 1999) was organized at AILA 1999, an international conference on applied linguistics; and later on that year an entire issue of *System* was dedicated to research into beliefs about language learning. Research into beliefs took many forms. First, the nature of beliefs was reconsidered (as were the starting points of doing research): even though some researchers still claimed beliefs to be *cognitive*,

possessed by the learner, others argued that they were *social*, and so shared and jointly constructed by the learner and the others involved in the process of language learning. Second, research at this point was characterized by a whole new range of terminology: a host of related terms (with more or less the same meaning) was used in studies of learners, including their *perceptions*, *conceptions*, *personal theories*, *everyday knowledge*, and *folklinguistics*. Third, research into learner beliefs diversified: studies were conducted basically along two lines of research (called by various names by reviewers of the developments in the field over the past 20 or so years, see e.g., Barcelos, 2003; Gabillon, 2005; Bernat, 2008; Ellis, 2008).

The first line of research, referred to as the *normative approach* by Barcelos (2003), followed the path laid down by the pioneers, sticking to a traditional *etic* perspective, borrowed from cognitive psychology (with ideals/principles adopted from the natural sciences) and stressing the *objective* nature of language learning. However, on occasions more complex research designs were resorted to, also. So instead of simple descriptions of a group of learners (or more than one compared), more sophisticated quantitative analyses were conducted to establish correlations, or cause-and-effect relationships, between learner beliefs and other learner characteristics, such as learning strategies, anxiety, motivation or personality, or learner background variables (including gender, age, language proficiency), or combinations of these, by statistical means. The majority of studies of learner beliefs were conducted along these lines, the BALLI continuing to be the most widely used instrument. Yang (1992), for instance, wanted to explore the beliefs about language learning held by second-language learners and their use of learning strategies. She used translations of the BALLI and the Strategy Inventory About Language Learning (SILL) developed by Oxford (1990) with 504 EFL undergraduates in Taiwan. The data were analyzed quantitatively using basic statistical procedures. The relationship between beliefs and strategy use turned out not to be very simple, and needed to be interpreted with caution. Yang added one open-ended question to the BALLI. The responses to this question revealed different beliefs from the BALLI. Some of the beliefs were probably culturally related, such as concerns about losing one's face, making a fool of oneself, or being laughed at.

By contrast, the second line of research opted for a less charted path, referred to as the *contextual approach* by Barcelos (2003), advocating an *emic* perspective, thus highlighting the *subjective* nature of language learning: the language to be learned, being a learner, the learning process, and learning contexts are all charged with positive or negative experiences and loaded with personal meanings (e.g., Kalaja & Barcelos, 2003). Beliefs were gradually acknowledged to be highly *dependent on context* and dynamic or *variable* not only from one occasion to another but even from one moment to another. This, in turn, meant a shift in research methodology. Typically studies were qualitative or interpretative in nature, and a variety of data collection methods were used, possibly in combinations, ranging from questionnaires (now with open-ended questions) and interviews to completion tasks (of the type "Studying English is like . . ."), diaries or journals, observation, and narratives, and the pools of data analyzed, for example, for their content, metaphors, or means of discursive construction. Lima (2005) conducted an ethnographic study in Brazil to investigate the beliefs about language learning held by students (and teachers) and their relationship to motivation to learn English in schools. A semi-structured interview was used with students, teachers and parents, two questionnaires (an adaptation of the BALLI and an open-ended one), autobiographies and diaries by teachers and students, audio and video recordings of classes and drawings by students. The data were subjected to content analysis. A direct relationship was found between beliefs and motivation: "Beliefs determine expectations and value judgments, leading either to motivation or demotivation. Motivation, in its turn, forces individuals to action which again has an impact on success, with beliefs and motivation sustained" (Lima, 2005, p. 64, translated from Portuguese).

From the mid-1990s onward, the discussion about the good language learner was placed within an even broader framework: it was argued that four key areas needed to be addressed in order to account for the complexity of language learning (Ellis, 1994):

1. learner language and its characteristics;
2. learner-external factors (i.e., contexts of learning);
3. learner-internal mechanisms (including transfer from the learner's first language); and
4. the language learner him- or herself.

Beliefs were one issue among many others (such as age, affective states, aptitude, motivation and personality) to be considered under the last of these key areas, and were claimed to have an indirect effect on learning outcomes through the learner's choice of learning strategies, or possibly a direct one (for an attempt at a comprehensive account of learner contributions or characteristics, including beliefs, viewed in relation to learner actions and contexts of learning, see Breen, 2001a).

As productive as the two lines of research have been, they have not, however, done full justice to the importance of learner beliefs, as these are viewed as just one of a host of other factors involved in language learning (or teaching). Thus beliefs have not yet been given the recognition that they deserve, especially in relation to learner action.

Most Recent Research

A recent "off-shoot" of the second line of research comprises studies that have been informed by Vygotskyan sociocultural theory and Bakhtinian dialogism (Alanen, 2003; Dufva, 2003). Social in origin, and so emerging out of interaction with others, beliefs are eventually internalized and can later change or, as it is now expressed, *transform* when the learner is faced with new experiences of learning in other contexts. Importantly, a further distinction is made between beliefs as *metacognitive knowledge* (or content) and as *mediational means* or tools (or content and control). Metacognitive knowledge has to be transformed into mediational means before it can influence second- or foreign-language learning. This is a way of acknowledging that some beliefs are more important than others, mediational means influencing learner action and thus either enhancing or preventing language learning. However, the relationship between learner beliefs and actions is considered to be far from a simple causal relationship (cf. the first line of research): beliefs can, in fact, influence actions in *complex* ways.

Typically, studies have been case studies, with learners viewed as individuals with their own personalities, learning histories, and agencies (instead of bundles of background variables), *longitudinal* in design, and making use of a variety of data, such as interviews or narratives, now in a broad sense including both verbal and visual ones. An additional methodological lesson concerns *positioning* (Coughlan & Duff, 1994). Whatever method or task is used to collect data, learners have a number of verbal and nonverbal recourses to choose from to report on their beliefs, and these may reveal how they position themselves in relation to the task or the topic at hand. Therefore great sensitivity is required in processing and analyzing data and triangulation of data pools is recommended.

For example, in her longitudinal study, Aro (2009) sought to describe the beliefs about EFL and its learning held by 15 schoolchildren in Finland. The children were interviewed three times over the first five years of school, when 7, 10, and 12 years of age, or years 1, 3, and 5 of school. The data were subjected to content analysis. In addition, use was made of the notions of *voice* and *agency*. The children's beliefs varied from one occasion to another and developed with experience, and at the same time were repetitive as if they had been

generally acknowledged facts of life (e.g., "English is needed abroad"). With time, the voice of a carefree child, even indifferent to English as a language, evolved into that of a language learner and user, with beliefs based on personal experience and an increased use of their own voice (of the type "In my opinion . . .") as opposed to the voices of significant others around them. The children's agency also developed from cooperation with their parents and teachers toward independence as learners, or from other-regulation to a higher degree of self-regulation. However, some children had fallen back into the role of a passive recipient of teaching by Year 5 of their studies.

Conclusion: Challenges and Directions for Future Research

The field is blossoming with flowers that come in all colors. To put it more professionally, traditional cognitively oriented research now exists side by side with socioculturally oriented research, launched more recently, these two forming extremes on a continuum of orientations. The current state of affairs is further characterized by the recognition by most researchers that learner beliefs about aspects of language learning are much more *crucial* than was thought before in determining how learners approach their learning of second or foreign languages and as such are complex mediational tools intertwining with learner action in complex ways.

Research on learner beliefs about language learning has come a long way since the first mention of the term *beliefs* in 1985 in applied linguistics. As this entry has shown, different approaches and theoretical understandings point to the importance of beliefs to several aspects of language learning and the language learner, such as anxiety, strategies, and motivation to mention just the most common. However, so far there has been very little research into the following aspects:

- Learner beliefs and *identity* (or second- or foreign-language or L2 selves) and agency: What is the relationship between learner beliefs and identity or L2 selves? What role do beliefs play in constructing and shaping learners' L2 selves? How can teachers help students to identify with certain beliefs to help them construct possible and ideal selves (Dörnyei & Ushioda, 2009)?
- Learner beliefs and *emotions*. Affective factors have also been a concern of researchers in applied linguistics. How do these relate to beliefs? A recent study by Aragão (2007) carried out in Brazil suggests that emotions and beliefs are intrinsically related. Future research should investigate this aspect further.
- *Change* in learner beliefs: How do learner beliefs change and develop (or transform)? What factors influence this change? How can teachers help in the development of learners' beliefs?
- Beliefs and *learning*: What is the relationship between beliefs and learning? So far, this relationship has not received much attention and we do not have many insights into exactly how beliefs and learning are related.
- Last but not least we suggest that instead of looking at these issues in isolation, research should try to approach these *holistically*, viewing motivation, identity, and emotions as an ecological system in which each one interacts with and affects all the others.

We hope that research into learner beliefs about language learning will continue to flourish and widen in its scope to include these aspects and bring a more complete picture of the language learner and his or her learning. In this sense, further socioculturally oriented studies (related to agency) would also be welcome.

SEE ALSO: Affect and Language Teaching; Agency in Second Language Acquisition; Bakhtin and Second Language Acquisition; Beliefs in Second Language Acquisition: Teacher; Case Study; Identity and Second Language Acquisition; Individual Differences in the Classroom; Motivation in Second Language Acquisition; Narrative Approaches to Second Language Acquisition; Qualitative Methods: Overview; Quantitative Methods; Sociocultural Theory; Teaching Language-Learning Strategies; Vygotsky and Second Language Acquisition

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Beliefs in Second Language Acquisition: Teacher

ANA MARIA FERREIRA BARCELOS AND PAULA KALAJA

Introduction and Overview

Research into teacher beliefs is a relatively new topic in language education; however, in the field of education it was addressed as early as the mid-1970s. In his study, now a classic, Lortie (1975) looked at the socialization into teaching of first-language teachers. The study marked a change in paradigm. Previously, teaching had been viewed as a process-product with an emphasis on teacher behavior and learning outcomes. Now, teacher thinking and knowledge are recognized as playing an important role in teaching. Teaching began to be studied from an emic, or insider, perspective, and so research into what is now known as teacher thinking, teacher cognition, teacher learning, or teacher knowledge was born.

The holders of these beliefs about language learning—and teaching—are learners or teachers, who might find themselves in either pre-service or in-service teacher-education contexts. The teachers can range from novices to experienced professionals; their work can take place in immersion, second- or foreign-language contexts, and they can be teaching children, adolescents, or adults. The beliefs about language learning and teaching held by teachers have their origins in their previous learning or teaching experiences, and depend on one another.

The importance of the beliefs held by language teachers has been related to (a) their reflections about their own practices (whether these help them to reflect or prevent them from doing so), (b) the actions taken and decisions made by them in their everyday practice, (c) their responses to changes or innovations, (d) their process of learning to teach, and (e) the possible resistance to new methods or activities in the language classroom on the part of the students. In addition, after graduation, language majors enter working life as teachers, textbook writers, evaluators, and administrators, and in that sense they are like gatekeepers, mediating their beliefs to generations of learners and others around themselves over careers extending some 40 years in these various roles. It is therefore crucial to find out about their beliefs about language learning and teaching as these might be reflected in their practices not only in classroom contexts but also in out-of-classroom contexts with possibly far-reaching consequences.

One of the major controversies concerning teacher (and student) beliefs has to do with the distinction between beliefs and knowledge. Most researchers make a distinction between beliefs as "based on evaluation and judgment" and knowledge as "based on objective facts" (Pajares, 1992, p. 313). Beliefs have been characterized as (a) non consensual, or disputable in principle; (b) evaluative and affective, although belief systems do have a cognitive component too; (c) episodic (relying on episodes in personal experience, folklore, or propaganda); and (d) open, that is, with wide boundaries that usually involve self-concepts (Abelson, 1979; Nespor, 1987). Knowledge, by contrast, is regarded as open to critical examination and reason. Other scholars, however, do not insist on such a distinction. It is argued that cognitive elements have their own affective and evaluative components.

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One way of resolving this issue has been to introduce all-inclusive terms such as beliefs, assumptions, and knowledge, or BAK (Woods, 1996), or simply teacher cognition (Borg, 2003), or what teachers think, know, and believe. To sum up, researching teacher beliefs about language learning and teaching has been a challenging task, not only because of the complex nature of the phenomenon but also because of the variety of terms and definitions introduced in the literature over the years.

Teacher beliefs are now characterized as follows (e.g., Pajares, 1992; Kalaja & Barcelos, 2003). First, beliefs are claimed to be contextual, personal, experiential, social, cognitive, and constructed in discursive practices. Second, they are described as dynamic and variable from one situation to another. Third, they are intrinsically related to actions, which guide and influence them. Fourth, beliefs are part of a teacher's interpretive ability to make sense of the social world around him or her and respond to the problems he or she is faced with. Fifth, beliefs are organized into clusters; earlier beliefs, it is claimed, are more difficult to change because these are more closely related to a teacher's emotions and sense of self. This explains why some beliefs may be more resistant to change. Finally, beliefs play an important role in helping teachers to understand themselves and others and adapt to the world. As such, these provide meaning, structure, order, direction, and shared values. They also help individuals to identify with groups and social systems, thus reducing dissonance and confusion.

Current State of the Field

In their starting points, studies of teacher beliefs about language learning and teaching have almost always been qualitative or interpretative (as opposed to being quantitative). This is in sharp contrast to research into learner beliefs. One explanation for this may be that understanding beliefs held by teachers is closely related to their actions in classrooms.

In order to find out about teacher beliefs, data have been collected from teachers themselves (and possibly from their learners) by a variety of means, including classroom observation, questionnaires, interviews, and reflective writing such as journal writing and narratives (for a critical review, see Borg, 2006). The subjects (or participants) under study have varied from pre- and in-service teachers to those in continuing education. Novices have been compared to teachers with a number of years of teaching experience either in cross-sectional or in longitudinal studies, the latter research design being, however, still quite rare.

The issues that the studies of teacher beliefs about language learning and teaching have addressed range from specific (e.g., beliefs about teaching grammar or reading, the use of the first language in the classroom, error correction, assessment, and technology) to general in scope. Crucial issues include teacher beliefs and their relationship to (a) actions, (b) change and teacher learning, and (c) beliefs held by their students. Below, each of these will be discussed and illustrated with one or two studies.

Teacher Beliefs and Actions

These days it is widely recognized that beliefs about language learning and teaching held by teachers influence their actions, and at the same time their actions influence their beliefs. In other words, the relationship is interactive. It is therefore important to understand how these stand in relation to one another, and what role contextual factors might play in this. For example, the beliefs held by a teacher may not be in line with his or her practice(s) because of clashing interests or ambiguities in the context, including large group sizes, low student motivation or proficiency, dull textbooks, or too many administrative pressures.

In his study, Woods (1996) wanted to find out how the beliefs, or BAK, of eight ESL teachers in Canada related to their decision-making processes. Importantly, these were viewed in relation to the courses taught as a whole. Use was made of ethnographic interviews, observations, and stimulated recall interviews based on videotaped lessons. The results suggest that BAK and behavior do not necessarily correspond. This can be explained by the presence of routine and unconscious actions being reflections of prior teacher beliefs. Contradictions or inconsistencies between teacher beliefs and practices can provide insights into the culture of teaching. Teachers may find themselves, for example, in a subordinate position in relation to their supervisors, principals, or researchers. This might make them subscribe to beliefs based on what they think is part of the current teaching paradigm, instead of what they actually do in class.

Beliefs, Change, and Teacher Learning

The discussion of changes in teacher beliefs about language learning and teaching is related to two processes: changes that pre-service teachers go through while in teacher education, and changes made in their practices by in-service teachers.

Borg (2003) distinguishes between behavioral and cognitive changes: A change in actions does not necessarily lead to a change in beliefs, or vice versa. Woods (1996), however, claims that change is a very complex process: Old beliefs have to be deconstructed and give room for another set to be re-constructed. This, in turn, might lead to periods of confusion and frustration. However, most authors agree that change is gradual. Taking risks and experiencing periods of uncertainty are important aspects of this process. The beliefs held by teachers are intrinsically related to their identities, and this might complicate the process of change. Thus, proposing a change in beliefs may be perceived as a threat to their identities. Despite these cautions, the literature suggests that in order for a change to occur teachers must first make their beliefs explicit (before wishing to change them), be given opportunities to reflect on why certain practices and beliefs might work better than those they are used to, and finally be given the chance to try out alternative practices (Feiman-Nemser & Remillard, 1996).

Richards, Gallo, and Renandya (2001) investigated the factors that prompted ESL teachers in Hong Kong to change their beliefs. Personal factors and the professional contexts turned out to play a strong role in triggering teacher change. In addition, factors such as dissatisfaction with the present situation, change in the teaching context, and conflict between new beliefs and current practices caused change(s) in teacher beliefs.

Teacher and Learner Beliefs

In order to understand the complexities of beliefs in school contexts, it is gradually being recognized that it is not enough to study the beliefs held by one group (consisting of either teachers or students) at a time; these should be studied in a single study involving both parties to see to what extent their beliefs are the same or different in the specific context where they find themselves (e.g., Block, 1990; Allen, 1996; Barcelos, 2000). While learners may not necessarily learn what their teachers attempt to teach, a match in their beliefs is thought to be productive to learning, increasing motivation, and a mismatch in this respect counterproductive.

Understanding this relationship (and especially mismatches) can provide insights into a number of aspects of the language classroom such as (a) misunderstandings and miscommunication, (b) challenges by students to their teachers' credibility, (c) the engagement of learners in strategies disapproved of by their teachers, and (d) withdrawal and feelings of

unhappiness experienced by students. In short, the mismatches can affect learners' motivation, efforts, and the types of activities they choose to take part in.

Most studies addressing a match or mismatch in teacher and learner beliefs have made use of questionnaires with closed questions administered to both teachers and students (such as the Beliefs about Language Learning Inventory or BALLI). As a rule, however, the teachers and students studied have been chosen randomly, coming therefore from different contexts (e.g., Peacock, 1998; for the most recent study of this type, see Brown, 2009), although, as we have argued above, if beliefs are acknowledged to be complex contextual constructs, teacher and learner beliefs should be investigated in specific contexts. The following examples illustrate research conducted along these lines—with consequences in the methodological choices made by the scholars concerned.

In his study, Block (1990) interviewed 22 adult learners and 14 teachers of EFL in a private language school in Spain about their beliefs about language learning and the roles of teachers and students. It turned out that the teachers saw themselves as guides and nurturing parents, whereas the students saw them as controllers of classroom activities. The mismatch can be explained by a difference in point of departure. Accordingly, the students believed that their job was to pay for the course, and invest enough time and effort just to make it to class; it was the teacher's job to do the rest. By contrast, the teachers believed that their task was to coordinate language learning and ensure an environment conducive to learning; it should be the students who actually do the learning. In addition, the teachers and students differed in the sources of their beliefs: The teachers were informed by a combination of their theoretical readings and professional discussions; the students, by contrast, relied on their own experiences and those mediated by their teacher in class.

In a case study, Allen (1996) wanted to find out to what extent the beliefs, perceptions of success, and behavior of a learner taking intermediate Academic English in Canada were influenced by the beliefs about language learning held by his teacher. For this purpose, data were collected by a number of means: classroom observation, interviews with the teacher and the student, and diary entries written by the student. These were complemented with the analysis of relevant documents, including the course textbook, handouts, and additional materials prepared by the teacher. The student seems to have been affected by his teacher. Originally the student believed that the teacher was responsible for his learning, that interaction with native speakers was the best way of learning English, and that he should aim at native-like pronunciation. The teacher, on the other hand, believed that learners did not have to strive for native-like pronunciation. In addition, the teacher emphasized the role of learners in class as responsible for their own learning. By the end of the term the student's beliefs more closely resembled those of his teacher.

Conclusion: Challenges and Directions for Future Research

Language-teacher beliefs about learning and teaching continue to intrigue researchers all over the world, with an ever-increasing number of studies, book chapters, or full books published on this topic. Teacher beliefs continue to be seen as one of the most important keys to understanding teachers' cognitions, knowledge, and practices, as well as their process of learning to teach. However, there are still a number of issues that remain as challenges for future research.

One of the main challenges, pointed out by Pajares (1992) and Borg (2006), relates to the relationship between teacher cognition and learning outcomes. In other words, how do teacher beliefs influence successful learning? Is a mismatch of teacher and student beliefs really counterproductive? What kind of teacher beliefs can enhance student learning?

The second challenge and direction for future research is related to the relationship between teacher beliefs and identities. How do teacher beliefs influence the construction

of their identities? As suggested by recent studies (e.g., Kubanyiova, 2009), investigating this aspect may help explain some of the dissonance between teachers' actual practices and the imagined cognitions and identities they wish to construct. Future research should investigate this aspect further.

The third challenge that future studies could investigate more deeply is the relationship between teacher beliefs and emotions. This is an aspect that has not yet been addressed in language teaching, but it is already a trend in general education (Zembylas, 2006). Important questions to address include: How do emotions and beliefs affect each other and help in the construction of teacher identities and practice(s)? How do emotions relate to teacher beliefs and influence teachers' decision making?

Further studies conducted within sociocultural theory (Johnson, 2009) would also be welcome. More specifically, we need more studies addressing the question of how beliefs held by teachers function as mediational tools in their specific contexts or communities of practice.

A challenge of yet another type would be to look at teachers and their beliefs about language learning and teaching in relation to those held by other people (besides students) found in the school context, including parents, colleagues, principals, and local school authorities. Or why not move beyond the classroom and study the beliefs held by teachers in the various other roles they might play (or contexts in which they find themselves) in the course of their professional lives, for instance as study counselors, as producers of textbooks, as evaluators of learner performance or proficiency giving course grades or marking high-stakes examinations, or as administrators making policy decisions concerning languages at local or national levels?

In conclusion, the research so far has managed to reveal the intricate and multifaceted nature of language teachers' cognitions. We hope that further research on this topic in applied linguistics continues to contribute to our understanding of teachers' lives, cognitions, and practices.

SEE ALSO: Affect and Language Teaching; Beliefs in Second Language Acquisition: Learner; Emic and Etic in Qualitative Research; Identities and Language Teaching in Classrooms; Motivation in Second Language Acquisition; Qualitative Methods: Overview; Sociocultural Theory; Teacher Education for Multilingual Education

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Bell, Allan

PHILIPPA SMITH

A dual career as a journalist and an academic set Allan Graham Bell (1947–) on a pathway to international recognition for his exceptional contribution to the study of language and communication.

Bell's work on referee and audience design, news discourse, media language, and New Zealand (NZ) English is particularly highly regarded and considered required reading in many sociolinguistic courses around the world. His research interests cross a number of methodological and disciplinary boundaries and intersect with many different areas of language use such as identity and voice.

Although born in Wellington, New Zealand in 1947, Bell spent the first 10 years of his life in Palmerston North until the untimely death of his father who was a minister of religion. Bell moved to Auckland with his family where he continued his education, achieving the status of top humanities student in the New Zealand national scholarship exams in 1965. In his adult years his ever increasing interest in language became apparent with his academic accomplishments at the University of Auckland, where he gained a Bachelor of Arts (1968) and a Master of Arts (First Class) in English and German, literature and linguistics (1969), and a doctoral thesis titled *The Language of Radio News in Auckland* (1977). Between his postgraduate degrees Bell spent time in Europe studying linguistics and applied linguistics at the University of Stuttgart and completed a year of predoctoral study at University College London.

While a student at Auckland University Bell sharpened his editorial skills with the production of a regular newsletter for Christian university students and, in a one year break from his PhD studies in 1976, he edited the somewhat controversial university student newspaper *Craccum.*

Bell's foray into postdoctoral employment saw him move back to Wellington—New Zealand's capital city and the hub of government departments. Here he held various editorial, journalist and media consultancy positions over a nine year period (1978–87) with the Department of Science and Industrial Research (DSIR), the Ministry of Agriculture and Fisheries, and the Ministry of Works and Development. Interspersed with these roles were periods overseas where Bell was a visiting research associate at the Center for Applied Linguistics, in Washington, DC in 1981, and in 1982 a Leverhulme postdoctoral scholar at the University of Reading, in England. While continuing his media work for the DSIR from 1987 to 1992, Bell wore several other vocational hats—from a self-employed researcher, author, and editor, to a consultant in applied sociolinguistics, media, and communications.

Overlapping with this period from 1987 to 1996, Bell held various part-time academic positions, first as an honorary research fellow and then as a senior research fellow in the Department of Linguistics at Victoria University in Wellington. In 1989 Bell was also a fellow of the Stout Research Centre at Victoria University which is dedicated to scholarly research in New Zealand society, history, and culture.

Following a short period in 1994 as a visiting senior research fellow at the Centre for Language and Communication Research at the University of Wales Cardiff, Bell, drawing on his many years of editorial expertise, cofounded the *Journal of Sociolinguistics* along with Nikolas Coupland (Cardiff) in 1997. Adam Jaworski (Cardiff) joined them as reviews editor. The journal, published by Wiley-Blackwell, receives about 150 submissions a year

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from academics wishing to publish in a high-quality sociolinguistics periodical. Aside from leading the editorial team, Bell continues to oversee the publication processes of the journal.

Bell returned to Auckland in 1997 where, in the Department of English linguistics program at the University of Auckland, he taught sociolinguistics and continued his research in media and language styles. In 2000 Bell became a research fellow at the Woolf Fisher Research Centre within Auckland University's School of Education. However, the following year he accepted his first full-time academic position, at the Auckland University of Technology as professor of language and communication and founder-director of the Centre for Communication Research (later renamed the Institute of Culture, Discourse and Communication). Teaching, research management, mentoring students, researching, and writing have since occupied his full attention.

Bell's journalistic experience prepared him well for research into language and media. He is perhaps best known for his theory and framework on audience design which was first promulgated in his seminal article "Language Style as Audience Design" published in *Language in Society* (1984). Audience design originated from Bell's research comparing two radio stations with audiences from opposite ends of the socio-economic spectrum. Bell suggested that the linguistic style-shifting of the newsreaders was in response to the audience enabling them to establish a greater sense of intimacy or, conversely, to create distance. Bell broadened this concept to include people in everyday life—in the way they choose their language, language variety, or specific linguistic features to respond to an audience. Referee design, as an aspect of audience design, proposes that people initiate language to construct different identities depending on their audience. Central to both these concepts is the role of the audience in how it listens to what is said and the way it responds, thereby giving "voice" to others on an individual level and on a wider social and political platform (Bell, 2007a). Bell's audience design framework provided an alternative to other contemporary theorists such as Labov, Gumperz, and Milroy (DeFelice, 1996), yet it became the leading approach to style in sociolinguistics internationally from the 1990s onward and is frequently cited in academic literature.

Two noteworthy publications that mark Bell's prominence in the field of media discourse are *The Language of News Media* (1991/2001), and *Approaches to Media Discourse* in which he contributes two chapters (Bell & Garrett, 1998). Bell's practical journalistic experience not only gave him firsthand knowledge of news writing—particularly apt in his deconstruction of news articles and the editorial processes involved—but it also facilitated a clear writing style in these books. Although not conceived as a text book it is not surprising that *The Language of News Media* has been widely used as one. Alongside publications written by van Dijk (1988) and Fowler (1991), the book is perceived as one of the first texts to critically analyze news media and has become a primary research monograph in the applied linguistics field, with a total of five reprints.

Bell (2007b) names Russian philosopher Mikhail Bakhtin as one of his academic icons, identifying the concepts of centrifugal and centripetal language as being a key influence on his work on language and identity (2007c). Centripetal forces pull language together in an effort to standardize and establish uniformity and homogeneity. But it is the centrifugal forces which Bell says, as a sociolinguist, he finds most fascinating describing them as "always whirling language apart into diversity, spinning new words, new dialects, new accents, new languages, new voices, regardless of all efforts to the contrary by academics, educators, politicians or pedants" (2007a). Advertisements have been linguistic "rich points" for some of Bell's research because they offer an "invaluable repository of sociocultural matter" (2007b) particularly in the formation of identity (see Bell, 1992, 1999).

Living in a small and somewhat isolated country such as New Zealand allowed Bell to research NZ English—an area that had been largely ignored in academic circles and

one that could be typified as an example of centrifugal forces at work. In conjunction with Janet Holmes and Mary Boyce (Victoria University), Bell conducted the Porirua Project (1989–93)—the first major investigation into everyday NZ English. It highlighted the distinctiveness of conversational NZ English and launched it to become one of the most studied varieties of the language internationally.

Recognizing that NZ English continues to evolve, Bell further explored this area (Bell & Kuiper, 2000; Starks, Harlow, & Bell, 2005), expanding it to include other language varieties such as Māori English (Māori being the indigenous people of New Zealand) (Bell, 2000). In 2009, during sabbatical leave, Bell was visiting professor in World Englishes at the University of Regensburg in Germany.

Bell's concern with addressing social and practical issues through his knowledge about language and communication is seen in his involvement in a wide range of projects which go beyond linguistic analysis. These include a somewhat prophetic investigation into media reporting and public understanding of climate change in New Zealand (Bell, 1994), and an examination of the impact of media technologies on society such as television violence (King et al., 2003) and the Internet (Bell et al., 2008). Bell has also undertaken advocacy roles and was influential in the government's decision to support, promote and sustain Māori language through broadcasting (Bell, 2010). His involvement in the Pasifika Languages of Manukau project (2000–2) highlighted concern about the maintenance of the community languages of Samoan, Cook Island, Niuean, and Tongan people living in Manukau in Auckland (Bell, Starks, Davis, & Taumoefolua, 2001; Taumoefolau, Starks, Davis, & Bell, 2002).

Bell's passion as a sociolinguist can be summed up in these words taken from his inaugural professorial address where he portrays himself as

> someone whose working life has been in language and how language functions—language as structure, language as manifestation; language as social fact and as identity bearer; language as interaction, as communication, as a bridge between self and other; language as truth teller and as deceiver; language as expresser; language as delight, language as miracle. (Bell, 2007b)

As a journalist, an academic, and a teacher there is no doubt that Bell's relationship with language has been a two-way process in which he has relished both the knowledge he has gained and the knowledge he has given.

SEE ALSO: Language and Identity; Mediated Discourse Analysis; Multilingualism; Varieties of World Englishes

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Berk-Seligson, Susan

YVONNE A. FOWLER

Susan Berk-Seligson (b. 1947) graduated with a first degree in Spanish and was subsequently a Peace Corps Volunteer in Costa Rica before obtaining her MA in Linguistics in 1971. The subject of her doctoral thesis was *Phonological Variation in a Synchronic/Diachronic Sociolinguistic Context: The Case of Costa Rican Spanish* and she duly obtained her PhD from the University of Arizona in 1978. She taught in the Modern Languages Department of Purdue University from 1983 to 1985 but spent the bulk of her career (from 1985 to 2004) at the University of Pittsburgh. Here she taught in the Hispanic Languages and Literatures Department but also held a secondary appointment in the Department of Linguistics where she was Director of the MA program in Hispanic Linguistics. At the time of writing she was at Vanderbilt University in Nashville, Tennessee, and has held a post as Associate Director of the Center for Latin American Studies as well as Director of Graduate Studies of that Center.

Berk-Seligson's research interests lie in sociolinguistics, forensic linguistics, pragmatics, discourse analysis, and language and gender. Her seminal work *The Bilingual Courtroom*, first published in 1990, revised and updated in 2002, and awarded the prize for Outstanding Book in the Field of Applied Linguistics by the British Association for Applied Linguistics, has had a major and far-reaching influence on research and practice in court interpreting. Drawing upon over 100 hours of audio recordings in federal, state, and municipal courts in the USA, she presents the first ethnolinguistic analysis of interpreter-mediated interaction in the courtroom. She clearly demonstrates how an interpreter alters the dynamics of the courtroom in highly visible ways: the swearing of the interpreter's oath; responding to challenges in interpretation by bilingual attorneys, who also often mistakenly address the interpreter instead of the defendant; and intervening to clarify witnesses' responses, among many others.

Her groundbreaking psycholinguistic study in the same volume of more than 500 mock jurors' reactions to different styles of interpreted testimony show how interpreters can unwittingly change both the testimony styles of witnesses and the questioning style of attorneys by including or excluding such features as politeness markers, hedges, and hyperformality in their interpreted utterances. Mock jurors were found to react positively to the use of politeness markers and hyperformality by witnesses, for example, and rated them as more convincing, competent, intelligent, and trustworthy than when those features were absent. Interpreter-mediated testimony, then, could mean the difference between being found innocent or guilty of a crime. As a result of her research into interpreting, Berk-Seligson is now a member and Research Affiliate of the Advisory Committee which oversees the Federal Court Interpreter's Certification Exam administered by the National Center for State Courts in the USA.

Her interests in the language of legal settings and that of gender were the focus of her research into the discourse of domestic violence. She served as a member of the National Advisory Board of the National Center for State Courts project: "Serving Limited English Proficient (LEP) Battered Women: A National Survey of the Courts' Capacity to Provide Protection Orders." She has also conducted research into domestic violence amongst indigenous Ecuadorians. As a result of this work she coauthored, with Shonna L. Trinch, "Narrating in Protective Order Interviews: A Source of Interactional Trouble" (2002).

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Her latest book, *Coerced Confessions: The Discourse of Bilingual Police Interrogations* (2009) examines the questioning of LEP suspects by "bilingual" police officers. The book serves to highlight and contrast the lack of any legal requirement for the use of interpreters at the police station with the relatively high degree of regulation to which court interpreting in the USA is subject, and is an indictment of police practices in relation to the interrogation of non-English-speaking suspects, where family, friends, and even codefendants may be used as interpreters as well as police officers. The book sets out to answer the question of why people confess to crimes they have not committed, and posits that non-English-speaking suspects should be regarded as vulnerable along with other kinds of interlocutors. There appears to be no requirement at national level to record police interviews of suspects to provide accountability and facilitate analysis, and very few US states have yet passed laws in this regard.

Berk-Seligson investigates a variety of strategies used by these officers when questioning LEP detainees. In one case a so-called bilingual police officer could not successfully assume the impartiality required of an interpreter and unwittingly shifted into interrogator mode through the use of first person plurals, including both himself and his co-interrogator in his questions. Discussion of the Miranda Rights also feature in the work; since there appear to be neither standardized translations of the Miranda Rights nor standardized procedures for officers to check the detainee's comprehension, the latter's rights are often violated. In yet other cases the officers' knowledge of Spanish was so limited as to render any interrogation virtually incomprehensible. Some still languish in prison as a result of coerced confessions.

Berk-Seligson has appeared many times as a linguistic expert witness in first-degree murder cases, often involving capital punishment, and also in cases where linguistic minorities assert their right to speak a language other than English in the workplace. She has also appeared in class action lawsuits initiated either by the Equal Employment Opportunity Commission or by private law firms. These are mostly cases of English-only policies operated by private companies. In addition she has been called as an expert in US Immigration and Naturalization hearings in regard to the provision of and right to good quality interpreting services.

In 2006 she conducted interviews with 93 Ecuadorians on a US Agency for International Development project in order to investigate the linguistic challenges associated with the proposal to give indigenous communities greater judicial autonomy in Ecuador. She found a lack of consensus in this regard among those she interviewed: namely, members of the judiciary at various levels, interpreters, translators, and local and national political leaders. This was evident both among the *mestizo/blanco* administrators of state justice and those within the Quichua-speaking communities themselves. Judicial rights for indigenous minorities have been guaranteed by law since 1998, but some among the judiciary would deny these rights and others uphold them. Many Quichua communities desire complete judicial autonomy while others within that same community would prefer to remain within the state justice system. Central to this issue is the provision of interpreters, who should pay for them, and to what standard they should perform their task. This work, in progress at the time of writing, will culminate in a book, *Human Rights, Gender, Language, and Ethnicity: Judicial Systems in Contact in the Andean Sierra.*

SEE ALSO: Forensic Linguistics: Overview; Legal Interpreting; Pragmatics: Overview

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Bhatia, Vijay

JANE LUNG

Vijay Kumar Bhatia is known internationally as one of the leading researchers and theorists on the subject of genres and is a renowned international author in the field of English for specific purposes. He is best known for his work in critical genre analysis of professional discourse. Over the past 44 years his specialities have grown to include discourse and critical genre analysis, legal analysis, as well as ESP and professional communication (theory and practice). He is a professor in the Department of English at the City University of Hong Kong and the founding president of the Asia-Pacific Association of LSP and Professional Communication; he is also an adjunct professor at the Macquarie University, Sydney, Australia.

Bhatia was born and raised in India, where he received his first degree in science and mathematics and an MA in English and American Literature. The early years of his study of professional communication in general, and genres in particular, began in 1968. At that time, as a young teacher and lecturer, he was asked by the School of Law at the University of Rajasthan in India to develop a specific program in English for law students. This began not only his interest in genres, but particularly in communication in law with its different types of legal documents. This experience in turn led to his first research-based investigation of the use of English in law at a time when the field of English for specific purposes (ESP) was relatively new. After attaining his MLitt (Bhatia, 1977) in India and his MA in Lancaster, UK (Bhatia, 1979), he then moved on to the University of Aston in Birmingham (UK) and studied for his PhD in discourse analysis under John Swales, investigating the formal and functional characteristics of qualifications in legislative writing and its application to English for academic legal purposes (Bhatia, 1982). There he became involved in a groundbreaking project analyzing research article introductions. During his time at Aston he had primary responsibility for establishing a resource center which has now become the largest ESP reference collection anywhere in the world and which he managed for its first four years, from 1979 to 1983.

Bhatia has taught at both undergraduate and postgraduate levels for more than 40 years, first in India, then in the UK, Singapore, and Hong Kong. His first academic appointment was as a lecturer at the University of Rajasthan in 1966, later moving on to join the University of Aston in Birmingham in 1979. After completing his PhD he took an academic position at the National University of Singapore first as a lecturer (1983) and then as senior lecturer (1986), he then went to the City University of Hong Kong as associate professor (1993) and as professor (1996). His work has involved the planning, designing, teaching, and testing of courses and modules in a large variety of academic areas, including discourse variation in professional communities, research methods in ESP, teaching of ESP, discourse and genre analysis, acquisition of specialist competence, and English for law. He has also been involved in the development of MA-level teacher training and applied linguistics programs at universities around the world, including the University of Aston in Birmingham, the National University of Singapore, the University of Malaya in Kuala Lumpur, and the City University of Hong Kong.

Among his most significant research projects has been his study on the *Teaching of English in Meeting the Needs of Business Education in Hong Kong*. This was done in collaboration

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with Christopher Candlin and other colleagues from five participating institutions. The resulting report contributed greatly to the development of more effective language programs in English for business communication. Another significant project has been *Genre Bending in Corporate Disclosure Documents*. The study used a multi-perspective critical genre analysis of corporate disclosure documents to analyze the appropriation and exploitation of linguistic resources that corporations used to promote their corporate interests within the process of factual corporate reporting thus projecting a positive and encouraging image of the corporation even when the corporation under-performs during that period.

Regarding Bhatia's research in legal discourse, he helped lead a groundbreaking study, again in collaboration with Candlin, focusing on *Strategies and Competencies in Legal Communications*, again in collaboration with Candlin, whereby the communication needs of legal professionals in Hong Kong were investigated. The outcome of this project contributed to the recommendations of an international committee appointed to propose reforms in the legal education programs in Hong Kong. A second study, *Generic Integrity in Legal Discourse in Multilingual and Multicultural Contexts*, also by Bhatia and Candlin, included colleagues from the School of Law (City University of Hong Kong) and 12 international teams of scholars from Italy, Denmark, France, Germany, the Czech Republic, South Africa, India, Hong Kong, Brazil, Finland, Malaysia, and Croatia. This project investigated the integrity of arbitration laws across linguistic, sociopolitical, and jurisdictional boundaries and was subsequently published in five edited volumes, bringing to the fore Bhatia's ability to coordinate diverse people from diverse cultures providing a platform for these various research teams while enabling them to exchange their contributions in a meaningful way. This in turn has culminated his current project, *International Commercial Arbitration Practices: A Discourse Analytical Study*, which involves more than 25 scholars from 15 different countries. This project is investigating the extent to which the integrity of arbitration principles is maintained in arbitration practice. It focuses on the nature and the extent of the colonization of commercial arbitration practices in international contexts, and explores the motivations for such an interdiscursive process. The outcome of this project will contribute significantly (a) to the understanding of mediation–arbitration–litigation perspectives in the context of "arbitration in action," (b) the strengthening of international commercial arbitration as a nonlitigation practice for handling commercial disputes, and (c) the development of authenticated professional packages for international arbitration training.

Bhatia thus may be best known for his research in legal discourse. Reflecting on the importance of this focus of study in the field of ESP in a recent interview with Carliner (2010): "I think the important aspect of legal discourse is the way different legal genres interact and co-construct each other." In his view, "teachers will perform more satisfactorily by combining different and overlapping genres in a particular disciplinary domain, and even across domains, in some cases" (Carliner, 2010, p. 64). While noting that the tendency has been to focus on the use of lexicogrammatical resources, he remarked that it has often been overlooked that "this genre forms the very basis for the construction and interpretation of other equally important and identifiable genres, such as the legal judgments and cases, agreements and contracts, pleadings and case notes, to name only a few" (Carliner, 2010, p. 64). Bhatia concluded the interview by observing, "the most economical, efficient and effective pedagogical strategy would be to teach them together, interdiscursively developed in the context of legal practice, rather than in isolation" (Carliner, 2010, p. 64). As reflected in this interview, his voice has been an important one in the debate on what the relationship of subject content and language instruction should be.

The prolific aspect of his work can be seen from the literally hundreds of publications contributed to journals, book chapters, edited volumes, and individual books. He has published widely internationally on the analyses of legal, business, newspaper, and adver-

tising genres; ESP and professional communication (theory and practice); simplification of legal and other public documents; and cross-cultural and disciplinary variation in professional discourses. Along with serving on the editorial boards of top journals, Bhatia has also influenced the field through his organization of a number of international conferences, symposiums, workshops, and roundtables that focused on LSP scholarship in academic, professional, and workplace contexts.

Along with his many articles focusing on genre, power, and discourse, he coedited a number of volumes with his ESP colleagues. The two most significant ones include, in collaboration with Maurizio Gotti, *Explorations in Specialized Genres* (2006), and with John Flowerdew and Rodney Jones, *Advances in Discourse Studies* (2008). He has also published multiple book chapters on genre and discourse studies in edited volumes with more than nine top publishers.

As to his published works, the best known of his books, *Analysing Genre: Language Use in Professional Settings* (1993), provided a comprehensive introduction to a relatively new and unexplored area of discourse studies: the analyses of nonliterary genres. In this book, he provided answers to the key question in discourse studies, "Why is a particular text genre written in the way it is?" Another important contribution of this book was the extensive discussions of cross-cultural variation in many academic and professional settings, including a variety of examples from a wide range of non-native contexts.

Another of his books, *Worlds of Written Discourse: A Genre-based View* (2004), is now widely used as a resource for further research and practice in ESP as well as discourse and genre studies. This book looks at the tension existing between the written discourse and its representation in applied genre-based literature by addressing the problem from the perspectives of four different worlds: the world of reality, the world of private intentions, the world of analyses, and the world of applications. By proposing a multi-perspective, three-space model of discourse analysis, Bhatia moves genre theories away from educational contexts into the real world and proposes a multidimensional and multi-perspective model for analyzing written professional discourse, extending substantially the notion of pure genre to incorporate new configurations such as genre colonies, genre mixing, genre-embedding, and genre bending.

To summarize, it can be seen that Bhatia has been a major force in extending genre analysis from a purely linguistic analysis of academic and professional discourses to the analysis of professional practices and disciplinary cultures. Along with a more comprehensive, multi-perspective, and multidimensional view of genre analysis, Bhatia's own contribution moved the application of genre analysis from the classroom to the reality of the workplace which, as he noted, is a "much more complex and dynamic real world of discourse" (Carliner, 2010, p. 63). His research also delved into the fact that different professional contexts require different kinds of expertise and that there are different conventions associated with specific professional practices and disciplinary cultures, leading to the conclusion that learning these conventions of use, in some contexts, is more important than learning the language as a tool. However, in Bhatia's mind the most important aspect of professional genres is their interdiscursivity—the large-scale mixing and embedding of genres, and even the "bending" of generic conventions. All of these lead to his conclusion that only by combining various theories and frameworks can one have a clear vision of the whole.

As to how he keeps his skills current and his interest in his career ongoing, his reply is that he constantly thinks about the issues that arise from analyses and keeps asking himself and others questions such as: Why do professionals write the way they do? What makes the forms they use successful? and his so often repeated question, "so what?" Although commenting that the search is never ending he insists that in his mind, even the little insight he has gained has spurred him on. Already he is quite excited about the notion

of interdiscursivity in professional genres, even working toward a manuscript on interdiscursivity in professional genres. His confidence is that the development of what he terms "critical genre theory" will prove to be a powerful tool to explore the appropriation of generic resources across genres, professional practices, and professional cultures. With such a questing spirit, no doubt his presence will be felt in the discourse community for years to come!

SEE ALSO: Genre-Based Language Teaching; Genre and Discourse Analysis in Language for Specific Purposes; Language for Specific Purposes: Overview; Writing and Genre Studies

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Bialystok, Ellen

GIGI LUK

Ellen Bialystok (1948–) is a Distinguished Research Professor in the Department of Psychology at York University, Toronto, Canada. She has bridged studies of language and cognition through her investigation of bilingualism. Her pioneering interdisciplinary research examines the cognitive consequences of bilingualism both in linguistic and non-linguistic domains across the lifespan. Most notably, Professor Bialystok has reported a bilingual advantage in tasks assessing executive function, which is a set of skills that are necessary for planning, cognitive flexibility, suppressing distracting information, and selectively attending to relevant information. These research findings have significant implications for education, linguistics, cognitive science, psychology, and neurology.

After completing her PhD at the University of Toronto in 1976, Bialystok acted as a project director and an assistant professor at her alma mater. She joined the Department of Psychology at York University in Toronto in 1982 as an associate professor. In 2001, she was appointed associate scientist at the Rotman Research Institute at Baycrest, a geriatric hospital affiliated with the University of Toronto. Her prolific research has been recognized in multiple disciplines, as reflected in recent awards from the Canada Council for the Arts (Killam Prize for Social Sciences, 2010; Killam Research Fellowship, 2001), York University (President's Research Award of Merit, 2009; Faculty of Arts and Faculty of Health Merit Awards, 2000–2009; Dean's Award for Outstanding Research, 2002; Walter L. Gordon Research Fellowship, 1999), Natural Sciences and Engineering Research Council of Canada (Top 50 Discovery List, 2006), and Baycrest Centre for Geriatric Care (Donald T. Stuss Annual Award for Research Excellence, 2005). Bialystok became a fellow of the Royal Society of Canada and a distinguished research professor at York University in 2003.

Bialystok's early research focused on second language acquisition in children and adults, particularly the processes involved in reading development and communication strategies. These early findings have important educational implications in classrooms with an increasing number of bilingual students. Language acquisition is not a static process but requires continual interaction between knowledge of language forms and functions. The ability to understand the abstract relations between language forms and functions is collectively referred to as metalinguistic awareness. Importantly, Bialystok showed that children who grow up in a bilingual environment have advanced development in metalinguistic awareness. However, depending on the languages these bilingual children speak, they may have weaker knowledge of language forms because of less intensive exposure in each language. At the same time, bilingual children develop better knowledge of language functions because of their diverse experience with multiple languages. These findings were published in a series of scientific articles in the 1980s (Bialystok, 1981, 1987a, 1987b, 1988, 1989). From these studies, Bialystok proposed that metalinguistic awareness relies on the knowledge of language forms that are abstract symbolic *representations* of sound and meaning. In addition, the ability to manipulate this knowledge is maintained by cognitive *control* that may also be involved in non-language processes. Bilingual children outperformed their monolingual peers in developing these cognitive control skills but showed some weakness in knowledge of language representation. The distinctions between representation and control were also applied to studies of adults' production as instantiated in communication strategies (Bialystok,

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1990) and introduced a general psycholinguistic perspective on issues such as proficiency. The research on these distinctions further set the stage for understanding the distinct cognitive consequences of bilingualism in linguistic and nonlinguistic domains.

Why does language experience, such as bilingualism, affect cognition? According to Bialystok, this observation is a consequence of constantly managing attention to one of the two languages in a bilingual's mind. This experience affects a language-general cognitive mechanism that allows bilinguals to outperform their monolingual peers in executive functions tasks that require cognitive control. This mechanism is proposed to be language-general because bilinguals who speak any pair of languages need to recruit this mechanism. An example of Bialystok's early investigation on the bilingual advantage was shown with the *moving word task* (Bialystok, 1999). This task specifically taps into young children's understanding of meaning constancy in printed words by associating them with pictures that are either consistent or inconsistent with the meaning of the words. When the meaning of the words and the pictures were inconsistent, Bialystok found that bilingual children were better at ignoring the distracting picture and focusing on the meaning of the words. The interpretation is that bilingual children are better at inhibitory control of attention resulting in less interference from distracting information.

Following the investigation of inhibitory control of attention in the moving word task for young children, Bialystok continued to examine this cognitive benefit in bilinguals with nonverbal tasks to isolate the often-reported bilingual disadvantage in tasks requiring processing of verbal or linguistic stimuli. To this end, Bialystok assessed executive functioning using computerized tasks that she designed with nonverbal stimuli. For instance, she had adopted the Simon task paradigm to include squares with two colors. In the Simon task, participants are required to respond to presented stimuli (press left button when a red shape is presented, press right button when a green shape is presented). Congruent trials are characterized by the congruence between the correct response and the position in which the stimulus is presented, for example, a red shape presented on the left, and incongruent trials by incompatible spatial presentation, for instance, a red shape presented on the right. This task requires minimal processing of language and performance was least influenced by language proficiency, which is typically associated with a bilingual disadvantage.

In addition to examining the influence of bilingualism on cognition in children, Bialystok has expanded her bilingualism research to other age groups, including young and older adults, comprising the major developmental stages across the lifespan. Using tasks that do not require processing of verbal or linguistic stimuli, such as the Simon task, Bialystok has successfully identified bilingualism as a contributing factor to cognitive advantages in executive functions, such as cognitive flexibility (Bialystok & Martin, 2004; Martin-Rhee & Bialystok, 2008), suppression of distracting information (Bialystok, Craik, Klein, & Viswanathan, 2004; Bialystok & Senman, 2004; Bialystok & Shapero, 2005; Bialystok, Craik, & Ryan, 2006) and the ability to focus attention on one task (Bialystok, Craik, & Ruocco, 2006). One common characteristic of the task conditions in which a bilingual advantage was found is that there is a need to inhibit distracting information, which is often presented as an alternative response. This characteristic is rather similar to the situation in which a bilingual has to continually ignore interference from the language that is not in use. The critical point is the extended practice of focusing attention to one language in bilinguals resulting in enhanced cognitive control even when dealing with nonlinguistic stimuli.

The findings of a bilingual advantage in executive functions in adults, especially older adults, have important clinical implications, particularly in dementia research. Bialystok and her collaborators evaluated clinical records of patients who showed signs of cognitive impairments and divided them into monolinguals and bilinguals (Bialystok, Craik, & Freedman, 2007). These two groups of patients were comparable in gender distribution, cognitive performance at the time of first interview, and their occupation status. Nonetheless,

the bilinguals showed symptoms of dementia about four years later than that observed in the monolinguals. This substantial delay in onset age was interpreted as evidence for cognitive reserve slowing down age-related cognitive decline. One of the factors contributing to cognitive reserve is stimulating mental activity, such as higher education, musical training, or having an active lifestyle. In this case, Bialystok and her colleagues have successfully identified speaking two languages as one of these activities that show direct benefits in protecting against cognitive decline.

Aside from examining the positive influences of bilingualism on cognition, Bialystok has also investigated linguistic disadvantages due to bilingualism. Handling multiple representational systems for the same object or concept becomes a cognitive burden. This cognitive burden arising from the bilingual experience is both the source of the cognitive advantage and linguistic disadvantage reported in bilingual studies. In a large-scale aggregated analysis, Bialystok and colleagues have compared monolingual and bilingual children's performance on an English standardized receptive vocabulary task (Bialystok, Luk, Peets, & Yang, 2010). Vocabulary is typically measured by administering standardized tests, such as the Peabody Picture Vocabulary Test (PPVT) (Dunn & Dunn, 1997), which requires participants to match one of four line drawings to a word spoken by the examiner. Overall, bilingual children attained lower scores across the age groups, consistent with previous studies. To identify a possible explanation for bilinguals' lower performance in receptive vocabulary, Bialystok and colleagues performed a preliminary item analysis on PPVT in a subsample of six-year-old monolingual and bilingual children. The results suggested that the bilinguals achieved lower performance only in words that they usually encountered at home but not in words that are typically introduced in a classroom. This demonstrates that bilingual children may have weaker receptive vocabulary in one of their spoken languages because of less intensive exposure to one of the two languages.

Professor Bialystok has significantly advanced the fields of applied linguistics as well as of cognitive science by bridging the study of language and cognition through bilingualism. A bilingual mind houses two language representations which need to be handled efficiently. The experience of managing two languages in turn enhances a general cognitive mechanism that is not language specific. Bialystok has provided evidence for this observation throughout the lifespan. These compelling results from studying the bilingual population suggest that language processing is not domain-specific. Most notably, the observation that language experience changes performance in executive functions lends support to the proposal that human cognition is plastic and experience shapes cognition. The research on bilingualism conducted by Professor Bialystok has had a decisive influence on theory and applications in multiple disciplines.

SEE ALSO: Bilingualism and Cognition; Cognitive Approaches to Communication Strategies; Inhibition and Control in Second Language Acquisition; Multilingualism and Metalinguistic Awareness

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Bias in Language Assessment

CATHERINE ELDER

Background

The study of bias in language assessment (as in other areas of educational measurement) is bound up with notions of fairness or disadvantage affecting particular groups of test takers. Bias is only one dimension of test fairness, as Xi (2010) amongst others has pointed out, and it is important to distinguish it from group differences in test outcomes that result from social circumstances beyond the test. The notion of bias, as discussed in this entry, has to do with the internal properties of a test and its component items and has been defined as "systematic error that disadvantages the test performance of one group" (Shephard, Camilli, & Averil, 1981).

Interest in the question of bias dates back to the era of IQ tests (Binet & Simon, 1916), which consistently showed inferior performance amongst those with low socioeconomic status due to factors later claimed to have more to do with opportunities to learn than with latent intelligence or mental capacity. This had obvious implications for both validity and fairness, and led to the quest for assessment instruments that were neutral in the sense of being free of undue bias or influence from variables extraneous to the construct under test.

Studies in language testing have identified variable sources of such bias, including gender, instructional experience, background knowledge associated with particular disciplinary areas, first language background, and ethnicity of particular test-taker groups. Bias may also stem from the interaction between these groups and the raters responsible for scoring test performance. This entry first discusses a priori approaches to bias detection, whereby efforts are made at the test design stage to avoid the selection of test content or testing formats likely to disadvantage particular groups of test takers, and then proceeds to an account of post hoc analyses of item performance and of rater behavior carried out with the aim of identifying (and eventually removing or minimizing) error of measurement where this is found to result in systematic overestimation or underestimation of the ability of the subgroups of interest.

Avoiding Bias in Test Design

It is customary in the process of developing any language test to make efforts to preempt the possibility that the choice of content for a test might be offensive and hence have a potentially biasing effect on the performance of particular subgroups within the target population. Scrutiny of test content occurs routinely during the normal text and item paneling process, and sometimes more formally, via a carefully selected bias review committee. Some companies, such as the Educational Testing Service (ETS) in the USA, publish fairness guidelines (Educational Testing Service, 2009) to guide test developers in avoiding unfair content or images in tests as they are developed. Such content might involve gender stereotyping, inappropriate labeling of ethnic groups, reference to distressing incidents or controversial topics, use of graphs that may be unduly difficult for candidates with

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limited numeracy, or specialized words that might disadvantage those without relevant technical knowledge. Fairness guidelines are likely to include caveats to the effect that inclusion of such content may sometimes be central to valid measurement of the ability in question—a reminder that bias needs always to be determined in relation to the purpose of testing. For example, in an English test for health professionals it may be necessary and indeed critical to include specialized medical terminology.

Whether a priori monitoring of test content results in fairer tests, however, remains open to question, since test writers and vetters may have limited insight into what could stand in the way of valid measurement for different groups of test takers. Ross and Okabe (2006), for example, show that a priori subjective screening of test items by a panel of EFL (English as a foreign language) teachers is not necessarily an accurate means of predicting statistical bias.

Statistical Investigations of Bias

Statistical evidence as well as judgment is required to support substantive claims of bias. Evidence of overall performance differences between groups is not necessarily relevant, since such discrepancies may well be a reflection of real differences with respect to the construct of concern. Efforts are therefore made to institute ability controls such that comparisons are made between groups who are demonstrably *of equal standing* with respect to the ability of interest (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999). If these matched ability groups perform differently on particular tasks or test items for reasons which are deemed by expert judges to have little to do with the relevant group's latent ability, then the resultant score differences can be confidently attributed to bias.

Differential Item Functioning (DIF)

The term "DIF" is often used in relation to statistical investigations of group differences at the item level, and such investigations are common in language assessment contexts. An item that displays DIF is one in which two or more groups, otherwise matched in ability on the construct of interest, have different probabilities of answering correctly (Fern & Rupp, 2007). This may be an indication of unfair bias. DIF studies involve analysis of differences in performance at the item level between a *focal* group (often a disadvantaged minority) and a *reference* group, which serves as the norm or benchmark for comparison. Matching of groups is generally based on the total test score, or on some external criterion deemed to be measuring the same or a similar construct.

The decision about which groups to target for comparison is usually determined a priori, either on the basis of research-driven hypotheses about factors in test takers' background that might be predicted to influence the way they tackle test items, or in response to actual disadvantage of one group compared to another. Language background is the most common focus of DIF studies in language testing (see studies by Elder, McNamara, & Congdon, 2003; Abbott, 2007; Roever, 2007) because psychological and social factors such as L1 transfer (whether negative or positive) and L2 exposure are likely vary between different L1 groups. Other grouping variables explored in language testing contexts include gender (Takala & Kaftandjieva, 2000), age (Geranpayeh & Kunnan, 2007), and academic discipline (Pae, 2004).

As for the object of language-related DIF analysis, investigations have focused most frequently on dichotomously scored tests of grammar, vocabulary, or both (e.g., Jang & Roussos, 2009), of pragmatic competence (Roever, 2007), and of reading and listening comprehension (e.g., Abbott, 2007; Pae, 2004, Geranpayeh & Kunnan, 2007). DIF studies

of polytomously scored speaking and writing assessments are less common (but see Kim, 2001; Elder et al., 2003; Lee et al. 2004). The tests investigated thus far include high-stakes English selection tests like the TOEFL (Test of English as a Foreign Language) and other locally developed instruments in various languages for diagnosis, placement, or the measurement of language proficiency/learning achievement.

A range of statistical methods has been used for calculating DIF in language tests. McNamara and Roever (2004) review different approaches, including the nonparametric Mantel–Haenzel and standardization procedures, IRT and logistic regression, with reference to particular language testing studies. Method selection may depend on sample size and item type (dichotomous versus polytomous), and some methods lend themselves better to the detection of *nonuniform* DIF (i.e., differential functioning which manifests only at certain score levels). Triangulation of methods can produce more robust outcomes and has now become standard practice in language testing research.

When interpreting DIF results, it is important to remember that DIF analyses are only the first step in any bias analysis and the presence of DIF is not ipso facto grounds for removing or revising a test item or excluding it in the reporting of test performance. Items displaying DIF need to be carefully scrutinized before it can be concluded that they are measuring candidates unfairly. Methods for determining sources of DIF generally involve post hoc inspection of the potentially offending items, usually by expert panels. In some cases it will be concluded that the different pattern of responses on the item is in fact evidence not of bias but rather of benign or construct-relevant differences indicative of a genuine proficiency gap between the groups of interest. Chen and Henning (1985), for example, found that Spanish test takers performed better than their Chinese counterparts on English vocabulary items which were cognate with Spanish. Should this be interpreted as unfair bias in their favor? No. It was concluded that such items were not overrepresented on the test and were a legitimate part of the corpus of English words that all proficient learners could be expected to have mastered, regardless of the difficulty such items might present for certain L1 groups. Conversely, it may be argued that an item is measuring a secondary dimension of the targeted ability, such as cultural background knowledge, unrelated or only tenuously related to the test construct (e.g., see Roever's 2007 discussion of the "Is the Pope Catholic" item on his ESL [English as a second language] pragmatics test). In the latter case the problematic item might be either removed or revised, on the grounds that it will unfairly disadvantage one or other group of test takers.

While determinations of construct relevance are always central to bias investigation and to decision making about subsequent action, the size of DIF (conventionally classified as negligible, moderate, or large) is also an important consideration. So too is the direction of DIF, given that an advantage for one group on some items can be neutralized by a disadvantage on others and hence may not have any practical impact. For example, Takala and Kaftandjieva's (2000) gender-based analysis of test takers' responses on a test of English vocabulary revealed an approximately even number of DIF items favoring male and female test takers respectively, such that overall scores for either group were unlikely to be affected. On the other hand, a large-scale multimethod study by Pae and Park (2006), exploring gender bias on the language component of a Korean scholastic aptitude test, showed that item-level DIF, regardless of direction, could have a substantial impact on overall test outcomes. In this latter case the DIF items, if found to be measuring skills unrelated to the test construct, might need to be revised or removed from the test to ensure valid outcomes for both groups.

Other practical applications of language-related DIF investigations are to inform item writers about avoidance of bias in future test versions (Uiterwijk & Vallen, 2005), to determine the fairness of a test for a particular population (e.g., whether immigrants can be validly measured by a test designed for L1 learners; Ockey, 2007), or to explore the impact

on the test construct of including test accommodations (such as reading aloud the input material from a reading comprehension test for students with disabilities; Bolt & Yesseldyke, 2006).

Rater Bias

The popularity of performance testing in the field of language assessment has resulted in greater attention to the potential for rater bias in judging test takers' speech and writing. Here the focus is less on the response patterns of test takers than on the way scores have been assigned. As with DIF items, the orientation of particular raters or groups of raters can work to inflate or depress test taker scores for individuals or groups in a way that may not be conducive to fair and valid measurement.

The study of rater bias falls within the class of differential facet functioning (DFF). Developments in MFRM (multifaceted Rasch measurement) along with methods such as CTT (classical test theory) and G-theory (generalizability theory) have been particularly useful in allowing investigation of how a particular facet of the test situation (e.g., choice of prompt, rating method, candidate identity), or multiple facets in combination, can elicit a biased or deviant pattern of responses from raters.

Language testing research has identified biased rating patterns on the part of novice raters compared to experts (e.g., Weigle, 2002), language versus discipline specialists (e.g., Brown, 1995), and native versus non-native speakers (e.g., Kim, 2009). The findings of such studies have practical implications for the design of tasks and rating scales, for rater training and rater choice.

As with DIF research, the findings of rater bias studies raise difficult validity questions. If subject-specialist raters on an LSP (language for specific purposes) test, for example, show consistent bias in relation to a particular feature of the rating scale, what is to say that this rating pattern is less defensible than that of the language experts, given that the subject specialist may be more aware of what matters for effective communication in the context of concern? Bias analysis may simply reveal different but equally defensible orientations to language rather than sources of unfairness. And even where biases are deemed invalid, they are not always amenable to correction. Rater training studies have shown that raters' responsiveness to feedback on their biased behavior is highly variable and does not always improve even when this feedback is presented to them over successive test administrations (see for example Knoch, 2011). The solution may therefore be to ensure appropriate groupings of raters to ensure representation of the different orientations to language in the real-world situation that the test is designed to reflect and to minimize the possibility that a test taker's score will vary according to the rater or class of raters that he or she is assigned to.

Limitations and Challenges

A limitation in both item and rater bias studies is the selection of groups used as the basis for comparison. Notions of nativeness and expertise, for example, are notoriously difficult to define, and boundaries between groups are often arbitrary. In addition, a variable like language background may be a surrogate for a host of other cultural, background knowledge, instructional, and experiential factors, which might offer better explanations of biases in item functioning or rating behavior than the overarching grouping category. Until these variables are distentangled, explanations of why bias occurs will remain hard to pin down. Rather than deciding on groups ahead of time, latent or mixed-class models may prove useful in exploring what new groupings of test takers or raters can reveal about the processes of answering test questions or judging test responses (Zumbo, 2007).

A further intractable problem with DIF studies is that language proficiency or any other relevant criterion for matching or comparing groups may itself be biased. Test-internal analyses, where the total test score is used as the criterion, take for granted the collective fairness of all test items. MFRM methods are not devoid of such problems either, since they compute bias as a deviation from what is predicted by the measurement model, itself merely a summation of the error-prone behaviors of individuals or groups. The choice of an external criterion, where this is used as the benchmark for bias determination, may likewise be predicated on an unwarranted assumption of neutrality and lead to decisions or actions that are at odds with fairness. (See Elder, 1997, for a discussion of one such case.)

Test constructs, as McNamara and Roever (2004) point out, are contestable and so too are expert opinions about what particular items are measuring or why they are functioning differently for particular groups. It has already been noted that a priori predictions of bias made at the test development stage are unreliable, and the same can be said for post hoc analyses of statistically flagged items (Geranpayeh & Kunnan, 2007). Abbott (2007) has proposed that better results may be obtained from a confirmatory rather than exploratory approach to item inspection, whereby judges are asked to categorize differentially functioning items or item bundles according to a conceptual language-processing framework established in advance of the bias screening process. Wolf and Leon (2009) show how exploratory and confirmatory approaches can fruitfully be combined in an exploration of the link between the linguistic demands of math and science test items and the performance of ELL (English-language learner) students on large-scale content assessments. Roever (2007) advocates mixed-method investigations involving think-aloud protocols from test takers in conjunction with expert judgment to further illuminate the basis for test-taker responses and assist decisions about whether these are integral or extraneous to the test construct. The practicality of this latter approach in operational testing situations is, however, questionable.

Fern and Rupp (1997) point out that there is thus far little consensus from DIF studies about factors which might cause bias in language tests, and hence little guidance can be offered to test developers about how to avoid it. Likewise, attempts to predict sources of bias in rater behavior may always be context-dependent, varying according to the purpose and content of the test and the particular populations involved in its implementation.

Conclusion

Bias threatens the validity of all evaluative exercises and researching and monitoring it in all forms of language assessment is a worthy enterprise, integral to the validation process and to the notion of professionalism in our field. It is to be hoped that increased rigor in this area of research, including more transparent and replicable research designs (as advocated by Fern & Rupp, 2007), may lead to refinements in language test development and administration that reduce the margin of error associated with test scores and result in fairer outcomes for test takers. The notion of "absence of bias" in language assessment is, however, chimerical, and documents setting out professional standards and codes of practice in our field, if they are to be more than simply aspirational, would do well to be circumspect in their claims about what is achievable.

SEE ALSO: Fairness in Language Assessment; Statistical Analysis of Test Results; Validation of Language Assessments; Values in Language Assessment

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Biber, Douglas

DWIGHT ATKINSON

Douglas Biber is a linguist who has spearheaded the computerized analysis of large, systematically constructed text corpora, yielding new and more sophisticated ways of understanding language and its use. His *multidimensional* approach to analyzing discourse, which examines co-occurrence patterns of large numbers of linguistic features across a broad range of spoken and written texts, has been highly influential in applied linguistics, sociolinguistics, and English linguistics. Biber also led the intensive, multiyear effort to produce *The Longman Grammar of Spoken and Written English* (Biber, Johansson, Leech, Conrad, & Finegan, 1999), a major academic grammar of English based on corpus findings. He has been active in developing pedagogical applications of corpus-analytic results as well.

Education

Biber was born in 1952 and grew up around Pittsburgh, Pennsylvania, USA. His father was a research physicist in the steel industry; his mother was a housewife. Biber attended local public schools, where he was attracted to math and science. Following high school he attended the Pennsylvania State University, majoring in geophysics.

On graduating from college, Biber worked as an oil-industry geophysicist for a year. He had taken linguistics courses in college and found them interesting, so at the end of the year he decided to try linguistics. He enrolled in a master's program at the University of Texas, Austin, which had a highly theoretical (i.e., Chomskyan) linguistics program, but after one year moved to the University of Texas, Arlington (UT Arlington).

As one of the few non-Chomskyan US linguistics programs in the 1970s, UT Arlington promoted linguistic traditions such as tagmemics, systemic functional linguistics, and text linguistics which were outside the US mainstream. One of Biber's early influences was Robert Longacre, who analyzed texts in terms of narrative structure and its linguistic correlates. The linguists at UT Arlington were also serious field linguists; as a result they had large amounts of primary language data. Biber was encouraged to work with these data—he produced his first two publications at this time, on the phonology of Mexican tone languages. On leaving UT Arlington with a master's degree, Biber had a strong background in functional, structural, and field linguistics, and a strong orientation as a researcher.

Biber went to work for a UNESCO-sponsored program in northern Kenya promoting mother-tongue literacy in the minority Somali community there. Biber's job was to prepare reading and teaching materials on linguistic principles and to train teachers to use those materials. As a result, Biber spent much of his time traveling the countryside, interacting with nomadic groups, and collecting linguistic data. He stayed in Kenya for three years.

In 1980, Biber decided to return to the USA to do a doctorate. He received admission to a well-known African linguistics program, but through interaction with the phonologist Larry Hyman ended up at the University of Southern California (USC). At USC, Biber was exposed to a rich and varied learning environment. Based on his literacy work in Kenya, he developed an interest in spoken versus written language differences. To support this interest, Biber's dissertation advisor, Edward Finegan, obtained the Brown Corpus of

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American written academic prose (Francis & Kučera, 1982) and the London–Lund Corpus of British speech (Svartvik & Quirk, 1980)—the first two major computerized corpora of English. At the same time, Biber was required to take statistics courses as part of his linguistics training, during which he learned statistical procedures such as factor analysis. Biber also studied computer programming in the new Speech Science and Technology Program at USC, and in his third and final year there was employed as a full-time computer programmer by the university.

Biber's dissertation combined these influences in a highly innovative way. Based on an exhaustive review of functional linguistic descriptions of English speech and writing, Biber wrote a computer program which processed the Brown and London–Lund corpora, assigning grammatical "tags" (i.e., part-of-speech labels, often with additional information included) to the words and expressions it identified. Biber then calculated normalized/standardized frequencies of these features and factor-analyzed the results to obtain multiple dimensions of variation across all the texts analyzed. This represented the birth of Biber's influential multidimensional (MD) approach to computerized text analysis. An abbreviated version of his dissertation was published in the prestigious journal *Language* (Biber, 1986), garnering him attention from linguists both in the USA and abroad.

Major Contributions

Multidimensional Analysis

Biber's (1988) *Variation Across Speech and Writing* was a thorough reworking of his dissertation. By automatically counting the frequency of 67 functional linguistic features in a 1-million-word corpus comprised 23 genres of spoken and written texts and then factor-analyzing the results, Biber derived five major dimensions of variation across the texts analyzed. These dimensions were assigned labels based on the shared linguistic/communicative functions of the features making them up:

1. informational versus involved production,
2. narrative versus nonnarrative concerns,
3. situation-dependent versus explicit reference,
4. overt expression of persuasion, and
5. abstract versus nonabstract information.

(An example of a functional linguistic feature is the first-person pronoun, which loaded on the "involved" side of the "informational versus involved production" factor.) Biber then compared the text groups studied (e.g., natural-science academic prose; face-to-face conversations) on these dimensions depending on their combined frequency counts (appropriately normalized and standardized) for each dimension.

The general results of Biber's analysis were clear: There are few if any absolute differences between spoken and written language—on some dimensions, there are written texts which pattern more like some spoken texts than other written texts, and vice versa. On the involved versus informational production dimension, for instance, personal letters are closer to face-to-face conversation at the "involved" end of the dimension, while academic prose and official documents are arrayed at the informational end. Likewise, the relationship between different text groups typically changes across dimensions—for example, face-to-face conversation and academic prose are widely separated on the involved versus informational production dimension but are closely allied on the overt expression of persuasion dimension. On this basis, Biber argued that "speech" and "writing" are by no means monolithic constructs, and need to be studied in more sensitive and detailed ways.

Following his 1984 graduation from USC, Biber proceeded to apply MD analysis and related approaches in a number of innovative projects. Hired by the university with a dual appointment in linguistics and speech science and technology, he worked closely in this period with Edward Finegan. They coauthored several major publications, including corpus analyses of stance (Biber & Finegan, 1989a) and the historical evolution of English registers (Biber & Finegan, 1989b), and coedited a volume, *Sociolinguistic Perspectives on Register* (Biber & Finegan, 1994).

In 1988, Biber obtained a four-year grant from the US National Science Foundation (NSF) to build and analyze a corpus of Somali speech and writing. One interesting aspect of this work was that it documented the initial development of written registers in Somali, which had formerly been essentially an oral language, from 1973 to 1977 (Biber & Hared, 1994; Biber, 1995).

In 1990, Biber and Finegan obtained an NSF grant to construct "A Representative Corpus of Historical English Registers" (ARCHER), a project which occupied a significant amount of Biber's attention over the next few years. The resulting corpus covered 10 historical English registers from 1650 to 1990, and contained 1.5 million words (Biber, Finegan, & Atkinson, 1994). Biber's 1995 book, *Dimensions of Register Variation: A Cross-Linguistic Comparison*, featured comparative MD analyses of Korean, Somali, Nukulaelae Tuvaluan, and English, with the Somali data coming from his Somali corpus and the English data from ARCHER. Biber has continued to use ARCHER in more recent work (e.g., 2004).

Longman Grammar of Spoken and Written English

In the early 1990s, Biber assembled an international team of corpus linguists for the purpose of writing a descriptive grammar of English on functional and corpus principles. This monumental project yielded *The Longman Grammar of Spoken and Written English* (or *LGSWE*—Biber et al., 1999). *LGSWE* is based on the 20-million-word Longman Corpus of English, which is derived from 37,000 texts in four main registers—conversation, fiction, news reporting, and academic prose. Several large supplementary corpora were also analyzed for this project.

LGSWE is based squarely on the assumption that language varies fundamentally according to the situations in which and communicative purposes for which it is used. The corpus-based analysis of real language across a wide variety of situations of use is therefore *LGSWE*'s most distinctive contribution, and its grounding in a large, systematically constructed text corpus gives it the authority that only a strong and broad empirical basis can provide. Grammatical explanations are clear and detailed, sometimes confirming long-held beliefs regarding variation in language use but often yielding surprising insights. *LGSWE* has been welcomed by the English linguistics community as a revolutionary addition to existing academic grammars, and by the applied linguistics community as a prize asset in designing teaching materials that reflect real language use rather than the intuitions or prescriptive biases of their producers.

More Recent Work

Working alone and with colleagues, Biber has produced a steady stream of books, articles, and chapters in recent years. Biber, Conrad, and Reppen (1998) is a pioneering textbook on corpus linguistic approaches to language use which covers both substantive findings and analytic methods. Biber (2006) is a corpus analysis of spoken and written registers in US university contexts. Biber, Connor, and Upton (2007) seeks to reconcile classic discourse analysis with discovering generalizable patterns from corpus studies, and is one of the first books of its kind in the field. Biber and Conrad (2009) sets out new views on the major conceptual categories of register, genre, and style and their relationships.

In the last-mentioned book and several recent papers (e.g., Biber, 2009), Biber has argued that there actually is at least one important difference between speech and writing. While written texts can be produced that have essentially all the characteristics of spoken texts—thus supporting the position that there is no absolute difference between speech and writing—the converse is not true: Certain written texts, and especially academic registers, have linguistic characteristics such as complex noun phrases and phrasal modifiers (versus modifying clauses) that cannot practically be implemented in speech due to online production limitations.

Other recent work has focused on the concept of *lexical bundles*—co-occurring sets of three or more words that distinctively mark registers according to their frequencies of occurrence. Biber, Conrad, and Cortes (2004), for example, found that lexical bundles occur at quite different levels of frequency in teachers' classroom speech versus textbooks despite their overlapping communicative purposes.

Biber has also worked steadily on pedagogical applications of corpus linguistics. These include a student version of *LGSWE* (Biber, Conrad, & Leech, 2002) and an accompanying workbook (Conrad, Biber, & Leech, 2002). A corpus-based ESL grammar textbook (Conrad & Biber, 2009) is the first of its kind—previous corpus-based ESL textbooks focused on vocabulary.

Recent Career

In 1990, Biber moved from USC to Northern Arizona University in Flagstaff, Arizona, where he is currently Regents' Professor of Applied Linguistics in the Department of English. An avid outdoorsman and climber, Biber takes full advantage of the many natural wonders of the US West. He is also a much-sought-after speaker and consultant and travels incessantly. Biber has been extremely influential in the growth of general and applied corpus linguistics (a full list of publications is available on Biber's Web site, http://jan.ucc.nau.edu/~biber/). Besides his voluminous writings and several monumental projects, a substantial number of former doctoral advisees now holding academic positions in the US and abroad testifies to this fact.

SEE ALSO: Corpora: English-Language; Corpus Analysis of Historical Documents; Corpus Analysis of Scientific and Medical Writing Across Time; Corpus Linguistics: Quantitative Methods; Lexical Bundles and Grammar; Register

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Bible Translation

ERNST WENDLAND AND PHILIP NOSS

Introduction

The Bible is the most translated and retranslated book in the world. The process of Bible translation involves a complex, multidisciplinary effort that is aimed at rendering what is in essence a library of diverse literary genres in the various world languages. It consists of the 39 books of the Hebrew Scriptures (Old Testament, OT), the 27 books of the Greek New Testament (NT), and an Apocrypha or Deuterocanon (DC) of up to 15 books depending on the church tradition. The practice of Bible translation is at once a science, an art, a craft, and a technology that benefits most from a team approach.

A number of applied and theoretical fields of linguistics and biblical studies are employed in the translation exercise, together with other disciplines, including anthropology, sociology, pragmatics, intercultural communication, orality studies, and literary studies. This sustained enterprise is sometimes carried on for many years. In order to understand and appreciate the multifaceted character of Bible translation, it may be helpful to view the process from several perspectives, including its past history and accomplishments to the present day, the main theories that inform Bible translation, the practical principles and procedures whereby it is accomplished, and some of the chief ways in which applied linguistics and related studies contribute to this worldwide endeavor.

High Points in the History of Bible Translation

A recent major collection of scholarly essays variously surveys the history of Bible translation through the ages (Noss, 2007). Here we can draw attention to only a few key developments that have highlighted its progress over the past two and a half millennia. The first translations of the Hebrew Bible, also known as the Tanakh, were largely informal and resulted from Israel's period of exile in Babylon around the fifth century BC, when Aramaic gradually became the lingua franca of the Middle East. As the Hebrew language grew less familiar to a majority of the people, oral translations or paraphrases of the text, often accompanied by commentaries, were made by the rabbis. These *Targumim* (sg. *Targum*) were later written down and became more or less standardized in different collections and versions (Wegner, 1999, pp. 201–2). A widely used Targum, known as the Samaritan Pentateuch, was rendered in Syriac, a dialect of Aramaic.

Between 250 and 100 BC, the first translation of the Hebrew Bible was made in *koiné* Greek, the common language of the Mediterranean world. It is known as the Septuagint (LXX, from the Latin meaning "seventy") because it was allegedly prepared by 70 Jewish scholars. It included the "apocryphal" or deuterocanonical books, and this became a significant factor in the later choice of formally authorized books that constitute the Christian canon. Because this first major translation of the Scriptures was the "Bible" used and referenced in citation by most NT writers, it was highly influential in the development of Christian vocabulary and theology.

After Aramaic and Greek, Latin became the language of wider communication in the increasingly Christianized Western world, especially in northern frontier regions of the

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Roman Empire. Latin served as the vernacular for another prominent early translation, the Vulgate (*vulgata* meaning 'common'). The OT translation, dating from around AD 405, was rendered from the original Hebrew by Jerome (Eusebius Hieronymus), while the Greek NT and DC books were probably translated by his protégé, Rufinus the Syrian (Burke, 2007, p. 85). Jerome was distinct in his stated endeavor to render the sense of the original text, instead of reproducing the literal form. Although he did not always succeed in this effort, his version became the Bible of the Western Church for the next 1,000 years.

The Septuagint and the Vulgate are considered to be primary versions, having been translated from the original languages. A number of secondary and tertiary versions based on primary and secondary versions, respectively, appeared in the early years of Christianity (ca. AD 400–1000). Translations based mostly on the Greek tradition were produced from the third to the seventh century in the Coptic languages of Egypt, in the Nubian language of what is today northern Sudan, and in Ethiopic, or Ge'ez.

Armenia became the first officially declared Christian nation in the fourth century. The languages of Scripture and liturgy were Syriac and Greek until a monk named Mesrop Mashtots devised an orthography and translated the Bible into Armenian in the fifth century. Bishop Wulfila (Ulfilas in Greek), a Goth born about AD 311 north of the Black Sea, together with a team of assistants, translated the Scriptures from Greek into Gothic so literally that the syntax was more Greek than Gothic. Because of his concern regarding the warlike tendencies of his countrymen, he omitted the translation of the Books of Kings.

Members of the Assyrian Church of the East, often referred to as the Nestorians, carried the Scriptures in Syriac eastward to India and across Central Asia to China where they produced the first translations in Chinese in the seventh century.

In the ninth century two brothers, Cyril and Methodius, completed a translation for the Slavic people in Moravia and Bulgaria. Although none of the original manuscripts survive, their translation from Greek was the beginning of Bible translation in Old Church Slavonic. A later translation became the first printed edition in 1581. Early in the 18th century, Peter the Great ordered a major revision of the Bible in Church Slavonic. Completed and printed in 1751 under Empress Elizabeth, it is known as the "Bible of Elizabeth." This is the official liturgical Bible of the Orthodox Churches of Slavic tradition up to the present time.

The "middle ages" of Bible translation in the West roughly cover the period from Martin Luther's German Bible in 1534 to the publication of the English Revised Version in 1885. As with the Latin Vulgate, Luther's revolutionary translation was preceded by earlier versions in the language, but his rendition was distinct in several crucial respects. First, it was based on the original languages, including the new 1516 Erasmus edition of the Greek New Testament. Second, its language was more standardized, contemporary, literary, idiomatic, and sound-sensitive than earlier German translations. Third, Luther's translation benefited from a scholarly review committee, and fourth, it was carried out according to explicit principles of meaning-oriented translation. The widespread influence of the Luther Bible in Germany soon extended to all countries affected by the Reformation, leading to new Protestant as well as Catholic translations in the principal languages of Europe.

John Wycliffe led the production of the first Bible in Middle English in 1383, but it was a secondary version, based on the Latin Vulgate, and it was a hand-copied edition. Over 100 years later, John Tyndale, whose translation convictions ultimately occasioned his martyrdom, was inspired and influenced by Luther to render the first New Testament in English based on the Greek text (1526), but with reference also to the German version. This led to the first complete English Bible published by Miles Coverdale in 1535. Several other English Bibles appeared in subsequent years, most under the influence of Tyndale's translation, until the publication of the great, royally sponsored "authorized version" of 1611, commonly known as the "King James Version." A series of revisions reflecting textual, translational, and linguistic factors followed over the years, culminating in the

widely accepted English Revised Version (NT published in 1881; OT published in 1885), the first translation to take into serious consideration the modern principles of textual criticism. A Catholic tradition of translation in English was initiated by the Douay–Rheims (or Rheims–Douai) Bible. Based on the Latin Vulgate, the NT appeared in 1582 and the OT with DC books in 1609–10.

The 20th century occasioned a significant expansion of Bible translation efforts all over the world. In most Western countries, this was the age of major revisions and new translations. The latter half of the century marked the rise of several influential idiomatic versions and paraphrases, among them, Today's English Version (TEV, 1966), now known as the Good News Translation (GNT, 1992), and the Living Bible (1971).

The "missionary age" of translations when missionaries generally controlled the overall translation process extended through most of the 18th to the mid-20th century and resulted in relatively literal versions in many languages of South America, Africa, and the Asia-Pacific region. Sparked by the popular TEV, a large number of "common language" translations were completed in the major world regions by a variety of translation organizations (see below). Today, translation projects are normally carried out by highly trained mother-tongue speakers and are accompanied by literacy and new reader programs.

The first decade of the 21st century has been characterized by a more eclectic and flexible translation approach that normally makes use of a greater number of supplementary aids such as explanatory notes and glossaries, newer publishing formats, and multimedia text delivery systems. Frequently, such projects are guided by extensive preliminary research into the specific needs and desires of the local language communities concerned. Bible translation in any language is a never-ending task due to new scientific discoveries and the practical factor of constant linguistic and sociocultural change, as well as the religious desirability of having each new generation and speech community confront the challenge of thoroughly investigating and clearly communicating the Scriptures for themselves in their local circumstances.

Results of Bible Translation

During the first 1,800 years of the Christian era, at least one book of the Bible was translated into some 70 languages. Another 460 languages were added in the 19th century, and nearly four times that many (1,768) during the 20th century despite two world wars and other major conflicts (Hill, 2006, p. 82). By the end of 2009, at least a portion of Scripture had been translated and published in 2,508 of the world's languages; however, only 459 languages possessed a complete Bible, and of these only 132 included the DC books.

The founding of the British and Foreign Bible Society in 1804 and the rise of the Bible Society movement during the 19th century greatly facilitated the translation, publication, and distribution of vernacular Scriptures. Some of the principal agencies involved in the current worldwide effort are the following: Wycliffe Bible Translators, also known by their academic arm SIL International, the United Bible Societies (UBS), Pioneer Bible Translators, Lutheran Bible Translators, and Word for the World, among many others. Of the world's estimated 6,900 living languages, spoken by some 7 billion people (Lewis, 2009), well over 4,000 lack any portion of Scripture at all. Of these, current estimates suggest that around 350 million people speaking 2,250 languages do not have access to Scripture texts in a language they understand, whether in print, audio, audiovisual, or electronic form Translation programs are currently under way in 1,990 of these remaining languages.

The original biblical texts were written in languages that possessed writing systems and a cadre of literate persons, often members of the priestly class. The earliest translations were into Greek and Latin, literary languages of international stature. Translation of the

Bible into a previously unwritten language provides a major impetus for the development of a writing system that is a precursor to a literate society.

Mesrop, for example, is credited with creating the alphabet that he used for the first translation of the Bible into Armenian. Bishop Wulfila wanted to have the Scriptures in Gothic, and this meant that he would need to create an alphabet and write this previously unwritten language. The "apostles of the Slavs," Cyril and Methodius, faced the same challenge for their Slavic dialect. With Cyril's Glogalitic alphabet, later followed by Cyrillic, it was possible to write the Slavic language translation that he, his brother, and their friends produced.

From these early examples to languages like German, English, Yoruba, Malagasy, and many others, the requirements of literature have led to the promotion of literacy and new reader materials, the production of dictionaries and related reference works, language standardization, the stimulation of national literatures, advances in translation theory and training, experimentation in machine-adapted translation, as well as other significant aspects of sociocultural and educational development.

Theories of Translation

Some 200 years ago, the German theologian and philosopher Friedrich Schleiermacher summed up the essence of translation, religious or secular, in terms of two basic alternatives: "Either the translator leaves the author in peace, as much as possible, and moves the reader towards him; or he leaves the reader in peace, as much as possible, and moves the author towards him" (Lefevere, 1977, p. 74). Like all popular generalizations, this observation involves an oversimplification and, possibly, a certain degree of misrepresentation. As J. Ellington has observed,

> Any attempt by translators to take the reader all the way to the writer is doomed to frustrate and alienate the average reader; yet any endeavor to take the writer all the way to the reader risks trivializing the message and creating disinterest. (2003, p. 317)

All translations fall somewhere along a continuum between a form-focused "literalistic" (foreignized, formal correspondence) rendition and a meaning-oriented "paraphrastic" (domesticated, functional equivalence) version.

Theories employed to support a particular approach to the translation task, whether more or less foreignized/domesticated, tend to be grounded in one or more of these fields of investigation: communication studies, comparative literature, discourse analysis, or cognitive processes (Munday, 2009, pp. 20–73). The following paragraphs briefly describe six prominent models and methods that explicitly or implicitly inform the work of contemporary Bible translation, each exemplified by a recognized proponent or practitioner (Wendland, 2004, pp. 42–80):

Literalist: Writing about his translation, E. Fox explains, "Rather than carrying across ('translating') the content of the text from one linguistic realm to another, I have tried to involve the reader in the experience of giving it back ('rendering'), of returning to the source and recreating some of its richness" (1995, p. xxv). Unfortunately, however, the reader has to be fairly well acquainted with the original languages of Scripture in order to appreciate the results of this formalistic methodology in his or her mother tongue.

Text-linguistic: This approach treats translation from the broad perspective of register analysis, comparative pragmatics, semiotics, intertextuality, and discourse texture and

types, with special emphasis on the key notion of "markedness," that is, linguistic distinctiveness. Thus, the less stylistically marked, or in Hatim and Mason's words, "the less evaluative the text is, the less need there will be for its structure to be modified in translation. Conversely, the more evaluative the text is, the more scope there may be for modification" (1990, p. 187). The various poetic genres in the Scriptures would fit into the latter category.

Interpretive: According to M. Lederer, "The interpretive theory . . . holds that the process [of translation] consists in understanding the original text by deverbalizing its linguistic form, and in re-expressing in another language the ideas that were understood and the feelings that were felt" (1994, p. 11, in Sterk, 2004, p. 131). This conception of translation is similar to the three-step dynamic equivalence approach of analysis, transfer, and restructuring applied in Bible translation by Nida and Taber (1969, p. 33).

Pragmatic: The approach of relevance theory foregrounds one of the Gricean maxims of successful communication (Hatim & Mason, 1990, p. 62), namely, "relevance," which, according to E.-A. Gutt "is seen as the *cost–benefit* relation of processing effort spent versus contextual effects obtained" (1992, p. 24, 2000, pp. 31–5). The principal aim is to achieve adequate interpretive effect with minimal processing effort. According to relevance theory, an "indirect translation" is designed to function on its own and may be freely modified, in terms of making implicit information explicit, to achieve maximal relevance for its intended user. A "direct translation," on the other hand, seeks to achieve the closest possible identification with the source-language text, such as the Scriptures (Munday, 2009, p. 220).

Functionalist: This category covers several approaches that have been employed in Bible translation. Speech act theory, for example, proposes that the culturally determined nature of any text that is part of a given oral or written communication event "determines the interpretation of an utterance as performing a particular speech act" (Yule, 1996, p. 48). The sociosemiotic and sociolinguistic orientation of functional equivalence holds that "the translator must seek to employ a functionally equivalent set of forms which in so far as possible will match the meaning of the original source-language text" (De Waard & Nida, 1986, p. 36). This perspective has been expanded with a special emphasis on capitalizing on the literary (oratorical) resources of the target language, that is, in a "literary functional equivalence" (*LiFE*) version (Wendland, 2004, pp. 369–79, 2011, pp. 109–11). Finally, C. Nord develops *Skopostheorie* as a theory of intercultural "communicative action" (1997, pp. 22–3). This theory takes the entire operation of a translation project into consideration in the negotiated "brief," that is, its overall guiding job commission (p. 30), and the *Skopos*, the principal purpose for which the translation is made for a particular constituency (p. 29).

Cognitive: This approach also applies to all phases of a translation project, from its initial organization to its postpublication testing, with respect to the culturally determined mental models, or representations, that influence all aspects of textual and contextual perception and interpretation. This process may be broken down into a set of conceptually overlapping and mutually interacting "frames of reference," namely cognitive, sociocultural, organizational, conversational, textual, and lexical (Wilt & Wendland, 2008). These interrelated, contextually prioritized and arranged perspectives on the world of one's experience "frame" the communicative act of Bible translation with reference to the original text as well as its rendering in another language and culture (worldview, way of life, value system, etc.). Therefore, "translations, which normally involve transfer of meaning not just across language but also across culture, will be interpreted in the light of different frames from those of the original author and audience. This means that a translation must do more than duplicate words, it must duplicate the situational frames those words originally referred to" (Hoyle, 2008, p. 7).

Practical Principles and Procedures

Many manuals and workbooks are available that survey, exemplify, and put into practice the major principles and procedures of Bible translation according to the general communication theory that has been adopted (e.g., Nida & Taber, 1969; Barnwell, 1986; De Waard & Nida, 1986; Gutt, 2000; Wilt & Wendland, 2008). Therefore, we will simply highlight by way of a series of questions some of the important issues pertaining to this multifaceted process that need to be considered by the translation community:

- *Canon*: Which books of Christian Scriptures are to be translated, only the 66 authorized texts of the Protestant canon, or will the additional books of the Catholic or Orthodox Deuterocanon be included?
- *Text*: Which text of the original Scriptures is to be used as the primary translation base (e.g., the Hebrew Masoretic Text; the Greek text published by the United Bible Societies), and how are important text critical problems to be decided in cases of controversy?
- *Brief*: What are the principles in terms of organizational structure and management policies that will guide and govern the project, and what will its principal communicative goal (*Skopos*) be in view of the intended audience? In light of the preceding, how will translators and support staff be trained and equipped to fulfill their respective assignments?
- *Modus operandi*: How will members of the translation team and review committees be coordinated to operate together in harmony during the process of composing, cross-checking, reviewing, testing, revising, and publishing the various draft texts?
- *Methodology*: What are the specific translation guidelines and techniques that will be adopted to handle the various translation problems that may arise, especially in areas of possible disagreement (e.g., how to handle crucial key terms and technical vocabulary)?
- *Training and technology*: Which courses of study are available to train translators and to progressively improve their skills? What tools and resources are on hand, or are still needed, to sufficiently equip the translators to carry out their work (e.g., Bible commentaries, lexicons, translation handbooks and journals, computer programs and equipment, access to the Internet for information and interaction)?
- *Engagement*: How will the project organizers or translation agency involved promote full and accurate use among individuals and churches of the translation portions that are being produced and the complete version that is eventually published (e.g., testing draft portions, organizing seminars on Scripture interpretation and application, holding classes in Bible schools and seminaries)?

Some Essential Applications of Applied Linguistics in Bible Translation

As Bible translation efforts continue to multiply in manifold ways the world over, a number of issues pertaining to applied linguistics and related studies maintain their relevance, some with greater urgency now than in the past. Our survey concludes with a summary of these major areas of ongoing research, testing, and information sharing:

Dialectology: It is not only a matter of deciding whether a certain language and speech community is still viable for supporting a new Bible translation (or revision). A project must also determine which dialect and sociolect would provide the most widely acceptable linguistic basis for any version under consideration. In addition, research is needed into areas such as the appropriate level of language for the group concerned, the use of ideologically sensitive terms such as those for race and gender, and the possibility of

functionally matching the literary genres and linguistic styles of the biblical texts with genres and styles of the translation language.

Paratext: A project must decide which supplementary helps (e.g., cross-references, marginal notes, book and chapter introductions, illustrations, glossary entries, a basic concordance or index) are most necessary to increase the average person's comprehension of the biblical text. Corresponding equivalents for nonprint media productions, such as aural or video Scriptures, must also be determined, plus how to coordinate all these auxiliary aids so that they complement the biblical text itself.

Format: Printed Bibles are still the most popular by far, although how much they are actually used in comparison with other media is debatable. In any case, the standard format for publishing Bibles is relatively dense and unwelcoming to the reader. Research is needed to discover how the text can be displayed to promote greater legibility and intelligibility (e.g., larger type, a single print column, unjustified right margins, the use of strategic space on the page).

Orality: This factor closely relates to the preceding issue in that the Scriptures are meant to be heard aloud, and therefore translations must be carefully composed with the crucial oral–aural dimension in mind. The Bible is heard much more often than it is read by individuals from a printed page; therefore it is logical that the characteristics of orality should be given prime consideration during the entire production process.

Technology: New developments in electronic media are making correspondingly novel platforms for Scripture publication and distribution available (e.g., via the ubiquitous Internet and personal cell phones). Ongoing analysis will be needed to evaluate the effectiveness of new media in these ever-changing technologies compared to older media (e.g., print, audio, audiovisual). Present tools and resources may need to be improved to better serve the translators in ongoing training and in the performance of their everyday tasks (e.g., UBS: Paratext; SIL: Translator's Workplace, Biblical Analysis Research Tool [BART]).

Biblical illiteracy: This is proving to be one of the most challenging current issues in the field of Bible translation. There are two major concerns: first, how to accurately discern and document the widespread phenomenon of general ignorance about the content and setting of the Scriptures; second, how to effectively combat this deficiency by providing a more suitable hermeneutical context for understanding, one that is appropriate both for the medium of transmission and for the intended audience group.

There is every indication that, in addition to its contribution to intercultural communication and increased knowledge of the biblical text, the multidisciplinary effort of Bible translation will continue to enrich and be enriched by all the fields of academic and practical study that it engages.

SEE ALSO: Assessment of Translation; Cultural Approaches to Translation; Functional Approaches to Translation; Literary Translation; Norms of Translation; Sociological Approaches to Translation; Strategies of Translation; Teaching and Learning of Translation; Translation Theory; Translation Tools

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Bilingual and Monolingual Language Modes

FRANÇOIS GROSJEAN

Bilinguals communicate differently when they are with monolinguals and when they are with bilinguals who share their languages. Whereas they avoid using their other language(s) with monolinguals, they may call upon it (or them) when interacting with bilinguals, either by changing over completely to the other language(s) or by bringing elements of the other language(s) into the language they are speaking.

This change of behavior, which affects both language production and language perception, has been alluded to by well established researchers over the years. Thus, Weinreich (1966), one of the founding fathers of bilingualism research, wrote in his classic book, *Languages in Contact*, that bilinguals limit interferences when speaking to monolinguals (he used "interference" as a cover term for any element of the other language), whereas, when speaking to other bilinguals, they use them freely. Other researchers such as Hasselmo (1970) and Baetens Beardsmore (1986) have made similar points. Grosjean has investigated this phenomenon—language mode—in a series of publications (Grosjean, 1985, 1989, 1994; see Grosjean, 2001, 2008, for reviews).

Language Mode

Description

Language mode is the state of activation of the bilingual's languages and language-processing mechanisms at a given point in time. Figure 1 illustrates the concept which is best presented as a continuum in a two-dimensional representation. The bilingual's two languages (A and B) are depicted on the vertical axis by squares.

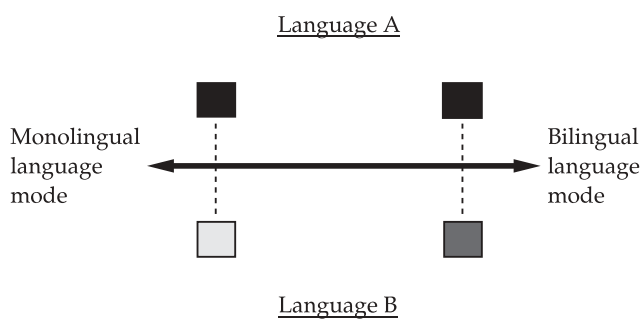

Figure 1 A visual representation of the language-mode continuum
Note. Two positions on the continuum are illustrated for a person with two languages (A and B): toward the monolingual end (on the left) and toward the bilingual end (on the right). The level of activation of a language (square) is depicted by the degree of darkness (black represents an active language and white an inactive or deactivated one).

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Two positions on the continuum are illustrated in the figure. In both positions, language A is the most active (it is the main language being used, or base language, hence the black square) and language B is active to varying degrees. On the left, language B is only very slightly active (lighter square), and the bilingual is said to be at, or close to, a monolingual language mode. On the right, language B is active (darker square), but it is not as active as language A, and the bilingual is said to be in a bilingual mode. (To simplify matters, we will mention only two languages at this point, but language mode applies also to three or more languages, as we will see below.)

Bilinguals will usually be in a monolingual mode (left part of the figure) when they are interacting with monolinguals with whom they simply cannot use their other language (here, language B). They have to deactivate the latter, usually unconsciously, so that it is not produced and hence lead to a breakdown in communication. They can also be in a monolingual mode with other bilinguals if they have only one language in common. Bilinguals will be in a bilingual mode (right part of the figure) when interacting with other bilinguals who share their languages and with whom they feel comfortable bringing in the other language. In this case, both languages are active, but one language (language B here) is slightly less active as it is not the main language of communication. Bilinguals can also be in an intermediate mode (between the two end points), for instance when they know that their interlocutor is bilingual but does not like to mix languages. In this case, the other language (language B in the example) will be only partly activated. What has just been said about speakers applies to listeners; they can find themselves at various points along the continuum depending on what they are hearing as well as on situational factors such as knowing that they share the same two languages with their interlocutor.

Language mode is made up of two components. The first is the base language chosen (language A in the example) and the second is the comparative level of activation of the two languages—from very different in a monolingual mode (left part of figure) to quite similar in a bilingual mode (right part of figure). These two components are usually independent of one another—one can change without affecting the other. Thus, the base language can be changed but not the comparative level of activation of the two languages. This takes place, for example, in a bilingual interaction when a bilingual switches over completely to the other language (which becomes the base language). In the example above, language B would become totally active and language A slightly less active. Similarly, there can be a change in the level of activation of the two languages without a change in base language, as in Figure 1. Thus, when referring to language mode, both aspects need to be mentioned. For example, a Spanish–English bilingual speaking Spanish to a Spanish monolingual is in a "Spanish monolingual mode"; the same bilingual speaking English to another Spanish–English bilingual is in an "English bilingual mode," and so on.

Movement Along the Language-Mode Continuum

A number of factors will influence a bilingual's position on the continuum, and hence the activation level of the languages concerned. First, there are the participants involved, that is, their language proficiency, their relationship, their language-mixing habits and attitudes toward language mixing, their mode of interaction, and so forth. For example, the mode will be monolingual if a bilingual is interacting with a monolingual family member. Second, the situation of the interaction will influence language mode, that is, the physical location, the presence of monolinguals, the decorum, and so on. Dewaele (2001), for example, found that the formality of the situation turned out to be a crucial factor in determining the position of the speaker on the language-mode continuum. Third, the form and content of the message being uttered or listened to will have an impact on the mode. Thus, if the topic is usually covered in another language, and the interactant is known to be bilingual, the

bilingual speaker will slip into a bilingual mode so as to call upon the other language for a word or an expression. In such cases, the base language may even change. Finally, the function of the language act (to communicate information, to request something, to create a social distance, to exclude someone, etc.) may change the language mode.

Movement along the continuum can occur at any time when the above factors change. In addition, the movement is usually not conscious. Bilinguals will also differ among themselves as to the extent to which they travel along the continuum. Some are rarely at the bilingual end—they mainly communicate with monolinguals or remain within one language with bilinguals. Others, such as bilinguals who live in bilingual communities, rarely leave the bilingual end.

Impact on Language Behavior

The particular language mode bilinguals are in will have an effect on the amount of use of the other (guest) language, the amount and type of mixed language used, the ease of processing of the two languages, and the frequency of base-language change. For example, in the monolingual mode, the language not being used is deactivated. This prevents a change in base language and limits almost totally the use of code switches and borrowings. However, dynamic interferences—deviations from the language being spoken due to the influence of the other deactivated language(s)—may still take place. In the bilingual mode, bilinguals usually first adopt a base language through the process of language choice and, when needed, bring in the other—guest—language in the form of code switches and borrowings. In addition, the base language itself can be changed, that is, the slightly less activated language becomes the base language, and vice versa. A change of topic, of situation, of interlocutors, and so on, may lead to a change of base language. In perception, a monolingual mode will usually "block out" the other language, leading sometimes to misperceptions if the latter is used, or slower processing. Cheng and Howard (2008) examined the cost of language switching when it was unexpected in one context (monolingual mode) and expected in the other (bilingual mode). They showed a significant reaction-time difference in the two conditions, thereby illustrating the impact of language mode during perception.

Evidence for Language Mode

There is increasing evidence of the importance of language mode in bilingual communication. In language production, observational and experimental studies have shown its impact. Poplack (1981) showed that a member of El Barrio—a Puerto Rican neighborhood in New York—produced about four times more code switches in informal situations, compared to formal situations. Treffers-Daller (1998) placed a Turkish–German bilingual in three different situations and showed changes in the base language used as well as differences in the amount of code switching that took place. In a series of experimental studies, Grosjean and his colleagues (reported in Grosjean, 2008) manipulated the language mode participants were in using a "telephone chain" task, and studied the impact this had on language production. The number of guest-language elements (code switches, borrowings) increased significantly as the participants moved from a monolingual to a bilingual mode, whereas the number of base-language syllables decreased, as did the number of hesitations.

In perception, Elman, Diehl, and Buchwald (1977) carried out a categorical-perception study with bilinguals in which they controlled for the base language and "pushed" bilinguals toward the monolingual end of the language-mode continuum (they used naturally produced stimuli, filler words in the base language, as well as carrier sentences in either English or Spanish). They found a boundary shift, with ambiguous stimuli perceived

significantly more as English or as Spanish depending on the language condition listeners were in. In this study, unlike in an earlier study by Caramazza, Yeni-Komshian, Zurif, and Carbone (1973), there was constant language-specific information which activated one language much more than the other and hence kept the bilinguals toward the monolingual end of the continuum.

In language acquisition, there is increasing evidence of the importance of language mode. For example, Lanza (1992) studied a 2-year-old Norwegian–English bilingual child, Siri, interacting with her American mother who feigned the role of a monolingual and did not mix languages, and with her Norwegian father who accepted Siri's language mixing and responded to it. Siri did much more content-word mixing with her father than with her mother, showing thereby that she leaned toward the monolingual end of the continuum with the latter and the bilingual end with the former. Genesee, Boivin, and Nicoladis (1996) recorded English–French bilingual children as they spoke to their mother, to their father, and to a stranger who only spoke their weaker language. The more a parent switched languages during communication, the more the child did too. Thus, as in Lanza's study, children were more in a monolingual mode with parents who did not mix languages much, whereas they were more in a bilingual mode with parents who mixed languages to a greater extent (or accepted language mixing).

In the domain of language pathology, Marty and Grosjean (1998) manipulated language mode in a study that examined spoken-language production in eight French–German aphasic bilinguals. The latter were asked to carry out a certain number of language tasks by two different experimenters—the first was a totally monolingual French speaker who knew no German, and the second was a French–German bilingual. The patients knew about the experimenters' language background before testing. The authors found that two patients could no longer control their language mode due to their pathology but the six others adapted their language behavior to the experimenter, that is they did not mix their languages with the monolingual experimenter (or, if they did do so, it was due to stress or fatigue).

Language Mode in Different Groups of Bilinguals

Studies of language mode have been carried out in relation to different groups of bilinguals. Four examples are given here.

Highly Language-Dominant Bilinguals

It has been reported repeatedly that highly dominant bilinguals (e.g., members of a minority group who rarely use the majority language, bilingual children who are strongly dominant in one language, second language learners who use their new language, etc.) do more language mixing when speaking their weaker language than they do when using their stronger language (Lanza, 1992; Genesee, Nicoladis, & Paradis, 1995). They do not seem to be able to control language mode when speaking their weaker language in the way less dominant, or balanced, bilinguals can. They attempt to deactivate their stronger language in a monolingual environment that requires the weaker language, but the latter may simply not be developed enough to allow them to stay in a monolingual mode. Hence, their stronger language is activated and it is used to help them out (see Grosjean, 2008).

Caixeta (2003) studied this experimentally with two groups of Brazilian Portuguese–French bilinguals, one advanced and one intermediate in their knowledge of French. They were tested individually, in French, on a number of tasks by two experimenters, a French monolingual and a French–Portuguese bilingual. Caixeta found that the participants who

had an intermediary level of French produced a greater percentage of guest elements than the advanced-level participants.

Multilinguals

People who know and use three or more languages also find themselves in various language modes (see Dewaele, 2001). For example, trilinguals are in a monolingual mode when the people they are interacting with are monolingual in one of their three languages, or when they share only one language with another bilingual or multilingual. They can be in a bilingual mode if they share two of their interlocutor's languages (e.g., languages B and C) and they feel comfortable bringing one of the languages (e.g., language C) into the base language (language B). If they are with trilinguals with whom they share all their languages, then the mode can be trilingual, with one language being the most active, for some period of time at least. What is true of trilinguals is also true of quadrilinguals. For example, a quadrilingual can be in a language-B monolingual mode where language B is being used (it is the base language) and languages A, C, and D are deactivated. This same person, in another situation, can be in a quadrilingual mode where, for example, language B is the base language and languages A, C, and D are also active.

Interpreters

To understand how interpreters undertake simultaneous interpretation, we have to call upon the languages involved but also upon their input and output mechanisms (Grosjean, 1997). Interpreters have to be in a bilingual mode where both languages are active. However, one language is not more active than the other as is normally the case in the bilingual mode. Here both the source language (the language being heard) and the target language (the language being spoken) are active to the same extent as both are needed, for perception and production respectively. This is relatively rare in normal bilingual communication. This said, the processing mechanisms differ according to the level of activation. The input mechanisms of both the source and the target language are active. The reason for the activation of the source mechanism is clear but why that of the target language? There are at least three reasons. Interpreters must be able to monitor their overt speech, the clients' occasional use of the target language must be processed, and the cues of fellow interpreters must be heard. As for the output mechanisms, only that of the target language is active; the source language's mechanism is not. The reason here is straightforward: Only one language has to be output—the target language.

Deaf Bilinguals

Like hearing bilinguals, deaf bilinguals find themselves in their everyday lives at various points along the language-mode continuum (Grosjean, 2010). When they are communicating with monolinguals they restrict themselves to just one language and are therefore in a monolingual mode. They deactivate the other language and remain, as best they can, within the confines of the language being used (for example, a written form of the majority language). At other times, deaf bilinguals find themselves in a bilingual mode, that is with other bilinguals who share to some extent their two languages—sign language and the majority language—and with whom they can mix their languages. They choose a base language—usually a form of sign language (the natural sign language of the community or a signed version of the spoken language). Then, according to various momentary needs, and by means of signing, finger spelling, mouthing, and so forth, they bring in the other language in the form of code switches or borrowings.

Language Mode in Research

Several research issues are related to language mode.

Language Mode as a Confounding Variable

Since language mode is a cognitive phenomenon that has its roots in human interaction, it is present in many research projects, but mostly in a covert way. The consequence is that the data obtained are variable due to the fact that participants are probably situated at various points along the language-mode continuum. In addition, the data can be ambiguous given the frequent confound between language mode and the variable under study. A few examples are examined below.

It is rare that researchers working on interferences/transfers put their bilingual participants in a strictly monolingual mode when they obtain language samples. This is unfortunate as they invariably obtain other contact phenomena such as borrowings and code switches which may not be of any interest in the study. For example, Marian and Kaushanskaya (2007) examined a database obtained in the study of autobiographical memories in bilinguals in order to observe crosslinguistic transfer and borrowing. The first author, herself also bilingual in Russian and English, interviewed all participants individually, in English in one session, and in Russian in the other. The participants were thus, de facto, in an intermediate language mode (they knew the experimenter was bilingual) and they brought in various types of contact phenomena. The types of phenomena would have been different and the number much less had participants been interviewed by monolinguals of the two languages.

A much researched psycholinguistic issue concerns the presence or absence of language-selective processing in bilinguals, that is whether bilinguals call on two (or more) languages when listening to, or reading, one language only. Beauvillain and Grainger (1987), for example, found evidence for nonselective lexical access when bilinguals were shown interlexical homographs. The problem, however, is that the bilingual participants in their experiment had to be in a bilingual mode to complete the task: They had to read a context word in one language and then decide whether the next word, always in the other language, was a word or not in that language. It is no surprise, therefore, that a result indicating nonselective processing was obtained. Many other studies which have failed to control for language mode sufficiently well have been carried out since then and there is now a growing myth that processing is nonselective (see, e.g., Dijkstra & van Hell, 2003, and its discussion in Grosjean, 2008). A close examination of the research situations, the methodologies, and the stimuli used in these studies leads one to conclude that most of the time the other language was being activated either by top-down or by bottom-up factors. Hence the nonselective processing found in experiments.

Finally, in the bilingual-language-development literature, it has been proposed by some that children who acquire two languages simultaneously go through an early fusion stage in which the languages are in fact one system (one lexicon, one grammar, etc.). They then slowly differentiate their languages, by separating first their lexicons and then their grammars. Evidence for this has come from the observation of language mixing in very young bilingual children and from the fact that there is a gradual reduction of mixing as the child grows older. However, according to researchers such as Genesee (1989), many of these children are in a bilingual mode when recorded, that is, the caretakers are usually bilingual themselves and they are probably overheard using both languages, if not actually mixing their languages (see Goodz, 1989). Thus, as with the other studies mentioned above, language mode is a confounding factor that impinges on the results obtained.

Language Mode as a Control Variable

Early attempts to control for language mode used two approaches, both of them inappropriate. The first was to put the participants in a "language set" (called by some a "language mode") by giving them instructions in one language, getting them to carry out preliminary tasks in that language, occasionally presenting reminders in that language, and so forth. What this does is activate a particular base language (the variable depicted on the vertical axis in Figure 1), but it does not guarantee a particular position on the monolingual–bilingual-mode continuum. A second inappropriate approach, which has been used a lot with bilingual children, second language learners, and aphasic or demented patients, has been to hide the experimenter's or interviewer's bilingualism. This is a very dangerous strategy as subtle cues such as facial expression and body language can give away the interlocutor's comprehension of the other language. In addition, it will not prevent occasional slipups such as responding in the "wrong" language or showing in one's response that what has been said in that language has been understood. All this will simply move the participant into a bilingual mode and, once again, make language mode a confounding variable. (For a discussion of approaches to use to put participants in a monolingual mode as much as possible, see Grosjean, 2008.)

Modeling

Few models of bilingual language processing and language acquisition have taken into account language mode as of yet. For example, De Bot's (1992) classic model of bilingual language production does not give a clear account of how language choice takes place (i.e., how the base language is chosen), how the language mode is set, and the impact it has on processing. Similarly, in the bilingual interactive activation (BIA) model (Dijkstra & van Heuven, 1998) one language is normally deactivated during the word-recognition process by means of top-down inhibition from the other language node and lateral interlanguage word-level inhibition. This will produce satisfactory results for word recognition in the monolingual mode but it will be less than optimal when mixed language is being perceived. In the latter case, it would be better if both languages were active with one more active than the other. To our knowledge, the only computational model of word recognition that simulates language mode is the Léwy and Grosjean BIMOLA model (see Grosjean, 2008). Both the base-language setting (a discrete value) and the language-mode setting (a continuous value) can be set prior to simulation in this model.

Conclusion

Language mode helps us understand how bilinguals use their languages, separately or together, in everyday life, and it accounts for many findings in the research literature. It is invariably present as an independent, control, or confounding variable and hence needs to be heeded at all times.

Many aspects of language mode have to be studied further. For example, it will be important to isolate the factors that influence a particular mode, determine their importance, and ascertain how they interact with one another to activate or deactivate the bilingual's languages, and hence change the bilingual's position on the language-mode continuum. The maximum movement possible on the continuum will also have to be examined for various types of bilinguals. Another issue concerns the resting mode individuals find themselves in when there is no language activity taking place. Finally, language mode in multilingual situations will have to be studied further.

SEE ALSO: Bilingualism and Bilinguality; Bilingualism and Cognition; Code Switching; Lexical Borrowing; Lexical Transfer and First Language Effects; Speech Perception

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Bilingual and Multilingual Education: Overview

JASONE CENOZ

Introduction

Multilingualism is common in modern society due to different historical, social, political, and economic reasons. The beliefs, attitudes, and discourses of different societies are reflected in educational planning and specifically in language planning at school. Nowadays an increasing number of schools have multilingualism as one of their educational aims. Due to the international spread of English, education often aims at teaching English but also includes national languages and minority languages. Languages are learned, maintained, and reinforced through education. Schools can provide ample opportunities for the development of multilingualism because of the number of hours and years that children spend at school (Baker, 2007).

Many schools all over the world include more than one language in the curriculum either as school subjects or as languages of instruction. Learning foreign languages has a long tradition as part of elite education and modern languages such as English, French, or German have been taught along with other school subjects. Classical languages, such as Latin and Greek, are also part of the school curriculum in some countries. The teaching of foreign languages has spread to general education in many countries and English and in some areas French are the main languages of instruction in many former colonial countries in Africa and Asia. In these settings, English and French are associated with more prestige and Western society than African and Asian languages. Bilingual and multilingual education also refers to learning languages that have a weaker social status. This weaker status may be reflected in the limited number of speakers of the so-called minority languages (e.g., Frisian in the Netherlands or Navajo in the United States), or in their limited functions in society (e.g., Quechua in Peru or Berber in Morocco) even when the demography is strong.

Most research on bilingual and multilingual education has been carried out in Europe and North America but more recently Africa, Latin America, and Asia are also attracting more attention (De Mejía, 2005; Feng, 2007; Heugh & Skutnabb-Kangas, in press).

In this entry we look at different aspects of bilingual and multilingual education. First, the meaning of multilingual education as related to bilingual education and its scope are addressed. Then the diversity of multilingual education and the *continua of multilingual education* as a tool to compare multilingual programs are discussed. The next section, "The Outcomes of Multilingual Education," looks at the linguistic and cognitive effects of multilingual programs and "New perspectives in Multilingual Education" deals with new ways of communicative interaction among multilinguals and their challenges for multilingual education.

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The Scope of Multilingual Education

Multilingual education refers to the use of two or more languages in education provided that schools aim at multilingualism and multiliteracy. This definition focuses on the aims of education and considers the goals of multilingualism and multiliteracy as a requirement. Therefore, multilingual education does not include situations in which bilingual and multilingual children speak languages other than the school language at home but do not get any support for their home languages at school. This is a very common situation in different parts of the world including the United States and Western Europe where many immigrant schoolchildren speak languages that are not part of the school curriculum.

We understand multilingual education ("multi" = many) as an umbrella term that includes bilingual education ("bi" = two) as its most common type but also refers to other types of multilingual education with three or more languages. Although trilingual education (or other forms of multilingual education with even more languages) is not as common as bilingual education, it can be found in different parts of the world (see Cenoz, 2009, chap. 2). In this entry we use "multilingual education" as a general term referring to two or more languages and we use "bilingual education" when referring specifically to two languages.

Definitions of bilingual education tend to consider the use of two languages as media of instruction, that is, the teaching of subject matter content in two languages, as a characteristic of bilingual education (Baker, 2007, p. 131; Skutnabb-Kangas & McCarty, 2008, p. 4; Cummins, 2008a, p. xiii; May, 2008, p. 20). For example, the different types of immersion programs in Canada use both French and English as languages of instruction at least at some point. However, there can be bilingual education programs in which only one language, the minority language is used as the language of instruction and the majority language is used as a subject. This is the case in some European programs in the Basque Country or Wales where the use of Basque or Welsh as the language of instruction counterbalances the low vitality of the minority language as compared to the vitality of Spanish or English. In these cases, it does not seem to be necessary to use the majority languages as languages of instruction because there is enough exposure to them outside the school and the majority languages are also taught as school subjects. These programs result in a more balanced bilingualism than when both the majority and the minority languages are used for the same amount of time in the school curriculum (Cenoz, 2009).

When more than two languages are involved, it is more difficult to use all the languages as languages of instruction even if the school aims at developing multilingualism and multiliteracy. Examples of multilingual education such as the European schools do not usually have three languages as languages of instruction but only two plus one or more languages as school subjects. Among the schools that can be considered multilingual because they aim at multilingualism and multiliteracy, some of them call themselves "trilingual" because they aim at developing communicative skills in three languages. There is a great diversity of schools regarding not only the languages of instruction used at school but also their target population. For example, in the Basque Country there are different programs aimed at the whole population with either Basque or Spanish as the language of instruction and in all of them English is a third language that can be taught as a subject or as additional language of instruction. Some trilingual schools are more elitist and are particularly aimed at expatriates and children of the upper classes as is the case of some international trilingual schools with languages such as Arab, French, and English in Arabic countries.

The great diversity of multilingual schools regarding the languages involved, the target population, and the use of the languages both as languages of instruction and school

subjects makes it difficult to establish fixed categories. In fact, it is even difficult to establish hard boundaries between bilingual schools where a third or fourth language is taught and schools that call themselves trilingual or multilingual.

Types of Multilingual Education

There are many different types of bilingual and multilingual education and Mackey (1970) already categorized 250 types of bilingual education. This diversity is related to the number of educational, linguistic, and sociolinguistic factors affecting multilingual education. According to the linguistic background of the students and the aims of the school some broad categories have been distinguished: transitional, maintenance, and enrichment programs (see for example May, 2008; Baker, 2011). *Transitional programs* aim at language shift from the child's first language to the majority language and imply cultural assimilation. According to our definition of multilingual education transitional programs cannot be considered examples of multilingual education because they do not aim at multilingualism and multiliteracy. In the case of *maintenance* and *enrichment* programs the second language does not replace the first. Furthermore, enrichment programs aim at developing linguistic diversity. Baker (2011, chap. 10) proposes a very well known typology that distinguishes strong and weak forms of bilingual education taking into account the language background of the child, the language of the classroom, and the linguistic, societal, and educational aims. Weak forms of bilingual education are not included in our definition of multilingual education because their goal is monolingualism or limited bilingualism. Strong forms of bilingual education include immersion for speakers of the majority language, maintenance/heritage-language programs, two-way/dual-language programs, and mainstream bilingual education in two majority languages for speakers of majority languages.

Typologies of bilingual education cannot always fit all the diverse types and specific cases found in schools in different parts of the world. This is even more difficult when educational programs go beyond two languages and aim at developing communicative competence in three or more languages. As an alternative, Cenoz (2009) proposes the "*continua of multilingual education*" as a more appropriate tool to deal with the diversity of multilingual education. Hornberger (2003, 2008) applied the idea of continua to biliteracy by using two-way arrows to represent "*infinity and fluidity of movement*" (Hornberger, 2008, p. 277). This idea of continua is used in the "*continua of multilingual education*" so as to provide a tool that can describe as many situations of multilingual education as possible.

As can be seen in Figure 1, the model places the educational continua inside a triangle because they are central to definining a school as multilingual. These "school" continua are linked to other external continua: linguistic distance and the sociolinguistic context.

When learning two or more languages the typological distance between the languages already known by the speaker (the first language/s or others) and the target language(s) can have an influence on the acquisition process (Cenoz, 2009). When languages are closely related to each other they tend to have considerable similarities in grammar, vocabulary or the phonological system. For example, Kowalski (2009, p. 175), an American multilingual speaker explains: "Once I was there, however, the language practically fell into my lap. For one thing, with Spanish and Latin already down, Italian fell in its turn like a domino."

Typological distance is a factor that has to be taken into account when analyzing different types of multilingual education, and languages are not only "related" or "unrelated" but there can also be different degrees in their relationship. For example Italian and English, being Indo-European languages, are more related to each other than to Japanese. The bidirectional continuum proposed in the *continua of multilingual education* for language distance can accommodate different combinations of languages. A school with Italian,

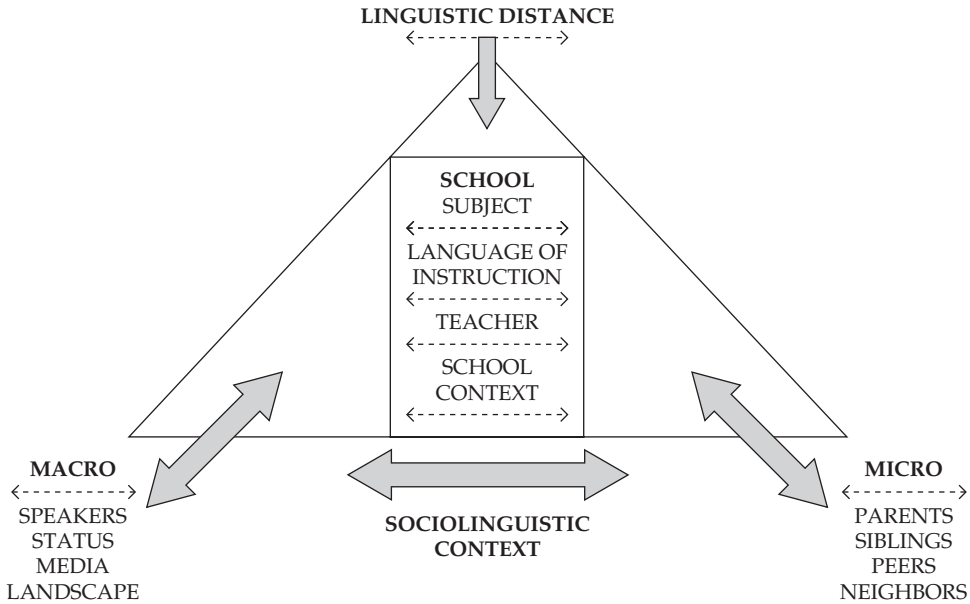

Figure 1 Continua of multilingual education. Cenoz (2009) © Multilingual Matters

English, and Japanese in the curriculum can be placed more toward the "more distant" end of the continuum than one with Italian, English, and French but more toward the "less distant" end of the continuum than one with English, Japanese, and Hebrew.

Apart from linguistic distance, the sociolinguistic environment in which a bilingual or multilingual school is placed needs to be taken into account. At the macro level, we can consider the relative status and vitality of the languages used at school, spoken by the students in society at large, or both. Factors such as the number of multilingual speakers, the status of the different languages, or their use in the media and the linguistic landscape can affect motivation to learn languages. For example Wildsmith-Cromarty (2009, p. 102) refers to status when discussing her experience learning Zulu: "the African languages have, until recently, carried no status in political, judicial, or educational domains so that there was no real incentive to learn them as additional languages." The sociolinguistic context where a multilingual school is located can be more or less multilingual. For example, a multilingual school in Argentina is more toward the "less multilingual" end of the continuum than a multilingual school in India.

The languages used by schoolchildren at home with their parents, siblings or the extended family, their neighbors, and peers are also part of the sociolinguistic context at the micro level. This context can be more or less multilingual. For example, Fantini recollects his childhood as being more bilingual and according to the *continua of multilingual education* this situation would be more toward the multilingual end of this continuum than a child brought up in a monolingual home: "I know our Italian dialects were dominant in both the family and the neighborhood. I don't remember anything specific about speaking Italian (or English, for that matter), but I know Italian was used as needed, otherwise English" (Fantini, 2009, p. 244).

The educational variables are four continua: subject, language of instruction, teacher, and school context. Languages can be school subjects but also languages of instruction. A high number of languages in the curriculum and their use as languages of instruction

place a school toward the multilingual end of the continuum. Other factors that can be considered when comparing multilingual schools are the intensity of language instruction, the age of introduction of the languages, or the integration of different languages in the curriculum. Teachers' communicative skills in different languages also contribute to make a school more multilingual as well as their specific training for multilingual education. A final factor that is considered to be in the school context is the use of different languages when teachers, supporting staff, students, and parents communicate outside the classroom in informal conversations and meetings. Literacy practices and the linguistic landscape inside the classrooms and in the school are also part of the school context. A school would be more multilingual if more languages are used for these functions. Freedman (2009, p. 139) recalls a school that would be toward the multilingual end of the continuum, "the school had an inherent multicultural character. Perhaps two-thirds of the students and some of the teachers spoke an African language (or several), in addition to French."

The "*continua of multilingual education*" can be used to compare different types of multilingual education within a country or internationally. This model can be more appropriate than traditional typologies to accommodate the diversity of multilingual education because it takes into consideration the effect of different factors but it proposes continua rather than closed categories so as to allow for comparison among different educational programs.

The Outcomes of Multilingual Education

Multilingual education, understood as education that aims at multilingualism and multiliteracy, entails good linguistic and academic results. This is the case both for speakers of a majority language and speakers of a minority language (or a language of low status) provided that there is an adequate development of the first language (May, 2008; Baker, 2011).

In general terms, research in immersion education for language-majority students has shown that students learn another language and acquire literacy skills at no cost to their overall academic achievement or their first language skills (see Baker, 2011). These results work for early total immersion but also for dual-language programs or two-way immersion programs, where students from language minority and majority backgrounds are in the same class and both languages are used as languages of instruction (Genesee & Riches, 2006). These results indicate that language-majority students who use the L1 on a daily basis outside school can have an L2 as a language of instruction at no cost for their L1 or for achievement in academic domains such as science, mathematics, and social studies. Proficiency in the L2 in immersion programs is higher in receptive skills than in productive skills. Students in early total immersion generally achieve higher levels of proficiency in the L2 than those in partial immersion but intensity of instruction also produces good results in some late immersion programs. In general terms, these results originally reported for Canadian immersion have been confirmed in other contexts (see May, 2008; see also IMMERSION EDUCATION).

In the case of speakers of minority languages or languages of low status, multilingual education that aims at maintaining and developing the first language along with other languages is associated with the best results not only in the L1 but also in the L2 and other areas of the curriculum. For example, a meta-analysis of research studies on minority children in the US reported by Genesee and Riches (2006) shows that learners who receive some reading instruction in the L1 in the primary grades achieve, at least, the same level of performance and in some cases even a higher level of performance in L2 reading than learners of similar linguistic and cultural backgrounds who have only received initial

literacy and instruction in English. López (2006) reports the successful transfer of key competences from indigenous first to the second language in Guatemala and Bolivia when first languages are used as languages of instruction. Good results in academic achievement and in classroom participation have also been reported (see, for example, López & Sichra, 2008). Mohanty (2006) points out that there are social psychological and educational benefits when the first language is maintained along with other languages in India (see also Young, 2009, on Macau). Heugh and Skutnabb-Kangas (in press) analyze several cases of multilingual education in countries such as Ethiopia, Burkina Faso, Peru, India, and Nepal, and conclude that mother-tongue education assists the content learning of other subjects but also other languages. These positive outcomes of maintaining and developing a minority language or a language of lower status at school have been confirmed in research studies conducted in many other parts of the world in diverse sociolinguistic and educational settings (see, for example, Cenoz & Gorter, 2008; Cummins & Hornberger, 2008).

New Perspectives in Multilingual Education

Multilingual education aims at developing multilingualism and multiliteracy but very often creates strong boundaries between languages by associating different languages to different teachers (one teacher, one language) or to different spaces (one classroom for each language). However, multilinguals use their languages as a resource and often mix them in daily communication with other multilinguals. The influence of some teaching methods has created isolation between the different languages in most school contexts but the interaction between the languages can be helpful in different ways (Cummins, 2008b). For example, multilingual students can use the languages they know to develop their metalinguistic awareness and make more progress when learning additional languages (Jessner, 2006). Nowadays, there is a trend toward a more multilingual approach in multilingual education, an approach that does not isolate languages. For example, Blackledge and Creese (2009) advocate for the flexible use of languages in school environments in order to focus on the speakers and not the languages and to look at their linguistic practice as related to the context in which they take place. In the same vein, García (2009) considers that pedagogical practices have to be built on the multimodal literacy practices that children bring to school and not on separate codes. In fact, new technologies have influenced communication and nowadays multimodality is increasingly important. Furthermore, elements from different languages are combined with other semiotic elements such as images, icons, or pictures. These networks of communication together with linguistic and cultural diversity in school settings pose new challenges for multilingual education.

SEE ALSO ON BILINGUAL AND MULTILINGUAL EDUCATION: Assessing Multilingualism at School; Attitudes and Motivation in Bilingual Education; Baetens Beardsmore, Hugo; Baker, Colin; Bilingual Education and Immigration; Cenoz, Jasone; Clyne, Michael; Content and Language Integrated Learning; Cultural Awareness in Multilingual Education; Cummins, Jim; Curriculum Development in Multilingual Schools; Early Bilingual Education; Ecology and Multilingual Education; Edwards, John; Edwards, Viv; Elite/Folk Bilingual Education; Empowerment and Bilingual Education; Fishman, Joshua A.; García, Ofelia; Genesee, Fred; Gorter, Durk; Heller, Monica; History of Multilingualism; Hornberger, Nancy H.; Martin-Jones, Marilyn; Materials Development for Multilingual Education; May, Stephen; McCarty, Teresa L.; Minority Languages in Education; Mohanty, Ajit; Mother-Tongue-Medium Education; Multilingual Education and Language Awareness; Multilingual Education in Africa; Multilingual Education in Australia; Multilingual Education in China; Multilingual Education in Europe; Multilingual Education

in India; Multilingual Education in Latin America; Multilingual Education in North America; Multilingual Education in the Arab World; Multilingual Identities and Multilingual Education; Multilingualism and Higher Education; Multiliteracies in Education; Romaine, Suzanne; Shohamy, Elana; Skutnabb-Kangas, Tove; Spolsky, Bernard; Teacher Education for Multilingual Education; Williams, Colin H.

SEE ALSO: Code Mixing; Code Switching; Language Planning and Multilingualism; Language Policy and Multilingualism; Multilingualism; Multilingualism and Metalinguistic Awareness

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Bilingual Education

OFELIA GARCÍA AND HEATHER HOMONOFF WOODLEY

Bilingual education is the use of two, or more, languages in the instruction and assessment of learners. Bilingual education differs from traditional language education programs that teach an additional language as a subject in that it uses the language as a medium of instruction. Programs vary in their goals, language use, and students served, and are also shaped by sociocultural and sociopolitical factors, historical context, as well as the status and power of speakers and languages.

Throughout the world, children of the elite are sent to bilingual schools for the purpose of learning prestigious languages—French, German, English, Chinese, Arabic, and others. However, in order to uphold linguistic hierarchies and maintain power, the masses have most often received monolingual education in the dominant language, which eventually leads to language shift and homogenization of differences.

The rise of global ethnic revivals in the mid-20th century, including civil rights movements in the United States, contributed to seeking greater educational opportunities for language minority populations. Universal education was extended to the masses through the inclusion of their languages in the educational system in the form of bilingual education programs. As we have moved into the 21st century, issues surrounding bilingual education today are more complex than in the past due to increased movement of people, technology, and the growing dynamism of bilingualism itself (García, 2009).

Recognizing that models of bilingual educations are artificial constructs divorced from the daily realities of school language use and learning, it is useful to look at different types of bilingual education. Various types of programs within bilingual education differ based on broad goals, contexts, and structures. One of the most elaborate, and best-known, typologies of bilingual education was proposed by William F. Mackey in 1970. Mackey's typology distinguishes 90 different variables depending on 4 intersecting factors:

1. The relationship between the language(s) of the home and the schools;
2. Curricular organization of the languages: the medium of education, their pattern of development, the distribution of the languages in the curriculum, the transition from one language to the other;
3. The linguistic character of the community and the country;
4. The function, status, and differences, both regionally and internationally, of the various languages.

In 1974 Wallace Lambert proposed what became the two classic models of viewing bilingualism in schools during the 20th century—*subtractive bilingualism* and *additive bilingualism*. Subtractive bilingualism is what happens when schools take away the home language of the child and substitute it with a majority language. Additive bilingualism, on the other hand, builds on the child's home language as the other language is acquired. However, these models of bilingualism have proven to be insufficient in the 21st century.

Subtractive bilingualism refers to the type of bilingualism promoted by *transitional bilingual education* models. These programs temporarily use the child's home language to facilitate the acquisition of a dominant language. The goal of these programs is to promote language shift to a majority language. Examples of transitional bilingual education programs can

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be found in Peru, Guatemala, and Bolivia, where indigenous languages are used in the early grades before students' transition to Spanish-only classes. Throughout many countries in Africa, local languages are used in transitional bilingual education usually up to the third or fourth grade when the language of education becomes the colonial language. Transitional bilingual education programs are also often used to educate immigrant students, especially in the United States. Acting as "safe-houses" for recently arrived immigrant students, transitional bilingual education programs are ways of alleviating the culture shock, alienation, and educational inequity that immigrant students often face. In the United States, transitional bilingual education programs are the most popular type of bilingual education currently used in serving language-minority, mostly Spanish-speaking, students, although they are being replaced with mostly monolingual approaches.

In support of the *additive bilingualism* of children, different types of bilingual education programs have been developed throughout the world. However, most of these types of bilingual education programs follow a *monoglossic* language ideology, which expect the same language abilities as monolinguals in both languages. One type of bilingual education program under this framework is *maintenance bilingual education.* These are programs mostly serving empowered language-minority children who want to maintain their home language while developing proficiency in a dominant one. These programs reflect community and cultural values, self-determination, and emphasize a strong bicultural identity for learners.

Prestigious bilingual education programs use an additive approach in serving empowered language-majority children through the medium of two languages. Languages are often strictly separated, usually through the use of different teachers who teach diverse content in different languages. In many parts of the world there are American, British, German, and French bilingual private schools that fall under this type.

Immersion bilingual education is another additive type of bilingual education where, after a short period of time in which language-majority children are taught in the additional language, the home language is increasingly used until half of the instructional time is devoted to the home language and the other half to the additional language. These programs were first developed in Québec for Anglophone-majority children who wanted to become bilingual. There are *early immersion* programs that start in the very early grades, as well as *late immersion* programs that begin in middle or secondary schools. Although the first immersion programs in Québec were of the *full* type, meaning that students were exclusively taught initially in the additional language, there are also *partial* types in which the instruction is never exclusively in the additional language.

Toward the end of the 20th century, and into the 21st, the linguistic complexities of Africa and Asia, and of the Deaf community began to gain recognition in Western scholarship. This has resulted in a growing acceptance that bilingual learners have diverse languaging practices, rather than being two monolinguals in one, or all starting out as monolinguals. These *heteroglossic* linguistic practices and ideologies are shaping new theoretical frameworks of bilingual education based on the realization of multiple coexisting norms, which characterize bilingual speech and bilinguals' use of multiple discursive practices, and have begun to compete with monoglossic beliefs. This ideology of heteroglossia includes sociolinguistic aims of bilingual revitalization, bilingual development, and linguistic interrelationship, while also contributing to global awareness and enhanced choices and opportunities for communities and learners. As a result of these changes, García (2009) identified two further theoretical frameworks of bilingualism—*recursive bilingualism* and *dynamic bilingualism*, neither subtractive nor additive because of their non-linear heteroglossic nature.

A *recursive bilingual* framework recognizes the complex nature of the bilingualism of ethnolinguistic groups who have undergone language shift as they attempt language

revitalization. The idea is that these speakers do not start out as monolinguals, but reach back to the bits and pieces of the languaging practices that they still hold. *Immersion revitalization bilingual education* programs use this framework to move the languaging practices of these ethnolinguistic groups forward and into a bilingual future. In Aotearoa, New Zealand, the "language nests" schools known as Kōhanga Reo are early childhood centers where Māori young children interact with Māori speaking grandparents and community members. Kura kaupapa Māori are immersion revitalization bilingual education programs that emphasize incorporation of local Māori knowledge as well as language learning, while working toward group agency and power. These types of immersion revitalization bilingual education programs are also prevalent among other indigenous peoples, especially Hawaiian natives, Native Americans in the United States, Canada's First Nations, and the Sāmis of Norway, Finland, and Sweden.

Developmental bilingual education programs also embody this *recursive framework* because the ethnolinguistic group is not monolingual to start with, but rather has a bilingual/multilingual concept of community, diverse language practices, and multiple identities. These programs are usually found in language minority communities that have undergone some degree of language loss, but have not suffered the language shift of those who need immersion revitalization bilingual education programs. Thus, the speakers in this group have a broad range of languaging practices. These programs differ from maintenance bilingual education programs that stem from a monoglossic ideology and only recognize monolingualism in both languages as a goal, as they are based on more flexible languaging practices. Developmental bilingual education programs recognize the cultural and linguistic diversity of their speakers and seek to serve non-dominant language students while both reaffirming and developing their minoritized language. Traditional or natural bilingual schools for Welsh speakers fall under this type. In the autonomous regions of Spain, Catalan, Galician, and Euskara (Basque) are used in different kinds of programs while recognizing the broad language continuum of its bilingual speakers. When Deaf bilingual education exists in the United States, most can be considered developmental bilingual education programs, recognizing the diversity of the Deaf community, some profoundly deaf, others hard of hearing, and yet others the product of the diverse success or failure of cochlear implants.

Under a *dynamic bilingual* framework within a heteroglossic language ideology, there is support for multiple language interactions that take place on different levels and planes including multimodalities, and other linguistic interrelationships. A dynamic form of bilingualism actively builds upon the multiple sense-making and discursive practices of bilinguals that García (2009) has termed *translanguaging*, extending the term coined by the Welsh Cen Williams to refer to a particular type of multilingual pedagogy.

Bilingual education under this dynamic framework includes *poly-directional bilingual education* also known as *two-way bilingual education*, *two-way immersion*, *two-way dual language*, *bilingual immersion*, or *dual language.* These programs include children who have various language practices and are often from majority and minority groups. In the United States these programs are increasingly called "dual language," a way of silencing the increasing bilingualism of the country. The Oyster School in Washington, DC, is one such example. The school immerses students with different language strengths (supposedly 50% English speakers and 50% speakers of the other language) with half the time studying in each language. In New York City, there are two-way bilingual education programs that educate students in English and either Spanish, Chinese, French, Russian, or Korean. The goals of these programs are bilingualism and biliteracy, as well as cultural understanding between groups. Neve-Shalom, Wahat Al-Salam in Israel, is an example of a two-way bilingual school that emphasizes peaceful cooperation and multicultural respect by having Jewish, Muslim, and Christian Israeli children study together with one Arab and one Jewish teacher

in Arabic and Hebrew. The European Schools for children of civil servants working in European institutions, where multiple languages are used in teaching and learning, are also examples of these poly-directional bilingual education programs. Although two-way bilingual education programs often have strict language separation arrangements and policies, in practice much translanguaging occurs, both by teachers and students.

In *Content and Learning Integrated Language (CLIL) bilingual education* programs an additional language is used as a medium to teach one or more subjects to the entire school population. These programs have been promoted especially in the European Union and replace traditional core language education programs. *CLIL-type* bilingual education programs have been spreading as a way to teach global languages.

Another dynamic form of bilingual education is *multiple multilingual bilingual education*. Increasingly, as more ways of languaging become recognized, bilingual education is not sufficient. A multiple multilingual bilingual education points to the greater complexity of language practices, recognizing more than two academic languages for literacy, but also a great range of languaging to make sense of learning. For example, in Luxembourg, all students participate in a trilingual education starting with the home language of Luxemburgish, followed by German language and literacy, and eventually French, which is then increasingly used as the medium of instruction. Translanguaging is a common feature of such teaching, as students and teachers negotiate meaning using all the languaging practices at their disposal. In other countries such as Singapore, the Philippines, India, Hong Kong, Morocco, Lebanon, and Algeria, various languages are used in schools and throughout an individual's educational experience.

Yet another dynamic form of bilingual education is what García and Kleifgen (2010) call *dynamic bi-/plurilingual education programs*. Whereas in the programs described above, the language practices in classrooms are rigidly controlled in top-down fashion by the school and classroom teacher, in these programs the new language is used in the education of students who then are given the agency to negotiate their linguistic repertoires. That is, the locus of control of the language rests with the students and there is a great deal of peer teaching. This type of program has become prevalent in some newcomer programs in the United States, especially in those known as international high schools for immigrant children.

Regardless of what type of bilingual education program a group or parent chooses for their children, one thing is clear. Bilingual education is the only way to educate children in the 21st century.

SEE ALSO: Advocacy in Language Teaching; Bilingual Education and Immigration; Bilingualism and Bilinguality; Bilingual and Multilingual Education: Overview; Empowerment and Bilingual Education; Immersion Programs; Legal Disputes over Second Language Instruction in the United States

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Bilingual Education and Immigration

VIV EDWARDS

Introduction

"Globalization"—or economic activity across national frontiers—is a relatively new term, usually applied to more recent population movements. The process to which it refers, however, started in the late 19th century, slowed in the period from the start of World War I, and has been gaining speed ever since, assisted by increasingly sophisticated communications and transport technologies (Education, Audiovisual, and Culture Executive Agency [ESCWA], 2008). From the 1960s, migration began to involve a wider range of sending and receiving countries (Spellman, 2002); since the late 1990s, the nature and extent of this migration have undergone further rapid changes. This new migration has been characterized by "super-diversity" or "the diversification of diversity" (Vertovec, 2006).

Because migration is an ongoing process, minority language communities are often very complex. To take just one example, Polish speakers in the UK belong to one of several diasporas: the wartime "Emigracja" between 1940 and 1950, composed mainly of the families of the Polish armed forces, refugees, and displaced persons; a small post-1950 migration, consisting in the main of anti-communists; a further small migration around 1980 from post-Solidarity Poland; and a large migration in the years following the enlargement of the European Union in 2004. The Emigracja and postwar diasporas encompass three generations, the Solidarity diaspora two generations, and the New Accession diaspora just one. The educational needs of children belonging to these diasporas are, of course, very different. The various groupings are, arguably, more strongly drawn together by linguistic and cultural ties than they are separated by their different migration histories and, for this reason, it is often impractical to discuss one group in isolation from the others. For the purposes of this article, however, the main focus will be on educational issues around multilingualism in the earlier stages of migration.

I will look first at the extent of linguistic diversity, and then consider a range of educational responses to speakers of other languages, including those of language minority speakers themselves. Next I will explore the different pedagogical approaches used in teaching speakers of other languages and, finally, the methods used to assess their learning.

A Note on Terminology

It is important to begin, though, with a brief consideration of terminology. As is often the case with more recent fields of study, there is considerable terminological confusion. In the USA, new arrivals speaking languages other than English are often defined in terms of what they lack (English) rather than what they have (fluency in another language), a state encapsulated in the term "limited English proficiency" or LEP. In Australia, the preferred term is speakers of "languages other than English" or LOTEs. In the UK, terms widely used include "second language learners" and "emergent bilinguals," although official parlance now seems to have stabilized around speakers of "English as an additional language" (EAL).

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There has been a similar vacillation around terminology for the languages which immigrants speak. In North America, discussions of both indigenous and more recently arrived immigrant languages are framed in terms of "heritage languages." In the UK and Australia, the preferred term for more recently arrived languages is "community languages." In addition, the terms "supplementary schools" and "complementary schools" tend to be used interchangeably in discussions of the non mainstream settings where these languages are taught. In this article, I will use the term "emergent bilingual" to avoid pathologizing new arrivals and stress instead both their actual achievements and their educational potential.

The Extent of Diversity

Population censuses—and particularly the Australian and Canadian censuses which are undertaken every 5 years—are useful sources of information on transnational flows of languages. In 2001 one in six Canadians reported speaking a language other than English or French at home; over 100 different languages were recorded. Five years later, the proportion of speakers of non official languages had risen from 18 to 20.1%, and the number of languages to more than 200. Chinese, Spanish, Punjabi, Urdu, Tagalog, and Arabic were the largest languages in terms of growth (Statistics Canada, 2009). The 2001 Australian census reported that 142 languages, in addition to Aboriginal languages, were spoken by just over one in six of the population. Five years later, the 2006 census recorded almost 400 different languages with a growth in speakers of Asian languages and a decline in speakers of European languages (Australian Bureau of Statistics, 2007). Even allowing for factors such as inconsistency in the naming of languages and differences in opinion as to what constitutes a language (Pennycook & Makoni, 2006), there can be little doubt either of the growth in the numbers of speakers of other languages or of the diversification in the languages involved.

School surveys are another useful source of information, especially in countries like the UK where questions on language are limited to Welsh in Wales, Gaelic in Scotland, and Irish in Northern Ireland. Statistics collected in 2007 by the Scottish Executive on the languages spoken by children at home and on community language teaching in England, Scotland, and Wales point to similar patterns in terms of the numbers of languages spoken and the diversification of these languages. They also highlight changes in the distribution of the languages. Although multilingualism has traditionally been an urban phenomenon, CILT (2005) gives the example of changing populations in two rural settings—the Scottish Borders where Portuguese- and Russian-speaking families have moved to work in the fishing industry, and Wrexham, a small town in northeast Wales where at least 25 languages are now spoken in schools, including Portuguese, Polish, Tagalog, and Shona.

The Educational Response

Patterns of educational provision for emergent bilinguals vary across time, both within and between countries. Nonetheless, it is possible to outline a number of broad trends which follow a similar chronological sequence. The main focus in this historical overview is on predominantly English-speaking countries in North America, the UK, and Australia, which, historically, were the main "receiving" nations. Similar trends, however, have been detected subsequently in many other destinations for immigrants.

Submersion

The response to the large population movements following World War II was one of laissez-faire: The unquestioned assumption was that children would "pick up" the new language in the playground. It was some time before the consequences of inaction were finally acknowledged: Far too many children were sinking rather than swimming. In the USA, minority language speakers resorted increasingly to legal means to redress the situation (Del Valle, 2003), ultimately paving the way for the provision of bilingual education (see below).

In England during the 1960s, teaching of new arrivals took place in special reception centers or "withdrawal classes" in the same school; here the sole emphasis was on learning English. In Australia, the Child Migrant Education Program was set up in 1971 to address similar needs. Students were withdrawn from mainstream classes for specialist English teaching for one or two lessons each day (Davison, 2001). Initially, segregated provision was justified on the grounds of administrative convenience; its educational value was not questioned. Over time, however, there was growing unease about the effectiveness of this policy. Concerns focused on the need for the social integration of new arrivals (Swann, 1985), the restricted curriculum resulting from the focus on language rather than content, and the limited opportunities for language learning in classrooms where the only native English speaker was the teacher (Commission for Racial Equality, 1986).

Mainstreaming

The move from separate to integrated provision started in the mid-1980s in the USA, Canada, Australia, and all current member states of the European Union and the European Economic Area. In some cases, pupils are directly integrated into classes where they receive special language support; in other cases, they are kept separate for a limited period and receive tuition adapted to their needs. In most of the countries in question, both kinds of provision exist alongside each other (ESCWA, 2008).

The motivation for mainstreaming is both philosophical and pedagogical. The philosophical rationale concerns the benefits that accrue to both minority and majority populations, and is reflected in a wide variety of policy statements (see, for instance, Swann, 1985). The pedagogical dimension will be discussed below.

Bilingual Education

The mainstreaming of emergent bilinguals is, however, by no means without its critics. This course of action is likely, for instance, to result in *subtractive* bilingualism, whereby the learning of the second language replaces the first language in children's repertoire. Many writers argue instead for the individual and societal benefits of *additive* bilingualism offered by bilingual education (see Baker, 2006, for an overview of this issue). Critics also point to the evidence that the longer children receive instruction in their first language, the better the educational outcome.

Of particular note in this respect are two large-scale longitudinal studies of children in US schools. The first of these studies examined the progress of 2,000 children over 4 years in three kinds of program—English only; early-exit bilingual programs, where the home language is used for transitional support in the first 2 years of school; and late-exit, where instruction in the home language continues alongside English throughout elementary school. Late-exit programs were the most beneficial (Ramirez, Yuen, & Ramey, 1991). The second study, based on the records of 700,000 language minority students over a period of 7 years, also found that late-exit programs delivered the best results (Thomas & Collier, 2002).

Evaluations of bilingual education worldwide show that children educated through the medium of two languages consistently perform at least on a par with children educated only through the majority language, while they outperform their peers in the minority language (Edwards, 2004; Baker, 2006).

Community Efforts to Maintain Minority Languages

Bilingual education is, however, an option open to only a very small proportion of students. In most cases, the priority of the education system is to teach the official language; other languages are used mainly for transitional support. In reality, responsibility for maintaining minority languages lies mainly with minority language communities themselves. This is a continuation of a long-term trend: US Chinese-language schools, for instance, date back to the early 19th century (Edwards, 2004). For many years, new migrants needed to choose between assimilation to the English-speaking majority and maintaining heritage languages quietly at home. Various community groups—often based around religious institutions such as churches, mosques, gurdwaras, and temples—have assumed responsibility for teaching minority languages. In some cases, overseas governments took the lead; in other cases, classes were organized by informal groups of parents.

The increasing demographic and economic strength of migrant communities has sometimes made it possible to gain official support, as in the case of the provincial programs for heritage languages in Canada, or in the distribution of funding to the states and territories by Community Languages Australia (www.communitylanguagesaustralia.org.au). Community activism in these countries has tended to work in tandem with the globalization agenda. As pointed out by Commonwealth of Australia (2009):

> Successive governments have reaffirmed a commitment to selecting high quality business migrants, in recognition of the benefits they contribute to Australia's increasingly global economy. They bring with them knowledge of overseas markets, business networks, cultural practices and often languages other than English, as well as their specific business skills and experience.

In the USA, modern foreign languages are now promoted in the interest of national security as well as global competitiveness. The National Security Language Initiative (www.ed.gov/teachers/how/academic/foreign-language/teaching-language.html) aims to increase the number of Americans mastering critical-need languages (such as Arabic, Chinese, Japanese, and Korean), starting at a younger age, as well as to increase the number of teachers and resources.

In the UK, social cohesion also figures prominently in official discourse concerning support for minority languages. As pointed out in the National Strategy for Languages in England (Department for Education and Skills [DfES], 2002, p. 12): "Drawing on the skills and expertise of those who speak community languages will promote citizenship and complement the Government's broader work on the promotion of social cohesion." Official support in recent years included the funding of the "Our languages" project (www.ourlanguages.org.uk) to promote teaching and learning through partnerships between mainstream and complementary schools; and greater flexibility in the accreditation of a wide range of languages through schemes such as Asset Languages (www.assetlanguages.org.uk) and the European Language Portfolio (www.coe.int/t/dg4/portfolio/). The UK position is thus in line with changing attitudes toward new minority languages in the European Commission which now actively promotes diversification in language learning, including non-European languages.

In all these settings, however, the main drivers of minority language provision remain local groups, assisted in varying degrees by umbrella organizations such as the Alliance

for the Advancement of Heritage Language in the USA (www.cal.org/heritage) the National Resource Centre for Supplementary Education in the UK (www.continyou.org.uk/what_we_do/children_and_young_people/supplementary_education), and Community Languages Australia.

Pedagogical approaches

Many of the early attempts to offer specialist programs for emergent bilinguals were based on a behaviorist model of learning: Children were required to master the correct form of words and the ways in which they are put together. Emphasis was placed on formal grammar and repetitive, rote drills with no attempt to relate the content of the teaching to the demands of the curriculum. In this approach, then, the content of learning is the language system itself.

The approaches to learning and teaching in mainstream classrooms today are, however, very different from those used in the days of "sink or swim." The mainstreaming of emergent bilinguals acted as a stimulus for the development of theory with important implications for both pedagogy and curriculum.

As dissatisfaction with earlier provision grew, the focus shifted from decontextualized language learning to the learning of language through content (Mohan, 1986). In order to maximize learning, attention was paid to comprehensible input (Krashen, 1985), a notion that encompasses the strategies that support learning. Examples might include presenting students with background information that allows them to key into what is being taught, and the use of graphic organizers such as charts and tables. Inquiry-based activities involving discussion and the flexible use of small group work are also common. This approach is justified on the grounds that, in order to learn a language, we need to participate in its meaningful use.

Another development with implications for emergent bilinguals in mainstream classrooms is the distinction between *conversational* and *academic* fluency (Cummins, 2001). Conversational proficiency develops rapidly over a period of one to two years through face-to-face interaction where there is plenty of contextual support for understanding in the form, for instance, of non-verbal cues. Academic language proficiency, in contrast, is associated with academically demanding subject matter where, typically, there is a great deal less contextual support and acquisition is a much longer process—estimates vary from five to nine years. In classroom activities such as synthesis, analysis, and evaluation which demand higher-order thinking skills, the absence of contextual support is likely to place students operating in a second language at a disadvantage. In the past, children tended to receive additional help only until they developed conversational fluency. Increasing emphasis, however, is now being placed on the need to support the development of academic language proficiency over an extended period.

For much of the history of second language teaching, little attention was paid to the maintenance or development of the students' first languages in the transition to mainstream schooling. Traditionally, second language teaching emphasized the exclusive use of instruction in the target language for transitional support and the avoidance of translation between first and second languages. More recent theories, in contrast, talk in terms of language *users* rather than language *learners* and focus on extending first language skills as part of a single, holistic, and more complex system of communication and meaning making (Cook, 2007). In this view, children should be judged by their success as second language users, not by their failure compared with native speakers. Strategies informed by this approach include encouraging students to write stories in their first language which they then talk about with other students in the second language; pairing students from the same language

background so that more fluent students can help less fluent peers; encouraging the use of bilingual dictionaries; and providing students with books in both their first and second languages.

The notion of "translanguaging" also offers interesting possibilities for reconceptualizing the realities of multilingual classrooms (García, 2009). In order to make meaning, students do not compartmentalize their languages; rather they make use of all their linguistic resources. Whereas code switching is often seen in negative terms as children's failure to separate their languages, translanguaging normalizes attempts to use both languages as they develop competence in their weaker language.

Mainstream provision emphasizes the linguistic, cognitive, and metacognitive skills necessary for educational success. The aim is to systematically extend students' grasp of academic language across the curriculum. Importance is attached to a fundamental principle of cognitive psychology, namely building new learning on a foundation of previous learning (Brandford, Brown, & Cocking, 2000). In linguistically diverse classrooms, this is achieved by drawing on the experiences which children bring with them to school, a process that both validates the identities of minority students and challenges narrowly ethnocentric curricula. In this approach, the whole school community, including parents, takes responsibility for developing responsive pedagogies and curricula (Cummins, 2001). There has thus been an important move away from the pathological model where responsibility for educational underachievement or non participation is placed solely on children and their parents.

Assessment

Multilingual classrooms present significant challenges for the assessment of learning. Given evidence that second language proficiency ceases to have a depressing effect on scores in reading and other school subjects only after four to five years of mainstream school experience (Katz, Low, Stack, & Tsang, 2004), the use of tools designed for first language speakers is extremely problematic not only on entry to school but also over a prolonged period of time. A variety of responses has emerged.

In the UK, a specialist teacher of English as an additional language usually undertakes initial assessment. If the teacher in question is unfamiliar with the language of the child, the school is encouraged to provide an interpreter who can talk to both the child and the parent. The emphasis is on what children can—rather than on what they cannot—do. It is further recommended that assessment of the second language should take place only when children have begun to communicate confidently in English. Official guidance stresses the importance of carrying out assessments in "a situation that is familiar to the learner" and ensuring that the children experience no "distress or discomfort" (Department of Children, Schools and Families [DCSF], *n.d.*).

Nationally or regionally developed scales or stages of language learning have been developed and incorporated into the curricula of Australia, Canada, the USA, and Ireland in order to counteract the weaknesses associated with assessment tools designed for first language speakers (Leung & Levkovicz, 2008). Examples include the ESL Scope and Scales, produced by the South Australian curriculum authorities, which link the content of the mainstream school curriculum and ESL descriptors. In the USA, the professional association of Teachers of English to Speakers of Other Languages has produced the K-12 ESL standards to provide teachers with broad requirements for second language development at different stages of schooling.

Other developments in the assessment of emergent bilinguals include modifications of the assessment tasks (e.g., introducing assessment in the first language, modifying

vocabulary, and the use of visual support) and changes to the assessment procedure (e.g., allowing extra time, giving instructions in the first language, and allowing the use of bilingual dictionaries).

More generally, there has been a move from summative assessment (the assessment *of* learning) to formative assessment (the assessment *for* learning). The first approach is intended "to certify learning and report to parents and students about students' progress in school, usually by signaling students' relative position compared to other students" (Earl, 2003). In assessment *for* learning, in contrast, teachers observe student responses to questions and tasks and give feedback to the students in order to promote the desired learning.

The increasing importance attached to testing in the USA in the wake of the No Child Left Behind Act has attracted bitter criticism for its attendant "unrealistic achievement targets, and punitive sanctions" (Crawford, 2008). Given the length of time required to achieve academic proficiency in English, the issues for students who arrive in the later years of schooling are particularly worrying. Interesting in this respect is the unplanned outcome of the imperative placed on schools to narrow the achievement gap between fluent and emergent bilinguals. For instance, to receive a regular high school diploma, students in New York State must pass five exams: Math A, Global History and Geography, US History and Government, any one science subject, and English. Students have the option of taking examinations in all these subjects (apart from English) in Spanish, Chinese, Korean, Russian, or Haitian Creole. This mode of assessment thus recognizes prior student learning and provides a more accurate picture of content knowledge.

Conclusion

The challenges for educators in an age of super-diversity are considerable. While learning the language of the new country is a matter of priority, there is less clarity as to how this is best achieved. We are, however, able to build upon a considerable body of experience.

We know, for instance, that conversational proficiency develops more rapidly than academic language proficiency and that emergent bilinguals are likely to continue to need support over a period which is often well in excess of four years after arrival. It is widely accepted that decontextualized language learning is far less effective than learning through content. And we understand that children are more likely to succeed when teachers attempt to build on prior experience, validating their identities in the process and challenging the assumptions of curricula which are all too often narrowly ethnocentric. Students' first languages also need to be taken into account in the development of suitable assessment tools.

Similarly, we know that children educated bilingually perform at least on a par with children receiving a monolingual education, at the same time as outperforming their peers in the minority language. By the same token, the longer children receive instruction in their first languages, the better the educational outcome. New pedagogies, such as translanguaging, are emerging as a more creative pedagogical response to the realities of multilingual classrooms.

The climate is much more supportive of minority languages today than in the past, driven by interests as varied as the desire for global competitiveness, national defense, and the need for social cohesion. Yet minority language activists—increasingly in alliances within and across languages and attracting varying degrees of official support—continue to be the main providers of minority language education. One of the issues facing language groups in receipt of official support is, of course, the extent to which minority language speakers wish to retain their independence as to what they teach and how.

SEE ALSO: Assessing Multilingualism at School; Assessment and Testing: Overview; Attitudes and Motivation in Bilingual Education; Content and Language Integrated Learning; Cultural Awareness in Multilingual Education; Curriculum Development in Multilingual Schools; Empowerment and Bilingual Education; Language Testing and Immigration; Mother-Tongue-Medium Education

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Bilingual Lexicography

PAUL BOGAARDS

Introduction

In many cultures bilingual lexicography is the oldest form of lexicography (but see Boisson, Kirtchuk, & Béjoint, 1991, for another point of view). This is understandable because the need to interpret texts in languages other than one's own is at least as old as the existence of writing. This situation underlines right away two characteristics of bilingual lexicography. The first, crucial, point is that in bilingual lexicography one of the two languages involved is always a language that is only partly known to the users of the dictionary. In most cases this is a foreign language, but sometimes it is a dialect that is not readily interpretable, and even the "translation" of an ancient form of a language into its modern shape presents fundamental characteristics of bilingual lexicography. The second feature is that bilingual lexicography is almost exclusively focused on written language. Before the first bilingual dictionaries came into being, in Europe in the 15th or 16th century, translations in the margins of texts or glossaries providing explanations of words used by an author had the same purpose as the receptive part of modern bilingual dictionaries: to make difficult vocabulary in texts understandable for speakers of another language. The need for a productive part, which is intended to make lexis available to those who want to express themselves in another language, was only recognized more recently.

This entry will first describe some of the structural aspects of bilingual lexicography, then move on to one of the major problems bilingual lexicography is confronted with: the equivalence between a word and its translation. Next, the various forms and the possible evolution of bilingual dictionaries will be explored. The concluding section will briefly examine bilingual dictionaries in the context of second language learning.

The Structure of Bilingual Entries

Let us begin by analyzing an example taken from an English–French dictionary:

> **hall** /hɔːl/ **N** a (= *large public room*) salle *f*; *[of castle, public building]* [grande] salle *f*; (also **village hall, church hall**) salle *f* paroissiale; (*Brit Univ*) (= *refectory*) réfectoire *m*; → **concert, music, town** b (= *mansion*) château *m*, manoir *m* c (*Theat*) ■ **to play the ~s** faire du music-hall d (= *entrance way*) *[of house]* entrée *f*; *[of hotel]* hall *m* e (*US = corridor*) couloir *m* f (*Univ:* also **hall of residence** (*Brit*), **residence hall** (*US*)) résidence *f* universitaire ■ **to live** *or* **be in ~** habiter en résidence universitaire *or* en cité universitaire . . . (Lefur, 2010, p. 1452)

It can be seen that information is there for native speakers of both English and French. Systematically, next to the entry word and the translations, all extra information that is meant for English users is given in italics. Speakers of English who want to translate the polysemous word *hall* into French will first of all have to choose the sense they need. The indications that distinguish the six senses (from a to f), e.g., "*large public room*" or "*Theat*,"

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are called "sense discriminators." Sense discriminators are also used to mark differences in meaning that are not part of the English lexicon, but have to be taken into account in French, for instance for sense (d) "*of house*" or "*of hotel*." All this information is necessary to guide the English speaker to the right translation. Once that has been ascertained, the reader is also given the gender of each of the French words, *f* (for feminine) or *m* (for masculine).

For French users, who are translating from the foreign language into their mother tongue, this information is superfluous. For such readers, the entry could have been much less complex and could have looked something like this:

> **hall** /hɔːl/ **N** a [grande] salle; salle paroissiale; réfectoire → **concert, music, town** b château, manoir c (*Theat*) ■ **to play the ~s** faire du music-hall d entrée; hall e couloir f (*Univ:* also **hall of residence** (*Brit*), **residence hall** (*US*)) résidence universitaire . . .

In this simplified entry native speakers of French are sufficiently served because they are able in a given context to make the right choice between the translations given and, moreover, know whether a noun is feminine or masculine. The example given with sense (f) in the original entry does not give any extra information to French users because they will not have any difficulty in understanding this phrase.

This example entry leaves us, however, with a number of points that need some discussion. First, there is pronunciation. The entry word is presented with its transcription in International Phonetic Alphabet (IPA) characters. The question is: Who is going to profit from this information? Not the English user, who knows how to pronounce the word, nor the French reader who recognizes the form but does not necessarily need to pronounce it. On the other hand, the English speaker may have to pronounce the French translations, but these are given without any phonetic indications. These can normally be found in the French to English part of the dictionary, but would also be very useful at this point. Second, some of the sense discriminators, such as "*Univ*" or "*Theat*," may serve both user groups although they are given in italics. This also applies to the language specifications, "*Brit*" and "*US*." Finally, the references to "**concert, music, town**" are of interest to both types of users. Speakers of both English and French are reminded that the word looked up may be part of a compound that is translated elsewhere.

A dictionary like the *Robert & Collins*, from which the above example is taken, is called bidirectional because, in each entry, it tries to serve in both directions, from language A to language B and vice versa. It combines features of both *productive* and *receptive* bilingual dictionaries, which are also known under such names as *Hinübersetzungswörterbuch* and *Herübersetzungswörterbuch*, *Schreibwörterbuch* and *Lesewörterbuch*, *dictionnaire de thème* and *dictionnaire de version*, or *encoding* and *decoding dictionary*. These terms insist on the use of bilingual dictionaries in translation, reading, and writing. The terms *active* and *passive dictionary* that are sometimes used are less felicitous because it is difficult to see in what way either a dictionary or its use can be active or passive.

In order to better see what is necessary for the receptive or the productive user, it is useful to describe the formal structure of the entries that are part of either dictionary. First of all, it is important to stress which side contains the unknown (or lesser known) language. For the receptive dictionary, this is on the left side (X > A); for the productive dictionary, it is on the right side (A > X). As in mathematics, X represents the unknown. This is the *ignorance principle*, which says that nothing in language X is obvious for the native speaker of language A. It is also important to use the proper terms for the two languages: *foreign* or *X-language* and *mother tongue* or *A-language* are preferable to just *source* and *target language*.

In the productive dictionary, the user goes from the known to the unknown, or from a meaning to a form. A word [a] in the mother tongue can have several senses, and [a] has to be brought back to the intended meaning or "lexical unit" (see Cruse, 1986) by a sense discriminator. This unique lexical unit [a^1] can then be translated. The form that is provided in the foreign language [x] should be accompanied by two types of parameters: grammatical and discoursal. The grammatical data should be as complete as possible, covering all syntactic, morphological, and phonological information that is necessary for the foreign learner to use the item correctly. The discoursal information should specify the exact semantic value of [x] and make clear any difference in style or connotative value between [a^1] and [x] so as to enable its appropriate use. This type of information should also include indications about collocations. If more than one translation is given for [a^1], the translations have to be accompanied by their own grammatical and discoursal information. The basic formula for the productive dictionary is thus:

$$a—[a^1] \Rightarrow x <g, d> (y <g, d>, \ldots)$$

It will be clear that, in the entry above, the French translations of sense (b), *château* and *manoir*, which are far from synonymous, have not been sufficiently distinguished for the English-speaking user on the level of discourse, and the grammatical information provided is minimal.

The basic formula for the receptive dictionary is:

$$x\ /t/ \Rightarrow a \text{ (comment)}.$$

In other words, the foreign form x should be accompanied by all traits /t/ that are necessary to permit its unique identification. The features used may be of a grammatical or a discoursal nature but can be less exhaustive than on the right side in the productive dictionary. They cannot be of a purely semantic type, however, because users are supposed not to know the meaning of this form. What users can know is the part of speech of x, as well as the kind of text they are reading (architecture or medicine; literary or slang; British or American; etc.). Using the traits, foreign readers should be able to recognize that the form they find in the dictionary exactly corresponds to the one they came across in their reading. The translation provided should be self-evident for the mother-tongue speaker. As many words are polysemous, however, many translations in the receptive dictionary should be accompanied by some extra information ("comment" in the formula). One of the ways of doing this is to provide a number of synonymous translations. Whenever this is possible, this can have the additional advantages of giving a better idea of the total semantic space covered by the foreign item and of suggesting a number of alternative possibilities to the translator. If no synonyms are available, then some other form of commentary should be provided so as to make sure that the user will have a correct representation of the meaning of the foreign item. In the example above, a single translation of the first sense of "**hall**" as "*salle*" would leave the French user puzzled about the type of room that was meant.

As will be clear, bilingual dictionaries do not always live up to these general rules. In printed dictionaries it is physically impossible to give all details about the use of the foreign forms that are found as translations in the productive part. In bidirectional dictionaries especially, it is often very hard to specify them in a satisfactory way: giving a number of translations in the receptive dictionary is useful and in many cases even necessary, whereas this leads to quite complicated results in the productive dictionary, where each of these translations has to be accompanied by grammatical and discoursal information. It has been

proposed, therefore, that the two types of dictionaries be separated and that there should be not two, but four (Shcherba, 1995; see also Bogaards, 1990) or even more (Kromann, Riiber, & Rosbach, 1990) dictionaries per language pair.

Translation and Equivalence

Bilingual dictionaries are often called translation dictionaries, and translation is indeed the heart of this type of reference work. It is a very special type of translation, however, focusing on isolated words rather than a text. It is well known that many words have different senses according to the context in which they are used, and translators are often forced to compensate in other ways for a lack of total correspondence between the original word and its translation. This is not possible in a bilingual dictionary, where the user wants to find the exact equivalent of the entry word. For a number of reasons, exact equivalence is often not easily attained.

Good equivalence exists between such lexical units as English *blanket* and French *couverture*, as is the case with other nouns for concrete objects as well as with more technical terminology. At the other end of the spectrum, we find concepts that do not have any equivalent in the other language. Duval (1991, p. 2818) gives the example of the French *ballotage*, which can only be translated as something like "situation in a political election when no candidate has an absolute majority in the first ballot and people have to vote again." Such culturally bound items do exist in various domains, such as national holidays, political systems, special dishes, or items of clothing. In between these two extremes are many cases of what is called *anisomorphism*—the phenomenon that languages categorize "reality" in different ways (see Zgusta, 1971; Yong & Peng, 2007). A case in point is *hall* in the sense of a large country house or mansion: the name for a category of buildings is quite clear to speakers of British English, but that does not correspond to any existing category of buildings in French. This means the two French translations given in the example above, *château* and *manoir*, taken together, cover more or less the same ground as *hall* in this particular sense, but they are not real equivalents.

Another typical example of anisomorphism is the Hungarian words for *brother*: *báty* and *öcs*, the first one referring to an older brother and the latter to a younger brother—no single word exists for the whole category of "brother." The phenomenon of a single term in the mother tongue that corresponds to two distinct terms in the foreign language is called *divergence*; in the other direction, when two distinct terms in the mother tongue correspond to one term in the foreign language, the feature is called *convergence*. Ideally, equivalents should have not only the same denotative meaning but also the same connotations, the same style level, as well as a comparable frequency in the two languages. If the French word *étrille* is translated as *swimming crab* (see Duval, 1991, p. 2819), only the denotative meaning is equivalent; the frequency is quite different as is the reference to something one can eat. The translation of the English *Saturday* into German shows another case of maintenance of the denotative meaning; regional variants here have to be distinguished, however, as this day is called *Samstag* in most of the German-speaking world but *Sonnabend* in the northern part of Germany. Although the Dutch *heengaan* and the French *partir* both mean 'to leave a place', the French word is not a perfect equivalent of the Dutch verb because the Dutch form is only used in a formal, written style, whereas the French verb is more neutral. It will be clear that all these cases of partial equivalence will have different implications for the productive and the receptive user of the dictionary, and therefore require different treatments.

If full equivalence is hard to provide for isolated words, this becomes even more difficult for other lexical units that have to be translated in the bilingual dictionary. Fixed expressions only seldom have perfect equivalents in other languages. A French expression like

ça vaut son pesant d'or or *ça vaut son pesant de cacahuètes* (lit. 'that is worth its weight in gold' or 'in peanuts') is not ill translated as *it's priceless*, but this translation lacks the flavor of the French original. And someone who is completely dead is *as dead as a doornail* in English, *zo dood als een pier* (lit. 'as dead as a worm') in Dutch, *mausetot* (lit. 'mouse dead') in German, and *raide mort* (lit. 'stiff dead') in French. Although these are all good equivalents, the images they evoke are quite different. The same goes for proverbs and other sayings that are part of the language and should therefore be included in a good bilingual dictionary.

Types of Bilingual Dictionaries

Bilingual dictionaries come in various sizes. Some are very compact, containing only the most frequent words of the two languages. Often these are meant to be used by younger students and they tend to propose a kind of bilingual list without any additional information. As the ignorance principle is not taken into account, they turn out to be very difficult to actually use, especially when they are meant to be bidirectional.

A special type of bilingual lexicography is constituted by the so-called *bilingualized* or *semi-bilingual* dictionaries. Dictionaries of this type are based on a monolingual one, containing definitions and other explanations in one language but, in addition, they provide translations in another language. These translations may be limited to equivalents of the entry words or may include translations of examples or other elements (for an overview, see Kernerman, 1996; Marello, 1998; Lew, 2004). Like the monolingual (learner's) dictionaries they are based on, bilingualized dictionaries are essentially readers' dictionaries. In the productive part, they may contain a kind of index giving references from the mother tongue to foreign-language entries in the dictionary itself, but such indexes are often very poor bilingual lists without any sense discrimination and without any special care taken to guide users in handling any special contrastive difficulties they may be confronted with in the other language (see Bogaards & Hannay, 2004).

Recently, some proposals have been put forward to combine monolingual and bilingual elements in one dictionary, especially for productive purposes. Expanding on an earlier sketch by Laufer (1995), Laufer and Levitzky-Aviad (2006) describe a dictionary in which L1-to-L2 translations are enriched by information about the L2 translation options and by L2 words that are semantically related so that the user can select the most suitable word out of several words in the semantic area. In a similar vein Bogaards and Hannay (2004) argue that the rich information that can be found in English learners' dictionaries should be made available in a bilingual setting. The user should thus be provided not just with a form in the foreign language, as is the case in traditional bilingual dictionaries, be they in paper or in electronic form, but with fully fledged lexical units with all necessary semantic information, a rich grammatical description, collocational possibilities, references to alternative meanings (synonyms, hyponyms, antonyms, and so on), as well as warnings against pitfalls and specific contrastive difficulties. A dictionary of this type, which can only be realized in electronic form, will constitute a real step forward in the development of bilingual lexicography.

Bilingual Lexicography and L2 Learning

Over the last years it has become ever more evident that, in L2 learning, the native language of the learner plays an important role. Not only in the first phase of the learning process but even in proficient bilinguals, "lexical and semantic information in L1 is activated during both comprehension and production in L2" (Kroll & Sunderman, 2003, p. 122). Laufer and Girsai (2008, p. 712) rightly conclude that "meaningful communication

has been the goal of communicative language teaching, but the best method for achieving this goal may not be identical to the goal itself." Excluding the native language of the learner, as is done in monolingual learners' dictionaries, therefore does not necessarily seem to be the most effective way of presenting the lexicon of the foreign language.

For a long time, L2 learning was almost exclusively seen as the domain of grammar. Nowadays, the importance of lexis is more and more recognized (see Gass & Selinker, 2008, p. 449). At the same time, the link between L2 learning and lexicography was dominated by the presence of monolingual learners' dictionaries (see Bogaards, 2010). There is now room for a new look at the whole process of L2 acquisition and the role bilingual lexicography can play in it.

SEE ALSO: Crosslinguistic Differences in Grammar; Dictionary Use; Intercultural Communication; Lexical Collocations; Lexicography Across Languages; Monolingual Lexicography

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Bilingual Literacy

NANCY H. HORNBERGER

Bilingual literacy, or biliteracy, can be defined as "any and all instances in which communication occurs in two (or more) languages in or around writing" (Hornberger, 1990, p. 213), where these instances may be events, actors, interactions, practices, activities, classrooms, programs, situations, societies, sites, or worlds (Hornberger, 2003). The continua model of biliteracy offers a framework in which to situate research, teaching, and language planning in bilingual and multilingual settings. The model's intersecting and nested continua demonstrate multiple, complex, and fluid interrelationships between bilingualism and literacy and the contexts, media, and content through which biliteracy develops. From the framework, we argue that for multilingual learners, the *development* of biliteracy occurs

> along intersecting first language–second language, receptive–productive, and oral–written language skills continua; through the *medium* of two (or more) languages and literacies whose linguistic structures vary from similar to dissimilar, whose scripts range from convergent to divergent, and to which the developing biliterate individual's exposure varies from simultaneous to successive; in *contexts* that encompass micro to macro levels and are characterized by varying mixes along the monolingual–bilingual and oral–literate continua; and . . . with *content* that ranges from majority to minority perspectives and experiences, literary to vernacular styles and genres, and decontextualized to contextualized language texts. (Hornberger & Skilton-Sylvester, 2000, reprinted in Hornberger, 2003, p. 35; see also Hornberger, 1989)

Further, we suggest there is a need to contest traditional top-down power weightings in education toward compartmentalized, monolingual, written, decontextualized language and literacy practices, by intentionally opening up implementational and ideological spaces for fluid, multilingual, oral, contextualized practices and voices at the local level (Hornberger, 2003, 2005, 2006; Hornberger & Johnson, 2007). The model has been exhaustively described and exemplified elsewhere (e.g., Hornberger 1989, 1990, 2003, 2008, 2010); this entry will briefly review its origins and then take up each of the four sets of continua—contexts, development, content, and media—in relation to recent and enduring assumptions and perspectives in research in anthropological linguistics and sociolinguistics, literacy studies, and bilingualism and multilingualism.

The original impetus for the continua model of biliteracy was an ethnographic research project I initiated in two multilingual communities of Philadelphia in 1987, the Literacy in Two Languages project, which continued for about a decade with participation also from my students and colleagues. In search of a framework to underpin that research and finding very little scholarly work attending explicitly to biliteracy, I looked instead to its component parts—work on bilingualism and the teaching of second or foreign languages and on literacy and the teaching of reading and writing. An enduring perspective that emerges in common across these literatures is that, although scholars, practitioners, and policy makers often characterize dimensions of bilingualism and literacy in terms of polar opposites such as first versus second languages (L1 vs. L2), monolingual versus bilingual individuals, or oral versus literate societies, in each case those opposites represent only

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theoretical endpoints on what is in reality a continuum of features. Further, when we consider biliteracy as the conjunction of literacy and bilingualism, it becomes clear that these continua are interrelated dimensions of highly complex and fluid systems; and that it is in the dynamic, rapidly changing and sometimes contested spaces along and across the intersecting continua that most biliteracy use and learning occur.

These insights became the basis for the continua of biliteracy model proposed in 1989 and since developed in my own and others' research in Philadelphia, nationally and internationally (Hornberger, 1990, 2003, 2008, 2010; Hult & King, 2011). Along the way, the framework has evolved and adapted to accommodate both a changing world and a changing scholarly terrain. Recent scholarship in the field of bilingualism on languaging, translanguaging, and flexible bilingual pedagogy, and in anthropological linguistics, sociolinguistics, and literacy studies on mobility, communicative repertoire, and transnational literacies highlight threads woven into the continua, as I explore in the sections which follow.

Mobility and Sociolinguistic Scales: Contexts of Biliteracy

The continua model of biliteracy posits that contexts influence biliteracy development and use at every level from two-person interaction (micro) to societal and global relations of power (macro) and that they comprise a mix of oral-to-literate, monolingual-to-multilingual varieties of language and literacy (Hornberger, 1989). Recognition of context as an important factor in language use dates back at least to the 1960s and the beginnings of sociolinguistics, linguistic anthropology, and the ethnography of communication; and continues up to the present in work on sociolinguistic scales, indexicality, and polycentricity (Blommaert, 2010).

Sociolinguistics broke new ground in the 1960s by moving the analysis of language beyond a focus on structure to one on language use in social context. Rather than study homogeneous languages, sociolinguists (particularly those in the linguistic anthropological tradition) took up the study of speech communities and their verbal repertoires, described in terms of speech (or, more broadly, communicative) domains, situations, events, and acts. Hymes (1964, pp. 3, 13) proposed that:

> [The ethnography of communication] must take as context a community, investigating its communicative habits as a whole, so that any given use of channel and code takes its place as but part of the resources upon which the members of the community draw . . . The starting point is the ethnographic analysis of the communicative habits of a community in their totality, determining what count as communicative events, and as their components . . . The communicative event thus is central.

Gumperz, co-founder with Hymes of the ethnography of communication, built on work by Goffman on face-to-face interaction, emphasizing

> a view of language as a socially and culturally constructed symbol system that is used in ways that reflect macrolevel social meanings (e.g. group identity, status differences) but also create microlevel social meanings (i.e., what one is saying and doing at a particular moment in time). (Schiffrin, 1996, p. 315)

His work investigates how contextualization cues, that is "signalling mechanisms such as intonation, speech rhythm, and choice among lexical, phonetic, and syntactic options" (Gumperz, 1982, p. 16), relate what is said to participants' background knowledge, enabling them to make situated inferences about their interlocutors' meaning.

More recently, Blommaert (2010) proposes and charts a further paradigmatic shift from a sociolinguistics of variation to a sociolinguistics of mobility. In keeping with an increasingly globalized world, he suggests, we need "a sociolinguistics of mobile resources, framed in terms of trans-contextual networks, flows, and movements" (2010, p. 1). Building on and citing a rich literature in linguistic anthropology and sociolinguistics over the past several decades, he offers three conceptual tools to help us think about language in this new sociolinguistics: sociolinguistic scales, orders of indexicality, and polycentricity—all sharing an emphasis on power and spatiotemporal sensitivity. Sociolinguistic scales are layered spatiotemporal scales at micro (e.g., local), macro (e.g., global), and intermediary (e.g., state) levels, distributed not only across horizontal space but also along vertical (hierarchical) dimensions (Blommaert, 2010, p. 34). Indexicality refers to the jump from one scale to another—for instance Gumperz's contextualization (1982) or Goffman's frames (1974)—and is ordered both "as 'types' of semiotic practice with predictable (presupposable/entailing) directions" (i.e., indexical order; Blommaert, 2010, p. 37, citing Silverstein, 2003) and as a "stratified general repertoire in which particular indexical orders relate to others in relations of mutual valuation—higher/lower, better/worse" (i.e., orders of indexicality; Blommaert, 2010, p. 38). Polycentricity refers to the multiple centers of authority to which people orient in communication, whether these reside in an individual, a collective, an abstract entity or ideal, and so on. Every environment of human communication is almost by definition polycentric and, like indexicality, polycentricity explicitly signals structures of power and inequality (Blommaert, 2010, pp. 39–41).

Contexts of biliteracy, then, can be understood as scaled spatiotemporal complexes, indexically ordered and polycentric, in which multilingualism and literacies develop within mobile multilingual repertoires in local spaces which are simultaneously translocal and global. In this light, the call for opening up implementational and ideological spaces for fluid, multilingual, oral, contextualized practices and voices in educational policy and practice becomes an even more powerful imperative for contesting the social inequalities of language.

Languaging and Communicative Repertoires: Media of Biliteracy

Biliteracy is about communication in two (or more) languages in or around writing; crucial in this are the languages and scripts—the media—through which biliteracy is learned and used. Media in the continua of biliteracy model refer to the actual communicative repertoires, that is the language varieties and scripts through which multilingual literacies are expressed, and the sequences or configurations in which they are acquired and used. The model defines these in terms of the linguistic structures of the languages involved (on a continuum from similar to dissimilar), their orthographic scripts (from convergent to divergent), and the sequence of exposure to or acquisition of the languages or literacies (ranging from simultaneous to successive; Hornberger, 1989). The media component in the continua model is roughly equivalent to Hymes's Instrumentalities in the SPEAKING heuristic (Hymes, 1974), including both code and channel, where "code" refers to language varieties, dialects, styles, while "channel" includes written, as well as oral, telegraphic, and other communicative modes.

From the earliest formulations of the ethnography of communication on down to the present, linguistic anthropological research in sociolinguistics has emphasized a focus not on languages per se but on verbal or communicative repertoire. Gumperz (1964) introduced the term "verbal repertoire" in seeking to describe multilingualism in India. Hymes referred to a child's verbal repertoire as "the range of varieties of language, the circumstances, purposes, and meanings of their use" (Hymes, 1980, p. 106). More recently, Blommaert

writes of repertoires as the complexes of linguistic, communicative, semiotic "resources people actually possess and deploy," such as "concrete accents, language varieties, registers, genres, modalities such as writing—ways of using language in particular communicative settings and spheres of life, including the ideas people have about such ways of using, their language ideologies" (2010, p. 102). Similarly García (in Makoni & Pennycook, 2007; García, 2009), in recognition of the mobility and fluidity of linguistic resources, the disinventing and reconstituting of languages (Makoni & Pennycook, 2007), calls for a focus not on language per se but on "the multiple discursive practices that constitute . . . languaging" (García, 2009, p. 40), wherein languages are seen not as fixed codes, but as "fluid codes framed within social practices" (García, 2009, p. 32).

Assumptions within the continua model about diversity of language varieties and scripts, and multiple paths and varying degrees of expertise in the learning and use of communicative repertoire, are consistent not only with theoretical stances of the ethnography of communication and the sociolinguistics of mobility, but also with work on multimodal expression and multiliteracies, extending literacy beyond reading and writing to other domains such as the visual, audio, spatial, and behavioral (Cazden et al., 1996). Consideration of the media of biliteracy entails attention not just to different languages, dialects, styles, and discourses, then, but also to different communicative modes including technological ones, as they are acquired and used—not in a dichotomized sequence but more often in crisscrossed, hybrid mixes and languaging practices.

This is not to suggest that incorporating multiple varieties, scripts, communicative modes, and crisscrossed paths of acquisition and use proceeds unproblematically in schools or other biliteracy learning contexts. Indeed, given that biliteracy implies the scaled, polycentric, and indexical intersection of biliterate learners' multiple literacy worlds in particular literacy sites (see Hornberger in Martin-Jones & Jones, 2000, p. 362), some implicit conflict in norms, practices, and identities is inevitable. It is precisely in these sites of conflict that relationships among differing language and literacy practices are most evident (in the same way that sociolinguistic norms of interaction are most salient when they are breached; see Hymes, 1968, p. 123). This in turn brings languaging to the fore in educational contexts, as evidenced by children's mixing, blending, and recasting literacy practices from home and school to unique new patterns and forms (see, e.g., Gregory & Williams in Martin-Jones & Jones, 2000, p. 52), or by teachers' and students' acceptance and encouragement of multiple languages and registers, unauthorized side-talk, movement, spontaneous interaction, and collaboration (e.g., Gutiérrez, Baquedano-López, & Tejeda, 1999).

Translanguaging and Flexible Bilingual Pedagogy: Development of Biliteracy

The continua model posits that the development of biliteracy may start at any point on any of three intersecting continua of first language to second language (L1–L2), oral to written, and receptive to productive language and literacy skills, uses, and practices; that biliteracy learning may proceed in any direction along those intersecting continua; and that it may do so by backtracking, spurting, or crisscrossing just as readily as by steadily progressing in linear fashion. There is an infinite potential for transfer of skills across any of the three continua of biliteracy development, but, by the same token, understanding or predicting transfer is elusive precisely because the three development continua are interrelated and furthermore nested within all the other continua (Hornberger, 1989).

Research in bilingualism has consistently suggested an integrated, holistic, context-sensitive view of bilingual development, a view wherein the bilingual is much more than the sum of two monolinguals. Cummins's (1979) groundbreaking proposal of the

developmental interdependence and thresholds hypotheses laid the theoretical ground for what remains a central tenet in scholarship on bilingualism (if not, sadly, in educational practice), namely, "that a child's first language skills must become well developed to ensure that their academic and linguistic performance in the second language is maximized" (Baker & Hornberger, 2001, p. 18). Close on the heels of this work, bilingualism scholars like Zentella (1981), Valdés (1982), and Grosjean (1985) provided empirical evidence for bilinguals' fluid code switching as a highly context-sensitive, competent but specific language practice. Decades of research continue to corroborate, deepen, and extend this understanding. Just as Grosjean (1985) suggested that a bilingual is not the sum of two monolinguals any more than a hurdler is simply the sum of a sprinter and a high jumper, García (2009), in her recent tour de force on bilingual education in the 21st century, argues that bilingualism is "not monolingualism times two" (2009, p. 71), "not like a bicycle with two balanced wheels," but "more like an all-terrain vehicle," whose wheels "extend and contract, flex and stretch, making possible, over highly uneven ground, movement forward that is bumpy and irregular but also sustained and effective" (2009, p. 45). García captures this view of bilingualism with the term "translanguaging," referring to the "multiple discursive practices in which bilinguals engage in order to make sense of their bilingual worlds" (2009, p. 45).

García borrows and extends the term translanguaging, originally "trawysieithu" in Welsh as proposed in a Welsh-medium thesis and taken up by Baker (in Hornberger, 2003) as translanguaging and transliteracy in reference to pedagogical practices where students hear or read a lesson, a passage in a book, or a section of work in one language and develop their work in another (e.g., by discussion, writing a passage, completing a work sheet, conducting an experiment); input and output are deliberately in a different language and are systematically varied (Baker in Hornberger, 2003, p. 82). Baker argues that the continua of biliteracy anticipate and extend the notion of translanguaging and transliteracy, providing a reminder of tensions that will typically be present and of the need to tip the balance toward the minority language to adjust for greater prestige associated with the majority language, as well as of the strategic need "to consider all the dimensions of the continua to create full biliteracy in students" (Baker in Hornberger, 2003, p. 84). Translanguaging practices have the potential to explicitly valorize all points along the continua of biliterate context, media, content, and development. Such practices, recently and eloquently theorized and documented also as hybrid classroom discourse practices (Gutiérrez et al., 1999), multilingual classroom ecologies (Creese & Martin, 2003), a four-quadrant pedagogic framework for developing academic excellence in a bilingual BA degree program (Joseph & Ramani, 2004; Hornberger, 2010), bilingual supportive scaffolding (Saxena, 2010), and flexible bilingual pedagogy (Blackledge & Creese, 2010), offer the possibility for teachers and learners to access academic content through the linguistic resources and communicative repertoires they bring to the classroom while simultaneously acquiring new ones.

Blackledge and Creese (2010) document flexible bilingual, translanguaging pedagogies uncovered through ethnographic team research in UK complementary schools—four interlocking case studies in four cities focusing on complementary schools in Gujarati, Turkish, Bengali, and Chinese heritage communities. They offer an ethnographic illustration of specific translanguaging knowledge and skills such as use of bilingual label quests, repetition, and translation across languages; of students' use of translanguaging to establish identity positions both oppositional to and encompassing of institutional values; and of teachers' endorsement of simultaneous literacies and languages to keep pedagogic tasks moving. They argue for a release from monolingual instructional approaches and easing of the burden of guilt associated with translanguaging in multilingual educational contexts. They demonstrate the potential of schools as alternative, safe spaces for multilingualism, sites where young people creatively use varieties of language including standard, regional,

class, and youth-oriented varieties as well as parodic language to take up, resist, and negotiate multiple academic and identity positionings.

Transnational Literacy Practices and Identities: Content of Biliteracy

The continua model posits that *what* (content) biliterate learners and users read and write is as important as *how* (development), *where and when* (context), or *by what means* (media) they do so. Whereas schooling traditionally privileges majority, literary, and decontextualized contents, the continua model argues for greater curricular attention to minority, vernacular, and contextualized whole-language texts. Minority texts include those by minority authors, written from minority perspectives; vernacular ways of reading and writing include notes, poems, plays, and stories written at home or in other everyday non-school contexts; contextualized whole-language texts are those read and written in the context of biliteracy events, interactions, practices, and activities of biliterate learners' everyday lives (Hornberger & Skilton-Sylvester in Hornberger, 2003). Note that the term "minority" here connotes not numerical size, but "observable differences among language varieties in relation to power, status, and entitlement" (May, 2003, p. 118). In today's usage, we might more likely use the term minoritized to "[convey] the power relations and processes by which certain groups are socially, economically, and politically marginalized within the larger society. This term also connotes human agency to effect change" (McCarty, 2005, p. 48).

Assumptions within the continua model about the importance of incorporating minoritized identities and perspectives, vernacular genres and styles, and contextualized texts in biliteracy learning contexts parallel other developments in research on bilingualism and multilingualism including the funds of knowledge project and work on multilingual and transnational literacies. Moll and colleagues argue that "community funds of knowledge" (sometimes called household funds of knowledge or local funds of knowledge), defined as "historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being" (Moll & González, 1994, p. 443), are a resource which can and should be drawn on in schooling for language-minority populations. The centerpiece of their work is collaboration with teachers in conducting household research; together they have found that, when teachers mediate by developing curricula that reflect content from both the standard curriculum and students' languages, cultures, and lives, students are empowered in their learning.

Research in multilingual literacies also takes the view that multiple languages and literacies, and the cultural practices and views of the world in which they are embedded, are resources on which individuals and groups may draw as they "take on different identities in different domains of their lives" (Martin-Jones & Jones, 2000, p. 1). Authors in Martin-Jones and Jones's (2000) volume provide richly detailed accounts and analyses of, for example, a minority-group member who, as an act of resistance, refuses to become literate because acquisition of majority-culture literacy requires the adoption of some of the cultural behaviors and values of the majority group; or how the interactions between a young Welsh farmer and a delegate of the Ministry of Agriculture, Fisheries and Food (as they fill out an Animal Movement form) reflect a hybrid combination of elements of bureaucratic and farm-world discourses in Welsh and English. This work, in parallel with the continua of biliteracy framework, focuses attention on the multiple ways people draw on and combine the codes in their communicative repertoires to make meaning as they negotiate and display cultural identities and social relationships.

Similarly, authors in Warriner (2007) take up multilingual and multimodal literacies and the identities and social relations maintained and transformed through those literacies.

Here, the focus is on transnational youth and adults, transmigrants who have moved bodily across national borders while maintaining and cultivating practices tied—in varying degrees—to their home countries. Drawing on long-term, in-depth ethnographies, the authors demonstrate how these youth and adults' transnational literacy practices and identities are profoundly rooted in processes of globalization, and constantly shift and develop across time and space. Dominican student María succeeds in positioning herself and being positioned over time as a "good" student at Luperón bilingual high school in New York, by drawing on resources provided by the school's local model of success, including high status for Spanish language and literacy, and the valuation of task-based literacy practices (Bartlett in Warriner, 2007); three young Latinas draw on transnational funds of knowledge and social relations in developing their retelling of the "return to Mexico" narrative, a counterstory to deficit portrayals of Mexican immigrant families (Sánchez in Warriner, 2007); newcomer Mexican students' informal literacy practices of tagging, branding, and shouting out at Captainville High are shown to be "literacies of display" of their transnational identities (Richardson Bruna in Warriner, 2007); three youths engage in online multilingual, multimodal creative exploration and negotiation of complex multiple identities across race, ethnic, gender, socioeconomic, and nationalist lines (McGinnis et al. in Warriner, 2007); and women refugee ESL learners struggle to negotiate successful new work identities for themselves, in spite of, rather than because of, an ESL pedagogy that prioritizes reading, copying, responding to known-answer questions, filling in the blanks, and memorizing at the expense of drawing on the first language literacies and multilingual competencies they brought with them (Warriner, 2007).

These cases illuminate the identities constructed and negotiated (biliteracy content), transnational spaces (biliteracy contexts), multimodal literacy practices (biliteracy media), and trajectories across time and space (biliteracy development) that the transmigrants take up. These instances, and others I have mentioned in the preceding sections, broaden and deepen the continua of biliteracy in ways that could not have been foreseen 20 years ago—neither in the real world nor in the research world. I am struck simultaneously by how different and how much the same our world—and our ways of describing our world—are today, as compared to 25 years ago when I started to research these issues. Globalization and mobility, multimodality and languaging, transnationalism and translanguaging were much less visible then, and the conceptual tools with which to study them much less developed, and yet the underlying realities of complexly multilingual contexts, richly diverse repertoires of communicative media, socially constructed meanings in textual content, and multiple potential trajectories of multilingual language and literacy development remain as enduringly and endearingly human now as then. Equally, or more so, multilingual learners deserve our continual reimagining and opening up of educational spaces that foster their ongoing development and creative transformation of their mobile—and biliterate—lives and literacies.

SEE ALSO: Bilingual and Multilingual Education: Overview; Ecology and Multilingual Education; Empowerment and Bilingual Education; Frame Analysis; Identities and Language Teaching in Classrooms; Language Policy and Multilingualism; Linguistic Diversity; Literacy and Bilingualism; Literacy in Multilingual Classrooms; Literacy and Transnational Migration; Multiliteracies in Education; Multimodality and Literacy; Teacher Education for Multilingual Education

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Bilingual/Immersion Teacher Education

DIANE J. TEDICK AND TARA W. FORTUNE

Bilingual education is a broad term that encompasses a wide range of program models involving use of at least two languages for academic instruction, one being the majority language of the geographic area where the program is offered. Fortune and Tedick (2008), among others, identify four bilingual/immersion models as a subset within this broad category that have distinct design features and end goals: one-way foreign language immersion, two-way bilingual immersion, one-way developmental bilingual education, and indigenous language immersion. These school-based programs offer a minimum of 50% of subject-matter instruction through a second, foreign, heritage, or indigenous language. They aim for *additive bi- or multilingualism and additive bi- or multiliteracy* (i.e., the addition of one or more languages while further developing the first), academic achievement, and intercultural understanding. Baker (2006) refers to these four models as "strong" forms of bilingual education. This entry is limited to teacher education for these models.

Bilingual/immersion teacher education is a unique and evolving area in the larger field of language teacher education. Scholars have argued that in addition to native or near-native proficiency in instructional language(s), bilingual/immersion teaching requires a particular knowledge base and skill set (Snow, 1990; Young, 1995; Day & Shapson, 1996; Evans, Hoare, Kong, O'Hallaron, & Walker, 2001; Freeman, Freeman, & Mercuri, 2005; Lyster, 2007; Fortune, Tedick, & Walker, 2008). It is far more than simply teaching language or teaching content. Despite widespread agreement that bilingual/immersion pedagogy is different, until recently there has been a surprising lack of clarity and consistency regarding what it takes to be an effective teacher in such settings. This is likely due in part to at least three common misperceptions about bilingual/immersion education: (1) being a proficient user of a language makes one a skilled bilingual/immersion teacher; (2) bilingual/immersion teaching is, at its core, simply "good teaching"; and (3) for students, learning through a second language is very similar to learning through the first. Thus, bilingual/immersion teacher preparation in general remains underdeveloped.

There are very few preservice programs that prepare bilingual/immersion teachers. In part this results from lack of licensure requirements. Internationally, bilingual/immersion teacher credentials typically parallel those for pre-K-12 classrooms. The only other common requirement is native to near-native proficiency in the instructional language(s). In contexts where there exist a sufficient number of same-language bilingual/immersion programs, teacher educators may deliver some or all of the coursework through the language(s) in which prospective teachers will offer instruction.

Some programs have been designed to prepare one-way foreign language immersion teachers. Canada has approximately 14 such programs (Karsenti & Dumouchel, 2006), many embedded within comprehensive "French as a second language" preparation programs. Finland and Australia have also developed immersion-specific teacher education programs. Launched in 1993, Australia's Language and Culture Initial Teacher Education Program (LACITEP) offered part of the curriculum in Japanese to provide English-speaking student teachers an opportunity to acquire immersion-specific teaching skills and knowledge while furthering their Japanese proficiency (Erben, 2005). The final LACITEP cohort at Central Queensland University graduated in 2006 (T. Erben, personal communication, April 5,

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2011). Finland's Swedish immersion teacher education program began in 1998 as a joint effort between universities in Vaasa and Oulu but was discontinued in 2009 (K. Mård-Miettinen, personal communication, February 10, 2011). The demise of these offerings reflects the challenge of sustaining such "niche" programs economically, particularly when licensing requirements are lacking and demand is relatively low.

In a few cases, instead of designing comprehensive bilingual/immersion teacher education programs, tertiary-level institutions have required individual courses focused on immersion teaching strategies or courses dedicated to teaching a particular language, such as Welsh or Irish, as a first or second language (W. G. Lewis, personal communication, March 7, 2011; P. Ó Duibhir, personal communication, February 9, 2011). These courses are taken in addition to a general teacher licensure curriculum.

There are also preservice programs designed to prepare bilingual/immersion teachers for the two contexts that serve language minority learners: developmental bilingual and two-way programs. Most of these bilingual teacher licensure and endorsement programs emerged during the 1970s and 1980s primarily in the USA (Commission on Teacher Credentialing, 2010) and focused on preparing teachers for various bilingual education programs. With funding from the US Department of Education and strong interest from prospective teachers, states with large numbers of language minority children developed a coherent set of courses that addressed second language acquisition; bilingual methods, materials, and assessment; cross-cultural education; biliteracy; and so forth. A growing number of these programs have expanded their focus to address the preservice needs of two-way bilingual immersion teachers specifically.

Indigenous immersion teacher preparation programs are unique in that nearly all participants are learners of the indigenous language and culture. This has led to programs in which the indigenous language and culture are foundational to the curriculum. For example, the Kahuawaiola Indigenous Teacher Education Program in Hawai'i offers post-baccalaureate Hawaiian immersion teacher certification through the medium of Hawaiian (Wilson & Kawai'ae'a, 2007) and engages participants in lived experiences within the Hawaiian worldview. New Zealand also offers preservice programs to prepare Māori immersion teachers for early childhood and primary levels (K. Edmonds, personal communication, April 6, 2011).

Given the small numbers of formal bilingual/immersion teacher preparation programs internationally, most teachers are not prepared explicitly for the bilingual/immersion context and instead learn "on the job" and through in-service professional development. The increase in bilingual/immersion programs and the specialized needs of these educators have prompted continuing professional development programs to materialize worldwide in areas such as Canada (Day & Shapson, 1996), Hong Kong (Hoare & Kong, 2001), Finland (Björklund, 1997), New Zealand (Hindle, 2002), and a growing number of US states where there is a critical mass of bilingual/immersion programs (Howard, Sugarman, Perdomo, & Adger, 2005). These professional development initiatives range from graduate-level, credit-bearing certificate programs to on-site workshops to summer institutes. Some outreach also occurs through distance learning, professional conferences, practitioner-oriented publications of best practice, and online communication forums. Finally, audiovisual, web-based, and print materials support ongoing professional development. As bilingual/immersion education has grown internationally so too has cross-national collaboration in professional development efforts. These efforts incorporate state-of-the-art understandings of best practice in the field.

Although a growing body of literature has focused on effective bilingual/immersion teaching, the research base on bilingual/immersion teacher education and development is scant. It has generally fallen into three categories: descriptions and reviews of bilingual or immersion teacher education programs (Ross, 1993; Young, 1995; Day & Shapson, 1996;

Wilson & Kawai'ae'a, 2007); studies that articulate the specific bilingual/immersion knowledge base and pedagogical skill set (Lapkin & Swain, 1996; Pérez, 2004; Fortune et al., 2008; Södergård, 2008; Kong, 2009; Cammarata & Tedick, in press); and studies that have explored actual processes of bilingual/immersion teacher education (cf. Erben, 2004).

Much has been learned about what is needed to become an effective bilingual/immersion teacher. These teachers are professionally charged with making academic content comprehensible to students learning through a new language while simultaneously developing proficiency and literacy in that language and facilitating cross-cultural and crosslinguistic connections. To do so, they must develop special understandings and abilities including knowledge of second language acquisition and teaching; educational linguistics (Wong Fillmore & Snow, 2002); bilingual/immersion research; integrated curriculum development; counterbalanced instruction (Lyster, 2007); biliteracy development (Escamilla, Hopewell, & Ruiz, 2007); struggling learners (Fortune, 2010); and the ability to create equitable, collaborative discourse environments (Palmer, 2008), using strategies such as cooperative learning, language awareness (Dagenais, 2008), and culturally responsive pedagogy (Fitts, 2009).

Having identified the ever-evolving knowledge base of what it means to be a practitioner, we acknowledge that challenges for bilingual/immersion teacher educators remain. They include the need to address an unprecedented diversity of student and teacher backgrounds and issues, to better understand the key role that language and culture play in ensuring that today's children become linguistically and culturally competent citizens of the world, and to narrow the chasm that sometimes exists between teacher education offerings and practitioner realities.

Perhaps the greatest challenge facing teacher educators are change-resistant tertiary-level organizational structures that continue to expect preservice bilingual/immersion teachers to enroll in one program for grade-level appropriate licensure, another to find ongoing support for their second language proficiency, and yet another for bilingual/immersion-specific knowledge and skills. This situation, coupled with the lack of a critical mass of teachers that might attract more attention, has resulted in a tendency toward one-course add-ons in lieu of more thoughtfully conceptualized, well-integrated teacher education programs.

Despite challenges, the bilingual/immersion community is poised to think creatively to more appropriately address the needs of prospective and practicing teachers. Given the small numbers of these educators on the one hand and the increasing variety of target languages and program purposes on the other, it is anticipated that expansion in teacher preparation and in-service professional development efforts will involve blended distance education, web-based instructional modules, and so on. This effort will require the active participation of teacher leaders, cross-disciplinary approaches to teacher education, and judicious use of multimedia technologies. As new initiatives to meet the bilingual/immersion teacher education challenge develop, so too must research in the field expand to inform those efforts.

SEE ALSO: Baker, Colin; Bilingual Education; Immersion Education; Immersion Programs

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Bilingualism and Age

DAVID SINGLETON

Introduction

Three issues arise from any consideration of the topic of bilingualism and age. The first has to do with the relationship between age and the characterization of bilingualism; the second relates to the question of whether maturational constraints may impede progress in late bilinguals toward very high degrees of proficiency in both languages; and the third concerns the methodology of investigating maturational constraints and the possible desirability of using the proficiency of early bilinguals rather than that of native speakers as the yardstick in the evaluation of the ultimate attainment of later L2 beginners.

Characterizing Bilingualism by Reference to Age

The popular view of bilingualism tends to associate it with the kind of phenomenon referred to in early studies of bilingual development, such as those of Ronjat and Leopold, which focus on simultaneous bilingual development or bilingual first language acquisition—where two languages are acquired from infancy—as opposed to successive or sequential bilingualism, where the second language is added when the first is already to some extent established. The dividing line between simultaneous and sequential bilingualism has sometimes been set at a particular age. Thus, for example, Paradis (2008) defines simultaneous bilinguals in a recent research paper as "simultaneous-from-birth (2L1) bilinguals" and early sequential bilinguals as those "whose L2 onset began after the birth to age 3;0 period, but before age 6;0." Baker (2006, p. 97), on the other hand, takes the line that "there are no exact boundaries between simultaneous and sequential bilingualism."

The proposal of age 3 as the dividing line between simultaneous and sequential bilingualism has been linked to the terms of the "unitary language system hypothesis," which posits (see, e.g., Volterra & Taeschner, 1978) differently characterized types of simultaneous bilingualism according to stage of development. The hypothesis suggests that simultaneous bilinguals begin with a single language system, a single fused linguistic representation, and that "it is only by age 3;0 that they begin to differentiate their two native languages" (Pettito et al., 2001, p. 455). The claim has been made, for instance, that the child at an early stage is not in possession of translation-equivalents across languages, but that he or she has a single lexical store, with one word from one or other of his or her languages for any given meaning. If it were truly possible to pinpoint an age at which a bilingual is capable of separating language systems, it would obviously make sense to take the age in question as the age of onset for an additional language which could, without arbitrariness, be seen as a watershed differentiating sequential from simultaneous bilingualism.

Unfortunately for such a perspective, the notion that there is a maturational point up to which the bilingual's language knowledge is radically unitary has been shown to be dubious (see, e.g., Deuchar & Quay, 2000). The claim that the bilingual's lexicon is systematically distributed across languages and that there is a stage (and an age) at which he or she has just one item in one or other language for a particular meaning has been undermined by research evidence, and it has also been shown that differentiation between the

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bilingual's two language systems is discernible from the earliest beginnings in phonology, morphology, and syntax as well. It appears, in other words, that even very young bilingual children have the capacity to separate their languages. Other research findings indicate that bilingual children are highly adept—even at a very early age (see, e.g., Nicoladis, 1998)—with respect to deciding which language to speak to whom, and that on occasions where a bilingual child mixes languages, the mixing in question may evidence an awareness—again from the beginnings of speech—that his or her interlocutors are capable of understanding and responding to both (see, e.g., Lanza, 1997).

Maturational Constraints and Bilingual Proficiency

In much of the psycholinguistic and neurolinguistic literature the term "bilingualism" tends to be applied simply to possession of knowledge of two languages, whatever the age at which such knowledge was acquired, whatever the order of the acquisition of the knowledge in question, and whatever the degree of proficiency in the languages in question. The issue that very frequently arises in relation to age and bilingualism in this broad sense is whether the age at which exposure to a given language begins is a (or indeed the) determinant of the level of ultimate attainment in the language in question. One widely accepted line of thinking in this area has its origins in the critical-period hypothesis, which postulates that there is a biologically programmed critical period, or "window of opportunity," for language acquisition, which closes abruptly at a particular maturational point (set at different ages by different researchers). Researchers subscribing to some version or other of the critical-period hypothesis have made the claim that, unless exposure to a given language begins before the offset point of the critical period, proficiency in that language will never be identical to that manifested by those whose exposure began at birth. A variant of this claim is that different areas of language (phonology, syntax, lexicon, etc.) have different critical ages associated with them (see, e.g., Singleton, 2005).

The claim that "late bilinguals"—that is bilinguals who begin to be exposed to one of their languages subsequent to some purported critical age—are incapable of becoming native-like in the late-begun language has been undermined by a wide array of recent studies which show late bilinguals performing at native-speaker levels (see, e.g., Birdsong, 1992; Ioup, Boustagui, Tigi, & Moselle, 1994; Bongaerts, 2003). A typical example, dealing with phonology, the area often thought to be the most vulnerable to age effects, is a study by Jedynak (2009), which found that 9 out of 35 post-pubertal L2 learners performed to native-speaker levels in terms of pronunciation of their target language, and that length of learning rather than age of onset seemed to emerge as the dominant factor relative to level of attainment. Hyltenstam and Abrahamsson (2000, p. 155) counter such evidence by pointing out that there is no recorded case of a post-pubertal L2 beginner behaving in every single detail like a native speaker, but they also recognize that very early L2 beginners tend to differ too at the level of fine linguistic detail from monoglot native speakers.

In the light of the above, it may well be that the maturational issue is a good deal less important in this connection than the fact of simply possessing knowledge of another language (see, e.g., Cook, 1995; Flege, 1999). The extent, prevalence, and complexity of crosslinguistic interaction between languages known to an individual are increasingly well documented (see, e.g., Jarvis & Pavlenko, 2007). It seems also to be the case that the degree of distance between the L1 and the L2 has an effect on the impact of crosslinguistic influence even at a young age (see Kellerman, 1995). McDonald (2000) found, for example, that learners of English from a Spanish-speaking background who had begun to be exposed to the language before age 5 were able to perform to native levels on an English grammaticality judgment test, whereas Vietnamese speakers with pre-age-5 experience of English

were not.

Age and the Monolingual Native Speaker Yardstick for Successful Bilingualism

This brings us to the question of how we are to measure the ultimate level of proficiency attained by late bilinguals. Success in this context—indeed in the study of second language acquisition and second language education generally—has tended to be interpreted as a level of achievement in the additional language which is indistinguishable from native-speaker proficiency. This approach has been challenged, however. Thus, Cook (2002) has argued that users of additional languages should be focused on in their own right rather than being compared with native speakers, and Davies has taken the line (2003, p. 213) that "the distinction native speaker–non-native speaker . . . is at bottom one of confidence and identity."

Cook (2002, p. 6) notes in this context that, while on every side the L2 user is judged against the native speaker, and "ultimate attainment is a monolingual standard rather than an L2 standard," there is actually no intrinsic reason why the L2 user's attainment should be the same as that of a monolingual native speaker. On the basis of what was said earlier with respect to the interaction between language competencies and the resultant effects on language performance the logical conclusion seems to be that the appropriate comparison in the investigation of ultimate attainment in late bilingual acquisition is not between the performance of later bilinguals and that of monoglot native users of the language in question but rather between later L2 beginners and those who begin to acquire an L2 in early childhood.

Concluding Remarks

More consideration clearly needs to be given to the definition of simultaneous versus sequential bilingualism. If the age criterion cannot, given the current state of the evidence, be determined by reference to a point where language systems are putatively separated by the child, perhaps it can be arrived at on the basis of a sort of "face validity." On this basis, age 3 (see above) may not in fact be a bad choice. Thus age 4 would seem too late on the basis that by this stage language development is already beginning to become in many respects adult-like, with, for example, child forms well on the way to elimination, and the pronoun system and sentence connectivity already fairly well established. Age 2 might seem a little early, given that language development is barely under way, with telegraphic two-element utterances barely in place. In any case, it would be useful if some age were agreed upon and adhered to in this regard across the field, for the sake of facilitating inter study comparisons.

With regard to the hypothesis that there is a maturational point beyond which a bilingual can no longer attain to native-like mastery of his or her second language, it has to be said that this point of view is very fiercely held by an entire camp of researchers. Given this, it is inevitable that research aiming to confirm this position will continue. Since large numbers of research findings challenging this position are also emerging, it seems inevitable that its advocates will continue to attempt to find "escape clauses" by discounting cases of high-performing late bilinguals who evince particular degrees of language aptitude or who have had particularly intense exposure to the second language. It is to be noted that the notion of critical period is radically changed by the use of such "escape clauses," since in its classic form it is supposed to apply species-wide, transcending individual attributes and experiences.

It has been argued above that the appropriate yardstick for the ultimate attainment of late bilinguals is not the proficiency of the monolingual native speaker, in view of the fact that crosslinguistic effects may constitute a confounding variable with regard to age effects, but rather the proficiency of early bilinguals. This (difficult to gainsay) argument has also recently been advanced by Ortega (2010) and in all probability will in due course occasion modifications to the way in which ultimate-attainment research is conducted. To be noted, however, is that early and late bilinguals differ in terms of the degree to which the first language is entrenched before the second is acquired and that this variable will continue to confound the search for age effects.

SEE ALSO: Aptitude in Second Language Acquisition; Attrition and Multilingualism; Beliefs in Second Language Acquisition: Learner; Bilingualism and Youth Language; Early Bilingualism; Second Language Vocabulary Attrition

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Bilingualism and Bilinguality

LI WEI

Bilingualism and bilinguality are a result of contacts between people speaking different languages. Hamers and Blanc (1983) in their book *Bilingualité et bilinguisme* first made the distinction between the two concepts, with bilinguality referring to the effect of language contact on the individual and bilingualism referring to the effect on society as a whole.

Estimates vary as to how many languages are spoken in the world today. Most reference books give a figure of around 6,000 (e.g., Crystal, 1987; Krauss, 2007). This is in fact a conservative estimate, as many parts of the world have been insufficiently studied from a linguistic point of view. We simply do not know exactly what languages are spoken in some places. What we do know, however, is that there are fewer than 200 countries—that politico-geographic unit to which most of us belong—in the world. It is inevitable perhaps that an enormous amount of "language contact" takes place.

There is a popular metaphor in linguistics that language is a living organism, which is born, grows, and dies. However, language is a human faculty: it coevolves with us, *homo sapiens*; and it is we who give language its life, change it, and, if so desired, abandon it. When we speak of "language contact," we are therefore talking about people speaking different languages coming into contact with one another.

There are many reasons for speakers of different languages to come into contact. Some do so out of their own choosing, while others are forced by circumstances. Key external factors contributing to language contact include (for further discussion, see Baker & Prys Jones, 1998; Li, 2007):

- Politics: Political or military acts such as colonization, annexation, resettlement, and federation can have immediate linguistic effects. People may become refugees, either in a new place or in their homeland, and have to learn the language of their new environment. After a successful military invasion, the indigenous population may have to learn the invader's language in order to prosper. Colonization is exemplified by the former British, French, Spanish, Portuguese, and Dutch colonies in Africa, Asia, and South America, most of which achieved independence in the 19th and 20th centuries. A modern example of annexation can be found in the absorption of the Baltic republics—Lithuania, Latvia, and Estonia—into the Soviet Union after the World War II. In the latter part of the 20th century military conflicts in Central Africa and the former Yugoslavia saw the resettlement of people of different ethnic backgrounds. Examples of federation where diverse ethnic groups or nationalities are united under the political control of one state include Switzerland, Belgium, and Cameroon.
- Natural disaster: Famine, floods, volcanic eruptions, and other such events can be the cause of major movements of population. New language contact situations then emerge as people are resettled. Some of the Irish and Chinese resettlements in North America were the result of natural disasters.
- Religion: People may wish to live in a country because of its religious significance, or to leave a country because of its religious oppression. In either case, a new language may have to be learned. Russian-speakers in Israel are a case in point.

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- Culture: A desire to identify with a particular ethnic, cultural, or social group usually means learning the language of that group. Minority ethnic and cultural groups may wish to maintain their own languages, which are different from the languages promoted by the governing state or institution. Nationalistic factors are particularly important.
- Economy: Very large numbers of people across the world have migrated to find work and to improve their standard of living. This factor accounts for most of the linguistic diversity of the USA and an increasing proportion of the bilingualism in present-day Europe.
- Education: Learning another language may be the only means of obtaining access to knowledge. This factor led to the use of Latin in the Middle Ages, and today motivates the international use of English.
- Technology: The availability of information and communication technologies (ICT), such as the Internet, has led to a further expansion of the use of English across the world. The vast majority of ICT users are non-native speakers of English.

From the above list we can see that one does not have to move to a different place to come into contact with people speaking a different language. There are plenty of opportunities for language contact in the same country, the same community, the same neighborhood, or even the same family.

Bilingualism

One consequence of language contact is bilingualism, or even multilingualism, at the societal level. There are many different kinds of societal bilingualism. The following three are typical cases:

- Territorial bilingualism: Groups of speakers of specific languages find themselves mostly within their own geographically and politically defined territories. Each group's language or languages are protected by legislations and institutional support, while other languages are also available, though without official status. Territorial bilingualism can be found in countries such as Belgium, Canada, India, Spain, and Switzerland, which apply the principle of territorial bilingualism in different ways.
- Diglossia: Two (or more) languages coexist at the community level but are used by sections of the society in a complementary way, one language having a higher status than the other and being used in certain functions and domains that are different from those for the other language. It is important to remember that diglossia is a construct to describe the relationship between two or more languages; it is not a static state of language use. Over time, the relationships between the different languages may change, due to various social factors, and the diglossic configuration can become highly complex. Examples of diglossia include simple binary diglossia of Guarani versus Spanish in Paraguay; double overlapping diglossia of African vernacular versus Swahili and Swahili versus English in Tanzania; double nested diglossia of Sanskrit versus Hindi versus Khalapur in India; linear polyglossic diglossia of English, Mandarin Chinese, Malay, Tamil, other Chinese, other Malay, and other Indian languages in Singapore; and complex triglossia of standard French and Dutch versus Belgian French and Belgian Dutch versus local dialects (Walloon and Flemish) in the Belgian capital of Brussels.
- Widespread multilingualism: In many countries of Africa, Asia, and Latin America, many different kinds of native languages of indigenous ethnic groups or nations coexist with one or more languages of wider communication. The majority of the people of these communities are also highly multilingual.

In all bilingual societies, how to manage the relationships across the different languages is a critical question. This gives rise to issues such as language maintenance and language shift, language planning and language policy.

Language maintenance refers to relative stability in number and distribution of language speakers and the retention of the language in specific domains, for instance, family, school, religion. Language shift, on the other hand, refers to the replacement of one language by another in specific domains. It is a progressive process whereby a language community shifts to speaking a different language. Such changes in language choice preferences happen across generations within a linguistic community. A host of factors may lead to language maintenance or language shift, ranging from political, social, and demographic factors (e.g., recent or continuing migration, social and economic mobility, ethnic identity) to cultural and linguistic factors (e.g., mother-tongue institutions, emotional attachment, cultural or religious festivals and activities, written text, and home literacy).

One possible long-term consequence of language shift may be language decline or even language death, a process that affects whole communities where the level of linguistic competence that speakers possess of a given language is decreased, eventually resulting in no native or fluent speakers of the language. Classic studies of language shift and language death include Gal's (1979) investigation of the replacement of Hungarian by German in the town of Oberwart in eastern Austria, where after 400 years of relatively stable maintenance of Hungarian–German bilingualism, economic, social, and family life became more industrialized and German-language based, and Dorian's analysis of east Sutherland in the northeast Highlands of Scotland, where the number of speakers of Gaelic, a language with low prestige, continuously declined throughout the 20th century, together with the decline of the traditional fishing industry, to the extent that Gaelic speakers stopped transmitting the language "to their children so that no replacement generation is available when the parent generation dies away" (Dorian, 1981, p. 105). Kulick's (1992) study of language and cultural changes among the villagers of Gapun, in the Sepik region of Papua New Guinea, shows that despite their strong attachment to their own language as a source of identity and as a tie to their lands, people are abandoning their vernacular in favour of Tok Pisin, the most widely spoken language in Papua New Guinea. By examining village language socialization practices, Kulick reveals how daily interactions, attitudes towards language, children, change, and personhood all contribute to a shift in language and culture that is beyond the villagers' understanding and control.

According to UNESCO (2003), a language is endangered "when its speakers cease to use it, use it in an increasingly reduced number of communicative domains, and cease to pass it on from one generation to the next. That is, there are no new speakers, adults or children." Currently the *UNESCO Atlas of the World's Languages in Danger* lists over 3,000 languages as endangered. There have been many attempts to slow or reverse language shift, decline, and death. The success of such attempts is often limited. The revival of the Hebrew language in Israel is often cited as the example of a language that has gained new first language speakers after it became extinct in everyday use for an extended period. But even in the case of Hebrew, the result of revitalization is a multifaceted Israeli language, which is multisourced. Other cases of language revitalization which have seen some degree of success are Welsh and Hawaiian.

Joshua Fishman, who devoted much of his intellectual life to the study of societal multilingualism, proposed a model for reviving threatened (or dead) languages, or for making them sustainable. The model consists of an eight-stage process. The eight stages are as follows (Fishman, 1991):

1. Acquisition of the language by adults, who in effect act as language apprentices (recommended where most of the remaining speakers of the language are elderly and socially isolated from other speakers of the language).

2. Create a socially integrated population of active speakers (or users) of the language (at this stage it is usually best to concentrate mainly on the spoken language rather than on the written language).
3. In localities where there are a reasonable number of people habitually using the language, encourage the informal use of the language among people of all age groups and within families and bolster its daily use through the establishment of local neighborhood institutions in which the language is encouraged, protected, and (in certain contexts at least) used exclusively.
4. In areas where oral competence in the language has been achieved in all age groups, encourage literacy in the language but in a way that does not depend upon assistance from (or goodwill of) the state education system.
5. Where the state permits it, and where numbers warrant, encourage the use of the language in compulsory state education.
6. Where the above stages have been achieved and consolidated, encourage the use of the language in the workplace (lower worksphere).
7. Where the above stages have been achieved and consolidated, encourage the use of the language in local government services and mass media.
8. Where the above stages have been achieved and consolidated, encourage use of the language in higher education, government, and so forth.

This model of language revival is intended to direct efforts to where they are most effective and to avoid wasting energy trying to achieve the later stages of recovery when the earlier stages have not been achieved. For instance it is probably wasteful of effort to campaign for the use of the language on television or in government services if hardly any families are in the habit of using the language.

Bilinguality

The impact of language contact on the individual results in bilinguality of various kinds. The different sociohistorical processes of language contact lead to many different types of bilingual and multilingual language users. For instance, at an individual level, some people may become bilingual or multilingual because they are born into bilingual or multilingual families and are exposed to multiple languages simultaneously from birth, while others learn and acquire additional languages at a later age in life due to schooling or changes in life experience. Romaine (1995), extending the typology by Harding and Riley (1986), identifies six different processes whereby children can become bilingual or multilingual (see Table 1).

In theory, these different routes to bilinguality would result in different bilingual behavior and cognitive organizations of the bilingual brain. But at the moment, there is very little systematic research linking the process of language contact with the outcome of bilinguality at the individual level.

One of the questions that concern researchers of bilinguality is what it means to be bilingual. For example, does a bilingual speaker's brain function differently from that of a monolingual's brain? In the majority of right-handed adults, the left hemisphere of the brain is dominant for language processing. There is some evidence to suggest that adult second language acquisition involves the right hemisphere more than first language acquisition in language processing. As proficiency in a second language grows, right hemisphere involvement decreases and left hemisphere involvement increases. However, quantitative analyses of the existing data often show that the left hemisphere strongly dominates language processing for both monolinguals and bilinguals, and that differences between them

Table 1 Processes of bilingual acquisition (based on Romaine, 1995)

	Parent	*Community*	*Strategy*
1. One person one language	The parents have different native languages with each having some degree of competence in the other's language.	The language of one of the parents is the dominant language of the community.	The parents each speak their own language to the child from birth.
2. Non-dominant home language/one language one environment	The parents have different native languages.	The language of one of the parents is the dominant language of the community.	Both parents speak the non-dominant language to the child, who is fully exposed to the dominant language only when outside the home, and in particular in nursery school.
3. Non-dominant home language without community support	The parents share the same native language.	The dominant language is not that of the parents.	The parents speak their own language to the child.
4. Double non-dominant home language without community support	The parents have different native languages.	The dominant language is different from either of the parents' languages.	The parents each speak their own language to the child from birth.
5. Non-native parents	The parents share the same native language.	The dominant language is the same as that of the parents.	One of the parents always addresses the child in a language which is not his/her native language.
6. Mixed languages	The parents are bilingual.	Sectors of community may also be bilingual.	Parents code switch and mix languages.

are the exception rather than the rule. Bilinguals do not seem to vary from monolinguals in neurological processes; the lateralization of language in the brains of the two groups of speakers is similar (Obler and Gjerlow, 1998; Fabbro, 1999).

A related issue concerns the mental representation of a bilingual's two languages and the processing emanating from such representation. Evidence exists for both separate storage and shared storage of the two languages in the bilingual's brain, resulting in the suggestion that bilinguals have a language store for each of their two languages and a more general conceptual store. There are strong, direct interconnecting channels between each of these three separate stores. The interconnections between the two languages comprise association and translation systems, and common images in the conceptual store act as mediators. Furthermore, speakers of different proficiency levels or at different acquisitional stages vary in the strength and directness of the interconnections between the separate stores in language processing; for instance, those highly proficient in two languages may go directly from a concept to the target language, while those whose second language is weaker than their first tend to use the first language to mediate (Kroll & Tokowicz, 2005).

Although the more general definitions of bilinguality would include people who understand a second language—in either spoken or written form or both—but do not necessarily speak or write it, a more common usage of the term refers to someone who can function in both languages in conversational interaction. Bilingual speakers choose their languages according to a variety of factors, including the type of person addressed (e.g., members of the family, schoolmates, colleagues, superiors, friends, shopkeepers, officials, transport personnel, neighbors), the subject matter of the conversation, location or social setting, and relationship with the addressee. However, even more complex are the many cases when a bilingual talks to another bilingual with the same linguistic background and changes from one language to another in the course of conversation. This is what is known as code switching.

There is a widespread impression that bilingual speakers code switch because they cannot express themselves adequately in one language. This may be true to some extent when a bilingual is momentarily lost for words in one of his or her languages. However, code switching is an extremely common practice among bilinguals and takes many forms. A long narrative may be divided into different parts which are expressed in different languages; sentences may begin in one language and finish in another; words and phrases from different languages may succeed each other. Linguists have devoted much attention to the study of code switching. It has been demonstrated that code switching involves skilled manipulation of overlapping sections of two (or more) grammars, and that there is virtually no instance of ungrammatical combination of two languages in code switching, regardless of the bilingual ability of the speaker. Some suggest that code switching is itself a discrete mode of speaking (Gardner-Chloros, 2009).

One important aspect of code switching is that the two languages involved do not play the same role in sentence making. Typically one language sets the grammatical framework, with the other providing certain items to fit into the framework. Code switching therefore is not a simple combination of two sets of grammatical rules but grammatical integration of one language in another. Bilingual speakers of different proficiency levels in their two languages or speaking two typologically different languages can engage in code switching and indeed vary it according to their needs.

There is another group of bilinguals who engage themselves in cross-modality language production. This is the case with speech–sign bilinguals who, in addition to the oral modality, use the manual–visual modality in everyday communication. They are special in one aspect, in that the two different modalities allow for the simultaneous production of the two languages. In other words, one can speak and sign at the same time. Research has shown that such simultaneous bimodal production is typically exemplified by the use of lexical items from both languages but only one set of grammatical rules, which is usually from the spoken language. Right now we know relatively little about how the two linguistic systems interact in the language production and processing of speech–sign bilinguals (for a review of existing studies of sign bilingualism, see Dufour, 1997). Indeed, much more work needs to be undertaken before we can fully appreciate the complexity of the language behavior of bilinguals generally.

Bilinguality changes over the life span. Children who are exposed to two or more languages from birth are usually described as simultaneous bilinguals, while people who learn additional languages after a first language is acquired are sequential bilinguals. Interactions between the different languages are a key issue for research in simultaneous bilinguals, and interference of and transfer from one language to another are central to the study of sequential bilinguals (De Houwer, 2009). Language attrition is a process similar to language shift but at an individual level. It refers to the loss of a first or second language or a portion of that language by individual speakers. It can happen at any point in time during an individual's life span, because the necessary contact with speakers of

that language is lacking over a lengthy period. It can also happen to elderly bilinguals who experience cognitive decline of some kind. Research evidence suggests that certain linguistic structures are more vulnerable to attrition. Identifying these linguistic structures and why they are vulnerable to attrition then becomes the central issue of investigation in language attrition research (Schmid, Köpke, Keijzer, & Weilemar, 2004).

Bilingualism and bilinguality are outcomes of language contact at two related levels, societal and individual. And language contact is an important field of study in applied linguistics, which has been approached from a variety of methodological perspectives. One of the key findings of the work by linguists is the dynamic nature of language contact. Causes, processes, and outcomes differ from and interact with each other, depending on the sociohistorical context. Understanding the dynamic nature of language contact, hence bilingualism and bilinguality, requires systematic, multidisciplinary, and comparative investigations in different communities and speaker groups. Such work has important implications for policy and practice in a variety of fields including education, community relations, management, and intercultural communication.

SEE ALSO: Bilingualism and Cognition; Code Mixing; Code Switching; Early Bilingualism; Language Policy and Multilingualism; Multilingualism; Multilingualism and Attitudes; Multilingualism and Identity; Multilingualism and Ideology; Multilingualism and Minority Languages

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Bilingualism and Cognition

ANNETTE M. B. DE GROOT

Scientific interest in the effects of (individual) bilingualism on cognition dates back to at least the first quarter of the 20th century, as illustrated by two articles that were published in 1923 on the relation between bilingualism and mental development (Smith, 1923) and between bilingualism and intelligence (Saer, 1923). In addition to engaging scientists, the question of whether and how bilingualism affects cognition also concerns policy makers, educators, and parents of bilingual families. The reason for this widespread interest in this issue plausibly is the high incidence of bilingualism and the appreciation that knowing about the way in which bilingualism affects cognition is a prerequisite for creating the circumstances that foster any of its beneficial effects on cognitive functioning while at the same time preventing any adverse effects it might have. In one domain of cognition, namely, language representation and use, the influence of bilingualism is ubiquitous, affecting all components of the language system, but there is also plenty of evidence to suggest that bilingualism affects nonlinguistic cognitive domains as well. In this entry the influence of bilingualism on language (verbal cognition) will first be discussed and, next, its effect on various aspects of nonverbal cognition.

Bilingualism and Language

That bilingualism affects language can be concluded from the results of myriad studies showing that a bilingual's two languages constantly interact with one another instead of there being solid mental firewalls between them. It appears that even a purely unilingual communicative setting does not prevent the other language from being simultaneously active and influencing the way in which the contextually appropriate language is processed. This holds for both language comprehension (e.g., Marian & Spivey, 2003) and language production (e.g., Colomé, 2001). The inevitable consequence of the inherently interactive nature of the bilingual language system is that the linguistic expressions of bilinguals differ from the analogous expressions of monolingual speakers. In other words, bilinguals do not equal two monolinguals in one person, and the linguistic expressions of monolinguals should not be considered the norm against which the language of bilinguals is evaluated (doing so would inevitably lead toward the conclusion that bilinguals' language use is inferior). Contrary to such a "fractional" view of bilingualism, a "holistic" (Grosjean, 1989) or "multi-competence" (Cook, 2003) view of bilingualism acknowledges the inherently interactive nature of the bilingual language system. This more realistic view holds that the frequent use of two languages produces a specific linguistic competence, one that differs from the competence of a monolingual speaker-listener but that is by no means inferior to it. Grosjean clarified this idea with an analogy derived from the domain of sports: "When compared individually with the sprinter or the high jumper, the hurdler meets neither level of competence, and yet when taken as a whole the hurdler is an athlete in his or her own right" (Grosjean, 1989, p. 6).

Most studies on language interaction (also called "crosslinguistic influence" or "transfer") in bilinguals have looked at the influence of the native, first language (L1) on using the second (L2), ignoring the possibility that L2 may also influence L1. Laufer (2003) suggests

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there might be two reasons for this. The first relates to the fact that many researchers in applied linguistics have been especially interested in L2 learning, and particularly in the earliest stages of this process. Crosslinguistic influences during these early stages of learning are almost entirely from the stronger L1 to the still weak L2 rather than from L2 to L1. The second reason suggested by Laufer is that much of the work on L2 learning has been motivated by the question of how members of immigrant communities can come to master the dominant language of the host community, the immigrants' L2, as rapidly as possible. Consequently, research primarily focused on how the L2 was acquired rather than on what happened to the L1 in the process. Whatever the reasons for the relative lack of studies looking at a cross-language influence of L2 on L1, evidence is accumulating that the L1 is influenced by later languages, be it L2 or any other later language, and that such an influence affects all linguistic domains: phonology, morphology, syntax, lexicon, conceptual representation, and pragmatics (Pavlenko, 2000).

Language interaction in bilinguals is manifest in accented speech, that is, the production of particular linguistic elements that differ from the way monolingual speakers would produce these elements. In addition, it is manifest in accented comprehension, that is, in deviations from the way in which monolingual listeners or readers process analogous language input. Examples from the domains of phonology, grammar, and semantics will be presented below. (Note that the word "accent" is used in a broad sense here, referring to differences in both language production and language comprehension in bilinguals as compared with monolinguals, and to differences in all linguistic subdomains, not just phonology.) Two possible sources of these accents are considered in the literature. One is parallel activation of representations of linguistic elements in a bilingual's two language subsystems even when they have selected one of their languages (the "target" language) for current use. Because the language system of monolinguals only stores linguistic units belonging to one and the same language, such parallel activation does not occur when monolinguals process language. According to this view, the representation units themselves do not need to differ between monolinguals and bilinguals. For instance, the representation of the English phoneme /t/ and the stored meaning for English *cat* in an English–French bilingual are identical to the representation of English /t/ and the stored meaning of English *cat* in a monolingual English speaker. The second possible source of bilingual speech accents is that bilinguals may have developed memory representations of specific linguistic units that differ from the representations of the corresponding units in monolingual memory. For instance, bilinguals may have developed representations that merge a pair of corresponding representations in monolingual speakers of their two languages. The former source of accents may be regarded a difference in processing or "performance"; the latter a difference in knowledge or "competence."

Phonological Accents

In a series of studies, Flege and his collaborators have shown a phonological accent, in both L1 and L2, when bilinguals produce speech sounds (e.g., Flege, 2002). In some of these studies the researchers measured the so-called "voice-onset time" (VOT) of consonants spoken by bilinguals and monolinguals in the context of a larger language fragment. The VOT is the time between the release of the air and the moment the vocal cords start to vibrate when a speaker produces a consonant. The VOT for one and the same consonant may differ between languages. For instance, the consonant /t/ is spoken with a longer VOT in English than it is in French and Spanish. This fact gives rise to the question of how bilingual speakers of two languages that exploit different VOT values in producing one and the same consonant utter this consonant. Flege and his colleagues have shown that the VOT values of such consonants differ between monolinguals and bilinguals.

Specifically, when spoken by bilinguals these consonants take on VOT values that are intermediate between those of the same consonants spoken by monolingual speakers of the two languages concerned. For instance, if English–French bilinguals and English monolinguals are asked to pronounce the speech fragment *two little dogs*, the VOT of the /t/ sound in *two* is shorter for the English–French bilinguals than for the English monolinguals. Conversely, if English–French bilinguals and French monolinguals are asked to pronounce the speech fragment *tous les chiens* 'all dogs', the VOT of the /t/ sound in *tous* is longer for the English–French bilinguals than it is for the French monolinguals.

Flege (2002) attributed phonological accents of this type to two L2 speech learning processes that both result in representations of phonetic categories in bilingual memory that differ from the representations of the corresponding categories in monolingual memory. One of these processes, "phonetic category assimilation," is thought to lead to representations that merge closely similar L1 and L2 sounds into a single phonetic category in memory. The second, "phonetic category dissimilation," is thought to be operative when an L2 sound is very different from all L1 sounds stored in memory. A separate representation for the new L2 sound is then formed in memory, but the position it takes up in phonetic space differs from the position occupied by this sound in monolingual speakers of the language concerned. Furthermore, while inserting a phonetic category for this new sound into the phonetic space, it pushes away one or more of the categories that represent L1 sounds from their original positions (causing an accent).

Grammatical Accents

A grammatical accent in bilinguals' language processing can, for instance, be witnessed by looking at the way bilinguals parse structurally ambiguous sentences for which the preferred solution differs between their two languages. Consider the Spanish sentence *Alguien disparó contra el hijo de la actriz que estaba en al balcón* ('Someone shot the son of the actress who was on the balcony'). In sentences of this type, either the head of the complex noun phrase (*el hijo* 'the son') or the second noun in this phrase (*la actriz* 'the actress') can be the subject of the relative clause (*que estaba en al balcón*). Spanish favors a "high-attachment" solution of this construction, assigning *el hijo* the role of subject of the relative clause. Conversely, English favors a "low-attachment" analysis, in which *la actriz* is assigned this role.

Dussias and her colleagues (e.g., Dussias, 2003; Dussias & Sagarra, 2007) examined how Spanish–English bilinguals parse sentences of this type. The results suggested an influence of the other language on the way bilinguals analyze them and, furthermore, that the context of testing may modulate this effect: When testing took place in a predominantly English-speaking environment in the USA, both Spanish-L1–English-L2 and English-L1–Spanish-L2 bilinguals generally favored low attachment over high attachment irrespective of the language of the presented sentences, English or Spanish (Dussias, 2003). In other words, in both the L1- and L2-speakers of Spanish, the Spanish sentences were analyzed according to the English-like parsing strategy. In a further study Spanish sentences only were presented, in either an L1 Spanish or an L2 English immersion environment, to Spanish-L1–English-L2 bilinguals and to Spanish monolingual control subjects. The bilingual participants immersed in L1 Spanish behaved like the monolingual Spanish control subjects, favoring high attachment. In contrast, the bilingual participants immersed in L2 English preferred the low-attachment solution that is favored in English.

Semantic Accents

Languages differ from one another in the way their vocabularies carve up conceptual space and the physical world. For instance, both Russian and English have separate words for

glasses and cups (*stakany* and *chashki* in Russian), but the exact reference of these words differs between the two languages: Paper cups are called *stakanchiki* (small glasses) in Russian (Pavlenko, 2005). One of the best known examples of differential word-to-concept mapping across languages concerns the way separate languages have lexicalized the color spectrum. Languages vary widely in the number of color words they possess to describe this spectrum and, of course, the number of color words used in a specific language has consequences for the exact reference of each of these words: The smaller the number of color words, the larger the range of hues referred to by each of them.

Since around 1960 a couple of studies have been published on the consequence of this crosslinguistic variability in color terminology for color categorization in bilinguals. One of these studies concerned a detailed investigation of color naming in Navaho–English bilinguals and Navaho and English monolinguals (Ervin, 1961). Ervin first performed a detailed contrastive analysis of the color systems of Navaho and English. This analysis revealed, for instance, that *litso*, the closest Navaho translation of *yellow*, is the favored response of monolingual Navaho speakers to hues across a much larger part of the color spectrum than the range of hues exciting *yellow* in monolingual speakers of English. Furthermore, the commonality of Navaho monolinguals' *litso* responses at its peak (that is, at the point that represented the focal color litso) was much larger (89%) than the commonality of English monolinguals' *yellow* responses at its peak (34%). Assuming an influence from the colors' names in the non-target language, Ervin expected the response probabilities in the target language to differ in bilinguals as compared with monolinguals. For instance, she expected that more Navaho–English bilinguals than English monolinguals would respond with *yellow* upon the presentation of focal yellow and the instruction to respond in English. Similarly, when presenting focal litso and inviting a response in Navaho, bilinguals were expected to produce fewer *litso* responses than monolingual Navaho controls. These predictions were borne out by the data, as were those derived from other differences between the color systems of Navaho and English as revealed in the contrastive analysis.

Ervin explained these results in terms of coactivation in memory of the representation of the presented color's name in the non-response language. For example, a Navaho–English bilingual may say *tatLqid* ('green') to a color patch that most Navaho monolinguals would call *litso* ('yellow') because the common English name for the depicted color (*green*) is coactivated with *litso*. *Green* then activates *tatLqid* via a connection between these two words in memory and *tatLqid* emerges as the response. An alternative account of these semantic accents is in terms of differences in the conceptual representations of color words between bilinguals and monolinguals. This is how Caskey-Sirmons and Hickerson (1977) explained the results of a similar study wherein English L2 speakers with various Asian languages as L1 were tested. Specifically, these authors assumed that, in the course of acquiring L2 English, broader conceptual representations of color words had come into being that merged the concepts associated with L1 color words and those associated with these words' closest L2 translation.

Bilingualism and Nonverbal Cognition

Bilingualism and Linguistic Relativity

The above discussion on how languages differ in the way they map words onto concepts implicitly introduced the theory of "linguistic relativity," that is, the idea that language influences thought or, more precisely, that differences between languages in the way they encode aspects of the surrounding world cause speakers of different languages to think differently about the world. According to this idea, the fact that Navaho and English split

up the world of colors differently causes monolingual speakers of Navaho to think about, and perhaps perceive, colors differently from monolingual speakers of English. The theory not only applies to nominal concepts but also to grammatical concepts such as tense, number, and gender. For example, the fact that verb forms in English but not in Indonesian contain tense markers (information about the time of the event or action described by the verb: past, present, or future) is thought to result in different time cognition in speakers of English and Indonesian. Benjamin Lee Whorf (1897–1941) is regarded as the major advocate of this view, which is known as the Sapir–Whorf hypothesis (after Whorf and his mentor Edward Sapir).

Studies on the relation between language and thought have typically compared the performance of monolingual speakers of two languages that differ from one another in one selected aspect, such as grammatical tense, gender, or number. Bilingual studies on linguistic relativity are sparse. Yet bilingualism has the potential to contribute importantly to this debate because it may be that "bilinguals are the only ones to experience directly the effects of linguistic relativity" (Pavlenko, 2005, p. 437). Do bilinguals experience different conceptual worlds when they speak their one or other language (a form of bilingualism that in the older literature is known as "coordinate bilingualism")? If so, is each of them identical to the conceptual world of monolingual speakers of the languages concerned? In the case of sequential bilingualism (where L2 acquisition starts after L1 acquisition), are there intermediate states prior to the end state of experiencing two conceptual worlds and, if so, what are they? Or is it perhaps the case that bilinguals have developed a blended conceptual world shared by the two languages and different from the conceptual world of monolingual speakers of either language (known as "compound bilingualism")? Recent bilingual studies on linguistic relativity suggest that some structural contrasts between a bilingual's two languages become reflected in conceptual representations that differ from those of monolingual speakers of these languages (e.g., Bassetti, 2007, a study on the effects of grammatical gender differences between Italian and German on the mental representation of objects; Athanasopoulos & Kasai, 2008, a study that examined the effect of grammatical number differences between English and Japanese on object representation). At least one bilingual study, testing the grammatical tense contrast between English and Indonesian (Boroditsky, Ham, & Ramscar, 2002), suggests that bilinguals can switch between two language-specific modes of thinking and that this mental reset can be triggered by just a modicum of language.

Bilingualism and Intelligence

Until well beyond the middle of the 20th century the view prevailed that bilingualism is detrimental for intelligence and cognitive functioning in general. A study by Peal and Lambert (1962) marked a change from this view to the opinion that, under specific conditions, bilingualism is in fact beneficial for intelligence and cognition (including linguistic competence). In this study 10-year-old French–English bilingual and French monolingual children from middle-class French schools in Canada's Montreal region were administered a number of tests that measured their verbal and nonverbal intelligence. Whereas earlier similar studies had generally shown a disadvantage for bilingual children as compared with monolingual peers, the bilingual children now performed significantly better than the monolingual children on the vast majority of all tests and subtests, both the ones that measured verbal intelligence and those measuring nonverbal intelligence. The bilingual advantage was, for instance, manifest in tasks that assessed concept formation ability and mental flexibility, and the bilingual children showed a more diversified set of mental abilities than the monolingual children.

To account for the discrepant results, Lambert (1977) highlighted one potentially crucial feature of the Peal and Lambert (1962) study, namely, the fact that in the Montreal region

both French and English are socially highly valued and respected languages. Therefore, the acquisition of English by children with French as their home language does not involve the risk of French getting corrupted as a consequence of a social pressure not to use it. This form of bilingualism, where an L2 is added onto an L1 that does not suffer a cost, has been coined "additive bilingualism," and it is this form of bilingualism that is advantageous for cognition. The counterpart of additive bilingualism is "subtractive bilingualism." In this form of bilingualism, for one reason or other (e.g., national and educational policies), the use of the L1 is discouraged with the effect that it is gradually replaced by L2. This form of bilingualism is detrimental for cognitive functioning. Plausibly, the earlier studies had accidentally tested bilinguals of the subtractive type. A further possible cause of the deviant results is that many of the earlier studies lacked experimental rigor, for instance, by not matching the bilingual participants and their monolingual controls on age, socioeconomic status, and amount of education (see Hakuta & Diaz, 1985, for a review). It may have been the case that the earlier studies tested bilingual children that tended to be younger or of a lower socioeconomic status, or less educated than the monolingual controls partaking in those studies. In all these respects, Peal and Lambert's study compared favorably with the earlier ones.

Bilingualism and Executive Control

Since Peal and Lambert's (1962) seminal investigation, detailed knowledge has been gathered about the aspects of cognition in which bilinguals excel. To conclude this entry, one of these aspects will be singled out here, namely, the skill of executive control (also called "attention control" or "cognitive control"). As already pointed out above, when bilinguals use one of their languages, the other language is simultaneously active as well. In order to select the targeted language, "language control" must be exerted, that is, the contextually inappropriate language must be suppressed or the contextually appropriate language must be selectively attended to. It is generally assumed that language control is effectuated by more general processes and mechanisms of executive control, that is, processes and mechanisms that take care of the control of action in general. If true, the requirement to incessantly control their two languages must have boosted bilinguals' ability to exert executive control in general and, consequently, bilinguals should be better than monolinguals when they perform nonverbal tasks that require executive control. This prediction came true in several studies, using different experimental tasks. It was for instance confirmed in a series of studies by Bialystok and her colleagues (e.g., Bialystok, Craik, Klein, & Viswanathan, 2004) in which bilinguals and monolingual controls performed the so-called "Simon task," a perceptual-motor task that assesses the participants' ability to inhibit or ignore irrelevant information (an ability that requires executive control).

Bilingualism has become an omnipresent phenomenon in the modern world and it may not take long before monolingual speakers can hardly be found anymore. It is a promissory side effect of this inevitable development toward bilingualism as the norm that, in the process, human's average cognitive skills will be lifted—as is suggested by the current research on the relation between bilingualism and nonverbal cognition.

SEE ALSO: Bilingual and Monolingual Language Modes; Complexity in Multilingual Systems; Crosslinguistic Influence and Multilingualism; Foreign Accent; Linguistic Relativity and Second Language Acquisition; Multicompetence; Multilingualism and Metalinguistic Awareness; Organization of the Second Language Lexicon; Spoken Word Production in Second Language Acquisition; Spoken Word Recognition in Second Language Acquisition

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Bilingualism and Multilingualism: Quantitative Methods

JUDITH F. KROLL AND ELEONORA ROSSI

Overview

Experimental approaches to bilingualism and multilingualism have developed at a rapid pace in the past 20 years (e.g., Kroll & De Groot, 2005). In part, this new field of research represents the application of new and existing methods in psycholinguistics and cognitive neuroscience to language processing in the first (L1) and second (L2) languages in bilinguals and L2 learners. It also reflects the realization that research on bilinguals and multilinguals holds the potential to reveal insights about language representation and processing that are otherwise obscured in monolingual language users who speak only one language. In some respects, the acquisition and use of two languages challenges the interface between language and cognition by requiring that the intended language be used in the correct context and by drawing on cognitive resources that allow the mental juggling of the two languages to be performed with skill. But in other respects, multiple language use is perfectly natural and the prevalence of multilingual speakers in many places in the world suggest that studies of language processing among speakers of more than one language will provide the most accurate picture of human language ability.

In this brief overview we consider illustrative experimental approaches to the acquisition, comprehension, and production in L2 learners and bilinguals. We include discussion of two different but related quantitative methods, one using behavioral measures of performance and the other using neural measures of performance. The behavioral methods include the response time to perform a language task, the accuracy of performance, the record of eye fixations as individuals read or listen to spoken language, and the acoustic record of what individuals say when they speak (see Kroll, Gerfen, & Dussias, 2008, for an overview of behavioral methods). The neural methods include event-related potentials (ERPs) and functional magnetic resonance imaging (fMRI). ERPs provide a sensitive record of the time course of the earliest stages of language processing whereas fMRI provides information on the spatial localization of language functions in the brain (e.g., Van Hell & Tokowicz, 2009). In each of the sections that follow, we illustrate the way in which these methods have been used to elucidate acquisition, comprehension, and production in two languages. In the section on production we include a detailed analysis of a hypothetical study that will serve as an example for researchers interested in pursuing behavioral research methods on bilingualism. Although there is an extensive literature on bilingualism in children, we focus our review on the methods that have been used to investigate adult bilingualism although ingenious methods have been developed to investigate early language abilities in bilingual children.

Acquisition

Learning a second language as an adult is a difficult process that produces mixed outcomes, particularly for the grammar and the phonology. Late L2 learners often speak the L2 with

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an accent (e.g., Piske, MacKay, & Flege, 2001) and fail to make distinctions among aspects of the grammar (e.g., Johnson & Newport, 1989). Much of the research on adult L2 learning has addressed the development of skill in the L2 relative to the existing L1 and relative to the performance of individuals who speak the L2 as their native language. The evidence on these issues has been largely based on the use of behavioral tasks such as grammaticality judgments (e.g., deciding whether a sentence is grammaticality acceptable) and ratings of the degree of accentedness of a non-native speaker's sentence production. More recently, there has been an attempt to characterize the development of L2 proficiency by using online tasks in which the speed and accuracy of processing can be examined more sensitively. We describe some of the methods used to assess the processing of written and spoken sentences below in the section on comprehension. Here we illustrate quantitative approaches to L2 acquisition by describing measures of lexical processing that have been used to investigate the earliest stages of adult L2 learning.

The logic in many studies examining the acquisition of lexical proficiency in the L2 has been to determine the degree to which there is evidence of activity of the language not in use. Early research suggested that during the first stages of adult L2 learning, there is activation of the translation equivalent in L1 but that once some level of skill is achieved, the dependence on L1 transfer diminishes (e.g., Kroll & Stewart, 1994). Later studies have provided compelling evidence to demonstrate that the activation of the language not in use continues once individuals become relatively proficient bilinguals, although the form of cross-language influence may change with increasing L2 skill (e.g., Dijkstra, 2005). The performance of highly proficient bilinguals on even simple word recognition tasks such as lexical decision (i.e., is a string of letters a real word in a given language?) shows that bilinguals cannot help but activate the language not in use. Bilinguals are faster than monolinguals to recognize words that are cognate translations, with similar spelling and phonology across language (e.g., the word *hotel* in Dutch and English), but they are often slower to recognize interlingual homographs or false friends that have similar form but different meanings in their two languages (e.g., such as the word *room* which means cream in Dutch).

One paradigm that has been used to assess lexical development in the L2 is translation recognition. A word is presented in one language and then followed by a word in the other language. The task is to decide whether the second word is the correct translation of the first. Critically, translation recognition requires only a "yes" or "no" response so that learners do not need to produce the word in the L2. To determine what sort of information learners activate when they process the L2 word, the "no" trials can be manipulated to include distractors that are similar to the target translation in word form or meaning. For example, if the word *man* (English) were followed by the word *hombre* (Spanish), the correct response would be "yes" that the second word is the translation of the first. However, if the English word *man* were followed by the Spanish word *hambre* (meaning hunger), the correct response would be "no" although *hambre* resembles the correct translation. A number of studies have tested L2 learners under these conditions to ask what sort of information is active when an L2 word is processed (e.g., Sunderman & Kroll, 2006). When distractors that require a "no" response are related in form, meaning, or both to the correct translation, response times are typically longer to reject the second word as not being the correct translation relative to a control condition in which the distractor is completely unrelated to the translation (e.g., the word *man* followed by *casa*, the Spanish word meaning house). The difference between the related and unrelated distractors is taken to be a measure of interference or sensitivity to that the particular dimension along which the distractor is related to the target translation. The general result in these studies is that both form and meaning distractors produce interference in response times, with longer "no"

responses for related than unrelated trials. However, the pattern of interference changes with increasing proficiency in the L2 (e.g., Sunderman & Kroll, 2006).

An exciting new observation in the research on acquisition is that ERP methods have shown that the brain is sensitive to implicit processes in early stages of acquisition that may not be revealed in behavioral performance (e.g., McLaughlin, Osterhout, & Kim, 2004). McLaughlin et al. demonstrated that learners in the earliest phases of foreign language exposure actually know more about the new language than their behavioral performance suggests. Similarly, ERPs reveal sensitivity to the language not in use even when behavioral data suggest that the bilingual's other language is effectively switched off (e.g., Thierry & Wu, 2007).

Comprehension

Bilingual comprehension has been investigated using a variety of offline (grammaticality judgments, accuracy rate, and response RTs) and online (self-paced reading RTs, and eye-tracking) behavioral measures. The general outcome indicates that for sufficiently proficient L2 speakers, L2 processing strategies resemble L1's (this seems not to be the case for special grammatical constructs like grammatical gender processing). However, there are some special signatures of L2 processing. Reading is typically slower in L2 than L1 and the time needed to process critical grammatical constructions (as revealed from RTs) is longer for L2 speakers. The observed disadvantage for processing in L2 may be understood as the requirement to recruit additional working memory resources in the less skilled language (McDonald, 2006). The coupling of offline and online measures has been particularly important to disentangle the factors that influence L2 processing. Of interest are studies that merge experimental paradigms to investigate the role of immersion in an L2 environment. For example, the parsing of ambiguous sentences in two groups of bilingual speakers (L1 Spanish/L2 English and L1 English/L2 Spanish) has been investigated by Dussias (2003) using offline (pencil and paper questionnaires, grammaticality judgments) and online (self-paced reading) tasks. Results converge in showing that Spanish/English bilinguals show different parsing preferences than monolingual Spanish speakers, suggesting that the parsing strategies in L1 may change as a function of the length of immersion in the L2 environment. Similar results using the same type of ambiguous constructions have been reported analyzing eye movements. Eye movements are informative because they provide an online measure of the time course of syntactic processing while participants read or listen to sentences. Dussias and Sagarra (2007) showed that Spanish-English bilinguals with extensive immersion in an English language environment process sentences in Spanish, their native language, using preferences associated with English, their L2.

If behavioral measures provide fundamental information on how language is processed in bilingual speakers, the use of neuroimaging techniques reveals its neurophysiological basis (ERPs) and its functional brain correlates (fMRI). The growing body of neuroimaging evidence suggests that proficiency may play a more central role in modulating L2 processing than age of acquisition (AoA). ERPs have been particularly sensitive to implicit neurophysiological activity related to grammatical processing even in early L2 learners who otherwise perform at chance behaviorally (e.g., Tokowicz & MacWhinney, 2005).

While ERPs provide a sensitive measure of the time course of language processing, fMRI has a relatively high spatial resolution that permits investigations of the cortical representation in bilinguals. One of the topics that has been examined with fMRI is the relative contribution of AoA and proficiency to the patterns of cerebral activation in L1 and L2. Perani et al. (1998) investigated whether bilingual speakers with different proficiency levels and different AoA have similar cortical representations. Results revealed that

proficiency rather than AoA was critical for determining the cortical representation for L2. However, it is also possible that proficiency and AoA affect different linguistic processes (i.e., semantics and syntactic processing). A reading of the recent literature suggests that these factors may play different roles in accounting for fMRI data on syntactic and semantic processes.

Production

Historically, research on production in both monolinguals and bilinguals has lagged behind research on comprehension because of the difficulty associated with controlling the nature of spoken output. Early production research relied primarily on observations of errors that occurred in natural speech (e.g., Garrett, 1993). The development of experimental approaches to reveal the components of error free production (e.g., Levelt, 1989) was a critical step in enabling a body of research that has investigated the processes that underlie the planning of speech in both the L1 and L2. Much of this work has exploited variants of picture naming tasks to examine the factors that come into play over the time course of planning single words, phrases, and sentences.

Perhaps the most widely used paradigm has been the picture-word Stroop task in which a picture is named in the presence of a distractor word that is visually present or spoken. By varying the timing of the presentation of the distractor relative to the picture, it is possible to identify the nature of the information that is active at a given moment in planning a spoken word. In both monolingual and bilingual studies, the general finding is that semantic information interferes early in the process of planning a single word utterance but that phonological information facilitates production when presented later in planning (e.g., Levelt, 1989). At issue theoretically is the sequencing of these processes, a point of debate in both behavioral and neuroscience research on this topic, with some arguing for a discrete, sequential process (e.g., Levelt, 1989) and others for an interactive model in which cascaded processes are initiated in parallel once processing has begun (e.g., Goldrick, 2006).

In bilingual research on spoken production (e.g., Costa, 2005), there is evidence that both languages are active even when bilinguals intend to speak in one language only. Bilinguals are faster to produce the names of pictured objects when the names are cognates in their two languages and their spoken responses are affected by the properties of the language not in use. The question then is how this activity is modulated to allow the selection of the intended language. See the illustrative example in the box below to understand better how experiments on lexical production in bilinguals are designed and analyzed.

Some argue that bilinguals have the ability to ignore the language they do not intend to speak, even if it is momentarily active during speech planning (e.g., Costa, 2005) whereas others (e.g., Green, 1998) argue that there is competition for selection among all activated language alternatives with an eventual requirement to inhibit the unintended language. The empirical approach to this question has relied largely on evidence from the language switching task (e.g., Meuter & Allport, 1999), in which bilinguals produce words in one language or the other as a function of cues that are presented (e.g., a colored background) to signal the language to be spoken. The main finding in this work is that language switching is costly to processing but more costly to the L1 than to the L2. This counterintuitive result has been taken as support for the inhibitory hypothesis; production of the weaker L2 is assumed to require inhibition of the stronger L1 and that inhibition remains present when the bilingual is then later required to produce L1. In the debate surrounding this interpretation, there is now evidence from both ERP and fMRI studies using adaptations of the switching paradigm modified for neurocognitive procedures (e.g., Abutalebi et al., 2008).

An Illustrative Case: A Hypothetical Experiment on Lexical Production in Bilinguals

In this hypothetical experiment, modeled on many actual experiments that have been performed (e.g., Costa, Caramazza, & Sebastian-Galles, 2000; Hoshino & Kroll, 2008), we illustrate how data are collected and analyzed in a psycholinguistic experiment. The goal of the hypothetical experiment is to determine whether bilinguals can turn off the language not in use when speaking words in one language alone. The logic is to ask highly proficient Dutch-English bilinguals to name pictures in English, their L2. Some of the pictures have names in Dutch that are cognate translations (e.g., the name of a banana in Dutch is *banaan*) but others have names in Dutch that are distinct (e.g., the name of a bicycle in Dutch is *fiets*). If bilinguals cannot avoid the activation of their L1 when they speak words in the L2, then we might predict faster naming times for pictures whose names share phonology and other aspects of word form relative to control pictures whose names do not overlap closely in word form. Bilinguals should reveal an advantage in naming cognate pictures but monolingual English speakers should not.

Method

Note that in an actual experiment there would be a larger number of participants and pictures and additional measures would be administered to be sure that there was close matching across the participants groups and across the pictures and their names.

Participants: Five highly proficient Dutch-English bilinguals and five native English-speaking monolingual control participants, otherwise matched in age and education, participated in the hypothetical experiment.

Materials: The experiment included 20 pictures of which 10 had cognate names like *banana* and *banaan* and 10 had noncognate names like *bicycle* and *fiets*.

Procedure: Pictures were presented briefly on a computer screen and participants were asked to name them as quickly as possible by speaking their name aloud into a microphone; response time to begin to articulate the picture's name was recorded and the participant's spoken responses were recorded to code the data later for accuracy. The sequence of pictures with cognate and noncognate names was randomized.

Results

The data were coded and only the correct responses were entered into the statistical analysis. It is typical to clean response time data first to exclude not only errors and omissions but also outliers that fall 2.5 standard deviations above or below an individual's mean response time. If there are a sufficient number of errors, not only the error rate but also the type of error might be analyzed. For present purposes we present the response time data only assuming that it has already been cleaned and coded to exclude errors and outliers.

Analysis

As we can see in the means (Table 1), the bilinguals were faster to name cognate than control pictures. The monolinguals took about the same amount of time to name cognate and control pictures. For the monolinguals, the cognate manipulation has no meaning because they are English speakers who do not know the names of the pictures in Dutch. Although the Dutch-English bilinguals were naming the pictures in English only, they appeared to be influenced by the convergence across English and Dutch when they produce the cognate names of pictures that are similar in the two languages. This is precisely the pattern that has been reported in past studies. Note as well that the monolinguals were

faster than the bilinguals. The monolinguals were naming pictures in their L1 whereas the bilinguals were naming pictures in their L2.

It is always helpful to see what the data look like as well although Figure 1 is redundant with the information in Table 1. In an actual paper, you would include either the table or the figure but not both. Each way of displaying the data provides an alternative visualization of the results.

The next question in analyzing the data is to determine whether these differences were statistically reliable. To do that, we submit the data file to SPSS to perform an analysis of variance (ANOVA) with one repeated measure, cognate status, and with one between-group factor, speaker group. Cognate status is a repeated measure because all of the participants named both cognate and control pictures. Speaker group is a between-group factor because an individual can only be either a bilingual or a monolingual but not both.

Table 1 Mean response times for monolinguals and bilinguals

Group	*Participant*	*Cognate**	*Control*
Bilinguals	1	1,021	1,089
	2	1,219	1,360
	3	907	975
	4	745	832
	5	1,000	1,084
Mean bilingual:		978	1,068
Monolinguals	1	693	707
	2	747	777
	3	1,066	1,052
	4	807	784
	5	734	739
Mean monolingual:		809	812

*All data are mean response times to name pictures in milliseconds.

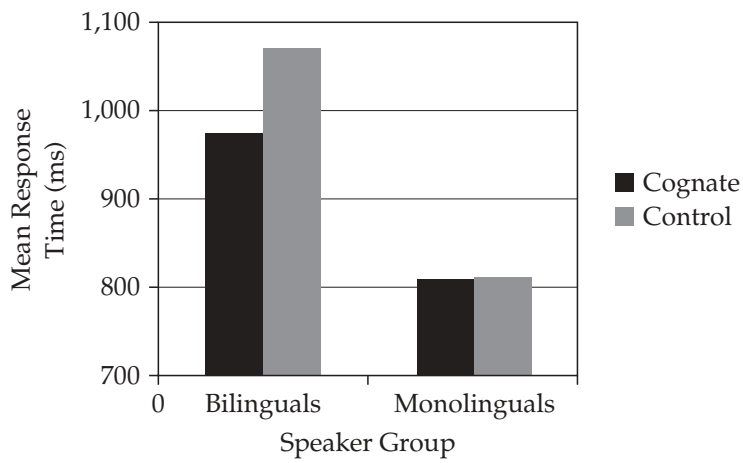

Figure 1 Graph of hypothetical data

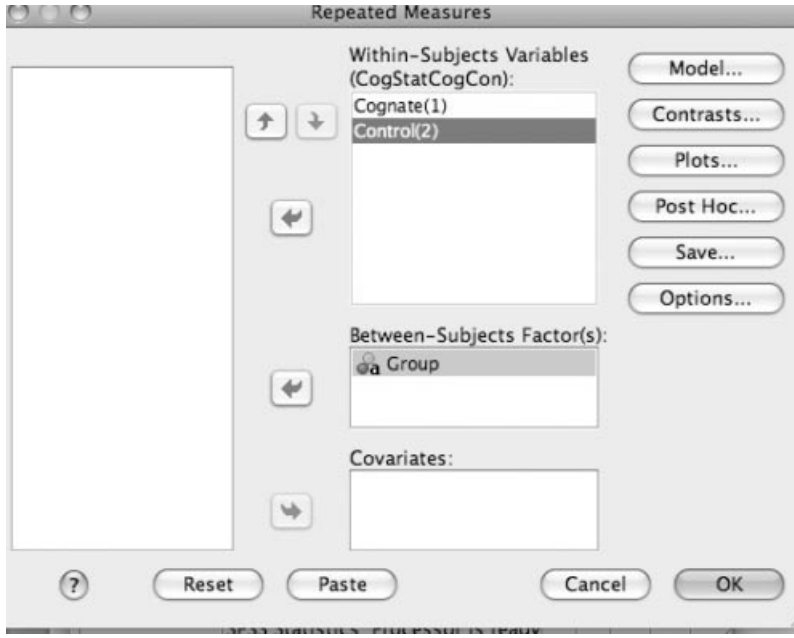

Figure 2 Choosing variables in SPSS

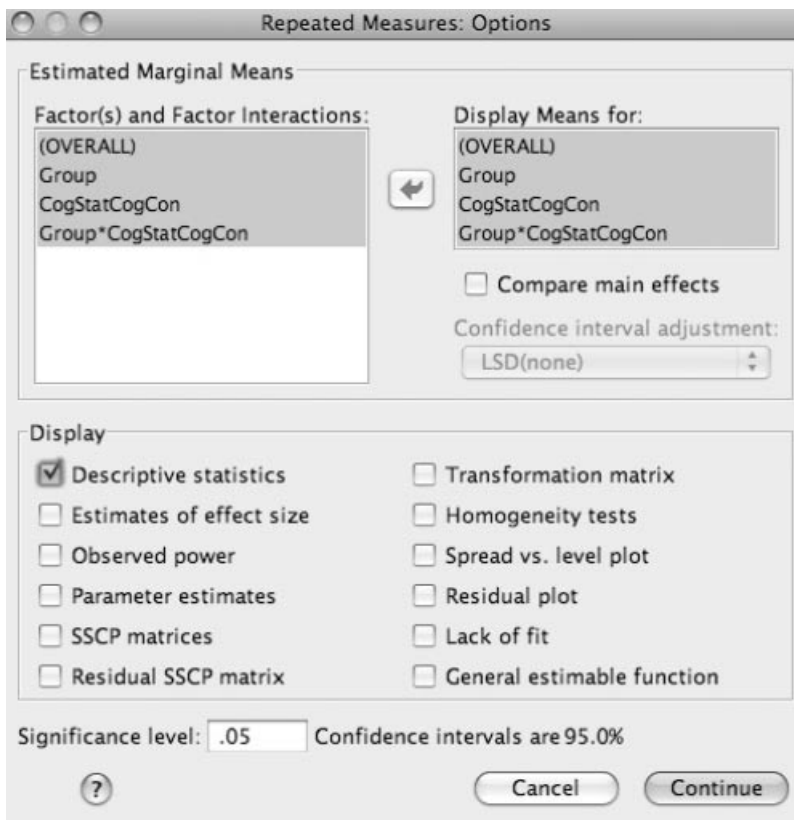

Figure 3 Selecting descriptive statistics in SPSS

Descriptive Statistics

Group		Mean	Std. Deviation	N
Cognate	Bilingual	978.40	173.020	5
	Monolingual	809.40	149.145	5
	Total	893.90	176.422	10
Control	Bilingual	1068.00	193.847	5
	Monolingual	811.80	137.807	5
	Total	939.90	208.264	10

Figure 4 SPSS display of means

In SPSS you go to the *analyze* menu, then choose *general linear model*, and then choose repeated measures. You will then need to name and identify your two variables as shown below:

If you then click on the *options* key, you can indicate that you want the output to include means for all of the main effects and interactions:

You then click on *continue* and *OK* and run the analysis. The output will include a series of tables that will give you the means for each condition and collapsed across conditions and also the ANOVA table of statistical results. Note that the variable CogStatCogCon is coded that way to indicate that the data for the cognate condition were entered first followed by the data for the control condition.

Figure 4 shows what a table of means will look like in SPSS. Note that in a reaction time experiment such as this one, we can only measure to the nearest millisecond so you can round off these values.

There will be two separate ANOVA tables that are critical, one for the within-subject factors (in this case we have only one—cognate status) and the other for the between-subject factors (and here we also have only one—speaker group).

The two tables in Figures 5 and 6 give you the F values for the two variables and their interaction. The analysis that we just performed is a subject analysis or an F1 analysis. In

Tests of Within–Subjects Effects

Measure:MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
CogStatCogCon	Sphericity Assumed	10580.000	1	10580.000	31.173	.001
	Greenhouse–Geisser	10580.000	1.000	10580.000	31.173	.001
	Huynh–Feldt	10580.000	1.000	10580.000	31.173	.001
	Lower–bound	10580.000	1.000	10580.000	31.173	.001
CogStatCogCon * Group	Sphericity Assumed	9504.800	1	9504.800	28.005	.001
	Greenhouse–Geisser	9504.800	1.000	9504.800	28.005	.001
	Huynh–Feldt	9504.800	1.000	9504.800	28.005	.001
	Lower–bound	9504.800	1.000	9504.800	28.005	.001
Error(CogStatCogCon)	Sphericity Assumed	2715.200	8	339.400		
	Greenhouse–Geisser	2715.200	8.000	339.400		
	Huynh–Feldt	2715.200	8.000	339.400		
	Lower–bound	2715.200	8.000	339.400		

Figure 5 SPSS ANOVA table of results within subjects

Tests of Between−Subjects Effects

Measure:MEASURE_1

Transformed Variable:Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	1.681E7	1	1.681E7	311.175	.000
Group	225993.800	1	225993.800	4.182	.075
Error	432274.000	8	54034.250		

Figure 6 SPSS ANOVA table of statistical results between subjects

many psycholinguistic studies, we perform both subject and item ANOVAS. The item ANOVA generates F2 values (also see the special issue of *Journal of Memory and Language*, 2008, on "Emerging Data Analysis" for a recent discussion of statistical issues related to these types of psycholinguistic data).

If you were writing about these results in an actual paper, you would note that there was a main effect of cognate status, $F1(1, 8) = 31.17$, $p = 0.001$, a marginal effect of speaker group, $F1(1, 8) = 4.18$, $p = 0.075$, and a significant interaction between cognate status and speaker group, $F1(1, 8) = 28.00$, $p = 0.001$. Depending on the journal, you might also include a measure of variability such as the mean square error when you report each of the F values.

These hypothetical results show that bilinguals were somewhat slower to name pictures in their L2 than monolinguals were in their L1 but that only bilinguals produced a cognate advantage, supporting the claim that bilinguals activate the language not in use when planning speech in one language alone.

Summary

We have illustrated some of the methods that are representative of current experimental research on bilingualism and the theoretical controversies to which they have been applied. What should be clear from what we have summarized is that there is a great deal of excitement around the joint use of behavioral and neurocognitive methods that reveal aspects of language processing in bilinguals that would not otherwise be evident by using one method alone. This is an enterprise that is rich in its potential not only to elucidate aspects of bilingualism but also for the purpose of using bilingualism as a tool to understand the constraints and plasticity associated with the language system more generally.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Cognitive Second Language Acquisition: Quantitative Methods; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Online Psycholinguistic Methods in Second Language Acquisition Research; Organization of the Second Language Lexicon; Second Language Representation in the Brain; Spoken Word Production in Second Language Acquisition

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Bilingualism and Speech Perception

NURIA SEBASTIAN-GALLES, BEGOÑA DÍAZ, AND ALBERT COSTA

Introduction

Speech perception refers to the process whereby acoustic linguistic information is interpreted and given a meaning. It proceeds through a series of stages in which acoustic cues are extracted and stored in sensory memory and then mapped onto linguistic information. Crucially, the relevance of these acoustic cues varies across languages in a very important way (Mattys, White, & Melhorn, 2005), and certain acoustic cues may have a linguistic significance for a particular language, but not for another. These crosslinguistic differences lead to significant differences in the way native and non-native listeners process subphoneme traits (Underbakke, Polka, Gottfried, & Strange, 1988), syllables (Cutler, Mehler, Norris, & Segui, 1986), stress patterns (Dupoux, Peperkamp, & Sebastian-Galles, 2010), and phonotactic constraints (Sebastian-Galles & Bosch, 2002). This research also suggests that learning a second language can imply nonexclusive solutions to bridge the gap between native and non-native speech processing: the suppression of the first language strategy, the development of new and separate strategies for the second language, and a compromise of the reweighting of each cue. The specific solution for each case depends, though not exclusively, on the relative properties of the two languages of the bilingual. For instance, if the sound to be learned has no close correspondence with the learner's existing language, like Zulu clicks for English native listeners, listeners may develop new processing strategies that most likely will not affect how the first language is perceived. On the contrary, if the sounds to be learned are similar though not identical to those of the native language, adjustments of the already existing processes and representations are most likely to be needed; so, for example, Japanese listeners must modify the way they categorize some sounds in their first language in order to perceive the English contrast between /r/ and /l/ (see Best, 1995; Flege, 1995). Similarities and differences between the two languages of a bilingual therefore play a fundamental role in how the speech processing system will cope with the two languages.

We have used the term "bilingual" without giving a formal definition. It is very difficult (if not impossible) to give a general definition of the term. In some studies, a difference is drawn between bilinguals (who are supposed to be highly skilled in both languages) and second language (L2) learners (who are supposed to be less skilled in their L2). In reality, both terms can refer to the same populations. Rather than defining what a bilingual is (or is not), we prefer to use the dimensions early/late and proficient/non-proficient to properly characterize a particular group of individuals.

Given this preamble, a basic question in bilingual speech perception is whether bilinguals can master (or not) the phonological properties of their two languages. Another basic question is the extent to which bilinguals can switch off the language not being used during speech perception. In this entry we will provide a brief overview of the research devoted to these basic questions.

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Perception of Segments/Phonology

The perception of foreign sounds (either isolated or integrated in different suprasegmental units) is one of the most difficult aspects to master when learning a second language. The origin of such difficulties could be related to the perceptual reorganization accomplished during early development. As will be described below, babies' perceptual system becomes attuned to the phonetic inventory of the maternal language during the first year(s) of life. Parallel to this attuning is what has been described as a perceptual "loss": Infants become worse at perceiving phonemic contrasts that are non-existent in the maternal language as they gain experience with the language(s) in their environment. Despite this relative loss in the ability to perceive foreign sounds, the perceptual system is still able to perceive the acoustically relevant information of non-native speech sounds, as different electrophysiological studies have shown (Tremblay, Shahin, Picton, & Ross, 2009). Therefore, with the appropriate input it should be possible to attain native-like speech perception performance for non-native sounds. Results from training studies strongly support this idea in that the changes induced by exposure to new phonemes occur even after relatively short exposures (Tremblay, Kraus, Carrell, & McGee, 1997; Tremblay et al., 2009). These results account for the fact that even late bilinguals can improve their non-native speech perception abilities, and suggest that the amount and quality of the second language input is fundamental in determining final performance levels (see, for instance, Flege, 2003).

However, different conclusions are usually reached when highly skilled bilinguals who have learned both languages in naturalistic environments are compared in the perception of their first and second languages. These studies show that in general, even for simultaneous bilinguals, there is some processing advantage for the first language when compared with the second one; this is the case for the perception of phonemes (Pallier, Bosch, & Sebastian-Galles, 1997; Sebastian-Galles, Echeverria, & Bosch, 2005), lexical stress (Dupoux et al., 2010), or speech segmentation (Cutler, Mehler, Norris, & Segui, 1989). Additional research with early and highly proficient bilinguals has shown that even those individuals that reach native-level speech perception performance may rely on acoustic parameters that are different from those of native listeners, at least for difficult foreign speech sounds. For instance, Underbakke et al. (1988) observed that Japanese listeners use temporal differences to distinguish the English-specific [ɹ]–[l] contrast, while native American English listeners use the spectral differences between the second and third formant frequencies as primary cues. These results show that the perception of foreign speech sounds, when compared with native speech perception, is sustained by different (and sometimes less efficient) procedures.

The conclusions of the studies addressing the question of how phonology is acquired by bilinguals paint a mixed picture. According to defendants of the idea that there are no limits to the learning of a second language (provided the adequate input), significant learning occurs even in the case of adult individuals and short training regimes. However, defendants of the idea that there are qualitative differences between the learning of the first language and learning of the second substantiate their conclusions through the fact that bilinguals exposed to an optimal environment (as balanced as possible) show a clear advantage in the perception of one of their two "first languages." While both hypotheses must be correct (as there is substantial evidence supporting both of them), a clear theoretical account accommodating all the evidence is still lacking.

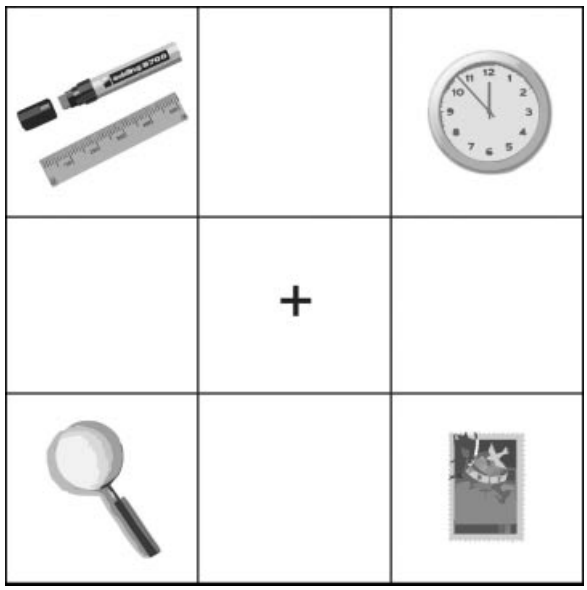

Figure 1 Example of a visual display presented to participants in Spivey and Marian's (1999) study testing Russian–English participants

Note. Two experimental conditions are shown: one with an interlingual distractor ("marker," upper left) or a baseline ("ruler," upper left). Participants look at interlingual distractors more often (52%) than at baselines (37%) when asked to act on the targets (e.g., "Put the stamp below the cross"), showing a parallel activation of the participants' two languages (e.g., "stamp" is *marku* in Russian).

Word Recognition: Access and Representation of the Bilingual Lexicon

Counterintuitive as it may be, a large body of research supports the idea that lexical access in bilinguals proceeds in a language-nonselective manner, in the sense that during word recognition the two lexicons of a bilingual are activated in parallel. According to this account, lexical representations from both languages always get activated to a certain degree, even if only one language is task-relevant. This has been shown for both visual and auditory word recognition, but also for word production.

One of the experimental paradigms widely used is the visual world paradigm (see Figure 1). In this setting participants are looking at a grid-like display containing a central fixation point and four objects placed at the corners of a square.

Participants are asked to move a named object to another location in the square (or to click on it or just to look at it). Participants' eye movements (or hand/mouse movements) are recorded. Spivey and Marian (1999) were the first to use this paradigm to explore nonselective activation of lexical items. These authors tracked the eye movements of Russian–English bilinguals as they were asked to move different objects. Crucially, the critical target object (e.g., a stamp, which is *marku* in Russian) started in the same way as the English name of another object in the array (e.g., the word "marker"). The remaining objects in the array had names with no phonological similarity to the target word in either language. The results showed that bilinguals were more likely to look at the distractor object whose name in the other language sounded like the target (in the example a marker), relative to control objects. Given that nothing in the experiment could be claimed to induce the activation

of the non-target language, these results are taken as evidence of a parallel activation of the two lexicons of a bilingual. Furthermore, stronger effects have been found when the non-native language is explored; in other words, bilinguals suffer from more lexical interference when accessing the non-native lexicon than when accessing the native one.

Despite these evidences, bilinguals can sometimes exploit subphonemic cues to constrain lexical activation to a certain extent. Using the visual word paradigm, Ju and Luce (2004) showed that, although lexical activation is nonselective, bilinguals can make use of subphonemic cues (such as voice onset time) to constrain lexical activation. Nevertheless, when the (sub)phonemic cue is difficult to perceive (as occurs with difficult non-native contrasts), bilingual lexical access is less effective and bilinguals may treat as homophones words that would be minimal pairs (i.e., word pairs that share all phonemes but one) for natives. For instance, Pallier, Colome, and Sebastian-Galles (2001) obtained equivalent repetition priming effects in a lexical decision task for minimal pairs containing a difficult vowel contrast and for real repetitions.

The results of bilingual lexical activation studies show that the same kinds of mechanisms of lexical access of parallel activation and subsequent reduction as a function of mismatching information, previously described for monolingual participants, apply in the case of bilinguals.

Individual Differences in Second Language Perception

Bilinguals differ in their ability to perceive the sounds of their second language. The main factor behind individual differences in second language perception is the age at which the second language is learned, revealing that the earlier a language is learned the better it is perceived (Flege & MacKay, 2004). This age constraint has led to one of the central debates in psycholinguistics: the debate around the existence of a critical period for second language learning in terms of brain maturation. Still, bilinguals who acquired their second language at the same age differ greatly in their mastery of second language phonetic contrast, as assessed by means behavioral tasks.

Several training studies have explored the brain anatomical and functional differences between successful and less successful non-native speech contrast learners. At the anatomical level, Golestani, Molko, Dehaene, LeBihan, and Pallier (2007) have shown that the rate of learning to discriminate an unknown phonetic contrast (e.g., the Hindi dental–retroflex contrast) in a laboratory training context positively correlates with (a) the white matter density of left Heschl's gyrus (the neural substrate of the primary auditory cortex) and (b) leftward asymmetry in white matter volumes in the parietal lobes. The authors suggested that the larger white matter volume present in the fast learners' left auditory cortex may reflect a more efficient processing of rapid temporal sounds.

In a functional magnetic resonance imaging (fMRI) study, Golestani and Zatorre (2004) studied whether differences in the learning of a new phonetic contrast (the Hindi contrast previously mentioned) also led to distinct activation patterns. Indeed, while performing a discrimination task on the trained non-native contrasts—compared with listening to white noise—successful and less successful learners exhibited distinct brain activation patterns. Successful learners showed a deactivation of the left middle temporal gyrus while less successful learners exhibited a suppression of the activity of the left angular gyrus and an increase of the activity in insula-frontal opercular regions. These results were interpreted as a reflection of greater neural efficiency of frontal areas in successful learners. These training studies provide relevant data about the neural mechanisms that allow individuals to quickly learn a new speech contrast, but they do not tap into the final acquisition of a second language phonetic contrast.

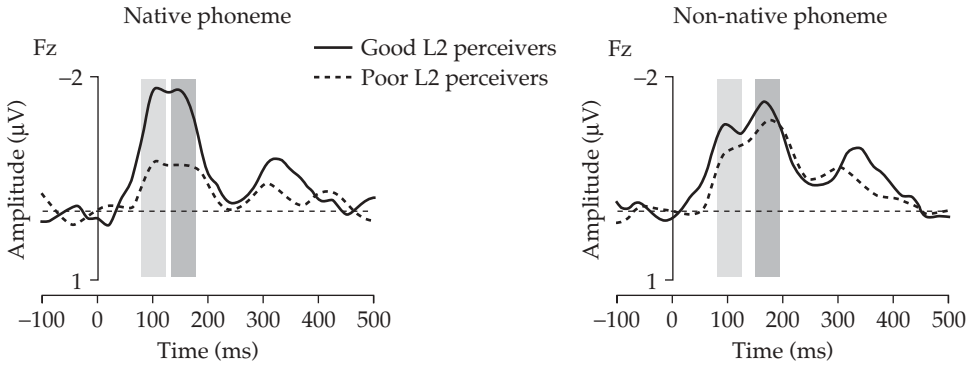

Figure 2 Mismatch negativities (MMNs) obtained for "good" and "poor" perceivers of an L2 phonetic contrast in response to a native and a non-native (unknown) phoneme (adapted from Diaz et al., 2008)

Note. "Good" perceivers displayed larger MMN responses than "poor" perceivers for the two different phonemes. Grey boxes indicate statistical differences between the two groups of bilinguals for the early subcomponent of the MMN (light grey) and the late subcomponent (dark grey).

To the best of our knowledge, only one study has compared the brain correlates of bilinguals who master the second language phonetic system to different degrees. Diaz, Baus, Escera, Costa, and Sebastian-Galles (2008) compared the event-related brain potentials (ERPs) of two groups of early proficient bilinguals who master a second language speech contrast to different extents. The two groups were compared in their brain responses to acoustic (involving tones of different duration, frequency, and presentation order) and speech (involving a native, /o/–/e/, and an unknown, /o/–/ö/, phonetic contrast) changes detection. Participants' discrimination accuracy, reflected electrically as a mismatch negativity (MMN), was similar between the two groups during the perception of tone changes. However, the neural response to the perception of speech sounds differed between the groups, and was reduced for the group with poorer performance on the second language behavioral tasks (see Figure 2).

Crucially, this reduction of the brain response to speech sounds was not only observed for the non-native phonetic contrast, but also for the native one. This difference in native perception reveals that individual differences in second language perception do not only stem from age constraints or other possible factors (such as motivational factors) since these factors do not vary in the acquisition of the native language. It remains to be seen whether these individual differences in second language perception correlate with differences in verbal abilities or other cognitive abilities which have not received much attention in the field of second language perception.

The Bilingual Infant/the Bilingual Child

Although the literature on bilingual language acquisition is quite extensive, issues such as the following have only recently been addressed: When do bilingual infants notice the existence of two "sound systems"? How do they organize the sounds of their two languages? And how do they recognize their first words?

Given that, at birth, newborns can discriminate between some, but not all, languages based on their rhythmic pattern, children born in bilingual environments can face two different situations: The two languages either can (e.g., English–Tagalo) or cannot (e.g.,

Catalan–Spanish) be initially differentiated. Although the results have shown that the way in which bilingual-to-be infants differentiate their languages of exposure may not be fully identical to that followed by infants growing up in monolingual environments, bilingual exposure does not generate specific problems in the processes of language differentiation, even in the case of perceptually challenging situations where initial discrimination at birth is not present.

Research with monolingual infants has shown that starting around 6 months of age, infants specialize in the phonetic repertoire of their maternal language, diminishing their capacity to discriminate between foreign phonetic contrasts and enhancing the discrimination of the native ones (this is called "perceptual reorganization" or "perceptual loss"). How does this perceptual reorganization work when infants are exposed to two languages? A few studies have addressed the perceptual reorganization in bilingual infants, in the context of vocalic and consonant contrasts in Catalan–Spanish (both vowel and consonant contrasts) and French–English (consonant contrasts), yielding mixed results. In a series of studies using a familiarization procedure it has been observed that Catalan–Spanish bilingual infants show a U-shaped discrimination pattern between the ages of 6 and 12 months (with an apparent lack of discrimination around the age of 8 months). However, French–English bilinguals show equivalent behaviors to their monolingual peers. A different procedure has more recently shown Catalan–Spanish bilingual infants as having equivalent discrimination patterns to their monolingual peers. The different results observed in the various populations tested (and with the different procedures used) could be revealing differences in the language processing strategies induced by the specific language pairs learned by the different populations (and by the task-specific cognitive demands).

Another domain that has been recently explored using experimental methods is the representational format of early acquired words. Some studies suggest that the early lexical representations of bilinguals may possess less fine-grained phonological detail than those of monolinguals (Ramon-Casas, Swingley, Sebastian-Galles, & Bosch, 2009). However, more recent data suggest that the apparently less successful developmental trajectory of bilingual infants may be due to some specific testing conditions and that, in fact, bilingual infants may even outperform monolingual infants (Mattock, Polka, Rvachew, & Krehm, 2010).

Taken together, the results of the studies addressing the early development of infants exposed to bilingual environments show both similarities and differences regarding the development of monolingual infants. Some of the observed differences may originate in the additional processing demands that some testing situations impose on bilingual infants. Indeed, it is usually the case that materials and testing situations are built in such a way that they are "linguistically neutral": The same materials are used for the different types of monolingual and bilingual populations. Thus, contrary to monolinguals, bilingual infants may need to determine which of their two languages they are listening to. As mentioned above, bilingual infants can even outperform monolinguals when these factors are properly considered. Additionally, Albareda-Castellot, Pons, and Sebastian-Galles (in press) and Sebastian-Galles and Bosch (2009) have proposed that differences in the nature of the input (such as the differences in language overlap across language pairs, e.g., comparing two Romance languages, such as Spanish and Catalan, vs. comparing typologically different languages, such as French and English) can also affect the specific mechanisms that bilingual-to-be infants develop to cope with their input.

Finally, differences between monolingual and bilingual exposure have also been reported in the use of basic heuristics of word meaning, such as mutual exclusivity (Byers-Heinlein & Werker, 2009), in the capacity to extract regularities in speech streams (rule-like; Kovács & Mehler, 2009b), and in the early development of executive functions (Kovács & Mehler, 2009a; Kovács & Mehler, 2009b).

Future Directions

In recent years our knowledge of the underlying mechanisms involved in bilingual speech perception has grown exponentially. Cross-language and bilingual research has shown a complex interaction between native and non-native language processing units. Studies have shown important commonalities between the underlying mechanisms of speech perception in monolingual and bilingual listeners, but also specific adaptations to bilingual input.

New questions are likely to be added to already existing ones; a couple only are mentioned here. In recent years, the influence of visual information in speech perception has been attested. In the case of audiovisual input, perception is the blending of visual and auditory information (as shown by the McGurk effect). It is clear that (less skilled) bilinguals greatly benefit from "seeing" non-native speech. Some pioneering studies are showing the relevance of this information in developmental (Weikum et al., 2007) as well as proficient cross-language and bilingual speech perception (Navarra, Sebastian-Galles, & Soto-Faraco, 2005; Soto-Faraco et al., 2007).

Another field with a lot of potential development lies on the too often neglected relationship between perception and production of non-native speech (or between the two languages of a bilingual). Only a few studies have explored in a systematic way the two sides of bilingual speech processing (Flege, 2003).

SEE ALSO: Aptitude in Second Language Acquisition; Bilingualism and Cognition; Critical Period; Foreign Accent; Organization of the Second Language Lexicon; Research Techniques and the Bilingual Brain; Second Language Speech Perception and the Brain; Spoken Word Recognition in Second Language Acquisition

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Bilingualism and Youth Language

MARGREET DORLEIJN AND JACOMINE NORTIER

Terminology

In this contribution we will give an introduction to the linguistic behavior of young people in ethnically mixed groups, often referred to as youth language or multiethnolects.

Many relatively recent immigrant communities of various ethnic and linguistic descent have settled in large urban centers all over Europe. In these communities, very specific slang-like linguistic varieties pop up among urban, multiethnic adolescent groups. These varieties are often referred to by the general public as "youth slang," "language of the street," "youth language," and so forth. In the sociolinguistic literature they are generally labelled as "multiethnolects." In recent decades, the phenomenon of these "multiethnolects" has received the warm attention of sociolinguists. These youth varieties (or rather, styles—see discussion below) share remarkably many features and characteristics, whether they are spoken in Scandinavia, the UK, the Netherlands, and so on. In this contribution, we use the term multiethnolect, although we are aware of its problematic status.

Although there is much debate among researchers about the precise nature of the phenomenon, a majority seems to be comfortable with a definition like the following (taken from Dorleijn & Nortier, in press):

> a linguistic style and/or variety that is part of linguistic practices of speakers of more than two different ethnic and (by consequence) linguistic backgrounds, and contains features from more than one language, but has one clear base-language, generally the dominant language of the society where the multi-ethnolect is in use.

In the literature, there is an ongoing discussion about the (correct) use of the term: there is no static set of linguistic norms, nor a one-to-one relation with specific ethnic groups. For a more detailed discussion see Jørgensen (2008) and Nortier (2008). It is tempting to attribute the recent warm attention of sociolinguists to the fact that multiethnolects have emerged only recently, in the wake of migration waves toward Western urban areas; that they are, in fact, a logical product of late modernity. This, however, is unlikely, since migration has happened all over the world, and the presence of multiethnic urban areas are a global phenomenon too. Multiethnolects certainly exist outside the Western world, as one can infer from work by, for instance, Kießling and Mous (2004) on African urban youth languages.

Moreover, multiethnolects appear not to be such recent phenomena. For example, Wolfram already reports in 1974 on Puerto Rican American groups where, as Fought (2006) formulates it: "adolescents in particular have been found to use certain features of AAVE [African American Vernacular English] in their English" (p. 450).

We see a multiethnolect as one of the possible outcomes of crossing, which was first described by Rampton (1995). In crossing, elements from other languages than one's own are used to construct a (new) identity. With the term multiethnolect, however, we refer to more than crossing, as the term is also supposed to cover language play or manipulation. An example is given below to illustrate how people who use *verlan* (France) play with words by turning them upside down and use elements from languages other than French at the same time.

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Function of Multiethnolects

As was noted above, multiethnolects are typically used by speakers of diverse ethnic backgrounds, and this includes the dominant, mainstream background. Multiethnolects appear to be a mostly urban phenomenon that emerges among adolescents in a context of migration in cities. This is not surprising: Multiethnolect users are much involved in the process of constructing and presenting a social identity, and such actions are an unavoidable consequence of living in the highly dynamic circumstances that multiethnic neighborhoods in large urban areas provide.

For adolescents in these circumstances the culture of the home is but one of many possibilities on which to build an identity. Both migrant and nonmigrant adolescents are invited to embark on a quest through a landscape with all kinds of linguistic and cultural possibilities but no clear directions, no obvious dominant tendencies, no fixed social positions. Therefore, an appeal is made to their own creativity in designing a desirable identity, and that is exactly what the multiethnolect is used for. These uncertain but (linguistically) rich circumstances leave people with all kinds of linguistic possibilities to create new, multicultural identities. Since multiethnolects are used in highly dynamic circumstances and mainly by adolescents, the exact form of the lects is not very stable and they are in most cases probably ephemeral. The degree to which multiethnolects persist when the users assume responsibilities for family and career needs further investigation.

Multiethnolects should therefore not be considered as clear-cut, stable *varieties* of a language, but rather as *styles*. "Style" or "linguistic style" is a complicated topic in which several dimensions play a role (see, e.g., Eckert & Rickford, 2001; Auer, 2007; Coupland, 2007; Keim, 2007; Quist, 2008). What concerns us here is that linguistic style can be mobilized by speakers in the appropriate situation, and can be associated with specific situations, interlocutors, or interaction types. Style, in the definition of Eckert (2001), is a "clustering of linguistic resources and an association of that clustering with social meaning" (p. 123). A style is used in particular circumstances or with particular interlocutors. The term "multiethnic style" would therefore have been a more appropriate term in this respect. The term is used for in-group communication. As with speech styles in general, speaking a multiethnolect means a continuous act of identity, a way of self-positioning versus the out-group and toward consolidating in-group solidarity. The literature reports that the kind of social identity multiethnolect users wish to convey is fairly universally a tough, "gang-like," "street" identity, and is generally associated with non linguistic stylization such as clothing and musical preference.

Linguistic Features of Multiethnolects

As indicated above, multiethnolects have in general one base language, which is usually the dominant national language of the country. In countries where more than one official language is spoken, more base languages are generally involved. Into the base language, features of other languages are mixed. "Mixing" occurs on all linguistic levels: phonological, morphological, lexical, syntactic, and, very prominently, in prosody and intonation. Linguistic characteristics that are attested in many multiethnolects are

- exaggerated and consciously stereotyped features characteristic of second language learners (grammatical structures, pronunciation, prosodic features);
- insertions of (non-dominant-language) formulaic expressions, greetings, discourse particles, all kinds of interjections, (taboo) content words and even occasionally function words of diverse linguistic sources; and
- word reversion (in some multiethnolects).

These characteristics are (mainly) the result of conscious agentivity by multiethnolect users, and they always carry social meaning, as may be illustrated by the following interview fragment (taken from Nortier & Dorleijn, 2008):

(1) R: Dat is het slechte Nederlands
I: En heeft dat ook een naam?
R: Ja, niet echt, maar 't is in principe dan eh lidwoorden die gebruik je dan expres verkeerd.
I: Ja, ja, die gebruik je dan exprès verkeerd, net als—
R: Ja dus
I: Die meisje
R: Die huis zeg ik dan. Terwijl ik weet ik bedoel ik weet heus wel dat het dat huis is, maar 't staat zo dom als ik dat op straat zeg, als ik zeg
I: Ja
R: Als ik zeg dat huis
I: Jaja
R: 't Is gewoon die huis. Maar als ik met jullie spreek dan wordt 't gewoon dat huis.
R: That is the bad kind of Dutch
I: Does it have a name?
R: No, not really, but in principle you uhmm . . . just use the articles deliberately in the wrong way.
I: Right! So you use them in the wrong way deliberately? Just like—
R: Yes, like
I: *Die meisje* ['that girl'—***dat*** *meisje* in standard Dutch]
R: I would say *Die huis* ['that house'—***dat*** *huis* in standard Dutch]. At the same time I know, I mean, I am very well aware of the fact that it should actually be *het huis*, but it would make a stupid impression if I would say . . .
I: Yes
R: If I would say *dat huis* out on the street
I: Yes, yes
R: It is just *die huis*. But when I speak with you [the authors—both Dutch and middle-aged] it is just *dat huis*.

In many cases, elements from one (of several) contributing languages are more manifest than elements from the other languages. In a Dutch multiethnolect, for instance, features from Moroccan languages are more predominant than elements from other contributing languages, such as Turkish. Similarly, Turkish is predominant in German multiethnolects (see, e.g., Dirim & Auer, 2004). This may partly be due to the fact that speakers of such a language constitute a majority within the multiethnolect speaking group, but this is not necessarily the only factor. It is also likely that the speakers of the language that predominantly provides "ethnic" elements have a certain covert prestige compared to other "ethnic" groups, that is, they are considered to be "tough." For example, in the Netherlands, respondents repeatedly have maintained that Moroccans are tough and Turks are dull (own field notes).

Other factors of importance that contribute to the actual structural and formal manifestation of a multiethnolect are sociolinguistic tendencies like language maintenance and shift, degree of multilingualism, and so on. For example, the above-mentioned Dutch multiethnolect (Dorleijn & Nortier, 2008; Nortier & Dorleijn, 2008) draws in particular from Moroccan resources, rather than, for instance, from Turkish, even though these communities in the Netherlands are comparable in terms of size and cultural background. Here, it

is the sociolinguistic situation of the communities in question that differs considerably and make the Moroccan elements more "adoption-prone." Beside Dutch, two home languages are spoken in the Dutch–Moroccan community: Moroccan Arabic and Berber. An estimated 70% of the Moroccans living in the Netherlands are Berber speaking. Although most Berber-speaking Moroccans are more or less familiar with Moroccan Arabic, this does not imply that every Berber speaks Moroccan Arabic fluently. Therefore, Dutch is often the unmarked mode within the community. In the close-knit Turkish community in the Netherlands, on the other hand, Turkish is still very vital. The unmarked mode among Dutch–Turkish bilinguals is the bilingual code switching mode, which is considered an in-group mode by its speakers (and by outsiders, who often complain that they feel excluded in all-Turkish company; see Nortier & Dorleijn, 2008).

Examples

The way groups of young people in ethnically mixed groups use linguistic resources to express their identity is not the same for all groups everywhere. What the groups do have in common is that they include languages other than the official prestigious languages, and that the varieties they use are in a continuous state of change.

In Germanic-speaking countries in Europe and in America, where the phenomenon has been relatively well studied in the past decades, multiethnolects are varieties based on the official languages. They are "a kind of Dutch" (or Norwegian, German, etc.) rather than a mix of languages. The users of multiethnolects have a native (or native-like) control of the official language which constitutes a firm base into which they insert additional elements from other languages. In languages other than English, (American) English is an important source too, since it is associated with prestige and fashion. A quote from Nortier and Dorleijn (2008, p. 138) underlines this statement: "Nederlandse taal klinkt gewoon niet, dat Marokkaans accent zorgt ervoor dat het 'rap-achtig' wordt net als in de Bronx NY" ("Dutch just doesn't sound good, that Moroccan accent makes it sound more 'rap-like' just like in the Bronx NY"). In recent years, we have found many examples of Dutch pronounced with a Moroccan accent in the Netherlands. In other languages such as German, pronunciation also is used as an ethnic marker (Deppermann, 2007, p. 329):

(2) Hab **isch** gekauft neue BMW
Standard German: ich habe einen neuen BMW gekauft
'I bought a new BMW.'

In (2) *ich* 'I' is pronounced as slightly fronted palatal *isch*, which marks an ethnic identity and has its roots in the pronunciation of German by native speakers of Turkish. This form is also used by speakers who do not know any Turkish, and it is frequently heard in popular rap songs, for instance.

Other markers are syntactic or morphological in nature. An example is (2) above: The German word order SVO/SOV is violated here and, instead, VSO is used. Word-order violation is also found in, for example, language use by native speakers of Norwegian. In (3), the SV order is used in a sentence that requires inversion (Svendsen & Røyneland, 2008, p. 75):

(3) hvis en av oss vinner vi deler halvparten
'If one of us wins *we split* half' (instead of correct Norwegian *split we*).

Violations of standard word order are typically associated with an imperfect second language acquisition. The speakers under consideration, however, speak the target language well and in unmarked communication they usually have no problems with the canonical word order (though exceptions to this rule do occur).

In languages with a grammatical gender distinction such as Dutch, German, and the Scandinavian languages, the use of a wrong grammatical gender is often encountered in multiethnolects. This was illustrated in example (1) above, where the speaker explained that he deliberately used the wrong gender when he was talking to his friends informally. In Dutch and other languages, the common gender is often overgeneralized and also used for neuter words: Swedish *en bord* is used instead of the correct *ett bord* 'a table' (Kotsinas, 1998).

In example (4) from Cutler (2008, p. 15), an 18-year-old Bulgarian who emigrated to the USA at age 8 uses characteristics of African American Vernacular English (AAVE) in relation to both pronunciation and grammar:

(4) She is PISSIN' me off! All the shit she's sayin'. I [a:] feel like smackin' 'em. I'm like "Ø you stupid? Do you hear what you're (r-Ø) saying"? (..) She Ø mad racist! (...)

In the example above, typical AAVE features are monophthongal /*a*/ instead of /*ay*/, /*r*/-lessness, Ø-copula, and the use of *mad* as an intensifier.

In French, and in some other Romance languages such as Spanish, varieties have emerged in which lexical elements (words, syllables, or both) are reversed. So, for example, instead of French *cité* 'city', *téci* is used. This variety, *verlan*, is widespread in France and emerged in the *banlieues* (suburbs) of Paris and other major cities among multiethnic youth groups. Beside the reversed use of words and syllables, there are other characteristics, illustrated in a poem in *verlan* in (5) (Didaweb, 2010; left column). An explanation of the *verlan* forms is given in the center column, and a translation into English on the right:

(5)

J'neco ap La Marseillaise	J'neco ap = je ne connais pas la Marseillaise = French national anthem	I don't know La Marseillaise
Mais c'est ici que je mange mes fraises		But I belong here
Au deblé, j'suis céfran	deblé = bled	Back home I am French
Et j'suis robeu en cefran	céfran = français robeu = beur (= arabe) cefran = France	And here I am an Arab
Kéblo entre ici et là-bas	kéblo = bloqué	Blocked between here and there
Des fois j'ai envie de me séca	séca = cassé (j'ai envie de partir)	Sometimes I feel like leaving
Mais c'est près d'Paris qu'j'ai grandi		But I grew up near Paris
Et l'Algérie j'l'ai tchav' quand j'étais p'tit	tchav' = quitté	And I left Algeria when I was small
Alors où j'me vétrou?	vétrou = trouve	So where do I find myself?
J'me sens perdu, c'est chelou	chelou = louche	I feel lost, it is bizarre
Fierté d'être un djez à Paris	un djez = un Algérien	Proud of being an Algerian in Paris
Tous les soirs, c'est Allah que je prie.		Every night I pray to Allah.

Examples of longstanding ethnic mixing (at least, in comparison with Western Europe) can be found in African cities where a long tradition of urbanization and migration has interesting linguistic consequences. Contrary to the varieties found in European cities, the varieties in African cities do not always consist of one clear-cut and recognizable base language in which elements from other languages are inserted. Slabbert (1994) describes the situation in Johannesburg where Isicamto is spoken, which is associated with a gang with a Zulu background. It has traces from Zulu, English, and a range of other languages. Isicamto started out as an urban youth language, but is spreading now to other groups as well. Consider example (6):

(6) If u-roof-a i-bank ya-se-lokishi-ni u-ya-tabalaza?
'If you rob a bank in the townships, is that fighting for survival?'

The word *roof* has roots in Afrikaans; *bank* is English; *lokishi* is from English 'location' and *tabalaza* has its origins in Zulu (*zabalaza* 'struggle').

Conclusion

Multiethnolects have emerged all over the world and will continue to do so. Young people have always used linguistic resources to express their identity. They have always turned to varieties with strong covert prestige and low overt prestige. In places where there is no ethnic mixing, other substandard varieties and dialects are used for this purpose. With the arrival of other ethnic groups, other languages and varieties have become available and are made use of. As globalization increases, and movements such as migration and urbanization increase accordingly, we expect the emergence of new multiethnolects to increase as well. Linguists and anthropologists should study the spread of these varieties, not only among young people but also among other groups in many different societies. We still do not know much about the mechanisms that cause the difference between multiethnolects in the Western world (one base language) and beyond (such as in Africa, multilanguage based). More explorative and comparative research is needed. We believe that the more a multiethnolect will spread, the stronger the need for groups of young people will be to "invent" new ways of speaking to distinguish themselves from others.

SEE ALSO: Code Mixing; Code Switching; Cross-Linguistic Influence and Multilingualism; Dynamics of Multilingualism; Linguistic Diversity; Multilingualism and Identity; Multilingualism and Minority Languages

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Blum-Kulka, Shoshana

ZOHAR KAMPF

Blum-Kulka is Professor Emerita at the Hebrew University, Jerusalem, specializing in pragmatics and discourse analysis. Her pioneer contributions to the fields of translation, cross-cultural pragmatics, pragmatic development, interlanguage pragmatics, language education, family discourse, peer discourse, and media discourse assisted in establishing the methodological and theoretical basis of applied linguistics. The discourse pragmatic approach, developed in her theoretical and empirical studies, made an important contribution to the field of linguistic pragmatics, helping to refute claims of the presumably monological nature of pragmatic theory, and speech act theory in particular (Linnel, 1998).

Shoshana Blum-Kulka was born in 1936 in the city of Cluj, Transylvania (then Romania, taken over by Hungary in 1940). Following the Nazi occupation of Hungary in 1944, she escaped on what is known as the "Kastner train" with 1,683 other Jews. Blum-Kulka arrived in Israel at the age of 9 and was educated at the Hebrew Reali School of Haifa. She earned a BA in English Literature and Romance Languages at the Hebrew University in Jerusalem and a Master's in Education from Teachers College, Columbia University in New York. She continued her academic studies back at the Hebrew University in Jerusalem, earning a PhD in Hebrew Linguistics under the supervision of Chaim Rabin in 1974. Prior to pursuing a full-time career as a scholar, Blum-Kulka ran the Intensive Hebrew Language Program for Overseas Students at the Hebrew University for 10 years, and was involved in writing and editing several textbooks of teaching Hebrew as a second language. She is credited with having introduced new approaches (both communicative and structurally graded) to the teaching of Hebrew as a second language, which subsequently completely transformed the way L2 is taught at university level in Israel. She began her academic career as a lecturer at the Center of Applied Linguistics at the Hebrew University in 1974 and was later invited to join the Department of Communication and the School of Education at the same university, where she served as professor of communication and education until her retirement in 2004.

From her early research on speech acts across cultures to her latest research on the dialogic and intersubjective nature of communication, Blum-Kulka promoted two basic ideas that establish the range and vision of applied linguistics: language use as social action and language use as a process of meaning making. Blum-Kulka's contribution to the field of applied linguistics in the late 1970s took several forms: her dissertation on linguistic simplification for language learners, textbooks for teaching Hebrew as L2, articles on principles and methods of language teaching, pragmatic studies of translation (e.g., 1982) and lexical simplification (Levenston & Blum-Kulka, 1978).

At the outset of the 1980s Blum-Kulka's research expanded to cover cross-cultural pragmatics in addition to the study of pragmatic competence in a second language (interlanguage pragmatics). The well-known Cross-Cultural Speech Act Realization Project (CCSARP), headed by Blum-Kulka, Kasper, and House, integrated linguistics, speech act theory, and politeness theory in demonstrating cross-cultural and situational variation in the performance of requests and apologies (Blum-Kulka, Kasper, & House, 1989). This study provided the theoretical and methodological framework for the empirical study of speech acts across cultures, adding to the "armchair" or role-play methods used until then—a semi-structured

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questionnaire (the Discourse Completion Test), which became widely popular for the quick collection of speech act data from large samples. Among the major contributions related to this project is Blum-Kulka's finding (1987) that different cultures exhibit diverse scales for the perception of politeness that do not conform to Brown and Levinson's equation of politeness with indirectness. This finding may be viewed as one of the first to challenge the universal claim of politeness theory.

Concurrently, in the mid-1980s, Blum-Kulka was also involved in studies of natural discourse, focusing on issues of (mis)understanding (with Weizman, 1988), and cultural ways of speaking in family discourse. These studies, which focused on the interactive nature of communication as a process of meaning making, were the basis for formulating her discourse pragmatic approach during the 1990s (e.g., 1997b). In her studies on family discourse she explored cross-cultural differences in natural family discourse at dinnertime between native Israelis, native Americans, and American immigrants in Israel. Blum-Kulka showed that family dinnertime, at least in the communities studied, share several basic characteristics related to the nature of the speech event, yet differ deeply in patterns of sociability and socialization, providing culturally distinct sites for children's pragmatic development (1997a). *Dinner Talk* was a major contribution to the study of pragmatic socialization in that it devoted close attention to the many-faceted contributions of multiparty, intergenerational talk for children's pragmatic development whereas other contemporary research tended to focus mainly on dyadic mother–child interaction. Further work along these lines showed the benefits of multiparty talk for pragmatic development across different cultures and genres (see Blum-Kulka & Snow, 2002). Best known from Blum-Kulka's work on specific genres are her studies on narratives, in which she developed a three-dimensional model (*telling*, *tales*, and *tellers*) to account for cultural variability in the unfolding of stories in conversation (e.g., 1993).

Blum-Kulka's interest in pragmatic development led her (by the mid-1990s) to the study of young child–child peer interactions in natural discourse, developing a theoretical view of peer talk as a "double opportunity space," which functions concurrently on the plane of meaning making within childhood culture as a locus for the co-construction of children's social world and peer culture, while at the same time affording opportunities for the development of discursive learning (e.g., 2005). Her studies of natural peer talk of preschool and preadolescent children demonstrate the cultural co-construction and discursive affordances for pragmatic development of peer talk in a gamut of genres, including casual conversation, narratives, explanations, pretend play, and argumentative talk (e.g., Hamo & Blum-Kulka, 2007).

Blum-Kulka's broad intellectual interests found further expression in her important contributions to the field of mediated political discourse. Her pioneer studies on political interviews (1983), and later on debates and talk shows (2001), made significant contributions to the contemporary field of broadcast talk. In her studies during the late 1990s and the 2000s Blum-Kulka integrated methods of conversation analysis, ethnographic observations, and pragmatic methods and theories, thus defining the methodological tool box used by scholars of discourse analysis (Tracy & Haspel, 2005).

To conclude, Blum-Kulka is among the first to introduce pragmatics to the field of applied linguistics, to develop an integrative approach (discursive pragmatics) to the study of language use, and to apply this approach innovatively and fruitfully to relatively understudied areas of interest, such as media discourse, family discourse, and, more recently, first- and second-language child peer talk.

SEE ALSO: Discourse Analysis and Conversation Analysis; Politeness and Face Research; Pragmatic Socialization

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Bowen, J. Donald

LYNN HENRICHSEN

J. Donald Bowen (1922–89) began his academic career as a Spanish teacher and researcher and became an early leader in applying the findings of modern linguistics (especially phonetics and phonology) to language teaching methods and procedures. He was a prominent pioneer in conducting contrastive analyses of English and Spanish. His greatest contribution, however, was probably in the area of pronunciation instruction (Bowen, 1972, 1975). His thinking about the importance of meaningful, contextualized pronunciation practice resulted in what is today called the "Bowen technique" (Celce-Murcia, Brinton, & Goodwin, 2010, pp. 9, 93, 147–8). The linguistic and instructional principles he championed influenced many pronunciation teachers and textbooks and even formed the basis for entire pronunciation courses (Henrichsen, Green, Nishitani, & Bagley, 1999). His linguistic and pedagogical expertise extended beyond pronunciation, however, to the entire range of language skills and corresponding instructional procedures. Throughout his life, Bowen was an acute observer of the way language was actually used and a tireless advocate for teaching "realistic English."

For most of his academic career, Bowen was a professor of English as second language and applied linguistics at the University of California Los Angeles (UCLA), where he influenced many generations of teachers. In fact, his UCLA colleagues Marianne Celce-Murcia, Donna Brinton, and Janet Goodwin dedicated their monumental *Teaching Pronunciation* (2010) to him and his associate Clifford Prator, their "mentors in the teaching of pronunciation." When Bowen passed away, the UCLA academic senate issued a statement in memoriam, calling him "a remarkable scholar and dedicated educator" who "strove to excel in his field and consequently made exceptional contributions in applied linguistics." In a professional obituary and tribute published in the *TESOL Newsletter*, University of Pittsburgh professor, Edward Anthony (1989), praised Bowen's "wide, deep, and long experience, and his thorough knowledge of language acquisition, language teaching and learning, testing and evaluation" and his "amazingly productive pedagogical life."

Since the schools Bowen attended when growing up did not offer foreign-language coursework, he did not study any languages except English until enrolling at Brigham Young University. There, he earned his bachelor's degree in English and Spanish and also took courses in French, German, Latin, and linguistics. While earning that degree, he was called to active duty in the US military in April 1943 and participated in the army specialized training program (ASTP), where he became interested in "modern" techniques for language instruction. The ASTP curriculum, designed by linguists and concentrating on the spoken language, had (according to Bowen's biography, 2004) "a profound effect" on his later life. He went on to earn his master's degree in Spanish from Columbia University in 1949 and his PhD from the University of New Mexico in 1952. His master's thesis involved a linguistic analysis of *El Conde Lucanor*, and his doctoral dissertation examined "The Spanish of San Antonito, New Mexico" using the analytic and descriptive methods of linguistics. The rest of his life's academic work also involved the application of linguistics to related fields.

Throughout his life, Bowen taught and traveled widely. Shortly after receiving his PhD in 1952, he participated in the Summer Institute of Linguistics in Bloomington, Indiana,

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where he met Henry Lee Smith, director of the School of Languages at the Foreign Service Institute (FSI) in Washington, DC. Bowen started work at the FSI in June 1953 with the job title "scientific linguist" and taught foreign service and air force personnel assigned to posts in Latin America. As a linguist, Bowen supervised several native-speaker instructors, corrected students' pronunciation, and provided grammar explanations. The FSI curriculum was intensive, relied heavily on descriptive linguistics, and emphasized pronunciation and intonation (which were often slighted in other language programs of the day). At this point in his career, Bowen began making plans to adapt the linguistics-based FSI approach to foreign-language teaching in traditional universities and other instructional settings.

The 1955 Modern Language Association (MLA) convention in Chicago turned out to be an important milestone in Bowen's career. Language educators from around the country discussed the future of language teaching, and most agreed that changes needed to be made. The Rockefeller Foundation provided a grant, and a committee of six distinguished linguists was named to write a "new kind of college textbook." After four years of labor, this team, Bolinger, Bowen, Brady, Haden, Poston, and Sacks, produced the landmark *Modern Spanish* (Bolinger et al., 1960), which became a model for a whole new generation of foreign-language textbooks.

In 1959, Bowen joined the faculty at UCLA, but during his 28 years at that university he spent many years away from Los Angeles. From 1959 to 1963, he served as codirector of the Philippine Center for Language Study (PCLS), a project funded by the Rockefeller Foundation and administered by UCLA, "dedicated to serving the interests of language research, study, and teaching in the Republic of the Philippines" (Dacanay & Bowen, 1963, p. ii). On his departure, his "progressive leadership" was lauded by Filipino officials as having "made a significant contribution to education in this country . . . by assisting in the preparation of linguistically oriented instructional materials [and] helping . . . find solutions to . . . complex language problems through research and experiments." The PCLS was intended to be a model for similar operations elsewhere in the world, and Bowen also advised the Southeast Asia Treaty Organization (SEATO) when it was establishing its Regional English Language Center. Later he was appointed to the English Teaching Advisory Panel of the US Information Agency. In 1966, he served as a consultant in Uruguay and directed the first of many National Defense Education Act (NDEA) institutes in TESL at UCLA. That same year, he participated in a USAID study tour in India. In 1968, he moved to Ethiopia to serve as field director of the Ford Foundation's five-country "Survey of Language Use and Language Teaching in Eastern Africa" project. In 1970 he went to Nairobi, Kenya in connection with the same project. In 1974–6, Bowen represented UCLA as a visiting professor at the American University and the Ain Shams University in Cairo, Egypt.

Besides all the work he did in these positions and international programs, Bowen authored or coauthored 38 books. Most noteworthy in the application of linguistics to language teaching were probably *Modern Spanish* (Bolinger et al., 1960), *Techniques and Procedures in Second Language Teaching* (Dacanay & Bowen, 1963), *The Sounds of English and Spanish* (Stockwell & Bowen, 1965), *The Grammatical Structures of English and Spanish* (Stockwell, Bowen, & Martin, 1965), *Patterns of English Pronunciation* (Bowen, 1975), *Adaptation in Language Teaching* (Madsen & Bowen, 1978), and *TESOL—Techniques and Procedures* (Bowen, Madsen, & Hilferty, 1985). He also edited *Beginning Tagalog: A Course for Speakers of English* (Bowen, 1965) and was on the editing committee of *Tagalog Reference Grammar* (Schachter & Otanes, 1972). In the area of sociolinguistics, he coauthored *Language in Ethiopia* (Bender, Bowen, Cooper, & Ferguson, 1976) and *Studies in Southwest Spanish* (Bowen & Ornstein-Galicia, 1976). He also edited *Current Trends in Linguistics: Linguistics in Oceania* (Bowen, Dyen, Grace, & Wurm, 1971). At the time of his passing, he was working on the manuscript of yet another book. In addition to these books, he published over a hundred research articles.

Bowen was also an active contributor to many professional and academic organizations, such as the Modern Language Association. He joined TESOL (Teachers of English to Speakers of Other Languages) in 1967, the year after it was founded. For many years, he served as TESOL book review editor for the *Modern Language Journal*.

Bowen died at age 66 after suffering with Parkinson's disease for 17 years.

SEE ALSO: Phonetics and Phonology: Overview; Pronunciation Instruction; Pronunciation Teaching Methods and Techniques

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Brain Activity During Second Language Processing (ERP)

D. J. DAVIDSON

Overview

The electroencephalogram (EEG) offers a unique view of second language (L2) processing because it is one of the few noninvasive techniques available within cognitive neuroscience to directly examine brain function during key events that take place during language comprehension. An EEG recording is a record of large-scale electrical activity of the brain over time, usually recorded with an electrode attached to the skin on the scalp. Primarily because it offers good time resolution, and because it is somewhat better suited to receptive language processing rather than production, researchers have used EEG to address questions about the functional organization of second language (L2) comprehension and learning. The time resolution of EEG enables it to capture the rapidly changing electrical response to individual words, morphemes, or speech sounds. Because of this, experiments are often conducted to examine first and/or second language performance using tasks that require listeners (or readers) to comprehend relatively short-duration material such as syllables, words, or sentences. The average response is then used, for example, to better understand when or how L1 and L2 language processing differ in the first few moments after the onset of a word, and also how these responses change over time during learning.

A related technique is magnetoencephalography (MEG), which records a signal that is the magnetic counterpart to the EEG. Because of the properties of magnetic fields with respect to the skull, it is in many cases simpler to relate the MEG to the underlying cortical regions that are active in an experiment, compared to EEG. For this reason MEG is often used in conjunction with anatomical information available using magnetic resonance imaging (MRI) to provide spatial information about the source of the electrical activity. Although there are important differences between EEG and MEG, this entry will largely focus on EEG, as it is by far the most commonly used approach for L2 research to date. After a brief introduction, this entry will provide an overview of some of the major findings that have accumulated in the literature on L2 electrophysiology.

Basis of the EEG and ERP Signal

The EEG Signal

Neurons communicate with each other via complex electrical-chemical processes at a very small spatial scale relative to the size of an EEG electrode, and this raises the question: What does the scalp-recorded EEG signal actually represent? As a first approximation, the EEG is believed to be a large-scale measure that reflects the spatial alignment and temporally synchronous activity of groups of a certain types of neurons, with the largest contribution from pyramidal cells. When these cells are active together in time, the electrical potential generated is large enough to be recorded with an external electrode on the skin, with respect to a reference electrode at a different location also on the skin. In the case that cells

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within the group are not synchronously active for a long enough period of time to sum, then the group activity will not be large enough to be observed, even if some individual cells are very active for shorter periods of time. For example, rapid events such as individual spikes from action potentials are not usually seen in EEG recordings under ordinary recording procedures. Also, if groups of neurons lack a parallel spatial orientation, an external sensor would not easily register their activity, whether or not it is synchronous. The EEG is therefore a selective measure of cortical electrical activity. It represents a certain timescale of activity from cells in a specific spatial arrangement. An important implication of this selectivity is that many important electrical events are almost certainly missed by the EEG recordings.

These considerations are probably most important for work that explicitly tries to link physiological processes in neurons and the cognitive operations that are believed to occur during (L2) listening or reading. Most studies of L2 processing, however, use EEG recordings more heuristically, as a gross measure of electrical activity without very specific assumptions about the link. These measures of electrical activity are termed components, which are spatial and temporal patterns of activity across the array of electrodes on the scalp. As an aside, it is good to bear in mind that in most recording arrangements the activity recorded with EEG is a difference between a given electrode and a reference electrode, thus reflecting activity measured at both sensors. Very often the reference electrode for EEG is placed in a standard location, such as behind one of the ears, or the nose, to make it easier to compare studies.

Before describing the components, it is worth describing a few common features of psycholinguistic experiments using electrophysiology. Very often, participants in an experiment listen to or read stimuli presented over a series of trials. Each trial is simply the presentation of a single stimulus, such as a word or a sentence, possibly followed by a motor response if participants are asked to make a judgment or decision about the stimulus. Usually, there are one or more different experimental conditions to be compared, and there are multiple occurrences of a single type of trial in the same experimental condition. For example, an experiment examining spoken word recognition might examine L1 and L2 word recognition by comparing the response to L1 words on some trials and L2 words on other trials. The reason for the multiple trials is that EEG recordings are subject to a great deal of noise or otherwise ongoing but unrelated brain activity, and a more consistent measure of the brain activity that is related to the stimulus can be obtained by repeating a given experimental condition many times. This does not mean that exactly the same stimulus is repeated (necessarily), but rather the experimental condition is repeated with a different word or sentence on each trial. For example, in the example for auditory word recognition, there might be 80 distinct L1 words presented versus 80 distinct L2 words presented in the experiment.

Event-Related Potential (ERP)

The most common measure (or model) for brain activity in L2 electrophysiology is the event-related potential (ERP). This is simply the average response in a group of trials recorded in a given experimental condition, where the average is calculated for each moment in time after the onset of the stimulus (or, in some cases, before a motor response). The ERP is a summary statistic because it uses a single time series, the average, to represent the important properties of the response for the entire group of trials. An assumption of this statistic is that the brain response to the stimulus reoccurs at a consistent time after the onset of the stimulus, and that other activity without this consistent timing is noise or unrelated activity.

Before taking the average, researchers typically subtract a baseline from the response to reduce the impact of variation that is considered noise. Alternatively, a high-pass filter

might be applied to the data. The baseline is usually defined as a short interval of time before the onset of a stimulus. The average value of the potential in this baseline interval is then subtracted from each point in the response interval. For this reason the baselined ERP often appears as positive or negative deflections from the zero potential, appearing very often as a dampened sinusoidal waveform. It should be kept in mind, however, that the actual average potential in the baseline time interval is not necessarily zero; it simply appears this way because of the baselining procedure.

The ERP waveform is usually described in terms of its features: the timing and magnitude of the most salient features of the waveform. The first few positive and negative deflections, occurring at approximately 100 ms and 200 ms respectively, might be termed the N100 and P200 components, for example, reflecting the polarity (N for negative potential, P for positive potential) and the approximate latency (e.g., 100 ms) of the peak of the component. Other components are named similarly, sometimes with designators to describe the general spatial location of the component on the electrode array. Two of the most important features of the ERP are the amplitude relative to the zero potential baseline, and second, the latency of a peak of a component (the point with the highest amplitude when there is clearly a single peak), relative to an event like word onset. These features have been shown to be responsive to several variables which are related to L2 language performance. Note that other summary statistics reflecting other aspects of brain activity, such as the average event-related time-frequency spectrum, or the average phase spectrum, can also be calculated from EEG data. However, their use in L2 research has not been widespread to date.

When one waveform in a condition is subtracted from another waveform in a different condition, the result is a difference waveform. It reflects time points when the two ERP waveforms diverge from each other. Many classical ERP effects are difference waveforms in this respect. Several typical effects seen in response to spoken or written words include the N400 effect, a negative potential difference wave beginning at approximately 300 ms and peaking at approximately 400 ms after word onset, and the P600 difference wave, a positive potential difference wave which begins at approximately 500 ms after word onset, and appears as a long-lasting shift, often without a single peak. In many experiments the N400 effect amplitude is responsive to the semantic relationships within the sentence. The P600 effect is likewise responsive to syntactic relationships within the sentence in many cases. It is also the case that many studies show a posterior distribution of both of these patterns. This means that the electrodes where the N400 or P600 difference waves are largest tend to be at the back part of the head. The timing, the polarity, and the approximate spatial focus of the difference wave are diagnostic features employed by almost all ERP studies of L2 (and L1) linguistic processing. Note that these patterns are general trends across studies, but there are important cases in which the N400 effect is seen in response to a syntactic contrast, and the P600 effect is seen in response to a semantic contrast. Another difference wave that has been important in studies of morphology or grammar is the left anterior negativity (LAN) effect, a negative difference wave appearing in approximately the same time window as the N400 effect, but with a left frontal focus on the scalp electrodes.

Properties of the ERP

There are several reasons why the features of the ERP waveform are used. The relatively high time resolution allows researchers to isolate a brain response with short duration. For example, spoken sentences unfold over time, and a given word might not have a duration longer than half a second. The ERP can reflect responses that occur within a few hundreds of milliseconds following a stimulus, therefore can reflect activity that is specific to a given word within the sentence in many circumstances. It is worth noting, however,

that the response to individual words within a sentence often overlaps from one word to the next, and the degree of overlap will depend on the rate of speech or the presentation rate of the stimuli more generally. For this reason, some studies use serially presented words with a relatively slow rate of visual presentation to artificially separate the response to individual words. It does not appear that there is a consensus in the literature about the side effects of the different modes of stimulus presentation, but both auditory and serial visual presentation remain in use.

Longitudinal and Group Comparisons

In L2 research, often experiments compare the ERPs of different groups of participants to investigate a question. Some examples include comparisons such as monolingual versus multilingual subjects, or early-acquisition versus late-acquisition learners. In these cases, the participants are selected for the study so that the groups are approximately matched on characteristics such as age, gender, handedness, and other factors that are likely to affect the results. This is done so that a comparison of the groups is likely to reveal only the influence of the factor which differentiates the groups (e.g., early versus late acquisition) and not other known factors. However, it is often the case that one of the groups is more variable than the other in their response, and it is difficult to distinguish systematic group variation from individual subject variation. Also, when participants are selected for a study, it is possible that preexisting differences might influence the pattern seen in an experiment.

One approach to this problem of individual variation is to examine the changing patterns of ERPs over time in a longitudinal study (Osterhout, McLaughlin, Kim, Greenwald, & Inoue, 2004). Whereas group comparisons characterize L2 speakers with differences in preexisting knowledge or experience, longitudinal studies track the acquisition (or development) of this knowledge over time. The longitudinal approach compares each participant against their own previous response to show a difference over time. In some cases this allows the design to factor out individual differences, especially when the learners in the longitudinal design start with little or no previous knowledge of the language they are learning. Longitudinal designs also characterize the dynamics of the changing ERP patterns, and this may be informative about how the knowledge is acquired.

Phonological Processes

Studies of sublexical L2 processing have for the most part employed a component known as the mismatch negativity (MMN). This component is seen during passive listening tasks in which listeners hear a series of standard stimuli (such as a phoneme or syllable), and an occasional mismatching stimulus. The mismatching stimulus elicits a larger amplitude waveform. This is believed to reflect the time when a cortical region registers the difference between standard and deviant stimuli. Studies of the MMN have shown that the effect can be seen in both younger and older L2 learners, but in the case that an L2 learner begins studying a second language relatively late, then the amplitude of the MMN is reduced for phonological contrasts in that L2.

Lexical and Morphological Processes

There have been many studies of the response to single words comparing L1 and L2 stimuli. Most often studies have examined the N400 component, a negative potential component with a posterior spatial focus, peaking around 400 ms after the onset of a word. The N400 is affected by a wide variety of contextual relationships, including semantic

meaning or association when words are presented in pairs. Studies that have examined the N400 component have found that the contextual influence on the N400 is similar in the L1 and L2, but also that L2 proficiency has an important influence. Lower L2 proficiency is associated with a reduced semantic context effect, but not a reduced associative context effect.

With respect to word morphology, differences between L1 and L2 speakers have been observed in processing inflectional morphology. For example, Hahne, Mueller, and Clahsen (2006) have found that overapplication of an inflectional plural rule for nouns results in only a P600 in L2 learners, in contrast to both a LAN and P600 that has been found in native speakers. Contrasts of verbal inflection showed an anterior negativity in the learners as well as a P600. In their experiments, the misapplications of irregular morphology led to a distinct N400 response. These results suggest that the electrophysiological response to morphological violations in learners can appear in a form similar to that of native speakers.

Grammatical or Syntactic Processes

In studies of syntactic or grammatical processes, researchers have most often examined the response to a single word or morpheme, the so-called critical word, presented in the course of a sentence. In many studies, one sentence will contain a grammatical mistake or error at the critical word, and this is compared to a control sentence which is otherwise like the violation sentence except for the mistake. The interest of such studies is to examine when differences emerge in the response to the violation critical word relative to the control, and moreover, how these differences are related to L2 knowledge, skill, and development.

The classical components described earlier (LAN effect, P600 effect) have been examined in several L2–L1 pairs, at various levels of group proficiency. The appearance of the P600 effect seems to be modulated by proficiency and age of acquisition, and possibly the particular language pairs that are involved in the study. Bilinguals who begin acquisition of both languages relatively early show a P600, and it is also seen in learners who start an L2 relatively late but who are nonetheless proficient in the L2. It appears that the P600 is more likely to be seen in an L2 if the L2 is part of the same language family as the L1 (e.g., Germanic), which is also likely to be correlated with proficiency. It should be noted that not all studies have observed the P600 in L2 learners, as some results have shown atypical patterns of the P600. So far, the LAN effect, including the early LAN effect (ELAN), although it has been studied less extensively for L2 learners than the P600, appears to be less commonly reported in the literature. The ELAN has only been reported in the case of relatively proficient L2 users (Rossi, Gugler, Hahne, & Friederici, 2006). Recent experiments have examined patterns of ERPs with longitudinal designs. To date, no study has observed a LAN effect over time, but interestingly, an N400 has been reported in addition to the expected P600, as learners gain L2 proficiency (Osterhout et al., 2004).

Semantic Processes

Like single-word studies, semantic processing for L2 comprehenders has been examined in sentences using the relationship between a critical word and the preceding context. The same logic of comparison between a violation condition and a control condition is followed in this type of design, often comparing groups of learners with different backgrounds of experience or proficiency.

The results of these studies have shown that an N400 effect can be seen in sentence context for L2 users, and it has a similar spatial pattern in the first and second language

users in most studies. In some cases there is a delay in the peak of the N400 for the L2. Studies that have independently examined the contribution of age of acquisition and proficiency have shown that both contribute to the delay in the peak. There is some variability in the N400 effect seen across studies, as some have reported no difference while a few cases have reported a larger N400.

Other Uses of the ERP Methodology

A small number of studies have employed ERPs to examine L2 production (see Hanulová, Davidson, & Indefrey, in press, for review). In the case of production, an additional complication is that signal artifacts associated with muscle movements of the face and larynx make it difficult to study the production of full sentences. Researchers have instead concentrated on picture-naming tasks in which a single lexical term is to be produced to label an object. For example, Christoffels, Firk, and Schiller (2007) examined the first half second after the appearance of a picture, but before actual articulation, to study language switching in bilinguals. Among other findings, they showed that naming pictures in an L1 resulted in a more negative waveform than an L2 at approximately 375 to 475 ms after picture onset, which is a relatively late difference in some models of production. Guo and Peng (2007) used a different technique, a "go-no go task" in conjunction with picture naming, to study L2 production with an ERP effect known as the N200 effect. The go-no go task required participants either to make or withhold decisions about semantic or phonological properties of the to-be-produced picture names in the task. The N200 appears on trials where a response must be withheld in the go-no go task, and the assumption is that the response can only be withheld when there is enough information available during production to actually suppress it. This can be used, for example, to compare semantic versus phonological decisions during word production. By comparing the latency of the ERP effect for these two types of decisions, Guo and Peng (2007) found no difference in the latency difference between semantic and phonological N200s when comparing a native L1 group versus the L2 of a learner group (see also Hanulová et al., in press). These findings seem to suggest that delays in L2 word naming might stem from differences in relatively late word-production processes.

Conclusions

Electrophysiological research is largely complementary to experiments that use behavioral techniques, in the sense that it provides more direct information about brain activity. Behavioral techniques such as response time or eye-tracking techniques are much simpler to use in experiments, but often require the arrangement of a specialized task for participants so that a behavioral response can be measured. In contrast, electrophysiological experiments do not necessarily require a behavioral task in many cases, as the EEG response directly reflects brain activity. As such, EEG studies are probably most useful for testing hypotheses about brain function, and their relationship to behavioral measures is an active research question.

The research reported to date on second language processing has so far not reported an electrophysiological effect that has not already been seen in studies of L1 processing, and a relatively common finding is that certain effects which are consistently observed in L1 users are less consistently observed in L2 users. The electrophysiological response to speech sounds and words appears to be qualitatively similar in L2 listeners and readers to that of the L1, with largely quantitative differences in the ERPs that have been reported. At the level of sentence processing, it appears that both syntactic and semantic violation effects

can be observed, but that syntactic violation responses are more variable than semantic effects. Age of acquisition and proficiency both seem to play a role in determining this variability, and the greater variability of the syntactic response would suggest that the grammatical system is more vulnerable to variation in the timing and intensity of input during acquisition or learning.

SEE ALSO: Inhibition and Control in Second Language Acquisition; Research Techniques and the Bilingual Brain; Second Language Representation in the Brain; Sentence and Discourse Processing in Second Language Comprehension

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Brain Imaging Studies and Vocabulary

MICK RANDALL

Brain imaging studies, behavioral studies, and anatomical studies of brain lesions are the three principal methods of investigating the way the brain processes language. The advent of new technologies has greatly enhanced the ability to examine neural activity in the brain, and such studies can be used to provide neurophysiological evidence for insights deriving from behavioral and anatomical studies. Thus brain imaging studies are complementary to evidence from behavioral studies, from studies of brain lesions and aphasia, and from theories of language processing derived from linguistic studies.

In cognitive linguistics, connectionist models are important metaphors to explain language comprehension. Models of lexical semantics and storage such as spreading activation (Collins & Loftus, 1975) and networking (Bock & Levelt, 1994) are central to these metaphors. Brain imaging studies of vocabulary are providing important support for theoretical models based on neural networks.

We shall consider the technologies involved and the methodology of such studies as well as the general anatomy of the brain as regards language processing, and look at the findings of studies connected with vocabulary first with regard to first language and then with regard to bilingual processing.

Methodology

Imaging Techniques

Although a number of techniques exist for investigating brain activity, we shall deal with those which are most commonly used in investigating language processing and divide them into two broad categories: electrophysiological techniques and neuroimaging ("hemodynamic") techniques.

Electrophysiological techniques measure levels of electrical activity. They involve the placement of electrodes on to the scalp to measure electrical activity produced by groups of neurons during specific cognitive processes. It is assumed that such increased electrical activity represents increased neural activity. Electroencephalography (EEG) and magnetoencephalography (MEG) are two such techniques. Both have very high temporal resolution but relatively low spatial resolution. Information is gathered at two times after the activity: the N400 (300–400 ms) and the N600 (beginning at 500 ms).

Hemodynamic techniques do not measure electrical activity, but measure increased metabolic activity such as blood flow. They have relatively poor temporal resolution (i.e., they cannot measure changes in very short time periods) but they have good spatial resolution (i.e., they can pinpoint brain structures involved to within 2–3 mm). Positron emission tomography (PET), the first metabolic imaging method extensively employed, measures emissions from radioactively labeled chemicals that have been injected into the bloodstream. PET was used extensively for the diagnosis of brain damage following strokes and other brain traumas during the late 1980s and 1990s. However, the most common neuroimaging technique today is fMRI (functional magnetic resonance imaging), because it does not use

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intrusive techniques and has enhanced spatial resolution. fMRI measures the magnetic properties of hydrogen and oxygen atoms in oxygenated and deoxygenated blood. fMRI studies are often supplemented by other methods such as EEG, MEG, or even stimulation techniques (where electrical stimulation is used to inhibit the function of specific brain areas).

Procedures

The experimental procedures involved in PET and fMRI studies are based on a subtraction paradigm in which experimenters establish a baseline image of neural activity; for example, subjects looking at a simple "+" in the middle of a screen. The subject is then asked to perform a task (e.g., identify an object) and the baseline pattern is then subtracted from the pattern observed during the task. The experimental conditions are presented either in blocks (block design) or as single events (event-related protocols). The differences between the baseline pattern and the pattern under the experimental condition are assumed to indicate the neural resources involved in carrying out the task. Tasks vary from atomistic, carefully controlled tasks in which a single variable is changed, such as naming a picture, to wider holistic tasks, such as reading a passage in a book.

One criticism of such studies is that there is never only one set of neurons or areas involved in even the simplest tasks and thus results are difficult to interpret (for discussion see Aquire, 1996). In vocabulary studies to measure visual processing, for example, subjects may be asked whether two visual objects are the same, yet the experimenter cannot be sure that the subjects have not subconsciously named the objects and thus involve verbal processing.

Another criticism is that there is a great deal of activity within the brain, and the targeted areas are those which stand out against a great deal of "noise." Thus, the pictures or information gained are actually based on statistics—the highlighted areas are statistically different from other surrounding areas—and thus depend on the statistical thresholds set by the experimenter. It is also necessary to note that not all brains are identical: significant numbers of people have language areas in the right as against the left hemispheres, and right-handed males are usually selected for investigation. Even allowing for this, results are often difficult to replicate and individual differences do exist.

Brain Anatomy

The areas of the brain involved in cognitive processing are described in relation to the cerebral cortex, which is the outermost layer of the brain and has a highly convoluted appearance. This structure is divided into four areas or "lobes": the frontal, temporal, parietal, and occipital lobes (see Figure 1a) and the cerebellum. In brain imaging studies, reference is usually made relative to these areas, with the addition of the adjectives "superior" and "inferior" to indicate top and bottom, and "anterior" and "posterior" to indicate front and back. In addition to the lobes, reference is also made to different gyri (gyrus in the singular), that is, the "ridges" which run across the cerebral cortex and, which, along with the sulci (sulcus in the singular), the "valleys," produce its convoluted appearance. Beneath the cortex lie a number of subcortical structures, the hippocampus and the cingulate cortex being the most important for language processing as they are concerned with memory, and the basal ganglia being involved in planning (see Figure 1b).

Another common neuroanatomical map divides the cortex into numbered areas, Brodmann's areas (BAs). Brodmann, a German neuroanatomist, identified more than 40 areas involved in cognitive functions (see Figures 1a and 1b).

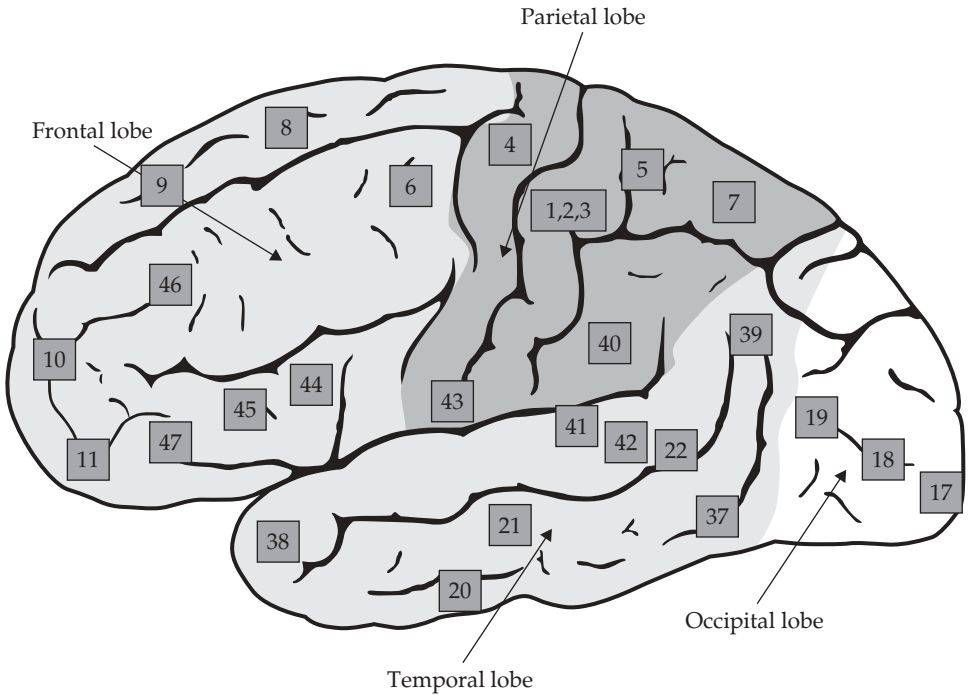

Figure 1a Brodmann's areas: lateral view, showing lobes (adapted from *Gray's Anatomy*)

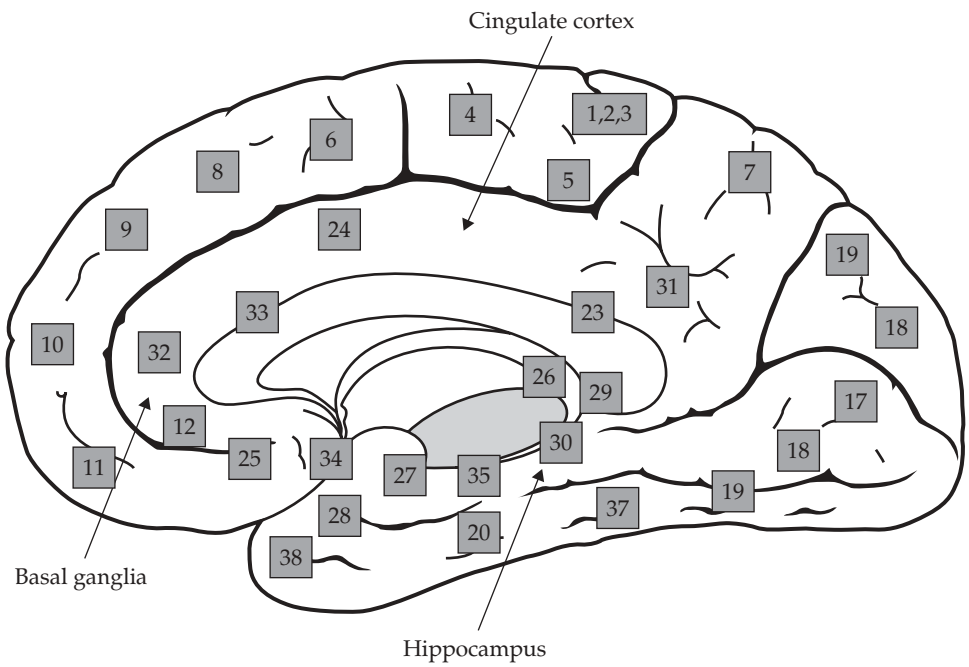

Figure 1b Brodmann's areas: medial view, showing subcortical structures (adapted from *Gray's Anatomy*)

Language Processing and Anatomical Findings

Lateralization

PET and ECG studies have provided neurophysiological evidence for the location of language functions in the left hemisphere. These studies have confirmed the importance of Broca's and Wernicke's areas, revealed by earlier neuroanatomical studies of aphasia. The role of left and right hemispheres can be illustrated by a study comparing object naming and object recognition carried out by Acres, Taylor, Moss, Stamatakis, and Tyler (2009). Verbal tasks correlated with partially overlapping left inferior and anterior temporal lobe areas, whereas the core regions involved in object recognition were those of the right inferior and anterior temporal lobe. However, it should be emphasized that studies show large areas of the brain active in language tasks, and that the areas which are identified by the subtractive methodology are those which differ statistically from neighboring regions.

Language Modularity: Broca's and Wernicke's areas

For many years it was believed that Broca's area (BAs 44, 45) was involved in phonological processing and speech production and Wernicke's area (BAs 22, 39) was primarily involved in understanding syntax and comprehension. However, fMRI studies have shown the situation to be much more complex. Recent evidence demonstrates that Broca's area also plays a significant role in language comprehension, and a number of neuroimaging studies have shown the involvement of Broca's area during the processing of complex sentences.

In a meta-analysis of 129 reports Vigneau et al. (2006) compared areas of activation in the cortex concerned with phonology, semantics, and sentence processing. They found that the patterns of activation are best explained by postulating three neurological networks concerned with phonological processing, semantic processing, and phonological working memory. The areas concerned with these functions include sections traditionally associated with Broca's and Wernicke's areas. Yet these areas do not deal exclusively with one function. Within the semantic field, these authors found seven identifiable clusters, only three of which were concerned with semantic tasks alone.

Parallel Distributed Processing

It is clear that neural processes are widely distributed. Cognitive scientists now accept that there are numerous areas involved in any linguistic task and it is impossible to associate specific language functions solely with specific anatomical areas. For example, the task of recalling words involves many areas, mainly, although not exclusively, located in the left hemisphere. This network includes the inferior temporal lobe, the inferior posterior parietal lobule, the premotor areas of the frontal lobe, the angular gyrus, and the supplementary motor area. These results would seem to support a parallel distributed processing model for language comprehension.

Spoken Versus Written Language

Many studies have investigated the mode of presentation (for a meta-analysis of word production see Indefrey & Levelt, 2004) These studies support the concept of a set of core structures involved in language processing acting as a neural network, and calling on other structures for modality-specific tasks. The core areas within the left hemisphere which are independent of modality are the inferior frontal gyrus (BAs 46, 47), the middle temporal gyrus (BA 21), the supramarginal gyrus (BA 40), and the angular gyrus (BA 39). In addition

to these core areas, auditory presentation is accompanied by extra activity at the primary auditory cortex (BAs 41, 42) and across the superior temporal gyrus bilaterally (BA 22), whereas printed sentences raised activation in the fusiform gyrus (BA 37).

Issues Concerned With Vocabulary

Word Recognition/Processing

There has been a great deal of interest in investigating the degree to which different brain structures are involved in the subprocesses of lexical storage, retrieval, and production. Studies have compared activity during tasks requiring phonological versus semantic processing. Such tasks include detecting rhymes versus detecting synonyms, counting syllables versus categorizing words, and reading/detecting pseudo-words (where the subjects say the word aloud) versus reading/detecting words (where subjects recognize the word silently). Lexico-semantic processing has been found to be associated with activity in the left middle and inferior temporal gyri (BAs 21, 20), the left inferior parietal region (BAs 40, 39), and the left superior prefrontal region (BA 46) in addition to the superior temporal regions (BA 22).

Word Learning

Another issue which has attracted attention is that of the differential resources used to make decisions when verbal associations are new or established. Generally, studies have found greater activation in the inferior frontal gyrus (BA 44) with pseudo-words than with real words, suggesting greater neural investment in the short-term memory with the former.

Item recognition, on the other hand, involves retrieval from episodic memory. The medial temporal lobe is thought to play a mediating role in lexical retrieval and in episodic memory encoding tasks. Achim, Bertrand, Montoya, Malla, and Lepage (2007) investigated these issues in a series of experiments in which subjects were required to make judgments on pairs of words which relied on item recognition or associative recognition. The study indicated that arbitrarily related associations revealed greater activation of the parahippocampal region (BA 36), the area strongly associated with memory and retrieval. In another study differences were seen between automatic semantic priming and strategic semantic priming. Subjects were asked to react quickly to presented word pairs as against being given time to think (Gold et al., 2006). The results suggested a three-stage lexical process involving automatic activation of semantic representations, retrieval of semantic representations, and inhibition of competitors. Such a procedure would be congruent with current connectionist views of language processing.

Word Frequency

Physical word properties, length, and frequency are processed in the same regions as other language items, although low-frequency words are associated with relatively greater activation in the left prefrontal cortex (BA 45), left fusiform gyrus (BA 37), and anterior cingulate gyrus (BA 24) (Chee, Westphal, Goh, Graham, & Song, 2003). The processing of complex words confirms the left temporal lobe (which includes Wernicke's area) as the site of word representation and the inferior frontal gyrus (which includes Broca's area) as the site of processing structural information. Thus, irregular verb inflections will be accessed directly, while regularly inflected words will be decomposed into stems and affixes.

Age of Acquisition of Words

fMRI studies have indicated an increased level of activation in the left inferior prefrontal cortex (BA 45) when making lexical decisions on early- versus late-acquired words. It appears that words early acquired automatically activate auditory representations and map on to semantics. Thus areas in the auditory cortex and the inferior portions of the temporal lobe are activated. However, processing late-learned words involves the analytical inferior prefrontal areas for more complex semantic retrieval and selection processes. In addition, late-learned words elicit activity in the fusiform gyrus (BA 37), which is thought to play a part in orthogonal analysis in the visual word form area. This suggests that late-learned items require more visual form processing than early-acquired words, which have more semantic interconnections and rely on auditory word representations. Overall, imaging studies suggest that late-learned words excite brain areas which involve more effortful processing perhaps related to declarative memory processes (Hernandez & Li, 2007).

Dual Route Reading

There have been numerous neuroimaging studies which have investigated the neurophysiological evidence to support either a dual or a single route for lexical access. In a meta-analysis of 35 fMRI and PET studies of word reading, Jobard, Crivello, and Tzourio-Mazoyer (2003) found common left-hemispherical areas involved in the reading of both words and non-words. In tasks which did not require grapheme-to-phoneme conversion (i.e., recognition of regular words), superior temporal areas (BA 22, included in Wernicke's area), the supramarginal gyrus (BA 40), and the left inferior frontal gyrus (BA 44, included in Broca's area) showed increased activation. In tasks requiring lexical and semantic word access, as with irregular words, additional activated areas included the so-called visual word form area (VWFA) located in the mid-fusiform gyrus (BA 37), the posterior middle temporal gyrus (BA 21), and part of the inferior frontal gyrus (BA 44). It would appear that there are separable areas concerned with lexical and sublexical procedures in word access, and that these areas work in collaboration to facilitate lexical access in different degrees depending on the necessity for grapheme-to-phoneme conversion.

The presence of separable lexical and sublexical processes was further corroborated in a study specifically designed to examine neural areas involved in spelling. Norton, Kovelman, and Petitto (2007) found increased activation involved in spelling regular words in the posterior superior temporal gyrus (BA 22), the area centrally involved in phonological processing. Irregular words, however, elicited greater activation over a variety of other language areas, in particular the inferior frontal gyrus (BA 37), which deconstructs the orthography, producing candidate words which are then submitted to the left inferior frontal gyrus, the bilateral middle temporal gyrus, and the left supramarginal gyrus for semantic verification, as might be predicted from parallel distributed processing models.

First and Second Languages

Another issue which has received attention is the question of how first and second languages (L1 and L2) are processed by the brain. The general finding of the majority of studies is that in bilingual tasks there are no differences in activation between the L1 and L2; both activate the same core language areas in the left frontal corpus (BAs 44, 45). This similarity in processing sites is even seen with Chinese–English bilinguals despite the large differences between the languages, especially between material presented in logographic and alphabetic scripts (Chee, Tan, & Thiel, 1999). The same study also found no differences of activated areas between languages learned early or late. However, many studies have shown differences in the level of activation of the different areas. This often depends on

whether the language was acquired early or late. For example, one study found differences in the level of activation in BA 44 and 45, with more activation of BA 44 for late multilinguals (Franceschini, Zappatore, & Nitsch, 2004), and age of acquisition versus proficiency has received considerable attention. A meta-analysis of imaging studies of bilingual language production indicated more extended activations for L2 speakers with low proficiency (Abutalebi & Green, 2007). Such findings might suggest, as with levels of lexical complexity above, more effortful processing of the less fluent and later-acquired language signaled by greater neural density or connectivity. It has been suggested that the extra resources with later-learnt language could relate to the greater use of declarative memory (phonological analysis, for example), whereas languages learnt early are more integrated into automatic semantic processing systems.

Issues such as the resources deployed in translation and language switching have also been investigated. A number of studies have identified increased activation in the left and right superior prefrontal cortex (BA 46), a region associated with task management, which would indicate the use of a supervisory mechanism during language switching tasks. One model which predicts the use of such a mechanism is that of inhibitory control (Green, 1998), in which competition is resolved by inhibiting the language which is not required in the task set, for example in naming pictures in either the more or less dominant language. Different bilingual neuroimaging studies have indicated activation of the anterior cingulate cortex (generally known for control of attention, conflict monitoring, and error detection), the basal ganglia (known for task selection), and the inferior parietal lobule (working memory) as well as the prefrontal cortex, suggesting that these areas cooperate in cognitive control of language production.

Thus, there would seem to be a consensus that there are common language areas involved in all language processing, whether in L1 or L2, and there would seem to be no evidence of separate lexical stores for the different languages. However, with improving spatial resolution offered by new technologies, differences are beginning to emerge in the degree of involvement of different areas in lexical access and retrieval in bilingual and multilingual tasks within the core language areas. Studies are also beginning to highlight the complex interplay between different areas of the brain, including areas concerned with general cognitive tasks, and it is this interplay which is likely to fuel future research in the area.

SEE ALSO: Bilingualism and Cognition; Brain Activity During Second Language Processing (ERP); Connectionism; Early Bilingual Education; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Modularity in Second Language Acquisition; Psycholinguistic Approaches to Vocabulary; Second Language Representation in the Brain

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Brazil, David

RICHARD CAULDWELL

David Brazil (1925–1995) was the originator of *discourse intonation*—a distinctive approach to research into spontaneous speech and the teaching of pronunciation and intonation (see http://www.speechinaction.com/Brazil.htm). This approach has influenced research, teacher training, and classroom practice around the world. Publications influenced by his work started appearing in the 1980s, and continue to appear—they include Bradford (1988), Hewings and Goldstein (1993), Cauldwell (2002), and Gorsuch, Meyers, Pickering, and Griffee (2010).

When he was 18 he joined the Royal Air Force and served in the latter years of World War II in Italy. He subsequently served for a time in India. On leaving the forces he took advantage of the opportunity to become trained as a teacher, and began teaching English in a number of schools around the United Kingdom. During this period he studied for a bachelor's degree at the University of London, which he obtained after six years of hard work.

He is perhaps best known for his association, which began in the 1960s, with the University of Birmingham. A new degree of Bachelor of Education had been established, and John Sinclair, as professor of modern English language, had insisted that courses on English language should be a compulsory component of this new degree. This necessitated the retraining of teacher trainers, and David—now a teacher trainer—was one of the first to attend lectures on the subject given by John Sinclair and Malcolm Coulthard. In the early 1970s, he studied for a master's degree at the University of Birmingham, and subsequently joined the School of English to act as a research assistant on government funded research projects. He then became a full-time lecturer. It was his work on these projects which became the subject matter of his PhD, and which led to the publication of *Discourse Intonation and Language Teaching* (Brazil, Coulthard, & Johns, 1980).

In his teaching he had the ability to make complex ideas seem simple. He had a way of teaching that made students—and his colleagues—feel that they were participating in a joyful discovery process in which David was learning just as much as they were. He came into academic life later than most scholars, though the advantages of this outweighed the disadvantages. He had a mind untrammeled by preceding practice, and this enabled him to place at the center of his description of intonation those features of speech that other writers felt they had to peripheralize: performance factors and contextual considerations. Other descriptions would only have recourse to such considerations when all the possibilities of ingenious syntactic explanation were exhausted. David, by contrast, placed such considerations at the center of his description. As a result, he produced a model which was at once elegant, simple, and above all, teachable—and his contribution to intonation studies had an immediate impact wherever he lectured. The only disadvantage of his coming late to academic life was that his work did not gain ready acceptance amongst those who were already established scholars in the field.

He retired in 1986, but far from becoming inactive, he undertook a series of secondments and lecture tours overseas. The time he had at his disposal also enabled him to undertake writing projects which culminated in the publication of *Pronunciation for Advanced Learners of English* (Brazil, 1994) and *A Grammar of Speech* (Brazil, 1995). It was only toward the end

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of his life that his work began to earn recognition beyond the circle of people who had come into personal contact with him. His work, particularly *The Communicative Value of Intonation in English* (Brazil, 1997), is increasingly cited and borrowed from in pedagogical texts, and his own *Pronunciation for Advanced Learners of English* (Brazil, 1994) brought him gratifyingly large royalties in the year following its publication. His last and most ambitious publication, *A Grammar of Speech*, was published in the early part of 1995. It represents a fundamental rewriting of grammar, based not on the notion of the sentence, but on the notion of a communicative chunk, the "telling increment," which has syntactic, intonational, and communicative requirements in order to be complete. The goal is to represent a unit of grammar not as a finished entity available for inspection, but as "something that is now-happening, bit by bit, in time, with the language being assembled as the speaker goes along" (Brazil, 1995, p. 37). It is a matter of great regret that David died before he could receive the accolades this publication was awarded—it won the English Speaking Union's Duke of Edinburgh award for Applied Linguistics in 1995.

All those who knew David would say three things about him: "He is one of the nicest men I have ever met," "He is a great teacher," and "He is an original thinker." He had affability, charm, and an ability to relate to everyone he met. Many people find academics intimidating and condescending: everyone who met David would, however, immediately comment on his approachability, and the friendly way in which he would engage with people in whatever most interested them.

SEE ALSO: Coulthard, Malcolm; Sinclair, John; Suprasegmentals: Discourse Intonation; Suprasegmentals: Intonation; Technology and Discourse Intonation

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Bredella, Lothar

EVA BURWITZ-MELZER

Lothar Bredella (b. 1936) is one of the most eminent scholars in the field of intercultural learning and the teaching of literature to learners of foreign languages. As a prolific writer and chairperson of a graduate school on the didactics of understanding others his influence extends far beyond Germany.

Bredella started his academic career at Goethe University Frankfurt where he received his PhD in 1968 and was appointed professor of English studies and the teaching of literature in 1972. In 1975 he was offered a chair at Justus-Liebig University Giessen, where he spent the most important years of his professional life until he became a professor emeritus in 2004. Bredella was a visiting professor at the University of Wisconsin, Milwaukee (1985) and at Simon Fraser University Vancouver (1993).

Bredella is a former president of the German Association for American Studies, the German Society for Foreign Language Research (DGFF), and a member of several other professional organizations. His most important academic achievement was the co-foundation of the Giessen graduate school (*Didaktik des Fremdverstehens*) in 1991 with his colleague Herbert Christ, an interdisciplinary postgraduate program dedicated to research in the area of intercultural understanding and learning. This graduate school became the starting point of a large number of academic careers in the field of intercultural learning and is documented in many books, edited or co-edited by Bredella and mostly published in the series Giessener Beitraege zur Fremdsprachendidaktik (Gunter Narr). Risager (2007, p. 116) names Bredella as one of the main representatives of a "rapprochement . . . between culture pedagogy and literature pedagogy." The Giessen graduate program

> has facilitated broad discussions of the role of literature in language teaching, being not least interested in reading comprehension from a hermeneutic perspective, including such psychological-cognitive skills as empathy, perspective awareness, perspective differentiation, perspective takeover and perspective coordination in connection with the pedagogical work on fictional texts in a foreign language.

Bredella's research interest is in literary theory, especially receptionist literary theory, and its implications for the teaching of literature; the analysis of the process of understanding and the development of teaching methods; and theories of intercultural understanding and the connection between literary and intercultural understanding in foreign language learning. A recent focus of his work is questions of educational philosophy and politics, reflected in statements about German National Educational Standards and their reductionist view of *Bildung* and education in the broadest sense. His latest publications are mainly concerned with the theory of intercultural learning and its manifold implications for the teaching and learning of a foreign language in contrast to transcultural concepts.

Among his most important publications is his *Einführung in die Literaturdidaktik* (1976), which was a "standard classic" in German universities, now replaced by a book co-written with Burwitz-Melzer, *Rezeptionsästhetische Literaturdidaktik* (2004). The central concepts of his approach to the understanding of fictional texts are presented in his monographs *Das Verstehen literarischer Texte* (1980) and *Literarisches und interkulturelles Verstehen* (2002). His most recent publication, *Das Verstehen des Anderen* (2010), embraces all the important

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features of his oeuvre and develops them into a comprehensive theory of "understanding otherness" through fictional text; it includes ideas from many other disciplines, philosophy, social psychology, and cultural theory. Very influential are the numerous anthologies Bredella edited with colleagues, as for example with Christ (1994), which outlines Bredella's concepts of intercultural learning, with Delanoy (1999), with Meißner, Nünning, and Rösler (2000), and Delanoy and Surkamp (2004). Some of his articles appeared in English, for example "The Tension between Assimilation and Identity Politics in James Maloney's Young Adult Novels 'Dougy' and 'Gracey'" (2000a), "Literary Texts" (2000b), and "For a Flexible Model of Intercultural Understanding" (2003).

SEE ALSO: Intercultural Learning; Intercultural Understanding with Literary Texts and Feature Films; Teaching Culture and Intercultural Competence

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Broeders, A. P. A.

TESSA VAN CHARLDORP

A. P. A. (Ton) Broeders (b. 1946) has published extensively in the field of forensic phonetics and still contributes greatly to the professionalization of the field of forensic linguistics and forensic science in the Netherlands and abroad. Broeders does this by questioning the value, validity, and reliability of technical and scientific forensic evidence. He is concerned with the way in which scientists—but also lawyers, prosecutors, and judges—formulate conclusions based on forensic research, and stresses the important role they play in the criminal justice process.

Academic and Working Life

Broeders was born in Breda, a town in the south of the Netherlands, where he obtained his secondary school diploma (1964). He received a university degree (cum laude) in English Language and Literature from the University of Nijmegen (1972) and spent the next sixteen years as a lecturer in English Language and Linguistics at the same university. After taking graduate courses in acoustics, audio recording, speaker recognition, and speech technology, as well as having spent some time in the United States as a visiting scholar (at the City University of New York and the University of California at Berkeley, 1986–87), Broeders joined the National Forensic Science Laboratory of the Ministry of Justice in Rijswijk, the Netherlands (1988). Here he was appointed as a forensic phonetician and linguist.

In 1996, Broeders became the head of the Department of Handwriting, Speech and Document Examination at the Netherlands Forensic Institute (NFI). After running this department for five years, he was appointed as chief scientist at the NFI (2002–07).

Since 1992, Broeders has served as a forensic expert on over a hundred court cases in the areas of speaker identification, text analysis, earwitness identification, and intelligibility enhancement of audio recordings. Furthermore, he served as an expert witness for the UN International Criminal Tribunal for the former Yugoslavia in The Hague in 2000 and 2002.

In 2003, Broeders received his PhD from Leiden University. His dissertation, entitled "In Search of the Source: An Exploration of the Basic Principles of Criminalistics and the Evaluation of Forensic Evidence," was awarded the Prof. A. E. J. Modderman Prize for criminal law dissertations in 2006.

Views on the Field of Forensic Linguistics

In the early stages of his academic career, Broeders was mainly concerned with forensic phonetics such as voice recognition techniques, speaker identification research through earwitnesses, and audio analysis. Broeders (1996) and Broeders and Rietveld (1995) discuss difficulties with earwitness reliability.

Since the late 1990s, Broeders has been mainly concerned with the professionalization of the field of forensic linguistics and forensic science. He advocates expressing conclusions

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in forensic identification disciplines within a logical framework rather than in terms of the traditional verbal probability scales that are still used by expert witnesses in courts worldwide (Broeders, 1999). More specifically, he cautions the field against making "logically incorrect" conclusions (Broeders, 2009). He suggests that experts should always work with two hypotheses, namely the (prosecution) hypothesis that the accused is guilty and the (defense) hypothesis that the accused is not guilty (Broeders, 1999). In his inaugural lecture at Leiden University Broeders pointed out that, in their formal training, criminal judges in the Netherlands are not taught how to evaluate scientific evidence. Broeders argues that this subject should be introduced in all criminal law curricula (Broeders, 2005).

Current Interests

During his academic career to date Broeders has served on numerous PhD committees. He was a founder member and former Executive Committee member of the International Association for Forensic Phonetics and Acoustics, and is currently a member of the editorial board of the *International Journal of Speech, Language and the Law* as well as *Expertise en Recht* (Expertise and the Law).

Broeders resides in the Netherlands and divides his time between the University of Leiden and the University of Maastricht, where he holds the chair of criminalistics. Since its opening in 2008, Broeders has been the scientific director of the Maastricht Forensic Institute (TMFI), the second largest forensic institute in the Netherlands.

Broeders's home Web page can be found at http://www.maastrichtuniversity.nl/web/Faculteiten/FdR/Thema/OverDeFaculteit/Medewerkers/MedewerkersAbc/BroedersA.P.A..htm

SEE ALSO: Forensic Linguistics: Overview

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Brown, Penelope

YOUNHEE KIM

Brown, Penelope (born on November 2, 1944 in Summit, New Jersey, USA) is probably best known for the monograph, *Politeness: Some Universals in Language Usage* (Brown & Levinson, 1987) coauthored with Stephen Levinson. Penelope Brown is currently a senior researcher emerita at the Max Planck Institute for Psycholinguistics in the Netherlands.

She obtained her BA in psychology from Carleton College in Minnesota in 1965 and her MA in anthropology and linguistics from the University of Iowa in 1970. She received a PhD in anthropology from the University of California, Berkeley in 1979 specializing in sociolinguistics, language and thought, and Mesoamerican ethnography.

Brown's early research is influenced by women's studies and her sociolinguistic interest in women's speech combined with her work on politeness. As a linguistic anthropologist, she has done her fieldwork in the Tzeltal Maya community of Tenejapa, in southern Mexico. The data she initially collected in that fieldwork provided the main database for her dissertation "Language, interaction, and sex roles in a Mayan community: a study of politeness and the position of women" as well as providing a conversational database relevant for her later work. In the dissertation, and in a series of publications (e.g., Brown, 1980), she addressed the topic of *women and politeness*. Meanwhile, she coauthored an essay with Stephen Levinson, and published it in 1978, which became the core of their 1987 book *Politeness: Some Universals in Language Usage*. This monograph has come to be accepted as the classic treatment on politeness in communication. In this monograph, Brown and Levinson (1987) develop a rich theory of linguistic politeness around Goffman's concept of *face*. Social interaction is viewed as cooperative activity, in which members work to maintain each other's *face*. This concept of *face* is further divided into two aspects, positive and negative face, or one's positive self-esteem versus one's freedom to act. The universal availability of these two kinds of face wants along with rationality provides the basis for the proposed universal principles of Brown and Levinson's politeness model, which tries to explain the linguistic commonalities of politeness utterances across languages.

Brown joined the Max Planck Institute (MPI) in the mid-1990s and has conducted collaborative comparative research there ever since. Spatial language and cognition has been one of the strongest research strands in the MPI's comparative research project, and in collaboration with her colleague and husband Stephen Levinson, Brown produced extensive research on spatial concepts and language in Tzeltal. In their 1992 paper, Brown and Levinson (1992) report on a linguistic and conceptual gap of "left" and "right" in Tenejapan Tzeltal. They found that Tenejapans use a number of different systems (including a "geocentric" system) to construct a division of space instead of using an "egocentric" system. Levinson and Brown (1994) use the example of Tzeltal to argue that human spatial cognition is not primarily egocentric, presenting a challenge to Kant's view of human conceptions of space and the prevailing assumption among cognitive scientists.

For Brown, research on spatial language and cognition has been a way to explore a bigger research agenda, *the relationship between language, culture, and cognition*, more specifically, the role that linguistic categories play in cognition from a developmental and cross-cultural perspective and the ways in which this role is influenced by the specific

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language and culture. Pursuing a comparative perspective, her research contributes to ongoing debates in the field, for example, universalism versus relativism. Based on her Tzeltal data, she has produced evidence that Tzeltal adult spatial language differs radically from languages where spatial relations are encoded in adpositions, for example, "in," "on," "under" (e.g., Brown, 1994, 2006b). She has pursued this line of research further in a longitudinal study of child language acquisition in Tzeltal, and has shown that there are culture- and language-specific influences on the children's acquisition patterns (Brown, 1998a, 2001, 2007a; Brown & Levinson, 2000, 2009).

Brown's research on child language acquisition not only addresses spatial vocabulary, but also includes acquisition of morphology (Pye, Pfeiler, De León, Brown, & Mateo, 2007), semantics (Brown, 2007a; Narasimhan & Brown, 2009), argument structure (Brown, 2007a, 2008; Bowerman & Brown, 2008), and the role of child–caregiver interaction (Brown, 1998b, 2002a), and Tzeltal children's development of narrative style (Brown, 2004).

Whether and how languages structure our experience differently has been an important question for Brown. Therefore, crosslinguistic investigation of argument structures and verb semantics, or more broadly, patterns of linguistic encoding of events have been an important research topic for her (Brown, 2007c). Her research on crosslinguistic investigation of argument structure and its influence on language acquisition culminated in the coedited volume with Bowerman, *Crosslinguistic Perspectives on Argument Structure: Implications for Learnability* (Bowerman & Brown, 2008). This volume offers an interdisciplinary perspective on verb argument structure and shows that languages are much more diverse in their argument structure properties than has been recognized, challenging the existing assumption that argument structure is strongly constrained by a set of universal principles. In her chapter of the volume, Brown (2008) investigated the relationship of verb semantics to argument ellipsis. Brown suggests that noun ellipsis in transitive sentences is related to the semantics of the verbs and this ellipsis may be a cue to helping children learn the semantics of verbs. Brown also coedited a special issue of the journal *Linguistics*, "The Linguistic Encoding of Multiple-Participant Events" (2007) with Narasimhan and Eisenbeiss. The special issue sketches the challenges that multiple-participant events pose for linguistic and psycholinguistic theories and demonstrates that there is considerable crosslinguistic and within-language variation in how the participants in multiple-participant events are encoded both at the lexical and the constructional levels (Narasimhan, Eisenbeiss, & Brown, 2007).

As part of a large-scale comparative study at the MPI, Brown also conducted a cross-cultural comparison of interactional patterns, revealing universals and particulars of interactional practices such as turn-taking systems, gaze behavior, person reference, and questioning (Brown, 2007b, 2010; Rossano, Brown, & Levinson, 2009; Stivers, et al., 2009). In her latest work, Brown examines the effect of one interactional practice—pointing for joint attention—on children's social-cognitive development in two different cultures, the Tzeltal Mayan community and the Rossel islanders of Papua New Guinea (Brown, 2011). She has also written numerous journal articles and encyclopedia entries on key topics of linguistics (e.g., Brown, 2002b; Brown, 2006a).

Brown continues to be a prolific writer and researcher. She is currently writing two books on Tzeltal: one on spatial language and cognition, and the other on conversation. Her work on linguistic pragmatics and on language and cognition provides an invaluable source of insight for students of applied linguistics, particularly those who are interested in the relationship between language learning, culture, and cognition.

SEE ALSO: Politeness; Politeness and Face Research

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Bush, Vannevar and Hypertext

THOMAS COBB

Widely known as the father or even guru of hypertext and its principal medium the World Wide Web, Vannevar Bush (1890–1974) never employed either of these names. Rather, he envisaged a "memex" system for organizing and retrieving multimedia information on microfilm, memex being a word like rolodex or index (card), that is, more redolent of the actual period of his activities. Yet Bush's memex system went far beyond any index-based information retrieval system and in many ways is the true precursor of the Internet, at least on the concept level.

An engineer, technocrat, and pioneer of analog computing, Bush became part of the mass mobilization of US intellectual resources in World War II. Director of the Office of Scientific Research and Development (1941–7), he was charged with focusing the minds of 6,000 leading US academics and scientists on matters of defense, via, for example, the Manhattan Project that developed the atomic bomb. After the war, Bush became presidential science advisor and hoped to carry the war time mobilization into useful peacetime projects. The basic details of Bush's work and life are well presented in his Wikipedia entry.

What emerged as interesting for Bush in his war work was the issue of information management. *Information* for Bush was roughly equivalent to *civilization*, with retrieval its principle mechanism. In his words: "[Information retrieval] is a much larger matter than merely the extraction of data for the purposes of scientific research; it involves the entire process by which man profits by his inheritance of acquired knowledge" (Bush, 1945, p. 106). And yet, at about mid-century effective information retrieval was starting to become a problem. Bush's efforts to mobilize a nation's intellectual resources had made him aware that there was already in existence more printed and other information available on any given topic than was easily manageable, even as the creation of new information was accelerating. Shortly after the war, in an early and prescient encoding of the sense of being information ridden, Bush described the present state of info-civilization:

> Science has provided the swiftest communication between individuals; it has provided a record of ideas and has enabled man to manipulate and to make extracts from that record so that knowledge evolves and endures throughout the life of a race rather than that of an individual. . . . There is a growing mountain of research. But there is increased evidence that we are being bogged down today as specialization extends. The investigator is staggered by the findings and conclusions of thousands of other workers—conclusions which he cannot find time to grasp, much less to remember, as they appear. (p. 101)

(Lengthy citations will help establish the prescient yet at the same time dated and even quaintly optimistic quality of Bush's thinking as viewed from the present. This citation is from the main document for which Bush is still known, an article written just after the war entitled "As We May Think" and published in *The Atlantic Monthly* in July, 1945.)

Bush's problem with information was not really that there was getting to be too much of it (he seemed never to question the engineer's maxim that more information is usually better), but that the means available for handling it had not kept pace of the means of producing it:

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> The difficulty seems to be, not so much that we publish unduly in view of the extent and variety of present day interests, but rather that publication has been extended far beyond our present ability to make real use of the record. The summation of human experience is being expanded at a prodigious rate, and the means we use for threading through the consequent maze to the momentarily important item is the same as was used in the days of square-rigged ships. (Bush, 1945, p. 102)

The square-rigged ship in question was basically the alphanumeric, name-based hierarchical index system, like the names-within-names of the folder system on the hard drive of your computer:

> The real heart of the matter of selection . . . goes deeper than a lag in the adoption of mechanisms by libraries, or a lack of development of devices for their use. Our ineptitude in getting at the record is largely caused by the artificiality of systems of indexing. When data of any sort are placed in storage, they are filed alphabetically or numerically, and information is found (when it is) by tracing it down from subclass to subclass. It can be in only one place, unless duplicates are used; one has to have rules as to which path will locate it, and the rules are cumbersome. Having found one item, moreover, one has to emerge from the system and re-enter on a new path. (p. 107)

The solution to this problem is to organize information more as humans do, or "as we may think," that is, in associative leaps and links:

> The human mind does not work that way. It operates by association. With one item in its grasp, it snaps instantly to the next that is suggested by the association of thoughts, in accordance with some intricate web of trails carried by the cells of the brain. (p. 107)

This scheme, however, is as we "may" think since we do not yet have all the details:

> Man cannot hope fully to duplicate this mental process artificially, but he certainly ought to be able to learn from it. In minor ways he may even improve, for his records have relative permanency. The first idea, however, to be drawn from the analogy concerns selection. Selection by association, rather than indexing, may yet be mechanized. One cannot hope thus to equal the speed and flexibility with which the mind follows an associative trail, but it should be possible to beat the mind decisively in regard to the permanence and clarity of the items resurrected from storage. (p. 107)

The plan probably seemed idle futurism at the time, but Bush envisaged a real device, which he named a memex (short for memory extender), a "device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility" (p. 107). Physically, the memex would resemble a desk, the top of which would bear "slanting translucent screens on which material can be projected for convenient reading," as queried from a "keyboard, and sets of buttons and levers." Space for all this information is no problem: "The matter of bulk is well taken care of by improved microfilm. . . . if the user inserted 5,000 pages of material a day it would take him hundreds of years to fill the repository, so he can be profligate and enter material freely" (p. 107). The information to be thus collected would not be limited to a text format:

> Most of the memex contents are purchased on microfilm ready for insertion. Books of all sorts, pictures, current periodicals, newspapers, are thus obtained and dropped into place. Business correspondence takes the same path. And there is provision for direct entry.

> On the top of the memex is a transparent platen. On this are placed longhand notes, photographs, memoranda, all sorts of things. When one is in place, the depression of a lever causes it to be photographed onto the next blank space in a section of the memex film, dry photography being employed. (p. 7)

As enthusiastic as Bush was for the simple collecting of information that a memex would make possible, it was more the accessibility of particular pieces of information that interested him, and following that their linking into useful associations. For this he envisaged making full use of traditional indexing:

> There is, of course, provision for consultation of the record by the usual scheme of indexing. If the user wishes to consult a certain book, he taps its code on the keyboard, and the title page of the book promptly appears before him, projected onto one of his viewing positions. Frequently used codes are mnemonic, so that he seldom consults his code book; but when he does, a single tap of a key projects it for his use.

(Like hyperlinks?) But more than index links, it is the associative links that Bush is really interested in:

> All this is conventional, except for the projection forward of present-day mechanisms and gadgetry. It affords an immediate step, however, to associative indexing, the basic idea of which is a provision whereby any item may be caused at will to select immediately and automatically another. This is the essential feature of the memex. The process of tying two items together is the important thing. (pp. 107–8)

More specifically:

> When the user is building a trail, he names it, inserts the name in his code book, and taps it out on his keyboard. Before him are the two items to be joined, projected onto adjacent viewing positions. . . . Thereafter, at any time, when one of these items is in view, the other can be instantly recalled merely by tapping a button below the corresponding code space. Moreover, when numerous items have been thus joined together to form a trail, they can be reviewed in turn, rapidly or slowly, by deflecting a lever like that used for turning the pages of a book. It is exactly as though the physical items had been gathered together to form a new book. (p. 108)

Minus the buttons, levers, microfilm, and dry photography, and with slanting screens replaced by virtual windows on a single but still slanting screen, functionally Bush's memex pretty much describes the laptop your writer is working on right now. But one big difference is that the latter can access not only all the information on a single hard disk but also that on the many other hard disks and stored in networks that "over a billion people have access to [in] the most extensive expansion of information ever compiled" (Wolf, 2007, p. 221).

Hits and Misses

Most of the quarter million hits for "Vannevar Bush" currently itemized on Google, at least on the first few pages, emphasize the amazing accuracy of Bush's predictions, but in fact his track record is mixed. Take the notion of a named information trail, Bush's key idea about how we may think. Technically, this has turned out even better than Bush predicted: the trail of this research for this very entry, that is, the pages that this author

actually went to from the search engine's offering the day before, is automatically stored in chronological order on the browser and accessible in the Internet Explorer's "Favorites" under "History: Yesterday" (and similarly in other browsers). Here, the false starts, dead links, and ads that a typical search now entails can be edited out, something Bush almost certainly did not envisage. But more importantly, somehow the idea of a trail of stored associations has not been the hit that Bush predicted. This author rarely uses his browser's History feature in Web searches, preferring to save good finds as a list of links or documents, either way losing the sequential character of a trail or other information about what he may have been thinking. This is actually quite common: a Google search on "IE favorites history" leads mainly to articles from Microsoft and others about how to use the feature, and there are no studies of how or whether it gets used by information workers (in, for example, the open access database of *Educational Technology Research & Development* at www.springerlink.com/content/1042-1629/).

Other key ideas have fared better. The notion of a mechanized associative search began as pure fantasy but step by step became clear and operable. The notion of capturing an association once provided by a search engine is clear enough, but how the search engine provides the raw material for associations was less so without the replacement of microfilm by digital media and then the many subsequent upgrades of digital processing power. This power was not long coming, and Bush's basic idea of an associative, non-hierarchical search was soon realizable in prototype. An early realization from IBM was Luhn's (1957) proposal to leave the to-be-searched archive itself largely unstructured (like the Web of today) and then retrieve information from it by "using words as indexing units for documents and measuring word overlap as a criterion for retrieval" (p. 316). This is a type of full text search, rather than a folder name and filename (index) search, such as we have enjoyed on our PCs since roughly 2005. The basic idea was developed and tested over the 1970s and 1980s, and particularly since 1992 through the ongoing Text Retrieval Conference series (TREC, sponsored by National Institute of Standards and Technology, which regularly cites Bush's ideas in its proceedings).

The search algorithms now deployed by Google and others are too complex to discuss in the present forum except to say that there is continuity between the associative principle of Bush and the modern search engine of Google and others. Bush is regularly cited as an inspiration by Googleplex fellows including Singhal (2001). Some recent search refinements Bush did not anticipate but that will resonate for applied linguists are that search words are stemmed (fleshed out as families), and multiword searches are recast as phrase first (thus *White House* is searched as a whole phrase first, then conjunctively, and only finally disjunctively). But these refinements are all continuous with Bush's basic concept, and indeed Bush is in some ways still ahead of Google in that a Google search remains a word-form dominated keyword search, with all the limitations pertaining thereto, where, for instance, money *bank* may be sought but river *bank* found. The final realization of Bush's associative idea awaits the fuller implementation of the "semantic Web," apparently just around the corner, where searches will proceed on a conceptual level through XML-encoded documents (Antoniou & Van Harmelen, 2004).

To summarize, Vannevar Bush came up with a remarkably specific blueprint for not only where we have got to in the universe of digital media but also where we may yet be going. It is thus ironic that at the moment of realization the question is increasingly posed, Is this where we want to be going?

What Bush Did Not Predict

We are presently seeing the simultaneous triumph of Bush's ideas along with the emergence of worries that a fully linked docuverse may just be another type of information overload

that this time there really is no solution for. A whole semi-popular subgenre of worrisome assessments has recently sprung up to argue points like "The Internet is rotting your brain" (Miller, 2010) and "Google is making us stupid" (Carr, 2008). Nicholas Carr's *The Shallows* (2010) is a non-academic but still serious work expressing a growing unease about the kinds of mental experience that a fully linked docuverse leaves us with. The basic problem is that fully linked documents provide mainly distraction and overload, and far more of it than people can actually cope with, particularly in the case of those who have had little other experience with texts and information such as children.

This piece from *The Shallows* looks like a realization of Vannevar Bush's happy daydream of buttons and levers:

> For more than a decade now, I've been spending a lot of time online, searching and surfing and sometimes adding to the great databases of the Internet. The Web has been a godsend to me as a writer. Research that once required days in the stacks or periodical rooms of libraries can now be done in minutes. A few Google searches, some quick clicks on hyperlinks, and I've got the telltale fact or pithy quote I was after. Even when I'm not working, I'm as likely as not to be foraging in the Web's info-thickets, reading and writing e-mails, scanning headlines and blog posts, watching videos and listening to podcasts, or just tripping from link to link to link. (Carr, 2010)

The difference, however, is that Carr here is building up to an ultimately negative assessment of this experience, where all this quick, targeted, or scanning type of linked, associative, and highly distractible "reading" is leaving him and presumably others less and less inclined, or possibly able, to get to the end of a longer texts with complex arguments.

Carr's evidence is mainly anecdotal, but he may have a point. Research studies both broad and narrow are starting to look at the costs and benefits of hypertextual, lateral, or search-based reading (to name just a few of the terms competing to name the phenomenon). An broad look is the five-year study (by Rowlands & Nicholas, 2008) of the computer logs from two heavily used research UK Web sites, showing that link-enabled researchers both young and old tend to skim rather than read, hop from one source to another, rarely return to any source they have already read, and rarely read more than two pages of any document, thus not so much reading as "power browsing horizontally" through abstracts and content pages in search of quick references for school assignments and academic tasks.

From the perspective of process and detail, reading researchers DeStefano and LeFevre (2007) review 38 experimental studies on the cognitive consequences of hypertext reading "in order to test the hypothesis that activities specific to hypertext can increase cognitive load and impair learning." (p. 1617). The researchers wonder whether, "When people follow links, they may lose track of where they are in the text, of their reading goals, of the larger context for the node, or of material activated in working memory" (p. 1627). Their review concludes that generally in the experiments reviewed, "many features of hypertext resulted in increased cognitive load and thus may have required working memory capacity that exceeded readers' capabilities" (p. 1636), or at least some readers' capabilities, since "the various manipulations [entailed in linked or hypertext reading] were often most detrimental to the reading processes of less-knowledgeable readers and for readers with low working memory capacity" compared to traditional linear presentations of text.

Few armchair ideas ever get realized, fewer still without surprises. Vannevar Bush formulated his vision of creating and reading linked texts from the perspective of a long-standing offline or linear reader. He almost certainly never thought about what kind of reading would take place once readers were "digital natives," virtually raised on associatively linked or hypertextual reading. The idea is now emerging that coping with multiple interlinked texts constitutes something of a new literacy, which like the old linear model

will have to be the subject of deliberate training and extensive practice, possibly involving either new cognitive skills, or a type of bi-modality between two literacies (see Ong, 1982, p. 175, for speech and text; and Wolf, 2007, chap. 9, for text and hypertext), or both. It is often said that learning to talk is free while learning to read is expensive, creating winners and losers (Gough & Hillinger, 1980; deHaene, 2009); it will probably turn out that learning to read hypertexts while beneficial to the able will be even more expensive, like reading but more so. At the moment, children appear to be floundering in the new literacy while their teachers persist with training and testing in the old—yet another digital divide.

SEE ALSO: Critical Media Literacy; Language and the Digital Divide; New Literacies of Online Reading Comprehension; Searchlinguistics; Teaching Reading; Technology and Literacy

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Butters, Ronald R.

JAN CHOVANEC

Ronald R. Butters was born in 1940 in Cedar Rapids, Iowa, USA. He obtained his BA and PhD degrees in English at the University of Iowa. Immediately after graduation, he took up a position at Duke University, where he taught for 40 years until his retirement in 2007. He was Professor of English (1990) and Professor of Cultural Anthropology (2000) at Duke University, and is now Professor Emeritus. From the 1970s, he was Chair of Duke University's linguistics program and from 2008 President of the International Association of Forensic Linguistics. He is currently a coeditor of *The International Journal of Speech, Language, and the Law,* and was formerly an editor and editorial board member of various journals, including *American Speech*, *Papers in Linguistics*, and *Journal of Metaphor and Symbolic Activity.* His book *Displacing Homophobia* (1989), coedited with John Clum and Michael Moon, won the 1989 Conference of Editors of Learned Journals Best Special Issue award.

Throughout his professional career, Professor Butters has worked primarily in the field of sociolinguistics, where he is best known for his studies in current American English. More recently, he has embraced legal linguistics and the new discipline of forensic linguistics, with a focus especially on trademarks, contracts, and statutes. Since the 1980s, he has prepared over 300 reports and provided expert linguistic testimony in over 60 depositions and court cases.

His sociolinguistic studies in American English have focused on dialectological research and language variation and change, as well as on nonstandard lexical and grammatical forms, especially in Black English and in dialects spoken in the Southern states. He has been most influenced by Leonard Bloomfield, Noam Chomsky, William Labov, Roger Shuy, Raven McDavid, and his colleague, the sociolinguist Walt Wolfram. Butters has conducted research on such issues as the pronoun *y'all* (noting the changes in the pronoun paradigm in the South), word order, and multiple modals in the Southern states. Like all of his influencers except Chomsky, he is interested in the links between language and the relevant speech community. In his view, however, Chomsky's emphasis on rigorous linguistic theory and the early "transformationalist" concentration on the psychology of language highlighted the need for sociolinguistics which had only been nascent in the work of Bloomfield and McDavid.

In his major sociolinguistic work (1989), Butters critically tackles the divergence hypothesis, which claims that Black and White English vernaculars are becoming more different from each other. Numerous linguistic variables (most crucially the invariant *be*, vowel fronting, and verbal *-s*) are shown not to be evidence of actual divergence. On the contrary, there are features (such as final consonant cluster simplification, /l/ vocalization, and embedded yes/no questions) that either indicate convergence or, at least, provide counterarguments to divergence. In this controversy, Butters adopts the position that there is "a mild sort of stable convergence in which linguistic changes arise in both the White and Black communities. The communities borrow from each other, but the dominant pattern of convergence is towards the culture of the majority" (1989, p. 180).

His sociolinguistic approach is also present in his research as a forensic linguistics scholar. Beginning in the 1980s, law firms began increasingly to seek Butters's advice as an expert witness in legal cases. His research interests have now turned to linguistics and

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the law, including the interpretation of the language of contracts and statutes, allegations of defamation, the verifiability of confessions and interrogations, and the interpretation of spoken, written, and electronic linguistic evidence—all areas in which he also offers legal consultancy.

In his early studies on statutory interpretation, Butters applied sociolinguistic methodology: He sought to establish the meaning of a term within a particular discourse community by examining the contexts in which the term is used. As an expert witness in cases involving statutory interpretation, he proceeded to triangulate the meaning (e.g., of the term "committed for pecuniary gain," see Butters 1993) on the basis of: (a) numerous court rulings (which provide meanings sanctioned by the discourse community), (b) the authorial/legislative intent as represented in the legislative proceedings, and (c) the ordinary language definitions and understandings/uses of a given term.

The expert linguistic evidence given by Butters in various cases has provided the basis for many of his articles in which he discusses real-language data against relevant theoretical approaches. Thus he has offered a semantic, pragmatic, and semiotic interpretation of instructions on scratchcard lottery tickets (2004), explored sociolinguistic variation in the courtroom (2007a), and explained ambiguity in legislative instruments (1993). He has also been involved in several major criminal cases. In *State of Louisiana v. Wilbert Rideau* (2005), he revealed linguistic inconsistencies in the defendant's confession, pointing out also that significant portions of the crime's witness statements were tainted by the hand of the interviewing police. In *State of Florida v. Michael Gordon Reynolds* (2008), he analyzed an error in the trial transcript which led to a significant ambiguity in a DNA expert's testimony—an ambiguity that could have unduly influenced the jury to sentence the defendant to death.

However, the major focus of his more recent work in forensic linguistics is trademark litigation (see, e.g., Butters 2007b, 2008a, 2008b; Butters & Westerhaus, 2004). In this area, Butters has been especially interested in the distinction between trademarks and generic terms, focusing on the interface between the lexical conception of such terms as common nouns and the legal understanding of their genericness. In assessing the difference, he draws on dictionaries, inductive analysis of historical and contemporary print-material records, and occasionally native-speaker introspection as represented in sociolinguistic surveys, in order to establish the extent to which the public is familiar with a trademark—what they know and what they believe. From a diachronic perspective, as Butters observes, trademarks may undergo genericide, that is, lose their association with a particular producer and become generic (e.g., *aspirin*, *thermos*). Generic words then identify the product rather than a particular brand of the product. The move toward genericness occurs when trademarks (which in legal conception must be used solely as "adjectives," i.e., nouns used attributively, as in *Xerox photocopy*) are either: (a) used as nonappositive independent nouns (often inflected and with the plural suffix), (b) converted into verbs, (c) printed in lower case, or (d) used in figurative senses. The exact position of the boundary between a trademark and a generic word is fuzzy and often subject to debate.

As manufacturers, in their attempts to prevent their trademarks from becoming generic, continually try to increase public awareness of their trademarks, the process of genericide has become, Butters argues, quite rare in the last few decades. It has been replaced by what he calls "pseudogenerics," that is, trademarks which often exhibit features of genericness, though the public still recognizes them as brand names (e.g., *Xerox*, *Kleenex*, *Google*).

As a forensic linguist, Butters has explored the following language-related issues of trademark litigation: the likelihood of confusion (of two or more marks), the strength of the mark (on the scale of generic/descriptive/suggestive/fanciful/arbitrary), and the propriety of the mark (whether it is "scandalous" or "disparaging"). He has supplemented

these three traditional dimensions with a fourth aspect amenable to expert linguistic consultation in trademark cases, namely "trademark dilution" (see Butters, 2008b), which is legally defined as the "lessening of the capacity of a famous mark to identify and distinguish."

Some of the most notable cases of trademark litigation in which he has testified include: *Aventis Pharmaceuticals v. Advancis* (2004), where he confirmed the possible linguistic confusion between Advancis and Aventis; *Steak N Shake v. Burger King* (2004), where, on the basis of historical research, he found the term "steakburger" to be generic; *Hilliyard Enterprises v. Warren Oil* (2003), where he used semiotic analysis when assessing the use of a checkerboard symbol; and the famous landmark trademark case of *Harjo et al. v. Pro-Football* (1997), which concerned the "political correctness" of the trademark "Redskins" for a famous American professional football team. In *Auto-Nation, inc. v. Acme Commercial Corporation et al. d/b/a CarMax the Auto Superstore*, which concerned the possible confusion between the trademarks Auto-Nation and Auto-Mation, the opposing linguist was Butters's mentor Roger Shuy, who wrote in his book on trademarks that in the end he felt that Butters had the stronger case (Shuy, 2002, p. 143).

Professor Butters is currently working on a monograph on trademarks as linguistic objects. His personal Web page is at http://trademarklinguistics.com/.

SEE ALSO: Linguistic Analysis of Disputed Meanings: Trademarks; Shuy, Roger

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Byram, Michael

PETER DOYÉ

Michael Byram is an influential theorist of foreign-language education and intercultural education whose thinking has helped to shape policies for and research on pedagogic curricula and the practice of teaching-and-learning of languages all over Europe.

Convinced of the necessity to embed foreign-language instruction in the comprehensive context of general education and to view its task as a contribution to the development of intercultural competence, he concentrates his research on the problems of such an integrative approach and of a joint promotion of language-and-culture learning in particular.

He regards the limitation of foreign-language teaching to the promotion of practical, economically desirable skills as a serious mistake and sees the language-learning process as a holistic development consisting of at least three components: the cognitive, the pragmatic, and the attitudinal. As any other valid educational undertaking, foreign-language teaching comprises the promotion of practical skills, knowledge, and attitudes. Based on work with Zarate (Byram & Zarate, 1997), Byram coined the terms

- *savoirs*: the knowledge of cultures and cultural processes,
- *savoir-faire*: the ability to use this knowledge for the performance of speech acts,
- *savoir-être*: the attitudes of openmindedness and tolerance as a basis for such a performance,
- *savoir-apprendre*: ability to discover other people's cultures and languages, and
- *savoir-s'engager*: critical awareness and evaluation of one's own and other cultures.

These expressions have become a core element in the terminology of any scientific discourse on language education in Europe.

Since 2000, Michael Byram has gone one step further. He has examined the relationship of language education and political education and emphasized the congruence of both in the cognitive, pragmatic, and attitudinal domains (Alred, Byram, & Fleming, 2006). He has proposed a superordinate aim, called "intercultural citizenship," by which he means the willingness to become engaged in political action across linguistic and cultural boundaries and the skills and knowledge needed for this engagement. Byram is convinced that this trinity represents the essential task of political and language education in any civil society of our present globalized world and demonstrates—in his later publications—how it can be practiced (Feng, Byram, & Fleming, 2009).

After an initial period of research and a PhD on Danish literature, Michael Byram's professional career began in the 1970s, when he taught French and German in an English community school to both children and adults. In 1980 he became lecturer in education at the University of Durham, was promoted to senior lecturer in 1989 and reader in 1990. In 1994 he was appointed professor of education at the same university, a position from which he retired as emeritus in 2008. During all these years he trained hundreds of teachers for work in secondary schools in Great Britain and supervised over 70 PhD students in various fields of research. Another important part of his occupation was his work as a consultant of the Council of Europe to the Language Education Policy Profiles of individual European countries, such as Belgium, Finland, Hungary, Norway, and Poland, and

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his engagement in the evaluation of a number of bicultural/intercultural European projects. Most fruitful was also his work as special advisor to the Council of Europe Language Policy Division, from which arose the Guide for the Development of Language Education Policies in Europe (Béacco & Byram, 2007). This document, which he wrote together with Jean-Claude Béacco, has become most influential as a basis on which a number of national governments have built their pedagogic curricula and language-teaching programs. Byram has held several visiting professorships including research fellow at the National Foreign Language Center, Washington DC, and visiting professor at Gakugei University, Tokyo.

Michael Byram has published 33 books and numerous articles on foreign-language instruction, on study abroad and on political and general education (Byram 1989, 2008). All these publications are centered around his idea of the role of language teaching and learning in the education of the individual and the development of society. Of course, they always treat different aspects of this concept. The topics range from cultural studies via bilingual and plurilingual education and social identity versus national identity to European citizenship. Some of Byram's books and articles present the procedures and results of his empirical studies, such as his own and joint research projects on language teaching and young people's perception of other cultures, on language learners as ethnographers (Byram, 2001), learning language-and-culture through exchanges, and the representation of target cultures in textbooks for language learning (Byram 1993). He is the editor of the *Routledge Encyclopedia of Language Teaching and Learning* (Byram 2000).

About half his books were published as joint products: He cooperated with a number of influential educationists in Great Britain, France, Germany, and other countries and served as the coeditor, joint author/editor, and contributor of these publications. His books have been translated into other languages, such as French, Italian, Chinese, and Japanese.

Byram's contribution to the promotion of language education certainly lies on the theoretical side. But his practical engagement in various pedagogic projects has also exercised an important influence on the consolidation of existing good practice and the innovation of teaching in conventional contexts. His open and empathetic personality always makes him a welcome speaker at conferences and workshops and a helpful advisor to many a European project. All these activities are accompanied by his membership of various academic societies, such as the Deutsche Gesellschaft für Fremdsprachenforschung and the British Association of Applied Linguistics.

Byram is also a member of the editorial committees and advisory boards of several educational and linguistic journals. He is an elected member of the British Academy of Social Sciences, and he was appointed Chevalier dans l'Ordre des Palmes Académiques in 1995.

SEE ALSO: Citizenship Education; Council of Europe Language Policy and Planning; Cultural Awareness in Multilingual Education; Intercultural Competence; Study Abroad

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Byrnes, Heidi

LOURDES ORTEGA

Heidi Byrnes (1944–) is among the most distinguished foreign language education scholars in the USA. Over more than three decades, her contributions have been characterized by a deeply intellectual commitment to investigating the nature of linguistic competencies that develop through foreign language instruction, and by her leadership in educational innovation and professionalism, where she is well known for having integrated research, praxis, and policy in an exemplary fashion.

Born in Germany, Byrnes visited the USA as a teenager under the auspices of the American Field Service high school exchange program and returned in 1964 to complete a Bachelor of Science in Education from the University of Kansas, followed by a Master of Arts in Modern Languages/Linguistics from Kansas State University. After several years of teaching German and English in Kansas and in her native Germany, she settled permanently in the USA and undertook her doctorate at Georgetown University. There she earned a doctoral degree in German/Linguistics in 1979 and immediately joined the regular faculty of the German Department. She has remained at Georgetown since then, earning the title of full professor in 1991 and of George M. Roth Distinguished Professor of German in 2005.

Byrnes's scholarly contributions are rich and have coherently evolved over the years in synchrony with major disciplinary shifts. In turn, she has encouraged, through the wedding of research and practice, unprecedented innovation in the field of foreign language education and has made unique theoretical contributions to the fields of language testing and second language acquisition.

During the 1980s, Byrnes participated in the theoretical developments that catapulted communicative language teaching to the center of professional international interest, and she played an active role in concomitant communication-oriented assessments. She was particularly instrumental in the development of the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines and oral proficiency interview assessments, including rater training and validation research (Byrnes & Canale, 1986; Byrnes, 1987; Buck, Byrnes, & Thompson, 1989). This and other early work foreshadowed one direction which Byrnes would pursue later, as it demonstrated a keen interest in investigating the relations between assessment and pedagogy, on the one hand, and, on the other, listening, reading, and writing as skills in which texts play a central role (Byrnes, 1984a, 1984c; Swaffar, Arens, & Byrnes, 1991) and in which grammar interacts with discourse in the service of making meaning (Byrnes, 1984b). Much of these efforts also gradually involved encouraging the critical search by the collective of US foreign language educators for theoretical underpinnings for their practice, and the deepening of ties between the foreign language research community and the community of applied linguistics. Two important edited collections in the 1990s (Byrnes, 1992, and 1998) are a good reflection of these two goals.

A related emerging theme in Byrnes's writings at the close of the 1990s was developing a well-justified intellectual and theoretical rationale for the purposes and goals of foreign language education in society and in academia (Byrnes, 1990). These developments in her thinking were profoundly impacted by formative service experiences at Georgetown

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University during those years, as department chair for six years and particularly in her work as Associate Vice President for Academic Affairs from 1993 to 1995. The role of administrator in the institutional upper echelons made her realize the importance of programmatic and policy-oriented, broad thinking in justifying the purpose of foreign language studies in the USA. Soon she embarked on a long series of strategic writings which explored how the community of US foreign language educators should function by having university departments think collectively and programmatically (Byrnes & Kord, 2001; Byrnes & Maxim, 2004), by meaningfully mentoring graduate students (Byrnes, 2001), and by resolving the traditional divide between language and content and softening the institutional borders between scholarly and service teaching (Byrnes, 2002a).

Continuing into the 2000s, Byrnes furthered her personal vision of a needed, fruitful overhaul in foreign language education scholarship and professional practice on three fronts: the action-oriented, theoretical, and empirical. First, in 1997 she acted upon long-percolating intellectual insights by spearheading an unprecedented curriculum innovation initiative that spanned all proficiency levels and programmatic components (from materials to teacher training to testing and evaluation), in the Georgetown German Department. This effort resulted in the creation of a successful and comprehensive curriculum for German foreign language education that embodied the careful articulation of content and language learning throughout, in the process doing away with the dividing lines between lower-division and upper-division teaching that she argued plagues most language departments in the USA. This exemplary initiative was developed, implemented, evaluated, and made sustainable in the long term partly thanks to Byrnes's formidable leadership and the unconditional support it garnered from close colleagues, students, and collaborators, many of whom soon became coauthors in key publications about the project; and partly due to sufficient levels of intramural funding as well as funding from the Spencer Foundation. Byrnes also worked along a second, theoretical front by making her curricular ideas transcend beyond her local context and fleshing out the theoretical underpinnings of the main elements of the new curriculum content (Byrnes, 2005) and tasks (Byrnes, 2002b). Importantly, Byrnes imbued both with the constructs of genre and textuality (Byrnes, Crane, Maxim, & Sprang, 2006) under the guidance of systemic-functional linguistic theory (Byrnes, 2006b). It is this novel blend that Byrnes advocates as an optimal solution for securing the future of foreign language education in transnational societies and achieving the mission to support the attainment of advanced levels of language and literacy in additional language learning (Byrnes, 2012). In a third, empirical front, Byrnes and associates have published a number of comprehensive studies that offer evidence regarding the linguistic and literacy competencies (Byrnes, Maxim, & Norris, 2010) and the curricular and educational learning outcomes (Pfeiffer & Byrnes, 2009) that ensue from this innovative curriculum. With this empirical work she has come full circle and contributed to the development of new knowledge in the fields of second language testing (Byrnes, 2002b), second language acquisition (e.g., Ortega & Byrnes, 2008; Byrnes, 2009), and, more recently, second language writing (Byrnes, 2011; Byrnes & Manchón, 2012).

Since the mid-2000s, all of Byrnes's work has been strongly influenced by the ideas of systemic-functional linguistics, which in her mind hold the potential to renew curriculum, pedagogy, and applied linguistic theory alike (Byrnes, 2006a). Indeed, Byrnes has found a most profitable match to her long-standing interests of the 1980s and 1990s in this theoretical framework, which addresses language description, use, and learning as a socially grounded phenomenon, always working at the level of oral and written texts that are embedded in social contexts.

Byrnes's service to the profession has also been rich and deep. She has reviewed for numerous international and national funding agencies, publishers, and journals. Particularly central has been her association with the *Modern Language Journal* as a member of the

editorial board uninterruptedly since 1992, an associate editor from 2001 until 2013, and prospective editor-in-chief after 2013. Noteworthy is her conceptualization as associate editor of the highly original biannual *Perspectives* section, which addressed topics of current and controversial professional interest during the first decade of the 21st century. Byrnes has also conducted external reviews of over 25 programs of foreign languages in universities across the USA and other countries, and she has served as evaluator for professional curricula such as those in the Department of Modern Languages of the US Naval Academy and the CIA Language Schools. She was 2011 President of the American Association for Applied Linguistics and has played many other key leadership roles in the American Association for Teachers of German, the American Council on the Teaching of Foreign Languages, the Modern Language Association, the Northeast Conference, and the College Board. In addition, her experiences have lent her a particularly acute sensitivity for professional advocacy in the realm of national language education policy. In 2007, she planned and executed an unprecedented series of panels about these issues at four main conferences in the USA, culminating in an invitational conference and a multivocal exploration of policy needs published in the *Perspectives* section of the *Modern Language Journal* (Byrnes, 2008). Not to be missed is the fact that Byrnes continues to teach unflaggingly in the Georgetown German Department at both the undergraduate and graduate levels and at all curricular levels of language proficiency.

Byrnes's achievements have been recognized internationally with innumerable invitations as keynote and plenary speaker, and she has received many scholarly distinctions. A sample includes a Mellon Fellowship in 1991; the Award for Distinguished Service in the Profession by the Association of Departments of Foreign Languages in 2002; and the ACTFL Nelson Brooks Award for works and writings that have changed the foreign language profession in 2004. Byrnes has also been an Honorary Member of the American Association of Teachers of German since 2008 and an approved Fulbright Specialist in applied linguistics at the Council for International Exchange of Scholars since 2009.

Byrnes continues to inspire new researchers with her innovative thinking and generous intellect. Her integration of intellectual-theoretical, curricular-programmatic, and policy-level interests into a life opus of writings and actions provides future applied linguists with a strong role model for scholarship and professional citizenry.

SEE ALSO: Genre-Based Language Teaching; Innovation in Language Teaching and Learning; Integration of Language and Content Learning; Language, Culture, and Context; Relations Between Oral Language and Literacy; Standard Setting on Language Tests; Systemic Functional Linguistics; Writing Development in Second Language Acquisition; Writing and Genre Studies

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Canada's Office of the Commissioner of Official Languages

SYLVIE A. LAMOUREUX

The Office of the Commissioner of Official Languages is an important element to Canada's national language policy implementation and development (available online at http://www.ocol-clo.gc.ca/html/index_e.php). In 1963, when tensions between French and English Canada challenged the very future of its Federation (1867), the federal government launched the Royal Commission on Bilingualism and Biculturalism to investigate the realities of bilingualism in Canada and make recommendations to strengthen the confederation based on the principles of two equal founding peoples, the English and the French. The Office of the Commissioner of Official Languages was created in 1969 as part of the first *Official Languages Act* adopted by the Canadian Parliament, based on the recommendations of the Royal Commission on Bilingualism and Biculturalism. The Office of the Commissioner of Official Languages provides policy makers with a mechanism to oversee the implementation of and compliance with a far-reaching language policy meant to bridge two divided linguistics groups, the Anglophones and the Francophones, and their respective minorities.

The scope of the *Official Languages Act* and the authority of the Office of the Commissioner of Official Languages are limited to areas of federal jurisdiction. They do not have jurisdiction in provincial, municipal or private sectors, except privatized former Crown Corporations such as Air Canada and Via Rail.

The role of the Office of the Commissioner of Official Languages is complex and continues to evolve in its complexity. Dyane Adam (2004), Canada's fifth commissioner, explains that the commissioner and its office are neither a language police, nor a simple institutional mediator. As spokesperson for the Office of the Commissioner of Official Languages, the commissioner reports directly to parliament through annual and other reports, as per Sections 66 and 67 of the *Official Languages Act*. The commissioner, an officer of parliament and an agent of change, is appointed for a seven-year renewable term by resolution from the Senate and House of Commons. Graham Fraser, appointed in 2005, is Canada's sixth Commissioner of Official Languages.

A second *Official Languages Act* was adopted in 1988 (http://laws.justice.gc.ca/eng/O-3.01/FullText.html) to align the original Act with the *Canadian Charter of Rights* (1982) and amended in 2005 (Office of the Commissioner of Official Languages, 2009). Of note, are the 2005 amendments to Part VII of the *Official Languages Act* that "imposed an explicit obligation on the federal government to take positive measures for the growth and development of official language communities, and to promote the use of both languages" (Fraser, 2009, p. IX).

The duties and functions of the Office of the Commissioner of Official Languages are stated in Part IX of the *Official Languages Act*. Article 56 deals with its mission and mandate. The roles of Office of the Commissioner of Official Languages are many, allowing a diversity of measures and interventions to ensure that the objectives of the *Official Languages Act* are met. The fifth commissioner, Dyane Adam, conceptualized her function as that of institutional mediator that must both regulate and enable conciliation (Adam, 2004, p. 52). Whereas she had identified three distinct roles for her duties as commissioner, that of

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ombudsman, auditor, and promoter, the Office of the Commissioner of Official Languages' website now identifies six roles. Along with the three identified by Adam, there are additional roles as liaison, proactive monitor, and court interventions. The original role of promotion has been expanded to include education.

The mission and roles of the Office of the Commissioner of Official Languages allow for investigation through audits, evaluations, research, and studies; recommendations to ensure better compliance with the *Official Languages Act*; receiving of complaints; interventions in and appeal to Federal Courts; and proactive implementation of the Act through monitoring. They also issue report cards following audits of specific departments and follow-up on the implementation of recommendations. This office does not, however, have the power to impose disciplinary sanctions or penalties; they are not, as Adam (2004) confirms, a language police.

The Office of the Commissioner of Official Languages makes an important contribution to knowledge mobilization about bilingualism, official language minorities, and implementation of language policy and planning through its own research activities and those that it supports, including conferences and meetings. These activities and strategies are positive measures for the vitality and promotion of official language communities.

Although the Office of the Commissioner of Official Languages' jurisdiction does not extend to provincial, municipal, or private sectors, Adam (2004) confirms that the commissioners who preceded her did in fact express themselves on matters beyond their jurisdiction. She looks to the scope of Article 82 to find support for their "activism," in their role as ombudsman. For Adam (2004, p. 50), this article clearly states the precedence of the *Official Languages Act* over all other incompatible articles or dispositions of all other laws in Canada, except the Canadian Charter of Rights. In situations where commissioners did in fact express opinions or concerns in areas outside their jurisdiction, members of parliament could and did question their personal authority to go beyond their mandate. The legitimacy of the commissioners over-reach, however, is ultimately judged by public opinion (Adam, 2004).

The Office of the Commissioner of Official Languages is an important element to Canada's national language policy implementation and development. For 40 years since the adoption of the *Official Languages Act* and the creation of the Office of the Commissioner of Official Languages, the annual reports have shed light on the accomplishments, the improvements and what needs to be done to meet the objectives of the *Official Languages Act*. But, as Fraser highlights in a 2010 news release (OCOL, 2010), the federal public service continues to wait to react to complaints before ensuring compliance with the *Official Languages Act*, rather than act proactively. Resistance seems to persist. The need for the Office of the Commissioner of Official Languages remains.

The Office of the Commissioner of Official Languages is no longer Canada's only ombudsman for official languages. Four other provincial and territorial jurisdictions, New Brunswick, Ontario, Nunavut, and the Northwest Territories now have their own provincial commissioners to watch over, guide, and support the implementation, planning, and policy development of official bilingualism at the provincial level. The five commissioners met as a group in August 2010. As we look to the future, collaboration and support across jurisdictions for the implementation of the official language policies seems plausible, possible, and desirable, in line with the objectives of the *Official Languages Act*.

SEE ALSO: Language Policy and Multilingualism; Language Policy and Planning: Overview; Language, Politics, and the Nation-State; Language Rights in Language Policy and Planning; Nation; Quebec Charter of the French Language and Canadian Language Policy

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Candlin, Christopher N.

RODNEY H. JONES

Christopher N. Candlin (1940–) is a major figure in applied linguistics, particularly in the areas of communicative language teaching and professional communication. He holds a BA in modern languages from Oxford, an MPhil in linguistics from Yale, and an honorary PhD from the University of Jyväskylä, Finland, and has held teaching and research posts at the University of Leeds, University of Lancaster, Macquarie University, City University of Hong Kong, and the Open University (UK). He has also held visiting and honorary professorships at a number of institutions including the University of Hawai'i, the East–West Center, Ontario Institute for Studies in Education, and University of Cardiff. Concurrent with these posts he established a number of important research institutes and centers including the Institute for English Language Education at the University of Lancaster in 1976, the Centre for Language in Social Life at the University of Lancaster in 1983, the National Centre for English Language Teaching and Research (NCELTR) at Macquarie University in 1987, which was a Commonwealth Key (National) Centre for Teaching & Research, and the Centre for Language in Social Life at Macquarie University, Sydney in 1994. He served as head of the department of linguistics and modern English language at the University of Lancaster between 1980 and 1983. He is currently senior research professor at Macquarie University. He has also been an important force in publishing in applied linguistics, editing 11 international book series with such publishers as Oxford University Press, Addison Wesley Longman, Routledge, and Palgrave Macmillan.

Candlin's most influential early work centered on defining the field of communicative language teaching and formulating principles for the design of communicative curricula (Breen & Candlin, 1980; Candlin, 1981, 1989). In this work he argued that communicative language learning involves learners being socialized into new kinds of social roles and social identities while at the same time drawing on a range of competences they already have based on communication in their native language and culture. Thus, curriculum design is an essentially reflective and critical process (Candlin, 1984) of facilitating a negotiation between the target repertoire and the abilities and expectations of learners. Related to his work in communicative language teaching, Candlin also made a significant contribution to the theory and practice of task-based language learning (Candlin, 1987b; Candlin & Murphy, 1987), devising a framework for organizing language-learning tasks based on various systematic components including goals, input, setting, activities, roles, and feedback.

In the later part of his career Candlin become increasingly involved in the study of professional communication, especially in the areas of law and medicine, an interest which began as far back as the mid-1970s with his work on developing language curricula for overseas doctors and medical staff (Candlin, Bruton, & Leather, 1975). In many ways his research in these areas helped to define the role of applied linguistics in the domain of professional communication and demonstrated the ways that linguists and discourse analysts can engage in fruitful collaboration with institutional and professional members. Not only has this work resulted in a wealth of findings directly applicable to the refinement and improvement of professional practices in a range of disciplines, but it has also yielded a number of important insights about discourse in social life relevant to other settings.

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Among these is the notion that communicative situations, especially in institutional and professional contexts, often involve "critical moments" in which issues of power, rights, claims, and responsibilities are critically evidenced, and in which discursive competence is particularly consequential (Candlin, 1987a). Observing such moments is of particular value for analysts, for it is in "critical moments" that the relationship between professional practices and the discursive practices which either support or undermine them become especially apparent.

Another of Candlin's important contributions has been in the study of the strategies professionals use to control communication processes and outcomes and define situations in particular ways. Most of these insights have come from the study of the discourse of alternative dispute resolution (Candlin & Maley, 1994, 1997), in particular how mediators use *reformulations* to reframe situations by altering experiential, interpersonal, and textual aspects of the message, and how they draw upon the discourses of other professions, specifically law and therapy, to create effective "inter-texts." In this work Candlin demonstrated that strategic uses of language in such settings are, as he puts it, the "interpenetration points, par excellence" for the study of intertextuality and interdiscursivity (Candlin & Maley, 1994, p. 79).

More recent work has focused on the discursive construction of risk and expertise, especially in health-care settings (Candlin & Candlin, 2002), demonstrating how the quality of health outcomes is directly related to the quality of discursive encounters between professionals and lay participants.

Candlin's research both in English language teaching and learning and in professional communication has resulted in numerous concrete benefits for professional practitioners and their clients, patients and students, and paved the way for future work on the relationship between discourse and professional practice.

SEE ALSO: Medical Discourse; Task-Based Learning: Cognitive Underpinnings

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Carroll, John B.

PETER SKEHAN

John (Jack) Bissell Carroll was a psychologist interested in language who had immense impact, both within his own field and also in applied linguistics. He was born in Hartford, Connecticut, in 1916, attended Wesleyan College for undergraduate work, and then completed a PhD at Minnesota in 1941, also working with L. L. Thurstone at the University of Chicago. He held academic posts at several universities, but most importantly in the Graduate School of Education at Harvard, and as William R. Kenan Professor of Psychology at the University of North Carolina. He also worked for a time at the Educational Testing Service (ETS). He died in 2003, aged 87.

His contributions are enormous and diverse. But we can start with his own central concern. Jack Carroll linked his interest in language with impressive knowledge of multivariate statistical techniques. He was fascinated by individual differences, and the structure of abilities, particularly the way language abilities fitted into the wider picture of cognitive functioning. His first significant publication was "A Factor Analysis of Verbal Abilities" (1941); his magnum opus, published in 1993, was *Human Cognitive Abilities: A Survey of Factor Analytic Studies*, demonstrating remarkable constancy in the nature of his interests. His 1993 book put forward a three-stratum view of human cognitive functioning, working from one general intellectual functioning factor, to a second stratum of broad ability domains (e.g., reasoning, verbal abilities, memory abilities), to a third more detailed stratum with more specific factors such as verbal comprehension, phonetic coding, vocabulary (all within verbal abilities). All this was meticulously supported through a meta-analysis of 461 data sets.

In considerable contrast, when Carroll was just 13 he attended a lecture by Benjamin Whorf, sparking an interest in Whorf's work on cultural relativity, and leading to a personal friendship. This led to a considerable growth in Carroll's knowledge of linguistics, and he retained contact with Whorf, collaborating with him on language work, and culminating in Carroll's editing of Whorf's work in *Language, Thought, and Reality: Selected Writings* (1956). At around the same time, he participated in conferences organized under the aegis of the (US) Social Science Research Council which culminated in Osgood and Sebeok's (1954) *Psycholinguistics: A Survey of Theory and Research Problems*, a volume which was foundational for the emergence of the subfield of psycholinguistics. Another distinct, and typically prescient contribution to applied linguistics was Carroll's work (from his time at ETS) in the production of the *American Heritage Word Frequency Book*, a significant educational contribution in providing frequency data that was linked to the effectiveness of educational decision making, and which foreshadowed work in corpus linguistics. He specialized in the statistical underpinning of the research, looking at how information from different corpora could be combined, and how inferences could be made that go outside the specific corpus that is being analyzed (Carroll, Davies, & Richman, 1971).

These general achievements set the scene for Carroll's three more specific contributions to applied linguistics. These are to educational linguistics, to language testing generally, and to the area of language aptitude measurement and theory. His contribution to educational linguistics was the publication of his seminal "A Model of School Learning" paper in 1963. The model combined individual difference factors (e.g., aptitude, motivation) and

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instructional factors, and explored how these two sets of influences could interact, thus anticipating the condition-seeking, interaction-oriented research that is now more commonplace. In other words, while individual differences were important in this model, a major contribution was to bring out how these differences could be compensated for by appropriate instructional decisions, sensitive to the needs of individual learners.

Carroll's contributions to language testing are wonderfully diverse. Practically, he directed an extremely important international survey into the teaching of French (Carroll, 1975). This was ground-breaking, making the development of standardized measurement procedures central, and explored how measurement in eight different countries, with clearly different educational environments, could be conducted in a manner that allows international comparisons. Carroll also made contributions to foreign language testing theory. In an early article on cloze testing (Carroll, Carton, & Wilds, 1959), he concluded that the format did not have considerable potential, since the processes that it uses are primarily local in nature. He also theorized language testing in interesting ways. First, he was less interested in "systems" for analyzing tests, for example, skills-by-levels matrices, and instead focused on processes that underlie language performance. Second, he stressed the importance of integrative testing, rather than the atomistic approach which was perhaps more typical at the time of his interest in language testing. These concerns are expressed in an influential article published in 1968, "The Psychology of Language Testing," in which he explored the significance of a competence–performance distinction (and of nonlinguistic influences on test scores), of the importance of individual differences in their potential for interaction with testing formats, and of the importance of analyzing test formats. Carroll also contributed an interesting chapter to the debate on the unitary competence hypothesis, which raged during the 1970s (Carroll, 1983). He demonstrated that a single factor solution to batteries of language tests (implying a unitary competence) could easily emerge if inappropriate analyses were conducted. The chapter is a clear tutorial about the importance, for factor analytic studies, of the careful consideration that is needed as to which tests or measures to include, and how to analyze the resulting dataset.

But it is Carroll's work with foreign language aptitude that is the most distinctive and enduring. With Stanley Sapon (Carroll and Sapon, 1959) he published the Modern Languages Aptitude Test (MLAT), a general purpose, omnibus test battery to measure language learning ability. The manner of developing this test battery is as interesting as the battery itself (Carroll, 1962). Carroll developed over 50 potential aptitude tests. Some predictor tests were then eliminated because, simply, they did not correlate with achievement. But the successful predictors were submitted to a factor analysis. This had two outcomes. Tests identified as duplicating one another could be eliminated. The factor analysis also demonstrated that four factors seemed to underlie the relations between the different tests. These were phonemic coding (the ability to analyze sound so that it could be retained for more than a few seconds); grammatical sensitivity (the talent to identify the functions that words fulfill in sentences); inductive language learning ability (the capacity to take a corpus of a target language, analyze it, and then form generalizations and extrapolate as to how new utterances could be produced in a rule-governed way); and associative memory (the ability to make links between verbal pairs of elements). The MLAT arose from this research foundation, and has been the most influential foreign language aptitude test of all time. It has been extensively validated, and has norms that facilitate interpretation. It has been translated and adapted for many languages. It was most influential in the 20 years of so after its development (Carroll, 1973). Subsequently, it lost favor somewhat, and was associated with outmoded, audiolingual methodologies. Indeed, it went out of print for a time, but is now available again.

The more recent reassessment of Carroll's aptitude work is very interesting. Two factors may be relevant. First, there is now a wider appreciation of the importance of individual

differences in language learning. It is less common to assume that all learners are the same, and so research studies now are far more likely to differentiate between learners, and even explore learner–treatment interactions. Second, Carroll's four-factor aptitude theory has been seen to have relevance for contemporary issues of dyslexia, of acquisition, and of the first–second language acquisition comparison. Phonemic coding ability, for example, has been shown to have links to procedures used to measure (native language) dyslexia. More process-oriented approaches, which examine a learner's capacity to identify interlanguage generalizations, recognize that not all learners operate acquisitional processes in the same way. For example, Robinson (1996) has explored how different instructional conditions link to (MLAT-based) measures of aptitude. Others have explored issues such as whether first language processes are implicit, while second language processes are explicit, and have used MLAT-based measures to cast light on critical period effects. Most recently, Abrahamsson and Hyltenstam (2008) have argued that second language learners who defy critical period limitations are learners who are equipped with very high aptitude.

Of course, there are limitations to Carroll's aptitude work. With the language-oriented subtests there is little theoretical foundation, and future research needs to show how what is measured is grounded in acquisitional theory. In addition, there is insufficient emphasis on proceduralization issues (although this is difficult to build in to what are relatively brief tests). And most glaringly, memory research has developed apace since Carroll's development of a fairly limited associative memory test. There is nothing, for example, on working memory (unless one designates the phonemic coding ability factor as addressing this area). But set against these limitations, Carroll entirely shaped the way we think about aptitude, and the ways we research it. He has left us concepts and measurement tools that are still highly relevant, more than 50 years after they were developed.

SEE ALSO: Aptitude in Second Language Acquisition; Assessment of Integrated Skills; Factor Analysis

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Case Study

PATRICIA A. DUFF

Defining Case Study Research

Case study is a very common and important approach to research in applied linguistics and many other academic and professional fields. Case studies are frequently qualitative and interpretive, but they can also be combined with, or can include, quantitative analyses and other approaches to knowledge generation. Case studies generally involve rich contextualization and a deep, inductive analysis of data from a small set of participants, sites, or events in order to understand aspects of language learning or use. Sometimes the focus of study is the knowledge, performance, or perspectives of a single individual, such as a language learner or teacher. Other types of case study may focus less on the individuals involved and more on a single speech event, activity, institution, policy, country, or scenario in which particular language issues figure prominently and are the focus of analysis. Regardless of what constitutes the case (a person, site, or situation), by definition, one or more *single bounded units* are selected for study because of their complexity, the types of interactions among their constituent parts, or how the cases relate to existing knowledge or theories about the way language operates in the world. The cases may confirm, disconfirm, complicate, illustrate, describe, explain, or extend existing knowledge in a variety of ways and drawing on a variety of epistemologies and theoretical and methodological frameworks. Despite the range in types and purposes of case studies, one commonality is that they provide concrete instances of a phenomenon of interest.

Case Studies in Applied Linguistics

Case-study research has played a crucial role in applied linguistics across a wide range of subspecializations, from second language acquisition (SLA) to pragmatics, studies of bilingualism and multilingualism, workplace communication, language policy, classroom pedagogy, or linguistic-landscape research in a particular region. One reason case study can be so compelling is its seeming simplicity and singularity. By examining quite intensively the experiences or characteristics of just one or a few people or contexts, researchers aim to understand in a more holistic way (usually) the intricacies and inner workings of the people, events, systems, or policies under scrutiny. The case then becomes a vivid exemplar of larger processes and conditions related to language. Although generalizations from the observed cases to all other cases in the same class, set or population (e.g., all students from a particular linguistic background, all workplaces, all classroom instruction) are neither desired nor possible, case-study research does have the potential to generate analytic generalizations, providing implications for models or theory (Duff, 2006). In addition, because fewer participants or sites are involved (typically) than in many other types of applied-linguistic research, a greater degree of contextualization can be included, and the complexities of the interaction between participants and their social, political, educational, or interpersonal situations can also be explored more fully. However, there are inevitable tensions and trade-offs in seeking local, highly situated understandings of particular

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phenomena versus trying to derive more general principles about applied linguistics and about humans' capacity to learn, use, or negotiate language. One challenge for case-study researchers, then, is to highlight the particularities of cases and contexts but also derive broader principles or observations of relevance to the field or to other readers beyond the specific cases in question.

This entry presents a brief overview of case studies in applied linguistics. Duff (2008, especially chap. 3) provides many detailed examples of research questions and studies that have characterized different decades of research, especially in L2 learning and education. In the same book, the philosophical underpinnings of case-study research are described in more depth and practical advice is given about conducting and reporting on case studies. Rather than reproduce that earlier material or studies featured in Duff (2012), this entry will profile other recent case studies from a variety of publications and types of research in order to help illustrate principles of case-study research.

The journals *Applied Linguistics*, *Journal of Language, Identity, and Education* (*JLIE*), *Journal of Second Language Writing*, *Modern Language Journal*, and *TESOL Quarterly*, among many others, often publish case studies nowadays, although that has not always been the case. A recent special issue of *JLIE* (Block, 2008a), for example, was titled *Multilingual Identities and Language Practices in a Global City: Four London Case Studies*. In a sense, the entire special issue constitutes a case study of multilingualism in one of the world's most cosmopolitan and multicultural "global" cities, and follows up on earlier work and larger studies by Block and his contributors on this same theme. The "case studies" in the special-issue volume included Block's (2008b) own study of Spanish-speaking Latinos (SSLs) in London, one particular community (albeit a fragmented one, as he points out) or case. He includes a discussion of census data and other publications about Spanish speakers in London over the past generation, and then describes the experiences of a subset of SSLs (four out of eight in total) he had interviewed and reported on elsewhere in more depth, all with respect to his underlying question of whether the SSLs in London constituted a cohesive community. It is therefore a kind of *nested* case study: The city is a case (of urban multilingualism, of a "global city"); the Spanish-speaking population in London is another case, illustrating the larger theme; and then profiles and data from four interviewees (focal cases) are included, revealing that they seem to represent a kind of "invisible minority" in London in this "emergent" community.

The second "case" in the special issue, by Cooke (2008), features a different demographic: youth migrants in London struggling with their "identities, positionings and education" (p. 22), in part because of the mandated national English-language curriculum, which was designed for adults, not teenagers. The focal participants (cases), all male, include a Kurdish Iraqi, an Angolan, and a Portuguese of African descent. The broader thematic case is the challenges facing adolescent visible minorities who are English-language learners and new urban settlers, two of whom are asylum-seekers, all negotiating their legitimacy and aspirations for their new lives in London.

The third study, by Preece (2008), is a "case" of multilingual, female, mostly British-born South Asian undergraduates at one university in London negotiating and performing discourses surrounding gender identities and heritage languages. Participants included a dozen females who took part in peer discussion groups and interviews, originally as part of a larger dissertation study. Thus, the "single bounded unit," apart from the university and city in which the study took place, and the academic writing program in which the author originally met them, appears to be the unit or situation of "urban ethnic-minority female university student," although diversity clearly exists among the members of this group.

Finally, Wallace's (2008) case study focuses on "identity construction of young people of minority ethnic background" (p. 62), particularly in relation to talk about literacy in classroom settings (two younger and two older children in each of two London schools).

Among aspects of the bilingualism, identity, and literacy practices she investigated, religious identity and associated language practices were foregrounded.

Thus, all four studies in the set were situated in London and revealed linguistic and social aspects of multilingualism and migration there, but the participants, units of analysis, linguistic and literacy issues, and theoretical frameworks and constructs used to describe the populations and their perspectives differed according to each author's purpose. None tried to generalize from their findings to other global cities or to the wider populations from which they had drawn their focal participants. However, they successfully illustrated some of the tensions commonly reported in urban, multilingual diaspora settings, with London constituting a unique sociological setting for this particular cross section of English-language learners and bilinguals. By aggregating four "cases" from the same city (another level of case), the volume gives readers an appreciation for the linguistic pluralism and socioeducational issues facing many youth and young adults in that context, one that could then be compared with other global cities.

An online search of other recent applied-linguistic case studies generates an enormous number and range of books, chapters, journal articles, dissertations, reports, and abstracts. However, examining recent articles in peer-reviewed applied-linguistics journals that are explicitly framed by their authors as "case studies," like the special issue reviewed above, is quite telling. For example, Abrams (2008), Barkhuizen (2009), Barnard (2009), Han (2009), Li and Schmitt (2009), Menard-Warwick (2008), Storch and Wigglesworth (2010), and Waring (2009) investigated an assortment of issues, but all opted to not only use case-study methodology but also foreground "case study" (or "single case") in their titles. The studies themselves featured, as cases, international or immigrant students, foreign-language students or teachers, or immigrant entrepreneurs. But the phenomena examined in and across the cases included such topics as questioning patterns, vocabulary acquisition, the effects of corrective feedback on writing, language teachers' histories, identities, and practices, and appropriate curricular accommodations for L2 students with learning disabilities.

Sometimes, rather than include "case study" in their titles, as these studies did, phrases such as "a longitudinal study" or "two students" (or "a classroom in Ghana," "two Canadian workplaces") indicate the nature of the case and its boundaries. However, it can be difficult to discern from titles or abstracts whether a case study is indeed being reported on or what the case is about, although normally that information appears in a section on research methodology or context. The authors should explain what the study is a case *of* and not only the number and description of participants or sites where the study takes place (Duff, 2012). Some publications with the term "case study" in the title may include just brief examples or vignettes of a phenomenon, or refer to the reported study as a case (e.g., of an experimental intervention or a survey), but without the contextualization, triangulation, in-depth analysis of data, and interpretive practices and discourse that are the hallmark of much qualitative case-study research. Researchers are therefore advised to use and interpret the term "case study" with caution, as it technically refers to a particular type of research design and written report and increasingly is also associated with an interpretive, qualitative epistemology.

Corresponding with the growing popularity and acceptance of case studies in applied linguistics and the growing awareness that an ecological, socioculturally situated analysis of a wide variety of linguistic and personal phenomena (such as identity) offers many theoretical and interpretive advantages over less situated accounts, a wider range of populations, sites, and languages is now being researched. Increasingly, these include asylum-seekers, often with very complicated transnational and linguistic histories, multilinguals of all ages and descriptions, heritage and indigenous language (re-)learners or users, younger learners and older learners (or users), illiterate, multiliterate, and multimodal language users, members of Deaf or signing communities, Generation 1.5 immigrant

populations and multinationals, and individuals performing gendered and other social identities in particular discursive ways. This broadened purview of case studies and the populations and topics being researched is both important and healthy for the field of applied linguistics because it allows commonly held understandings about the processes of, and conditions for, language teaching, learning, assessment, and use and about population traits and variables to be challenged and reconceptualized based on evidence from other, previously unresearched or under-researched settings. In addition, new technologies for investigating language practices and processing, in case studies of language use in virtual communities, studies involving brain scans, or various other contexts, also involve and yield new tools, methodologies, and theoretical understandings for the field.

As in the "four London cases" described earlier, we learn from such accounts about the diversity of language users around the world, about their communities, ideologies, identities, and practices, about problems with essentializing (overgeneralizing from) certain categories of learners, and about the impact of globalization on migration, education, and linguistic behaviors. Sometimes it is only by means of comparisons of such studies with studies situated in other locations (e.g., the "global cities" of Mumbai or Montreal) or in readers' own contexts that their uniqueness or typicality—or the particular combination of factors affecting linguistic phenomena—becomes apparent, leading to the *transferability* of findings. Readers learn about issues likely to be of wider social, educational, and linguistic significance in the world, particularly if they feel confident that the researcher's case study is credible and trustworthy, is well supported and illustrated with relevant data or evidence, and also, ideally, attempts to make links between the local issues reported on and those of wider interest in applied linguistics or in other relevant disciplines.

Issues in Case-Study Research

Many case studies in applied linguistics—although not nearly enough—are longitudinal, lasting typically a few months to a few years, particularly if the study is part of major funded institutional research or dissertation or thesis work. For developmental studies, this mid- to longer-term perspective can be extremely helpful and can demonstrate, for example, interim stages in learning and how certain developmental patterns relate to other patterns or behaviors. In other areas of work, such as language policy and research on language shift, a longer-term perspective may be essential for understanding local linguistic ecologies, educational practices, the politics of language choice, and nonlinguistic factors affecting policy development and implementation. Longitudinal work can be very rich indeed, revealing migration patterns, attrition in language programs or schools (e.g., non-completers, transfers, or dropouts), language learners' and users' complex histories and trajectories, and sociopolitical and educational change. However, longitudinal work can be very demanding, precisely because research populations in applied linguistics may be quite migratory, people may leave work or education programs for a variety of reasons, and because researchers are under institutional pressure to produce shorter-term research results for annual productivity reviews (Duff, 2008; Harklau, 2008).

How many cases should be included in a study—a single case or several cases? As is explained elsewhere (Duff, 2006, 2008), there may be very good reasons for focusing on just one case (an event, school, person, family) rather than several. It may provide sufficient detail and evidence of the phenomenon under investigation, it may serve as a pilot study, or may be highly representative of others in a larger study and serve as an exemplar. Conversely, it may be quite distinct from other cases in the larger study and for that reason warrant special attention. Space limitations and the desired scope of an anticipated publication might also preclude the inclusion of more cases since the researcher would be

unable to provide sufficient details to fully illustrate the issues being investigated. One case in such instances might be quite adequate.

However, multiple-case studies, if done well, can provide a much richer account of the phenomenon in question by revealing similarities, differences, and variation in the observations and experiences of participants (or sites). The multiple observations then help researchers describe—and theorize about—the conditions under which certain cases seem to behave or perform in particular ways and not others. For larger-scale studies such as doctoral dissertations, therefore, there are many advantages to including several (e.g., two to six) cases for in-depth study rather than just one. When more than one case is included, authors have various options about how to present the findings. Individual cases can be described, followed by a cross-case analysis. Alternatively, the report may be theme-driven with data drawn from cases as is relevant. Yet another option is to group cases according to certain shared (thematic or demographic) features, presenting them not as individuals but as pairs or small sets of cases that are then compared with other pairs or small sets.

It is nevertheless important to explain why particular cases (and not others) were included, how data analysis was conducted, and how findings have been represented. If the report is drawn from a larger study involving several other cases, readers normally want to know how the featured cases differ (if at all) from others in the set or why they have been singled out for publication in a particular piece. Qualitative case-study researchers do not always seek or select cases that are highly representative of the larger sample or population from which they are drawn. As was mentioned above, they may intentionally sample for extreme, atypical, or unusual cases to illustrate a phenomenon. However, readers and reviewers often wonder about the typicality or uniqueness of such cases, of counterexamples or outliers in the larger set, and about what kinds of inferences can be drawn from these particular cases in order to understand the phenomenon in question. Therefore, researchers must describe sampling and selection criteria very carefully—the rationale for the recruitment or selection of particular types of cases rather than others—and consider the implications of such decisions and then the findings based on them for the field more generally. Because applied linguistics research normally depends on the voluntary participation of research subjects, it is also important to consider how the self-selection (volunteering) process itself influences the types of participants in the study and the findings that emerge. Are these participants more confident, optimistic, proficient, available, or needy (e.g., when a financial incentive is offered) than others targeted for recruitment who opted *not* to participate? How might the participating subjects' personal characteristics or demographics delimit insights into the issues or experiences being investigated?

The same principles and questions apply to the selection of transcript material, activities, images, examples, and other forms of data included in an article. Readers deserve to know how and why particular examples were chosen and how representative or typical they are of the larger data set.

Finally, case-study researchers often need to pay special attention with respect to research ethics and confidentiality precisely because the more in-depth and contextualized the case, the more details about the participants and setting are revealed and thus the more potentially identifiable it will be (Duff, 2008). Also, the closer the case participant is to the researcher, or the more closely the researcher is involved in a power relationship with potential participants, the more questions arise from ethical review boards about the appropriateness of recruitment. A common concern is whether the participant can truly offer informed consent (assent, in the case of minors) without feeling coerced. Furthermore, review boards seek assurances that participants are fully competent to understand the study's objectives and methods, and their role in it, in order to provide

their truly informed consent. In cross-cultural and crosslinguistic research, often with disadvantaged populations, this principle is very important and often necessitates providing multilingual paperwork and oral explanations about the nature of research projects and participation in them.

Case Studies in Mixed-Method Research

The theoretical philosophy underlying case-study research, as a method, is that much can be learned by looking both holistically and in close detail at the behaviors, performance, knowledge, or perspectives of just a few rather than many research subjects. The cases can reveal important developmental patterns or perspectives that might be lost or obscured in a larger-scale study of populations or larger sample sizes, especially where measures of central tendencies (the average or normative experience) are reported. The local contexts and conditions can be fleshed out much more fully than would be possible with a large number of participants and contexts that would normally rely on quantitative methods to describe patterns and changes because of the sheer volume of data. These patterns or insights then contribute to theorizing about the phenomenon under investigation. However, including the backdrop of larger patterns, including typical experiences, also helps with the contextualization and interpretation of individuals' experiences. There is, therefore, a natural potential synergy and complementarity between universalizing and particularizing approaches to research. Mixed-method research incorporating both quantitative and qualitative approaches, for example, has not been used to a great extent in applied linguistics historically, perhaps because there was often a mutual aversion on the part of researchers toward paradigms other than the primary ones guiding their own work or toward the usefulness of different ways of capturing and presenting data. Fortunately, in recent years important strides have been made in attempts to bring together the strengths and affordances of different methodologies and traditions to produce robust studies that can often benefit from a combination or triangulation of methods, theories, disciplinary perspectives, researchers, and data.

Recent multimethod research with (variably longitudinal) case studies in SLA includes Caldas (2007), Donato and Tucker (2010), and Kinginger (2008) (see Dörnyei's 2007 chapter on multimethod research for other references). These scholars combined proficiency tests or social–psychological measures based on questionnaires about learners' attitudes and motivation with case studies of children's, bilingual adolescents', or L2 study-abroad students' experiences of learning another language (French in Caldas's and Kinginger's studies and Japanese in Donato and Tucker's), or being socialized into another culture and how it affected them, their proficiency, identities, and so on, often over an extended period. The larger quantitative data provides very useful background information against which cases can be foregrounded, which helps address questions by readers or reviewers about scope, scale, and representativeness. The qualitative case studies also personalize or animate more technical or abstract statistical descriptions of observed trends, behaviors, practices, or populations. Another option is to keep case studies at the core of the research but to invite researchers embracing different theoretical frameworks, disciplines, or research methodologies to examine the same cases, leading to a potentially richer triangulation of perspectives than viewing cases from one primary perspective alone.

Conclusion

Case-study research has much to offer both applied linguists and nonspecialists attempting to understand scholarship in our field. It is now seen to be a valued and valid approach

to research in education, sociolinguistics, pragmatics, assessment, and other strands of applied linguistics, especially when it is conducted and written up well. As revealed by the citations above to recent case studies in applied linguistics, case-study research can be longitudinal and ethnographic or it can be much shorter in duration, less sociocultural, and more technical and narrow in focus in terms of linguistic or cognitive processes or systems. It can stand alone as research or can be combined with other research methodologies and designs. Case-study research in education tends to be inductive and interpretive, seeking recurring patterns and themes for the purpose of gaining understandings of different experiences. But some case studies, for example those in psychology or linguistics, may be more deductive, positivist, and quantitative, testing hypotheses about cause–effect relationships or other interactions among variables. Regardless of the underlying epistemology and ontology and the tools used for data collection and analysis, the primary benefit of case studies is that they provide a window into the worlds of people and linguistic events. Effective case studies are accessible and informative for readers because of the narrative or expository description and contextualization provided about the individuals or sites and the phenomena of interest. It is for this reason that case studies are often a key component of instruction and assessment in law, medicine, and business, and they have the same pedagogical merit and potential for knowledge mobilization in applied-linguistics programs and publications as well.

SEE ALSO: Qualitative Methods: Overview; Qualitative Teacher Research; Sociolinguistics: Mixed Methods; Validity in Qualitative Research

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Catford, J. C.

JIMMY G. HARRIS AND JOHN H. ESLING

Professor Emeritus J. C. Ian Catford was born in Edinburgh, Scotland, in 1917 and died peacefully in Seattle, Washington, in 2009. Ian's father was English and his mother was Scottish. He grew up in Edinburgh and considered himself more Scottish than English. In his preteens, he was seriously interested in engineering, especially the aerodynamics of steam flow, steam values, and cylinders of steam locomotives.

In 1931, at the age of 14, his parents took him to see a stage performance of George Bernard Shaw's *Pygmalion*, which impressed him enormously and caused him to be deeply interested in linguistics and phonetics for the rest of his life. Later on, while browsing in an Edinburgh secondhand bookstore, he bought a copy of Henry Sweet's *A Primer of Phonetics*. He stated that the primer became his bible and caused him to read everything on the subject in the Edinburgh Public Library.

In 1933, through a friend, he met Daniel Jones of University College London (UCL), who put him through a short oral examination on practical phonetics, asking him to pronounce all manner of sounds including back unrounded vowels, ejectives, and implosives. He passed the exam and went on to study Jones's pronouncing dictionary of RP English until he became fluent in RP (received pronunciation). In the summer of 1934, he took a course in French phonetics at UCL. His teachers were Hélène Coustenoble and Lilias Armstrong. He also took an instrumental phonetics course from Stephen Jones. Daniel Jones gave him private instruction in the cardinal vowels and the phonetics of Urdu. In addition, he studied notebooks from the mid-1930s containing phonetic notes on Norwegian, Dutch, Serbo-Croatian, Japanese, Persian, Sindhi, Derawal, Urdu, Telugu, and many dialects of English.

In 1935, at age 17, he gave a talk on Scottish dialects on the BBC (British Broadcasting Corporation). At about this time, the BBC hired him to participate in radio plays as a specialist in exotic and foreign language accents. He thus began a long association with the BBC and broadcasting in general. Also in 1935, he published his first phonetic publication on a Southern Scots dialect in *Le Maître Phonétique*. That summer he went to Paris to perfect his French pronunciation. Many French people he spoke with thought he was French because his accent was so good.

While in Paris, he met Paul Passy, the famous French phonetician and one of the founders of the IPA (International Phonetic Association). Back in London, he attended the Second International Congress of Phonetic Sciences, where he met Otto Jespersen and H. E. Palmer. He later entered the University of Edinburgh where he majored in French. He spent his third year in 1938 in France where he studied phonology with André Martinet. At the end of his year in France, he attended the third International Congress of Phonetic Sciences, where he got to know Hjelmslev, Trager, Jon and Betsy Uldall, Eli Fischer-Jørgensen, Jespersen, Paget, and Jakobson.

In 1939, his article "On the Classification of Stop Consonants" was published. Back in Edinburgh, he took a course in Sanskrit and became convinced that all students of linguistics should study Latin, French, and Sanskrit. In 1939, he went abroad to Greece to teach basic English for the British Council. His colleagues in Athens were David Abercrombie

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and Jon and Betsy Uldall. During his two years in Athens he acquired a working knowledge of modern Greek. He also worked on his first Caucasian language—Kabardian (1942). With the German army approaching Athens, they were evacuated to Egypt, where he worked on another Caucasian language with a refugee who spoke Avar (1943), a Dagestanian language.

In 1943, he was transferred to Palestine where he taught English to speakers of 60 different languages. He also married Lotte Gerecht in the same year. They spent their honeymoon in Lebanon and Syria working on Circassian. Back in Palestine, he worked as a radio announcer for a radio station in Jerusalem that broadcast to Nazi-occupied Europe in 15 languages. His most important announcement in June 1944 was, "This is the voice of the United Nations from the British Mediterranean station. The liberation of Europe has begun," following the Allied landings in Normandy.

In 1946, he finally returned to the UK where he earned his living as a BBC radio actor specializing in exotic and foreign accents, as a teacher of applied phonetics at the Royal Academy of Dramatic Art, and as a private teacher of English to foreigners. He also studied general linguistics under J. R. Firth and Slavonic Linguistics at University College London.

In 1952, he took a job at Edinburgh University as a researcher for the Linguistic Survey of Scotland. In 1957, Catford was appointed Director of the new School of Applied Linguistics (SAL) at Edinburgh University. In preparation for the job, the British Council sent him on a two-month tour of India and Pakistan to study the problems of teaching English in both countries. In his spare time, he worked on Paryabi tones, Miretané implosives, Ladakhi Tibetan voiceless laterals, and the Kannada, Toda, and Burushaski languages.

As director of SAL, Catford felt that applied linguistics should foster a wider knowledge of linguistic data and theories than other types of linguistics. It should cover a wide range of topics such as all types of language teaching, bilingualism, translation theory, dialectology, language acquisition, machine translation, developing alphabets for unwritten languages, forensic linguistics, English grammar, anatomy and physiology, general linguistics, and phonetics. He saw the study of applied linguistics as a discriminating eclecticism in which no one theory is the best for all applications.

In 1964, he was invited to join the Department of Linguistics at the University of Michigan in Ann Arbor to serve as director of the English Language Institute. He also taught applied linguistics, translation theory for TEFL (teaching English as a foreign language), comparative historical linguistics, and phonetics. In 1970, with a grant from the American Council of Learned Societies, he went to the Soviet Union where he worked on 20 Caucasian languages. In 1977, he returned to the Soviet Union where he worked on seven more. Also in 1977, he spent six weeks in Indonesia teaching translation theory to speakers of 25 different Indonesian languages. After his retirement in 1985, he continued his career as a visiting professor in universities in Turkey, in Israel, and at UCLA.

In 1977, Catford published his *Fundamental Problems in Phonetics*, which is an overview of experimental phonetics. In 1988, he published *A Practical Introduction to Phonetics*, and in 2001 the second edition of *A Practical Introduction to Phonetics* was published. This second edition is considered the best practical introduction to phonetics published in the last 50 years. Not only was J. C. Catford a pioneer in applied linguistics, but he is also widely regarded as the leading practical phonetician of the 20th century.

SEE ALSO: Abercrombie, David; Jones, Daniel; Phonetics and Phonology: Overview; Voice Quality

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Cenoz, Jasone

JULIA D. BARNES

Jasone Cenoz is a professor in the Department of Research Methods in Education at the Faculty of Education of the University of the Basque Country (UPV) in Donostia-San Sebastian, Spain. Her academic interests encompass multilingualism, second (L2) and third (L3) language acquisition, bilingual and multilingual education, linguistic landscape, interlanguage pragmatics, and the age factor.

Cenoz was born into a Navarran family in Pamplona in 1960. Although her grandparents on both sides were Basque speaking she was raised as a Spanish speaker, as were many of her generation. As a now fully competent user of Basque, with a son who has Basque as his strongest language, her work has done much to erase this generational gap largely imposed by Franco's oppressive linguistic policy in favor of Spanish.

Given the role that her work has played in the understanding of multilingual education it is significant that she studied two language degrees, completing English in 1982 at the Universidad de Salamanca, after which she carried out postgraduate work at the University of Southern California. In 1983–4, back in the Basque Country, she became involved with teaching on the University Studies Abroad Consortium at the University of Reno. Employment as a secondary school teacher of English from 1984–92 then gave her valuable practical insights into the nature of education to shape her future academic work and it was during this period that she graduated in Basque and completed her pre-doctoral studies and PhD dissertation on the teaching and learning of English as an L2 and L3 (1992).

The appearance of her early seminal PhD dissertation on multilingual education in minority language contexts, assessed by Fred Genesee and Miguel Siguán among others, coincided with the 1992 Spanish Education Reform in which English became compulsory from age 8 and was introduced in the Basque Country through experimental programs at even earlier ages. Much of Cenoz's principal research in the late 1990s would be in this field.

Also in 1992 Cenoz joined the Department of English and German Philology at UPV as a tenured lecturer through the field of intercultural pragmatics. Her undergraduate and postgraduate courses (taught in any of her three languages) in second language acquisition, linguistics, pragmatics, and sociolinguistics were popular and well subscribed and led to her supervising doctoral dissertations in a variety fields of multilingualism such as metalinguistic awareness, writing skills, and infant acquisition among others.

Meanwhile Cenoz embarked upon various research projects attracting important funding and international interest. One of the major projects funded (1996–2004) by the Spanish Ministry of Education and Science involved the large-scale collection of data in English from trilingual cohorts who had been exposed to English at different ages to see if the age of exposure was significant. This bank of data provided invaluable resources for a number of significant doctoral dissertations. Along with other colleagues in the department she founded and subsequently led the group Research in English in Applied Linguistics (REAL), which became one of the key research teams in social science in the Basque Country and in Spain with cutting edge research in second language and multilingual acquisition,

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phonology, and the age factor (Cenoz, 2003a, 2003b; Gallardo, García Lecumberri, & Cenoz, 2006). Cenoz characteristically generously contributed time and energy to building opportunities for research and an ethos of collaboration between colleagues and with other national and international universities.

National and international networks have been central to Cenoz's academic contribution whether for research, meetings and conferences, or publications. She has led initiatives to bring together communities who share similar linguistic issues, from classroom practitioners to academics. Language professionals everywhere will recall conferences, meetings, workshops, and summer courses with expert speakers from many fields of bi- and multilingual education, pragmatics, research methods, and so on, held under Cenoz's supervision often in the privileged sea-view locations of the Kursaal or Miramar Palace in Donostia-San Sebastian, or the seminars organized by the REAL group in Vitoria-Gasteiz, and elsewhere. Key events have been the 1999 International Association of Child Language (IASCL) conference and the 2004 European Association of Second Language Acquisition (EUROSLA) conference. Cenoz herself has been much in demand as an expert speaker receiving invitations to lecture in locations as diverse as Israel, Poland, the United States, India, and Australia. She has also been a consultant to the European Commission and for the Spanish University National Accreditation Commission as well as an assessor on numerous PhD boards.

The potential of her early work was acknowledged with two key books in the field edited in collaboration with Fred Genesee (Cenoz & Genesee, 1998, 2001) which were to provide a window to work on education and language acquisition at the end of the millennium. There followed her extremely active involvement in international publication, for instance as the International Association of Applied Linguistics (AILA) publications coordinator and as member of the board between 2002 and 2008 where she continues as a member at large. She has also served on the board of journals and series such as the *AILA Review*, *Annual Review of Applied Linguistics*, *Applied Linguistics*, *International CLIL Research Journal*, *International Journal of Bilingual Education and Bilingualism*, *Journal of English Studies*, *Language Policy*, *Language Teaching*, *Vigo International Journal of Applied Linguistics* (*VIAL*), *Multilingual Education*, *AILA Applied Linguistics* book series, *Tertiärsprachen* (Stauffenburg), and the *Mouton de Gruyter Trends on Applied Linguistics* series.

Jasone Cenoz has been key in the establishment of the biannual Conference on Third Language Acquisition and Multilingualism which first took place in Innsbruck in 1999, and in the establishment of the International Association of Multilingualism (IAM). This association has been responsible for the consolidation of multilingual research as a field in its own right and a number of major publications have been the outcome (Cenoz & Jessner, 2000; Cenoz, Hufeisen, & Jessner, 2001, 2003). With Ulrike Jessner she is one of the founders and editors of the *International Journal of Multilingualism*.

In 2000 she gained her tenure professor status at UPV with a project on research methods in education and in 2004 was chosen to be its vice-rector with special responsibility for international affairs. In 2005 she moved from the Department of English Philology at Vitoria to the Department of Research Methods in Education in Donostia-San Sebastian. This move coincided with her deeper involvement with wider aspects of multilingualism and education not only with regard to English and internationalization, but also in relation to Basque and minority language education. There were a number of publications in Basque (Cenoz & Lasagabaster, 2005, 2006) and Cenoz edited a special issue of *Language, Culture and Curriculum* about teaching through Basque (2008), contributing two chapters. In 2009 she published *Towards Multilingual Education: Basque Educational Research from an International Perspective* in which her experience and contribution to the three areas of Basque, education, and multilingualism converged providing a long overdue compendium of research-based expertise for wider use in the field. Cenoz has also contributed to work on Basque in the

field of minority language with a number of publications (Cenoz, 2001; Cenoz & Gorter, 2008) as well as through collaboration with institutions such as the ERSC Research Institute for Bilingualism at Bangor University, Wales and the Fryske Academy in Friesland, Netherlands. In the meantime she has continued to stay abreast of developments in applied linguistics in general through collaborations (Manchón & Cenoz, 2008), a forthcoming special issue of *Modern Language Journal* on the topic of "Beyond Bilingualism and SLA," and an encyclopedia in collaboration with Nancy Hornberger (2007).

Her most recent work has revolved around a new research team based at UPV in Donostia-San Sebastian called DREAM (Donostia Research in Education and Multilingualism) and around collaboration with the Ikerbasque academic Durk Gorter with whom she has carried out ground-breaking work on multilingual linguistic landscape (2009). Cenoz and Gorter also have forthcoming publications relating to multilingualism and education in European minority languages, the diversity of multilingualism in education, and multilingual pedagogies in school contexts. In her latest book, published with Elka Todeva, Cenoz (2009) presents multilingualism from a different perspective in which speakers of multiple (at least seven) languages narrate their linguistic experiences.

It is Cenoz's quest to create a reference point for high-level international work on multilingualism and its research. Multilingualism has in the last 20 years become a major emerging issue at the heart of modern society and understanding it and training for it are crucial to education and policy throughout the world. Cenoz's academic contribution and initiatives, characterized by her vision, scope, and generosity, coincide with this period and the insights provided by her tireless research have made her a leading figure in the understanding of multilingualism today.

SEE ALSO: Bilingual and Multilingual Education: Overview; Crosslinguistic Influence and Multilingualism; Linguistic Landscape; Minority Languages in Education; Multilingualism; Multilingualism and Minority Languages; Teaching a Third Language; Third Language Acquisition

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Central Institute of Indian Languages

UDAYA NARAYANA SINGH

The Central Institute of Indian Languages (abbreviated as CIIL) was established in mid-1969 by the government of India to coordinate between the central and state governments as well as among state language institutes, tribal research institutes and bureaus, institutions dealing with languages such as the Central Institute of English, Hyderabad (now known as EFLU), the Central Institute of Hindi, the Anthropological Survey of India, the Language Division of the Registrar-General's Office, and university departments of languages and linguistics. The proposal to establish CIIL, with a focus on applied linguistics, was first mooted in 1967 by a ministerial working group, thanks to the country's planning commission. The idea was later endorsed by a committee of top linguists in the country. Since then, CIIL (www.ciil.org) has been functioning as a clearinghouse for information on all matters relating to the development of Indian languages in this country and abroad, with an interdisciplinary research program. With dialogues established between traditional scholars of grammar and modern linguistics, it has also developed suitable interdisciplinary programs for giving linguistic orientation to social scientists and social science orientation to linguists.

The major achievements of CIIL have been its development of methods, materials, and aids for teaching Indian languages, and the conduct of language courses; these resources have also been used in CIIL's seven branches, called regional language centers (RLCs), which are located all over India. In addition, as well as correspondence courses using audio cassettes, CIIL has also developed CD-based, online, and radio-based courses in language teaching. Further, its flagship program, titled *Bhasha Mandakini*, has been able to produce over 600 television episodes to teach Bangla, Tamil, Kannada, and Marathi. The institution has paid particular attention to publishing grammars of tribal, indigenous, and minor languages of the country. Creating writing systems for unwritten languages entering into school and communication domains has been its responsibility, too. Yet another strong area of work done by the institution is in language testing and evaluation (www.ciil-miles.net), which has now developed into a major national project called the NTS, or National Testing Service (http://www.ciil-miles.net/NTS-INDIA.asp).

One of CIIL's original aims—namely, development of suitable translation techniques and conduct of courses for translators (www.anukriti.net)—has now graduated into a major national initiative called the National Translation Mission (NTM). Under this project (www.ntm.org.in), the emphasis is on creating a huge repository of texts in all 22 constitutional languages of India, promoting translator education, establishment of a database of translators and translation experts in the country, and establishing translation as an industry. A major aim of CIIL has been to develop corpora of Indian languages, and its initial work (reported at www.ciilcorpora.net and www.ciil-spokencorpus.net) developed into the huge Linguistic Data Consortium of Indian Languages (LDC-IL) (www.ldcil.org). Under the LDC-IL, CIIL—along with two Indian Institutions of Technology at Chennai (www.iitm.ac.in) and Mumbai (www.iitb.ac.in), the Indian Institute of Science at Bangalore (www.iisc.ernet.in), and the International Institute of Information Technology (www.iiit.net)—has worked on the creation, analysis, and uploading of different kinds of corpora and

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other linguistic resources, such as speech-to-text and text-to-speech work, character recognition, and natural language processing vis-à-vis Indian languages. Both NTM and LDC-IL have generated many by-products such as dictionaries, thesauri, word-finders, common vocabulary research, and usage compilations. They have also contributed significantly to classical studies, such as the establishment of a Classical Tamil center (now to be found at http://www.cict.in/), an Institution at Chennai (titled CICT), and the current projects in Classical Telugu and Classical Kannada.

As is well known, 4% of India's people speak 96% of her languages, and many of these languages have a much smaller number of speakers. According to the 2001 census, there are 122 languages with at least 10,000 speakers in India, but the number of distinct mother tongues is well over 3,000. CIIL's work on at least half of these 122 languages through its LIS-India Project is significant (www.lisindia.net). A large number of India's smaller languages can be found in the northeastern states, and most of them are still in oral form. Attempts have been made to write grammars for the first time in their languages, and some of these can be seen at www.ciil-grammars.org. Textbooks have been prepared to introduce those languages into schools for the first time. The North East Language Development (NELD) program involves 15 languages covering six states: Manipur, Assam, Meghalaya, Arunachal, Nagaland, and Tripura. A major project has been undertaken for the linguistic and cultural documentation of 11 languages of Sikkim. Pictorial glossaries of Kok Borok (Tripura), Monpa (Arunachal Pradesh), and various Bhili languages (Gujarat, Maharashtra, and Rajasthan) have been completed. Sixty programs on northeastern languages on various subjects like dictionary making, orthography, cultural documentation, sociocultural studies, compilation of common administrative terminology, grammars, and multilingualism and language use are conducted every year. As a truly multi-headed organ of the Department of Secondary and Higher Education of the Ministry of Human Resource Development, CIIL:

- assimilates and distributes the fruits of its research in applied linguistics to all peer institutions,
- provides manpower for research and development in universities and institutions, provided they share the interest of CIIL, and
- houses all varieties of thoughts, theories, and practices in language sciences—often seemingly contradictory but each one having its own heritage and importance.

It has also been an aim of CIIL to promote and document the endangered languages of India, which are very much a part of India's plural cultural heritage. In the period since its foundation, CIIL has created a legend of its own by producing and archiving studies on 118 Indian languages, including 80 tribal languages; publishing 590 books and monographs, including language learning materials; and creating courses on cassettes in almost all major Indian languages. Its efforts in library automation have been achieved in record time under a project titled Bhasha Bharati (www.ciillibrary.org), and are often showcased as a model of library modernization.

The institution has had, in the 40 years between 1969 and 2009, three full-time directors: Professors D. P. Pattanayak, E. Annamalai, and Udaya Narayana Singh. The Central Institute of Indian Languages has so far been the principal government organ able to trouble-shoot all language-related debates, arguments, and issues wherever they have occurred, and has therefore fulfilled an important obligation for which it was created, at a time of intense linguistic strife in the country during the mid-1960s.

SEE ALSO: Multilingual Education in India; National Language and English in India

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Chaos/Complexity Theory for Second Language Acquisition

DIANE LARSEN-FREEMAN

Introduction

Chaos/complexity theory (C/CT) and closely related dynamic systems theory were first proposed in the physical sciences and mathematics to explain the behavior of complex dynamic systems. The systems usually involve a large number of elements or agents, which interact and give rise to a different order of complexity at a higher level. An oft-cited example is how individual birds interact to form a flock of birds. The systems are dynamic because they are always changing, sometimes gradually, sometimes abruptly. Thus, the study of change is central to C/CT researchers. They seek to understand how change occurs and how elements or agents interact to produce it. Change in such systems is often nonlinear, which means that the effect is not proportionate to the cause. The nonlinearity is attributed to the fact that such systems are sensitive to initial conditions, a characteristic popularly referred to as the *butterfly effect*, whereby even the flapping of a single butterfly's wings in one part of the world can have an effect on a weather system in another. It is this sensitivity to initial conditions that makes complex systems *chaotic*—they can change in unpredictable ways.

Because of the complexity, the interconnectedness of the elements or agents, their dynamism, their nonlinearity, and the openness of such systems to energy from outside of themselves, change in complex systems cannot be explained through simple cause-and-effect relationships. Rather it can be said that the complexity emerges in a bottom-up way through the mechanisms of *self-organization*, whereby systems grow in complexity without being guided by an external source, and *coadaptation*, where the system adjusts or adapts to its context.

From this initial brief description, it may not be difficult to see why the influence of C/CT is growing. So many naturally occurring systems are complex dynamic ones: neural networks, social networks, the ecology of a particular locale, and so forth. Consequently, insights from the theory, really a meta-theory, have been applied to a wide variety of phenomena, including organizational development, the spread of disease or epidemiology, and language evolution. Its influence is broad because the theory affords a unique perspective into dynamic systems, which has had the effect of shifting our understanding of the nature of second language acquisition (SLA; Larsen-Freeman, 1997).

Traditional views of SLA

Traditional views of SLA differ in many ways from that inspired by C/CT. Many scholars date the origin of the modern study of SLA to the late 1960s or early 1970s. The field has, for much of its brief time in existence, operated under a number of assumptions, which SLA researchers have inherited from linguists and from first language acquisition researchers. These assumptions revolve around a "developmental ladder" metaphor (Fischer, Yan, &

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Stewart, 2003), whereby second language learners are metaphorically seen as traversing the distance from the relatively fixed, homogeneous mental competence of their first language to a target language competence through a series of steps or stages. The journey is made manifest through learners' production of an "interlanguage" (Selinker, 1972). The variable production evident in interlanguage ultimately gives way to target language structures that are stable over time and place, although they may be deployed differently, due to style shifting (Tarone, 1979). In this view, structures are enduringly real, object-like, truly out there in the world and also in our heads. Thus, theorists in this tradition write about linguistic structures being acquired from input and being assimilated as elements of an internal mental grammar. Traditionally, researchers have also assumed that it was possible to adopt a bifurcated research agenda, focusing on the nature of the SLA process or, alternatively, focusing on learners' differential success while engaging in the process of acquiring another language.

Shifting the Metaphor

Of course, no single researcher may subscribe to all the assumptions underlying this traditional ladder metaphor, and some of the assumptions have been abandoned as the field has evolved. Nevertheless, the metaphor of a developmental ladder has been the dominant view since the inception of the field. These days, C/CT has the potential to radically shift the metaphor under which SLA research has been conducted, from that of developmental ladder to one where development is seen as a complex process of dynamic construction within multiple ranges in multiple directions (Fischer, Yan, & Stewart, 2003), more of a web than a ladder.

Accompanying the newer metaphor is the view that language is not fixed, but is rather a dynamic system. Language evolves, changes, and is learned in the dynamics of language use between and among individuals. As a language is used, it grows and organizes itself from the bottom up in an organic way, as do other complex systems. Out of interaction in local communities, certain variegated stabilities of structure emerge—as with the flocking birds, complexity emerges at a higher level. The new level of complexity in the community is dependent upon what preceded it—its initial conditions. In this way, each new level is historically contingent, dependent on what has come before.

A complexity-inspired view of language also rejects the notion of language as something that is taken in—a static commodity that one acquires and therefore possesses (Larsen-Freeman, 2002). Instead, language is seen to be as much a process as a product, something in which one participates (Sfard, 1998). Because language is a dynamic system, continuously changing, its potential is always being developed, and it is never fully realized. This applies to the language of a speech community as well as to an interlanguage.

Although it is never static, a certain level of stability can be achieved in a complex system, where change is gradual. At other unpredictable times, the behavior of the system becomes highly unstable with the system changing rapidly from one state to another. It is especially when the behavior of a system is unstable that the organism is free to explore new behaviors in response to task demands. Indeed, it is the flexibility to discover new solutions that is the source of novel forms (Thelen, 1995). However, the system may self-organize with respect to one area of language only. Presumably there are oscillating cycles of lesser and greater order going on elsewhere in the system (Larsen-Freeman, 1997), and in the case of learner language, extended periods where alternative forms, with roughly the same meaning, exist side by side. These extended periods are often due to the strong influence of the native language, to which learners have already made a neural commitment.

Language Users/Learners

Moving now from the language system to language users and learners, it is said that as speakers interact, they "soft-assemble" (Thelen & Smith, 1994) their language resources. They cobble together existing ones and create new ones to deal with the communicative pressures at hand. The assembly is said to be "soft" because the elements being assembled, as well as the specific ways in which they are assembled, can change at any point during the interaction. Thus, soft-assembly refers to processes involving the articulation of multiple components of a system, where "each action is a response to the variable features of the particular task" (Thelen & Smith, 1994, p. 64). Ultimately, "It is the multiple integrations of many component processes in many different tasks that leads to a system that is flexible, inventive, and exquisitely adaptive" (Smith & Breazeal, 2007, p. 67).

The soft-assembled patterns that arise from interaction are the products of dynamic adaptation to a specific context (Tucker & Hirsh-Pasek, 1993). The adaptation to a context includes the process of coadaptation in which each individual in an interaction imitatively adapts to the language of another. This points to the importance of the social embeddedness of human cognition. In addition, the view that language is social stems from the fact that it is used for social action within a context of language use, where pressures and affordances, learners' identities, goals, and affective states will all have a profound effect on language performance (van Lier, 2004). Learners do not reproduce their linguistic world—they actively transform it.

This is true for the language use of both proficient speakers and language learners. The patterns are "created and dissolved as tasks and environments change" (Thelen & Bates, 2003, p. 381). Some patterns are preferred; others are more ephemeral. In fact, we would be better off using the term "second language development" rather than "second language acquisition" in that learners have "the capacity to create their own patterns with meanings and uses (morphogenesis) and to expand the meaning potential of a given language, not just to internalize a ready-made system" (Larsen-Freeman & Cameron, 2008, p. 116). Language acquisition is not a matter of conformity to uniformity. Thus, developmental change seems "not so much the stage-like progression of new accomplishments as the waxing and waning of patterns, some stable and adaptive and others fleeting and seen only under special conditions" (Thelen & Bates, 2003, p. 380).

Nativists believe that the input to children acquiring their native language underdetermines the complexity of language, and they therefore assume that the complexity needs to be prespecified in the form of a universal grammar, an innate faculty with which all humans are endowed. However, from the perspective of C/CT, first and second language development can be seen to stem from the emergence of new forms in a complex system. What is striking from a complex systems view is that the language learning child or adult produces language that is richer or more complex than the language addressed to her or him (van Geert, 2003, p. 659). This is a commonly observed property of all complex systems, in which complexity emerges not from input to the system nor from an innate blueprint, but rather from the creation of order, internal both to the language learner and, at another level, to the external community through social processes such as in the development of pidgins.

Usage-Based Emergentism

Stable language-using patterns emerge from repeated soft-assemblies (Larsen-Freeman & Cameron, 2008). Usage leads to these becoming entrenched in the speaker's mind and to them being taken up by members of the speech community. Thus, a usage-based (e.g.,

Tomasello, 2003) or emergentist (Ellis & Larsen-Freeman, 2006) view of language acquisition aligns well with C/CT. According to this view, language has the shape that it does because of the way that it is used, not because of an innate bio-program or internal mental organ. As for acquisition, it is the frequency of patterns in language use that promotes learning. The patterns can be characterized as Zipfian, where certain prototypical forms occur with far greater frequency than do others, recruiting learner attention and thus aiding the implicit language acquisition process. Such patterns exist at every level of scale from phonemes to morphemes, lexical items, phrases, idioms, non-canonical collocations, grammar constructions, conversational structures, and so forth. However, instead of being composed of rule-governed linguistic units, which may have no psychological reality for learners, the patterns may be "pastiches of various kinds of item-based constructions" (Tomasello, 2000, p. 76).

As learners revisit the same territory again and again, they perceive and begin to recognize patterns at these levels of scale; they register them in memory. With subsequent encounters, the pattern is strengthened in memory (in neural networks we speak of the connection weights being increased). However, it is not merely numerical superiority that privileges certain patterns above others and leads to their earlier appearance in learners' production. For one thing, there is the influence of the L1 , which acts as a filter on perception. For another there is the contingency factor. Certain forms are uniquely associated with a meaning or with a use. They will be easier for a learner to notice and to acquire than structures in the language that are polysemous. Another factor influencing which forms get noticed and used is the status of the individual who uses the form. Presumably the language resources of individuals with higher status will be more influential than those of lower status individuals. Another factor is the affective attachment learners have to certain patterns over others (Todeva, 2009).

Because each interaction is unique, there is a great deal of variation at one time in learners' performances and clear instability over time. Variation and fluctuation are important characteristics of dynamic systems (Thelen & Smith, 1994; van Geert & van Dijk, 2002) and should not be dismissed as measurement error. The fluctuation and variability is in part because language learners dynamically adapt their language resources to the context, and the context is always changing. Thus, there is a dynamic interplay between a person's abilities and context affordances (van Geert & Steenbeek, 2005). While it is possible to separate context and person for the purpose of analysis, such separation requires the untenable assumption that the two are independent (van Geert & Steenbeek, 2005). Individual developmental paths, then, each with all its variation, may be quite different one from another, even though in a "grand sweep" view these developmental paths appear quite similar (de Bot, Lowie, & Verspoor, 2007). One consequence of this is that generalizations about learning are elusive and not likely to hold regardless of the individual involved or of the context (e.g., tutored versus untutored). This is all the more so in multilingual situations where the routes of learning naturally show still greater diversity (Jessner, 2008).

Individual Differences

Generalizations about learners are not likely to hold either. Individual differences naturally follow from the fact that individuals tend to actively select and manipulate the contexts in which they function (van Geert & Steenbeek, 2005). In fact, it could be said that individuals not only determine what aspects of the outside world are relevant to them, but they actively construct a world around themselves and are constantly altering it (Lewontin, 2000). A C/CT view sees learners' language resources as resulting from use, recognizing

the centrality of variation and the intentionality of learners in choosing the forms that they do. It also recognizes that individual difference factors, such as motivation, do not function as a state but rather as a dynamic process, characterized by motivational ebbs and flows. Such a perspective is congruent with recent conceptualizations of motivation in SLA, in which motivation is seen as operating under the influence of various interacting elements producing continuous change within the system (Dörnyei, 2009).

Implications for Research Methods

How the variability and specific adaptations of soft-assembled "make-do" solutions at one time lead to the instability and stability of development over time is of course the central concern of SLA research and will remain so. What are needed are individual microdevelopmental studies that seek to understand the mechanisms by which learners "forgo old ways of behaving and adapt new ones" (Thelen & Corbetta, 2002, p. 60). Microdevelopment studies require much denser data collection intervals than what is typical in SLA research.

Newer approaches to the study of complex dynamic systems involve computer modeling. While such models are reductions in and of themselves, they have the decided advantage of allowing the investigation of the dynamic interactions of these factors in language learning, processing, and use while accelerating the process in a simulated fashion (Ellis with Larsen-Freeman, 2009).

In addition to modeling, van Gelder and Port (1995) offer dynamical description as an approach to the study of dynamical systems. Dynamical description "provides a general conceptual apparatus for understanding the way systems—including, in particular, nonlinear systems—change over time" (van Gelder & Port, 1995, p. 17).

It is clear, though, that cross-sectional research by itself is not adequate to capturing the dynamism of the process. While cross-sectional research gives researchers a picture of the "grand sweep of development" where global structure and similarities across participants can be seen at one point in time, it obscures what is happening at the level of the individual over time. Therefore, as a complement to cross-sectional research, "a view from below" is needed, where the "messy little details" lie (de Bot, Lowie, & Verspoor, 2007, p. 19). It is by looking at these that we see that behavior is variable and context dependent. Further, "it is very well possible that if we look close enough that the general developmental stages individuals go through are much less similar than we have assumed so far" (de Bot, Lowie, & Verspoor, 2005, p. 24).

Conclusion

To underscore the impact of C/CT on SLA, what is on offer here is not a piecemeal weighing of the traditional assumptions, but a call for a wholesale perspective shift, from a developmental ladder to an emergentist web perspective, one that sees linguistic signs not as "autonomous objects of any kind, either social or psychological," but as "contextualized products of the integration of various activities by [particular] individuals in particular communicative situations. It logically follows that they are continually created to meet new needs and circumstances" (Toolan, 2003, p. 125). The dynamism of language and learning central to this position frames questions concerning SLA in a different light from traditional views.

Language learning is not seen to be a linear, additive process, but a nonlinear, iterative one (de Bot, Lowie, & Verspoor, 2007), which is context-dependent and variable. For this reason, what generalizations exist at the group level often fail at the individual level. In

fact, different learners may develop different language resources even when the ambient language is similar (Mohanan, 1992). "The ideas of 'soft-assembly' and historical contingency offer a way of conceptualizing both the global and universal changes in development as well as the local, variable, and individual pathways" (Thelen & Bates, 2003, p. 382).

With C/CT not only do we get a more variegated portrayal of a learner's language resources, but we also get a different, more emic, account of its development. Learning is not the taking in of linguistic forms by learners but the constant adaptation of their language resources in the service of meaning making in response to the affordances that emerge in the communicative situation. Learning does not add new forms to the system; it changes the system.

SEE ALSO: Cognitive Models of Interaction; Cognitive Second Language Acquisition: Quantitative Methods; Complexity in Multilingual Systems; Connectionism; Dynamic Systems Theory Approaches to Second Language Acquisition; Emergentism; Implicit Learning in Second Language Acquisition; Social Influences on Second Language Speech Acquisition; Variability in a Dynamic System Theory Approach to Second Language Acquisition

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Chapelle, Carol A.

JOAN JAMIESON

Carol A. Chapelle (1955–) is distinguished professor of liberal arts and sciences at Iowa State University, where she has taught and conducted in research applied linguistics since 1985. Her research and teaching is aimed at developing productive links between knowledge in applied linguistics and educational practices, particularly with respect to the use of technology for language learning and assessment. Her limited success as a learner of Russian in high school and college may have prompted her interest in the challenges faced by the adult language learner and their practical consequences for teaching—an interest that has sustained her teaching and research in computer-assisted language learning and language assessment.

Chapelle graduated from Michigan State University with a bachelor's degree in linguistics. She then attended the University of Illinois at Urbana-Champaign, completing her master's degree in teaching English as a second language in 1979 and PhD in a crossdisciplinary program on second language acquisition and teacher education in 1983. The timing of her graduate work coincided with the development and use of computer-assisted instruction for second language teaching at the University of Illinois, where a large computer-assisted instruction system (PLATO) had been in place since the 1960s. By the late 1970s many hours of instruction were being delivered by the system for students of English as a second language and students studying many other languages. Observation of ESL students' use of these materials was revealing for Chapelle: the intensive individual interaction and feedback learners received through the use of PLATO far exceeded what they got in a classroom, but there was a need to understand the effects and potential value of this new form of interaction. She and Jamieson conducted three studies that drew upon data collected as students interacted with the ESL materials on PLATO (Chapelle & Jamieson, 1981; Chapelle & Jamieson, 1986; Jamieson & Chapelle, 1987). The positive reception of this work in addition to her conviction that improvements were needed in second language pedagogy fueled her work on technology and second language learning over the following years.

Stemming from the need to understand the effects of computer-assisted language in order to design better materials for learners, Chapelle's work in this area has explored two fundamental issues: (a) the connection between the design of computer-assisted language learning tasks and research on second language acquisition (e.g., Chapelle, 2005, 2009) and (b) research methods that can help to illuminate the learning that takes place in computer-assisted language learning (e.g., Chapelle, 1990, 1997). Chapelle advocated the use of research designs which examine design features and computer-learner interactions rather than comparing CALL to classroom instruction, which she believed were not sufficiently nuanced to reveal insights relevant to teachers and materials designers, although her paper on the evaluation of innovations suggests a role for such research in communicating with some audiences (Chapelle, 2007).

Her work in this area over three decades demonstrates that technologies for language learning are not a monolithic solution to learners' needs but rather a complex research project in which issues such as learning needs, accessibility of materials, assessment, research methodology, linguistic analysis and theoretical bases of acquisition are all important

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issues. All are worthy of careful analysis and exploration, and her books, articles and presentations take up these topics in great detail. Two of her books have been particularly influential in this area: *Computer Applications in Second Language Acquisition* (2001) and *English Language Learning and Technology* (2003).

Stemming from the research methodological strand of her work on technology is another of Chapelle's research areas—language assessment. The basis for claims made in most empirical research comes from some form of language assessment, and therefore the interpretations made on the basis of assessment results need to be valid. Researchers and teachers regularly make interpretations about students' learning, their abilities, and their performance. The validity of the interpretations and uses of assessment results is the most critical piece of any research on technology and language learning, but how can one demonstrate validity? An exploration of a response to this basic question has resulted in many papers and books that investigate the validity of interpretations from specific tests (e.g., Chapelle & Abraham, 1990; Chapelle, Jamieson, & Hegelheimer, 2003) and discuss the issues of validity and validation as they have evolved over the past 25 years (e.g., Chapelle, 1998, 1999; Chapelle, Enright, & Jamieson, 2010). Key works in this area are a 1998 paper entitled "Construct Definition and Validity Inquiry in SLA Research," which lays out three distinct approaches to defining the constructs used as the basis for test development and validation and the 2008 explanation of "The TOEFL Validity Argument." This line of research has also provided a means of addressing substantive issues in the use of technology for language assessment, which have been explored in her books, but most centrally in *Assessing Language Through Computer Technology* (Chapelle & Douglas, 2006).

Due to social factors beyond applied linguistics, the practical uses of computer technology in language learning and language assessment have expanded dramatically over the past thirty years. As a consequence, Chapelle's work has been useful for a growing field with many new applied linguists wishing to engage with the current issues. In response to this need, the applied linguistics program at Iowa State University developed a doctoral program to provide the intellectual space for cultivating interest and harvesting knowledge of professionals to expand their capabilities as language teachers and learners through the use of computer technology. Like the University of Illinois at Urbana-Champaign, where Chapelle's interests were piqued by the PLATO project, Iowa State University of Science and Technology creates an environment for exploration and use of computer technology in applied linguistics. The Atanasoff–Berry Computer, the first electronic digital computer, was built by John Vincent Atanasoff and Clifford Berry at Iowa State University during 1937–42 (JVA Initiative, 2005).

It is a university where a fruitful research–practice interface is viewed as the key criterion for success, and therefore provides a hospitable environment for Chapelle's praxis-oriented research program. She makes accessible knowledge about applied linguistics to those engaged in practical work in applied linguistics through publications, professional service, and serving on advisory boards for projects in language assessment. She has served as editor of *TESOL Quarterly* (1998–2004) and president of the American Association for Applied Linguistics (2006–7); she is the coeditor of the *Cambridge Series in Applied Linguistics* (with S. Hunston). Her book, *ESOL Tests and Testing: A Resource for Teachers and Program Administrators* (Stoynoff & Chapelle, 2005), has been on the TESOL best seller list. Her book, *Tips for Teaching With CALL: Practical Approaches to Computer-Assisted Language Learning* (Chapelle & Jamieson, 2008), is widely used by teachers beginning to use computer-assisted language learning. The commitment to make accessible the knowledge in applied linguistics to a broad audience is at the basis of her motivation to develop the present *Encyclopedia of Applied Linguistics*.

SEE ALSO: Computer-Assisted Language Learning Effectiveness Research; Instructional Computer-Assisted Language Learning; Validation of Language Assessments

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Child Pragmatic Development

ASTA CEKAITE

Language is a tool that children and adults use to act in and explore the social world; to create, develop, and sustain social relationships; and to engage with others in culturally meaningful activities. Thus, pragmatic development involves children's acquisition of communicative competences, that is, learning how to use language, to communicate and understand others appropriately and effectively in a widening range of social contexts and activities while assuming increasingly complex social roles (Hymes, 1972). In contrast to children's development of grammar and syntax, consistently shown to be largely completed by the age of 5 years, children's sophisticated mastery of varied conversational skills is a long-term process. Basic pragmatic skills emerge at quite an early age, but are refined and developed throughout preadolescence and adolescence, over time allowing the child to engage in a constantly broadening range of social activities, and to become a full-fledged member of the culture and society. Indeed, children's acquisition of communicative competence has crucial social and educational implications. Conversational skills play a major role in a child's access to interactions with peers and in forging peer-group relations in the first and second language. Such skills are important in adult–child relations, qualifying children as interactionally competent students in educational settings, and play a significant role in shaping children's written literacy skills.

Research Perspectives on Pragmatic Development

The study of child pragmatic development is a heterogeneous field that brings together linguistic pragmatics and child development, and encompasses different traditions and theoretical perspectives on language and social interaction: socioculturally informed research such as developmental pragmatics (Ervin-Tripp, Guo, & Lampert, 1990; Ninio & Snow, 1996; Blum-Kulka & Snow, 2002), sociolinguistics (Kyratzis & Guo, 2001), language socialization (Ochs & Shieffelin, 1984), and developmentally informed approaches to child language acquisition (Berman & Slobin, 1994). Topics studied within the field of children's pragmatic development in their first language focus on a broad range of distinct but inextricably related aspects of communicative competence: the emergence and development of verbal communicative acts (i.e., speech acts) in young children; the development of conversational skills; children's growing sensitivity to the social parameters of talk; and children's acquisition of extended discourse genres such as narratives, explanations, definitions, and so forth.

Though all the above-mentioned traditions agree that children's active participation in interactions with adults is a major driving force behind children's acquisition of communicative competence, they differ in their interests and methodological approaches. Developmental studies track the fundamental developmental process in the child's construction of pragmatic abilities. They map the universal route and rate of children's communicative development cross-culturally and across ages, grounding their analysis largely on experimentally elicited or semi-elicited data, that is, children's performance in controlled communicative tasks (Hickmann, 2003). Socioculturally informed studies on

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pragmatic development examine the emergence of communicative skills longitudinally, on the basis of communicative practices in children's everyday interactions with adults and peers. Emphasizing the socially and culturally sensitive nature of conversational norms, such studies examine how everyday interactions serve as a culturally bounded foundation for children's learning and practicing of appropriate language use (Shieffelin & Ochs, 1986; Blum-Kulka, 1997).

Conversational Sites for Learning

In child pragmatics, adult–child and children's peer interactions are viewed as distinct interactional and developmental sites: these interactions afford different participant roles, communicative genres, and various degrees of conversational assistance. Adults generally support children's conversational participation by providing a model and scaffolding children's competent and equal conversational performance. Peer interactions, on the other hand, reveal children's pragmatic abilities in unaided conversational situations. Furthermore, peer talk actively contributes to children's pragmatic development: the peer discourse has its own specific gains, providing a training ground for children's conversational skills, genres, and roles unavailable to children in adult–child conversations, which are asymmetric with respect to social knowledge and power (Blum-Kulka, Huch-Taglicht, & Avni, 2004).

The Emergence and Development of Pragmatic Skills

The Emergence of Speech Acts in Young Children

Studies investigating the acquisition of verbal communicative acts (speech acts) by children have traced how very young children, starting from the preverbal stage, use linguistic means to perform social actions and examine the pragmatic goals they achieve. Notably, even when toddlers use one-word utterances, they are able to make requests for action and information and to produce statements, responses, and acknowledgments, combining these utterances with nonverbal means. For instance, the first verbal requests are designed as a combination of gestures and the name of the object requested, words such as "more," "want," and "gimme" (Ervin-Tripp et al., 1990). By the age of 2.5 years, children deploy a wide repertoire of communicative acts that gradually become more sophisticated and refined. Over time, children learn the lexicocommunicative and pragmatic means that enable full verbal and situationally sensitive realization of previously acquired communicative intents such as justifications, promises, prohibitions, challenges, apologies, explanations, refusals, and disagreements (Wells, 1985; Ninio & Snow, 1996).

Children's Conversational Skills

Children's communicative use of language allows them to respond to and to solicit further speech, thus organizing social interaction as adjacent responsive and reactive verbal actions that serve as the building blocks of conversation and intersubjectivity. Studies of children's conversations examine a complex combination of skills: children's mastery of turn-taking procedures, initiation and development of relevant topics, and ability to recognize and repair breakdowns in mutual understanding.

Turn taking concerns the ability to organize verbal interaction by taking turns, that is, by selecting an appropriate place for one's verbal contribution in conversation. Turn-taking procedures are situationally and culturally sensitive, varying depending on participation frameworks (dyadic or multiparty), activities, and social settings (de Leon, 1998). In the West, where adults treat children as conversational partners from birth, rudimentary

turn-taking procedures begin to develop long before children's linguistic productions do (Trevarthen, 1979). In peer groups, children organize social interactions by conforming to turn-taking procedures typically by the age of 3 years, although the gaps between their turns are longer than in adult conversation (Ervin-Tripp, 1979). Multiparty encounters (e.g., family dinner conversations) constitute complex interactional situations for young children, who (still) experience difficulties with the precise timing of their self-selections (Blum-Kulka & Snow, 2002). Similarly, institutional procedures of turn taking in educational settings are the target of extensive pragmatic socialization in elementary schooling (Cekaite, 2007).

Turn taking is not an isolated conversational ability: sustaining and developing topically coherent conversational episodes requires the ability to select turns with contributions that manifest topic relatedness, that is, that respond to and add novel information to the topic at hand, thereby facilitating further development of the topic and conversation. In interactions with young children, adults tend to assume the bulk of the conversational responsibilities for topic development. They ask questions, initiate topics, expand and clarify unclear utterances, and are able to sustain conversational episodes with 2-year-olds. In children's peer conversations, topical coherence and contingent responses are recurrently achieved through varied means of repetition, sound, and verbal play. Communicative uses of repetitions and partial recyclings are documented across a broad age range, from 2-year-olds', preschoolers' (McTear, 1985), and preadolescents' peer interactions (Cekaite & Aronsson, 2004), revealing children's sophisticated lexical, syntactic, and prosodic analysis of and responsivity to previous talk. Indeed, efficient use of (partial) repetitions is one of the normative prerequisites for competent participation and acceptance in the communicative practices (arguments, disputes, play) of the peer group (Goodwin, 1990).

Children's repertoires for maintaining topical coherence develop to include formally and semantically diverse means, starting as early as 2 years of age (McTear, 1985). Achieving adult-like conversational coherence, however, has a long developmental trajectory in peer talk. Children continue to improve the topical relatedness of their conversations throughout adolescence, 10–11-year-olds still producing factually unrelated turns in their conversations (Dorval & Eckerman, 1984).

Smooth running of the conversation depends on the participants' abilities to recognize, locate, and repair misunderstandings and conversational breakdowns (Schegloff, Jefferson, & Sacks 1977). In Western contexts, adults' requests for repairs and clarifications are tuned to children's verbal skills, starting at around 1.5–2 years of age, when children's talk increases in both comprehensibility and the richness of lexicosemantic features. Children's efforts to repair conversational breakdown are documented before 3 years of age. While initially children tend to address problems of understanding by simply repeating problematic turns, older children (3-year-olds) exhibit an increased repertoire of remedial resources, deploying and answering requests for clarification that target specific problematic features of talk, and revising their utterances accordingly (Ninio & Snow, 1996). Also in peer interactions, children (between 4 and 6 years) manifest their growing concern with the smooth running of interaction and their abilities to remedy problems of understanding (McTear, 1985).

Repair skills are at the heart of children's developing understanding of the other's perspective. There appears to be cross-cultural variation in repair procedures concerning the speaker's and hearer's responsibilities for securing mutual understanding that conforms to the larger set of rules regulating interaction. In Western middle-class contexts, adults' repair initiations serve multiple functions, both as enhancing mutual understanding and as implicit socializing procedures concerning the pragmatics of conversation. Given that the primary responsibility for clarity of communication rests with the speaker, the child-speaker is expected to provide relevant background information and consistently monitor

the comprehensibility of his or her talk. In contrast, studies from non-Western contexts have shown different repair practices. For instance, in Japan children are socialized into "intent listenership": because the responsibility for mutual understanding is attributed to the listener, children are expected to develop and deploy interpretative skills and to actively signal (non)comprehension (Clancy, 1986).

Politeness and Social Parameters of Language Use

Children's emerging sensitivity to the social parameters of language use constitutes an area of pragmatic research that examines how and when children learn to be polite, to tune in and modify their language depending on the social context and role relations with the addressee, as well as how to master various speech registers and styles.

Politeness markers are part of children's precocious pragmatic skills. In Western contexts, when children reach the age of 2.6–3 years, they typically vary the linguistic form of their requests according to the status and age of the addressee. Children exhibit awareness of the desirability of using indirect request forms with addressees whose social status and age are higher than their own (adults and older children/siblings), whereas when speaking with their peers, children deploy unmitigated imperatives and blunt statements. School-age children (7- to 8-year-olds) clearly extend their pragmatic repertoires: they utilize formally and semantically diverse means in the realization of requests as well as understand and design indirect requests and hints that take into account obstacles in the addressee's situation (Ervin-Tripp et al., 1990).

Children's peer group activities present an ideal site for observing and documenting children's mastery and acquisition of social registers. In pretend play, for instance, children index and sustain in-character roles using a range of linguistic resources. Indeed, play serves as a major site for conversational development, providing children with opportunities for using and perfecting skills in registers that are typically associated with high status, and that are unavailable for children's use in supportive, yet asymmetric, adult–child interactions. Children as young as 4 years of age engage in script-based play—playing family, teacher–student, or doctor–patient relationships—vary their use of language styles and registers, exhibiting sensitivity to status and social and gender roles (Andersen, 1990). Preschool children, boys and girls, master gendered language styles, using them as a repertoire of speech strategies to achieve particular interactional goals. Instead of relying on the so-called universal feminine language style, which is associated with mitigation and consensus seeking, girls adjust and manipulate their language according to participant constellations, using assertive and unmitigated speech (generally viewed as a masculine assertive and controlling speech style) when playing in mixed-gender groups (Kyratzis & Guo, 2001). While young children rely largely on register-relevant prosodic resources, in school-age children interactions and different social roles are marked and sustained collaboratively through register-relevant lexical means (Hoyle, 1998). Over time, varying language registers and styles are perfected and deployed instrumentally in preadolescents' and adolescents' identity work as resources marking their affinity to class, ethnicity, gender categories, or youth culture (Rampton, 1995).

In multilingual children, sensitivity to language choice emerges before the age of three, when children start accommodating their language choice to the addressee's language preference (Fantini, 1985). Pragmatic functions of language alternation develop throughout school age, where children refine skills concerning how to use contrasting languages for managing social relations—for instance, deploying code switching as a power-wielding device (Jørgensen, 1998).

Extended Discourse Genres

Children's acquisition of extended discourse genres—narratives, explanations—is a relatively well-charted area of children's pragmatic development. In narratives, temporally distant events are described in a way that clarifies the causal relations between them. In contrast to talk, which is embedded within the here-and-now activity, when engaged in storytelling the child cannot rely on the hearer sharing experiences of the same event and must adhere to the pragmatic requirements of adjusting to the listener's knowledge and point of view. As sustained and decontextualized forms of talk, narratives require the structuring of information in linguistically and cognitively coherent and explicit ways, and involve basic skills of importance to school-related spoken and written literacy.

Studies on children's narratives follow two distinct research traditions. Socioculturally informed research investigates children's naturally occurring narratives and their narrative socialization in everyday discursive events. Thus, rudimentary narratives—children's attempts to converse about remote topics and non-present people and things—are identified very early, before the age of 2. In everyday conversations, narratives are collaboratively accomplished, and adults scaffold children's structured, audience-sensitive presentation of narrative information. By monitoring the audience for comprehension, assessments, and responses, children learn to organize narratives, choose tellable topics, and adopt appropriate affective and moral stances, thus adapting to cultural criteria for successful narrative performance (Blum-Kulka, 1997).

Developmental studies map the universal route of children's narrative development cross-culturally and across ages, assessing the well-formedness of children's autonomous, adult-unsupported narrative performance. Using highly constrained elicited narratives—asking children from different age groups and different languages to narrate a sequence of events in a wordless picture book—such studies map the general progression in the development of narrative structures and cohesion, including the development of linguistic forms for encoding the functions of temporality, causality, person, and spatial reference (Berman & Slobin, 1994).

Other forms of extended discourse that are considered part of a literate or academic register—explanations, arguments—are explored as recurrent features of peer talk and play (Aukrust, 2004). In the argumentative discourse between peers, young children display well-formed and convincing arguments, which they use to make their points (Zadunaisky-Erlich & Blum-Kulka, 2010). Peer talk thus incorporates both child-unique discursive strategies and strategies that echo discursive conventions from the adult culture, enabling the refinement of both.

Conclusions

Children's pragmatic competence—their knowledge of how to configure a range of communicative resources in specific discursive practices—is developed and refined through participation in family, peer, and educational interactions, which serve as a means and motivation for skillful and strategic language use. By investigating both universal and culture-specific features of children's interactional skills, studies on pragmatic development seek to describe and detail how children learn to use language as an efficient tool for social action.

SEE ALSO: Classroom Research on Pragmatics; Conversation Analysis and Child Language Acquisition; Family Discourse; Narrative Discourse; Politeness; Pragmatic Competence in Multilingual Contexts; Pragmatics and Culture; Pragmatic Socialization; Speech Acts Research

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Christian, Donna

CAROLYN TEMPLE ADGER, DORRY KENYON,
JOY KREEFT PEYTON, AND NANCY RHODES

Donna Christian (1949–) is among the foremost authorities in the United States on language education and language in education. She began her academic career in mathematics, completing an undergraduate degree at St. Lawrence University with high honors, and went on to study applied linguistics and French at Georgetown University. As one of the first students in Georgetown's sociolinguistics program (PhD, 1978), Christian conducted dissertation research on the dialect of the Appalachian region. *Appalachian Speech* (1976), which she wrote with Walt Wolfram, still stands as the seminal source on this dialect. Christian's collection of American English dialect recordings is available in The Library of Congress American Memory series (http://memory.loc.gov/ammem/collections/linguistics). This collection of interviews and other speech recordings, primarily from dialect research and oral history projects, provides a centralized source of North American dialect samples, preserving linguistic resources that might otherwise be lost. Christian taught linguistics and education courses for George Mason University, Georgetown University, the George Washington University, the University of California-Santa Cruz, and the University of Virginia. In 1979, she received a Fulbright Senior Lecturer award in linguistics and taught for two years at Adam Mickiewicz University in Poznań, Poland.

Donna Christian is well known for her leadership at the Center for Applied Linguistics (CAL). Beginning there in 1974 as a research assistant, while a graduate student, Christian rose to become director of the research division, secretary of the corporation, and vice president. In 1994, she was named president. In that capacity, she led CAL's efforts to recognize and respond wisely to language and language learning issues in the United States and beyond through research on language and language learning; technical assistance to national, state, and local governments; and professional development for educators on language learning. Christian led the organization through a period of growth to articulate a mission and a vision, refresh the organizational structure and procedures, and enhance its reputation as a leader across the subdomains of applied linguistics. She encouraged innovation in applying research to social challenges, such as supporting language immersion, heritage language development, annual English-language proficiency testing for adults and K-12 students, and content area testing for students with low levels of English proficiency.

Christian's own contributions to the field of applied linguistics include research and publication in aspects of K-12 education where research had been sparse. Two areas of particular focus are vernacular dialects in education settings and dual-language education programs. In addition to her research on Appalachian English, her research on Ozark English, Native American English, and Vietnamese English is part of the sociolinguistic research canon on vernacular English. With Walt Wolfram, she wrote *Dialects and Education: Issues and Answers* (1989), which addressed urgent questions from educators about language variation. That volume was revised as *Dialects in Schools and Communities* (2007) (with Walt Wolfram and Carolyn Adger) for use in teacher preparation and educational services. In the wake of the Ebonics controversy of 1996, Christian organized a meeting of concerned scholars in linguistics and education, which led to publication of *Making the Connection:*

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Language and Academic Achievement among African American Students (1999) (with Carolyn Adger and Orlando Taylor).

As two-way immersion programs (a form of dual-language education) gained numbers in the 1980s and 1990s, Donna Christian led collaboration on documenting practice and defining program models (Christian, Montone, Lindholm, & Carranza, 1997). *Guiding Principles for Dual Language Education* (2007) (developed with Elizabeth Howard, Julie Sugarman, Kathryn Lindholm-Leary, and David Rogers), which describes the approach, program models, and the research base of two-way immersion, is considered a fundamental reference and guide for two-way program design and evaluation.

Christian's contributions to the field extend beyond these areas of particular interest and expertise. Her publications on language learning have addressed policy, programs, and instructional practice in foreign language learning in the United States, English language learning, and heritage language programs. She was one of the first to see the importance of collaboration across the fields of foreign language, English as a second language, and content area learning; and she was instrumental in helping the profession of language educators see the benefits of integrating language and content area teaching and learning, starting in the early grades.

Donna Christian's leadership on the national scene has included appearing as an expert witness in hearings on Capitol Hill and as a participant, moderator, and discussant in numerous panels on language policy. She has served on the boards of directors of the International Research Foundation for English Language Education (TIRF) and the Joint National Committee for Languages; on the advisory board of the Hispanic Family Literacy Institute (National Center for Family Literacy); and on the editorial boards of the *Heritage Language Journal*, the *International Journal of Bilingual Education and Bilingualism*, *College ESL*, and *American Speech.* For the Linguistic Society of America, she served on the Audit Committee and on the Committee on Language in the School Curriculum. For many years, Christian has been an *ex officio* member of the Executive Committee of the American Association for Applied Linguistics.

The field of applied linguistics has grown and benefited from Donna Christian's vision and leadership in using the research base to create a society in which language and culture are valued.

SEE ALSO: Immersion Programs; Literacy and Bidialectalism

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Citizenship Education

MICHAEL BYRAM

Citizenship education, whether under this label or under some other, such as "civics," "éducation civique" or "politische Bildung," has a long history (Heater, 2004); the field is also attracting increasing contemporary interest and, therefore, a source of growing academic literature. The recent appearance of a *Handbook of Education for Citizenship and Democracy* (Arthur, Davies, & Hahn, 2008) might indicate that there is a settled body of knowledge to which the book provides guidance, but the tendency to polemic in some of the articles indicates that this is not the case. The appearance of collections of essays too (e.g., Stevenson, 2001; McDonough and Feinberg, 2003) in which there is frequent reference to "dilemmas" or to new theories and terms, is another indicator of flux. A third stream, of comparative studies, includes collections of articles describing citizenship education in a range of countries (Lee, Grossman, Kennedy, & Fairbrother, 2004; Grossman, Lee, & Kennedy, 2008; Zajda, Daun, & Saha, 2009), sometimes with minimal attempts to establish a comprehensive perspective (Jackson, 2002; Schweisfurth, Davies, & Harber, 2002), and a large-scale survey of "civic education" in 28 countries (see IEA Civic Education Study, http://www.terpconnect.umd.edu/~jtpurta/) in 1999 and 2000. This was renewed and repeated 10 years later with a significant change of title from "Civic Education Study" to "Civic and Citizenship Education Study" (see IEA International Civic and Citizenship Education Study, http://iccs.acer.edu.au/) and an increased number of participant countries, indicating perhaps higher international interest in the issues.

In the midst of this academic analysis of constantly changing complexity, it is the authors of the kind of handbook which helps teachers to plan, teach, and possibly assess courses and activities in citizenship education who dare to be firm in their recommendations. The introduction of obligatory citizenship education or the development of new curricular directions encourages publishing to fill immediate needs, specific to local circumstances. If the implementation of citizenship education is to permeate the curriculum, there are books for teachers which deal with citizenship education as a "whole school approach" (Turner & Baker, 2000a), but there is also an approach that includes citizenship education in each subject (Turner & Baker, 2000b). If, as a third option, the approach is to have a separate subject, then books are available for teachers with a qualification and specific responsibility for "citizenship education" (Gearon, 2009). Further, traditional publishing is complemented by Web sites produced by education authorities wanting to advise and influence teachers (e.g., http:www.citized.info/; http://www.curriculum.edu.au/cce; http://cspe.slss.ie/index.html).

Concepts and Themes

In the midst of this complex field, a critical reading of work on citizenship education can be based on concepts and themes which are addressed whatever the approach. The applied linguist might use discourse analysis to throw more light on citizenship education; here we can identify some of the dominant concepts and themes.

The assumption that citizenship and democracy are necessarily associated with each other is widespread, not only in the title of the handbook referred to earlier, the first

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article of which is on democracy (Crick, 2008). In Germany, a tradition of teaching established soon after the end of World War II was originally termed "politische Bildung" ("political education"), with a federal center to support it (Bundescentrale für politische Bildung; see http://www1.bpb.de/), but this term has been challenged with the term "Demokratielernen" ("learning democracy") (Himmelmann, 2001; Himmelmann and Lange, 2005). The challenge echoes the emphasis of the Council of Europe on "Education for Democratic Citizenship" (see http://www.coe.int/edc).

Yet there are other kinds of citizenship education in the past and the present. As Heater (2004, p. 152) points out, the phrase "totalitarian citizenship education" may appear to be an oxymoron but nonetheless exists in the world. Heater discusses Nazi Germany and the Soviet Union. Contemporary cases so far appear only in travel literature, for example the description of nation building in Turkmenistan around the personality cult of the president and his literary works, on which students take compulsory tests (Brummell, 2005, p. 13).

Furthermore, "democracy" is a complex concept in Western thought (see Crick, 2008), and it is a complex transplantation in other parts of the world (e.g., China, discussed by Feng, 2006), with consequences for the notion of citizenship itself and citizenship education.

"Community" is a second fundamental term, which is seldom defined, not even using Tönnies's (1887/2002) well-known contrast with "society." Citizenship education is presented as the relationship of the individual and his or her community, or more often "communities." Another distinction can be made between "nationality" and identification with a group of people who "imagine" themselves to belong together as a community (Anderson, 1991) on the one hand, and on the other "citizenship," which connotes a (usually legal) relationship of rights and duties between an individual and a state. Nation-states assume, not always justifiably, that individuals identify with an entity both as a state society and as a national community. In the most striking development of this, a relationship now exists between individuals and the European Union as a political entity, in fact made up of more than 20 member states. European citizenship is the first example of a supranational citizenship based in law, whereas an identification with a European nation scarcely exists. Other concepts of supranational citizenship, including "global" or "world" citizenship, are not legal concepts but aspirations to identification with supranational communities; the notion of cosmopolitanism, which has a long pedigree (Carter, 2001; Heater, 2004), has become the most dominant of such concepts in recent times with the idea of "cosmopolitan citizenship" (e.g., Osler & Starkey, 2005a).

The notion of "community" is also used to refer to groups of people—sometimes temporary and in flux, sometimes static and unchanging—larger and smaller than the populations of states. The use of the term to refer for example to a "global community" (Banks, 2008, pp. 61–2) is frequent, although Banks believes that of all the communities with which an individual might identify, the "nation" is most important, because nation-states offer a "background condition" for democracy and "social solidarity." There is, nevertheless, a large and growing literature on the concept and reality of global community or global civil society (Anheier, Glasius, & Kaldor, 2004).

"Social solidarity" is a synonym of other key concepts: "inclusion," "cohesion," and "diversity." Although all societies are and have always been "diverse" in some way—even if the diversity has not been recognized or has been ignored—it is the contemporary phenomena of global mobility, migration, and global communications that creates a visible and sometimes disturbing diversity in state societies. The discourse of inclusion attempts to counteract diversity and the multiplicity of communities, some of which transcend state boundaries. Citizenship education which encourages identification with nation-states is made responsible for creating cohesion. However, cultural citizenship, cultural rights, and identification with multiple communities should be acknowledged as of equal importance as political, social, and economic rights (Stevenson, 2001). There is a concern to include

groups considered marginal—for example in the Council of Europe's *White Paper on Intercultural Dialogue* (2008)—but this hides an assumption of a mainstream within a state society.

Debates about whether society can prosper with many diverse groups living side by side, or whether inclusion is crucial to success, are unfinished, and involve the question of patriotism and whether citizenship education should cultivate loyalty to country and state. Citizenship education can include explicit patriotic practices such as learning a national anthem (recently introduced into French schools) or saluting a national flag (well established in the USA and under discussion in other countries). Patriotism is in potential tension with supranational citizenship since in principle the two may make opposing demands (Carter, 2001, pp. 172–4), although in practice young people may have no problem with multiple allegiances (Mitchell & Parker, 2008).

Whatever identification is encouraged, "active citizenship" is often invoked, together with "participation." Where the school is seen as a community, "participation" means inclusion of pupils in governance and in service. Furthermore, instead of defining schooling as preparation for later life, education policy can require activity in communities outside the school and handbooks for teachers may provide help with what for many is a new relationship for schools (Potter, 2002).

Finally, the term "citizenship education" itself needs to come under scrutiny. Its prominence is recent—though it can be traced to the 1930s as Brennan says in a book entitled *Political Education and Democracy* (1981)—and it is more dominant in Europe than elsewhere; for example, in the USA, the term "civic education" is used, and in Singapore the term "national education" betrays a patriotic approach. Alongside citizenship there are established terms including "peace education," "global education," "human rights education," and "world studies." To analyze the commonalities and differences is not possible here but would further clarify the nature of each and how each may incorporate elements of others.

Citizenship Education and Applied Linguistics

With few exceptions (e.g., Osler & Starkey, 2005b), authors on citizenship pay little attention to language, and yet the applied linguist would associate "community" with "speech community" and consider active participation in community as dependent on linguistic competence. Anderson's (1991) notion of an "imagined community" as the foundation of nation-states is based on people being literate and communicating through print. Today this can be extended to electronic media, and include speech. Furthermore, language communities exist both within and beyond national boundaries.

The significance of language teaching and learning is recognized in the testing of immigrants' knowledge of the language(s) of a country and the offer or obligation to take classes to attain a minimal competence for participation in society. Foreign-language teaching can also be a site for citizenship education (Starkey, 2005); linguistic competence has to be enriched by intercultural competence (Guilherme, 2002); and specific connections between language education and global citizenship are a new development in the debate (Birch, 2009). The commonalities in the aims of foreign-language education and citizenship education should lead to a reorientation of the former to complement the latter (Byram, 2008).

On the other hand, though there has been a renewed interest in the theory of "deliberative democracy" (e.g., Center for Deliberative Democracy; see http://cdd.stanford.edu/), not least under the influence of Jürgen Habermas, it is striking that whether the focus is on multilingual states or on "transnational democracy" there is no apparent awareness of the linguistic demands of "deliberation across boundaries," which is seen as "straightforward" (Dryzek, 2002, p. 116).

SEE ALSO: Critical Analysis of Political Discourse; Human Rights; Teaching for Internationalization and Critical Citizenship

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Clark, John L. D.

MARTYN CLARK

John Levan Demaree Clark (1936–) has been influential in promulgating the use of direct testing methods in the assessment of speaking proficiency. These methods emphasize the elicitation of actual samples of speech in a communicative context to assess oral ability rather than relying on inference from tests of listening ability or knowledge of vocabulary and grammar. He strongly advocated the adaptation and use in regular academic contexts of the oral proficiency interview techniques developed initially by the Foreign Service Institute (FSI) of the US State Department. The work of Clark and other colleagues was instrumental in the development, professional endorsement, and dissemination of the ACTFL (American Council on the Teaching of Foreign Languages) Proficiency Guidelines and the corresponding growth of the so-called proficiency movement in foreign language teaching in the United States.

In addition to his work in the speaking testing arena, Clark was concerned with the state of the language testing field in general, suggesting broad-scope research programs and innovative assessment approaches including the use of computers long before they became common fixtures in schools. Throughout his career, he championed an intellectually rigorous approach to addressing theoretical and conceptual issues in language testing while maintaining sensitivity to and respect for real-world operational considerations as well. Many of his writings remain classics in the field, and show clarity of purpose and, on occasion, considerable wit.

Clark majored in French at Amherst College and obtained a master's degree in Romance languages at the University of North Carolina. Interested in exploring language-related areas other than the increasingly detailed study of Romance literature, he applied for and was accepted as a doctoral candidate in the Research In Instruction Program at Harvard University Graduate School of Education (HGSE). There, he worked with John B. Carroll as a senior assistant on two major language assessment projects: a parametric study of language training in the Peace Corps and a nationwide survey of the linguistic ability of undergraduate foreign language majors in their senior year. Over the course of these and other research projects at HGSE, Clark gained the keen interest in language testing that would shape his future career.

Shortly before obtaining his EdD from Harvard in 1967, Clark joined the Educational Testing Service (ETS), where he worked on a variety of test programs including the College Board Achievement Tests, Advanced Placement Tests, and the Test of English as a Foreign Language (TOEFL). At the time, the testing of speaking skills received little emphasis at ETS or in the academic language field in general, and Clark became interested in addressing this disparity. He pursued this interest by initiating the so-called "common yardstick" project together with Protase Woodford, an ETS colleague. The goal of this project was to develop, in collaboration with the American Council on the Teaching of Foreign Languages (ACTFL), a common metric for describing speaking proficiency attainments in secondary school language classes and beyond by suitably adapting the speaking proficiency descriptions and oral interview procedures that had been used at FSI and other government agencies since the 1950s. This effort was the genesis of what became the ACTFL proficiency guidelines, now widely used as a common standard for describing proficiency in foreign language education programs in the United States.

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Instead of indirectly estimating the presumed speaking ability of the examinee through measures of vocabulary or structural control on a written test (or through highly artificial "speaking" exercises that bear little resemblance to real-life communication), the FSI and ACTFL proficiency tests make use of a face-to-face interview aimed at determining what the speaker can functionally do with the language, beginning at a fairly simple conversational level and becoming increasingly demanding. Although seemingly a friendly informal conversation, the interview is carefully structured to continually probe and confirm that the speaker can indeed perform all of the functions in all of the domains associated with a particular proficiency level. The interview continues until the examinee is clearly no longer able to hold his or her own, at which point the interview winds down. The highest level of sustained performance demonstrated is considered to represent the examinee's proficiency rating.

In addition to working on direct proficiency testing techniques, Clark was interested in the possibility of adding a speaking component to the TOEFL program, whose operational constraints precluded the use of face-to-face elicitation procedures. He and other ETS colleagues investigated a variety of "semi-direct" approaches, in which test stimuli are delivered by a recording or printed material or both, with the examinee's responses recorded for later evaluation. This work (Clark & Swinton, 1979) resulted in the Test of Spoken English (TSE), which became one of the most widely used semi-direct tests of speaking ability until it was discontinued in 2010.

While advocating and promoting a rigorous conceptual basis for language testing of all types within the testing community, Clark was also keenly aware of the need to bring this information to language teaching practitioners. Toward this end, he published *Foreign Language Testing: Theory and Practice* (1972), in which he stressed the need to align test development and test selection with test purpose. He was also one of the first to highlight the important distinction between achievement testing (covering what a learner has gained from a particular course of study) and the broader notion of proficiency testing, which is concerned with the real-life communicative competencies of the learner, irrespective of any particular course of study. To describe the evolving classroom activities aimed at developing communicative use of language while at the same time operating within the lexical and structural limitations of a particular course, Clark coined the term "prochievement." When asked on occasion how this term came into being, he would typically reply that "'achficiency' just didn't seem to cut it."

Throughout his career, Clark participated in a variety of conferences and conducted numerous workshops to introduce oral proficiency concepts and testing techniques in educational settings and testing institutions both in the United States and abroad. Under an ETS contract with the US Peace Corps, he traveled to some 19 countries to conduct face-to-face interview training and rating sessions for Peace Corps staff in these areas.

As part of a large-scale survey of college students' understanding of global issues conducted by ETS, Clark experimented with the notion of student self-assessment of language skills through the use of what he termed "can-do" statements (Clark, 1981). Although the detailed verbal descriptions of language ability provided in the FSI, ACTFL, and other similar proficiency level scales are generally understood and can be suitably applied by trained raters, they are not as readily grasped by nonspecialists. By recasting verbal descriptions of proficiency levels as short, highly focused descriptions of particular language use tasks (e.g., "I can order a simple meal in a restaurant"), they are more easily understood by language learners without the need for formal training on the proficiency descriptors themselves. The use of "can-do" statements for student self-assessment and for teacher assessment of students has since been widely incorporated into the Common European Framework of Reference (CEFR) as well as reintroduced in an American context as interest in the CEFR process has increased in the United States.

In 1981, Clark joined the Center for Applied Linguistics (CAL) in Washington, DC as director of the Foreign Language Education Division. While at CAL, he continued to promote oral proficiency testing, overseeing development of a semi-direct, tape-mediated proficiency test of Chinese (Clark, 1986a), together with a detailed handbook for creating similar tests in other less commonly taught languages (Clark, 1986b). The operational intent of the Chinese test was to present tape-recorded questions and other spoken stimuli designed to elicit, to the extent possible, a sample of spoken language similar to that obtained from a face-to-face proficiency interview. This speech sample was recorded for later evaluation by trained raters in accordance with the levels of ability specified in the general proficiency descriptions. The tape-mediated test is not a direct substitute for the live interview, but is a reasonable alternative for situations in which face-to-face interviewing is not feasible.

Throughout this period, Clark maintained his interest in promoting research-based practice in classroom language instruction, working on projects to document teaching materials for less commonly taught language programs (Clark & Johnson, 1982). With Eleanor Jorden, he conducted research on language attrition (loss of language skills over time) on the part of students of Japanese (Clark & Jorden, 1984), and later wrote a detailed exposition of the conceptual and methodological issues involved in researching and measuring such loss (Clark, 1982).

In 1986, Clark became the dean of program evaluation, research, and testing at the Defense Language Institute Foreign Language Center (DLIFLC) in Monterey, California, where he directed a 50-person staff involved in these three areas. In the testing area, he supervised the design and development, for the more widely taught DLIFLC languages, of an improved version of the Defense Language Proficiency Test series—reading and listening proficiency tests based on FSI-type proficiency guidelines and widely used by the US Department of Defense and other federal agencies. He also supervised DLIFLC's interview-based speaking testing program, and in this capacity served in the early 1990s as chairperson of the interagency Federal Language Testing Board (FLTB). This body was charged with proposing standardized elicitation techniques and rating procedures for speaking proficiency interviewing across the major government language-training institutions, with the goal of counteracting the somewhat disparate testing styles and rating procedures that these agencies had locally and independently adopted over time.

Even though most DLIFLC testing projects and processes were not readily available to the general public, Clark continued to contribute insights and recommendations to the language-testing field at large. For example, long before computers became commonplace in the schools, he proposed a detailed research agenda for their use in language learning and testing (Clark, 1988). He strongly cautioned that computer technology should be viewed as only one part of an overall system of language instruction and assessment, conceptually including the live teacher and a number of other "delivery" mechanisms. He correspondingly urged that close study and detailed specification of the intended learning or assessment outcomes should always precede and inform the adoption of a particular technological approach.

In the early 1990s, Clark elaborated on his long-held view that language teaching and testing should not be operated as a "cottage industry" but that the field should take steps to become a fully professional discipline through greatly expanded networking, collaboration, and coordination of efforts across institutions and individuals, aided by recent major advancements in computer-based data collection and dissemination (Clark & Davidson, 1993). He argued that such an approach, if conscientiously implemented, would move the language learning and testing endeavor away from the fragmented efforts of individual groups and provide a strong and highly feasible foundation for exponential progress in both fields.

Following his retirement from DLIFLC in 1996, Clark has remained active in the language-testing arena on a consultant basis, including serving from 2006 to 2008 as chairperson of the Defense Language Testing Advisory Board (DELTAB), charged with examining and recommending improvements in the DLIFLC testing program. In 2006, John L. D. Clark was awarded the University of Cambridge Local Examinations Syndicate/International Language Testing Association (UCLES/ILTA) Lifetime Achievement Award in recognition of his numerous contributions to the field of language testing.

SEE ALSO: Carroll, John B.; Common European Framework of Reference; Language Testing and Accountability; Language Testing in the Government and Military; Rating Oral Language; Self-Assessment; Technology and Language Testing; Uses of Language Assessments

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Classroom Research on Pragmatics

ALICIA MARTÍNEZ-FLOR

The classroom is an educational setting where two or more persons meet for a given period of time for the purposes of learning, for example, languages (van Lier, 1988). Classroom organization is essential in terms of what kind of input and opportunities for practice are offered for learners to develop their pragmatic competence (Martínez-Flor & Usó-Juan, 2010). Therefore, classroom research refers to that type of investigation actually implemented in real classrooms which studies what is happening in this particular context.

In order to examine the research conducted in this setting with a focus on pragmatics, it is essential to first present the differences involved in developing pragmatic competence in a second language (SL) or a foreign language (FL) classroom. Then the distinction between research which examines the opportunities offered for pragmatic development in the classroom context (i.e., observational), and research which analyzes the effects that implementing a particular instructional treatment may have on fostering learners' pragmatic competence (i.e., interventional), will be reported. Finally, the different research methods employed in classroom-based studies with a focus on pragmatics will also be addressed.

Differences Between Second and Foreign Language Classrooms with a Focus on Pragmatics

According to Kasper (1989), a distinction exists between *natural contexts*, which refer to those places where learning occurs while the learner is actively engaged in naturally occurring contexts, and SL and FL settings, which are designed specifically for language learning to take place. Whereas the former (that is, natural contexts) are traditionally exemplified by dyadic face-to-face interaction, the latter (that is, SL and FL settings) have been traditionally associated with the type of teaching known as frontal, in which the teacher controls the interaction. The distinction between these two last types of educational settings, namely those of SL and FL classrooms, as well as the advantages or disadvantages they display in providing opportunities for developing learners' pragmatic competence, are key in the field of interlanguage pragmatics.

Regarding opportunities offered for learners' acquisition of pragmatic competence in both types of contexts, the SL classroom offers more advantages than an FL setting for developing learners' pragmatic ability (Kasper, 2001). In an SL context, learners have rich exposure to the target language outside the classroom and a lot of opportunities to use it for real-life purposes. This fact enables them to develop their pragmatic ability, since they may get involved in situations where they are required to interpret utterances in context or interact with different participants in different environments. In contrast, learners in an FL setting lack all these opportunities to be engaged in genuine communication in the target language. Additionally, they do not have a direct observation of native speakers that may provide them with a model to be followed. In fact, the only source of input and instances of pragmatic behavior they may receive comes from the classroom. For this reason, creating the necessary conditions that allow learners to develop their pragmatic competence in this specific context is essential. As Rose (1999) points out, this aspect is also particularly difficult, since FL classrooms involve large classes and limited contact

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hours that prevent teachers from organizing an appropriate environment to facilitate the development of learners' pragmatic ability. However, if the FL classroom is somehow homogeneous (a decreasing feature of classrooms in an increasingly multicultural and multilingual world), it may offer the possibility of establishing comparisons between learners' mother tongue and the target language, as well as which pragmatic features may be common to or different in the two cultural systems.

To sum up, SL classrooms involve a series of characteristics that are not observed in FL classrooms, namely those of authentic target language input, interaction in the target language outside the classroom, exposure to diverse contexts, authentic purposes of target language use, and social consequentiality. However, in spite of all the advantages that an SL context may offer for pragmatic development, it has been claimed that even after a long period of contact with the target language, some pragmatic aspects still continue to be incomplete (Bardovi-Harlig, 2001). In this sense, teaching pragmatic competence in both SL and FL classrooms has been regarded as advisable and necessary. According to Bardovi-Harlig and Mahan-Taylor (2003), the classroom is a place where, by means of instruction, salient input may be provided. Moreover, instruction can help learners understand language use and provide them with knowledge of the different choices that may be employed depending on the situation they are involved in and whom they are talking to. (For the elaboration of different activities and instructional approaches to teach a variety of pragmatic features in the classroom setting, see Bardovi-Harlig & Mahan-Taylor (2003), Huth & Taleghani-Nikazm (2006), and Usó-Juan & Martínez-Flor, 2008, among others.) The actual classroom-based research conducted in these settings is reported next.

Research on Pragmatics in the Classroom Context

In an attempt to describe the research conducted on pragmatic-related aspects in the classroom setting, Kasper (2001) distinguishes between *observational* and *interventional* studies.

Observational studies are often conducted in authentic classrooms where the researcher focuses on certain L2 pragmatic issues. The main purpose of these studies involves the analysis of the processes that take place in the classroom by describing in detail any aspects that may influence the acquisition of L2 pragmatics, such as teacher input, chances for productive practice in collaborative activities, or observation of learners' development of pragmatic ability over time. Pragmatic issues can be studied developmentally, by paying attention to the pragmatic development that comes about in the classroom by examining issues related to language acquisition and language socialization, or nondevelopmentally, by paying attention to pragmatic features such as speech acts, discourse markers, classroom discourse organization, or politeness phenomena as they happen at a point in time in the classroom. An analysis of observational classroom-based research on different pragmatic aspects has indicated that both SL and FL classrooms may offer learners opportunities for pragmatic learning. In particular, the studies show that arranging productive activities and making learners interact with other peers provide great benefits for the acquisition of pragmatics, while the teacher-fronted classroom structure can also enable learners to develop their discourse-pragmatic ability (see for example the work by Ohta, 2001).

Interventional studies, by contrast, pay attention to a particular kind of intervention that has been used in the classroom setting to teach learners a specific pragmatic feature of the SL or FL. Thus, in contrast to the observational studies, in interventional research the targeted pragmatic aspect becomes the object of the study and the classroom is seen as a setting in which students may learn as a result of planned pedagogical action directed toward the acquisition of pragmatics. Within this group, Rose (2005) distinguishes three

types of interventional studies, namely teachability studies, instruction versus exposure studies, and studies adopting various teaching approaches.

Teachability studies examine whether a particular pragmatic feature is teachable or not in the classroom setting. This type of study adopts a pretest/posttest design which involves only one group, and is also characterized by adopting an explicit type of instruction. *Instruction versus exposure studies* involve the use of two groups of participants under two different conditions in order to compare whether instruction is better than mere exposure. Thus, they attempt to examine Schmidt's (1993) noticing hypothesis, which implies that exposure to the target language alone is not enough for pragmatics learning. This type of research also follows a pretest/posttest design and the group under the treatment condition is usually characterized by receiving an explicit type of instruction. Finally, the studies which *adopt various teaching approaches* examine the effectiveness of different methods in the classroom context. Among these studies, the two typical types of pedagogical intervention involve explicit and implicit instruction. The explicit instructional approach is based on the provision of metapragmatic information through description, explanation, and discussion of the pragmatic feature being taught, whereas the implicit instruction is operationalized by including particular input enhancement techniques (such as the use of bold text or italics) or recasts that attract students' attention toward the targeted pragmatic feature without explicitly explaining anything about such a pragmatic aspect.

An analysis of these three groups of interventional studies illustrates the positive role that instruction on pragmatics plays in both SL and FL classrooms. Regarding the teachability of pragmatic aspects, results show that a range of different features such as discourse markers, gambits, pragmatic routines, pragmatic comprehension, and a variety of speech acts are teachable (Liddicoat & Crozet, 2001; Safont, 2005). Moreover, the effectiveness of instruction has also been demonstrated in studies in which learners receiving instruction outperform those who are only exposed to the target language (Yoshimi, 2001; Fukuya & Zhang, 2002). Finally, concerning the comparison of different teaching approaches, recent research has indicated that the proper operationalization of the implicit type of instruction may yield similar positive results to those obtained by the use of metapragmatic explanations under the explicit instructional approach (Koike & Pearson, 2005; Martínez-Flor & Fukuya, 2005; Alcón, 2007).

An important decision when conducting any type of classroom-based research on pragmatics, either observational or interventional, is the choice of the method of data collection, since its appropriate use will potentially influence research outcomes.

Research Methods in Pragmatics

Kasper and Roever (2005) claim that the main methodological approaches that have been employed to analyze how target language pragmatics is learnt in the classroom setting can be categorized in three groups, namely those of examining spoken interaction, questionnaires, and self-report data.

The method employed in the first group, that is, *recording authentic discourse*, allows the researcher to observe how participants produce and understand pragmatic information and how they interact in contextual settings, but the researcher has no control over the interaction or over how different variables influence participants' behavior in conversation. In order to gain more control over spoken interaction, observational research resorts to elicited conversations by making use of open and closed role plays. In those cases, interactional data are obtained under controlled conditions, but the relationship of elicited conversation to authentic discourse offers problems of validity. In fact, as Golato (2003) points out, the roles students may be asked to perform are often fictitious or imagined,

and this fact may influence their production when they have to act roles they have never played in real life. In addition, performing role plays, in contrast to authentic conversations, does not have real consequences for the students and, therefore, not only *what* is said but *how* it is said may not reflect real speech. A recent alternative is the collection and analysis of naturally occurring data through, for example, conversation analysis (CA) (Markee, 2000; Huth, 2006; Huth & Taleghani-Nikazam, 2006).

Moving on to the second group, different *questionnaires* have been used to examine FL learners' pragmatic competence in the classroom context. Discourse completion tests have been used to collect pragmatic production of speech act strategies, multiple-choice questionnaires serve to measure recognition and interpretation of utterances, and scaled-response formats have been utilized to evaluate learners' perceptions of pragmatic errors or appropriateness of speech act realization strategies. Among them, the discourse completion test has been the most commonly used in research on pragmatics in classroom settings (Hinkel, 1997; Billmyer & Varghese, 2000; Safont, 2005).

Finally, in relation to the third group, which involves *self-report data*, three main methods have been identified, namely those of interviews, think-aloud protocols, and diaries. These three types of self-report methods are characterized by being totally open-ended and more directed toward analyzing participants' behavior and their decisions on the particular pragmatic aspects examined (DuFon, 1999; Woodfield, 2008). Although this third type of method involving self-report data may provide information on learners' cognitive processes, it has not often been used in classroom research on pragmatics. One reason could be that qualitative data is more time-consuming than the administration and analysis of questionnaires, and it is also more difficult to generalize the results obtained. However, a qualitative type of methodology is needed if we follow a sociocultural or socialization perspective in research on pragmatic learning. In this case, CA may be used to examine in detail how opportunities for pragmatic learning arise in different contexts, and interviews and self-report data may be assessment measures from which we can choose the one that best suits our purposes.

Overall, research on pragmatics in classroom contexts, in either SL or FL settings, shows the positive role of engaging learners in an instructional period (by implementing either an explicit or an implicit instructional treatment) and the teachability of all pragmatic aspects examined (i.e., a variety of speech acts, implicature, pragmatic particles, or presupposition, among others). A common consideration in all this research is the importance of exposing learners to rich and contextually appropriate input, as well as providing them with ample opportunities to communicatively practice the particular pragmatic feature being taught. Additionally, the issue of choosing the most appropriate research method taking into account the objectives to be achieved in a particular classroom-based study is also of paramount importance. In fact, the method of data collection has been reported to potentially influence research outcomes, and that is why it is advisable to adopt a multimethod approach that involves the use of different instruments in all classroom research on pragmatics, to maximize information and increase the level of objectivity of findings.

SEE ALSO: Interlanguage Pragmatics; Pragmatic Awareness in Second Language Learning; Pragmatics Research Methods; Second Language Pragmatic Development; Speech Acts Research; Testing in Pragmatics Research

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Classroom Discourse

ANDREW JOCUNS

Classroom discourse, broadly defined, refers to all of those forms of talk that one may find within a classroom or other educational setting. However, a review of the literature reveals that the context of what makes up classroom discourse as a unit of analysis is quite broad, and perhaps a better way of thinking of this unit is to broaden the scope of the term to discourse in educational settings. The analysis of classroom discourse has evolved from studies that examined teacher and student interaction to a more recent emphasis on learning and identity construction through discourse. The range of topics included within classroom discourse analytical studies has also ranged from such topics as literacy and teacher–student interaction to a more recent emphasis on multimodal semiotics and interactions in STEM classrooms (science, technology, engineering, and mathematics). In addition the breadth of research on classroom discourse has ranged in scope from microanalytical conversation analysis to Halliday's systemic functional grammar (1978, 1994). While many linguists have fostered the development of classroom discourse, it should also be noted that education research has evolved its own paradigmatic approaches to classroom discourse (e.g., interaction analysis). This selective review will begin by examining some seminal texts in the study of classroom discourse focusing first upon ethnographic studies, then offer a discussion of the influence of conversation analysis in the study of classroom discourse, and finally highlight some recent trends in the study of this phenomenon including knowledge in classroom discourse and research in STEM classrooms.

Culture and Socialization in Classroom Discourse

It goes without saying that the history of social science theory and practice has involved an ever shifting unit of analysis relative to the theory or practice to which a researcher adheres. Some of the most seminal studies of classroom discourse were rooted in linguistic anthropology, and more specifically derived from the ethnography of speaking. Such studies focused upon the variation of how language is socialized not only across languages but other spoken varieties and dialects as well. Cazden, John, and Hymes's (1972) edited volume provided a series of studies that was meant to emphasize how language was often misused in schools such that minority students were left out largely because they had no forum in school with which to utilize the linguistic practices that they were socialized in. That is, schools failed to consider the effects of native languages and dialects in curriculum development. Cazden (2001) has suggested that, in order to offer a more inclusive classroom, discourse behavior should be explicitly taught in classrooms, enabling students who are excluded from success because of issues of mismatched linguistics practices to participate fully in the classroom.

Another such study rooted in the ethnography of speaking was Philips's (1983) study of the Warm Springs Indian Reservation. Philips noted problems in how White teachers interacted with Native American students in the classroom. The students in question were socialized to interact differently with adults than their Caucasian counterparts. Philips identified the interactive means behind this discrepancy and defined the concept of participant structures—ways of arranging verbal interaction for students. Additionally Philips

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isolated four participant structures that were used in the classroom that conflicted with those the Native American students were socialized in and utilized in their own homes. This study revealed that culture and socialization play a key role in how students are perceived by their teachers in the classroom. Students who were socialized in the dominant culture were more familiar with the participant structures used in the classroom, and as such, had a better chance at success. The analysis of participation structures has gone well beyond the classroom but has endured as an important analytical category with which to study classroom discourse ethnographically. In a more recent study of Balinese Gamelan classrooms in the United States, Jocuns (2009) emphasized how students are active participants in classrooms, and at times, may choose which participant structure to use at a given moment.

An equally important strand of research in classroom discourse and cultural difference has been the work of Gumperz. From Gumperz's work came the important understanding of conversational inference—the situated or context-bound process of understanding amongst participants—and contextualization cues—verbal signs produced during interaction that enable the process of conversational inference to occur. Cook-Gumperz and Gumperz (1982) argue that an important consideration for studies of classroom discourse and interaction is the notion of communicative competence. Communicative competence refers to what a speaker needs to know in order to be a competent speaker within a community. As Philips (1983) has shown, what makes one communicatively competent within a community may not make one competent within an educational setting. What is more, Cook-Gumperz and Gumperz (1982) contend that there is a vast difference between ways in which people learn the world over. That is to say, cultural differences in discourse style and behavior do not end with a discussion of linguistic practices, but should also include cross-cultural examinations of learning practices.

The early studies of classroom discourse that focused upon differences in how groups of people are socialized and how that affects classroom experiences and performance eventually bled into other areas of language use in the classroom, most notably literacy studies. Several researchers found that literate practices, similar to discursive practices, were vastly different in school contexts compared to the communities from which students were socialized. Shirley Brice Heath's (1983) study of multiple communities in Appalachia discussed how not only linguistic practices differed in terms of socialization across communities, but the expectations of literacy practices also differed across these cultural traditions. Scollon and Scollon's (1981) study drew attention to the differences between literate practices of textual literacy and oral literacy in Arctic Village, Alaska. In addition, there is a growing body of research in the new literacy studies which has effectively drawn attention to the fact that not only are there different cultural practices of literacy, and different values placed on literacy, but also that literate practices have implications that go well beyond the classroom itself (Gee, 1996). One of the implications of these studies of cultural differences between language use and literacy practices, and between the community and the classroom, is that what counts as knowledge varies across these contexts and success in the classroom implies a comprehension of the dominant culture's use of linguistic and literate practices (Bloome et al., 2005).

A recent trend within classroom discourse analysis has involved the positions taken up by students and the role of teachers in the development of classroom and educational identities. Wortham's (2006) study of students in a great books course in middle school has drawn attention to how academic learning and processes of social identification can be dependent upon one on another. Wortham develops his thesis based upon two students whose identities evolved along their trajectories of identification in unexpected ways where the students in question were identified by their teacher and classmates as having identities and character traits similar to curricular themes that emerged in the class. From this study

we learn how processes of social identification emerge within classrooms, along trajectories of identification, over both time and space and that social positioning (i.e., identity development) and academic learning are dependent upon one another.

The Microethnographic Study of Classroom Discourse

Influenced in part by the conversation analysis tradition, there is a large body of research in education and classroom discourse that has focused upon the real-time moment-to-moment interactions between teachers and students. This is not to suggest that those studies that utilize the ethnography of communication do not examine real-time language use, but such studies tend to be more holistic and focus upon larger cultural differences. Conversation analysts argue that social structures are discerned and reproduced in how participants interact. As such the analytic structures that make up the conversation analysis tradition, such as turn structure, repair, and interaction sequences should emerge during classroom interaction between teachers and students and reveal some aspects of the social structure that holds classrooms together. In addition, as noted in the previous section, the structures of the dominant and minority cultures emerge as well. One example is question and answer sequences, and as Heath (1983) found in her study, there were differences in how the communities in her study valued and used such question and answer pairs in the home compared to how they were expected to be used in the classroom.

In his work on the structure of classroom behavior, Mehan (1979, 1985) noted that one difference in how teacher–student interaction emerges in the classroom, as compared to normal conversation, is that in the classroom there may also be an evaluation component that is attached to the end of the interaction by the teacher. A widespread finding, and one that has continually received much attention, from studies of classroom discourse turn sequences has been the initiation-response-evaluation, or I-R-E, conversational turn structure (Mehan, 1979). Within this structure a teacher may ask or initiate a question, delegate a student to respond, and based upon the response evaluate the accuracy of the student's response or offer other types of feedback.

There have been several interpretations and criticisms of the I-R-E structure that are worthy of note. Wells (1999) refers to this structure as IRF where the F refers to feedback or follow-up; this is to emphasize that the teacher is not always evaluating the student's response as positive or negative. One interpretation is that the I-R-E limits student participation to short brief answers, limited in scope to what the teacher knows, and as such not conducive to more complex types of learning to include: developing intricate responses, dealing with ambiguously composed texts and constructing alternative interpretations (Bloome et al., 2005). Another issue with I-R-E that Bloome et al. discuss is that on the surface it appears as if the I-R-E is a linear pattern of social interaction, when in fact it can, and often does, occur alongside many classroom interactions that may be occurring simultaneously. One of the many criticisms surrounding the I-R-E is that evaluation is not always present and that while many classroom discursive interactions between teachers and students resemble the I-R-E structure, it is obtuse and meaningless to be analytically confined to the structure itself (Wells, 1999). Rather, many researchers suggest going beyond the I-R-E in order to effectively evaluate the quality of the interaction. Others have suggested that the structure itself is bound by a complex power relationship between teachers and students and by using the I-R-E a teacher is able to exert authority and power within the classroom. Another interpretation of this structure is worthy of note here, as it relates to processes which are going on in real-time conversations outside of the classroom, and that is the construction of common ground and intersubjectivity. This body of work suggests that the seeming gatekeeping behavior of the teacher who utilizes the I-R-E structure

is not to limit what the students contribute as much as it is to manage the information and knowledge that is conveyed through the lesson and as a result develop "common knowledge" amongst the students and teacher (Edwards & Mercer, 1987).

Erickson (1996) notes that the variety of interactions that emerge within a classroom are not always representative of the simple I-R-E structure, but rather include a complex array, or ecology, of behaviors that have social and cognitive implications for the participants involved. The emergent discursive behavior of classrooms is not always represented accurately by the I-R-E structure. Jocuns (2007, 2009) investigated the pedagogy used to teach Balinese Gamelan known as *maguru panggul* (the teacher is the mallet) and those findings suggest a different format for the I-R-E as it emerges in different types of classrooms. In a music classroom the teacher is constantly evaluating the behavior of music students and addressing problems as they arise in real time. The important goal is establishing common ground and shared knowledge between the teacher and the music students. This suggests that the structure of turn sequences is not uniform across educational settings and that the goal of such structures is not necessarily to maintain control and power, but for the teacher to establish shared knowledge, that is, intersubjectivity, amongst the teacher and students (Edwards & Mercer, 1987). Another body of recent work in classroom discourse has involved studies of multimodal discourse analysis where researchers draw on large stores of digitized video data to analyze the behavior in classrooms. One such approach has also introduced Halliday's systemic functional grammar to the analysis of classroom discourse, most notably the work of Wells (1999).

Knowledge and Classroom Discourse

One approach to classroom discourse has been to examine not only the language that is used within the classroom or educational setting but the myriad of ways in which knowledge is constructed, displayed, or both during social interaction within the classroom, not to mention content knowledge. These studies build on ideas discussed in the previous section, namely those that emphasize how classroom discourse involves a negotiation of shared knowledge between teachers and students (Edwards & Mercer, 1987). Such studies have examined the metacommunicative knowledge at a student's disposal during learning interactions including verbal and nonverbal discourse, and the participant structures available for a student to use in a specific educational setting (Jocuns, 2007, 2009). In addition, studies have shown how the discursive strategy used in a classroom influences the co-construction of knowledge and identity in the classroom (Duff, 2002). A common theme of studies of knowledge and classroom discourse has also been the negotiation and re-negotiation of knowledge between teachers and students (Tuyay, Jennings, & Dixon, 1995). The crux of such studies is that they emphasize that students learn more than just content knowledge during classroom interaction: they also learn the metacommunicative means by which to construct knowledge, as well as the ability to develop and maintain social roles and identities. What is more, through classroom discourse students play a role in constructing content knowledge.

Discourse Analysis in STEM Classrooms

An ever increasing body of research in classroom discourse has examined the language used in teaching mathematics and science in classrooms and laboratoriums, as well as how language in the science classroom is influenced by science textbooks. Interestingly many of these studies are influenced by Halliday's social semiotics. In addition to showing how language is used differently in science activity, in terms of how scientists in laboratory

meetings blur the distinction between the scientist and the physical world (Ochs, Gonzales, & Jacoby, 1996), such studies of the science classroom emphasize the importance of a multimodal approach to the science classroom. Lemke (1990) has shown how the specific language of science is used to talk about the work and that in order to "talk science" students in the science classroom must acquire this language to be successful. Kress, Jewitt, Ogborn, and Tsatsarelis (2001) examined how the nature of scientific discourse is multimodal and as such students must acquire not only the skills to talk about science, but also the multimodal interactional skills to learn in the science classroom. Using a systemic functional approach Young and Nguyen (2002) show how modes of teaching and learning are influenced by different modes of communicating. In their case they examine the differences in language used in a textbook compared to the verbal interactions of the teacher. Similarly, others have shown how students in the science classroom experience the science curriculum through both verbal interactions and written text, and that different science texts promote different types of interactional engagement and as such promote different types of discourse (Kuipers, Viechnicki, Massourd, & Wright, 2008). Another body of research in STEM classrooms focuses upon the fact that, in order to be successful in a STEM class, students must become members of a community of speakers (Sfard, 2007). Discourse analysis in the science classroom involves situating the science textbook within the interactive framework of the classroom and in some instances the text is resistant to talking science.

This entry began with a juxtaposition of two approaches to classroom discourse—the ethnography of communication and conversation analysis—followed by a short discussion of a few approaches that utilize systemic functional grammar. Rampton, Roberts, Leung, & Harris (2002) provides a complete and thorough description of these three theoretical traditions as they are related to research work in applied linguistics and the analysis of classroom discourse. While these three traditions do represent the main three theoretical angles to approaching discourse in educational research it should be noted that most analyses are not confined solely to one of these three approaches, but often utilize an eclectic mix of theories and studies including those found in qualitative traditions of educational research.

SEE ALSO: Classroom Research; Conversation Analysis and Classroom Interaction; Conversation Analysis and Education; Critical Analysis of Discourse in Educational Settings; Hymes, Dell; Individual Differences in the Classroom; Language Ideology in a Language Classroom; Silence and Participation in the Language Classroom

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Classroom Research

NINA SPADA

Classroom research (CR) in applied linguistics has evolved from descriptions of pedagogic practices used primarily for second/foreign language (L2) teacher training purposes, to experimental investigations of the effects of instruction on L2 learning, to analyses of a wide range of learner factors that are thought to contribute to more (or less) successful learning. Below CR is defined along with a description of how it has evolved, how it has been conducted and the types of questions and topics that have been investigated.

What Is Classroom Research?

According to Allwright (1983), "Classroom research is just that—research centered on the classroom . . . it simply tries to investigate what happens inside the classroom when learners and teachers come together." (p. 191). More recently, Dörnyei (2007) described CR as "an umbrella term for empirical investigations that use the classroom as the main research site" (p. 176). This emphasis on the classroom as the context in which research is carried out is critical because not all research that claims to have implications for L2 learning and teaching actually takes place in classrooms. Nunan (1991) emphasized this point in a review of 50 widely cited studies examining relationships between L2 teaching and learning. He found that only 15 of them had been carried out in authentic language classrooms. Most of the studies were conducted in a laboratory or quasi-laboratory setting and thus were more appropriately referred to as "classroom-oriented" research. Nunan argued that "if context is important to research outcomes, then we need more classroom-based . . . studies" (p. 103). In the years since Nunan's review, more research has been carried out in L2 classrooms.

What Are the Origins of L2 Classroom Research?

CR emerged as a clearly identifiable area of research in applied linguistics in the early 1960s. It was at that time that the "method comparison" studies were underway to investigate the effects of the audio lingual versus the cognitive code method on L2 learning (e.g., Chastain, 1969). These large-scale experimental studies indicated no superior advantages for one teaching method over the other but the results were difficult to interpret because no information had been collected about how the different instructional methods had been implemented. This was a serious limitation of the research because teachers are known to implement the same method in different ways. Even when different labels are used to characterize different methods, they often overlap in several ways. This was confirmed in a replication of the "method comparison" studies carried out 20 years later with the inclusion of a classroom observation component. The results indicated overlapping instructional practices in the two experimental groups and no advantages for one L2 teaching method over the other (Swaffar, Arens, & Morgan, 1982).

The realization that the "method comparison" studies failed to take account of what actually happened in classrooms led researchers to develop studies in which teaching and learning behaviors in L2 classrooms were systematically described.

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Are There Different Approaches to Classroom Research?

In his comprehensive book on research in second language classrooms Chaudron (1988) identified four traditions in classroom research: *psychometric*, *interaction analysis*, *discourse analysis*, and *ethnographic*. The psychometric approach involves experimental and control groups and measurements of learning outcomes. It was used in the "method comparison" studies discussed in the previous section and has also been used in more recent CR on instructed second language acquisition (SLA) some examples of which are presented below.

Interaction analysis, influenced by sociological investigations of group behaviors in first language classrooms, is characterized by the use of observation schemes to describe and analyze teacher and learner behaviors. Over 30 observation schemes have been developed for use in L2 classrooms and they vary in number and type of categories and focus. For example, one well-known L2 observation scheme, the *Communicative Orientation of Language Teaching Observation Scheme—COLT* (Spada & Fröhlich, 1995) focuses on pedagogical practices and linguistic behaviors of teachers and learners. This contrasts with a recent observation scheme, *Motivation Orientation in Language Teaching—MOLT* (Guilloteaux & Dörnyei, 2008), which focuses on aspects of teachers' motivational practice and learners' motivational behavior.

Discourse analysis, "arose from a linguistics perspective in an attempt to analyze fully the discourse of classroom interaction in structural-functional linguistic terms" (Chaudron, 1988, p. 14). This approach is characterized by detailed descriptions and analyses of the speech produced by teachers and learners. While there have been analyses of the entire discourse in some first language classrooms, most L2 research has focused on particular aspects of discourse for detailed study (e.g., question types, corrective feedback). Contemporary research in critical discourse analysis in L2 classrooms represents an epistemological shift from traditional discourse analysis taking the view that "classroom discourse like all other discourses, is socially constructed, politically motivated, and historically determined" (Kumaravadivelu, 1999, p. 472).

Ethnographic CR originated in cultural anthropology and the tradition of describing and analyzing the practices and beliefs of different cultures through the use of rich narratives including field notes, diaries, journal entries, film, and audio recordings. Although it took some time for ethnographies of L2 learning to appear on the CR scene, they are a recognized research tradition in L2 learning and teaching and span a wide range of topics (van Lier, 1988). Examples of ethnographic research in L2 classrooms include detailed descriptions and comparisons of ESL student identities and social relations and how these impact on classroom practice and students' academic and linguistic progress (Toohey, 2000).

While these four traditions represent distinct approaches to CR situated within different theoretical and empirical frameworks, they are increasingly combined in CR studies. Classrooms are highly complex environments including instructional and social components. Thus, researchers increasingly agree that CR benefits from the use of multiple methods and techniques for data collection and analysis.

What Type of Questions and Topics Are Examined in CR?

A wide range of questions and topics have been investigated in CR some of which have already been referred to above. One of the main areas of CR is the kind of linguistic input that learners are exposed to either through teacher talk or instructional materials. This includes investigations of the way in which L2 instructors modify their speech using strategies such as repetition and paraphrasing to aid learner comprehension. Some recent work has examined the extent to which other sources of input (e.g., simplified texts) promote

comprehension and learning (Horst, 2005). Another central area of CR has focused on the type of questions that teachers ask (e.g., closed versus open; genuine versus display) and how this contributes to the quantity and quality of learner production. One recent example is a detailed discourse-based analysis of question types in content and language integrated learning (CLIL) classrooms in Austria (Dalton-Puffer, 2007).

A good deal of CR has investigated the different types of corrective feedback teachers provide to learners, whether some types occur more frequently than others and in what instructional contexts. CR has also examined whether learners notice certain feedback types more than others, if they respond differently to feedback types and whether particular types of corrective feedback contribute more to L2 learning (Lyster, 2007). In addition, classroom-based studies in the instructed SLA literature have examined the effects of different types of instruction on L2 learning (Spada, 2011). CR also includes studies that have investigated interactions between different types of instruction and characteristics of individual learners (e.g., aptitude) and their combined effects on L2 learning (Erlam, 2005).

Future Directions in CR

One of the claims that researchers make about CR is that the findings are likely to be considered as more relevant and meaningful by L2 teachers and practitioners because the research is carried out with real teachers and learners in real L2 classrooms. While this greater "ecological validity" may be true, the challenges of carrying out research in authentic classrooms are many, not least of which is the lack of control that researchers have in such contexts. The debate about the "ecological validity" of CR has intensified in recent years and is likely to attract more research attention in the future.

SEE ALSO: Form-Focused Instruction; Instructed Second Language Acquisition; Roles for Corrective Feedback in Second Language Instruction

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Classroom Research in Second Language Acquisition

JOAN KELLY HALL AND DUFF JOHNSTON

A sociocultural perspective of language and learning has had a major impact on classroom research on second language acquisition (SLA) over the last two decades. This perspective considers language to be a fundamentally social phenomenon, comprised of linguistic resources whose meanings are both embodied in and constitutive of everyday communication. Language learning is viewed as a collaborative process that begins in our regularly occurring communicative activities. Through repeated experience and the guidance of more capable others, individuals acquire not only the grammatical, lexical, and other communicative resources essential to full participation, but also the communicative intentions and specific perspectives on the world that are embedded in these resources.

These views of language and learning have drawn attention to the importance of language classrooms as sociocultural communities in their own right and as communities embedded in larger social worlds. While these communities may be characterized by shared goals, resources, and patterns of participation, they may also serve as sites of conflict involving divergent values, motivations, and resources. Crucial to the accomplishment of classroom communities, whether cooperative or not, are the interactional activities created in teacher–student and student–student talk. Through their interactions with students teachers provide models of what they consider appropriate language knowledge and skills for use as well as strategies and opportunities for students to acquire them. In the process of participating in these interactions and those involving their peers, learners position themselves in relation to different patterns of interaction and to the roles, relationships, and goals made available through these patterns. In the process, learners develop habits of language use with which they make sense of and participate in their classroom communities. It is their eventual internalization of their activities' linguistic resources, including the particular worldviews embodied in them, which characterizes classroom language learning.

What follows is this. After briefly summarizing the disciplinary foundations of second and foreign language classroom research informed by a sociocultural perspective, we review current research trends and conclude with a brief discussion of future directions.

Disciplinary Foundations and Early Research

A sociocultural perspective on classroom-based SLA draws on several disciplinary fields for theoretical and methodological inspiration. A first source of insight is found in the tradition of American linguistic anthropology, and in particular, the work of Dell Hymes, John Gumperz, and Elinor Ochs. In contrast to a view of language as a universal, fixed property of the human mind, Hymes (1964) considered social function to be the source of linguistic form, and so proposed the ethnography of communication as a conceptual framework and method for capturing patterns of social action and their linguistic components as used by members of social communities in real-world contexts. A contemporary

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of Hymes, Gumperz (1982) was also interested in the social foundations of language. Labeled interactional sociolinguistics, his approach to the study of language use focuses on the identification of linguistic and prosodic cues social group members use to index contextual meanings, and specifically on those moments where interpretive differences in cue use lead to miscommunication. Building on the work of Hymes and Gumperz, and drawing on empirical data gathered from caregiver and other activities within family groups, Ochs (1988) proposed language socialization as a conceptual framework for understanding the interdependence of language and culture learning. A key premise of this framework is that through its use in interaction, language socializes individuals not only into appropriate and meaningful patterns of language use but also into particular identities and social relationships, and more generally into systems of thoughts, beliefs, and values specific to their groups.

Drawing on these insights, early classroom research used ethnographic methods such as participant observation and audio and video recordings to capture patterns of communication found in classrooms; these were then examined for the kinds of opportunities for learning they made available to learners. While some researchers in the 1980s drew on these insights to study interaction in classrooms that included linguistically and culturally diverse students, such research did not gain currency in studies of second and foreign language classrooms until the 1990s. Some early studies conducted during this time include those by Poole (1992), Harklau (1994), Willett (1995), and Toohey (1998). Drawing on the language socialization paradigm, Poole examined teacher–student interactions in two ESL (English as a second language) classes in terms of the cultural norms and beliefs regarding expert accommodation of novice incompetence and displays of knowledge into which the students were being socialized. In a similar vein, Harklau compared patterns of spoken and written language use in an ESL classroom to those in a mainstream classroom and found significant differences in terms of the curricular content and goals and instructional practices. She argued that these differences had different socializing effects and thus led to differential treatment of the ESL learners.

Also drawing on the language socialization paradigm are the studies by Willett (1995) and Toohey (1998), who examined the socialization practices found in elementary classrooms that included ESL learners. Together, their findings reveal how children's involvement in different routines with their teachers led the teachers to develop different perceptions of learners' language abilities. These perceptions, in turn, led to further differentiation in the kinds of learning opportunities the teachers made available to the learners, which influenced the children's subsequent language and academic development. Although most of the early studies focused on learning contexts of ESL learners, a few examined foreign language classroom contexts. These include Duff's (1995) study of the interaction patterns in a content-based immersion classroom in Hungary, Hall's (1995) study of teacher–student interaction in a high school Spanish-as-a-foreign-language classroom, and Lin's (1999) study of the classroom interaction patterns found in junior form EFL (English as a foreign language) classrooms in Hong Kong.

Another early source of inspiration for classroom research comes from ethnomethodology, a branch of sociology, and specifically, conversation analysis (CA). Asserting interaction as the fundamental site of human sociality, CA seeks to describe the structures used by social group members to bring about and maintain social order in their interactional activities. One early influential study on the interactional accomplishment of educational activities emerging from this paradigm is the 1979 study by Mehan in which he revealed the formal structure of teacher-directed lessons in first language elementary classrooms to be a three-part exchange of teacher initiation, student response, and teacher evaluation (IRE). While this paradigm had some influence in discussions on second and foreign language classrooms in the 1980s and early 1990s, it was not until the late 1990s that interest

developed in using CA to examine the routine activities of second and foreign language classrooms.

A third source of inspiration comes from developmental psychology and in particular Vygotsky's theory of learning (Vygotsky, 1986). A key premise of this theory locates the source of learning in social activity mediated by symbolic means. These means are the linguistic tools and other resources with which more expert members assist less competent participants in noticing, ordering, representing, and remembering their involvement in communicative activities. On this view, individual learning is fundamentally tied to its specific contexts of learning and the means by which they are constituted. These contexts and their means are what eventually become the cognitive tools with which learners make sense of and participate in their communicative worlds. Early language classroom research invoked different Vygotskyan concepts such as regulation, private speech, scaffolding, and the zone of proximal development (ZPD) to examine the linguistic means used by teachers and students to create and participate in various learning activities. Representative studies include Adair-Hauck and Donato (1994), which examined the means by which teachers scaffolded learners in the ZPD; de Guerrero and Villamil (1994), which examined the effects of ESL peer mediation in the ZPD; and McCafferty (1994), which examined the role of L2 learners' private speech.

Current and Future Directions

While these trends in classroom research continued throughout the 1990s, they did not begin to take a firm hold of the field until the early years of the new millennium. This increased interest was due in part to scholarly discussions in the late 1990s that called for expanding the theoretical, conceptual, and methodological scope of the field. While earlier research could be characterized by allegiance to its disciplinary roots, current trends are taking a more synergistic approach that merges disciplinary boundaries. For example, current ethnographic studies of classrooms with interests in language socialization have also drawn on social anthropological research and specifically on Lave and Wenger's (1991) community of practice model. In this model, novice community members start as legitimate peripheral participants who gradually become experts through the language they learn to use in routine patterns of interaction. Two examples of studies adopting this extended model of language socialization are He's (2003) study on the varied ways Chinese heritage language learners participated in classroom interactions and Vickers's (2007) study of the professional L2 socialization of an ESL student in an undergraduate computer engineering course. In contrast to earlier work, these more recent studies emphasize that the second and foreign language socialization of learners does not necessarily follow a smooth or predictable course. While inclusionary efforts of more expert community members play a major role in learners' socialization, a variety of other social, historical, and political issues may influence the developing participation of these novice members. Taken together, these efforts reinforce the importance of sensitivity to local conditions of use and the specific, situational needs and practices of learners and instructors.

Another hallmark of current ethnographic research is its critical view of classrooms. In contrast to earlier work, which depicted classrooms as largely unproblematic learning environments, current research highlights the potential for conflict between instructional goals and learner outcomes. In addition, a second group of studies has begun the vital work of examining the social contexts of foreign language education in developing areas outside traditional Western research settings. Representing the first group of studies is Duff's (2002) examination of interaction in a mainstream Canadian high school social studies class. Her findings reveal how instructor strategies for including ESL students,

such as asking them to discuss what, to the students, were sensitive issues, and the regular interruptions by native English-speaking peers, worked together to reduce ESL students' participation rather than enhance it. Similarly, Nguyen and Kellogg (2005) reveal how instructor objectives and peer pressure in an adult ESL class led to relatively low frequency of electronic message board postings by learners who disagreed with course content favoring a tolerance of diverse sexual orientation. As an example of ethnographic classroom research in a non-Western setting, Blommaert, Muyllaert, Huysmans, and Dyers' study (2005) of English classes at a multilingual and socioeconomically disadvantaged community high school in South Africa reveal how local community practices of L2 use and instruction worked to reinforce locally appropriate but internationally divergent language models. The authors argue that the peripheral normativity reproduced at the school may be typical of second and foreign language learning in many developing areas of the world. Such studies provide a detailed, ground-level understanding of how dominant language models are shaped by local stakeholders to fit their immediate purposes. What both groups of studies emphasize are the challenges inherent in using the social and communicative resources of classrooms to further the language learning of students with varied identities and a wide range of social, affective, and linguistic needs.

Another current trend extends interest in the sociology of second and foreign language classrooms by using CA methods to describe the structural properties of classroom interactional activities, such as the pedagogical practice of directing learners to spot and correct errors (Koshik, 2002), the construction of a small group activity (Mori 2002), and openings of pair tasks (Hellermann, 2007). Relying primarily on detailed transcripts of naturally occurring audio- and video-recorded interactions and paying close attention to the fine points of interaction, the studies make visible the detailed and complex work that language teachers and learners do with their talk to build and manage their classroom worlds.

A final area of focus of contemporary socioculturally grounded classroom research continues to use Vygotskyan concepts to investigate teaching and learning interactions, with increasing interest in the role of student–student interaction as resource in addition to teacher–student interaction for working in learners' ZPDs. Guk and Kellogg (2007), for example, found complementary roles for the two types of interaction by noting that teacher–student interaction produced shorter, form-focused exchanges, while student–student interaction produced longer, more meaning-focused exchanges in Korean EFL classrooms. Similarly, Huong (2007) found that classroom groups that included a more proficient student from a more advanced class used more English in their discussions and were exposed to a higher number of new lexical items when compared to unassisted groups comprised of students at the same proficiency level. Both studies provide arguments for the role of other-mediated learning in the classroom, with a particular emphasis on the role group work can play in developing learners' language knowledge and use.

Most recent is the developing interest in dynamic assessment (DA), which extends the concept of other-mediation in situations of formal language assessment. In contrast to traditional assessment measures that test students in conditions of unmediated isolation, DA seeks to gain a more accurate picture of a learner's ongoing and potential development by allowing them to interact with more knowledgeable partners during the completion of assessment tasks. As one example, Poehner (2007) examined DA sessions involving university-level learners of French describing short film clips to an instructor while using the perfective and imperfective aspects. In interactions with the learners, the instructor asked about problematic aspect choices in order to gauge learners' conceptual understandings while also successfully encouraging them to make more accurate choices. Studies like this make a case for a social view of language learning that treats assessment measures as opportunities for continued language development through the interactional mediation of others.

Socioculturally grounded classroom research on SLA has made significant contributions to our understanding of language classrooms. We understand more fully the complexities of these contexts of learning, and in particular, of the kinds of activities and events typical of different types of classrooms. Likewise, we have gained an understanding of how the social, economic, historical, and political conditions of larger social communities give shape to the types of learning communities that are created in language classrooms, and, more particularly, the varied roles that teachers and students play in their learning communities, and the subtle yet significant influences that teachers' and students' understandings of their roles have on the learning environments they create. We also understand more fully the intricacies of interactional patterns and other means used to mediate learners' language development.

These accomplishments notwithstanding, much work remains to be done. In this final section we briefly chart what we feel are promising directions for future research on classroom-based second and foreign language learning. A first direction is toward greater integration of the conceptual and methodological perspectives outlined above. Although this entry has largely presented these perspectives in isolation for clarity's sake, an honest appraisal of existing research finds considerable cross-pollination among them, with scholars regularly invoking a principled eclecticism in merging insights, concepts, and methods from several fields in order to conceptualize and describe the complex interactional dynamics they find in language classrooms. Typical of this approach is the work of Hellermann (2008), who embeds conversation analytic examinations of learner–learner interactions in adult ESL classrooms within a community of practice framework. While proponents of conceptual and methodological orthodoxy will undoubtedly question such attempts at research synergy, socioculturally minded classroom researchers will continue to draw on a diversity of ideas and methods to illuminate and build understanding of the myriad details of classroom language learning contexts.

A second direction for future research involves the continued development of critical language classroom assessments. Following current research that problematizes the interactional affordances and outcomes for learners, future studies should continue to develop rich descriptions of classrooms that highlight the potential for contested interactional goals and activities. Key to these studies will be fuller descriptions of classrooms as cultural contexts with their own sites of struggles and their own local institutional imperatives that both support and contradict the social and linguistic needs of learners. Also key will be the inclusion of examinations of interactions that occur both at the margins of formal lessons and within them, such as small talk, storytelling, joking, and other interactional activities by which friendships and other relationships are built and managed, and the kinds of learning opportunities they engender.

A third direction involves an expansion of classroom-based studies beyond the Western research core to include work in what have traditionally been considered peripheral, developing contexts. In addition, efforts to explore a fuller range of language learning at all levels of formal education—including, most significantly, elementary and secondary levels—will undoubtedly be a feature of future studies as researchers explore the sociocultural implications of classroom-based learning.

Finally, as research continues to explore a wider range of classroom contexts and to connect them more closely with the varied communities that language learners also inhabit, there is still a need to connect descriptions and findings with efforts to address the challenges and inequalities that are revealed. As we move more fully into the twenty-first century, one mark of effective socioculturally grounded research on second and foreign language classrooms will be the ability of researchers to establish and maintain productive collaborative relationships with educators, parents, policy makers, and other community stakeholders aimed toward nurturing effectual practices of language teaching and learning in classrooms that are indigenous to their particular social contexts.

SEE ALSO: Classroom Discourse; Conversation Analysis and Classroom Interaction; Hymes, Dell; Interactional Sociolinguistics as a Research Perspective; Language and Identity; Sociocultural Theory; Vygotsky and Second Language Acquisition

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Cluster Analysis

KATA CSIZÉR AND JOAN JAMIESON

"Cluster analysis is the art of finding groups in data" (Kaufman & Rousseeuw, 1990, p. 1). Cluster analysis is a cover term for a variety of exploratory techniques which aim to classify observations into subgroups based on their similarities to each other, and their differences from members in other subgroups, based on a set of predefined characteristics. Observations that applied linguistics researchers might want to classify as cluster analysis depend on the subfield: in discourse analysis, various texts might be grouped by using linguistic features and different registers as clustering variables; in testing, test tasks might be grouped using types of input and difficulty indexes as clustering variables; in second language acquisition, learners might be grouped using individual difference variables such as students' attitudes and motivation as clustering variables. Researchers should take into account the fact that this procedure is considered to be exploratory (Kojic-Sabo & Lightbown, 1999; Dörnyei, 2007); that is, it usually describes groups of observations or participants but does not test hypotheses; effect size is not considered.

Overview

Cluster analysis is distinguished from other data-reduction techniques, such as factor analysis and discriminant analysis, by the fact that with many cluster analysis techniques there is no assumption of an underlying statistical model (Arabie & Hubert, 1996; Everitt, Landau, & Leese, 2001; Norušis, 2010). As Dörnyei (2007) puts it, "currently cluster analysis lacks an underlying body of universally endorsed statistical theory. Thus, researchers need to make several somewhat arbitrary decisions relating to the method of calculation" (p. 237). Researchers not only face this dilemma but also a general lack of agreement on how a "cluster" is defined and the computational difficulty of finding nonoverlapping clusters in all but the smallest of data sets (Milligan, 1996).

A number of techniques are available in cluster analysis, including graphs, partition or proximity (both names are used), hierarchical, fuzzy analysis, and the more statistically sound methods of classification likelihood and finite mixture models (Everitt, personal communication, May 13, 2010). The two most common techniques are hierarchical and partition/proximity (Kaufman & Rousseeuw, 1990). Hierarchical techniques compute as many clusters as there are observations, in iterative runs, which is very intensive for large data sets. There are two types of hierarchical techniques—agglomerative methods and divisive methods (Kaufman & Rousseeuw, 1990). The most common, agglomerative methods, start with as many clusters as there are observations and end up with one cluster. First, the closest individual members of the sample are grouped into new clusters, and then the closest clusters are joined together until one single cluster containing all sample members is arrived at.

Divisive methods do the opposite; they begin with one cluster and end up with as many clusters as there are observations. In both techniques, once an observation has been assigned to a cluster it cannot be reassigned. Partition/proximity techniques classify data into k clusters, in which each cluster must contain one observation, and each observation must belong to only one cluster. The number of clusters is predetermined by the researcher,

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which is seen as a drawback because results are highly dependent on this initial choice. All of these techniques produce a series of partitions in the data by using one of several clustering measures. Similarity measures are frequently used for categorical data and for data containing both continuous and categorical variables, while dissimilarity measures (i.e., distance measures) are commonly used for continuous data. (For descriptions of frequently used methods for combining clusters, see Everitt et al., 2001, pp. 40 & 62, and Norušis, 2010, pp. 372–4).

Cluster analysis is applied following seven steps (Everitt et al., 2001; Milligan, 1996)

1. Selection of entities to cluster.
2. Selection of the variables in the data set on which to group the observations or participants.
3. Standardization of the variables.
4. Selection of a similarity or dissimilarity measure.
5. Selection of the clustering method.
6. Determination of the number of clusters.
7. Replication, interpretation, and testing of the results.

Explanation and Example

The first step in cluster analysis is to select the entities, or observations, to include in the study (Milligan, 1996). Random sampling is not required, unless the researcher wishes to generalize to a larger population. The selected sample should be representative of the cluster structure believed to be present. There are no firm rules for sample size, other than the obvious recommendation to have more observations than variables and resulting clusters, but sufficient observations should be included so that the sample can be subdivided into two groups for the purpose of replication (described below). For example, Csizér & Dörnyei (2005) used a 3% random subsample in their hierarchical cluster analysis and the remainder of the sample in their *k* means analysis.

The second step in cluster analysis is to define the variables on which participants or observations in the sample are to be grouped. Technically, there are no prescribed mathematical or statistical rules that limit this number, but the more variables used the more complex the results will be, which will make group-based descriptions more difficult as the number of clusters might increase with the use of more variables. Milligan (1996) points to one major caution in terms of variable selection: Only those variables which are believed to increase the discrimination of observations in the data set should be included because the addition of only one or two unnecessary variables can dramatically affect the results.

The third step in cluster analysis is to consider standardizing the variables. Some believe that in order to have unified distances, variables should be standardized. If not, values with larger values will contribute more to the distance measure than the variables with smaller values (Norušis, 2010). However, both Milligan (1996) and Everitt et al. (2001) caution that standardization is not always necessary; if clusters exist in the original variable space, they claim that standardization may hide the clusters. If one decides to standardize the variables, Milligan (pp. 352–3) shows the effects of alternative formulas along with the traditional z score.

The fourth step in cluster analysis is to select the way similarity or distance should be measured among the variables. The researcher should consider the scale of the data: Is it dichotomous, categorical, continuous, or a combination? The selection made in step 5, the clustering method, must also be considered. Different measures are best used with clusters of various shapes (Norušis, 2010). Different statistical programs offer different measures, but the most common distance measures are Euclidean (including Ward's method), correlation, nearest or farthest neighbor, and average linkage.

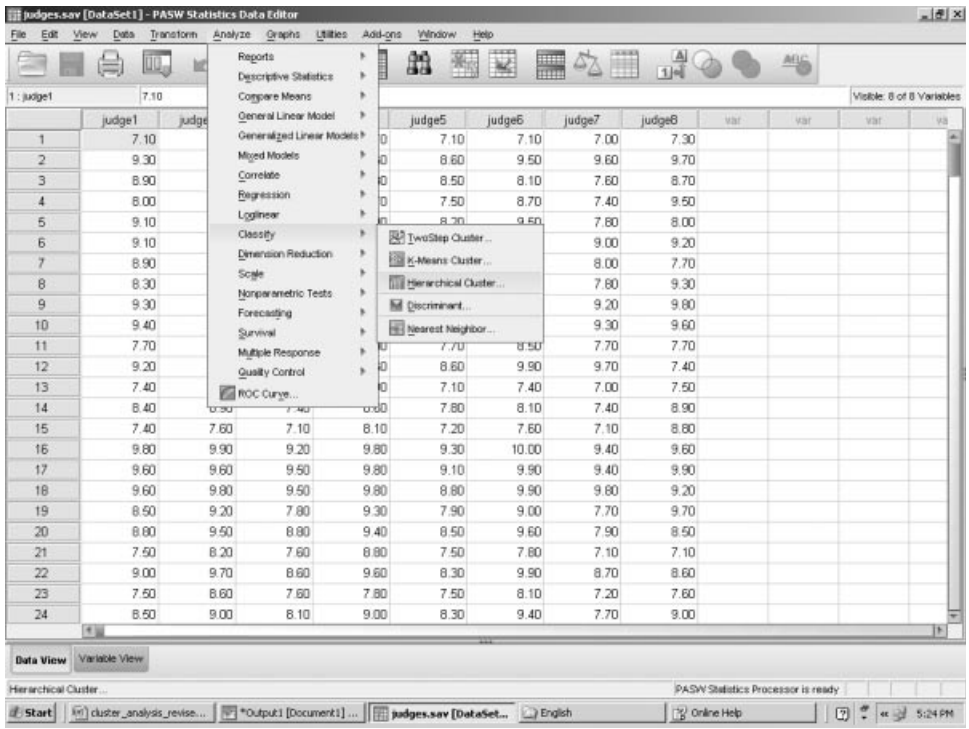


Figure 1 Screen shot of cluster analysis menus in SPSS™/PASW™

The fifth step in cluster analysis is to decide on the clustering method. The method should be selected to uncover the number of clusters in the data selected, insensitive to error, and available as computer software. Many researchers with continuous data use agglomerative hierarchical techniques with Ward's distance method on a small subset of the data to determine the number of clusters. Then, in step 7 they use a partition/proximity analysis to replicate the number of clusters, thereby strengthening the findings.

Three methods were available in PASW™ (formerly SPSS™) in 2010: hierarchical, *k*-means (a partition/proximity method), and two-step cluster. While all three used continuous data, only the two-step method could analyze categorical data. To run hierarchical clustering in SPSS/PASW, this command sequence is followed: Analyze → Classify → Hierarchical cluster, as illustrated in Figure 1.

The sixth step in cluster analysis is to determine the number of clusters. This decision is somewhat subjective. Researchers familiar with cluster analysis use what are called "stopping rules," a topic beyond the scope of this entry. (See Milligan and Cooper, 1985, for a seminal study.) Norušis (2010, pp. 368–71) recommends looking at the agglomeration schedule and the dendogram in the SPSS output. A dendogram is a visual representation of the steps of the clustering procedure. The SPSS/PASW command sequence: Analyze → Classify → Hierarchical cluster → Plots → Dendogram, generates a dendogram in the output. An example is shown in Figure 2. The vertical lines show the stages in the analysis in which clusters are formed. Together with the information in the agglomeration schedule, if researchers are using a dissimilarity measure (such as Ward's method), they want to see the stages at which the distances are large to stop cluster formation. The circles in Figure 2 illustrate the researcher's decision to apply a four-cluster solution.

The seventh and last step in cluster analysis involves replicating the clusters, interpreting them, and testing them. Each of these is described below.

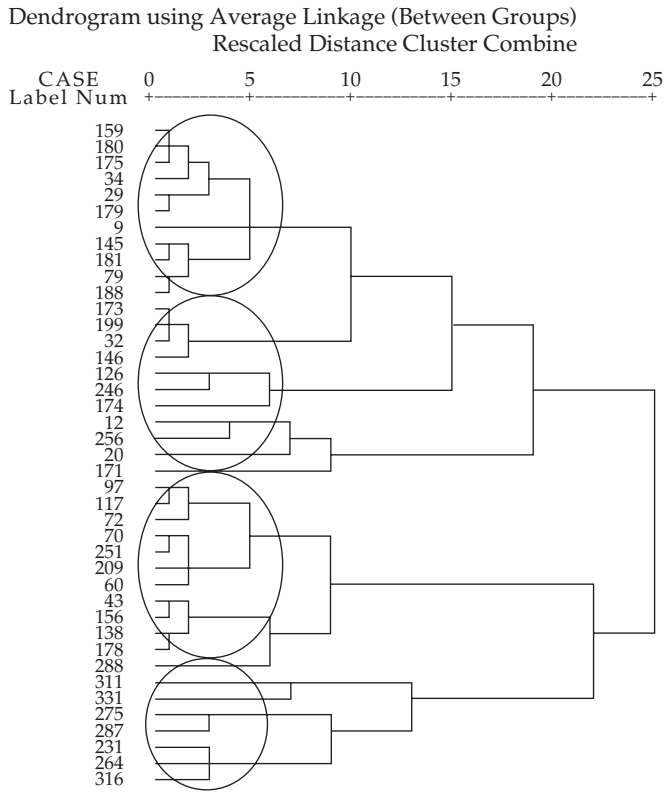
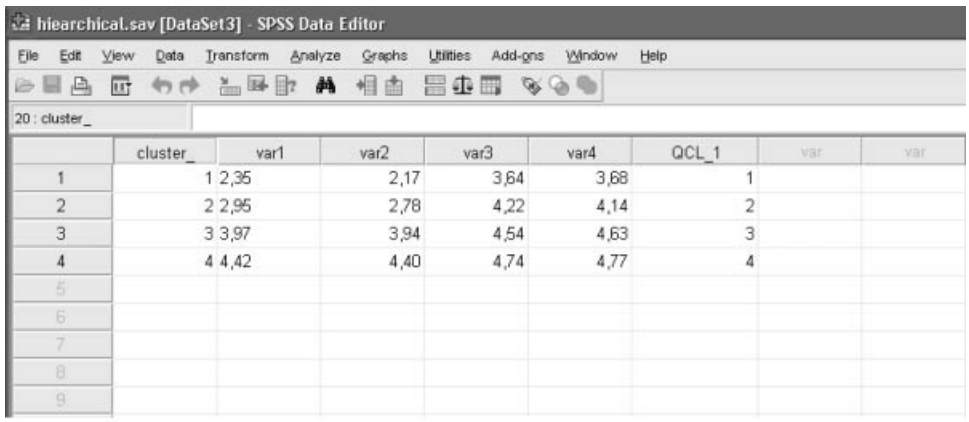


Figure 2 Illustration of a dendogram and the subsequent decision about four clusters identified in the data set (SPSS™/PASW™)

Replicating Clusters

Because most cluster techniques will find a cluster solution in a data set, it is necessary to validate a cluster solution. One method for validation is to replicate a cluster solution across different samples of a population, or across different subsets of a data set (e.g., Lorr, 1983; Lorr & Strack, 1994; Milligan, 1996). Milligan (pp. 368–9) describes a number of steps to follow in a replication analysis.

1. Obtain two samples of data. Recall that Csizér & Dörnyei (2005) divided their data set into two subgroups.
2. Cluster analyze the first sample and obtain cluster centroids. The first subgroup undergoes a complete cluster analysis, as was described above. Once the clusters are determined, their centroids are obtained. Researchers often use Ward's method with the first subgroup, as the centroids it produces have been shown to provide robust "seed points" for the analysis in step 3. Cluster centroids are the center points for each cluster, which are calculated based on the positions of the cluster members, and the center is the point which is the closest to each case within the cluster. In order to do this, first the cluster solution needs to be saved (SPSS command sequence: Analyze → Classify → Hierarchical cluster → Save → Single solution → Number of cluster: 4). Next, the mean values of the cluster variable (clus4_1) are calculated with descriptive statistics and these results are to be fed into a separate SPSS data file (see Figure 3).



	cluster_	var1	var2	var3	var4	QCL_1	var	var
1	1	2,35	2,17	3,64	3,68	1		
2	2	2,95	2,78	4,22	4,14	2		
3	3	3,97	3,94	4,54	4,63	3		
4	4	4,42	4,40	4,74	4,77	4		
5								
6								
7								
8								
9								

Figure 3 A screenshot of a data file using SPSS™/PASW™ and created based on the results of the hierarchical cluster analysis (var1 to var4 indicating the clustering variables)

3. Directly cluster analyze the second sample. All decisions regarding selection of variables, standardization, and number of clusters will mirror the analysis of the first subset. Now, however, a partitioning/proximity cluster technique is often used, namely *k*-means analysis (SPSS/PASW command sequence: Analyze → Classify → K-Means cluster). During this process, sample members are put into a predefined number of clusters and the initial cluster centers ("seeds") are read from an external file (produced in the previous step). The distances between the second sample data points and the centroids obtained from the first sample are determined, and data points from the second sample are assigned to their nearest centroid. Here, all observations are assigned to a cluster. The grouping of the observations or participants into the clusters is done in an iterative way; that is, sample members closest to these predefined centers are assigned to these initial clusters. As a consequence, new centers are obtained (centers are defined based on the positions of the cluster members, and the center is the point which is the closest to each case within the cluster) and sample members are regrouped according to these new centers. The process of *k*-means clustering is repeated until stable cluster centers are obtained; in other words, no changes are detected between two subsequent regroupings in terms of the position of the cluster centers. The cluster memberships of the observations are saved.
4. Compute a measure of agreement between the two clusterings. Two frequently used measures of agreement are Cohen's kappa and Hubert and Arabie's corrected Rand index; the level of agreement reflects the stability of the cluster solution.

Interpreting Clusters

Once the clusters have been identified, they need to be interpreted. Similar to naming factors in factor analysis, the subject-matter knowledge of the researcher is indispensible. In order to find out more about the clusters, one-way analyses of variance (ANOVAs) can be run separately for each variable yielding the mean value for each cluster. ANOVA only provides information to describe the cluster groups in a meaningful way and helps to assign label names to the cluster groups. It is important to underscore the point that the ANOVA results should only be used descriptively; interpreting their results as significant is inappropriate because the groups were obtained from their maximum differences on each variable and so results will almost always be significant (Milligan, 1996; Everitt, Landau, & Leese, 2001; Norušis, 2010). In the example used above, cluster 1 was interpreted

as "high level of contact," cluster 4 as "low level of contact." Not uncommonly, the clusters in the middle were a bit more difficult to interpret or "name."

Testing Clusters

Traditional hypothesis testing is another approach for validating the clusters. If a study has dependent variables not included in the cluster analysis, the researcher could run ANOVAs (or another appropriate analysis depending on the variable's scale) in order to find out whether the cluster group membership accounts for meaningful differences (Milligan, 1996; Dörnyei, 2007).

SEE ALSO: Describing and Illustrating Quantitative Data; Discriminant Function Analysis; Factor Analysis

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Clyne, Michael

TIM MCNAMARA

Michael Clyne (1939–2010) was an Australian sociolinguist and sociologist of language who worked in the areas of language contact, code switching, bilingualism and multilingualism, immigrant language maintenance and shift, language education, language policy, and the sociolinguistics of the German speech area. He was a passionate advocate of multilingualism.

Clyne's interest in bilingualism and multilingualism dated from the circumstances of his early life. He was born in Melbourne to parents who had recently arrived from Vienna as refugees from Nazism following the *Anschluss*. He grew up in a rather isolated environment amid wartime suspicion of German speakers, even those who were refugees, and directed his passion then and subsequently throughout his childhood to exploring languages and the language phenomena immediately around him—the presence of the various languages (especially German, but also Hungarian, Croatian, and Czech among others) spoken by members of his family and family circle, and the associated experience of bilingualism, and code switching. He recounts a wonderful example of the latter from when he was a boy of five: his mother, asleep in the sun on a deck-chair at home, spoke the following in her sleep: "Das ganze Jahr muß ich waschen ein boy's shirt" (Clyne, 1992a, p. 400).

His academic training began at the University of Melbourne, where he studied a number of Germanic languages: German (one of his mother tongues), Dutch (in which he achieved native-like fluency), Icelandic, and Norwegian. (He later studied Old and Modern Frisian at Utrecht and Swedish at Bonn.) There followed graduate study in Utrecht and Bonn, with a master's thesis on an aspect of historical dialectology. On his return to Australia Clyne was appointed to a junior academic position at the recently established Monash University in Melbourne. As an undergraduate he had come across Einar Haugen's *The Norwegian Language in America* (Haugen, 1953), which he devoured, as it related closely to his family experience; it introduced him to the academic discussion of languages in contact in the context of language maintenance and shift, an interest which came to full flower in his PhD on code switching in German–English bilinguals in Australia and which informed his subsequent career. He spent many years in the German department, before in 1988 taking up a chair in linguistics at Monash, which he held until 2001. His final years of remunerated academic life (2001–4) were spent as a professorial fellow in the School of Languages and Linguistics at the University of Melbourne, his alma mater. In retirement he remained in emeritus and honorary professorial positions at Monash and Melbourne respectively.

Clyne's research on languages in contact, a continuing expression of his experience of his earliest years, took many forms. As a Germanist, spending the first quarter century of his academic career in a German department staffed mostly by literary scholars, he might have been somewhat isolated from developments in linguistics, but had the good fortune to be working at Monash when it established the first linguistics program in Australia, under Göran Hammerström. Other linguist colleagues at Monash included the head of the flourishing Japanese program, the neo-Prague School linguist Jiří Neustupný, and for a time Wilga Rivers in French. Clyne explored aspects of language contact from a number

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of linguistic perspectives—lexical, syntactic, processing, typological, and phonological. But perhaps more significant was the range of social contexts in which he explored the issue of language contact, leading to pioneering work in a number of fields. His early paper (Clyne, 1968) on the German spoken by guest workers was a forerunner of studies of immigrant language learning both in Europe and Australia. It was also an early contribution to research on the relation of second language production to processes of pidginization, which was to become a major topic in second language acquisition in the work of applied linguists at UCLA, especially Roger Andersen and John Schumann.

A third area was second language attrition, an interest triggered by awareness of what was happening to elderly Dutch- and German-speaking long-term immigrants to Australia. A fourth area was cross-cultural communication and interlanguage pragmatics: A paper in Clyne (1972) again anticipated much work that was to follow subsequently, including a volume of his own on intercultural communication in the multilingual and multicultural workplace (Clyne 1994). A specific aspect of this work was the question of the generic differences in writing, particularly scholarly writing, across cultures, with particular reference to German and to English, something of which Clyne obviously had direct experience. The final area was language maintenance and shift, the subject of two of his best-known books, *Multilingual Australia* (Clyne, 1982) and *Community Languages: The Australian Experience* (Clyne, 1991). This set a pattern for documenting the fate of immigrant languages in Australia that continued with the analysis of census data until the end of his life, as Australia's demography rapidly changed as a consequence of its diverse refugee intake and its greater orientation to Asia. A later volume (Clyne & Kipp, 2006), for example, provided studies of Somali, Filipino, and Macedonian in Melbourne. Two other books from the "Melbourne era" were well received: *Dynamics of Language Contact* (2003), which used comparative data from migrant languages in Australia to reconceptualize a range of language contact issues, and *Australia's Language Potential* (2005), intended for a more general audience, which raised issues concerning the place of monolingualism and multilingualism in Australian society.

Given Clyne's enduring interest in multilingualism and language contact, it was natural that he should have played a role in policy developments affecting that area. By the early 1970s, a cultural revolution was under way in Australia, triggered by the rapid economic growth and population expansion of the 1950s and 1960s, especially through the vigorous immigration program, and the political protests in the late 1960s arising from Australia's involvement in the Vietnam war. This culminated in 1972 with the election of the Whitlam Labor government, the first nonconservative government for 23 years. One of the features of the radically changed social and political atmosphere in Australia was a policy of multiculturalism to replace the discredited and overtly racist White Australia policy, which only formally came to an end at that time. Clyne was an early advocate of the teaching of the languages of the new immigrant populations in schools (Clyne, 1964), and an advocate of language planning to reflect the new changed multilingual reality of Australia. The high point of this period was the adoption in 1987 of the National Policy on Languages (Lo Bianco, 1987). Clyne became the director of one of the research centers established under the policy, the Language and Society Centre at Monash. Clyne was involved in the establishment and evaluation of a bilingual German–English program in schools, and advocated (by example and by teaching) the raising of children bilingually in families where that was feasible.

Parallel to Clyne's work on language contact and multilingualism in Australia was his contribution to European sociolinguistics, with books on the sociolinguistics of the German-speaking countries (Clyne, 1984), pluricentric languages (Clyne, 1992b), the changing role of German in Europe (Clyne, 1995), and a comparative study of address terms in European languages with colleagues at Melbourne (Clyne, Norrby, & Warren, 2009).

Michael Clyne was honored by the Australian, German, and Austrian governments, and received several prestigious international awards for his scholarship. In retirement he maintained the tireless energy, the curiosity, and the enthusiasm for multilingualism that marked his long career.

SEE ALSO: Assessing Multilingualism at School; Dynamics of Multilingualism; Endangered Languages in Australia; Language Planning and Multilingualism; Language Policy and Planning: Overview; Multiculturalism and Second Language Learning; Multilingual Education in Australia; Multilingualism at Work; Multiliteracies in Education

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COBUILD Project

NICHOLAS GROOM

The COBUILD project was a partnership between Collins publishers (later HarperCollins) and the University of Birmingham, UK, which was established in 1980 and lasted for two decades. The aim of the project was to develop and publish a range of English language learning and teaching materials based exclusively on the analysis of computerized corpora of attested spoken and written texts collected from a variety of British, North American, and Antipodean sources (hence the acronymic project title Collins Birmingham University International Language Database). Often cited as an exemplar of genuinely successful and mutually beneficial collaboration between academic and commercial interests in applied linguistics, the COBUILD project is widely acknowledged to have had a major impact on the English as a second language (ESL) publishing industry, and on the design and compilation of monolingual learners' dictionaries in particular. Research associated with the COBUILD project has also made important contributions to linguistic theory, particularly through its close association with cutting-edge developments in corpus linguistics.

The COBUILD project was led from its inception by John Sinclair, then professor of modern English language at the University of Birmingham, UK. Sinclair and his associates at Birmingham had been developing computer-assisted approaches to the study of lexis in electronically stored collections of authentic language data since the mid-1960s (see e.g. Sinclair, 1966; Sinclair, Jones, & Daley, 2004), and it was the promise shown by this early work, together with the rapid advances in computer and document scanning technologies that occurred during the 1980s, that emboldened Collins to fund the COBUILD project as a commercial publishing venture.

Sinclair used this funding to set up and maintain a team of corpus compilers, computer programmers, and lexicographers who worked full time on the COBUILD project. The first published output of this team, the *Collins COBUILD English Dictionary* (CCED), appeared in 1987. This monolingual learner's dictionary broke entirely new ground in pedagogic lexicography through its extensive use of computer corpus data. Of particular note was the use of frequency lists to determine not only which words would be included in the dictionary (only the most frequent words were granted headword status), but also how the different senses of polysemous words would be ordered (see Figure 1). For example, CCED presents *back* as an adverb and preposition first, and as a noun referring to a part of the human body second, on the grounds that this ordering reflects the relative frequency of these two forms and meanings in native-speaker usage as represented by the corpus. The pedagogic rationale for this approach is that it prioritizes words and phrases that learners of English are most likely to encounter, and which express the meanings that they are most likely to want to express for themselves.

Corpus data were also used as the exclusive source of citation material in CCED (concocted examples were not allowed), and as the basis for additional information about the typical collocations and usage patterns associated with each headword. Some of this information was presented (in abbreviated form) in an additional column running parallel to the main text for each entry. Other such information was integrated into the wording of the definition itself. The CCED definition style was also highly innovative in that it used full sentences instead of the terse, nominalized style found in virtually all other dictionaries.

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baby boom 105 **back**

baby boom, baby booms. A **baby boom** is a period of time when a lot of babies are born in a particular place or country; an informal expression. *I'm a product of the postwar baby boom... In the early 1990s, China will suffer the results of the baby boom of the 1960s.* N-COUNT: usu sing

baby boomer /beɪbi buːmər/ **baby boomers;** also spelled **baby-boomer**. A **baby boomer** is someone who was born in Great Britain or the United States during the years 1945-1949, when there was a baby boom; an informal expression, used mainly in journalism. *...a now middle-aged baby boomer. ...baby-boomer parents shopping for children's clothing and toys.* N-COUNT: oft N n

baby buggy, baby buggies. A **baby buggy** is a small seat with wheels, which a young child can sit in and which can be pushed around. N-COUNT ~pushchair

baby carriage, baby carriages. In American English, a **baby carriage** means the same as a **pram**. N-COUNT

babyhood /beɪbihʊd/. Your **babyhood** is the period of your life when you were a baby. *From babyhood, he loved to make people smile.* N-UNCOUNT

babyish /beɪbiɪʃ/. **Babyish** actions, feelings, or looks are like a baby's. *...babyish behaviour. ...a fat, babyish face... I'm ashamed of the babyish nonsense I write.* ADJ-GRADED: usu ADJ n

babysit /beɪbisɪt/ **babysits, babysitting, babysat.** If you **babysit** for someone or **babysit** their children, you look after their children while they are out. *I promised to babysit for Mrs Plunkett... My friend asked me to babysit for her six-month-old son... You can take it in turns to babysit... She had been babysitting him and his four-year-old sister.* ♦ **babysitter** *It can be difficult to find a good babysitter.* ♦ **babysitting** *Would you like me to do any babysitting?* ◆◇◇◇◇ VERB ~mind V for n V V n N-COUNT N-UNCOUNT

baby talk; also spelled **baby-talk**. **Baby talk** is the language used by babies when they are just learning to speak, or the way in which some adults speak when they are talking to babies. *Maria was talking baby talk to the little one.* N-UNCOUNT

baccalaureate /bækələriət/. The **baccalaureate** is a secondary school examination taken by students at the age of eighteen in France and some other countries. N-SING

bachelor /bætʃələr/ **bachelors.** A **bachelor** is a man who has never married. ◆◇◇◇◇ N-COUNT

Bachelor of Arts, Bachelors of Arts. A **Bachelor of Arts** is a person with a first degree in an arts or social science subject. N-COUNT

Bachelor of Science, Bachelors of Science. A **Bachelor of Science** is a person with a first degree in a science subject. N-COUNT

bachelor's degree, bachelor's degrees. A **bachelor's degree** is a first degree awarded by universities. • See also **BA, BSc**. N-COUNT

back 1 adverb uses

back /bæk/ ◆◆◆◆◆

In addition to the uses shown below, **back** is also used in phrasal verbs such as 'date back' and 'fall back on'.

1 If you move **back**, you move in the opposite direction to the one in which you are facing or in which you were moving before. *The photographers drew back to let Thorne and Abbot view the body... She stepped back from the door expectantly... He pushed her away and she fell back on the wooden bench... She pushes back her chair and stands.* ADV: ADV after v, oft ADV prep ~backwards ≠forwards

2 If someone or something goes **back** somewhere, they return to the place where they were before. *I went back to bed... Mr Mandela is due back in South Africa today... Smith changed his mind and moved back home... I'll be back as soon as I can... He made a round-trip to the terminal and back.* ADV: ADV after v, *be* ADV, oft ADV prep/adv

3 If someone or something is **back** in a particular state, they were in that state before and are now in it again. *The rail company said it expected services to get slowly back to normal... Denise hopes to be back at work by the time her daughter is one... Having recently bought an old typewriter, I am now trying to bring it back into working order.* ADV: ADV after v, *be* ADV, oft ADV prep

4 If you give or put something **back**, you return it to the person who had it or to the place where it was before you took it. If you get or take something **back**, you then have it again after not having it for a while. *She handed the knife back... Put it back in the freezer... You'll get your money back.* ADV: ADV after v, oft ADV prep

5 If you put a clock or watch **back**, you change the time shown on it so that it shows an earlier time, for example when the time changes to winter time. ADV: ADV after v

6 If you write or call **back**, you write to or telephone someone after they have written to or telephoned you. If you look **back** at someone, you look at them after they have started looking at you. *They wrote back to me and they told me that I didn't have to do it... If the phone rings say you'll call back after dinner... Lee looked at Theodora. She stared back.* ADV: ADV after v, oft ADV prep

7 You can say that you go or come **back** to a particular point in a conversation to show that you are mentioning or discussing it again. *Can I come back to the question of policing once again?... To come back to what I said in the Introduction, in the nineteenth century Spain was fully a part of Europe... Going back to the school, how many staff are there?* ADV: ADV after v, ADV *to n* PRAGMATICS

8 If something is or comes **back**, it is fashionable again after it has been unfashionable for some time. *Black is back... Consensus politics could easily come back into fashion.* ADV: ADV after v, *be* ADV, oft ADV prep

9 If someone or something is kept or situated **back** from a place, they are at a distance away from it. *Keep back from the edge of the platform... I'm a few miles back from the border... He started for Dot's bedroom and Myrtle held him back.* ADV: ADV after v, *be* ADV, oft ADV from n

10 If something is held or tied **back**, it is held or tied so that it does not hang loosely over something. *Her hair was tied back... The curtains were held back by tassels.* ADV: ADV after v

11 If you lie or sit **back**, you move your body backwards into a relaxed sloping or flat position, with your head and body resting on something. *She lay back and stared at the ceiling... She leaned back in her chair and smiled.* ADV: ADV after v ≠forward

12 If you look or shout **back** at someone or something, you turn to look or shout at them when they are behind you. *Nick looked back over his shoulder and then stopped, frowning... He called back to her.* ADV: ADV after v, oft ADV prep

13 You use **back** in expressions like **back in London** or **back at the house** when you are giving an account, to show that you are going to start talking about what happened or was happening in the place you mention. *Meanwhile, back in London, Palace Pictures was collapsing... Later, back at home, the telephone rang.* ADV: ADV with v, ADV prep PRAGMATICS

14 If you talk about something that happened **back** in the past or several years **back**, you are emphasizing that it happened quite a long time ago. *The story starts back in 1950, when I was five... I was in St. Lucia back in January of this year... Mr Davis was wounded in that terrorist attack a few years back.* ADV: ADV with v, ADV prep, n ADV PRAGMATICS

15 If you think **back** to something that happened in the past, you remember it or try to remember it. *I thought back to the time in 1975 when my son was desperately ill... My mind flew back to stories I had heard about Vinnie.* ADV: ADV after v, ADV *to n*

16 If someone moves **back and forth**, they repeatedly move in one direction and then in the opposite direction. *He paced back and forth... Two boys were in the street, tossing a baseball back and forth.* PHRASE: PHR after v

• to **cast your mind back**: see **mind**.

back 2 opposite of front; noun and adjective uses

back /bæk/ **backs** ◆◆◆◆◆

1 A person's or animal's **back** is the part of their body between their head and their legs that is on the opposite side to their chest and stomach. *Her son was lying peacefully on his back... She turned her back to the audience... Three of the victims were shot in the back... He threw the old cloth saddle across the donkey's back.* N-COUNT: oft poss N ≠front

2 The **back** of something is the side or part of it that is towards the rear or farthest from the front. The back of something is normally not used or seen as much as the front. *...a room at the back of the* N-COUNT: usu sing, oft the N of n ≠front

Figure 1 A page from *Collins COBUILD English Dictionary* © HarperCollins Publishers 1995. Screenshot reproduced from *Collins COBUILD English Dictionary* with the permission of HarperCollins Publishers Ltd © HarperCollins Publishers Ltd 2011

One of the hallmarks of the COBUILD project throughout its lifespan was its emphasis on building and using very large corpora. The first edition of CCED was based on a corpus of 20 million words. By the publication of the second edition (1995), this corpus had grown to 200 million words, and had become known as The Bank of English. The Bank of English has continued to expand with each subsequent edition of CCED, and the current version of the corpus stands at around 2 billion words. (The version currently held at Birmingham for academic research purposes is a modest 450 million words in comparison.) The main argument for using large corpora is that most words occur very rarely in authentic language data, and a large corpus is thus required in order to obtain enough examples of a given word to form the basis for valid generalizations to be made about it.

In addition to dictionary publishing, the COBUILD project produced a wide range of other ESL learning and teaching resources, grammar reference books, and usage guides. Of these, the most innovative and influential (if not the most commercially successful) are the *COBUILD English Course* (Willis and Willis, 1988) and the prizewinning *Grammar Patterns* series (Francis, Manning, & Hunston, 1996, 1998). The former is widely recognized as the most thoroughgoing implementation of a lexical syllabus yet attempted by a commercial ESL coursebook series, while the latter is noteworthy for its detailed presentation of hundreds of verb, noun, and adjective complementation patterns, and its systematic grouping of these patterns into semantically related groups.

When the COBUILD project drew to a close, the lexicographic and computational work that had previously been done at Birmingham shifted to the HarperCollins offices in Glasgow, Scotland, where it continues to the present. Although the COBUILD project itself no longer exists, HarperCollins continues to use the COBUILD name in its publications, and the COBUILD brand remains one of the best known and most respected in the ESL publishing industry. The academic legacy of the COBUILD project also remains strong in applied linguistics, and is most clearly manifested in the growing popularity of theories such as pattern grammar (Hunston and Francis, 1999) and the 'idiom' and 'open choice' principles (Sinclair, 1991). These theories are a direct product of the computational corpus research that formed the core activity of the COBUILD enterprise, and offer a compelling critique of the traditional distinction between syntax and lexis, and the prioritizing of the former over the latter in much mainstream linguistics.

SEE ALSO: Corpus Analysis for a Lexical Syllabus; Corpus Linguistics: Overview; Pattern Grammar

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Code Mixing

ELENA NICOLADIS

"Code mixing" refers to a multilingual's or a bilingual's use of two or more languages in a single unit of discourse, such as a word, an utterance, or a conversation (see, e.g., Genesee, Paradis, & Crago, 2004). As "code mixing" is sometimes used exclusively to refer to children's productions, this entry focuses exclusively on children. An example of code mixing could be the utterance *I like couring* from a French–English bilingual, with the French verb root *courir* meaning 'to run' in an otherwise English utterance. Some researchers use the term "code mixing" contrastively with "code switching" (see, e.g., Genesee, 1989; compare Meisel, 1994). "Code switching" implies a deliberate although not necessarily conscious alternation of languages. Researchers studying bilingual children's use of their two languages have often opted for the term "code mixing" so as to remain uncommitted as to whether children's alternation of languages is deliberate or not. When children are of preschool age (i.e., between approximately 1 and 5 years of age), researchers have generally opted to remain neutral as to whether their alternation of language is deliberate. This article will therefore focus on preschool bilingual children's code mixing.

In order to identify some functions of preschool children's code mixing, it can be useful to identify the functions of code switching in adult bilinguals. Researchers are in general agreement that code switching serves a large variety of functions, including: not knowing a word or linguistic construction in the target language (e.g., Li & Tse, 2002), providing the right word to express a concept exactly (e.g., Poplack & Sankoff, 1988), expressing a sense of identity or power (e.g., Poplack, 1987). Researchers have also noticed that adult bilinguals' code switching is grammatically constrained, often resulting in utterances that would be grammatical in both languages (e.g., Poplack, 1980) or in at least one language (e.g., Myers-Scotton, 1993).

In contrast to these adult functions, some of the earliest studies of bilingual children interpreted code mixing as a sign of having confused the two languages as a single linguistic system (e.g., Leopold, 1949). Since then, many studies have shown that bilingual children can differentiate their languages very early in development (e.g., Deuchar & Quay, 1999; see review in Genesee & Nicoladis, 2007). Researchers have generally reached the consensus that children's code mixing is more accurately evidence of their creative and flexible use of (a) limited linguistic resources and (b) the availability of choices in how to express their message. Children's code mixing may then take on some of the same functions as adult code switching even in the preschool years.

When children are in the one-word stage, they code mix by changing languages between utterances, resulting in inter-utterance code mixing. Code mixing can be identified as the inappropriate language choice for the interlocutor, such as using a Spanish word when addressing an English-speaking adult (e.g., Genesee, Nicoladis, & Paradis, 1995). When bilingual children are in the one-word stage and their productive vocabulary totals around 50 to 100 words or less, one of the primary reasons for code mixing seems to be to refer to a concept that the child can label in only one language. For example, a case study with a Portuguese–English bilingual child showed that about 90% of his inter-utterance code mixing could be attributed to not knowing a word in the language of the interlocutor (Nicoladis & Secco, 2000; see also Genesee, Paradis, & Wolf, 1995). As children get older,

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one of the functions of code mixing is still undoubtedly to fill a lexical or conceptual gap. Bilingual children between the ages of 2 and 4 years generally code mix more when trying to speak their weaker language than when trying to speak their stronger language (Genesee, Nicoladis, & Paradis, 1995; Köppe & Meisel, 1995; Nicoladis & Genesee, 1997). Also, as children get older, the grammatical complexity of their code mixing may increase, particularly in their stronger language (e.g., Bernardini & Schlyter, 2004). Code mixing may allow children to convey concepts in their weaker language that they simply do not have the grammatical capacity to express in that language (see, for example, Gawlitzek-Maiwald & Tracy, 1996).

When bilingual children reach the two-word stage (i.e., when they start to put two different words together in a single utterance), they can produce their first instances of intra-utterance code mixing, or code mixing within a single utterance (Genesee, Nicoladis, & Paradis, 1995). For example, a Spanish–English bilingual might say *Dónde doggie?* 'Where doggie?' Researchers have shown that, from the age of 2 years on, bilingual children's code mixing shows roughly the same patterns of grammatical constraints as adults' code switching (e.g., Meisel, 1994; Köppe & Meisel, 1995; Allen, Genesee, Fish, & Crago, 2002; Paradis, Nicoladis, & Genesee, 2000). For example, bilingual children show a tendency to mix a single word, often a noun, into an utterance that is otherwise in the other language (e.g., Lanza, 1992; Meisel, 1994). Where more than a single word is code mixed, children often use a large enough chunk of language so as not to violate the grammar of either of their languages (e.g., Paradis et al., 2000). Paradis et al. (2000) cite examples of French–English bilingual children's code mixes between English strong subject pronouns and French verbs, as in *I vas taxi* 'I go taxi' (p. 257). French subject pronouns are clitics and therefore much less separable from inflected verbs. So, by mixing at the point of the subject pronoun and verb, children violate neither French nor English grammar.

It is not yet clear when in the course of development children's code mixing becomes a reflection of identity or power issues, but it is clear that sociolinguistic factors affect even preschool children's code mixing. For example, the rate of code switching used by adults varies across communities (e.g., Poplack, 1987). Children's rate of code mixing can resemble that of adults in the community from the age of 2 to 3 years (e.g., Tabouret-Keller, 1963; Nicoladis & Genesee, 1997). It is possible that the resemblance in rate has to do with children's imitation of the adults and older children in their community. Similarly, part of the reason that children's code mixing comes to resemble adults' code switching may be that adults systematically socialize children in how to use their two languages. For example, Lanza (1992) argued that a Norwegian–English 2-year-old bilingual code mixed less with her English-speaking mother than with her Norwegian-speaking father because the mother systematically responded to the child's use of Norwegian as if she did not understand it.

One recent study is suggestive that bilingual children's code mixing and language use more generally may be related to the majority versus minority language status in the community. Paradis and Nicoladis (2007) examined the language use of 3- to 5-year-old French–English bilinguals who were growing up in a context in which English was the majority language. They observed that the children were more likely to code mix when speaking with a French interlocutor than with an English interlocutor. Furthermore, the French-dominant children could speak primarily one language in both an English and French context while the English-dominant children were more likely to code mix in the French context compared to the English context. Paradis and Nicoladis (2007) argue that these results reflect the majority status of English in the community in which the children were growing up, but it is not clear if the children themselves were sensitive to the majority-language status of English. Paradis and Nicoladis (2007) point out that the children's behavior could be a reflection of their parents' behavior, of their parents' socialization techniques, or even of the number of bilinguals the children had met.

In sum, when bilingual children first start speaking, they often code mix to fill lexical gaps, as adult bilinguals sometimes do. Code mixing to fill lexical gaps remains a function of code mixing, even as children get older. As soon as bilingual children are old enough to use grammatical constructions, their code mixing is largely grammatically constrained, much as adults' code switching is. Within the preschool years, there is some evidence that sociolinguistic factors affect children's code mixing, but it is not yet clear whether children themselves are code mixing to express their identity or power relations.

SEE ALSO: Bilingualism and Youth Language; Code Switching; Early Bilingualism

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Code Switching

MARGARET DEUCHAR

Introduction

Code switching (CS) is an activity which may be observed in the speech (or writing) of bilinguals who go back and forth between their two languages in the same conversation. Please note that Spanish words are underlined, English words are shown in normal style, and **Welsh** words are shown in bold. Key to glosses: PL = plural, SG = singular, M = masculine, PRON = pronoun, DET = determiner, PRT = particle, NEG = negative/negative particle, DEM = demonstrative, DAT = dative, ACC = accusative, INF = nonfinite, PRES = present, IMP = imperfect tense, FUT = future tense, 1SG/1PL = 1st person singular/plural, 2SG/PL = 2nd person singular/plural, and 3SG/3PL = 3rd person singular/plural. Examples (1)–(6) illustrate code switching from recorded conversations between Spanish-English, Welsh-English, and Welsh-Spanish bilinguals. The data were collected as part of the research program of the ESRC Centre for Research on Bilingualism (www.bilingualism.bangor.ac.uk) and with funding from the AHRC for a grant awarded to the author for a project on "Code switching and convergence in Welsh: A universal versus a typological approach" (for the Welsh-English data see http://talkbank.org/data/BilingBank/Bangor).

(1) él siempre me da cumplido-s así
he always me.DAT.1SG give.PRES.3SG compliment-PL like_this
'he always gives me compliments like this'
so I said to him, "talk to me in two more years" (Sastre 9, see http://www.talkbank.org/data/Bilingbank/Bangor/)

(2) pero hasta ahora because él nada más tiene que quince
but until now because he nothing more have.PRES.3SG than fifteen
añ-it-o-s ya para dieciséis next month
year-DIM-M-PL already for sixteen next month (Sastre 9, see http://www.talkbank.org/data/Bilingbank/Bangor/)
'but until now, since he isn't more than fifteen years old, turning sixteen next month'.

(3) **mae hi just yn meddwl bod yna** quick fixes **i bob_dim**
be.PRES.3SG she just PRT think.INF be.INF there quick fixes to everything
yeah?
yeah (Fusser 29, see http://www.talkbank.org/data/Bilingbank/Bangor/)
'she just thinks that there are quick fixes for everything, yeah?' (Fusser 29, see http://www.talkbank.org/data/Bilingbank/Bangor/)

(4) **bydda i (y)n wneud biotechnoleg, achos dw i**
be.1S.FUT PRON.1S PRT do.INF biotechnology because be.1S.PRES PRON.1S
ddim yn gallu inscribir-me **yn ddau**
NEG PRT can.INF write.INF in two (Patagonia 29, see http://www.talkbank.org/data/Bilingbank/Bangor/)
'I'll do biotechnology because I can't register for two things'.

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A more accessible term for code switching might be *language switching*, but as Gardner-Chloros (2009, p. 11) explains in her textbook on the topic "Nowadays *code* is understood as a neutral umbrella term for languages, dialects, styles/registers, etc." As for how the term *switching* is used, we can illustrate this with reference to example (3). Here we can see that there has been a language change or switch between the Welsh word ***yna*** ('there') and the English word *quick*. But in the code switching literature linguists tend to use the term "switch" to refer not to the point at which there is a switch between words from two languages, but to a sequence of words representing a change from the previous language. So in (3), whereas the first switch point occurs between the Welsh word ***yna*** ('there') and the English word *quick*, linguists would normally refer to the sequence of English words *quick fixes* as constituting the switch.

While the notion of switch has mostly been taken for granted in the literature, it is not as obvious as one might think. In example (3) there is in fact a switch back to Welsh after *quick fixes*, so the question arises whether the Welsh sequence ***i bob dim*** ('for everything') should be counted as a switch as well. In practice linguists tend to count as a switch a word or sequence of words in a different language from the language in which the utterance begins. However, for a discussion of why a linear approach of this kind might be problematic, see Deuchar, Muysken, and Wang (2007, pp. 309–10).

As shown in examples (1)–(4), switches may consist of one word only, as in, for example, *because* in (2) or *inscribirme* ('to register') in (4), or more than one word, as in *quick fixes* in (3). Single-word switches raise a particular problem for CS researchers, as they have to decide which words from another language are in fact borrowings established some time ago as adoptions into the recipient language, or whether they are switches into another language. Of course switches can be used only by bilinguals who speak more than one language, so we can be fairly sure that words used by monolinguals will be borrowings. For example, the word *restaurant* is an English word borrowed from French in the 19th century and is used by English-speakers who speak no French. Sometimes, though, it is hard to find monolingual speakers of a language to help identify which words are borrowings. This is the case with Welsh, whose speakers live in a society dominated by English, and who generally become bilingual in both Welsh and English from an early age. To help us solve this practical and theoretical problem in our research at Bangor on Welsh-English CS, we started by considering English words that we found in a respected Welsh dictionary (Thomas, 1950–2002) to be borrowings, and other words to be switches. This meant that we counted examples like ***sbwnjo*** ('sponge') in (5) as a borrowing and therefore as a Welsh word, instead of considering it a switch into English. On the other hand, we counted examples like *exfoliate-io* ('exfoliate') as switches because they are not (yet) in the dictionary. Since switches often become borrowings over time, future editions of the dictionary may include this and other similar words. Dictionary makers have to make what may be fairly arbitrary, practical decisions about what to include in their dictionaries, and they are not helped by the fact that there is considerable debate among researchers, who have debated for more than half a century about how to identify a borrowing rather than a switch (see, e.g., Haugen, 1950; Weinreich, 1953; Pfaff, 1979; Poplack & Sankoff, 1984; Heath, 1989; Myers-Scotton, 1992; Poplack & Meechan, 1998).

Poplack (1980) suggests that a code switch may be partially but not fully integrated into the recipient language, that is, the language into which it is switched. Borrowings or loanwords, however, may be fully integrated: "Established loanwords assume the morphological, syntactic and often, phonological, identity of the recipient language" (Poplack, 2004, p. 590). According to Sankoff (2001), significant progress was made by Poplack and Meechan (1998) in developing a quantitative method for distinguishing between switches and borrowings. They compared "lone other-language items" (i.e., words whose status as a switch or borrowing was unclear) with words of the same grammatical category in the

recipient language in which these other-language items were being used. Applying this method, Eze (1998), for example, concluded that English-origin verbs inserted into Igbo discourse behave like Igbo verbs phonologically, morphologically, and syntactically and should therefore be considered borrowings (Igbo is a language spoken in Nigeria). Stammers (2010), however, argues that some differences between English-origin and Igbo verbs have been underplayed and that the evidence for a clear distinction between borrowing and switching may have been overinterpreted. In his own study of the integration of English verbs into Welsh, Stammers (2010) finds a clear relation between the frequency of use of those English verbs and their level of integration. So as a rough guide, highly frequent other-language items are good candidates for borrowings, while low frequency items may be viewed as switches, though the dividing line between the two categories is not always clear.

We now turn to what motivates researchers working on CS, or what questions they are trying to answer. Two of the most common research questions pursued by those working on code switching are the following:

1. Are there rules governing CS like the rules of grammar of a single language?
2. Why do bilinguals code switch?

In answer to the second question, Bullock and Toribio (2009) suggest that people may use CS as a marker of their identity, to confer status, or to achieve particular communicative goals. Gumperz (1982) wrote a seminal article in which he argued that the functions of CS included quoting the speech of others, identifying the person being addressed, repeating the same message for emphasis, and adding more details to the main message. Gumperz's work inspired much in the framework of conversational analysis, where some researchers argued for the importance of CS in structuring conversations (see Auer, 1984, 1998; Gardner-Chloros, 2009, chap. 4). Turning to the relation between CS and identity, Chen (2008) argued that distinctive CS styles are used by returning versus local Cantonese-English bilinguals in Hong Kong, and that these express contrasting identities. Sayahi (2004, p. 377) argues that "code-switching by Spanish-English bilinguals in New York goes beyond the immediate conversational functions to help forge a hybrid social identity unique to this group."

It could be argued that in order to discover why bilinguals switch, we first need to know where it is possible for them to switch, or at which points in their speech they have a choice between staying in the same language and switching to another. This takes us to the first question above, "Are there rules governing CS like the rules of grammar of a single language?" In order to address this question we need to draw a distinction between switching within the clause ("*intraclausal* switching") and switching between clauses ("*interclausal* switching"). Intraclausal switching is illustrated by example (5), which can be broken down into clauses as shown, with the beginnings and ends of clauses marked by square brackets:

(5) **[mae nhw (y)n** exfoliate-**io chdi gynta] [ac yn sbwnjo chi**
be.PRES.3PL they PROG exfoliate-INF you first and PRT sponge.INF you
drosodd gynta]
over first
'they exfoliate you first, and sponge you over first' (Fusser 29, see
http://www.talkbank.org/data/Bilingbank/Bangor/)

This example is divided above into two coordinated clauses of which the first contains intraclausal switching in the form of *exfoliate*. Interclausal switching, on the other hand, can be illustrated by example (1) above. This is repeated below with the clause boundaries shown by square brackets:

(1) [él siempre me da cumplido-s así]
he always me.DAT.1SG give.PRES.3SG compliment-PL like_this
'he always gives me compliments like this'
[so I said to him, ["talk to me in two more years"]] (Sastre 9, see http://www.talkbank.org/data/Bilingbank/Bangor/)

Some switches can be classified as both intraclausal and interclausal, as in example (6):

(6) [I wonder [pryd o'n i yma] then]
I wonder when be.IMP.1SG I here then
'I wonder when I was here then'

In this example the switched material is in Welsh (***pryd o'n i yma***) and is intraclausal in that it is a subordinate clause within the clause [*I wonder . . . then*]. At the same time, because it is a complete clause in itself, it can be considered interclausal. This kind of example illustrates that no data analysis is simple!

The terms *intraclausal* and *interclausal* are actually found in the literature on CS less commonly than the alternative terms *intrasentential* and *intersentential*. However, this author prefers the former terms since the term *intrasentential* can be ambiguous between *intraclausal* and *interclausal* when the latter refers to switching between two clauses in the same sentence. We can illustrate this with the famous title of the article by Poplack (1980) shown in (7) with square brackets indicating the separate clauses:

(7) [Sometimes I'll start a sentence in Spanish] [y termino en español].
'Sometimes I'll start a sentence in Spanish and end in Spanish'.

Some researchers would describe the switch from the English of the first clause to the Spanish of the second clause as *intrasentential* because it occurs within the sentence, while others would describe this as *intersentential* switching because a clause is a kind of minimal sentence. This second group would probably reserve the term *intrasentential* for the kind of switches that occur in examples (2)–(4) above. So to avoid the ambiguity of the term *intrasentential* it is arguably preferable to use the terms *intraclausal* and *interclausal*.

To return to our question of where code switching is allowed to take place, there seem to be few restrictions on it occurring between coordinated clauses or sentences. Whether speakers take up the option to do interclausal switching is another question, and may vary from community to community. Restrictions do seem to apply, however, to where intraclausal CS can occur, and our focus will be on this type of switching in the rest of the entry. Researchers generally agree that there are restrictions, but where they do not agree is on the question of what the best theoretical account of these restrictions is.

A particularly interesting question for researchers investigating intraclausal CS is what happens when material from two languages is combined in a sequence for which the grammatical rules in the two languages would be different. For example, it is well known that the order of words within the noun phrases of different languages varies from language to language. In some languages, like French, the adjective normally follows the noun whereas in others, like English, the adjective precedes the noun. So whereas in the English phrase *red wine* the adjective *red* comes before the noun *wine*, the order is the opposite in the French equivalent, *vin rouge*, with the noun *vin* ('wine') coming first and the adjective *rouge* ('red') coming second. In corpus data collected by our team at Bangor, we have two pairs of languages showing the same contrast, Welsh-English and Spanish-English. Welsh and Spanish behave like French in that the adjective normally comes after the noun, in

contrast to the order found in English. There are currently two contrasting approaches to dealing with questions like this regarding the rules for CS. These will be called the symmetric and the asymmetric approaches here. The asymmetric approach is associated with the notion of a matrix language (see Myers-Scotton, 2002, 2009) and assumes that one of the two languages spoken by a bilingual provides the grammatical rules for a given clause, with the other language material being slotted in. The symmetric approach, better known as minimalism (MacSwan, 2009) does not assume priority for any one language but allows for lexical items to be drawn from either language and for their features to determine the possibility of their combination. The two contrasting approaches can be illustrated with reference to example (8):

(8) **maen** **nhw (y)n bryderus am** **roid** **y** bid **cyntaf i_mewn**
be.PRES.3PL they PRT anxious about put.INF DET bid first in
'they are anxious about putting the first bid in' (Stammers 6, see http://www.talkbank.org/data/Bilingbank/Bangor/)

According to one version of the minimalism approach (see Cantone & MacSwan, 2009) the relative order of the noun and the adjective in (8) will be determined by the normal order in the language of the adjective, ***cyntaf***, which in this case comes from Welsh. In Welsh the noun is normally followed by the adjective, as happens here, where the noun *bid* is followed by the adjective ***cyntaf***. In relation to this example the contrasting matrix language approach actually makes the same prediction, though for different reasons. In the matrix language approach the noun-adjective order should follow the language of the grammatical frame as determined by the language of the finite verb and the relative order of the verb and the subject. In this example the finite verb ***maen*** is Welsh and the verb precedes the subject as is normal in Welsh. Thus the noun is expected to be followed by the adjective as is normal in Welsh.

We now turn to two examples, (9) and (10), for which the two theoretical approaches make different predictions:

(9) **oedd** **gynnon ni** **ystafell yn Plas yn Dref, ystafell** brilliant
be.3S.IMP with-us PRON.3S room in Plas yn Dref room brilliant
'we had a room in Plas yn Dref, a brilliant room' (Deuchar, 2006, p. 1994)

(10) **tibod** **y** **y** raw **peth** **(y)ma (fe)lly de**
know.2S DET DET raw thing here thus TAG
'so you know the raw thing don't you' (Robert 3, see http://www.talkbank.org/data/Bilingbank/Bangor/)

In (9) the language of the adjective, *brilliant*, is English, so the symmetric (minimalism) approach would predict that the relative order of the Welsh noun ***ystafell*** ('room') and adjective *brilliant* would be as in English. The asymmetric (matrix language) approach, on the other hand, would note that the grammatical frame of the clause is Welsh and so expect the noun-adjective order to be in Welsh. In this case the minimalism approach makes the wrong prediction and the matrix language approach the right one.

The tables are turned when we look at (10), however. Here the adjective-noun order is as the minimalism approach would predict: it follows English, the language of the adjective *raw*. Although the grammatical frame is Welsh the adjective (*raw*) does not follow the noun (***peth***) as is normal in Welsh. The matrix language approach thus makes the incorrect prediction for this example.

Table 1 Examples of mixed noun/adjective constructions showing (in)compatibility with competing theoretical approaches

Example	*Gloss*	*Grammatical frame of rest of clause*	*Compatible with minimalism approach?*	*Compatible with matrix language approach?*
y bid **cyntaf**	'the first bid'	Welsh	yes	yes
ystafell brilliant	'brilliant room'	Welsh	no	yes
y raw **peth**	'the raw thing'	Welsh	yes	no

Table 1 shows which of the examples so far are compatible with each approach. If we were to award a point for each occurrence of "yes" in the above table we would see that there is a "draw" between the two theoretical approaches, with each approach receiving two points for compatibility with two of the three examples, and each being incompatible with one (different) example. But no conclusion can be drawn on the basis of only three examples (particularly since the order in ***y*** *raw* ***peth*** seems not to be preferred by speakers) and this interesting issue awaits further research. Phrases with the noun and adjective in different languages are in fact fairly rare where the normal order in the two languages is different, and this may be for reasons of congruence (see Deuchar, 2005), according to which switching between two categories may be inhibited where the relative order of words in these two categories differs in the two languages. However, future experimental work may be able to obtain more data consisting of sequences of nouns and adjectives like those shown in Table 1. (See Gullberg, Indefrey, & Muysken, 2009, for some ideas regarding possible experimental techniques.)

The two approaches outlined above involve formulating rules for CS and then checking with data to see if the rules are followed. The two approaches have in common that they claim universality, or that their predictions apply to all data. Muysken (2000), however, presents a different, typological approach which instead of making universal predictions about rules to be followed, describes three possible patterns of CS based on consideration of the data. This typological approach makes few assumptions about the data in advance, except that they will follow one of the three patterns. It also is broader in that it applies to interclausal as well as intraclausal CS, whereas the other approaches apply only to intraclausal CS. Although Muysken's approach is not concerned directly with question (1) above about the "rules" of CS, it does allow for the possibility of relating different CS patterns to social factors, like the status of the languages in the communities, or the proficiency of the speakers.

This entry has focused on CS from the standpoint of linguistics, although other approaches are possible. The issue of whether there are "rules" of CS has been addressed and two contrasting approaches which assume there are rules have been outlined. A third approach has also been mentioned which prefers the notion of various patterns to rules. All the approaches agree, however, that there are limits on the way material from different languages can be combined in the same conversation. Further research should help to indicate exactly what these limits are, and how the characteristics of the speaker or the community they live in can make a difference to the possibilities of language combination.

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SEE ALSO: Code Mixing

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Cognates

RENA HELMS-PARK AND VEDRAN DRONJIC

Defining Cognates

Cognates can be defined in multiple ways depending on one's research or pedagogical focus. In historical linguistics, the approach is etymological; cognates are words in one or more languages descended from a common ancestor, either directly (for example, English *tongue* and Irish *teanga*, which are descendants of a Proto-Indo-European word containing the hypothesized root **dinghwa-*) or through borrowing (as is the case with the English and Slovene words *robot*, both originating in Czech). Cognates can exist within one language, as with *cap*, *chief*, *chef*, and *head* (the first being derived from the Latin word *caput* 'head', *chief* and *chef* being borrowed from French at different times in the history of English, and *head* being the direct Germanic development from Proto-Indo-European). Due to semantic drift, cognates can have slightly or significantly different meanings. For instance, Romanian *lume* 'world' and Catalan *llum* 'light' are both descended from Latin *lumen* 'light', yet their different meanings render them *false friends.* False friends should be distinguished from *false cognates*, which are pairs that are formally similar but derived from different sources. At first encounter, a German-speaking learner of Swedish might be tempted to believe that Swedish *öl* is cognate with German *Öl* 'oil', whereas it actually means "beer" (cf. English *ale*). Both *öl* and *ale* are descended from the hypothesized Proto-Germanic root **alut-*, while German *Öl* and its Swedish cognate *olja* 'oil' can both be traced back to Latin *oleum* 'oil'.

From a psycholinguistic viewpoint, the emphasis when defining cognates is generally on degrees of formal similarity, either in auditory (spoken) or visual (orthographic) modality, since this has bearing on the recognizability of cognates. On a cline of recognizability, while English *father* is close to Danish *fader* (older form), it is less so to Danish *far* (newer form); and the connection between Irish *athair* and English *father* seems even more opaque. Phonetic overlap at the beginning of the word appears to increase recognizability (as in Marslen-Wilson's cohort model, 1987). Similarly, while English *ass* might be recognized as a cognate of Italian *asino* 'donkey', neither of these might seem related to French *âne*, 'donkey'. Likewise, orthography might obscure cognates which are easy to recognize in their spoken form (e.g., Argentine Spanish *lluvia* /ˈʃuβja/ and Northern European Portuguese *chuva* /ˈʃuβɐ/ 'rain'). Conversely, the cognate status of a pair of words may sometimes be obscured by phonology and in spite of similar spelling. For instance, while the connection between Danish *stjerne* and (Central) Swedish *stjärna* ('star') is relatively easy to recognize in writing, the spoken forms of these words, /ˈsdjæɐ̯nə/ and /ˈɧæː˧˩ɳa˥˩/, respectively, are much harder to recognize as cognates. Clearly, all of the above factors must be considered by researchers when designing experiments and by educators when dealing with cognates in lexical syllabi, as they will inevitably have an effect on processing.

In second language acquisition and processing research the definition will likely be more psycholinguistic than etymological or historical, that is, COGNATE = [+ FORM OVERLAP, + MEANING OVERLAP]; FALSE FRIEND = [+ FORM OVERLAP, – MEANING OVERLAP]. However, as a result, we end up with an anomalous situation where etymologically false

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cognates, such as Mandarin *māma* 妈妈 'mother' and Serbo-Croatian *mama* 'mommy', in theory could well be represented and processed in bilingual brains in a cognate-like way, while etymologically true cognates such as Italian *asino* and French *âne* 'donkey' could fail to register as cognates among linguistically naïve learners. Crosslinguistic homographs, such as Spanish *burro* 'donkey' and Italian *burro* 'butter', can be particularly misleading to learners when initially encountered.

For the above reasons, "cognate" is an ambiguous label in applied linguistics unless its definition is tailored to a specific research or pedagogical context. For example, in order to constrain the definition of cognates, Roberts and Deslauriers (1999) compared pairs of L1 and L2 phonemes for similarity in features, calculated their phonemic distance, and required cognates to have at least 70% feature overlap. Kondrak (2003) recommended using a special algorithm centering on "feature salience" on the grounds that some phonetic features are more important than others. Likewise, to assess visual (orthographic) similarities between pairs of cognates in the same script, there are measures of graphemic distance in the literature (see Gooskens & van Bezooijen, 2006).

Cognates are of interest to applied linguists because of their obvious potential to influence second language learning and processing, for instance by facilitating word recognition and acquisition. Or, because of the easier burden of lexical acquisition, other aspects of L2 learning can be accelerated. In cases when two genetically related languages are very similar typologically and lexically, the number of cognates can be so large as to make possible various degrees of communication between speakers of different languages (e.g., Swedish, Norwegian, Danish; Macedonian, Bulgarian, Serbo-Croatian; Hindi, Marathi, Gujarati; Tamil, Malayalam, Kannada; Spanish, Portuguese, Galician; Zulu, Xhosa, Swati). This sort of facilitation has implications for lexical testing, as discussed below.

Research on Cognate Facilitation

Research involving bilinguals indicates that cognates are recognized, learned, and translated faster than non-cognates (Kroll & Stewart, 1994; Lotto & de Groot, 1998), especially when these items are high frequency in the L1 and low frequency in the L2 (Dijkstra, Grainger, & van Heuven, 1999). Among bilinguals, cognates are less prone to attrition than non-cognates (de Groot & Keijzer, 2000) and less vulnerable to temporary breakdowns of the lexical retrieval mechanism such as tip-of-the-tongue states (Gollan & Acenas, 2004). However, apart from facilitating acquisition and processing, cognate status can also increase the likelihood of L1-to-L2 phonetic transfer in word production (Patterson & Goldrick, 2008).

In psycholinguistics, priming is a popular research tool that has been widely used to address questions about cognate representation and processing. Most of the early priming research on cognates used overt visual-visual priming (i.e., priming without masking). Those studies which used long stimulus-onset asynchronies (SOAs) (over 300 ms) found facilitation with cognate translation equivalents (Gerard & Scarborough, 1989) but none with non-cognate translation equivalents (Cristoffanini, Kirsner, & Milech, 1986). Note that short SOAs facilitate both form and semantic priming, thereby favoring both cognates and non-cognate translation equivalents, while long SOAs generally facilitate form priming but not semantic priming (since semantic activation is short-lived), thereby favoring only cognates (e.g., de Groot & Nas, 1991).

Whereas nonmasked (overt) priming is susceptible to episodic and strategic processing effects, *masked priming* eliminates these effects since the participant is typically unaware of seeing the prime. Using masked Spanish–English and English–Spanish priming, Davis et al. (2010) found that cognates indeed prime each other (just as words prime themselves). There were similar amounts of priming for equilinguals, Spanish-dominant bilinguals, and

English-dominant bilinguals. The magnitude of priming effects was the same for cognates with differing degrees of orthographic overlap (e.g., *clear—claro*; *tower—torre*) and in either direction (L1–L2 and L2–L1). However, de Groot and Nas (1991), using both masked and overt priming, found that while both cognate and non-cognate primes accelerated lexical decisions, only cognates displayed associate priming across languages: English *baker* primed Dutch *brood* 'bread' (forms related), but English *blanket* did not prime Dutch *laken* 'sheet' (forms unrelated). Van Hell and Dijkstra's (2002) study of Dutch–English–French trilinguals residing in the L1 (Dutch) environment reported English-to-Dutch and French-to-Dutch cognate facilitation, with the latter only observed in participants with sufficient levels of proficiency in French; in general, when one language is considerably weaker than the other, cognate facilitation may not be observed in the L2-to-L1 direction, while it is likely to be observed in the L1-to-L2 direction.

Recently, cognates have also been the focus of studies on nonfluent aphasia, some of which demonstrate that cognates are less vulnerable to loss in cases of brain damage (e.g., Detry, Pillon, & de Partz, 2005). Other studies hypothesize that treatment consisting of picture-naming in one language facilitates naming of cognate equivalents in the other. The results here are often ambiguous (for more on this, see Costa, Santesteban, & Caño, 2005); unidirectional (i.e., cognate facilitation in the L2 but not the L1) (Roberts & Deslauriers, 1999); or without evidence of positive language transfer, as in Meinzer, Obleser, Flaisch, Eulitz, and Rockstroh's (2007) study of a French–German balanced bilingual, who, after a stroke, received successful language therapy only in German but displayed no transfer to French in language tests or fMRI scans.

Cognate Facilitation: Models

One explanation for cognate facilitation is that cognate pairs share a representation, making any form differences between the two items similar to those between morphologically linked words within a language (Lotto & de Groot, 1998; Sánchez-Casas & García-Albea, 2005). Non-cognates, on the other hand, have language-specific representations in the bilingual lexicon. Thus, when a non-cognate L2 word is learned, a new lexical entry must be created, while an L2 cognate simply requires modifications to the entry of its L1 counterpart.

Another explanation for the quicker acquisition of cognates centers on the form overlap between two separate (language-specific) representations of L1–L2 cognate pairs. First, less form-related learning is required. Second, a lexical stimulus in one language helps the activation and retrieval of its cognate. In addition, as Jiang (2000) suggests, during the word-association stage of L2 lexical acquisition (see Kroll & Stewart, 1994), L1 lemma mediation prevails, whereby the learner ascribes an L1 lemma to an L2 phonological word structure. In the case of cognates with a high degree of semantic and conceptual congruence, the learner gets it right even during the interim lemma mediation stage, accounting for the rapidity with which cognates are acquired.

There are models that explain cognate facilitation through the architecture of the language-processing system and not through differences between the representations of cognates and non-cognates. In the bilingual interactive activation (BIA) model of lexical representation/processing (Dijkstra & van Heuven, 1998; Dijkstra, Grainger, & van Heuven, 1999), words similar to the input, either orthographically or phonologically, are activated in both languages, and nontarget items are inhibited by top-down processes. Costa et al. (2005) further suggest that the mechanism for prompting naming in the other language lies at the phonological (sublexical) level, with a cognate's phonological content being activated via the target word as well as its counterpart.

It is possible that the presence of cognate pairs in the bilingual lexicon heightens a cognate's neighborhood density in the mental lexicon. Sherkina-Lieber's (2004) findings suggest that bilinguals (here Russian–English) perceive L2 items with cognates in their L1, but not those without L1 counterparts as having higher frequency than monolinguals do.

Using stimuli that included cognates and interlingual (L1–L2) homophones and homographs with different degrees of phonological and orthographic similarity respectively, Dijkstra, Grainger, and van Heuven (1999) investigated the connection between word recognition and orthographic neighborhood density among Dutch–English bilinguals. The results showed that semantic and orthographic overlap led to faster reaction times, but phonological overlap alone slowed the participants down. This explains why, in a number of recognition studies, cognates display a processing advantage, but interlingual (semantically unrelated) homophones do not.

Cognates: Pedagogical Issues

Hall (2002), based on research on cognate recognition among Spanish–English bilinguals, hypothesized that learners intuitively search through L1 lexical items for form–meaning matches with newly encountered L2 lexical items. However, there is also evidence that, despite their phonological/orthographic and semantic overlap, cognate pairs are often not recognized without explicit instruction, especially during the early stages of L2 acquisition and especially among young children. García (1991) found that fifth- and sixth-grade Spanish students learning English failed to recognize the relationships between everyday Spanish words and orthographically similar English cognate counterparts. In a similar setting, Nagy, García, Durgunoğlu, and Hancin-Bhatt (1993) found great variation in English learners' recognition of Spanish–English cognates in a reading comprehension task and concluded that recognizability increased with L2 lexical proficiency and age; while all the learners underused their knowledge of Spanish to grasp cognate words in English, the grade 4 students fared worse than students in grades 5 and 6. Similarly, Rukholm (2011) found that beginner learners of undergraduate Italian with a background in English or French did not make significantly higher gains than learners of languages genetically distant from Italian when acquiring cognates such as *cuore* 'heart' (cf. French *cœur*) or *ostacolo* (cf. English/French *obstacle*), presumably because they did not make any special connections between cognates. When recognition depends heavily on the written word, script differences can camouflage connections between cognates. This is witnessed in pairings of languages such as Hindi or Ukrainian with English where learners often fail to consider that the L1 and L2 may have cognate vocabulary (e.g., Hindi *विधवा* /vɪd̪ʰvɑ/ and *widow*; Ukrainian *церква* /ˈtsɛrkvɑ/ and *church* (Perhan, 2008)).

Bravo, Hiebert, & Pearson (2006) suggest that cognates be made a centerpiece of English instruction for Hispanic children in the USA since numerous ordinary Spanish words have English equivalents that belong to a higher "style" and are frequently used in academic/scientific writing (e.g., *enfermo/infirm*, *frío/frigid*). (This is generally true of vocabulary in all Romance languages.) The researchers' examination of a mini-corpus based on words found in primary school science curricula revealed a substantial number of cognates of this type (over 25%). Chen, Ramírez, Luo, Geva, and Ku (2011) compared Spanish- and Chinese-speaking Canadian fourth- and seventh-graders and found that the Spanish speakers out-performed the Chinese speakers on cognates in the Peabody Picture Vocabulary Test, whereas there was no such advantage for non-cognates. Moreover, for the Spanish speakers, length of residence in Canada only predicted knowledge of non-cognate vocabulary.

Tréville (1996) found that instruction in recognizing and morphologically manipulating cognates helped beginner-level English-speaking university students of French to identify

cognates and infer their grammatical properties. (Note, however, that this treatment did not lead to higher reading comprehension scores on university reading tests.) Similarly, Perhan (2008) found that a group of Ukrainian-speaking undergraduates who had received explicit instruction on Ukrainian–English cognates and had completed a variety of tasks requiring elaborate processing (for example, pairs work to deduce the meanings of emboldened words in a text) out-performed not only those in a no-treatment group but also students who were simply exposed to these cognates in reading assignments that culminated in answering simple comprehension questions that did not hinge on understanding these cognates. Most importantly, the students who were given explicit instruction were able to generalize their knowledge of cognates to English items not previously encountered.

The inclusion of cognates in vocabulary tests is sometimes a contentious matter. Cobb (2000), for example, found that Francophone students enrolling in English courses in a Francophone university ended up with inflated scores on those segments of the Vocabulary Levels Test (VLT) (Nation, 1990) that contained a large proportion of French–English cognates. This was especially consequential since many of these learners were still struggling with extremely common Anglo-Saxon-derived words. However, Helms-Park, Dronjic, and Petrescu (2007) found that Romanian-speaking and Vietnamese-speaking students in a large Canadian university did equally well on the academic section of the VLT, despite the great preponderance of Latin-based cognates here. The authors surmised that, while the Romanian speakers might have known many cognates through minimal learning (or perhaps without even encountering them in an English-speaking environment), the Vietnamese-speaking students had learned these lexical items during their preparation for university study or through the frequent use of these items in everyday university contexts. Interestingly, in the 10,000-word general level (which featured less common words) the Romanian speakers clearly out-performed their Vietnamese counterparts on test items that were Romanian–English cognates. The authors recommend that cognates be included in a lexical test to whatever extent they exist in a frequency band or register targeted by the test. Nonetheless, when lexical tests are being validated, it seems to be a good idea to keep records of test takers' language backgrounds in order to gauge to what extent some groups are advantaged as a result of cognate facilitation.

SEE ALSO: Formal Models of Bilingual Lexicons; Lexical Priming; Lexical Transfer and First Language Effects; Psycholinguistic Approaches to Vocabulary; Second Language Word Difficulty; Spoken Word Recognition; Vocabulary Acquisition in Bilinguals; Vocabulary and Reading

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Cognitive Approaches to Communication Strategies

JEANNETTE LITTLEMORE

In second language acquisition research, the study of communication strategies (CSs) has traditionally gone hand in hand with interest in communicative competence, which is broadly defined as the ability not only to know the rules of the target language, but also to know how to use the language appropriately in different contexts. The most well-known model of communicative competence is Canale and Swain's (1980), which includes three main components: grammatical competence, sociolinguistic competence, and strategic competence. Canale and Swain's (1980) notion of strategic competence provided structure to the already flourishing field of CS research. CSs are defined by Tarone (1983, p. 62) as "the speaker's attempt to communicate meaningful content, in the face of some apparent lacks in the language system."

In trying to communicate, learners may have to make up for lack of knowledge of grammar or vocabulary. They might do so by relying on circumlocution, paraphrase, transfer from the L1 and so on. CSs differ from learning strategies in that they are used by learners, not to help them learn the target language, but to describe or approximate concepts and words they do not know or that cannot be instantaneously retrieved (Willems, 1987). However, some researchers, such as Bialystok (1983) maintain that this distinction between learning strategies and CSs is somewhat artificial. Bialystok argues that the use of so-called CSs can result in learning, and that many of the so-called learning strategies can also be used to communicate: "Any strategy may potentially operate as either a learning or a communication strategy: ideally the implementation of a strategy leaves a positive mark on both learning and communication" (Bialystok, 1983, p. 102). The a priori classification of strategies can, according to Bialystok, conceal important information about the types of strategies that L2 speakers select in order to communicate in any given situation.

There is some debate as to whether "communication strategies" or "compensation strategies" is a more appropriate term. Communication strategies comprise all strategies that are used to overcome obstacles to communication including, for example, accommodation and negotiating strategies. Compensation strategies, on the other hand, are specifically those strategies through which an L2 learner compensates for grammatical and vocabulary difficulties. Compensation strategies can therefore be viewed as a subset of CSs.

There have thus been different approaches to the study of CSs, and each carries its own definition. Researchers who take a sociolinguistic approach (e.g., Bachman & Palmer, 1996) tend to adopt a very broad definition which includes things such as planning one's message, negotiating meaning, or devising ways to interpret hidden ideas in texts. Researchers who take a more cognitive approach tend to focus mainly on "compensation" strategies, which learners use to compensate for gaps in their knowledge of the target language. The focus tends to be on spoken discourse. These researchers tend to argue that, as CSs are inherently mental procedures, research should focus on the cognitive processes underlying their use. They distinguish between planning and execution and make it an explicit categorization principle in their taxonomies.

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Much of the early research that was carried out into CSs was mainly descriptive. Researchers were interested in the types of CSs used by second language learners, usually with a view to establishing some way of classifying them. As with learning strategies, a number of overlapping and somewhat confusing hierarchical taxonomies emerged and researchers struggled to find a systematic way of classifying these strategies. The taxonomies were complicated, and at times self-contradictory. However, they are important in that they prepared the ground for later more empirical research in the area.

One of the first researchers to assemble CSs in an organized fashion was Tarone (1978, 1980). She based her taxonomy on a data set of nine subjects. The subjects were asked to describe, in both their native language and the target language, a complex illustration containing seven objects for which they probably would not know the word in the target language. There were thus only seven target language concepts. Although the data set was small, it was sufficient to enable Tarone to uncover most of the CSs that are discussed in later studies and at the same time demonstrate the consistency with which learners adopt these strategies in communicative situations of this type.

The CSs in Tarone's taxonomy were divided into five major categories, three of which were further subdivided:

1. *Avoidance*
   a. *Topic avoidance*—the student omitted salient but lexically difficult objects.
   b. *Message abandonment*—the student started to tackle the difficulty but then gave up.
2. *Paraphrase*—"rewording of the message in an alternate, acceptable target language construction, in situations where the appropriate form or construction is not known or not yet stable" (Tarone, 1978, p. 198)
   a. *Approximation*—"the use of a single target language vocabulary item or structure, which the learner knows is not correct, but which shares enough semantic features in common with the desired item to satisfy the learner" (1978, p. 198). Example: "worm" (silkworm).
   b. *Word coinage*—"the learner makes up a new word in order to communicate a desired concept" (1978, p. 198). Example: "airball" (balloon).
   c. *Circumlocution*—"a worldly (sic) extended process in which the learner describes the characteristics or elements of the object or action instead of using the appropriate target language structure" (1978, p. 198). Example: "she is smoking something. I don't know what's its name. That's uh Persian, and we use in Turkey a lot of" (water pipe).
3. *Conscious transfer*
   a. *Literal translation*—this is said to occur when the subject takes an L1 or L3 expression and translates it directly into the L2.
   b. *Language switch*—this is the straightforward insertion of words from another language.
4. *Appeal for assistance*—this is said to occur when the learner consults any source of authority.
5. *Mime*—this strategy includes all nonverbal accompaniments to communication, particularly those that serve in the place of a missing target language word.

One problem with the early CS research was what Bialystok (1990) describes as the "modularity fallacy" which, she alleges, dominated the early communication strategy research. This fallacy, according to Bialystok, led researchers to believe that the CSs were separate and independent from one another. It led to an overreliance on surface forms, and caused a proliferation of categories of CSs which lacked psychological validity and reliability. Bialystok (1990, p. 80) also points out that "attempts to document both the reliability and the validity of the taxonomic classifications have led to disappointing results."

Several researchers have attempted to go beyond the "taxonomy" approach to the study of CSs. Faerch and Kasper (e.g., 1984) first moved away from surface phenomena to examine underlying processes, and discussed strategies in terms of two main behaviors, namely reduction (e.g., avoidance of errors) and achievement (compensatory strategies, e.g., transfer). Kumaravadivelu (1988) identified three psychological processes that he maintains underlie all CSs. These are *overgeneralization, creative transfer* and *cultural relativity*. Overgeneralization occurs when "learners make inductive generalization about the target language system on the basis of the data to which they are exposed" (1990, p. 316). In creative transfer, learners attribute to a lexical item "all the functions . . . of its assumed first language translation equivalent" (1990, p. 316). In cultural relativity, learners employ thought patterns that are characteristic of their culture, which leads them to produce utterances that differ from the rhetorical norms of the target language.

Poulisse (1990, 1993) (sometimes referred to as "The Nijmegen Project"), also aimed to go beyond linguistic differences and examine the underlying processes. Instead of creating a product-oriented taxonomy, this research aimed to produce a context-free, process-based taxonomy of CSs that met three basic requirements: (a) parsimony—the fewer strategies the better; (b) generalizability—independence of variation across speakers, tasks, languages, and proficiency levels; and (c) psychological plausibility (most important)—a taxonomy should be "informed by what is currently known about language processing, cognition and problem-solving behavior" (Dornyei & Scott, 1997, p. 199). Basing their work on Levelt's (1989) model of speech processing, they propose a process-based analysis consisting of two "strategy families": the conceptual strategy family and the linguistic strategy family. If learners compensate for a missing word by exploiting conceptual knowledge they are thought to be using a conceptual strategy, whereas if they attempt to compensate through linguistic knowledge they are thought to be using a linguistic strategy. Poulisse (1993) extended the taxonomy of CSs to include three "strategy families:" "substitution;" "substitution plus;" and "reconceptualization." Substitution strategies are used when the speaker replaces the intended lexical item with another one, either from the L1 or from the L2 (for example, the use of the L2 word "animal" for "rabbit," or the L1 word "house" for the L2 word "maison"). Substitution plus strategies involve the use of a substitution strategy, but with an added morphological or phonological development (for example, the creation of the verb "ironize" on the basis of the noun "iron"). Reconceptualization strategies involve "a change in the preverbal message involving more than a single chunk" (p. 181) (for example, "it's green and you eat it with potatoes" for "spinach"). These involve componential analysis (it's got a head, a body, and four legs) and/or the provision of information about what the item does, what it's for, where it can be found, and so on.

Other researchers who have taken a cognitive approach to CSs include Chen (1990), who divided CSs into "linguistic" and "knowledge-based" strategies; Marrie and Netten (1991), who divided CSs into "achievement" and "reduction" strategies; and Bialystok (1990), who divides strategies into those that involve "analysis" (i.e., exploring one's intended meaning) and those that involve "control" (i.e., directing one's attention to a particular aspect of the communication problem). Khanji (1996) made an initial attempt to combine both the interactional and psycholinguistic approaches to the study of CSs and has developed a taxonomy which, he claims, incorporates both views. In his taxonomy he contrasts self-regulating strategies with topic-regulating strategies, showing yet another way of taking a cognitive approach to CS research.

More recent developments in the field have included a focus on the use of gesture as a compensation strategy. For example, Gullberg (1998) found gestural CSs to be particularly useful as they involved both interlocutors in the joint solution of the task and help to create redundancy. Olsher (2008), who looked at repair turns in student interactions, found that gesture played an important role in explaining or enhancing the meaning of the

repeated segments, and that it contributed to the interactional understanding of the repaired turn. Finally, Mori and Hayashi (2006) showed how gesture is used to build intersubjectivity and common frames of reference in dialogues between native speakers and second language learners. Once these common frames of reference have been built up, the native speaker has an idea of what the language learner wants to say and can help provide the missing vocabulary to the learner. All of these studies illustrate how this newly found focus on gesture can help to build bridges between purely "cognitive" approaches to CSs and approaches that have taken a more interactional perspective. They also promise to provide new ways of exploring the relationship between CS usage, language learning and the employment of more generic, less "language-specific" cognitive processes.

SEE ALSO: Bialystok, Ellen; Gesture Analysis in Second Language Acquisition; Intercultural Competence; Interlanguage; Tarone, Elaine

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Cognitive Approaches to Translation

HANNA RISKU

Obviously, there is more to translation than just associating words in one language with those in another. Cognitive scientific approaches to translation try to understand and explain the workings of translators' minds: How do translators and the other actors involved in translation create meaning in the situations and texts they handle? How do they arrive at their strategies and choices? How does their cultural and linguistic background influence their thinking and understanding? How do they develop translation competence?

All cognitive scientific approaches to answering these questions have one thing in common: they do not restrict their description to intelligent behavior like learning, problem solving, and translation. Their main goal is to explain the development and workings of the mental processes that make complex cognitive behavior like translation possible (Shlesinger, 2000; Thagard, 2005, p. 3). This is why (and how) cognitive approaches differ from other—e.g., linguistic or psychological—approaches to translation: They refer to and expand existing cognitive scientific models of the mind to describe the processes which might serve to explain the behavior and choices of translators.

Cognitive translation research is closely related to the ever-increasing process research in translation studies, which uses different methods to observe the actual chronological activity of translating by different groups of participants with different text types and different contexts. What makes cognitive translation research cognitive is the fact that it tries to look "behind" the observable processes and, when doing so, refers to certain cognitive scientific concepts or approaches as a framework (which can thus be confirmed or disproved). Consequently, cognitive approaches focus clearly on the people and processes involved in translation and employ a primarily descriptive—as opposed to a normative—mode of research, applying various empirical and experimental research designs. Thus, they can be seen as part of "translator studies," the recent tendency in translation studies to focus explicitly on the translator, rather than on translations as texts (Chesterman, 2009, p. 13: "A broad outline of Translator Studies would cover sociology, culture and cognition, all looking at the translator's agency, in different ways").

Instead of only analyzing texts or external behavior (in a behaviorist manner), cognitive scientists consider inner processes. The mind is no longer a "black box." There are, for example, now sophisticated methods and instruments available which make the neurological processes in the brain visible. However, the cognitive processes as such are neither visible nor self-evident, and there are several competing hypotheses in cognitive science regarding the meaning of the neurological and behavioral evidence. One question that remains open is, for example, the location of meaning. Does meaning reside in words, languages, texts (Wilss, 1988, p. 104), neuronal patterns, brains, or interaction? Consequently, the different cognitive scientific approaches propose different answers to the question of what happens in the minds of translators.

An understanding of cognition is a prerequisite for explaining many of the practical tasks relevant in translation, since these tasks are based on thinking, learning, and understanding. What are the effects of different methods of teaching and learning? Why do translators find some things easy to translate, yet others difficult? How can meaning be

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assigned to target situations and source texts? Are there any universal elements to thought processes which remain the same across different cultures and serve as a basis for translation? Can machine translation programs actually show us how "human translators" work—or can they only show us how people *don't* work? Applied research can address, for example, the following questions: What can be done in the production process to make texts understandable? What kinds of tools support translators in their problem-solving processes? How should translators organize their work?

Methodological Approaches

Modern cognitive scientists and cognitive science methods often have their roots in psychology, artificial intelligence, philosophy, linguistics, anthropology, and neuroscience. For example, psycholinguistic research on bilingualism has had a major effect on translation studies (and an even stronger effect on interpreting studies; Campbell & Wakim, 2007), while text comprehension and production research has provided important discourse processing concepts (van Dijk & Kintsch, 1983). All these disciplines bring their own methodological traditions and competences to the study of cognition. In translation studies, the methods used to date have included, for example, introspection (Seleskovitch & Lederer, 1984—later criticized for its insufficient empirical basis and for relying on the authors' own experience, see e.g., Pöchhacker, 2000, pp. 67–8—and Seleskovitch, 1988), neurological EEG measurements of brain activity (Kurz, 1996), theoretical analysis (Wilss, 1988; Risku, 1998), think-aloud protocols (TAPs) of individual language learners and translators (Krings, 1986; Lörscher, 1991; Jääskeläinen & Tirkkonen-Condit, 1991; Tirkkonen-Condit & Jääskeläinen, 2000) and groups of translators (Kußmaul, 2000), participant observation (Risku, 2009), tracking/logging the translation process on computer screens (Jakobsen, 1999), and eye-tracking (see e.g., Göpferich, Jakobsen, & Mees, 2008; several contributions in Shreve & Angelone, 2010a; Dragsted, 2010; Shreve, Lacruz, & Angelone, 2010; Rydning & Lachaud, 2010; Alves, Pagano, Neumann, Steiner, & Hansen-Schirra, 2010; O´Brien, 2010). With methodological innovation having become a major topic in cognitive translatology (Shreve & Angelone, 2010b, pp. 6–7), increasing attention is also placed on combining translation process observation with translation product analysis and corpus-based translation studies (Rydning & Lachaud, 2010; Alves et al., 2010; Halverson, 2010; see also Malmkjær, 2000, p. 164).

Over time, the research design used in cognitive studies of translation has moved away from the study of nontranslators or learners in conditions that bear little relevance to professional translation practice toward the description of real-life(-like) translation by professionals. Important first moves in this direction were the change of test persons from beginners to semiprofessionals by Krings (1988) and the comparisons of beginners with professionals by Jääskeläinen and Tirkkonen-Condit (1991; for a summary of the empirical evidence of the differences between the way beginners and professionals work, see Fraser, 2000, pp. 111–12 and Kußmaul, 2009, p. 317). For example, professionals have been observed to use global, recursive strategies instead of local, linear strategies and to write longer segments of text at a time, leading to the hypothesis that they process larger, meaning-based units (Kußmaul, 2009, p. 317). The growing practical relevance of the translation processes studied increased the potential for applied research, since it enabled researchers, for example, to use the results to develop suitable didactic measures to support the learning and teaching of translation competences (Kußmaul, 1995; Kiraly, 2000; Hansen, 2006).

At the same time, defining professionalism and expertise in an operationalizable manner has become one of the current themes in cognitive translation studies. In light of the (inferior) quality of translations produced by some professionals in empirical studies, the

pragmatic solely education and/or length of work experience definition has proved insufficient when looking to identify "best practice" and best performance (Jääskeläinen, 2010). The issues of acquiring the social role of a professional translator (Holz-Mänttäri, 1984; Sela-Sheffy, 2005) and acquiring the expertise to perform excellently in a field can thus be seen as distinct yet closely related research topics (for classic typologies of developing expertise, see Dreyfus & Dreyfus, 1986 and Bereiter & Scardamalia, 1987, 1993). After all, as situated and constructivist approaches to cognition show (see below), the social and cognitive perspectives are intertwined: the possibility of assuming the role of a professional in a production network facilitates and enables the acquisition and implementation of the expertise needed for the task (Kiraly, 2000; Risku, 1998, 2009).

Technology has often provided a framework for new scientific models. For example, the development of the models used in the cognitive approaches to translation has been oriented on the computer metaphor (translation as information processing and symbol manipulation) since the 1960s, on the neuronal network metaphor (connectionist models of translation) since the 1980s, and on the social networks metaphor (social constructivist and situated translation) since the 1990s. The summary of the development of the cognitive approaches to translation provided below uses these as a framework:

- information processing (translation as code switching and symbol manipulation),
- neural networks and connectionism (translation as an experiential, cultural act), and
- situated cognition (translation as socioculturally situated interaction).

Translation as Information Processing and Symbol Manipulation

In the early days of translation (and communication) studies, the telephone or coding and recoding in different linguistic systems served as an explanatory model (Jakobson, 1959; Kade, 1968; Koller, 1978). According to this classic model, translators work like code switchers: they replace the elements and rules in one coding system with the elements and rules of another (Wilss, 1992, p. 110). Once a person has learned a language system and its corresponding elements and rules in another language system, they can basically rely on their own dexterity and proficiency—a bit like a machine (e.g., a gramophone, see Wilss, 1992, p. 109). By this principle, the function of a text could be determined by means of system-linguistic analysis. However, this model proved to be too simplistic: sense and meaning cannot be primarily or exclusively explained through reaction to stimuli or by decoding symbols.

If the brain works like a computer rather than a telephone—an assumption that takes us into the domain of modern cognitive science—translation is still a matter of codes, rules, and uncovering the binding function of the text, but in a far more subtle sense. The first and probably best known—although now much disputed—information processing as symbol manipulation approach combines the notion of an inherent universal system of rules (Chomsky's transformational-generative grammar, 1965) with the notion of thinking as a logical operation on symbols (Simon, 1970; Fodor, 1983). According to this principle, people of all cultures think with the help of the same language structure (language of thought), which we use when translating. Different languages are merely surface phenomena which can be associated back to the basic rules, and thus to their meaning, using syntactic analysis. If all perception and understanding is a coding in internal symbols, and all thinking is an operation of these symbols, translation is also a kind of—albeit complicated—computer program.

Equivalence theory approaches to translation imply a corresponding picture of translation as the comparison of linguistic and cultural systems. For example, semantic networks

provide a method of systematically structuring and comparing meaning by means of symbol and concept systems based on shared properties. According to these approaches, the relevant properties, concept networks, and linguistic conventions used in different cultures lay the basis for translation as information processing and linguistic transfer.

Translation as an Experiential, Cultural Act

The previously dominant notion of information processing as a rule-based manipulation of symbols has proved to be highly problematic in recent years. Even the smallest change in the task or system causes the model to break down—while humans are able to master and understand even incomplete and grammatically incorrect information with apparent ease. Traditional algorithms might out-perform the logical and mathematical calculation abilities of the human brain, but they fail miserably with the day-to-day routine tasks encountered in the "natural" world—even ants are far superior in this context than any "autonomous machine." This was one of the reasons why it was assumed that humans do not think and understand in terms of semantic characteristics, but in terms of experiential, emotionally loaded typical examples—or prototypes (Rosch, 1973). The prototype theory was used in translation studies, for example, by Snell-Hornby (1988, p. 27), Hönig (1997), and Kußmaul (2000). Drawing on Lakoff (1982, p. 16), Snell-Hornby emphasizes the fuzzy, culturally constructed nature of our cognitive categorizations and their "blurred edges," which are influenced by the body, by cultural myths, and by stereotypes. Depending on our culture and situation, we categorize differently and judge certain objects to be more representative than others. The meaning of the word *bird* is not defined across all cultures based on its characteristics as a two-legged, two-winged, beaked vertebrate that can fly. Instead, humans associate it with the species they are most familiar with or which is most prevalent in their society, thus instantaneously associating it with an individual and, at the same time, culturally dependent world of colors, sounds, and movement. Consequently, our understanding of a text necessarily depends on our nonlinguistic presuppositions and preconceptions.

The prototype theory well and truly rocks the ideal of translation as a subject-independent recoding of a linguistically transparent meaning. It is one of a group of cognitive models which postulate different experience-based (in contrast to symbol- and property-oriented) units of thought. These units are referred to, for example, as frames, scripts, schemas, scenes, or scenarios. In translation studies, Vannerem and Snell-Hornby (1986) implemented Fillmore's (1977) model of scenes and frames to explain the experiential basis of text analysis and production in translation. All of these approaches are based on the assumption that the world knowledge gained through individual experience plays a dominant role in thinking, understanding, and learning. The term "schema" itself can be traced back to Kant, Bartlett, and Piaget and is now used in the cognitive sciences to describe the rough patterns of action and thought which we reconstruct accordingly when we encounter a situation and which are modified over the course of time. Thus, all understanding is initially based on a contextual interpretation of our own patterns of thought. We don't begin to understand and produce texts when we read the first words they contain, we begin to do so when we activate our understanding of the particular situation, which leads us to expect certain types of texts and content. Translators can therefore never *re*produce, they offer possibilities for new constructions of meaning.

The scheme theory model served to explain the emotional, flexible, contextual, creative, and constructive sides to translation. Translators, it would seem, do not simply process symbolic information based on a set of rules, they construct meaning in concrete situations. In doing so, they draw on their own experiential meaning, i.e., they are self-referential.

Understanding was thus explained as an interaction between situation-specific inputs and internal, individual, and culture-specific models. Scientists in the field of artificial intelligence were able to simulate this process in the 1980s. Cognition was modeled as pattern recognition using artificial neural networks. In the cognitive sciences, this created the paradigm of connectionism or parallel distributed processing (Rumelhart & McClelland, 1986). This approach not only attempts to provide a functional explanation for human cognition, it also draws on the structure of the brain with its millions upon millions of connected nerve cells. According to this approach, there are no preprogrammed symbols and rules. We don't store knowledge somewhere as individual pieces of data, we develop and activate patterns with connections of different strength between closely linked neurons. Knowledge is not located in the individual neurons, it is distributed across the entire network—hence the term "parallel distributed processing." The use of abstract (computer) models of biological neural networks is referred to as connectionism, a term now also applied to the whole approach. So computers also play an important role here, albeit only as tools. There is no suggestion of a universal calculation algorithm; the network itself learns—through individual experience and by using the available connections—to recognize regularities in its environment. The meaning of symbols is actively learned in concrete interactions on the sub-symbolic level. The repetition of situations creates relative (individual and cultural) stability, but meaning is nonetheless in a constant process of change.

The connectionist networks approach provides explanations for many translation phenomena that were left unanswered by the symbol manipulation approach. Translators (like connectionist networks) can also activate copious patterns and use different interpretations to suit the situative, textual, and internal context, even when the source text is unclear. Their culture-specific knowledge and experience and their prior knowledge of the target group affect the way they translate. Thus, connectionists tackle the wider epistemological and hermeneutic problem of "framing" (Gadamer, 1972; Wheeler, 2008): They try to explain our ability to take account of a situation, base our interpretations on what is relevant in a specific situation, and limit the scope of information that is (re)considered in the process. In translation studies, Gutt (1991) discusses the problem of endless circles of inferences in terms of relevance, based on Sperber and Wilson's (1986) relevance theory. Hönig (1997, p. 50) combines experience-based—and thus culture-specific—world knowledge and its manifestation in translation into a connectionist model of constructive translation. In doing so, these experts formulated cognitive approaches to translation which explain why translators cannot simply reproduce "the" functions and meanings of a text in another culture and situation, but have to take a responsible role as decision makers, experts, and interpreters (Nord, 1997).

The move to a view of cognition as a sub-symbolic and linguistically nontransparent activity relativizes the adequacy of "thinking aloud" as a data-gathering method: Since every verbalization is already an interpretation, and possibly even a rationalization of the internal, intro- and retrospectively inaccessible process, the validity of TAPs has been criticized in translation studies (e.g., Bernardini, 2001; Jakobsen, 2003). TAPs were the preferred method of data collection in early process studies and resulted in a wealth of hypotheses on the underlying cognitive processes; nowadays, they are increasingly combined with other methods, and triangulation is preferred in order to avoid overemphasizing the translators' verbalized accounts of their own action (Alves, 2003).

Translation as Socioculturally Situated Interaction

In the 1980s, the cognitive sciences experienced growing criticism of the symbol systems and information-processing hypothesis. This period also marked the birth of connectionism.

In the 1990s, there was growing dissatisfaction with the connectionist models because of the low priority they accorded to the social and artifact-mediated aspects of intelligence. Parallel developments in different disciplines—from developmental psychology (Thelen & Smith, 1994) to learning theories (Lave & Wenger, 1991), robotics (Brooks, 1995), dynamic systems theory (van Gelder, 1998), and human–computer interaction (Suchman, 1987)—acknowledged the importance of social and physical interaction in cognition. Consequently, scholars combined their efforts to tackle the sociocultural situatedness of cognition (Frank, Dirven, Ziemke, & Bernárdez, 2008), marking the birth of a new approach: situated, embodied cognition. Rather than explaining cognition as the recognition, reconstruction, and use of relatively stable schemas and patterns in the brain (with scientific roots in Piaget's [1954] developmental psychology), situated, embodied cognition views cognition as agent–environment interaction in a psycho-social, ecological system (with roots in Vygotsky's [1962] theory of language and thinking). Here, cognition is seen as situated action in complex physical and social situations—not as the recycling and reuse of prior knowledge. People cannot "borrow" meaning from their inherent cognitive abilities, or from their environment, or from other people. Meaning cannot be localized on paper or in the brain, it results from our interaction with our current environment. Thus, the object of study is extended from the brain to its interaction with body and the environment, emphasizing the importance of social interaction and interaction with cultural artifacts.

The situated cognition approach was brought to translation studies for example by Kiraly (2000) and Risku (2009; see also Prunč, 2007, p. 197; Muñoz Martín, 2010) and to the neighboring discipline of terminology for example by Temmerman (2008). Whereas Kiraly presents a social constructivist approach to translator education, Risku (2009) uses field studies with participant observation to illustrate the role of the social and physical environment, especially the influence of the tools of the trade (translation technology) and social roles in interaction. According to the situated cognition approach, one of the main reasons for our intelligence is that we delegate knowledge to our environment and motions. We use tools and instruments. Thus, much of the complexity is "scaffolded" by external structures (Clark, 1997, pp. 45–6), and we reduce the need to store, search for, and process knowledge in the brain.

The principle of cognitive economy manifests itself in many different ways. We design translation offices and technologies to suit their specific purpose; we use specific forms of discourse in various conversations; we create checklists to coordinate actions and reduce the cognitive load on our memory. Rooms, organizations, forms of discourse, and actions which serve other actions become tools in the wider sense of the word (Hendriks-Jansen, 1996). They put a framework, a cultural scaffolding, around our actions and understanding. External aids such as terminologies, grammars, text analysis heuristics, and scientific models are all used as scaffolds: they form teaching, learning, and organizational aids.

Process research in translation has concentrated to a large extent on describing translation as a problem-solving and decision-making process. The focus has been placed in particular on those phases in which the translator faces difficulties, the translation process becomes slow and the translator tries to find a solution for a problematic text segment. By doing so, it has implicitly adopted an information-processing view on translation, looking at it as a mental operation on internal processing units and defining a multitude of different mental "process operators," such as macro and micro strategies, techniques, methods, and procedures (Gil Bardaji, 2009). However, as Muñoz Martín (2010) points out, if we take the consequences of situated, embedded cognition seriously (Risku, 2010), unproblematic text segments and "unconscious" processes are just as interesting as problematic segments: they provide information on the ability to interact fluently with the material in hand and thus might prove very relevant for the description of translation expertise.

The "extensions to cognitive science" brought by the situated, embodied cognition approach include "bodies, the world, and dynamic systems" on the one hand, and "societies" on the other (Thagard, 2005). The role of the social factors in cognition has also been taken into account in the recent developments of translation studies. With reference to Vygotsky's (1962) concept of the "zone of proximal development," Kiraly (2000, p. 40) notes that essential internal developmental processes are only able to operate when learners interact with people in their environment and with their peers. He develops a view of situated learning by learning through authentic actions in translation education. As didactic methods, sociocognitive apprenticeship (Brown, Collins, & Duguid, 1989, p. 39) and legitimate peripheral participation (Lave & Wenger, 1991) take into account that learning to translate is based on assuming roles and the corresponding behavior associated with these roles in social situations. Cognitive and social skills are closely interrelated. By assuming the role of the expert, we develop the ability to cope with the challenges this role imposes (Lave & Wenger, 1991). Thus, professional identity and competence are not only associated with the individual, but also with social processes or other processes with a strong social element.

The situated cognition approach to translation emphasizes the social organization of translation by practitioners (Risku, 2009). Close attention is given to the communities of practice (Risku & Dickinson, 2009), the actor networks (Buzelin, 2005), and the computer-supported cooperative work in which complex activities are negotiated (see Wagner, 1997). The social elements in translation studies (Wolf, 2006) are thus visible in the cognitive approaches to translation, as they increasingly expand their scope of attention from the individual translator to the study of networks and collaboration in translation (Kiraly, 2000).

SEE ALSO: Cognitive Approaches to Communication Strategies; Translation and Interpreting: Overview

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Cognitive Constructivism

GEORGE G. HRUBY AND ANTHONY B. ROEGIERS

Cognitive constructivism is an umbrella term for a host of related epistemological and psychological theories about the nature of knowledge and how it is formed through a knower's mental (hence *cognitive*) processes. As the metaphor of *construction* implies, cognitive constructivist theories assume that knowledge is a thing made by the mind rather than received from a source. Knowledge, in this view, is not transmitted all of a piece with meaning intact or contained, nor accrued piecemeal and then reconstituted. Rather, knowledge is said to be *constructed*, or actively structured, by a knower's mental processes even as particular purposes and contextual constraints guide the result. The anthropomorphic image of a builder or *bricoleur* (tinkerer) creating a knowledge structure, edifice, or machine is occasionally employed to illustrate this metaphor of mental process, and may be helpful if not taken too literally.

In conjunction with the idea that knowledge or understanding is constructed, cognitive constructivists hold that the structure of knowledge (as in a specific network of associations) is crucial to its functionality. As one result, pre-existing knowledge structures impose a degree of guidance, affordance, or constraint on the development of new knowledge. In more pedestrian terms, we make sense of our memories and perceptions, including *new* experiences and information, by the light of what we already know. We recognize and comprehend the familiar by reference to what we already know, of course, but we also make sense of novel experiences by comparison and analogy with what we already know. To define an unknown word, for instance, we use already known words. In short, bringing perceptions into accord with the structure of what we already know, and thereby expanding the structure of what we know, is the central task of knowledge construction.

Granted, all but the most extremely simplistic, reductionist, or empiricist theories of knowledge would accede at least some role for prior experience as a crucial component in knowledge formation (cf. Locke, 1689/1996; Vico, 1699/1993). But cognitive constructivism takes this assumption further under the theoretical emphases of *structuralism*, particularly the claim that meaning is to be found not inherent in the essentially arbitrary elements of a system, but as a result of their regularly ordered interrelationships (as developed by Saussure, 1910/1983). Thus, to make sense of our perceptions, these must be ordered, structured, or constructed into an arrangement in accordance with the semiotic grammar of a representational system. For *cognitive* constructivism, this system is the mind, which is presumed to be made up of an ordered arrangement of informational representations as well as cognitive processes for performing operations on those representations. It is the necessary ordering of said representations that is the basis for claiming that knowledge (memory, understanding, experience) is, and indeed must be, *constructed*.

Several implications follow from these basic tenets of cognitive constructivist theory: (a) knowledge is neither fixed nor absolute; (b) it is variably reconstructed with each recollection or use; (c) these customized reconstructions vary to suit the knower's immediate needs regarding a particular goal, task, or situation (which provides still more experience for adjustment of the underlying knowledge base); and (d) different individuals, with different prior knowledge, perspectives, histories, and values, will generate slightly different recollections of the "same" event. As a result, (e) different observers take away somewhat

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different new knowledge from the "same" learning experience. Most generally accepted would be that (f) the role of prior knowledge in the acquisition of new knowledge requires that effective educational regimens be graduated in design.

A concrete example of knowledge variance (as suggested in items b and c of the previous paragraph) would be the rereading of a favorite book by a single individual. The experience of the second reading is notably different from that of the first reading even though the reader and the printed words on the page are the same in both cases. The difference is due to the reader's intervening experience (including having experienced and thought about the first reading of the book). This experience changes the content and structure of the reader's prior knowledge, resulting in different prior knowledge brought to bear in the second reading, thus altering what the reader recognizes, associates, anticipates, and values.

Descriptions of how this works can be seen to fall along a continuum of theories. These range from suggesting that the construction of knowledge is a deliberatively willful and strategic act on the part of a knower attempting to make sense of perceptions or insights on behalf of some objective, to suggesting that the construction of knowledge is an automatic biological process involving the adaptive development of neural structures in response to activation, which then channel the future behavior and potential experiences of an organism as it grows in transactive response with its environment (these two views are not mutually exclusive, however, as they describe different scales of organization).

Most theories of cognitive constructivism, however, fall between the consciously strategic and biologically automatic views, with most emphasizing representational mental processes, largely nonconscious but consciously mediatable, that account for the resulting structure and accessibility of a knower's knowledge. Philosophically, the roots of cognitive constructivism can be found in Western rationalist epistemology with its emphasis on logical coherence over sensory correspondence as a gateway to truth (e.g., Descartes, 1596–1650), as well as in empiricist models of knowledge built of networks of associations gleaned from experience (e.g., Hume, 1711–76). These idioms were incorporated into theories about the role of experience in conceptual growth in functional psychology (e.g., James, 1842–1910; Dewey, 1859–1952). These foundations were further amended by psychological research resulting in the articulation of what is currently taken to be cognitive constructivism.

Cognitive constructivist thinkers have cited the work of German philosopher Immanuel Kant (1724–1804) as a foundation (e.g., Kant, 1781/2008), particularly his notion of archetypal categories for thought and their use in ordering our sensations of the world. Kant's systemically rigorous idealist philosophy laid the groundwork for structuralism more generally, and particularly its subsequent use as a psychological idiom in the 20th century. Credit for moving these ideas into psychology is principally given to the Swiss developmental psychologist Jean Piaget (1896–1980). Piaget actually referred to himself as a *genetic epistemologist*, however, which underscores both the philosophical and biological roots of his enterprise (*genetic* in this sense simply means growth-related, not genomic; thus, Piaget saw himself as a researcher of knowledge growth, assuming it was an essentially organic process).

Piaget, relying on case-based observation, concluded that human thought develops through interrelation with the environment but in dependably sequenced, biologically necessary stages toward adaptively structured knowledge and skills. These cognitive stages emerge in tandem with other developing attributes of behavior and emotion in a necessarily complex, organic fashion toward adaptive functionality. The four basic stages of cognitive development he proposed were (a) the development of sensory-motor schemas in infancy, (b) the development of pre-operational schemas (representations) in early childhood, (c) the development of concrete schemas (logical operations) in mid-childhood, and (d) the development of formal schemas (operations on hypotheticals) in late childhood/prepubescence.

Piaget (1937/1957) suggested these developmental stages are realized through the learning of specific *schemas* (regimens, skill sets, protocols), which initially relate to immediate developmental needs, but can be applied by analogy to later novel experiences, situations,

or scenarios. Major structural renovations to the knowledge base of the sort that mark a behavioral stage-shift are necessary when schemas which were previously adaptive come to prove inadequate for a child's needs. The cognitive disequilibrium created by this inadequacy prompts the child's exploratory behaviors toward a more satisfying relationship with the environment, fostering the next stage in the developmental sequence.

For instance, an infant at birth has a propensity for suckling and gentle grasping and will apply these behaviors to any object it can take to hand. As a result, the infant develops coordinated tactile and motor skills (sensory-motor stage), and patterns of multimodal association necessary for the development of object identification and, subsequently, linguistic representation (preoperational stage).

Piaget presumed a changing (but at any given time definitively structured) knowledge base that requires adaptation for growth. The adaptive mental processes of *assimilation* (adjusting new knowledge to match prior knowledge) and *accommodation* (adjusting prior knowledge to match new knowledge) allow for the growth and modification of a knower's knowledge base. As Piaget phrased it, intelligence organizes the world by organizing itself.

Piaget's ideas have faced both theoretical and empirical challenges over the decades, and were much modified over his long career; but his importance in articulating the construct of mental learning processes, cognitive development, and the structured nature of knowledge (albeit within an organic idiom) remains unassailable. Piaget's insights were very much of a time when post-Hegelian and Darwinian themes were common intellectual parlance. Other thinkers articulated similar ideas. For instance, Piaget's use of equilibration and adaptation as dynamical processes for cognitive development were presaged by the American functional psychologist John Dewey (e.g., 1896).

Another early contributor to the psychology of knowledge construction was F. C. Bartlett (1886–1969), who elaborated constructivist principles to account for the problem of knowledge variation and memory. His experiments demonstrated that memories are not exactly duplicated; rather, their details tend to alter from recollection to recollection (or across social sharings). This suggested to Bartlett that memories were not the mere repeating of traces (as had been suggested by the psychologist Hermann Ebbinghaus, 1850–1909), but were adaptive reconstructions of underlying *memory schemas,* a complex of associated representations (unrelated to Piaget's notion of behavioral schemas; inspired more by the ideas of neurophysiologist Henry Head, 1861–1940). Bartlett (1932/1995) noted that reconstructions of schemas vary not at random, but in general accord with the purpose or context of the recollection. Not surprisingly, therefore, Bartlett is also noted for his attention to the role of contexts and social conditions for learning and memory, an emphasis underappreciated in the British academy of his time.

In spite of the noteworthy theoretical and empirical advances of Dewey, Piaget, Bartlett, and others, it was not until the development of cognitive psychology, beginning in the 1950s (e.g., Neisser, 1967), that cognitive constructivism could be operationalized and researched. This was made possible by cognitive psychology's use of the computer program as a mechanistic metaphor for mental structure and process. At the time, computer programs were relatively simple and linear, and their logic was easy to map in two-dimensional flowcharts, making them suitable as a metaphor for cognitive modeling. The power of this metaphor lies in the fact that computer programs require logical precision in their structure to carry out their function. A computer program that lacks such precision does not function. From this it was deduced that the structure of a functioning mind must allow for the kind of exactitude made possible by computer program logic. (A desire for such exactness in language-based representational systems had already been the failed dream of the Logical Positivists of the early 20th century, who conceded their project at about the time that this new turn in psychology began.)

Insights from experimental psychology (Miller, 1956), psycholinguistics (Chomsky, 1957), and the then budding field of artificial intelligence (Newell & Simon, 1956) were conjoined

within this metaphor of the-mind-as-software-program. As such, the mind's program structure could be indirectly researched through back propagation from functional (or failed) results in closely controlled experiments. This so-called *cognitive revolution* transformed vague ideas about developmental epistemology into an empirically grounded agenda for cognitive psychology. A surge of governmental funding for research in the basic and applied social sciences at the time supported a boom in university-based cognitive research laboratories and graduate programs, adding momentum to research on mental structure.

A curious characteristic of this new approach to studying the mind was that it took the deliberate construction of knowledge to heart not just as an ontological assertion, but as an epistemological precept and methodological foundation as well. Cognitive researchers dismissed positivistic behavioral measurement that lacked acknowledgment of the theory or knowledge presumed in the investigation, as behaviorists had done (e.g., Skinner, 1953; cf. Chomsky, 1959). Rather, cognitive psychologists insisted that a true science of the mind and behavior required carefully formulated theories and models of causation from which testable hypotheses could be drawn for potential falsification (Popper, 1935/1959). Thus, the deep structure of knowledge and cognitive process was at once an assumption, target, and means of psychological investigation, a situation that critics rightly claimed warranted concern over circular reasoning in research design. But the explicit call for rationalist science over mere empirical measurement (Chomsky, 1959) set cognitive psychology apart from the positivism of earlier experimental studies of behavior.

Although research on mental structure initially promised a more certain model of knowledge construction, the emphasis on theoretical modeling generated instead an ever-greater plurality of models and divergence of theory. But three obvious strands in this diversity can be traced. One strand, emboldened by advances in information technology, demonstrated a greater interest in the structural necessity of internal coherence and operative feasibility, and hypothesized hierarchically embedded program structures (as in those resulting from propositional analysis, e.g., Kintsch, 1998). This thread came to inform educational work on automatized processes, skills acquisition, and disabilities interventions.

The second strand, emanating out of developmental psychology, took a greater interest in the purposively directive influence of the developing organism or learner, functionally or consciously mediating the direction of its knowledge construction, giving rise to the construct of autopoiesis (self-creation; Thompson, 2007) and the active learner (e.g., Bruner, 1960), as opposed to the passively conditioned learner (e.g., Watson, 1930). Cognitive strategy instruction in education is predicated on ideas from this thread.

The third strand, following from directions in psycholinguistics, took an ever-greater interest in the situational, contextual, and social factors involved in knowledge construction (as well as in the organic necessity, not just traditional theoretical preference, for parsimony in models of cognitive processing). This strand inspired greater interest in sociocognitive theories of learning that have proven especially appealing to educators.

Additional cognitive constructivist variants of note include *radical constructivism* (von Glasersfeld, 1990), a strong philosophical repudiation of any correspondence theory of truth; *neo-connectionism* (e.g., Elman et al., 1997), an application of so-called neural network modeling to the problem of concept development; and the externalization of knowledge construction via *social* (or institutional) *construction of knowledge* (Berger & Luckmann, 1966/1984). Among the more currently engaging issues in cognitive constructivism is the role of knowledge structure formation in comprehension and its occlusion, the relationship of knowledge construction to consciousness, and the relationship of both to experience and language development (Tomasello, 2005).

Cognitive constructivism's structuralist and often computationalist orientation puts it at odds with most poststructuralist semiotic theory and even with more recent neurologically informed bioecological theories of learning and development. The term is often used in

juxtaposition to the more friendly term *social constructivism* (often, in current usage, conflated as simply *constructivism*), a theoretical orientation more closely related to the anthropological assumptions of much qualitative research in applied linguistics. It would be erroneous, however, to read into this distinction a forced choice: Cognitive and other mental processes respond and develop in response to social processes, and vice versa. But this oppositional positioning underscores the historical importance of cognitive constructivism as a point of reference for the social sciences, and it has contributed more to our currently under-interrogated assumptions about knowledge and learning than we often acknowledge. Work in artificial intelligence, robotics, neuroscience, neurolinguistics, situated cognition, and education continues to make productive use of its many implications.

SEE ALSO: Assessment and Testing: Overview; Cognitive Second Language Acquisition: Overview; Language Learning and Teaching: Overview

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Cognitive Grammar

CARITA PARADIS

Introduction

Cognitive grammar (CG) is a relatively recent approach within the functional family of linguistic theories. It originated in the late 1970s but did not gather real momentum until the 1980s, with seminal publications such as Lakoff (1987) and Langacker (1987a), followed more recently by Talmy (2000), Croft and Cruse (2004), and Geeraerts and Cuyckens (2007). CG is not a static monolith but a vibrant enterprise constantly undergoing developments and improvement. However, all work within the theory relies on some foundational assumptions shared by the members of the community. CG describes language as a structured collection of meaningful categories, which are formed on the basis of our experiences of the world and which help us store and manage information: "a way of organizing knowledge that reflects the needs, interests and experiences of individuals and cultures" (Geeraerts & Cuyckens, 2007, p. 5). From this overall characterization, Geeraerts and Cuyckens identify three main tenets: (a) the primacy of semantics in linguistic analysis; (b) the encyclopedic nature of linguistic meaning; and (c) the perspectival nature of linguistic meaning, indicating that the world is not objectively reflected in language, but an image of the world seen through the lense of the language user. This entry reflects these three tenets in order and concludes with some remarks on the notion of *usage-based*, which is central within the framework. The importance of the idea that linguistic categories, like most categories, are prototype continua with core and peripheral members is a recurring theme throughout. All these aspects make CG special and different from other approaches to linguistics, both within the functional school of thought and outside it.

The Primacy of Meaning

Absolutely essential to the CG approach is the meaningful functioning of language in all its guises and all its uses in text and discourse. Such an approach promotes empirical methods which are geared to natural language usage. Language is a highly dynamic entity for which no absolute boundaries between the traditional areas of syntax, semantics, and pragmatics are assumed. Human language is shaped by the two main functions it serves: the *semiological function* and the *interactive function* (Langacker, 1998, p. 1). The semiological function is the mapping of meanings (conceptualizations) with linguistic forms in speech, writing, signs, and gestures. This is the symbolic nature of language from which the centrality of meaning for all linguistic concerns follows. In the literature, these symbolic structures are often referred to as form–meaning pairings. The interactive function, on the other hand, concerns the communicative side of language use as a social phenomenon, including aspects such as the function of providing information as well as expressing the speaker's subjective stance and intersubjective awareness. Both the semiological and the interactive functions are crucial for the guiding idea that language use must be explained with reference to the underlying mental processes as well as with reference to the social and situational context.

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More specifically, we can say that linguistic meaning is both fostered and constrained by a number of factors. The first factor is what we know about the world around, that is, encyclopedic knowledge. The second factor is the conventionalized symbolic links between lexical items and concepts in language, such as *dog*/DOG, *have a bath* /ACTIVITY(BATH), *the long and the short of it*/THE SUMMARY OF THE MATTER Third, linguistic meaning hinges on human cognitive processes, such as attention and categorization, which pervade every level of language use. In example (1) such construal operations are the processes that allow us to interpret the circumstances described as an event that might have resulted in a goal, in which case the football player is the agent and also the most prominent figure, while (2) is more likely to describe an incident where the ball figures prominently. Example (3) is a case of metonymization which selects the most important part of the body for the description of a good academic. Through metaphorization in (4), we are able to understand a theory by comparison with a building, and in (5) a binary contrast between *chaos* and *calm* is set up and focalized (Paradis, 2004, 2005, 2011; Paradis, Willners, & Jones, 2009; Oakley, 2009).

(1) *The football player* hit the ball.

(2) *This ball* hit the football player.

(3) There are *lots of good heads* at this university.

(4) The theoretical *foundation* is solid.

(5) I prefer *chaos* to *calm*.

All linguistic expressions are profiled according to "frames" or "domain matrices," such as "on a hike" or "at a restaurant." Frames or domain matrices are systems of concepts, which are related in such a way that in order to interpret the individual concepts we have to understand the structure of the whole (Fillmore, 1982, p. 111; Ungerer & Schmid, 1996, pp. 214–16; Goldberg, 2006). All such factors are available to speakers as presupposed information in communication.

Like most linguistic categories, lexicon and grammar are not discrete entities but form a continuum from more substantial (contentful) meaning structures such as PEOPLE, ARTIFACTS, and EVENTS, to more schematic structures (configurations), such as PATH, SCALE, PART/WHOLE, and BOUNDEDNESS. In contrast to "lexical meanings," which are contentful and conceptually rich (e.g., "car," "Africa," "swim"), grammatical meanings rely mainly on highly schematic configurations such as "mass/count," which is a BOUNDEDNESS configuration, and "temporality," which may be viewed as PATH, that is, a timescale between past time and future time with "now" in the middle. The function of schematic categories also allows us to construe more complex expressions such as phrases and clauses and to ground them in the actual discourse situation. In between the two extremes are meanings such as negation, intensification, or meanings of prepositions, which are neither primarily contentful nor primarily configurational. Another important standpoint in some cognitive literature is that words and constructions do not "have" meanings (Cruse, 2002; Paradis, 2005, 2008). Meanings in language emerge from the contentful and configurational pre-meaning structures, which crystallize when they are used in human communication. The relation between pre-meanings and full discursive meanings is the same as that between the ingredients in a stew and the stew itself. They are two different substances. The pre-meaning stage can be illustrated using Figure 1. The way we see the human being in the picture can be compared to a certain pre-meaning stage. The ingredients that are present

Figure 1 A person heading somewhere © 2010 Olof Ekedahl. All rights reserved

in the picture form the basis of the emergence of the stew. The full meaning becomes clear when the pre-meaning is eventually properly couched in its situational context, just as the human being would have been, had she been focalized and set off against the background and the event.

The Linguistic–Encyclopedic Continuum

The second tenet concerns the encyclopedic nature of meaning in CG. This position is in stark contrast to the commonly held view among linguists of different persuasions that it is possible to make a clear distinction between linguistic knowledge and nonlinguistic or encyclopedic knowledge. This position is questioned by cognitive linguists. That an interpretation of an expression comprises both linguistic and encyclopedic knowledge is not controversial in any linguistic framework A more controversial question is what the knowledge is like that is needed for interpreting sentences (linguistic knowledge) and what the knowledge is like that is considered superfluous for that purpose (encyclopedic knowledge), and where the dividing line between the two is located. Instead, the two types of knowledge are considered to form a continuum. Consider examples (6), (7), and (8) from Paradis (2003) from the point of view of the alleged divide between linguistic meaning and encyclopedic meaning.

(6) Pubs *open* at 11.
Three hundred pubs *open* today.

(7) We always make *fast* decisions.
I dislike *fast* food.
Angela is a *fast* writer.

(8) The *newspaper* is on the kitchen table.
The *newspaper* made ten journalists redundant.

The claim in CG is that knowing the meaning of *open* in (6), *fast* in (7), or *newspaper* in (8) always involves knowing about the kinds of activities one performs when one "opens things" such as pubs, boxes, debates, computer files, or books, or how various time specifications, such as "at 11" or "today," influence the interpretation of *open*. In (7) and (8), we may ask ourselves what entities can be "fast" and in what way, and whether "newspapers" are artifacts, companies, or even people who work for the newspaper (Taylor, 2000, p. 121; Paradis, 2004). As pointed out earlier, it is not possible to fully understand the meanings of those words without knowing about the "frames" or "domain matrices" which they form part of. It is not possible to strip off what would be encyclopedic meaning because there is no way that we can know where to start and where to stop.

Although meaning in CG is encyclopedic in the sense that there is no delimited linguistic meaning, not all aspects of meaning are considered to be of equal status. Langacker (1987a, pp. 158–61) deals with such matters as gradation in terms of four *centrality* factors. The centrality of a certain specification is a matter of its relative sociocognitive entrenchment and likelihood of activation. Centrality correlates with the degree to which a specification is *conventional*, *generic, intrinsic,* and *characteristic*. Langacker uses *banana* as an example. His knowledge of *banana* includes the fact that his sister put sliced bananas on her cereal for breakfast in the morning, but this fact cannot be an aspect that is in other people's minds and cannot be on a par with essential properties such as ontological type, size, shape, smell, taste, and color. Some specifications are not possible to omit, while others are completely irrelevant for even the most exhaustive description. This entails that not all aspects of our knowledge of an entity should at all times be taken into consideration. Language users always select relevant parts and focus their attention on those parts. What is important to accept is that lexical meanings involve all kinds of specification that we use in different communicative situations. This position is provocatively formulated by Jackendoff, who is, strictly speaking, not a cognitive linguist but shares many ideas with them:

> Recall again what a word is: a way of associating units from distinct levels of representation. Now consider what it takes to be able to look at food and know what it tastes like: a learned association between a visual and a gustatory representation. How many of those do we store? A lot, I should think. From a formal point of view these associations of representations are not unlike those between phonological and conceptual structures. And as far as learning goes, they're almost as arbitrary as word–meaning associations. Mashed potatoes and French vanilla ice cream don't look that different. (Jackendoff, 1997, p. 107)

Perspectives and Construals

The third tenet concerns the fundamental idea within CG that linguistic meaning is perspectival and reflects language users' capacity for conceptualizing the same situation in different ways. There is no completely neutral or indeed objective way of seeing, describing, and understanding a situation. Meaning in language is grounded and constrained by

how human beings perceive the world, and we express ourselves accordingly. In their introductory textbook, Radden and Dirven (2007, p. xi) give an expressive example of how language interacts with perception and attention. They say that if we see a bird flying above us, we focus on the bird with the sky as the backdrop and describe the situation accordingly as *a bird in the sky*. We do not focus on the sky and describe the situation as *the sky around the bird*. If we play around with one of the examples in (6) *Pubs open at 11* and change it into *The pubs open at 11*, we create an image of a number of specific pubs, as opposed to pubs in general. For visualizations of the difference between the two types, see Radden and Dirven (2007, pp. 89, 106). Grammatical constructions are always semantically motivated. Linguistic meanings are also grounded in social interaction. Meaning is constantly negotiated by us as language users on the basis of our intentions and our assessment of our and other people's knowledge of the world. Language unavoidably shapes thought, which entails some level of linguistic relativity.

Ways-of-seeing are crucial in language use and meaning making, whether they concern more contentful meanings such as nominal or verbal meanings, or sentences and discourses, or more schematic grammatical meanings such as tense and aspect (e.g., parts of speech in Paradis, 2005; transitivity in sentences in Langacker, 2006, Davidse & Heyvaert, 2008, and Paradis, 2009; or discourse phenomena in Talmy, 2000, and Oakley, 2009). In what follows, two concrete examples are given to illustrate the understanding of grammatical notions such as parts of speech and degree in language within CG. Parts of speech are defined as notional categories in most linguistic approaches; that is, nouns denote entities, verbs denote actions, and adjectives denote qualities or properties in the world. This entails that category membership is unambiguous and based on necessary and sufficient features, and such categories do not have internal structure in terms of centrality. There are obvious problems with clear-cut categories both from the point of view of the nature of linguistic meaning and from a methodological perspective. Typological studies of word classes (Dixon, 1982; Givón, 1984; Thompson, 1988; Wierzbicka, 1986; Croft, 1990, 2001; Stassen, 1997; Aikhenvald, 2000; Dixon & Aikhenvald, 2009) reveal that the categorization of forms into grammatical classes such as parts of speech is not a trivial matter. There is considerable consensus among typologists that the category of noun is a universal category, while the category of adjective is not. Givón (1979, p. 13) says that "The category of adjective is a notorious swing-category in language." English adjectives are a case in point with members that are rich conceptualizations, such as *American*, *economic*, and *fruity*, and members that are mainly configurational single property concepts, such as *mere*, *only*, and *main* (Paradis, 2005, pp. 554–60).

Langacker (1987b) proposes a part-of-speech model where a noun is viewed as THING, construed as an atomic notion conceived as static and holistic. Nouns are summary scanned, which means that all aspects of the concept are available at the same time and together form a gestalt. Verbs are conceptually PROCESSES. They are relational and sequentially scanned over time. Adjectives are similar to both nouns and verbs. They are relational like verbs, but they differ from verbs in being atemporal instead of temporal and summary scanned like nouns instead of being sequentially scanned like verbs. Langacker (1999, p. 11) gives *yellow* as a concrete example to illustrate the crucial function of construal in the classification of parts of speech. The conceptual content of *yellow* in the color domain is kept constant over its various construals into different parts of speech. *Yellow* as a noun, as in *yellow is a warm color*, profiles a particular kind of THING in color space. *Yellow* as an adjective, as in *yellow paper*, profiles an ATEMPORAL RELATION of a color sensation to a THING. Yellow as a verb, as in *the paper yellowed*, profiles a PROCESS in which the color of the THING (PAPER) gradually changes. Furthermore, Langacker contrasts the verbal sense, which profiles a sequential PROCESS, with the stative-adjectival meaning of the participle *yellowed* (*the yellowed paper*). The verb and the participle evoke the same content. In fact,

the process profiled by the verb serves as the base for the participle in that something can only be yellowed if it has undergone a process of yellowing. The participle profiles only the final state, which makes it atemporal and nonverbal. The upshot of this story, then, is that it is the speaker who construes some content in the act of communication, and parts of speech are configuration construals. The speaker's choice of construal depends on how the message is best visualized.

Another, linguistic notion that is traditionally thought of as a grammatical notion is DEGREE. Most other linguistic frameworks would say that DEGREE is a grammatical notion related to the comparability of adjectives and adverbs and expressed through adverbs (*more*, *very*) and quantifiers (*much*, *all*, *a lot of*). However, there are also scholars who note that manifestations of DEGREE are, in fact, associated with more contentful categories such as nouns, verbs, and adjectives too (Sapir, 1949; Bolinger, 1972; Paradis, 1997, 2001). In particular, Paradis (2008) takes issue with the grammatical-class approach, which cannot account for the flexibility with which DEGREE is used and the apparent ease with which it is invoked in new contexts, and shows that it is first and foremost a configurational meaning structure that combines with structures pertaining to all kinds of knowledge: THINGS, EVENTS, and STATES.

Linguistic items that are primarily expressions of DEGREE, and linguistic items whose content has an underlying DEGREE configuration form a continuum. The notion of DEGREE may be foregrounded and construed as the most salient component of a meaning structure, or it may be construed as a backgrounded meaning structure. For instance, DEGREE modifiers such as *very*, *a bit*, *little*, *much*, and *totally* foreground DEGREE. In contrast to them, linguistic expressions, such as *bad*, *dead*, *adore*, and *beauty* foreground content structures such as MERIT, EXISTENCE, MENTAL STATE, and APPEARANCE respectively, while DEGREE resides in the background. For instance, while the meaning of *bad* is construed according to an UNBOUNDED SCALE configuration, *bad–good,* it primarily profiles the property of MERIT when it is used in language. There are many linguistic expressions that at first sight do not appear to be associated with grading, such as *man* or *book*, but may in many occurrences of use highlight properties that are gradable. For instance, the profiling of *a handsome man* involves the evaluation of a property of MAN along a gradable dimension of BEAUTY. Similarly, the profiling of *a marvelous book* involves a gradable dimension of BOOK as being "a good read" or "a beautiful artifact." The backgrounded DEGREE structures of such meanings provide the necessary condition for combination with degree modifiers, either directly as in *very nice*, *absolutely excellent*, *quite a man*, and *badly needed,* or as in *a very good book* through a gradable property of a BOOK (THING) bridged by "merit," as here specified by *good*. On a more creative note, there was a car advertisement in Sweden, *How WE are you*? *The new V70*. *Very WE*, where the personal pronoun *we* was used as something you can be more or less of. All this goes to show that DEGREE is not confined to the meanings of certain grammatical function words but is part of the use potential of a wide range of lexical items.

A Usage-Based Approach

Finally, the notion of CG being a usage-based theory, mentioned in passing at the beginning of this entry, merits more attention and qualification, since the term is ambiguous and may refer to two different but related things, which are both central to the framework. First, research within the framework is usage-based in the sense that it makes use of both textual and behavioral data sources. CG encourages empirical investigations using data from "real" language (Gonzalez-Marquez, Mittelberg, Coulson, & Spivey, 2007; Gilquin & Gries, 2009; Paradis et al., 2009). The other meaning of the notion of usage-based theory is with reference to how languages are acquired, how they develop, and how they change

in the contexts where they are used in social communication (Tomasello, 2003, 2008; Traugott & Dasher, 2002). Motivations for linguistic development and language change are always functional and spring from language use and communicative needs in the settings of the symbolic structures, that is, the conventionalized form–meaning pairings (Paradis, 2008, 2011). Different readings in different contexts emerge from the speaker's intention and the addressee's wish to interpret an expression in a relevant way in order to obtain socially viable mappings between words and concepts. Some of these uses lead to change while others are just contextualized shifts. Construal operations are the source of all readings, both conventional and ad hoc contextual ones, and possible lexical change takes place when new conventional, entrenched links between linguistic expressions and conceptual structures are formed. CG always seeks semantic motivations for grammatical construals. One major advantage of CG over other theories is that it has the tools to account for the dynamics of language use and meaning-making.

SEE ALSO: Corpus Linguistics: Quantitative Methods; Formal and Functional Approaches to Grammar; Generative Grammar; Systemic Functional Linguistics

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Cognitive Linguistics of Second Language Acquisition

MARJOLIJN VERSPOOR AND FRANK BOERS

Introduction

When investigating second language development or deciding on ways to teach it, it is important to know how language and language development are viewed in general, because it will determine to a great extent what you look for, what you find, and what you teach. For example, if you think that syntax (form) drives a modular system, your attention will focus mainly on form. On the other hand, if you think the need to communicate and express meaning drives a dynamic, complex system, your attention turns to how language users develop their meaning system and how insights into this development may help in teaching an L2. Cognitive linguistics (CL) holds the latter view. In this entry, we will first explain the basic concepts in CL, contrast them with syntax-driven approaches to SLA, and finally show how CL insights may be applied in the L2 classroom.

Origins and Central Tenets of Cognitive Linguistics

Before outlining its applications in the field of second language acquisition, it is useful to trace the origins of cognitive linguistics as a theory and to sum up some of its central tenets.

Cognitive linguistics (henceforth CL) began in the early 1980s, mostly as a reaction to generative, Chomskyan accounts of language. The founders of the CL movement felt that generative linguists described language too much as if it were an independent module in the mind. The alternative proposed by CL is to consider language as a reflection of general cognitive abilities and social interaction, i.e., mechanisms at work outside the realm of language. To CL advocates, language is thus an integral part of human cognition, not a distinct module. Diverse linguistic phenomena reflect human perception, human categorization, and human analogical and associative thought. Let's briefly illustrate each of these in turn.

The way messages are commonly packaged reflects the way people perceive reality. For instance, a moving entity (e.g., a big bird flying over our heads) will draw our attention to the effect that the background (e.g., patches of cloud in the sky) will be noticed less. This "figure–ground" experience, where the figure is the entity that gets our attention first, is reflected in the way that it is typically assigned a prominent role in an utterance, such as the subject of an active sentence. For example, *the children were running around the table* would appear a much more "natural" description of the scene than *the table was being run around by the children*. When language mimics reality, it is said to be "iconic." Well-known examples of iconicity are words that mimic sounds (so-called onomatopoeia), such as a cat's *meowing*, and standardized phrases whose word order mimics the chronology in which events normally occur, such as *stumble and fall* and *crash and burn*. However, CL theorists adopt a broader view of iconicity than most other linguists, who tend to have a

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firmer belief in the arbitrariness of the sign (a conviction that harks back to the teachings by Saussure, the famous French structuralist).

Much of language reflects human categorization processes. Rather than seeing the world as a collection of distinct, neatly organized entities that are waiting to be named by humans, CL holds that humans impose their own categories on their world in a way that is relevant to them. That is why CL is said to take an experientialist perspective on human categorization. Communities may differ in the way they conventionally categorize things, however, and these differences are reflected in their lexicons. For instance, some communities may have a finer-grained categorization of the color spectrum than others, and consequently have more color terms at their disposal. At the same time, we can use one and the same word to refer to a variety of entities as long as we perceive these diverse entities as members of the same category. Inclusion in a category will often depend on the degree of resemblance to what is felt to be a "best" example of the category, a so-called prototype. For example, ostriches may be nontypical birds (at least to Europeans), but they are nevertheless called *birds* because of their resemblance to the prototype (which to most Europeans will look more like a tit or a robin) is felt to be sufficient. But the prototype at the center of a category may differ from one community to the next. For example, in Europe the prompt *fruit* is likely to elicit *apple* or *orange* as examples that first come to mind. In some other parts of the world such as India or South America, it might prompt *mango* or *banana*. These variations are due to the differing availability of these fruits in the respective communities. Less central members of the fruit category would be watermelons (much bigger than the prototype). A borderline case would be tomatoes (neither sweet nor sour, unlike the prototype), which many people would include in the category denoted by the word *vegetable* instead. It is with reference to "peripheral" members of a category that the referential scope of seemingly equivalent words is likely to differ from one language to the other. It is also with reference to peripheral members that the common denominator will often require specification to avoid misunderstanding: When we meet the word *mother*, we will be inclined to assume that this refers to what we consider to be the prototypical mother, i.e., the woman who gave birth to the child and who nurtures it, unless the referent is specified as *biological mother* or as *stepmother*. The *mother* example also illustrates how an utterance activates much more knowledge—crucially, *extralinguistic* knowledge—than what is actually "in the words." Interpreting the word *alimony*, for instance, activates knowledge of a whole scenario (a so-called frame) involving two people getting married, having one or more children, getting divorced, and so on. It is thanks to the automatic activation of so much knowledge of the social as well as the physical world that utterances are functional despite their underspecification: The interconnectedness with acquired world knowledge allows language use to be economical.

Particular attention in CL has been devoted to standardized *figurative* language, and how figures of speech such as metaphor and metonymy reflect the basic cognitive abilities of analogy and association, respectively. For example, in English and many other languages, we can see expressions such as *she has a high position*, which means she has power and status, whereas *he has a low position* means the opposite. Other positive expressions are *the good news gave me a lift*, whereas negative expressions are *these problems are getting me down*. The fact that metaphoric uses of *up* and *high* often refer to something positive and *down* and *low* to something negative is likely due to an analogy with physical, bodily experience. When humans are standing upright, they tend to be fit, alert, confident, and mobile, whereas if they are stooping or lying down, they may be ill, weak, submissive, or in hiding. The thesis that a lot of language is grounded in bodily experience like this is called the embodiment thesis. Other figurative expressions that are "embodied" are related to emotions, such as anger as in *she was fuming* and *she just exploded*. When people are angry they often feel hot and become red in the face. This sensation or impression of increasing heat inside

the body invites an analogy with what happens to the content of a container (e.g., a kettle) if it is heated up. Metaphor enables us to describe intangible sensations and abstract concepts via analogies with more concrete and better understood experience. Another very common figure of speech is metonymy, which, rather than exploiting analogy, relies on our cognitive ability for association. For instance, in the utterance *there's been no comment from The White House yet*, the place-name stands for "the President of the US and his spokesmen or spokeswomen." Metonymy, as a reflection of our associative abilities, can thus serve purposes of economy again.

Observations that language and general cognition were found to be inseparable were made in the 1970s and 1980s by scholars such as Wallace Chafe, Charles Fillmore, George Lakoff, Ronald Langacker, and Leonard Talmy, who laid the foundation of the school of thought now known as cognitive linguistics. For more information on the roots of CL and its branches (such as frame semantics, conceptual metaphor theory, space grammar and force dynamics), see the official CL Web site: http://www.cognitivelinguistics.org/cl.shtml

An important consequence of seeing language as a reflection of general cognitive abilities is that many linguistic phenomena can be "motivated," i.e., they are explainable, albeit retrospectively. As we have seen, the way messages are conventionally packaged may be more iconic than has long been assumed; the way in which a single word or a single expression develops various meanings and usages can often be accounted for through associative and analogical thought, and so on. Further below, we will show that it is the exploitation of this notion of "motivation" that is a distinguishing feature of CL-oriented language pedagogy.

First, however, we need to outline the CL views of first and second language acquisition in general.

CL Views of First and Second Language Acquisition

The CL movement rejects the generativist postulation of a "universal grammar" with a "language acquisition device" and "innate grammar." According to CL, language acquisition (and language change more generally) is "usage-based." This means that L1 is acquired through exposure to and use of the language in social interaction. Children gradually master the language through imitation, analogy, hypothesis-testing, and generalization. It is this stance on language acquisition that has in recent years helped CL theorists forge an alliance with several psycholinguists (see Robinson & Ellis 2008 and Pütz & Sicola 2010 for collective volumes representing this alliance) who support the thesis that children's mastery of their mother tongue gradually "emerges" from exposure to language samples, interactive use of what they pick up from those samples, and their hypothesis-testing abilities. There is thus no need to postulate the existence of an innate, special-purpose grammar blueprint. How fast and how well certain language elements or patterns are picked up can be accounted for with reference to the interplay of several variables, including the frequency with which the element or pattern is encountered, its prominence in the input (e.g., its phonetic salience), and the transparency and reliability of its form–meaning correspondence. Prototypical usages of words and patterns are established as children encounter these early and repeatedly.

The same variables come into play in second language acquisition, but at least one variable is added. Unless the L2 acquisition starts at a very young age, the learners will have adopted "thinking-for-speaking" habits that are typical of their L1. Insofar as these habits overlap with those of the L2 this will be helpful, but insofar as they diverge this will be a hindrance. Especially older L2 learners have strongly entrenched L1 patterns and conceptualizations, which may transfer to the L2 (see Verspoor, 2008; Lowie, Verspoor, &

Seton, 2010). An additional difference from L1 acquisition concerns the distributional properties of the input. The discourse used among adults is "richer" than that used by carers to address children, and so more variants of a given pattern may compete for the learner's attention. Input that is initially biased in favor of the high-frequency, prototypical usage of a pattern has been shown to facilitate early acquisition of that pattern.

Another point of convergence of CL proponents and like-minded psycholinguists is their rejection of the view that language is made up of a lexicon and a set of grammar rules. This simplistic dichotomy is replaced by the view of language as a continuum from small elements to complex patterns. All of these, irrespective of their size, are now commonly called "constructions" in CL jargon (e.g., Goldberg, 2006). This includes concrete and particular units such as morphemes, words, and idioms as well as more abstract or schematic units such as word classes and sentence patterns. Language learning is thus construction learning at various levels of linguistic complexity, and it is no longer viewed simply as vocabulary + grammar-rule learning. This conception of language as an inventory of units ranging from simple to complex ones also draws semifixed multiword units (such as idiomatic expressions and strong collocations) into the spotlight. In this respect, at least, the CL movement is in agreement with several applied linguists who have in recent years made a case for phraseology-oriented language pedagogy (see Boers & Lindstromberg, 2009 for a review).

The view of second language acquisition as a usage-based, dynamic process that is in many ways similar to L1 acquisition entails that learners benefit from receiving a lot of meaningful input from which to pick up elements and patterns for imitation, extension, and generalization. It also entails the need for opportunities for hypothesis-testing through output in meaningful social interaction.

High quantities of input and ample opportunities for output are available in contexts of "naturalistic" learning, that is, when learners spend a long time in the L2 environment, for example as young immigrants or as students in an immersion program. A substantial amount of second language learning takes place in a more "formal" setting, however, typically at school, college, or university, where exposure to and use of the L2 are much less self-evident. It is concerning those learning contexts, also called *instructed* second language acquisition, that most proposals for pedagogical applications of CL have been put forward. We will turn to these next.

CL Approaches to Instructed Second Language Acquisition: General Rationale

CL-inspired proposals for language pedagogy typically draw from case studies in which the motivated nature of language is highlighted. Students of English as a second language can be helped to appreciate, for example, that the meaning of expressions such as *time flies, (being) behind schedule* and *(being) ahead of time* is not at all accidental, but rather the reflection of one of the ways in which we conceive of the intangible notion of time—that is, the conception of time as a moving entity (and us trying to keep up with it). Learners have indeed been shown to find it easier to guess the abstract sense of a word such as *forge*, as in *forge an alliance*, after they have learned its literal sense (as in *forge a sword*). Moreover, they are also likely to remember it better (Boers, 2000; Verspoor & Lowie, 2003).

The idea that learners will benefit from recognizing the motivated nature of L2 target elements rests on the premise that insightful learning (as opposed to blind memorization) fosters the formation of durable traces in memory. This premise is at the heart of general models of memory, such as the levels-of-processing hypothesis (Cermak & Craik, 1979) and the dual coding hypothesis (Paivio, 1986), and they are fully compatible with models

of memory proposed in the field of second language acquisition in particular, such as the noticing hypothesis (Schmidt, 1990). In the domain of second language vocabulary acquisition, for example, it is believed that the degree of engagement of a learner with a given target item is one of the determining factors in how fast and how well that item is added to the learner's L2 repertoire (see Schmitt 2008 for a review of research on L2 vocabulary acquisition). In what follows we offer a synopsis of ways in which pedagogy-oriented CL has proposed to turn various types of linguistic motivation into channels for cognitive engagement.

CL-Inspired Ways of Teaching L2 Words and Expressions

Most proposals for CL pedagogical applications target L2 words and expressions and they aim to stimulate insightful learning by raising learners' awareness of the motivated connections between the diverse meanings that a word or expression has developed (radiating from a prototypical usage). Several such proposals and experimental evidence of their effectiveness can be found in Achard and Niemeier (2004), Boers and Lindstromberg (2008) and De Knop, Boers, and De Rycker (2010).

For example, the meaning of *beyond* in *Why she left such a good husband is beyond me* and *He had changed beyond recognition* can be explained to students by connecting it to a more literal usage of this preposition, as in *The cat was sitting beyond the reach of the chained dog*, and by pointing out the commonness of the figuration (in this case the conceptual metaphor ABSTRACT INACCESSIBILITY IS DISTANCE), which is noticeable also in *That's far from clear to me* and *It didn't even look remotely familiar*. Quite often in CL pedagogy, schematic drawings are used to elucidate the literal usage of a preposition. Also the use of prepositions and adverbs when they are used as part of phrasal verbs can be shown to be nonarbitrary to the language learner. For example, the meaning of *out* in *She's found out about my affair* and *The exam turned out quite easy* may be clarified with reference to the conceptual metaphor KNOWING IS SEEING (the commonness of which can be demonstrated by means of the example *I see what you mean*) and the inference that what is outside a container is likely to be visible.

Motivated connections between literal and figurative meanings can also be pointed out to language learners with regard to the figurative usage of so-called manner-of-motion verbs (as in *Inflation was soaring, Holmes stumbled on a piece of evidence* and *The PM dodged all questions about the war*) (e.g., Lindstromberg & Boers, 2005). These are known to be notoriously difficult for learners whose L1 belongs to a type of language that makes comparatively little use of such verbs (e.g., Slobin, 2000; Cadierno, 2004).

It has also been proposed that learners can be helped to master so-called grammaticalized words by reminding them of the earlier, lexical uses. A simple example is *going to* as a marker of the future (e.g., *I'm going to buy her a bouquet of roses*), which can be motivated as an extension from the literal, spatial sense of the verb (e.g., *I'm going to the florist's*). The causal use of since, as in *I couldn't drive since I'd been drinking*, can be motivated as an extension via inferences from its temporal sense, as in *She's been feeling fragile (ever) since she had that accident*.

Figurative idioms have been a particularly popular target for CL-inspired pedagogy. Proposals range from systematically grouping idioms according to the metaphor themes they happen to instantiate (for example, *being hot under the collar, blowing off steam, breathing fire* and *adding fuel to the fire* can be grouped under the metaphor ANGER IS HEAT) or the common domain they happen to have originated from (for example, *taking something on board, showing someone the ropes, being on an even keel*, and *being in the doldrums* can be grouped as expressions generated by the domain of seafaring) to the occasional resuscitation

of the literal reading of an idiom as it happens to occur in a text used in the classroom (by pointing out to students, for example, that *behind the scenes* can have a literal meaning in the theatre and that *being on the ropes* can have a literal meaning in boxing). Pictures or drawings depicting the literal usage of the expressions may be added for purposes of elucidation or consolidation. For example, the literal reading of *in the wake of* . . . can easily be elucidated by drawing a ship and the waves it generates as it moves ahead.

All of the above-mentioned interventions stimulate "semantic elaboration," i.e., the creation of associations concerning the *meaning* of the target words and expressions. According to some studies on vocabulary acquisition (e.g., Barcroft, 2002), this does little to aid retention of the *form* of the items. Pathways for form-focused elaboration have been explored in recent years by Lindstromberg and Boers (2008), who point to the high incidence of nonarbitrary phonological repetition (e.g., alliteration) in the formation of compounds (e.g., *bunk bed*), idioms (e.g., *from pillar to post*), collocations (e.g., *wage war*), and various other formulaic sequences (e.g., *last but not least*). Drawing learners' attention to such sound patterns in L2 words and phrases has been shown to foster their recollection.

CL-Inspired Ways of Teaching L2 Grammar

Another strand of CL proposals for instructed second language acquisition deals with more "schematic" (i.e., abstract) targets for learning, which would conventionally be termed grammar topics (De Knop & De Rycker, 2008). For example, it has been suggested that spatial imagery be used to clarify the distinction between so-called continuous and simple tenses in English (e.g., *She was reading the letter* versus *She read the letter*), where continuous tenses are said to present an action or event as a zone without clear boundaries, while simple tenses present the action or event as a bounded zone. The same imagery can be applied to clarify the distinction between so-called uncountable and countable nouns (e.g., *much fog* versus *many clouds*). CL-inspired lessons on the English article system exploiting this notion of "boundedness" were developed and experimentally tested by Verspoor and Huong (2008).

Other recent CL proposals for grammar teaching target sentence patterns at a level of analysis that is less abstract than that of syntactic analyses. For example, *He pushed me out of the room* is a literal instance of the "caused-motion construction." From such literal instances of a construction, more figurative extensions can develop. In *He stared me out of the room*, for example, the cause of the motion is no longer tangible. In *He was cheated out of his job*, both the cause and the location are abstract. The range of extensions available for each construction varies from one language to another. This is why instruction about L2 constructions may be helpful, because learners may erroneously transfer extensions available in their L1 to their use of the L2 or disregard the communicative potential of extensions which happen to be missing from their L1.

It has to be acknowledged, however, that as far as these CL proposals for grammar instruction are concerned, not much empirical evidence for their effectiveness has yet been attested.

CL-Inspired Ways of Raising Learners' Crosslinguistic and Cross-Cultural Awareness

In the preceding sections we have given a synopsis of ways in which CL pedagogues propose to target distinct L2 elements (such as multimeaning words, figurative idioms, and constructions). In keeping with the CL tenet that language is intertwined with social experience, several pedagogy-oriented cognitive linguists have also suggested ways of

stimulating students' broader communicative competence by heightening their awareness of social and cultural variables of language use (e.g., Littlemore & Low, 2006). Comparative studies of figurative language (e.g., Kövecses, 2006) are one source of information for raising students' awareness of cross-cultural differences. For example, it maybe an eye-opener to students from a Western background when they are informed that metaphorical references to the heart as the seat of the emotions and the head (or mind) as the seat of reason are not at all universally shared (e.g., Charteris-Black, 2002). Also the extent to which certain domains of life have permeated a community's figures of speech may vary from one community to another. For instance, speakers of Spanish have many more figurative idioms available to them that have originated from the domain of religion than speakers of English do and this also holds for the domain of bull fighting (Boers & Stengers, 2008). In an indirect way, the repertoire of figurative expressions of a given community may be considered as a reflection of its culture (albeit of the past). Students have been found to misinterpret L2 figurative utterances because of lack of familiarity with culture-specific metaphors and also because of cross-cultural differences regarding the value judgments associated with seemingly familiar ones (Littlemore, 2001). For example, depicting government as a machine (and ruling politicians as "technocrats") may be a common way of conveying a negative stance toward government in Western culture, but this value judgment may be absent from seemingly equivalent metaphors in other cultures.

Conclusion

The essence of a CL view of second language acquisition generally is that it is driven by the interplay of variables such as frequency (influencing prototype formation), saliency effects (influencing what elements in the input are noticed most easily) and the relative reliability of form–meaning correspondences (influencing the success of hypothesis-testing). In addition, it is likely to be affected by the learner's entrenched L1 habits. Special attention is given to the role of constructions at a level of complexity between single words and syntax.

The essence of CL-inspired second language *instruction* is that it fosters learners' appreciation of the nonarbitrary features of words, phrases and patterns that they are aiming to master. The benefits of the described interventions are believed to be brought about by the cognitive engagement they encourage on the part of the learner. In many of the interventions there is the additional likelihood that learners will associate the target expressions with mental pictures of concrete scenes. The results of a growing body of studies generally support the thesis that CL-type instruction is effective.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Cognitive Grammar; Cognitive Models of Interaction; Cognitive Second Language Acquisition: Quantitative Methods; Crosslinguistic Influence and Multilingualism; Emergentism; Thinking for Speaking in Second Language Acquisition

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Cognitive Models of Interaction

ROBERT E. SANDERS

Cognitive models of interaction comprise ideas about the tacit knowledge or mental processing required to engage in social interaction. The knowledge and mental processing of interest is just what is required for two or more persons to alternately produce utterances and embodied actions that are interconnected with each other's, and thus are interactive. This does not include many of the diverse cognitions that persons also draw on when interacting, for example their knowledge about and attitudes toward the matter at hand; their knowledge about and attitudes toward each other; their identities and stereotypes; their roles, rights, and obligations; and their power relation and social status. These other cognitions may influence the content, outcome, and usefulness of an interaction, but are not essential to achieving interaction as such.

A variety of ideas about the cognitive basis for engaging in social interaction have been put forward. However, these have not always been presented under the heading of "cognitive models of interaction." Instead, many of them have developed independently, in relation to topics and issues within distinct subfields, principally conversation analysis, language pragmatics, discourse analysis, applied linguistics, communication theory, and artificial intelligence. Relevant work is bound together by its agreement on the first of the following propositions, and contention about the soundness and details of the second.

1. When two or more people interact—alternately producing utterances (or embodied actions)—not just any utterance (or embodied action) can meaningfully, coherently, or functionally be produced next.
2. There is a principled basis for constraints on what is produced next in an interaction that people must know consciously or tacitly in order to *inter*act, to produce utterances (or embodied actions) that are responsive to those of others, and cohere with them productively in joint undertakings that bring about a co-constructed end result.

Sanders (1987) regards knowledge of the constraints on what is produced next within interactions as constituting a distinct "competence," an interactional competence. Levinson (2006) refers to such knowledge as constituting an "interaction engine." Both regard such knowledge as distinct from linguistic and sociocultural knowledge, in that pairs of people who do not speak the same language and are not natives of the same culture can still engage each other in coherent and productive social interactions, using improvised means of expression drawing on a relatively small repertoire of gestural and vocal universals.

Different formulations of the constraints on what is produced next have in common that it is a matter of what is or is not relevant—a matter of relevance to others' utterances or actions, or to the end result the parties may interactively bring about, but not relevance to the cognition of oneself or others, as in Sperber and Wilson's (1986) relevance theory. However, it is not a settled matter what the basis for such constraints is, or their generality, scope, and content. Different formulations of these constraints, and tacitly, different cognitive models of interaction, emerged mainly in the 1970s and 1980s. Work on them since may have been inhibited by the resistance among conversation analysts to premature theorizing. Most have proven sufficiently fruitful to have endured, and been applied and refined, without much concern for integrating them or going beyond them.

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Proposed formulations vary along two main dimensions. One dimension involves their basis. Constraints on what is produced next may have a discursive basis involving meaning relations between temporally ordered utterances or embodied actions, and thus be principled and cross-situational. Alternately, such constraints may have a social basis—a relational, institutional, cultural, or practical basis—involving the functionality of utterances as means to ends, and thus be conventional, situated, and variable, rather than principled. Searle (1992) implicitly attributes constraints on what is produced next to custom and practicality, in that he acknowledges that not just anything can be produced next in an interaction, but contends that there are no (discursive) rules regarding this.

Another dimension along which ideas about these constraints vary involves their scope. They may apply just to the production of utterance or action pairs (or in some instances, triples), such as "complaint" (first part) and "apology" or "excuse" (second part), where a first part makes contingently relevant, and thus constrains, a second (and sometimes a third) part. Alternately, they may apply to the production of multiunit wholes, often internally organized with beginnings, middles, and ends, such as a service encounter, a job interview, or an information-gathering and planning discussion. Within such wholes, what is produced next may be constrained by its relevance to a pre-established end point, or to some thread that links prior components to form a whole, or both. In such wholes, the component utterances or embodied actions may be sequentially ordered and interdependent, and there may be well-formedness criteria. The resulting four broad possibilities—discursive constraints within whole sequences or between pairs, or social constraints within whole sequences or between pairs—are not mutually exclusive.

The concept of "adjacency pairs" is the most prominent formulation of constraints that apply to utterance pairs or triples. This particular concept of pair-wise constraints was developed by the conversation analysts Schegloff and Sacks in the 1960s and early 1970s (see Schegloff & Sacks, 1973). These constraints have a primarily discursive basis. The concept is that part of the meaning of some utterances is that they make certain responses contingently relevant, such as questions that make an answer relevant, or offers that make acceptance or rejection relevant. More than that, the contingent relevance of these responses makes the hearer's failure to produce the response a marked omission or evasion. They thus not only discursively constrain what comes next, but create a social incentive for the hearer to produce it. What people need to know to interact on this basis is thus what the meaning of utterances is that function as first parts of adjacency pairs or triples. However, Schegloff and Sacks (1973) regarded such pairs as a special case of constraints on what comes next that is not broadly applicable. They regarded much of what comes next in an interaction as constrained instead on the basis of what would be topically relevant, and held that this is a much less restrictive constraint than the constraint produced by the first part of an adjacency pair.

The constraint produced by the first part of an adjacency pair on what comes next does not necessitate that the second pair part be produced immediately after the first, or produced at all. The other may not produce the second pair part (e.g., may not know the answer to the question or may not be willing to produce it), or there may be intervening utterances between the first and second pair parts—embedded sequences or side sequences. Someone who is asked a question may seek clarifications before answering it, and someone who receives an offer may seek further information about it before accepting or declining. As a result, there can be extended, internally structured, sequences comprising interwoven pairs of what Edmondson (1981) terms proffers and satisfactions, the whole bounded by an initial proffer and a terminal satisfaction. Reichman (1985) took note of the discourse markers within turns that signify a move into or out of embedded sequences, although she did not make claims about the organization and interconnections within such sequences.

Grice (1975, 1989) developed a quite different way of conceptualizing what can be

regarded as pair-wise constraints on what comes next. One key difference is that despite a number of his examples, he did not regard the constraint on what comes next as a product of a particular utterance, but rather a product of "the accepted purpose or direction of the talk exchange" (Grice, 1975, p. 45). This constraint can still be regarded as the product of a singular antecedent, but an antecedent produced by context and by prior utterances in concert rather than singly. Accordingly, this can also be regarded as a constraint that arises from the engagement of interacting people in a larger whole, the talk exchange. Moreover, on the one hand these constraints have a discursive basis. It is on the basis of what they are about, their semantics, that utterances are constrained by the purpose and direction of the talk exchange. On the other hand, the purpose or direction of the talk exchange is a contingent, social matter and thus these constraints also have a social basis. What people have to know to interact on this basis, then, is first, how to infer the direction or purpose of the talk exchange from relevant evidence (e.g., from the social context, and the utterances that have been produced so far), and second, how utterances are semantically interconnected to be congruent with and constructive of that direction or purpose. Grice is vague about these specifics, and much remains to be done to flesh them out.

A second, fundamental, way Grice's approach differs from the concept of adjacency pairs is that in Grice's view, constraints on what comes next do not delimit the particular utterances or utterance-types that come next, but rather, they delimit the interpretation of whatever comes next. In this view, if a question is asked, then whatever utterance is produced in the slot for an answer will be interpreted as an answer if at all possible (or else as a non sequitur produced to avoid answering), as long as it conforms to the accepted purpose or direction of the talk exchange to produce any answer at all. This accounts for the absence of answers when a question is interpretable as "rhetorical" (based on the question's relevance to the purpose and direction of the talk exchange), and if an answer to a rhetorical question is produced anyway, Grice's view accounts for interpretations of that answer as a mistake or sarcasm.

In contrast to the concept of constraints on what comes next based on what would be responsive to an utterance's or action's antecedent(s), there are concepts of constraints based on what is required of participants at each next turn to jointly produce some larger whole (e.g., a sales transaction), or interactively achieve some goal. An early approach from this perspective arose in artificial intelligence research, most notably the work of Schank and Abelson (1977) on such knowledge structures as scripts and schemas. These authors posited that in standardized contexts, there are conventional multistep procedures that are sequentially ordered (scripts), and interconnections among components (schemas). For example, in patronizing certain kinds of restaurant, customers are seated before they order, order before they are served, eat before they pay, and pay before they leave. Within such procedures, there clearly are constraints on what comes next. These constraints are not based on the discursive relation between components from one to the next. They are based instead on the practicality or functionality of each included action and their sequential order in collectively bringing about some end result. Hence, the ordering of the same components of patronizing a restaurant may vary with the type of restaurant. For example, in a fast food restaurant customers are seated after they order, are served after they pay, and leave without leave taking after they have eaten.

A different idea about constraints on what is produced next within multiunit wholes is that there is a principled, discursive basis for them. This stems from the view associated with the concept of a text grammar that linguistic objects combine in principled ways beyond the level of the sentence. Van Dijk (1980) developed this approach extensively, but with a focus on the meaningfulness of combinations of sentences (in texts) or actions (in interactions) to form macrostructures (e.g., a paragraph or episode) and superstructures (combinations of macrostructures). He considered that there are constraints on what is

produced next within such larger wholes, although spelling these out was not his concern:

> for a sequence to be coherent not only the actions should be connected but they should also be *conceptually* related: Not wanting to read a linguistics book this afternoon may be a reason for going fishing, which is a necessary condition for the possible consequence of catching a fish, which may have my eating fish for dinner as a possible consequence. Yet, not wanting to study linguistics and having fish for supper are not conceptually related. In terms of the coherence conditions for discourse, we would say that they belong to different *topics* or *themes*. Hence, there must be a *global* constraint that makes action sequences coherent, and it is at this point where we need *macrostructures of action*. (van Dijk, 1980, p. 140)

Despite van Dijk's interest in extending the boundaries of linguistics to include such larger discourse and action wholes, the basis he posits on which their components are interconnected and constrained seems to be extralinguistic. It is a matter of the real-world, practical and functional relationships between objects and events that the parties refer to or act on. At the same time, in contrast to Schank and Abelson's (1977) approach, van Dijk's concept of the basis for constraints on what is produced next in larger wholes is not limited to standardized contexts.

Sanders (1987) proposed that there are both discursive and social constraints on what is produced next in interactions, and that these generally apply concurrently and congruently, but sometimes may conflict. He specified discursive constraints that arise from a "ground of coherence" that emerges between components of larger wholes as they are added to an unfolding sequence. A ground of coherence forms emergently as successive components are relevant to each other based on commonalities in their propositional content, or in the felicity conditions of the illocutionary acts they count as, or in what they implicate, or all of these. In addition, Sanders posited that there are constraints on what is produced next based on what is discursively relevant to a desired end result. While these latter constraints have a discursive basis (the meaning relations between components of the whole and the desired end result) they also have a social basis in that they arise from the participants' situated interest in achieving a certain outcome.

Levinson (1992) proposed a narrower, more precise, conception than van Dijk (1980) or Sanders (1987) of the larger wholes that constrain what is produced next and its interpretation. Levinson considered that persons interact within the framework of an activity that delimits what end results can be achieved and what actions are engaged in to achieve them. He roots this idea in Wittgenstein's (1953) concept of language game, and the concepts of speech events and episodes in ethnographies of speaking (Gumperz, 1972; Hymes, 1972). Levinson notes that activities range from "[a] totally prepackaged activity . . . [to] the largely unscripted event (e.g., a chance meeting on the street)" (1992, p. 69). This concept improves on, but is consistent with, much prior thinking. It provides a clearer basis for establishing the "purpose and direction of the talk exchange" than Grice (1975) gave, while retaining Grice's idea that components of interactions are interpreted relative to their contribution to the apparent purpose and direction of the talk exchange. The concept of activity is also consistent with Schank and Abelson's (1977) ideas of scripts and schemas, but applies much more comprehensively "to any culturally recognized activity" (Levinson, 1992, p. 69). The concept of activity is consistent, too, with van Dijk's (1980) concept of interactional superstructures, but it adds a basis external to and sometimes prior to the production of such superstructures, instead of van Dijk's tacit view that they are emergent as interactions progress. And the concept of activity is consistent with Sanders's (1987) view that interacting persons generally are constrained by the end result they are attempting to bring about, but improves on it in two ways. It specifies what the basis is of the

end results persons interact to bring about, and it provides for a greater restrictiveness on what is produced next than simply what is and is not discursively relevant to that desired end result.

Except for the concept of adjacency pairs, thinking about constraints on what is produced next in interactions has increasingly focused on the importance of the larger whole that participants are engaged in producing. In his summary of the key cognitive underpinnings of his "interaction engine," Levinson (2006) cites first, attributions to others of what might be termed "macro-intentions," and second, taking the perspective of the other on oneself and on the situation. Both of these can be tied to inferential processes about the current activity or larger whole the parties are engaged in producing. But from work so far, it is clear that constraints on what is produced next as interactions progress also arise from the discursive relations between components of the interaction. In this regard, Levinson (2006) cites the importance of reasoning along Gricean lines about the other's intention in having produced that component of the interaction just then, and therefore its meaning.

The path toward future development of cognitive models of interaction leads to two core tasks. One is to detail the knowledge base and inferential processes by which participants undertake to arrive at a mutual understanding of the larger whole which they are engaged in producing, especially when it is at the more implicit, more unscripted, end of the continuum of activity types. The other is to detail the bidirectional influence between the activity in which the parties are engaged and their production of and interpretation of the components of their interaction.

SEE ALSO: Analysis of Dialogue; Context in the Analysis of Discourse and Interaction; Pragmatics in the Analysis of Discourse and Interaction

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Cognitive Second Language Acquisition: Quantitative Methods

BILL VANPATTEN

Cognitive second language acquisition (SLA) research encompasses a wide variety of issues and phenomena, including, but not limited to, language processing (including sentence, discourse, and lexical processing), nonlinguistic factors affecting acquisition (e.g., aptitude, motivation), and instructed SLA (e.g., the effects of formal instruction on acquisition, the effects of task orientation on performance). In short, cognitive SLA research can refer to that which is not either purely linguistic or social in nature ("purely" suggesting that there can be overlap between the linguistic, the social, and the cognitive in some cases).

This entry will focus on instructed SLA and will illustrate the use of the *repeated measures analysis of variance (ANOVA)* design (although in cognitive SLA more generally a variety of designs can be used depending on the research question: *t* tests, ANOVA, ANCOVA (analysis of covariance), chi-square, and correlational analyses, among others). The repeated measures design is used in instructed SLA research because the researcher normally wants to see how an instructional treatment affects learning (e.g., Norris & Ortega, 2000). The researcher administers a pretest (Time 1) to the participants, delivers the treatment, and then administers a posttest (Time 2) or a series of posttests at different points (Time 2, Time 3, Time 4, and so on). If there is improvement from Time 1 to the subsequent test times, then the researcher can claim some kind of causative effect: The treatment under question had a positive effect. If there is no improvement, then the researcher would claim the treatment was not effective. If learners perform worse on the posttest(s), then the researcher might conclude the treatment had a negative effect.

Before research is conducted using a repeated measures ANOVA in instructed SLA, the following features of the design are typically present.

1. There must be at least one *treatment group* (called the *experimental group*) and one *control group*, the group that does not receive the treatment. A control group is necessary to ensure that any effects observed in the experimental group are indeed due to the treatment and not to improvement that would happen naturally over the course of time.
2. Participants are *randomly assigned* to treatment(s) and control.
3. The pretests and posttests must not be the same test but they must be of the same nature and be matched for level of difficulty. What researchers normally do is create various versions of a test (say, versions A and B) and then create a *split block* by which 50% of the participants receive version A as the pretest and 50% receive version B. Then the tests are switched for the posttest: The 50% that received version A receive version B and vice versa. In this way, any slight irregularities in the test are accounted for. What researchers should not do is give the experimental group version A and the control group version B and then switch: If there are irregularities in the test, they might create a difference between groups prior to the treatment.

We will now illustrate a classic repeated measures design. The point of this exemplary study is to compare the effects of processing instruction (PI) on three different kinds of

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measures: (a) a sentence-level interpretation task; and (b) two production tasks—a sentence-level production task and a short discourse-level reconstruction task (see VanPatten & Uludag, 2011, for the original study). The question the authors are asking is whether the effects of PI (a specific input-oriented and sentence-level treatment) transfer to tasks not part of the treatment (in this case, the two production tasks). The following are the elements of the design.

- There were two groups: one experimental (the PI group) and a control group that did not receive treatment. Participants were randomly assigned to each group.
- The target structure was the English passive.
- The participants were adult first language (L1) speakers of Turkish learning English as a foreign language at the university level.
- There were three tests: a pretest, and two posttests. The latter were administered immediately after treatment and then two weeks later. The tests consisted of an interpretation test (to see whether participants could correctly determine who did what to whom), a sentence-level production test (written), and a reconstruction test (in which participants heard a short, 25–30-word passage, and then had to reconstruct it in writing). The first test was designed to bias for the PI group (PI participants engaged in this kind of task during treatment). The other two tasks did not form part of the treatment and were "novel" tasks vis-à-vis the grammatical structure and processing problem that was the focus of the treatment.

After the researchers scored the data, they entered it into the statistics software *SPSS*. Figure 1 displays this data entry. Column 1 contains the Group identifier: 1.00 = PI; 2.00 = Control. The next three columns represent the scores on the interpretation test: column 2 = pretest (PreInt), column 3 = posttest 1 (Post1Int), and column 4 = posttest 2 (Post2Int). The subsequent three columns represent the scores on the sentence-level production test (pretest, posttest 1 and posttest 2, respectively), and the final three columns represent the scores on the reconstruction test (again, pretest, posttest 1, and posttest 2, respectively). Note: data were originally scored and entered into an Excel sheet and then imported directly into SPSS using the import function.

Before running the repeated measures ANOVA, the researchers had to ensure that there were no significant differences on scores on the pretest (i.e., that all groups were performing at the same level prior to treatment). Thus, the researchers ran three *one-way ANOVAs* on each of the pretests: interpretation, reconstruction, and sentence-level. To run an ANOVA in SPSS, we click on Analyze, then on Compare Means, and then on One-way ANOVA (Figure 2). A dialogue box appears, asking us to indicate our within- and between-group factors. We click on PreInt and then the arrow to move it to within-subjects factor, and we click on Group and then the arrow to move it to between-subjects factor (Figure 3).

For illustrative purposes, we will use only the interpretation part of the output (Figure 4). The part of the output to focus on is Group. In reading this line, we see no difference between PI and Control, as seen by the *F value* and the *p value* (represented by "Sig." in the output of the SPSS). In a research paper, we would report it this way: "The one-way ANOVA on the interpretation pretest scores revealed no main effect for Group, $F(1, 37) = 2.028$, $p = .163$."

Next, the researchers ran the repeated measures ANOVA for each of the three measurement types. Again, for illustrative purposes, we will use only the data from the interpretation test here. To run a repeated measures ANOVA in SPSS, the researcher clicks on Analyze, then on General Linear Model, and then on Repeated Measures (Figure 5). A dialogue box appears in which the researcher has to indicate the name of the within-subjects factor and how many levels it has. For this study, we type Interpretation to replace

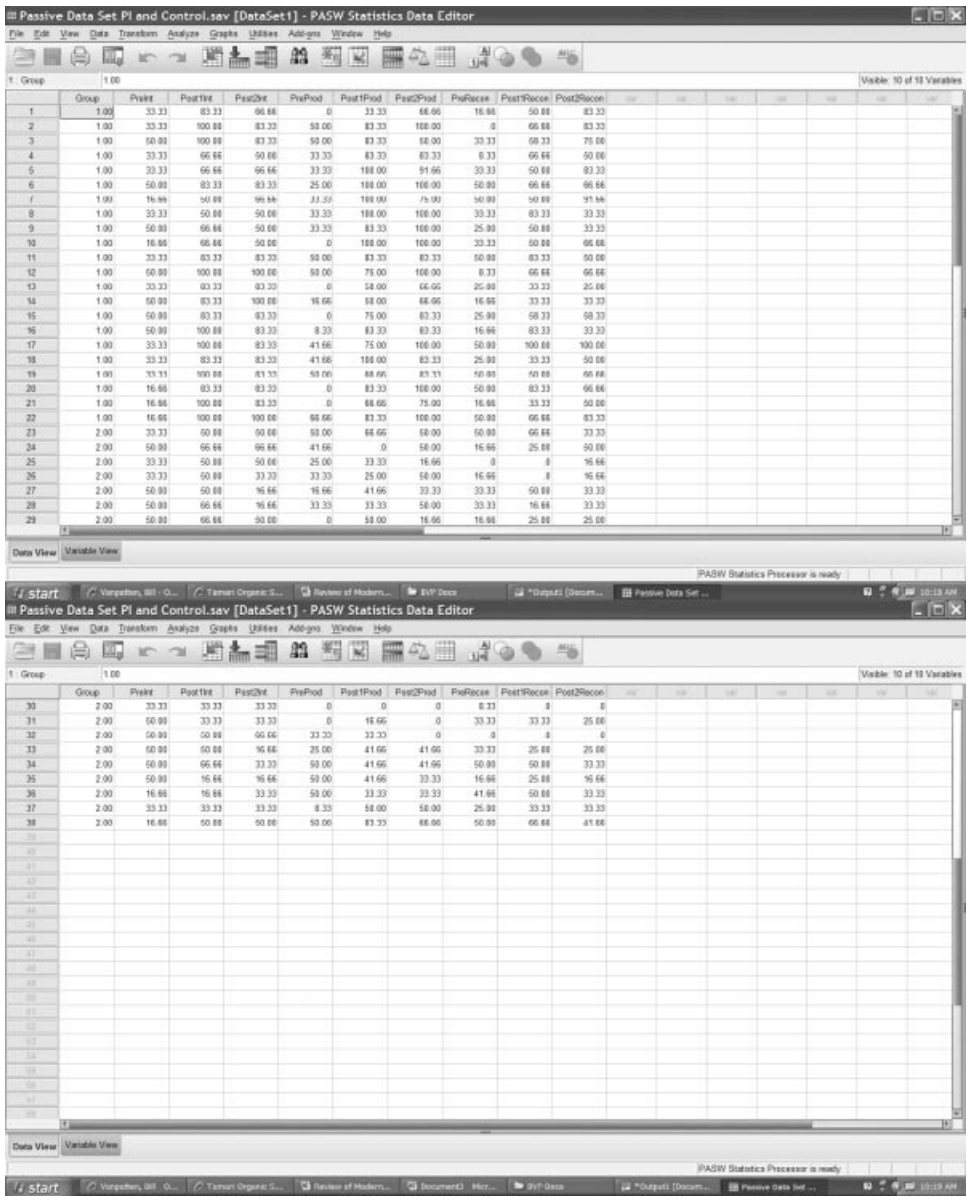

Figure 1 SPSS data set for the study on PI and transfer effects
Note: there are 38 participants split across two screens.

"factor 1" and then in the levels box we type "3" (to indicate that there are three interpretation tests). These steps and the results are displayed in Figure 6. Next, we click "Define" and a new dialogue box opens up. Here we have to tell SPSS which three tests are the within-subjects factor so we click on PreInt and click the arrow to move it over to the right side. We do the same for Post1Int and Post2Int. Then we have to tell SPSS which variable is the between-subjects factor. In this case, it is Group so we click on that, click on the arrow, and move it over to the right. This is all we need for the present study so we click "OK" (Figure 7).

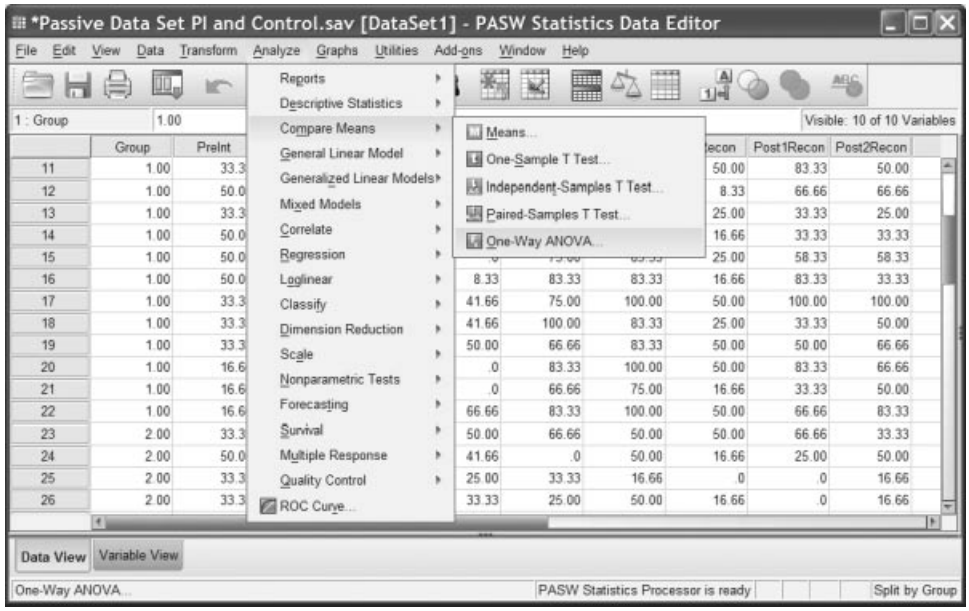

Figure 2 Navigation to one-way ANOVA

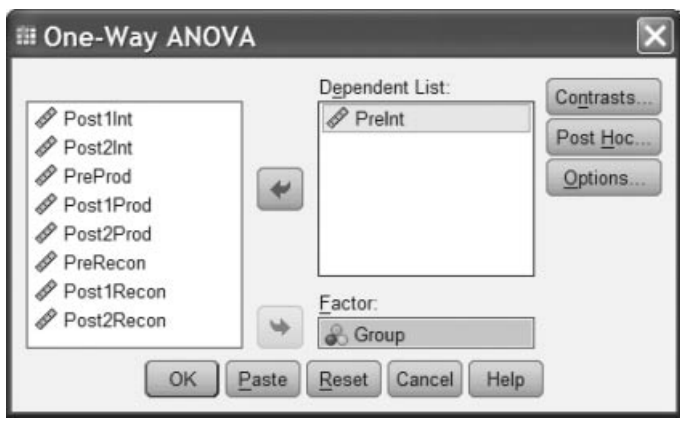

Figure 3 Dialogue box for one-way ANOVA

The output of the repeated measures ANOVA appears in Figure 8. There are two parts of the output to examine: the Test of *Between-Subjects* Effects (which tells us about PI vs. Control) and the Test of *Within-Subjects* Effects (which tells us about the Interpretation tests over time and any possible interaction with the between-subjects factor, Group). As can be seen, Group makes a difference, with the F value 41.274 and the p (sig.) value .000. At the same time there was an effect for Interpretation, as can been seen in the F value, 47.602, and the p value, .000. Importantly, there was no interaction between the two variables of Group and Interpretation (see the line Interpretation * Group): F value is 38.551, p value is .000. We would report these results in the following way: "The repeated measures ANOVA on the interpretation tests yielded a main effect for Group, $F(1, 37) = 41.274$, $p = .000$,

ANOVA

PreInt

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	309.218	1	309.218	2.028	.163
Within Groups	5489.885	36	152.497		
Total	5799.103	37			

Figure 4 SPSS output for one-way ANOVA on interpretation pretest scores

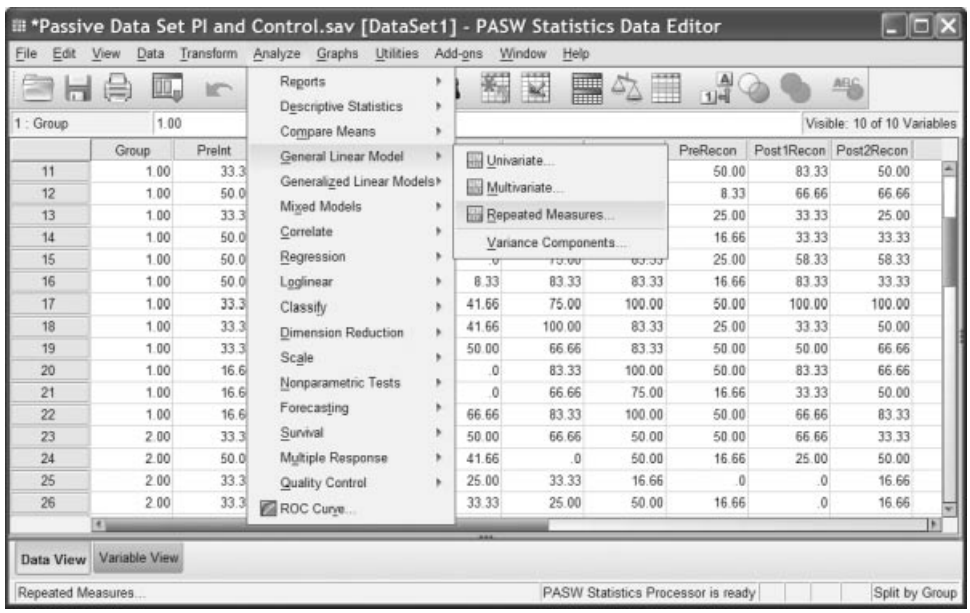

Figure 5 Navigation for repeated measures ANOVA

a main effect for Interpretation, $F(1, 37) = 46.702$, $p = .000$, and a significant interaction of Group × Interpretation, $F(2, 72) = 38.551$, $p = .000$." (Note that with ANOVAs, variables/factors have "effects": We do not talk about "significant differences" with variables in an ANOVA.)

Because there is an interaction between Group and Interpretation, we cannot fully interpret the effects for the two main variables/factors. So we must conduct additional analyses. To probe the effect for Group, we conduct one-way ANOVAs for posttests 1 and 2, in exactly the same way we did for the pretest (see above). In the present case, the results are as follows: a main effect for Group on Posttest 1, $F(1, 37) = 46.334$, $p = .000$, and a main effect for Group on Posttest 2, $F(1, 37) = 55.706$, $p = .000$. Because there are only two groups, and we know the means for PI are higher than those for Control, we can interpret these results to mean that treatment had an effect on the interpretation test: PI was significantly better than Control on both posttests after treatment.

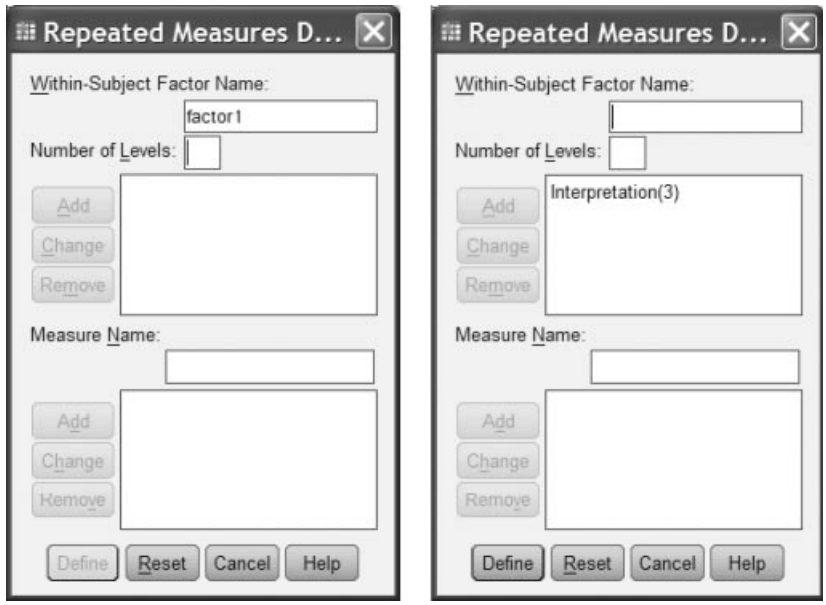

Figure 6 Dialogue boxes for setting up repeated measures ANOVA

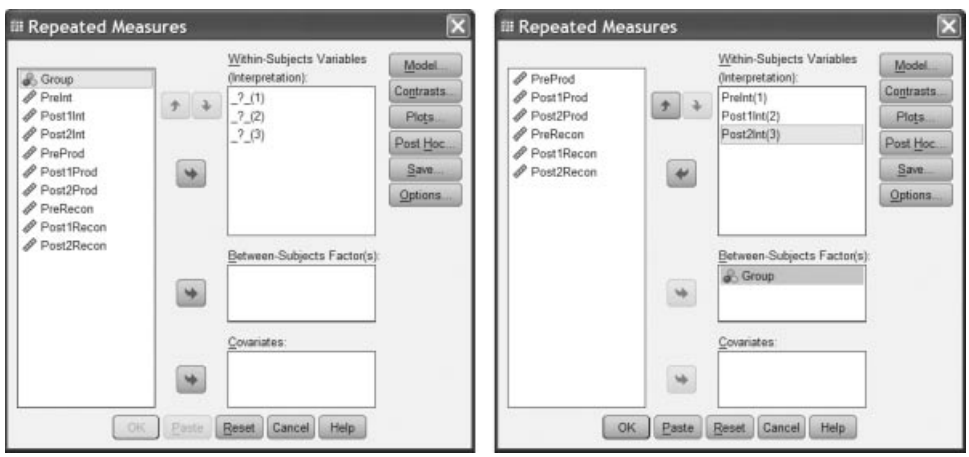

Figure 7 Dialogue boxes for inserting variables into repeated measures ANOVA

However, we are not finished with probing our interaction. We must also probe the effect for Interpretation. In this case, we must conduct a series of *paired-samples t tests* for the PI group comparing the following: pretest versus posttest 1, posttest 1 versus posttest 2, and pretest versus posttest 2. We must do the same for Control. First, we separate out the PI and the Control data into two different data sets (in the present example, we cut Control from the data set and pasted it into its own data set). To conduct a *t* test in SPSS on the PI data, we click on Analyze, then Compare Means, and then click on Paired Samples T Test ("paired" because we are comparing means from the same group, not means from different groups). A dialogue box appears and we must click on the scores we want to compare. First, we click on PreInt and then the arrow. This inserts PreInt into one slot on

Tests of Between-Subjects Effects

Measure:MEASURE_1

Transformed Variable:Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	317047.833	1	317047.833	853.768	.000
Group	15327.201	1	15327.201	41.274	.000
Error	13368.643	36	371.351		

Tests of Within-Subjects Effects

Measure:MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Intepretation	Sphericity Assumed	14754.440	2	7377.220	47.602	.000
	Greenhouse-Geisser	14754.440	1.805	8176.154	47.602	.000
	Huynh-Feldt	14754.440	1.947	7578.590	47.602	.000
	Lower-bound	14754.440	1.000	14754.440	47.602	.000
Intepretation * Group	Sphericity Assumed	11949.037	2	5974.518	38.551	.000
	Greenhouse-Geisser	11949.037	1.805	6621.543	38.551	.000
	Huynh-Feldt	11949.037	1.947	6137.600	38.551	.000
	Lower-bound	11949.037	1.000	11949.037	38.551	.000
Error(Intepretation)	Sphericity Assumed	11158.260	72	154.976		
	Greenhouse-Geisser	11158.260	64.965	171.759		
	Huynh-Feldt	11158.260	70.087	159.206		
	Lower-bound	11158.260	36.000	309.952		

Figure 8 Parts of the SPSS output for repeated measures ANOVA on interpretation test

the right side. Then we click on Post1Int and then the arrow. This inserts Post1Int next to PreInt, indicating SPSS will compare these two scores with a *t* test. We continue with our other comparisons until the dialogue box contains a list of three comparisons, numbered 1, 2 and 3. When we have done this, we click on OK. This procedure appears in Figure 9. The results of the output appear in Figure 10.

Reading across the output, we scan each line for the *t* value and the *p* value (Sig.). From this output we see that for the PI group there is a significant difference for each pairwise comparison. We would report it like this: "The results of the paired-samples *t* tests yielded a significant difference between the pretest and posttest 1, $t(21) = -12.304$, $p = .000$, a significant difference between posttest 1 and posttest 2, $t(21) = 2.592$, $p = .017$, and a significant difference between the pretest and posttest 2, $t(21) = -10.844$, $p = .000$. These results indicate that the PI group made a significant gain from pretest to posttest, dropped down somewhat from posttest 1 to posttest 2, but still had significant gains at posttest 2 compared to the pretest."

We repeat the procedure above for our data set on just the Control group. The SPSS output yields the table in Figure 11. Again, reading across the lines we see that no comparison yielded any significant differences. We could report this information the following way: "As for the Control group, no pairwise comparison yielded any significant differences: pretest vs. posttest 1, $t(15) = -1.566$, $p = .138$; posttest 1 vs. posttest 2, $t(15) = 1.952$, $p = .070$; pretest vs. posttest 2, $t(15) = .565$, $p = .580$."

Figure 9 Dialogue boxes for setting up paired-samples *t* test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	PreInt - Post1Int	-48.48545	18.48248	3.94048	-56.68013	-40.29078	-12.304	21	.000
Pair 2	Post1Int - Post2Int	6.06091	10.96569	2.33789	1.19900	10.92282	2.592	21	.017
Pair 3	PreInt - Post2Int	-42.42455	18.35039	3.91232	-50.56065	-34.28844	-10.844	21	.000

Figure 10 SPSS results for *t* tests on interpretation test for PI group

What do our results show, then? The results of the repeated measures ANOVA along with the subsequent follow-up analyses show that the PI group made significant gains on the interpretation test while the Control group did not. What is more, although the PI group's scores declined from posttest 1 to posttest 2, the scores were still significantly higher at the end of the study than those on the pretest, suggesting at least a short-term (two-week) durability for the effects. To be sure, we have not answered our question regarding whether or not the effects of PI are transferable to tasks on which the participants were not trained (i.e., output-based tasks). If we had the space, we could present the analyses for both the sentence-level production test and the reconstruction test, repeating what we did for the interpretation test. And, if we had done this, we would show that the results are basically the same and that the effects do transfer to novel tasks unrelated to treatment type (see VanPatten & Uludag, 2011). We leave these analyses for readers to try on their own.

To be sure, repeated measures ANOVAs are not restricted to instructed SLA research in which treatment variables are manipulated; they are used anytime a researcher wants to compare groups of participants at one time and at a later time on the same measures (e.g., examining the effects of study abroad). Repeated measures can also be used to compare subcomponents or categories of items in a test when each participant has taken all parts of the test or performed with each item. For example, we can imagine a scenario in which participants took a test that included real regular verbs and real irregular verbs but also nonsense verbs that resembled both regular and irregular verbs (e.g., *swim, swam, drim, dram*). Assuming an equal number of each set of items and that what the participant did with each item was the same, the researcher could make use of a repeated measures ANOVA to see how participants performed on the various kinds of verbs. In short, repeated measures ANOVAs can be used when the measurement and number of items are the same, but groups of items can be treated as "separate" tests.

SEE ALSO: Comparing Two Related Samples; Comparing Two+ Independent Groups; Variables

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	PreInt - Post1Int	-6.24875	15.95857	3.98964	-14.75247	2.25497	-1.566	15	.138
Pair 2	Post1Int - Post2Int	9.37562	19.21536	4.80384	-.86352	19.61477	1.952	15	.070
Pair 3	PreInt - Post2Int	3.12687	22.12976	5.53244	-8.66524	14.91899	.565	15	.580

Figure 11 SPSS results for *t* tests on interpretation test for Control group

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Cognitive Second Language Acquisition: Overview

JOHN WILLIAMS AND MARIANNE GULLBERG

Cognitive approaches to second language acquisition are characterized by an interest in how the human mind deals with language in learning; in what language learners know and how they use that knowledge in speaking and understanding. The aim is to understand how and under what conditions learners construct and organize knowledge, and how they then deploy that knowledge under the time-pressures of real language use in interaction and communication. Of key interest are the ways in which cognitive systems and abilities, partly conditioned by our biology, interact with external aspects of language and learning such as the properties of the language being learned, the context and situation, and so forth. Traditionally, these different views on language, acquisition, and learner-internal or learner-external factors have been examined in different theoretical and empirical domains. Despite their differences, all approaches share fundamental assumptions about the role and status of the NATIVE SPEAKER as a point of comparison and benchmark, although this notion has also received theoretical attention recently.

This section does not aim to give a historical overview of all concepts and approaches that have paved the way for the current state of the field, but rather to exemplify and illustrate some of the current key theoretical and empirical strands of investigation. In doing so, it brings together findings from many disciplines ranging from applied linguistics, linguistics, psycholinguistics, psychology, and cognitive neuroscience. The scholars representing these fields often publish in different parts of the literature, not necessarily under the heading of applied linguistics, and target different linguistic levels, phenomena, and factors separately. But the diverse perspectives and the scholars that represent them all contribute to our understanding of the multifaceted phenomenon that is cognitive second language acquisition.

The Input

Input plays a crucial role in cognitive approaches to SLA with the debates revolving around the extent to which properties of the input shape development. In such a perspective it becomes vital to examine those properties in detail and the effects of crosslinguistic diversity and typology (see TYPOLOGY AND SECOND LANGUAGE ACQUISITION) on acquisition, including potential modality effects such as in the SECOND LANGUAGE ACQUISITION OF SIGN LANGUAGE or crosslinguistic differences in reading, scripts, and orthographies (see SECOND LANGUAGE READING, SCRIPTS, AND ORTHOGRAPHIES). In a similar vein, the consequences of acquiring a new language in the presence of several others is examined in studies of THIRD LANGUAGE ACQUISITION, where not only properties of the languages, but also factors such as recency of use and proficiency levels in the languages involved are examined.

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Cognitive Approaches to Acquisition

Cognitive approaches to acquisition reflect the polarization between nativist and empiricist philosophies. The nativist view is that the child is born with an innate universal grammar that is represented according to the principles of modularity in an encapsulated language faculty that is separate from other cognitive abilities. This inspires a particular approach to input processing (see INPUT PROCESSING IN SECOND LANGUAGE ACQUISITION) that stresses the role of innate knowledge of relevant linguistic categories, allowing the child to induce the structure of the language(s) to which it is exposed despite the assumed "poverty" of the input. The main issues in this field are whether universal grammar (UG) is accessible in SLA, and whether native-like proficiency is attainable by adult learners (see UNIVERSAL GRAMMAR AND SECOND LANGUAGE ACQUISITION, MODULARITY IN SECOND LANGUAGE ACQUISITION, CRITICAL PERIOD, FOSSILIZATION). At the other extreme, the empiricist approaches, latterly referred to as EMERGENTISM, assume no innate knowledge, emphasize the richness of the input as the sole basis for learning, and focus on the functions of linguistic forms, as illustrated by the COGNITIVE LINGUISTICS OF SECOND LANGUAGE ACQUISITION. They appeal to general cognitive learning mechanisms that are not specific to language, specifically principles of associative learning as exemplified in the COMPETITION MODEL and CONNECTIONISM. Between these positions we find research that considers the interplay of UG and properties of the input and general cognitive principles and their effects on all learners, leading to the study of LEARNER VARIETIES, examined as languages in their own right.

Representations and Processing

Research on second language representation and processing builds on the models of processing developed in the context of monolinguals and explore the implications of multilingualism. The essential question motivating this research is the extent to which second language (L2) representation and processing are separated from, integrated with, or parasitic upon the first language (L1), and the extent of crosslinguistic influence (see CROSSLINGUISTIC INFLUENCE IN SECOND LANGUAGE ACQUISITION), both uni- and bi-directional (from the L1 onto the L2, and vice versa). Research on LEXICAL ACCESS IN BILINGUAL VISUAL WORD RECOGNITION, SPOKEN WORD RECOGNITION IN SECOND LANGUAGE ACQUISITION, SPOKEN WORD PRODUCTION IN SECOND LANGUAGE ACQUISITION, and ORGANIZATION OF THE SECOND LANGUAGE LEXICON, all shows that even though a person is performing a task in a single language there are unconscious influences from their other languages. This suggests integration of the language systems, but also raises questions about INHIBITION AND CONTROL IN SECOND LANGUAGE ACQUISITION in determining which language a multilingual speaker uses. With regard to accessing the meanings of words, psychological MODELS OF LEXICAL AND CONCEPTUAL REPRESENTATION IN SECOND LANGUAGE ACQUISITION assume shared conceptual representations, but access via the L1 at early stages of acquisition (i.e., the L2 is parasitic on the L1) with direct L2 form–meaning mappings acquired with experience.

Research on SENTENCE AND DISCOURSE PROCESSING IN SECOND LANGUAGE COMPREHENSION suggests that the same processing principles apply in L1 and L2, and that there is similar crosslinguistic influence as for lexical processing. Of particular interest here is whether native-like processing can be acquired in areas of grammar that are different from the L1 but also the extent to which the same end result can be reached through different processing routes. Similar themes emerge in relation to SENTENCE PRODUCTION IN A SECOND LANGUAGE with the additional problem of selecting language-appropriate semantic content for expression in the correct morphosyntactic form to reflect one's ideas, or THINKING

FOR SPEAKING IN SECOND LANGUAGE ACQUISITION, raising the issue of the acquirability of lexicalization patterns that are different from the L1. Turning this issue around, one can ask whether differences in means of expression across languages cause differences in general cognition outside of language, the issue of LINGUISTIC RELATIVITY AND SECOND LANGUAGE ACQUISITION, and whether learning an L2 changes the way you think.

All of the above research uses behavioral methods including crossmodal analyses involving gesture (see GESTURE ANALYSIS IN SECOND LANGUAGE ACQUISITION) and online psycholinguistic methods (see ONLINE PSYCHOLINGUISTIC METHODS IN SECOND LANGUAGE ACQUISITION RESEARCH) to examine moment-by-moment processing. Research on BRAIN ACTIVITY DURING SECOND LANGUAGE PROCESSING (ERP) and also SECOND LANGUAGE REPRESENTATION IN THE BRAIN provides converging evidence, showing similar brain responses in L1 and L2 and similar localization of brain activation for different language processes. Thus there is very strong support for integration of L1 and L2 knowledge and processing.

Learning Mechanisms and Educational Consequences

With regard to specific learning mechanisms, the cognitive approach appeals to general principles of memory and learning from psychology. These are relevant to an overall theory of SLA regardless of whether one is a nativist or an empiricist because even nativists have to admit that not all of language is UG-constrained, and certain aspects have to be learned using general cognitive mechanisms. The debate here centers on the extent to which people can spontaneously pick up different aspects of language from input even though their task does not require them to do so (see INCIDENTAL LEARNING IN SECOND LANGUAGE ACQUISITION), or without even being aware of what they have learned (see IMPLICIT LEARNING IN SECOND LANGUAGE ACQUISITION), or whether they can only learn by being taught or consciously working out rules for themselves (see EXPLICIT LEARNING IN SECOND LANGUAGE ACQUISITION). Central to these debates are the roles of attention, noticing, and awareness in learning (see ATTENTION, NOTICING, AND AWARENESS IN SECOND LANGUAGE ACQUISITION). Most of this research concerns the acquisition of knowledge, but with regard to the acquisition of fluency in performance processes of AUTOMATIZATION, SKILL ACQUISITION, AND PRACTICE IN SECOND LANGUAGE ACQUISITION are critical.

The study of the cognitive processes underlying SLA has consequences for pedagogy. TASK-BASED LEARNING: COGNITIVE UNDERPINNINGS focuses on how the design characteristics of tasks affect the cognitive mechanisms underlying language learning. More specifically, the INTERACTION APPROACH IN SECOND LANGUAGE ACQUISITION explores how learner–teacher conversation provides opportunities for learning through switches of attention from meaning to form. Emergentist approaches stress the role of the lexicon and the emergence of grammar from formulaic language, hence an understanding of the cognitive processes underlying VOCABULARY ACQUISITION IN SECOND LANGUAGE ACQUISITION, and learning FORMULAIC LANGUAGE AND COLLOCATION becomes critical to devising optimal methods of instruction. Emergentism also stresses the functions of language forms, and cognitive linguistics can play a role in suggesting how these can be made transparent to the learner. Research on COGNITIVE APPROACHES TO COMMUNICATION STRATEGIES focuses on both interactive and psycholinguistic aspects of learners' language use with potential consequences for both instruction and learning. Working from the perspective of models of language processing PROCESSABILITY THEORY AND TEACHABILITY predicts the natural course of development and L1 influences during SLA with consequences for the staging of explicit instruction. The study of FOSSILIZATION can help target explicit instruction on just those grammatical features that are predicted to be problematic for the learner.

Individual Differences

Individual differences in second language learning success can be related to differences in underlying cognitive abilities, and understanding these relationships can shed light on the cognitive mechanisms of SLA. The age of the learner may impact upon the learning process. For example, ultimate native-like attainment might only be possible if acquisition begins during a CRITICAL PERIOD. More generally, the notion of APTITUDE IN SECOND LANGUAGE ACQUISITION may be decomposed into different cognitive abilities all of which show variability between individuals. Recently attention has focused on working memory, and its further division into phonological short-term memory (see WORKING MEMORY IN SECOND LANGUAGE ACQUISITION: PHONOLOGICAL SHORT-TERM), which is especially implicated in vocabulary learning, and an attentional component, which is implicated in explicit learning (see WORKING MEMORY IN SECOND LANGUAGE ACQUISITION). From a different perspective, research on PERSONALITY IN SECOND LANGUAGE ACQUISITION has investigated whether language-learning success tends to be associated with certain personality traits.

Biographies

Many distinguished scholars have contributed to the development of cognitive approaches to second language acquisition. Many key figures are represented in other areas of this encyclopedia, but the following scholars feature in biographical entries here: Ellen BIALYSTOK, Vivian COOK, Robert DEKEYSER, Nick ELLIS, Rod ELLIS, Jan H. HULSTIJN, Judith KROLL, Michael H. LONG, Terence ODLIN, Peter ROBINSON, Jacquelyn SCHACHTER, Richard SCHMIDT, and Peter SKEHAN. They represent different disciplines and research traditions but their common and long-standing focus on the nature and processes of SLA has provided the field with some of its most influential models, theories, and tools.

SEE ALSO: Bilingual and Multilingual Education: Overview; Language Learning and Teaching: Overview; Social, Dynamic, and Complexity Theory Approaches to Second Language Development: Overview

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Cohen, Andrew D.

NORIKO ISHIHARA

Being a prolific researcher and an exceptionally extroverted individual, Andrew D. Cohen (born March 14, 1944) is known as a researcher in applied linguistics, teacher and educator in second/foreign language learning and teaching, learner of 11 languages (Aymara, Quechua, German, Italian, and Latin, with working knowledge of Spanish, French, Hebrew, Portuguese, and some Japanese and Arabic), vigorous international traveler and lecturer, timely and informative e-mail responder, energetic squash player (until age 66), cyclist in all weather, enthusiastic trumpeter and guitarist, and father of two children with one grandchild as of 2010. His work encompasses several subfields of applied linguistics, including assessment, bi/multilingualism and immersion education, language learner styles and strategies, pragmatics, and research methodology.

Perhaps Cohen's most influential contribution to applied linguistics is his strategic approach to language learning and teaching. Cohen's work in developing a program for styles- and strategies-based instruction (SSBI) reflects his beliefs in independent language learning, in which learners are trained to self-motivate and self-regulate their studies. His work includes a research study validating the effectiveness of integrating language learning and use strategies into language instruction, a teachers' guide to SSBI (Cohen & Weaver, 2006), and an annual summer institute on the topic at the Center for Advanced Research on Language Acquisition (CARLA) housed at the University of Minnesota until 2009. In collaboration with others including Michael Paige and Barbara Kappler, Cohen has written guides for learners, instructors, and program professionals on how to maximize students' learning of language and culture through the use of strategies while studying abroad (Paige, Cohen, Kappler, Chi, & Lassegard, 2006; Kappler Mikk, Cohen, & Paige, 2009), and conducted research with students in French and Spanish-speaking countries.

In the area of cross-cultural/interlanguage pragmatics, Cohen's research with Elite Olshtain in the early 1980s on the speech act of apologies is known as one of the first seminal attempts to empirically investigate speech act realization, elucidating the major components of apology-specific strategies. More recently, as part of his CARLA projects, Cohen combined his strategic approach with the development of pragmatic competence. In this effort, he directed the development of Web-based curricular materials on second-language Japanese and Spanish pragmatics and collaboratively studied the effects of those strategies-based materials on the development of learners' pragmatic competence. Cohen was also involved in creating and co-instructing at a summer institute on learning and teaching pragmatics at CARLA (from 2006), and co-authored a teachers' guide on this topic (Ishihara & Cohen, 2010).

Cohen's work in bi/multilingualism, bi/multilingual education, and immersion education dates back to the early 1970s at the beginning of his career. His doctoral dissertation (Cohen, 1972) was later published as a book entitled *A Sociolinguistic Approach to Bilingual Education: Experiments in the American Southwest* (Cohen, 1975). More recently, he conducted studies involving Spanish immersion education at the Adams School in St. Paul, Minnesota, and research at the Concordia Language villages with their German, French, Russian, and Norwegian summer immersion programs.

Cohen's research in the areas of second language assessment (e.g., Cohen, 1994) and research methodology often capitalizes on his expertise in other areas, particularly in SSBI

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and pragmatics. His investigations range widely, including research on test-taking strategies, assessment of speech act performance in the second language, oral language assessment, the use of summary tasks and written reformulations, the utility of verbal report in providing writing feedback and in researching pragmatic development, and the role of language learner strategies and strategy instruction in language teaching methodology. He also writes more generally about second language learning, teaching, theory, and pedagogy.

Cohen is a member of the Program in Second Language Studies at the University of Minnesota (until 2014). He served as the Director of the Language Resource Center at CARLA from 1993 to 2004 and has been active with numerous projects within CARLA as mentioned above. His most recent project with CARLA centered on the development of a Spanish grammar strategies Web site for learners, launched in the summer of 2009, which is intended to provide a model for teachers and researchers of any language on how to pass on successful learners' strategies in a given skill area (in this case, grammar) to other learners of that language.

Cohen was born in Washington, DC, and grew up there as well as in Long Island, New York. He holds a BA in French history and literature from Harvard University (1965) and an MA in linguistics from Stanford University (1971). In 1973, he received his PhD in international development education from Stanford University. Upon the completion of his BA, Cohen served as a Peace Corps volunteer in rural community development in the High Plains in Bolivia (1965–7), while he learned Aymara which was his third foreign language at the time. Later he was assistant professor in the English as a Second Language Section in the Department of English at the University of California at Los Angeles (1972–5). Cohen spent 16 years in Israel, where he served as a senior lecturer at the Centre for Applied Linguistics in the Faculty of Humanities at the Hebrew University of Jerusalem (1975–9) and then as associate professor of applied linguistics in the School of Education at the Hebrew University (1979–91). Since 1991, he has been teaching in the Program in Second Language Studies in the College of Liberal Arts at the University of Minnesota in Minneapolis (associate professor, 1991–3; full professor, 1993–present), where he is now in phased retirement and teaching only Fall semesters until the Fall of 2013.

The significant contributions that Cohen has made to the field of applied linguistics have been recognized in the form of the honors he has been awarded. He was designated Scholar of the College in the College of Liberal Arts at the University of Minnesota for 2002–5. He was also selected as the recipient of the 2006 Distinguished Scholarship and Service Award from the American Association for Applied Linguistics.

SEE ALSO: Interlanguage Pragmatics; Teaching Language-Learning Strategies

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Collaborative Language Learning

NEOMY STORCH

The term *collaborate* means to share labor (co-labor) and hence collaborative language learning is often taken to mean assigning students to work in pairs (or small groups) on language tasks. The use of pair work in second language (L2) classrooms has grown in recent years. Pair work is deemed to provide learners with more opportunities to use the target language and thus accords with communicative approaches to language instruction. Pair work is also supported by most of the current theories informing second language acquisition research. For example, in Long's (1996) interaction hypothesis, interaction is seen as the means of making L2 input more comprehensible and thus facilitating L2 learning. In Vygotsky's (1978) sociocultural theory, the development of all higher order cognitive skills (including language learning) is said to emerge in social interaction (Lantolf & Thorne, 2006).

However, despite the widespread use and support for pair work in L2 classes, as students and teachers we have all probably experienced and observed pairs who do not seem to work well. Indeed one of the underlying assumptions in assigning students to work in pairs is that learners will collaborate rather than function merely as two individuals working autonomously in close proximity. Another related assumption is that the nature of the relationship that pairs form has no influence on language learning outcomes. Recent research findings suggest that not all pairs collaborate and that it is collaborative pair work that is conducive to language learning.

One of the first studies to consider the relational aspects of learner interaction was by Donato (1994). In his investigation of the relationships foreign-language learners formed when working in small groups, Donato distinguished between what he termed "collective groups" and "loosely knit groups." Some of the defining characteristics of collective groups included frequent requests for mutual assistance, which Donato termed "collective scaffolding," and a cohesive discourse pattern that was often indistinguishable from that of an individual speaker.

Building on Donato's work, Storch (2002, 2009) observed and recorded the talk of the same pairs of tertiary English as a second language (ESL) learners working on different tasks over a semester. Based on her data, Storch established a model of dyadic interactions with two intersecting continua (see Figure 1). The horizontal continuum reflects the learners' level of contribution and control over the task and ranges from low to high equality. The vertical continuum reflects the learners' level of engagement with each other's contribution and is thus termed *mutuality*. High mutuality describes interactions that are rich in reciprocal feedback and a sharing of ideas. At the other end, low mutuality reflects lack of engagement with each other's suggestions. The two intersecting continua form four quadrants, representing four distinct patterns of pair relations.

Pairs who display a collaborative orientation reside in the top half of the model, in quadrants 1 and 4. In quadrant 1, the pattern of interaction is truly collaborative: both equality and mutuality are relatively high. That is, both members of the pair contribute to the task and engage with each other's suggestion. The kind of assistance offered is bidirectional, with both learners offering assistance to each other or pooling their linguistic resources (collective scaffolding) to reach resolutions. In quadrant 4, the pattern is labeled

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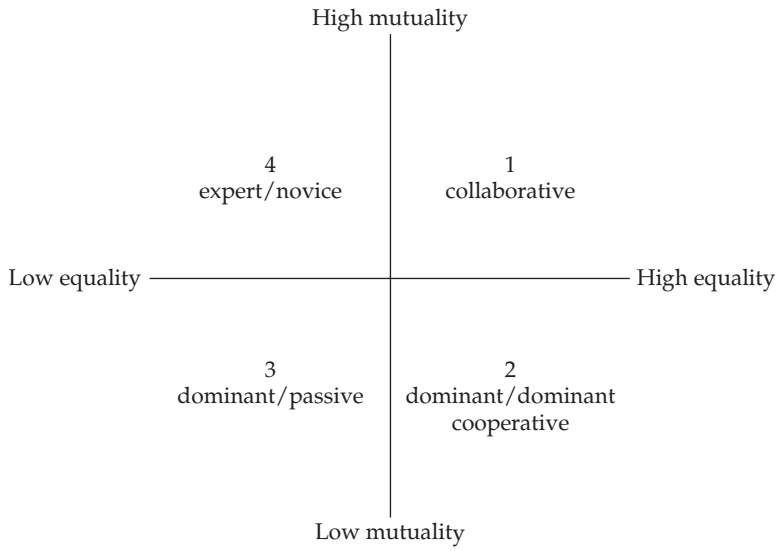

Figure 1 A model of dyadic interaction © Neomy Storch

expert/novice and reflects a tutor/tutee relationship. In such pairs, one learner takes a leading role but at the same time provides the kind of support and encouragement usually provided by the teacher.

The lower half of the model represents noncollaborative patterns of interaction. Quadrant 2 represents a pattern of interaction where there may be moderate to high equality, but a relatively low level of mutuality. In such pairs, both members of the pair contribute to the task but do not engage with each other's suggestion. This may occur either because the learners wrestle for control of the task or are unwilling to engage with each other's suggestion (a relationship labeled "dominant/dominant" in Storch, 2002, 2009), or both of these, or instances where the pair cooperate rather than collaborate. That is, the learners simply divide the task between themselves, with each participant focusing only on their part of the task.

Quadrant 3 represents a dominant/passive pattern. The dominant participant in such dyads takes control of the task and completes the task as if on his or her own. The other participant adopts a more passive, subservient role. There is little interaction in such patterns because there are few contributions, questions, or challenges forthcoming from the more passive participant.

Excerpt 1 comes from the data of Storch (2002, 2009) and is an example of the type of interaction found in collaborative pairs. The two participants contribute jointly to the task and engage constructively with their own and each other's suggestions. They engage in what Swain (2006) refers to as "languaging": using language to make meaning and to deliberate about the language used. In Excerpt 1, we see evidence of learners using language to co-construct ideas by building and elaborating on each other's utterances (e.g., turns 2–9) and by seeking and providing mutual assistance (e.g., turns 19–20). Once ideas are formulated the learners engage with the utterances produced. There is corrective feedback in the form of explicit peer repair (e.g., turn 15) or recasting (e.g., turn 6) as well as positive feedback in the form of confirmations (e.g., turns 9, 10). There is also evidence of pooling resources, or collective scaffolding (Donato, 1994). In turn 16, the pauses suggest

that Mai may be searching for an appropriate verb. Charley suggests a verb (show) but then Mai notes a problem with subject verb agreement and Charley provides the appropriate correction.

Excerpt 1: Illustration of collaboration (Quadrant 1 in Figure 1)

2	Mai:	From the chart
3	Charley:	This chart about
4	Mai:	The data
5	Charley:	With percentage and ah . . .
6	Mai:	Describe describe the percentage of
7	Charley:	English language fluency
8	Mai:	English language fluency between two countries yeah? Vietnam and Laos
9	Charley:	Yes and compare before they came here and now
10	Mai:	Yes
11	Charley:	You can separate it here
12	Mai:	Yeah . . . first we . . . mm the
13	Charley:	Perhaps you should write
14	Mai:	Yeah I write yeah from the information of the chart yeah . . . [writing] information of the chart
15	Charley:	No from figure 3
16	Mai:	Ah figure . . . figure 3? From figure 3 . . . figure 3 ah
17	Charley:	Show the information
18	Mai:	Show the information . . . it it's
19	Charley:	Yeah it's ok it shows . . . the data or the percentage?
20	Mai:	Should be the percentage

It is important to note that collaboration is different from cooperation. Excerpt 2 comes from the data collected by Tan who compared the nature of pair work in face to face and via computer mediated interaction in a class of adult learners of Chinese as a L2 (see Tan, Wigglesworth, & Storch, 2010). As can be observed in Excerpt 2, although both Jan and Ben contribute to the task (a short composition), there is little engagement in each other's suggestions and very little evidence of feedback or of a pooling of resources. That is, there is no evidence of languaging or the type of cohesive, collaborative dialogue evident in Excerpt 1.

Excerpt 2: Illustration of cooperation (Quadrant 2 in Figure 1)

7	Jan:	Do you want to start? Is our student studying at *Moerben daxue*? {Melbourne University}
8	Ben:	*dui ta jiudian chi zaofan* {Yes, he eats breakfast at 9 o'clock}

9 Jan: *shierdian shangke xuexi yingyu*
{At 12 start class to study English}

10 Ben: *jiudianban ta qu Moerben daxue*
{At 9:30 he goes to Melbourne University}

11 Jan: *hao*
{Good}

12 Ben: *hao yidian zai fandian chi wufan*
{Good. At one o'clock at restaurant eat lunch}

These different patterns of dyadic interaction have since been reported in a number of studies in different contexts. For example, Ives (2004) found evidence of collaborative, expert/novice, and expert/passive patterns of interaction in a primary L2 class where grade 6 learners were paired with native-English-speaking children. Aldosari (2008), in a study conducted in an English as a foreign language (EFL) class (Saudi Arabia) where learners were paired according to their L2 proficiency, found more evidence of collaboration in pairs of equal proficiency (high-high and low-low) than in pairs where learners had different proficiency (high-low). Kim and McDonough (2008), in a study conducted in South Korea with learners of Korean as a second language, also reported different patterns of pair interaction depending on whether the learner worked with an interlocutor of the same or with a higher L2 proficiency level. However, L2 proficiency level may not be the sole reason explaining why learners form different patterns of interaction. Storch (2004) suggested that collaboration can best be explained by reference to individuals' goals and attitudes to the activity of pair work. These goals and attitudes are in turn shaped by an individual's history of language learning and by cultural backgrounds. Collaboration is most likely to occur when both members of the pair share goals and view the activity and the contribution of each member as valuable.

Given that learners are likely to form different patterns of interaction when assigned to work in pairs, the important question to consider is whether these patterns have implications for language learning. As Excerpt 1 shows, collaborative dialogue is rich in language learning opportunities. That is, when learners collaborate they deliberate about language use: they provide suggestions, countersuggestions, explanations, and feedback to each other. A number of studies (e.g., Storch, 2002, 2009; Watanabe & Swain, 2007; Kim & McDonough, 2008; Tan et al., 2010) have reported more evidence of deliberations about language in the data of pairs who collaborated than in noncollaborative pairs. Thus these studies suggest that collaborative pair work provides greater potential for language learning than noncollaborative pair work.

A small number of studies have also shown direct links between the nature of dyadic interaction and language learning outcomes. Storch (2002, 2009) traced for the presence of linguistic items over which the learners deliberated in the pair talk appearing in the learners' subsequent individual production. She found such evidence in the data of the collaborative pair and in the expert/novice pair more so than in the noncollaborative pairs. Watanabe and Swain (2007), using a pre-/posttest design, found greater evidence of learning in the data of pairs who collaborated than in those who exhibited a noncollaborative orientation.

The nature of interaction has been found to have an impact not only on language learning outcomes but also on test performance outcomes. For example, Galazi (2008), who studied the interactional patterns of pairs of candidates in the First Certificate in English test, reported that pairs who exhibited a collaborative orientation achieved higher scores than those who interacted in a cooperative pattern.

In language classrooms, which are essentially social events (Block, 1996), interactions between participants may have multiple meanings and in turn different language learning outcomes. As a growing number of studies have shown, not all pair work qualifies as

collaborative, and some dyadic patterns may be counterproductive. A greater awareness and understanding of the nature of collaboration is therefore important in order to enhance the learning opportunities pair work offers language learners.

SEE ALSO: Interaction Approach in Second Language Acquisition; Languaging: Collaborative Dialogue as a Source of Second Language Learning; Sociocultural Theory

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Colonialism and Language Policy and Planning

ROBERT PHILLIPSON

Key factors that account for European languages and Christianity being transplanted worldwide are identified. The privileged position of excolonial languages has been consolidated through Western influence on educational policies and linguistic imperialism. The existence of alternative language policies that create greater social justice shows that much-needed change is possible.

European languages have accompanied political and economic influence, invariably backed up by military might. The present-day strength of English, French, Spanish, and Portuguese in the Americas, Africa, Asia, Australasia, and the Pacific is a direct consequence of successive waves of colonization. The dominance of English, rather than French, in North America and India is due to British military successes. The external colonization of English built on internal suppression of all the Celtic languages of the British Isles (Welsh, Gaelic, etc.).

The significance of language for political control was appreciated from its inception. In 1492 Queen Isabella of Spain was presented with a plan for establishing Castilian as "a tool for conquest abroad and a weapon to suppress untutored speech at home" (quoted in Illich, 1981, p. 35). For its author, Nebrija, the first modern grammarian and language planner, "Language has always been the consort of empire, and forever shall remain its mate" (p. 34). The language was to be fashioned as a standard in the domestic education system, as a means of social control, and harnessed to the colonial mission elsewhere.

Christianity accompanied European languages worldwide, just as Arabic has been integral to the spread of Islam. In central and southern America, the colonizers encountered well-established local languages of empire, and there was a protracted debate between missionaries seeking to preach the gospel using these languages, as opposed to those who favored Spanish (Heath, 1972). An official British survey of sub-Saharan Africa in 1938 noted that "until very recently 'nine-tenths of the education in Africa was in the hands of missionary bodies'. The same was largely true for most other parts of the tropical Empire and for indigenous people trapped within white settler societies" (Etherington, 2005, p. 11). Missions were part of "a larger drama—the spread of modernization, globalization, and Western cultural hegemony" (p. 4), with missionaries often preceding colonial armies and administrators.

Missionaries devised orthographies for initial literacy work and evangelization in many African languages. There is considerable debate about whether they "created" African languages invalidly (Makoni & Makoni, 2009). There is also serious concern about how missionaries in the 21st century are integrating their Christianization goals with English teaching, often covertly (Wong & Canagarajah, 2009). The Wycliffe Bible Translators, the partner organization of the Summer Institute of Linguistics, has the goal of making "the Bible accessible to all people in the language they understand best. To make this vision reality, Wycliffe also focuses on literacy development, community development and church partnerships" (Wycliffe, *n.d.*). Missionary goals worldwide are promoted through processes that are marketed as culture-free general education, whether a minority language

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or English is used. While it is true that Christianity has been appropriated for local purposes by colonized peoples, missionaries are integral to global dominance by the USA and its acolytes.

The colonizers of North America and India felt they had a divine right to promote their beliefs and language. By the mid-19th century English was being projected as

> a strong, a harmonious, a noble language . . . Before another century has gone by it will, at the present rate of increase, be spoken by hundreds of millions . . . That language is rapidly becoming the great medium of civilization, the language of law and literature to the Hindoo, of commerce to the African, of religion to the scattered islands of the Pacific. (Edwin Guest, 1838, quoted in Crowley, 1989, pp. 71–2)

In territories where Europeans settled, indigenous peoples experienced physical genocide, and survivors were subjected to Westernized education policies and linguicide: "we have room for but one language here, and that is the English language" (US President Theodore Roosevelt, 1919).

In the British Empire there was a recurrent debate about the merits of using English or the languages of colonized peoples in their education (Rahman, 1999). English literature was developed as a school subject in India, where it proved its worth as an instrument of social control, before being introduced in British schools (Viswanathan, 1989). British literature still dominates the curriculum of departments of English in postcolonial universities, building on the rationale that it is the ultimate humane education (see Phillipson, 2009, pp. 114–18, 138–9). In like fashion, in US colonies such as the Philippines, there was an insistence on an exclusive use of English in education from 1898 to 1940, and Filipinos had "the literary taste of an American" imposed on them, with lasting consequences (Martin, 2002). Russian was an instrument of ideological control in the Soviet Empire from Stalin's time onward, with concepts such as bilingualism and international language signifying the replacement of other languages by Russian (Rannut, 1994).

Examinations in British colonies followed the UK system, which has been retained in many former colonies. *Examining the World: A History of the University of Cambridge Local Examinations Syndicate* (Raban, 2008) triumphantly documents how the content and language of school education are still determined in Cambridge, in liaison with local education authorities in Brunei, Mauritius, Singapore, and elsewhere. The growth of English-medium "international" schools for elites worldwide has consolidated this influence and created a new market for this educational business. It strengthens the position of English and British influence worldwide.

Linguistic and Educational Imperialism

There are similarities between taking Christianity worldwide and the secular gospel of "global" English. The transplantation and export of languages is sometimes referred to as language spread, which is shorthand for a host of variables that can account for the expansion of a language. The term is misleading, however, since it can be interpreted as signifying an agentless process, as though languages, like living organisms, expand and contract according to nature's laws. In fact languages, like the many species of flora and fauna that Europeans have spread worldwide (involving ecological imperialism, Crosby, 1994), quintessentially involve human intervention. It is specific groups of humans who have taken their languages with them in each context, and successfully imposed them. Colonial policies have involved linguistic imperialism (Phillipson, 1992; Mühlhäusler, 1996). Gilbert Ansre, the Ghanaian sociolinguist, describes this (1979, p. 12) as

> [t]he phenomenon in which the minds and lives of the speakers of a language are dominated by another language to the point where they believe that they can and should use only that foreign language when it comes to transactions dealing with the more advanced aspects of life such as education, philosophy, literature, governments, the administration of justice, etc . . . Linguistic imperialism has a subtle way of warping the minds of even the most noble in a society and of preventing him from appreciating and realising the full potentialities of the indigenous languages.

Linguistic imperialism has these features:

- it is a form of *linguicism*, a favoring of one language over others in ways that parallel societal structuring through racism, sexism, and class: Linguicism serves to privilege users of the standard forms of the dominant language, those with convertible linguistic capital;
- it is *structural*: More material resources and infrastructure are accorded to the dominant language than to others;
- it is *ideological*: Beliefs, attitudes, and imagery glorify the dominant language, stigmatize others, and rationalize the linguistic hierarchy;
- the dominance is *hegemonic*, it is internalized and naturalized as being "normal";
- linguistic imperialism interlocks with *a structure of imperialism* in culture, education, the media, communication, the economy, politics, and military activities;
- in essence it is about *exploitation*, injustice, inequality, and hierarchy that privileges those able to use the dominant language;
- this entails *unequal rights* for speakers of different languages;
- language use is often *subtractive*, proficiency in the imperial language and in learning it in education involving its consolidation at the expense of other languages;
- linguistic imperialism is invariably *contested and resisted*.

In Africa "Education to many people came to mean simply the ability to speak and write English" (Mazrui, 1968, p. 186). "English was the official vehicle and the magic formula to colonial elitedom" (Ngũgĩ wa Thiong'o, 1986, p. 12). Although many investigative reports on the British Empire stressed the need to strengthen local languages, policies of economic underdevelopment and linguistic underdevelopment functioned in parallel, and tied the peripheral economies and languages to global centers of power.

One of the most durable legacies of colonialism has been language:

> Years after the attainment of political independence, the majority of African independent states have continued to practise linguistic policies inherited at the time of independence, where, on the whole, foreign colonial languages are more favoured than the languages indigenous to the African continent. (Organization for African Unity Inter-African Bureau of Languages 1985, p. 7)

The pedagogy of global English is based on five tenets (Phillipson, 1992): English is best taught monolingually; the ideal teacher of English is a native speaker; the earlier English is taught, the better the results; the more English is taught, the better the results; if other languages are used much, standards of English will drop. All five tenets are professional fallacies: the monolingual fallacy, the native-speaker fallacy, the early-start fallacy, the maximum-exposure fallacy, the subtractive fallacy. These fallacies are central to the billion-dollar "English-language teaching" business of the UK and USA: teacher training, the export of know-how, textbooks and reference works, and so on. The French similarly invest in promoting French internationally, as a means of maintaining political and economic

interests, but their pedagogy suffers from comparable weaknesses. The World Bank has perpetuated the false privileging of European languages in African education (Mazrui, 1997).

A Paradigm Change?

There are pressures to change this state of affairs. African heads of state have established an African Academy of Languages with a mandate to promote mother-tongue-based multilingual education, so as to ensure that a greater proportion of African children succeed in education. The Bamako International Forum on Multilingualism (January 19–21, 2009) approved a set of recommendations to African governments and to "aid" organizations that should facilitate a reversal of current educational paradigms (see www.acalan.org). Children who benefit from literacy and concept development in a local language are more likely to succeed in learning additional languages. Such policies are not "against" particular languages; they are intended to combat linguicist misuse of the languages. They reflect the fact that there is a consensus on how multilingual education can best be organized, and an awareness of the need for language policy and planning to be adjusted accordingly, as is now happening in many parts of the world (Skutnabb-Kangas, Phillipson, Mohanty, & Panda, 2009).

In the postcolonial world, a continuation of the asymmetrical relationship between North and South requires the complicity of local elites and a continuation of exploitative policies, including language policies. It also builds on the ethnocentricity and blindness to the nature of linguistic hierarchies and dominance that characterize books on 'global' English (reviewed in Phillipson, 2009). When Gordon Brown was due to make his first visit to India and China (January 17, 2008) as UK prime minister, he announced a plan to make British English "the world's common language of *choice*" and to ensure that it is taught at primary level as a core skill. He omitted to mention that English learning is very big business for the UK. What "choice" means for schoolchildren in the south has been lucidly explained by the Tanzanian scholar Casmir Rubagumya (2004, pp. 134, 139):

> European languages were *imposed* on Africa in the colonial period. African people as communities did not *choose* to learn those languages. . . . Individuals who do not go to school, and therefore do not learn European languages, do not choose not to go to school. They do not have access to schooling. . . . Giving false hopes that everybody can have access to "World English" is unethical.

Language policy and planning need to change so that the harmful consequences of the colonial linguistic inheritance are reduced.

SEE ALSO: Language and Globalization; Language and Identity in Africa; Linguistic Imperialism; Role of Linguistic Human Rights in Language Policy and Planning

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Commercial Translation

GEOFFREY S. KOBY

Commercial translation is the translation of a source text (a written original) into a written target text, generally by a freelance professional translator, for a commercial purpose and for remuneration, often with short deadlines. The translation industry operates largely using an agency model: translation agencies work with clients to determine translation needs, then contract with freelance translators who produce the translation using a "translate–edit–proof" model where one translator produces a translation, a second translator in the same language pair (the "editor") checks for accuracy and revises the translation, and a proofreader checks the target text for correctness. Translation agencies also provide other services to clients, such as desktop publishing. Some professional translators also provide the entire translation service to direct clients.

Commercially translated text types generally fall within two large domains: (a) business-related, legal, and financial translation; (b) scientific, technical, and medical translation. In these domains, the original document generally is characterized by a functional purpose which generally remains similar or identical in the translation, resulting in a translation approach in these texts that is normally communicative (as opposed to esthetic) and domesticating (i.e., making the translated text similar to original texts in the target culture for a similar or identical purpose). Advertising/marketing texts constitute a special challenge due to the combination of communicative and esthetic factors as well as the need to appeal to the reader. According to an American Translators Association (ATA) survey, commercial translators generally focus on one of the two broad domains listed above, with the greatest number specializing in business/finance (57%) and law (54%), or in medicine (46%) and industry and technology (39%), although many specialize in multiple areas (American Translators Association, 2007, p. 9). The majority of respondents to the survey worked as independent contractors, with 52% full time and 28% part time, while only 12% worked in-house in the private sector. Although it is difficult to determine the size of the translation market due to its fragmentation and freelance nature, the research firm Common Sense Advisory (www.commonsenseadvisory.com) reports that commercial translation industry volume is predicted to reach $25 billion by 2013. The US Bureau of Labor Statistics (2010) reports, "Interpreters and translators held about 50,900 jobs in 2008. However, the actual number of interpreters and translators is probably significantly higher because many work in the occupation only sporadically," while a recent European Commission report indicates an "assumed value of the translation and interpreting sector, comprising software localization and website globalisation activities, of 5.7 billion € in 2008" (2009, p. iv). The translation industry is "one of the most fragmented in the world . . . out of 700 participants [companies], 43% have no employees at all . . . and 36% have between 1 and 10 employees" (p. 23f.).

Literary translation is usually considered to be a separate area different from commercial translation due to differences in approach (esthetic and possibly foreignizing, i.e., highlighting differences instead of adapting to target-culture norms), deadlines (usually longer), and remuneration (usually less). Commercial interpreting (of an orally produced text, often in a legal, medical, or social services setting) is also considered to be a separate area, although some professional translators also interpret.

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Companies needing translation services expect professional translators to be able to write as specialists in a particular field in order to create texts that professionals in such a field (e.g., accountants or physicians) would be able to use with the same facility as documents originally produced in their culture. Professional translators sometimes hold degrees in a professional field (e.g., law or engineering), but frequently acquire passive knowledge of a field through coursework and other reading. As Clark puts it, "there is simply no such thing as, say, a Master's Degree in Translation of Hungarian Car Repair Manuals into English from Semilegible PDFs" (2010, p. 10). Thus, for instance, a business/financial translator is capable of researching and understanding (and reproducing) business plans, annual reports and other financial reports, minutes of business meetings, prospectuses for stock offerings, and so forth. This domain also impinges on the legal area due to the need to understand and translate excerpts from accounting and financial legislation. The legal area also covers translation of contracts, legal briefs, lawsuits, and court rulings, and so on. Patents, although containing formulaic legal language, are often not considered legal translation since most of the content is generally technical. Thus scientific/technical translators translate patents, as well as technical reports, specifications, engineering documents, manuals for equipment, software and hardware, scholarly and professional articles on scientific topics, and so forth. This domain also includes the translation of product inserts and packaging materials for consumer products. Some such translators also focus on localization of products, manuals, and software interfaces for foreign cultures; in these cases, a single source text is sometimes translated into multiple target languages for use in multiple world markets. Medical translators specialize in the biological, chemical, and professional jargon and language necessary to make their work comprehensible in the medical world. A specialized area of medical translation is medical surveys, which are validated in the source language, translated, back-translated, and revalidated to ensure that medical survey research in multiple languages is valid.

Some texts can be categorized into multiple specialty areas, such as a business plan or prospectus for a company specializing in medical technology, for example. Such a text may include description of the company's physical plant, a narrative of the company's history, specialized financial analyses, and specialized descriptions of the medical technology. In such a case, the translation may be divided among multiple specialized translators to ensure high quality.

In addition to subject matter specialization, commercial translators must have a variety of skills and carry out a variety of specialized activities. Translators normally receive assignments in electronic form via e-mail, meaning that they must handle e-mail attachments and keep track of many files, following agency-specified file-naming conventions. Fundamentally, all commercial translators carry out the core function of translation, typically while consulting a variety of reference works, particularly specialized bilingual dictionaries in the domain, bilingual Internet glossaries, parallel texts, and corporate Web sites. For the most part, they create their translation using one of several mainstream software tools such as the Microsoft Office suite, or other specialized text or graphics management programs. Frequently, translators are also requested to copy the formatting of the source text, at least roughly, which requires additional skills. Many translators also use what is called a Translation Environment Tool or TEnT, which is specialized computer-aided translation software designed to support professional translators by managing specialized terminology and storing the translator's sentences in a translation memory tool for future reuse. Some translators also use other specialized tools to localize software for a specific locale. Machine translation (MT; automatic translation by computer without human intervention), on the other hand, was until recently rarely used by professional freelance translators. A small number of professional translators working in large companies do prepare texts for input into MT software (pre-editing), or revise the software's output to make it acceptable for

human use (post-editing). The quality of MT has made a leap forward with the advent of statistically based MT applications, notably Google Translate (http://translate.google.com), and is therefore increasingly being integrated into TEnTs and working processes of some freelance translators in order to increase productivity.

It is often necessary for translators/translation agencies to educate their clients due to popular misconceptions about the nature, complexity, and cost of translation. Frequent misconceptions include the idea that any bilingual speaker is capable of translating, that anyone who has studied a foreign language is competent to translate, that students or academics are capable of professional translation, and that anyone armed with the appropriate dictionaries will produce an accurate and adequate translation. The American Translators Association has made two publications available on its Web site to assist professionals in combating this notion: Durban's *Translation: Getting It Right* (2003), and Durban and Melby's *Translation: Buying a Non-Commodity* (2008).

As noted above, advertising/marketing texts require a special translation approach. Following review of the source text, the translator may recommend that the client contract with an advertising agency in the target culture. However, some companies prefer to have a unified message across multiple cultures (e.g., the McDonald's corporate slogan "I'm lovin' it"/"ich liebe es"/"c'est tout ce que j'aime"), requiring a translator/team to adapt the source language message to the target language culture, while complying with corporate design guidelines. Such messages must be carefully planned to avoid misunderstandings or giving offense due to culturally or linguistically bound messages such as wordplays or specific images. This thorny problem was the topic of an entire special issue of *The Translator* in 2004 (Adab & Valdés, 2004).

In the USA, professional translators generally charge by the word (particularly for translation) or per hour (editing and formatting). In Europe, charges are often by line (a specified number of characters, often 55). Since most translators are freelance professionals running their own businesses, rates are negotiated between the agency/direct client and the translator. One point of contention is whether to charge by source text word count or target text word count.

Professional associations play a large role in the translation industry. The International Federation of Translators (FIT; www.fit-ift.org), an umbrella organization whose membership is more than 100 national translation associations, offers a triennial world congress, advocates for training, working conditions, and recognition of the profession, and publishes a journal and a newsletter. In the USA, the 11,000-member American Translators Association (ATA; www.atanet.org) is the major professional association. Its membership includes professional translators and translation agencies, and its activities include a major annual conference, regional and special-topic conferences, local chapters, scholarly publications, a member magazine, and a certification program. Similar programs exist in other countries. For instance, Canadian translator organizations operate at the provincial level, while in England the primary association is the Institute of Translation and Interpreting (ITI; www.iti.org.uk), and in Australia, the Australian Institute of Interpreters and Translators (AUSIT; www.ausit.org). Similar associations exist in other countries throughout the world. Other professional associations exist specifically for interpreters or literary translators. (See www.lexicool.com/translator_associations.asp for a list of translator and interpreter associations.)

One of the major issues for professional translators is the question of who is qualified to be a professional translator. In some countries, the term "translator" or its equivalent is a protected professional title, and only those who pass a government examination are "certified," "accredited," "authorized," or "sworn" translators or some similar title. In the USA, the status of translator is not protected, but professional certification is available through the American Translators Association, which started its professional certification

program in 1973. It currently includes more than 24 language combinations and more than 2,000 certified translators, despite a pass rate of less than 20% (Stejskal, 2003b, p. 13). Other credentialing options in the USA include federal government examinations for court interpreters (Stejskal, 2003a, p. 13), a credential for judiciary translators and interpreters in Spanish developed by the National Association of Judiciary Interpreters and Translators (NAJIT; www.najit.org/). According to the ATA survey, the majority of respondents (63.9%) are not certified translators (ATA, 2007, p. 6). In Australia, the National Accreditation Authority for Translators and Interpreters (NAATI; www.naati.com.au), a government-owned corporation, provides accreditation testing on a variety of levels (paraprofessional, professional, and advanced translator and interpreter). In the United Kingdom and Ireland, on the other hand, translators are not certified; instead, translators certify their translations as a member of a professional organization (Stejskal, 2002, p. 12).

According to the ATA survey, the majority of commercial translators (61%) were not born in the USA (ATA, 2007, p. 5). Thus they often will have been trained in institutions in their home countries. The training of these survey respondents varies widely, but most (88%) hold at least a bachelor's degree and more than half (55%) hold either an MA or a PhD (ATA, 2007, p. 8). However, one cannot assume that this training was in translation and interpreting studies; instead, many translators hold either a subject-matter degree or a general degree in a foreign language and culture (which may be English). Increasingly, however, the translation industry is becoming professionalized, and translation studies is becoming a recognized academic discipline with its own organizations and curricula offering professional training and professional degrees for prospective translators.

SEE ALSO: Computer-Assisted Translation; Legal Translation; Medical Translation; Post-Editing of Machine Translation; Scientific and Technical Translation; Translation, Localization, and Internationalization; Translation Tools

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Common European Framework of Reference

ARI HUHTA

This entry focuses on the *Common European Framework of Reference for Languages: Learning, Teaching, Assessment* (CEFR), which, in the words of a non-European observer, is "one of the most ambitious examples of the gradual formation, shaping and . . . implementation of language education policies" (Byrnes, 2007, p. 641). The CEFR was designed by the Council of Europe (CoE), a pan-European organization that promotes human rights, mutual understanding, parliamentary democracy, and the rule of law. It advocates linguistic rights and language learning as a way of enhancing mutual understanding, and plurilingualism—an individual's ability to use more than one language—is a key concept in CoE language policy (see CoE, 2008).

The roots of the Common Framework go back to the 1970s to definitions of notions and functions needed for communication (e.g., the Threshold Level by van Ek, 1977). Concrete development of the CEFR started in the early 1990s, and the final version of the Framework was published in English and French in 2001 (see North, 2000; Little, 2006, 2007, for details). The Framework has been translated into dozens of languages: currently, 33 language versions exist, including such non-European languages as Arabic, Chinese, and Japanese. For an updated list of language versions, go to www.coe.int/lang.

According to the Framework (CoE, 2001, p. 1), it provides:

> a common basis for the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe. It describes in a comprehensive way what language learners have to learn to do in order to use a language for communication and what knowledge and skills they have to develop so as to be able to act effectively.

By doing the above, the CEFR improves the transparency of language education, which will also "facilitate the mutual recognition of qualifications gained in different learning contexts, and accordingly will aid European mobility" (CoE, 2001, p. 1).

The view of language in the CEFR is action-oriented and considers "users and learners of a language primarily as 'social agents', i.e. members of society who have tasks (not exclusively language-related) to accomplish in a given set of circumstances, in a specific environment and within a particular field of action" (CoE, 2001, p. 9). Although the CEFR does not recommend particular teaching or testing methods, the action-oriented view strongly suggests that communicative, task-based approaches are particularly compatible with the CEFR (Little, 2006, p. 169). The CEFR sees language learning as a lifelong process that is not limited to school and that also includes informal learning.

In line with the CoE's policies, the CEFR promotes plurilingualism and intercultural communication, which are aims shared by the European Union, the most important European political and economic organization. This has obvious implications for language curricula in Europe. The CEFR also introduces the idea that learners need not all learn in the same way, nor exactly the same things. It is, furthermore, entirely natural for learners to acquire "partial competences"—for example, an ability to understand a language without being able to speak it equally well.

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The CEFR includes two descriptive dimensions, horizontal and vertical. The vertical dimension is the best known and most widely used part. It is a proficiency scale comprising six successive levels: A1, A2, B1, B2, C1, and C2. Levels A2, B1, and B2 can be split into two sublevels thus increasing the total number of levels to nine (see North, 2000, 2007, on the origins of the CEFR scales). There are global scales for written and spoken reception (i.e., reading and listening), and for written and spoken production and interaction. Fifty-four specific scales were developed to describe different communicative activities, strategies, and learner competences within the above six main categories.

Central to the CEFR are "can do" statements: descriptors defining specific instances and contexts of language use. They are the building blocks of the scales but they also link the scales to many content categories of the CEFR. These statements can also link different aspects of language education, such as curricula, textbooks, and assessments.

The horizontal dimension of the CEFR consists of taxonomies or descriptions of different types of contexts of language use. These include domains (personal, public, occupational, educational) and specific situations of language use within domains; themes (e.g., daily life, travel, education); communicative tasks and purposes (e.g., understanding instructions, making inquiries about work); activities (e.g., reading correspondence, speaking from notes); strategies (e.g., inferring from context); texts (e.g., text types); and conditions and constraints of language use. In addition, the CEFR gives an account of different general and language competences. The former include, for example, the ability to learn and study, which is essential for lifelong learning. The latter cover linguistic, sociolinguistic, and pragmatic competences, which are obviously based on theories of communicative competence developed in applied linguistics.

Impact of the CEFR

The Framework has had considerable impact on language education in Europe—and beyond, as indicated by its translation into several non-European languages. However, its influence varies between countries and areas of language education. The CEFR has had a significant effect on European-level language policies: recently, the Council of Europe issued a resolution (CoE, 2008) recommending that its member states utilize the CEFR more in their educational systems. Also, the European Union considers the CEFR compatible with its language policies and has supported several related projects (Little, 2007, p. 647), including its own major study of foreign language proficiency in secondary education (Jones & Saville, 2009).

Of the areas of language education, CEFR impact has been strongest in language assessment. The international examinations, in particular, have quickly aligned themselves with the CEFR levels (Little, 2007, p. 648); impact on national examinations has been more varied (see Eckes et al., 2005, for details). The Framework's influence on curricula and textbooks has also been quite considerable but, again, highly variable. In some countries, such as France and Finland, the CEFR has profoundly shaped national curricula (Bonnet, 2007; Hildén & Takala, 2007) but in others it has been ignored so far. In contrast, the role of the CEFR in teacher education and especially classrooms has been modest (Jones & Saville, 2009, p. 54), except perhaps via the European Language Portfolio (Little, 2007, p. 649; see also the examples described in the "Case studies" of the use of the CEFR found at www.coe.int/portfolio).

The view that the impact of the CEFR has been smallest in the language classroom is shared by North (2007, p. 659), who estimates that the Framework's aim of encouraging "practitioners to reflect on their current practice, particularly to analyzing practical language learning needs, setting objectives, and tracking progress" has not been achieved. However,

much more progress has been made in establishing "a common metalanguage to talk about objectives and assessment," and in agreeing on common reference points (North, 2007). According to North, the most significant effect of the CEFR is that people working in different pedagogic cultures and areas of language education now understand each other much better.

An important change that the CEFR has brought about in many curricula and assessments is that language proficiency is no longer defined only in terms of grammar and vocabulary—not even as functions and notions—but also as qualitatively and quantitatively different stages of development. Furthermore, criterion referencing is becoming more common in assessment: that is, learners are assessed not by comparing them with each other but with reference to what they can actually do, as described in the CEFR levels.

Space does not allow a detailed treatment of the many applications that have clarified and illustrated the Framework or mediated it to language pedagogy and assessment (see Little, 2006, and the CoE Language Policy Division's Web site at www.coe.int/lang for more information). Perhaps the single most important and widespread application of the CEFR is the European Language Portfolio (ELP), which makes use of both the horizontal and vertical dimensions of the CEFR and combines learning, teaching, and assessment. The ELP helps language learners to become more autonomous, self-reflective, and capable of setting their own goals and assessing their progress toward those goals with the help of CEFR scales and "can do" statements. The portfolio is also used to record the learner's linguistic achievements, both formal and informal. It thus supports plurilingualism, partial competences, and lifelong learning, which are all central to the CEFR (cf. Little, 2005, 2006, 2007; www.coe.int/portfolio). The Council has validated about 100 different ELPs for a range of levels and types of language education. However, it is not known how many teachers and learners actually use them; it appears that an ELP needs integration into the curriculum if it is to be used on a continuous basis (Little, 2007, p. 652).

Another major development that has acquainted considerable numbers of learners with the CEFR is DIALANG (www.dialang.org). DIALANG is a free, Internet-based language assessment system in 14 languages based on the CEFR; it provides learners with feedback on the strengths and weaknesses in their proficiency (Alderson, 2005). To a considerable extent it too integrates learning with assessment (and with teaching, depending on how it is used). Importantly, it was the first professionally developed assessment system whose content was based on the CEFR categories of functions, communicative activities, texts, and so forth. It was also the first to design procedures for linking test results with the CEFR levels. About 50,000–100,000 persons take DIALANG tests each year, which means that it has served as a practical introduction to the CEFR for hundreds of thousands of learners so far.

Finally, an important further impact of the CEFR should be noted. The challenges in applying the Framework have also benefited research. Aligning different areas of language education with each other is now more advanced, especially in assessment (cf. the *Manual*; CoE, 2004/2009). More generally in applied linguistics, there is now renewed interest in studying how linguistic forms and functions relate, which is needed when language-specific versions of the CEFR are developed (e.g., Bartning, Martin, & Vedder, 2010). Furthermore, DIALANG, an application of CEFR, led to new openings in diagnosing L2 development and its problems (Alderson, 2005).

Issues and Challenges

Although the CEFR has been welcomed by many it has also engendered criticism and even fears. The perceived problems with the CEFR can be divided into two related types: issues with the document itself and issues with its use.

The CEFR is a long, extensive document because it aims to cover so much of what is involved in using and learning languages. Thus, anybody wishing to understand the Framework needs to spend considerable time studying it, which likely means that most nonlanguage specialists, many of whom nevertheless make policy, admission and other decisions with reference to the CEFR, never actually read it properly. The CEFR is also criticized for being difficult to understand because of vague and imprecise expressions in places (e.g., Alderson, 2007, p. 661). Responses to a survey of 30 CoE member states indicated that there is indeed a need for a reader-friendly summary of the CEFR (Martyniuk & Noijons, 2007, p. 8).

Some researchers criticize the construct validity of the CEFR scales because of the way they were designed (Fulcher, 2004) or because they are not based on findings from second language acquisition research on how proficiency develops (Hulstijn, 2007).

Certain problems with the CEFR relate to imbalance in the quality of its scales and descriptors. First, although many CEFR scales have a sound empirical basis, some do not. Spoken interaction and production are elaborated and empirically scaled but writing, reading, and listening scales have a weaker empirical basis. Definitions of comprehension, in particular, have been criticized for not making use of relevant theory and research (Alderson, 2007, p. 661). More generally, the CEFR is stronger in describing interactive aspects of proficiency than psycholinguistic and cognitive aspects of language use (Weir, 2005, p. 294). Second, the lower part of the scale (A1–B2) is better defined than the two highest levels, C1 and C2; many C2 descriptors, in particular, have no empirical basis (North, 2007, p. 657). Supplementary documents elaborate A1–B2 (i.e., Breakthrough, Waystage, Threshold, and Vantage documents) but detailed definitions of C1 and C2 are only now emerging (see Bartning et al., 2010; North's compilation of C1–C2 descriptors at the European Association for Language Testing Assessment Web site at www.ealta.eu.org/resources.htm; the Profile Deutsch project at www.goethe.de/lhr/prj/prd/deindex.htm; the English Profile project at www.englishprofile.org/).

A further imbalance in the CEFR is that it does not properly address lingua franca use of language or contexts in which two or more languages are used simultaneously. The implicit assumption appears to be that languages are used between native and non-native speakers, and that only one language at a time is used.

The second set of issues concerns the use of the CEFR. Its high international profile has led to criticisms that the CEFR is increasingly being used as a tool of power and centralized control, and as an instrument for harmonization that decreases diversity in language teaching and assessment (e.g., Fulcher, 2004). Claims of linkage to the CEFR may often be made for commercial reasons, simply to promote the sales of courses, textbooks, and tests without empirical backing (cf. CoE *Manual*, CoE, 2004/2009) or adherence to the values and concepts underlying the CEFR (Alderson, 2007, p. 661; CoE, 2008, p. 9). This has led to calls for the Council or some other international body to validate such claims (Alderson, 2007, p. 662), possibly similarly to the validation of European Language Portfolios by the CoE.

Additional challenges concern the use of the CEFR for purposes and audiences it was not originally intended for. It was designed with adults' needs in mind, although learners as young as 15 or 16 were involved in constructing the descriptive scales. Thus, recent applications of the CEFR in curricula for young learners (e.g. Little, 2006; Hildén & Takala, 2007) have added material relevant for children to the descriptions. Further new areas include higher education and the teaching and assessing of language for specific purposes. Here, too, new content needs to be added to the CEFR's descriptive categories and scales. Recently, the use of the CEFR in first language education has also been investigated (North, 2007). Little is yet known about the success of all these new extensions to the Framework coverage.

Given the influence of the CEFR in language testing, it is somewhat ironic that the Framework has turned out to be inadequate as a basis for test design and even for linking purposes (Weir, 2005; Alderson et al., 2006). Consequently, a manual to guide the linking of assessments with the CEFR has been created (CoE, 2004/2009), as well as specific tools to help to analyze test content with reference to the CEFR (e.g., Alderson et al., 2006). Importantly, benchmark examples of speaking and writing performances, and comprehension test items have been published by the CoE to illustrate the reference levels for both pedagogic and assessment purposes. Conveniently, the most robust multilingual speaking samples are available online at www.ciep.fr/publi_evalcert/dvd-productions-orales-cecrl/index.php.

Finally, CEFR users face the neglected question of evaluating to what extent the content of their curricula, textbooks, tests, and so on are aligned with the content of the Framework (Kaftandjieva, 2007). Alignment with the CEFR scale can be complex but procedures nevertheless exist for estimating how successful such (vertical) linking is. In contrast, procedures for estimating successful horizontal content alignment are lacking. Even the *Manual* (CoE, 2004/2009) only offers procedures for describing a test or other content in terms of CEFR content categories. It is possible that the open-ended nature of the CEFR makes it difficult to estimate the adequacy of content alignment, but methods have been developed elsewhere that could be explored for the CEFR (see Kaftandjieva, 2007). Until then, uncertainly lingers with claims of linkage based only on vertical linking with the CEFR.

The Future of the CEFR

The impact of the CEFR is likely to remain strong in Europe and beyond despite occasional criticisms of, for instance, its harmonizing effects, and even instances of misuse. Its influence is increasing with every new purpose and context in which it is used. Particularly important in this respect will be the European Survey of Language Competences by the European Union, because the study makes extensive use of CEFR content and levels (see Jones & Saville, 2009).

As described above, the CEFR is used for so many purposes that, inevitably, its content is not sufficient for all purposes. There are at least two ways to address this: either to design an updated version of the CEFR, or to continue to create external resources—such as the ELP—to complement the Framework. Of course, a combination of the two approaches is also possible. It is not known if and when new versions of the CEFR might be designed; this may be a largely political decision to be made by the CoE member states. In contrast, the proliferation of external resources is likely to continue in the future.

As mentioned above, surveys of users indicate that the Framework is not easy to understand in places. New CEFR-related materials might, therefore, include some simplified versions of the Framework or detailed guidelines on its use and interpretation.

Since the wording of some descriptors has been shown to be problematic (Alderson et al., 2006), a revision of the "can do" statements might also be considered. That would, however, require a new major study and recalibration of the statements; this might be complemented by other empirical approaches recommended in, for example, Hulstijn (2007). Probably the nonempirical CEFR descriptors (North, 2007, p. 657) would also be included in the study.

The Framework will continue to be applied in new contexts, most importantly for young learners and in first language education (North, 2007). There will also be further language-specific elaborations of the linguistic, notional, and cultural content of the CEFR levels (cf. Little, 2007, p. 649) and research that aims at validating such elaborations (cf. Little, 2007, p. 649; Bartning et al., 2010).

The CEFR has clearly made a major impact on national and international policy making in Europe. An obvious future development is to strengthen its current limited role at the classroom level. This would require that curricula, textbooks, teacher training programs, and local tests embrace the goals and view of language of the CEFR more widely and thoroughly than is currently the case. Only in that way can the aims of the CEFR really be achieved.

SEE ALSO: Assessment Across Languages; Council of Europe Language Policy and Planning; Language Policy and Multilingualism; Language Policy and Planning: Overview; Self-Assessment

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Community Interpreting

SONJA PÖLLABAUER

Community interpreting (CI) refers to interpreting in public service institutions and differs from other types of interpreting in a number of aspects (e.g., mode of delivery, interaction situation, level of formality/orality present, level of interpreter involvement, status and roles of the participants, level of professionalization, and power asymmetries) (Hale, 2007, p. 31). Compared to conference interpreting, which has achieved the highest level of professionalization within the interpreting world since the 1950s (Pöchhacker, 2004, p. 29), CI is sometimes described as "the poor relation" (Mason, 2001, p. i), a phrase which reflects the status CI has had in the interpreting community until recently. In spite of its low prestige, CI can be said to be one of the most common and oldest types of interpreting (Roberts, 2002, p. 157). Through the centuries, interpreters have had to bridge communication barriers between speakers of different languages and cultures. In interpreting studies (IS), CI has long been neglected. Throughout the 1990s it has gradually become an accepted field of research (Pöchhacker, 2004, pp. 28–9). With respect to practice and training though, its professionalization and acceptance among practitioners, clients, and the public still varies, with a high level of service provision in only a few pioneer countries and the majority of countries lagging behind. This entry will provide an overview of different aspects of CI, the state of training and CI research. It attempts to address both spoken and signed language (SL) interpreting, specifically highlighting aspects in which SL, which enjoys a higher degree of professionalization, differs from spoken-language interpreting.

Community Interpreting: Definition and Labeling

CI differs from "international" (conference/diplomatic) interpreting in that it takes place "within the community" ("intra-social" interpreting) (Pöchhacker, 2004, p. 16). It can be defined as interpreting between individuals (migrants, refugees, members of minority and indigenous groups, occasionally tourists or other foreign-language visitors) and officials of public service institutions (legal, medical, therapeutic, and social settings) in a given society. Typical venues are police stations, emergency rooms, hospital wards, doctors' offices, immigration and social service departments, schools, and welfare and community centers.

The term CI is often used in juxtaposition to the more prestigious conference interpreting, with other types (business, diplomatic) ranging somewhere between these two poles. It is also used as an umbrella term for different types of interpreting in public settings (public service, legal, medical interpreting) (Roberts, 1997, p. 9). Court interpreting is sometimes (especially in countries with a low level of professionalization), though not always, regarded as part of CI (Pöchhacker, 2004, p. 30). If it is seen as separate, other extra-court "legal" interpreting assignments may nonetheless count as CI and often show the same poor working conditions (Ozolins, 2010, p. 199).

Around the world, this type of interpreting is discussed under different labels, which are not always used synonymously (Hale, 2007, pp. 27–30): *Community interpreting* is often, though not exclusively, used in Europe and the USA; the UK switched to *public service interpreting* as the qualifier "community" became too confusing within a larger EU context

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(Corsellis, 2008, p. 7), and, some feared, might also be confused with *community work* and thus perpetuate the notion that CI involves unpaid ad hoc services rendered by untrained volunteers (Bowen, 1999, p. 319). Other used terms are *dialogue interpreting*, *liaison interpreting*, *cultural interpreting*, *community-based interpreting* (Roberts, 2002, pp. 158–61) (the list is not exhaustive). Non-English-speaking countries often borrow the English terms (typically "community interpreting"), or coin loan words on the basis of the English labels, for example, *interprétation sociale*, *interprétation communautaire*, *interprétation en milieu social*, *interprétariat* in France, *interpretación comunitaria*, *interpretación social*, *interpretación (e traducción) en los servicios públicos* in Spain (Bastin, 2001), *Kommunaldolmetschen* in Austria (Pöchhacker, 2000, p. 39), or *mediatore linguistico-culturale* in Italy (Pöchhacker, 2008, p. 22). Some simply call it *interpreting* without an additional qualifier and have pled for an end to this "battle over what could be called 'adjectival interpreting'" (Ozolins, 2000, p. 30).

Though it is true that CI is simply interpreting, it certainly is not easier than other types of interpreting but can even be more risky due to the potential consequences of interventions and distortions in accuracy (Hale, 2007, p. 32). In 1995, Brian Harris opened the First International Conference on Interpreting in Legal, Health, and Social Service Settings in Toronto, claiming: "Community Interpreting is where the action is" (Community interpreting, 1995, p. 14). This statement reflects very well what makes CI different: Interpreters are potentially faced with highly emotional, high-risk situations over which they have low control (Dean & Pollard, 2001). Community interpreters often render private, and intimate issues into another language. In such encounters, much is at stake, as Smirnov points out: "Sadly enough it is not the life of an interpreter, but that of his client that may become a price paid for a poor rendition" (1997, p. 215).

Characteristics of Community Interpreting

CI differs from other types of interpreting in a number of specific parameters.

Mode of Delivery

Consecutive interpreting (with or without note-taking) is typically used for spoken-language encounters, and simultaneous or consecutive interpretation for sign language contributions (Russell, 2005). Chuchotage (whispered interpretation), a type of simultaneous interpreting, and sight translation (for the translation of written material) are also used frequently (Hale, 2007, p. 32). Phone interpreting has been employed since the 1970s (Pöchhacker, 2004, p. 30); recently new techniques (video interpreting, remote simultaneous interpreting, VoIP interpreting) have also been tested in CI (legal and health-care) settings (Korak, 2010, pp. 19–22). Especially for SL interpreting video interpreting has become a growth market (National Association of the Deaf, 2011). CI encounters are usually bidirectional, that is, interpreters have to translate into both their working languages. In spoken-language interpreting, interpreters do not work in teams as in conference settings, but are almost always on their own. In SL interpreting, interpreters also often work in teams (Jones, 2007).

Level of Formality/Orality

Exchanges in CI settings are usually dialogical with two or more speakers interacting. This may entail specific problems for the interpreters with respect to discourse management (e.g., overlapping talk, confusion in turn taking, specific cross-cultural communicative strategies). The "texts" community interpreters render are—unlike monologic, prepared talk ("written to be spoken")—usually shorter patches of unplanned speech of a wide

variety of register, including slang, dialects, and nonstandard language use (Hale, 2007, pp. 31–2). Encounters may be both highly formal and informal, with different levels of technicality. The languages used in CI are often languages of limited diffusion or indigenous languages (Ozolins, 2000, p. 21) with a concomitant low status of its speakers and low availability of (qualified) interpreters for these languages, as opposed to so-called "world languages" often used in other settings.

Level of Intimacy/Emotionality

In CI, delicate and personal matters are on the agenda, and interpreters cannot hide behind the protective walls of an interpreting booth. They are right in the heart of "action" and sometimes become the center of attention, criticism, or anger themselves. Interpreters are faced with "disease, poverty, migration, labour, human rights" (Setton, 2007, p. 58) from a very different perspective. Community interpreters also have a gate-keeping function: They are mediators ("gate-keepers") between the host-country officials, who have the power to grant or withhold certain services, and the individuals applying for these services (information, subsidies, etc.).

Level of Involvement

CI takes place in face-to-face settings with a (usually) limited number of participants (prototypically three). Encounters often evolve from dyadic to triadic "three-way exchanges": Interpreters intervene actively and frequently turn into a third party in the interaction (Mason, 2001, p. ii). The often assumed "invisibility" of interpreters turns out to be a myth: "the interpreter cannot avoid becoming involved as a participant, whether through their own translational filter (e.g. subtle modifications to the register or pragmatics of source speech) or through the need to comment on their own or others' linguistic behaviour" (Mason, 2001, p. ii). Performance standards applied to other settings cannot be automatically transferred to CI (Setton, 2007, p. 59). Though the principles of neutrality and detachment, which are common and commonly accepted precepts in ethical codes for interpreters, should principally also be applicable to CI, this is in fact not always true. In CI settings, interpreters often have problems defining their role and staying within the confines of their role: Aspects of neutrality/involvement and attachment/detachment have been a major issue of debate among practitioners and in research. This is partly caused and certainly exacerbated by the fact that (at least in spoken-language interpreting) community interpreters are not always trained interpreters with a formal qualification but very often "natural interpreters" (Harris, 1977), that is, unpaid and untrained individuals who are called upon to interpret on the basis of their presumed language competence (e.g., family members, friends, strangers, and co-workers). The use of such lay interpreters is still widespread in CI, especially in countries with a low degree of professionalization of CI, but sometimes even in countries with a more professionalized stance toward interpreting. Even children are used (in some settings on a regular basis) as interpreters—with potentially harmful consequences (Pöchhacker, 2000, p. 175).

The interpreters' roles in these interaction constellations are very complex: Community interpreters always work for two clients simultaneously. They may be required to simultaneously serve both sides and "help" them, meaning they "can, from two opposing points of view, be regarded as potential renegades" (Wadensjö, 1998, p. 34). Interpreters, especially untrained interpreters, often exceed their authority: There are accounts of interpreters working actively "against" one side, distorting information, and intervening unprofessionally (Barsky, 1994, p. 43 & passim). Clients sometimes mistrust interpreters due to their affiliation to a specific ethnic group (Barsky, 1994, p. 48), their language (language of the "enemy"), their "wrong" age (too old, too young) or gender (Pöllabauer, 2005, pp. 104–7). In the case

of such basic mistrust and prejudice, important details may well remain unsaid which may have serious consequences for the outcome of an interaction.

Level of Non-Equality/Power Asymmetries

Many CI settings are characterized by an inherent power asymmetry: The mechanism and institutional (sociocultural) "rules" of the host country are unknown and the entire system and situation potentially bewildering to migrants or members of minority groups (who may sometimes have very little schooling and be illiterate). Very often, they are required to follow Kafkaesque, implicit, and unspoken rules to get along. Culture-specific forms of behavior and host-country communicative patterns may appear strange to them, which is why community interpreters are also sometimes called upon to "help" these clients and explain cultural differences ("cultural mediation" or "cultural interpreting") (Pöchhacker, 2000, p. 241). There is no consensus, however, as to the extent to which cultural mediation, which often involves more than interpreting, is deemed adequate; in some fields and/or countries, the role of interpreters as cultural mediators is not regarded as being acceptable, while in others (e.g., Italy) it has recently even been advocated by some institutions, mostly in the health-care sector (Pöchhacker, 2008).

Conflicting Goals, Social Tension, and Lack of Awareness

Speakers in CI settings often have conflicting goals (e.g., asylum-seeker vs. asylum-granting authority). Resolving vital requests for one party may involve curtailing the other party's interests. CI is also a field in which social tensions, racial prejudice, and ethnic tensions may have a considerable influence on communicative encounters and their outcome: The provision of adequate language services for migrants is only seldom a top priority for policy makers and often met with low acceptance among the public; immigration issues are highly controversial in some countries; and members of minority groups are faced with antagonism and prejudice factors, which bear down on the work of interpreters.

Interpreting Practice and Service Provision

In only a few countries is CI a fully fledged profession. Compared to other forms of interpreting, CI often remains a low-status type of interpreting with little training among practitioners, lack of recognition, and low remuneration (Pöchhacker, 2004, p. 30). The provision of CI services (or the lack of such services) clearly reflects a society's stance toward equal access, civil rights, and immigration (Wadensjö, 2001, p. 37). A higher level of professionalization has been achieved in SL interpreting (Napier, 2004).

On a national level, professionalization is often triggered by the introduction of antidiscriminatory legislation. The Court Interpreters Act led, for instance, to the professionalization of court interpreting in the US in the 1970s; at the same time, new legislation prompted the professionalization of SL interpreting and the development of a national association of interpreters (Registry of Interpreters for the Deaf, RID) (Pöchhacker, 2004, p. 29). Apart from these two trailblazing events, however, professionalization in CI has, if at all, mostly been achieved in the legal and medical fields (Pöchhacker, 2004, p. 30), and mostly in countries with "an explicit immigration policy" (p. 30) and a climate in which fair and equal access to services and the availability of adequate interpreting services are considered important and recognized by the majority of the population (Wadensjö, 2001, p. 34). In many countries worldwide, the situation is less favorable: Institutions continue to use lay interpreters with no or hardly any training, who are recruited on an individual, ad hoc basis, often with no payment at all. There are no or highly divergent training measures, and no accreditation systems, professional guidelines, or professional organizations. The

interpreting market is hardly regulated, and anyone can serve as an interpreter on the basis of his or her alleged interpreting skills. There are few to no quality controls and little awareness as to the dangers of using untrained interpreters (Ozolins, 2000, 2010) even though certification/credentialing would be highly important.

In terms of the spectrum of service provision (Ozolins, 2000), on the one end, there are a very few countries that provide fully comprehensive interpreting services, including full-scale training (possibly even train-the-trainer and train-the-user programs), national registers of interpreters, accreditation, a professional body with agreed performance standards, adequate remuneration, and political support for equal access and service provision for foreign-language-speaking individuals; this mainly applies to "pioneer" countries such as Australia and Sweden, or the US and Canada for SL interpreting. Countries which completely "deny the existence of multilingual communication issues" (Ozolins, 2000, p. 21) are at the opposite end of the spectrum. Between these two poles, a large number of countries rely on diverse ad hoc or generic approaches with institutions trying to cover language barriers in different (often highly divergent) ways, but with little political and legislative support.

Training Situation

Training is often regarded as the key to professional service provision. In CI, it nonetheless remains one of the problem areas, with little or no training available for spoken-language interpreting in many countries. Only pioneering countries such as Australia or Sweden have implemented training programs and interpreting services on a large scale as early as in the 1960s and 1970s (Pöchhacker, 2004, p. 30). Today, the training spectrum ranges from nonexistent in some countries (usually countries with little immigration or acceptance of immigration), ad hoc training measures and semi-institutionalized training, to full-scale, comprehensive training provision (the exception) (Ozolins, 2000). The training situation differs with respect to SL interpreting: SL interpreter training is available in several countries worldwide (also at a university level) (Napier, 2004).

With respect to spoken-language interpreting, training often takes place outside academic settings: University or college training programs (usually at the postgraduate level) are underrepresented. Higher education institutions have only recently started to integrate CI into their curricula (often within single seminars or modules), which previously had focused primarily on conference interpreting. Training concepts are highly divergent with regard to duration, content, admission criteria, testing, teaching approaches, language combinations, degrees awarded, and so forth (Hale, 2007, p. 168). In a nonacademic context, training is offered by interpreting services and user institutions for their (in-house) interpreters. Distance/online training has been explored by some training institutions (Roberts, 2002, pp. 170–1).

Some of the challenges in CI training are: a lack of qualified trainers, which has triggered the development of train-the-trainer courses (Corsellis, 2008, p. 65); problems in attracting students with adequate language/cultural skills (Hale, 2007, p. 169); deciding on the most relevant content of training measures, and adequate teaching methods (Pöchhacker, 2004, pp. 186–7); lack of awareness among users as to the importance of using qualified interpreters, leading to the establishment of train-the-user courses (Corsellis, 2008, pp. 118–49); the development of adequate screening and assessment methods (Corsellis, 2008, pp. 60–9).

Research

Since the 1990s CI has established itself as a valid field of IS, with the "social turn" in IS leading to a shift from cognition to interaction (Pöchhacker, 2008, p. 39). Before that,

beginning in the 1950s, interpreting research had mainly focused on conference interpreting. Research on CI was fuelled by the Critical Link conference series (starting in 1995, with successive conferences in 1998, 2001, 2004, 2007, and 2010), which has brought together practitioners, trainers, and researchers.

CI research has always been attractive to scholars from other disciplines and been dealt with from different theoretical/disciplinary angles (e.g., cultural studies, discourse studies, linguistics, pragmatics, sociology) (Pöchhacker, 2004, pp. 47–60). Some of the most influential publications have been written by authors with a different disciplinary background, for example the seminal publications by Berk-Seligson (1990), Wadensjö (1998), Barsky (1994) on spoken-language interpreting, and Metzger (1999) and Roy (2000) on SL interpreting; these latter two especially have succeeded in bridging the gap between research on SL interpreting and spoken-language interpreting with their broad focus and wide reception in IS. CI research broadly focuses on diverse aspects of interaction and the dynamics of mediated discourse.

SEE ALSO: Conference Interpreting; Health-Care, Medical, and Mental Health Interpreting; Legal Interpreting; Professionalization of Interpreters; Signed Language Interpreting Profession

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Comparative Phonetics and Phonology

RACHEL HAYES-HARB

Introduction

It has long been observed that non-native accents exhibited by second language learners are not random in their features; rather their features seem to be predictable at least in part from the native language(s) of the learner. That is, native Japanese speakers learning English tend to produce accented English speech that is typical of native Japanese speakers, and that also appears to reflect the transfer of aspects of the phonetics and phonology of Japanese into their English speech. For example, it is not uncommon for native Japanese speakers to produce the English words "read" and "lead" as homophones. Japanese does not have the phonemes /r/ and /l/; instead, Japanese has a single liquid category, which native Japanese speakers presumably transfer into their English productions, replacing both English /r/ and /l/. Similarly, as a group, native English speakers learning Spanish tend to produce characteristically English-accented Spanish. For example, in English, syllable-initial voiceless stop consonants are aspirated (as in [t^hu] "two"), while in Spanish they are not (e.g., [tu] "you"). Native English speakers typically inappropriately aspirate voiceless stop consonants when speaking Spanish, presumably as a result of the transfer of an aspiration process from their native English to Spanish.

The observation that the native-language sound system seems to impact the second language sound system is not in fact a matter of any serious controversy in the second language acquisition literature. On the other hand, the extent of this impact, the reasons for it, and how non-native accents can be overcome by learners are topics of debate among second language acquisition researchers, and have inspired a large body of research spanning several decades. The focus of this entry will be on the historical progression of theories of the effects of the relationship between native-language and second language sound systems on second language acquisition, beginning with the contrastive analysis hypothesis and its revisions, and concluding with current models of second language speech perception and production.

The Contrastive Analysis Hypothesis

In 1957, Skinner published *Verbal Behavior*, wherein he proposed that language acquisition was a process of acquiring a set of habits through learning and reinforcement, reflecting the then-current philosophy of psychology known as behaviorism. In the same year, Lado published *Linguistics Across Cultures: Applied Linguistics for Language Teachers*, in which he detailed what became known as the contrastive analysis hypothesis. Lado's (1957) hypothesis was heavily influenced by Skinner's theory of verbal behavior, and also by earlier comparative linguistics work by Fries (1945), Weinreich (1953), Haugen (1956), and others. According to Lado (1957), the linguistic habits developed over the course of native-language acquisition are carried over into the second language: "Probably because the use of the sound system of a language operates as a system of automatic and semiautomatic habits, it is extremely difficult to change anything in that system" (p. 11).

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In this way, Lado (1957) predicted that all errors committed by second language learners could be explained in terms of differences between the native and second languages. Specifically, "those elements that are similar to [the learner's] native language will be simple . . . , and those elements that are different will be difficult" (1957, p. 2).

Lado (1957) further detailed a procedure for undertaking the comparison of native and second language sound systems, grammatical structures, vocabulary systems, writing systems, and cultures. The procedure for the comparison of sound systems can be roughly summarized as follows:

1. Compare the individual phonemes of the two languages:
   a. Does the native language have a phonetically similar phoneme?
      E.g., English has the phoneme /h/; Portuguese does not (p. 13).
   b. Are the variants of the phonemes similar in both languages?
      Example: The Spanish phoneme /d/ can surface as a fricative; English /d/ cannot (pp. 14–15).
   c. Are the phonemes and their variants similarly distributed?
      E.g., The French phoneme /zh/ can appear word-initially; English /zh/ cannot (p. 17).
2. Compare the allowable phoneme sequences in the two languages along with their distributions:
   E.g., English allows syllable-initial /sp, st, sk/ clusters; Spanish does not (pp. 17–18).
3. Compare the stress and rhythm patterns of the two languages:
   E.g., English allows weak stress (i.e., unstressed syllables); Spanish does not (pp. 33–4).
4. Compare the tone/intonation patterns of the two languages:
   E.g., Spanish matter-of-fact statements have a low-mid-low intonation pattern; English matter-of-fact statements have a mid-high-low intonation pattern (p. 44).
   E.g., In Thai, pitch is associated with morphemes and words; in English, pitch is determined by sentence-level intonation patterns (p. 45).

The product of a contrastive analysis, then, is a list of similarities and differences between the two languages, which can presumably be used to predict which second language structures a learner will find relatively easy or relatively difficult. For example, because English allows syllable-initial /sp, st, sk/ clusters but Spanish does not, native speakers of Spanish should have difficulty learning to produce these clusters in English, and indeed it is widely documented that they do (see, e.g., Altenberg, 2005). According to Lado, the predicted ease and difficulty of second language structures can directly inform second language pedagogy:

> Even though the process of comparing two sound systems must of necessity be tedious, dry, and abstract, the results obtained are of great practical use for the preparation of textbooks, tests, and exercises to supplement inadequate materials, and for the evaluation of materials and the diagnosis of student problems. (Lado, 1957, p. 12)

Lado thus asserted that predictions about the structures that are likely to cause errors can lead to teaching materials and methods that anticipate and directly address the errors. Throughout the 1960s, the contrastive analysis hypothesis was intensely popular among language teachers, and was a major theoretical underpinning of what became known as the audio-lingual method of language teaching. In the audio-lingual method, the presentation of second language materials was determined by contrastive analysis, with a focus on structures that were different between the native and second languages (and therefore predicted to be more difficult for learners) in order to help students overcome "incorrect habits" transferred from the native language. The audio-lingual method fell generally out

of favor during the 1970s, as evidence counter to the contrastive analysis hypothesis in its original form mounted.

The version of the contrastive analysis hypothesis originally posited by Lado in 1957 has since become known as the strong version of the contrastive analysis hypothesis. This strong version is characterized by a priori comparison of the native and second languages with the goal of predicting learner difficulties. However, it gradually became clear that:

- Learners often do not make the errors predicted by the contrastive analysis hypothesis. E.g., Native English speakers discriminate a Zulu click contrast with native-like accuracy. Contrastive analysis predicts that this should be a source of learner error: English does not have any click consonants (Best, McRoberts, & Sithole, 1988).
- Learners often make errors that are not predicted by the contrastive analysis hypothesis. E.g., Native speakers of Mandarin sometimes devoice English word-final voiced obstruents. Contrastive analysis does not predict this error: Mandarin does not allow word-final obstruents and does not have a word-final obstruent devoicing rule (see, e.g., Broselow, Chen, & Wang, 1998).

Wardhaugh (1970) detailed what is known as the weak version of the contrastive analysis hypothesis; in this version, comparison of the native and second languages can be used to help explain learner errors in an a posteriori fashion. Proponents of this version of the contrastive analysis hypothesis analyze actual learner errors in light of similarities and differences between the first and second languages in order to determine possible sources for the errors, using methods from the field of error analysis (see, e.g., Corder, 1967). While the a posteriori approach to contrastive analysis at first appears to solve the two problems with a priori contrastive analysis listed above, in fact, as Schachter (1974) pointed out, error analysis can only be used to identify and analyze errors that learners actually produce, and ignores potential errors that learners do not make because they avoid difficult structures. Schachter therefore advocated the use of a combination of a priori contrastive analysis and error analysis in order to better understand second language sound patterns.

Revisions to the Contrastive Analysis Hypothesis

Since the 1960s, second language researchers have proposed a number of revisions to the contrastive analysis hypothesis. There are several reasons for this development. First, it was noted that the contrastive analysis hypothesis as discussed thus far does not, in either the strong or weak versions, provide an explanation for the relative difficulty of second language structures for learners. However, not all novel second language structures pose equal difficulty for learners. For example, Eckman details the case of word-final obstruent voicing in German and English. While English allows voiced obstruents word-initially, -medially, and -finally, German only allows voiced obstruents in the word-initial and -medial positions (that is, underlyingly voiced obstruents are devoiced word-finally). The CAH predicts that native English speakers learning German should have the same degree of difficulty learning to devoice German word-final voiced obstruents as do native German speakers learning to produce the voiced–voiceless contrast word-finally in English. Instead, however, native English speakers appear to have relatively little difficulty learning the German devoicing rule, while native German speakers have relatively more difficulty learning to produce the word-final voicing contrast.

In addition to the inadequacy of traditional contrastive analysis to explain relative learner difficulty, revisions to the CAH also reflected the "Chomskyan revolution" in the field of theoretical linguistics, which began in the late 1950s and resulted in a move away from behaviorism toward an innatist view of language. A central claim of Chomsky's was that

all language was governed by an innate endowment known as universal grammar, which determined what was and was not possible in language, and also the relative markedness of linguistic structures. Selinker's (1972) interlanguage hypothesis represents the application of Chomskyan linguistics to second language acquisition theory—Selinker proposed that the language of learners was not simply an imperfect approximation of the second language, but rather an emerging linguistic system that was subject to the principles of universal grammar. These developments in linguistic theory and second language acquisition theory paved the way for revisions to the contrastive analysis hypothesis that improved its ability to account for observed learner data. For example, Eckman (1977) proposed that incorporating the notion of markedness into the contrastive analysis hypothesis can lead to an explanation for the relative difficulty of second language structures, in the form of the markedness differential hypothesis, where (from Eckman, 1977, p. 321):

1. Those areas of the target language which differ from the native language and are more marked than the native language will be difficult.
2. The relative difficulty of the areas of the target language which are more marked than the native language will correspond to the relative degree of markedness.
3. Those areas of the target language which are different from the native language, but are not more marked than the native language will not be more difficult.

Eckman provided support for the markedness differential hypothesis via the case of the relative difficulty of word-final obstruent voicing in German and English. Using typological evidence, Eckman presented an implicational hierarchy with respect to where languages maintain underlying voicing contrasts in surface forms, indicating that the surface maintenance of an underlying voicing contrast is most marked in word-final position. The relative markedness of the maintenance of the contrast in word-final position therefore renders the English pattern more difficult to learn than the German pattern, accounting for the observed directionality of difficulty. Thus the simple comparison of native and second language structures must be accompanied by a theory of markedness in order to make adequate predictions about second language learner difficulty. While the transfer of native-language structures into the second language continues to be acknowledged as playing an important role in second language acquisition, much research since the 1970s has focused on determining how transfer, in combination with other influences, in particular markedness and developmental effects, determine the structures observed in learner language. Hecht and Mulford (1982) investigated the acquisition of English by a six-year-old native speaker of Icelandic and found that not only did transfer and developmental (i.e., markedness) effects interact in determining acquisition patterns, but that transfer best explained the relative difficulty the learner had with particular segments, and developmental factors best explained sound substitution patterns. Broselow (1984), Broselow and Finer (1991), Hancin-Bhatt and Bhatt (1997), and Broselow, Chen, and Wang (1998), among others, have demonstrated that second language syllable structure is influenced by a sometimes nuanced interaction of transfer and developmental effects.

The Acquisition of Second Language Segments and Systems of Phonological Contrast

The (revised) contrastive analysis hypothesis formed the theoretical foundation, throughout the 1970s and 1980s, for much research investigating the general prediction that second language phonemes that are similar to native-language phonemes will be relatively easy for learners, and that second language phonemes that are different from native-language

phonemes will be relatively difficult to learn. However, the simple similarity/difference between the phonemes of the first and second languages does not adequately account for some second language phenomena. For example, Flege (1987) investigated the production of the French /u/ and /y/ vowels by native English speakers. The French vowel /u/ is acoustically similar to English /u/, and the French vowel /y/ is relatively more different from any English vowel. Therefore, according to the contrastive analysis hypothesis, native English speakers should exhibit more difficulty producing French /y/ than French /u/. In fact, however, Flege found that native English speakers produced French /u/ with higher F2 values than did native French speakers, yet there was no difference between the native English and French speakers when producing French /y/. This finding indicates that when the native and second languages have phones that are similar (but not identical), learners may in fact encounter more difficulty learning to produce them accurately than when native and second language phones are less similar. Flege attributes this phenomenon to what he terms "equivalence classification," where similarity between native and second language phones prevents L2 learners from developing a separate phonetic category in the second language, resulting in the use of a single, merged category that is used in both the native and second languages, and retains properties of the native-language category. On the other hand, when native and second language phones are sufficiently dissimilar, the learner is free to create a new phonetic category in the second language that closely approximates the second language category. Thus, in the case of equivalence classification, similarity between native and second language sounds leads to greater difficulty for learners than does difference.

In the 1990s and the first decade of the 21st century, researchers became increasingly interested in the types of both similarities and differences that can exist between native and second language sound systems, and ways of assessing similarity and difference. The two most prominent models of non-native speech (perception and/or production) during this time are Flege's speech learning model (e.g., Flege, 1995) and Best's perceptual assimilation model (e.g., Best, 1995). While the speech learning model is a model of second language speech learning, and the perceptual assimilation model is a model of cross-language perception, for the purpose of the present discussion, the overlap in their goals is more important than their differences. In both models, success in learning to perceive (and/or produce) the phonological contrasts of a second language will depend (in part) on the perceived relationship between phones in the native and the second languages. In both models, similarity and difference between native and second language phones are assessed via cross-language perception experiments, in which the second language sounds are classified according to native-language phonetic categories, and rated for how well they fit into the native category. In this way, it may be possible to determine the perceived phonetic distances between native and second language phones.

Best (1995) provides a useful typology of the perceptual relationships that can exist between the phonological contrasts of a native and second language, along with predictions of their relative discriminability by non-native listeners (Best, 1995, p. 195):

1. Two-Category Assimilation: Each non-native segment is assimilated to a different native category, and discrimination is expected to be excellent.
2. Category-Goodness Difference: Both non-native sounds are assimilated to the same native category, but they differ in discrepancy from native "ideal". . . . Discrimination is expected to be moderate to very good, depending on the magnitude of difference in category goodness for each of the non-native sounds.
3. Single-Category Assimilation: Both non-native sounds are assimilated to the same native category, but are equally discrepant from the native "ideal". . . . Discrimination is expected to be poor. . . .

4. Both Uncategorizable: Both non-native sounds fall within phonetic space but outside of any particular native category, and can vary in their discriminability as uncategorizable speech sounds. Discrimination is expected to range from poor to very good, depending upon their proximity to each other and to native categories. . . .
5. Uncategorized versus Categorized Type: One non-native sound assimilated to a native category, the other falls in phonetic space, outside native categories. Discrimination is expected to be very good.
6. Nonassimilable: Both non-native categories fall outside of speech domain being heard as nonspeech sounds, and the pair can vary in their discriminability as nonspeech sounds; discrimination is expected to be good to very good.

It is thus predicted that extremely sophisticated and nuanced relationships between the sound systems of the native and second languages are what determine the relative difficulty of non-native phonological contrasts, and unlike Lado's (1957) version of the contrastive analysis hypothesis, current models of second language speech do not simply equate similarity with ease, and difference with difficulty. Nonetheless, it is clear that comparison of the native and second language sound systems still plays a crucial role in explaining second language phonetic and phonological phenomena.

Summary and Conclusion

Over the past 50 or so years, there have been several important developments concerning the role of comparative phonetics and phonology in predicting and explaining second language phenomena. The contrastive analysis hypothesis in its original formulation predicted that similarities between the native and second languages would result in ease of acquisition, while differences would lead to learner difficulty. This strong version of the hypothesis became untenable as it was found that it both over- and underpredicted learner errors, leading to a weaker version of the hypothesis where similarities and differences between the native and second languages were useful in the a posteriori explanation of learner errors. Further developments in contrastive analysis occurred as researchers noted that a theory of second language acquisition must acknowledge the contributions of markedness and developmental effects, in addition to transfer, to the relative difficulty of second language structures. Finally, over the past twenty or so years, second language speech researchers have focused a great deal of attention on the relative difficulty posed by second language phonological contrasts that differ in their relationships to native-language contrasts, and have proposed a sophisticated set of hypotheses about the relative difficulty of second language contrasts with respect to the relationships between native and second language sounds.

In conclusion, the importance of considering similarities and differences between the phonetics and phonology of the native and second languages in order to make predictions about and/or explain second language phenomena has never been seriously challenged by second language acquisition researchers. However, it has become clear that a simple comparison of the structures of the two languages is insufficient; rather, any adequate account of second language phonetics and phonology must accommodate effects other than transfer (including, but not limited to markedness/developmental effects), and must also acknowledge that similarity and difference between the two languages do not translate straightforwardly into, respectively, ease and difficulty for second language learners.

SEE ALSO: Interlanguage; Lado, Robert; Phonological Acquisition; Prediction in Teaching Pronunciation; Schachter, Jacquelyn

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Comparing Groups With Multiple Dependent Variables

SHAUNA J. SWEET AND ANDRÉ A. RUPP

Multivariate analysis of variance (MANOVA) is a multivariate extension of the general linear model in which a linear combination of p continuous dependent variables is expressed as a function of one or more categorical independent variables/factors that are used to represent different treatments or experimental conditions. One might be interested in, for example, the effect of instructional feedback on second language learners' sociolinguistic competence, where the latter is measured by scores on multiple assessments that measure students' grammatical competence, pragmatic competence, as well as appropriate oral and written production of appropriate linguistic phrases across different real-life contexts. Alternatively, one might be interested in the impact of the availability of different learning resources and type of instruction on students' performance on richly contextualized exams over time. Each of these is illustrative of questions that could be investigated using MANOVA; the first scenario reflects its use in a cross-sectional setting whereas the second reflects its use in a longitudinal setting.

Surveys of peer-reviewed journals in applied linguistics have revealed a dramatic increase in the use of quantitative methodologies generally between 1970 and 1985. MANOVA has been used with increasing frequency in the social sciences since the 1970s, though its use in applied linguistics specifically is not nearly as common as in other domains such as psychology or education. A follow-up review of professional publications between 1991 and 1997 showed an increasing reliance on the use of quantitative methods with MANOVA being the most popular analytic method among them (Henning, 1986; Lazarton, 2002).

Although it is most often advocated for use with experimental designs, MANOVA is an analytic technique that can also be utilized when researchers seek to detect group differences on multiple dependent variables in quasi-experimental or observational studies; a treatment could be self-selected (such as by students' previous exposure to a second language), or groups could be defined by the investigator (for example different proficiency groups). As suggested earlier, MANOVA supports both the analysis of cross-sectional and longitudinal repeated-measures data where a single measurement taken at p time points creates the p dependent variables. As with other general linear models, the use of a MANOVA for analytic purposes does not create causal inferences per se; instead it is the nature of the data-collection design that determines the strength of the inferences that can be made.

The Multivariate Null Hypothesis

MANOVA is typically described as a multivariate extension or multivariate analogue of univariate ANOVA. As with univariate ANOVA models, one can distinguish between one-way, two-way, or k-way models depending on whether one, two, or k categorical predictor variables are included in the model. In a basic one-way ANOVA model, the null hypothesis is that the population mean on some outcome of interest is equal across k groups that are represented by the levels of the single categorical predictor variable in

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the model; the alternative hypothesis is that the population mean of at least one group is different from the others:

$$H_0 = \mu_1 = \mu_2 = \cdots = \mu_k$$

In a basic one-way MANOVA model, the null hypothesis concerns the equivalence of the population mean vectors or centroids across the k groups; each vector contains the population means on all p dependent variables:

$$H_0 = \begin{bmatrix} \mu_{11} \\ \mu_{21} \\ \vdots \\ \mu_{p1} \end{bmatrix} = \begin{bmatrix} \mu_{12} \\ \mu_{22} \\ \vdots \\ \mu_{p2} \end{bmatrix} = \cdots = \begin{bmatrix} \mu_{1k} \\ \mu_{2k} \\ \vdots \\ \mu_{pk} \end{bmatrix}$$

The alternative hypothesis is that there is at least one group with a population mean vector that is different from the others.

The Computational Mechanics of MANOVA

In MANOVA the population means for the k groups on the p dependent variables are not compared independently of one another, which would be the case if a sequence of p univariate ANOVAs were conducted. Instead, computational procedures for MANOVA rely on the variance–covariance matrix for the p dependent variables ($X_1, X_2, \ldots, X_p$), which are used to construct one or more optimally weighted linear combinations/variates/discriminant functions ($C_1, C_2, \ldots, C_m$).

$$\begin{aligned} C_1 &= W_{11}X_{11} + W_{12}X_{12} + \cdots + W_{1p}X_{1p} \\ C_2 &= W_{21}X_{21} + W_{22}X_{22} + \cdots + W_{2p}X_{2p} \\ &\vdots \\ C_m &= W_{m1}X_{m1} + W_{m2}X_{m2} + \cdots + W_{mp}X_{mp} \end{aligned}$$

These combinations can be thought of as a rotation of the original axes of the multivariate space such that differences between the k groups are maximized along these rotated, or newly created, dimensions while correcting for informational redundancy in these variables. MANOVA is thus especially effective for detecting group differences that exist for linear combinations of dependent variables, rather than simply multiple individual variables. As a result, MANOVA can help to separate groups that would be marginally indistinguishable if group mean differences were tested independently on the p variables.

Figure 1 shows this case for $p = 2$ dependent variables. Here, a group difference is difficult to detect with respect to variable X_1 as the two marginal univariate normal distributions overlap quite a bit; a group difference is more easily detectable with respect to variable X_2 as the two marginal univariate normal distributions are more strongly separated; but the key group difference of interest, which exists with respect to both correlated variables X_1 and X_2, is easiest to detect along a diagonal line that represents a specific linear combination of X_1 and X_2.

Test Statistics

There are several test statistics that can be used to evaluate the tenability of the multivariate null hypothesis. The F-test statistic that is used in univariate ANOVA models, which is a

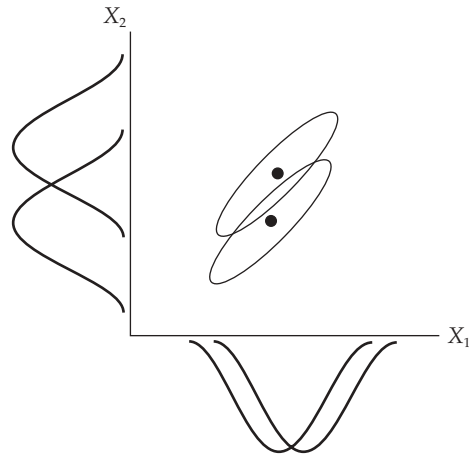


Figure 1 Group differences in unidimensional versus two-dimensional space

Table 1 Common multivariate statistics

Statistic	*Symbol*	*Conceptual formula*
Wilks's Lambda	Λ	$\frac{SS_{Within} \text{ on } C_1}{SS_{Total} \text{ on } C_1} + \cdots + \frac{SS_{Within} \text{ on } C_m}{SS_{Total} \text{ on } C_m}$
Pillai–Bartlett Trace	V	$\frac{SS_{Between} \text{ on } C_1}{SS_{Total} \text{ on } C_1} \times \cdots \times \frac{SS_{Between} \text{ on } C_m}{SS_{Total} \text{ on } C_m}$
Hotelling–Lawley Trace	T	$\frac{SS_{Between} \text{ on } C_1}{SS_{Within} \text{ on } C_1} + \cdots + \frac{SS_{Between} \text{ on } C_m}{SS_{Within} \text{ on } C_m}$
Roy's Greatest Characteristic Root	θ	$\frac{SS_{Between} \text{ on } C_1}{SS_{Total} \text{ on } C_1}$

function of the amount of between-group variation that is due to each effect included in the model, cannot be directly used for MANOVA. In MANOVA models, operations are performed on transformations of the observed variance–covariance matrix of the p dependent variables. Specifically, each test statistic is a function of the proportion of the amount of between-group variation along different discriminant functions ($C_1, C_2, \ldots, C_m$).

The four most commonly reported multivariate test statistics are Wilks's Lambda, Pillai–Bartlett Trace, Hotelling–Lawley Trace, and Roy's Greatest Characteristic Root. Of these, Wilks's Lambda is the one that is most often reported. As shown in Table 1, each test statistic is calculated by using slightly different pieces of information. Roy's Greatest Characteristic Root reflects the amount of variation captured in only the first discriminant function. The remaining statistics are based on ratios that involve two of the following quantities: the between-group variation, the within-group variation, and the total variation along the m discriminant functions. Among all statistics, Wilks's Lambda offers perhaps the most straightforward interpretation, as it is a direct representation of the proportion of variance that remains unaccounted for by the grouping structure which is induced by the independent variables.

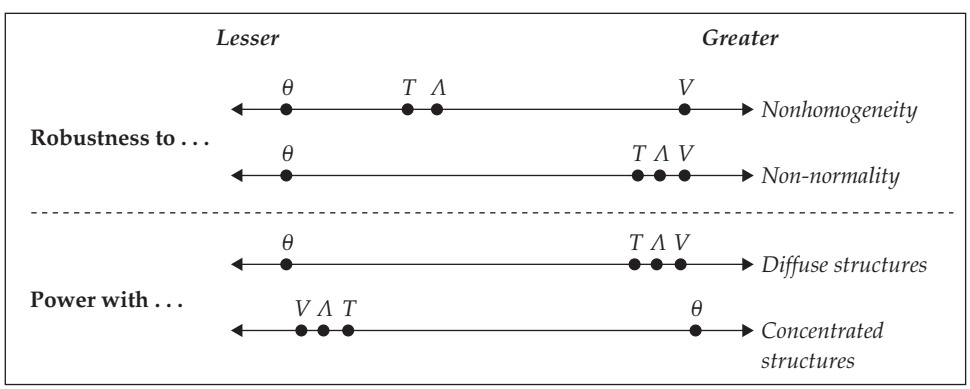
Model Assumptions

Just as with univariate ANOVA, the accuracy of the *p*-values associated with MANOVA test statistics and the coverage probabilities of associated confidence intervals depends on how well the characteristics of the data satisfy the model assumptions (Bray & Maxwell, 1985; Lattin, Carroll, & Green, 2002). In order for the theoretical sampling distributions for test statistics to be accurate in MANOVA models, it is required that the observations comprise an independent random sample of the population of interest and that the *p* dependent variables follow a multivariate normal distribution. Logarithmic, arcsine, and similar transformations of individual dependent variables may be used to induce marginal univariate normality, a necessary but not sufficient condition for this assumption to be met.

Two further critical assumptions are that the variance of each of the dependent variables is constant across all *k* groups, which is identical to univariate ANOVA, and that the covariance between any two dependent variables is constant across all *k* groups, which is unique to the multivariate context. Box's M Test can be used to test for the homogeneity of the variance–covariance matrices across the *k* groups, but the test is very sensitive to even small departures from homogeneity and non-normality so that it is rather conservative. In practice, ensuring that groups are of equal size can often help minimize the impact of violating this assumption (Bray & Maxwell, 1985). As with other linear models, the correlation between the categorical predictor variables, also known as multicollinearity, can negatively impact the precision and power of the test statistics. This is not an issue for true designed experiments but can be an issue in the case of quasi-experimental or observational studies where the grouping structure is preexisting, rather than created by design. MANOVA is also particularly sensitive to the presence of outliers, which increases the likelihood of Type I errors (Haase & Ellis, 1987; Cole, Maxwell, Arvey, & Salas, 1994). As with other statistical models that do not involve latent variables, it is assumed that all variables are measured without error.

Power of Test Statistics

The statistical power and the robustness of the four MANOVA test statistics to violations of the model assumptions are two criteria that are helpful for selecting the most appropriate multivariate test statistic in any given situation; Figure 2 shows how the four test statistics perform with respect to these two criteria. There is no single test statistic that is uniformly most powerful. Roy's Greatest Characteristic Root is most powerful when the dependent variables exhibit a concentrated structure such that the between-group variation



Notes: Λ = Wilks's Lambda, V = Pillai's Trace, T = Hotelling's Trace, and θ = Roy's Greatest Root.

Figure 2 Relative robustness and power of common test statistics for MANOVA

is primarily concentrated along a single linear discriminant function of the dependent variables. This situation is rarely encountered in practice, however. When the dependent variables exhibit a diffuse structure and multiple linear discriminant functions are required to capture key patterns in the data, Pillai's Trace and Wilks's Lambda are most powerful (Olson, 1976; Stevens, 1980).

Robustness of Test Statistics

Pillai's Trace and Wilks's Lambda are most robust to violations of statistical assumptions. Pillai's Trace is the only statistic that is robust both to heterogeneity of variance–covariance matrices across groups and to violations of multivariate non-normality. Wilks's Lambda is reasonably robust to violations of multivariate non-normality only. In contrast, Roy's Greatest Root criterion is highly sensitive when any of the statistical assumptions are violated, which is not uncommon in social science research (Olson, 1976; Bray & Maxwell, 1985).

Follow-up Analyses

Generally speaking, researchers interested in the nature and magnitude of the effects of experimental treatments/conditions on particular dependent variables typically conduct follow-up analyses that may include factorial ANOVAs with subsequent planned and post hoc comparisons. An in-depth treatment of these follow-up analyses and the associated statistical and conceptual issues are beyond the scope of this entry, but the flow chart in Figure 3 illustrates the types of tests and procedures a researcher may utilize to better examine group differences (Bray & Maxwell, 1982; Enders, 2003; Hair, Black, Babin, Anderson, & Tatham, 2006).

Effect Size Estimates

In univariate ANOVA models, a common estimate for the effect size estimate is the ratio of between-group variation, σ_μ, to within-group variation, σ, in the population, which is typically denoted by f:

$$f = \frac{\sigma_\mu}{\sigma}$$

The multivariate analogue for MANOVA is more complicated to compute and its formula depends on the test statistic that is used. A priori power computations of required sample sizes for studies further depend on the computational algorithm that is used to simultaneously solve the resulting system of equations. Nowadays, freeware programs like GPower3 can perform such computations efficiently in user-friendly environments (Faul, Erdfelder, Lang, & Buchner, 2007; see specifically tables 4 and 5).

Conclusion

MANOVA is an analytic technique that is well suited to investigating a number of applied linguistic research questions. Key constructs of interest such as sociolinguistic competency, lexical richness of discourse, or language comprehension that are psychologically complex typically are best captured using multiple related measures. Furthermore, studies that use

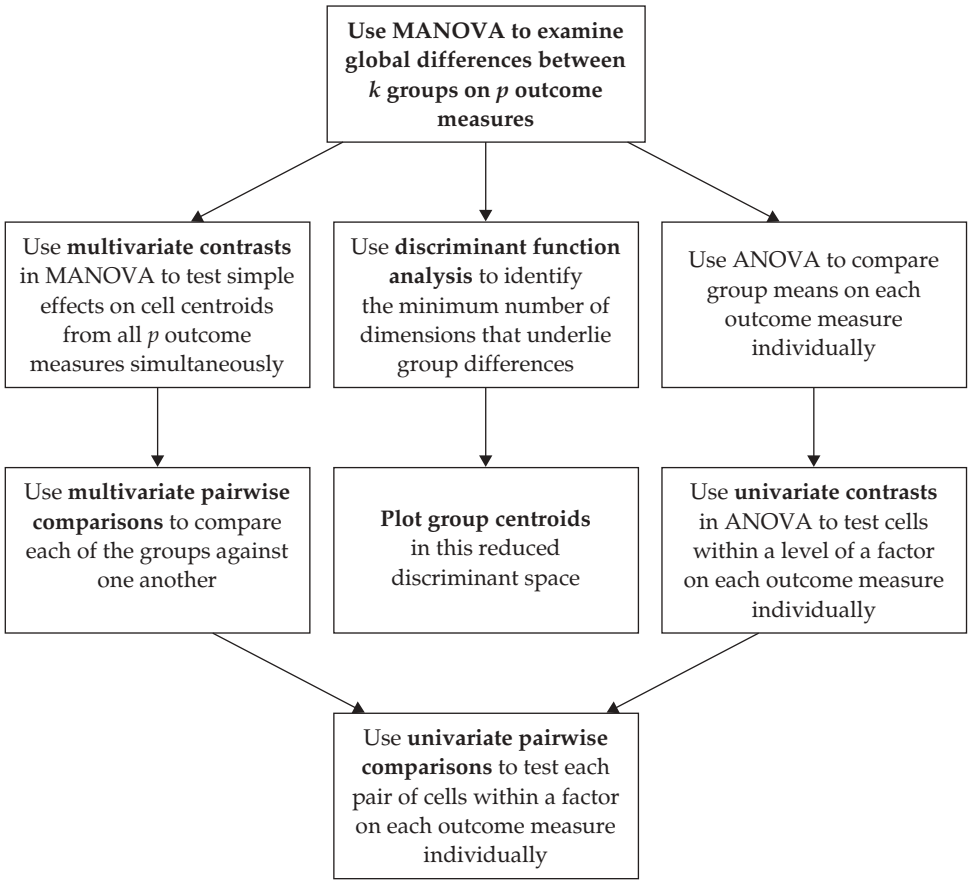


Figure 3 Flowchart illustrating possible analytic paths following a significant MANOVA result

multiple follow-up tests over time are not uncommon. One of the oft-cited advantages of MANOVA is that it allows greater control over the experiment-wise Type I error rate compared to a series of univariate ANOVAs. However, in practice these analyses are often done anyway as "protected *F*-tests" upon a statistically significant global test result for the MANOVA. Such a two-step approach to analyzing multivariate variance and covariance has statistical limitations (Bray & Maxwell, 1982; Enders, 2003). Therefore, it is perhaps more advantageous to remember a unique advantage of MANOVA over and above univariate ANOVAs, namely that it offers greater statistical efficiency for testing multivariate hypothesis in the form of a specific linear relationship between two or more correlated dependent variables as illustrated above in Figure 2 (Huberty & Morris, 1989). Finally, similar to univariate analyses of covariance (ANCOVA), the inclusion of continuous covariates for improving the power of the test for group differences is also possible within the multivariate general linear modeling framework within which MANOVA is embedded.

SEE ALSO: Comparing Groups with Multiple Independent Variables; Describing and Illustrating Quantitative Data; Probability and Hypothesis Testing; Variables

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Comparing Groups With Multiple Independent Variables

SHAUNA J. SWEET AND ANDRÉ A. RUPP

Factorial analysis of variance (ANOVA) is a specific form of the general linear model in which variation in a single continuous outcome measure of interest, Y, is expressed as a function of the overall and combined effects of two or more categorical independent variables or factors that represent different treatments, conditions, or characteristics. For example, we may be interested in how the average second language reading comprehension scores of students differ across groups created jointly by students' gender and the passage content (Brantmeier, 2003). Or we may wish to examine how the average vocabulary acquisition scores of university students differs across students with different levels of initial language proficiency, sets of target words with different features, and categories of use for target words for academic lectures (Vidal, 2003).

Incorporating multiple factors into a single modeling framework such as factorial ANOVA has two basic advantages. First, the approach is generally more powerful for detecting effects of interest than conducting multiple one-way ANOVAs. Second, it permits testing of interaction effects among predictor variables, which are often of substantive and not just statistical interest (Patterson & Bailey, 1978; Brantmeier, 2004). In reviews of applied linguistics research in both professional journal articles and domain-specific methodology textbooks, ANOVA is consistently referenced as one of the most popular statistical methodologies for making group comparisons on multiple independent variables (Brown, 2004; Henning, 1986; Lazarton, 2002; Brantmeier, 2004).

We begin our discussion of factorial ANOVA by describing three forms of the statistical model, the corresponding statistical null hypotheses, and test statistics; we then describe model assumptions and robustness to violation of those assumptions, and consider testing for unbalanced designs. We then discuss effect sizes and appropriate follow-up tests for specific group comparisons, and conclude with a brief description of factorial ANOVA models for alternative experimental designs.

The Statistical Model

Factorial ANOVA models are a special case of the general linear model and specifically an extension of the one-way ANOVA model. Instead of including one categorical predictor variable in the model, they simply have two, three, or more categorical predictor variables in the model.

In order to illustrate the general structure of a factorial ANOVA model, one has to distinguish between models that contain fixed effects only, models that contain random effects only, and models that contain mixed effects. Technically speaking, hypothesis tests for fixed effects are concerned only with differences in population means for the levels of the factors that were actually included in the study, whereas hypothesis tests for random effects are concerned with the variation among population means for all possible levels of the factors, of which the selected levels in any given study are viewed as a random subset.

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Random effects can be quite common in applied linguistics research, especially when effects of interventions involving students in different classrooms and different schools are investigated. One is often not interested in the particular types of teachers, students, and schools that are included in a study, but rather whether there are mean differences on the outcomes of interest across all teachers, students, and schools more generally. In this sense, random effects often come from sampling designs that lead to hierarchical data structures (e.g., students nested within classrooms or teachers, which are nested within schools).

To formalize these ideas, we juxtapose three factorial ANOVA models with two categorical predictor variables each, which leads to three distinct formulations of two-way ANOVA models. The models that we distinguish are (a) the fixed-effects model, (b) the random-effects model, and (c) the mixed-effects model. Using what is known as the treatment-effects notation, the three models can be written as follows (Lomax & Surman, 2007):

Fixed-effects model (A and B fixed)	$Y_{ijk} = \mu + \alpha_j + \beta_k + (\alpha\beta)_{jk} + \varepsilon_{ijk}$
Random-effects model (A and B random)	$Y_{ijk} = \mu + a_j + b_k + (ab)_{jk} + \varepsilon_{ijk}$
Mixed-effects model (A random, B fixed)	$Y_{ijk} = \mu + a_j + \beta_k + (a\beta)_{jk} + \varepsilon_{ijk}$
Mixed-effects model (A fixed, B random)	$Y_{ijk} = \mu + \alpha_j + b_k + (\alpha b)_{jk} + \varepsilon_{ijk}$

where μ is the overall or grand mean of Y in the population, a_j is the fixed treatment effect for level $j = 1, \ldots, J$ of factor A, a_j is the random treatment effect for level $j = 1, \ldots, J$ of factor A, β_k is the fixed treatment effect for level $k = 1, \ldots, K$ of factor B, b_k is the random treatment effect for level $k = 1, \ldots, K$ of factor B, and the interaction effects are defined analogously. ε_{ijk} denotes an individual-level error term, which is the difference between the individual and group-specific mean scores; they are assumed to be normally distributed with a mean of zero and a constant variance. Note that a simple treatment effect is simply the difference between the grand mean and a group-specific mean in the population, which are estimated by the respective sample means; for example, $a_j = \mu - \mu_j$ is the treatment effect for factor level j of factor A.

The Statistical Null Hypotheses

In a basic one-way ANOVA model, the null hypothesis is that the population mean of Y is equal across k groups, which are represented by the levels of the single categorical predictor variable; the alternative hypothesis is that the population mean of at least one group is different from the mean of the other groups:

$$\mathrm{H}_0 : \mu_1 = \mu_2 = \cdots = \mu_k$$
$$\mathrm{H}_a : \text{at least two } \mu_i \text{ differ}$$

For example, we might hypothesize that on average students will perform equally well on a reading comprehension test regardless of class size; the alternative hypothesis is that the average scores of students in small, medium, and large classrooms will be significantly different from one another.

In factorial ANOVA models there are several hypotheses, one for each of the effect terms that is included in the model. In the case of a two-way ANOVA model, there are two main-effect tests for factor A and factor B, respectively, and, if it is included in the model, an interaction-effect test for both factors jointly. Extending our above example, we might be interested in how male and female students (factor A) perform in classrooms of different sizes (factor B). Factorial ANOVA could then be used to investigate (a) if male or

Table 1 Hypotheses for two-way ANOVA model

	Main effect A	*Main effect B*	*Interaction effect AB*
Fixed-effects model (A and B fixed)	$H_o : \alpha_1 = \alpha_2 = \cdots = \alpha_J = 0$ H_a : at least one $\alpha_j \neq 0$	$H_o : \beta_1 = \beta_2 = \cdots = \beta_k = 0$ H_a : at least one $\beta_k \neq 0$	$H_o : (\alpha\beta)_1 = \cdots = (\alpha\beta)_{JK} = 0$ H_a : at least one $(\alpha\beta)_{jk} \neq 0$
Random-effects model (A and B random)	$H_o : \sigma_a^2 = 0$ $H_a : \sigma_a^2 > 0$	$H_o : \sigma_b^2 = 0$ $H_a : \sigma_b^2 > 0$	$H_o : \sigma_{ab}^2 = 0$ $H_a : \sigma_{ab}^2 > 0$
Mixed-effects model (A random, B fixed)	$H_o : \sigma_a^2 = 0$ $H_a : \alpha_a^2 > 0$	$H_o : \beta_1 = \beta_2 = \cdots = \beta_K = 0$ H_a : at least one $\beta_k \neq 0$	$H_o : \sigma_{a\beta}^2 = 0$ $H_a : \sigma_{a\beta}^2 > 0$
Mixed-effects model (A fixed, B random)	$H_o : \alpha_1 = \alpha_2 = \cdots = \alpha_J = 0$ H_a : at least one $\alpha_j \neq 0$	$H_o : \sigma_b^2 = 0$ $H_a : \sigma_b^2 > 0$	$H_o : \sigma_{ab}^2 = 0$ $H_a : \sigma_{ab}^2 > 0$

female students perform better on average (a main-effect test for factor A), (b) whether or not class size has an effect on students' reading comprehension (a main-effect test for factor B), and (c) whether or not class size has a differential effect on the performance of male and female students with regard to average reading comprehension ability (an interaction-effect test for factors A and B jointly). Essentially, the statistical significance of interaction effect means that individual cell means need to be compared, which makes interpretations more complex compared to the case of nonsignificant interaction effects when the means for the levels of factors A and B can be compared separately (i.e., across all levels of the other factor).

Depending on the nature of the effects, the hypotheses differ and have the forms shown in Table 1 (Patterson & Bailey, 1978; Iversen & Norpoth, 1987; Lomax & Surman, 2007). That is, hypotheses for fixed effects are formulated in terms of the specific factor levels included in the study, while hypotheses for random effects are formulated in terms of variances of means across all possible levels.

Experiments investigating three or more factors may also be analyzed using three, four, or *n*-way ANOVA models. These higher-level ANOVA models are conceptually similar to the two-way models illustrated in Table 1, but analysis and interpretation of the results are more complex due to the larger number of factors involved.

Test Statistics

In one-way ANOVA models, the global or omnibus test statistic is based on an *F*-distribution and has the following form

$$F = \frac{MS_A}{MS_E} \sim F_{J-1,JK(n-1)}$$

which represents the ratio of the mean square for the effect A (i.e., the average variation of scores around their respective group means) to the mean square for the errors (i.e., the average variation of the error terms within each group). As a result of the structure of hypotheses in factorial ANOVA models the test statistics for the different effects change depending on whether the effects are fixed or random; Table 2 shows the resulting *F*-statistics.

As Table 2 shows, the denominator of tests for main effects for fixed factors becomes the mean square for interaction when the other factor is random while main effects of random factors as well as interaction effects are always tested using the mean square for error in the denominator. Generally speaking, the theory of expected mean squares can be used to determine what the appropriate test statistics should look like. Textbooks on factorial ANOVA models should be consulted whenever at least one effect is random because not all software programs compute the correct test statistics (see Lomax & Surman, 2007).

Model Assumptions and Robustness to Violations of Assumptions

Each factorial ANOVA model comes with a basic set of assumptions, which are required for the sampling distributions of the test statistics to be accurate and, thus, for the *p*-values and confidence intervals to be trustworthy. These are that the errors are normally distributed within each group with constant variance across groups (i.e., $\varepsilon_{ijk} \sim Normal(0,\sigma^2)$), that the observations are independent within and across each group, and, in the case of random effects, that the factor levels are sampled randomly from a normal distribution with factor-specific variance also (Lomax & Surman, 2007).

Table 2 Test statistics for two-way ANOVA models

	Main effect A	*Main effect B*	*Interaction effect AB*
Fixed-effects model (A and B fixed)	$F = \frac{MS_A}{MS_E} \sim F_{J-1,JK(n-1)}$	$F = \frac{MS_B}{MS_E} \sim F_{K-1,JK(n-1)}$	$F = \frac{MS_{AB}}{MS_E} \sim F_{(J-1)(K-1),JK(n-1)}$
Random-effects model (A and B random)	$F = \frac{MS_A}{MS_{AB}} \sim F_{J-1,(J-1)(K-1)}$	$F = \frac{MS_B}{MS_{AB}} \sim F_{K-1,(J-1)(K-1)}$	$F = \frac{MS_{AB}}{MS_E} \sim F_{(J-1)(K-1),JK(n-1)}$
Mixed-effects model (A random, B fixed)	$F = \frac{MS_A}{MS_E} \sim F_{J-1,JK(n-1)}$	$F = \frac{MS_B}{MS_{AB}} \sim F_{K-1,(J-1)(K-1)}$	$F = \frac{MS_{AB}}{MS_E} \sim F_{(J-1)(K-1),JK(n-1)}$
Mixed-effects model (A fixed, B random)	$F = \frac{MS_A}{MS_{AB}} \sim F_{J-1,(J-1)(K-1)}$	$F = \frac{MS_B}{MS_E} \sim F_{K-1,JK(n-1)}$	$F = \frac{MS_{AB}}{MS_E} \sim F_{(J-1)(K-1),JK(n-1)}$

Dependencies between observations that are not explicitly modeled affect the standard errors for model parameters (i.e., the group mean estimates) and thus the accuracy of inferences about model effects. The *F*-test is robust to moderate violations of non-normality but it is sensitive to extreme observations and to heterogeneity of error variance across groups. Unequal error variances across groups introduce bias into the mean square for error, thereby increasing the likelihood of Type I and possibly also Type II errors. As with other statistical models that do not involve latent variables, it is additionally assumed that all variables are measured without error.

One additional assumption of factorial ANOVA is that the factors included in the model are independent of one another. The correlation between predictor variables is generally known as multicollinearity or nonorthogonality and can be controlled by use the design structure that is used, within reasonable practical constraints (Iversen & Norpoth, 1987; Shaw & Mitchell-Olds, 1993; Lomax & Surman, 2007). Correlations between independent variables are not an issue in true experimental designs with a balanced structure (i.e., equal sample size in each group) where the assignment of experimental units (e.g., persons) is randomized. However, unbalanced designs lead to nonorthogonality. They are common in quasi-experimental or observational studies where the observed grouping structure is pre-existing, and naturally occurring groups are of different sizes. This situation is quite common in applied linguistics research; different instructional techniques that are of interest may be employed in classrooms of different sizes, or language learners' initial language proficiency (high, medium, low) is included in the model but the distribution of language learners' proficiency at the beginning of an instructional program is heavily skewed. Even with random assignment within quasi-experimental designs, however, unbalanced data structures can result from attrition or nonresponse. As with other general linear models, correlations between the independent variables can negatively impact the precision and power of the test statistics. The *F*-test is less robust to violations of the normality and homogeneity of variance assumptions when group sizes are unequal and small group sizes generally decrease the robustness of the test (Lattin, Carroll, & Green, 2002; Lomax & Surman, 2007).

Testing in Unbalanced Designs

When group sizes are unequal, it is not possible to disentangle all the separate effects of each of the factors in the model without adjusting the statistical testing procedure because it is not possible to uniquely partition the associated sums of squares for the effects that are needed for the *F*-tests. The solution to this problem is to rely on sequential, partially sequential, or regression approaches. This changes the computation of the resulting sums of squares, which are then labeled Type I, Type II, and Type III sums of squares, respectively, in most statistical software programs.

Table 3 Approaches to hypothesis testing with unbalanced designs

	SS	*Main effect (1)*	*Main effect (2)*	*Interaction*
Sequential/Hierarchical	Type I	$\alpha \mid \mu$	$\beta \mid \mu, \alpha$	$\alpha\beta \mid \mu, \alpha, \beta$
Partially sequential/ Partially hierarchical	Type II	$\alpha \mid \mu, \beta$	$\beta \mid \mu, \alpha$	$\alpha\beta \mid \mu, \alpha, \beta$
Regression	Type III	$\alpha \mid \mu, \beta, \alpha\beta$	$\beta \mid \mu, \alpha, \alpha\beta$	$\alpha\beta \mid \mu, \alpha, \beta$

Note. The "|" notation indicates that the sum of squares for a specific effect is calculated with other effects already included in the model (i.e., "conditional on" other effects).

Each of these approaches uses a slightly different set of rules to adjust each of the main and interaction effects for other factors in the model. The sequential approach adjusts each effect test by accounting for (i.e., conditioning on) effects already in the model; the partially sequential approach adjusts each effect test for other effects at the same level of complexity but not high-order interaction effects; and the regression approach calculates the effect of each factor adjusting for all other factors always included in the model.

With a balanced design all of these approaches yield the same result, but otherwise the three approaches often lead to different conclusions about the hypotheses (Lomax & Surman, 2007). The sequential or hierarchical approach depends heavily on the order in which variables are entered into the model; the partially sequential approach is only reasonable if higher-order interactions are assumed to be zero, and any significant high-order effects are consequently difficult to interpret. Again, it is helpful in practice to refer to basic textbooks on general linear models for specific advice regarding testing procedures.

Effect Sizes

The statistical significance of an F-test does not provide any information on the magnitude of a particular effect and may largely be an artifact of the available sample size. To overcome this limitation, confidence intervals are used as inferential analogues to hypothesis tests, and effect sizes are used as complementary descriptive statistics.

Four measures of effect size are commonly reported in conjunction with factorial ANOVA analyses: eta-squared (η^2), partial eta-squared (partial η^2), omega-squared (ω^2), and Cohen's f (Faul, Erdfelder, Lang, & Buchner, 2007; Lomax & Surman, 2007). Each of these effect-size measures describes the proportion of variance in the dependent variable that is explained by a factor (or combination of factors) in the model using slightly different pieces of information (Pierce, Block, & Aguinis, 2004; Lomax & Surman, 2007). Statistical and discipline-specific resources typically provide rough benchmarks for classifying effect sizes as small, medium, and large but it is the particular study context and study-related research context that should inform the eventual interpretation of the size of effects.

As the ratio of the sum of squares of the effect of interest to the total model sum of squares, η^2 is easy to calculate but it does not account for variation due to error, tending to overestimate the variance attributable to a treatment, and is biased for small samples. Partial η^2 is the ratio of the treatment sum of squares to the sum of the treatment and error sums of squares, and is less biased with small samples because it accounts for variation due to error. Caution should be exercised in reporting classic versus partial η^2 values because partial η^2 generally takes on a larger value than η^2 in factorial ANOVA models and is not additive across effects (Pierce, Block, & Aguinis, 2004). Next, ω^2 is the proportion of variance accounted for by a treatment effect controlling for other treatment effects, and it takes into account both error variance and the structure of the data collection design. It takes on different forms depending on the experimental design, is more difficult to calculate, and less frequently reported than either η^2 or partial η^2. Importantly, ω^2 is only appropriate for fixed-effect ANOVA models. Finally, Cohen's f is the ratio of the standard deviation of the means to the standard deviation of the errors (i.e., the square root of the ratio of explained to unexplained variation).

Follow-Up Tests

A significant treatment effect may be the consequence of population mean differences between two or more groups. Following a significant F-test, researchers typically perform pairwise comparisons of means, for which a wide variety of procedures exist. The most

common ones are Tukey, Scheffé, and Bonferroni, with the latter procedure being a rather conservative general method for protecting the family-wise or experiment-wise error rate of all such comparisons.

As an alternative to such simple comparisons, researchers also conduct more complex comparisons of multiple group means using contrasts, typically independent or orthogonal contrasts. Orthogonal contrasts are sets of linear combinations of group means so that pairwise comparisons are the simplest cases of contrasts. Statistically, contrasts are characterized by the fact that the weights for the linear combinations of the means sum to zero while the sum of the cross-products of those weights for pairs of coefficients are also zero for orthogonal contrasts. When the categorical predictor variables are measured on ordinal rather than nominal scales, orthogonal contrasts can also be used for trend analyses, which investigate whether there are linear, quadratic, cubic, or higher-order trends in the means along the levels of the ordinal predictor variable. This requires specialized sets of coefficients, which textbooks on general linear models include or programs utilize automatically.

Factorial ANOVA Models for Alternative Designs

As with any general linear model, the strength of the inferences that can be drawn from the inferential tests in the factorial ANOVA model are closely connected to the design structure for data collection. A randomized experimental design with or without blocking supports the strongest form of causal inferences on the basis of an ANOVA model analysis. In practical applications, however, there may be some treatment combinations that are not theoretically significant, not feasible given budget or time constraints, or not ethical (Shadish, Cook, & Campbell, 2002).

With appropriate modifications to the underlying general linear model structure and associated hypothesis tests, factorial ANOVA models can accommodate resulting alternative designs. Such designs include fractional factorial designs, for which many treatment cells are empty; complete and incomplete block designs that include nested factor levels (e.g., certain instructional aids are only available to students in particular classrooms); and repeated-measures designs.

SEE ALSO: Describing and Illustrating Quantitative Data; Probability and Hypothesis Testing

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Comparing Two Independent Groups

VEDRAN DRONJIC AND RENA HELMS-PARK

This entry deals with research designs in applied linguistics in which two independent groups of participants are compared. First, the concept of independent groups is defined and contrasted with other designs. Then, a number of essential research and statistical terms related to studies involving two independent groups are elaborated on. Finally, appropriate statistical procedures for analyzing data from such research designs are described, and the reader is pointed to a number of useful sources for further reading.

Independent Groups Research

In experimental research, groups are independent when one group of randomly selected participants is exposed to one condition or treatment and a corresponding randomly selected group to a different condition or treatment (the "independent variable") and the researcher observes the effect of the independent variable on a dependent variable. This is called independent-measures or between-subjects research. There are experiments without an overt manipulation of an independent variable. Here, groups are determined by participant characteristics, and the characteristic distinguishing one group from the other is called a quasi-independent variable. Alternatively, multiple measurements are taken from a single group, which is referred to as repeated-measures or within-subjects research. However, whenever there is reason to expect that the data may be compromised by test order (e.g., when the posttest in a repeated-measures study closely resembles the pretest), an independent design is preferable. In a third type of situation, separate groups of participants are used, but individual participants in one group are closely matched to identical or near-identical participants in the other group. This is called matched-samples research. The latter two types of study are grouped under the umbrella term "related-samples research" and are considered equivalent for the purposes of statistical analysis (Gravetter & Wallnau, 2007).

In terms of experimental manipulation, researchers working with two independent groups have two main choices. In a comparison group design, both groups receive a treatment. For instance, one might investigate the impact of hypertext glosses versus bolding of text on second language (L2) lexical acquisition. In a control group design, one group (the treatment group) receives a treatment while the other (the control group) does not. Still, it is customary to have the control group perform some kind of language-based task to ensure that any observed differences are attributable to the treatment (Mackey & Gass, 2005). In practice, many applied linguistics studies feature both a control group and a number of treatment groups. With independent groups, the primary method of ensuring that an apparent difference made by an experimental manipulation is not due to extraneous factors is to assign participants to groups randomly (Field, 2005). In fact, true experimentation by definition entails random assignment of participants to groups. This is easier to achieve in some kinds of research (e.g., in most laboratory-based research) than in others (e.g., in research with intact classes). Research in which randomization is not feasible is referred to as quasi-experimental.

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Statistical Tests for Comparing Two Independent Groups

When comparing two independent groups, the aim is to ascertain whether the groups are representative of two different populations. Assuming random sampling (to ensure maximum initial comparability), any observed differences should be attributable to the experimental manipulation. In applied linguistics, comparability is commonly confirmed through pretesting, particularly with small samples. As per scientific convention, researchers test the assumption that experimental manipulation will not cause any differences or changes. This is referred to as the null hypothesis (H_0). The opposite is called the experimental (or alternative) hypothesis (H_1). Researchers quantify the likelihood of H_0 not being true on the basis of the observed data by using inferential statistical procedures.

Independent Samples *t* Test

The most commonly used procedure when comparing two independent groups on a single measurement is the independent samples *t* test. Essentially, three pieces of information are required for this test: (1) the observed difference between the mean scores obtained from the samples; (2) the expected difference between the means (zero if H_0 is validated); and (3) the estimated standard error of the difference between the sample means. Once a *t* statistic is computed, researchers consult a statistical table of *t* values (available in Fisher & Yates, 1974, or most statistics textbooks) to ascertain whether the observed difference between the means is greater than what is expected by chance alone. (*SPSS* and similar software applications do this automatically.) If this is the case, H_0 is rejected, and it is concluded that the observed difference is due to the experimental manipulation. An important notion here is that of the alpha level, which is defined as the acceptable degree of probability (written as *p*) that the observed difference is due to chance. The conventional alpha levels vary across disciplines. In applied linguistics, 5% is generally considered acceptable. Therefore, if the *p* value is less than 0.05, it is said that the observed difference between the groups is statistically significant at the 0.05 level, or, in other words, that the observed differences will be due to chance ≤ 5% of the time when H_0 is true.

The independent samples *t* test is a parametric test based on the normal distribution. Parametric tests make assumptions about parameters (i.e., characteristics of entire populations as opposed to samples). In order to reach an accurate conclusion, apart from the requirement that the sampling be random (to ensure sample-to-population generalizability), a number of additional assumptions should be met when using such tests: (a) the researcher should be dealing with continuous (interval or ratio) data (i.e., any value within the range should be observable and the difference between, say, 1 and 2 on the scale should be the same as the difference between, say, 5 and 6); (b) the data must come from two independent observations; (c) the data should be normally distributed in both populations; and (d) the variances in both populations should be approximately equal, which is referred to as the homogeneity of variance assumption (Field, 2005; Gravetter & Wallnau, 2007).

With respect to (a), it should be noted that, in practice, researchers frequently treat ordinal data (e.g., data obtained with a Likert scale) as continuous and submit them to parametric tests. If this is done (and there is an unresolved debate about whether it should be done; see Velleman & Wilkinson, 1993; Jamieson, 2004), it should be clearly stated in the research report. If the assumption in (b) is violated, the *p* value produced might be inaccurate. With regard to (c), while parametric tests tend to be tolerant of violations of normality (Glass, Peckham, & Sanders, 1972), such violations may reduce statistical power (i.e., increase the likelihood of a Type II error, or accepting H_0 when it is false). A number of options exist for dealing with non-normal data (e.g., Wilcox, 2005; McDonough & Trofimovich, 2008), including the use of robust statistics (Larson-Hall & Herrington, 2010). Finally, with regard to (d), there is an alternative way of computing the *t* statistic if the

homogeneity of variance assumption is violated (see Gravetter & Wallnau, 2007). *SPSS* does this automatically.

When running a *t* test in *SPSS*, it is possible to request a separate test of normality for each group. The Kolmogorov–Smirnov Test is the more commonly used of the two tests performed by *SPSS*. In addition, *SPSS* will automatically test the data for homogeneity of variance using Levene's Test for Equality of Variances. Nonsignificance on the Kolmogorov–Smirnov Test implies that the data are probably normally distributed and on Levene's Test that the homogeneity of variance assumption has been met.

For presenting the results of a *t* test, see Gravetter and Wallnau (2007). Norris and Ortega (2000), among others, have pointed out that the reporting of effect sizes should become standard practice in applied linguistics. As *SPSS* does not compute effect size for *t* tests, this is done manually and is a straightforward matter (see, e.g., Rosnow & Rosenthal, 1988; Cohen, 1992). Effect size is usually reported as Cohen's *d* (indicating the mean difference in terms of standard deviations) or as the percentage of variance accounted for (or r^2). Cohen (1988) has suggested guidelines for interpreting effect size using these statistics.

Nonparametric Tests for Comparing Two Independent Groups

When comparing two independent groups, there are occasions when independent samples *t* tests are not advisable, namely, when the above assumptions are not met. In such situations, there are two alternative inferential statistical techniques, the chi-square test for independence and Mann–Whitney *U*, both belonging to a family of procedures called nonparametric tests. While these do have less stringent requirements than parametric tests, they also have less statistical power and therefore might not always detect a genuine effect (cf. Type II error above). When the assumptions for parametric tests are violated, researchers may decide to perform both parametric and nonparametric tests and report whether the results of the tests correspond. It is not uncommon for researchers to report only the results of the parametric test if the results of the two tests agree.

Mann–Whitney *U* is the nonparametric alternative to the independent samples *t* test for data which can be meaningfully ranked. Here, the groups' scores are combined and rank ordered. A subsequent procedure establishes whether the two sets of scores cluster at opposite ends of the distribution or are mixed relatively evenly. In short, this test reflects the level of overlap between the groups' scores. The Mann–Whitney *U* test assumes that the data come from independent observations, that the dependent variable is continuous, and that scores are disparate enough to make ranking meaningful, that is, that there are not a large number of identical scores (Gravetter & Wallnau, 2007). For more on this test, including the reporting of results, see Gravetter and Wallnau (2007). For example, in a study of the acquisition of English causatives by Hindi and Vietnamese speakers, Helms-Park (2001) used multiple-choice, grammaticality judgment, and production tests that were scored on a scale of 0 to 4. A Mann–Whitney *U* test was used because many of the distributions were not normal and had unequal variances, rendering the *t* test unsuitable.

Note that multiple comparisons between two independent groups are commonly required (in fact, due to increasing sophistication in design, studies comparing only two means are rare in present-day applied linguistics). In such situations, *t* tests (or their nonparametric counterparts) are inappropriate since running multiple tests on the same data increases the likelihood of Type I error (i.e., finding significant differences between groups when there are in fact none); this is known as familywise or experimentwise inflation of the error rate. For instance, Costa, Caramazza, and Sebastián-Gallés (2000) compared Spanish monolinguals and Catalan–Spanish bilinguals on speed of naming pictures in Spanish. In one of the tasks both the first language of the participants and cognate status of the picture names were manipulated. Thus, apart from contrasting monolinguals and bilinguals, the researchers also compared naming speeds for cognate and noncognate picture names. In

Dronjic and Helms-Park (2009), two groups of participants completed the same vocabulary test but with different instructions. Besides an overall score, subscores were obtained for both paradigmatic relations and collocations. Dronjic and Helms-Park were indeed able to use an independent samples *t* test to compare the overall test scores. However, to avoid familywise inflation of the error rate, both sets of researchers used a repeated-measures analysis of variance (ANOVA) for their multiple comparisons. Note that if multiple *t* tests must be performed, a reduction of the alpha level is necessary (see Gravetter & Wallnau, 2007).

SEE ALSO: Comparing Two Related Samples; Comparing Two+ Independent Groups; Comparing Two+ Related Samples; Sampling: Quantitative Methods; Testing Independent Relationships; Variables

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Comparing Two Related Samples

XIANGYING JIANG

Introduction

The related samples design, which compares the means of two groups that are related, is widely used in applied linguistics research. For example, let us say we want to know if the English reading performance of a group of English as a second language (ESL) students has improved after an instructional treatment during a one-semester English reading class. To make this determination, we could randomly select students from an ESL student population and enroll them in a one-semester English reading class or, more likely, we would use an intact class. A pretest and posttest would be administered at the beginning and the end of the semester, respectively. This is a typical pre- and post-experimental design (for the randomly assigned group, or quasi-experimental design for the intact group), in which each pair of responses is related because it comes from the same individual. Another design that would result in two related samples is the so-called matched pairs design. In this design, each pair of responses comes not from the same individual, but from two individuals that are somehow matched (e.g., by age, intelligence, or prior performance). Two statistical methods, the paired samples *t* test and the Wilcoxon signed-rank test, are designed to compare the two related samples. This entry explains both statistical methods, covering the following topics: the logic of the test, assumptions, example data, running a computer application, and interpreting the results, including effect size. The entry concludes by discussing the advantages and disadvantages of each method.

Paired Samples *T* Test

Logic of the Test

The paired samples *t* test is designed to determine whether differences exist between the means of two related samples. (This test is also referred to as a dependent *t* test and a matched pairs *t* test.) It is important to understand that testing whether the two sample means are equal is the same as testing whether the mean of the difference scores between the two samples is zero. Thus, the paired samples *t* test is essentially an extension of the one-sample *t* test. That is, what the paired samples *t* test does is to first transform the two related samples into one single sample of difference scores by subtracting one sample from the other and then evaluate the mean of the difference scores against zero (Howell, 2002). Like the two independent samples *t* test, the paired samples *t* test requires that the two measures be the same or in parallel forms (e.g., reading scores 0–100 in both samples 1 and 2). The measures must be at the interval level of measurement, at least.

A null hypothesis that says the mean difference equals zero is tested. The null hypothesis would be rejected if the probability obtained were less than or equal to a preselected significance level, such as $\alpha = .05$. On the other hand, we would fail to reject the null hypothesis if the probability obtained were greater than the preselected significance level $\alpha = .05$.

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Table 1 Hypothetical data on reading comprehension from a group of ESL students

Student	*Pretest*	*Posttest*	*Difference* $X_d = Post - Pre$
1	85	94	9
2	56	62	6
3	92	85	–7
4	84	86	2
5	65	72	7
6	90	95	5
7	56	66	10
8	70	70	0
9	76	79	3
10	83	87	4
11	80	79	–1
12	52	60	8
		Sum	46
		Average	3.83

Assumptions of the Test

There are three assumptions for the paired samples *t* test: (1) Observations for each pair should be made under the same conditions; (2) the mean differences should be normally distributed; and (3) variances of each variable can be equal or unequal (SPSS Inc., 2007). For example, we must make sure that the pretest and the posttest in the above example take place under identical conditions to satisfy assumption 1. One instance of incomparability would be if students were given cloze questions in the pretest but multiple-choice questions in the posttest. To satisfy assumption 2, the population of difference scores must be normally distributed. You may assess normality by using a histogram, stem-and-leaf plot, or Q-Q plot. But the normality assumption is not a strong one. Sometimes, a reasonable violation of the assumption is well tolerated as long as the sample size is large. Assumption 3 is not much of a concern since it states that the population variances can be either equal or unequal.

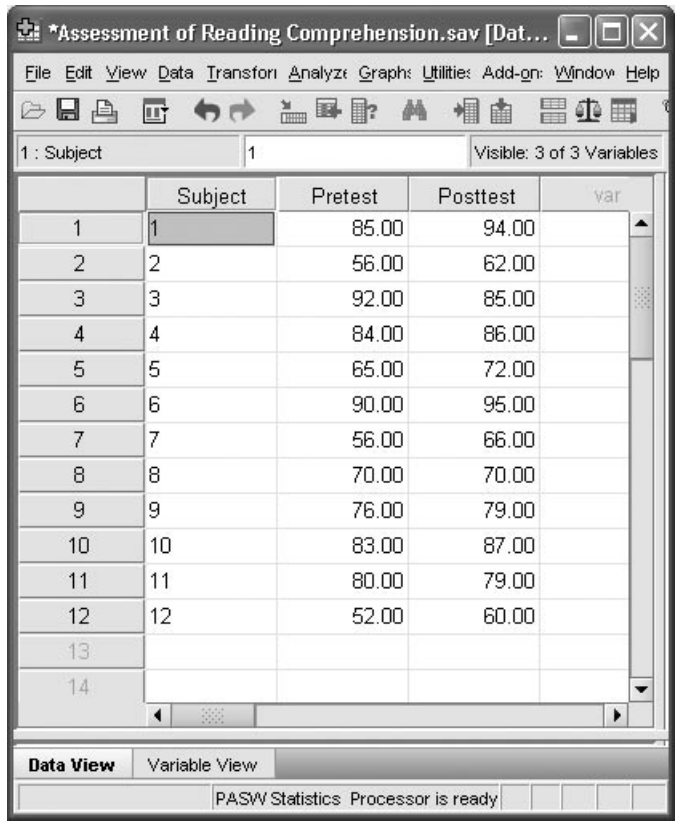
Example Data

Table 1 presents some hypothetical pre- and posttest data on reading comprehension from a group of ESL students. Subject number is in column 1, pretest scores in column 2, posttest scores in column 3, and difference scores in column 4 (column 3's posttest – column 2's pretest). A positive difference score shows that the student did better in the posttest than in the pretest, and vice versa. The last row of column 4 displays the mean difference of 3.83, which is to be statistically evaluated against zero.

Running a Paired Samples *T* Test

To run the paired samples *t* test in SPSS (currently renamed PASW), we first enter the data into a SPSS datasheet as shown in Figure 1.

Then, we click Analysis > Compare Means > Paired-Samples *T* Test to access the procedure. The remaining steps are self-explanatory and are illustrated in Figure 2.



	Subject	Pretest	Posttest	var
1	1	85.00	94.00	
2	2	56.00	62.00	
3	3	92.00	85.00	
4	4	84.00	86.00	
5	5	65.00	72.00	
6	6	90.00	95.00	
7	7	56.00	66.00	
8	8	70.00	70.00	
9	9	76.00	79.00	
10	10	83.00	87.00	
11	11	80.00	79.00	
12	12	52.00	60.00	
13				
14				

Figure 1 SPSS data view

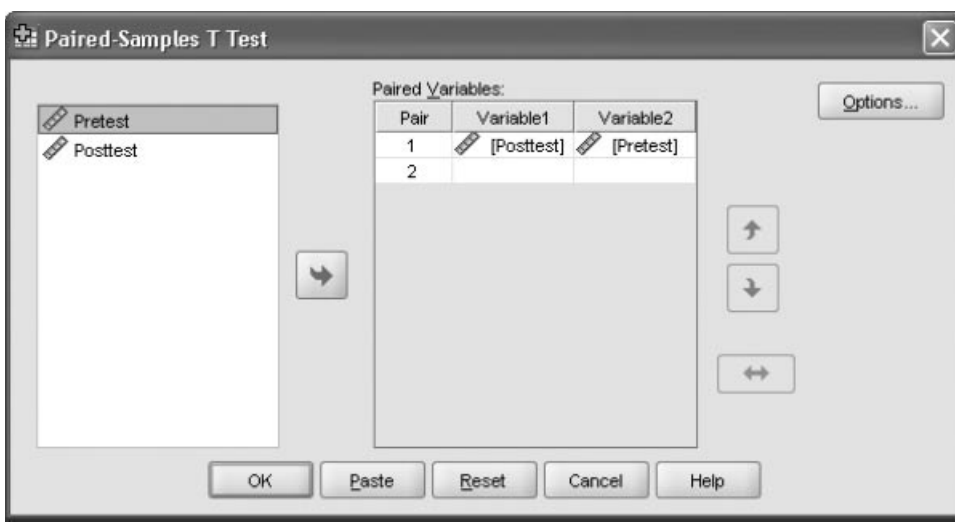


Figure 2 Paired samples *t* test dialogue box in SPSS

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	posttest	77.9167	12	11.92750	3.44317
	pretest	74.0833	12	13.98349	4.03668

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	posttest & pretest	12	.942	.000

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1 Posttest - Pretest	3.8333	4.83986	1.39715	.75823	6.90843	2.744	11	.019

Figure 3 SPSS output from the paired samples *t* test

Interpreting the Results

SPSS displays the results in three boxes (Figure 3). The first box displays descriptive statistics for each variable. In the second box, the correlation coefficient (r = .942) shows strong correlation between the two samples, which is expected. The third box displays the output of the paired samples *t* test. The first three columns display the descriptive statistics for the difference scores. Notice that the mean difference is positive (as we saw in Table 1). Column 7 shows that *t* equals 2.74 and the last column shows that the *p*-value (2-tailed) of this *t* equals .019. Since the *p*-value is less than the critical value $\alpha = .05$, we reject the null hypothesis and conclude that the two samples are significantly different. Since the mean difference is positive, we can understand that students did significantly better, statistically, in the posttest than in the pretest.

Effect Size

To estimate the magnitude of a significant effect (i.e., the effect size), one of two approaches is often used for a paired samples *t* test: the standardized mean difference (Cohen's d) or the strength of association (eta squared). Although designed for two independent samples, Cohen's d is found to be also appropriate for calculating the effect size for two related samples (Dunlop, Cortina, Vaslow, & Burke, 1996). SPSS does not provide Cohen's d in the paired samples *t* test procedure. To obtain this statistic, you can access one of the online Cohen's d calculators (e.g., http://www.danielsoper.com/statcalc/calc48.aspx). In our example, the calculator returns a d = 0.30, which indicates that the posttest score was about

$^1/_3$ a standard deviation greater than the pretest score, a relatively small effect size. To compute eta squared, square the observed *t* value and divide that by the observed *t* squared + *df* (Hatch & Lazaraton, 1991). In our example, the value is .41, meaning that the instructional treatment accounted for 41% of the variance between the posttest score and the pretest score.

Wilcoxon Signed-Rank Test

Logic of the Test

As discussed previously, the paired samples *t* test requires that the population of difference scores is normally distributed. If it appears that this assumption is violated, you may consider using the Wilcoxon signed-rank test, which is a distribution-free procedure. The logic of the Wilcoxon test is as follows. The test first transforms the numerical difference scores into a set of signed ranks based on the magnitude of these difference scores. Then statistical inference is made on whether or not the mean rank equals zero (Wilcoxon, 1945).

The null hypothesis is that there is no difference between the pretest and the posttest. Being a signed-rank procedure, the Wilcoxon's test essentially tests the null hypothesis that the mean rank equals zero. We would reject the null hypothesis and conclude that there is a significant difference between the pretest and the posttest if the *p*-value of the observed Z statistic were less than $\alpha = .05$. On the other hand, we would fail to reject the hypothesis and conclude that there was no significant difference between the pretest and the posttest if the *p*-value were greater than $\alpha = .05$.

Assumptions of the Test

The assumption for the Wilcoxon signed-rank test is that the population distribution of difference is symmetric. The different data do not need to have a normal distribution (SPSS Inc., 2007). But the data must be continuous, that is, at least at the ordinal level of measurement.

Example Data

We further examine this method by revisiting the pretest and posttest data in Table 1. We begin by rearranging the set of difference scores in order of increasing absolute value, which yields: 0, –1, 2, 3, 4, 5, 6, 7, –7, 8, 9, 10. Then, we discard the difference of zero, replace the above numbers with numbers 1 through 11, and keep algebraic signs. These steps yield these ranks: –1, 2, 3, 4, 5, 6, 7.5, –7.5, 9, 10, 11. Notice that the two values (7.5 and –7.5) are the average of the adjacent tied ranks 7 and 8 (i.e., 7 and |–7|). The subsequent Wilcoxon test is performed on these ranks instead of on the original numerical values.

Running the Wilcoxon Test

To run the Wilcoxon test in SPSS, we first enter the data in an SPSS datasheet as shown in Figure 1. Then we access the procedure by clicking Go to Analysis > Non-Parametric Test > 2 Related Samples. The remaining steps are self-explanatory and are illustrated in Figure 4.

Interpreting the Results

As shown in Figure 5, the first box of the output displays the descriptive statistics for each variable. The second box shows the rank statistics. In the first column of this box, SPSS

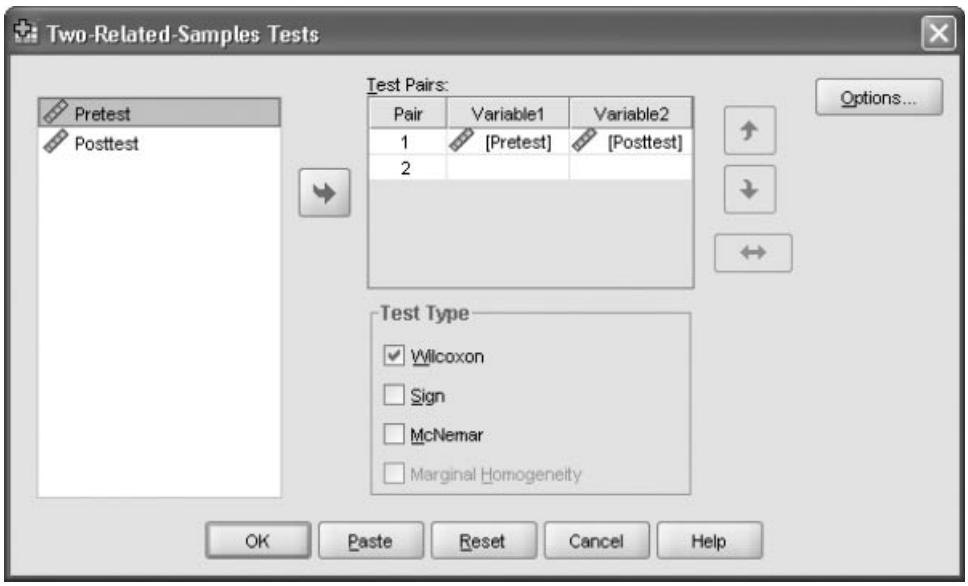


Figure 4 Two-related-samples tests dialogue box in SPSS

output shows that there are 12 ranks in total, 2 of which are negative (i.e., –1, –7.5), 9 are positive (i.e., 2, 3, 4, 5, 6, 7.5, 9, 10, 11), and 1 is a tie (where posttest – pretest = 0). The last column shows the sum of negative ranks (i.e., 1 + 7.5 = 8.5; the negative signs are ignored) and the sum of the positive ranks (2 + 3 + 4 + 5 + 6 + 7.5 + 9 + 10 + 11 = 57.5), respectively. The column to its left shows the mean negative ranks (8.5/2 = 4.25) and mean positive ranks (57.5/9 = 6.39). The *p*-value (2-tailed) of the z score tells whether or not the two samples are significantly different. SPSS uses the smaller one of the two sums of ranks (i.e., 8.5) to calculate the z score. The z score is found to be –.179. Since the 2-tailed probability ($p = 0.029$) is less than the preselected significance level $\alpha = .05$, we may conclude that there is a significant difference between the pretest and posttest. Since the mean of the posttest is greater than the mean of the pretest, we may conclude that the students did significantly better in the posttest than in the pretest.

Effect Size

To compute the strength of association for the Wilcoxon signed-rank test, square the Z test statistic, and divide it by N–1 (Hatch & Lazaraton, 1991). In our example, eta squared = .43.

Advantages and Disadvantages

Finally, we discuss the advantages and disadvantages of the paired samples *t* test versus the Wilcoxon signed-rank test. The paired samples *t* test is a parametric test and, as such, requires the assumption of normality. However, as long as the assumption is satisfied, the paired samples *t* test is more powerful than the Wilcoxon test. That is, the paired samples *t* test is more likely to detect differences when differences exist. Therefore you should use the paired samples *t* test as long as the normality assumption is satisfied. Sometimes, even a reasonable violation of the normality assumption is tolerated. In contrast, the Wilcoxon

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Pretest	12	74.0833	13.98349	52.00	92.00
Posttest	12	77.9167	11.92750	60.00	95.00

Ranks

		N	Mean Rank	Sum of Ranks
posttest - pretest	Negative Ranks	2[a]	4.25	8.50
	Positive Ranks	9[b]	6.39	57.50
	Ties	1[c]		
	Total	12		

a. posttest < pretest

b. posttest > pretest

c. posttest = pretest

Test Statistics[b]

	posttest - pretest
Z	-2.179[a]
Asymp. Sig. (2-tailed)	.029

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Figure 5 SPSS output from the Wilcoxon signed-rank test

test is a nonparametric method and, as such, does not assume normality of distribution. This method is less powerful because it ignores available information by replacing interval or ratio level values with ranks. However, when there is a clear violation of the normality assumption, which occurs often when sample size is small, as often is the case in applied linguistic research, the Wilcoxon test is preferred. The Wilcoxon test is also preferred when there are outliers in the data because rank-based statistics are less sensitive to outliers (Norusis, 2009).

SEE ALSO: Comparing Two Independent Groups; Describing and Illustrating Quantitative Data; Inference; Probability and Hypothesis Testing; Quantitative Methods; Sampling: Quantitative Methods

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Comparing Two+ Independent Groups

JENIFER LARSON-HALL

A statistical comparison among groups asks the basic question of whether the means of the groups differ widely enough to conclude that the groups come from different populations. Many times in applied linguistics the groups are composed of human participants, and the reasons they could differ are because the groups received different types of experimental treatments or teaching methods, or because the participants differ in fundamental ways such as memory ability or past experiences. One example would be a comparison of how well three groups understood a piece of literature based on different types of analysis: traditional teacher-led discussion, discovery analysis with students doing most of the questioning, and a control group who simply read the text with no analysis at all. Another example would be examining Arabic speaking proficiency looking for evidence that experience with the language in different contexts (naturalistic exposure versus instructed immersion versus non-immersion instruction) was an important factor for proficiency. If a statistical test finds that the groups are significantly different, we may infer that the variable we are looking at (type of teaching method in the first example or learning context in the second) played a role in affecting participants' outcomes, and we can quantify the practical effect of that variable with another statistic called *effect size*.

Logic

A comparison among the means of more than two groups asks whether the variable that is measured (the dependent variable) is affected by another variable of interest to us (the independent variable). If this variable of interest, such as teaching method, preparation time before writing, or type of words being learned (which are all categorical variables) is found to be statistically significant, then this means that the independent variable had some effect on the outcome of the dependent variable.

The question of whether, overall, the independent variable had an effect on the dependent variable is answered in the omnibus test of a one-way ANOVA statistical test (ANOVA stands for ANalysis Of VAriance). The omnibus test is the one that produces an F statistic and an associated p-value (you can see an example later in this entry in Figure 1). Mathematically, ANOVA tests the ratio of the amount of variation within the groups themselves (do the scores of individuals within the group vary widely or is there only a small range of different scores within one group?) and between the separate groups (what is the difference in scores across the groups?). If the groups are highly different from each other but the variation is small within the group, the F statistic will be large (over 2) and the test will be statistically significant. If the groups are highly different from each other but there is also a wide variation within the groups, the F ratio will be smaller and the test may not be statistically significant. Obviously, if the groups are not very different from one another it is not likely that the ANOVA F statistic will be large.

Even if the omnibus test is statistically significant there is still a further question to ask—which levels of the independent variable are statistically different from one another and how do they differ? For example, in looking at the effects of different types of oral

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error correction with three different treatment groups, you wouldn't just want to know that overall error correction type made a difference to outcomes (the question the omnibus test answers) but you would also want to know about specific differences between the treatments. Did the two groups which received correction do better than the control group which received no correction? Did the method of explicit correction work better than implicit correction? To answer this question one can perform post hoc tests or planned comparisons. Post hoc tests compare all of the groups to one another one at a time, testing for statistical differences. Planned comparisons are better used when you have a large number of groups but are not interested in every single comparison between groups. Planned comparisons let you choose which groups to compare to one another.

To summarize so far, if you have a dependent variable that is a continuous or interval-level and you have just one independent variable that is categorical or nominal and has two or more levels, you can use a statistical test to investigate whether the mean response differs between levels or groups. If you only have two levels in your independent variable, meaning you only have two mean scores, you should use a *t* test to compare two independent groups. On the other hand, if you have two, three, or more categorical independent variables, you can use factorial ANOVA models.

Assumptions

In conducting your statistical test of comparing two+ independent groups, you will need to decide if you would like to use a parametric, nonparametric, or robust test. If you want a parametric test, you will choose the one-way ANOVA. Parametric tests involve estimating the distribution of scores in a population, using the data sampled from the population. Because of this, parametric statistics involve making assumptions about the shape of the distribution, chiefly that the data are normally distributed and that the variances are equal.

For the assumption of a normal distribution, Larson-Hall (2010) argues that it is virtually impossible to tell whether your data are exactly normally distributed or not if sample sizes are small (under 50 in each group). Therefore, it is judicious to look only for extreme skewness by examining histograms and for outliers by looking at a boxplot. If you have skewness or outliers your data are not normally distributed.

The assumption of equal variances means that all of the groups have similar variance (or the square root of the variance, which is the standard deviation). Examine the numerical standard deviation of the groups compared to the total number of points to decide whether variances are equal. Some statistical programs allow you to test the assumption of equal variances with Levene's test of homogeneity of variances, and this can be one more piece of evidence that group variances are equal or not (the *p*-value for this test should be *over* .05 to conclude that variances are equal).

Nonparametric tests do not assume that distributions are normal (although they do assume that the population distributions are equal, which is similar to the assumption for parametric statistics that variances are equal), and they also do not rely on measures of location such as the mean, which can be skewed by outliers. The nonparametric analogue to the one-way ANOVA is the Kruskal–Wallis test, and the nonparametric analogue to post hoc tests is the Mann–Whitney test. Many authors use nonparametric tests when their data do not satisfy the assumptions of parametric tests, but assume that such tests are not as powerful as parametric tests.

In fact, the power to find out the actual situation (whether groups differ depending on the independent variable) depends on the shape of the data, so that parametric tests may not be as powerful as nonparametric tests when their assumptions are not satisfied (Maxwell & Delaney, 2004). Power is a technical term that is measured on a percentage scale from 0

to 100 and notes the probability of finding a difference between groups when that difference does exist, but it can also be understood in its normal sense of being strong enough to find real differences. Both parametric and nonparametric statistics can be susceptible to considerably lower power if distributions are skewed or have unequal variances (Wilcox, 1998). Howell (2002) notes that when you expect unequal variances (such as in the case when you might be comparing native speakers to non-native speakers and expect much less variance in scores from the native speakers), it is especially important to try to keep group sizes equal.

If either the normality assumption or the equal variances assumption does not hold, you may still proceed with a parametric statistical test. Be aware, however, that you may fail to have the power to find differences which actually exist. Although many statistical users have heard that the ANOVA procedure is relatively robust (in other words, immune) to departures from assumptions, simulation studies with simple statistical tests have shown that they are not (Tukey, 1960; Hampel, 1973). Modern statistics has developed more sophisticated statistical tools that can better deal with departures from assumptions and have higher power, and this collection of tools is labeled robust statistics (for more information about these types of statistics, see Larson-Hall & Herrington, 2010). Wilcox, Keselman, and Kowalchuk (1998) found that a robust method was quite effective at dealing with the situation when three unwanted conditions all held at the same time: group distributions were non-normal, variances were unequal, and group sizes differed.

There are two more assumptions that all data which is analyzed with a comparison of group means must follow. One is that the data are independent, and the other is that the dependent variable is measured as an interval-level variable.

Most statistical practitioners would like some guidelines with respect to sample sizes. Although 30 is sometimes given as a rule of thumb for a minimum size for a study (for 3 groups, that would be 10 minimum in each group), in reality the size you need depends on how strong the effect you are studying is. If you are studying a phenomenon which exists but has a small effect size, you may need over 100 people in each group in order to have enough power to find any differences, but if the effect size is large, 10 in each group would be sufficient. Thus, you should be aware that just because you don't find any differences between groups does not mean they do not exist; in such a case you should look at how much power your statistical test had. If it had strong power (.80 or higher) then you may conclude it is unlikely that there are real differences between your groups. However, if your power is low, then you can only conclude that you would need more participants in order to answer your question (for detailed instructions about calculating power in the R statistical program, see Larson-Hall, 2010).

Example of Parametric Technique

To illustrate the parametric one-way ANOVA data from an unpublished study by Larson-Hall will be used (google "Larson-Hall," "forgotten" and "Routledge" and you'll find the actual data online as an SPSS file). The data examine Japanese users of English. Some of them lived in the US as children, but returned to Japan and essentially lost their English. They are called "Early immersionists." Another group lived in the US as adults, and they are called "Late immersionists." A third group was majoring in English at a university but had never lived abroad. They are the "Non immersionists." The dependent variable is a phonemic discrimination test, where listeners had to identify whether the word they heard began with the English sound [ɹ], [l], or [w]. Essentially, the question was how the age at which the learner began learning the L2 and living in the target-language country might affect the ability to discriminate among these sounds.

ANOVA

Score on the R/L/W listening test

	Sum of squares	df	Mean square	F	Sig.
Between groups	1481.589	2	740.794	3.527	0.39
Within groups	8611.048	41	210.026		
Total	10092.636	43			

Figure 1 Output for the omnibus test of a one-way ANOVA using SPSS

Omnibus Results

Using any type of statistical software, you will have several different pieces of output for the results of the one-way ANOVA statistical test. You should first look at your descriptive statistics, especially the means and standard deviations of your groups, and get familiar with your data. Always be sure to report your descriptive statistics somewhere in your report; for a one-way ANOVA, effect sizes will be calculated from means and standard deviations, so your reader will need to see these.

The second piece of information you'll want to examine is the omnibus ANOVA results. The output from an SPSS one-way ANOVA is found in Figure 1. You'll need to report the data in the columns for "df," "F" and "Sig." (the other columns give results of the mathematical steps in calculating the *F* ratio). The "df" column gives the degrees of freedom for both the "Between groups" calculation and the "Within groups" calculation (this is also sometimes called the error df). You'll need to report both of these numbers. The "F" column gives one number, which is the final result of the mathematical calculations of the ANOVA. If it is over 2 it is likely that the associated *p*-value will be less than .05, indicating a "statistically significant" result. The value in the "Sig." column is the *p*-value of the omnibus one-way ANOVA test. If it is less than .05, we can reject the null hypothesis that there is no difference among the groups we are testing.

Given the output found in Figure 1 we can say that for this test of phonemic discrimination there is a difference among the three groups. We can report this by saying something like "A one-way ANOVA found a statistical difference among groups, $F_{2,41} = 3.5$, $p = .039$."

Post Hoc Results

Given that the omnibus test is statistically significant, we can then examine the results of post hoc tests comparing the groups two at a time in pairwise comparisons. There are many choices available for the type of post hoc test to use, and they differ in how much they adjust the raw *p*-value to make up for the fact that you are doing multiple tests (by simply performing many statistical tests you may get a statistically significant result merely by chance). The LSD test will actually not make any adjustment to the alpha level, and Howell (2002) recommends this as the best post hoc test when you have only three groups. If you want to use an adjustment, Bonferroni is more powerful than Tukey when fewer tests are done, but Tukey has more power when more tests are done. You may also choose post hocs which can help adjust for violations of the homogeneity of variance assumptions, including the Games–Howell post hoc (more powerful) and Dunnett's T3 (more conservative). If you use the R statistical program, you could use the LSD to get raw *p*-values and then use the newer Benjamini and Hochberg False Discovery Rate algorithm to adjust *p*-values (http://www.unt.edu/benchmarks/archives/2002/april02/rss.htm).

Since there were only three groups, the statistical analysis uses LSD post hoc tests, which are seen in Figure 2. Basically, this figure shows the results of three tests. However,

Multiple Comparisons

(I) Status	(J) Status	Mean difference (I-J)	Std. error	Sig.	95% confidence interval	
					Lower bound	Upper bound
Non	Late	–1.467	5.292	.783	–12.15	9.22
	Early	–13.124*	5.385	.019	–24.00	–2.25
Late	Non	1.467	5.292	.783	–9.22	12.15
	Early	–11.657*	5.385	.036	–22.53	–.78
Early	Non	13.124*	5.385	.019	2.25	24.00
	Late	11.657*	5.385	.036	.78	22.53

Figure 2 Results of the LSD post hoc tests from a one-way ANOVA

Note. * The mean difference is significant at the 0.05 level.

the actual number of entries is doubled by reversing the order of the comparison, resulting in six pieces of information. For example, the "Non versus Late" group comparison is given in the first row of output, and the reversed "Late versus Non" group is given in the third row of output.

The second column of Figure 2 shows the mean difference, which is the raw difference in mean scores between the two groups. The last two columns, titled "95% confidence interval," give the range within which, with 95% confidence, the mean difference would fall with repeated testing. One may use the 95% confidence interval (CI) in the same way as the *p*-value (found in the column "Sig.") to determine statistical significance: if the interval passes through zero, then it is possible that the actual mean difference is zero, and thus there is no difference between groups. However, if the interval does not pass through zero the difference is statistically significant (and the range of the CI gives an idea of how large or small the difference between the two groups could be). The column "Std. error" gives a measure of variance that we do not need to use.

My results show that the comparison between the Non and Late group is not statistically significant ($p = .783$), the comparison between the Non and Early group is statistically significant ($p = .019$), and the comparison between the Late and Early group is also statistically significant ($p = .036$). Report these results in this way: "LSD post hoc tests found statistically significant differences between the Non and Early group ($p = .019$) and the Late and Early group ($p = .036$), but no statistically significant difference between the Non and Late group ($p = .783$)."

Effect Sizes

It is always important to include effect sizes when giving the results of a study. Generally, the effect sizes for the differences between two groups (the post hoc tests) will be more informative than the effect size for the omnibus ANOVA. For this reason, you can use the same method for calculating effect sizes as is used for *t* tests. Using an online calculator (http://www.uccs.edu/~faculty/lbecker/) you can input mean scores and standard deviations to find effect sizes for paired comparisons. Using the Larson-Hall data (Non: mean = 67.7, sd = 13.8; Early: mean = 80.9, sd = 14.3; Late: mean = 69.2, sd = 15.4) the Cohen's d effect size for Non versus Early is d = .94, meaning the groups differ by almost an entire standard deviation, which is quite a large difference. For Early versus Late d = .79 (also a large difference) and for Non versus Late d = .1 (negligible effect size). Effect sizes show how *important* the difference between groups is. Effect sizes don't change based on the

group size, while statistical outcomes do. This is why you should also give effect sizes for nonstatistical comparisons as well as statistical ones, because you may find important effects even if the statistics indicate that the comparison is not statistical.

SEE ALSO: Assessment and Evaluation: Quantitative Methods; Comparing Groups with Multiple Independent Variables; Comparing Two Independent Groups; Comparing Two Related Samples; Comparing Two+ Related Samples; Describing and Illustrating Quantitative Data; Probability and Hypothesis Testing; Second Language Speech Perception and the Brain; Speech Perception

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Comparing Two+ Related Samples

FLORIN M. MIHAI

What Are Related Samples?

In a survey of four major applied linguistics journals, more than 40% of the linguistics studies had used a design where the means of more than two samples were compared (Lazaraton, 2005). In many instances, researchers have employed a repeated measures design with the purpose of measuring the same dependent variable across two or more intervals. For example, a linguist might want to measure pronunciation accuracy of students taking an accent reduction course at 1-, 3-, and 6-month intervals after course completion.

Parametric Techniques

In studies where the same set of individuals participates in all of the different treatment conditions, researchers who want to use a parametric test should use repeated measures (RM) ANOVA. There are several possible designs for RM ANOVA, the most frequent ones being one-way and two-way RM.

In a one-way design, we test whether the mean value of a single variable differs significantly among the three or more levels of a set of conditions, also called a factor. For example, a group of researchers wants to test whether reading proficiency in the second language (L2) is affected by noise levels. To do that, they measure reading comprehension at three different noise levels: low, moderate, and high. Each participant experiences each of the noise levels in a random order. Noise is the factor and the reading comprehension score of the participants is the repeated measure.

A two-way design is used in experiments involving more than two sets of conditions. Continuing with the previous example, let us assume that the researchers wanted to include an intervention—giving students training in ignoring noise. Pretests were given before the intervention, under each of the three noise conditions, followed by three posttests (again under each noise condition) given after the intervention. Now we have two factors: noise and time. The reading comprehension score for each condition is the repeated measure. This design would allow the researchers to examine the main effects of time and noise, as well as possible interactions (whether the treatment was effective for the low noise condition, but not for the high noise condition).

RM ANOVA designs are particularly useful in certain data conditions. First, great variation among participants may inflate error variance estimates; using RM on each participant provides a way of controlling for this source of variation and reducing error variance (Stevens, 1996). Second, sometimes a sufficient number of participants is difficult to recruit; these designs are cost-effective because each member is measured under all conditions, and moreover, inferential testing becomes more powerful because the sample size is not divided between conditions or groups.

However, there are some disadvantages when using RM design. Participants may get better (practice effect) or they may get worse (fatigue effect) as the experiment progresses over time. Additionally, the order in which conditions are experienced may affect the

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performance of the participants. One last disadvantage is that statistical assumptions are seldom met when running an RM ANOVA (Girden, 1992).

With regard to statistical assumptions, like any ANOVA, RM ANOVA assumes the following (Howell, 2006):

1. normal distribution of data,
2. homogeneity of variance, and
3. homogeneity of covariance if the treatment factor has more than two levels.

RM ANOVA is not very sensitive to the violations of assumptions 1 and 2. If assumptions 2 and 3 are met, then we can describe the population of the study as showing a condition called compound symmetry, a desirable condition but more strict than necessary. Assumptions 2 and 3 can be relaxed as long as there is sphericity, which is the assumption of homogeneity of variances and covariances within each level of the within-subjects factor (Field, 1998). A result violating this assumption cannot be trusted because it increases the Type I error rate. A Type I error occurs when researchers conclude that there are differences between a set of conditions (with related samples such as pretest vs. posttest) when in fact there are none. However, other statistics can be used which correct for this violation and these are typically provided in statistical output.

Example

To exemplify the statistical output of a one-way RM ANOVA design, let us examine a hypothetical study related to vocabulary acquisition in an L2. In this study, researchers want to investigate the effect that a new approach in teaching L2 vocabulary has on integrating vocabulary items into L2 students' long-term memory. Baseline data are collected and vocabulary retention is measured at 3, 6, and 9 months after the treatment has been administered. Table 1 shows the raw data for 32 participants.

Figures 1, 2, and 3 display the output generated using SPSS (Statistical Package for the Social Sciences) for the data set listed in Table 1. In Figure 1 we can see that the mean vocabulary score at the time the baseline data were collected is lower that than at the other three times. We can also see that the standard deviation across the four times is similar.

Figure 2 displays the results of Mauchly's sphericity test. This test is based on the likelihood ratio criterion and involves a scaled comparison between the determinant and the trace of the sample covariance matrix (Anderson, 1958). The significance level in the example is less than .05 so there are significant differences between the variance of differences. Therefore, sphericity cannot be assumed. Corrections for violations of sphericity include the Greenhouse-Geisser, the Huynh-Feldt, and the Lower-bound corrections. If epsilon (Figure 2) is less than .75, we should use the Greenhouse-Geisser correction, whereas for cases when epsilon is larger than .75, we should use the Huynh-Feldt correction.

Descriptive Statistics

	Mean	Std. Deviation	N
Baseline	29.6250	11.92382	32
Threemonths	52.6875	12.93766	32
Sixmonths	50.9375	12.84633	32
Ninemonths	49.1250	12.69684	32

Figure 1 SPSS output for means and standard deviation for Table 1 data set

Table 1 Vocabulary retention data

Participant	*Baseline new vocabulary items*	*New vocabulary items retained after 3 months*	*New vocabulary items retained after 6 months*	*New vocabulary items retained after 9 months*
1	20	59	50	48
2	10	30	29	27
3	12	35	33	31
4	14	39	38	38
5	29	60	57	50
6	19	41	40	42
7	18	30	29	30
8	21	40	32	31
9	20	60	55	51
10	11	31	30	28
11	30	45	44	42
12	21	50	49	47
13	22	41	40	36
14	50	65	64	63
15	55	70	65	54
16	41	65	62	61
17	40	64	62	60
18	42	67	67	65
19	43	69	68	67
20	44	70	69	69
21	40	65	64	60
22	35	50	51	50
23	20	43	43	42
24	34	54	54	52
25	37	59	58	58
26	36	60	59	58
27	21	40	39	35
28	32	65	64	64
29	30	50	50	49
30	23	42	41	40
31	40	67	65	65
32	38	60	59	59

Mauchly's Test of Sphericity[b]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Within Subjects Effect	Epsilon[a]		
						Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.124	62.136	5	.000	factor1	.521	.544	.333

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

b. Design: Intercept
Within Subjects Design: factor1

a. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Figure 2 SPSS output for Mauchly's test of sphericity for Table 1 data set

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Sphericity Assumed	11083.125	3	3694.375	311.811	.000
	Greenhouse-Geisser	11083.125	1.563	7089.533	311.811	.000
	Huynh-Feldt	11083.125	1.631	6793.226	311.811	.000
	Lower-bound	11083.125	1.000	11083.125	311.811	.000
Error(factor1)	Sphericity Assumed	1101.875	93	11.848		
	Greenhouse-Geisser	1101.875	48.463	22.737		
	Huynh-Feldt	1101.875	50.576	21.786		
	Lower-bound	1101.875	31.000	35.544		

Figure 3 SPSS output from RM ANOVA for Table 1 data set

Based on the results from the sphericity test, the researchers used Greenhouse-Geisser correction and reported a significant F statistic of 311.81, indicating that a statistically significant difference was found among the four times the vocabulary data were collected. The practical significance for this statistical finding can be estimated by effect size. The effect size (partial eta squared) can be obtained by calculating the percentage of variance that is explained by the differences in treatment. Specifically, the sum of squares for Factor1 (the error accounted for by time of data collection, 11,083.125) is divided by the total variance (11,083.125 + 1101.875, or 12,185). This results in .91. For the data set in Table 1, then, the partial eta squared or η^2 is .91 or 91%, which means that 91% of the variability in the data is accounted for by the differences between treatments and is interpreted as a large effect size and one that is practically significant.

When reporting data, the following information should be included: the descriptive statistics, the type of ANOVA used (one-way RM, in this example), F-values (the F column in Figure 3), degrees of freedom (between, 1.56, and error, 48.46, found in the df columns in Figure 3), *p* value (.000, found in the Sig. column in Figure 3), and whether or not the differences were significant. In the case of Table 1 data, the results using Greenhouse-Geisser correction are significant, because the *p* value as reported by SPSS is less than .0005 (rounded to .000 in the figure), making the rejection of the null hypothesis very likely. Figure 3 contains error values where error is defined as the amount of unexplained variation across the conditions of the repeated measure variable. Because the statistical analysis figures the error term in its calculations (F is the variance between treatments divided by variance due to chance or error), we do not report those values.

Because a significant difference was found among the four times that the vocabulary data were collected, the researchers may decide to run subsequent analyses, referred to as *post hoc* analyses. These are a series of *t* tests comparing the means of two time periods. For example, baseline would be compared to 3 months, then to 6 months, and then to 9 months; then 3 months would be compared to baseline, 6 months, and 9 months; and so forth. The purpose of these multiple *t* tests is to pinpoint which group means are significantly different from one another. Typically, adjustments are made, such as the Bonferroni adjustments, to address Type I error of multiple comparisons.

Nonparametric Techniques

The Friedman analysis of variance by ranks or the Friedman test is a nonparametric alternative to RM ANOVA, because it does not require the dependent variable to follow a

Ranks

	Mean Rank
Baseline	1.03
Three months	3.84
Six months	2.94
Nine months	2.19

Figure 4 SPSS output for Friedman test ranks

Test Statistics[a]

N	32
Chi-square	84.818
df	3
Asymp. Sig.	.000

a. Friedman Test

Figure 5 SPSS output for Friedman test statistics

normal distribution (Friedman, 1940). Developed by the US economist Milton Friedman, the test separates the data in tables comprising n rows by k columns. Then, the data are ranked across the rows and the mean rank for each column is compared. If we take the data in Table 1 as an example, the SPSS output which resulted after running the Friedman test is displayed in Figures 4 and 5.

In Figure 4 we see that in terms of rank order, baseline is the lowest, followed by 9 months, 6 months, and then 3 months. Compare this to the means in Figure 1.

Figure 5 contains the essential data that need to be included in reposting any findings for studies that analyzed data using the Friedman test: chi-square value, degrees of freedom (df), and p value (Asymp. Sig). The results are significant, because the p value is <.000, rounded to .000.

Regarding the sample size appropriate for running this test, it is very difficult to achieve a $p < .05$ with a sample size smaller than 12. Therefore, researchers should consider a number of participants larger than 12 for the Friedman test and larger than 30 for the RM ANOVA.

SEE ALSO: Comparing Two+ Independent Groups; Probability and Hypothesis Testing; Quantitative Methods

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Competition Model

PING LI AND BRIAN MACWHINNEY

The competition model (CM) made its debut in Bates and MacWhinney (1982) as a mechanistic explanation of language acquisition. Since its inception, there have been a large number of studies using this framework to account for not only language acquisition but also language comprehension, language production, and impaired language processes. Because the CM distinguishes itself from many other psycholinguistic theories in its emphasis on language variation, the model has been applied to the analyses of many typologically different languages, including Chinese, English, German, Hungarian, Italian, Russian, and Spanish, to name a few. Like other scientific hypotheses, the CM has continued to evolve in order to increase its explanatory power (Bates & MacWhinney, 1987, 1989; MacWhinney, in press). Here we first provide an overview of the model and then discuss its application to the study of second language acquisition.

Cues and Cue Competition

A basic construct of the CM is the *cue*, an information source that allows the language user to successfully link linguistic form with meaning. Cues vary in their *type* (morphological, syntactic, prosodic, semantic, and pragmatic), *availability* (how often they are present), and *reliability* (how often they lead to the correct interpretation). Each cue is associated with *cue validity*, the joint product of availability and reliability, and crucially, the same cue may have different validity in different languages. For example, in English, word order (e.g., a noun before a verb) is a strong and reliable cue for identifying agent versus patient roles in an event (high validity), whereas word order is less predictive of who does what to whom in Chinese (low validity). Different languages may also utilize different cues to achieve the same goals; for example, in Hungarian, the suffix *-t* of a noun is a highly valid cue for predicting that the previous noun is a direct object, the recipient of an action, whereas in Chinese, the freestanding morpheme *ba* preceding a noun reliably indicates the direct object of a sentence.

A second key construct of the CM is that cues compete or converge in an utterance (hence the term "competition model"). That is, cues can point in the same or different directions for meaning interpretation in a sentence. In cases of competition, cue validity serves as the primary determinant of *cue strength*, that is, the weights that speakers assign to different cues during real-time sentence processing. For example, in the sentence *the elephant kicks the rock*, both word order and the animacy cue converge to point to *elephant* (preverbal, animate) as the agent of the action. By contrast, in the sentence *the rock kicks the elephant*, word order and animacy point to different nouns as the agent (word order favors *rock*, whereas animacy favors *elephant*). This divergence creates a competition between cues. In English, word order wins the competition (native English speakers reliably interpret *rock* as the agent), whereas, in Chinese, animacy wins the competition (native Chinese speakers generally interpret *elephant* as the agent; see Li, Bates, & MacWhinney, 1993). In general, sentence interpretation is facilitated when cues converge (shown in faster response time (RT) and higher accuracy) but impeded when cues compete (shown in slower RT and lower accuracy).

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Most of the empirical work within the CM framework relies on a sentence interpretation paradigm in which different sentences are created with orthogonalized cue combinations. For example, given a simple sentence of two nouns and a verb, there are three possible word order combinations: NNV, NVN, and VNN. Combined with the animacy cue (animate, A, vs. inanimate, I), these orders yield nine different conditions: AAV, AIV, IAV, AVA, AVI, IVA, VAA, VAI, and VIA. Systematic variation of the various cue types has allowed researchers to examine how cues collaborate and compete during offline and online sentence comprehension, how the same cues hold different validities in different languages, and how learners of a new language need to acquire new cue validities in sentence processing.

Second Language Learning

An important prediction of the CM with regard to learning is that cue availability and cue reliability may have different developmental trajectories. Cue availability is defined as the proportion of times a cue is available over the times it is needed, whereas cue reliability is the proportion of times the cue leads to the right answer over the total number of occurrences of the cue. In both L1 and L2 learning, cue strength is initially determined primarily by availability, because beginning learners are only familiar with cues that are relatively frequent in the language input (Taraban & Palacios, 1993; Matessa & Anderson, 2000). As learning progresses, cue reliability becomes more important than cue availability. To approach native proficiency, the learner needs to rely entirely on cue reliability for cue strength. In some cases, one can further distinguish the effects of *conflict reliability*: when two highly reliable cues compete, the one that wins the competition has a higher conflict reliability. For example, Dutch L1 learners only begin to realize after age 8 that the more reliable cue of pronoun case should dominate over the more frequent, but usually reliable, cue of word order (McDonald, 1986).

A second important prediction of the CM is that learners need to acquire new cue-strength patterns when learning a second language, and that depending on the language-specific properties of the speaker's L1 and L2, this acquisition may show different patterns. In a study of Chinese–English bilinguals who acquired their L2 at different ages, Liu, Bates, and Li (1992) examined how bilinguals assign thematic roles during online interpretation of sentences in L1 and L2. They identified four logical possible outcomes for adult bilingual learners: (a) differentiation: a clear separation in the use of cues for each language; (b) forward transfer: use of L1 cue patterns in the interpretation of L2 sentences; (c) backward transfer: use of L2 cue patterns in the interpretation of L1 sentences; and (d) amalgamation: an integrated pattern of cue use for both L1 and L2. The results of Liu et al.'s study were that late bilinguals showed clear forward transfer, in that they used their L1 cue strengths to interpret L2 sentences (e.g., relying more on semantics than word order in cases of cue competition). By contrast, early bilinguals, depending on the age of L2 acquisition, showed either differentiation or backward transfer. More importantly, there was no monotonic effect of age of acquisition, in that the teenager group exhibited stronger differentiation patterns than the early childhood group.

A given cue type may play different roles in different languages, leading to important implications for second language learning. Tokowicz and MacWhinney (2005) examined the ERP (event-related potential) responses of English–Spanish bilinguals who read sentences containing subject–verb agreement (similar in L1 and L2), determiner number agreement (different in L1 and L2), and determiner gender agreement (unique in L2). In both English and Spanish, subject–verb agreement is required, whereas determiner number marking differs in the two languages: English marks number only on the noun (*houses*) while Spanish marks number on both the noun and the determiner (*la casa* vs. *las casas*). ERP patterns showed that the English–Spanish bilinguals were highly sensitive to grammatical violations

in L2 for constructions that are formed similarly in L1 and L2 (subject–verb agreement), but were not sensitive to those that are formed differently in the two languages (determiner number agreement). In a similar ERP study, Chen, Shu, Liu, Zhao, and Li (2007) found that Chinese–English bilinguals showed high levels of accuracy in detecting subject–verb agreement violations in the L2 even though their L1 does not use any morphological agreement; however, their ERP response patterns differed from those of native English speakers in that no LAN (left anterior negativity) or P600 waveforms were present. These findings suggest that the particular cue strength from L1 may be ingrained in the late bilingual speakers, and that the L1 cue patterns negatively impact their processing in the L2, sometimes reflected not in behavioral but only in neural responses.

The Unified Competition Model

The CM is a model that highlights the dynamic interaction of cues in response to the processing environment, in which the statistical characteristics of the input and the learning characteristics of the language user jointly determine the processing outcome. The model has stimulated much crosslinguistic research, in both the monolingual and the bilingual context. Interestingly, while the model emphasizes that cue validities are highly variable and are different for users of different languages, it stresses that the underlying learning mechanisms are similar across L1 and L2 language acquisition. MacWhinney (in press) recently articulated this idea in the unified competition model (UCM), according to which the following constructs should be invoked to account for similarities and differences between L1 and L2 acquisition: maps, chunking, transfer, resonance, connectivity, codes, and mental models. Each of these constructs relies on additional tracks and traditions of research. For example, the account of lexical and grammatical maps is based on the DevLex model, a type of self-organizing neural network model of learning (Li, Farkas, & MacWhinney, 2004; Li, Zhao, & MacWhinney, 2007), as well as evidence from this work regarding the processes of entrenchment in neural networks (Zhao & Li, 2007, 2010). The account of chunking derives from the theory of item-based learning (MacWhinney, 1975, 1982). The model of connectivity derives from recent work in neuroimaging (Zhao et al., 2008; Friederici, 2009). The role assigned to codes and social participation comes from studies of social bases of learning (Firth & Wagner, 1998), and the role of mental models comes from recent work in cognitive linguistics (MacWhinney, 2008).

The UCM addresses the issue of similarities between L1 and L2 acquisition by emphasizing the extent to which second language learners must deal with the risk factors of entrenchment, negative transfer, social isolation, parasitism (dependency of L2 on L1), and mismatched connectivity (incorrect connections between processing areas). These risk factors arise from neurological, cognitive, and social configurations that change with development. The model also suggests how learners can make use of preventive factors to overcome these risks. The preventive factors include positive transfer, social participation or immersion, active thinking in the L2, reorganization through resonance (interactive activation from corresponding sites), and internalization (using L2 for inner speech). In order to achieve successful L2 acquisition using the same core mechanisms available to the child, the older learner must maximize the use of each of these protective factors. How these risk factors unfold in development and how learners can actively use the protective factors remain as the major challenges to theories of second language acquisition.

SEE ALSO: Bilingualism and Cognition; Bilingual and Multilingual Education: Overview; Connectionism; Emergentism; Second Language Speech Perception and the Brain; Sentence and Discourse Processing in Second Language Comprehension

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Complexity in Multilingual Systems

ULRIKE JESSNER

Introductory Remarks

Although multilingualism (or plurilingualism, to use a more Eurocentric term to describe the individual level) is by no means a new phenomenon, this field has only recently begun attracting a growing number of researchers. In a number of publications authors have referred to multilingual development as both a dynamic and a complex process. Today scholars are realizing more and more that in the study of multilingualism, the interaction of a variety of factors needs to be taken into consideration. The investigation of the complexity of multilingualism, a phenomenon which seems to lend itself to being approached from a dynamic systems theory (DST)/complexity theory (CT) perspective, has become one of the most challenging scientific undertakings of the linguistic academic community.

In the following we will consider the growing field of multilingualism and questions of definition before moving on to the variety of factors contributing to the complexity of multilingual systems. The main part of this entry deals with a dynamic systems theory approach to third language acquisition/multilingualism. We conclude with the call for an autonomous model of multilingualism in the field of linguistics.

The Research Scope of Multilingualism

The term "multilingualism" has been used with increasing frequency over the last few years. Yet, if we take a closer look at the publications that use the term, it quickly becomes clear that it is used to cover a range of meanings, some of which appear to be contradictory. Many still use the term "multilingualism" to refer to any system with more than one language. As bilingualism is the most commonly studied form of multilingualism, the two terms are used synonymously. An increasing number of researchers view third language acquisition (TLA) not as extended second language acquisition (SLA), but rather a different language-learning process in various respects (see Jessner, 2008a). As pointed out by Kemp (2009), the variety of terms and their origins derive from (a) the complex nature of use of various languages in a multilingual context and (b) the researchers' backgrounds, ideologies, and purposes.

With the increase in interest in the field of multilingualism, several problematic issues, in particular with regard to terminology, have arisen. For instance, whereas in traditional SLA research the terms L1 and L2 are clearly defined, research on life-span development in multilinguals shows that the chronological order in which languages were learned is not necessarily the most useful factor in defining the L1, in the sense of "dominant language," of a multilingual person. An L1 might become an L2 or L3 at a later phase in a multilingual person's life due to a change of linguistic needs. The strong role that emotion can play in multilingualism can further complicate this classification. L1 might also denote the language of the heart, for instance the language somebody shares with her/his partner regardless of the level of proficiency in that language or the frequency of use.

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Complexity and Diversity of Multilingual Development

As this discussion already shows, multilingualism is a challenging field, both because of the complexity stemming from diverse interdisciplinary interests and because of the number of variables involved in multilingualism. So far the field has been approached from different perspectives, such as on a sociolinguistic, psycholinguistic, and educational level. A DST/CT approach calls for the focus on the interdependence between all the variables in a multilingual system.

Since the mid-1990s, research on TLA or multilingualism has been increasingly intensified with the main goal of describing multilingual phenomena in order to investigate differences and similarities between second and third language acquisition (see, e.g., work by Cenoz, Hufeisen, and Jessner; De Angelis, 2007). So far studies have mainly been carried out in the fields of crosslinguistic influence, the cognitive and linguistic effects of bilingualism on learning further languages, multilingual processing, child trilingualism, and teaching of third languages. The field also includes studies concerned with the neurolinguistic aspects of the phenomenon (for a critical view see de Bot, 2008) or the economic value of language in a linguistic landscape (Cenoz & Gorter, 2008). In order to be able to judge multilingual development or multilingual conversation, all variables which contribute to multilingual development need to be taken into consideration, as suggested by DST. For instance, the number of possible acquisition routes increases with the number of languages learned. Whereas in SLA there are only two possible orders of acquisition—the two languages are acquired either simultaneously or sequentially—in the case of TLA we are confronted with at least four. Moreover, forms of learning are considered to play a crucial role in multilingual development. In contrast to SLA, TLA learning routes are much more diverse because very often forms of learning are of a mixed nature, that is multilingual learners study in both natural and instructed contexts.

Individual factors in language learning, such as motivation, attitudes, cognitive factors (e.g., aptitude, personality traits; see, e.g., Dewaele, 2010), as well as physical traits of multilingual learners (e.g., hearing capabilities), also contribute to the complexity of multilingualism and research of the phenomenon. Furthermore, during the life span of a multilingual person a variety of the factors involved can be subject to change, for instance motivation to learn one language may change (Dörnyei, 2009).

Dynamic Systems Theory and Multilingualism

The complexity and dynamics of multilingualism and multilingual development lend themselves to discussion within a DST or CT framework. With the support of new DST-based thinking avenues, several important issues in multilingualism have been identified.

In the dynamic model of multilingualism (DMM; Herdina & Jessner, 2002; Jessner, 2008b), DST/CT is applied to multilingual acquisition and use. Based on DST/CT principles, the development of a multilingual system is characterized by its nonlinearity, reversibility, stability, interdependence, complexity, and change of quality. Van Geert (1994, p. 50) states that "a system is, by definition, a dynamic system and so we define a dynamic system as a set of variables that mutually affect each other's changes over time." A multilingual system is adaptive and dynamic, which means it is able to change depending on the perceived communicative needs of the multilingual individual. Language attrition, a very common phenomenon of multilingual learning, is seen as an integral part of multilingual development, thereby illustrating reversibility in dynamic systems. Therefore, in contrast to reductionist approaches to language acquisition, in DMM it is stressed that multilingual

development is seen as complex, nonlinear, and variable due to its dependence on social, psychological, and individual factors.

The goal of the DMM is to serve as a bridge between SLA (process) and bilingualism (product) research, but at the same time to indicate that studies of multilingualism have to go beyond the scope of SLA and bilingualism. According to a DST approach the interaction between all the languages in a system needs to be foregrounded and recent studies in the area of TLA support this. Since the mid-1990s, an increasing number of scholars have conducted research on the differences and similarities between the processes in SLA and TLA. Evidence stems from studies on crosslinguistic aspects of TLA, where the status of the L2 in studies of TLA has turned out to be different from what would have been expected from traditional SLA research. From a number of investigations into transfer processes in multilingual learners it became obvious that in most cases the L2, and not the L1, as might have been expected, acted as supporter language in the case of both typologically related and unrelated languages (for an updated overview of the literature see De Angelis & Dewaele, 2009).

In contrast to monolingual learners, bilingual children show cognitive advantages in further language learning. Evidence of this was found in investigations into artificial language learning and a number of studies mostly in the European minority-language context such as Spain (Basque Country, Catalonia) and Finland (see Jessner, 2008a). In DMM it is argued that in the process of learning an L3 the learner develops a metasystem which is based on a bilingual norm, unlike SLA, where such a metasystem can only be based on the acquisition of the L1 and is therefore different in quality. In DST/CT terms this means that the multilingual system is considered sensitive to initial conditions which makes its development difficult to predict. An M(ultilingualism)-effect is assumed to develop as an emergent property in a changing multilingual system. This factor consists of language-specific and non-language-specific or cognitive skills which are used in the language-learning processes, language management, and maintenance. These skills and abilities which qualitatively differ from those in a monolingual can contribute to the catalytic effects in TLA, as found in experienced language learners (Kemp, 2007).

To sum up, in DMM a multilingual system is an open system, dependent on a variety of factors such as social and psychological ones. Language systems within the multilingual system are seen as interdependent (rather than as autonomous) systems because their behavior depends on the behavior of previous and subsequent systems and it would therefore make little sense to look at the various systems in isolation. In the following, stability of multilingual systems and holism as two major themes of a DST/CT approach to multilingualism have been selected for further discussion.

Stability of Multilingual Systems

As stated above, multilingual systems are constantly changing and their development includes both acquisition and attrition processes. If we take a long-term perspective of multilingual development (i.e., over the course of a multilingual's life), due to changes in the perception of communicative needs it is actually quite common that language knowledge in one language may begin to erode, due to enhanced contact with a new, further language. Learning an L3, for instance, can counteract the maintenance of an L2 or L1 or, in other words, language attrition or loss appear more often in multilingual than in bilingual biographies (see Todeva & Cenoz, 2009). In this case the L3 will become more dominant than the L2 due to limitations of resources for the use and maintenance of languages, as defined in Zipf's law of least effort (Zipf, 1968). As a result of this shift in language proficiencies,

the multilingual system loses stability. In DMM systems stability is related to language maintenance, that is the interplay of stability and variation needs to be focused on. Variability is used as a measure of stability because increased variability marks transition points in language development, so-called attractors (see also de Bot, Lowie, & Verspoor, 2007). If not enough energy and time are invested in maintaining a system, the system cannot be maintained, and it will begin to attrite. Other factors influencing systems stability include the number of languages involved, maturational age at which a language is learned and relative stability established, the level of proficiency at which this takes place, and the time span over which the language system is maintained.

A well-known example of such a stabilizing effect of a language system, very often but not exclusively at a rudimentary or restricted level of proficiency, is fossilization, a very common phenomenon in multilingual learning. The reasons for fossilization are complex and interrelated over time; in many cases they are related to domain specificity in bi- or multilingual contexts (see Larsen-Freeman, 2006, for a critical study of research on fossilization). But, even if parts of the multilingual system can become fossilized, that is, will—in very general terms—stop growing, they will still be able to exert influence on the other parts of the multilingual system.

A Holistic Approach to Multilingualism

Holistic approaches to bilingualism seem to be most frequently deployed in discussion deriving from Grosjean's idea of the bilingual as a competent speaker/hearer with very specific attributes (see, e.g., Grosjean, 1985), which provided part of the basis for Cook's work on the L2 user and multicompetence (see, e.g., Cook, 1992). Grosjean and Cook both argue for a perspective on bi- and multilinguals which places the focus not only on the specific skills developed via contact with two or more languages, but also on the non-applicability of monolingual norms in multilingual contexts and consequently in research on bi- and multilingualism. Additionally, in DMM it is argued that the multilingual system is in constant flux and that a holistic approach is a fundamental condition of a DST/CT approach. In this perspective, emergent properties of the open multilingual system (skills and abilities developed by multilingual users which are not to be found in monolinguals) have to be focused on as does the interdependence of all parts of the system.

Such an approach not only puts emphasis on a definition of multilingual proficiency based on a holistic understanding of the diverse components of the construct, but also stresses the interrelation between socio- and psycholinguistic aspects of multilingualism. From a DST/CT perspective the idea of nested systems contributes to an understanding of the relationship between two seemingly different approaches to the same phenomenon. In the case of language attrition in multilinguals the interdependence between these two aspects is obvious since it is changes in environment that eventuate in changes in linguistic knowledge (typically affecting the L1 of immigrant children). Language contact, more generally, as a complex phenomenon having emergent qualities, readily lends itself to being discussed from a complexity thinking perspective, as pointed out by Aronin and Singleton (2008). Similarly to Herdina and Jessner (2002), these authors claim that there are parallels between the concepts of complexity and recent findings and thinking in multilingualism. Increasing awareness and explicit recognition of the complexity of multilingualism allow for a more comprehensive theoretical understanding of multilingualism as well as yielding practical results in the teaching of multiple languages. Along with liminality and suffusiveness, complexity is an inherent emergent property of contemporary multilingualism that calls for the development of appropriate new research approaches. Among the sources for the latter would be the methods of complexity science (Aronin & Hufeisen, 2009).

Outlook

From the above discussion it has already become quite obvious that a DST/CT approach to multilingualism needs to be complemented by DST/CT research methodology. As early as 2002, Herdina and Jessner stated that an autonomous model of multilingualism needs to be developed in order to do justice to the complex nature of multilingualism.

To achieve this goal it is necessary that not monolingual but multilingual norms be applied in multilingualism research. Yet at the moment, only a small number of scholars seem to realize what such an approach entails for research on multilingualism. To date, most linguists continue to apply monolingual norms when it comes to research on bi- and multilingualism, which means among other aspects that native-speaker language proficiency is still used as the yardstick for all the languages of the multilingual person, and multilingual subjects and their languages can be investigated without taking all the languages in contact into consideration (see, e.g., De Angelis & Jessner, in press).

For future research it is therefore hoped that the complexity of multilingual development is acknowledged and consequently approached from a DST/CT perspective which is able to focus on nonlinearity and variability.

SEE ALSO: Attrition and Multilingualism; Bilingualism and Cognition; Crosslinguistic Influence and Multilingualism; de Bot, Kees; Dynamic Systems Theory Approaches to Second Language Acquisition; Larsen-Freeman, Diane; Multilingualism; Multilingualism and Emotions; Multilingualism and Metalinguistic Awareness; Variability in a Dynamic System Theory Approach to Second Language Acquisition

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Compound Words

EMILIANO GUEVARA

Compounding is one of the two main processes of word formation in natural languages (the other one being derivation by affixes). In short, compounding creates a new word by joining together two or more independent words (cf., among many others, Bauer, 2001); the newly created compound is typically a hyponym of one of its constituents, which is called the *head* of the compound. For example, given the independent simple nouns *dog* and *house*, a speaker of English is able to form the compounds *doghouse* and *house dog*, respectively headed by *house* and *dog* (i.e., a *doghouse* is a type of *house* and a *house dog* is a type of *dog*). The remaining constituent in a compound is called the *modifier*.

Although compounds behave like words (e.g., they show the distributional patterns of words, they cannot be separated in discourse, etc.), they also clearly show some combinatorial properties that constitute a sort of "internal syntax." Compounding (especially nominal compounding) is a recursive process which can be applied to its own output, thus creating compound words of increasing complexity, for example, *plastic* ***doghouse***, ***plastic doghouse*** *sale*, ***plastic doghouse sale*** *committee*, and so on. This feature of compounding makes it an extremely powerful and creative means of word formation, particularly efficient for the creation of specialized terminologies.

While the prototypical compound word is formed by combining two nouns (N+N=>N), there exist many different productive patterns of compounding in the world's languages (for an overview see Guevara & Scalise, 2008). As an illustration, consider the following English examples: *underclothing* (P+N=>N), *speak-box* (V+N=>N), *high school* (A+N=>N), *bitter sweet* (A+A=>A), *ice cold* (N+A=>A), *above-mentioned* (Adv+A=>A), and *sky dive* (N+V=>V).

As simple and fundamental as it may seem, compounding is an intensely debated topic in theoretical linguistics. The very nature of compound words is the main reason for this disagreement: compounds stand half-way between word-formation (morphology) and syntax, and scholars have not been able to establish whether compounding belongs to one of these grammatical modules, or if it constitutes a different, specialized module in its own right. Even the very definition of compounding becomes a difficult task when one considers some special cases including at least one constituent that is clearly not a word. This is the case of *neoclassical compounds* such as *biohazard*, *astrophysics*, or *bibliography*, where the constituents *bio-*, *astro-*, *biblio-*, and *-graphy* are bound stems (i.e., not attested as independent words) of Greek and Latinate origins. An even more serious problem for the definition of compounding is posed by the so-called *phrasal compounds*, which are characterized by having a complex modifier that clearly seems to be a syntactic object, for example *God-is-dead theology*, an *ate-too-much headache* (cf. Lieber, 1992). This ambiguous status of compound words between morphology and syntax has been further elaborated by Jackendoff (2009), who claims that they are in fact a relic of protolanguage, providing us with an insightful point of view into earlier stages in language evolution.

The interest in compound words has a long history, with the first known exposition by the Sanskrit grammarian Pāṇini (fourth–fifth century BC). One of the aspects that has attracted the most interest is the classification of compound types (see Bauer 2001; Bisetto & Scalise, 2005). Besides the above mentioned neoclassical and phrasal compounds, a

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number of other types have been identified with various criteria. For example, the so-called *synthetic compounds* (e.g., *truck driver*, see Lieber, 1992) are formed by a deverbal head (*drive* + *-er*) and a modifier that corresponds to the internal argument of the head's verbal base (*drive a truck*). Focusing on a single criterion, that is, the grammatical/semantic relation between the constituents, Bisetto and Scalise (2005) identify three main types of compounds: *subordinate* (the modifier stands in a dependency relation with the head, e.g., *doghouse* = "house of/for/with a dog"); *attributive* (the modifier functions as a mere attribute of the head, being almost emptied of its original meaning, e.g., *swordfish*, where *sword* means only "long and sharp"); and *coordinate* (where both constituents stand in a relation of coordination, as in *poet-painter*). Furthermore, some compounds do not seem to have a head at all, for example, *pickpocket* (V+N=>N, but *pickpocket* is not a type of *pocket*): they are called *exocentric compounds*.

Compounding is an interesting phenomenon also for other sciences, in particular for cognitive psychology and for psycholinguistics. Since compounds are usually formed by two constituents, and since most regular compounds are semantically transparent, compounding as a whole is a perfect window into the complex mechanisms of the mental lexicon. Cognitive psychologists have paid particular attention to the subtleties of conceptual combination and interpretation of nominal compounds (see Gagné & Shoben, 1997; Wisniewski, 1997; Estes & Glucksberg, 2000). Psycholinguists have concentrated instead on the mental representation and processing of compounds (Are they stored/accessed as single units or as separated constituents? Are frequent compounds processed faster?). For a wide-ranging overview of these issues, see Libben & Jarema (2006).

Compounding has recently also attracted some attention in computational linguistics. The aspects that have been treated so far regard the automatic segmentation and structural analysis of multiconstituent compounds such as the famous German example *Donaudampfschiffahrtsgesellschaftskapitän* 'Danube steamship company captain.' More recently, also, the automatic induction of compound semantics has been an object of study, see Lauer (1995) and Ó Séaghdha (2008).

SEE ALSO: Brain Activity During Second Language Processing (ERP); Formulaic Language and Collocation; Imaginary Words; Lexical Collocations; Lexical Priming; Lexical Semantics; Myths about Second Language Vocabulary Learning; Onomastics; Psycholinguistic Approaches to Vocabulary; Second Language Word Difficulty; Term Banks; Traditional Approaches to Monolingual Lexicography; Vocabulary Acquisition in Bilinguals; Vocabulary Learning Strategies; Vocabulary Loss in the First Language; Vocabulary and Reading; Vocabulary Size in the First Language; Vocabulary Size in a Second Language; Web-Based Lexical Resources; Word Associations

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Computer-Assisted Pronunciation Teaching

DOROTHY M. CHUN

Although the teaching of pronunciation does not appear to be one of the top priorities for most language teachers at the beginning of the 21st century, it is an important aspect of spoken language that cannot be ignored in view of globalization, the growing needs of cross-cultural communication, and issues of speaker identity and social integration. Second language speakers need not only to make themselves understood but to be able to understand both native and non-native speakers of their second language (L2). Instead of the more traditional focus on acquiring a native-like accent by practicing difficult sounds, it is a widely held opinion that the current focus should be on intelligibility and comprehensibility, acknowledging both the rarity of acquiring native-like pronunciation and the nonstandard variations in all languages. A growing body of research indicates that the melody and rhythm of language, rather than individual vowels and consonants, are more important for understanding and producing a language that is not one's native tongue or first language (L1). In order to help learners improve their perception and production of melody and rhythm of the L2 being learned—as well as of individual L2 sounds—computer-assisted pronunciation teaching has proven to be an effective means. The computer's capacities for unlimited input, practice and repetition, for individualized and instantaneous feedback, for both listening and speaking activities, and for providing a visualization of tone and intonation contours make it a useful tool for teaching pronunciation.

Technology for Teaching Segmentals (Vowels and Consonants)

Extensive research on the acquisition of L2 vowels and consonants has been conducted (Lively, Logan, & Pisoni, 1993; Flege, Bohn, & Jang, 1997; James & Leather, 1997; Kingston, 2003, to name only a very few), but computers were often used only to conduct the studies and analyze the data rather than as training tools.

Studies that use computer-based training materials for segmentals are emerging, and training can include perceptual, acoustic, articulatory, or some combination of the three types. For example, Wang and Munro (2004) noted that "a limited range of speech sounds have been examined, with a disproportionate number of studies considering only consonants" (p. 539), prompting them to investigate computer-based training techniques with Chinese speakers learning English vowel contrasts. Learners were trained both in the perception and production of vowels, and in comparison with an untrained group, trainees showed improved perceptual performance and maintained their improved production three months after the training.

Feedback

The need for feedback is well documented in second language pronunciation research (Leather, 1983). The traditional record–play exercises in language laboratories that have existed for decades enabled learners to listen critically to replays of their production, in

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the hope that they would improve their pronunciation. However, in practice, this required learners to monitor themselves even though they generally lack the phonetic criteria for critical listening (see Gómez et al., 2008, for a discussion of feedback loops connecting speech perception and speech production). One solution using computers is to provide real-time feedback to the learner in the form of visual displays of articulatory activity and its acoustic consequences in actual speech output.

In contrast to precomputer technologies for teaching and practicing pronunciation, which only used the *auditory* and oral channels, computers have been used since the 1960s for analyzing and *visually* displaying human speech for linguistic and pedagogical purposes (Delattre, 1963). While spectrographic analysis at that time was a painstaking process, it has become relatively easy technologically to digitize, process and analyze the acoustics of spoken language. Computers today are equipped with hardware to digitally record speech, and free software exists for processing the digital files. Figures 1–3 below were created with the free digital audio editor Praat, available for Windows, Mac, Linux, and other Unix-like operating systems. Other widely used free programs include Audacity, ENHANCE, RTSPECT, SFS, Speech Analyzer, WASP, and Wave Surfer, to list a few (Godwin-Jones, 2009).

Visual Acoustic Displays

Waveforms are graphical representations of sounds, i.e., graphs of a signal's sound pressure over time. Motohashi-Saigo and Hardison (2009) explored the value of using waveform displays as visual feedback to L2 learners of Japanese geminates (doubled vowels and consonants) and found significant improvement in perception (identification) following training, especially when learners received both auditory *and* visual feedback. Figure 1 shows a waveform of the word "ah" repeated three times.

Spectrograms display the acoustic features of sounds, with the most common format being a graph showing time on the horizontal axis and frequency (of vocal fold vibration) on the vertical axis. In addition, a third dimension indicates the amplitude (or loudness) of a particular frequency at a particular time, represented by the intensity or color of each point in the image. Figure 2 shows a spectrogram of the word "ah" repeated three times whose waveform is shown in Figure 1. Figure 3 shows a spectrogram of the word "oh" repeated three times. Although "ah" [a:] and "oh" [o:] are different words with different meanings, if a learner were to see only the spectrograms, it would not be clear how the pronunciation is actually different or what the learner would need to do in order to produce the two words correctly. In other words, although technology can visually display acoustic differences, if learners are not expert at "reading" the spectrograms or at understanding how the formant frequencies (harmonic frequencies or acoustic resonances) are

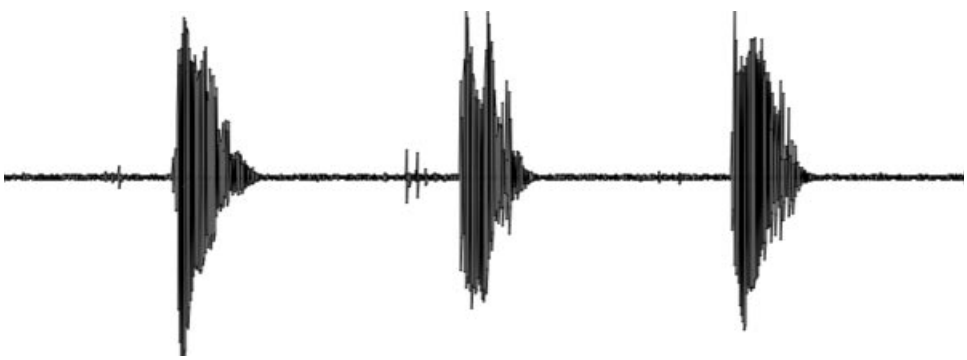

Figure 1 Waveform of "ah." Created with the digital audio editor Praat (praat.org)

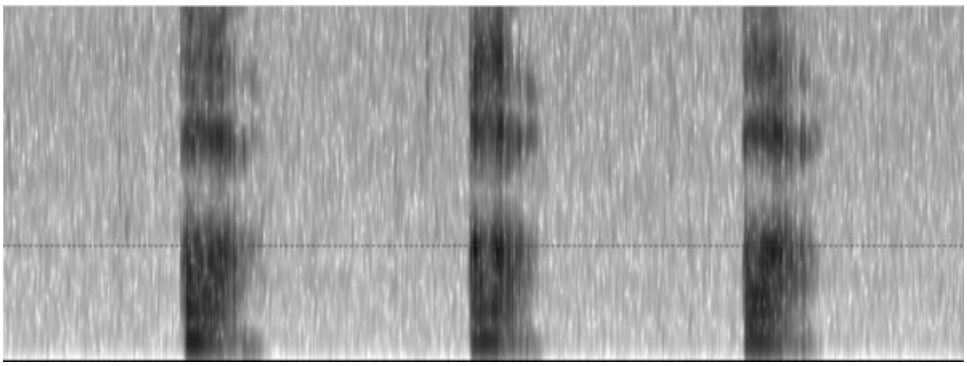

Figure 2 Spectrogram of "ah." Created with the digital audio editor Praat (praat.org)

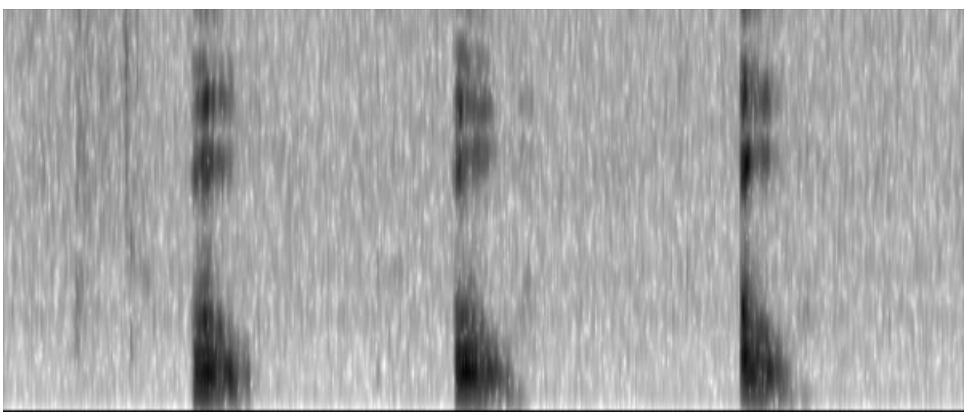

Figure 3 Spectrogram of "oh." Created with the digital audio editor Praat (praat.org)

articulated with the tongue, such displays will not be immediately or intuitively useful. It should also be noted that formant representations are primarily of use in displaying the characteristics of vowels, but they cannot be created for voiceless sounds and are therefore not of use for depicting voiceless consonants.

In addition to the problem of interpreting the difference between the spectrograms of the "ah" and "oh" vowels in Figures 2 and 3 above, there is a difference in the duration of the two words, which in turn makes it difficult to compare the spectrographic information. This illustrates a common problem with software programs, which purport that learners simply need to compare their pronunciation with that of a native speaker. In the case of comparing spectrograms, if the duration of the sound or word is not identical to the native-speaker model, then it is even more difficult for learners to ascertain how and why their pronunciation is incorrect. Gómez et al. (2008) and Molholt and Hwu (2008) propose that such visualization can be helpful to learners, but targeted training is critical.

Visual Articulatory Displays

In contrast to acoustic waveform or spectrographic analyses, perhaps of greater use to learners are articulatory explanations and visualizations, i.e., descriptions of how sounds and words are articulated or produced by speech organs, including the lips, tongue, teeth,

Figure 4 Images from the University of Iowa's Phonetics Flash Animation Project Web site, showing the project logo and sample video of a sound spoken in context. http://www.uiowa.edu/~acadtech/phonetics/ © The University of Iowa

and the oral and nasal cavities. Many free Web sites today show articulatory mechanisms in great detail. For example, the University of Iowa's Web site does an excellent job of showing how sounds and words in American English, German, and Spanish are produced (http://www.uiowa.edu/~acadtech/phonetics/). With the use of video animations of the speech apparatus, learners can simultaneously hear the sounds and see how the tongue, lips, and uvula move (see Figure 4).

De la Vaux and Massaro (2004) studied facial movements and gestures, systematically manipulating the amount of visual information presented to a listener in testing and training word and phoneme recognition. A study by Hardison (2003) proposed that since the presence of visual cues from a talker's face is beneficial for the improvement of L2 perceptual accuracy, attention should be focused on the talker's lip movements in improving speech and pronunciation, for example, by using video within computer-based pronunciation training. Cosi, Cohen, and Massaro (2002) experimented with computer-animated conversational agents with potential applications to tutoring second language speakers.

Automatic Speech Recognition (ASR)

In an excellent review of research and software for computer-assisted pronunciation training (CAPT), Neri, Cucchiarini, Strik, and Boves (2002) proposed that ideal CAPT courseware should provide input, output, and feedback, and should incorporate automatic speech recognition (ASR) technology. They observed that available technology is capable of meeting pedagogical requirements, but concluded that "many commercial systems tend to prefer technological novelties to the detriment of pedagogical criteria that could benefit the learner more" (p. 441). Specifically, they found that the issue of feedback remains problematic and note that current ASR technology can only provide a limited amount of detail in error diagnosis. Other studies echo similar limitations, e.g., Levis (2007) and Derwing, Munro, and Carbonaro (2000), who found that automatic speech recognition for non-native speakers was 24–26% lower than for human listeners, suggesting that ASR software would provide unreliable feedback to second or foreign-language learners (p. 597). The issue of appropriate and sufficient feedback will be discussed further in the following section.

In summary, computer software has been used for training in the perception and production of L2 sounds (vowels and consonants). Visualizations of articulatory processes, i.e., how speech sounds are produced by human speech organs, and of the resulting acoustic product, i.e., spectrograms and waveforms showing vowel qualities, loudness (intensity) and duration, have been found to be effective to some degree. However, despite the enormous progress that has been made in terms of speech recognition, the feedback provided by ASR software is not as accurate or as helpful as it theoretically could be. This is an area that requires further research and development. In addition, there is to date less

research on vowels than on consonants; yet, vowels are of critical importance to having an "accent" as well as to the melody and rhythm of language, as they are generally the carriers of pitch and duration, which in turn contribute to stress and rhythm. The following section discusses CAPT programs for suprasegmentals.

Technology for Teaching Suprasegmentals (Prosody, Intonation, Rhythm)

Current research both in L2 phonological acquisition as well as in the use of computers for pronunciation training (including ASR) is focusing increasingly on suprasegmentals or prosody (Chun, 2002; Jenkins, 2004). Key areas of investigation to be discussed in this section include foreign accent, intelligibility, comprehensibility, fluency, and discourse intonation.

A common and realistic goal of second language learners is to achieve a level of pronunciation sufficient to be understood in their L2. Although a non-native accent can sometimes interfere with this goal, simply having an accent is not necessarily a barrier to communication. Munro and Derwing (1999) found in a seminal study that "even heavily accented speech is sometimes perfectly intelligible and that prosodic errors appear to be a more potent force in the loss of intelligibility than phonetic errors" (p. 285). They define intelligibility broadly as "the extent to which a speaker's message is actually understood by a listener" though there is no universally accepted way of assessing it (p. 289). Intelligibility is distinguished from comprehensibility in that the latter refers to the listener's *perception* of how much they have understood or the ease with which they could interpret an utterance. A listener's perception of accent may be different from the same listener's judgment of comprehensibility. In a classroom experiment in which one group of ESL students received segmental instruction and a second received suprasegmental instruction, Derwing, Munro and Wiebe (1998) found that only the second group's extemporaneous production improved in comprehensibility, meaning that listeners found them to be easier to understand (see also Tanner & Landon, 2009). In theory, CAPT could be used for suprasegmental instruction for the purpose of improving L2 speakers' comprehensibility.

Visualization of Suprasegmentals

Researchers have studied how intonation carries meaning both at the sentence level and at the discourse level and helps to create cohesion in discourse (Wennerstrom, 1998; Pickering, 2001). Researchers and teachers alike have been advocating that intonation be taught in second and foreign-language classes (Chun, 1998), and there is evidence that presenting displays of pitch contours improves both perception and production of tone (e.g., in tonal languages such as Mandarin Chinese) and intonation (de Bot & Mailfert, 1982; Molholt & Hwu, 2008). But two main obstacles hinder the teaching of intonation. First, most teachers do not themselves know enough about suprasegmentals to be able to explain them to their students, and second, prosody is a very complex phenomenon, as it involves many different aspects of speech, including stress, rhythm, and intonation. How to quantify each of these prosodic components is also very difficult. One of the possible solutions to quantifying these features is to use visualizations of the acoustic manifestations of these components, e.g., a graph showing fundamental frequency (or pitch) curves that display the melody of speech on the y-axis, along with time on the x-axis showing the duration or length of syllables or words (see the lower part of Figure 5). Another possibility is waveforms that display the intensity (loudness, the amount of energy given to each syllable) as well as the duration of individual sounds, words, or periods of silence (upper part of Figure 5).

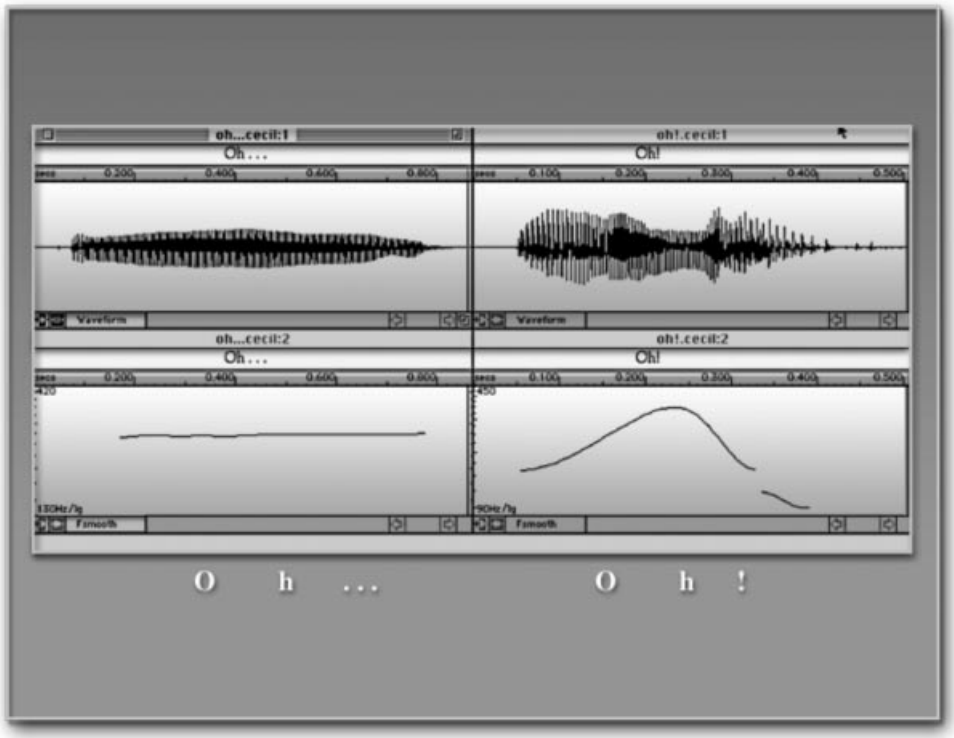

Figure 5 Waveform and pitch curves of two utterances "Oh." Created with the digital audio editor Praat (praat.org)

Levis and Pickering (2004) examined sentence-level versus discourse-level intonation and recommended that technology be employed to teach intonation at the discourse level, stating "While the use of visualization technology is a crucial advance in the teaching of intonation, such teaching can further be enhanced by connecting technology to an understanding of how intonation functions in discourse" (p. 505). They provided some specific examples of how systematic meanings of pitch movement can be described in transparent ways to learners, and pointed to the reality that software is now capable of presenting longer stretches of speech. Yet, it is also true that the unlimited number of situations and contexts allows for a large number of appropriate intonational patterns, e.g., the "Oh . . ." on the left in Figure 5 might be uttered when a speaker is reacting hesitantly or skeptically, whereas the "Oh!" on the right indicates a certain degree of surprise. Instructors and software would need to explain the (numerous) possibilities.

Hardison (2004) reported on a study of using visual feedback provided in a computer-assisted program to help in the acquisition of French prosody by foreign-language learners (L1 English). The software provided pitch displays of native-speaker exemplars and real-time displays of learners' utterances and proved effective not only in improving the learners' pronunciation of the trained utterances but also of novel sentences. In addition, segmental production improved, and learners noted increased confidence in their oral production of French, and heightened awareness of the elements that make up speech.

In a German phonetics course that included a focus on improving learners' intonation, Chun (2008) had her students use TELL ME MORE software (http://www.tellmemore.

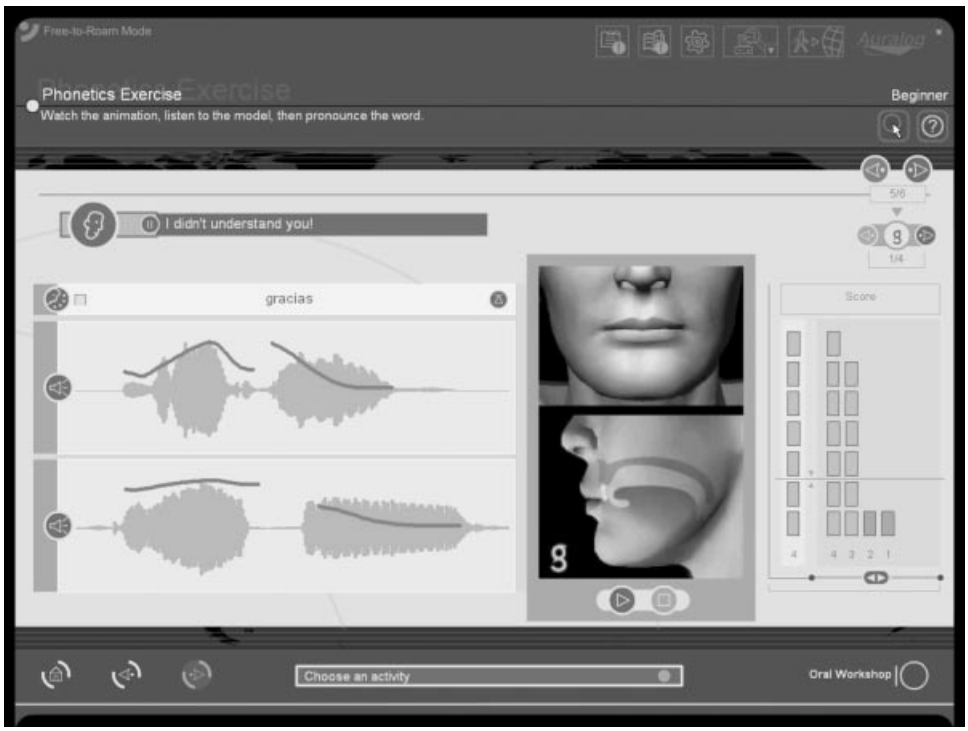

Figure 6 TELL ME MORE software's display of pitch curves. http://www.tellmemore.com © TELL ME MORE

com) to practice sentence intonation (see Figure 6). The ASR component of the software displayed the pitch curves of a learner's utterance (blue line) in real time. The learner could also see the movement of the lips and other speech organs as well as an assessment in the form of (1–7) green bars. Although studies such as Hardison's (2004) reported that these types of visualizations could improve pronunciation, students in the German phonetics course tended to look only at the number of bars they received for their utterance and not at the pitch contours. If they received the maximum number of bars possible, they went on to the next item, without noticing whether their pitch contours matched those of the native speaker. Even after students were instructed to draw the native speaker's pitch curve along with their own on paper, they were not able to explain how their contours differed from the model's. This suggests that learners must be trained explicitly in how to use the visualizations of their pitch contours to notice and improve their pronunciation. These training features must be incorporated into software programs for learners but are not currently available in the great majority of programs.

An excellent online program for advanced learners of English is Streaming Speech (http://www.speechinaction.com/), based on Brazil's theory of discourse intonation and on sound pedagogical principles. The speech samples are all unscripted narratives that have been meticulously and extensively "re-purposed" for pedagogical use. Learners can observe the direction of pitch changes that are schematically drawn, as in the example in Figure 7. The use of authentic speech is in stark contrast to the vast majority of programs for pronunciation that use stilted, unnatural-sounding recordings, though this may be effective primarily for advanced learners.

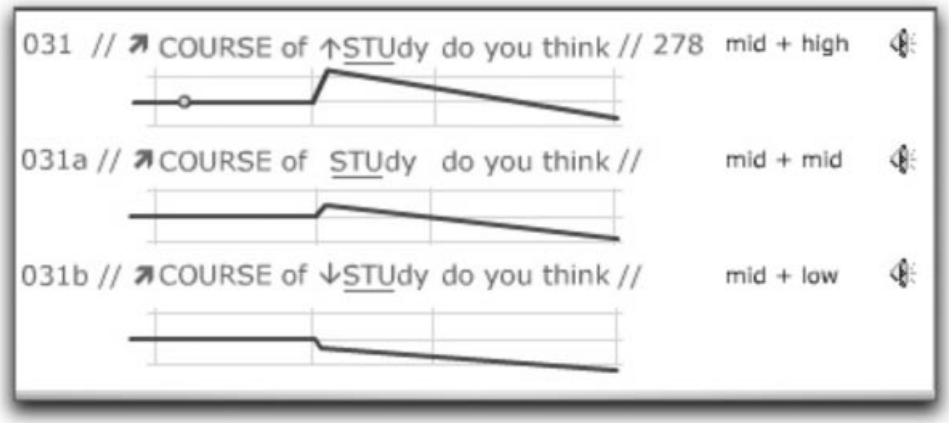

Figure 7 Streaming Speech software. http://www.speechinaction.com/ © Streaming Speech

Use of Videos

Computer programs can provide not only visualizations of speech but also videos of speakers speaking. A study by Hardison (2005) was conducted with L1 speakers of Mandarin Chinese who were advanced L2 speakers of English. Their pretraining difficulties with English prosody involved some of the discourse functions of intonation that contribute to the cohesion of speech, namely the marking of thought groups with appropriate pausing and pitch movement, and the use of stress and intonation to mark information focus. The study investigated the effects of different types of contextualized training using segments from the participants' own oral presentations on the production of discourse-level English prosody. Two computer-based tools were used to compare training with and without the visual context of the speech event, and with discourse-level input versus isolated sentences. The first tool was the Web-based Anvil (Kipp, 2001), which provides a screen display integrating the audio and video components of a speech event with the associated pitch contour created by the public domain phonetic tool Praat (see Figure 8). Results showed that the presence of the video was helpful, more so with discourse-level input than with individual sentences, strongly suggesting that meaningful contextualized input, as provided for example by video, is valuable for prosody training.

The second tool was the Real-Time Pitch program in conjunction with the Computerized Speech Lab, which produces a pitch contour in real time and allows on-screen comparison of a learner's utterance with that of a native speaker, including overlay of one contour on another (see fig. 3 in the article at http://llt.msu.edu/vol8num1/hardison/default.html). These programs are both commercial products of KayPentax (http://www.kaypentax.com).

In summary, technological tools are widely accessible for creating software that can help L2 learners by (a) displaying acoustic information about their utterances (e.g., pitch curves) as compared with native-speaker utterances and (b) displaying video clips of native speakers' facial movements and body gestures, which provide helpful nonlinguistic and contextual information. In addition, the W3C's (World Wide Web Consortium) efforts to implement commonly accepted standards are helping on the technical side (Godwin-Jones, 2009). But the main obstacle is that ASR is not yet able to provide the kind of detailed diagnosis of learners' mispronunciations and meaningful feedback that would allow learners to understand precisely what is incorrect or mispronounced. Furthermore, the expertise of teachers in collaboration with programmers is needed to create such software with the accompanying helpful feedback.

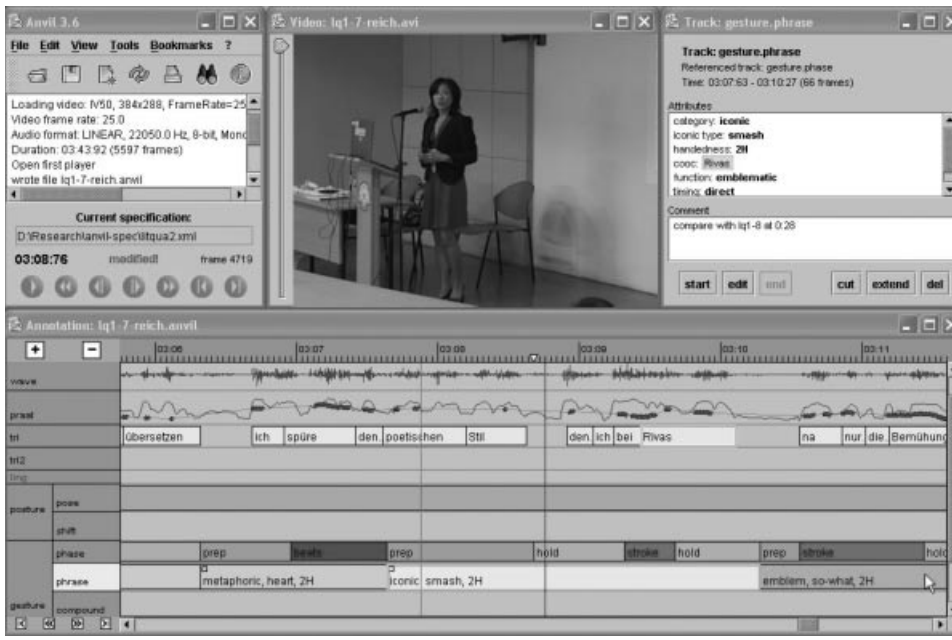

Figure 8 Web-based Anvil software. http://www.anvil-software.de/ © Anvil

Outlook for the Future

Given the technological capabilities that exist, an ideal CAPT program would combine auditory and visualization features, automatic speech recognition (ASR), and appropriate and accurate feedback. Hincks (2003) proposed "oral skills software using an animated agent, a talking head, as an intelligent language tutor. Such a tutor would need to be endowed with sophisticated speech recognition in order to 'understand' students, and natural-sounding speech synthesis in order to communicate with them. As we have seen, speech recognition has a way to go before meeting these goals" (p. 18). However, if L2 researchers and teachers were to collaborate closely with acoustic phonetic and ASR programmers (computer scientists and engineers), they could together resolve issues such as reconciling differences in the speed of speech between a non-native learner and a native-speaker model, meaningfully describing and visually pinpointing problematic differences between learners and native-speaker models, and finally, but importantly, embedding practice into more authentic, contextualized speech situations.

A critical but nontechnological issue that needs to be dealt with is teacher training. Derwing (2008) noted that only a small percentage of language teachers have had any formal pronunciation teaching, so this must change even before teachers consider using technology to help with pronunciation teaching. Levis (2007) stated that teachers need to have a basic understanding of the types of technology that are used in phonetics research and that they "should have the opportunity to develop and test their own computer-based pronunciation exercises through the use of basic CALL authoring tools" (p. 196). Instructors will need to learn to use these authoring tools and collaborate with discourse intonation specialists and computer scientists to design pedagogically sound activities and exercises (Dalby & Kewley-Port, 2008; Precoda & Bratt, 2008).

Finally, there are broader social issues that must be considered, including which language variety or dialect will be taught with CAPT programs, whether multiple variants and accents will be included in a program, and the acceptability of speakers to maintain their identity as L2 speakers. The goals of pronunciation training might then shift from acquiring unaccented speech to targeting intelligible, comprehensible speech. To be sure, negative societal (or individual) reactions to accented or non-native speech that affect integration of L2 speakers will not be changed or even ameliorated by CAPT software, no matter how sophisticated or effective it becomes.

SEE ALSO: Accent Reduction; Automatic Speech Recognition; Foreign Accent; Instructional Computer-Assisted Language Learning; Pronunciation Instruction; Speech Analysis Software; Suprasegmentals: Discourse Intonation; Suprasegmentals: Intonation

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Computer-Assisted Language Learning and Machine Translation

HAROLD SOMERS

Introduction

Machine translation (MT) is the oldest application of what is sometimes called "language engineering," and has been around for over 60 years. While not fulfilling the early promise of "fully automatic high-quality translation of unrestricted texts," the technology has now reached a stability and a maturity, where developers and experienced users well understand the capabilities and limitations, and, in general, present these honestly to the general public.

This entry concerns the role—potential and actual—of MT in the teaching of languages. We will first discuss and clarify what we mean by "machine translation," and briefly survey the state of the art, concentrating mainly on commercial and freely available MT tools. A reminder of the limitations and difficulties associated with MT systems will be a useful preface to the sections that follow.

Our discussion of the role of MT in language learning will begin with a comment on the use of translation per se in the language classroom. We will then discuss the importance of teaching about MT and related tools to language learners as potential translators, before focusing on the use of MT as a classroom device for language learning. Finally, given the widespread availability of free MT tools on the Internet, we address a recently emerging problem of language learners using MT tools to complete translation and other writing tasks, how this type of plagiarism can be spotted, and whether MT has a more positive role to play in the language classroom.

What Is Machine Translation?

For the most part in this entry we will understand "machine translation" to mean computer software which takes a text written in one language and attempts to translate it, largely without any intervention by a human user, into another. Apart from a brief mention, we will not refer to tools for computer-assisted translation which may or may not attempt some part of the translation task but largely leave it to the human translator to make the important decisions; nor will we comment on the newly emerging technology of spoken-language translation, which as yet is of insufficient maturity to have a significant use in the classroom.

MT technology is now widely available for dozens of languages either free on the Internet, included as part of the package on new computers, or as stand-alone software available at prices ranging from trivial to significant. By far the widest use of MT is by nonlinguists for translating Web pages and e-mails. Users should understand that the translation quality is entirely dependent on the nature of the source text and may range from acceptable without revision (for texts using a limited vocabulary and simple syntax), through adequate for gisting purposes, to almost incomprehensible.

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Historically, MT system development has seen two major approaches, which are characterized as "rule-based" and "statistical." Rule-based MT systems consist of programs which apply, as the name suggests, packages of linguistic rules to analyze the input text and convert it into the target language. These rules are developed by teams of expert linguists and represent a massive investment by the MT system producers. The statistical approach on the other hand depends on automatically extracting from huge amounts of parallel data (millions of words of translations, usually aligned sentence-by-sentence) statistical parameters capturing the probabilities of word and phrase correspondences. Statistical MT systems typically do not encode explicit linguistic information, but learn it from analyzing many examples. The latter approach has for the last 20 years overwhelmingly dominated MT research, though a small number of commercially available MT systems are rule-based, and the market leader, Google Translate, uses mostly statistical approaches, which are now beginning to dominate. The significance of this difference will become apparent in later sections.

Whichever approach is taken, state-of-the-art MT systems still have many weaknesses, so much so that it is generally agreed that while they may be suitable for "assimilation," for example getting the gist of a text written in a foreign language, they are insufficiently accurate for the production of high-quality text if the user does not know enough of the target language to check for bad translations. Ironically, it is these weaknesses in MT that most lend themselves to its use as a language-teaching tool.

The main weaknesses stem from the inherent ambiguity of natural language: in "lexical ambiguity," individual words can have a variety of meanings and hence translations which cannot always be inferred from the context. Lexical ambiguity can result from polysemy (where a word has several related meanings) or homonymy (where the different meanings are unrelated) in the source language, or from the fact that a word in one language can have a variety of translations in another, just because the target language makes distinctions that the source language does not. So a typical MT error is to choose the wrong target word.

"Structural ambiguity" can arise when a sequence of words has more than one possible interpretation, which again can lead to a different translation. This can be related to lexical ambiguity, as in the famous example *Time flies like an arrow* (the ambiguity lies in which of *time*, *flies*, or *like* is the verb), or can come from scope or attachment ambiguities as in *young men and women* (are the women young?) and *He saw the girl with a telescope* (who has the telescope?).

Taken together, these kinds of problems can simply overload the MT system and result in poor, "stilted," or even incomprehensible translations. On top of this, for some language pairs, the source language may be underspecified with respect to the target language (e.g., some languages do not distinguish singular and plural), with obvious ramifications for translation.

Translation as a Language Skill

One issue relating to the use of MT for language teaching is whether translation itself is a useful activity (see Cook, 1998). The so-called "classical" grammar–translation method is almost universally derided these days, though perhaps this is more for its approach to the teaching of grammar than to its use of translation. Furthermore, in this approach, translation is L2–L1, texts are usually chosen for their literary merit, and the aim is to ensure comprehension and, perhaps, to improve *L1* writing skills.

Newmark (1991) identifies various aims behind translation as a language-learning exercise, depending on the stage the learners are at: as a form of control and consolidation

of basic grammar and vocabulary in the elementary stages, in the middle stages as a way of combating interference, interlanguage or unconscious translationese, and for advanced learners as a skill in itself (Newmark, 1991, pp. 61–2). He also identifies it as a means of improving "style," of increasing vocabulary and "flexibility in switching grammatical shifts," and he mentions two further uses focusing on communicative appropriateness, social style and register, and what he calls "semantic" translation, focusing on unusual collocations, metaphors, neologisms, words and grammatical constructions used in a special or unusual way.

Whichever the translation direction, self-correction is claimed to be good, though quite difficult. If correcting errors is a good exercise, then MT is a good source of such errors, as we will discuss in the next section.

Campbell (1998) writes at length on the competence to translate into the L2 as a measure of L2 acquisition, and that translation exercises can give some insight into interlanguage development. He expresses his surprise that "translation studies [have] virtually ignored the idea of interlanguage" (p. 13), even though there are many resonances. Translations produced by learners represent a linguistic system in some degree separate from both L1 and L2 systems. One argument is that by setting a translation into the L2 (rather than, say, a free composition), one can control the vocabulary and structures that are tested. Another, much weaker, argument is that translations are easier to mark, because of the existence—at least notionally—of a "correct" model. More realistically several more or less correct models will exist, depending on the level of the student.

If translation is an activity that language learners expect to engage in professionally, then there is a place for translator training in language learning. Furthermore, however useful an activity translating is for language learning—and opinion on this has fluctuated over the years—it seems to be a natural thing for learners to want to do, and seems to be an inevitable part of most language curricula, both into and out of the L2.

MT and Trainee Translators

Irrespective of whether translation in itself is a skill that many language learners may appreciate learning and practicing, translation is one possible (professional) use of a student's language abilities. It is therefore not contentious to state that language learners "need to know what the capabilities of state-of-the-art MT are and how to evaluate its role as a practical tool in the language industry" (Lewis, 1997, pp. 255–6). Awareness of translation technologies by trainee translators is the focus of some of the earliest literature on the use of MT in the language classroom that we have been able to find, as typified by a series of articles by Loffler-Laurian (1983, 1985, 1987) which are nevertheless rather general in nature. Like many writers who followed her, Loffler-Laurian highlights the need for trainee translators to be aware of technological advances, the role of post-editing and revision, and above all the question of style and "the adaptation of style to the specific needs of communication" (1983, p. 96, my translation). She suggests that MT output can be useful in reconsidering the traditional notions of "mistake" and "error."

Awareness of MT and computer-based tools for translators is now an important element of translator training, usually at the undergraduate and graduate levels. Somers (2003a) surveys some of the approaches that have been taken, including hands-on training, awareness of controlled language applications, system dictionary updating, simulation of workflow scenarios (see also Hartley & Schubert, 1998), teaching of post-editing skills (see La Torre, 1999; O'Brien, 2002), and evaluation of MT output.

MT in Language Learning

Besides its role in translator training, there have also been a number of proposals to use MT as a language-learning tool. Of course there is something a little odd in trying to use a tool for a purpose for which it was not intended (even though some early commercial MT software systems promoted their use also as a language-learning aid, and the software included grammar tutorials, for example lists of inflection paradigms). Nevertheless, some of the proposals for use have been quite ingenious. Predominant among the reported uses is the idea of taking MT as a bad model, using its errors and shortcomings to bring out some aspects of linguistic differences. MT evaluation and revision (post-editing) of MT output as a language-learning exercise similarly focuses on MT's weaknesses, though perhaps in a more sympathetic approach. Finally, we will also look at how some translation tools can be used in the language classroom, and the use of MT in language training for specialists in other fields.

Using MT as a Bad Model

MT software first became generally available in the mid-1980s, before personal computers were widely used, and so access to MT was obviously somewhat restricted. Nevertheless there were some early pioneers keen to exploit the technology. The quality of the output was then sufficiently low that the prevalent view was typified by Higgins and Johns, who said of MT systems that "as language learning aids they are woefully inadequate, but . . . might provide a teacher with an interesting peg on which to hang a discussion of grammar, asking the students to spot the machine's howlers and account for them" (Higgins & Johns, 1984, p. 95).

This idea of MT as a "bad model" is quite widely found, where its weaknesses and mistakes are used to bring out subtle aspects of language differences or to reinforce learners' appreciation of both L1 and L2 grammar and style. For example, Ball suggests that "withholding the source text and inviting the student to *reconstruct* it from the raw translation . . . can be quite useful for drawing attention to half-forgotten points of grammar and usage" (Ball, 1989, p. 52; emphasis original).

Anderson (1995) describes use of a bidirectional English–Hebrew MT system in this way. Students manually entered sentences provided to them one by one, noted the results, and then used native-speaker intuition and/or L2 reference works (depending on the translation direction) to identify and correct the errors. For translation into the L1, this can be a useful exercise, since the poorer-quality translations are usually too close to the lexical and syntactic structure of the source language, and this exercise can reinforce the students' awareness of differences between the languages by showing them a bad translation into their own language.

Richmond (1994) likewise uses the MT system to bring language contrasts to the attention of students by again providing sample texts for translation into L2 along with model answers. Students are asked to type in the original L1 sentence, and note that the system gets the translation wrong. They are then asked to try to modify the sentence and retranslate it, continuing to do so until the appropriate target text is obtained. Because the MT system tends to produce rather literal translations, in order to get the desired output, the original text has to be modified to make it more like the target text. This, as he points out, is of course the reverse of normal student behavior, producing incorrect L2 that too much resembles L1. Richmond calls this "doing it backwards," and the pedagogic reasoning behind this is that it causes the student to focus on the differences between the languages. The method has the advantage that "there is no danger that they will reinforce their own target-language errors" (p. 75), and a further pedagogical aspect of the exercise is that the

"strange and often humorous" L1 constructions produced by the students help to fix the correct L2 constructions in their minds.

This idea of "pre-editing" the input text, i.e., taking a given text and changing it so as to cause some effect in the resulting translation, is also suggested by French (1991) as a way of getting students to appreciate what might be potentially ambiguous in the source text in order to spot the type of linguistic difficulty MT faces.

Shei (2002) suggests that pre-editing can be done both with L1 text and with L2 text, either the student's own, or a given (native speaker's) text. Shei has experimented with various approaches for Chinese and English, which have the additional interest of being typologically highly dissimilar. His comments on the L1 pre-editing task suggest that its benefits are rather general, inviting students to "reflect . . . on their knowledge in the target language" (p. 93). Editing native-quality L2 text to coerce a better translation is a controversial approach. Shei reports that some students found the task useful, but others were more negative, suggesting that the exercise only reveals how translating is not a good way to learn the L2, or how poor the student's L2 grammatical competence was.

Evaluation and Post-Editing of MT Output

Moving away from MT as a bad model, some pedagogical uses of MT can more closely reflect real-life use of this tool. A combination of evaluation and post-editing (i.e., correcting the MT output) has been suggested by various writers.

Belam (2002) describes MT output evaluation exercises with language learners. Students are asked to compare alternative translations which may have been produced by humans or MT systems. She outlines a number of benefits, in particular in focusing on the question of the wider context in which translations are done, but as a language-learning exercise, she returns to the question of exposing students to L2 texts of varying quality. Evaluation work, as well as exposing students to possibly incorrect models, assumes that they are competent to give a relative judgment about translation quality, a recurring difficulty with using MT into the L2.

Post-editing MT output is seen as a useful pedagogical exercise not just because of its applicability in the real world, but because it serves to heighten learners' awareness of the subtleties of the languages involved. One of the earliest advocates of this approach, French (1991) highlighted the need for students to be self-critical toward their written productions. Belam (2003) describes teaching of post-editing skills to advanced learners, and argues that the activity forces students to study the text in detail and promotes the learning of new vocabulary and expressions, new grammatical points and stylistic features. "Far from confusing students or giving them bad habits, the post-editing exercise can actually be seen to have positive benefits for their language learning" (Belam, 2003, p. 4). Kliffer (2005) reports using post-editing in his language classes with advanced learners. Although stronger students were frustrated by MT's "stupid" errors, weaker students found evaluating a translation and correcting its mistakes to be less stressful than doing a translation entirely by themselves.

Niño (2004, 2008) reports on a number of experiments in which advanced learners engage in post-editing MT output in the L2. She reports that the skill of detecting and eventually correcting errors is highly linked to the students' command of the L2, though she recommends this only for advanced students.

Translation Tools in the Classroom

Besides using MT output, some researchers report use of other translation tools. Corness (1985, 1988) gives details of the use of ALPS's interactive MT system with advanced

learners of German. One of the features of this (now obsolete) system was its "interactive translation" mode, in which it would ask the user to choose among alternative interpretations of an ambiguous phrase. For example, is *a big computer user* a user of big computers or a big user of computers? Corness exploited this facet of heightening awareness of varieties of possible translation which may be due to differences in interpretation, or stylistic differences.

Lewis (1997) devised a course exploiting the fact that MT software often allows users to expand and enhance the system dictionaries, and found that students increased their knowledge of L2 grammar in this way. In particular, students whose command of formal grammar was weak found the MT dictionaries appeared to provide a stimulus for researching areas of grammatical structure.

Away from MT systems themselves, one translation tool worth mentioning is the Translation Memory System (TMS), widely used software which allows users to access previously completed translations when translating a new text, and the related bilingual concordance (Huet, Bourdaillet, & Langlais, 2009), a parallel text indexed by key words in either language. In the case of the TMS, the software looks in the database for a close match to the input sentence, which may differ from it by a few words. It is then up to the translator to decide what to do with the proposed partial match. DeCesaris (1995) suggests that this type of program can be adapted for use in a classroom setting, in which the TMS can be used as a self-learning resource to provide students with immediate access to models that they know are correct. From a language-teaching perspective, this kind of software can serve as a nice alternative to the traditional gap-filling exercise. Shei & Pain (2001) make what amounts to a similar proposal (although they describe it in terms of an MT system based on "lexicalized sentence stems" rather than a TMS).

Somers (2003b) discusses the pedagogic use of a range of language technology tools specifically for teaching Japanese, including MT, but mentioning also text input, speech output, and lexical tools. The particular difficulties that Japanese presents to learners (especially due to typological differences and also the writing system) and the generally good quality of Japanese language technology make this a particularly promising area.

MT for Nonspecialists

So far we have concentrated on the use of MT as a tool for language learners who are in some sense language specialists. There is also a great potential for the use of MT in specialized courses in reading foreign languages for students of other disciplines, e.g., German for scientists, Russian for international affairs specialists, Chinese for business studies, etc. Free Web-based MT can play a massive role in this, an application really well suited to its capabilities. As mentioned above, the quality of state-of-the-art MT is such that it is best suited (if the quality of the input text cannot be limited and controlled) for the purposes of "assimilation," i.e., providing a rough translation that gives a "gist" of the original text. This may be entirely adequate for nonlinguist users who are specialists in their own fields.

Once this idea catches on, it is quite possible that institutions of higher learning will redefine their foreign-language graduate reading requirements to include, besides proficiency with or without a dictionary, use of MT, whether the free online version or software purchased and installed locally.

Many of the ideas reported above predate the era of inexpensive MT software, including free online MT. Since MT is now available at virtually no cost, we can expect language teachers to be much more willing to experiment with some of these ideas. But this introduces a danger which we address in the final section.

Online MT and the Risk of Plagiarism by Language Learners

As mentioned above, MT is available not only in the form of commercially available software, but also, increasingly, free online. Only a few years after it became available in this form (Gaspari & Hutchins, 2007), Web sites offering translations had become almost innumerable. That the availability of free online MT could pose a problem for language teachers is recognized by McCarthy (2004). As he suggests, there is a danger of students simply feeding the text they have been given as an assignment through the MT system and submitting the output for assessment. McCarthy discusses the reasons why this is bad: it is unfair to students who have invested the intellectual effort and time into producing an original translation, a translation produced with no intellectual input has no instructional value, and it is therefore a waste of the teacher's time to correct it. McCarthy goes on to report a discussion with his students about strategies for combating use of free online MT, and in particular how to penalize it. Somers, Gaspari, and Niño (2006) report a number of methods of successfully detecting what is effectively a special kind of plagiarism, a problem made interesting by the similarity, or otherwise, between the kinds of mistakes a language learner makes, compared to those that an MT system typically makes. Niño (2009) discusses the problem in more detail, covering linguistic strengths and weaknesses of free online MT systems, pros and cons of student use of MT, and suggesting some good and bad examples of possible use of free online MT in the classroom.

There is an irony in that MT is most useful in the classroom when it goes wrong. Successful translations are of limited interest to the learner, but bad translations can be instructive to highlight differences between languages, to illustrate how and to what extent MT works, and, in the teaching of translation as a skill in itself, to focus on choices and dilemmas facing the translator. As the quality of MT improves, so its use in the classroom may widen.

SEE ALSO: Computer-Assisted Translation; Concordancing; Emerging Technologies for Language Learning; Post-Editing of Machine Translation; Teaching and Learning of Translation; Teaching Translation and Interpreting; Technology-Supported Materials for Language Teaching; Translation Tools

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Computer-Assisted Language Learning Effectiveness Research

CAROL A. CHAPELLE

It seems like a simple enough question: Is computer-assisted language learning effective for language learning? Indeed, researchers address this question in a variety of ways, but most language teachers and researchers would point out that the question is considerably more complex than it first appears.

The Complexity of Effectiveness

Complexity lies just beneath the surface of each part of the question. Computer-assisted language learning (CALL) encompasses a wide variety of practices. CALL can refer to such practices as using a vocabulary Web site to engage in self-study of relevant vocabulary during a semester-long reading class. CALL could also refer to use of a multimedia program to give interactive listening practice over the course of five weeks in a listening class. It could mean regular use of computer-generated feedback on grammatical errors in a semester-long writing class, or it could mean a single Internet collaboration with a speaker of the target language in a class in another country. These are just a few examples of what CALL can mean, and the list gets longer as new technologies become available and pedagogies are developed.

The diversity of practices encompassing CALL suggests that the meaning of *effective* will have to be at least equally varied. If something is effective, it produces a desired result, but with such an array of CALL practices, the desired results are many, as well. The result-orientation of effectiveness creates a challenge for those attempting to respond to the question. In the four examples of CALL given above, to claim that CALL had been effective, it would be necessary to show successful outcomes relative to the aims of the learning tasks, i.e., increased vocabulary ability, improved listening skills, improved grammatical competence in writing and increased intercultural competence.

Each of these refers to an aspect of language learning, but how can language learning actually be measured in a way that is valid in a research study? Can the researcher use a score on a vocabulary size test, the score on a standardized listening test, the teacher's judgment of grammatical accuracy on a student's written work, or a score on a measure of intercultural competence? All of these types of assessments might provide some evidence about language learning if viewed relative to an assessment at an earlier time. But it is not entirely clear that each of these could be considered valid for making a claim about the effectiveness of CALL.

In each of the examples, it would be necessary to examine precisely what the learning goals are that pertain to the technology. If in the first case the learners are to select the vocabulary for self-study, it is not clear that the CALL activity should affect overall vocabulary size as measured by a general vocabulary test. In the second case, would listening ability be expected to increase in a manner and to a degree that would be detectable on a standardized test? In the third case, is the learner's use of the grammar correction feedback

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intended to teach the grammar, or is the aim to provide assistance in producing the texts in the writing class? In the fourth, what precisely is the learner to gain from one cross-cultural encounter? Each example shows that to investigate effectiveness, the researcher would need a precise and relevant definition of language learning. The definition would need to pertain to the language abilities that the learners were intended to develop as a result of working with the technology. The results would prudently be applied only to the particular aspect of language that was tested. In other words, the research would not allow for making general claims about CALL effectiveness. Instead, researchers would investigate the quality of CALL in a more piecemeal fashion using a number of methodologies, many of which do not rely on an outcome measure.

Effectiveness Relative to Alternative Types of Instruction

Some researchers have investigated claims about the effectiveness of technology relative to classroom instruction. If the question is posed in this relative sense, the issue is to measure the differences in outcomes between two groups of learners. In other words, who learns the vocabulary better: the class that is instructed through CALL allowing for individual collection and testing of the words, or those who are left with paper and pencil tools? Researchers have investigated many aspects of CALL using this approach, including grammar, vocabulary, reading, writing, and listening communication skills, and overall learning. Grgurovic (2007) provided a searchable database where readers can explore these studies. A look at Grgurovic's (2007) summary of the results does not suggest a definitive answer to the questions about CALL effectiveness relative to other forms of instruction. However, it reveals many studies in which results favor the CALL group. When the studies found in this systematic search of the second/foreign-language learning research were further analyzed through a meta-analysis (see Norris & Ortega, 2006), the overall finding was that for studies conducted with methodological rigor, the CALL groups performed systematically better than their counterparts who did not use CALL. The mean differences were small, but statistically significant (Grgurovic, Chapelle, & Shelley, 2011).

As Felix (2005a, 2005b) points out, however, such comparative studies and their derivative meta-analyses are limited in the nature of the results they can provide. Such studies lack important information needed to understand the conditions under which CALL is successful. Cobb (1997) argues that such an understanding and theorizing of the conditions is essential if researchers are to make sense of the research results. The "black box" of the technology condition has been an ongoing criticism of such research for many years (Pederson, 1987; Dunkel, 1991; Chapelle, 2001). As a consequence, many researchers have used other methods to attempt to gain more detailed information about where, when, why, and with whom CALL is effective.

Getting at the Detail

Researchers studying the effectiveness of classroom teaching recognized long ago that comparisons of outcomes alone were inadequate as scientific evidence for conclusions about the superiority of one method over another for language learning (e.g., Chaudron, 1988). Similarly, researchers studying CALL would like to be able to make claims about the quality of particular learning activities for developing specific aspects of communicative language ability as well as to produce findings that can be used to improve the design of activities for learners. Five examples help to illustrate the types of research that are addressing questions about the nature and quality of the experience that students engage in as they work on CALL.

First, researchers examine learners' use of negotiation strategies as they seek to understand meaning while they work on CALL. Based on theoretical and methodological principles coming from interactionist research on second language acquisition (Pica, 1994), these researchers have used interaction analysis of human–computer interaction or focused discourse analysis of recorded written and oral conversation to analyze the quality of the interactions that learners engage in during the CALL activity. Findings from studies of human–computer interaction have been positive overall: Students who interact with the program to obtain help as intended do tend to learn (e.g., Plass, Chun, Mayer, & Leutner, 1998). Research investigating students' language as they communicate with each other online has found that if activities are designed carefully, students do indeed use negotiation of meaning strategies which are thought to be beneficial for language development. When written interactive communication is involved, negotiation of meaning can be accomplished in a number of different ways; moreover, students have also been observed to engage in negotiation of form, which suggests that metalinguistic awareness is prompted by the activity (Pellettieri, 2000). Overall, the research supports the claim that students' interactive written communication in well-designed activities results in students' reflection on language and self-correction during conversation.

Sometimes, in combination with the first approach, a second approach to investigating CALL examines learners' development of specific linguistic features that are used while working on CALL. One type of study investigates activities aiming to teach students particular linguistic features—most typically vocabulary—and interaction pertaining to the learning targets is documented. In such a study, outcomes can be tested because linguistic features are targeted (Smith, 2004). In another type of study, learners' language is observed and documented as they work on activities online over the course of several weeks or a semester. Progress is noted through documentation of changes in the learners' language at it develops throughout the activities (Belz, 2003). This methodology has been used to examine grammatical and pragmatic aspects of the learners' language. Belz and Kinginger (2003) note that intercultural collaborations with peers afford opportunities for learners to develop pragmatic competence, so the research aims to support this claim with findings about pragmatic development.

A third focus of investigation is the interaction that students engage in, which may be relevant for their development of intercultural competence. In particular, research has examined miscommunication that may occur as a result of students' limited intercultural abilities. Analysis of such interaction suggests that when a culturally based misunderstanding has occurred, recovery is not a given (Ware & Kramsch, 2005). Unlike linguistic breakdowns that spawn negotiation of meaning, culturally based breakdowns seem to be very difficult to repair, and it is not evident that learners gain cultural understanding from such breakdowns. This is an important area of study for teachers and researchers wishing to claim that cross-cultural collaborations over the Internet help to develop intercultural competence.

A fourth approach is to investigate stakeholders' perspectives on the qualtiy of their experience when working with CALL. Particular questions can be devised to investigate users' perceptions relative to claims that materials developers make. The stakeholders are typically the teachers and students who use the materials. One such study investigated *Longman English Interactive* (Rost & Fuchs, 2004), a video-based multimedia program aimed at developing the integrated language skills of beginners to intermediate learners (Jamieson & Chapelle, 2010). The basis of the evaluation was a set of six criteria from theory and research in instructed SLA (language-learning potential, meaning focus, learner fit, authenticity, impact, and practicality), as outlined by Chapelle (2001). Opinions pertaining to these criteria were solicited at multiple points in time through a survey of over two hundred students in the United States and three countries outside North America. Quantitative

results, for the group as a whole as well as for the students and teachers at each location, revealed that positive claims about the six criteria could be justified for the whole group, but that not all claims were supported for all locations. In other words, the context affected the evaluation of the CALL materials.

A fifth approach to research is undertaken in view of the recognition that results in all of these studies appear to be affected in part by factors that occur prior to and in the institutional context surrounding the activities under investigation. Students' own goals for language learning, as well as their experience with and interest in technology, undoubtedly influence the success of activities introduced by teachers (Warschauer, 1999). Factors in students' prior lives affect their perceptions of technology possibilities, which in turn have implications for their learning through technology (Thorne, 2003). If the claims to be made about CALL take into account learners' background, motivation, interests, knowledge, and access to technology, as some argue they should, researchers typically use qualitative research methods such as case studies to capture a detailed understanding of the individuals (Duff, 2008). Moreover, language programs and institutional decision making also affect what, how, and when technology is used for language learning (Burston, 2006).

Conclusion

The research that is done to investigate CALL demonstrates that statements about effectiveness of outcomes measured by tests do not encompass all the types of claims researchers want to make about CALL. Instead, researchers hope to make a range of assertions about the quality of interactions, acquisition of particular linguistic features, benefits of intercultural encounters, and users' opinions about specific aspects of the activities. Such claims vary according to the audience for the research results (Chapelle, 2007). Particularly for those in applied linguistics, the idea that technology could be categorically effective or ineffective does not sit well with professional knowledge about the many facets of language learning and the context-specificity of the learners' needs. Rather than seeking evidence about a monolithic technology effect, applied linguists tend to study a range of factors in the learning situation in detail using a variety of research methods.

SEE ALSO: Assessment of Grammar; Assessment of Listening; Assessment of Pragmatics; Assessment of Vocabulary; Computer-Mediated Communication and Second Language Development; Corpora in the Language-Teaching Classroom; Instructional Computer-Assisted Language Learning; Qualitative Research on Information and Communication Technology; Technology and Language: Mixed Methods; Technology and Language: Quantitative Methods

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Computer-Assisted Qualitative Data Analysis Software (CAQDAS)

JEREMIE SEROR

In seeking out techniques and guidelines best suited to conduct qualitative research, researchers are increasingly turning to the growing availability of computer software packages designed for qualitative research and data analysis. Also known as CAQDAS (computer assisted qualitative data analysis software), these computer programs produced to facilitate qualitative researchers' analytical work first appeared in the early 1990s (Basset, 2004). Nevertheless, to date, discussions in the literature of the adoption and impact of these digital tools by researchers remain limited when compared to the much-better-established role of computer software for quantitative data analysis (Lewins & Silver, 2007). This may well be about to change as the list of available software programs and their professional commercialization as widely available tools has increased steadily. Some of the original CAQDAS programs such as ATLAS.ti, NVivo, and HyperResearch are now joined by a wide assortment of programs whose variety of functions and capabilities reflect the broad range of methods associated with qualitative inquiry. Nowadays, for instance, qualitative researchers may choose from programs specifically designed for the analysis of audiovisual data (e.g., Transana) or from mixed methods programs focusing on text retrieval and the integration of statistical tools to integrate content analysis and text mining dimensions (e.g., QDA Miner).

Although each package offers a unique set of tools and interfaces, all take advantage of technological innovations in the area of digital data management to assist and enhance the way researchers store, edit, retrieve, link, and visualize complex and varied data formats, including the "unstructured" data that is so often at the heart of qualitative research (Bazeley, 2008).

While not without controversies (see more on this below), researchers who have examined the use of CAQDAS increasingly highlight the potential these packages have to change how researchers interact with qualitative data and how, with reflective and appropriate use, the software can augment the flexibility, efficiency, and rigor of the analytical process (Lewins & Silver, 2007).

From its very first versions, crucial to the design of CAQDAS was a transition from the hands-on work of annotating, cutting up, filing, and searching for data in stacks of papers to an electronic environment where these tasks could be executed digitally on a computer screen. Thus, whereas the essential functions of CAQDAS echo processes traditionally associated with qualitative data analysis, the computer environment simplifies and speeds up the reiterative process of examining, storing, coding, organizing, and recording thoughts while sifting through the data to test ideas and theories.

For instance, the time-consuming process of coding data segments and (re)organizing them in both hierarchical and nonlinear structures is greatly simplified by CAQDAS packages that allow, for example, a researcher to code a section of an interview by simply selecting and dragging on their screen a segment of an interview onto the label of a relevant analytical theme. Clicking another button allows a researcher to link a memo capturing his or her thoughts about this segment or to bring up a list of all themes currently associated with that interview. Another click displays how many of these themes are also "coded"

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in interviews with other participants, allowing for cross-case comparisons. Finally, clicking on any of these themes produces a list of all the data sources (specific quotes, whole documents, images, audiovisual segments, or all of these) ever linked to this theme, each of which can in turn be instantaneously called up for review and further analysis and coding.

CAQDAS designers have also taken advantage of computers' automated record-keeping to assist the process of tracking, updating, or undoing analytical steps. In this way, qualitative analysis is rendered more efficient, and researchers are offered an increased sense of flexibility and capacity for risk taking with their analysis (Weitzman, 2003) while producing "a strong record of transparent and replicable research" (Cousins & McIntosh, 2005, p. 592), which helps enhance the thoroughness and rigor achieved by qualitative researchers (Lu & Shulman, 2008).

Beyond the speed and ease offered by these programs, for many users, the true attraction of these tools lies in CAQDAS's capacity for experienced users to integrate a degree of complexity and detail into their analysis that would be difficult to achieve without computers (Richards, 2002). Part of this is rooted in the improved sense of efficiency and overall organization offered by CAQDAS programs, which locate all data sources and analytical work within a single, uniform, searchable file or folder that can in most cases be stored and transported on a USB memory stick (Lu & Shulman, 2008).

Researchers working with CAQDAS have also noted the enhanced capacity to work with large data sets (Lu & Shulman, 2008), and the ability to explore data visually through the innovative and dynamic graphical representations and modeling systems which are now a common feature of most CAQDAS (Parmeggiani, 2009). There are also considerable advantages linked to computers' capabilities of establishing and examining links between various data components. In particular, opening up new possibilities beyond a traditional code-and-retrieve approach, hypertext links, frequency counts, Boolean searches, automatic coding, and cross-matching of coded data with case descriptions are now frequently part of sophisticated search functions available to users to explore patterns in their data.

Perhaps most important in transforming what CAQDAS packages might offer researchers has been the capacity for these programs in recent years to import and manipulate an ever-widening range of data sources. No longer are researchers limited to working with simple text files. Many packages can now easily integrate rich text documents, as well as multimedia files such as film, audio, and images. The latest version of Atlas.ti at the time of writing, for example, allows researchers to work directly with PDF files and add geographical location tags to documents imported into a project through an embedded Google Earth function.

Through this expanded capacity to work with multiple forms of data within the programs themselves, researchers are now freer to move back and forth from raw data (full transcripts, pictures, audio recordings, etc.) to analytical categories, to theory building as part of a "context-rich" analytical process (Lu & Shulman, 2008). In the field of applied linguistics, where working with discourse frequently requires considering both the micro and macro contexts in which language is embedded (Duff, 2007), this ability to switch effortlessly from the actual recordings of language events to analytical constructs is particularly interesting. At any time, findings emerging from the analysis can easily be traced back to specific sections of raw data, which can in turn easily be resituated within a larger context, all while tracking and annotating the analytical steps that helped identify these sections as relevant. This offers considerable benefits for researchers seeking to enhance the verifiability of their work, while rebutting popular criticisms of qualitative research as relying too often on arbitrarily chosen quotes (Antaki, Billig, Edwards, & Potter, 2003).

Illustrating a trend toward the adoption of CAQDAS for discourse analysis, King (2010), for example, reports making successful use of NVivo's ability to code, link, and later merge

various explorations of his data, to explore membership categorizations found in young participants' discussions of the impact of a year-long break prior to beginning university studies. Mavrou, Douglas, and Lewis (2007) similarly report on their use of Transana to work with multiple levels of transcriptions, all synchronized with raw video recordings, to conduct a fine-grained analysis of interactions and exchanges between "able" and "disabled" students in inclusive classrooms.

Another important innovation in the use of CAQDAS has been the emergence of features designed to facilitate team-based research, with multiple researchers collaborating and working on a single qualitative project (Bazeley, 2008). A number of CAQDAS programs offer merging functions for collaborative work, as well as cross-rater verification functions that can be used to confirm the degree of agreement in the interpretation of data by team members. NVivo's latest release at the time of writing permits team members to work at a distance on a single server-hosted project.

Finally, CAQDAS's facilities for the management of complex data have been seen with great interest by researchers interested in mixed methods projects that combine qualitative techniques with quantitative tools. CAQDAS packages such as NVivo and MAXqda feature the ability to import tabular data from spreadsheet programs, to add depth and richness to the descriptions and analysis of participants or cases found in a study (Johnston, 2006).

Despite what this software has to offer, the growing popularization of CAQDAS for qualitative research has not been without contention. Concerns have been raised about the potential negative impact that computer-based interfaces can have on the quality of data analysis possible in an electronic environment. For Mangabeira, Lee, and Fielding (2004), it is a question of realizing that not all researchers will have the experience, comfort level, personal inclination, or all of these to work effectively with computers for the organization of qualitative data analysis and its workflow. Indeed, rather than simplifying the analysis, for some, on-screen interfaces simply entail the need to relearn to do "digitally" what might otherwise be achieved with little thought (if perhaps more slowly) in a more analog fashion. Richards (2002) further warns that the software's representation of data in digital windows, as partitioned segments separate from the whole, with particular fonts, formats, and limited visual ranges, can decontextualize and possibly distance researchers from their original data. Echoing this necessity to question the imposed limits of a digital workspace, MacMillan (2005), in her review of the efficacy of CAQDAS for discourse analysis, questioned whether software could ever offer the degree of organization required for the detailed work entailed by discursive analysis, and deplored the effort required to adapt one's analysis to what she perceived as an overall structural emphasis on code-and-retrieve processes and a grounded theory approach to qualitative data analysis.

Finally, unease has been expressed at attempts to take advantage of computers' capacity to work with larger sample sizes while integrating quantitative techniques into qualitative projects. Some see in these trends, and in their implied change in focus from the meaning found in data to frequency counts, a dangerous shift away from the qualitative inquiry tradition's deliberate focus on the unquantifiable and on smaller data sets (St John & Johnson, 2000).

While the above concerns do need to be taken into consideration by researchers contemplating the adoption of CAQDAS, it would be simplistic to state that it is the programs themselves, rather than *who* uses them and *how*, that should be examined when determining the potential contribution of these tools to qualitative research. Richards (2002) calls for more frequent and detailed assessments of what is actually done with these tools rather than simply a critique of their capabilities (see Mavrou et al., 2007, for a good example of the insights to be gained from this type of work). In fact, experienced researchers will recognize that these new tools are in this sense no different from any of the more traditional methodological tools at their disposal. Whether it be choosing to work with a CAQDAS

package or deciding on a specific transcription convention to use when working with interviews, the best approach will be to keep in mind that the value of these tools will unavoidably be linked to researchers' needs in terms of resources, methodology, and goals as well as their personal preferences, experience, comfort levels, and willingness to research and to train themselves with these tools.

In light of the fact that CAQDAS programs come with a technical and methodological learning curve (Johnston, 2006), Lewins and Silver (2009) suggest this reflection process is especially important when choosing a package. On the basis of their own comparisons of various available CAQDAS programs, they stress that although most users would like a simple answer to the question "Which is the best package?" this is in fact impossible. While most programs offer the same basic features, the differences which set them apart in the way these features are accessed and realized will mean that each package will be best suited for specific types of projects and researchers. As such, it is the users who take the time to inform themselves well about CAQDAS and what each program has to offer who are likely "to find the most satisfying fit between these tools and their own research needs" (Cousins & McIntosh, 2005, p. 596).

A growing body of work suggests that researchers in a wide range of disciplines including the natural sciences, business, and creative arts are taking the time to make use of CAQDAS (Bazeley, 2007). This interest is matched by an increased demand for training with CAQDAS and suggests these researchers, including applied linguists, have found ways to take advantage of this software to support and add to their work, exploring the complexities and nuances that characterize the richness of qualitative data. This body of work also demonstrates that CAQDAS will likely continue to play a significant role in the legitimization of qualitative research as an important and valid mode of inquiry, as its user base moves from early adopters to a growing number of mainstream users (Fielding & Lee, 2002). Indeed, if, as suggested by Atkinson, Coffey, and Delamont (2001, p. 15), "we are only just beginning to witness the impact of information technology on qualitative research," even those uninterested in moving away from more traditional approaches to qualitative data analysis may find it useful to at least consider how these new tools are set to change, transform, and shape the future of qualitative research, if not in their own work, then in the work of a future generation of researchers.

SEE ALSO: Conversation Analysis Methodology in Second Language Studies; Discourse Analysis and Conversation Analysis; Discourse Analysis in Literacy Research; Mixed Methods; Qualitative Literacy Research; Qualitative Methods: Overview; Qualitative Research on Information and Communication Technology; Qualitative Sociolinguistics Research; Qualitative Teacher Research; Validity: Mixed Methods; Validity in Qualitative Research

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Computer-Assisted Translation

KEIRAN J. DUNNE

Computer-assisted translation (CAT), sometimes called computer-aided translation or machine-aided translation, is the process whereby a human translator is assisted by specialized software. The defining characteristic of CAT is that the software *helps* the translator, who retains control over the translation process, unlike machine translation (MT), in which software actually *replaces* the translator.

CAT and MT represent two different approaches to the question of how to use computers to produce better, quicker, and cheaper translations. Early efforts sought to fully automate translation using MT. In the 1950s, research groups were formed at a number of universities across the United States. Encouraged by early demonstrations of the practical feasibility of machine translation, particularly the 1954 demonstration by a joint IBM–Georgetown University research team, US government agencies invested significant amounts of money in MT research (Hutchins, 1978).

However, it soon became evident that researchers had underestimated the challenges of MT. The resulting translations were rudimentary and often nearly incomprehensible, and critics began to question the utility of MT (Hutchins, 1978). Yehoshua Bar-Hillel (1960, pp. 158–63), for instance, argued that fully automatic high-quality translation (FAHQT) was a dream that would not be achieved in the foreseeable future, if ever. In Bar-Hillel's view, the challenges of MT stemmed not from translation, but from comprehension. If a computer cannot determine the meaning of ambiguous words or sentences, he reasoned, then practical MT would require human postediting to correct the (mis)translations, in which case the process could not truly be characterized as FAHQT. Bar-Hillel (1960) asked whether postediting was the best use of human labor in the translation process. Instead of attempting to supply computers with encyclopedic knowledge and program them to make human-like inferences when facing ambiguity, ideas he dismissed as "utterly chimerical" (p. 160), Bar-Hillel argued that researchers should concentrate on developing practical machine aids to translation, which would be far more feasible than achieving FAHQT.

In 1964, the Automatic Language Processing Advisory Committee (ALPAC) was formed to evaluate the relative usefulness and promise of research and development in the field of automated foreign-language translation on behalf of several US government agencies. The committee's report observed that no existing system performed true "machine" translation, as the production of useful output from state-of-the-art systems required human postediting (ALPAC, 1966). MT was also deemed to be less accurate, slower, and harder to understand than human translation, a dire assessment given the stated imperatives of improving quality and speed while decreasing cost. Echoing Bar-Hillel, the committee's verdict was unequivocal: "We do not have useful machine translation. Further, there is no immediate or predictable prospect of useful machine translation" (ALPAC, 1966, p. 32). The report concluded that machine aids to translation might be a fruitful means to achieve better, quicker, and cheaper translations.

Due largely to the ALPAC report, MT research fell into disrepute and attention turned to the development of translation aids (Hutchins, 1998a; 1998b). Early efforts focused on lexicography and terminology, reflecting the fact that translators of scientific and technical

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texts typically spent more than half of their time researching the translations of technical terms (ALPAC, 1966, p. 27; Zachary, 1979, p. 19). Indeed, the first lexically oriented translation aids predate the ALPAC report: the Terminological Bureau of the European Coal and Steel Community created its automatic phrasal dictionary, DICAUTOM, in 1963; two years later, the West German Federal Office of Languages implemented LEXIS, a computerized system that enabled the creation of text-oriented glossaries, i.e., lists of terms that appeared in a given source text along with their approved translations (Hutchins, 1978). The 1970s witnessed the development of electronic term banks, such as EURODICAUTOM, the terminology data bank for the translation services of the European Community, and TERMIUM, which was created at the University of Montreal in 1970 as a centralized terminology storehouse for Canada's translation services (Hutchins, 1978).

Building upon these efforts, researchers expanded the conceptual framework of CAT during the 1970s and 1980s. Thus, Friedrich Krollmann (1971, pp. 118–19) proposed expanding the terminological database into a "linguistic data bank" comprising seven interlinked subbanks:

1. Multilingual dictionaries for lexicography;
2. Multilingual dictionaries for machine-aided translation;
3. Monolingual dictionaries containing additional information on lexicographical entries, particularly definitions;
4. Thesauri for information retrieval/documentation;
5. An index for registering and checking translations, to avoid duplication;
6. A text corpus bank for linguistic analyses;
7. Translation archives.

This linguistic data bank would be accessible not only to translators, but also to lexicographers and other multilingual information workers over a network. Although the state and cost of the technology precluded development of such a system at the time, Krollmann's model represents an early prototype of an enterprise computer-assisted authoring and translation system.

Krollmann's proposals for a translation index, corpus, and archive of translated text were adopted and expanded upon by Peter Arthern in 1979. Observing that many European Community texts requiring translation were quite repetitive and reproduced extensive passages from other documents, Arthern argued that translators were wasting considerable amounts of time duplicating previous translation work. To solve this problem, he proposed a computer-based system of "translation by text-retrieval" (Arthern, 1979, p. 93) whereby the organization would store all texts along with the corresponding translations in a centralized repository, so that users could locate any given passage of text in any of the organization's working languages, along with the corresponding translation(s). Translation would involve comparison of new text to previously translated texts, most likely one sentence at a time, followed by retrieval and printing of the nearest available equivalents for subsequent reuse. This concept of sentence-level translation storage and reuse, now commonly known as "translation memory" (TM), would not be widely implemented until the 1990s. Arthern also noted that his proposed system could easily be supplemented by adding MT capability.

In 1980, Martin Kay published his seminal report, *The Proper Place of Men and Machines in Language Translation*, in which he proposed a translator's amanuensis, or workstation, as an answer to the question of how—and to what extent—machines should be used in translation. The amanuensis envisioned by Kay would incorporate a text editor enabling source-text display in an upper window and simultaneous target-text production in a lower window. Echoing Bar-Hillel and the ALPAC report, Kay (1980) called for the

incorporation of "translation aids" (p. 12) from an editable dictionary to a history function allowing the translator to track decisions made about specific words and phrases so as to systematically control how subsequent occurrences of such difficulties would be treated. This function can be seen as a precursor to future TM implementations.

During the 1980s, Alan Melby (1981, 1982, 1983, 1987) made similar proposals for the development of a CAT system. Having spent the 1970s working on machine translation, Melby (1983) observed that MT "must be almost perfect or it is nearly useless" because postrevision of even 20% of the text negates the cost, quality, and time savings that MT might otherwise achieve (p. 174). Melby thus proposed a three-level system of "translator aids" (1983). Level one would offer a word processor and access to a bilingual dictionary or terminology file. Level two would offer all functions of level one, plus a preprocessing capability to search for unusual words or phrases, automatic lookup of terms in the bilingual terminology file and a means of inserting selected terms from the terminology file into the target text. Finally, level three would offer all functions of levels one and two, plus an interface to a MT system that would enable the translator to consider MT sentences and accept, modify, or reject them one at a time, thereby avoiding the classic "all-or-nothing" MT problem. Like Kay, Melby wanted translators to be able to make their own decisions about when/what to translate or to postedit, and thus to remain in control of the translation process.

Automated Language Processing Systems (ALPS) was the first company to offer translator aids in a commercial product. ALPS' multilingual word processor offered three levels of support: "a multilingual word processor with on-demand lexical lookup . . . a translation item-oriented editor that automatically matched online source text against dictionaries . . . and a sentence-by-sentence full translation system that interacted with the translator to resolve ambiguities in source language analysis, source-target language transfer, or target-language generation" (Lonsdale, 2007, p. 3). The product also offered a "repetitions-processing" feature, enabling translators to specify the creation of a "repetitions file" into which each segment was copied along with its translation as the translator proceeded through the file. In this way, the translator could compare new source text to segments from previously translated texts, retrieve all matches and reuse them in the current project, thus avoiding the translation of repeated segments of text; this was "clearly an early implementation of basic features of a 'translation memory'" (Hutchins, 1998a, p. 12).

In 1988, Brian Harris made a major contribution to the concept of translation memory by proposing a new form of translator's aid, the "bi-text," defined as "a single text in two dimensions" in which the source and target segments are associated by the act of translation to form translation units (p. 8). Harris envisioned an environment in which translators would store all translation units in the form of bitext. This would enable a translator to search for all sentences in which a given word or phrase occurs and display the corresponding translation units. Harris (1988) proposed that search results encompass not only exact matches but also matches that would be similar enough to be of use to the translator.

By the late 1980s, the notion of translation aids was increasingly familiar to both scholars and practitioners (Vasconcellos, 1988), but translators still viewed them "as something for the future" (Hutchins, 1998a, p. 13). Thanks to the commoditization of the PC and the advent of mass-market desktop software during the 1990s, translation aids have become accessible to individual translators in the form of specialized translation software, commonly referred to as "CAT tools" or "translation tools." Today, CAT is a de facto tool of the trade in commercial translation in many domains, including scientific, technical, medical, and legal translation, as well as localization.

Since its inception in the 1960s, CAT has sought to develop computer-based aids to address specific problems in the translation process. From the 1960s to the 1990s, CAT

focused largely on lexicography, terminology, text processing, and reuse of previously translated material. Over the past decade or so, CAT has explored new ways to support translators, including automated checking of spelling and terminological consistency, automatic suggestion of translation as the user is typing based on similarity to previously translated material, and even optional integration of machine translation. In this respect, computer-assisted translation can be said to have come full circle, nearly five decades after the publication of the devastating ALPAC report.

Historically, CAT has focused on assisting humans as they translate documents. However, the past decade has witnessed a shift from the authoring of documents to the creation of content, the advent of structured (semantic) authoring, and single-source publishing, whereby content is separated from the means of its presentation and assembled on demand in response to a specific user request (Rockley, 2003; Gollner, 2009). These developments present translators with new challenges, especially the comprehension and translation of chunks of text without context. This radical shift in authoring also raises anew the question of how best to use technology to support translation and translators.

SEE ALSO: Internationalization and Localization; Technology and Terminology; Technology and Translation; Translation, Localization, and Internationalization; Translation Tools

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Computer-Assisted Vocabulary Load Analysis

STUART WEBB AND PAUL NATION

The development of computer software and frequency-ranked word lists has made it easier to determine the representation and frequency of words in text. It has allowed researchers to collect data on the millions of words in corpora in a matter of seconds. Analysis of the vocabulary in text and corpora can provide data about the ease or difficulty with which discourse may be understood, the extent to which words may be learned through reading and listening, and the words which may be most useful for comprehension.

Research focused on vocabulary load has primarily concentrated on four areas: the vocabulary size necessary to understand different types of discourse, the potential for incidental vocabulary learning through reading and listening, the degree to which words recur in discourse, and the identification of technical vocabulary in text. The following sections will provide an overview of research in each of these areas, describe how to carry out an analysis of vocabulary load, and discuss the limitations of studies analyzing vocabulary load.

How Many Words Do You Need to Know for Comprehension of Written and Spoken Discourse?

Several studies have analyzed different types of discourse to determine the vocabulary size necessary for comprehension. This is useful for teachers and learners because it provides target vocabulary sizes at which discourse may be understood. This line of research builds on empirical studies which have shown that reaching 90–98% coverage (the percentage of known words in a text) may indicate adequate comprehension depending on the modality (listening or reading) and the type of text. It is important to note that coverage figures provide an indication of adequate comprehension rather than ensuring adequate comprehension. You may know all of the words in a text (100% coverage) but that does not mean that you will understand the text. A 95%, 98%, or 100% coverage figure does, however, provide a useful indication of whether or not a text may be understood.

The unit of counting words in these studies is typically the word family. The rationale behind counting with word families is that learners may recognize unknown members of a word family through knowledge of another member of the family. For example, if you know the word *assess*, you may be able to understand the meaning of *assessment* or *reassess* when they are encountered in context. This, however, is likely to depend on the level of the learners. A more appropriate unit of counting might be word types or lemmas for beginners because they would not have the knowledge of word parts necessary to understand related family members.

Laufer (1989) found that 95% coverage could provide reasonable comprehension of a general academic L2 text. Hu and Nation (2000) found that 98% coverage was necessary for adequate unassisted L2 reading comprehension. This was supported by Carver (1994) who found that 98–99% coverage provided adequate L1 comprehension of a text with the necessary coverage being dependent on the difficulty of the text. Bonk (2000) found that

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with adequate coping strategies, L2 learners could have adequate L2 aural comprehension of short texts at far below 95% coverage, and Larson and Schmitt (cited by Schmitt, 2008) suggest that 90% coverage may provide adequate listening comprehension. The contrasting results and variability in comprehension between texts and discourse types suggest that more research is needed, although some of the differences can be explained by the definition of comprehension in the studies. What might be defined as adequate comprehension in one study may be something quite different in another study. There is a need for a precise construct of comprehension that will allow comparison across studies.

Nation (2006) analyzed the Wellington Corpus of Spoken New Zealand English (WSC) and found that a vocabulary size of 3,000 word families was necessary to reach 95% coverage, and a vocabulary size of 6,000 to 7,000 word families was necessary to reach 98% coverage of spoken discourse. This was supported by Adolphs and Schmitt's (2003) analysis of the spoken Cambridge and Nottingham Corpus of Discourse in English (CANCODE), which indicated that a vocabulary size of 3,000 word families was needed to reach 95% coverage of spoken discourse. Nation also examined the vocabulary size necessary for comprehension of a graded reader, novels, newspapers, and a children's movie and suggests that a vocabulary size of 6,000–7,000 word families is needed to understand spoken discourse and a vocabulary size of 8,000–9,000 word families is needed to understand written discourse. These figures are based on 98% coverage being necessary for adequate comprehension.

Hirsh and Nation (1992) examined three short novels aimed at teenage or younger readers to determine the coverage of the most frequent 2,000 word families and the vocabulary size necessary to reach 97–98% coverage. They found that a vocabulary size of the most frequent 2,000 word families reached only 90–92%, and a vocabulary size of 5,000 word families reached 97–98% coverage. They suggest that 97–98% coverage may be sufficient for learners to read novels for pleasure.

Webb and Rodgers (2009a, 2009b) analyzed the vocabulary in 88 television programs and 318 movies. They suggest that the presence of visual input together with aural input is likely to facilitate comprehension and that 95% coverage may be sufficient for understanding L2 television and movies. The results showed that coverage is likely to vary between individual programs and movies. Overall, a vocabulary size of 3,000 word families plus proper nouns and marginal words provided 95% coverage of both discourse types. Webb and Rodgers report that once learners have knowledge of the most frequent 3,000 word families, regular viewing may lead to significant incidental vocabulary learning as well as improved comprehension of spoken input.

Future research needs to carefully define adequate comprehension and the conditions under which texts are used in order to get a clear picture of vocabulary goals.

What Is the Potential for Incidental Vocabulary Learning Through Reading and Watching Television and Movies?

Another way to analyze vocabulary load is to look at the frequency of occurrence of the words in a text. This line of research draws on research that has shown that the more words are encountered in context, the more likely they are to be acquired without conscious attention to vocabulary learning (Saragi, Nation, & Meister, 1978; Jenkins, Stein, & Wysocki, 1984; Horst, Cobb, & Meara, 1998; Rott, 1999; Waring & Takaki, 2003; Webb, 2007). Research indicates that from six (Rott, 1999) to 20 encounters (Waring & Takaki, 2003) may be needed to learn words incidentally through reading with the amount of knowledge gained dependent on the contexts in which the words are encountered (Webb, 2008), and the characteristics of the words themselves. Based on these figures, researchers can get some indication of the extent to which words may be learned in a text or corpus.

How Often Do Words Recur in Discourse?

Nation and Wang (1999) examined the potential for vocabulary learning offered by graded readers using a corpus of such readers at various levels. They looked at how often vocabulary recurs at each level to determine the amount of reading necessary to learn the newly introduced items. The results indicated that if learners read seven graded readers in a level they would encounter 40% of the new items 10 or more times.

Webb (2010a) and Webb and Rodgers (2009a) took a similar approach, examining the number of times word families were encountered in television programs and movies. They looked only at word families which were likely to be unknown to viewers—low-frequency items found in Nation's (2006) 4,000–14,000 word lists. Both studies indicated that there would be little to no vocabulary learning through watching a small number of movies or television programs. However, with regular viewing, incidental learning could be substantial.

What Is the Technical Vocabulary of a Text?

Looking at the number of encounters with words in a text may also enable us to identify the technical vocabulary for that topic or text. Technical words are items that are more common in one area than outside of that area. For example, *word*, *grammar*, *lemma*, and *morpheme* are technical words in applied linguistics because they are encountered with greater frequency in applied linguistics than in other areas such as physics and medicine. Identifying the technical vocabulary is useful because it sheds light on the low-frequency words which may be of greatest value to learners with specific academic purposes. In this approach to analysis of vocabulary, it is important to have a significant number of running words in a text to clarify what is and what is not technical vocabulary.

Ward (1999) identified the most frequently occurring words in an engineering corpus and then examined the coverage which this corpus-derived vocabulary (which included high-frequency, academic, and technical words) would provide in an independent set of engineering texts. His results indicated that the most frequent 2,000 words in the corpus provided over 95% coverage of the texts. Chung and Nation (2003) analyzed the vocabulary in an anatomy text and an applied linguistics text using a corpus-comparison approach to identify the technical vocabulary. They identified 4,270 of the word types in the anatomy text (37.6%) and 835 of the word types in the applied linguistics text (16.3%) as technical. The study indicated that a large percentage of words may be unique to a specialist domain and that the number and percentage of technical words and types of technical words are likely to differ between subjects.

Another reason to look at the most frequent words in a text is to determine the value of preteaching or glossing those words. Webb (2010b) examined the vocabulary in television programs to determine the extent to which knowing the 10 most frequent word families outside the high-frequency general service vocabulary would increase coverage. The study indicated that prelearning topical vocabulary may be a useful method of increasing comprehension. Webb (2010c) took a similar approach, creating glossaries of the most useful words in related television programs. Identifying a learnable number of topic-related words may provide learners with a means to reduce the vocabulary load of discourse.

How Does Vocabulary Differ in Related and Unrelated Discourse?

Comparing the vocabulary in different texts can provide some indication of the ease with which these texts may be understood as well as the potential for vocabulary learning

through reading or listening. Several studies have looked at the number of word types and families in related and unrelated discourse as well as the frequency of occurrence of those items. It is important to compare texts with an equivalent number of running words to make a valid comparison between texts. This line of research has been useful because it shows the benefits of narrow reading and listening; reading or listening to discourse about a single topic or related topics can reduce the lexical demands of the task and increase the potential for learning the vocabulary that is encountered.

Hwang and Nation (1989) compared the vocabulary in running news stories and unrelated news stories. They found that words outside the most frequent 2,000 word families were more likely to recur in the running news stories than in the unrelated news stories. Because research has shown that increasing the number of encounters with words in context is likely to increase their potential for learning (Saragi, Nation, & Meister, 1978; Jenkins, Stein, & Wysocki, 1984; Horst, Cobb, & Meara, 1998; Rott, 1999; Waring & Takaki, 2003; Webb, 2007), the study indicated that there was greater potential for incidental learning in related text. Sutarsyah, Nation, and Kennedy (1994) looked at the vocabulary in an economics text and the vocabulary from a collection of short academic texts on a variety of topics. They found that the economics text contained a much smaller number of word types (9,469) and word families (5,438) than the academic texts (12,744 and 21,399 respectively), and the number of times the topic-related words in the economics text were encountered was higher in the economics text than in the collection. Schmitt and Carter (2000) also compared the vocabulary in related and unrelated sets of newspaper articles. They found that the newspaper stories with related themes used fewer word types than the unrelated articles and that content words recurred more often in the related articles than in the unrelated articles.

Gardner (2008) looked at the vocabulary in fifth-grade and sixth-grade expository and narrative texts with similar and unrelated topics. He used a slightly different approach from the other studies. He examined the number of times word types recurred rather than word families and included proper nouns in his totals. He found that words were more likely to recur in expository texts than in narrative texts.

Rodgers and Webb (in press) examined the vocabulary in related and unrelated television programs. They looked at all of the episodes in a complete season of six different programs and compared each one with a set of unrelated programs. The results showed that there were fewer word families and word types, and that low-frequency words recurred more often in the related programs than in the unrelated programs. Taken together, the research indicates that related texts may have a lighter vocabulary load than unrelated texts and that there is greater potential for vocabulary learning through reading texts or watching television programs with related topics.

How Do You Carry Out an Analysis of Vocabulary Load?

Carrying out an analysis of the vocabulary in text can be a relatively straightforward procedure. We will discuss it using the RANGE program (Nation & Heatley, 2002) because it is the most commonly used software in studies of vocabulary load. RANGE allows users to find the number of words necessary for comprehension, determine the number of encounters with word types and families, and see the range of use of vocabulary in multiple texts. It also provides data on the tokens, types, and word families according to the word lists that are used in the analysis. RANGE can be used with the supplied word lists (1,000- and 2,000-word lists based on the General Service List (West, 1953), the Academic Word List (Coxhead, 2000), or Nation's 14 British National Corpus (BNC) 1,000-word lists), or researchers can use their own word lists with the program. It is freeware and available from Paul Nation's Web site: http://www.victoria.ac.nz/lals/staff/paul-nation/nation.aspx.

There is also an online version which can be accessed at the Compleat Lexical Tutor (http://www.lextutor.ca/range/), and a freeware program—AntWordProfiler—developed by Laurence Anthony (http://www.antlab.sci.waseda.ac.jp/antwordprofiler_index.html).

The ease with which the analysis can be completed is dependent on the type of discourse and the number of running words in the text. A corpus is likely to take longer to analyze than a single text, and spoken discourse typically takes longer to analyze than written discourse because of the number of modifications to the text which may be needed. Computer programs can only read words according to their spellings. This means that if the spellings of words in the text do not conform to the spellings used to classify the items, then you need to decide what should be done about those words. This is likely to occur with connected speech, hyphenated words, proper names, and misspelled words. Typically researchers will go through the text and change these items to spellings which conform with those used in the software (see, for example, Nation, 2006; Webb & Rodgers, 2009a, 2009b). This is most easily done by piloting the text with the software and looking at the output to see which words are not identified by the program. In the RANGE program (Nation & Heatley, 2002) these words will be found in the output under *Types Not Found in Any List*.

Once the text has been run through the RANGE program, the output can be analyzed. The RANGE program provides two useful forms of data in the output. First, it provides the distribution of tokens, types, and word families in each word list. Typically, this indicates which words are high frequency, low frequency, and technical words, although this is dependent on the word lists used with RANGE. Table 1 is an example of the distribution of tokens, types, and word families from Webb and Rodgers's (2009a) analysis of 88 television programs, which used Nation's (2006) 14 BNC 1,000-word lists. These lists

Table 1 Tokens, types, and word families at each word level for all television programs (taken from Webb & Rodgers, 2009a)

Word list	*Tokens*		*Types*		*Word families*
	Raw	*%*	*Raw*	*%*	
1,000	225,011	85.11	3,169	22.79	996
2,000	11,675	4.42	2,269	16.32	963
3,000	5,095	1.93	1,457	10.48	820
4,000	3,439	1.30	1,019	7.33	694
5,000	1,872	0.71	739	5.31	539
6,000	1,307	0.49	519	3.73	422
7,000	857	0.32	386	2.78	333
8,000	560	0.21	292	2.10	250
9,000	525	0.20	267	1.92	231
10,000	401	0.15	181	1.30	168
11,000	339	0.13	207	1.49	187
12,000	230	0.09	122	0.88	109
13,000	179	0.07	116	0.83	106
14,000	103	0.04	73	0.52	70
Proper nouns	7,827	2.96	1,656	11.91	1,656
Marginal words	2,719	1.03	43	0.31	4
Not in the lists	2,245	0.85	1,392	10.01	?*
Total	264,384		13,907		7,513

*The RANGE program is not able to calculate word families for words not in the lists.

Table 2 Cumulative coverage, with and without proper nouns and marginal words, for all television programs (taken from Webb & Rodgers, 2009a)

Word list	*Coverage without proper nouns*	*Coverage including proper nouns*
1,000	85.11	89.10
2,000	89.53	93.52
3,000	91.46	95.45*
4,000	92.76	96.75
5,000	93.47	97.46
6,000	93.96	97.95
7,000	94.28	98.27**
8,000	94.49	98.48
9,000	94.69	98.68
10,000	94.84	98.83
11,000	94.97	98.96
12,000	95.06*	99.05
13,000	95.13	99.12
14,000	95.17	99.16
Proper nouns	2.96	
Marginal words	1.03	

*Reaching 95% coverage.
**Reaching 98% coverage.

are accompanied by a marginal words list (containing words like *um, er, wow, gee*) and a list of proper names.

In the final row of Table 1 we can see that there were 264,384 running words, 13,907 word types, and 7,513 word families in the television programs. The studies which examined related and unrelated text looked at these figures to see how the vocabulary loads of different texts compare. In each of those studies the number of tokens was similar but the number of types and the number of families were smaller in the related texts indicating that the unrelated texts were lexically more demanding. The percentages of the tokens in the third column can be added together to determine the cumulative coverage. The cumulative coverage figures for the example above are shown in Table 2.

By adding the percentage of tokens found in the first 1,000 word list (85.11%) to the percentage of tokens found in the second 1,000 (4.42%) and third 1,000 (1.93%) word lists we can see that a vocabulary size of 3,000 word families would have 91.46% coverage of the running words in the television programs. The third column in Table 2 uses the same calculations but includes the percentage of proper names (2.96%) and marginal words (1.03%) in the totals. The cumulative coverage including proper names and marginal words at the 3,000 words level is thus 91.46 + 2.96 + 1.03 = 95.45%. This is the figure that leads Webb and Rodgers to suggest that a vocabulary size of 3,000 word families may be sufficient to reach 95% coverage of television programs. The argument for including proper names and marginal words in the totals is that learners with a vocabulary size of 3,000 word families are likely to be able to understand these items relatively quickly because their learning burden is lower than typical words.

The second part of the output which is useful for analysis is the data for each word. RANGE shows the number of times each word type and word family were encountered in the text and lists them according to the word lists used in the analysis. Examining the

Table 3 Number and percentage of encounters with word families in the fourth 1000-word list

	Television corpus	
	Amount	*Percentage*
1 encounter	224	32
2 encounters	132	19
3–4 encounters	135	19
5–7 encounters	103	15
8–9 encounters	25	4
10+ encounters	75	11
Total word families	694	100

number of times that words are encountered provides some indication of the potential for vocabulary learning, as well as which words might be considered to be technical words. Table 3 shows the number and percentage of word families which were encountered at differing frequencies in the fourth 1,000-word list for Webb and Rodgers's study of television programs.

Looking at the figures we can see that 11% of the word families were encountered 10 or more times, 30% of the word families were encountered five or more times, and 32% of the word families were encountered once. The figures provide some indication of the likelihood that words at this level may be learned through watching 35.1 hours of television programs. The running words which were encountered most often have the greatest potential to be learned. The words encountered only once or twice are less likely to be learned.

What Are the Limitations of Research on Vocabulary Load?

There are several limitations with computer programs used to analyze vocabulary load. First, words can only be classified according to their form. Thus homographs and polysemous words such as *bow* will be classified as belonging to the same word family whether the meanings found in the text refer to the front of a ship, a decorative knot, a weapon for shooting arrows, or bending at the waist or knees.

Second, because words are classified according to form, software cannot take account of proper names which have the same form as a word in one of the lists. For example, if proper names such as *Bush*, *Baker*, and *Field* occur in a text, they will all be classified as belonging to high-frequency word families because the same words cannot occur in different lists. In analyses of corpora this is likely to have a negligible influence on results, because when calculating coverage, proper name figures are usually included in the known words. However, studies of text with a small number of running words, and studies looking at the frequency of individual words, should take this into consideration.

Third, the RANGE program is unable to classify multiword items. This means that core idioms such as *by and large*, *so long*, and *beat it* will be classified according to their more frequent parts despite the difference in meanings between the single-word and multiword items. However, there are relatively few core idioms and most multiword items are figuratives which have a greater degree of overlap between form and meaning, and may pose fewer problems for learners (Grant & Bauer, 2004). This suggests that multiword items may not greatly influence results, but researchers should consider whether they pose any

threat to the validity of the findings. Updated software which can analyze single and multiword items according to their frequency of occurrence in the different word lists is one area where the technology used for analysis of word lists could be improved.

Fourth, it is also important to consider how the word lists used for analysis with the RANGE program were developed in order to determine whether the word lists may influence results. For example, Nation's (2006) fourteen 1,000-word lists were based on the frequency of occurrence of words in the BNC. The BNC is made up primarily of British written text which is more formal in nature. The word lists therefore reflect a bias toward more formal British English. This can be seen in the following list of headwords taken from the first and second 1,000-word lists: *bin, biscuit, bloke, bugger, chap, fortnight, lorry, motorway, muck, nick, nil, nought, parish, parliament, pence, petrol, pint, pound, pub, quid, rubbish, sack*, and *sod*. The frequency of items in a list is likely to vary based on the corpus from which they are derived.

Research on vocabulary load is gaining greater sophistication as there are developments in technology and the creation of word lists. This kind of research is valuable in its own right as it guides the setting of learning goals and the development of instructional material. This research is also a useful prerequisite to experimental studies on learning from text, in that it provides useful data on the nature of the vocabulary in the text. Such research is also useful for examining the potential and adequacy of the recommendations for learning as evidenced by the recent debate on learning through input (Cobb, 2007; McQuillan and Krashen, 2008; Cobb, 2008).

SEE ALSO: Concordancing; Corpus Linguistics: Overview; Explicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Teaching Language for Academic Purposes; Teaching Vocabulary; Vocabulary Acquisition in Second Language Acquisition; Vocabulary and Language for Specific Purposes

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Computer-Mediated Communication and Second Language Development

SHANNON SAURO

Computer-mediated communication (CMC) is person-to-person communication that takes place via a range of computer-supported transmission technologies that enable both synchronous real-time and asynchronous interaction across different modalities. Thus, CMC encompasses such technologies as e-mail and text chat, blogs, vlogs (video blogs), bulletin boards and voice boards, and Web sites and wikis (a series of interconnected Web pages). Within language learning contexts, certain types of CMC are more prevalent, and accordingly research on language development that occurs during and through CMC reflects this tendency.

Historically, CMC for educational purposes can be traced back several decades to the development of computer-assisted instructional systems such as PLATO (Programmed Logic for Automatic Teaching Operations) and TICCIT (Time-Shared Interactive Computer-Controlled Information Television; Chapelle, 2001). The 1970s saw the development of programs that enabled users to leave personal letters for one another (the precursor to e-mail) or to page and initiate real-time communication with another user who was currently logged into the network (an early version of instant messaging or text chatting; Smith & Sherwood, 1976).

The late 1980s and early 1990s began to see the publication of articles in language research and language pedagogy journals that described the potential for CMC to support language learning. For instance, Ervin (1988) describes Compuserve's Foreign Language Education Forum, established in 1985, which supported e-mail and bulletin boards dedicated to foreign language learning, while Lunde (1990) advocates the use of e-mail as an inexpensive and quicker alternative to pen-pal exchanges and explores how e-mails can be produced in character-based languages like Japanese.

Moving beyond recommendations for classroom implementation, Kelm's (1992) description of the language produced by university learners of Portuguese during whole class interaction, and Beauvois's (1992) case study of a high school French learner's tutoring experience using InterChange, the synchronous CMC (SCMC) component of the Daedalus Instructional System package, represent a move toward integrating and evaluating text chat in language learning contexts. Further extending this line of research, Chun's (1994) longitudinal study of the language of beginning learners of German during class discussions using InterChange reveals the potential for CMC to support the development of interactive competence in a second language. During 14 chat discussions conducted over an academic year, Chun documented the numbers and functions of turns her students produced. Her analysis revealed the learners were able to produce a wide range of speech acts in the target language including asking and answering questions, greeting and leave-taking, and managing discourse by requesting clarification and providing feedback.

In the wake of these early studies exploring the use of text chat for language learning, the mid-1990s to early 2000s saw an increase in research on text chat that documented the amount and quality of language that learners produced in text chat compared to spoken interaction (e.g., Kern, 1995; Warschauer, 1996) as well as the amount of communication

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repair or negotiation of meaning, generated during different types of communication tasks during text chat (Blake, 2000; Pellettieri, 2000; Smith, 2004). Results of these studies revealed that text chat discussion diverged from oral interaction with respect to the quantity and quality of language learners produced, yet resembled oral interaction with respect to the amount of negotiation fostered by different communication tasks.

Following this exploration of the quantity and quality of language produced and the types of tasks that supported strategies for repairing communication breakdown in text chat, researchers and instructors began to turn their attention to examining the enduring benefits of CMC for the development of skills and knowledge in a second language. Such studies focused either on the development of holistic language ability or on the acquisition of discrete language units such as vocabulary or specific grammatical structures.

Studies that examine more holistic second language development have looked in particular at the use of CMC to support spoken language or second language literacy. For instance, Payne and Whitney's (2002) semester-long examination of the influence of CMC on oral language development compared the oral production interview scores of learners of Spanish whose instruction included semi-weekly text chat discussions to those of learners who had participated in weekly spoken discussions in the classroom. While both groups improved, students in the text chat group showed significantly greater gains in oral proficiency measures than did the spoken discussion group. In a three-way comparison that investigated both SCMC and asynchronous CMC (ACMC), Abrams (2003) investigated the spoken language development of university learners of German who discussed readings in text chat (SCMC), on an electronic bulletin board (ACMC), or in face-to-face conversation (oral). Findings revealed that students in all three conditions performed similarly with respect to the complexity of the sentences they produced and the range of vocabulary used, while participants in the oral group and the SCMC group produced significantly more total words than did those in the ACMC group. Such studies provide some evidence that SCMC in the form of text chat can support oral language development.

While links have been made between the use of spoken language and SCMC, studies of second language literacy development have primarily looked to different types of ACMC and have focused on the emergence of specific literacy practices over time. For instance, Chen's (2006) two-and-a-half-year case study examined several hundred e-mails written by a graduate student from Taiwan to her peers and professors. Over time, the length and structure of her e-mails as well as the pragmatic strategies she used to make requests changed to reflect the e-mail norms of her university's culture. In another case study, Bloch (2007) examined the development of critical literacy and academic writing skills fostered by blogging in an academic writing course. Analysis of the blog entries and other writing samples produced by a generation 1.5 Somali learner of English revealed the development of argument structure and specific rhetorical strategies. As these case studies illustrate, research on second language literacy development using ACMC has typically illuminated language use and the process of language development, but has not attempted to make claims regarding the influence of the technology on writing skills.

In contrast to these studies examining the development of holistic language skills (e.g., speaking, writing) in the second language, another body of research has focused on the use of CMC to foster discrete vocabulary or grammatical knowledge. Such studies are typically of short duration, involve manipulation of the interaction, incorporate comparison groups, and focus in particular on text chat.

One such study which examined vocabulary development is Smith's (2004) study of adult English-language learners' ability to recognize and produce new vocabulary words after completing different types of communication tasks during text chat. In this five-week study, Smith used a pretest–posttest–delayed posttest design to evaluate his participants'

vocabulary learning by measuring their ability to both produce and recognize new vocabulary words encountered during the tasks. Results of this study revealed that negotiating the meaning of these unfamiliar words during text chat led to short-term sustained gains in vocabulary knowledge. Thus, Smith's findings provided evidence that negotiated interactions during CMC could facilitate second language vocabulary development.

With respect to studies of CMC and grammar development, the use of different error correction strategies during text chat has received particular attention. Sachs and Suh's (2007) comparison of two types of recasts, those that were underlined and those that were not, found that both types in a chat environment led to comparable improvement in backshifting of English verbs from simple to past perfect in reported speech among intermediate learners of English. In another study comparing the relative effectiveness of error correction types for grammar learning during text chat, intermediate and advanced Swedish learners of English were randomly assigned to one of three groups (recast, metalinguistic, and control) and received feedback on the use of the zero article with abstract nouns (Sauro, 2009). Participants receiving recasts or metalinguistic feedback demonstrated improved target form knowledge. Furthermore, the learners who received the metalinguistic feedback showed significant improvement over learners who received no feedback. The lack of significant learning by the control group in Sauro's study also suggests that, in the absence of corrective feedback or some other type of instruction, simply using text chat to communicate is not enough to support the development of certain grammatical features in the short term.

However, the findings of these two studies, which involved intermediate and advanced language learners, stand in contrast with those of an earlier study (Loewen & Erlam, 2006), in which beginning-level learners of English who received feedback on errors with the past tense *-ed* did not outperform participants who received no feedback. Taken together, these studies provide evidence for the short-term benefits of certain types of error correction during text chat for grammar development for learners with sufficient proficiency.

Understanding for which types of learners CMC may hold the greatest advantage for second language development is another promising direction for future research. Representing one such example of this line of work is Payne and Ross's (2005) investigation of whether learners' working memory capacity might be related to the degree of oral proficiency development following a semester-long Spanish-language course that incorporated two chat discussions per week.

However, the individual, contextual, or linguistic factors that may influence the effectiveness of CMC as a tool for second language development still remain relatively unexplored. As details from the studies described above suggest, most of our understanding of CMC and second language development stems from research with adult learners using written CMC, especially text chat and to a lesser degree e-mail, to communicate in and learn languages that use alphabetic writing systems. Pedagogically informative future research on CMC for language development will need to incorporate different learner populations (e.g., younger learners, learners not in university classrooms), a broader range of CMC modalities and formats (e.g., voice boards, wikis, voice chat), and target languages with different orthographic systems and keyboard input methods (e.g., simplified Chinese, traditional Chinese, Arabic) to reflect the broad range of pedagogical contexts in which CMC can be used to support language learning.

SEE ALSO: Instructed Second Language Acquisition; Technology and Teaching Writing; Working Memory in Second Language Acquisition: Phonological Short-Term

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Computer Scoring of Spoken Responses

JARED C. BERNSTEIN

Scoring oral test responses by computer is the estimation of spoken language ability or its component skills by the operation of a computer on one or more spoken responses that are presented within an oral language test. This estimation process will be referred to here as *computer scoring of spoken responses* (CSSR). As shown in Figure 1, automatic scoring is one component in a system for computer-based testing (CBT) that may present, record, and distribute spoken response material. CSSR refers to the automatic analysis and scoring of the responses that have typically been collected through such a CBT system.

Figure 1 also shows the basic processing in CSSR within a CBT system. A speech signal is picked up and recorded, then processed by a speech recognition system, the output of which is sent to scoring modules, which return component scores that are combined according to a score-integration logic, then displayed in a score report. As of 2011, automatic oral response scoring may focus on the content of the speech, which may include its turn structure, pragmatic force, linguistic form, and lexical content. Scoring may also focus on qualities of the speech itself, such as its fluency and pronunciation, or may combine content and quality aspects into a more general estimate of speaking ability.

Current CSSR systems estimate speaking ability by combining measures of linguistic and lexical structures with measures of fluency and pronunciation, returning scores with high consistency and acceptable accuracy, although the construct validity of some tasks and scoring methods has been questioned.

Why Use CSSR?

Human scoring of speaking has been shown to be valid for some purposes, but reliable human scoring is difficult to establish and maintain, even over a coarse six-level scale and even when well-trained raters use carefully constructed scoring rubrics. Score consistency is especially difficult across different language environments, across items, and over time, in part because there is a tendency for human raters in any judgment task to drift or shift to fit the range and distribution of exemplars in a sample (Parducci, 1995). Counteracting

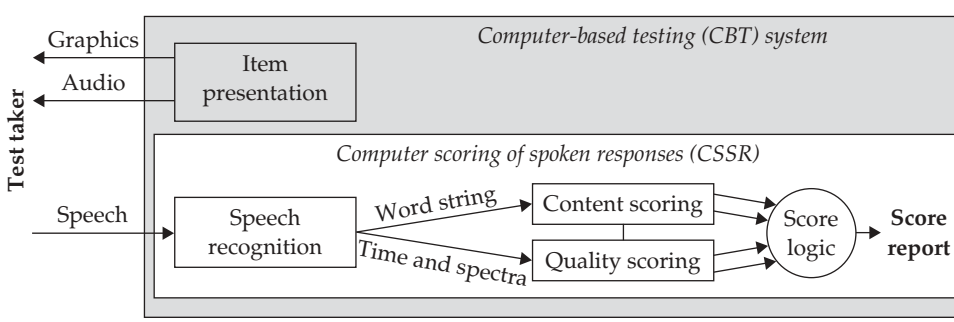

Figure 1 Schematic view of CSSR within a CBT system

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natural human tendencies that cause scale-shift within and across human judges requires effective training and equating procedures that can add cost to human-scored speaking tests.

Automatic scoring of spoken performances addresses some of the problems of human scoring. For example, permanent equilibration is possible for a standard distribution of skill levels across samples of speakers of different first languages. Automatic scoring can be calibrated once and reproduced on as many machines as needed to score millions of exams, and then score new material the same way at any later time. These advantages may also carry with them lower costs to the test taker and much shorter scoring delays.

History of CSSR

CSSR applies techniques from several more basic (and overlapping) fields including automatic speech recognition (ASR), spoken language processing, computational linguistics, and statistical pattern recognition (Jurafsky & Martin, 2009). ASR forms the core of a CSSR system. The earliest ASR systems were implemented in analog hardware in the 1950s; the first digital implementations of ASR appeared in the late 1960s and were first commercially viable in the 1990s in telephony. Eskenazi (2009) reviews the development of educational applications of ASR as it started appearing in the 1990s. Aist (1999) and Ehsani and Knodt (1998) present even more time depth, reviewing visual feedback systems from the 1970s and 1980s that were used for language learning. For example, Nickerson and Stevens (1973) describe a sophisticated real-time feedback system used in deaf education that ran on hybrid analog/digital processors and displays.

Methods

Although CSSR is often applied in assessment tasks that require both listening and speaking, we limit the scope here to estimating speaking ability only, disregarding the mode of item presentation. Accurate CSSR depends on many factors, but important elements include the size of the unit to score, the predictability of the spoken material, and the number of independent measurements combined in estimating the score. Some applications of CSSR, such as error detection in an interactive pronunciation tutoring system, are inherently more difficult than others. Recognition of the correct answer read aloud from a multiple-choice list, for example, is an easy task for ASR. As is common in engineering, the nature of the application guides the selection of method.

Pronunciation tutors are considered important applications for foreign language instruction because spoken interaction with expert pronunciation feedback may not be easily available to learners. A learner of English or an instructional designer may expect that the assessment component of the machine should be able to "hear" a sentence, then accurately detect the mispronounced segments (phones) and provide tutor-style guidance to encourage correct production. This would rely on quality scoring, as shown in Figure 1, applied to a sequence of recognized segments, each of which is a short event with 5–25 acoustic observations. In the error detection scenario, a speech recognizer produces its best estimate of the spoken words and submits a time-aligned transcription of the phones in the spoken response to the quality scoring module. So, for example, in a 1-second utterance of "Sweep the kitchen," the first subprocess inside the ASR module analyzes the speech signal into a sequence of 100 spectra, and assigns the first 9 spectra to [s], the next 7 spectra to [w], the next 14 spectra to [i], and so forth. Thus, each phone in each word has an associated sequence of spectra, from which the pronunciation tutor is expected to make a judgment of whether or not these spectra should count as a good exemplar of the recognized phone.

The most common and basic approach to scoring pronunciation quality is to combine a spectral likelihood ratio (sometimes used as a confidence measure) with the duration of the phone (which is just the number of spectra assigned to that phone from the sequence of spectra in an utterance). The likelihood ratio highlights the relative compatibility of the observed spectra with the expected acoustic properties of the recognized phone that has been aligned with these spectra. The calculated likelihood ratio, given a series of observed spectra and a recognized phone, is of the form:

$$\text{Pronunciation score} = \frac{\text{Probability of these spectra given the recognized phone}}{\text{Average probability of these spectra given any other phone}}$$

This ratio effectively normalizes the score for channel distortion and voice quality, as both the upper and lower term are affected by these factors. Similar methods are described by Franco et al. (2010) as applied to Spanish spoken by English speakers; Strik, Truong, de Wet, & Cucchiarini (2009) describe and compare related methods for error detection in a two-way distinction between [k] and [x] in non-native Dutch.

Again, an important consideration is the total duration of the sample to be scored; and if one is picking out problem segments in a single utterance, the nature of the segment matters too. Franco et al. (2010) found that for most segment types in Spanish, human–human agreement on the "nativeness" of a single production of a phone yields kappa values below 0.3. That is, in many cases native listeners do not agree about the acceptability of particular instances of phones, although they may well have high confidence in their judgments.

Figure 2 shows how machine scores improve with the increasing duration of the stretch of spoken material that is scored. The data shown is for a sample of 50 adult learners of English with a variety of first languages. Three phone-classes are shown: the short solid line shows all and only /r/ segments; the dashed line shows all /r/, /ə/, and /w/ segments, and the long solid line show all segments taken together. For each class, for a set of 50

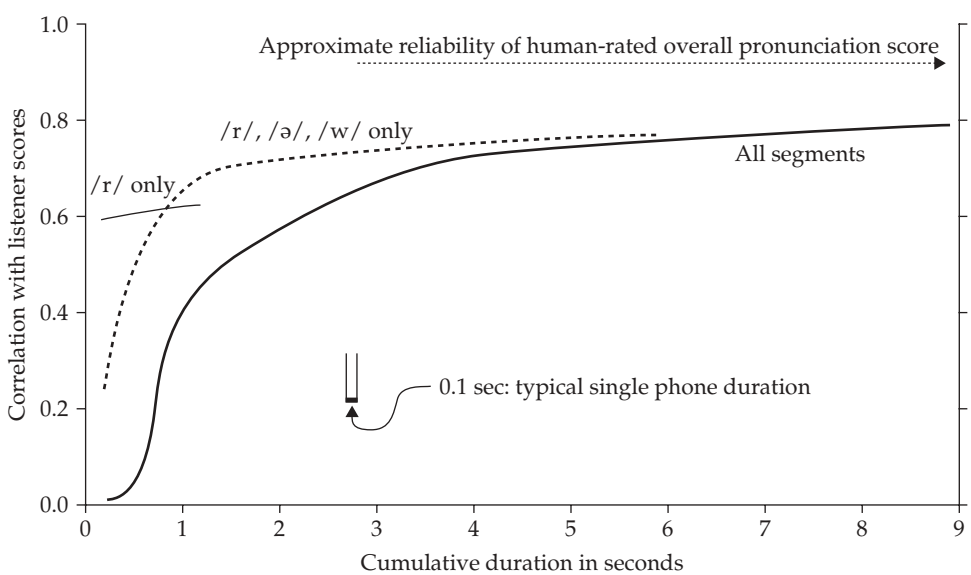

Figure 2 For three classes of phones, correlation between listeners' overall human-rated pronunciation scores and corresponding CSSR score as a function of the cumulative signal duration that CSSR operates on $n = 50$ test takers

test takers speaking in response to an English speaking test, the line shows the value of the correlation between a machine pronunciation score and a reliable composite human score of overall pronunciation for the speakers based on many recordings of each speaker rated by several judges.

Taking 0.1 seconds as a typical phonetic segment length, it can be seen from Figure 2 that a machine can produce speaker pronunciation estimates from two or three tokens of /r/ that correlate with a speaker's overall human-rated pronunciation score with a value of about 0.6, while if all segments are considered, it would likely take about 24 phones to produce a similar correlation with human ratings. In summary, for single pronounced tokens of a phone in context, accurate automatic detection and diagnosis of errors is a challenging technical task that attempts to match a human judgment that Franco et al. (2010) have shown to exhibit generally low agreement between pairs of human raters.

Summative assessment of speaking ability is a more general task that typically includes pronunciation scoring as a component, but can return more accurate and reliable scores because it may reasonably be based on one or more minutes of speech and use several independent sources of information from a set of spoken responses.

Referring back to Figure 1, a summative assessment can be extracted from a set of spoken responses by combining estimates from several different kinds of evidence that can be combined into an overall estimate. Because cultural expectations permit an assessment to last more than an hour and to elicit many short samples or several long samples of speech, or both, capturing 5 or 10 minutes of spoken material for computer scoring is culturally acceptable. The "All segments" line in Figure 2 suggests that even with only 2 or 3 minutes of speech, an overall pronunciation score can be accurately estimated.

However, there may be four or more scores coming from the content and quality analyzers, as schematized in Figure 1, which can be combined to produce a summative score that correlates closely with human summative judgments. For example, summing just two automatically extracted measures of linguistic content (syntactic structure and vocabulary) and two automatic measures of production quality (fluency and pronunciation) from 3–4 minutes of speech produces very high correlations (r = .97) with sums of corresponding human ratings of the same spoken materials (Bernstein & Cheng, 2007). In this implementation, the individual automatic sub-scores correlate with the human scores with values of {0.93, 0.94, 0.89, 0.89}. In part, because the cross-correlation of the automatic sub-scores averages about 0.72, the machine–human correlation of the summed scores reaches 0.97 for a human summed score with a reliability of 0.98.

Note that in 3 or 4 minutes of spoken material responding to 20–60 spoken prompts, a test taker may produce 2,000 or more phones, 40 or 100 phrases or clauses that perhaps include 40 or as many as 500 words. Given a relatively accurate scoring of these semi-independent content and quality aspects of the person's speech, an accurate overall score can be reported.

Explanation

Although CSSR techniques will produce only a rough estimate of a person's oral proficiency from that person's production of one unit of spoken language, when many of these noisy estimates are summed, the result asymptotes toward the human summative rating. CSSR works best on constrained tasks for two reasons. First, the component content and quality estimates are constrained by the accuracy of the underlying speech recognition technology, and predictability of the spoken material is a main determinant of ASR accuracy. Second, when tasks elicit relatively predictable spoken responses, test developers can build much tighter performance models from samples of speakers of various levels. That is, within a

constrained context, the variance of many acoustic, lexical, and rhythmic units is reduced, especially in high-proficiency speech, and the variance of these units then can be used as a yardstick in scoring other spoken responses.

In the work presented by Bernstein and Cheng (2007), the performances scored are produced in real time—without any preparation time or note taking. Evidence from Hulstijn (2007) suggests that apparent automaticity is a key element in judgments of general speaking ability. If so, the unprepared nature of a task may bring out aspects of automaticity in performance that are particularly salient to listeners and interlocutors in real conversation.

Challenges

As of 2011, CSSR techniques yield less reliable scores for spoken-answer tasks that elicit widely variable or unpredictable responses. This is partly because speech recognition relies strongly on "top-down" processing, which is typically implemented in ASR and CSSR systems as a statistical language model (LM). LMs are conceptually similar to expectation grammars in the applied linguistics literature (Oller, 1971); however, LMs usually model word–word dependencies, thus mixing lexical and syntactic expectation. LMs, therefore, are quite topic sensitive, as human listening is under unfavorable noise conditions.

An example to clarify: A language model based on n-grams uses the previous words to predict the next word, on the basis of probability estimates derived from transcribed speech in response to the same assessment prompt. Thus, given *raise income tax* an LM might strongly predict *rates* to be the next word, because *raise income tax rates* is a commonly occurring 4-gram (4-word sequence) in response to a given prompt. The same kind of LM prediction could be made for a 3-gram like *income tax rates*, or a word pair like *tax rates*, and the unigram probability for the word *rates* (without any information about the preceding words) is helpful recognizing speech.

Although ASR takes advantage of some of the top-down expectations that human listeners use, many features of ASR behavior are not similar to human performance. ASR systems do not produce errors in patterns similar to human listeners' patterns of errors, and systems need to be designed with this difference in mind. One notable difference is that human listeners are quite good at isolating a single unknown word in a sequence, while ASR technology does not return reliable "confidence" scores for single words. For example, a reasonably common human exchange might be:

Speaker 1: *The [unintelligible] one didn't show up.*
Speaker 2: *The <u>which</u> one didn't show up?*

The listener (speaker 2) was sure of all the words but one and then asked for that one. Like pronunciation scoring, ASR lexical decision is not very reliable on a single word; the processes gain accuracy over sequences of several words. In the ASR literature, this is called the "Out-of-Vocabulary" (OOV) problem, and no general solution is yet available that enables automatic dialogue turns like speaker 2's question.

Future Directions

There may be broadly two directions of future enhancement for CSSR: One is analysis for sharper diagnostic reporting, and the other is reintegration of speaking skills with cognitive and social skills to reconstitute the traditional communicative spoken language construct from more elemental constructs. First, and most simply, many of the tasks that elicit spoken responses use spoken prompts, so one can presume that response performances

are partly dependent on listening as well as speaking. It would be good to test speaking with tasks that elicit the kind of spontaneous speech found in natural dialogue without conflating the speaking scores with listening skills. Second, there are many perceptible qualities of the speech itself that cannot be reliably scored from unconstrained samples; examples are indexical properties like friendliness, or affective properties like apparent mood. Lastly, it would be useful if articulation and prosody in speech could be analyzed such that the most effective route toward phonological improvement was known for a given speaker.

The reintegration of CSSR with those cognitive and social aspects of live communication will depend on ongoing development of technologies that extract features of declarative and social meaning, and that are still nascent in applied linguistics and in spoken language engineering.

SEE ALSO: Assessment of Listening; Automated Essay Evaluation and Scoring; Computer-Assisted Language Learning and Machine Translation; Fluency; Pronunciation Assessment; Spoken Word Recognition

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Conceptualizing and Researching "New Literacies"

COLIN LANKSHEAR, MICHELE KNOBEL, AND CAITLIN CURRAN

References to "new literacies" have become increasingly common as use of digital technologies has grown within everyday routines, reflecting a growing sense that "literacy" can no longer be presumed to refer simply to interactions with conventional texts.

New Literacies as a General Concept

"New literacies" mostly functions as an umbrella term for myriad everyday interactions with *digital* texts. The term "text" has itself been amplified to extend far beyond alphabetic–typographic texts alone. "Text" now covers all manner of multimedia artifacts that people can be said to read and write, interpret, and make meaning from in their daily lives. As a general classification, "new literacies" typically refers to interactions with digitized textual material and other digital media. It is a general referent for "information literacy," "multimodal literacy," "digital literacy," "(multi)media literacy," "Internet literacy," and so on (Coiro, Knobel, Lankshear, & Leu, 2008a). Understanding and using new media and technologies competently is another conception of "new literacies." In this sense, being "savvy" with digital tools and techniques is seen as a new literacy (e.g., computer literacy).

Numerous scholars also identify examples of new literacies that do not necessarily entail use of digital technologies and digitally coded meanings. These are literacies that can be regarded as *chronologically* rather than *ontologically* "new" (Lankshear & Knobel, 2003, p. 17) with one or more of the following characteristics: they are relatively recent—or recently popular—forms of literacy practice; they have only recently been conceived of as literacies; only recently have they been considered as literacies with which formal education should engage. Diverse "new" literacies of this type include (critical) media literacy, print-based zines and fan fiction, strategy card games, analogue media remixing, graphic novels, and certain forms of iconic and logo-based communications.

Specific Conceptions of New Literacies in Research and Theory

In contrast with such umbrella uses, researchers and scholars have begun conceptualizing new literacies in ways intended to help understand and explain a range of developments in human interaction and communication under contemporary media conditions. Several approaches can be distinguished—albeit with significant overlaps among them—within academic literature dating from the late 1990s.

New Literacies in the Context of a Changing Communicative Order

Brian Street (1998) conceptualizes new literacies by reference to a changing *communicative order* in which a range of nonlinguistic semiotic systems "cut across reading, writing and speech" (p. 9). Increased use of icons, images, and visual displays, as well as combinations

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of text and images within instruction manuals, safety procedures, warnings, and the like are typical examples of changing communication patterns. There is no *necessary* association with digital technology use here, although a strong and growing contingent association exists. Examples include making meaning from postcards, logos, and information charts comprising graphics and alphabetic text. The emphasis is on multiple media, formats, and sign systems at work in ways of communicating meaning. Communicative competence requires mastering new literacies: acquiring grammars of visual and multimodal design for reading and writing hybrid text types comprising linguistic and nonlinguistic signs, managing tools for consuming and producing multimodal texts, and mastering changing discourses within work environments and key social institutions. This conception of new literacies emphasizes heteroglossia over linguistic essentialism and "purity," and communicative efficacy over deference to long-established systems of linguistic rules and conventions. In particular, it challenges "school-centric" literacy education that privileges forms of discourse and approaches to vocabulary, grammar, and syntax that are increasingly out of touch with contemporary communication needs outside of formal educational settings.

New Literacies and Democratic Citizenship

Douglas Kellner (2000) advocates the need for educators to engage with and promote a variety of new types of literacies to make education relevant to the demands of a global postindustrial and networked society that is multicultural and democratic—with a particular emphasis on empowering individuals and groups traditionally excluded from full economic, political, social, and cultural life. This requires developing "new forms of media literacy, computer literacy, and multimedia literacies," or new forms of "multiple literacies" (p. 249). Kellner advocates a *critical* media literacy that "teaches students to learn from media, to resist media manipulation, and to use media materials in constructive ways," and develop "skills that will cultivate citizens and . . . make them more motivated and competent participants in social life" (p. 251). He argues for an expanded concept of computer and information literacy that "involves not just technical knowledge and skills, but refined reading, writing, research, and communicating ability that involves heightened capacities for critically accessing, analyzing, interpreting, processing, and storing both print-based and multimedia material" (p. 254).

New Literacies of the Internet

During the past decade an ongoing research program involving Donald Leu and colleagues has emphasized the central importance of the Internet to conceptualizing new literacies (Leu, O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009). The new literacies of the Internet result from the fact that the Internet, as a powerful technology for literacy, "permits the immediate dissemination of even newer technologies of literacy to every person on the Internet by connecting to a single link on a screen" (Coiro et al., 2008a, p. 3). Under these conditions literacy becomes *deictic*: literacy is continually redefined amidst constant technological change and has meaning only on a case-by-case, context-by-context basis. Literacy has come to mean "a rapid and continuous process of change in the ways in which we read, write, view, listen, compose and communicate information" (Coiro et al., 2008a, p. 5). Given that literacies will continue to be multiple and rapidly disseminated, the concept of literacy acquisition becomes radically different from that of the print era. It will henceforth require "a larger mindset" and ability and disposition to adapt to regular changes in the means and protocols for communication and information exchange. Within this conception, Leu and colleagues have focused particularly, though not exclusively, on *epistemic* aspects of literacy: on comprehending and evaluating information accessed online.

New Media Literacies

Jenkins and colleagues define new media literacies as "a set of cultural competencies and social skills that young people need in the new media landscape" (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2006, p. 4). "New media" comprise "new sites of audience expression" made possible by digital technologies (Jenkins et al., 2006). Buckingham (2008) and Marsh (2005) similarly speak of digital media literacies that mobilize forms of textual and visual representation, language and communication codes and conventions, production processes and practices, and audience understandings. From a new media literacies perspective, using new media blurs "the boundaries between mass communication and interpersonal communication, and between producers and consumers" (Buckingham, 2003, p. 310). "Participatory culture" is central to Jenkins's conception of new media literacies. This is "a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices" (Jenkins et al., 2006, p. 3). Members of participatory cultures feel valued and socially connected to one another. Participating in fan fiction cultures, for example, includes writing and posting stories online for review, providing writing hints and tips for each other, contributing to fan blogs or discussion boards, creating music and video clips, and so on, drawing on and contributing to a shared pool of fan-produced media products and resources. Buckingham (2003) argues that such participation requires the development of new forms of critical analysis and ideology critique to effectively harness the productive possibilities of new media literacies.

New Literacies—Integrating Production and Consumption

Numerous writers argue that using new technologies to decode and produce meanings using symbols involves an intense integrated relationship between the consumption (reading) and production (writing) dimensions of signifying and representational practices (e.g., Jenkins, 2006; Gee, 2007; Bruns, 2008; Ito et al., 2010). Within print literacy the orientations and roles of producer and consumer of texts often seem quite distinct. Concepts like critical literacy and critical reading emerged in part to focus on the value of readers reflecting on the design of texts from their authors' perspectives. In many digitally mediated literacy practices, however, the acts and roles of consuming and producing have become inseparable. To play video games successfully, "gamers must think like games designers; they must at least think about how elements of game design work to help or hinder their goals as players" (Gee, 2007, p. 135). Furthermore, tinkering with game engines (software) means that players can modify games in different ways and even design entirely new games (Gee, 2007). Emphasis on operating as *both* consumers and producers is marked across diverse popular cultural pursuits involving new technologies. These include various fan practices involving participation in affinity spaces (Gee, 2004; Jenkins, 2006), such as digital music and video remixing, certain kinds of animation (e.g., machinima), and fan fiction, as well as practices such as blogging, photosharing, participating in discussion forums, and elements of online social networking.

Digital Technologies and Collaborative Ethos Within Contemporary Literacy Practices

A social practice approach to literacies focuses on shared ways of creating and exchanging meanings within social contexts in which participants use tools and knowledge to meet goals with respect to who they are and what they are trying to achieve within those contexts (Scribner & Cole, 1981). From this perspective it has been argued that new literacy

practices are characterized by use of digital tools and techniques in conjunction with a distinctive ethos or sensibility (Lankshear & Knobel, 2006). The *technical* dimension of new literacies includes, for example, such things as knowing which icons to click on screen, understanding file management systems, and knowing how to convert files from one format to another. The *ethos* dimension of new literacies refers to the intensely "participatory," "collaborative," and "distributed" nature of many current literacy practices. New literacies draw on collaborative dispositions and ways of participating, supported by distributed digital networks and other Web 2.0 technologies. They emphasize participants accessing and "developing" the distributed knowledge of communities of interests, where experts and novices work together as peers to support and advance their individual and collective ends (Benkler, 2006; Lankshear & Knobel, 2006). New literacy practices enact values and ways of generating, sharing, and remixing resources and ideas to build and enrich cultural stock. Typical examples include participating in fan fiction and anime music video remix affinity spaces, contributing to wikis, blogging, and using collaborative online writing spaces to complete shared projects.

Researching New Literacies

Orientation to Theoretical Development

Coiro et al. (2008a, p. 12) distinguish between (a) approaches to researching new literacies that import theoretical perspectives developed within contexts of traditional literacy research and (b) embryonic research approaches that make Internet and other digital technologies and the social practices these enable central to research and build out from there. They argue that new literacies are sufficiently distinctive as to require their own theoretical integrity grounded in "the social practices of [new literacies] . . . and the context and conditions under which these social practices occur, develop and evolve."

Theoretical Range

To date, individual studies of new literacies have typically drawn on single traditions of inquiry, such as cognitive theory, sociolinguistics, psycholinguistics, sociocultural or sociotechnical theory, and media or communications theory (or both), although numerous mixed-method studies (e.g., Bruce & Bishop, 2008; Burn, 2008) range over multiple perspectives. Notwithstanding the dominance of single traditions, new literacies research collectively reflects a rich diversity of specific theoretical preferences and more general theoretical perspectives. For example, approaches to investigating the politics of new literacies in relation to issues of access, equity, citizenship, and the like range across variants of critical theory, demographics, economics, network theory, and mathematical studies of power law distributions. Studies of video games as new literacies draw on cognitive science, discourse theory, social semiotics, sociolinguistics, economics, law, cognitive and social psychology, design studies, educational technology, social constructionism, among others (e.g., Steinkuehler, 2008). Research into the distinctive character of online reading comprehension (Leu et al., 2005) draws on theory from such fields as cognitive psychology, cognitive science, psycholinguistics, constructivism, and metacognition. Studies at the interface of language acquisition and maintenance and participation in online social practices and affinities (e.g., Black, 2008; Lam, 2009) draw on language acquisition theory, discourse theory, sociolinguistics, social practice theory, the sociology of transnational migration, and social theories of identity, among others. Other new literacies research interests draw on such diverse theoretical options as sociotechnical theory, social construction of space and time, postcolonial theory, feminist theory, hermeneutics, informatics, communications

theories, theories of culture, network theories, and so on (for a wide sampling, see Coiro, Knobel, Lankshear, & Leu, 2008b).

Methodological Approaches

New literacies research spans a wide range of design types, including experimental and quasi-experimental and large-scale quantitative designs (including surveys), discourse studies, ethnographies, case studies, text and multimodal analysis designs, interview-based designs, and various mixed-method and hybrid designs. Questionnaires, evaluative tests, interviews, participant and nonparticipant observation, interviewing, artifact collection, screen capture, in situ conversations with a purpose, think alouds, walk-throughs and talk-throughs, written transcript collection, textual documentation of technical resources, network mapping, audio and video recording of interactions, use of eliciting devices, and the like are among the staple means of data collection in new literacies research (Coiro et al., 2008b). Data analysis options are likewise diverse. Quantitative designs employ familiar statistical analyses, such as analysis of variance and covariance, cluster analysis, cross tabulations, and descriptive statistics. Popular options within qualitative studies include various forms of discourse and linguistic analyses, inductive and interpretive coding, narrative analysis, theme and category analysis, rhizomatic analysis, network analysis, spatial analysis, and social semiotic analysis, among others. Mixed-method and hybrid design studies employ various combinations of analyses within and across the kinds of quantitative and qualitative options mentioned.

New Literacies Research

Research concerned explicitly with advancing knowledge and theory of new literacies has burgeoned since the 1990s. Among the diverse emphases apparent within the overall field, the following are especially visible.

Studies of Fan Practices

This corpus investigates forms of literacy engaged in by people who are active fans of some phenomenon (notably, writing fan fiction, creating fan videos, participating in fan-based discussion boards). Affinities, participation, and collaboration are key organizing and explanatory concepts (Jenkins, 2006). Ethnographic designs employing fieldnotes, artifacts and interview data, analyzed by inductive coding and various linguistic and discourse analysis techniques are popular (Black, 2008; Ito et al., 2010; Lam, 2009).

New Literacies as Digital Production Practices

Studies here focus on creation of digital products and artifacts that are not necessarily linked to fandoms—such as studies of digital storytelling, digital music composing, digital photography, and curating online photographs studies, creating flash animations, stop motion animation, website construction, and machinima making (e.g., Hull, 2004; McClay, Mackey, Carbonaro, Szafron, & Schaeffer, 2007).

Online Reading Comprehension

A growing body of studies investigates school-age children's online information-processing and reading-comprehension strategies, with particular emphasis on how reading online differs from traditional print-based reading (Leu, O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009). This body of work also addresses the means by which and extent to which students actively evaluate online information.

Social Networking and Online Communication

Considerable research focuses on engagement with online networks and communication media. Focus areas include participation in social networking sites such as Facebook and Myspace and online discussion forums, as well as communication practices like instant messaging, blogging, twittering, and the like (e.g., Lewis & Fabos, 2005; Davies & Merchant, 2008; Lam, 2009). Studies often address the (dis)continuity between these new literacies and the forms of literacy encountered in formal education settings.

Video Gaming

Video games and gaming practices are a well-established focus for new literacies research (cf., Squire, 2008; Steinkeuhler, 2008), proceeding from the standpoint that game design involves a multimodal code comprising images, actions, words, sounds, and movements that players interpret according to gaming conventions and meanings (Gee, 2007, p. 135). Studies often employ onscreen game-play recordings, interviews, fieldnotes, discussion board transcripts, e-mails, community documents such as player-generated walkthroughs, and manuals. Forms of linguistic and discourse analysis are widely used.

New Literacies and Classrooms

Many researchers are interested in how to incorporate new literacies effectively into classrooms and, particularly, with how to implement and evaluate new literacies projects in school and after-school settings (Brass, 2008). Increasing attention also is being paid to developing and evaluating options for assessing new literacies within formal education (Burke & Hammett, 2009).

SEE ALSO: Critical Media Literacy; Discourse Analysis in Literacy Research; Multimedia Digital Engagements by Readers and Learners; Multimodality and Literacy; New Literacies of Online Reading Comprehension; Sociolinguistic Studies of Literacy

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Concordancing

CHRISTOPHER TRIBBLE

What Is a Concordance?

For most language teachers and lexicographers, a concordance will be a computer-generated listing of all of the instances of a word in a collection of texts. Such a concordance for the word *rabbit* in Lewis Carroll's *Alice in Wonderland* would look like Figure 1.

More formally, a concordance can be defined as "a collection of the occurrences of a word-form, each in its own textual environment. In its simplest form it is an index. Each word-form is indexed and a reference is given to the place of occurrence in a text" (Sinclair, 1991, p. 32). This definition is important because it reminds us that, originally, a concordance was a manually prepared list of the word forms found in a text or set of texts along with references to their precise locations (by book, verse, line, etc.). *Word form* is stressed here because at a basic level it would require separate searches to find the singular and plural form of, for example, *cat* and *cats* in a corpus.

The first recorded concordance in the Western tradition was based on the work of Cardinal Hugo of St Caro, who, "with the help of hundreds of Dominican monks at St James convent in Paris, compiled a word index of the Vulgate in the year 1230" (Bromiley, 1997, p. 757). Given the huge human effort involved in such a project, it is not surprising that in the pre-computer age, these were only developed for a few culturally valued texts (e.g., Cruden's 1738 *A Complete Concordance to the Holy Scriptures*, Strong's 1890 *Exhaustive Concordance of the Bible*, or Becket's 1787 *A Concordance to Shakespeare*). These books provided scholars with two kinds of resource. The first was a comprehensive account of where words were used in a closed set of texts (in Strong, 1890, the 8,674 Hebrew root words in the Old Testament and the 5,624 Greek root words in the New Testament). The second, (e.g., Becket 1787) was designed as a source of insight and illumination for a wider readership, with an example of the word being given along with its linguistic context and location in the Shakespeare canon (play, act, scene), as in the example for *WORD* in Figure 2.

In computer-assisted linguistic analysis, concordances continue to be, at heart, indexes of instances, but they can be generated for a range of new purposes and across an ever-expanding range of texts and text types. A printed concordance of a Greek root word in Strong (1890) would have assisted scholars concerned with biblical exegesis by giving a comprehensive account of how often and where this word was used across the King James Authorized Version of the New Testament. Indeed, this tradition continued until the 1990s

```
cking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.
 so VERY much out of the way to hear the Rabbit say to itself, 'Oh dear! Oh dear
 all seemed quite natural); but when the Rabbit actually TOOK A WATCH OUT OF ITS
er mind that she had never before seen a rabbit with either a waistcoat-pocket,
 was another long passage, and the White Rabbit was still in sight, hurrying dow
d it when she turned the corner, but the Rabbit was no longer to be seen: she fo
to see what was coming. It was the White Rabbit returning, splendidly dressed, w
ady to ask help of any one; so, when the Rabbit came near her, she began, in a l
 timid voice, 'If you please, sir--' The Rabbit started violently, dropped the w
```

Figure 1 Concordance for *rabbit* in Lewis Carroll's *Alice in Wonderland*

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WORD

What faid he? How looked he? Wherein went he?
What makes he here? Did he afk for me? Where remains he?
How parted he with thee? And when fhalt thou fee him again?
Anfwer me in one word.
As you like it, A. 3, S. 2.

— Hear me, Hubert! drive thefe men away,
And I will fit as quiet as a lamb;
I will not air, nor wince, nor fpeak a word,
Nor look upon the iron angerly :
Thruft but thefe men away, and I'll forgive you.
King John, A. 4, S.

— Thefe haughty words of hers
Have batter'd me like roaring cannon-fhot,
And made me almoft yield upon my knees.
Henry VI. P. 1, A. 3, S.

Gregory, o' my word, we'll not carry coals.
Romeo and Juliet, A. 1, S

Figure 2 Concordance for *word* in Becket's *A Concordance to Shakespeare* (1787), p. 458

with printed concordances of Henry James (e.g., Bender, 1987), Joseph Conrad (e.g., Bender, 1979), and T. S. Eliot (Dawson, Holland, & McKitterick, 1995).

Useful as these concordances have been to scholars, a computer can now be used to create an equivalent to the Strong concordance in the blink of an eye, and it can also support a much wider range of analytic purposes.

Computer-Generated Concordances: Approaches, Tools, and Resources

Earlier Traditions

Before the days of digitized texts and modern computers, concordances were made by dedicated individuals or teams, working often over long periods of time. Team members would read the text, identify words that mattered to the analysis, and painstakingly build up tables which recorded where each instance of that word was found. A paper-based concordance for *rabbit* in *Alice in Wonderland* could take two main forms.

Assuming a text in which article, page, and line numbering are known, a concordance in the Strong (1890) tradition might give us an entry for *rabbit* such as the one in Figure 3.

Each time the word *rabbit* appeared in a page, the tally would be increased and a cumulative log would be kept of the article, page, and line reference so that a cumulative total and list of locations could be compiled at the end of the research process.

count	word	article	page	line
1	rabbit	1	1	9
2				12
3				15
4				18
5				21

Figure 3 Basic index concordance for *rabbit*

A concordance in the Becket (1787) tradition might look more like this:

```
. . . when suddenly a White Rabbit with pink eyes ran close by her
(Article 1, p.1, l.9)

Alice started to her feet, for it flashed across her mind that she had
never before seen a rabbit with either a waistcoat-pocket, or a watch
to take out of it . . . (Article 1, p.1, l.18)
```

the editor having decided that these two uses of *rabbit* were more interesting than other instances in the text.

Simple Concordances

In contemporary computer-assisted analyses of texts, we expect to be able to access all the information we would find in a paper concordance (i.e., frequency of occurrences and exact location in the text) along with a great deal more. Using a modern concordancer such as WordSmith Tools version 5 (Scott, 2008), which has been used to generate all the original examples here, it is possible to look at a word form in a number of ways—each of which has its value for the researcher.

As a way of demonstrating the principle which underlies a concordance, Sinclair (1991, p. 33) gives an example of a concordance of a complete short text, *The cat sat on the mat* (see Figure 4). Here, each word is treated as a *node* word form (i.e., the string of characters which the computer has been instructed to search for in the corpus). These notes have then been sorted in alphabetic order (rather than being presented in text sequence) and a one-word-form context at either side has been provided.

the	cat	sat
the	mat	
sat	on	the
cat	sat	on
	the	cat
on	the	mat

Figure 4 One-word-form context concordance (adapted from Sinclair, 1991, p. 33)

Although such full text concordances continue to be a possibility, it would be unusual to use this approach for larger texts or text collections. A more common format is one in which a single node or search term (this can be a word form or phrase) is looked for in all its contexts across a text. Given in Figure 5 is the same Key Word in Context (KWIC) concordance for the word form *rabbit* which was used in Figure 1. In the current display, the first 10 occurrences of the word form are presented in text sequence at the center of a context of 70 characters (spaces and punctuation are counted as characters).

```
N                    Concordance
1      the daisies, when suddenly a White Rabbit with pink eyes ran close by
2     ERY much out of the way to hear the Rabbit say to itself, 'Oh dear! Oh
3     seemed quite natural); but when the Rabbit actually TOOK A WATCH OUT O
4     nd that she had never before seen a rabbit with either a waistcoat-poc
5     another long passage, and the White Rabbit was still in sight, hurryin
6     when she turned the corner, but the Rabbit was no longer to be seen: s
7     e what was coming. It was the White Rabbit returning, splendidly dress
8     o ask help of any one; so, when the Rabbit came near her, she began, i
9     d voice, 'If you please, sir--' The Rabbit started violently, dropped
10    o finish his story. CHAPTER IV. The Rabbit Sends in a Little Bill It w
```

Figure 5 KWIC concordance for *rabbit* in *Alice in Wonderland*

It should be remembered that the KWIC format is not the only way of displaying concordance data, and that it is not always the best. The concordance extract in Figure 6 gives an alternative view of the same data, but this time complete sentences are shown and the node word is underlined.

```
N                Concordance
1
'So she was considering in her own mind (as well as she could, for the hot day made
her feel very sleepy and stupid), whether the pleasure of making a daisy-chain
would be worth the trouble of getting up and picking the daisies, when suddenly a
White Rabbit with pink eyes ran close by her.
2
There was nothing so VERY remarkable in that; nor did Alice think it so VERY much
out of the way to hear the Rabbit say to itself, 'Oh dear! I shall be late!' (when
she thought it over afterwards, it occurred to her that she ought to have wondered
at this, but at the time it all seemed quite natural); but when the Rabbit actually
TOOK A WATCH OUT OF ITS WAISTCOAT-POCKET, and looked at it, and then hurried on,
Alice started to her feet, for it flashed across her mind that she had never before
seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and
burning with curiosity, she ran across the field after it, and fortunately was just
in time to see it pop down a large rabbit-hole under the hedge.
```

Figure 6 Sentence concordance for *rabbit* in *Alice in Wonderland*

There are advantages and disadvantages to this kind of display, but in the early stages of introducing concordancing to learners and other students of language it is sometimes the case that a sentence view of concordance data can be more useful than the KWIC display, as it presents fewer reading challenges to newcomers to corpus analysis.

Word Forms and Lemmas

The first concordance examples discussed in this entry were for single word forms. While such searches can be very revealing, there are times when a researcher needs to move beyond individual word forms. In such cases it can be important to be able to investigate a *lemma* instead. Sinclair defines *lemma* as follows:

> A lemma is what we normally mean by a "word." Many words in English have several actual word-forms—so that, for example, the verb *to give* has the forms *give*, *gives*, *given*, *gave*, *giving*, and *to give*. In other languages, the range of forms can be ten or more, and even hundreds. So "the word *give*" can mean either (i) the four letters **g**, **i**, **v**, **e**, or (ii) the six forms listed above.
>
> In linguistics and lexicography we have to keep these meanings separate; otherwise it would not be possible to understand a sentence like "*Give* occurs 50 times in this text." For this reason, the composite set of word-forms is called the lemma. (Sinclair, 1991, p. 173)

In other contexts, researchers may need to search for particular phrases (fixed combinations of word forms) which have importance for them, or even to search for noncontiguous patterns where the node is separated from a list of required context words by a set span of word forms or characters. Modern concordancing software offers resources which make

both of these tasks relatively straightforward. With an unmarked-up corpus (i.e., one that does not contain part-of-speech [POS] tags, lemma information, or other codes), two strategies can be used. The first requires the user to enter a list of the word forms which constitute the lemma of a stem, for example *cat/cats* or *smile/smiles/smiling/smiled*. A concordance for *cat/cats* in *Alice in Wonderland* will look like Figure 7.

```
N
1      ht, I should think!' (Dinah was the cat.) 'I hope they'll remember her
2      very like a mouse, you know. But do cats eat bats, I wonder?' And here
3      rself, in a dreamy sort of way, 'Do cats eat bats? Do cats eat bats?'
4       sort of way, 'Do cats eat bats? Do cats eat bats?' and sometimes, 'Do
5       bats?' and sometimes, 'Do bats eat cats?' for, you see, as she couldn
6      gs. 'I quite forgot you didn't like cats.' 'Not like cats!' cried the
7      ot you didn't like cats.' 'Not like cats!' cried the Mouse, in a shril
8      , passionate voice. 'Would YOU like cats if you were me?' 'Well, perha
9      And yet I wish I could show you our cat Dinah: I think you'd take a fa
10     inah: I think you'd take a fancy to cats if you could only see her. Sh
```

Figure 7 Concordance sample for *cat/cats* in *Alice in Wonderland*

An alternative approach to typing all the word forms you wish to find is to use the *wild-card* facility (*regular expression* in Unix environments) which different concordancing programs offer. A wild card is a symbol which can be used to stand for one or many alphanumeric characters. In a Windows operating system environment, wild cards might include examples such as those in Figure 8.

wildcard	search	result
* any character at the end of a word (including punctuation)	cat*	I'm afraid, but you might catch a bat, and that's a mouse, you know. But do cats eat bats, I wonder? a dreamy sort of way, 'Do cats eat bats? Do cats e ay, 'Do cats eat bats? Do cats eat bats?' and some d sometimes, 'Do bats eat cats?' for, you see, as
* any character at the beginning of a word (including punctuation)	*ing	the Rabbit-Hole Alice was beginning to get very ti ning to get very tired of sitting by her sister on ister on the bank, and of having nothing to do: on n the bank, and of having nothing to do: once or t o the book her sister was reading, but it had no p
* any whole word	have * to	poky little house, and have next to no toys to e! I do wonder what CAN have happened to me! When an--but then--always to have lessons to learn! Oh eshire Cat: now I shall have somebody to talk to. what you had been would have appeared to them to
? any single character	Engl???	. The further off from England the nearer is to and yet it was certainly English. 'I don't quite c remedies--' 'Speak English!' said the Eaglet oon submitted to by the English, who wanted leade ps it doesn't understand English,' thought Alice;

Figure 8 Concordance sample from *Alice in Wonderland* using Windows wild cards

Phrases

Concordancing software does not restrict you to searching for individual word forms. It is also possible to look for closed and open phrase patterns, using a mix of full word forms and wild cards to create search algorithms that most closely meet your needs. Thus, in a corpus of business correspondence a search for *thank you for* produced the results shown in Figure 9.

```
1     land  Dear Mr Personname I write to thank you for your services over t
2     ll be your sole point of contact. I thank you for your greatly valued
3     ess Southern Ireland Dear Firstname Thank you for attending our meetin
4     ss Southern Ireland  Dear Firstname Thank you for arranging and chairi
5     or opening the new TG Dublin depot. Thank you for all of your efforts
6     ies. May I take this opportunity to thank you for your interest in our
7     00 60 3 716 0953 Dear Mr Personname Thank you for your letter addresse
8     ease do not hesitate to contact me. Thank you for your assistance. You
9     00 91 591 31120S Dear Mr Personname Thank you for your letter regardin
10    rly on the outside of the envelope. Thank you for your co-operation in
```

Figure 9 Concordance sample using a phrase search for *thank you for* in a corpus of business correspondence (retrieved January 4, 2010 from http://users.utu.fi/micnel/business_english_lexis_site.htm)

A search for *do not * to* will produce the results shown in Figure 10.

```
1          mpanyaddress Tick here if you do not want to receive any further
2     g will show that great negotiators do not need to use any tricks but y
3          mpanyaddress Tick here if you do not want to receive any further
4     u have any further queries, please do not hesitate to contact me.
5     ou require more information please do not hesitate to contact either m
6     ve any queries on the above please do not hesitate to contact me. Th
7     re any further information, please do not hesitate to contact me on my
8     re any further information, please do not hesitate to contact me on my
9      database searches further, please do not hesitate to contact me on 01
10    f you need any further information do not hesitate to contact me on ..
```

Figure 10 Concordance sample using a wild-card phrase search

In a larger corpus, it begins to be possible to search for quite extended patterns and obtain a surprisingly large number of results. Thus a search in the 100-million-word British National Corpus (BNC) (Oxford University Computer Service, 1995) for *if * * * enough to* produces 156 results. (In the example in Figure 11 the contracted word form *hasn't* counts as one word. This is a feature common to most concordancing programs.)

```
1     k he's got in the office today and if he hasn't got enough to worry ab
2      offered to act as Promoter for us if we could donate enough to provid
3     he full employment level of output if prices are high enough to make t
4     o say constitutes a legal warning. If you are foolish enough to close
5     nt is the price for higher returns if you are lucky enough to make it
6                 chievement to sink in. If I am lucky enough to be chosen i
7                 chievement to sink in. If I am lucky enough to be chosen i
8     a time are homeless in Gloucester. If they're not lucky enough to find
9     ls of post Thatcher Britain. Here, if you are lucky enough to own an o
10     million miles from feeling. Adam, if you'd be good enough to finish w
```

Figure 11 Concordance sample from the British National Corpus (BNC) using a wild-card multiword phrase search

Working with Corpus Data

Searching for words or phrases in a small corpus is simple enough. However, as the corpus size increases so do the problems of managing the data which searches will produce. Three main ways of dealing with data overload are sorting, sampling, and restricted searches.

By taking advantage of the fact that your concordance is electronic, you can *sort* output so that like is grouped with like. There are at least three ways of re-sorting concordance data: by the node word itself, by the left context of the node, and by the right context. Of course, sorting can be done in ascending or descending order. If further information is available, the data can also be sorted by text, by tag, or by any other available category. The three examples for the search string *look** in Figures 12–14 demonstrate the potential for this approach.

A search for *look** in Lewis Carroll's *Through the Looking Glass* produces 155 results. This is not a huge amount of data, but it is still more than you can take in without some further processing. Sorting the node word first reveals which form of *look** occurs most frequently (*looking* with 71 occurrences) and which form is least frequent (in this instance *looks*, which only occurs once) (see Figure 12).

```
145    the crown, NOW!' the Unicorn said, looking slyly up at the crown, whi
146   t she had never seen such a strange-looking soldier in all her life. H
147   candles all grew up to the ceiling, looking something like a bed of ru
148   y bit of the worsted while I wasn't looking! 'That's three faults, Kit
149   se, would you tell me--' she began, looking timidly at the Red Queen.
150    use talking about it,' Alice said, looking up at the house and preten
151   about 'em,' the Sheep said, without looking up from her knitting: 'I d
152   nt to buy?' the Sheep said at last, looking up for a moment from her k
153   no!' 'What volcano?' said the King, looking up anxiously into the fire
154   sonable child,' said Humpty Dumpty, looking very much pleased. 'I mean
155   corn rise to their feet, with angry looks at being interrupted in thei
```

Figure 12 Concordance sample for *look** sorted by the node word in Lewis Carroll's *Through the Looking Glass*

Sorting by the left context shows us, for example, the typical subjects for *look** as verb (see Figure 13).

```
1      d pretended not to see it: but it looked a LITTLE ashamed of itself,
2      d it round for him. 'I thought it looked a little queer. As I was say
3          to carve a joint before. 'You look a little shy; let me introduce
4     on't understand,' the Knight said, looking a little vexed. 'That's wh
5        an't get at me!' Then she began looking about, and noticed that wha
6     caught the shawl as she spoke, and looked about for the owner: in ano
7     What AM I to do?' exclaimed Alice, looking about in great perplexity,
8        ' 'Don't tease so,' said Alice, looking about in vain to see where
9        away at full speed. Alice stood looking after it, almost ready to c
10    n wool. Alice rubbed her eyes, and looked again. She couldn't make out
```

Figure 13 Concordance sample for *look** sorted by the left context in *Through the Looking Glass*

Sorting by the right context can show typical collocating adverbs, prepositions, complements, and so forth (see Figure 14).

```
1      d pretended not to see it: but it looked a LITTLE ashamed of itself,
2      d it round for him. 'I thought it looked a little queer. As I was say
3          to carve a joint before. 'You look a little shy; let me introduce
4     on't understand,' the Knight said, looking a little vexed. 'That's wh
5        an't get at me!' Then she began looking about, and noticed that wha
6     caught the shawl as she spoke, and looked about for the owner: in ano
7     What AM I to do?' exclaimed Alice, looking about in great perplexity,
8        ' 'Don't tease so,' said Alice, looking about in vain to see where
9        away at full speed. Alice stood looking after it, almost ready to c
10    n wool. Alice rubbed her eyes, and looked again. She couldn't make out
```

Figure 14 Concordance sample for *look** sorted by the right context in *Through the Looking Glass*

Depending on the software you are working with, sorts can also extend beyond the immediate context of the node, with sorts at one, two, three, or more words to the right or left of the node being possible.

If you are still overloaded with data from a concordance search, you can either reduce the amount of text that you are working with, or use computer software to make a randomized selection or *sample* from the data. A final way of reducing the data generated by your search, if your concordancing software permits this, is to build *restricted searches*. With a POS-tagged corpus such as the BNC, it is possible to specify the word classes that will be included in a search (Aston & Burnard, 1998). Thus, rather than looking for, say, *rabbit* (2,571 results in the BNC), it would be possible to look for *rabbit* as *verb* only (39 results). However, even if you do not have a POS-tagged corpus, it is possible to develop simple search algorithms by making use of the features that most modern concordancing programs provide, which will greatly improve the searches that you make.

For example, in academic discourse, the ways in which extended noun phrases are post-modified is an important component in the construction of meaning in impersonal, fact-oriented written texts (Biber, 2006). Assuming you have access to a corpus of experimental science research journal articles which have not been POS tagged, how do you go about collecting examples of, for instance, extended noun phrases in grammatical subject or sentence theme position for research or teaching purposes?

If you have access to a concordancer which uses an asterisk (*) as a whole- or part-word wild card, it is possible to make the following search algorithm:

> <u>Search for</u> "the * of" <u>in the context of</u> "*." <u>up to four words to the right</u>
> (i.e., search for any word preceded by a definite article and followed by the preposition *of* in the context of a preceding full stop up to four word forms to the right of the node)

This produced results such as those in Figure 15 (shown in sentence concordance format with extended theme in bold and node underlined).

```
1     To determine the significance of these banding patterns following the MEE
      analysis of samples of pools of individuals we compared individual worms
      with the pools using the rational and allozyme interpretation as detailed by
      Andrews and Chilton (1999).
2      The usefulness of the application of MEE to provide answers to parasite
      systematics has been reviewed by Andrews and Chilton (1999).
3     To date, the roles of genetic variation of O. viverrini on this observed
      variability in infection, transmission and associated disease are not known.
5     The specificity of this PCR, in addition to its sensitivity (50 pg),
      demonstrates its usefulness in Leishmania typing.
```

Figure 15 Concordance sample for *the * of* in a text from *Acta Tropica* (retrieved January 4, 2010 from http://www.sciencedirect.com/science/journal/0001706X)

Further refinements of this simple algorithm can be devised, making it possible to identify, quantify, and describe other kinds of noun post-modification (present or past participle, relative clause, and other prepositional phrases), and, of course, it is then possible to devise other searches to identify other lexicogrammatical or discourse features.

SEE ALSO: Corpora in the Language-Teaching Classroom; Corpora: Specialized; Corpus Analysis of English as a Lingua Franca; Corpus Analysis of English as a World Language; Corpus Analysis for a Lexical Syllabus; Corpus Analysis of the World Wide Web; Corpus Analysis of Written English for Academic Purposes; Corpus Linguistics in Language Teaching

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Conference Interpreting

SYLVIA KALINA

Conference interpreting (CI) is the mediation, from a source language (SL) into a target language (TL), of speeches, presentations, and spontaneous comments by delegates and participants at international conferences where people do not speak the same language. Today it is mostly done in the simultaneous mode: interpreters work in soundproof booths and delegates listen to their output through headphones. As opposed to some other types of interpreting (e.g., community settings), interpreters are not expected to perform any intercultural mediation apart from offering explanations of names, acronyms, or institutions that are indigenous to the culture of the speaker. Conference interpreters work either unidirectionally from one or several languages into their native tongue (A-language), or bidirectionally between their A-language and a B-language which they speak nearly as well as their native tongue.

From a Profession to a Discipline

In the late 19th and the 20th century—and especially after World War II—the number of international and multilingual conferences began to rise sharply, and the profession of conference interpreting developed in conjunction with the corresponding demand for oral linguistic mediation. Initially, conferences were interpreted in the consecutive mode: that is, an entire speech or intervention was made, and the TL version followed afterward. For this mode of CI, memory and note taking are the most important skills. As soon as technological progress had produced the appropriate transmission equipment, the simultaneous mode became predominant, especially where many languages are concerned, as it does not result in loss of time for translation. The profession of CI is a highly respected expert activity. Today, it is practiced either by freelancers or by salaried employees in a multilateral setting, for example within international organizations (IO). Conference interpreters have developed a high professional profile, and have a worldwide professional association, the International Association of Conference Interpreters (AIIC, Association Internationale des Interprètes de Conférence).

After an early period where it was linguists who took a scientific interest in CI (see Gerver, 1976), professional interpreters themselves started researching into what they practiced. Seleskovitch (1978) based her model of human comprehension on sense (meaning), whereas the wording (form) can be neglected: "languages do not choose the same set of words to point to the same objects or concepts so that speakers in individual languages do not use the same words to express the same ideas" (1978, p. 337). According to Seleskovitch, good interpreting quality is obtained if the interpreter works into his or her mother tongue and has an excellent understanding of source language as well as extensive general world knowledge.

Although more informal types of interpreting had been practiced much earlier, it was only with the emergence of CI that people began to reflect on interpreting: researchers wanted to know whether and—if so—how a person can listen in one language and speak, that is, translate, in another at the same time. Linguistic research initially focused on the use of speakers' pauses by simultaneous interpreters, modifications of grammatical structure

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in the TL, and types of errors identified in the interpreting product. The contributions of interpreting professionals dealt with the processes of consecutive and simultaneous interpreting as such, the cognitive processes involved, and the specific constraints particularly in simultaneous interpreting (SI).

In the early research periods it was found that the quality of CI required spontaneous speech production by conference speakers, as only ideas that were verbalized on the spur of the moment could be translated immediately in the oral mode, with interpreters using strategies such as analysis and segmentation of source text, anticipation, paraphrasing and, occasionally, generalizing. Meanwhile, CI is practiced even with carefully prepared and complex source texts read at maximum speed, as speakers are constrained by limits of speaking time. Conference interpreters have had to adapt to these conditions, and have developed appropriate skills and strategies.

The present state of the art in CI research (now known as "interpreting studies," a term that also includes other types of interpreting) is impressive. It extends from models that seek to explain mental processes by studying errors and identifying process-specific error types (Jensen, 1985), and concerns itself with the typical features of prosody in simultaneous presentation (Shlesinger, 1994; Ahrens, 2005). Researchers are also investigating cognitive processes involved in the act of interpreting (Gile, 1995; Setton, 1999; Moser-Mercer, 2000), as well as strategies used by interpreters to cope with the typical deficiencies of the mediated communication process (Kohn & Kalina, 1996). Furthermore, research is being carried out into user preferences (Kurz, 1989; Moser, 1996), cultural aspects of interpreting (Pöchhacker, 1994), analyses of quality and its assurance (Kopczyński, 1994; Kalina, 2005), to mention only a few areas.

Research methodology has also advanced. Earlier comparisons of source and target texts were based on written transcripts of experimentally obtained versions; today, product analysis is performed on the basis of authentic audio or video recordings of real-life speeches and interpretations, and cognitive processes are studied with sophisticated experimental methods.

After CI research results started to be discussed by the scientific community and professionals, research into other modes of interpreting in the fields of public service, court, police, and medical dialogue interpreting was taken up. The analysis of different settings and their impact on interpreting approaches and techniques brought CI and other interpreting types more closely together so that we can now speak of a discipline of interpreting studies which is concerned with all types of interpreting.

CI as Comprehension and Production of Speech

Processes during consecutive CI are rather similar to those of more informal dialogue interpreting, with two distinctive features. One is that cultural mediation is less relevant as audiences at international conferences are largely aware of intercultural differences, and the other is that longer speech segments are usually processed (in the heyday of consecutive interpreting, speeches of about 20 minutes and sometimes up to an hour and more used to be rendered integrally, with every nuance and detail of the original contained in the interpreted version). Today, sections of speech that are interpreted tend to be kept much shorter so that listeners do not have to wait too long before receiving the translation. Also, this helps make an event more interactive, as the audience can respond more spontaneously.

In SI, the incoming sound has to be of excellent quality. Interpreters have to cope with all types of speakers, who may speak in a language which is not their native language, or may wish not to commit themselves, and are rarely aware of interpreting constraints. SI

is practiced not only at international conferences such as the meetings of the European Parliament with its 23 languages, and other international organizations, but also at bilingual events (scientific symposia, training seminars, interviews, international works council meetings, legal depositions, etc.), and for the media.

Where technical facilities are not available and only one or two participants need interpretation, whispering may be practiced. This mode is even more stressful than SI proper, as interpreters have to speak with subdued voice—not really whispering—and at the same time concentrate on input despite noise levels in the conference room.

In SI, one of the most interesting research questions continues to be that of interpreters' *décalage* (ear–voice span). This is not a fixed time span to be recommended or maintained; rather, the time which elapses until an interpreter starts to verbalize an idea of the original she or he has understood may vary as a function of the interpreter's knowledge about speaker and subject, semantic complexity of the original, and structural similarities or dissimilarities between languages.

SI takes place in adverse conditions, inasmuch as interpreters perform dual and competing cognitive activities—listening to a speech segment in one language, analyzing it, and at the same time producing another segment in another language (Gile, 1995)—and do not have control over semantic content and processing speed. As incoming discourse remains "in the ear" when TL text is produced, CI is extremely prone to performance errors (Kohn & Kalina, 1996). Complex figures which are unproblematic to the translator constitute a real challenge to interpreters: enumerations of items have to be processed very fast so that every item is remembered; presentation rate (speaking speed) has to be adapted and modified during the whole process; and items that are not properly understood have to be either deleted (left out) or rendered in a more generalized form. Anticipation (probabilistic prognosis, see Chernov, 1994) is an important strategy in SI, especially regarding languages with different syntactical structures. In addition to listening to the original speech (source text) and producing their output (target text) at the same time, interpreters have to monitor their own speech production. Due to the adverse processing conditions, the target text may frequently contain speaking errors (false starts, hesitations, filled pauses, etc.). Depending on the remaining processing capacity, the decision may be to either correct an error or intentionally not correct it; in the worst case, where no capacity is left for the monitoring process, the interpreter may not even be aware of output errors.

New Technologies and CI

Despite a multitude of innovations in conference technology and for the interpreting booth, such as source text "repeat" functions or equipment for visually handicapped simultaneous interpreters, the cognitive effort interpreters need to put into the process has not diminished. Great hopes initially placed in machine interpreting (MI) have not materialized for the conference setting, so, for the time being, MI will not be a threat to human conference interpreters. However, working conditions before and during an assignment have been influenced both positively and negatively by new information and communication technologies, as the following list illustrates:

- Preparation is much easier with digital knowledge resources, the Internet, and quick access to all types of documents.
- With English being used more and more as a lingua franca, more non-native speakers with foreign accents make interpreters' work more difficult, and those conference interpreters who do not work from/into English see their languages being cut out of conferences.

- Media presentations often do not take interpreting requirements into account. When a video clip has background music or there is audible machine noise, it becomes more difficult for interpreters to follow what is being said.
- The technical facilities that now exist everywhere tend to make users see interpreting as part of an automated communication process and neglect the need for preparation and comprehension. Interpreters are regarded as part of the technical equipment. Users are not aware of their needs—for preparation, for example. The trend is toward hiring interpreters at the last moment and expecting them to act as ever-ready encyclopedias.
- Communication technologies allow for remote interpreting (RI), which may be cheaper but affects interpreting quality. RI risks turning CI even more into a service to be hired at the very last minute; furthermore, the atmosphere of a conference, which is also a source of information for interpreters, cannot be tapped into in the same way as when interpreters are physically present in the conference hall.
- Subjects negotiated at international level are becoming more and more complex, and interpreters have to be extremely versatile, covering one topic at a technical conference on one day and then another topic for the media on the next.

CI Training

CI is the only type of interpreting for which training was offered at university level from the outset. This greatly helped to develop the profession, and many experienced conference interpreters are teaching at universities around the world. Meanwhile, the theoretical components of translation and interpreting studies and of communication are firmly anchored in CI Masters' programs. With technological progress and new media applications, university training for CI is becoming more challenging and more demanding; on the other hand, students can be prepared for the market and its requirements much better than in the past. This is the result of better media equipment and electronic learning methods but also of the development of systematic training on the basis of proven theoretical approaches. As future developments in information and communication technology can hardly be predicted, it is all the more necessary to prepare the young generation of interpreters for present and future challenges.

SEE ALSO: History of Interpreting; Interpreting Techniques and Modes; Media Interpreting; Models of Interpreting; Quality in Interpreting; Teaching and Learning of Interpreting

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Connectionism

PING LI AND XIAOWEI ZHAO

Connectionism, also known as parallel distributed processing (PDP) or artificial neural networks, is an important theoretical framework as well as a computational tool for the study of mind and behavior. Connectionism advocates that learning, representation, and processing are parallel, distributed, and interactive in nature. It argues for the emergence of human cognition as the outcome of large networks of interactive processing units operating simultaneously. Connectionism has had a profound impact on many areas of research including linguistics, psychology, and artificial intelligence, and language as a hallmark of human behavior has received in-depth treatment since the beginning of connectionist research. The acquisition of the English past tense, the recognition of speech, and the processing of sentences are among the earliest connectionist models (McClelland, Rumelhart, & the PDP Research Group, 1986). The application of connectionism to second language acquisition research, however, has only recently gathered momentum, as discussed in this entry.

Neural Basis

The development of connectionism was largely motivated by the idea that the human brain does not operate like a digital computer. The human brain consists of a huge network of nerve cells, indeed, with billions of interconnected neurons, for the purpose of information processing. At the individual neuronal level, the electro-chemical processes for information transmission are relatively simple, going from cell bodies to axons and passing through a synaptic cleft to reach the dendrites of another neuron. It is at the neuronal-network level that information processing becomes more interesting and also more complicated, given that a single neuron is usually connected to thousands of other neurons. The strengths of their synaptic connections (the effectiveness of signal transmission across synapses) are not fixed, and it is the changes in synaptic strength that determine the neuronal teamwork. The ability of the human brain to derive the "optimal" strengths for a neuronal network in solving any given problem is the basis of neural information processing that inspires connectionist theories of learning, memory, and language. Each individual neuron is not very powerful, but a simultaneously activated network of neurons makes human cognition possible.

Given the above picture of neural information processing, connectionist models are built on two fundamental components: simple processing elements (*units*, *nodes*, or *artificial neurons*), and connections among these processing elements (hence the term "connectionism"). Like real neurons, a node receives input from other nodes. The input signals are accumulated and further transformed via a mathematical function (e.g., a sigmoid function) to determine the activation value of the node. A given connectionist network can have varying numbers of nodes, with activations spreading from node to node via the corresponding connections, either within the same level or across levels. Like real synapses, the connections can have different levels of strength (*weights*), which can be adjusted according to learning algorithms (see below), thereby modulating the degree to which a source node can influence a target node. In this way, the network can develop unique combinations of

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weights and activation patterns of nodes in representing (thus memorizing) different input patterns from the learning environment. Unlike computer programs that are dedicated to specific tasks and are fixed a priori, the weights and activation patterns in connectionist networks are continuously adapted during learning, and it is this adaptive process that makes connectionist networks interesting models of human behavior.

Learning Rules

Different connectionist networks use different algorithms to adjust weights to achieve learning. These algorithms can be classified roughly into two groups: supervised and unsupervised learning. A typical connectionist network with supervised learning consists of three layers of nodes: input layer, hidden layer, and output layer. The input layer receives information from input patterns (e.g., representations of alphabetic features), the output layer provides output patterns produced by the network (e.g., classifications of alphabets according to shapes), and the hidden layer forms the network's internal representations as a result of the network's learning (e.g., the visual similarities between "O" and "Q"). The most widely used supervised learning algorithm in psychological and cognitive studies is "backpropagation" (Rumelhart, Hinton, & Williams, 1986). According to backpropagation, each time the network learns an input-to-output mapping, the discrepancy (or error, δ) between the actual output (produced by the network based on the current connection weights) and the desired output (provided by the researcher) is calculated and is propagated back to the network so that the relevant connection weights can be changed relative to the amount of error ($\Delta\omega = \eta^*\delta$, where $\Delta\omega$ indicates change of

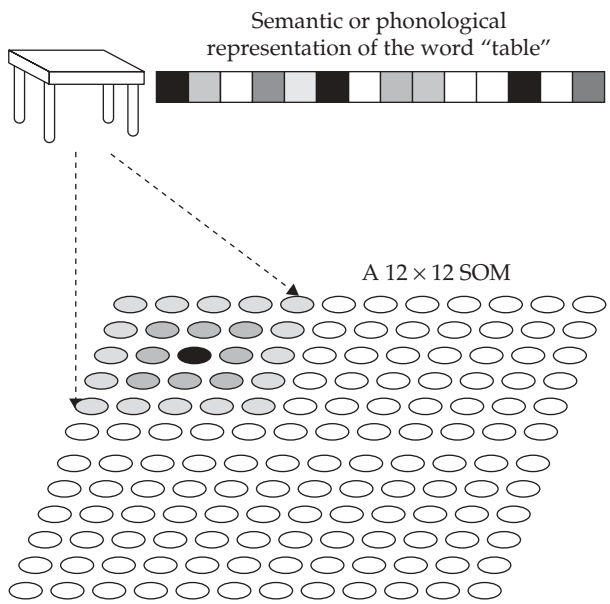

Figure 1 A demonstration of SOM's training process
Note. When an input vector representing the meaning or sound of a word (e.g., "table") is sent to the network, a best matching unit (the black node) becomes highly active. Its weight vector and that of its neighboring units (the gray nodes) are adjusted proportionally, such that they become more similar to the input. The size of the neighborhood usually decreases as the training progresses, and eventually only the best-matching unit itself is included in the neighborhood.

weight, η the rate of learning, and δ the error). Continuous weight adjustments in this way lead the network to fine-tune its connection weights in response to regularities in the input–output relationships. At the end of learning, the network derives a set of weight values that allows it to take on any pattern in the input and produce the desired pattern in the output.

In contrast to the backpropagation algorithm, unsupervised learning uses no explicit error signal at the output level to adjust the weights. A popular unsupervised learning algorithm is the self-organizing map (or SOM; Kohonen, 2001), which consists of a two-dimensional topographic map for the organization of input representations, where each node is a unit on the map that receives input via the input-to-map connections. At each training step of SOM, an input pattern (e.g., the phonological or semantic information of a word) is randomly picked out and presented to the network, which activates many units on the map, initially randomly. The SOM algorithm starts out by identifying all the incoming connection weights to each and every unit on the map, and for each unit compares the combination of weights (weight vector) with the combination of values in the input pattern (input vector). If the unit's weight vector and the input vector are similar or identical by chance, the unit will receive the highest activation and is declared the winner (the best-matching unit, see Figure 1 for an example). Once a unit becomes highly active for a given input, its weight vector and that of its neighboring units are adjusted, such that they become more similar to the input and hence will respond to the same or similar inputs more strongly the next time. This process continues until all the input patterns elicit specific response units in the map. As a result of this self-organizing process, the statistical structure implicit in the input is captured by the topographic structure of the SOM and can be visualized on a 2-D map as meaningful clusters. Finally, although not an inherent property of SOM, different maps can be linked via adaptive connections trained with the Hebbian learning rule (Hebb, 1949), a neurally inspired and biologically plausible mechanism of associative learning and memory. The Hebbian learning rule can be expressed simply as $\Delta w_{kl} = \alpha_k \cdot \alpha_l$, where Δw_{kl} refers to change of weight from input k to l and α_k and α_l the associated activations, which indicates that the connection strengths between neurons k and l will be increased as a function of their concurrent activities (that is, neurons that fire together wire together).

Major Properties

Connectionism stands in stark contrast to the classical computational view of the human mind, which assumes that human cognitive operations have properties fundamentally similar to digital computers which rely on discrete (symbol-based), modular (domain-specific), and serial (one step at a time) processes (see Bates & Elman, 1993 for a review). First, in terms of knowledge representation, connectionism argues for "distributed representation": a given concept is represented not by a single discrete symbol as in classical cognitive models, but by multiple nodes and their weighted connections in concert, which leads to a distributed pattern of activation of relevant microfeatures. Because of distributed representation, one cannot directly identify crisp concepts or rules in a connectionist system, and therefore the acquisition of relevant concepts or rules entails the learning of appropriate activation patterns. As mentioned above, learning in connectionist networks can only be achieved by the adjustment of weights that hold among relevant processing units for appropriate activation patterns.

Second, connectionist theories assume a high degree of interactivity between various levels of information processing. Classical cognitive theories posit highly modularized symbolic subsystems. These modules are often "domain specific" and "informationally

encapsulated," which means that they are designed to support specific cognitive processes and involve a low degree of interactivity (Fodor, 1983). If a module is damaged, the cognitive functions associated with it are all impaired. In contrast, connectionist networks depend crucially on information flow within and across different processing units and levels. Thus, even if parts of the system are damaged, the disruption of functions occurs only gradually, allowing for "graceful degradation" as seen in patients with brain injury of various types.

Third, although individual nodes in a network have limited power, just like individual neurons as discussed earlier, when multiple nodes are connected at any given time step of learning, they can process information simultaneously, giving rise to very powerful computational capacity in problem solving.

Finally, connectionist networks are nonlinear dynamical systems, capable of capturing nonlinear patterns often observed with children and adults during learning and development. This nonlinearity is introduced into the system by activation functions (e.g., sigmoid function) and certain topological structures in the network's self-organization process (e.g., multiple layers, recurrent connections, and dynamic unit growth). Because of these properties, connectionist models are ideally suited to account for language acquisition in both the monolingual and the bilingual context, as we discuss in the next section. In classical symbolic models (e.g., Pinker, 1991), nonlinear patterns such as the U-shaped behavior are accounted for by a combination of multiple linear mechanisms (e.g., rules versus associations in the acquisition of the English past tense). By contrast, connectionism conceptualizes human behaviors as fundamentally nonlinear, emergent properties. Connectionist models can be considered close allies of the broader class dynamical systems (Spencer, Thomas, & McClelland, 2009), in which complex dynamic interactions among multiple features in the learning environment and multiple variables that characterize the learner determine the shape and outcome of the learning/representation system. This perspective has led to recent interests in constructivist neural networks, in which internal representations (i.e., the hidden units) are allowed to dynamically increase or decrease as a result of learning experience or task difficulty (see Shultz, 2003; Ruh & Westermann, 2009).

Connectionist Second Language Learning

Connectionist networks have been used to account for a wide range of important empirical phenomena in linguistic behavior, such as speech perception, speech production, semantic representation, reading acquisition, and language acquisition (see Westermann, Ruh, & Plunkett, 2009 for a review of connectionist language acquisition). Many of these studies have been based on the *simple recurrent network* (SRN), a model that clearly demonstrates language as a dynamical system (Elman, 1990). The SRN combines the classical three-layer backpropagation learning with a recurrent layer of context units. These units keep track of hidden-unit activations at a prior time point, which are then provided along with new input to the current stage of learning (hence "recurrent" connections). This method enables connectionist networks to effectively capture the temporal order of information, since the context units serve as a dynamic memory buffer of the system. Given that language unfolds over time, the SRN therefore provides a simple but powerful mechanism to identify structural constraints in continuous streams of linguistic input.

The utility of the SRN for language acquisition was quickly demonstrated in not only the monolingual context but also second language acquisition and bilingualism. French (1998) presented an SRN model of bilingual language processing that learns artificially generated sentences of the N-V-N structure in English and French. The network was exposed to mixed bilingual input, with the two languages intermixed at the sentence level. Its task was to predict the next word, given the current input in the sentence. French

showed that distinct patterns of the two languages emerged after connectionist learning: words from the two languages became separated in space according to a hierarchical cluster analysis of the hidden-unit activations. The model provided support to the hypothesis that the bilingual input itself is sufficient for the development of distinct mental representation of each language, without invoking separate processing mechanisms for different languages.

Along the same line, Zhao and Li (2007, 2010) further studied the development of bilingual speakers' lexical representation based on a model called DevLex (*Developmental Lexicon*). Unlike previous connectionist language acquisition models, DevLex and DevLex-II models are a set of large-scale multilayered, unsupervised, SOM-based models of language development (Li, Farkas, & MacWhinney, 2004; Li, Zhao & MacWhinney, 2007). The DevLex-II model was originally developed to capture first-language acquisition phenomena such as vocabulary spurt and lexical confusion (Li, Zhao, & MacWhinney, 2007). It includes three SOM maps responsible for representing the phonological content, semantic content, and output sequence of the lexicon, respectively. Through self-organization principles and Hebbian learning (see discussion above under Learning Rules), DevLex-II simulates word comprehension via phonology-to-meaning links and word production via meaning-to-sequence links. The model was trained to learn 1,000 English and Chinese words, with different onset times for the learning of the second language (L2, either English or Chinese) relative to that of the first language (L1, either Chinese or English). Our modeling results indicate that when the learning of L2 is early relative to that of L1, functionally distinct lexical representations may be established for both languages. This finding is similar to that of French (1998). However, when the learning of L2 is significantly delayed relative to that of L1, the structural consolidation of the L1 lexicon prevents the L2 from establishing distinct and independent lexical representations.

The findings from DevLex-II provide a computational account of the age of acquisition effect by reference to the dynamic interaction and competition between the two languages (see Li, 2009, for review and discussion). Instead of using age (and the maturational changes that accompany age) as the basis of the critical or sensitive period of language acquisition, our model points to the cascading effects of learning across developmental times as the explanatory mechanism underlying critical-period effects. The reduced plasticity in L2 learning could be seen as the result of structural changes due to the learning system's experience with L1, in that L1 consolidation adversely impacts the system's ability to reorganize and restructure L2 relative to L1. Consistent with this idea, a recent modeling work by Richardson and Thomas (2008) systematically evaluated the conditions under which critical-period effects may be observed in a SOM-based neural network. Their simulations suggest that the emergence of critical periods depends on a range of factors, such as representational resources, organizational structure, learning parameters, and the similarities between early and late training sets. When the new knowledge and old knowledge are similar, their model shows smaller critical-period effects; when the two are sufficiently different, the effects are more salient.

Conclusion

It has become increasingly clear that language can no longer be studied as an abstract innate mental entity as has been traditionally advocated (Chomsky, 1988). Connectionism argues in favor of a computational approach to the complexities associated with the dynamical interactions of the learning system with the linguistic environment (MacWhinney, 2001). The idea that complex human linguistic behavior can emerge from simple neural-chemical processes may appear at first implausible, but connectionism has demonstrated that this is not only biologically plausible but also psychologically real: parallel distributed

information processing carried out by large-scale networks of interconnected neurons can account for the form–meaning mapping process in speech perception and speech production, as well as in language acquisition. In this perspective, we can consider rules of language as the product of neural network processes in the long human evolutionary history, in much the same way as a hexagonal structure emerges from simple acts of honeybees packing small amounts of honey into the honeycomb from multiple directions (Bates, 1984). Learning of a second language entails complex cognitive and linguistic constraints and interactions, and connectionist models provide insights into how these constraints and interactions may be realized in the natural learning context.

SEE ALSO: Bilingualism and Cognition; Competition Model; Critical Period; Emergentism; Vocabulary Acquisition in Second Language Acquisition

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Connectives

MARINA BONDI

Connectives (or *connectors*) (French *connectif/connecteur*, Italian *connettivo/connettore*, Spanish *conector*, German *Konnektor/Konnektiv*) are a key feature of language in use and have been studied from many different points of view—syntactic, semantic, pragmatic, and cognitive. Connectives can be preliminarily defined as language elements whose main function is to connect utterances or text units, linking prior and subsequent information. Realized prototypically by conjunctions (*and*, *but*, *if*), they may be seen to cut across the whole spectrum of word combinations, including prepositional phrases (*in addition*), adverbials (*furthermore*), and clauses (*what's more*). Connectives can thus be studied both as functional sentence elements and as elements of a textual or discourse grammar. At sentence level, they connect words, phrases, or clauses. On the level of text and discourse, they may be seen to express or establish semantic or pragmatic relations between textual or discourse units.

Different approaches to connectives direct attention to different aspects, ranging from meaning relations to interactional aspects and cognitive features, argumentational value, language change, and cross-cultural elements.

The word *connective* owes much to the related notion of "logical" or "truth-functional" connectives (or operators) in logic and formal languages. Logical connectives are a set of expressions acting as truth functions. Examples would be: *and* (expressing conjunction), *or* (inclusive or exclusive disjunction), *implies* (implication), *if . . . then* (implication), *if and only if* (equivalence), and so forth. In formal languages, they can be represented by unambiguous symbols: conjunction ($\wedge$ or &), disjunction ($\vee$), material implication ($\rightarrow$), and biconditional ($\leftrightarrow$, $\equiv$, or =). In natural language, the relations they represent are not limited to connecting propositions and are typically realized by a wide range of expressions.

In applied language studies, the interest in this wide class of units originates from the development of textual grammars and discourse analytic approaches in the 1970s and 1980s. With the notions of text and discourse, attention is brought to those very language elements—such as connectives or pronouns—that cannot be explained simply within the boundaries of the sentence. The study of textual cohesion and coherence looks at elements that reach beyond traditional grammar units like the clause or the sentence (Halliday & Hasan, 1976; van Dijk, 1977; Ducrot, 1980; Roulet, Auchlin, Moeschler, Rubattel, & Schelling, 1985). Halliday and Hasan's study on cohesion (1976), in particular, has been very influential in establishing an interest in connectives as giving "texture," or unity, to texts. An extensive section is devoted to conjunction, where a set of disparate grammatical categories are identified as "*connectors*," that is, expressions that link clauses or sentences to each other in discourse.

Pointing to a text-functional semantics, Halliday and Hasan's definition of cohesion concerns discourse relations above grammatical structure, thus excluding coordination and subordination. Conjunction is classified according to the semantic relations established by connectors into four main types, related to four main notions: addition (including additive and alternative relations, as well as exemplification and comparison), contrast (ranging from adversative "proper" to contrast, correction, and dismissal), causality (including cause, means, purpose, condition, and respective relations), and temporality (including successive and simultaneous relations) (Halliday & Hasan, 1976, pp. 238–66).

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Later developments of systemic functional linguistics confirm a view of cohesion as discourse semantics, that is, meaning beyond the clause. The basic relations are still described as "four kinds of logic" or "logical relations" in recent models of analysis (e.g., Martin & Rose, 2003, pp. 110–12). Some degree of consistency in spelling out the types of relations expressed may also be found in other approaches.

Approaches such as rhetorical structure theory have also paid great attention to the relations established between discourse units and produced systematic mappings of discourse relations. Their interest, however, lies more in the relations themselves than in the lexicogrammatical signals.

The wide array of formal realizations of the elements that are used in actual discourse to connect textual units makes it impossible to say they meet certain syntactic criteria. Most approaches recognize at least three sources: conjunction, adverbs, and prepositional phrases (e.g., Fraser, 1999, p. 943). The reason for choosing a connective is obviously semantic—the relation that needs to be expressed (e.g., "cause")—but the choice of a grammatical structure is also important from a textual point of view: a subordinate clause will help treat the two units (e.g., cause and effect) as a single idea, whereas coordination will present the two units as equally important. Separate sentences might also be linked by sentence adverbs or other connectors. The order of elements can be the determining factor in explaining the choice of one form or another, especially in as far as word order contributes to information (given new) structures.

It should be noticed, however, that connectors are multifunctional and a single connective can express different kinds of meanings. A conjunction like *and*, for example, can be used to indicate addition ("American historian-autobiographers have usually been unaware of each other's publications, *and* they do not refer to any common theoretical framework"), cause/condition ("Subscribe *and* get 4 issues free"), and time sequence ("When a massive star runs out of fuel at the end of its life, it collapses *and* explodes").

When considering the "linking system" as a whole, it is important also to consider implicit connections, that is, links that are not marked explicitly. We can think of a zero-realization or nonrealization of connectives (see also Lenker & Meurman-Solin, 2007). In "Subscribe. Get 4 issues free" the conditional meaning would be still inferable from the context.

The category of connectives, on the whole, seems to blur the distinction between grammatical words like *and* or *but* and lexical patterns like *in addition to that* or *what's more*. It is possible to say with Aijmer (2002, pp. 16–19) that even when they originate in complex lexical patterns, connectives—like most pragmatic markers—can be treated as distinct from most lexical items: they are somewhat "grammaticalized" (Hopper & Traugott, 1993) through time—they become more constrained morphosyntactically and function as indivisible units. The process can be illustrated diachronically through the change from clause-internal adverbial to sentence adverbial and discourse marker, as shown, for example, by Schwenter and Traugott (2000) in the case of *in deed* becoming *indeed*, epistemic sentence adverb and marker of elaboration or clarification.

Connectives are seen as relational and organizational units from a textual and pragmatic point of view, acting as instructions for the reader/hearer in many cognitive or semantic approaches. The nature and scope of the relations, as well as the multifunctionality of connectors in general, are not clearly agreed upon in the literature. The class itself is more often defined in terms of a core and periphery (Pons Bordería, 2008) rather than in terms of necessary and sufficient conditions. Items assume different degrees of connectivity and can be shown to have many other functions.

The textual perspectives developed by text linguistics and discourse analysis have also inspired studies on discourse production and comprehension. One of the most interesting areas in focus has been that of metadiscourse, discourse about the evolving discourse.

Connectives are presented as one of the main categories of metadiscourse already in Vande Kopple's classification system (1985), where they are clearly identified as part of textual metadiscourse, showing the connection between parts of a text, whereas in Crismore, Markkanen, and Steffensen (1993) "logical connectives" are limited to coordination of main clauses. Later models (e.g., Hyland, 2005) show increasing awareness of the multifunctional nature of connectives, while also clarifying that the status of connective does not in itself guarantee metadiscursive status (Ädel, 2006, p. 22).

Terminological Debate

The debate on connectives is complicated by terminological instability and by the complexity of the relations of these elements of textual grammar with the rapidly developing fields of semantics and pragmatics. The terminological debate is clearly related to the centrality of connectives in text organization, production, and comprehension, as well as to their inextricable link with different approaches to grammar, semantics, pragmatics, and cognition.

Problems arise soon in differentiating "connectors" (Halliday & Hasan, 1976), "discourse connectives" (Blakemore, 1987), and "discourse markers" (Schiffrin, 1987), and later also "pragmatic markers" (Aijmer, 2002), "discourse particles" (Fischer, 2006) or—in the German tradition—"pragmatic particles." Discourse markers are sometimes almost identified with connectives as defined above. Fraser, for example, calls discourse markers those elements that signal "a sequential relationship between the current basic message and the previous discourse" (Fraser, 1990, p. 383), or that "function like a two-place relation" (Fraser, 1999, p. 938), while excluding other pragmatic markers such as commentary markers, focus particles, and so forth. The relations expressed can refer to discourse units, as well as topics, and their basic meanings recall other definitions of connective relations (elaboration, contrast, inference, or temporality). Other linguists refer to discourse markers as a hyperonymic class of elements including connectives, modal particles, interactive markers, and so forth (e.g., Pons Bordería, 2008). Some look at connectives and discourse markers as a complementary class of markers, expressing respectively relations between units and modal relationships between the speaker and the message.

In general, when a distinction is made, or when the word "connective" is used to indicate the field in focus, the interest is on the connecting, coherence-establishing function of elements. Connectives are found in both written and spoken utterances; they tend, however, to be variously integrated into the discourse and to involve different "conversational" aspects such as topics or activities (Fischer, 2006, pp. 8–11). This will normally mean that there is the need to provide a picture of connectives that should be consistent with both the general field of discourse or pragmatic markers and long-standing grammatical analyses of conjunction within and between sentences. The need to integrate syntactic, semantic, and pragmatic analysis seems to be central to many different theoretical frameworks (Celle, 2007).

Semantics and Pragmatics: Multifunctionality of Connectives

Studies of connectives have often highlighted the problems of distinguishing semantic from pragmatic meaning in their use (Halliday & Hasan, 1976; Schiffrin, 1987; Fraser, 1990, 1999). Given the range of elements included and the complexity of semantic and pragmatic functions, attempts to arrive at a functional typology or to provide an account of meaning relationships have been accompanied by an awareness that categories may be overlapping and that many connective elements may have different functions at the same time.

One of the first issues of debate raised in the study of connectives is the nature of the relation expressed on the semantic and pragmatic levels. The distinction between external

and internal conjunction, introduced by Halliday and Hasan (1976), is particularly clear in some areas of meaning. Temporal conjunction, for example, may easily distinguish relations between events talked about, as expressed by time adverbials in a narrative (*then*, *previously*, *meanwhile*), and relations between parts of a text, as in enumeration (*firstly*, *secondly*, *finally*). Additional relations, on the other hand, can be very fuzzy from this point of view and signal a relation that works both at the level of the experience represented in discourse and in the development of discourse, as in the following statement supported by two arguments "These editions are valuable, but they have their limitations. . . . They cover only parliaments, not conventions of estates. *And* they contain errors and omissions." Most approaches to connectives, however, tend to distinguish the two functions—organizing the experience represented in a discourse sequence and organizing discourse as such.

Ducrot (1980, p. 16) adds an "enunciative" perspective, while looking at two different types of *mais* ('but'), those expressing a contrastive meaning that derives from "facts," and those contrasting speech acts. Ducrot's work introduces two elements that will have fruitful developments in semantics: an instructional view of meaning and a study of implicit meanings. Connectors are seen as linking language units and giving readers/hearers instructions on how to interpret the relation between the semantic units connected.

Schiffrin (1987) studies the relationship signaled by *but* in terms of both ideational (referential, derived from "facts") and interactional content and establishes a model that looks at three types of structure: ideational content, verbal action, and exchange structure. Her study of *but*, for example, distinguishes its use for referential contrast, functional contrast, and contrastive actions, that is, "speakers' efforts to make a point in reaction to interruptions, distractions, challenges, and disagreements" (Schiffrin, 1987, p. 177). She concludes that the semantic meaning of *but* is contrastiveness and the pragmatic meaning is speaker-return, which has an expressive function of point making, but she also admits that the connector can mark all of three types of contrast simultaneously.

In relevance theory (and related cognitive approaches) connectives are defined in a strict sense, as elements that constrain the inferences that can be derived between two propositions (Blakemore, 1987). Attention is thus paid to the reader/hearer's perspective, rather than to the text itself. Debate originates from the distinction between conceptual elements (words encoding a concept, information about the conceptual representations to be derived from a proposition) and procedural elements (instructions regarding how to process a concept) (Wilson & Sperber, 1993, p. 2). Connectives are identified as procedural elements, encoding procedural constraints on the inferential phase of comprehension (Blakemore, 1987; Wilson & Sperber, 1993, pp. 19–21).

The distinction between procedural and conceptual has recently been presented as gradable, with connectors expressing different degrees of strength of conceptual and procedural coding (Moeschler, 2002, p. 277), while maintaining the function of linking mental representations of experience, sequencing them, and making explicit the relation between them.

Pragmatic interest in different degrees of explicitness/implicitness in utterances is reflected in many approaches. Fraser (1990, 1999), for example, while focusing more explicitly on a grammatical-pragmatic perspective and looking at discourse markers as signals of the relations between the utterance preceded and followed by the signal, also shifts the emphasis from the speaker to the hearer's interpretative activity. The hearer has to find whether the relation expressed is with the direct message of the previous textual segment or with any of the implicit meanings realized, whether implicit assumptions, logical implications, or conversational implicature.

Studies of individual connectives have also often debated the issue of their "core meaning," variously emphasizing the functional role of connectives, to be seen as instructions for interpretation (Aijmer, 2002), or their invariant semantic properties (Rossari, 2000).

The picture of multifunctional units is further complicated when attention is paid to the multifarious nature of the units related by connectives. What exactly do connectives connect? On the one hand they may be seen to designate the relationship between propositional units or mental representations of experience. On the other hand, they may connect a wide range of elements in discourse (Schiffrin, 1987). Rehbein, Hohenstein, and Pietsch (2007, p. 4) identify a long list of "dimensions" that can become either the starting point or the target point of a connective: the constellation (speech situation), the utterance act, the illocutionary act, the propositional act, knowledge, other mental processes (e.g., evaluation, planning, etc.), and cooperation (interaction-management).

A Range of Perspectives

In a discourse perspective, Roulet et al. (1985) use "connecteurs" to refer to markers of the structure of discourse and group them according to their argumentative functions: argumentative, counter-argumentative, consecutive, and reevaluative. The study of connectors proves to be an interesting area of convergence of discourse analysis and argumentation studies. *L'argumentation dans la langue* (*Argumentation in language*) (Anscombre & Ducrot, 1983), in particular, has a special interest in the topic and aims at discovering argumentative instructions in connectors. The approach shows for example that some contrastive relations can best be explained with reference to the argumentative dimension of some common or shared knowledge called *topos*, which is part of our stereotyped encyclopedic knowledge and is shared by speakers of a language, as well as those sharing the same culture or way of thinking.

More recently, a growing body of studies has been based on the analysis of corpora, that is, principled collections of authentic instances of language in use. Corpus work has introduced further descriptive possibilities and interest in both diachronic (see, for example, Lenker & Meurman-Solin, 2007, for a range of approaches) and synchronic perspectives (Aijmer, 2002). Corpus-based analyses can complement more intensive studies of particular texts, and vice versa. Text and discourse studies can be built upon when closer analysis of particular instances of communicative events is integrated with quantitative data from wider textual bases. These provide the necessary background and support to textual interpretation, for example, by analyzing co-occurrence patterns that characterize specific genres or texts, or diachronic interpretation, for example, tracing the path to grammaticalization.

Distributional patterns across registers are analyzed, for example, in Biber, Johansson, Leech, Conrad, and Finegan (1999), under the headings of linking adverbials, coordinators, and subordinators. Quantitative analysis shows, for example, that linking adverbials are "considerably more common in conversation and academic prose than in fiction and news" (p. 880). Information is also offered on the semantic categories that characterize different registers or genres, showing, for instance, that academic prose is distinguished by intensive use of enumerative/additive/summative adverbials, while news presents the lowest level of contrastive/concessive adverbials.

Diachronic studies, on the other hand, look at connectives from the point of view of language change. Descriptive work focuses on the development of individual connectives or types of connectives, such as relative pronouns, time adverbials, or concessive connectives in general (Lenker & Meurman-Solin, 2007).

Crosslinguistic analysis is also becoming prominent in the field. It is concerned with establishing correspondences across languages, while often aiming at tackling typological questions and finding discourse universals. Connectives may operate at several linguistic levels, often showing that the same function is expressed lexically in one language and grammatically in another. Complete equivalence, however, is not the rule. The study of

parallel translation corpora can contribute to giving a picture of the multifunctionality of connectors, as well as to establishing a network of semantic relations between them in terms of their closeness to or remoteness from each other in the semantic space (Dyvik, 1998). The integration of functional and formal perspectives in the study of a wider semantic field is often regarded as more reliable and more rewarding than research based on a single language (Aijmer & Simon-Vandenbergen, 2004).

The empirical study of non-native-speaker language is adding a further perspective to applied studies on connectors (see Granger & Tyson, 1996, for an early example). Muller (2005) reviews the relation of a range of applied interests to the study of connectors: second language acquisition, communicative competence, interlanguage pragmatics, and the study of learner corpora. These can be shown to have great potential interest in studies on how connectors are acquired by non-native speakers and the respective role of overuse, underuse, and misuse.

SEE ALSO: Corpus Linguistics: Overview; Discourse Markers; Halliday, M. A. K.; Hasan, Ruqaiya; Inference and Implicature; Learner Corpora; Metadiscourse; Pragmatic Markers; Pragmatics in the Analysis of Discourse and Interaction

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Content and Language Integrated Learning

DAVID MARSH AND MARÍA JESÚS FRIGOLS MARTÍN

Introduction

Content and language integrated learning (CLIL) is a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. CLIL involves the use of language-supportive methodologies leading to authentic learning where attention is given to both the topic and the language of instruction. "Achieving this twofold aim calls for the development of a special approach to teaching, in that the nonlanguage subject is not taught *in* a foreign language but *with* and *through* a foreign language" (Eurydice, 2006, p. 8).

CLIL represents a holistic approach to learning which is heavily cognitive-based and which draws on an interplay of the theoretical foundations of constructivism and second language acquisition. In Europe it can be found at all levels of compulsory education. Most commonly found in secondary education, it has in recent years become a significant activity at primary level. There is little CLIL implementation reported in tertiary education.

Often carried out through interdisciplinary modules led by content and language teachers, or primary-level class teachers, the amount of time given to CLIL within the curriculum tends to remain low. Globally, the most common vehicular language is English, and in Europe there are increasing signs that CLIL is being adopted for the learning of other languages.

The Origins of CLIL

During the 1990s, the European Union was experiencing the triple pressures of integration, expansion, and modernization. Whilst multilingualism (the ability of citizens to speak different languages) acted as one of the pillars of European integration, education became a focal point for innovation, particularly as regards adjustment to the demands of the emerging information age.

Throughout this decade there was transnational recognition that a delivery gap existed between what was being provided in many countries as language learning and outcomes in terms of the ability of citizens to actively use these languages in their lives (see European Commission, 1995). There were language barriers identified (see European Commission, 1996) which were hindering the development of multilingualism and, consequently, undermining some of the goals of European integration.

Educational expertise in different disciplines, including additional language learning, became actively engaged in exploring different pathways by which to prepare young people for their future lives in information-rich environments. One example of this quest for pragmatic change was the 2007 formalization of a recommendation for all the European Union member states on "Key Competences for Lifelong Learning" (European Commission, 2007).

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Following a four-year period of interdisciplinary and transnational expert dialogue, the term "content and language integrated learning" (CLIL) was adopted in 1994 and launched formally in 1996 (see Marsh, 2002). It designated a distinct range of methodologies that suited contexts where education was given in a language that was not generally the first language of the students involved. This included situations where students would be learning a foreign language, but also covered the learning of regional, minority, and heritage languages. The theoretical basis, and practical application, of CLIL was later recognized as applicable to contexts where students, often from migrant backgrounds, needed to accelerate their ability to learn through the majority language of the school (see Anderson, 2008, 2009).

In the early 1990s, initial support was given by the European Commission to expert organizations, initially in Finland (University of Jyväskylä) and the Netherlands (European Platform for Dutch Education) for a twofold purpose. First, to develop ways of articulating the principles of CLIL to the wider educational world, particularly in relation to language teaching and learning. Second, to develop a community of practice across the countries of the European Union, and beyond. This latter goal, which has actively attracted investment to the present day, is significant in enabling an understanding of how CLIL emerged and why it has continued to spread widely since the first two attempts to monitor and report on the situation were published (see Eurydice, 2006; Wolff, 2009).

During this period it was recognized that significant educational achievements in the simultaneous learning of language and content subjects had been made in different countries across the world. Examples could be found in relation to immersion (e.g., Canada and Catalonia), content-based language instruction (e.g., USA and Southeast Asian countries), bilingual education in European regions (e.g., Wales and the Valle d'Aosta region of Italy), and a range of highly context-specific educational environments such as border and international schools.

The use of differing terms to describe educational practices that had similar methodological approaches was found to be commonplace. The strategic development of CLIL in the 1990s involved searching for and identifying commonalities of good educational practice within and across different geographical and social contexts, and establishing bridgeheads by which these could be taken into mainstream education for the benefit of large cohorts of students.

The origins of CLIL were essentially organic and directly linked to the adaptation of educational life during the rapid emergence of the information age as it permeated home, school, and working life. Now, some twenty years later, the term is no longer viewed as a particularly European phenomenon and has spread globally.

The Emergence of CLIL

The emergence of CLIL in the 1990s can be linked to the language awareness movement which was developed in relation to both first and second language learning during the 1980s (Hawkins, 1984; Donmall, 1985).

Proponents of language awareness attempted to seek commonality of interest between those involved with first and second language teaching, and promote the curricular concept of "languages across the curriculum" (Barnes, Britton, & Rosen, 1969). Much of this early work was carried out in the United Kingdom on social inequalities and low standards of literacy in the first language (Davie, Butler, & Goldstein, 1972).

Language awareness is highly relevant in understanding why CLIL has continued to take root as in an age characterized by social, technological, and educational convergence.

One key feature of the new technologies which links to CLIL is that they involve social learning, are primed for the use of constructivist methodologies, and have become part of the connectivity lifestyle of young people.

The shift toward embedding features of language awareness into language-learning curricula was often hindered by time pressures. Language teachers can expect to achieve only modest outcomes with a broad cohort of learners if limited time is available within the curriculum. The early development of CLIL was characterized by the search for a complementary extra platform for developing language learning. "CLIL enables languages to be taught on a relatively intensive basis without claiming an excessive share of the school timetable" (Eurydice, 2006, p. 9).

This "extra space" enabled specific forms of methodology to be used to achieve goals not attainable within a time- and resource-restricted language-learning slot in a curriculum. The methodologies have developed into a form of education that surpasses "language learning," and which enables learners to experience integrated "language-acquisition-rich" learning environments. Use of these methodologies results in moving beyond linguistic goals that are predominantly utilitarian toward those that are essentially pragmatic.

CLIL is inspired by "important methodological principles established by research on foreign-language teaching, such as the need for learners to be exposed to a situation calling for genuine communication" (Eurydice, 2006, p. 9). And as noted by Wolff (2009, p. 560), "The experience (of CLIL) shows that both linguistic and content subject competence can be promoted within this integrated concept more effectively than when content and language are taught in isolation."

Now we briefly outline some of the major drivers that underpin the relevance and adoption of this educational approach.

Consolidation of Insights From the Educational Sciences

The theoretical basis of CLIL is not exclusive to any single domain. In Europe, it has often been the case that practice has preceded research, but such practice has been grounded in research insights that draw on diverse traditions and sources. CLIL is interdisciplinary, and as such it is not restricted to any single evidence base or theoretical tradition.

However, there are certain fields that directly apply to the language-learning aspects of CLIL practice. These are language awareness (LA), second language acquisition (SLA), psycholinguistics, and foreign-language learning (FLL). There are others, which relate to education in general, or subject-specific learning contexts, that apply to the design of CLIL methodologies. The most obvious of these are the philosophical underpinning and research traditions of learning theory (LT) such as constructivism and cognitivism.

As Wolff (2009) observes, CLIL "is at the interface of a number of academic disciplines which can result in controversies arising from differing perceptions, particularly in respect to terminology" (p. 563). The term "second language acquisition" is a classic example of a field that involves sometimes quite polarized orientation, and even diverse understanding of key terminology (see Doughty & Long, 2003). CLIL itself is prone to diverse forms of terminological misinterpretation, and this has further complicated the establishment of links between separate research traditions.

The relevance of insights from such different fields depends partly on the scale, scope, and type of CLIL model being implemented. These models differ widely (see Wolff, 2009), even if they utilize very similar core principles (see Marsh, 2002). The level of diversity often makes generalization and transfer of research insights problematic. This is particularly the case where specific forms of language development such as phonology are studied in situ without regard for other performance-based aspects of language competence.

The dual-focused learning objectives of CLIL mean that insight into its theoretical foundations need not only include but also go beyond domains mainly involved with language acquisition and learning. Consolidation of an understanding of CLIL also needs to reach out to modern cognitive theories. These assume that people learn by interacting with their environment, and that this process "which involves both the person's previous knowledge and the environmental stimuli is seen as a constructive process. During this interactive process new knowledge is constructed and learned, and then integrated into the previous knowledge. The results of such knowledge constructions are always more than the sum of the environmental percepts; they are new concepts that cannot be foreseen. So learning is not adding information to information already stored, but constructing new knowledge." (Marsh et al., 2009, p. 13). The co-construction of knowledge, of both content and language, is a key theoretical precept in understanding the educational benefits that are reported as surfacing through the implementation of CLIL (see Baetens Beardsmore, 2008). It is these benefits, often anecdotally reported at the outset, which have been one of the most significant driving forces for the uptake of CLIL.

Convergence of Insights From the Neurosciences

The field of neuroscience has developed as a separate discipline over the past thirty years. Since 2000, it has expanded due to ongoing advances in neuroimaging and other technology enabling researchers to look inside the brain to an unprecedented degree.

Research is increasingly examining whether knowing and using more than one language has a structural or otherwise positive impact on thinking and the brain (see Marsh et al., 2009). Dietrich comments that "advances in cognitive neuroscience in just the past two decades . . . have been breathtaking and they have brought unprecedented understanding and predictive power about how the mind works" (Dietrich, 2007, p. 27). The outcomes of studies conducted over the last forty years in largely nonlaboratory settings are dovetailing with recent findings often involving use of neuroimaging techniques conducted in laboratory settings. This is now enabling a breakthrough in understanding what happens within the mind and brain when a person learns or uses more than one language. This has important implications for education in general, and especially CLIL (see Bialystok & Petitto, 2010).

One of the significant findings is that changes in the brain's electrical activity may occur much earlier than previously thought. Osterhout et al. report that "preliminary results from three studies indicate that classroom-based L2 instruction can result in changes in the brain's electrical activity, in the location of this activity within the brain, and in the structure of the learners' brains. These changes can occur during the earliest stages of L2 acquisition" (Osterhout et al., 2008, p. 510).

It has often been assumed that impact on the mind and brain would only be found if a person has a very high command of different languages. But studies such as Osterhout et al. (2008) suggest that changes in the brain may start even in the earlier stages of language learning. This has implications not only for recognizing the value of partial language competences, but also for understanding why certain approaches such as CLIL appear to lead to positive learning outcomes. The impact on the brain of knowing a second language, especially in relation to certain neural advantages, is increasingly being considered in relation to CLIL-type educational provision. Coggins, Kennedy, and Armstrong (2004) argue that it is "possible that bilingual learning can have a profound effect on brain structures" (p. 73).

The cognitive neurosciences stress the need for powerful learning environments. Yet for various reasons not enough language education is spent encouraging learners to engage

in higher-order thinking about meaningful content. There is now an intersection between the neurosciences and education, which acts as a driver in developing innovative approaches to learning such as CLIL. "After two decades of pioneering work in brain research, the education community has started to realize that understanding of the brain can help open new pathways to improve educational research, policies and practice" (OECD, 2007, p. 13).

Demand for English Language

Globalization has led to a demand for greater access to the English language (see Graddol, 2006). This has led to educational providers examining different ways of improving levels of English-language competence. One option considered involves the learning of nonlanguage content subjects through English. This has led to an expansion of schools and colleges that teach all or part of the curriculum through the medium of English. This shift toward teaching in English has raised discussion over what types of educational methodologies need to be applied if schools are to be successful.

Educational contexts differ with respect to the role of English outside the classroom and the types of exposure that learners have, which may be very high (e.g., Scandinavia) or low (e.g., Ethiopia). The adoption of "blueprint models" which may work in one country (e.g., immersion in Canada) is rarely desirable, and this has led to attention being given to what types of "language-supportive" methodologies might be both accessible and relevant in local contexts.

Demand for the Learning of Other Languages

CLIL-type educational provision is used for the teaching and learning of regional, minority, and heritage languages across the world. It is by no means restricted to English even if current indicators (in Europe only) show that English is the most commonly adopted vehicular language (Eurydice, 2006). It is an educational approach that is adopted to suit educational policies which aim to develop specific languages (e.g., within certain autonomous regions of Spain).

Internet-Based Networking

Internet-based networking is becoming an increasingly significant lifestyle phenomenon across many societies in the world, particularly amongst the younger generations. Countries obviously differ with respect to the use of multimedia technologies in education, but networking is an ongoing new development which has a bearing on education, including the learning of languages.

A study on the use of computers in European primary schools (Balanskat, 2009) shows that during 2008/9 some 75% of Europe's primary teachers used computers in school, and all 30 countries reported investment in teachers' digital competence development. The same report suggests higher figures for European secondary education. One feature of having access to computers and the Internet is the social capital to be gained when groups of students and individuals engage in networking.

Increasingly low technology costs and adoption of a common language enables CLIL to promote communication between schools and students through projects and exchange on an unprecedented scale. As networking becomes frequent in the lives of young people outside the school, there is pressure to introduce educational networking techniques for the purposes of curricular learning (see Rufer-Bach, 2009). In international linkage, access to a shared language is a key factor in enabling this to happen.

Competence-Based Education

Information-rich Internet-based societies require educational systems that develop specific types of competences. In Europe, amongst other regions, there is an ongoing shift toward competence-based education, which focuses on the ability to use knowledge, skills, and personal abilities in different contexts (see European Parliament, 2008). The constructivist basis of CLIL leads to learning outcomes that can be heavily competence-based in relation to both "knowing" and "doing."

The Key Competences for Lifelong Learning in Europe Framework (European Commission, 2007) is one example of such an attempt to influence educational systems and the curricula. The recommended key competences for lifelong learning concern communication in the first and additional languages; mathematical, scientific, and technological competences; digital competences; learning skills; interpersonal, intercultural, and social competences; entrepreneurship; and cultural adaptability. Objectives of competence-based education such as these directly complement those of CLIL practice, particularly with respect to communication and learning skills.

Counterforces to CLIL

Issues that have been articulated against the implementation of CLIL have been mainly sociopolitical rather than educational. These have generally been linked to concerns about adoption of English as a medium of instruction, and an understanding that CLIL is a conduit for strengthening the spread of English language to the detriment of other linguistic or cultural interests (Marsh, 2002).

Protection of national languages (e.g., in Iceland, the Netherlands, Norway, Slovenia, Sweden), and nationalism (e.g., in Malaysia), have led to political discourse and actions which have hindered the development of this type of educational approach.

Another issue concerns cultural and linguistic diversity, often resulting from migration (e.g., in the USA), which has led to increased efforts to teach the national language to young people, and with a reluctance to allow additional languages to be used as a medium of instruction.

Finally, administrative (especially intraministry), international political agencies (e.g., those that seek to promote national interests), and professional bodies (e.g., the language teaching and learning industry) may seek to block the principles of curricular integration so as to protect vested interests and avoid influencing the status quo. As Mehisto suggests, "CLIL programme implementation often causes disjuncture—a tension between one's current way of doing things and a new approach" (Mehisto, 2008, p. 109).

Research Insights on CLIL

Wolff (2009, p. 550) suggests that "CLIL is a practically oriented educational approach for which, until recently, researchers did not show much interest." In Europe, CLIL practice has often preceded research.

But the increasing presence of CLIL-type provision in educational systems, both in Europe and in other parts of the world (e.g., Colombia, Malaysia, Singapore), as well as the interest of the European Commission to support CLIL implementation as a means to foster multilingualism (see European Commission, 2003), has led to a growing need to analyze its impact on learning processes, results, and contexts.

CLIL has recently emerged as a distinct area of interest for researchers who have previously depended on studies in second language acquisition (SLA), bilingualism, foreign-language learning (FLL) and applied psycholinguistics for achieving understanding.

Navés and Victori (2010, p. 25) observe that "just as with most of the CLIL programmes implemented so far—which tend to be of an experimental nature—most of the research done up to now may also be characterized as being exploratory." To date, much of the available evidence has been anecdotal and generated by small-scale studies. There is common agreement among researchers (e.g., Lasagabaster, 2008; Wolff, 2009; Navés, 2009, among others) on the need for more empirical research on CLIL.

Existing evidence has been gathered across countries and regions, using different research methods and tools, on diverse aspects of CLIL implementation (see Seikkula-Leino, 2007; Lasagabaster, 2008; Navés, 2009; Ruiz de Zarobe & Jiménez Catalán, 2009; Wolff, 2009; Navés & Victori, 2010).

Research has generally been on language learning within CLIL. However, other aspects of CLIL such as acquisition of content subject competence, development of mother-tongue literacy skills, learner autonomy, affective learning factors (motivation and self-esteem), and cognitive development, are increasingly being reported.

Future Trends

Given the complexity of international educational comparisons and the ongoing unfolding expansion of interest in CLIL, it is only possible to provide some conjecture on the future of this educational approach.

There is an increased demand for English language in many countries, which may lead to greater adoption of this language as a medium of instruction (see Graddol, 2010). There is also greater understanding of the types of educational methodologies that need to be applied if schools are to successfully teach (partly or otherwise) through the medium of English as an additional language.

Global competition between universities and research institutes will involve increasing numbers of degree programs being taught through the medium of English language. This may lead to more secondary level schools opting to prepare students through partial teaching of academic subjects through the medium of English.

There is increased pressure for systemic structural change in certain educational systems to adapt to the social and technological changes in the wider environment (in Europe and elsewhere). This change involves moving educational practice away from "transmission models," which have stubbornly remained commonplace, toward constructivist participatory modes of learning. CLIL may act as a catalyst for change in this respect (see Mehisto, 2008).

Focus on learning sciences and brain research will expand (due partly to the current trends seen in OECD countries, and particularly in respect to the OECD Programme for International Student Assessment—PISA) which may lead to national initiatives exploring the link between understanding of the brain and educational practice. This may focus on the significance of competence-based learning through constructivist methodologies within situated collaborative environments. These mirror good CLIL practice, and are likely to lead to recognition that CLIL provides good learning environments for both content learning and language development.

Finally, perhaps the most significant ongoing development concerns what is termed Learning 2.0. New technical solutions that emphasize social learning through networking are likely to become increasingly developed and accessible. Partnerships between technical

providers, publishers, and educational agencies are likely to generate opportunities for learning, both within and outside the classroom, which could complement existing forms of CLIL implementation.

SEE ALSO: Bilingual and Multilingual Education: Overview; Council of Europe Language Policy and Planning; Curriculum Development in Multilingual Schools; Immersion Education; Innovation in Language Teaching and Learning; Integration of Language and Content Learning; Minority Languages in Education; Multiculturalism and Second Language Learning; Multilingualism and English; Reading and Content Area Learning; Writing and Content Area Learning

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Content-Based Instruction in English for Specific Purposes

DONNA M. BRINTON

The field of teaching English to speakers of other languages (TESOL) abounds with a veritable "alphabet soup" of acronyms: English language teaching (ELT), English-language learners (ELLs), English for general purposes (EGP), English for academic purposes (EAP), English for specific purposes (ESP), and content-based instruction (CBI), to name just a few. ESP is particularly rich in acronyms that describe its various subdisciplines: English for science and technology (EST), English for business and economics (EBE), English for legal purposes (ELP), English for medical purposes (EMP), English for occupational purposes (EOP), and so on.

Confusion and Boundary Disputes: EAP? CBI? ESP?

It is understandable that those who first enter the field of applied linguistics may feel lost in this alphabet soup. And those of us who teach courses in TESOL methodology spend a considerable amount of time explicating the meanings of acronyms such as English as a foreign language (EFL), English as a second language (ESL), English as an additional language (EAL), and the like. However, even more weathered veterans of the field may pause to ponder the differences between the closely related "cousins" ESP, EAP, and CBI and ask "Where are the boundaries?" As we will see in this entry, this confusion relates to the tendency of ESP and CBI to encroach upon each other's territories. The confusion engendered as a result is made all the more marked by competing claims in the literature about where the boundaries between these two territories lie. To begin resolving the dispute, let's first look at several instructional scenarios:

1. At Lakeridge Elementary School, teacher Tarry Lindquist uses social studies as a core of her fifth grade classroom, integrating aspects of science, reading, language arts, and art into the core curriculum. For example, at the beginning of the school year, students read legends and stories about First Americans (language arts), studied hunters and gatherers and the land bridge theory (social studies), learned about stewards of the earth (science), and made block prints and stencils with Northwest Indian designs (art) (Lindquist, 1995).
2. At UCLA, undergraduate students in a multi-skills ESL class taught by lecturer Linda Jensen studied a unit about the First Amendment of the US Constitution. In this unit, they viewed video footage of authentic university lectures from a communications studies course and read related excerpts from the course text as well as other related articles. Reading, writing, speaking, and listening activities centered on the topic of First Amendment rights (e.g., dress codes, speech codes on campus). All language and skills instruction used this context as a point of departure (Weigle & Jensen, 1997).
3. Based on a needs analysis of final year projects for engineering students at Hong Kong University of Science and Technology, lecturer Lynne Flowerdew targeted the development of students' critical thinking skills. Identifying the genre of problem solution as

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critical to students' ability to complete this project, she obtained samples from the Engineering Department, analyzing the constituent elements of these final projects. Students in the ESL course were instructed to work in groups to identify a project focus; they then received instruction in the genre of the problem solution report. Drafts of these reports received instructor feedback. Students were also required to double-check the feasibility of their solutions with a subject specialist (Flowerdew, 2000).

4. In the intensive English program (IEP) of Indiana University, students in Joy Egbert's elective class "Kids and Computers" engaged in an exchange with second and third grade children at a local elementary school. For the first step in the exchange, the IEP students created computer-based slide shows about their culture. They then began a series of school visits, the aim of which was to teach the children computer skills and to collaboratively produce slide shows. To reflect on what they learned during the process, Egbert's students participated in electronic journal exchanges with the instructor (Egbert, 2000).
5. At the Colchester English Study Centre, Joan Allwright conducted a short course for visiting medical professionals with the aim of improving their English for professional discourse purposes. To better analyze needs, participants were asked to complete a self-report questionnaire identifying areas of need in their communication skills. Participants were then asked to participate in case conference simulations (based on real medical cases). Following the simulations, the teacher shared actual clinical solutions to the cases and provided feedback on language (Allwright & Allwright, 1977).
6. In Mrs. Macias's sheltered section of ninth grade English, there were 25 students from different countries. The sheltered course followed the regular English 9 syllabus but enrolled only non-native English speakers. In the course, students read well-known short stories in English and an abridged version of the novel *Great Expectations*. In the sheltered section, the teacher included additional vocabulary exercises and provided students with extra study questions. She also lectured more than in her regular English 9 class (Adamson, 1993).

At first glance, most would agree that scenarios 1, 2, 4, and 6 above represent examples of CBI in action, while scenarios 3 and 5 represent rather clear-cut examples of ESP. However, identifying instances of CBI or ESP and articulating the differences between them is quite another thing. In the section that follows, we will look at historical attempts to chart the boundaries of ESP and revisit the scenarios.

Mapping the Territory: ESP

Over the years, numerous attempts have been made to "map" the territory of ESP (Strevens, 1977; Hutchinson & Waters, 1987; Johns, 1991; Jordan, 1997; Johns & Price-Machado, 2001). Two of the most commonly referred to maps in the ESP literature are those proposed by Strevens and Hutchinson and Waters (see Figures 1 and 2).

Although differing in the boundaries they draw, these maps tend to exhibit some overlap regarding the following aspects of the territory that they chart as ESP. First, ESP is seen as distinct from EGP, which in the tree diagrams these experts draw is represented as a separate branch of ELT. Second, there tends to be a sharp division drawn between occupational or vocational ESP and the varieties of special purpose language instruction that occur within academic institutions. Finally, EAP is often singled out as distinct from its other more specific academic counterparts, such as EST.

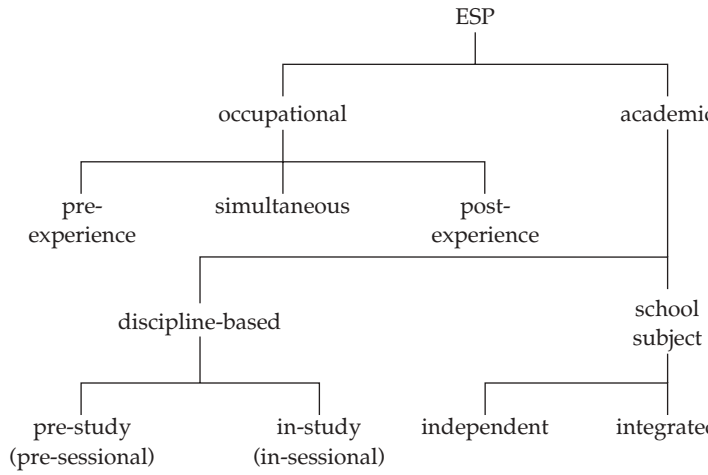

Figure 1 Types of ESP (Strevens, P. [1977] Special-purpose language learning. *Language Teaching and Linguistics Abstracts, 10*[3], 145–63 © Cambridge University Press)

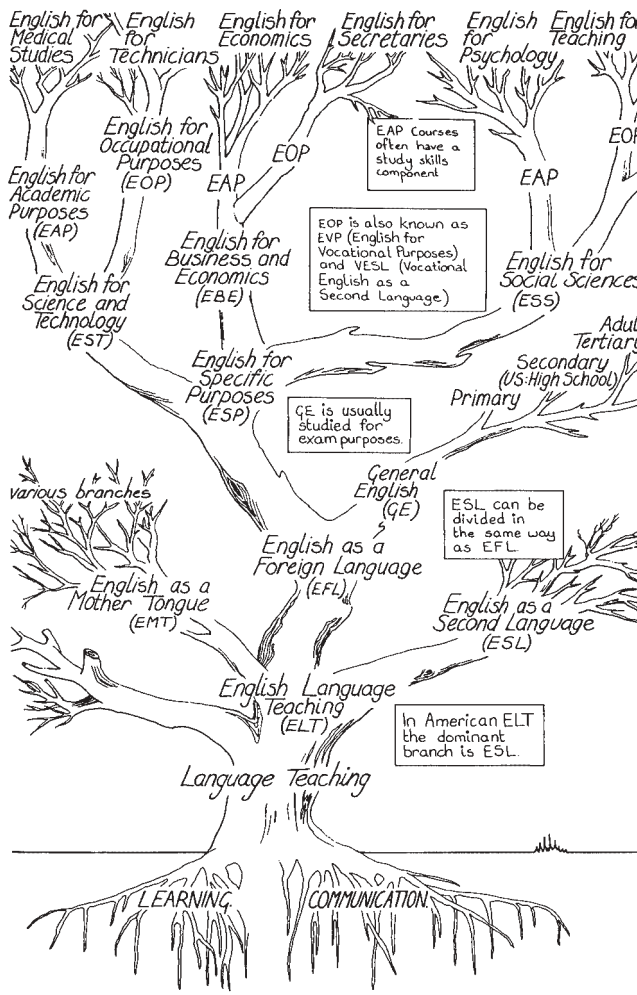

Figure 2 The tree of ELT (Hutchinson, T., & Waters, A. [1987] © Cambridge University Press)

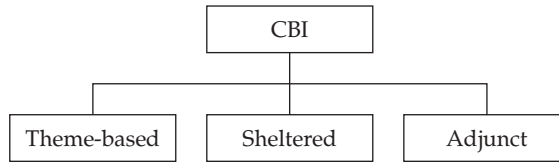

Figure 3 Three prototype models of CBI as proposed by Brinton, Snow, and Wesche (1989)

Mapping the Territory: CBI

Early work on CBI (Brinton, Snow, & Wesche, 1989; see also Brinton, Snow, & Wesche, 2003) identified the following three prototype models of CBI (see Figure 3):

1. *Theme-based instruction*. Themes of specific interest, relevance, or both to the learner provide the organizing principle for the course. The theme of each unit serves to contextualize new language that is presented and provides the point of departure for skill- and language-based instruction and practice. Typically, a theme extends over several days or even weeks, providing rich linguistic input and creating the necessary conditions for learners to acquire new language.
2. *Sheltered instruction*. Students for whom the language of instruction is a second or additional language (L2) are separated or "sheltered" from their first language (L1) (i.e., mainstream) peers for the purpose of content area instruction. In most versions of this model, the content instructors who teach the sheltered section of the course receive specialized training in techniques to help students access the content material and to provide a nurturing atmosphere for the learning of both language and content. In theory, students' exposure to the rich academic language and complex concepts presented in the sheltered class provides the necessary conditions for L2 acquisition to occur.
3. *Adjunct instruction*. One or more content area course is paired with a language course. At the outset of the course, as well as on an ongoing basis, the instructors negotiate their syllabuses to coordinate their instructional objectives. Typically, the objectives of the language course are identified with respect to students' linguistic needs in the content course, though adjustments in the content course objectives may also occur. L2 acquisition occurs (a) through students' exposure to the academically challenging language of the content course and (b) through the systematic linguistic guidance provided in the language course.

In proposing these three models, the authors caution that they are intended as prototypes only, and as such are meant to allow "consideration of other content-based variations which combine features of the three" (Brinton, Snow, & Wesche, 2003, p. 23). Ostensibly, these authors foresee innovations in CBI models as combining features of the existing prototypes but differing in some significant way—that is, arising out of the varied instructional settings in which the model is to be implemented and the specific needs of the students in that setting.

In the intervening years since the initial publication of *Content-Based Second Language Instruction* in 1989, numerous innovations in CBI models have arrived on the scene. These innovations have been well documented in the CBI literature. Figure 4 presents an updated map of CBI, as proposed by Brinton (2007). As represented in this diagram, the three original prototype models continue to flourish. However, they have continued to adapt to

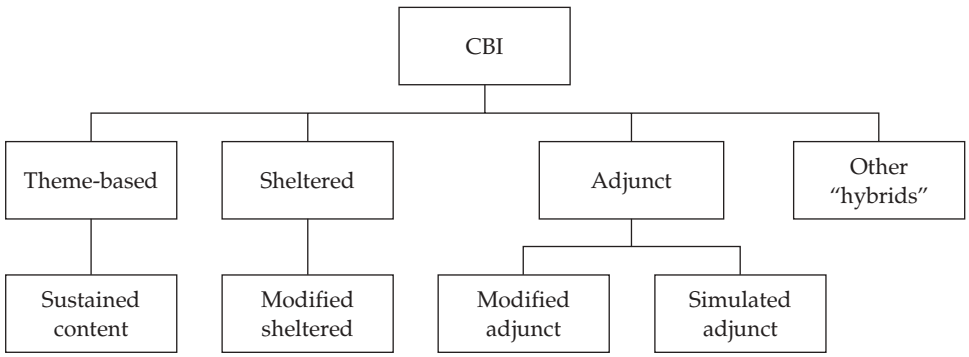

Figure 4 An updated map of CBI's territory (© D. M. Brinton, 2007)

the settings in which they are used, causing the creation of several subbranches and even other new "hybrids."

Note that detailed information on the recent models depicted in Figure 4 are contained in the following sources: simulated adjunct (Brinton & Jensen, 2002); sustained content (Pally, 1997, 2000; Murphy & Stoller, 2001); and modified theme-based (Stoller, 2002).

Boundary Parameters: ESP and CBI

The early 1990s witnessed a great deal of discussion of both the common ground shared by ESP and CBI and their essential differences. Agreed-upon similarities include the following (Johns, 1992, 1997; Brinton, 1993):

1. ESP and CBI share a dissatisfaction with the traditional abstraction of language from its natural environment and real language use.
2. They share a concern that general purpose English courses cannot prepare students for the demanding linguistic, rhetorical, and contextual challenges of the real world.
3. They use genuine discourse from the real world to ensure that classroom content reflects the target situation.
4. They engage students in meaningful use of language rather than in activities that focus on the language itself.
5. They expand the definition of language teaching to include cognitive skills and critical thinking.
6. Finally, both ESP and CBI have as their goal the transfer of language skills and content to real life.

The differences of opinion regarding the territory covered by ESP and CBI, however, tend to loom larger. In an article originally published in 1992 and subsequently republished in 1997, Johns makes the following claims:

1. ESP has a rich research tradition, unlike CBI, its younger cousin.
2. It serves adult language learners internationally, while CBI is anchored in the English-speaking world and is linked to K-12 settings.
3. ESP courses often focus on one skill, while CBI courses favor an integrated, all-skills focus.

4. ESP is grounded in linguistically oriented and text-based research, while CBI research is concerned with the immediate classroom and issues of pedagogy (e.g., student affect, materials/curriculum design, and instructional strategies).

Disagreeing with these claims by Johns, Brinton (1993) responds as follows:

1. Both CBI and ESP are international in scope, as witness presentations on CBI programs from all over the globe at the international TESOL Conference.
2. Both CBI and ESP share a research base, as witness ongoing research in sheltered classrooms on the discourse of teachers and learners.
3. ESP grew out of commercial ventures, and even today often displays a commercial bent; CBI, on the other hand, grew out of academic needs and remains firmly entrenched in academic institutions.
4. ESP populations are brought together in the common pursuit of expanded language proficiency in a given domain and are thus identifiable; CBI populations are more varied, but are brought together through the vehicle of content.
5. Learners in ESP courses are instrumentally motivated since what they are learning is pragmatically informed (i.e., with immediate value to their profession or discipline); CBI learners are more intrinsically motivated, that is, by knowledge as an avenue to success in more general terms.
6. ESP is field-specific; CBI consists of a broad-based inquiry into academic knowledge, with a particular topic chosen not as an object, but as a vehicle of study.

CBI's Role in ESP: Putting a New Spin on the Debate

Though the above discussions are of some historical interest, they tend to focus almost exclusively on delineating the boundaries between CBI and ESP and do not lead to any satisfactory conclusion. In fact, as insinuated in the title of this entry, the more pertinent issue may lie instead in determining the place of CBI *in* ESP.

Eskey (1997) puts a new spin on the issue by eschewing the debate about boundaries and instead focusing on CBI's role as a course-organizing principle:

> the content-based syllabus is best viewed as an even newer attempt to extend and develop our conception of what a syllabus for a second-language course should comprise, including a concern with language form and language function, as well as a crucial third dimension—the factual and conceptual content of such courses. (p. 135)

Having now established that CBI is a type of syllabus, we are in a better position to pinpoint its relation to ESP. Master (1997/8) concurs with Eskey, noting that CBI has the same status as the grammatical, notional/functional, situational, rhetorical, and task-based syllabi. Further, he argues, in terms of Wilkins's (1976) distinction between synthetic and analytic syllabi, CBI constitutes an analytic syllabus, since "significant linguistic forms can be isolated from the . . . context in which they occur [and] learning can be focussed on important aspects of the language structure" (p. 2). ESP, on the other hand, is simply one of two main divisions of ELT, the other being EGP (i.e., as previously pointed out by Hutchinson and Waters, 1987). According to Master, a CBI syllabus can be used in both EGP courses (in which case the theme-based model would pertain) and in ESP courses (in which case either the sheltered, adjunct, or other hybrid models would pertain). He concludes by noting that ESP is simply a domain of ELT that makes substantial use of the CBI syllabus.

Continuing the argument in much the same vein, Master and Brinton (1998) note:

> In our view, CBI is a type of syllabus, the organizing principle on which a curriculum is based. It joins the other types of syllabi recognized in the field, namely, the grammatical, the notional-functional, the rhetorical and the task-based syllabus. The organizing principle is the content or subject matter on which any implementation of CBI . . . is based. ESP, on the other hand, is a division of ELT that has only one other member, namely, English for general purposes (EGP). ESP makes extensive use of the content-based and the task-based . . . syllabi. In other words, there is no "boundary" between ESP and CBI; instead, they operate independently because both ESP and EGP may make use of any of the syllabi. (pp. vii–viii)

Flowerdew and Peacock (2001) and Jordan (1997) examine the range of approaches that can be used in EAP syllabus design, tracing these by era. They note that while early EAP syllabi tended to be influenced by the lexicogrammar-based approach, syllabi in the 1970s were typically based on notional/functional or discourse-based approaches. Similarly, syllabi in the 1980s were frequently organized using either the skills-based or genre-based approach. These authors conclude their analysis by noting that a very influential approach to EAP syllabus design, especially in North America, is the content-based syllabus.

Finally, Basturkmen (2006) discusses the role of CBI in ESP courses, stating that ESP today makes extensive use of CBI. In passing, she notes several potential advantages of the CBI syllabus over alternative types of syllabi. These include the fact that CBI makes use of authentic texts embedded within the subject content, thus avoiding the pitfall of many other syllabus types, which remove or "export" the text from its natural context. Further, since CBI is an integrated, holistic approach, students are exposed to all skills and are required to synthesize from multiple sources.

Conclusions

To return to the scenarios presented earlier in this entry, we can now see that scenarios 3 and 5, both ESP courses, employ genre-based and discourse-based syllabi, respectively. The remaining scenarios (1, 2, 4, and 6) represent EAP courses that employ a CBI syllabus (i.e., a theme-based prototype in scenarios 1, 2, and 4 and the sheltered prototype in scenario 6).

This entry has examined the role of CBI in ESP. While early debates focused on delineating the boundaries between the two, later works more accurately analyze their symbiotic nature, stressing the role that a CBI syllabus plays in ESP course design. To conclude, CBI can not only be a highly effective way of delivering EGP courses but can serve as an equally efficient organizing principle for EAP and ESP courses (Brinton & Holten, 2001). Ultimately, an ESP course developer may choose to use a CBI syllabus as an organizing principle; she or he may also select another syllabus type (e.g., grammatical, notional/functional, genre-based, or task-based).

SEE ALSO: English for Academic Purposes; English for Occupational Purposes; English for Science and Technology; Language for Specific Purposes: Overview

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Content-Based Language Instruction

MARGUERITE ANN SNOW

Introduction

What is the "content" of second or foreign language teaching? A visitor to a second or foreign language class might observe the teacher teaching a grammar point such as relative clauses, students working in pairs to give directions from a map, or a small group listening to a taped folk tale. In a class at another school, the visitor might find the class reading an article about wildlife trafficking one day, and, in the next class session, participating in an activity in which they read biographies of wildlife traffickers, then state their opinions, using expressions such as "I think _____ should go to jail because _____." At the end of the two-week unit, students prepare a poster and make presentations about endangered animals, displaying information on the causes of endangered status and current conservation efforts.

The "what" of language teaching has expanded in recent decades from an earlier focus on grammar in a structural syllabus, to functions such as making polite requests in a notional/functional syllabus, to students solving tasks in a task-based syllabus (Snow, 2001). In a content-based syllabus such as that used in the design of the wildlife trafficking unit, the content serves as the vehicle through which grammar, functions, skills, and tasks are presented and practiced by learners (Evans, 2006).

Content-based language instruction (CBLI) and its European counterpart, content and language integrated learning (CLIL), employ subject matter for second/foreign language teaching purposes. In other words, selected content is integrated with language teaching aims. The majority of work on CBLI approaches has originated in North America, while CLIL or "dual-focused" education is primarily a reaction to the need for plurilingual ability in schoolchildren as a consequence of the integration of the European Union, with particular focus on *all* youngsters "regardless of social and economic positioning" (Marsh, *n.d.*, p. 9).

The goal of CBLI and CLIL to create interesting, meaningful instruction that taps into learners' interests and needs, in a variety of settings, with students of different age groups and educational levels, provides the common core of the two approaches. And, while CBLI and CLIL have developed from somewhat different traditions, the conceptual approach is fundamentally the same in their dedication to topics and subjects as the basis for materials and course development. Moreover, both have local and international reach. As such, the two are treated in this article as complementary labels for essentially the same overall instructional approach. The scope of this entry will focus primarily on CBLI, given the author's expertise; the reader is encouraged to explore the network of web sites and platforms dealing with CLIL, including the refereed journal devoted to CLIL issues and projects (www.icrj.eu).

Three Main CBLI Models

CBLI is an umbrella term for a variety of models that differ in the degree of language and content integration. At one end of the continuum are "language-driven" models; at the

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other end are "content-driven" models (Met, 1998). In the early days of CBI, Brinton, Snow, and Wesche (1989) described three prototype models—theme-based, sheltered, and adjunct. These prototype models have served a useful role in discussions about how to structure CBLI programs in different instructional settings.

Theme-based courses, popular in both second and foreign language settings, consist of classes taught typically by the language teacher (not a content specialist). The theme is "exploited" for grammar, vocabulary, and functions; typically the goal is to integrate the teaching of listening, speaking, reading, and writing skills around the designated theme. In both English as a second language (ESL) and English as a foreign language (EFL) settings, the theme might be selected for student interest or need and teacher content specialization. In EFL, it may take into account the teachers' comfort level with the model since a theme-based course may present challenges to teachers accustomed to a traditional grammar-based approach. A motivation for such courses in EFL is frequently to challenge students at the high intermediate or advanced proficiency levels.

The "Animals in the Language Classroom: Teaching English and Critical Thinking in a Social Issues Class" unit briefly described above is a theme-based unit developed by Heidi Evans for Japanese students at Kwansei Gakuin University. Her goals were to provide student with opportunities to increase their English skills and deepen their knowledge of a content area of interest. Her goal for improving her students' English was to give them opportunities to further develop oral, written, research, and presentation skills through in-class tasks and out of class homework and practice. In terms of the content, Evans wanted her students to link previous knowledge and experiences to new information and raise students' awareness of animal issues at local and global levels (Evans, 2006).

The immersion model in the elementary foreign language setting is perhaps the best known example of the second prototype, the *sheltered model*. In it, students receive a substantial amount of instruction in the second/foreign language, typically taught by a teacher primarily trained in the content areas. Pressure from English-speaking parents in the mid-1960s who wanted their children to acquire high levels of French as a second language led to the establishment of the first immersion program in the Montreal suburb of St. Lambert (Lambert & Tucker, 1972). In this program, students received all instruction from the first day of kindergarten in French. English was introduced in second grade and other subjects were introduced in English in later grades until about half the subjects were taught in French and half in English by the sixth grade. Four decades of research in Canada have consistently shown that English-speaking students immersed in French attain higher levels of French than any other school-based model of foreign language instruction, and that they achieve in their academic school subjects, including English, at the same or higher level than their counterparts instructed in English (Genesee, 1987).

The immersion model spread to the USA in 1972 with the establishment of the Spanish immersion program in Culver City, California (Campbell, 1984). Research on this program and others with target languages in French, German, and, more recently, in such less commonly taught languages such as Japanese, Chinese, and Arabic corroborates the findings of the Canadian French immersion programs. Currently, there are over 300 immersion programs in the USA offered in 18 foreign or heritage languages. The immersion model expanded in the1980s into "two-way" or "bilingual immersion" by incorporating native speakers of the immersion language (Lindholm-Leary, 2001). The two-way model has also grown in popularity in the USA with over 350 current programs in 28 states and the District of Columbia (see the web site of the Center for Applied Linguistics for updated figures for both types of immersion programs at www.cal.org). Further, the immersion model has spread well beyond its original French immersion roots to immersion programs for aboriginal students in Canada, and to both "early" and "late" programs in international venues

such as Australia, China, Finland, Hong Kong, Hungary, Italy, and Spain (Fortune & Tedick, 2008).

The sheltered model has also been implemented widely in US elementary and secondary schools with large populations of English learners. The primary goal of sheltered instruction is to teach academic subject matter using special instructional strategies that assist in making the content comprehensible and focusing on the skills, academic language functions (e.g., asking for clarification, writing definitions, etc.), and vocabulary students' need to succeed in school (Snow, 2001).

The third prototype program is the *adjunct model*, also referred to as "bridge" or "linked" courses. In this type of CBLI, students are concurrently enrolled in a language course and a content course. This model has most commonly been employed in the postsecondary ESL setting. For example, in Project LEAP (learning English for academic purposes) at California State University, Los Angeles, students who needed additional assistance with their academic literacy skills were concurrently enrolled in linked courses such as *Humans and their Biological Environment* taught by a professor of Biology and a language course taught by an ESL specialist (Snow & Kamhi-Stein, 2002). Participating content and language faculty designed activities and assignments that integrated the content with the language needs of the students enrolled in the linked courses. Adjunct courses have also been implemented with EFL students who need to improve their English language proficiency in order to access course content in programs such as international business or international policy studies (Jourdenais & Springer, 2005).

"Discipline-based" programs have also been designed in the postsecondary foreign language setting where foreign language and content area faculty work together to link their courses. At the University of Minnesota, courses in the major European languages were linked with social sciences disciplines, and at Brown University, a course in *Japanese Culture and Society* was linked with a content-based component in Japanese (Krueger & Ryan, 1993).

Over time, CBLI has evolved into new configurations with features of the various prototype models reworked to suit the needs and resources of different settings, blurring the distinction between the models but revealing the dynamic process of curriculum design in CBLI (Snow, 2005). Brinton and Holten (2001), for instance, describe a "simulated" adjunct course at the University of California, Los Angeles in which videotapes of actual lectures by content faculty provided the content base for academic ESL classes. Further, Benesch (2001) argues for "critical" needs assessment and rights analysis as a way to use CBLI courses not only as a vehicle for developing academic literacy, but as a means to assist students to develop social awareness and acquire the language tools to seek social change.

Implementation Issues

Along with the reconfiguration of CBLI models and the diversification of its goals, there has been ongoing discussion of issues of implementation. Stoller and Grabe (1997) proposed the "Six T's Approach" for dealing with issues of selection and scope of content in CBI. In this framework, material developers and teachers design courses around a *theme*, *topics*, *texts*, *threads*, *tasks*, and *transitions* in an effort to improve coherence in theme-based courses. More recently, Pally (2000) introduced the term "sustained" content and Murphy and Stoller (2001) expanded on the notion as sustained-content language teaching (SCLT), an alternative to the tendency for some theme-based courses to jump from topic to topic where one day students might read about capital punishment, the next day about competitive bike riding. SCLT has two major components: (a) a focus on the exploration of a

single content area or carrier topic, and (b) a complementary focus on L2 learning and teaching. In the context of adjunct instruction, the most complex model logistically, others have focused on such challenges as student language proficiency (Iancu, 1997) and issues of power and authority when content and language teachers collaborate (Goldstein, Campbell, & Cummings, 1997).

In recent years, there has also been a concerted effort to enhance the language teaching opportunities of CBLI following Swain's (1988) admonition that "not all content teaching is necessarily good language teaching" (p. 68). Thus, practitioners and researchers such as Gibbons (2006) suggest that teachers create a "language inventory" of the academic language features that can be found in a unit of instruction. This language inventory can then be used to design language objectives and learning activities that focus explicitly on the language connected to content tasks, and to guide the development of assessments to determine whether students are learning language while developing content knowledge. Similarly, Carr, Sexton, and Lagunoff (2006) have identified the common discourse patterns (e.g., analyze, classify, hypothesize, etc.) that English-language learners need in order to deal successfully with science content; others have focused on strategies for raising secondary school teachers' awareness of the language challenges of history (Schleppegrell & de Oliveira, 2006). Finally, in the context of French immersion, researchers have devoted considerable effort to highlighting language instruction through systematic interventions such as form-focused activities and corrective feedback (Lyster, 2007) and collaborative tasks that focus on linguistic accuracy such as reformulation and metatalk (Swain & Lapkin, 1998).

Conclusion

This entry provided a brief glimpse into the vast world of CBLI and the various approaches to integrating language and content in a variety of settings with learners of different age groups and educational goals. Despite the variations in models, all are predicated on the belief that learning a second or foreign language is more efficacious when subject matter has a central role in the course curriculum—when the "what" of language teaching is expanded to include interesting, motivating content.

SEE ALSO: Bilingual Education; Bilingual/Immersion Teacher Education; Content and Language Integrated Learning; Immersion Programs; Integration of Language and Content Learning; Needs Analysis

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Context in the Analysis of Discourse and Interaction

INGRID DE SAINT-GEORGES

Context is a central concept in the analysis of discourse and interaction in all the major research traditions in applied and sociolinguistics. Early linguistics did not display much sensitivity to it (Scollon, 1998, p. 80) and tended to study utterances in isolation and without reference to context. Today, however, there seems to be a general consensus around the idea that we understand utterances because they fit or make sense within particular situations. Studies of discourse and interaction include some orientation to context, if nothing else because "language is always produced by someone to someone else, at a particular time and place, with a purpose and so forth" (Blommaert, 2005, p. 39).

Beyond general agreement that "context should be taken into account" (Jones, 2004, p. 22), however, researchers often disagree about what should count as context, or how much context should be taken into account in the analysis. It could be argued that the way context is treated is in fact what usually sets apart and distinguishes different approaches and research traditions (Tracy, 1998). Conversation analysts, for example, often described as interested in identifying universal conversational rules, usually advocate limiting the study of context to those elements which are evoked in the sequential unfolding of the text or the interaction. Institutional context, social background, gender of the participants, and so on therefore should only be attended to by the analyst if they show up in the interaction and are made relevant to the ongoing exchange by the participants. For others, such as critical discourse analysts, for example, it is the connection between language and social processes that needs to be explicated, and this requires examining how text and interaction are woven into the fabric of sociopolitical action, social structures, context of cultures, and so forth (Halliday & Hasan, 1985; Fairclough, 1989). These different perspectives, with many others, have given rise to heated debates (Tracy, 1998) and have strongly contributed to giving the field its current shape.

Early Work

Historically, several outstanding researchers have pioneered discussions on context in the study of discourse and interaction. Malinowski (1947, p. 306) is usually credited with being the first scholar to introduce the notion of *context of situation* to examine the "conditions under which a language is spoken." About the same time, in the 1950s, a group of experts around anthropologist Gregory Bateson at Palo Alto (California) began to analyze closely filmed interactions, which led to decisive insights about the organization of face-to-face interaction. Attention to gestures, intonation, facial expressions, and space came to be integrated into the study of exchanges and communication (Duranti & Goodwin, 1992; Scollon & Scollon, 2009).

In the 1970s, Gumperz and Hymes (1972) further proposed that, in order to understand culture, one needed to pay attention to the "speech events" and activities in which speakers were engaged. Meaning was to be found in the social interaction and not just in the grammatical competences of the speakers.

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In various branches of sociolinguistics, linguistic anthropology, but also of course linguistics, pragmatics, and philosophy, scholars have highlighted context, making salient the importance of looking at "immediate environment in which a text is actually functioning" (Halliday & Hassan, 1985, p. 46) and at the actions participants in this environment are performing with language. In the 1990s, Kendon (1992) introduced the oft-quoted idea that this environment functions as a kind of "(back)ground" against which the text (the "figure") becomes interpreted. While the "figure" is usually clearly identifiable (it is the focal event to which the participants are attending), the background is much fuzzier but contributes nonetheless to the production and interpretation of meaning.

Exploring relations between figure and ground has raised numerous methodological questions for the study of interaction: What are the boundaries between context and the text that it is context to? How can researchers study what is "unattended" or ignored in a situation? How do they know what aspects of the attended context speakers orient to (Duranti & Goodwin, 1992, p. 4)? Three seminal publications in the early 1990s address these questions and others: "Some Context for Context Analysis: A View of the Origins of Structural Studies of Face-to-Face Interaction" (Kendon, 1990), *Rethinking Context: Language as an Interactive Phenomenon* (Duranti & Goodwin, 1992), and *The Contextualization of Language* (Auer & Di Luzio, 1992). These works were the catalyst of much subsequent work on context in discourse and interaction, and they highlight three key concerns. First, they show that in all research traditions "it is a recurring methodological problem to know at what level to define the situation one studies" (Scollon, 1998, p. 79). Second, they underline the fact that what gave rise to an increasingly complex and interactive understanding of context was the fertile interplay between a host of theoretical orientations (including, but not limited to, the ones presented here). Finally, they stress the particularly productive role played by discussions of context in the investigation of the relations between language structure, language use, social organization, and culture (Duranti & Goodwin, 1992, p. 32).

The Problem With Defining Context

The notion of context has been described by many as "notoriously hard to define" (Duranti & Goodwin, 1992, p. 2; Tracy, 1998). Not only does it mean different things in different research paradigms, but more generally the range of contexts in which utterances are considered can also vary widely. Researchers of context thus regularly stress that processes of different magnitude usually operate within a single interaction or event (Blommaert, 2005, p. 40). This makes it possible to study a range of phenomena as part of context, from the more microscopic (e.g., the "intonation contours" that will lead to interpret "oh" sometimes as an expression of surprise, sometimes as an expression of irony) to the more macroscopic phenomena (e.g., the social structures, such as the military, the global economy, the world system which, functioning as a sort of matrix, elicit, permit, or prevent certain kinds of communicative acts). From a practical viewpoint, Blommaert (2005, p. 40) notes that people seem to show remarkable ease in identifying what contextual cues are relevant for interpreting a situation or to convey the meaning which they want to convey (though sometimes they get it wrong). Blommaert thus proposes to define context minimally as "the totality of conditions under which discourse is being produced, circulated and interpreted" (2005, p. 251), and summarizes the question of context by saying that it "addresses the way in which linguistic forms—'text'—become part of, get integrated in, or become constitutive of, larger activities in the social world (see also Scollon 2001)" (p. 39). Jones (2004, p. 25) prefers to talk about context (*Umwelt*) as "an individual's environment of communicative possibilities." Other authors choose more specific definitions of context. Van Dijk (2009) for example takes context to be the mental models and representations speakers use to make their contribution appropriate to the situation in which they find

themselves. He takes these mental models to be the mediating link between language and society. Schegloff (1987) prefers a talk-intrinsic definition of context, focusing on speech exchange systems as the context for interaction. Preceding or following utterances, the turn exchange system, or preferred responses become key sites to study even cultural aspects of interaction.

As Scollon (1998, p. 79) reminds us, metaphors of context will always put the spotlight on some aspects of the communicative process while diverting from others. For example, he argues, if we take context to be what "surrounds talk," we might fail to pay attention to what is "in" the communication (the history of experience embodied in the speaker, the linguistic codes or genres she masters, the registers she has access to, etc.). If we focus on what is "in" the communication we might miss all those aspects that are not directly oriented to by the interactants in their discourse, but which might be nonetheless relevant to its production and interpretation.

Key Discussions

Several key discussions have shaped thinking about context. Early on, scholars often approached the problem of context by trying to identify what were ingredients of context, or parameters for it. A well-known example is Hymes's (1972) SPEAKING grid. This acronym was devised as a mnemonic tool to help analysts remember to pay attention to several contextual parameters in the analysis of a speech event: the Setting, the Participants, the Ends and goals of the event, the sequence of Actions, the Key (i.e., the manner and tone of speech), the Instrumentalities (i.e., the channels of communication used), the social and cultural Norms foregrounded in the interaction, and the Genre (or text types) selected. By coming up with lists of this kind, Scollon (1998) notes, scholars were not interested simply in the "journalistic analysis of the five Ws—who, what, where, when, and why—but were concerned with the ways in which any communication must be interpreted against the context of these elements" (pp. 79–80).

Other researchers have conceived of context in terms of "layers." Fetzer (2004), to name just one example (but see also Halliday & Hassan, 1985, p. 12; Fairclough, 1989, p. 25), distinguishes between "linguistic context" (genre, intonation, preceding utterances), "social context" (participants, roles, situations, physical and psychological dispositions), "sociocultural context" (organizational dimensions, sociohistorically constituted institutions), and "cognitive context" (memory, prior knowledge, mental representations, etc.).

The metaphors of parameters or layers of context have, however, come under criticism. First, thinking in terms of "layers" risks hiding the many connections existing between different levels (Jones, 2004, p. 22). This has led scholars to specifically attempt to explain how, for example, the linguistic context (intonation, indexical meanings) relates to social and sociocultural contexts (roles, group culture or subculture). The seminal work of John Gumperz on contextualization cues (1992) crucially looks into such issues. Second, many earlier views tended to display context as something "already there" and "stable," an "inert container" for actions. Scholarship in interactional sociolinguistics, for example, has shown on the contrary that context is something that speakers build and transform as they go along. This is possible because speakers in an interaction do not bring along the same "contextualization universe." They might come with a different understanding of a situation, different goals and positions within it, have access to different resources and repertoires. This asymmetry might lead them to want to have a specific view of the situation acknowledged, recognized, or accepted (Blommaert, 2005, pp. 43–5), and they might very well attempt to challenge or change the definition of the situation. What this shows is that language is in fact both context-dependent and context-creating. It may serve to "frame"

a situation in a specific way (Goffman, 1974), and it can be used to signal changes in the roles and alignments interactants are taking up toward each other.

In the study of context in interaction and discourse, researchers have sometimes viewed context as the "mechanical frame" placed upon communication (the "container" view), others have seen it as the "conduit through which it occurs," and still others, more recently, have become interested in the "socially constructed nature of these frames and contexts themselves" (Scollon, 1998, p. 83). The study of context has entailed looking at how the properties of discourse (syntactic, semantic, prosodic, argumentative, etc.) are constrained by the situation in which speech occurs, but also at how these properties become resources to organize the interaction (coordinate action, display identities, etc.). It has highlighted the necessity to consider how historical, cultural, or social frames influence the situated conduct and behavior of people but also how this situated conduct is sometimes used by them to evaluate, discuss, or challenge frames presented as already constituted (Filliettaz, 2006).

New Contexts of Scholarship and New Issues

Today, changes in the context of studying interaction and discourse are raising new issues, inviting scholars to investigate hitherto "forgotten contexts" (Blommaert, 2005, pp. 55–66). Social changes such as increased mobility of people and a more globalized economy suggest the need to "open up the circumference of analysis" (Scollon & Scollon, 2004) in several directions. Researchers are, for example, questioning views of language and context grounded in the Anglo-American or Western worldview (Makoni, 2005), and the kind of "ethnocentrism" it often entails. Blommaert (2005, p. 48) thus considers that many of the traditional assumptions about interaction (for example, that there are shared meanings and common ground among participants, or a symmetric contribution to the interaction) might well reflect Western context and bias. There is a great variety of sociolinguistic contexts that differ from this broad Western view. Mobility of speakers also makes particularly salient that a lot of what is going on in interaction is linked to other situations, traditions, and experiences that are in fact "recontextualized" in the situation. While interactions are always local, there are elements that transcend the moment in which they are produced (Blommaert, 2005, p. 45).

This recognition also suggests the need to probe not just the context of the researched, but also that of the researcher and the research process. Two kinds of questions can be asked here (Blommaert, 2005, pp. 59–65). The first one is: What is the context that the researcher takes for granted? For example, critical discourse analysis works from the assumption that many encounters are characterized by a power imbalance (e.g., doctors are more powerful than their patients because of status, knowledge, etc.) that is the unquestioned context for much of the research. This fails to acknowledge that there are cases of doctor–patient interaction which run otherwise. So the context of power imbalance itself could turn into an object of investigation. The second question has to do with what Blommaert terms "data history" (2005, pp. 64–6). Some research is very much time-bound. To carry out ethnographic research about Hong Kong's handover to China (Scollon, 1997), for example, a specific set of economic, social, political, and personal circumstances needed to co-occur to make it possible to gather the specific data the researcher needed. This highlights the need to reflect on these circumstances and to make clear what is specific about them.

The development of new technologies of communication also challenges some of the assumptions that were made about context when sociolinguistics was overwhelmingly dominated by the study of face-to-face interaction. With face-to-face interaction, the focus was on situations of copresence and mutual monitoring. In computer-mediated

communication, notions of setting, participation, or attention shift. Jones (2004) shows that, in digital surroundings, attention is often polyfocal (there are several foci of attention between the physical world and the virtual world), and participation can be manipulated (conversational partners can be turned on and off the screen). Multiple figures are attended to against the backdrop of multiple grounds.

More widely, there are many linguists today challenging traditional orthodoxies about the nature of language (Scollon, 2001). They question the idea that there is such a thing as "a language," conceived as "a priori ontological system" (Le Nevez, 2008). Rather than taking language to be a fixed mode, they view it as a repertoire of practices. Meaning and communication emerge from social interaction. This body of research pays less attention to text, and more to the ways in which texts "fit into the web of places, practices and communities that humans inhabit" (Jones, 2004, p. 31). For others, understanding communicative practices necessitates knowing more about the ways in which text interacts with other modes of meaning making (Jewitt, 2009). With these views of discourse, the traditional "figure" of language dissolves. It is no longer a repertoire of stable meanings, "there for use." And with this shift comes the necessity of revisiting the traditional "background" of "context" with new tools and theories, and the need to question anew the idea of "text."

In the 1990s, there was a clear move away from static conceptions of context, and toward more complex, dynamic, active, and interactive views of contextualization. This trend still continues. What sets apart discussions of context then and now is probably that "local talk-in-interaction" is no longer the sole unit of analysis and that new lines of inquiry are opening up.

We find several trends. One could be qualified as a "historical" trend. We now find researchers interested in tracing what happens to discourse not just in single speech events but across time and place. They develop a "polycontextual" view of discourse and interaction (Leander, 2002), and seek to understand not just the situation itself, but the chain of events that has led to an interaction or which emanates from it (Scollon & Scollon, 2004) and the relations between speech events. There is also an expansion in the range of phenomena that are taken into account. Scholars are going beyond previous studies of nonverbal communication to include not just gaze, gestures, and body movements but also the built environment, logos, graffiti, and so on to think about how spatial surrounding affects what it is possible to mean and say (Pennycook, 2007). They are also rethinking previous notions of "layers of context" by becoming interested in the issue of "timescaling" of events (Scollon & Scollon, 2009). In interaction, processes belonging to different "timescales" come together. The reframing and negotiation of context are usually easier to carry out when dealing with processes on smaller timescales (for example, negotiating the role one will take up in a situation) than when dealing with large-scale societal structures (e.g., negotiating a school reform). Researchers thus become interested in studying the weight and impact of some contexts over others (Kell, 2009; Hult, 2010). Through these studies, scholars have often begun to question the usefulness of the very idea of context, proposing to replace it with other units of analysis.

Schegloff's words, "rethinking context is the omnipresent job of analysis" (1992, p. 215), are as relevant now as ever, whether in helping to make the breakthroughs that still await in the scholarship on context in discourse and interaction, or in helping to decide whether to abandon the notion of context altogether.

SEE ALSO: Anthropological Linguistics; Conversation Analysis and Interactional Linguistics; Critical Discourse Analysis; Hymes, Dell; Interactional Sociolinguistics as a Research Perspective; Language, Culture, and Context; Multimodal Discourse Analysis; Pragmatics: Overview

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Conventional Methods for Assessing Vocabulary

JOHN READ

It is a time-consuming process to create new assessment procedures of any kind and to validate them adequately. Vocabulary assessments are no exception to this general observation, which means that there is a natural tendency for teachers and researchers to prefer established procedures rather than going to the trouble of devising new instruments. However, there are few vocabulary measures that can be considered standard tools, in the dual sense of being thoroughly researched and applicable in a wide variety of teaching or research contexts. Indeed, according to modern validation theory, validity is not an inherent property of an assessment procedure; rather, it is necessary to determine whether the procedure can be appropriately used for particular purposes and with specified populations of language learners. Thus, those who adopt a vocabulary test that they have not developed themselves have an obligation at least to conduct a trial with a sample group of the intended population of test takers to find out whether the test results can be meaningfully interpreted for their intended purpose.

The Word–Meaning Link

Traditionally, the essence of vocabulary testing has been to ascertain whether learners can make a link between words in the second language and their meanings. The meaning can be represented in three ways:

- a synonym or short definition in the target language;
- an equivalent word or phrase in the learners' first language; or
- a picture or some other graphic representation of the word.

The first two options are the basis for the most widely used types of vocabulary test item: multiple-choice and matching. The multiple-choice format has nearly a century of tradition behind it as the centerpiece of the psychometric approach to educational measurement in the USA and has been widely adopted in national examinations in other countries where large numbers of students need to be assessed with a high degree of reliability. Since multiple-choice tests of vocabulary work particularly well in psychometric terms, it is not surprising that vocabulary items were a key component of the Test of English as a Foreign Language (TOEFL) from its inception in the 1960s until the mid-1990s (Read, 2000, pp. 138–47). Eventually, the discrete vocabulary items were largely replaced by contextualized language use tasks, which were considered more valid measures of academic language proficiency for university admission purposes. Multiple-choice vocabulary items have been subjected to a variety of criticisms over the years, but nevertheless the format has been adopted in Nation's recent Vocabulary Size Test (Beglar, 2010), which is designed to give a reliable estimate of the total number of words known by first or second language users.

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The matching format is best known from its use in Nation's earlier Vocabulary Levels Test (Nation, 1983; Schmitt, Schmitt, & Clapham, 2001), which was originally intended as a diagnostic tool for classroom teachers but came to be widely employed as a more general measure of higher frequency vocabulary in English. The format requires the learners to match each of a set of words with its definition from a selection given, or vice versa. This type of test is somewhat easier to create than a multiple-choice one, but it can be criticized for testing the target words in isolation, whereas standard practice in current multiple-choice vocabulary items is to present the word in a short (usually nondefining) sentence context.

The third option, pictorial presentation of the meaning, is particularly suitable for young learners or for older people who are not literate in the target language. The Cambridge English for Speakers of Other Languages (ESOL) Young Learners English tests (http://www.cambridgeesol.org/exams/young-learners/yle.html) make extensive use of pictorial material, particularly at the Starters and Movers levels, where the exam papers include items requiring the learners to match words and pictures. Perhaps the best-known standardized instrument of this kind is the Peabody Picture Vocabulary Test (Dunn & Dunn, 2007), which was designed primarily to diagnose learning needs of students in the American education system, but it could also be used with appropriate trialing to assess the vocabulary knowledge of second language learners across a wider age range. The test material, which is individually administered, consists of sets of four pictures. For each set the administrator says a word and the response task is simply to point to the picture which represents the meaning of that word. It should also be pointed out that this is one of very few examples of a test which assesses oral vocabulary; almost all other conventional vocabulary measures focus on words in their written form.

Other Aspects of Word Knowledge

The tests discussed thus far are limited in at least two ways:

1. They require the learners simply to *recognize* the correct response from the options given. This is often referred to as passive vocabulary knowledge.
2. They focus exclusively on the form–meaning link rather than other aspects of word knowledge.

Let us look at each of these points in turn.

Learners need to be able to *recall* the forms and meanings of words, as well as recognizing them. One test that systematically assesses recognition and recall of form and meaning both monolingually and bilingually is the Computer Adaptive Test of Size and Strength (CATSS) developed by Laufer and Goldstein (2004; available online at http://hcc.haifa.ac.il/~blaufer). The other common format for assessing recall of word forms is gap-filling, in which the target word is deleted from a sentence or a larger text and replaced by a blank. Gap-filling has traditionally not been favored in large-scale exams because there are often several words that can fill a particular blank, which means that the items cannot be machine-scored and there may be subjective judgment involved in determining which responses are acceptable. One gap-filling test that has been quite widely used for research purposes is Laufer and Nation's (1999) productive version of the Vocabulary Levels Test, in which some of the initial letters of each target word are given to ensure that that there is only one correct answer. However, this makes a hybrid kind of test that only partially assesses recall of the words.

With regard to the second limitation of word–meaning recognition tests, a number of authors have pointed out that knowing a word has multiple components, including

knowledge of pronunciation, spelling, frequency, associations with other words, grammatical functions, and usage. Nation's (2001) analysis of what it means to know a word has been influential, as has his discussion of how the various knowledge components can be assessed. This broader perspective is often called "depth of vocabulary knowledge,"

There is really no standard method of assessing depth of word knowledge. One possible candidate is the word associates format (Read, 2000, pp. 180–6), in which test takers select several words that are associated with a given target word. In a recent review, Read (2012) notes that experimental versions of the format have been investigated by researchers in a number of countries, but it has apparently not been adopted as an operational test outside of the research context, and it really represents just one other component of Nation's vocabulary knowledge framework, beyond the link between word and meaning.

A second assessment tool that has created interest as a depth measure is Wesche and Paribakht's (1996) Vocabulary Knowledge Scale (VKS). Originally developed for use in a vocabulary acquisition study, the VKS first requires learners to rate how well they know the meaning of each target word and then to supply evidence of their knowledge in the form of a synonym or a translation, as well as composing a sentence containing the word. Thus, it is a kind of combination of self-assessment with conventional test tasks. Modified versions of the VKS have been used by a number of other researchers, but some critics (e.g. Bruton, 2009) have raised issues such as the conceptual basis of the instrument, whether it really forms a measurement scale, and its inability to deal with multiple meanings of words.

Vocabulary in Use

Moving beyond knowledge of words, we are also interested in the ability of learners to apply their vocabulary productively in speaking and writing tasks. This goes much further than the very controlled form of production assessed by the Productive Levels Test referred to above. It also means that the test designer cannot specify in advance which words will be elicited by the task; rather, it is necessary to evaluate in a more global way the learners' use of vocabulary in completing the task. There are essentially two approaches to assessing vocabulary use: by means of rating scales; and by calculating lexical statistics.

Rating scales constitute the conventional method of assessing spoken and written production in operational tests. This kind of scale defines a number of levels of performance, and for each level there is a descriptive statement of the typical linguistic or communicative features associated with that level. Normally, vocabulary use is just one of the criteria that raters are asked to consider. For example, let us take the Occupational English Test, which assesses the language proficiency of overseas-qualified health professionals wishing to practice in Australia (www.occupationalenglishtest.org). In the Writing subtest, which for doctors involves composing a referral letter based on case notes, one of the rating criteria is Appropriateness of Language, "including the appropriate use of vocabulary and tone in the response." Obviously, this requires a holistic and subjective judgment which does not target any particular words in the text. Raters need to focus on the overall communicative effect of each candidate's lexical choices.

The second approach, applying statistics, has quite a long history among scholars interested in analyzing the lexical characteristics of different types of written text. Two key concepts here are lexical variation and lexical sophistication. Variation (or diversity) refers to the extent to which the writer uses a wide range of words rather than just a restricted vocabulary. The traditional measure is the type–token ratio (TTR), which is a simple calculation of the number of different words in a text (types) as a proportion of the total number of words (tokens). However, a more reliable statistic is Malvern and Richards's D (Malvern, Richards, Chipere, & Durán, 2004), which is designed to deal with

a well-known weakness of the TTR: its being influenced by the length of the text. On the other hand, lexical sophistication is concerned with the proportion of lower-frequency words in the text. One influential measure of sophistication is Laufer and Nation's (1995) Lexical Frequency Profile, which calculates the relative percentages of words in four categories, essentially distinguishing between very high-frequency words and others. Meara and Bell (2001) have proposed as an alternative a measure called P_Lex, which controls for the fact that learner texts are typically quite short.

A recent development in large-scale proficiency testing is automated scoring of speaking and writing tasks (Xi, 2010). With this approach, a computer program is trained to identify linguistic features of texts which are associated with the judgments that human raters have made about the quality of the spoken or written performance, and lexical measures figure prominently in this process, at least for writing (Enright & Quinlan, 2010). In the current writing subtest of the internet-based Test of English as a Foreign Language (TOEFL) (iBT), each script is assessed both by a human rater and by an automated system. It remains to be seen to what extent automated scoring will supplant human ratings, but this represents an important new application of vocabulary measures in language assessment.

Thus, in conclusion, although there are a number of vocabulary measures that are widely known and used, they tend to have limitations of various kinds, including partial evidence at best of their reliability and validity. Several innovative procedures have been designed and investigated for research purposes, but few have been adopted for the assessment of learners in operational tests, which still rely mostly on established formats such as multiple-choice, matching, gap-filling, translation, and rating scales. It is important to clarify the purpose of the assessment and the nature of the vocabulary knowledge to be measured. As noted above, the terms "receptive" and "productive" can be particularly problematic. Although vocabulary research is a vibrant area of academic study, the value of its findings is significantly dependent on the quality of its measuring instruments and how appropriate they are for their intended purpose.

SEE ALSO: Assessment of Vocabulary; Lexical Frequency Profiles; Measures of Lexical Richness; Vocabulary Size in a Second Language; Word Associations

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Conversation Analysis and Affiliation and Alignment

JAKOB STEENSIG

Introduction

When people respond in interaction they will invariably indicate whether they cooperate with aspects of the utterances they respond to. The concepts of *alignment* and *affiliation* are both used about cooperative responses, and, conversely, *disalignment* and *disaffiliation* are used about uncooperative ones.

The two terms "affiliation" and "alignment" have been in use about different types of responses for a long time; Jefferson (2002) distinguishes, for instance, between "acknowledgement" on the one hand and "affiliation" on the other. However, it is only recently that this difference was made explicit and explicated, and it was suggested that studying both processes could give analytical insight. This is also the point of view taken in the present entry. It will begin by introducing the distinction between the two concepts and then look at examples of how the concepts and the distinction between them can be used analytically.

Distinguishing Affiliation and Alignment

Stivers (2008) is the first to explicitly define and delimit the two concepts. This is done for the specific environment of responding to storytelling (see below). Stivers, Mondada, and Steensig (2011) attempt to generalize the distinction across activities. They conceptualize *alignment* as the "structural level of cooperation" (2011, p. 20) and see aligning responses as ones that "cooperate by facilitating the proposed activity or sequence; accepting the presuppositions and terms of the proposed action or activity; and matching the formal design preference of the turn" (2011, p. 21). This involves accepting the interactional roles involved in the activity; for instance, in the context of storytelling, accepting the role as a storytelling recipient (Stivers, 2008). *Affiliation* is, in this proposal, "the affective level of cooperation," in that "affiliative responses are maximally pro-social when they match the prior speaker's evaluative stance, display empathy and/or cooperate with the preference of the prior action." (Stivers et al., 2011, p. 21). Table 1 gives an overview of key concepts in this distinction.

Table 1 Overview of alignment and affiliation features

Alignment: structural level	*Affiliation: affective level*
Facilitate and support activity or sequence	Display empathy
Take proposed interactional roles	Match, support, and endorse stance
Accept presuppositions and terms	Cooperate with action preference
Match formal design preference	

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The term "affective level" is a rather vague and nonanalytic concept. It may capture the display of empathy and support of stance, but cooperation with action preference is not necessarily, in any obvious way, an affective issue. I have kept it, for lack of a better word, because this is the cover term that has been used in earlier discussions.

Below, we will try to clarify how the concepts of alignment and affiliation can contribute to understanding structural and "affective" issues of social interaction. But first, we will consider how the conditions for aligning and affiliating are set up.

Creating an Environment for Alignment and Affiliation

In order for a speaker to align or affiliate, there must be something to align or affiliate with. Excerpt (1) illustrates this:

(1) [Stivers (2008, p. 41), excerpt 6]

```
01  KAT:     .tlk alright so Curts' parents come for dinner?,
02           (.)
03  LIA:     #h[m#
04  TAR:  →    [(m)m hm,
05           (0.3)
06  KAT:     an' uhm_ (0.8) we're like
07  LIA:     h(h)m!/(0.8)
08  KAT:     "leave your ^dog;" "we'll babysit your dog,"
09           (.)
10  TAR:     ((gaze shifts to Katie))
11  KAT:     ["we have uh dog £t^oo.",]
12  TAR:  ⇒  [((nodding . . . . . .))]
13  KAT:     an so:_ his parents leave thuh dog,
```

Katie begins in line 1 to tell a story and Taryn responds to this in line 4 and line 12. In both cases, Taryn *aligns*, that is, she accepts the role as a story recipient, which contributes to maintaining the activity of storytelling, but only the nodding in line 12 *affiliates*. In line 1, Katie announces a story, that is, an activity that the recipient can align with, but there is no indication of stance and, hence, nothing to affiliate with. Line 8, however, is reported speech, revealing something about the teller's stance: It "portrays the offering as something they did with enthusiasm (note the pitch peak and emphasis on 'dog' and the quick succession of offers in line 8)" (Stivers, 2008, p. 42). Those features make it possible for Taryn to affiliate, that is, support Katie's stance or perspective, which is what she does by nodding in line 12.

Excerpt (1) also shows that alignment is relevant after virtually every interactional contribution. Everything that people say is part of some activity and has a format that next speakers need to deal with. Affiliation, on the other hand, is relevant only after utterances that take a stance or have specific action preferences.

Aligning and Affiliating are Interpretive Processes

Sometimes the activity with which the recipient can align is not as straightforward as in excerpt (1). In excerpt (2), Cora has told that she has the flu and is getting into what Jefferson and Lee (1992/1981) call a "candidate Troubles-Telling sequence":

(2) [Jefferson & Lee (1992, pp. 527–8), excerpt 3, abbreviated, line numbers added]

```
01  LIL:  →  e- You sure sound aw:ful. [( hoarse.)   ]
02  COR:                               [·t Oh:: my God] I been
```

```
03          ·hhh running the highest temperatures you ever sa:w.
04  LIL:  →  Oh m go:sh well let me hang up and let you get back to bed=
```

Jefferson and Lee argue that Cora's lines 2–3 are the beginning of a troubles-telling, but Lily's response in line 4 treats it as raising a problem with continuing the conversation and hurries to remedy that problem by suggesting that she close the call. Lily "may be properly aligned as the proposer of an inauspicious plan, and an intruder upon someone's 'trouble', but certainly not as a 'troubles-recipient'" (1992, p. 528).

Troubles-telling is, according to Jefferson (1988) and Jefferson and Lee (1992), a recognizable activity with the corresponding roles of a "troubles-teller" and a "troubles-recipient." It is, however, also an activity that is built up gradually, making it possible for the recipient to take other roles than that of a "troubles-recipient." It is a general feature of interaction that people can initiate activities in recognizable ways, but that recipients can still choose to interpret the activity as something else. Therefore, the work of an analyst (as well as that of a conversationalist) is to analyze how a contribution creates conditions for aligning, as well as how those conditions are interpreted and treated by the next contribution. Lily's response in line 4 can also be seen as an attempt to affiliate, displaying empathy with the stance that talking now is too much for Cora, but it may be missing the point if Cora is going for an empathic response to her troubles-telling. Therefore, the same is true for affiliation as for alignment: A recipient may affiliate with something that does not match recognizable attempts at creating an affiliation environment in the prior utterance.

Disaligning *and* Disaffiliating

Sometimes people respond in clearly disaligning ways. In excerpt (3), Frank has called to talk to Marge's husband, who is not present:

(3) [Jefferson & Lee (1992, pp. 524–5), excerpt 1, abbreviated, line numbers added]

```
01  MAR:     I: would like to tell you that one of your: ·h uh brother
             (...)
02  MAR:     introduced my husband to a lady
             ((story about husband not coming home and spending
             his time with this lady, then coming home and just going
             to bed))
03  MAR:     ·hh well you know I was questioning about what was
04           go[i n g o : n? ]
05  FRA:  →    [Well do you h]appen to have his phone number?
```

Jefferson and Lee analyze Marge's story as a "troubles-telling," making it relevant for Frank to be a "troubles-recipient." They see line 5 as Frank clearly disaligning by initiating a different activity and not doing any of the actions that a troubles-recipient could do. It is clearly also insensitive to the stance Marge is taking and to her call for empathy, and it is, thus, also a disaffiliative response.

Affiliating Without Aligning

People can disalign while still affiliating with their coparticipants. This is the case, for instance, when a speaker agrees with another speaker while, simultaneously, asserting more rights over the knowledge of what is being assessed. In excerpt (4), Gay has been reading a German phone number to Jeremy, who now assesses its length:

(4) [Heritage & Raymond (2005, p. 27), excerpt 21, abbreviated, line numbers changed]

```
01  JER:  °Gosh°it goe:s (.) goes on'n on
02  GAY:  Oh it doe:s Germany doe:s.
```

Gay's response is affiliative; it supports and agrees with Jeremy's stance in line 1. In some senses, it is also aligning: It accepts the activity (assessing) and furthers the sequence. But Jeremy's first assessment contains knowledge presuppositions that Gay's response does not align with. It suggests that the length of German phone numbers is something new and remarkable, and that this could be so to the recipient as well. But Gay's response is "*oh*-prefaced" (Heritage, 2002), marking that this is something that she already knew, and it contains a partial repeat (*it does*), that further emphasizes Gay's prior and independent access (Stivers, 2005).

Similarly, answers to questions can confirm and affiliate while, at the same time, taking issue with the knowledge or other presuppositions in the question. This can be the case with, for instance, answers that mark the question as inapposite (Heritage, 1998; Heinemann, 2009), "unaskable" (Stivers, 2011), or asked on the wrong grounds (Stivers & Hayashi, 2010).

Aligning without Affiliating

It is possible to disaffiliate in an aligning way. One example of this is when "noncommittal" responses occur at points where more engaged responses would be the affiliative thing to do. This has repeatedly been shown to happen in counseling and medical encounters. Excerpt (5) is a classic instance, from a call to a suicide prevention center, originally recorded and transcribed by Harvey Sacks:

(5) [Jefferson (2002, p. 1352), excerpt 11, abbreviated, original transcript conventions retained, line numbers added]

```
01  PAT:  I cant go through with it I cant go through with the
02        evening I cant (sniffle)
03  DOC:  uh huh
04  PAT:  you talk     I don't want to talk
05  DOC:  uh huh
06  PAT:  ((laugh sob)) it sounds like a real professional uh huh
07        uh huh uh huh (sniffle)
```

The patient is clearly going for something more than *uh huh* from the doctor, as indicated explicitly in line 6. The doctor's responses are disaffiliative in that they do not show empathy, and thus also decline to follow up on at least one aspect of the action preference (that the display of trouble get recognized in some way), but the doctor still aligns as a recipient to the patient's telling and its formal properties.

Stivers et al. (2011, p. 27) claim that disagreements with assessments also can be aligning (but disaffiliating) when they accept the activity (of assessing) and the knowledge division between parties that the first assessor has proposed.

Discussion

Any analysis of alignment and affiliation should be specific about how preceding actions create something to align and (possibly) affiliate with and about how responding utterances (dis)align or (dis)affiliate. But pointing out what is alignment and affiliation cannot

be an aim in itself. The concepts have analytical relevance only if they contribute to understanding how social cooperation (or the opposite) is done. Future work will show whether the concepts prove fertile for analyses, or whether it is better to use the sub-concepts listed in Table 1 above.

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Identity in Interaction; Conversation Analysis and Laughter; Conversation Analysis: Overview; Conversation Analysis and Recipient Behavior; Conversation Analysis and Transcription and Data; Conversation Analysis and Turn Taking

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Conversation Analysis and Child Language Acquisition

MICHAEL A. FORRESTER

There is now an emerging body of work that can be best described as child-focused conversation analysis (child-CA). The main theme of the research centers on what is involved with children learning how to talk, with additional work on CA studies of childhood. An examination of the literature reveals the diverse themes and issues underscoring contemporary work found across many disciplines. This diversity reflects the fact that ethnomethodologically informed research in child-CA is not focused on language acquisition per se, but instead on how children learn to participate in meaningful social interaction, including language as a social practice. While all such work employs CA methods, the research questions, and underlying theoretical leanings, are diverse. Furthermore, the research designs are similarly varied, including single-case studies, longitudinal designs, cross-sectional comparisons, field studies, ethnographic descriptions, and participant observation. Whatever the design, approach, or data selection criteria employed, there is a shared commitment to the analysis of children's naturally occurring interaction in situ.

As a guide to the emerging literature, child-CA research can be classified into five general areas: (a) prelinguistic communication, (b) repair, (c) competencies and understandings, (d) grammar, and (e) childhood. Such a differentiation is to some extent arbitrary as many themes overlap, but employed here to give a sense of the emerging literature. While there may be some correspondence between subthemes and disciplines (childhood: sociology; prelinguistic communication: developmental psychology), child-CA research can be found in many areas. Furthermore, although there may be an implicit transdisciplinary orientation to describing and explaining the *development* of children's skills and abilities, this is not necessarily a shared aspect of child-CA work.

Prelinguistic Communication

Child-CA research in this theme has highlighted the earliest indications of young children's methodic social communicative skills. In a series of studies of preschool children age 1 to 3 years Kidwell (2009) demonstrates their emerging orientation to a normative social order and their gradual recognition that what is just as important as misconduct is whether your actions are detectable or not by caregivers. Highlighting instances where children make use of another child's gaze shift as a resource for shaping their own actions, Kidwell's (2009) detailed analysis of embodied action and sequence in talk-interaction, particularly gaze and "looking," speaks to a large domain of psychological research on joint attention, considered a cornerstone of language development. Similarly, Kidwell and Zimmerman (2007), in their examination of how very young children present objects to others, show that various practices are involved in making something observable and such "observability" of objects is often what inaugurates a sequence of interaction with another. The theme of what makes action observable is also considered in work by Lerner and Zimmerman (2003), who show how children employ the appearance of one action to accomplish another, and Kidwell's recent work highlights the significance of joint attention and orientation to

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sequence for epistemic accountability (Kidwell, 2011). These studies, although not directly concerned with language per se, highlight the significance of behaviors underpinning the emergence of language.

Repair

How, why and under what circumstances children *repair* their own or others' talk represents a second theme. Through examining children's repair practices we can gain insight into how they understand conversation, and specific elements of the language system. As part of an influential corpus of child-CA work Wootton (1994) has documented the emergence of third turn repair. Initially re-requesting and outright rejections (say of the offer of an object) were mixed together, followed by a period where brief gestures were employed alongside a re-request, and by 18 months, acts of rejection were clearly differentiated from re-requesting. This careful analysis of one child's request and repair practices serves as an early example of how fine-grained analysis can reveal aspects of a child's competence hitherto unknown. The ability of a child to call on resources of self-repair and correction is also highlighted by Filipi (2007) in her examination of how one child responds to somewhat disinterested continuers in talk. More recently Forrester (2008) has documented the emergence of self- and other-initiated repair between the ages of 1 and 3 years, highlighting the fact that spontaneous self-repair is more common initially than (adult) other-initiated repair. Crosslinguistic comparisons, however, warrant caution given Laakso's (2010) work with Finnish children age 1 to 5 years, indicating that other-correction of children's speech diminished rapidly after age 2 years. Further, when children first use self-repairs, the lexical repair initiators typical of Finnish are not employed; and by 4 years, children are skillful in repairing their utterances for social interactive purposes, using adult-equivalent linguistic devices.

Competencies and Understandings

Attaining full membership of a culture entails children learning how to recognize and produce talk, *and* simultaneously display their understanding of talk as a reflexive social activity. They need to display to others their understanding of "talk" as an accountable set of social practices. Wootton (1997) talks of the acculturation of the child through emerging intersubjective understandings that are locally derived, that is, pertaining to very recent cultural and moral events.

In charting key aspects of the child's conversational skills and understandings Wootton (1997) comments that intersubjective "understandings" have three important properties: They are local, public, and moral. For example, these understandings are public in that the child's conduct is systematically sensitive to agreements and preferences which have been *overtly* established within earlier talk. Detailing and examining intersubjective understandings is central to the work of Tarplee (2010), who addresses the inherent difficulties of using concepts such as "feedback" to explain language development. Looking at displays of understanding, on a turn-by-turn basis, Tarplee (2010) highlights the child's orientation to sequential implicativeness, and makes the point that the particular kind of parent–child interaction where linguistic pedagogy is relevant is constituted by the structure of the talk itself.

A related child-CA study concerned with children's competencies questioned the assumed relationship between cognitive development and play. Examining 4–9-year-olds playing

together, Whalen (1995) demonstrated the detailed ways that children first initiate, then systematically organize and accomplish, fantasy play as a socially shared, thoroughly collaborative activity. Similarly, Sidnell (2011) analyses the talk of 3–4-year-olds during make-believe play. Focusing on how "what it is to know" is practiced by children, he details the manner in which epistemic rights about make-believe characters and events flow from participation in the activities, where children orient to knowledge as a structural domain imbued with significant moral importance.

In contrast, Church (2009) describes how children recognize and display disagreement and confrontation with adults and peers. In arguments, threats, and responses to potential conflict, young children use atypical dispreferred turn-shapes, highlighting their developing understanding of the "projectable" and conditional nature of turn taking. Church's (2009) analysis indicates the subtle processes involved in children gradually learning how to produce accounts in their talk that dispel or displace potential conflict.

The potential difficulties children face when dealing with adults is brought out in the work of Wootton (2005). Detailing the manner in which children make requests, he considers whether there is any orderly connection between the grammatical form requests take and the sequences in which they happen. Over and above demonstrating the relationship between the child's request form selection and patterns of "accountable alignment" particular to the preceding talk and action, Wootton (2005) draws our attention to the fact that transitions need to be understood with reference to the dynamics of the interactions the child is experiencing rather than relying on cognitive developmental explanations.

Grammar

Another theme of child-CA work subsumes topics such as language form, syntax, prosody, and conversation monitoring. Tykkyläinen and Laakso (2010) consider how 5-year-old Finnish children employ the "agreement-pursuing" question particle, showing that use is closely embedded with attempts at negotiating social relationships with peers, particularly during fantasy play. The role of adult input and how children begin to recognize the significance of turn taking is brought out in the work of Wells and Corrin (2004). Using an International Phonetic Alphabet (IPA) supplemented CA orthography they highlight how a child can recognize significant prosodic features, when and where to employ them, and what the results might be. Such work draws our attention to the subtle nature of prosody in turn taking and turn completion, where, for example, it is use of mid-pitch which projects the non-completion of a child's turn—a nonfinal element which adults orient to.

Other structural features of the local management system seem unique to adult–child talk. Tarplee (1996), for example, has documented the phonetic repair work children produce in contexts where adults disguise direct correction by carefully designed temporal placing of turns-at-talk. Contrastingly, adults often produce repair initiators in their talk with children without explicitly locating what the trouble-source of the child's prior turn might be. Corrin's (2010) analyses of the talk of a 19–21-month-old indicates that self-repair can be initiated through potentially ambiguous adult turns in the ongoing sequence of talk.

Again, as with repair studies, crosslinguistic comparisons are emerging within child-CA work. Salonen and Laakso (2009) note that 4-year-old Finnish-speaking children produce fewer morphological and more syntactic self-repairs. They are also able to produce long and complex revisions of ongoing speech, and can monitor their conversation at various levels—pronunciation, morphology, and content—while simultaneously taking account of embedded nonverbal actions.

Childhood

In work considering aspects of learning how to talk beyond structural elements of conversation, we find both sequentially focused CA and membership categorization analysis (MCA). For example, the difficulties and challenges children face when interacting in unfamiliar circumstances are highlighted by Hutchby (2010) in counseling contexts, and by Cahill (2010) within medical interactions. The subtleties involved in inviting and encouraging a child's participation gain importance given O'Reilly's (2006) observation that adults are likely to simply ignore children's interruptions in family therapy sessions.

How children deal with challenging and problematic talk with each other is documented by Sidnell (2010) in his work on questioning repeats, commenting that children of different ages exhibit contrasting interactional concerns which cannot simply be accounted for by appealing to "internal" developmental mechanisms. Other work reminds us that children's own interactional concerns regarding role position can be evident in their talk (Gardner & Forrester, 2010). Forrester and Reason (2006), for example, highlight the sensitivity children exhibit surrounding membership categories of the self. Likewise, Butler and Weatherall (2006), using both sequential analysis and MCA, looked at the play activities of 6–7-year-old children and documented the subtle social pragmatic practices used by children, commenting that such situated cultural resources produce nuanced and creative versions of the world.

Such versions of the world are not fixed or determining, however, as is highlighted in the work of Danby and Baker (1998), whose analysis of preschool-aged boys' play "illustrates that masculinity is not a fixed character trait, but is determined through practice and participation in the activities of masculinity" (p. 151). The interdependence of talk and social positioning is also clear in Weatherall's (2002) research on children's recognition and production of gender roles. Weatherall makes the point that children of this age, as part of their striving to become competent members of their culture, show a particular sensitivity to the display of their knowledge of gender categories, and will correct inappropriate use of membership category terms. Finally, de Leon (2007) provides an illustrative example of how child-CA can illuminate our understanding of both conversational structure and childhood. His analysis of two young Mayan children's reorganization of greeting structures, playful repetition, and recycling across turns engenders an emergent sibling culture, one that "contests the social organization of the age-graded structure of the extended family" (p. 405).

CA research on children, on adult–child talk, and on topics germane to understanding how children learn how to talk is gathering momentum. Notwithstanding a degree of overlap, it is clear there are a number of identifiable themes in the literature. What is distinct about child-CA is the careful focus on how, why, and under what conditions younger members of any culture gradually attain the skills necessary for producing those reflexively accountable sense-making practices that constitute interaction.

SEE ALSO: Conversation Analysis and Learning in Interaction; Conversation Analysis: Overview; Conversation Analysis and Prosody; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Turn Taking

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Conversation Analysis and Classroom Interaction

PAUL SEEDHOUSE

This entry discusses how conversation analysis (CA) has been employed to investigate interaction which occurs in second/foreign-language (L2) classrooms. The detailed, intensive study of interaction in L2 classrooms only took off in the 1960s with the advent of audio- and, later, video-recording technology. The first wave of development in the description and analysis of L2 classroom interaction was observation or coding schemes from the 1960s. A second major development was the use of discourse analysis (DA) from the 1970s. DA uses principles and methodology typical of linguistics to analyze classroom discourse in structural-functional linguistic terms. Seedhouse (2004) suggested that DA cannot portray the flow of the interaction because it is essentially a static approach which portrays interaction as consisting of fixed and unidimensional coordinates on a conceptual map. Since the DA approach was developed for first language (L1) classrooms and transferred for use in L2 classrooms, it had difficulty in portraying the extra dimension which distinguishes L2 classroom interaction from L1 classroom interaction. This is that language is the object as well as the vehicle of interaction. With the development of coding schemes and DA studies, from the 1980s, the importance of interaction as a vital element in the instructed L2 learning process became clearer.

Strong interest then emerged in applying a new methodology (CA) to the description and analysis of L2 classroom interaction. CA had developed in the 1960s, had no obvious connection with learning, and in its genesis dealt exclusively with monolingual English data. Publications then appeared which started to address the relationship between CA and L2 classroom interaction. The overall picture of the L2 classroom which emerges from the application of a CA methodology is that it is a very complex, dynamic, and fluid interactional environment. Pedagogy and interaction are intertwined in a mutually dependent relationship and we must examine the minute detail of the interaction to gain a full understanding of the instructed L2 learning process. Previously, for many years researchers in the area of language learning had shied away from examining the micro-detail of classroom interaction, regarding it as an excessively complex, heterogeneous, and particularly "messy" source of data. However, with CA it became possible to do this and studies have demonstrated that, as with conversation, there is also *order at all points* in L2 classroom interaction.

In general terms, then, CA studies have transformed our understanding of how L2 classroom interaction is organized and how this organization is related to a number of teaching and learning issues. A number of studies have examined in detail specific issues related to language classroom interaction from a CA perspective, revealing subtle interactional practices which transform our perceptions of L2 learners and teachers. Olsher (2004) demonstrates how L2 learners in small-group project work may complete sequential actions through gesture or embodied displays, revealing the importance of nonverbal aspects of interaction. Koshik (2002) reveals how teachers use the pedagogical practice of designedly incomplete utterances in order to initiate self-correction by learners. Carroll (2005) challenges the general perception of L2 novice learners as incompetent communicators, uncovering

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their ability to make creative communicative use of their minimal linguistic resources and use sophisticated conversational micro-adjustments. Novice learners can precision-time their entry into interaction, recycle turn-beginnings to solicit the gaze or attention of partners, and use vowel marking as a resource for forward-oriented repair. Mori (2002) traces how a task-as-work-plan (which was intended to be a discussion with native speakers) is transformed into a task-in-process resembling a structured interview of question-and-answer exchanges. Markee (2000) portrays the progress of intersubjectivity during two tasks, one of which results in learner comprehension of the target item while the other does not. Appel (2007, p. 282) examines how L2 classroom interaction can be seen as a form of performance, and suggests that "verbal interaction in the language classroom can be seen as a reflexive mode of communication which uses some of the resources characteristic of performance to make language its special focus."

Employing a macro-perspective, Seedhouse (2004) applied CA methodology to an extensive and varied database of language lessons from around the world to tackle the question 'How is L2 classroom interaction organized?' The main thesis developed in this monograph is that there is a reflexive relationship between pedagogy and interaction in the L2 classroom, and that this relationship is the foundation of its context-free architecture. This relationship means that, as the pedagogical focus varies, so the organization of the interaction varies. However, this also means that the L2 classroom has its own interactional organization which transforms intended pedagogy into actual pedagogy. The concept of the rational design of institutional interaction is employed to identify the institutional goal as well as three interactional properties which derive directly from the goal. The basic sequence organization of L2 classroom interaction is presented, together with an emic methodology for its analysis. Seedhouse stresses the dynamic nature of context by exemplifying how the institution of the L2 classroom is talked into and out of being by participants and how teachers create L2 classroom contexts and shift from one context to another. The monograph portrays the L2 classroom as a complex, fluid, dynamic, and variable interactional environment and provides a concrete example of how CA methodology can be applied to an issue of interest to language teachers and applied linguists. In order to understand the relationship between interaction and the process of language learning, it is vital to understand how the interaction is organized.

There has been interest in how CA can be employed to investigate notions relevant to language teaching and learning such as communicative competence and interactional competence. Communicative competence had previously been presented as a fixed and static construct; as Mondada and Pekarek Doehler (2004, p. 502) point out, the traditional notion of competence is of "a phenomenon that is isolated from socialization processes." CA offers a very different view of the nature of competence. Instead of working from the static assumption that competence is something that one has a fixed degree of at a point in time, CA presents competence as variable and co-constructed by participants in interaction. CA also provides a means of exploring the variable ways in which such competence is co-constructed in particular contexts by the participants involved. "Competence cannot be defined in purely individual terms as a series of potentialities located in the mind/brain of a lone individual, but needs to be conceived of as a plurality of capacities embedded and recognized in the context of particular activities" (Mondada & Pekarek Doehler, 2004, pp. 502–3). Lee (2006) suggests that, whereas communicative competence has traditionally been viewed as the goal of L2 teaching, it can also be viewed as a precondition of L2 teaching. Seedhouse (2004, p. 241) shows how CA can reveal the current state of a learner's competence and the level that a learner is able to achieve when assisted. Hellermann (2007, p. 85) defines interactional competence as the "ability to co-construct appropriate linguistic forms, registers, and sequential routines in appropriate contexts in order to accomplish discursive practices." Studies such as Carroll (2005) portray how interactants with minimal

linguistic resources can nonetheless employ these resources skillfully and innovatively in interaction in L2. Such CA research, then, reinforces a shift away from a linguistic deficit model focused on individual performance toward a model in which communicative competence is seen to be co-constructed.

Studies have critiqued the notion of "task" employed by the task-based approach to language teaching and learning. A number of CA works (Mori, 2002; Mondada & Pekarek Doehler, 2004; Seedhouse, 2004) demonstrate that there can be significant differences between the task-as-work-plan (what is supposed to happen) and the task-in-process (what actually happens) and reveal learners to be active agents, who transform tasks-as-work-plans into tasks-in-process on a moment-by-moment basis. Mondada and Pekarek Doehler (2004, p. 505) therefore insist "that [tasks] cannot be understood as stable predefined entities." Studies of task-based interaction have generally provided useful evidence of student–student interaction, as opposed to plenary interaction.

In a similar vein, CA has been employed to provide evidence of what actually happens during particular language learning activities. In recent years, the range of activities covered has become very diverse, expanding the knowledge and evidence base. Examples in the literature are of how language play emerges and is organized; the interactional practices of collaborative video-game playing; the vocabulary learning of one learner during conversations over a three-month period; the practice of "doing word explanation"; a microanalysis of gesture and speech used by a teacher during vocabulary explanations; yes/no questions in a teacher-fronted English as a second language (ESL) lesson; and reading classes and the co-construction of a quiz game.

A number of CA studies have explored the mechanism of repair in relation to L2 classroom interaction. This is a vital mechanism as far as second language acquisition (SLA) is concerned; as Markee observes, "Conversational repair is viewed by SLA researchers as the sociopsychological engine that enables learners to get comprehended input" (2000, p. 31). Liebscher and Dailey-O'Cain (2003) suggest that the different types of repair initiations employed by teachers and learners are reflexively related to their respective roles as teachers and learners. Hosoda (2006) relates the employment of repair trajectories to level of language proficiency, showing that this became relevant when one participant invited repair by another and when intersubjectivity was threatened. Jung (2004) shows how a learner employs repair initiation as a resource in production of vocabulary items. Koshik (2002) reveals how teachers use the pedagogical practice of designedly incomplete utterances in order to initiate self-correction by learners.

One area of CA research into language learning which is expected to grow considerably in coming years is that of longitudinal studies that document the development of interactional patterns in learners over time. Studies so far demonstrate the promise of this approach. Young and Miller (2004) conducted longitudinal observation of revision talk, noted that the participation framework changed over time, and "demonstrate processes by which the student moved from peripheral to fuller participation" (p. 519). Hellermann (2007) examines task openings by successful learners over a period of at least 18 months. He proposes (p. 91) that learning can be conceptualized as "the change in the use of resources and strategies for engaging in a particular aspect of social interaction." Brouwer and Wagner (2004, p. 44) examine the development over a period of two months of a Japanese learner of Danish: "The differences between early and later encounters are found in the complexity of the emerging structures which build on earlier talk and topics and where increasing displays of understanding by both participants can be seen. Learning a second language, then, may be described in terms of increasing interactional complexity in language encounters rather than as the acquisition of formal elements." These authors conclude that "instead of describing [the learner's] change in use of linguistic elements alone, one can explain her progress in terms of interactional resources and how they are employed in the interaction

in collaboration with her conversation partner" (p. 45). Markee (2008) proposes a "learner behavior tracking methodology" which is able to track longitudinal L2 development. This methodology tracks how the "learning object" occurs in interaction and also portrays the process of learning via interaction.

An issue which is receiving increasing prominence is the question of what constitutes adequate primary data for CA studies of L2 classroom interaction. It has been argued that nonverbal communication and gaze are potentially important features of face-to-face interaction and that multimodality should therefore be incorporated into CA studies. Recent CA studies in the area of language learning which demonstrate the significance of nonverbal communication and gaze for our understanding of interaction include Lazaraton (2004), Olsher (2004), Carroll (2005), Mori and Hayashi (2006), and Seedhouse and Almutairi (2009). A number of these studies employ frames from videos together with overlays such as arrows and graphics which highlight the significance of nonverbal features.

Looking to possible future directions for CA research in classroom interaction, it is highly likely that it will examine a wider range of languages being learned and taught, using a wider range of teaching practices, activities, and issues, in a wider range of classroom contexts. It is also likely that multimodal analysis will become more common.

SEE ALSO: Conversation Analysis and Education; Conversation Analysis and Language Acquisition; Conversation Analysis and Lingua Franca; Conversation Analysis and Multimodality; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA

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Conversation Analysis and Cockpit Communication

MAURICE NEVILE

Conversation analysis (CA) research on cockpit communication uses audio and video recordings of actual or simulated flights to explore the language and practices by which pilots establish moment-to-moment what is happening, who is doing what, who knows what, and what is to be done next, to perform necessary tasks to fly their aircraft. Major studies have examined how airline pilots routinely collaborate as a crew to fly commercial aircraft (Nevile, 2004a; Auvinen, 2009), and other studies have examined data from civil aviation (Melander & Sahlström, 2009) or military air operations (Nevile, 2009). This CA research falls generally within the interests of institutional talk and workplace studies, and has offered an alternative to the mostly experimental studies of communication from within aviation human-factors psychology.

The dominant line of research has shown how pilots, in various and situated ways, orient to and accomplish appropriate timeliness and sequential order of talk and action. In the cockpit it is critical to say and do things at the right time and in the right order, as outlined formally in procedures, flight manuals, regulations, and training. Particular actions for flight tasks are mostly relevant, or possible, only when particular other actions have been completed, and are known to be so. CA studies show how pilots establish and maintain a sense of what now and what next as they progress through flight tasks and flight events. For example, pilots can preface a turn at talk with "and," and so present some new activity or task as connected and relevantly next (Nevile, 2006c). Pilots develop an ongoing sense of their conduct of their flight as a whole by making salient the sequentiality of their work when the officially prescribed wordings they are required to use can leave this implicit. A pilot can also preface a turn with "and" to prompt another pilot to perform an action which is due but not yet initiated (Nevile, 2007a). Rather than make conspicuous another's possible lapse, *and*-prefaced talk presents the absent action as merely timely and occurring ordinarily next in sequence. Or, when conducting a checklist for a flight task or stage, one pilot might say "okay" or "thank you" in response to the other's final call of "checklist complete," to show that the "complete" call was itself heard and there is now a shared crew understanding that the checklist is closed and it is legitimate to move to a next action (Nevile, 2005a).

Pilots' orientation to the significance of completion is evident also in the timing and production of their talk for performing tasks. For example, talk in the airline cockpit is tightly scripted in content, and is constrained in allocation of speaker and turn order. Sequences of talk are repeated many times over the course of a pilot's career. Cockpit communication can be highly predictable and so is vulnerable to moments of overlap at the end of turns, when speaker change occurs. However, pilots avoid overlapping talk and allow one another's talk to emerge complete and in the clear (Nevile, 2007c). Moments of overlapping talk can signal trouble in the flow of talk and action (Nevile, 2008). Pilots can also use prosody, such as rising and falling terminal pitch, to signal continuity or finality as they progress and complete tasks, for example when jointly conducting a checklist (Nevile, 2005b).

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Figure 1 After turning on the autopilot, a captain points to the illuminated autopilot button and says "I'll take autopilot's in"

Lastly and importantly, pilots can physically embody their understandings of appropriate timing and sequential order for performing tasks (Nevile, 2004a, 2004b, 2005b; Auvinen, 2009; Arminen, Auvinen, & Palukka, 2010). For example, pilots delicately modify features of talk throughout its production (e.g., pauses, sound lengthening) to synchronize talk precisely with accompanying nontalk activities (e.g., turning a dial, pressing a button), and so ensure that verbal claims about task progress and completion (e.g., "that's set," "autopilot's engaged") are consistent with reality (Nevile, 2004a, 2004b). That is, when something is said to be done it must really be so at the time of saying. For some actions or events a pilot can signal the momentary and relative value for joint attention of a cockpit display (e.g., for altitude), or other location (out of the windows), by pointing at it in ways that are more or less visible to and witnessable by the other pilot (see Figure 1) (Nevile, 2007b).

There are other lines of inquiry, including how pilots communicate with parties beyond the cockpit, such as air traffic controllers. Pilots can design talk to include multiple actions within a single turn (Falzon, 2009), and must integrate external communication with their ongoing collaboration within the cockpit (Nevile, 2004a; Auvinen, 2009; Nevile, 2009). Another interest has focused on how pilots act according to relevant cockpit roles (e.g., captain, first officer, crew) and associated duties and responsibilities (Frankel, 2000; Nevile, 2001, 2004a). Pilots can use choices of personal pronoun to invoke and ascribe particular roles and present their continuously evolving understanding of who's who in the cockpit for performing tasks (Nevile, 2001, 2004a). Some pronouns are scripted in officially prescribed wordings (e.g., "my power levers"), but others modify or occur outside official wordings ("I'll have cruise power"). By varying pronominal choices pilots realize and make accountable formal roles in situ and moment-to-moment. Other research considers roles such as learner and instructor in pilot education (Melander & Sahlström, 2009).

In the cockpit things do not always go routinely, and trouble or problems can arise. Pilots and others identify and deal with such moments by drawing on language, embodied activity and gestures, and material resources, for example to restore intersubjectivity and repair the temporal and sequential order of talk and action (Frankel, 2000; Nevile, 2007a, 2008; Bergmann, Nazarkiewicz, Finke, & Dolscius, 2008; Auvinen, 2009; Arminen et al., 2010). Features of cockpit interaction can create a context for error (Nevile & Walker, 2005), and the challenge of managing the participation and understanding of multiple and distributed parties can lead to mistakes and poor decisions (Nevile, 2009). CA can therefore contribute to aviation safety by informing investigations of aviation incidents and accidents. CA can offer detailed transcriptions and analyses of "black box" voice recordings to examine communication as a possible contributing factor (Nevile, 2006a, 2006b).

A recurring finding of CA research on cockpit communication is that although much of what pilots say is constrained by formally prescribed wordings for procedures, pilots must realize these wordings in situ in real time, and they commonly vary the "script" as it is occasioned to meet local and emerging contingencies. Flying an aircraft is a technical and task-driven activity, but it is also highly dependent on language and processes of social interaction.

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis: Overview; Ethnomethodology in the Analysis of Discourse and Interaction; Multimodal Discourse Analysis

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Conversation Analysis and Communication Disorders

RAY WILKINSON

Introduction

A communication disorder can profoundly affect a person's ability to convey information to others and to produce a full range of social actions within conversation (such as requesting, offering, telling off, correcting, telling jokes or stories, etc.). It can have a significant impact on a person's social and personal identity and their ability to create and maintain interpersonal relationships. The investigation of communication disorders is important in order to be able to analyze their causes and the forms they take and, ultimately, to improve treatment for those affected. At the same time, analyzing how communication may break down or not function with normal limits holds out the promise of being able to tell us something about the workings of normal, non-disorder, communication and its components. Other approaches such as neuropsychology, for example, have long drawn on communication disorder data in order to learn about both normal and disordered functioning (Ellis & Young, 1996).

In recent years, the method and findings of conversation analysis (CA) have been increasingly drawn upon in the investigation of communication disorders. In the case of aphasia, a language disorder typically acquired following stroke and the disorder most studied using CA, this approach has also been used to implement and evaluate treatment (Wilkinson, Bryan, Lock, & Sage, 2010). This overview will discuss how CA has provided a new perspective within the field of communication disorders and how it has produced a range of findings about how these disorders impact on people's everyday social interactions.

Communication Disorders

Communication disorders can occur in both adults and children and can take many forms (see Kent, 2004). One class of communication disorder primarily involves the processes involved in the production or reception of the speech signal. For example, dysarthria, a motor speech disorder, can occur due to damage to elements of the speech production process such as those involved in articulation or respiration. It can occur as part of disorders such as Parkinson's disease or cerebral palsy. A second class of communication disorder involves impairments to aspects of the speaker's linguistic system and can affect, for example, vocabulary or grammar. These impairments may impact on the person's ability to understand spoken language as well as to produce it and can also affect reading and writing. Communication disorders of this type include aphasia, or specific language impairment (SLI) in children. A third class of communication disorder includes significant cognitive or intellectual impairments. Disorders of this type can occur in adults with dementia or in people with certain types of autism or of learning difficulties (referred to in some countries as "mental retardation").

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Investigating Communication Disorders Using CA

CA relies as its primary data source on video or audio recordings of naturally occurring social interactions, in particular those interactions which involve talk. Analysis using this approach focuses on the social conventions and practices which participants in an interaction draw upon in order to produce talk and other conduct in interaction which is treated by recipients as coherent and meaningful. As such, CA brings quite a different methodological and conceptual approach to the investigation of communication disorders compared to more traditional approaches within the field.

For example, elicited data has formed the basis for much of what is known about individual communication disorders as well as for the planning and evaluation of treatment for those disorders. Tasks used to elicit data include asking the person with the communication disorder (PWCD) to name or describe a picture, read aloud, repeat words or sounds, produce a narrative, or enact a role play. While the control which such an approach provides has many positive features, there are also, however, significant concerns about the ecological validity of findings produced using this approach (Heeschen & Schegloff, 2003). For example, there are questions about how closely the person's performance on the task in a clinic or laboratory might reflect their performance in everyday social interactions, where the presence of other participants produces particular time pressures on communication and may affect how the person designs and produces their utterances. Evidence so far suggests that aspects of a speaker's language production, such as grammar, can display systematic differences when elicited within a test situation as opposed to being produced spontaneously within conversation (Beeke, Wilkinson, & Maxim, 2003; Heeschen & Schegloff, 2003). Also, close analysis of PWCDs within naturally occurring everyday interactions can highlight their often subtle use of a range of resources which are not available to them in the testing situation. These can include nonvocal resources (e.g., gesture, body movement, and eye gaze) and the resources provided by the material environment (including objects to act upon or point to) and the PWCD's significant others (such as shared knowledge and familiarity, which can often permit the recipient to infer meaning, even when the PWCD's contribution may appear to others as difficult to interpret). At the same time, however, analysis of how the PWCD carries out tasks in the clinical context, including therapy tasks, may provide insights into the nature of the speaker's interactional strengths or deficits (Gardner, 1998).

Other methods which have traditionally been drawn upon in communication disorder research include interviews and questionnaires, in particular where the aim is to collect more social and ethnographic information. Again, however, while such approaches can provide useful information, their reliance on the person's memory and insight into the phenomenon under question can be problematic. In the case of conversation in particular, using interviews or questionnaires risks uncovering only superficial details compared to the wealth of information that can be found through analyzing audio or video recordings of conversation alongside transcriptions of those recordings.

Insights into the Impact of Communication Disorders within Social Interaction

Insights which CA has provided into the impact of communication disorders on social interaction will be discussed here by focusing on four overarching themes which have emerged from the investigation of individual disorders.

One theme is that these interactions recurrently display some form of delay in the progress of the PWCD's contribution toward completion, or in the sequence of which that

contribution is part, or both. These delays are often caused by the activity of repair, that is, practices for dealing with troubles in speaking, hearing, or understanding (see Schegloff, 2000). Different disorders may recurrently display distinct patterns of repair in interaction. Within conversations involving a person with acquired dysarthria, for example, a regular repair pattern is that of other-initiations of repair by the conversation partner (Bloch & Wilkinson, 2009). It is evident from these repair initiations that the source of trouble for the recipient is often the poor intelligibility of one or more elements of the speaker with dysarthria's turn arising from that speaker's motor speech difficulties. In many types of aphasia, on the other hand, there is a preponderance of self-initiations of repair, particularly in the form of word searches by the person with aphasia (Laakso & Klippi, 1999; Helasvuo, Laakso, & Sorjonen, 2004). While recurrent features of repair initiation may differ between these two disorders, in both cases it is not uncommon for the first attempt at self-completion of repair by the PWCD to be unsuccessful and for other attempts to then ensue, entailing often longer repair attempts and delays than are typically seen in non-communication disorder interaction. This inability to achieve self-repair despite a prolonged attempt is one occasion in interaction when the PWCD's incompetence may be quite visible and indeed may be referred to or alluded to through, for example, laughter (Wilkinson, 2007). As well as often being longer, repair in these interactions may also be more jointly achieved than in non-disorder interaction. Even when the eventual outcome is self-repair by the PWCD, the conversation partner will often have been actively involved in the repair activity leading up to that successful outcome.

A second research theme is a focus on how the disorder can be seen to impact on the PWCD's social identity, interpersonal relationships, or both. Kitzinger and Jones (2007), for instance, show how the memory deficits associated with Alzheimer's disease, a form of dementia, may have interactional consequences for family relationships. For example, in forgetting to inquire about certain features of family members' well-being at a point when such an inquiry might be expected (e.g., in the "how are you" sequences in the openings of phone calls), the person with dementia may be viewed, quite incorrectly, as self-centered and uncaring about the relationship concerned. In relation to social identity, Antaki, Walton, and Finlay (2007) observe a recurrent practice whereby staff working with people with learning difficulties, for example in residential homes, regularly propose an activity for the residents (e.g., going cycling) in terms of social aspects, such as which other people will be present. Antaki et al. (2007) discuss how this practice implies a limited identity in that, for example, the interest of the people with learning difficulties is treated as being primarily social, with less interest in the activity's intrinsic qualities. Another feature of identity in communication disorder interaction can be highlighted using Goffman's (1981) distinction between the "author" of an interactional contribution (i.e., the person who, broadly speaking, has chosen the words) and its "animator" (i.e., the "sounding box" through which the words are actually produced). While in a non-communication disordered speaker these two aspects are regularly—although by no means invariably—combined, in PWCDs there is often a systematic separation between author and animator. For example, in his analysis of interactions between Chil, a man with severe aphasia, and his everyday interlocutors, Goodwin (2007) shows how, despite having only three words at his disposal (*yes*, *no*, and *and*), Chil is able to use practices such as other-initiation of repair to prompt others to alter what they have just said and thus produce, or "animate," utterances whose meaning Chil can in some sense be seen to have "authored." Wilkinson, Bloch, and Clarke (in press) analyze a different type of separation between author and animator, that is, the use of voice output communication aids (VOCAs) by PWCDs, for example those with severe dysarthria, to "speak," or "animate," a contribution which they have authored (by means of, for example, a keyboard). In both cases, while animation allows the PWCD to produce a more complex contribution than would otherwise be possible, there can also

be costs. The PWCD, for example, may have less control over the message they wish to convey or over the stance and aspects of self-identity which they may want to project via their contribution.

A third theme, linked to the above, concerns how the PWCD, other participants, or both adapt the way in which they produce their contributions in response to the limitations brought about by the communication disorder. One form this takes is that two (or more) participants may systematically co-construct an element of talk which in non-disorder interaction would typically be produced by one speaker. Heeschen and Schegloff (2003), for example, analyze how in their data the use of "telegraphic speech" (grammatically simplified expressions) by a speaker with aphasia prompts the interlocutor to unpack the verbal and nonverbal contributions of the person with aphasia and co-produce in systematic ways what that speaker was trying to articulate. Bloch (2005) analyzes a case of co-construction at an even finer level of granularity; the co-construction of individual words by a man with severe dysarthria and an everyday interlocutor (his mother). In this case, due to the man's poor level of speech intelligibility, the dyad had evolved a system of talking whereby the man regularly produced a word one sound (or phoneme) at a time, with his mother repeating back to him her hearing of that sound to ensure she had heard it correctly. This carried on until the word was complete.

The fourth theme concerns how analyses of a PWCD's utterances, and in particular their responses within interaction, may tell us something about the nature of the intelligence, comprehension, or both of that person and, by extension, of other people with a similar disability. In an analysis of a man with frontotemporal dementia, for example, Mikesell (2009) shows that his responses recurrently displayed an inability to understand the intention of the interlocutor's prior utterance and the ongoing activity sequence of which that utterance was part. Maynard (2004) examines responses produced by people with autism on a published educational test and uses these data to investigate the nature of intelligence in autism. He shows how the children with autism in his data produce responses which display a local, or literal, understanding of the subtest question rather than the kind of gestalt or composite understanding which would commonsensically be expected. Maynard's paper is one example of CA research in this field which not only discusses its findings in terms of what has been learned about the communication disorder under investigation, but generalizes outward to discuss what has been learned from the analysis about aspects of everyday social life, such as deviance and disability and everyday language practices. This use of communication disorder data to learn about "non-disordered" speech, language, and cognition within interaction constitutes one direction which research in this field may be expected to pursue further.

SEE ALSO: Conversation Analysis and Learning in Interaction; Conversation Analysis: Overview; Conversation Analysis and Recipient Behavior; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Turn Taking

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Conversation Analysis and Design

BEN MATTHEWS

Since the mid-1980s, the design of various technologies such as user interfaces for photocopiers, surgical monitoring alarms, London Underground control systems, video-conferencing software, and interactive museum exhibits has benefited from investigations informed by conversation analysis (CA). The exemplar studies which form the basis of this entry are best understood as contributions of CA-informed work, rather than contributions to the discipline of CA.

CA (and ethnomethodology more generally) first came to the attention of those concerned with the design of technologies through the significant work of Lucy Suchman (1987). Her analysis of the difficulties that users encountered trying to work a photocopier had a profound impact on the field of interface design (which has since become known as interaction design—designing the interactions with and of technologies). A number of general features of CA make it ideal for application to technology design, not least because it offers a clear counterpoint to other approaches that attempt to explain human interaction with technological systems. Prior to Suchman's work, cognitive science and experimental psychology were the human sciences that had the largest influence on how designers sought to understand and predict how users would behave with technology and interpret *its* behavior (Norman & Draper, 1986, is representative). In contrast to such approaches that advanced general abstract models of human behavior, or that accumulated quantitative empirical findings on the basis of controlled experiments of users interacting with systems, CA proposed something completely different. CA offers the promise of a systematic, evidence-based investigation of the interactional difficulties encountered in the use of technology, detailing the many and varied resources that users employ in order to understand, and render intelligible, actions with and of technology. CA supplants a generic model of human sense-making processes with an analytic orientation to practice that can reveal users' own local, situated methods for deciphering system behavior, exchanging controlled experimental settings for people's naturally occurring interaction with systems.

To this end, CA-informed studies have provided a number of contributions to systems design. The following examples, although selective, are representative of this growing corpus of work. One of the principal contributions of Suchman's (1987) study was to lay out, in an analytic scheme, the multiple mismatches that obtain between the resources available and employed by the users to make sense of the system's behavior, on the one hand, and the resources upon which the system can rely in order to respond to the users' actions, on the other. Her analysis showed how the users make use of all manner of elements in their social, temporal, and material environments (including the sequence and structure of the system's actions within the users' courses of activity) as resources to help them decipher the system's responses and instructions. In contrast, the system could only produce automatic responses from users' overt actions with it. To complicate matters, these automatic responses often obscured, rather than revealed, the design rationale on which they were based, as the users received and interpreted each system response in relation to its placement in a socio-material sequence of interaction that gave each system response a locally contingent sense. Suchman's recommendations for systems design included

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expanding the resources on which systems could draw in order to respond to users' commands. Importantly, however, Suchman's work is best known in design less for its CA orientation or for its design recommendations than for its trenchant critique of rationalist models of human action that were embedded within computer engineering cultures, and upon which the design of "intelligent" interfaces were based. Her critique, coupled with its empirical diagnosis of the alien intelligibility of the photocopier interface, is responsible for the remarkable legacy that CA-informed work has enjoyed in design circles. Notably, that legacy includes the widespread recognition of the importance of the social and material *context of use* to the usability of interaction technologies.

Subsequent CA studies of technology can be seen to have followed Suchman with respect to the types of contributions they offer to design. Roughly speaking, these contributions can be divided into (a) articulation of the social organization of work and life; (b) enumeration of design cautions, recommendations, or specifications; (c) development of "hybrid" design practices; and (d) respecification of central concepts in design research.

The Social Organization of Work and Life

The work of Christian Heath and Paul Luff since the early 1990s deserves particular mention. Their collection of studies (Heath & Luff, 2000) has served as a benchmark for the contribution of a CA orientation to an understanding of collaborative work involving the use of technologies. For instance, the ways in which a user's actions with and orientations to a system are publicly available to her colleague can be a vital resource for the colleague's coordination of his actions with hers, and for the accomplishment of their shared tasks (Heath & Luff, 1991). This bears on the many attempts by designers to develop computer systems to support online collaboration through video conferencing or shared virtual workspaces, as many of these systems, through their design, prohibitively deny users access to precisely these resources. The multiplicity and variety of users' sense-making resources cannot simply be encapsulated within systems, or easily made available to systems as input. This general point has been reinforced and developed in subsequent CA-informed studies in a range of different settings, including air traffic control (Harper, Hughes, & Shapiro, 1989), collaborative virtual environments (Hindmarsh, Fraser, Heath, Benford, & Greenhalgh, 2000), electronic guidebooks (Szymanski, Aoki, Grinter, Hurst, Thornton, & Woodruff, 2008), technical support systems (Whalen & Vinkhuyzen, 2000), and software tools for designers themselves (Bowers & Pycock, 1994), among others. In each case, these studies have offered detailed understandings of technologically mediated (and disrupted) practices in the lived detail of their enactment that have formed an important resource for the redesign of the technology in question.

Design Cautions, Recommendations, and Specifications

Practically, CA contributions to the actual design of systems have included recommendations for the kinds of changes systems should make (and should avoid making) to existing work practices (Button & Harper, 1993), or for implications for staff training and expertise (Whalen & Vinkhuyzen, 2000), or, more ambitiously, for specifying the nature of technologies and their features. For instance, on the basis of their studies, Heath and Luff (1992) proposed that computer-mediated communication systems would better support cooperative work if users were given the freedom to systematically control, while an activity is already underway, their own audiovisual accessibility to their collaborators. (This has, years since, become a feature of technologies such as Skype®.) Work conducted at PARC has perhaps taken the contributions of CA to design the furthest in this regard,

where CA observations have informed specific design features of an electronic guidebook at an historic house. After study of the structure and content of the social interactions of visitors using these devices, a new design was developed that allowed visitors to "eavesdrop" on the audio content playing on their friends' guidebooks (Szymanski et al., 2008).

A more controversial application of CA to systems design has been the move to operationalize the findings of CA with regard to the systematic organization of ordinary conversation as specifications of formal rules for the behavior of more "natural" text and speech system interfaces (Luff, Gilbert, & Frohlich, 1990). While there remains promise for some kind of application of CA to speech and text interfaces in this way (and certainly, some interesting systems have been developed as such), the claims made on behalf of such "conversing systems" have generated some dispute among conversation analysts (Button, 1990; Button & Sharrock, 1995).

Development of "Hybrid" Design Practices

One of the enduring legacies of CA approaches to the study of technologies for design has been the development of "hybrid" design practices. Although this began in the late 1980s with designers taking an interest in ethnography (and the social sciences more generally) for the purposes of informing design, it developed into more specific, engaged forms of multidisciplinary participation. In this respect, while CA studies have certainly informed design, helped determine technological design features, and reworked notions in design discourse, they have also been an essential component in the evolution of design practice itself. For example, Suchman and Trigg (1991) developed a practice of using video as a medium for designers to reflect on their own ways of working. On the basis of collaborative experiences with the application of CA in design and technology projects, Jordan and Henderson (1995) introduced the idea of multidisciplinary interaction analysis laboratories. A range of approaches for integrating an ethnomethodological orientation into design projects has been undertaken and described (Dourish & Button, 1998), and practical strategies for integrating CA into technology design have been developed (Woodruff, Szymanski, Grinter, & Aoki, 2002).

Respecification

In a different vein, CA-informed studies have also changed the ways in which design research has conceptualized a number of topics central to its practice. A number of these contributions have served to erode inherited distinctions. Heath and Luff's (1991) analytic work undermined conceptual divides between the individual and the social in the accomplishment of cooperative work. Similarly, the maintenance of a strong distinction between the social and technical has been subjected to repeated attack in these studies: Users' actions with systems are always actions-in-a-social-field, and system responses must equally be understood within the social and temporal organization in which they are irredeemably implicated. Similarly, a number of other notions, including context (Dourish, 2004), coordination (Heath & Luff, 1991), rules (Button, 1994), abstraction (Dourish & Button, 1998), generalization (Sharrock & Randall, 2004), and human and artificial agency (Suchman, 2007), have received CA and ethnomethodological scrutiny. Design research has subsequently become a new arena for debates between different schools within the social sciences (Nardi, 1996), a development that has been formative for the sophistication of theoretical discourse in design research more generally; see, for example, Suchman's (1994) critique of speech act theory as a reliable basis for the design of systems, and the special issue of *Computer Supported Cooperative Work* (1994) dedicated to the responses it generated.

SEE ALSO: Conversation Analysis and Cockpit Communication; Conversation Analysis and Emergency Calls; Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis and Multimodality; Conversation Analysis: Overview

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Conversation Analysis and Dyads, Triads, and More

MARIA EGBERT

Introduction

In early sociological work Simmel (1902) first approached the relationship between group size and the possibility of different kinds of affiliation and opposition. Later, Goffman (e.g. 1961) explored how in groups of varying size diverse sorts and degrees of participation are possible. Seminal to later conversation analytic (CA) research has been Goffman's concept of "situation" or "participation framework" as "an environment of mutual monitoring possibilities, anywhere within which an individual will find himself accessible to the naked senses of all others who are 'present', and similarly find them accessible to him" (Goffman, 1972/1964, p. 63). CA has examined the interactional activities in participation frameworks in which the number of participants is related to the interactional outcome, depending on whether a person is in interaction with another person, in a triad, or in a participation framework with four or more persons.

Dyads

Dyads are the only group in which the departure of one member ends the interaction; it is the only constellation in which there can be no minority or majority; and even in this smallest social group there can be agreement or dispute (Simmel, 1902).

A gathering of two participants forms a "fully-focused gathering" (Goffman, 1961, p. 91), as long as there are no external factors to which a member orients. The ringing of the telephone may lead to a temporary second focus, while the continuation of the first conversation remains relevant and imminent. When a third person is in the realm of mutual monitoring, a simultaneous involvement of one member with the third person may occur, holding the engagement in the suspended first interaction through body posture (Schegloff, 1998). In such a torque position, the body below the waistline indicates the "base" involvement in the main interaction, while the turning of the torso or head to the other co-present person signals temporary involvement, thus turning the encounter into what Goffman (1961) termed a "multifocused" gathering.

Dyadic interaction has been conceptualized as a model of multi-person constellation in order to gain an understanding of the specifics of groups with more than two participants. Differentiating between "party" and "person," Schegloff (1995) demonstrates that the turn-taking mechanism is designed to organize "the distribution of talk not in the first instance among persons, but among *parties*" (p. 33, Schegloff's emphasis). This applies to other practices in multi-person interaction. In multi-person storytelling, participants regularly organize themselves into two parties, with the storyteller and sometimes a co-teller as one party to whom the story recipients align in such a way that they display listenership through body position, eye gaze, and verbal recipiency and thus form the other party (Goodwin, 1981, 1984). In many institutional settings this underlying dyadic principle is readily observable

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in the organization of the physical environment, such as in classrooms, courtrooms, and some churches.

Triads

In triads, two participants can form a coalition against one, and conversely, in a conflict between two, a third participant can help in conflict resolution (Simmel, 1902). CA reveals how affiliation and disaffiliation are achieved interactionally.

Sacks discerns for triads (and larger multiparty interaction) that one person's action can serve different purposes to those of the other two.

> Consider the case of two guys and a girl in a place together. If she flirts with B, then she may be seen as teasing C; . . . That is to say, she may have no interest in flirting with B, she may be interested in teasing C. (Sacks, 1995/1969, Lecture 2, p. 100)

Similarly, a compliment can be designed to affiliate or to partition. A compliment may indirectly devalue the non-addressed third coparticipant, whereas a "safe" compliment does not implicate the non-complimented coparticipants negatively (Sacks, 1995/1969, Lecture 2, p. 103; Golato, 2005). In dyadic interaction the compliment sequence is complete when the addressee delivers a response (Pomerantz, 1978); in triads it is just as likely that the third participant steps in and produces a second compliment agreeing with the first compliment (Golato, 2005). Special features of triads also occur in complaints. In dyadic interaction the addressee of the complaint usually reacts with an account, with a justification, by delaying a response, or by disattending to the complainable (Mandelbaum, 1991). In multiparty interaction the gap emerging frequently after the delivery of the complaint is sometimes used by a third participant to step in and to dissipate the tension associated with the complaint (Egbert & Vöge, 2008). In interactions with three persons hierarchy may pose specific problems when status is indexed linguistically. Research on Pohnpeian, a Micronesian language, shows how in a single turn, a speaker can orient to two separate levels of rank; in addition, one participant's status can be differently oriented to by two different speakers in the same conversation (Keating, 1998). Many more kinds of triadic participation frameworks are documented, such as byplay (Goffman, 1981; Goodwin, 1997), cross-play (Goffman, 1981), talking for the overhearer (Heritage, 1985), and forming collectivities (Lerner, 1993; Egbert, 1997a).

The addition of a third person to a dyad can contribute to conflict resolution and a stronger union of the prior dyad (Simmel, 1902, pp. 45–6). This feature is the basis for special kinds of institutional interaction. In couple therapy there is a tendency toward body posture constellations in which the couple align in a parallel position to each other and together face the third participant (Scheflen, 1964). However, affiliation can also be formed in a different way. When a patient in a medical setting is accompanied by a third person—for example, a child by a parent—the doctor and the person accompanying the patient often disregard the patient's experience of the illness, a phenomenon which does not necessarily seem to be related to the patient's young age alone (Schwabe, 2006).

Differential levels of participation have also been found for triads in which interactants have differential communicative resources. Bolden (2012) shows this for Russian immigrant families to the USA. In interactions with at least three participants one of them assumes the role of, or is invited to serve as, a language or culture broker in order to mediate when problems of mutual understanding occur. In Charles Goodwin's research on interaction with an American aphasic man whose only linguistic resources are the words "yes," "no," and "and," the participant with aphasia uses the talk of others to perform a variety of

actions (Goodwin, 1995). In language socialization, the triadic structure can serve particular purposes. For Navajo, Field (2001, p. 256) reports that in

> using triadic directives, adults simultaneously accomplish two interactional goals: they get the indirect target to perform some action, and they also prompt the intermediary peer or sibling to take responsibility for their peer or younger sibling. Thus, the triadic participation structure of these directives diverts authority onto a child peer (often an older sibling), providing him or her with a culturally appropriate social role to step into, and reinforcing traditional expectations concerning relations between peers and self-determinacy among children as a peer group—for example, that they are expected to be responsible for each other.

Two interactants may also engage with nonhuman beings, such as pets, things, and ghosts, thus constructing a participation framework which utilizes some of the features of human triads. In a veterinary clinic the veterinarian and staff may address "the animal as though it were able to engage in purposeful action"; people "attend to and affiliate with animals"; they produce talk "voiced on the animal's behalf"; and they also use talk to animals "as a resource to smooth the way for ongoing professional (and interpersonally cordial) interaction" (Roberts, 2004, p. 424). Not only animals but also technological devices may be oriented to in ways exploiting specific features resembling a person. A study of two persons visiting a museum shows the role which an electronic museum guide (a recorded voice audible through headphones) can play. In their turn taking the two interactants orient to this technological device as if it were a third participant (Woodruff, Szymanski, Grinter, & Aoki, 2002). Anthropologists and conversation analysts report of many communities of practice that ghosts and spirits (not detectable by most Western researchers) are oriented to by humans as coparticipants of a participation framework (e.g. Everett, 2008). Such research indicates that the members' perspective on the participating framework and the number of participants in it may differ from the researcher's counting.

Interactions With Four or More Participants

The key function of a group larger than three is "that it makes possible the subdivision of a group into minor groups" (Simmel, 1902, p. 189). Initial observations on single-case analyses (Sacks, Schegloff, & Jefferson, 1974, p. 713) show that with a minimum of four participants, a conversation can temporarily split up into two parallel conversations (schisming) and come together again (merging). From a video analysis of everyday conversation, Egbert (1997b) examines in detail how through all the coparticipants' coordinated actions these transformations are achieved. Concerted actions are needed because it takes at least two coparticipants to break away while a minimum of two others is required to maintain the already ongoing conversation. While sustaining schisming, coparticipants orient to the respective other parallel conversation in specific ways, including poetics across sub-conversations, eye gaze, and switching between sub-conversations. Thus schisming can only be fully understood by taking into consideration the Goffmanian concept of participation framework. As a social action, breaking away from an ongoing conversation into a parallel conversation achieves affiliation with the other breakaway partner(s), and at the same time the remaining conversationalists are disaffiliated. An examination of schisming can also discover a relationship to categories beyond talk. The fracture achieved in schisming may coincide with membership categories, such as generation, gender, host–guest, and in bilingual settings along language lines.

In many institutional settings the breakaway conversation is done as subordinate to the already ongoing interaction, which usually follows an agenda. This is the case in classrooms,

meetings, and the courtroom, where extended and unrestrained breakaway actions can be sanctioned in order to return to a joint focus which is needed to perform the institutional task (Goffman, 1961; Atkinson, 1979).

For interactions with more than four coparticipants, CA studies usually focus on specifics of the group settings other than number of participants. There is a tendency, with an increase in number of participants, for the group to more likely be organized formally to ensure unity (Simmel, 1902). Examples are classrooms, business meetings, and religious rituals.

The number of participants is one of many features of a setting. In order to fully understand a situation, research needs to appreciate the multidimensional nature of interaction as a situated activity. The overall conclusion to be drawn from the investigation of how number of participants is related to interaction is that humans are in the first place social beings with a concern for union and separation.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Education; Conversation Analysis and Multimodality; Conversation Analysis: Overview; Conversation Analysis and Turn Taking

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Conversation Analysis and Education

TOM KOOLE

Introduction

Conversation analysis (CA) has been concerned with education from an interest in how educational practices are accomplished by participants as situated activities. First and foremost this has meant an interest in interaction in classrooms as the primordial site of formal education. Conversation analysts aim to analyze how teachers and pupils establish "order" in the classroom; not order as the pedagogical teacher problem of how to keep pupils from disruptive behavior, but order in the sense of bringing about classroom interaction in such an "orderly" manner as to become recognizable and interpretable as classroom interaction, both for teachers and pupils as participants, and for us as observers and analysts. And when the issue of pedagogical order and teacher authority does get analyzed, as in Mehan (1979) or Macbeth (1990), it is dealt with as an instance of the latter type of "order," not as a unilateral teacher problem, but as an interactional accomplishment of both teacher and pupils.

Although CA has also produced studies of student group work (Ford, 1999; Melander & Sahlström, 2009), teacher–student dyads (Koole, 2010), and student–student dyads (Hellermann, 2008), the interest in the orderly production of classroom interaction has primarily focused on frontal teaching to the whole class. Two basic organizational features of informal talk-in-interaction have also been important foci of CA studies of education: *turn management*, or how teacher and pupils organize their mutual speaking and listening, and *sequential organization*, with an interest in the interactional organization of classroom activities. Recent studies show an increasing interest in learning as an interactional activity and an interest specifically in teaching second language classes.

In studying these organizing features, a research interest has been the relation between classroom interaction and informal face-to-face conversation. CA takes informal conversation to provide a basic set of interactional norms and resources, some of which can be adapted for institutional practices, while others remain intact. The CA treatment of classroom interaction shows a long line of studies of the relation between informal and educational interaction, some arguing that basic principles have become adapted to institutional practice (e.g. McHoul, 1978, on turn taking; Mehan, 1979, on sequence organization), some showing that basic principles are incorporated into classroom practices (e.g. Hellermann, 2003, on syntax and prosody as interaction organizing resources; and Lerner, 1995, Koshik, 2002a, 2002b, Margutti, 2006, and Koole, 2010 on question–answer relations), and some disputing whether similar phenomena from informal and classroom interaction should be seen as adapted or different (e.g. McHoul, 1990, and Macbeth, 2004, on repair and correction).

Turn Management

Sacks, Schegloff, and Jefferson in their 1974 paper on turn taking had already suggested that in different institutional contexts we would see different means for allocating turns that

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can be described as deviations from the turn-taking systematics of informal conversation. This challenge was taken up by McHoul (1978) when he analyzed teachers and pupils as having asymmetric turn-allocation rights. This amounted to a systematics that is a modification of the Sacks et al. (1974) model for informal conversation in two major respects. In contrast to informal conversation

1. pupils may not self-select after each turn-completion point of the present speaker, but must wait to be selected by the teacher; and
2. pupils do not have the right to select a next after they complete their turn, the teacher is always the next speaker.

Since 1978, however, conversation analysts have found student self-selection to be much more ubiquitous than could be predicted from McHoul's analysis (e.g. Sahlström, 1999). A major classroom technique for turn allocation is a conditioned form of pupil self-selection whereby a teacher invites all pupils to take a turn or bid for a turn (Mehan, 1979; Mazeland, 1983). In excerpt (1) we see both turn-allocation techniques.

(1) [Mazeland (1983)]

```
01  TEA:  wie heeft er nog wel jaartallen verder dan driehonderd
          who has heard of any years beyond three hundred
02        voor Christus gehoord.
          before Christ
03  PUP:  ja, zeshonderd jaar voo[r Christus
          yes, six hundred before Christ
04  TEA:                         [zeshonderd jaar voor Christus.
                                  six hundred before Christ.
05  TEA:  weet jij iets van zeshonderd jaar voor Christus?
          do you know anything of six hundred before Christ?
```

In lines 1–2 the teacher invites pupils to self-select by asking a question addressed to all pupils with "who." In line 5, subsequently, the teacher selects a single student, addressed with "you" (sg.), for a next turn.

An important focus of CA studies of turn management in classrooms has been on teacher techniques for allocating turns. In his influential study "Learning Lessons," Mehan (1979) was concerned with the difference between "individual nominations" (as in excerpt 1, line 5) and whole-class-directed invitations in particular "invitations to bid," for example by raising a hand, and "invitations to reply" by self-selecting (excerpt 1, lines 1–2). Others have focused their analytical attention on the design of teachers' turn-allocating turns (Lerner, 1995; Koschmann, Glenn, & Conlee, 2000; Koshik, 2002a; 2002b). A teacher-turn format that is often used in classrooms is what Koshik (2002a) calls the "designedly incomplete utterance": The teacher produces an utterance that is designed to be completed by a pupil.

In comparison to the research on teacher-allocation techniques, much less attention has been given to the work pupils do to get turns. Yet the studies that exist convincingly demonstrate pupils' active hand-raising behavior (Sahlström, 1999) or verbal bids, often in combination with hand raising, as techniques for getting turns, or the opposite: They may do work to avoid getting turns. Sahlström (1999) discusses the example of Sven, who only raises his hand at places where the teacher's turn is audibly not yet complete, and as a result does not get a turn.

Sequence Organization

The sequential structure that has, without question, received most attention in studies of classroom interaction is the IRF sequence. In this sequence, first analyzed extensively from a CA perspective by Mehan (1979), a teacher performs an initiative action (I: initiation), the pupil responds to that initiative (R: reply), and the teacher then provides feedback to that response, often an evaluation (F: feedback). This sequence may be used as in excerpt (2) where a primary school teacher instructs pupils to move their seats, and subsequently evaluates the move as "good."

(2) [Mehan (1979)]

```
01 TEA: these four people over to Martin
02 PUP: (((move to seats))
03 TEA: good Rafael
```

And it is used very ubiquitously to discuss educational content, as in excerpt (3), where a mathematics teacher and a pupil look at the axes of a coordinate system.

(3) [Koole (2010)]

```
01 TEA: hier nemen ze stapjes van?
        here they take steps of?
02 PUP: tien
        ten
03 TEA: ja.
        yes
```

Here, the teacher asks a question, the pupil answers that question, and the teacher evaluates that answer as correct. The third turn shows that the teacher knew the answer to his own question, and for that reason these teacher questions are also known as "known information questions" (Mehan, 1979).

The IRF sequence consists of three related sequential "positions" (I, R, F), but not necessarily of three turns. A sequence can be expanded to include more turns, as in excerpt (4), where the teacher's negative evaluation in line 3 induces the pupil to correct her first answer. Only after the pupil's answer in line 4 receives a positive evaluation (line 5) does the sequence come to a close.

(4) [Koole (2010)]

```
01 TEA: juist, wat is hier het kleinste getalletje?
        Right, what is the smallest number here?
02 PUP: zes (.) tien
        six (.) ten
03 TEA: nee,
        no,
04 PUP: tien, tien
        ten, ten
05 TEA: tien
        ten
```

The I–R Relation

CA research of this IRF sequence has produced several educationally relevant insights into the relation between the three sequential positions. As far as the relation between Is and Rs is concerned, the question at stake is how particular types of teacher Is make pupils respond with particular types of Rs. One of the earliest findings in CA is that we overwhelmingly organize our talk as action pairs called "adjacency pairs" (Schegloff, 2007), such as a pair of greetings, or question–answer pairs. The two parts of such pairs are produced by two different speakers, which makes the production of a first-pair-part an appropriate tool for turn allocation. Following a first-pair-part, speaker change needs to occur. Second, the pairs are type-governed. A greeting needs a return greeting, and a question needs an answer. Moreover, this relation between questions and answers has been discovered to be so specific that particular question formats project particular types of answers. Not only does, for example, a *why*-question project a reason-answer and a *where*-question a location-answer, but, more interestingly for educational practice, questions with built-in answer options commonly project one of the options as the "preferred" answer (Schegloff, 2007).

The most common question of this type is the yes/no question, with its two answer options "yes" and "no," and these yes/no questions very frequently embody a "preference" for either a "yes" or a "no" answer. This feature of yes/no questions is used as an educational resource in producing the first position of the IRF sequence. Koshik (2002b), for example, found that teachers use yes/no questions that prefer no-answers to point essay-writing students to problematic aspects in their writing.

(5) [Koshik (2002b)]

```
01 TEA:  are you gonna talk about it? in relation to: de Gaulle?
02 STU:  (this) nuh uh. heh:=
03 TEA:  =not right here right?
04 STU:  yeah
```

In excerpt (5) the teacher question in line 1 indicates for the student that at this point in his essay ("in relation to de Gaulle") he was not supposed to talk about "it." We see the student in his response treat the question indeed as introducing a problem, and the teacher confirms this in line 3. Margutti (2006) and Koole (2010) show that this use of question preference for educational purposes is present in several other types of questioning, such as questions with two answer options ("up or down"; "mountains or plains") of which one is the preferred option.

The R–F Relation

Another line of research has focused on the relation between the last two sequential positions, R and F. Hellermann (2003) noticed that teachers often evaluate student answers by repeating that answer. Prosody is used in these evaluations to distinguish repetitions that make a positive evaluation from other repetitions. McHoul (1990) compared teacher evaluations of pupil answers to the Schegloff, Jefferson, and Sacks (1977) analysis of repair in informal conversation, and found on the one hand that in educational contexts also there is a preference for self-initiation and self-correction of errors, while on the other hand other-initiations and other-corrections—by the teacher—are more frequent than in informal contexts.

Conclusion

The study of the situated accomplishment of educational order has been exemplified here with studies of turn management and sequential organization, two basic organizing principles of both informal and classroom interaction. These studies show that classroom interaction is related to informal conversation in ways that are educationally relevant, and in return can provide insights into the nature of informal talk. This relevance for application is not always immediately embodied in the research outcomes, sometimes because of the actual distance between analysis and application, sometimes also because analysis needs to be translated into application. Let us conclude with an example of the latter. Given the preference embodied in a yes/no question for either "yes" or "no," teachers are better advised to apply such questions in activities that seek to convey information to pupils than in activities that seek to check pupils' understanding; or, to phrase it tangentially, teachers are better advised to treat such questions and their answers as a means for conveying knowledge than as a means for checking it. The preference norms that inform these question–answer relations are examples of a normative interactional organization that, in contrast to for example the norms for turn allocation, are directly incorporated from informal conversation into classroom interaction to accomplish educational order.

SEE ALSO: Conversation Analysis and Classroom Interaction; Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis and Language Acquisition; Conversation Analysis and Learning in Interaction; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis: Overview; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA; Conversation Analysis and Turn Taking

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Conversation Analysis and Emergency Calls

JAKOB CROMDAL

Calls for emergency assistance are operated by a range of organizations across the world, including local police authorities, medical institutions, and dedicated dispatch centers. Conversation analysts have long taken an interest in exploring the organization of such calls, seeking to understand how the general principles of turn taking are modified to meet the social and institutional concerns of seeking and providing help (Whalen & Zimmerman, 1987). Specifying how institutional contexts are reflexively tied to the parties' local production of trouble reports, this work came to pave the way for a wider body of research on service-related telecommunications (see Baker, Emmison, & Firth, 2005).

Overwhelmingly, emergency calls stand out for their brevity and narrow focus, forming a class of highly specialized and goal-oriented institutional talk. According to Zimmerman (1992), emergency calls are typically organized into five distinct phases: (a) opening and identification of the service; (b) request for assistance; (c) interrogative series; (d) response; and (e) closing. It is fair to say that the opening exchanges have received far more research attention than the other phases of the calls, which points to the procedural significance of the initial alignment of the business and concerns which each party brings to the interaction (Whalen & Zimmerman, 1990; Cromdal, Osvaldsson, K., & Persson-Thunqvist, 2008). One important feature, at the operator's end, is a pre-beginning orientation toward every call as a virtual emergency. The specialization of the call, while being continually achieved in the talk, is hearable already in the opening line, through which the operator identifies the institution as, specifically, an emergency assistance service. Also, the initial talk is characterized by topical reduction: greeting exchanges and other mutual courtesies typical of ordinary telephone calls give way to strictly service-relevant matters. The resulting organization of the opening exchange—where the identification of the service creates a topical slot for a functional request for help—is fundamental to the parties' "achieving an institutionally constrained focus to the talk" (Whalen & Zimmerman, 1987, p. 175) from the outset.

Inquiries into the practice of interrogation have explored how parties deal with matters of detail and veracity in callers' accounts of various incidents as well as the organizational relevance of this information (e.g., Sharrock & Watson, 1989). Callers, who may often have access to first-hand observations of the reported incident, are normally unfamiliar with the institutional rationalities and procedures of dispatch work. The work of emergency operators is therefore guided by an interrogative agenda, designed to manage the knowledge asymmetry between the parties (e.g., Whalen & Zimmerman, 1990; Bergmann, 1992). Cromdal et al. (2008) have examined the collaborative production of initial emergency reports, showing how the operators' actions are simultaneously embedded within an interrogative protocol as well as sensitive to the unfolding dynamic of events taking place at the callers' end.

However carefully designed, institutional routines do not guarantee communicative success, and a handful of studies have examined various features of interactional trouble, offering detailed single-case analyses of incidents with fatal outcomes. For instance, Whalen, Zimmerman, and Whalen (1988) analyzed the handling of a medical emergency in which

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a nurse-dispatcher insisted on speaking with the patient, in spite of having been assured by two callers that the patient was incapable of speech. This study highlights the interpretive power of the sequential environment of accounts, showing how the callers' reports of the patient's symptoms, being produced within argumentative sequences, were treated as oppositional moves and refusals to comply with the nurse's instructions, rather than as actual information on the medical status of the patient. In a similar vein, Garcia and Parmer (1999) report on a call in which the caller initially failed to communicate the severity, urgency, and proper location of a shooting incident, which prompted the operator's disbelief in the caller's telling and, eventually, led to the death of two police officers. Both studies point to the interactional basis of animosity and mistrust owing to the asymmetry of knowledge between the parties, and specifically to their difficulties in assuming what Schutz (1953/1973) termed "reciprocity of perspectives."

There are less fateful examples of interactional trouble between callers and operators. For instance, Osvaldsson, Persson-Thunqvist, and Cromdal (in press) discuss several conversational means designed to secure the parties' mutual comprehension. Such practices include displaying and ratifying candidate understandings, prompting clarification and paraphrasing, and postponing certain parts of the interrogation to a later occasion. Parker, Pomerantz, and Fehr (1995) analyze affective displays in callers' complaints, and Monzoni (2009) shows how negatively framed questions were used to deliver unveiled complaints, projecting issues of responsibility in subsequent talk. Steensig and Larsen (2008) discuss (dis)affiliative features of "you say x"-formatted questions in emergency as well as other service calls, and Eglin and Wideman (1986) unpack the notion of professional dominance by examining the sequential placement and organizational functions of interrogatives in calls to a police emergency line. Finally, Nordberg (1999) shows how confirmation of forthcoming help may serve to initiate closure of the interrogative series. As in mundane telephone calls, an important function of such pre-closing moves was to allow for a reopening of any further relevant matters or "unmentioned mentionables" (Schegloff & Sacks, 1973, p. 303).

Although work in conversation analysis has already covered some distance in explicating the key features of emergency communications across the world, several challenges lie ahead. For instance, bearing in mind that persons calling for emergency assistance often take part in or witness dramatic and potentially distressful events, there is surprisingly little work focusing on the displayed features of emotions and their bearing on the interaction between the callers and operators (but see Whalen & Zimmerman, 1998). Another central yet under-researched feature of medical emergencies concerns how patients' injuries, symptoms, and health status are established through talk. Such inquiries into emergency diagnostic interrogations would bridge over to another perennial strand of conversation analysis, namely doctor–patient interaction (see Heritage & Clayman, 2010). Finally, technological development is prompting a new generation of research (e.g., Pettersson, Randall, & Helgeson, 2004; Fele, 2008). Mobile technologies already allow persons to seek emergency assistance from an infinite range of locations and settings, and inventions such as electronic maps, mobile positioning networks, and in-vehicle emergency communication systems provide for more efficient and reliable methods of gathering incident details and organizing response activities. These recent inquiries into the socio-technical aspects of operators' call-taking and dispatch work allow us a glimpse into the future.

SEE ALSO: Conversation Analysis and Cockpit Communication; Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis: Overview; Conversation Analysis and Turn Taking

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Conversation Analysis and Emotion and Cognition in Interaction

JONATHAN POTTER

In his very earliest published lecture Harvey Sacks (1992) gave an indication of how conversation analysts should treat cognition.

> When people start to analyze social phenomena, if it looks like things occur with the sort of immediacy we find in some of these exchanges, then, if you have to make an elaborate analysis of it—that is to say, show that they did something as involved as some of the things I have proposed—then you figure that they couldn't have thought that fast. *I want to suggest that you have to forget that completely. Don't worry about how fast they're thinking. First of all, don't worry about whether they're "thinking." Just try to come to terms with how it is that the thing comes off.* Because you'll find that they can do these things. Just take any other area of natural science and see, for example, how fast molecules do things. And they don't have very good brains. (Sacks, 1992, p. 11; emphasis added)

His emphasis was on how the visibility/hearability of interaction is crucial to its operation, with "cognition" (mind, thoughts, knowledge, etc.) relevant through how it is heard and seen. In another early example, Sacks showed how speakers can display "shared knowledge" through completing another speaker's utterance—this can show the recipient that the speakers "know what's on each other's minds" (Sacks, 1992, p. 147). In this program of work cognitive or psychological analysis should be bracketed off in favor of pursuing issues of public interaction and how that unfolds.

In the half century since these arguments were first developed the outline of such a non-cognitivist approach that reworks psychological matters (including "emotional" matters) in interactional terms has become clear. By focusing on conversation analytic (CA) approaches to psychology, this entry will offer an illustrative and necessarily selective review of some of the ways psychological and emotional matters figure in interaction; it will also sketch some CA attempts to address more traditional pictures of inner processes and states; and it will briefly note the role of studies of the way psychological research identifies its objects.

Conversation Analysis as a Direct Approach to Cognition and Emotion

A central feature of the approach to interaction in CA is that speakers *display* their *understanding* through the sequential unfolding of their talk. Thus when a speaker provides an acceptance and appreciation this displays their understanding that an invitation had been issued in prior talk. Indeed, issuing any second pair part to an adjacency pair displays an understanding that the prior one was the relevant first pair part. Such an approach to understanding does not require analysts or participants to have privileged access to the cognitive or brain states of coparticipants. Understanding here is a public and practical feature of interaction. In this sense, CA is following in the tradition of philosophers such as Wittgenstein and Ryle (Coulter, 1989).

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Schegloff (1992) argues that such turn-by-turn patterning is the practical way in which *intersubjectivity* is sustained. Interactants monitor such organizations and use them to identify problems of understanding and initiate practices of repair. The normative and systemic organization of conversation becomes a central medium for the maintenance of intersubjectivity. In this way intersubjectivity or shared understanding is treated as a procedural issue—the turn organization of conversation provides different slots for checking and modifying understanding, each with different possibilities and constraints. Note that participants have no apparatus outside of this system for checking each other's thoughts or brain states; the unfolding and structured moments of conversation are where psychological matters become live.

A foundational issue for cognitive analysis has been the nature of knowledge and belief. This topic has been addressed in a number of strands of CA work and has become part of a recent focus on practical epistemics. Edwards (1999) argues that, for participants, the question of whether people share knowledge is a practical one, and depends on both the descriptions that embody knowledge and the conversational means through which agreement is established.

Heritage has stressed that knowledgeability is something managed in basic ways through different conversational practices; the organization of conversation lays out the "epistemic landscape" for the participants, highlighting who is more knowledgeable (K+) or who is not (K–) on relevant matters (Heritage, 2011). Thus in a series of studies of the token "oh" he shows how it is used to display a speaker's "change of state" (Heritage, 2005). For example, "oh" can "embody the experience of a recollection" and display that experience for purposes relevant to the ongoing interaction. When receiving news the token "oh" can ratify it as actually news to the recipient.

Another conversational practice that is fundamental to epistemics and therefore knowledge is that of questioning itself. The interactional-sequential logic of questions is that those issuing the question propose themselves as uninformed on some matter and at the same time project the recipient as informed. Note that in social situations where questions do not mark a lowly position in the epistemic landscape (in classroom teaching or news interviews) "oh" tokens are much less common. Questions can be designed to offer a candidate answer (Pomerantz, 1988) or embody polar options to grammatically constrain response possibilities (Raymond, 2003). Each of these designs can establish a different epistemic relation, a different level of K+ and K–, between speaker and recipient.

Epistemic relations can be finessed in a range of different ways using tag questions. They can index lowered epistemic status (K–) in the way that was highlighted by early work in sociolinguistics (Lakoff, 1975). By being asked for confirmation for a declarative, the other is treated as in a position (K+) from which they can ratify it. However, tag questions can also be used to mobilize support for an assertion where the speakers present themselves in an authoritative (K+) position (Hepburn & Potter, 2011).

Another major area of psychology which interactional work contributes to would traditionally be glossed as attitudes, attitude change, and social influence. CA contrasts with these psychological approaches by focusing not on underlying, enduring attitudes, but on the conversational practices of expressing an assessment of something and how such assessments unfold interactionally. Pomerantz's (1984) work shows that there is a very strong normative expectation with the issuing of an assessment for the recipient to issue an assessment of their own. Such second assessments have a preference organization: the preferred second assessment follows directly, is upgraded, and is often simple; the dispreferred second assessment comes after delay, the disagreeing component often comes late in the turn, and it is often downgraded.

The nature of an assessment is a complex topic. Sometimes it will involve explicit use of moral or evaluative terms (*good*, *great*, *poor*) but at other times assessment will be built using

descriptions. Assessments can be built as "object side" or "subjective side" (*that coffee is nice, I love that coffee*; Wiggins & Potter, 2003), and where topics are delicate, assessments can be built as entirely separate from the wishes or values of the speaker (Edwards, 2007).

CA offers a treatment of all these features of "cognition" that starts with the public and practical, and how psychology can work as something intelligible and relevant in interaction. The treatment of emotion has been less developed but starts with the same focus on the public and practical. Rather than looking at psychological and physiological disturbances within the individual, attention is focused on practices and in particular the sequential and interactional role of various features of prosody and timing. Couper-Kuhlen (2009) suggests that a CA approach to emotion will focus on displays (thereby bracketing off questions of mental and physiological states) and treat those displays as realized through embodied practices, which are situated in sequential positions, and interpreted in a context-sensitive fashion (p. 95). This contrasts strongly with traditional psychological work on emotion where the primary data source is aggregated questionnaire responses about, say, when the participant has cried in the past and how they felt about the crying. In that work emotion is often treated as something hard to directly measure except via physiological means.

Hepburn (2004) studied crying in calls to a child protection help line. She identified a range of features that in different combinations are treated as signs of upset. These include talk that is unusually quiet; is delivered with a tremulous voice; is delivered with very high pitch; contains excessive aspiration; is accompanied by, and delayed by, wet or snorty sniffs; is unusually or erratically delayed; and is accompanied by full-blown sobs. Crying is often combined with extrematized descriptions of negative feelings and with apologies.

Analysis of receipts to crying in the same collection of calls suggests that they commonly include *take-your-time*s, which orient to and license the disruption caused to the ongoing interaction; sympathetic receipts (*oh gosh*, *tut* particles); and empathic receipts (Hepburn & Potter, 2007). Empathic receipts are particularly interesting, as the classic picture of empathy involves a cognitivist image of accurate understanding of the recipient's feelings. Analysis of such receipts, however, highlights two features. First, they contain a formulation of the other's psychological state that draws on information delivered just prior, in terms of either the severity of the emotional display or explicit self-ascriptions. Second, they mark this formulation as epistemically contingent on the information given. There is a strong orientation to the recipient having primary rights to their own mental state.

Couper-Kuhlen (2012) has highlighted some of the patterning of "affective displays" such as disappointment and the reception of complaints. She has highlighted how the understanding of affect displays is strongly sequentially located and associated with broad prosodic patterns such as "subdued" or "dynamic." She concludes that voice "in displaying affective stance is not a spontaneous expression of some inner state but rather a carefully deployed and manipulated resource, used in complex interaction with verbal and other non-verbal resources."

Conversation Analysis's Implications for Classic Cognitive Psychology

For some workers in the more ethnomethodological tradition, the engagement with classic cognitive psychology involves taking on too many of the conceptual confusions of cognitivism, and should thus be avoided (Coulter, 2005). For some discursive psychologists exploring the broader implications of CA for cognitive research can be valuable, but should avoid assuming cognitivist pictures of human action.

Hopper (2005) considers the idea that conduct may be strategically planned and guided by such plans. He worked with a corpus of phone calls made to US President Johnson's

office soon after he became president. These calls were very similar: They typically involved thanking supporters and accepting congratulations. Hopper suggests they provide a natural setting for the consideration of the operation of strategic thinking, for example by using the calls as an environment to initiate the cost-cutting agenda that would characterize Johnson's presidency. However, Hopper concludes both that it is hard to find convincing evidence of strategy at work, and that even if such strategies were operating they would need to be flexible enough to work with the varied contingencies of talk.

Schegloff (2006) has taken a different approach. Rather than follow the route of attempting to use human conduct as a pathway to cognitive entities, he has tried to highlight the consequences of basic CA findings for classic forms of cognitive analysis. In effect, the findings of CA describe a highly complex system of interaction that includes regular phenomena that set a profound challenge for classic psychological models to account for. These include phenomena of turn and sequence organization, repair, a wide range of projection phenomena, and person reference. Schegloff highlights the kinds of competence that any interactant must have to fully take part in conversation and in particular how that competence must deal with the different *possible* trajectories of conduct that arise in the contingency of actual talk. Speakers must be capable of designing their talk and other conduct so that it can be "taken up for the 'possible Xs' that compose it," and they must attend to:

> the talk and other conduct produced by a co-interactant so as to 1) address the multiple "possible Xs" that compose it, 2) resolve that multiplicity of possibilities and arrive at some determinate grasp of what the other was saying/doing, and 3) display that grasp in their own responsive conduct—sometimes correctly, sometimes not, (Schegloff, 2006, p. 146)

With this approach Schegloff is leaving the work of addressing any cognitive implications of these phenomena with cognitive researchers; his aim, though, is to highlight just how complex the conduct is that they need to model.

Note that what Schegloff and other CA workers are doing here is not attempting to make a contribution to cognitive psychology or a broader discipline of cognitive science. Rather they are laying out how "psychological matters" are live for participants in interaction and in particular the way they are organized sequentially and structurally. The point is that a cognitive science or cognitive psychological approach might need to consider the implications of this for their assumptions, theories, claims, and empirical methods. For example, neuroscientific work on "emotion" or "empathy" might need to consider the sorts of public and interactional matters that become live when upset is displayed and the sorts of sequential and normative environment in which such matters unfold, as well as recognize the timescale on which participants are able to apprehend and produce actions (Hepburn, 2004).

Conversation Analysis and Psychological Method

CA has important implications for the analysis of cognition and emotion through the light it has thrown on psychological methods as interactional occasions. Psychological research identifies the nature of its phenomena through instruments such as tests, experiments, survey interviews, focus groups, and so on. Such procedures involve forms of institutional talk, and the implications of this for findings can be important.

Antaki and colleagues have conducted a series of studies of psychological assessments and systematic survey interviews (Antaki & Rapley, 1996; Antaki, 2006). Crucially, this

work shows some of the ways in which the findings can be influenced by standard conversational processes. Although it was not his main object, Schegloff (1999) studied a test for "pragmatic deficit" consequent on brain surgery, and noted an interesting tension between the conclusions of the test for the way the recipient's competence was understood and what he demonstrated in his sophisticated orientation to the demands of the testing situation itself.

Conclusions

CA was not designed as an approach that would address psychological questions as classically formulated. Indeed, Sacks emphasized that it would be a different order of research. One of the basic things that is involved when learning the analytic procedures of CA is to move away from interpreting talk as a consequence of underlying desires, intentions, and feelings. However, as CA has developed it can be understood as an approach which provides an illuminating, systematic, and progressive account of a wide range of human conduct. Indeed it provides a foundational method and body of findings for a discursive approach to psychology (Edwards & Potter, 2005). CA has presented a precise and comprehensive challenge to classic approaches to cognitive psychology which, as yet, has yet to be met with the sophistication required. Important work will continue on the interactional organization of psychological research methods.

SEE ALSO: Conversation Analysis and Interaction in Standardized Survey Interviews; Conversation Analysis: Overview; Conversation Analysis and Prosody; Conversation Analysis and Therapy

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Conversation Analysis and Ethnomethodology

PAUL TEN HAVE

There can be hardly any doubt that ethnomethodology has been a major influence in the emergence of conversation analysis (CA) as a unique perspective in the human sciences. Gradually, however, the two seem to have drifted apart. The current situation is ambiguous: For some of its practitioners, CA is still part of the ethnomethodological movement, while many others treat it as an independent pursuit. This entry will provide a summary characterization of ethnomethodology with a focus on its research practices and a consideration of its relation to CA.

Harold Garfinkel

Around 1960 Harold Garfinkel (1967) developed a specific approach to the core problem of sociology: "How is social order possible?" He maintained that the orderly aspects of social life are the product of the continuous application by members of society of what he called "ethno methods," ways of doing that make the sense of what they are doing observable and inferable. It should be noted that these "methods" are not considered to be standardized; they are mostly informally adapted to the circumstances in which members live their lives. The concept that is most often used to focus on such a situational contingency is "indexicality." "Indexical expressions" are statements whose sense depends on the circumstances in which they are uttered. As Garfinkel writes: "I use the term 'ethnomethodology' to refer to the investigation of the rational properties of indexical expressions and other practical actions as contingent ongoing accomplishments of organized artful practices of everyday life" (Garfinkel, 1967, p. 11). Note that his interest is not in the distinction between indexical and non-indexical expressions as such, which is a philosopher's problem, but in indexicality as an unavoidably present phenomenon of practical actions and expressions.

Because "ethno methods" are such an integral part of everyday life, they are in fact unremarkable, and hence hard to study. Therefore Garfinkel in his early work (1967, pp. 35–75) used specific procedures to make these methods "observable." In his "breaching experiments," he created situations in which some taken-for-granted "background expectancies" were not applicable, or he asked his students to do so. In one of these experiments, for instance, students had to act in their parents' homes as if they were boarders. Two kinds of reactions were observable in this and other "experiments": On the one hand people were surprised, shocked, and angry, and on the other hand they sought to "normalize" the situation by finding some explanation for it.

Although these early experiments were useful as demonstrations of the existence and significance of the phenomena of interest, they cannot be properly seen as serious studies. In other empirical contributions, Garfinkel used more ethnographic approaches, but he did prefer to study situations in which "normality" was somehow at issue, for instance by studying the ways in which a transsexual person had to demonstrate her femininity (1967, pp. 116–85).

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Taking a historical perspective, it can be said that Garfinkel's initiative had its roots in two separate theoretical traditions. On the one hand, he did his graduate studies at Harvard under the supervision of Talcott Parsons, who developed a very abstract theoretical schema of social action as a kind of precondition for any empirical study of society. But on the other, Garfinkel criticized this approach on the basis of insights from the phenomenological philosophy of writers like Alfred Schutz, Aron Gurwitsch, and Edmund Husserl. Central to this critique was that people like Parsons tend to treat the members of society as what Garfinkel calls, somewhat ironically, "judgmental dopes" (1967, pp. 67–8), as if they are blindly enacting what a sociological or other theory expects them to do. For Garfinkel members of society actively create and maintain social order, and the ways in which they do so can be studied, which is the task that ethnomethodology has set for itself.

Ethnomethodological Studies

After Garfinkel's early demonstrations, his students had to find their own ways in which they could study "ethno methods." In the early days, this was mostly done using a range of ethnographic approaches. Lawrence Wieder, for instance did a study of a "half-way house," a rehabilitation center for convicted drugs users (1974). He focused on the ways in which both staff and inmates accounted for the latter's lack of participation in the program by referring to a kind of solidarity code. Instead of using this "code" as an explanatory "folk sociology" to be systematized, Wieder studied, in detail, *how* the "code" was actually used in various everyday situations, as an accounting practice.

After 1970 Garfinkel stimulated his graduate students, such as Kenneth Liberman, Eric Livingston, and Michael Lynch, to do what he called "ethnomethodological studies of work," in which attention was to be paid to the everyday details of very specialized activities. The idea was that such activities, as in scientific research, ultimately depend on concrete, local practices which are, however, ignored in any account of those activities (see Garfinkel, Lynch, & Livingston, 1981). In order to be able to understand what is going on in a scientific laboratory, one has to have a basic knowledge of the sense of what is going on there. Garfinkel has called this being "vulgarly competent" in the activities in the setting (Garfinkel & Wieder, 1992). The acquisition of such a competence is, therefore, a basic requirement for doing an ethnomethodological study.

In their *An Invitation to Ethnomethodology* David Francis and Stephen Hester (2004) offer a kind of general procedure for doing ethnomethodological research. They stress that the point always is how to gain *access* to the procedural foundations of the activities of interest, their "observability" and "accountability." This requires the transformation of everyday sense-making practices from resources *of* analysis into topics *for* analysis. For these authors, "doing ethnomethodology involves taking three methodological steps":

1. Notice something that is observably-the-case about some talk, activity or setting.
2. Pose the question "How is it that this observable feature has been produced such that it is recognizable for what it is?"
3. Consider, analyse and describe the methods used in the production and recognition of the observable feature. (Francis & Hester, 2004, p. 26)

Francis and Hester explicate three different "modes" of this "three-step method of ethnomethodology": "self-reflection," "analysis of recorded talk and action," and what they call "acquired immersion." The common basis of these modes is "the presumption that analysis is premised upon immersion in the activity under study" (p. 26). In other words, in order to analyze an activity, one has to understand it *as* a participant in such an activity.

In the first of these modes, "self-reflection," the ethnomethodologist's own understandings and activities provide the phenomena for analysis. Sudnow's study of his own piano playing (1978) is an obvious example of this mode. In the second mode, "analysis of recorded talk and action," ethnomethodologists rely again on their own competencies, this time specifically as conversationists and speakers of natural language. This is, of course, the preferred mode of CA, which can also be described as using the three steps outlined above. When the analyst is not able to rely on his or her competencies, the third mode, "acquired immersion," becomes relevant. This involves getting enough membership knowledge in a particular setting to understand as from inside the specialized activities that constitute that setting. This is what Kenneth Liberman did for his study of practices of formal reasoning in the philosophical discussion of Tibetan monks (2004).

Francis and Hester note that their three modes "are not mutually exclusive, nor are they unrelated." Instead, "they can usefully be combined. Indeed, the separation of them into distinct modes is somewhat arbitrary" (2004, p. 27). Indeed many recent ethnomethodological studies do in fact use at least two of these three modes, most often recordings and acquired immersion, as Liberman did. Other examples are available in a recent collection of papers edited by Hester and Francis (2007).

It should always be remembered that ethnomethodology emerged as a critical reflection on the basic theories and methods of sociology. This has led, on the one hand, to empirical studies like the ones mentioned above, and on the other to a series of programmatic, theoretical, and philosophical publications by Garfinkel himself and others such as Graham Button, Jeff Coulter, and Wes Sharrock, who often demonstrate the affinity of ethnomethodology with Wittgenstein's later philosophy (see Suggested Readings). The core point of these contributions is that ethnomethodology "re-specifies" the basic conceptual foundations of sociology and the other human sciences as investigatable properties of members' situated activities. Ethnomethodology, then, is offered as an *alternate* sociology (Garfinkel & Wieder, 1992).

Ethnomethodology and Conversation Analysis

As noted in the introduction, opinions among researchers in CA regarding its relation to ethnomethodology vary from seeing CA as one way of doing ethnomethodological studies to seeing it as a an independent pursuit. Garfinkel's initiative was clearly a major influence in the development of the CA approach by Sacks and Schegloff. But it is also clear that ethnomethodology and CA have drifted apart in various ways. In this section, the focus will be on aspects of the research methods used in CA against a background of ethnomethodological considerations (see ten Have, 2004, 2007, pp. 43–50).

A major feature of ethnomethodology is that it struggles with what can be called "the problem of generalities" (ten Have, 2004, pp. 174–6). From the first quotation from Garfinkel given above, it should be clear that for him the interest is in the local production of actions in their uniqueness, and in so far as these actions have general features, these generalities are produced locally, as single achievements. Now take a look at an early statement by Sacks.

> The gross aim of the work I am doing is to see how finely the details of actual, naturally occurring conversation can be subjected to analysis that will yield the technology of conversation.
>
> The idea is to take singular sequences of conversation and tear them apart in such a way as to find rules, techniques, procedures, methods, maxims (a collection of terms that more or less relate to each other and that I use somewhat interchangeably) that can be used to generate the orderly features we find in the conversations we examine. The point

> is, then, to come back to the singular things we observe in a singular sequence, with *some rules that handle those singular features, and also, necessarily, handle lots of other events.* (Sacks, 1984, p. 411; emphasis added)

In a simplifying manner one can say that, for Sacks, the analysis of conversational phenomena is done in two steps: First one analyzes a single case, then one formulates "rules" which can and will be applied to other instances. The first step is an ethnomethodological one; the second goes beyond that. It is the second step that has often been criticized by hard-core ethnomethodologists. In various publications, Michael Lynch has expressed his misgivings about CA's aspirations to be a "science." For instance, in the "methodological appendix" to their book on the Iran–Contra hearings, Lynch and Bogen (1996, pp. 269–70) refer to Wittgenstein's complaint about the prevailing "craving for generality" in the philosophy of his day, and the concomitant "contemptuous attitude towards the particular case." And they add: "For Wittgenstein, descriptions of singular activities are valuable precisely because they cast into relief diverse, unexpected, yet intelligible organizations of language use." On the other hand, Lynch has elsewhere expressed his appreciation of the "first step" of the CA procedure as "the ethnomethodological foundations of conversation analysis" (2000).

Emanuel Schegloff has confirmed CA's indebtedness to ethnomethodology on this point: "Although there is much which differentiates CA from many central features of ethnomethodology . . . , the local determination of action and understanding has ethnomethodology as its most substantial and proximate source" (Schegloff, Ochs, & Thompson, 1996, p. 15). In other words, a major lesson of ethnomethodology for CA is to take the first step in the analysis seriously; that is, not to perform it as a simple act of "coding," which, of course, has consequences for using a quantitative research design in CA studies (Schegloff, 1993; Heritage, 1999).

CA itself is currently being practiced in a variety of ways, some closer to ethnomethodology than others. In his studies of telling good or bad news, Douglas Maynard (2003), for instance, places his careful CA analyses of a wide range of instances of such tellings in an ethnomethodological framework by suggesting that they constitute a sort of "breaching" event (see pp. 1–33, specifically p. 6). Most "workplace studies" use a CA-based analysis of recorded interactions against a background of an ethnomethodologically inspired ethnography (e.g., Heath & Luff, 2000; Nevile, 2004). In contrast, one can note that most CA work in the "interaction and grammar" tradition hardly refers to ethnomethodology.

CA, then, can be seen as ethnomethodology's younger sister, who has gone her own, partly independent, but highly successful way. While ethnomethodology offers a broad *alternate* philosophical and empirical perspective for the human sciences, CA presents a more limited, but extremely productive, conceptual and empirical approach for studying the core activity of human society: embodied verbal interaction.

SEE ALSO: Conversation Analysis and Identity in Interaction; Conversation Analysis and Institutional Interaction; Conversation Analysis and Membership Categories

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Conversation Analysis and Gender and Sexuality

CELIA KITZINGER

Gender and sexuality are routinely displayed, negotiated, and constructed through talk-in-interaction. The cumulative, empirically derived body of knowledge foundational to conversation analysis (CA) as a discipline is increasingly used in feminist (and other politically engaged) research as a way of engaging with gender and sexuality as part of the politics of everyday life.

The earliest feminist work drawing on CA was Zimmerman and West's (1975) exploration of interruptions in cross-sex conversation and then Goodwin's (1990) analyses of girls' talk. Since the early 2000s there has been a dramatic increase in CA and CA-influenced research dealing with topics such as refusing sex (Kitzinger & Frith, 1999), transgender issues (Speer & Green, 2007), "coming out" as lesbian or gay (Kitzinger, 2000; Land & Kitzinger, 2005), violence against women (Stokoe, 2010), heteronormativity (Kitzinger, 2005a, 2005b), childbirth helplines (Shaw & Kitzinger, 2007; Kitzinger, 2011), and gender categories in interaction (Stokoe, 2010; Speer, 2005; Kitzinger, 2007). Feminist researchers have found that CA offers a powerful and rigorous approach for exposing mundane, routine, everyday forms of oppression—the "micro-inequalities" of social life. CA is also increasingly used in applied settings as part of training and evaluation of woman-centered services (Kitzinger, 2011).

The emergence of "feminist CA" has been criticized both by feminists and by conversation analysts. It is sometimes proposed that CA has too narrow and restrictive a scope and that its attention to the fine details of talk, independent of speaker characteristics (such as gender), render it unsuitable for understanding how power and oppression operate in relation to gender and sexuality (see Kitzinger, 2000, for overview). Others have dismissed CA as jargon-ridden, impenetrable, and—despite its stated focus on participants' orientations—divorced from speakers' own understandings of what is happening in social interactions. It has also been claimed that feminist CA so violates basic methodological principles as to cast doubt on whether it is genuinely identifiable as CA/ethnomethodology (see response in Kitzinger, 2008a). Most recently, however, theoretical critique has been overridden by the best possible evidence of the value of CA for studying gender and sexuality, that is, by the development of a substantial body of empirically based feminist CA (e.g. Speer & Stokoe, 2010) that draws on the key findings of the discipline across the generic organizations for conversation, namely turn taking, sequence organization, repair, word selection, and overall structural organization.

Since the 1970s, when both CA and feminist research on language were in their infancy, the two fields have developed and intersected in important ways. This intersection can be illustrated with reference to just one of the key generic organizations identified by CA: how turn taking is managed by participants in talk-in-interaction. Early feminist work relating gender to the turn-taking model suggested the existence of gender differences: for example, that male speakers disproportionately interrupt women's talk (Zimmerman & West, 1975), or that the turn-taking model is gender-specific to males, since women regularly speak in cooperative overlap (Coates, 1997). Neither claim about sex differences has been

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borne out by subsequent work (Kitzinger, 2008b). Instead, developments in CA understandings of turn taking have offered the opportunity for more sophisticated analyses that show how the turn-taking system is negotiated by speakers who are analyzably managing issues relating to gender or sexuality in their talk. The following two data analyses offer a glimpse of the value of the turn-taking model in addressing gender/sexuality issues in talk-in-interaction.

In excerpt (1), one student, Linda, is launching a disagreement with another about how one might feel on learning that someone for whom one felt romantic interest was intersex. In the course of her turn she "comes out" as someone who has felt sexually attracted to another woman. I have displayed part of the talk in bold as a device for drawing the reader's attention to the fact that Linda's information about her own past romantic attractions is embedded part way through an if/then formulation (a compound turn construction unit [TCU], Lerner, 1996), the first component of which (*If you've thought of yourself as heterosexual and you suddenly find yourself attracted to a woman*) projects some final component (which turns out to be *it's very disturbing*)—and only after production of this final component has the TCU been brought to possible completion.

(1)

```
01 LIN:  it does.
02 LIN:  it does have an effect on you because
03       (0.2) if you've thought of yourself as heterosexual
04       (1.0) and you (.) >suddenly find yourself attracted
05       to a woman °it happened to me,< (0.2) a few years ago°
06       it's very (0.8) disturbing,
07 CK:   [mm  ]
08 LIN:  [in a] way it's it's (0.2) makes you very anxious
09       (.)
10 LIN:  because you then don't know how you're supposed to respond
```

Co-conversationalists' shared orientation to compound TCUs means that speakers can insert additional material between the "if" and the "then" components of their talk with reasonable assurance that (since speaker transition is not yet relevant), this material will not be topicalized or treated as other than parenthetical to the otherwise ongoing business of the talk. Information embedded inside a compound TCU is protected from being topicalized (e.g. "what did you do?"), assessed (e.g. "that must have been weird"), or treated as offering the opportunity for a second telling (e.g. "oh that happened to me too"). Here, then, the speaker is actively using the grammatical structure of language (in conjunction with practices of turn taking and sequence organization) as a resource for the social action of "coming out" discreetly (see Kitzinger, 2000, for a full analysis).

Excerpt (2) is drawn from a call to a birth crisis helpline, and the caller, Hannah, is describing what happened after her emergency hysterectomy. She is cautiously building a case for the possibility that her health-care team may be to blame for her hysterectomy—a claim that she treats as possibly overstepping the limits of propriety (e.g. as unsubstantiated, hysterical, or paranoid). On the very brink of producing this somewhat delicate accusation, she slows down her talk mid-TCU (with the silence after *were* and the increasingly protracted sound stretches), thereby creating an opportunity for the call-taker ("CLT") to come in prior to completion and to complete the TCU on her behalf (Lerner, 1996).

(2) [BCC 205]

```
01 HAN:  if things had just naturally gone wro:ng
02       .hh[hh] they'd've been looking at the file=
03 CLT:     [mm]
04 HAN:  ='n: sayin' oh this woman was just damned
05          unlucky[:.]
06 CLT:            [ye]ah. hh
07 HAN:  uhm (0.2) but I almost felt that these::
08       (1.0) looking ba:ck: (0.2) that (.) these
09       people we:re (.) coming i::n to:::
10 CLT:  cover their ba:ck[s.]
11 HAN:                   [c ]over themse:lves.
12       in [some] wa:y.
13 CLT:     [yes:]
14 CLT:  .hhh y- yours is a very: intelligent and
15       reasonable response to all this:.
```

In this marked departure from ordinary turn-taking procedures, anticipatory completion of a coparticipant's TCU renders the completed turn a coproduction, jointly constructed across the talk of the two participants (Lerner, 2002). In this instance, the call-taker is able to demonstrate an empathetic understanding of the sort of thing that Hannah would treat as an adequate completion in part because Hannah has supplied an implied contrast between what would have happened if *things had just naturally gone wrong* (line 1) and what may instead—with the contrastive *but* (line 7)—have been the case. By voicing the (unspoken, delayed) part of Hannah's turn, the call-taker is engaged in an affiliative action, showing both that she understands Hannah's position, and—by co-implicating herself in its articulation—that she is treating it as a reasonable position to take. Hannah's subsequent delayed completion of her own talk with a near-repeat of what the call-taker has said (line 11) endorses the call-taker's completion while also reasserting authority over her turn's talk and making relevant a next turn responsive to it. This next turn receipts Hannah's claim and positively assesses it (lines 13–15). Displays of empathetic understanding are an important component of help-line work in "woman-to-woman" organizations such as the birth crisis line, and the turn-taking model offers insights into how these are accomplished, which can be harnessed for training (Kitzinger, 2011).

These two examples illustrate applications of the turn-taking model to feminist concerns. They were specifically selected as such since turn taking has sometimes been singled out for criticism by those who consider CA unsuited to feminist ends (see Kitzinger, 2000). Equally, however, all the other generic organizations of conversation are also realized in and through the particulars of any given interaction—and these too can be oriented to issues of gender/sexuality or related feminist concerns. So, for example, sequence organization is integral to all CA data analysis (because it is integral to all talk-in-interaction). Feminists have shown that young women's self-reports of how they refuse sex (using appreciations, mitigations, and accounts) bear little relationship to the idealized representations of "just say no" in assertiveness training and date-rape prevention training manuals, but they do rather closely mirror CA findings about how dispreferred responses are normatively done (Kitzinger & Frith, 1999). Another key generic organization of conversation, word selection, has been heavily researched by feminists exploring the uses of gendered terms such as *woman*, *lady*, *slut*, *bloke* (e.g. Kitzinger, 2007; contributions in Speer & Stokoe, 2010; Stokoe, 2010). These different domains of generic organization are pervasively intertwined—as, for example, when a study showing how heteronormativity is displayed

in interaction finds that the sequentially relevant next action is designed differently depending on whether the word selected in the initiating turn is *wife* or some nonfamily reference term (Kitzinger, 2005b).

Research using CA to study gender/sexuality issues is still relatively new and underdeveloped. It is clear, however, that CA offers a rigorous method for the analysis of actual recorded human interaction (rather than second-hand reports of it) with a commitment to understanding participants' own orientations and actions. It is in the course of these ordinary human interactions that, for example, "comings out" are accomplished, woman-to-woman empathy displayed (or withheld), sexual refusals expressed (and accepted or not), and heteronormative assumptions made apparent. These are the actions out of which genders and sexualities are constituted in everyday life.

SEE ALSO: Conversation Analysis and Identity in Interaction; Conversation Analysis and Turn Taking

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Conversation Analysis and Identity in Interaction

CHARLES ANTAKI

The perspective of conversation analysis (CA) on identities can be described as social constructionist and non-essentialist. It declines to take it that the person *has* this or that given identity and prefers to watch as the person moves in and out of the multiple categories that society offers. That movement, CA continues, is entirely contingent on the demands of the moment, and, subject as it must be to complex social forces, is nevertheless routinely mediated by talk.

Since Harvey Sacks's foundational work on what he called "membership categories" (see Sacks's early lectures in 1966, reproduced in Sacks, 1992, vol. 1), CA has worked to the proposition that, as a pair of later commentators put it: "Membership of a category is ascribed (and rejected), avowed (and disavowed), displayed (and ignored) in local places and at certain times, and it does these things as part of the interactional work that constitutes people's lives" (Antaki & Widdicombe, 1998, p. 2). CA does not tell us what catalog society will offer its members as identity categories at any one moment, or why that catalog exists and not some other (it cedes that task to ethnography, anthropology, and sociology) but it is articulate about how those identity categories are conjured up, and what work they do.

In its methods, CA shares important principles with many other kinds of discourse analysis of identity (for a broad view see Benwell & Stokoe, 2006). It takes it that identities appear in talk or text that is naturally found (in the sense of not invented or imagined by the researcher); that words which signify or imply identities are to be understood in their co-text; that the analyst is to be sensitive to the words' nonliteral meaning or force; and that the analyst is to reveal the consequences achieved by the identities conjured by the words' use—as enjoyed by those responsible for the words, and suffered by their addressees, or the world at large.

What is unique about CA is that it adds two further requirements on those who research in its name. One is that data must be approached without a priori ideas as to what identities are in play in the given scene—the identities must be made visible among the participants, and the analyst's own interpretation is disqualified. The other specialist CA injunction is that identity matters be understood by analyzing the words in their developing, interactional sequence: Words in talk take their force from the particular moment and manner of their delivery, and to strip them from their natural environment is to put them in a cage and watch them wither.

For a person to "have an identity," then, is to be cast—at least momentarily—into a recognizable social category with associated characteristics or features, with interactional consequences. That casting need not be explicit. There is no need to call someone a mother for her to be treated as one—and, the CA argument goes, effectively in that scene to *be* one. The casting can be done as well, and more economically, by talking about her in ways that only make sense if one's hearers infer that she is indeed a mother. The same person a minute later will pick up a phone and be treated as the office-worker she (also) is; later in the day she will be—will be referred to as, treated as, and talked to as—a neighbor, a daughter, and a stranger in consecutive episodes of interaction. The next day, at the airport,

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institutional forces will combine to judge whether she is an American, a smuggler, or a terrorist; and so on, for an endless series of daily encounters.

The force of "having an identity" is its consequentiality in the interaction—what it allows, prompts, or discourages participants to do next. Here is a pair of snippets, showing one kind of consequentiality of an identity ascription:

(1) [Zimmerman (1998, p. 100). "CAT" is the call-taker at an emergency services call centre, "CAL" is the caller.]

```
01  CAT:     Mid-City emergency
02  CAL:  →  .hh tch hi: we got u:h (.) this is security at thuh
03           bus depot. Greyhound bus depot?=
04  CAT:     =yes ma'am=
05  CAL:     =an' we got a guy down here that's uh:
06           (0.6) ((background noise))
07           over intoxicated hhh .hh he just- he's passed out.
```

In the self-ascription at lines 2–3, the caller's identification as *security at thuh bus depot* is fitted to the institutional preferences of the emergency services call center: that callers declare themselves—as soon as possible—to be competent witnesses to emergencies, and as qualified as possible as solicitors of help. As a member of the security team at a recognizable public facility, the caller smooths the path of the telephone call. Compare the turbulence when such an identification is missing:

(2) [Zimmerman (1998, p. 100)]

```
01  CAT:     Mid-City emergency
02  CAL:     yes sir uh go' uh couple gu:ys over here ma:n
03           they thin' they bunch u wi:se ((background
04           noise))=
05  CAT:  →  =are they in yur house? or is this uh business?
```

Denied the caller's identification, the call-taker has to rectify the resulting informational absence: They ask whether this is a domestic matter, or a public one, as the two events may have different contingencies in how the service is to respond. The point to labor is that identifications—of oneself, a copresent other, or a third party—are functional things; they do some interactional work. In the emergency call, the caller's identification helps warrant their request for help; in the infinitely many other interactions a person will have in their daily routines, there will be an infinite variety of other actions that the identification will perform.

Here is another example, from Edwards's work on talk in marital counseling (Edwards, 1998). "Connie" is telling the counselor about the infidelities of her partner, "Jimmy." How to refer to Jimmy's other lover? Is she a woman, or, as Connie puts it, a *girl*?

(3) [Edwards (1998, p. 25), renumbered]

```
01  CON:     I can't accept (1.0) I can't accept (1.0) y'know: (.)
02           what he's telling me, (0.5) y'know?=I just belie:ve
03        →  that this girl was here all alo:ng
```

As Edwards puts it, "the expression 'this girl' serves to downgrade her status, if not her threat, as an unattached, unmarried, available, possibly young, female"—all without doing so explicitly and making Connie seem aggressively prejudiced. But does *girl* always imply sexual status? Hardly; all descriptions are indexical, and to prove the point here is Connie

again, this time mobilizing the word *girl* in a context which gives it an entirely different meaning:

(4) [Edwards (1998, p. 27), renumbered]

```
01  CON:     >What I would like to be able to do is,< when my friend
02           rings me up, (0.5) every six weeks, or: when they're
03        →  having a ↑girls' night out, >to be able to say,< (.)
04           "yeh, I'd love to go".
```

A girls' night out is, as Edwards points out, a common English expression for a one-off, informal, female-only excursion where the emphasis will be on companionship. Indeed Connie later adds *when I go out with the girls, it's all married women talking about our kids or something, or somebody rings .hh they have a problem . . . that's the girls' night out*. For Connie, the *girls* provide an occasion to share, commiserate, and show public, non-sexual solidarity—at the opposite pole to Jimmy's *girl*, who provides an illicit sexual escapade.

Such concentration on identity categories and the work they do is traceable back to the work of one of CA's founders, Harvey Sacks. In its wider form, open to sequential analysis and a discursive reading, it informs work such as Edwards's, described above. In its narrower form it is sometimes known as *membership categorization analysis* (MCA). An example from the work of Sacks himself illustrates the idea. Here is an extract from a newspaper account of an interview with a US fighter pilot:

> I certainly don't like the idea that I might be killing anybody . . . [b]ut I don't lose any sleep over it. You have to be impersonal in this business. Over North Vietnam I condition myself to think that I'm a military man being shot at by another military man like myself. (quoted in Sacks, 1992, vol. 1, p. 205)

As Sacks observes, any description of events is a choice which disqualifies others, and renders certain inferences more salient in the reader's mind. Here, the pilot's identification of both himself and those against whom he is fighting as military men "delocalises the affiliations of the personnel," as Sacks puts it (1992, vol. 1, p. 206); "what is relevant . . . is not that we are the military of the US and they of Vietnam, but that we are both military"; and indeed both simply doing the job, as it were, that the category "military man" entails. The pilot may well not like the idea that he is killing anybody, and his re-identification as (merely) a military man distances his actions from too close a personal matter of choice. A phrase like "military man" is a sort of binding agent—what Sacks calls a "Membership Categorisation Device"—that brings together disparate objects (this individual US citizen, that particular, if anonymous, Vietnamese man) into a coherent set with given interdependencies. Even the most banal of descriptions will conjure into being a very specific connection between two objects: thus the child's story that includes the phrases "The baby cried. The mommy picked it up." immediately specifies—without effort—that the baby is this mommy's baby, and that she picked it up to do with it what mommies do with crying babies (Sacks, 1992, vol. 1, p. 236).

MCA takes this kind of insight, and Sacks's speculations about various kinds of pragmatic rules that bind together category names and their associated behaviors and other predicates, and builds a highly articulated apparatus with which to analyze texts and talk (see, for example, the programmatic account in Lepper, 2000). The more taxonomic style of some MCA work has not been popular among most CA researchers, who prefer to attend to their normal interests in charting the flow of talk, and describe the play of identity categories in interaction without the complex vocabulary of MCA. Hester and Eglin's edited volume (1997), however, offers examples of MCA work which tries to find a way of combining MCA with sequential analysis.

Research using general CA principles of sequential analysis has thrown light on three kinds of identity category, to use the useful tripartite division suggested by Zimmerman (1998): "transportable," "situational," and "discourse" identities. The first are what would be thought of as traditional sociological categories, such as gender (e.g. Speer & Stokoe, 2010); disability (e.g. Rapley, 2004), or age (e.g. Nikander, 2002); the person can "transport" such a membership from one scene to another. Perhaps the most obvious (and well-researched) such "transportable" identities in talk are those which are signaled by languages, dialects, and codes (see, for example, chapters in the collection by Auer & Li Wei, 2007). The second includes such occasioned identities as language student (Hauser, 2005) or call-show host (Hutchby, 1996), which are bounded by a given scene and setting. The third kind are categories which emerge from the discursive demands of the communicative exchange—for example, one could inhabit the identity of a "troubles-teller" (Jefferson & Lee, 1981) or an "authorised troubles-recipient" (Antaki & Horowitz, 2000). More to the point, the research has shown how these identities emerge in interaction, and are used for interactional ends.

In sum: CA is the study of social action as it is brought about through the design, delivery, and uptake of language in interaction. To adapt J. L. Austin's happy phrase, people do even large-scale things with the slightest of words; and one of the large-scale things people do is impose *identities* on themselves and others. CA's contribution to the social science of identity is to show how talk brings identities into being in the here-and-now of interaction, and how those identities are consequential there-and-then.

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis and Membership Categories; Conversation Analysis: Overview

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Conversation Analysis and Institutional Interaction

LORENZA MONDADA

Within the last fifty years, the study of institutional interaction has been carried out by a large number of scholars referring in diversified ways to conversation analysis (CA), ethnomethodology (EM) and workplace studies (WPS). This entry presents the specific approaches of these three related fields, elaborating on their major topics. In the conclusion, their theoretical, methodological, and applied contributions are highlighted.

Talk at Work and Institutional Talk-in-Interaction

As CA emerged during the 1960s, and consolidated during the 1970s, one of its main objectives was the study of conversational "machinery" based on turn taking and sequence organization, for example adjacency pair, repair, and preference. These early studies dealt with ordinary or mundane conversation as the interactional practice which presents the largest variety of structure. This does not mean that ordinary conversation was the only object of CA or that during these early years CA scholars did not work on other forms of social interaction: Sacks worked on phone calls to a suicide prevention center and on therapy groups, Schegloff worked on emergency calls to the police, and so forth. Conversation is based on a set of practices or methods which are both context-free and context-dependent and offers a reference model for the description of interactional formats that can be found in a variety of social settings. In this sense, ordinary conversation is a "master institution" that exists, and is experienced, prior to institutional forms, encompassing a large array of practices, purposes, rules, and inferential frameworks (Drew & Heritage, 1992).

From the late 1970s on, an increasing number of studies have dealt with (mainly audio) recordings documenting institutional and professional interactions in various naturalistic settings. Institutional talk appears as characterized by distinctive turn-taking systems and sequence types which are a specialized, reduced, or structurally adapted version of formats described in ordinary conversation (Heritage, 1984, pp. 239–40).

For example, in broadcast interviews the sequential organization of the interaction is restricted to the question–answer adjacency pair and an asymmetric distribution of the first and the second pair part among the participants (one being specialized in asking questions and the other in answering them), whereas in ordinary conversation questions are one among a range of possible actions and are not always produced by the same participant. The format of the questions is also specialized in broadcast interviews, with a preface introducing the question: although this preliminary can be pursued through various turn construction units, the interviewee generally waits for the completion of the question before speaking, whereas in ordinary conversation possible transition-relevance points can be used as an occasion to legitimately self-select. Moreover, contrary to conversation, where preliminaries are used for projecting the next action, in the broadcast interview they are used in the service of other tasks, such as providing background information or inserting critical and challenging views, since the participants are already oriented to the question and therefore the question does not have to be announced as such (Greatbatch, 1988; Schegloff, 1988/9).

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This kind of analysis has made it possible to identify the specific sequential formats that configure and constrain the opportunities to speak and to initiate actions—as they are shaped by the institutional context but also reflexively construct it—in a number of institutional interactions. Therefore, for example, classroom interactions are characterized by one speaker, the teacher, other-selecting the pupils and by sequences expanded by third evaluative turns (McHoul, 1978; Mehan, 1979); broadcast interviews are characterized by the absence of continuers and of receipt tokens such as "oh," and these practices orient toward an overhearing mass media audience (Greatbatch, 1988; Clayman & Heritage, 2002); police call openings are characterized by reduced and compacted sequences (Whalen & Zimmerman, 1987), and so forth. Some types of sequences can be found in both institutional and ordinary contexts, such as the "perspective display series" for announcing bad news (Maynard, 2003), but appear to have a more rigid and reduced structure in the former than in the latter.

This kind of observation has made it possible to develop a cumulative body of knowledge about the organization of institutional talk-in-interaction in various settings (Heritage & Clayman, 2010), such as debates in courts, medical consultations, public speeches, or standardized survey interviews. Moreover, this kind of observation has opened up the possibility of a comparative analysis of different forms of social interaction in context (Drew & Heritage, 1992, p. 19; Arminen, 2005) in terms of different levels of organization, such as turn taking, sequence organization, openings and closings, and the overall organization of interaction.

These analyses have a series of important consequences for the articulation between interactional order and institutional order. Instead of starting with an a priori categorization of context which would act as a set of pre-existing constraints imposed on institutional interactions, CA considers that the context is created and maintained through the recurrent and pervasive interactional practices of the participants. For example, the institutional context of a call to an emergency service is achieved through the way in which participants treat the call, manage it, and retrospectively refer to it as an emergency call (Zimmerman, 1992). Context is reflexively achieved by the participants orienting to its institutional features, which are procedurally consequential (Schegloff, 1991) for the way in which talk is organized in its details.

Thus, although analysis focuses in the first place on the organization of social interaction, it aims at describing not only interactional practices but also the institution as it is managed, reproduced, and eventually transformed in and through interaction (Heritage, 1984). For example, in her study of work meetings, Boden (1994) shows that meetings reveal and achieve at the same time the institutional structures in action: A company or an institution is maintained, renewed, and transformed through the way in which its members interact together, for example by adopting specific participation frameworks, by favoring specific chairman's techniques, and so forth, either in formal or in informal meetings: "it is within these local sequences of talk, and only there, that these institutions are ultimately and accountably talked into being" (Heritage, 1984, p. 290).

Ethnomethodological Studies of Work

In parallel with CA's work on institutional settings, a long tradition of studies of work characterizes EM—the latter having been influential for the former, sharing with it a major concern for the study of social practices as they are methodically and indexically organized. EM studies of work began with fieldwork done by Garfinkel on the work of jurors deliberating guilt or innocence (1967, pp. 104–15), coroners determining cause of death (1967, pp. 11–18), and personnel staff keeping clinical reports (1967, pp. 186–207), and continued

with a rich series of in-depth ethnographies of criminal justice and police (Bittner, 1967), coroners (Sudnow, 1967), and correctional facilities (Wieder, 1974).

Whereas CA studies are based on recordings of naturalistic occurrences of work activities, EM studies rely more on ethnographic fieldwork and on a diversity of sources. Their focus is on the way in which members accomplish their everyday work in an accountable way, on their skilled competence in achieving it, and on the way in which this work achieves, reproduces, and adjusts to the normative order of the institution.

Later on, various studies of work were initiated in technologically complex professional settings—in part supported by the Xerox Research Centre Europe, where Button initiated a series of studies of the locally situated organization of work activities, with the aim of integrating local relevancies, methodical practices, and skills in the technological infrastructures expected to support professional practices (Button, 1993). Studies dealt with topics such as the coordination of work in big enterprises, the emergence of "virtual organizations" and distributed teams, and the conception of computer programs or new technological tools.

Another series of studies focuses on the work of discovering sciences (Lynch, 1993), describing the highly specialized competences and the practical work of research teams (such as astronomers discovering a pulsar, neurophysiologists engaging in "shop talk" during their experiments, or mathematicians writing theorems). These analyses focus on the detailed work involved in performing competently specialized tasks specific to each setting.

These studies contribute to some core EM issues. First, they deal with a central EM notion, *accountability*: The organization of the work setting is based on the fact that participants' action is available as publicly scrutinizable and mutually recognizable in the work setting. This "observable-reportable" character is further enhanced and made particularly explicit in administrations, companies, and institutions, where infrastructures and technologies support the constitution and maintenance of files, archives, and reports. Second, these studies are interested in the role of rules, procedures, and regulations in the production of action. They show that work practices cannot be specified by rules and they are not produced by following rules—although they can retrospectively invoke rules in order to make sense of the circumstances and justify the outcomes of an activity (see Suchman, 1987). Third, the accountable and methodical achievement of work and expertise reveals practices of mundane reasoning, embodied courses of practical reasoning that constitute the situated rationality of everyday and specialized institutional activities (Garfinkel, 1967; Lynch, 1993).

Workplace Studies

Whereas the study of institutional talk-in-interaction has been focused on the specific sequential organization of institutional interactions and their reflexive and mutually constitutive relation with the institutionality of context, WPS have been focusing on the complex articulation between professional practices and their ecology, with a special emphasis on the material, technological, and spatial context of the workplace (Luff, Hindmarsh, & Heath, 2000). Inspired both by CA studies of institutional talk and by EM studies of work, WPS have focused on "centres of coordination" (Suchman, 1993) such as airport and underground control rooms, where the organization of interaction is highly sensitive to a fragmented and complex ecology, multiple simultaneous activities, multiple participation frameworks, copresent and distant exchanges, and activities mediated by computer and technologically.

Two projects played an important role in this context: The first is the study of an airport initiated by Suchman at Xerox PARC, including intensive videotaping of various locations, focusing on persons at work and producing close-up views of the documents and screens

they were using (Suchman, 1993; Goodwin & Goodwin, 1996). The second is the study of the line control rooms of the London Underground initiated by Heath and his colleagues (Heath & Luff, 2000), focusing on the coordination of multiple copresent and distant activities.

Over the years, other complex workplaces have been described: press agencies, architectural studios, financial centers, archeology sites, operating theaters, television studios, airplane cockpits, and so forth.

WPS have contributed to a diversification of both analytical topics and methodological practices within EMCA. They have extensively used video recordings for capturing the complexity of the work ecology; in turn, video data have revealed the relevance of multimodal resources (linguistic resources, gesture, gaze, facial expressions, bodily postures and movements), artifacts (objects, documents, technologies as they are situatedly used), and environment (spatial organization of the workplace) for the analysis of the sequential organization of action, multiparty interactions, and multi-activity.

Moreover, video data in complex specialized settings could not be analyzed in the same way as those in familiar everyday settings, but made ethnography necessary. Whereas specific forms of ethnography have been largely used in EM, this topic has been controversial in CA, especially since the work of Moerman (1988), which invites a "culturally-contexted CA" and advocates a combination of ethnography and CA. Ethnography in general has been questioned within CA because it is seen as running the risk of imposing exogenous categorical and typological characterizations on the setting, the participants, or the activities before examining the details of talk and conduct in order to demonstrate the procedural consequentiality of relevant categories to which participants incline (Schegloff, 1991). Nevertheless, WPS have shown that ethnographic fieldwork can be done from an EM and CA perspective, and is even necessary for accessing settings that are generally closed to the public and unfamiliar to the researcher. In this case, ethnographic observations provide information about the research site and serve as a form of proto-analysis helping to identify the relevant activities in situ and enable the adequate organization and arrangement of the recording devices (see Maynard, 2003, pp. 64–79; Mondada, 2006; Heath, Hindmarsh, & Luff, 2010).

Conclusion: Analytical, Methodological, and Applied Contributions

Since the development of EM and CA in the 1960s, a diversification of the field has occurred, expanding the empirical settings studied, the kind of data collected, and the issues and topics treated by the analyses. The study of institutional talk-in-interaction, EM studies of work, and WPS exemplify this diversity and at the same time strengthen the common focus on the detailed analysis of the situated practices and interactional formats which achieve institutional order.

These approaches have provided substantial descriptions of the specificities and systematicities of institutional and professional practices. They have contributed to the understanding of the reflexive relationship between action and context, and the "procedural consequentiality" (Schegloff, 1991) of the institutional constraints on the sequential organization of interaction; they have highlighted the practices through which participants recognize and make recognizable the skilled, expert, specialized conducts and reasonings in which they are engaged; and they have shown the configuring importance of technologies, artifacts, and documents in the organization of these activities.

Moreover, by engaging in detailed analysis of the complexity of institutional and professional contexts, these approaches have provided important advances in the methodologies

for documenting them—on the basis of a careful study of naturalistic settings. CA analysis of institutional talk-in-interaction has exploited the fine-grained details of audio recordings to show their relevance for the sequential organization of talk. EM studies of work have insisted on the researcher's competence in the observed practices—what has been called the "unique adequacy," that is, the researcher's ability to see the phenomena studied from a member's perspective rather than from the perspective of the classical sociological literature—and developed a specific form of ethnomethodologically informed ethnography. WPS have insisted on the importance of the body, material environment, and artifacts, and on the consequent necessity of video recordings and careful analysis of the multimodal details of the organization of action.

Last but not least, these approaches have contributed not only to substantial analytical insights but also to applied issues, stressing the practical consequences of their analyses.

Societal contributions by CA studies—for example in medicine, in education, and in professional training—have been discussed within the last decade under the label of "applied CA." In proposing the term, ten Have (1999) points to two very different aims: On the one hand, the term has been used to refer to studies focusing on specific terrains and their specific organizational features; on the other hand, it has referred to analyses which aim at various forms of social intervention for the training, counseling, and empowerment of social actors. The former does not always imply the latter, and the latter should not obscure the fundamental analytical contributions made by the former. They can be seen as mutually strengthening each other: Systematic analyses of institutional practices not only enrich the scientific literature but can also empower practitioners. For example, the detailed study of the organization of medical consultations, their opening, the reason for the visit, history taking, prescription of drugs, and so forth shows that the way in which a doctor formats these sequences has consequential effects on the opportunities for the patient to voice his or her concerns and on his or her acceptance of the doctor's recommendations (Heritage & Maynard, 2006). These observations can be crucial for the training of medical personnel, for the development of a patient-centered medicine respecting the patients' knowledge and expertise, and for developing medical prevention programs.

Some EM studies of work have also been oriented toward applied concerns, mainly within the field of technology and participative design, promoting design centered on users and supporting their detailed situated practices. In this context, Button and Dourish (1996) introduced the idea of "technomethodology," referring to the integration of EM analytical mentality into the very practice of designers, inviting them to adopt an EM perspective on the technologies and the uses they support. This program resonates with Garfinkel's proposal to develop "hybrid studies" (2001, pp. 100–3), where the description of the practices of assembling, making accountable, and achieving an activity, a structure, and an order is done in a perspective converging with the concerns and the agendas of the professionals involved in these same practices.

Likewise, by focusing on the intricate articulations between work and its ecology, between the sequential organization of talk and the embodied organization of spatially situated participation frameworks, between action and technology, WPS have been strongly engaged in interventions in professional settings. Their focus on the situated use of technologies has been important for user-centered design of new technologies and within the field of computer supported collaborative work (CSCW). In this context, they contribute to the re-specification of the sense and the praxeological configuration of terms such as "collaborative activity," "decision taking," "usage," and "workflow organization"; they attempt to shift the attention of designers from the features attributed to the technologies to the contingent and occasioned way in which participants use them in their ordinary practices, to think about technologies as supporting (vs. constraining) everyday work practices.

By engaging with a diversity of institutional and professional settings, by providing rich audio- and video-recorded materials documenting the skilled practices routinely taking place within these social practices, the studies of institutional interaction in CA, EM, and WPS contribute to key advances in analytical and conceptual issues as well as to innovative modes of intervention.

SEE ALSO: Conversation Analysis and Classroom Interaction; Conversation Analysis and Cockpit Communication; Conversation Analysis and Design; Conversation Analysis and Dyads, Triads, and More; Conversation Analysis and Emergency Calls; Conversation Analysis and Ethnomethodology; Conversation Analysis and Identity in Interaction; Conversation Analysis and Interaction in Standardized Survey Interviews; Conversation Analysis and Meetings; Conversation Analysis and Multimodality; Conversation Analysis: Overview; Conversation Analysis and Therapy; Conversation Analysis and Transcription and Data

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Conversation Analysis and Interaction in Standardized Survey Interviews

DOUGLAS W. MAYNARD AND NORA CATE SCHAEFFER

Surveys use questions to collect measurements from a sample in order to estimate characteristics of a population. The "objective" data obtained by survey interviews are achieved in the interaction between respondents and interviewers who have been trained to behave in a standardized manner. Over the years, both critics and practitioners of standardized survey interviewing have considered how the fundamentally social nature of the interview affects the data produced there. Both groups consider the interaction between the interviewer and respondent when they evaluate the quality of survey data. Critics present examples of interactions that depart from ordinary conversation as evidence that the resulting data cannot be valid. Practitioners suggest that surveys are about measurement rather than meaning in a conventional sense and view such individual incidents as leading to measurement error that results from unusual circumstances or "bad" survey questions. They also consider that adherence to rules of standardization improves the overall quality of the data in the aggregate by increasing reliability. We consider these issues by reviewing the meaning of standardization, the role of tacit knowledge for conducting and participating in the interview, and recent conversation analytic (CA) studies of interaction during survey calls.

Standardization

Fowler and Mangione (1990, p. 35) have codified four principles of standardization as comprehensive, grounded in reasoned understanding of the interview, and refined through many years of practice and observation:

1. Read questions as written.
2. Probe inadequate answers nondirectively.
3. Record answers without discretion.
4. Be interpersonally nonjudgmental regarding the substance of answers.

Survey researchers would probably universally accept these principles, although specific practices derived from these principles can vary. At various sites, researchers and staff charged with supervising field operations have developed their own specifications for training interviewers, derived from such general principles (Viterna & Maynard, 2002).

Standardization does not eliminate the effect of the individual interviewer on the individual respondent. An interviewer who follows the rules of standardization might react to a respondent's ambiguous answer by repeating all the response categories, for example. From the point of view of standardization, this kind of influence would be preferable to alternative behaviors such as using beliefs about the respondent's likely answer to choose a particular response category for the respondent to confirm. If standardization were comprehensive and perfectly implemented, we could say that the interviewer did not affect responses—in the very specific sense that the effect of any interviewer would be

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the same as the effect of any other interviewer. That is, interviewers who are operating in a standardized manner should be interchangeable.

Listening to a survey interview, it is easy to conclude both that standardization is essential and that it will never be perfectly and comprehensively achieved. This is because no set of rules is complete or covers every contingency. If such a set were somehow developed, it would be beyond the capacity of human interviewers to remember and apply. And so survey practitioners often must accept data produced in "messy" interactions as good enough for the purposes and budget at hand. Survey practitioners explicitly or implicitly recognize that interviewers inevitably must alternate between the rules of standardization and supplementing those rules (Maynard & Schaeffer, 2002). That is, interviewers, along with respondents, deploy resources of an "interactional substrate" (Maynard & Marlaire, 1992)—basic skills for engaging meaningfully—in pursuit of answers. These skills are presumed by and yet largely ignored in the rules of standardized interviewing.

Tacit Knowledge as Deployed in the Survey Interview

Those who are discontented with strict interpretations of standardization may be reflecting an explicit or implicit understanding of the necessity for what Polanyi (1958, p. 20) calls tacit knowledge, which, as part of survey interviewing, has received increased scholarly and practical attention. From a CA perspective, one form in which tacit knowledge about how to gather information is exhibited is through the use of an "interviewing sequence" that unfolds in three turns: (a) question, (b) answer, and (c) acknowledgment. For example, the parts of two interviewing sequences are indicated with arrows in excerpt (1). (FI = female interviewer; FR = female respondent.)

(1) [Maynard & Schaeffer (2002, p. 15), normalized]

```
FI:       okay, and now we'll get started.
FI:  1 →  first, how many persons live in your household counting
          all adults and children and including yourself?
FR:  2 →  four
FI:  3 →  okay and now we have some questions about government
          agencies.
FI:       as you know, every ten years there is a census of
          the population of the United States.
FI:  1 →  how confident are you, that the census bureau
          protects the privacy of personal information about
          individuals and does not share it with other
          government agencies?
FI:       very confident, somewhat confident, not too confident,
          or not at all confident?
          ((silence))
FR:       share it with what other governments?
FI:       well the question doesn't specify, but it says other
          government agencies
FR:  2 →  oh. probably very confident.
FI:  3 →  okay. people have different ideas about what the census
          is used for . . .
```

Not all survey questions appear in this three-part paradigmatic format, with an "okay" or other receipt object such as an acknowledgment in the third position (Schaeffer & Maynard, 1996, pp. 71–2). Often, the acknowledgement by the interviewer is omitted, which results

in a two-part question–answer sequence. For example, when interviewers have a block of questions to ask about a single topic, they tend to omit the acknowledgment and produce two-part sequences until the block is completed, at which point they return to the paradigmatic three-part sequence.

Analyzing the interviewing sequence as a generic form can remind us that the survey is only one type of "interview." Dictionary definitions, for example, suggest that the interview is a "formal consultation" used to evaluate qualifications or "a meeting at which information is obtained (as by a reporter, television commentator, or pollster) from a person" (*Webster's Ninth New Collegiate Dictionary*). Accordingly, the survey has a relationship to other interviews, all of which use the interviewing sequence but which vary in discrete ways (including how the third-turn acknowledgment is configured, as we discuss below). For example, physicians and nurses often interview their patients to obtain a medical history; teachers and psychologists interview students as part of teaching and testing activities, employers interview prospective workers in making hiring decisions, and newscasters interview government officials and others as part of their programming. The survey can be compared to these other interviews to specify some of its distinctive characteristics.

Although the survey interview has long been described as a "conversation with a purpose" (Bingham & Moore, 1924, cited by Cannell & Kahn, 1968), survey interviews differ from conversations in substantial and important ways (Schaeffer, 1991). However, administration of the survey is like interviewing behavior in other settings including ordinary conversation (where one participant may casually solicit facts or opinions from another) and institutional settings such as schools, courtrooms, and news organizations in its reliance on tacit knowledge and taken-for-granted procedures. These interactional skills are used by the interviewer in producing questions, the recipient in answering them, and the interviewer yet again in acknowledging or not in particular ways. Although the survey shares generic practices with other interview forms for asking, answering, and acknowledging answers, it is relatively distinctive in its practices for maintaining the neutrality of questions and acknowledging answers without evaluating their content. Studies of interaction in the survey interview recognize the three-part interviewing sequence or its two-part variant as base forms for the interview. There are, however, different approaches to studying this interaction.

Approaches to and Recent Studies of Interaction in the Survey Interview

Since the early 1990s, the methods used to study what happens during the survey interview and the goals of those studies have become more diverse. Explicitly or implicitly, research efforts recognize how tacit knowledge is used in accomplishing a survey interview, but investigators take different approaches to locating how this knowledge is used and the effects of tacit knowledge on data quality. For the sake of simplicity, we categorize these approaches according to whether the research considers turns of talk in the interviewing sequence as the interviewer's or respondent's "unilateral" productions, or regards these turns as cooperatively, collaboratively assembled and therefore as "bilateral" productions. The first approach, called "interaction coding" or "behavior coding," can only be briefly mentioned, and includes studies such as those pioneered by Cannell, Fowler, and Marquis (1968), along with slightly later studies by Morton-Williams (1979) and Brenner (1982). Related to these are experimental studies that examine differences in interviewer styles (Dijkstra & van der Zouwen, 1988). Although researchers examine how the interviewer's

behavior influences a respondent's answer and how this answer may affect the interviewer, they regard each of these turns as the speaker's own unilateral production, and the main tasks have been to identify indicators of measurement error in the respondent's behavior and errors on the interviewer's part or in the design of questions. Recent experimental research has incorporated a more nuanced understanding of how interview data involve the collaborative "grounding" of understanding (Clark, 1996). Designing protocols that recognize this feature by permitting a conversational style of interviewing may improve response accuracy, although at the expense of increased time to complete the interview (Schober & Conrad, 1997; Belli, Shay, & Stafford 2001).

The collaborative view of survey interviewing is implemented most consistently in CA studies. One of the earliest was Suchman and Jordan's (1990) publication, which expressed reservations because ordinary resources for establishing shared understanding in conversation are prohibited in the survey interview. Their critique, which highlights how the interview imposes external rather than local control, restricts elaboration on answers, and minimizes the resources of repair, suggests how the interview differs from and is inferior to conversation in the establishment of mutual understanding and meaning, rather than what constituent properties characterize the performance of the survey as a standardized interview for purposes of social measurement. Schegloff (1990), in a response to Suchman and Jordan, suggests that inquiry is possible into features of the survey interview as having their own integrity, and that all talk-in-interaction embodies organizational problems having to do with turn allocation; repair of troubles in speaking, hearing, understanding, and so forth; and a variety of other matters depending on the nature of the survey and its substantive topic. For example, Schaeffer and Maynard (2002) have examined "occasions for intervention" on the part of interviewers when respondents either ask for clarification (as at line 16 in excerpt [1] above) or, rather than choosing a response category, produce "reports" that indicate uncertainty and offer an unstated upshot as a kind of proto-answer.

A monograph study is Houtkoop-Steenstra's (2000) study of question-and-answer sequences during the survey interview, although the book also uses Goffman's (1979) concept of "footing," and shows how interviewers and respondents skillfully exhibit a variety of participation statuses or stances relative to the talk and task at hand. Houtkoop-Steenstra also addresses such topics as redundant questions (those for which a respondent has already provided relevant information), the structure of question turns, and the field coding of questions.

Another major CA work on the survey is the edited volume by Maynard, Houtkoop-Steenstra, Schaeffer, and van der Zouwen (2002), with sections on theoretical orientations, recruitment to the survey, interaction during the question-asking portion of the interview, and issues concerning data quality (transcription, coding, and technology). More recent research on recruiting survey participants includes Maynard, Freese, and Schaeffer's (2010) study of how potential respondents present interactional environments that are relatively discouraging or encouraging, and how, in response, interviewers may be relatively cautious or presumptive in their approach. It turns out that a significant matter in obtaining participation is whether interviewers are able to make the request in the first place; that is, interviewers' ability to "tailor" behavior to the interactional environment can affect progress to a point at which a request can be produced, as well as the form the request takes. This line of CA research follows the Groves, Cialdini, and Couper (1992) suggestion that interaction is one of the critical elements in a theory of survey participation, and that interviewers increase the chances of obtaining participation by tailoring their scripted instructions. This means engaging in a continuous search for cues about a householder who answers the door or telephone, and applying the appropriate persuasive messages in relation to those cues.

Conclusion

Overall, along with traditional, more unilateral approaches to studying interaction, CA and its orientation to the inherently collaborative nature of the interview contribute to understanding the social organization of this approach, how to improve the survey itself, and how to increase cooperation with requests to participate in surveys.

SEE ALSO: Conversation Analysis and Ethnomethdology; Conversation Analysis and Institutional Interaction; Conversation Analysis and Interview Studies; Conversation Analysis: Overview; Conversation Analysis and Therapy; Conversation Analysis and Turn Taking

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Conversation Analysis and Interactional Linguistics

FRIEDERIKE KERN AND MARGRET SELTING

Introduction

Interactional linguistics is grounded on the premise that language should not be analyzed in terms of context-free linguistic structures but as a resource for the accomplishment of actions in social interaction. With this in mind, interactional linguistics takes an interdisciplinary approach to a linguistic analysis that aims at an understanding of how language is both shaped by and itself shapes the actions it is used for. Interactional linguistics combines an interest in linguistic phenomena and structures with the theory and methodology of conversation analysis (CA) and contextualization theory (CT). It is conceptualized as an interface between linguistic analysis and the analysis of social interaction.

Basic Assumptions

Studies in interactional linguistics aim at a description of linguistic phenomena as resources for the construction and organization of practices and actions/activities in interaction. In contrast to the traditional Saussurean and Chomskyan view of language as a system of signs that can be described without reference to the context in which it is used, interactional linguistics adopts the view that language use is fundamentally context-sensitive, that is, practice-, action-, sequence-, and recipient-oriented. Interactional linguistics maintains that linguistic analysis should acknowledge the fact that language is used in and for particular tasks and purposes of interaction, and that, as a consequence, linguistic phenomena need to be analyzed with regard to the conversational actions they are deployed for and the sequences they are embedded in. Within this framework, language is conceived of as an ongoing, emergent product in a social semiotic event; the specific structures of spoken language are analyzed as meaningful and actively deployed resources for the accomplishment of conversational goals or tasks at hand.

The aim of interactional linguistic description is, among others, an underpinning of interactional, in particular CA, sequential analyses by investigating in detail the role of linguistic resources in (cueing or steering) participants' situated construction and interpretation of practices and actions in social interaction. For this, participants' practices and actions are decomposed into their constitutive linguistic and other structures. Interactional linguistics aims at a description of both the forms and functions of linguistic phenomena in talk-in-interaction at all levels—that is, as lexico-semantic, syntactic, phonetic-prosodic, or complex rhetorical or stylistic structures and resources—with reference to linguistic regularities and rules on these levels. It aims at a functional description of linguistic structures by reconstructing how the decomposed linguistic resources are routinely combined and methodically used in particular locations and sequential contexts in order to fulfill their role in the cueing of interpretations of practices and actions in social interaction. For

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this, interactional linguistic analysis can—as indicated above—start from either linguistic forms or interpreted practices and actions in interaction.

Historical Development

Interactional linguistics builds upon and is strongly influenced by CA. CA's primary research interest is the description of participants' methods for the organization of social interaction. CA is not interested in investigating the linguistic details of those methods in a systematic way. However, CA's fundamental interactional perspective on language has inspired many linguists.

For the development of the interactional linguistic research perspective, three approaches have been most relevant:

1. In the 1980s, British linguists and phoneticians began combining phonetic analysis with CA methodology. They showed that phonetic structures are systematically shaped by and used for the accomplishment of tasks in interaction. They argued that such phonetic structures should hence be described as products of and resources for the organization of the speech exchanges in which they are produced (e.g., French & Local, 1983).
2. After earlier work in linguistic anthropology had described syntactic structures with reference to discourse structures, scholars based in the USA developed a new approach to discourse-functional linguistics which headed in similar directions in their aim to combine linguistic analysis and CA sequential analysis, focusing primarily on the role of syntax, later also prosody, in sequential social interaction (e.g., Fox, 1987; Ford, Fox, & Thompson, 1996).
3. In the German research context, a group of linguists combined the theory and methodology of CA with the insights of CT in investigating the role of prosody and syntax in spoken language in interaction (e.g., Auer & di Luzio, 1992; Couper-Kuhlen, 1993, Selting, 1995). CT claims that participants in interaction deploy linguistic and paralinguistic features to suggest and evoke interpretive frames which are used by participants to "construct" a context of interpretation, allowing them inferences about "what is going on" in the speech event (see Gumperz, 1982). CA and CT constitute the theoretical and methodological basis of research in interactional linguistics.

Research Principles and Methods

Research in interactional linguistics is strictly empirical and grounded in databases of naturally occurring talk-in-interaction. The analysis includes a description of linguistic forms and structures as well as an account of their functioning as a relevant resource in talk-in-interaction. The analytical categories to be developed are understood as an integral part of the sequential context in which they occur. As far as possible, they are derived directly from the data. Categories need to correspond as closely as possible to those that the participants themselves can be demonstrated to orient to in interaction (participant categories). Categories are validated or "warranted"—that is, demonstrated as indeed relevant for the participants' orientation—by showing that and how recipients in their next turns orient to them. Grammatical analysis, for instance, is not to be guided by a priori traditional concepts such as "clause" or "sentence." Instead, linguistic units and constructions are viewed as the result of an ongoing, real-time process of coordination and interaction between the participants, by-products of their construction of practices and actions in conversation.

Methods of validation in interactional linguistics draw mainly on principles of sequential analysis. Linguistic structures are reconstructed as interactionally achieved and interactionally relevant phenomena. The following five types of evidence are employed for grounding analytic categories in the data themselves:

1. The relationship of the device to just prior turns. Linguistic phenomena in turns are often shaped by features of prior turns.
2. Co-occurring evidence within the turn. Syntactic, lexico-semantic, and prosodic cues may be used cumulatively, supporting each other in order to suggest specific interpretations of turns.
3. Subsequent treatment of the interactional device in question. Analytical categories may be discoverable and shown as relevant by examining following talk in order to see how a turn is being dealt with by participants.
4. Discriminability of the interactional device. The systematic comparison of a linguistic category with other categories may shed light on its specific function.
5. Deviant cases in the use of the device. Even though at first sight deviations may contradict the hypothesized regularities, they in fact often confirm them on a deeper level. Participants may respond to deviant cases violating routine expectations in ways that reveal their orientation to just those routine expectations: For example, speakers may account for their not conforming to the expectations, or recipients may explicitly demand actions conforming to expectations.

Objects of Research

Interactional linguistics is interested in all objects of research that are grounded in the use of language in social interaction. There are basically two possibilities of starting a study in an interactional linguistic framework. One way is to select a conversational practice or action/activity type as a starting point, and to reconstruct the linguistic devices with which it is methodically accomplished. The second way is to select a specific linguistic structure as a starting point, and to investigate its methodical use and functioning for the accomplishment of verbal actions. Research can be either language-specific or crosslinguistic. Crosslinguistic research allows insights into the ways in which the accomplishment of conversational practices and actions may be shaped by the linguistic resources provided by the specific languages at hand.

So far, most studies have focused on examining the role of devices from either syntax or phonetics-prosody, and the relations between them, for the conduct of interaction (e.g., Auer, 1996; Ford et al., 1996; Selting, 1996; Couper-Kuhlen, 2004). More recently, response particles (e.g., Betz & Golato, 2008) and lexico-semantic structures and devices have also been attended to (e.g., Couper-Kuhlen & Thompson, 2005; Deppermann, 2005). Furthermore, scholars have begun to integrate analyses following empirical approaches to construction grammar into the interactional linguistic endeavor (e.g. Couper-Kuhlen & Thompson, 2005; Günthner & Bücker, 2009). Most recently, students of interactional linguistics have begun to systematically include multimodal aspects of language use into their analyses of talk in social interaction (Gülich & Couper-Kuhlen, 2007; Selting, 2010).

Linguistic structures are described with respect to their role in the following practices and actions in social interaction: (a) the construction of turns and units smaller than turns—turn construction units (TCUs)—in and for interaction, (b) the organization of turn taking, (c) sequence organization, (d) the formation of practices and actions, and (e) the constitution of conversational genres and styles.

An additional area of interest is the study of the ways in which linguistic structures and phenomena are used and modified in specific interactional settings and participant constellations, such as in institutional settings (e.g., Heritage & Clayman, 2010), in interactions with and between children and adults (e.g., Wells & Corrin, 2004; Kern & Quasthoff, 2005), or with and between participants with communication disorders (e.g., Goodwin, 2010).

Findings

Since the early 2000s, numerous empirical studies have demonstrated that the construction and interpretation of conversational practices and actions depend on their linguistic structure as much as on their positioning within an action sequence. In particular, it has been shown that prosody and syntax play important roles for the construction of smaller conversational units, such as TCUs, as well as for the organization of thematic and sequential (dis)coherence, for action construction and the signaling and management of affectivity.

SEE ALSO: Conversation Analysis and Multimodality; Conversation Analysis: Overview; Conversation Analysis and Prosody; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA; Conversation Analysis and Transcription and Data; Conversation Analysis and Turn Taking

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Conversation Analysis and Interview Studies

GABRIELE KASPER

Conversation analysis (CA) approaches any kind of interview from a set of empirically grounded premises.

1. Interviews are a form of locally accomplished social interaction.
2. Interviews are jointly produced by interviewer and respondent.
3. Participants' talk in the interview accomplishes a range of social actions, stances, and identities.
4. All features of the participants' interactional conduct may shape the flow of the activity and generate the interviewee's responses.

With these premises, CA's approach to interviews sets itself apart from the prevalent treatment of interviews in the social sciences. "Prevalent treatment" may seem an objectionable description, considering the wide variety of theoretical perspectives on interviews, their social and cultural contexts, interview researchers' disciplinary and political agendas, and interviewing formats and styles (Gubrium & Holstein, 2002; Roulston, 2010). Yet the differences between, for instance, social constructionist (Chavez, 2006), phenomenological (Kvale & Brinkman, 2009), postmodern (Fontana & Prokos, 2007), and feminist (Hesse-Biber & Leavy, 2007) orientations to interviews, and the diversity within each of these (partially overlapping) groups, recede into the background when it comes to the analysis of interview data. The practice of coding the data for recurrent themes that speak to the study's theoretical orientation and investigative purpose, read off from the interview transcript (e.g., Chavez, 2006; Kvale & Brinkman, 2009), de facto treats the interview as a self-evident instrument for gathering information about respondents' social and mental life, a transparent conduit to the purportedly situation-transcendent content of a person's mind. Epistemological avowals to the contrary notwithstanding, this data treatment builds on a transmission model of communication, in which language is seen as a neutral medium that requires no particular analytical attention, while interactional organization and non-linguistic semiotic resources are disregarded altogether. Although anthropologist Charles Briggs issued an early warning that "interview techniques smuggle outmoded preconceptions out of the realm of conscious theory and into that of methodology" (1984, p. 3; Mishler, 1986), the practice of interview analysis in the social sciences and in applied linguistics in particular has overwhelmingly remained unaffected (Talmy, 2010).

Research interviews share with interviews conducted for other purposes a turn-taking system that reflexively constitutes an activity as interview. Unlike ordinary conversation, turns in interviews are distributed through "action (or 'turn-type') preallocation" (Heritage & Clayman, 2010, p. 37), that is, one party asks questions and the other party answers them. As first pair parts in an adjacency pair, all questions constrain the range of possible next actions and their format and therefore create a momentary asymmetry between questioner and answerer. The organization of the interview ties the questioning and answering to the categories of interviewer and respondent and thereby lends the entire activity an

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inbuilt asymmetry—which, however, does not necessarily remain unchallenged, as in cases when respondents resist answering a question as projected (see examples below).

Studies conducted from the perspectives of ethnomethodology (EM), CA, and discursive psychology (DP) examine the methods by which participants accomplish different types of research interview as orderly social activities. The standardized survey interview and the qualitative interview are two contrasting dyadic interview formats. A third major type of research interview, the focus group, has been less prominent, especially in applied linguistics. Focus groups can be more or less prestructured (Morgan, 2002, for overview), but all varieties are organized as moderated group discussions of a topic in which the participants are experts or stakeholders. In contrast to the dyadic interview, participants in focus groups interact with each other, not only with the moderator. In informal focus groups, turn pre-allocation is relaxed or minimized. Consequently their interactional organization tends to be more conversational, that is, party-administered and locally managed.

Survey interviews are designed to minimize random error and bias in order to afford reliable and valid social measurement. Interview questions are therefore prestructured through a scripted interview schedule, and allowable response formats are strongly constrained. And yet, as survey researchers are the first to acknowledge, it is impossible to entirely bring the contingencies of interaction under the control of a prescriptive interview regime. At unpredictable moments, interviewers and respondents can be seen to depart from the standardized protocol, resort to their commonsense interactional competencies to resolve local problems in the interaction, and revert to the formal institutional practice. As an example, Moore (2004) discusses the practice of "projective reporting," "a device for managing [such] mismatches between presuppositions embodied in the questions and the respondents' own experiences" (p. 57). In this practice, rather than answering a survey question as projected by the question format, respondents report a circumstance related to the answer. (In excerpt [1], "IF" = female interviewer, "RF" = female respondent.)

(1) [Moore (2004, pp. 62–3)]

```
193  IF:  An:'uh .hh (0.3) did you listen to
194       an opera ↑music ↓program on radio
195       (1.1)
196  RF:  Parts of it hhhh [heh-heh  ]
197  IF:                   [.tch Okay] that's okay.
198       .hh An did you listen to opera music
199       records tapes or compact discs
```

The lengthy gap of silence following the interviewer's question (line 195) flags the question as problematic for the respondent and may indicate that she does not have a response ready to it. In her subsequent response (line 196), she does not answer the interviewer's polar question with a "yes" or "no" as projected. Instead her response shows what the problem is—whether listening to "parts of" an opera music program counts as listening to "an" opera music program. The turn-final laughter may index the respondent's uncertainty about whether this is an acceptable answer—precisely one of the problems that now confronts the interviewer, who has to decide (a) whether the respondent's report qualifies as an allowable answer as projected by the question, and (b) how to code that answer. In other documented instances of projective reporting, the respondent provides an upshot of the report, such as "so I guess yes." Without an upshot formulated by the respondent, the interviewer has to make her own judgment by inferring from the respondent's report to the available answer categories. Interviewers sometimes offer candidate upshots to the respondent for confirmation ("so you *did* listen to opera on the radio"), but not in this case. Without an upshot formulated by either participant, the interviewer accepts the report

as a qualified answer in her next turn (line 197) and proceeds to the next survey question (line 198). As Moore (2004) comments, implicit answers and their interpretation are standard interactional practices in ordinary conversation and other forms of institutional talk, but they violate the stipulations of the standardized survey protocol. Yet in order to accomplish "standardization in interaction," departures from the standardized routine through projective reporting and other commonsense practices are unavoidable members' methods.

In contrast to standardized interviews, the overall purpose of *qualitative* interviews is to obtain in-depth descriptions and accounts of the participants' lifeworld. Interview formats that meet this goal are semi-structured or un-prestructured ("open-ended"). Although the interviewer decides what initial questions to ask, he or she typically assumes the role of an attentive listener in order to "give voice" to the participant and encourage long and detailed personal accounts and narratives, told from the respondent's subjective perspective. Despite the marked difference in purpose, established social science approaches to qualitative interviews share with standardized interviews the view that the interview serves as a window to the participants' inner world and their perceptions of the world outside—in other words, the interview figures as a *resource* to inform about matters of a different order than the interview itself. From a CA perspective, the main focus of interest is how the interview comes off as an organized social activity, that is, the interview interaction becomes the *topic* for analysis. CA's concern with the "assembly process" (Holstein & Gubrium, 2004) of interviews has brought into view a range of interactional practices, among them the delivery structure of questions and responses (Grindsted, 2005), speakership allocation (Mazeland & ten Have, 1998), repetition and upshot formulation (Mazeland & ten Have, 1998; Grindsted, 2005), accounting practices (Baker, 2002), reported speech (Buttny, 2003), hypothetical scenarios (Roulston, 2001), and membership categorization and attribution as moral work (Roulston, 2001; Baker, 2002). These and other CA studies attest some of the methodical practices by which interviews come about as the interviewer's and respondent's joint interactional accomplishments. By implication, they also show that some prevalent methods in the analysis of qualitative research interviews are prone to undermine the validity of the proposed findings. One such method is to delete the interviewer from the analysis (Potter & Hepburn, 2005) and attribute interview "outcomes" unilaterally to the respondent. Another, related procedure is to read off from interviewee responses themes that are relevant to the theoretically stipulated research goal and treat the interviewee's comments about such themes as evidence for the person's memories, experiences, attitudes, perceptions, or similar cognitive states.

The approach to interviews as a tool for excavating the contents of respondents' minds is embodied in transcripts that delete the details of the sequential and temporal organization of the interview talk and represent the interaction as a written script. Excerpt (2) below, from Speer (2005), illustrates some ways in which the interviewer's conduct shapes the interviewee's actions and how respondents manage identities, stake, and interests through the sequential, temporal, and linguistic composition of their turns. The interviewer (Speer) had asked Ben, a man in his mid-twenties, whether he had ever been to a gay bar. Ben described an occasion where he went with his girlfriend and some of her friends ("'coz she was intrigued'") and that he was "chatted up" by a man (Speer, 2005, p. 112).

(2) [Adapted from Speer (2005, p. 112)]

```
01  Speer:  Was he attractive?
02          (0.6)
03  Ben:    Phh. (1.8) I s'pose he was reasonably well looking, ↑Yeah.
04          (1.6)
05          But you know it doesn't interest me,
```

```
06          (.)
07          I'm definitely (0.8) not interest(h)ed(h) in(h) men(h).
08  Speer:  hhh.
09          (0.8)
```

Five observations: The first and most fundamental point to make is that the topics of Ben's "experience" in a gay bar and his reaction to another man's physical attractiveness would not have come to pass, at this moment in the interaction, and in this particular form, without the interviewer's initial question (whether Ben had ever been to a gay bar, not shown in original) and her "follow-up" question in line 1.

Second, Ben's extended response is inevitably recipient-designed and sensitive to the interactional setup, that is, produced for this particular recipient, a female friend, in a dyadic talk in his home. Were Ben to talk on the topic with other participants in a different location—a group of male friends in a pub, for example—the telling might come out quite differently. With contextually shifting accounts, displays of stances, and (dis)claimed and attributed identities, interview participants orient to the local and relational character of their tellings. "Experiences," "attitudes," or "perceptions" are only available as discursively and contingently produced versions.

Third, the interviewer's conduct visibly shapes the interviewee's response. After her initial question, the interviewer passes up all opportunities for taking another turn and so pursues from Ben multiple expansions of his answer (lines 4, 6, 8, 9).

Fourth, with the temporal, prosodic, and verbal resources that Ben marshals in producing his answer, he treats the matter brought up in Speer's question as a delicate one. To begin with, Ben's answer to Speer's polar question is delayed through an inter-turn gap, a vocalization (*Phh.*) that casts the question as one that he does not have a ready answer for, and a rather lengthy pause. Ben then launches a type non-conforming answer (Raymond, 2003) by indexing epistemic caution (*I s'pose*) and downscaling Speer's description *attractive* to *reasonably well looking* before adding a type-conforming answer token, *↑Yeah*. The turn-final position of *yeah* and its initial rise bring Ben's answer off as the result of an unpremeditated evaluation rather than something he thought about before. Since the interviewer neither offers a third-turn acknowledgment nor asks another question after Ben's completed answer turn, Ben takes another turn (line 5) in which he counters the possible inference that he might be "interested." The *but*-prefaced turn sets the upcoming utterance in contrast with the preceding, while the epistemic stance marker *you know* frames the following unit as information that is new to the recipient or that the recipient should consider. As such, the *you know* token makes an acknowledgment relevant in the next turn. When none is forthcoming, Ben reformulates the matter-of-fact account *it doesn't interest me* (line 5) as an upgraded (*definitely*), more explicit version (replacing *it* with *men*) with stronger speaker involvement through the active grammatical mood: *I'm definitely (0.8) not interest(h)ed(h) in(h) men(h).*

Finally, with the laughter toward the end of the turn, Ben discounts the opposite proposition as absurd.

Analytic attention to the interactional practices by which Ben assembles his answer makes visible how participants construct identities and stances in their lives outside of the interview as local concerns at particular moments in the interview interaction. We see, first, that Ben treats Speer's question in line 1 as confronting him with a dilemma, that is, acknowledging another man's physical attractiveness without experiencing erotic desire; second, how he draws on such context-free methods as reluctant concession and disavowing interest to claim the identity of a non-homophobic heterosexual man. In order for participants' methodic interactional practices to become available for analysis, interviews have to be transcribed according to standard CA convention (Potter & Hepburn, 2005).

The study of research interviews from a CA perspective has a fairly short history and consequently, the main task for investigators is to formally describe the procedural infrastructure of different types of research interview. But the social organization of interviews remains a critical concern for investigators also when some topical focus sets the agenda for a study because, as Holstein and Gubrium (2004) emphasize, the *what* in interviews is only available through the *how*.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis and Interaction in Standardized Survey Interviews; Conversation Analysis: Overview; Conversation Analysis and Recipient Behavior

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Conversation Analysis and Language Acquisition

JOHN HELLERMANN

Researchers interested in language in use have used methods from ethnomethodological (EM) conversation analysis (CA) to show convincing evidence for the process of learning as it happens in a turn-by-turn manner in sequences of talk (e.g., Garfinkel, Lynch, & Livingston, 1981; Macbeth, 1994; papers in Markee & Kasper, 2004). Recently, theoretical and practical concerns have motivated researchers using CA to consider the possibilities of observing learning beyond individual interactions, to look longitudinally and propose that learning is observable in changes in practices for interaction (Wagner, 2004; Hellermann, 2007) at different points in time. The practical concerns are developmental (how children learn language), pedagogical (how adults learn additional languages), and vocational (how professionals learn their professions). For much of this research, another practical concern is the expectation of making connections between research and practice.

Due to CA's local and social focus on interaction and the traditionally psychological definitions of learning, such longitudinal investigations using CA methods have raised theoretical and methodological concerns and these questions: What is the theory of language and social interaction that grounds CA methods and what, if any, are the limitations for investigations of learning using that method? In this entry, to illustrate how CA and longitudinal data offer insights into the issue of learning, I will discuss some reasons that CA researchers have chosen to use longitudinal data, and how CA research might conceptualize acquisition or learning. Toward the end of the entry a brief summary of some research using longitudinal data and CA methods to address learning will be presented.

Longitudinal Data with CA Methods

There are at least two reasons for the relatively recent concern of CA researchers with issues of learning and taking on the conceptualization of learning as a social process. The first is the increasing numbers of CA researchers who work in contexts (university departments) where there is interest in connecting research to practice (departments of language pedagogy, child development, and applied linguistics). Researchers in these departments are working with data involving "novices" of some sort who are "in training" in some way. Novices in this sense may be children developing competencies for language and social interaction, adult learners of a foreign language, physical therapy patients, or apprentice professionals in training.

The very fact of investigating the talk-in-interaction of novices strongly implicates the researchers in showing the participants' orientations toward their novice statuses if not the changes that occur during their time as novices. As self-identified and socially identified novices, the participants in these interactions are working toward socially established interactional goals but, by definition, are not yet competent in one or more of these goals. The CA principle that there is order at all times in interactions and that members use their competencies for ordering their social interactions suggests that, in the interactions

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of novices, the orientation of participants to their novice statuses and novice competencies will be made visible in their interactions.

Adding a longitudinal focus to the investigation of the sequential nature of talk-in-interaction that novices use to negotiate local contingencies can show participants and researchers differences in the management of those sequences at different points in time. It can as well show the degree to which this management conforms to institutional goals, that is, to the standards of talk-in-interaction of the particular institution, be that the language, the school, the doctor, or the governing board. In many cases, practitioners (often the researchers themselves) have immediate needs to use the findings from research in instructional settings. Funders, administrators, and colleagues rightly look toward researchers for the connection to practice.

A second reason for CA to address learning at this point in time may be the availability of longitudinal data. CA uncovers regular practices for the turn-by-turn sequential formatting of talk in any conversational or institutional setting. A priori regard for contexts or participants is not necessary for this research endeavor, and as a result, data collection is often not purposeful with respect to participants or context. Yet, while purposeful data collection has not become part of standard CA methods, the use of data collected purposefully by other researchers does occur and has been present from the start of CA research (Sacks's, 1992, and others' research on recordings of suicide prevention hotline calls). Recent longitudinal CA research on learning has used longitudinal data collected expressly for the purpose of doing sequential analysis on learning in that context (Wootton, 1994; Forrester & Reason, 2006; Cekaite, 2007; Markee, 2008; Nguyen, 2008; Forrester & Cherington, 2009; Ishida, 2009; Martin, 2009). Others have used data collected longitudinally for other purposes for their sequential analyses (Brouwer & Wagner, 2004; Hellermann, 2007).

CA Methods and Learning

EM and CA consider cognition a visible, social phenomenon (Coulter, 1983; Schegloff, 1991); the conceptualization of learning as also a social, co-constructed process is not an epistemological leap. That conceptualization has been made in various ways and is still underway.

CA methods are not interested in and cannot offer understanding toward neurological or psychological changes that may be part of learning and which are the dominant focus for research on learning in psychology. Like its theoretical precursor EM, CA is interested in the accountable, commonsense methods that members use to accomplish social interactions, accountability that is visible without access to views of electrochemical actions of the brain. It is this foundational understanding of CA that is allowing new insights to be made into learning. Researchers using CA are conceptualizing learning as a visible and co-constructed accomplishment seen in talk-in-interaction (Brouwer & Wagner, 2004; Wagner, 2004) and in the change in language practices seen over time (Hellermann, 2007). CA's focus on details of talk-in-interaction shows how members are accountable to one another for their social organization and allows researchers to discuss learning as a situated and co-constructed process.

Some CA researchers draw on learning theory from outside of CA to ground their empirically based claims for evidence of learning (discussed in Kasper, 2006; Markee, 2008; Markee & Mori, 2009). Situated learning theory (Lave & Wenger, 1991) has been invoked as compatible with CA methods (Hellermann, 2008) given that its main constructs ("joint enterprise," "shared repertoire," "mutual engagement," and "legitimate peripheral participation") conceptualize learning in a co-constructed, situated, and interactional

way (Fox, 2006). CA researchers have brought situated learning theory in at the end of the sequential analysis of the data and used it to help explain the empirical findings of the analysis. When the sequential analysis of longitudinal data involving novices is complete and differences in the sequential practices used by the novice are noted by the researcher as having occurred at different times, the researcher is called upon to speculate on the reasons for these differences. For those interested in situated learning theory, the agnostic stance of the CA researcher doing the sequential analysis is set aside when the analysis is complete, and bodies of knowledge on human interaction are drawn on to take the next step in the analysis (Brouwer & Wagner, 2004; Nguyen, 2008; Martin, 2009).

From an EM perspective, competent members of society have and use their competencies for achieving social order through talk at all times, meaning that every unmarked ("normal") sequence of talk can be seen as local, indigenously organized achievement. If that is the case, the question arises: What might be considered "new" achievements or learning? In linguistics, the commonly held understanding is that a native language is acquired by the early teenage years. With this understanding, language learning researchers generally stop considering the possibility that first language speakers after the teenage years may be "learners." However, with its theoretical grounding in EM, CA methods show that each interaction provides the opportunity for such new achievements when participants use and adapt context-free methods for the particular contingencies of each interaction. Learning, then, is not limited to the category of "novices," be they novice users of a language, children learning their first language, or novice professionals. CA studies of learning focus on novices because they are the participants in whom there is societal and pedagogical interest. They are the participants whose status as members (determined by their accounting practices in talk-in-interaction) is of interest to both the participants themselves and the analyst.

Some Longitudinal Research Using CA Methods

The first longitudinal investigations by a CA researcher are Wootton's studies of his daughter (1994). Wootton's research, as well as more recent child language studies by Forrester (Forrester & Reason, 2006; Forrester & Cherington, 2009), investigates the development of actions through the talk of young children without explicitly addressing a theory of learning. In studies of children, the assumption is that the appearance in the data of a language form or sequential practice is part of the child's language and social development. Given the field for several of these publications (psychology), by implication, this development can be understood as evidence of the development of individual cognitive capacity. CA methods, however, attempt to uncover participants' (even novices') active work to establish intersubjective understanding, and Forrester's and Wootton's research is consistent with these methods, claiming that the newly appearing sequences of talk of the children in their data are visible, co-constructed examples of what is called cognition. This perspective comes through especially in Wootton's description of children's development of language practices as "self-guided" (2006, p. 196).

The research by Wootton and Forrester focused on the interactions of young children (starting at around age 10 months) in at-home settings with caregivers. The research investigated particular competencies of a participant for actions in talk (requests, repair) over a period of several years. As the children faced different interactional contingencies for interaction (different objects in the environment, different participants, different actions), these contingencies were shown to be the contexts for the new forms and practices for talk. The assumption is that the new language forms and practices are needed and develop for use to work with these new contingencies.

Research on adult novices in various situations is complicated by the fact that as adults, novices face different contingencies with a wealth of interactional and social experience. Studies of adults in classroom settings for language learning have traced the practices for talk-in-interaction to perform the same actions at different times (Hellermann, 2007) and how different contexts at different times provide opportunities for learning (Markee, 2008).

Adult novice language users have also been studied longitudinally outside of explicit learning contexts. Ishida (2009) focused on the appearance of a particular language form of one novice user of Japanese (sentence-final particle *ne*) and its use for different functions at different points in time (data over nine months). Although exploratory in nature, Brouwer and Wagner's (2004) study of international business telephone calls showed how learning can be seen in practice, showing how adjustments to greeting sequences were made in the lingua franca telephone interactions of business people at different points in time. Brouwer and Wagner's conceptualization focuses on the active nature of learning as a process—the response and differing adjustments to interactional contingencies.

Two other projects have used CA methods on longitudinal data from work and professional training settings. Martin (2009) reports on an investigation of a CA practice (repair) that was accomplished through talk and physical movement in orthopedic rehabilitation. In this case study, data were collected on 22 occasions over the course of nine months. Martin found that during the interaction between a physical therapist and patient, a patient learned to accomplish the therapeutic movement independently over the course of the nine months. During repeated therapy sessions, the patient's orientation to the movement necessary for therapy went through three stages: (a) the therapist (other) initiates and repairs the shoulder movement behavior; (b) the therapist (other) initiates repair of the problematic behavior but the patient (self) can complete the repair; and (c) the patient recognizes, initiates, and completes repair of the problematic therapy behavior.

Nguyen's research (2008) focused on pharmacy interns interacting with clients picking up medication at a pharmacy. Nguyen's data included 21 interactions collected over two months. The analysis showed that the repeated participation in the speech exchange system of pharmacist–client provided a context for the intern to develop expert-like practices for opening interactions, giving advice, and transitioning between activities. This change was seen in the way the interns brought the patient in as a ratified participant in the interaction and managed to coordinate their own advice with the doctor's prescription. While Nguyen acknowledges interaction as co-constructed, she sees CA methods used with longitudinal data as allowing focus on the development of one party's competence (the pharmacy intern) for the management of an institutionally devised practice.

Conclusion

EM and CA provide an account of social behavior that focuses on participants' accountability to one another for normative language use. EM studies (and many CA studies) focus on the local achievements of accountability expressed through language as learning without resorting to generalizations beyond the particular contexts in which the learning occurs (Fox, 2006). In addition, CA looks at the role of sequences of language-in-interaction in managing or co-constructing this accountability, and has provided baseline findings from exhaustive empirical analysis, suggesting the possibility for generalizing from particular contexts and doing comparative analyses (Schegloff, 2009). Comparative studies that are done in the interest of seeing learning over time periods longer than single interactions ask: If members hold one another accountable and produce accountable talk and action for members, how do novices produce such accounts and orient to accountability in member-like ways, and how do such practices change over time as contexts for language use change

over time? The CA research that has focused on the interactions of novices suggests that the accountability is there (for adults at least) and that changes in the practices for this accountability can be observed both in a turn-by-turn way and in an event-by-event way with longitudinal data.

SEE ALSO: Conversation Analysis and Child Language Acquisition; Conversation Analysis and Classroom Interaction; Conversation Analysis and Ethnomethodology; Conversation Analysis and Learning in Interaction; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA

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Conversation Analysis and Laughter

ELIZABETH HOLT

Introduction

Social interaction centers on linguistic elements but nonlinguistic aspects are also crucial. One of these is laughter. It might be thought that laughter is not subject to the kinds of patterns that underpin talk; that it is often simply a spontaneous reaction to finding something funny. But research in conversation analysis (CA) has revealed that this is not the case. Laughter is, in fact, highly organized and is the product of the same kind of ordering that provides for all social interaction. Thus, existing research has revealed regularities in its use in terms of where it occurs in turns and within sequences; in the kinds of interactional environments it occupies; and in the tasks it accomplishes. Research on interaction has also thrown light on the relationship between laughter and humor.

Laughter has often been regarded simply as a response to some humorous stimulus (see Glenn, 2003). But CA investigation of its use in interaction has revealed it to be a far more complex and multifaceted phenomenon that displays its own orderliness and that contributes to the ongoing action sequences in which it occurs. Evidence for this comes from analysis that has investigated laughter in contexts other than where there is something manifestly funny about prior talk. Some of these findings will be summarized below. However, while laughter is not simply a reaction to humor, it is true that laughter does not have meaning in the way that lexical items (as part of the linguistic code) do. Laughter has a referent. In CA this referent is called the "laughable." According to Glenn, "Placement of a laugh relative to its laughable displays precisely what the referent or laughable is, typically via placement concurrent with or immediately following the object" (2003, p. 49). But specifying the meaning of the term "laughable" is not easy. Glenn (2003) states: "The relationship between laughs and their referents defies consistent labeling, in part, because the term *laughable* glosses over an analytically problematic notion. Virtually any utterance or action could draw laughter, under the right (or wrong) circumstances. This fact dooms any theory that attempts to account coherently for why people laugh" (2003, p. 49)

Recent work on laughter in interaction suggests that, in treating a turn, sequence, or component as a laughable, participants may often be orienting to a cluster of properties concerning the delivery, design, sequential position, and action of the talk (Ford & Fox, 2010; Holt, 2011). Turns containing certain components are recurrently treated as laughables, such as exaggerations (Drew, 1987; Ford & Fox, 2010) and reported speech and enactments (Holt, 2000, 2007).

Laughter regularly occurs in a range of positions in respect of the ongoing talk: (a) within a turn, often interspersing talk toward the end of the turn; (b) at the end of a turn following talk, by the same speaker; (c) as a response to a prior turn; and (d) (less commonly) following a pause, or a response by another participant, where the laughter seems to relate to the speaker's prior talk. A distinction between laughter and talk is that, whereas speakers commonly avoid overlapping talk, it is acceptable (and sometimes even desirable) for participants to laugh together. Simultaneous laughter is called "shared laughter" (though shared laughter need not be concurrent; Jefferson, Sacks, & Schegloff, 1977, p. 2). Jefferson (1979) has shown that a first laugh can serve to invite reciprocal laughter. Following a

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laugh invitation recipients can accept it by laughing; they can decline the invitation, often by overlapping the laughter with talk; or they can remain silent, which may result in the producer of the invitation pursuing laughter. Laughter that occurs without a preceding explicit laugh invitation is "volunteered" laughter (Jefferson, 1979).

The Interactional Environments of Laughter

CA research on laughter in a range of different interactional environments has thrown light on the regularities that underpin its occurrence, and the contribution it makes to the ongoing action sequence. However, it must be remembered that laughter is a slippery device: Because it is not part of a linguistic code it is highly ambiguous and attempts to identify why it is used must proceed cautiously. On different occasions it can have contradictory uses—for example, it can be used to display both affiliation and nonaffiliation—and thus generalizations cannot easily be made. Furthermore, existing research is limited and there is a need for further analysis of laughter in a broad range of sequential environments.

Observations about the interactional uses of laughter have been made, focusing on its use within turns, in pairs of turns, within more extended sequences, and in the wider social context. These are discussed below.

The Contribution of Laughter Within Turns

On occasion speakers produce particles of aspiration during words. Traditionally these have been referred to as laugh particles; however, Potter and Hepburn (2010) refer to them as "interpolated particles of aspiration" (IPAs) because it avoids the presumption that these are the same as laugh particles outside of words. These researchers identify two uses of IPAs: (a) They can be used to mark a lexical item as, in some way, insufficient or problematic; and (b) "they can be used as a resource for action formation, inserted into words to modulate the nature or strength of the action" (p. 1). Laughter toward or at the end of turns has also been seen as modifying the action of the turn. According to Schenkein (1972, p. 366), "*hehe* can be tagged on to the end of an utterance as some kind of insurance that the utterance will not be taken seriously, literally, or in its more typical senses." Thus, it may be considered a kind of "post-completion stance marker" (Schegloff, 1996), implicitly conveying the speaker's stance toward the preceding talk. At the same time, as well as potentially modifying the turn, it may also play a role in indicating that a completion has been reached (O'Donnell-Trujillo & Adams, 1983).

Laughter as a Response

Jefferson (1979) showed that laughter recurrently occurs as a response to an invitation to laugh made through laughter in the prior turn.

(1) [Jefferson (1979, p. 81)]

```
01  ELL:  he s'd well I am cheap he said, .hh about the big things.
02        he says but not the liddle things hhhHA HA[HA HA HA
03  BIL:                                             [heh heh heh
```

Ellen laughs at the end of her turn and Bill treats this as an invitation by joining in after two beats. Thus, reciprocation of laughter may affiliate with the conveyed stance of the prior speaker. This can be seen in talk involving reported speech (Holt, 2000), where laughter by the recipient may affiliate with the teller's stance toward a reported utterance implicitly conveyed through laughter at or toward the end of their turn.

Reciprocating laughter, however, may not always display affiliation. According to Jefferson (1984), laughter in the environment of troubles-telling can display troubles-resistance on the part of the teller.

(2) [Frankel:TC:1:4:SO]

```
01  G:     you don't want to go through all the ha:ssle?
02  S:     .hhhh I don't know Geri,
03         (.)
04  S:  →  I've I've stopped crying uhheh-heh-heh-heh-heh,
05  G:  →  wuh were you cry::ing?
```

S laughs at the end of line 4, displaying that she is able to take the trouble lightly. However, G does not treat this as a laugh invitation by reciprocating. Instead he takes the trouble seriously, thereby exhibiting "troubles-receptiveness" (Jefferson, 1984, p. 351). Only in what Jefferson refers to as "buffer topics" (i.e. when the participants have moved away from discussion of the trouble to other—related or unrelated—matters) do recipients recurrently treat the laughter as an invitation to shared laughter. Thus, responding with laughter to a preceding laugh is not always affiliative. In talk about troubles it can convey resistance to aligning as a sympathetic troubles-recipient (Holt, in press).

An analysis of teasing by Drew (1987) revealed that laughter by the "victim" occurs as a response in about one third of the collection. Ways of responding can be seen as occupying a continuum, depending on their orientation to the nonserious nature of the tease, from responding seriously to going along with the tease. Thus "laughing along" occupies a midpoint position between nonaffiliative responses and affiliative ones.

Laughter in Extended Sequences

Analysis of responses to improprieties by Jefferson, Sacks, and Schegloff (1987) also showed that laughter can be a midpoint between fully affiliative and nonaffiliative responses. Responses range from disaffiliating from the impropriety at one end to escalation at the other. Focusing on the extended sequence revealed that there can be a progression of responses from initial resistance, to shared laughter, to affiliation (see also Holt, in press).

Holt (2010) shows how shared laughter may contribute to sequences which close down topics. In responding to laughter in a first turn with shared laughter, or with further topical talk, participants may orient to the trajectory of the talk: Shared laughter is recurrently associated with topic closing.

Laughter and Social Context

Analysis has also focused on the relationship between laughter and the social context of its occurrence, mainly in institutional settings. Adelswärd (1989) investigated laughter in Swedish job interviews. She found that there was more mutual laughter in those interviews where the applicant was successful. Thus, she argues that mutual laughter is indicative of rapport and consensus. Lavin and Maynard (2001) drew their data from telephone survey interviews where laughter on the part of researchers is prohibited because it impacts standardization. Some researchers responded with pseudo-laughter or smile voice in order to maintain standardization and an affiliative relationship with coparticipants.

Analysis of laughter in institutional settings has identified a relationship between it and difficult or delicate interactional environments. A study of doctor–patient interaction by Haakana (1999) revealed that patients tend to laugh more than doctors, and they recurrently

laugh alone. The laughter displays the patient's orientation to the environment as delicate when, for example, rejecting a doctor's candidate understanding or directive.

In multiparty assessment meetings in Swedish detention homes, Osvaldsson (2004) found that laughter often occurs in interactionally awkward environments where there has been a series of oppositional turns.

Patterns of laughing and refusing laugh invitations in institutional environments have been seen as arising from the asymmetrical relationships of participants. West (1984) was concerned with the asymmetrical nature of doctor–patient interaction. She saw laughter as an invitation to "come closer." Like Haakana (1999), West found that patients laugh more than doctors, and that they often laugh alone; thus "patients volunteer laughter more readily than doctors, but their invitations to laugh have much lesser likelihood of acceptance than do those of physicians" (p. 120). Vöge (2010) also found a relationship between laughter and the realization of hierarchy during complaint sequences in business meetings. When the complainant is in a subordinate role to the complainee, laughter can be used to contribute toward the implicitness of the complaint as well as seeking alignment and affiliation.

Other aspects of role, membership categorization, identity, and participation frameworks have also been found to be enacted and transformed through laughter. For example, in a business meeting involving participants from several different countries, Markaki, Merlino, Mondala, & Oloff (2010) showed how laughter can reconfigure groups through affiliation and disaffiliation and by making national categories salient.

Conclusion

Thus, analysis of laughter in interaction has revealed that it is orderly, and its use is tightly bound up with lexical elements of turns and sequences. It is certainly not always a reaction to humor, and, in fact, much CA research has focused on the use of laughter where there is nothing manifestly funny about the preceding talk. Reasons for the use of laughter are hard to pin down, but analysis has revealed that it can contribute to the action of turns and sequences. It recurrently occurs within turns, at the end of turns, and as a response to prior talk. Much research has tended to focus on laughter in two-party interaction, but Glenn (1992) has found that the number of participants can make a difference to who laughs first.

A first laugh can invite shared laughter. However, shared laughter is much less common in interaction than solo laughter, and there are many interactional environments where responding affiliatively does not involve reciprocating the laughter. It is clear, however, that laughter (whether in response to a laugh invitation, or as volunteered) can sometimes be affiliative. It can also contribute to the interactional construction of rapport and intimacy. Research on laughter in institutional environments has highlighted its role in contributing to awkward, delicate, or in some other way problematic talk, and has also suggested it may be associated with hierarchical organization, membership categorization, and participation frameworks.

The term "laughter" is commonly tied up with notions of mirth and amusement. Thus, there is a danger that using this term for certain sounds in interaction imports assumptions about its nature that are unwarranted. It also glosses over distinctions between the many different kinds of sounds that are seen as constituting the category. But CA provides an appropriate approach for continuing analysis of the use of these sounds in talk, of how they contribute to sequences, and of potential distinctions between ones that occur in different sequential positions and follow different prosodic patterns.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis: Overview

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Conversation Analysis and Learning in Interaction

TIMOTHY KOSCHMANN

Learning as Change in Practice Over Time

As can easily be seen from other entries, learning is a central topic in applied linguistics research. This entry addresses itself to a very basic question: How does one go about studying learning in interaction? There are, of course, many ways to study interaction itself. Conversation analysis (CA) is one approach, one that focuses on the practical details of how talk-in-interaction is organized (Sacks, 1992; Schegloff, 2007). Arguments have been advanced elsewhere pertaining to the benefits of adopting CA methods in applied linguistics research (Firth & Wagner, 1997, 2007; Schegloff, Koshik, Jacoby, & Olsher, 2002; Mori, 2007) and there is a growing body of interesting work that has emerged from that proposal (e.g., Brouwer & Wagner, 2004; He, 2004; Mondada & Pekarek Doehler, 2004; Lee, 2006; Hellermann, 2007; Sahlström, 2009). Schegloff et al. (2002) caution, however, "Since CA research is theoretically and methodologically grounded as a study of publicly observable phenomena, the view of competence it supports is one of situated practices rather than psycholinguistic models of learning processes and knowledge structures" (p. 13). Does CA's orientation to witnessable practice preclude the study of learning using CA methods? This entry seeks to address this question.

We begin by considering just what it means to learn something. A classic definition of learning in psychology was provided by Hilgard and Bower (1966), who stipulated:

> Learning is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g., fatigue, drugs, etc.). (p. 2)

Their definition, a technical one designed to serve as a point of departure for scholarly inquiry, captures several features of our everyday understanding of what we mean when we say someone has "learned" something. As they specify from the outset, "learning" is processual. It is a transitive verb requiring both a subject ("the organism") and an object (the "activity"). It cannot be detected within an activity itself, but resides instead in the ways that activity is transformed over the course of time. As Hilgard and Bower noted, practices may change for a variety of reasons and not all changes in practice necessarily constitute learning. In any case, to recognize that a change has occurred requires a judgment of regularity. To study learning, therefore, is to plunge into an investigation of regularities.

The Investigation of Regularities

To consider two or more events to belong to a named category (e.g., religious observances, academic lectures, play performances) rests implicitly on judgments of cases being in some

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sense the "same" for the purposes of analysis. According to Winch (1990) such judgments underlie all research seeking to render accounts of regularities in the social world. He wrote, "A regularity or uniformity is the constant recurrence of the same kind of event on the same kind of occasion; hence statements of uniformities presuppose judgments of identity" (p. 78). Winch asserted that the rules defining identity in social science research are investigation-specific: "To investigate the type of regularity studied in a given type of enquiry is to examine the nature of the rule according to which judgments of identity are made in that enquiry" (p. 78).

Baccus (1986) argued contra Winch that judgments of identity are not solely an investigator's constructions, but trade upon that investigator's knowledge as a competent practitioner of the matter under study. Baccus wrote:

> [T]he investigator must first have some idea of the internal workings of a social phenomenon (in its naturally available way) before he can go on to make statements about the phenomenon from his point of view as an investigator. He thus must have some practitioner's knowledge about his object, knowledge which is "unreflective" because it is in natural use by members of the production of the phenomenon. (p. 2)

She argued that rules defining identity are part of the "criteria and concepts" (p. 3) that inhere in the social situations being studied. They are, in this way, internal to the matter being studied. She concluded, "If identity judgments are to be valid and appropriate to some phenomenon, given phenomenal integrity, then the 'rules' to which Winch refers are those of everyday social theorizing and investigation is a set of practices which explicitly accommodates these as not only legitimate but as primary operations of investigation" (p. 4).

Studies of learning, however, must go beyond simple investigations of regularities. As mentioned earlier, learning entails change. To ascribe learning, two activities must be sufficiently similar to be recognized as belonging to a common category, but must at the same time be perceived as different in some way. To recognize learning, therefore, requires a "same-but-different" analysis; it requires both judgments of identity *and* dissimilarity. Consider an example of a father and his young child. Suppose before they leave the house each morning they follow a ritual whereby the child seats herself near the door while her father ties her shoes. Their activity is oriented to and produced as a familiar one—they are doing "tying shoes" and they are doing it together. Suppose one morning the father encounters the child at the door, but this time her shoes are already tied! We might reasonably gloss the situation by saying "something had been learned," but what about this situation represented learning? Learning, from an interactional perspective, is to be found within the embodied methods whereby the participants detect and display changes in the ways their joint activity is organized.

This is a somewhat different treatment of learning than that conventionally employed in the behavioral sciences. It is an ethnomethodologically informed treatment, one that locates the phenomenon not in the subject's head, but rather in the methodic character of the activities within which the subject participates. To use Garfinkel's (1967) terminology, learning is a *members' method* or, perhaps more accurately, learning is the set of members' methods whereby we display and detect developmental change within our familiar and recurring activities. Recognizing learning in ourselves and others is a natural part of functioning as a competent member of society. Learning is an accountable, public, and locally occasioned process. By this view, interaction does not just provide *evidence of* learning; it is where learning itself is to be found. We might call this learning-in-*and-as*-interaction. Our task as investigators is not to certify that learning has occurred, for that is a member's matter, but rather to give an account of just *how* members conduct the investigations into

the regularities that Winch described. What is needed, ultimately, is an investigation into their investigations and into their "everyday social theorizing" (Baccus, 1986, p. 4).

Empirically Grounded Accounts of Action in CA

Having developed in sketch form an alternative framework for thinking about learning, we now turn to the requirements for adequate description in CA. Research in CA rests upon a fundamental distinction between *practice* and *action*. Its task is to give an account of the forms of situated practice that produce recognized categories of social action. Schegloff (1997) cautioned against oversimplifying this relation, suggesting that analysts need "to remain alert to an action-formation resource pool, in which practices, deployed always in some position, can accomplish different actions; and actions can be accomplished through a variety of situated practices" (p. 505). Schegloff (1996) stipulated further that an account of precisely how a practice produces an action must include three elements. A fundamental feature of all CA research is a resolute insistence that any claim or finding must be grounded in what can be heard or seen in the available record. An account, therefore, must offer "a formulation of what action or actions are being accomplished, with compelling exemplification in displays of data and analysis" (1996, p. 172). A second requirement is a "demonstration that the interlocutors in the data being examined have understood the utterances (or other conduct) in question to be possibly doing the proposed action(s) or that they are oriented to that possibility" (p. 172). Building this demonstration requires a close examination of the sequential environment within which an observed practice was produced, particularly any talk or conduct that immediately follows. "This immediately subsequent talk [or conduct], being appropriate to—or even responsive to—what preceded it, ordinarily displays an understanding of what the preceding talk was 'doing'" (p. 173). Attending to participants' displayed relevancies is an important means of keeping the analysis honest. But providing evidence that a practice was understood by participants in a certain way does not yet constitute an adequate account of the practice–action relation. What is still required is "a specification of the methodic basis for the construction, deployment, and recognition of [the] action" (p. 173). An adequate account, therefore, must describe "what about the production of that talk/conduct provided for its recognizability as such an action; that is, what were the methodical, or procedural, or 'practice-d' grounds of its production" (p. 173).

The strategy proposed by Schegloff is one of collecting material exhibits of practice, specifically practices that produce a targeted action. Such collections may draw on a diversity of settings and subjects, possibly sampling across multiple data corpora, using inclusion criteria that are indifferent as to exactly who produced the investigated practices and when. The process is exploratory; it involves "finding out what one is collecting in the process of collecting it" (Schegloff, 1997, p. 502). A compiled collection constitutes a critique-able specification of the practice–action relation. It represents an empirically grounded theory of the action. It serves as something "to which an empirical account of action can be answerable and by which it can be constrained" (Schegloff, 1996, p. 168).

Baccus's "natural use" knowledge of the internal workings of the phenomena under study is accommodated in specific ways in Schegloff's three criteria for producing empirically grounded accounts of action. As he stipulated, the account must specify what sort of action is being performed. Doing so presumes some sort of rule of identity as described by Winch. The account must also demonstrate that participants orient to the observed practices as accomplishing the specified action, that is, that they apply the identity rule in the same way as the analyst. Finally, it must include a description of *how* the specified action provides for its own recognizability. Participants must carry out their own analysis

of their interaction to achieve this recognition. Their methods for analyzing their own conduct become, in CA research, both a resource and a topic. In this way, CA accounts are, like the descriptions of learning-in-and-as-interaction, based upon an investigation of an investigation.

Empirically Grounded Accounts of Learning

Learning, as conventionally construed, seems oddly out of place amongst the "generic problems and practice(d) solutions" (Schegloff, 2006, pp. 71–83) that have traditionally served as the objects of study in CA research. CA concerns itself with the organization of talk-in-interaction. The very notion of "acquiring a language" is seen as incompatible with the basic tenets of CA research (Brouwer & Wagner, 2004; Firth & Wagner, 2007). As He (2004) argued, CA "is not a learning theory and thus is not designed to document language acquisition" p. 579). The incompatibility lies in using CA methods to do something that it is not designed to do—to certify learning conceptualized as an unobservable, occult matter. When learning is conceived of as a public and accountable process, however, this incompatibility disappears. Nonetheless, some accommodations must be made before we will be able to start producing empirically grounded accounts of learning analogous to the kinds of accounts of action proposed by Schegloff.

CA collections, as described by Schegloff (1997), are comprised of material exhibits selected to display the range of practices employed to produce an identified action. To produce an analogous empirically grounded theory about learning, a different sort of collection will be required. Where CA collections are comprised of simple practices, *learning collections* will consist of one or more ordered sets each representing a trajectory of practice observed over time. This will necessitate new forms of data gathering. Whereas a researcher constructing a traditional CA collection may be indifferent as to *who* produced a particular practice and *when*, such information is essential when attempting to reconstruct how an action developed over time. To start to build learning collections, therefore, we will need new sorts of data sets, data sets that track individual participants over extended periods of time. Fortunately, some language learning researchers have already started to build such corpora. Wootton (1997), for example, constructed a longitudinal corpus to study how a single infant came to perform certain actions (e.g., making requests) over time. Others have constructed corpora that allow for the study of changing practices among adults as they begin to interact within a second language (e.g., Brouwer & Wagner, 2004; Mondada, & Pekarek Doehler, 2004; Hellermann, 2007).

An important thrust of 20th-century philosophy was to find ways of dissolving the dualism of mind and world. Studying learning-in-and-as-interaction provides us with a means of conceptualizing and investigating learning as a worldly matter. It enables us to understand learning as a methodic and "practice-d" matter (to paraphrase Schegloff). It provides a means of better understanding how participants in interaction conduct investigations into the changes in practice that serve as the basis for their avowals and ascriptions of learning. Learning collections constitute empirical theories about just how such investigations are accomplished. This represents not so much a departure from the traditional program of CA research as its logical extension. CA collections of the sort described by Schegloff will supply the categories of action upon which learning collections will eventually be constructed. By the same token, empirical work on learning-in-and-as-interaction will open the door to a whole new line of inquiry in CA, inquiry into how actions develop over time. It represents a significant direction for future research.

SEE ALSO: Conversation Analysis and Child Language Acquisition; Conversation Analysis and Classroom Interaction; Conversation Analysis and Education; Conversation Analysis and Ethnomethodology; Conversation Analysis and Language Acquisition; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA

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Conversation Analysis and Lingua Franca

ALAN FIRTH

This entry outlines an emerging body of research that deploys conversation analytic (CA) methodology and its theoretical underpinnings to explicate the micro-details of talk and social interaction between people who communicate in a lingua franca (LF). An LF may be defined as a "contact" or "vehicular" language used by people who do not share a first language (L1) and who are not native speakers (NSs) or L1 speakers of the language being deployed. An example of an encounter where the language used may be characterized as an LF is an L1 speaker of Spanish interacting with an L1 speaker of Mandarin Chinese *in French*—in which case French is the LF. As this example indicates, a language's characterization as an LF is determined not by the characteristics of the linguistic code but by the relationship of its speakers to the language being deployed. The term "LF" does not describe or imply any particular level of speaker proficiency, linguistic sophistication, or communicative competence. Any language can function as an LF, although it is widely accepted that English has, in recent decades, become the world's preeminent LF (e.g. Jenkins, 2006). This is reflected in the fact that the bulk of empirical research has concentrated on how English has been used in its guise as an LF.

The Genesis of CA and LF

During the 1960s and early 1970s—that is, the first decade or so of its emergence as a discipline—CA research overwhelmingly focused on L1 speakers (of English) in the predominantly English-speaking communities in the United States and, subsequently, the United Kingdom. This focus in terms of data may have been largely incidental, as English produced by L1 speakers was, presumably, the speech community most conspicuously accessible (and familiar) to conversation analysts. If second, third, or *n*th language speakers of English were participants in the data corpora collected by the earliest CA researchers, the notion of "other language" speakers remained unexamined. Thus, as Firth (1996, p. 238) notes in his overview of the data collected in the earliest CA research: "a picture emerges of an enterprise that [demonstrated] a remarkably consistent though restricted interest in the talk of 'normal' *adults* who are members of the *same culture* and who share and use the *same native language*—in the majority of cases the English language."

Accessibility of data type might not be the only factor that accounted for CA's apparent initial lack of interest in interactions involving persons who were not L1 speakers of English, however. The "working assumption" of a community-wide shared competence in and knowledge of language is viewed, in CA, as a resource for both participants and conversation analysts alike for, as Sacks (1995, p. 116 [Lecture 14, 1964]) puts it: "we [professional analysts] can use that information which we have as members of the same society that these . . . people are in." This "information," taken to be accessible by dint of co-membership of the lingua-cultural community, enabled Sacks and his colleagues to recognize phenomena as "ordinary," "canonical," or "anomalous," and to make "intuitively plain observations" (Jefferson & Schenkein, 1978, p. 170, n. 10) on the collected data. However,

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as Firth (1996) suggests, when analyzing LF interactions, the analyst's intuitions may be less reliable than when analyzing data involving people who may be taken to share—with the analyst—linguistic and cultural membership. This is because LF interactions involve speakers from diverse lingua-cultural backgrounds, whose linguistic proficiencies might vary considerably. This factor may in part account for the relative dearth of early CA research on talk that does not exclusively involve NSs.

One notable exception to this pattern of data-type uniformity was Jordan and Fuller's (1975) much-overlooked article "On the Non-Fatal Nature of Trouble: Sense-Making and Trouble-Managing in Lingua Franca Talk." This was the first publication deploying CA methodology to examine LF interactions. The authors' observations are informed by the ethnomethodological precept—one which fundamentally underpins CA—that social interaction is *achieved* and *accomplished* as and in a conjoint and contingent dialogical process. Indeed, one might argue that ethnomethodology and CA can be properly seen as closely related paradigms whose primary goals are to explicate, and by so doing celebrate, the achieved character of social interaction. This theoretical point of departure doubtless allowed Jordan and Fuller (1975) to highlight the "non-fatality" of communicative perturbations evident in the forms of talk under analysis—a prescient raising of a recurring theme in subsequent CA-LF research.

This thematic emphasis contrasted sharply with cotemporaneous applied linguistic research, not informed by either ethnomethodology or CA, on so-called "non-native-speaker–non-native-speaker" (NNS–NNS) or "L2-learner–L2-learner" discourse. This research is overwhelmingly "deficit-oriented" (Firth & Wagner, 1997), in that it emphasizes the frequency and gravity of linguistic and pragmatic "errors" in NNS/second language (L2) learner talk, the overall communicative "limitations" seen to characterize such talk, and the need to draw evaluative comparisons with the so-called "target language" of NSs.

The Emergence of a CA-LF Paradigm

Despite the publication of Jordan and Fuller's (1975) groundbreaking study, it was not until the early-to-mid-1990s that a nascent research paradigm of *CA of LF interactions* began to materialize. This occurred with Firth's (1990, 1996) and Firth and Wagner's (1997) applied linguistic research, which argued for the need to redress the prevailing "deficit orientation" to NNS/L2 learner discourse. This could be achieved, Firth (1990) proposed, in two combined ways: first by replacing the terms "NNS–NNS" or "L2-learner–L2-learner interactions" with the term *LF interactions*, and second by adopting CA's method and concomitant theories (of language, context, competence, etc.) in analyzing such data.

Adopting the term "LF" instead of "NNS," "L2-learner," or "L2-speaker" was more than a cosmetic change. What it does, Firth (1990, 2009) argued, in both highlighting and eschewing the negative connotations of *non*-native and the hierarchical and inferiority connotations of *second* language speaker, while also questioning the relevance of "L2 learner," is to signal a change in theoretical and even ideological stance: from deficit to achievement, from failure to accomplishment, from prejudiced description to unprejudiced description (Firth, 1996). Although by no means viewed as a conceptual or theoretical panacea, "LF" was preferred because, it was argued, it carries less monolingual and NS-centric baggage than the prevailing terminologies (Firth & Wagner, 2007; Firth, 2009).

Similarly, because CA's theoretical foundations are ethnomethodological, this entails the conversation analyst adopting an emic (i.e. participant's) perspective on analytical relevancies (Schegloff, 1992), viewing the nature of context and social identities as locally accomplished rather than given or analyst-defined, and giving analytical primacy to uncovering interactional achievement and accomplishment rather than failure and deficit. Firth (1990, 1996,

2009) and Firth and Wagner (1997; 2007) argue that such analytical procedures and theoretical standpoints permit a kind of methodological and theoretical "liberation" for applied linguists in general and second language acquisition (SLA) researchers in particular—scholars who have traditionally focused on language produced by persons who are not NSs of the language being deployed. The "liberation" involves finding alternative ways of conceptualizing the NNS—namely as an agent who is not ipso facto communicatively handicapped by his or her L2 speaker status and who is not ipso facto an "L2 learner" simply because he or she is using an L2.

CA-LF Research

Since the early 1990s there has been a steadily growing amount of empirical research undertaken on discursive interaction in encounters where an LF has been deployed—most often in situations where English is the LF. This research has in large measure been CA in its broad methodological and theoretical orientation, and has sought to reveal and explicate, through detailed transcript analyses, interactional competencies and socially managed patterns of talk-based behavior. Collectively, the research is underpinned by a motivation to describe social interaction without recourse to a "deficit" ideology characteristic of SLA/L2 studies. And, in that CA-LF research has focused for the most part on social settings that are not overtly "educational," it provides an empirical alternative to L2 researchers' preoccupations with persons interacting (as "learners") in L2 classrooms (Wagner, 2004).

CA-informed research into English as an LF ("ELF") includes Firth's studies of international commodity traders communicating by telephone (e.g. Firth, 1990, 1996, 2009); Gramkow Andersen (2001) on telephone communications between university administrators; Haegeman (2002) on business meetings; Wagner and Firth (1997) on sales talk; House (2002), Lesznyak (2004), Meierkord (2005), and Kaur (2010) on international student conversations; Jenks (2009) on Skypecast interactions (voice-based chatrooms); and Mauranen (2009) on academic (university) interactions.

Findings reveal an interactional terrain characterized by instances of communicative robustness; interactional deftness, resourcefulness, and adroitness; and a high degree of collaboration and cooperation—despite obvious variations in the participants' linguistic, cultural, and pragmatic knowledge. Thus far, scholars have been circumspect in positing fundamental differences in interactional patterns and linguistic features between L1 speakers and LF speakers of the same language. What appears to be evident, however, is perhaps a greater preponderance of certain forms, features, and interactional strategies in LF interactions, compared with L1 interactions in the same language. Firth (1996), for example, reveals that a prominent feature of the LF interactions he examined was how participants implicitly engage in what he termed "make-it-normal" and "let-it-pass" procedures, enabling them to imbue the interaction with an appearance of "ordinariness"—in the face of ostensibly "extraordinary" linguistic/discursive behavior. Gramkow Andersen (2001), Lesznyak (2004), Kaur (2010), and Mauranen (2009) uncover a range of accommodatory behaviors—such as rephrasing, repetition, slowed enunciation, and code mixing and code switching—as participants calibrate their conversational contributions in order to retain an appearance of "fluency" and meaningfulness. Kaur (2010) also revealed how the interactants in her study restricted the conversational topics to those deemed culturally "safe."

A key theme in these researchers' work is highlighting participants' orientations to difference, particularly in cultural and linguistic knowledge, as this is manifest in the skilled deployment of a range of *preemptive or proactive* strategies—all of which serve to circumvent or minimize the risk of miscommunication and, perhaps more importantly,

the need to avoid topicalizing communicative difficulty within the interaction. Further, in the LF interactional research thus far undertaken, there appears to be a collective orientation to resisting behaving in ways that may result in being viewed as an "L2 learner" (Firth, 2009).

Clearly, though, such findings are a characteristic of the data types and settings hitherto subjected to analysis, and influenced by the interactional goals of the participants, their social relations, and the relatively minor variations in linguistic proficiency observable in the LF interactions examined so far. Analyses of data from a significantly wider variety of social settings, involving participants with greater variation in proficiency in the LF, would appear to be urgently required (Seidlhofer, 2001). With a continued expansion along these lines, research within the CA-LF paradigm will doubtless become increasingly significant within the fields of discourse studies, L2 research, sociolinguistics, intercultural communication, and CA.

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Language Acquisition; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA

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Conversation Analysis and Meetings

BIRTE ASMUß

Meetings have traditionally been dealt with as preplanned, ordered organizational events, in line with Schwartzman's definition of a meeting as "a communicative event involving three or more people who agree to assemble for a purpose ostensibly related to the functioning of an organization or a group" (1989, p. 7). As a response to this rather functionalistic view, an increased focus on interaction in meetings has developed in recent years. Cooren (2007) sees a move from the "interpretive turn" in the 1980s and the "discursive turn" in the 1990s toward the "interactional turn" (p. xii). The "interactional turn" is characterized by the increasing focus on studying and understanding the details of complex workplace interactions, and is methodologically mainly based on conversation analysis (CA).

The advantages of a CA approach to the study of workplace interactions such as meetings are based on CA's focus on actions as collaborative achievements. For meetings this means that instead of being seen as events characterized by the fixed roles of the organizational participants, they are seen as the interactional accomplishments of all participants. CA makes it possible to show "how conversations contribute to the production of organizational roles, for example, superior–subordinates, labor–management, and interviewers–applicants" (Putnam & Fairhurst, 2001, p. 86). It is the reciprocal, local, and continuously ongoing negotiation between all meeting participants that constructs and reconstructs meeting characteristics such as being formal, informal, more or less goal-oriented, and so on (Drew & Sorjonen, 1997). Hence, meetings are crucial events for the emergence of organizations, as it is through such institutional conversations that organizations arise.

The view on the "emergent organization" is central to a basic notion of CA, namely the role of context (Heritage, 1984). Through their way of orienting to the conversational encounter as being a meeting, participants create a context for the meeting and at the same time are influenced by the organizational context in which it takes place.

One of the central CA studies on meetings is Boden's *The Business of Talk* (1994). Here she points out the importance of seeing meetings as local accomplishments dominated by talk: "Talk and its turn-by-turn sequential accomplishment are what meetings are about, however many memos, minutes or reports may be written before, after or in reference to the event" (Boden, 1994, p. 82). This does not mean that events outside the actual meeting are seen as irrelevant. From a CA perspective, events prior to meetings such as memos, minutes, phone calls, and earlier meetings are seen as resources for the actual meeting talk. Hence, instead of attributing to these events a priori a fixed role for the meeting, their meaning is allocated locally in the meeting and negotiated recurrently by all meeting participants.

CA studies of meetings have dealt with a variety of different topics (Asmuß & Svennevig, 2009). One central topic is the question of meeting management and meeting leadership (Pomerantz & Denvir, 2007; Clifton, 2009; Nielsen, 2009), and related to that, questions of asymmetry and hierarchy in meetings (Huisman, 2001; Clifton, 2006). Studies show how middle managers do leadership by collaborating closely with employees in interpreting and defining goals and contextualizing employee actions (Nielsen, 2009) and how asymmetry in meeting talk is interactionally achieved by the use of formulations (Clifton, 2006).

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Another central question deals with meeting openings and closings (Boden, 1994; Arminen, 2001; Kangasharju & Nikko, 2009). It has been shown, for example, that meeting openings and closings are fine-grained, well-coordinated activities which mark the boundaries of more informal pre- and post-meeting talk. The study of agreement and alignment in meeting interaction has been another area of major interest (Kangasharju, 2002; Asmuß, 2007). Here it has become apparent that alliances in meetings can be built through collaborative completions, repetitions of directly prior items, and embodied actions such as head shakes (Kangasharju, 2002) and that the way requests are made reflects the degree of entitlement to actually make them (Asmuß, 2007).

CA has traditionally focused on verbal aspects of interaction. As a response to this monomodal focus, in recent years a range of CA studies have developed that focus more on meeting interaction as embodied action. One of the new lines of research is the field of "microethnography" or "video-based ethnography" (LeBaron, 2008), which is informed by ethnographic approaches to workplace studies. Apart from taking the complexity of workplace interaction seriously by including both the verbal and the embodied interaction, this line of research relies to a greater degree than traditional CA work on single case analysis, where the aim is to show in detail the sequential disposition of longer stretches of interaction instead of building collections of specific actions. Another recent development which reflects on the different modalities that are at stake when talking about meeting interaction is the focus on multimodality (Sidnell & Stivers, 2005). Especially within the field of meeting interaction, more and more studies deal with the way the multimodal environment influences different kinds of meeting interaction in the form of resources and restrictions (Mondada, 2009; Svennevig, 2012).

Within the last decade, the analysis of meeting interaction from a CA perspective has attracted major attention within a new, rapidly evolving field of management studies, namely strategy-as-practice (Golsorkhi, Rouleau, Seidl, & Vaara, 2010). Instead of seeing organizational strategy as the result of an isolated managerial task, strategy-as-practice opens up a view on strategy as an ongoing organizational process which includes all organizational members. A number of studies address the question of how strategy is implemented, negotiated, and interpreted through different kinds of meeting talk.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Ethnomethodology; Conversation Analysis and Identity in Interaction; Conversation Analysis and Institutional Interaction; Conversation Analysis and Multimodality

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Conversation Analysis and Membership Categories

DENNIS DAY

Membership categorization analysis (MCA) deals primarily with the way we use categories to make sense of and for each other in social interaction. As such, it is one means of explicating the practically oriented, commonsensical, and cultural reasoning of people as they go about their social lives. In particular it focuses on the recognizability of people as certain sorts of people or, more specifically, people as certain sorts of members of society, and how this recognizability is a resource for members in their dealings with each other. And as one of the primary ways in which we "deal" with each other is through language, MCA is often brought to bear on the analysis of how people use language in situations of everyday life.

As with other strands of ethnomethodology and conversation analysis (CA), with their focus on the everyday methods by which we live our lives, there is a special way to understand what is meant by "analysis." When we use the term "MCA," we are here of course referring to the ways in which we, as analysts, explicate some empirical material; however, we can also use the term as a gloss for what the people in our empirical material are doing—they are categorizing each other as certain sorts of members of society. Thus what we, as analysts, are doing is simply bringing to light members' own analyses. MCA should thus not be thought of as, for example a theory of social categorization that is applied to some empirical materials to test its predictability, but rather as the explication of people's own resources for social life.

MCA has its beginnings in the work of Harvey Sacks (1972a, 1972b, 1992), who became interested in the way in which categorizations rely on social categories, such as policeman, mother, deviant, and how these and associated social categories might be organized into collections, known as membership categorization devices (MCDs).

> My attention shall be exclusively limited to those categories in the language in terms of which *persons* may be classified. For example, the categories: "male," "teacher," "first baseman," "professional," "Negro," etc., are the sort I shall be dealing with. Frequently such "membership" categories are organized, by persons of the society using them, into what I shall call "collections of membership categories," categories that members of society feel "go together." . . . They are not constructed merely as aids to my analysis; whether or not a particular category is a member of a particular collection is, in each and every case, a matter to be decided empirically. (Sacks, 1966, pp. 15–16; original emphasis; cited by Jayyusi, 1984, p. 212)

The central elements in the use of social categories, according to Sacks, are MCDs and a set of "rules of application." Rules of application match categories from a device to individuals or collections of individuals. Of particular interest are the "consistency rule" and its corollary, the "hearer's maxim." The consistency rule states, roughly, that if a category from an MCD is used to categorize a member of a particular population, then all other members may be categorized with categories from that device. One may view the consistency rule as applying to the production of a categorization such that speakers may

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co-select categories from within the same device. The hearer's side of the consistency rule is termed a "hearer's maxim": "if two or more categories are used to categorize two or more members of some population, and those categories can be heard as categories from the same collection, then: hear them that way" (Sacks, 1992, p. 221). Furthermore, such categories may provide for inferences concerning typical activities of their incumbents. Such activities are referred to as being category-bound (Sacks, 1992).

Of special interest to Sacks and those who have followed him has been the following problem: Given that a person may be described "correctly" in an infinite number of ways on a given occasion, what are the principles of a "proper" description? One such principle by which a description becomes proper is through its being heard as relevant in falling under an MCD relevant to the talk at hand.

The classic example from Sacks, derived somewhat atypically from a book of stories by children, is how we understand the expression "The baby cried, the mommy picked it up." Sacks contends, and the reader is encouraged to try this on their own, that we hear the "mommy" as the "baby's mommy." The basic idea is that if we can hear the rendering of the categories "mommy" and "baby" as belonging to the device "members of a family," then we hear them that way. We may say that picking up their babies is a category-bound activity of mommies, something mommies are expected to do. Thus when offered a description of some mommy picking up some baby, we infer they are members of the same family.

MCA, along with the analysis of turn sequencing and recipient design provided by CA, provides a powerful analytic tool-kit with which relationships between interactants can be understood (Sacks, 1992; Antaki & Widdicombe, 1998; Hester & Eglin, 1997). With regard to MCA analysis of spoken interaction, categorical analysis, in fact, is necessarily carried out in parallel with sequential analysis. Most MCA practitioners would also claim the converse—sequential (CA) analysis by necessity implies categorical analysis. There has been some debate on the relationship between CA, with its focus on sequentiality, and MCA. Details concerning this can be found in Watson (1997), Housley and Fitzgerald (2002), Wowk and Carlin (2004), and Schegloff (2007).

Moreover, MCA has been further developed since the early work by Sacks, both conceptually and empirically. Jayyusi (1984, 1991) brought out the moral and normative character of categories and categorization. Recall from the mommy and baby example above that we expect mommies to pick up babies. It is not far from that to suggest that as we expect them to do so, they *should* do so, and in this way issues of normality and morality can be seen to come into play. For more empirical work in this vein, see for example Antaki, Biazzi, Nissen, and Wagner (2008), Arminen (1996), Baker (1997), Eglin and Hester (1999), Heritage and Lindström (1998), Hutchby (2001), and Stokoe (2003). The second major conceptual development within MCA has been Watson's (1978) extension of the notion of category-bound activities to the more general notion of category-bound predicates. Thus not only activities, or actions, may be bound to categories but also a wide range of characteristics, essentially whatever can be "properly" predicated of an incumbent to the category. Not only can we hear mommies as "picking up babies," but also as being of a certain age, of having certain kinds of knowledge, and so forth. The notion of category-bound predicates has become quite general in MCA research. It is important to point out, however, that with the moral or normative implicativeness of both categories and category predicates, their applicability is always bound to concrete situations of categorization and should not be thought of as "context-free" properties of linguistic expressions.

Belonging to the "family" of ethnomethodology and CA, MCA is rarely an object of abstract theorizing. Rather, in discussion of it, data, consisting of as close a record as possible of human interaction, are always in the foreground. MCA may work with transcripts of spoken interaction as CA does, but also with texts as well as detailed ethnographic

documentation of settings and the people in them. Let us then have a look at a bit of spoken interaction to get sense of how MCA works. The data come from a video recording of a group of university students engaged in a "project group meeting," that is, a group with the task of conducting a study and writing a report by the end of term. At our point of entry in the transcript, they are making a list of the tasks they have before them. Our focus will be on the categories they use, but also on where and how they are used in the turn-by-turn construction of the interaction.

(1)

```
01  ERN:  which days days [we have is it two or what]
02  LOU:                  [but this is my eat pasta ]week
03  ERN:  °your what?°
04  LOU:  °I have to eat pasta all week°
05  ERN:  °why that°
06  PET:  you gotta me kiddin me (.) you're not on one of
07        those stupid diets are you?
08  LOU:  uh no no no I'm must a I'm just er (.)
09  PET:  you [broke ]
10  ERN:      [did you] lose a bet?
11  LOU:  just broke
12  PET:  yeah ha ha [ha HA HA HA gid]dy e giddy e giddy me:::?
13  LOU:             [that's my diet ]
14  ERN:  [(xx) ]
15  PET:  [which] brings us to another subject (1) shouldn't
16        we arrange like to do something fun with each other
17        again soon?
```

In line 1 ERN is asking which days a particular task is to take place. LOU begins a turn at line 2 where ERN's ongoing inquiry may finish, and in overlap with ERN notes a particular feature of the week which ERN's inquiry concerns, that it is her eat pasta week. LOU succeeds in gaining the turn after the repair sequence which follows, and thus her contribution becomes the focus of continuing activity. LOU's contribution at line 2 is subjected to repair, initiated by ERN in line 3, to which LOU responds by reformulating her attribution of the week in question in line 4. This then is subjected to an inquiry by ERN as to the reason for the attribution of why LOU has to eat pasta all that week. Thus we get the sense that whereas the repair sequence in lines 3–4 may concern a mishearing of what LOU has said, the inquiry beginning at line 5 concerns rather how the eat pasta week is to be coupled with LOU. In MCA terms we can say it like this: What sort of category is LOU a member of such that "eat pasta week" is a proper predicate? What follows are three candidate accounts posed as inquiries for why LOU will have a pasta week? The answer to this will depend on her reasons for having an eat pasta week. PET inquires in "teasing" fashion at lines 6–7 if she's on one of those stupid diets, PET inquires if LOU is broke, and ERN inquires if LOU has lost a bet. LOU denies being on a diet at line 8, does not attend to the question of losing a bet, and answers affirmatively that she's just broke in line 11. Thus LOU "uncouples" a connection between herself and being on a diet, much less one of those stupid ones.

PET carries on in line 12, nonetheless, rejecting LOU's account of her pasta week as being a matter of being broke with what sounds like an ironic *yeah*, laughter tokens, and repeating part of his initial contribution at line 6. His *giddy e* can be understood as *kidding me*. LOU continues her turn in line 11, in overlap with PET, with the clause in line 13 *that's my diet*, which we can hear then as proposing that being broke is the only reason for her particular diet of the week. Thus her diet, as it were, should be understood simply as the

food she is to eat that week, that is, in another sense of the word diet, and not a particular diet, that is, one for losing weight. LOU is thus not heard as the type of person who would go on a stupid diet, as being an incumbent of a category with that possible predicate. Instead, she makes herself out to be an incumbent to the category of people whose diets, in the sense of "food intake," are adjusted to their dire economic situation. Using our members' knowledge of people like LOU, ERN, and PET in this setting, the category of "poor student" does not seem too far off.

We may also reflect upon what LOU avoids by her answers to the three inquiries. She does not respond to the "bet" inquiry, but she does to the "stupid diets" one. Our question then is: What sort of category might the action "be on a stupid diet" bind in this setting? One alternative might be to turn to the Sacksian notion of "omni-relevant" categories, and in this case "sex" seems most intuitive. Thus, we might propose that LOU has deflected a "gendered" MCD, whereby being on a stupid diet might be coupled with "woman," opting instead for an MCD organizing "people with little money," such as "students."

The idea that categories are important in human life is not new, especially within studies of language, where linguists have long pondered the relation of categories to thought and language. MCA takes a different tack, focusing instead on categories and social practice, a notion summed up nicely by Derek Edwards in the title of his article from 1991, "Categories are for talking."

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Gender and Sexuality; Conversation Analysis and Identity in Interaction; Conversation Analysis: Overview

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Conversation Analysis and Multimodality

KRISTIAN MORTENSEN

Introduction

In recent years, the number of conversation analysis (CA) publications and presentations that incorporate information about participants' bodily conduct has increased dramatically (for a recent review see Stivers & Sidnell, 2005). Ranging from loose glosses of participants' movements to detailed transcription and systematic sequential analysis of gaze, gesture, and other visual information (most often) in relation to talk, they all address the importance of visual aspects *for* participants *in* social interaction; that is, social interaction is intrinsically *multimodal*. Although "mainstream" CA from its outset was primarily interested in the organization of *talk*-in-interaction, the inclusion of bodily conduct is not entirely new to CA. For instance, Sacks, Schegloff, and Jefferson (1974, p. 717) mention the role of gaze as a device for allocating turns between participants. Additionally, several researchers have been focusing on the interplay between verbal and visual aspects of interaction from early on (e.g., Goodwin, 1981; Heath, 1986). Today video data largely serve as the preferred data type in situations in which participants have visual access to one another, but analysis of the inclusion of bodily conduct in the *systematic* construction of social practices is relatively new. The aim of this entry is to provide a brief overview of research conducted within a CA approach to multimodality, and to sketch the major methodological challenges in this endeavor, including:

1. describing which aspects, among talk, body movements, and physical artifacts in the surroundings, are treated by the participants as *relevant* to the ongoing social actions that the participants are engaged in;
2. the sequential or serial position, or both, in which verbal and visual resources occur; and
3. the social practice that the sequential and serial coordination of different modes accomplishes.

The inclusion of visual aspects in and for interaction is far from limited to CA research, but has strong roots within (in particular) social sciences and human–computer interaction (HCI): Psychology and psycholinguistics have a long tradition of studying in particular gesture's relation to talk as a window on the mind (e.g., McNeill, 1992). Sociology and anthropology have studied the bodily behavior of individuals and social groups in various settings and cultural groups (e.g., Goffman, 1963). HCI adopts linguistic or anthropological approaches, or both, in analyzing the embodied ways in which humans engage and interact with and around various types of technology and computer software (e.g., Heath & Luff, 2000; Suchman, 2007), often with the aim of guiding IT designers in shaping new user-based technologies. Recently, multimodality has also been used as an umbrella term for a range of heterogeneous approaches at the intersection of linguistics, semiotics, visual studies, and discourse and interactional analysis (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001; Norris,

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2004; Jewitt, 2009). Of particular relevance here is *multimodal interactional analysis*, which aims at analyzing the interdependence of *embodied modes* (like talk, gesture, and posture) and *disembodied modes* (like background music, layout, text, and images; Norris, 2004).

A CA approach to multimodality, however, differs from the latter approach in two fundamental ways. (a) Although the aim of multimodal interactional analysis is to describe the interrelation of different modes, it starts by providing a detailed analysis of each semiotic field in its own right—as a grammar of gesture, gaze, and so forth. CA's approach to multimodality, on the other hand, does not describe each mode independently, but as an interplay between various semiotic fields. (b) Multimodal interactional analysis *assumes* that everything is relevant to and affects the ongoing interaction, but does not adopt an *emic* approach as does CA. In her introductory monograph to the field, Norris writes: "In multimodal interactional analysis we are *only* concerned with what individuals express and others react to" (Norris, 2004, p. 4, emphasis in original). Although this resembles the aim of CA, it does not necessary include a *social* interactional perspective in the analysis. For instance, Norris describes how individuals incorporate the rhythm of background music in the way they walk (Norris, 2004, pp. 41–4). Although this is, indeed, an interesting observation, the focus is quite different from CA's scientific aim, namely to describe recurrent practices of social interactional phenomena. There is thus a crucial difference between *assuming* that everything is relevant, and CA's claim that everything *might* be relevant, but is not necessarily *made* relevant by the participants.

Multiple "Modes"?

Multimodal analysis, from a CA perspective, attempts to describe how talk, visual resources (predominantly gesture, gaze and body posture), the use of physical artifacts in the participants' surroundings, and the surroundings themselves are *jointly* used to perform coherent social action. Rather than regarding these different semiotic fields as contextualizing talk, it is precisely the combination of them, sequentially as well as serially, that produces a specific social action. In this light, it is somewhat misleading to talk about *multi*modality since participants themselves cannot be seen to orient to the modes as being independent from one another. The term "multimodality" is therefore not to be taken as an *emic* category, but as an analytical one, and talk, or any other modality for that matter, cannot a priori be given analytic priority. Although the aim is not to describe a "grammar" of, for instance, gestures, the different modes provide different semiotic properties (Enfield, 2005, p. 52): Where verbal talk is dominated by a high degree of symbolic meaning, the visual modalities are (primarily) indexical, that is, they are made meaningful in and through the sequential context in which they are embedded. Without assigning a more prominent status to "talk," Goodwin notes that "to see a gesture as a meaningful sign . . . a hearer must first use the talk that accompanies it to find a relevant sense for the speaker's waving arm and then synthesize into a larger whole a succession of different hand movements that appear and disappear through time" (2002, p. 33). Goodwin talks about "different *kinds* of sign, with each kind getting crucial aspects of its structure from the medium used to construct it" (2002, p. 29, emphasis added). At any point in interaction, certain semiotic fields are relevant to the ongoing action and are oriented to by the participants. As the interaction unfolds, some semiotic fields may lose their relevance and others may come in focus as part of the contingent progression of interaction (Goodwin, 2000a).

A methodological challenge to this aim is to connect the interplay of verbal and visual resources in *building collections of social practices*. This implies documenting how the visual resources perform *interactional contributions*, that is, that (a) they are used *systematically* in interaction and (b) they perform, in a specific sequential context of surrounding verbal

and visual actions, *recognizable social actions*. As the analyst includes a whole range of resources, the more complex (for the analyst, that is, *not* necessarily for the participants) it becomes to find other instances of the same social practice. Most studies, therefore, focus either on a single case analysis and the intertwined complexity of the various resources employed, or on a single visual resource in relation to talk to perform a specific social practice. Below follows a brief overview of the CA research that has been conducted in the different semiotic fields. Although this may appear slightly contradictory, the aim is not to give the impression that each mode is analyzed independently. Rather, the aim is on the one hand to provide a comprehensive overview of multimodal CA research to readers who may not be familiar with, for instance, gesture studies from other research traditions, and on the other hand to present (or rather sketch) research on interactional functions that may be specific to each semiotic field.

Talk

Since the 1960s, CA has studied the organization of social practices in talk-in-interaction. Ranging from descriptions of the organizations through which social actions, and more generally *intersubjectivity*, are accomplished, such as turn-taking organization, sequence organization, and the organization of repair, to specific social actions, such as doing assessments and word searches, CA has documented the co-constructed nature of talk that is intrinsically bound to, and shaped by, the immediate sequential surroundings.

Besides syntactical and lexical dimensions of talk, intonation and prosody are part of the vocal modality. For instance, in relation to turn-taking organization, coparticipants rely on the speaker's intonation in projecting points of possible completion of the ongoing turn construction unit (TCU), although the importance of grammar and intonation in the projection of possible TCU completion is subject to a continuous debate (see, e.g., de Ruiter, Mitterer, & Enfield, 2006). Additionally, in a range of studies Goodwin (e.g., 2000b) shows how a man with severe aphasia (he is only able to pronounce the words *yes, no*, and *and*) uses intonation, in coordination with visual modalities, to be a competent "speaker" despite grammatical and lexical limitations.

Verbal talk still serves as the "anchor point" in much CA/multimodal research, although this does not mean that talk is, a priori, given analytic priority. The linear temporality of talk makes it a reliable baseline, in relation to which visual modes are temporally organized, when it comes to transcribing multimodal interaction. However, in situations in which verbal talk is (either entirely or partially) absent, such as sign language, transcribing constitutes a practical as well as a methodological challenge. Notions such as pauses and gaps refer exclusively to an absence of *verbal* contributions to the interaction rather than an absence of *action* (Schmitt, 2004). Indeed, (verbal) pauses are often filled with relevant meaningful activities in and through participants' bodily conduct. In this way, multimodality turns the focus from turns-at-*talk*, in "classic" CA, toward the construction of *action* as the basic unit of analysis. This, inherently, includes a discussion of the applicability of the generally talk-based CA terminology.

Gaze

A large number of studies, from early on in CA's beginning, has documented the role of gaze as displaying the attention of the coparticipant(s) toward the current speaker. Goodwin's groundbreaking (1981) study on the organization of gaze in interaction shows how the recipient's gaze affects the linguistic progression of the speaker's turn-at-talk. He shows how a speaker modifies their turn beginning via pauses, hesitations, and restarts to attract and secure the recipient's gaze, and how recipients remove their gaze toward

the (projected) end of the speaker's turn. In this way, the recipient's gaze plays a role not only for the emergent grammatical construction, but also for the turn-taking organization. Similarly, the speakers' gaze is continuously used to display a shared attention, for instance when manipulating physical artifacts. The action of "seeing" is in this way embedded within the ongoing interactional activity, and plays a crucial role in establishing and maintaining participation frameworks out of which social actions can emerge. Gaze has primarily been described as a recipient activity and has been related to a range of social practices such as receipt tokens, affiliation, and stance display.

Gesture

Gesture and its relation to talk has probably been most extensively studied within psychology, in particular with respect to what the coordination of gesture and talk reveal about inner mental processes. For instance, McNeill (1992) describes how a gesture consists of three phases—preparation, stroke, and retraction—and thus provides a "syntactic description" of gestures. Although similar descriptions have been made within an interactional perspective (Sacks & Schegloff, 1975/2002), the analytic focus lies on the interactional function(s) that are accomplished. Schegloff (1984) shows how ("iconic") gestures precede (and are often terminated before) the lexical affiliate, and thus how they may affect the projection of upcoming talk. Mondada (2007) shows how gestures are systematically used as a way of projecting incipient speakership, and how they can even "interrupt" the ongoing (verbal) turn-at-talk. Similarly, Streeck and Hartge (1992) show how a pre-speech gesture can be "interrupted" by the coparticipant. Although the number of systematic analyses of gesture's interactional properties is still limited it is obvious that gesture, besides its referential properties, plays an integrated part in the basic "machinery," including turn taking, through which intersubjectivity is (co-)constructed.

Bodies and Body Posture

An important interactional function of the human body is to display the level of engagement in interaction. The majority of CA research on body movement and posture is built on Adam Kendon's (e.g., 1990) notion of the *transactional segment*. This refers to the physical space in front of a person, through which participants display their level of engagement in the interaction and understand that of the coparticipants. In this way, the participants create a participation framework, around which they co-organize their actions. Kendon divides the human body into three hierarchically organized segments: the lower body, the torso, and the head (including eyes), which are able to twist around the same vertical axis. Whereas the lower body is the most static part of the body and displays the participant's enduring focus of engagement, the torso and head are more flexible and can, whenever not "facing" the same way as the lower body, display an immediate focus of attention. For instance, when seated in a cinema the lower part of the body would normally be facing the screen (in and through the physical arrangement of the chairs, which again affords and constrains the possibilities for social interaction), and thus facilitate a somewhat relaxed *home position* (Sacks & Schegloff, 1975/2002) with the entire body facing the screen. However, it is possible to twist one's head or torso toward the neighbor (or the guy talking on his cell phone in the row behind you!), although this may only be a brief twist.

This framework has more recently been applied to describing bodily conduct with or without relation to (verbal) talk in a range of different settings, primarily around physical objects. For instance, Schegloff (1998) shows how body torque is coordinated with the linguistic progression of the turn-at-talk, and how participants, in and through their bodily arrangement, orient to possible completions of the ongoing TCU.

Artifacts and the Surroundings

The inclusion of physical artifacts and/in the surroundings is increasingly considered in multimodal analyses, in particular within professional or institutional settings, or both, and HCI. Ranging from "simple" written information in textbooks and on paper and classroom blackboards or whiteboards to complex, high-technological settings such as control rooms and airline cockpits, these studies show (a) how participants include and use tools when engaged in interaction, and (b) how these tools are used to structure the ongoing activity. *User-based design* is a special "applied" line of research, in which analyses of participants' interaction with and around tools (in a broad sense of the word) are used as a basis for designing the tools themselves. For instance, the way in which computer screens (and other work-related artifacts) are physically positioned in a room structures the kinds of interaction that take place while interacting with the tools themselves. The study of ways in which people use technologies such as cell phones, online communication technologies, and GPS navigation systems, and broadly the field known as *workplace studies* (Luff, Hindmarsh, & Heath, 2000), will undoubtedly increase in the future, and, hopefully, feed back into design and engineering, and the development of (material/physical) products.

Sequentiality and Seriality

One of the basic assumptions of CA is that talk is sequentially organized. This is crucial for the establishment of intersubjectivity since the speaker, in and through the design, action, and timely (i.e., "sequential") placement of a turn displays their understanding of the prior turn. For instance, some turns are so intimately tied together that the lack of a "second,"—that is, the "responsive" turn—is understood by the coparticipant to be *missing* and thus as accountable. Similarly, the beginning of a turn-at-talk displays the speaker's orientation to the prior turn as being *possibly* complete. This includes primarily the study of *talk*-in-interaction and thus focuses on the verbal mode. However, the picture gets more complicated when several modes are taken into consideration (see, e.g., Mondada, 2008). Whereas the vocal mode is restricted to only one turn-at-talk at a time—that is, one (emergent) syntactic construction at a time—the visual mode is not constrained in the same way. While producing a turn-at-talk, one can produce several gestures and facial expressions, and move body and gaze simultaneously (the German *Koordination* tradition is a good example of how this is methodologically analyzed; see, e.g., Schmitt, 2007). This results in methodological challenges in terms of describing the *coordination* and *cooperation* of the various modes involved in human social interaction. Although it is unquestionable that human–human interaction relies on the intertwined co-occurrence of multiple modes (see, e.g., Goodwin, 2003, 2006), we still know little about how the different modes are coordinated, and how different modes contribute to the online meaning construction and production of social practices.

Conclusions and Current Trends

Since the 1980s, an increasing amount of research has described the complexity of *talk-and-bodies*-in-interaction, arguing that verbal talk and bodily conduct are finely coordinated within multifaceted physical surroundings to perform coherent social actions. This has served as an argument for extending the boundaries of a range of research fields working with "language," including anthropology (Goodwin & Goodwin, 2005), linguistics (Mondada, 2006, 2007), and applied linguistics (Mori & Hayashi, 2006). Although the importance of

visual modalities in and for social interaction can hardly be neglected, it is less clear how the different modalities play together to perform what is essentially the scientific aim of CA: to describe recognizable social practices. This has probably been most systematically studied in relation to turn-taking organization. Within turn-taking organization, visual modalities (in particular gesture) have been shown to work systematically as a resource for projecting turn beginnings (Streeck & Hartge, 1992; Mondada, 2007) and possible completion of TCUs (Mondada, 2006). Undoubtedly, the description of social practices that are done (partly) in and through visual modes will have, or rather *continue* to have, a prominent position in the future. Systematic work is already in progress in relation to some basic findings of CA such as turn-taking organization (Hayashi, 2005; Schmitt, 2005; Mondada, 2006, 2007) and the organization of repair (Seo & Koshik, 2010). A relevant issue in this endeavor is a focus on the social practices that are performed in similar sequential positions through *different* multimodal resources (see Schegloff, 2009). This results in methodological challenges that remain to be further investigated. For instance, to what extent does gesture project (possible) turn completion compared to syntax and intonation? Is gesture "as strong" a resource as syntax in defining transition-relevant positions? What are the (interactional) boundaries between a "turn-at-talk" and an "action"?

SEE ALSO: Conversation Analysis and Cockpit Communication; Conversation Analysis and Design; Conversation Analysis and Dyads, Triads, and More; Conversation Analysis and Identity in Interaction; Conversation Analysis and Institutional Interaction; Conversation Analysis: Overview; Conversation Analysis and Prosody; Conversation Analysis and Recipient Behavior; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Transcription and Data; Conversation Analysis and Turn Taking

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Conversation Analysis and Other-Initiated Repair

TREVOR BENJAMIN AND HARRIE MAZELAND

This entry builds on the entry "Conversation Analysis and Repair Organization: Overview" by examining the organization of other-initiated repair. Excerpts (1) and (2) illustrate the two varieties, or trajectories, of other-initiated repair: those in which the repair proper is performed by the speaker of the troublesome talk (other-initiated *self-repair*) and by its recipient (other-initiated *other-repair*). The *trouble-source* (TS), the *initiation* (I), and the *repair proper* (R) are labeled in the transcripts:

(1) [other-initiated self-repair; CF:6938]

```
01  JEN:      [  ((laughing))       ]
02  SAL:  TS  [is your man a medical] student?
03  JEN:  I   .hhh wha:t?
04  SAL:  R   is your man a medical student?
05  JEN:      he's a dental student.
```

(2) [other-initiated other-repair; Schegloff, Jefferson, & Sacks (1977, p. 378)]

```
01  BEN:  TS   listen to the pigeons.
02             (0.7)
03  BIL:  I+R  [quail, I think.
04  ELL:       [coo-coo:::: coo::::
05  BEN:       oh yeh?
06             (1.5)
07  BEN:       no that's not quail, that's a pigeon.
```

Following a brief discussion of the positioning of other-initiations, this entry overviews these two varieties of other-initiation (self-repaired and other-repaired). It concludes with a remark on the relevance of repair for second language (L2) learning. For practical purposes, the excerpts presented are taken primarily from English data. The references cited throughout, however, include research on a wider number of languages.

The Positioning of Other-Initiations of Repair

Though they can become "displaced," other-initiations of repair overwhelmingly occur as the first action following the possible completion of the turn constructional unit (TCU) which is or which contains the trouble-source (Schegloff, 2000). This adjacent positioning is explicable largely in terms of the organization of repair itself. First, by withholding their initiation until the troublesome TCU is possibly complete, and sometimes even a bit further, recipients provide the speaker with multiple opportunities to address the problem themselves. Second, adjacent positioning massively reduces the "search space" in which the trouble-source must be located (Schegloff et al., 1977). Cases like excerpt (3) provide evidence that participants work to achieve adjacent positioning.

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(3) [Schegloff (2000, p. 229)]

```
01  KEN:  TS  I'm always dreaming about walking down the aisle.
02            and I can't stand [thinking about getting-
03  ROG:  I                     [getting hitched?
04  KEN:  R   getting hitched.
05  KEN:      I can't stand thinking about it
```

In line 3 Roger indicates that he has trouble understanding Ken's use of the expression *walking down the aisle* by offering *getting hitched* as a candidate reformulation. Although he withholds during the trouble-source TCU (line 1), Roger positions this repair-initiation in overlap with Ken's turn continuation (line 2). Ken aligns by cutting off his turn and performing the repair proper (line 4) before resuming. Standard turn-taking practices are thus "over-ridden" to secure a "maximally adjacent" repair initiation (Schegloff, 2000; Benjamin, in press).

Other-Initiated Self-Repair

The most frequent cases of other-initiated repair are those in which the recipient indicates a trouble, but leaves the repair proper to the trouble-source speaker. These two actions—the initiation and the repair proper—form an adjacency pair through which the speaker and recipient collaboratively and interactively attempt to address the problem(s) at hand. Each part of this adjacency pair will be taken up in turn.

The Initiation

Recipients are provided with a substantial set of turn formats for initiating repair. These options vary primarily in whether and how they (a) locate what is causing the trouble (the *trouble-source*) and (b) delimit the nature of the trouble (the *trouble-type*), for example, as one of hearing, understanding, or accepting the trouble-source (Schegloff et al., 1977; Robinson & Kevoe-Feldman, 2010).

As noted, the adjacent positioning of other-initiations greatly aids in the identification of the *trouble-source*. Some formats, such as *what?* and *huh?* (see excerpt [1]; Drew, 1997), rely entirely on this sequential clue. Most formats, however, pinpoint a particular item in the trouble-source TCU, for instance, by repeating it (*May* ← *Mary* in excerpt [4]); replacing it with a *wh*-word (*he* ← *who* in excerpt [5]) or a candidate reformulation (*walking down the aisle* ← *getting hitched* in excerpt [3]); syntactically expanding off it (*city hall* ← *of Bristol* in excerpt [6]; see Hayashi & Hayano, in press); or deploying an incomplete repeat which locates the item as a gap to be filled (*to get into trouble* ← *you have no time* in excerpt [7]; see Koshik, 2002).

(4) [Field:2:1:1]

```
01  LES:  TS  Ma:y is: ill too:. she's had either a heart attack
02            or a, slight stro:ke,
03  MUM:  I   Ma:ry?
04            (.)
05  LES:  R   Ma:y.
```

(5) [CF:4504]

```
01 JOH:  TS  yeah he he went into the city ye- um: two days ago.
02 GRE:  I   who.
03 JOH:  R   Rick.
```

(6) [Field:2:1:1:1]

```
01 LES:  TS  a:nd em: (.) he's ↑been invited to a dinner at the city
02           ha:ll (0.2) we:ll (.) Rimbold's=
03 MUM:  I   =of ↑Bristol.
04           (0.2)
05 LES:  R   yes.
```

(7) [CF:4874]

```
01 B:  TS  besides for that I got no time to get into trouble.
02         (0.9)
03 B:      hhh hhh
04 A:  I   you have no [ti]:me_
05 B:                 [hh]
06 B:  R   to get into trouble.
```

The core identifying element may also be *framed* by repeated words or pro-form substitutions as in excerpt (8) (*Holly thinks he should do it* → *who does*; see also excerpt [12], line 3). Finally, when repair is initiated non-adjacently from the trouble-source turn, recipients sometimes aid in the identification task by signaling this "displacement," for instance, with clausal formats such as *who's that* (cf. *who*) and *you mean the picture* (cf. *the picture*; Benjamin, in press; Egbert, in press).

(8) [CF:6952]

```
01 TOM:  TS  if Holly s- if Holly thi:nks he should do it that's it.
02 TOM:      .hhh [hhh]
03 BIL:  I        [who] does?
04           (0.3)
05 TIM:  R   Holly.
```

The relationship between initiation formats and *trouble-types* is complex and has received considerable discussion in the literature. While the bulk of the trouble-type analysis resides with the trouble-source speaker (see the next section), the recipient can, through the selection of an initiation format, play an important role in this process. Robinson (2006), for instance, shows that unlike *huh?* or *what?*, the format *sorry?* is particularized to categorizing the trouble as the recipient's lack of hearing. There also seems to be a strong correlation between the prosodic/phonetic design of some formats and trouble-types. At least in German and English, falling terminal pitch on *wh*-word-based formats associates with underspecified reference, and rising terminal pitch with other types of problems (Selting, 1988; Egbert, Golato, & Robinson, 2009). Excerpts (5) and (7) illustrate this difference: *who.* receives a further specification of the targeted reference (*he* ← *Rick*), whereas *who does?* receives a repetition (*Holly* ← *Holly*). Recipients can also deploy nonvocal methods for delimiting the trouble-type, for example, furrowed eyebrows to communicate lack of understanding, though this has not been studied systematically.

The Repair Proper

Faced with a recipient's repair initiation, a speaker is expected to repair the trouble as a next action. The solution they offer displays their analysis of the problem, or the analysis they are committing themselves to at this stage of the problem-solving activity (Pomerantz, 1984; Svennevig, 2008). A number of recurrent repair operations can be identified. First, the trouble-source speaker may repeat all (excerpt [1]) or part (excerpts [7] and [8]) of the trouble-source turn. While repetition may appear relatively straightforward—an efficient means of addressing auditory problems—analysis has shown that this repair operation is used in the environment of different trouble-types (Drew, 1997), and that the phonetic design of the repeat can index such differences (Curl, 2005). A second common repair operation is an elaboration on or further specification of the trouble-source, as discussed for excerpt (5) above. Third, when the initiation is a candidate understanding (as in excerpts [3] and [6]) or partial repeat (as in excerpt [4]), the typical repair operation is a confirmation such as *yeah* or corrective replacement, as in excerpt (4) above (*Mary* → *May*). The final repair operation to be mentioned here is rather different. Consider excerpt (9) below. Faced with the initiation *huh?*, the police desk modifies the preference structure of their question (the first version prefers a "yes" response, the revised version a "no").

(9) [IND-PD]

```
01 POL:  TS  is she pregnant?
02 CAL:  I   huh?
03 POL:  R   she's not pregnant is she,
04 CAL:      I don't know.
```

There is an intimate relationship between other-initiations of repair and the organizations of preference and interpersonal alignment (Schegloff et al., 1977; Drew, 1997; Wu, 2006). Like turn-initial hesitations or hedges, other-initiations of repair halt the progressivity of the ongoing activity and can thus function as pre-rejections or pre-disagreements. Orienting to this possibility, speakers on occasion downgrade or, as in excerpt (9), even reverse the preference of the talk targeted for repair.

Other-Initiated Other-Repair

Participants can also repair items in the talk of others. Unlike simply initiating repair, performing the repair proper (i.e. *correcting*) involves a claim of greater authority or better access to the trouble-source. In excerpt (10) below, for instance, in substituting *hoog* 'high' for *laag* 'low' Leo claims superior knowledge regarding the value of the dollar. Such claims may be mitigated—note the uncertainty marker *I think* in excerpt (2)—and the speaker who is being corrected may either contest this claim—as in excerpt (2)—or ratify it—as in line 6 of excerpt (10).

(10) [pre-meeting talk; Dutch]

```
01  COR:  TS   da's wel gunstig. want de dollar staat laa:g.
               that is PRT advantageous because the dollar is low.
02             (0.5)
03  LEO:  I+R  hoog:.
               high.
04             (.)
05  JAN:       hoog.=
               high.
06  COR:       =is ie nou weer hoog?
               is it high again now?
07             (0.6)
08  JAN:       °jah.°
               yes.
```

Other-initiated other-repair is dispreferred in informal talk (Schegloff et al., 1977). In most cases it can be (and typically is) avoided: "when the hearing/understanding of a turn is adequate to the production of a correction by 'other', it is adequate to allow production of a sequentially appropriate next turn" (Schegloff et al., p. 380). Recipients may also choose to correct covertly, in a by-the-way manner that does not interrupt the progressivity of the talk. Jefferson (1987) calls this *embedded correction*:

(11) [Jefferson (1987, p. 93); a hardware store]

```
01  CUS:  →  mm, the wales are wider apart than that.
02  SAL:  →  okay, let me see if I can find one with wider threads
03           ((Looking through stock))
04  SAL:     how's this.
05  CUS:  →  nope, the threads are even wider than that.
```

The salesman uses an alternative reference form (*threads* instead of *wales*), but he chooses to do so embedded within a sequentially appropriate next turn rather than in an official "exposed" manner (see Kurhila, 2001, on the use of embedded correction in talk between native speakers [NSs] and non-native speakers [NNSs]).

Repair and Correction in Foreign-Language Learning Activities

Participants in talk-in-interaction are primarily oriented to the methodic achievement of common understanding. Repair and correction differ in how they relate to this process: Whereas repair is one of the key resources through which understanding is accomplished, correction is an activity which presupposes it (Macbeth, 2004). The primacy of common understanding and activity progression holds for all types of interaction, including those involving NNSs. Consider excerpt (12), taken from the closing section of a phone call between two business partners who use English as a lingua franca:

(12) [international business call; MRD = Meredith, Dutch account manager; PIA = Italian agent]

```
01  PIA:      (anne:hm::) (0.7) your u:H (0.3) so- sobistitute?
02            (0.8)
03  MRD:  →   my wha↑:ht?
04            (0.4)
05  PIA:      (°eh [huh°)     [(°yeah°)
06  MRD:  →        [OH HehhUhe[h ·hH he:- .h you mean the person
07            that will rePLA↑:ce me?
08            (0.2)
09  PIA:      yeah:.
```

In lines 6–7, Meredith offers Pia a possible understanding of the trouble-source word (*sobistitute)*, but does not engage in correcting its problematic form. The interactional achievement of a common understanding that furthers the progression of the sequence is given priority. Nevertheless, such sequences may display features that are relevant for the investigation of N–NN interaction. Schegloff (2000) and Wong (2000), for example, investigate "displaced" other-initiations and discuss the possibility that some instances may be typical of N–NN conversation, particularly those in which the NNS offers a sequentially preferred response based on a premature problematic understanding.

Schegloff et al. consider the possibility that the organization of repair—most notably, the "highly constrained occurrence of other-correction"—may differ in domains in which the socialization of the "not-yet-competent" is at stake. There, "other-correction is not so much an alternative to self-correction in conversation in general, but rather a device for dealing with those who are still learning" (1977, pp. 380–1). Macbeth (2004) develops this line of reasoning in his discussion of the relevance of other-correction in the classroom. Within the context of learning activities, other-initiation of correction and other-correction are deployed as devices for guiding pupils toward supposedly more competent uses of the forms, procedures, and content in the target domain. Correction is didacticized, and, as a consequence, is constrained differently from its use in noninstructional environments.

Similarly, participants in N–NN interactions may "transfer" and modify practices and formats from the organization of repair for initiating and pursuing language learning in noninstructional settings. Brouwer (2004), for example, analyzes practices that NNSs use for initiating learning activities focused on the pronunciation of words. The language expertise of the NSs is mobilized in a learning sequence in which the NNS is acting or treated as the learning party. Consider excerpt (14). S, a native speaker of Danish, has mentioned that all Danes carry around a special brand of rucksack.

(13) [Brouwer (2004, p. 93)]

```
01  B:      ja det har vi ikk i Hol↓land at vi -alle ha:r (.)
            yeah we do not have that in Holland that we all have
02      →   d samme:: (0.4) øh ↑rygsa:k
            th same          uh rucksack ((alternative pronunciation))
03          (0.2)
04  B:  →   ryg↑sak
05          (0.2)
06  S:  →   ↑ryg↓sæk.
            rucksack ((standard pronunciation))
07  B:  →   rygsæk
08          (0.3)
09  B:  →   ↓så . . .
            so . . . ((continues))
```

B, an NNS of Danish, initiates a learning sequence by prosodically emphasizing and isolating the problematic item *rygsak* (lines 2–4). The NS responds by repeating the word using the standard pronunciation (line 6). The language learner then repeats this pronunciation (line 7), both as a kind of exercise and as a trial which the NS should monitor. After the learning sequence, the NNS returns to the activity that was temporarily put on hold. Note that, in this case, the correction produced by the NS is not about understanding but about the correct phonetic/phonemic form of a word which came up in talk. The participants are engaging in a side sequence for doing L2 learning with a focus on a particular aspect of linguistic form. Nevertheless, the learning sequence itself requires an appropriate understanding of what the NNS is doing when she is isolating, and prosodically marking a particular part of her turn and repeating it, or what the NS is doing when repeating this segment with an alternative pronunciation.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Ethnomethodology; Conversation Analysis and Lingua Franca; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis: Overview; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA; Conversation Analysis and Self-Repair; Conversation Analysis and Turn Taking

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Conversation Analysis and Prosody

BEATRICE SZCZEPEK REED

The term *prosody* has varying definitions across language-related disciplines. In conversation analysis (CA) and its linguistic counterpart, interactional linguistics (Selting & Couper-Kuhlen, 2001), it refers to the "musical" aspects of speech, that is, pitch (intonation and pitch register), loudness, and time (syllable duration, speech rate, rhythm, and pauses); in addition, some writers include voice quality. Another term for prosody that is frequently used in linguistics is *suprasegmentals*. This term is based on the common linguistic distinction between articulation, which refers to the production of individual sounds or *segments*, and those areas of speech production that are above the level of individual sounds, that is, suprasegmental.

Pitch, loudness, time, and voice quality impact on spoken language in a variety of ways. *Loudness* is relevant, first, for the distinction between stressed and unstressed syllables, which is achieved, among other things, by brief increases and decreases in loudness (other features of stress are pitch and duration; see below). Stress is relevant to conversation in two ways. *Word stress* tells us which syllable in a multisyllabic word must be stressed. In English, this is invariable. More important for conversation is *utterance stress*, which describes the speaker's choice regarding which words in a given utterance are to be made more prominent than others. This choice has significant implications for conversational meaning and information focus. Second, loudness becomes conversationally relevant when speakers increase or decrease their overall speaking volume for longer stretches of speech. Such a change is less relevant for the interactional role of an individual word, but represents a more global prosodic practice, with which speakers put longer utterances in relation to surrounding talk. For example, speakers may increase overall loudness when they are being interrupted, and thus show that they are the legitimate floor holders (French & Local, 1986). Overall loudness is typically reduced when speakers approach the end of their turn.

Time is conversationally significant, first, in terms of the time speakers take for the production of individual syllables, that is, *syllable duration*. In English, duration contributes to stress, together with loudness and pitch. This is relevant for word stress, but also for interactional purposes, in that syllables can be lengthened or shortened beyond their default pronunciation. For example, syllable lengthening becomes interactionally meaningful when speakers elongate syllables during expressions of appreciation (Szczepek Reed, 2006). Second, time is relevant when it comes to how fast or slowly conversationalists are speaking. *Speech rate* can be measured by counting the number of syllables, or sounds, per second. An example of the relevance of speech rate in interaction can be seen in Uhmann's (1992) work on German conversations, which shows that high speech rate is associated, for example, with side comments and afterthoughts.

A third aspect in which time impacts on spoken language is *speech rhythm*, that is, the production of syllables at regular intervals of time. Speech rhythm in English, particularly British English, has a strong tendency toward "stress timing," that is, stressed syllables are placed at roughly regular time intervals. Other languages and varieties, such as Singapore English and French, have a tendency toward "syllable timing," where every individual syllable is perceived as a rhythmic beat. In all languages, speech rhythm is a highly perceptive category, and if we were to set a metronome against a speaker of British

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English, they would soon be "off beat." However, as listeners to spoken language, we have a strong tendency to perceive syllables as rhythmic. In CA, rhythm has been mostly analyzed for its role in turn taking (see below). Finally, time becomes relevant in spoken language when it comes to *pauses* and their duration. Silence can be highly significant for interaction. Local and Kelly (1986), for example, show that the phonetic features of pauses determine their role in conversation. "Holding" pauses, which are the result of glottal closure, are treated by conversationalists as indicating that a speaker is about to continue speaking. "Trail-off" pauses, in which the glottis remains open, are not necessarily interpreted in that way. In addition to the role played by pauses in conversation, they also have a direct impact on our perception of speech rate and rhythm.

Pitch is the prosodic feature that has received the most attention from students of language, in particular *intonation*. The term "intonation" refers to continuous changes in speech melody, which result in rising and falling *pitch accents* on stressed syllables. Many functions have traditionally been attributed to intonation, such as displaying grammatical structure, information focus, and a speaker's emotions and attitudes. In CA, intonation has mainly been studied for its use in designing conversational turns as complete or incomplete (see below). Pitch, however, is also relevant in terms of changes in speakers' overall pitch span. During the course of a conversation, speakers may change from an overall higher to an overall lower pitch register, for example, when they are producing a conversational aside (frequently produced with lower pitch register), or are preparing to say goodbye (frequently associated with higher pitch register). More specifically, Couper-Kuhlen (1996) has shown that conversationalists also differentiate between different types of pitch register changes. In certain interactional environments, copying a previous speaker's high pitch register can be treated as repetition, if it is done relative to the next speaker's own overall voice range; or as mimicry, and thus criticism, if it is done on an absolute scale, matching the previous speaker's high pitch precisely.

In addition to these "musical" aspects of speech, the term "prosody" also comprises voice quality, especially in CA. In many other approaches to language, voice quality is regarded as outside the realm of linguistic inquiry, because it is not used to convey specific semantic meaning. However, research on the phonetics of conversation has shown that it is indeed an important factor when speakers negotiate interactional meaning. For example, Ogden (2004) shows the relevance of a variety of voice quality changes, such as creaky and breathy voice, for turn taking in Finnish.

CA, with its view on language as a resource for human interaction, has shown that prosodic features are relevant for the management of conversation. Particular attention has been paid to negotiating who speaks when, and for how long (turn taking), and the role of prosody for conversational actions, such as delivering good or bad news.

Regarding turn taking, prosody is one of the interactional modes used by conversationalists to negotiate issues of speakership and recipiency. For example, in order to design a turn as finished, and thus as potentially signaling a place for others to come in, conversationalists typically bring it to completion in terms of its grammatical, pragmatic, and prosodic structure (Ford & Thompson, 1996). Out of these three, the prosodic aspect is the most locally flexible. Its form varies greatly with a speaker's language, and indeed their linguistic variety. Different accents and dialects may use different prosodic signals to design turns as potentially complete. For example, Local, Kelly, and Wells (1986) show that in Tyneside English turn completion is achieved by a slowing down in speech rate toward the end of the turn, a sudden increase and decrease in loudness on the last stressed syllable, lengthening of that syllable, centralized quality on the final vowels, and either a step up or a drop in pitch on the last stressed syllable. Similar prosodic features are described in Local, Wells, and Sebba (1985) on London Jamaican English, and in Wells and Peppe (1996) on Ulster English.

In addition to these descriptions of the precise phonetic and prosodic nature of the final syllables of a potentially complete turn, Schegloff (1998) shows that in US American English, "pitch peaks" at the end of turns are interpreted by conversationalists as projecting an upcoming opportunity for turn transition. Similarly, Wells and MacFarlane (1998) show that speakers of West Midlands English treat final pitch accents as foreshadowing potential turn completion. In these researchers' data, however, the final accent is not a "peak," but a "valley." This finding confirms that prosodic features of conversation must be studied not only in the context of their immediate interactional environment, but also in the context of the linguistic variety in which they occur.

From the above-mentioned work on the precise prosodic nature of complete turns one must not conclude that every time a speaker designs an utterance in such a way this automatically "means" turn completion. Turn taking remains a process of local negotiation, and at each potential completion point—and in fact at other points, too—current speakers have the option of continuing, or not; and (potential) next speakers have the option of coming in, or not. Therefore, a further way of looking at the role of prosody for turn taking is in terms of its overall prosodic features.

For example, Couper-Kuhlen (1993) and Auer, Couper-Kuhlen, and Müller (1999) show that speakers of standard varieties of English typically continue the speech rhythm established by a previous speaker's turn in their own next utterance. In British and American English, this means that a next speaker must produce the first stressed syllable of his or her turn exactly at the moment at which a next beat is projected by the prior speaker's rhythm. Their research shows that conversationalists treat turn taking that does not follow this pattern as interactionally problematic.

The use of prosodic features from one turn to the next is not limited to speech rhythm. Under the term *prosodic orientation* Szczepek Reed (2006) describes conversationalists' tendency to match or complement previous speakers' prosodic patterns in their own prosody. For example, next speakers frequently repeat prior speakers' intonation contours when they offer a response, such as an answer to a question, an agreement, or a return greeting. Both rhythmic integration and prosodic orientation show, first, that speakers are aware of each other's prosody; and, second, that prosody can function as a form of alignment between two turns, independent of the words being used.

Much research has been devoted to describing the role of prosody for specific conversational actions. For example, Freese and Maynard (1998) show that the prosodic design of delivering good news typically involves high pitch, a wide pitch span, increased loudness on key words, fast speech rate, and normal voice quality; whereas delivering bad news often involves low pitch, a narrow pitch span, syllable lengthening, breathy or creaky voice quality, decreased loudness on key words, and slow speech rate. However, as most studies demonstrate, very few conversational actions are accomplished exclusively through prosody. Instead, prosody is one of many resources of interaction that participants employ during an emerging conversation in order to negotiate actions and meaning. Other resources include articulation, lexis, grammar, information structure, and, if the interaction is face-to-face, gesture, gaze, and body posture, to name only the most obvious. By the same token, negotiating turn taking, actions, and meaning is not the only activity prosodic patterns are involved in. Prosody is also a language-specific cue for phonetic distinctions (for example, the role of syllable duration for distinguishing long and short vowels), lexis (for example, the role of loudness, pitch and duration for determining word stress), and syntax (for example, the role of pauses and intonation phrase boundaries for separating one syntactic construction from another). Furthermore, prosody is used as a cue for the display of affect and stance (Gardner, 2001). Thus, in everyday conversation prosody fulfills a multitude of functions, often simultaneously; but rarely are any of those functions fulfilled through prosody alone.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Interactional Linguistics; Conversation Analysis and Turn Taking; Suprasegmentals: Discourse Intonation; Suprasegmentals: Intonation; Suprasegmentals: Prosody in Conversation; Suprasegmentals: Rhythm; Suprasegmentals: Stress; Suprasegmentals: Tone; Syllables; Voice Quality

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Conversation Analysis and Recipient Behavior

ROD GARDNER

Recipiency is half of conversation. When a speaker is producing a turn at talk, there will be at least one recipient. Typically there is regular, frequent change of speaker, so the roles of current speaker or current listener change every few seconds. Non-talking participants, however, are not passive recipients. Their engagement is evident through nonverbal activities, such as gaze, head movement, gestures, smiles, eyebrow flashes, body orientation, and proximity to the speaker. They may also produce vocalizations, as well as, for example, laughter or sighs, which are not substantive contributions to the topical development of the talk, but which provide some indication of the kind of stance that the recipient is taking. Such tokens of recipiency may supplement the visual cues for the current speaker; these expressions of affect, of claims of understanding, of agreement or disagreement, of changes in epistemic states, of a readiness to move toward other activities—not to mention the absence of such tokens—can tell the speaker a great deal about how their talk is being received. Indeed, as Heritage (1984, p. 335) noted, it is a mistake to treat these tokens as an undifferentiated set of "backchannels," as "such treatments seriously underestimate the diversity and complexity of the tasks that these objects are used to accomplish."

Such brief responsive utterances are often hard to "define," in a dictionary sense. One claim we can make after thirty years of conversation analysis (CA) study of these tokens is that they are a complex, varied, and disparate group of objects. They have core uses, but these can vary according to their placement (what kind of turn at talk they follow and what follows them), their prosodic shape (whether they are falling, rising, or level in terminal pitch), and their timing (whether they overlap the prior talk, occur close to a completion point of unit of talk, or follow a gap of silence).

There follows an overview of some of the more common response tokens. For reasons of space, the focus is on English, though it is important to note that extensive work in a number of other languages exists. This is discussed briefly in the final section. The focus in the following four sections is on acknowledging tokens such as *Mm hm* and *Yeah*, epistemic tokens and newsmarkers such as *Oh*, activity shift tokens such as *Okay*, and an overview of assessments such as *Good*.

Continuers and Acknowledgment Tokens

One core group of brief response tokens is a closed set that briefly acknowledges the prior turn in various ways: *Mm hm/Uh huh*, *Mm*, *Yeah* (Jefferson, 1993), and *No* (Jefferson, 2002). *Mm hm* and *Uh huh* pass up the opportunity to take the next turn (Schegloff, 1982), thereby relinquishing the turn to the previous speaker. Sacks's lectures in the 1960s included some discussions on continuers such as *Uh huh*, for example in lecture 7, spring 1967; lecture 14, fall 1967; or May 24 lecture, 1971 (Sacks, 1992). However, the first attempt at a thorough analysis of response tokens was Jefferson (1981).

All excerpts quoted in this entry are taken from a dietary consultation at an Australian hospital. While a medical consultation is institutional talk with differences from ordinary

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conversation in various ways, evidence so far suggests that response tokens are used in generally similar ways. In the first excerpt a dietician (DIT) outlines to a client (CLI) what will be covered in the following session.

```
(1) [Diet:1A:1996:43]
01  DIT:     >okay,= well ↑what ↓I'll do today.= just to outline thuh
02           session is ↑jess ↓fin:d a little bit about
03           your↑self¿= abo[ut ·hhh things like yihknow cooking=
04  CLI:                    [right,
05  DIT:     =of the mea:ls, who does tha:t¿= what y[uh do] during=
06  CLI:  ->                                        [mm hm,]
07  DIT:     =thuh da:y¿ [·hhhhh] (.) bidda about what you ea:t,hh and (.)
08  CLI:                 [righ';]
09  DIT:     =a (.) usual sort of in:ta:ke¿=
10  CLI:  -> =m[m hm,]
11  DIT:       [·hhh ] and ↑then ↓we'll talk about yihknow triglyceride
12           le-vel:s¿ [·hhhh ] a:nd wa:ys that (.) you could (.)
13  CLI:  ->           [mmm hm,]
14  DIT:     =modify: the ↑di:et? (.) perhaps exer↑ci:se¿ ·hhh ↓tuh
15           help riduce those levels of trigli[ceride;]= ↑oka:y?
16  CLI:                                       [°sure°;]
```

The dietician's talk consists of one long turn, made up of multiple turn construction units (TCUs). The three *Mm hm*'s from the client are placed close to points of utterance completion (such as *and a usual sort of intake* in lines 7 and 9). This reflects an understanding that the larger activity of outlining the session is still underway, so the right to take a turn at a transition relevant place (TRP) is passed up. Tokens that do this have been called "continuers," in the sense that the producer of the *Mm hm* is allowing space for the prior speaker to continue talking (Schegloff, 1982). *Uh huh* appears to be a variation on *Mm hm*. Note also that the terminal pitch direction of all three is slightly rising (indicated by the comma that follows them), which is typical for continuers. Note also that when the outline of the session ends, the client produces not a terminally rising *Mm hm*, but a falling *Sure*, which assents to the agenda for their meeting.

Mm typically has falling pitch. It works differently from *Mm hm* in rather subtle, but nevertheless distinctive ways. Its primary function is to acknowledge the prior turn rather than pass up the opportunity to take the next turn (Gardner, 2002). In excerpt 2, the dietician asks the client during the information-gathering phase of the consultation what kind of salad dressing he uses.

```
(2) [Diet:1A:1996:521]
01  DIT:     d'you know what type [↑it i:s?]= ↓o:r whether it's home=
02  CLI:                          [·fhhhhhh]
03  DIT:     =[ma:de¿= ↓o:r.]
04  CLI:      [*e:::::::hm:]::= Kra:f::t free?= o[r: Kraft light
05  DIT:                                         [O:H-
06  DIT:     ↑good; so yer using a (.) a light one any[way.]
07  CLI:  ->                                          [mm:.]
08           (1.4)
09  DIT:     ↑grea:t ·hhhh and you ↑mentioned ↓sometimes having
10           a desse:rt . . .
```

The client's answer is that he uses a low-fat salad dressing, an answer that provides new information for the dietician: her *Oh* in line 5 indicates an epistemic "change-of-state"

(Heritage, 1984). She positively assesses his answer with her *Good* in line 6, and formulates the upshot of his answer with *so you're using a light one anyway*. This effectively brings this question–answer sequence to a possible close, and the client produces a falling pitch *Mm*. What follows is a gap of silence of 1.4 seconds, and then another dietician assessment that closes this sequence, followed immediately by a new question. The client's neutral *Mm* acknowledgment of the dietician's turn is not a continuer, but an acknowledgment that evinces that there is nothing to add to the answer he had already given (Gardner, 2002).

Yeah (or *Yes* and other variants) is probably the most frequently used of all response tokens in English conversation (Drummond & Hopper, 1993; Jefferson, 1993). It has similarities to *Mm*, in that it primarily acknowledges the prior speaker's turn, but through its positive polarity it often can be seen as doing more than mere acknowledging, by aligning and—depending on the nature of the prior talk—confirming or agreeing with what the prior speaker had said, as well as being more likely to be followed by more talk by the same speaker (Jefferson, 1993). It is also used as an answer to polar ("yes/no") questions. In excerpt 3, there are five *Yes/Yeah*'s. The first of these is an answer to the question, *Do you like tomato and that sort of thing*. The consultation has entered the phase in which the dietician is providing the client with advice about how to improve his dietary intake.

```
(3) [Diet:1A:1510:34'00"]
01 DIT:     d'jou like tom a:to and ↑that sort of thi[ng you can=
02 CLI:  ->                                          [yes::.
03 DIT:     =have on [biscuits.]
04 CLI:              [mm hm, ]
05 CLI:     mm [hm¿
06 DIT:        [·hhh tha:t's something that's a bit more filling:¿=
07          and it [looks more uh- [interesti:ng¿
08 CLI:  ->        [yes.           [↑mm::.
09 CLI:     [Mm::.]
10 DIT:     [·hhhh] u:hm but it's[: still a reasonable snack in=
11 CLI:                          [that's right.
12 DIT:     =betwee:[:n. ·hhhh [↑either ↓th]at or another p-piece of=
13 CLI:  ->         [yehs;     [ uh   huh, ]
14 DIT:     =fruit like yuh sai[::d,
15 CLI:                        [mm hm,
16 DIT:     u:m ·hh- >or yuh might even wanna< have a sma:ll
17          yihknow half a sa:ndwich;= or something [like] uh- a=
18 CLI:                                             [mm:.]
19 DIT:     s-salud [or something like that¿ ·hhhh just tuh: fill=
20 CLI:  ->         [ye:ah,
21 DIT:     =up so that yuh not gonna snack on;
22 CLI:  ->  yehs.=
```

The second *Yes*, in line 8, is an acknowledgment token, which aligns through agreement with the dietician's judgment that tomatoes (and similar foods) are *something that's a bit more filling*. Furthermore, unlike an expert opinion, this is something that falls within the client's personal experience, which displays agreement in a way that the neutral acknowledgment *Mm* would not do. The remaining *Yes*'s in lines 13, 20, and 22 similarly follow assessments or suggestions with which the client aligns. Note that whereas a positive *Yes/Yeah* can been seen to align with the prior turn, the *Mm* that follows *You might even want to have a small, you know, half a sandwich* declines to align or agree—or to disalign—with this suggestion. A *Yeah* could be seen as agreeing that "half a sandwich" is what he wants, whereas the *Mm* leaves such agreement unstated.

In this third excerpt, there is also a stronger expression of agreement, *That's right*, in line 11. Note that this follows the more noncommittal *Mm* in line 9. Both respond to the dietician's *and it looks more, uh, interesting*. *That's right* has the effect of upgrading an initial neutral acknowledgment to an agreeing one, but more strongly than a *Yes* would.

Epistemic Tokens

A second set of response tokens is epistemic. These can be expressions of receipt of new knowledge (*Oh*), of understanding (e.g., *I see*), to mark something as news (e.g., *Really*), or of acknowledging epistemic connections between two actions (*Right*).

Oh has been the subject of a series of publications by Heritage (e.g., 1984). The core use of *Oh* is to claim a change in epistemic state: It marks the prior talk as containing information that the recipient did not have before. There was an *Oh* in excerpt 2, reproduced here as excerpt 4.

```
(4) [Diet:1A:521]
01  DIT:     d'you know what type [↑it i:s?]= ↓o:r whether it's home=
02  CLI:                          [·fhhhhhh]
03  DIT:     =[ma:de¿= ↓o:r.]
04  CLI:      [*e:::::::hm:]::= Kra:f::t free?= o[r: Kraft light
05  DIT:  ->                                     [O:H-
06  DIT:     ↑good; so yer using a (.) a light one any[way.]
07  CLI:                                               [mm:.]
08           (1.4)
09  DIT:     ↑grea:t ·hhhh and you ↑mentioned ↓sometimes having
10           a desse:rt
```

Heritage's work suggests that the information that the client uses a light salad dressing was not within the dietician's domain of knowledge, and she further marks this as positive with her subsequent assessment *Good*. Such *Oh*'s are reproduced in response to informings, or to answers which include informings, or counter-informings contradicting some earlier informing: They are an archetypal expression of "coming to see something" (Heritage, 1984, p. 337) that one had not seen before.

Brief listener responses can also claim simple understanding (such as *I see*), or strong agreement (*That's right*). *Right* can be used in the sense of 'Correct' (a widespread North American English use), but in British and Australian use it regularly goes beyond that to respond to complex prior talk in which the speaker is constructing "a progressively emerging epistemic construct" (Gardner, 2007), such as an explanation or advice giving.

Activity-Shift Tokens

A third major group of response tokens includes *Okay* (Beach, 1993; Pillet-Shore, 2003) and *Alright*. These project a readiness to move to a new activity or matter. In the dietetic interview (as in many medical consultations and other kinds of interviews), *Okay* is mostly found in third position following a question and answer. In such cases there is usually an agenda of questions, and the *Okay* is sequence-closure relevant, proposing a move to the next question. Excerpt 5 illustrates this. After summarizing his daily diet, the client is now responding to a series of questions from the dietician to record in more detail his daily

intake. In lines 2 and 4, the dietician asks the client what kind of toast he eats at breakfast, to which the client replies that it is *brown* (line 5).

```
(5) [Diet:1A:1996:366:9'50"]
01          (1.5)
02  DIT:    and ty:pe of ↑toast? would it be:
03  CLI:    u:::[::::::::hhm]
04  DIT:        [a white toa]st, or a brow:n toast¿
05  CLI:    brown.=
06  DIT:    =brown.
07  CLI:    °wholemeal (.) (sort of bread,)°?
08          (0.2)
09  CLI:    °(bread).°
10          (0.7)
11  DIT: -> °okay°?
12          (1.6)
13  DIT: -> °okay? ·hhh and you mentioned butter.= would that be
14          butter or ma:rgari[:ne.
15  CLI:                      [>margerine<.
16  DIT: -> it would bi margari:ne,= o↑kay?
17          (1.4)
18  DIT:    ↑and what about between your breakfast and your
19          lun:ch.
```

The dietician seeks confirmation of this in line 6 by repeating *brown*, before the client elaborates to say that it is *wholemeal*. The dietician accepts this as a sufficient answer by proposing to close this question–answer sequence with her *okay* in line 11. This is followed by a 1.6-second silence and then another *okay* at the beginning of line 13. During the silence, she writes his answer on a form she has in front of her, so the second *okay* can be understood not as a second closing of the prior sequence, but to show that her form filling is completed, and she is ready to move on to the next question. She then does so, and he gives a one-word answer, *margarine*. She confirms his answer in line 16, followed by another sequence-closing *okay*, before moving on to the next sequence. So these *Okay*'s can be seen to be marking boundaries between question–answer sequences in a series of questions in a set agenda.

Alright and *Right* (the latter with a different function to the epistemic *Right* discussed above) can also be used to propose a shift in activity, but they, and especially *Alright*, appear to be used with higher-level activity shifts, such as ending more extended sequences.

Assessments

Assessments form a much more open group of often brief responsive utterances. Any expression that makes some positive or negative evaluation of a prior turn, expresses an affect reaction, or expresses a judgment can be an assessment (see Goodwin & Goodwin, 1987). They include expressions such as *Great* or *How awful*, but also longer utterances, for example *That's great, that's been very helpful*. The reason for including assessments in a summary of recipient talk is that they are frequently brief responses to a prior turn, though it should be noted that assessments can also be first turns in a sequence. Excerpt 6 shows some recipient assessments.

```
(6) [Diet:1A:1996:105:4'00"]
01  DIT:     ·hhh (0.4) °an:d (.)↑yuh've° (.) got any diabe:tes
02           at all,= or a [family] history of dia[bete:s,
03  CLI:                   [ N:o, ]               [n:no.
04  DIT:     °↑no°, (.)↑'t's good-; ·hhh (0.4) any other
05           conditions that yuh might see thuh doctor abou:t_ (.)
06           that affect what you ea:t_
07  CLI:     NO I've been very lucky [(    ]       ).
08  DIT:                             [bee:n very-]
09  DIT:  -> ↑GOOD; (.) ↓that's [g-
10  CLI:                        [don' go to doctor's
11           [very often at all. ]
12  DIT:  -> [THA(H)T'S GOO(H):D.]
13  DIT:  -> $glad tuh hear it.$ ·hhh ↑an: what ↓about
14           medica:tions.
```

In this excerpt, the dietician produces a series of assessments of the client's answers to her questions about his medical condition and its effect on his diet. The client claims to have been *very lucky* (itself an assessment), to which the dietician responds with an emphatic *Good* and *that's g-* (the start of 'good' or 'great'?) in line 9, and a further loud *That's good* in line 12, and *Glad to hear it* in line 13.

Assessments perform a rich and complex range of actions beyond the kind presented in excerpt 6. Antaki, Houtkoop-Steenstra, and Rapley (2000), for example, show how assessments can be used in conjunction with activity-shift tokens such as *Okay* to indicate successful completion of question–answer sequences in institutional talk, particularly when these have required more work than usual to bring them to conclusion. Low-grade assessments, in contrast, have been shown in some situations, such as home-care visits in Denmark and Sweden (Lindström & Heinemann, 2009), to close routine tasks that have been adequately performed as "good enough" for the occasion.

Cross-Institutional, Multimodal, Crosslinguistic, and Cross-Cultural Issues

The discussion so far has been about English, and the examples are taken from a single, medical institutional setting. While the evidence we have points to these examples being representative of the use of response tokens in English, there remain a number of unanswered questions about issues that have not been addressed here: What is the role of the visual in recipient behavior? What differences are there between ordinary conversation and various institutional settings, such as legal, media, educational, business, or political? What differences will we find across languages and cultures?

There has been relatively little research into recipient behavior multimodally, though this is increasing (e.g., Barske, 2009), as it is for various institutional settings (e.g., Jones, 2001, for medical settings). Stivers (2008), however, shows that visual responses such as nods and vocal continuers attend to different aspects of storytelling: The former affiliate with the storyteller's stance, while the latter align with the emerging line of the story. Ruusuvuori and Peräkylä (2009) demonstrate how facial expression works alongside vocal assessments, often preceding them, to display participants' stance to the storytelling.

There is very little on child language (e.g., Filipi, 2007) or second language speaker talk (e.g., Wong, 2000). There is a more substantial literature on response tokens in other languages, notably Japanese. While all languages and cultures would appear to have a place for response tokens, there are differences. In Japanese, for example, response tokens, known in Japanese as *aizuchi*, occur more frequently than in English or other languages that we

know about (Kita & Ide, 2007). It has been proposed that this relates to the grammar of Japanese, which is a verb-final language, with grammatical particles frequently also occurring utterance-finally. These factors make it more difficult to predict where an utterance will come to completion. To compensate, Japanese speakers tend to produce *aizuchi* during utterance-internal grammatical boundaries, such as after the subject, object, or an adverbial phrase. That being stated, on the evidence we have so far, languages that have been studied appear to have response tokens of a broadly similar type to English, though with some differences. (See, e.g., Xudong, 2008, for Chinese; Heinemann, 2005, for Danish; Mazeland, 1990, for Dutch; Keevalik, 2010, for Estonian; Sorjonen, 2001, for Finnish; Betz & Golato, 2008, and Golato & Fagyal, 2008, for German; Young & Lee, 2004, for Korean.) This is not surprising, as recipients of talk—who are at least half of talk-in-interaction—need some way to express how they are responding to the talk that they are hearing.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Multimodality; Conversation Analysis: Overview; Conversation Analysis and Prosody; Conversation Analysis and Turn Taking

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Conversation Analysis and Repair Organization: Overview

BARBARA A. FOX, TREVOR BENJAMIN, AND HARRIE MAZELAND

Introduction

Repair is the cover term for a range of practices, found in all languages that have been studied, by which trouble of all sorts is managed. Whether the trouble arises from problems with speaking, hearing, understanding, or, potentially, agreement, repair practices exist which can attend to it within just a few turns of the source of the trouble. Repair provides a locally managed, interactionally organized, procedural architecture through which participants preserve intersubjective understanding (Schegloff, 1992).

Although there had been experimental studies on disfluencies in talk, and on requests for repetitions, clarifications, and so forth, the groundbreaking study by Schegloff, Jefferson, and Sacks (1977) was the first to treat these various phenomena as belonging to a single organization, for which the term *repair* was introduced. In their paper, the authors describe the temporally ordered opportunities for repair in naturally occurring talk-in-interaction, and specify the basic mechanisms which underlie them.

In describing repair it is necessary to make a few basic distinctions. One is that repair typically happens in two phases: first, repair is initiated, that is, some trouble is indicated; second, the repair itself is performed, that is, the trouble is attended to or "fixed." We thus speak of *repair initiation* and the *repair proper*. Given that there are two phases of repair, it is necessary to distinguish which participant engages in each phase. The organization of repair references only two parties: the speaker (*self*) and any other participant (*other*). Thus, for example, self can both initiate and perform the repair proper, or other can initiate and self can perform the repair proper, and so on, in all possible combinations.

These combinations, however, are not randomly distributed in talk. Some are tremendously more frequent than others and have a larger set of opportunities dedicated to them. Analysis has revealed that opportunities for self to initiate, as well as to perform the repair proper, outnumber opportunities for other to initiate or to perform repair; in addition, opportunities for self to initiate precede opportunities for other to initiate. And lastly, even when others initiate, they typically (a) refrain from producing the repair proper, leaving an opportunity for self to accomplish the repair, and (b) delay their initiation, providing further opportunities for self-repair. These facts taken together suggest a preference for self-repair over other-repair.

It should be kept in mind that repair is more general than "correction," involving on many occasions utterances which have no perceivable "error" in them. In fact, in many instances, especially for self-initiated self-repair, the motivation for the repair cannot be discovered. However, in all cases repair delays the progressivity of the turn or sequence, in that rather than producing the next item or action due, one of the parties initiates repair.

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Opportunities for Repair

Opportunities for the initiation of repair are ordered with respect to the trouble-source. This section provides a brief overview of these possibilities. For expository reasons we will give examples from English, which is also the language on which most groundbreaking work on the organization of repair was conducted. This is not to imply, however, that the linguistic form of repair actions is identical in talk-in-interaction across languages.

The first position in the *repair-initiation opportunity space* arises in the same turn construction unit (TCU) in which the trouble occurs. Consider excerpt (1):

(1) [at the farmhouse]

```
01  LAU:     she gave her best friend and her husband
02           a surprise birthday party for their
03       →   birthda- fiftieth birthdays and she
04           wants us to just forget about hers.
```

Laura initiates repair in the final syllable of what is projected to be *birthdays* in order to insert the modifier *fiftieth.* This illustrates *same-turn self-repair*. The speaker of the trouble-source initiates and accomplishes repair within the same TCU in which it occurs. While significantly less common, self-initiated other-repair is also possible in this position, for example, in word searches.

The next opportunity arises at the possible completion of the TCU in which the trouble-source occurs. *Transition space repair* is also self-initiated self-repair. Excerpt (2) illustrates this:

(2) [Field:X(C):1:1:1]

```
01  MUM:     Cyd rang this evening.
02  MUM:  →  Cyd Arnold,
03           (.)
04  LES:     how is she:?
```

Mum comes to a place of possible completion with *evening* and then initiates and accomplishes repair with a next utterance, in the transition space of the initial TCU.

The third systematic opportunity for initiating repair—and the first for "other"—arises in next position after the trouble-source turn (Schegloff, 2000). Excerpt (3) illustrates *other-initiated self-repair*. *Other-initiated other-repair* is also possible.

(3) [CF: 6938]

```
01  JEN:     [   ((laughing))      ]
02  SAL:     [is your man a medical] student?
03  JEN:  →  .hhh wha:t?
04  SAL:  →  is your man a medical student?
05  JEN:     he's a dental student.
```

In overlap with Jen's laughter, Sally asks Jen about her new boyfriend. Jen initiates repair with *wha:t?* and Sally then repeats her utterance, performing the repair proper.

Following next turn is another opportunity for self-initiated self-repair, referred to as *third position repair.* In excerpt (4), the recipient produces a turn which displays an understanding of the trouble-source turn which the original speaker finds problematic.

(4) [Field:X(C):1:1:1; Leslie has bought Mum some biscuits]

```
01  LES:     it's e-well I don't know that they are very good heh
02           he[h
03  MUM:       [what are they then,
04           (.)
05  LES:     shortbread.hh
06           (0.4)
07  MUM:  →  no I mean what ma:ke,
08           (0.4)
09  LES:     oh:: hum (1.0).hhh well some Scottish make,
```

Leslie's answer, *shortbread*, displays an understanding of Mum's question as asking about the biscuit's type (cf. oatmeal). Mum initiates repair to "correct" Leslie's understanding. Third position repairs exhibit a highly recurrent format: a repair initiation (typically "no"), an agreement/acceptance (e.g. "I know"), a rejection (often "I don't mean X"), and the repair proper (often "I mean" plus a contrast, reformulation, or, as in excerpt [4], specification; see Schegloff, 1992).

In contrast to excerpt (4), self can also initiate repair following minimal responses. In excerpt (5), Hannah initiates and repairs *paintings* after she has reached possible completion and her recipient has responded with *mhm*.

(5) [SBL:1]

```
01  HAN:     And he's going to be making his own paintings.
02  BEA:     Mhm
03  HAN:  →  And- or I mean his own frames.
```

Despite its positioning, this type of repair, known as *third turn repair*, is more similar both in form and in "motivation" to transition space repair than to third position repair: The repair arises from the original speaker entirely and not from the recipient's displayed understanding (see Schegloff, 1997).

These positions—same-turn, transition space, next position, and third position—provide a set of ordered opportunities for addressing troubles in talk-in-interaction. They are organized relative to their distance from the trouble-source in an order that favors self-initiation over other-initiation and self-repair over other-repair. The entries on "Conversation Analysis and Self-Repair" and "Conversation Analysis and Other-Initiated Repair" provide more detailed research results for each of these areas. They also discuss language-specific patterns for the design of self-repair and the relevance of repair in learning and learner interactions.

SEE ALSO: Conversation Analysis and Education; Conversation Analysis and Ethnomethodology; Conversation Analysis and Other-Initiated Repair; Conversation Analysis: Overview; Conversation Analysis and Self-Repair

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Conversation Analysis and Second Language Acquisition: CA-SLA

SIMONA PEKAREK DOEHLER

CA, SLA, and CA-SLA

Conversation analytic research on second language acquisition (CA-SLA) has emerged relatively late in the history of both CA and SLA. This is largely due to the historic development and the analytic focus of the two fields of research. On the one hand, ethnomethodological CA originated as a critical approach to society concerned with the local production of social order; it was not designed to address issues of learning or development. On the other hand, SLA research has traditionally been focused on the learner's internal cognitive processing of linguistic forms; it has paid only limited attention to the social-contextual dimensions of the learning of a second language (L2) (but see Hatch's, 1978, early statement). Yet, since the 1990s, the SLA scientific landscape has undergone a notable shift toward more socially, socioculturally, and sociocognitively oriented approaches, involving an increased awareness of the contingent, contextual, adaptive, and hence non-linear nature of learning. CA research has played a major role in this development. In a much-quoted programmatic statement, Firth and Wagner (1997) have outlined the basic principles of what was later to become CA-SLA, calling for a "significantly enhanced awareness of the contextual and interactional dimensions of language use" (p. 286). Their argument has triggered a critical debate between cognitive and socially oriented SLA researchers (see *Modern Language Journal*, 1997, *81*[3], 2007, *91*[5]), and has provided major impulses for CLA-SLA research ever since.

Reconceptualizing Learning and Cognition

Learning-in-Action

CA-SLA has developed a view of language learning as a situated social practice: Learning is seen as embedded in the moment-by-moment deployment of (most typically) interactionally organized courses of practical activities, such as telling a story, negotiating an understanding, solving a task, and so forth. As Markee and Kasper (2004) put it: "learning behaviors may usefully be understood as a conversational process that observably occurs in the intersubjective space between participants, not just in the mind/brain of individuals" (p. 496). CA-SLA views learning processes as contingent upon (and observable within) the micro-details of social interaction, and as socially distributed. This conception rests on an understanding of social interaction as the bedrock of human linguistic and (more generally social and mental) functioning (see Garfinkel, 1967; Schegloff, 1991) and hence as the starting point of the study of SLA.

Accordingly, learning behaviors are understood to be basically adaptive behaviors: Rather than resulting from static previous knowledge or stable individual traits, they are situated conducts, depending on the way learners orient to and interpret the situation at hand through the course of its accomplishment and how they respond to the local contingencies

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of social practice. As learning behaviors are situated, so are the resulting competencies: They are co-constructed, adaptive, flexible, and sensitive to the contingencies of use. These conceptions have been captured in CA-SLA research by the notions of *learning-in-action* (Firth & Wagner, 2007) and *competence-in-action* (Pekarek Doehler, 2006). They can be interpreted as offering a renewed grasp on a core issue of traditional SLA, namely variability: What classically has been termed the learner's "interlanguage" is seen as eminently sensitive to the contingencies of communicative practice.

In recent work, the very object of L2 learning has been cast in terms of "methods" (in the ethnomethodological sense of the term) for accomplishing second language (L2) talk-in-interaction (Mondada & Pekarek Doehler, 2004; Hellermann, 2008; Pekarek Doehler, 2010). Methods are systematic procedures (of turn taking, repairing, opening or closing conversations, etc.) by which members organize their conduct in ordered and mutually recognizable ways. Methods are part of the competence that allows members to participate in social interactions (see Garfinkel, 1967). They are hence the very object of developing the ability to interact in a (second) language. This conception clearly broadens the view of the object of learning beyond the details of the linguistic system and addresses issues of L2 interactional competence. It also respecifies the notion of language as a dynamic, adaptive resource for action (Firth & Wagner, 2007; Pekarek Doehler, 2010). This shifts the researcher's focus away from concerns with the correctness of linguistic forms toward an interest in how patterns of language use serve to accomplish social interactions and how they emerge from these interactions.

On the Observability of Sociocognitive Processes

The CA-SLA notion of learning is rooted in an understanding of cognition as inextricably intertwined with (inter)action (see Schegloff, 1991). Sociocognitive learning processes are embedded in what Schegloff (1992, p. 1338) calls the "procedural infrastructure" of social interaction (see Kasper, 2009): A turn at talk projects (i.e. makes conditionally relevant) specific types of next actions and the next turn displays an understanding of the previous one. The sequential organization of talk hence informs us about how participants orient toward each other, toward language, and toward processes of language learning. As Garfinkel (1967) proposed in his foundational work in ethnomethdology, the relation between cognition and social organization is observable and accountable as materialized in the micro-details of social conduct.

While CA-SLA cannot tell us what happens in the brain of the learner, its analytic apparatus enables it to uncover how learning processes are observably shaped within the moment-by-moment unfolding of everyday communicative practices and the social agents' local interpretive processes (see Firth & Wagner, 1997, 2007; Kasper, 2009; Seedhouse, 2004). Factors that have been widely acknowledged within the larger field of SLA as key determinants of learning, such as motivation, learning strategies, attention focus, and noticing, have been shown in CA-SLA research to be configured in response to social practices, to be observably enacted within the turn-by-turn unfolding of such practices (for examples see Kasper, 2009; Markee & Seo, 2009; Pekarek Doehler, 2010) and embodied through gesture, body movements, and the use of tools such as paper and pencil (Mori & Hasegawa, 2009). A major contribution of CA-SLA studies to understanding the process of learning lies in documenting how interaction shapes cognition and how learning processes are configured within situated courses of practical activities.

Methodological Underpinnings

CA-SLA studies share a range of basic CA methodological principles:

- *Naturally occurring data*, audio or video recorded and finely transcribed, provides the basis for analysis.
- *Activity* rather than language form is the starting point for analysis: The focus is primarily on how learners do things (how they do repair, take a turn, open a story, or close a conversation), and how they use and elaborate language to do so.
- Typically, *collections* of such doings are established in order to identify recurrent "methods" for accomplishing social actions and recurrent interactional formats that provide opportunities for learning.
- *An emic perspective* is brought to bear on the data: Analysis attempts to uncover how participants themselves orient to and interpret each other's actions, how they treat each other as learner or expert, and how they orient toward learning or competence. Sequential analysis is the prime methodological tool for warranting an emic perspective (see Schegloff, 1991).
- *Systematic sequential analysis* is undertaken in order to uncover the micro-details of the moment-by-moment unfolding of talk-in-interaction.

Given the relatively short history of CA-SLA, there remain many individual differences between the studies currently undertaken. One of the most notable among these is the degree of attachment to the analytic mentality of CA and the need to supplement that source of inspiration by other theories (for a recent discussion see Kasper, 2009). Also, there are a range of socially oriented SLA studies (not subsumed under the notion of CA-SLA) that use CA as a technical tool for microanalysis without implementing CA's analytic mentality.

Analyzing L2 Interactions and Learning Environments

Looking back on less than two decades of CA-SLA research, we can distinguish roughly speaking two phases. Much of the earlier work undertaken on L2 interaction was concerned with understanding L2 interactions. It was in part designed as a counter-position to the dominant cognitive orientation of SLA research, and motivated by the idea that for understanding SLA, we need first to understand the details of L2 use. An early development in this direction, rarely noted in the Anglo-Saxon literature, was offered by CA-inspired Francophone studies on interaction and SLA (e.g. de Pietro, Matthey, & Py, 1989; Krafft & Dausendschön-Gay, 1993). Starting in the late 1980s, these studies provided valid insights into the role of interactional formats as a potential basis of learning, as well as into the contextual and identity-related dimensions of L2 use. More strictly CA-based SLA studies emerged some years later, and have intensified since.

In a first phase, these studies investigated classic objects of CA research. Analysis of repair practices in L2 talk-in-interaction within or outside the classroom (Kurhila, 2006), of word searches, of precision timing, and of many other objects (see e.g. the papers collected in Gardner & Wagner, 2004) contributed to a better understanding of the L2 speakers' communicative practices and occasions for learning. These studies also shed light on the social and contextual sensitivity of learning-related practices such as repair. For instance, a number of studies show that in interactions outside of the classroom, ranging from everyday conversations to institutional interactions, first language (L1) speakers provide other-correction only when (implicitly) invited to do so by the L2 speaker.

CA work carried out on L2 classrooms helped us understand the "architecture" of the language classroom (Seedhouse, 2004) as well as the collaborative accomplishment of pedagogic interactions (Markee, 2000; see also the papers collected in *Modern Language Journal*, 2004, *88*[4]), showing for instance how "tasks" are locally enacted and transformed

throughout the moment-by-moment unfolding of talk, and how boundaries between classroom activities are negotiated and reformatted (Mori, 2004).

Also, CA-SLA work of this first phase uncovered the new insights that can be gained in understanding learning opportunities and learning behaviors from the perspective of the L2 speakers and their coparticipants. On the basis of this *emic* perspective (for detailed discussions see Firth & Wagner, 1997; Markee & Kasper, 2004; Seedhouse, 2004), notions of learner, native and non-native speaker or expert have been criticized as reifying a static, aprioristic characterization of participants in social interaction (Firth & Wagner, 1997)—characteristics that often do not correspond to what participants actually do (e.g. the "learner" does not always behave as a learner, nor does the "native speaker" necessarily behave as a native speaker).

This body of research contributed to a better understanding of how the details of interactional practice potentially shape learning processes (e.g. through word searches or repair) and of how learning environments are continually constructed and transformed through the course of social interactions. Here again, CA-SLA offers a distinct view of some core SLA issues, illuminating, for instance, how what the analyst may identify as learner "error" is treated by the participants themselves, and how that interactional treatment creates occasions for what has classically been cast in terms of "attention focus," "noticing," and "corrective feedback," and ultimately for learning. While some of the work cited developed programmatic statements about learning (Firth & Wagner, 1997; Mondada & Pekarek Doehler, 2004), empirical evidence for L2 learning was scant in the earlier work (but see Brouwer & Wagner, 2004, for preliminary observations). In 2006, Kasper stated that CA-SLA's "potential for L2 learning has been largely unexplored" (p. 83). Within the few years since, CLA-SLA has experienced a sea change: A growing body of research empirically documents learning in terms of both the emergence of L2 linguistic patterns and the development of L2 interactional competence.

Analyzing Learning

Two interconnected objects of L2 learning are studied in current CA-SLA. Studies that are concerned with the local observability of learning processes investigate how patterns of language use are jointly elaborated and restructured within courses of practical activities, mostly across short time spans. Studies that are concerned with L2 interactional development typically use a longitudinal research design in order to observe development in terms of the increased diversification of speakers' methods for accomplishing social actions in talk. The general focus is on how participants themselves orient to language as a resource for or an obstacle to communication, rather than on what represents a correct or an incorrect target-language form.

Evidence for Learning I: The Interactional Configuration of Linguistic Patterns

Recent microanalytic studies of learning processes across short time spans have demonstrated how participants' cognitive orientation toward linguistic forms is organized through the sequential deployment of turns at talk. These investigations go beyond local mechanisms of repair or negotiation in order to account for how participants progressively, repeatedly, and collectively structure their linguistic resources and how they reuse them in new interactional environments.

Markee and Seo (2009) show an L2 speaker in an English as a second language (ESL) tutor–tutee interaction engaging in a lengthy interactional negotiation where her initial wording *many time* is other-repaired as *much time*. The analysis documents how, through-

out the fine-grained tissue of interaction, the student both experiences and displays change in cognitive state, moving from non-understanding to understanding of the proposed linguistic form. Then, some 60 seconds later, the student reuses the target-language form while smiling and gazing at the tutor, thereby portraying her reuse as a consequence of the joint negotiation undertaken earlier on. The study provides evidence for short-term learning as interactionally occasioned and oriented to as such by participants.

Pekarek Doehler (2010) documents a similar case, but related to longer-term learning, within the French L2 classroom. The analysis first shows how, in a student-initiated negotiation sequence around the French verb *adorer* 'to adore', the student's cognitive orientation toward language and learning (attention focus, noticing, and understanding) is organized through the sequential deployment of turns at talk. The analysis then provides evidence for learning: One month later, the same student reuses the verb *adorer* in a new communicative environment. By means of prosody, gaze, and body posture she tags that word for her coparticipant as the product of their previous interaction, thereby publicly displaying her learning as being contingent on a shared interactional event.

These and other studies demonstrate, from an emic perspective, how participants themselves exhibit orientation toward (and ongoing assessment of) each other's language expertise or cognitive states (Kasper, 2009; Mori & Hasegawa, 2009), and toward learning opportunities that they contribute to construct (Mori, 2004; Firth & Wagner, 2007). Such evidence opens an interesting window onto the *process* of learning, helping us to understand what learning is for the learner and his or her coparticipants. It demonstrates how socially contingent, mutually occasioned cognitive processes emerge out of the course of interaction, and how, thereby, linguistic structure is occasioned by the micro-details of social interaction. Such evidence corroborates a view of language learning behavior as a socially distributed activity and empirically counters a cognitive-individualistic perspective on learning.

Evidence for Learning II: L2 Interactional Competence and Its Development Over Time

Recently, a small number of studies have investigated the development of L2 interactional competence over time.

Tracking the same dyads of adult English as a foreign language (EFL) learners in the classroom across several months and even years, Hellermann (2008) documents their practices of opening tasks, of telling stories, and of disengaging from an activity. For instance, story openings by beginning learners are done *in medias res*, with little or no use of framing devices such as time locators ("one day") or pre-sequences, while intermediate-level learners show increased use of such devices. The study hence documents interactional development as observable through changes in the sequential organization of a practice. Cekaite (2007) combines the framework of language socialization with CA methodology in a longitudinal, microanalytic study of a Kurdish immigrant child in a Swedish classroom. She documents how the learner's turn-taking behavior changes across time from silence, through inappropriate turn taking (e.g. use of "heavy" attention-getting devices), to appropriate identification of slots for turn taking. In a cross-sectional study of French L2 classroom interactions, Pekarek Doehler and Pochon-Berger (2011) document interactional development in terms of a diversification of speakers' methods for doing disagreement. With the advanced learners, disagreement prefaces emerge that reveal an increased sensitivity to the preference organization of talk-in-interaction.

These studies and a few others (e.g. Hellermann, 2007) show that interactional skills related to turn taking or the sequential organization of a given practice are to some extent relearned or recalibrated in the L2, and not just automatically transferred from the L1. The

attention paid to the details of the linguistic system, however, is scant in the research cited. A notable exception is Ishida's (2009) analysis of a Japanese L2 learner in a study-abroad context. Ishida retraces how the learner's use of the Japanese particle *ne* (sometimes compared to English *isn't it* or *you know*) is progressively diversified both in its interactional function and in its sequential environment, which she interprets as evidence for L2 interactional development.

In the research cited, evidence for learning is provided in terms of the increased diversification and local efficacy (i.e. relevance for this specific action, for these interlocutors at this sequential moment of their interaction; see Brouwer & Wagner, 2004) of speakers' methods for accomplishing social actions in talk. While contributing to an empirically grounded understanding of interactional competence and its development, the studies also outline a useful methodology for analyzing the development of L2 interactional competence by looking at recurrent interactional micro-practices. By focusing not primarily on new linguistic forms but on the diversification of methods for accomplishing talk-in-interaction (among which language is a central resource), the studies contribute to a redefined, more holistic understanding of what the object of L2 development is.

Conclusion

Since the mid-to-late 1990s, CA-SLA has helped us understand the detailed unfolding of the learner's communicative practices and learning activities, thereby breaking down any ontologic division between the cognitive and the social, between language and action, between language learning and language use. Research in the field has contributed to a better understanding of how the details of interactional practice may shape learning processes and how the latter are sensitive to issues of identity, context, or role as they are locally enacted. The conceptual and methodological apparatus of CA has also allowed the specifying of key concepts in the field of SLA in procedural, interactional terms: understanding (Kasper, 2009), participation (Brouwer & Wagner, 2004; Hellermann, 2007, 2008), competence (Pekarek Doehler, 2006), and learning (Firth & Wagner, 2007). And the identification of the systematic procedures speakers employ to engage in talk-in-interaction with limited linguistic means has given rise to a view of the L2 speaker as a capable social agent, developing sensitive methods for action and interaction, rather than as a deficient target-language user.

A promising future path for the field is to look more closely at learning as a process: CA's fine-grained methodology enables us to track how patterns of language use emerge out of the process of talk-in-interaction. Also, interactional development over time is gaining increased attention, whereby L2 resources are viewed as part of a wider range of methods by which members organize their L2 interactional conduct. With both these future paths to venture on, CA-SLA will face the need to critically assess how far the conceptual and methodological apparatus of ethnomethodological CA is suited to tackle issues of change across time (Kasper, 2009).

SEE ALSO: Conversation Analysis and Child Language Acquisition; Conversation Analysis and Classroom Interaction; Conversation Analysis and Ethnomethodology; Conversation Analysis and Interactional Linguistics; Conversation Analysis and Language Acquisition; Conversation Analysis and Learning in Interaction; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis: Overview; Conversation Analysis and Transcription and Data

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Conversation Analysis and Self-Repair

BARBARA A. FOX

This entry builds on "Conversation Analysis and Repair Organization: Overview" and examines the first and most frequent site of self-repair, namely same-turn self-repair. The three other opportunities for self to initiate repair (transition space, third turn, and third position) are discussed in the general review of repair.

Initiators

When a speaker encounters some trouble in achieving progressivity of the current turn construction unit (TCU), the speaker may initiate repair during that TCU. In English the most common initiators of same-turn self-repair are nonlexical: cutoff (Schegloff, Jefferson, & Sacks, 1977; Schegloff, 1979; Jasperson, 1998, 2002), *uh/um*, and silence (Schegloff, 1979). Cutoff is a full or partial closure, typically glottal (although other places of closure, such as alveolar, are possible) which stops the production of the current sound and delays production of the next sound due. Although there have been claims that cutoff is not used as a repair initiator in languages with phonemic glottal stop, recent evidence suggests that this is in fact not the case (see Fox, Wouk, et al., in press, for Chinantec and Persian).

Schegloff (1979) refers to cutoff as a postpositioned initiator, in that it typically initiates repair on something that has come before.

Uh/um is produced interstitially, after the completion of a word, and is often accompanied by silence (Schegloff, 1979). It often initiates a word search, or possibly the formulation of something interactionally delicate. There is some evidence that *uh* and *um* accomplish different kinds of delay work, namely that *uh* initiates a "minor" delay while *um* initiates a "major" delay (Clark & Fox Tree, 2002, p. 73). Schegloff (1979) refers to *uh/um* as prepositioned initiators, in that they tend to come before the items they initiate repair on. Of course, *uh/um* can operate retrospectively as well (Schegloff, 1979).

Lexical initiators are more common in languages other than English, although English speakers do on rare occasions initiate repair with *y'know* or *I mean*. Finnish and Estonian are two languages that are known to show quite frequent use of the negative marker *ei* (Hennoste, 2006) as a repair initiator. For a discussion of different initiators in Finnish, see Laakso and Sorjonen (2010).

Same-Turn Self-Repair Operations

Same-turn self-repair manifests in several forms, two of which—recycling and replacement, and their various combinations—appear to be the most frequent. Recycling is the repetition of some bit of talk, including affixes, words, phrases, and even entire clauses. Consider excerpt (1), in which Ann repeats the word *that*:

(1) [Chinese dinner]

```
01  ANN:     I, had a big fight with Downey at school.
02           (0.7)
03  BET:     mh- [(            ).
04  ANN:  →      [oh tha:t, that's another thing that-
```

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Replacement targets some bit of talk and replaces it with some new talk, as in excerpt (2) below. In this fragment, Donna has been telling her recipients about the track where she sometimes does her morning walk. At line 7 Donna produces what could be heard as a trail-off *so* (Local & Walker, 2005), and there is no further pursuit of the topic. After another sequence-closing utterance at line 11, Mom starts up a related but new telling (the Bolder Boulder is an annual 10 k race, and the participants are discussing walking on a track). She begins the telling with the name of a copresent participant (her daughter), and replaces the name with the pronoun *we*:

(2) [at the farmhouse]

```
01  DON:     what is that shredded tire or something
02           (maybe) (0.3) that ([  )?
03  LAU:                           [is that what it is?=
04  DON:     =that's what I've heard.
05           (0.4)
06  MIC:     hmmm=
07  DON:     =so,
08           (0.5)
09  (?):     (    )
10           (1.3)
11  DON:     anyway
12           (0.2)
13  MOM:  →  yeah, Laur- (0.2) we were training for the
14           Bolder Boulder oh this was probably about
15           five years ago
```

Replacements can be pre- or post-framed with recycling, as in excerpts (3) and (4). In excerpt (3) the speaker pre-frames the replacement of *tha-* with *Monarch* (the name of a local high school) by recycling *opening*.

(3) [at the farmhouse]

```
01  LAU:     well you know when they were first talking about
02        →  opening tha- (0.5) opening Monarch, I was talking
03           with a lady from work and she's like
```

In excerpt (4), Jenn seeks clarification about what another speaker means in a discussion about feelings of dissociation from the body; the speaker replaces *do* with *are* and blends back into the originally projected talk by post-framing recycling of *you*:

(4) [housemates]

```
01  JEN:     >right< but do you physic- do you see the
02           image (.) of you .hh from: the third person
03        →  position? or do you- are you just like
04           being hyper aware of yourself.
```

Insertions and deletions can also be found, although deletions are quite rare. A somewhat infrequent form of repair could be called "abandonment"; in such repairs the speaker begins a TCU and then abandons it, beginning instead a new TCU. For example, in excerpt (5), Bonnie starts to tell Jenn about a movie that she and Terr had seen the previous evening. However, both Jenn and Terr are attending to Terr placing a piece of lettuce on

the mouth of a Barbie doll's head which is on the table. At line 4 Bonnie begins an utterance with *And there's*, cuts off, and then a long silence unfolds in which Terr attempts to get the lettuce to stick to Barbie's mouth; Bonnie then resumes the telling with a new TCU (*Mike Myers plays . . .*)

(5) [housemates]

```
01  BON:     heh s(h)o we saw this movie last night? right,
02           ca[lled Austin Powers?
02  JEN:       [yeah
03  TER:     (why won't this) stay.
04  BON:  →  oh my god. and there's- (0.9)
05  TER:     mm[mmm-m ((placing lettuce on doll head on table))
06  BON:  →    [Mike Myers plays like the good guy and the bad guy:?
```

One also finds word searches and placeholder repairs. Word searches form a particular class of same-turn self-repairs in which the speaker displays trouble in finding the next word due. In English, word searches are often initiated with *uh/um* and silence, sometimes exhibiting a series of *uh/um* plus silence. Word searches lead to a set of possible outcomes: successful finds of the sought-for word by the speaker, successful finds of the sought-for word by the recipient (with confirmation by the speaker), and failed searches by the speaker (and possibly the recipient). Gaze from the speaker to the recipient during a word search often serves to elicit help from the recipient in finding the word (Hayashi, 2003). An example from English of a failed word search (for the name of the organization that called), followed closely by a successful one (for the name of the location of the event), is given in excerpt (6) (CU is the name of a local university):

(6) [at the farmhouse]

```
01  LAU:  (but) I got the- (2.3) oh I don't remember (0.3) who it
02        was (0.8) that called (0.5) ('n-) I just totally spaced
03        out the name (0.9) but it's um, that polic:e (0.5) deal=
04        >they always bring in a-< (0.3) singer: (0.5) and a
05        comedian, (.) and play down at- (1.2) cee u ((CU))
```

As this fragment begins, the speaker begins a TCU, cuts off, and then a long silence unfolds, during which she lowers her head and completely withdraws her gaze from her recipients. She displays the failed outcome of the search with *oh I don't remember (0.3) who it was*, another long pause unfolds, and then another announcement of the failed search *I just totally spaced out the name*. She continues with a work-around (*police deal*), followed by a description, which itself includes a search for the location of the playing—during the 1.2-second silence, Laura produces repeated pointing toward a location removed from the participants' location, and then retrieves the name of the location (*CU*). Thus while the first search fails, the second search is successful.

Placeholder repairs (Wouk, 2005) are a subset of word searches in which the speaker produces a "dummy" lexical item—in many languages marked with appropriate morphology for the sought-for word—while they continue to search for the word; if the word is found, a new version of the phrase is produced which replaces the placeholder with the sought-for word (see Fox, Hayashi, & Jasperson, 1996; Amiridze, Davis, & Maclagan, 2010). Although English speakers make infrequent use of this strategy (with placeholder items like *whachamacallit*), some languages, such as Japanese, Indonesian, Russian, Udihe, and Udi, make fairly extensive use of it (see Hayashi, 1994; Wouk, 2005; Ganenkov, Lander, & Maisak, 2010; Podlesskaya, 2010).

Syntactic Changes Accomplishable by Self-Repair

In English there are a variety of syntactic changes that can be accomplished by same-turn self-repair. Schegloff (1979) lists the most frequent set: A modifier can be inserted within a noun phrase (and other phrase types as well); a main clause can become a complement or subordinate clause, and vice versa; one interrogative type can be converted into another, as well as converting a declarative into an interrogative, and vice versa; and elements in a clause can be reordered. In addition, we have found that same-turn self-repair can change the prosody of a word or phrase (and, in tonal languages, the tone), as well as change the tense/aspect of a verb; replace a definite article with an indefinite one, and vice versa; convert a noun phrase into a prepositional phrase; and delete modifiers from various phrase types (Fox et al., in press). In some languages, such as Japanese and Finnish, it is possible to replace one bound morpheme with another (Hayashi, 1994; Karkkainen, Sorjonen, & Helasvuo, 2007).

Linguistic Resources and Self-Repair Crosslinguistically

Recent work has found that the morphosyntactic practices of a language shape certain facets of self-repair organization. Hayashi (1994) was the first to note the possibility that differences in word order, morphological structure, and frequency of non-overt arguments might produce somewhat different self-repair practices than those previously described for English. Subsequent research has confirmed Hayashi's initial hypotheses for a range of languages (Fox et al., 1996; Fincke, 1999; Wouk, 2005; Karkkainen et al., 2007; Fox et al., in press). Fox et al. (in press) have found that all of the languages examined (Bikol, English, Finnish, German, Hebrew, Indonesian, Japanese, Korean, Mandarin, Persian, and Sochiapam Chinantec) have a tendency to recycle single words, even English, although English shows the weakest tendency of all the languages. What is perhaps more interesting is that all of the languages, including English, display an extremely strong preference for recycling within a "processing word" (Bybee, personal communication), that is, elements which together form a highly entrenched unit. For example, if we look at the longer recyclings in English, of three or more words, we see things that are made up of words that occur together extremely frequently (*as soon as*, *if all else*, *do they go*, *that was really*, *I went in*, *you can get a*).

This fact suggests that recycling, including pre-framing of replacements, stays within the boundaries of highly entrenched units, and that languages vary in the size of such units, with English at one extreme with longer processing words (made up of several "words") and languages like Indonesian at the other extreme with shorter processing words (typically made up of a single word).

Hayashi (1994) and Fox et al. (1996) suggested that these findings regarding scope of recycling in Japanese and English might be revealing of turn-taking practices in both languages, with English turn beginnings being highly grammaticized and thus allowing for early turn projection (and recyclings back to turn beginning), and Japanese turn beginnings being less grammaticized and providing for weaker turn projections (and fewer recyclings back to turn beginning). Of course there are many other sources of projection in conversation—sequential location, action environment, prosody, and visual/body movements all play an important role in projecting how and when a turn-in-progress might come to completion. Nonetheless, to the extent that morphosyntax and the prosody of processing words play a role in turn projection, English appears to be quite unusual in providing substantial patterns of expectation from early on in the utterance.

Interactional Functions of Self-Repair

In her groundbreaking 1974 study, Gail Jefferson provided compelling evidence that same-turn self-repair is not just a reflection of cognitive difficulties in pursuing progressivity, but rather that important interactional work is being accomplished through "correction," and the apparent avoidance of "correction." She proposed that speakers orient to the Error Correction Format—Word1 + Hesitation + Word2—through which Word2 is heard as replacing, rather than continuing from, Word1 (see Jasperson, 1998, for an elaboration of this format). On the basis of an orientation to this format, speakers can produce utterances such as *the k- officer*, hearably producing the smallest bit of a word (in this case, voiceless velar closure), and know that their recipient will hear that to be a word in the same domain as *officer*, and replaceable by *officer*. Through this procedure the speaker can get the recipient to hear that *cop* has been replaced by *officer*, and thereby to indicate that the speaker is the kind of person who would normally say *cop*, but in deference to the kind of person the recipient is seen to be (in this case, a judge) has chosen to say *officer*. Through self-repair a speaker can thus accomplish important interactionally situated identity work.

Self-repair also accomplishes many other interactional functions. It can be used to delay a dispreferred response. It is a device for eliciting recipient gaze, if the recipient is not gazing at the speaker (Goodwin, 1979; 1981). Self-repairs occur regularly in topic changes (Schegloff, 1979; see also excerpt [2] above). One type of self-repair, namely recycling, is commonly used in the event of overlapping talk, to get the speaker "into the clear" (Schegloff, 1987; see also excerpt [1] above).

Conclusion

Although from a certain perspective, repair might seem to be a prototypical example of chaotic "performance" data, research has revealed a tremendous degree of organization at every level.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Ethnomethodology; Conversation Analysis and Interactional Linguistics; Conversation Analysis and Lingua Franca; Conversation Analysis Methodology in Second Language Studies; Conversation Analysis and Other-Initiated Repair; Conversation Analysis: Overview; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA

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Conversation Analysis and Therapy

DON BYSOUTH

Conversation analysis (CA) as applied to therapy represents an approach to the study of therapeutic interactions (i.e. interactions that involve professional therapists and clients engaged in a wide variety of therapeutic approaches in a diverse range of settings) that might best be regarded as representing a rigorous analytics of the sequentiality of therapeutic actions. Some of the earliest CA work explored interactions that occurred in therapeutic settings, with pioneering work done by Sacks on suicide prevention telephone hotlines and examinations of a group therapy session (Sacks, 1992). Subsequent early work examined more specifically therapeutic practices (Turner, 1972) and how therapists could produce (re)formulations of clients' troubles-talk into matters more amenable to psychological remedy (Davis, 1986). Following from these there has been growing and sustained consideration by CA scholars of the discursive practices involved in therapy settings, given that talk itself is the principal means by which therapists provide professional services to clients (with psychotherapy, after all, known as the "talking cure"). More recent CA work has examined a range of psychotherapeutic settings, contexts, and theoretical and practical approaches in order to elucidate the techniques employed by therapists and clients as practical skills and the products of their work as demonstrable achievements. In short, CA studies of therapy seek to uncover how therapy, that is, therapeutic talk and interaction, is produced as a possibly distinct and discrete mode of human conduct.

Where CA investigations of therapy differ from other linguistic and social scientific approaches to the study of therapy and therapeutic practice is in the importance CA accords to action, the sequential organization of action, and the level of detail required for any empirical examination. CA examines in fine detail the moment-to-moment interactions that take place in individual psychotherapy interactions.

CA investigations have examined a wide range of therapeutic approaches including cognitive behavioral, psychoanalytic, person centered, narrative, and integrative approaches, and have examined both individual and group-based interaction. While Sacks's early writings and lectures on therapeutic interactions do not represent a systematic approach to the study of therapy, they have nonetheless provided the inspiration for numerous key studies of therapy and counseling over the past several decades, and of how a range of practices across different therapeutic styles and settings may share common organizational features (Peräkylä, Antaki, Vehviläinen, & Leudar, 2008). Studies have focused on providing detailed examinations ranging from single psychotherapy sessions (e.g. Gale, 1991) to the study of group therapy settings (e.g. Arminen, 1998). Studies of a range of settings include examinations of materials from child counseling settings (e.g. Hutchby, 2002), psychiatric consultations (e.g. Bergmann, 1992), and investigations of psychotherapy intake interviews (e.g. Czyzewski, 1995). Important work has also been undertaken on how counselors can elicit talk from clients on extremely delicate matters, perhaps a hallmark of therapeutic interactions, for example in HIV or AIDS counseling and guidance (Peräkylä, 1995; Silverman, 1997).

Peräkylä et al. (2008) have proposed that CA studies of therapy can profitably examine psychotherapy interactions by distinguishing between initiatory (projecting for a response)

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and responsive actions. In addition they have suggested a focus on the institutional character of therapeutic interaction with examinations of particular actions (the components of a relevant initiatory or responsive sequence, such as a question–answer sequence), the local consequence of such actions, and the therapeutic function of such actions (e.g. how such actions relate to the psychotherapeutic objectives in a given interaction). Briefly, some actions that have been the focus of CA investigations include questioning, history taking, formulation, advice giving, advice receipt, client resistance, and a growing concern with the management of epistemics and emotion talk (e.g. the status of utterances relating to thoughts and affective states).

Actions that have received considerable attention in CA studies of psychotherapeutic interactions are those associated with doing "formulation." Formulations are a range of practices that involve one speaker proposing a version of what a prior speaker has said, and have been investigated in therapy settings to elucidate how alternate versions or recastings ("reformulations") of clients' talk are performed by therapists in order to achieve therapeutic aims (e.g. Davis, 1986; Antaki, Barnes, & Leudar, 2005). Such formulations may often involve "idiomatic" or proverbial expressions (i.e. talk that is of a decidedly everyday or ordinary form) when they feature in therapy (Antaki, 2007). In this regard, Antaki (2008) argues that such practices of formulation are a key resource in psychotherapy and can be observed in a range of undertakings, for example in how therapy sessions are managed, client history taking, when clients resist formulations provided by therapists of their problems, and when therapists provide psychotherapeutic interpretations. With regard to particular types of therapy, studies have examined the practices by which interpretations are produced in psychoanalytic therapy (e.g. Vehviläinen, 2003; Peräkylä, 2004; Forrester & Reason, 2006), and how core concepts in psychotherapy such as "empathy" can be understood as interactionally produced in different settings, for example in telephone counseling (Pudlinski, 2005) and face-to-face settings (Wynn & Wynn, 2006).

Recent areas of topical interest for CA studies of therapy include the study of nonverbal aspects of therapeutic interaction, for example in psychodynamic therapy enactment (e.g. Streeck, 2008), how thoughts and feelings are produced as displays in therapeutic interactions (e.g. Bysouth, 2009), and how the therapeutic orientation of particular therapies and therapists is made consequential in therapeutic interactions (e.g. Leudar, Sharrock, Truckle, Colombino, Hayes, & Booth, 2008).

CA scholars suggest that CA provides a way to clarify various aspects of psychotherapy that have remained essentially invisible to other research methodologies. For example, Peräkylä and Vehviläinen (2003) have proposed that professionals working with clients exercise a range of competencies drawing on particular therapeutic theories and techniques as "professional stocks of interactional knowledge" (SIKs), and that a CA orientation applied to the fine-grained details of therapeutic interactions might complement the more abstract or generic SIKs. Such approaches are notable in that they may be provided by CA scholars who are practicing psychotherapists (e.g. Peräkylä et al., 2008) and therapists with an interest in CA (e.g. Streeck, 2008). In this sense, ongoing reflections on CA as an analytic method applied to therapeutic practice by practitioners might provide linkages between the theoretic neutrality of CA with regard to various psychotherapeutic approaches and how CA findings may inform actual therapeutic practice.

CA studies are conducted with an eye toward how therapists and clients interact to produce something describable as therapy, by attention both to the generic features of social interaction that have been elucidated in previous CA studies, and to the micro-details of specific therapeutic interactions to illuminate the various practices that constitute a wide and diverse range of psychotherapy approaches. While CA of psychotherapy has become a major area of research interest, is important to note that findings concerning these investigations have until recently been fragmented in comparison to CA studies of other

institutional interactions, which appear to have made more substantial progress (e.g. studies of medical consultations, news interviewing, legal settings). The challenge for a more unified approach to CA studies of psychotherapy is how to integrate findings drawn from examinations of heterogeneous psychotherapeutic theories and practices in order that CA might provide understandings of generic phenomena while capturing the unique elements of particular psychotherapeutic undertakings.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Emotion and Cognition in Interaction; Conversation Analysis and Ethnomethodology; Conversation Analysis and Identity in Interaction; Conversation Analysis and Institutional Interaction; Conversation Analysis: Overview; Conversation Analysis and Recipient Behavior

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Conversation Analysis and Transcription and Data

JOHANNES WAGNER

Transcriptions and Data

Media subtitles provide transcriptions of the spoken word. Playscripts are transcriptions that provide instructions on how dramatic talk and play should be created. Courtroom transcripts are routine records of trials. Interviews of public figures are often transcribed for publication. In each of these applications, transcription transforms spoken language into written text. In many fields of research, transcription has developed into a highly sophisticated tool, because any research that deals with talk and interaction needs valid and detailed transcription. This is especially true for conversation analysis (CA) and ethnomethodological CA (EMCA), since transcripts are a core resource in the analytical practice.

It is paramount for CA to point out that transcriptions are not the object of the study. The object to be studied is social conduct in its ecology. Recordings are secondary to the real thing, but they are a necessity for systematic study. And transcriptions are, in turn, secondary to recordings. Transcriptions are a research tool to identify interesting phenomena in the data to be studied. A detailed transcription indicates both the words being produced and the ways in which they are produced. CA studies have demonstrated extensively (e.g. Jefferson, 1984, 2010; Gardner, 2002) that the "content" of talk cannot be isolated from the way talk is produced and heard.

Recordings and Data

Since interactions happen in real time, they are only "available" here and now. Recordings transform ephemeral interactions into permanent objects and allow researchers to study their details by watching and listening to them repeatedly. In Heritage's words:

> The use of recorded data is an essential corrective to the limitations of intuition and recollection. In enabling repeated and detailed examination of the events of interaction, the use of recordings extends the range and precision of the observations which can be made. It permits other researchers to have direct access to the data about which claims are being made, thus making analysis subject to detailed public scrutiny and helping to minimise the influence of personal preconceptions or analytical biases. Finally, it may be noted that because the data are available in "raw" form, they can be re-used in a variety of investigations and can be re-examined in the context of new findings. (Heritage, 1984, p. 238)

CA has not defined any specific *technical* standard for data collection. Depending on the state of the art of the recording technology, CA researchers try to get the best data that recording techniques are able to produce. But CA researchers may also work with pitifully low-quality recordings (e.g., Jefferson's transcription of the Watergate tapes at

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www.talkbank.org), if the available data happen to be in that form. For CA, the issue is not the technical but the *interactional* quality of data. Good data come from interactions that are minimally influenced and structured by the recording activity. They should be—as far as possible—recordings of consequential real-life social activities that the participants would have undertaken anyway.

It is frequently discussed whether recorded data are sufficient for an analysis or whether the researcher needs to collect ethnographic details and do field studies as part of the process of data collection (e.g., ten Have, 1999, p. 58). Many classical CA studies use data from accidental recordings for which not much is known about the people who were recorded. In other cases—especially in institutional interaction and workplace studies—data were recorded in the context of careful ethnographic fieldwork (Heath, 1997), as in the case of Whalen (1995), who worked as a call-taker and emergency dispatcher at police and fire departments when he studied the structure of emergency calls.

The issue is not so much the amount of ethnography done by the researcher as his or her membership knowledge of the situation and its ecology. For the analysis of mundane everyday interactions, specific ethnographic data may not be necessary, and the researcher can draw on his or her cultural membership, whereas the examination of institutional or workplace interactions might require that the researcher conduct extensive ethnographic studies or even undergo specific professional training.

Recording interactions in real life poses the question of ethical concerns (Taylor, 2001). Increasingly, universities and other research institutions register and control all research on human subjects, and new research projects need to be approved by committees designed to guarantee the ethical conduct of research with human subjects. Preferably, recorded participants will sign *informed consent* sheets that specify how the data can be used (e.g., in publications, at conferences) and the possibilities of data sharing. Examples of such consent forms are available at http://talkbank.org/share/irb.

Transcription

Any transcription implies a reduction of the rich ecology of interaction (e.g., talk, prosody, embodiment, and artifacts) to what can go onto a page of text. Transcribers need to make choices about what will be represented and what will be omitted, as well as about the form that the representations will take. However, what is omitted and what is represented in the transcription is not an unproblematic choice. It is informed by and has consequences for the analysis and the ultimate quality of the research. Good transcriptions avoid formulating generalizations and stereotypes about the participants (Jefferson, 1996).

Transcribers' choices are not objective. They are results of an interpretive process that has been discussed in many publications (Ochs, 1979; Edwards & Lampert, 1993; Green, Franqiz, & Dixon, 1997; Roberts, 1997; Bucholtz, 2000; Vigouroux, 2009). In ten Have's words, transcriptions are "'theory laden' renderings of certain aspects of what the tape has preserved of the original interaction" (ten Have, 1999, p. 77).

While core data for early CA were dyadic talk, often on the phone, many recent CA studies analyze video recordings of multiparty interactions. The stakes for transcribers become especially high when transcribing video recordings. These are not a "transparent window on social interaction" (Mondada, 2009, p. 68), but are themselves products of recording and editing practices that arise from the analyst's ways of seeing. In this way, just adding stills to the transcript does not produce analysis. As Goodwin (1994) has shown in detail, videos and the way they are presented frame the understanding of the analyzed segment. In his study of the court deliberations on the Rodney King trial, Goodwin demonstrates how the modification of visual material supports certain ways of seeing and understanding the overall interaction. In his work, Goodwin (e.g., 2000) marshals transcription, drawings,

and still pictures, and enhances them by markings on the picture, arrows, and comments. Still, watching the video itself is a central condition for any reader who wishes to fully understand what is going on.

When transcribing multiparty video recordings, the transcriber needs to break with the logocentric tradition of CA, according to which transcribed talk forms the core of the transcript and bodily activities are marked in relation to the talk. Transcribers need to find ways to indicate in the transcription the relevant and consequential verbal and bodily activities of all participants, and these possibly relevant activities multiply with the numbers of participants. Egbert (1997), for example, has shown that parties of four and more participants can split up into parallel conversations. Participants may respond to nonverbal activities and these activities should then be marked in the transcript.

Granularity and Readability

The tradition of CA transcription begins with Harvey Sacks. Gail Jefferson remembered an eye-opening experience in a sociology class taught by Sacks in 1965. "Sacks didn't simply *mention* the occurrence of laughter, he *showed* it: 'heh', 'ha', et cetera" (Jefferson, 2010, p. 1477). Jefferson developed in the following years the classical CA transcription conventions (Atkinson & Heritage, 1984; Jefferson, 1985, 2004) that were used for stand-alone transcriptions in the time of reel-to-reel tape recorders, when direct access to data was difficult. In Jefferson's unmatched transcriptions of audio recordings, she tried to note down whatever she heard. She used modified orthography (eye-dialect) and a large repertoire of notation symbols to indicate how the talk was produced. Excerpt (1) is, in Jefferson's own words, "horribly detailed" (2010, p. 1478).

```
(1)
                                                  ↓↓
01  CLA:  MAY'we oughta play acro:ss the rooghm fhhh'm [↑eahhch ↑uhh heh hé=
02  ZOE:                                               [h h h h h h h h h h h
03  CLA:  =↑·*u:h ↑*uh ↑·#uh ↑·*uh ↑*uh ↑·#uh ↑·*uh ↑·*uh ↑uh-·hhhe: ·hhhhh
04  ZOE:  uhh ↑huh ↑hu[h *mgh ↑huh-↑huh- ] ↑uh-↑uh [·k ·k
05  CLA:              [ ehhh heh huh he:h ] eh     [↑·*uh ↑·*uh=
06  CLA:  =[↑·*uh ↑·*uh [↑·*uh]
07  ZOE:  [·hhhhhhhh [ ohgh]: it wz fu:n [wun]it.]
08  CLA:             ↑↑                  [·hh]·hh] ih↓ye:a:h ((smiling))
```

Jefferson argues for this kind of maximally exhaustive transcription: "Why put all that stuff in? Well, as they say, because it's there. Of course, there's a whole lot of stuff 'there,' i.e. in the tapes, and it doesn't all show up in my transcripts; so it's because it's there, plus I think it's interesting" (2004, p. 15).

Noting features of talk in the transcription that are not necessarily relevant for the work in progress makes it possible for the researcher to mine data in connection with other research projects. Excerpt (1) is taken from Jefferson (2010), where she discussed participants' responses to guttural features in incoming talk as indications of laughter that might be responded to. Her core argument is built on three transcriptions—from 1976, 1993, and 2007. The paper clearly demonstrates that marking in the transcription whatever is noticed in the talk makes it possible to go back to a larger data corpus and find instances of the phenomenon in focus.

The need for explicitness in stand-alone transcripts has disappeared with the advent of digital sound and transcription editors, such as CLAN, ELAN, EXMaRALDA, and TRANSANA. Using these editors, transcriptions can be linked to audio and video recordings at any point and the data are then available for instant playback. Still, the explorative role of detailed transcription should not be underestimated.

Excerpt (1) demonstrates that the balance between readability and technical accuracy is a crucial issue for transcribers. Transcriptions written for machine analysis—such as the early child language transcriptions in CHILDES—may include all kinds of notations, while a transcription designed primarily for consumption by the human eye needs to refrain from overdoing such richness of coding detail. These various levels of granularity are notoriously difficult to define and even more difficult to control consistently over larger numbers of data.

Economy

Detailed transcriptions of audio recordings are very time- and cost-intensive. Even experienced transcribers need to calculate at least a ratio of 60:1 for high-quality recorded dyadic interactions, such that 1 minute of data takes at least 60 minutes of transcription time. When recordings involve multiparty interaction, this ratio goes still higher.

It is even more difficult to estimate the time that would be required for accurate transcription of video recordings. Although the availability of video can help speed up transcription of the spoken word, the additional transcription of gestures, gaze, proxemics, and placement can be extremely time-consuming. Presently, no system of annotation for these nonverbal streams has been developed which can match the precision of notation systems for the verbal stream. As a result, researchers typically improvise when annotating the embodied aspects of interaction.

Page Design

CA transcriptions generally follow a transcription design developed by Gail Jefferson. The transcription is laid out as a text page. In instances of overlap, parallel lines are established. Excerpt (2) is again taken from Jefferson (2010).

```
(2)
01  NIX:  rʰi(h)ight.h[·huh
02  PET:              [uh:: I jis(·)tuh cain't ↑say anything
03        ↓abghout ight. o[ne way]=
04  NIX:                  [thet's ]
05  NIX:  [r i g h t.]
06  PET:  [er  anow]ther I don' wunnuh c'nfirm in I don'
07        wunnuh den[y it.
08  NIX:            [·t
09  NIX:  so ther prab'ly write a story ghun thha:t. .[hunyuh]
10  PET:                                               [ u h, ]
11        hhhh I don't knao:w.
```

Another format was devised by Ehlich and Rehbein (1979). They developed a *partiture* or "musical score" format where one single tier is assigned to every speaker. For each speaker, the transcription allocates one potentially endless tier. The transcription contains as many tiers as there are speakers, plus any number of comment and coding tiers that can be added to each speaker tier. Only when they are printed on a page do partiture transcriptions break lines.

In partiture transcriptions, the transcriber needs to make fewer analytic choices when transcribing. In the Jefferson formats, decisions constantly have to be made when and where a line should be broken. Depending on the theory of the transcriber, new turns, new turn construction units or new tone/breath groups may be the criteria for breaking the line. This is not necessary in a partiture design.

The disadvantage of partiture editors is that they only show a small segment of the interaction on the screen. Obviously, a full partiture transcription of excerpt (1) cannot be displayed on a normal page. In a partiture layout, lines 3–5 of excerpt 2 would look as follows

```
(2a)
PET:  ighT. one way= er anowther I don' wunnuh . . . deny it
NIX:  thet's right.                                     ·t
```

A third layout has been suggested by Ochs (1979), who argued that the spatial arrangement of a transcription is not neutral but shows—or hides—relations between speakers. She suggests a format with a column for each speaker. However, the column format is rarely used today.

Transcription Conventions

Transcription conventions are a link between identifiable features of talk and a symbol used to note this feature. Many conventions have to do with issues of timing since timing is central for the understanding of talk. If features are well defined, transcription notations can be translated into each other. Most transcription systems attend to the following issues:

1. General features that are commonly noted:
   - speaker identification;
   - transcription, comment, or coding tiers;
   - use of normal orthography versus eye-dialect;
   - criteria for line breaks; and
   - overlaps with other speakers, often marked by square brackets [ ].
2. Features on the unit or construction level:
   - global intonation features—Jefferson used question mark for rising intonation, full stop for falling intonation, and comma for contours which are heard as unfinished speech;
   - syncopation;
   - latching;
   - pauses, which are, according to Jefferson, marked by time values between parentheses (0.5), while pauses below 0.2 seconds are marked by (.); and
   - often, faster and slower speed of passages.
3. Features on the word level:
   - local intonation features like pitch, stress on words, and loudness;
   - stress jumps;
   - inbreath ·hh and outbreath hhh; and
   - laughter noises in the word.
4. Voice quality:
   - smiley voice,
   - creaky voice, and
   - whispering.
5. Multimodal details:
   - beginning and extensions of participant's actions;
   - gaze toward other participants and away from them respectively; and
   - gesture preparation, climax, and retreat.

Most CA practitioners use some version of Jefferson's notation system. In Germany, many practitioners use Gesprächsanalytisches Transkriptionssystem (GAT) notations (Selting et al., 1998, 2009; Deppermann & Schütte, 2008), which are less precise than Jefferson's system with respect to measuring pauses, but more precise with respect to prosodic features, noted on a specific tier. GAT also notes accentuation, tone movement, tone jumps, and high and low register. Tone changes and loudness are marked by a small repertoire of musical expressions (forte, piano, etc.).

Specific Problems

A number of specific issues arose as CA spread from the description of American and British data to other languages. Many of these issues are difficult to solve elegantly, and different researchers improvise with individual solutions:

- *Different writing systems*: CA transcription works well with any alphabetic orthography while languages with logographic writing systems, such as Chinese and Japanese, create considerable problems (Haberland, 2010).
- *Multilingual data*, in which speakers shift between different languages: Transcribers need to decode whether and how to represent words in terms of linguistic source. They need to decide about pronunciation variance and accent. If transcribers choose eye-dialect to show an accent, the transcription will inevitably be criticized as stereotyping and comic-book-like (Wagner, 2009).
- *Translation issues*: Ten Have (1999, p. 93) mentions these as problems in the publication of transcriptions. While it is unacceptable—and rarely done today—only to present the translated excerpts, many publications add a word-by-word or morpheme-by-morpheme interlinear translation to each tier as well as an idiomatic translation.
- *Multimodal issues*: The transcription of gaze, gesture, posture, and space is presently unsolved.
- *Data preservation, data sharing, and protection levels*: Although CA has produced a large number of transcriptions in the last decades, only few of these are in the public domain.

Transcription is a key issue for the quality of CA research. Since many features of talk are difficult to catch objectively in a transcription (e.g., when is talk loud enough or fast enough with respect to surrounding talk to mark it as louder or faster?), transcribers' decisions will vary and include many compromises. As Chafe plainly writes: "In my own transcribing practice, I have compromised a variety of nonfalling contours with a single symbol, the comma" (1993, p. 35). The only solution is in the development of knowledge created by transcription-based studies. When researchers have a clearer picture of the many non-falling contours, they can deploy different resources to bring that knowledge to bear on new and revised transcriptions.

SEE ALSO: Conversation Analysis and Multimodality; Conversation Analysis: Overview

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Conversation Analysis and Turn Taking

CECILIA E. FORD

Introduction

Turn taking refers to a system through which interlocutors manage transfer of speakership, with each next turn in sequence displaying how that speaker has interpreted previous talk and the action so far. While it may seem self-evident that people wait for other persons to stop talking before beginning next turns, examination of recordings of everyday talk reveals that across languages pauses and overlaps are minimized. This close monitoring and management of timing means that pauses and overlaps, when they do occur, are not random but are instead orderly and socially meaningful.

In a groundbreaking article based on close analysis of audio-recorded conversations in English, Sacks, Schegloff, and Jefferson (1974) account for the split-second timing evident in turn transitions in ordinary talk. They propose that turns are composed of recognizable interactional units or "turn construction units" (TCUs). Given the recognizability of TCUs, participants can predict a turn's trajectory and possible point of completion during the course of the developing turn rather than waiting until its end. In other words, TCUs allow participants to predict or *project* possible completion points for ongoing turns *before* such points are reached and before gaps emerge between turns. Projection of possible completion supports a system in which next speakers overwhelmingly start precisely at the ends of previous turns. Crosslinguistic research supports the existence of such a turn-taking system in all groups studied, with variations in timing and average lengths of silences between turns (e.g. Stivers et al., 2009).

Turn taking in ordinary talk is not prescripted. Participants work out speakership on a turn-by-turn basis, as well as within the course of unfolding TCUs (Goodwin, 1979). As a current speaker produces a turn, there may be opportunities for others to join in with overlapping talk or to give nonverbal responses. As a speaker approaches a projectable point of turn completion, others prepare to begin next turns. Sacks et al. (1974) divide the practices for turn taking into two components: turn construction and turn allocation.

For turn construction, the resources of specific languages support projection of what it will take for a TCU-in-progress to come to completion. For English, the language with which Sacks et al. worked, with its subject–verb–object word order, lexicogrammatical structures present one obvious basis for projection of turn trajectories. Indeed, Sacks et al. list TCUs as grammatical units: "sentential, clausal, phrasal, and lexical constructions" (1974, p. 702). Thus, Sacks et al.'s original account for turn construction foregrounds syntax as a basis for projectability. However, they note that "some understanding of 'sound production'" is important for turn projection (p. 721; see also Ford & Thompson, 1996; Schegloff, 1996).

Turn allocation involves a set of rules for when speaker change occurs and how next speakers are selected. Each speaker is initially allotted one TCU per turn. In the course of a turn, the current speaker may select a next speaker. Recognizable courses of action across turns also contribute to speaker selection, as does the content of a turn, which may designate a particular person by reference to specific knowledge of a topic. Projectable points of possible completion constitute *transition-relevance places* (TRPs), with the term *relevance*

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underscoring the fact that speaker change *may* occur at such points, but it is not predetermined or prescribed. If no specific next speaker is selected, a next speaker may "self-select." If no next speaker starts, the current speaker may continue. In the latter case, the original speaker produces an extended turn.

Same-speaker continuation past a TRP is one route to an extended or *multi-unit* turn. Multi-unit turns may also be responsive to the sequential position of a turn in an unfolding sequence of action. For example, the response to a proposal may take more than one TCU to complete. In excerpt (1), B produces a multi-unit turn in response to V.

(1) [student data: 1984 UCLA]

```
01 V:     but we can call her, when you get here.
02 B:  →  yeah. well there might not be: (.) well
03        (.) it all depends on what's going on,
04        ( ) the weekend.
```

V has proposed an action for herself and B. In his response, B first minimally acknowledges the proposal but then goes on to resist outright agreement.

The sequential unfolding of a turn is monitored for how it moves toward constituting an action fitted to the particulars of an unfolding sequence of action (e.g. question and answer). Thus transition relevance is not determined by grammatical or phonetic practices alone. Action trajectories are essential components of turn projection. Stories and other larger, single-speaker agendas are set in motion through interactional negotiation at their beginnings. They are sustained through participant coordination until their ends are jointly accomplished. Conversation analytic (CA) and linguistic studies have investigated the properties and processes of such longer multi-unit turns (e.g., Jefferson, 1978; Goodwin, 1984; Houtkoop & Mazeland, 1985; Selting, 2000).

The turn-taking practices proposed by Sacks et al. (1974) are sensitive to the social specifics of improvised moments of interaction. Another source of variation relates to the number of participants in a conversation, which affects the mechanics of speaker selection and supports further minimization of gaps. Interactions with more than two speakers result in greater potential competition for speakership and a consequent further minimization of gaps between turns as the first starters gain the floor. Egbert (1997) details the orderly ways in which groups of four or more participants can lead to separation of interactional sequences or *schisming* (Sacks et al., 1974, p. 713).

With respect to research since Sacks et al.'s presentation of the turn-taking model, it is important to recognize that in the title of their 1974 article, they describe the mode as "a systematics" not "the" systematics for turn taking. Furthermore, Sacks et al. account for mundane, unscripted interaction rather than specialized speech-exchange systems such as meetings or ceremonies. A large area of CA research has involved demonstrating that adaptations of turn-taking rules are constitutive of institutional talk (Drew & Heritage, 1992). Another continuing area of development in turn-taking research addresses how turn trajectories are recognized in progress, an issue foundational to turn projection. Linguists and communications scholars have made significant contributions to an understanding of turn taking as involving multiple semiotic systems, well beyond what we traditionally think of as language. Charles Goodwin has long led the way in providing a view of multiple and simultaneous semiotic systems for turn construction and turn taking (e.g., 1979, 2000), demonstrating in numerous works that coordinated multimodal activity is both a goal of and a basis for turn taking. Scholarship since Sacks et al. (1974) has significantly expanded our understanding of lexicogrammar, embodied/visual actions, sound patterns, and the sequential structure of unfolding activities in relation to turn taking in face-to-face interaction.

Projection and the Interactional Significance of Overlaps and Delays

The precision timing of overlapping talk, be it affiliative or disaffiliative, is explained by reference to projection of turn and action trajectories as they unfold, that is, the projection of talk-yet-to-come based on talk-so-far. The social significance of the timing of turn beginnings depends on the specific placement of overlaps or pauses in relation to sequentially emergent turns and activities (Jefferson, 1984). CA research provides a typology of overlap timing (Jefferson, 1986) and an account for the orderly resolution of overlapping talk (Schegloff, 2000).

Evidence for projectability is found in common and predictable overlaps that occur as current speakers continue past points of possible completion. When a TCU moves toward projectable grammatical, action, and phonetic completion, simultaneous talk results from a next speaker starting while the current speaker continues. In excerpt (2), Helen's turn overlaps with Darin's turn continuation beyond a TRP:

(2)

```
01  DAR:  →  yeah. I mean even they live just li:ve with
02           giardia an' they li:ve with amoebas. [you know.
03  HEL:  →                                       [yeah.
```

Relying on multiple sources for projection, most obviously grammar and intonation, Helen artfully initiates her response in overlap with Darin's tag question. Rather than acting randomly or waiting for a post-turn pause, Helen positions her turn to coincide with a projectable TRP in Darin's emerging turn.

Collaborative completion also offers compelling evidence for projection of turn trajectories. In excerpt (3), Roger supplies a syntactically projectable main clause to complete the sentence Dan has begun. In doing this, Roger demonstrates his understanding of the content of Dan's talk, and he also shows his accurate parsing of the "syntax of the sentence-in-progress" (Lerner, 1991, p. 441):

(3) [Lerner (1991, p. 445); transcript simplified]

```
01  DAN:  when the group reconvenes in two weeks=
02  ROG:  =they're gonna issue strait jackets
```

Projection and the split-second timing of next-turn initiations support a semiotic system in which pauses and overlaps are social actions (or socially meaningful withholdings of action).

Overlaps may enact strong affiliation. In excerpt (4), during the sequential emergence of Dianne's turn, and clearly at a point of non-completion, Clacia times her response to overlap just as Dianne produces a degree adverbial followed by the projectable adjective:

(4) [Goodwin & Goodwin (1987); transcript simplified]

```
01  DIA:  Jeff made an asparagus pie it was
02        s: : so [: goo:d.
03  CLA:          [I love it.
```

In excerpt (4), projection and overlap result in the joint production of a positive evaluation, with the timing and the content of the words mutually elaborating one another.

Starting a turn in overlap may also reinforce a disaffiliative action. In excerpt (5), F begins speaking at a point when the action and content of C's turn are recognizable. F's early beginning is done based upon the projectable *non*-completion of C's turn so far, and in this way F underscores his disaffiliation with C's position:

(5) [Sacks et al. (1974); transcript simplified]

```
01  C:     we:ll I wrote what I thought was a-a
02         rea:son[able explanatio:n
03  F:  →         [I: think it was a very rude le:tter.
```

An emerging gap after possible turn completion can project an upcoming disafilliation:

(6)

```
01  BRA:     .hhh so can I wear blue jeans tonight,
02        →  (0.7)
03  MAU:  →  uh n↑o:↓(h):.(h)
```

A gap emerges in a place where a response is relevant, and Maureen's response is indeed characterized by further delay in the form of a hesitation marker (*uh*). When Maureen delivers *no*, she formulates it with attenuation: marked pitch movement, sound stretch, and breathiness. The 0.7 of a second delay before Maureen's response takes on meaning within a turn-taking system characterized by a norm of minimal gap and minimal overlap.

Significance in emerging silences is found in cases of additions to turns in pursuit of uptake. The same speaker regularly adds to a turn when an addressee is delayed in responding, that is, when a gap is emerging. In excerpt (7), Terry adds two grammatically and prosodically fitted increments beyond TRPs as she pursues a response from Maureen:

(7)

```
01  TER:  we had him,(.) this summer,
02        (1.5)
03  TER:  for f:i:ve weeks.
04        (0.8)
05  TER:  when we were out at the campground?
06  MAU:  oh really.
```

How do interactants project trajectories of turns such that they can so regularly start speaking just as current turns end, with minimal gap or overlap? Findings testify to the cognitive processing capacity of humans as we monitor and manage real-time and socially consequential interaction. The emergence of the linguistic subfield of interactional linguistics (e.g. Selting & Couper-Kuhlen, 2001) can be seen as one response to the notion that linguistic units are adaptations to interactional exigencies. Using CA methods, linguists have questioned traditional structural categories and worked to ground linguistic categories in empirical evidence from turn taking and turn construction, moving beyond a written language bias in understanding linguistic units (Linell, 2005).

Goodwin (1979) was early in drawing attention to the details of sound production and the interactional construction of turns, and John Local (1992) was among the earliest to combine CA with close analysis of phonetics. Intonation and rhythm have received considerable attention as well (e.g. Couper-Kuhlen, 1992; Ford & Thompson, 1996; Selting, 1996). Once underway, a turn constitutes an "interactively sustained domain of multimodal conduct" (Hayashi, 2005, p. 21). Along with Goodwin's continuing research, CA scholars

have come to treat visual bodily action as central to turn construction and turn taking (e.g. Hayashi, 2005; Iwasaki, 2009). Bodily actions may constitute pre-beginnings of turns (Streeck & Hartge, 1992; Schegloff, 1996), and they may also extend verbal actions (Ford, Thompson, & Drake, 2009).

Conclusion

The complexities of turn taking, including placement and composition of turns, constitute essential parts of meaning making in interaction. As each next turn displays the sense made of a prior action, it also provides the prior speaker with a means to inspect that next turn and offer repair. Turn taking, along with the orderliness of sequences of turns and systems of repair, must be understood as central to a socially achieved sense of intersubjectivity among interactants in real-time talk (Heritage, 1984, p. 254). For applied linguistics, attention to turn taking is proving a rich area of discovery and a valuable methodological tool. In incorporating turn taking into applied linguistic studies, however, researchers must understand that turn taking is accomplished on a moment-to-moment basis and is contingent upon situated and locally managed multimodal activity. The need for analytic sophistication with regard to turn taking and turn construction presents a formidable challenge for applied linguists intent on moving quickly to quantification in their research.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Dyads, Triads, and More; Conversation Analysis and Education; Conversation Analysis and Ethnomethodology; Conversation Analysis and Multimodality; Conversation Analysis: Overview; Conversation Analysis and Recipient Behavior; Conversation Analysis and Repair Organization: Overview

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Conversation Analysis: Overview

KRISTIAN MORTENSEN AND JOHANNES WAGNER

Conversation Analysis

Conversation analysis (CA) is a data-driven research methodology, which studies the organization of naturally occurring social interactions, as they occur in real time. The aim is to describe the *in situ* relevant and recognizable practices in talk and bodily conduct through which participants make sense in interaction. CA research has accumulated over the last forty years a large number of robust results about the social order in interaction.

In contrast to most other methodologies in applied linguistics, CA insists on a purely descriptive stance to the field's classical issues. CA avoids introducing external concepts (as, for example, knowledge, intentions, beliefs, mental processes, emotions, motivation) that cannot be grounded in the participants' observable behavior, that is, cannot be shown to be something the participants orient to in the data. In other words, CA follows a strictly *emic* approach in taking participants' publically inspectable perspective in describing social interaction.

CA's insistence on describing what people do *in situ*, in real time, is not based in behaviorist psychology, but follows the ethnomethodological distinction between *topics* and *resources*. Topics are categories such as power, gender and sexuality (see CONVERSATION ANALYSIS AND GENDER AND SEXUALITY), and learning—resources are the practices and behaviors which participants use to make these topics intelligible for each other. Resources in this sense are the interactive procedures which the participants recognize as somebody "doing power," or "doing gender," and so on. In the study of cognition and emotion (see CONVERSATION ANALYSIS AND EMOTION AND COGNITION IN INTERACTION), CA consequently does not study what might be going on in the mind. Instead, focus lies on how participants by the way they speak make it obvious for their coparticipants that they are "doing thinking," or that they become angry or excited, or what epistemic stance they take.

The History and Origin of CA

Conversation analysis developed within sociology in the 1960s, but has later extended into neighboring disciplines such as applied linguistics, anthropology, (social) psychology, and linguistics, and has researched practices in a large range of professions such as health, technology, media, and design. With its roots in ethnomethodology (EM) (see CONVERSATION ANALYSIS AND ETHNOMETHODOLOGY), CA aims at uncovering the taken-for-granted and unnoticed knowledge on the basis of which members interact, and in particular, although not exclusively, members' tacit knowledge about the organization of talk (see CONVERSATION ANALYSIS AND TURN TAKING and CONVERSATION ANALYSIS AND RECIPIENT BEHAVIOR). This constitutes a radical break away from the structural focus that dominated the human and social sciences in the 1950s and 1960s. According to this approach, the individual was subject to externally given (linguistic and societal) structures that defined, or even determined, human behavior. In linguistics, Chomsky (e.g., 1957) distinguished "competence" and "performance," regarding the latter too messy to be studied in detail.

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In sociology, Parsons (e.g., 1951) explained human behavior as underlying larger societal and cultural values. Opposing this, Goffman (e.g., 1964), and later Sacks (e.g., 1967), developed social interaction into a scientific object in its own right. Garfinkel (1967) turned towards the practices that members use to make sense of and re-create their social world. CA can nevertheless be described as normative in nature, but this normativity is descriptive rather than *pre*scriptive. EM and CA describe the practices which participants in interactions produce and recognize as culturally recognizable ways of "doing" social actions. Through the ways in which people interact, they orient towards social norms, for example, a *greeting* is followed by another *greeting* and *questions* are followed by *answers*, to mention some obvious examples. It is in and through behavior that social norms are enacted and upheld. In other words, people are held accountable for their actions and the absence of actions where those are normatively expected (e.g., avoiding to answer questions).

The foundations of conversation analysis proper were laid in two seminal papers by Harvey Sacks, Emanuel Schegloff, and Gail Jefferson. In the first paper from 1974, they describe the turn-taking structure (i.e., the management of speakership) as a simple but very powerful rule apparatus, through which participants orderly manage turn taking with "no gap and no overlap" (Sacks, Schegloff, & Jefferson, 1974, p. 700). Launching a new turn-at-talk is therefore not just about "speaking," but essentially about "listening" to the ongoing talk in order to find a relevant moment to come in. To this end, a potential next speaker orients to what the ongoing turn-at-talk *projects* and when it may come to a possible completion. This projection is done grammatically, prosodically, and pragmatically. In this way, listening to the ongoing talk is a precondition for being able to participate verbally in the interaction. The second paper, published in 1977 deals with instances where intersubjectivity is under threat. This may be trouble in speaking, hearing, or understanding which needs to be repaired. "Trouble" does not refer to an externally given mistake, but what the participants treat as problematic (Schegloff, Jefferson, & Sacks, 1977). The paper outlines who ("self" or "other") initiates and completes the repair, respectively, and finds in the structural organization of repair a preference for self-initiations versus other-initiations and a preference for self-repair (see CONVERSATION ANALYSIS AND SELF-REPAIR) versus other-repair (see CONVERSATION ANALYSIS AND OTHER-INITIATED REPAIR).

Turn taking (see CONVERSATION ANALYSIS AND TURN TAKING) and repair organization (see CONVERSATION ANALYSIS AND REPAIR ORGANIZATION: OVERVIEW) have been two major fields in CA research over the last decades. In a range of papers, Jefferson (e.g., 1984) has documented the fine-grained organization of turn transition. The different environments—from early turn beginnings to heavily delayed responses—contribute to the participants' sense making. Delayed responses have an especially prominent status in CA research. "Preference organization" refers to a technical preference that projected next actions are supposed to be produced without delay. It has been documented extensively in CA that the precise timing of activities is a major resource for sense making. Participants understand or orient to a pause even as short as 0.2 seconds as a delay in the progress of interaction and as such as an indication of trouble. In general, recipient behavior (see CONVERSATION ANALYSIS AND RECIPIENT BEHAVIOR) and its subtle distinctions is one of the more technically challenging, but very significant topics in CA. Recently, research on responsive behavior has focused on affiliation and alignment (see CONVERSATION ANALYSIS AND AFFILIATION AND ALIGNMENT), illustrating how social relations emerge and are made relevant through the ways in which next contributions to a conversation are formed.

Another major area in CA, though it has been less studied than CA's structural side, is membership categorization analysis (MCA) (see CONVERSATION ANALYSIS AND MEMBERSHIP CATEGORIES). MCA focuses on how categories are used in interaction. In interaction speakers design their talk for specific coparticipant(s) by the ways in which they refer to each other

(e.g., "dad," "professor," or "coach"). In using one classification or another, they orient to the coparticipant as a *member* of a specific social group, for which certain subcategories and actions are relevant and others are not. And likewise, the classification may be doing social work that is relevant to the ongoing interactional business.

Much of the early work in CA has used telephone interactions. These are usually held between two speakers who have no visual access to each other and where everything done is in and through talk. The initial analytic focus on the dyad (i.e., interaction between two participants) turned out to be highly useful since dyads are the most significant configurations of participants. In later research, the role of the number of involved participants for the structure of the talk has been highlighted. The number of participant in itself plays a crucial role for turn-taking constraints and creates different patterns for participation (CONVERSATION ANALYSIS AND DYADS, TRIADS, AND MORE).

From studying phone conversation, CA researchers quickly moved to the study of face-to-face interactions. While very few of the early CA data were video-recorded conversations, research on video data of very different participation frameworks has in recent years increased significantly. Video data allow the analysis of multimodality (see CONVERSATION ANALYSIS AND MULTIMODALITY) in interaction and this has become one of the most promising fields in CA.

Sense Making

For CA, talk-in-interaction is the primordial site of social life, and the natural environment of language. The workings of social relations from governments and educational systems to friendships and intimate relationship are co-constructed through interaction or more precisely *talk-and-bodies-in-interaction*. It is, in part, through social interaction that schooling is done, morality is made visible, and financial trades are accomplished. And it is through social interaction that members of society claim and negotiate their identities (see CONVERSATION ANALYSIS AND IDENTITY IN INTERACTION) (e.g., democrat, police officer, gay) and where participants recognize when someone is behaving "abnormally"—whether this "behavior" can be clinically categorized (e.g., Tourette syndrome, aphasia, non-native speaker) or not (e.g., weird, sociopath). In sum, social interaction, in all its varieties, is where participants create and engage in the social world they inhabit.

Any action is sequentially embedded in a local ecology of activities. Any action is based on earlier actions and indicates the way in which an earlier action has been understood. Any action paves the way for further actions, which will be understood on the grounds of what already has happened. CA and EM refer to this double relation of being shaped by context and shaping context as "indexicality" and "reflexivity." "Indexicality" refers to the sense which is brought into an interaction by anything sequentially previous, "reflexivity" refers to how a new action makes sense of what has been brought in and opens up for new understanding. A first greeting by participant A, for example, responds to meeting and recognizing participant B. B's second greeting recognizes the greeting process that can open for further activities.

Participants talk a particular context into being in and through their interaction. In this way, the participants themselves negotiate when certain (institutional) identities are relevant and when not. This is a members' problem that participants construct interactionally through the moment-by-moment progression of the interaction. On a local level (i.e., what participants do here and now), each turn-at-talk displays the speaker's understanding of the turns-so-far. Each turn, then, is shaped by the previous turn(s), and is itself a context for the next turn. Turns-at-talk are at the same time context-shaped and context-renewing (Heritage, 1984).

Data and Method

The technological breakthrough of (portable) tape recorders, which could record and replay any conversation was a precondition for the very detailed work about talk which shaped CA's scientific credibility. Before tape recorders were available, talk could be experienced and observed but could not be made the object of detailed scientific scrutiny. Nor could it be shared and discussed with research colleagues.

CA researchers collect audio or video recordings of "naturally occurring" interactions. This category should not be confused with "authenticity" or "naturalness" of the data. "Naturally occurring" requires that data are part of the participants' consequential social action, be it in mundane everyday or institutional environments. That is, that the interaction would have taken place even in the absence of the researcher/recording device.

Conversation analysis takes ordinary "mundane" conversation to be the most basic site of social relations and ordinary conversation has served as the empirical database for the larger bulk of CA findings. However, researchers in a variety of professions and "applied" disciplines have extended the database to include various (institutional) settings such as interviews (see CONVERSATION ANALYSIS AND INTERVIEW STUDIES) interaction in medical settings, classroom interaction (see CONVERSATION ANALYSIS AND CLASSROOM INTERACTION) and therapy sessions (see CONVERSATION ANALYSIS AND THERAPY). The organization and social structure of institutional interaction (see CONVERSATION ANALYSIS AND INSTITUTIONAL INTERACTION) are seen as variations vis-à-vis ordinary conversation, for example, in terms of how turn taking is accomplished. This does not (necessarily) mean that the phenomena described are exclusively used in these institutional settings. Rather, these studies document how participants engage in institutional interaction, rely on, and adapt practices from ordinary social life to accomplish institutional goals. CA methodology nowadays provides detailed analyses of the interactions in various institutional settings, which can inform and eventually change professional practices.

Gail Jefferson developed a notation system for detailed transcription (see CONVERSATION ANALYSIS AND TRANSCRIPTION AND DATA) of the collected data. Her system notates features of the interaction, for example, pauses, sublexical words, prosody (see CONVERSATION ANALYSIS AND PROSODY) (e.g., volume, stress, rhythm, pause, etc.), which displays details of talk that are lost in standard orthography. One of the many phenomena Jefferson opened up through her transcriptions of sound as emerging in real time is laughter (see CONVERSATION ANALYSIS AND LAUGHTER). By annotating laughter as it appears, that is, as *hha hha* and *hhe hhe*, the interactional architecture of laughter suddenly became accessible as well as the social work it might be doing. Jefferson's very detailed transcriptions make the wealth of subtle features of talk available for analysis. CA research has shown that these subtle features are demonstrably relevant for the participants themselves and for the ways they make sense of each other.

In CA research practice, data are not necessarily collected with specific research hypotheses in mind. Instead, CA researchers take whatever naturally occurring interactions they are allowed to record, transcribe the data and observe what interesting phenomena emerge out of an unfocused analysis, that is, out of what in CA terms is referred to as "unmotivated looking." Traditionally, this is done in data sessions where CA researchers share observations of the same data fragment. These observations often lead to more detailed studies of the candidate phenomenon to understand the features of productions and its local ecology in talk.

When an interesting candidate phenomenon has been identified, other data are usually mined to find more instances of it. Depending on the frequency of the phenomenon, a collection of instances can cover several hundred cases or just a handful. Any description should explain all the instances found, however, those that do not fit the analysis, that is,

"deviant cases," are often serious challenges for the research process. Explaining deviant cases can make an analysis more robust since the participants may be seen to orient to the phenomenon *as* deviant. But deviant cases may as well destroy a first analysis and lead the researcher to reanalyze the data.

Dissemination of CA

Since Sacks et al.'s seminal papers, CA has made substantial inroads into a wide range of different scientific fields and has formed research communities in a variety of countries, mainly in the United States, Europe, and parts of Asia. CA emerged in the social science departments of California under the influence of especially Erving Goffman and Harold Garfinkel. Researchers in the United Kingdom and Germany brought CA to Europe where CA initially was practiced in social sciences. Apart from sociology and communication studies, CA researchers are now employed in social sciences, humanities, education, health studies, and technology.

In humanities, linguistics is possibly the field where the largest numbers of CA researchers have been employed outside sociology. In CA, language is described as the bedrock of interaction and this has attracted the interest of language specialists. Interactional linguistics (see CONVERSATION ANALYSIS AND INTERACTIONAL LINGUISTICS) builds on a history of linguistics and pragmatics where CA adds resources to study the interactional role of linguistic elements in much greater detail than previously possible. In the study of language disorders (see CONVERSATION ANALYSIS AND COMMUNICATION DISORDERS) CA-informed research has opened a discussion of social aspects of language disorders. Other fields informed by CA are education (see CONVERSATION ANALYSIS AND EDUCATION) and therapy (see CONVERSATION ANALYSIS AND THERAPY).

In technology, workplace studies (Suchman, 1987; Luff, Hindmarsh, & Heath, 2000) has involved CA in the study of user conduct in complex technological settings—such as control centers, collaborative work such as cockpit communication (see CONVERSATION ANALYSIS AND COCKPIT COMMUNICATION), and medical work—and made CA a relevant research method for user-centered design (see CONVERSATION ANALYSIS AND DESIGN). Technomethodology (Button & Dourish, 1996; Crabtree, 2004) has studied the ways in which humans make sense of technology.

CA provides a method to study the activities in professions and specialized environments including meetings (see CONVERSATION ANALYSIS AND MEETINGS), standardized interviews (see CONVERSATION ANALYSIS AND INTERACTION IN STANDARDIZED SURVEY INTERVIEWS), and interview studies (see CONVERSATION ANALYSIS AND INTERVIEW STUDIES). One of the early areas in CA is the study of emergency calls (see CONVERSATION ANALYSIS AND EMERGENCY CALLS). In those calls, time pressure to get help clashes with the interactional practices of ordinary phone calls, sometimes with disastrous results.

The present encyclopedia presents an (admittedly, incomplete) overview of various fields in which CA has been applied as a methodological approach and has provided professional feedback to "practitioners." Extending the traditional focus of applied linguistics, that is, first and second language acquisition, CA has entered, to varying degrees, a range of disciplines some of which are presented in this encyclopedia. For other overviews see Drew and Heritage (1993), Richards and Seedhouse (2005) and Arminen (2005). CA has also provided more or less specific guidelines to "practitioners" (Antaki, 2011).

In this encyclopedia, recent CA research in language learning has special relevance. Child language acquisition (see CONVERSATION ANALYSIS AND CHILD LANGUAGE ACQUISITION), which has a long history of ethnographic-informed research, has fostered a number of CA contributions. In second language acquisition (see CONVERSATION ANALYSIS AND SECOND

LANGUAGE ACQUISITION: CA-SLA) research, the dominating paradigm of experimental psycholinguistics has for two decades attempted to integrate interaction into a psycholinguistic model (Long, 1981, 1983; Gass & Varonis, 1985). CA scholars have challenged the distinction between competence and second language use (Firth & Wagner, 1997, 2007) and over the last 15 years have produced a large number of studies on learning in second language interactions. CA studies in SLA have used data from classroom interaction (see CONVERSATION ANALYSIS AND CLASSROOM INTERACTION), from lingua franca (see CONVERSATION ANALYSIS AND LINGUA FRANCA), and from everyday L2 encounters (Gardner & Wagner, 2004; Kurhila, 2006).

A CA take on L2 learning needs to be part of a more general understanding of how learning in interaction (see CONVERSATION ANALYSIS AND LEARNING IN INTERACTION) is organized. Returning to the earlier mentioned paramount distinction between topic and resource, CA is not interested in learning or language acquisition (see CONVERSATION ANALYSIS AND LANGUAGE ACQUISITION) as a topic (or as a result), but in the resources that participants demonstrably deploy for making sense of a certain activity *as* language learning. A number of publications have recently explored CONVERSATION ANALYSIS METHODOLOGY IN SECOND LANGUAGE STUDIES, especially longitudinal studies (e.g., Hellermann, 2008; Nguyen & Kasper, 2009; Hall, Hellermann, & Pekarek Doehler, 2011; Pallotti & Wagner, 2011).

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Conversation Analysis Methodology in Second Language Studies

CATHERINE E. BROUWER

Introduction

The use of the concepts and methodology of conversation analysis (CA) for second language (L2) studies has been argued widely (Firth & Wagner, 1997, 2007; Markee, 2000; Kasper, 2006; Kasper & Wagner, 2011). However, when CA and second language acquisition (SLA) are brought together, compromises need to be made and the methodology needs to be made explicit. Hellermann (2006) describes his study as a *microethnographic longitudinal case study, using methods from CA*. Such carefully deployed terminology indicates that there are issues at stake in the ways in which CA is applied to L2 studies.

Types of Studies

Below I describe five different approaches to the analysis of L2 materials. These approaches are categorized on the basis of data type, research objective, and the analytical procedures employed.

Participants' Interactional Methods in L2 Everyday Talk

Interactional methods (or practices) are the systematic ways in which participants organize their interactional conduct. The description of such practices is the prime research objective of a number of CA-SLA studies which build on the results of prior CA studies of "monolingual" conversations and compare them with interactional practices in L2 data. A number of studies investigate, for instance, different types of repair. For example, Brouwer, Rasmussen, and Wagner (2004) describe embedded repair in L2 talk on the basis of Jefferson (1983), and demonstrate how the occurrence of this practice reveals orientations to the identities of one or several parties as L2 speakers. Another group of studies describes practices that have not been documented previously in CA. Theodórsdóttir (2011) presents cases where an L2 user insists on completing a hesitantly produced utterance although her conversation partner, during the production of the turn and before she has finished, already indicates that she has understood. Theodórsdóttir shows how the L2 speaker thereby orients to her identity as an L2 learner. The contribution of this type of work is that it documents members' methods and shows how issues of participants' identities are paramount in the data.

Interactional Methods in Interactions-for-Learning

Interactions-for-learning are organized with the objective of L2 learning, and include classrooms, proficiency interviews, and the like. A number of studies investigate how the activity at hand (the classroom) is constituted through specific interactional methods. Mortensen (2009) describes how students in a classroom make themselves available as

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next speakers when the teacher asks a question. This line of research may discuss L2 talk in relation to ordinary conversation and show its institutional characteristics. In other words, research on interactional methods in interactions-for-learning aims at showing how, for example, an L2 classroom, as a site for L2 learning, is organized in terms of interaction. The line between institutional and conversational talk, however, is not drawn beforehand, but rather negotiated in or organized by the talk itself; thus interactions that were planned as casual conversations become institutional. Mori (2002) demonstrates how a small group activity, planned as a casual interaction between native speakers and L2 learners, actually resembles a formal interview. Research on interactions-for-learning points toward the ways in which participants stage their interactions as environments which facilitate L2 learning.

"Re-Specifying" SLA Concepts on the Basis of (L2) Conversations

Firth and Wagner (1997) have argued that applying CA to SLA essentially involves re-specification of learning and cognition. Some studies follow up on this call by addressing concepts in mainstream SLA research and investigating interactional practices which in SLA are considered of central importance. An example of such an interactional practice, "recast," is treated by Hauser (2005). A recast is an altered repetition of learner-produced utterances by a teacher—a type of repair. This type of repair is said to play a central role in L2 learning (Lyster, 1998; Mackey & Philp, 1998) since it provides L2 learners with corrected versions of what they themselves have said—in other words, recasts do not negotiate meaning, but only form. Hauser discusses how recasts, contrary to the claims and coding practices in SLA, do not necessarily maintain the "meaning" of the learners' initial utterance. Therefore, recasts may have a different function in interaction than what is claimed in SLA. Hauser thus provides a strong empirical argument in relation to "mainstream" SLA methodological practices.

Longitudinal Studies

In first language (L1) and L2 learning, longitudinal studies are traditionally carried out in order to track how language learners perform over longer stretches of time. A speaker's performance at occasion A is contrasted with his or her performance at some later occasion B in order to ascertain what has been learned. Such studies do not describe learning "as it happens" in interaction but rather point at how the talk *has* changed. The analysis of interactional longitudinal data can be carried out with CA methodology. The overall research design seems to be inspired by a tradition in L1 and language acquisition research, while the analytic approach is CA.

Analysis of Language-Teaching Materials

Language-teaching materials consist most often of textbooks in which model dialogues are presented in written form. Considering the significance of these materials for the process of language learning, they provide interesting material for interaction analyses. Wong (2001) analyzes telephone openings in a number of English textbooks in order to discuss how they relate to telephone openings in "real life" as extensively described in CA. The issue for this type of work is thus how practices that are to be learned are presented in teaching materials. Mori (2005) takes a specific word (*dooshite* 'why') as a point of departure and scrutinizes dialogues and exercises in three textbooks in order to uncover the specifics of the dialogues in which this word is presented to the learner. Mori argues that *dooshite* seemed to be included in order to teach specific grammatical forms, rather than functions.

CA Methodological and Procedural Positions in L2 Studies

CA-SLA publications regularly discuss central methodological issues for CA and whether and how they contrast with mainstream methodologies in SLA. The most prominent of these issues are discussed below.

Naturally Occurring Data

CA studies generally use naturally occurring data, or data from any type of interaction that would have taken place regardless of a researcher recording it. Naturally occurring data can come from mundane everyday interaction, or they can be recorded in institutional (e.g., classrooms) or even carefully arranged encounters (e.g., tests or [survey] interviews). The critical issue is that naturally occurring interactions are not staged for the benefit of the researcher but follow their own agenda. CA-SLA has pointed at the quality of the data for analysis since SLA studies often use elicited data for making claims about interaction (Firth & Wagner, 1997). It is, however, not always clear whether some data may be seen as "instances of interaction for language-learning purposes" or "planned interaction for the sake of data collection." For example, researchers sometimes ask students to tape their interactions as a part of their language class. In such cases, the status of the data as naturally occurring is questionable, and this should be addressed in the study.

Naturally occurring L2 data may be hard to collect. Some language learners are reluctant to tape themselves or to be taped in situations in which they feel less competent. This may be a reason for researchers just to audio record face-to-face encounters (Theodórsdóttir, 2011), or to turn to institutional data rather than everyday conversations, or even to rely on written materials such as textbooks.

Describing Interactional Methods or Practices

The research objective of CA is to describe members' interactional methods. This contrasts with the tendency in SLA to focus on language issues. As Firth (1996) states, CA-SLA studies need to address what the interactants are *doing* to a higher degree than what they are *saying*. If one is to follow basic CA principles of taking all the details of the talk into account, one may consider details that the participants seemingly ignore, as Firth shows.

Longitudinal studies that investigate the development of L2 learners' interactional competence may follow Wootton's CA study of how a child's performance of requests changes over several years, thus focusing on the development of one interactional practice (Wootton, 1997). Such studies need to make the case that the tracked participant's method is the *same* method over time, even though the L2 learner's performance has *changed*. As Sahlström (2009) suggests, such a claim may best be made by building the analysis on findings in L1 CA studies.

An alternative is represented by Hellermann (2006), who describes changing participation in relation to a sequential position in the interaction, for example after a prompt from a teacher to start a task. The participation may change either by the learner performing different actions over time, or by the learner, as in the Wootton example, performing the same action but in different ways.

Finally, describing how an *individual's* interactional competence changes over time on the basis of the description of *interactional* practices, which according to classical CA are seen as shaped by all participants who take part in them, may be a contradiction in itself. Following Lave and Wenger (1991), who conceptualize learning or development as changing participation, may solve this problem, but moves the enterprise further away from established CA research.

Unmotivated Looking

The paramount discovery procedure in CA is unmotivated looking. This means that the analyst refrains from imposing categories on the data that are not demonstrably relevant for the participants. In other words, CA starts from making observations about the data, rather than using pre-formulated notions about phenomena that are thought to be in the data. This means that the researcher does not have to search for the appropriate data to fit a research problem. In Sacks's own words:

> Recurrently, what stands as a solution to some problem emerges from unmotivated examination of some piece of data, where, had we started out with a specific interest in the problem, it would not have been supposed in the first instance that this piece of data was a resource with which to consider, and come up with a solution for, that particular problem. (1994, p. 27)

Several researchers in CA-SLA have practiced this, and have discovered practices that have not been described in either CA or L2 studies. An overall interest in issues having to do with language learning or participants' identities as L2 users does not necessarily clash with this research strategy, as long as it is not too specific.

As both Kasper (2006) and Schegloff, Koshik, Jacoby, and Olsher (2002) have suggested, however, CA-SLA studies may benefit from applying outcomes from established CA to L2 materials. For example, a researcher may look at how well-described practices in CA, such as greetings, telephone openings and closings, invitations, or repair sequences, are accomplished by L2 users. For some types of research, "unmotivated looking" is not an option. It is, for example, hardly fruitful to scrutinize textbooks for how they present practices without having thorough analyses of such practices available beforehand. Talmy (2009, p. 905) provides a lengthy discussion of an example of how motivated looking at data from an English as a second language (ESL) classroom may reveal what is problematic about the classroom.

Membership Knowledge

Conversation analysts employ "membership knowledge"—knowledge about the everyday practices of the people they study—in their analysis. One could ask how a researcher can use membership knowledge when the analyst is not, necessarily, a "member" of the same community of language users as the informants, for example when a native speaker of English studies Chinese learners of English. Moerman (1996) suggests obtaining membership knowledge by ethnographic observation, and especially in the case of classroom L2 studies, this is a workable option employed by several researchers, such as Mortensen (2009).

Researchers mostly analyze L2 materials in their own L1, for example Mori (2002) studying Japanese as an L2. One reason for examining materials in the analyst's L1 may be that, in Moerman's (1996) words, "Conversation analysis of foreign language materials is difficult" (p. 149). However, analyzing L2 materials may be additionally problematic. As Firth (1996, p. 239) notes, the interactants in the data as well as the researcher do not share a "developed and stable linguistic and interactional competence." This may be more problematic in some cases than others, depending on the command the researcher has of the informants' L1 and additional languages.

Transparency

In contrast to many quantitative studies of SLA which present language data transformed into numbers, CA-SLA claims a higher degree of transparency of the research process by providing transcripts of analyzed sequences and inviting the reader to scrutinize these.

This requires the transcript to be as precise as possible yet understandable for the reader. These requirements may be conflicting. Jefferson (1996) demonstrates some of the challenges of transcribing data produced by L2 speakers. Many L2 speakers have non-native accents, but most CA-SLA researchers do not directly represent these accents in their published transcripts unless they are considered relevant for the analysis. This reduces the opportunity for the reader to examine the analysis. A solution for this has can be seen in the work of Hellermann, who provides the reader with the possibility of watching video clips of the data. However, such a solution might not be possible due to arrangements regarding confidentiality and anonymity.

SEE ALSO: Conversation Analysis and Classroom Interaction; Conversation Analysis and Education; Conversation Analysis and Ethnomethodology; Conversation Analysis and Institutional Interaction; Conversation Analysis and Interview Studies; Conversation Analysis and Language Acquisition; Conversation Analysis and Learning in Interaction; Conversation Analysis and Lingua Franca; Conversation Analysis and Membership Categories; Conversation Analysis: Overview; Conversation Analysis and Repair Organization: Overview; Conversation Analysis and Second Language Acquisition: CA-SLA; Conversation Analysis and Transcription and Data

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Conversational Grammar

CHRISTOPH RÜHLEMANN

Introduction

Computerized corpora have facilitated descriptions of the grammar of conversation in unprecedented detail in recent decades. Beside numerous research articles focusing on individual features, two corpus-based grammars have advanced our knowledge of conversational grammar considerably, the *Longman Grammar of Spoken and Written English* (*LGSWE*, Biber, Johansson, Leech, Conrad, & Finegan, 1999) and the *Cambridge Grammar of English* (Carter & McCarthy, 2006). Particularly revealing are the analyses in the large entry in the *LGSWE* entitled "The grammar of conversation" (Biber et al., 1999, pp. 1038–125). Given the growing awareness of the relative differentness of conversational grammar from the grammar of Standard English, some scholars argue "the independence of spoken grammar" (McCarthy, 2001, p. 128) while others assert "the underlying *sameness* of spoken and written grammar" (Leech, 2000, p. 687).

The aim of this entry is to give a brief account of conversational grammar and to outline how its forms can be understood functionally. In so doing I will draw on the situational framework developed in Rühlemann (2007). The last section will present a case study on situational ellipsis. All examples used for illustration are taken from the conversational subcorpus of the British National Corpus (BNC, 2001), a general corpus of roughly 100 million words of British English collected in the 1990s (see Hoffmann, Evert, Smith, Lee, & Berglund Prytz, 2008).

What Is Conversational Grammar?

Following the authors of the *LGSWE*, I will use the term "conversational grammar" as referring to "grammatical features that are especially characteristic of conversational language, as compared with other registers" (Biber et al., 1999, p. 1038). That is, for a feature to be part of conversational grammar it is required that it either occur virtually only in conversation or be characteristically more frequent in conversation than in other major registers. A feature that is virtually nonexistent in writing but widespread in casual talk is *I says*, a form used in reports of conversations with multiple turns (see Rühlemann, 2007); a related phenomenon is quotative *I goes*, (see Rühlemann, 2008). Consider:

(1) Cos **he says**, **Steve says** to me, is he in? **I says**, no. **He says**, he's not in? **I says**, no. And a bit later on **I says** to him . . . I think he's at Cadets. **He says**, he's not, he's in. **I says**, eh? **He says**, he's in. And he's just walked past me. **I says**, well you could of told me he were in. **He says**, he's gone and done summat.

An example of an item which does occur in writing but is, in relative terms, much more common and more "key" in conversation is the first-person pronoun *I*: it is by far the most frequent word and the second most significant key word in the conversational subcorpus of the BNC (following the contracted form *yeah*) (on the nature and analysis of key words, see Scott, 1997).

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Since conversational grammar is so intimately linked to register it will be necessary to characterize the notion of register in some more detail.

What Are Registers?

Registers are defined by Biber et al. as "situationally defined varieties" (1999, p. 5). This definition grasps two key components of register: variation and situation.

Registers are social varieties, such as sermons, sports commentaries, academic writing, news reportage, and conversation, to name a few. What distinguishes them? First, they are distinguishable on the basis of the circumstances—or, in Hallidayan terminology, "type of situation" (Halliday, 1978, p. 29)—in which they are typically produced. The circumstances, for example, under which a sports commentator breathlessly reports on the rapidly changing scenes on the pitch are fundamentally different from the circumstances under which a poet produces maybe a two-liner in which every syllable is measured and weighed and every possible overtone is mulled over countless times. Not surprisingly, the circumstances in which language is used impact on *how* language is used: because the situation types are different, the language arising from them will be different too. The notion of register, then, requires a double perspective: an extralinguistic perspective, in which registers are intimately associated with certain situation types, and a linguistic perspective, in which registers are distinguishable on the basis of the linguistic features distinctive of them (see Crystal, 2003, p. 290).

This Janus-face of registers is crucial for describing them: "Any account of language that fails to build in the situation as an essential ingredient is likely to be artificial and unrewarding" (Halliday, 1978, pp. 28–9). How can the relationship between language and situation be described? In addressing this question the notion of adaptation is helpful: the linguistic variation characteristic of a register results from the language users *adapting* their language to constraints set by the particular situation. In the case of conversation, then, conversational grammar can be seen as adapted to the constraints set by the conversational situation. That is, the forms that are characteristic of conversational language are functional with regard to the factors that characterize the conversational situation. If one accepts this premise, the question arises as to what type of situation gives rise to conversation. In what follows I will address this question and give illustrative examples of conversational grammar.

Conversational Situation and Linguistic Adaptation

The question of what determines the conversational situation has attracted some attention in recent research (e.g., Biber et al., 1999; Leech, 2000). Probably the most comprehensive account to date is Rühlemann (2007). He outlines five situational factors for conversation: "shared context," "co-construction," "real-time processing," "discourse management," and "relation management." They are briefly explained in what follows.

Shared context refers to the wealth of nonverbal, perceptual, social, and cultural context that conversationalists share with each other. Because conversationalists interact face to face, they can convey subtle meanings nonverbally, using facial expressions and gestures. Conversationalists share access to visual, auditory, or tactile stimuli; there is no need to spell out every reference; often pronouns such as *that* or *he* will suffice for the hearer to recognize the intended referent. Further, conversationalists typically know each other well; thus, they share a wealth of experiences (what they went through) and discourses (what they talked about). As a result, linguistic "shortcuts" such as minute hints, unfinished sentences, pronominal usage "out of the blue"—unintelligible for outsiders—are easily understood. Also, conversationalists tend to underspecify reference and use vague language

instead, relying on their partners to fill in the gaps (e.g., O'Keeffe, 2004). In (2), for example, the set marker *or something* (Stenström, Andersen, & Hasund, 2002) is used not only to index the speaker's uncertainty about the intended reference but also to activate in the listener's mind the category "fruit," which, in its breadth, is more likely to be referentially correct than the narrower reference to "grapefruit."

(2) No she, she had a grapefruit **or something** didn't she?

Co-construction reflects the fact that conversational text is the outcome of joint construction, through sequential organization (Sacks, Schegloff, & Jefferson, 1974) and role rotation (Goffman, 1981). Unlike lectures or academic presentations, which allow for speaker change only in question-and-answer sessions, the organization of turn taking in conversation provides for constant, rapid speaker change and the concomitant rotation of participant roles. Participants slip in and out of three major roles: speaker (the one holding the floor), recipient (the one/s whom the speaker is addressing) and listener (the one/s supporting the speaker in the backchannel but not claiming the floor; see, for example, Wong and Peters, 2007). Because of this inherent coauthorship in conversation participants can with great ease co-construct single utterances, and respond coherently and with "no gap/no overlap" (Sacks et al., 1974) to utterances, however elaborated, fragmented or elliptical. Speakers use a wide range of techniques to encourage co-construction. Examples of verbal next-speaker selection techniques include use of vocatives (e.g., McCarthy & O'Keeffe, 2003) and question tags (e.g., Tottie & Hoffmann, 2006); nonverbal techniques make use of gaze, intonation, and other bodily cues.

Real-time processing captures the fact that in conversation an essential resource—available in abundance in most writing—is scarce: time. Unlike writers, who can retrace, change, delete, and substitute any words, speakers cannot take back anything they have said. Unlike readers, who can reread passages at their leisure, listeners must understand speech immediately and be able to coherently respond in a split second. Further, what speakers are going to say and how they are going to put it is not premeditated in conversation: speakers plan ahead as they speak. Because time for planning and processing speech is scarce, the principle of economy looms large in conversation: "If one can shorten the text while keeping the message unimpaired, this reduces the amount of time and effort involved both in encoding and in decoding" (Leech, 1983, p. 67). The forms favored by the economy principle include, at the phonological level, all types of contraction: negative contraction such as *n't*, verbal contraction such as use of *'s* both for *is*, *has*, and *does*, and conversational contractions such as *gonna*, *gotta, dunno, cos*, etc. Syntactically, the economy principle favors types of "generalization" (Rühlemann, 2007), that is, use of single forms fulfilling multiple functions. The effect of generalization is a reduction of production load: instead of using two (or more) distinct forms, which is more costly to process, a single *uni*-form is used. Examples include the invariant tag *innit*, as in (3), use of *BE like* to report not only speech, as in (4), but also thought, emotion, and gesture (Buchstaller, 2002), and the pattern "*there's* + plural NP," as in (5):

(3) So that'll be over a hundred and forty pound **innit**?
(4) I**'m like** oh come on Carla hurry up
(5) Well in many ways yes, they, **there**'s powered **roads**, there's electricity and even water on tap, they never had

The construction in (5) has been shown to be more frequent in conversation than the plural verb–plural NP construction (see Biber et al. 1999, p. 186). Carter (1999, p. 157) argues that *there's* + plural NP is "used standardly in spoken English irrespective of whether the following subject is singular or plural."

Another notably economic construction is the header construction.

(6) **This little shop** . . . [**it**]'s lovely.

Headers involve an NP preceding the core of the clause (*This little shop* in the example), with a co-referential pronoun inside the clause (*it*). They benefit both the speaker, who "separates out crucial bits of information which are then attached more loosely to the clause" (Biber et al., 1999, p. 957), and the recipient, who receives an early statement of the upcoming topic.

Discourse management arises from a convergence of real-time processing and co-construction: because speakers in conversation interact in real time, fully exposed to all sorts of planning and processing constraints, and, at the same time, need to be able to co-construct conversation coherently, an interactional dynamism is created, which is probably unparalleled in other registers. This dynamism demands attention: if unattended, conversation might collapse into disorder and incoherence. The crucial task is, then, for conversationalists to "manage" the dynamism in such a way as to establish discourse coherence. This is achieved by adherence to the "processibility principle" (Leech, 1983). This principle "recommends that the text should be presented in a manner which makes it easy for the hearer to decode in time" (Leech, 1983, p. 64). A broad variety of language features serve the processibility principle; they include most notably discourse markers (e.g., Schiffrin, 1987), the "maxim of end-weight" (Leech, 1983, p. 65), which demands that complex constituents be right-branched rather than left-branched, and "turn markers" such as *he says/goes/'s like* and *I went/said/'m like*, which help listeners tell apart the different "voices" that narrators may enact in storytelling.

Relation management, finally, pertains to the interpersonal goal-orientation in conversation: to do conversation is essentially to "establish bonds of communion" (Malinowski, 1923). Prime examples of "bonding language" are certain types of vocatives, including familiarized forms such as *Mike* or *Mikey* for *Michael*, endearments such as *love* or *sweetheart*, as well as the rich variety of pet names used for loved ones (see Leech, 1999; McCarthy & O'Keeffe, 2003). The interpersonal orientation in conversation is also realized by use of evaluative language. Examples include the tail construction, as in (7). Tails involve extraposed noun phrases (*this smog*, in the example below). They commonly co-occur with strongly evaluative language and, thus, predominantly perform a "phatic function" (Aijmer, 1989).

(7) Terrible **this smog** innit?

Evaluative language also includes "affect adjectives" such as *good* or *lovely*, "affect verbs" such as *WANT* or *LOVE*, and the broad class of interjections which "have an exclamatory function, expressive of the speaker's emotion" (Biber et al., 1999, p. 1083). Speakers in conversation also use a broad variety of means to involve listeners in the discourse. Examples, particularly in conversational storytelling, are use of historic present (HP), direct speech reporting (including forms of mimicry) instead of the more detached indirect reports, and "introductory this" as in (8), a use of the proximal demonstrative which serves to quickly involve the listeners in the story, inviting their active cooperation in building up a mental image of the situation being depicted (Biber et al., 1999, p. 274).

(8) And we got **this** mad bloke come in!

In the remainder of this entry I will pick out one conversational grammar feature—situational ellipsis—as a case in point, characterizing it in more detail.

A Case in Point: Situational Ellipsis

Quirk, Greenbaum, Leech, & Svartvik (1985) distinguish three types of ellipsis: textual, where the full form is recoverable from the neighboring cotext; structural, where the ellipted form is retrievable through knowledge of grammatical structure; and situational, where the "missing" element can be recovered via recourse to extralinguistic context. The three types are illustrated in (9)–(11) (ellipted forms in square brackets):

(9) textual: (. . .) if you want me to **[lift the edge of your carpet]** I'll, I can lift the edge of your carpet and put it down onto the floor

(10) structural: (. . .) he's telling me the other week, he's, he's still five thousand pounds owing to him, though, work **[that]** he did twelve months ago

(11) situational: **[I]** Couldn't see any sign of nervousness myself (. . .)

Crucially, situational ellipsis tends to be utterance-initial, taking the form of "omission of subject and/or operator" (Quirk et al., 1985, p. 896). The following examples illustrate these structural possibilities. While only the subject is ellipted in (12)–(14), both subject and operator are not encoded in (15)–(17). The only example of operator-only ellipsis is (18):

(12) **[I]** Wouldn't mind.
(13) PS02B: What babe?
PS02F: **[I]** Don't want these black-currant sweeties.
PS02B: Why babe?
PS029: **[You]** Don't like them?
(14) **[It]** Depends how long it takes me.
(15) **[Do you]** See what I mean about that skirt?
(16) **[Have you]** Got that letter?
(17) **[Is there]** Anybody else with a comment?
(18) **[Does]** Anyone want a cup of tea?

As illustrated in the examples, situational ellipsis overlaps to a large extent with "subject ellipsis" (Nariyama, 2004). Omitting the subject is unproblematic in so-called pro-drop languages (e.g., Italian and Spanish) where the subject is morphologically shown by the verbal inflection. For example, the subject of the Italian utterance *ti voglio bene* ("I like you") is unmistakably the speaker because the verb form *voglio* can only be used for first-person singular. This type of subject–verb agreement, however, is largely absent from English (except for third-person singular present tense). The problem, then, is how listeners can ascertain the ellipted referent.

The answer lies in the context, which, in its multiple facets, is shared by conversationalists. Relevance theory, developed by Sperber and Wilson (1995), is helpful in elucidating the ways that listeners go about exploiting the shared context. Participants look for an interpretation that makes the utterance relevant in the expected way, thereby following a path of least effort. That is, listeners test the most accessible interpretation first and move on to the second, third . . . most accessible interpretation only if the first, second . . . does not yield satisfactory implications. In the case of ellipted third-person referents, the most accessible interpretations will be those derived from the linguistic cotext. In (14), for example, the omitted subject is the dummy subject *it*, the most conventional "filler" for

the ellipsis. In (17) and (18), relevant interpretations are arrived at by filling in forms that are structurally suggested by the cotext. In most cases, however, situational ellipsis is centered on first and second person (see Nariyama, 2004, p. 258), as in (11)–(13) and (15)–(16). Here, then, the type of context exploited is the extralinguistic context. The pronouns *I* and *you* are core person deictics by which speakers refer to themselves and their interlocutor(s) respectively. In face-to-face conversation, both addresser and addressee are physically copresent. When references to them are "left out," listeners need not venture far to recover the referents: in questions, the most accessible referents are the listeners themselves; in statements, the most likely referents are the speakers (Nariyama, 2004). Thus, relevance and recoverability are ensured by physical copresence.

In sum, what may be felt as "missing" in the use of situational ellipsis, if looked at from a written perspective, is made highly predictable by linguistic and extralinguistic context. As McCarthy (2001, p. 56) puts it: "Nothing is missing since the subject is there in front of the listener or is simply obvious and/or current/salient in the context."

Conclusions

It is still early days for descriptions of conversational grammar. As future corpora of conversation become larger and even more successful in their struggles to faithfully represent the myriads of conversations going on every day in the English-speaking world, many details of present-day descriptions of conversational grammar may have to be modified and, possibly, interpreted in a different light. The attempt, however, to view conversational grammar as the flip side of the conversational situation and to try to understand how, by using conversational grammar, speakers attempt to come to terms with the constraints set by the situation is a promising one. It helps us appreciate the value of conversational grammar, which lies in its adaptedness. The implications particularly for English-language teaching cannot be overstated. If conversational grammar can no longer be brushed aside as simply nonstandard, it can no longer be designated as a no-go area for language learners. Rather, knowing what makes the language of conversation unique and functional may enable us to actually teach it to our students.

SEE ALSO: Analyzing Spoken Corpora; Conversation Analysis and Turn Taking; Functional Grammar; Pragmatic Markers; Pragmatics in the Analysis of Discourse and Interaction; Pragmatics and Grammar

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Conversational Implicature

MICHAEL HAUGH

Speakers are often assumed to mean more than the literal sense of the words that they have spoken. For example, if I am in a café with a friend who is eating some cake with her coffee, and I comment that the cake looks really nice, my friend might respond by offering me some of her cake. By making this offer, my friend has shown that she thinks I was implying that I would like to try some of her cake. Since I did not actually say I wanted to try her cake, I could deny that I meant to imply this, either directly by saying something like "Oh, I didn't mean I want to try it" or indirectly by saying something like "Oh, I'm not hungry at the moment." However, unless I make some sort of denial, then, what has been implied, in part due to my friend's response, is that I would like to try her cake. In lay terms this is considered a *hint* or *implication* that has arisen from what I have just said.

Paul Grice, a prominent philosopher of language, introduced the concept of conversational implicature to encompass such meanings in the 1967 William James lectures more than forty years ago. He developed a theory of conversational implicature as part of his broader theory of speaker-intended meaning, contrasting it with the notion of "what is said" (Grice, 1989). Conversational implicatures were divided into two main types by Grice: *particularized* conversational implicatures and *generalized* conversational implicatures. The basic difference between particularized and generalized conversational implicatures is that the former require specific contextual information to arise, while the latter are meant unless something in the context (including the utterance itself) blocks them.

Returning to the above "cake" example, for instance, in saying that I think that my friend's cake looks nice, a particularized conversational implicature (namely that I would like to try my friend's cake) potentially arises. If my friend responds in turn with something like "Would you like some?" then not only does she show that she has drawn this particularized conversational implicature, but a generalized conversational implicature also arises from her saying "some cake," namely, "[but] not all of it." This latter implicature could be canceled, for example, by her saying something like "in fact why don't you have it all?" and so is clearly not part of what is said. However, in most contexts it would arise unless explicitly canceled, and thus it counts as a generalized implicature.

In outlining his theory of conversational implicature, Grice made three key claims, each of which has subsequently become the subject of considerable debate in pragmatics. First, Grice claimed that the inferences underlying conversational implicatures are made in a principled way. He formalized this claim in the postulation of an overarching cooperative principle, formulated as "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice, 1989, p. 26), and through its elaboration in the four related conversational maxims.

The maxim of *quality*

Try to make your contribution one that is true, and specifically:

- Do not say what you believe to be false.
- Do not say that for which you lack adequate evidence.

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The maxim of *quantity*

- Make your contribution as informative as is required for the current purposes of the exchange.
- Do not make your contribution more informative than is required.

The maxim of *relevance*
Make your contribution relevant.
The maxim of *manner*
Be perspicuous, and specifically:

- Avoid obscurity.
- Avoid ambiguity.
- Be brief.
- Be orderly.

In positing the cooperative principle and conversational maxims, however, Grice did not mean to say that communication is always cooperative—a view that is sometimes mistakenly attributed to him—as the cooperative principle applies even in situations where people are arguing (Grice, 1989, p. 369). Instead, Grice claimed that speakers generate conversational implicatures by either invoking or flouting one or more of the conversational maxims in light of a general assumption that speakers are always adhering to the cooperative principle. In other words, instances where the speaker's utterance can only be treated as consistent with a particular conversational maxim and the cooperative principle (invoking), or just the cooperative principle (flouting), if the speaker is understood to be implicating (a technical term for *implying*) something beyond what he or she has said.

Grice's second key claim was that conversational implicatures arise from inferences that are defeasible, and thus (theoretically at least) they can always be canceled. He argued that a conversational implicature can be canceled in two ways. *Explicit cancellation* involves adding a subsequent clause (for example, "I didn't mean [to imply *x*]") to retract the implicature, or alternatively block the implicature from arising in the first place. *Contextual cancellation* involves finding situations in which the potential implicature would not arise (Grice, 1989, p. 44). These two types of cancellation are of a different order of language description, however, as Jaszczolt (2009) points out, with only the former being of relevance to those analyzing implicatures in discourse.

Grice's third key claim was that conversational implicatures can be generated through either once-off reasoning in a particular context (nonce inferencing), or regularized or conventionalized reasoning across contexts (default inferencing). According to Grice, particularized conversational implicatures are generated through ordinary reasoning (as opposed to strict logical reasoning) about a speaker's intentions, drawing from what has been said by the speaker in a specific context as well as the cooperative principle and conversational maxims. Generalized conversational implicatures, on the other hand, are induced through default reasoning about a speaker's intentions, drawing from what has been said in conjunction with the cooperative principle and conversational maxims in the absence of a marked context.

One problem with the cooperative principle and conversational maxims framework, however, is that it is not actually rigorous enough to account for the conversational implicatures it supposedly generates. Davis (1998), for instance, argues that the maxims can be used to generate implicatures which do not actually occur in conversation, concluding that the maxims generate erroneous predictions as readily as they generate correct ones. For example, the meaning of an idiom such as *spill the beans* can be worked out using Gricean principles (Sadock, 1978), but it does not seem reasonable to suggest that hearers actually use these principles in deriving the meaning of such idioms. Instead, it is more likely that

some kind of conventionalized route is involved, as argued by Wierzbicka (1985) in regard to implicature conventions more generally.

The development of a more formally rigorous and empirically grounded set of conversational maxims has occupied neo-Griceans, a group of scholars who have retained the fundamental assumptions of Grice's theory of conversational implicature in their work since the 1980s. Of particular note is the work of Horn (1984, 2004) and Levinson (2000) who have developed alternative theories of generalized conversational implicature in which Grice's maxims have been refined or even reformulated. Horn (1984) proposes a dual distinction between the principles of quantity and relation, while Levinson (2000) develops a tripartite distinction between the principles of quantity, informativeness, and manner. "Scalar implicatures," for instance, a particular type of generalized conversational implicature, arise by default from the use of a weaker term on a quantity implicational scale according to neo-Griceans.

One key challenge to the notion of generalized conversational implicature, however, is that not only Gricean principles, but also the refined neo-Gricean principles, arguably overgenerate implicatures that do not actually arise in interactions. For example, according to the quantity scale <*all*, *most*, *many*, *some*>, "some" is generally understood to imply "not all." Thus, a standard (neo-)Gricean account would predict that by saying "Some of them do" in response to A asking "Which of your colleagues support the strike?" B is implicating "Not all of them do." Yet in reality, something like "I don't want to [or can't] say who supports the strike" is more likely to be implied (Carston, 1998). A theory of generalized conversational implicature must therefore include a systematic account of when these default inferences are blocked if it is to constitute a viable category of implicature. This is not to say that default inferences do not underpin implicatures in many instances, but rather that considerable work remains to be done to further our understanding of these kinds of implicature.

A second problem with the Gricean theory of conversational implicature is that the cooperative principle and conversational maxims may be unnecessary altogether. Relevance theorists, for instance, have argued that these should be abandoned in favor of the principle of relevance, that is, the assumption that "every act of ostensive communication conveys a presumption of its own optimal relevance" (Sperber & Wilson, 1995, p. 260), where relevance is defined as a balance between "positive cognitive effects" and "processing effort" (Sperber & Wilson, 1995, pp. 265–6). The basic idea is that hearers interpret the speaker's intended meaning(s) through inferential processes guided by calculations of relevance. A (conversational) implicature is redefined in relevance theory as a "communicated assumption which is derived solely via processes of pragmatic inference" (Carston, 2002, p. 377). The scope of relevance-theoretic implicature can thus be considered to be largely synonymous with that of particularized conversational implicatures. The (neo-)Gricean distinction between generalized and particularized conversational implicatures is not accepted by relevance theorists, who argue instead that such meanings are better treated as part of the explicature of an utterance.

The relevance-theoretic account of implicature also faces challenges, however. One issue is that "positive cognitive effects" are not yet well characterized, and thus relevance theorists can arguably only offer intuitive rather than formal accounts of the generation of implicatures. A second problem is that the distinction between implicatures and explicatures is not as clear-cut as might first appear (Haugh, 2002). While Carston (2002) argues that the distinction relates only to the derivational process underlying communicated assumptions, such a view cannot account for the ways in which implicatures can give rise to politeness (or impoliteness), express humor, and index particular identities or power relationships.

More recently, it has been argued that particularized conversational implicatures can be shown to arise from situated inferences without recourse to the cooperative principle or conversational maxims, or indeed even the speaker's intentions (Marmaridou, 2000; Gauker, 2001; Haugh, 2007, 2008b). It has also been claimed that implicatures are not necessarily always cancelable, and thus situations that generate diverging understandings of what has been implied are not always straightforwardly resolved (Haugh, 2008a). The focus has thus shifted in sociopragmatic approaches to implicature to the interactional and relational effects of their usage in discourse.

The notion of conversational implicature has been adopted more widely in other related fields, including the field of second language learning and teaching. In seminal work on the comprehension of implicatures by second language speakers of English, for instance, Bouton (1988) found that the interpretation of implicatures varied according to their L1 background and nationality. Further work on the comprehension of conversational implicatures by learners of varying proficiency levels has found that while L2 proficiency has a significant effect on accuracy in the comprehension of conversational implicatures, there is a less clear-cut relationship between comprehension speed and L2 proficiency (Taguchi, 2005). Other work has investigated whether L2 learners can be taught to better understand conversational implicatures, with some arguing that explicit instruction is helpful (Kubota, 1995), while others take a more equivocal position, suggesting that it is only effective in the case of teaching more formulaic conversational implicatures (Bouton, 1994). A recent study indicates that L2 speakers of English tend to derive scalar implicatures not only more often than L1 speakers of English, but also more often than they would in their own L1 (Slabakova, 2010). It appears, then, that L2 speakers are not necessarily aware of what contextual factors may block scalar implicatures. The fact that once something has been implied it cannot necessarily be retracted, however, underscores the importance for second language learners to acquire a better understanding of implicatures in their L2.

Applied linguists who carry out research into second language learning and teaching have generally taken a much less critical view of Grice's theory of conversational implicature, however, compared to those in the originating field of pragmatics, where aspects of Grice's theory have been the subject of considerable debate over the past thirty years. Thus, while investigating the comprehension and production of implicatures by second language learners (and various methods of teaching this) is indeed a worthwhile endeavor, more in-depth consideration of the various debates surrounding Grice's theory of conversational implicature, and the alternative theories of implicature that have been offered in its place, is arguably necessary in order to better contextualize the findings of such studies. Teaching strategies for understanding implicatures that draw from Grice's theory of conversational implicature, for instance, are not necessarily going to be effective simply because they are likely to be difficult to apply in practice for learners.

Grice made an enormous contribution to our understanding of language use through his theory of conversational implicature. However, his theory has often been (mis)interpreted as a theory of communication, when it is arguably first and foremost a part of a theory of speaker (or utterer) meaning (Arundale, 2008; Davis, 1998). This misinterpretation is perhaps due in part to the relatively sketchy nature of many of Grice's proposals and also to the incomplete publication of his research program during the 1970s and 1980s. In introducing the notion of conversational implicature Grice was intent on explicating how speakers can mean things beyond the literal sense of the words that they have spoken, not on explaining the communicative process per se. Recognizing this important distinction, between speaker meaning and communication, is crucial if we are to appreciate the seminal contribution Grice made to linguistic pragmatics, and applied linguistics more broadly, through his theory of conversational implicature. At the same time, it is important to recognize the limitations of his framework in regards to furthering our understanding

of the place of implicatures in communicating, whether it be in a first or second language. A number of alternative approaches to theorizing implicatures have been developed that offer various ways forward, including those developed by neo-Griceans, relevance theorists, and more recently by those working in various sociointeractional frameworks.

Implicatures are arguably important not only because they can give rise to politeness (or impoliteness), but because they can be used to avoid taking sole responsibility for what is communicated and to reach tacit understandings with others, as well as to express humor, and to index particular identities or power relationships. A comprehensive theory of implicature needs to account for all of the interactional and relational effects that can arise when we imply something rather than saying it directly. While conversational implicatures have traditionally been the focus of researchers in the so-called Anglo-American tradition of pragmatics (or cognitive-philosophical pragmatics), there is also considerable scope for greater attention to be paid to implicatures by those working from a European sociocultural-interactional perspective. In this way, we can move beyond a narrow view of regarding conversational implicature as simply a linguistic phenomenon.

SEE ALSO: Inference and Implicature; Pragmatics in the Analysis of Discourse and Interaction; Pragmatics and Cognition

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Suggested Readings

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Cook, Vivian

BENEDETTA BASSETTI

Vivian James Cook (born June 13, 1940) is an English applied linguist who investigates second language acquisition, and especially multicompetence. He holds a Chair in Applied Linguistics at Newcastle University, UK.

Professor Cook is an active researcher and theorizer and a popular writer, whose past and present work covers first language acquisition, second language acquisition, second language teaching, linguistics, English as a foreign language, writing systems, and bilingual cognition. He is currently chiefly noted for his work on second language acquisition, in particular his concept of multicompetence. He is a prolific author, who has published more than 20 books and more than a hundred journal articles and book chapters. He is a writer of textbooks—on linguistics, first and second language acquisition, language teaching, English as a foreign language, and the English writing system—and of popular books. He is an enthusiastic initiator, with a flair for pioneering new areas of research and for promoting communication across discipline boundaries. He founded (1989) and was first President of (1991) the European Second Language Association (EUROSLA), whose annual conference, held since 1991 in different countries, is arguably the most prestigious meeting for nonpedagogically oriented second language researchers in Europe. In 1993 he was a member of the founding committee of MATSDA (Materials Development Association), a group of interested parties working for the development of high-quality language teaching materials. In 2009 he cofounded the journal *Writing Systems Research*. Over the past 20 years, he has helped the emergence of new research areas, from the effects of second languages on first languages, to second language writing systems, to bilingual cognition, by organizing workshops and editing volumes, as well as through his own research. In the past decade, his work has focused on developing the multicompetence approach to second language acquisition, on writing systems, and on bilingual cognition.

Cook's first jobs were as a Lecturer in English as a Foreign Language at Ealing Technical College (now Thames Valley University) and as Director of the Language Service at the North East London Polytechnic (now University of East London). During this period, he authored or coauthored several coursebooks of English as a foreign language, including the tape-based *Active Intonation* (Cook, 1968), the audio-lingual drill-and-dialogue-based course *Realistic English* (Abbs, Cook, & Underwood, 1968–70), *English Topics* (Cook, 1975a), which was based on his concept of the topic syllabus, the communicative-based *Using Intonation* (Cook, 1979a), and *English for Life* (Cook, 1980–1983), which was based upon the idea of patterned conversational interaction. His English coursebooks have been widely used all over the world.

Vivian Cook has been researching language acquisition since the early days of his career. In the 1960s and 1970s his publications dealt with both first and second language acquisition and the relationship between the two. In 1978 he became a lecturer in applied linguistics at the University of Essex, where he taught first and second language acquisition and language teaching methodology. His interests then shifted more towards second language acquisition and second language teaching.

From the 1970s to the 1980s Cook was a pioneer in the use of second language acquisition research techniques such as elicited imitation (Cook, 1973), short-term memory measures

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(Cook, 1977), microartificial languages (Cook, 1988), and computerized response time measurement of comprehension (Cook, 1990) and of grammaticality judgment tasks (Cook, 1994). Believing that the key to language teaching was to understand how people learn languages, he embarked on a lifelong enterprise of bringing together linguistics and second language research with language teaching. He played a major role in popularizing Chomsky's theories, and explored various ways in which universal grammar could be useful for second language acquisition research and language teaching.

He continued to publish on language teaching, from materials development to syllabus design. In the 1980s he was active in developing CALL (computer-assisted language learning) programs for English teaching using BASIC and PROLOG. He argued that the main asset of the computer was its unique ability to handle language through parsing and interactive dialogues, and he therefore concentrated on syntactic parsing programs, computer adventure games, and mock interviews, which he presented in several publications.

Since 1991, Vivian Cook has been developing an approach to second language acquisition known as multicompetence. Multicompetence is "the knowledge of two languages in one mind" (Cook, 2007, p. 17). The main tenet is that the mind of someone who knows more than one language is different from the mind of a monolingual. Anyone who uses one or more languages in addition to the one they first learnt as a child is then an *L2 user* (pronounced *L two user* to avoid the negative connotations of the word "second"), a label used to differentiate those who have knowledge of more than one language from those in the process of learning another language (*L2 learners*). Second language users are not only quantitatively different from monolinguals (in the number of languages known, or in the level of knowledge of their languages), they are also qualitatively different, because knowledge of more than one language affects all the linguistic systems in the L2 user's mind (see Cook, 2002). Knowing a second language affects the first; this is not a symptom of attrition, but of a restructuring language system (see Cook, 2003). Effects can be found in all language modalities (i.e., in reading and spelling, as well as in speaking), and even in nonlinguistic cognition. Given these qualitative differences, L2 learners and users should not be compared with native speakers, but rather with successful L2 users. Most importantly, since multicompetence is a potential achievement for all human beings, researchers in all fields should bear in mind that monolinguals are not representative of what human beings can achieve. The idea of multicompetence has been applied to various fields, from the bimodal bilingualism of deaf people to Native American languages.

A leitmotiv of Cook's work has been his constant interest in language teaching. He has always aimed at relating language teaching practice to second language research findings, and has written various articles about the implications of universal grammar for language teaching and for multicompetence. Within the multicompetence approach, learners can use their first language in the L2 classroom, L2 teachers need not be native speakers of the language they are teaching, and the purpose of L2 learning is to become a multicompetent user of more than one language rather than imitating a native speaker of a second language. Based on his work on the English writing system, Cook argued that second language teachers and textbooks should pay more attention to teaching written language in its own right, rather than using it as a representation of spoken language. Based on his work on bilingual cognition, he argued that second language teaching and learning can change the way people think.

In the early years of the new millennium, Vivian Cook began researching writing systems. In 2004 he published *The English Writing System* (Cook, 2004b) which introduced English orthography to students, covering the linguistics of English orthography and its acquisition by children and second language learners. In the same year he organized the first workshop on second language writing systems (with Benedetta Bassetti), and in the following year coedited *Second Language Writing Systems* (Cook & Bassetti, 2005). This was

the first volume to deal with the acquisition and use of a writing system in a second language. In 2009 he founded the journal *Writing Systems Research* with Jyotsna Vaid and Benedetta Bassetti, with the aim of publishing interdisciplinary and international research on all aspects of writing systems.

Professor Cook has always been interested in the connections between second languages and the psychological processes of language. He has favored an experimental approach to second language research (e.g., *Experimental Approaches to Second Language Learning*, 1986), and conducted experiments on the comprehension of relative clauses (Cook, 1975b), on aspects of short-term memory (Cook, 1977), and on the psychological reality of adjacency pairs (Cook, 1981); in 1997 he published a widely quoted survey paper on "The consequences of bilingualism for cognitive processing." In recent years he has been looking at the relationship between linguistic relativity and bilingual cognition. Since linguistic relativity research shows differences in nonlinguistic cognition among speakers of different languages, knowledge of more than one language might affect nonlinguistic cognition. In 2002 he organized a panel on the topic of "Bilingual cognition" at the 12th EUROSLA conference, where he and his students presented research investigating the relationship between linguistic relativity and nonlinguistic cognition in bilinguals. His coedited volume *Language and Bilingual Cognition* (Cook & Bassetti, 2011) brought together more than 30 scholars working in different disciplines and countries to showcase research on bilingual cognition, its theoretical background, and its practical implications.

The volumes edited in the past two decades show Vivian Cook's continuous interest in bringing together researchers working on language across different disciplines and fields, such as linguistics, psychology, and education.

An important aspect of Professor's Cook production, and indicative of his personality, is his role in popularizing linguistics and second language research by authoring textbooks for postgraduate students and popular books. His accessible and entertaining style, characterized by a spoken-language quality and by unusual and memorable examples, coupled with his encyclopedic knowledge, make his textbooks and popular books very successful.

His coauthored introduction to Chomsky's syntactic theories, *Chomsky's Universal Grammar: An Introduction* (first published in 1988) proved popular with students of linguistics. It is now in its third edition (Cook & Newson, 2007), and it has been translated into Chinese, Italian, Japanese, and Korean. His book *Young Children and Language* (Cook, 1979b) aimed to inform playgroup workers about children's acquisition of language in nonacademic language. Other successful textbooks introduced students to the acquisition, learning, and teaching of a second language. *Second Language Learning and Language Teaching* (first published in 1991) now in its fourth edition (Cook, 2008) and translated into Chinese and Japanese, has become more multicompetence-oriented with each new edition. *Linguistics and Second Language Acquisition* (1993) covered a breadth of areas of linguistics (rather than simply syntax), and is still used as a textbook in postgraduate courses in applied linguistics and language teaching.

Professor Cook has also authored two popular books that aim at introducing serious linguistics to the general public while entertaining them. *Accomodating Brocolli in the Cemetary: Or Why Can't Anybody Spell?* (2004a) managed to convey linguistically sound views of English orthography to the general public. The book was very well received, and an American edition was published the following year. In *It's All in a Word: History, Meaning and the Sheer Joy of Words* (2009), Cook presented the lay reader with amusing but linguistically informative facts and arguments about the nature of vocabulary and its acquisition and use.

Vivian Cook has given talks all over the world, from the Far East (China, Japan, Korea, Malaysia, Singapore) to the Middle East (Gaza, Iran, Israel) to the American continent (Argentina, Canada, Chile, the USA), as well as most, if not all, European countries. He is

a devoted teacher and supervisor, and his former students can be found in universities around the world. Regular updates about his publications and teaching can be found on his website http://homepage.ntlworld.com/vivian.c/Vivian%20Cook.htm, which also provides an extensive bibliography of second language acquisition research.

SEE ALSO: Materials Development; Multicompetence; Universal Grammar and Second Language Acquisition

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Core Vocabulary

HUW BELL

"Core vocabulary" as a term refers generally to those lexical items which are accepted as being central and indispensable to language use, and is therefore of obvious interest to second language learners and teachers. It is the nexus of words which are independent of dialects or special registers, which are used frequently across a wide range of topics, and which all native speakers normally know and use. Core vocabulary is thus a relatively accessible term conceptually, and its precise meaning has been clarified considerably since the mid-1980s; as a term, "core vocabulary" has almost completely superseded such variants as "essential," "basic," "procedural," and "nuclear," although in some instances these have taken on more specialized meanings. (In this entry, "core vocabulary" will be used in place of all other terms where there is no difference in meaning.)

The notion of core vocabulary is not new: Murray (cited in Aarts & MacMahon, 2006, p. 463), in a foreword to the *Oxford English Dictionary*, refers to "a nucleus or central mass of many thousand words." It is visible as a concept if not a term in such 20th-century lexical landmarks as the Vocabulary Control movement, the General Service List, and other early word lists, and it has a prominent and productive relationship with corpus linguistics.

The two key issues with core vocabulary are its definition and its applications. This entry deals with both. Stubbs (1986) and Carter (1987) have created a very full definition of coreness which is set out in the first section below; this is followed by a consideration of the uses of core vocabulary, primarily in language teaching and learning but touching on some other applications.

Defining Core Vocabulary

One basic truth about core vocabulary items is the fact that all normal native speakers know them. An often-used basis for defining whether a word is worth knowing is frequency: the more frequent a word is, the more useful it is; by extension, therefore, the more likely it is to be core. However, these points of reference—universality of knowledge among native speakers and high frequency—are inadequate as definitions of core vocabulary, the first because it requires native-speaker insight to establish, and the second because, as Stubbs points out (1986, p. 111), frequency is a consequence of, not a test for, coreness.

Stubbs (1986) proposes 12 descriptors of coreness and a much smaller set of general observations about what he terms nuclear vocabulary; Carter (1987) proposes 10 tests of coreness. Stubbs and Carter group their criteria in similar ways: a test for coreness is related either to the *neutrality* of words or to the *syntactic and semantic relations* between words. Stubbs's and Carter's criteria overlap considerably, and in the following summary, use is made of both. It also should be noted that many of the tests overlap to a large extent.

Syntactic and Semantic Relations

Superordinateness Core vocabulary items are more frequently superordinates than they are hyponyms. *Furniture*, *tree*, and *home* are core; *armchair*, *stool*, *ash*, *beech*, *maisonette*, and *bungalow* are noncore.

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Semantic productivity Core vocabulary items typically have more meanings than noncore items. A rough indication of this is in the number of dictionary entries a word has. As examples, core *run* and *book* have multiple meanings, whereas noncore items such as *sprint* and *paperback* are more restricted.

Formal productivity Core vocabulary items are used more productively to create compounds than noncore words. A core word such as *arm* can produce many more compounds than the noncore *limb.*

Power of substitution Core vocabulary items can replace noncore items; noncore items cannot do this so frequently. Syntactically, core *run* can do the work of noncore *sprint*, *trot*, *race*, *gallop*, *hurry*; but the noncore group cannot replace *run* in the same way. Semantically, noncore words can be defined using core words; but the reverse is not true.

Collocability Core vocabulary items form more collocations—have more allowable combinations with other words—than noncore items. *Yellow* contracts more collocational partnerships than *blonde*.

Antonymy Core vocabulary items are more likely to have agreed antonyms than noncore items. Core *happy* and *sad* have clear and relatively predictable antonyms in each other, but noncore *ecstatic* and *woebegone* do not have antonymous forms so readily and predictably available.

Neutrality

Core vocabulary is by its nature generic and nonspecific, but at least four types of neutrality can be specified.

Affective neutrality Core vocabulary lacks general affective connotations such as those based on attitude and feelings. Noncore *ancient* has a distinct set of associations, whereas core *old* is relatively neutral, although it can take color from its collocations.

Cultural neutrality Core vocabulary tends to be less marked by cultural associations, and is more directly translatable from one language to another. Carter (1987, pp. 183–4) cites *thin* as culturally neutral, and noncore *slim* and *slender* as culturally marked.

Contextual neutrality Core vocabulary does not betray its origins by association with a particular context. Specialist environments require specialist marked lexical items, so while *heart*, *chest*, *leg* are core, *fibula*, *nephrologist*, and *gastroenteritis* are not.

Register neutrality Core vocabulary is not restricted to a particular register. Core *ill* is not marked for a particular register, but *under the weather*, *poorly*, and *indisposed* are restricted to certain usages.

A few criteria for coreness do not fit well into the two broad categories above and are better regarded as frequent features, rather than defining characteristics, of core vocabulary. First, language users prefer to use core vocabulary when summarizing a text; this is clearly related to power of substitution. Second, core vocabulary items tend also to center around the middle on affective clines such as those used in Osgood, Suci, and Tannenbaum's (1957) semantic differential technique; this is a reflection of their general neutrality, since the poles of such clines illustrate markedness. English core vocabulary is usually Anglo-Saxon in origin, and tends *not* to be compound. Finally, core items are often more frequent than noncore.

The composite definition of core vocabulary above is not without problems. Core words are often *not* frequent, for example, and frequent words are often not core: the relationship between frequency and coreness is not simple. However, while there is substantial overlap between the categories—for example, there is an obvious relationship between Anglo-Saxon

origin and formal simplicity, or between superordinateness and power of substitution—this does not mean that the defining characteristics are deficient; it instead suggests rather strongly that the notion of coreness is best defined by a series of clines rather than a simple core/noncore distinction (Carter, 1987, pp. 189–90).

Applications of Core Vocabulary

The concept of core vocabulary is useful in several branches of applied linguistics and especially to second language learners and teachers. In second language learning, the idea of coreness originated in the 20th-century rationalization of vocabulary learning and teaching, and core vocabulary is visibly useful in several areas including the creation of coursebooks, graded readers, learner dictionaries, and other pedagogic materials; and the selection and ordering of lexical materials to teach or learn (from the vocabulary lists for individual lessons to entire lexical syllabuses).

Core Vocabulary and L2 Vocabulary Lists

Vocabulary selection—the choice of which vocabulary to teach or learn, particularly at lower proficiency levels—shares a number of issues with core vocabulary. That the chief aim of vocabulary selection is "to find the minimum number of words that could operate together in . . . the greatest variety of contexts" is stated very clearly (West, 1937; Jeffery, in West, 1953, p. v).

The words a learner needs initially may well be those which are relatively frequent, useful across a range of registers and topics, widely collocable, and providing good coverage of text; and to some extent lexical items which meet these criteria will overlap with core vocabulary. But this is only a general pattern, and, as McCarthy and Carter (2003) observe, although "core vocabulary based around the 1500–2000 most frequent words . . . does very hard work in day-to-day communication . . . raw lists of items need careful evaluation and further observation of the corpus itself before an elementary vocabulary syllabus can be established." In general, the selection criteria for core vocabulary are broadly similar to those used in West's 1953 General Service List and other general pedagogic lists. Some lists, notably the Academic Word List (AWL; Coxhead, 1998) have specifically avoided the most frequent items, yet in other respects the criteria for inclusion in the AWL are similar to those for defining core vocabulary—Coxhead's *range* and *uniformity of frequency* clearly overlap with Carter's *substitution* and *power of substitution.*

Core Vocabulary in Learner Dictionaries and Graded Readers

Core—or, at least, *controlled*—vocabulary has a clear role in the creation of simplified reading materials, including texts for inclusion in coursebooks, graded readers, and the definitions provided by learner dictionaries. Most major ELT (English language teaching) publishers have series of readers in levels based explicitly on lexical content (e.g., the Penguin Readers and Oxford Bookworm series). The criteria for core vocabulary are clearly applicable in the selection of vocabulary for these readers (with possibly a greater emphasis on frequency). With even more explicit reference to core criteria, "only the most common and 'central' meanings of the words on the list [are] used in definitions" in the 2,000-word Longman American Defining Vocabulary (Longman, *n.d.*). Other learner dictionaries make explicit reference to coreness in descriptions of their selection policy (e.g., Jones & Tschirner, 2006). The role of core vocabulary in simplified text is clearly related to its role in L2 reading skill and teaching which is aimed at improving this skill. The assumption is that a very small number of common words accounts for a very high percentage of most text:

for example, Huckin and Coady (1999, p. 185) suggest that 3,000 most frequent words account for 95% of text, and that to be able to learn vocabulary incidentally from text, "learners need to have a well-developed core vocabulary." Coady (1997, p. 287) stresses that these core items must be so well known as to be automatic.

Core Vocabulary and Register and Genre Studies

Core vocabulary has had some impact in studies of register and genre. Lee (2001) investigated how far spoken and written registers vary according to their use of core vocabulary, and concluded that coreness was "a cline or dimension of variation along which to measure texts" (p. 274). Hyland and Tse examined the relationship between academic writing and coreness (as represented by Coxhead's Academic Word List), and "questions the widely held assumption that students need a single core vocabulary for academic study" (Hyland & Tse, 2007, p. 235). Core vocabulary has also been used deliberately as a tool in the creation of a "new" genre—that of an "educated variety of Japanese English" (D'Angelo, 2005).

Other Applications

Finally, there are a set of applications which use the term "core vocabulary" with a different meaning, or are only tangentially related. First, some use has been made of core vocabulary in studies of development of languages over time, and particularly in studying the timescales by which related languages have evolved from each other. "Core" here is usually taken to mean lexical items in very basic categories such as parts of the body, essential features of the landscape, and colors, which are presumed fundamental to early human experience, and from which calculations can be made about the time since languages split from each other (Swadesh, 1951). Second, core vocabulary intervention makes use of the central principle of "useful words" as a therapeutic instrument designed to assist children with speech problems of varying degrees of severity (McIntosh & Dodd, 2008).

SEE ALSO: Lexicostatistics and Glottochronology; Vocabulary and Reading; Vocabulary Size in a Second Language

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Corpora and Literature

DAN MCINTYRE

The use of corpora to analyze literary texts is a methodological approach most commonly taken within the field of stylistics. Often defined as the linguistic study of literature, stylistics in its most general sense is the study of style in language (Crystal & Davy, 1966) and may be viewed as a subdiscipline of linguistics that falls within the sphere of applied linguistics. Although it is true that most stylisticians have concentrated on the analysis of literary texts, there is no intrinsic reason why stylistics should be limited to this text type; indeed, a good number of stylisticians have turned their attention to nonliterary texts using the same analytical techniques that are used to uncover stylistic devices in canonical literary writing (see Jeffries, 2010). Nonetheless, the principles of stylistics derive from work carried out on literary texts, and the value of corpora for stylistics lies in their capacity for allowing the testing of hypotheses about texts and stylistic theories more generally. In recent years, the use of corpora has validated theoretical ideas about the source of stylistic effects in texts by providing statistical support for foregrounding theory, one of the foundational elements of stylistics.

Foregrounding theory derives from the notion that style is a consequence of motivated linguistic choice. Selection from a range of linguistic options gives rise to particular stylistic effects (Ohmann, 1970, p. 264). These can manifest themselves as authorial style (the distinguishing linguistic features of, say, Dickens's style); genre style (the distinction between different text types, for instance, emails and conventional letters); and text style (the local effects created by the style of language used in a text). Foregrounding theory predicts that the elements of a text that are determined to be of particular stylistic import will be those that deviate in some sense from the norms of language, be those norms external or internal to the text in question. Van Peer (1986) demonstrated psychological support for foregrounding theory through the empirical testing of real readers. However, notwithstanding the fact that readers generally agree on what is foregrounded in a text, to determine the extent of foregrounding requires access to frequency information about linguistic norms, which before the availability of large-scale electronic corpora (representative databases of text) was unobtainable. Moreover, some linguists (e.g., Freeman, 1970) doubted the value of such frequency information, even if it were to become available. Such views, though, were inherently flawed, since it is only by understanding the statistical norms of language that we can determine whether a particular usage is indeed unusual and hence foregrounded. The advent of modern corpus linguistics provided the necessary means of determining these statistical norms and demonstrated that views such as Freeman's were mistaken. From this it should be clear that the value of corpora to stylisticians is immense, and while corpus-related work has not progressed as quickly in stylistics as it has within mainstream linguistics, it is on the increase and "corpus stylistics" is becoming an ever more prevalent term to describe corpus-related stylistic analysis.

Approaches to corpus stylistics may be divided into three types: (a) corpus-assisted analysis, (b) corpus-based analysis, and (c) corpus-driven analysis. While these distinctions are not unproblematic, they can be useful heuristically as a means of identifying common practices in corpus work. The first of these uses large reference corpora to assist the analysis of a single text. Corpus-assisted analysis may be carried out in order to validate

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(or invalidate) the stylistician's intuition about the stylistic effects of particular linguistic structures. For example, in the Roger McGough poem "Vinegar," the poet says that sometimes he feels like a priest in a fish and chip shop queue who thinks that it would be nicer to buy supper for two (rather than, presumably, for just himself). Based on our schematic knowledge of priests, particularly the prototypical notion of them being unmarried, we might assume that the reason for this simile is that the speaker is ruminating on feeling lonely. However, a search for the collocates of *priest* in a reference corpus reveals a potential alternative meaning. The collocates of a particular lexeme are those lexical items that typically occur in close proximity to it. A search of the British National Corpus (a 100-million-word database of late twentieth-century British English) reveals that the most statistically significant collocate of *priest* is *lecherous*. This suggests that an alternative interpretation of the poet's meaning in "Vinegar" is that he is expressing a desire for a sexual rather than an emotional relationship (for a fuller analysis of this poem, see Jeffries & McIntyre, 2010). Of course, the range of texts across which a collocate is present in a corpus is an important consideration for stylistic analysis. Nonetheless, even if there were only one occurrence of *lecherous* as a collocate of *priest*, this would validate the response of a reader who saw this connotation in the poem. Collocation does not indicate the "correct" interpretation of a text. What it does do is indicate the range of interpretations that are valid. An excellent example of corpus-assisted analysis is O'Halloran (2007), and it is perhaps this kind of corpus-related work that will have most appeal to conventional literary critics; it does not require the construction of specialist corpora (there are plenty of commercially available corpora which can be used for corpus-assisted work), nor does it require particular expertise in computing and corpus analytical techniques. Instead, corpus-assisted literary analysis uses easily obtainable information to provide support for more conventional qualitative analyses of literary texts.

Corpus-based and corpus-driven analysis differ from corpus-assisted analysis by treating the target analytical text (or texts) as a corpus in its own right. The target text is then uploaded to whatever corpus analysis software has been chosen and is subjected to corpus analytical procedures to shed light on the meaning of the text(s) in question. Strictly speaking, if the object of analysis is a single text then corpus linguists would not recognize it as a corpus, since its dimensional restrictions do not allow for generalizations to be made about the language variety that it represents. Nonetheless, this difference of status does not prevent the application of corpus linguistic techniques to investigate the language of particular texts. When such analysis is focused entirely on the target text in order to extrapolate information relating to that text alone, this is *intratextual* analysis (Adolphs, 2006). When such analysis is supplemented by comparing the target text against a reference corpus, this is *intertextual* analysis (Adolphs, 2006).

The distinction between corpus-based and corpus-driven procedures (as described by Tognini-Bonelli, 2001; see also Francis, 1993) is that the former uses corpus analysis to validate existing theories and hypotheses, while the latter uses the results of corpus analysis to formulate new theories and hypotheses. While this distinction is useful in heuristic terms, it should be borne in mind that in practice there are overlaps between the two. Hardie and McEnery (2010) see the distinction as the difference between viewing corpus linguistics as a methodology (the corpus-based position) and seeing it as a subdiscipline of linguistics (the corpus-driven position). In practice, most corpus stylistic work involves a blend of the two approaches. An example of broadly corpus-based analysis can be found in McIntyre and Walker (2010), who analyze male and female speech in a corpus of blockbuster film scripts. This analysis takes hypotheses generated from the qualitative analyses of film critics and tests them on a large corpus of data. McIntyre and Walker's (2010) analysis provides support for some of these hypotheses (e.g., the notion that gendered roles are reflected in the topics that male and female characters talk about) while invalidat-

ing others (e.g., the notion that male characters operate in the margins of society). Stubbs (2005), on the other hand, is an example of broadly corpus-driven analysis. Stubbs uses corpus techniques to analyze Joseph Conrad's *Heart of Darkness*. Stubbs allows the results of an initial corpus analysis to determine his critical appraisal of the story, finding, for instance, that the word *grass* is associated by collocation with "death, decay and desolation" (Stubbs, 2005, p. 14). While it is possible that Stubbs was responding to literary critical comment on the novel (see Widdowson, 2008, for an alternative perspective on Stubbs's work), it is clear that many of his analytical discoveries would be unlikely to have been uncovered through qualitative analysis alone; here again is evidence that a corpus approach to literary analysis allows a greater degree of objectivity than is often found in the work of conventional literary critics. That corpus techniques should have been embraced by stylisticians is not surprising, given stylistics' concern with objective, rigorous, and falsifiable analysis.

While different in methodological approach, McIntyre and Walker's (2010) broadly corpus-based study and Stubbs's (2005) broadly corpus-driven study both used similar analytical techniques. The most straightforward of these is a frequency count of all the words in a corpus. However, while frequent words might be indicative of the propositional content of a corpus, as Stubbs points out, "textual frequency is not the same as salience" (Stubbs, 2005, p. 11). To determine whether a particular word is indeed foregrounded in our target corpus we need to measure its normal distribution in a reference corpus. For example, a single Dickens novel might be compared against a reference corpus consisting of either the rest of Dickens's novelistic output or a larger corpus of general nineteenth-century fiction. Doing such a comparison will highlight those words which are "key" in the target corpus; that is, words which are statistically more or less frequent than in the reference corpus. Scott (2009) has shown that the reference corpus used does not significantly affect the key word list that is generated, though as Culpeper (2009) points out, if the reference corpus and target corpus are closely related (e.g., one Dickens novel compared against all the other Dickens novels) there is a greater likelihood that the key words generated will be revealing of stylistic features specific to the target corpus. For example, in Stubbs's (2005) analysis of *Heart of Darkness*, one of the most significant key words is *seemed*, suggesting a preoccupation in the novel with uncertainty.

Of course, the list of key words generated is often very long and in such cases it is often an impossible task to analyze each of the key words in turn. In such cases we need a means of reducing the amount of data we have to analyze. One means of doing this is to use a different cut-off point for statistical significance. Corpus linguistic software calculates keyness using a statistical method such as a log-likelihood or chi-square test. Adjusting the p-value in such tests (that is, increasing the level of confidence we want to have concerning whether our findings are indeed statistically significant) will reduce the list of items. Sometimes this alone is not enough and we are still left with too much data to handle. Interpreting long key word lists thus demands a reliable procedure in order to distinguish those words that are simply statistically significant, and those which are both statistically and interpretatively significant. Many of the words in a key word list will be indicative of the content of the text—what is often termed its "aboutness" (Phillips, 1989). Such words can in many cases be disregarded. For example, *river* is a key word in *Heart of Darkness*, though this is unsurprising, given that the focus of the story is a river journey. Similarly we would expect proper nouns to turn up as key, since character names are often specific to one novel. Hence, we can often disregard these too (though this is not to say that proper nouns are never interpretatively significant). Determining key words that are stylistically revealing is often a matter of filtering out proper nouns and key words related to aboutness issues. Often, stylistically important key words are verbs or grammatical words, as with *seem*, above.

Keyness is one of the most useful indicators of style that corpus analytical technology can reveal. In addition to frequency and keyness, though, most corpus linguistic software packages offer an array of other analytical tools. One of these is the facility to compute *n*-grams (also known as "clusters" or "lexical bundles"). *N*-grams are words which turn up frequently in sequence (*n* simply stands for any number). For example, in McIntyre and Walker's (2010) study of male and female character dialogue in blockbuster movies, it was found that among the most frequent 5-grams in the male speech were six grammatically negative clusters (e.g., "I don't know I," "I don't know if"). If we look at the function of these *n*-grams in context, all of them are used to emphasize a complicating action in plot terms, and may thus be seen as one of the genre traits of blockbuster films. In the female speech, among the most frequent 4-grams are a series of interrogatives (e.g., "what are you doing?" "what do you want?"). The function of these clusters in context is to facilitate plot-explanatory dialogue from male characters, thus casting female characters in blockbusters in a predominantly supportive role.

A further analytical tool that is useful to the corpus stylistician is collocation. As we have seen, this can be revealing of the semantic meanings associated with particular lexical items, though as Louw (1993) has shown, collocation is also indicative of what he terms *semantic prosody*. For instance, the word *priest* in the Roger McGough poem "Vinegar" (above) might be said to have a semantic prosody of unlicensed sexual desire by virtue of its frequent collocation with *lecherous*. It is also important to point out that the analytical techniques described so far do not operate in isolation from one another. In an intratextual corpus-based study of Ian Fleming's James Bond novel, *Casino Royale*, Mahlberg and McIntyre (2007) showed that one of the most frequent *n*-grams in the novel, "the back of the," has a semantic prosody of violence, by virtue of its connection with violent events. Here, for instance, is a concordance extract of "the back of the" from the novel:

> picked me up between them and shoved me into **the back of the** car. I went on struggling
> dead, each killed by a single .35 bullet in **the back of the** skull.
> and down behind Bond's back. Bond felt **the back of the** blade pass down his spine.
> another blow, only to get a rabbit punch on **the back of the** neck which made him arch
> by the spill you took. He was standing at **the back of the** crowd with one of his men
> the spectators' feet, his legs in the air. **The back of the** chair splintered with a

In each case, a violent event is related to each instance of the *n*-gram. For example, a character being kidnapped is shoved into "the back of the" car and a bullet is described as lodged in "the back of the" skull. This *n*-gram is loaded with a strong negative semantic prosody of violence, such that any instance of it once this has been established is likely to imbue the reader with a sense of unease concerning what is about to happen.

Frequency, keyness, *n*-grams, and collocation are perhaps the most commonly used analytical tools within corpus stylistics. However, these are not the only options open to critics wishing to use corpora to study literary texts. All the examples cited so far have focused on what can be gleaned from an analysis of raw text. Further stylistic insights can be gained by adding metalinguistic and nonlinguistic information to a corpus via a series of tags. Here we can make a distinction between annotation (the adding of metalinguistic information to a text) and mark-up (the adding of information about nonlinguistic variables). The easiest form of annotation is that which can be added automatically using a computer program. Aspects of linguistic structure that are form-based are easier to annotate automatically than those which have little or no basis in form. Hence, automatic part-of-speech tagging is a relatively straightforward process. The adding of such annotation means that it is then possible for the analyst to extract information not simply about the

frequency and keyness of words, but of the frequency and keyness of tags too; for example, which parts of speech are key in a text. Annotation of categories that are not form-based must be done manually. To date, the most intensive stylistic study to use annotation is Semino and Short's (2004) project to tag a corpus of 260,000 words of English writing (comprising fiction, news, and biography) for categories of discourse presentation (see also the related project to add discourse presentation tags to a corpus of spoken British English, reported in McIntyre et al., 2004). By doing this, Semino and Short (2004) were able to test the model of speech and thought presentation first outlined in Leech and Short (1981), and in so doing found quantitative support for the notion that direct speech is the semantic norm for speech presentation. In addition to various other findings, they also revealed the necessity of a parallel scale of writing presentation, results that would have been impossible to achieve via solely qualitative analysis.

The techniques described in this entry require corpus analysis software. Numerous packages are commercially available and of these perhaps WordSmith Tools (Scott, 2004) is the best known, though other packages such as AntConc (described in Anthony, 2004) are equally good and, in some cases, free. The Web-based Wmatrix (Rayson, 2008) is also highly recommended. In addition to the conventional corpus tools featured in WordSmith and AntConc, Wmatrix automatically annotates uploaded texts for part of speech and semantic categories, allowing for the analysis of key parts of speech and key semantic domains. All of these software packages can be found via the Web. Finally, a range of electronic texts and corpora, many of which are freely available, are stored at the Oxford Text Archive (http://ota.ahds.ac.uk/). The use of corpora in literary analysis is likely to increase as literary scholars become increasingly aware of the advantages they offer. This approach to literary studies improves substantially on more subjective methods by allowing a more objective and falsifiable approach to text analysis. As Sinclair (2004) notes, in all approaches to linguistic analysis it is imperative that we "trust the text." Using corpora allows us to do just that.

SEE ALSO: Concordancing; Corpus Analysis of Literary Texts; Corpus-Based Linguistic Approaches to Critical Discourse Analysis; Corpus Linguistics: Historical Development

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Corpora in Language for Specific Purposes Research

VIVIANA CORTES

Among the various approaches that are often used to study language for specific purposes (LSP), those focusing on the analysis of the genres used by the target discourse communities have attracted a high degree of attention in the last decade. The members of different discourse communities develop specific communicative practices and conventions to communicate with one another and with other communities. Language learners who need to acculturate to a new community that uses a specific language type need to become aware of the forms of discourse used by those communities. For many decades, the description of these discourses was done by analyzing a single text or a very limited number of texts, in an attempt to provide language learners with a framework of reference for the acquisition of this specific language and to help materials designers develop materials that could be used for the teaching of LSP. With the advancements in computer technology and the collection of language corpora (large collections of machine-readable language texts) that have been taking place in the past two decades, the use of recurrent features of language that mark the tendencies of a discourse community can now be easily identified and analyzed. Technology now allows for the collection and storage of hundreds of thousands or millions of texts that provide data to describe language in detail, basing that language description on empirical findings instead of mere intuition.

Corpus studies of LSP discourse cover a wide variety of text types although it is necessary to point out that the bulk of the investigations have been mainly in the field of language for academic purposes (LAP), particularly English for academic purposes (EAP). The major journals in the LSP and LAP fields as well as many edited volumes that focus on these areas of text analysis have shown a strong tendency in the use of corpora for this type of investigations and teaching situations in the past ten years. After a short section that introduces different approaches to the use of corpora in text analysis, the remains of this entry will describe a number of studies that used corpora to analyze LSP and LAP. It is important to point out that the number of corpus-based studies in those areas is extremely high and new studies are continually being developed and added to the literature in applied linguistics, thus the list of studies presented here is far from comprehensive.

Using Corpora to Analyze LSP

Researchers and instructors in LSP try to understand the linguistic characteristics of specialized registers. Traditionally, those investigations have been based on texts and have analyzed the language in authentic texts. Corpus-based text analysis provides the advantage brought about by using a large, principled collection of texts, and by combining quantitative and computational techniques with qualitative interpretations. Corpus-based research methods often focus on the description of lexical, grammatical, or discourse features. When considering the use of corpora for the analysis of LSP, researchers "often have research questions relating to the description of 'registers' rather than individual linguistic features" (Biber, Conrad, & Reppen, 1998, p. 135). Registers are situationally defined

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varieties of language. Some registers are very specific such as introduction sections in research articles in organic chemistry, while other registers are more general, like everyday conversation or newspaper writing. The application of corpus-based techniques to register analysis is a very powerful tool that can provide a framework for comparison to identify register variation more accurately.

As previously mentioned, many corpus-based text analyses focus on the study of particular lexical features, specific grammatical structures, and some characteristics of the discourse under consideration. In the investigation of register variation, corpus-based approaches can be employed to find answers to compare the use of specific lexical or grammatical features across registers or to provide comprehensive descriptions of specialized registers. While many LSP studies have used mega-corpora to analyze register variation, an increasing number of studies use specialized corpora made up of texts similar in topics and type. These corpora are generally called "small" corpora, collections of texts of less than a million words. Among those studies that focused on lexical features in specialized registers, we can mention, for example, Gledhill's (2000) study of academic articles on cancer research. These studies compared keywords across the sections of those articles, identifying significant words and their functions in each of those sections. An example of corpus-based grammatical studies is presented by Biber et al. (1998). These authors investigated the difference in the use of dependent clauses across spoken and written registers (conversations and prepared speeches vs. academic prose and official documents), focusing on the way in which relative clauses, causative adverbial clauses/ subordinate clauses, and *that*- complement clauses are used across these registers.

The linguistic analysis of corpora is often conducted using computer programs for linguistic analysis. This software can be commercially available or free downloadable software, as in the case of the well-known concordancers. Computer programs can also be specially designed for specific studies. The advantages of specially designed software lie in the fact that software designers can tailor these computer programs to their needs and in that way elaborate more sophisticated research questions, as in the case of grammatical taggers, for example. Nowadays, many studies of LSP discourse use multidimensional analysis of language corpora that had been grammatically tagged to statistically analyze frequencies of a wide range of linguistic features simultaneously. As Biber et al. (1998) emphasize, the results of such studies allow researchers and teachers to "understand more fully the specialized registers that students seek to master, as well as the differences from other registers that students are exposed to" (p. 170).

The most widespread use of corpus-based methodologies in the analysis of LSP is undoubtedly related to the analysis of discourse organization. In order to attain a generalizable corpus-based description of discourse structure, several analytical steps are needed, such as determining the type of discourse units and the communicative functions these units perform, segmenting the texts into these discourse units, classifying these discourse units by type and category, and studying the linguistic characteristics of each discourse unit in each text and across all texts in the corpus. These procedures can be completed following a "top-down research approach or a bottom-up research approach" (Biber, Connor, & Upton, 2007, p. 12). These corpus-based research approaches have different starting points and the results they yield present different types of information on the texts that make the corpus under consideration. Biber, Connor, et al. (2007) present a comprehensive description of these methodologies and a number of studies are introduced to illustrate both approaches.

The top-down approach consists in studying the corpus in search of organizational patterns that represent communicative functions used by the members of the language communities that are being investigated. The first step in the top-down approach is to develop a framework of analysis which is then used to determine the discourse unit types

that may be identified in the texts being studied as well as the communicative functions performed by these units. Then, the framework is used in the analysis of all the texts in the corpus. The most popular use of this approach for the analysis of LSP can be found in "move analysis," which was introduced by Swales (1990) in his seminal work on research article introductions. In this approach the text is described as a sequence of rhetorical moves that fulfill a clear communicative function. Texts consist of a series of functional units called "moves" which help fulfill the communicative purposes of a genre. Moves vary in length and they can be the result of the combination of multiple steps. Many researchers have used move analysis to determine the discourse organization and the communicative purposes of research articles in various disciplines and of each of the sections of the research article, as well as in the analysis of other academic genres, such as book reviews. The same type of move analysis was used in the analysis of other type of specialized discourses such as grant proposals and research grants, both in American and European contexts.

The bottom-down approach to the analysis of discourse organization, on the other hand, uses specialized software to segment the texts in the corpus automatically into discourse units. This segmentation is based on linguistic criteria. The discourse units are then studied for a wide variety of linguistic features and they are grouped into discourse unit clusters which share linguistic characteristics (Biber, Connor, et al., 2007). In the bottom-up approach, the procedure starts with the segmentation of the corpus, followed by the analysis and classification of the units and a linguistic and functional description of the discourse categories identified, and the tracing of tendencies in the discourse organization. Some researchers call these discourse segments vocabulary-based discourse units (or VBDUs) and they are mainly identified by boundaries established by the introduction of new information through new vocabulary in the discourse (Biber, Csomay, Jones, & Keck, 2007). This approach was also used to segment and analyze various types of registers such as university classroom sessions and research articles.

In spite of the different procedures used in these approaches, both of them can complement to provide a more comprehensive description of the register under analysis. Biber, Csomay, et al. (2007) agree "that the overall patterns of discourse organization documented by move analysis are generally compatible with those documented by VBDU analysis" (p. 257).

Corpora in LSP

The great majority of the research of studies that described the language in settings other than those connected to academia using corpus-based analyses was conducted in business settings. Most of these studies used top-down approaches to the study of discourse organization. Yeung (2007) for example, studied a small corpus of authentic business reports in search of tendencies in the use of certain lexico grammatical choices and rhetorical features. Flowerdew and Wan (2006) analyzed tax computation letters and a corpus of authentic written auditors' reports from a large international Hong Kong accounting firm, analyzing the structural organization as well as the linguistic and functional realization of this register. Similar methodologies were used to analyze other types of business-related discourse in order to find tendencies in the use of lexico grammatical choices and rhetorical features, as in the case of business reports and faxes, and special business correspondence, such as collection letters.

Several specialized corpora have been collected to study various aspects of spoken business English. McCarthy and Handford (2004) conducted a study of spoken business English based on the analysis of CANBEC, the Cambridge and Nottingham Corpus of

Business English, a collection of texts transcribed from spoken business English recorded in companies of all sizes, from multinational companies to small partnerships. In addition, the Hong Kong Corpus of Spoken English, a collection of conversation and public discourse produced by Chinese speakers, has been transcribed for prosody and intonation and has been used in multiple studies, particularly in the context of the hotel industry for the analysis of different aspects of this specialized discourse. In addition, various studies have recently been focusing on the investigation of the language of outsourced call centers using large-scale corpora that represents the typical interactions and communicative tasks performed in centers in different part of the world that serve English-speaking customers. Studies based on these corpora analyze the frequency distribution and functional characteristics of a wide range of lexico grammatical features.

Studies of philanthropic discourse have also been made using corpus-based methodologies in the last decade to investigate the organizational patterns and linguistics conventions frequently found in various types of fund-raising discourse such as grant proposals (Connor, 2000) and fund-raising letters (Upton & Connor, 2004). Often, these investigations make use of corpora specially designed for these analyses.

A section of the *Longman Corpus of Spoken and Written English* (Biber, Johansson, Leech, Conrad, and Finegan, 1999) was used in a comprehensive grammatical analysis of newspaper writing that reports statistical analysis of this register in comparison to the other registers in the corpus (conversation, fiction, and academic prose). Other studies have also used corpus-based approaches to the study of different aspects of newspaper writing such as the language of headlines and the use of metadiscourse markers to indicate persuasion in this register.

Some studies have used corpora and corpus-based methodologies to investigate the discourse of professional communities outside the business realm, such as architectural discourse, wine-tasting notes, or sports-related discourses focusing on the analysis of rhetorical structures or figurative expressions (Caballero, 2007).

Corpora in LSA

As mentioned previously, the study of language in specific academic settings has made extensive use of corpus-based methodologies. The frequent grammatical features of academic prose have been researched exhaustively in statistical analyses of this register in English as a whole (Biber et al., 1999) and in studies of individual academic registers that used small, specialized corpora of different languages to analyze various linguistic features or discourse organization. The work of Coxhead (2000) that produced the Academic Word List is worth mentioning in this section, as the data in her study has been used as a framework of reference in a large number of investigations of academic vocabulary and for the creation of academic word lists in languages other than English, such as, for example, French.

From the numerous written and spoken academic registers that have been investigated using corpora and corpus-based tools, the experimental research article has been the principal focus of analysis. The bottom-up corpus-based approach has been used to identify and analyze a wide variety of lexical and grammatical features in the experimental research article as a whole or across its sections, within or across academic disciplines. Many of these studies focused on individual linguistic features such as shell nouns or the use of discipline-specific vocabulary. Another group of investigations focused on the identification and analysis of frequent collocations, such as the study of collocations in specialized corpora like medical or pharmaceutical texts (Gledhill, 2000) as well as the study of lexical bundles, expressions defined as extended collocations, in research articles in history and biology (Cortes, 2004), or lexical bundles in four different disciplines in comparison to

other academic genres (Hyland, 2008). Other studies concentrated on salient language structures in this register such as the study of evaluative *that* (Hyland & Tse, 2005), the syntactic analysis of research article titles (Wang & Bai, 2007), and the study of conditionals in medical research articles (Ferguson, 2001). In addition, as previously mentioned in the corpus-based methodology section, many top-down studies focused on the organization and rhetorical analysis of the research article using Swales's (1990) framework of move analysis in whole articles and article sections across disciplines. In addition to the study of research articles, these approaches have also been used to investigate other written academic registers such as theses and dissertations.

Some studies of academic registers have focused both on spoken and written varieties. One of the most comprehensive studies of the language used in university settings can be found in Biber et al. (2004) and in Biber (2006a). The corpus analyzed in these studies covered a variety of spoken registers such as classroom management talk, lectures, speeches, student–professor conferencing, and study group interaction, as well as conversations in the dormitories and service encounters at the cafeteria in various universities across the United States. The written registers covered textbooks, research articles, and other scholarly publications as well as university inception and activities brochures, and written classroom materials such as syllabi. This study presents a thorough analysis of these registers and a comparison across registers and major academic areas. A series of other studies have been conducted on this corpus to analyze specific linguistic features such as, for example, lexical bundles (Cortes & Csomay, 2007) and stance (Biber, 2006b). In addition, MICASE, the Michigan Corpus of Spoken English (Simpson, Lee, & Leicher, 2003), a recorded and transcribed collection of 200 hours of academic speech from across the university, has been used in numerous linguistic studies (Louwerse, Crossley, & Jeuniauxa, 2008).

Biber et al. (1998) report that in recent years corpus-based analyses have become popular for studies of historical linguistics as this area of linguistic study always relied on the study of text collections from past periods to trace linguistic developments chronologically. Diachronic corpora allows for a wide variety of research questions. Some studies have analyzed the historical development of research genres, such as the comparison of medical research articles to speech-based registers from the ARCHER corpus (Biber et al., 1998) and Atkinson's (1992) study of the development of medical discourse over two centuries.

In addition, contrastive analyses of academic registers using parallel corpora are becoming popular in the applied linguistic field (Johansson, 2007) because they help reveal characteristics of parallel and translated texts and they can inform about the analysis of linguistic phenomena that takes place when transferring information across languages. Some studies have focused on the lexical bundles in research articles in Spanish and English (Cortes, 2008), the comparison of the language and organization of book reviews in English and Spanish (Moreno & Suárez, 2008), and the study of research article introductions in Portuguese and English (Hirano, 2009).

It is undeniable that the use of corpora and corpus-based methodologies in text analysis has contributed to great advancements in the research of LSP. The findings of corpus-based studies of LSP provide invaluable information for the better description of these discourses and the direct application of the empirical results of these investigations, which are based on the natural use, to the teaching of these. It is expected that these methodologies will continue evolving, which together with the collection of more and more varied corpora of LSP could help provide a more comprehensive study of these specialized registers.

SEE ALSO: Concordancing; Corpora in the Teaching of Language for Specific Purposes; English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Language for Specific Purposes Research Methods; Research Articles in English for Specific Purposes

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Corpora in the Language-Teaching Classroom

CHRISTOPHER TRIBBLE

Introduction

From the earliest days of language corpus development, corpus researchers have advocated the use of corpus resources in language education, and made significant claims for the impact that language corpora will have in the language classroom:

> Very large collections of language text will shortly become available cheaply on CD-ROM. Quite young learners will gain access to this and will become self-taught DDL (data-driven learning) students. Problems will arise when the textual evidence does not fit the precepts of classroom and text book, and the mythology will prove no match for the facts. (Sinclair, 1997, p. 30)

Pedagogically, the use of language corpora in language teaching has been justified from two main perspectives.

The data-driven learning (DDL) model (Johns, 1991) is situated within the learner autonomy tradition in language education. The key idea in DDL is that learners learn best when they "discover" the language in the same way that corpus linguists do; that is, through a bottom-up process of rule building on the basis of observation and analysis of language data. In a DDL framework, the corpus offers a means whereby students can take control of their own learning, with the teacher taking on the role of facilitator and co-researcher.

An alternative but compatible justification for the introduction of corpora to the language-teaching classroom is found within *schema theory*. Cook (1997, p. 86) comments that: "A schema is a mental representation of a typical instance. Schema theory suggests that people understand new experiences by activating relevant schemas (also called 'schemata') in their minds." For Widdowson (1984) schema theory has relevance to language learning, because this latter can be conceptualized as a process in which meaning and form become associated through repeated exposure to patterns of language in use, thereby establishing schemata. Corpus tools provide an ideal starting point for the investigation of language-in-use and the building of schematic knowledge because: "they allow learners to observe *what* is typically said in given circumstances, and *how* it is typically said, and to relate the two." (Bernardini, 2004, pp. 17–18, emphasis in the original).

Despite the developments which have taken place in both direct and indirect applications of corpus data in language education (Römer, 2008) the use of corpora in language learning classrooms has occurred much less widely than had been expected. Although a wide range of corpus-informed learners, dictionaries, and grammar reference works have become available to language students and language teachers in recent years (e.g., Biber, Johansson, Leech, Conrad, & Finegan, 2000; Rundell, 2007), and while attempts have been made to show how corpus investigation can be used in the language classroom (Tribble & Jones, 1990; Johns, 1991, 1994; Aston, 1996; Flowerdew, 1996), the evidence for the successful use of corpus resources in these contexts remains slight (Chambers, 2005; Aijmer, 2009).

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One problem has been that corpora prepared for non-language teaching purposes, for example, the British National Corpus (BNC), have proved difficult to exploit in language classrooms. A possible alternative solution, that of tailoring the corpus to meet the needs of language learners, may prove to be more fruitful (Braun, 2007), but even here, problems remain. Braun's (2007) study offers some evidence of success in integrating corpus research into a language course for 14–18 year olds. However, Braun's study also highlights the scale of the challenges that still exist. These include the problem of getting the right data for language learner corpora and, importantly, the need for teacher training in the use of corpora in materials development and classroom applications.

Corpus Resources for General Language Education

A good match between corpus resources and learner needs is an essential pre requisite for the successful use of corpora in language education. In general language teaching, corpus resources have the potential to provide students with an accessible and effective means of extending their understanding of how words are used in context. Where the emphasis is on function words (e.g., determiners, prepositions, modal verbs), Biber (1990) has demonstrated that small balanced corpora such as the BNC Baby (a 4-million-word subset of the British National Corpus containing 1 million words each of academic writing, newspaper language, spoken conversation transcripts, and prose fiction) can be helpful to learners and teachers.

As an example, consider the case of students in a lower level group who have problems with the position of the adverb *already* in a declarative clause: "The most unloved person who ever lived was Sue. When Sue was born her parents did not want her as they had *already* ten children to look after." Using data from the BNC Baby News subset it is possible to provide learners with a printout like the one in Figure 1. The task requires learners to identify where in the clause the word *already* is most frequently found and to formulate, if possible, a rule which describes its behavior in such contexts (BNC Baby, 2005).

With the evidence to hand, learners should be able to see that *already* comes either after the verb "to be" when it is used as a main verb (*he is* already *PPS to the Chancellor* . . .), or between an auxiliary and a main verb (*we have* already *sold* . . . , *certain names will* already *be* . . .), or simply in front of the main verb (*which* already *existed* . . . , *who* already *have the Body Shop franchise* . . .). On the basis of these kinds of insight they can form a provisional rule for the use of *already* and try it out in their own writing.

```
1     rmances of Macbeth at the Civic are already sold out. But there are ti
2     lved. Inevitably certain names will already be familiar Stephen Crwoth
3     ed a group booking for 50.; We have already sold 87 per cent of our ti
4     rlington. Provisional bookings have already been made for entertainers
5     d banquets. Beehive Variety Ltd has already spent £175,000 on improvem
6     ies like Trevor's where refunds had already been paid. He feels he has
7     a minute's peaceful sit down; those already seated should stand up and
8     m lad with a residual accent, he is already PPS to the Chancellor. He
9     nd strengthen the connections which already existed,; she said. The ch
10    Complaints about the coffee bar had already been dealt with by adding
11    Slice of Saturday Night (May 1823), already seen in York and Darlingto
12    returns in June for a season that's already heavily booked. London Con
13    st for Conservation Volunteers have already achieved much to improve t
14    w, but it's important to see what's already here before we go ahead an
15    ed on the Tees estuary, the area is already an internationally-famous
16    here are going all the way. They've already played in the Northern Int
17    g at local shops and that there was already sufficient land in the are
18    dgement from the new board that the already twice-cancelled figures fo
19    tion. Liz and Terry McLoughlin, who already have the Body Shop franchi
20    oun Brady said similar schemes were already underway. THE number of em
```

Figure 1 A concordance of *already* taken from the BNC Baby

It is important to note that this kind of pedagogic support requires a significant level of mediation by the teacher. The teaching materials should not contain overwhelming amounts of data, and the concordance lines which are presented to students must be selected to present useful examples from which students can learn. Presenting learners with thousands of rows of unmediated concordance output is a recipe for failure. Indeed, in many circumstances, especially with beginners, the effort involved in learning to use corpus investigation tools and in filtering out irrelevant or confusing examples would often be much greater than the benefits which students could gain from the task. In such cases a modern, corpus-informed reference work or course book will usually give learners the insights they need more quickly and effectively than large amounts of corpus data.

For learners who need to build knowledge of specific vocabulary, a general corpus is unlikely to provide enough examples to be useful. This problem can be resolved, however, through the use of teacher-developed small corpora which make use of online or CD-ROM encyclopedias such as Encyclopedia Britannica (www.britannica.com) or Wikipedia (www.wikipedia.org). While many higher education institutions discourage the use of Wikipedia as an academic reference resource (because its authority is open to question), as a source of language forms it can be extremely useful.

As an example, consider the case of a group of business studies students who are confused about the distinction between the words *economic* and *economical* in English. A micro-corpus containing business-related texts (taken from Wikipedia in this instance) can provide rapid exemplification of the contrast between these two words. Students can then be asked to elaborate a "rule" for the use of the two words using concordance output (as in the selection in Figure 2) and collocate information derived from larger concordances for *economic* and *economical* (see Figure 3).

Typically, students can be expected to come up with statements such as:

> On the basis of the available evidence you use the word *economic* with reference to systems of trade and the management of money, or to the study of these systems. You use *economical*, by contrast, when referring to things which are inexpensive or not wasteful.

The advantages of an electronic encyclopedia micro-corpus in this instance are that: (a) the texts are presented in contexts that are interesting and accessible for the learners, and (b) although the corpus is small it offers sufficient (rather than overwhelming) data.

```
nomics , as well as branches of history (economic history ) or geography (econ
 in wages. Marx built much of the formal economic analysis found in /Capital/ on
lative surplus population as coming from economic causes and not from biological
 favor of greater capital investment for economic development in a desired patte
 e were bond slaves of the freeholders . Economic discussion was driven by scarci
nomist of the world: His contribution in economic management, APH Publishing cor
o a significant extent from an idealized economic model or ideology , the
ction and process that local real estate economic sales processes and laws are c
more than 1000 members of the Government Economic Service , who work in 30 gover
cused on an individual person in a given economic society and Macro economics is
15] ^[16] In the 1700s, one of the first economic writers was Richard Cantillon
Its preoccupation with functionalism and economical building meant that ornament
 , seemingly ignoring the request for an economical building, incorporated nume
     arrisoned while under attack. Other economical buildings available include
n engine size ; smaller CV usually meant economical cars. The 602 cc engine of t
 I, specialized manufacturers using more economical construction methods were se
matic, high-ceiling foyer . It is a very economical design because the basement
nt are less capital intensive and may be economical in smaller unit sizes than l
nique of bipack color photography became economical in the early 1910s when the
hillips. In addition to being a far more economical process for producing concen
 construction should be "substantial and economical rather than ornamental â€¦ a
. The recommended healthy 50% RH is more economical to maintain. Extra heat inpu
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Figure 2 Concordance example: *economic* versus *economical*

ECONOMICAL	ECONOMIC
building	activity
car	freedom
engine	geography
heating	growth
manner	historians
means	history
methods	ideology
point	planning
production	system
repair	systems

Figure 3 Collocates table for *economic/economical*

Teaching Language for Specific Purposes

A context in which appropriate text corpus resources can be particularly helpful is that of language teaching for specific purposes. In such contexts two kinds of corpus data are typically used: *exemplar* and *analog* corpora.

An *exemplar* corpus is a collection which contains texts that are identical in communicative purpose and organizational structure to the texts the students want to learn how to write. On a business English course, examples of these kinds of text genres might be

- brochures for products or courses,
- mission statements for corporate organizations or international charities,
- writing from the students' own disciplinary areas (assignments, dissertations, etc.),
- offer letters for financial services.

Students in an academic writing program can gain valuable insights from the use of exemplar corpora as in, for example, the study of citations in academic writing (Hyland, 1999). Difficulties of building exemplar corpora can be overcome by the simple strategy of asking students to provide electronic versions of articles or other texts which are important to their studies, along with examples of their own writing (with a record of the grade achieved).

An *analog* corpus contains texts which, while they are not identical to the texts that students are learning to write, are close enough in communicative purpose and organizational structure to have pedagogic value. Such a corpus might be useful for a teacher who faces the problem of developing a corpus of relevant text exemplars for students who come from a wide range of disciplinary backgrounds, as in many English for specific purposes (ESP) and English for academic purposes (EAP) programs.

Examples of analog corpora could include

- academic journal articles (for use in writing programs for students in higher education),
- factual junior encyclopedia essays and articles (for use in lower level writing courses),
- collections of texts drawn directly from language teaching course materials (for use in elementary courses).

One of the best examples of a learning program based on the use of an analog corpus can be found in the Kibbitzer program at the University of Michigan (http://micase.elicorpora.info/micase-kibbitzers). Using examples from university lectures, seminars, and written work, the materials allow learners (with the support of tutors) to investigate important aspects of the use of English in a North American academic setting.

The Issue of Native-Speaker Data

A final concern which needs to be discussed in this section is the extent to which native-speaker corpus data is appropriate in the foreign language learning classroom. Widdowson has commented that in the project of language education: "We are concerned here not primarily with what language users know, but with what language learners need to know" (Widdowson, 1991, p. 20).

This statement raises a number of important issues with regard to the kinds of examples which should be offered to learners, and the pedagogic processes which should be deployed in order to make them relevant to their learning needs. Thus while strong arguments have been made in favor of the use of native-speaker data as a resource in curriculum and materials development (O'Keefe, McCarthy, & Carter, 2007), others have argued in favor of the use of corpus data based on lingua franca encounters (Seidlhofer, 2000). Their claim is that this variety represents the majority of interactions between speakers of English as a foreign language, and offers, therefore, a more appropriate model for foreign language pedagogy (see the extensive discussion in Seidlhofer, 2003).

It can, however, be argued, that when building a corpus for advanced level students of writing, the native/non-native status of the writers whose texts are included in the pedagogic corpus is of less importance than their expertise as writers in their disciplinary area.

Technological Requirements for Using Corpora in the Language-Teaching Classroom

For teachers or course book writers with access to the Internet, several free resources are available for the preparation of classroom materials or activities. One of the most useful currently available is at Brigham Young University's Corpus website (http://davies-linguistics.byu.edu/personal). Using the tools provided through this site it is possible to work with the British National Corpus, the TIME Corpus of American English, and corpora of contemporary and historical American English. Samples from the British National Corpus can also be accessed through the BNC website (www.natcorp.ox.ac.uk/using/index.xml.ID=simple), and limited searches of the Collins Wordbank (www.collins.co.uk/Corpus/CorpusSearch.aspx) can be carried out online. The WebCorp search engine also provides an excellent way of systematically searching the Internet for linguistic data and presenting results in ways which can be educationally useful (www.webcorp.org.uk; see also http://tiny.cc/corpora).

Hardware and Software

The hardware requirements for developing and analyzing classroom corpora are now available on most basic personal computers. For the development of specialist corpora it can also be useful to have access to a desktop scanner and optical character recognition (OCR) software which can convert scanned images of documents into machine-readable text. For those interested in developing corpora from electronically published data, it is also essential to have access to software which is able to convert large numbers of PDF documents to a plain text format.

To carry out corpus research it is essential to have access to a corpus analysis or concordancing package (output from such programs has already been shown above). The two best known commercially available options are WordSmith Tools version 5 (Scott, 2008; www.lexically.net/wordsmith/) and MonoConc Pro (Barlow, 2000; www.athel.com/mono.html), while AntConc (Anthony, 2006; www.antlab.sci.waseda.ac.jp) offers a cost-free

alternative, and is particularly useful for the processing of smaller corpora. All these programs allow the user to make wordlists and concordances, and to generate examples of collocations (groups of words which typically occur together). WordSmith Tools and AntConc also enable the study of phenomena which Scott (1997) calls "keywords," that is, words which are statistically prominent in a research corpus when it is compared with a larger corpus, and of the frequently occurring multiword combinations which Biber and Conrad (1999) call "lexical bundles."

Conclusion

Although corpora have not been used in mainstream education to the extent which might have been hoped for, they are emerging as an important resource in teaching in specialist language areas (Thompson, 2007) and are likely to constitute an essential resource in pedagogic accounts of specific language use. There is also a much higher level of awareness of the potential of corpora on the part of teachers and publishers than hitherto, and if appropriate corpora can be made available to meet the needs of a wide range of learners, there is a good chance that the predictions of the pioneers of corpus-informed language education may yet be fulfilled.

SEE ALSO: Corpora: Specialized; Corpus Analysis of English as a Lingua Franca; Corpus Analysis of English as a World Language; Corpus Analysis for a Lexical Syllabus; Corpus Analysis of the World Wide Web; Corpus Analysis of Written English for Academic Purposes; Corpus Linguistics in Language Teaching

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Corpora in the Teaching of Language for Specific Purposes

VIVIANA CORTES

The analyses of specialized corpora (i.e., large collections of machine-readable texts) help describe language in detail, providing data that can be easily transferred to pedagogical contexts. Thus, corpus-based language analyses have become an invaluable tool in the teaching of, and materials design for, language for specific purposes (LSP), as language learners need to master the specific discourses used in their new language communities to become successful members of those communities.

The origins of the relationship between corpora and English-language teaching seem to go back to the second part of the 1980s (Gabrielatos, 2005). After the publication of the *Collins COBUILD English Language Dictionary*, several papers reported the use of corpus-related materials in the language classroom (Johns, 1988). The relationship between corpora and language teaching has been evolving ever since and has resulted in an important number of corpus-based research studies that report pedagogical applications of corpus-based research findings (Sinclair, 2004; Flowerdew, 2005).

There seem to be two general approaches to the use of corpus-based materials in the classroom. Instructors can analyze corpora and use the results of these analyses for materials design or they can introduce corpora into the classrooms, training students to use them (Partington, 1998). The former approach is often called the soft approach, while the latter is called the hard approach (Gabrielatos, 2005). In the former approach, instructors often try to determine frequency patterns for specific linguistic features and use those analyses to answer questions that were raised in class, or perhaps instructors may use corpora to generate authentic data and examples. In the second approach, instructors provide students with appropriate training to explore corpus materials to conduct linguistic inquiry by themselves, and they may also introduce students to the different states of corpus collection. In her comprehensive review of corpus- and genre-based approaches to text analysis, Flowerdew (2005) highlights the importance of the identification of specific genres to be explored in the English for specific purposes (ESP) and English for academic purposes (EAP) class. A corpus designed to inform classroom teaching or materials design could provide learners with opportunities to draw generalizations on genre that they could eventually transfer to their own language production (Tribble, 2002). Students' analyses of corpora make use of techniques connected to data-driven learning (DDL) (Johns, 2002), a process which "confront[s] the learner as directly as possible with the data" (p. 108) allowing the learner to become a language researcher and discover patterns in the language through activities that explore language learning as schema-based restructuring (Bernardini, 2004).

When students have to create a text in the target language which belongs to a genre they might not be familiar with, they should examine similar instances of that genre to try to discover linguistic conventions and the discourse organization patterns which are not easily found in dictionaries or grammars (Flowerdew, 1993a). This is part of the rationale for the creation of corpus-informed materials or corpus-based course curricula for LSP courses, trying to use a twofold top-down/bottom-up approach to the analysis of the target language. Integrating corpus-based analysis to genre-based approaches to text

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analysis helps integrate these approaches in order to provide a better description of the target registers under analysis. In addition, the use of learner corpora (collections of texts produced by non-native speakers of the target language) provides a very valuable resource for LSP materials design and language teaching.

Producing corpus-based materials for teaching general English is a very complex procedure and can involve a wide variety of variables which may go beyond corpora collection and analyses (Gavioli, 2005). In spite of the advantages of using corpora in materials design, corpus work meant for the design of a syllabus for a course of general English can be an overwhelming task, which is reflected by the few truly corpus-based and corpus-informed materials that are currently commercially available (McCarthy, McCarten, & Sandiford, 2005). In the world of teaching LSP, on the other hand, "corpora may be a practical and very interesting resource" (Gavioli, 2005, p. 23) as a corpus made up of specialized texts can produce the linguistic features that characterize those registers, and those items can be used in the design of LSP syllabi. The use of small specialized corpora to teach LSP is not without some concerns, however. Sometimes, students who work with small, specialized corpora may try to transfer their findings beyond the scope of the register they analyzed through these corpora to less specialized texts. This drawback, however, can be avoided by providing students with different types of corpora that could clearly show them the limits of their extended generalizations.

Corpora and Corpus Tools for LSP

LSP teachers have always been more interested in "what to teach" than in "how to teach" (Hunston, 2002, p. 198); that is, they need to make their students aware of the language features that characterize the specialized target language. Corpus studies can be a great help in making many pedagogical decisions because they often focus on the frequent vocabulary and typical phraseology of certain registers and also on the way in which language users organize their discourse and relate to their audiences. A specialized corpus is a collection of texts that represents a sample of a sublanguage (which can be more or less specialized) and such corpora "reflect the teaching or research purpose they were produced for" (Gavioli, 2005, p. 61).

When using corpora and corpus data in the LSP classroom, the most popular corpus analysis tool is the concordancer, not only for the teacher or materials designer developing curriculum or specific materials for a class, but also for students who are exploring the corpus themselves. Concordancers are computer programs that can be acquired commercially or sometimes freely downloaded from the Internet. This type of software allows for many aspects of linguistic inquiry: key words, key words in context (KWICs), and n-grams are among the most popular. Key word analysis produces lists of words that occur very frequently in a register in comparison to some norm. This application, for example, allows LSP teachers, materials writers, and students to create specialized word lists that can be easily identified in a single text or a corpus of specialized texts (O'Keefe, McCarthy, & Carter, 2007). KWICs (or concordance lines) provide information to identify the "lexicogrammatical profile" of words and expressions (p. 14), such as the word's most frequent collocates, fixed expressions in which the word may often be found in, as well as its syntactic and semantic restrictions together with its prosody or the particular environments in which the word commonly occurs. A wide variety of corpora that can be accessed online (McEnery, Tono, & Xiao, 2006), such as the Michigan Corpus of Academic Spoken English (MICASE) (Simpson, Lee, & Leicher, 2003) or the Corpus of Contemporary American English (COCA) (Davies, 2008) offer online concordancers with specific applications that can be used for online linguistic searches on the texts provided by the corpora in the website. Hyland (1996) stresses the importance of concordanced output for the analysis of

certain linguistic features in specialized registers, such as the use of hedges in particular sciences. Corpora and concordancers have become essential tools in the identification and analysis of specialized vocabulary and the use of idioms in specialized contexts for LSP teaching.

Corpora in LSP and LAP Materials and Curriculum Design

Numerous studies revealed the advantages of using corpora in the LSP class and in the development of LSP materials (Ketterman & Marko, 2002; Gavioli, 2005), with many examples of this approach to LSP teaching belonging to the field of language for academic purposes (LAP). It is important to explain here that commercially available corpus-based LSP materials for teaching specific genres connected to target languages are not easy to find. In addition, many important differences have been found when comparing LSP textbook data and LSP corpus data. For example, Thompson and Tribble (2001) described citational practices in academic writing together with the language forms used to realize these citations. They reviewed published teaching materials produced for this purpose and found that these materials offer little constructive support to novice writers, as most of the textbooks reviewed did not provide explicit advice on how to manage citations in different disciplines.

The majority of the corpus-based materials used in this approach are built and developed by course instructors or materials designers in charge of adapting or developing materials for particular LSP situations. Bovea Menero (2001) conducted a study in which she compared a small corpus of authentic business letters and a corpus of business letters from English textbooks, focusing on ways of addressing the addressee, ways of making personal allusions, colloquialisms, and the use of subtechnical business vocabulary. The results of her study showed that the language used in authentic letters was more colloquial and direct than that used in textbook letters, which results in shorter and more personal allusions in the authentic letters and longer, more verbose, and rather more formal texts in the textbook corpus, confirming that the analysis of corpora made up of authentic texts provides the most appropriate sample of target language for LSP instructors and students.

Among some of the examples of corpus-based materials or corpus-based curricula for LSP, the most frequent cases are in the teaching of business English or legal English, particularly in the teaching of writing. Curado Fuentes (2002) introduced the analysis of a business English corpus through language-learning tasks. He collected and analyzed a representative corpus of English for business science and technology, selecting the texts that satisfy topic interests that follow university and professional curricula and which match the types of skills that need to be highlighted in the ESP context. His corpus covered a wide variety of genres, from business research papers and textbooks to reports of products and sales, as well as samples from other written and oral genres such as conference abstracts, electronic discussions, and technical reports. He conducted lexical and grammatical analyses on the corpus and used the results of those analyses as the source of information for his curriculum development, designing materials and activities that reflected his findings. Another application of business language exploration through corpora analysis is presented by Popescu (2007) in her attempt to design materials and activities to teach business collocations using concordancing lines from different corpora (including the British National Corpus and the Business Letter Corpus) in a comparative manner, and dictionaries, and even encouraging students to create their own business letter corpora. Popescu emphasizes the importance of adapting corpus-based LSP vocabulary materials to the students' level of proficiency, always trying to design authentic, real-life tasks. In a similar manner, Weber (2001) suggests the use of concordancers to help raise students'

awareness of the use of the generic and structural features frequently occurring in legal essays. Weber describes a wide variety of concordancing activities designed for a writing course for law undergraduate students at the University Center in Luxemburg. In another study, Mudraya (2006) describes how she used the findings of the analysis of the Student Engineering English Corpus (SEEC) to create materials and activities to teach vocabulary and collocation in the LSP class by means of the use of concordancers and the exploration of word frequencies and concordancing lines for the teaching of language in general and LSP in particular. Pinna (2007) illustrated the whole process of the collection and use of corpora to create materials for LSP teaching, starting with the collection of a corpus of oral implantology that was used by this author as a language-learning resource for students of dentistry who specialized in that subfield. He presented a wide variety of corpus applications to the LSP classroom and the exploration of this specialized corpus to expose the students to the typical contextual associations of words and terms that make up the complex skills possessed by experts in this specific type of discourse.

Perhaps the most comprehensive study of the application of corpora and corpus-based tools to the teaching of LSP, particularly of English for specific purposes (ESP), is the one by Gavioli (2005). Her book clearly identifies the advantages of collecting corpora for materials design and the different uses that can be made of those corpora in the classroom. Her work is based on two small corpora specially collected for curriculum design: a medical corpus made up of research papers in six subfields in that discipline and a corpus of economic–political texts, which were meant to help students familiarize with issues related to the European Community. Gavioli explains that working with small corpora may be problematic because this type of corpus only provides partial descriptions of the specialized languages under consideration, but she stresses the importance of using corpora in LSP teaching as she considers this field to be a "particularly suitable area for corpus-based teaching and learning" (p. 14). Her approach to the use of corpora in ESP develops around preparing students to become language analysts, exploring corpora by means of concordancers, and guiding them in the process of data analysis and towards what type of linguistic phenomena to focus on while conducting that analysis. Gavioli also introduces a series of language experiments carried out by ESP students who worked with specialized and nonspecialized corpora trying to find solutions to problems connected to their own learning of the language.

As previously mentioned, many curricula developed for the teaching of LSP focus on courses of LAP and reflect the analysis of academic-related genres such as the book review, the research article, or university lectures, both for target language analysis and for materials design. Flowerdew (1993b) explains the advantages of the different uses of concordancing in course design. He presents a case study of a course designed in the Language Center at Sultan Qaboos University in Oman. This foundation course was developed for science students at this English-medium university. In the scenario presented by Flowerdew, science and English are taught in parallel, and the English course bases its materials on the science course. The English course was "developed around the language and communicative activities students are exposed to in science" (p. 232). A corpus was then created consisting of transcriptions of the biology lectures that students received and readings in science, and it was analyzed by means of concordancing software for word frequencies in search of specialized and semi-specialized vocabulary. These frequency data were then used as criteria for syllabus selection and grading and for comparison with frequencies from a nonspecialized corpus. The results of the use of the concordancer helped to identify which uses of items to teach and provided examples that were directly incorporated into the instructional materials. Flowerdew presented a complete unit developed following this corpus-informed approach, which was used in the course described in his article.

Several course curricula and materials designed for LAP have originated in the analysis of MICASE. Pérez-Llantada (2005) discussed the role of corpus methodologies in providing information on frequency variability, linguistic patterning, and functional behavior of words in ESP lecture comprehension and how corpora help ESP practitioners investigate real language use to make informed decisions about teaching priorities. Based on findings from the same corpus, Neely and Cortes (2009) provide a variety of corpus-based materials aimed at raising students' awareness of the use of a group of lexical bundles, which are defined as groups of three or more words that frequently occur together, as discourse organizers in academic lectures.

Two very comprehensive and groundbreaking articles that present corpus-based curricula for the LAP writing class are Lee and Swales (2006) and Cortes (2007). Lee and Swales describe an experimental corpus-informed EAP course for doctoral students, in an approach that they called "technology enhanced rhetorical consciousness-raising" (p. 72), presenting students with knowledge and tools needed to work with expert corpora in order to examine these corpora in search of lexico-grammatical and discourse patterns. Students in this course used specialized corpora of academic writing and speech (MICASE, the Research Article Corpus, and academic texts from the British National Corpus) and they were taught to use online and computer-based concordancers in order to analyze the corpus for self-learning. Students were also instructed to compile their own corpora made up of their own writing and expert texts in their disciplines. These authors included an overview of the course structure, the linguistic and discourse phenomena examined in the course, together with a description of its advantages and disadvantages as reported by both learners and instructors. The results of the interviews conducted to receive feedback on the course design and application confirmed that the participants found the use of corpora in the classroom empowering, and they could see the advantages that the use of corpora presented over the use of reference or grammar books.

In a parallel-designed course, Cortes (2007) presents a genre-based and corpus-based class designed for advanced international graduate students. The course intertwined both top-down and bottom-up approaches to the analysis of a corpus through data-driven learning activities. Students' analysis of the especially collected corpus of research articles in their academic disciplines was guided by a set of readings extracted from research studies in applied linguistics that students used as a framework of reference for their own exploration of the corpus. They used specially designed concordancing software to analyze recurrent linguistic features in the genre, and introspective analysis of the different sections of the research article to identify the communicative purposes of those sections.

It is expected that the use of corpora in the analysis and description of varied registers in years to come will continue yielding findings that can be directly transferred to LSP teaching materials and curriculum design. As with other language-teaching areas that have started using corpora, LSP will definitely benefit from the advancement of computers and the use of these advancements in the exploration of more and more varied specialized language corpora.

SEE ALSO: Concordancing; Corpora in Language for Specific Purposes Research; Corpora in the Language-Teaching Classroom; Genre and Discourse Analysis in Language for Specific Purposes; Language for Specific Purposes Learner Corpora

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Corpora: Chinese-Language

WINNIE CHENG

Introduction

Chinese corpus linguistics has made rapid developments over the last decade in the areas of corpus building, exploration in information technology, and publicly available corpus resources, and has introduced various practical applications, primarily in education and research. Chinese corpus construction work began in the 1920s (Feng, 2001; Zhan, Chang, Duan, & Zhang, 2006) when Chinese printed texts, with Chinese characters as the basic unit, were collected manually and the frequencies of Chinese characters were counted by hand to examine statistical data in order to understand the actual usage of Chinese characters in real-world contexts. The quantitative findings contributed to the compilation of Chinese textbooks to help primary school children to read and write Chinese characters. Between the 1980s and the early 1990s, Chinese sentences were segmented into word sequences by hand with the aid of computers for frequency counts of Chinese characters, and Chinese corpora were used to compile Chinese dictionaries, select the most frequently used words for Chinese textbooks, and draft the specifications for Chinese word segmentation (Zhan et al., 2006). From the mid-1990s, Chinese corpora were annotated and no longer confined to written text material but included spoken Chinese (Zhan et al., 2006).

Chinese speech and text corpora are increasingly important for the research and development of word segmentation and the practical applications of word segmentation in information retrieval and part-of-speech tagging, automatic speech recognition, text-to-speech conversion, natural language processing, and learning and teaching (e.g., Li & Xu, 2005; Emerson & O'Neil, 2006). Two such examples are the Chinese–English Parallel Corpus (Chang, 2004) and the Chinese Interlanguage Corpus (Zhan et al., 2006).

The Chinese–English Parallel Corpus, with over 20 million characters of Chinese texts of different types and corresponding English texts, contains texts from the Internet covering a range of domains including newspaper articles, technical articles, literature, and movie scripts (Chang, 2004, pp. 283–84). The parallel corpus is annotated in three ways: global textual attributes, monolingual textual structural annotation, and parallel alignment annotation (p. 284), and has been used in the development of a monograph-oriented machine-aided translation system, a contrastive study on Chinese and English passive form, and bilingual dictionary compilation (p. 290).

The Chinese Interlanguage Corpus, developed by the Beijing Language and Culture University in 1995, contains 5,774 Chinese compositions and other exercises written by 1,635 foreign students from 96 countries and regions learning Chinese in nine universities in Beijing and other cities (Zhan et al., 2006). The corpus was annotated to reveal errors such as incorrectly used Chinese characters and words, and ill-formed sentences. It provides useful information to Chinese language teachers and textbook editorial teams and so promotes effective learning of Chinese.

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Chinese Corpora for Linguistic Studies

Chinese corpora have been used as resources for the studies of the Chinese language and cross-linguistic comparisons of English and Chinese (McEnery & Xiao, 2004), focusing on the linguistic aspects of lexis, grammar, semantics, pragmatics, phonetics, and phonology.

Corpora are most commonly used for lexical development, particularly in lexicography (Emerson & O'Neil, 2006). As Chinese words, unlike in many other languages, are not identifiable by spaces, it is problematic for natural language processing (NLP) applications that operate on this basis for purposes of information retrieval and data mining. As a result, researchers working with Chinese corpora have focused on word segmentation using a variety of methods, for instance using existing lexica to form "the core of a tokenization tool" (Emerson & O'Neil, 2006, p. 43). The English–Chinese Parallel Corpus (1 million English words and two million Chinese characters) has been analyzed to support the learning of lexis (Wang, 2001). The adverb *xianzai* ('now') was analyzed by eight Chinese students who noted that 'now' can also be translated as *muqian* ('in front of eyes'), *cike* ('this moment') and that 'now' is also used to draw attention: *wei* ('well' or 'listen') and *haole* ('all right') (Wang, 2001, p. 182).

Deng (2005) looked into the verb/noun collocation behavior of Chinese students, by comparing the Chinese Learner English Corpus (CLEC) with the Brown Corpus of Written American English (Brown) and the Lancaster–Oslo–Bergen Corpus of Written British English (LOB). Deng (2005) examined 'learn', 'gain', and 'success' and found collocates used by Chinese students differed greatly from those used by native English speakers, both in frequencies of occurrence and collocational patterns. For instance, Chinese students used 'learn' much more frequently, and despite similar collocates of 'learn . . . a subject/a language/ something', Chinese learners used 'learn . . . knowledge/technology/experience/ skills' which are not found in the Brown or LOB corpora (p. 759). The unique usages were found to be due to "mother tongue interference" (p. 760).

A spoken corpus, composed of both non-face-to-face talk on the Electric Bulletin Board System (BBS) and face-to-face daily conversation mainly produced by young people in Taiwan, was analyzed to explore the lexical, grammatical and discourse functions of *shuo* 'say' (Wang, Katz, & Chen, 2003, p. 457). The study explored the grammaticalization of *shuo*, triggered by metaphorical and pragmatic extension, by drawing on the general tendencies of semantic change proposed by Traugott (1982, 1989), namely grammaticalization will proceed from the propositional (i.e., objective, ideational) to the textual and to the expressive (i.e., subjective, speaker-based) level, but not in the reverse direction (Wang et al., 2003, p. 481). Wang et al. (2003, p. 483) found that *shuo* in Taiwan Mandarin is going through the semantic changes suggested by Traugott. The lexeme *shuo* changes from the propositional level, where it is a verb meaning 'say' that "prefaces an utterance conveying information," to the expressive level, where it functions as a discourse marker, and "encodes the attitude of the speaker toward the proposition" (p. 458). The corpus-based study found that *shuo*, in addition to serving as a complementizer, can also "occur in an utterance-initial position, functioning as a marker of hearsay, and in an utterance-final position, as a marker of counterexpectation or as an intensifier" (p. 457).

A study in Hong Kong compared an existing Chinese synonym dictionary, the *Tongyici Cilin*, with lexical items from the finance and economic news domain from a contemporary Chinese corpus, the Linguistic Variation in Chinese Speech Communities (LIVAC), to "investigate the commonalities and uniqueness of the lexical items used in various communities . . . and to evaluate the adequacy of the *Tongyici Cilin*" (Kwong & Tsou, 2006, p. 325). The *Tongyici Cilin* contains 70,000 lexical items. It was first published in the 1980s based exclusively on Chinese as used in post-1949 Mainland China (p. 324). The LIVAC contains "newspaper articles collected regularly and synchronously from six Chinese speech

communities, namely Hong Kong, Beijing, Taipei, Singapore, Shanghai, and Macau" (p. 325). The study found that 23–40% of the candidate words from various subcorpora are unique to the individual communities and 70% of them are not covered in *Tongyici Cilin* (p. 331). Analysis of the LIVAC shows the highest word usage similarity between the Macao and Hong Kong varieties, followed by Hong Kong and Taiwan, and Hong Kong and Singapore and the lowest word usage similarity between Shanghai and Hong Kong (Feng, 2006, p. 193). It also shows fewer different words (types) used in Singapore and more different words (types) used in Shanghai, probably because "Singapore Chinese language is not the exclusive language in the local social life, whereas Shanghai has a special position in China and the economic activities are extremely active" (Feng, 2006, p. 193).

Using two comparable corpora: the Freiburg–Lancaster–Oslo–Bergen Corpus (FLOB) (1991) and the Lancaster Corpus of Mandarin Chinese (LCMC), Xiao, McEnery, and Qian (2006) studied not only passive constructions in British English and Mandarin Chinese, but also "more fine-grained genre distinctions between the two languages" (p. 110). Analyzing both spoken and written data, their study shows that although passive constructions in both English and Chinese display "a basic passive meaning," they are different in terms of "overall frequencies, syntactic features and functions, semantic properties, and distributions across genres," due to distinguished features of English and Chinese respectively (p. 146). The study also demonstrates that methodologically "comparable monolingual corpora provide a useful tool for contrastive linguistics" (p. 146).

In another study, *gei* ('to give') constructions in Mandarin Chinese and *bei* ('to give') constructions in Cantonese in three corpora of spoken and written Chinese and Hong Kong Cantonese were compared (Wong, 2009). The three corpora were the LCMC (written Mandarin), the CallHome Mandarin Chinese Transcripts Corpus (spoken Mandarin), and Hong Kong Cantonese Adult Language Corpus (HKCAC) (Cantonese) (Wong, 2009, p. 62). The main findings included: (a) in English and Mandarin Chinese, the order of indirect object followed by direct object reverses in Cantonese; (b) compared to Mandarin *gei* constructions, a lower incidence of Cantonese *bei* constructions co-occurring with a verb phrase; (c) when compared with *gei*, Cantonese *bei* is more commonly used as a passive marker and as a verb meaning 'allow'; and (d) *bei* occurs in a set phrase, but *gei* does not (p. 77). As Wong (2009) remarked, the study provided "pedagogical implications for Cantonese speakers learning Mandarin and Mandarin speakers learning Cantonese" and contributed to "the dichotomy between what a language and a dialect are thought to be and how they actually behave linguistically" (p. 77).

Previous studies on aspect in Chinese were mostly intuition-based, that is, not attested with corpus data (Xiao & McEnery, 2004, p. 4). Adopting a corpus-based approach, Xiao & McEnery (2004) studied both situation aspect and viewpoint aspect markers in Mandarin Chinese. They examined five corpora: two monolingual corpora of Mandarin Chinese (The Weekly Corpus and the LCMC), two English corpora (the FLOB Corpus and the Freiburg–Brown [FROWN] Corpus), and an English-Chinese parallel corpus (E–CPC). Their study identifies eight viewpoint aspect markers and discusses the characteristic features of them in great detail.

The LCMC was examined by Siewierska, Xu, and Xiao (2010), in combination with the Lancaster–Los Angeles Corpus of Spoken Chinese (LLCSC) which contains two million words of authentic spoken and written Chinese data, to study the interaction of splittable compounds (SCs) with morphology, syntax and pragmatics. Siewierska et al. (2010) found that "the typical grammatical pattern of SCs is constitutive of an aspect marker (*-le, -zhe, -guo*) or resultative verb complements as post-verb adjacent elements (54% of all SCs), and a quantifier, a classifier, a modifier or a combination of two or more of them which precede the nominal components of SCs" (p. 464).

Shei (2005) examined features of fixedness in phraseology and textuality in the genre of Web-based news reports on fire incidents in Chinese. The study investigated collocations, extended lexical units (Stubbs, 2002), that is, lexical units larger than collocations, and textual cohesion, based on extended lexical units spanning the text. The study proposed a script model for the Chinese and English newspaper reports which analyze fire news in terms of place, time, event, process, result, cause, and update (Shei, 2005, pp. 215–16). Shei (2005) concludes that "different degrees of fixedness can be observed from corpora of different sublanguages, with distinctive patterns of lexical units or lexical priming effects recognisable for each" (p. 216).

Ambiguity in Chinese discourse can be found at the four levels of "lexical, syntactic, semantic (referential ambiguity), and pragmatic" (Wang, Chen, & Hsu, 1998, p. 467). This study focused on semantic and pragmatic ambiguity that involves ellipsis and anaphora. Wang and colleagues applied an event-based parser and successfully solved about 90 percent of the 300 mathematics-based word problems experienced at elementary school in Taiwan (p. 471). An event is "an activity or state expressed by a sequence of words" (p. 466), and the event-based approach views the underlying structure of a discourse as an event sequence rather than a parse tree. Wu, Jin, Zhang, and Yu, (2006) also tackled the issue of disambiguation and constructed a semantic sense-tagged Chinese corpus, aimed at enhancing "word sense disambiguation and research on Chinese lexical semantics" (p. 420).

Wang and Tsai (2007) investigated Chinese conjunctions/contrastive markers across four different text types—casual conversations (informal dialogues), narratives of personal experiences (informal monologues), formal interviews (formal dialogues), and formal lectures (formal monologues)—in a spoken corpus. Their study found that the use of the Chinese contrastive markers *zhishi, buguo*, *danshi,* and *keshi*, which "correspond to English 'but/yet/however'" exhibit "a range of attitudinal, cognitive and interactional properties" (p. 1775). *Zhishi* is usually used to express an afterthought, *buguo* to change the topic, *danshi* to emphasize or make a point, and *keshi* to denote an implicit contrast (p. 1775). In terms of frequencies of occurrences, the study found that *danshi* occurs more often in formal monologues, *buguo* in formal dialogues, *keshi* in informal speech situations, and *zhishi* in informal dialogues. In terms of functions, *zhishi, danshi, buguo*, and *keshi* are lexical conjunctions that express "a topic-internal contradiction" (p. 1775). In addition to this function, *danshi, buguo*, and *keshi* function to "introduce a new topic and to mark a dispreferred response" (p. 1775).

Similar to Wang and Tsai (2007), Chang (2008) examined a mini spoken corpus containing approximately 11 hours of conversations among native speakers of Taiwanese Southern Min to explore the syntactic patterning and semantic-pragmatic functions of contrastive markers. Recurrent patterns of contrastive markers in discourse can be attributed to "sequentiality, communicative intent and the dynamics of interaction" (p. 2114). The position of the contrastive marker is related to the function of the contrastive marker, namely when the contrastive marker is placed near the clause matrix, it is more likely to be used for propositional contrast; otherwise, the contrast marker is likely to take on metalinguistic interpretation. The study contributes to linguistic research by providing a "systematic analysis of the syntactic configuration and the discourse functions" (p. 2145) of contrastive markers and serves as a pioneering study on the grammaticalization of *sikong* as a conjunctive contrastive marker in Taiwanese Southern Min conversations.

Idioms and metaphors have been investigated in Chinese corpora. Hsieh (2006) examined the Corpora of Animal Expressions in Mandarin and German, using the notion of 'semantic molecules' which are "composed of 'primitive semantic features'" (Goddard, 1998, p. 247). Hsieh (2006) studied the semantic molecules of *Cat* expressions and found that the "salient semantic molecules of cat are 'weak' in Mandarin Chinese and 'weak, false, small, unimportant, flattering, quick, shrill' in German" (p. 2206). The study explored the "semantic

interaction and the cultural backgrounds within the form of society" (p. 2206) to explain these findings.

Other corpus-based studies investigated Chinese phonetics and phonology (Tseng, 2005) and the interaction between phonology and syntax and discourse (Wang, Yang, & Lu, 2006; Wang, Lin, & Li, 2009). Tseng (2005), for instance, examined the Mandarin Conversational Dialogue Corpus (MCDC) consisting of 30 one-hour Mandarin spontaneous dialogues in Taiwan to investigate linguistic characteristics of syllable contractions in spontaneous Mandarin which "are more or less unexplored in Mandarin phonetics and phonology" (p. 64). The study found that open syllables following open syllables, rather than closed syllables, are likely to be contracted, and that the most frequent syllables, that is function words, which lack semantic content and are less prominent in phonetic realization, tend to be contracted (p. 81). Tseng (2005) showed that corpora of spontaneous speech could be used to "empirically [confirm] linguistic theories" and to explore "unknown linguistic phenomena" (p. 81).

In another study, a Chinese Putonghua (Mandarin) spoken corpus consisting of 10 monologues was rated by 25 participants on a 5-point scale in terms of the Perceived Boundary Strength (PBS) of discourse units, namely clauses (intonational phrases), sentences, and paragraphs (Wang et al., 2006). The main results include: (a) a significant difference in the PBS of clauses, sentences, and paragraphs, but a similar PBS between simple and compound sentences; (b) the pitch-based cue for distinguishing clauses, sentences, and paragraphs appears to be both the pitch of the pre- and post-boundary syllables and the pitch difference between them; (c) declination occurs within clauses; and (d) pauses are "longer and more varied at larger units" (p. 358).

Using a corpus of 973 spontaneous telephone conversations, Wang et al. (2009) studied the pitch of spontaneous speech in Chinese Putonghua. Analyzing 1,084 intonation phrases, Wang et al. (2009) found a great variability in the pitch range and pitch register of intonation phrases (IPs) in spontaneous speech, showing that the pitch range of IPs at the start position of an exchange is inclined to be great and at the end position small. They also found that compared to university students reading aloud, in spontaneous telephone speech the pitch range of IPs is small but the pitch is more variable (p. 190).

Conclusion

Looking to the future, Chinese language corpora are likely to make improvements in two main areas (Zhan et al., 2006): first, there should be a common standard for annotating Chinese corpora due to the lack of morphological cues in Chinese; second, Chinese language corpora could be made more widely available to both scholars and the public with the advances made in information technology. Chinese language corpora are important resources in a number of important ways, including lexicography (and in the case of Chinese–English corpora, bilingual lexicography), Chinese language information processing, the tracking of changes in the Chinese language, the production of dictionaries and other reference materials, the development of aids to translation, language teaching materials, the study of many aspects of linguistic behavior, such as vocabulary, grammar, semantics, pragmatics, phonetics, and phonology, the study of register variation, and natural language processing (e.g., Tognini-Bonelli, 2001; Hunston, 2002; Chang, 2004). Chinese language corpora promise to be increasingly important in the future.

SEE ALSO: Corpora: English-Language; Corpora: Specialized; Corpus Analysis in Dialectology

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Corpora: English-Language

SEBASTIAN HOFFMANN

Introduction

This entry provides an overview of a selection of electronic language corpora that are available for the study of English at the time of writing (early 2010), including information about their availability and pricing as well as any specific corpus tools that are required to access the data, where applicable. Before taking a look at individual corpora, a few introductory comments are in order.

First, it is useful to distinguish two senses in which the word "corpus" is used. The more conventional sense is the one described by Sinclair (1996): A corpus "is a collection of pieces of language that are selected and ordered according to explicit linguistic criteria in order to be used as a sample of the language." In other words, a corpus is a carefully crafted compilation of instances of authentic language use rather than just any large number of electronically stored texts. In recent years, however, some linguists have started to take a more generous view of what constitutes a corpus. This particularly refers to the whole range of data that is available in virtually limitless quantities on the Internet, but it also applies to specialized electronic text archives (e.g., of literary texts or newspapers) and electronic dictionaries (e.g., the *Oxford English Dictionary*). While such data sets no doubt represent interesting sources of data, the present overview will use the more conventional definition and concentrate exclusively on traditional corpora that are compatible with Sinclair's definition given above.

Second, since specialized corpora are treated in a separate entry, this overview will be restricted to what is commonly termed "general corpora." This label refers to a balanced collection of electronic texts that is intended to be representative of the whole range of language contexts available to speakers of a particular language variety (e.g., British or Australian English). For very large general corpora, the term "reference corpus" is sometimes used. While some general corpora cover both spoken and written data, the term is also applicable if only one of the two modes is represented.

Third, it must be stressed that the brief descriptions of corpora offered here are no more than introductory in character. Since no fully objective criteria for corpus representativeness exist, reliable interpretations of the linguistic patterns observed in the data greatly benefit from a full awareness of the sampling strategies employed by the corpus compilers. Readers are therefore invited to consult as much additional information as is available for the corpora before using them to conduct serious research. A useful resource for this purpose is the Corpus Resource Database (CoRD—see http://www.helsinki.fi/varieng/CoRD/index.html), which provides first-hand information on a range of English-language corpora; all information was submitted or approved by the compilers of each corpus.

Finally, a compact overview of this type must necessarily be selective in its coverage. As a matter of course, the omission of a general corpus should not be seen as an indication that it would not be a useful resource for the study of the English language. A more complete and annotated overview of corpus resources can be found in Lee (*n.d.*).

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Overview of General Corpora

British National Corpus

The British National Corpus (BNC—see www.natcorp.ox.ac.uk; Burnard, 2007) was created to be a balanced reference corpus of late 20th-century British English. It contains almost 100 million words, about 10% of which are transcriptions of spoken data. All in all, the BNC consists of over 4,000 text samples of varying length (ranging from a few hundred words to several tens of thousands of words). All texts were automatically part-of-speech tagged with CLAWS (see http://ucrel.lancs.ac.uk/claws/; Garside, 1987), making use of the C5 tag set (also known as the "BNC Basic Tag Set"). In addition, all word forms in the corpus are associated with their corresponding headwords (e.g., *GIVE* for the verb forms *give*, *gives*, *gave*, *given*, and *giving*).

The texts to be included were selected according to specified selection criteria in order to mirror the language of the time. For the written component of the corpus, these criteria were "text domain" (e.g., world affairs, leisure, arts), "time period" (mostly 1985–93, but including some older texts dating back as far as the 1960s), and "medium" (e.g., book, periodical). For the spoken component, two separate strategies were employed. On the one hand, a selection of about 150 recruited speakers recorded all their conversations over a given period of time. The selection of these so-called respondents was based on socio-demographic criteria (age, sex, social class, and geographical region) and mirrored the structure of British society at the time. The 4.2 million words recorded in this fashion form the demographically sampled part of the corpus (DS). In contrast, the 6.2 million words of the context-governed part (CG) were chosen to represent particular settings or contexts of language use, for instance meetings, radio broadcasts, lectures, and tutorials. Texts from four broad domains were selected in roughly equal proportions: "business," "educational and informative," "institutional," and "leisure." Unlike the DS part of the corpus, the CG part also contains monologues (approximately 25%). On the whole, the CG part of the corpus tends to represent more formal language use than the spontaneous conversations of the DS part; this difference is not categorical, however.

Once the material was selected, it was included in the corpus together with whatever supplementary information about it was available (e.g., age, sex, domicile of author or speaker, perceived level of difficulty, genre). The proportions of the corpus annotated with these descriptive features are thus accidental rather than the result of the corpus compilers' conscious objectives to mirror general language use as closely as possible. For example, about 70% of CG is produced by men, while in DS an equal proportion of words is spoken by women and men.

The transcription of the spoken data is fairly broad and purely orthographic, but it includes such metatextual information as indications of pause length, overlap of speakers, and speech quality (e.g., whispering). No prosodic information is available. Some of the original tape recordings were deposited with the British Library, and at the time of writing a project is under way that will prepare and release the sound recordings of the demographically sampled part of the corpus to the public. Significantly, the project also involves alignment of the transcription with the sound.

Since its first release in 1995, the BNC has been revised twice. No new texts were added to the corpus, but some known errors were fixed (e.g., duplicate texts removed) and the annotation of metatextual information was improved. The texts of the third edition of the corpus (released in 2007) are formatted in XML. The corpus can be searched with a variety of tools. It is distributed with XAIRA (see xaira.sourceforge.net), an open-source corpus tool that can also be used to search other corpora in XML format. An alternative is offered by BNCweb (see bncweb.info), a web-based interface integrated with the

powerful CQP query software (see Hoffmann, Evert, Smith, Lee, & Berglund Prytz, 2008). There are also a number of free web-based services available that offer restricted access to the corpus (e.g., with limited context of query results); these include Mark Davies's BYU-BNC (see http://corpus.byu.edu/bnc) and Bill Fletcher's Phrases in English or PIE (see http://phrasesinenglish.org/).

The BNC is distributed by the University of Oxford. A personal license is priced at £75 while an institutional license costs £500 (plus VAT, if applicable). Two smaller subsets of BNC texts, BNC Baby (4 million words) and the BNC Sampler (2 million words) are available through the same channels.

Corpus of Contemporary American English

For over a decade, no corpus of American English existed that could match the BNC as regards size and range of data. In the year 2008, this gap was to a large extent filled by the Corpus of Contemporary American English (COCA—see www.americancorpus.org; Davies, 2009), a balanced corpus containing over 400 million words of both spoken and written data. In contrast to the BNC, the contents of COCA are not fixed but updated on a twice-yearly basis, adding approximately 20 million words every year, thus making it possible to investigate very recent developments in American English. A further difference to the BNC is that virtually all texts in COCA are complete texts rather than text samples of varying sizes. The texts in the corpus were automatically part-of-speech tagged with CLAWS. The tag set that was used is the more detailed C7 tag set (see http://ucrel.lancs.ac.uk/claws7tags.html); however, since both COCA and the BNC were tagged with the same tagger, it is still possible to compare tag-based findings across these data sets.

Like the BNC, COCA contains a range of different domains or genres, but the choice of categories and their proportions are somewhat different, covering the five genres of spoken, fiction, popular magazines, newspapers, and academic journals in equal quantities. For each of these genres, care was taken to balance their contents not only overall but also for each year. For example, the genre "popular magazines" contains data from almost 100 different sources that cover a large range of different topics and target audiences, including news, health, home and gardening, women, finance, religion, and sports. Similarly, the texts for the "academic journals" genre are taken from the entire range of the Library of Congress classification system, and again this applies as far as possible to each individual year for which data were collected. An Excel spreadsheet containing detailed information about the composition of the corpus can be downloaded from the COCA Web site (see http://corpus.byu.edu/coca/files/texts.zip).

Since sampling strategies and selection criteria can vary considerably, it is always a somewhat problematic exercise to compare findings from different corpora. The COCA genre for which direct comparability with BNC data is potentially most challenging is the spoken data. This is because all spoken texts are derived from transcripts of unscripted conversation on TV and radio programs (e.g., *Newshour* [PBS], *Good Morning America* [ABC], *Today Show* [NBC], and *Larry King Live* [CNN]). Although there can be little doubt that these interactions are indeed relevant examples of spoken interaction, their nature is necessarily different from the carefully compiled and demographically sampled set of spontaneous conversations in the spoken component of the BNC. For researchers whose focus is primarily on spoken interaction, the use of additional American sources (e.g., the Santa Barbara Corpus, see below) is therefore recommended to reduce the danger that findings may be significantly influenced by issues relating to corpus compilation rather than by actual differences between British and American English.

For copyright reasons, COCA cannot be distributed to users but is exclusively accessible through its Web-based interface. This tool offers the typical features of a concordancer,

including flexible ways of restricting searches to individual sections of the corpus (e.g., time spans or genres) and displaying results in tabular and graphical formats. The display of the immediate context of search results is restricted to a few words before and after the query match. While this will have no impact on a large range of research questions, this limitation may nevertheless at times be frustrating for users wishing to investigate corpus findings in a more qualitative way (e.g., to conduct research on pragmatics).

The Bank of English

Like COCA, the Bank of English is a corpus whose contents are not static but instead updated on a regular basis. Its compilation was started in the 1980s under the direction of John Sinclair as part of the COBUILD (Collins Birmingham University International Language Database) project, resulting in a corpus of initially 8 million words of English text. In forming the basis for the *Collins COBUILD English Language Dictionary* (1987), it set the stage for a new approach to lexicography and dictionary making that was explicitly corpus-based. Since then, the Bank of English has grown to a size of over 500 million words, containing data from a wide range of sources (written and spoken) from eight different (native) varieties of English. The corpus is available to subscribers as part of Collins Wordbanks*Online* (see http://www.collinslanguage.com/wordbanks/default.aspx) via a Web-based interface (from £695, excluding VAT; free one-month trials are available). A 56-million word subset of the corpus can be accessed for free, but the output is restricted to a maximum of 40 concordance lines.

The Brown Family of Corpora

The three general corpora presented so far belong to a category that is often referred to as "mega-corpora." However, there are a number of smaller corpora that also clearly deserve the label "general corpus." A set of these is known as the Brown family of corpora, whose name derives from the very first electronic corpus of English, the Standard Sample of Present-Day American English, later simply known as the Brown Corpus, referring to the university where it was compiled (Francis, 1965; Francis & Kučera, 1979). It consists of 500 written text samples of 2,000 words dating from the year 1961, thus 1 million words. For the selection of texts, the compilers applied a sampling frame that was intended to capture a very wide range of (written) language use: The corpus is divided into two major parts, termed "informative" (approximately 75%) and "imaginative" (approximately 25%), which are in turn subdivided into a total of 15 different genres of varying proportions (e.g., press: editorial, popular lore, romance, and love story). The actual text samples to be included for each section were chosen randomly, for instance from a list of all available publications in a particular subject field, rather than based on any text-internal criteria.

About a decade later, the Brown Corpus was twinned by a matching selection of texts of British English dating from the year 1961, the 1-million-word Lancaster–Oslo–Bergen Corpus (LOB; Johansson, Leech, & Goodluck, 1978), to permit direct quantitative comparisons of written English as it is used on both sides of the Atlantic. In the early 1990s, a team at Freiburg University, Germany, then compiled two further analogues of the original Brown Corpus, the Freiburg–Brown Corpus (abbreviated Frown; Hundt, Sand, & Skandera, 1999) and the Freiburg–LOB Corpus (abbreviated FLOB; Hundt, Sand, & Siemund, 1998) containing texts from 1991 to 1992. The Brown family of corpora thus makes it possible to investigate and compare recent language variation and change in British and American English over a period of 30 years.

All four corpora are distributed on the ICAME CD-ROM at a cost of NOK 3,500 (approximately €440 in spring 2010) for individual users and NOK 8,000 (approximately €1,000) for institutional licenses. The CD-ROM contains a range of other English-language

corpora, some of which are also mentioned in the present overview. The corpora are in a simple text-only format, with minimal mark-up using simplified SGML tags (e.g., indicating paragraph boundaries or foreign words) in the case of Frown and FLOB, and can thus be searched by means of standard corpus tools (e.g., AntConc [see http://www.antlab.sci.waseda.ac.jp/software.html] or WordSmith Tools [see http://www.lexically.net/wordsmith/]). The Brown Corpus is also distributed in XML format on the BNC Baby CD (see above). Finally, both the Brown Corpus and LOB are also available in part-of-speech tagged format on the ICAME CD-ROM (see http://icame.uib.no/newcd.htm and http://khnt.hit.uib.no/icame/manuals/).

Three further corpora modeled on the Brown format were compiled for different varieties of English: the Kolhapur Corpus of Written Indian English (Shastri, 1986), the Australian Corpus of English (ACE; Peters, *n.d.*), and the Wellington Corpus of New Zealand English (Bauer, 1993), containing data published in 1978 (Kolhapur) and 1986 (ACE and Wellington) respectively. Furthermore, at the time of writing, several projects are under way or have recently been completed that extend the Brown family of corpora to include both older and more recent data sets. Thus, there are now two additional corpora for British English: BLOB-1931 (for "before LOB"; Leech & Smith, 2005), containing material published around the year 1931, and BE06 (Baker, 2009), consisting of a comparable set of texts from the year 2006, the latter compiled from Internet sources. These corpora are currently not publicly distributed; however, it is anticipated that BLOB-1931 will become available soon via a Web-based search interface. Text collection for 1901 British and 1931 American analogues is still in progress.

By the standards of the early 21st century, the size of the Brown family of corpora is relatively small. However, given their virtually exact match in terms of sampling frames, they nevertheless represent highly valuable sources of data, particularly where medium- to high-frequency phenomena are concerned.

International Corpus of English

One further set of small-scale corpora deserves mention in the current context: the International Corpus of English (ICE—see http://ice-corpora.net/ice). Its aim is to provide researchers with a collection of 1-million-word comparable corpora of more than 20 varieties of English worldwide. However, each of its components is also designed to be a general corpus of its variety in its own right. Each corpus is compiled following the same strategies; again, 500 text samples of 2,000 words each are included. In contrast to the Brown family of corpora, however, ICE corpora contain 60% of spoken material. At the time of writing, about half the corpora are publicly available, including data sets for four native varieties of English (Canada, Great Britain, Ireland, and New Zealand).

All ICE corpora follow the same annotation scheme, involving for example markup for overlapping speech, foreign or indigenous words, and typographic features such as boldface font and underlining. In addition, all corpora will eventually be part-of-speech tagged with the same automatic tagger, thus improving the opportunities for comparing the use of grammatical structures across different varieties. Furthermore, ICE-GB has already been syntactically parsed at the phrase, clause, and sentence level.

The majority of available ICE components can be either downloaded free of charge from the ICE Web site (after submitting a signed license agreement), or accessed for a nominal fee from the corresponding ICE team. The exception is ICE-GB, with prices between about £350 and £750, depending on location and type of license; a single-user student license is available for £25, however. The original audio recordings for ICE-GB can be obtained for an additional £250–500. With the exception of ICE-GB and its complex syntactic-parsing annotation scheme, all ICE corpora can be searched with standard corpus tools. For ICE-GB,

the (Windows-only) tool ICECUP is provided to make full use of the grammatical information encoded in the corpus.

Spoken General Corpora

Since the transcription of conversation is a much more time-consuming task than collecting written data, the number of available general spoken corpora is fairly limited, and none exceeds even half the size of the 10-million-word spoken component of the BNC. For British English, the London–Lund Corpus (LLC; Greenbaum & Svartvik, 1990) is a widely used corpus containing approximately 500,000 words representing various types of spoken language (e.g., spontaneous face-to-face conversations or prepared monologues) recorded mostly during the 1960s and 1970s, but with a few texts dating as far back as 1953 and 11 texts recorded in the 1980s. Some of the recordings were made surreptitiously, without the knowledge of (at least some of) the people involved, which ensures a high level of authenticity of the material, but would no longer be allowed today.

The LLC is distributed on the ICAME CD-ROM. All recordings were carefully transcribed and contain detailed prosodic information. While this is no doubt a great asset for researchers of speech, the format makes a reliable search for individual words or phrases with a standard corpus tool next to impossible. As a case in point, consider the four lines below, reproduced from the LLC. The word *wiggle* occurs twice, but with different types of intonation, indicated by the word-internal symbols "\/" (i.e., fall–rise) and "\" (i.e., fall), respectively. A search for *wiggle* with a standard corpus tool would match neither of these instances.

```
111b 37 8750 1 1 A 11 2^and !then . 'do a :w\/iggle# - - /
111b 37 8760 1 1 A 12 2+^so as _to+ - ++^s/orry#++ /
111b 37 8770 1 1 B 11 2+((it ^always !w\as#))+ /
111b 37 8780 1 1 B 11 2an ^old 'old ++w\iggle#++ /
```

Various informal versions of the LLC stripped of its prosodic annotation exist, but it appears that only one of them is officially distributed (see DCPSE below).

For spoken American English, the readily available corpus data is sparse. The only general corpus of spoken interactions is the Santa Barbara Corpus (see http://www.linguistics.ucsb.edu/research/sbcorpus.html), with 249,000 words in 60 different texts. The data contain interactions from various regions in the USA; the majority of contributions appear to be by speakers of educated Standard American English. The corpus is distributed by the Linguistic Data Consortium in four separate volumes and includes the original sound files; prices for individual volumes range from US$100 to US$200 each. A much larger corpus is the Longman Spoken American Corpus, containing 5 million words of spontaneous conversations of more than 1,000 speakers from a diverse set of sociodemographic backgrounds. However, virtually no documentation exists and access to the corpus unfortunately appears to be restricted to Longman in-house use, where it is for example employed in the compilation and validation of modern grammars of English.

Diachronic Corpora

The final section of general corpora to be presented here deals with text collections whose contents are intended to represent language use from different time periods and are thus primarily suited for the investigation of language change. Perhaps the best-known of these is the diachronic part of the Helsinki Corpus of English Texts (or Helsinki Corpus for short; Kytö, 1996), which covers almost 1,000 years in the history of English (ca. 750 to ca. 1700). It contains 1,572,800 words in three major sections (Old/Middle/Early Modern

English), which are further subdivided into a total of 13 subsections. Most texts included are samples (2,000 to 10,000 words) rather than complete texts. In the selection of texts, the compilers took care to cover a wide variety of language use available through records from each time period; however, given the relatively small overall size of the corpus, the representativeness of individual registers within each section must necessarily be evaluated with caution. For many types of investigation, the Helsinki Corpus offers a convenient starting point that can then be complemented by research on the basis of more specialized corpora covering much shorter periods of time.

Each text of the Helsinki Corpus contains a header with detailed information relating to such parameters as geographical dialect, genre, and sociolinguistic features such as age, sex, and social rank of the author, if available. The file format allows searches with standard corpus tools; however, users need to be aware of the conventions employed to encode certain typical features of older manuscripts. For example, superscript is indicated with an equal sign (e.g., y = t = for y^t) and letters such as ash and thorn are indicated with compound characters (e.g., + t for þ). The Helsinki Corpus is distributed on the ICAME CD-ROM.

For researchers wishing to investigate the full length of the history of English, the Helsinki Corpus can be complemented with ARCHER (short for A Representative Corpus of Historical English Registers—see http://www.llc.manchester.ac.uk/research/projects/archer/; Biber, Finegan, & Atkinson, 1994), which contains about 1.8 million words sampled from seven 50-year periods (1650–1990) covering nine different registers. A total of 70% of the corpus represents British English; for American English, only three time periods (1750–99, 1850–99, and 1950–90) are included, but plans are in place to fill the gaps in the American data in the near future. The files are in a simple text format and can be searched with standard corpus tools. ARCHER is maintained by a team of researchers involving 15 different universities. For copyright reasons, it is not publicly available; however, interested researchers can gain local access to the corpus at any of the 15 universities involved.

Given the ephemeral nature of speech, very few collections of historical spoken data exist, and even fewer data sets belong to the category of "general corpora." There is one notable exception, though, involving major parts of two corpora that have already been mentioned here: the Diachronic Corpus of Present-Day Spoken English (DCPSE—see http://www.ucl.ac.uk/english-usage/projects/dcpse/index.htm). It consists of equal proportions of data from the LLC and ICE-GB, amounting to a total of about 875,000 words. Like ICE-GB, the texts from the LLC have been syntactically parsed, thus allowing direct diachronic comparisons of grammatical, and not merely lexical, features of spoken British English across a time span of about 30 years. The corpus can be searched with ICECUP; various licensing options are available and prices range from about £350 to £720; a student license is available for £25.

Finally, at the time of writing, a promising new source of diachronic data for American English was about to be released for public access: the Corpus of Historical American English (COHA—see http://corpus.byu.edu/coha.asp), a balanced collection of 400 million words covering the four genres of fiction, popular magazines, newspapers, and academic prose, and thus nicely complementing the present-day English data contained in COCA (see above).

Conclusion

The use of electronic corpora has had an enormous impact on the field of applied linguistics. Today's scholar can access large amounts of authentic language use by way of a few mouse clicks. Furthermore, sophisticated corpus tools have been developed that support both novices and experts in the field in their analysis of the patterns that emerge from the

data. In particular, English corpora have become increasingly influential in language teaching, both when it comes to informing the creation of modern pedagogical materials and when used as active tools in the classroom (see, e.g., Hunston, 2002; papers in Quereda, Santana, & Hidalgo, 2006).

As will be apparent from this overview of general corpora, researchers can select from a wide range of options to find the corpus that is best suited for answering a particular research question. However, it will also be clear that the selection criteria employed by the compilers of these general corpora vary quite considerably. Apart from the obvious difference between corpora incorporating spoken language, written language, or both, more subtle differentiations arise due to the choice and proportions of text types included. As already alluded to in the introduction, it is necessary for researchers to be thoroughly acquainted with the corpus that they are searching in order to make full sense of the patterns that can be observed. This is even more necessary if findings from different corpora are compared.

Fascinating new avenues of research are opening up in corpus linguistics due to the use of virtually limitless quantities of Internet-derived data. Still, for many types of applications, recourse to a data set that was compiled on the basis of principled decisions in order to be representative of a well-defined population of language users is recommended.

SEE ALSO: Corpora: Specialized; Corpus Analysis of English as a World Language; Corpus Analysis of the World Wide Web; Francis, Nelson; Greenbaum, Sidney; Kučera, Henry; Sinclair, John

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Corpora: French-Language

GEOFFREY WILLIAMS

Corpus linguistics arrived late in France, but electronic text archives arrived early. The apparent contradiction lies in the defining of corpora and of corpus linguistics. Interestingly, it was lexicography that would provide the impulse for this new tool for the study of language. The development of a new prestige dictionary led to the building of a large database of texts that is now available online. However, as everywhere the real development of corpus analysis came about with the development of personal computers and stand-alone concordancing tools. In France, two fields made the initial inroads into corpus analysis: spoken language studies and natural language programming (NLP). The latter is not our primary concern here as this entry will concentrate on corpus linguistics in terms of applied linguistics rather than in computational applications.

Initially corpus linguistics in France concentrated on spoken language, text corpus linguistics being essentially carried out in English for specific purposes. This has gradually changed as interest in the use of computers has spread to other fields of applied linguistics, notably in the teaching of French as a foreign language. France does not have a national corpus, but does have a plethora of small spoken corpora in addition to much-used literary and press resources. To understand French corpora, it is useful to have an insight into how and why French corpus linguistics developed, before looking at the different corpora available in the French-speaking world.

French Corpus Linguistics

Frantext and the Literary Tradition

What has become known as the "French exception" is a plea to recognize individual cultural values, and more particularly French ones, in an increasingly Anglo-Saxon dominated world; key to this is a strong defense of the French language and literature, as well as cinematographic traditions. This has had an important effect in educational fields where literature has been put on a pedestal as the paragon of correct usage. In countries which have a national academy, literature is a major reference point in deciding what is correct usage. This does not necessarily leave much room for a descriptive corpus linguistics approach that seeks to avoid imposing notions of acceptability and may be one reason why France still has no reference corpus. It also explains why the first major electronic archive was literary in bias.

In the pioneering postwar years, France realized very early on that computers would play a major role in the analysis of texts. As early as 1957, Paul Imbs, then at the Centre de philologie romane in Strasbourg, had planned a new dictionary for French that would be based on a large "corpus" of texts. This project involved the creation of a new research center in Nancy, the Centre de recherche pour un trésor de la langue française, which was to become the current major research group ATILF, well-known for its work on the Text Encoding Initiative (TEI—www.tei-c.org). ATILF is a group accredited by the Conseil national de la recherche scientifique (CNRS—French national research council); it is based

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at the University of Nancy and is now the most important center in France for the encoding and analysis of digital texts, the TEI being the most widely used international standard for the markup of humanities texts. The initial collection of 19th- and 20th-century texts compiled under the direction of the linguist and lexicographer Bernard Quémada formed the basis of what is now Frantext (www.frantext.fr).

The literary tradition in France has also led to a large amount of work on quantitative analyses, notably carried out in Nice by Etienne Brunet. This work necessitated the creation of more electronic texts and also a concordancer, Hyperbase, which is widely used for corpus analysis in France. This quantitative literary work cannot really be considered as corpus linguistics as it is aimed essentially at authorship studies of literary texts, although more recent work on political texts using Hyperbase is more applied in orientation, notably with the work of Damon Mayaffre.

Political issues have also been an important element in the work of researchers like André Salem and Dominique Labbé, but here again the interest lies more in the discourse of individual politicians or movements than in an attempt to analyze language in general. Work carried out in Aix-en-Provence by Jean Véronis led to the compiling of corpora from press and EU sources to study political discourse, but in this case more from an NLP viewpoint.

Non-Literary Written Corpora

Apart from the literary tradition and work on spoken corpora, it was English-language studies that primarily discovered and promoted corpus linguistics. Much current work on French corpora is carried out by researchers initially involved in English-language teaching. Apart from these pioneers, the main interest in corpora came more from the NLP community, with the exception of work on spoken language analysis.

Much early work on French corpus linguistics arose from sociolinguistic studies, notably through the publications of Françoise Gadet and Claire Blanche-Benveniste. The former undertook sociolinguistic analyses while the latter carried out essential corpus building work and investigations at Aix-en-Provence, leading to a reevaluation of attitudes to both genre and grammar in spoken French. Much work in developing spoken corpora has been carried out in the Université de Provence, and also in other centers such as Lyon and Orléans.

The interest in oral corpora in France led to a perceived need to adopt common standards for the collection, transcription, and archiving of material. The result was a project under the auspices of the French Observatoire des pratiques langagières (Observatory of language practices), part of the Délégation générale à la langue française et aux langues de France (DGLFLF). In France, language is very much a state affair, even if the state puts very little money into actual research. The resulting reference work edited by Olivier Baude (2006) talks little about applications, which was not his brief, but does provide valuable information on all aspects of corpus constitution, including the far too often neglected legal aspects.

Nevertheless, most data-collection projects remain small and tackle extremely precise sociolinguistic issues rather than more general questions of language, as might be expected in corpus linguistic research. If anything can differentiate corpus linguistics from other related fields in applied linguistics, it must certainly be that the objective of the former is to generalize about language or language varieties and to compare with other subsets.

Journées de la Linguistique de Corpus

Despite the lack of available corpora, the French corpus linguistics scene is dynamic with both the Association française de linguistique appliquée (AFLA—French Association for Applied Linguistics) and the Association pour le traitement automatique de la langue

(ATALA—[French] Association for NLP) hosting events. The *Revue Française de Linguistique Appliquée* has, to date, published three issues dedicated to corpus linguistics (1996, 1999, and 2007; http://www.rfla-journal.org/presentation.html), although the contents give a better picture of what is happening elsewhere in the world than in France as the definition of "corpus" tends to be very wide. Since 2002 a journal with a strong literary bias entitled *Corpus* (www.unice.fr/ILF-CNRS/CORPUS) has been published annually by the research group created by Etienne Brunet at the University of Nice. Major written works are still relatively rare, although three books can be mentioned, the very NLP-oriented volume by Habert, Nazarenko and Salem (1997), the work edited by Bilger (2000), and that edited by Williams (2005). The latter shows the broad spectrum of work being carried out in France as shown through contributions to the 2002 edition of the conference "Journées de la Linguistique de Corpus" (JLC) organized first annually, and now biennially, at the Université de Bretagne-Sud in Lorient.

The JLC originally started as a workshop in 2001. The success led to a major conference in 2002 with further editions at two-year intervals from 2003. From 2005 onwards the proceedings have all been published online in the *Texte et Corpus* journal (http://web.univ-ubs.fr/corpus) giving an up-to-date picture of what is happening in the French-speaking world.

The JLC aim to bring together all those interested in corpora in French or in French-speaking countries. This means a very broad range of approaches ranging from the highly computational to teaching-based studies. Variety is not only the spice of life, but it breaks down frontiers between disciplines so that people from very different fields can meet and exchange views and information.

French Corpora

As we have seen, French corpus linguistics is relatively young and suffers from the lack of a national reference corpus. Corpus projects are legion, but corpora tend to be small and the compilers lack the necessary copyright permissions to make them available. Larger resources do exist, but these are often created by and for the language-engineering community and distributed through ELDA (Evaluations and Language Resources Distribution Agency) at prices that are beyond the means of university research groups.

Literary Corpora

The biggest and most well-known French corpus is Frantext. This largely literary archive of 3,952 whole texts has been partially lemmatized and can be consulted online under license and with restricted access. For those involved in French literary studies this is a marvelous research tool with full texts for key works over a period of nearly 700 years. Unfortunately, the allergy felt by some, and promoted by others, in literary academia for computerized tools means that many students of French are unaware of the existence of this corpus, even if it is used by those preparing for the (highly) competitive examination used to select teachers in French secondary schools, the *agrégation*. This is a great shame as, although the interface is not very user-friendly, the contents are a gold mine for anyone studying the evolution of the French language.

The archive consists of two main parts: the main section covers contemporary French from 1500 to the present and a separate corpus of Middle French covers the period from 1330 to 1500. The main corpus allows the user to study lexical, stylistic, spelling, and grammatical changes over a long period of time. Syntactic and lexical variation mean that part of speech markup is impossible for earlier periods, but more recent texts are available in a separate part of speech (POS) tagged and lemmatized corpus. Rights have always

been a major issue with Frantext, which explains why access is so restricted. However, a large subset of copyright-free texts is now available from the Centre national de ressources textuelles et lexicales (CNRTL) Web site (www.cnrtl.fr). This is highly appreciated as downloadable resources are vital for developing a discipline where people like to experiment with different concordancers.

Students of the French language can also turn to the French of Quebec with license-free access to the Quebec counterpart to Frantext, Québétext (www.tlfq.ulaval.ca/quebetext). The Trésor de la langue française au Québec is a rich source of data containing texts published between 1837 and 1919. Like Frantext, the archives can only be accessed online, but, in this case, the access is open.

For those wishing to compile their own literary corpora it is possible to access some major texts in HTML format through the Association des bibliophiles universels (ABU) Web site (http://abu.cnam.fr); the Bibliothèque nationale Gallica Web site (http://gallica.bnf.fr) also has downloadable texts, but many of these are as yet only available in PDF format. Many other resources exist through the TEI-based projects and other collections held on university servers, but the majority of literary corpora are the work of scholars who do not hold copyright, and who consequently cannot distribute their source data.

Spoken Corpora

If written corpora tend toward the literary, the area in which corpus linguistics has really developed in terms of applied linguistics has been spoken corpora, which tend toward the sociolinguistic.

Two major early developments in spoken corpora were the projects of the GARS research team in the University of Provence and sociolinguistic work carried out at the University of Orléans using the Etude sociolinguistique sur Orléans corpus, the latter consisting of a series of interviews carried out in the late 1960s. The results from these studies exist, but the problem lies in actually tracking down the corpora.

Name changes and mergers among French research groups can lead to problems of visibility as acronyms change frequently. In the case of GARS, the group became DELIC before the latter split up with some members forming TALEP—Traitement automatique du langage écrit et parlé (Automatic Processing of Written and Spoken Language) along with some members from CALN—Compréhension automatique du langage naturel. All of these belong to LIF—Laboratoire d'informatique fondamentale. Unfortunately, corpora are not mentioned on their Web site and a knowledge of history is required to understand the meanders. Another source of freely downloadable corpora might seem to be the Corpus de la parole Web site. This does give links to major projects in spoken corpora such as the Orléans corpus and the Phonologie du français contemporain corpus and others. Unfortunately, what this Web site does not do is link to the actual corpora. However, much of the material from GARS-DELIC is available on the C-ORAL ROM dataset (Cresti & Moneglia, 2005). This very rich source contains data in four Romance languages, including French. It is here that many of the earlier spoken corpora can be found along with more recent material. The CD-ROM also contains tools, for which more up-to-date versions can be found online. One source for freely available corpora is the Parole publique archive held at the University of Tours (http://www.info.univ-tours.fr/~antoine/parole_publique/corpus.html). These are small, but can be downloaded. Anyone involved in building spoken corpora and wishing to share data can upload material and thereby participate in a movement for open-source corpora.

Obviously, much is also happening in other French-speaking countries, notably at the Université Catholique de Louvain in Belgium with the VALIBEL research group (www.uclouvain.be/valibel). In addition to an inventory of existing corpora and transcription procedures, their Web site also gives access to corpora via the MOCA (Multimodal Oral

Corpora Administration) interface. As ever, open access with downloading is difficult, but at least access exists.

For those interested in language learning another useful source is the French Learner Language Oral Corpora at the University of Southampton (www.flloc.soton.ac.uk). The building of learner corpora is a growing field in the study of "Français langue étrangère" (French as a foreign language) studies, but few corpora are freely available, as they are largely built for small studies and PhD theses. The Southampton dataset concerns child language from subjects between the ages of 5 and 11, and contains corpora built at Southampton and also at other partner universities. Access is via the CHILDES software (http://childes.psy.cmu.edu/). The very informative Web site gives details of methodologies adopted and the criteria for corpus constitution. However, spoken corpora are inevitably small, so linguists seeking large amounts of data have to turn to written sources.

Non-Literary Written Corpora

If a French linguist wants to turn to contemporary language, the only direction seems to be toward newspapers. The obvious answer here is to download material from Web sites or from databases such as Lexis Nexis or Factiva. In practical terms this does give access to a large amount of data but, since restrictions apply, the resulting resource cannot be disseminated despite any time spent in marking up data in XML and the carrying out of POS tagging, which is, in itself, a breach of copyright.

The CNRTL, who brought us the open-access Frantext, also have a newspaper corpus online from a regional source. This gives access to three years of material from the regional newspaper Est Républicain in XML format. Otherwise, those who want large amounts of data have to look to CD-ROM sources, and this means *Le Monde* and *Le Monde Diplomatique*, both available through ELDA. They are not true corpora, however, in that they are a single source, with *Le Monde* being just a very particular center-left Paris-centered variety of the French language. Unfortunately, much research continues to be based on these, and will be until a reference corpus comes along.

No centralized database of written corpora exists in France, but the Réseau des corpus lexicaux québécois (Quebec network of lexical corpora) provides a variety of corpora built and maintained by the five universities of the province. Access is still invariably by interface due to copyright restrictions.

Web-based corpora are also increasingly available. The biggest are those held on the Corpus Architect Web site (http://ca.sketchengine.co.uk). Corpus Architect, previously Sketch Engine, is not free but is not expensive either, and gives access to the online concordancing and sketch building tools that have proved invaluable in lexicography. The French corpus is a very large collection of Web data from which concordances and word sketches can easily be built and analyzed through a tried and tested convivial interface. Those wishing to download a very large Web-based corpus of French can also contact the WaCky (Web as Corpus kool ynitiative; http://wacky.sslmit.unibo.it/doku.php?id=start) project which will make the French, and other language, corpora available free of charge on request. At the time of writing the frWaC corpus is at 1.6 billion words.

Another Web-based source is that held at the University of Leeds, which is freely available online with a concordancer interface (http://corpus.leeds.ac.uk/internet.html). A very simple interface in English gives access to Internet corpora in several languages. It is sufficient to type the query and select the language to get a concordance. The same can be done to get collocations extracted via a series of different statistical measures: Mutual Information, T-Score and Loglikelihood. More sophisticated searches can be done using Corpus Query Processor (CQP) syntax, a system for writing complex queries developed during the Corpus Workbench project (http://www.ims.uni-stuttgart.de/projekte/

CorpusWorkbench/CQPUserManual/HTML/). These are mass data; the user has no information as to selection criteria. While such corpora may not fulfill the canons of corpus building criteria that are laid down, tried, and tested in corpus linguistics research (see Wynne, 2005, for a full discussion), they are much used in language engineering and do provide access to very large amounts of data.

Parallel Corpora

From early on in the development of corpus studies an interest arose for parallel corpora, particularly in the NLP community with its interest in terminology extraction and automatic, or assisted, translation. One notable resource was that developed within the TELRI (Trans-European Language Resources Infrastructure; http://telri.nytud.hu/) initiative. Unfortunately, as with many Europe-funded projects, once the project is over access to data is difficult. This is very much the case with the TELRI Tractor archive. Freely available parallel datasets include the EUROPARL corpora built from European Parliament texts and the INTERSECT corpus held at the University of Brighton. The former is a large project with data available for the period from 1996 to 2009 in 11 different languages, including French (www.statmt.org/europarl). The corpora are downloadable with the relevant documentation. The latter is at about 1.5 million words for French and is formed from a balanced corpus covering a variety of genres (http://artsresearch.brighton.ac.uk/research/academic/salkie/portfolio). The files are plain text, and have been aligned using ParaConc (http://www.athel.com/para.html). Copyright issues mean that the corpus is not freely downloadable, but it is available on request to the researchers involved. Although parallel corpora remain a staple in NLP, corpus linguistics and much NLP is now turning to comparable corpora in order to get over the inevitable bias brought in by the translation process. Projects such as IntUne (Integrated and United; www.intune.it) and METRICC (Mémoire de traduction, recherche d'information et corpus comparables or Translation Memories, Information Retrieval and Comparable Corpora; www.metricc.com) are only beginning to analyze the complexity of such corpora, and as yet none are available for distribution or online access.

Lexicographical and Specialized Corpora

French commercial lexicography may fail to take corpora seriously, but terminology and special language studies do not. This is not to say that the big dictionary publishers do not use corpora, but that they do not make them available. In developing French-language lexicography two nations shine forth: Belgium and Quebec.

With the ancient Katholieke Universiteit Leuven and the Université Catholique de Louvain, Belgium is well served in corpus linguistics. French-speaking Louvain has already been mentioned; its Flemish counterpart is particularly active in both lexicographical and terminological corpora. Most notable is the team built up by Jean Binon and Serge Verlinde with the DAFLES (Dictionnaire d'apprentissage du français langue étrangère ou seconde) project. This is a unique learning interface for French with access to corpora—a model for data-driven learning.

Terminology is another field that is well represented in Belgium with TERMISTI (ISTI = Institute for Translators and Interpreters; www.termisti.org) in Brussels. Their Web site gives a large number of links to resources and tools in a variety of languages, including French. Another major lexicographical and terminological center is the Observatoire de linguistique sens-texte (OLST; http://olst.ling.umontreal.ca) in Montreal. A visit to their site will give access to a number of resources, including Corpus Migou, a consultation interface for their corpora.

France itself has well-developed research centers using corpora for special languages; there are centers in Paris with the EILA research group at the Université Paris-Diderot and in Lyon with the CRTT (Centre for Research in Terminology and Translation; Université de Lyon 2). In both cases, corpora are built, often by doctoral students working on highly specialized themes, but copyright impedes access.

The French national research agency (Agence nationale de la recherche or ANR) has funded the construction of corpora, but the definition of the terms has been extremely fuzzy. However, one ambitious project looking at authorial position and learner corpora has been funded: the Scientext initiative (http://aiakide.net/scientext-site/spip.php?article1). This ANR-funded project has built corpora in French and English. The latter is fully open source and can be downloaded; the former is currently available through an interface. If ambitious funding and a genuine analysis of needs takes place, this could be the means to gradually move forward to building a reference corpus for French.

Conclusion: Corpora in France and the French-Speaking World

We have a strange dichotomy. Corpus linguistics is alive and well in France, but corpora are far and few between, at least those that can be disseminated. This initial survey may stimulate people to come forth with more addresses or to put more material online so that a directory of available resources can be built. A careful reading of *Texte et Corpus* would provide a long list of cited corpora. Unfortunately, many have no distribution possibility or very limited access, generally through a Web interface.

The way forward can only be through cooperation with those who need corpora endeavoring to persuade research funding bodies that, as researchers work for free, the tools they need should be free too. A lot of hidden resources will continue to lie insufficiently exploited on machines throughout France and the French-speaking world. This entry does not seek to be exhaustive; it is an overview of what is available. What it would like to be is also a stimulus so that a more complete picture may be drawn and more ambitious projects may see the light of day.

SEE ALSO: Corpus Analysis of Child Language; Corpus Analysis of Literary Texts; Corpus Analysis in Translation Studies; Corpus Analysis of the World Wide Web

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Corpora: German-Language

WOLFGANG TEUBERT

This entry focuses on large and more frequently used German-language corpora, their use, and applications. Many more corpora have been compiled for specific research issues, and some of them can be found on the Web for instance by using Google Scholar (www.scholar.google.co.uk/). The corpus activities of the Institut für Deutsche Sprache (IDS) in Mannheim are accorded a particular focus, because this institution was the cradle of German corpus linguistics. IDS corpus compilation and research reflects the changing corpus philosophy from the early decades of German corpus research to the present time. The IDS is also an important clearing and service center for contemporary German language studies. The remit of the corpus linguistics group at the IDS is to develop new methods and tools for a data-driven exploration of very large text corpora. Researchers inside and outside the IDS are invited to use corpora and software for studies in the field of lexicology/lexicography, grammar, and language variation. The goal is to enable a fruitful interaction between top-down and bottom-up approaches that will enhance our understanding about the way discourse behaves. For more information see IDS Korpuslinguistik (www.ids-mannheim.de/kl/) and IDS (www.ids-mannheim.de).

While some diachronic and historical corpora are also listed, dialect corpora outside the IDS are not documented as this would demand too much space and as there is already an excellent Web page containing all the relevant information. However, some corpora of related or neighboring languages, Frisian, Lëtzebuergesch, and Yiddish, are referenced. There is also a list of parallel corpora with German as one of their languages.

Excluded are commercial corpora and corpora not compiled for linguistic research but for applications in computational linguistics, natural language processing, or human language engineering, that is, corpora providing data for knowledge extraction, machine translation, artificial intelligence and expert systems, conceptual ontologies, or speech recognition/understanding systems.

The Kaeding Corpus: A Corpus *Avant la Lettre*

As early as 1891, the stenographer Friedrich Wilhelm Kaeding began to compile a non-electronic 11-million-word corpus of contemporary literary works, newspaper texts, official announcements and directives, business letters, and specialist literature. The purpose was to develop a new stenographic system based on dependable statistics of syllable frequency. In the absence of computers, it turned out to be a mammoth project involving 100 compilation centers all over Germany with 665 collaborators (Kaeding, 1897/1898). The Kaeding corpus also formed the basis for Helmut Meier's linguo-statistical studies, begun in 1922 and finally completed in 1964 (Meier, 1964/1967). Later, in the 1970s, a computational analysis of the Kaeding corpus formed the basis for the development of the Zertifikat Deutsch of the Goethe-Institut (www.goethe.de/lrn/prj/pba/bes/tdf/enindex.htm).

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Corpora and Corpus Research at the Mannheim Institut für Deutsche Sprache (IDS)

The IDS was set up in 1965. Its foundation marks a new beginning of research on contemporary German language. Much earlier research during the 1940s and 1950s was seen as problematic due to the closeness of many scholars to the Nazi regime. It was also the time when the subdiscipline "Germanistische Sprachwissenschaft" [German language studies] was gradually introduced at German universities, on a par with German literature and history of the German language, within the discipline of German studies ("Germanistik"). The remit of the IDS was to describe language objectively using real language data. The results of this basic research fed into applications such as the compilation of dictionaries, grammars, and textbooks for teaching German as first and as foreign language.

Early History of Written Language Corpora at the IDS

Almost half a century ago, the first IDS Yearbook stated:

> The section "Documentation of contemporary German" will fill an urgent need. In a representative cross section of today's literature and on the basis of carefully prepared software, initially the written German language of today will be stored electronically, considering aspects of lexis as well as of syntax. The resulting data will be made available to all researchers working on the German language. (Institut für Deutsche Sprache, 1967, p. 12, my translation)

What has changed since is that the naïve belief in a representative corpus has given way to a more cautious and multifaceted view of what a corpus can represent. In 1969 the IDS acquired its first (mainframe) computer, with a core memory of no more than 7 megabytes, and completed its first corpus, the Mannheimer Korpus (MK1), consisting of 293 texts or 2.2 million words published between 1950 and 1967, featuring fiction, some popular science and other non-fiction, and also a small selection of newspaper and magazine texts. The texts were keyboarded on punched tape. As neither screens nor online access was available, any results obtained with still rather primitive corpus software were printed out as hard copy. For more information see IDS Korpora (www.ids-mannheim.de/cosmas2/projekt/referenz/korpora.html).

The MK1 provided the empirical data for the project Grundstrukturen der deutschen Sprache dealing with grammatical phenomena such as the passive voice, tenses, the subjunctive, and sentence patterns, mostly completed during the early 1970s. Due to the computational shortcomings, the actual work, such as the extraction of citations and their annotation, was carried out manually. Still, the resulting monographs constitute proper corpus-based studies and had important implications for all subsequent grammatical research, correcting many erroneous previously held beliefs. They were published in the 1970s in the series *Heutiges Deutsch, Reihe 1: Linguistische Grundlagen. Forschungen des Instituts für deutsche Sprache*. For more information see IDS Publikationen (http://pub.ids-mannheim.de/).

Another early corpus project was the Bonner Zeitungskorpus (BZK) compiled at the Bonn branch of the IDS and consisting of cross sections of a leading East German paper (*Neues Deutschland*) and a leading West German paper (*Die Welt*) of the years 1949, 1954, 1959, 1964, 1969, and 1974. It was the first German corpus suitable for diachronic research. For more information see IDS Korpora (www.ids-mannheim.de/cosmas2/projekt/referenz/korpora.html). Some studies using this corpus were published in Hellmann (1984).

The IDS Archive of Written Language Corpora Today: DeReKo (Deutsches Referenzkorpus)

From 1999 to 2002, the IDS, in conjunction with the Institut für Maschinelle Sprachverarbeitung at Stuttgart University and with the Seminar für Sprachwissenschaft at Tübingen University, carried out the project DeReKo (Deutsches Referenzkorpus), which led to the compilation of complete and unaltered (i.e., no correction of spelling, etc.) texts (starting from 1956) representing a wide range of genres (newspapers, fiction, political, legal, and scientific texts) and covering Germany, Austria, and Switzerland, originally totaling ca. 1 billion words. Kupietz and Keibel say, "The main purpose of DeReKo is to serve as an empirical basis for the scientific study of contemporary written German" (2009, p. 54).

DeReKo is now the label given to the entirety of written German language corpus resources at the IDS. It comprises a host of corpora totaling about four billion words, three billion of which are accessible online for language researchers worldwide. The majority of these corpora were compiled at the IDS, others were transferred to Mannheim after the local projects had expired. The current list comprises the MK1 and MK2, the Limas-Korpus (see below), numerous corpora of German, Austrian, and Swiss newspapers and German language newswires, corpora devoted to specific authors (Goethe, the Grimm brothers, Marx and Engels, Thomas Mann), corpora of languages for special purposes, contemporary fiction, as well as some smaller special corpora. Three billion words can be accessed from outside the IDS, with a further billion available only to researchers working at the IDS. A complete list can be found at IDS Aktuelles Korpusarchiv (www.ids-mannheim.de/kl/projekte/korpora/archiv.html).

Development of an IDS Corpus Philosophy

The early beginnings of corpus research were marked by a belief that it would be possible to design and compile a finite corpus representative of the German language, if not in respect to the lexicon then at least in respect to its grammar. But in the 1970s the European corpus community began to question the concept of representativeness and its discontents. The outcome of this discussion is set down in the NERC Report (Calzolari, Baker, & Kruyt, 1995). What exactly is the discourse universe sampled by the corpus? What is our definition of standard language? Is it more a matter of text production or of readership? Which social and regional parameters have to be taken into account? It was in the 1980s that the aim of an authoritative balanced or representative corpus was finally abandoned. Instead the task was redefined: the IDS would offer a variety of modular corpora among which a user had to select the modules they expected to fit their specific research question. The task of demonstrating that a corpus samples a particular discourse universe is thus devolved from the corpus compiler to the corpus investigator. Consequently, it was decided to assemble corpora compiled for different purposes under the umbrella of a highly sophisticated query system, Cosmas I (*Co*rpus *S*earch, *M*anagement and *A*nalysis *S*ystem), now replaced by Cosmas II (www.ids-mannheim.de/cosmas2/). It allows the researcher to compile their customized corpus from the resources on offer. This philosophy of separating corpus compilation from corpus research promotes a corpus acquisition strategy that can be described as opportunistic, that is, building an ever-growing corpus archive with limited means, based on the principle of "primordial sample design" (see Kupietz, Belica, Keibel, & Witt, 2010).

While the use of concordancing tools became the primary approach for corpus research on English, the limitation of single concordance lines proved to be inappropriate for German, with its very liberal word order. Often elements semantically closely linked are

dispersed over a whole sentence. This is why normally the sentence is the unit of reference in most German-language corpora. Consequently all corpus texts are divided into their sentences, and the sentence number provides the reference. As German is a highly inflecting language, Cosmas makes provisions for queries either by lemma or by a definable subset of word forms of a lemma. This feature also allows a search for all compounds of which a lemma can be part (compounding being another common feature of German). DeReKo comes with annotations generated by three tagging tools: TreeTagger, Machine Phrase Tagger (Connexor Oy), and Xerox FST Linguistic Suite (more information at IDS Annotationen, www.ids-mannheim.de/kl/projekte/korpora/annotationen.html, and in Belica, Kupietz, Lüngen, & Witt, 2010). The IDS corpus setup is based on the international standard XCES as set out in the Corpus Encoding Standard for XML (www.xces.org) and compatible with the text encoding initiative guidelines TEI P5 (www.tei-c.org/Guidelines/P5/).

While most corpora in applied linguistics are organized synchronically, only the diachronic dimension of the discourse will reveal how language changes and how the meaning of the same segment type (word or phrase) in a text today differs from the meaning of this segment type in prior occurrences. This is why special software for monitoring semantic change was designed and implemented for the Wendekorpus, a corpus divided into six phases covering newspaper texts in West and East Germany covering the end of the GDR and the German reunification, from mid-1989 to the end of 1990. For more details, see IDS Cosmas Gesamtkonzept (www.ids-mannheim.de/kl/projekte/cosmas_I/gesamtkonzept.html).

Spoken Language Corpora and Corpus Research at the IDS

The Archiv für Gesprochenes Deutsch (AGD) comprises a large selection of corpora partly compiled at the IDS, partly in external projects. They are divided into (a) dialects spoken inside Germany (Binnendeutsche Mundarten), (b) colloquial German/standard German (Binnendeutsche Umgangssprache/Standardsprache), (c) varieties spoken outside Germany (Auslandsdeutsche Varietäten), and (d) corpora for conversation analysis (Gesprächskorpora). These corpora exist in the form of recordings and, to a large extent, also in the form of transcripts. About 8,000 of altogether 15,000 documents are implemented in the database. For legal reasons only a fraction can be accessed from the outside. Without authorized access a user can only try out ten different interactions as registration is necessary to work with the full research version. There are a number of query options, including those provided by Cosmas II (http://agd.ids-mannheim.de/html/index.shtml).

In the early days of the IDS, its Freiburg branch was compiling a corpus of spoken standard German for the purpose of investigating grammatical and stylistic registers of spoken German and comparing them to those of the written language. The size of the Freiburger Korpus is 500,000 words. It has provided the basis for a number of studies, describing for the first time the grammar of standardized spoken German in a systematic way, for instance, on the subjunctive, the passive voice, the past tenses, and on vocabulary size. It is complemented by a corpus of "natural" dialogues, compiled from 1974 to 1978. Some of these studies were carried out in conjunction with the Goethe-Institut, thus providing a basis for their German courses for non-native speakers. Corpus texts and the research on them are published in the series *Heutiges Deutsch* (Hueber Verlag).

Even older than the Freiburger Korpus are the origins of the Deutsche Spracharchiv, the key archive of spoken German language recordings, founded in 1932. Its main collections (elicited narratives with a focus on dialects) date from the mid-1950s to the late 1960s and cover West Germany and surrounding areas (Vorarlberg, Liechtenstein, Alsace, and the Netherlands, but also include speakers from former East Prussia and from what used to

be called West Prussia). This corpus comprises ca. 6,000 recordings, representing ca. 1,000 mostly rural locations with speakers from three generations. About 3,000 recordings are transcribed and accessible. They are complemented by a collection of East German dialect recordings. The last major project of the Deutsche Spracharchiv before it was integrated into the AGD was a rather comprehensive recording operation of extant (East) Yiddish dialects, including elicited narratives recordings of Holocaust survivors. Many of these recordings have been transcribed and are accessible.

Another important corpus is the Pfeffer-Korpus, consisting of ca. 400 narratives and dialogues, covering the regional accents of colloquial German sampled in 1961 from the whole German-speaking area. It was transcribed, encoded, and edited at the Institute for Basic German at Stanford University under the guidance of Alan Pfeffer.

The conversation corpora are more recent. During the 1980s, a corpus Stadtsprache sampling 840 recordings (250 also available as transcripts) of colloquial discourse of diverse social strata and in different public environments of Mannheim was collected. During the same period, a corpus of 223 professional mediation talks (Schlichtungsgespräche, of which 103 are available as transcripts) was also compiled. The corpora were made the object of a number of studies within the framework of ethnomethodology and conversation analysis (www.ids-mannheim.de).

The Limas-Korpus: A German Version of the Brown Corpus

The Limas-Korpus is compiled on principles similar to those of the Brown Corpus. The Brown Corpus, set up in the 1960s by Henry Kucera and W. Nelson Francis at Brown University, contains a selection of American English (about 500 text samples of 2,000 words and consisting of about one million words). The Limas-Corpus contains 500 excerpts from various kinds of texts, each with a length of ca. 2,000 words. Randomly selected on the basis of the "Nationalbiographie" of 1971/1972, this corpus is composed of textual excerpts from the 33 different domains into which this bibliography categorizes all German language publications. The project was initiated in 1970 by the Arbeitsgruppe Limas (*LI*nguistische und *MAS*chinelle *S*prachbearbeitung) in Bonn and completed in 1973. Although the work on the project is completed, the corpus can still be accessed at various sites, for example, at Limas (www.korpora.org/Limas/) and at IDS Korpora, and is also available on microfiche (it is described in more detail in Glas, 1975).

Corpora at the DWDS

The DWDS (Digitales Wörterbuch der deutschen Sprache) is a long-term project of the Berlin-Brandenburg Academy of Sciences. It has a large collection of corpora, and it is also linked to the C4 corpus project which will, once completed, provide a balanced 20th-century corpus of the German-language area in Austria, Switzerland, and South Tyrol consisting of 80 million words. For more information on the C4 project, see Korpus C4 (www.korpus-c4.org).

All DWDS corpora are lemmatized and part of tagged speech. Many of them can be accessed without subscription. These are the more important corpora:

DWDS Kernkorpus: This corpus covers, in balanced form, text genres over the whole 20th century. It consists of 100 million words in ca. 80,000 documents, encoded/annotated in conformance with XML/TEI (see Text Encoding Initiative, 2009).

Korpus Gesprochener Sprache: This corpus comprises 1,500 transcripts covering the 20th century, totaling 2.5 million words.

DDR-Korpus: This steadily growing corpus, compiled in conjunction with the Berlin Humboldt University, comprises currently 1,150 texts covering the full duration of the East German state from 1949 to 1990, mostly texts written by East German authors and published in West Germany. It contains 9 million words.

Korpus Jüdische Periodika: This corpus, covering the years from 1887 to 1938, is compiled in conjunction with the project Compactmemory. Currently it comprises 50,000 pages taken out of eight periodicals and linked to digitized images of each page, and consists of ca. 26 million words.

Zeitungskorpora: This corpus consists of the weekly *Die Zeit* (mainly since 1996, currently 106 million words and regularly updated), *Berliner Zeitung* (covering the years 1994 to 2005 and consisting of ca. 250 million words), *Tagesspiegel* (covering the years 1996 to 2005 and consisting of ca. 170 million words), and *Potsdamer Neueste Nachrichten* (covering the years 2003 to 2005 and containing ca. 15 million words).

There is also an opportunistic Ergänzungskorpus of ca. 1 billion running words (mostly newspaper texts from between 1990 and 2000). There is more information on the corpus resources at the DWDS (www.dwds.de). A list of relevant publications is also available at this Web site.

Schweizer Textkorpus

The Schweizer Textkorpus is an ongoing project of Basel University. The goal is the compilation of a substantial corpus of texts in standard (written) German written by Helvetian authors of the 20th century. It will form part of the 80-million-word Korpus C4 mentioned above. The Swiss contribution aims to provide a balanced representation of Swiss German vocabulary. In 2009 the first phase was completed, comprising ca. 20 million words, about half of which are currently accessible online. For more information see the Schweizer Textkorpus (www.schweizer-textkorpus.ch).

Austrian Academy Corpus

The Austrian Academy Corpus (AAC) is a long-term project of the Austrian Academy of Sciences. While the corpus aims to contribute to new applications in text technology and to research in philology and cultural history, it has also compiled a large structured collection of Austrian texts (books, newspapers, and journals, including *Die Fackel*) from 1848 to 1989. The digitized texts are linked to the scanned page images. There is also a Viennese Theatre Corpus focusing on the playwright Johann Nepomuk Nestroy, and a Baedeker Corpus, consisting of first editions of Baedeker guidebooks between 1875 and 1914. These corpora are richly annotated.

The combined size of all AAC corpora is currently ca. 1 billion words. The AAC is part of the C4 project and forms part of the Austrian subcorpus. For more information see Austrian Academy Corpus (www.aac.ac.at).

Initiative Korpus Südtirol

The aim of the Initiative Korpus Südtirol is the collection of South Tyrolean texts and their compilation in the form of electronic corpora in order to make them available for a wider public and to carry out research on the specificities of South Tyrolean German. The Initiative Korpus Südtirol is a joint project of the Freie Universität Bozen, the Europäische Akademie Bozen, and Innsbruck University. In its first phase, from 2005 to 2008, the

initiative compiled a richly annotated corpus of 68 million words. This corpus is freely accessible. It feeds into the C4 project (see above). For more information see Korpus Südtirol (www.korpus-suedtirol.it).

Wortschatz Universität Leipzig

The German part of this project consists of a (finite and completed) 30-million-word newspaper corpus, available for download. A second (Web and non-completed) corpus is under construction and is expected to offer another 30 million words. In addition, an internal corpus, Deutscher Wortschatz Online, with 35 million sentences or 500 million words, can also be queried. For more information see Wortschatz Universität Leipzig (http://wortschatz.uni-leipzig.de).

Diachronic and Historical Corpora

There are a growing number of diachronic and historical corpora or corpora featuring earlier phases of German. These resources have been primarily compiled not for linguistic research but for literary or philological studies (e.g., the Projekt Gutenberg initiative at http://Gutenberg.spiegel.de). Listed below are some diachronic corpora compiled with linguistic research in mind.

Bonner Frühneuhochdeutschkorpus: This corpus is a collection of approximately 100 published books in Early Modern German (ca. 1350–1700). Each book is available in HTML code (2002), useful for older browsers with a legible HTML version of the text, and the customized FnhdC/HTML version using Unicode-3.1 with morphological and syntactic annotation (www.korpora.org/Fnhd/unten_ueberfnhd.html).

Digitales Mittelhochdeutsches Textarchiv: The goal of this archive at Trier University is to make available a comprehensive collection of philologically reliable Middle High German text editions. It is the basis for the *Mittelhochdeutsches Wörterbuch*, a joint project of the Mainz Academy of Sciences and Göttingen University. The archive was compiled in co operation with the Electronic Text Center of the University of Virginia. Most of the ca. 100 texts are available as XML downloads (http://mhgta.uni-trier.de/index.html).

Reference Corpus Middle High German (1050–1350): This project at Bochum University commenced in 2009 and will be concluded in 2012. It aims at creating a reference corpus of Middle High German, with annotation on the morphosyntactic level (www.linguistics.ruhr-uni-bochum.de/~dipper/project_ddd.html).

Oxford Text Archive: This archive contains ca. 30 German texts, many of them from the Middle High German period. Most of them are available to the general public (http://ota.ahds.ac.uk/catalogue/index-id.html).

TITUS (Thesaurus Indogermanischer Text- und Sprachmaterialien): This is an ongoing project of Frankfurt University. Besides text in most Indo-European languages, it also features a surprisingly large selection of Old/Middle High and Early Modern German texts, usually in HTML format and often also in a "wordcruncher" version. They are annotated to a high standard. For access to many of the texts it is necessary to sign up as a member of TITUS (http://titus.uni-frankfurt.de/indexe.htm).

German Dialect Corpora

The Archiv für Gesprochenes Deutsch (AGD) at the IDS offers a broad selection of German dialects in the form of recordings and corpora of their transcripts. However, many more

corpora exist for many regional or local dialects spoken within the German language area and in the diaspora. They are listed in Paul Joyce's Web page (Joyce, 2010), "Deutsche Dialekte—Linkverzeichnis" at the University of Portsmouth, covering not only German dialects but also neighboring languages such as Yiddish, Frisian, Lëtzebuergesch and the Slavic language Sorbian spoken in parts of eastern Germany (see below; http://userweb.port.ac.uk/~joyce1/dialects/).

The Situation of Related Neighboring Languages

Frisian: While (West) Frisian is still very much alive, with ca. 400,000 speakers, in the Dutch province Friesland or Fryslân, with its municipal center Ljouwert (Leuwarden), it has largely disappeared in its eastern variety (East Frisian), formerly spoken along the German North Sea coast between Emden and the Jade estuary. However, the variety spoken by perhaps 10,000 speakers along the eastern coast of Schleswig Holstein and Jutland and on adjoining islands (North Frisian) is still kept actively alive. So far, however, there is no corpus.

The Fryske Akademy in Ljouwert is constructing several corpora, for New Frisian, 19th-century Frisian, Middle Frisian, and (planned) Old Frisian, covering the time from the 12th to the 20th century. The New Frisian corpus with currently 25 million words is accessible online from the Akademy. For more information see Frisian Corpora (www.fa.knaw.nl/fa/3departments-and-disciplines/department-of-linguistics/taalkorpora_en_/frisian-language-corpus).

Lëtzebuergesch: Luxembourgish/Lëtzebuergesch is one of the official languages of Luxembourg (besides French and German). Lëtzebuergesch now has a standardized orthography and grammar and has about 300,000 speakers. However, so far no substantial corpus has been compiled. For more information see Laboratoire de linguistique et de littératures luxembourgeoises (http://wwwfr.uni.lu/recherche/flshase/laboratoire_de_linguistique_et_de_litteratures_luxembourgeoises/recherche).

Yiddish: While West Yiddish, the variety formerly spoken by Jews in Germany, Switzerland, and Alsace, became practically extinct at the end of the 19th century, (East) Yiddish, with its center in Wilna, and spoken in various dialects in Poland, Czechoslovakia, the Ukraine, the Baltic states, Belorussia, and Russia, had a strong presence up to the Holocaust with millions of speakers and a wide range of literature. It has all but disappeared from the lands conquered by the German troops in World War II, but it survives (as a taught language) in the diaspora, for example, in New York, Buenos Aires, and also in Israel. The largest collection of Yiddish recordings is found at the Language and Culture Archive of Askenazic Jewry at Columbia University. However, transcripts of these recordings are not accessible online. For more information see *Language and Culture Atlas of Askenazic Jewry* (Herzog, 2006). The IDS Archiv für Gesprochenes Deutsch (http://agd.ids-mannheim.de/html/index.shtml) also features a corpus of recordings and transcripts of Yiddish dialects.

German in Parallel Corpora

Parallel or translation corpora consist of original texts in a source language and their translations into one or more target languages. Ideally they are aligned at the sentence level. When it comes to German, there is a dearth of such corpora. For more information on parallel corpora and applicable software see parallel corpora in Uppsala (http://xml.coverpages.org/etap-over.html). Here follows a selection of existing resources and/or projects about to develop parallel corpora:

EuroParl is a parallel corpus consisting of proceedings of the European Parliament. It offers currently about 50 million words for each of these languages: French, Italian, Spanish, Portuguese, English, Dutch, German, Danish, Swedish, Greek, and Finnish. The original language of a document is often not transparent, therefore, the corpus is aligned on the sentence level. For some language pairs, including English–German, there are specific parallel corpora using the same dataset. EuroParl can be downloaded (www.statmt.org/europarl/).

The English/German Translation Project was carried out in the 1990s at Chemnitz Technical University. It consists of a variety of genres and features English as well as German original texts and their translations. Limited access is possible at Transcorpus (www.tu-chemnitz.de/phil/english/chairs/linguist/real/independent/transcorpus/index.htm).

GeFRePaC is a German–French reciprocal (bi-directional) corpus, aligned on the sentence level, with 15 million words in each language. It features a variety of genres. It is published by ELRA as a CD-ROM. More information is available from the ELRA Catalogue (www.language-archives.org/item/oai:catalogue.elra.info:W0031).

Concluding Remark

As for other languages, there is an abundance of special corpora, often relatively small, that have been compiled in connection with specific research projects. For reasons of space they cannot be dealt with in this entry. Unlike the Oxford Text Archive, which is a kind of clearinghouse for English corpora in Britain, there is still no comparable institution for German language corpora. Anyone searching for a particular German corpus is best advised to put a query to the Corpora List (corpora-bounces@uib.no).

SEE ALSO: Corpora: English-Language; Corpora: French-Language; Corpora: Specialized; Corpus Linguistics: Historical Development

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Corpora: Multimodal

SVENJA ADOLPHS

Natural language collected and stored in multimillion-word corpora forms the basis of inquiry in a diverse range of disciplines. Advances in the field of corpus linguistics over the past two decades have contributed to pioneering research in many areas of communication studies and language description. However, while the analysis of large-scale text corpora can provide insights into language patterning, and can help establish linguistic profiles of particular social contexts, it is limited to the textual dimension of communication. Yet, communication processes are multimodal in nature, and there is now an increasing body of research concerned with the development and analysis of corpora that enable the user to study the speech and gestures of the participants in social interaction, and ways in which the verbal and nonverbal are inextricably linked. The impetus towards multimodal corpora recognizes that natural language is an embodied phenomenon and that a deeper understanding of the relationship between talk and bodily actions—particular gestures—is required if we are to develop a more coherent understanding of the collaborative organization of communication (see also Saferstein, 2004).

Work in multimodal communication has seen advances in both theory and practice. The theoretical starting point for much significant work has been in systemic-functional linguistics and in different subfields of psychology (see, for example, McNeill, 1985). Foundational work in multimodal communication, such as Kress and van Leeuwen (1996), has illustrated how choices of image can align with verbal choices. This work has been extended in recent years to embrace the multimodal analyses of word, image, and sound within different language varieties, including cartoons, comics, film, information leaflets, maps, advertisements, Web pages, and classroom textbooks (e.g., Baldry & Thibault, 2004, 2006). The emphasis has been on how choices of one image or camera angle or color tone can cumulatively encode particular meanings. The almost exclusive focus has been on written text. A particular challenge for current research is therefore to integrate the computer-enabled power of corpus linguistic methods with the theories and practices of multimodal linguistic research, with particular reference to the analysis of spoken discourse. In other words, one key aim of multimodal corpus linguistics is to provide computerized analyses of patterns of verbal and nonverbal meaning in ways that allow new understandings of discourse to emerge.

Human communication functions within a variety of direct and indirect "semiotic channels" (Brown, 1986, p. 409). The occurrence of such channels is affected by modes of communication that differ widely according to their form, function, and context of use (see foundational work by Argyle, 1988, and Ekman & Friesen, 1969, and more recent studies by Wilcox, 2004, and Gu, 2006). Previous studies on the relationship between language and gesture have traditionally focused on smaller data samples (see, for example, Streeck, 1994; Goodwin, 2000; Kita, 2003; and Olsher, 2004), and are often carried out in experimental settings. With the development of large-scale collections of video-recorded and transcribed interactions, we can extend the potential for research into behavioral, gestural and linguistic features. Current multimodal corpus studies focus mainly on multimodal and multimedia studies of discourse, and speech engineering and corpus annotation (Gu, 2006, p. 132).

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Whatever the approach and focus of multimodal corpus research, there are a number of common challenges which relate to three key stages in data preparation and collection. These can be summarized under the headings "record," "represent," and "replay" (Knight, Evans, Carter, & Adolphs, 2009). Recording multimodal corpus data poses a number of issues ranging from the right camera angle to capture sufficient detail of the interaction, to more basic questions of equipment, and challenges relating to informed consent. A related priority for future research in this area is the development of tools and methods to address ethical issues; for example, to anonymize video data while still being able to extract the salient features that are the focus of the analysis. Pixelating faces or using shadow representations of heads and bodies can blur distinctions between gestures and language forms and, when taken to its logical conclusion, anonymization should also include replacing voices with voice-overs from other speakers. Ethical considerations of reusing and sharing contextually sensitive video data as part of a multimodal corpus resource need to be addressed further in consultation with end users, informants, researchers, and ethics advisors. The issues are especially acute when tools and resources are shared and Web-enabled.

Once the data is recorded, it needs to be represented in a way that allows a certain degree of alignment between the video/audio stream and the transcript of the interaction. Video annotation software, such as ELAN and Transana, can facilitate this process. The development of new interfaces is required when the aim is a corpus-based analysis of multimodal discourse representations. It is important that such interfaces include a concordance facility and allow the analyst to move between the concordance data and transcript, and the relevant point in the video. An example of such an interface is the Digital Replay System (DRS), which is a research prototype developed at the University of Nottingham (Brundell et al., 2008). The "replay" phase of the process requires careful consideration as to the extent to which the user may determine replay features (e.g., through linking search functions to predetermined coding tracks in the analysis).

Research in multimodal corpus linguistics has contributed significantly to the development of new interfaces of the kind described above and to the articulation of key challenges associated with each of the research phases (Carter & Adolphs, 2008). Most importantly, it has challenged the applicability of some of the key methods and visualization tools used within the corpus linguistics tradition, such as the analysis of concordance data, when we move from monomodal to multimodal representations.

Multimodal corpus linguistics is a relatively new area of research, and there are numerous challenges that require further investigation. They include technical issues such as the development of gesture-recognition systems, and issues of scope, such as the analysis of more than one gesture region at a time. An example of the latter would be the integration of hand and head gestures, as well as gaze, in alignment with language use. They further include theoretical questions of how gesture and language integrate and whether they can be described within a single framework. Early work in this area has generated some interesting findings as outlined above. It has also shown that some of the functional categories of language use that we have developed purely on the basis of transcribed records of discourse may have to be reconsidered in the light of new insights gleaned from the deployment of a multimodal approach. As our abilities develop in recording, storing, and analyzing ever larger multimodal corpora in an integrated manner, we may expect to see new patterns of meaning, which allow us to assess issues of scalability in relation to multimodal corpus research. Finally, advances in adding video and audio streams to more traditional corpus linguistics resources mainly based on textual records, are likely to pave the way for adding and exploring further data streams. This may include global positioning system (GPS) data or time reference to a discourse event, and could potentially include any type of data that is recorded in relation to our everyday social interactions. In this

regard, multimodal corpus linguistics is likely to have an impact on language description that goes beyond the mere link-up between language and gesture, to include a vast number of other data streams that will ultimately lead to better descriptions of language in context, and thus to better applications based on those descriptions.

SEE ALSO: Analyzing Spoken Corpora; Multimodal Corpus-Based Approaches

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Corpora: Specialized

MARTIN WARREN

In corpus linguistics, there is a distinction made between general corpora and specialized corpora. A simple, but potentially misleading, way to distinguish between these two kinds of corpora is size. The former run into tens of millions of words, such as the Bank of English (over 500 million words) and the 100-million word British National Corpus, whereas specialized corpora tend to be measured in tens of thousands, or single-digit millions, of words. However, as Sinclair (2001, p. viii) points out, the size of corpora is relative and what seemed large in the 1960s was subsequently dwarfed by those compiled in the 1980s and they, again, now seem small at the time of writing (2011). The difference between the two kinds of corpora is described by Sinclair (2001, pp. viii–x), and he argues that it is not the size of a corpus but rather the purpose for which it is created which best distinguishes a general corpus from a specialized corpus. A general corpus is designed to reveal patterns of language use for the language as a whole, whereas a specialized corpus is compiled not to aid in the description of the language as whole but to describe, for example, a specific register, genre, or variety of the language.

A key aspect of any corpus is that it is designed on a principled basis (Sinclair, 2005, pp. 2–17). Four of Sinclair's design principles—the communicative purpose of the corpus contents, what the corpus represents, the representativeness of the corpus, and the control of the subject matter by means of external criteria—are central to determining whether a corpus is made up of a wide range of spoken and written texts representing in their totality general language use, or is made up of spoken or written texts (or both) representing a specific kind of language use.

Given that general corpora are typically made up of identifiable subcorpora, it might be argued that they in effect contain a set of specialized corpora making the compilation of distinct specialized corpora unnecessary. For example, the Cambridge International Corpus (see, e.g., McCarthy & Handiford, 2004) consists of a number of subcorpora (e.g., spoken British English, spoken business English, spoken North American English, legal English, business reports and documents, financial English, academic English, and a learner corpus), each of which could be treated as a specialized corpus. However, as Flowerdew (2004, pp. 14–15) points out, using the subcorpora of general corpora in place of specialized corpora can be problematic because they often fall short in terms of representativeness, size, and even accessibility, so it is often necessary for the corpus linguist to build a specialized corpus. Flowerdew (2004) offers a useful set of parameters for classifying corpora as specialized (p. 21):

- specific purpose for compilation;
- contextualization—setting, participants, and communicative purpose;
- size—1 to 5 million words;
- genre-based;
  1. type of text/discourse
  2. subject matter/topic
- variety of English.

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It can be seen that Flowerdew (2004) includes size as a characteristic of specialized corpora and, while there are some very large specialized corpora, Sinclair (2005, p. 16) notes that for the compilers of a specialized corpus a "much smaller corpus will be needed for typical studies than is needed for a general view of the language." The reason for this is that the "number of different word forms, which is a rough estimate of the size of the vocabulary, is far less" in specialized corpora than general corpora (Sinclair, 2005, p. 16). This tendency is explained by the fact that a specialized corpus "highlights a small, probably technical vocabulary" and the "characteristic vocabulary of the special area is prominently featured in the frequency lists" (Sinclair, 2005, p. 16).

Another design characteristic which distinguishes specialized from general corpora is that specialized corpora tend to be designed for early human intervention (EHI) studies while general corpora are designed for delayed human intervention (DHI) (Sinclair, 2001, p. xi). In the case of the former, the corpus compiler has a specific goal (or goals) and builds a corpus accordingly. In the case of DHI, the researchers compiling a general corpus do not have such specific aims in mind. Sinclair (2001, p. xi) gives an example of one EHI study often conducted by those working with specialized corpora, which is to compare "proportional differences or the presence or absence of particular phenomena" which the researcher then interprets. Sinclair (2001, p. xii) cites Biber, Johansson, Leech, Conrad, and Finegan's (1999) grammar of English which compares four specialized corpora—conversation, fiction, news, and academic with each corpus made up of 4–5 million words—as a typical EHI study. Other increasingly popular examples of comparative studies are translation studies using specialized parallel corpora consisting of translated texts aligned to enable comparisons to be made and thus "translation equivalence to be studied" (Sinclair, 2001, p. xii), examples of which are given below. Having a specific focus can also mean that specialized corpora can be used to inform language teaching. For example, "descriptions of structure, reliable models of usage, how words and phrases are translated," determining the essentials in a syllabus, and identifying learners' errors can all be developed and/or supported by focusing on specific genres and subgenres (Sinclair, 2001, p. xiii).

A specialized corpus, then, is typically compiled to investigate a particular register, text type, language variety, or form of language use. Here Bhatia's (2004, pp. 30–2) definition of register is used, which relies on the notion of context of situation: the field, mode, and tenor of a discourse, whereby a register can be field dominated (e.g., scientific register), mode dominated (e.g., casual conversation), or tenor dominated (e.g., client consultation) (Bhatia, 2004, p. 32). A genre, on the other hand, represents a particular type of text (Bhatia, 2004, p. 31) such as a sales letter, annual report, or job interview. When examples of specialized corpora are reviewed, it is apparent that they are not always easy to categorize as representing primarily a register, text type, language variety, or form of language use because some are designed to cover more than one of these categories.

Selection of Contents

The selection of the contents of a specialized corpus often requires the corpus linguist to seek advice from experts in the field to ensure its representativeness and balance. Three specialized corpora compiled in Hong Kong illustrate the importance of doing this. The Hong Kong Financial Services Corpus (7.3 million words) and the Hong Kong Engineering Corpus (9.2 million words) relied on professional bodies, organizations, and individual professionals both for expert advice in terms of corpus contents and also for the texts themselves. Bhatia (2004, p. 212) built a corpus of 105 criminal and civil law cases (569,445 words) from common law countries, mainly the UK and Australia, recommended by law professors in Hong Kong. He examined the use of collocations to arrive at a grammar of such legal cases and looked in detail at the collocations of the verbs *submit*, *grant*, *reject*, and

dismiss (p. 215). Another example is the 1.3-million word research article corpus compiled by Hyland (2004, p. 91) containing 240 articles based on 30 articles from 8 disciplines. In such a project, it was important to have the advice of experts in the respective disciplines to select the texts. Hyland used the corpus to examine the use of citations, reader orientations, directive functions, self mention, and promotion (2004, pp. 94–108).

Spoken Corpora

There remains a massive imbalance between the number of corpora of written texts and those containing spoken texts because spoken language remains the most difficult kind of data to obtain and is very time consuming to transcribe. This is unfortunate given that the written language makes up only a small proportion of total language use compared with spoken, of which the vast majority is conversation. However, there are some notable exceptions, such as Sinclair, Jones, and Daley's (1970) Spoken Text Corpus of 135,000 words compiled in the 1960s and the extensively researched 500,000-word London–Lund Corpus of Spoken English built in the 1960s and 1970s (http://khnt.hit.uib.no/icame/manuals/londlund/INDEX.HTM). Examples of more recently compiled spoken corpora are the Michigan Corpus of Academic Spoken English (MICASE), the Cambridge and Nottingham Corpus of Discourse in English (CANCODE), and the Corpus of London Teenager Language (COLT). MICASE is 1.7 million words of spoken, mainly US, English and is another example of a corpus representing the academic register minus written academic texts. CANCODE is a 5-million word corpus of spoken UK English collected from a variety of informal settings and has been used by McCarthy and Handiford (2004) with another specialized spoken corpus, the 1-million word Cambridge and Nottingham Spoken Business English Corpus (CANBEC), to compare the two registers. Compiled in 1993, COLT (http://www.hd.uib.no/colt/) contains 500,000 words of naturally occurring talk between London teenagers aged 13 to 17. There are, of course, spoken corpora of languages other than English. For example, Wong (2009) compared *gei* and *bei* constructions in Mandarin Chinese and Cantonese, which closely correspond with a basic meaning of "to give" (p. 60). The study made use of one written corpus and two spoken corpora, the Lancaster Corpus of Mandarin Chinese of 15 written texts, the 300,000-word corpus of Mandarin Chinese telephone conversations (CallHome Mandarin Chinese Transcripts Corpus), and the 170,000-character Hong Kong Cantonese Adult Language Corpus of "phone-in programmes and forums on local radio" (Wong, 2009, p. 62).

Register

There are corpora which represent a register such as the corpus of computing-related texts compiled by Bowker (1998), who argues that specialized target language corpora are a better translation resource for translators than conventional lexicographic resources. Similarly, Claveau and L'Homme (2006, p. 209) describe a method for "discovering and organizing noun-verb combinations" made possible by developing a French corpus of computing texts. The description of English grammar by Biber et al. (1999) has been mentioned before and is based on four specialized corpora representing four different registers drawn from both US and UK sources (Biber et al., 1999, pp. 29–35). Hoey (2005, p. xi) describes his theory of lexical priming with examples drawn from a 95-million word corpus of news and features texts from the UK-based *Guardian* newspaper. He argues that using this specialized corpus is "an asset, not a limitation" because "working with a corpus from a single source" then "means that claims, though necessarily limited, are securely grounded" (p. xi). Another example of a news register corpus was built by De

Sutter, Speelman, and Geeraerts (2008) to investigate the reasons for grammatical variation in the "word order in Dutch clause final verb clusters" (p. 194). To do this, they used the 54-million word corpus of written Dutch which includes both Netherlandic and Belgian Dutch texts, from newspapers and the Web from the years 1958, 1978, and 1996 (p. 199). A different register, fiction, was used in a study by Brown, Tiberius, and Corbett (2007) which examined the use of Russian nominals that "exhibit both syncretism and inflectional allomorphy" (i.e., where one form has more than one function and one function has two or more forms) in the Russian Standard Corpus, which is 1.5 million words of 20th-century Russian fiction (p. 518).

Genre

Specialized corpora based on a genre have become very common and can range in size and the specificity of the text type collected. Ooi (2001), for example, compiled a corpus of 120 personal classified advertisements posted by men and women in Singapore and the USA. He investigated the use of frequently used phrases and identified *looking for* and *sense of humor* to be key phrases in the genre along with key words. He found the key words *fun* and *sex* were used more frequently by men while women were more likely to use the key word *friends* (pp. 181–2). Another example of a very specific text type is Quaglio's (2009, p. 30) Friends corpus (604,767 words), made up of nine seasons of the well-known television program of the same name, which he compared with the 4-million word American conversation subcorpus of the Longman Grammar Corpus (p. 36). The main aim of compiling this specialized corpus was to compare the scripted conversations with naturally occurring conversations, and Quaglio uncovered substantial differences between the two. The 4-million word American conversation subcorpus of the Longman Grammar Corpus was also used in a study by Friginal (2009, p. 64) in which he compared approximately 1.1 million words of face-to-face conversations selected from the subcorpus with two other specialized corpora. He compiled a call center corpus (553,765 words) based on 500 telephone calls recorded in the Philippines. He also used a 1-million word switchboard corpus (pp. 65–7) which is part of the American National corpus. It comprises 600 calls between pairs of speakers who were matched to talk on the phone by selecting the same topic from a list of potential topics before being recorded. The latter corpus is unusual in that corpus linguists typically collect naturally occurring data for their corpora rather than contrived or experimental data.

Function-Based Corpora

Some specialized corpora contain incomplete texts. Sometimes this is in order to have strict control over the size of the corpus, and the balance of the contents, and sometimes it is because the compilers are interested in particular parts of a text. Bondi (2001, pp. 138–9) compiled two corpora made up of parts of texts. One comprises ten economics textbook introductions (71,000 words) and the other consists of 456 economics-journal abstracts (47,000 words). She compared the use of expressions "to represent argumentative activity within scientific procedures" (p. 138). The six most frequent meta-argumentative expressions in the introductions are *statements*, *questions*, *assumptions*, *disagree*, *judgments*, and *predictions*. In the corpus of abstracts they are *examines*, *state*, *discusses*, *considers*, *implications*, and *analyzes*. Barnbrook and Sinclair (2001) compiled a dictionary-definition corpus of 434,220 words which is made up of all 31,497 word senses defined in the *Collins COBUILD Student's Dictionary* (Barnbrook & Sinclair, 2001, p. 238). They investigated and described the "restricted language of definition" and argued for "local grammars" which better

describe the grammar of the restricted language than a general grammar (p. 271). These local grammars then formed the basis for writing software capable of automatically retrieving definition sentences from corpora. Some corpus linguists have compiled more traditional specialized corpora—fund-raising letters, biology/biochemistry research articles, and university classroom teaching—and then dissected the texts into their respective discourse moves in order to compare the language found in each of the move subcorpora (Biber, Connor, & Upton, 2007).

Bilingual Lexicography, Translation Studies, and Parallel Concordancing

The use of specialized corpora in bilingual lexicography, translation studies, and parallel concordancing has become increasingly common. Santos and Frankenberg-Garcia (2007, p. 337) describe the compilation of a 3-million word parallel corpus of English and Portuguese publicly available on the Web. The corpus consists of different varieties of English (UK, USA, and South Africa) and of Portuguese (Portugal, Brazil, Mozambique, and Angola). The corpus files are based on 74 different pairs of original and translated texts which are "extracts of fiction, randomly taken from the beginning, middle or end of books" (p. 337) from the period 1886 to 2002. Parallel corpora, such as the French–German parallel corpus (Teubert, 2002), enable bilingual lexicographers to harness corpus linguistics to identify in one language "semantic conglomerates such as compounds or collocations using a combination of statistical and grammatical approaches," (p. 204) and then their equivalents in the other language, to compile better-informed dictionaries. Teubert uses *Arbeit* and *travail* as examples and shows how they are rarely translation equivalents in the parallel corpora (pp. 205–10). Chodkiewicz, Bourigault, and Humbley (2002, p. 250) compiled a parallel English–French corpus, European Court of Human Rights, which includes the court's own founding texts and 36 decisions made by the court. The two corpora each contain 12,131 sentences and around 300,000 words (p. 251). They found that problems of ambiguity, in terms of translation equivalents, are greatly reduced if "multiword terms" are studied because "single-word terms are often more ambiguous" (p. 253). Williams examines the "semantico-syntactic environments" of the verbs *show* and *demonstrate* and Spanish *mostrar* and *demostrar* in a bilingual corpus of medical research articles (Williams, 2008, p. 38). He uses a parallel corpus of English and Spanish texts in the study, 64 articles translated from Spanish and 64 from English and a comparable subcorpus of 64 untranslated Spanish articles, totaling 0.5 million words (p. 40). The Springer Bilingual Corpus contains a 1-million-word parallel corpus of English–German scientific medical abstracts from 41 medical journals. The corpus is aligned at sentence level and annotated for part-of-speech, morphology, chunks, semantic classes, and semantic relations.

Learning and Teaching Applications

Specialized corpora have implications for the learning and teaching of English for specific purposes, and many learner corpora (corpora of texts spoken or written by novice writers and speakers rather than by experts) are now aimed specifically at language learning and teaching. Flowerdew (2001, pp. 370–1) used a subcorpus of written reports by university students (ca. 200,000 words) which is part of the Hong Kong University of Science and Technology Learner Corpus. She found that students knew key vocabulary but were less familiar with "the lexico-grammatical environment in which the word occurs" (p. 371) resulting in "collocational mismatches." The International Corpus of Learner English (http://cecl.fltr.ucl.ac.be/Cecl-Projects/Lindsei/lindsei.htm) is a written learner corpus made up

of 3.7 million words of EFL writing by university students representing 16 mother tongue backgrounds (Bulgarian, Chinese, Czech, Dutch, Finnish, French, German, Italian, Japanese, Norwegian, Polish, Russian, Spanish, Swedish, Turkish, and Tswana). Each subcorpus contains 200,000 words written by third or fourth year university students who each contribute two 500-word essays—one argumentative and the other a literature examination paper. The same team of researchers built a spoken learner corpus to complement the written corpus.

Unique Resources

There are also specialized corpora that are worth noting because of the daunting task of compiling them and the unique resource which each represents. One such corpus is the Electronic Text Corpus of Sumerian Literature (http://etcsl.orinst.ox.ac.uk/) which is made up of 394 texts originally written on clay tablets in cuneiform characters. The corpus comprises both transliterations and translations (English). Another is an online sign language corpus (Crasborn et al., 2007) which consists of three signed languages used in Sweden, Britain, and the Netherlands (p. 542). The corpus was built in part to determine the extent to which "current annotation conventions, metadata categories, and technical possibilities" for archiving sign language are sufficiently robust to build a larger corpus in the future (p. 542).

Multimodal Corpora

The most recent development in specialized corpora is the building of multimodal corpora. Knight, Evans, Carter, and Adolphs (2009) describe the formidable challenges faced by those compiling a multimodal, multimedia corpus. The corpus in question is the Nottingham Multi-Modal Corpus which is a multimodal corpus of spoken interaction. These challenges include saving the naturally occurring data in "three different modes; textual, spoken (audio) and video" (Knight et al., 2009, p. 2). These are then searchable via an interface which gives access to "lexical, prosodic and gestural features" (p. 2). This requires researchers to transcribe, code, and mark up gestures such as head nods and hand movements. Another of the pioneers of multimodal corpora is Gu, of the Chinese Academy of Social Sciences, who also describes (Gu, 2006) the extensive analysis required in the preparation of an accessible multimodal corpus. He included orthographic transcription, prosody, speech acts, eye gaze, body language, gestures, elaborate descriptions of participant roles, and relative positioning in a multilayered alignment accessed via a complex computer-mediated interface (p. 161). These kinds of specialized corpus are promising to open up exciting new avenues of research and the exploration of a much fuller description of meaning making.

Specialized Corpora in Other Fields

The focus above has been on the compilation and investigation of specialized corpora by corpus linguists, but there are, of course, researchers in other fields who compile and work with specialized corpora. The most notable fields are computational linguistics and natural language processing (NLP). Much of the work with specialized corpora in these fields has focused on investigating ways to build such corpora in a fully automated fashion. An example is the work of Leturia, San Vicente, Saralegi, and Lopez de Lacalle (2008) who compiled specialized computer science and geology corpora of written Basque texts from the Web using discipline-specific n-grams (i.e., two or more words which frequently

co-occur consecutively in a corpus) to identify the texts. Others have used key single-word and multiword terms as the basis to extract texts to build corpora. For example, Fairon (2006, p. 43) compiled a specialized corpus of online newspapers by using "clustering algorithms" (i.e., mathematical formulae that aim to determine the significance of word clusters) which identified specific kinds of newspaper article content. In a project involving computational linguists, corpus linguists, and critical discourse analysts, a corpus of newspaper articles about refugees and asylum seekers was compiled automatically using a method termed "relative query term relevance" (Gabrielatos, 2007, p. 5) in combination with the identification of key words to automatically extract relevant articles from electronic newspaper collections. The resulting corpus was then analyzed employing a fusion of corpus linguistics and critical discourse analysis approaches (Baker et al., 2008).

The techniques employed for the automated compilation of corpora have been developed within a broader field known as "data-mining" (see, e.g., Han & Kamber, 2006), which often involves constructing an ontology that aims to be a complete description of a specific knowledge domain (in a specific language) in terms of how it is organized, its hierarchy, and all of its constituents and their interrelationships. Automatically identifying and classifying documents on the Web, for example, requires "frequent pattern analysis" which includes association, correlation, causality analysis, and cluster analysis (Han & Kamber, 2006). Roche and Kodratoff (2006) adopted this approach when building their French curriculum vitae corpus by using a threshold for acquiring the ontology (i.e., all the relevant and related domain texts on the Web) based on statistical cutoffs.

Conclusion

Specialized corpora cover a wide range of registers, genres, language forms, and language varieties. Their number has increased thanks to a combination of the availability of hardware and electronic texts, and the higher profile of corpus linguistics. As corpus linguistics has grown, so too has the demand for more specific and targeted studies and applications, which specialized corpora are often best designed to meet. These corpora are still primarily compiled for the use of researchers, but they are also finding a more significant role in the language classroom, especially in the learning and teaching of languages for specific purposes, and in translation studies.

SEE ALSO: Corpora: Chinese-Language; Corpora: Multimodal; Corpus Analysis of Sign Languages

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Corpus Analysis for a Lexical Syllabus

DAVE WILLIS AND JANE WILLIS

The Case for a Lexical Syllabus

A lexical syllabus for language learners sees lexis as central to syllabus design, aiming to cover the most frequent words and phrases of the target language, together with their most frequent meanings and uses and the combinations and patterns in which they typically occur.

The arguments for a lexical syllabus rest on the findings of corpus linguistics and were initially put forward by West (1953), who laboriously drew up *A General Service List of English Words* (GSL) by hand. Now the advent of electronic corpora affords us a far more detailed picture (see Sinclair & Renouf, 1988; Willis, 1990). An appropriate research corpus can help us identify the words, phrases, and patterns that learners are most likely to need. A general corpus (spoken and written) would suit most learners, but a specialist corpus would be required for learners who need to study or work in a specialist field (e.g., academic, business, medical).

In the 1970s and early 1980s advocates of a notional/functional syllabus tried to identify the central meanings in the language, those which every learner would need to express and understand from an early stage, and to design a syllabus around these meanings. They listed functions such as *agreeing/disagreeing* and drew up complex inventories of meanings, or notions. But there were two major problems with these inventories. First they had no empirical basis. There was no way of knowing whether a proposed inventory truly represented the basic meanings realized in the language. Second, there was the problem of identifying realizations of these notions and functions. Notions of space and time, for example, are central to all kinds of discourse, but how are they typically expressed?

In advocating a lexical syllabus Sinclair recognized that the most central meanings in the language are those expressed by the most frequent words and phrases, and these can be identified empirically by means of frequency counts based on language corpora (see Sinclair & Renouf, 1988). Given this, corpus analysis can contribute to syllabus design in three ways:

- by analyzing *word frequency*. In English (although other languages will vary), the most frequent 700 words account for around 70% of text. So 70% of all we hear, speak, read, or write is made up of a mere 700 different words. The most frequent 1,500 words account for 80% of text and the most frequent 2,500 for 86%. Figures vary slightly for different types of corpora, and informal spoken language can be 10% higher (Nation, 2001, p. 17, 2006, pp. 59–82; Hunston, 2002). After 2,500 words the coverage begins to fall off very rapidly. It takes over 6,000 words to account for 90% of text. (A "word" here is a "type": so *go*, *going*, *went*, *gone*, etc. would all count as separate words.) These figures show that these highly frequent words and their meanings are vital for a working command of the language. But they would not be sufficient. Even with 86% coverage, roughly one word in seven would still be unknown (Laufer, 1989; Waring & Nation 1997). Learners still need key words and phrases relating to specific topic areas, so a topic-based syllabus should run in parallel with a lexical syllabus.

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- by identifying the most frequent *meanings and uses of the most frequent words*. These can be surprising. The word *point*, for example, is one of the 20 most frequent nouns. Once we look at the phrases in which the word occurs (*the point is*, *that's a good point . . .* , etc.) we realize the important function it serves in organizing discourse. It is this use that accounts for its startlingly high frequency, rather than its more obvious meaning: *the thin sharp end of something*.
- by highlighting *typical phrases and word combinations*. Prepositions—all highly frequent—combine with frequently occurring verbs to create new meanings (*get up*, *get over*, *get out of*, etc.). Frequent adjectives collocate with a wide range of nouns: *strong* is found with nouns as disparate as *case*, *currency*, *drink*, and *possibility*. Many common verbs have a range of delexical uses; *give*, for example, is frequent with its basic meaning of *present* or *donate* but is more often found in phrases such as *give a talk*, *a smile*, *some advice*, and so on. Hunston (2002) explores more deeply the concept of "language as phraseology."

There was a second argument in favor of a lexical syllabus. Sinclair's work with corpora led him to postulate two principles at work in the organization of language. Traditional grammar sees language as made up of grammatical units—noun phrases and verb phrases—which combine to make clauses, which in turn combine to make sentences. So, following a structural (grammatical) syllabus, we teach students to produce and understand pattern sentences illustrating verb tenses, conditionals, comparatives, and so forth and then manipulate those frames in particular ways to achieve particular meanings. Sinclair (1991, pp. 109–10) calls this the "open choice principle": language is made up of a series of sentence frames and clause frames; we then choose appropriate lexical items to fill out these frames. Vocabulary is treated as subservient to grammar.

But Sinclair challenges this view of grammar by drawing attention to another more important principle at work, which he calls the "idiom principle."

> The principle of idiom is that a language user has available to him or her a large number of semi-preconstructed phrases that constitute single choices . . . The overwhelming nature of this evidence leads us to elevate the principle of idiom . . . to being at least as important as grammar in the explanation of how meaning arises in text. (Sinclair, 1991, p. 110)

This view is echoed by Widdowson:

> Communicative competence is not a matter of knowing rules for the composition of sentences. . . . It is much more a matter of knowing a stock of partially pre-assembled patterns, formulaic frameworks, and a kit of rules, so to speak, and being able to apply the rules to make whatever adjustments are necessary according to contextual demands. Communicative competence in this view is essentially a matter of adaptation, and rules are not generative but regulative and subservient. (Widdowson, 1989, p. 135)

So Widdowson sees grammatical rules governing verb tenses, determiners, and so on (what Willis, 2003, p. 34, calls "the grammar of orientation") as "subservient," simply allowing us to tailor our message more precisely to the context. Communication is predominantly a process whereby we string together pre-assembled or partially pre-assembled phrases. And it is these phrases together with the most frequent words which form the backbone of the lexical syllabus.

Specifying a Lexical Syllabus—From Words and Phrases to Meanings and Patterns

The first realization of a lexical syllabus for a general course—*Collins COBUILD English Course* (Willis & Willis, 1988)—was based on the COBUILD main corpus which, in the early 1980s, consisted of 7.5 million words of written and spoken language. This provided reasonable coverage of the most frequent 2,500 words, all of which occurred at least 120 times in the corpus.

The most frequent words have on average three broadly different meanings, and each meaning has its own typical patterns. When compiling the COBUILD syllabus, a data sheet was produced for each word, giving the main meanings and numerous examples of each pattern, with the most typical phrases. Let us look at a summary of the word *way* and its contribution to the lexical syllabus.

Way comes after *time* and *people* as the third most frequent noun in English with around 7,000 occurrences in the main corpus. Lexicographers worked with these 7,000 concordance lines to identify the main semantic fields covered by *way*:

1.	Method, means	*It's a useful way of raising revenue.*
2.	Manner, style	*He smiles in a superior way.*
3.	What happens, what is the case	*That's the way it goes.*
4.	Degree, extent	*In no way am I a political person.*
5.	Direction	*A man asked me the way to St. Paul's.*
6.	Distance, extent	*I flew the rest of the way to Danang.*
7.	Time	*National revolt was still a long way off.*

In addition to these semantic areas a number of discourse uses were noted, such as:

By the way: *By the way, that visit of Muller's is strictly secret.*

Also salient were a number of syntactic frames associated with *way*:

Noun Phrase + *to* + infinitive: *The cheapest way is to hire a van.*
Noun Phrase + *of* + *-ing*: *The different ways of cooking fish.*
Noun Phrase + relative clause: *The only way a telegram can be delivered.*

So the word *way* offers input to the syllabus in three ways:

- as a word which expresses a number of central concepts,
- as a component in a large number of common phrases,
- as an exemplar of valuable syntactic frames.

Studying syntactic frames (e.g. *way of* + *be* + verb + *-ing*) can lead to other discoveries. We can identify groups of nouns which often follow the same pattern:

METHOD: *way; method; means; process*
LIKING/DISLIKING: *love; hope; hatred; fear; horror*
POSSIBILITY: *likelihood; chance; possibility; risk; danger*
OUTCOME: *result; effect; aim; intention; advantage; disadvantage*

So we move from highly frequent words such as *way* and *of* to the specification and organization of other words which exhibit similar behavior. This approach to the classification of words according to their meanings and associated patterns has been exhaustively researched and documented (Francis, Hunston, & Manning, 1996, 1998).

Once we embark on this process of analysis we begin to discover further insights which are often ignored in language-teaching materials. A look at the modal *would* is illuminating. Traditionally, *would* is treated as a component in the so-called "second conditional" with an "if" clause: *I would feel sorry for him if he wasn't such a reactionary*. But in the COBUILD main corpus only 8% of the occurrences of *would* were in conditional sentences; 48% of occurrences were in hypothetical statements without the co-occurrence of *if*:

"The Tempest" ***would*** *make a wonderful film.*

Most course books fail to highlight this much commoner occurrence of *would*. Another use of *would* which is largely ignored is its reference to past habits:

On my way to school I would stop and pick wild strawberries.

This use is rarely taught. Its place is usurped by *used to*, even though *would* with this meaning is roughly three times as common as *used to*.

So the specification of a lexical syllabus offers four advantages:

- It enables us to identify the central concepts that learners will need to produce and understand.
- It offers a truer reflection of the way language is structured.
- It links words to syntactic patterns and groups words according to the patterns with which they are associated.
- The process of syllabus specification obliges us to take a fresh look at the language and the way words are used.

From Lexical Syllabus to Teaching Materials

In the 1980s all the lexical research had to be done from scratch. After the publication of the *Collins COBUILD Dictionary* in 1987 it became possible to start with a frequency list and then work from dictionary entries to provide a description of the meanings, uses, and typical patterns of the target words. Nowadays, all the major ELT dictionaries are corpus based and provide a sound basis for a lexical syllabus.

The words to be learned (target words) need to be embedded in text. Nation (2001, p. 387) recommends that for optimum learning, words need to be encountered in meaning-focused contexts in normal language use. So the materials writer needs to identify relevant topics and select and create suitable texts, both spoken and written, which learners will process as part of their language course, using frequency lists and word descriptions to ensure systematic coverage of target words in course materials. These topic-related texts will obviously provide exposure to vocabulary far beyond the frequent words targeted for detailed study, moving towards the 15,000–20,000 words generally accepted as providing an adequate threshold vocabulary for reading.

This body of assembled texts forms what Willis (1993, 2003) calls a *pedagogic corpus* (Hunston, 2002). This corpus is then analyzed to see what coverage it offers of the target words and meanings, and decisions are taken as to which words or meanings (or both) are best illustrated in each text. Words and meanings are then allocated to units of work.

After devising activities and tasks which help learners to use language and engage with the texts in a meaningful way, pedagogic exercises can then be devised to enable learners to focus on the target words and their associated patterns. Further exercises will ensure these are recycled at regular intervals. The aim of all these exercises will be to familiarize learners with the target forms in the pedagogic corpus as a whole. Types of activity appropriate to this are illustrated in Nation (2008), Willis (1996, 2003), Willis and Willis (2007).

The approach in the *Collins COBUILD English Course* was to design a pedagogic corpus covering the top 700 words at the elementary level, to revise and extend these and add a further 800 words at the intermediate level and a further 1,000 words at the advanced level, making a total of 2,500 words. On average, the top 700 words have three broad meanings each—so the elementary course covered well over 2,000 meanings. An alternative approach would be to provide opportunities for an initial study of the top 300 words and their combinations at elementary level. At later stages learners would go over these words again and again, linking them progressively to further words, associating new words with the patterns based on the most frequent words. So the top 300 words would provide a constant focus, linking gradually to an increasing number of less frequent words, but constantly revising the most basic patterns of use.

The Impact of the Lexical Syllabus

These proposals for the lexical syllabus have had an impact on syllabus design in that recent approaches recognize more fully the importance of frequent words and, in particular, of phrases and collocation. Lewis's lexical approach (Lewis, 1993) emphasized the importance of lexical phrases and collocation and promoted much greater awareness of these phenomena among ELT practitioners and textbook writers, for example Dellar, Walkley, and Hocking (2005). The main difference between Lewis's approach and the lexical syllabus is that Lewis takes lexical phrases as a starting point but offers no empirical way of specifying the most important phrases. The lexical syllabus, on the other hand, starts with the most frequent words, arguing that an analysis of these words and their associated patterns will identify the phrases learners are likely to need. For more on the lexical approach see Lewis (1997), and for another view of this approach see Thornbury (1998).

Frequently Asked Questions

Does a lexical syllabus ignore the central concerns of the grammatical syllabus, such as the structure of interrogative and negative clauses and the use of different verb forms?

In fact, a lexical syllabus subsumes a very thorough coverage of grammar. Interrogative and negative forms are identified by the specification of words such as *why*, *what*, *not* and the auxiliary verbs such as *do*, *will*, and their uses. Both their form and their use are highlighted in the context of the pedagogic corpus and the texts in which they occur. Elements such as past tense are highlighted by the use of the most frequently occurring forms such as *was*, *were*, and *went*. The way in which these words are used is related to other past tense forms to build up a picture of the verb phrase in context. As we have seen in our analysis of *would*, modal verbs are likely to receive a more detailed and revealing treatment in a lexical syllabus than in traditional syllabuses. But both the syllabus and the materials designer must be aware that the "idiom principle" works alongside the "open choice principle." Basically, communication is achieved through words and phrases, and this is

the proper starting point for syllabus specification. But we must be aware of Widdowson's additional requirement that learners need to be "able to apply the rules to make whatever adjustments are necessary according to contextual demands."

Is a lexical syllabus just a list of words or does it include phrases?

As we have shown in our earlier references to Sinclair and Widdowson, the rationale for a lexical syllabus derives from recognition of the importance of phraseology and of the way language is structured around frequent phrases and patterns. In advocating a lexical syllabus, Sinclair and Renouf (1988) were quite explicit in their recognition of phrases. "For any learner of English, the main focus of study should be on (a) the commonest word forms in the language, (b) their central patterns of usage, and (c) the combinations which they typically form" (Sinclair & Renouf, 1988, p. 148).

Below is an example of how the word *fact* appeared on the list of lexical objectives in a revision unit of level 1 of the *Collins COBUILD English Course*. The examples were taken from the texts and recordings in previous units. Notice how the examples relate to (a), (b), and (c) above. Other common uses of *fact* (*the fact is . . . , despite the fact that . . .*) were covered elsewhere in the course, together with words such as *problem* which have similar patterns.

Fact		
1.	True things	Facts about Britain.
2.	The fact that	My 81-year-old mother is proud of the fact that she doesn't look her age.
3.	In fact	It was cold, in fact freezing.
4.	As a matter of fact	

How can a lexical syllabus handle the complexities of the really common words?

The definite article is, by a long way, the most frequent word in English. But it can hardly be regarded simply as a lexical item. It carries with it a complex and highly abstract grammar. The same applies to the indefinite article. Between them they label noun phrases as given or new; specific or non specific; and so on—features which are essential to the coherent development of discourse. They present serious problems for speakers of languages like Japanese and Arabic which handle these notional categories in a very different way. So all the really common words such as *the*, *a(n)*, *of*, and *is* require detailed treatment and revision over a long period of study, not just at beginner level. Fortunately, they occur so often in any pedagogic corpus that it is easy to collect familiar examples to highlight their various uses.

Applications

The usual approach to syllabus design nowadays is to design a "multistrand" syllabus, taking account of grammar, lexis, phonology, and language functions. But the core of such a syllabus is nearly always a specification of grammatical items: Sinclair's (1991) "open choice" grammar. Proponents of a lexical syllabus would acknowledge the need for multiple strands in the syllabus but would argue for a lexical specification based on corpus analysis of the most frequent words in the language to form the basis of the syllabus.

SEE ALSO: Corpora in Language for Specific Purposes Research; Corpora in the Language-Teaching Classroom; Corpora: Specialized; Formulaic Language and Collocation; Pattern Grammar; Syllabus Design; Teaching Vocabulary; Vocabulary and Language for Specific Purposes

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Corpus Analysis for Operational Communication

EDWARD JOHNSON AND MARK GARNER

Operational Communication

"Operational communication" refers to the combination of communication procedures, technologies, and language systems used for a range of operationally specifiable communicative purposes, working environments, or settings (Johnson, 1990). These operations typically involve coordination of personnel, machines, data, or all of these, and have implications for law and order, health and safety, the protection of property, or all three. The professional cultures engaging in operational communication frequently transcend conventional linguistic and political boundaries (Johnson, 2002, 2003). Much of the communication occurs at a distance in environments that are fast moving, and it therefore relies to a considerable extent upon technical connectivity, for example by radio. Equally importantly, it also requires the use of language that is as clear and reliable as possible, avoiding the ambiguity and implicitness inherent in natural language. Procedures need to be imposed not only to manage the technology, but to control the language transmitted in a manner appropriate to the operational requirements.

The contribution of corpus analysis to pioneering dictionary projects such as COBUILD (e.g., *Collins COBUILD English Language Dictionary*, 1987) is well known. Less familiar is the contribution to the languages of operational communication. This entry considers that contribution to the design of operational communication systems in six different areas of professional activity: shipping, policing, air traffic, emergency services coordination, civil protection, and health care. Much of the discussion is based on commissions undertaken by the present authors over the last 30 years, which have required collaboration between experts in operational matters, computer science, and communications technology as well as linguistics. In each case the objective was to formulate practical solutions to the problems affecting communication between people operating in circumstances of high risk. The projects differ in terms of the operational settings and the form of the potential solutions, but each has required a substantial body of corpus-derived evidence.

Kinds of Communication Controls

Two well-known early operational communication projects were aimed at standardizing communication procedures for VHF radio. SeaSpeak (Johnson, 1983a; Glover, Johnson, Strevens, & Weeks, 1984a, 1988) was designed for worldwide maritime communication and PoliceSpeak (Garner, Hick, Johnson, & Matthews, 1993a, 1993b; Garner, Johnson, Hick, & Matthews, 1993; Johnson, 1993) for UK and French police at the Channel Tunnel frontier. Each involved developing a controlled grammar that permitted a more or less unlimited number of utterances and conversations. The grammars prescribed the sequencing of transmissions within a conversation as well as the structure of the transmissions themselves. They also specified standard phrases and conventions for expressing measurements and

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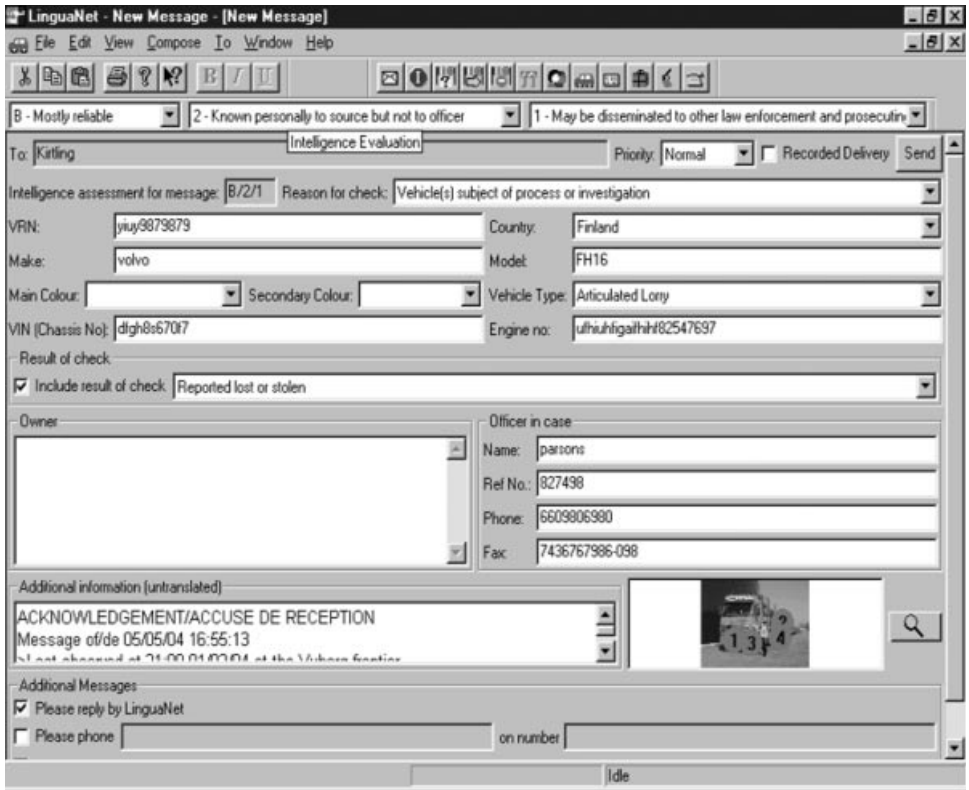

Figure 1 LinguaNet™ screenshot of a multilingual commercial vehicle inquiry with an annotated image © Prolingua Ltd

descriptions. A similar controlled grammar approach was used later for the interactive English–French machine translation authoring system Linitext (Johnson, 1990, 1996). At the other end of the scale are simpler systems, such as the phraseologies for International Air Traffic Control (Johnson, 1987; Cushing, 1994; International Civil Aviation Organisation, 2007; Civil Aviation Authority, 2009) and Vessel Traffic Control (Glover, Johnson, Strevens, & Weeks, 1984b). These consist of a set of "slot-and-fill" patterns for particular operations.

Between these two extremes are partially elaborated grammars, which comprise a smaller number of formal rules and a partially prescribed lexis, in combination with a few guiding principles that make for more efficient communication. Standardised Radio Procedures (SRP) for police analogue radio (Kent Constabulary, 1994) was of this sort, as is its 21st-century equivalent, AirwaveSpeak (National Police Improvement Agency, 2007), for police digital radio. Intacom (Johnson, Garner, Hick, & Matthews, 1996), for British and French emergency services at the Channel Tunnel, produced four interconnected solutions: detailed English and French operational language recommendations, a design for an electronic binational incident log, a bilingual operational lexicon, and prescribed bilingual emergency alert formats. The project also gave rise to the development of the first multilingual, multi-modal operational e-mail system, LinguaNet™ (Prolingua, 1993).

This system was created in the early 1990s, using corpora from police operations. It remains operational today, and enables the police of European countries to engage in cross-border operational communication using multilingual text and annotated images (Gorm Hansen, Selsøe Sørensen, & Johnson, 2002; Johnson, 2002, 2003). It uses linguistic

controls for consistency in certain kinds of messages, such as describing suspects, identifying vehicles, and tracing firearms.

A more ambitious application is being built for multinational health care. The Millennium Global Village Network (MGV-Net) (Kanter et al., 2009) is an information and communication system built upon the Open Source medical record, OpenMRS (Wolfe et al., 2006). Linguistic elements within MGV-Net and OpenMRS must be stable and usable by staff working at several levels within an international application field including community health-care workers, clinic staff, regional administrators, and the staff of health ministries. Communication between different speech communities depends on establishing equivalence in the various languages. A multinational corpus of existing records is providing the initial field data, which are then mapped to pre-existing standard codes in internationally agreed medical reference tables such as SNOMED (www.ihtsdo.org) and the International Classification of Diseases (http://www.who.int/classifications/icd), the object being to improve interoperability between systems and semantic coherence within the international health-care and medical research community.

Finally, some operational communication systems include little or no formal prescription, but limit the nature of the linguistic control to a series of recommendations. One example is the UK government's national guidelines for emergency call handling (Association of Chief Police Officers, 2005; Garner & Johnson, 2006). Another is an ongoing project for the UK Cabinet Office aimed specifically at standardizing the terminology of civil protection (HM Government Cabinet Office, 2010), and more generally at achieving greater uniformity in usage across the government departments, organizations, and emergency response agencies. The analysis of the corpus of civil protection literature results in lexicographical proposals, which are then subjected to professional scrutiny and modification using a wiki-style facility on a closed circuit extranet.

It should be clear from these outlines that the nature of the technology of transmission significantly influences the nature and extent of the linguistic controls. Nowadays, operations are seldom coordinated through speech alone. The transmission of textual and graphical data is communicatively more efficient than the spoken word in many contexts. Transponders fitted to aircraft (Field, 1985) and ships (McGeoch & Stawell, 1987) automatically transmit a signal announcing identity, position, and heading, thus reducing the need for radio exchanges. Special-purpose text messaging and electronic mail permit operational dialogues through the medium of text and images. The different media are also used in combination, as when a radio conversation is based on operational information available to both parties via screens. Operational communication is a constantly evolving field.

Sources

Since it deals with actual language in use, all operational communication research needs to be rooted in corpus analysis. Here, the concept of "corpus" extends beyond collections of talk-in-interaction to include diverse spoken and particularly written materials relating to the organizational, operational, technical, and professional environments within which communication occurs, and which determine its forms and functions. Such material can also provide an authentic framework for the delivery of results to practitioners who are more familiar with the language of their profession than with the language of linguistics.

In operational settings, communication is an integral part of a technical process and also the main apparatus of command and control. This means that sources specifying the operations are a fundamental part of any operational communication corpus. The manifest real-world outcome of an exchange—its operational purpose—is of central concern to the researcher. In some circumstances, the purpose is achieved if, for example, a question is

appropriately answered, a warning heeded, an item of information understood and noted, or an instruction recognized and accepted (Johnson, 1983a). In many circumstances, the criterion of achieving the purpose is physical: The airplane is at the cruising altitude; the fire team has withdrawn; the ship is changing course; police officers have begun setting up cordons; the diver is now "slacked" from the bell (Construction Industry Research and Information Association, 1982). In some operations, for example police surveillance, the operational purpose, such as the transmission of an item of information, is achieved by the communicative act itself. The objective of including operational data in the corpus is to give the researcher access both to the higher-level operational situations in which specific operations occur (the descent of aircraft, evacuation of buildings, etc.) and to the full range of detailed operational purposes which give rise to specific communicative forms: *Bring [the aircraft] to flight level one zero*; *Withdraw all fire-fighters from the front of the building.*

Some operational information can be inferred from a corpus of real exchanges, but this kind of corpus provides only instances: it is a poor guide to the influences that gave rise to those instances. The comprehensive prescriptions for operational communication must, as far as practicable, anticipate every eventuality, especially those which, though very rare, are high risk. These eventualities are found in operational manuals, layouts of working environments, emergency plans and procedures, inquiries into disasters, formal codes of practice, organizational structures and legislation, and the like. Much of this material may be tagged and merged within a combined corpus for ease of analysis and comparison. Experience has shown that operational detail is enhanced during consultations with practitioners and when researchers attend operations and exercises. At such times, too, unwritten influences on language stemming from professional cultures (Zimmerman, 1992) may be revealed. It is on such sources that the rationale for the communication prescriptions is based; as the historical failure of artificial languages demonstrates (Garner & Johnson, in press), without an evidence-based rationale their formal adoption, and particularly the participation of the end users, is unlikely to be achieved.

Other essential corpus resources contain the technical characteristics of the carrier technologies and regulations governing their use (International Telecommunication Union, 2004). The different technical possibilities and limitations of, for example, radio, telephone, and electronic mail make different linguistic and procedural demands. Very high frequency (VHF) or ultra-high frequency (UHF) analog radios have limited range, are subject to distortion, blocking, and interference, and are vulnerable to interception. Such impediments can often be circumvented by appropriate language and procedure. On the other hand, digital radios, now used by several services in Europe (www.tetra-association.com), allow multiple "talk groups" of users to share fewer frequencies without interference. This removes the need for language to cope with poor reception, but it creates a new requirement for procedures and language to manage talk groups. Digital signals can be routinely encrypted, which obviates the need for code words and veiled speech. Enhanced reception and security, however, are conducive to less disciplined speech, and hence a greater risk of communicative inefficiency. The need for exchange protocols and other language controls is correspondingly higher.

The advent of ancillary technologies, such as operational databases, global positioning systems (GPS), and mapping systems, has also affected operational communication, for example between police officers and control rooms. Officers can obtain unmediated access to data on suspects or vehicles; GPS combined with mapping systems provides control-room staff with the location of patrols and incident sites. Particularly significant changes have been brought about by the operational information systems which now regulate much of the work of emergency service call handlers and dispatchers (http://www.publictechnology.net/content/14730). Behavioral controls, such as screen layouts, templates, and questioning

sequences, together with specified terminologies, field titles, and data elements, determine forms of language that inevitably migrate into operational usage.

In sum, while language-in-use corpora are essential for operational communication research, they are not sufficient by themselves, and need to be extensively supplemented by a range of other data sources.

Corpora and Analyses

Corpora of language-in-use for these studies fall into three broad categories: transcribed speech from radio and telephonic sources, text from paper records converted to electronic form, and material imported directly from computer-mediated communication systems. There have also been remote analyses of corpora held by others. An example is the Trans-Frontier Police Messaging Project (Cross Channel Intelligence Conference and Hampshire Constabulary, 2003), which examined the direction, content, and operational outcomes of cross-border police messaging as the basis for designing new systems. Eleven police sites in seven European countries ran a Prolingua (www.prolingua.co.uk) analytical program on their own structured message corpora and were thus able to produce research data without releasing the original records. This is a valuable capacity, as operational data often contain sensitive material which may be handled only by security-cleared researchers. Alternatively, raw data may be desensitized using substitution guidelines set by linguistic researchers.

The collection, assembly, and transcription of speech corpora are essential to operational communication research when voice is one of the modes of communication, but they are logistically complex and sensitive to security controls, and hence expensive to produce. The corpora are thus typically of modest size, unlike the textual resources that have become available since the advent of word processing, orthographic character recognition, the World Wide Web, and electronic text messaging. The voice corpus for SeaSpeak in 1981, for example, amounted to 1,600 transcribed maritime VHF transmissions of perhaps 40,000 words plus 200 complete exchanges containing 20,000 more. This was a respectable speech corpus, at the time, of some 60,000 words (Johnson, 1983a). A decade later, PoliceSpeak had access to equally modest voice corpora: 80,000 words of transcribed English and French police radio and 13,500 words of written messages. By contrast, 500,000 words of written records were downloaded from police computers. Fifteen years later, the project to build a national standard for police digital radio (National Police Improvement Agency, 2007) analyzed radio exchanges from 22 UK constabularies amounting to some 150,000 words. The more easily compiled corpora of textual or computer-readable communication are valuable, particularly in the compilation of lexicons, data elements, field names and entries, and free or controlled written syntax which are part of operational communication. They must not, however, be given disproportionate influence.

The relatively small language-in-use speech corpora may be exhaustively analyzed by a combination of manual and fairly basic automated processes. As long ago as 1980 corpus analysts in the SeaSpeak project were able to produce evidence of unnecessary synonymy and syntactic variety in maritime operational communication, by annotating instances in an automated corpus (a concordance, for example), then sorting and re-presenting. Categories included such items as phrases used for making contact, signaling repeats, and giving confirmations of reception, together with functionally tagged syntactic structures—all of which are required for building a controlled operational language and procedure. Corpora also have a central role in evaluation. Real-life operational material collected before and after a communication training program can be compared to provide a measure of, for example, how communicatively effective the prescribed forms are, and the extent

to which they have been learned and used (Kent Constabulary, 1993). For these purposes, simple in-house programs based on general and selective concordancing, word counts and rankings, collocations, category tagging and sorting, and morphological identification are sufficient.

Detailed Examples

Let us illustrate the foregoing discussion by examining a few cases in more detail. It is almost thirty years since the computational re-presentation of corpora made it relatively easy to process linguistic resources for language building in areas of high operational dependency. SeaSpeak therefore qualifies as a historical milestone of corpus linguistics (Johnson, 1983b); it can still serve as a model and benchmark for other studies. Its objective was to reduce misunderstandings and inefficiencies in communication, as well as to reduce the training demands, by creating standard procedures and a simple grammar for English language radio communication in international maritime operations. Analysis of the corpus revealed that VHF conversations were conducted in a variety of sequences using a wide range of vocabulary, so an essential early step was to construct a conversation grammar for all maritime VHF exchanges. This took the form of a standard algorithm structured around three simple stages: establishing contact, exchanging messages, and terminating.

The formula is shown in steps below using Pike's tagmemic notation (Pike, 1954–60):

Ex = + cal + att +/− [+/− (+/− adc −/+ asc) + agc] +/− swo +/− rqr +/− adv + mes + rsm +/− (+/− sco −/+ aco) +/− sby + end

where Ex = exchange, cal = initial call, att = respond to call, adc = advise VHF channel, asc = assign VHF channel, agc = agree VHF channel, swo = switchover, rqr = request readability, adv = advise readability, mes = message, rsm = respond to message, sco = state continuation, aco = advise continuation, and sby = standby.

All the steps are linguistic; they are transmissions; except "swo," which is a manual switch to another frequency. The first compulsory step, shown here as the tagmeme "cal," requires a standard utterance to alert the station called. In the corpus at least thirty variants for this simple function were found; analyzing them provided a set of candidate components, lexis, and word orders for the controlled grammar. The prescribed sequence was: identification of station name called × 2; the phrase 'this is'; station name calling × 2; the phrase 'on channel number # . . .'; the word 'over'. For example:

Elin Star GXXX, Elin Star GXXX. This is Halmsund Port, Halmsund Port. On VHF Channel 16. Over.

Each of the necessary transmission types was built in the same way, starting with the corpus analysis. The outcome is a prescription for all maritime VHF exchanges, where the process of making, maintaining, and terminating contact is treated separately from message-bearing content.

This structure contrasts with air traffic control language where, because of the very close attachment of participant, message, and operation, it is deemed safe to abbreviate the contact procedure, combine it with message bearing, and prescribe entire sections of slot-and-fill dialogue (Robertson & Johnson, 1988, p. 132):

SF 153 radar contact. Descend to flight level 220.
– Leaving flight level 310, descending to level 220, SF153.

SF153, continue descent to flight level 110, report
passing 150.
– Descending to flight level 110, SF153.

The grammar of message-bearing transmissions in SeaSpeak is based in part upon the linguistic functions identified during corpus analysis (full grammar discussed in Johnson & Garner, in press). As an illustration, here are four instructional messages from a (functionally annotated) corpus:

I want you at the SB buoy for two o'clock.
You should be all right if you stick to that.
We would like you just to push on the starboard.
You have to steer a course then of three two.

They are rendered (using a simple imperative verb rule) in SeaSpeak as follows:

Meet the pilot, position: SB buoy, time: one-four-zero-zero UTC.
Maintain your present course.
Push on the starboard side.
Steer course three two.

The first example indicates some other rules, such as replacing certain prepositions with specific "topic markers" for position and time; a standard format for time of day, including the convention used, 'UTC'. The entire SeaSpeak prescription is an interlocking suite of procedural and linguistic components. The grammar specifies the structures of the exchange, the transmission, and the broadcast. Forms are strictly specified for numbers, identifications, time, measurements and quantities, and position. Standard markers are used to prefix 43 of the most commonly occurring maritime concepts, such as bearing, destination, draught, interval, range, tonnage, and visibility. There is a set of 39 standard phrases for such purposes as making and maintaining contact, controlling discourse, seeking clarification, correcting, and confirming. There are also a very few fixed-format messages, such as the standard 'Mayday' call. Finally, for training purposes the project provided a list of the 32 most prominent maritime operations as contexts within which to exemplify the language system.

A supplement to SeaSpeak, Vessel Traffic Control Systems (VTS) (Glover et al., 1984b), was developed for strictly controlled sea areas and ports. These are the maritime equivalent of airports, and allow abbreviated communications between ships and shore stations. Analysis of a corpus showed that a limited range of messages occurs in this context, and these, together with existing regulations and the physical and technological features of VTS systems, were converted into a prescribed series of condensed slot-and-fill reports matched to ships' transit stages. In order to reduce the dependency on voice communication, the project also recommended a generic physical layout for VTS systems (Johnson, 1990).

PoliceSpeak adopted a similar methodology to SeaSpeak, starting with analysis of a corpus of English and French radio traffic, supplemented by operational instruction materials. Standard procedures for making and maintaining contact over VHF and UHF radios were designed. Unlike in maritime communication, however, the variety of possible police messages is considerable, and the controls in this project focused on guidance for constructing the most frequent or important types of message found in the corpus. Standard formats were introduced for certain messages, such as the situation report, the request for a vehicle or person check, and the declaration of a major incident. Standard forms were given for commonly occurring topics, including addresses, locations, directions, clock times, dates,

clothing, weapons, person descriptions, vehicles, and index numbers. To facilitate communication in the bilingual context of the Channel Tunnel, the first ever corpus-derived English–French police lexicon was developed (Garner, Hick, et al., 1993a). A set of recommendations was made for the use of police radio in the Tunnel (Garner, Hick, et al., 1993b; Garner, Johnson, et al., 1993), later adapted for more general police radio purposes (Kent Constabulary, 1994). An example follows:

> Priority, Priority. This is. Papa Sierra One. Over.
> Hello Papa Sierra One. Transmit. Over.
> Priority Sitrep. Location M20, coast-bound carriageway, A229 exit. Incident, serious injury, RTA. Require ambulance and fire brigade. Over.

PoliceSpeak was the forerunner of the UK national standards for digital police radio in 2008 (National Police Improvement Agency, 2007), which were aimed primarily at communication between control rooms and patrols. Owing to the very limited time available for training officers to use the standards, the grammar was greatly simplified, and three levels of compulsoriness were introduced: "mandatory," "use-as-required," and "recommended." The operationally most logical sequences for voice transmissions were adopted: for example, inverting the normal sequence of a residential address into district—area—road—house number.

Summary

Corpus analysis is integral to the successful conduct of operational communication research and to the design and evaluation of the controlled language and communication systems which are the outcome of the research. In broad outline, the process of developing a system typically goes through three phases (Garner & Johnson, 2006):

1. description and analysis of current communication practices,
2. planning and implementation of controlled communication practices, and
3. evaluation of the controlled practices.

The approach is cyclical, and the phases may overlap as the work progresses.

Corpora are essential to phases 1 and 3. In the first phase, several different types of data—and hence different corpora—are required. One type is of actual language-in-use, which can be analyzed to provide a picture of current practices; this kind of corpus has been familiar to descriptive linguists for a long time. Clearly it is desirable to make this corpus as extensive as possible, but there are limitations to what can be achieved. Operational communication practices are highly specific to individual professional fields (such as police, fire brigade, ambulance, air traffic, maritime) and often to organizations within those fields (such as an individual police force or a harbor authority). Moreover, these practices change over time as the carrier technologies and the nature of the operations change. This means that corpora cannot normally be agglomerated: A new corpus is required for each new project. Other corpora also required in phase 1 are built from written (and occasionally spoken) texts relating to the organizational environment, standard procedures for operations within the particular context, and the like. They include strategic planning documentation, professional service manuals, technological specifications, and training materials. Such sources, appropriately tagged, may be combined with the language-in-use corpus for ease of analysis. They provide the framework for understanding how communication works both as a control and as a medium of the operations.

The corpus required in phase 3, the evaluation phase, consists of real-life data of operational usage in the period after the introduction of the communication controls. Analysis of usage reveals how well the controls have been learned and utilized, and helps the researcher to identify areas in which communication inefficiencies remain, or new ones have arisen. These linguistic measures, along with objective measures of efficiency (such as data on airtime use and numbers of repeat transmissions), are used to supplement qualitative measures derived from users' attitudes toward the controls, impressions of ease of learning, and so on.

Operational communication research thus provides an interesting, and in some respects a distinctive, example of the application of corpus linguistics (broadly understood) to the solution of highly important, real-life communication problems.

SEE ALSO: Corpora: English-Language; Corpora: Multimodal; Corpus Analysis of Language in the Workplace; Corpus Analysis in Social and Public Policy Research

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Corpus Analysis in Dialectology

DANIELA KOLBE

Introduction

Dialectology is the study and description of dialect(s); the first studies in this field were conducted in the 19th century. Significant changes in methodology and research focus in the second half of the 20th century distinguish "modern" dialectology from earlier, "traditional" dialectology. Traditional dialectology focused on dialect words and their pronunciation by individuals deemed "good dialect speakers" in rural areas, widely neglecting, for instance, dialect grammar. Modern dialectology aims to represent the actual speech used in particular areas, and it consequently reveals a more representative picture of actual language that also takes into account further linguistic areas, in particular grammar, as well as external factors, such as speakers' gender and social background. Before the second half of the 20th century, data had to be gathered, analyzed, and stored without the help of a computer, that is, in nonelectronic form. The turn towards empirical studies in modern dialectology was introduced by sociolinguistics and eventually initiated the use of large electronic corpora of texts. As the term "corpus" in general has come to refer only to electronic databases since the 1990s, the development and application of corpus analysis in modern dialectology is focused on in this entry. Most of the existing electronic corpora for the study of dialects have been compiled since the 1990s. These databases allow the analysis of the infrequent patterns of dialect syntax, which had earlier been widely neglected, but which are indispensable for a complete description of the linguistic systems of dialects.

Aims and Methods of Traditional Dialectology

Research in English dialectology first focused on dialect lexis. It comprised the collection of specific dialect words that did not belong to the standard English lexicon, such as Scottish *lassie* for *girl*, non-standard pronunciations of English words, such as the entry *tack* for *take* in Wright (1898–1905, vol. 6, p. 12), and different meanings of words, such as *angle* meaning 'hinge' (Wright, 1898–1905, vol. 6 supplement, p. 8). The interest in dialect lexis was inspired by comparative philology, which is mainly concerned with discovering the relationships between languages. Dialects were considered to be good sources of older words that were no longer used in contemporary English, but which display the relation to another language. An example of this is *to wend* 'turn,' a cognate of German and Dutch *wenden* which was still used, for instance, in the Yorkshire and Essex dialects, at the end of the 19th century (Wright, 1898–1905, Vol. 6, p. 432).

This kind of research usually resulted in the creation of atlases that showed the spread of dialectal forms. At the turn of the 19th/20th century, comprehensive dialect atlases of Germany and France were compiled (Wenker, Wrede, & Mitzka, 1956; Gilliéron & Edmont, 1902–15). The first countrywide survey in England was the *Survey of English Dialect* (Orton & Dieth, 1962–71). These atlases show the geographical boundaries of dialect forms by illustrating in which locations a specific form occurs. A map of British dialects of English would show, for instance, in which locations speakers use the Scottish word *lassie* for

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standard English *girl* by isoglosses, that is, lines that divide the locations in which the word occurred from those in which it did not (see Trudgill, 2000, p. 124).

In order to collect the necessary information to produce dialect maps, dialectologists mostly interviewed older men in rural areas—the so-called NORMs (nonmobile, old, rural males)—and explicitly examined how they would pronounce a certain word, or which word they would use, usually on the basis of a questionnaire that was filled in by the interviewer (Chambers & Trudgill, 1980, p. 33). The resulting maps were thus based on corpora of the questionnaire data and of the notes reporting dialect use outside the preformulated questionnaire interview noted by fieldworkers (e.g., the "incidental material" of the SED).

Sociolinguistics and Modern Dialectology

The use of electronic corpora accompanied the shift from traditional to modern dialectology. The first sociolinguistic studies led to a turn towards different methods in the 1970s and gave rise to the conference series *Methods in Dialectology* (Wilson, 1972).

In his sociolinguistic studies, Labov (1966) revealed that many linguistic expressions are variable, so that speakers make use of more than one realization of a linguistic form. One famous example of such a linguistic variable is a speaker's choice between pronouncing or not pronouncing the postvocalic "r" sounds in *fourth floor*. Labov's studies show that hardly any speaker uses one variant at all times and that speakers' choices of a variant are strongly influenced by external factors, such as social class, age, gender, and ethnic background. Speakers also use a wide range of speech styles, from more casual to more formal styles.

Thus, although *lassie* is a typically "Scottish" variant of Standard English *girl*, Scottish speakers of English vary between both forms, depending on the situation. Dialect usage is more likely to appear in more casual speech, typically among relatives and/or friends. In situations that involve persons who do not speak the same dialect, speakers prefer formal speech and avoid the use of their vernacular, especially of strongly stigmatized variants. Unfortunately for linguists interested in nonstandard language, their presence alone creates a situation in which it seems appropriate for informants to use more formal speech and to avoid stigmatized variants. This is known as the "observer's paradox": the mere observation of behavior leads to a change in the behavior, so that the event the observer would have been interested in does not take place.

The combination of different observation techniques in sociolinguistics (e.g., questionnaires vs. recorded interviews) also brought to light the fact that speakers are often not aware of or do not admit to their actual language use and are thus unreliable sources for its documentation (see Labov, 1966, p. 455). The data collected in the early dialect studies must therefore have been heavily influenced by speakers' consciousness of being asked questions about their dialect. Depending on the speaker, this might also mean that they reported dialect words that they remembered other people using but had actually never used themselves.

Following on from sociolinguistic studies, dialectology from the 1970s consequently turned towards the description of actual speech. Instead of reporting only the locations in which speakers used, for instance, the glottal stop [ʔ] instead of [t] in the pronunciation of certain words (e.g., *better*, *but*), studies now calculated the percentage of the glottal stops in all instances of (t) in intervocalic or word-final position. The availability of the tape recorder from the mid 20th century helped to create corpora of audio recordings for phonological studies of dialects. Dialectology then also shifted from interviewing NORMs to observing the speech of more balanced samples of speakers in terms of occupation, age,

and gender. As more speakers of varying social background live in urban areas, dialectologists extended their research to towns and cities. Trudgill's study of speech in Norwich (1974) is one of the first large studies applying sociolinguistic methods and has become a milestone for modern dialectology by cofounding the subfield of "urban dialectology."

Most of the studies in "urban" dialectology in the 1970s and 80s still focus on phonological or accent differences, and they do so for a reason: all English utterances contain more phonological variables than lexical, morphological, or syntactic ones. The phoneme inventory of received pronunciation (RP) has a fixed size and is limited to 45 phonemes (Upton, 2008, pp. 240, 248). Phonemes therefore recur at relatively small intervals. Grammatical patterns and especially syntactic variables (including relative pronouns, conjunctions, and word order patterns), however, are much less frequent. For example, the double modal construction *would might*, which indicates uncertainty and can be rephrased by *would perhaps*, occurs twice in the 500,000 words of spoken English in the British component of the International Corpus of English (ICE-GB; http://ice-corpora.net/ice/index.htm), for example, *I* ***would might*** *move it now straight away* (file s1b-025). In quantitative terms this means that in over 7,000 occurrences of modal verbs the double modals constitute not even 0.1 per cent of all cases. Consequently, quantitative studies of syntax require much larger databases than studies of phonology. It is also more difficult to elicit individual syntactic structures such as *to*-infinitive or relative clauses in an interview than a particular word or the pronunciation of a sound (in a word). Moreover, nonstandard patterns in syntax, such as double modals, are often regarded as instances of "wrong grammar" and strongly stigmatized. Thus speakers try to avoid them in recorded interviews and respond in the negative when asked about their use in a questionnaire. In descriptive linguistics, however, standard English is one variety of English among other, nonstandard, varieties. Consequently, dialect grammar is considered by linguists as parallel and equal in status to standard grammar. Dialects are seen as one of many aspects in which languages vary, and this variation can represent incipient language change (see Torgersen & Kerswill, 2004).

The lack of research on dialect syntax and the resulting gap in the description of dialects was first noted in the 1980s (Edwards & Weltens, 1985). However, in order to conduct empirical studies with quantitative analyses that examine proportions of standard and dialect features in actual speech, dialectologists needed larger data samples of dialect speech which can be analyzed automatically—that is, electronic corpora. The first studies of dialect syntax were thus conducted in the 1980s (e.g., Jones, 1985) and they are not restricted to dialects of English. Much research on the syntax of Scandinavian dialects has, for instance, been conducted within the project umbrella ScanDiaSyn (Scandinavian Dialect Syntax; http://uit.no/scandiasyn/?Language=en) from 2002 to 2009, and several of the individual projects are continuing till after 2010 (Vangsnes, 2010).

Computer-Assisted Corpus Analysis in Modern Dialectology

The application of sociolinguistic methods in dialectology, as mentioned above, usually concerns the calculation of a linguistic variable, for example the ratio of instances of *girl* or /t/ to instances of *lassie* or [ʔ], and to possible further variants. There are different approaches to extracting these variants from the corpora.

Electronic corpora usually consist of text files. Up to the time of writing (2010), phonetic transcriptions of sound files have not been digitized, which is not surprising considering the complications involved. One such complication concerns the recognition of phonetic symbols by corpus search tools, as these symbols do not appear on standard computer keyboards. The amount of phonetic detail that could be included in a transcription (aspiration, glottalization, pronunciation of /r/, devoicing, etc.) presents another compounding

factor: many of these phonetic processes are matters of degree rather than of complete presence or absence, and might be classified differently by individual researchers. The original sound files are, however, indispensable for (re)evaluation, ideally through alignment of the text with the respective audio files, such as in the Newcastle Electronic Corpus of Tyneside English (NECTE; http://www.ncl.ac.uk/necte/).

In order to retrieve data from electronic corpora, a common method is to use a concordance search for particular words of interest, which yields all instances of these words from the corpus in their respective contexts. Thus, one could listen to the pronunciation of each occurrence of particular words, or analyze their meaning from the context accessible via the concordance. Concordance searches can also be used to find nonstandard language patterns, such as dialect words (e.g., *lassie*), the use of standard English object pronouns, such as *me* or *him*, in subject position (*Him's doing well*), or the nonstandard relativizer *what* (*My aunt what lives in Manchester*).

There are, however, structures that cannot be found by searching for individual words. For instance, subject–verb inversion in indirect questions, as in *She didn't know why* ***had this*** *happened*, appears in a large variety of forms. It can be introduced by the *wh-* question words or by any auxiliary (*have*, *had*, *was*, *were*, *is*, *am*, *are*, *would*, *should* . . .), and an adverb or adverbial phrase might occur before the indirect question. Therefore, the total number of indirect questions required to calculate the percentages of standard and nonstandard forms cannot be extracted from a corpus through the concordances of an easily restricted number of words. In order to extract as many indirect questions from a corpus as possible with a reasonable amount of effort, the most frequent verbs that introduce indirect questions (i.e., their matrix verbs) are used as means of identification. For indirect questions, these are *ask*, *wonder*, *know*, and *see* (see Filppula, 2000). In the concordances of these verbs it is possible for the researcher to identify all indirect questions.

While this method has the disadvantage of presenting the researcher with a lot of irrelevant data, such as other uses of the verbs, it also has the benefit of allowing the analysis to become more corpus-driven (see Tognini-Bonelli, 2001, pp. 65–100), as unexpected patterns can be found. In the analysis of the variation between the complementizer *that* and its zero equivalent in Kolbe (2008, pp. 90–129), for example, the concordances of the matrix verbs *think*, *say*, *know*, and *see* revealed the use of the dialectal complementizer *as*, which is hardly mentioned in the descriptions of dialect grammar (see Kortmann & Upton, 2008). Had it been possible to extract only complement clauses with zero-*that* or *that* complementizer, the dialectal variant *as* would have been ignored.

Modern dialectology makes central use of statistical software, both for descriptive statistics, which count occurrences and percentages, and for inferential analyses, which indicate whether the actual distribution could be replicated in a different sample, mostly by tests of statistical significance. In addition, inferential statistics helps to compare the influence of speakers' dialects with other factors that may influence their choice of one variant of a linguistic variable by calculating the strength of the influence of each factor, for example, in variable rule analysis (Tagliamonte, 2006, pp. 217–34). It thus allows the distinction between features of nonstandard language that are typical of a (group of) dialect(s) and features that are so widespread that they can be considered to belong to a supraregional vernacular. For instance, nonstandard *for to* is reported to occur in all dialects of English spoken in the British Isles represented in Kortmann (2008) except East Anglia (p. 485). As it also expresses a sense of purpose and predominantly appears in infinitive adverbial clauses of purpose (Kolbe, 2008, p. 273), it is probably better considered as a nonstandard feature of the general vernacular that especially occurs in nonfinite clauses of purpose than as a characteristic feature of a certain (group of) dialect(s).

While the rise of these statistical methods results from the growing importance of quantitative analysis of distributions and frequencies, qualitative analyses of small samples, which focus on the closer examination of a particular structure, are still indispensable.

From a quantitative perspective it does not make sense to analyze the distribution of only two instances of any syntactic structure. In a qualitative analysis, however, the two instances of double modals (*would might*) in ICE-GB support the hypothesis that *might* is developing into an adverb with a similar meaning to *perhaps* or *maybe* (Miller, 2008, p. 306): as in *I would* ***might*** *move it now* (ICE-GB, file s1b-025) and *I would* ***perhaps*** *move it now*.

In dialectometry, a subfield of dialectology, computational methods are used to measure how different or "distant" particular dialects are from each other. While these calculations are primarily based on the data from dialect atlases and on lexis and pronunciation, the first dialectometricians turned to corpus data for their studies at the beginning of the 21st century (Leinonen, 2008; Szmrecsanyi, 2008; Grieve, 2009), and also to the study of grammatical features (Szmrecsanyi, 2008; Grieve, 2009).

Implications of Modern Dialectology

Corpus analyses facilitated the description of dialects as complete linguistic systems that exist in parallel to, but are not in any way "worse" than, the standard. Research of this kind has had repercussions even on the United Kingdom's national curriculum in schools. One of the aims is to teach pupils "about **how** language varies: . . . between standard and dialect forms" (Qualifications and Curriculum Authority, *n.d.*, emphasis added). This implies a didactic approach in which dialects are treated as alternative varieties for private communication, while standard language and its patterns are discussed as formal alternatives rather than taken for granted (Cheshire & Edwards, 1993).

Dialect Corpora

Most existing electronic dialect corpora were compiled since the 1990s (a list of corpora and their Web sites is provided in the reference section), some of which consist of the digitized results of earlier dialect surveys. The Leeds Corpus of English Dialects (part of the Leeds Archive of Vernacular Culture, LAVC; http://www.leeds.ac.uk/english/activities/lavc/) contains selected SED recordings (Klemola & Jones, 1999). The Newcastle Electronic Corpus of Tyneside English (NECTE) consists of more recent data and also data from the Tyneside Linguistic Survey. The Helsinki Corpus of British English Dialects (http://www.helsinki.fi/varieng/CoRD/corpora/Dialects/index.html) will (once completed) contain dialect speech from the 1970s and 1980s.

However, when dialect speakers are interviewed for other reasons than dialect study, they are not aware that their language is destined for later analysis, which should reduce the degree of attention they pay to their speech. Transcripts of these interviews are therefore useful resources for the analysis of dialect speech. The Freiburg English Dialect Corpus (FRED; http://www.anglistik.uni-freiburg.de/institut/lskortmann/FRED/), for instance, consists of interviews for oral history projects in Great Britain. Corpora which were not explicitly compiled for dialect analysis but contain spontaneous speech from different regions can serve to analyze dialects, as demonstrated in the two examples of double modals in ICE-GB. The British National Corpus (BNC; http://www.natcorp.ox.ac.uk/corpus/) also provides information on the regional origin of speakers sampled in the spoken files, and ICE-Ireland allows the analysis of Irish English.

Parts of the database of spoken German (Datenbank Gesprochenes Deutsch, DGD; http://dsav-oeff.ids-mannheim.de/DSAv/SUCHMASK.HTM) are also accessible to the general public, as are the maps compiled in the survey of German dialects by Georg Wenker in digitized form (Digitaler Wenker Atlas, DiWA; http://www.3.diwa.info/titel.aspx). The DGD, together with the German Language Archive (Deutsches Spracharchiv, DSAv) furthermore provide online access to over 20 different corpora.

Further corpora compiled explicitly for the study of regional differences in other countries are, for instance, the American Nationwide Speech Project Corpus (Clopper & Pisoni, 2006; http://www.ling.ohio-state.edu/~cclopper/nsp/index.html), the Spoken Japanese Dialect Corpus (University of Tsukuba; http://research.nii.ac.jp/src/eng/list/files/GSR-JD.pdf), the Nordic Dialect Corpus (Johannessen, Priestley, Hagen, & Åfarli, 2009), and the Corpus of Estonian Dialects (Lindström & Pajusalu, 2003).

Conclusion

Dialectology has always drawn on the collections of speakers' utterances. In their electronic form these are now known as corpora. When dialectologists began to conduct empirical studies in the tradition of Labovian sociolinguistics, the availability of large digitized corpora facilitated the turn towards the study of less frequent syntactic patterns. In addition to the connection with sociolinguistics, modern dialectology bears on various other approaches in linguistics, such as typology (Anderwald, 2002) or cognitive grammar (Pietsch, 2005). Although traditional dialectology focused on the investigation of dialect lexis, lexical analysis has become rare; it is not even addressed in the overview of British varieties of English in Kortmann and Upton (2008).

The introduction of corpus analyses to dialectology also accompanies the shift to investigations of more naturalistic data. Thus, it would be desirable to collect more data from interviews for nonlinguistic purposes in order to be able to analyze more natural dialect data.

Nevertheless, modern dialectology faces two central challenges: First, to pursue the interest in dialect syntax it will be necessary to compile much larger corpora than the ones that already exist. If a double modal occurs on average twice in 500,000 words, dialectologists would need a corpus of at least 10 million words of dialect speech to compile a database of double modals that is large enough for the analysis of their actual function and use. Second, traditional dialects are decreasing in number, while individual dialect features spread to many other dialects, a process which is probably enhanced by modern media (Durham & Smith, 2008). Due to this general process of dialect leveling, corpora of 21st-century British English are less likely to contain typical traditional dialect features. These prospective corpora are more likely to serve as a resource to redefine our notion of dialect areas, as well as understanding of dialect features, in the UK (see Trudgill, 2000, pp. 82–3, pp. 132–5).

SEE ALSO: Qualitative Methods: Overview; Quantitative Methods; Teaching Grammar and Corpora

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Corpus Analysis in Forensic Linguistics

JANET COTTERILL

This article looks in two directions with respect to the use of corpora within forensic linguistics: first, the notion of small, genre-specific forensic corpora made up of both questioned or disputed texts and candidate texts; and second, the use of existing large corpora of language in a variety of specialized/individual genres which may assist the forensic linguist in his or her task. Each category of analysis is illustrated with contemporary, real-world examples and considers the advantages and disadvantages of using a corpus approach.

Definitions and Delineations of Forensic Linguistics

The growing discipline of forensic linguistics may be broadly defined as the study of language and law. Forensic linguistics is coupled with its sister discipline forensic phonetics, which, as the name suggests, deals with speaker and voice identification in data such as telephone calls, answerphone messages, and other recorded speech samples. Forensic linguistics has two principal foci of attention: the descriptive aspect and the investigative dimension.

Descriptive Forensic Linguistics

Within this domain, the linguistic characteristics of a variety of different genres and text types are described. This broadly encompasses the language of the legal process, from arrest to trial and beyond, and includes the following texts and registers:

- The police caution/Miranda and its equivalents, a text read aloud to suspects on arrest outlining rights and responsibilities (Shuy, 1997; Cotterill, 2000; Rock, 2007).
- The police interview (Heydon, 2005; Haworth, 2006).
- The language of civil and criminal trials, including examination-in-chief (direct) and cross-examination; opening statements and closing arguments; jury deliberation and verdicts (Stygall, 1994).
- Judicial language: Supreme Court judgments, reports, and appeals (Solan, 1993).
- Prison language (Mayr, 2004).

Within the written aspect of language and law a wide spectrum of text types is also analyzed:

- contracts/written laws (Tiersma, 1999),
- trademarks (Shuy, 2002),
- warning labels/signs (Dumas, 1990; Tiersma, 1999).

This descriptive aspect of the field is an obvious one for the development of genre and text-specific, specialized corpora, although in some countries, including the UK, there are restrictions placed on the availability of data from courtrooms, with many of the proceedings and resulting transcripts/recordings either difficult to obtain or nonexistent. Despite this the descriptive area is undoubtedly one where corpus linguistics can prove extremely

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useful in exploring linguistic characteristics of legal genres and is likely to grow in the future. Perhaps indicative of this trend the most recent book on courtroom and judicial language (Heffer, 2006) carries the subtitle *A Corpus-Aided Linguistic Analysis of Legal–Lay Discourse*.

Investigative Forensic Linguistics

The second area is perhaps the best known and longest established area of corpus analysis in forensic linguistics: This involves the analysis of texts as part of criminal investigations. Texts include the following:

- threat letters,
- suicide notes,
- fabricated confessions,
- blackmail/extortion letters,
- terrorist/bomb threats,
- ransom demands,
- e-mails,
- text messages.

The use of corpora in investigative forensic linguistics is of increasing importance. Not only is such a methodology useful for analyzing sets of texts collected by scenes-of-crime officers at the early crime investigation stage, but the resulting evidence benefits from a scientific presentation in court. This includes the use of graphs and charts, tables and statistics, which juries have been shown to find more convincing than testimony delivered in a qualitative form (Conley & O'Barr, 1990). In addition to clearly defined forensic contexts such as those detailed above, there are other, more peripheral areas where corpus linguistics is becoming an important method of investigation. As O'Keeffe, McCarthy, and Carter (2007, p. 20) attest, "authorship and plagiarism are growing concerns within forensic linguistics, for which corpora can prove a useful instrument of investigation." The Joint Information Systems Committee (JISC) Electronic Plagiarism Detection project created TurnitinUK plagiarism detection software in 2000, for example, which is used widely by UK universities, colleges, and schools.

One of the major challenges within the forensic field is usually not present in the same way for corpus constructors of more general and widely available texts such as newspaper articles or casual conversation (e.g., the Bank of English, the Brown Corpus, or the British National Corpus). As O'Keeffe, McCarthy, and Carter (2007) point out, the construction of corpora and the notion of sampling can be crucial. As they put it, "any old collection of texts does not make a corpus." Unfortunately, and frustratingly for the forensic linguist, any old collection of texts is precisely what is provided by either the police or defense solicitors, who are unaware of genre/register differences, variations in text size, and temporal factors, all of which may influence the potential of texts to be analyzed.

All the text types listed above pose a number of challenges for the analyst. The first concerns the length of the text(s) to be analyzed. In general, all of the above are typically short pieces of writing with very few extending beyond a single page or several pages. In fact, texts such as e-mails and in particular text messages frequently consist of fewer than ten words and as such represent a dilemma for the analyst. Without very much language to work on, it is difficult to establish authorship, either in terms of identification or exclusion of candidate authors. As Olsson (2004, p. 14) notes:

> many forensic inquiries present too little data to justify a full-scale statistical study. Often there are no more than two candidates, as few as three attested texts and perhaps no

> more than one or two questioned texts. This is why most methods described as authorship detection do not work in the forensic context.

This kind of work also involves the notion of idiolect and uniqueness of expression (see Coulthard, 2004), both of which can very effectively involve the use of corpora. However, there are additional problems with work of this kind. First, the linguist has to attempt to deal with the thorny issue of genre. Such work in general linguistics which has attempted to define the characteristics of particular genres (e.g., Biber, 1988, 1995; Stubbs, 1996) has resulted so far in only partial descriptions of stylistic characteristics associated with certain text types. Perhaps the most problematic genre of analysis in this area is that of text messaging, where samples of data are both brief and highly idiolectal.

The Use of Specialized Individual Corpora in the Authorship of Text Messages

In addition to the text types outlined above, an increasing number of crimes involve the analysis of small, specialized corpora of text messages or SMS. Here, very small features including the use of punctuation, capitalization, and abbreviation, as well as openings and closings to messages, contained in very short texts nevertheless appear to give a sense of the author's idiolect or texting style. The brevity of text types was a focus of Eugene Winter's work, who attempted to establish the threshold of text size where analysis was no longer feasible (Winter, 1996). As Coulthard discussed as early as 1993:

> no one really knows how small a sample one can reliably work with, at what size significant irregularities begin to emerge, whether two samples by the same person can be treated as one larger sample and to what extent regularities vary across registers. (Coulthard 1993, p. 93)

To illustrate this principle, he cites Stubbs (1996, pp. 81–100) who, comparing two short letters of an average of only 400 words each, was able to show repeated instances of common word usage. In addition to the issue of genre or register, there is a diachronic dimension to the issue of authorship attribution; as Tomblin (2009) has also noted, underpinning authorship identification must be an assumption that an individual's idiolect (even assuming this can be established as a valid concept), remains constant across the output of an author over time.

As a relatively new genre, people's texting styles tend to show considerable variation and idiosyncrasy. In general, older people tend to write messages in full form with traditional openings and closings, as they would in e-mails or letters, whereas younger individuals are more likely to send more frequent and shorter text messages, using abbreviated forms and features such as emoticons, and tending to omit openings to their messages as well as parts of speech such as the definite and indefinite article (Crystal, 2009). These differences in style, whether related to gender, age, or other sociolinguistic variables, are becoming increasingly significant in forensic linguistic corpus evidence. In 2000, the BBC News website even went as far as to call mobile phones "the new fingerprints" in their potential as corpora of an individual's idiolectal texting style.

In a 2005 case with texting as a key evidential criterion, parallel corpora of the text messages of murder victim Julie Turner and her friend Howard Simmerson were compared. This was central to the timeline of the crime, since on the afternoon following her disappearance her partner had received the following mobile phone text which the local newspaper reported at the time: "Stopping at jills, back later need to sort my head out."

He (the perpetrator) allegedly sent this text message to Miss Turner's partner and to his own mobile phone in an apparent attempt to convince people she was still alive and to give himself an alibi.

The following day, two days after Julie had gone missing, another apparently reassuring text was received: "Tell kids not to worry. sorting my life out.[*sic*] be in touch to get some things" (*Worksop Guardian*, November 4, 2005). In a corpus of letters which Simmerson had written (and which therefore provided a comparative corpus), analysts found similarities to the language of the mobile-phone texts, as well as several unusual orthographic and punctuation features which were indicative of a text-messaging idiolect. Simmerson was arrested and charged with her murder. He was subsequently convicted of the murder in 2005 and was sentenced to life imprisonment. The role of his individual corpus of text messages in comparison to Julie's was pivotal in the trial.

The Use of Pre-Existing Linguistic Corpora in Forensic Linguistics

As well as the construction of sometimes necessarily opportunistic and unprincipled, but bespoke, case-specific corpora as in the example discussed above, large, pre-existing corpora of English are extremely useful for the forensic linguist in a variety of case types. This may be in an investigative role where the linguist is asked to comment on idiolectal, dialectal, or regional features of texts which may aid police officers in identifying and locating a potential perpetrator. It is also possible to use corpora to illustrate common meaning (the difference between a legal meaning and a lay person's plain understanding) of a term in (usually civil cases) disputed comprehensibility of texts. These include texts such as patient information leaflets included in packs of medication, instructions, and warnings. Failure to fully comprehend these types of texts can lead to frustration at best and even injury or death at worst.

Another sector of work for the forensic linguist is that of trademark disputes, where both usage type and frequency becomes crucial (see Shuy, 2002 for a detailed discussion of forensic linguistic analysis of trademarks). In cases such as this, access to large corpora can be invaluable since it allows the linguist to gauge a sense of the common usage of such terms and by implication the common understanding of them. Arguably the largest corpus of all is the Web—used in a number of authorship attribution cases, most famously that of the Unabomber.

Using the Web as a Reference Corpus to Catch a Killer

The case of the Unabomber in the USA spanned the 1970s, 1980s, and early 1990s and is the archetypal illustration of a hybrid approach to forensic data analysis, combining individual intuition and idiolectal features of language, with the Web acting as a reference super-corpus.

Theodore Kaczynski, a disenchanted ex-university professor of mathematics in the USA, sent 16 letter bombs to a variety of targeted individuals and institutions. His attacks increased in the level of violence used and resulted in three fatalities and 23 injuries of varying severity. He was named by the FBI as the Unabomber because of his choice of targets—universities and airlines. In 1995, a textual dimension was added to the case. Kaczynski contacted the *New York Times* with an ultimatum: he would stop his campaign if either the *Washington Times* or the *Washington Post* agreed to publish a 35,000-word manifesto he had written, entitled "Industrial Society and its Future." One of the hopes of the *Post* and the *Times*, which both agreed to publish the manifesto, was that someone might recognize its stylistic characteristics.

The manifesto contained a number of distinctive features indicative of the writer's idiolectal style. In addition to consistent self-references using the plural form *we* or *FC* (standing for Freedom Club), or both, the author also capitalized whole words as a means of indicating emphasis. Although the text displayed an idiosyncratic use of hyphenation, it was otherwise error-free, in terms of both spelling and grammar, despite the fact that the author had used an old-fashioned typewriter rather than a word processor with a spelling and grammar checker.

A short time after the manifesto was published, the FBI was contacted by David Kaczynski, who claimed that the document had been authored by Theodore, his long-estranged brother. The manifesto contained certain unusual expressions, such as a self-description of the writer as a "cool-headed logician." David Kaczynski found a set of letters dating back to the 1970s which appeared to contain similar phrasing to that of the manifesto. This is a clear and fascinating example of the power of an individual's recognition of an idiosyncratic and distinctive writing style. Following a search of Kaczynski's property, he was arrested and charged with manufacturing and sending the incendiary devices. With the possession of a further set of additional documents seized from the property, the FBI's analysis (discussed in Fitzgerald, 2004, a Georgetown graduate of linguistics and FBI agent) determined that there were multiple similarities between the manifesto and particularly a lengthy letter sent to a newspaper on a similar topic.

Following this individual analysis and discovery process, a more detailed analysis of the manifesto was subsequently conducted. The first linguist brought in by the defense argued that although the two documents did indeed share lexical and grammatical similarities, this was not surprising as they were written in roughly the same genre and on the same topic. In response, the FBI carried out an analysis of the Web, which, although significantly smaller in the mid-1990s than even 10 years later, still represented an enormous reference corpus. The FBI used the same set of 12 expressions that had been used in an analysis previously carried out for the defense. The 12 generic and non-subject-specific words and phrases were the following:

Single Lexical Items	**Phrases**	**Lemmas**
thereabouts	at any rate	argu*
gotten	more or less	propos*
propaganda	on the other hand	
presumably	in practice	
moreover		
clearly		

* This includes lexical items such as argument, argumentative, proposition, proposal, etc.

At first glance these items and phrases do not appear at all remarkable. As the defense suggested, one would expect them to appear in any argumentative text of this type. However, when the 12 words and expressions were entered into the search engine Google, a total of approximately 3 million Web hits were returned which contained one or more of them. This is an unsurprising result but was clearly extremely disappointing for the FBI's analyst (confirmed in personal communication with the special agent concerned and published by him in Fitzgerald, 2004). The query was then refined to include only those documents which contained all 12 of the search terms. This produced a remarkable result: only 69 documents on the entire Web contained all 12 of these words and phrases. Perhaps more remarkably, each hit consisted of a version of Kaczynski's 35,000 word manifesto. As Coulthard points out in his discussion of the methodology employed in the Unabomber case:

> This was a massive rejection of the defence expert's view of text creation as purely open choice [see Sinclair, 1991], as well as a powerful example of the idiolectal habit of co-selection and an illustration of the consequent forensic possibilities that idiolectal co-selection affords for authorship attribution. (Coulthard, 2004, p. 433)

In addition to the corpus evidence produced from these items and phrases, one further fascinating issue emerged which relates to the concept of keyness, that is words or phrases which occur with "unusual frequency" (Scott, 1999). In his manifesto, the Unabomber reversed the order of an expression, from the more expected "have your cake and eat it too" to "eat your cake and have it too." This alternative formulation was also found in other writings by Kaczynski, but a search of the Web again found that this was a unique form not found in any other text. The concept of idiolectal features, as illustrated in the case of the Unabomber, has considerable potential in forensic casework, as Kredens (2002) discusses in detail.

Shortly before his trial in 1998, Kaczinski pleaded guilty to all charges and received a commuted sentence of life imprisonment without the possibility of parole. The Unabomber case is a powerful illustration of the potential power of using the Web as a reference corpus, albeit with many caveats and cautions.

Coulthard and Johnson (2007) discuss the case of Robert Brown in the UK, who was convicted of the murder of Annie Walsh in 1977. The alleged confession was the only substantive evidence presented by the prosecution. Brown consistently claimed the confession had been produced by the police and that incriminating sections had been inserted into his police interview. Coulthard analyzed several significant strings which occurred in both disputed texts, for example, "I asked her if I could carry her bags and she said yes." In a convincing analysis using the Web again as a reference corpus, Coulthard showed these apparently common strings do not occur at all on the Web. The appeal court found Brown's conviction unsafe, mainly due to this evidence, and he was released after spending 25 years in prison. Coulthard labels this comparative method a "corpus-assisted" approach combining expert qualitative analysis with corpus linguistic methodology (Coulthard, 2004).

For Solan and Tiersma (2004), such an approach would be admissible even under the rigorous Daubert criteria employed in American courtrooms. Daubert requires that a method be subjected to peer review and publication, undergo empirical testing, and be generally accepted by its relevant academic community. Corpus linguistics, Solan and Tiersma conclude, represents the most promising methodology currently available to linguists attempting authorship attribution.

Conclusion

With the development of large corpora of various forensic genres apparently on the horizon, the future for forensic linguistics, particularly in terms of authorship analysis in all its forms, seems to hang on computerized analysis and the development of robust statistical measures. Many forensic linguists advocate the creation of these genre-specific corpora of authentic data (in the example below, police statements), both to permit:

> statistically valid statements in court and to protect [oneself] against the suggestion by hostile cross-examiners that, as any reasonable person will agree, a corpus of general conversation is irrelevant for comparative and normative purposes, because the linguistic behaviour of witnesses and suspects must change when they are making statements under oath. (Coulthard, 1993, p. 89)

In terms of effective data analysis and the fulfillment of evidential criteria, it seems clear that corpus linguistics will have an increasingly important role to play in the future detection of crimes involving language. Whether corpus-aided, corpus-assisted, or corpus-based, much of the work of the forensic linguist will involve some degree of corpus linguistic methodology and principles.

SEE ALSO: Forensic Linguistics: Overview; Language of Courtroom Interaction; Language of Jury Instructions; Language of Police Interviews; Legal Language; Linguistic Analysis of Disputed Meanings: Trademarks; Prison Language

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Julie Turner

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Corpus Analysis in Social and Public Policy Research

JOANNA CHANNELL

Corpus analysis can be used to research problems and issues in government and public policy. It can, for example,

- explain why people misunderstand government information documents,
- suggest how such documents can be improved,
- show how the uses of terminology differ between the general public and specialists or politicians,
- reveal the underlying assumptions and coded messages in public documents, and
- provide advice on how public institutions can best communicate with the people whose needs they serve.

Such research may be carried out as academic research (where the inspiration, methods, timetable, and aims come from the academic researcher), or it may be consultancy research or commissioned research. Consultancy research is different from academic research (although it may be carried out by academics) because the paying client (government or other public body) specifies the research question(s), the outcomes, and the timetable. And the client normally retains control of the data and the results (for detail on how applied linguistics research of this type is commissioned and negotiated, see Shuy, 1998; Roberts, 2003; Channell, 2007).

Corpus research in public policy is a relatively new area, with the first projects being undertaken in the mid-1990s (see Campanelli & Channell, 1994, 1996, for early examples). With the arrival of large general corpora of British English (e.g., the Bank of English and the British National Corpus), together with the software tools to analyze them, building a specialist corpus for a specific project became possible (Channell & St John, 1996; Channell, 1997; and see principles set out in Thomas & Wilson, 1996; Skelton & Hobbs, 1999).

The results of corpus research are valuable in the public arena and potentially helpful to policy makers because they are methodologically sound, and demonstrably objective and quantified. This is important because people with no specialized knowledge about language often believe that language use is entirely subjective and that therefore the evaluation of its effectiveness is simply a matter of personal opinion. It is also the case that policy makers, particularly those at the top of government and responsible for large areas of government expenditure, require a high level of robustness of data and findings, since they will need, in turn, to present sound arguments to government ministers. Given its evident reliability and applicability, however, corpus research remains an underused resource for policy research.

Why Do Organizations Commission Corpus Research?

The reasons for seeking specialist help from applied corpus research are often one or more of the following:

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- The organization needs to evaluate the effectiveness of its communication with the public it serves.
- The organization has received complaints, or negative media coverage, or an external body is putting pressure on it to improve.
- Professionals with other types of expertise (often management consultants or marketing professionals) have failed to solve a particular language issue or problem.
- Applied linguistics research has been helpful before (or they have heard that it was helpful to another organization).

How Corpus Linguistics Helps Public Policy Makers to Understand the Nature of Language

One of the most important contributions that corpus linguistics can make to public policy is to explain how language works and therefore how public communication can be made effective. (Many other areas of applied linguistics, for example discourse analysis and genre analysis, can also make a strong contribution here.) Applied linguists who carry out consultancy research often encounter writers who, while they may have a sincere desire to write effectively, operate with a layperson's view of language which misleads them (Shuy, 1998, gives a good exposition of the misunderstandings he encountered in 30 years of undertaking consultancy research, much of it for the US Government; see also Channell, 2007).

For example, inexperienced writers often believe that words are "a bunch of discrete units" which can be put together in any way the writer likes (Shuy, 1998), and therefore used in any setting regardless of appropriateness. Corpus analysis has consistently demonstrated the contrary, which is that

- most words must be used in regular patterns (collocation, pattern grammar), and
- the frequency of particular words, grammar patterns, and sentence structures varies measurably according to the context and purpose of the text.

Nonlinguist readers can recognize a successful text but often lack the vocabulary and theoretical framework to explain why it is successful. Corpus analysis can help them to see that a successful text is highly structured, and that vocabulary and grammar choices follow known patterns appropriate to the text purpose.

Many writers of public documents struggle to balance brevity with simplicity and clarity. Corpus research can show that a shorter version of a text may be harder to understand because it deviates from known patterns and omits appropriate text-linking phraseology.

Another area of difficulty for many nonlinguists is the accurate identification of ambiguity and therefore the potential for misunderstanding of a text. Corpus linguistics helps by demonstrating unequivocally that a form may have different functions in different contexts. Equally a particular function may be expressed by a variety of forms. The different perspectives on and conceptions about language held by linguists and nonlinguists pose specific issues in the establishment of a productive working relationship for a research project (see Shuy, 1998; Channell, 2001; Roberts, 2003, for ideas about how to establish such a relationship).

When conducting public policy research on language issues there are, therefore, two specific challenges for the corpus linguist: first, to understand how nonlinguists understand and try to resolve language issues; and second, to find ways to communicate the insights of research in usable and understandable forms to public bodies or government (Shuy's book, *Bureaucratic language in government and business*, 1998, which contains examples of

research on Medicare and social security with government institutions in the USA, is particularly good on overcoming the challenges in this area).

Examples of Corpus Research Approaches and Methods for Public Policy Research

Researchers may exploit corpus approaches in a number of ways and will usually use them in conjunction with other linguistic research methods, such as conversation or discourse analysis. They may also draw on social research methodologies, for example focus groups, survey data, and interviews (see Channell & St John, 1996, for a project which used a suite of techniques). Corpus linguistics provides quantitative analyses which "boost the empirical value" of qualitative results (Koteyko, Nerlich, Crawford, & Wright, 2008, p. 239). For the researcher, a key advantage of commissioned consultancy research is that it often provides a highly privileged access to otherwise unobtainable text or spoken conversation data. This section outlines some examples of projects, summarizing data, approaches, and results. In particular it highlights the policy impacts of consultancy research for the public body that commissions it.

Example 1

The British government collects data on work-related training from different large-scale surveys. How can it collect accurate data about training?

The UK government commissioned this research in 1993 when government statistics showed that data from different sources reported incompatible results. It appeared that statistics on the amount and level of workplace-based training and development were not accurate. Initial research had indicated that professionals in training, education, and labor market research had a very different understanding of what is meant by training from that held by nonspecialists. The research questions investigated therefore became:

1. What do people understand by the term *training*?
2. How do people generally describe the processes of acquiring the skills, knowledge, and experience necessary to undertake their work?

To answer the first question, corpus analysis, carried out by a team at the University of Birmingham, drew on a subset of 24 million words of nonfiction corpora from the Bank of English, developed by Collins COBUILD and held at the University of Birmingham (Sinclair, 1991). All forms in the word family for "train" (i.e., *train*, *trains*, *trained*, *training*, *trainee/s*) and all associated verb forms were analyzed. The research made clear that in general British English usage, "train"

- is very often used about sports, especially in newspaper contexts; and
- where it is used about work, uses are limited (in the data considered) to those occupations requiring clearly delimited training periods (e.g., professions, being a secretary, in the military).

A separate strand of the research, consisting of interviews and focus groups with training professionals and researchers, had shown that their definition of training is very broad in that it could cover every kind of learning, informal or formal, and any experience which led someone to be able to do their job effectively. A key finding therefore was that the corpus analysis found no evidence to support this broad definition in the corpus data

examined. This was a small part of the whole project, but it already showed why asking a survey respondent the question "What training have you received?" would be unlikely to elicit an accurate response, and therefore why the national data on workforce training and skills was not reliable. (See Campanelli & Channell, 1994, for a full description of the whole project.)

The second question ("How do people talk about how they learned to do their jobs?") was answered by building a specialist 60,000-word corpus of talk transcribed from focus groups. This showed that people draw on a wide range of expressions to describe their learning and qualifications, and tend to use *training* only to describe specific periods of classroom-based learning. For the government department which commissioned this project the outcome was to provide specialist advice to those commissioning and designing labor market research, which then led on to modifications to the design of national survey questions on work-based training.

Example 2

Why can't people understand the newly introduced UK-wide national system of vocational qualifications?

In the early 1990s the whole system of vocational qualifications and related training and education in the UK was changed. The new unified system is called National Vocational Qualifications (NVQs) and was introduced with three main aims: to improve the levels of training, skills, and qualifications in the workforce; to recognize and give credit for learning which takes place in the workplace; and to ensure that the quality of work would be the same wherever it was carried out. This would mean, for example, that every person in the UK who has the job of replacing worn tires on cars would receive similar training, gain the same qualification, and carry out the work in the same way and to the same standard. The work of analysis of different jobs, rewriting of qualifications and testing, and developing a new system of assessment took almost 10 years (for a detailed account, see Mansfield & Mitchell, 1996).

A key aspect of the new qualifications is that for every job role, there is a clear, detailed, and unambiguous written description of exactly what someone training to undertake the job would need to learn. A trainee demonstrates their learning not by undertaking written examinations but by showing an assessor that they meet this description. There was and still is, therefore, a large amount of documentation to be read and understood. While most people welcomed the new system in principle, many learners, tutors, employers, and assessors found the documentation very hard to use. They reported that it was difficult to understand and even more difficult to use for assessing competence in job performance. The government therefore commissioned a large-scale research project on why people found the documentation difficult and how it could be improved.

The corpus aspect of the research was carried out by the team at the University of Birmingham which had worked on Example 1. They built a purpose-designed 2-million-word corpus consisting of the texts of all the then-current NVQs.

The corpus analysis then consisted of comparing lexis, collocation, and sentence patterns between the NVQ corpus and various newspaper and other nonfiction corpora. This analysis showed that the "difficult" NVQ texts exhibited

- high frequency of never previously identified collocations,
- high frequency of everyday words used with novel meanings unknown to readers,
- inappropriate vagueness and inappropriate overspecification,
- low frequency of normal links and discourse markers,
- inappropriate brevity.

All of these are text features which experienced readers are normally able to process. It was the high frequencies and the presence of all of the features together which made the texts so hard for most readers to understand.

In this piece of consultancy research the team was able to do three things that were helpful to the government department that commissioned the work. The research

- showed that NVQ texts are a distinct genre,
- identified 16 different linguistic features which were causing problems to readers, and
- recommended strategies for rewriting and redeveloping the texts.

The results and recommendations were well received because the findings were backed with the presentation of quantitative data from comparative analyses of different corpora. It was clear that these were not subjective opinions about the texts. Apart from making the results convincing, this had the positive outcome that the researchers avoided alienating the writers and developers of NVQs by criticizing their work. The applied linguists showed that they understood the constraints of the NVQ writing task and the strategies used to accomplish it.

There were many other strands to this highly complex piece of research. Importantly, the research fed into the government's national review of the NVQ system, led to specialist training for those who would be redrafting the documentation, and resulted in a good practice manual for writers (see Channell & St John, 1996; St John & Channell, 1996; Channell, 1997).

Example 3

How are individuals *and* people *situated in British government and European Union policy documents on adult learning?*

This academic corpus research used 950,000 words of government and academic publications on lifelong learning, presenting a concordance-based analysis of *individuals* and *people* (see Piper, 2000a, 2000b). The approach was to compare the purpose-designed corpus with an existing general corpus (the British National Corpus). The research found that "close analysis of a corpus can provide valuable evidence for the constituent potential of language in theories of society and culture, and that the differences revealed between 'individuals' and 'people' demonstrate that the discourse of lifelong learning has close affinities with contemporary sociocultural models of individualization, consumption and production" (Piper, 2000a, p. 515).

A similar approach has been applied to the discourse of other areas of public policy. For example, Koteyko et al. (2008) built a corpus of 174,000 words to present an analysis of the discourse of British government policy on measures to combat MRSA (methicillin-resistant *Staphylococcus aureus*, which is resistant to antibiotics of the penicillin class).

Example 4

What happens when people in the UK with a health problem telephone a free telephone advice line available from the National Health Service?

A growing area of corpus-based research is within the well-established field of research on health discourse (e.g., between patients and doctors). One example (Adolphs, Brown, Carter, Crawford, & Sahota, 2004; Adolphs, Atkins, & Harvey, 2007) analyzes the language of call center staff who need to understand the health problems of people who telephone them. The researchers constructed a specialist corpus of 61,000 words of recorded telephone

calls. One finding was that an identified set of conversational features were more prominent in the data than in general spoken British English: imperatives, pronouns, vague language, and affirmations and positive back channels (e.g., "right" or "okay"). The researchers identified these features as indicating an "involved and interpersonal" style. The outcome of such work is to improve the ways that health professionals communicate with patients (see Adolphs et al., 2004).

Reporting of Results and Outcomes

Having sought specialist corpus research and consultancy, policy makers normally require a report, which will be different in content, organization, and style from the reporting of research in an academic journal. A consultancy report needs four main areas of content:

- a clear analysis of the present situation and the reasons for carrying out the research, avoiding technical language as much as possible;
- the main findings, with justification of the analyses but without large amounts of linguistic research evidence—the evidence will usually appear in appendices, not in the main text;
- a clear exposition of what is working and what needs to be changed; and
- specific pointers that can be used to make improvements.

However valid the results, and however carefully tailored the report may be, commissioning organizations will not necessarily react favorably. Sometimes organizations will welcome the report and recommendations and set about making changes. On other occasions, they may not like the results. People may misunderstand the corpus results, fail to value the insights gained, or specifically work against implementation of the suggestions (for the US context, see Shuy, 1998, for some penetrating analysis of how and why this can happen to a linguistics project).

Current Issues

There exists an immense potential, worldwide, for greater application of corpus research in the arenas of public and social policy, government information, and investigation of how governments and institutions can best communicate with the people they serve. The basic methodology of building a specialist corpus for analysis (including, where appropriate, comparison with a general one) will always provide reliable research conclusions. These conclusions are then of value to policy makers because they are clearly objective. It is the case, however, that applied corpus analysis is not widely recognized outside the immediate field of related disciplines. This will need to change if it is to realize its potential as a practical tool in social and public policy research.

SEE ALSO: COBUILD Project; Conversation Analysis and Transcription and Data; Corpora: Specialized; Corpus Linguistics: Quantitative Methods; Discourse in Organizations; Focus Groups; Interviews in Qualitative Research; Language Ideology and Public Discourse; Qualitative Language for Specific Purposes Research

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Corpus Analysis in Translation Studies

DOROTHY KENNY

Introduction

Translation normally involves the production of a written text in a target language based on a previously existing written text in a source language, while its sister activity, interpreting, usually involves spoken (or sign) language. Translation and interpreting have been carried out for millennia, and today form part of a multibillion dollar industry. This large-scale activity has been matched since the late 20th century by significant growth in translator training programs worldwide. What this means is that translation studies, the branch of scholarship that attempts to account for translation and interpreting phenomena, has to deal with an expansive field of enquiry and thus draws on a wide range of methodologies, including those supplied by corpus linguistics. The use of corpora in translation studies is, in fact, a relatively recent phenomenon, one that gained impetus with the publication of Baker's (1993) seminal article on the subject. Since then, corpus analysis has been adopted mainly in predominantly descriptive studies of translation, and in the more applied areas of translator education and the evaluation of resources used in corpus-based machine translation. Before discussing individual studies in these areas, I will say a brief word about the types of corpora such studies draw on.

Corpora in Descriptive Translation Studies

Translation scholars make extensive use of standard monolingual general reference corpora, often to ascertain what is "normal" for the source and target language (see, e.g., Kenny, 2001; Philip, 2009; Stewart, 2009). They have also created special corpora of texts *translated* into a single language. Such corpora are called monolingual translational corpora. When a monolingual translational corpus is juxtaposed with a comparable set of texts (in terms of genre, publication dates, domains covered, etc.) originally written in the same target language, we have what is known as a monolingual comparable corpus. An early example is the corpus used by Laviosa (1998) in her mainly quantitative investigation of translated English. Using word listing software, Laviosa found that her sample of translated English displayed a higher proportion of grammatical words, a higher proportion of high-frequency words, greater repetition of high-frequency words, and less variety in the lemmas most frequently used, than her comparable sample of original English. These "core patterns of lexical use," she suggests, are consistent with the simplification hypothesis (Blum-Kulka & Levenston, 1983), the idea that translated texts are often simpler than other texts in the same language. Simplification has been proposed as a recurrent, or more controversially, "universal" feature of translation. Other proposed translation universals, including explicitation, have been the particular focus of further studies based on monolingual comparable corpora, and these are discussed below.

Perhaps the best known monolingual translational corpus is the Translational English Corpus (http://www.llc.manchester.ac.uk/ctis/research/english-corpus). TEC contains some 10 million words of English translated from a variety of source languages, covering mostly

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literary and journalistic genres. By comparing TEC to a comparable selection of original English texts from the British National Corpus (BNC) (www.natcorp.ox.ac.uk), Olohan and Baker (2000) found that translators into English use optional syntactic elements such as subordinating *that* in reporting structures significantly more often than other writers in English, a finding the authors argue is consistent with the idea that translators tend to be explicit in places where other target-language writers tend to leave information implicit. Olohan and Baker link this tendency to the cognitive complexity of translation, but their monolingual methodology cannot rule out the influence of source texts. A follow-up study by Kenny (2005), however, showed that English translators of German fiction use reporting *that* significantly more often than would be predicted on the basis of the distribution of the analogous form *dass* in the German originals, thus suggesting that source texts are not the main trigger for explicitation. Another significant finding based on studies using TEC is that translators tend to use contractions (*don't*, *here's*, etc.) less than, and in different ways to, other writers in English (Olohan, 2003). While this might suggest that translations are more formal than other texts in English, Olohan points to other factors that may also be at play, including the style of the original author and the translator, and the possible effects of explicitation.

Scholars in Finland have replicated the TEC research design to investigate the specificity of translated Finnish. Tirkkonen-Condit (2004) finds that certain elements that are specific to Finnish, namely verbs of sufficiency (e.g., *mahtuu* 'is small enough') and some clitic particles, are under-represented in texts translated into Finnish compared with texts originally written in Finnish. This finding is interpreted as evidence to support her Unique Items Hypothesis, which proposes that target-language specific items will be under-represented in translated texts because source texts do not provide adequate input to trigger their use. Other work has shown that some linguistic features, for example multi-word units combining *haluta* 'to want to' with verbs meaning 'to say', 'to demonstrate', 'to emphasize', etc., are over-represented in translated Finnish (Mauranen, 2000). These findings are of particular significance for languages in which a high proportion of the texts published are translations and suggest useful ways in which the influence of translation on the development of such target languages can be tracked.

Translation studies scholars also use parallel corpora, that is, collections of source texts alongside their associated target texts in one (in the case of bilingual parallel corpora) or more (in the case of multilingual parallel corpora) languages. Parallel corpora, also known as "translation corpora," are usually aligned at sentence or, failing that, paragraph level. This allows users to conduct bilingual concordance searches using programs such as ParaConc (www.athel.com/para.html) or Multiconcord (http://artsweb.bham.ac.uk/pking/multiconc/cfl.htm). Similar to the studies based on monolingual comparable corpora discussed above, parallel corpus studies are sometimes designed to pursue what are hypothesized to be recurrent features of translation. Øverås (1998), for example, interprets the greater use of cohesive devices in translations compared to source texts in the English-Norwegian Parallel Corpus as evidence of explicitation in translation, and observes that the explicitating tendency is operational in translation from both English to Norwegian and Norwegian to English.

Normalization is understood here as the purported tendency among translators to use more standard formulations in the target language than are warranted by the source texts they translate, or to overuse patterns that are typical of the target language. Kenny (2001) investigates lexical normalization in a corpus of German literary texts translated into English, focusing on the translation of creative words that occur only once, creative collocations, and creative writer-specific forms in the German. Instances of these features were identified with the help of the WordList program and related cluster and keyword functions in an early version of WordSmith Tools (www.lexically.net/wordsmith), and

Multiconcord was then used to extract their translations into English. Kenny finds evidence of normalization, but she also uncovers many cases of ingenious translation and identifies habits of individual translators.

This shift from a focus on global patterns in translation, as exemplified by the monolingual work referred to above, to a focus on the styles of individual translators is continued in other work based on parallel corpora (although, see Baker, 2000, for an analysis of translator style using a monolingual methodology). Thus, Saldanha (2005) uses works of original Spanish and Portuguese fiction and their translations by either Margaret Jull Costa or Peter Bush to isolate features of each translator's style. Taking a corpus-driven approach in which an initial quantitative analysis is used to suggest fruitful lines of enquiry, Saldanha identifies the use of italics for emphasis as indicative of Jull Costa's style and the use of source-language words in target texts as indicative of Peter Bush's style. She interprets Jull Costa's use of typography as evidence that this translator prioritizes readability in translation. Saldanha goes on to relate translation strategies to each translator's positioning vis-à-vis his/her target audience, as ascertained through interviews and the translators' own writings. Winters (2009) analyzes two contemporaneous translations into German of F. Scott Fitzgerald's *The Beautiful and Damned*, one by Renate Orth-Guttman, the other by Hans Christian Oeser, and shows that the translators differ considerably in their choice and use of individual modal particles. Winters's subsequent qualitative analysis takes a pragmatic approach, discussing the modal particle *wohl* according to its communicative function, its role in speech and thought acts and in the narrative, and its use in establishing narrative points of view. Bosseaux (2007) also studies point of view, this time in non-contemporaneous translations into French of Virginia Woolf's *To the Lighthouse* and *The Waves*. Point of view is operationalized in this study through deictic uses of personal pronouns, adverbs of time and space, use of tenses, among other textual elements.

The above are good examples of studies that would probably never see the light of day without electronic corpora: some are based on very large volumes of data, for example, thousands of instances of features that occur very commonly in texts (personal pronouns, German modal particles, etc.) where such volumes could not be handled easily without computational assistance; some revolve around phenomena that are defined by their distribution (high-frequency words, writer-specific forms, etc.), and so could not be identified without quantitative analysis of an empirical base. These studies also illustrate how corpus analysis in translation can draw on ever expanding sets of data, with comparative data for studies of translated language being drawn from general reference corpora for the same language, and external corpora being used to establish how typical something spotted in one's own smaller parallel corpus is of the source or target language in general. What is more, they illustrate how scholars in corpus-based translation studies are increasingly integrating concepts from areas such as cognitive linguistics, pragmatics, narratology, lexical semantics, collocation studies, cultural studies, ideology, and even typography to enrich their analyses of corpus data. And although these studies are associated in particular with the branch of translation studies known as "descriptive translation studies," it is clear that the agenda they pursue goes beyond description, and even subsequent explanation. By drawing attention to the specificity of translated language and to the agency and "voice" of individual translators, scholars in the area help to make translation and translators visible, thus contributing to an agenda of translator empowerment. Apart from serving this political end, the studies surveyed above also suggest ways in which translation criticism can expand. Finally, while it is true that literary texts have predominated in the studies mentioned so far, this bias is corrected somewhat in more pedagogically oriented corpus-based translation studies (discussed below), which often draw on corpora of specialized "technical" texts.

Corpora in Translator Education

The ability to compile and use corpora is now considered part and parcel of the core competences that translation graduates should have, and some sources focus on teaching student translators to conduct effective searches in corpora provided by the teacher, or indeed to create and query their own ad hoc corpora, assembled to support decision-making during a particular translation commission and often jettisoned afterwards.

The teaching of translation "proper" has drawn on a variety of corpus types. Teachers may use source-language general reference corpora to provide extra information about problems that students encounter in source texts, or even to problematize aspects of source texts that students have taken at face value. Stewart (2009), for example, shows how data from the BNC can be used to back up the teacher's intuition that certain words (e.g., *chill*) or even lexicogrammatical structures (e.g., *X was near*.) carry connotations of fear and foreboding, thus steering students' translations of an extract from James Joyce's short story *The Dead* in a new direction.

Zanettin (1998) shows how bilingual comparable corpora, that is collections of source- and target-language texts that cover the same domains, text-types, time periods, etc., but are not related to each other through translation, can be used by students to evaluate the behavior of target-language units that are similar to discourse units in the source text they are trying to translate. In such cases students often discover that cross-linguistic cognates or other perceived equivalents are not used in the same types of environments in the two languages, and they thus adjust their translations accordingly. Zanettin shows this effect for both general and specialized medical translation. Corpas Pastor and Seghiri (2009) likewise show how a bilingual comparable corpus of travel insurance documents can help guide translation practice in the classroom.

Monolingual target-language corpora are particularly helpful for those (be they students or professional translators) who have to translate into their non-native language, as they provide evidence of "natural" ways of expressing ideas in the target language. But even those translating into their native language often need this kind of assistance, especially if they are translating in highly specialized domains in which they have not received formal education. In particular translators can use concordancers to extract terminological, collocational, and even conceptual information (in the form of definitions, etc.) from specialized target-language corpora (Bowker & Pearson, 2002). Such corpora also provide backup to teachers who have to evaluate student translations, as they provide hard evidence of what is common or natural in the target language, thus taking some of the burden of proof off the teacher's own subjective judgment. Maher, Waller, and Kerans (2008) argue that specialized target-language corpora also provide excellent resources in the continuing professional development of translators, revisers, and editors.

Parallel corpora, on the other hand, can be used to demonstrate the type of solutions that translators come up with when faced with problems that *only* arise in translation, so there is not much point in looking for guidance in a target-language reference corpus whose texts were created in a monolingual environment. Pearson (2003) shows, for example, how culture-specific references in a corpus of *Scientific American* articles are dealt with in translation for publication in French in *Pour la Science*, stressing how professional translators make decisions based on assumptions about their target readers' cultural knowledge.

Corpus Analysis in Machine Translation

Contemporary machine translation is predominantly corpus-based, with statistical systems learning bilingual "translation models" and monolingual "language models" from previously

existing parallel corpora and target-language corpora respectively. Machine translation researchers in general do not scrutinize the contents of their corpora, and the common idea persists that more data is better data. Some scholars, however, have conducted analyses of smaller parallel corpora used for training specialized systems, such as those intended for the translation of subtitles (Flanagan & Kenny, 2007; Volk, 2008). This "profiling" typically aims to measure average sentence (or segment/subtitle) length, lexical variety, and the amount of repetition at segment level, as all of these attributes might be expected to impact upon the quality of output produced by machines that essentially "recycle" previous human translations.

In conclusion, corpora have become vital resources in translation research, translator education, and machine translation development, serving both theoretical and more applied instrumental goals.

SEE ALSO: Corpora: Specialized; Translation Theory; Translation Tools

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Corpus Analysis of Business English

BETTINA FISCHER-STARCKE

International business has greatly increased over the past decades, and business transactions are frequently carried out in English. As a result, the study of business English has become an increasingly popular and important field of research with applications in teaching (e.g., Brown & Lewis, 2002) and consultancy (e.g., Baxter, Boswood, & Peirson-Smith, 2002). The term "business English" usually refers to language used in a commercial setting, for example by and with profit-oriented companies. The text types of the genre include both written and spoken language, such as letters, emails, reports, and replies to customer enquiries.

For research purposes, corpora of business language, in particular business English by native and non-native speakers of the language, have been built. Some of these are publicly available, for example:

- Business Letter Corpus (Someya, 2007a; http://www.someya-net.com/concordancer/index.html) and Learner Business Letter Corpus (Someya, 2007b; http://www.someya-net.com/concordancer/index.html); according to Lee (2009), the Business Letter Corpus consists of "1,020,060 word tokens of U.S. & U.K. samples, as of 1 March 2000. Also searchable (separately): a non-native English corpus of business letters written by Japanese business people," while the Learner Business Letter Corpus consists of "209,461 word tokens in 1,464 letters written by Japanese business people."
- Enron Corpus (http://www-2.cs.cmu.edu/~enron/), which contains about 500,000 emails by about 150 users, mostly senior management of Enron. The dataset was made publicly available during the US government investigation of Enron's business practices.
- Hong Kong Financial Services Corpus (http://langbank.engl.polyu.edu.hk/HKFSC/). In July 2009, this contained 6,727,791 words of texts collected from the Hong Kong financial services sector.
- Japanese Business News Text (Graff & Wu, 1995; http://www.ldc.upenn.edu/Catalog/CatalogEntry.jsp?catalogId=LDC95T8), a corpus of Japanese-language business and financial news. Approximately 30 million words are taken from the morning edition of *Nihon Kezai Shimbun*, the largest Japanese financial news daily newspaper; a smaller part of the corpus comes from the Japanese edition of the financial newswire *Dow Jones Telerate*.
- VOICE corpus (http://voice.univie.ac.at), the Vienna–Oxford International Corpus of English, which represents English as a lingua franca (ELF). Two of the domains included in the corpus, namely *professional business* (203,407 tokens) and *professional organizational* (354,545 tokens), are ELF business English. Data belonging to these categories can be extracted and searched separately from the rest of the corpus.
- Wolverhampton Corpus of Business English (http://www.elda.fr/cata/text/W0028.html), which consists of about 10.2 million words of written business texts from the World Wide Web collected within six months from 1999 to 2000. The texts come from 23 different Web sites of native and non-native English-speaking countries.

In addition, Nelson (2004) provides access to data generated from his Business English Corpus (http://users.utu.fi/micnel/business_english_lexis_site.htm). Moreover, the Cambridge and Nottingham Business English Corpus (CANBEC) (http://www.cambridge.org/elt/

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corpus/corpora_canbec.htm) consists of one million words of spoken data from native and non-native speakers of English mostly in the UK. This corpus, however, is owned by Cambridge University Press and is not publicly available.

This relative scarcity of corpora is due to companies' confidentiality and privacy concerns with regard to their correspondence or communications. Legal issues such as copyright, trade secrets, and infringements of personal rights make companies understandably reluctant to permit public access to their documents. Consequently, a number of linguists have compiled private business language corpora for which they were individually granted permission by the relevant companies, but which are not accessible to other researchers.

The list of corpora above reflects a bias toward written language, which is also reflected in research on business English. Moreover, corpus linguistic research often emphasizes lexis and phraseology, with pragmatics and usage being analyzed less frequently. Exceptions are Connor and Upton (2004) and Henry and Roseberry (2001). Corpus linguistic studies of business English have been conducted by, for example, Collins and Scott (1997) and Sardinha and Barbara (2008) (see Suggested Readings for further studies).

A major practical application of research into business language is the design of teaching materials. Since English is often the language of international business, it is frequently used by non-native speakers in professional interactions. Consequently, teaching business English to non-native English-speaking business students to prepare them for their future careers is an essential part of their education. The textbooks used in business English classes usually focus on both business-specific and non-specific language features such as

- terminology, for example *brand image*, *GDP* (Mascull, 2004), *direct mail*, and *sponsorship* (Brook-Hart, 2006);
- phrases to be used in a business context, for example in presentations, in reacting to follow-up questions (Harding & Taylor, 2005), and in describing survey results (Farrall & Lindsley, 2008);
- general vocabulary, for example phrasal verbs, here called "multi-part verbs," such as *point out* and *call on* (Trappe & Tullis, 2005, p. 36) and phrases for expressing disagreement (Powell, 2009).

These words and phrases reflect the authors' intuitive perceptions of characteristic linguistic features of the genre of business English, since, with the exception of Mascull (2004), none of the textbooks reviewed for this entry refers to corpus data.

The textbooks mirror a trend in research on business English toward focusing on lexis and phraseology and to put less emphasis on usage and pragmatics. The categories of lexis and phraseology taught include

1. general business vocabulary, that is, words or phrases that are used both in business and in everyday situations, such as *paid* or a phrase asking for clarification;
2. core business vocabulary, that is, terminology such as *investment*;
3. topic-specific vocabulary, that is, words and phrases that are specific to a particular business context, such as *hedging transaction risk*, a term relating to the stock market.

The focus on characteristic lexis and phraseology of business English in teaching materials reflects insights gained in previous linguistic research that some words and phrases are more characteristic of one genre or register than of another: see for example Coxhead (2000, 2002) on characteristic lexis of academic English, and Biber, Conrad and Cortes (2004) on lexicalized phrases of academic English.

Consulting a corpus for the design of teaching materials gives a grounding on which to make a decision about which words and phrases are particularly useful for students to

learn, and should therefore be included in the teaching materials. This is based on authentic data used in a business context, as opposed to an author's intuitions about the register. Unlike intuition, corpora allow us to identify those words and phrases which really are most characteristic of the register as objectively as possible. On the corpus linguistic principle that equates frequency with importance in language (Sinclair, 1991), the most frequent words and phrases of a register, as represented by the corpus, are perceived to be its most characteristic. They are therefore necessary features for the students to learn. Also, the principle of language teaching that frequent items should be taught before infrequent ones (West, 1953; Nation, 2001) supports a choice of words and phrases on the basis of their frequencies in a corpus for teaching purposes. The following analysis therefore demonstrates one way of identifying these items and of generalizing from them appropriate teaching content for business English courses for non-native speakers of English. Because of constraints on space, however, their conversion into actual teaching materials is not discussed in this entry. For the same reason, the focus of the analysis is on lexis and phraseology with the pragmatics and usage of the lexis and phrases being only minor considerations. This also reflects the main trends of research in business English.

The analysis uses the Wolverhampton Corpus of Business English (henceforth WCBE), since its compilation ensures that it gives an overview of the language used in written international business transactions by speakers of different mother tongues. This mirrors the majority of situations for which non-native English-speaking students of business English classes require English in their future working lives, that is, writing documents in English which are read by native and non-native speakers of English. Spoken interactions in English are likely to be less frequent in their future professional environments. The software used for the analysis is Word Smith Tools (Scott, 2007) and kfNgram (Fletcher, 2002).

Using such data and software guarantees that the results gained from the analysis are as independent of the researcher's intuitions as possible, and ensures that teaching materials reflect the real language usage in business interactions as opposed to how authors of teaching materials think it is used. Consequently, the findings on relevant units of teaching gained in the following analysis differ in part from the foci of current textbooks.

One way of identifying characteristic words and phrases of business English to be included in teaching materials is to extract quantitative key words and the most frequent phrases of the corpus. Quantitative key words are words which are statistically more salient in a corpus than in a reference corpus. Key words are identified on the basis of their relative frequencies in comparison to another set of data, as opposed to their raw frequencies. Phrases below are (a) uninterrupted phrases of *n* words, called n-grams, or (b) phrases of *p* words that are variable in one slot, called p-frames. The phrases are identified on the basis of their frequencies of occurrence without any semantic or pragmatic criteria. The key words are identified by comparing the WCBE with the British National Corpus (BNC), a 100-million-word corpus of general English. This comparison identifies those words which are characteristic of business English as compared to general English. The classification of a word as business-specific was, in the first step of the analysis, an intuitive process. In the second step, concordance lines of the words in question were analyzed and those words which occurred in a business context in at least 50% of the concordance lines were retained on the list.

The identification of both key words and the most frequent phrases in the corpus is based on the automatic and quantitative analysis of large amounts of text to (a) compare the lexis of two corpora with each other and (b) identify recurrent strings of words on the basis of their frequencies. Neither can be identified intuitively: the amount of data is too large to detect the patterns without the help of software. Conversely, however, the large corpus allows us to analyze a sample of the register that is as representative as possible.

The larger the representative corpus, the more likely it is that it features constituent linguistic patterns of the register with statistically significant frequency. It is these constituent patterns that students of the register need to learn, since only by knowing and actively using these are students able to produce discourse that conforms to the expectations of the register's discourse community.

The key word analysis of the WCBE when compared with the BNC identified more than 1,500 key words. This indicates large lexical differences between the two corpora and therefore between business and general English. For practical reasons, I will look at the 500 statistically most significant key words of the list.

Of these 500 key words, 305 are business-specific and 195 are general English words. The business-specific words are mostly terminology, frequently nouns, which identify business concepts, for example *investment*, *securities*, *shares*, and *commission*. Verbs include *paid*, *investing*, *purchased*, and *issued*. Some business-specific words, such as *paid*, refer to a business transaction, but have entered general English because of their very frequent usage in and reference to everyday transactions.

The findings on (a) the high number of key words identified in this analysis and (b) the high number of nouns on the list allow us to draw two conclusions that are relevant for the design of teaching materials:

1. Terminology is a characteristic feature of the register and includes terms such as *portfolio* and *stock*.
2. The register in its written form, as represented by the corpus, is mainly characterized by nouns as opposed to verbs. This reflects the tendency toward a nominal style in written general English.

Both findings mirror the contents of current textbooks.

As a second step in the analysis, the most frequent continuous and discontinuous phrases of between three and six words in the WCBE are extracted. For reasons of space and relevance, the following analysis is restricted to the top 50 n-grams and p-frames of each length. In teaching materials, however, the numbers of phrases taught could be much larger.

Table 1 lists the numbers of general English and business-specific phrases that occur among the top 50 phrases of the respective lengths. There are only 10 6-frames in the corpus that occur with a minimum frequency of 200, the threshold level used in this

Table 1 General English and business-specific phrases among the top 50

	General English	*Business-specific*
3-grams	25	25
3-frames	37	13
4-grams	16	34
4-frames	19	31
5-grams	8	42
5-frames	5	45
6-grams	5	45
6-frames	1	9

analysis. Examples for both types of phrases are *a * of the*, a general English 4-frame, and *the market value of the*, a business-specific 5-gram. Like the key words, business-specific phrases were identified in a two-part process by (a) an intuitive classification and (b) an analysis of the phrases' concordance lines.

The numbers above and the items on the lists suggest three main patterns relevant for teaching:

1. The longer the phrases are, the more business-specific they are. This confirms findings from other phraseological analyses (e.g., Starcke, 2008) which have shown that shorter phrases are open to more lexical combinations than longer ones. Because of the greater number of lexical and grammatical items included in the phrases, longer phrases are more restricted in their lexical and grammatical environments than shorter ones.
2. Many of the phrases that are categorized as business-specific are extensions of shorter phrases classified as general English. This is the case, for example, with *class a* * which becomes * *class a shares*. Changing the length of a phrase might also change its classification of being or not being characteristic of a particular register, possibly based on the occurrence of lexis that might have a different meaning in another register, for example *share*.
3. Business terminology, for instance *securities* and *asset*, is a determining factor for classifying a phrase as business-specific, for example *by investing primarily in*, which is rendered business-specific by the occurrence of the term *investing*. The classification of a phrase might therefore depend on the occurrence of specific lexis, possibly of one word only. This indicates that the lexis and phraseology of the register are interdependent. In fact, those words which render phrases business-specific are frequently identified as key words in the key word analysis presented above.

On a more general level, the phraseological analysis of the WCBE has identified three types of phrases. One type is what I call *terminological phrases*, that is, phrases which express a particular concept and have to be learned as one unit. An example is *the securities act*, which specifies a particular law. These phrases are complementary units of both lexis and content, in this case the regulations set out in *the securities act*. Language and content cannot be separated.

The second type is fixed phrases, n-grams, which are not business-specific, for example *in connection with*, which might characterize a formal written style.

The third type is both general and business English p-frames which are more compositional in nature in that they are flexible in one slot, for example *the * of the* and *net asset value* *. In the WCBE, the most frequent realizations of the * in the first phrase are *value, end, date, terms*, and *time*, and *at, the, and*, *fund's*, and *in* in the second phrase. They are combinations of both the phrase and the fillers of the variable slot which are, in fact, the phrase's collocates and paradigmatic variables. Being able to combine them allows learners of the register to produce idiomatic language.

All three types of phrases are characteristic features of the register, and it is the co-occurrence of the characteristic phrases and lexis in the discourse which transforms general English into business English and also allows the two to co-occur. Reflecting this is a main concern of business English textbooks.

Taking the lemma SHARE*, that is, the node word *share* with every possible realization of the * such as *shared* and *sharing*, as one example for a practical application of these findings, Table 2 shows its numbers of occurrences as part of the n-grams and p-frames and its co-occurrences with the node word *class*. Both lexical items are also identified as key words in the corpus.

Table 2 Occurrences of SHARE*

n/p	*Number of n-grams which include SHARE**	*Number of p-frames which include SHARE**	*Number of n-grams which include SHARE* and* class	*Number of p-frames which include SHARE* and* class
3	6	4	4	1
4	12	16	11	14
5	10	16	9	14
6	9	3	8	3

The high number of occurrences of SHARE* as part of the corpus's most frequent phrases and the high number of co-occurrences of SHARE* and *class* indicate (a) the importance of the vocabulary of shares and the share market in general within the register, and (b) that shares are frequently defined and identified, for example by mentioning their class. This defining of shares often follows two grammatical patterns. First, in 61 of its 76 occurrences, SHARE* stands to the right of a determining or defining word or phrase, for example *the class * share* and *the net asset value per share*. Second, SHARE* is used in passive constructions in seven instances, for example *shares are subject to ** and *if shares are redeemed*, and in a further four instances SHARE* is the object of an action, for example *purchase of class a shares*. Active voice constructions or phrases in which SHARE* functions as agent, for example a description of a share's performance, do not occur among the corpus's most frequent phrases and therefore seem to be less frequent in language usage than passive constructions. These grammatical patterns could be reflected in teaching materials.

The pragmatics of business English, for example politeness and conventions for small talk in a business context, are more difficult to identify in a frequency-based corpus analysis than the features discussed above. Nevertheless, the occurrence of the modal verbs *may* and *shall* in the list of key words might indicate the salience of politeness and therefore of pragmatics in the genre.

An analysis of their concordance lines, however, shows that *shall* mainly occurs in legal contexts such as specifying requirements, rights, and obligations. Its most frequent collocates at L1 (immediate left) are *fund, and, committee, board*, and *plan* and at R1 (immediate right) are *be, not, have, include*, and *become*. This stresses the importance of legal English, which is not featured in many business English textbooks, for business English.

May, on the other hand, is mainly used as a marker of politeness with *fund, you, which, and*, and *it* as its most frequent L1s and *be, also, not, invest*, and *have* as its most frequent R1s. This is a possible starting point for the discussion of the linguistic means and the significance of politeness in business discourse and therefore for teaching pragmatic conventions in business English.

Using frequency criteria based on a corpus linguistic analysis for the selection of units of teaching in business English classes may suggest a shift in focus of currently used teaching materials. The corpus linguistic evidence suggests that the strong emphasis on lexis in teaching materials might be shifted to include both lexis and phraseology as well as a stronger focus on the pragmatics of politeness in business English and the salience of legal English. This includes lexis and phraseology which are both business-specific, that is, business terminology and terminological phrases, and general English. Only by teaching and, from the students' perspective, learning these various aspects of the genre can the learners become competent members of the discourse community of business English.

SEE ALSO: Biber, Douglas; Corpora: English-Language; Corpora: Specialized; Corpus Analysis for a Lexical Syllabus; Corpus Analysis of Key Words; Corpus Analysis of Language in the Workplace; English as Lingua Franca; Sinclair, John; Corpora: Specialized

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Corpus Analysis of Child Language

HEIKE BEHRENS

Corpus research has a long-standing tradition in child language research: Observational data provide the basis for our knowledge about developmental processes including their individual and crosslinguistic differences (for more detail, see Behrens, 2008). But the analyses critically depend on an appropriate corpus design that provides sufficient information on and appropriate transcription and annotation of the linguistic structures at stake. In the following, I will discuss the implications for analysis that result from corpus design, and outline the main research questions addressed by corpus analyses of child language. I will conclude with a sketch of the research perspectives made possible by new achievements in corpus linguistic methodology.

Corpus Design

The design for collecting naturalistic, spontaneous speech corpora proceeds along five dimensions: participant selection, the mode of recording, the types of interaction to be recorded, the sampling regime, and the length of the recording period.

Participant Selection and Recording Choices

The most traditional forms of language acquisition corpora derive from longitudinal case studies, often of the researchers' own child or children. Recording one's own children not only allows easy access and a naturalistic setting, but also facilitates the interpretation of the children's utterances because one is familiar with their pronunciation and way of talking, their past experiences, and the current setting. However, this type of subject selection led to a bias in the socioeconomic background as this procedure self-selects middle-class and highly educated families. The Harvard project initiated by Roger Brown was among the first to include children from different socioeconomic backgrounds (Brown, 1973).

The earliest corpora on language development were parental diaries. Diary notes can be taken everywhere. The only imperative is that the notes be taken on the spot, as people's long-term verbal memory tends to be poor. To date, audio or video recordings seem to be the most natural choice since they capture the signal authentically. But recording technology imposes some constraints on the situations that can be recorded. To improve comprehension and to make transcription easier, it is preferable that only few people take part in the activities, that the interaction take place in a quiet environment, and that play activities which involve a lot of noise be avoided. Also, the presence of recording technology may make the situation less natural. Recordings in other family homes typically involve the participation of researchers who take care of the recording, especially when video recordings are made to follow the face-to-face interaction of the children as well as their focus of attention in a particular situation. These researchers can assume the role of "wallpaper" by not participating in the interaction and taking notes about the situation instead (e.g., Hart & Risley, 1995), or they can actively engage with the children and their families and assume the role of a family friend. In order to avoid the involvement of extra-family

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members in the recording situation, the families could be equipped with mobile equipment such that they can carry out the recordings themselves.

Regarding the situations to be recorded, most longitudinal studies in first language acquisition try to capture the naturalistic interaction between the children and their social environment and thus focus on play situations and mealtime conversation. But the research design can be also be comprehensive and geared to sampling a more representative array of interactional situations in order to achieve a complete picture of the child's linguistic and conversational abilities (Roy, 2009). Such a comprehensive picture requires a large number of recordings and faces the transcription and coding bottleneck.

Sampling Regime and Corpus Size

With the rise of corpus linguistic methods and analyses, there is growing awareness of the interdependence of corpus size and the chance of finding the structures under investigation. When the sampling density is too low, rare structures may be missed completely in a particular sequence, or only individual exemplars may be sampled that are hard to interpret developmentally. Studies from the 1950s to the 1990s typically recorded the children every two or four weeks for 30 minutes or an hour. While the amount of data obtained in this way allows us to trace the main aspects of development, the data generally do not suffice to study the development of complex and low-frequency phenomena, and they typically do not suffice to assess the productivity even of common structures. In a new type of dense databases one or two hours per day are recorded for longer time intervals (Lieven, Behrens, Speares, & Tomasello, 2003; Behrens, 2006). These dense databases reveal fine-grained developmental processes as well as variability of language use in children and adults. With limited transcription capacity, dense recording cycles with long breaks (e.g., one or two weeks of dense recording every two months) may provide a better picture of the child's level of achievement than single recordings every couple of weeks. The most complete record of language development is Deb Roy's full-time observation of his son. The amount of data gathered from several fish-eye cameras can only be transcribed and analyzed with the help of specifically developed tools for automatic data recognition (Roy, 2009).

The relationship between sample size and research question has implications for the corpus size needed: Studies of phonetics usually require smaller corpora, whereas large samples are essential for the study of rare and complex constructions (Demuth, 2008). Statistical estimates help to assess the amount of data necessary in order to find a sufficient number of examples in a corpus (Tomasello & Stahl, 2004; Rowland, Fletcher, & Freudenthal, 2008). To increase the frequency of the construction at stake, targeted sampling methods, for example diary notes or settings with stimulus material, can provide a reasonable amount of data for a limited domain within a reasonable amount of time. In targeted designs certain tasks (e.g., picture-book descriptions) are repeated, or props and activities are used to elicit certain structures such as spatial language or passives. Stimulus material also helps to confront the children with linguistically challenging situations and to compare their performance in new versus routine situations (Eisenbeiss, 2009). With appropriate instruction children's caregivers can be trained to collect targeted data such that larger populations can be studied.

Longitudinal and Cross-Sectional Designs

Most corpora of child language follow a longitudinal design and trace children's development over a period of one or more years. Existing longitudinal corpora tend to focus on the age range of 1.5 to 3.5 years because of the current research interest in the earliest

stages of development and because of the belief that most of language development is achieved in the preschool period. Consequently we have only a very limited understanding of children's spontaneous language use between early childhood and school age. Furthermore, there are methodological problems in comparing data obtained at home and in school since the early child language data typically stem from free play situations and everyday interactions at home, whereas the corpus data of older children tend to come from targeted elicitation contexts such as narratives, picture-book descriptions, and experiments.

Longitudinal studies tend to be restricted to a few children only because of the transcription bottleneck and because the families involved need to be committed to the study in order to maintain a recording scheme over several years. Moreover, long-term developmental processes can only be analyzed after the study has been completed.

Cross-sectional designs can be used to study several children of different age-groups at the same time. Most cross-sectional studies follow a targeted design: Picture-book descriptions provide information on children's narrative competence at different ages and across different languages (e.g., Berman & Slobin, 1994), and elicitation tasks can be used to gather data longitudinally as well as cross-sectionally (Rowland & Theakston, 2009; Theakston & Rowland, 2009). The developmental state of specific groups or children can also be correlated with other measures (IQ test, language development score, vocabulary size), and can be used to investigate the variability within a particular population.

Transcription and Data Storage

Transcribing naturalistic, spontaneous interaction requires decisions on the accuracy of transcription (standard orthography or phonetic and prosodic accuracy), the delineation of units (clauses, sentences, or utterances), and the inclusion or exclusion of context information. These decisions have trade-offs for analysis as transcripts with standardized orthography can be coded and analyzed more easily than a transcription that represents articulatory variation faithfully. Misrepresentation of the data through standardization can be avoided by marking deviations from the standard with special markers and by linking the transcription to the original sound or video signal such that it is possible to go back to the original signal, or by transcribing the data at several layers (e.g., phonetic and orthographic transcription). The Child Language Data Exchange System (CHILDES: http://childes.psy.cmu.edu/) developed and maintained by MacWhinney in interaction with the child language research community provides transcription guidelines for child language data (CHAT: Codes for Human Analysis of Transcripts) as well as the program package CLAN (Child Language ANalysis) specifically designed for the analysis of CHAT-transcripts. CLAN offers programs for frequency statistics, searches, collocation analyses, and much more (see MacWhinney, 2008b). CHILDES also hosts the publicly available archive for child language acquisition data, currently comprising 44 million words from 28 languages (MacWhinney, 2008b), and makes them accessible by indexing each file with metadata (e.g., codes for the language[s] spoken, the speakers, their socioeconomic background) according to the Talkbank protocol (www.talkbank.org). Fast-moving developments in information technology require continuous maintenance of digitized data, not only to exploit the latest technological developments, but also to prevent data from being lost on obsolete platforms or outdated and inconvertible database programs. Since the 1980s, the CHILDES system has been adapted to the latest technological developments and is now available in a platform-independent UNICODE format. Currently, a standardized and automatic morphosyntactic annotation system is being developed (MacWhinney, 2008b).

Analyses

Developmental Trajectories

The most obvious focus of corpus-based first language acquisition research is to establish developmental trajectories regarding structural phenomena (phonetics, morphology, syntax, and the lexicon). In the earlier phases of corpus research, studies focused on the age and order of acquisition. Ideally, trajectories of different children are compared to establish, for example, the rank order of the emergence of morphology (Brown, 1973).

Semantic and pragmatic development is hard to access through corpora because, even if children produce a word correctly and appropriately, we do not know whether they have understood the full meaning of the word in the adult sense, especially since context information tends to be scarce in most published corpora. Semantic overgeneralizations are rare and better assessed through the diary method (Clark, 1993).

Despite almost 50 years of tape- and video-recorded corpus collection, only a limited number of languages have been studied, and for most of these languages we only have records of few children, studied for a short period. Thus, our knowledge regarding individual variation in child language is very limited, especially since the research focus was on establishing general patterns of development. Another limit is the age range sampled: Most corpora focus on the period between the ages of 1.5 and 3.5, and there are only few longitudinal datasets that cover the onset of schooling (e.g., the German Rigol Corpus on CHILDES). Because of the transcription bottleneck it is not expected that we will gather sufficient naturalistic data to allow for the study of individual differences. Here, training studies, standardized questionnaires, elicitation data, or experimental data will be more efficient methods of assessing individual differences and variation in learning strategies.

One of the major aims as well as one of the major problems in research on language learning is the assessment of productivity, defined as the capacity of the child not just to reproduce a linguistic structure, but also to have at least an initial understanding of its structural properties and its function. The mere occurrence of a structure does not attest its mastery. There are numerous criteria for productivity, ranging from variability in form (e.g., an item should be used in at least two or three different contexts), to quantitative criteria assessing almost adult-like mastery (90% correct usage in obligatory contexts; Brown, 1973), to an assessment of adult-like creativity including (experimental) evidence that the child is able to apply the structure to previously unknown lexical material such as nonce words (Tomasello, 2000). The question of what counts as acquired is also theory dependent. Usage-based theories of acquisition assume that children build up linguistic knowledge gradually. Consequently, productivity develops from unproductive reproductions to a more and more flexible usage (Tomasello, 2000). Nativist approaches to acquisition assume that children are innately endowed with conceptual and/or structural knowledge and that this knowledge is accessible to children. In this view, innate knowledge provides both pathways and constraints for acquisition that account for inter-individual commonalities and low error rates (Goodluck, 2009). Because of these different theoretical vantage points in child language studies, the evidence and its interpretation does not lead to a coherent picture of language acquisition across the theoretical divides (see Ambridge & Lieven, 2011, for a comparison of the different empirical predictions).

Interaction of Linguistic Variables

Crosslinguistic comparisons help to distinguish language-general, possibly universal, learning processes from language-particular ones (see the seminal project initiated by Slobin that compared data from more than 20 typologically diverse languages with respect to a wide range of linguistic domains and their developmental trajectories; Slobin, 1985–97).

Crosslinguistic differences in form–function relationships and corresponding differences in the order of acquisition help us to identify what makes a language hard or easy to learn. Bates and MacWhinney developed the competition model in order to assess the reliability of a linguistic cue (Bates & MacWhinney, 1982; see MacWhinney, 2008a, for its development into a processing model for L1 and L2 acquisition). Cue reliability is a function of cue availability (the frequency with which it occurs) and cue validity (the uniqueness with which it encodes a particular function). If a cue is frequent and unique, it is easier to learn than when it is rare and multifunctional. The competition model can be applied to complex linguistic structures where many cues interact. Cues such as word order, morphology, and the animacy of the noun-phrase referent contribute to sentence processing. If these cues are assessed language by language it is possible to show how they compete in order to predict developmental trajectories crosslinguistically (Kempe & MacWhinney, 1998).

In the study of the interaction of variables, traditional corpus research is inspired and supplemented by connectionist modeling and computational linguistics. Connectionist models simulate neural networks to study learning processes. Initially, these processes were modeled with hypothetical data, but more recently input data from child language corpora have been used (Westermann, Ruh, & Plunkett, 2009). Connectionism is related to dynamic systems theory: Both view linguistic categories as emergent, but may differ in their view on the internal mental representations of grammar. Dynamic systems theory also views linguistic structure as embodied and includes non-linguistic variables as well (Hockema & Smith, 2009). Computational models of language acquisition focus on the acquisition of phonology and syntax, especially in the probabilistic basis for category formation. Such models differ in the linguistic structures they assume. Some models work bottom-up and derive structure probabilistically from co-occurrence relations (Redington, Chater, & Finch, 1998); others start out with assumptions about the underlying tree-structure of language (Bod, 2009).

The Role of the Input

What kind of information is available to language learners and how do they make use of it? In nativist frameworks, input was long disregarded as a major force for language development, but in functionalist, constructivist, and usage-based approaches to language acquisition, linguistic structure is supposedly derived from the child's interaction. If language acquisition is input driven, there should be a close resemblance between child language and the data the particular child is exposed to (Behrens, 2006). This does not imply that children do not generalize beyond what they hear, but it is hypothesized that generalization is gradual and based on abstraction over positive data. Critically, child language does not emerge as a mirror image of the adult language: Perceptual factors (e.g., prosodic prominence, perceptual salience) and functional factors (e.g., communicative usefulness, semantics) influence what children learn first (Clark, 2009). To date we have only very limited knowledge of the linguistic evidence available in the input (e.g., Cameron-Faulkner, Lieven, & Tomasello, 2003). But with the new fully parsed databases a more comprehensive picture of the adult language and the way in which children make use of this information is within reach.

Perspectives and Desiderata

New perspectives for corpus research on L1 acquisitions not only include the study of more and typologically diverse languages and the study of later L1 development, but also a better use of the existing data for research synthesis and validation across corpora and the inclusion of non linguistic information provided by the discourse context.

Language acquisition research follows the general trend in social sciences from qualitative to quantitative studies. Studies based on corpora can provide basic insights that can help formulate subsequent experimental studies. But most individual corpora are too small to allow valid generalizations. Despite the availability of a range of corpora in the CHILDES database, most corpus studies do not make use of the full range of corpora that are relevant to a particular question. However, with the new tools for morphosyntactic analyses, comparative studies across parsed corpora will become easier and more efficient. But standardization also leads to information reduction as a particular level of transcription and a particular level of coding is chosen. Hence researchers need to familiarize themselves very carefully with what information is and is not available in the database to avoid unwarranted conclusions from comparative quantitative analyses.

The use of the full quality of the signal is also important. The majority of corpus studies focus on the linguistic information alone. But communication is embedded in a real-life context with the presence of discourse partners and their linguistic and non linguistic behavior. The discourse context can influence what needs to be encoded or not, or how a particular utterance should be interpreted. Researchers studying the acquisition of argument structure have developed methods to check whether and how this additional information affects the sentence structure of children and adults (see Allen, Skarabela, & Hughes, 2008). In early child language, for example, objects that are physically present and perhaps even jointly attended are often omitted in speech. In most publicly available corpora, context annotation is too scarce for such analyses, and access to the original video recording is necessary to study factors like gaze direction and joint attention.

Another domain for innovative L1 corpus research lies in diagnostics. As stated above, establishing the order of acquisition and the normal course of acquisition of a particular language is one of the major aims of corpus linguistic child language studies. But for several reasons the evidence we have is scattered: partially because of the limited size of the database for many of the languages studied, partially because of the lack of meta-analyses for those languages for which larger databases are available, and partially because of the lack of research syntheses that summarize the results from the studies available. Consequently there is a gap between the results from base research on first language development studies and the data needed for purposes such as speech therapy and early intervention. Hart and Risley (1995) conducted an observational study of 44 US children's early language development, and were able to follow the achievement of most of these children at school age. It turned out that the best predictor of these children's success at school was the amount of input they received in early childhood. The amount of input was correlated with conversational style, as encouraging input tends to be richer in vocabulary and syntactic structures than an interactive style that mainly consists of prohibitions.

In summary, we expect to see methodological advances with respect to quantitative analyses. With the availability of more data that are transcribed and coded according to the same standards, it will be possible to study the acquisition of rare structures more closely, and to conduct statistical tests that help us to overcome the problem of the interpretation of small datasets. But we also expect advances in qualitative studies: With the increased interest in the situational and communicative grounding of language and language acquisition, analyses of the non linguistic and linguistic information captured on video together will provide a better picture of how interaction shapes the course of language acquisition.

SEE ALSO: Competition Model; Connectionism; Corpora: Multimodal; Corpus Linguistics in Language Teaching; Corpus Study: Cognitive Implications; Emergentism; First Language Development of Grammar; Learner Corpora

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Corpus Analysis of English as a Lingua Franca

BARBARA SEIDLHOFER

The acknowledged advantage of corpus linguistics is that it provides access to data derived from actually attested language upon which a reliable description can be based. This enables linguists to make use of observation rather than being dependent on less reliable data, based on either introspection or elicitation. A prior decision that has to be taken, however, is what kind of attested language is to be selected.

As far as English is concerned, the important corpora have been predominantly those capturing English as a native language (ENL), reflecting the usage of so-called educated and predominantly British and American native speakers of the language. Corpora have also been compiled of an array of varieties of English mostly in postcolonial settings where English is an official additional language, and this has supported descriptive work especially in the field of World Englishes. The scope of these corpora is primarily defined by reference to particular speech communities residing in certain countries or regions. The assumption here is that the usage of the speakers belonging to these speech communities represents different varieties of the language—British English, East African English, and so on (see, e.g., Kortmann & Schneider, 2008).

What has so far received very little attention from corpus linguistics is the essentially extraterritorial use of English as a lingua franca (ELF) for international or intercultural communication. Defined as the common means of communication chosen by speakers from different linguacultural backgrounds, ELF does not fit the essentially geographical concept of "varieties" tied to speech communities mentioned above. ELF is used among people that may be native or non-native speakers of English, but the ethnographic and sociolinguistic reality today is that the vast majority of ELF users have first languages other than English. This means that countless interactions worldwide take place every day in which only a very small minority of native speakers of English, if any, participate.

This global use of the language is noteworthy not only because of its extent, but also because of its sociolinguistic significance, representing as it does the very dynamics of the process of language variation. And yet it has remained virtually undescribed. At a time when the electronic means for such description are readily available, it is a curious anomaly that the very technological development that is both cause and consequence of the global spread of English has not been applied to investigating ELF. Instead of being seen as exemplifying natural and necessary linguistic vitality, and an obvious object of the kind of observation that corpus linguistics can uniquely provide, ELF has generally been subjected to impressionistic judgment and often dismissed as deviant, especially in English-language teaching circles.

But the late 1990s saw the beginning of a lively and controversial debate about the recognition of ELF as a phenomenon that was worth studying in its own right and called for a rethinking of established sociolinguistic ideas. Alongside arguments for the conceptualization of ELF as a natural, variable use of the language (e.g., Seidlhofer, 2001; Widdowson, 2003), a number of small-scale empirical studies were published. Jenkins (2000) was a particularly significant publication: The book's focus is on phonology, but the empirically

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based discussion of issues of international intelligibility, of relevant sociolinguistic and sociopsychological research, and its delineation of applied linguistic implications for teaching, fueled demand for a broader empirical basis for the description of ELF interactions.

Around the beginning of the millennium the case for corpus-based descriptions of ELF to remedy its neglect was sufficiently recognized to attract funding and, since then, empirical research on ELF usage has been gathering momentum. In addition to a growing number of published and unpublished PhD theses on various aspects of ELF based on "personal" corpora that are not in the public domain, there are now two corpora explicitly designed for the investigation of ELF usage: VOICE, the Vienna–Oxford International Corpus of English (VOICE, 2009; http://www.univie.ac.at/voice/), and ELFA, the Helsinki-based corpus of English as a Lingua Franca in Academic Settings (see Mauranen & Ranta, 2008; http://www.uta.fi/laitokset/kielet/engf/research/elfa/corpus.htm).

VOICE and ELFA each comprise about 1 million words of transcriptions of recordings of spoken interactions among speakers of many different first languages carried out through ELF. For researchers interested in language variation and language change—obviously a key concern of the study of ELF—a focus on the spoken medium is essential, as it is in speech that variability in language is most readily discernible. Since the primary interest of ELF research is to further the understanding of how the language develops when used for intercultural communication, predominantly by non-native speakers across the boundaries of primary speech communities, it stands to reason that the first ELF corpora should be focused on capturing how ELF is spoken rather than written. Observing how interactants negotiate meaning in real time, in spontaneous, non scripted speech events, removes the standardizing pressure of writing. In addition, when the speech events are highly interactive, researchers can also gain some measure of insight into how mutual understanding among the interlocutors is co-constructed.

The speech events captured in both corpora are naturally occurring; this means that the interactions they record were not specially arranged, nor were they elicited, but they would have happened anyway, whether the researchers were there to record them or not. There are no speech events with speakers who all share a first language, nor are there English-language lessons. Both corpora contain transcriptions of complete speech events rather than samples or extracts of longer texts. In the case of VOICE at least, this decision was taken in order to also allow for qualitative analyses of the corpus texts, in the sense that corpus users would not be limited to sampling the corpus in an essentially context-deprived fashion, homing in on individual words and word clusters with the help of the usual corpus tools. Instead, it should be possible to access and make sense of entire speech events, as a frame for what the participants experience, as an analytic construct for the researcher, and as a complete and meaningful unit for the corpus user. This decision, of course, meant that the corpus contains transcripts of interactions of varying length, ranging from a few minutes up to several hours.

The two corpora differ most significantly in their domain coverage. ELFA focuses on the academic use of ELF, whereas VOICE covers three domains: educational, leisure, and professional (the latter subdivided into business, organizational, and research/science). This difference of coverage provides for the possibility of undertaking small-scale comparisons of findings to investigate whether certain patterns are likely to be domain-specific or specific to ELF usage more generally. In terms of first languages represented, both cover a wide range, but VOICE has a primary (but not exclusive) European focus. However, the work of VOICE has been extended in that it has provided the methodological basis for another, complementary ELF corpus in the "ASEAN + 3" region (Association of Southeast Asian Nations plus Japan, South Korea, and China), being prepared by a project consortium with its center in Hong Kong (see Kirkpatrick, 2010; http://www.ied.edu.hk/rcleams/view.php?secid=227).

Another significant difference between ELFA and VOICE (at the time of writing in 2010) is that while ELFA, according to the project Web site, "will be available to researchers on request," presumably on-site, VOICE is in the public domain: VOICE Online 1.0 was released for free Internet access in 2009, with the release of the XML corpus to follow, together with a handbook. This open-access policy, which VOICE follows as a matter of principle, is especially important for applied linguistics in that it enables researchers to draw on the resources of the corpus as appropriate to their particular inquiries and to check on findings that other researchers have derived from the data.

The compilation of VOICE has posed an array of interesting methodological challenges right from the start, comparable in some ways to the recording of an unknown language. On the one hand, the purpose of VOICE is to provide a basis for analyzing ELF and, since this is a use of English that has hitherto not been described, let alone codified, it would have been counterproductive to rely on taken-for-granted assumptions based on encoded varieties of English. On the other hand, if spoken ELF was to be converted into consistent, computer-readable transcripts, these had to be modeled on some existing orthographic system. But if neither British nor American spelling is actually suggested by the speakers' pronunciation, which one should be used when transcribing their speech? The decision was therefore taken to adopt neither entirely British nor entirely American spelling, but to introduce a (clearly defined) degree of fusion of the two. The intention behind this was to give the ELF speakers in the corpus their own voice, so to speak, to achieve a certain symbolic degree of dissociation from either British or American English, and to reflect the intrinsic hybridity of ELF talk—while still retaining the consistency that computer-readability and retrievability requires.

As for markup, particular tags absent or optional in other transcription conventions are employed frequently in VOICE because observation of the ELF interactions suggested that certain features have a high functional load. For instance, utterances spoken laughingly are put between "<@> </@>" tags, and special tags are used for speaking onomatopoeically, for marking non-English speech, and for pronunciation variations and coinages: "yes and also <pvc> *financiated* {financed} </pvc>" (VOICE, 2009, POwgd325).

A precise description of all markup and spelling conventions is available on the project Web site, and the rationale of the decisions taken is described in detail in Breiteneder, Pitzl, Majewski, and Klimpfinger (2006). The operationalization of these conventions posed a challenge since transcribers had to be trained to override their natural inclination to report what they supposed was said from an ENL viewpoint instead of recording what was actually said.

While many problems were operationally resolved, the whole undertaking of compiling an ELF corpus has been accompanied by a keen sense of the tension between the great potential of a corpus for getting at textual facts on the one hand and its considerable limitations when dealing with language use "in the real world" on the other. This is why, from the very beginning of work on ELF description, it was regarded as crucial that the design of VOICE should strive to counteract some of the inevitable drawbacks of a corpus (and a relatively small one at that) by laying particular emphasis on factors that support corpus users in their attempts to develop an emic understanding of the speech events in the corpus, what the purpose of the interaction is, what the relationships are between the speakers—in short, "to figure out what the devil they think they are up to" (Geertz, 1983, p. 58). The design features that support this approach are complete speech events; abundant contextual information; and a very high degree of interactivity rather than monologues, which would provide no clues as to how participants negotiate meaning and jointly construct their shared communicative resource. In addition, a number of sound files of the original recordings will be made available and the possibility of providing part-of-speech

tagging is being investigated. But obviously, severe limitations remain as to what can be captured in such a corpus.

The descriptive work on ELF has not mainly been on linguistic forms as such, but on the communication processes the forms point us to, on trying to get at what these forms are symptomatic of—how ELF users exploit and shape the underlying resources of the language to achieve their communicative outcomes (for examples see references in Seidlhofer, 2009). Over recent years, corpus-based studies of ELF talk have become available, and many of these are listed on the VOICE and ELFA Web sites. ELFA's sister project SELF (Studying in English as a Lingua Franca; http://www.eng.helsinki.fi/elfa/self) investigates how speakers experience and negotiate ELF in their academic activities. The first comprehensive collection of ELF studies based on various sets of data but also on the two ELF corpora discussed here is Mauranen and Ranta (2009). These descriptive findings raise important issues about what "English" is and how it can be described, and they demonstrate that ELF usage cannot be dismissed as defective or deficient English. On the contrary, corpus findings reveal how its users appropriate and exploit linguistic resources in complex and creative ways to achieve their communicative purposes.

While some of the forms studied in learner corpora (see, e.g., Granger, 2003) will be the same, the interpretation of these forms is very different: They point us to the processes by which interlocutors from diverse first languages appropriate and adapt English for their own needs. The variety of linguacultural backgrounds that come into contact through ELF talk make for a high degree of fluidity and hybridity of forms, but certain regularities, particularly in the strategic uses of ELF, are beginning to emerge from various descriptive studies. They reveal how speakers draw on the underlying resources of the language, not just the conventional ENL encodings, and adjust and calibrate their own language use for their interlocutors' benefit. These insights in turn have shed new light on established concepts of "community" and "variety" and provide pointers as to how these may have to be reappraised when confronted with the unprecedented global phenomenon of ELF.

The applied-linguistic implications of corpus-based descriptions of ELF are potentially vast, since, if we want to understand how intercultural communication in a globalized world works, how it may be improved, and how it can be made amenable to teaching, we need to understand how ELF is used. For instance, an enhanced understanding of ELF interactions is a prerequisite for coping with typical ELF situations in peacekeeping operations, conflict resolution, and asylum-seeker interviews. Another application is the possibility of developing speech-recognition systems for non-native English speech, and of course the design of ELF teaching and testing materials. To mention another example, in linguistically diverse contexts such as the institutions of the European Union, where simultaneous interpretation is used on a large scale, English is increasingly used as a relay language. This English, however, is not ENL but ELF, and there is now a heated debate in the profession about how the training of interpreters and translators can take this fact into account.

ELF corpora also bring to critical attention another issue in applied linguistics, namely the relationship between linguistic description and pedagogic prescription. It has been proposed that the patterns of so-called real or authentic native-speaker usage that a corpus can reveal should be prescribed as the content of courses in English as a foreign or other language (see Wichmann, Fligelstone, & Knowles, 1997; Aijmer, 2009). The assumption here is that conformity to ENL norms of usage is necessarily the one and only valid objective for foreign learners of the language. The widespread use of ELF calls this assumption into question: What ELF corpora show is that international users of English are capable of communicating effectively without such conformity and it seems reasonable to suggest that this capability should be a major consideration when deciding on pedagogic priorities in the design of courses of English as a global international rather than a local national language.

SEE ALSO: Analyzing Spoken Corpora; Conversation Analysis and Lingua Franca; Corpora: English-Language; Corpus Analysis of English as a World Language; Corpus Analysis of European Union Documents; Corpus Analysis of Spoken English for Academic Purposes; Learner Corpora

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Corpus Analysis of English as a World Language

ANDREA SAND

Introduction

Academic interest in the field now referred to as "English as a world language" arose out of the realization that there is more to the English language than British English and that the English language had in fact changed radically by becoming a language spoken around the globe. The linguistic study of English as a world language emerged in the late 1960s and early 1970s, as the bibliography compiled by Viereck, Schneider, and Görlach (1984) documents in great detail. Initially, the main focus of research was on native speaker (L1) varieties, such as American English, Canadian English, Australian English, or New Zealand English, but in the late 1990s and early 2000s, a wealth of studies has been published on postcolonial second language (L2) varieties, also called New Englishes or indigenized Englishes. These varieties of English are mostly used as an official language in former British colonies and thus in a number of public domains, such as administration, education, or the media. They are generally spoken only as a second language by the majority of the population. Today, the terms "English as a world language" and "World Englishes" tend to be used mainly in reference to the latter group, which includes varieties such as Indian English, Singapore English, Nigerian English, Kenyan English, and Jamaican English. As corpora of English as a foreign language (EFL), English as a lingua franca (ELF), and learner language are discussed elsewhere in this encyclopedia they will not be covered in this article, although they might also be considered part of "English as a world language."

At about the same time, the field of English corpus linguistics was also developing, with the compilation of the first computer-readable 1-million-word corpora, the Brown Corpus of Written American English (Brown) in 1963–4 and the Lancaster–Oslo–Bergen Corpus of Written British English (LOB) in the late 1970s. Both Brown and LOB cover 500 texts of 2,000 words, all published in 1961. The same number of samples was taken from a variety of genres, including news reportage, science, religion, government documents, and fiction. The availability of these two closely matched sets of data triggered a flurry of systematic cross-variety comparisons which also lead to the publication of corpus-based dictionaries and grammars, while the studies describing the features and sociolinguistic status of World Englishes in the 1970s and 1980s relied on more traditional data collection methods, generally favoring a rather impressionistic "feature-list approach," that is listing phonological, morphosyntactic, lexical, or stylistic features believed to be particular to or characteristic of a given variety. In most studies, no information was provided on the frequency of a given feature or any indication of whether it is restricted to speech or writing.

Pioneering Corpora

The breakthrough for a corpus-based approach to studying World Englishes was the compilation of the Kolhapur Corpus of Indian English at Shivaji University, Kolhapur, between 1980 and 1986. The Kolhapur Corpus is designed to match LOB and Brown as

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closely as possible, while at the same time reflecting the realities of English in India. It consists of texts published in 1978 and its structure closely resembles that of LOB and Brown, but some of the text categories have been weighted differently. There are, for example, fewer religious tracts and fewer institutional reports, but more government documents than in the two other corpora. The differences are greatest in the fiction section, where the subsections "Western fiction" and "detective fiction" had to be replaced by other text types, as they were not available in Indian English. Nevertheless, the corpus provided the first opportunity of systematically comparing Indian English to British or American English, and of allowing quantitative analyses (see Shastri, 1988).

In the following years, two further native-speaker varieties followed suit: In 1990, the Australian Corpus of Written English (ACE) was released at Macquarie University, Australia, compiled according to the Brown and LOB guidelines of texts published in 1986 (see Green & Peters, 1991). In 1998, two New Zealand English corpora became available. The Wellington Corpus of Written New Zealand English (WWC) also mirrored the format of the earlier corpora with material published between 1986 and 1990. Additionally, the Wellington Corpus of Spoken New Zealand English (WSC) consisting of 1 million words of spoken English, including monologues and dialogues in private and public settings recorded between 1988 and 1994, was compiled to provide researchers with spoken data as well (see Holmes, Vine, & Johnson, 1998). Some of the spoken data recorded for the WSC was later also used for the New Zealand component of the International Corpus of English, the most ambitious and most comprehensive project with regard to corpora of World Englishes.

The International Corpus of English (ICE)

In 1988, Greenbaum made a proposal for an international corpus of English, which was to include 1-million-word subcorpora from L1 and L2 varieties and cover written and spoken genres alike. In order to allow text-linguistic and pragmatic research as well as morphosyntactic and lexical research, the option of including full texts in addition to the 2,000-word samples in the form of a monitor corpus was envisaged. This meant that the subcorpora could be accompanied by a collection of full-length texts to allow access to the context of the samples. These changes with regard to the first generation of 1-million-word corpora were due to changes in the major research paradigms in linguistics, in which the role of context and of spoken discourse had become gradually more important over the years.

The design of the ICE corpora is weighted toward spoken language, with 300 spoken samples out of a total of 500 2,000-word samples. Of these 300 texts, one third is made up of natural face-to-face conversations. Also included are telephone conversations, class lessons, broadcast discussions, parliamentary debates, legal cross-examinations, and business transactions, as well as monologue text types, such as spontaneous commentaries, unscripted and scripted speeches, demonstrations, legal presentations, broadcast news, and broadcast talks. The written section consists of 200 text samples and includes non-printed material such as student essays and exams as well as social and business letters. The printed genres are very similar to those represented in Brown and LOB, covering press text types, academic and popular informational texts, administrative and instructional writing as well as fiction. The design of the corpora thus enables linguists to study variables in highly formal registers (e.g., scripted speeches, academic writing) as well as in very informal settings (e.g., conversation, personal letters; see Nelson, 1996a). Originally, a collection period between 1990 and 1994 was envisaged, but as new teams have been joining until very recently, the material will eventually cover a much larger time span (Greenbaum, 1996, p. 6; International Corpus of English, 2010).

The corpus will also ultimately be tagged and parsed for sophisticated syntactic analyses on the basis of the ICE-CUP retrieval software. At the time of writing, this is only available for the British subcorpus, ICE-GB, which was already completed in 1996. Some subcorpora, for example ICE-Ireland, also include special markup to allow searches for pragmatic markers and other discourse features. The subcorpora for Great Britain, Ireland (Northern Ireland and the Republic of Ireland), Canada, New Zealand, East Africa (Kenya and Tanzania), Jamaica, India, Hong Kong, Singapore, and the Philippines have been completed. At the time of writing, work is under way on subcorpora covering Malta, the USA, Australia, Fiji, Malaysia, Nigeria, Namibia, South Africa, Ghana, and Trinidad and Tobago (see International Corpus of English, 2010).

Eventually, the kind of research envisioned by Greenbaum at a time when only ICE-GB had been completed will become possible:

> As the parallel corpora become available, new possibilities open up for rigorous comparative and contrastive studies. I envisage the search for typologies of national varieties of English: first-language versus second-language English, British-type versus American-type English, African versus Asian English, East African versus West African English. Researchers might explore what is common to English in all countries where it is used for internal communication, demonstrating how far it is legitimate to speak of a common core for English or of an international written standard. (Greenbaum, 1996, p. 10)

Some of the studies on the basis of several ICE subcorpora already indicate that there is a tendency to a high degree of uniformity in the more formal written text types while the spoken texts exhibit more variability, as for example shown in Sand's (2003) study on article use.

While the ICE project has enabled linguists to conduct comparative studies similar to those on the basis of Brown and LOB, there are also some methodological issues which should not be underestimated. As already pointed out with regard to the compilation of the Kolhapur Corpus, second-language varieties pose particular problems with regard to data collection. While adherence to the ICE compilation guidelines is crucial for optimal comparability, the sociolinguistic situation in some countries simply does not provide text types such as parliamentary debates or broadcast discussions in English. Therefore, some teams had to make allowances in this respect and substitute other text categories. For technical reasons the telephone conversations often had to be replaced by some other type of interaction, for example radio phone-ins. ICE-Hong Kong, for example, contains only 450 text samples, due to difficulty in data collection in some domains (Bolt & Bolton, 1996, pp. 201–8). Similarly, in bi- and multilingual situations English may not be the language of choice for conducting relaxed face-to-face conversations and the results are often much more formal than the texts in ICE-GB. ICE-East Africa deviates most from the compilation guidelines. The corpus contains a total of about 1.3 million words, but Kenya and Tanzania are unevenly represented and texts have been used in full rather than being cut at the 2,000-word limit (Schmied, 2003, pp. 251–2). Such changes may complicate comparative research across several ICE corpora.

Compilation teams working in multilingual settings also face the difficulty of providing a representative sample of informants, covering, for example, not just various age groups or both genders, but also all the L1s spoken in a particular country. There are also difficulties with regard to transcription conventions and normalization (see Biewer, Hundt, & Zipp, 2010; Mukherjee, Schilk, & Bernaisch, 2010). For ICE-GB, all deviations from Standard English with regard to grammar or spelling were normalized for optimal data retrieval (Nelson, 1996b, pp. 39–42). For most of the L2 varieties there is no codified standard norm, and every deviation from international standard usage bears the potential of showing in

which way the variety may develop in the future. Normalizing these instances would therefore threaten the research objective of representing actual language use, but retaining all variants may hamper retrievability. With new technological tools for accessing the sound files alongside the transcriptions, these decisions will eventually become more transparent for the researcher. Despite these methodological problems, the ICE corpora were the only available source of corpus data allowing cross-varietal comparisons in speech and writing when this article was written, while most other corpora were compiled with a variety-specific research goal in mind.

Other Corpora of World Englishes

It is impossible to list and describe all other available corpora of World Englishes in this survey, therefore only a small selection will be provided to illustrate the kind of work being done. De Klerk has compiled a corpus of spoken South African Xhosa English, consisting of roughly 500,000 words of various text types recorded from 317 speakers. She argues very strongly in favor of homogeneous corpora representing only speakers of one particular L1 rather than attempting to represent all L1s spoken in a multilingual country like South Africa, as would be required by the ICE compilation guidelines (see de Klerk, 2006). A different approach is taken by Meierkord, who has compiled the Corpus of Black and Coloured South African English in Contact. The corpus was compiled between 2004 and 2007 and consists of about 25 hours of speech recorded from 55 speakers of different ethnicities, professions, and L1s in group interview settings, which have been ethnographically transcribed. As the related research project focuses on lingua franca communication, the varieties of English used in interethnic discourse in South Africa were the target varieties in this corpus (see Meierkord, 2007). Both corpora will help researchers to gain a better understanding of spoken Black South African English, but they are hardly suited for comparative research because they represent completely different text types and informant groups.

While work on the West African subcorpora of ICE is still under way, the only available corpus resources for this region are the Cameroon English Corpus (CEC, ca. 890,000 words) compiled at the University of Yaounde in the 1990s and four corpora compiled at Humboldt University in Berlin, Germany, covering Cameroon (Corpus Calixthe, ca. 960,000 words), Nigeria (Corpus Nigeria, ca. 130,000 words), Liberia (Corpus Liberia, ca. 75,000 words), and Ghana (Corpus Ghana, ca. 135,000). All of these corpora consist of written material only, but cover a range of text types. While the CEC includes private and published written language, the other corpora also include data downloaded from the World Wide Web (e.g., e-mails) or from newsgroups (see Wolf, 2001, pp. 247–59).

Those interested in the English spoken in Singapore can also draw on the Grammar of Spoken Singapore English Corpus (GSSEC), which was compiled between 1998 and 1999. It consists of about 8 hours of conversation, totaling over 60,000 words, which were later included in ICE-Singapore, but is still available separately with a different kind of markup. As the recordings for the GSSEC were made under natural conditions and partly in settings rife with background noise, a second corpus was compiled at the National Institute of Education in Singapore by David Deterding and Low Ee Ling in 2001 to allow for acoustic phonetic analysis. It includes reading passages and interviews with speakers of educated Singaporean English (see Deterding & Ling, 2001).

Recent Approaches to World Englishes: Using the World Wide Web

When the British National Corpus (BNC) with about 100 million words of spoken and written British English was released in the 1990s, it was the first of the megacorpora used by dictionary publishers for lexicographic purposes to be made available to the academic public. Despite its shortcomings with regard to transcription and tagging accuracy, the sheer wealth of data made the BNC particularly suitable for research focusing on less frequent constructions or individual lexical items and their different meanings and functions in different contexts. At the time of writing, there is no similar project in sight to cover any of the L2 World Englishes discussed in this survey. Therefore, researchers have used different strategies of accessing databases larger than the ICE corpora. One of them is using the World Wide Web as a source of data.

The World Wide Web can be accessed directly through general search engines like Google, or search engines designed for linguistic research, such as WebCorp (see Renouf, Kehoe, & Banerjee, 2007). By searching only country-specific domains, it can be ensured that only texts from Web sites hosted in a particular country are used. While this database is vast, it is also unstructured, changes from day to day, and the linguistic background of the authors can rarely be ascertained. Therefore, the results of such searches are sometimes difficult to interpret. Schmied (2003) offers a comparison of World Wide Web data and ICE-East Africa for the purposes of identifying loanwords from Swahili and their collocates, showing that the two methods—using the World Wide Web and the structured corpus—actually complement each other. Along similar lines, Mair (2007) looks at collocational patterns in L1 and L2 varieties of English from Great Britain, Canada, Australia, New Zealand, India, Singapore, the Philippines, Jamaica, Kenya, and Tanzania on the basis of the country-specific domains on the Web, the BNC, and ICE, coming to the conclusion that collocational profiles may be very useful in characterizing and identifying different varieties of English. These two studies illustrate the fruitful combination of traditional corpora and the Web for lexical or phraseological research.

Another research strategy to access data is to download very large amounts of text from the World Wide Web, which saves valuable time and financial resources in comparison to traditional fieldwork. The most popular text type for this kind of corpus-building is online newspapers, but other, more informal, and interactive text types, such as bulletin boards or discussion forums, have also been used as sources of data. Examples of this line of research are, for example, work by Hoffmann and Mukherjee (2007) on verb complementation in Indian English, for which they relied on about 31 million words from the Indian national newspaper *The Statesman* automatically downloaded from the Web. A similar approach was taken by Hundt and Biewer (2007), who used data from English-language newspapers from Australia, New Zealand, the USA, Fiji, Singapore, and the Philippines to compile a newspaper corpus of South Pacific and East Asian Englishes which comprises about 1.5 million words in total.

Nelson (see International Corpus of English, 2010) employed a similar methodology in compiling the Internet-Sourced International Corpus of English (ICELite) covering Uganda, Papua New Guinea, Sudan, Sierra Leone, and Oceania (Solomon Islands, Tonga, and Guam). By using various Web crawlers, Nelson was able to identify and download texts of almost all written categories of ICE, especially press and administrative texts.

While this Web-based approach yields a lot of data in a short period of time, especially if the newspaper in question provides an online archive, there are also some serious shortcomings. Such data are generated solely from newspapers, which are among the most formal and most internationally standardized genres available, and are thus not very helpful

for assessing less formal usage. In addition, it is also hard to tell whether the texts in question were really written by speakers of the target variety, whether they are based on international news agency material (see Hundt & Biewer, 2007, p. 252), or whether they have been edited by a native speaker of another variety of English (see Schmied, 1996, p. 187). This makes such Web-derived corpora less reliable than traditional corpora.

The use of other text types available on the World Wide Web such as bulletin boards, Weblogs, or discussion forums provides more interactive data and also more control over the authors included, as they usually have a profile on the Web site of the provider in question. An example of the use of discussion forum data is Mair's (2003) study of Jamaican English and Jamaican Creole by residents and expatriates. Although his study is more a qualitative analysis of a relatively small database, it is certainly possible to compile larger corpora of various Web-based text types. For example, a corpus of Weblogs posted in English by Singaporeans of various age groups and L1s is being compiled at the University of Trier, Germany, to study the interplay of standard and nonstandard features in this particular text type (see Sand, 2009).

It has become clear, in this admittedly selective survey of current research on World Englishes based on larger samples of data derived from the World Wide Web, that a vast source of data has become available through the development of the World Wide Web and new software tools, but that this kind of data is also less reliable than the traditional corpora discussed above.

Applications and Future Research

In conclusion, some of the possible applications of corpora of World Englishes will be discussed. As has been pointed out above, the first computer-readable corpora of American and British English as well as their much larger successors have been used in the compilation of reference dictionaries and reference grammars of international Standard English. Thus corpora of L2 varieties of English can also serve as a first step in identifying and eventually codifying an emergent local or regional standard. In McArthur's (1998, p. 87) classification of World Englishes, East Asian, South Asian, and African Englishes are classified as "standardizing," while Caribbean and South Pacific English are listed with a regional standard variety. Corpora can be used to quantify the degree of internal variation within L2 usage and to identify consistent differences from international standard usage of English, thus putting McArthur's classification to the test. This research can then provide the basis for the compilation of dictionaries, grammars, or usage handbooks of individual varieties, which is especially important in a postcolonial context, where the local variety of English is often perceived as lacking when compared to British or American English. A development of linguistic emancipation, which has already happened in former colonies like Australia or New Zealand, can thus be supported for speakers of L2 varieties as well.

Such a process of linguistic emancipation may of course not be restricted to the individual lexeme or construction, but may affect whole text types. Current corpus research on individual text types has shown the emergence of indigenized norms with regard to communicative strategies and textual norms, from discourse pragmatics of Māori English speakers in New Zealand (Holmes, 2008) to job applications from India (Sand, in press). Differences with regard to academic writing, for example, may seriously hamper the chances of being published in mainstream academic journals in Great Britain or the USA for authors from L2 countries. Once such differences on the textual and stylistic level are identified, they can be contrasted to other norms in teaching. Ultimately, the question needs to be addressed whether there really is an international standard of usage for written English, as postulated by Crystal (2003) and others.

Corpora can also be used in a teaching context, both in English-language classrooms in the country in question and elsewhere, to help learners understand variation in English across varieties and across text types (see Schmied, 1996, pp. 193–4). They could also be used as tools for teachers and examination boards for setting realistic standards in exam marking in L2 countries, where the application of British norms and standards is not in line with the linguistic reality of the students.

For all these applications, it is of course necessary to combine corpus analysis with other methods, such as elicitation or language attitude surveys, as the mere occurrence of a certain feature does not necessarily mean that it is accepted as standard usage by all members of a speech community. Nevertheless, a corpus is a good starting point for any linguist wishing to explore World Englishes without resorting to the impressionistic lists of features which had dominated the field in its early days. Corpora also make less salient features accessible and provide information on whether a feature is preferred or dispreferred, whether a feature is restricted to certain contexts or text types, and the degree to which a feature is actually similar to or different from other varieties of English.

SEE ALSO: Corpora: English-Language; Corpus Analysis of English as a Lingua Franca; Corpus Analysis of the World Wide Web; Francis, Nelson; Greenbaum, Sidney; Johansson, Stig; Kučera, Henry; Language for Specific Purposes Learner Corpora; Leech, Geoffrey; World Englishes and Teaching English to Speakers of Other Languages

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Corpus Analysis of European Union Documents

AMANDA MURPHY

The EU as a Multilingual Entity

In linguistic terms, the European Union is a unique entity that boasts 23 official languages. Its institutions constantly generate texts in all languages, which is fertile ground for corpus linguists seeking large quantities of naturally occurring language. The overview presented here briefly considers the nature of these texts, the type of corpus-based research that has been accomplished or is underway, and hypothesizes about future applications of corpus-based research on EU documents.

The policy of multilingualism—the right of all citizens to address the EU institutions and consult legislation in any official EU language—implies that EU documents in all languages have the same linguistic and legal status. This stems from the Union's founding treaty signed in Rome in 1958, which states that the treaty was "drawn up in a single original in the German, French, Italian and Dutch languages, all four texts being equally authentic." Thus, there are no "original" documents, which are subsequently translated: all the versions of a text, in whatever language, are considered "originals" that enjoy the same legal validity. This singular linguistic portrait entails an enormous body of parallel texts, which invite linguistic investigation from many points of view.

Clearly, in such a context, there is a permanent need for translation and interpretation: indeed, each major EU institution has its own translation unit. Legislation is updated frequently, and since the Union continues to enlarge, the arrival of every new member state also multiplies the number of translation and interpretation combinations by ever-increasing proportions: according to the formula $n.(n–1)$, with 23 official languages, translation combinations currently amount to 506. Translation—both by humans and by machine—is consequently one fruitful area of research into EU documents. Within this vast field, corpus-based translation research is exemplified by the EuroParl corpus, a parallel corpus of parliamentary proceedings in 11 official languages, compiled by Koehn (2005) from the website of the European Parliament. The research is carried out through the EuroMatrix and EuroMatrixPlus projects, dedicated to machine translation of EU languages, funded by the European Commission Seventh Framework Programme for Research and Technological Development (www.euromatrixplus.net).

A second area of corpus-based research is multilingual text mining and information extraction. Within the European Commission (EC), the EU's reference center of science and technology, the Joint Research Centre (JRC), has built a multilingual news-gathering engine (Steinberger, Pouliquen, & Ignat, 2005), which constantly analyzes over a thousand news portals in 19 languages, and provides news summaries and an overview of the most important stories reported all over the world. It can also be used to assess media visibility of issues launched by the EU institutions.

Another area of research supported by the commission is linguistic analysis of legal texts via a publicly available corpus: the JRC-Acquis multilingual parallel corpus (Steinberger, Pouliquen, Widiger, Ignat, Erjavec, Tufiş, & Varga, 2006). The *Acquis Communautaire* is the total body of EU law applicable in member states, and translating this legislation is the

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first step new member states take in the process of joining the EU. The JRC Multilingual corpus contains only a proportion of the whole *Acquis* and therefore cannot be classified technically as a reference corpus: it does however represent nearly all the 23 languages.

Categorizing EU Documents

The online gateway to the European Union is the point of entry to the countless documents produced by the institutions of the European Union: an overall classification is an arduous task, and there is at present no central agreement between the institutions about document management and archiving. What is clear is that all text types are standardized within the institution in which they originate. The three decision-making bodies—the European Parliament, representing the people within the Union, the European Council, representing national governments, and the European Commission, representing common European interests—work together mostly on legislation, and a large proportion of documents common to all three are concerned with the preparation and discussion of legislation, resulting in amendments to existing documents. Most documents are written by specialists for informed audiences; however, there is a constant drive within the EU institutions to make information transparent and accessible to all its citizens. The president of the European Commission at the time of writing, José Barroso, declared in 2005 that transparency was one of the Commission's strategic objectives. Examples of this are the publicly available Citizen Summaries, which are clear, simple and precise summaries of reports, recommendations, or proposals for legislation, with a maximum length of two pages.

Researchers rarely generalize about EU documents, given the vast range of audience, function, and text type. A few scholar-translators working for the EU institutions, specifically Cosmai (2007) and Wagner, Bech, and Martínez (2002), have drawn up text categories based on their personal experience, rather than on systematic corpus-based methodology. Cosmai makes four broad distinctions: *legislative*, *political*, *administrative*, and *informational* documents, whereas Wagner et al. (2002) uses the terms *Incoming*, *Outgoing*, and *Internal*. Incoming texts are written outside the EU and are translated for members of the institutions; outgoing texts are legislative texts that are applicable to all citizens and must therefore be translated into all the official languages; internal texts include minutes from meetings and administrative documents, which are often translated into just English, French, and German. The online register of documents from the European Commission, on the other hand, available through the EUROPA website, makes five distinctions: (a) agendas of EC meetings; (b) minutes of EC meetings; (c) documents relating to official instruments for which the Commission has sole responsibility; (d) proposed legislation and other Commission communications to the Council and the other institutions, and their preparatory papers; and (e) documents which cannot be classified into the other series. Clearly, categorizations also depend on their use: in a corpus-based study of European Commission documents, Murphy (2008a) identifies five stages of the legislation process alone within which there are 28 different text types.

Corpus-Based Studies of EU Documents

A number of multilingual corpora of EU documents are available through the Evaluations and Language Resources Distribution Agency (ELDA) (www.elda.org). However, published, accessible corpus-based studies mostly concern monolingual corpora of French and English. From a methodological point of view, some of this research could be refined, in that it tends to compare the specialized language of EU documents with general reference corpora, which could be criticized for not being strictly comparable in terms of text types.

Since the 1990s, a Belgian research group has been investigating EU discourse in French in the interdisciplinary context of political science. Using corpus methodology and factor analysis, they investigate ways in which new concepts and ideologies are introduced, change over time, and spread throughout the EU by means of translation into 23 languages. They are interested particularly in words and phrases that re-occur, with or without slight variations, enter networks of meaning across texts, and become concepts with new meanings that are not discernible from the analysis of single instances. Gobin (2000) takes a diachronic view of 14 investiture speeches of presidents of the European Commission in its various forms between 1953 and 1993. She notes three preponderant preoccupations throughout the speeches: (a) the self and the community institutions, expressed through first person pronouns and adjectives, and nouns referring to the institutions; (b) Europe; and (c) the fields of politics and economics. Interestingly, a sharp change is noted from the first presidency of Jacques Delors (1985–9), after which a more socio-political vision of Europe emerges.

Gobin and Deroubaix (2009) report on two corpora: one is an enlarged version of the Gobin (2000) corpus of European Commission President investiture speeches (1953–2000), and the other contains the broad economic policy guidelines from the same years, a recommendation published annually at first, and then every three years by the Council of the European Union. In the presidential speeches, the scholars observe the gradual emergence of words such as *transparence* (transparency) and the changing of meaning of common words such as *travail* (work or labor): before 1981 no mention is made of the *marché de travail* (labor market), whereas *travail* co-occurs with nouns such as *flexibilité* (flexibility) and *mobilité* (mobility) after 1981. Another example is the phrase *taux d'emploi* (employment rate) launched by the Commission in 1994. This phrase gradually replaces *taux de chômage* (rate of unemployment) and *population active* (workforce) in EU discourse as these terms do not adequately account for the people who are actually unemployed and could work.

Again in French, Anderson (2006) investigates a one-million-word corpus of 19 different text types taken from all the EU institutions, as part of an analysis of the French of administration. She compares it with a corpus of the same size of national French administrative language, and also contrasts the two administrative corpora with a two-million-word corpus of non-administrative language. The monograph focuses on the core phraseology of administrative language, both in EU discourse and in French national administrative discourse. The main findings reveal the conservative nature of EU discourse, which contains fewer types of multiword phrases (ranging from three to eight items) than both French national administration discourse and general French. EU discourse is also shown to be repetitive, since the multiword phrases, though fewer in types in the EU corpus, are used more frequently than in both comparable corpora. A comparative analysis of the keywords and *locutions* (idioms) points in the same direction: EU discourse contains fewer keywords with more restricted phrasal patterns and collocations, and fewer locutions, which are more frequently used. Anderson also considers the different genres within the register, and shows that the greatest proportions of multiword sequences are found in genres of a legal nature, either primary legislation, such as European treaties, or secondary legislation, which makes extensive reference to existing legislation, and cross-references within the same document. The language of EU documents is thus shown to rely strongly on repeated multiword sequences.

Turning now to English, research into EU discourse is conducted with both pedagogical and descriptive aims. A pedagogical example of a corpus-based project on a specific EU text type is Connor and Mauranen (1999), who investigate the language of grant proposals for European Union research funds. Grant proposals are a genre within academic writing, but they can also be considered a genre of EU documents, given the number of standardized documents sent to the EU requesting research funds. Based on 34 grant proposals written

by Finnish scientists, the research identifies the grant proposal as a form of persuasive writing, leading to a guide to writing successful proposals, which recommends ten necessary functional moves.

The lexis of EU documents is specialized and standardized and the EU institutions have made efforts to clarify terminology for the public by providing online tools such as the multilingual term base, Interactive Terminology for Europe (IATE), which explains important terms in all official languages (http://iate.europa.eu). These tools, however, do not necessarily suffice in a teaching context. In Hungary, for example, a member state since 2004, research was prompted by the challenge to find teaching materials for students aiming to work for the EU institutions. Trebits (2008, 2009a, 2009b) formed the Corpus of EU English (CEUE) from documents with legal, businesss, and political purposes. The 200,000-word CEUE is designed to represent the diverse fields of EU activity, and contains 19 information booklets written for a broad, informed audience, one annual report of EU activities from 2006, and sample test material from recruitment competitions in all subject areas.

Examining the corpus from the point of view of lexis, Trebits (2008) finds that 46.5% of lexical words in the CEUE are not among the most frequent 3000 words in the BNC (British National Corpus), which indicates a high percentage of EU-specific lexis (www.natcorp.ox.ac.uk). (Incidentally, many of the EU-specific words identified are not present in the online terminology databases on the EUROPA site, which might indicate that these tools were not devised according to corpus methodology.) Collocations are equally important as typical factors of EU-lexis: analyses of the clusters around common words show useful patterns for learners, such as the abbreviation *EU*, the tenth most common lexical word in the CEUE, which is frequently preceded by the definite article and by a set of common prepositions, producing set phrases such as: *within/between/throughout/by/across/from/outside the EU*.

Trebits (2009a) examines phrasal verb constructions in the CEUE. A comparison of the frequency lists of phrasal verbs in the CEUE and in the BNC shows that half of the 25 most frequent phrasal verbs in the former do not appear in the equivalent list from the latter, indicating that they are distinguishing features of EU document English. Another important finding concerns the semantic analysis of these phrasal verbs: the word-senses associated with the most common phrasal verbs that occur in both corpora are systematically narrower in the CEUE than in the BNC. For example, the phrasal verb *set up* occurs with two different word-senses in the CEUE compared to 15 different senses in the BNC. Trebits (2009b), instead, investigates a third area in which the language of the CEUE is shown to differ from the BNC, which is that of conjunctions.

The last group of corpus-based studies of EU documents in English dealt with here regards the typical phraseology of EU documents, and the analysis of the versions written by non-native speakers subsequently edited by native speakers. EuroCom is a one-million-word parallel corpus compiled of non-edited and edited documents from 31 different directorates general of the European Commission (Ulrych & Murphy, 2008). In line with findings reported here about French EU language, a comparison of three-word units in EuroCom with those in the BNC brings to light a strong auto-referential strain in EU documents, with frequent mention of the European Union, its member states, and references to specific directives, regulations and their implementation. Murphy (2008b) reports that in terms of phraseology, three-word phrases such as *in order to* and *as well as* occur with much greater frequency in EU documents than in the BNC: text analysis of the contexts of such three-word phrases reveals a tendency toward explicitation in specialized EU texts. Interestingly, this holds both for texts written by non-native speakers of English, and for those revised by native speakers. In other words, editors of EU texts written by non-native speakers do not always remove these three-word phrases. From this angle,

edited texts resemble translated texts, which are known to be characterized by a high level of explicitation.

The European Union institutions are increasingly present in the lives of European citizens, particularly through legislation. A vast store of text types in all the official EU languages are available for investigation, and since the EU institutions wish to dialogue with citizens, more research into the language of these documents would be socially relevant. If evidence-based comparative research were conducted into, for example, document design, clarity, and comprehensibility, by comparing them to comparable specialized corpora, the workings of the EU in its multifarious areas of influence might become clearer to citizens, which would be mutually beneficial. Corpus-based analysis of EU documents is still in its infancy, but there are viable paths worth exploring.

SEE ALSO: Computer-Assisted Translation; Corpora: Specialized; Council of Europe Language Policy and Planning; Language Policy and Multilingualism

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Corpus Analysis of Historical Documents

KATE TRANTER

Historical documents are often used in applied linguistics as a source for studying the structure and use of language in the past. Linguists compile corpora such as the Representative Corpus of Historical English Registers (ARCHER; http://www.llc.manchester.ac.uk/research/projects/archer/) or the Penn-Helsinki Parsed Corpus of Early Modern English (PPCEME, 2004; http://www.ling.upenn.edu/hist-corpora/PPCEME-RELEASE-2/index.html), using a variety of text types and covering a wide period. They are used for diachronic linguistic studies, to show, for example, lexical or grammatical differences between Early Modern English and present-day English (e.g., Hundt, 2007), or the structure of a particular language variety (e.g., Dollinger, 2008). In this way the analysis of historical corpora contributes to the understanding of earlier forms of a language and of language variety and change.

Further, linguists create and analyze historical corpora which include information about social or historical contexts. The Corpus of Early English Correspondence CEEC (1998; http://www.helsinki.fi/varieng/domains/CEEC.html), for example, aims "to facilitate sociolinguistic research into the history of English" and provides a supplementary database with extralinguistic, socioregional information on the corpus and its informants. This type of information can be combined with corpus linguistic analysis to draw wider conclusions about language in its historical context. This is demonstrated by studies such as Nevalainen and Tissari's (2010) study of 18th-century politeness.

Following the so-called "linguistic turn" in the humanities of the 20th century, historians have also become interested in the history of language change, its contexts and implications. This is evident in the field of conceptual history or German "Begriffsgeschichte" (e.g., Koselleck, 1978), which overlaps with the field of historical semantics (e.g., Teubert, 1989). In addition to this focus on semantic change, many historians have also developed a greater awareness of the role language plays in discourse in general. They have looked to other linguistic approaches such as speech act theory and discourse analysis to help explain the content and context of their texts. Some have created small corpora and used corpus tools to analyze them (e.g., King, 2008).

However, despite this interest and the wealth of text at their disposal, much of which is electronically stored, historians have not generally cooperated with corpus linguists (or vice versa) in the compilation and evaluation of corpora. Yet corpus linguistics is not merely a "method," but is embedded in the search for meaning shared by other disciplines. Thus a further application of corpus linguistics to historical documents is the interpretation of corpus data by linguists and historians in cooperation. Research questions and insights in either discipline can arise both from the results of corpus analysis steered by linguists working with historians, and from historical analysis steered by historians working with linguists.

Linguists and historians alike face problems when compiling corpora from historical documents. Relevant documents, whether for public or private use, are not necessarily printed or published. While some are well-preserved and easily available, others are damaged, difficult to read, and incomplete. This means that a historical corpus will often

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not be made up of a broad variety of texts taken from many different contexts as are the large contemporary language corpora such as the British National Corpus (BNC, 2007; http://www.natcorp.ox.ac.uk/) or the Corpus of Contemporary American English (COCA, 2008; http://www.americancorpus.org/). It can consist only of those texts which have been preserved and can be accessed by historians. This generally results in small, specialized corpora compiled by scholars for their own use. Increasingly, though, such corpora are being made more widely available electronically and stored for use in accessible databanks such as the Oxford Text Archive (http://ota.ahds.ac.uk/).

The compilation of these small historical corpora can be problematic. Typically they contain all the available written documents of their narrow focus, such as for a particular year or parish, and are restricted to one particular text-type. This may seem of advantage to historians because they concentrate closely on the sources and use all the relevant texts available. But it does not make the corpus representative in that "findings based on its contents can be generalized to a larger hypothetical corpus" (Leech, 1991, p. 27). A relatively homogeneous text-type or a narrow time period in the corpus may lead to a lack of balance within it and therefore to unreliable results. A corpus of letters, for example, where one person has contributed a disproportionate number of letters or letters of disproportionate length, can give the corpus and its results an unwanted bias. On the other hand, an advantage of these small "tailor-made" corpora is that, in contrast to larger "off-the-peg" corpora, they permit the origins and wider context of their texts to be more easily reconstructed. As a result they are also suited to different types of linguistic analysis, including qualitative discourse analysis. As with all corpora, their usefulness depends on their linguistic analysis.

Similar care has to be taken when choosing or compiling a reference corpus. Software such as WordSmith (Scott, 2008) allows a reference corpus to be compared with the text corpus to indicate words of unusual or unexpected frequency in "keyword" lists. The choice of reference corpus may influence the significance of the results. If, for example, for a corpus of 18th-century pauper letters, the reference corpus is compiled from 18th-century literary texts, the keyword results may be different from those resulting from a comparison with a modern corpus. Corpus users and interpreters need to know how results are obtained in order to understand their significance.

Increasingly large amounts of historical text are being digitized and made available online, such as through Early English Books Online (EEBO; http://eebo.chadwyck.com/home) or the US national archives (NARA; http://www.archives.gov/historical-docs/). These vast resources could provide material for text and reference corpora (Crane, 2006). To be useful for corpus studies, texts need to be available in full text rather than page images. Yet most optical character recognition (OCR) software used to convert text images into full text has difficulty with deviations of spelling and handwriting, typically relating to abbreviations and older materials (Balk, 2009). This means there is a wide potential for error, unless time-consuming hand-editing is undertaken, and results may be distorted.

Corpus linguistic tools such as concordance software will only be accurate if they recognize and annotate lexis in a text correctly (Barnbrook, 1996). Standard tools used to annotate texts to show parts of speech (POS tagging) and components of sentences (syntactic parsing) may not recognize historical variants. But if this annotation is inaccurate, it may lead to faulty analysis, for example of grammatical functions in a text, without the analyst being aware of it. Some of these difficulties can be overcome by adding variants to the POS tagger or "backdating" the lexicon to adapt it to the texts concerned (Archer, McEnery, Rayson, & Hardie, 2003), or by standardizing spelling before using a modern POS tagger such as CLAWS (Garside & Smith, 1997; http://ucrel.lancs.ac.uk/claws/). However, standardizing elements of the text to fit modern tools may distort it and obscure elements which are important for analysis and interpretation, such as text provenance or

author literacy. Other tools are being developed to solve this dilemma, such as the variant detector VARD (Baron & Rayson, 2008), which can detect spelling variants and insert modern equivalents alongside them. For semantic tagging the problem is even more acute, given the extent and speed of meaning change over time. Rayson, Archer, Piao, and McEnery (2004) have developed a historical semantic tagger for Early Modern English, USAS (http://ucrel.lancs.ac.uk/usas/). It indicates the conceptual field of a word and so permits scholars to identify semantically related areas in a corpus. Semantic relations can also be traced using the *Historical Thesaurus of the Oxford English Dictionary* (Kay, Roberts, Samuels, & Wotherspoon, 2009), which provides a comprehensive guide to meaning change from Old English to the present day, and also denotes parts of speech. The Digital Editions for Corpus Linguistics (DECL; http://www.helsinki.fi/varieng/domains/DECL.html) project also aims to overcome some of these problems by creating a framework to produce online editions of historical texts which can be used for corpus-based study but also expose their original features (Honkapohja, Kieslaniemi, & Martilla, 2009). Compilers and users of historical corpora need to be aware of these problems and possibilities in order to obtain reliable results and gain the maximum benefit from a corpus study.

Applying corpus linguistic methods to historical texts holds new potential for their analysis and interpretation. Discourse analysts and critical discourse analysts are increasingly interested not only in corpus methodology as such but also in its ability to shed light on the wider meaning of texts or on their hidden discourse (e.g., Mautner, 2009). Corpus linguistics has the potential to cross the lines into other fields of linguistics. In genre analysis, for example, discourse unit patterns can be determined by preceding corpus analysis, and typical linguistic patterns can be corroborated by subsequent corpus analysis of discourse units (Biber, Connor, & Upton, 2007). In the case of historical documents, corpus linguistics can, therefore, enhance both their quantitative and qualitative analysis, and substantiate their interpretation by linguists and historians alike. This is a valuable application of corpus linguistics to research in other disciplines.

SEE ALSO: Corpora: Specialized; Corpus-Based Linguistic Approaches to Critical Discourse Analysis; Historiography; Qualitative Language for Specific Purposes Research

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Corpus Analysis of Key Words

PAUL RAYSON

Introduction

If you look up "key word" in a dictionary you will find that it has various senses, but the relevant sense here is a word that has importance or significance especially to describe the contents of a document. In the context of corpus analysis, the accepted definition of a "key word" extends this sense to a *statistically* significant word characterizing a document, text, or corpus. The procedure to extract key words from a corpus is one of the most regularly used tools in a corpus linguist's toolbox alongside frequency profiling, concordancing, and collocation analysis. Numerous studies in linguistics and other disciplines have exploited the key-words procedure for the analysis of textual data, ranging from a discourse analysis of refugees and asylum seekers in the UK press, studies of health communication, lexical simplification in translations, profiling of learner language, to e-learning materials development. The key-words procedure is inherently comparative. In order to discover the statistically significant key words in a corpus, we compare it to a (usually larger) reference corpus and extract the words that occur significantly more or less frequently compared to what we expect based on the reference document.

There are several further meanings of "key word" in the language- and text-processing literature that we turn to briefly here. In the area of information retrieval (IR), the science of indexing and searching for information in document collections or on the Web, a "key word" is a manually assigned word or phrase given as a label to a book or article by an author or human abstracter. Techniques have been proposed in IR to extract such key words automatically from text (notably Sparck Jones, 1971) and some of these measures are now finding their way across to the community of corpus linguistics (Oakes, 2008). Similarly, one can assign key words to photographs or images to assist in their retrieval (Zhou & Huang, 2002). Early work in semantics was carried out by Firth (1935) on "focus and pivotal words" and this laid the groundwork for much that was to follow. Cultural key words are "words which capture important social and political facts about a community" (Hunston, 2002, p. 117). Williams (1983) produced a set of around 120 words which were important in the culture but were selected subjectively. Stubbs (1996, p. 172) made his selection of words based on characteristic collocations to show the associations and connotations that they have. Wierzbicka (1997, p. 16) in trying to understand cultures through their key words had no "objective discovery procedure" for them. Finally, Stubbs (2010) compared and contrasted the concepts of cultural key words with the statistical key words that we shall focus on here.

Having now examined the core and related definitions for key words, in the next section we will further clarify what statistical key words are and define the process by which they are calculated. Next, we will focus on problems and limitations of the technique and possible solutions to them, before concluding by considering a variety of applications for this technique by way of further literature for the reader to explore.

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Method: How Are Key Words Calculated?

The procedure to calculate key words can be applied mechanically, is conceptually quite straightforward, and is comprised of three stages. The first stage is to compute a word-frequency list for each of the two texts that we wish to compare. One of these texts would usually be the larger reference corpus mentioned above. For each text, the word-frequency list records the different word forms (types) and how many times they occur (tokens). We also count the total number of running words in each text. The second stage is to compare the two resulting frequency lists. Some complexity arises in the application, choice of statistical test, and the assumptions made in such calculations and we will further describe these issues below. Conceptually the comparison is again quite straightforward. For each word in the two texts, we apply a statistic or formula that compares its relative frequencies (i.e., percentages of occurrence) in the word-frequency lists. The value of the statistic or "keyness" is proportional to the difference in relative frequencies. In other words, the larger the difference in relative frequencies, the larger the value of the statistic or "keyness." The third and final stage of the process is to sort the words in terms of their keyness. This means that, all other things being equal, the most interesting key words with the largest keyness values appear at the top of the list. The least interesting words, whose relative frequency is similar in the two texts, are listed toward the bottom of the key-words list. We can further distinguish between positive and negative key words. Positive key words are those which are "overused" in the first text: their relative frequency is higher in this text compared to the second or reference text. Negative key words are said to be "underused" in the first text relative to the second since their relative frequency is lower in this text compared to the reference corpus. In most cases, it is the positive key words that are most interesting since they tell us about what occurs more often in the first text.

In terms of the second stage and the application of the keyness statistic, we first need to construct a "contingency" table for each word in the frequency lists. Then we apply our chosen statistic to calculate the keyness value. The most widely used methods are log-likelihood and chi-squared. Other keyness statistics have been proposed; see Baron, Rayson, and Archer (2009) for a detailed survey and discussion of the criticisms of these statistics. Chi-squared was first used in a corpus analysis context by Hofland and Johansson (1982) to compare word frequencies in corpora of 1 million words of American English (the Brown Corpus) with 1 million words of British English (the LOB Corpus). The chi-squared values can be looked up in statistical tables (of the chi-squared distribution) in order to identify those that are statistically significant at different levels of confidence, for example 5%, 1%, and 0.1%. Each level corresponds to a cutoff and a probability (or "p") value. For example, the 5% level (or p value of 0.05) corresponds to a keyness critical value of 3.84. Hence any words with a chi-squared value greater than or equal to this value are considered significant. At the 1% level, p value of 0.01, the critical value is 6.63. We can specify smaller p values and correspondingly higher critical values in order to be more certain of our results. This mathematical process is known as hypothesis testing and the default or "null hypothesis" in this test is that there is no difference between the actual frequencies we observe in the two corpora. A high enough keyness value allows us to reject this null hypothesis for a given word, although it should be noted that, strictly speaking, this does not logically entail support for the alternative hypothesis, that there is a difference between the actual frequencies.

Log-likelihood (LL) was first brought to the attention of the corpus community by Dunning (1993) for collocation analysis. LL has been shown to be more reliable than chi-squared in a number of different arrangements of corpus comparison (Rayson, Berridge, & Francis, 2004) such as varying the relative sizes of the corpora and across the range of

Table 1 Contingency table for keyness calculation

	Corpus 1	*Corpus 2*	*Total*
Frequency of a word	a	b	$a + b$
Frequency of other words	$c - a$	$d - b$	$c + d - a - b$
Total	c	d	$c + d$

word frequencies. Hence, we will present it here. This simpler version of the formula comes from Read and Cressie (1988, p. 3) who show that chi-squared and log-likelihood come from the same family of statistics.

Table 1 shows the contingency table that we need to complete for each word in the frequency lists. The values "*a*" and "*b*" are the "observed" or actual frequencies of the words in the two corpora. The total size of each corpus is shown by "*c*" and "*d*." We first calculate "expected" values for each word using the following formula:

$$E_i = \frac{N_i \sum_i O_i}{\sum_i N_i}$$

The expected values are simply averages for each word adjusted for the corpus size. In this formula, "*N*" corresponds to the total number of words and "*O*" corresponds to the observed value. From Table 1, $N_1 = c$, and $N_2 = d$. So, we calculate $E_1 = c \times (a + b) / (c + d)$ and $E_2 = d \times (a + b) / (c + d)$. The final log-likelihood value is then calculated using the following formula:

$$LL = 2 \sum_i O_i \ln \left(\frac{O_i}{E_i} \right)$$

The formula represents the distance of the word frequency in each corpus from the previously calculated expected or average values. In terms of Table 1, $LL = 2 \times ((a \times \ln(a / E_1)) + (b \times \ln(b / E_2)))$. This result can be calculated using a simple spreadsheet, although we have to be careful about calculating ln(0), so in practice we ignore that half of the calculation if "*a*" or "*b*" are zero.

A very important caveat is required at this point. Statistical goodness-of-fit procedures such as chi-squared, the log-likelihood metric and others assume that samples are random with independent observations, but of course we know that language corpora do not abide by these assumptions (Stubbs, 1995; Kilgarriff, 2005; Evert, 2006; Baroni & Evert, 2007). Gries (2005) also highlights the fact that corpus linguists rarely apply a correction for multiple "post-hoc" testing as takes place in the key-words procedure and points out that this correction is more common in other disciplines. The usual sidestep taken by linguists who are aware of these criticisms is to employ the metrics to calculate the keyness values and use them only to place the key words in rank order rather than determine significance for each word. If we put less reliance on the significance-testing component of the procedure, it can be used informally to guide our analyses (Rayson & Garside, 2000).

Scott defined, refined, and applied this key-words process with his WordSmith software in a number of papers (1997, 2000a, 2000b, 2001a, 2001b, 2002). As we have seen, the procedure is inherently comparative and usually involves a general reference corpus. It can also be used to compare a text with other relevant texts (Rayson & Garside, 2000; Seale,

Ziebland, & Charteris-Black, 2006). There are at least three important considerations to bear in mind when choosing the reference text: representativeness, homogeneity, and comparability. Representativeness (Biber, 1993) is an important attribute for a reference corpus. To be representative, a corpus should contain samples of all major types of text (Leech, 1993) in some way proportional to their use in "everyday language" (Clear, 1992). This allows us to discover features in the study text with significantly different usage to that found in "general" language. Where we are comparing corpora of roughly equal sizes, as in the Hofland and Johansson (1982) study to compare British and American English, homogeneity is important since we may otherwise find that the results reflect certain sections within one of the corpora that are unlike the remainder of the two corpora being compared. Comparability refers to the sampling methods employed in the collection of each of the corpora and ideally the same sampling methods should be employed in each case. For example, the LOB Corpus was created to be comparable to the Brown Corpus and its compilers used the same design and collection procedures. This renders the results directly comparable and avoids any unintended surprises such as key words arising because the corpora are sampled from a different time period, genre, or domain.

Problems, Limitations, and Extensions of the Technique

In addition to the caveats already expressed above, there have been some criticisms of the key-words approach. Berber Sardinha (1999) highlighted one drawback in that there are normally far too many key words for the researcher to analyze. Baker (2004a) noted three points in relation to the technique. First, "a key word analysis will focus only on lexical differences, not lexical similarities" (Baker, 2004a, p. 349). Comparing, as Baker did, two corpora of gay and lesbian erotic narratives to general corpora such as Brown or LOB would produce different key words than when comparing the erotic narratives to each other. This reinforces the careful choice of a reference corpus as of prime importance. Second, a word may be key because it occurs very frequently in one part of a corpus. Hence, examining the range or dispersion of a key word is important. Third, "key words only focus on lexical differences, rather than semantic, grammatical, or functional differences" (Baker, 2004a, p. 354). It is possible to find cases where a word is key when it appears with a number of different meanings in the text and, in contrast, cases where a word does not get marked as key because counting all of its senses together hides the fact that one of the senses is key when counted separately. Gries (2006, p. 116) also stated one obvious limitation of key-word variability studies as "they have little or nothing of interest to offer a linguist who is primarily interested in grammatical or other phenomena."

The methodology presented in the previous section has been fairly stable. There are alternatives in the statistic used as described above. Recent explorations, for example Scott's article (2009) on the search for a bad reference corpus, have allowed us to see the limitations and the robustness of the technique itself by examining the effect of choosing different reference corpora.

In terms of revisions to the technique, Scott (1997) right from the start extended the procedure to find "key key words." These are words that are shown to be key in a number of files within a corpus. Mahlberg (2007) showed that the keyness procedure applied to lists of clusters (recurrent phrases or n-grams) can produce useful results for studying local textual functions in literary stylistics. In order to address the criticisms of the key-word procedure as discussed above, Rayson (2008) proposed an extension to the process to include key parts of speech and key semantic domains as implemented in the Wmatrix software. This exploited automatic corpus-annotation tools that assign a grammatical label and semantic field tag to every word or phrase in a corpus. The frequencies of these tags were counted to produce tag-frequency lists and then the keyness calculation was applied

to those lists in addition to the word-level lists. As a result, at the semantic level, words are grouped together into semantic fields which do not emerge from the word-level analysis, thus allowing a richer and deeper set of key items to emerge. The practical problem of too many words to examine is also partially solved because of the smaller number of semantic groups that need to be checked.

Example Applications

By way of a small example, the key-words procedure was applied to the full text of "Alice's Adventures in Wonderland" (one of the most frequently downloaded texts from the Internet Archive and Project Gutenburg; see online resources). The total text is around 27,000 words long and it was compared to the British National Corpus written sampler (1 million words). As Scott notes, many of the top key words in any comparison are personal names and this can be seen in the results here. The top 20 key words are (in order of keyness): *Alice*, *she*, *said*, *turtle*, *hatter*, *gryphon*, *I*, *it*, *mock*, *you*, *herself*, *dormouse*, *Queen*, *rabbit*, *her*, *house*, *March*, *caterpillar*, *very*, *duchess*. Using a p value of 0.01, there are 1,189 words above the critical log-likelihood value of 6.63, giving plenty of words to examine in further analysis.

The key-words procedure has been used to address a wide range of research questions in linguistic analysis. Leech and Fallon (1992) used the items marked by Hofland and Johansson (1982) as significant and examined cultural differences using corpora of British and American English. Baker (2004b) used key words to examine discourses of homosexuality in the UK House of Lords debates on gay-male law reform. Toolan (2006) highlighted the growing trend of use of the key-word procedure for literary analysis as a way of discovering foregrounding, structuring, and reader-guiding in a text. There are many further examples on the Web pages of WordSmith and Wmatrix tools listed in the suggested readings below. Scott and Tribble (2006) also showed how key words and other related corpus analysis techniques can be used in language education and teaching.

SEE ALSO: Corpora: English-Language

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Corpus Analysis of Language in the Workplace

LOUISE MULLANY

Applied linguists in various parts of the world have demonstrated the value of investigating language in the workplace from a corpus linguistic perspective. The term "workplace" is frequently used as a broad category to incorporate a range of contexts including businesses, organizations, and institutions where individuals are involved in some form of employment. This can be in public, private, or voluntary sectors, and it covers employees across all socioeconomic categories and at all levels of workplace hierarchies. Researchers specializing in language in the workplace are interested in a range of topics where the findings of linguistic studies can be of benefit to employees in their everyday working lives. The findings of language in the workplace studies can be of practical relevance to a range of audiences including academics, workplace practitioners and trainers, language teachers, speakers or writers who have taken part in studies, along with future workplace employees. Corpus linguistics has provided language in the workplace researchers with a suite of techniques to highlight linguistic patterns of use based upon large amounts of workplace data. This entry will highlight corpora that have played important roles in the development of this area of study. Key findings and research issues will also be highlighted.

Analytical Approaches to Workplace Language Corpora

A number of workplace language corpora have emerged since the turn of the 21st century. These collections have enabled researchers to make a series of ground breaking observations regarding language use in the workplace. At this point, it is useful to clarify that the term "corpus" is used in this entry to refer to a collection of texts. Some researchers have compiled a corpus of language in the workplace and then examined the data using analytical techniques from sociolinguistics and discourse analysis. The Language in the Workplace study at Victoria University of Wellington in New Zealand is an excellent example of this (e.g., Holmes & Stubbe, 2003; Holmes, 2006). Others researchers have compiled workplace language corpora and then investigated these data using corpus linguistic tools and techniques, often referred to as electronic forms of textual analysis (Adolphs, 2006). A good example of this is the work of Handford (2010), who compiled and analysed CANBEC, the Cambridge and Nottingham Business English Corpus. Both the New Zealand workplace project and Handford's project will be examined in more detail later in this entry.

When electronic forms of textual analysis are used, they do not tend to be used in isolation. Corpus linguistics researchers tend to combine corpus approaches with other, more qualitative analytical approaches including discourse analysis, pragmatics, and genre studies. Corpus linguistics is most frequently used as a starting point to produce an overall survey of workplace data to establish any identifiable patterns of language use. Researchers can then expand upon the findings of these patterns with more detailed qualitative analysis, by integrating methods and approaches from other linguistic subdisciplines. Handford's (2010) work provides a prime example of this.

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Gaining access to workplaces for any linguistic data collection is far from straightforward, and compiling a workplace corpus, especially if naturally-occurring speech in a range of different workplaces is desired, is often a difficult and lengthy process. However, as Sarangi and Roberts (1999) point out, even if access is really difficult, researchers should persevere with any institutional/organizational research sites, including workplaces. They are under-researched contexts, and are important to investigate since many of us spend the majority of our everyday lives in workplace environments. For corpus linguists, once the corpus has been collected and transcribed it can be explored from a variety of different linguistic perspectives and, if appropriate, it can be added to in years to come.

Some of the most significant corpus studies of the workplace that have been produced so far have focused on naturally-occurring speech (e.g., Holmes & Stubbe, 2003; Cheng, 2004; Handford & McCarthy, 2004; Warren, 2004; Holmes, 2006; Handford, 2010; Koester, 2010), though investigations have also been successfully conducted by examining written texts. Written analysis includes a focus on authentic texts (Nickerson, 2000) and also on texts that have been produced in controlled environments specifically for the purposes of the research project (Upton & Connor, 2001). Some investigators combine a spoken and written focus in their corpus (Nelson, 2000, 2006). The advent of new technologies has also opened up a range of different media of written communication that can be successfully investigated using corpus approaches, particularly as various forms of electronic communication have become so commonplace in everyday workplace interactions (e.g., Nickerson, 2000; van Mulken & van de Meer, 2005). Furthermore, the move toward the production of multimodal corpora, where features of gesture, pose, and gaze are analyzed alongside speech patterns, means that corpora with wide-ranging foci and data collection techniques are emerging (e.g., McCowan et al., 2003; Chen et al., 2005; Mana et al., 2007).

Workplace Corpora: Illustrative Examples

One of the largest and most successful corpus collections of workplace language is the aforementioned New Zealand Language in the Workplace project set up by Janet Holmes and colleagues. This corpus began in 1996 with government funding and it has grown rapidly since then. At the time of writing, it consists of over 1,500 interactions involving 450 people from 20 different workplaces including government departments, factories, hospitals, and corporate businesses. A great deal can be learned from its innovative methodological approaches to workplace data collection, as well as from its successes in ensuring that its research findings are of applied relevance.

All studies within the project have an overarching commitment to improving communicative effectiveness and the everyday working relationships of individuals within workplaces. The variety of different types of workplaces included in the corpus has enabled a range of topics to be focused upon, including how language use in the workplace can be influenced by gender (Holmes, 2006) and ethnicity (Schnurr, Marra, & Holmes, 2007). Researchers have also examined leadership language and workplace cultures (Schnurr, 2009), linguistic politeness (Holmes & Stubbe, 2003), and the importance of social talk and humour in everyday workplace interactions (Holmes, 2000a, 2000b).

Alongside its intellectual value within academia, this project provides an excellent set of illustrations of how applied linguistics findings can be of practical relevance to audiences outside of academic contexts, including workplace trainers, practitioners, and everyday employees. For example, Victoria University of Wellington runs a programme for immigrant workers to teach the different communicative norms of New Zealand workplaces in order to help workers find successful employment, based on their corpus findings. Researchers have also disseminated their findings in media interviews and television

appearances. They have published in non academic sources, including magazines and articles specifically designed for a lay audience. They have produced what they term "communication evaluation models," in conjunction with human resources managers in workplaces, to aid effective communication amongst employees. They have hosted seminars and workshops on the findings of the data in all workplaces where corpus collection took place. They have authored a series of brochures aimed at end-user groups, and they also offer official language consultancy services to businesses. Further details of these practitioner-orientated resources can be found at the project's website (see Online Resources below). Each of these activities provides a successful model for academics to follow in order to make a difference in terms of research dissemination.

Although this encyclopedia has a separate entry on corpus analysis of business language, a significant number of language in the workplace corpora to date, including the New Zealand corpus, have focused on the language of businesses as an integral area of investigation within the "workplace" as an overarching category. It is therefore important to spend some time focusing on other notable examples of this work in order to present an inclusive overview of the field. Nelson's (2000) Business English Corpus (BEC) was one of the first, and is made up of two corpora. The first is a collection of business English materials taken from 33 textbooks, which amounts to 600,000 words. The second corpus consists of what Nelson terms "real" business English. This consists of authentic spoken and written materials, and stands at just over one million words. The data include emails, faxes, and reports, along with spoken material from meetings, negotiations, and telephone conversations.

Nelson used WordSmith Tools (Scott, 1999) to conduct a keyword analysis of his corpus. He used a subset of the British National Corpus (BNC), known as the BNC Sampler, as a reference corpus. The BNC Sampler is a subset of the 100-million-word BNC, containing one million words of spoken and one million words of written texts. The Sampler texts have been carefully selected so that they mirror the much larger BNC. Comparisons with the BNC Sampler enabled Nelson to assess both how business English differs from general English, and how textbook materials differ from the "real" business language collected in naturally occurring settings. He found that the everyday language in real-life settings did not correlate with the advice given in English language teaching textbooks. He also confirmed his hypothesis that business English differs from general, everyday language. He found that textbooks too often included lexis that did not appear in real-life interactions. While the textbooks focus on impersonal and nonemotive language, in authentic workplace interactions there was a strong focus on personal and interpersonal lexis and politeness. Nelson's findings have clear practical relevance for language teachers, textbook producers, and educational policy makers. Nelson has a set of resources relating to his findings available online (see Online Resources below).

The Cambridge and Nottingham Business English Corpus (CANBEC) was compiled between 2000 and 2004 by Mike Handford under the directorship of Ronald Carter and Michael McCarthy at the University of Nottingham, in conjunction with Cambridge University Press (Handford & McCarthy, 2004; Handford, 2010). CANBEC consists of a variety of corporate workplace texts. Most of the data come from businesses based in the UK, though the corpus also includes interactions from Japan, Ireland, Spain, and Germany. Handford and McCarthy (2004) explore a range of keywords in context (KWIC), using a 5-million-word corpus of informal, naturally occurring spoken language, known as the Cambridge and Nottingham Corpus of Discourse English (CANCODE), as a reference corpus. They then move on to a qualitative analysis by looking at concordance lines in context. Their results accord with Nelson's (2000) finding that business workplace language shares many features with everyday, interpersonal social talk, again providing empirical evidence which contrasts with advice given in business language textbooks.

Mullany (in press) has examined the CANBEC data from the perspective of language and gender, using frequency lists to search for lexical items containing direct gender referencing, for example, *girl*, *boy*, *man*, *woman*, to ascertain how, where, and when gender becomes the topic of conversation in workplace business meetings. This initial survey is followed by a concordance analysis, combined with sociolinguistic and discourse analytical techniques (see Baker, 2006, 2010), to examine how gender and sexuality are enacted by workplace professionals.

CANBEC has also been used alongside other corpora. Koester (2006, 2010) combines an analysis of CANBEC with a corpus analysis of ABOT, an informal corpus of office talk in the United States. This enables her to produce a wider-ranging investigation of different facets of workplace language genres.

Adolphs, Brown, Carter, Crawford, and Sahota (2004) illustrate the important role that corpus linguistics can play in analyzing the language used by healthcare professionals when giving advice in medical workplaces. They focus on a small corpus of telephone conversations taken from the 24-hour British telephone nursing helpline, NHS Direct. They use WordSmith Tools to produce a keyword analysis, with CANCODE as a reference corpus. They combine corpus analysis with conversation analysis to highlight how nurses' linguistic strategies, including politeness markers, modals (linguistic expressions that emphasize possibility or necessity), backchannels (linguistic strategies of listener encouragement), and conversational endings, where medical information is succinctly summarized, can have a positive impact on a patient's compliance with medical advice. They situate their corpus investigation within "applied clinical linguistics" and their findings have clear practical implications for healthcare practitioners, trainers, and NHS Direct nurses themselves.

Researchers at the Hong Kong Polytechnic University have compiled the Hong Kong Corpus of Spoken English (HKCSE; see Cheng, 2004; Warren, 2004; Cheng & Warren, 2006), which currently stands at just under one million words. It has a subset drawn from a range of workplace business contexts including meetings, job interviews and presentations, telephone conversations, office talk, and service encounters. This subset totals 500,000 words. The service encounter category includes the workplace language used in a five-star Hong Kong hotel (Cheng, 2004). By examining word frequencies and collocations at the front desk of the hotel when customers are checking out, Cheng's analysis pinpointed occasions where intonation and lexicogrammatical inaccuracy had caused communication problems between the hotel desk employee and the customer. For example, the frequency analysis highlighted "minibar" as a frequently occurring lexical item. However, if the wrong discourse intonation was used, combined with lexicogrammatical inaccuracy, then a request by front desk staff about minibar use could appear as an accusation. Cheng (2004, pp. 154–9) outlines the practical relevance of her findings for a number of different groups including English for specific purposes (ESP) teachers and providers, hotel professionals, front office staff, and corpus or applied linguists.

The corpus linguistics research team at Hong Kong Polytechnic University has released a range of other profession-specific written corpora including the Hong Kong Corpus of Survey and Construction Engineering, which is nearly 6 million words, the Hong Kong Engineering Corpus, at just over 9 million words, and the Hong Kong Financial Services Corpus, which totals just over 7 million words. Links to these corpora can also be found online (see Online Resources below).

Upton and Connor (2001) use a different type of written text in their workplace corpus, which consists of job application letters. It is known as the Indianapolis Business Learner Corpus (IBLC). The corpus contains 200 letters, composed by students from five different countries, who were studying business communication as part of a writing training course. Therefore, the letters are not examples of authentic workplace communication, but they

can still be useful to analyze from a corpus perspective, especially as the learning and training opportunities that result from the findings are of practical relevance to educators working on such workplace communication skills training programmes. Upton and Connor apply corpus linguistic methods to examine the politeness strategies used by the students in the application letters, as well as focusing on an analysis of the different parts of the application-letter-writing genre, known as an analysis of rhetorical "moves" within the written texts.

Corpora and Workplace Meetings

There is an observable prevalence of workplace meetings as data collection sites in spoken workplace corpora. For example, in CANBEC, out of the total corpus of just over one million words, meeting data account for 912,734 words. The dominance of meetings reflects the crucial role that they play as locations for speech events in everyday workplace talk. As Boden (1994, p. 81) points out, meetings are "the very social action through which institutions produce and reproduce themselves."

There are also practical advantages to collecting corpus linguistic data in meeting settings. Meetings are often preplanned events, enabling forward planning by the fieldworker to gain permission, and to ensure that recording equipment is properly set up and that the full consent of everyone present has been obtained. Collecting data from the same type of speech event across different workplaces enables meeting language to be quantitatively compared and contrasted across different businesses and organizations. Meetings also have the advantage of enabling researchers to observe participants fulfilling often very specific role responsibilities.

However, it is important to stress that the dominance of meetings in particular workplaces is partly dependent upon the *type* of workplace, and often on the socioeconomic background of the participants who are the focus of the research project. Holmes and Stubbe (2003) point out that in their New Zealand Language in the Workplace corpus, meetings are commonplace in "white-collar" workplaces, whereas in "blue-collar" workplaces they are not so frequent (the terms "white collar" and "blue collar" refer to a historical tradition of different colours of workplace clothing depending upon occupation, thought to have originated in the United States: "blue collar" refers to those engaged in manual labour and "white collar" refers to those in engaged in nonmanual work, often in offices). This point reflects the dominance thus far of white-collar and often middle-class corporate occupations in corpus linguistic workplace studies. There are exceptions, such as the New Zealand factory studies (Stubbe, 2000; Holmes & Stubbe, 2003), though the majority of these naturally occurring spoken corpora have been collected in nonmanual workplaces. One reason for this is that data recording is easier in nonmanual settings as the problems of noise can make it much more difficult to record successfully in manual environments. Additionally, actual physical workplace locations tend to be nonstatic in manual workplaces, which poses a whole suite of problems with recording equipment in such locations.

Finally, it is worth noting that the British National Corpus (BNC) includes a subset of 1.3 million words of "business events" which includes trade union meetings, along with sales demonstrations, consultations, and interviews.

Electronic Workplace Language

Nickerson (2000), and van Mulken and van de Meer (2005), provide two interesting illustrations of corpus linguistic studies of electronic workplace communication. Nickerson

(2000) took a corpus-based approach to investigating naturally occurring language in 100 e-mail messages, in English, by both native English speakers and native speakers of Dutch working for the same multinational organization at its UK base. Her corpus analysis of linguistic structures revealed that British writers used far more questions and more emphatic markers (linguistic items that emphasize the force or certainty of the message) than their Dutch counterparts.

However, Nickerson is then careful to point out that company culture plays a complex role in the communicative strategies selected, and participants' language choices should not just be viewed as representative of their national culture. Her work demonstrates the overall value of combining a corpus linguistic approach to intercultural communication with nuanced, context-sensitive analyses in order to avoid overgeneralization or cultural stereotypes.

Van Mulken and van de Meer (2005) have used corpus-based methods to conduct a genre analysis which investigates how Dutch and American organizations reply to e-mail queries regarding company products and distribution. They used corpus tools to assess linguistic differences in the response e-mails, and found that American companies express gratitude more frequently, whereas Dutch companies are more likely to use an apology when they have to decline requests.

Multimodal Corpora and the Workplace

The production of successful multimodal corpora often relies on high quality video recordings to assess speech in conjunction with paralinguistic and contextual features including posture, gesture, and gaze, and to consider how these correlate with one another. Laboratory settings are thus often needed to produce the required quality of recording. In terms of multimodal corpora of the workplace, artificially constructed settings, particularly meetings, the prevalence and significance of which was discussed above, are frequently set up as experimental data collection sites in laboratories or similar settings.

Any workplace data produced in a laboratory or constructed setting lacks the authenticity of naturally occurring workplace language, and it is important to take this into account when assessing such data and considering its applications. Some multimodal corpora will be more artificial than others—in some cases, "meeting" data will even be scripted. Nonetheless, such studies can be useful in revealing correlations between linguistic features, paralinguistic features, and the physical setting, and these findings can have clear practical relevance for workplace practitioners and trainers.

Examples of multimodal corpora where workplace-style meetings have been artificially set up include the MM4 Audio-Visual Corpus (McCowan et al., 2003). This consists of 29 meetings which cover prearranged topics where the meetings were completely scripted. There is also the Mission Survival Corpus of meetings in Italy (Mana et al., 2007). Although these are not scripted, researchers do control the topics and tasks of the meetings in experimental conditions. Similarly, the VACE Multimodal Meeting Corpus has been produced in the United States (Chen et al., 2005), where nonscripted talk takes place, but within a controlled environment, as meeting participants were given a set of specific tasks to fulfill in a set number of fixed meeting scenarios.

Conclusion

This entry has shown a range of different ways in which corpus linguistics can be used to produce investigations of language in the workplace. At the time of writing, the field is still in its early stages of development, and the range of investigations that are taking

place is exciting and innovative. Examples have been given of how the findings of such studies can be packaged to be of practical use to workers, practitioners, and trainers, thus providing examples of applied corpus linguistics workplace research in action.

SEE ALSO: Corpora: Multimodal; Corpus Analysis of Business English; Corpus Analysis of Key Words; Corpus Analysis of Political Language; Corpus Linguistics: Overview; Lexicogrammar; Mixed Methods; Multimodal Corpus-Based Approaches; Quantitative and Mixed Methods: Overview

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Corpus Analysis of Literary Texts

MICHAELA MAHLBERG

Corpus stylistics brings together approaches from corpus linguistics and literary stylistics. It is concerned with the application of corpus methods to the analysis of literary texts by relating linguistic description with critical interpretation. Corpus stylistics as a discernible field started to develop mainly in the first decade of the 21st century. It encompasses a variety of approaches that often differ in the way that links are made between corpus linguistics and literary stylistics. This entry outlines fundamental principles underlying the corpus analysis of literary texts, and it offers an overview of the range of work that contributes to shaping the emerging field of corpus stylistics.

Literature in Corpora and Properties of Individual Texts

Literary texts can be seen in comparison to other types of texts in a large corpus. In this sense, the corpus analysis of literary texts contributes to the study of variation of linguistic features across different registers. Biber, Johansson, Leech, Conrad, and Finegan (1999), for instance, give plenty of examples of how distributions of linguistic items compare across different registers, including fiction. For corpus linguistics, frequency information is at the heart of the work in the field. Corpora provide information on repeated and typical uses, and allow for generalizations to be made across a set of texts. While linguistic features that are shared among literary texts can be easily investigated with corpus methods, features of individual texts tend to be neglected in large-scale quantitative studies. As Sinclair (2007, p. 3) puts it: "Evidence of routine behaviour of language users is found in corpora, and a distinctive literary text is just not worth including in a general corpus because it will disappear below the waves."

Corpus stylistics shifts the analytical emphasis to individual texts. Like literary stylistics, it allows us to focus on the qualities of a single text and its "artistic function" (see Leech & Short, 2007, p. 11). Linguistic features in the text are seen in relation to the effects they might create and the interpretations that readers arrive at. However, the description of the artistic function of a text is to some extent subjective and a text can have different effects on different readers. The corpus analysis of literary texts therefore has the advantage of providing more systematic evidence for interpretations (see Stubbs, 2005, p. 22). Although there are clear limitations to the quantitative information that can be derived from a single literary text, even basic corpus techniques can be of use to support stylistic analyses by automatically searching a text for specific features, displaying data in a useful format, or comparing different texts.

In his encyclopedia article on corpus approaches in stylistics, Wynne (2006) stresses the potential of the field that has come to be referred to as corpus stylistics. The main challenge lies in genuinely bringing corpus linguistics and literary stylistics together. Often, work summarized under the umbrella term of corpus stylistics is driven from a particular point of view: either corpus linguists trying to apply their methods and concepts to the study of literary texts, or stylisticians drawing on corpus linguistics to develop their approaches. In order to develop corpus stylistics as a field, we also need to be explicit about basic methodological principles that have potential for cross-disciplinary work. A useful starting point is the comparative nature of both corpus work and stylistic analysis.

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Corpus Comparisons and Deviations from Linguistic Norms

Features of a particular text can be identified by comparing this text with other texts. A corpus method that highlights individual qualities of a text based on comparison is the "key words" method. A concordance tool such as WordSmith Tools (Scott, 2008) generates key words by comparing the frequencies of the words in the text with the frequencies of those words in a reference corpus. Key words are words which are significantly more frequent in the text than in the reference corpus. Scott (2006) illustrates the key words procedure by comparing *Romeo and Juliet* against a corpus containing all of Shakespeare's plays. Culpeper (2009) also uses key words to analyze *Romeo and Juliet*, but he compares the speeches of individual characters. With the help of the tool WMatrix (see Rayson, 2008), Culpeper (2009) extends the analysis of key words to key semantic domains. For that purpose, each word is first assigned a "tag," that is, a label, according to the semantic domain it belongs to, and the key comparison then works on the tags. Key words or key semantic domains can provide starting points for a more detailed textual analysis. The key words procedure illustrates a typical feature of corpus linguistics, which is that corpus work is to a large extent based on comparisons. The comparisons that literary stylisticians are interested in cover both comparisons across texts, and also comparisons within a text. An example of the latter is the analysis of fictional speech compared to narration in a text. Questions that stylisticians want to investigate thus have implications for the kind of corpus tools they will find useful (see Mahlberg & Smith, 2010).

In literary stylistics comparison plays a role, for instance, when stylistic features are described in terms of deviations from linguistic norms. The departure from textual norms relates to psychological effects of prominence, and to the foregrounding that affects the reader's reception and interpretation of a text. Leech (1985) distinguishes three types of deviations. The following examples will help to characterize the different types in terms of corpus methods. "Primary deviation" is deviation from norms of the language as a whole (Leech, 1985, p. 45). It can be described by comparing a textual example to a general reference corpus. An example is the work by Louw (1993), who advocates "matching texts against corpora" (Louw, 1993, p. 161). He shows, for instance, how irony is constructed in *Small World*, a novel by David Lodge. Louw (1993) compares the context of the verb form *bent on* in a text extract with the contexts of *bent on* in a concordance. Louw's (1993, p. 166) concordance analysis shows that "the pursuits that people are *bent on* are almost always negative or unpleasant in some way." In the extract from *Small World*, in contrast, *bent on* is followed by the seemingly positive noun *self-improvement*. Thus Louw (1993) argues that irony is created through using an expression in a context that goes against the general trend of usage as shown in a large corpus. "Secondary deviation" is deviation from the norms of literary composition, including the norms of the author (Leech, 1985, p. 48), and an example in this area is the work of Tabata (2002). Tabata deals with 23 texts by Charles Dickens, and statistically analyzes the correspondence between word-class distributions and texts. Tabata (2002) finds that Dickens's serial fictions and sketches are characterized by different sets of word classes. "Tertiary (or internal) deviation" is deviation from text-internal norms (Leech, 1985, p. 49). This type of deviation makes it possible to capture contrasts between different parts of a text. Stubbs (2001), replicating Youmans's (1991) method, looks at contrasts within the short story "Eveline" from James Joyce's *Dubliners*. He identifies places where new words are used for the first time. He finds that parts of the story identified through the analysis of vocabulary development correspond to parts of the story identified in literary criticism.

A point that has to be made about "norms" and "deviations" from norms is that the terminology seems to suggest there may be such a thing as "normal" or "ordinary" language compared to "literary" language that characterizes literary texts. Instead of making

such a distinction, Carter (2004, p. 69) favours a "cline of literariness," with some uses of language being more literary than others. Carter (2004, p. 69) points out that the literariness of a text depends on "whether the reader (or listener) *chooses* to 'read' or respond to [the] text (spoken or written) in a literary way" (emphasis in the original).

Developing the Stylistician's Toolkit

Corpus approaches add to the stylistician's toolkit, that is, the descriptive tools that are available to characterize linguistic features. With the focus on repetitions and quantifiable patterns, a key concept in corpus linguistics is "collocation," the repeated co-occurrence of two words within a specified span. In the novel *Bleak House* by Charles Dickens, for instance, *little* is shown to collocate with *scream*, as illustrated by Hori (2004) in his extensive study of collocations in Dickens. Hori (2004) points out that the nine occurrences of the collocation are used to delineate a character's behavior. Miss Volumnia, a cousin of Sir Leicester's, is the only character who utters a "little scream" (Hori 2004, p. 179). While collocations capture verbatim repetitions of words, the concept of the "semantic prosody" accounts for co-occurrence patterns around a word in terms of attitudinal meanings (Sinclair, 2004). Louw's (1993) example of *bent on* in *Small World*, referred to above, illustrates a negative semantic prosody. The semantic prosody does not depend on the repetition of the same word, but the contexts of *bent on* shown in the concordance can be interpreted as referring to negative and unpleasant things. Patterns of co-occurrence can also be interpreted in terms of "lexical primings." With his theory of lexical priming, Hoey (2005) suggests a psychological explanation for the existence of collocations: Language users acquire collocations by being exposed to repeated patterns of usage. Lexical primings are described on the basis of patterns in corpora. By showing how writers deviate from common language patterns, Hoey (2007) also uses his theory of lexical priming to account for literary creativity. With a method similar to that of Louw (1993), Hoey (2007) compares fragments from literary texts against reference corpora. He looks, for instance, at the beginning of a fantasy novel by Michael Moorcock, and relates the meanings of *called for* and *went to them* in the text extract with the meanings of these forms in reference corpora. Hoey (2007) argues that Moorcock exploits the readers' primings to create a contrast between how characters are portrayed and how characters act.

When corpus approaches are applied to the analysis of literary texts, the focus is often on the innovation brought about by the methods or descriptive tools. It is equally important to explicitly link these methods and tools to approaches in literary stylistics. Semantic prosodies, for instance, can be interpreted in terms of point of view (Adolphs & Carter, 2002), key words can be linked to style markers (Culpeper, 2009), key semantic domains can be used to identify metaphorical language (Archer, Culpeper, & Rayson, 2009), and the analysis of collocations can be interpreted in terms of schema theory in order to build a link to cognitive stylistics (O'Halloran, 2007). In addition to building links from corpus methods to concepts in literary stylistics, we also need to proceed in the other direction: driving corpus approaches by research questions in literary stylistics. A book-length contribution in this area is the approach by Semino and Short (2004). The authors set out to test and develop the Leech and Short ([1981] 2007) model of speech and thought presentation. This model originally focused on prose fiction. With the help of a corpus approach, Semino and Short (2004) show how an extended version of the model can be systematically applied to compare twentieth-century fictional, journalistic, and (auto)biographical narratives. The study is based on a corpus that had to be annotated manually to identify categories of the discourse presentation scales, such as direct thought or free indirect speech. This work shows that corpus stylistics is not the same as a merely quantitative approach to

stylistic questions. Semino and Short (2004, p. 40) emphasize that the process of annotation is in itself part of the analysis and theory development: "the re-examination of the corpus data in the light of the completed annotation . . . can lead to further changes in theorization." Busse (2010) further develops the Leech and Short ([1981] 2007) model with a focus on 19th-century English.

Another corpus stylistic approach that is motivated by theoretical questions is Toolan's (2009) narrative prospection model. Toolan (2009) is interested in parameters that shape readers' expectations as to how a text progresses. To identify features that foreground narrativity, he employs corpus methods such as key word comparisons or searches for repetition patterns. His focus is on specific features that are singled out on the basis of textlinguistic and narratological theory. Corpus methods then aid the semiautomatic search for the features in question. Among the narrativity parameters are sentences containing high-frequency key-word character names, or sentences carrying characters' represented thought. In the discussion of the latter, Toolan (2009, pp.137f.) suggests an inductive procedure to automatically identify examples of free indirect thought, thus suggesting a way towards automatizing some of the annotation that for the Semino and Short (2004) study still had to be done manually.

Searching for a Theoretical Underpinning of Corpus Stylistics

Altogether a number of different approaches may be grouped under the umbrella of the newly emerging field of corpus stylistics. Some of them tend to be located more towards the corpus linguistic end of the spectrum, with a focus on methods, while others give more emphasis to questions originating in the realm of literary stylistics. Although Semino and Short (2004) begin their study with the speech and thought presentation model that was developed in the field of literary stylistics, their book also addresses wider implications for a cross-disciplinary field of study. The authors emphasize that one of their aims is to make stylisticians and corpus linguists more aware of each other's work (Semino & Short, 2004, p. 17). Such mutual awareness is crucial in order to arrive at an approach that is more than the sum of its parts. Nevertheless, identifying a theoretical basis for corpus stylistics cannot be straightforward. Neither corpus linguistics nor literary stylistics are unified fields. On the one hand, corpus linguistics can be seen as a methodology that is applicable across a range of linguistic fields to support the quantification of linguistic analysis. On the other hand, the description of repetitions that become visible through the cumulative picture provided by corpora has led to new descriptive concepts such as collocations, semantic prosodies, patterns, lexical bundles, or lexical primings that raise theoretical questions (see, e.g., the arguments in Biber, 2006; Hoey, 2005; and Sinclair, 2004). The underlying view of corpus linguistics will then naturally shape the approach taken to corpus stylistics. In his corpus stylistic approach to narrative progression, Toolan (2009, p. 24) states that for him, "corpus analytic methods are only the tail, while one's theory of language . . . remains the dog." This view leads him to describe his study as being "based in corpus linguistic methods but in fact driven by textlinguistic and narratological theory" (Toolan, 2009, p. 25). Equally, literary stylistics can be approached from different angles to which both linguistics and literary criticism contribute. Ideally, a corpus stylistic approach is guided by the starting point that lies with the text under analysis, and combines various fields that are relevant to the textual analysis.

A theoretical foundation for corpus stylistics can be based on the concept of the "corpus stylistic circle" (see Mahlberg, in press). The corpus stylistic circle builds on the view of stylistics as presented by Leech and Short ([1981] 2007). According to Leech and Short ([1981] 2007, p. 11), literary stylistics aims "to . . . relate the critic's concern of aesthetic

appreciation with the linguist's concern of linguistic description." To explain this relationship, Leech and Short ([1981] 2007, p. 12) draw on Spitzer's (1948) philological circle: Linguistic observation and literary insight, including interpretation and critical evaluation, are in cyclic motion. Neither of the two has priority, because the human analyst will always approach a text as both an example of language and also as a literary work. On this basis, the aim of corpus stylistics can be seen as relating the critic's concern of aesthetic appreciation with the corpus linguist's concern of linguistic description. At first sight, this statement may seem to be a simple reformulation of the one put forward by Leech and Short ([1981] 2007). However, the "corpus linguist's concern of linguistic description" emphasizes that corpus linguistics has started to change the way in which we observe and describe language.

The corpus stylistic circle is exemplified by Mahlberg's (in press) study of Dickens's fiction. Mahlberg (in press) draws on the concept of local textual functions as descriptive tools from a corpus linguistic point of view. Local textual functions aim to capture lexical patterns that are specific to a set of lexical items or a set of texts. In this sense the functions are local. The functions are textual, because they aim to describe how the items function in view of the qualities of the text(s) they occur in (see Mahlberg, 2007). The starting point to find local textual functions in Dickens is the identification of clusters. Clusters are repeated sequences of words such as *his hands in his pockets* or *as if he had been.* Mahlberg (in press) argues that such clusters function as building blocks for textual worlds in Dickens's fiction. They contribute, for instance, to the description of characters, or point to comments by the narrator. The corpus stylistic circle highlights the relationship between linguistic description and the concerns of the literary critic. This relationship is captured by linking the description of building blocks of textual worlds to an approach to the externalization of characters put forward by John (2001). While Mahlberg's approach to Dickens's fiction contributes to the conceptualization of a foundation for corpus stylistics, it also points out unavoidable limitations of the field. The localness of the functions under analysis emphasizes that not every text will be amenable to a similar analysis. Equally, not every author may be as prolific as Dickens and thus allow for generalizations across a number of texts that can then form the background for the analysis of a specific text sample (see Mahlberg, 2009). Corpus linguistics depends to some extent on a critical mass for the identification of patterns, which is reflected by the fact that much of corpus stylistic work focuses on prose fiction, or the style of an author as shown in a number of his/her works (e.g., Hardy, 2007; Fischer-Starcke, 2010).

Conclusions

The theoretical underpinning of corpus stylistics is directly related to its applied nature. With the focus on individual texts, corpus stylistics addresses the real-world problem of how texts have effects on readers, and how texts are part of a culture where people respond to a text as a work of literature. By addressing this real-world problem, corpus stylistics also highlights the limitations of corpus linguistics. Texts in corpora are not "read," and corpora do not offer a straightforward way of assessing the effects of texts on readers. Corpus methodology can help to find repeated patterns. Such patterns can contribute to the foregrounding which is "assumed to be a fundamental sense-making aesthetic resource" (Toolan, 2009, p. 71). However, identifying repetition is not the same as explaining possible effects a text may have on a reader. As Toolan (2009, p. 191) highlights, "it is not that textual obviousness alone is sufficient condition for something to be likely to be psychologically real for readers." With the focus on discernible patterns in texts, corpus stylistics can be of use in complementing literary stylistics and literary criticism, but it cannot claim to replace either of them.

Future developments in corpus stylistics will have to explore a variety of corpus resources, both in terms of software and corpora, in order to relate textual patterns to a range of literature-specific questions. The analysis of corpora containing translations of literary texts, book reviews, and scholarly criticism can add further dimensions to the study of literary texts and their potential effects on readers. Additionally, working notes by authors may provide useful resources for innovative corpus studies.

SEE ALSO: Concordancing; Corpora and Literature; Corpus Analysis of Key Words; Grammar and Literature; Leech, Geoffrey; Lexical Priming; Semantic Prosody; Sinclair, John

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Corpus Analysis of Political Language

ALAN PARTINGTON

Types of Corpus-Assisted Studies Into the Language of Politics

It is difficult to conceive of any political action which does not involve using language: political speeches, newspaper editorials, press conferences, Acts of Parliament, declarations of war and peace negotiations, to name but a few. Language is vital to the process of transforming political will and power into social governance and all political actions are prepared, accompanied, and controlled by language. Fairclough goes further still. Politics, he says, is not just conducted through language, but much of politics *is* language: "politics partly consists in the disputes which occur in language and over language" (Fairclough, 1989, p. 23).

It is possible to define politics narrowly as the working of institutions of power or, more broadly, as the interrelations of groups (including those institutions) within a given society. It is similarly possible to define the *language* of politics narrowly as the language used by an institution to conduct its business, to communicate with other institutions and to the rest of society, or, more broadly, as all the discourse produced by groups within a society which relate to issues of the management of power and of social governance. Both of these definitions are relevant to the kind of studies of political language conducted with the assistance of corpora.

One type of study relates to the first definition and examines the language of a particular institution, employing corpus-assisted techniques to examine the linguistic structures used by actors to effect the business of the institution and to communicate politically relevant messages to addressees and beneficiaries (the parties for whom the discourse is ultimately enacted) in order to fulfill the specific functions of the institution or particular aims of the actors.

Another type of study examines texts on political issues emanating from the main sites of public experience of political issues, namely the media, both printed and spoken.

Potential Sources of Data

In both types of study, researchers will typically need to compile their own data set, very generally by downloading texts from the Internet, rather than exclusively accessing large preexisting so-called "general language" corpora such as the Bank of English or the British National Corpus. A number of political institutions make available a good number and variety of political texts, for example, the White House Library, the UK government Web site and the Web sites of individual political parties. Several countries make available transcripts of their parliamentary discussions, though this raises the vexed question of authenticity. UK Hansard reports, for example, are frequently altered after the actual speeches have been delivered (Mollin, 2007).

Media texts too can often be found on the Internet; those provided by newspapers, of course, but media networks like the BBC, CNN, and US public service radio, for instance, often provide transcripts of speeches, debates, and interviews. In some cases, however, as

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generally with TV news, transcripts may well have to be prepared manually by the researchers. When accessing data owned by private media companies, researchers have to take care not to infringe copyright.

Depending on the research questions, the researchers may decide to annotate their corpora in some way. As with any information that has been transferred from one format to another (a photograph is not the same as its subject), data which has been downloaded into a computer-readable form has undergone a process of decontextualization, of "semiotic impoverishment" (Hardt-Mautner, 1995), which can sometimes be quite severe. It may therefore be appropriate to reenable access to contextual information, for example, which section of a newspaper an article appeared in or, in an interactive discourse type, information about the various speakers. Such information can be added to the corpus while keeping it separate from the actual text it contains, the process being commonly referred to as mark-up. A good example of how mark-up can permit a fine-grained analysis of different linguistic contexts and different speakers can be found in the body of work on parliamentary discourse, much of which has been comparative, contrasting the different language practices of different kinds of speakers, on the basis of gender, party affiliation, and institutional role (Bayley, 2004; Bevitori, 2007).

The comparative ease with which sizeable data sets can be collected has spawned a generation of researchers who use corpora as one of their research tools, "linguists who use corpora" rather than "corpus linguists." Moreover, it is not only linguists who compile and use their own corpora. Almost all the language-based sciences—philosophy, literary studies, psychology, sociology, and, of course, political science—can boast researchers who work with corpora. However, corpus use can encourage even non-linguists to look at and evaluate the language patterns the subject matter is expressed in. The studies outlined here are then conducted by "linguists who use corpora" working, on occasion, with "political scientists who use corpora."

Types of Research Objectives

There are also at least two distinct types of research objective. The first type is similar in its aims to discourse and conversation analysis and uses corpus techniques to investigate a particular political or institutional discourse type, exactly as with any exemplar of discourse, to uncover and analyze non-obvious patterns of language or aspects of linguistic interaction. Partington's study (2003) is an attempt to devise corpus-assisted discourse studies (CADS) methodologies to investigate the communicative strategies used by speakers in a particular form of institutional conflict talk between politicians and journalists, and treats issues of general linguistic interest such as facework, participation roles, attribution, and metaphor. Other corpus-assisted studies of (im)politeness in press briefings and judicial inquiries have shown how participants in institutional settings operate with not just one set of positive face needs, but two, namely, competence face and affective face. The former is bolstered by appearing to be competent, authoritative, and in control whilst the latter is enhanced by persuading our peers that we are, first of all, non-threatening, but also congenial and good to be around. The problem is that, since affective face is closely related to belonging to an in-group, the two forms of face are generally incompatible at any one time. Different participants can be seen to give different weight to the two types and adopt different strategies in maintaining them (Partington, 2006, pp. 97–8, 169–70; Taylor, 2009).

The second type of research is more overtly engaged with the political, social, and cultural aspects of the set of texts under study and attempts to uncover any non-obvious

ideological meanings and messages they may contain. Teubert (2001) has studied the language of Euroskepticism in the UK employing a corpus of texts deriving from various self-proclaimed Euroskeptic Web sites whilst Hardt-Mautner's (1995) seminal paper on combining qualitative and quantitative approaches in CADS research was in fact a metastudy born from a methodological need to analyze large quantities of texts on EC/EU discourse in the UK press. Several authors have studied patterns of language in an individual politician's public addresses or those of a political party (Fairclough, 2000) with the aim of shedding light on ideological positions and how they are communicated.

This second type of project is, naturally, more typical when corpora of media discourse are being employed, whether the object of scrutiny be the ideology of media organs themselves or the ways in which they discuss ideological issues. Johnson, Culpeper, and Suhr's study (2003), for instance, is a diachronic study of the varied and changing ways in which PC terms (*politically correct*, *political correctness*, etc.) were employed in three corpora of different UK quality newspapers from 1994–9, particularly in reference to how Labour Party policies were perceived.

Occasionally the two types of research objective—the linguistic and the ideological—are combined. Baker et al.'s research (2008) is the result of an interdisciplinary collaboration between a group whose primary training was in corpus linguistics and a group of critical discourse analysts (CDA), a subdiscipline whose practitioners traditionally and explicitly work within a leftist ideological framework. The research analyzed a 140-million-word corpus of British news articles about refugees, asylum seekers, immigrants, and migrants (collectively RASIM). It tested how collocation and concordance analysis were able to identify common categories of representation of RASIM, as well as directing analysts to representative texts in order to carry out more detailed qualitative analysis. Interestingly, the two groups obtained different observations. The corpus linguists, working with the whole corpus, uncovered both positive and negative representations of RASIM, whilst the CDA group, focusing on a smaller group of articles, concluded that positive representations were non-existent.

Another project with a still wider interdisciplinary scope was the European Union-funded *IntUne* project (2005–9), where teams of corpus linguists from France, Italy, Poland, and the UK collaborated with teams of scholars and political practitioners from a large number of EU countries and from political science, sociology, public policy, media, linguistics, and socio-psychology. The aim of the project was to study the changes in perceptions of citizenship, particularly in terms of identity, representation, and scope of governance, which result from the enlargement of the European Union.

The corpus linguists compiled and marked up two corpora of television and newspaper texts from the four countries, the first from February to March 2007, the second from the same three-month period in 2009, and analyzed them to track any perceived changes in media attitudes to European affairs. Topics studied included how the press in different countries reported the EU's 50th anniversary, how they report the politics and customs of other member states, and whether there is any historical evidence in the press of a common sense of European identity. It must be noted that a good number of political scientists involved in the collaboration failed to appreciate the relevance of collecting and analyzing preexisting data on issues such as perceived sense of European identity or attitudes to enlargement and immigration, preferring either to elicit their own data, generally in the form of questionnaires, or preferring frequently to trust their own introspections. This lack of appreciation of corpus-driven research is not dissimilar to that once commonly experienced by corpus linguists within linguistics itself.

The Added Value of Using Corpora

There have of course been a large number of studies of language in politics conducted by linguists, mainly discourse analysts, or by political scientists, without any recourse to corpus techniques. These have traditionally been qualitative in nature concentrating on a limited number of texts. However, it is clear that, in politics as much as any other field, an individual text does not exist in isolation from other texts of the same institutional discourse type, whether it be a parliamentary speech or even a session of speeches, or a newspaper article commenting, say, on immigration policy. Both the speech and the article are inevitably part of a much wider ongoing discourse. Large collections of tokens of a discourse type would seem to be a valid, appropriate, and rigorous way of reflecting the intertextuality of political discourses. As Sinclair commented: "the language looks rather different when you look at a lot of it at once" (Sinclair, 1991, pp. 100), and the same is true of any individual discourse type of the language.

The *CorDis* project (Morley & Bayley, 2009) was entirely premised on the validity of intertextuality, of the interconnectedness of discourse types. *CorDis* is a composite corpus or, alternatively, a collection of subcorpora of around 6 million words of transcribed spoken (ca. 4.5 million) and written (ca. 1.5 million) texts from UK and US sources of varying types but all relating to the post-2003 conflict in Iraq. It was devised to reflect the temporal progression from political news making to reporting and investigation:

- Sources of news creation: (a) British House of Commons, (b) US House of Representatives;
- News negotiating and mediation: White House press briefings;
- Recounting to the public: (a) television news, (b) newspapers, subdivided into news reports, editorials, and opinion pieces;
- Political-judicial inquiry: the Hutton Inquiry, which touched on the UK Government's reasons for going to war.

The corpus was marked up to permit both the isolation of parts of a single subcorpus, for instance, type of speaker (female or male, Democrat or Republican, White House podium or journalist), as well the ad hoc creation, if necessary, of a large number of different groupings of texts in order to answer specific research questions. These groupings could cut into and across subcorpora—i.e., all the editorials and opinion pieces, but not news reports, from US, but not UK—newspapers (Morley, 2009). The television news subcorpus was marked up for speaker role (e.g., news presenter, war zone correspondent, ordinary person), speech event (e.g., news report, live exchange, reporter question) and mode of delivery (e.g., spoken to camera, in voiceover, in videophone) (Marchi & Venuti, 2009). It was possible to interrogate all of the subcorpora in turn in relation to a particular theme. Duguid (2009), for instance, investigates the different proportions and functions of reporting devices (from verbs such as *claimed*, *asked*, to text nouns like *dossier*, *report*, to thought signals such as *felt*, *wondered*) in each of the subcorpora respectively, in particular the way these devices are managed and exploited by institutional speakers.

Corpora and corpus techniques, then, permit the integration of quantitative analyses with those of a qualitative nature and this permits radically different types of research. CADS methodology

> is predicated on the belief that the combined use of qualitative and quantitative linguistic analysis is not only possible but that their combined application increases the researcher's analytical capacity to an extent greater than would be predicted from the sum of the two methods. (Morley, 2009, p. 10)

At the very simplest, corpus techniques can collect instances of use of items of interest to the researcher quickly and exhaustively. Hardt-Mautner (1995) was interested in how the four UK newspapers in her material, that is, two tabloids, the *Mirror* and the *Sun*, and two so-called qualities, the *Guardian* and the *Telegraph* (the first in each pairing being left-leaning, the second right-leaning), evaluated EC/EU news actors. The precise example she discusses is that of Jacques Delors, then president of the EU Commission. Using a concordancer, a program which searches very rapidly through large quantities of text and lists all instances of the search word or phrase along with a specifiable amount of context, she collected all instances where Mr Delors was mentioned. She was then able to go into the texts themselves and analyze in a traditionally qualitative fashion how he was discussed (much more frequently and, unsurprisingly, more negatively in the right-leaning Euroskeptic papers).

Typically in CADS research, however, a qualitative analysis can provide observations which themselves serendipitously suggest avenues of further quantitative and qualitative investigation. Hardt-Mautner (1995) prepared word-frequency lists—lists containing the words in order of frequency of occurrence—from her four newspapers. High in the lists of the two tabloids she found the names of the newspapers themselves, as well as the item *people*. Using the concordancer to investigate the use of these words in context she ascertained that the tabloids not only used self-referentiality as a means to create an authoritative voice for themselves, but even went so far as to claim to speak for the *people*.

Duguid's detailed investigation of reporting items mentioned above was largely sparked by her observation of their incidence in word-frequency lists of the various *CorDis* subcorpora. Riccio (2009) was intrigued by how the item *message* was high in the frequency list of White House briefings. Her subsequent detailed qualitative analysis of the item at both grammatical and rhetorical levels revealed the very varied and subtle ways it was employed by the spokespersons, sometimes to warn or even threaten some beneficiary of the *message*.

It is often very fruitful to compare the word-frequency lists obtained from two separate collections of texts, which can reveal which particular words or word clusters (i.e., "groups of words which follow each other in a text" [Scott, 2008]) are more frequent and often therefore more relevant in the one as opposed to the other. These items are known as the key words or key clusters of the relevant corpus. In Baker's analyses of two political debates, one on foxhunting in the UK House of Commons (Baker, 2006, pp. 121–49) and one around a Bill in the House of Lords to equalize the age of sexual consent for gay men with that for heterosexuals (Baker, 2004), he compares the word-frequency lists of the pro- and anti-sets of speakers. As regards the second of these, he notes how the word *homosexual* was associated with the key word *acts*, whereas *gay* was linked to key words denoting identities. Those who argued in favor of law reform focused on a discourse of equality and tolerance, while those who were against law reform tended to employ key words relating to danger, ill health, crime, and unnatural behavior.

It is impossible to overstate the importance of comparison in all CADS research; it is only possible to ascertain the particular features of one discourse type by comparing it with others. It is common practice to determine the key items in one's target corpus by comparing its frequency list with that of a heterogeneric general language corpus. Baker compared both his House of Commons pro- and anti-foxhunting speeches to the FLOB (Freiberg-Lancaster/Oslo Bergen) heterogeneric corpus. The item *cruelty* was frequent in both sides of the debate and therefore did not appear as a key word when they were compared, but it did appear in the key word comparisons with FLOB. Subsequent concordancing of the word revealed how each side in the debate used the term in very different ways. In the anti-hunt discourse it appeared with items such as *ban*, *prevent*, *tackle*,

unnecessary, *root out*, thus taking for granted that hunting entailed cruelty. But in the pro-hunt discourse it appeared with words and phrases relating to the difficulty of *defining* cruelty, of devising *tests*, to *prove*, or find *evidence* that hunts involved cruelty (Baker, 2006, pp. 138–9).

Modern Diachronic Corpus-Assisted Discourse Studies (MD-CADS)

One very recent offshoot of CADS, namely modern diachronic corpus-assisted discourse studies (MD-CADS; see Partington, 2010, for the first collection of papers), is entirely premised upon comparison. Researchers at the Universities of Siena and Bologna in Italy compiled the *SiBol* Corpus consisting of two (sub)corpora from different but contemporary periods in time, designed and compiled to be as alike as possible to eliminate potential maverick variables. The first, *SiBol 93*, contains all the articles published by the three main UK quality newspapers, namely *The Times*, the *Telegraph*, and the *Guardian*, in the year 1993. The second, *SiBol 05*, contains articles which appeared in the same three newspapers in the year 2005. The first contains around 100 million words and the second around 145 million words. Articles in the two corpora were marked up to permit the retrieval of metalinguistic information about the different political orientation of the three newspapers, date, and specific source.

The word-frequency lists of the two corpora were compared with each other, producing two key word lists, one of the key items in the 2005 newspapers, the other of the key items from 1993. Apart from allowing the researchers to track changes over time in newspaper language and discourse practices, the lists shed much light on political, social, and cultural developments over the time period. Clearly news actors come and go: for instance, the 2005 list contains *Bush* as opposed to *Clinton* and *Blair* as opposed to *Major*, and similarly items relating to current newsworthy events, Iraq- and Afghanistan-related items as opposed to Bosnia-related terms.

The 2005 key word list includes items relating to high finance or venture capitalism, including *FTSE* (Financial Times Stock Exchange index), *bid*, *takeover*, *executive*, and *hedge* (funds), as well as financial institutions such as *Deutsche* and *HSBC* (both banks).

In contrast, the 1993 key word list contains few items from high finance and far more relating to the national economy in general: *recession*, *recovery*, *inflation*, *economy*; to the relationship of government to the economy: *treasury*, *devaluation*, *privatization*, *budget*, *trade union*(s); and to industrial matters: *coal*, *chairman*, *industrial*, *unemployment*. Commerce and trade feature prominently: *trade*, *market*, *profits*, *losses*, and both *export* and *exports*, as very significantly do items relating to war and "defense": *UN*, *defense*, *NATO*, *military*, *troops*, *peacekeeping*, (armed) *forces*, *commander*, *artillery*, (arms) *embargo*, *convoys*, and *war*. This should not imply that the world in 2005 had necessarily become more peaceful and, unsurprisingly, in the 2005 list there are a number of terrorism-related words: *bombing*(s), *terrorist*, *terror*, and *Qaeda*. The greater quantity of lexis on economic and military matters in the 1993 list may simply reflect the general growth in UK "quality" newspapers of soft news and magazine content relative to hard news and political reporting over the time period.

Conclusion

By enabling quantitative and qualitative research methodology to be used in tandem, corpus-assisted approaches have considerably deepened our understanding of the character of political language, both from the linguistic and political scientific perspectives. At

the same time, the particular challenges presented by research into political discourse types, given their multi-faceted, ever-changing, and often conflictual nature, has led researchers to forge novel methodological techniques which can fruitfully be applied in other areas of corpus research.

SEE ALSO: Corpora: English-Language; Corpora: Specialized; Corpus Analysis of European Union Documents; Corpus Analysis of Key Words

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Corpus Analysis of Scientific and Medical Writing Across Time

DWIGHT ATKINSON AND ELLEN VALLE

Diachronic corpus linguistic studies have fundamentally deepened our knowledge of scientific and medical writing by revealing "language-in-the-making" (see Latour, 1988): how the literate technologies of scientific and medical research have developed, and what they have been developed for. If language actively creates (rather than simply reflects) the realities it describes, as constructivist accounts of language and social life (e.g., Kress, 1995) argue, then to study the history of scientific and medical language is to study, in part, the history of science and medicine itself.

Diachronic Corpora Featuring Scientific and Medical Writing

The diachronic study of scientific and medical writing is a comparatively recent development in corpus linguistics, and has therefore focused largely on corpus-building. For this reason, we begin by reviewing existing corpora.

It should first be noted that virtually all computerized historical corpora featuring scientific and medical language are English-language corpora. While unfortunate from the viewpoint of linguistic diversity and representativeness, this no doubt also reflects the expanding historical role of English in science and medicine. Thus, comparing journal abstracting databases between 1965 and 1988, Baldauf (2001) found a 10% increase for English over other languages in biology articles, to 84.7%, a 16% increase for chemistry articles, to 66.9%, and a 24% increase for medical articles, to 75.6%. These trends have no doubt continued apace in most cases.

Corpora featuring scientific and medical writing can be divided into two types. *General corpora* seek to cover a wide range of fields and text types; they are usually designed to provide the basis for general descriptions of a language. *Specialized corpora*, on the other hand, focus on specific areas of endeavor, such as science, medicine, law, and literature. Both types of corpora have their uses in cross-time studies of scientific and medical writing.

General corpora featuring scientific and medical writing include the 1.5-million-word diachronic section of the Helsinki Corpus of English Texts (http://www.helsinki.fi/varieng/CoRD/corpora/HelsinkiCorpus/index.html), the original computerized historical corpus of English, which covers the period AD 750 to 1700. The Helsinki Corpus's representation of scientific and medical writing is modest, amounting to no more than three scientific texts and two medical texts (and sometimes none) per 100-year period. Overall, the corpus contains ten texts classified as scientific, four as medical, and four as combined scientific/medical. Individual texts are 2,000–10,000-word extracts from full texts.

A second general corpus featuring scientific and medical writing is the Representative Corpus of Historical English Registers, or ARCHER (http://www.llc.manchester.ac.uk/research/projects/archer/), originally compiled by Douglas Biber and Edward Finegan at the University of Southern California (Biber, Finegan, & Atkinson, 1994) and now managed by a consortium led by David Denison and Nuria Yañez-Bouza at the University of Manchester. As of 2010, ARCHER contains 1.8 million words comprising 2,000-word

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samples from 11 historical registers (i.e., situational varieties) of English, two of which are scientific and medical research writing samples from historical journals across approximately 50-year periods from 1650 to 1999. There are 100 scientific and 126 medical texts in total.

Specialized corpora of scientific and medical writing include the Middle English Medical Texts (MEMT; http://www.helsinki.fi/varieng/CoRD/corpora/CEEM/MEMTindex.html) corpus constructed by Irma Taavitsainen, Päivi Pahta, and Martti Mäkinen at the University of Helsinki (Taavitsainen, Pahta, Mäkinen, & Hickey, 2005). MEMT is a 500,000-word corpus consisting of 200- to 2,000-word samples of 83 texts on medical matters from 1375 to 1500. The texts are divided into three groups—surgical treatises, specialized texts, and remedy books—written for both medical practitioners and the wider public. MEMT is part of the larger Early English Medical Writing corpus project (Taavitsainen & Pahta, 1997; Taavitsainen, 2009), which will cover 1375 to 1800. The Early Modern section of this corpus, spanning 1500 to 1750 and about to appear as of 2010, has been the subject of several studies (see below).

A second specialized corpus, the Coruña Corpus of English Scientific Writing (www.udc.es/dep/finc/CC.doc), is currently being compiled (as of 2010) at the University of A Coruña, Spain by the Research Group for Multidimensional Corpus-based Studies in English (Crespo Garcia & Moskowich-Spiegel Fandino, 2010). When complete, the Coruña Corpus will consist of English scientific texts from 1700 to 1900, although "science" is interpreted broadly to mean natural sciences, humanities, philosophy, and history. Each of these categories will consist of two text samples per 10-year period, with texts running up to 10,000 words. The natural science section will include texts in astronomy, physics, life sciences, chemistry, mathematics, and possibly other areas. The astronomy texts have already been released as the 400,000-word Corpus of English Texts on Astronomy (Crespo Garcia & Moskowich-Spiegel Fandino, 2009).

A final historical corpus of scientific writing, also currently under construction (as of 2010), deserves special mention: the diachronic section of the Corpus Informatisés Bilingues de Langues de Spécialités (www.termplus.dk/docs/LANS22003-CIBLSP.doc), being compiled at the University Lumière Lyon 2 under Philippe Thoiron. This appears to be the first effort to construct a bilingual diachronic computerized corpus of scientific writing, in this case focusing specifically on the field of ecology. Dury (2004) described the challenges in compiling this corpus, the English part of which runs from 1900 to 2002 and features (apparently complete) "specialized and semi-specialized" (p. 9) articles and book chapters on ecology, sampled by 10-year period. This part of the corpus, totalling about 700,000 words, is complete; its French counterpart is under construction.

Diachronic Corpus Studies of Scientific and Medical Writing

The studies described in this section are based on the corpora reviewed above. As most of the specialized corpora, in particular, are currently (2010) under construction, the research conducted on them is preliminary.

As part of a larger project, Atkinson (1992) analyzed a portion of ARCHER's medical subcorpus—70 articles from the *Edinburgh Medical Journal* (*EMJ*) sampled across seven 40–50-year intervals between 1735 and 1985, with a total of approximately 250,000 words. The analysis employed Biber's (1988) multidimensional approach, which measures frequency changes in 67 linguistic features, grouped via factor analysis into five smaller sets of co-occurring features, with each set given a descriptive label based on its features' shared functions.

Over the 250-year period of study, *EMJ* articles showed: (a) a steady increase in "informational production," as marked by rising frequencies of nouns, word length, prepositions, high type/token ratios, and attributive adjectives; (b) a steady drop in narrative features (e.g., past tense verbs, third-person personal pronouns, and "public" verbs); (c) steady linear movement from "situation-dependent reference" to "explicit reference," the latter marked by relative clause types and nominalizations; (d) a steady drop (with one exception) in "overt expression of persuasion," as marked especially by modals; and (e) no appreciable movement from an "abstract" presentation of information, as represented by passive verb types and reduced relative clauses.

Atkinson (1996, 1999) applied the same methods to a modified version of the original ARCHER scientific subcorpus—70 articles from the *Philosophical Transactions of the Royal Society of London* (*PTRS*), sampled at seven 50-year intervals between 1675 and 1975. Like the *EMJ* texts, *PTRS* articles showed steady increases in "informational production," a steady drop in narrative features, and a general trend toward less "overt expression of persuasion." Unlike the medical texts, there was general movement over the 300-year period toward more "abstract" information presentation, but no clear pattern of variation on "explicit" versus "situation-dependent reference."

While different forces were obviously at work in British science and medicine, common trends existed as well. Thus, both of Atkinson's studies indicate movement from relatively narrative, personal approaches in early periods to increasingly non-narrative, impersonal ones. Thus, the main rhetorical basis for truth claims in both fields shifted from personal authority and detailed eye-witness description of actual events to (a) intricate descriptions of research methods in 19th-century science, and (b) generalizations based on large statistical data sets in 20th-century medicine. Texts also became increasingly nominalized and informationally dense as the highly distinctive registers of present-day scientific and medical research writing emerged.

Biber has conducted multiple studies comparing cross-time development of different written registers of English. While not focusing exclusively on medical or scientific texts, these studies provide interesting comparative data. Thus, Biber (2004) examined the use of five types of stance markers (i.e., markers of propositional attitude or feeling such as *might*, *hopefully*, *appear to*) in drama, personal letters, news, and medical research registers from the ARCHER corpus between 1650 and 1975. While stance markers generally increased in frequency across registers in this period, medical research articles exhibited little change on four of the stance marker types, and in all but one case showed the lowest cross-time frequencies of stance markers among the four registers. These findings reinforce what both other studies and commonsense experience suggest: that present-day English-language research writing represents a truly distinctive form of language use—one which has increasingly diverged from other uses of language.

In a series of studies based on the Middle English Medical Texts Corpus, Taavitsainen and colleagues (e.g., Taavitsainen & Pahta, 1998) established the existence of a scholastic philosophy approach to argumentation wherein rhetorical appeals were made to ancient and medieval authorities. This was thought to be opposed to a natural-philosophy (i.e., early modern science) approach based on personal observation and experience. Taavitsainen (2009) extended this research by analyzing six kinds of texts represented in the not-yet-released Early Modern Medical Texts Corpus—general treatises (textbooks), specialized treatises, surgical treatises, recipe books, health guides, and medically focused *PTRS* articles—for evidence of both kinds of rhetoric. Although the findings were complex, at least one clear pattern emerged: *PTRS* articles were resolutely geared toward appeals to personal experience and observation, following the new approach to science innovated in the 17th century, whereas the other genres were variable in this regard.

In early work on the Coruña Corpus, Lareo and Ramos (2008) examined the frequency and use of complex predicates (CPs) containing the verb *make* in the 18th-century portion of the life sciences subcorpus, totaling 10 texts and approximately 100,000 words. They found that higher frequencies of *make*-CPs correlated with one extralinguistic variable, *origin of author*, while lower frequencies correlated with *level of technicality of text* (specialized versus popular). In general, *make*-CPs increased over the 100-year period of study. It should be noted, however, that frequency differences were quite small in this study, with the total range of variation amounting to just over one occurrence per 1,000 words of text.

Reyes (2008) examined verb types in 19 mathematical texts from the Coruña Corpus between 1800 and 1900 (as mentioned previously, the Coruña Corpus includes mathematics in the natural sciences). She found that verbs of communication (e.g., *say*, *tell*) and perception (e.g., *see*, *observe*) were more common in these texts than desiderative verbs (e.g., *want*, *wish*), as were verbs in the simple present tense and passive voice. These findings agree, according to Reyes, with heightened attention to clarity, precision, directness, impersonality, and nominalization in modern mathematical writing as part of a more general emphasis, rhetorically speaking, on scientific observation and objectivity.

Additional Studies and Future Directions

Additional studies inform the diachronic study of scientific and medical writing. Moessner (2009), for instance, compared two small corpora of scientific texts—one drawn from ARCHER—to test the degree to which ARCHER represents the full range of 17th-century English scientific writing. On the basis of her findings, she argued that ARCHER was representative in some ways but not in others. While representativeness is an ideal concept in diachronic corpus construction, and there is no real way to ascertain it without compiling a corpus of all texts, Moessner does provide useful ideas for future corpus construction.

There are various cross-time studies of scientific and medical writing based on nonelectronic (and not publicly available) text collections—notable examples include Bazerman (1988), Gross, Harmon, and Reidy (2002), Salager-Meyer, Alcaraz Ariza, and Pabón (2007), and Valle (1999). Much can be learned from these studies about the historical development of scientific and medical writing—knowledge which can be applied and/or tested in diachronic corpus research. Attempts have also been made to combine qualitative and quantitative research methods in this endeavor, including Atkinson's studies reviewed above.

Conclusion

Diachronic corpus linguistic research on scientific and medical writing is in its infancy: existing corpora provide quite partial coverage; most specialized corpora are still under construction; there is a near-complete bias toward English, although this bias is not completely unmotivated from a present-day perspective; and only a small number of studies, many of them self-admittedly preliminary, have been completed. We can therefore hope for extensive development in this area in coming years, as new corpora come online and researchers extensively analyze them.

SEE ALSO: Bazerman, Charles; Biber, Douglas; Corpora: English-Language; Corpora: Specialized; Corpus Analysis of Historical Documents; Research Articles in English for Specific Purposes

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Corpus Analysis of Sign Languages

TREVOR JOHNSTON AND ADAM SCHEMBRI

Introduction

Sign languages (SLs) are the naturally evolved visual-gestural languages of deaf communities. There are many SLs, many of which are not mutually intelligible or historically related. A few of these languages are village-based (e.g., in the less urbanized and developed regions of the world) but most are urban-based and have strong historical links to schools for the deaf established between the 18th and 20th centuries during periods of industrialization and colonization.

In a very real sense, corpora of SLs do not exist at the time of writing (2010). This may appear somewhat surprising given that there is clearly so much that corpora—and only corpora—could do to improve SL description and analysis in order to address practical real-world problems surrounding deafness, such as the education of deaf children and SL interpreter provision and training.

Until around 2004, the term "corpus" in the SL linguistics literature had not been used in the contemporary sense of "linguistic corpus." A corpus in this sense means a collection of written and spoken texts *in a machine-readable form* that has been assembled for the purposes of studying the type and frequency of constructions in a language. A modern linguistic corpus contains digital texts of some kind with associated metadata that describe the participants and the circumstances under which the data were produced and collected. The linguistic units in the texts usually have annotations of various types appended to them. SL linguists have, however, continued to use "corpus" in the more traditional sense of a data set upon which a linguistic description or analysis has been based. This sense of corpus predates modern corpus linguistics which first began with the application of computer technology to language processing in the middle of the 20th century.

Until 2008, the data set of a SL "corpus" typically consisted of a collection of video recordings, with or without accompanying transcription, or simply a written transcription of SL produced by informants. In the latter case, the primary data were often not recorded or, if they were, they were never easily accessible or properly archived. Moreover, in some cases, the primary data were neither naturalistic nor representative of a language variety defined by explicit criteria. Indeed, some data sets only consisted of recorded sentences performed or elicited as demonstrations of grammatical structures of the described language, for example, the data available from the American Sign Language (ASL) Linguistic Research Project at Boston University. This is not what is nowadays expected in a linguistic corpus.

The reference to these data sets as "corpora" in the SL literature has the potential to mislead corpus linguists who may not be familiar with past SL linguistic practice as to the status of some published descriptions and analyses of these languages.

Corpus-Based Linguistics and Signed Languages

There are many arguments that have long been advanced in support of corpus-based language description and linguistic research and they all apply equally well to SLs. However,

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there are several additional reasons why corpora are particularly important in SL research, some of them unique to this field of linguistics.

SLs are languages of minority communities that also have no real geographical presence, apart from home, school, or community meeting place. SLs experience interrupted inter-generational transmission for all but a tiny minority of users who are themselves born to deaf signing parents. Hence most SLs have few native users. In addition, SLs have no dedicated or widely used written form. Consequently, users sometimes appear to lack sets of shared linguistic norms that are often found in stable language communities, especially those with literacy and established standard varieties.

These facts create two major problems for SL researchers. First, although native user intuitions are of valuable assistance to linguists developing hypotheses regarding the use and structure of any language, these intuitions may be less useful in language description work in SL-using communities, all of which have been characterized as displaying high degrees of variation in both lexis and grammar. This variability means there is less consensus on phonological or grammatical typicality, markedness, or acceptability amongst users than is the case for a spoken language such as English. The practice in SL linguistics of relying on the intuitions of a small number of informants can thus be seen as problematic. Second, the representation of SL utterances using written glosses based on the majority spoken and written language that give little or no indication of sign form—the standard practice in SL linguistics—has meant that primary data have remained essentially inaccessible to other researchers and consequently unavailable for meaningful peer review.

In short, there is a particular need for creating recordings of naturalistic samples of SL produced by deaf adults and children so that they can be processed into language corpora in order to empirically ground our understanding of the structure, use, acquisition, and learning of SLs. Without corpora, one risks basing educational interventions and interpreting training, not to mention linguistic theory, on descriptions of SLs that may be inadequate.

Reasons for the Previous Lack of SL Corpora

Modern SL corpora had not been initiated before 2004 (see below) for three main reasons (see Crasborn, Efthimiou, Hanke, Thoutenhoofd, & Zwitserlood, 2008). First, the short history of SL language research practice and language description was strongly influenced up to the end of the 20th century by generative linguists who, believing in the "idealized native signer," were comfortable basing their descriptions on the grammaticality judgments of an extremely small numbers of informants.

Second, developments in the representation and transcription of sign language data have not kept up with the growth of sign language research. SLs are face-to-face visual-gestural languages that have no widely accepted written forms or standard specialist notation system which can be used in transcription. In almost all research, glosses have been used to "transcribe" SL data. This practice gives little or no indication of form. Even if a dedicated notation system has actually been used to transcribe data, the fact that SLs meaningfully exploit space (by the placement or movement of signs in the space in front of the signer) and visual-gestural prosody (e.g., movements of the head and torso, changes in facial expression and mouth patterns and modifications in the speed and intensity with which manual signs are performed) in complex ways means that it still remained very difficult to do. Consequently, almost no extended SL texts of any kind have been created, either by glossing or by using a dedicated notation system that could in turn be digitized, read by computer, and further processed (e.g., tagged, searched, sorted, etc.). One notable exception is a gloss-based text file of New Zealand SL (NZSL) which consists of 100,000 sign tokens. It was used to produce the first lexical frequency profile of an SL (McKee & Kennedy, 2006).

Third, there has been a lack of suitable technology for SL capture and its secondary processing (see Crasborn et al., 2008). Although the technology of analogue recording (first vision, then sound) had been used in linguistics and anthropology from early in the 20th century (it took some time for advances in technology to make it possible to combine the two media), they could not be used to align the glossed or transcribed representation of the utterance to the actual media. (Recordings, nonetheless, did make it possible to capture the ephemeral linguistic event so that linguists could listen to or view an utterance repeatedly during transcription.) The absence of time-alignment and the difficulties in transcribing three-dimensional visual-gestural languages meant that in a fundamental sense no real SL source texts were created and made available for processing. This had to wait on further technological developments.

Changes in Theory and Technology Usher in SL Corpus Linguistics

Not surprisingly, given the history of linguistics in the 20th century, the first steps towards corpus-based research in the field of SL linguistics came in part from an interest in sociolinguistic variation. Just like modern linguistic corpora, sociolinguistic data sets consist of large representative samples of the language of different social groups in different settings and regions, possibly over a period of time. Large-scale SL sociolinguistic projects, for example, began with studies of ASL by Ceil Lucas and her colleagues (e.g., Lucas, Bayley, & Valli, 2001). In these studies, hundreds of hours of video data from 207 participants were analyzed for the correlation of social factors such as gender, age, race, and class with phonological, syntactic, and lexical variation in ASL. Also, again like modern linguistic corpora, these data sets included the collection of participant metadata. The sociolinguistic studies of Lucas on ASL were followed by similar studies by Adam Schembri and colleagues on Australian SL (Auslan), and David McKee and colleagues on NZSL (e.g., Schembri, McKee, McKee, Johnston, Goswell, & Pivac, 2009). Though all studies used large representative data sets with some basic explicit metadata, the source texts do not constitute corpora in the full modern sense because the data sets are not machine-readable. Nonetheless, they all represent an important step toward the corpus analysis of SLs with findings on language change-in-progress and regional variation in lexis (e.g., Lucas, Bayley, Reed, & Wulf, 2001), phonological variation (e.g., Schembri et al., 2009), and grammatical variation (Wulf, Dudis, Bayley, & Lucas, 2002).

The advent of digital audio and video recording in the late 20th century enabled transcriptions to be directly time-aligned with recorded segments. This, coupled with improvements in personal computer technology and multimedia annotation software in the early 21st century, made genuine SL corpora possible for the first time. The way in which recordings of face-to-face language could be best processed to create corpora for the purposes of linguistic analysis were transformed or multiplied, or both (cf., Beal, Corrigan, & Moisl, 2007). For instance, the source text from that point onwards could remain the primary data itself (i.e., the SL video recording), rather than being necessarily replaced by its representation in a transcription to which annotations were subsequently appended.

For SL researchers, this meant that it became possible to use glosses productively in a digital multimedia environment by exploiting the fact that glosses are "mere" annotations, rather than using them as second-best compromise transcriptions. This can be achieved by ensuring that conventional linguistic units and types are systematically and consistently identified with invariant and unique sign identifiers (or "ID-glosses") to which linguistic annotations can be added (see Johnston, 2010).

One of a number of multimedia annotation software programs suitable for use by SL researchers wishing to create corpora is called ELAN (EUDICO Linguistic Annotator) (Max Planck Institute for Psycholinguistics Language Archiving Technology Group, 2009). One may analyze a corpus of multiple annotation files in ELAN alone or export the annotations into other corpus analysis programs. In ELAN, for example, one can easily extract frequency statistics for any annotation (gloss or linguistic tag) and identify the environments in which they occur. These searches can be further constrained by specifying aligned or overlapping values on multiple tiers within the annotation file and by metadata values such as age, gender, region, text type, and so forth associated with various files. The search routines in ELAN can display multiple individual matches in a concordance view.

With the development of digitized video recording and multimedia annotation software, the creation of SL corpora became possible. They are best described as subtypes of "spoken" (or, better, face-to-face) multimedia language corpora.

The Creation of SL Corpora Begins

To create a SL corpus one needs to take the above facts into account as well as observe generally accepted principles of modern corpus linguistics—namely, a corpus should be representative (e.g., a collected set of texts should accurately reflect the language of an identified entity), well-documented (e.g., with relevant metadata), and machine-readable (e.g., able to be searched and processed electronically) (McEnery & Wilson, 2001; Meyer, 2002; Teubert & Cermáková, 2007). This requires dedicated technology (e.g., computers and software), standards and protocols (e.g., agreed metadata categories), and shared or at least transparent terminology (e.g., grammatical class labels) (Crasborn, van der Kooij, Broeder, & Brugman, 2004). Importantly, any secondary processing of the primary data should ensure and facilitate machine-readability, which basically means that annotation should take priority over transcription.

In 2004, the first SL corpus project began with a digital video archive of recordings of deaf native, early learner, or near-native signers of Auslan (a similar, but considerably smaller project began on Irish SL in the same year). Each participant took part in three hours of language-based activity that involved an interview, the production of narratives, responses to survey questions, free conversation, and other elicited linguistic responses to various stimuli such as a picture-book story, a filmed cartoon, and a filmed story told in Auslan (see Johnston & Schembri, 2006). The archive was collected as part of an Endangered Languages Documentation project (SOAS, London University) with the intention that it would serve as the basis of a large machine-readable SL corpus in the modern sense. The Auslan corpus consists of these archive recordings and their linked ELAN annotation and metadata files. The corpus, however, is only really being created as the annotation files are completed. This work began in 2007 and it is expected it may take at least five years before a basic reference corpus of the entire video archive is completed (i.e., a minimal annotation set of time-aligned ID-glosses and English translation). Detailed multi-tier annotation would take even longer.

Since the work began on the creation of the Auslan corpus a number of other SL corpus projects have begun—Netherlands SL (NGT), British SL (BSL), NZSL, French SL, German SL, and Swedish SL—or are planned (e.g., ASL) at the time of writing. The first stage of the NGT corpus was completed in 2008, in the sense that the archived video recordings had been edited and catalogued and were made accessible through a digital video archive on the Internet. However, by the end of 2009, only a small percentage of the NGT video files had been annotated or translated into a parallel written text. The creation of these different sign language corpora signals the beginning of a period of corpus-based research

in SL linguistics which is certain to lead to a much better understanding of structure and use of these languages.

Corpus Analysis of SLs Begins

SL corpora promise to improve peer review of descriptions of SLs considerably and make possible, for the first time, a corpus-based approach to SL analysis. Corpora are important for the testing of language hypotheses in all language research at all levels, from phonology, through lexis, morphology, syntax, and pragmatics to discourse.

By way of example, consider the study by de Beuzeville, Johnston, and Schembri (2009) on the spatial modification of verbs in the Auslan corpus. A subset of verbs in most sign languages may have their initial place of articulation, their final place of articulation, or both modified so that the verb signs are directed from and towards present referents, or locations associated with absent referents. These spatial modifications are used to express who does what to whom, with initial locations, for example, often reflecting the location associated with the agent argument (i.e., the "doer" of an action) and the final location with the patient argument (i.e., the person or thing "done to"). This investigation examined the frequency and linguistic environments of verb modification with a view to assessing if spatial modification to signal these roles was obligatory in the language. The spatial modification of verb signs in SLs has traditionally been explained as a grammatical system marking subject and object role (e.g., Sandler & Lillo-Martin, 2006), similar to obligatory subject marking in English (e.g., third person singular *-s* in *he walk*s). This study found that the modifications were not obligatory, were strongly associated with a very small number of high frequency verbs, and tended to co-occur in specific linguistic environments. The authors suggested that these observations would not be expected under the traditional grammatical account of spatial modification and they are more in keeping with an analysis that sees the phenomenon reflecting, in part, the fusion of gestural pointing into the articulation of lexical verbs, as suggested by Liddell (2003).

The existence of (the beginnings of) an Auslan corpus made this study possible in more than one way. For example, the very identification of high frequency lexical verbs was only made possible through the corpus itself. This finding could then be added to the corpus and by way of verb frequency tagging become itself a factor in the further analysis of the corpus.

Conclusion

The creation of SL corpora as corpora in the modern sense involves more than recording, digitizing, editing, cataloguing, and archiving video texts. This is not to deny the importance of the creation of reference archives for SL researchers. After all, until the time of writing, there have been very few publicly available reference texts of any SL. Nonetheless, corpus creation must involve the transformation of archived material into something which is machine-readable by the principled application of annotation procedures that make optimal use of new digital technologies.

It is to be expected that, as the SL corpus projects around the world gain momentum and yield larger and larger machine-readable data sets, debates surrounding various lexical and grammatical features of SLs (e.g., lexical variation, verb "agreement," question formation, constituent order, grammatical relations, and so on, see Johnston & Schembri, 2007) will be transformed by the introduction of representative naturalistic usage data. Similarly, the analysis of native signer corpora will enable educators of the deaf and SL interpreter trainers to ground sign language curricula and assessment procedures

empirically, both of acquisition milestones for deaf children and proficiency rating for L2 SL interpreters. As SL corpus linguistics grows, it is also expected that the newer corpora will, from the outset, be representative of the entire signing community (not just native signers), and that "older" corpora—like the Auslan, NGT and BSL corpora—will be augmented by data from non-native signers.

SEE ALSO: Corpora: Multimodal; Corpus Linguistics: Overview; Signed Language Interpreting Profession

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Corpus Analysis of Spoken English for Academic Purposes

RITA SIMPSON-VLACH

Within the broader field of English for Specific Purposes, English for Academic Purposes (EAP) has become a heavily investigated area. However, within this arena, attention has tended to focus heavily on written rather than spoken discourse. Collections of academic written language are easier and less costly to assemble, and therefore corpus-based EAP research on written genres has flourished to a greater extent than comparable research on spoken genres. However, in spite of this imbalance, several corpora of academic speech are now available, and analyses of spoken EAP now span a wide and growing range of topics.

Prior to the development of spoken language corpora, the study and teaching of spoken academic language relied heavily on some combination of written academic discourse, conversational speech, or intuition to provide models of spoken language in academic contexts. With the availability of specialized corpora of academic speech, researchers and teachers gained access to resources that permit investigations of specific questions about grammar, lexis, usage, and discourse patterns as these actually occur in spoken academic contexts. These research inquiries have begun to fill in the gaps in our knowledge about the characteristics of academic speech as a specialized language genre. Results from such investigations are of interest to both applied linguists generally as well as EAP teachers and materials writers who can use such insights to better inform their teaching and materials development. A judiciously sampled spoken academic corpus constitutes a valuable research resource and set of models characterizing the spoken language that students will encounter and need to produce in the course of their academic endeavors.

Spoken EAP Corpora

The pioneering advances in this arena came in the late 1990s with the development of two corpora of academic language in the United States. One of these was a combined spoken and written corpus, the TOEFL 2000 Spoken and Written Academic Language (T2K-SWAL) corpus, compiled by Biber and his colleagues at Northern Arizona University (Biber et al., 2004). The other was a corpus of academic speech, the Michigan Corpus of Academic Spoken English (MICASE), compiled by a team of researchers at the University of Michigan (Simpson, Briggs, Ovens, & Swales, 2002). Following shortly thereafter and modeled on MICASE was another similar corpus created in Britain, the British Academic Spoken English Corpus (BASE) (Thompson & Nesi, 2001). The latter two corpora are both freely available for research and teaching, and MICASE provides a dedicated online search engine. The T2K-SWAL corpus is proprietary and available for research only to a limited number of affiliated researchers, many of whom continue to conduct ongoing research based on this important resource. These three corpora—MICASE, BASE, and the spoken component of the T2K-SWAL corpus—are all approximately the same size, at roughly 1.6 to 1.8 million words.

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Another important spoken EAP corpus project developed more recently in Europe is the English as a Lingua Franca in Academic Contexts (ELFA) corpus, compiled in Finland by Mauranen and colleagues (Mauranen, 2007). This corpus arose out of the recognition that English has established itself as the global lingua franca, and non-native speakers of English now outnumber native speakers around the world. Within academic domains, English constitutes the primary language of communication for a great number of people speaking it as a foreign or second language, often in communities with speakers from different language backgrounds. Corpora of spoken English, however, have by and large focused on or restricted themselves to native speakers. The ELFA corpus, with one million words of transcribed speech, provides a crucial resource for studying the linguistic features of this lingua franca both as a language variety in its own right and as an important component of academic speech.

In addition to these dedicated collections of academic speech, some larger corpora include a proportion of academic speech in their holdings, such as the British National Corpus (BNC), the Vienna-Oxford International Corpus of English (VOICE), and the Corpus of Contemporary American English (COCA). To the extent that the sub-corpora of these larger corpora are searchable separately from the rest of the non academic and written genres, they could constitute additional resources for the study of spoken EAP. For the most part, however, the spoken academic sub components of these larger corpora are not fully exploitable as EAP tools because they are not readily segregated from the larger corpus. Additional corpora of academic spoken English are being developed in other countries, but at the time of writing (2010) are either not yet publicly available, or not yet complete. Finally, a number of researchers have compiled more or less ad hoc corpora of specific spoken academic domains for particular research projects. One such example is Camiciottoli's (2007) work on the language of business studies lectures, based on a small corpus of 12 L1 and L2 lectures in the fields of business and economics. However, since such corpora tend to be fairly small (rarely encompassing more than 100,000 words) and are not generally widely available for additional research by other scholars, they have not become major influences on spoken EAP research, but have rather contributed incrementally to the growing body of knowledge about spoken academic genres.

Spoken academic English takes many forms, and each of the corpora described above delineates the universe of academic speech slightly differently. Even within a university setting, determining exactly which speech contexts fall into the category of "academic speech" is not always simple. It is generally agreed that the language of classrooms—that is, lectures, seminars, and class discussions—are central genres of academic speech, and all the academic speech corpora include a large percentage of classroom speech. Of all the spoken academic corpora, MICASE includes the widest range of speech events, from classroom lectures, discussions, and seminars, to laboratory sessions, student presentations, one-on-one tutorials, advising sessions, research interviews, dissertation defenses, public colloquia, meetings, study groups, and academic service encounters. The T2K-SWAL corpus includes fewer different speech event types; class sessions are the most common, followed by in-class groups, office hours, study groups, and service encounters. The BASE corpus is more streamlined yet, containing only lectures and seminars. It is also well established that in order to be representative of academic speech in general, spoken academic corpora must encompass a wide range of subject areas, from the hard sciences and engineering to the social sciences, humanities, and arts subjects. However, not all academic speech corpora have sampled equally from the academic subject domains, and indeed given the vast number of academic fields and the different ways these are categorized from one country to another or even one university to another, it would be nearly impossible to do. These inconsistencies make comparative research using two different corpora more challenging.

These spoken academic corpora are indeed valuable collections of previously unavailable

data that constitute an important resource for EAP practitioners. Nevertheless, it is important to note that within the larger world of corpus linguistics, and even when compared to academic written corpora, the 1 to 1.8 million words of ELFA, MICASE, BASE, and the spoken component of the T2K-SWAL corpus are considered rather small corpora. The small size is a limiting factor primarily in the context of vocabulary studies, but in other respects, particularly for studies combining corpus linguistics and discourse analytic methods, the small size and often correspondingly richer contextual information available can be an advantage.

Analyses of Academic Spoken Corpora

Broadly speaking, corpus-based analyses of spoken academic discourse can be grouped into three major sub categories: research on vocabulary or phraseology, research on grammar, and research on discourse patterns; although there is in fact much overlap among these divisions. The overarching research questions relating to spoken EAP are: What are the linguistic characteristics of contemporary academic speech—its grammar, its vocabulary, its discourse structure, its functions and purposes? Is it possible to situate academic speech along a continuum between academic prose and casual (non academic) conversation? Put another way, do academics speak like they write? Another related question is whether within academic spoken contexts the characteristic linguistic features vary according to academic disciplines or the different academic roles of speakers. Researchers working on spoken academic language are attempting to answer aspects of these larger questions from a variety of angles.

Analysis of Vocabulary and Phraseology

The publication of the Academic Word List (AWL; Coxhead, 2000), which was based on a 3-million-word corpus of academic written texts, has been of great benefit to EAP teachers and materials writers. One obvious extension of this effort might be to compile a comparable word list based on academic speech. At the very least, it would be worthwhile to know if the words and word families of the AWL occur in the same proportions in academic speech. However, given the comparatively small size of academic spoken corpora as noted above, this turns out to be not such an easy task. A corpus of 1.6 million words is not large enough to provide sufficient instances of important but less frequent words. Similarly, due to inconsistencies between the topics included, certain vocabulary words might appear more frequently than others merely by virtue of the sampling bias. For these primary reasons, as of 2010 a comprehensive spoken version of the AWL has yet to be compiled.

In spite of these limitations, there have been at least partial attempts. Thompson (2006) analyzed the vocabulary of the one million words of lectures in the BASE corpus, and proposed an Academic Lecture Word List which contained 230 word families, far fewer than the AWL's 570. This is important information for EAP teachers, because it means that of the 570 AWL word families, more than half are likely to be favored in writing and therefore not suitable for emphasis in a speaking course. Like the AWL, the Academic Lecture Word List is divided into sublists by frequency and by broad content domains, giving EAP researchers and teachers the ability to identify words that are common in all disciplines, or more common in, for example, the physical sciences than in the social sciences or life sciences.

Another related area of considerable ongoing research interest has been the study of the phraseology of academic discourse—recurrent three- to five-word sequences which are variously called multi word expressions, formulas, or lexical bundles. This line of inquiry has been more fruitful than investigations of vocabulary alone, because smaller

corpora can provide more insights into phenomena like multi word phrases that are relatively more frequent. Several general findings about the phraseology of academic speech have been noted. First, most spoken academic genre types have a higher frequency of recurring sequences of words (i.e., strings of words that appear together frequently) than comparable written genres. This accords with the more general observations that speech is replete with recurring high-frequency phrases and repetition is far more prevalent in speech than in writing.

Given other characteristics of academic speech that position it somewhere between general conversational genres and academic prose (e.g., grammatical features), we might expect academic speech to have fewer multi word expressions than conversation, but more than academic prose. However, in fact, in the case of classroom teaching, Biber's (2006) analysis of lexical bundles reveals that there are in fact *more* recurrent multi word phrases than in other spoken registers. This finding is of great potential importance to EAP teachers, and has been explained as a function of the interactive, personal nature of classroom teaching combined with its high-information-density language features. Lexical bundles, or phrases, function to segment and organize discourse structure, flag information status, signal transitions, convey stance, and generally to bracket the presentation of knowledge in various ways.

A more recent project relating to the phraseology of academic discourse is the Academic Formulas List (AFL; Simpson-Vlach & Ellis, 2010), a project which used a statistical measure called mutual information, in addition to frequency, to arrive at three separate lists—one for spoken, one for written, and one core list encompassing both spoken and written discourse—of three-, four-, and five-word phrases that are both salient as coherent chunks or phrases, and that are statistically more frequent in academic than in non academic discourse. The top five phrases of the core AFL are: *in terms of*, *at the same time*, *from the point of view*, *in order to*, and *as well as*; the top five phrases of the Spoken AFL are: *be able to*, *blah blah blah*, *this is the*, *you know what I mean*, and *you can see*. It is evident from just this glimpse of the Spoken AFL that academic speech resembles other spoken genres (although these phrases all occurred more frequently in academic speech than in corpora of ordinary conversation). Academic speech predictably has more recurring formulas than academic writing, a finding corroborated by other research. The AFL should prove to be a useful resource for EAP teaching and testing purposes, and presumably the spoken component of the list will be an especially valuable resource, since at the time of writing (2010) there have not been any comprehensive lexical reference lists based solely on spoken academic discourse.

Other questions surrounding the vocabulary of academic discourse have been studied by Biber (2006), who reported several findings about academic speech. In this study, he looked specifically at classroom teaching and found a smaller number of word types, many of which occurred with very high frequencies, especially compared to academic writing (e.g., *get*, *say*, *think*, *want*, *see*, *thing*). In addition, classroom teaching uses fewer low-frequency specialized words and relies more heavily on common high-frequency content words.

Analysis of Grammar

The comprehensive analysis of the grammar of academic speech has been limited primarily to studies done by the T2K-SWAL research team, mainly because it was originally tagged for part-of-speech, unlike other corpora that either were not tagged or were tagged some time after their original compilation. Part-of-speech tagging facilitates more comprehensive and detailed grammatical analyses rooted in quantitative methods.

Biber (2006) reports the findings of quantitative grammatical analysis of the T2K-SWAL corpus. The most basic grammatical analysis involves looking at the relative frequencies

of nouns and verbs in a given genre (part of the lexicogrammar). Spoken academic registers as a whole have roughly equal frequencies of nouns and verbs in contrast to written registers, which rely much more heavily on nouns. Correspondingly, spoken registers have more adverbs than adjectives, whereas the reverse is true for written registers. Separating out classroom teaching from the other academic spoken genres, however, the results show that nouns are slightly more frequent than verbs, situating this kind of talk closer to academic writing in that respect. Spoken registers predictably have a higher incidence of pronouns than written registers. The profile of verbs in academic speech shows that the present tense is overwhelmingly preferred over the past tense; similarly, simple aspect and active voice verbs are the norm; slightly higher percentages of verbs occur in the progressive aspect than the perfect aspect, and fewer than five percent of verbs occur in the passive voice. Characteristics of adverbial clauses are also interesting; these are more common in spoken registers, especially conditional adverbial clauses (e.g., *if*-clauses). Causative adverbials (e.g., *because*-clauses) are less common than conditionals, but still more common in spoken registers, and are especially prevalent in study groups. Finally, complement clauses, mainly *that*-clauses, are more common in spoken than in written registers, especially in the interactive registers. These findings help establish a baseline profile of the lexicogrammar and clausal features of academic speech, which in turn provide a more reliable basis for linguistic comparisons between genres, as well as for the creation of EAP teaching materials. For example, when teaching vocabulary words like *establish* and *establishment*, it is helpful to bear in mind the noun-heavy characteristics of written genres compared to spoken genres, and vice-versa.

A number of other studies of the grammar of academic speech have been conducted by Swales and his colleagues and published on the MICASE website (MICASE, 2009). These brief summary reports have included topics such as the distribution of *data* as a plural versus singular noun; the use of *among* and *between*; modal contractions with *will*; the use of vocatives; and anaphoric *so*. Unlike the grammatical analyses based on part-of-speech and clause types, these studies of grammatical features in MICASE tend to be exploratory in nature and to span an eclectic range of topics, and they are based on a combination of concordance searches, quantitative analyses, and pragmatic or discourse analysis. These studies are premised on the assumption that the language features in question are often problematic for students, and therefore of interest to both EAP teachers and students.

Analysis of Discourse and Pragmatic Features

Probably the largest number and variety of studies of academic spoken corpora fall into the category of pragmatics and discourse, although these often overlap with analyses of vocabulary or grammar.

Several early studies on MICASE examined hedging. One study looked at the ubiquitous hedges *kind of* and *sort of* from a cross-disciplinary perspective (Poos & Simpson, 2002). This research concluded that these common hedge words (also called mitigators or qualifiers) are more frequent in the humanities and social science disciplines than in the physical and biological sciences. This finding was further confirmed in a later study (Simpson-Vlach, 2006) of a larger set of lexical and phraseological differences across disciplines. Other researchers have examined hedging and the related phenomenon of vague language in academic speech. Another early MICASE study examined the discourse-pragmatic features of the word *just*, a lexical item that is among the most frequent in distinguishing academic speech data from roughly comparable written data (Lindemann & Mauranen, 2001). That research identified a number of different functions of *just* in academic speech, showing that its more commonly taught temporal function—as in *she has just arrived*—is the least frequent in academic speech, vastly outnumbered by the use of *just* as a mitigator, often collocating with other hedges and metadiscourse signals—as

in *so let me just talk about those a little bit more*. Another early MICASE study looked at the use of clusters of discourse markers and noted how often clusters such as *okay*, *so now* are used to signal topic transitions in academic speech and contribute to the cognitive task of discourse management (Swales & Malczewski, 2001). Several studies have been done on pronouns—*we*, *I*, and *you*—and their discourse-pragmatic role in creating interactivity in lectures.

In all of the studies of pragmatic or discourse-level features, the approach is generally to begin with a quantitative overview of the feature(s) in question, but then to use the corpus data as a contextualized resource for qualitative analyses. These types of studies take as their departure point an assumption that the discourse feature under investigation is pedagogically relevant.

Teaching Applications for Spoken EAP

Teachers of spoken English for Academic Purposes need access to accurate models of academic speech in order to make curricular decisions, design effective teaching materials, plan lessons, and coach students as they work toward mastery of the spoken genres of the academic world. The emerging body of research on spoken EAP corpora provides teachers with a wealth of valuable resources. The larger-scale quantitative-based vocabulary and grammar studies, as well as the more qualitative discourse and pragmatic research findings, are all relevant to EAP teaching as they inform the linguistic content knowledge of teachers, providing insights into characteristics of academic speech that are distinct from academic writing or ordinary conversation.

Some scholars have used spoken corpora as the basis for creating teaching materials for academic speech. Nesi (2001) and colleagues produced a multi-media set of classroom teaching materials called EASE (Essential Academic Skills in English) using the videotaped seminars and lectures of the BASE corpus. Simpson-Vlach and Leicher (2006) wrote a handbook to accompany the MICASE corpus which includes a wide range of pedagogical suggestions for incorporating corpus-based exercises and research findings into classroom teaching. Their sample pedagogical materials include a lesson on formulaic expressions derived from MICASE, with examples such as *it seems to me*, *keep in mind*, *it turns out*, and *more or less*. Each phrase is presented in context, with exercises to identify the meaning or function as well as suggestions for speaking and listening practice using the formulas. Other teachers have made use of concordance-style or computer-based corpus searching in the classroom, a somewhat controversial practice among EAP practitioners, as the concept of "data-driven learning" is championed by some but not universally accepted as an efficient use of classroom time. Corpora of academic spoken English have become increasingly valuable in the field of EAP, and the available resources, while still not as plentiful as those for written corpora, are sufficient to provide language teachers with opportunities to incorporate existing teaching materials into their classes, devise original corpus-based materials, or conduct research to inform classroom practices and curriculum.

SEE ALSO: Corpora: English-Language; Corpus Analysis of English as a Lingua Franca; Corpus Analysis of Written English for Academic Purposes; Corpus Linguistics in Language Teaching; Corpus Linguistics: Overview; English for Academic Purposes; Qualitative Corpus Analysis; Swales, John M.; Teaching Grammar and Corpora; Teaching Language for Academic Purposes

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Corpus Analysis of the World Wide Web

WILLIAM H. FLETCHER

Introduction

The World Wide Web has become a primary meeting place for information and recreation, for communication and commerce, for a quarter of the world's population. Millions of Web authors have created billions of Web pages, unknowingly providing texts to be mined for their linguistic and cultural content. The Web has evolved into the resource of first resort for lexicographers and linguists, for translators, teachers, and other language professionals. As a source of machine-readable texts for corpus linguists and researchers in complementary fields like natural language processing (NLP), information retrieval, and text mining, the Web offers extraordinary accessibility, quantity, variety, and cost-effectiveness. Investigators in these disciplines have developed scores of tools and products from Web content for both researchers and end users, and authored hundreds of scholarly papers on their projects.

This entry reviews the rewards and limitations of either acquiring Web content and processing it into a static corpus, or else accessing it directly as a dynamic corpus, a distinction captured in "Web for/as corpus" (De Schryver, 2002); here "Web corpus" serves as a cover term for both approaches. In the process, this entry surveys typical applications of such data to both academic analysis and real-world situations, discusses tools and techniques available to motivated language professionals and learners, and outlines future directions for Web corpus development.

Advantages and Limitations of Web Corpus

The Web corpus owes its popularity to its tremendous size; broad linguistic, geographic, and social range; up-to-dateness; multimodality; and wide availability at minimal cost. We shall consider each advantage briefly before discussing the limitations of the Web corpus.

Size

The Web universe is constantly expanding, so its size is unknowable. In 2008 Google noted that it had identified (but not actually indexed) over a trillion (10^{12}) distinct URLs (Web addresses), and that several billion (10^{9}) new Web pages appear daily (Alpert & Hajaj, 2008). Estimates suggest that Google indexes about 40 billion Web pages; the search engine (SE) Cuil.com's home page claims to index 127 billion, albeit with much repeated content. Size is about more than impressive statistics: Halevy, Norvig, and Pereira illustrate "the unreasonable effectiveness of [huge sets of] data" derived from the Web when applied to NLP problems like automatic speech recognition (ASR) and machine translation, arguing that "invariably, simple models and a lot of data trump more elaborate models based on less data" (2009, pp. 8–9), an insight reflected in the steadily improving quality of their employer Google's online translation and speech transcription tools. Size also matters

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because many words and phrases are relatively infrequent, so even large traditional corpora like the British National Corpus (BNC, 100 million words) offer few examples if any of familiar constructions to be found in abundance online.

Range

Once overwhelmingly Anglophone and Eurocentric, the Web has become truly World Wide, encompassing most of the earth and its written languages; English-language users and content now have minority status online (Top Ten Languages—Internet World Statistics, 2009). The availability of Web text has stimulated the development of corpora, lexica, and NLP tools for under-resourced languages across the globe, including Africa (http://AfLaT.org) and southeast Asia (http://SEAlang.net). Internationally oriented sites provide multilingual material which can aid translators and language learners. Online social networks have redefined our notion of community, bringing formerly private interaction into public view. In one example, such open access to informal discourse permitted Thelwall (2008a) to compare swearing on the social site MySpace by male and female teenagers and middle-aged adults from the UK and the US; users unintentionally supplied both linguistic and demographic data.

Up-to-Dateness

Major SEs closely track unfolding events and incorporate content from online communities with minimal time lag, enabling real-time study of current topics and emerging usage. Indeed, the Web and associated technologies have been both the catalyst for much linguistic creativity and the main vehicle for its dissemination. The Web is the most effective resource to research and document linguistic reflections of contemporary culture. In contrast, any static corpus is cut off at the moment of its compilation. For example, since the enormous Google 1T corpus, based on a trillion words of online English, was completed shortly before the appearance of the social site Twitter, it lacks any trace of the hundreds of playful neologisms coined by "tweeple."

Multimodality: Sound, Sight, and Text

Video and audio represent a sizable segment of online content, but search and linguistic analysis such as part-of-speech (PoS) tagging and concordancing require machine-readable written text. Some commercial news broadcasts and interviews are available in transcript form (Hoffmann, 2007), affording access to scripted and unscripted language in both spoken and written form. Sites which provide searchable (and downloadable) transcripts of audio content via ASR have come and gone, but new technologies are emerging to provide comparable services for online video: Exalead's Voxalead, Google Audio Indexing, YouTube ASR captioning and translation, and, most impressively, IBM TALES, which supports search with English queries for video content in other languages and provides reasonably accurate original and machine-translated text. Such sites enable Web corpora which combine video or audio material with written text.

Availability

In the developed world, Internet access is fast and inexpensive, and the growing demand in developing countries continues to improve service and reduce costs there as well. With an inexpensive PC and a home broadband connection one can compile and process a multimillion-word corpus in minutes. Besides Web-only content, such a corpus can contain material available in other forms, such as articles from newspapers and magazines, entire

books, and even movie subtitles. Thanks to the Web, acquisition of computerized text in almost any modern written language has become a straightforward task.

Limitations of Web Corpus

Despite the obvious benefits, Web content has drawbacks and limitations as linguistic data. Unless one restricts oneself to preselected sites, the source and linguistic properties of a Web page remain unknown. For whom and what purpose is the text intended? What geographic and demographic origin and target audience does it represent? Was it written carefully or carelessly by a native speaker, or is it an unreliable translation by man or machine? Is the document authoritative—accurate in content, and representative in linguistic form? Typically a Web corpus cannot answer such questions, which reflect key elements in the design of traditional corpora. Other caveats and limitations are discussed below.

Web as/for Corpus (WaC/WfC)

Web as Corpus

The most widespread approach to accessing the Web as a corpus is through commercial SEs like Google, Yahoo!, or Bing. For some purposes a quick glance at snippets of search terms in context on a search engine results page (SERP) suffices. For further insight users can retrieve Web pages from the SE's cache to display all occurrences of the word forms matched, highlighted in context—a rudimentary but rapid sort of concordance.

In another scenario a user queries an SE for alternate forms, phrases, or spellings, then compares the number of hits reported; Googlefight.com animates such comparisons. Not surprisingly, some linguists have based serious discussions on the comparison of "ghits" (Google hits), an unreliable practice for several reasons (Kilgarriff, 2006). Hit counts are very different from corpus frequencies: They reflect the number of matching Web pages, not actual occurrences, and a single page may be counted for alternate search terms. Many Web pages duplicate each other's content, inflating the counts. Indeed, "most widespread" does not necessarily mean "preferred": "ungrammatical" German *da werden Sie geholfen!* 'You (*formal*) will be helped there!' gained popularity as an advertising slogan, so it is far more frequent online than "correct" *da wird Ihnen geholfen!* In contrast, the "grammatically correct" analog with informal *dir* wins this Googlefight by a five-to-one ratio. Similarly, reinterpretations of common English phrases like *straight-laced, hone in on, font of wisdom/knowledge* rival or exceed the accepted spellings in frequency online.

Hits tally more than exact matches, further skewing page counts. To identify potential hits in major languages which do not match a query exactly, SEs typically apply *stemming*, that is reduction to a base form, erasing distinctions among, for example, verb forms and even verbs and related nouns, so a search for *governed* also matches pages with *governing* or *government.* The dominant Russian SE Yandex.com performs similar simplification of morphologically far more complex languages like Russian and Kazakh, one factor in its success in the region. Some Web pages are included in hit counts not for their own text but for the content of pages linking to them. SEs ignore punctuation, so some reported hits for a phrase might be spread across a phrase or sentence boundary. Diacritics are treated inconsistently or simply disregarded. Most importantly, reported hit counts only roughly approximate the actual number of matching documents, and can vary greatly even within a few minutes. Particularly misleading is the "union of sets" problem: hit count algorithms typically underestimate results for an OR query, reporting fewer matches for alternate search terms than for one of the terms alone. (For details of such issues see Duclaye, Collin, & Pétrier, 2006; Fletcher, 2007a; Thelwall, 2008b; Uyar, 2009a, 2009b).

As gatekeepers of the Web, the major SEs also have limitations for users who want to explore the language behind the hit counts. They are useful for linguistic research by coincidence, not by design, and their services are subject to change or cancellation without notice. Since they exist to steer impatient searchers toward any relevant Web pages, major SEs limit results to the top 1,000 matching URLs as ranked by proprietary schemes, which tend to favor media and similar popular sites, and often tailor result sets to give prominence to the most popular matches and to reflect the user's geographic location and past search activity. Such second-guessing of the searcher's intent can skew results and mask the full range of possible matches.

Despite such limitations, the three major SEs do afford effective access to a significant subset of the Web: only they have the massive infrastructure required to discover, index, store, and retrieve data from billions of Web pages efficiently. By delivering results which favor text-rich pages and authoritative sites, and which reduce the number of duplicate and questionable documents, they raise the quality of SERP content. Several free tools facilitate WaC research via these SEs. For example, WebCorp (www.webcorp.org.uk; Renouf, Kehoe, & Banjeree, 2007) provides an online service to query SEs, then generate concordances, word lists, and document metrics from matching Web pages. KWiCFinder (http://kwicfinder.com; Fletcher, 2007a) runs on a PC to produce concordances from Web pages; it can save local copies of pages retrieved for further analysis or inclusion in an offline corpus. While these tools are optimized for European languages, some SE-intermediary sites such as the SouthEast Asian Language Web Corpus (http://SEALang.net) focus on other regions. In contrast, WebAsCorpus.org (Fletcher, 2007b) concordances Web pages in any language and character set. To enable rapid creation of ad hoc corpora, this site compresses matching Web pages into a single zipfile for download and offline analysis.

All three of these applications provide rapid answers to questions of language usage with examples highlighted in context, but the total number of matching documents is limited by the SEs. To build larger Web corpora, the BootCaT software package (http://bootcat.sslmit.unibo.it; Baroni & Bernardini, 2004) starts from a user-provided list of seed terms and iteratively queries an SE, retrieves documents, extracts related terms, then re-queries the SE with these new terms and repeats the process. Another free suite of tools, Jaguar, extracts specialized corpora from the Web and analyzes various lexical features statistically (Nazar, Vivaldi, & Cabré, 2008). Its document-clustering techniques reduce extraneous content by filtering Web pages based on their similarity to user-designated documents. Since Jaguar provides data processing and storage, it places fewer demands on the user's technical expertise and infrastructure.

Tools like WebCorp and WebAsCorpus.org are regularly used by translators, writers, and language learners to verify usage and refine and enrich their writing. Language teachers enlist them to find authentic examples and appropriate texts for their students. Of course, such applications require the user to identify concerns, initiate a search, and evaluate the result. A new generation of SE-based tools for foreign language professionals and learners aims to support the writing process transparently. For example, Microsoft's Web-based ESL Assistant detects a number of common learner errors (e.g., articles, prepositions, word order) and suggests improvements based on both large-scale language models derived from Web data and real-time SE queries (Gamon et al., 2009). It highlights potential problems and furnishes examples of alternative formulations, along with confidence scores derived from SE hit counts.

Other important SEs could also be tapped by applications like those described above. They provide alternative gateways to the Web with different features, search results, and focuses. For example, Exalead.com still supports in-word wildcards and proximity operators (* and NEAR), features dropped by AltaVista in 2004. Baidu.com, the leading SE in China, indexes content from Asian countries not accessible via other SEs. There are

hundreds of niche SEs for specific languages, regions, or content areas which can be harnessed for WaC.

Web for Corpus

"Crawling" or "spidering" the Web to compile a do-it-yourself corpus offers a powerful but challenging alternative to SE-mediated access. Starting from a list of "seed" URLs, crawler software "harvests" Web pages, saves copies locally, extracts links, downloads new Web pages linked to them, then repeats the process until user-defined criteria are met. Crawlers can be restricted to desired domains (e.g., UK, RU) or Web sites (e.g., a specific newspaper, government or social site), and limits can be set on the thoroughness with which each site is harvested.

After downloading, Web pages must be processed for importation into corpus analysis tools and databases. This entails converting the various document formats found on the Web (HTML, PDF, DOC, etc.) into clean plain text, a very challenging process, especially for languages with multiple encoding schemes for non-Roman scripts (e.g., Khmer, Burmese, Japanese), and detecting the language to filter out extraneous material. To reduce noise and improve representativeness one may also remove "boilerplate" or "template" elements (content recurring on each page, navigation links, etc.), nearly identical or highly repetitive documents, and Web pages not consisting primarily of coherent text (Fletcher, 2004; Baroni & Kilgarriff, 2006; Scannell, 2007). To enhance usefulness for linguistic research, the texts may also be tagged with grammatical information and/or normalized, for example converted to lower case or corrected for typographical and spelling errors.

Many software applications are available to crawl the Web and process Web pages into usable text, but such solutions typically require programming expertise to customize and coordinate the various processes. A rare exception is multiplatform GrosMoteur, which produces concordances either by spidering the Web from a list of seed URLs or by querying Yahoo! directly. For the more technically proficient, Web Archive's Heritrix crawler and complementary applications offer greater flexibility and power.

Some free academic sites support Web corpus creation and annotation by harvesting online content on demand and processing it according to the user's specifications. Glossa.net calls itself a "watch engine": a user registers a query for specific terms or structures in a variety of languages and receives concordances enhanced with morphological, syntactical, and semantic information as Glossa.net encounters them. Alternatively one can take advantage of numerous free application programming interfaces (APIs) to Web services to perform sophisticated tasks through simple scripts adapted from sample code. For example, AlchemyAPI retrieves and processes Web pages, supporting language detection, text extraction (content minus boilerplate), and document categorization by topic. The site uClassify offers predefined document classifiers (e.g., detection of language, author gender) as well as a customizable module which can be "trained" to classify texts by genre or topic.

The following paragraphs survey representative examples of Web corpora acquired through crawling. The Crúbadán Project (Scannell, 2007) is compiling corpora for 431 under-resourced languages to enable translation and adaptation of open-source end-user applications (word processors, spellcheckers) for those languages. The Leeds Collection of Internet Corpora (Sharoff, 2006) provides a search interface to large (up to 100 million words) linguistically annotated corpora in a dozen European and Asian languages. The WaCky Project has compiled tagged corpora of one to two billion words each for several European languages available for free download to academic researchers (Baroni, Bernardini, Ferraresi, & Zanchetta, 2009). Much larger tagged corpora with target sizes of 10–20 billion words have been developed, including WebCorp's Linguists Search Engine (Renouf, 2009) and BiWeC (Pomikálek, Rychlý, & Kilgarriff, 2009).

Lexicographers have been avid consumers of Web data. For example, the Web-derived two-billion-word Oxford English Corpus was built to support dictionary development and to monitor the evolution of English. The University of Leipzig's Wortschatz-Portal has compiled online-searchable lexica and downloadable corpora for 57 languages (http://wortschatz.uni-leipzig.de/). For German this portal offers a free API to obtain detailed lexical, morphological, syntactic, and semantic information, as well as examples of usage for any given word form. Specialized aids for translators, writers, and language learners would be easy to develop with this service. Web data can also support bilingual lexicography: Ferraresi, Bernardini, Picci, and Baroni (2008) show that typical collocations found in large independently-compiled corpora of English and French can assist lexicographers in revising a bilingual dictionary.

A Web crawl can also target only a specific site or set of sites. For example, Gutenberg.org, Wikibooks.org and other eBook sites are unrestricted sources of literary, academic, and general-interest texts. Many media companies have online archives of articles and transcripts which can be crawled; the most impressive compilations from such sources are Mark Davies's *Time* Corpus and Corpus of Contemporary American English (http://corpus.byu.edu/). For languages with few NLP tools available, crawling sites with high-quality text can provide the data for producing them; for example, to develop a lexicon and PoS-tagger for Bengali, Ekbal and Bandyopadhyay harvested a Web corpus from the archives of a single newspaper (2008).

To develop translation aids, Web sites with multilingual content can be mined for parallel corpora. WeBiText.com has compiled a "translation memory" of searchable parallel texts in 30 languages, mainly from EU and other government sites (Désilets, Farley, Patenaude, & Stojanovic, 2008); SERPs show translation equivalents in context. Linguee.de targets a single language pair, German–English, and draws on corpora from a wider range of bilingual sites spanning most content areas; SERPs highlight equivalent terms and indicate level of confidence in their accuracy based on quality of the sources and user ratings. Of course, as Jiménez-Crespo (2009) demonstrates, human-translated sites also are subject to strong influence from the source language. Consequently, corpora with comparable content drawn from similar sites in different language areas may be preferable to parallel corpora in which one text is inevitably translated. For a study of language and culture in Italy and the UK as reflected in the phraseology of agritourism, Manca (2008) compiled monolingual comparable corpora from sites in both countries; the contrasts her analysis reveals would not have emerged as clearly from translated texts.

Such investigator-compiled Web corpora remain orders of magnitude smaller than the SEs' databases. To stimulate research, Google has released data from two sets of Web corpora, one of over a trillion tokens of English, the other of around 100 billion tokens, in 10 other European languages. One prototype project, Linggle, enhances Google's data with PoS tags and supports search in this vast dataset by wildcard and wild-PoS, or both, to identify recurring collocations (Chang, 2008); for example, **/a beach* returns collocations of *adjective beach* by actual frequency (not document frequency) in Google's database. Wu, Witten, and Franken (2010) describe a much more ambitious ongoing project to combine filtered Google data with text examples from the BNC in a variety of English learning activities. Another application finds an approach to detecting real-word spelling errors (e.g., mistaken *there* for *their*) based on Google's datasets more effective than other spell-checkers (Islam & Inkpen, 2009).

Copyright

Copyright issues remain a gray area in compiling and distributing Web corpora. In principle anything found on the Web is copyright and therefore subject to control by its author. Free

access to Web content does not imply the right to download, retain, reprocess, and redistribute it. A small percentage of Web pages do explicitly permit reuse and redistribution under Copyleft or Creative Commons license; Yahoo! and Google both support searching only such pages. Obtaining permission from all copyright holders to reuse texts from a large Web crawl borders on the impossible. The interpretation of international copyright law varies widely by country, ranging from unrestricted use for research purposes to "no use is fair use"; Hemming and Lassi (*n.d.*) discuss the issues without resolving them. The labor-intensive nature of postprocessing data from a Webcrawl, and the need of investigators to share data for verification and replication of their results by other researchers, argue for redistributing Web corpora even if it entails some legal risk.

Trends in Web Corpus Development

The Web as corpus community continues to grow in size and productivity. The Association for Computational Linguistics Special Interest Group on Web as Corpus (SIGWAC) organizes annual workshops which attract both corpus linguists and NLP researchers. Web data are increasingly prominent in papers in other related fields as well. To the enormous benefit of corpus linguists, the SE industry's research agenda overlaps significantly with their own. Investigators from the major SEs regularly publish papers with insights from their research on Web-scale data, and the industry also supports the development of open-source software which scales better to corpora with billions of tokens than do traditional database systems. This software includes Lucene, a powerful full-text SE, and Hadoop, a framework to distribute processing of data-intensive applications over many PCs, as well as more specialized tools based on them like Mahout, a distributed machine-learning library for document clustering (identifying similar documents) and classification (assigning documents to predetermined categories). The ability not only to compile but also to process, store, manage, and uncover meaningful patterns in huge datasets benefits investigators and end users alike.

SEE ALSO: Automatic Speech Recognition; Using the World Wide Web for Language Teaching

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Corpus Analysis of Written English for Academic Purposes

AVERIL COXHEAD

Corpus-based research and English for academic purposes (EAP) have a close relationship. In his editorial for a special issue on EAP and corpora in the *Journal of English for Academic Purposes* Thompson (2007, p. 285) explains this connection: "Corpora, at one level, are sources of evidence about language use, and permit a wide range of analyses of how language is used in different registers, contexts, and by different users." The term EAP covers a wide range of second or other language teaching and learning, including preparation for university studies, support courses for undergraduate second language learners already enrolled in university, and preparation for postgraduate studies to doctoral level. In this entry, we look at how corpus analysis of written texts provides evidence of language in use for EAP and informs dictionary design, materials development, testing, and curriculum design.

Types of Written Corpora for EAP

Various types of written academic corpora have been developed for EAP. Some are larger and more general in nature, while others are smaller and more specific. A corpus might contain samples of all written materials students could be expected to encounter at university. For example, the TOEFL 2000 Spoken and Written Academic Language Corpus (T2K SWAL) (see Biber, 2006) contains written materials such as university textbooks, course reading materials, web pages, and catalogues. Another corpus might contain texts from one particular subject area (see Flowerdew, 2004; Nesi, 2008).

While these corpora contain material that students might be expected to read, they might not contain materials that students need to write (Nesi, 2008). A problem related to EAP student writing is what learners should aspire to in their writing. Should we use corpora of professional writers as models for these writers, or perhaps highly proficient university level first-language (L1) or second-language (L2) student writers, or both? Examples of written corpora of highly proficient writers include the British Academic Written English (BAWE) corpus (Nesi, 2008) and the Michigan Corpus of Upper Level Student Papers (MICUSP) (English Language Institute, University of Michigan, *n.d.*). BAWE contains over 2,700 texts from undergraduate and postgraduate students writing in 35 university subject areas in the UK. MICUSP contains approximately two million running words of A grade final degree papers by undergraduate and postgraduate writers in the USA. Both corpora are freely available to researchers, EAP teachers, and students. MICUSP has a searchable online interface.

Some corpora contain writing from non-native writers. These collections are called learner corpora and are used to find out more about the language used in particular contexts by language users themselves. Learner corpora allow comparisons between L2 and L1 writers, as well as between L2s and other L2s. A benchmark learner corpus is the International Corpus of Learner English (ICLE), a corpus of writing by intermediate to advanced learners of English. The first version of this corpus was developed in 2002. A new version

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is now available (Granger, Dagneaux, Meunier, & Paquot, 2009). It contains 3.7 million words of writing from English-as-a-foreign-language learners from a variety of languages, including for example Czech, Dutch, French, German, Chinese, and Japanese. Gilquin, Granger, & Paquot (2007) call learner corpora the "missing link in EAP pedagogy" and outline the potential of research in this area to benefit both teachers and learners.

Corpus Analysis of Language in Use for EAP

In this section, we will look at grammatical and lexical analyses of written corpora for EAP.

Grammatical Analysis of Corpora for EAP

A common question in EAP is what grammatical structures should teachers and learners focus on? That is, what grammatical features typify academic prose? In a large, well-conducted, and complex study, Biber and his colleagues (Biber, Johansson, Leech, Conrad, & Finegan, 1999; see also Biber, 2006) compiled the Longman Spoken and Written English corpus of approximately 40 million words of British and American English which included texts in conversation, fiction, news, and academic prose. They found, for example, that nouns far outnumber any other word class in this corpus of academic prose. Biber (2006) categorizes nouns in different academic disciplines in textbooks and classroom language, and finds differences in textbook language across disciplines. Biber (2006, p. 49) uses an example of a university textbook passage and illustrates how verbs in the written text serve "to connect long and complex noun phrases, which convey most of the new information in the passage." This information can help teachers and learners to decide what kind of texts to select for reading in class and whether to spend time on text attack skills to help unpack long and complex noun phrases in reading, and to think about how writers' own texts might be constructed to embody the grammatical structures of academic written English.

Vocabulary in EAP Corpora

Vocabulary is another area of research activity that combines EAP and corpus-based studies. The Academic Word List (AWL) (Coxhead, 2000) is an example of written corpora analysis using a wide range of academic subject areas and a variety of academic materials. It was primarily made for EAP teachers as part of a university preparation programme or for students working independently. On average, the AWL covers around 10% of the words in an academic text, compared to 1.4% in fiction. The AWL has spawned a host of EAP teaching materials and has been used by test developers.

Corpus analysis can also help us find out about common collocations of words. For example, the written academic corpus used to develop the AWL shows us that *analysis* and *of* have a strong relationship. In the sentence "several implications flow from *the* previous *analysis of* Swedish and Canadian approaches to gender equity" (emphasis added), the target word "analysis" is followed by "of" and then a noun phrase. Other examples show that nouns which follow "analysis of" include *interaction*, *language*, *system*, *programme*, *the effect*, *the changes*, and *data*. This relationship between *analysis* and *of* goes both ways. That is, we can have *analysis of* as well as *of analysis*. *Of analysis* often occurs in patterns such as *method/unit type/level of analysis*. Another example is *analysis and/and analysis*. The collocates for these patterns are quite different. Examples of *analysis and* collocates include *assessment*, *evaluation*, *interpretation*, *management*, and *results*. Examples of *and analysis* collocates include *description*, *data collection*, and *representation* (Coxhead & Byrd, in press).

Multi-Word Units in Written Academic Corpora for EAP

When we look wider than collocations, we can see patterns or sequences in word use where vocabulary and grammar come together. That is, the use of a particular word requires the use of a specific grammatical form (see Biber et al., 1999). These combinations of words and grammar are called "lexicogrammatical patterns" or "multi-word units." Academic written English, according to Coxhead and Byrd (2007, p. 134),

> has characteristic extended sets of words that come in relatively fixed sequences and that are likely to be stored in memory as sets rather than created word-by-word for each use—examples include four-word sequences like those reported in Biber et al. (2004) [see Biber, 2006] in an examination of phrases such as *the extent to which*, *as a result of*, *at the end of*, and *it is possible to*.

Corpus tools can highlight or draw out these patterns from texts. Some patterns appear to be more like phrases, such as *on the other hand* and *at the same time*, in which the words seem relatively fixed. Other patterns have a more open structure, where a word can be substituted but the same basic pattern remains, as in *it is* _____ *to*, and *it is possible to/it is important to/it is necessary to*.

Research has analyzed characteristic patterns or lexical bundles for a variety of academic communicative types and purposes. For instance, Biber and colleagues (Biber, Conrad, & Cortes, 2004) analyzed lexical bundles in classroom teaching and textbooks. Hyland (2008) analyzed a written corpus of samples of published writing, student writing in dissertations, and master's theses to investigate differences in lexical bundles among disciplines. He found that electrical engineering contained the greatest number of lexical bundles in his corpus, while biology contained the fewest (p. 9). Learner corpora research has brought to light some interesting findings on the use, misuse, or nonuse of particular lexical items by native and non-native English writers. Paquot (2008), for example, reported on a cross-linguistic study of exemplification in writing by learners with five different language backgrounds. She found that a writer's first language can affect their use of multi word units and that writers can make errors with these units at the function, frequency, and register levels. Corpora can tell us how the same words are used differently in different contexts. It is important for EAP learners and teachers to understand this new information on variation in academic texts.

Applying Corpus Analysis to Dictionary Design, Materials Development, Testing, and Curriculum Design in EAP

Dictionaries have increasingly incorporated results from corpus analysis. A recent example is the use of a learner corpus to inform the development of a learner dictionary (Gilquin et al., 2007). This dictionary takes an example of learner writing that contains an error, explains the problem, and provides information on meaning, use, and corrections. Other dictionaries include common collocations, frequency-based information on words, and examples from L1 and L2 academic corpora to exemplify language in use.

Academic writing research is a rich area of collaboration between written corpora and materials development. An early example is Thurstun and Candlin's (1997) *Exploring academic English*. This groundbreaking workbook focuses on a small number of words such as *research*, *analysis*, and *probably*. It uses corpus results to illustrate the meaning and use of these words in authentic written academic texts. Activities direct the reader to notice and analyze target words in concordances. Opportunities are given to use the words in writing on academic topics. Another example is Thompson and Tribble's (2001) analysis

Table 1 From kibbitzer 77, Tim Johns

This kibbitzer is based on a summary by a Greek-speaking postgraduate student of physiology:

Original	**Revision**
In the early stages of an acute inflammatory immune response, neurophils predominate the phagocytic cell species recruited to the site.	In the early stages of an acute inflammatory immune response, neurophils predominate **among** the phagocytic cell species recruited to the site.

As shown by citations [below], ***predominate*** is not a transitive verb: it cannot be followed by an object, but can be followed by a prepositional phrase constructed with ***among***, ***in***, ***over***, etc.

1 This version still ***predominates*** among Roman Catholic laity.
2 . . . trees such as the dipterocarps, which ***predominate*** in primary rainforest in . . .
3 Yet the colours and shapes that ***predominate*** in any one place seem to bear . . .
4 . . . the class of antibody that ***predominates*** in blood . . .

of citation in academic texts and EAP textbooks. These materials include suggestions for using corpora in EAP classrooms to investigate citation in texts related to students' areas of academic interest using readily available word processing software.

Tim Johns, an early adapter of corpus linguistics and the originator of the term "English for Academic Purposes," developed "kibbitzer" pages that use samples of language from EAP corpora to illustrate the meaning and use of words and phrases in context. (A "kibbitzer" is an interested observer. See http://www.eisu.bham.ac.uk/support/online/kibbitzers.shtml.) Table 1 is adapted from kibbitzer 77 on "predominate":

The kibbitzer then illustrates how *predominate* contrasts with *dominate*, using concordance lines as examples. Unfortunately these kibbitzer pages are no longer readily available online, but they were instrumental in the data-driven learning trend in EAP. Römer (2009) finds that teachers want and need more such data-driven learning materials to inform classroom practice, and that corpus-driven materials need to be incorporated into language programmes.

Corpora studies now play a role in test development, for example in vocabulary, in comparisons of lower-level and higher-level proficiency for L2 writers, and in grammaticality. Hunston (2002, p. 212) states that learner corpora render the basis of assessment "explicit" in that the corpus sets the standard for the learner language comparison, and "realistic" in that the corpus contains authentic language in use.

Increasingly, the literature reports on EAP students being introduced to corpus-based studies to supplement their language programmes. One major benefit is the increased level of responsibility students feel for their own writing. Yoon (2008, p. 45) states,

> Corpora are tools that allow students to solve their linguistic and writing problems independently, and they raise students' linguistic awareness through problem-solving with authentic texts.

Starfield (2004) identifies language development, student empowerment, and engagement with authoritative English resources as benefits of corpus use by PhD students in a writing course.

Corpus analysis by novice second-language academic writers has students compiling their own specialized corpora for analysis (Lee & Swales, 2006). These writers describe this approach as "decentering" (p. 71) because

> it allows non-native speakers a chance to make their own discoveries about what is "done" in the language, instead of relying on native-speaker intuitions, or grammar/style books; it typically involves texts from a variety of different writers/speakers (not all of whom are necessarily native speakers), instead of just one native-speaker teacher standing in front of the classroom.

EAP learners and teachers can now access a wide range of online tools for investigating written academic corpora. Tom Cobb's (*n.d.*) website, the Compleat Lexical Tutor, has a concordancing program that allows learners to search single target words and phrases in their own writing and compare their use with written EAP corpora. It also has a grammatical comparison exercise where learners can correct a grammatical error either using their own knowledge or by checking concordance examples in a written corpus. In EAP classes, the present writer combines Johns's and Cobb's ideas and has learners investigate L1 and L2 uses of target language features. They create worksheets for each other using their findings. Such exercises can encourage learners to notice patterns in language and provide an avenue to develop skills by editing their own written language.

In this entry we have looked at how corpus analysis of written academic texts sheds light on language in use, and informs teaching and learning. Teachers have tools that enable learners to develop a degree of independence and start solving their own real-world language problems in EAP and university studies.

SEE ALSO: Corpora: Specialized; English for Academic Purposes; Learner Corpora; Vocabulary and Language for Specific Purposes

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Corpus Linguistics in Language Teaching

CASEY KECK

Corpus linguistics is an area of applied linguistics that uses computer technology to analyze large collections of spoken and written texts, or corpora, which have been carefully designed to represent specific domains of language use, such as informal conversation or academic writing. Since the early 1990s, researchers have become increasingly interested in applying the findings of corpus-based studies to second and foreign language education, and some (e.g., Conrad, 2000) have argued that corpus linguistics could revolutionize language teaching by fundamentally changing the way we approach materials design and curriculum development.

What Relevance Does Corpus Linguistics Have for Language Teaching?

Prior to the development of electronically stored corpora, it was not feasible to identify patterns of language use in, for example, American English conversation, as analyzing millions of words by hand was impossible to accomplish in a timely manner. Now, however, computer programs allow for automatic language analysis, and corpus-based findings have emerged which both enrich and challenge previous notions about language use. Specifically, the past few decades have seen an explosion in information available regarding (a) the frequency with which particular words or linguistic features occur in a language; (b) the ways in which lexis and grammar work together to create meaning; and (c) the ways in which situational factors, such as the mode and purpose of communication, impact the choices we make as writers and speakers of a language.

Corpus linguistics has made a wealth of frequency information available to language teachers, and this information can play an important role in helping teachers to decide what is more or less important in a language classroom, depending on what is known to be more or less typical in actual language use (Biber & Reppen, 2002). For example, teachers who would like to know which phrasal verbs are used most frequently in English can consult corpus-based frequency lists (e.g., Biber, Johansson, Leech, Conrad & Finegan, 1999; Gardner & Davies, 2007). Teachers preparing university students for the demands of academic study in English-speaking universities can now find lists of the most frequently used academic words across disciplines (Coxhead, 2000), as well as lists of important multiword phrases used in university spoken and written discourse (e.g., Biber, Conrad, & Cortes, 2004).

Corpus linguistics research has also shown that lexis and grammar work together to create meaning, and this has fundamentally changed our understanding of what it means to "know" a word. While dictionaries and language teaching materials previously focused on providing word definitions, these resources are increasingly drawing upon corpus analysis tools to provide additional information about *collocation*, the tendency of words to co-occur with other words, and *phraseology*, the tendency of words to occur in particular grammatical patterns (Hunston, 2002). It has become clear that a word cannot be defined

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in isolation, but rather, meaning is expressed through a combination of a word with other words and syntactic patterns. Corpus analysis tools, such as concordancing programs, allow teachers and students to view several examples of a key word in context and to study how this context impacts word meaning. These tools are particularly well suited for investigating the multiple senses of a single word, the subtle differences in the use of seemingly synonymous words, and the positive and negative connotations of particular phraseologies (Sinclair, 2005; Tsui, 2005).

Finally, corpus linguistics has shown teachers the importance of register and the ways in which language use varies according to the communicative demands of a given situation. Registers can be defined quite broadly (e.g., writing, as a general register, could be compared with speaking), or can be quite specialized (e.g., one could study the register of *New York Times* editorials). As Conrad (2000) notes, it no longer makes sense to offer students "monolithic" descriptions of the language they are studying: The choices we make regarding our use of particular words, phrases, and grammatical structures is largely determined by the context of communication. For example, the real-time pressures of conversation can help to explain its frequent use of contractions and pronouns, while the characteristics of writing (e.g., time for planning, the need to provide context for the reader) help to explain its frequent use of complex noun phrases (Biber et al., 1999). Because many language students experience a variety of registers in the target language (talking with friends, attending university classes, giving presentations at work), it is important for teachers to understand how language use varies across these contexts and to highlight important register differences in their classroom teaching.

Corpus Linguistics in the Classroom: Options for Language Teachers

Teachers who are interested in applying corpus linguistics in their own classrooms have a number of options available to them. Teachers who are just beginning to learn about corpus linguistics themselves, or who do not feel they have enough time or resources to devote to corpus activities, can nevertheless draw upon a variety of corpus-based resources when planning lessons and designing materials, including corpus-based dictionaries, grammars, and language textbooks (McCarthy, 2008). Teachers can also take a more critical approach to evaluating existing language teaching materials, keeping in mind issues that corpus linguists have emphasized as important: *frequency* (e.g., when selecting target vocabulary); *collocation and phraseology* (e.g., teaching not only word meaning, but also important collocates and syntactic patterns); and *register variation* (e.g., highlighting key differences in the use of a particular feature in speaking and writing).

A number of online tools also make it possible for language teachers to analyze collections of texts they plan to use in their classroom, to assess the difficulty of these texts, and to investigate how vocabulary words are recycled across an entire instructional unit (Cobb, 2007). Teachers can also consult a variety of online corpora when preparing lessons and materials. For example, the Corpus of Contemporary American English, or COCA (www.americancorpus.org), allows teachers to search not only for key words, but also for synonyms, important collocates, and grammatical patterns. The Michigan Corpus of Academic Spoken English, or MICASE (http://micase.elicorpora.info), allows users to generate concordance lines and to download entire transcripts of speech events, such as class lectures, student presentations, and study group sessions.

In addition to consulting corpora themselves, teachers also have the option of introducing corpora to their students. Flowerdew (2009) notes that students could benefit from explicit instruction on how to consult a wide range of corpus-based resources when investigating their own language-related questions. Teachers can also engage students in what

Johns (2000) refers to as *data-driven learning*, or the analysis of concordance lines that have been selected, arranged, and possibly edited by the teacher to draw learners' attention to patterns of language use. Building on Johns's ideas, a number of researchers (e.g., Aston, 2001; Bernardini, 2001) have advocated a *discovery learning* approach, where students, not teachers, take primary responsibility for searching and analyzing corpus data. These researchers argue that discovery learning, unlike teacher-directed activities, empowers learners to challenge textbook explanations and native-speaker intuitions and to make discoveries about language use that, without the use of corpora, would not have been possible.

The use of corpus data in the classroom is not uncontroversial, however, as others have expressed skepticism concerning the relevance of corpora for language teaching. In some cases, corpus data, when divorced from its original context, may serve to confuse students, rather than help them to learn about the language (Widdowson, 2002). The use of both learner corpora (see, e.g., Granger, 2002; Seidlhofer, 2000) and small, specialized corpora (see, e.g., Gavioli, 2001; Lee & Swales, 2006; Romer, 2010) may help teachers to design language analysis activities that engage students in explorations of texts that are more immediately relevant to their own lives.

Conclusions

Corpus linguistics has fundamentally changed our understanding of language use, and this, in turn, has led to changes in how we approach language education. Over the next few decades, it is likely that corpus-based findings will continue to inform the development of language teaching materials. The use of corpora in the classroom is also likely to increase, as teachers and students are given greater access to online corpora and text analysis tools. The major question to be explored is no longer "What relevance does corpus linguistics have for language teaching?" but rather "How can teachers and students most effectively make use of the corpus-based resources available to them?" Continued exploration of the use of corpora in a wide range of classroom contexts will no doubt help to refine our understanding of the variety of ways in which corpus linguistics might be applied to language pedagogy.

SEE ALSO: Biber, Douglas; Corpora in the Language-Teaching Classroom; Corpora in the Teaching of Language for Specific Purposes; Corpus Analysis for a Lexical Syllabus; Corpus Analysis of Spoken English for Academic Purposes; Corpus Analysis of Written English for Academic Purposes; Corpus Linguistics: Overview; Language for Specific Purposes Learner Corpora; Learner Corpora; Pattern Grammar; Pragmatics in Learner Corpora; Sinclair, John; Teaching Grammar and Corpora

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Corpus Linguistics: Historical Development

SUSAN HUNSTON

Origins

A number of features characterize corpus linguistics. It uses a collection of texts that have occurred naturally and are stored on a computer. Software is then used to manipulate the texts so that they can be examined in ways that are different from reading them in a linear fashion. These characteristics can be explored further to explain the origins of corpus linguistics. Although corpus linguistics might be said to have begun in the 1960s, many of its key assumptions were by that time already part of the linguistic tradition.

There is a long history of fieldwork in linguistics in which examples are collected to illustrate how language is used. Francis (1992) cites lexicographers and grammarians among linguists who routinely collected samples of language in actual use. For example, to compile the Oxford English Dictionary, dozens of volunteers were set to work reading books, newspapers, and other sources to identify the origins and uses of specific sets of words. Jespersen was among grammarians who regularly noted down examples he encountered to illustrate a grammar of English (Jespersen, 1909–49), while Fries compiled a collection of transcribed telephone conversations as the source material for his grammar (Fries, 1952). The later Survey of English Usage project, headed by Quirk, adopted a more systematic approach, collecting samples of written and spoken English from a variety of situations to describe the English of educated, London-based speakers (Quirk, 1960). In many ways, then, for people whose concern was to describe a language, the development of electronic corpora was a natural and welcome extension to their existing activity. Computers made it possible to collect much larger quantities of text and to process it much more quickly than a manual analysis could.

The tradition of manipulating data is even older. For example, concordances of the Christian Bible have been produced manually since the 13th century (Anthony of Padua, exact date unknown). These concordances select all instances of a given word and cite the phrases or sentences in which they occur. This is partly a convenient indexing device, but it is also designed to demonstrate the meaning of words of religious significance (such as *lamb* or *covenant*) by showing the surrounding text in all places where they occur. The manually-constructed concordances are a direct precursor of the concordancing programs used in corpus linguistics.

Journals and Conferences

The oldest journals devoted specifically to corpus linguistics are the *ICAME News*, first published in 1979 and replaced by the *ICAME Journal* in 1987, and the *International Journal of Corpus Linguistics*, first published in 1996. Two later journals are *Corpus Linguistics and Language Theory* (first volume 2005), and *Corpora* (first volume 2006). Journals with a more general interest in computational applications to humanities, linguistics, and literature are

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Computers and the Humanities, first published in 1966, and *Literary and Linguistic Computing*, first published in 1986.

There are now dozens of regular or occasional corpus linguistics conferences, held in as many countries. ICAME (the International Computer Archive of Modern and Medieval English), founded by Francis, Johansson, Leech, Sandved, and Svartvik, hosted what was probably the first such conference in 1979. Apart from that, the earliest corpus linguistics conferences focused on applications, with the first Teaching and Language Corpora (TALC) conference in 1994, the first Practical Applications of Language Corpora (PALC) conference in 1997, and the first conference of the American Association for Applied Corpus Linguistics (later renamed as the American Association for Corpus Linguistics) in 1998.

Corpora

In one sense, the history of corpus linguistics is the history of a series of objects—corpora. The first corpus to be given that name was the Brown Corpus, developed by W. Nelson Francis and Henry Kučera (at Brown University) and released in 1964. It consisted of texts amounting to one million words (or "tokens"). The corpus was not simply collected, but was designed, with the aim of being representative of written American English. To achieve this, a single year of publication was chosen—1961—and 15 categories were established (Francis and Kučera, 1982). These included six categories of fiction, two separate categories of newspaper texts ("reportage" and "editorial"), and an academic category subdivided into subject areas ("Natural Sciences," "Mathematics," and so on). There was a concern to have as wide a spread of texts as possible, so samples of 2,000 words were taken from each of 500 individual texts. This meant that no long texts took up a disproportionate amount of the total corpus size (so the corpus was not "skewed"), but it also meant that only a small part of each long text was included.

The Brown Corpus was important for many reasons. It was made widely available, and it introduced the concepts of representativeness and balance; many subsequent corpora used the same categories and followed the same principle of sampling texts. This made it possible to make direct comparisons between corpora. In addition, during the 1970s the Brown Corpus was "tagged," that is, each word ("token") in the corpus was given a code indicating its word class ("adjective," "plural noun," "comparative adverb," and so on). This made it possible, for example, to calculate the total number of adjectives in each part of the corpus, or to establish which nouns were most frequent. Although the principles of text sampling and of tagging were challenged subsequently (e.g., Sinclair, 1992), they have remained very common in the compilation of corpora.

Johansson (2008, pp. 34–5) points out that although many developments in corpora during the 1960s and 1970s involved English (he attributes this partly to the wide availability and principled design of the Brown Corpus), the early development of corpus linguistics was characterized by its international aspect. Universities and research centres in Britain, Canada, France, Germany, Italy, Norway, Sweden, and the USA contributed to early corpus-building. There were a number of joint projects. For example, a collaboration between the universities of Lancaster, Oslo, and Bergen headed by Johansson and Leech produced the LOB corpus of written British English in 1976. This used the same sampling technique and the same text categories as the Brown Corpus, and was the same size.

After these early corpora of English in the 1960s and 1970s, corpora developed in a number of ways. They grew in size as computer capacities increased. For example, the Bank of English Corpus, which was used as the basis for Sinclair, Hanks, Fox, et al. (1987), was at that time just under 20 million tokens in size, but about 20 years later comprised nearly 650 million tokens. The tradition of a large, balanced corpus that is representative

of a language variety developed into the concept of a "national" corpus. The first of the "national" corpora was the British National Corpus, begun in 1991 under the direction of Burnard and Leech, and released in 1994. Whereas Brown and LOB had each consisted of one million tokens, the BNC was many times larger, 100 million tokens, and this size became the standard for national corpora. As well as many kinds of written English, it included unpublished written material, such as letters, and a large amount of transcribed spoken language, obtained in part from a demographically selected cross-section of (English-speaking) British society. Xiao (2008) cites a large number of national corpora, many following similar design criteria to the BNC, existing or under construction: Chinese, Czech, Danish, Dutch, French, German, Greek, Hungarian, Irish, Italian, Korean, Maltese, Norwegian, Polish, Russian, Slovak, and US English.

After the 1960s, however, corpora did not simply get larger but also developed in other ways. There was a rapid growth in corpora consisting of specific kinds of text. These included historical corpora tracing the development of a language, parallel corpora comparing two languages, as well as, for example, corpora of news texts, or 19th-century fiction, or casual conversation, or academic writing. Many if not most of these specialized corpora were built to make possible comparisons between forms of a language, such as between different centuries, between different social settings, or between different professional groups. New publishing practices made it possible to access texts electronically, avoiding the need to scan or keyboard texts. The growth of the Internet made huge quantities of electronic text available, and the World Wide Web itself formed a kind of megacorpus (Bergh & Zanchetta, 2008). It became possible for an individual with very limited resources to make corpora of material available electronically. As a result, corpus-building moved from the exclusive domain of the large research project to the desk of the individual researcher. Specialized corpora extended to include electronic forms of written language such as e-mails, text messages, and blogs. The digital recording of sound and of visual images reduced the dependency of corpora on the written representation of language, and made it possible to build corpora of signed languages (Schembri, 2008) and to link transcribed spoken corpora to sound files.

Annotation and Software

As noted above, one of the key features of the Brown Corpus was the "tagging" of the corpus, that is, the addition of a word-class tag to each word in the corpus. Part-of-speech (PoS) tagging is done automatically, that is, using a computer program rather than a human being, but in some cases the tagging is subsequently edited, as automatic tagging is not completely accurate.

PoS tagging is only one kind of corpus annotation, and one aspect of the history of corpus linguistics is the development of new forms of annotation, and the extensive work that has been carried out to improve the accuracy of automatic annotation. A natural successor to PoS tagging was syntactic annotation, which provides a grammatical parse of each clause. Because it is more difficult to achieve accuracy in parsing than in tagging, "treebanks" were developed to assist this (Leech & Eyes, 1997). Treebanks are parsed corpora whose accuracy has been improved by human editing. Parsing programs can be calibrated against the known correct treebanks to improve their accuracy. More sophisticated kinds of annotation include allocating categories relating to intonation, meaning, or specific sets of items such as reported speech or thought (Garside, Leech, & McEnery, 1997). In corpora of language produced by learners, errors may be tagged.

Annotation has a number of advantages (Leech, 1991). It makes it easier to distinguish between the various uses of words that are ambiguous, such as "right ≠ left" and "right

≠ wrong." It also allows more abstract information to be extracted from a corpus, as frequencies can be given for classes of items, whether grammatical, semantic, or pragmatic, as well as for individual words. A drawback to annotation and the abstractions derived from it is that abstractions necessarily draw on a particular theoretical approach, and the researcher may be constrained to see in the corpus (only) that which the annotation makes salient (Sinclair, 1992).

Alongside developments in annotation has been a burgeoning of innovative kinds of corpus investigation software. Early software produced word frequency lists and concordance lines. This was followed by statistical information about strength of collocation and the comparative frequency of words in different corpora (Scott, 1996). Corpus investigation tools have always operated on tags as well as on words, and as annotation became more sophisticated they calculated the relative frequency of categories such as semantic classes, as well as of parts of speech (Rayson, 2009). With an increased interest in phraseology, software was developed to identify even variable and discontinuous phrases in a corpus (e.g., Greaves, 2009). It is clear that developments in software design mirror the more theoretical concerns of corpus linguistics. The focus on lexis and collocation is facilitated by concordancing and the measurement of frequency of co-occurrence. Scott's work on identifying distinctive lexis both enables and encourages the exploration of specific discourses. As corpora have grown larger, software has developed that enables the individual researcher to manage very large amounts of data by producing abstracted material from it (e.g., Kilgarriff, 2002). The software, then, mediates between the corpus and the user. At its best it does not replace engagement with the raw data, but provides a point of entry to the corpus, giving the researcher a rationale for investigating one set of items—words, phrases, or texts—from the millions of items that are present in the corpus.

Corpus Linguistics and Linguistic Theory

The history of corpus linguistics is a history of ideas as well as an account of corpus and software developments. In particular, it is evident that corpora have led to innovation in the way that languages are perceived. At the same time, because corpora have started to be used by so many people in different situations, it is arguable that "corpus linguistics," as a separate, identifiable way of doing linguistics, may no longer be a defensible category.

Corpora have been used to refine both descriptions and theories of language, largely by quantifying linguistic features and linking those to social and other kinds of context. For example, the collection edited by Lindquist and Mair (2004) demonstrates that studies of language change have benefited enormously from the availability of historical corpora such as the Helsinki Corpus of English Texts, while collections such as Aijmer, Altenberg, and Johansson (1996) present studies comparing similar features in different languages. There are numerous studies of the comparative frequency of individual grammatical features, especially in English, which might be said to culminate in Biber, Johansson, Leech, Conrad, and Finegan's (1999) survey of grammatical features in four contrasting corpora (news, academic prose, fiction, and conversation). Another set of studies deals with discourse categories such as conversational routines (e.g., Tottie, 1991; Stenström, 1994; Aijmer, 1996). Finally, there are many studies that distinguish between apparently similar words, of which Kennedy's (1991) study of *through* and *between* is an early example based on one language, while Viberg's (1996) study of English *go* and Swedish *gå* is a crosslinguistic example. What these studies have in common is the priority given to relative frequency and the importance of quantitative observations. Meyer (2002) points out that this places corpus linguists at odds with generative grammarians, and that Chomsky's criterion of explanatory adequacy is unlikely to be met using corpus data alone. McEnery and Wilson (1996) argue that Chomsky's views led to a hiatus in the development of corpus linguistics

during the 1950s.

Although corpus linguists often indicate that their work is intended to corroborate, extend, or resolve previous theoretical positions, a large body of work explicitly opens new areas of language theory and challenges preconceptions. For example, Biber (1988) proposes that language variation should be regarded as multidimensional rather than unilinear. He shows that texts from two different contexts, such as conversations and interviews, may be quantitatively similar if one set of features is taken into account, but quantitatively different if another set of features is used in the calculation. Sinclair's (1991, 2004) work on lexical items suggests that lexis and phraseology, not grammar, are central to the description of English, and that in fact lexis and grammar should not be regarded as separate areas of language description. Essentially he proposes a unit for the analysis of English—the "unit of meaning"—which represents a radical departure from previous linguistic theories.

In line with studies such as these, a distinction is often made between studies that take established categories or hypotheses as their starting point (sometimes called "corpus-based") and those that aim to find new modes of description by taking a more open stance towards the corpus data ("corpus-driven") (e.g., Tognini-Bonelli, 2001). An alternative way of conceptualizing trends in corpus linguistics is to distinguish between "broad-brush" and "fine-grained" language studies. These represent different ways of exploiting the potential of a corpus. Corpora are ideal for identifying general differences in the frequency of specific items in different contexts. Biber, Johansson, Leech, Conrad, and Finegan's (1999) comparison between four corpora, which quantifies features such as tenses, noun phrase modification, and adverbials in each corpus, is one example. The result is a series of broad characterizations of each of the corpora. Corpora are also, however, ideal for identifying details of the usage of individual words or phrases, as examples from a broad range of texts can be displayed together. Sinclair's theories, for example, come from very close attention paid to relatively few items.

A somewhat later trend in corpus linguistics is the use of corpora to enhance work which belongs to the field of discourse analysis or critical discourse analysis (e.g., Stubbs, 1996; Baker, 2006). Here the target corpus is tightly controlled to represent a very specific type of discourse, and the approach to analysis may involve studying individual texts as text, as well as searching the whole group of texts as a corpus. A frequently used technique is to identify what is "special" in terms of content or stance in the target corpus by identifying words and phrases which occur relatively more frequently in it than in a general corpus. Another is to examine the collocates and phraseology of items which are statistically or culturally significant in the target corpus, often to reveal ideological tendencies which may be hidden where only one text is read.

It was noted above that it has become relatively simple for any researcher or teacher to build and exploit a corpus. It is not surprising, therefore, that there is a growing debate as to what kind of a discipline corpus linguistics is, or indeed whether it is a discipline at all (Taylor, 2008). In a sense, "corpus linguistics" has been a victim of its own success. Corpora, and the techniques and methods associated with them, are now widely used in a number of fields, such as sociolinguistics, psycholinguistics, stylistics, or discourse analysis, where the quantitative results of a corpus search may be interpreted in the light of other evidence. In other words, the objects and techniques of corpus linguistics are no longer limited to people who use such tools exclusively, and, as such, the value of "corpus linguistics" as a distinguishing label might be said to have disappeared. On the other hand, the investigation of the uniquely-configured object that is a corpus cannot be reduced to a simple set of techniques for language description (Teubert, 2005). The impact of corpus linguistics on language theory itself remains its most important contribution, and for that reason alone the name deserves its place in the history of linguistics.

SEE ALSO: Biber, Douglas; Corpora: Specialized; Corpus Analysis of Key Words; Corpus Analysis of Political Language; Corpus Analysis of the World Wide Web; Corpus Linguistics: Overview; Leech, Geoffrey; Sinclair, John

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Corpus Linguistics: Quantitative Methods

STEFAN TH. GRIES

Introduction

Ever since technological development has made it possible to search large corpora in a very short time, corpus linguists have done a lot of interesting work in linguistics in general, and in applied linguistics in particular. Given both a large interest of corpus linguists in lexicographic applications and the fact that words are among the linguistic elements most easily recoverable (in the usual suspects of well-researched Indo-European languages at least), most corpus-linguistic work until now has been concerned with words and/or *n*-grams (i.e., sequences of words), their distribution with regard to other words, and their distributions across different modes, registers, genres, varieties, and so forth.

More recently, however, the situation has changed and corpus-linguistic research has begun to address many more syntactic phenomena. While this is to some extent due to the increased availability of syntactically annotated corpora, it is also due to corpus linguists' and many cognitive linguists' adoption of the assumption that syntax and lexis are not qualitatively different (see Hunston & Francis, 2000, or Hoey, 2005, in corpus linguistics and Langacker, 2000, or Goldberg, 1995, 2006, in cognitive linguistics). Only recently, however, have words and syntactic patterns, or constructions, been treated on a par not only *theoretically*, but also *empirically*. One example is the application of association measures that are usually applied to co-occurrences of words (aka collocations) to the co-occurrences of words with syntactic patterns. This approach is referred to as *collostructional analysis* (a blend of *collocation* and *construction*), and three different kinds of applications have been proposed:

- **collexeme analysis**, which quantifies the degree of attraction or repulsion of words (typically verbs) to a syntactically defined slot in a construction (see Stefanowitsch & Gries, 2003), for example: how much does *give* like to occur in the ditransitive?
- **distinctive collexeme analysis**, which quantifies which words (typically verbs) are attracted to or repelled by one of several constructions (see Gries & Stefanowitsch, 2004a), for example: how much does *give* prefer to occur in the ditransitive as opposed to the prepositional dative?
- **covarying collexeme analysis**, which identifies preferred and dispreferred pairs in two slots of one construction (see Gries & Stefanowitsch, 2004b), for example: the two verb slots in *He tricked her into marrying him*.

These methods have been applied in a variety of domains and languages including constructional senses and complementation patterns, syntactic alternations of a variety of constructions, verb-specific syntactic priming effects, and so forth. In this article, applications of distinctive collexeme analysis to data from second-language learners of English will be discussed briefly.

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Table 1 Frequencies of *give* in ditransitive and prepositional datives in the ICE-GB (from Gries and Stefanowitsch, 2004a, p. 102)

	Ditransitive	*Prepositional dative*	*Total*
give	461	146	607
Other verbs	574	1773	2,347
Total	1,035	1,919	2,954

Distinctive Collexeme Analysis

Like nearly all corpus-linguistic association measures, distinctive collexeme analysis is based on a two-by-two co-occurrence table such as Table 1, which exemplifies how the lemma *give* is distributed across ditransitive and prepositional datives in the British component of the International Corpus of English (ICE-GB).

In collostructional analysis, the association measure used most frequently to evaluate such tables is the negative log to the base of 10 of the $p_{\text{one-tailed}}$-value of a *Fisher–Yates exact test*. Using the open-source programming language and environment R (see R Development Core Team, 2010, available from http://cran.at.r-project.org/), this measure can be computed easily as follows (when the observed frequency in the upper-left cell is larger than the one expected by chance, i.e., $607 \cdot 1035 / 2954 \approx 213$):

```
607*1035/2954 # expected frequency¶
[1] 212.6760
– log10(sum(dhyper(461:607, 1035, 1919, 607))) # – log10 p-value¶
[1] 119.7361
```

Line 3 of the above code computes the negative log to the base of 10 (– log10) of the sum (sum) of all probabilities from the hypergeometric distribution (dhyper) from the observed frequency of 461 to the theoretically possible extreme of 607, given that the data contain 1,035 ditransitives, 1,919 prepositional datives, and 607 instances of *give*. (Such computations can be performed automatically with a script available from http://tinyurl.com/collostructions.)

If the observed frequency of the cell of interest is less than the expected one (as it is here for the occurrence of *give* in the prepositional dative), this formula changes to the following, which computes the negative log to the base of 10 (– log10) of the sum (sum) of all probabilities from the hypergeometric distribution (dhyper) from the observed frequency of 146 to the theoretically possible extreme of 0, given that the data contain 1,919 prepositional datives, 1,035 ditransitives, and 607 instances of *give*:

```
– log10(sum(dhyper(0:146, 1919, 1035, 607))) # expected frequency¶
[1] 119.7361
```

Analogous tests can be done for all verb or lemma types occurring at least once in either the ditransitive or the prepositional dative, and then these verb lemmas can be ranked according to the strength of their attraction or repulsion to the two constructions (an interactive R script for this offering different measures of association strength is available from the author). The verbs that are most strongly attracted to the ditransitive and the prepositional dative are listed in (1) and (2) respectively (listed in decreasing strength of association strength).

1. *give, tell, show, offer, cost, teach, wish, ask, promise, deny, award, grant, cause, drop . . .*
2. *bring, play, take, pass, make, sell, do, supply, read, hand, feed, leave, keep, pay . . .*

Such results are interesting because they provide strong support for analyses of the two constructions that invoke different constructional senses. For example, the ditransitive has been argued to involve constructional senses of transfer, enablement of transfer, non-enablement of transfer, communication as transfer, and others. In addition, they are also compatible with what is known about the two constructions' acquisition patterns (where, for example, *give* is a path-breaking verb for the acquisition of the ditransitive).

While many analyses of this kind were targeted at argument-structure constructions, other less semantically loaded constructions have exhibited similar verb-specific effects; examples include *will*-future versus *going to* V (see [3]), particle placement (see [4]), or *to* versus *ing*-complementation (see [5]).

3. a. He will mess it up.
   b. He is going to mess it up.
4. a. He will mess up the whole talk.
   b. He will mess the whole talk up.
5. a. He tried to mess up everything.
   b. He tried messing up everything.

This collostructional approach has returned interesting and new results regarding many of the above constructions and others, and there is even experimental evidence from sentence-completion and self-paced reading tasks that indicates that the behavior of native speakers of English can sometimes be predicted better on the basis of association strengths than on the basis of raw frequencies or conditional probabilities (see Gries, Hampe, & Schönefeld, 2005, 2010).

Applications

The above kind of corpus-based measurement of association strengths has many interesting implications and applications. For example, there is an increasing body of evidence that shows that children and adults are very sensitive to distributional patterns in language: infants less than a year old can notice statistical co-occurrence patterns in their ambient language; language change is strongly correlated with the frequencies of words and syntactic patterns; and linguistic representation and processing exhibit frequency and conditional-probability effects. Therefore, the computation of probabilistic associations between different linguistic elements can inform many aspects of theoretical linguistics, but also applied linguistics. The following two sections discuss how such corpus-based methods can also be correlated with experimental data and show, here for second and foreign-language learners, how the corpus-based association strengths help to reliably predict second-language learners' experimental priming responses.

Ditransitive Versus Prepositional Datives

Gries and Wulff (2005) performed a sentence-completion task in which the results of Gries and Stefanowitsch's (2004a) distinctive collexeme analysis, parts of which were listed in (1) and (2), were correlated with the results of a sentence-completion priming experiment with German learners of English (mean number of years of English instruction: 11.1 years). In that experiment, the subjects were presented with sentence fragments of two kinds in an alternating fashion: sentence fragments that suggested a particular completion (as in [6]), followed by sentence fragments that did not (as in [7]).

6. a. The racing driver showed the helpful mechanic . . . [suggests a ditransitive]
   b. The racing driver showed the torn overall . . . [suggests a prepositional dative]
7. The racing driver showed . . . [does not suggest a specific constructional completion]

The question was whether subjects' completion of a fragment of the type in (6) would prime them to complete the fragment of the type in (7) with the same construction, and the learner subjects did exhibit such a significant priming effect. More interestingly in the present connection, however, is the fact that the subjects exhibited different priming effects for different verbs: the subjects were significantly more likely to be primed for ditransitives when the sentence fragment ended in a verb that the distinctive collexeme analysis of the native English speaker identified as preferring the ditransitive, and vice versa. Even more interestingly, Gries and Wulff also showed that this significant correlation between native-speaker corpus preferences and learner experimental preferences cannot be reduced to the English verbs' translational equivalents in German.

Similar evidence was obtained by Wulff and Gries (in press) on the basis of (German and Dutch) learner corpus data from the International Corpus of English (ICLE; Granger, 1993). They found a highly significant correlation between native-speaker corpus preferences and learner corpus preferences.

In sum, for the alternation of ditransitives and prepositional datives, different studies using the collostructional approach revealed that the two constructions exhibit markedly different preferences for different verbs, which in turn correlate with cognitive-linguistic accounts of the two constructions and their sense extensions, and these preferences are robust across native speakers and learners, and across experimental and observational data.

to-Versus *ing*-Complementation

In a similar set of case studies, Gries and Wulff (2009) studied the two complementation patterns exemplified in (5). They first conducted a distinctive collexeme analysis of the two constructions in native-speaker corpus data to identify which verbs they prefer. They found that the *to*-construction and the *ing*-construction preferred the verbs listed in (8) and (9) respectively (listed in decreasing strength of association strength).

8. *try*, *wish*, *manage*, *seek*, *tend*, *intend*, *attempt*, *hope*, *fail*, *like*, *refuse*, *learn*, *plan* . . .
9. *keep*, *start*, *stop*, *avoid*, *end*, *enjoy*, *mind*, *remember*, *go*, *consider*, *envisage*, *finish* . . .

Again, many of the claims about the semantic differences between the two constructions are confirmed. For one, the verbs most distinctively associated with the infinitival construction, *try* and *wish*, both denote potentiality, while the verbs most distinctive for the gerundial construction, *keep*, *start*, and *stop*, denote actual events. Along similar lines, many of the collexemes distinctive for the infinitival construction are future-oriented (*intend*, *hope*, *learn*, and *aim* are just a few examples), while the distinctive collexemes of the gerundial construction evoke an interpretation in relation to the time of the utterance (*avoid*, *end*, *imagine*, *hate*, etc.).

As before, the question arises as to what extent learners are aware of these statistical tendencies, especially since these two patterns provide few other clues such as, for instance, the order of semantic roles they involve. Gries and Wulff therefore performed a similar sentence-completion experiment involving priming with German learners of English (mean number of years of English instruction: 11 years). (This study included several additional factors that are of no concern here.) In a logistic regression involving priming and verbs' attraction to both constructions, Gries and Wulff found that the collostructional preference of the verb in the target fragment was by far the strongest predictor of the learners'

sentence completions. Also, Wulff and Gries (in press) show that the same native-speaker collostructional preferences are also highly significantly correlated with learners' preferences obtained from the German part of the ICLE.

As with the ditransitives and prepositional datives, different kinds of evidence support the collostructional approach and its implications: native speakers and learners exhibit very similar preferential patterns of construction use.

Conclusion

This article has discussed several different case studies—involving different experiments and different corpus data—all of which yield converging evidence in support of a quantitative corpus-linguistic method to explore the syntax–lexis interface, the collostructional approach. This approach yields replicable quantitative data for the general description of constructions' distributional characteristics and/or verb subcategorization preferences as well as other processing-related accounts of acquisition, learning, and priming. However, another feature of this approach that is just as attractive is that it is compatible with much recent work in usage-based cognitive linguistics and psycholinguistics that adopts an exemplar-based perspective, in which learning is based on the memorization of, and probabilistic abstraction from, thousands of exemplars. Such collostructional studies are therefore more than just a convenient quantification of co-occurrence phenomena: they also provide a motivated way for relating empirical results and contemporary linguistic and psycholinguistic theorizing.

SEE ALSO: Testing Independent Relationships

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Corpus Linguistics: Overview

MICHAEL STUBBS AND DOROTHEA HALBE

Corpus linguistics means the use of computer-assisted methods to study large quantities of real language. Such research is important for applied linguists because they investigate questions about actual language use. Due to advances in technology, researchers can discover new facts and test hypotheses about aspects of language which were not previously accessible to empirical observation. These include the frequencies of linguistic patterns as language varies over time and in different social settings and also many aspects of routine language use which are not obvious even to native speakers.

The data used in corpus linguistics are a "language corpus," which since the 1990s (see CORPUS LINGUISTICS: HISTORICAL DEVELOPMENT) usually means a text collection which is large, computer-readable, and designed for linguistic analysis. A general reference corpus aims to provide a broad and balanced sample of a language. Such a corpus can consist of hundreds of millions of words of running text, sampled from thousands of individual texts, which are selected according to specific criteria such as a sociolinguistic theory of language variation. Smaller specialized corpora (see CORPORA: SPECIALIZED) can provide samples of specific text types (e.g., anything from the casual spoken language of teenagers to the formal written language of academic research articles). Software allows the texts to be rapidly searched, in order to find, list, sort, and count words, phrases, and grammatical patterns.

These new technological resources help researchers to describe as accurately as possible how language is used in everyday life. In the past, central aspects of human behavior were inaccessible to systematic study, since it was impossible to search for patterns in such huge quantities of data. Nowadays, the new data and methods have radically changed how dictionaries and grammars are produced. The first corpus-based dictionary was by Sinclair (1987) and major grammars based on data from large corpora include Sinclair (1990), Francis, Manning, and Hunston (1996, 1998), Biber, Johansson, Leech, Conrad, and Finegan (1999), and Carter and McCarthy (2006).

Applied linguists must then assess the practical relevance of this work. Can the linguistic descriptions and principles which have been developed by corpus linguists be applied directly to practical problems (e.g., teaching a language or improving translation practices), or must applied linguists develop their own descriptions and principles which are relevant to their specific problems? It used to be argued that applied linguistics needs linguistics: you have to have linguistics before you can apply it (Corder, 1973). Nowadays many applied linguists would argue exactly the opposite: it is the difficulties which arise in analyzing real-world data which lead to a reappraisal of the concepts used by linguistics. The latter framing certainly characterizes the relationship between knowledge production and knowledge use in corpus linguistics today.

In addition, linguistics cannot, on its own, solve real-world problems in which language is a major factor. There are always other nonlinguistic factors, such as psychological, social, and financial (e.g., in language teaching) factors. Applied linguists must therefore often interpret and integrate findings from other disciplines, such as psychology and sociology, and applied linguists have therefore investigated many different relations between language and the world.

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Corpus methods can be directly applied to some practical problems: for example, preparing dictionaries for advanced learners (a central task in language teaching), or helping to make documents easier to understand for average readers (a task in campaigns to simplify bureaucratic language), or comparing quantitative features of texts in order to identify the author of anonymous letters (one task for forensic linguists). Other implications are less direct, but help us to understand the relation between language and its users better: for example, empirical studies of language use can give insight into how language is learned by children or stored in the brains of adults, and how language relates systematically to aspects of the social world, such as social class, gender, and age.

The productivity of corpus methods today is the result of the foundational work on corpora since the 1960s, carried out (in rough chronological order) by scholars such as Nelson FRANCIS, Henry KUČERA, Randolph QUIRK, Sidney GREENBAUM, Geoffrey LEECH, Jan SVARTVIK, Stig JOHANSSON, John SINCLAIR, and Douglas BIBER. Such work is comprehensively reviewed in introductions to corpus linguistics (e.g., Kennedy, 1998; Biber, Conrad, & Reppen, 1998; Stubbs, 2001; Meyer, 2002; Teubert, 2006; Lindquist, 2009).

At the center of corpus linguistics is frequency information, and several entries discuss the kinds of quantitative analyses (see CORPUS ANALYSIS OF KEY WORDS) which corpus software makes possible. Other entries provide detailed examples of the implications and applications of this information, especially for educational and professional purposes. Major areas covered are how corpus methods are used in the study of the following:

- Different languages: see CORPORA: CHINESE-LANGUAGE, CORPORA: ENGLISH-LANGUAGE, CORPORA: FRENCH-LANGUAGE, CORPORA: GERMAN-LANGUAGE, and CORPUS ANALYSIS OF SIGN LANGUAGES (although this is only a small sample of work which is becoming available in different languages).
- Varieties of English: English as a world language (see CORPUS ANALYSIS OF ENGLISH AS A WORLD LANGUAGE) and a lingua franca (see CORPUS ANALYSIS OF ENGLISH AS A LINGUA FRANCA), dialects of English (see CORPUS ANALYSIS IN DIALECTOLOGY), styles of English (spoken and written [see CORPUS ANALYSIS OF WRITTEN ENGLISH FOR ACADEMIC PURPOSES]), and relations between spoken language and gesture (using data from multimodal corpora [see CORPORA: MULTIMODAL]).
- Written text types: documents in institutions (e.g., the European Union [see CORPUS ANALYSIS OF EUROPEAN UNION DOCUMENTS], the Royal Society [see CORPUS ANALYSIS OF SCIENTIFIC AND MEDICAL WRITING ACROSS TIME]), historical documents (see CORPUS ANALYSIS OF HISTORICAL DOCUMENTS), political (see CORPUS ANALYSIS OF POLITICAL LANGUAGE) and literary (see CORPUS ANALYSIS OF LITERARY TEXTS) texts, translated texts (see CORPUS ANALYSIS IN TRANSLATION STUDIES), and the huge variety of texts on the World Wide Web (see CORPUS ANALYSIS OF THE WORLD WIDE WEB).
- Spoken and written language use in social situations such as workplaces (see CORPUS ANALYSIS OF LANGUAGE IN THE WORKPLACE) and school classrooms, where discourse for professional (see CORPUS ANALYSIS OF BUSINESS ENGLISH) and academic purposes (see CORPUS ANALYSIS OF SPOKEN ENGLISH FOR ACADEMIC PURPOSES) has implications for advanced language learning.
- Language use in social situations where accurate communication is essential: in public policy (see CORPUS ANALYSIS IN SOCIAL AND PUBLIC POLICY RESEARCH) and the courtroom (see CORPUS ANALYSIS IN FORENSIC LINGUISTICS), and in the design of systems for multinational/multilinguistic real-time communication at sea, in the air, and between police and emergency services (see CORPUS ANALYSIS FOR OPERATIONAL COMMUNICATION).
- Vocabulary and phraseology: where accurate description has applications in the preparation of better and more accurate monolingual and bilingual dictionaries.

- Work which has psychological and educational implications (see CORPUS STUDY: COGNITIVE IMPLICATIONS), including first language acquisition (child language [see CORPUS ANALYSIS OF CHILD LANGUAGE]), second language learning (e.g., analysis of learner language) and second language teaching (including syllabus design [see CORPUS ANALYSIS FOR A LEXICAL SYLLABUS], and the use of corpus software in the language classroom [see CORPORA IN THE LANGUAGE-TEACHING CLASSROOM]).

In a famous statement, Brumfit (1997) defines applied linguistics as "the theoretical and empirical investigation of real-world problems in which language is a central issue." The entries show how the rapid development of hardware and software, especially since the 1990s, has contributed substantially to the accurate descriptions of real language use which are essential to this aim.

SEE ALSO: Discourse: Overview; Learner Corpora; Lexis: Overview; Monolingual Lexicography; Pragmatics: Overview; Technology and Language: Overview

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Corpus Study: Cognitive Implications

NICK C. ELLIS

Cognition

"Perception is of definite and probable things" (James, 1890, p. 82). From its very beginnings, psychological research has recognized three major experiential factors that affect cognition: frequency, recency, and context (e.g., Anderson, 2000). Learning, memory, and perception are all affected by frequency of usage: the more times we experience something, the stronger our memory for it, and the more fluently it is accessed. The more recently we have experienced something, the stronger our memory for it, and the more fluently it is accessed. (Hence your more fluent reading of the previous sentence than the one before.) The more times we experience conjunctions of features, the more they become associated in our minds and the more they subsequently affect perception and categorization; so a stimulus becomes associated with a context and we become more likely to perceive it in that context. The power law of learning describes the relationships between practice and performance in the acquisition of a wide range of cognitive skills—the greater the practice, the greater the performance, although effects of practice are strongest at early stages of learning, thereafter diminishing and eventually reaching asymptote (Newell, 1990). The power function relating probability of recall to recency is known as the *forgetting curve* (Ebbinghaus, 1885).

William James's words which begin this entry concern the effects of frequency upon perception. There is a lot more to perception than meets the eye, or ear. A percept is a complex state of consciousness in which antecedent sensation is supplemented by consequent ideas which are closely combined with it by association. The cerebral conditions of the perception of things are thus the paths of association radiating from them. If a certain sensation is strongly associated with the attributes of a certain thing, that thing is almost sure to be perceived when we experience that sensation. But where the sensation is associated with more than one reality, unconscious processes weight the odds, and we perceive the most probable thing: "all brain-processes are such as give rise to what we may call FIGURED consciousness" (James, 1890, p. 82). Accurate and fluent perception thus rests on the perceiver having acquired the appropriately weighted range of associations for each element of the sensory input.

It is human categorization ability which provides the most persuasive testament to our incessant unconscious figuring or "tallying" (Ellis, 2002). We know that natural categories are fuzzy rather than monothetic. Wittgenstein's (1953) consideration of the concept *game* showed that no set of features that we can list covers all the things that we call games, ranging as the exemplars variously do from soccer, through chess, bridge, and poker, to solitaire. Instead, what organizes these exemplars into the *game* category is a set of family resemblances among these members—son may be like mother, and mother like sister, but in a very different way. And we learn about these families, like our own, from experience. Exemplars are similar if they have many features in common and few distinctive attributes (features belonging to one but not the other); the more similar are two objects on these quantitative grounds, the faster are people at judging them to be similar. Prototypes, exemplars which are most typical of a category, are those which are similar to many

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members of that category and not similar to members of other categories. Again, the operationalization of this criterion predicts the speed of human categorization performance —people more quickly classify as *birds* sparrows (or other average-sized, average-colored, average-beaked, average-featured specimens) than they do birds with less common features or feature combinations like those of kiwis or penguins (Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976). Prototypes are judged faster and more accurately, even if they themselves have never been seen before: someone who has never seen a sparrow, yet who has experienced a range of other birds, will still be fast and accurate in judging it to be a bird (Posner & Keele, 1970). Such effects make it very clear that although people don't go around consciously counting features, they nevertheless have very accurate knowledge of the underlying frequency distributions and their central tendencies. Cognitive theories of categorization and generalization show how schematic constructions are abstracted over less schematic ones that are inferred inductively by the learner in acquisition. So psychology is committed to studying these implicit processes of cognition.

Language Cognition

The last 50 years of psycholinguistic research has demonstrated language processing to be exquisitely sensitive to usage frequency at all levels of language representation: phonology and phonotactics, reading, spelling, lexis, morphosyntax, formulaic language, language comprehension, grammaticality, sentence production, and syntax (Ellis, 2002). Language knowledge involves statistical knowledge, so humans learn more easily and process more fluently high frequency forms and "regular" patterns which are exemplified by many types and which have few competitors. Psycholinguistic perspectives thus hold that language learning is the implicit associative learning of representations that reflect the probabilities of occurrence of form–function mappings. Frequency is a key determinant of acquisition because "rules" of language, at all levels of analysis from phonology, through syntax, to discourse, are structural regularities which emerge from learners' unconscious lifetime analysis of the distributional characteristics of the language input. In James's terms, learners have to figure language out.

It is these ideas which underpin the last 30 years of investigations of language cognition using connectionist and statistical models (Christiansen & Chater, 2001), the investigation of how frequency and repetition bring about form in language and how probabilistic knowledge drives language comprehension and production (Bybee & Hopper, 2001; Bod, Hay, & Jannedy, 2003), and the proper empirical investigations of the structure of language by means of corpus analysis exemplified elsewhere in this encyclopedia. Corpus linguistics allows us to count the relevant frequencies in the input.

Frequency, learning, and language come together in usage-based approaches which hold that we learn constructions while engaging in communication, the "interpersonal communicative and cognitive processes that everywhere and always shape language" (Slobin, 1997). Goldberg's (2006) construction grammar argues that all grammatical phenomena can be understood as learned pairings of form (from morphemes, words, idioms, to partially lexically filled and fully general phrasal patterns), and their associated semantic or discourse functions: "the network of constructions captures our grammatical knowledge *in toto*, i.e. it's constructions all the way down" (Goldberg, 2006, p. 18). Such beliefs, increasingly influential in the study of child language acquisition, have turned upside down generative assumptions of innate language acquisition devices, the continuity hypothesis, and top-down, rule-governed processing, bringing back data-driven, emergent accounts of linguistic systematicities. Constructionist theories of child language acquisition use dense longitudinal corpora to chart the emergence of creative linguistic competence from children's

analyses of the utterances in their usage history, and from their abstraction of regularities within them (Tomasello, 2003; Goldberg, 2006). Children typically begin with phrases whose verbs are only conservatively extended to other structures. A common developmental sequence is from formula, to low-scope slot-and-frame pattern, to creative construction.

Second Language Cognition

What of second language acquisition (L2A)? Language learners, both L1 and L2, share the goal of understanding language and how it works. Since they achieve this based on their experience of language usage, there are many commonalities between first and second language acquisition that can be understood from corpus analyses of input and cognitive- and psycholinguistic analyses of construction acquisition following associative and cognitive principles of learning and categorization. Thus usage-based approaches, cognitive linguistics, and corpus linguistics are increasingly influential in L2A research (Robinson & Ellis, 2008; Collins & Ellis, 2009; Ellis & Cadierno, 2009), albeit with the twist that since they have previously devoted considerable resources to the estimation of the characteristics of another language—the native tongue in which they have considerable fluency—L2 learners' computations and inductions are often affected by transfer, with L1-tuned expectations and selective attention (Ellis, 2008) blinding the acquisition system to aspects of the L2 sample, thus biasing their estimation from naturalistic usage and producing the limited attainment that is typical of adult L2A.

Construction Learning as Associative Learning From Usage

If constructions as form–function mappings are the units of language, then language acquisition involves inducing these associations from experience of language usage. Constructionist accounts of language acquisition thus involve the distributional analysis of the language stream and the parallel analysis of contingent perceptual activity, with abstract constructions being learned from the conspiracy of concrete exemplars of usage following statistical learning mechanisms. Psychological analyses of the learning of constructions as form–meaning pairs is informed by the literature on the associative learning of cue–outcome contingencies where the usual determinants include: factors relating to the form such as frequency and salience; factors relating to the interpretation such as significance in the comprehension of the overall utterance, prototypicality, generality, and redundancy; factors relating to the contingency of form and function; and factors relating to learner attention, such as automaticity, transfer, overshadowing, and blocking (Ellis, 2008). Corpus linguistic and psycholinguistic research together show how these various factors conspire in the acquisition and use of any linguistic construction.

Input Frequency

- *Construction frequency*. That language users are sensitive to the input frequencies of constructions (Ellis, 2002) entails that they must have registered their occurrence in processing. These frequency effects are thus compelling evidence for usage-based models of language acquisition which emphasize the role of input.
- *Type and token frequency*. Token frequency counts how often a particular form appears in the input. Type frequency, on the other hand, refers to the number of distinct lexical items that can be substituted in a given slot in a construction, whether it is a word-level construction for inflection or a syntactic construction specifying the relation among words. For example, the "regular" English past tense *-ed* has a very high type frequency

because it applies to thousands of different types of verbs, whereas the vowel change exemplified in *swam* and *rang* has a much lower type frequency. The productivity of phonological, morphological, and syntactic patterns is a function of type rather than token frequency (Bybee & Hopper, 2001). This is because (a) the more lexical items that are heard in a certain position in a construction, the less likely it is that the construction is associated with a particular lexical item and the more likely it is that a general category is formed from the items that occur in that position; (b) the more items the category must cover, the more general are its criterial features and the more likely it is to extend to new items; and (c) high type frequency ensures that a construction is used frequently, thus strengthening its representational schema and making it more accessible for further use with new items. In contrast, high token frequency promotes the entrenchment or conservation of irregular forms and idioms; the irregular forms only survive because they are of high frequency.

- *Zipfian distribution*. In the early stages of learning categories from exemplars, acquisition is optimized by the introduction of an initial, low-variance sample centered on prototypical exemplars. This low variance sample allows learners to get a fix on what will account for most of the category members. The bounds of the category are defined later by experience of the full breadth of exemplar types. Goldberg, Casenhiser, and Sethuraman (2004) demonstrated that in samples of child language acquisition, for a variety of verb-argument constructions (VACs), there is a strong tendency for one single verb to occur with very high frequency in comparison to other verbs used, a profile which closely mirrors that of the mothers' speech to these children. In natural language, Zipf's law (Zipf, 1935) describes how the highest-frequency words account for the most linguistic tokens. Goldberg, Casenhiser, and Sethuraman (2004) showed that Zipf's law applies within VACs too, and they argue that this promotes acquisition: tokens of one particular verb account for the lion's share of instances of each particular argument frame; this pathbreaking verb is also the one with the prototypical meaning from which the construction is derived.

  Ellis and Ferreira-Junior (2009a, 2009b) investigated effects on naturalistic L2A of type/token distributions in the islands comprising the linguistic form of English verb-argument constructions (VL verb locative like *go there*, VOL verb object locative like *put it in the fridge*, VOO ditransitive like *give him the money*) in the ESF corpus (Perdue, 1993). They showed that VAC verb type/token distribution in the input is Zipfian and that learners first acquire the most frequent, prototypical, and generic exemplar (e.g., *put* in VOL, *give* in VOO, etc.). Their work further illustrates how acquisition is affected by the frequency and frequency distribution of exemplars within each island of the construction (e.g., [Subj V Obj $\text{Obl}_{\text{path/loc}}$]) and by their prototypicality.
- *Recency*. Language processing also reflects recency effects. This phenomenon is known as *priming* and may be observed in phonology, conceptual representations, lexical choice, and syntax. Syntactic priming refers to the phenomenon of using a particular syntactic structure given prior exposure to the same structure. This behavior has been observed when speakers hear, speak, read, or write sentences (Pickering & Ferreira, 2008). There is now a growing body of research demonstrating such L2 syntactic priming effects (McDonough & Trofimovich, 2008).

Form: Salience and Perception

The general perceived strength of stimuli is commonly referred to as their salience. Low salience cues tend to be less readily learned. Many grammatical meaning–form relationships, particularly those that are notoriously difficult for second language learners, like

grammatical particles and inflections such as the third person singular *-s* of English, are of low salience in the language stream. For example, some forms are more salient: *today* is a stronger psychophysical form in the input than is the morpheme *-s* marking third person singular present tense, thus while both provide cues to present time, *today* is much more likely to be perceived, and *-s* can thus become overshadowed and blocked, making it difficult for second language learners of English to acquire (Ellis, 2008).

Function

- *Prototypicality of meaning*. Categories have graded structure, with some members being better exemplars than others. The prototype as an idealized central description is the best example of the category, appropriately summarizing the most representative attributes of a category. As the typical instance of a category, it serves as the benchmark against which surrounding, less representative instances are classified. The greater the token frequency of an exemplar, the more it contributes to defining the category, and the greater the likelihood it will be considered the prototype. Ellis and Ferreira-Junior (2009a) show that the verbs that second language learners first used in particular VACs are prototypical and generic in function (*go* for VL, *put* for VOL, and *give* for VOO). The same has been shown for child language acquisition, where a small group of semantically general verbs, often referred to as light verbs (e.g., *go*, *do*, *make*, *come*) are learned early.
- *Redundancy*. Redundant cues tend not to be acquired (Rescorla & Wagner, 1972). Not only are many grammatical meaning–form relationships low in salience, but they may also be redundant in the understanding of the meaning of an utterance. For example, it is often unnecessary to interpret inflections marking grammatical meanings such as tense because they are usually accompanied by adverbs that indicate the temporal reference. Second language learners' reliance on adverbial over inflectional cues to tense has been extensively documented in longitudinal studies of naturalistic acquisition (Dietrich, Klein, & Noyau, 1995).

Contingency of Form–Function Mapping

Psychological research into associative learning has long recognized that while frequency of form is important, so too is contingency of mapping. Consider how, in the learning of the category of birds, while eyes and wings are equally frequently experienced features in the exemplars, it is wings which are distinctive in differentiating birds from other animals. Wings are important features for learning the category of birds because they are reliably associated with class membership, unlike eyes. Raw frequency of occurrence is less important than the contingency between cue and interpretation. Contingency, and its associated aspects of predictive value, information gain, and statistical association, is a driving force for all associative learning (Shanks, 1995). It is central in psycholinguistic theories of language acquisition too (Ellis, 2006), with the most developed account for second language acquisition being that of the competition model (MacWhinney, 2009). Ellis and Ferreira-Junior (2009b) show how psychological measures of form–function contingency, as well as collostructional analysis measures (Gries, 2008), predict VAC acquisition. Boyd and Goldberg (2009) argue that conditional probability is a more appropriate measure. This is still an active area of inquiry, and more research is required before we know which statistical measures of form–function contingency relate more strongly to acquisition and processing.

Language Learning as Estimation From Sample

Language learners have limited experience of the target language. Their limited exposure poses them the task of estimating how linguistic constructions work from an input sample that is incomplete, uncertain, and noisy. Native-like fluency, idiomaticity, and selection present another level of difficulty. For a good fit, every utterance has to be chosen, from a wide range of possible expressions, to be appropriate for that idea, for that speaker, for that place, and for that time. And again, learners can only estimate this from their finite experience.

As with other estimation problems, successful determination of the population characteristics is a matter of statistical sampling, description, and inference. There are three fundamental instructional aspects of this conception of language learning relating to statistical sampling and estimation, and corpus linguistics is central to each.

1. The first and foremost concerns *sample size*. As in all surveys, the bigger the sample, the more accurate the estimates, but also the greater the costs. Native speakers estimate their language over a lifespan of usage. L2 and foreign language learners just don't have that much time or resources. Thus, they are faced with the task of optimizing their understanding of language from a limited sample of exposure.

   Corpus linguistic analyses are essential to the determination of which constructions of differing degrees of schematicity are worthy of instruction, their relative frequency, and their best (= prototypical and most frequent) examples for instruction and assessment. Gries (2008) describes how three basic methods of corpus linguistics (frequency lists, concordances, and collocations) inform the instruction of second language constructions.
2. The second concerns *sample selection*. Principles of survey design dictate that a sample must properly represent the strata of the population of greatest concern. Corpus linguistics, genre analysis, and needs analysis have a large role to play in identifying the linguistic constructions that are of most relevance to particular learners. For example, every genre of English for academic purposes and English for special purposes has its own phraseology, and learning to be effective in the genre involves learning this (Swales, 1990). Lexicographers develop their learner dictionaries based on relevant corpora and dictionaries focus on examples of usage as much as on definitions, or even more so. Good grammars are now frequency-informed. Corpus linguistic analysis techniques have been used to identify the words most relevant to academic English (the Academic Word List, Coxhead, 2000) and this, together with knowledge of lexical acquisition and cognition, informs vocabulary instruction programs (Nation, 2001). Similarly, corpus techniques have been used to identify formulaic phrases that are of special relevance to academic discourse, and to inform learners' instruction (the Academic Formulas List: Ellis, Simpson-Vlach, & Maynard, 2008).
3. The third concerns *sequence of exposure*. Corpus linguistics also has a role to play in informing the ordering of exemplars for optimal acquisition of a schematic construction. The research reviewed above suggests that an initial, low-variance sample centered on prototypical exemplars allows learners to get a "fix" on the central tendency of a schematic construction, and then the introduction of more diverse exemplars helps learners to determine the full range and bounds of the category. Although there is work to be done on determining its applicability to particular constructions, and particular learners and their L1s, in second language acquisition, this is probably a generally useful instructional heuristic. Readings in Robinson and Ellis (2008) show how an understanding of the item-based nature of construction learning inspires the creation and evaluation of instructional tasks, materials, and syllabi, and how cognitive linguistic

analyses can be used both to inform learners how constructions are conventionalized ways of matching certain expressions to specific situations, and also to guide instructors in isolating and presenting the various conditions that motivate speaker choice.

Future Research Directions in Corpus Linguistics and Cognition

Usage is rich in latent linguistic structure, thus frequencies of usage count in the emergence of linguistic constructions. Nevertheless, as Einstein observed, "Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted." Corpus linguistics provides the proper empirical means whereby everything in language texts can be counted. But not everything that we can count in language counts in language cognition and acquisition. If it did, the English articles *the* and *a* alongside frequent morphological inflections would be among the first learned English constructions, rather than the most problematic in L2A.

The study of applied linguistics from corpus linguistic perspectives is a two-limbed stool without triangulation from an understanding of the psychology of cognition, learning, attention, and development. Sensation is not perception, and the psychophysical relations mapping physical onto psychological scales are complex. The world of conscious experience is not the world itself but a perception crucially determined by attentional limitations, prior knowledge, and context. Not every experience is equally important: effects of practice are greatest in early stages but eventually reach asymptote. The associative learning of constructions as form–meaning pairs is affected by: factors relating to the form such as frequency and salience; factors relating to the interpretation such as significance in the comprehension of the overall utterance, prototypicality, generality, and redundancy; factors relating to the contingency of form and function; and factors relating to learner attention, such as automaticity, transfer, and blocking.

We need models of usage and its effects on acquisition. Univariate counts are vague indicators of how the demands of human interaction affect the content and ongoing coadaptation of discourse, how this is perceived and interpreted, how usage episodes are assimilated into the learner's system, and how the linguistic system reacts accordingly. We need models of learning, development, and emergence that take all these factors into account dynamically.

SEE ALSO: Cognitive Linguistics of Second Language Acquisition; Competition Model; Corpora in the Language-Teaching Classroom; Corpus Analysis of Child Language; Corpus Analysis of Spoken English for Academic Purposes; Corpus Analysis of Written English for Academic Purposes; Emergentism; Statistical Analysis of Test Results

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Suggested Readings

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Corpus-Based Linguistic Approaches to Critical Discourse Analysis

WINNIE CHENG

Why Are Corpus Linguistics and Critical Discourse Analysis Combined?

In language and communication research, a wide range of theoretical frameworks and methodological approaches have been employed, among which are corpus linguistics (CL), critical discourse analysis (CDA), and an innovative combination of CL and CDA (Baker et al., 2008).

CL is an empirical method of linguistic analysis and description, which uses corpora as the primary data and starting point. It accommodates the full evidence from the corpus and analyzes this with the aim of finding "probabilities, trends, patterns, co-occurrences of elements, features or groupings of features" (Teubert & Krishnamurthy, 2007, p. 6) and arrives at generalizations about language phenomena. Basic CL research methods include the generation and study of word lists, key words, collocates, and concordances, backed up with measures of statistical significance. CL is primarily quantitative and interested in the local context of situation, namely the analysis of concordance, which is "a collection of the occurrences of a word-form, each in its own textual environment" (Sinclair, 1991, p. 32). Corpus linguistic methods have been applied to address discourse-level phenomena, namely "characteristics associated with the use of a language feature," "realizations of a particular function," "characterizing a variety of language," and "mapping the occurrences of a feature through entire texts" (Conrad, 2002, p. 75). CL has also been employed in CDA research.

CDA views "language as discourse and as social practice" (Fairclough, 2001, p. 21) and studies the relationship between language and ideology (e.g., van Dijk, 1997; Fairclough, 2001; Wodak, 2001). Following Halliday's (1985) approach that perceives "language as firmly rooted in its sociolinguistic context" (Orpin, 2005, p. 37), CDA is comprised of three stages: description of text, interpretation of the relationship between text and interaction, and explanation of the relationship between interaction and social context (Fairclough, 2001, pp. 21–2).

CDA has been criticized for its methodological weakness, mainly due to its qualitative approach to linguistic analysis, which results in "fragmentary [and] exemplificatory" text types (Fowler, 1996, p. 8). Others, including Widdowson (1996, 2000a), criticize CDA for lacking in academic rigor, primarily because data analysis tends to bear out the analyst's subjective preconceptions (Orpin, 2005, p. 38). Stubbs's (1997) criticisms of CDA are mainly concerned with its lack of representativeness in the short or fragmentary texts and randomly selected data, as well as the failure on its part to make generalizations of the results of CDA research because the linguistic features are rarely compared with norms in the language (Orpin, 2005, p. 38).

In response to this criticism, Stubbs (1997) suggests using CL methodology to bolster CDA, specifically through using random sampling, analyzing a large collection of text, and comparing the textual features under study with language norms captured in a corpus in

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order to make reliable generalizations about typical language use. Responding to Widdowson's (2000b) position paper, "On the Limitations of Linguistics Applied," Stubbs (2001) points out that although Widdowson raises important issues about text interpretation, his argument is flawed: "since he does not discuss the inherently quantitative, variable, and comparative nature of corpus data, he cannot directly discuss the relations between textual, cognitive, and social phenomena" (p. 149).

The challenge of marrying the qualitative methods of CDA, which examine grammatical or lexical choices made to express social processes and social phenomena, and the quantitative CL methodology, which is mainly used for studying the lexicogrammatical and collocational patterns of lexical items (Sinclair, 1996), is to decide "which aspects of the CDA approach can be best served by corpus analysis" and "to find a point or points of entry into the data" (Orpin, 2005, pp. 38–9).

Research Studies Using CL Approaches to CDA

Some studies have usefully and effectively combined CDA and CL methods by comparing frequencies of words and phrases and collocational and syntactic patterning (Orpin, 2005), including investigation into pronoun use in sexism and language (Stubbs, 1992); transitivity choices in the encoding of causation and agency in geography textbooks (Stubbs & Gerbig, 1993); analysis of representations of the EU in the British press (Hardt-Mautner, 1995), representations of women in the news (Caldas-Coulthard, 1993); the diachronic study of *ethnic*, *racial*, and *tribal* between two corpora, namely the pre-1985, 18-million-word Birmingham Collection of English Texts and the post-1985 Bank of English, at that time 167 million words (Krishnamurthy, 1996); comparison of representations of the foreign in the British and Polish press (Galasinski & Marley, 1998; see below); business texts about ecological issues (Alexander, 1999); British parliamentary debates on European integration (Bayley, 1999); analysis of New Labour rhetoric (Fairclough, 2000); and the reporting of the 1995 Yorkshire drought (Jeffries, 2003).

Using a transcribed political interview from a corpus of 65 interviews recorded from the BBC between 1985 and 1990, Simon-Vandenbergen (1997) investigates "modal (un)certainty in political discourse" (p. 341). The term "modal certainty" refers to devices speakers use "to convey a high degree of commitment to the validity of their propositions" (p. 344) as "means of 'intrusion into the speech event' [to] express interpersonal meanings" (Simon-Vandenbergen, 1997, p. 344). The study analyzes the most important interpersonal choices identified in the political interview, namely modal auxiliaries and adverbs (*will*, *going to*, and *would*); modality expressed by lexical verbs (*I think, I suppose*); modality expressed by conditional clauses; modality expressed by nouns (*possibility*, *chance*, *likelihood*, etc.); usuality (c*ontinuously, constantly*, *ever ever*, *never*); evaluative adjectives that express grading (*incredible*, *remarkable*, *great*), including superlatives and degree words (*completely*, *relatively*, *somewhat*, etc.); quantifiers (*all*, *any(thing/body)*, *none*, *most*, *the majority*, *many*, *a load of*, *very few*); scaling by syntactic means, that is, repetition and parallel structures; metalinguistic comments with a modal value; marked choices of person; the lexical register of deception and imagination; and lastly the modal function of intonation (Simon-Vandenbergen, 1997, pp. 345–50).

Beaugrande (2001) converts Widdowson's (2000b) position paper into a miniature data corpus and conducts a corpus-based CDA by subjecting the paper to analysis by the three methods criticized in it, namely Halliday's functional linguistics, Sinclair's CL, and Fairclough's CDA. The corpus is analyzed in terms of frequent words, such as *reality* and its other forms, *argue* attested in verbs and nouns, and the concordances of these words, to uncover "some interpretative possibilities that might otherwise not be realized" (p. 118).

In Hong Kong, Flowerdew (2004) examines a corpus of 140 speeches, interviews, press conferences, and other pronouncements either delivered by or involving the first chief executive of the Hong Kong Special Administrative Region (SAR) of the People's Republic of China (PRC), Tung Chee-hwa, after the return of Hong Kong from Britain to Chinese sovereignty on July 1, 1997. Flowerdew's findings show that Tung's discourse has an emphasis on the development of a "knowledge-based" economy in relation to the free market (2004, p. 1553), and when Tung speaks about the economy in a positive manner, very often he is referring to the state of the Chinese, rather than Hong Kong's, economy (p. 1567). Tung's discourses show an attempt to downplay the role of democratic development and to emphasize both that Hong Kong people are believers in Confucian values and Hong Kong people's essential Chineseness, trying to "establish a new identity for the people of Hong Kong" (pp. 1575–6).

Also in Hong Kong, Cheng (2004) reports on the analysis of 12 public speeches made by Tung Chee-hwa between October and December 2001, at two levels of meaning making: collocational and intonational. The study provides evidence for the ways in which a public speaker constructs a relationship with the audience and the ways in which the speaker conveys particular meanings and ideological positions by means of making lexicogrammatical and intonational choices, both directly and indirectly. Cheng (2004) concludes that, first, some of the findings are less generalizable to other contexts where public speeches are made by political leaders because those examined in this study are specific to Hong Kong; second, political discourses and perhaps other genres in the public domain tend to transmit short-term priorities or agendas, albeit reflecting underlying values, as opposed to longer-term values and beliefs; third, politicians need to generate "buzz collocations" and "buzz idioms" to drive home their messages, but these also need to be reworked and repackaged from time to time, which may add to the temporary nature of some patterns of language use in the context of political speeches; and lastly, unique patterns of discourse intonation choices are found based on the key words and collocates examined.

Sotillo and Wang-Gempp (2004, p. 91) focus on quantitative and qualitative analyses of a 46,300-word corpus of online political discussions with residents of five northern New Jersey towns as participants. Their study analyzes the use of "epithets, hyperbole, lexical choices, word collocations, verbs of collocation, and personal pronouns" in the corpus, and by using a CDA framework, it examines the discursive practices in terms of social classes, power relations, and conflicting political ideologies.

In another study, Orpin (2005) examines a group of eight words that are semantically related to *corruption*, namely *corruption*, *sleaze*, *bribery*, *graft*, *malpractice(s)*, *impropriety/ties*, *nepotism*, and *cronyism*, in a corpus of 800 texts from 4 of the 17 subcorpora of British newspapers: the *Guardian*, the *Independent*, *The Times*, and the tabloid *Today*. By analyzing the semantic profiles, identifying the geographical locations the words refer to, and comparing the connotational similarities and differences of these words. Orpin (2005) finds that words with a noticeably negative connotation tend to be used when referring to activities in countries including Italy, Pakistan, South Korea, India, and Malaysia (pp. 56–7), while less negative words are used when referring to similar activities in the international pages of the British press (p. 57). The instances of language use are compared against the norms of language use as reflected in the then 323-million-word Bank of English (p. 59). Orpin (2005) draws on CDA theory to interpret the ideological stance shown, including in Britain the growing dissatisfaction with the then Conservative government, the public concern over deregulation and greater private ownership of previously public assets, and shifting awareness of corruption from abroad to Britain (pp. 57–8). Orpin concludes by declaring that corpus methodology is employed not to replace qualitative analysis but to complement it in order to back up CDA assertions with reliable, empirical evidence (p. 59).

O'Halloran (2007) studies one aspect of CDA, namely how metaphors in texts are used to express ideology, along the lines of Lee's (1992) analysis of metaphors in a hard news text. Examining a corpus of newspapers of 260 million words from six newspaper sub-corpora from 1999–2003, the Bank of English, O'Halloran examines the collocational and lexicogrammatical patterns of words that Lee identifies as metaphors, namely *simmering*, *erupted*, and *swept through*. Whereas Lee (1992) argues that *simmering* and *erupted* are used metaphorically for volcanoes, O'Halloran's (2007) hard news corpus study finds that "across different forms of the lemma, 'erupt', there would seem to be a *cline of delexicalisation* from 'eruption(s)' to 'erupt(s)' to 'erupted'" (p. 20), in that the past tense form *erupted*, as well as *has been simmering*, has a semantic association with human phenomena rather than volcanoes, while the collocational pattern of *eruption* reveals meanings "associated with volcanoes inside and outside the hard news register" (p. 20). This study therefore concludes that the corpus-informed interpretation of metaphor at the register level—hard news texts in this case study—has the advantage of avoiding both "pretextual metaphorical lexicalization of textual data" and "producing a misleading overall interpretation of textual data identified as metaphorical from the perspective of readers who have been routinely exposed to the text's register" (O'Halloran, 2007, p. 20).

Koteyko, Nerlich, Crawford, and Wright (2008) use corpus linguistics techniques and (critical) discourse analysis to examine "the assumptions, judgements, and contentions that structure two discourses of MRSA [methicillin-resistant *Staphylococcus aureus*]" (p. 223). They employ the analytic tools of frame analysis (Entman, 1993) and story line (Hajer, 1995). Entman's (1993, p. 52) linguistic framing works "to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described," and Hajer's (1995) story lines function to position actors and to attribute blame, responsibility, urgency, and responsible behavior (Koteyko et al., 2008, p. 226). The CL tools of word lists and collocation are also employed as analytical tools to move frame analysis and story lines beyond subjective judgment (Van Gorp, 2007). The study begins with manual qualitative analysis of "media coverage, scientific literature and policy documents dealing with the spread of MRSA in UK hospitals" (p. 227), as a result of which two frames of "simple/not simple or not rocket science/no silver bullet" (p. 227) and several key words that are indicative of these frames, the adjectives *simple*, *basic*, and *proper* (p. 228), are identified. The qualitative approach is followed by "quantitative pattern recognition" (p. 227) by comparing the concordances of the three adjectives in a corpus of 801 British national newspaper articles (1995–2006) and a corpus of key UK government policies on MRSA and infection control in hospital settings (1998–2006) (p. 229). The empirical evidence collected from specialized corpora and computational tools validates qualitative "hunches" (p. 239) that coverage of MRSA is based on a "simple/not simple discursive dichotomy, which is evoked in different discourses . . . to blame others and to defend oneself against blame" (p. 239), and that the dominant frame of "simple cleanliness" is used to advocate solutions to MRSA problems, while that of "complexity" is used to challenge government policy or give defensive reasons as to why policies dealing with the problem of MRSA fail (p. 239).

Another recent example of combining CL and CDA is Baker et al. (2008), which adopts a corpus-assisted CDA methodology to examine the discursive presentation of refugees, asylum seekers, immigrants, and migrants (RASIM) in the British press over a 10-year period (1996–2005). Baker et al.'s project starts by investigating aspects of the wider context surrounding the issue of RASIM in the UK in order to inform the selection of texts and form a 140-million-word corpus. Focusing on the notions of keyness and collocation, the project examines the corpus to find out the relative frequencies and emerging statistically significant lexical patterns primarily involving the four key terms: *refugee(s)*, *asylum*

seeker(s), *immigrants(s)*, and *migrant(s)*, followed by the analysis of their concordances. Then selected parts of the textual corpus are qualitatively analyzed by drawing from relevant migration-related information in order to contextualize the findings of the text-based analysis.

Other studies are corpus-informed, using a corpus as a resource for data. For instance, Galasinski and Marley (1998) conduct a comparative quantitative content analysis of two corpora from the British and Polish press (10 national daily newspapers and 10 national weeklies from Britain and Poland) to identify agency in foreign news; the results are then used "as a frame for a qualitative critical linguistic analysis" (p. 565). While quantitative content analysis reveals "some of the media coverage of the moment" (p. 565), CDA complements this by revealing "long-standing patterns of discursive representations with their systemic biases and preferences" (p. 565). For example, in both presses, "coverage of the foreign is dominated by reporting in terms of either business and politics, with the former favoured in Britain and the latter in Poland" (p. 585). In addition, quantitative content analysis shows ambivalence in the British media's attitude toward Russia, which usefully informs a qualitative content analysis of "negativity" (p. 586).

Musolff (1997, p. 230) suggests that the discourses of terrorism are "metaphorical-cocktails of political jargon," and the discourses are expressed in terms of four dichotomies established through the metaphors of terrorism being good vs. evil, law vs. lawlessness, civilization vs. barbarism, and freedom vs. tyranny, all of which create illusory and metaphorical representations of terrorism being the possession of weapons of mass destruction (WMDs).

Future Directions for Corpus Linguistics and Critical Discourse Analysis

Increasingly, more studies have integrated CL and CDA to address social concerns, processes, and phenomena, by taking advantage of the complementary methods and approaches unique to these disciplines. Many of the corpora used in CDA studies so far are specialized ones, primarily media and political discourses. Future studies could explore other text types, such as feedback commentaries in education (Hyatt, 2005), academic classroom discourse (Csomay, 2006), and business media discourse (Koller, 2005), and integrate CL, CDA, and other fields such as intercultural rhetoric (Connor, 2004) and cognitive metaphor (Koller, 2005).

CL can also be combined with different theoretical approaches to CDA, including French discourse analysis (Pêcheux, 1982), critical linguistics (Kress & Hodge, 1979), social semiotics (Hodge & Kress, 1988), sociocultural change and change in discourse (Fairclough, 2001), sociocognitive studies (van Dijk, 1980), and the discourse-historical method (Wodak, 2001).

SEE ALSO: Biber, Douglas; Corpora: Multimodal; Corpus Analysis of Political Language; Corpus Linguistics: Overview; Critical Discourse Analysis: History and New Developments; Fairclough, Norman; Leech, Geoffrey; Multimodal Corpus-Based Approaches; Sinclair, John; van Dijk, Teun A.; Wodak, Ruth

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Corpus-Based Testing

FIONA BARKER

The Nature of Corpus-Based Testing

Principled collections of language texts—corpora—allow the storage, retrieval, and analysis of many tens of thousands of complete or partial texts, originally written, then spoken and now increasingly in multimedia formats. This entry outlines how these language databases and associated analytical techniques inform the field of language testing and assessment (LTA) which, like the discipline of corpus linguistics, has grown in scope, importance, and influence throughout the 20th century, particularly since the 1950s (see Spolsky, 1995 for a history of LTA).

LTA covers a wide range of approaches to testing aspects of language knowledge or use through discrete, standalone assessments or linked series of papers or components (see ALTE, 1998, for definitions of LTA terms). Other assessment instruments are less formal, involving in-class assessment (including virtual classrooms) or the collection of portfolios of language learners' work. The products of these tests or assessments may be rated (assigned a score or grade) or commented upon by the learners themselves, by peers, or instructors, and may also be externally assessed or moderated. There are many types and purposes of testing instruments which vary according to market demand, technological developments, and theoretical approaches in LTA and related applied linguistics fields (see Weir & Milanovic, 2003, for one examination board's approach).

The language testing field has become increasingly professionalized, accountable, and influential throughout the 20th century with the development of international associations of language testers such as ILTA (founded 1992; see www.iltaonline.com) and various standards of good practice such as AERA/APA/NCME (1999). Here we are concerned with how corpora inform the large-scale, high-stakes testing of language proficiency as this is where they have been applied most extensively to date.

Corpora and related techniques can be used throughout the cycle of planning, developing, delivering, and rating a language test (see Saville, 2003, pp. 78–87). Whilst corpora provide unique insights and unrivaled data of different types to language testers, they are not universally applied within LTA, some of the reasons for which are presented below along with examples of the successful use of English language corpora within this field.

Key Developments and Challenges

There has been a steady growth in corpus-informed LTA since Alderson (1996) encouraged language testers to bear in mind fundamental theoretical considerations such as *construct definition* and *validity* (see ALTE, 1998) alongside the results of corpus-informed empirical study. However, the development of collections of learner (and native user) production by examination boards predated this expression of how existing corpora could be used in specific parts of the language testing cycle. For example, the first scripts in the Cambridge Learner Corpus (CLC)—one of the largest learner corpora of exam scripts in existence—date from 1993 (see www.cambridge.org/elt/corpus). The development of any corpus

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requires significant investments of time, capital, and expertise, and corpus-informed language tests require sufficient data in order to be applicable to an international candidature—which suggests why the use of corpora has taken time to establish itself within LTA. Much relevant research is long-term and interdisciplinary as examination providers need to be sure of the validity, reliability, impact, and generalizability of their corpus-based findings, these being examples of Bachman's (1990) "essential measurement qualities." Nevertheless, there has been a steady increase in language testers' willingness to engage with corpora in relation to designing, validating and rating language tests, as shown by symposia at international testing conferences (including Taylor, Thompson, McCarthy, & Barker, 2003) and publications that describe the differential use of learner and native corpora in developing new test materials or validating existing ones (Taylor & Barker, 2008) or report specific applications such as the automated assessment of written production (Shermis, Burstein, & Leacock, 2006). Examination boards have undertaken extensive corpus-building and corpus-informed research since the 1990s to support their tests, including TOEFL (see Biber, 2006) and IELTS (see Taylor & Falvey, 2007).

The main ways in which corpora are used in LTA are in (a) defining user needs and test purpose, (b) designing tests, and (c) refining task rating; some key studies relating to these areas are noted here. Corpora can reveal what language learners *can do*, which informs both what is tested at a particular proficiency level and how this is rated (see ALTE Members, 2002). Hawkey and Barker (2004) used learner corpus data in the development of a common scale for assessing writing across a range of proficiency levels and types of English whilst the testing division of the University of Michigan used a corpus of written and spoken language test production to revise the scoring criteria for the Examination for the Certificate of Competency in English (see www.lsa.umich.edu/eli). Studying learning materials in general or specific language domains—including the rapidly expanding professional areas such as aviation, financial, or legal language—also provides a corpus-informed approach to designing tests in terms of the range, level, and genre of questions required and at the more detailed level of individual items to be targeted. Learner production can also help language testers to describe more accurately various linguistic domains such as business English (Horner & Strutt, 2004) or legal English (Vidaković & Barker, 2010).

When we consider test design, corpora can show how learner output is a product of interrelating variables—elements of Weir's (2005) *socio-cognitive framework*—including the learners' demographic details, their learning environment, and the test mode (paper- or computer-based). Both learner and native corpora and learning materials (course books, syllabuses, classroom recordings, etc.) form the empirical basis of the English Profile Program which is an international, interdisciplinary research program whose primary aim is to develop reference level descriptions (RLDs) for English, that is, a systematic specification of learning objectives that describes what a learner can be expected to know at each proficiency level (see www.EnglishProfile.org). The overall goal of this Council of Europe endorsed program is to set professional standards for the learning, teaching, and assessment of English worldwide. This program started with the 30 million-word CLC and further written and spoken corpora are being developed to complement this resource; international teams are submitting learners' written responses and spoken data together with detailed demographic information plus assessments of proficiency levels across various educational contexts (see Alexopoulou, 2008). Researchers from various applied linguistics fields (computational linguistics, second language acquisition, psycholinguistics) are identifying criterial features for specific proficiency levels taking into account L1 influence (see www.EnglishProfile.org for current research).

More generally, learner corpora are used by test writers to explore the collocational patterning in learner or native production, so that common or less frequent patterns can

be tested to distinguish between candidates at a particular proficiency level. Additionally, the most frequent errors or misuses of specific collocational pairings can be used to provide suitable *distractor* items for multiple-choice questions. Corpus evidence—whether from learner or native corpora—is used alongside experienced question writers' intuitions about what learners can be expected to know at a certain level, so is not considered to replace human question writers in the test writing process.

Various research projects—often undertaken by examination boards—have explored corpus-informed task rating since the 1990s in a bid to automatically score or evaluate written production, known as automated essay scoring (see Shermis et al., 2006, pp. 403–4), and the more challenging spoken production, both of which relate to the automatic detection of errors in learners' output. One outcome of this area of research is the increasing number of online evaluation services where learners or their instructors can upload writing samples —sometimes in response to actual test questions—and receive back general or formative feedback (see, for example, ETS www.ets.org or Cambridge ESOL www.CambridgeESOL.org examination boards' Web sites). There are also educational diagnostic services such as CALPER GOLD, which enables instructors to analyze emergent structures in their students' work, which can inform teaching and assessment practices (McCarthy, 2008, p. 571). Another system designed for researchers, Coh-Metrix, identifies over 400 indices of cohesion, language, and readability which provides information on textual features, world knowledge, language, and discourse characteristics which has been used to investigate differences across closely related registers, including English/American legal texts (Hall, McCarthy, Lewis, Lee, & McNamara, 2007, pp. 41–3).

The rating or assessment provided by any automated system should be carefully considered, as it is clear that a computer cannot—and should not—"think" exactly like a human rater. Any assessment system's utility and relevance depends on its design, the linguistic or other measures used to quantify "performance," and the quantity and quality of the original corpus data upon which it was trained, just as any corpus needs to be checked for suitability before being used for research. Nevertheless, the future is bright for (semi-) automated means of assessing learner output, which should serve the learners and end-users of their test results well as long as they are fully informed about what these systems can and cannot provide.

The rapid increase in the number and type of tests delivered electronically means that it is now possible to form corpora from computer-based as well as paper-based language tests, although we should consider the potentially conflicting demands of maintaining the quality of existing language tests and of developing new ones to keep pace with user needs and technological innovations alongside the development and exploitation of corpus resources and techniques.

It is clear that the last two decades in particular have seen an increase in the number and visibility of corpora within the field of LTA. An important point to note is that corpora are being developed and used specifically for language testing and that these uses are being argued for and critiqued within the field rather than being adopted by all language testers. We should also note that tests of other languages make use of their own national corpora and that there is a growing (non-English) literature about corpora of other languages (see David Lee's *Bookmarks for Corpus-based Linguists*, www.tiny.cc/corpora).

The final section considers the future of corpus-based testing for the assessment of language proficiency.

The Future of Corpus-Based Testing

The collection and use of large native and learner corpora from across the proficiency spectrum and specialized language domains are beginning to move from data collections

driven by consortia of publishers, examination boards, and academic researchers (e.g., British National Corpus, see www.natcorp.ox.ac.uk) towards data collections where individual teachers or learners upload their own data which can be exploited by all contributors, even though these are still likely to be guided by a specific research program (e.g., English Profile Corpora, see Web site).

Besides the large-scale projects mentioned above there is a growing body of corpus research that informs more localized tests or particular test tasks, or is more general and exploratory in nature. For example, researchers have used corpora to validate oral production and interaction in various L2 English contexts: discourse variation in intermediate-level paired speaking tests of various L1 learners (Young & Milanovic, 1992), fluency markers of adolescent Norwegian learners of English (Hasselgreen, 2005), and interaction in a group discussion task of Chinese learners (He & Dai, 2006). Other research projects are exploring aspects of written and spoken data using a comparative approach, in a similar way to the English Profile Program. For example, the WOSLAC Project (Mendikoetxea, 2006) uses English and Spanish L1/L2 corpora to inform the learning, teaching, and assessment of both languages. The LONGDALE Project (Longitudinal Database of Learner English) uses learners' written and spoken production, demographic details and proficiency level to inform SLA and teaching practices (see http://www.uclouvain.be/en-cecl-longdale.html). These more specific uses are likely to increase as the benefits of corpus-informed research become more widely known.

Corpora are becoming increasingly more visible and accessible through online access and downloadable resources including courses, analytical systems, and search tools as well as the datasets themselves. At the heart of LTA lies the process of identifying the construct to be tested; how this is to be tested stems from having a clear concept of what is to be tested. Language corpora are helping to reveal previously intuited facts about language structure, functions, and use in first and other language users, with evidence from the output of learner, novice, and expert users in a range of domains such as general purpose, professional, or academic contexts. Without corpora language testers would be unable to validate some of their long-held intuitions about language which underpin current testing practices.

The field of corpus linguistics and the existence of corpora have begun to bring significant benefits to language testing. New types of corpora are pushing the boundaries of what data it is possible to collect, such as multimodal linguistic corpora (see the HeadTalk gesture corpus, Knight et al., 2006), and the increasing number of multinational and interdisciplinary approaches to corpus data collection, annotation, and exploitation make the future of corpus linguistics an exciting one for LTA. The latest developments can be followed through electronic discussion lists or blogs (see, for example, Corpora List at www.hit.uib.no/corpora and Text Tools for corpus linguistics at http://corpustools.blogspot.com).

The development and use of corpora continue to gather momentum and there are many freely available datasets for noncommercial use, although more needs to be done to make further datasets available at realistic cost. The collection of adequate permissions for use of an individual's work in a corpus is often a barrier to making data more widely available, as are commercial concerns where organizations may not wish for their data (collected over many years and at great expense) to become available to competitors. Despite this, the future of corpus-based testing is bright, as long as all involved remain clear about the roles and responsibilities of the providers and users of the data within the relevant corpora; the impact on tests informed by corpora, and the wider social impact of the tests themselves.

SEE ALSO: Computer Scoring of Spoken Responses; Corpora in the Language-Teaching Classroom; Corpus Linguistics: Overview; High-Stakes Language Testing; Learner Corpora; Technology and Language Testing

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Correlational Research in Language Assessment

THOM HUDSON

Researchers in language assessment are frequently interested in determining the relations between two or more variables. One of the most fundamental statistics for indicating the strength of relations between two variables is the correlation coefficient, *r*. The correlation coefficient is also one of the foundations for many other analytic procedures in applied linguistics and the behavioral sciences. It estimates the linear association between two variables, and provides a numerical value between –1.0 and +1.0 to represent that relationship. A correlation of near zero implies no relationship whereas values near +1.0 or –1.0 imply strong positive and negative relationships, respectively.

Language studies have utilized correlation to investigate a number of questions. Bonk (2001) addressed the research question, "Is there a correlation between proficiency in producing and recognizing collocations and general English proficiency?" (p. 119). He found a correlation of $r = .61$ between tests measuring the two variables. Pulido (2009) was interested in how L2 learners of Spanish process lexical input during reading. The research question was "What is the relationship between lexical inferencing and retention?" (p. 38). She found that with a production measure, correlations were positive and significant, $r = .45$ for more familiar topics and $r = .60$ for less familiar topics. Liu and Jackson (2008) were interested in the relationship between Chinese EFL learners' communicative reticence and anxiety. These researchers found the correlation coefficient between a measure of unwillingness to communicate and foreign language anxiety to be $r = .535$. In all three of these cases, the researchers were interested in how two variables systematically varied together.

Graphical Display of Correlational Relationships

Figures 1–3 graphically display the scatterplots which represent the types of relationships that the correlation coefficient is designed to reveal. Suppose you had three sets of data. Each data set contains the numerical results for 35 students on two variables. For each student in each data set, you can find the student's score along the horizontal axis and the corresponding score along the vertical axis. In Figure 1, there is very little indication of a systematic linear relationship between the two variables. It is not the case that as the scores on X increase, the scores on Y systematically increase or decrease. There almost appears to be a random relationship between the two variables.

In Figure 2, on the other hand, we begin to see a bit of systematicity. As scores on X increase, the scores on Y also tend to increase. There is obviously not a one-to-one relationship in the change, but a tendency in the directionality of the changes in the two scores can be discerned.

Finally, in Figure 3, we see a one-to-one relationship. For each unit of change in X, there is a unit of change in Y. The result is a plot that is represented by data points along a straight line. Researchers examine these types of graphical displays to determine that the relationship between the two variables is best summarized by a correlation coefficient, which assumes a linear relationship.

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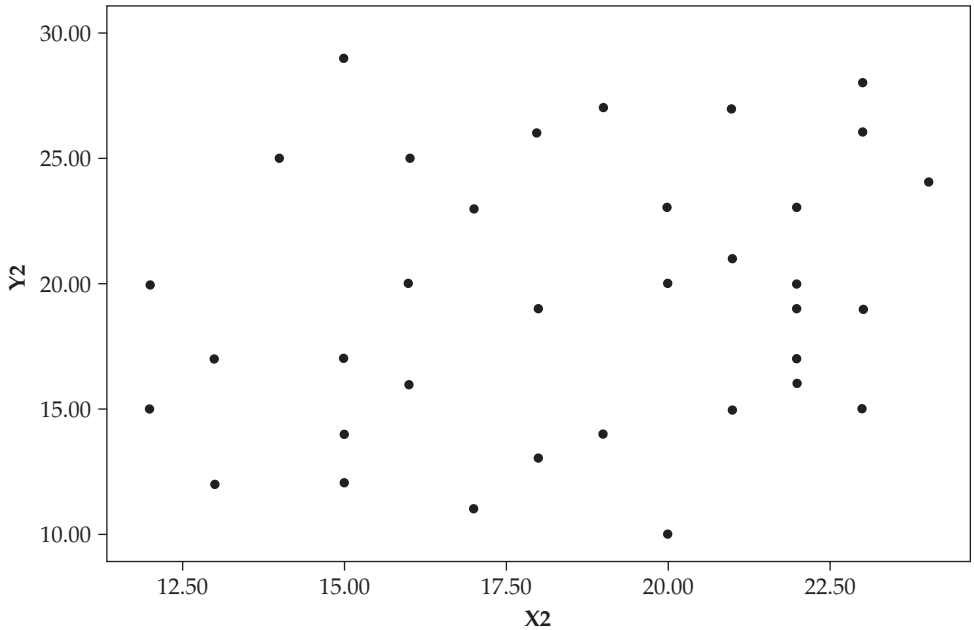

Figure 1 Graphic representation of near zero correlation

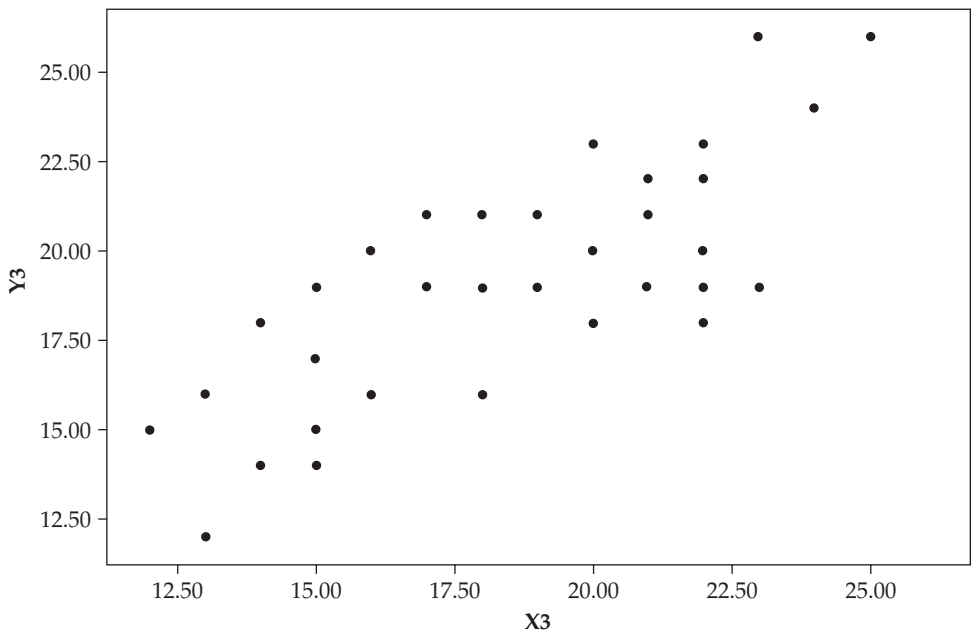

Figure 2 Graphic representation of a moderate correlation

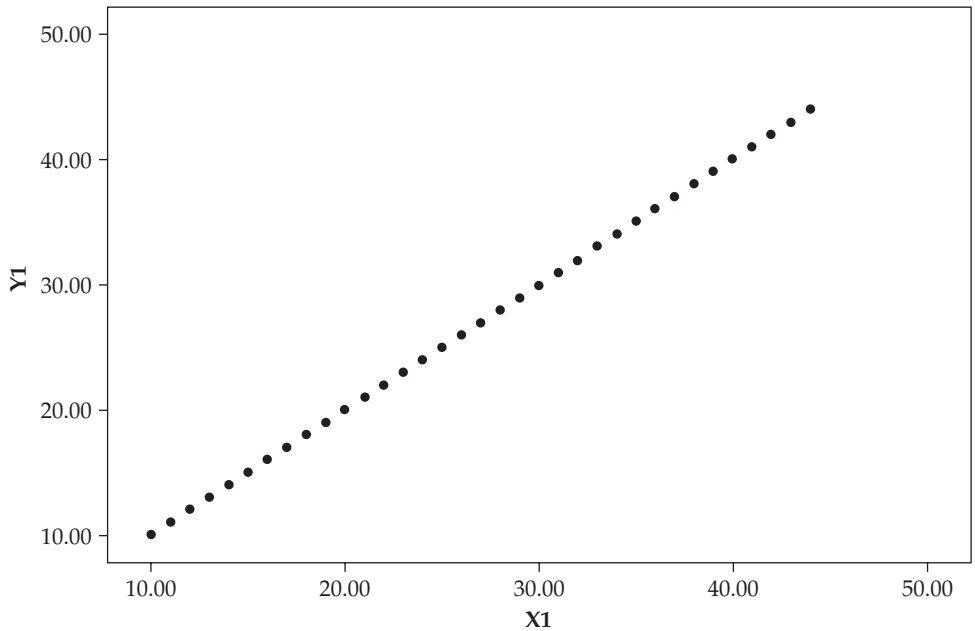

Figure 3 Graphic representation of near perfect correlation

Direction and Magnitude of Correlation Coefficients

The two characteristics of the correlation coefficient that are generally of most interest are the direction and magnitude of the correlation. A correlation coefficient can be either positive or negative in direction. With a positive correlation, the scores on one variable increase as the scores on the second variable increase. This is the relationship shown in Figure 3. With a negative correlation, as the scores on one variable increase, the scores on the second variable decrease. If a relationship between two variables is negative, the graphical display will depict this relationship as shown in Figure 4.

As noted above, the correlation coefficient can range from –1.0 to +1.0. The larger the magnitude of the absolute value of the correlation coefficient, the stronger the relationship between the two correlated variables. The squared value of the correlation coefficient, r^2, the coefficient of determination, represents the percentage of shared variation in one variable that overlaps the variation in a second variable. It is a measure of the strength of association between the variables and helps to interpret the meaningfulness of the correlation coefficient. Knowing the percentage of overlapping variance across the two variables is much more informative than simply knowing the correlation coefficient alone.

Correlation Coefficients

There are a number of variants of the correlation coefficient, depending upon the nature of the measurement scale. In applied linguistics the scales are generally interval, ordinal, or nominal. Interval scales have continuous equal units throughout the scale and have an arbitrary zero point. Ordinal scales are those which reflect relationships that are ranked in nature, such as *first, second, third*. The relative order is indicated, but the actual difference

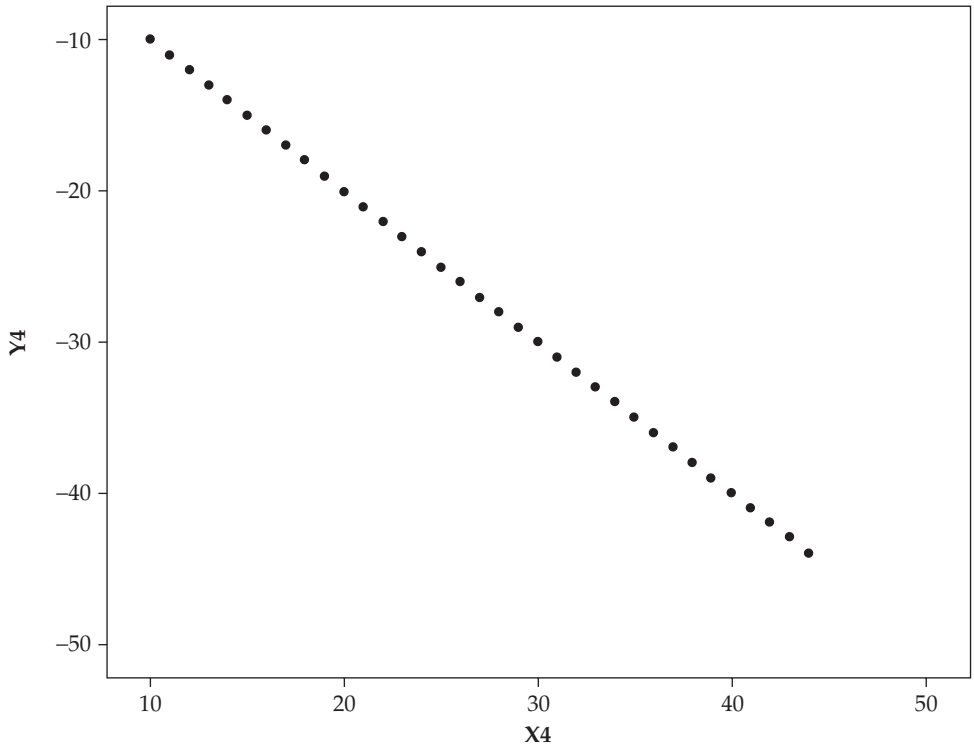

Figure 4 Graphic representation of negative correlation

between the adjacent categories is not specified. Nominal scales present a classification system that situates items, persons, or other objects into mutually exclusive categories. Classifications such as *male/female, L1/L2*, or *advanced/beginning* represent nominal scale assignments. These different scales require separate approaches to address the correlational relations in the data.

The most commonly presented correlation index is the Pearson product-moment correlation coefficient. It is used to describe the linear relationship between two interval scale variables with normal distributions. The Pearson product-moment correlation indicates the extent to which a person's rank on one variable is the same on a second variable.

Although the Pearson correlation is the most common type of correlation reported, other correlation coefficients have been devised to account for situations in which the two variables are not on interval scales. The three most common coefficients are the Spearman rank order correlation, the point biserial correlation, and the phi coefficient.

The Spearman rank order correlation (ρ or r_S), for example, is used when the underlying data are ordinal in nature. Data may be represented as ordinal if they were initially collected to represent the relative rankings of individuals on the two variables, or if the underlying data are problematic (perhaps with a number of outliers, small numbers, or non-normal distributions) such that the ordinal relations lend themselves to analysis more readily than the original interval data.

When the relationship of interest is between one dichotomous variable (e.g., coded 1 or 0) and another that is on an interval scale, the point biserial correlation (r_{pbi}) is used. Common examples include male or female, or correct and incorrect answers on a multiple-choice test item, with some variable such as test score measured on an interval scale. Point biserial

correlations are used regularly during test development to compute item discrimination values for test items.

When X and Y are both coded as dichotomous variables the phi (ϕ) coefficient is used. In language assessments, for example, it might be of interest to examine the extent to which class level membership is related to one of two first languages.

Correlational Use in Reliability

Correlation has specific uses within language assessment research and practice. Correlational concepts are at the heart of measurement reliability. The reliability of measurements can be estimated with procedures which fall into four categories: internal consistency, test–retest, alternate forms, and inter-rater reliability. Each approach is designed to estimate the consistency of measurements. Internal consistency reflects the extent to which items or parts of a test produce similar results. A correlation between the test parts is used to estimate reliability. Test–retest reliability provides an estimate of the test stability across time by administering a test at two different times to the same group of examinees and finding the correlation coefficient between scores on the two administrations. Alternate forms reliability involves administering two different but parallel forms of a test to the same group of examinees. The correlation between the two forms of the test is the estimate of reliability. Inter-rater reliability is used when raters are involved in the process of assigning numerical scores to examinees' production. This is frequently the case in the assessment of writing or speaking, or in other performance assessments. The correlation between raters is the estimate for the reliability of the ratings. Each of the approaches to estimating reliability is concerned with the correlational consistency of data results.

Correlation Approaches in Measurement Validation

Correlation is also a central feature of validation research. One part of the validation process can involve an examination of whether an assessment rank orders examinees in the same way as other measures of the posited construct. Thus, if a test developer is interested in developing a new approach to testing the academic English ability of second language learners, it might be useful to correlate the new assessment instrument to other tests of academic English, such as TOEFL or IELTS. While this alone is certainly not sufficient to establish test validity for this use, it can serve as one piece in the argumentation process.

The goal above is to show congruence between a measure of a particular construct and other measures of the same construct. By extension, an argument can be made that it should also be possible to show that the new measure performs differently from measures of different constructs. That is, it should be possible to demonstrate divergence from other constructs. Likewise, it is important to demonstrate that the test method itself (e.g., multiple choice, performance, task based, etc.) is not a primary factor in the performance outcomes. These concerns are the basis for multitrait-multimethod (MTMM) analysis (Campbell & Fiske, 1959). MTMM examines the correlations between measures of multiple traits using multiple methods.

Factor analysis is a statistical approach which analyzes the interrelationships among variables in order to explain the common underlying dimensions, or factors, of these variables. The statistical approach condenses the information contained in a number of original variables into a smaller set of dimensions. The basic data structure used as input for factor analysis is the correlation matrix.

Regression is an outgrowth of correlation analysis. In its most basic form, simple linear regression allows the prediction of one variable on the basis of another variable. For

example, an English as a second language program might know the correlation between the TOEFL examination and the placement examination that is given to incoming international students. The predicted value on the placement test can be found by multiplying the correlation between the placement test and the TOEFL by an incoming student's known TOEFL score.

Path analysis is a correlational procedure that allows the prediction of multiple dependent variables. Path analysis uses a series of multiple regression analyses to ascertain the relationships among a set of variables. It is used to indicate the relative effects of variables such as motivation, anxiety, years of study, GPA, and memory span on such outcomes as vocabulary learning and fluency. The model that is developed is generally depicted as a path diagram with arrows indicating the direction and strength of the relationships.

An additional correlational approach used for validation research is structural equation modeling (SEM). SEM is an integration of factor analysis, multiple regression, and path analysis. As Raykov and Marcoulides (2006) note, "SEM provides researchers a comprehensive method of the quantification and testing of substantive theories" (p. 1). Some characteristics of structural equation models are that models are conceived and often constructed in terms of variables that are not directly measurable, like anxiety, aggression, or personality; models generally take potential errors of measurement into account by including an error term for each measure; and models are usually constructed to address interrelationships between all pairs of observed variables. SEM is used in confirmatory factor analysis to test whether data agree with a priori hypothesized numbers of factors and relationships among the variables. As such, it can be used in assisting with construct validation of test results.

Conclusion

Correlation is one of the most commonly used statistical approaches in language assessment. It demonstrates the strength of association between two variables. It indicates the extent to which subjects are rank ordered in the same way on two variables relative to all other subjects in a collection of data. Within language assessment, it is used in the test construction process and in the test validation endeavor.

SEE ALSO: Reliability in Language Assessment; Statistical Analysis of Test Results; Structural Equation Modeling in Language Assessment; Validation of Language Assessments

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Cotterill, Janet

RIA PERKINS

Dr Janet Cotterill is a British linguist, born 1968, with specializations in a range of linguistics including forensic linguistics, systemic functional linguistics, discourse analysis, and language and gender.

She holds a BSc (Hons) from Aston University, a Master's degree from Liverpool, and received her PhD from Birmingham University. Cotterill is now a Reader in Language and Communication in the School of English, Communication, and Philosophy at Cardiff University. She has been involved with the International Association of Forensic Linguistics (IAFL) for many years, holding the positions of President (2007–9), Vice President, and Secretary as well as presently being a member of the Executive Committee. She cofounded the International Language and Law Association (ILLA) and is now coeditor of the association's online journal. Cotterill also sits on the editorial boards of a range of journals, including the *International Journal of the Semiotics of Law* and the *International Journal of Speech, Language and the Law*, as well as holding the position of UK Commissioning Editor for the Oxford University Press monograph series in Language and Law. She has also been accepted for training to become a magistrate.

Cotterill's profession and academic background was originally in the fields of translation and interpreting, then teaching English as a foreign language (TEFL) and applied linguistics. This has led her to be based in various different countries besides the United Kingdom, including France, Egypt, and Japan. Cotterill has accrued considerable experience as a consultant and expert witness within the field of forensic linguistics; she was involved in the case of Dhiren Barot who pleaded guilty in 2006 to terrorist offences including a planned attack on London. She now runs her own forensic linguistics consultancy specializing predominantly in the areas of terrorism risk assessment, murder, suicide, threat and blackmail documentation, and authorship analysis (particularly within the context of SMS text messages and e-mail messages, and textual cases).

To date she has published over 40 articles and book chapters covering a range of topics within linguistics and forensic linguistics. She has also published eight books as author, editor, or coeditor. The initial focus of Cotterill's work within forensic linguistics focused on the area of language within the legal process, the potential interactional problems between the legal expert and the layperson, and the potential role of the linguist within this setting. These interests are reflected in her 2002 acclaimed edited collection *Language in the Legal Process*. Among other themes, this demonstrates Cotterill's interest in the area of the language of the police, which can also be seen in her earlier publication (2000), "Reading the Rights: A Cautionary Tale of Comprehension and Comprehensibility."

Cotterill utilizes a range of approaches throughout her works, but in her early publications, and particularly the 2003 monograph which was based on her PhD dissertation (Cotterill, 2003), she centered predominantly on corpus and discourse analysis approaches. *Language and Power in Court: A Linguistic Analysis of the O. J. Simpson Trial* examines the trial of O. J. Simpson, who was accused of murdering his wife and killing the man she was with, to explore seldom-questioned features and strategies of trial language. This work demonstrates some key themes in her early research, in particular the interplay of narratives within the courtroom, and the realization of power within legal settings. Another

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key theme was the use of metaphor within the trial. Cotterill focused on this in her 1998 article, demonstrating through an analysis of the O. J. Simpson criminal trial that metaphor is prevalent within trial language, and that it both aids jury comprehension and is a valuable coercive device.

Besides the discourse of the legal process, Cotterill has also focused her research on the language surrounding sexual abuse and rape. In 2007 Janet Cotterill published the edited collection entitled *The Language of Sexual Crime*, which looks at the discourse that surrounds sexual abuse and rape across a wide variety of settings and from a variety of perspectives and approaches. It not only explores sexual crimes in a variety of different places—the USA, Scotland, Hong Kong, Ireland, and Israel—it also looks at a variety of contrasting discourses, from the wording of the law to the questioning of child witnesses. This collection elucidates much about the discourse surrounding rape, as well as challenging many of the preconceptions and assumed truths.

Recently Cotterill's research has progressed into the area of semiotics; this can be seen in her recent article, "Mugshots and Motherhood: The Media Semiotics of Vilification in Child Abduction Cases" (Cotterill, 2010). In this article she analyzes the media portrayal of mothers whose children have been abducted. As can be seen in her early work relating to the O. J. Simpson trial, Cotterill predominantly takes a case study approach, focusing in particular on Karen Mathews, the mother of Shannon Mathews who was missing for 24 days in 2008 (Karen was later charged for her involvement in engineering the apparent kidnap of Shannon). Cotterill contrasted the portrayal of working-class Karen Mathews with that of the middle-class Kate McCann, mother of Madeleine McCann who went missing in 2007 (and sadly remains missing). Cotterill demonstrates the ways the media make judgments about both women and question their roles as mothers; she also analyzes the wider field and addresses the social semiotics surrounding the media portrayal of female criminals. Through this she demonstrates that a woman who commits a crime that breaks the social expectations of how women should behave will attract a greater level and volume of media attention than a man would, particularly if the crime contravenes the expectations of nurturing and the perceived instinct toward motherhood. She points out that they will not only receive more media attention, but that the portrayal within the media will be more critical and more negative.

Janet has two forthcoming monographs in preparation: one on the discourse of multiple sclerosis and another on the language of the courtroom.

SEE ALSO: Forensic Linguistics: Overview; Systemic Functional Linguistics

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Coulthard, Malcolm

SAMUEL TOMBLIN

Professor Richard Malcolm Coulthard (b. 1943) is an English linguist and prominent figure in applied linguistics who is recognized for his research on discourse analysis. Additionally, through his research, teaching, and consultancy, he has shaped the field of forensic linguistics into a credible subdiscipline of applied linguistics both in the UK and internationally. Coulthard founded the International Association of Forensic Linguists in 1993 and served until 1995 as the founding president. He cofounded the association's journal, *The International Journal of Speech, Language and the Law* (formerly *Forensic Linguistics*) which first saw publication in 1994 and which he continued to edit until 2007.

As an undergraduate, Coulthard studied English Language and Literature at Sheffield University before joining the London Institute of Education to pursue a career teaching English. While studying for the Postgraduate Certificate in Education, Coulthard became interested in how factors such as socioeconomic class and language ability affect educational achievement, and particularly the work of Basil Bernstein. This interest led him to University College London where he enrolled on a two-year Postgraduate Diploma in Linguistics under Michael Halliday, whose influence led Coulthard to adopt a functional approach to linguistic analysis. Coulthard commenced his doctoral research with John Sinclair at the University of Birmingham. His research evaluated Bernstein's theory of restricted and elaborated codes through empirical investigation.

After completing his doctoral thesis in 1970, Coulthard accepted a lectureship at the University of Birmingham and remained in post for 37 years, during which time he developed undergraduate, postgraduate, and research programs and was key in the growth of the department from initially just himself and Sinclair to 28 members of staff at the time he left. To mark his fiftieth birthday and in recognition of his contribution to the department of Modern English Language, Coulthard was presented with a *festschrift* edited by his colleagues John Sinclair, Michael Hoey, and Gwyneth Fox (1993). Drawing on his own isolated experience as a doctoral researcher, Coulthard formed an informal group of PhD students to discuss forensic linguistics research. Many of his PhD students have themselves developed successful careers in forensic linguistics, most notably Sue Blackwell, Janet Cotterill, Tim Grant, Krzysztof Kredens, and Frances Rock. In 2004, Coulthard moved to Aston University, becoming the world's first Professor of Forensic Linguistics and in 2008 he founded the Centre for Forensic Linguistics. Coulthard is Emeritus Professor of English Language and Linguistics at the University of Birmingham, Honorary Professor at Cardiff University, and previously held a professorial position at the Federal University of Santa Catarina, Brazil (1987–9).

Coulthard has authored and edited 22 books and over 60 book chapters and articles. He achieved international fame for his 1977 textbook, *An Introduction to Discourse Analysis*, in which he drew together research from various disciplines including philosophy, psychology, sociology, anthropology, and linguistics in an attempt to create a unified discipline focusing exclusively on the study of interaction, namely, discourse analysis. In 1985 a second edition of the book was published to reflect current research, and the general editor commented that Coulthard had "put discourse analysis on the map" (Coulthard, 1985, p. vii). In 1992 Coulthard edited a collection of papers in the area of spoken discourse analysis

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which was followed by an edited collection of papers focusing on the analysis of written text (1994a). Both collections represented work from the Birmingham perspective which located text analysis in a systemic view of language, taking into account the purpose and process of text creation and which recognized the interactive nature of written text (Coulthard, 1994a, p. xi).

Coulthard, in collaboration with Alison Johnson, wrote *An Introduction to Forensic Linguistics: Language in Evidence* (2007), a textbook aimed at students. Split into two parts, the first explored the language of the legal process while the second dealt specifically with language as evidence. Coulthard and Johnson argued that sound knowledge of descriptive linguistics is essential for forensic linguistics research and to that end provided comprehensive references to other areas of linguistic research. Coulthard and Johnson emphasized the importance of authentic data and used engaging and illustrative examples, often drawn from their own casework. The textbook was followed by a comprehensive, more advanced introduction to the field of forensic linguistics, *The Routledge Handbook of Forensic Linguistics* (Coulthard & Johnson, 2010) which marked the transition from what was once an emerging field to a developed and established subdiscipline of applied linguistics. Drawing on a variety of established and early-career researchers working in different countries from a range of disciplines, the handbook is a fitting celebration of forensic linguistics.

Coulthard is a respected expert witness. He accepted his first case in the mid-1980s and has since been commissioned to prepare over 200 reports for both prosecution and defense in civil and criminal cases. Coulthard's expertise shaped his earlier consultancy work in forensic discourse analysis typically to establish the authenticity of disputed police interviews and witness statements and confessions. One such case involved William Power, one of six Irishmen collectively known as the Birmingham Six, who were arrested after bombs planted by the IRA exploded in two public houses. All were convicted partly as a result of disputed confessions. Focusing particularly on coherence, overspecificity, terms of address, and repetition, Coulthard was able to demonstrate that the confession contained features of police register indicating police interference. This evidence called into question the credibility of the police officers, and after 17 years in prison, all six men were released (see Coulthard, 1994b).

One of Coulthard's highest profile cases involved Derek Bentley who in 1953, aged 19, was hanged for shooting a police officer despite the fact that Bentley's friend, Chris Craig, had fired the shot and that Bentley was in police custody at the time of the shooting (Coulthard, 1994b, pp. 31–2). Bentley was illiterate and had a low IQ. During his trial, he claimed that the police had helped him to write his statement, which they denied on oath, claiming instead that "the statement was an accurate 'verbatim' record of what Bentley had actually said" (p. 32). Through a comparison of Bentley's statement with a sample of witness statements and statements from police officers, Coulthard was able to show that one feature in particular, the temporal marker "then," was used atypically in Bentley's statement. Coulthard found it occurred more frequently in police statements and Bentley's statements than in comparable authentic witness statements. Coulthard also investigated structural positioning and found that in police statements, as with the Bentley statement, there was a high frequency in the postposed position (*then I* rather than *I then*). Coulthard consulted a reference corpus and found that in ordinary spoken texts, "then" occurred more often in the preposed position. He concluded that Bentley's statement contained a marked feature of police register and therefore could not have been a verbatim record of what Bentley had said. In 1998, Coulthard's evidence was accepted and as a result of all the evidence in the trial, Bentley's murder conviction was quashed by the Court of Appeal.

Coulthard also has an extensive case history in the field of authorship analysis. His most recent high profile case centered around the authorship of mobile telephone text messages. In 2008, Coulthard provided evidence in court during the trial of David Hodgson for the

murder of Jenny Nicholl who had gone missing in 2005. Several days after her disappearance, friends and relatives received text messages sent from Nicholl's mobile telephone indicating that she was alive and well. Suspicion grew over the authenticity of the text messages, and proving their authorship became a key issue. Hodgson, who had been having an affair with Nicholl, was arrested for her murder. Coulthard compared the disputed text messages with genuine messages known to have been authored by Nicholl and Hodgson. Focusing on stylistic features including spacing, spelling, abbreviations, dialectal stylizations, and letter–number substitutions, Coulthard was able to demonstrate that the disputed text messages were closer in style to those of Hodgson. The jury found Hodgson guilty and he was sentenced to 18 years in prison for the murder of Nicholl, whose body has never been found.

Coulthard (1994b) observed that in the early days of investigative forensic linguistics, there was no clear methodology "and the work was usually undertaken as an intellectual challenge and almost always required the creation, rather than simply the application, of a method of analysis" (p. 27). Through illustrative examples and discussion of his casework, Coulthard (1994b) made the case for the application of corpus linguistics as a methodology, arguing that large general corpora and more specialized corpora are required to enable detailed analyses of particular genres and registers: "only when we know very much more about the 'normal' and the authentic can we be fully secure in identifying the deviant, the unauthentic and the falsified" (p. 40). Coulthard is particularly respected for publishing details of his casework and he has drawn on his experience as an expert witness to highlight potential problems in presenting linguistic evidence in UK courts (e.g., Coulthard, 1997, 2004) and how experts may most effectively express their opinions (Coulthard, 2010).

SEE ALSO: Cotterill, Janet; Discourse Analysis and Conversation Analysis; Forensic Discourse Analysis; Forensic Linguistics: Overview

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Council of Europe Language Policy and Planning

WALDEMAR MARTYNIUK AND JOSEPH SHEILS

Introduction

The Council of Europe, currently (December 2010) encompassing 47 European states, was founded in 1949 as a platform for intergovernmental cooperation aiming at promoting democracy, human rights, and the rule of law. Language education plays an important role in pursuing these goals, and programs of intergovernmental cooperation in the field of languages have been carried out by the Council for over 50 years now.

Early programs of international cooperation in Strasbourg focused on the democratization of language learning for the mobility of persons and ideas, and on the promotion of the European heritage of cultural and linguistic diversity. Projects assisted member states in implementing reforms aimed at developing learners' communication skills and encouraged innovation in language teaching and teacher training, with an emphasis on a learner-centered approach. These ideas have found practical expression through the development of reference instruments known as *threshold levels* from 1972 onwards (for details see Trim, 2007).

While continuing to promote innovation in support of developing communication skills in foreign languages, more recent projects have increasingly addressed the social and political dimensions of language learning, focusing on language education for social cohesion, democratic citizenship, and intercultural dialogue. Currently, the Council of Europe offers a concept of plurilingual and intercultural education within which skills in all languages available to the learners are being taken into account and developed further in a lifelong learning process, to ensure successful development of the individual and for the benefit of the society they live in and contribute to. Council of Europe policy attaches particular importance to the development of plurilingualism—the lifelong enhancement of the individual's linguistic repertoire. This repertoire is made up of different languages and language varieties at different levels of proficiency and includes different types of competences. It is dynamic and changes in its composition throughout an individual's life (for details see Beacco & Byram, 2007; Council of Europe, 2010). As the Council of Europe attaches particular importance to the recognition and valuing of the cultural and linguistic diversity of people, plurilingualism is considered a value, not just a competence.

Policy Documents and Tools in Support of Plurilingual People Living in Multilingual Societies

Council of Europe language education policies have initially been based on Article 2 of the *European Cultural Convention* (1954), which encourages all states parties to take steps for the mutual promotion, teaching and learning of languages. The *European Charter for Regional or Minority Languages* (1992) offers specific measures to promote the use of this category of languages in education (particularly Part III, Article 8). In 1995, the member states of the Council of Europe, through the *Framework Convention for the Protection of*

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National Minorities, agreed to "undertake to promote the conditions necessary for persons belonging to national minorities to maintain and develop their culture, and to preserve the essential elements of their identity, namely their religion, language, traditions and cultural heritage" (Section II, Article 5).

The important role the Council of Europe attaches to language education has led to the adoption of a number of policy recommendations. These include

- *Recommendation No. R (98) 6 of the Committee of Ministers on Modern Languages,* emphasizing intercultural communication and plurilingualism as key policy goals and proposing concrete measures for each educational sector and for initial and in-service teacher education;
- *Recommendation 1383 (1998) of the Parliamentary Assembly of the Council of Europe on Linguistic Diversification*, stating among other things that "there should be more variety in modern language teaching in the Council of Europe member states; this should result in the acquisition not only of English but also of other European and world languages by all European citizens, in parallel with the mastery of their own national and, where appropriate, regional language";
- *Recommendation Rec (2005) 3 of the Committee of Ministers on teaching neighboring languages in border regions*, urging the governments of member states "to apply the principles of plurilingual education, in particular by establishing conditions that enable teaching institutions in border regions at all levels to safeguard or, if need be, introduce the teaching and use of the languages of their neighbouring countries, together with the teaching of these countries' cultures";
- *Recommendation R (2008) 7 of the Committee of Ministers on the use of the CEFR [Common European Framework of Reference for Languages] and the promotion of plurilingualism*, outlining general principles and measures to be implemented by authorities responsible for language education at national, regional, and local level as well as specific measures aimed at policy making, curriculum and textbook development, teacher training, and assessment.

The Language Policy Division of the Council of Europe (LPD) has developed a range of instruments for the implementation of these recommendations. The *Guide for the Development of Language Education Policies in Europe* (Beacco & Byram, 2007) is a reference document for the formulation or reorganization of language teaching policies to promote plurilingualism and diversification in a planned manner. The *Common European Framework of Reference for Languages* (Council of Europe, 2001) provides a common basis and a common language for the elaboration of syllabuses, curriculum guidelines, textbooks, and teacher-training programs, and for relating examinations to one another. Many countries including those outside Europe have used the publication of the CFER to stimulate curriculum and examination reforms in different educational sectors. Possible avenues for working with the CEFR and the *European Language Portfolio* (ELP) in the Canadian context have been recently outlined in a publication of the Canadian Council of Ministers of Education (2010). The ELP is a document in which those who are learning or have learned any language—whether at school or outside school—can record and reflect on their language learning and cultural experiences. The *Autobiography of Intercultural Encounters* invites users to reflect critically upon their own memorable intercultural experiences, and helps them to analyze these in retrospect and in light of the most defining aspects of each encounter. The most recent *Guide for the Development and Implementation of Curricula for Plurilingual and Intercultural Education* (Council of Europe, 2010) focuses on the right to a quality education. Its aim is to make teaching more effective, and increase the contribution it makes, both to school success for the most vulnerable learners, and to social cohesion.

The ideas and proposals put forward in the Guide form part of the project *"Languages in Education—Languages for Education,"* contributions to which are published on a *Platform of Resources and References for Plurilingual and Intercultural Education*. The LPD is also offering tools and guidelines regarding the linguistic integration of migrant children in education systems and the linguistic integration of adult migrants.

The European Centre for Modern Languages

The *European Centre for Modern Languages* (ECML), a Council of Europe Partial Agreement based in Graz, Austria, offers support for the implementation of Council of Europe policies at classroom level. The Centre's consecutive programs of activities have by now comprised more than 50 projects coordinated by international teams of experts and has directly involved over six thousand language professionals in Europe and beyond, with the impact reaching as far afield as Canada, Japan, and countries in Africa. The ECML is offering innovative tools in support of teacher education and the implementation of plurilingual approaches to education, such as the *European Portfolio for Student Teachers of Languages* (Newby, Allan, Fenner, Jones, Komorowska, & Soghikyan, 2007) and the *Framework of Reference for Pluralistic Approaches to Languages and Cultures* (Candelier, 2011).

SEE ALSO: Language Planning and Multilingualism; Language Policy and Multilingualism; Language Policy and Planning: Overview; Multilingualism

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Critical Analysis of Discourse in Educational Settings

GLENN TOH

Ideologies and Inequitable Practices

Critical analyses of discourses in education are fundamentally affected by the fact that much of education, whether as an academic field or enterprise, is born of ideologies that result in inequitable practices, power differentials among people of different race, culture, gender, class, and socioeconomic differentiation. The need for discourse and discursive practices to be critically analyzed in education settings stems, moreover, from the understanding that education can never be free of values and ideology.

Values and ideologies are embodied, staked, staged, and claimed in and through discursive action and keenly contested in discursive spaces. Such spaces and the contestations thereof are, therefore and in turn, inherently discursive in nature. Politicized action and ideologized practices in education are often enacted in the academy, making it an important site for critical analyses of power-laden discourses and power-born cultural practices. Such discourses and cultural practices create, sustain, perpetuate, and reproduce power inequalities, precipitating and increasing the marginalization of disadvantaged groups. The irony is that education is an enterprise that might be thought of as being emancipatory and empowering, or at worst neutral, in its outcomes. Pennycook (2000, p. 93) captures this succinctly in the following description:

> An optimistic liberal view of education is that it provides opportunity for all: anyone can go to school, receive equal treatment, and come out at the end as whatever they want. Yet it does not take a very sophisticated critical analysis to suggest that this is far from what actually happens.

Exposing Ideologies and Inequitable Practices

Critical analyses of prevailing power- and ideology-laden discourses and practices aim to surface and expose tools, techniques, strategies, and rhetoric behind existing ideologies that mask social injustice while manufacturing compliance. Such analyses reexamine and reformulate existing understandings of the nature and formulations of what counts as legitimate (or legitimized) knowledge and seek to bring about more just and ethical educational practices. Put simply, they expose inconsistencies, contradictions, hypocrisies, foibles, and fallacies that come to bear on educational practices in the hope of achieving greater fairness.

Critical analyses of discourse in education proceed from the important assumption that knowledge, including knowledge of even a "scientific" nature, is a sociodiscursive construct. They examine how knowledge, and the access to privilege and power through knowledge, can be a dividing force in society, resulting in clear power differentiations between those who have access to legitimized forms of it and those who do not. A significant part of the

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work seeks to highlight, problematize, and contest assumptions about the origins and nature of what counts as knowledge, but which invariably belie sociohistories as well as ideological underpinnings that legitimize and reify these assumptions. Hence, critical analysis of discourse in educational settings becomes an area of study that destabilizes existing bastions of unfair and polarizing practices relating to the construction and appropriation of knowledge. Such practices perpetuate injustices often glossed over as convention or "tradition." They keep the privileged in positions of dominance and the disadvantaged in subordinate roles.

In terms of intellectual roots, critical analyses of discourse in educational settings find inspiration from studies in critical discourse analysis (an area of study that acknowledges the role of language in the way that power relations, as well as bias and prejudice, are structured in society—see van Dijk, 1984, 2001 and Wodak, 2001) alongside studies in critical pedagogy, critical social literacy, critical sociolinguistics, and critical applied linguistics, which trace their roots to critical literacy and in turn critical theory. A commonly adopted premise in studies that relate to education is that elitist cultural practices and the identities, subjectivities, mythologies, rhetoric, and narratives thereof are in fact dissimulated or at least not immediately visible (Turner, 2004), and need to be explored through deeper analysis. While power positions in the academy are legitimated and reified, projects of domination are systemically obscured and occluded. Hence, there is the need to have these exposed.

Areas of Critical Analysis

Conventional discourse analyses in educational settings have involved several established areas of study. They include analyses of discourse strategies, communicative acts, classroom interaction as cultural practice, classroom discourse, and literacy development, as well as discourse studies of second language development (Pennycook, 2000). In contrast, critical analyses of discourse in educational settings adopt a palpably more politicized view of education and have taken the form of the studies described in the following section.

Critical Analyses of Textbook Content and Ideology

Textbooks have been critically examined for their content and ideology. In particular, textbook analyses have targeted matters to do with race, culture, gender, beliefs, and class and how these are treated in reading passages and exercises. The types of characters featured in reading passages and the way they are described and represented feature commonly in textbook analyses. Other research has looked into the way themes and topical issues are treated in the study content (Apple & Christian-Smith, 1991; Dendrinos, 1992; Baik, 1994). The findings of such analyses often reveal that certain types of people are portrayed advantageously; for example, White Caucasian characters may come across as being decent and happy people living comfortable lives employed in white-collar jobs, while people of color are portrayed as shady individuals living in disadvantaged circumstances and employed in blue-collar jobs. Western lifestyles are typified as being English-speaking and middle-class, characterized by vacations and seaside picnics, as opposed to the rural, spartan and deprived lifestyles of non-Westerners. Such analyses can help to reveal the subtle messages and values that are transmitted to students.

Curriculum Content and Approaches to Curriculum Design

Curriculum content and approaches to curriculum design have also been the subject of critical analyses. These studies focus on how curriculum planning can be politicized and

ideologically motivated, resulting in curricular goals and content that can be politically or culturally biased toward certain dominant or hegemonic ideologies. Such analyses can also expose how curricula can be mobilized to fulfill certain agendas. For example, ESP curricular content has, ironically, been traced back to the vested interests of multinational companies benefiting from having their staff proficient in English to further their international business relations (Benesch, 2001), while aspects of the "academic" writing syllabus can be traced back to prejudices in the academy or to patronizing preconceptions about EFL students' ability in formal writing (Hyland, 1996; Hocking & Toh, 2010).

Pedagogy and Classroom Interaction

Critical analyses have also sought to examine discourses relating to pedagogical processes and classroom interaction. Typically, such analyses address issues such as methodologies or approaches that are partial toward certain cultures, socially privileged groups, or particular conceptions of the ideal teacher (e.g., the native speaker) or the L2 learner. They have uncovered how even the notion of teaching "method" is itself weighted, how perceptions of "good" teaching can be associated with colonial control, or as otherwise something preexisting, erudite, or heuristic, to be passed from expert to novice (Wilson, 1992; Canagarajah, 1999; Kumaravadivelu, 2003; Warschauer, 2002). Underlying assumptions concerning the interactive or learning styles and strategies of certain types or groups of learners (e.g., the "Korean" or "Indian" student, the "rote" learner, the "passive" learner, the "migrant" learner) are also scrutinized for fallacious assumptions or bias, even as they come to bear on discourse concerning "good" ways to teach students that are stereotyped in this way.

Testing and Evaluation

Discourses relating to testing, evaluation, and assessment have been the focus of critical analyses, principally because testing and evaluation have been viewed as bastions of regulation and control. Critical analyses in this area have looked, in particular, into how testing and assessment can be ideologically laden, steeped in outdated practices, inequitable, classificatory, or blatantly divisive, perpetuating unequal power relations and divisions in society. Work has also been done on how test instruments can be reductionist, atomistic, decontextualized, and narrow in scope and focus, leading to learning experiences that are not practical, realistic, or enlightening in terms of both feedback and positive washback for students (Boyd & Davies, 2002; Murphey, 2004; McNamara & Roever, 2006). Extremity of example can be found in Murphey (2004), which explores official rhetoric offered in place of changes to Japanese university entrance examinations that would promise fairer and more professional testing practices.

Power Differentials in School and Community

Institutional, supervisory, superintendent, and regulatory discourses (governmental, state, and local) concerning schooling and the community have come under critical scrutiny. Critical analyses have sought to examine how such discourses disparage, denigrate, or otherwise regulate certain sectors of the community—migrants or children of migrants, foreign workers, or returnees—and how such discourses are mobilized in oppressive ways or for oppressive ends (Wodak, 1996; Giroux, 2004, Kubota & McKay, 2009). Kubota and McKay (2009), for example, reveal how bias can run deep in community attitudes toward certain cultures. In their particular illustration, bias against Hispanic cultures in parts of Japan is seen as affecting language learning in the community.

Policy and Planning

In applied linguistics, critical analyses of discourses in education have targeted inequalities that stem from language policy and planning concerning lingua francas, languages of access, status, and power in contrast with minority or marginalized languages (Tollefson, 1991; Phillipson, 1992; Fishman, 1996; Lin & Martin, 2005; Oda, 2007). Critical analyses of other areas of education policy include studies of policy directions of different countries concerning academic, technical, or vocational education, education in the creative and fine arts, or even religious education. Findings have revealed that education policy and planning are a function of various political or social agendas. Minority races, languages, and cultures, for example, have been disadvantaged through many a skewed education policy.

Colonial Discourses

The discourses of colonialism and neocolonialism have also come in for critical scrutiny. Such discourses are critiqued for resulting in prevailing hegemonies that come to bear on education policies and practices which result in asymmetrical North–South, inner-circle and outer-circle relations as well as dominant and subordinate identities among learners and other stakeholders. Criticism of the British Council's approach to ELT is a commonly quoted example of colonizing discourses at work, as would be the reification of the White native speaker as ideal teacher of English (Phillipson, 1992; Pennycook, 1998; Fishman, 1996).

Current Trends

An important aspect of the critical analysis of discourse in education has been analysis focusing on the influence of societal and global trends on education, including globalization, internationalization, marketization, neoliberalism and commoditization in, as well as the commodification of, education (Kubota & McKay, 2009; Kubota, 2010); a further focus of attention is how these influences affect future work orders and human subjectivity, not least as to how schools, universities, vocational and technical colleges should fit into worldviews that legitimize a belief in, for example, the free market economy. A "recent discovery" under this subheading would be Kubota's (2010) description of the resurgence of interest in prewar national education policies in Japan and how education can be mobilized to foster patriotism and self-sacrifice among the young.

Moral and Ethical Referents

The critical analyses of discourse discussed above have been linked to sociocultural, moral, and ethical referents including various conceptualizations of freedom, liberty, and empathy, as well as equal opportunity for access to portals, symbols, tools, and technologies of power across gender, race, class, status, and also referents pertaining to equity, dignity, public good (Giroux, 2004), and social justice (van Dijk, 1984). Such analyses have also drawn on educational referents such as the nature of learning as well as the right to learn, which in themselves are socially founded and representational constructs, as well as on concerns over how different trends in (current and emergent) history present moral and ethical dilemmas for educators and policy makers alike. Such analytical studies invariably turn to sociohistorical, sociopolitical, as well as sociocultural epistemologies for answers to why so much of what takes place in education results in outcomes that are regarded as oppressive and exclusionary.

Academic Literacies

In relation to epistemological views of the nature of knowledge and learning, an important area of study linked to critical analyses of discourse in education is the body of research into academic literacies. A group of scholars writing in the academic literacies tradition has since the 1980s sought to argue that ways of knowing and meaning are not apolitical or neutral, but are discursively and rhetorically situated within social and political structures and discourses in society. The work of these scholars has come to hold considerable bearing on an understanding of critical analysis of discourses in education, particularly in the way their work has sought to unpack the social processes of discourses—seen as pivotal in critical discourse analysis (van Dijk, 1985)—with specific attention to discourses relating to education and the way knowledge is structured, constructed, construed, controlled, and rendered. Lillis and Turner (2001) for example, illustrate how the discourse behind so-called "scientific" knowledge can be traced to common disagreements within the Royal Society, where scientists argued to convince their peers about the veracity of their theories.

Academic literacies scholars, moreover, find commonality in their assumption that language can be mobilized to control meaning (Fowler, Hodge, Kress, & Trew, 1979), the result of which is that certain meanings are privileged and counted as being "academic" while others are marginalized, particularly when it comes to the written genres of the academy.

Real-life illustrations can be found, for example, in Lillis (2003). Lillis notes how Black working-class values or certain ethnically situated religious values which hold meaning for students coming from various quarters of (in this particular case) British society can be marginalized and deemed as "nonacademic" when set alongside values of an academy that is predominantly associated with the White middle class. Lillis (2003) describes how tutors can put categorical remarks like "not really relevant" against arguments that do not proceed from values and assumptions held by a powerful majority. Relating the experience of a student, "Mary," coming from a Black working-class background, Lillis tells how Mary responds to an essay question on whether the term "underclass" adequately describes the social position of ethnic minorities in Britain. Mary's argument that ethnic minorities have made significant contributions to the cultural richness of British society in both music and popular culture is deemed irrelevant. The point made is that it is important in academia for students to be allowed to enter into discussions about the kind of meanings that they wish to put across in their academic work, meanings which students from a diversity of backgrounds and sociohistories hold as being important. Hence, demystifying the "academic" in academic writing (through the unveiling of ideologies that although not immediately apparent do influence what it means to be "academic") has been part of this body of work. Academic texts and knowledge are exposed as being, in fact, staged attempts at enacting and privileging certain viewpoints while maintaining a facade of transparency, neutrality, objectivity, detachment, methodicity, and rationality (Turner, 2004; Scott & Turner, 2004; Molle & Prior, 2008). Academic knowledge is exposed as being sociohistorically situated, intertextual, dialogic, and in reality embodies a diversity of voices, rather than a monologue or a monolith of "authoritative" authorial information, when put through the rigors of epistemological cross-examination. Hence, what van Dijk (1985, p. 7) calls "White middle-class discourse style" is revealed as being very much a sociopolitical construct that would be out of place in multiethnic and multicultural schooling situations. In this connection, academic literacies scholars argue that educators should foster a critical awareness of language among students to enable learners of diverse backgrounds to become accustomed

to different ways of knowing, meaning, selecting, and arguing (Lillis, 2003; Myers & Beach, 2004), thereby facilitating deeper critical reflection on the way in which identities, meanings, and knowledge are constructed. This can only enrich and invigorate the process of knowledge creation.

Future Research

While the body of work that critically analyses discourses in education is now substantial in terms of critiques of discourses to do with policy, practices, and stakeholder subjectivities, there is nevertheless going to be room for continued efforts in the area. This is principally because matters to do with ideology and power are subject to constant and ongoing negotiation and dispute, even as fresh sociocultural narratives, political rhetoric, and cultural forms emerge in the education arena. In addition, whether the focus of the analyses be monologic conceptualizations, normalizing categorizations, reductionist discourses or even monolithic, minimalizing or totalizing theorizations or practices, having them dialogized through critical analyses becomes an important way of maintaining vigor and rigor in education.

The ideologies and power relations that come out of current trends such as the way education institutions are, in various instances, being run like (or as) businesses, complemented by influential (but neutral-sounding) rhetoric, including catchwords such as "market analysis," "cost–benefit ratios," "accountability," "financial viability," "institutional ranking," "client preferences," or "client feedback" becoming part of emergent narratives in administrator-speak, the mercantile and infomercial discourses that institutions (especially universities) have plugged into, will provide good opportunity for future research into the way teaching, learning, and knowledge creation will be affected. Closely related are the discourses surrounding the ways in which institutions hire, retire, fire, or promote faculty members, which can be examined for the rhetoric of the work orders that come with marketization and neoliberalism, as well as the rhetoric capturing the language and work of administrators and bureaucrats when it comes to discussions about departmental or institutional closures, mergers, or "viability." In this connection, with economic pressures bearing on public and private institutions alike, it would also be interesting for studies to be carried out on the conversations around fiscal as well as staffing cutbacks, downsizing, devolution, mergers, accreditation, and other similar activities that are becoming increasingly common. Alongside this is now the practice of having people with "real-world" or "market" experience coming into universities and other institutions either to teach, or more often, as senior administrators actively involved in decision making and advising on the way knowledge should be treated, or on the way teaching or learning should be carried out, or other aspects of the vision and mission of educational institutions.

Looking further, matters that pertain to oppression, including racism, racialization, and cultural imperialism, the persistence of oppressive methodologies and pedagogies, the continued resistance to practices that are more liberating or emancipatory, as well as popularized myths, artifacts, entities, symbolisms, or conceptualizations (and the cultural practices linked to them), the foreign expert, the technocrat, the overseas degree, market experience, the standardized test, the course feedback form, the bell curve, the international school, the baccalaureate or ISO accreditation, should all be subject to objective and critical examination.

In applied linguistics and language teaching, and in particular, English-language teaching, such trends as the creation of "English only" universities in situations where education has been carried out in a national language (e.g., Thailand and Japan), the design and delivery of courses taught only in English in traditionally EFL situations, the late but furious demand for courses in English for "academic" purposes (which is very much an

offspring of the aforesaid developments), the rush on the part of universities, private companies, NGOs and even religious organizations toward providing instant or ready qualifications in TESL, TEFL, and TESOL, as well as widely commercialized but reductionist methods of testing and measuring achievement in language learning, present challenges for continued critical attention.

Critical analysis of discourses in education thus remains an area for ongoing research.

SEE ALSO: Critical Discourse Analysis: History and New Developments; Critical Discourse Analysis of Popular Culture

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Critical Analysis of Multimodal Discourse

THEO VAN LEEUWEN

The term "critical analysis of multimodal discourse" suggests a merger of two distinct fields of applied linguistics: critical discourse analysis and multimodality. At present it cannot be said that such a merger has taken place. Unlike critical discourse analysis and multimodality, the "critical analysis of multimodal discourse" is not—or not yet—a field with its own conferences, journals, edited books, and so on. Although some critical discourse analysts focus on multimodal texts and some multimodal analysts take a critical stance, they are in the minority, in both fields, despite the increasingly important role of multimodal discourse in many social and political contexts, especially since the emergence of the Internet. It is therefore best to separately survey multimodal work within the tradition of critical discourse analysis and critical work within the tradition of multimodality; and to then assess whether—and if so, to what degree—a coherent field of study has begun to emerge, even though it does not as yet have a clear academic identity of its own.

Critical Discourse Analysis and Multimodality

Critical discourse analysis, as it emerged in the late 1980s, is based on the idea that text and talk play a fundamental role in maintaining and legitimating inequality, injustice, and oppression in society. It employs discourse analysis to show how that happens, and it seeks to spread awareness of this aspect of language use in society, and to argue explicitly for change on the basis of its findings. Methodologically eclectic, it uses a range of linguistic methods and also strongly engages with critical social theory—Fairclough in particular has insisted on grounding critical discourse analysis in critical social theory (Chouliaraki & Fairclough, 1997). But its claim to validity ultimately rests on linguistic methods of analysis and linguistic arguments. Critical discourse analysts may, for instance, study the use of pronouns in political speeches to show how pronouns include some and exclude others from being "British" or part of "the people," and to discursively construct government views and policies as those of "the people" (Fairclough, 1989, pp. 178ff.).

The social and political issues critical discourse analysts have studied over the past 20 years vary widely. There has been a great deal of work on racism and anti-Semitism and on immigration and asylum. More recently, neoliberalist discourses have become an important focus. But the pages of key journals such as *Language and Politics*, *Critical Discourse Studies*, and *Discourse and Society*, and collections such as Toolan (2002), show that critical discourse analysts have addressed many other issues as well, including gender, war and terrorism, and welfare and unemployment, to mention just a few. The texts they analyze also vary. Although there has been a tendency to analyze speeches by politicians, parliamentary debates, and media reports and editorials, critical discourse analysts have also analyzed school textbooks, advertisements, the books of management gurus, transcripts of doctor–patient and workplace meeting interactions, and much more. And as a glance at the contents of *Discourse and Society* will demonstrate, this work has increasingly come from all corners of the world.

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In all these fields communication has become much more multimodal, yet most work in critical discourse analysis remains firmly monomodal, looking only at written and spoken language. On average, only 1 in 17 articles in key journals such as *Language and Politics* and *Critical Discourse Studies* critically analyzes multimodal discourse, and only a handful of critical discourse analysts strongly argue for a multimodal approach, for instance Chouliaraki in her work on the televisual representation of suffering (2006), Machin in his work on image banks (2004) and computer war games (Machin & Suleiman, 2006), and van Leeuwen in his work on visual racism (2000), in which he argues that racist stereotypes from the colonial era persist most strongly in visual rather than verbal texts, and in comic strips, advertisements, and other forms of popular culture rather than in more factual and "highbrow" texts. For this reason he urges critical discourse analysts to pay greater attention to texts of this kind:

> Visually communicated racism can be much more easily denied, much more easily dismissed as "in the eye of the beholder" than verbal racism . . . it is for this reason that a consideration of images should have pride of place in any inquiry into racist discourse. If images seem to just show "what is," we need to show that that may not always be quite so. If images seem to just allude to things and never "say them explicitly," we need to make these allusions explicit. (2000, p. 335)

For such an inquiry to rate as critical discourse analysis, however, it has to be grounded in some kind of linguistics analysis. An analogue to the linguistic methods used in critical discourse analysis therefore has to be developed for modes of communication other than language. As will be seen in the next section, this has in fact happened in the field of multimodality, even if not specifically for the purpose of facilitating critical discourse analysis.

Multimodality and Critical Discourse Analysis

The term "multimodality" has, over the past 20 years, been taken up by linguists and discourse analysts to denote the integrated use of different communicative resources, such as language, image, sound, and music, in multimodal texts and communicative events. Once linguists moved from studying isolated sentences to studying texts, they realized what they should have known all along: that communication is multimodal, that spoken language as it is actually used cannot be adequately understood without taking nonverbal communication into account, and that many forms of contemporary written language cannot be adequately understood unless we look not just at language, but also at images, layout, typography, and color. In the 1960s French structuralist semioticians began to apply linguistic methods to the study of news and advertising photographs, films, and many other modes and media. More recently the work of Halliday (1978, 1985) has inspired "grammars" of semiotic modes such as visual images (O'Toole, 1994; Kress & van Leeuwen, 1996), sound and music (van Leeuwen, 1999), and body action (Martinec, 2000, 2004), to name just a few. By now, multimodality has its own biannual conference and a range of edited books.

The work of multimodal discourse analysts is not necessarily critical in the sense described above. Multimodal discourse analysis is often applied to education, in studies of the development of multimodal literacy in young children (Kress, 1997), of multimodal learning resources, including textbooks, toys, CD-ROMs, and the Internet (Jewitt, 2006), and of multimodal classroom interaction, and such work often focuses more on heralding what is to come than on critiquing what is. It sees multimodality as a key to better learning and stresses that the learning potential of different modes needs to be better understood by

teachers, and that multimodal literacy needs to be more fully integrated into the curriculum in ways based on what can be learned from studying the spontaneous learning of very young children, or from studying other forms of informal learning, such as playing with toys or computer games. In the same vein, multimodal analysis is applied to improving communication and learning in museums, tourist communication, health and workplace communication, and so on.

Nevertheless, there has been, from the beginning, a critical strand within multimodal discourse analysis. This was to a large extent due to the example set by Gunther Kress and Bob Hodge (Kress & Hodge, 1978, 1988). Their first book, *Language as Ideology* (1978), was a forerunner of critical discourse analysis. Influenced by Whorf and Halliday as well as Marx, they showed how grammatical systems allow reality to be constructed in different ways, and how they therefore can be used to ideological ends. In their second book, *Social Semiotics*, they extended this to other modes of communication, showing, for instance, how the grammatical system of modality can be applied to visual images, for instance in comic strips, where it may use different signifiers but nevertheless does the same kind of communicative work it does in language, creating "social definitions of the real." They showed not only how the grammar of modality was deployed in the press to lessen the credibility of left-wing politicians in the Thatcher era in the UK, but also how it was used in comic strips to make readers identify with the "good" characters and distance themselves from "bad" characters (Kress & Hodge, 1988, pp. 121ff.).

This work was further developed in Kress and van Leeuwen's *Reading Images: The Grammar of Visual Design* (1996). This book was on the one hand more technical, describing visual grammatical systems by means of Hallidayan system networks, and providing detailed methods of analysis, with clear formal criteria, which have been taken up in a range of contexts, many of them not related to critical discourse analysis. On the other hand, they regularly gave examples that demonstrated the potential of their methods for critical discourse analysis. One of their key examples was taken from an Australian social studies textbook for primary school children titled *Our Society and Others* (see Kress & van Leeuwen, 2006, pp. 45–7). The book's chapter on Aboriginal Australians included a section on their material culture, and this section included a page on which two 19th-century engravings were shown side by side: on the left, a picture of Aboriginal artifacts, formally arranged, and shown against a white background (a stone axe, a bark basket, and a wooden sword); on the right, a moonlit scene of two British colonists stalking up toward a group of Aborigines seated around a fire, their guns ready. Kress and van Leeuwen used these pictures as examples of specific visual grammar structures. The picture of the Aboriginal artifacts was an example of a "classificational" image, an image in which a number of different objects or people are arranged symmetrically and given the same size, the same orientation to the horizontal and vertical axis, and so on, so as to signify that, somehow, they belong to the same category, even though that category is not always verbally labeled. The picture on the right was an example of a "narrative" image, in which the two main "volumes" of the picture, the two most visually salient entities (the "British" and the Aboriginal people round the fire) are linked by a "vector," an oblique line (here formed by the gun) running from the one to the other and signifying an action ("aiming a gun at") in which one "volume" (the one from which the vector emanates, i.e., the British) is the Actor, the entity that does the action, and the other the Goal, the entity that is affected by the action (here the Aboriginal people). But Kress and van Leeuwen also pointed out that such structures construct particular versions of the realities they depict. It would have been possible to have a "classificational" picture of antique British guns, and a "narrative" picture of Aboriginal people attacking the colonists, for instance. Moreover, the captions offered different constructions of the same events. The caption of the "narrative" picture, for instance, read "The British used guns," thus eliminating the affected party, the Aboriginal

people. Finally, the left–right structure realized a "Given–New" relation in which the picture of the "primitive" Aboriginal tools is the Given, and the picture of the gun-using colonists the New, the element treated as not yet known to the readers and therefore containing the key message. Such observations, based on well-grounded methods of analysis, can lead to critical analyses—the chapter in the school book, for instance, showed the colonization of Australia and the subjection of its Aboriginal inhabitants as the inevitable outcome of British technological superiority.

But Kress and van Leeuwen did not explicitly describe their methods as a form of critical analysis. They just revealed an interest in multimodal critical discourse analysis through their choice of examples, and through the often brief interpretations of these examples. And this has remained the situation in multimodal discourse analysis. In the most recent international conference on multimodality, only 12 of the 123 papers had an explicitly critical aim, going by the abstracts (Fifth International Conference on Multimodality, 2010).

Two Examples of the Critical Analysis of Multimodal Discourse

I will, finally, discuss two examples of the critical analysis of multimodal discourse in a little more detail. Machin (2004) analyzed how, in the Internet image bank Getty Creative Images, photographic images can be searched for the concepts they express, rather than for the people, places, and events they record and document. The visual expression of concepts by means of staged photographs has of course long existed in advertising, but today, Machin shows, it also extends to the editorial content of newspapers and magazines, where we traditionally expect "records of reality." The images in the Getty Creative Images image bank leave space for words and have restricted color palettes to facilitate their use in page layout, and they are generic rather than specific, using a range of decontextualizing devices and a restricted vocabulary of attributes to indicate the identity of people and places (hard hat + rolled up blueprint = "architect"; laptop = "office"; nondescript skyscraper = "city," and so forth). They are therefore deliberately designed to be used in multiple contexts, and sold over and over. And the concepts they seek to illustrate, labeled for ease of searching, focus on the positive values of contemporary corporate discourse—freedom, creativity, innovation, determination, concentration, spirituality, well-being, and so on—and are void of all political content: pictures of "freedom" mostly show people jumping for joy, or in an open-topped car on a virtually empty road, just as in the advertisements—with just a few images of the Statue of Liberty and the American flag thrown in, with or without warplanes overhead.

Van Leeuwen (2008) developed a framework for analyzing how the identity of "social actors" can be signified verbally, visually—and with the "Playmobil" range of toy figurines and accessories. Social actors can, for instance, be represented as individuals or as "types," and individually or collectively, and they can be functionalized (categorized by what they *do*, e.g., their profession or some kind of activity), or classified—categorized by what they are deemed to *be* (e.g., by gender, class, ethnicity, or nationality). His analysis demonstrates that many identity categories can be expressed verbally as well as visually. But not every category can be expressed in every mode, and the ways in which the same categories are expressed in different modes does add further meanings and values. The minimalistic characters of Playmobil offer a range of such categories, van Leeuwen shows, a microcosm of the social world. But even this system constructs reality in specific ways. The "ethnic family" box, for instance, contains a father, a mother, and three children, all with brown skin and identical hair color, and with a mother who wears her hair in a bun. The "family" (no further qualification) comes in a box with a father, a mother, and two children, all pink-skinned and with different hair colors, hence with a modicum of individuality. And

here the mother has long blonde hair, signifying youthful feminine attractiveness. A message is built into the "system"—"ethnic families" have more children, less individuality, and women who grow old earlier.

Conclusion

A few things can perhaps be said by way of conclusion. The field of multimodality has produced reliable methods that can be used for the critical analysis of multimodal discourse. It is itself, however, only marginally concerned with critical discourse analysis. Instead it tends toward a celebratory view of multimodality, as a tool for the design of effective communication in education, museums, hospitals and clinics, and so on. Critical discourse analysis is duty bound to plead for caution here. Contemporary corporate discourse is replete with positive self-affirmation, relentless optimism, and unquestioned belief in progress, and this kind of discourse increasingly infects other fields as well. This can be engaging and infectious, but it can also mask or silence other realities that are not quite so positive.

Meanwhile critical discourse analysis itself needs to pay more attention to the multimodality of contemporary communication, because the discourses that need the scrutiny of a critical eye are now overwhelmingly multimodal and mediated by digital systems that take multimodality entirely for granted.

SEE ALSO: Critical Discourse Analysis and Critical Applied Linguistics; Critical Discourse Analysis: History and New Developments; Multimodal Discourse Analysis; Multimodal Text Analysis

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Critical Analysis of Political Discourse

JOHN FLOWERDEW

The term "politics" derives from the Greek Πολιτικά (*politika*), as used in Aristotle's *Politics*. That volume dealt with the government of the state, but also, more broadly, all human interactions where power is an issue. Critical analysis, within the context of critical discourse analysis (CDA), has focused on aspects of both of these dimensions of politics. CDA thus considers issues such as political economy (e.g., globalization), political debates broadly defined, media discourse, organizational discourse, racism, gender issues, ecological issues, and identity (including national identity). Since the 1980s, a considerable amount of discourse analysis has focused on politics in the narrower sense of the term (e.g., Chilton, 1985, 2004; Atkinson, 1988; Lakoff, 1990; Wilson, 1990; Harris, 1991, 2001; Scannell, 1991; Schaffner, 1997), although the focus of this work is not necessarily critical. The focus of this entry will be mainly, although not only, on the more narrowly defined approach to political discourse. Within this more restricted definition of political discourse analysis, CDA has focused on such texts as speeches, interviews, radio phone-ins, public meetings, manifestos, constitutions, and treaties.

CDA's immediate antecedents are to be found in the work of critical linguists working at the University of East Anglia (Fowler, Kress, Hodge, & Trew, 1979) and broader influences include the work of linguists and political economists such as Louis Althusser, Mikhail Bakhtin, Pierre Bourdieu, Michel Foucault, Michael Halliday, Antonio Gramsci, and Jürgen Habermas. The approach also draws on classical rhetoric, text linguistics, sociolinguistics, applied linguistics, and pragmatics. Much of this early work focused on (political) news analysis.

The basic premise of CDA is that language is a form of social practice and that, as with all social practices, power is an important variable. The focus is on how power is manifested in discourse, or text and talk. The relationship between power and language is not seen as deterministic, however, but as variable, power influencing language and language affecting power. It is not possible, therefore, to "read" power relations "off the page" or text. That being said, particular linguistic forms may be used in the expression of power, an early insight being the distinction in many European languages between first and second pronouns (*tu*/*vous*) of Brown and Gilman (1960/1972), whereby the *tu* form may be used by the more powerful person, but the *vous* form is required in return. Other linguistic features which have been extensively studied include transitivity (in the systemic function sense of the term), lexis, phonology, and various features of genre, among many others. CDA is not limited to written or spoken text, but also considers other semiotic systems, such as the visual and acoustic, which may equally affect meaning.

CDA also assumes that discourse is controlled by gatekeepers who have the power to influence social beliefs, values, and ideologies, and determine what is and what is not acceptable discourse. Although language power may be held by gatekeepers, it is not always a question of "heroes and villains" (van Dijk, 1993); the powerful may not be aware of their abuse of discourse. Indeed, it is a precept of CDA that discourse may be *naturalized*, embodying taken-for-granted assumptions about people's roles in society, and it is the goal of CDA to reveal such naturalizations. The term "critical" in the CDA acronym refers not to negative evaluation, but in the sense of *critique*, with the goal of a positive outcome.

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Thus CDA focusing on racism has the goal of reducing inequality, not just criticism of those enforcing it.

Because it is not possible to "read" discourse off the page, and because its underlying meanings may be taken for granted, CDA places much emphasis on the role of context in analysis. That is, other data, in addition to the immediate textual data, may be employed in the analysis, such data typically taking the form of other texts, participant interviews, and other forms of ethnographic data. Because of this, CDA is often interdisciplinary, involving researchers from other fields, such as political economists, sociologists, anthropologists, and historians. Such triangulation enhances objectivity and mitigates accusations of subjectivity and bias in interpretation, which have been made by some, most notably Henry Widdowson, in a famous exchange with Norman Fairclough (Widdowson, 2004). Arguments against such accusations of bias are that, on the one hand, it is spurious in any research to expect objectivity, any researcher being socially positioned, and that at least CDA is open about its political orientation; and, on the other hand, one can appeal to such measures as representativeness, reliability, completeness, and accessibility, as well as the above-mentioned triangulation, as in other forms of qualitative research in the human sciences.

Following from its openly political agenda, some CDA practitioners argue for active political engagement beyond the academic publication (e.g., Fairclough has engaged with journalists, and Ruth Wodak often takes on the role of what she refers to as a "public intellectual"). Wider dissemination of the findings might include newspaper commentaries, television and radio broadcasts, training seminars, and further education courses (Reisigl, 2008).

Reacting to what he sees as the "deconstructive" and rather negative nature of CDA, Martin (1999) has put forward the idea of a positive discourse analysis, where, instead of analyzing the abuse of power through language, the focus would be on the emancipatory power of positive discourse, of how language power can be used to bring about positive effects in the world. A danger of this, however, is that such work might be turned into a form of propaganda for the status quo. In so far as the term "critical," as defined above, already incorporates the notion of change and improvement, it might also be argued that such a discourse is no longer necessary. Having said that, while it may be agreed that dominant social structures tend to lead to naturalized discourses, there do exist, in situations of dominance, instances of resistance to such conventionalized discourses. It is worth noting that CDA has given little attention to such *agency*, in favor of more attention to *social structure*, as compared to the educational linguistics literature, where under the influence of Vygotskyan sociocultural theory, more attention has been paid to agency (e.g., Lantolf, 2000); perhaps CDA could redress this imbalance (Flowerdew, 1997, 2008).

Five figures are generally seen as key in CDA: Norman Fairclough, Gunther Kress, Ruth Wodak, Teun van Dijk, and Theo van Leeuwen (although Kress and van Leeuwen have been more active in recent times in other areas, in educational discourse and visual design). All have focused on political discourse, to a greater or lesser degree. According to Wodak (2001), this group of researchers came together at a meeting in 1991 organized by van Dijk in Amsterdam and which was seen as the "formal" initiation of CDA. Also, the group contributed articles to a special edition of *Discourse and Society* on CDA in 1993. That being said, it is important to emphasize that CDA has never been a "school" in the strict sense of the term, each member of the group following his or her own approach. Other figures more or less central to the movement include Carmen Caldas-Coulthard, Jan Blommaert, Lilie Chouliaraki, Robert de Beaugrande, and Siegfried Jäger. If CDA is not a school, neither is it a *theory*. Van Dijk (1993) prefers to call it an *approach*. There is disagreement among practitioners as to whether it is a theory, an approach, a method, or a combination of two or more of these (Flowerdew, 2008).

In terms of topics, Fairclough has focused on discourse and power (Fairclough, 2001), on discourse and social change (globalization, neoliberalism, knowledge economy), and on media discourse. He takes a theoretical approach, usually examining relatively small extracts of text in order to illustrate concepts such as orders of discourse, intertextuality, hybridity, and voice. On the social side, he is influenced by the political economists Laclau and Mouffe (1985/2001), among others. In terms of political engagement, his book *New Labour, New Language?* (2000) is an attempt at a more popular contribution aimed at the general public, while his earlier edited collection *Critical Language Awareness* (1992) has argued for a systematic critical approach to language that can be carried over into schools and to the public at large. A summary of a relatively recent paper (2005) gives an idea of his approach. In this paper, he makes it clear that his is a specific version of CDA

> which is characterized by a realist and dialectical-relational theory of discourse, a methodology which is oriented to constructing objects of research through theorizing research topics in dialogue with other areas of social theory and research, and selecting methods which are in part inherent to this version of CDA and in part dependent upon the particular object of research.

In this particular study, Fairclough focuses on elements of political transition in Romania, the "knowledge-based economy," focusing on one discourse phenomenon, recontextualization.

Like Fairclough, Wodak's research agenda focuses on the development of theoretical approaches to CDA. She combines elements of ethnography, argumentation theory, rhetoric and systemic functional linguistics, focusing on gender, language in politics, prejudice, and discrimination. She is best known for her work on political discourse concerned with anti-Semitism in Austria, where she developed, with colleagues, her *discourse-historical* approach. She has also studied the discourse and politics of the European Union, focusing on issues including unemployment, NATO, neutrality in Austria and Hungary, the discursive construction of European identities, racism "at the top," and parliamentary debates on immigration. In general, Wodak's approach is much more ethnographic than Fairclough's. She is also interested in the role of history in discourse (Martin & Wodak, 2003). Indeed, as a multidisciplinary enterprise, one role for CDA is historiography, the writing of history.

Developing earlier work in the 1970s on the psychology of text processing with Walter Kintch (van Dijk, 1977), van Dijk's contribution to CDA has been in developing a sociocognitive model, with a focus on the discursive reproduction of racism, in particular, by politicians, journalists, scholars, and writers (which he refers to as the "symbolic elites"), and in printed news media. Van Dijk's sociocognitive approach attempts to bridge the gap between society and discourse. Working from a mental models approach, van Dijk sees discourse, processed via long-term and short-term memory, as shaping our perceptions and understandings. Stereotypes and prejudice can occur when such models become overgeneralized. In relation to this work, van Dijk has been interested in developing theories of ideology and context. He founded the leading journal devoted to CDA, *Discourse Studies*, which he still edits.

Although, as already mentioned, in his later work Kress has moved away from CDA, as one of the founding members of the group, his is an important contribution. Already, in earlier work, with Fowler (Fowler et al., 1979) and Hodge (Hodge & Kress, 1979/89), he was a leading theoretician for critical linguistics, focusing on ideology in news discourse. His later book (Kress, 1989) is significant in setting out some important principles for CDA, as is his contribution to the special edition of *Discourse and Society*, referred to above, "Against Arbitrariness" (Kress, 1993). In this paper, as in his other contributions (echoing Whorf), he argues that a fundamental understanding for a critical approach to discourse

is the "motivated" relation of the signifier and the signified, how producers and readers of signs are motivated by their backgrounds and social histories which make up the relevant context, including the social structures and the power relations existing therein. He also argues that a focus on "bland" texts might be more productive than texts which are more obviously ideologically marked and for the intrinsically multimodal nature of texts.

Van Leeuwen is influenced by his background in film and television and emphasizes the overall semiotic nature of discourse (van Leeuwen, 2004), considering not just text, but acoustic and visual elements of discourse, as well as material action. With regard to CDA, and in accordance with his overall semiotic approach, van Leeuwen (1996, p. 33) has stated that

> there is no neat fit between sociological and linguistic categories and if Critical Discourse Analysis, in investigating for instance the representation of agency, ties itself in too closely to specific linguistic operations or categories, many relevant instances of agency might be overlooked.

Van Leeuwen's work is less focused on politics in the narrow sense of the term, although he did conduct a large-scale project studying globalization and discourse (Machin & van Leeuwen, 2003).

Returning to the work of Fairclough, perhaps the leading figure in CDA, and to the dichotomy presented at the beginning of this entry regarding the narrower conception of the political, concerning the government of the state, and the broader definition, concerning all human interactions where power is an issue, Fairclough proposes that the boundary between these two poles is ever changing, depending upon what he refers to as the prevailing order of discourse. By order of discourse he means "the structured configuration of genres and discourse which constitutes political discourse, the system . . . which defines and delimits political discourse, at a given point in time" (Fairclough, 1998: 146). Contemporary political discourse articulates together, Fairclough argues, the orders of discourse of the political system (conventional, official politics), the media, science and technology, grassroots sociopolitical movements, and ordinary private life and it does this in an unstable and shifting configuration. Fairclough argues that a way into these orders of discourse is via their agents, on the one hand, and their genres, on the other.

This brings us to Flowerdew's work, which has focused on the political discourse surrounding Hong Kong's change of sovereignty from Britain to China. This work, which has been going on since the early 1990s, approaches this discourse from the perspective of the political leaders—the last British governor and the first two chief executives of what is now a special administrative region of China—and focuses on such genres as public meetings, interviews, set piece speeches, and televised addresses. This analysis has led Flowerdew to investigate some important features of political discourse, such as the exertion of language power, the manipulative use of language, cross-cultural political discourse, the notion of political "myth," the discursive construction of (national) identity and racialized discourses (e.g., Flowerdew, 2011). It is unusual in political discourse analysis in focusing on one specific context over a long period, allowing for a fuller understanding to develop of the social context and orders of discourse in question.

In terms of methodology, Reisigl (2008), based on his experience working with Wodak's research team in Vienna, has listed a sequence of steps for the systematic critical analysis of political discourse, as follows:

1. Consult previous knowledge about the sociopolitical problem that possesses linguistic aspects.
2. Collect (triangulated) discursive data for analysis.

3. Prepare and select specific data for analysis.
4. Formulate research questions and hypotheses based on rapid checking of data or part of it.
5. Pilot the analysis to adjust analytical instruments and further spell out research questions.
6. Develop detailed case studies; these can operate at macro or micro linguistic levels or at the level of context; they lead to an overall interpretation of the results of analysis, taking into account the social, historical, and political context of the analyzed data.
7. Formulate critique to reveal problematic discursive strategies, solve specific problems of communication, or improve communication; this is based on ethical principles such as democratic norms and human rights; it focuses on opaque, contradictory, and manipulative relations among power, language, and social structures and commits itself to cognitive and political emancipation (and improvement of communication).
8. Apply results, e.g., publication of a book/articles and/or more widely disseminated outlets.

To conclude, there are two peer-reviewed journals which are devoted to CDA and which deal with political topics (in the narrow sense): *Discourse and Society* and *Critical Discourse Studies.* In addition, *Journal of Pragmatics* and, especially, *Journal of Language and Politics*, regularly publish articles devoted to the critical study of political discourse.

SEE ALSO: Critical Discourse Analysis; Critical Discourse Analysis: History and New Developments; "Critical" in Critical Discourse Analysis; Discourse and Identity; Immigrant Discourse; Language Ideology and Public Discourse; News Discourse

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Critical Applied Linguistics

SINFREE MAKONI AND BUSI MAKONI

The term "critical" when used with reference to poststructuralist and postmodernist scholarship is neo-Marxist and influenced by Derrida (1970) and Foucault (1970). Critical scholarship is "restless" (Pennycook 2004) as it questions assumptions made in the parent discipline. Criticality is a process of engaging with power and social inequality both within and outside applied linguistics. Nonetheless, critical applied linguistics (CAL) is not opposed to power but to its effects. CAL is skeptical of concepts such as the native speaker, language, identity, and agency.

There are a number of different prisms through which CAL may be viewed. Given our personal biographies our view of CAL is postcolonial. A postcolonial reading of CAL is not a total rejection of "Westcentric frameworks of analysis and assessment" (Shi-Xu, 2009, p. 239). After all, not all Westcentric perspectives are inadequate in other contexts. In fact, some can be used productively in non-Western contexts. The important issue, therefore, is not the origin of the theories but what they seek to accomplish and the social-linguistic issues they address. Some Western frameworks may be incompatible with non-Western realities whereas in certain cases frameworks originating from outside Western countries may enrich Western perspectives (Shi-Xu, 2009). It is against this background that our version of CAL should be understood and evaluated.

Most CAL researchers subscribe to social constructionism. As Stead (2004) points out, "social constructionism is anti-essentialist." It questions the centrality of categories and dichotomies because these "divisions are not reflective of a reality but are often political, thus serving the interests of the groups who devised them." Social constructionism then shifts the focus to how relationships are constructed. Social constructionism is appealing to CAL scholars because its aim is "to re-examine received or mainstream viewpoints, to produce new interpretations or meanings." By so doing, it disrupts the exploitation associated with institutionalized discourses. For instance, "social constructionism avoids essentializing . . . languages as if they exist independently." After all, "knowledge is contextually embedded. Multiple realities are negotiated in historical time" (Stead, 2004, pp. 391–2). Postcolonial CAL does not dismiss essentialization. Within postcolonial CAL, tension exists between social constructionist and essentialist thinking or the proclivity to articulate social constructionism in essentialist discourse. The issue is not whether to essentialize or not, but rather the degree and extent to which it takes place. Some degree of essentialization is inescapable and desirable (Spivak, 1993; Sayer, 1997) in order to promote and advocate causes whose analysis may be dependent upon social constructionism. For instance, causes such as mother-tongues education, minority language, language rights, multilingualism, and so forth are dependent on social constructionism and often involve essentialization.

The question that arises, however, is whether reification to the degree of treating languages as discrete serves the objectives which the analysis is meant to serve. It is for this reason that postcolonial CAL questions the "thingness" of language or the anthropolinguistic perspective reified in order to capture the dynamics of social and linguistic variation. The anti-anthropolinguistic stance has been taken further by work which questions the conceptual validity of multilingualism as an alternative to monolingualism. Multilingualism, postcolonial CAL scholars argue, is caught up in the same paradigm as monolingualism

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in that it is a form of plural monolingualism. As an alternative to multilingualism, they advance concepts such as polylingualism, metro-lingualism, and *vague linguistique* (Makoni & Makoni, 2009), all of which reflect an indeterminate, fluid, and constantly evolving singularity which these scholars view as a return to monolingualism; not, however, linguistic monolingualism but rather humanistic monolingualism. Linguistic monolingualism refers to language as a code, as a system, and with no reference made to the language user. In humanistic monolingualism the emphasis is on the way an individual is able to integrate personal experiences with social biography as a critical component of an individual's language. Nonetheless, CAL is heterogeneous. It encompasses a number of areas such as migration studies, feminist research, critical pedagogy, and so forth. The subareas differ considerably in their method, mode of analysis, and orientation toward language, multilingualism, and other language-based frameworks. They also differ in how they are situated within the debate on essentialization and constructivism.

Postcolonial CAL, however, tends to situate itself at the intersection of essentialization and social constructionism because it is at the point of intersection between the two that social realism can be effectively described. In the promotion of social causes CAL essentializes to advance its political causes. Yet both approaches, social constructionist and essentialist, engage with political critique of social relations and promote variants of applied linguistics situated in social and cultural traditions outside Western contexts. These variants focus on questions that deal with applied linguistic concepts drawn from Asia, India, and Latin America (Shi-Xu, 2009). For example, the conventional tendency is to describe New Englishes using a metalanguage with origins in Latin. Yet in a postcolonial framework the analysis is recontextualized by describing English using metalanguage from other regions of the world. English is thus described and viewed through the lens of Indian, Latin American, and African metadiscursive regimes.

The contribution of non-Western contexts in mainstream applied linguistics is not new. For instance, the work by Gumperz (1958), which began in India, and systemic functional linguistics (SFL), which was stimulated in part by Halliday's learning of Chinese and reading of Chinese grammars, were subsequently to have a considerable impact on applied linguistics (Shi-Xu, 2009). The roots of these theoretical frameworks were outside the Western world. Nonetheless, the Chinese origins of SFL are rarely acknowledged. The tendency is to trace the origins of this work to Malinowski, Firth, and so forth. Similarly, the work of some eminent applied linguists such as Brumfit, Davies, and many others was shaped initially by their experiences in African countries such as Tanzania, Kenya, and Zimbabwe. CAL, in this regard, is situated at the intersection of colonialism, postcolonialism, feminist theories, and history.

Given the literature on colonialism and language practices in Asia, Latin America, and Africa, CAL, therefore, has a longer trajectory in these regions and may be as old as colonialism. After all, the appropriation of languages is a feature of colonialism (Fabian, 1991). The appropriation was carried out through descriptions of grammars, dictionaries, and word lists. At this stage, the distinction between description and prescription was blurred because description was used prescriptively.

Research in critical history has implications for CAL; findings in one field have implications for another. Critical historians, for instance, argue that colonial regimes were neither monolithic nor omnipotent. These historians further point out that closer investigation reveals "competing agendas for using power, competing strategies for maintaining control, and doubts about the legitimacy of the venture" (Cooper & Stoler, 1997, p. 6). The point critical historians make is that the strength of colonialism is exaggerated. Colonialism, they assert, is much weaker than previously thought. If critical historians are correct, it seems that from a language planning perspective, colonial language policy exists more in abstract theory than in practice. In terms of practice, colonial policies were a bricolage, with imperial

powers modeling their practices at times on non-European colonial powers. Hence "France turned to Russia and Russia to the American west" (Stoler & McGranahan, 2007, p. 4) and at times even the supposed intuitive distinction between colonizer and colonized was not clear. This is reflected in the relationship between Egypt and the Sudan, where Egypt is a "colonized colonizer." The tendency in CAL scholarship, however, has been to interpret the abstract as real.

Colonial language policies are important in the writings of CAL (Pennycook, 2004; Ramanathan, 2005) because they bring to the fore politics and reflect how local power structures conform to and confound pressures brought by globalization. As critical historians point out, however, colonial policies including language policies were a bricolage, and it is therefore not surprising that colonial languages refer to a range of referents: missionary variants of African languages (Meeuwis, 2009), products of processes of Arabization, and the imposition of English. This is to be expected because what constitutes colonial and what a "colonist" is differ between languages and also vary in terms of both historical and geographical space. In Africa, for instance, historically standardized African languages were framed as colonial or "European" languages by African elites (Errington, 2007). Yet in Africa the same languages are now a rallying point in indigenous language advocacy campaigns. Similarly, Arabic was treated as a threat by the British but not by the southern Sudanese who appropriated it. In Sudan, African languages and English are treated as languages of resistance against Arabization. In CAL grammars are political, and this has been effectively demonstrated by the publication of a Pan-Hispanic grammar (Valle, 2009). The Pan-Hispanic grammar is based on all the varieties of Spanish, which explains the use of the term "Total Spanish" approved by all Spanish language academies. A Pan-Hispanic grammar is a symbol of the emergence of a Spanish cross-continental unity of equals. The equality is evident in the erasure of the dominant status of scholars from Spain. In fact, "the conspicuous erasure of the leadership role played by the Spanish linguist and his team further reveals the strategic value of wrapping the grammar in an image of authority and pan-Hispanic consensus" (Valle, 2009, p. 883).

CAL is as much an intellectual project as it is a call to political action, deploying many modes rendering the "process of decision-making transparent for the wider public" (Wodak, 2006, p. 299). Most of what is visible to the public is a "staging" of politics because the state is vulnerable when its decision-making processes are known and it is treated as embedded in society and not reified. In fact, the state contributes toward the construction of reality. This it accomplishes through its financing of language education, language teaching, lexicography, and language planning. The state, however, is a key player in knowledge production. Interestingly, applied linguistics is one of the disciplines involved in state interventions in language, which suggests that, to a large degree, applied linguistics is a state subject. The desire to influence the "real world" may, however, be perceived as outside applied linguistics. Yet politics is part of CAL, as reflected in its grappling with colonialism and globalization.

Even though the state has the power to produce knowledge, authorized knowledge is resisted, as reflected in critical discourse analysis (CDA). CDA resists the effects of power when it illuminates covert ideologies in texts, thereby liberating society while inadvertently reinforcing the subordinate status of others. When CDA illuminates ideologies underlying the production of most texts it is itself reflecting its own ideologies. Analysis in CDA is therefore always continuous. However, unlike other areas of CAL, CDA does not have identifiable methods, but this renders it highly adaptable to different contexts, particularly fluid, multilingual ones. Until recently, CDA has depended on the discourse analyst for the interpretation of texts, ironically reinforcing the monopolization of knowledge production by a few actors. To preempt a monopoly of knowledge, ethnographical accounts of the readings of texts are used to complement the analysts' interpretation.

In the past most of the texts were from Euro-American contexts, but there is an increasing number from other parts of the world. If texts are drawn from different parts of the world then some will inevitably be bilingual, thus rectifying the monolingual Anglo-centered nature of texts frequently used in CDA. For CDA to be relevant to other regions of the world it has to develop a strong sense of history because some trends which are not evident when viewed synchronically are self-evident diachronically. When situated in other contexts, it has to draw on other intellectual traditions.

Another process which has been a source of controversy in CAL is globalization. One of the most powerful but controversial arguments posited by Phillipson (1992) and others is the impact of the colonial on the periphery. The argument is replete with irony which is often disconcerting to "third world" scholars. For instance, the idea of "linguistic imperialism" is now more or less universally associated with scholars from the "center." It gives insight into knowledge production and dissemination which are, again, associated with the center rather than the periphery. "Periphery" refers to former European colonies. A more convincing analysis has to be historical, geographical, and ethno-class situated, thus creating opportunities to discuss the effects of globalization, the impact of globalization, and how it shaped center countries themselves, through the spread of "third world" languages and cultures. The effect of globalization has compelled us to be more reflexive as we grapple with issues about ethics and the potentially acrimonious discussion of the degree to which we can be held morally responsible individually and collectively for the uses to which our research is put.

Because CAL has a global reach and because of its social constructionist orientations, it has to address dichotomies in applied linguistics such as gender, the native speaker (Kabel, 2009), and so forth. Gender is incompatible with sociolinguistic realities in some post-colonial contexts, especially in Africa. Oyewumi (1997), for example, argues that the Yoruba (in Nigeria) are not organized along gender lines. To this end, analytical categories such as male-wife or female-husband exist although these do not have direct correspondence with male/female distinctions based on the Western concept of a nuclear family. The male/female divide is not based on biology but rather relates to the cultural roles played by individuals. Similarly, concepts such as native speaker, identity, community, and language are all founded on Western monolingual communities. These concepts are not robust enough to explain the complex linguistic tapestry of multilingual communities.

The discourse of monoglot normality has influenced applied linguistics in many ways. Languages such as creoles in multilingual settings are treated as "exceptional" or something of an oddity. Multilingualism renders the discourse of "normality" problematic. Because the relationship between language and identity tends to be treated as a monolingual affair, language practices in multilingual communities may misrepresent it unless it is handled carefully. For instance, language shift is equated to language loss, notwithstanding the fact that a multilingual individual's identity is located in multiple codes. Similarly, in monoglot views, the "native speaker" is a valuable asset, but in multilingual communities it is not clear how "nativiness is assigned" (Love, 2009, p. 31). In addition, distinctions between monolingualism and multilingualism are based on individual linguistic resources. Since linguistic resources vary between individuals the idiolect inevitably becomes one of the central pillars in CAL. An idiolect is then viewed as a set of an individual's linguistic resources or form–meaning connections. People coordinate idiolects in discourse, and they generalize them to other resources called languages, dialects, registers, styles, and so forth.

Another area of research which is of central significance to CAL is migration studies. Migration has become salient in national discourses because of xenophobia. Xenophobia and the ever-changing immigration rules make immigrants from the south vulnerable to discrimination. Through discourse analysis CAL challenges such discrimination, because

discrimination is a social process embedded in discourse and can thus be challenged through discourse analysis.

In critical pedagogy, which is one of the strands of CAL, the objective is to encourage self-reflexivity by language teachers. Language teaching is here seen as a powerful political tool with social consequences, which has become important in a post 9/11 world in which issues about security have acquired a linguistic turn. In critical pedagogy, there is also awareness that there might be differences across contexts in terms of what are construed as acceptable learning and teaching styles. For example, whereas rote learning is denigrated in Western language learning, Ramanathan (2005) shows that rote learning and choral responses occur in many contexts in India. In some situations critical pedagogy examines the complicated relationships between language teaching and proselytization.

Closely related to critical pedagogy is language testing. Whereas in the past the tendency was to construe language testing as positivist, language testers need to develop an awareness of the power of tests as they shape learners' life outcomes. Critical language testing also raises the role of ethics in testing (Shohamy, 1997).

Conclusion

Love (2009, p. 31) states that "what passes for a study of science is a form of culture maintenance." Throughout this entry we have shown how the claim of the culture of maintenance can be addressed. We have shown the relevance of texts from other languages, the need to use metalanguages from other traditions of linguistic thought, the need for sensitivity to concepts which are underpinned by the assumptions of monoglot communities, and how these factors make it difficult to argue that Western concepts of language are necessarily applicable to postcolonial contexts. The development and writing of grammars in the nineteenth century and, more recently, the publication of the Pan-Hispanic grammar reflect the extent to which grammars are political artifacts and that languages are neither natural nor primordial, similarly to ethnicities, notwithstanding the fact that, subjectively, languages may be perceived as natural.

CAL shares common features with social constructionist versions of other disciplines such as geography, history, and so forth in their critique of the natural and their emphasis on human-centeredness. CAL, even though it might have features which are peculiar to it, is closely aligned with applied linguistics. It also contributes toward an understanding of language planning through its reevaluation of accepted categories in applied linguistics and the connections it makes between the state and language.

SEE ALSO: Bilingual Education and Immigration; Critical Literacy; Critical Pedagogy; Ethics in Language Assessment; Forensic Linguistics: Overview; Linguistic Imperialism; Multiculturalism and Second Language Learning; Nation; Postcolonial Studies; Race; Religion

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Critical Discourse Analysis

BERNHARD FORCHTNER

Critical discourse analysis (CDA, nowadays also referred to as critical discourse studies) investigates naturally occurring written and spoken language beyond the sentence level, as well as other forms of meaning making, such as visuals and sounds, seeing them as irreducible elements in the (re)production of society. However, *critical* discourse analysis furthermore aims to demystify the role language plays in the (re)production of unjustified domination and inequality, and questions the social conditions in which these discourses are embedded. This has made CDA an increasingly popular, and still evolving, approach over the last two decades. This entry offers an introductory overview of the core principle, diverging strands, and controversies in the field.

Starting Points: Discourse and Critical Impetus

CDA, as a label and network of scholars, emerged in the early 1990s in the course of interdisciplinary attempts to apply linguistic insights to the analysis and theorizing of social phenomena. Due to different contexts of emergence and the problems faced, CDA cannot be seen as a homogeneous theory but rather as a heterogeneous perspective informed by a variety of positions in such diverse fields as pragmatics, rhetoric, sociolinguistics, sociology, philosophy, social psychology, and text linguistics. Despite its pluralism, at least two widely shared concepts, discourse and critique, can be considered to constitute the core of CDA.

First, the concept of discourse is often used multidimensionally, ranging from style (e.g., "the discourse of academics") and genre-related understandings (e.g., "the discourse of editorials") to communication on a particular topic (e.g., "the discourse on racism") or even as producing the respective object, that is, as a network of knowledge. Nevertheless, a common denominator can be identified in, for example, Fairclough and Wodak's (1997, p. 258) characterization of discourse as "a form of 'social practice'. Describing discourse as a social practice implies a dialectical relationship between a particular discursive event and the situation(s), institution(s) and social structure(s), which frame it . . . To put the same point in a different way, discourse is socially *constitutive* as well as socially shaped." As such, discourse is understood as the social activity of making meaning through language use or semiosis, that is, meaning making not only through written and spoken language but also via sound, gestures, and images. Simultaneously, discourse is viewed as a crucial element in the (re)production of the social relations of a given society. However, discourses are not seen as free-floating or singular elements in this (re)production but as embedded in social contexts, referring to each other (interdiscursivity) as well as to material conditions which enable/constrain discourses.

Second, CDA is not interested in discourses for their own sake but seeks to challenge the linguistic/semiotic relations through which injustice is obscured and (re)produced. Hence, CDA claims to be critical when investigating semiosis in contrast to more descriptive forms of discourse analysis. Fairclough (2010, p. 43), for example, rejects approaches which "describe without explaining" or explain while just taking the immediate micro-context of the situation into account. Here, CDA echoes Horkheimer's (1972, pp. 206–7)

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demarcation of critical and traditional research. While the latter tends to perceive the world as a sum-total of facts and does not question its genesis, the former "has society itself for its object . . . [and] is suspicious of the very categories of better, useful, appropriate, productive, and valuable, as these are understood in the present order." CDA too aims to denaturalize ideological categories which help to (re)produce unjustified power structures and thereby provides resources for those struggling against linguistic/semiotic aspects of injustice. Moreover, its proponents put forward a transformative agenda "*for* emancipation, self-determination and social recognition . . . [which] is motivated by the perhaps utopian conviction that unsatisfactory social conditions can, and therefore must, be subject to methodological transformation towards fewer social dysfunctional and unjustifiable inequalities" (Reisigl & Wodak, 2001, p. 34). CDA's critique is thus negative, that is, denaturalizing and demystifying, and positive, that is, providing more inclusive and egalitarian solutions (Fairclough, 2010, p. 14).

Further Crucial Concepts

Closely related to the notion of discourse are concepts like text, intertextuality, genre, and recontextualization. These concepts carry roughly similar meanings across the various approaches in CDA.

For example, Lemke (1995, p. 7) describes the relation between discourses and texts as follows: "[o]n each occasion when the particular meanings characteristic of these discourses are being made, a specific *text* is produced. Discourses, as social actions more or less governed by social habits, produce texts that will in some ways be alike in their meanings." However, by the very nature of being part of a discourse, texts are also, to varying degrees, "sites of struggles," as they are rarely absolutely coherent entities but are informed by a range of positions (Wodak & Meyer, 2009, p. 10). This heterogeneity, that is, intertextuality, is established through explicit and/or implicit, synchronic and/or diachronic relations to various other texts and is thus a "source of much of the ambivalence of texts" (Fairclough, 1992, p. 105). At the same time, texts are always situated and, as such, part of distinct genres. A widely accepted definition is given by Fairclough (1992, p. 126), who characterizes genre as a "relatively stable set of conventions that is associated with, and partly enacts, a socially ratified type of activity." In other words, particular discursive practices, as other social activities, follow particular sets of rules which are crucial factors in meaning making. Finally, recontextualizing describes the process of decontextualizing a given text element and transferring it to another one, by which means a (partly) new meaning is created (Reisigl & Wodak, 2009, p. 90). In addition, Chouliaraki and Fairclough (1999, pp. 93–4) point out the role of recontextualization in struggles due to the emancipatory or regressive consequences that the transfer of an argument into new contexts can have.

These concepts can be illustrated by reference to "God Save the Queen," an (in)famous song by the punk rock band the Sex Pistols, released during Queen Elizabeth II's Silver Jubilee in 1977. This multimodal text combines lyrics with various kinds of sounds and belongs to the genre of "song," more specifically "punk rock song," which follows a particular set of conventions and thus raises expectations in those familiar with the genre. The song is, furthermore, part of a wider discourse on the role of the monarchy in the United Kingdom and thus several interdiscursive relations exist, for example, to the discourse on what constitutes "Britishness." For many listeners, its meanings derive, for instance, from an explicit intertextual reference to the similarly entitled national anthem of the United Kingdom: By decontextualizing phrases from the anthem and recontextualizing them in their song, the band sparked a scandal when it released the song. Related to this example, CDA might raise questions such as "What does this text tell us about the

UK and its inner constitution?" "What was specific about the 1970s that made this song relatively iconic?" "Why did this particular genre emerge?" "Does this text challenge unjustified power structures?" and "How does the text realize its aims linguistically, for instance, who appears as an agent, which metaphors are used, etc.?" This example furthermore indicates the range of text genres that can be analyzed: from punk rock songs to television programs, from cigarette packets to blogs, from political speeches to newspaper articles, and so forth.

Varieties of CDA

CDA has never aimed to establish a coherent body of concepts and definitions. Apart from some shared core assumptions (see above), differences continue to exist. Given the plurality of approaches within CDA, and the limited space available here, the following can only touch briefly on what are arguably the three most influential approaches in CDA: Norman Fairclough's dialectical-relational approach, Teun van Dijk's sociocognitive approach, and Ruth Wodak's discourse-historical approach. This section will address their predominant research interests, their particular conceptual frames, and, where appropriate, their epistemological foundation. However, several other approaches exist within CDA, such as critical metaphor analysis (e.g., Charteris-Black, 2004), the so-called Duisburg group which draws extensively on Foucauldian concepts (Jäger & Maier, 2009), and van Leeuwen's (2004) theory of discourse as recontextualizing social practice.

Fairclough's Dialectical-Relational Approach

Fairclough's program focuses on discourse in relation to social/cultural change, in particular the emergence of new forms of capitalism. Here, semiosis is viewed as central: Social/cultural changes are no longer pushed through simply by means of coercion, but also through discourse (Chouliaraki & Fairclough, 1999). In other words, discursive change and social change go hand in hand.

These changes occur not only within the textual dimension of discourse, but also in what Fairclough (1992, pp. 96–9, 200–24; 2010, pp. 232–3)—building on Foucault—calls "orders of discourse." The latter are relatively stable "ordering[s] of relationships among different ways of making meaning, i.e. different discourses" (Fairclough, 2010, p. 265). For example, the discourse on property nowadays is characterized by the dominance of a discourse of private property over other property regimes. However, instead of simply investigating the textual dimension of discourses, Fairclough (2010, pp. 132–3) proposes to analyze three dimensions of discourse simultaneously.

- Texts should be described.
- The relationship between these texts and discursive processes should be interpreted.
- The relationship between discursive processes and wider social processes should be explained.

Analyzing the interplay between abstract structures, concrete events, and mediating practices of, for example, the existing property regime must consequently also address the dialectical relationship between linguistic/semiotic and other elements within each element of the social process (Fairclough, 2010, p. 232). The dialectical-relational approach is therefore

- relational insofar as it deals with relations between discourses (and nondiscursive elements) which themselves consist of relations, and

- dialectical as it focuses on the mutual relationships between, for example, the discursive and the material.

Among the three core approaches to CDA, the dialectical-relational approach is most systematically influenced by critical linguistics (e.g., Fowler, 1996) and draws on the linguistic theory of systemic functional linguistics (Chouliaraki & Fairclough, 1999, pp. 139–55). At the same time, Fairclough and his collaborators have related CDA explicitly and systematically to social theories such as those of Anthony Giddens, Antonio Gramsci, Chantal Mouffe, Ernesto Laclau, Jürgen Habermas, Karl Marx, Louis Althusser, Michel Foucault, and Pierre Bourdieu (e.g., Chouliaraki & Fairclough, 1999).

Van Dijk's Sociocognitive Approach

Van Dijk's work (e.g., 1993) has been concerned with the analysis of racism for many years, the role of elites in the (re)production of ethnic prejudice, and, thus, unjustified power relations.

However, van Dijk has pursued his research interests through very specific means. He has continuously argued for the inclusion of cognitive elements in the theoretical framework of CDA—what he describes as a sociocognitive approach. In short, van Dijk is interested in cognitive structures and the way in which these structures, in every instance and on every level, serve as an interface between social activities (discourse) and the properties surrounding social situations. This mediation is accomplished by subjective mental models which are activated through contact with the respective text and, subsequently, determine its interpretation (van Dijk, 1998, pp. 78–89; 2008, pp. 57–70). This proposal has far-reaching consequences for CDA as, for example, the understanding of context shows. Both the dialectical-relational and the discourse-historical approach tend to understand context as rather objective, enabling, and construing meaningful social activity, that is, framing discourses through objectively existing (though alterable) properties (however, at least in the case of the discourse-historical approach, this builds on the concept of mental models; see Wodak et al., 1990, pp. 37–9). Van Dijk (2008, p. 71) defines context as "*a special kind of mental model of everyday experience*," that is, in subjective-cognitive and not objective-external terms. It is only through such contextual models that people are able to interpret their social environment and (re)act.

According to van Dijk (2008, p. 73), it is through analysis of such context models that researchers "can describe as well as explain how our discourses are (produced as) situationally appropriate." A telling example of the significance of the cognitive aspect in van Dijk's work is his conceptualization of ideology. While both the dialectical-relational and the discourse-historical approaches understand ideology roughly in terms of a mystified, particularistic representation of social relations, van Dijk (1998, p. 8) proposes a neutral definition of ideologies, seeing them as simply being the "*basis of the social representations shared by a group*." It is the study of this socially shared representation—the interface between the social and the individual—which enables an understanding of social practices, that is, discourses (van Dijk, 1998, pp. 88–9).

Wodak's Discourse-Historical Approach

The discourse-historical approach cannot be understood without some awareness of the eruption of anti-Semitic and nationalist discourses in Austria at the end of the 1980s (e.g., Wodak et al., 1990). Similar to van Dijk's research, this tradition has focused extensively on anti-Semitism, racism, nationalism, and xenophobia (e.g., Reisigl & Wodak, 2001; Heer, Manoschek, Pollak, & Wodak, 2008; Wodak, de Cillia, Reisigl, & Liebhart, 2009). However, since 2000, Wodak and her collaborators have also studied other areas, among them

decision-making processes in European Union organizations (e.g., Muntigl et al., 2000). Central to all these studies is the conviction that understanding discursive events implies taking their broader sociopolitical and historical contexts into account. Consequently, a four-dimensional concept of context is at the center of this approach. It includes

- immediate language or text-internal co-text,
- intertextual and interdiscursive relationships,
- the specific context of the situation in which the discursive practice takes place, and
- the broader sociopolitical and historical context (Reisigl & Wodak, 2001, p. 41).

Discursive strategies, which are crucial in the construction of positive self and negative other representations, are a further tool of analysis within the discourse-historical approach. These more or less intentional strategies are concerned with nomination ("How are persons, objects, phenomena, etc. linguistically referred to?"), predication ("With what characteristics are they credited?"), argumentation ("How is this characterization justified?"), perspectivation ("From what perspective are these processes conducted?"), and intensification/mitigation ("Are strategies used which intensify/mitigate the overall force of the respective argument?") (Reisigl & Wodak, 2001, pp. 44–5; 2009, pp. 93–4; Wodak et al., 2009, pp. 31–5). Ideally, such analyses triangulate multiple methods and genres such as interview and focus-group transcripts, political speeches, and so forth (e.g., Wodak et al., 2009). Another distinct characteristic of the discourse-historical approach is its differentiation of critique as immanent critique (problematizing text/discourse internal inconsistencies), socio-diagnostic critique (denaturalizing particular discursive practices), and sociodiagnostic/retrospective critique (aiming for transformation of the current state of affairs) (Reisigl & Wodak, 2001, pp. 32–5).

Despite drawing on a variety of social theorists in general, the discourse-historical approach specifically refers to the Frankfurt School, in particular the critical theory of Habermas (Reisigl & Wodak, 2001, pp. 32–4, 263–71; Forchtner, 2011), and it is mainly the latter's language philosophy which validates the discourse-historical approach's critical position.

Criticisms of CDA

Since its emergence, CDA has repeatedly provoked heated debates, initiated by scholars from within the approach as well as from external critics. Two strands of criticism seem to be of particular importance for the further development of CDA.

First, a number of critics have characterized CDA as lacking systemic analysis and being politically biased (Stubbs, 1997; Widdowson, 2004). Concerning the apparent lack of rigor in its analysis, this can be—and has been—dealt with by systematic procedures of data selection and data downsizing, as well as the incorporation of quantitative methods, such as corpus linguistic tools. Concerning the criticism of CDA as producing politically biased research, it has been made explicit many times that CDA takes a stance against unjustified domination and inequality and its causes. However, this has been done in transparent and verifiable ways. Given CDA's aim of translating its critical insights into political action, that is, real improvements for those in need, methodical rigor, transparency, and verifiability are in CDA's own interest.

Second, concerning CDA's own critical standards, one of its eminent researchers, Michael Billig (2003), points to the potentially problematic consequences of constructing another's research (implicitly) as not being critical by providing nothing more than "rhetoric of critique." Billig has sparked further debate on the issue of the "language of critical discourse analysis" in a recent intervention regarding CDA's own writing style and extensive use

of nominalizations and passivizations, which critical discourse analysts usually criticize in their own research (Billig, 2008, pp. 783–844).

The subject of critique itself is indeed a pressing concern in CDA as its critical attitude toward discourses which (re)produce unjustified domination and inequality is not always theoretically justified. The question is whether such a justification of CDA's principles is needed or whether the conventions of this particular research community provide sufficient foundation. The degree to which CDA is able to clarify this question and integrate social theories in order to form even more coherent proposals, which (a) acknowledge the importance of discourse in the (re)production of the social, (b) provide concepts to understand and explain it critically, and (c) are able to coherently validate its own critical standards, might prove crucial for the further development of CDA.

Conclusions

CDA provides a normative framework for social research, by which means social problems and/or wrongs can be addressed by providing a space for dialogue between relevant disciplines. Central to such a critical social science remains the focus on the systematic analysis of discourses (written, spoken, visual, audible) in relation to the sociopolitical context. As such, integrating detailed textual analysis with theories and concepts taken from anthropology, philosophy, sociology, and other disciplines will remain the main task for critical discourse analysts in years to come.

SEE ALSO: Corpus-Based Linguistic Approaches to Critical Discourse Analysis; Critical Analysis of Multimodal Discourse; Critical Discourse Analysis: History and New Developments; "Critical" in Critical Discourse Analysis; Fairclough, Norman; van Dijk, Teun A.; Wodak, Ruth

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Critical Discourse Analysis and Critical Applied Linguistics

AHMAR MAHBOOB AND BRIAN PALTRIDGE

What Is Critical Applied Linguistics?

Critical applied linguistics studies ways in which education, regulation, and the study and use of language relate to the realization, maintenance, and reproduction of the distribution of power in society. The critical move in applied linguistics focuses on issues of power as it is enacted, reproduced, and resisted through fields associated with language studies, such as language policy and planning, language codification, language teaching, language learning, and language testing. The purpose of this work is not only to understand and explain how power is constructed and exercised through language, but also to change the practices and empower those who are at risk from oppressive practices. Work that attempts to achieve these goals in applied linguistics has a "critical" perspective, even if it is not always labeled as such (Pennycook, 2010). Some of this critically oriented work predates the adoption of the term "critical" in applied linguistics, while others followed in response to a call by Pennycook in his 1990 article "Towards a Critical Applied Linguistics for the 1990s":

> We need to not only understand ourselves as intellectuals situated in very particular social, cultural and historical locations, but also to understand that the knowledge we produce is always interested. If we are concerned about the manifold and manifest inequities of the societies and the world we live in, then I believe we must start to take up moral and political projects to change those circumstances . . . [We would] do well to be more humble in the world, listening to the many alternative views of language and learning, rather than preaching our views as the newest and best. (Pennycook, 1990, pp. 25–6)

"Critical" in Language Policies

Studies in language policy focus on the regulations, laws, policies, and practices that relate to the use and functional distribution of languages. These studies examine issues such as which language(s) are adopted as national or official languages or both in a region; and the status, role, and future of languages that are not promoted through such regulatory policies. It investigates how and why certain languages are given a privileged position, and how the use of particular language(s) helps the powerful maintain their political and economic control.

Tollefson points out that the term "critical" has three interrelated meanings:

> (1) it refers to work that is critical of traditional, mainstream approaches to language policy research; (2) it includes research that is aimed at social change; and (3) it refers to research that is influenced by critical theory. (Tollefson, 2006, p. 42)

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One key influence of critical language policy studies has been in examining the role, function, and power of English worldwide. In examining English as a global language, Phillipson argues that English, as it is used as a worldwide language, privileges countries where English is spoken as a native language and positions people who can use the language proficiently in a more powerful position vis-à-vis the local population who cannot. He writes:

> whereas once Britannia ruled the waves, now it is English which rules them. The British Empire has given way to the empire of English. [Critical applied linguistics] attempts to contribute to an understanding of the ways in which English rules, who makes the rules, and what role the English teaching profession plays in promoting the "rules" of English and the rule of English. (Phillipson, 1992, p. 1)

Phillipson's (1992) *Linguistic Imperialism* was one of the first book-length studies of how English plays a crucial role in the maintenance of power structures in a postcolonial context. However, this work has also been quite controversial. For example, Canagarajah (1999) in his book *Resisting Linguistic Imperialism* critiques Phillipson by highlighting the deterministic nature of Phillipson's work. He also notes that Phillipson's work has been done from the "centre" and does not provide the tools to explore the complexities of resistance to linguistic domination. Pennycook (2001) similarly raises concerns about these arguments and notes that "Phillipson takes a static view of language and maps it onto a deterministic political framework, suggesting thereby that the promotion of English supports dominant capitalistic and political interests" (p. 62). While both Canagarajah and Pennycook note the power of English, they also highlight the importance of studying how English is appropriated and resisted by people in different parts of the world.

Critical language policy research also seeks to describe and explain how people in various parts of the world have internalized the notion that English is the language of national development. As a result of this belief they maintain and promote English as a national or an official language, often at the cost of local languages. For example, Mahboob (2002) examines how the language policies in Pakistan devalue local language and encourage the adoption and use of English. Such ideologies, rather then leading to national development, naturalize the power of English and ensure that the existing power relationships are maintained. As such, they can be seen as hegemonic practice.

Critical work on language policy also examines claims about how English and other languages relate to national and economic development. English is often linked to processes of modernization and development and is marketed as the language of diplomacy, education, finance, globalization, science, technology, tourism, and so forth. As a consequence of this, there is a global trend for English to be introduced in all schools and at earlier grades. Critical inquiries into the question of "earlier is better" English-in-education policies question whether such policies work. They observe that students who are educated through such reforms show no marked differences from students who are educated in their local languages. In fact, some studies show that such policies give "people an inadequate education both of and through their first language" (Pennycook, 1999, p. 1). Pennycook (1999) also points out that putting the limited resources of developing countries into English takes away resources that could be spent on educating female students or other marginalized groups, or on other developmental projects. Thus, the relationship between English and development is seen as tenuous at best.

"Critical" in Language Codification

Language codification processes are those in which linguists study and document how languages work. Typically, research on language documentation and codification is not labeled "critical." However, this work can be seen as critical in how it influences people's perceptions and beliefs about language and how language works in society. These descriptions of language are used in education and inform the design of pedagogical and other material. For example, traditional grammars of English, used and taught through textbooks, are based on these materials. These codified varieties are normalized through their use in education and promoted as the "standard" language. Critical perspectives on this work raise questions such as: Whose dialect is codified and used as models in education? How are variations on the "standard" evaluated or judged? And what consequences do people face when they do not adhere to the standard language? Such questions have been raised in work on World Englishes (Kachru, 1990) and creole studies (Nero, 2006) and have influenced and contributed to the critical stance in linguistics and applied linguistics.

The work in areas such as World Englishes and critical language policy (Phillipson, 1992) has created space for other movements in applied linguistics as well. One example of this is the non-native English speakers in TESOL (NNEST) movement. NNESTs have, for a considerable amount of time, outnumbered native English speakers in TESOL (NESTs); however, they have been marginalized in the profession (Mahboob, 2010). The best jobs (with higher salaries and better benefits) are often given to NESTs, even if NNESTs have appropriate credentials for the position. Experts studying this issue have raised awareness about the inequities in the job market working against qualified NNESTs. Another thread of research that builds on these issues focuses on race in the context of applied linguistics and TESOL. This work also has an emancipatory agenda and is clearly critical in its orientation, even if it is not always labeled as such.

"Critical" Language Teaching

Pennycook (1989) argues that language teaching approaches are not neutral, but rather reflect "a particular view of the world and [are] articulated in the interests of unequal power relationships" (pp. 589–90). This position has been affirmed by researchers who have shown how particular teaching methods developed in North America, Britain, and Australia (NABA) and marketed worldwide are not necessarily appropriate for their contexts. For example, Chick (1996) argues that the use of the communicative approach in language teaching "was possibly a sort of naive ethnocentricism prompted by the thought that what is good for Europe or the USA had to be good for KwaZulu" (p. 22). Similar issues were raised by researchers in China, India, Japan, Pakistan, South Korea, and Thailand.

A critical turn in language teaching posits that language teaching is not only about methods but about teachers' ability "to operate with some personal conceptualization of how their teaching leads to desired learning—with a notion of causation that has a measure of credibility for them" (Prabhu, 1990, p. 172). As such, "critical" language teaching is much more interested in helping students achieve the goals that are important to them and less in the "method" used to do this. Kumaravadivelu (2006) calls this the "post-method condition," and in response to it presents an alternative framework and introduces three operating principles that need to be considered in language teaching: particularity, practicality, and possibility.

> Particularity seeks to facilitate the advancement of a context-sensitive, location-specific pedagogy that is based on a true understanding of local linguistic, social, cultural, and political particularities. Practicality seeks to rupture the reified role relationship between theorizers and practitioners by enabling and encouraging teachers to theorize from their practice and to practice what they theorize. Possibility seeks to tap the sociopolitical consciousness that students bring with them to the classroom so that it can also function as a catalyst for identity formation and social transformation. (Kumaravadivelu, 2006, p. 69)

Other researchers engaged in critical language teaching have also recognized these principles in their work. For example, Canagarajah (1999) provides an in-depth study of how teachers and students working in remote Sri Lankan classes use creative classroom strategies that reflect an engagement with local context, needs, and resources. He, along with other critical applied linguists (e.g., Norton Peirce, 1995), highlights the importance of identity in the discussions of language teaching (and learning). He argues that what we need is an approach that

> provides for the possibility that, in everyday life, the powerless in post-colonial communities may find ways to negotiate, alter, and oppose political structures, and reconstruct their languages, cultures, and identities to their advantage. The intention is not to reject English, but to reconstitute it in more inclusive, ethical, and democratic terms. (Canagarajah, 1999, p. 2)

Genre pedagogues in Australia (Martin & Rose, 2008) have taken a different approach to empowering students from disadvantaged communities. Genre pedagogues argue that in order to help students from disadvantaged backgrounds to move out of their positions of marginalization, they need be explicitly taught the language and discourses of power. These authors point out that the skills required to produce written texts—the genres of power and access—are not equally available to students from minority or marginalized groups. The aim of genre pedagogy is therefore to help students develop control of these genres. In order to do this, genre pedagogues draw on work on systemic functional linguistics, the sociology of education, and sociocultural theory.

"Critical" Language Learning

The critical turn in language-learning research examines questions such as "How do power relations affect language learning, and how do they affect the social identities, wishes, desires, and histories of language learners?" (Ellis & Barkhuizen, 2005, p. 281). In order to do this, Ellis and Barkhuizen add:

> Theorists and researchers would unavoidably have to look beyond the walls of language classrooms and other language learning settings and events, beyond the bounds of static social relationships and unidimensional language learners, and beyond commonly accepted and unquestioned causal variables such as personality traits (introversion or extroversion, for instance) and motivational factors (for example, the influence of instrumental and integrative motivation). (2005, pp. 282–3)

One of the first researchers who explored this in the context of TESOL was Norton (Norton Peirce, 1995). She, among others, argues that identity needs to be understood as fluid, dynamic, and multiple, rather than as constant or static. Identity is something that is

negotiated through language and changes based on the learners' needs, resources, and context. She writes:

> It is through language that a person negotiates a sense of self within and across different sites at different points in time, and it is through language that a person gains access to—or is denied access to—powerful social networks that give learners the opportunity to speak. (Norton, 2000, p. 5)

Norton also writes that learning a language is like making an investment. When learners invest in learning a new language, "they do so with the understanding that they will acquire a wider range of symbolic and material resources, which will in turn increase the value of their cultural capital" (Norton, 2000, p. 10). The use of economic metaphors in Norton's work posits that language learning is not simply a result of "instrumental" or "integrative" motivation, but something that the learners expect to gain from.

"Critical" Language Testing

Shohamy's (2001) book *The Power of Tests* represents an important turn in language testing, from a focus on issues such as measurement and validation to ethical issues such as what tests are doing, how they affect people's lives, and how they should be used responsibly. Hamp-Lyons (2000, p. 579) discusses "the accountability *to* society and *by* society that should drive all those involved in the industry of creating, administering, consuming, preparing people for, and critiquing tests" (original emphasis). McNamara and Shohamy (2008) continue this discussion in relation to the use of language tests for citizenship, immigration, and asylum purposes. This work mirrors the key tenet of critical applied linguistics research, which aims not just to describe what people are doing, but also to transform and change what they do (Pennycook, 2001). McNamara (2009) points out the discriminatory policies and practices that the use of such tests support. He discusses how the 1901–73 White Australia Policy, up to the 1930s, employed English dictation tests as a way of keeping people out of Australia. The new Australian Citizenship Test now plays a similar role. McNamara points out, however, that the language requirements of this test are, in fact, much higher than previous standards set for this purpose and that test takers need to obtain a high level of language and literacy skills in order to have a chance of passing the test. This, of course, is not just happening in Australia. Language and other sorts of tests are being used for similar gatekeeping purposes in the Netherlands, Sweden, Denmark, France, Germany, Estonia, Latvia, the UK, and the US (McNamara & Shohamy, 2008). Language testers, McNamara and Shohamy argue, need to develop more effective forms of advocacy and the mobilization of the people for whom such testing has consequences so that policy makers will no longer be able to ignore them.

Conclusion

In concluding, we would like to relate the work done in critical applied linguistics to critical discourse analysis (CDA). Critical applied linguistics has a number of points in common with CDA, and a number of ways in which it is rather different. Like critical applied linguistics, CDA aims to unpack power relations that are not evident, on first sight, to people, and it aims to bring about change. Critical applied linguistics, like CDA, describes and seeks to change inequities and discriminatory practices that are related to descriptions, perceptions, policies, and practices of language. Many of these issues are interrelated,

however, and while we may want to tease them apart by considering which subfield—critical applied linguistics or CDA—they belong to, it is not always easy to do so. Even in the summaries of key issues provided here, work in critical language policy, critical language codification, critical language teaching, learning, and testing is interrelated in multiple ways. For example, language codification efforts tend to focus on the language (or discourse) that is promoted through a language policy. Language tests then use these codified varieties as the "standard" language that has to be tested for various purposes. The tests in turn have a backwash effect on language teaching and learning. This interrelatedness of both critical applied linguistics and CDA highlights the significance of being aware of the various subfields in critical applied linguistics as we develop our work in this area.

Another thing to be noted is that while many subfields use the label "critical" to mark their orientation to the field, other work or subfields might not. What is important is the goal of our work: to describe the processes through which positions of power, prestige, and authority are naturalized and, in doing so, resist them and bring about change, be it critical applied linguistics or CDA that we use as a framework for doing this.

SEE ALSO: Corpus-Based Linguistic Approaches to Critical Discourse Analysis; Critical Analysis of Discourse in Educational Settings; Critical Analysis of Multimodal Discourse; Critical Analysis of Political Discourse

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Critical Discourse Analysis of Multilingual Interactions in the New Media

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Multilingual Interaction in New Media

User-friendly Web 2.0 tools allow Internet users to participate on a much larger scale than ever before, without having the same requirement for expertise in computer literacy (O'Reilly, 2005). These tools also give rise to Web sites that depended on users to generate content, like YouTube (video sharing) and Flickr (image sharing). The ease of creating and sharing content means that many of these Web sites are globalized platforms for user interactions. How does this emergence of new technological tools affect our concept of the Internet linguistic landscape? This is perhaps where critical discourse analysis (CDA) should be introduced as the analytical tool for understanding the social aspects of this new media phenomenon.

Critical Discourse Analysis

CDA adopts the approach that language is social practice, and thus discourse shapes, and in turn is shaped by, society. CDA is an appropriate analytical approach for analyzing multilingual online interaction because it engages discourse by "beginning with a social problem" (Fairclough, 2003, p. 209). Earlier CDA research on Web-based data has covered the semiotic, textual, and interactivity aspects of computer-mediated communication. With more than 1.67 billion Internet users worldwide (www.internetworldstats.com), any linguistic investigation without the application of CDA is missing out on the key sites at which social life constitutes, and in turn is constituted in, contemporary societies. There are two focal points in applying CDA to multilingual interaction in new media: the languages and media.

Multilingual Interaction: The Languages

Multilingual interaction can be viewed from two perspectives. First, multilingual interaction is seen as a result of "Internet users as members of one or more *speech communities* who bring to their online encounters shared knowledge, values, and expectations for linguistic interaction" (Danet & Herring, 2007, p. 7, original emphasis). Users of these Web 2.0 tools do not interact in a vacuum; they are transferring their lived experiences onto virtual domains. Therefore it will not be unreasonable to assume that users are tapping into their linguistic repertoires when accessing the Internet. From this perspective, it is the human interactions between users, through technological tools, which are multilingual. Second, multilingual interactions can also be viewed as users interacting with the Web site interfaces. Nowadays, most Web sites support multilanguage option access, or "multilingual accessibility" (Ivkovic & Lotherington, 2009, p. 24). Upon access to the Web sites, users

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are immediately viewing more than one language simultaneously displayed there. The users' understanding of and navigation through these multilingual signs is another form of multilingual interactions.

At the moment English is still the dominant language used on the Internet, followed by Chinese, Spanish, Japanese, and French. Approximately 82.2% of global Internet users share the top 10 languages used on the Internet (www.internetworldstats.com). However, the visible presence of languages online depends heavily on physical access to technology. This means unequal technological access will lead to not only digital divide, but also digital linguistic divide. On the other hand, pockets of linguistic diaspora thrive in virtual spaces, giving smaller speech communities online presences (Mautner, 2005; Ivkovic & Lotherington, 2009). An earlier survey of Internet language use has shown that the use of English varies according to national contexts, and in most cases English coexists with other varieties of English and local languages (Block, 2004). The aforementioned Web sites, and other social media Web sites, continue to experience dramatic growth in their user populations, and this new wave of Internet technology is gradually changing the ways languages are displayed and used on the Web. Canagarajah (2006) argues that new forms of texts on the Internet will include English and "languages other than English embedded in otherwise English texts (as diverse dialects, registers, and languages now commonly inhabit the same textual space)" (p. 26). Viewing communication in the digital age as "the intersection between mobile people and mobile texts," Jacquemet (2005) argues that there should be a focus on "transidiomatic practice," or "the communicative practices of transnational groups that interact using different languages and communicative codes simultaneously present in a range of communicative channels, both local and distant" (pp. 264–5). English is but one visible language on the most popular Web sites. Nowadays, popular Web sites like Google and Wikipedia offer site interfaces in different languages. Among the top 10 most accessed Web sites (Google, Facebook, Yahoo!, YouTube, Live, Wikipedia, Blogger, Baidu, MSN, and QQ), only QQ is noticeably monolingual in its interface language options (www.alexa.com). All the other Web sites operate on multilingual platforms, with Wikipedia operating in 267 language editions.

Multilingual Interaction: The New Media

Researchers argue that what distinguishes new media, or Web 2.0, from the first generation of the Web is the difference between publication and participation. Users of the earlier Web can publish content, but the information published may only be known to a small group of more knowledgeable Internet users. Web 2.0 is not a revolution in hardware or a reconfiguration of the Internet. The new media have three characteristics: multimodality, interactivity, and hypertextuality (Kress, 2003). In other words, Web 2.0 allows users to publish interactive texts (including multimedia texts), participate to contribute content, and network through various platforms. The new media are both participatory and hypersocial (Jenkins, 2006; Ito et al., 2010). In other words, "new media" is used "to describe a media ecology where more traditional media such as books, television, and radio are intersecting with digital media, specifically interactive media and media for social communication" (Ito et al., 2010, p. 10). The concept of collaborative content authoring associated with many of these new media tools encourages a greater flow of participation. Many of the social media Web sites claimed collaboration and participation as prime features, for instance MySpace, Facebook, Blogger, and YouTube. And to a certain extent, these social media Web sites are gradually taking over the older generation of chatrooms and forum discussion as the prime sites for investigating multilingual interactions. Empirical studies on the use of language(s) in various new media, including instant messaging,

chatrooms, blogging, digital gaming, image sharing, and social networking, suggest that multilingual interaction is an emerging feature.

Multilingual Interaction: The Interaction

In a survey of eight countries (France, Italy, Macedonia, Oman, Poland, Tanzania, Indonesia, and Ukraine), the language choices that higher education students made depended on their language repertoires, and in many countries, computer sessions in their national languages have been found to comprise a much higher percentage than sessions in English (Kelly-Holmes, 2004). These findings are relevant in understanding synchronous, or simultaneous, computer-mediated communication (CMC). Peel (2004) found that Arab students favored Arabic over English as their language of choice for synchronous chatting. Other than language preferences, researchers into instant messaging in languages other than, or in addition to, English examine the linguistic creativity of the users. Lam (2004) describes how two young Hong Kong immigrants to the United States engaged in hybrid language practices involving romanized Cantonese, Cantonese–English code switching, and bilingual wordplay in bilingual chatrooms. Lee's (2007) study of text messages produced by Hong Kong university students shows that, in addition to the use of emoticons, the users draw on their linguistic knowledge of spoken Cantonese, standard written Chinese, and English to be creative in their Cantonese spelling and Cantonese–English code mixing.

Users of asynchronous CMC tools such as discussion forums and electronic bulletin boards (BBSs) are also linguistically resourceful. Su (2007) found Taiwanese Internet users creatively utilizing visual and auditory linguistic presentation by integrating Stylized English, Taiwanese-accented Mandarin, and Taiwanese in BBSs to achieve group solidarity, and show attitudes and ideology. Though Chinese is the dominant language used in these BBSs, Stylized English is used to signal Chinese transliteration, and thus is the more acceptable form of English use. The same innovativeness is also found among young Japanese users on BBSs, using strategies like unconventional spelling and punctuation (Nishimura, 2003). Participating in online discussion forums is often bilingual, if not multilingual. Hanna and de Nooy (2009) studied the moves of four French foreign-language learners' participation in the Parisian newspaper *Le Monde* online forums, and found that willingness to engage in debating, not linguistic competence, is the determining factor in participation.

Engaging in online interactions is the key to sustaining social networking. The interaction might have started off as a serendipitous encounter in vast cyberspace, but soon the networking relationship requires maintenance. Blogging is one of the more established Web 2.0 tools; Technorati has indexed more than 157 million blogs since 2004 (www.technorati.com). The sheer number of blogs will logically point to the existence of variations, from topics to language choices. Research has suggested that the vast number of blogs leads to a concentration of readers at the "head," or most popular, of the blogosphere, but there are only very few readers at the "tail" (for instance, a blog with only family and friends as readers). So a random survey of the most popular and visited blogs listed by Technorati shows English as the dominant language used, while blog-hopping in the blogosphere shows that there are many more bloggers publishing content and receiving comments in their usual language, or English, or both. Multilingual interactions in blogs might have been limited by the users' access. Other than chance stumbling, one has to know what to look for in specialized blogs.

Image- and video-sharing sites provide a different perspective on asynchronous interactions through commenting. YouTube operates in 22 different language editions, leaving plenty of space for viewers from different linguistic backgrounds to leave asynchronous comments to the same video. Massively popular YouTube music videos, like Lady Gaga's

Bad Romance, are good examples of interactive "complementary multilingualism" (Ivkovic & Lotherington, 2009, p. 24). The example that Ivkovic and Lotherington used to illustrate complementary multilingualism was the YouTube music video posting of *Moltiva*, the winner of the Eurosong 2007 contest. The song was originally performed in Serbian, but comments posted were in Finnish, French, English, Serbian, Croatian, Russian, and Slovene. Participants leave comments in their own languages assuming that the present and potential viewers of the video share one or more languages. This is not an exclusive case for the European context. For many of the YouTube music videos performed by popular South East Asian musicians, it is common to find viewers leaving multilingual comments. These videos may have been uploaded by fans, who have also written bilingual information about the song and the singer (usually in the local language and English). Two mega Asian pop singer-songwriters—Utada Hikaru, who has released albums in Japanese and English, and Faye Wong, who sings in Cantonese, Mandarin, English, and Japanese—are prime examples. Their fans left comments, and debated, in English, Japanese (both written and romanized), and Chinese (both simplified and traditional). In such cases, comments on the linguistic performances of these performers and attitudes toward national language far outweigh comments on musical appreciation in this type of discourse (Ivkovic & Lotherington, 2009).

In addition to video sharing, photo-sharing sites are attracting an increasing number of users. Flickr (Flickr.com) is an image- and video-hosting Web site which claims to host more than 4 billion images. When a user accesses Flickr, the first noticeable instance of multilingualism comes from the different ways of saying "hello" in different languages, generated automatically to greet the user. The images that users have uploaded are usually accompanied by title, description, and tags, and then other viewers can add comments. At any given moment, a random search for an image will already yield multilingual results. Davies (2009) first responded to one user's photo set on cupcakes, and this led to chained responses. Flickr users from different parts of the world responded by commenting, posting their own visual narratives (accompanied by additional notes in their usual languages), and asking for English translation of these multilingual texts. Though the transactional language was English-dominant, the various cupcake photo sets received comments in languages other than English. These studies on hybrid media texts and interactions surveyed the potentials of both user–user and user–interface multilingual interactions, but CDA may offer the next step by critically exploring the social issues behind the production and consumption of such texts. The corporate and institutional Web sites surveyed in Ivkoric and Lotherington (2009) prompt discussion on issues of globalization; and by the same token, the friendship circle in Davies (2009) indicates that interactions on globalized online platforms might not be available to all users.

The proliferation of 3D graphical virtual worlds and multiuser virtual environments (MUVEs), most notably Active Worlds (activeworlds.com) and Second Life (secondlife.com), exhibits other dimensions of multilingual interactions. Axelsson, Abelin, and Schroeder (2003) found that English- and non-English-speaking users in Active Worlds performed similar rituals to those of face-to-face interaction when encountering a non-English introduction. The acceptance or rejection of the introduced language depended heavily on the character of the setting, whether it was a general social or themed discussion, and the perceived intention of the language introducer. Language plurality is also more likely to be tolerated when fellow speakers are present. In Second Life, multilingual interactions are facilitated through language classes, and other formal and informal gatherings (Diehl & Prins, 2008). Although English is the usual language in Second Life, there are also linguistic islands and areas for residents who do not speak English as their usual language. In casual game play, for instance FarmVille, verbal or textual interactions are frequently

replaced by action game play. However, in massively multiplayer online games (MMOGs), which are especially popular among adolescents, gamers are both playing video games and conducting in-game conversation. The in-game chats between an American gamer and a Ukraine gamer in Thorne's (2008) study show that the use of Russian, Latin, and English (in both standard and text language) is driven first by the shared interest in gaming, and then expanded to mutual interests in music and life goals.

Researchers frequently suggest that shared interest is the starting point for multilingual interactions. Anime and manga (Japanese animation and comics) are fast becoming a major facilitating medium for online multilingual interactions. Ito et al. (2008) mention, for example, an American teenager collaborating with a peer in Spain to produce an online role play within a fan-fiction site; an 18-year-old Brazilian "anime music video" producer working creatively with Japanese-language animations; and "fansubbers" in Japan who add English subtitles to Japanese animations and post them on the Internet, often within hours of their appearance on Japanese TV. The multilingual collaboration could not have happened without the availability of Web 2.0 tools, but the interaction also went beyond partner authorship to participant sharing on social networking and media-sharing sites.

Multilingual Interaction in New Media: The Critical Perspective

When we revisit the starting point of employing CDA in understanding multilingual interactions, viewing language use on the Internet as shaping and being shaped by our contemporary societies, what do we learn and have yet to learn? First, the multilingual online interactions in new media reported here suggest that English may still be a dominant transactional language for online interactions, but increasingly, it is not the only language used by users. With the technological advance in online translation tools, we are also increasingly empowered to compose multilingual communication with a greater degree of accuracy. Second, as Ivkovic and Lotherington (2009) suggest, multilingual language use can also spark debate on nationalism and language rights. This brings forth the issue of whether the opportunities for multilingual interactions are conducive to multicultural understanding. Third, multilingual interaction is found to be most active in domains where users share some common interests. Research suggests that these interactions are found across different digital platforms, making "transidiomatic practice" (Jacquemet, 2005) perhaps a fruitful direction for further investigation. Finally, when we survey the top 10 Internet languages (English, Chinese, Spanish, Japanese, French, Portuguese, German, Arabic, Russian, and Korean), it is not difficult to note that they give a skewed representation of the physical world population. Languages with smaller speech communities are being left out in their digital presences. To a certain extent, the types of multilingual interactions discussed are more relevant to speakers of the top 10 languages, but not to speakers of minority languages. As Internet access expands and globalized online spaces continue to grow, we will witness and participate in more instances of multilingual interactions. The current body of research suggests that we have yet to fully explore the implications and impacts of new media communication and interaction. At present, the linguistic examination of new media practices is often separated from other modes of expression; thus, perhaps one possible way to advance research on multilingual interaction is to reconceptualize such interactions as one dimension of multimodal discourse. Language is but one mode in communicating multimodality, and in applying theories in multimodal discourse analysis, we may find new lenses in analyzing and understanding the various social actors in such digital multilingual interactions. It is important not only to see such interactions as a triumph of the fluidity of digital tools, but also to treat these interactions as the starting points from which to understand our contemporary societies.

SEE ALSO: Critical Analysis of Multimodal Discourse; History of Multilingualism; Multilingual Identities and Multilingual Education; Multilingualism and Identity; Multilingualism and the Internet

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Critical Discourse Analysis of Popular Culture

PATRICIA A. DUFF AND SANDRA ZAPPA-HOLLMAN

Introduction

Critical discourse analysis (CDA) is an approach to discourse analysis that has evolved over the past several decades. It is associated with work conducted since the 1980s by European linguists Norman Fairclough, Ruth Wodak, and Teun van Dijk and their colleagues but has become quite interdisciplinary as a scholarly practice. CDA also has its North American counterparts with their own interpretations of, and orientations to, critical discourse studies, a broader term, in the work of Gee (2004), for example, as well as scholars in other parts of the world (e.g., Australia, Asia). Traditionally, critical discourse analyses have examined formal media such as newspapers and oral, written, and visual (graphic) political discourse in other venues. However, CDA is also being applied to the analysis of popular culture texts, as illustrated in this entry, but generally by scholars in cultural studies and related fields, rather than in applied linguistics. Most of the work looking critically at popular culture (or "pop" culture, as it is also referred to in the literature) in applied linguistics investigates classroom practices involving, but not centrally concerned with the analysis of, pop culture texts. In what follows, we first provide a brief overview of CDA, followed by a discussion of its application to pop culture.

The Theoretical Foundations of CDA

CDA scholarship and pop culture research based in cultural studies both draw variously on poststructuralist orientations to discourse, Bourdieusian sociology, neo-Marxist theory, and critical feminist theory, as well as linguistics. Like other critical theory, CDA examines texts for evidence of unequal power relations among participants (including those referred to) in discursive events. CDA was influenced to a large degree in terms of both theory and methodology by critical linguists who embraced Hallidayan systemic functional linguistics, which has always placed importance on social and contextual aspects of language. The heterogeneity of CDA's theoretical underpinnings and the analytical tools employed by critical discourse analysts make it difficult to define. Because of this, it can be viewed as a theoretical orientation, as a research program, or as a methodological framework, or all of these, for the study of written, spoken, and visual texts in social context, rather than as a school or paradigm. Yet there is general agreement about CDA's overarching purpose: the examination of language use in society and the inequalities, asymmetries, and discriminatory or manipulative practices in discourse affecting the public. It is conceptualized by van Dijk (2001) as "a type of discourse analytical research that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced, and resisted by text and talk in the social and political context" (p. 352). Furthermore, Luke (2002, p. 100) notes:

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> CDA involves a principled and transparent shunting back and forth between the micro-analysis of texts using varied tools of linguistic, semiotic, and literary analysis and the macroanalysis of social formations, institutions, and power relations that these texts index and construct.

Because CDA is concerned with the study of unequal social power relations, many CDA researchers focus on discrimination based on differences in race, gender, political views, ideologies, and social class, among other categories. Key concepts and terms in CDA studies therefore include *hegemony*, *power*, *dominance*, *resistance*, and *reproduction* (see van Dijk, 2001). Numerous journals regularly feature critical discourse studies of one type or another, for example, *Critical Discourse Studies; Critical Approaches to Discourse Analysis Across Disciplines; Discourse & Society; Social Semiotics; Journal of Language and Politics; Applied Linguistics;* and *Critical Inquiry in Language Studies*. In much of the work, researchers focus on "the intersection of language and social structure" (Blommaert & Bulcaen, 2000, p. 450) and often state their personal ideological positions explicitly (Wodak & Meyer, 2008). However, relatively few of these publications analyze the discourse of pop culture texts.

Applications of CDA to Pop Culture and Related Discursive Texts and Practices

As noted above, CDA has been taken up by researchers working in—and across—a range of disciplines in the social sciences and humanities in addition to (applied) linguistics. Given its orientation to power differentials and the potential exploitation of people with less power by those with more, political, economic, and institutional discourse has been a common focus for studies (e.g., Wodak, 1996). Furthermore, gender-based discrimination in the media, such as advertisements, and in popular teen magazines has been examined (Fairclough, 1995a, 1995b). In contemporary applied linguistics, especially in work on English as an international or additional language, CDA has been a preferred method for researchers embracing critical theory (e.g., Talmy, 2010) to examine talk (e.g., in classrooms) or texts used for instructional purposes. Parallel and sometimes earlier work in first language and literacy studies adopted CDA to examine asymmetrical power relationships in schools and other institutions and how they are reproduced through various educational discourse practices, to the disadvantage of those students who are already most vulnerable. Work of this sort analyzes texts based on classroom interactions, textbooks, and online technologies, and examines the kinds of identities and ideologies inculcated through the textual practices and problems associated with those.

Until now, however, relatively little research in applied linguistics has focused on the critical analysis of *pop culture* texts themselves, either in educational or non-educational settings. (For a discussion of how pop culture itself has been theorized and analyzed, see Storey, 2009a.) Some studies have, however, conducted analyses of cartoons, comic books, animations, television shows, and movies, hip-hop lyrics, tabloids (e.g., gossip columns) and videogames for the way they position (empower and disempower) particular types of participants or social actors or for the kinds of language and literacy practices they socialize students into. And, although pop culture is often discussed as a potentially very useful resource for bridging students' vernacular and home literacies and interests with those of the school or university (e.g., Duff, 2004; Norton & Vanderheyden, 2004; Mackie & Norton, 2006; and a regular column in the *Journal of Adolescent and Adult Literacy* for many years), the texts must be examined carefully because of how characters and contexts are discursively constructed, marginalized, commodified, or mocked, based on their social or linguistic characteristics. The politics of representational practices, including visual, aural, and textual semiosis, must be examined.

What social and linguistic lessons are students actually learning through repeated, sanctioned exposure to such messages and construals? Research in critical media literacy and critical pedagogy seeks to address this question and offers possibilities for engaging with such textual practices in educational contexts where students become critical consumers, analysts, and producers of pop culture texts (e.g., Buckingham, 1998). It is therefore not just the pop culture texts themselves that merit deconstruction but participants' (e.g., students' and teachers') engagement with and appropriation of them inside and outside of class.

One of the most influential works of this sort in the 1990s, perhaps more a critical linguistic (phonological/sociolinguistic) analysis than a critical discourse analysis per se, was Lippi-Green's (1997) book, *English with an Accent*. She analyzed how the accented oral English of cartoon characters in Disney animations historically and in 24 contemporary children's animated films she examined (e.g., *Aladdin*, *The Lion King*, *The Jungle Book*) portrayed ethnolinguistic minorities (Jews, African Americans, Southerners) in disparaging and stigmatized ways. Such representational practices, she argued, reproduce social and linguistic stereotypes, ideologies, and identities that fan the flames of discrimination, beginning in the homes of very young children. Male African American Vernacular English speakers, for example, were associated with particularly unfortunate character roles in the films she analyzed, such as unemployed, purposeless humans or creatures (animals, birds). In television and movies, similar forms of linguistic stereotyping were reported, through the use of French or other European accents in English to mark the sexual desirability and availability of female characters, for example. Lippi-Green (1997, p. 103) concluded that

> What children learn from the entertainment industry is to be comfortable with the same [accent or ethnicity as theirs] and to be wary about other, and that language is a prime and ready diagnostic for this division between what is approachable and what is best left alone.

Critical discourse analyses of tabloid literature (e.g., in English and Mandarin, respectively, in Britain and Taiwan) and for gender-based stereotypes, including the use of such terms as *hunky*, *curvy*, and *kinky* have appeared in recent issues of *Discourse & Society* (Wang, 2009, drawing on such diverse methodological tools as corpus linguistics, Caldas-Coulthard & Moon, 2010, and survey research combined with textual analysis). Indeed, issues of masculinities and (sexualized) femininities are central to many critical discourse studies of pop culture (e.g., chapters in Dines, 2003).

Considerable research has been conducted on the instructional uses of pop culture and new media, including videogames, simulations, social media sites, blogs, and movies, in language and literacy education. For example, Black (2006, 2009) examined the role of Japanese *anime*-based fan fiction, "writing in which fans use media narratives and pop cultural icons as inspiration for creating their own text" (p. 172). She demonstrated how pop culture (*anime*) and technology (Web sites) provided a context in which an adolescent English-language learner was able to develop a powerful, transcultural identity. The literacy practices themselves were found to be empowering to students, according to them, although the content of the *anime* was not critiqued. Similar positive effects of participation in virtual communities and vernacular discourse were reported by Lam (e.g., 2000, 2004) in the context of bilingual Chinese immigrant adolescents engaged with Internet-mediated chatrooms. Duff (2004) urged applied linguists and educators to consider the implications of classroom discourse that includes passing references to pop culture (by both teachers and local students) and issues of access to the community and to learning, as well as to valuable language and content for English-language learners especially who may find themselves marginalized from such discourses. Norton and colleagues (Norton & Vanderheyden, 2004; Moffat & Norton, 2005), furthermore, demonstrate that *Archie* comic books, for instance,

are a common form of pop culture literacy practice for first and second language learners in North America, which often enable otherwise reluctant readers to take part in English literacy practices that they enjoy and help them enter into communities of practice with their peers and expanded forms of literacy thereafter. Nevertheless, sexism, commercialism or consumerism, and other messages in such texts need to be carefully deconstructed by teachers, parents, and readers and not assumed to simply be benign forms of entertainment.

Although critical analyses of pop culture texts themselves, and not just their value in bridging extracurricular and curricular learning objectives, have been plentiful in cultural studies (e.g., Dines, 2003), examining depictions of gender, sexuality, class, and race in relation to television shows, the internet, magazines, fiction, and icons such as Barbie dolls, applied linguists have been much less involved in such critiques based on discourse analysis. However, new genres and practices, associated with hip-hop culture(s) for example, are now being critically examined as creative, indigenous, globalized, and often multilingual and multimodal forms of representation, expression, play, and subversion in which language plays a crucial albeit often under-analyzed role (Alim & Pennycook, 2007; Alim, Ibrahim, & Pennycook, 2009). Thus, a growing number of international studies on hip-hop in applied linguistics, sociolinguistics, and anthropology now interrogate these practices and their theoretical significance from multiple perspectives.

Challenges and Future Directions for CDA Studies of Pop Culture

Critical discourse studies and pop culture are each very broad, interdisciplinary areas of scholarship, involving many kinds and modes of analysis, text types, and textual practices. Therefore, examining trends at the intersection of CDA and pop culture is not straightforward. Critical studies are often critiqued on the grounds of a priori ideological investments on the part of researchers with sometimes limited amounts of data presented, an issue confronted by some analysts but one that is still important to consider. The potential contributions of critical analyses of pop culture in contemporary pedagogy should be acknowledged, with recommendations for the participation of students themselves in CDA of pop culture in education settings. At the very minimum, students should be made more aware of linguistic and discursive means of representation, authority, and argumentation and how they are impacted by such devices.

To conclude, CDA represents a "critical turn" in discourse studies and applied linguistics, one considered to be among the "most influential and visible branches of discourse analysis," according to Blommaert and Bulcaen (2000, p. 447). Indeed, there is great value in applying critical approaches to the study of pop culture discourse(s) in both educational contexts and society at large because of the pervasiveness, power, and significance of these textual practices for those engaged with them. As Luke (2002) writes, however, CDA poses certain challenges for applied linguistics and education, and having better-refined tools for the microanalysis of texts as well as a metalanguage to describe them would be helpful. Bogran (2010), for example, argues that better tools are needed for analyzing positioning, point of view, and meaning in texts. We therefore envision much future research addressing these challenges and possibilities in applied linguistics and education, particularly as more of the responsibility for the production and contestation of pop culture messages changes from large corporations to individuals and small groups of users, fans, critics, and creators.

SEE ALSO: Critical Media Literacy; Language Ideology in the Discourse of Popular Culture; Using Popular Culture in Language Teaching

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Critical Discourse Analysis: History and New Developments

ADITI BHATIA

What Is CDA?

Critical discourse analysis (CDA) has often been regarded more as an alternative perspective to discourse analysis rather than a school or specialization (Van Dijk, 2001). CDA as a perspective "primarily studies the way social power, abuse, dominance, and inequality are enacted, reproduced, and resisted by texts and talk in social and political context. With such dissident research, critical discourse analysts take explicit positions, and thus want to understand, expose, and ultimately resist social inequality" (Van Dijk, 2001, p. 352). CDA is defined further by its attempt to demystify, through the analysis of various semiotic data, the ideological and asymmetrical power structures that inhibit social, political, and cultural processes. It is in fact possible to define the CDA perspective as

> fundamentally concerned with analysing opaque as well as transparent structural relationships of dominance, discrimination, power and control as manifested in language. In other words, CDA aims to investigate critically social inequality as it is expressed, signalled, constituted, legitimized and so on by language use (or in discourse) . . . three concepts figure indispensably in all CDA: the concept of power, the concept of history, and the concept of ideology. (Wodak, 2001, pp. 2–3)

Origin and History of CDA

CDA's focus on language and discourse originated from the "critical linguistics" that emerged (mostly in the UK and Australia) in the late 1970s. The terms "critical linguistics and "critical discourse analysis" are often used interchangeably, with CDA becoming an increasingly preferred term, reflecting more accurately its roots, including rhetoric, text linguistics, sociolinguistics, applied linguistics, and pragmatics (Wodak & Meyer, 2009).

The mid-1960s and early 1970s saw growth in the dimensions common to the related disciplines that emerged in the humanities and social sciences, where, despite their "different disciplinary backgrounds and a great diversity of methods and objects of investigation, some parts of the new fields/paradigms/linguistics sub-disciplines of semiotics, pragmatics, psycho- and sociolinguistics, ethnography of speaking, conversation analysis and discourse studies all deal with discourse and have at least seven dimensions in common" (Wodak and Meyer, 2009, p. 2):

- an interest in the properties of real language by users in natural settings;
- a focus on texts, discourses, conversations, speech acts, or communicative events;
- a study of action and interaction;
- an interest in the nonverbal aspects of communication;
- a focus on the social and cognitive aspect of interaction;
- an investigation of the context of language use; and
- an analysis of the range of semantic-pragmatic-textual language use.

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The network of critical discourse analysts grew from a symposium in Amsterdam in the early 1990s, which included scholars like Teun van Dijk, Norman Fairclough, Ruth Wodak, Theo van Leeuwen, and Gunther Kress. Of course since then scholars have developed, branched out, or even distanced themselves from the more traditional approach. Since "studies in CDA are multifarious, derived from quite different theoretical backgrounds, oriented towards different data and methodologies . . . [relying on] a variety of grammatical approaches . . . definitions of the terms 'discourse', 'ideology', 'power' and so on are also manifold" (Wodak & Meyer, 2009, p. 5), which has allowed CDA to remain a flexible school of thought, rigorous in debate, leading to positive development and growth in the objectives and agendas of the research that this school generates, thus conveying a more resilient, less categorical image.

Crucial Components of CDA

There may exist several distinct interpretations of CDA, but some of the basic tenets common to all address issues of power and language production in society, focusing on language as social practice and particularly on the context of language use. It is in this regard that CDA differs so significantly from discourse studies, since in addition to incorporating the above-mentioned dimensions in its analysis, it approaches its investigation in a problem-oriented, multidisciplinary manner; it is "not interested in investigating a linguistic unit per se but in studying social phenomena which are necessarily complex and thus require a multi-disciplinary and multi-methodical approach" (Wodak & Meyer, 2009, p. 2). It is for this reason that this particular perspective on discourse employs the term "critical," which is often wrongly misinterpreted to mean a negative assessment of crucial social and political issues and events, although in fact the objects of inquiry for CDA are often common societal processes that can transform into the focus of "critical" inquiry.

The "Critical" in Discourse Analysis

Perhaps what can be regarded as a dominant characteristic of CDA is its belief that language is social practice (Fairclough, 1989; Fairclough & Wodak, 1997), meaning that discourse both shapes and is shaped by society. Discursive events share a co-constitutive relationship with the social, institutional, and professional contexts within which they take place. They are socially conditioned by the local and macro contexts in which they occur, but at the same time the discursive events shape the social identities and relationships of the participants engaged in these events themselves. As Fairclough and Wodak (1997, p. 258) state,

> discourse is socially constitutive as well as socially conditioned—it constitutes situations, objects of knowledge, and the social identities of and relationships between people and groups of people. It is constitutive both in the sense that it helps to sustain and reproduce the social status quo, and in the sense that it contributes to transforming it. Since discourse is so socially consequential, it gives rise to important issues of power. Discursive practices may have major ideological effects—that is, they can help produce and reproduce unequal power relations between (for instance) social classes, women and men, and ethnic/cultural majorities and minorities through the ways in which they represent things and position people.

The "Discourse" in Critical Analysis

As mentioned earlier, the diversity in the interpretation of CDA often lies in the multifarious definitions offered of crucial concepts, including the term "discourse," which many

scholars and academics have tried to shape in terms of their distinct approaches to CDA. One dominant definition comes from Foucault (1972, p. 80), who identifies discourse "(1) sometimes as the general domain of all statements, (2) sometimes as an individualizable group of statements, and (3) sometimes as a regulated practice that accounts for a number of statements." Mills (1997) states that the first of the three definitions that Foucault offers is perhaps the broadest and most generally applicable at a theoretical level. The second definition describes discourse as an individualizable group of statements, internally structured and regulated, having coherence and a force in common. The third definition, "a regulated practice that accounts for a number of statements," deals with discourse as rule-governed, focusing on the conventions that produce statements and texts.

Foucault (1989) in his concept of discourse also emphasizes the importance of context and history, explaining that discourse is not simply a linguistic practice; it is about the representation of reality, the practice of it, again illustrating the fundamental view that CDA has of discourse as social practice. Discourse, for Foucault, is made of statements, which he considers as atoms of discourse, in the way sentences are atoms of a text. Similarly, Ricento (2003) in his study states that discourses are not simply in the moment; they are "sites of action, not static receptacles or artifacts. They represent beliefs based on the interpretation of events and, in turn, help shape future events. They are windows into the lifeways of a culture and society" (p. 630).

Fairclough (2003) presents an interpretation of discourse that varies slightly from that of Foucault, considering it "as ways of representing aspects of the world—the processes, relations and structures of the material world, the 'mental world' of thoughts, feelings, beliefs and so forth, and the social world" (p. 124). Discourses are different conceptions of the world, connected to the different relations people have with the world, depending on their social positions. Fairclough further emphasizes that discourses are "projective, imaginaries, representing possible worlds, which are different from the actual world, and tied in to projects to change the world in particular directions" (p. 124).

"Discourse" thus in CDA refers not to a single piece of text, which may very well be no more than a unit of discourse, but rather to the social process of creating meaning. Discourse, then, is the end product of the creation and interpretation of semiotic variables.

Crucial Components of CDA

The crux of CDA is formed by the fusion of language, discourse, and social structure, consisting of eight primary characteristics (McKenna, 2004):

1. *Teleology*: CDA is committed to unveiling the power structures in society in what can be seen as its bid to solve problems caused by practical action. It has a "teleological commitment to justice, democracy, equality, and fairness" (p. 10).
2. *Theory of discourse*: CDA is distinguished from mere discourse analysis in that it studies text in an interdiscursive and intertextual manner in the process of meaning making.
3. *Materialism*: CDA treats language as more than just a random linguistic process; discourse is given meaning by social action, and takes place within a complex sociocultural framework, whereby "social context relates to textual production" (p. 11).
4. *Historicity*: CDA acknowledges that texts and utterances are a product of our habitus and thus indicative "of the spatio-temporality of any textual production and {accommodating] the diachronicity of discourse" (p. 12).
5. *Constructionism and constructivism*: CDA investigates how language is both constitutive of and an expression of social structures.
6. *Theories of subject*: "Because the concept of subject incorporates issue of agency and constructedness, it is a crucial aspect of critical discourse studies . . . [leading to the understanding of] an external and an internal form of subjectivity" (pp. 12–13).

7. *Ideology*: Discursive practices are a reflection of our subjective understanding of the world, and hence our ideologies. Discourses can be seen as an expression of our ideologies and yet constitutive of them.
8. *Power*: Ideologically infused discourses reflect power struggles in society that in turn categorize and structure society. They put forward subjective versions of reality with the purpose of information processing, distribution and retention of power, creating in-group exclusivity, and setting standards for normative behavior.

Fairclough (1989, p. 5) elaborates on the way CDA investigates the relationship between language, power, and ideology, analyzing "social interactions in a way which focuses upon their linguistic elements, which sets out to show up their generally hidden determinants in the system of social relationships, as well as hidden effects they may have upon that system." Fowler (1996, p. 3) further points out that CDA is "designed to get at the ideology coded implicitly behind the overt propositions, to examine it particularly in the context of social formations." Power has the capacity to create and maintain a hierarchical demarcation in social institutions (Fairclough, 1989). CDA, recognizing this capacity of power-generated hierarchical structures, tends to make these hidden connections obvious to the recipients of it. As Calsamiglia and Van Dijk (2004, p. 370) write,

> popularization discourse needs to be formulated in such a way that non-specialized readers are able to construct lay versions of specialized knowledge and integrate these with their existing knowledge. Thus, various strategies of explanation, such as definitions, examples, or metaphors, among many others, are the semantic means that allow language users to relate new knowledge to old knowledge.

CDA aids in the process of deciphering the impact of powerful ideologies on discursive practices; how discourse is popularized, or converted from specialized knowledge into lay knowledge, and what are the consequences of this sort of recontextualization, where "discursive practices are cut off from their embeddedness in action and transformed into discourses which are articulated together in new ways according to the logic of the recontextualizing practice: and transformed from real to imaginary, and bought into the space of ideology" (Fairclough, 1999, pp. 70–1). Outcomes of ideological discourses may include the partial distribution of power and reinforcement of the status quo; the creation of stereotypes and categories; even the subjective understanding of reality that is conveyed through media representation and which then determines the reality for a collective populace.

With a focus on critical language study, Fairclough (1995, p. 28) emphasizes the importance of investigating local microstructures and the more interlaced macro events of society: "The critical approach has its theoretical underpinnings in views of the relationship between 'micro' . . . and 'macro' structures which see the latter as both the conditions for and the products of the former and which therefore reject rigid barriers between the study of the 'micro' . . . and the study of the 'macro'" (Fairclough, 1995, p. 28). His dialectical-relational approach to CDA is based on his three dimensions of discourse, namely text, discourse practice, and sociocultural practice, and similarly the analysis of discourse integrates description, interpretation, and explanation of data, as represented in Figure 1 (see Fairclough, 1995, p. 59).

For Fairclough (1989), discourse, which bears witness to power and ideology in society, is an amalgamation of text, interaction, and social context, within which he draws the distinction of "description of text, interpretation of the relationship between text and interaction, and explanation of the relationship between interaction and social context" (p. 109).

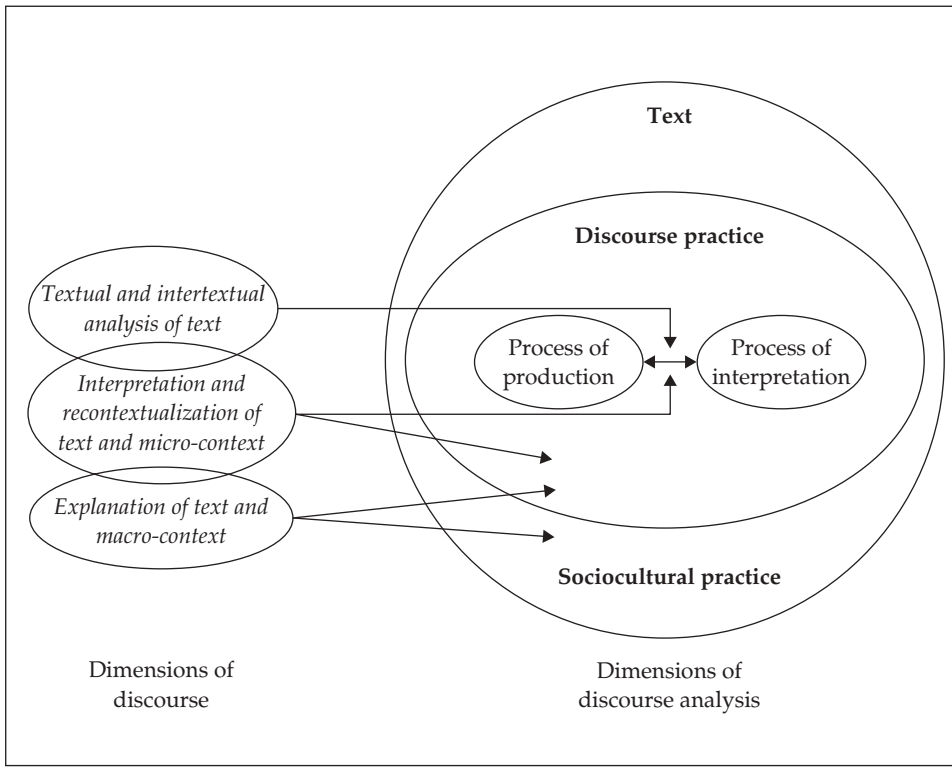

Figure 1 Dialectical-relational approach to CDA (adapted from Fairclough, 1995, p. 59)

In a similar manner, Van Dijk's (1993) sociocognitive approach to research perceives CDA as an instrument of analyzing power structures in discourse; as he mentions, "critical discourse analysis is specifically interested in power *abuse*, that is in breaches of laws, rules and principles of democracy, equality and justice by those who wield power" (pp. 254–5). Van Dijk elaborates further by saying CDA examines the way in which powerful gatekeepers in society influence social beliefs and values, and shape ideologies, through the standards they set for what is and is not acceptable. In other words, CDA explores power asymmetry in discourse. This approach's

> focal triad is construed between discourse, cognition and society. Discourse is seen as a communicative event, including conversational interaction, written text, as well as associated gestures, facework, typographical layout, images and any other "semiotic" or multi-media dimension of signification. Van Dijk relies on socio-cognitive theory-splints and understands linguistics in a broad "structural–functional" sense. He argues that CDA should be based on a sound theory of context. Within this claim, the theory of social representations plays a main part: Social actors involved in discourse do not only use their individual experiences and strategies, they rely mainly upon collective frames of perceptions, called social representations. (Wodak & Meyer, 2009, pp. 25–6)

Wodak's (2002) discourse-historical approach expands on the basic principles of CDA by adding a historical dimension, integrating "a large quantity of available knowledge about the historical sources and the background of the social and political fields in which discursive 'events' are embedded. Further, it analyses the historical dimension of discursive

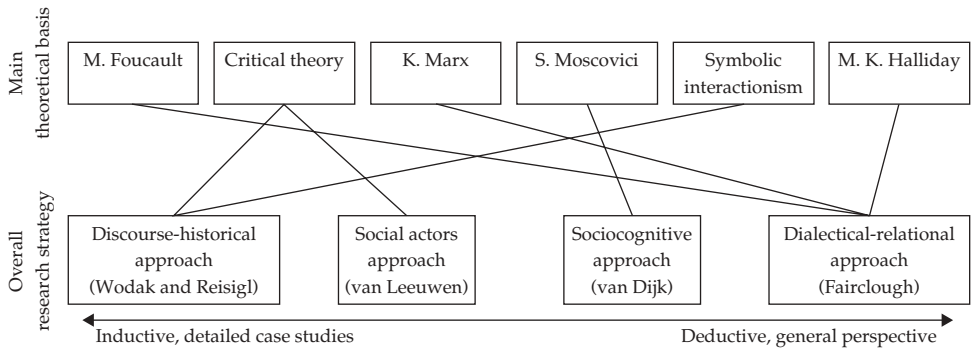

Figure 2 Primary research strategies and theoretical approaches in CDA (adapted from Wodak & Meyer, 2009, p. 20)

actions by exploring the ways in which particular genres of discourse are subject to diachronic change" (Wodak, 2001, p. 65). The discourse-historical approach aims to make explicit the relations between discourses and the historical and sociopolitical contexts within which they are embedded. Discourses are multilayered, often connecting with and recontextualizing others; as a consequence, they are often filled with paradoxes, contradictions, and inconsistencies. Exploring, in addition to the facets mentioned above, the historicity of discourses and discursive events, allows the opportunity to discover possible inconsistencies in discourses and demystify—in other words, bring into focus as much as possible—the historical dimension and manipulative character of discursive practices (Wodak, 2001). Figure 2 illustrates some primary research strategies and theoretical approaches in CDA (see Wodak & Meyer, 2009).

Recent Developments in CDA

There has been a growing trend in CDA toward the integration of cognitive linguistics. Research approaches of this capacity include Charteris-Black's (2004, 2005) critical metaphor analysis (CMA) approach, which attempts to indentify and investigate metaphors convey the intention, motivations, and ideologies that underlie language use. CMA can be defined as an "integration of cognitive semantic and pragmatic approaches that is based on corpus evidence" (Charteris-Black, 2004, p. 13). The approach most usefully takes into consideration the speaker's or writer's intention with regard to the creation and diffusion of metaphor by blending both cognitive and pragmatic perspectives, recognizing that although metaphor is not just a linguistic phenomenon, in the language of persuasion writers and speakers "use metaphor to persuade by combining the cognitive and linguistic resources at their disposal" (2004, p. 11). Focusing his research largely on political discourse, Charteris-Black explains that CMA attempts to

> identify *which* metaphors are chosen and to explain *why* these metaphors are chosen by illustrating *how* they create political myths . . . [in addition to indicating] how the metaphors of one social or political group may be taken over, exploited and developed by those of another for competing ideological ends. (2004, pp. 28–9)

Scholars have increasingly emphasized the role and importance of cognitive linguistics in the critical reflection of discourse, as Hart and Lukes (2007, p. xi) state: "So far, the application of Cognitive Linguistics in critical discourse analysis has in the main been

restricted to conceptual metaphor theory . . . Whilst we recognise the importance of conceptual metaphor theory in critical discourse analysis . . . its appropriation is also challenged." They continue by mentioning that cognitive linguistics presents a "rich and varied theoretical world" (p. xi), which needs to be considered for appropriation and integration, "including conceptual metaphor theory, conceptual blending theory and frame semantics, as well as developing theories, such as metaphor power theory and discourse space theory" (p. xi). This is just one development in the ever-growing and dynamic approach to discourse studies, which is altered, adapted, and molded by researchers in various disciplines to investigate the thickly layered discourses that are shaped by and in turn shape an ever-developing society.

SEE ALSO: Critical Discourse Analysis and Critical Applied Linguistics; Critical Discourse Analysis: Overview; "Critical" in Critical Discourse Analysis; Fairclough, Norman; Wodak, Ruth

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Critical Discourse Analysis: Overview

ANGEL LIN

Critical discourse analysis (CDA) as a young discipline has a history of only about three decades. While it might be possible to see CDA as a particular approach to discourse analysis rather than a separate discipline, CDA's disciplinary status has been well established through its research journals and the influential work of key researchers associated with CDA; for example, Norman FAIRCLOUGH, Gunther Kress, Ruth WODAK, Teun van Dijk, and Theo van Leeuwen (see CRITICAL ANALYSIS OF POLITICAL DISCOURSE).

As a young discipline, however, it has drawn on theoretical resources dating back to European Enlightenment philosophy. From the critique of metaphysics by Immanuel Kant (1724–1804) to the critical theory of the Frankfurt School in the twentieth century, CDA is a true descendant of the Anglo-European tradition of placing faith and value in applying the human rational faculty to the critical analysis of political, social, and cultural formations of various kinds (e.g., race, class, and gender categories) (see "CRITICAL" IN CRITICAL DISCOURSE ANALYSIS).

With its fluid and fast developing research questions and diverse methodologies worthy of an energetic young discipline, CDA is often a somewhat different thing to different researchers and scholars with slightly different theoretical or methodological preferences. And yet what unites these seemingly diverse efforts in CDA inquiry is CDA's central concern with different forms of social inequality and domination and subordination that are being produced and reproduced through language and discourse, and its commitment to working towards effecting change and improvement of such situations. This central concern and commitment underlie a nexus of basic theoretical concepts and research methodologies in CDA, which are outlined below as a synoptic introduction to this section.

Language as Social Practice

One key distinction between CDA and discourse studies lies in CDA's consistent focus on language as social practice and particularly on the social and political context of language use. CDA is not interested in investigating language as a static linguistic entity but in studying social and discursive processes and their consequences (see CRITICAL DISCOURSE ANALYSIS: HISTORY AND NEW DEVELOPMENTS). In particular, CDA takes the theoretical stance that language should not be seen as a reified object of study, and language treated as a bounded entity is actually an ideological and social construct, born of activities of political, nationalist, or colonial, segregating agendas (Pennycook, 2001, 2003, 2004, 2010). The analytical focus should thus be on how language, as continuously changing systems of semiotic resources, among other semiotic systems of resources (e.g., multimodality, see CRITICAL ANALYSIS OF MULTIMODAL DISCOURSE), are recruited and utilized for constructing racial, gender, social, and cultural categories that legitimate and perpetuate inequalities in society. In this respect CDA shares much in common with the recent "critical turn" in applied linguistics, or what comes to be known as critical applied linguistics (CAL). The two disciplines can be seen as sister disciplines that mutually inform each other, with CAL focusing more on applied linguistics issues such as language policy, language ideologies, language teaching, language learning, and language testing (see CRITICAL DISCOURSE ANALYSIS AND CRITICAL APPLIED LINGUISTICS).

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Discursive Construction of Racial and Social Categories/Identities and the Politics of Representation

One central concern of CDA research is to critically analyze the discursive construction of racial, gender, and other social and cultural categories, identities, and stereotypes that legitimate and perpetuate discrimination against particular groups of people. Much of early CDA work focuses on the critical analysis of "race" as a discursive construction, the role of discourse in racialization processes, and the reproduction of racialized identities and discrimination of marginalized groups in society (see CRITICAL ANALYSIS OF POLITICAL DISCOURSE).

Key CDA research conducted by Teun van Dijk uses both linguistic and social psychological approaches to the critical analysis of racist discourses of the White ruling elites in European, British, Australian, New Zealand, North American, Latin American, and South African societies (van Dijk, 1993, 2005; Wodak & van Dijk, 2000). Van Dijk's classic 1993 study critically analyzed racist discourses from all key domains: political discourse, corporate discourse, academic discourse, educational discourse, and media discourse. In this important study, van Dijk both integrated and theoretically elaborated his earlier research on racism and the press (van Dijk, 1991) and ethnic prejudice in thought and talk (van Dijk, 1987). Van Dijk differentiated between elite racism and popular racism and argued that it is the racist discourses of the elites in different domains of society that provide both the cognitive frameworks and the discursive resources for the reproduction of ethnic stereotypes in everyday talk and thought of the masses.

Drawing on Bourdieu (1984, 1988), van Dijk further saw these elites as playing an important role in the authorization and legitimation of racist policies and everyday racist practices. Almost outperforming their earlier colonial predecessors, contemporary elites, van Dijk argued, employ a range of sophisticated forms of discourse to legitimate their own social, political, language, and economic policies that safeguard their elite status and privilege in society (van Dijk, 1993).

Expanding Domains of Analysis and Interdisciplinary Methodologies

Apart from deconstructing the categories of race and racist representations, CDA researchers have also worked on uncovering the stereotypical representations of different social and cultural groups, using diverse methodologies, and in a variety of domains, including educational settings (see CRITICAL ANALYSIS OF DISCOURSE IN EDUCATIONAL SETTINGS), the new media (see CRITICAL DISCOURSE ANALYSIS OF MULTILINGUAL INTERACTIONS IN THE NEW MEDIA), and popular culture (see CRITICAL DISCOURSE ANALYSIS OF POPULAR CULTURE). With the rise of new media it is increasingly important to employ new methodologies to analyze visual images and multimedia texts (Kress & van Leeuwen, 1996). Multimodal approaches to CDA have thus made great contributions to enriching the repertoire of methodological tools available to CDA researchers (see CRITICAL ANALYSIS OF MULTIMODAL DISCOURSE). This entry shows how the Playmobil toy figurines and accessories construct reality in specific ways. For instance, the Playmobil "ethnic family box" contains a father, a mother, and three children, all with brown skin and identical hair color, with a mother who wears her hair in a bun. The Playmobil "family" (with no further qualification), in contrast, comes in a box with a father, a mother, and two children, all pink-skinned and with different hair colors, hence with some suggestion of individuality.

CDA's methodology has sometimes been criticized as subjective and not "scientific": for example, CDA researchers typically choose text examples to support their analytical

claims without first establishing a representative sample of texts to conduct their analysis (see "CRITICAL" IN CRITICAL DISCOURSE ANALYSIS). In recent years, however, more and more CDA researchers are integrating corpus linguistic methods into their methodology. Corpus-based methods have complemented traditional CDA methods well by using random sampling, analyzing a large collection of texts, and comparing the textual features under study with language norms captured in a corpus in order to make reliable generalizations about typical language use (see CORPUS-BASED LINGUISTIC APPROACHES TO CRITICAL DISCOURSE ANALYSIS).

Entries Collected in This Section

To introduce this energetic young "transdisciplinary" discipline with all its fluid and fast developing issues and diverse methodologies presents a daunting task. The contributors of the eleven entries collected in this section have done an exemplary job within the limited assigned space. The first entry starts off by problematizing the "critical" in CDA through tracing the etymological roots of the word and the philosophical sources of the discipline (see "CRITICAL" IN CRITICAL DISCOURSE ANALYSIS). The entry summarizes two major critiques of CDA: one is philosophical and the other is methodological. The philosophical critique is based on the postmodernist orientation towards plurality of values across different cultural systems of the world. If CDA has a basic ethical concern about uncovering social injustice then there is the question regarding CDA's claims about social injustice; for example, an instance of social injustice seen in one culture might not be seen that way in another culture. While this entry has put forward this question to CDA researchers only recently, the deeper theoretical debate has in fact long been carried out in critical cultural studies: Is critical theory still tenable in the face of challenges from postmodernist philosophies? It seems to me that CDA researchers can draw on some theoretical resources from post-Marxist responses to postmodernism (e.g., Laclau & Mouffe, 1985; Chen, 1996). For instance, if CDA is both seen and carried out as a situated practice and not as a set of universal theoretical claims, then the postmodernist challenge should not be fatal to CDA.

The methodological critique summarized by the author has to do with the methods of selecting text samples in CDA practice. CDA researchers have been criticized for selecting only those samples of texts that support their claims and not paying attention to other texts that do not support their claims. In a way, this critique is answered by the next two entries. The entry CRITICAL DISCOURSE ANALYSIS: HISTORY AND NEW DEVELOPMENTS provides an overview of the historical development of CDA as a discipline from its early association with critical linguistics (Fowler, Hodge, Kress, & Trew, 1979; Fowler, 1996) to its recent strengthening of its methodologies by integrating concepts and methods of corpus linguistics and cognitive linguistics (e.g., Charteris-Black, 2004, 2005). The entry CORPUS-BASED LINGUISTIC APPROACHES TO CRITICAL DISCOURSE ANALYSIS further provides a comprehensive account of the recent development of applying corpus-based approaches to CDA and how corpus linguistics has contributed to the methodological repertoire of CDA in response to criticism about lack of systematic representative text sampling procedure in CDA research.

The entry CRITICAL DISCOURSE ANALYSIS AND CRITICAL APPLIED LINGUISTICS offers us an overview of critical applied linguistics (CAL) and shows how much both CDA and CAL share in common, with CAL focusing more on social inequalities arising from language ideologies and legitimated ideological language policies and language education practices. CRITICAL ANALYSIS OF MULTIMODAL DISCOURSE further advances our knowledge of the relationship between multimodality analysis and CDA. Although the two disciplines have developed independently, there are multimodality researchers with a critical concern, and

CDA researchers who employ multimodal analysis methodologies to analyze visual images and multimodal texts, as images construct reality in ideological ways just as much as language does, if not more. The entry CRITICAL ANALYSIS OF POLITICAL DISCOURSE further describes the historical development of CDA work in political domains, in particular, illustrating the value of longitudinal analysis with the contributor's own study that tracks the political discourse of British governors in their last years of colonial rule in Hong Kong in the 1990s. CRITICAL ANALYSIS OF DISCOURSE IN EDUCATIONAL SETTINGS offers an account of CDA research in educational settings, illustrating that while historically CDA started off with concerns mainly with political and media discourse, CDA practice is very important in uncovering the working of ideologies and inequalities in education domains.

With much recent global corporate and popular discourse celebrating the new media and Internet as emancipatory and democratic, CRITICAL DISCOURSE ANALYSIS OF POPULAR CULTURE gives a note of caution on critical analysis of popular culture. It also points out that there is great value in applying critical approaches to the study of popular culture discourse(s) in both educational settings and society at large given the pervasiveness, power, and significance of these textual practices. Related to this topic is the entry on the increasing presence of multilingual, multimodal interactions in the new social media (see CRITICAL DISCOURSE ANALYSIS OF MULTILINGUAL INTERACTIONS IN THE NEW MEDIA). Although this entry deals mainly with these new sociolinguistic phenomena, it points to the need for more future CDA research in the new media which are increasingly characterized by superdiversity and "supervernacularization" in communication patterns and networks of these virtual "supercommunities" (Blommaert, 2011).

This collection devotes its final two entries to biographical accounts of two central figures in the development of CDA as a discipline: Norman FAIRCLOUGH and Ruth WODAK. From the perspective of an applied and educational linguist, the contributor describes the development of the work of Norman Fairclough and his contribution to the transdisciplinary nature of CDA emphasizing how Fairclough integrated critical social theory into textual analysis of discourse. The entry on Ruth Wodak details her contribution, stressing her role not only as an academic and researcher but, much more importantly, also as a public intellectual deeply committed to the battle against racism, anti-Semitism, and right-wing populist rhetoric in Austria and Europe. The future of CDA, as the contributors in this section all point out, is still fluid, dynamic, and very much in the making. With its commitment to critical analysis of the discursive processes of domination and subordination, social injustice, and symbolic violence, CDA continues to make important contributions to the theory and practice of applied linguists.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Critical Media Literacy; Institutional Ethnography; Kress, Gunther; Language Ideology and Public Discourse; van Dijk, Teun A.; van Leeuwen, Theo

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Critical English for Academic Purposes

SARAH BENESCH

Introduction

This entry traces critical English for academic purposes (CEAP) from its first publications, in the early 1990s, to its more recent offerings. It begins by defining CEAP, first in relationship to traditional English for academic purposes (EAP), and then through its disciplinary positioning. Theoretical differences between CEAP and EAP are then explored. Finally, a 2009 *Journal of English for Academic Purposes* special issue on CEAP is examined to illustrate how these theoretical assumptions drive its current praxis.

The Relationship Between EAP and CEAP

A starting point in defining critical EAP is a definition of traditional EAP, for which I turn to Hyland and Hamp-Lyons (2002). They describe EAP as a field that aims to help English language learners "gain fluency in the conventions of English language academic discourses" so that they might "successfully navigate their learning" (p. 1) in various disciplines. Critical EAP, on the other hand, while retaining the aim of helping students navigate academic discourses and disciplines, challenges the notion of academic conventions as necessarily reasonable and non-negotiable. Instead, CEAP sees students as active agents, rather than novices or subordinates, who can be encouraged to question unreasonable requirements and collaborate with their instructors in developing appropriate curricula.

Another way of defining CEAP is by locating its disciplinary home: Is it a subfield of EAP? Or is it, instead, more closely allied with critical applied linguistics (CAL)? The status of a field, or subfield, might be measured by whether there are journals devoted to its scholarship. According to this criterion, EAP is an established field with a dedicated scholarly journal, *Journal of English for Academic Purposes* (*JEAP*), and, to a lesser degree, *English for Specific Purposes* (*ESP*). As to CAL, there are at least two applied linguistics journals that solicit manuscripts with a critical orientation: *Critical Inquiry in Language Studies* and *Journal of Language, Identity, and Education.* CEAP, by contrast, has no dedicated journals, though critical EAP scholarship is represented in both *JEAP* (Cadman, 2005; Benesch, 2009) and *ESP* (Harwood & Hadley, 2004; Archer, 2008). In addition, critical EAP articles can be found in journals receptive to submissions with a critical orientation, such as *TESOL Quarterly* (Benesch, 1996; Angelil-Carter, 1997; Thesen, 1997) and *Journal of Second Language Writing* (Casanave, 2003; Kubota & Lehner, 2004).

Determining where CEAP "belongs" in the disciplinary landscape is even thornier when considering that CAL may not even be a field or subfield, but, instead, a "form of anti-disciplinary praxis" (Pennycook, 2001, p. 164). From this perspective CAL is a continuous process of interrogating theory and practice rather than a boundaried discipline. While acknowledging this perspective, I prefer to regard CEAP as an inter-discipline, incorporating aims and assumptions of both EAP and CAL. In this entry I discuss how CEAP has enacted "problematizing practice" (p. 167), a nonfoundational stance through which it retains its critical edge. Yet, I also show that CEAP has not acted exclusively as an *enfant*

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terrible, attempting to push EAP beyond its zones of foundational comfort. Rather, there is a substantive CEAP literature grounded in shared theoretical assumptions, one that supports the claim that CEAP is an established presence in applied linguistics, in its own interdisciplinary right.

To demonstrate CEAP's development from an EAP counterdiscourse to its current status as an inter-discipline, I'll next discuss some early CEAP publications from the 1990s. In these articles, CEAP offered an alternative to EAP by theorizing power in three areas: language; pedagogy; teachers' and students' complex and shifting identities.

Theorizing Language and Pedagogy: Attention to Power

Pennycook (1994) offered the earliest challenge to EAP's theory of language, questioning a fundamental, yet unexamined, EAP assumption: languages are conduits of meaning, that is, "channel[s] through which ideas can pass back and forth unchanged" (p. 13). Pennycook pointed out that English *for* academic purposes implies that language is a neutral vehicle for transporting academic content. This formulation, he claimed, promoted a theory of language as an innocent and transparent medium through which academic purposes could be achieved. Pennycook's counterproposal was English *as* academic purposes. The shift from *for* to *as* highlighted the politics of English, suggesting "a critical stance that recognizes the ways in which English is embedded in social, cultural, and political relations" (p. 14).

In questioning English *for* academic purposes, Pennycook underscored EAP's tacit acceptance of a structuralist theory of language, with its language/content divide, and its view of language and social factors as separate rather than inextricably linked. In place of structuralism, Pennycook proposed a poststructural theory of language as discourse(s), where language is "a social practice . . . and always/already social and cultural" (p. 17). This theory of discourses acknowledged power by positing language as a site of struggle, that is, discourses competing for legitimacy within social contexts, in which power is unequal. From this poststructural perspective, academic texts, genres, and assignments are not content-delivery devices that help students achieve their goals, but are instead socially constructed artifacts open to "multiple readings from diverse discursive positions" (p. 20). Critical EAP, then, would invite students to examine their complex relationships and reactions to academic English, including possible ambivalence, and to develop novel understandings in light of their subject positions.

Whereas Pennycook was concerned primarily with theories of language, my focus was pedagogy. Through the lens of unequal power in academia, I critiqued EAP's unequivocal endorsement of the literacy demands of academic courses, questioning whether they were in fact "positive artifacts of a normative academic culture into which ESL students should be assimilated" (Benesch, 1993, p. 710). Though I endorsed EAP's move away from general English to more specific academic discourse, genres, and assignments, I did not accept them as necessarily "realistic" and "authentic," as the EAP literature claimed. Rather, I countered that academic requirements and assignments were sometimes capricious and ill conceived and therefore problematic as target materials. In this and other articles published around the same time (Benesch, 1988, 1991, 1992), I attributed EAP's unquestioning acceptance of academic materials to the subordinate status of ESL instructors and students in the academy. Their role, according to mainstream EAP practice at the time, was to make content course materials comprehensible to EAP students. Missing from this equation was EAP's potential for challenging the status quo of unfavorable conditions, so that faculty across the curriculum might develop more appropriate assignments, ones geared to their actual students rather than imagined, better-prepared ones.

Theorizing Teachers' and Students' Complex and Shifting Identities

Articles concerned primarily with students' complex identities in EAP contexts began to appear in the late 1990s. As in the earlier critical EAP publications, the central issue was power, another challenge to EAP's quietism regarding social inequality, including in academic settings. Two articles (Angelil-Carter, 1997; Thesen, 1997) emerged from the University of Cape Town (UCT) at a time when South African post-secondary institutions were admitting black students to historically white universities. Angelil-Carter (1997) aimed to discover how previously excluded students "develop an authorial voice within multivoiced text in academic writing" (p. 269), by interviewing a native speaker of Zulu who had been a political prisoner before enrolling in UCT. Grounding her research in Bourdieu's notion of the linguistic marketplace where discourses compete for legitimacy, the author was concerned with how "subject positions, and thus the ability to claim the right to speak and be heard can shift" (p. 264).

Angelil-Carter illustrated changing subject positions in her discussion of the interview process itself, documenting how power shifted between her and the student, depending on the topic, institutional roles, race, and gender. Concluding that power shifts even in a single encounter, such as an interview or classroom exchange, the author called for more nuanced explorations of teachers' and students' identities, through greater attention to the intersection of language, power, and identity within and outside of academic settings.

Thesen (1997), too, conducted interviews with black English language learners at UCT, to explore "the dynamics of identity construction" (p. 488). Hoping to subvert the *disadvantaged* label misapplied to these students, and the traditional EAP notion of initiating novices to the academic mainstream, she focused on *transitions*, from rural schools to an urban university, political writing to academic writing, and first language to other languages. Thesen believed that the university had failed to interrogate its own white privilege vis-à-vis the newly admitted black students and to "adjust itself to the new realities" (p. 490). She therefore hoped to uncover how students' various oral and written discourses, nonacademic and academic, informed each other, from the students' perspective. She discovered that far from being passively disadvantaged, the students were actively constructing "emergent identities across different contexts in which [they] are clearly agentive, making choices about where to merge and where to resist" (p. 504). Given her finding that students' identities were not fixed, but "in movement" (p. 506), Thesen encouraged greater student input into how they are positioned institutionally.

It is clear from the examples of early CEAP scholarship that EAP provoked the counterdiscourses of CEAP. Yet, it is also true that CEAP has influenced EAP, by raising theoretical and methodological questions. The degree to which these questions have attracted EAP researchers is taken up in the next section.

What Have Been CEAP's Influences on EAP?

By the time *JEAP* appeared in 2002, CEAP had made sufficient inroads that the editors of this newly launched journal acknowledged its influence. In their first editorial, Hyland and Hamp-Lyons wrestled with the "extent to which EAP is a pragmatic or critical discipline" (2002, p. 9). They wondered whether the goal was to facilitate students' "effective participation in academic communities" or if there was an additional mandate "to provide learners with ways of examining the academic socio-political status quo" (p. 9). The tension, as they described it, was between reproducing "existing forms of discourse (and thus power relations)" and "understanding of them so they can be challenged" (p. 9).

Hyland and Hamp-Lyons called for submissions addressing EAP's sociopolitical contexts, including power, to "fully understand what happens in institutions to make discourses the way they are" (p. 9). Their acknowledgment of the need for more careful theorizing and that "EAP instruction itself is not a politically neutral activity" (p. 9) demonstrate the impact that critical EAP had already made.

However, despite the editors' call for greater attention to power, three years later, Hamp-Lyons and Hyland conceded that, though there had been an increase in submissions with an explicit "social-theoretic stance" (2005, p. 3), power relations continued to be overlooked, for the most part. One explanation they offered was that critical EAP might be a "risky venture" (p. 3), perhaps due to the often hierarchical relationship between EAP instructors and their counterparts across the curriculum. That is, though the authors did not specify precisely what might be "risky" about a critical approach, they pointed to the following overlooked areas as legitimate sites of EAP investigation, all connected to power relations in an academic setting: "individual competitiveness, alliances among particular groups, the role of gatekeepers, and vested interests in institutional rewards systems" (p. 3). However, given EAP teachers' often subordinate status, it is perhaps not surprising that, despite the editors' urgings, power relations remained unexplored, for the most part, in submissions to *JEAP*. Instead, there were reports of small changes at the local level with little attention drawn to them.

The tension between encouraging critical EAP while acknowledging the possible risks for EAP teachers, often among the most vulnerable in terms of seniority and job security, demonstrates that criticality was in the air, though treated apprehensively even by mainstream EAP researchers in more senior positions. One example is Swales, Barks, Ostermann, and Simpson's (2001) report of a four-year study of MA architecture students' presentations of their designs, based on discourse and corpus linguistic analyses. Their research goals, captured in the title "Between critique and accommodation," included attention to both "the discourses of the M. Arch program" and "the larger social context in which these discourses are situated" (p. 442). Yet, in their conclusion, the authors discussed the limitations of critical EAP in bringing about large-scale institutional change:

> While a quasi-critical concern about our students' wellbeing in a recognized "culture of suffering" can lead to certain kinds of negotiated modification with subject instructors (such as changes in the assignment profile), there are likely to remain broader decisions that remain beyond our influence. (Swales et al., 2001, p. 455)

The recognition that change may be incremental is not at odds with critical EAP, but, instead, consistent with a central tenet: reflexivity. That is, as I show in the next section, CEAP is scrupulous about avoiding grand claims of empowerment or radical transformation, recognizing that change is multifaceted, not easily achieved, and not even necessarily desired.

Journal of English for Academic Purposes Special issue on Critical EAP

JEAP's special issue on critical EAP exemplifies CEAP scholarship 16 years after "critical EAP" was first proposed. The five articles point to sustained interest in power and identities, as well as reflexivity and criticality, that is, openings for students to question the status quo so they might improve social conditions in and outside academic contexts. Uniting all the articles are the following healthy tensions, none of which is resolved, but,

instead, interrogated in a reflexive, rather than definitive, manner: Should EAP pedagogy be pragmatic or critical? Is the target situation fixed or malleable? Are the students unskilled novices or full-fledged participants in academia? Should EAP teachers act as go-betweens or change agents? Each author raises these questions related to power and identity, yet allows the tensions to remain unresolved.

For example, Appleby (2009) discussed conflicts between white female Australian teachers and their East Timorese EAP students' notions of what is acceptable in gendered arrangements. Rather than taking a definitive stance, however, the author kept open the question of whether the teachers should have accepted what appeared to them as gender inequality in the behavior and language of their students or, instead, challenged it. She left it to readers to decide whether challenging the status quo might have served as a dominating discourse imposing culturally specific notions of gender equality, or not.

Other articles discuss moment-by-moment decisions made by the authors in their interactions with students. These "micro-ethnographic level" (Cadman, 2005, p. 354) choices were guided by awareness of power relations and students' subject positions, without imposing any particular point of view. Instead, students were encouraged to choose between accepting and challenging the status quo. For example, Chun (2009) invited EAP students to depart from a textbook chapter on "emotional intelligence" by focusing on a cartoon accompanying the text. Students interrogated traditional gender roles implied by the cartoon, which led to a lively and challenging classroom discussion of the relationship between gender, emotions, and intelligence.

For her part, Grey (2009) invited EAP business students to document diversity, uncertainty, and contradiction in different communities. During class presentations of their photographs and essays, one group presented a hybrid image of a digitally composed face comprised of features from each member, a patchwork crossing gender and racial lines, thus challenging "hegemony and fixity" of identities (p. 131) and provoking a "political engagement with difference" (p. 127).

Phan Le Ha (2009), too, addressed complex identities and power relations in mentoring an Indonesian graduate student. Both struggled with tensions between accommodating and resisting academic English discourse conventions. Their ambivalence about academic English calls to mind Morgan's (2009) proposal for EAP teacher educators to aim for "possibilities rather than certainties" so that students and instructors might reconceptualize traditional "roles and responsibilities" (p. 87).

Conclusion

Whether critical EAP is a field, subfield, or inter-discipline is perhaps less important than its hybrid identity as a set of shared theoretical assumptions and a theoretical nudge to EAP, a reminder to take power and identities into account. By keeping alive the tensions between pragmatism and criticality, fixity and malleability, accommodation and resistance, and the status quo and change, critical EAP insists that EAP research, teaching, and learning are inextricably linked to power relations.

SEE ALSO: Critical Applied Linguistics; Critical Discourse Analysis; Critical Pedagogy; English for Academic Purposes; Identities and Language Teaching in Classrooms; Identity and Second Language Acquisition; Ideology in Research Methodology; Language and Identity; Praxis and Second Language Acquisition

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Critical Ethnography

STEVEN TALMY

Critical ethnography in applied linguistics is an explicitly political approach to the empirical investigation of local occasions of language learning and use, and their connections to issues of race, ethnicity, class, gender, sexuality, identity, and language politics. It is typified by its complementary commitments to

- *describing* discrimination, social inequality, marginalization, and oppression in the everyday life of institutional (e.g., school) cultures, subcultural groups or both;
- *working to transform* the conditions that allow these and other forms of injustice to persist; and
- *maintaining a critically reflexive stance* toward the relationships between researcher, the researched, and knowledge production, representation, and dissemination.

Like other forms of ethnography, critical ethnography adopts methods such as participant-observation, interviewing, and the collection and analysis of site artifacts, but it derives its theoretical influences, insights, and explanatory frameworks from critical social theories. In recent years, it has become an established approach to inquiry in applied linguistics, with studies that focus on issues such as racism, sexism, linguistic prejudice, homophobia, and identity politics both in and outside of the language classroom.

Contrasting Conventional and Critical Ethnography

In descriptive or conventional forms of ethnography, a primary aim is to investigate

> people's behavior in naturally occurring, ongoing settings, with a focus on the cultural interpretation[s] of behavior . . . The ethnographer's goal is to provide a description and an interpretive-explanatory account of what people do in a setting . . . the outcome of their interactions, and the way they understand what they are doing. (Watson-Gegeo, 1988, p. 576)

Central principles of ethnographic research include a research focus on behavioral patterns of a cultural or subcultural group; holistic, contextual interpretation; and participant-relevant (or "emic") analysis, derived from prolonged and persistent engagement in the research field, ongoing data collection, requisite "thick description," and an emergent, recursive relationship between data, research questions, and interpretations (see, e.g., Lincoln & Guba, 1985; Erickson, 1986).

Critical ethnography shares these interests, but also departs from them in important ways. As May (1997) notes, critical ethnographers "reject the abrogation of a theoretical perspective for the 'open-ended' collection of data, [which is] characteristic of conventional ethnography," because all researchers necessarily "begin from a theoretical position," whether they acknowledge it or not (p. 198). Similarly, critical ethnographers dismiss the possibility of straightforward or "objective" description of sociocultural settings, since all description is inherently interpretive, and all interpretation is in some way ideological. In sum, critical ethnography "transforms" conventional ethnography by

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> supplying it with additional perspectives, principally historical and structural, that alter the ethnographic project toward one which supports an emancipatory as well as a hermeneutic concern . . . [T]his makes it a procedure with a pedagogical and political interest. (Simon & Dippo, 1986, p. 201)

The Critical Ethnographic Project

To define what is meant by "critical" is fraught with the potential for reductionism and inaccuracy. This is attributable not only to a dynamic plurality of critical social theories, but to ongoing, shifting relationships among them and postmodernism, poststructuralism, and postcolonialism. To arrive at a single definition would erroneously suggest a comfortable consensus among critical researchers, and "lead problematically toward solidify[ing] and disciplin[ing]" (Pennycook, 1994, p. 691) what is in fact a diverse and richly complex constellation of theories that work to transcend disciplinary borders, and that explicitly challenge the modernist impulse to simplify, categorize, and label.

Although there is no simple definition of "critical," there are certain principles shared in the critical ethnographic "project" (Simon & Dippo, 1986). Talmy (2010, pp. 128–9) has summarized some of them as follows: a conception of society as marked by asymmetries in power; a focus on the mutual relationships between social structure and human agency; a processual conception of culture as an ongoing, politically contested site of struggle; acknowledgment of the sociohistorical situatedness of research; ongoing efforts to promote the transformation of inequality; a rejection of the notion of value-free research, which is replaced by critical ethnographers' open acknowledgment of their own values (see Becker, 1967); and a reflexive recognition of how those values have shaped their scholarship.

Early Work in Critical Ethnography

According to Anderson (1989), critical ethnography grew

> out of dissatisfaction with social accounts of "structures" like class, patriarchy, and racism in which real human actors never appear . . . [and] dissatisfaction with cultural accounts of human actors in which broad structural constraints like class, patriarchy, and racism never appear. (p. 249)

Contemporary forms of critical ethnography can be traced to the anthropology of education, the sociology of education, and cultural studies, for example, in the work of Basil Bernstein (e.g., 1975), Angela McRobbie (1978), and John Ogbu (e.g., 1974). Paul Willis's (1977) study of "the lads," 12 working-class boys who composed the "counter-school culture" of an English secondary school in the 1960s, is one of the best-known and most widely cited critical ethnographies of the era, and demonstrates well how ethnography can be used to empirically ground and amplify the critical ethnographic project. The lads rejected the middle-class values of the school by asserting their working-class identities in the form of "continuous guerrilla warfare" (p. 19) that took place both in and outside the classroom. The lads missed class, vandalized books, disrupted lessons, harassed teachers and conformist classmates (the "ear'oles"), and otherwise flouted school rules with an array of oppositional behaviors. Willis shows the rationale, or "counter-logic," in the lads' resistance by tracing it to their working-class roots. Their families, the shop floors where their fathers worked, the street life they knew, and the terms of their counter-school culture all pointed to a different ethos than the normative, domesticating, middle-class culture promoted at school.

Critical Ethnography in Applied Linguistics

Canagarajah (1993, 1999) is one of the first to have published a "politically motivated ethnography" (1993, p. 605) in the field. His research concerned an eight-month-long critical ethnography of 22 Tamil students in a Sri Lankan university second language (L2) English class. Despite professing to be highly motivated due to the social and economic advantages afforded English speakers in the country, these students increasingly displayed oppositional behaviors to the English course's curriculum, textbook, and pedagogy. These behaviors included increasing absence from class; use of their first language (L1) when the L2 was called for; refusal to participate in pair/group activities, compelling more traditional teacher-regulated classroom participation structures; and defacing textbooks. This was the "underlife" of student opposition, a collaborative counterculture of coping strategies students deployed to oppose the "alien ideologies and cultural values of the textbook" (1999, p. 93). Canagarajah suggested that such a counterculture allowed students to appropriate what was communicated through the curriculum and reconstruct it in ways they preferred or believed were to their advantage.

Other critical ethnographies in the field have addressed a range of topics while still sounding similar themes, including the politics of (second) language education, power, learner agency, racism, linguistic prejudice, and other forms of discrimination. Ibrahim's (1999) study considers how a group of continental African youth attending a Francophone high school in Canada "became Black," that is, entered a "*social imaginary* . . . in which they [were] already constructed, imagined, and positioned . . . as Blacks" (p. 353). Motha (2006) uses data from interviews and afternoon teas to represent discussions she had with four teachers in their first year of teaching in public schools about challenges they indicated they were having with issues concerning race, identity, and the historical legacies of racialization, colonialism, and English-language teaching. Talmy (e.g., 2009) has used a critical discourse analytic framework to analyze social interaction in high school English as a second language (ESL) classrooms as a means to ground and elaborate claims from his critical ethnography concerning the widely noted, yet little investigated, "stigma" associated with the category of ESL in public schools. His investigation of social relations between long-term, "generation 1.5" ESL students (or "lifers") and recent newcomers (or "FOBs") connects instances in the micro politics of classroom interaction to matters of "macro" sociological significance, including assimilationism, xenophobia, and the valorization of "native speakers" of English.

Criticisms

Of the numerous criticisms that have been leveled at critical ethnography, two relevant critiques are addressed here: first, the emancipatory impulse of the "critical project," which has been criticized by scholars generally sympathetic to the aims of critical research; and second, problems arising from the so-called imposition of critical values, which has been faulted by scholars who question "partisan" research.

Critical ethnography has been criticized for the paternalism implicit in its notions of emancipation and empowerment, its universalism and ahistoricity, and its failure to address the implications of rationalist assumptions (see, e.g., Ellsworth, 1989; Gore, 1992). This has led to calls for greater reflexivity and sensitivity to local complexity. Gore (1992) maintains that critical researchers "must be more humble and reflexive in our claims." She maintains that rather than making grand pronouncements to research participants about "what we can do for you!" critical scholars "need to ask what *can* we do for you?," the possibility existing that "we" may not be able to do anything for "you" at all. Here, "empowerment

is constructed as the *exercise of power in an attempt to help others to exercise power*" not "the *giving* of power" (p. 62, emphasis added).

In one of the more carefully argued and insightful discussions concerning the problems that arise from the so-called imposition of critical values, Hammersley (2000) maintains that critical scholarship "amount[s] to redefining the goal of enquiry as the promotion of some practical or political cause" (p. 156). Such a "redefinition" constitutes what he refers to as "wilful" or "motivated" bias (cf. "negligent bias"), which perverts both "the guiding principle of objectivity" in scholarly inquiry, and the pursuit of truth, "the only value that [should constitute] the goal of research" (p. 154). Critical scholars have responded to such arguments by contending that *all* research is political, not just that which aspires to be. They also note that it is ironic that because critical ethnographers go to great lengths to acknowledge their value orientations, they are susceptible to criticisms about the imposition of them, and by extension, the trustworthiness of their scholarship (see, e.g., Quantz, 1992).

Quality in Critical Ethnography

Because critical ethnography is "openly ideological" research (Lather, 1986), Anderson (1989) maintains that validity is the most serious methodological challenge facing critical ethnographers:

> Critical ethnographers are in a double bind. They are often viewed with skepticism not only by the . . . research establishment, but also by fellow ethnographers who have taken care to build procedures for "objectivity" into their work . . . The apparent contradiction of . . . [openly ideological] research with traditional definitions of validity has left critical ethnography open to criticism from both within and outside of the ethnographic tradition. (p. 253)

The debate centers on whether or not conventional conceptions of validity, that is, those drawn from research conducted within a positivist paradigm, should or even can be applied to qualitative research, especially that which is openly ideological. If such conceptions are to be applied, there are epistemological, theoretical, and methodological incompatibilities; if they are not, then how is the "trustworthiness" (Lincoln & Guba, 1985) of critical ethnography to be ensured? Lather (1986) calls this being "between a rock and a soft place," where the rock is "the unquestionable need for trustworthiness in data generated by alternative paradigms" and the soft place "is the positivist claim to neutrality and objectivity" (p. 65). She offers a reconceptualization of validity, one that recognizes that while research is never neutral (and thus that there is "no longer need [to] apologize for unabashedly ideological research"), data credibility checks are needed "to protect our research and theory constructions from our enthusiasms" (p. 67). Along with the more common techniques that are used in this endeavor, such as triangulation and reflexivity, she adds the notion of "catalytic validity," which represents the degree to which the research initiates Freire's conception of "conscientization," or "the deepening of the attitude of awareness characteristic of all emergence" (Freire, 1993, p. 90), among research participants (and presumably, the researcher).

While Anderson (1989) agrees that quality in critical ethnography must be ensured through the use of systematic procedures (also see Carspecken, 1996), he warns that these procedures are valuable to the "extent that [they] provide the reader with a record of the decision-making process that produced the final analysis." Claims to analytic objectivity that derive from methodological rigor work to mask "the creative act of researcher interpretation, [and] are attempts to fit ethnography into a positivist . . . framework" (Anderson, 1989, p. 252). Such attempts, it should be clear, are to be avoided.

The means that can be employed to ensure quality in critical ethnography can take several forms. First, data analysis should be ongoing and recursive throughout fieldwork, analysis, and writing, in order to check, modify, and refine emergent understandings throughout. This can be done by incorporating relevant negative instances in the data, and in the resultant search for alternative explanations. Data can also be triangulated using different methods (e.g., observation, audio/video recordings, documents, interviews) as well as different sources (e.g., different research participants). Critical reflexivity is also essential, particularly because the longitudinal requisites of critical ethnography may well result in researchers themselves becoming socialized into the cultures they are simultaneously immersed in and investigating. In this respect, occasional debriefing sessions with peers, advisers, and thesis committee members can be important. Member checks can also be used, in which research participants are consulted concerning emergent analyses. Discourse analysis of relevant social interactions and site artifacts can also be undertaken as a means for grounding, warranting, and elaborating claims (see Talmy, 2010). Finally, a key to high-quality critical ethnographic inquiry is prolonged and persistent engagement. This refers to frequent, repeated instances of site entry for fieldwork over periods spanning several months or years.

Conclusions

Critical ethnography remains comparatively underrepresented in qualitative research in applied linguistics. However, it is clear that this is changing. Recent scholarship has demonstrated that critical ethnography is particularly well suited for investigating topics of great relevance to the field; at the same time, this work has shown how the orientations provided through applied linguistics research can also benefit critical ethnography.

SEE ALSO: Critical Applied Linguistics; Critical Discourse Analysis; "Critical" in Critical Discourse Analysis; Institutional Ethnography; Qualitative Methods: Overview

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"Critical" in Critical Discourse Analysis

PAUL CHILTON

The term "critical" was adopted by a group of linguists working at the University of East Anglia, UK, in the 1970s to describe a type of applied linguistics that concerned itself with the relationship between language and social phenomena. Unlike the kind of sociolinguistics that was concerned with covariation between linguistic features and social variables such as geographical location, gender, generation, and social class, the "critical" approach was understood as making explicit social processes and structures about which judgments, in effect ethical judgments, could be made. This approach was called "critical linguistics" by its initiators, Roger Fowler, Bob Hodge and Gunther Kress (Fowler, Hodge, Kress, & Trew, 1979). Later developments came to be known as "critical discourse analysis" (CDA), a label especially associated with the work of Norman Fairclough (Fairclough, 1992, 2001; Fairclough & Wodak 1997), van Dijk (1993, 2008) and Ruth Wodak (1989, 1996, 2006). The label "critical discourse studies" (CDS) was preferred by van Dijk, while Wodak's approach is called the "discourse historical approach" (Reisigl & Wodak, 2009).

Emergence of the Critical Approach

The critical approach to discourse can be seen less as a scientific development within linguistics than as a philosophical perspective with roots in Western philosophy. This fact gives rise to important problems within the contemporary globalized context. The word *critical* is associated with currents of thought whose recent sources are in the eighteenth-century European Enlightenment but whose roots are in ancient Greek philosophy. Etymologically, the verb "criticize" and its cognates derive from Greek *krinein* "to separate, decide," in the sense of making a judgment or a distinction.

In the European philosophical tradition of the eighteenth century, "critique" or "criticism" implies not accepting arguments or states of affairs as given and unchangeable but analyzing them on the basis of rational judgment. Criticism in this sense is assumed to be value-free, except insofar as high value is given to rationality itself. More specifically, to be critical in the European Enlightenment could imply rejecting metaphysics, denouncing religion, and challenging political abuse. In the work of Immanuel Kant (1724–1804), "critique" (*Kritik*) has an antimetaphysical meaning to some degree, but not a primarily condemnatory meaning. Rather, "Kantian critique" has to do with the use of rational analysis to explore the bounds of concepts and theories, including the human use of reason itself and its relationship to the physical structure of the world. Later philosophers radically extended the reach of Kant's notion of *Kritik*. Marx applied it to political economy. The Frankfurt School of Critical Theory in the 20th century, whose leading lights were Theodor Adorno (1903–69), Walter Benjamin (1892–1940), and Max Horkheimer (1895–1973), chose to include analysis of cultural and social phenomena of various kinds. Another philosophical development of the Kantian outlook is critical realism, the British version (e.g., Bhaskar's 1989 work) being relevant to critical social science, although the term "critical realism" is used also in the philosophy of natural science and in theology. In the second half of the 20th century, this broad "critical" tendency produced "critical studies" of various kinds, the general aim of which was to expose the contingent artifactuality of

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social and cultural forms such as gender and race. Work of this kind has established itself in sociology and also in economics, legal studies, international relations, and the history of science.

The critical study of language can be seen as arising in this tradition, as indeed was claimed by its early exponents (Fowler et al., 1979; Fowler, 1996). Among the "critical" academic disciplines in the West, critical discourse analysis has focused on language use and has sought to advance critical analysis by applying technical tools from linguistics.

The Term *Critical* in CDA

It is of course the case that the meanings of the word "critical" in English include non-technical meanings that might be glossed as "censorious" and in some contexts "denunciatory." It is arguable that there are two senses in English and European languages. The first and more specialized sense might be called "cognitive": to "criticize" is to engage in "critique," to engage in a rational conceptual activity. The second and everyday meaning is primarily interactive. In this sense, to "criticize" denotes an interactive social activity that somehow incorporates a normative or ethical standpoint. The verb "criticize" is thus a particular kind of speech act verb.

Within CDA, there are varied and sometimes vague understandings of terms such as "critical," "criticism," and "critique." This leads to at least two connected projects. First, critical analysis of discourse can mean to make the implicit explicit. More specifically, it means making explicit what is claimed to be an implicit relationship between discourse, power, and ideology. In societies where people, especially those in dominant or influential positions, tend to convey their propositions in a rather opaque manner, it is by being "critical" in this sense that one can "make more visible these opaque aspects of discourse" (Fairclough & Wodak, 1997, p. 258). And to be "critical" requires analysis: *Critical* is used in the special sense of aiming to show up connections which may be hidden from people—such as the connections between language, power, and ideology (Fairclough, 2001, p. 4)

Van Dijk has on numerous occasions stated that critical discourse studies should be engaged in the critique of social inequality and that

> [t]he "critical" in CDS . . . presupposes a judgment of any social situation or practice that is illegitimate, specifically a discursive practice that constitutes an abuse of power and that confirms or results in social inequality or injustice. And combined with DA or DS the "critical" implies that it is a scholarly discourse/practice that is based on the systematic and explicit (theory based) analysis of such abusive discourse as an illegitimate practice in terms of a multidisciplinary discourse studies. (Personal communication; see also van Dijk 1993, 2008)

It is clear, as van Dijk is aware, that the notions of abuse, legitimacy, power, etc. require further explanation and definition. In principle, critical discourse studies, as distinct from discourse studies in general, produce theories and analysis that (also) formulate a reasoned judgment about the discursive practices, especially of those in power.

Second, being "critical" has a further implication, one that takes the application of linguistics beyond pure analysis and puts it to work in what is intended as the improvement of socially embedded discourse. It may be said that this follows from the view that all discourse is a form of action. Thus, critical analysis itself, since it also is a form of discourse (or rather "metadiscourse"), is a form of social action. For instance, Wodak and Reisigl (Wodak, 1996, 2006; Reisigl & Wodak 2001, 2009) are concerned with the application of the results of discourse analysis to communication problems in, for example, schools and hospitals, as well as to guidelines for nondiscriminatory language behavior.

Fairclough makes specific proposals for critical discourse analysts: working with activists in designing and carrying out research, linking it, for instance, to the campaigns of disabled people over welfare reform, seeking to publish pamphlets, articles in newspapers and magazines, or on the Web, and developing ways of writing which are accessible to many people without being superficial (Fairclough, 2001, pp. 264–65). The implication appears to be that critical discourse analysts have some obligation (a) to be politically committed, (b) to seek to apply practical results of analysis to communication problems, or (c) both of these activities combined. Kress (1996, p. 15) summarizes the critical project of CDA in terms of a political project.

> Critical studies of language, critical linguistics (CL) and critical discourse analysis (CDA) have from the beginning had a political project: broadly speaking that of altering inequitable distributions of economic, cultural and political goods in contemporary societies. The intention has been to bring a system of excessive inequalities of power into crisis by uncovering its workings and its effects through the analysis of potent cultural objects—texts—and thereby to help in achieving a more equitable social order.

Reisigl and Wodak (2001, p. 34) are explicit about the ethical and human rights basis of their criticism:

> an engaged social critique is nurtured ethically by a sense of justice based on the normative and universalist conviction of the unrestricted validity of human rights and by the awareness of suffering, which both takes sides *against* social discrimination, repression, domination, exclusion and exploitation and *for* emancipation, self-determination and social recognition.

These authors go even further in mentioning the model of deliberative democracy for their grounding of critique, drawing extensively on ideas from Jürgen Habermas (Habermas, 1971, 1979, 1984/1987, 1996). In this line of argument the political model of deliberative democracy is linked with a discourse ethics, Habermas's "universal pragmatics," which postulates specific ethical imperatives as universals underlying human communication.

It seems clear that critical analysis presupposes a normative judgment that in turn presupposes a values base; it is not simply a discovery procedure that will explicate hidden power abuse and inequalities. The question thus arises as to exactly what procedures are involved in critical analysis. Reisigl and Wodak (2009) address this question and propose a three-stage model that distinguishes text-immanent critique, sociodiagnostic critique, and prospective critique. Their view of *text-immanent critique* is not focused first and foremost on the linguistic description of texts. Rather it is based on hermeneutics (the study of possible meanings in texts) and pursues one of the early ideas of critical theory, namely, the unearthing of inherent contradictions by linguistic means. While *text-immanent critique* is claimed to be strictly text-oriented, *sociodiagnostic critique* is avowedly based on the analyst's social and political commitments. At this level, also, the aim is to reveal multiple interests and contradictions originating in the text producers, on the basis of the evidence of the text and its contexts. Utterances in a text, or the text as a whole, may belie or be belied by other utterances and texts. This is described by Reisigl and Wodak (2001) as a process of "demystifying." *Prospective critique* is said to be built on these two levels and to have the purpose of identifying areas of social concern that can be addressed by direct social and political engagement.

CDA is critical in two senses. First it seeks to reveal what is not self-evident through the analysis of societally contextualized and institutionalized language use. Second, it seeks to judge (given a certain set of values or a political ideal), and ultimately to correct or

improve, certain kinds of social structures and processes. Such considerations reveal the ambitious nature of the critical claims of CDA. The philosophical, and specifically ethical, exploration of such claims has scarcely begun.

Methodological, Theoretical, and Philosophical Issues

CDA scholars often say that their processes of analysis and critique should themselves be subject to critique. Serious criticisms have indeed been raised with respect to linguistic methodology and theory, both of which are related to CDA's notion of critique. I believe, however, that there are also more fundamental philosophical questions that have started to appear and that will doubtless be addressed by new generations of scholars in the international scholarly community.

The Problem of Objectivity

A serious objection against CDA arises precisely from the normative assumptions underlying the critical stance. The presence of value judgments is likely to disturb those linguists who take seriously the claim of linguistics, pure or applied, to scientific objectivity. Widdowson (2004), for example, raises objections against CDA, not so much because he lacks sympathy with CDA's ethical or political stance, or because he thinks certain kinds of language use in the public domain should not be criticized, but because he considers CDA's methodology to be flawed. According to Widdowson critical discourse analysts select small data sets and selectively analyze linguistic features in a way that merely confirms their own values. Similar kinds of objection to the CDA paradigm have been made by Stubbs (1997) and Schegloff (1997). CDA scholars have replied that they do in fact acknowledge their normative position. In itself this reply does not remove the charge of subjectivity but takes the argument into a further discussion concerning the very possibility of scientific objectivity, in which reference is often made to Kuhn (1962) on the shift of scientific paradigms and Habermas on science, normativity, knowledge and interests (Habermas, 1968, 1971).

In response to the problem of the size of data sets, some researchers respond that CDA work has now begun to examine very large amounts of data using the expanding techniques of corpus linguistics (see Baker, 2006; Baker et al., 2008). Selection bias can be addressed by using standard statistical sampling techniques. Furthermore, it is also sometimes claimed that subjective bias can be eliminated or reduced with the assistance of text analysis programs.

The problem here, however, is that meanings and interpretations cannot be found this way, even if programs claiming to identify semantic fields are employed. Given a statistically selected data set, and given statistically significant lexical, grammatical, and semantic patterns, the critical discourse analyst still wants to investigate first context-sensitive pragmatic meaning and second the social significance of these findings. There is likely to be no objective method for these two interpretative stages.

The Problem of Criticizing Language

While the critique with which CDA is concerned is the critique of discourse, CDA work frequently states that it understands discourse as the use of language; certainly, the writers referred to in this article offer analyses of language using various tools of linguistic description. In addition to the methodological objections already mentioned there are several objections relating to linguistic theory that CDA work lays itself open to.

One fundamental issue concerns the question of what it is exactly that is under critical analysis. The English term *language* is notoriously ambiguous. It can refer to the human language ability, to *a* language such as Tzeltal or Mandarin, or to language-in-use in

everyday communication. Some authors associated with CDA give the impression that it is a language *as such*, that is its grammatical structures and lexicon, even its writing system, that is under critique. This tendency is apparent in Hodge and Kress (1993) with regard to English and in more extreme form in Hodge and Louie (1998) with regard to Mandarin. Such approaches may suggest that the structures of a particular language (or at least some of them) are in themselves ideologically motivated, rather than simply particular *uses* of a particular language. While it is the case that some languages may reflect particular social structures in some grammatical patterns (a well-known example might be gender honorifics in Japanese, for example), and the same may be said of a language's lexicon, it is unwarranted to make large generalizations to the effect that a language's grammatical structures can be ideologically motivated. This is not to say that the conventional *uses* of the grammatical and lexical systems of a language are not closely related to social structures and are manifest in numerous ways, including the dynamics of genres.

There is a related and frequently found variant of this approach, which focuses on particular grammatical structure and makes general claims about their ideological function. For example, it has been asserted that "transformations always involve suppression and distortion" (Hodge & Kress 1993, p. 35), with particular reference to passive constructions and nominalizations. Both these constructions have attracted much critical attention and the distinction between a syntactic or morphological phenomenon and its use in interactive contexts has not always been drawn when critical interpretation is presented. Even when nominalizations are being treated not as an abstract grammatical construction but as an actually attested in-use instance, and even when they have been correctly identified as nominalizations, the claim that they are mystificatory in context is generally extremely difficult to uphold (on nominalizations see Fairclough, 1992; see also the special issue of *Discourse & Society*, 2008).

Two Kinds of Philosophical Problem

As will have already become apparent, one of the problems of formulating a theory of discourse analysis is the risk of circularity, something that is not at issue for ordinary discourse analysis, in which there is not critical intent (except in a quasi-Kantian sense of making conscious the structures of human discourse). There would be no problem, if as is sometimes thought, linguistic analysis infallibly reveals abuse of power and the like. But it is difficult to see how this can be the case, for one would have to be able to specify exactly which linguistic structures will predict such abuse, and there is no evidence that this can be done. The alternative is as follows: the analyst first reads and generates an overall impression (i.e., the meaning of the text) that it is related to power structures of which they disapprove, and subsequently proceeds to identify linguistic structures in the text that they claim give rise to that overall impression (i.e., the meaning of the text). This alternative leads to the charge of circularity and subjectivity. Put like this, the problem resembles what is known as the hermeneutic circle in, for example, the philosophy of Heidegger. There is a dilemma here that remains for a full theory of CDA to resolve.

A philosophical problem of a different order is revealed by the fact that CDA now finds itself in a global environment. CDA has already crossed geopolitical and cultural frontiers. In view of what we have seen above concerning the origins of the critical stance in the European Enlightenment, the presupposing of an ethical and/or political base of critique in CDA, this fact raises important questions. Given its avowed aims and interests, it is difficult for CDA to ignore them. When CDA is translated into languages other than European ones and received in non-Western societies, how is the critical element understood? Is the critical element separable, leaving a kind of qualitative sociolinguistics that is treated as a method for investigating the integrated relationships between language, social action, and social structures? If the critical element is understood as integral to the

descriptive analysis, then a question arises as to the normative base that grounds critique. There is the logical possibility that *any* value system could serve as the basis for critique. Thus for example, some scholar in some society may believe that social inequality and differential power structures are desirable. Can CDA be used to critique discourse which upholds and promotes *in*equality? Or are the values presupposed by Western practitioners of CDA somehow intrinsic to the analysis? This case has not yet been philosophically made by CDA theorists. This hypothetical example brings out the inevitability for CDA of specifying the values that ground its critical element. Once admitted, however, this point leads to noticing the inevitability of justifying those grounds, in particular in a globalized context where value systems may not be universal. It is thus conceivable that critical discourse analysts, in different societies, for whom different values provide the premise for critical argument, may be obliged to enter a kind of justificatory dialogue that is essentially different from the pursuit of critical analysis that takes its grounds for granted.

SEE ALSO: Corpus Linguistics: Overview; Critical Discourse Analysis; Discourse Analysis and Conversation Analysis; Discourse and Cognition; Discourse and Identity; Discourse in Action; Discourse: Mixed Methods; Sociolinguistics: Mixed Methods

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Suggested Readings

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Critical Literacy

HILARY JANKS

Introduction

Critical literacy is a sociocultural orientation to literacy that takes seriously the relationship between meaning making and power. Text producers choose the mode and the medium of their communication and the messages they create are constructed by the specific choices they make of language, words, images, gestures, sounds, layout, and design. In order to illustrate how texts may be read critically, this entry will analyze the titles and covers of key books in the field. This rhetorical strategy enables two moves. First, it provides a means of introducing the history of the field, and second, it turns critical literacy on itself to enact its principles of textual interrogation.

In producing texts, speakers and writers have to make lexical, grammatical, and syntactic choices. In making lexical choices they have to decide on the exact vocabulary to use; in making grammatical choices they have to choose, for example, between present and past tense, tense and modality, active and passive voice, singular and plural, and first, second or third person; in making syntactic choices they have to decide on the order of their words and the sequence of their clauses. Different choices produce different texts with different meanings and different effects. Text producers who are critical make choices that are principled and ethical. Critical readers are alert to the interests at play in texts and are concerned with questions of who benefits and who is disadvantaged.

In multimodal texts a range of sign systems are used to convey meaning: visual, verbal, audio, gestural, spatial. In each of these sign systems producers have to choose from a range of possible options. In the visual mode alone there is a range of media—photography, drawing, and videography, among others—and within each of these a range of possibilities. So, for example, in photography, there are different shots: close-up, medium, and long—different ways of framing and cropping, different kinds of focus, and so on. Choices of which sign to use are called semiotic choices and they entail decisions about both selection and combination. Halliday (1985) refers to language as "meaning potential"; how meaning is realized depends on the choices that are made. The same can be said of all sign systems.

The choices made in the construction of texts reflect the positions of their text makers—where they stand in relation to the ideas as well as how committed they are to their point of view. These choices also work to position readers. In addition to understanding *what* texts mean, critical readers also have to be conscious of *how* texts mean; how texts are positioned by their writers and *how* texts work to position their readers. Readers also have to ask whose interests are served by this positioning in order to understand how power works in and through texts to produce particular social effects.

To make matters more complicated, it is important to realize that the choices made by text producers are not always conscious. Meaning makers take on the naturalized ways of speaking, writing, and designing that are available to them in their discourse communities without always realizing that these include taken-for-granted ways of doing, being, valuing, and believing (Gee, 1990). Because these discourses produce us as speaking subjects (Foucault, 1984), critical writers and designers have to be able to examine their own texts in order to understand the interests at work, and they need to acquire sufficient

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facility with signs to enable them to control their textual stance. Because meaning making can be used for good or ill, a critical literacy perspective needs to be underpinned by an ethical commitment to equity and social justice.

Verbal Mode

Some of these ideas can be illustrated with an analysis of the titles of 15 books in the field of critical literacy that have contributed to its establishment and development. This is a highly selective list of books relating to critical literacy which in addition excludes related work, such as that by feminist or post-colonial writers, that has underpinned critical literacy. Because spatial constraints have resulted in a list that is not comprehensive, the discussion of patterns and their implications is meant to be illustrative, not definitive:

1. *Pedagogy of the Oppressed* (Freire, 1972);
2. *Language and Control* (Fowler, Hodge, Kress, & Trew, 1979);
3. *Ways with Words* (Heath, 1983);
4. *Literacy in Theory and Practice* (Street, 1984);
5. *Literacy: Reading the Word and the World* (Freire & Macedo, 1987);
6. *Language and Power* (Fairclough, 1989);
7. *Social Linguistics and Literacies: Ideologies in Discourse* (Gee, 1990);
8. *Reading Images* (Kress & van Leeuwen, 1990);
9. *Critical Language Awareness* (Fairclough, 1992);
11. *The Politics of Writing* (Clark & Ivanič, 1997);
11. *Constructing Critical Literacies: Teaching and Learning Textual Practice* (Muspratt, Luke, & Freebody, 1997);
12. *Situated Literacies: Reading and Writing in Context* (Barton, Hamilton, & Ivanič, 2000);
13. *Multiliteracies* (Cope & Kalantzis, 2000);
14. *Negotiating Critical Literacies in Classrooms* (Comber & Simpson, 2001); and
15. *Multimodal Discourse: The Modes and Media of Contemporary Communication* (Kress & van Leeuwen, 2001).

The titles have been listed chronologically and give a sense of developments in the field. Each of these books is positioned differently by the choice of words for the title. Only three use the word *critical* in conjunction with *literacy*. Only five signal the importance of power in this domain by the choice of the words *power*, *politics*, *control*, *ideologies*, or *oppressed*. Six suggest that the focus is on *language*, *linguistics*, or *word(s)*. Nine in this set refer specifically to literacy, with five signaling a shift in the way of thinking about literacy by selecting the plural form of this noun. Two work with literacy as reading, writing, or both, while three suggest that literacy includes an ability to read images and other multimodal signs, which results in the shift from print literacy to multiliteracies. Eight titles present literacy as a socially situated practice (with words such as *social*, *situated*, *in classrooms* or *in contexts*, *reading the . . . world*, *contemporary*, *ways*, and *practice*). Two suggest that critical literacy is an active, ongoing process through the use of the present participles *negotiating* and *constructing*. Three of the titles relate critical literacy to education with the words *pedagogy*, *teaching and learning*, and *classrooms*. These ideas are summarized in Table 1.

Development of the Field of Critical Literacy

The words chosen give a sense of how the writers and their publishers have decided to position each book's contribution to the field, but they also reflect the history and develop-

Table 1 Ideas foregrounded in the titles of key books pertaining to critical literacy

Markers	*Titles and choice of markers*
Critical (3)	*Critical Language Awareness*; *Constructing Critical Literacies: Teaching and Learning Textual Practice*; *Negotiating Critical Literacies in Classrooms*
Power (5)	*Pedagogy of the Oppressed*; *Language and Control*; *Language and Power*; *Social Linguistics and Literacy: Ideologies in Discourse*; *The Politics of Writing*
Language (6)	*Language and Control*; *Ways with Words*; *Literacy: Reading the Word and the World*; *Language and Power*; *Social Linguistics and Literacies*; *Critical Language Awareness*
Literacy (9)	*Literacy in Theory and Practice*; *Literacy: Reading the Word and the World*; *Social Linguistics and Literacies*; *Reading Images*; *The Politics of Writing*; *Constructing Critical Literacies*; *Situated Literacies: Reading and Writing in Context*; *Multiliteracies*; *Negotiating Critical Literacies*
Multimodality (3)	*Reading Images*; *Multiliteracies*; *Multimodal Discourse: The Modes and Media of Contemporary Communication*
Socially situated practice (8)	*Pedagogy of the Oppressed*; *Ways with Words*; *Literacy in Theory and Practice*; *Literacy: Reading the Word and the World*; *Social Linguistics and Literacies*; *Constructing Critical Literacies*: *Teaching and Learning Textual Practice*; *Situated Literacies: Reading and Writing in Context*; *Negotiating Critical Literacies in Classrooms*
Ongoing process(2)	*Constructing Critical Literacies*; *Negotiating Critical Literacies in Classrooms*
Education(3)	*Pedagogy of the Oppressed*; *Constructing Critical Literacies*: *Teaching and Learning Textual Practice*; *Negotiating Critical Literacies in Classrooms*

ment of the field, and the social conditions which governed their selection at the time. For example, what critical literacy means had to be established before it could be used meaningfully in a book title. To this day, the different meanings of the word "critical" create ambiguity. In one sense *critical* refers to a form of reasoning based on evidence and argument; in another to a Marxist analysis of social power. To avoid confusion with critical thinking and to include other theories of power based on the work of Bourdieu (1991) and Foucault (1984), writers often avoid the word *critical* in their titles. It is important to understand that signs have to be read in relation to the processes and conditions of their production and reception (Fairclough, 1989).

Knowledge of the field enables a reader to locate the different titles in the different strands of work that influenced the development of critical literacy. The term "critical literacy" originates with Freire (1972), who was teaching adults in Brazil to become literate. At the time his main focus was on developing what came to be known as critical pedagogy, an approach capable of producing human beings capable of acting in and on the world (Freire & Macedo, 1987). He set out to create problem solvers able to take social action to improve the social conditions of their lives, and he was the first to link reading the word to reading the world. Although tied to developments in critical pedagogy, critical literacy, which was taken up largely in Australia, focused at first on critical reading as a form of social action and transformation (Muspratt et al., 1997; Luke, 2000; Comber & Simpson, 2001).

Literacy was also the focus of the work of anthropologists such as Heath (1983) and Street (1984), who studied literacy as a set of practices in a range of communities by observing literacy events. Their ethnographic work was extended into what became known

as the new literacy studies (Barton et al., 2000). This work shows whose practices enter the mainstream and become institutionalized and whose remain peripheral.

In the UK, work in East Anglia focused more on linguistics, and the term "critical linguistics" was coined by Fowler et al. (1979) in *Language and Control*. This was picked up in the work of the Lancaster circle on critical language awareness (Clark, Fairclough, Ivanič, & Martin-Jones, 1987; Fairclough, 1992) and critical discourse analysis (Fairclough, 1989). Linguists choose to use Halliday's systemic functional grammar (1985) because of the way in which it works with meaning. Gee (1990), a linguist working in the USA within a Bourdieuean framework, develops a sociocultural understanding of discourse and method of discourse analysis borrowing also from cognitive linguistics. Alistair Pennycook (2001) provides an overview of a range of approaches to critical linguistics and an orientation toward second language teaching.

Halliday's grammar forms the basis of Kress and van Leeuwen's (1990) work on *Reading Images*, which led to work on both multimodality and multiliteracies. That texts are becoming increasingly multimodal is nowhere more apparent than in online texts and the move from page to screen. The shift to add critical writing to critical reading was made by the work of Clark and Ivanič (1997; Ivanič, 1998) and extended to include design and redesign in the work of the New London Group on multiliteracies (Cope & Kalantzis, 2000).

For the analysis of these titles to be considered critical, a discussion of the interests at play in the field as reflected in them is needed. Freire's title is the only overtly political one, with its focus on education for the liberation of an oppressed class in Brazil. His work with adults was seen as subversive and he was forced to leave Brazil. In addition, his books were banned there and in other parts of the world. Of the authors in this partial list who are women, only two—Heath (1983) and Ivanič (1998)—have written monographs that have shaped the field. An analysis of critical discourse research shows the gendered nature of this field, in which men produce the theory and women apply it to practice (Norton, 1997). In the social sciences, different orientations compete with one another and intellectuals carve out a piece of the territory for themselves. The different strands contributing to critical literacy reflect these internal struggles within the field.

The Visual Mode

Kress's work focuses on the different affordances of different modes of communication. The visual and verbal modes enable different representations of meaning. This is easily illustrated with the use of different covers for the same book. A striking example is the difference between the hardback and softback editions of Janks's (2010) book *Literacy and Power* (see Figure 1). (Colored versions of these images may be viewed at http: hilaryjanksprofessional.blogspot.com/search/label/Publications.) Words alone simply do not create the same impact as a carefully selected visual image. When verbal and visual messages work in combination, the verbal is often used to anchor the meaning of the image. On the softback cover, the two work in combination with the image, acting as a visual metaphor for the title.

Both covers include the book's title in white and the name of the author. Everything else is different. The hardback cover uses a standard, plain format typical of academic texts. Its austerity suggests that it will be read by discerning people who, from the title and the name of the author alone, will know whether or not the book merits their attention. The sans serif font has a clean, modern look, the deep blue background lends dignity to the project, and the overall uncluttered design suggests that this is serious reading. Without any visual or verbal enticements it also makes the book look like dull work, an effort rather than a pleasure to read. This particular format is used by Routledge for its research titles and is intended for purchase by libraries.

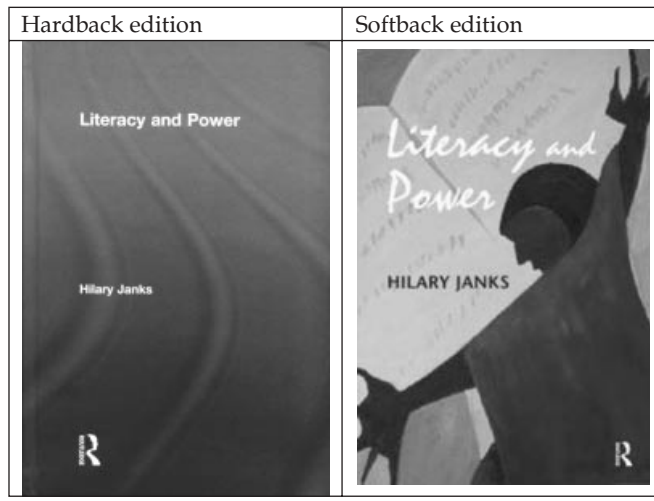

Figure 1 Comparison of hardback and softback covers of the same book © 2010 Routledge

The softback cover has a completely different and unique cover design. Using the genre developed for trade paperbacks, a strong, full-color painting takes up the whole of the front space, with the writing superimposed onto it. The use of contrasting colors is dramatic and demands the viewer's attention. The image of a large book held aloft by a powerful and imposing figure with outstretched arms serves as a metaphor for the title. The choice of an informal cursive font, suggestive of handwriting, is unusual for an academic text, and the use of block capitals makes the author's name stand out. A vector that divides the image along a diagonal from the top left corner to the bottom right corner is created by the line that separates the pages of the book in the picture, and it draws the eye to the Routledge logo. The horizontal lines used for the words of the title and author's name become salient because they cut across the diagonal. Overall the strong design makes one notice the cover.

In addition, the cover genre for popular books requires a blurb that explains what the book is about as well as recommendations from well-known experts in the field. This appears on the back cover and entices the reader with questions such as: "Do texts have designs on us and what can we do about it? What is 'linguistic capital' and who has it? How is literacy implicated in relations of power and questions of identity in our daily lives?" To knowledgeable readers, questions like these promise that the book will deal with key debates in the field, but they also invite a nonspecialist audience to consider the book.

Given that the hard and soft covers are for the same book, it is true that one should not judge a book by its cover. This, however, is a naive view because a cover affects readers' disposition toward a book, and in an age in which the visual increasingly carries meaning, the designs of covers are part of a book's meaning.

The Significance of Critical Literacy

Critical literacy is an overall stance toward spoken, written, and multimodal texts that requires a commitment to equity and social justice. It provides strategies for interrogating the word and the world, with the addition more recently of methods for analyzing multimodal texts. Texts are shaped by the discursive resources available to text makers and by

the ways of combining "saying (writing)-doing-being-believing and valuing" (Gee, 1990, p. 142) in the discourse communities that they inhabit. Gee's argument is that these discourses produce our identities, providing us with our durable and embodied dispositions (Bourdieu, 1991).

Language is not a neutral means for communication. According to the report of the Truth and Reconciliation Commission in South Africa, which examined the role played by language in crimes against humanity during the anti-apartheid struggle:

> Language, discourse and rhetoric *does* things: it constructs social categories, it gives orders, it persuades us, it justifies, explains, gives reasons, excuses. It constructs reality. It moves certain people against other people . . . Language, in its many and varied forms, is the central element in ideology as power . . . In the South African context it is important to understand how multiple discourses combined, intersected and intertwined to create climates of violence. In this respect, the ideologies of racism, patriarchy, religions, capitalism, apartheid and militarism all intertwined to 'manufacture' people capable of violence. (Truth and Reconciliation Commission, 1998, pp. 294, 296–7)

In a world riven by xenophobia, discourses that construct others as different and dangerous continue to produce fear and violence. The Bush years in the USA are a case in point. It is important to understand how discourse works and why it is, according to Foucault, "the power which is to be seized" (Foucault, 1984, p. 110). Because texts are the instantiations of discourse, much of the work of critical discourse analysis and critical language awareness focuses on the analysis of texts. The analysis of titles and covers in relation to the interests in play is an example of this kind of work.

Other work in critical literacy is more directly related to that of Freire. Here educators assist students to identify problems that affect their lives and to take considered action. "To exist, humanly, is to *name* the world, to change it. Once named, the world in its turn reappears to its namers as a problem and requires of them a *new naming*. Men are not built in silence, but in word, in work, in action-reflection" (1972, p. 61). This approach is epitomized in the work of educators such as Marg Wells in Australia and Vivienne Vasquez in Canada. Both are early childhood educators who help young children to identify and name their concerns and to take appropriate action to address them. Marg Wells's students were able to identify the absence of trees in their poor neighborhood as an issue to be taken up with the town council (Comber, Thomson, & Wells, 2001). Vasquez's children were upset that one of their peers was unable to eat at a school function because there was no food for vegetarians. The children addressed this with the organizing committee and with other schools in their neighborhood. Having named the problem, they wrote letters and petitions, did research, and wrote reports to support their arguments (Vasquez, 2004). They learnt to use literacy to effect meaningful change: what Freire refers to as a "new naming."

New literacy studies is able to show how society privileges the literacy practices of dominant classes and creates the conditions of failure for people whose languages and literacies are constructed as "nonstandard." Work on students' out-of-school literacies is providing ways of bringing students' diverse funds of knowledge (Gonzalez, Moll, & Amanti, 2005) into the classroom so as to use difference as a resource for learning. The work of Kress et al. (2005) on multimodality in teaching demonstrates powerfully how an analysis of the different modes of communication in English classrooms interact to produce the messages that students receive.

Because language and other forms of semiosis (meaning making) shape the social and are shaped by the social contexts of their use, developments in critical literacy are affected by changes in the sociohistorical and political context. For example, Al Gore's powerful

multimodal presentation *An Inconvenient Truth* (2006) shows that it a text can change the conditions of possibility for discourses pertaining to the sustainability of the planet. Here reading the word and reading the world come together in ways that Freire (1972) could not have predicted. We are all going to have to read our practices of consumption and waste critically, in order to change them. Different moments of history require different discourses, different rhetoric, and different abilities to read the world into the word. Barack Obama's US presidential election campaign reminded us of the power of a carefully crafted speech delivered by a forceful orator.

Critical literacy is also affected by changes in technology. Information is now available to anyone who has access to the Internet at a touch of a button. This is a democratic medium where everyone has the power to produce and disseminate ideas. More and more information arrives unasked for through wireless technologies. Who has access to new digital literacies and what they do with them is going to become an increasingly important question. What is needed is a critically literate population of readers, writers, and viewers who are able to judge the quality of information and arguments as well as the likely effects of texts.

The Future of Critical Literacy

We know that new technologies affect the texts we produce and the signs that we use. We know that information can be Twittered instantly and that technologies can be harnessed for good or ill. We know that we read and absorb information differently when we read by scrolling on screen and flitting from hypertext to hypertext as opposed to the more linear reading of print texts. We know that new multimodal forms of communication require both new languages and literacies and that these in turn require new critical literacies. And we know that the exponential rate of change will place demands on our ability to read, write, and design with a critically literate stance and a social conscience. What we do not know is exactly what forms of design and analysis the future holds or which forms of power will draw the critical literacy gaze.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Analysis of Multimodal Discourse; Critical Discourse Analysis and Critical Applied Linguistics; Critical Discourse Analysis: Overview; "Critical" in Critical Discourse Analysis; Critical Pedagogy; Critical Theory and Literacy; Multimodality and Literacy; Systemic Functional Linguistics

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Critical Media Literacy

GUY MERCHANT

Media of various kinds play an increasingly important role in our everyday lives. With recent technological developments their reach has become ubiquitous and global. Particularly in affluent economies, where digital media are so pervasive that they are present in our experience from birth to old age, engagement with the material and social world is increasingly filtered through the technologies we use. Through personal communication devices, screen-based entertainment, educational resources, and so much more, a broad segment of our informational and relational lives are now technologically mediated. As a result, some commentators suggest that this has profoundly influenced who we are and how we see ourselves. So, for example, Gergen (1996, p. 131) argues that "in every way we become increasingly engaged in a world with others—a socially saturated world." But although these changes in individual and social experience have become central to recent debates in *new literacies*, understanding the role of media in our lives has a longer history, reaching back at least as far as the work of the Frankfurt School in the interwar years (see below). It has repeatedly been argued that, because of the growing significance of media in everyday life, it is important that educators should work with children and young people to develop a critical understanding of the media environment. Innovation and development work of this kind, often classified as "media education" or "media studies," has taken place at all levels of the education system. As a subject, media studies has used perspectives from social and cultural studies, literary theory, and communication studies in the analysis of media texts and the social practices and contexts in which they are located. These texts include mass media, such as television, cinema, and newspapers; person-to-person media, such as cell phones and music players; and niche media, such as fanzines and specialist websites.

The term *media literacy* has recently been adopted to describe "the ability to access, understand and create communications in a variety of contexts" (OfCom, 2004). This suggests a set of competencies that are prerequisites for membership and participation in a media-rich social world and are therefore presumably already developing in the early years (Marsh, Brooks, Hughes, Ritchie, & Roberts, 2005). But why should these competencies be described as *literacy*? The impetus for this comes from two sources—first, from the ways in which traditional definitions of literacy have been challenged (e.g., the New London Group, 1997), and second, from a need to secure a place for media work in curriculum planning and delivery.

Traditional conceptions of literacy are united by a concern for meaning-making with the written word through the practice of reading and writing, and are often associated with handwritten and print text. The rapid rise of digital communication has unsettled these associations and has led some to suggest that, because texts such as websites regularly combine image and sound with writing, it has become increasingly difficult to anchor definitions of literate meaning-making to the written word (Merchant, 2007). Consequently some uses of the terms *new literacies* and *digital literacies* focus on more holistic and wide-ranging conceptions of meaning-making (Lankshear & Knobel, 2006), and so it becomes quite appropriate, by extension, to redefine the study of media as a concern for developing "media literacy." Furthermore, the project of media education may well be enriched

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through an alignment with some influential theoretical and analytical perspectives that have developed out of the study of print literacy. Among these is the conceptualization of literacy as a social practice (Street, 1984), analyses of the nature of text and reader response (Eco, 1979), and the aspirational claims of some of those working in the field of *new literacies* (e.g., Gee, 2003). In addition, as Livingstone (2008, p. 59) observes, there is a "long and proud history of theorising emancipatory knowledge in terms of the democratisation of literacy."

But there is also a more pragmatic reason for adopting the term literacy. Given the repeated emphasis on the importance of literacy in the compulsory school curriculum, fueled by the back-to-basics movement in countries like the UK, Australia, and the USA, redefining media study as a kind of literacy may well help to secure its place within the curriculum. Indeed, there are some early indications of how this may play out. For example, in recent curricular guidance in England references made to the study of text include the use of different media, the importance of multimodality, and the use of new technology for meaning-making—all under the banner of literacy. But this begs the question of whether the use of media in such contexts is in itself media literacy, or indeed sufficient to be described as *critical media literacy*.

A variety of educators have stressed the importance of the critical dimension (e.g., Giroux, 1994; Luke, 1997; Alverman & Hagood, 2000; Buckingham, 2003; Kellner & Share, 2007), and their various interpretations of what should constitute "the critical" are informed by different schools of thought. The traditional cultural studies perspective, with its roots in the work of the Frankfurt School, argues that the culture industry is a powerful force in reproducing dominant ideologies and is essentially a sophisticated instrument of social control. Critical media literacy from this perspective is an act of resistance, or at least an inoculation against media domination. Over recent years, a more nuanced understanding of the relationships between media, audiences, information, and power has emerged out of this work. So, for example, by fusing elements of critical pedagogy with cultural studies, Kellner and Share (2007, p. 65) identify five basic themes or practices. These are (a) understanding media as the result of a process of social construction; (b) analyzing the codes and conventions through which media texts communicate; (c) recognizing how audiences negotiate meanings; (d) exploring the relationships between representation, and ideology and power; and (e) examining the role of producers and the media industry. Furthermore, the work of Giroux and his collaborators has consistently argued for a critical pedagogy that might reclaim public education and cultural policy from media corporations (Giroux, 1994; Giroux & McLaren, 1994; Giroux & Pollock, 2010).

Buckingham (2003), in his exploration of media literacy, arrives at a similar list of themes to those outlined by Kellner and Share (2007), but in doing so, introduces some useful reflections on how the concept of criticality has been operationalized in educational contexts. Amongst these is the observation that much early practice in media studies focused on "uncovering" the ideology of media texts, with the teacher in the position of providing the "correct" reading. In the extreme, according to Buckingham, this has had a tendency to silence personal response, to deny the possibility of multiple readings, and generally ignores or denies the pleasure that children and young people may derive from their everyday uses of media. The critique leads Buckingham to emphasize the importance of production in media literacy, suggesting that: "Much of the value of practical work lies in the fact that it allows students to explore their affective and subjective investments in media, in a way which is more difficult to achieve through critical analysis" (2003, p. 137).

This emphasis on the relationship between production and consumption seems particularly relevant when new social media and Web 2.0 technologies are considered (Davies & Merchant, 2009). The rapid rise of person-to-person messaging, online social networking, and content-sharing challenges established distinctions between producers and audiences.

In fact, some argue that the boundaries have become blurred to the extent that new practices of "produsage" emerge (Bruns, 2008), in which consumption involves production and is, in some senses, inseparable from it. Perhaps this is best illustrated through the example of photo-sharing sites such as Flickr, in which full participation depends as much on producing content as it does on viewing and commenting on the work of others (Merchant, 2009). Web 2.0 enthusiasts have seized upon these ideas, suggesting that they herald the emergence of a new cultural logic driven by a communitarian ethos (e.g., Lessig, 2002; Leadbeater, 2009). Whilst there is plenty of evidence of new kinds of participation and the development of new media forms, it is all too easy to overlook the fact that Web 2.0 services themselves are produced, owned, and designed—often as commercial ventures. As the involvement of children and youth in participatory media continues to increase—for instance, "73% of wired American teens now use social networking websites" (Lenhart, Purcell, Smith, & Zickuhr, 2010, p. 4)—the rationale for developing critical media literacy grows in strength.

In his writing on media, Jenkins regularly uses the term "participatory culture" to capture these recent trends, frequently suggesting the importance of audience engagement and collective intelligence in the development of popular media (e.g., Jenkins, 2006a). In an influential occasional paper written for the MacArthur Foundation—often referred to as the White Paper—a participatory culture is described as one in which members "believe their contributions matter, and feel some degree of social connection with one another" (Jenkins, 2006b, p. 3). It is argued that new communications technology has transformed the lives of many (but not all), and that new media skills are necessary for full participation in the digital world. Because of what is referred to as "the participation gap" these skills should, according to the White Paper, be incorporated in the school curriculum. Jenkins and his colleagues identify three problems:

> How do we ensure that every child has access to the skills and experiences needed to become a full participant in the social, cultural, economic and political future of our society?
>
> How do we ensure that every child has the ability to articulate his or her understanding of the way that media shapes perceptions of the world?
>
> How do we ensure that every child has been socialized into the emerging ethical standards that will shape their practices as media makers and participants within online communities? (2006b, p. 18)

The authors recognize the centrality of media in the lives of children and young people whilst identifying the role that schools, after-school clubs, and parents play in the "learning ecology" (Barron, 2006, p. 195). These contexts all have a contribution to make to the "core media literacy skills" identified in the report. The skills themselves constitute a somewhat radical departure from earlier iterations of media literacy. Eleven skills are identified:

- Play—the capacity to experiment with your surroundings as a form of problem-solving
- Performance—the ability to adopt alternative identities for the purpose of improvisation and discovery
- Simulation—the ability to interpret and construct dynamic models of real world processes
- Appropriation—the ability to meaningfully sample and remix media content
- Multitasking—the ability to scan one's environment and shift focus as needed to salient details
- Distributed cognition—the ability to interact meaningfully with tools that expand mental capacities

Collective intelligence—the ability to pool knowledge and compare notes with others toward a common goal
Judgment—the ability to evaluate the reliability and credibility of different information sources
Transmedia Navigation—the ability to follow the flow of stories and information across multiple modalities
Networking—the ability to search for, synthesize, and disseminate information
Negotiation—the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms. (Jenkins, 2006b, p. 56)

What is significant about this version of media literacy is that it draws our attention to the assets that children and young people are already developing across a range of media contexts, stressing informal, playful, and creative engagements with media content. At the same time, it draws our attention away from the more serious and worthy work of analysis and critique that marks earlier descriptions of media literacy. Furthermore, the list implies a model of learning that is both collaborative and self-motivated.

An alternative view, and one that perhaps suggests a more reflective or critical producer and consumer, comes from the European Charter for Media Literacy (Euromedia, 2004). In contrast to the models discussed above, the European Charter is more explicitly linked to social policy. Bachmair and Bazalgette (2007), in their commentary on the Charter, identify the range of interests at work in current debate on media literacy and illustrate how the Charter attempts to establish a consensual and transnational agreement. Apart from explicit political interest they identify the competing voices of regulatory bodies, hardware and software providers, pressure groups, national cultural and religious institutions, as well as media producers, each with their own concerns and interests in media literacy.

Despite the potential conflicts of interest, the European Charter for Media Literacy has identified three interrelated strands (or aims) of media education, often referred to as the three Cs. These are:

- Cultural: broadening learners' experience of different kinds of media form and content.
- Critical: developing learners' critical skills in analyzing and assessing media outputs.
- Creative: developing learners' creative skills in using media for expression and communication, and for participation in public debate.

These three strands map onto a list of seven key competencies, described in the following way, in terms of what media literate people should be able to do:

- Use media technologies effectively to access, store, retrieve, and share content to meet their individual and community needs and interests.
- Gain access to, and make informed choices about, a wide range of media forms and content from different cultural and institutional sources.
- Understand how and why media content is produced.
- Analyze critically the techniques, languages, and conventions used by the media and the messages they convey.
- Use media creatively to express and communicate ideas, information, and opinions.
- Identify, and avoid or challenge, media content and services that may be unsolicited, offensive, or harmful.
- Make effective use of media in the exercise of their democratic rights and civic responsibilities.

Despite the broader goals of the Charter, these competencies do seem to draw together some key themes in the field of critical media literacy in a way that could easily translate into educational objectives. So whilst the Jenkins White Paper works well in describing the habits of mind and the practices that emerge with new media, as well as their implications for pedagogy and learning, the strength of the Charter is that it could be used effectively in curriculum planning.

In conclusion, it seems that there is no shortage of guidance on critical media literacy, and although there are differences in emphasis, there is broad agreement that developing the "knowledge, skills and understandings that are required to interpret, evaluate and produce media" (Buckingham, 2003, p. 36) is a desirable aim for both formal and non-formal education. Recent thinking on the topic emphasizes an "asset model" (Robinson & Mackey, 2006)—a model that examines the positive aspects of the many and diverse encounters with media and technology that pattern the lives of children and young people, providing an important counterpoint to risk discourses (Beck, 1992) and ongoing pre-occupations with safety and regulation. The asset view is well captured by Alvermann and Hagood in their review of research on critical media literacy in which they observe that:

> Bringing together in literacy education the extremities forged between popular and canonical texts, out-of-school and in-school literacies, body and mind, and pleasure and work more fully reflects the blurring of boundaries of a post-modern society and the multiliteracies of everyday life. (2000, p. 201)

As we move toward this reconceptualization of literacy education there do, however, remain some important and unresolved dilemmas. The first of these concerns the various interpretations of the notion of criticality, as explored above. In some ways this debate mirrors some of the complexities in critical theory and in literary criticism. Perhaps we need to ask whether we want children and young people to rediscover the ideologies and biases that some adults have previously identified, whether we want them to become informed media critics or want them to be discerning consumers and producers of media. The second issue is whether or not we believe that the formal education system can be expected to bear the full responsibility of developing media literacy. Given that the major part of young people's engagement with media is likely to take place outside of school contexts, there are good reasons to suggest that media literacy develops across a range of contexts and that parents, after-school clubs, community groups, as well as producers and independent agencies have an important role to play. Third, there are some contentious issues at stake in identifying what constitutes development in critical media literacy. For instance, in discussing literacy, the White Paper suggests that "Before students engage with the new participatory culture, they must be able to read and write" (Jenkins, 2006b, p. 19). But given that young children are already immersed in media culture—well before the start of their compulsory schooling—there are powerful arguments to suggest that critical media literacy should be taught alongside traditional literacy (see Marsh et al., 2005).

Finally, there is the question of how this kind of critical literacy can most profitably engage with some of the popular discourses about the harmful effects of media. These discourses often focus on the vulnerability of the young and the supposed dangers posed by early exposure to sex and violence; to manipulation through advertising; and to the possibility that they may become addicted to media. Although media education has contributed a degree of challenge to such views in the past, they have resurfaced in recent concerns about chat rooms, videogames, and online social networking. An open-minded and critical approach to media regulation and safety issues will need to have a central place in critical media literacy as it responds to changing contexts.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Analysis of Multimodal Discourse; Critical Literacy; Critical Pedagogy; Critical Theory and Literacy; Multimodality and Literacy; New Literacies of Online Reading Comprehension

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Critical Pedagogy

MANUELA GUILHERME

Introduction

Critical pedagogy is a movement that originated in the interdisciplinary field of education, which has nonetheless expanded into other disciplinary fields, and, therefore, it postulates an interdisciplinary approach regardless of which discipline it is applied to. Furthermore, the term "critical," with its various interpretations, has gained meaning from original theorizations, mainly in philosophy, sociology, literature, and political science, each one acting as a main inspiration for the various definitions of the concept of a critical pedagogy. The notion of critical pedagogy/ies thus encompasses several definitions depending on the focus adopted. This focus may be educational, sociological, political, ethical, aesthetic, and even methodological—for example, dialogical, interactional, and so forth—and therefore each theory of a critical pedagogy will take a different perspective on the teaching/learning praxis it advocates. The idea of praxis, involving a dynamics between theory and practice, is a strong and innovative feature of critical pedagogy and one that emphasizes a move away from the notion of methodology in education.

The multiple, flexible, and eclectic nature of critical pedagogy makes the often simple task of labeling, defining, or describing it very complex. However, when you are sufficiently knowledgeable of its theoretical sources and experienced in the teaching/learning processes it involves, you will definitely be able to recognize it when you encounter it. First, it is defined as "pedagogy" rather than "teaching method" for a reason. Critical pedagogy includes teaching as part of the teaching/learning process, viewed as a dialectical and dialogical reproduction as well as a production of knowledge. Second, it implies both an epistemological turn, in that it is aimed at the critical apprehension and rebuilding of knowledge, and a methodological shift, in that it focuses mostly on purposeful action, that is, what to do with knowledge in order to cooperatively transform society for the better, rather than on the interaction aimed at acquiring ready-to-consume knowledge. Finally, the implementation of a critical pedagogy always takes into consideration the "situatedness" of the individual in place and time, each of which should be understood in their different concentric circles—from local to global and vice-versa—and in relation to their historical layers. It is therefore very much concerned with identity issues, with the learner's individual and collective heritage and, as a result, with her/his social and political empowerment as a subject of knowledge since "critical pedagogy identifies the subjects who form the discursive community of learners and knowers" (Hovey, 2004, p. 248). On the whole, critical pedagogy may respond to the needs of contemporary education at all levels, from basic to higher education, as well as to the challenges of a global era, cosmopolitan societies, and an epistemological turn: "Critical pedagogy can provide insight and direction for this global turn in higher education by identifying sites of knowledge production resistant to change and offering productive ways of engaging in international or intercultural themes" (p. 247).

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Philosophical Background

The notion of a "critical pedagogy," as it is understood nowadays, gained momentum in the United States in the late 1980s and early 1990s, mainly based on North and South American thinking. It was also inspired by European thinkers, such as the Frankfurt School's critical theory (e.g., Horkheimer, Adorno, Habermas) and the French so-called postmodernism (e.g., Foucault, Baudrillard, Derrida, Lyotard), as well as by American feminists (e.g., bell hooks); but the real source has mainly been South American postcolonial writers. The works of Paulo Freire—the Brazilian philosopher and educator (1921–97) who travelled widely, living and working in Europe and Africa—have provided the most solid and innovatory ideas for the theorization of critical pedagogy, in particular due to the notion of "*conscientização*" that he disseminated throughout the academic field of education studies, aiming to strengthen the political responsibility of education and educators and the perception of education as cultural politics.

The works of Habermas and Freire only meet on very general points shared by both critical theory and critical pedagogy, such as the promotion of a strong and pragmatic relationship between theory and practice together with a metatheoretical approach, since "both authors work within the broader metatheoretical tradition of a critical hermeneutics . . . as well as take into account the social structural contexts of action" (Morrow & Torres, 2002, p. 15). In addition, both put a strong focus on communication/dialogue and on social agency. However, their "lifeworlds," to use Habermas's term, hardly touch, apart from the fact that they share the same generation and some of the academic readings on philosophy, sociology, and political science which predominate in European academic circles. But Freire could not or did not want to ignore his vision and knowledge centered on the southern hemisphere, or his educational experience with nonacademic communities in rural areas on both sides of the southern Atlantic, which he brilliantly explored and developed. This perspective in his work makes the difference and gives it the potential to respond to the needs of education at a time of globalization, mobility, and epistemological change. This is the reason why the critical pedagogy that he proposes is not geographically, culturally, or temporally circumscribed and it re-appears again and again as an ontological, epistemological, and intellectual pedagogical movement in various parts of the globe, adding to and expanding different theories and practices historically developed in specific communities.

Critical Pedagogy and Citizenship

Critical pedagogy meets the challenge of dealing with culture by "bringing the laws of cultural representation face to face with their founding assumptions, contradictions and paradoxes" (McLaren, 1994, p. 216). It is also interwoven with the notion of ethics, both observant of universal human rights and attentive to particular stories located in specific contexts. Giroux, one of the strongest advocates of critical pedagogy in North America, states that "ethics must be seen as a central concern of critical pedagogy" and in his view, within the framework of a critical pedagogy "ethics is taken up as a struggle against inequality and as a discourse for expanding basic human rights" (Giroux, 1992, p. 74). In relation to ethics, issues of human suffering, dignity, and emancipation are concerns which are central to critical pedagogy. Within this framework, critical pedagogy is vital for the accomplishment of multicultural/intercultural democratic citizenship education programs. In Freire's words, "to be human is to engage in relationships with others and with the world" and he adds that "men relate to their world in a critical way" as "they apprehend

the objective data of their reality (as well as the ties that link one datum to another) through reflection—not by reflex, as do animals" (1974, p. 3). These axiomatic statements also invite us to reflect upon the nature and nurture of the world to which humans relate and upon the humans who, in turn, relate to one another.

Pedagogy Versus "Standardcy"

Despite the diversity of practices, which is itself encouraged by the literature on critical pedagogy, and the various theories which have stemmed from the original idea of a critical pedagogy, it provides educators of every discipline with a systematic and solid corpus of principles and with a vision of the pedagogical process and purpose. Although during this first decade of the 21st century, the notion of "pedagogies" has been supplanted by the requirements of "standards" and, therefore, the focus on process has been replaced by a concern for results, as a product, and although critical pedagogies have tended to be overlooked, they have also been recognized as more and more indispensable in order to ensure that education does not betray its nature and intention. While the notion of critical pedagogy and the "standardmania" dominant nowadays are, in principle, radically incompatible, a knowledgeable and critical combination of the two may set limits to simplified overstatements of each of them. In this case, standards should be used within a wider framework of a critical pedagogy, and not the other way round, since the latter provides a philosophical—both ontological and epistemological—and a political understanding of diversity in education, while the former offer a number of general guidelines aimed at homogenizing education, which can also be helpful, provided they are treated as complementary, rather than as a priority. They are also radically divergent in their goals since a critical pedagogy aims for an active citizen prepared to intervene in society, while a "standards technocracy" aims for a "competent" individual ready to adapt to and serve society as it has been structured by dominant and established powers.

Although these are opposing visions of education theory in essence, they are nevertheless condemned, in practice, to cohabit in the same educational system and, therefore, in each individual "educatee." The education system, including life-long learning programs, must provide space for educators and educatees to develop both these visions, according to moral, civic, and professional patterns which are offered to them by their caring families and communities, their democratic societies, their critical educational institutions, and a global and free world.

Intercultural Responsibility: Moving Beyond Intercultural Competence

This reasoning also suggests a move beyond the concept of "intercultural competence" towards a notion of "intercultural responsibility," a term coined by Guilherme and developed by the international team behind the ICOPROMO Project, in particular by the Portuguese team (Guilherme, Keating, & Hoppe, 2010). This project aimed to build a bridge between pedagogy and training, producing materials for professional development in intercultural communication and interaction. While Phipps and Gonzalez (2004) and Byram (2008) worked on the idea of an "intercultural being," both Fleming and Risager, in particular, argued for an expansion of the term "intercultural competence." On "key aspects of the holistic concept of intercultural competence such as empathy, openness, tolerance of ambiguity, readiness to decenter, willingness to engage with others and to try anything

new," Fleming recognizes that "to say that someone possesses such traits is implicitly to say something about their propensity," and that "it is also to make a statement about how they will be rather than just how they will perform" (Fleming, 2009, p. 9). Risager also challenges the concept more and more daringly as she states that "intercultural competence is very much the competence of navigating in the world, both at the micro-level of social interaction in culturally complex settings, and at macro-levels through transnational networks like diasporas and media communications" (Risager, 2009, p. 16). The notion of "intercultural responsibility" therefore adds a social, relational, civic, and ethical component to the conception of "intercultural competence" in that it "raises issues concerning the negotiation between the similar and the contrasting aspects of different ethical frameworks, in particular how this negotiation is verbalised and performed" (Guilherme et al., 2010, p. 83).

A Critical Pedagogy of Language and Culture

Language and culture are therefore important elements to consider in critical pedagogy, in their power workings and identity shaping within multilingual and multicultural cosmopolitan societies. In addition, while critical pedagogy is essential for the full accomplishment of multicultural/intercultural democratic citizenship and professional education, second or foreign language and culture education is a fundamental element for the full accomplishment of a critical pedagogy. Giroux is very clear on this:

> Knowledge cannot be only indigenous to be empowering. Individuals must also have some distance from the knowledge of their birth, origins and specificity of place. This suggests appropriating those knowledges that emerge through dispersal, travel, border crossings, diaspora and through global communications. (Giroux, 2006, p. 165)

A critical approach to living experiences of difference is vital both for the development of a critical pedagogy and for the effectiveness of language and intercultural education, and both within the conceptual framework of a critical intercultural citizenship education. The interaction and complementariness between citizenship education, intercultural education, language/culture education, and critical pedagogy give way to the emergence of "critical cultural awareness," a notion put forward by Byram and adopted by Guilherme (Byram, 1989, 1997; Guilherme, 2002). Critical cultural awareness entails a *savoir s'engager*, according to Byram's definition, that is, it goes beyond a critical understanding and interpretation of difference and intercultural relations into critical commitment and action. Nevertheless, Byram reminds us that "the definition of critical cultural awareness emphasises the importance of individuals being aware of their own ideology—political and/or religious—and the need to be explicit in one's criteria of evaluating other people's action" (Byram, 2008, p. 165). Critical cultural awareness is also understood as going beyond an individual towards a collective dimension by undertaking "*a philosophical, pedagogical, and political attitude towards culture*" (Guilherme, 2002, p. 219). Not only is it geared towards self-awareness or one-to-one communication, but also to collective micro- and macro-contexts and, therefore, is sensitive and attentive to ontological, epistemological, social, and pedagogical issues and changes in language and culture education. In sum, it is through the development of critical cultural awareness, through "a critical pedagogy of (foreign) language/culture education and of intercultural communication/interaction [which] implies a critical use of language(s), a critical approach to one's own and other cultural backgrounds and a critical view of intercultural interaction," that a critical pedagogy constitutes such an impressive element and contribution to civic and global education (Phipps & Guilherme, 2004, p. 3).

Intercultural Mobility

Communities resulting from all types of intercultural mobility cut across the cultural limits of the social and professional structures from which they emerge and create very particular dynamics, with both positive and negative impulses. Intercultural mobility creates a rich and complex holistic process which goes beyond mere displacement, straightforward multicultural interaction, or detached cross-cultural communication. As Barton and Tusting point out "discourse and power are central to understandings of the dynamics of communities of practice" (2005). Thus, from our point of view the development of intercultural competencies requires not only an awareness of the meaning-making mechanisms, "*conscientização*"—a recurrent theme in Freire's works—but also dialogical tools for engaging in cross-cultural interaction and communication. It is also necessary to develop an ability to manage and explore these mechanisms and tools in order to achieve effective intercultural communication and interaction competence, which are fundamental for living in new and emerging communities and being active citizens in those communities (Guilherme, 2000). The conceptual framework of critical pedagogy makes all the difference for the definition of "effective" intercultural communication and interaction in that it develops the concept of dialogue in complexity, that is, by moving beyond the idea of apparent consensus and superficial harmony. Since a critical pedagogy looks suspiciously on power dialectics, dialogue is not "*naïf*," in Freire's words, and, therefore, "it cannot exclude conflict" since they "interact dialectically" (Freire, 1979/2007; author's translation). Within this view, "effective" critical intercultural dialogue does not aim at a final consensus or expect enduring cordiality throughout. Instead it is built upon unstable and dynamic platforms of understanding/misunderstanding and temporary agreements/disagreements, based on reciprocal and respectful communication and collaboration, to be negotiated again and again with an eye on the power issues to be fought for and against.

Intercultural Dialogue

The Council of Europe describes intercultural dialogue "as a process that comprises an open and respectful exchange of views between individuals and groups with different ethnic, cultural, religious and linguistic backgrounds and heritage, on the basis of mutual understanding and respect" (2010, p. 23). However, in the same document—the *White Paper on Intercultural Dialogue*—it adds that "the universal values upheld by the Council of Europe are a condition for intercultural dialogue. No dialogue can take place in the absence of respect for the equal dignity of all human beings" (p. 26). In fact, these statements may be mutually contradictory, since the former statement accounts for diversity whereas the latter accounts for inferred universality, and a critical pedagogy would address this. Either the affirmed universal values are understood to be mutually claimed, within a certain limit, or they are besides uniformly translated. Here lies the cornerstone of critical intercultural dialogue. According to Santos, "the central task of emancipatory politics of our time, in this domain [a counter-hegemonic human rights discourse and practice], consists in transforming the conceptualization and practice of human rights from a globalized localism into a cosmopolitan project" (Santos, 1999, p. 220). Among the five premises that he identifies as necessary for that transformation to take place, the second premise involves the recognition that "all cultures have conceptions of human dignity but not all of them conceive it as human rights" (p. 221). Santos adds a third and a fourth premise: that "all cultures are incomplete and problematic in their conceptions of human dignity" and that "all cultures have different versions of human dignity" (p. 221). Having this in mind, a critical pedagogy tackles the idea of universal values by assuming that they encompass the discussion of a variety of perspectives upon them.

A Critical Pedagogy of Interculturality

It is possible for an individual to accept, enjoy, and live diversity, to adapt and be personally and professionally successful in a multicultural setting. This individual can even experience some ontological and epistemological change. However, a critical pedagogy requires "a critical cycle," that is, "a reflective, exploratory, dialogical, and active stance towards cultural knowledge and life that allows for dissonance, contradiction, and conflict as well as for consensus, concurrence, and transformation" (Guilherme, 2002, p. 219). This process would entail the experiencing of a series of operations

> gathered in three main moments: (a) when one approaches and responds to culture(s)—experiencing, exploring, wondering, and speculating; (b) when one engages with and embarks on (inter)cultural observation, research and interpretation—appreciating, commenting, comparing, reflecting, analysing, and questioning; and (c) when one performs (inter)cultural acts and transforms cultural life—hypothesizing, evaluating, negotiating, deciding, *différant*, and acting. (p. 221)

Such operations should nevertheless require "a cognitive and emotional endeavour that aim[ed] at individual and collective emancipation, social justice and political commitment" (Guilherme, 2002, p. 219).

Although neither Habermas nor Freire focused on language education per se, the work of both revolved around critical issues in language education and linguistics in their theoretical developments on communication and dialogue. They, along with their followers, provided these fields in the social sciences with essential theoretical and praxeological conceptual tools within the critical theory and critical pedagogy frameworks that may offer some guidance for exploring the potential of linguistically and culturally diverse societies in a globalizing world, where central and peripheral nations are renegotiating their positions of influence. Nevertheless, a critical pedagogy of language and intercultural communication leads to a critical hermeneutics and heuristics of intercultural dialogue and collaboration which requires the development of a notion that Guilherme calls "intercultural responsibility," since it encompasses and implies a relationship—be it professional, civic, personal, or civic and personal—a commitment to social justice and an active involvement in matters of individual dignity and collective interest (Guilherme et al., 2010). This perspective requires more than intercultural competence, broad as this concept may be, and leads to a compromise between different traditions of cross-cultural relations stemming from European and non-European civilizations—northern, southern, eastern and western—brought into contact in commercial exchanges or religious missions within colonial efforts and establishments. On the whole, these various types of contacts have developed diachronically and fall into two main conceptual frameworks, multiculturalism and interculturality. The former features cross-cultural relations historically characteristic of northern-European settlements, while the latter sprung up over time and suited Iberian types of missionary imperialism and colonialism, and has also inspired contemporary theories of postcolonial intercultural dialogue. This is also the source of Guilherme's theorization on intercultural responsibility, which owes much to a critical pedagogy as it has been developed based on Freire and his followers' postulates.

SEE ALSO: Cultural Awareness in Multilingual Education; Mother-Tongue-Medium Education; Multilingualism and Ideology; Multilingualism and Language Rights; Multilingualism and Minority Languages; Multiliteracies in Education; Teacher Education for Multilingual Education

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Critical Pedagogy in Language Teaching

GRAHAM CROOKES

Critical pedagogy in language teaching is a perspective in language curriculum theory and instructional practice that supports and advances teaching and the study of languages in ways that would promote social justice. In this case, the popular term "social justice" is based on one or more critiques of present-day society (or societies) that reflect the interests of the working class, women, non-heterosexuals, ethnic minorities, and marginalized peoples, and includes perspectives that valorize environmental conservation and peace. "Critique" refers to systematic and constructive criticism based on empirical and theoretical study of society, language, and the person, reflecting alternative, progressive, or radical theories of societies, individuals, and languages. Language is understood here broadly, as having both structural and functional dimensions, socially implicated as discourse and thus involved in the construction of individuals and the maintenance and change of societal structures.

The term "critical pedagogy" was attached to the work of Brazilian literacy educator and curriculum specialist Paulo Freire (e.g., 1967/1974), its central figure, during the late 1970s; that is, some years after his writings became popular outside his home country. According to Henry Giroux (http://www.freireproject.org/content/henry-giroux-interview), he and Freire discussed what useful label could be attached to this line of work and considered "radical pedagogy," but discarded it as too challenging. They substituted the less transparent, perhaps more inclusive term "critical" for "radical." This suggests a connection to the area of social theory known as "critical theory," but the link is not close in early work in this area (Blake & Masschelein, 2003). Given the breadth of developments in this area, the very long-standing and unconfined term "radical pedagogy" might have been a better choice (see Gore, 1998). However, the fact remains that "critical pedagogy" is the most widespread term for social justice-oriented tendencies in applied linguistics and in language teaching. (For more explicitly theoretical or disciplinary understandings in applied linguistics, we also have the term "critical applied linguistics"; Pennycook, 2001.)

Initially, Freire's critical pedagogy was an approach to first and second language literacy based on Catholic, progressive, and radical critiques of society. In it, literacy was to be taught in such a way that the poor and the working class could interpret reality so as to be able to act on it to improve their lives. Class was the primary unit of analysis in Freire's work, along with the idea that the "human vocation" involved one's ability to care for others and improve oneself (see Taylor, 1993).

What critical pedagogy has become is much broader than that. Freire originally thought of oppression as mostly what is experienced by the working class at the hands of the ruling class. But as radical social thinking and theorizing developed along with the growth of social movements over the decades of the end of the 20th century, other important aspects or sites of oppression became more visible and organized. Thus the feminist movement entered its second wave after the late 1960s; race-based social critique became more obvious; gender orientation became recognized as a site of oppression and a place of pedagogy; and issues of peace and environmental protection all developed curricular manifestations.

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These areas developed instructional and theoretical manifestations within applied linguistics and language teaching. Mainstream critical pedagogy continued to develop as well (e.g., Apple, Au, & Gandlin, 2009).

Core elements of practice, both in Freire's L1 literacy work and in L2 language teaching of a critical nature, can be sketched without in any way suggesting that there is one fixed "method" implied by these elements. One central feature is that the elements of the language curriculum should relate to the issues of the students' life and the things in their life that are problematic, which they might be able to change and improve through the tool of literacy or an additional language, and the changed consciousness that would come from that. When Freire's original literacy courses were delivered within the students' home communities, the instructional team spent time living in the community, to develop an ethnographic critical needs analysis. A characteristic feature was and still is the use of visual images (pictures or photos) or realia concerning aspects of the students' life. Pictures may be used as projective devices; through commenting on them and discussing them, students develop or articulate some aspects of the topics or language content they wish to learn that they wish to be able to command. In addition, since one underlying goal of the approach is to foster the freedom and ability to act of the students, the students themselves play a substantial role in the development of curriculum content and even of materials.

L2 specialists began to take up Freire's work from the late 1970s on, but much more substantially after the mid-1990s. Foreign language teaching in the USA early witnessed publications identifying a critical pedagogy for languages such as French or Spanish in the high school or university. Crawford (1978) derived principles for language critical pedagogy from Freire's work, and these illustrate core values in critical pedagogy as well as alerting teachers to some of the challenges of implementing it. They include the following:

- The purpose of education is to develop critical thinking by presenting students' situation to them as a problem so that they can perceive, reflect, and act on it.
- The content of curriculum derives from the life situation of the learners as expressed in the themes of their reality.
- The learners produce their own learning materials.
- The task of planning is first to organize generative themes and second to organize subject matter as it relates to those themes.
- The teacher participates as a learner among learners.
- The teacher contributes his or her ideas, experiences, opinions, and perceptions to the dialogical process of the course.
- The teacher's function is one of posing problems.
- The students possess the right to and power of decision making.

The most prominent early adopter of Freire's ideas in English as a second language (ESL) was Elsa Auerbach, whose publications continue to be very important for teachers who wish to know what critical language pedagogy looks like in practice (e.g., Wallerstein & Auerbach, 2004). Newer proponents of critical pedagogy in world languages have provided useful analyses and advocacy (Reagan & Osborn, 2002) and some accounts of actual short pedagogical initiatives (e.g., Ohara, Saft, & Crookes, 2001). The area has also expanded into more academic language teaching (Benesch, 2009). In its emphasis on the needs of students and their active role in their education it is consistent with other recent developments such as task-based language teaching and learner autonomy.

Feminist pedagogy has been promoted in language teaching particularly by Vandrick (e.g., 1998), who draws on elements of feminist process to describe feminist classroom

participation practices, which ensure female students have equal time and assist and direct male students in fulfilling this goal. Feminist language curriculum means the teacher makes sure the classroom content is bias-free, avoids stereotyping, and puts women-related matters at the center of content.

For language teaching, race as a form or site of oppression has been worked on only quite recently. Oppression based on societal insistence on a particular sexual orientation and oppression of those not conforming (heterosexism) has been recognized by radical educational practitioners and has produced both practical and theoretical work in language teaching (e.g., Nelson, 2008).

It has been suggested that critical pedagogies are inappropriate for use in some cultures. This view strongly generalizes the characteristics of some parts of mainstream schooling or other temporary historical-cultural conditions to cultures or countries as a whole (see Shin & Crookes, 2005a). Reports of language critical pedagogy tended to favor ESL settings, though an increasing number of explorations are reported (e.g., Shin & Crookes, 2005b) concerning the teaching of English in foreign language (EFL) contexts.

The number of publications on language critical pedagogy continues to grow, reflecting (though perhaps exceeding) practice. In recent years the area has acquired a journal (*Critical Inquiry in Language Studies*) and a professional society (the International Society for Language Studies) notably hospitable to ideas of critical language pedagogy and associated positions. A research agenda for the area has become clearly specified (Crookes, 2009). The conceptual and theoretical expansion of the area (as well as the breakup and increased diversity of public and private sectors of education in the 21st century) allows the proponents of language critical pedagogy to view the future for their initiatives with optimism.

SEE ALSO: Needs Analysis; Teaching for Internationalization and Critical Citizenship; Teaching Language for Peace; Teaching Literacy

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Critical Period

KENNETH HYLTENSTAM

The scholarly discussion on the notion of a critical period (CP) for language acquisition dates back to the 1950s and 1960s, when first Wilder Penfield and Lamar Roberts (1959) and later Eric Lenneberg (1967) suggested that differences in the outcomes of child and adult second language acquisition most likely had a biological basis. Penfield and Roberts claimed that, up until the age of approximately 9 years, "the child's brain has a specialized capacity for learning language" (p. 240), and Lenneberg observed that "[f]oreign accents cannot be overcome easily after puberty" (p. 176). Lenneberg's treatment of the issue, however, was based mainly on first language data and demonstrated the effects of a presumed CP in the area of recovery from aphasia, for which children stood a good chance of total recovery, while recovery by adults was often less successful. He considered at the time that puberty coincided with the completion of hemispheric lateralization for language and therefore thought that the loss of a biological predisposition for language acquisition could be related to lateralization.

Over time, especially in recent years, the concept of a CP for language acquisition has come under intense debate. In particular, although there is unanimous acceptance of the fact that children eventually reach a more native-like level of proficiency in a second language than learners who start learning a second language as adults, there is no consensus that this difference has a biological foundation, as the critical-period hypothesis (CPH) would predict. This disagreement is partly due to differences in the understanding of what the notion of a critical period as such entails, to which we will return below. Another more basic and philosophical cause for the controversy is the central and symbolic role the notion plays in the nature–nurture divide. Ideological preferences among researchers to stress either biological or environmental aspects of language development play a role in this regard. The rhetorical tone that is sometimes noticeable in debates on the CPH to a considerable extent has its origin in the epistemological commitment of the researchers—nativist (proponent) or constructivist (opponent), cognitive (proponent) or social constructivist (opponent), general cognitive (opponent) or modular (proponent), and so on. Those opposing the existence of a CP argue that social, cognitive, or psychological factors provide a better explanation for the differences between children and adults in the eventual outcome of language acquisition. There is also some discussion of the fact that the configurational requirements of a CP, especially in terms of a clear cut-off point after which acquisition would not be possible, are not fulfilled. Although the rest of this entry will focus on the arguments for and the workings of a CP for language acquisition, space will also be given to a more detailed presentation of the criticisms that have been leveled against the existence of a CP.

The notion of a CP has its origin in the biological sciences and was used by ethologists to account for the observation that species-specific development and eventual behavior in a specific area are dependent on early and well-timed exposure to certain environmental stimuli. A CP can therefore generally be defined as a time span in early life during which the organism is responsive to stimuli that are crucial or relevant for a behavior (or capacity) to develop in keeping with a species-specific standard. If the organism does not encounter or experience the particular stimuli during the time span for sensitivity, that behavior will either not develop at all or eventually reach an end state that differs from the species-specific ultimate standard.

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Examples of such maturationally constrained behaviors range from imprinting in geese and song learning in songbirds to bonding in sheep and vision in cats and primates. The effects of maturation on minute details of behavior are continuously being mapped out, especially in neurobiological research. The classic results from studies on critical periods for vision in cats obtained by the 1981 Nobel medicine laureates David Hubel and Torsten Wiesel have been followed by detailed studies of vision in primates. Among the best understood negative CP effects in human vision are deficits in keen binocular vision and stereopsis among humans. Such deficits result from the fact that certain cells in the visual cortex, the so-called binocular cells, were not "activated" normally during the right period, between 4 and 6 months of age, because of a disruption in binocular vision. This happens, for example, in individuals suffering from *strabismus* (i.e., an affliction in which the two eyes look in different directions). For binocular cells (80% of the relevant visual cells) to develop normally, they must respond to the same input from either eye. When this is not possible because both eyes cannot focus on the same visual stimulus simultaneously, one eye, which becomes the "good" eye, takes over and all cells become monocular. The CP for stereopsis is thought to end around 8 years of age, as reflected in the effects of treatment, with better effects the earlier the treatment is carried out and little effect after 9 years of age.

Similar to what can be found for language acquisition, however, there are spectacular exceptions, as in the case of "Stereo Sue," who developed stereo vision at the age of 48 (Barry, 2009). In general, with strabismus as in many other behavioral areas, the dependence on a CP is not categorical: Some abilities can in fact develop also after the CP, which is therefore sometimes characterized as a "time of maximum neurological plasticity" (Cooper & Cooper, 2010). Furthermore, it has been demonstrated that brain plasticity in the area of vision can be manipulated pharmacologically. On the one hand, plasticity during the CP can be abolished by certain chemical substances, and, on the other, the CP can be extended through degradation of factors that normally increase at the end of maximum plasticity, such as myelination (the process whereby parts of the nerve cells are progressively covered by a fatty substance), in this case by mutants of the myelin protein (Daw, 2006).

Returning to language, the idea of a CP has been applied to all types of language acquisition, such as first and second language acquisition, typical and atypical language acquisition, and oral and visual (sign) language acquisition. In first language acquisition, it is only from the comparatively few exceptional cases of delayed exposure to any language at all that detailed information can be gained concerning the effects of a presumed CP. Examples include the well-known case of Genie, deprived of language exposure during childhood (Curtiss, 1977). For second language acquisition, in contrast, there is a massive amount of data available on language acquisition starting at different phases of the life span.

Considering the complexity of human language as a system of communication, it is highly likely that maturation will affect some but not all aspects of language behavior. Different parts or components of language may be constrained differently and heterochronously, that is at different times during development, as reflected in the notion of *multiple critical periods*. Also, much language learning occurs with reasonable ease over the entire life span of a human, for example, the learning of new vocabulary. What seems to be the key parameter distinguishing child learners from adult learners is the fact that young learners in the majority of cases seem to be able to reach an overall proficiency level in the second language, phonetics/phonology included, that allows them to be considered native speakers of that language, which is an extremely rare feat for adult learners:

> automatic acquisition from mere exposure to a given language seems to disappear [after puberty], and foreign languages have to be taught and learned through a conscious and labored effort. Foreign accents cannot be overcome easily after puberty. However, a

> person *can* learn to communicate at the age of forty. This does not trouble our basic hypothesis on age limitations because we may assume that the cerebral organization for language learning as such has taken place during childhood, and since natural languages tend to resemble one another in many fundamental aspects . . . the matrix for language skills is present. (Lenneberg, 1967, p. 176)

This quote from Lenneberg addresses many of the issues that have been researched and debated over the years. In addition to underscoring that (a) the ability to reach *native-like* ultimate proficiency for L2 learners is largely restricted to those who start using the second language before puberty, it considers (b) puberty as the end point for a CP, (c) the effect that any early language exposure can have on subsequent language acquisition, and (d) the difference between automatic or implicit acquisition assumed to be possible within the CP, and the conscious or explicit learning postulated to be the only remaining option for late learners. Furthermore, although unmentioned in this particular quote, Lenneberg proposed (e) *lateralization* as the neural mechanism that could account for puberty as the end point for the CP. However, this role for lateralization was soon shown to be incorrect.

With respect to the first point, namely the differentially obtained native-likeness in younger and older language starters, which must be considered to be the most central aspect of the hypothesis, empirical observations are compatible with the CPH, that is, that child learners frequently produce results in the range of native controls, whereas such results have rarely, or even perhaps never, been demonstrated by adult learners (Hyltenstam & Abrahamsson, 2003; Long, 2005). Despite the central nature of native-likeness, many studies on the CPH do not focus on this aspect of acquisition. More frequently, it is the level of *ultimate attainment*, native-like or not, among younger and older learners that is correlated with age of onset (AO). One of the most robust results in CPH-related research is a strong negative correlation between AO and ultimate attainment in a second language.

As for the second point, a multitude of studies have agreed on puberty or early adolescence as an end point for native-like proficiency levels in a second language. Several other studies have pointed to a discontinuity at earlier ages, in particular around age 6, especially for phonology and grammar (Long, 2005; see, especially, Johnson & Newport, 1989).

In relation to the third point, the hypothesis predicts that delayed exposure to an L1 should affect the level of ultimate attainment more severely than delayed exposure to an L2. Case studies of abused children who have not been exposed to any language before puberty (Curtiss, 1977) show severe limitations in development of grammar and pronunciation, whereas learning a second language from the same age allows high levels of proficiency in that language. It has frequently been pointed out that deprivation data are difficult to interpret in terms of a CP for language; however, similar results have also been obtained from studies of delayed first language exposure to American Sign Language (ASL) (e.g., Mayberry, 1993).

The fourth point, on the distinction between (implicit) acquisition and (explicit) learning, has been dealt with in a series of theoretical discussions about language-learning differences between children and adults (see DeKeyser, 2003). Some of its most well-known exponents are Krashen's *acquisition–learning hypothesis*, Bley-Vroman's *fundamental difference hypothesis*, and Felix's *competition hypothesis*. Also the various perspectives on access to universal grammar (UG) (full/direct, partial/indirect, or no access) in UG-framed SLA theories (see White, 2003) can be translated into a CPH framework (see Pinker, 1994: "use-it-then-lose-it").

With respect to neurological correlates of the CPH, greater prepubescent brain plasticity and successive decreases in such plasticity have generally been referred to. With respect to the specific character of this plasticity and change, a number of possibilities have been offered, all related to developments in the brain that are known to occur during childhood

and adolescence. Some of these (myelination, slow prefrontal development) have explicitly been explored as possible correlates of the CPH, while others have been mentioned in more general discussions about child–adult differences.

At a non-anatomic level, especially in recent decades, decreasing plasticity has been related to what has been called L1 entrenchment, that is, a perspective in which the first language progressively becomes an obstacle for additional language learning, thus impeding native-like second language ultimate attainment (Ventureyra, Pallier, & Yoo, 2004). In opposition to the latter view, Hyltenstam, Bylund, Abrahamsson, and Park (2009) claim that the empirical basis for this impediment account is weak.

As mentioned initially, a number of counterarguments to the CPH have been put forward over the years. There is a current consensus that some of these are, in fact, not valid arguments as they deal either with phenomena that are not covered by the hypothesis or with issues that are not decisive components of it. Examples of the former are early objections to the CPH based on results showing that younger learners are, in fact, *not* better than older learners in terms of the initial rate of learning a second language (Snow & Hoefnagel-Höhle, 1977). The reason this is not a valid counterargument is that the CPH is not concerned with what happens in the initial stages of second language learning but instead pertains to long-term impacts, that is, what is ultimately attainable in language acquisition/learning. An example of objections to nondecisive components is the type of criticism that says that, if lateralization is not the cerebral mechanism behind the differential behavior of children and adults, there can be no CP. The CPH is not dependent on lateralization as such; other cerebral mechanisms may instead be at work.

More substantial criticisms of the CPH have frequently focused on the correlation between AO and ultimate attainment. For various reasons, most prominently because correlation does not equal cause, results showing a strong negative correlation between AO and ultimate proficiency are not accepted by everyone as evidence of maturational constraints. It has been suggested that there may be other factors of a social or psychological nature, such as length of residence, input frequency, motivation, general cognitive changes, or first language use, that could explain these correlations (see Flege, Frieda, & Nozawa, 1997). However, in studies that have used statistical measures that are able to assess the relative weight of different influencing variables, it has consistently been shown that AO is the strongest and often only factor in predicting ultimate attainment. Often approximately 50% of the variance is explained by AO, whereas other factors add only 2–6% in accounting for the variance (see DeKeyser & Larson-Hall, 2005).

Second, it has been claimed that AO and ultimate attainment correlations exhibit patterns of a linear decrease rather than one of discontinuity, which would be expected for the CPH: At the end of the period there should be an obvious offset, after which we would expect a flattening of the interaction between AO and ultimate attainment. Studies such as Bialystok and Miller (1999) obtained results indicating a linear decline through all AOs, and Birdsong and Molis (2001) saw age effects among postpuberty and adult learners generally. These authors interpret their results as evidence against the CPH and suggest general age-dependent cognitive factors as causes. However, another possibility for linear decrease might be a combined effect in which maturation plays the dominant role until puberty and adolescence and in which social/psychological factors become more important for explaining variation after maturation is complete (Hyltenstam & Abrahamsson, 2003). In light of these findings, it is probably fair to say that the issue of discontinuity is not yet solved.

Finally, counterarguments have addressed the issue of native-likeness as evidence for the CPH. Some authors claim that native-like ultimate attainment among late learners is not as rare as has been previously thought, something that would indeed falsify the hypothesis. Birdsong (2005) reviewed frequencies of L2 participants who performed in the

range of native speakers and claimed that studies show up to 15% of postpuberty samples that reach this level. Conversely, many studies have shown that it is hardly the case that native-like ultimate attainment is always or nearly always obtained by learners with prepuberty AOs (Abrahamsson & Hyltenstam, 2009).

Research related to the idea of a CP for language is central to language acquisition theory, in particular for the understanding of defining differences between first and second language acquisition. Intensive efforts to improve our understanding of the factors behind age differences in language acquisition outcomes have been made over the last 15 years, but the field is far from approaching a consensus about the role of maturational constraints. However, current claims for reconsidering definitions of concepts, analytical instruments, and research methodologies (see, e.g., Hyltenstam & Abrahamsson, 2003; Birdsong, 2005; Long, 2005) are promising for decisive steps forward in the near future. A fruitful perspective may be to line up linguistic CPH studies with views on CPs in areas other than language. Expressions such as the frequently used "window of opportunity," in the sense of a brief and well-defined period of time during which an opportunity must be exploited or else missed, may be replaced by expressions such as "optimal periods," "sensitive periods," a "period of maximum neurological plasticity" (Cooper & Cooper, 2010), or "maturational period" (Hyltenstam & Abrahamsson, 2003). Such changes may be far more than mere changes in terminology and would instead reflect what we know for a fact: that language learning—and possibly acquisition—takes place even outside the period that is most advantageous for language acquisition. They would acknowledge the fact that a period of maximum plasticity does not end at a single point in time, but rather over a longer period during adolescence.

SEE ALSO: Bilingualism and Age; Explicit Learning in Second Language Acquisition; Fossilization; Implicit Learning in Second Language Acquisition; Second Language Representation in the Brain; Universal Grammar and Second Language Acquisition

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Critical Race Theory and Qualitative Research

RYUKO KUBOTA

Critical race theory (CRT) developed in the scholarly field of legal studies in the United States, and was later introduced to the fields of education and applied linguistics. It is built on the recognition that racism is endemic to American society. CRT foregrounds race-based critiques exposing—through counter-storytelling that challenges majoritarian narratives favoring White privilege—the injuries of racism experienced by people of color with the aim of eradicating racism and other social injustice. It challenges the normalcy of White Eurocentrism in various facets of everyday life, while acknowledging the dynamic and diverse nature of the experiences of racially subordinated groups. As such, CRT problematizes and rejects a modernist pursuit of the monolithic objective truth that explains human experiences and social practices through a lens of Whiteness. CRT is philosophically compatible with critical intellectual approaches such as postmodernism, poststructuralism, critical pedagogies, and critical multicultural education.

CRT is relatively new to applied linguistics. Research focused on race and racism within the field has not always drawn on CRT, nor has it been only compatible with qualitative methodology (e.g., see Rubin, 1992, for a quantitative study on the impact of instructor's race on students' listening comprehension and perceived accentedness). However, CRT provides researchers with a coherent conceptual lens to focus on race, racialization, and racism as essential factors that shape individual experiences of people of color and social practices. Before discussing CRT, it is necessary to define "race" and "racism" as key terms in this inquiry.

Race and Racism

Although the term "race" is often associated with physical characteristics such as skin color and facial features, it is in fact a social construct rather than a biological category. Scientific evidence has confirmed that all human beings, despite apparent physical differences, are genetically more or less the same. Nonetheless, the idea of race evokes differences among groups of people according to phenotypical characteristics that are visibly different. Thus, although race does not exist biologically in a scientific sense, the idea of race exists and can be investigated as a socially constructed category (Kubota & Lin, 2009).

In contemporary discourse, any reference to race is often avoided and instead replaced by the more benign notions of culture and ethnicity, two closely related constructs, constituting *cultural racism.* Bonilla-Silva writes: "*Cultural racism* is a frame that relies on culturally based arguments such as 'Mexicans do not put much emphasis on education' . . . to explain the standing of minorities in society" (2003, p. 28).

As for racism, various scholars have offered slightly different definitions. For instance, Omi and Winant (1994) define racism as "a fundamental characteristic of social projects which create or reproduce structures of domination based on essentialist categories of race" (p. 162). In general, racism is a mechanism that produces a relation of domination and subordination among racialized groups and perpetuates the unequal relation of power.

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In everyday discourse, racism is typically associated with bigotry and personal discrimination, which constitutes individual racism. However, racism also exists at the institutional level, as seen in racial inequality in employment, education, housing, health care, and so on. Moreover, epistemological racism shapes mainstream legitimated knowledge about history, philosophy, and other disciplines, based solely on White intellectual traditions (see Kubota & Lin, 2009).

Development of CRT

CRT has its origin in legal studies. It branched off in the 1980s from critical legal studies—a progressive movement that began in the 1970s within the liberal civil rights tradition in legal academia in the United States—with a specific focus on how law and legal practices produce unequal relations of power with regard to race (Crenshaw, Gotanda, Peller, & Thomas, 1995). Pioneered by scholars of color within legal studies, CRT has critically scrutinized the US legal system, which claims to be objective, fair, and colorblind and yet favors the racially and economically privileged. As such, CRT investigates and transforms the relationship among ideas of race, racism, and power (Delgado & Stefancic, 2001).

CRT has been developed into LatCrit (Latina/o critical race), AsianCrit (Asian critical race), and TribalCrit (tribal critical race) theories. They go beyond the Black/White binary to address specific issues, such as language, immigration, and stereotypes, that are relevant to Latina/o, Asian, and Native American communities. Other branches include FemCrit (critical race feminism) and WhiteCrit (critical White studies). While FemCrit promotes gendered analysis and feminist critiques of racism and classism, WhiteCrit exposes and problematizes White privilege to challenge racism (Yosso, 2005).

During the 1990s, CRT was introduced to the field of education (e.g., Ladson-Billings & Tate, 1995), addressing racial inequalities in educational policies, curriculum, instruction, and funding. A number of publications have appeared in such journals as *International Journal of Qualitative Studies in Education*, *Qualitative Inquiry*, and *Race Ethnicity and Education* and in edited books. In applied linguistics, research focused on race in general began to appear in the 1990s—for example, Amin (1997) examined ESL (English as a second language) students' conflation among Canadians, White people, and native speakers of English; and Ibrahim (1999) studied through ethnography a Canadian high school in which African immigrant youths *become* Black in discursive practices—but an explicit focus on CRT did not appear until the late 2000s (e.g., Kubota & Lin, 2006, 2009; Michael-Luna, 2008).

Tenets of CRT and Application to Research

Basic assumptions of CRT, summarized by Delgado and Stefancic (2001), lie in the recognition that racism is an ordinary part of everyday life, deeply ingrained in social structures; racism benefits the racially dominant group socially and economically, while disadvantaging others; racial categories are social invention; forms of racialization and racism are not static but in flux; each racialized group is always heterogeneous; and unique voices of people of color expressed through storytelling can expose hidden forms of racism.

In the field of education, Solórzano and Yosso (2002) discuss critical race methodology as an approach to research grounded in CRT. They list the following five perspectives: (a) the intercentricity of race and racism with other forms of subordination, (b) the challenge to dominant ideology, (c) the commitment to social justice, (d) the centrality of experiential knowledge, and (e) the transdisciplinary perspective (2002, pp. 25–6).

First, consistent with Delgado and Stefancic (2001), critical race methodology situates race and racism at the center of inquiry. At the same time, it recognizes the importance

of focusing on the intersectionality between the idea of race and other social categories including gender, class, language, nationality, religion, sexual identity, and so on. This allows any inquiry to be multifaceted and complex. Second, the modernist master narrative that privileges objectivity, neutrality, and colorblindness needs to be called into question and uncovered as to how it silences and distorts the experiences and perspectives of people of color. Third, research in this framework aims to eradicate not only racism but other kinds of oppression such as sexism and poverty. It promotes empowerment and social transformation. Fourth, lived experiences of people of color are exposed explicitly through such tools as "storytelling, family histories, biographies, scenarios, parables, *cuentos*, *testimonios*, chronicles, and narratives" (Solórzano & Yosso, 2002, p. 26). Finally, critical race methodology uses historical and contemporary analysis of the effects of racial, gender, and class injustices on people of color by drawing on multidisciplinary methods of ethnic studies, women's studies, sociology, history, law, and so on.

The fourth component above is elaborated as *counter-story* or *counter-storytelling*, which is defined as "a method of telling the stories of those people whose experiences are not often told (e.g., those on the margins of society)" and "a tool for exposing, analyzing, and challenging the majoritarian stories of racial privilege" (Solórzano & Yosso, 2002, p. 32). Counter-stories can be classified into personal stories or narratives (autobiographical reflection of oneself), other people's stories or narratives (stories told in a third person voice), and composite stories or narratives (stories involving two or more composite characters based on multiple data—see for example Solórzano & Yosso, 2001) (Solórzano & Yosso, 2002, pp. 32–3). In these counter-stories, racism, sexism, linguicism, classism, and other forms of injustice are woven together to expose the voices of people of color that have been silenced in the past, challenge the privileged majoritarian narratives, and provide alternative understandings of the society experienced from the margin.

CRT in Applied Linguistics

In applied linguistics, basic assumptions of CRT constitute a guiding principle of the volume edited by Curtis and Romney (2006), which is a groundbreaking collection of personal narratives written by scholars in the field of English-language teaching. Works included in Kubota and Lin (2006; 2009) and some other publications also draw on CRT as a conceptual foundation. These publications address such topics as (a) racial and linguistic discrimination against English teachers of color and (b) the racialization and racism experienced by ESL students of color.

First, counter-stories told by English-language teachers of color, whether native or non-native speakers of English, demonstrate how race, ethnicity, nationality, language, accent, and gender intersect each other to shape their experiences in employment, teaching, and everyday life. Because of the transnational nature of the field of second language teaching, experiences recounted by these professionals reveal injuries of racism not only in the United States, which is a context CRT has traditionally focused on, but also on the global scale.

One significant issue revealed in the counter-stories in Curtis and Romney (2006) is that the construct of the native speaker of English, which has been problematized as exerting hegemonic power in the scholarly field of teaching English, is actually associated with middle-class Whiteness in many contexts. This intersection produces discrimination in employment and classroom teaching not just for non-native English-speaking professionals but also for native English-speaking teachers of color.

This discrimination is deeply rooted in racism against people of color that can be found in many parts of the world. Indeed, narratives told by professionals of color and qualitative research, such as a study on Brazilian people's perceptions of the images of race

depicted in English-language textbooks (Taylor-Mendes, 2009), reveal that essentialized images of racialized groups, such as Blacks associated with people in poverty, criminals, and athletes, as well as a racial hierarchy of power, are endemic in discourses around the globe, shaping the race-based beliefs among students, teachers, parents, and administrators in EFL (English as a foreign language) contexts. This problem is partially caused by institutional racism that prevents professionals of color from taking teaching and leadership roles, creating a vicious circle of racism.

Second, some qualitative studies have focused on experiences of racialization among students to expose symbolic violence or hidden psychological injuries. For example, while East Asian students in White-dominant societies are typically constructed as the model minority, many are exposed to blatantly racist acts by some of their peers while growing up, or feel pressure to be racially and linguistically assimilated into the White mainstream group to the point that they look down upon their Black peers (see in Kubota & Lin, 2009). Furthermore, events such as 9/11 fuel an existing racial/religious prejudice—Islamophobia—and shape victimized or oppositional subjectivities among Arab international students in the Western world.

The unmarked dominant group in assimilationist racism is not, however, always White. For example, the unmarked dominant group in a high school in Hawaii is constituted by locally dominant students of Asian origin who oppress Micronesian newcomer students, producing a racial and linguistic hierarchy of power even within an ESL classroom (Talmy, 2010). Furthermore, the formation of racial identity is highly contextual. A Latina secondary school student, for instance, might aspire to take on an African American identity as a "cool" and oppositional category in terms of race and language. These examples warn against essentialist and static views of racial and linguistic identity in research.

Beyond research directly or indirectly inspired by CRT, the field of second language education, including ESL, EFL, bilingual, heritage, and foreign-language education, has investigated race, racialization, and racism in pedagogical contexts. Some research has focused on students' engagement in anti-racist pedagogies and investigated through classroom observations, oral and written discourse analysis, or interviews how students raised their awareness of different types of racism. Other studies focus on textbooks or teaching materials and analyze how the content addresses racial, ethnic, and linguistic diversity (Herman, 2007) or how a certain material influences students' racial identity (Michael-Luna, 2008).

Race and racism are also topics of investigation in the field of discourse analysis, as seen in the seminal work of van Dijk (1987). Through analyses of texts, interviews, and conversations, researchers have investigated the ways in which the superiority of Whiteness is legitimated, racism is explicitly and implicitly expressed, and people co-construct racist discourse in casual conversations. Although this research framework shares a focus on race and racism with CRT, the main purpose is not to expose the experiences of people of color in order to challenge the master narrative and transform existing power relations, but rather to investigate and illuminate the linguistic and discursive mechanism of racialization and racism.

Critiques of CRT and Responses

Although CRT is a powerful framework that goes beyond the normative White, Eurocentric, majoritarian epistemology, it has been criticized from several fronts, as delineated by Duncan (2005). First, critics argue that CRT fails to demonstrate how it is fundamentally different from existing scholarship, including such liberal traditions as feminist critique, in analyzing subjugated voices as opposed to dominant ones. Second, CRT is prone to be

oblivious to the diversity of the voices of the racially oppressed, especially the gap between privileged scholars of color and underprivileged people of color. A third critique is that the method of storytelling is one-sided and lacks the objectiveness required for social science research. Fourth, from a Marxist perspective, CRT is critiqued for its overreliance on race over class, a category entrenched in the political economy of capitalism, thus different from other social categories, and in need of special attention in the analysis of racism (see Kubota & Lin, 2009). In response to these criticisms, Duncan (2005) offers a solution in *critical race ethnography*, which incorporates diversified data from multiple sources, such as interviews, observations, documents, and statistics, supporting stronger claims about distinct experiences of people of color in relation to broader material conditions.

One unresolved question concerns who is entitled to use CRT to represent the voices of people of color. Hayes and Juárez (2009) offer a cautionary narrative, in which a well-meaning White teacher educator interested in learning to use CRT could substitute issues of race with social class through a colorblind lens and at the same time gain rewards for advocating for racial minorities. Even when researchers of color study the experiences of people of color from within, what is the responsibility of the researcher beyond exposing the voices of the oppressed (Lee & Simon-Maeda, 2006)?

CRT as well as general inquiry into race and racism is still at an early stage of evolution in applied linguistics. Further interdisciplinary research would expand scholarly understandings and praxis for social transformation.

SEE ALSO: Critical Pedagogy; Culture; Ethnicity

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Critical Theory and Literacy

BARBARA COMBER

Introduction

Critical theory is typically referred to in the singular, but the term refers to multiple theories coming from different disciplinary traditions, which compete with each other for dominance and engage in debates about their relative explanatory power. It is concerned with understanding how power relations are produced and how they might be transformed. Critical theory champions both analysis and action, with clear intentions for justice, aiming for understanding and change (Young, 1998). Historically critical theory has its genesis in the 1920s in the German philosophical tradition of the Frankfurt school, but critical theory continues to evolve, each iteration addressing the shortcomings of predecessors.

While protagonists may contest the label, many feminist, multicultural, postcolonial, poststructuralist, indigenous, environmentalist theories are clustered within the family of "critical theories" in their allied interrogation of the politics of everyday life. Some emphasize economic power; others the gendered, racial, religious, or sexual underpinnings of social, cultural, and political relations. In terms of literacy, critical theories associated with multiculturalism, cultural-historical approaches, policy analysis, linguistics and semiotics, development and learning, and feminism continue to have an impact. Key refrains echo across these bodies of work—consciousness-raising, reading against the grain, reading the word and the world—and vocabularies—ideology, deconstruction, critical discourse analysis, empowerment, identity, voice, and dialogue—that signal the politics of literacy.

Questions about knowledge are important for literacy studies—how knowledge is produced and represented and by whom. The emergence of anthropological, ethnographic, sociolinguistic, and qualitative research into literacy led to new questions for inquiry, new approaches, and new insights. The categories underpinning research on populations came under scrutiny. Key critical moves were from assumed provable certainty about the way things are; to deep troubling about the inequities of the way things are and responsibility to make a difference; to contestation that researchers even know where and how to look or how to name the problems which they purport to study.

Critical theory changed how literacy is understood, how it is studied, and the design of literacy pedagogies. The question of what constitutes literacy is discussed first in this entry, drawing insights from selected critical scholars whose work has historically been proven to be internationally significant. A discussion of competing explanations of unequal outcomes of school literacy learning follows. More recent critically oriented literacy studies, informed by Foucault and Bourdieu, are considered. To conclude, ongoing challenges faced by critical theorists are outlined.

What Constitutes Literacy?

Until the middle of the twentieth century the term "literacy" was not in common use. Initially, "literacy" (or, more likely, "illiteracy") was used in adult education or with reference to the needs of the developing world. Literacy also featured in discussions of the

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conditions under which different racial groups could immigrate to Western nations (Lake, 2005). Literacy was construed as a unilateral functional skill to be mastered. Illiteracy was seen as a deficit and blamed on the people so diagnosed. Literacy was also set up in opposition to orality, with literate cultures seen as more developed than those of oral traditions. Critical theory disputed and complicated these assumptions.

The impact of Brazilian scholar Paulo Freire in the 1960s and a number of seminal anthropological studies of reading, writing, and communication practices (Heath, 1983; Street, 1984) undertaken in the 1970s and 1980s shifted attention toward the sociocultural and political nature of literacy. Questions such as who had access to which forms of literacy practices, and to what ends, began to be raised in relation to race, ethnicity, gender, and class, and later with respect to sexuality and locality. The New Literacy Studies (Barton, Hamilton, & Ivanic, 2000) and critical sociological studies have continued these lines of inquiry into contemporary practices of multimodal and digital literacies.

Four critical educators are discussed here: Paulo Freire, social activist and literacy educator of adult workers in Brazil; Sylvia Aston-Warner, early childhood educator of Māori children; Brian Street, ethnographer of literate practices in different cultures and communities; and Harvey Graff, historian of literacy myths and legacies.

Freire argued that people need not only to read words, but also to read the world (Freire & Macedo, 1987). He insisted on the importance of critical analysis of the organization of contemporary life. Literacy should transform workers' lives and reposition teachers as "cultural workers." Literacy would reorient the alienated masses, overcome cultures of silence, develop a critical consciousness, and liberate workers from dominant ideologies and oppressive practices. Reading was a political, not an academic, utilitarian, cognitive, or romantic activity (Freire & Macedo, 1987; Lankshear & McLaren, 1993).

Preceding Freire's (1972) *Pedagogy of the Oppressed*, Sylvia Ashton-Warner was teaching Māori children to read in New Zealand. Delays with publication of *Teacher* (Ashton-Warner, 1963) did not prevent it impacting on Freire, who acknowledged her approach to "generative words"—vocabulary that assists children making a cultural bridge to school learning.

Ashton-Warner (1963, p. 33) stated: "First words must have intense meaning for a child . . . Pleasant words won't do. Respectable words won't do. They must be words organically tied up, organically born from the dynamic life itself."

Influenced, like Freire, by critical psychoanalyst Erich Fromm, Ashton-Warner insisted on the psychological aspects of learning to read, leading her to question the normative class and cultural assumptions of early texts. Literacy acquisition was no straightforward mechanical task, but a deeply emotional, sociocultural experience. Hence she argued that "a Maori child should begin his reading from a book of his own colour and culture" (Ashton-Warner, 1963, pp. 33–4). Her attention to critical dialogue between learners, teachers, and texts highlighted the social, cultural, and political nature of early literacy.

Studies of cross-cultural differences in literacy revealed a multiplicity of situated practices; hence the singular construct, "literacy," as the collective label for reading and writing skills, became a problem. Reflecting on his 1970s research in a mountain village in Iran, Street (2001) realized that literate practices were integral to relations of everyday life and commerce. An "autonomous" view of literacy (as a set of skills with supposedly predictable benefits) ignores the ways in which people go about reading and writing to accomplish specific social, religious, and economic goals—practices that may remain invisible to Western observers. Street's "ideological model of literacy" drew upon cultural anthropology, history, critical and literary theory to understand the uses different people make of literacy.

Taking a historical approach to literacy, Graff (2001) identified myths about its assumed benefits. He showed how difficult it is to change practices that are historically embedded, how complex literacy is conceptually, the non-neutrality of literacy, the impact of schooling

on literacy, the dangers of dichotomies (such as oral and literate), the importance of motivation in literacy learning, the historical fact of multiple pathways to literacy learning, and the lack of predictable relationships between mass literacy and economic development. Graff warned: "History holds powerful lessons in disappointment and misplaced expectations. Critical literacy needs to learn from those lessons" (2001, p. 13).

He reviled "the newly proliferating literacies"—the tendency to describe everything as literacy—emotional, moral, environmental, food literacy, among others (Graff, 2001, p. 7). Yet he did not dispute the fact that there are many literacies, including alphabetic, scientific, spatial, visual and aesthetic, and argued that educators need to "expand our understanding of communicative contexts and channels in sociocultural contexts" (Graff, 2001, p. 15) through an interdisciplinary program.

Following engagement with critical theory, literacy was understood as historically, culturally, and socially situated practices and was no longer seen as a universal skill through which all populations benefit equally. As literacy programs are ideologically underpinned by particular worldviews, the extent to which communities take up various literate practices is contingent upon their being able to adapt them to their own interests (Street, 2001).

Literacy and Unequal Outcomes: Insights From Ethnographies of Schooling and Families

Ashton-Warner anticipated the consistent finding that, in the developed world, poor, marginalized, and English as a second language learners do less well with school literacies. Internationally lower levels of literacy achievement among disadvantaged student populations have been consistently documented. Decades of research into school literacies in English-speaking education systems has addressed this phenomenon, contesting deficit explanations, which claim that these children (or their families) are deficient and therefore not educable. This explanation is clearly anathema to critical theorists as it blames those with limited power and different cultural and linguistic capital for what they cannot automatically access and display. Three alternative critical explanations for unequal performance have emerged:

- the difference explanation, which argues that these children have different knowledge and language practices than those valued by schools;
- the "structural inequality" explanation, which argues that schools reproduce the inequalities which already exist within the population; and
- the "resistance" explanation, which argues that nonmainstream students actively resist White middle-class schooling.

The Difference Explanation

A key move against the dominance of deficit discourses has been work around the construct of "difference." According to this explanation, children from disadvantaged communities have difficulties with school literacy when their home language and literate practices differ from those required at school. It was not that such students lacked experiences or facility with language but that there was a discontinuity between school and home practices (Heath, 1983; A. Luke, 1993).

Heath's seminal study paved the way for school and family ethnographers of literacy internationally (see Hull & Schulz, 2001). Heath (1983) found that the language and literacy practices of three different communities varied in patterns that related to class, race, and religion. Children whose home language and literate practices matched most closely

those of the school were advantaged when it came to school literacy. Heath went beyond analysis to action in training a group of teachers and students as ethnographers to examine how the language and literate practices of their communities might be considered as learning resources. Ethnographic methods became a pedagogic tool for teachers and students exploring language difference.

Following Heath and Street, the significance of context of situation, the non-neutrality of texts, language choices, and school expectations for student display continue to underpin research designs in literacy studies (Barton et al., 2000). Many researchers working with similar theoretical resources, especially Bakhtin, explored the social nature of children's appropriation of school and community texts (Dyson, 1989; Hicks, 2002). Such theories provided new directions about where to look, what to look and listen for, and the kinds of questions that should be asked about literacy events.

Yet Heath's work, and similar ethnographies, has been critiqued in terms of its optimism, overstating the case for literacy, limited theorizations of class, and whether calling attention to difference addresses unequal power relations and systematic inequalities.

The Structural Inequalities Explanation

If students were disadvantaged by their home experiences (as both deficit and difference arguments assume) and simply needed more instructional time, one would expect that the performance of children who were disadvantaged at the beginning of schooling would gradually "close the gap" over time. However, more schooling increases, rather than reduces, the gap, giving rise to the hypothesis that there are structural inequalities through which the educational systems construct inequitable opportunities and outcomes (Anyon, 1981; Connell, 1993). According to this explanation the structures and assessment practices of schools, educational bureaucracies, and credentialling authorities ensure that privileged students are rewarded for the resources, competences, and practices they access at home and disadvantaged students are classified as poor performers and receive a watered-down curriculum. Institutional practices such as streaming or ability grouping can maintain different positions and ensure that disadvantaged children get differential treatment. At key transition points children are assessed in ways that determine both current placements and possible futures and these assessments are made on the basis of norms constructed from the "ruling class" (Freebody, 1992). Schools, departments of education, and credentialling bodies assess individuals in ways that authorize mainstream, White, middle-class Standard English, ensuring that children's linguistic resources are differentially valued.

Reading instruction received by children in different ability groups varies in quality. Typically, children in "high ability" reading groups read whole texts, focus on enjoyment and understanding, and are asked challenging questions, whereas children assigned to the "low ability" group (often students from disadvantaged backgrounds) focus on words and word parts, are interrupted more, read much less, and are asked literal questions (A. Luke, 1993).

Given that available resources construct different possibilities for literate activity, one other indicator of structural inequalities can be seen in the contrastive circumstances of schools—where they are located, how well they are resourced (libraries, ICTs, sports fields, staff, volunteers, etc.), and the well-being of the community they serve. Poor schools can raise less money from their communities and consequently they may have poorer quality equipment, buildings, and amenities. Yet poor schools have more welfare-related and curriculum modification work to do in order to meet their community needs (Thomson, 2002).

According to the structural inequality argument, schools in Western nation states are the product of White, middle-class, capitalist societies which privilege White, middle-class

competitive knowledges and literacies and exclude other practices. It follows that schools will sort and select students for life futures that maintain the inequities on which such economies function. Yet explanations that constitute educational institutions as sites of cultural reproduction may downplay students' agency.

The Resistance Explanation

Not all researchers characterize disadvantaged children as the victims of their families or of powerful education systems. In the sociological tradition of Willis (1977), some literacy researchers theorize that certain groups of "minority" students resist what school systems have to offer in order to protect their own identities in relation to their peers and communities (Giroux, 1983; Christie, 1989). They may perceive that they have more to lose by conforming to mainstream ways of being, speaking, and doing than they stand to gain. No guarantees come with scholastic achievement but there may be immediate negative community consequences that impact on students' identities and social lives.

Nonmainstream children, Gee (1990) argues, have difficulties with dominant discourses because they conflict with the values and viewpoints of their primary discourses. Schools require children to use new language in new ways. In the Australian context, Christie claims that, "In order to preserve their Aboriginal identity from the intrusion of individualistic European teaching methods, Aboriginal children everywhere have been actively resistant to learning to read and write" (Christie, 1989, p. 28). Ogbu argues that schools need to "develop programs to help these minority children learn how not to equate mastery of school culture and language with loss of group identity and security" (Ogbu, 1985, p. 868). Literacy programs need to be constructed with input by the communities they serve.

Since the 1980s, critical approaches to literacy have developed, including the New Literacy Studies, critical literacy, multiliteracies, and cultural-historical approaches. A substantial body of work shows how different groups are excluded from different forms of institutionalized literate practices, but also the ways in which different people appropriate and redesign literate practices in different contexts.

Contemporary Critical Studies of Literacy

Critical and feminist research expanded among literacy scholars in the 1990s, much of it led by scholars of color, of working-class heritage, and those working in oppressive political conditions. Pierre Bourdieu and Michel Foucault provided new understandings about how power works in relationships to language, institutions, and identities; hence their theories have proven particularly generative for literacy researchers.

Michel Foucault and Literacy Studies

Foucault has been variously described as a historical philosopher, a social scientist, and a sociologist; however, his work defies labels. He studied the processes by which human beings are constituted as subjects, both through discourses associated with the human sciences (psychology, demography) and through the institutional practices of modern societies (examination, surveillance, confession). Of particular interest to researchers in literacy studies are his constructs of power/knowledge, discourse/subjectivity, and discipline/surveillance.

The use of Foucault's "tool-box" has grown as part of a broader move from psychological discourses to sociological discourses informing literacy studies (Baker & Luke, 1991). Foucault's work has been used in two main ways. First, there are studies that take a historical perspective—including both archaeological and genealogical approaches—on

the role of literacy and schooling in the formation of modern citizens. Second, there are studies using Foucauldian analytical tools in examining contemporary discursive and institutional education practices.

Studying schooling in the nineteenth century, Donald (1992) investigated how illiteracy was constituted as a problem. He tracked the production of connections between illiteracy and criminality and the school's function in maintaining surveillance of the children of the laboring poor. School literate practices do not necessarily create spaces of freedom, and can be employed as a part of the disciplinary practices of the institution, managing both teachers and students.

Carmen Luke explored the emergence of discourses on childhood and pedagogy in relation to the early printing industry, the 1525 Peasant Rebellion, and Lutheran reform. She demonstrated the use of institutional literacy to make students and teachers identifiable "visible" objects of knowledge "through the written trace left by their own writings, and by the notations made of them by their supervisors and the surveillance experts of visitations" (C. Luke, 1989, p. 126). Through the literate work of students and teachers the school acted as an apparatus for surveillance, examination, and record keeping of the population.

Taking a genealogical approach, Hunter (1988) argued that child-centered pedagogies and normative social training operate together in forms of modern literacy pedagogy, contributing to the management of increasingly diverse populations. Intellectuals have misguidedly reduced English teaching to a series of binary choices: freedom versus sophisticated social control, or personal growth versus useful skill. Given these oppositions, the teacher is seen as either transformative intellectual or as a professional with a limited set of duties and obligations.

Similarly, Patterson argued that personal response pedagogy brought the "real life of the child" into the "corrective space of the school" (Patterson, 1993, p. 66). While the rationale is that it allows students freedom to express their own meanings and that all authentic responses are equally acceptable, personal response "may be better understood as a result of the need to find alternative ways for engaging the attention and supervising the moral and ethical development of increasingly diversified secondary school populations" (Patterson, 1993, p. 66). In Patterson's analysis reader-response pedagogy is a site for surveillance.

Because schools combine detailed information on each student with monitoring of their moral conduct they can be seen as the "paradigm of modern technologies of government" (Donald, 1992, p. 12). The contention from these genealogical studies is that literacy education is part of a broad sociopolitical move to govern diverse school populations (Hunter, 1988; Patterson, 1993). Pedagogical approaches that make claims to liberating the individual can also be seen as practices in which individuals learn to govern the self and to produce themselves as proper citizens.

Allan Luke and colleagues (Luke, 1992) examined how discursive and institutional practices constructed the school literate subject. They explored the ways in which such practices exclude and include, advantage and disadvantage, different groups of school students. Foucault's work provided "a model for rethinking pedagogy as discourse and inscription" (A. Luke, 1992, p. 112). Similarly, Woods and Henderson (2010) reexamine Reading Recovery as an instance of disciplinary practice that regulates the teacher's and the child's talk, movement, and gaze around texts, where tutors are trained to watch, interpret, and regulate children's behaviors; simultaneously the tutors' pedagogical repertoires are reshaped.

Foucault's destabilizing of grand theories and truth claims is pertinent to literacy educators working for social justice, in problematizing the myth of the universally empowering properties of literacy.

Pierre Bourdieu and Literacy Studies

Bourdieu's work was informed by anthropology, philosophy, and a range of critical theory. His sociological framework allows education scholars to "address and redress . . . systematic inequities that are generated by the schools, their affiliated language-in-education policies, and their everyday practices" (Albright & Luke, 2008, p. xi). Bourdieu directs researchers to consider children's different and particular family histories (as embodied in the habitus) and the contrasting resources (capital) and repertoires of practices that are available to them in everyday life which they take with them to schooling and other fields.

While many researchers have engaged with Bourdieu's work to look at questions of class and school success (Reay, 1998; Lareau, 2003), it has taken some time for his work to be fully explored in literacy education, partly due to delays with translation. Scholars are now employing his rich concepts to understand how class impacts on students' success with school literacies (Compton-Lilly, 2007; Albright & Luke, 2008).

Compton-Lilly (2007) conducted longitudinal studies of Black, working-class, urban youth with a particular focus on family reading practices. Using Bourdieu's (1986) approach to capital (embodied, cultural, and social), she postulates that families have different "reading capital" that differentially position youth in terms of academic success. While some students are privileged when their capital is recognized at school, for others it remains invisible or is considered inappropriate for school reading. The effects of capital are always subject to their value in specific fields of activity.

A recent collection on Pierre Bourdieu (Albright & Luke, 2008) is organized around his concepts of field and habitus and explains doxa, reflexivity, symbolic violence, exchange and capitals, and other Bourdieusian key words in the context of literacy education. Contributors show how Bourdieu goes beyond binary accounts of agency or reproduction, and explore a range of educational phenomena—the lifelong emergence of a scholarly habitus across time, places, and institutions; literacy education as a discursive political field and as a cultural gift. Common to these chapters is Bourdieu's insistence upon ongoing researcher self-reflexivity. Other writers address contemporary problems facing educators—the dominance of English as the language of instruction, the incorporation of new technologies in schooling, the affordances and limits of out-of-school popular literacies for school learning—and in so doing demonstrate the versatility and depth of Bourdieu's oeuvre, while adjusting, adapting, and supplementing elements of his "heuristics" to explain the specific conditions of their contexts.

It can be misleading to give too much credit to individual theorists. Most researchers work with ensembles of theories, or "hybrid theoretical discourses" (Miller, 1996), rather than limiting their analyses to that of any one person or perspective—for example, working with Foucault and feminist theory, or Bourdieu and feminist theories, or Bourdieu and Bernstein, or Bakhtin and feminist theories.

Many critical theorists (including Appadurai, Bernstein, Bourdieu, de Certeau, Derrida, Fairclough, and Foucault) provided theoretical resources for rethinking literacy practices. Each invented concepts and forms of relational analysis of contemporary institutions and associated practices that have informed literacy studies. Feminist theory has reshaped literacy studies in ways that cannot be fully subsumed under critical theory, as it contributed distinctive policy and pedagogical interventions (Moss, 1989; Gilbert & Taylor, 1991; Davies, 1993).

Ongoing Challenges

Several challenges face educational researchers regarding the limits of what can be accomplished in and through schooling. The "emancipatory role of teachers" (Young, 1998,

p. 175) must be questioned along with the limits of what effective schools can deliver. The inequitable outcomes of mass schooling can "only be overcome in a learning *society* which privileges learning relationships in *all* spheres and sectors of society" (Young, 1998, p. 170, emphasis in original). Claims made both for the utilitarian and the utopian benefits of literacy, along with assumptions about teachers' capacities to ensure equal outcomes for all students, need interrogation.

The language of critical theory remains exclusive and abstract (Ellsworth, 1992), hence reducing its potential to effect widespread change and recruit marginalized groups. This is ironic given its espoused political project to redress oppression and injustice. Feminists argue that the language is symptomatic of more significant flaws in critical theory, which in regard to critical pedagogy run the risk of reproducing "relations of domination" (Ellsworth, 1992, p. 91) in that people's historical and contemporary contexts, desires, and positioning are ignored. Critical theorists must subject their own practices to stringent evaluation as they would have others do.

Developing understandings of positive discursive practices across new sites and in various modes and media is now urgent. Lam's accounts of immigrant adolescents' uses of technoliteracy practices to "maintain social relationships and affiliations across countries" (2009, p. 377) provides a prototype for new kinds of literacy research. Such work attests to the multiplicity of linguistic and multimedia resources deployed by youth in order to communicate across the time, space, and language constraints that often limit what teachers and students accomplish in schools. Critical approaches to multiliteracies will need to invent new frames, vocabularies, and pedagogies for changing population, communication, and pedagogical environments.

SEE ALSO: Critical Discourse Analysis and Critical Applied Linguistics; "Critical" in Critical Discourse Analysis; Critical Literacy; Critical Pedagogy; Critical Race Theory and Qualitative Research; Literacy and Multicultural Education

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Critiques of Language Policy and Planning

THOMAS RICENTO

We need to make a distinction at the outset between language policy and planning (LPP) as a purposeful activity carried out by elected officials, ministries of government, officially sanctioned bodies (such as school boards and language academies), community groups and organizations (such as churches), businesses, and families (who may, for example, wish to maintain the learning and use of a particular language which might not be taught in the schools), and the study of language policy and planning by academics. The latter activity, especially over the past several decades, tends to be concerned "with investigating the processes by which languages and language varieties obtain particular statuses in various domains of private and public life, and how policies (whether explicit or implicit) reaffirm or attempt to modify in some way such achieved or ascribed statuses of languages" (Ricento, 2007, p. 212). In addition to analyzing (and often criticizing) the rationales and effects of language policies on various social groups and speech communities in diverse settings, academic researchers may advocate particular policies or policy directions to further particular agendas, such as increasing support (financial and political) for threatened languages, or promoting improved educational access for speakers of minority or threatened languages. In this entry, I will discuss the research and theorizing done by scholars in the field of language policy and planning and describe how this work relates directly to people's everyday lives. Because language is imbricated in all aspects of social life, critiques of language policy and planning emanate from a variety of disciplines in the social sciences and humanities, including linguistics, critical theory, sociology, philosophy, economics, anthropology, and cultural studies, to name a few.

In recent decades a great deal of research has been conducted on the ways in which language policies, whether those policies are explicitly planned or the result of institutional practices and customs, may limit or restrict educational access, and ultimately the social mobility, of speakers of minority languages in many contexts around the world. Our ability to function successfully in society is strongly influenced by the language(s)/language variety(ies) we speak (or don't speak). Yet, as Lippi-Green (1997) has so eloquently shown, discrimination based on language is particularly frustrating and unfair, as most people are not able to easily change the language/language varieties they grow up with. Furthermore, language is not only useful as a means of (inter)communication between people for various purposes, it also constitutes an important aspect of our identity as members of various social groups (family, community, society, nation, region, world) (Ricento, 2005a). Yet, millions of school-age children who arrive at school speaking minority languages, or "nonstandard" versions of the school language, are disadvantaged linguistically, and if they are from a sociocultural background different from the mainstream culture, they may face additional barriers to achieving academic and social success. For example, the negative effects of speaking a so-called nonstandard variety of English, for example African American Vernacular English (AAVE), in formal school settings can be devastating for young children (Rist, 1970). While schools may not officially discriminate against children who speak AAVE, society (employers, writers of standardized tests, etc.) does discriminate against speakers of AAVE, who may find they are barred from educational, career, or housing

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opportunities based solely on the language variety they speak. While children who arrive at school speaking AAVE may develop more "standard" varieties of English, children who arrive at school already speaking (and reading) a variety closer to standard English have a huge advantage, and this advantage increases throughout their schooling career (Hart & Risley, 2003). The use of AAVE readers as a means to bridge acquisition of "standard" English has been severely criticized by many school personnel and language purists because it gives status to what they perceive to be "bad" or "corrupted" English. Yet, it is assumed (incorrectly) that speakers of AAVE should automatically acquire the dominant ("White") variety and failure to do so is an act of resistance, or lack of motivation. Yet, how likely would it be that speakers of "standard" (White) English would be willing to acquire AAVE if the tables were reversed and AAVE were the high-status English variety in the United States?

In other contexts, students who arrive at school speaking a nonminority language, and who are schooled in that language, may also be disadvantaged. For example, in many African and Asian countries, former imperial languages such as English and French continue to have high status and offer access to superior educational opportunities, particularly at the tertiary level, even though access to education in these languages is unattainable for the large majority of the population. Despite policies that support teaching and learning in indigenous national languages in these countries, the legacy of imperialism combined with the international appeal and power of global languages, especially English, undermines such policies (Ricento, 2010). In South Africa, for nearly 50 years, the system of racially segregated schooling widened the gap between the education of Africans and Whites; for many Africans, Bantu education (racially segregated education in one of the indigenous African languages) meant inferior education, and became emblematic of the apartheid regime. As a result of this history, a deeply ingrained negative attitude toward the use of African languages as medium of instruction developed, an attitude that persists to the present day, and which disadvantages those who are educated exclusively in African languages. Another example of how the European colonial legacy continues to influence language-in-education policies is found in India. The English language assumed a pivotal position during the Raj in India (1858–1947), separating British rulers from their subjects, but also Indians who spoke English from those who did not. This legacy of division—between Indians who speak and are educated in and through English, and those who are educated exclusively in vernacular languages—persists to the present day in Indian society. According to Crystal (2003), based on 2001 census data, only one-third of one percent of the Indian population speak English as their first language (350,000 out of a total population of 1,029,991,000), while 200,000,000 use English as a second language (about 20% of the total population). Yet, even though English is clearly a minority language throughout India, those who are educated in it beginning with primary school have a decisive advantage over those who are educated through the medium of the local vernacular language. This is because the prestigious science-based disciplines at the tertiary level, such as computer science, engineering, the hard sciences, pharmacy, and medicine, tend to be available only in English. The English proficiency of students educated through vernacular-medium schooling is generally lacking at high school completion, which prevents these students from entering these professions (Ramanathan, 2005, p. 6). Ramanathan (2005, p. 35) concludes that

> by validating the role of English as much as it does at the tertiary realm and beyond, the general socio-educational apparatus is also simultaneously sending out implicit messages about the generally low regard it has for the Vernaculars both within the apparatus as a medium of instruction and in the larger social world to which the apparatus is inextricably tied.

There is a clear association between social class and medium of instruction: students schooled in the vernacular in the K-12 years are typically lower-income children, while English-medium instructed children tend to be middle class and have access to better higher education and careers. Thus, in both India and South Africa, access to, and education through, the medium of English is associated with higher socioeconomic status and a better life, while vernacular languages are devalued, even though all K-12 students in India have the option of being educated in either one of India's 15 nationally recognized languages or in English (Pattanayak, 1981). The examples from South Africa and India illustrate the complex ways in which historical, political, and economic factors can limit the efficacy of government language-in-education policies which seek to promote education in the local/vernacular languages.

Another factor which has been researched by academics is the discourses of language policy and planning with their attendant ideologies about language(s) and linguistic communities. By critically analyzing the discourse of policy makers, academics, politicians, and the media, scholars such as van Dijk (1998), Blommaert and Verschueren (1998), and Fairclough (1989) have shown how discourse both reflects and constitutes societal beliefs about language(s), and their speakers. Ricento (2005b) analyzed the written discourse used by organizations that support the teaching and learning of heritage languages in the USA. He found that a prominent metaphor in the discourse was "language-as-resource," but the resource (language) was characterized as a commodity to be "cultivated" and "harnessed" primarily in serving the military, security, and economic needs and interests of the state (the US government and its agents). The interests, needs, and values of heritage language speakers and their communities were at the bottom of the list of reasons for supporting changes in policies designed to "produce" more competent speakers of strategically important languages. Discourses that represent languages as commodities tend to focus on the purely instrumental dimension of language as a tool for communication while diminishing the ways in which language(s) serve as markers of identity and transmitters of culture and history. Wiley (2001, p. 32) argues that "to ensure that heritage language programs do not merely become symbolic gestures, imposed by outsiders to the community, it is important to define heritage language programs from a community perspective."

This is not to say that the economic dimensions of languages are unimportant or irrelevant in considering their role in social mobility and the aspirations of individuals and communities. Indeed, one scholar has argued that "languages can be maintained only to the extent that they are endowed with an economic value" (Magnet, 1990, p. 295). However, as Petrovic (2005, p. 400) has noted, "many language minority communities create diglossic linguistic contexts. Their languages serve different social (and economic) functions, but the community is bilingual nonetheless." The commodification of language as a "resource" fits within the neoliberal/rational choice political paradigm which tends to support the teaching, learning, and use of the national/dominant language, or an exogenous "world language" because of its perceived economic benefits, as the exclusive language of schooling, work, and commerce. It also assumes that minority languages have limited instrumental value outside of local and community domains. The idea that languages are tied to communities, and that communities may provide "benefits" that are not easily reduced to quantifiable "goods" with market-determined value, is not factored into most types of rational choice models (May, 2001, pp. 39–40), or it is taken for granted by speakers of dominant/national languages who enjoy both instrumental and affiliational/identity aspects of their language. The prevalence and unquestioned acceptance of the neoliberal/rational choice framework in some academic and most mainstream media discourses concerned with language planning and policy renders support of minority/marginalized languages, and especially those that are associated with socially and economically marginalized groups, as misguided, a "waste of money," "romantic idealism," or unrealistic. It is for these reasons

that François Grin (2006, pp. 83–4) has argued that state intervention in language planning and policy is justified because "almost every form of market failure occurs when it comes to the provision of linguistic diversity." If we consider the counterfactual argument, that is, a world without linguistic diversity, most people would find such a state of affairs to be undesirable. Yet, without deliberate policies to protect the status and domains of use for thousands of threatened minority languages, the likelihood that these languages will survive for very long is remote (Krauss, 1992). In addition, the intergenerational transmission of world languages with minority language status in certain territories, such as Spanish in the United States, Mandarin and Cantonese in Canada, and Hungarian in the Slovak Republic (among many other cases that can be mentioned), requires active involvement of states and their governments if those societies, as collectivities, claim or aspire to be multilingual as well as multicultural. Since the governments of most states stand to gain from neoliberal economic policies, even if their populations do not (Ricento, 2010), it has been argued that strong universal linguistic human rights (LHR) conventions and treaties must be implemented and enforced by states in order to ensure the continuation of linguistic diversity (Skutnabb-Kangas, 2007). While a number of attempts and draft documents have been developed and approved at various subnational levels, to date such LHR conventions have not been adopted or ratified by states, a reflection both of the unwillingness of states to cede any degree of their ability to control their own populations and of the continuing power and persistence of neoliberalism as the driving ideology behind globalization, with the attendant power and influence of international languages, such as English.

In the early days of research in language policy and planning a great deal of attention was focused on the national character of languages and on developing strategies to promote political integration in developing nations. Over the past two decades, there has been a greater concern with investigating the more complex yet fundamental issues dealing with language choice, individual and group identities, and socioeconomic structures and hierarchies of inequality. Borrowing from the theories and methods of critical theory (Tollefson, 2006), scholars in recent years have investigated the role of power in influencing the status of languages in society and their relative positioning mediated by social class and ascribed group characteristics, such as ethnicity, race, and gender, among other variables. One of the challenges for researchers has been to account for the relations between macrolevel structures and policies and microlevel language behavior in order to understand how macrolevel policies are taken up, resisted, or transformed by subjects in their lived experiences (Ricento, 2000, pp. 208–9). To address this gap in the literature, researchers have used the methods of ethnography combined with critical discourse analysis in a model referred to by Johnson (2009) as "the ethnography of language policy." Hornberger and Johnson (2007) suggest that an approach that incorporates historical analyses of policy texts combined with multilayered ethnographies of policies in local contexts will help researchers and policy makers better understand why policies succeed or fail, or result in unexpected outcomes altogether.

To summarize, everyone is affected in their everyday lives by policies that involve language. Many of these policies, whether they are official and prescribed or simply the result of customs and local practices, may be considered unfair, prejudicial, or advantageous, depending on the contexts and purposes for which they apply. Language is far more than a medium for communication between individuals; it is, in fact, because language is so tied up with our identities as human beings and members of groups, societies, and nations that it is nearly impossible to devise, implement, and evaluate language policies without some degree of emotional involvement. Because language is *not* used primarily as a "conveyer belt" to transmit "thoughts" between people, policies dealing with language can never simply be about efficiency and practicality. The fact that there are between 5,000 and 6,000 named oral languages in the world today is testament to the

fact that humans *value* difference, and language is one of the primary means by which we establish who we are, and who we are not.

SEE ALSO: Language Attitudes in Language Policy and Planning; Language Problems as Constructs of Ideology

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Cross-Cultural Pragmatics

STEFANIE STADLER

"Pragmatics" refers to the study of language in action. As such its focus is to explore the meaning an utterance acquires on the basis of the social and situational context in which it is embedded. One of the many concerns of the field of pragmatics is that linguistic knowledge—such as knowledge of grammar and vocabulary—alone is insufficient for interacting across cultures. Instead, the field asserts that the meaning of an utterance cannot always be interpreted in a literal manner, but depends on the context in which it occurs. An example that is frequently used to explicate the aim of the field of pragmatics is as follows:

A: What time is it?
B: The milkman was just here.

The answer to this question does not per se tell the other person what time it is and is entirely meaningless to an outsider. However, within a social context where there is such a thing as a milkman who delivers fresh milk to people's private homes on a daily basis (for example in the UK), this answer indicates an approximate time. It does so by assuming the shared contextual knowledge that the milkman delivers the milk each day at 8 a.m., for example. Though B's answer does not relate directly to A's question, it allows A to infer meaning from its contextual embedding.

It can thus be said that the field of pragmatics is in part concerned with how context contributes to the meaning of an utterance and with how to interpret the literal meaning of an utterance based on its contextual referencing.

"Cross-cultural" literally means between cultures, hence, on a literal level "cross-cultural pragmatics" refers to the study of meaning negotiation between different cultures. While the term "cross-cultural pragmatics" is sometimes used to refer to precisely this kind of research, more and more frequently a clear distinction between the terms "cross-cultural" and "intercultural" is being made. Though these terms are often used interchangeably, it is useful to distinguish between them. The term "cross-cultural" refers to exploring how natives speak and act in their native language and within their own cultural context and comparing how native behavior in one culture compares with that in another culture. This definition of cross-cultural therefore does not refer to the exploration of issues relating to people conversing across cultural boundaries—as the literal meaning of the term suggests—but rather the exploration of issues pertaining to *intra*cultural communication. Cross-cultural pragmatics adopts a comparative methodological approach which contrasts the findings of the characteristics of intracultural communication in two different cultures by identifying similarities and differences in their (speech) behavior. Findings of this investigative framework add to our knowledge base on a cognitive level by highlighting cultural differences, their underlying causes (e.g., values and norms), and their manifestations as they emerge through speech. However, cultural differences identified through cross-cultural inquiry are not necessarily an adequate predictor for communicative situations when people from different cultures interact with one another, as people often adopt different behaviors when talking to strangers than when interacting with people from their

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own cultural background. This is where the field of intercultural pragmatics takes over. The term "intercultural" is used to clearly emphasize that research of this nature focuses on interactions between members of different cultures. Intercultural discourse focuses on the complexities that arise from interactional partners approaching a communicative situation with different sets of rules, norms, expectations, and assumptions. It unearths common pitfalls and causes for miscommunication and takes an interest in how to resolve communicative problems deriving from cultural differences.

The field of cross-cultural pragmatics can thus be said to investigate the speech behavior and norms of different cultures, focusing on contextually derived meaning, the appropriateness of language usage in differing cultural contexts, and the complexities and challenges tied to the acquisition of pragmatic competence. According to Alcón and Safont Jordá (2008, p. 193), pragmatic competence requires "knowledge of those rules and conventions underlying appropriate language use in particular communicative situations and on the part of members of specific speech communities." Pragmatic competence entails both the ability to produce an utterance that is meaningful and appropriate to the social and contextual setting in which it is produced and the ability to correctly interpret someone else's message by inferring the intended meaning. Hence, this field of study is equally concerned with meaning construction (i.e., the speaker's contribution) and meaning interpretation (i.e., the addressee's contribution) of a message exchange, although there is a stronger focus on productive skills than on perceptive skills.

The most prominent field of research investigating meaning interpretation is the study of conversational inference. Studies in this area are not necessarily tied to specific speech events and this distinguishes them from most other types of studies into cross-cultural pragmatics. In the subsequent section on conversational inference I will briefly outline the areas of interest and foci in this line of investigation on discourse-generic inquiries. As it is difficult, if not impossible, to categorically compare the entire speech behavior of one culture to that of another, pragmatics studies typically focus on very specific communicative situations. In the sections on speech act theory and politeness theory I will discuss the application of pragmatic inquiry into such specific speech situations and contexts. Though both types of pragmatic studies differ in the breadth of their investigation focus, they are united by a shared goal. What both lines of inquiry have in common is the overarching notion that language largely obtains meaning from the context in which it occurs and that intended meaning can only be derived by taking the social, situational, and cultural context into account. In the last section on applied language studies I will provide an insight into what is arguably the most praxis-oriented line of inquiry in the field of pragmatics. This area of pragmatics takes an interest in both context-generic and context-specific aspects of pragmatics and explores the impact of pragmatics on a learner's performance in his or her target language and the importance of the integration of pragmatic knowledge into the language classroom.

Conversational Inference

Conversational inference denotes the ability to extricate the intended meaning from the literal message. According to Spencer-Oatey and Franklin (2009, quoting Thomas, 1995, p. 1), "people do not always or even usually say what they mean." In other words, it is more common for the intended meaning to be hidden than to be expressed clearly. Conversational inference is thus the listener's ability to read between the lines and draw the hidden meaning from the speaker's utterance. Gumperz (1992, p. 230) describes inferencing as "hypothesis-like tentative assessments of communicative intent, that is, the listener's interpretation of what the speaker seeks to convey." For this, listeners need to

rely on background assumptions and draw on extralinguistic "knowledge of the world." We derive this knowledge from "our customary ways of being in social situations," as Scollon and Scollon (2001, p. 12) put it. That is, conversational inference is not so much a process of conscious reflection and analysis, but more a habitual response to the social situations we are used to encountering based on our upbringing in a certain cultural and social setting. Because what people say, how they say it, and how what is said is being interpreted is influenced to such a large degree by the cultural background of speakers and addressees alike, studies on conversational inference often focus on cultural aspects.

One of the most famous approaches relating to conversational inference is that of the notion of context levels. Hall (1976) and Hofstede (2001) assert that people can be said to belong to either low-context cultures or high-context cultures, with low-context cultures expressing meaning explicitly and only relying on contextual inference to a minimal degree. High-context cultures, on the other hand, rely heavily on the ability of the listener to draw meaning from the context and attribute intentions by drawing on contextual cues. It is for these latter types of cultures that conversational inference is an indispensible communicative tool. The stark difference in practice of meaning transfer and meaning interpretation in different cultures is what makes this line of inquiry so attractive for cross-cultural comparisons and thus makes it a main element of the field of cross-cultural pragmatics.

As a consequence, this strand of cross-cultural pragmatics is dedicated to unraveling how utterances are intended and interpreted in the cultural context in which they occur. It seeks to explore the relationship between message uttered and message received. Studies that combine a focus on conversational inference with a cross-cultural pragmatic approach further aim to shed light on different cultural practices, and the extent to which people rely on the listener's ability to uncover intentions. It strives to understand what prompts people from one cultural background to interpret the same message differently to someone from a different cultural background and what problems this can cause for people engaging in communication across cultures.

Speech Act Theory

Speech act theory forms the main platform for cross-cultural pragmatics and is frequently pursued in connection with other lines of inquiry. In contrast to conversational inference, speech act theory focuses exclusively on specific speech events, the so-called "speech acts." The term "speech act" refers to Austin's (1962) notion that language is as much a mode of action as it is a means of conveying information (Henderson & Brown, 1997). Speech acts are verbal messages that, through the very action of being uttered, perform a certain function. According to Searle (1969, p. 16), all linguistic communication involves speech acts and these form the basic units of communication.

Cross-cultural speech act studies are, according to Gass and Neu (1996, p. 1), based on the assumption that "speech acts are realized from culture to culture in different ways and that these differences may result in communication difficulties that range from the humorous to the serious." The speech acts that received the most attention include compliments, apologies, refusals, requests, greetings, complaints, and disagreements. This area within cross-cultural pragmatics started in the mid-20th century, with its inception being strongly linked to the names of John Austin and John Searle. In its infancy, this area was more strongly tied to philosophy, but is now firmly anchored in linguistics. While it experienced its heyday in the early 1980s, it is still being pursued actively to date, as speech act theory forms a valuable platform for many different types of investigation. The popularity of this branch of studies saw projects emerge that dedicated their attention entirely to the study of speech acts in a cross-cultural setting, most notably the CCSARP (Cross-Cultural Speech

Act Realization Project), consisting of renowned researchers in the field of pragmatics and second language acquisition. Research in this field of cross-cultural pragmatics aims to explore the ways in which certain cultures typically express a certain speech act. Each culture has preferences as to how a speech act is performed in line with the attributes a culture values. One such attribute is the level of directness/indirectness that is appropriate for the particular situation, the speaker, the addressee, and the general contextual setting. Different cultures have different rules and norms as to what constitutes appropriate levels of directness in a particular speech event. This is especially true for potentially offensive speech acts, such as complaints, or speech acts that impose on the addressee, such as requests (see Stadler, 2002). These are therefore often produced in a very subtle manner, relying heavily on the skills of the addressee to attribute meaning to the utterance and detect the clues for the real intent behind a speech act. It can be very difficult for addressees to understand the intended meaning, not just for conversational partners from a different cultural context, but sometimes even for people that share the same cultural background. Because successful communication requires that the message and meaning intended by the speaker is correctly received and interpreted by an addressee, sustainable error-free communication is rare, both within a culture and between cultures (Dattner, 2004). However, it is not only difficult to interpret the intended meaning of a speech act, it is also difficult to produce a speech act in the language and manner that are appropriate to the social and situational context. Countless studies have highlighted the problems connected with the acquisition and implementation of such pragmatic knowledge (Cohen & Olshtain, 1993; Stadler, 2002).

Speech act research thus tries to identify what is appropriate behavior when expressing a speech act in a particular culture and how to appropriately detect the intended meaning. Cross-cultural speech act research does so by means of comparison, where differences and similarities are identified in the realization of a particular speech act in different cultural contexts.

Politeness Theory

Cross-cultural comparative studies have also been prominent in politeness research. The issues of directness and indirectness that feature prominently in speech act studies also play a central role in politeness theory. Although this issue has been hotly debated and contested in more recent years (Meier, 1995), indirectness had traditionally been linked to politeness, while directness had been linked to a lack thereof (Brown & Levinson, 1987; Lakoff, 1990). This proposed connection between the level of directness employed in speech acts and the level of politeness has resulted in the fact that speech act theory and politeness theory have become closely interlinked and are often pursued in a joint endeavor.

The most famous study to have been written in this field is Brown and Levinson's 1978 and revised 1987 contribution. Although their study has received criticism, it set a useful cornerstone in politeness theory. Many of these early studies have drawn generalizations on presumably universal politeness trends, but have subsequently been criticized for stereotyping cultural trends, partly because the so-called universals were heavily based on Western cultures and did not necessarily apply to Asian cultures (see Gu, 1990). As a consequence researchers have moved away from universal politeness trends and have focused on cross-cultural inquiries into cultural differences in politeness behavior. This has resulted in the findings that people do not always strive for harmony and that politeness behavior is strongly tied to cultural preferences. While some cultures, such as Anglo-Saxon cultures, lean more toward maintaining harmonious and friendly relations in most contextual circumstances, other cultures enjoy heated debates and deliberately employ

strategies that encourage disagreement rather than consent (including many Southern European cultures, South American cultures, German and Jewish cultures). This has resulted in the emergence of impoliteness theory studies (see Culpeper, 1996).

The main aim of cross-cultural politeness research is very similar to that of speech act theory, namely to identify differences and similarities in the way politeness is expressed in different cultures and to establish to what degree politeness is valued in a particular society in relation to other values.

While these lines of inquiry focus on identifying differences and similarities in the way that different cultures express and interpret certain conversational goals through language, applied language studies focus on what it takes to acquire the knowledge of how to communicate effectively and appropriately in a non-native language and cultural context.

Applied Language Studies

This area within cross-cultural pragmatics is strongly tied to education and aims to promote the teaching of pragmatics in the language classroom. The claim is that language instruction places too strong an emphasis on the acquisition of linguistic knowledge, thereby overlooking the importance of the acquisition of pragmatic competence. Language instruction has traditionally been largely focused on the transmitting of knowledge of grammar, lexis, pronunciation, orthography, and so forth. However, not only can interaction sometimes be a marginalized component of language acquisition, but what little conversational practice takes place often occurs in a largely decontextualized environment. As a consequence, when language learners do eventually get confronted with interactions in the target culture, they fail to communicate their intentions appropriately. This is due to a phenomenon known as pragmatic transfer, which refers to language learners applying the conversational rules and norms of their own culture and language to the target language. The consequences are all too often communication failure and miscommunication, if not negative cultural stereotyping. In order for learners to overcome such negative pragmatic transfer, they need to acquire pragmatic competence in the target language.

Ellis (1997) regards linguistic competence as a prerequisite for pragmatic competence, as it is necessary to master the required level of grammar and lexis in order to be able to express different levels of subtlety. However, linguistic proficiency in no way guarantees pragmatic competence (see Cohen & Ishihara, 2005). Studies investigating the acquisition of pragmatic knowledge have shown that students with otherwise excellent language skills lack pragmatic competence (Stadler, 2002). Pragmatic competence entails the knowledge of when it is appropriate to say what to whom in another culture, and the rules for that can be complex and subtle, making them particularly difficult to acquire. Unlike grammar, pragmatic knowledge cannot be pinned down to precise rules, as no two people from the same culture always react in precisely the same way in the same situation, making pragmatics far less predictable than linguistic knowledge. Rather, pragmatics relies as much on inference and intuition as on behavioral norms. The mastery of such competence requires sensitivity and perceptiveness on the part of the learner, combined with preparation and explicit instruction. Ellis (1997) even argues that a further element could be involved in achieving pragmatic competence, which he relates to accommodation theory. He suggests that pragmatic competence involves an element of managing the emotional response associated with certain speech behaviors, which can make it difficult to adopt a certain style that is considered inappropriate in one's native language context. According to Ellis (1997, p. 182), for Japanese to adopt a direct style of interaction would thus require "psychological convergence" on their part, a step which Cohen and Olshtain (1993) and Cohen and Ishihara (2005) report is difficult for learners to master.

Conclusions

Increasing globalization, the realization of the disastrous consequences that miscommunication entails, and the awareness that linguistic competence alone is insufficient to guarantee mutual understanding have created a pressing need to explore the cultural dimension of pragmatics. As a response to the need to gain a better understanding of how practices of meaning transfer are influenced by the cultural background of speakers and listeners, the field of cross-cultural pragmatics emerged. Its target is to explore and compare cultural practices, norms, values, and behaviors in order to better inform the needs of practitioners engaging in communication across cultures and educationalists who make decisions on language education policies. Cross-cultural pragmatics thus has the potential to make a valuable contribution to the practical needs of an increasingly interconnected world.

In order to better serve the practitioner sector, it would be desirable to create a better synergy between and across disciplines. Cultural aspects of communication are relevant to and explored in a myriad of different fields, including linguistics, communication studies, business, psychology, pedagogy, management, and mediation, to name but a few. Insights from the various fields, though, are largely produced for intrinsic benefits and consequently tend to be written in a manner that makes it approachable mostly (if not solely) to other people in the same field. Better interdisciplinary communication would help drive forward a mutual goal of facilitating communication across cultures. At this point in time, the value that pragmatic inquiry adds to practitioners is often understated or overlooked by other sectors. Improved interdisciplinary integration and increased accessibility to practitioners (i.e., laypeople) would help cross-cultural pragmatics to achieve the status and recognition it deserves.

SEE ALSO: Inference and Implicature; Interlanguage Pragmatics; Politeness and Face Research; Pragmatic Competence in Multilingual Contexts; Pragmatics and Culture; Speech Acts Research

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Crosslinguistic Differences in Grammar

HILDE HASSELGÅRD

Comparing Grammar Across Languages

In his much-cited work *Linguistics Across Cultures* Lado (1957/1971) gives advice on how to compare linguistic and cultural systems, mainly with the aim of improving language teaching. As regards the comparison of grammatical structures, he asks the fundamental question "What does grammatical structure mean?" (1957/1971, p. 51). The answer to this question depends on educational background as well as theoretical persuasion. Lado himself regards "grammatical structure as matters of form that correlate with matters of meaning" (1957/1971, p. 52). Grammatical structure encompasses a range of phenomena, from morphology to word order, and apparently also phraseology, as indicated under the heading of "Grammatical structure, a system of habits" (1957/1971, p. 57).

The study of crosslinguistic differences in grammar may have a theoretical as well as an applied objective; typological research, for example, may aim at grouping languages on the basis of similarities in their linguistic structure (e.g., Steinbergs, 1996, p. 374) or at testing the universal grammar hypothesis (e.g., Jackendoff, 2002, p. 68). Contrastive analysis tends to be associated with applied linguistics. It is traditionally defined as "a linguistic enterprise aimed at producing inverted (*i.e.* contrastive, not comparative) two-valued typologies" (James, 1980, p. 3). According to James (1980, p. 63), contrastive analysis "involves two steps: *description* and *comparison*." Thus, although a contrastive analysis may involve more than two languages (see, e.g., Cosme, 2008), the number of languages involved is necessarily limited by the practicalities associated with the first of these steps.

Contrastive analysis is furthermore founded on "the assumption that languages can be compared" (James, 1980, p. 3). This requires a *tertium comparationis*, that is, "a background of sameness against which differences can be viewed and described" (Johansson, 2007, p. 39). The sameness may be based on either form or meaning, and may involve any level of language description. Chesterman (1998, pp. 29ff.), examining Krzeszowski's (1990) approach, lists the following types of equivalence that may serve as *tertium comparationis*: statistical, translation, system, semantico-syntactic, substantive, and pragmatic. According to Roman Jakobson, "any comparison of two languages implies an examination of their mutual translatability" (1959, p. 234), and the translation relation has indeed often been regarded as the most viable *tertium comparationis* for crosslinguistic study; see, for example, James (1980, p. 178) and Johansson (2007, p. 3).

Halliday (2002a, p. 30) emphasizes the need to "establish what categories [are] comparable" in crosslinguistic studies, as it is by no means evident that different languages have the same categories. To this end, he proposes (2002b, p. 41) that "the fundamental categories for the theory of grammar are four: *unit, structure, class* and *system*." According to Halliday, "these four, and no others, are needed to account for the data. . . . they make possible . . . a comprehensive description of the grammars of languages" (2002b, p. 41). *Units* of grammatical form include morphs, words, groups, phrases, and clauses (p. 45); a *structure* is made up of elements in succession, and thus pertains to the formation of groups, phrases, and clauses (p. 46); examples of *classes* are parts of speech (with their subclasses) and

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phrase types (p. 51), while the *system* provides "the final requisite for the linking of the categories to the data" (p. 53), that is, a framework for choosing (and accounting for) appropriate units, classes, and structures in a language. See also James (1980, pp. 31ff.). Units of grammar are hierarchically related and may undergo *rank shift* (e.g., clauses may be embedded in phrases). Structures constitute syntagmatic relations, while classes represent paradigmatic relations. It follows that languages may differ as to the structure of units, and furthermore that equivalent meanings may be realized by units of different classes.

Analysts may disagree over whether Halliday's four categories are the only ones, or the most relevant ones; however, the various relations they represent are useful to keep in mind when comparing grammatical structures across languages. In such comparisons it will often be evident that languages vary, as Halliday and Matthiessen (2004, p. 9) note, "with respect to the 'division of grammatical labour' among the ranks. In particular, certain languages do relatively more grammatical work at group (and clause) rank, whereas other languages do relatively more work at word rank." A similar observation was in fact made by Weil (1844), contrasting "la marche des idées" with "la marche syntaxique" in texts translated from classical languages into modern French. Thus, to return to Lado (1957/1971), "matters of meaning" may correlate with different (lexico)grammatical structures in different languages.

Some brief comments on a single example must suffice at this point to illustrate the crosslinguistic comparison of unit, structure, class, and system. (The example is from Europarl, accessed via OPUS at http://urd.let.rug.nl/tiedeman/OPUS.)

(1) a. The Treaty prescribes the creation of an area of freedom, justice and security, but the Tampere summit is in danger of turning only into a security summit.
    b. Le Traité prescrit la création d'un espace de liberté, de sécurité et de justice, mais le sommet de Tampere risque de se transformer en un sommet sur la sécurité.

An analysis of examples (1a) and (1b), which are translationally related, indicates that French and English are structurally and syntagmatically similar in having the word order of SVO. Moreover, the subject noun phrase (unit) is composed in the same way (structure) with a definite article in front of the head noun. However, the class of nouns in French involves a distinction that the English noun phrase lacks, namely that of gender, which shows up in the variability of the definite article (system). The example further seems to indicate that the two languages differ as to the combination of nouns in compounds; cf. *Tampere summit* and *security summit* versus *sommet de Tampere* and *sommet sur la sécurité*. Further exploration is required to test whether this is a consistent difference between the languages or whether it is peculiar to the present example. We may also note that the English noun *danger* corresponds to the French verb *risquer*; this meaning is thus realized by different classes in (1a) and (1b).

Method and Materials for Crosslinguistic Grammatical Studies

In making crosslinguistic grammatical comparisons, as in all contrastive analysis, it is important to make sure that like is compared with like. Chesterman (1998, pp. 52ff.) proposes a method in which the linguist, examining primary data in two languages, starts from a perceived similarity between phenomenon X in language A and phenomenon Y in language B. The perceived similarity may be related to any aspect of the two languages compared. An initial null hypothesis, that X and Y are identical, can then be tested and revised until a satisfactory description is reached.

Contrastive studies of grammar are usually text-based, although other methods may be applied, such as elicitation experiments. The texts used for contrastive studies may be comparable texts in the languages compared, or they may be translations between those languages. Examples of text-based studies of word order can be found in the research of members of the Prague school, for example Firbas (1992). A number of text examples in various languages are used for illustrating the different principles that underlie word order, in particular the grammatical principle (which dominates in present-day English) and the principle of Functional Sentence Perspective (which dominates in Czech).

A rudimentary comparison of units, structure, classes, and system may be carried out on relatively little material, or on introspective data from a bilingual speaker. However, linguistic systems do not consist only of the potential choices that can be made with respect to units, classes, and structures in a language; there is also an element of probability that a certain construction will be used in particular contexts. The study of this kind of probability requires a large number of data representing a range of text types. Monolingual corpus studies have, for example, shown that grammatical choices vary across registers of language (see, e.g., Biber, Johansson, Leech, Conrad, & Finegan, 1999). Along these lines, Teich (2003, p. 27) argues that register is part of the linguistic system and moreover that some aspects of crosslinguistic variation may be "due to differences in usage conditions according to register" (p. 28). For example, she finds that the distribution of active and passive voice is different in English and German scientific writing, with the passive being more of a "register feature" (p. 181) in English than in German. This kind of information is useful in applied contrastive analysis; it is, for instance, important for translators to be able to find the appropriate style level and for language learners to produce utterances that are not only grammatically correct, but also natural and appropriate to the context of situation.

Corpus-Based Studies of Crosslinguistic Grammatical Differences

Since the mid-1990s it has been possible to study crosslinguistic differences in grammar on the basis of corpora. Corpora for contrastive analysis may be translation corpora or comparable corpora (see Johansson, 2007, pp. 9ff.). A parallel corpus is defined here as a bidirectional translation corpus with comparable original texts in both languages. A bidirectional corpus has some obvious advantages: (a) The translation relation ensures equivalence of meaning between texts in the languages compared, and (b) the researcher can control for translation effects by having access to comparable original texts in both languages (Johansson, 2007, p. 12). The comparability of the original texts in such a corpus thus takes care of the register variable discussed by Teich (2003). Teich also suggests (p. 222) that register comparability can be used as *tertium comparationis* in studies based on multilingual, non-translated material.

The most obvious disadvantage as regards the use of corpora for studying grammar is that many features of grammar are not easily searchable unless the corpus is carefully tagged and parsed. Often, "exploring grammatical phenomena in a multilingual corpus is a difficult and time-consuming task involving much manual intervention, unless there are clear lexical correlates" (Johansson, 2007, p. 37). Parallel corpus studies of grammar are thus typically—but not exclusively—focused on grammatical categories that are closely linked to lexis, such as studies of modality starting from modal auxiliaries (e.g., Løken, 2007) or modal adverbs (e.g., Aijmer, 2002). However, as these studies show, the parallel corpus methodology establishes translation paradigms (involving members of different classes), which may also turn out to be lexicogrammatical paradigms for expressing modal meaning. Examples (2)–(5), from the Oslo Multilingual Corpus (OMC; see www.hf.uio.

no/ilos/english/services/omc) may serve as an illustration: The English modal auxiliary *might* is shown to correspond to various forms of the German subjunctive ([2b] and [3b]), the present modal *kann* (4b), and the discourse particle *wohl* (5b). These correspondences thus constitute (part of) the German translation paradigm for *might*.

(2) a. You *might* have asked her in.
    b. Du *hättest* sie hereinbitten *sollen*.
(3) a. One *might* get £300,000, but the repolisher would want his cut.
    b. Dreihunderttausend Pfund *könnte* man kriegen . . .
(4) a. You never know when you *might* need to do this, he says.
    b. Man kann nie wissen, ob man es nicht einmal brauchen *kann*, sagt er.
(5) a. Of course, now, if a big woman like you is afraid of what her daddy *might* say?
    b. Wenn natürlich eine so erwachsene Frau wie du Angst hat, was ihr Vater *wohl* dazu sagt.

Correspondingly, the English paradigm arising from the translation of the German particle *wohl* includes *probably, perhaps, presumably, doubtless, surely, I suppose,* and constructions with modal auxiliaries and *seem*, thus consisting of modal adverbs, modal auxiliaries, a catenative, and a comment clause.

Other types of grammatical studies—of structure and system—may use a lexical starting point to investigate the division of labor between lexis and grammar in expressing particular meanings. A case in point is the well-known distinction between Germanic and Romance languages as regards the expression of manner and direction with verbs of movement (e.g., Slobin, 1996). As predicted by Talmy's distinction between verb-framed and satellite-framed languages (e.g., Talmy, 1985), Germanic languages tend to express the manner of movement in the verb and optionally path in an adjunct, while Romance languages tend to do the opposite. This is exemplified by (6a) and (6b), where the Norwegian verb *krabbe* 'crawl' denotes manner of motion (with the direction *opp* 'up' added as a satellite) and the French *monter* 'mount' denotes direction.

(6) a. De myldret om faren hele tiden, *krabbet* opp på fanget hans og rusket ham i skjegget.
    Lit: 'They crowded about the father the whole time, *crawled* up on his lap and pulled him in the beard.'
    b. Ils grouillaient sans cesse autour de leur père, *montant* sur ses genoux pour lui tirer la barbe.

Obviously, crosslinguistic studies of grammar may also start from a grammatical category that exists in two languages, and compare its function(s) and distribution. Unless the corpus used for such an investigation is both tagged and parsed, the linguist will have to resort to a combination of word class tagging, filters, and wild cards to find the relevant material. One such example is Elsness's (2003) study of the present perfect and the preterite in Norwegian and English. Although the two categories have similar expressions in the two languages and also roughly similar uses, the corpus material showed that the present perfect was more frequent in Norwegian, at the expense of preterite forms, presumably because "the verb forms express (slightly) different temporal meanings in the two languages" (2003, p. 34). Greater divergence between the two verb forms is found if more languages are added; de Swart (2007) finds great similarities between the use of the German Perfekt and the French passé composé, on the one hand, and the English and Dutch present perfect, on the other. However, the use of the German and French forms differs markedly

from that of the English and Dutch forms, as shown in (7), where the English preterite corresponds to a German Perfekt in the context of specific time reference.

(7) a. She *bought* Scudder's Cottage when she first arrived here three years ago.
b. Sie *hat* Scudder's Cottage *gekauft*, als sie vor drei Jahren hierherkam.
Lit: 'She has Scudder's Cottage bought, when she three years ago here arrived.'

Similarly, Lansari (2009) studied the periphrastic future expressions *aller* + infinitive and *be going to* in French and English on the basis of a parallel corpus. These forms are similar in composition as well as meaning and are retrievable on the basis of a combination of lexically and grammatically defined search terms in both languages, even if the study inevitably reveals other expressions of future time used as correspondences. Fabricius-Hansen (2004), by contrast, investigates a linguistic category that exists in only one of the languages under comparison, namely the German reportive subjunctive, with a view to identifying any correspondence it may have in parallel texts in English and Norwegian, which lack this form.

Furthermore, the division of labor between participant and adjunct expression of circumstantial meanings may vary across languages, as argued by König and Gast (2007, pp. 110f.). They show that relations that would normally be encoded as adjuncts in German may be encoded as participants in English, for example the roles of instrument or location, as exemplified in (8).

(8) a. *His green eyes* glinted with playful malice.
b. *In seinen grünen Augen* glitzerte ein boshaftes Lächeln.
Lit: 'In his green eyes glinted a malicious smile.'

Crosslinguistic studies may also concern grammatical constructions, such as presentative or cleft constructions. Comparisons may take into account not only the form of the constructions, but also their frequency and their functional properties. Ebeling (2000) is a contrastive study of presentative constructions on the basis of the English–Norwegian Parallel Corpus (ENPC). The study starts from a survey of the construction in both languages based on original texts. Their translations are studied to reveal the paradigmatically related constructions that exist monolingually. The method and the material allow Ebeling to establish the range and the frequency of presentative constructions in both languages and the extent to which they correspond to each other. A similar study was carried out by Johansson (2002) on cleft constructions in English and Swedish. Both studies used lexically defined search terms to retrieve all the relevant constructions, followed by a great deal of post-editing of the search hits.

Other types of study cannot be undertaken by automated corpus methods. Examples are Johansson's (2007) study of subject change in translation and Hasselgård's (2004) study of thematic choice in English and Norwegian. Although both studies used part of the OMC, the retrieval of relevant examples had to be entirely manual, based on complete texts. Some of the findings were that Norwegian uses more formal subjects than English (also consistent with Ebeling's, 2000, findings) and in general prefers informationally lighter themes than English.

Cosme's (2008) study of clause linking in English, French, and Dutch likewise required careful manual analysis of a limited amount of material. She found that English and French are relatively similar in their preference for subordination versus coordination, while Dutch showed more of a tendency toward incremental discourse organization, that is, a greater preference for coordination. Close scrutiny of translations between English and French

also showed that the two languages differ as to the kinds of subordinate clauses that occur most frequently. Thus, although the three languages by and large share the resources for clause linking, attested language use shows different preferred patterns.

As pointed out by Kennedy (1992, p. 368), corpus linguistics can help identify "preferred ways of putting things." Although this observation is made about monolingual corpus studies, it is no less true of corpus-based contrastive studies. Any comparison of units, classes, structures, and systems will bring out differences between languages as regards their lexicogrammatical potential; a corpus-based comparison may bring out crosslinguistic differences as regards the instantiation of that potential in discourse.

Applications of Crosslinguistic Studies of Grammar

Knowledge of crosslinguistic differences in grammar is invaluable in the teaching and learning of foreign languages. This was precisely the objective of early contrastive linguists such as Lado: "in the comparison between native and foreign language lies the key to ease or difficulty in foreign language learning" (1957/1971, p. 1). The principle of contrasting the native language with the language to be learnt is also visible in a number of pedagogical grammars for foreign-language learning, especially if they are intended for use in a specific language community. Such a contrastive focus may even be implicit, for example, in that particular attention may be paid to areas where the students' first language (L1) is known to differ from the second language (L2) in such a way as to constitute learning problems.

Representing a different application of contrastive grammar, Salkoff (1999) formulates differences between French and English in the form of rules, with the aim not only of helping students of translation, but also of serving as a basis for machine translation. Contrastive grammar clearly has applications in translation practice as well as in translation studies, since the translator needs to know which structures and systems are equivalent in the source language and the target language, and where the two languages differ as to the division of linguistic labor or simply exhibit different grammatical preferences.

SEE ALSO: Corpora: Specialized; Corpus Linguistics: Overview; Formal and Functional Approaches to Grammar; Grammatical Variation in Adolescent Language; Johansson, Stig

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Crosslinguistic Influence and Multilingualism

SCOTT JARVIS

Introduction

Crosslinguistic influence is the often preferred term for a phenomenon more commonly known as *transfer*, which is the influence of one language on another, as witnessed in the language use (both comprehension and production) and other language-related behavior (e.g., categorization, gesturing, similarity and typicality judgments, reaction times) of both individuals and discourse communities. The former term is often preferred because it more naturally refers to a wider variety of crosslinguistic effects—including the overuse, underuse, and avoidance of language forms, functions, and structures in one language due to the influence of another language, as well as crosslinguistic effects at the level of conceptualization and mental processing—whereas the latter term is often interpreted as the literal transfer of a form, structure, or meaning from a person's knowledge of one language to their use of another (Kellerman & Sharwood Smith, 1986). Nevertheless, the two terms are often used interchangeably to cover the same range of meanings, and this convention will be followed here as well. *Interference* is another term that has frequently been used to refer to this phenomenon, but its use is naturally limited to the negative effects of crosslinguistic influence, which may represent only a minority portion of the ways in which one language affects another. For convenience, in this entry, crosslinguistic influence as a general phenomenon will be referred to interchangeably as *CLI*, *CLI effects*, and *transfer*.

Seminal work on CLI in the domains of second language acquisition, bilingualism, and multilingualism has resulted in a number of landmark findings (see Jarvis & Pavlenko, 2008, pp. 10–13). These include the positive effects of CLI, its effects on both the rate and stages of acquiring a second or additional language, the fact that CLI is driven more by similarities between languages than by differences, the fact that CLI effects tend to fluctuate as a person becomes more proficient in the target language and may even increase in some areas of language use, the finding that CLI effects occur in multiple directions (even from a second language to a first), the discovery that some language features are more likely to transfer than others, the finding that CLI extends beyond forms and structures to meanings and the social functions of language, and the observation that transfer is ultimately an individual-level phenomenon affected by factors such as motivation, aptitude, and personality.

The study of CLI has advanced considerably over the past several years in terms of both the contexts in which such effects have been found and the theoretical explanations that have been offered to account for them. A number of recent studies have focused on the discovery of CLI effects in areas of language knowledge and acquisition where transfer has previously been claimed not to occur. This includes transfer involving bound morphology such as locative suffixes (Jarvis & Odlin, 2000), the acquisition of tense and aspect (Ayoun & Salaberry, 2008), the order in which grammatical morphemes are acquired (Luk & Shirai, 2009), and the emergence of word order rules (Bohnacker & Rosén, 2008). Some

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of the relatively new domains for the investigation of transfer include perception and naming patterns (Athanasopoulos, 2009), the construal and description of motion events (von Stutterheim & Nüse, 2003), lexical representations and lexical networks (Jarvis, 2009), working memory and the allocation of attentional resources (Trude & Tokowicz, in press), and the use of speech-accompanying gestures (Brown & Gullberg, 2008), to name just a few. Some of the important new theoretical perspectives on CLI include the multicompetence model (Cook, 2002), the thinking for speaking and conceptual transfer frameworks (Slobin, 1996; von Stutterheim & Nüse, 2003; Jarvis, 2007; Jarvis & Pavlenko, 2008), and models of inhibitory control, crosslinguistic interaction, and activation and resonance (Green, 1998; MacWhinney, 2005).

It is impossible to capture the full breadth of these advances in this entry, but the interested reader is referred to Jarvis and Pavlenko (2008) for a fuller synthesis of many of these developments. The present entry will offer a brief description of advances in the following areas: conceptual transfer, CLI and memory, and CLI and the brain. The term *multilingualism* in the title of this entry should be understood broadly as encompassing individuals regarded as bilinguals, multilinguals, and second language (L2) learners and users. Throughout the entry, all such individuals will be referred to interchangeably as either multilinguals or L2 users (cf. Cook, 2002) without any implied distinction between bilinguals and multilinguals or between L2 users and L3 (L4, etc.) users, even though such distinctions are often valuable. It is nevertheless relevant to point out that there are many types of multilingualism, and that a large number (if not most) of the studies on transfer in the language use of so-called bilinguals and L2 learners actually do involve participants who have learned a third or even a fourth language, at least in a classroom setting. The studies that have specifically examined the effects of the L1 versus a later-learned language on the use of another later-learned language have shown that the precise number of languages that a person knows plays less of a role in determining the nature and degree of CLI the person exhibits than do the following factors, among many others: (a) crosslinguistic similarity between the source and target languages (e.g., Ringbom, 2007); (b) proficiency in the source and target languages (e.g., Odlin & Jarvis, 2004); (c) context of learning and amount and type of exposure to the target language; (d) frequency, recency, and salience of the forms and structures that are candidates for transfer (e.g., Williams & Hammarberg, 1998); and (e) metalinguistic awareness (see Jarvis & Pavlenko, 2008, pp. 174–210 for a fuller treatment of these factors). Regarding this last factor, work discussed by Jessner (2006) suggests that the learning of each additional language leads to continually increasing levels of metalinguistic awareness, which in turn leads to faster rates of acquisition for each additional language, and also leads to a greater awareness of and reliance on crosslinguistic similarities between prior languages and the language currently being acquired. This may result especially in higher levels of positive transfer (cf. Odlin, 1989, p. 152). Again, however, CLI patterns do not vary in a binary manner depending on whether a person knows just two versus three or more languages; rather, all of these factors and others work together along a multidimensional continuum in effecting the types and extent of CLI that will emerge in any language-use situation.

Conceptual Transfer

Conceptual transfer refers to cases where a multilingual's language behavior or language-related behavior (e.g., categorization, typicality judgments, gesturing) exhibits CLI effects that are interpreted as having taken place in the person's conceptual system prior to the conversion of his or her preverbal message into language (Jarvis, 2007; Jarvis & Pavlenko, 2008). Studies on conceptual transfer can be viewed as attempts to investigate CLI within

the paradigm of cognitive linguistics, which allows researchers to hypothesize that certain instances of CLI in a multilingual's use of one language originate from the experiential categories and patterns of event construal that the person has acquired as a speaker of another language. This line of inquiry shares much in common with the *thinking for speaking* framework (Slobin, 1996), as well as with Levelt's (1989) speech production model and the work by von Stutterheim and colleagues on information structure and conceptualization (e.g., von Stutterheim & Nüse, 2003). However, whereas these other frameworks were originally developed to account for other phenomena, such as monolingual speech production and differences across languages in the organization and expression of information, the conceptual transfer framework has been formulated to focus exclusively on CLI. Within that focus, conceptual transfer actually has a broader scope than these other frameworks in the sense that conceptual transfer deals not just with conceptualization (i.e., the process of forming temporary mental representations of complex situations and events), but also mental concepts (i.e., the structure and content of mental categories). Both phenomena fall within the purview of conceptual transfer, and Jarvis (2007) proposes the terms *conceptualization transfer* and *concept transfer*, respectively, for purposes of distinguishing the two when necessary.

Although it is difficult at present to establish with certainty whether particular CLI effects originate within a person's conceptual system, the empirical evidence for conceptual transfer has accumulated quite substantially over the past few years, and much of it is quite compelling. It includes the finding that there exist crosslinguistic differences and corresponding CLI effects in multilinguals' patterns of naming, categorizing, and judging the similarity and typicality of various colors, shapes, substances, and objects (Cook, Bassetti, Kasai, Sasaki, & Takahashi, 2006; Athanasopoulos, 2009). It also includes the finding that there exist CLI-related differences in how multilinguals from different language backgrounds interpret the meanings of tense and aspect markers in both the L1 and L2, how well they can distinguish between completed and non-completed actions (Trude & Tokowicz, in press), and how well they can remember certain types of information (see Jarvis & Pavlenko, 2008 for a review of these findings). In terms of conceptualization, the accumulating evidence also shows that multilinguals with different language backgrounds display differential effects in how they segment strings of continual action into discrete events (von Stutterheim & Nüse, 2003), how they construe motion events in terms of manner and path of movement (Hohenstein, Eisenberg, & Naigles, 2006), and which components of those events they select for verbalization (von Stutterheim & Nüse, 2003). Crucially, these findings are bolstered by additional evidence from multilinguals' speech-accompanying gestures (Brown & Gullberg, 2008) as well as eye fixations and ability to recall certain characteristics of events they have witnessed (von Stutterheim, Bastin, Carroll, Flecken, & Schmiedtová, under review). These additional forms of evidence seem to confirm that these CLI effects do indeed occur at the conceptual level, perhaps often in combination with simultaneous CLI effects at the linguistic level.

Most of the research on conceptualization transfer has focused on the construal of motion events in narrative tasks. There is a great deal that we do not yet know about what types of CLI might occur in multilinguals' conceptualization of scenes, situations, arguments, and forms of reasoning and problem solving in tasks other than narratives. There is also still a great deal to be discovered about the relationship between conceptualization transfer and concept transfer, particularly with respect to the templates (or schemas) that people rely on when forming temporary representations of events and situations they have encountered or imagined (Langacker, 2008). These schemas are presumably stored in long-term memory and therefore constitute concepts, so crosslinguistic differences in event construal may very well reflect not just conceptualization (i.e., processing) differences, but also concept (i.e., knowledge) differences. It is important to discover whether speakers of

different languages actually have differently structured event schemas, or whether they simply differ in terms of which schemas they tend to access in particular contexts. Finally, it is relevant to ask whether certain concepts and conceptual patterns might constitute universals and are therefore not relevant to crosslinguistic influence.

CLI and Memory

Memory, and particularly working memory, is either directly or indirectly involved in all cases of CLI, but the relationship between transfer and working memory is just now beginning to receive explicit empirical attention. Two fundamental questions in this area concern the relationship between transfer and working memory capacity (WMC): Does crosslinguistic similarity affect WMC, and does WMC affect transfer? The first question can be further delineated as follows: Does the degree of similarity between the L1 and L2 affect (a) *how much* of the L2 input an L2 user is able to retain in working memory, (b) *how accurately* the input is retained, and (c) *how long* it is retained? Similar but more complicated questions concern cases involving more than two languages, such as when the target language is an L3 and the L1 and L2 differ with respect to how similar they are to the L3. The answers to these questions will of course also be complicated by the multilingual's types and levels of proficiency in each language. These questions have not yet been fully addressed, but two studies that suggest that crosslinguistic similarity does indeed affect whether, how much, and how accurately L2 users are able to process and retain L2 input are Fender (2003) and Odlin (2009). Fender found that due to language differences and differences in educational training, Arabic- and Japanese-speaking L2 users of English tend to have different underdeveloped reading subskills that interfere with WMC and therefore also with reading speed and comprehension. Odlin examined whether Finnish-speaking and Swedish-speaking L2 users of English differ in terms of how well they are able to make use of intermittent written titles appearing in a silent film they were asked to describe. The results showed that the Swedish speakers retained more information from those titles than the Finnish speakers did, a finding Odlin attributed to the greater degree of similarity between Swedish and English than between Finnish and English. He also related these findings to Ringbom's (2007) work on the importance of crosslinguistic similarity for L2 comprehension, learning, and production, all of which can be understood in relation to memory processes and resources.

Regarding the effects of WMC on transfer, some of the relevant subquestions are whether L2 users with higher WMCs might show different types and amounts of CLI. It is of course also relevant to ask to what degree any such effects might be moderated by other factors, such as language proficiency, language aptitude, and so forth. A study by Trude and Tokowicz (in press) addresses these questions to a certain degree in an investigation of the effects of WMC on L2 users' ability to inhibit their L1 while using the L2 (cf. Green, 1998). Viewing working memory as the sum of short-term memory capacity and controlled attention, the researchers investigate specifically whether L2 users with lower WMCs make more L1-induced pronunciation errors due to their reduced ability to inhibit irrelevant (i.e., non-L2) information. The researchers recruited two groups of adult English speakers: one with no prior instruction in any Romance language, and one with at least four semesters of Spanish as a foreign language. The WMCs of both groups were tested and they were given a tutorial in Portuguese pronunciation. Later, they were tested for their ability to recall Portuguese sound-letter correspondences, and the researchers analyzed the types and numbers of errors they made. The results showed that higher WMC was associated with higher accuracy on the recall test, and, interestingly also, that the L2 users with higher WMCs exhibited a higher proportion of Spanish-like errors. The researchers interpreted

both of these findings as suggesting that the participants with higher WMCs were more successful at inhibiting L1 interference, but that they tended not to direct attentional resources toward the inhibition of their less dominant (and presumably less activated) L2 Spanish. An alternative explanation, however, may be that the perceived similarities between Spanish and Portuguese make Spanish more difficult to inhibit (e.g., Ringbom, 2007).

These studies raise a number of additional questions that can profitably be explored in future research. One of the most crucial questions is that, if crosslinguistic similarity does indeed affect WMC, then how is crosslinguistic similarity to be defined? That is, what are the specific similarities that L2 users are able to benefit from in relation to WMC, and are there certain types of similarities that are more critical than others? Also, is there a certain threshold level of crosslinguistic similarity that needs to be crossed before the similarities have a positive effect on WMC? These questions of course extend beyond transfer and have implications for learning in general.

CLI and the Brain

Perhaps the final frontier in the investigation of transfer is the pursuit of when, where, and how transfer occurs in relation to brain physiology. Although the answers to these questions might never become perfectly clear, research has nevertheless begun to address them with neuroimaging technology focusing on (a) the composition of brain tissue through the use of structural magnetic resonance imaging (MRI) and (b) brain functioning through the use of functional magnetic resonance imaging (fMRI) and the measurement of event-related brain potentials (ERPs). Like the research on working memory, the research involving brain imaging so far has addressed transfer primarily from the perspective of effects associated with crosslinguistic similarity.

Concerning CLI effects on the composition of brain tissue, a paper by Green, Crinion, and Price (2007) reviews evidence showing that, with increasing vocabulary knowledge, English speakers develop increasing grey matter density in a specific area of the brain called the posterior supramarginal gyrus. Further research reviewed by the authors shows that Italian-speaking L2 users of English exhibit an even greater density of grey matter in precisely the same area, due presumably to their greater vocabulary knowledge across both languages. This seems to indicate that vocabulary knowledge is stored in the same location regardless of the language it is associated with. However, in the authors' own empirical comparisons of multilinguals who know Chinese versus those who do not, they found what appears to be a clear language-specific effect. The multilinguals who knew Chinese either as an L1 or L2 showed "highly significant enhancement of grey matter density" (p. 195) in areas of both the right and left hemispheres where neither monolingual English speakers nor Italian-English multilinguals show such density. The authors interpreted this result as reflecting the fact that Chinese lexical knowledge requires the encoding of tonal distinctions, which appears to require additional types of neural resources than those needed for the storage of English or both Italian and English vocabulary.

Regarding CLI effects on brain functioning, Kotz (2009) summarizes the relevant ERP and fMRI research. ERPs measure electrical brain activity along a time dimension and in relation to factors such as amplitude and polarity. Two very important ERP components are known as N400 and P600, the former of which refers to a negative voltage deflection occurring approximately 400 ms after a person first encounters a stimulus, and the latter of which refers to a positive voltage deflection occurring approximately 600 ms after the initial perception of the stimulus. According to Kotz, N400 is associated *inter alia* with morphosyntactic, semantic, and thematic role assignment, whereas P600 is associated with

syntactic reanalysis and repair. The research on L1 syntactic processing has found relatively stable N400 and P600 effects in native speakers when processing certain ungrammatical, ambiguous, or complex syntactic structures. Research on L2 syntactic processing has likewise found that multilinguals and L2 users sometimes do and sometimes do not show the same effects. One of the factors that determines whether N400 and P600 effects will occur appears to be crosslinguistic similarity. Studies by Tokowicz and MacWhinney (2005) and several others reviewed by Kotz (2009) show that positive transfer of N400 and P600 effects occurs in L2 users' performance on L2 sentence processing tasks when the L2 structures in question (e.g., tense marking, gender and number agreement) are congruent with L1 structures, and that N400, P600, or both effects fail to emerge in many cases where L1 and L2 structures are incongruent.

The results of the relevant fMRI studies are somewhat different in that they focus on areas of brain activity rather than on the timing of particular electrical events, although there is a relationship between the two (see Kotz, 2009). The relevant studies have confirmed that the activation of specific areas of the brain in multilinguals depends largely on the particular combinations of languages they know, and also especially on how similar those languages are to one another. A study by Jeong, Sugiura, Sassa, Haji, et al. (2007), for example, found that native Korean multilinguals who know Japanese and English as additional languages (with equivalent proficiency in both) showed activation of certain areas of the brain only during sentence comprehension tasks performed in English (i.e., not in equivalent tasks performed in either Korean or Japanese). A second study by Jeong, Sugiura, Sassa, Yokoyama, et al. (2007) provided additional evidence of the effects of specific language combinations. The participants included a group of native Korean multilinguals with Japanese and English as additional languages, and a second group of native Chinese multilinguals with the same additional languages. The results of sentence comprehension tasks performed in all three languages by each multilingual showed the activation of various parts of the brain in English versus the L1 was higher for Korean speakers than for Chinese speakers, whereas the activation of various parts of the brain in Japanese versus the L1 was higher for Chinese speakers than for Korean speakers. Given that Korean is more similar to Japanese than to English, and given that Chinese is structurally more similar to English than to Japanese, the results of this study suggest that crosslinguistic similarities play an important role in the areas and levels of brain activation in multilinguals.

These studies have of course just barely begun to scratch the surface of the some of the most fundamental questions not only for CLI research but also for the fields of multilingualism and second language research more generally. Some of the most crucial questions are the following: How are a multilingual's two or more languages stored and processed in the brain in relation to each other? To what degree and in which areas is a person's knowledge and processing of two or more languages separated versus integrated? What are the differences between a monolingual's and a multilingual's knowledge and processing of the same L1?

Summary

While traditional investigations of both positive and negative transfer in various subsystems of language competence continue, the study of CLI as an object of both empirical and theoretical interest has expanded into the realms of cognition and brain physiology. In both the traditional and new areas of investigation, researchers no longer appear to claim that CLI is completely nonexistent in any particular domain of language knowledge or use, but rather appear to be more interested in examining and discovering more precisely

what its role may be in combination with a host of other factors. A major challenge for the future is the continual discovery of ways in which its effects are manifested, particularly in the still relatively unexplored domains of language knowledge and use, and also in cases where such effects may remain hidden without the development and proper use of new, highly sensitive tools and forms of analysis.

SEE ALSO: Bilingualism and Cognition; Code Mixing; Code Switching; Dynamics of Multilingualism; Multicompetence; Multilingualism

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Crosslinguistic Influence in Second Language Acquisition

TERENCE ODLIN

Terminology

The phrase *crosslinguistic influence* (CLI) is roughly synonymous with other terms, most notably *language transfer* and *interference*, in that all refer to the influence of one language upon another, most typically in cases of second language acquisition (SLA). These terms continue to be used widely, but in each case the expression is really a cover term for a wide range of phenomena. For that reason, secondary terms are often used, such as *positive transfer* to refer to the facilitating effects of one language in acquiring another (e.g., of Spanish vocabulary in acquiring French) and *negative transfer* to refer to divergences due to some differences between the target language and a source language (most typically the native language of the learner). Still another cover term often used is *substrate influence*, but this is found mainly in historical or sociolinguistic studies of language contact, such as work on the influence of certain African languages on the development of creoles in Surinam (Migge, 2003).

While the terms in the first sentence are roughly synonymous, they are not equivalent. *Interference*, for instance, normally implies some kind of negative transfer such as production errors, as when a native speaker of Finnish says, *They sit to the grass* instead of *They sit on the grass*, where the Finn's use of *to* indicates influence from Finnish (Jarvis & Odlin, 2000). Although language-contact studies often emphasize interference in discussions of substrate influence, the facilitating effects of positive transfer are no less important for SLA research.

It is worth noting that the Latin etymology of *transfer* suggests carrying (the *-fer*) across (*trans-*), and a German term for transfer, *hinübertragen*, likewise suggests the motion metaphor, as does the *cross-* in *crosslinguistic influence*. The term *transfer* has occasionally been criticized for its suggestion that something moves somewhere even though the linguistic phenomena are often not physical but rather psychological and social. The metaphor is not a problem, however, as long as researchers keep in mind the essential function of transfer (or any synonym) as a cover term. In this respect it is not very different from the term *metaphor*, which has a similar etymology, or the term *translate*, which is from the same source as *transfer*, even while *metaphor* and *translate* obviously denote rather different linguistic phenomena (Dechert, 2006; Odlin, 2008).

Apart from facilitating and interfering influences, other phenomena that CLI or transfer can denote include not only the influence of a first language on a second (e.g., L1 Finnish on L2 English) but also the influence of a second language on the first (L2 English on L1 Finnish). Any case of second language acquisition implies at least the possibility of both kinds of CLI, and such mutual influences are sometimes studied jointly and are often termed *bidirectional transfer* (e.g., Pavlenko & Jarvis, 2002). Even so, much research focuses on either L1→L2 influence (e.g., Han, 2010) or L2→L1 influence (e.g., Porte, 2003). While second languages are often the research concern, crosslinguistic influence is also manifest in many cases of the acquisition of a third language (De Angelis, 2007). In such cases the

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influences could be L1→L2 or L2→L3, with combined effects of L1 and L2 also being possible as well as reverse influences (e.g., L3→L1). Contexts involving a third language (L3), a fourth language (L4), and so on are often termed *multilingual transfer*.

Crosslinguistic influence affects both production and comprehension. Numerous studies (including many reviewed by Kormos, 2006) have identified influences from the speech-production system of the L1 in vocabulary, pronunciation, and grammar, and there are likewise many studies of CLI in written language (e.g., Jarvis, 1998). The comprehension of spoken and written language is also subject to a variety of influences from the L1 processing systems (e.g., Grabe, 2002; Fender, 2003). One analysis (Ringbom, 2007) maintains that crosslinguistic similarity (as with English and Swedish) proves especially useful in comprehension and thereby indirectly aids production by freeing processing resources for the demands of speaking or writing in a new language.

Errors such as use of the preposition *to* cited above are the most salient manifestation of negative transfer, but the L1 can be involved in other ways as well. Hypercorrections, for example, may arise where the L1 has one phoneme, for instance voiceless velar /k/ in Finnish, while the L2 has more than one, as where English has two velar stop phonemes, /k/ and /g/. Although a spelling error such as *crass* for *grass* could be viewed as a substitution of Finnish /k/ for English /g/, this explanation will not work for the spelling of English *comes* as *gomes*, since Finnish has no /g/; accordingly, the latter error, but not the former, is a hypercorrection. The absence of something in the L1 can sometimes lead to simplification, in the sense that a similar absence is evident in a learner's speech or writing. Finnish does not have articles, and native speakers of that language are more prone to using noun phrases with no article than are native speakers of Swedish, a language that has articles (Jarvis, 2002; Odlin, 2012). In other cases, the presence of something in the native language can induce avoidance, as in the apparent aversion to using certain English words by speakers of Nootka and Thai because the English forms sound too much like taboo words in their L1s (Haas, 1951). In these examples of avoidance, simplification, and hypercorrection, something is absent either in the learner's L1 (e.g., a /g/ in Finnish) or in the learner's attempts in L2 (e.g., certain English words avoided). Because of the *absence* of something, the influence of the L1 on the L2 is not as obvious as the prepositional error with *to*, but in such instances the native language nevertheless proves to be a cause for what is found (or not found) in the learner's L2.

The Verification of CLI

Crosslinguistic influence has been a controversial topic in SLA research, and linguists seeking to demonstrate such influence have employed several methods of verification. One that has often proved persuasive requires having more than one group of native speakers using the target language, the logic being that different L1 groups will at least sometimes show differences in how they use or understand the target language. The examples from Finland given above can illustrate the advantages of such a method. When speakers of Finnish are compared with native speakers of Swedish, there are often significant intergroup differences. Thus, Finnish speakers (but not Swedish speakers) sometimes erroneously supply the preposition *to* when constructing a sentence such as *They sit ___ the grass*. Similarly, Finnish speakers (but not Swedish speakers) sometimes produce misspellings such as *gomes*. Differences in these and other cases can be correlated with characteristics of the native languages.

Similar comparisons have been used with other groups as well (e.g., comparisons of speakers of Tamil and Gujarati by Mesthrie & Dunne, 1990), but the situation in Finland has offered special advantages because of the relatively homogeneous social—but not

linguistic—background of the groups. While most citizens (some 93%) are native speakers of Finnish, a sizable minority speak Swedish as the L1 (ca. 6%). According to Ringbom (2007), the socioeconomic differences between these language communities are not great, and the similarities include the schooling that children in the two groups receive. Much greater are the typological differences between the languages, with Swedish being, like English, a Germanic language, whereas Finnish belongs to a non-Indo-European family (in the Finno-Ugric branch of Uralic). The similarities of Swedish to English give a considerable advantage in learning English vocabulary, pronunciation, and grammar including articles and prepositions. Even while some Finnish speakers do cope well with these challenges of English, speakers of Swedish tend to do better on national examinations (Ringbom, 2007). Since the social backgrounds of students are similar, the differences in success with English seem due much more to linguistic than to social factors.

The above examples of written English of students in Finland come from a database developed by Jarvis (1998), who also collected similar writing samples in Finnish, Swedish, and English from native speakers of these languages. Thus the corpus consists of five subcorpora, three for the native-language samples plus one for English as written by Finnish speakers and one for English by Swedish speakers. All individuals had the same discourse task (describing the events in scenes of a film). The purpose of having five corpora with a uniform discourse profile was to identify structures in the native languages that would be the source for the patterns of apparent transfer, whether positive or negative. In errors like *sit to the grass*, the corpus of native Finnish shows instances such as *istuvat nurmikolle* ('sit grass-to'), where the suffix *-lle* is a case inflection indicating movement toward a goal, the technical term for this particular inflection being *allative case*. Without having the Finnish corpus, researchers might accurately surmise that the allative inflection is the source of such preposition errors, but with actual examples of native-speaker usage, the surmise has stronger support. It is also possible to detail the positive transfer enjoyed by Swedish speakers in their use of articles by contrasting the presence of articles in L1 Swedish and their absence in L1 Finnish, resulting in a very great difference in the use of articles in English by the two L1 groups (Jarvis, 2002).

Although positive transfer most typically involves successes in exploiting a real similarity between the native and target languages, errors sometimes imply at least a little positive transfer (Ringbom, 1987). In the following example, *some* is a slightly respelled Swedish relative pronoun (*som*)—which should be *who* or *that*—in the sentence *That were girl <u>some</u> stole [bread]* (Odlin & Jarvis, 2004, emphasis added). Once again, the writing in the L1 makes clear the source of the error: *Efter en stund kom damen <u>som</u> hade stulit bröde* ('After a moment came the woman who had stolen the bread'). Although native speakers of Finnish produced other errors with relative clauses, none used *some* in this aberrant way. However, what is just as significant as the error with *some* is the use of a relative clause in English; in other words, the similarity of relative clauses in Swedish and English results in the helpful and interfering influences from Swedish simultaneously. A well-known fact about CLI is the danger of so-called false friends, as in the error with *some*. However, Ringbom (2007) has viewed the facilitative influences of Swedish as more significant than the false friends, and the partly positive transfer of *some stole* supports that view.

If the problem of using *some* as a relative pronoun were widespread among other L1 groups, it would be harder to argue for a specifically Swedish influence. However, the error seems to be specific to the Scandinavian language-contact setting. Similarly, the development of a special perfect construction in the English of Ireland and Scotland reflects a very specific regional and linguistic setting, where the verb phrase *is after going* is a present perfect construction in sentences such as *The stone is after going through, he says* (= *The stone has gone through*). Equivalent constructions exist in Irish and Scottish Gaelic, and so the likelihood of CLI is high (Odlin, 2008). The cases of *some* and *after* show that

structures not found in many language-contact situations can sometimes prove to be plausible examples of transfer, even though the method of explicitly comparing two or more L1 groups (as in the case of *some*) offers potentially more detailed analyses.

Constraints and Individual Variation

The above methods provide a way to verify the occurrence of CLI and likewise to falsify some claims about constraints on such influence. For example, the evidence for the positive transfer of articles from Swedish to English falsifies a hypothesized constraint in universal-grammar research about the nontransferability of "functional projections," an abstract structure that includes articles (Vainikka & Young-Scholten, 1998). Similarly, there have been claims of constraints on the influence of L1 word order, L1 inflectional morphology, and L1 idioms, yet, in each case, actual instances of transfer are evident in the literature on SLA and language contact. Although predicting when transfer will occur has long been viewed as a problem, it is no less risky to predict when transfer will not occur (Odlin, 2006).

Specific characteristics of linguistic systems no doubt influence what learners consider transferable, but systemic factors are not immune to individual judgment. Kellerman (1977) stressed the skepticism of many learners that figurative expressions such as *dyed-in-the-wool* (which has a close counterpart in Dutch) were bona fide idioms. For some students, such expressions seemed too close to Dutch to be real. However, Kellerman's figures (pp. 118–19) show considerable individual differences, where not all Dutch students took such a skeptical view. The reporting in Kellerman's study makes it easier to see the importance of individual differences than is the case in some research where statistical treatments focus even more on group tendencies. However, no thorough understanding of the transferability issue seems possible without taking learner differences into account.

Habits and CLI

The controversies over CLI are salient in accounts of the history of SLA (e.g., Larsen-Freeman & Long, 1991) that link the idea of transfer to behaviorist theories of language learning. Selinker (2006) recalls that a key proponent, Robert Lado, was a behaviorist; even so, Selinker also states that Lado's mentor Charles Fries was not (and Selinker himself had studied with both). Certain other structuralists such as Benjamin Lee Whorf (1956) resemble Fries in rejecting behaviorism yet accepting the reality of CLI. Such evidence thus argues against equating CLI with behaviorism even in the structuralist era. Part of the historiographical problem is that many structural linguists including Fries, Lado, and Whorf used the term "habit" in connection with the psychology of learning, yet the word often went undefined and did not invariably imply behaviorist concepts.

Whatever the ambiguities of the term "habit," more recent work in SLA distinguishes a number of phenomena in CLI that the term could denote, including these: activation, automaticity, and entrenchment. Activation can take place in varied circumstances, including when a word in the second language evokes one or more meanings in the native language. Elston-Güttler and Williams (2008), for instance, found that among Germans who use English as L2, the English noun *bag* apparently evokes the joint L1 meanings of pouch and container (the German word *Tasche* can denote either a pocket or a bag). Automaticity serves the needs for speed and economy in language processing, but patterns that are automatic in the native language can contribute to a foreign accent. Hammarberg (2001) observed that a learner of L3 Swedish initially relied more on L2 German similarities with Swedish but that she had more difficulty in suppressing her L1 English phonetic patterns as she grew more fluent in the L3. Hammarberg attributes this problem to the

automaticity of motor patterns linked to L1 English phonetics. Entrenchment can result from an L1 influence that persists and makes it difficult or perhaps even impossible to fully acquire structures such as English articles, which are formally simple yet semantically and pragmatically complex (Han, 2010; Odlin, 2012). The notions of activation, automaticity, and entrenchment are no doubt interrelated, but much more research will be needed to understand the precise nature of the relationships.

Phenomena such as entrenchment were indeed considered in the structuralist era, as seen in a discussion by Whorf of the "binding power" of L1 English on L2 French (1956). Both then and now, the extent of such power remains unclear, partly because of the difficulty of understanding the relation between language and thought (which is sometimes referred to as the "Whorfian" problem). There is research (e.g., Lucy, 1992) supporting some of Whorf's beliefs about the existence of language-specific effects on cognition. If, as Lucy's work indicates, there are subtle cognitive influences that vary with the native language that one happens to speak, such differing influences may play a role in certain types of CLI. Accordingly, phenomena such as entrenchment may have a deep-seated cognitive as well as linguistic basis. Although Whorf's name is often associated with the label *linguistic determinism*, he was more optimistic than some recent psycholinguists, believing as he did that linguistics could help learners overcome the "binding power" of the native language (Odlin, 2008). How true Whorf's view may or may not be remains an important research question.

SEE ALSO: Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Crosslinguistic Influence and Multilingualism; Linguistic Relativity and Second Language Acquisition; Multicompetence; Third Language Acquisition

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Cultural Approaches to Translation

DAVID KATAN

There are numerous cultural approaches to translation, given the numerous definitions of both "culture" and "translation." We might say that both culture and translation revolve around difference. We notice culture as difference, and we require translation when difference significantly affects communication. The approaches may then be divided according to how difference between self and other should be managed in translation. In the first case, "translating from cultures," differences should be *explained*. In the second, "translating for cultures," differences should either be *reduced* (domestication) or *highlighted* (foreignization). The final approach, "translating between cultures," gauges the likely tolerance for difference and attempts to mediate or *reconcile* differences, creating an interspace.

In all cases, it is understood that texts are seen to relate to larger contexts, or frames of interpretation; and that translation involves a form of intervention which goes beyond language transfer.

Translation *From* Cultures

Malinowski was a pioneer in terms of cultural approaches to translation, though he was neither a linguist nor a translator. As an anthropologist he realized that explaining "the native view" of the magic in Trioband stories to an English audience required more than a literal translation, and hence he was "continually striven to link up grammar with the context of situation and with the context of culture" (1935, p. 73). The context of culture is a wide encompassing frame relating to assumptions regarding appropriate behavior, practices, and values as cued by language (Halliday & Hasan, 1989, p. 47; see also Katan, 2004).

Take, for example, the following passage from novelist Jane Austen. At a certain point, Emma finds "her hand seized—her attention demanded, and Mr. Elton actually making violent love to her." The context of situation, pre-Victorian, will inform us that the language cued "courtship"; but to actually understand Emma's attribution of "violent" we would need to know the context of culture, such as how to court 19th-century style, and at what stage the language and behavior would be considered "violent." More generally, as Goffman (1974/1986, p. 25) put it, readers need to know "What is it that's going on here?" and to have ways of giving meaning to that practice or, as he says, of accessing "schemata of interpretation" (p. 8).

If the interpretative frame, or schema, is an internal cognitive representation, then the "thick description" is what the anthropologist will use to help the outside reader access that interpretative frame. Appiah (2000, p. 427) suggests the same approach for translation, defining "thick translation" as "translation that seeks with its annotations and its accompanying glosses to locate the text in a rich cultural and linguistic context." The translator here is a visible frame maker *explaining* cultural differences to the target reader, often through extratextual devices. The famous Victorian translation of *The Thousand and One Nights*, for example, became well known for its explanatory notes on the manners and customs of Muslim men. Yet there are few examples of this type of intervention (Snell-Hornby, 2006, pp. 98–9). This is because most translators and scholars still feel that the

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use of any extratextual notes is not only a sign of translator indecision or inadequacy, but is also off-putting for the reader. So, traditionally, this has been the approach to scholarly works only, such as the translations of the Bible. For the time being, thick translation remains a seldom-used cultural approach.

Translating *For* Cultures

The first translator to offer detailed considerations about the context and to offer a more acceptable cultural approach to translation was Bible scholar and translator Eugene Nida. Though he professed an anthropological approach to *explaining* the source-text culture, he actually had much more interest in allowing readers to read and respond to the Bible in translation in the way the gospel writers had originally intended. However, as he notes, "Reader response can never be identical to the original due to different historical, cultural and environmental contexts" (1964, p. 159).

Reducing Difference

Nida's approach, then, was to translate through dynamic (or functional) equivalence: "Translating consists in reproducing in the receptor language the closest natural equivalent of the source language message, first in terms of meaning and secondly in terms of style" (Nida & Taber, 1969, p. 12). The target words would then trigger the same associations and emotional effect as those of the original text. Hence Nida's provocative suggestion to substitute the meekness of "the lamb of God" for Inuit readers with the image of a meek "seal of God."

According to this approach, a translation is unsuccessful when the reader begins to experience a "culture bump" (Leppihalme, 1997, p. 4), which is "where a reader of a TT [target translation] has a problem in understanding a source-cultural allusion." Today, audiovisual (AV) translation scholars are particularly aware of the "lingua-cultural drop in translational voltage" (Antonini & Chiaro, 2005, p. 39). The area of intervention revolves around omitting, glossing, retaining, or substituting references such as "institutions" and "pastimes" through to "celebrities and personalities." The approach is linguistic, hence nonverbal aspects of signifying cultural practices, such as the use of color, sound, kinesics, and proxemics, meaningful to one audience but not to another, are rarely discussed.

Nida himself was heavily influenced by Chomsky, and used semantic structures to tease out culture-bound meanings. A development of this linguistic approach has been successfully used with comparable corpora. Tognini Bonelli and Manca (2004), for example, show how "Children and dogs welcome" (a standard collocate in accommodation brochures) must be translated differently if dynamic equivalence is to be maintained. The cultural approach here is to analyze target-language collocation frequency lists. In this particular case, Italian dogs are never "welcome," but "accepted." Even more interesting is the fact that children in Italian accommodation brochures are not even mentioned. Children, by default, are always welcome. Hence, assumptions about "children" are clearly dependent on the context of culture.

So far, culture and the context of culture have been perceived as fixed and rather structured entities, framing an original or translated text. During the 1980s, a new loosely defined school of thought began to appear in translation studies, subsequently labelled as the "cultural turn" (Snell-Hornby, 2006, p. 56). The emphasis now was on the text as an integral part of a larger network or system of cultural signs, and no longer bound by the search for the formal or dynamically equivalent *mot juste*.

Deconstructionism and "the death of the author" were extremely influential. They paved the way for the functionalist approach, which was to focus translators' attention away

from text-based equivalence toward the *skopos*: "the function that the target text is intended to fulfil" (Vermeer in Nord, 2005, p. 27). Reducing difference was no longer primarily linked to fidelity with the original text, but now to target-text coherence within a reader's particular world. However, to do so, the translator would still have to construct a particular (and static) context of culture.

Also important was the idea of translation as rewriting (Lefevere, 1992) and of translation as anything that the culture accepts as such (Toury, 1995, p. 26). This rethinking of the relationship between the text and its particular contexts meant that there could be no definitive translation, and that now the difference between "a translation" and "an adaptation" was blurring. As a result, translation studies had finally broken "the two thousand year old chain of theory revolving around the faithful vs. free axis" (Gentzler, 2001, p. 71).

Thus, the cultural approach favored by the functionalists considers not only culture-bound terms and collocations, but also culturally appropriate genre styles and norms (Reiss & Vermeer, 1984; Toury, 1995). This has led to a growth in studies on the subject known variously as "comparative stylistics," "intercultural rhetoric," or "comparative pragmatics" (e.g., Wierzbicka, 2003; Bührig, House, & Ten Thije, 2009). These studies tend to focus on models of appropriate writing style across languages and, in some cases, the culture-bound motivations fostering such styles (e.g., Katan, 2004).

The "cultural filter" became a popular analogy. Like a pair of sunglasses, the filter distorts the way in which reality is perceived, and hence also accounts for the differences in interpreting meaning across linguacultures. For some, the filter should be used actively by translators for non-fictional texts only (e.g., Bührig et al., 2009). For others (e.g., Katan, 2004), cultural and other perception filters are an integral part of interpretation of any text.

An approach designed not just to reduce but to eliminate any trace of source-text culture came originally from the software industry, which needed to "localize" (American-based) products around the globe. The task required making modifications to products and services so that they could sell just as well in local markets worldwide. The cultural approach here involves, for instance, not only adapting the examples and illustrations in the instruction manual for the various languages, but also adapting the language of the software instructions and responses in the computer or phone. Many other features need to be adapted, such as the type of guarantee and often the plug itself. Also, colors and graphics will often be modified to meet local cultural norms. Ideally, to improve efficiency, products and documentation will be market-ready, already "internationalized" (i.e., free of an American context of culture) and hence ready to be localized into all languages through more automated translation.

The translation of comic literature has also been considered a form of localization (Zanettin, 2008), where not only is the dialogue adapted according to the sensitivities of the receiving culture, but there is often new editing, additional cover art, lettering, and retouching. Donald Duck in Italian, for example, becomes an Italian icon known mainly by his new surname Paparino (Duckling), and is more respectful to his elders; while in Arabic he never kisses. However, comic writing has yet to be internationalized.

Though comic and other writing often takes on a new local voice, many translation scholars have noticed that much of the domestication is actually producing a more standardized approach to translation worldwide; and where internationalization does take place it tends to follow an Anglo-American style. The result is a rationalized monocultural "McDonaldization" of translation (Katan, 2004). So, for reasons of efficiency—or hegemony according to postmodernist thinking (Robinson, 1997)—the translation industry is being streamlined into a universal way of thinking and practicing, as envisaged through one local (American) set of appropriate translation strategies and writing styles. In its favor, we have a startling number of instant multilanguage versions of manuals, software, games, (Hollywood) films, and even breaking news. Also the concept of a global norm and lingua

franca (English) regarding academic and scientific production fosters the global dissemination of ideas and helps those from minority languages earn international recognition. Also, oppressed groups such as the Dalits (traditionally regarded as an Untouchable caste in India) have found themselves a new voice and an appreciative audience through translation into English, bypassing local caste opposition and able to make an international case for justice at home (Kothari, 2007).

On the other hand, these voices find themselves standardized in English: "the literature by a woman in Pakistan begins to resemble, in the feel of its prose, something by a man in Taiwan" (Spivak, 2000, p. 400). And translation out of English, constrained through lack of time and space (and in the end money) means that readers and viewers learn to live with "translationese" or "dubbese," as the Anglo-American style is squeezed, unlocalized, into other language spaces on computers, phones, and film.

Hence, in this more global view of culture, difference is indiscriminately reduced. The "other," through economies of scale, is classified rationally, simplified, and stereotyped, reducing any in-depth understanding. In the academic and scientific world of discourse "epistemicide" (Bennett, 2007) may take place, whereby the straitjacketing of academic ideas to an Anglo discursive style might actually result in the *loss* of ideas.

What is being seen is gatekeeping on a global scale, where information and translation is controlled in such a way that minority voices (writing styles, literatures) have difficulty in being heard *as different*. Lefevere (1992) introduced the term "patronage" to describe the economic and political power issues involved in gatekeeping the translation of literature. As a result, American film, TV, and fiction are routinely translated, while all other nationalities' output is not—due principally to issues of patronage rather than to inherent merit.

Highlighting Difference

As a response to the above, postcolonial thinkers are attempting to delimit the spread of what they see as an Anglo-American monoculture globalizing the planet. Culture here is ideological and a sign of power. "Difference" is now seen in terms of inequality, superiority, and inferiority. This approach pits itself *against* the dominating colonial master voice in translation (Venuti, 1998), to safeguard the voices of the subaltern languages and literatures. This is no easy task when the very essence of translation itself entails the removal of one language in favor of another, and the voices themselves (in translation) will be reinterpreted through the limiting cultural filters of the target reader discussed earlier.

The cultural approach, here, attempts to expose and empower the translator, seen no longer as invisible and working passively within the system, but as "committed" or even as "an activist," aiming to consciously intervene against those gatekeeping activities that tend to exclude minority voices. The more activist translators may intervene by subscribing publicly to an anticapitalist stance, by refusing to translate for the dominant culture, by making the hidden ideologies explicit in the text, by manipulating the target text covertly *against* the original intent, and by producing noncommercial or alternative translations in support of minoritized groups (Baker & Chesterman, 2008; see www.babels.org).

Committed translation scholars have also focused their attention on how translators tend to work *within* the dominant gatekeeping system, and how they have intervened on foreign texts, distorting them to fit what they believe to be superior Anglo style. The Victorian poet-translator Edward Fitzgerald is a case in point. His cultural approach to translating a peripheral culture is writ clear: "It is an amusement for me to take what Liberties I like with these Persians, who (as I think) are not Poets enough to frighten one from such excursions, and who really do want a little Art to shape them" (Lefevere, 1992, p. 4). The result was the lauded, and very English, translation of *The Rubaiyat of Omar Khayyam*, and the inclusion today of many of Fitzgerald's stanzas in the *Oxford Book of Quotations*.

Also well known in English are Rabindranath Tagore's own translations of his Bengali poems, for which he received the Nobel Prize in Literature in 1913—the first time it had been given to an Indian. Sengupta (1990, p. 58) suggests that this was due to his ability to efface his poems in translation and create "the stereotypical role that was familiar to the coloniser, a voice that not only spoke of the peace and tranquillity of a distant world, but also offered an escape from the materialism of the contemporary Western world." And herein lies part of the problem: To be read and appreciated, the original voice may well be distorted by the "other" to fit a domestic mold, and "difference," as a result, may well remain stereotypical, linked to a deterministic context of culture.

The postcolonial approach, then, is an attempt to break that mold, focusing on the hybrid nature of cultural, or rather "transcultural," identity (Tymoczko, 2007, pp. 120–39). Postcolonial postmodernist theorists now use the term "cultural translation" to talk about individuals who have crossed these artificial cultural borders into a third space. Those who have done so are themselves, like British–Indian writer Salman Rushdie, "translated men" (1991, p. 17), freed from their original culture to write in their own terms, using their own brand(s) of foreignized English. However, cultural translation has little to do with the translating of texts.

Translation is involved, though, as Robinson notes (1997, pp. 88–113), when these transcultural voices are to be translated into other languages. He outlines three approaches: "literalism" (following House); "métissages," the mixing of multiple races and ethnic language; and finally deliberate "mistranslations" from the dominant language. However, the last two approaches pose a fundamental problem for practicing translators and their readers. For there is little observable difference between a translation regarded as a text which has successfully subverted the established order, breaking the domestic mold, and one that is considered incoherent and "bad" due to its stilted language, signs of interference, and mistranslation. Indeed, the postcolonial approach has been criticized for its lack of utilizable methodology and its elitist approach, while Singh (2007, pp. 77–8) suggests that "perhaps it is time to take a RE-TURN to the study of language and renew the connection between translation studies and the study of language."

Translating *Between* Cultures

The final approach to be discussed is indeed a return to language, focusing as it does on "intercultural communication"—a term popularly used in translation studies (e.g., by the International Association for Translation and Intercultural Studies and *The Translator*), though not always properly understood. For some translation scholars, intercultural communication is understood as equalling language-based "functional equivalence" (Bührig et al., 2009, p. 1)—which takes us back to Nida's approach.

More relevant for translation is the interculturalists' view. First, "an intercultural situation is one in which the cultural distance between the participants is significant enough to have an effect on interaction/communication that is noticeable to at least one of the parties" (Spencer-Oatey & Franklin, 2009, p. 3); second, meaning is not innate in the text, but is constructed through filters according to contexts of situation and culture. This cultural approach focuses on difference between self and other in terms of communicability and in terms of reader *tolerance* of cultural distance.

The translator, here, first gauges the relative distances (in terms of cognitive environment, appropriacy, norms, values, and beliefs) between the source and target contexts of culture; and second, as privileged reader, negotiates levels of tolerance for difference according to original and new intentions. This requires bicultural competence and the ability to (dis)associate and take a third perceptual position (Katan, 2002).

Importantly too, in contrast with House, the concept of ideal or model reader (Eco, 1984) is essential here, for it is necessary to build a plausible model of both original- and target-reader reaction. Yet clearly this necessity is open to further criticism. Second-guessing reader reaction will lead once again toward determinism: the static view of individuals ready-labeled as belonging to idealized or model cultures. Hence the need for the translation to take place within the "mediation space," as proposed by Wolf (2007, p. 113), open to new and evolving hybrid solutions, with the aim of *reconciling* differences according to text and readership tolerance for difference. The translator as a mediator also filters meaning according to her own, at times conflicting, "professional" or "committed" role to find out, indeed, "What is it that's going on here?" between the two cultural worlds.

SEE ALSO: Cultural Linguistics; Culture; Culture and Context: Overview; Intercultural Discourse; Language, Culture, and Context; Linguaculture; Linguistic Imperialism; Norms of Translation; Translation, Localization, and Internationalization; Translation Theory

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Cultural Awareness in Multilingual Education

MICHAEL BYRAM

"Cultural awareness," as a quick Internet search will show, is a widely used phrase and consequently has no single precise meaning. It is used to refer to awareness of diversity within a society and among societies. It is often associated with "training," involving specific activities which draw attention to diversity and encourage and deliberately develop positive attitudes and understanding. Such training is directed at adults in their professional and working lives. It is linked through this to "intercultural competence" which is based in part on heightened cultural awareness and which is itself fundamental to "intercultural communication." This field of activity and study is well enough established to have spawned "handbooks" (e.g., Straub, Weidemann, & Weidemann, 2007; Deardorff, 2009) and many textbooks (e.g., Holliday, Hyde, & Kullman, 2004; Jandt, 2004; Chen & Starosta, 2005).

In the field of multilingual education, the phrase "cultural awareness" can also be found in general use to draw attention to diversity within a society, and therefore within education systems. Learners are perceived as diverse because they speak a range of languages in their home and their environment outside school and, in the school, outside the formal curriculum, or because they adhere to various religions, or because they have different skin color, or some combination of these and related characteristics.

A more specialized use of the phrase than in the sphere of "training" or in education systems in general, is to be found in language education, especially where more than one language—whether "national" or "foreign"—is taught as a subject or used as a medium for teaching other subjects. This contrasts with "training" for cultural awareness which pays little or no attention to the relationship to language learning and proficiency.

It is in foreign language education that most precision in defining and understanding "cultural awareness" can be found, together with the discussion of the meaning of "culture" and the relationship of language and culture. Ultimately this means that "cultural awareness" is used as a starting point and a designation of an area of interest, and is replaced by other concepts and terms. It is the debates and discussions of these which are fundamental to the understanding of "cultural awareness."

The first issue is that of the relationship of language to culture and language to thought. The questions addressed are whether a language embodies a culture and whether a language constrains the thinking of those speaking it as their "native," dominant, or mother language. Definitions of "culture" abound and a much cited collection was made by Kroeber and Kluckholm (1952) whereas Williams traced the etymology of the word in English (1983) and a thorough recent overview is offered by Straub (2007b). The discussion of what distinguishes a native speaker from a non-native speaker is also frequent (e.g., Davies, 2003) as writers try to clarify the concept in order to help language teachers to decide what is correct and acceptable use of a language since, like teachers of all kinds, they have to set standards for their learners. The question of whether a language constrains the thinking of its speakers because of the particularities of its grammar has been discussed since the early 19th century when Humboldt argued that it did, and was renewed in the 20th

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century by the American linguists Sapir and Whorf who also supported this view. The discussion distinguishes between a "strong" hypothesis that language absolutely constrains thought and a "weak" view that a language may influence the way people see and think about their world, but that they can learn to escape and see it through other languages. This issue is linked to the relationship of language and culture since one of the ways of defining culture is the thinking that individuals have and share about their world with others speaking the same language.

Much of this debate was originally based on what is now seen to be a simplistic perception of both language and culture as bounded and internally homogeneous entities. It was assumed that all speakers (and writers) of language X speak and write the same language and share the same culture X, which often has the name X, to be found in country X. This was probably only ever the case for a subgroup within the country X, that is, those with a high level of education, and the homogeneity was in fact a result of their shared educational experience. The fluidity of social life and the consequent changes in societies in the 20th century—not least as a consequence of social revolutions and large-scale migrations—have shown these assumptions to be false. People may be "native speakers" of several languages to different degrees, and possess several ways of thinking that they share with several different groups, large and small, of other people, that is, several cultures. Their situations may change radically over a lifetime and their languages and cultures too. Because fluidity and migration are new phenomena in contemporary history, they challenge language teachers in new ways, although many individuals will nonetheless remain in the same situation and speak and share only one language and culture throughout their lives.

The result of change for language teachers is to cast doubt on their traditional assumptions about language X. Can it be taught as a homogeneous entity spoken by all those who identify themselves with language X? Can they teach about country and culture X if its homogeneity is questioned? Their answer to the first question is easier because despite there being varieties of language X, it has usually been standardized in grammars and reference dictionaries. It is much more difficult for culture X since such standardization does not exist.

Risager (2006) has provided the most comprehensive and authoritative account, both historical and contemporary, of this debate. She argues that the relationship of language and culture needs to be analyzed in terms of social linguistic practice, of the individual's psychological resources, and of language as a (standardized) system. In the first case, language and culture are separable since individual languages are used in many ways, contexts, and cultures, whereas in the second case language and culture are closely associated in the psychology of the individual. Risager develops Agar's (1994) concept of "languaculture," where language and culture are presented as inseparable, to refer to individuals' experience. In the third case, a language can be described as a system but there is no corresponding systematic description of "culture." It is not possible even in principle to envisage such a description, for example, in terms of a national culture. As a consequence she argues in a second book (Risager, 2007) that language teaching must go beyond the focus of language X in country and culture X to include the use of language X wherever it is found for whatever cultures it is used to embody.

In all of this, how to interpret the concept of culture is not lost from sight. The emphasis on a shared way of thinking may be complemented by analysis of artifacts—from music to architecture to literature to school curricula—as realizations of ways of thinking. It may also be complemented by an analysis of rule-governed behavior, that is, the conventions followed, or not, by people who share a way of thinking and Fox (2004), in her account of "watching the English," would argue that these conventions are recognized by a national group, "the English" where the concept of "national culture" is retained.

Once it has been decided, by individual teachers or by curriculum designers, which approaches to take to the relationship of language and culture, the next series of questions arises. Shall learners study and analyze a foreign language and culture or shall they learn to use them as "native" like other speakers do? Shall they do both and if so to what ends? Shall study and analysis be focused only on the foreign language and culture or shall it include a comparison with the learners' own language and culture? In short, shall the focus be on "knowing that" or "knowing how" (Ryle, 1949), or, if both, how shall they be linked?

In practice, the answers to these questions have shifted during the history of foreign language teaching in the modern era (i.e., since the late 19th century), from "knowing that" to "knowing how," from emphasis on "knowledge" to focus on "competence." This is part of a wider change in education systems from transmission of knowledge with curricula specifying what is to be learned to acquisition of competences with specifications of outcomes. Whether there is any substantive link between knowledge and competences or whether the concept of competences includes knowledge is part of a general debate about this shift (Fleming, 2009) and has also been controversial in theorizing about language learning. It is not well developed in theorizing about cultural learning although some models of cultural and intercultural competence include "knowledge that" as well as "knowledge how," as we shall now see.

Models of cultural or intercultural competence have been developed as a response to the complexity of defining culture as knowledge or competence or some combination of both. Pedagogical models of competences can be useful for teachers in education systems or trainers in the world of work since they can help to specify aims and purposes, that is, what competences are to be taught—or "developed" if "teaching" is associated too closely with the transmission of knowledge—and why. Other models, which describe states or stages in the learners of reactions to their experience of other languages and cultures, can be used to identify outcomes which are not competences but attitudes. This latter approach is present in Bennett's (1993) widely quoted model which suggests that people move—or should move—along a scale of reactions from ethnocentricity to ethnorelativity. Although this kind of model can be used to measure one kind of outcome, it does not offer help to teachers planning their curriculum and teaching methods.

A second kind of approach taken in psychology is to chart the possible sources of influences on people, usually children of school age, and their perceptions of and attitudes to cultural others. This is done most authoritatively by Barrett (2007) who has captured the interplay of the multitude of factors identified in empirical research in a societal-social-cognitive-motivational theory. This is useful to teachers because it contextualizes the role of education and demonstrates the power of other factors which they need to be aware of in their pedagogical planning.

Neither psychological approach specifies knowledge or competence nor does it help teachers to clarify the relationship between them. Second, and not surprisingly, these models do not help teachers or curriculum designers to clarify the purposes of teaching knowledge and competences. For the shift in emphasis from knowledge to competences, evident in all education including language teaching, is a challenge to the purposes of language education as well as to the methods used. Pedagogical models are needed to provide answers to questions of "why" as well as "what" and "how."

A recent comprehensive analysis of models of intercultural competence is provided by Spitzberg and Changnon (2009) who have their own categorization of models: *compositional* models which simply list components crucial to success in interaction, *co-orientational* models which describe "interactional achievement of intercultural understanding," *developmental* models which emphasize change over time whilst including definitions of components, *adaptation* models which describe the mutual adjustment required of people

in interaction, and *causal* models which identify the causal relationships among components. This last type would meet one of the criticisms of models presented by Straub (2007a) who argues that many models are weak because they do not specify whether components are necessary or sufficient, whether components are in some hierarchical relationship, whether they developed separately or together, in formal or informal learning, or whether they can be the object of systematic instruction. Again, though his criteria deal with questions of "what" and "how," the issue of "why," so important in educational settings, needs to be added.

It is the emphasis on competences that may lead to an omission of the "why" question in teaching foreign languages and cultures. The stronger emphasis on knowledge prevalent in the first half of the 20th century did not always introduce explicit answers to "why" either, and the most notorious example of an explicit purpose was found in Germany in the 1930s when the use of comparison of cultures in the study of foreign languages was enlisted in the glorification of German culture. Despite this misuse, it is comparison which is crucial to study and analysis as was already the case for classical languages (Bolgar, 1954). This is accepted by curriculum designers but needs to be accompanied by a critical self-awareness, the ability to examine the grounds of comparison and the evaluations which inevitably ensue. The term "critical cultural awareness" has been coined for this (Byram, 1997), a refinement of the more general term "cultural awareness" with which we began.

SEE ALSO: Critical Pedagogy; Cultural Studies; Culture; Intercultural Competence

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Cultural Capital

GAI HARRISON

The idea of "capital" commonly conjures up images of money or property, or alternatively a form of wealth that can be invested to grow more wealth. However, capital can also take a variety of noneconomic forms, which in turn can be used to gain access to other resources in the marketplace. The sociologist Pierre Bourdieu has been a key theorist in this regard. He has expanded on traditional understandings of capital to include nonmaterial forms, including cultural capital. In contrast to economic capital, Bourdieu (1986, pp. 243–48) defines cultural capital as the knowledge, qualifications, values, tastes, and other lifestyle factors acquired through the processes of socialization and education. Language, in the form of linguistic capital, is considered a type of cultural capital. For example, the way one speaks or the languages one speaks signifies a measure of cultural capital (Bourdieu, 1977, 1991). The possession of certain types of socially valued cultural capital may then allow a person to procure additional resources that can be translated into material wealth. In other words, under the right conditions cultural capital can be converted into other forms of capital. However, cultural capital is unevenly distributed and consequently it is implicated in the reproduction of inequality.

Bourdieu (1986) delineates three types of cultural capital. *Embodied* cultural capital is a product of education and socialization and encompasses an individual's knowledge and skills. It includes one's language competencies and leaves visible marks on the body, such as accent. In its *objectified* form, cultural capital comprises material objects such as art, books, or instruments. However, in order to make appropriate use of this form of cultural capital and realize its value, one needs the prerequisite embodied cultural capital, or "know-how." The last form of cultural capital identified by Bourdieu is *institutionalized* cultural capital, which may take the form of credentials or qualifications. Institutionalization confers an objective value on cultural capital and allows for its conversion into economic capital, where its potential profitability also depends on its scarcity (Bourdieu, 1986, p. 248). At the same time, cultural capital such as language competencies have no real value unless they are deemed legitimate by dominant groups. Without this legitimation, cultural capital holds little symbolic value as a tradable asset (Bourdieu, 1991).

An individual's cultural capital is evaluated according to social context, or the particular field in which these social relations are played out. Bourdieu likens a field to a group of players who all have an investment in the game, with some seeking to maintain the status quo and others striving to alter the distribution of capital or to have its relative value reassessed in order to ensure its recognition. In this sense, a field constitutes a site of struggle (Bourdieu, 1991). However, this does not mean that each player necessarily has a game plan. On the contrary, players in the field often do not consciously calculate their moves. Instead, they are predisposed to play the game in a certain way. Bourdieu terms this a person's *habitus*, which refers to a set of deep-rooted dispositions or an orientation to the world. For example, a person's linguistic *habitus* may be evident in a way of speaking which has been unconsciously acquired in the course of growing up, which also carries traces of his or her class position (Bourdieu, 1991, pp. 81–9).

Families and schools are primary sites for the transmission of cultural capital. Parents in particular are important conveyers of cultural capital, which is passed from one generation to the next. However, the acquisition of cultural capital may not occur on a conscious

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level and the way in which it is both acquired and transmitted is rarely visible (Bourdieu, 1986, p. 245). Cultural capital is also implicated in the maintenance and reproduction of class structures. Upper-class children who possess the "right" cultural capital can make good use of this in the education system, where it is recognized and rewarded.

A relationship is posited to exist between the investment families make in cultural capital and scholastic outcomes, which in turn is dependent on one's social capital. Bourdieu (1986) defined social capital as an individual's relationships, networks, and group affiliations. Social capital can be employed to "back up" cultural capital as it opens doors for people and allows them access to influential networks (Bourdieu, 1986, p. 244). However, in order to be put to good use, these personal connections need to be durable and signify the right credentials, such as being affiliated with a well-known family or school. In addition, a "closed club" mentality may be in operation where elite or more powerful groups fortify their boundaries to exclude those deemed to lack the appropriate social capital. This in turn limits their access to the elite group's valued resources and prevents them from being able to capitalize on their own cultural capital.

These dynamics similarly play out in linguistic exchanges. Language competencies act as a form of capital that are differentially valued in the linguistic market and play a key role in regulating access to public resources and income (Bourdieu, 1977). In other words, some languages and language practices have greater buying power than others. The value of any particular language in the marketplace is tied to the worth of its speakers and the types of linguistic capital that are accorded high value are not equally available to everyone (Bourdieu, 1977). This process is moderated by the interests of dominant groups who determine the value of linguistic resources. In doing so, dominant groups "regulate access to other resources (such as knowledge, friendship, or material goods) and legitimate the social order that permits them to do so by masking (that is naturalizing) their ability to do so" (Heller & Martin-Jones, 2001, pp. 2–3).

The view that language operates as a form of differentially valued cultural capital which is an influential determinant of life chances is particularly salient in the contemporary global era. Globalization has increased opportunities for information exchange as well as enhancing cross-border mobility. In this current climate, language takes on greater economic importance where the ability to speak another language or use language in certain ways signifies a measure of cultural capital (Bourdieu, 1991, pp. 43–65). English, in particular, has come under the spotlight because of its global dominance in a range of activities, including business, information technology, and academic publishing. As a global language that is now the center of a vibrant growth industry, English is "marketed as a language of success, hedonism, and international mobility" (Phillipson, 2001, p. 2). Accordingly, it functions as a form of cultural capital that can be used to gain access to other resources in the marketplace.

For some individuals, making an investment in learning English has concrete dividends in terms of increasing work options, pay, and status. For native speakers, however, this cultural capital is inherited and they effortlessly enjoy more linguistic capital by virtue of the fact that "the 'communication value' of their language increases as others learn it as a foreign language" (de Swaan, 1998, p. 117). In some contexts this may promote asymmetrical relations between "native speakers" and those ascribed the status of "non-native speakers," especially when these relations are reproduced in educational settings and the workplace. In these contexts, the embodied cultural capital of the native English speaker is accorded higher symbolic value than that of the non-native speaker (Pennycook, 2001, p. 125). In this regard, not having the right accent or speech style may mean that a person's linguistic capital is devalued in the linguistic marketplace. This in turn illustrates how privileged groups may regulate access to cultural capital.

These inequitable social arrangements are similarly evident in countries where English was introduced via colonization. The prestige and status attached to speaking English in Hong Kong is a case in point here. Although Hong Kong's sovereignty was returned to China in 1997, English remains a sought-after form of symbolic capital, providing vital access to educational and economic resources and perpetuating class divisions (Lin, 2001; Chan, 2002). Its uneven distribution ensures that it acts as a type of cultural capital that is disproportionately available to privileged groups.

What these examples illustrate is that although everyone builds up a stock of cultural capital, it is not necessarily the case that the cultural capital one acquires is particularly valuable or will return concrete dividends. Indeed, "without the 'right' cultural capital, one cannot make connections, interact competently, or be taken seriously in certain places" (Schwalbe et al., 2000, p. 430). In the case of language, the "right" cultural capital usually constitutes those language practices that are afforded value and legitimated by dominant groups.

In summary, as a tool of analysis, cultural capital allows for an understanding of how linguistic interactions are implicated in both expressing and reproducing the social order. However, Bourdieu's ideas have been criticized in some quarters for being overly deterministic of the reproduction of the social order and dominant language practices, not recognizing the multiple manifestations of power, and negating the possibility for change (Pennycook, 2001, pp. 126–7). Nonetheless, in terms of its utility for applied linguistics, cultural capital provides a useful lens for examining the complexities of linguistic exchanges and how they are embedded in broader social and economic relations.

SEE ALSO: Bilingual Education and Immigration; Empowerment and Bilingual Education; Intercultural Learning; Subjectivity

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Cultural Hybridity

BIRGITTA FRELLO

The concept of (cultural) hybridity has gained prominence within a broad range of cultural and social theories since the 1980s, most notably within postcolonial studies, cultural studies, and globalization theory. The importance and influence of hybridity theory is thus closely related to an increased awareness of global cultural flows, influences, and interdependences, both historically and contemporarily. Furthermore, focusing on hybridity and hybridization is a way of conceptualizing difference that aims to avoid and undermine ideas of boundedness and closed identity and hence also avoid the essentialism that haunts theories of multiculturalism for instance.

The concept of hybridity is closely related to other concepts that are aimed to capture the mixture and interrelations between previously separate units or to overcome what is perceived as a problematic conception of clearly distinguishable cultural units. Examples of other concepts within the same field are creolization, syncretism, and transculture. Sometimes the concept of hybridity is treated as a general concept that designates the whole field, and sometimes it is treated as a specific concept among other concepts in the field, for example pointing to the field of cultural production, whereas creolization primarily deals with language and syncretism primarily deals with religion.

As several scholars have noted, the concept of hybridity is historically rooted in biology, referring to the interbreeding of species. This conceptual history also links the concept to the problematic legacy of racism and the fear of miscegenation and contamination of the white race in the era of colonialism (see Young, 1995, for a discussion). However, as has also been noted, the link to biology does not necessarily or exclusively connect the concept to racism and the ideas of purity, since cross-fertilization is also a positive means of development in biology (e.g., García Canclini, 2000).

The concept of hybridity primarily entered cultural theory through postcolonial studies. Here, the idea that hybridity not only constitutes a form of "mixing" but also entails a contamination of purity was turned upside down and developed into a critical gaze on conceptions of cultural and racial purity in colonial relations. This development was partly inspired by Mikhail Bakhtin's discussion of hybridity in language and his analysis of the carnival (Bakhtin, 1981, 1984).

Some of the most renowned hybridity theorists, working within the fields of postcolonial studies and cultural studies, are Homi K. Bhabha, Stuart Hall, and Paul Gilroy. Despite differences, they all share a perspective that is critical toward notions of cultural and racial purity and that relates this critique to a critique of power hierarchies. Central to the work on hybridity by these—and other—theorists is that the concept and the problems that it addresses not only refer to a "mixture" of cultural elements with different origins, but also point to a displacement and disturbance of established identities. The concept of hybridity seizes the disturbing sense of ambivalence in the encounter with the other who is "almost the same, but not quite" (Bhabha, 1994, p. 86).

According to this line of thought, hybridity refers not only to the mixing of cultural elements but to the interdependence and basic impurity of the identities involved in the cultural encounter in colonial relations as well as in postcolonial migration. Hence, hybridity involves the destabilization of identities in encounters between colonizer and colonized

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as well as in postcolonial encounters when postcolonial migrants enter the former colonial centers. The result is an undermining of the construction of the "West" as the natural repository of truth and reason: "The displacement of the 'centred' discourses of the West entails putting in question its universalist character and its transcendental claims to speak for everyone, while being itself everywhere and nowhere" (Hall, 1996, p. 446).

Thus, to some extent the concept of hybridity as employed in postcolonial theory and in cultural studies stands in opposition to the concept of multiculturalism. Both share the effort to capture the complexities of a world marked by infinite encounters between people with different backgrounds and different worldviews. However, while "multiculturalism" often still maintains a notion of an independent existence of separate and bounded cultures prior to the encounter, "hybridity" is aimed directly at overcoming the notion of a prior existing bounded culture.

A later development in theories of cultural hybridity is found in theories of globalization. Although the two theoretical strands are not independent and not clearly discernible either, they do to some extent address different basic questions and rest on different theoretical insights, leading to different notions of the hybrid.

When the notion of hybridity is employed in theories of globalization, the concern is to grasp what happens to culture, cultural production, and identity in a world that is characterized by increasing cultural exchange both in terms of institutions and processes, such as media and migration, and in terms of ideas and cultural products and practices. The increased cultural, economic, and human flows across borders and continents fundamentally change the conditions of existence for cultures and cultural identities. Therefore, within globalization theory, the notion of hybridity is related to the discussion about the distinction between the local and the global and to other conceptual attempts to overcome this dichotomy and stress the interdependence and conflation of scales, places, and practices, notably Roland Robertson's term "glocalization" (Robertson, 1995).

While the notions of the destabilization and denaturalization of hitherto taken-for-granted identities are central for theories of hybridity in postcolonial theory and cultural studies, the notion of "mixture" is more central in globalization theory. It is the (hybridizing) consequences of the very scope and speed of cultural exchanges that the concept is aimed to grasp. As in this quote from Nederveen Pieterse (1995, p. 53), in which he indicates the need of a theory of hybridization:

> How do we come to terms with phenomena such as Thai boxing by Moroccan girls in Amsterdam, Asian rap in London, Irish bagels, Chinese tacos and Mardi Gras Indians in the United States, or "Mexican schoolgirls dressed in Greek togas dancing in the style of Isadora Duncan"?

The claim that it is necessary to theorize globalization in terms of hybridity is substantiated by arguing that globalization does not only involve a Westernization of the non-Western world. The influences are mutual and the result is not homogenization but hybridization. By focusing on the hybridization of culture, it is thus possible to grasp the complexities involved in the process of mutual adaptations and reinterpretations of cultural forms in the contemporary world.

However, the usefulness of the concept of hybridity in cultural theory is not without opponents. The main critiques focus on the claim to overcome essentialism and on the relation to power and social critique (e.g., Friedman, 1997, 1999; Hutnyk, 1997). The concept of hybridity is primarily employed in order to counter conceptions of purity, be it by focusing on the denaturalization of hitherto taken-for-granted identities, as in postcolonial theory and cultural studies, or by focusing on the accelerated blending of cultural forms

as in globalization theory. Nevertheless, one of the main and most persistent lines of critique against the use of the concept is that it presupposes and reproduces the same essentialist notion of culture and identity that it sets out to criticize, since in order to identify something as "mixed" one needs to presume a preexisting pure form. Another line of critique focuses on the question of power. In postcolonial studies hybridity is often seen as a critical moment in a world in which power differences rest on notions of purity. However, according to the critics, this celebration of mixing goes very well with dominant global power interests of today. Thus, celebrating hybridity may support power hierarchies as much as it challenges them.

It can be contested whether these critiques always hit their target. The field of hybridity theory is complex and internally characterized by disagreements and differences, and the problems that Friedman, Hutnyk, and others criticize are discussed at length also within the field of hybridity theory itself (e.g., Ang, 2001). Notwithstanding the critique, the introduction of hybridity in cultural theory has contributed to highlighting processes and relations that have been left largely out of sight in traditional cultural theory. Thus, cultural hybridity not only refers to the mixing of cultural elements. It is a term that is employed in various ways in order to conceptualize and critically engage with relationships between notions of purity and impurity in a cultural–historical perspective. It is "a heuristic device for analysing complicated entanglement," as Ang (2001, p. 17) puts it.

SEE ALSO: Bakhtin, Mikhail M.; Cultural Identity; Cultural Studies; Postcolonial Studies

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Cultural Identity

JOHN E. JOSEPH

Identities are manifested in language, first, as the categories and labels that people attach to themselves and others to signal their belonging; second, as the indexed ways of speaking and behaving through which they perform their belonging; and third, as the interpretations that others make of those indices. The ability to perceive and interpret the indices is itself part of shared culture. Every individual has a repertoire of identities of various kinds—some combination of national, ethnic, religious, generational, and gender identities, together with those relating to social class, sexual orientation, profession, and various levels of sub- and supranational belonging.

The term "cultural identity" is sometimes applied to some or all of those just named above, while at other times it is reckoned to be a distinct category. On the one hand, culture and identity are never entirely separable: It is a defining trait of the concept of culture that whatever beliefs, values, inclinations, tastes, practices, and texts constitute it must also serve an identity function for those who participate in the culture. On the other hand, no group can be expected to be culturally homogeneous; the urge to tribalize is too deeply rooted in human nature, indeed its ubiquity in animal behavior testifies to how deep it runs in our evolutionary heritage. So, for instance, within Islamic religious identity there are different ways of 'being Muslim'—in other words, a variety of Islamic cultural identities, subsumed under the umbrella of a religious identity that itself admits of variants: Sunni and Shia, and, within the latter, Sufis, each with their distinctive practices and texts, even if most of their central beliefs are the same.

Cultural identities rarely carry great imaginative power unless they are textualized as national or racial/ethnic identities. People do not go to war for their culture in the way they willingly die for their fatherland or their people, or other "imagined communities" which they perceive as being *naturally* constituted, rather than just arbitrary, contingent cultural constructs (Anderson, 1991). And yet, it is not provable that any race or nation is a "natural" entity; all are at least partly constructed, and, at the same time, as Mary Catherine Bateson has pointed out, "Everything is natural" (Bateson, 1995). Gender identities might seem to be directly linked to the physical configuration of reproductive organs, and yet people are readier to accept that an individual is a "woman trapped in a man's body," or vice versa, than they are that someone is a Japanese trapped in an Ethiopian's body.

The idea that the existence of communities is largely textual has not simply been invented by academics. The essentially cultural nature of race was established in law by the British House of Lords in 1983, in the case of *Mandla v. Dowell Lee [1983] 2 AC 548*, in which a Sikh boy won the right to wear his top knot and turban despite its violating his school's uniform code. The opinion stated that a number of criteria make a race, of which two are essential:

1. a long shared history, of which the group is conscious as distinguishing it from other groups, and the memory of which it keeps alive; and
2. a cultural tradition of its own, including family and social customs and manners, often but not necessarily associated with religious observance.

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In addition, five further conditions were determined to be "relevant" but not essential:

3. either a common geographical origin or descent from a small number of common ancestors;
4. a common language, not necessarily peculiar to the group;
5. a common literature peculiar to the group;
6. a common religion different from that of neighboring groups or from the general community surrounding it; and
7. being a minority or being an oppressed or a dominant group within a larger community.

Sikhs were given recognition as a race under the law by virtue of being "a distinctive and self-conscious community . . . although they are not biologically distinguishable from the other peoples living in the Punjab." A crucial piece of evidence for their distinctiveness lay in a surprisingly fine-grained fact about their literary language, Punjabi: "They have a written language which a small proportion of Sikhs can read but which can be read by a much higher proportion of Sikhs than of Hindus." The law recognizes that race is not a genetic given but a cultural, historical, textual, and linguistic construct. What differentiates it from, say, religion, is the physical nature of the signs by which it is interpreted—skin color, hair texture, the shape of facial and other bodily features. But these things are never fixed. They overlap, as we should expect them to do given that people have always tended to marry outside their genetic group. Indeed many cultures require exogamy. And the interpretation of racial features itself takes place within a culture-specific context.

Among the constituent elements of cultural identity, shared tastes and inclinations are more bodily and emotional in orientation, while shared beliefs and values are mental and rational. But none of these tastes, inclinations, beliefs, or values is directly observable, apart from in oneself through introspection. All we can observe in others is *practices* and *texts*, from which we infer the other elements. Ethnographic analysis proceeds therefore as though cultures are made up of practices and texts. The practices include how food is obtained and prepared, how clothing is made and decorated, patterns of marriage and family arrangements, how trade is carried out and how worship is conducted. Often these practices are encoded in or bound up with texts, either in the narrow sense of written texts or oral tradition, or the broader one of visual texts, including paintings, statues, and other totemic figures, tattoos, jewelry, songs and chants, dances, and the like.

Language is a practice—the systematic signifying practice of a particular group—through which texts are made. Language is itself also a text, inasmuch as those who share the practice of a particular language inevitably discuss what is the right or the better way of saying something, make certain expressions taboo, and otherwise engage in the sort of metatalk about the language that gives it a kind of social and cultural reality. The very concept of "a language" arose historically only after, and in conjunction with, the practice of writing. In the modern world the culture of language has been centered around two particular types of texts: the lexicon and the grammar; such is their power that even scientific linguists, led by Chomsky, have ended up projecting these two text types into the brain, as modules of mind that supposedly have a physical (hence universal) basis. However, in doing so these linguists have closed their eyes to the metaphorical nature of their projections and the fact that they are based on cultural textual artifacts.

Identities, whether of an individual or of a community, are not a given. They have to be forged—created, transmitted, reproduced, performed—textually and semiotically, that is, through signs. Language being the ultimate semiotic system, every identity ideally wants a language of its own. Not a wholly new language, but at least some segment of the vocabulary that insiders can use to distinguish themselves from outsiders. Joseph (2006) argues that this is a much more significant factor in language change than historical linguists

have been prepared to admit. For every identity a time comes when a new generation wants it updated. New words, signs, and texts are admitted, often by hybridization with some more recent and vibrant identity.

Silverstein (2003) has developed an approach to the analysis of the "indexicality" of language that attempts to capture how cultural meanings—on the level of ethnicity, class, gender, or any number of other factors—are encoded in and interpreted from utterances. He regards linguistic communication as containing a vast complex of indices, operating on various levels, from those of word meaning to the pragmatics of communicative "face," to the various forms of micro- and macrosocial indexing that constitute linguistic identity. His contention is that these levels are not positioned either haphazardly or even on a par with one another, but are ordered hierarchically. Whatever level of indices one may be analyzing (which Silverstein calls n), there is always a next higher level ($n + 1$) that will emerge from how n is used in communication. So, for example, my choosing to address someone with informal *tu* or formal *vous* in French indices my perceived relationship to him or her (level n), but also has immanent within it the potential for me to be indexed by others for what my pronoun choice says about me (level $n + 1$). This structured indexicality produces "registers," "alternate ways of 'saying "the same" thing' considered 'appropriate to' particular contexts of usage" (Silverstein, 2003, p. 212), and within which culturally specific meanings are "enregistered" (for a particular application, see Agha, 2003).

Blommaert (2007) has contested Silverstein's approach on the grounds that it focuses too much on the linguistic sign, rather than on the social institutions that transmit and reproduce the orders of indexicality. Indexical order cannot explain why an individual's linguistic behavior is regular enough to be identifiable as his or her own. For Blommaert (2007, p. 117), "Register" can be characterized as follows: "clustered and patterned language forms that index specific social personae and roles, can be invoked to organise interactional practices used for typifying or stereotyping. Speaking or writing through such registers involves insertion in recognisable (normative) repertoires of 'voices.'" The current debate among linguistic anthropologists is to what extent these indices are precise and fixed or "constitute a field of potential meanings—an indexical field, or constellation of ideologically related meanings, any one of which can be activated in the situated use of the variable" (Eckert, 2008, p. 453).

Cultural identity poses problems within cultures as well as between them, for instance, on the ethical and political level, issues of multiculturalism and multilingualism. Appiah (2005) distinguishes between a "hard" pluralism that takes very seriously the ethical imperative for allowing dissenters to opt out of the group culture into which they were born, and a "soft" type, inclined to see the group as the most important unit where autonomy is concerned, and to insist that individuals cannot have real autonomy except as part of their group belonging. Appiah challenges Kymlicka's (2001) faith in a distinction between exogenous and endogenous change, with the latter being a valid way for a culture to evolve, by raising the thorny case of arranged marriages within South Asian families in the UK. If younger members of the culture want to choose their own partners, is this an exogenous British value that should be resisted in the interest of cultural preservation? Appiah concludes that

> when multiculturalists like Kymlicka say that there are so many "cultures" in this or that country, what drops out of the picture is that every "culture" represents not only difference but the elimination of difference: the group represents a clump of relative homogeneity, and that homogeneity is perpetuated and enforced by regulative mechanisms designed to marginalize and silence dissent from its basic norms and mores. (Appiah, 2005, p. 152)

On the more theoretical level, cultural identity poses the problem of how it is that even individuals who are not dissenters within their particular cultural identity nevertheless possess agency and make choices that they perceive to be free, while at the same time recognizing that those choices are partly shaped by the culture of which they are a part. Gramsci's (1971) theory of hegemony is an attempt to explain the cultural shaping as a political imposition, while warning that the perception of agency may be an example of "false consciousness." And yet such a strong form of hegemony cannot explain how it is, for example, that, despite having as strong a cultural indoctrination apparatus as has ever existed, the Soviet Union and its satellite states were not able to control the choices of their citizenries and eventually collapsed, to be replaced by the capitalism which they had spent 70 years building and enforcing a culture aimed at demonizing. Bourdieu's (1991) theory of the individual as "habitus," making choices guided by inclinations inculcated into us since early childhood, is an attempt at striking a balance between individual agency and the field of social and cultural forces in which that agency is situated.

SEE ALSO: Cultural Capital; Cultural Hybridity; Cultural Representation; Culture; Language, Culture, and Context

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Cultural Linguistics

FARZAD SHARIFIAN

Introduction

In the broadest sense of the term, "cultural linguistics" refers to the subbranch of linguistics that explores the relationship between language and culture. More specifically, it attempts to understand language as a subsystem of culture and examine how various language features reflect and embody culture. "Culture" here is meant in the anthropological sense, that is, as a system of collective beliefs, worldviews, customs, traditions, values, and norms shared by the members of a cultural group. Research on the relationship between language and culture has significant implications for areas in applied linguistics that require an understanding of language as a system firmly grounded in culture. These areas include intercultural communication and teaching/learning foreign languages.

Interest in studying the relationship between language and culture is not new. It can be traced back at least to the 18th century. Wilhelm Von Humboldt (1767–1835), Franz Boas (1858–1942), Edward Sapir (1884–1939), and Benjamin Whorf (1897–1941) are prominent scholars who all emphasized the relationship between language, thought, and culture. The most well-known and controversial view in this area is known as the Sapir–Whorf hypothesis, and is based on the work Sapir and Whorf conducted on the Hopi languages of America. They concluded that speakers of different languages think differently and have different views of the world. They argue that, since different languages "dissect" the world differently, the structure of the language spoken determines the thought patterns of the speaker. A milder version of this hypothesis, known as the weak version, simply states that language, thought, and perception are interrelated.

In more recent decades, a number of American anthropological linguists, most notably Dell Hymes and John J. Gumperz (e.g., Gumperz & Hymes, 1972), placed the study of language within the context of culture and society. Hymes and Gumperz, and Hymes in particular, established a framework for the ethnography of communication, or culturally distinctive means of communication.

Cultural Linguistics as a Branch of Cognitive Linguistics

The term "cultural linguistics" was perhaps first used by a pioneer of cognitive linguistics, Ronald Langacker, in an argument emphasizing the relationship between cultural knowledge and grammar. He maintained that "the advent of *cognitive linguistics* can be heralded as a return to *cultural linguistics.* Cognitive linguistic theories recognize cultural knowledge as the foundation not just of lexicon, but central facets of grammar as well" (Langacker, 1994, p. 31, original emphasis). However, in practice, so called "mainstream" cognitive linguists were united by their main focus on exploring the relationship between language and conceptualization. The role of culture in shaping language and its influence on all levels of language was not adequately dealt with until the publication of *Toward a Theory of Cultural Linguistics* by Gary B. Palmer, a linguistic anthropologist from the University of Nevada, Las Vegas. In this book, Palmer argued that cognitive linguistics can be directly applied to the study of language and culture. Central to Palmer's proposal is the idea that

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"language is the play of verbal symbols that are based in *imagery*" (Palmer, 1996, p. 3, emphasis added), and this imagery is culturally constructed. Palmer argued that culturally defined imagery governs narrative, figurative language, semantics, grammar, discourse, and even phonology. His work on cultural linguistics, based on the analysis of cases from languages such as Tagalog and Coeur d'Alene (e.g., Palmer, 1996, 2003), revealed how the basic analytical tools of cognitive linguistics, such as "schema," "image schema," and "conceptual metaphor," can be grounded in cultural knowledge.

The notion of "schema" has been very widely used in several disciplines, and this has led to different understandings and definitions of the term. For cognitive linguists such as Langacker, schemas are abstract representations in the sense that a noun, for example, instantiates the schema of [[THING]/[x]], whereas a verb instantiates the schema of [[PROCESS]/[x]]. In classical paradigms of cognitive psychology, however, schemas are considered more broadly as building blocks of cognition used for storing, organizing, and interpreting information. Image schemas, on the other hand, are regarded as recurring cognitive structures which establish patterns of understanding and reasoning, and are often formed from our knowledge of our body as well as social interactions (e.g., Johnson, 1987). An example of this would be to understand the body or parts of the body as a *container*. Such understanding is reflected in expressions such as *with a heart full of happiness*. Conceptual metaphors are defined as cognitive structures that allow us to understand one conceptual domain in terms of another. For instance, the English metaphorical expression *you broke my heart* reflects the conceptual metaphor of HEART AS THE SEAT OF EMOTION (e.g., Lakoff & Johnson, 1980). Palmer persuasively argued that all these conceptual structures are very likely to have a cultural basis.

A number of other linguists have also emphasized the relationship between language and culture, most notably Wierzbicka (1979), who introduced the term "ethno-syntax" (see also Wierzbicka, 1992; Enfield, 2002). Mathiot (1979) edited a collection of essays, which she called *Ethnolinguistics*, in which contributors explored the relationship between language and worldview. *Ethnosemantics* has been a subfield of anthropology since at least the 1960s, and the aim of ethnosemanticists has been to study "the ways in which different cultures organize and categorize domains of knowledge, such as those of plants, animals, and kin" (Palmer, 1996, p. 19). Goddard, a close associate of Wierzbicka, edited a volume entitled *Ethnopragmatics: Understanding Discourse in Cultural Context* (Goddard, 2006). In this book contributors provided a culture-internal perspective toward speech practices across different languages. Another influential trend of work on the relationship between language and culture has been what might be described as the social-anthropological/sociolinguistic approach, influenced by the work of scholars such as Michael Agar. Agar (1994) used the term "languaculture," following Paul Friedrich's (1989) "linguaculture," to describe the relationship between language and culture. For Agar, "langua" relates to discourse, not just words and sentences, and culture underlies meanings. This work is further developed in Risager's (2006) treatment of "global flows and local complexity," where she explores the intricate relationship between language and culture from a transnational perspective, presenting a critique of simplified accounts of language and culture. This view emphasizes the fact that "[l]inguistic and cultural practices change and spread through social networks along partially different routes, principally on the basis of transnational patterns of migration and markets" (Risager, 2006, p. 2). All these enterprises can be subsumed as part of the broad discipline of cultural linguistics.

Palmer's proposal for a theory, or perhaps "paradigm," of cultural linguistics inspired a number of cognitive linguists to examine in depth the grounding of language in culture. For example, one of the main strands of research within cognitive linguistics is to explore how a conceptual metaphor is grounded in bodily experience (e.g., Lakoff & Johnson, 1980). Within this area, those who adopt a cultural linguistic perspective explore how such

conceptual metaphors are different from language to language and how such conceptualizations have their roots in particular cultural traditions such as ethnomedical belief systems (e.g., Sharifian, Dirven, Yu, & Neiemier, 2008; Yu, 2009a, 2009b).

The theoretical direction that Palmer initiated has been further developed in the work of Sharifian (2011), in the form of a multidisciplinary framework that draws on theoretical advancements in several disciplines and subdisciplines, including cognitive linguistics, cognitive anthropology, cognitive psychology, complexity science, distributed cognition, and anthropological linguistics. This framework, termed *cultural conceptualizations and language*, views language as firmly grounded in a group-level cognition that emerges from the interactions between the members of a cultural group. Two important aspects of cultural cognition are *cultural conceptualizations* and language. Cultural conceptualizations are defined as conceptual structures such as "schemas," "categories," and "conceptual metaphors," which not only exist at the individual level of cognition but also develop at a higher level of cultural cognition, where they are constantly negotiated and renegotiated through generations of speakers within a cultural group, across time and space. These cultural conceptualizations are *heterogeneously distributed* across the members of a cultural group, in the sense that individuals do not exactly share all the elements of the conceptualizations that are drawn upon by the entire group. Language is a primary means for encoding and communicating cultural conceptualizations, serving as a memory bank for the cultural conceptualizations of a particular cultural group.

Examples of the Grounding of Language in Cultural Conceptualizations

To cite an example of the grounding of language in cultural schemas, everyday words such as "family" and "home" are, when used in Aboriginal English, associated with Aboriginal cultural schemas and categories. The notion of "family" lends itself to complex systems of categories and schemas in Aboriginal English which may be opaque to Anglo-Australians (Sharifian, 2011). The general cultural category of Family, to start with, usually moves beyond that of nuclear family and captures the extended family including cousins, cousins of cousins, and so on. Subcategories such as "father," "mother," "aunt," and "uncle" may include people whom an Anglo-Australian would categorize as "second cousins." Aboriginal kinship systems are "classificatory" systems (Tonkinson, 1998), where, for example, the term for "father" might refer to one's father as well as father's brothers, and the term for "mother" may refer to one's mother as well as mother's sisters and, in some cases, mother's brother and even mother's cousins. The corollary is that one's cousins are thus considered and called "brother" and "sister," or "cousin brother" and "cousin sister."

At the schema level, each of these categories is associated with complex schemas that embody knowledge about behavior and obligation. Each kin term "carries with it the obligation to observe certain behavioral rules known to all, and this makes it easy for the interaction to proceed along well-defined lines, regardless of whether the person encountered is loved or hated, admired or feared" (Tonkinson, 1998, p. 151). The Aboriginal cultural schemas of Family embody behavioral rules such as restraints relating to "touching, joking, calling by name, direct eye contact, the passing of objects from hand to hand, visiting other person's camp, argument, sexual innuendo and physical assault" (Tonkinson, 1998, p. 153).

As an example of how cultural conceptualizations can govern syntactic devices, cultural classification in the Australian Aboriginal language Murrinh-Patha requires 10 noun classes (Walsh, 1993). These classes are identified through noun class markers appearing before the noun. The following list gives the class markers with their associated category (Walsh, 1993, p. 110):

1. *kardu*: Aboriginal people and human spirits;
2. *ku*: non-Aboriginal people and all other animates and their products;
3. *kura*: potable fluid (e.g., "fresh water") and collective terms for fresh water (e.g., "rain," "river");
4. *mi*: flowers and fruits of plants and any vegetable foods; also faeces;
5. *thamul*: spears;
6. *thu*: offensive weapons (defensive weapons belong to *nanthi*), thunder and lightning, playing cards;
7. *thungku*: fire and things associated with fire;
8. *da*: place and season (e.g., "dry-grass time");
9. *murrinh*: speech and language and associated concepts such as song and news;
10. *nanthi*: a residual category including whatever does not fit into the other nine categories.

This system of noun classification is entrenched in Murrinh-Patha cultural conceptualizations. Walsh argues the fact that fresh water, fire, and language have separate classes indicates the prominent place each holds in the culture of the Murrinh-Patha. These examples clearly reveal how language can serve as an archival site for cultural conceptualizations, whether or not such conceptualizations remain at the conscious level of the speakers.

Applications of Cultural Linguistics

Palmer's proposal for cultural linguistics also inspired studies that have applied "cultural linguistics" to areas such as intercultural communication and second language learning. A theme session entitled "Applied Cultural Linguistics" was organized as part of the Eighth International Cognitive Linguistics Conference, University of La Rioja, Spain, in 2003. This led to the publication of an edited volume with the same title (Sharifian & Palmer, 2007). The contributions to this volume focused on Japanese, Chinese, Arabic, Persian, English, Aboriginal English, and African English. The studies in this volume collectively provided evidence about how learning a second language (or language variety) involves learning a new conceptual system including new cultural schemas, conceptual metaphors, and image schemas. For example, the chapter by Ning Yu explored the Chinese conceptualization of the heart in the context of traditional Chinese medicine and philosophy (see also Yu, 2009b). Yu maintains that the Chinese cultural model of the heart gives rise to metaphors that profile the heart as a physical entity (e.g., THE HEART IS A CONTAINER), a part of the body (e.g., THE HEART IS THE RULER OF THE BODY), and the locus of affective and cognitive activities (e.g., THE HEART AS THE HOUSE OF ALL EMOTIONAL AND MENTAL PROCESSES). He contrasts this conceptualization with the heart–mind dichotomy, which characterizes Western cultures. Thus, Yu demonstrates that cultural schemas rival bodily schemas as sources of conceptual metaphors. As for the implications of his observations, Yu draws on the notions of *conceptual fluency* and *metaphorical competence* developed by Danesi (e.g., 1995). The notion of "metaphorical competence" was proposed as an addition to the more traditional notions of "communicative competence" and "linguistic competence." The idea is that the metaphorical basis of the language-to-be-learned, which is largely derived from cultural models, should be made explicit to the learners to help them achieve fluency at the cultural–conceptual level. In the case of L2 learners of Chinese, Yu maintains that a clear delineation of Chinese conceptual metaphors, such as those associated with the heart, facilitates second language learning and enables L2 speakers to avoid misunderstanding in intercultural communication.

A cultural-linguistic approach has also recently been adopted by the study of intercultural communication. For example, Sharifian (2010) explored intercultural communication between Aboriginal and non-Aboriginal Australians and observed how lack of familiarity with the cultural conceptualizations that interlocutors draw on during intercultural communication can lead to miscommunication, severely disadvantaging speakers from less powerful groups in contexts such as the courtroom and the classroom. The following is an example cited in Sharifian (2010) from a real-life conversation with a speaker of Aboriginal English, who was drawing on an Aboriginal spiritual cultural schema: "A: My sister said, 'When you go to that country, you not allowed to let 'em [them] take your photo, they can sing you.'" The word "sing" in the above sentence instantiates the Aboriginal cultural schema of "singing," according to which, when a man has fallen in love with a girl, he may try to obtain some strands of her hair, a photo, or something similar in order to "sing" her, a ritual incantation. "Singing" is supposed to make the girl turn to the person who had "sung" her, and refusal to do so may cause her to suffer a serious or even fatal illness. Unfamiliarity with this cultural schema would confuse or create misunderstanding in interlocutors listening to the statement quoted above.

In addition to the areas of applied cultural linguistics discussed above, Sharifian (2011) presents several studies where he has adopted the framework of cultural conceptualizations to explore topics of an applied nature in cross-cultural pragmatics, English as an international language, and political discourse. His in-depth study of compliment responses in Persian reveals how the enactment of speech acts can dwell in cultural schemas that have long been developed as part of the cultural cognition of a speech community. As for the use of English as an international language, it is observed that English is increasingly adopted by communities of speakers around the world to express their cultural conceptualizations, instead of those of Anglo-English speakers, and this fact has serious ramifications for the field of English language teaching (ELT). In the area of language and politics, discourse produced by politicians and about politicians and political events often makes heavy use of culturally constructed figurative language, particularly metaphor and metonymy. When such discourse is literally translated, the result is often an intentional or inadvertent misrepresentation of the original discourse. Overall, the approach of cultural linguistics to applied areas of inquiry appears to be very promising, although at this stage such studies have just begun to appear. John Benjamins has recently launched a new book series with the title of *Cognitive Linguistic Studies in Cultural Contexts*, which promotes and disseminates research in cultural linguistics.

SEE ALSO: Anthropological Linguistics; Culture; Language, Culture, and Context; Linguaculture; Linguistic Relativity and Second Language Acquisition; Politeness and Face Research; Sociocultural Theory

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Cultural Representation

GENEVIÈVE ZARATE

As a concept, *cultural representation* is first and foremost a product of the field of social psychology and is particularly known to be a key concept in cultural studies (Hall, 1997). However, in the Europe of the 1990s when ideologies of the Cold War were crumbling and the old continent was equipping itself with a language and educational policy (Treaty of Maastricht, 1992), the concept found its way into the field of applied linguistics and language pedagogy. Departing from conventional discourses of the time which emphasized the articulation *one language equals one culture*, the concept of *cultural representation* opened up a discussion on the perception of the Other in the field of languages, thus offering new perspectives when compared to debates which are centered on the strict acquisition of a specific language system. The concept spearheaded the raising of questions such as "What are the learner's representations when s/he starts to learn a language?" "Have an advanced learner's representations evolved during his or her learning period?" "How does a teacher's representations affect his or her learner's?" (Byram & Risager, 1999). The concept therefore makes possible the establishment of an epistemological link between a learner and a teacher, between a learner and a native speaker, and the plurality of modes of social identities.

The concept offers answers to the debates surrounding the interpretation of facts relating to a foreign culture and its articulation with the competences expected of a foreign language learner. It is not the same thing as the notion of "viewpoint," which tends to pitch one point of view against another and to promote cultural relativism. Originating from the social sciences, the concept of *representation* clearly invites the interpreting person to abandon the idea of a "true culture" altogether and to consider the rapport with reality in the form of a dialectical relationship which engages the opinion and the mode of socialization of the person who has to interpret the foreign reality (Zarate, 1993; Kramsch, 2009).

Cultural representation questions the qualitative relationship that every learner or speaker has with a language which up till then was commonly supposed to be based on or to lead to positive representations within a school-based teaching of a language. By questioning the background of a xenophobic relationship, the concept opens up the horizon of applied linguistics to identity tensions, resistances to cultural difference, or to historical, geopolitical, and ethnic conflicts which feed national or regional memories and encourage a negative relationship with the language of the menacing neighbor or enemy. One observes that precedence is given to these questions within the field of less commonly taught languages (LCTL), where these negative presuppositions lead to the petering out of candidate-learners when they are directly hit by the repressive steamroller of the more commonly taught languages, especially English, the international and undisputed language of social mobility. Questions on the qualitative relationship that each one has with languages, whether learnt at school or not, are also beginning to be asked around the language or languages of the family, which can be seen as a social stigma and a barrier to social mobility when intergenerational transmission is interrupted within the same family.

Finally, the increasing number of travels abroad during university training—especially within the European ERASMUS program (Murphy-Lejeune, 2001)—contribute to a true-to-life laboratory for observing the effects of negative representations when the relationship with the Other is no longer the object of an idealized or school-style teaching; depending

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on the time of the foreign sojourn, eating and hygiene habits may brush aside the cultural schemes within which the learner has been socialized.

These questions arise through the sense of cultural difference, which is increasingly concrete and intense, given the accelerated geographically diversified circulation of goods and persons in a world that has become globalized. Languages seem less foreign, the categories that are commonly used to classify them into mother tongues, second or foreign languages having shown their limits once the geographical space no longer correlates with national entities, but is associated with a globalization that is both present all over the planet and visible right from the local level.

The pedagogical models that have influenced thoughts on languages during the second half of the 20th century, especially the Communicative Approach, are on the decline, when compared to the present complexity fed by cultural representations. Consequently, it is worth noting that the Common European Framework of Reference (CEFR, Council of Europe, 2001), although a major European tool circulated and commented on outside Europe, is henceforth no more than a worn-out extension of the Communicative Approach, since it has not integrated these economic and geopolitical changes as well as the concept of *cultural representation* in its set-up. One challenge that has not yet been dealt with is that of the progression of learning cultures and how to evaluate them by integrating the weight and the evolution of these representations in a systematized description. The debate on the assessment of intercultural competences is divided along the lines of whether or not to take them into consideration. Byram proposes to limit progression to three of the six levels of the CEFR and thus combine communicative with intercultural competences (Byram, 1997). Zarate and Gohard-Radenkovic (2004) suggest accepting the difference between both dimensions and propose the notion of "recognition" of intercultural competences, by stressing the fact that representations cannot be an object of evaluation and can evolve at a pace that is different from that of linguistic competences.

Pedagogical breakthrough made in the description of representations was not recorded in the CEFR. Yet, accusing fingers were pointed at "stereotyped representations" right from the 1980s, especially in school manuals not known to have abandoned an easy route of tourist clichés and a backward and outlandish outlook as far as the culture taught was concerned. The distinction between "auto/self-representations" and "hetero-representations" is also a useful lever with learners. "Hetero-representations," or representations one has of another, have been explored by the cultural institutes charged with the responsibility of promoting their language outside their national frontiers (Goethe Institut, 1988; Istituto italiano di cultura, 1997). By producing a selection of amusing press cartoons taken from the media of the learner's country concerning the country whose language is being taught, and putting them side by side, these pedagogical tools give rise to a large number of clichés, representing the Other through faults or qualities based on public opinion, or "collective representations."

Parallel presentation of "crossed representations" of the Other is a simple and effective tool to help show the falsifying power of stereotype, but it can be undermined if the teacher insists, in a superficial way, on listing a catalogue of stereotypes or on approaching them in a playful manner. "Auto/self-representations" or representations that one has of one's own community are a more advanced stage of being aware of these phenomena. They call for a deep examination of one's opinions, including those on a subject that is thought to be mastered, like the subject of a speaker's own culture.

Raising language teachers' awareness during their initial training or during continuing education is a powerful tool for making them conscious of these effects. Cultural awareness that has been carved out of keeping a distance as far as representations of a family's daily routine is concerned, and especially as far as the modalities of one's own socialization is concerned, acquired the status of a full-fledged competence in the 1990s.

Representations of the Other can be approached not only from a binary perspective—the ones circulating in the learner's country on the language being taught and those circulating about the learner's country in the country or countries that are emblematic of the taught language—but also within a plurilingual perspective. This suggests that language should not be considered as the only emblem of a nation but also as a social connector, sign of the complexity of a speaker's affiliations to a set of linguistic and social communities.

The reflexive dimension, at the core of cultural awareness, supposes an individual's ability to distance him- or herself from the place that languages, including a speaker's mother tongue, occupy in the course of one's life. The ethnographical diary (Fleming & Byram, 1998) and the learning diary are tools that enable learners to put into words representations and to reread the manner in which they were built over a period, covering an individual's or a family's story, which is always singular. With their multidimensional background and plurilingual perspective such documents therefore associate interrogations on mother tongues and national languages with foreign languages either learnt at school or during a nonschool experience. In this sense, one would talk of a link between "social representations" and discourses on languages (Moore & Py, 2010, pp. 271–327). When this complexity is apprehended through discourses that mediatize the relationship with social reality (manuals, dictionaries, films, advertisements, national hymns, especially when used as class materials), one can speak of "cultural representations" (Maurer & Londei, 2010, pp. 219–67).

Methodological presuppositions of the social sciences obviously call for the abandonment of immediate evidence, for the "truth" of social realities, and for making a critical review of a personal experience whose aim would be to question ordinary knowledge, these being necessary conditions for creating instructional manuals of social reality and for interpreting the way the whole society functions. Cultural representations are therefore a call for the widening of the disciplinary scope of applied linguistics beyond its founding principles.

SEE ALSO: Critical Pedagogy; Cultural Capital; Cultural Studies; Intercultural Competence; Nation

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Cultural Studies

OVE SERNHEDE

Today, research on and theoretical studies in the field of "culture" are amongst the most expansive areas in the social sciences and the humanities. Interdisciplinary institutes with a focus on what has come to be called cultural studies have sprung up at universities in Europe, North America, Asia, and Australia.

The question "what are cultural studies?" cannot be answered readily or unequivocally. Cultural studies are not a run-of-the-mill academic discipline, but rather a research field where the same demarcation difficulties that have wrought havoc in traditional fields are replaced by a productive ambivalence that has played a crucial role ever since the inception of cultural studies in the mid-1960s. Cultural studies is not a field with a universally accepted methodology or theoretical frame of reference, and its critics hold that the interest this kind of cultural analysis has attracted in recent years threatens to undermine the research area. There are also those who assert that cultural studies are no more than a passing fad, and some scholars even prefer not to be unconditionally associated with the designation. Clearly, this is a situation in which we who work in cultural studies must take a stand, and endeavor to narrow the field into to a more structured research area. The point of departure for this article is that the existing tradition in cultural studies provides potential for the development of topical, interdisciplinary research with a critical point of departure, discussing the terms and conditions that apply to human life in contemporary society.

Culture and Identity

Cultural studies is perhaps best viewed in the light of the relationship between culture and identity. This is still one of the key themes of critical, topically oriented research in cultural studies, a field of tension comprising "homelessness," the fundamental precondition of life in the modern world. The process of modernization, increasingly accentuated today, is eroding the traditional, given patterns of identity, previously rooted in categories such as class, gender, ethnicity, race, and nationality. This erosion has led to a total reshaping of our worldview, one consequence of which is that everyday life in late modernity is uncertain and ambivalent, and people are vulnerable in a novel way. Identity, a sense of belonging, and meaning are no longer taken for granted, no longer aspects of life we simply grow into. Instead, they have become vital dimensions of the world which every human being has to create for him- or herself, so that previously relied on, prefabricated dimensions have to be individually constructed by each one of us. Theories of modernity, so influential in recent years, typically refer to contemporary society as "post-traditional," that is, as a society in which tradition as a roadmap for life is considered obsolete and the individual is compelled to be a "seeker." This can be seen most clearly in the young, because they are in the phase of life where a person works most intently on his or her identity. So it is no coincidence that research focused on young people—who are often challenging in their processing of the terms and conditions of life in the modern world—has been a core aspect of socially oriented cultural studies. And it was the research undertaken by the British Birmingham School on youth sub- and countercultures that made

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cultural studies a source of inspiration to scholars of the social sciences and the humanities throughout the Western world (Cohen, 1972; Hall & Jefferson, 1977; Hall, Critcher, Jefferson, Clarke, & Roberts, 1978; Hebdige, 1979; Hall, 1997). Since then, the identity-creating dimensions of culture have become increasingly important and so the focus of research in this aspect of cultural studies has shifted from the study of small, significant, delimited subcultures to the impact of popular culture on segments of the population at large, and to the functions of pop culture. One sector of the social sciences that has attracted increasing attention in cultural studies in recent years is the study of everyday life. Scholars in this field investigate problems related to culture in late modernity from the point of view of routines, lifestyles, and patterns. The fact that traditional identities have been destabilized has resulted in a phenomenon sometimes referred to as "tribalization," in which society is seen as a regression to tribal value systems, that is, ethnic, religious, generational, regional, or other groupings defined by their efforts to achieve a policy of identity within the tribe or group. These trends are of crucial interest to cultural studies of the contemporary period. Another aspect of such research takes its inspiration from what is known as critical theory, a research tradition with long experience of integrating aesthetic and ideological analyses into its diagnoses of the contemporary. Its explanatory models in the study of the relations between the individual, culture, and society tend to come from the sociological or psychological disciplines.

"Reading" Culture

Although it is impossible to give a simple definition of cultural studies, the designation in itself implies that cultural studies is concerned with the "study of" or "research into" culture, more specifically contemporary culture. However, this conception is already problematic as the word culture itself is a multidimensional and extensive concept. The fact that cultural studies focus on contemporary culture does not, of course, exclude the historical context or historically based analysis. On the contrary, some of the most interesting recent research has an explicitly historical dimension, even if the main focus is contemporary culture or phenomena with topical implications. The fact remains that the idea of cultural studies was conceived within the parameters of historical research rooted in a general desire to achieve a greater understanding of society as a whole.

The category of "culture" is clearly a problematic contender. A more traditional definition would see it as the epitome of the accomplishments of humanity. In this sense, cultural thoughts and expressions have survived on the basis of their ability to say something profound and perceptive about the human condition. These most sophisticated insights from eras past are recorded in literary, philosophical, scientific, and artistic works. Thus, if we wish to understand the "human being" we must study our cultural heritage. In contrast with this somewhat simplified definition, recent decades of research in the social sciences have begun to produce a much broader understanding of the term culture, relating to how different groups cope with the social and material conditions in which they live. In this sense, culture can also refer to different ways of life (social value systems, lifestyles, institutions, etc.) that develop within a subculture, social class, or nation. This perception of culture, commonly termed the anthropological view, tends to place virtually everything under the umbrella term "culture." If what we consider "highbrow culture" can be equated with the traditional definition of culture given above, then clearly "pop" or "mass" culture" corresponds to the anthropological perception. The view of culture that characterizes cultural studies stresses that "culture" is far more than literature, drama, and the arts, but is also reluctant to subscribe to oversimplifications or too broad a definition

to be meaningful. As a result, the last few years have seen a marked interest in discussions that target the symbolic and communicative aspects of lifestyles. Such a perspective can, in certain respects, also bridge the gap between the narrower, more traditional view of culture and the wider, anthropological one.

From this point of view, culture is primarily about production and exchange of meaning between people, and cultural studies become much more concerned with the structures of meaning that sustain the common world we call culture. The question of who we are and with whom we share a sense of community—our identity—depends largely on the ways in which we attribute meaning to the world in which we live. In this way the real essence of culture lies in the demarcation and preservation of differences both within and amongst groups. In order for a culture to develop, the members of a group must share certain fundamental values, feelings, and ideas. They fashion and share the cultural codes that define their world and their own identities similarly for the entire group. This also means that thoughts and feelings actively make up a representational system that defines the place of each person in the world. Without these matrices of meaning—found in an individual's consciousness as well as in his or her social practices—it would be impossible to speak of a sense of belonging, identity, or shared values. But we are not endowed with meaning and identity from above. Rather, meaning is constructed and reconstructed in exchanges between people, and in every community this involves power, prestige, and reputation struggles, in which the meaning-bearing structures of the various groups play a pivotal role. All cultural products and practices are born of the human being's instinctive search for meaning and his or her recourse to symbols, signs, or representations to be able to configure and communicate his or her situation and needs. The principles that allow us to interpret and understand these significances are based on the same rules we use in linguistic practices. The fact that cultures are synthetic, meaning-bearing structures makes them similar, in some respects, to a text, which can be "read."

When French semiotician Roland Barthes (1972, 1975), whose work is key to the tradition of cultural studies, expressed a keen interest in soccer, it was immediately clear that what attracted him was not which team was at the top of the league. For Barthes, the key questions were what it is that drives people to become soccer fans in the first place, the role of soccer in shaping an identity, and how it confers meaning to people's lives—in other words, how should we read soccer culture? How can a soccer match generate such powerful reactions in an entire country or amongst the supporters of a particular club? It is precisely such questions that are central to cultural studies. Another founding father of the discipline is French anthropologist Claude Lévi-Strauss (1966), who studied the role of ritual, myth, and folklore amongst "primitive" peoples in South America. Lévi-Strauss was not primarily interested in how these traditions came in to being or how they were used. Instead, he attached great importance to what they can tell us about the kind of lives these people lead. He was interested in analyzing meaning, not by plotting and documenting the origins of their myths and rituals, but by understanding the codes and systems of signification, the rules by which any one ritual or folktale produces meaning. Both of these approaches seek to tease out and grasp what lies below the surface of these everyday forms of performance. More recently, the work of French philosopher Michel Foucault (1988) has become important to cultural studies. His overriding interest is more about cognizance and knowledge than meaning in itself, and he thinks in terms of discourse rather than language. It is discourse that determines what we can say, that controls the way we speak and the way we shape knowledge about something. Discourse also dictates how knowledge and learning are structured in a social a context and, for this reason, it is central to the perception of power and the exercise of power in a society.

Cultural Studies: An Open and Critical Project

Cultural studies are about critical cultural research focusing on contemporary society. Cultural studies should be seen as a discursive structure, a research project with a sense of direction driven by particular areas of interest. This kind of cultural research affords scholars from differing disciplines and with varying views of scholarship the space to pursue an ongoing dialogue about methods of research and theoretical points of view. As such, this cultural research must, by necessity, be an "open project," with an inherent aversion to the privileging of any one metadiscourse or methodology. However, the current situation, in which the internationally accepted term cultural studies is synonymous with research defined solely by the interests of each researcher in a particular field, is problematic. British sociologist Stuart Hall (1992), a prominent thinker in his field, maintains that cultural studies "can't just be any old thing which chooses to march under a particular banner." Certain criteria must be established to arrive at a definition of cultural studies. This article is inclined to concur with Hall in his assertion that it must remain a characteristic feature that cultural studies refuse to be defined in a traditional, academic way, as using a given neutral standpoint to study, for example, the lifestyle or the aesthetics of a group. One defining aspect of cultural studies is undoubtedly the relationship with society beyond academia. According to Hall, the scholar has to define his or her role as a critically thinking intellectual whose research reflects his or her close relationship with society and its expressions. The seeds of the kind of research into contemporary culture that is "cultural studies" were taken from this vision of scientific scholarship. One model that bears relation to this idea, of which Hall is an advocate, was inspired by Italian philosopher Antonio Gramsci (1988), who argues that we need "organic intellectuals," thinkers who do not simply allow themselves to be swayed by utilitarian ideologies and power structures. Of course, this does not imply that their research abandons its "scientific" stance, nor does it mean that the researcher will carry the torch for a political ideology or the interests of a specific stratum of society. For research to be a truly critical project, it must also be critical of itself and call its own work and motivating factors into question.

Against this background, we can see that the point of departure in a discussion that seeks to understand what this type of research is and what is should be must stem from a necessary tension between the refusal to unequivocally and definitively define the field of study and the need to determine, develop, and highlight the standpoints that correspond to the inherent critical intentions and opportunities of the genre. One way of identifying these standpoints is to step back and engage in a closer analysis of the historical conditions that originally brought critical, contemporary cultural research into being.

Cultural Studies and Popular Culture

Cultural studies are often associated with youth and popular culture. To get a better idea of the line of thought within a more concrete cultural studies approach this section offers a little insight into the study of youth subcultures and popular culture. Research in the field of popular culture can be likened to a seismograph, a sensitive instrument that detects movements under the surface of society, of which expressive youth cultures are arguably the most striking example. In youth culture social conflicts, contradictions, and trends are expressed symbolically. Young people's production and reception of culture are related in a complex and transitional way to their social conditions. The task of the researcher is to "read" contemporary tendencies in society through the cultural expressions or codes that youth create and employ.

One reason why the study of youth culture has been one of the most exciting fields of research in the social sciences and the humanities during the last decade is its focus on

the unsecured or unstable identity in late modern society. This theme stretches far beyond youth, although, for understandable reasons, questions of identity are especially acute during that period of life. It is not difficult to trace how different phases of the postwar modernization process have been reflected in youth culture. In simple terms, youth cultures of the 1950s and 1960s mainly thematized identity in relation to class. Teddy Boys in the UK as well as their Swedish equivalent, Raggare, the Bikers, and the Mod culture can be seen and understood against the background of the changed patterns in class cultures at a time when UK and Swedish societies, as in most other parts of Western Europe, sloughed off its old skin and everyday life took great strides into modernity. Youth cultures of the late 1960s, 1970s, and 1980s demonstrated androgynous features. Music styles, glitter rock, punk, and hard rock, and artists like David Bowie, Annie Lennox, and Michael Jackson focused in a new way on gender. In modern society it is no longer obvious or given how a person must live or look as a man or woman, for youth culture has offered an internal as well as an external arena for experimentation.

Of course, the youth cultures of the late 1980s and early 1990s still express the themes of class and gender, but it also seems that, with the emergence of reggae, hip-hop, and rap, there is now a focus on ethnicity and roots. In the USA, the home of rap music, one branch of hip-hop culture has proclaimed that rap is a black expression and that only blacks have the "right" to use it. Against this "Afrocentrism" other groups of black, white, Hispanic, and Asian immigrants in the USA and Britain assert that rap cannot be reserved solely for Afro-Americans merely because it has its origins in the black ghetto—to quote the rap artist Kid Frost, "rap is not a black art form, it's an urban art form." This "ghetto-centrism" is currently a growing element in rap music. Despite its strong Afro-American roots, rap music, through its creative collage and sampling technique, can be seen as a multicultural, postmodern aesthetic expression. Like all Afro-American-based music, rap is characterized by its "call-and-response" patterns, which mean it is open to the reactions of the receiver. This quality has enabled a fusion of the musical features of different cultures; television commercial jingles, rock, Egyptian belly dance, and African drums all meet in rap. Together with its textual themes, this has made rap a genre that expresses in a multitude of ways the identity work that is required by modern, multicultural society. The "Hip-Hop Nation" has a culture with black roots, but its inhabitants are a multicolored ethnic mixture.

SEE ALSO: Cultural Capital; Cultural Hybridity; Cultural Identity; Culture; Postcolonial Studies; Race; Subjectivity

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Culture

KAREN RISAGER

Introduction

References to "culture" have become more and more prominent in applied linguistics, especially since the 1980s. The term has typically been used in order to highlight the (supposed) intimate relationship between language and culture in a number of disciplines such as intercultural pragmatics, intercultural communication, and intercultural learning as part of foreign and second language learning.

The chief aim of this entry is to show some of the complexity and heterogeneity of the concept of culture and thus to contribute to a critical discussion of the sometimes rather simplistic identification of "language" and "culture" in applied linguistics. For a more thorough analysis of this issue, see Risager (2006), from which parts of this entry are drawn.

The following sections outline the development of the concept of culture in European history and in cultural anthropology, including its relation to the interdisciplinary field of cultural studies. Cultural anthropology is particularly relevant to applied linguistics because it is the academic discipline that has taken the keenest interest in the concept of culture throughout its history, during which it has also taken account of the linguistic dimension of culture. Both American cultural anthropology and French structuralist cultural anthropology have drawn inspiration from various forms of linguistics. American linguistic anthropology has also included the Whorfian discussion concerning the relationship between language/culture and thought, a discussion preceded by a similar one in the German-speaking parts of Europe, opened by W. von Humboldt in the 1830s.

Originally a European Concept, Different From for Example East-Asian Concepts

The word "culture" first appears as the classical Latin *cultura*, which had to do with the cultivation of land and care of flora and fauna. The stem *col-* (infinitive *colere*) had a very broad area of meaning, covering such words as *to settle*, *to inhabit* (e.g., *colony*, *colonization*), *to cultivate*, *to care for*, *to provide*, *to praise*, *to celebrate* (cf. the other Latin nominalization *cultus* and the word *cult*). After its history in Classical and medieval Latin it spread to most European national languages as an academic term that did not enter everyday language until the course of the 19th century—initially in Germany (Márkus, 1993). The word has been subject to a number of semantic transformations engendered by the general cultural and social history of Europe. En route, the concept has undergone differing semantic changes in the various linguistic communities (especially England/France on the one hand and the German-speaking area on the other). These developments have to do with the meaning of the concept of culture in relation to the neighboring concepts of 'civilization' (in an English, French, and German version) and the German concept of *Bildung* (Elias, 1939/1969).

This development can be compared to that of near-equivalent East-Asian concepts: the Chinese *wen hua* (culture or civilization, really, to change oneself through written characters,

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education) and *wen ming* (civilization or culture, civilized) and the Japanese (etymologically the same and written with the same signs) *bun-ka* (culture as opposed to nature) and *bun-mei* (civilization). Whereas the East-Asian concepts have a totally different history related to the importance of literacy, the European concept of culture constitutes an old but still living metaphor referring to the act of cultivation, which means that the European concept sometimes still has connotations of the earth, of roots, origins, growth, and so on (Risager, 2006).

Concepts of Culture in Europe: Individual, Collective, and Aesthetic

Whereas "culture" originally only had the literal meaning of cultivating the land (as explained above), its meaning was expanded during Roman times into a metaphor referring to the cultivation of the individual soul or mind. We know this was the case at least from the time of Cicero, who used the metaphorical expression *cultura animi* (i.e., cultivation of the soul or mind), which had to do with the individual's mental cultivation, either via self-development or, later, from the time of Augustine (ca. AD 400), via God's cultivation of the soul. For many centuries *cultura animi* (or, from the 16th century, *cultura* without a logical object) designated a process of mental cultivation, a pedagogical process. Not until the 17th century could the concept also designate the result of this process, in other words the mental (intellectual, spiritual, aesthetic) level the person involved had attained. One then began to speak of "the cultivated person."

From the end of the 17th century, a collective concept of culture developed alongside the individual one. The collective concept of culture has to be divided into a hierarchical and a non-hierarchical variant. The hierarchical variant is the earlier, and it deals either with the societal conditions for the individual process of cultivation or with what "cultivated people" have in common. The hierarchical element is that one perceives certain groups in society, or certain peoples, as being cultivated (the Europeans) and others as being uncultivated (i.e., "savage"). This hierarchical concept of culture was challenged in the 1770s and 1780s by J. G. von Herder (1782–91/1952), who historicized and "dehierarchisized" the concept of culture by emphasizing that all the peoples of the world participate in a gradual, historical process of cultivation, and that every people possesses culture.

In the course of the 19th century, a number of special spheres crystallized in connection with modern development, including "art" with its subsections: literature, the visual arts, music, and so on. These became a reference for the aesthetic concept of culture which developed during the same period, alongside other concepts of culture, and which adopted a narrowing, individual, and hierarchisizing direction that focused in particular on artistic products as supreme achievements of symbolic–aesthetic creativeness. In American discourse, the aesthetic concept of culture is often associated with the term "big C."

Concepts of Culture in Cultural Anthropology Until the 1970s

The period between the early 1900s and the early 1970s was productive in terms of new academic perspectives on the study of culture.

All-Embracing, Functional Concepts of Culture (First Half of the 20th Century)

The European—especially German—concept of culture in the 19th century was taken across the Atlantic by the German-born F. Boas (educated in physics and geography) in the years around 1900 in connection with his involvement in ethnographic studies of American Indian

cultures and languages. Boas developed a functional concept of culture that emphazises the integrated character of every culture taken as a whole, comprising both material and immaterial life. He was highly critical of the evolutionism of the 19th century and its innate ethnocentrism and racism, and he and his followers gave the concept of culture the culture-relativist character it has had ever since in most American anthropology. Boas was the man who organized anthropology in the USA as a cohesive and independent discipline that students could study as part of their education. It was his vision of anthropology that came to characterize anthropology in the interwar years, and in that vision the concepts of both culture and language enjoyed a prominent position. Among his followers are for example R. Benedict, E. Sapir, and B. L. Whorf, and the tradition can be said to be rounded up by A. L. Kroeber and C. Kluckhohn, who offered a synthesis of a large number of different definitions of culture existing at that time (Kroeber & Kluckhohn, 1952).

Meaning-Oriented Concepts of Culture (From the 1950s)

In the 1950s and 1960s, dissatisfaction gradually grew against this all-embracing, and some would say amorphous, concept of culture, and people tried to limit and clarify it in various ways. One suggestion was to consider cultures as ideational systems (systems of meanings) that had a more or less independent status in the societal whole. In this approach the concept of culture came to have similarities with the concept of language or text. Among the anthropologists who chose to focus on the meaning-oriented dimension one can distinguish, up to the 1970s, between three main approaches: a cognitive, a structuralist, and an interpretive approach. The three approaches have in their separate ways transferred theories and methods to do with language and texts to the realm of cultural analysis.

The cognitive approach was mainly represented by W. Goodenough in the first phase of cognitive anthropology, which was inspired by the American structural linguistics of the 1950s: taxonomic linguistics, componential analysis, and so on (Goodenough, 1957/1964). The tendency is also called ethnosemantics, ethnoscience, or new ethnography. Goodenough saw culture as being analogous to language, and he therefore transferred linguistic methods to an analysis of culture. This practice resulted in the use of the concept of "cultural grammar" for the cultural rules and systems that were uncovered. Apart from the method being inspired by contemporary American linguistics, it was also prompted by precisely the rejection by this type of linguistics of the study of semantics. The entire semantic field of research was thus open to anthropology. Cognitive anthropology, which is still a flourishing field, mainly understands culture as knowledge: The locus of culture is in human consciousness. In terms of method, a cognitive ethnographical analysis of culture has to do with studying the content in and the structures of this knowledge, for example through an analysis of the conceptual system of the informants within a particular area: kinship systems, plant life (ethnobotany), diseases and their treatment (ethnomedicine), and so on. This analysis can, for example, comprise componential analysis of the semantic elements that are part of the system. Keesing (1974, 1994) is one example of later representatives of this tradition.

The structuralist approach to the study of culture from the 1950s is evident in the work of French anthropologist C. Lévi-Strauss, who moved to New York during World War II. He was inspired by Boas, but also by linguistic structuralism and cybernetics. Acquainted with the Prague School's phonemic theory via R. Jakobson, he was inspired to attempt to transfer the idea of unconscious thought structures to the broader area of culture, and he formulated a theory of how social phenomena could be analyzed as an expression of cumulative processes of consciousness shared by all humanity. A knowledge of cybernetics prompted him to emphasize the binary logic of the processes of consciousness. In terms of method, a structuralist analysis of culture thus typically deals with arriving at an understanding of symbolic pairs of opposites in culture, such as nature/culture, female/male,

cold/hot, human/animal, bad/good, for instance via a study of kinship systems or myths (Lévi-Strauss, 1958).

An interpretive approach to cultural anthropology was driven in particular by the American anthropologist C. Geertz from the 1960s. Geertz's (1973) thoughts have had a great impact both within anthropology itself and in the cultural and social sciences in general. Geertz is at odds with cognitive anthropology in that he claims that the locus of culture lies in social action. Culture, then, is to be found among the members of a society and it is public. Social action is conceived of as a text ("an acted document") that is a bearer of complex networks of meaning. The ethnographer has to interpret this culture-as-text by making a "thick description" of the semantic structures it conceals. While cognitive linguistics, especially in the 1960s and 1970s, had a strong affinity with American linguistics, interpretive anthropology has had relations with hermeneutics and thereby with literary interpretation. So it is also a view of culture that is not blind to the aesthetic dimension of cultural practice.

Concepts of Culture in Anthropology From the 1980s

In the 1970s, anthropology, like many other cultural and social sciences, was to a certain extent influenced by Marxist trends. The concept of culture was typically understood as ideology, and studies of culture were often synonymous with studies of ideological criticism. But from the 1980s, the concept of culture became salient and, in the practice-oriented form, more or less influenced by contemporary postmodern thought (Keesing, 1994).

Practice-Oriented Concepts of Culture

The orientation toward practice was accompanied by a critique of system thinking in most culture research until then: Goodenough, Keesing, Lévi-Strauss, and Geertz all described culture (in their publications prior to the 1980s) as a system or a structure (more or less varied or distributed). From the 1980s there was increasing skepticism toward, or even a rejection of, the idea of culture as a cohesive system. This antisystem tendency meant, among other things, that cultural theory stopped using analogies to linguistics in its system-oriented forms (Street, 1993), and drew more for inspiration on practice-oriented linguistic philosophy, for instance the late Wittgenstein.

Those perspectives aligned with social constructionism prefer to criticize what they refer to as the essentialist understanding of culture, in other words the conception of culture as "something" that has a particular essence and that can be used as an explanatory factor regarding people's actions and attitudes.

Since the emphasis on the conception of culture lies in the dimension of practice, this conception of culture is in the main an extension of the interpretive branch. Geertz is a precursor of the practice-oriented concept of culture, and he is sometimes described as "prepostmodern." For Geertz, the task of the ethnographer is to unearth the already existing system of symbols via a thick description of symbol-saturated practice. For advocates of the practice-oriented concept of culture, the symbols are created and recreated in the negotiation of meaning between people in social interaction. Particular emphasis is placed on the meaning-creating individual, with some people also talking of a subject-oriented or subjectivist concept of culture. The stress, however, is not on the single individual but on individuals in interaction, that is, on intersubjective processes. Emphasis is placed on the procedural, social, and conflictual aspects of the ascription of meaning in context.

Running parallel with the practice-oriented conception of culture is also a cognitive anthropology that is interested in the inner locus of culture, theorized as individuals' cultural models of the world (Shore, 1996). But parts of this tendency too are moving toward a conception of knowledge of the world as being socially constructed in interaction and discourse. Among the scholars who combine a cognitive and a practice-oriented approach

is Agar (1980, 1994).

Anthropology and Cultural Studies

The interdisciplinary cultural studies movement has exerted a certain influence on parts of anthropology since the 1980s (Turner, 1993). This has led to a shift of anthropological interest toward such subjects as culture and ethnicity in the modern metropolis, subcultures and cultural dominance, multiculturalism and identity politics. The cultural studies movement intertwined in the 1980s with the postmodern tendency, which generally emphasizes capturing differences, heterogeneity, otherness, multiplicity, particularity, complexity, and hybridity (Hall, 1992, 1996).

This relativist focus has also partially influenced anthropology. It has, among other things, involved a discussion of the validity of the cultural representations of ethnography and of what form such representations can and ought to assume. This discussion of ethnographical representations, the conversion of lived life into text (Marcus & Fischer, 1986), can be seen as an illustration of the kind of meaning that is ascribed to language within the recent practice-oriented tendency: There is considerable interest in linguistic practice, text, and discourse in a more general sense, but only relatively sporadic interest in language diversity, including the significance of the various languages for epistemological knowledge (see the traditional Whorfian discussion).

Transnational and Global Approaches

There is a very strong tradition of microlevel studies in anthropology, that is, studies of local communities at different levels, including the interpersonal, interactional level. But from the 1990s some scholars developed approaches that focus on cultural processes and practices at the global and transnational macrolevels, for example Hannerz (1992) and Appadurai (1996), who are also influenced by the cultural studies movement.

Hannerz conceptualizes culture as meaning and focuses on the social organization of meaning, with particular reference to transnational cultural flows and local cultural complexity (Hannerz, 1992). In Hannerz's theory culture has two loci, an external and an internal: The external locus is meaningful, externalized forms such as speech, gestures, song, dance, and decoration. The internal locus of culture is meaning in consciousness—not perceived as an idealized consciousness but as that of concrete human beings. The individual's share in culture he mainly describes with the aid of the hermeneutical concepts of perspective and horizon: Each human being is unique in his or her experience-based, socially influenced perspective on the outside world, and his or her horizon is reflected by personal life experiences and education. At the individual level, society is thus seen as a network of perspectives. The two loci of culture are each other's prerequisites, and the cultural process takes place in the interaction between them, at the societal micro- and macrolevels. It occurs partly in the concrete interaction between people in interpersonal situations, but also at higher levels, right up to the highest level: the global level, via the distribution of goods and mass communication.

Hannerz, then, adopts a macroanthropological perspective. He studies, among other things, how cultural distribution processes of various, possibly global, extents result in local complexity. He emphasizes that cultural flow takes place in real time and has a direction; it is also socially organized and characterized by power structures. At the global level, the main cultural flow passes from the world's cultural centers to the periphery, but there is also flow that passes from the periphery toward the centers, as people on the periphery create new culture by utilizing both imported and local resources.

Appadurai takes as his starting point the idea that we are living a rupture in modernity where ordinary people, because of the intensified interplay of transnational migration and the use of transnational media representations, have begun to deploy their imaginations

in the practice of their everyday lives. Thus more people than ever before seem to imagine routinely the possibility that they or their children will live and work in places other than where they were born (Appadurai, 1996). He emphasizes that he is not so interested in the imagination of the single individual but mainly in collective imagination made possible by the mass media. He is critical of using the term "culture" as a noun, and prefers to use it as an adjective: cultural. His concept of culture is thus quite different from Hannerz's: Whereas Hannerz's concept of culture is focused on the production and spread of meaning in a very general sense, Appadurai chooses to see culture as difference. Among the many possible cultural differences, he suggests to focus on those that either express or set the groundwork for the mobilization of group identities. Those identities may be of any kind —ethnic, national, religious, linguistic, professional, sports related, lifestyle related, and so on—and, if they are transnational, they greatly contribute to the development of transnational imageries.

This choice makes it relevant to discuss the concept of culturalism, and Appadurai proposes that this concept be used when we are dealing with movements that involve the conscious mobilization of cultural differences in the service of a larger national or transnational politics. It may be for example the identity politics of African Americans, Pakistanis in Britain, Algerians in France, native Hawaiians, Sikhs, French speakers in Canada, and so on. Appadurai notes that culturalist movements are the most general form of the work of the imagination and frequently draw on the fact or possibility of migration or secession. Thus, Appadurai much more than Hannerz stresses the political nature of collective identity formation (Risager, 2009).

Appadurai has proposed to describe the current global situation as a fundamental disjuncture between a number of processes, and he uses the term "-scape" (from "landscape") to bring forth a certain imagery of these more or less separate processes as fluid and irregular landscapes. He thus distinguishes between ethnoscape, mediascape, technoscape, financescape, and ideoscape. The first two are those to which he has given most attention. Ethnoscape is the landscape of people in the world, either as moving over longer or shorter distances for one reason or another (migrants, refugees, expats, tourists, students, etc.) or as more sedentary; ethnoscape is not only about actual physical mobility but also about fantasies about moving, wanting to settle, wanting to control migrations, and so on. Mediascape is both the specific distribution of media throughout the world and the images of the world created by these media. Mediascape contributes to the collective imagination through the proliferation of realistic and fictional representations in a wide range of genres and styles.

Political and Strategic Uses of Culture

Like Appadurai, a number of anthropologists have emphasized the importance of awareness of the power dimension in studies of culture, including the very problematic role of anthropology in colonial history. L. Abu-Lughod, for example, calls for an ethnography that writes not with culture, but against culture (1991). She argues that culture is a concept that operates to enforce separations that inevitably carry a sense of hierarchy. The concept of culture is a term for the self–other relationship, and this is always a relationship of power. Referring to experience from feminist anthropology she argues that anthropologists always have to be aware of their positionality (Western/non-Western, gender, class, race, etc.), and reflect on the actual situatedness of their knowledge. She proposes to avoid using the concept of culture, and to prefer terms like "discourse" (see Foucault) and "practice" (see Bourdieu). She also calls for a stronger emphasis on narrative ethnographies of the particular, studies that do not try to make cultural generalizations.

G. Baumann is also interested in the uses of culture, but he focuses on popular uses of the term in multicultural, multiethnic communities in big cities such as London. He coined

the expression "the double discourse of culture." According to Baumann (1996), people's discourses (in his empirical studies) can be categorized into two types: One type is a discourse equating community with culture. It is a reifying discourse used by everyone, and it is also found in the media and in public and political debates. Baumann calls this "the dominant discourse." The second type is a more creative, but also reifying, discourse that attempts to question and redraw identities within and across these communities. This kind of discourse is used by many people as well, and it may be seen to contest the dominant discourse. Baumann calls this "the demotic discourse." His major point is that both discourses are widespread and legitimate and used for specific purposes in different settings. The dominant discourse may be useful not least when people compete for funding or fight for their rights.

In a later study, Baumann (1999) introduces two other terms: "essentialist discourse" and "processual discourse." The essentialist discourse regards national cultures, ethnic cultures, and religious cultures, for example, as finished objects, as something people have or can be members of. This discourse is very popular. The processual discourse is represented by academic discourse that describes practices in processual terms and tries to deconstruct essentialist perceptions of human groups. The processual discourse deals with culture as something people do or create. Baumann's main point is that both discourses are legitimate and have to be incorporated in a total picture of cultural processes. Thus he says that it is not the case that we have a choice between a false but popular "theory" and a scientifically productive but unpopular theory. We have two types of discourses operating and interacting in the same field. Baumann states that ordinary people can be observed to command what he calls a double (or dual) discursive competence, and he is of the opinion that they develop this dual competence more strongly the more they expose themselves to multicultural practices (Risager, 2009).

In conclusion it can be said that both Abu-Lughod and Baumann represent the growing concern in anthropology about the dangers and dilemmas related to the concept of culture and its political and strategic uses. It is a hypercomplex concept that is very elusive indeed. The use of the concept seems unavoidable in some parts of applied linguistics, but it is important to be aware of the complex and conflicting meanings associated with the term as a part of European and Western thought.

SEE ALSO: Anthropological Linguistics; Cultural Capital; Cultural Identity; Cultural Studies; Ethnicity; Linguaculture; Multiculturalism and Second Language Learning; Postcolonial Studies; Subjectivity

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Culture and Context: Overview

KAREN RISAGER

Introduction

Large parts of structural and functional linguistics have been developed and practiced without any reference to the role of language in culture and society. In applied linguistics, in contrast, the separation between language and culture is not possible because the very purpose of applied linguistics is to investigate the interface between language practices and other cultural and social practices in the real world, whether the primary aim is improvement or critique of existing practices. Thus the whole of applied linguistics can be said to be oriented toward an interest in language in relation to culture and context. For a comprehensive conceptual analysis of the relationship between language and culture in a historical and transnational perspective, see Risager (2006, 2007).

The section on culture and context in this encyclopedia emphasizes the importance of this relationship, as well as its diverse and interdisciplinary character. In order to capture the meaning of the culture and context connection in applied linguistics the section covers entries on a wide range of relevant fields and concepts such as anthropological linguistics, cultural linguistics, sociocultural theory, critical applied linguistics and postcolonial studies, cultural studies, and culture in language teaching and learning, in addition to important concepts such as ethnicity, nation, citizenship education, and intercultural competence. One of the entries is a general introduction to LANGUAGE, CULTURE, AND CONTEXT aimed at a general audience and highlighting some central issues related to the study of language and context, and the study of language and culture.

Most of the entries in this section have been written by applied linguists who are working interdisciplinarily. Others have a nonlinguistic background and write about their topics from another perspective, for example anthropology, in order to achieve an in-depth understanding of each topic. Perspectives from neighboring disciplines include anthropology, cultural studies, cultural sociology, literature studies, and literature pedagogy.

Anthropological Linguistics

Among the fields focusing on language in relation to culture one must first mention ANTHROPOLOGICAL LINGUISTICS, sometimes called linguistic anthropology. This field has forerunners in 19th-century Europe, especially in the German-speaking areas (Herder, Humboldt), but was developed as a distinct discipline in the early 20th century in the USA by German-born Boas, as one of four interrelated subdisciplines of anthropology: physical anthropology, archeological anthropology, cultural anthropology, and linguistic anthropology. Linguistic anthropology/anthropological linguistics was further developed by a long range of other scholars such as Sapir, Whorf, Goodenough, Agar, and Duranti, not only in the USA, but worldwide (Foley, 1997). This field of interest has developed from the study of American-Indian and other indigenous languages and cultures to include language and culture in and across various groups in modern society. Anthropological linguistics often uses ethnographic methods in the study of language practices seen as cultural practices, for example, conversational exchanges and their culturally specific pragmatics.

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It should be added that most of British or French social anthropology has not been very interested in the role of language, with important exceptions like Malinowski, Ardener, and Lévi-Strauss.

Cultural Linguistics

Another field that deals with language and culture is CULTURAL LINGUISTICS, developed since the 1990s (Palmer, 1996). Whereas anthropological linguistics is often interested in language practices in communicative events embedded in specific cultural and social contexts, cultural linguistics primarily takes a cognitive perspective and focuses on the relationship between language and culture in the minds of different language groups. It is interested in the description and analysis of cultural scripts and models, such as our conceptions of time and space and how these are reflected in our language and language use, for example in metaphors and metonyms.

Sociocultural Theory

Yet another field that emphasizes the relationship between language and culture is SOCIOCULTURAL THEORY, originally conceived by the Russian psychologist Vygotsky and later exploited by (among others) applied linguists, especially within the areas of language socialization and language learning (Lantolf & Thorne, 2006). This perspective emphasizes developmental and learning processes as embedded in the specific sociocultural context, and typically investigates how social interaction with people surrounding the individual—parents, teachers, peers, and so forth—plays a decisive role in developmental and learning processes, for example, concerning the learning of first, second, and foreign languages. It has been suggested that the interdisciplinary field concerned with the intersection of language, culture, and society could be called sociocultural linguistics (Bucholtz & Hall, 2005).

Critical Applied Linguistics and Postcolonial Studies

The study of language in relation to social context (whether conceived as micro or macro) has been of central concern in the vast and growing field of sociolinguistics, and this field is treated in depth in other sections of this encyclopedia. This section on culture and context, however, includes an entry on CRITICAL APPLIED LINGUISTICS in order to highlight the importance of studies of power in applied linguistics (Pennycook, 2001). Critical applied linguistics has developed as a special topic area since the 1990s and foregrounds studies that investigate and critique language practices (in language policy, in language teaching, and other fields) in terms of processes of marginalization, hierarchization, minorization, otherization, racialization, culturalization, and other forms of dominance, as well as resistance or struggle against them. This field often draws on perspectives from studies of globalization and POSTCOLONIAL STUDIES, perspectives that insist on a global and historical understanding of how power relations have developed and are developing.

Cultural Studies

The interdisciplinary field of CULTURAL STUDIES has also been included. This field has its origin in British studies of working class culture from the 1960s, and soon widened its scope to studies of youth culture and media culture, spreading to the United States of America and other parts of the world (Hall, 1996). It has developed into a very wide and

complex field dealing with issues of culture, identity, and power related to race, ethnicity, nationality, gender, sexuality, age, class, religion, and other sociocultural parameters. It may take local, transnational, and global perspectives, including studies of migration and diaspora studies. Until now this field has not been very interested in the study of language as a sociocultural parameter (languages in the plural), but it is very interested in human language in general, often taking a poststructuralist and social constructionist perspective on language as discourse and as one of the semiotic means in the construction of cultural representations (i.e., representations of culture and society in oral and written texts, movies, commercials, maps, museums, etc.).

Culture in Language Teaching and Learning

Last, but not least, one of the biggest areas of applied linguistics itself should be mentioned, namely foreign/second language teaching and learning. In this field there have been discussions and research on the relationship between language, culture, and society for more than a century, and especially since the 1980s. Teachers and scholars have been discussing topics such as the sociocultural content of textbooks, progression in texts and topics, different methods, the role of vocabulary teaching, the role of nonverbal communication, the importance of cultural awareness (or cultural knowledge, insight, understanding), the management of stereotypes, the role of cultural imagination, intercultural learning processes, assessment of intercultural competence, internationalization and the role of cultural experiences and personal encounters *in vivo* or via the Internet, education for intercultural citizenship, and national versus transnational perspectives.

Thus the field has seen a large number of people developing their views on language and culture in language teaching and learning, views that are so theoretically diverse that it would be somewhat problematic to introduce the whole field in a short entry (see the historical analysis in Risager, 2007, and the research timeline in Risager, 2011). Instead, there are quite a number of entries dealing with different aspects related to the field (see below).

Concepts

In addition to entries on the relevant fields of study, the section includes a number of specific entries on central concepts. First of all, the concept of CULTURE is introduced as a hypercomplex concept in Western thought. The concept of SUBJECTIVITY is introduced, as is the concept of LINGUACULTURE, that is, the cultural dimensions of language. In connection with these, the concepts CULTURAL IDENTITY, CULTURAL HYBRIDITY, and CULTURAL CAPITAL are also included.

Second, a number of important concepts are described that often occur in cultural analysis: NATION, ETHNICITY, RACE, and RELIGION. Concepts like gender, age, and class could have been included here as well, but they represent parameters that have been treated quite frequently in sociolinguistically oriented parts of applied linguistics, and we therefore refer to such sections.

Third, topics related to language teaching and learning are the following: INTERCULTURAL COMPETENCE, INTERCULTURAL LEARNING, INTERCULTURAL UNDERSTANDING WITH LITERARY TEXTS AND FEATURE FILMS, INTERCULTURAL COMMUNICATION, and MULTICULTURALISM AND SECOND LANGUAGE LEARNING. There are also entries on CRITICAL PEDAGOGY, on CITIZENSHIP EDUCATION, and on HUMAN RIGHTS. And finally there are entries on the topics CULTURAL REPRESENTATION, CULTURE IN TEXTBOOK ANALYSIS AND EVALUATION, and intercultural learning in relation to STUDY ABROAD.

A Vast Area With Many Voices

The field "language in relation to culture and context" is a vast area, and many different voices are being heard. The following renowned scholars have been chosen to feature in biographical entries from a much larger set of distinguished actors in the field: Michael AGAR, Mikhail M. BAKHTIN, Lothar BREDELLA, Michael BYRAM, A. Suresh CANAGARAJAH, Alessandro DURANTI, Manuela GUILHERME, Hartmut HABERLAND, Adrian HOLLIDAY, B. KUMARAVADIVELU, Aneta PAVLENKO, Alastair PENNYCOOK, Karen RISAGER, Edward SAPIR, and Geneviève ZARATE. Their biographies reveal a diverse set of backgrounds but also a shared interest in exploiting the possibilities of combining and synthesizing different fields of knowledge and disciplinary traditions in the interface between studies of language and studies of culture and society.

SEE ALSO: Conversation Analysis: Overview; Critical Discourse Analysis: Overview; Discourse: Overview; Kramsch, Claire; Language for Specific Purposes: Overview; Language Learning and Teaching: Overview; Teaching Culture and Intercultural Competence

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Culture and Language for Specific Purposes

ULLA CONNOR AND WILLIAM ROZYCKI

A classic definition of culture has been formulated as follows by the anthropologists Kroeber and Kluckhohn (1963):

> Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiments of artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of actions, on the other as conditioning elements of further action. (p. 357)

The all-encompassing nature of culture as described above presents a problem in applying the concept to specific language learning and specific language pedagogy. Culture has for some time been a contested term, and in part this is because "culture" can mean almost anything in human experience. And, as seen above, culture can be taken as either the product or the conditioning factor of human behavior. Thus, to be of value in explaining or informing aspects of language for specific purposes (LSP), any use of the term must be accompanied by rigorous delineation and clear conceptual boundaries.

Within LSP, there are two distinct but complimentary conceptualizations of culture that are in evidence. Each has played a role in explicating the LSP process. The first, which can be called the traditional or received view of culture, derives directly from the anthropologic formulation of culture encapsulated in the definition offered above by Kroeber and Kluckhohn. This earliest and most widespread conceptualization of culture is commonly applied to the shared values, artifacts, and behaviors of an ethnic, tribal, regional, or national group. The anthropologist Mathews (2000) calls this traditional view "the way of life of the people" (p. 2). Thus we see formulations such as "Hispanic culture," "Papua New Guinean culture," "Asian culture," "German culture," and so forth.

The second view of culture has emerged from criticism that the traditional formulation easily stereotypes those considered to be different. This postmodern view problematizes the idea of culture, seen as being tainted by the subjectivity of the viewer/commentator. Some proponents of this more recent view highlight the complexity of culture, and cultures are seen as dynamic and in flux. Furthermore, diversity is seen to exist not only between ethnic and national groups, but also within such groups.

In a similar vein, instead of seeing cultures as products, Street (1993) introduced the notion of culture as a verb, whereby culture is not a fixed thing. It is seen as ever changing, subject to, and yet influencing the dynamics of instantiated interaction.

Examples of Traditional Views of Culture in ESP/LSP

The traditional and, in the 20th century, extremely common conceptualization of culture has been an important aspect of English for specific purposes (ESP). Jordan (1997) in *English*

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for Academic Purposes devotes an entire chapter to discussing cultural differences in learning styles and strategies of EAP students new to Britain. He writes that EAP students "normally retain the learning style they have utilized throughout their school life" (p. 95), and this often conflicts with teacher expectations. He also mentions differences in academic cultures and how they can cause problems for ESP learners. Cultural mismatches can occur due to many aspects of academic life: different lecture styles, different means of evaluation (multiple choice examinations versus essay tests), punctuality in attending seminars and tutorials, use of libraries as quiet places, and certain expected polite conventions in addressing faculty and staff.

Basturkmen (2006) also includes cultural knowledge as part of knowledge objectives in ESP, along with language, affective, and transfer objectives. Cultural knowledge objectives refer to the control of sociocultural rules. As an example of teaching underlying knowledge in business communication, she mentions the importance of the teaching of not only strategies of buyers and sellers but also of different national cultural differences.

Barron (1991) lamented the neglect of using learners' culture to pedagogical advantage: "ESP has so far totally ignored the traditional cultures of students" (p. 173). Barron examined an ESP for science program in Papua New Guinea, drawing on his own experience as an instructor/planner with the program. He cites one main reason for the neglect of traditional culture, namely the belief that science is culturally neutral. Barron voiced his disagreement with the view that "there is an independent scientific culture that is the same all over the world, which is secondary to particular cultures" (p. 176). According to Barron, science is an integral part of primary cultural systems. He posits that in Papua New Guinea, a less literate society, technology is concrete rather than abstract, taking shape in ways that can be seen, heard, touched, and felt. Barron underscores the important role ESP can have in effecting a smooth transition from the concrete textualization of technology in Papua New Guinea society to the abstract and theoretically based Western textualization that appears in English. Adopting this view, teachers of ESP for science and technology should encourage their students to draw upon already-present cultural resources—irrespective of the literacy level of their society—rather than starting with a blank slate in addressing Western technology and science.

Examples of Alternative Views of Culture in ESP/LSP

The second, alternative conceptualization of culture has emerged more recently from criticism of the traditional formulation. Keesing (1994) has attacked the received concept of culture because it reifies the "other," distancing the formulator from those perceived to be different, and permitting self-identity only by labeling what one is not. This postmodern view, as proposed by Keesing and others, would discard the idea of culture as hopelessly tainted by the subjectivity of the user.

Holliday (1994, 1999) introduced a model of culture that considers both large (i.e., ethnic and national) cultures and small (i.e., disciplinary, gender) cultures. Holliday's theory is especially helpful in understanding the complexity of a classroom where national, professional, and student cultures overlap. Other critics of the traditional view, for example, Ramanathan and Atkinson (1999), expand this concept, maintaining that tremendous diversity exists not only between ethnic or national groups, but also within such groups. Thus, the traditional concept of ethnic culture need not be discarded, but is complemented by a new conceptualization of culture. Such proponents draw from the work of Giddens (1979) the idea of multiple small cultures that cross the boundaries of traditional ethnic culture. Holliday (1999) demonstrates the sociolinguistic ramifications of small cultures. Atkinson (1999) suggests the language classroom is home to institutional, disciplinary, generational,

and other small cultures that interact and interrelate. Kramsch (2001) sees the language classroom as composed of "shifting identities and cross-cultural networks" (p. 205). This view of the flux of multiple small cultures is emphasized by Dudley-Evans and St. John, in their comprehensive reference book on ESP (1998), when they state that culture is complex, that it "comprises various aspects such as national, professional, organizational and personal cultures" (p. 66).

This newer and more encompassing view of culture, that of multiple cultures, can inform otherwise puzzling research findings in LSP. For example, Sullivan and Girginer (2002) performed a discourse analysis of international aviation radio conversations between pilots and air traffic controllers. Though there is a canonical vocabulary and grammar for civil aviation communication (Airspeak) that is prescribed and controlled by the International Civil Aviation Organization (ICAO), analysis of 9 hours of recorded radio conversations describes use of noncanonical speech (e.g., call sign "2211" was expressed as call sign "double two double one" in place of the prescribed "two two one one"; instead of the canonical term "on your frequency," the nonstandard "with you" was used). Though Sullivan and Girginer did not analyze the reasons for this discrepancy, it may be theorized that generational culture (shared by veteran pilots) valued nonstandard language to mark experience. Since pilots and air traffic controllers begin their careers with only the input of the ICAO-approved language guidelines, it is only seasoned veterans who can pick up this type of speech and use it to demonstrate their veteran status.

An example of an ESP classroom which shows the overlapping national, disciplinary, and individual cultures, is described in Connor, Rozycki, and McIntosh (2006). The program was a six-month ESP program in business, finance, and economics, offered to staff from the Ministry of Finance of the People's Republic of China at a US language institute. The instructors had to take account of the small cultures (e.g., age, gender, professional affiliation, and identity) issues among the participants sharing the same large (Chinese) culture background.

Adoption of a middle ground approach that recognizes national/ethnic culture while accepting the existence of myriad small cultures is recommended by Atkinson (1999) for applied linguistics in general and is especially suited for LSP. The middle ground approach sees all humans as individuals but acknowledges that individuality is also cultural. "Knowing students individually also involves knowing them culturally" (p. 643). So, even if we downplay outmoded, stereotyping views of culture, we need to know as much about our students' local and social practices as we can.

A fertile area of research remains in LSP to explore this middle ground. With the increased globalization of business, industry, and academic disciplines, it is important that, through linguistic research, we discover language and communication strategies used in real-life intercultural encounters. From such research findings, LSP instruction can take account of the cultural and linguistic fluidity of interactions, keeping in mind the complex interactions of small and large cultures.

SEE ALSO: Critical Discourse Analysis; Language for Specific Purposes: Overview

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Culture in Textbook Analysis and Evaluation

KAREN RISAGER AND CAROL A. CHAPELLE

Introduction

Textbooks often play a central role in the formal teaching of foreign and second languages, especially at beginning level. To this day, much language teaching is structured by published textbooks, even if it is supplemented with other materials from the Internet or elsewhere. In view of the importance of textbooks in providing learners with their first authoritative glimpses of the target culture, only a little work in applied linguistics has explored issues concerning the choice of cultural content for textbooks. However, the research that has been conducted points to the importance of different ways of representing culture, the ideological dimensions of cultural choices authors make, as well as the variety of methodological perspectives that are useful.

Cultural Representation: Modernism and Postmodernism

The central culture-related question for language textbook analysis reflects the tension between modernist and postmodernist perspectives: Is it possible to define and present an objective image of the foreign culture, or is the content of the textbook always dependent on the cultural perspective of the author(s), located in time and space? The modernist approach emphasizes knowledge of facts and structures. It demands of the textbook that it present a maximally true, realistic, and representative picture of the foreign society and culture. It should present "society in a nutshell," or present "a panorama of the culture." Most textbook production is influenced by this perspective, trying to offer learners some basic and authoritative knowledge of the target language country/ies, written by authors who do not intend to show explicitly any subjective evaluation of the material presented.

The postmodernist approach, in contrast, emphasizes the role of different perspectives in cultural representation. In postmodernism, culture is dependent on the eyes that see. Some of the proponents of this approach take an explicit antiessentialist stance, maintaining that there is not "a culture" out there to describe, but that any descriptions and stories about others are always social and cultural constructions produced from a particular perspective and under specific historical and social circumstances.

These questions are important for textbook analysis, but they are very seldom if ever raised in the textbooks themselves, and the textbook authors remain more or less anonymous to students and teachers, who are unlikely to ask questions such as why the author chose to include characters of a particular nationality or particular locations within a particular country. Scholars in applied linguistics, however, have raised the discussion of modernism, postmodernism, and antiessentialism in textbook production and analysis (Kramsch, 1988; Zarate, 1993; Risager, 1998).

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Cultural Choices: The National Tradition and Transnational Challenge

From around 1850 until around 1990, foreign and second language teaching including textbooks was entirely dominated by the national paradigm. This means that the cultural content has been focused on the country/ies in which the target language is the main first language or official language. The frame of description has been the nation-state, most often presented as "the country," seen in isolation as expressed by the metaphors "society in a nutshell" or "panorama of the culture." Prior to this period, the content of language textbooks typically had a much broader, almost encyclopedic character, encompassing for example the elements, the earth, the body, the economy, grammar, music, geography, history, and angels (Comenius, 1649; see also Risager, 2007).

A number of analyses of textbooks conceived in the national tradition have appeared, particularly in Europe, where the integration process following World War II raised awareness of the importance of cultural knowledge and understanding. It was widely realized that language teaching and the cultural content of textbooks could be important contributors to an increased awareness of cultural similarities and differences among the European nation-states. For instance, a joint British–German project conducted an analysis and evaluation of the representation of Britain in German textbooks for the teaching of English (Doyé, 1991) and a corresponding analysis of the representation of Germany in British textbooks for the teaching of German (Byram, 1993). The project was mostly conceived within the modernist approach, emphasizing accuracy, representativeness, realism, and educational potential. Other analyses along these lines were conducted by Krauskopf (1985), Friz (1991), and Wegner (1999). Risager (1991) analyzed trends in the cultural representations displayed in European language textbooks. The analysis was mainly conceived in the modernist and national tradition but underscored the need for authors to include topics on international and intercultural processes and relations in textbooks.

Sercu (2000) conducted a major empirical project on the teaching of German in Flemish-speaking Belgium, also within the national approach. She studied the development of pupils' intercultural communicative competence, and her investigation dealt both with pupils' perceptions of Germany and with the sociocultural content of six different textbooks used in the classrooms. Among the results of the analysis of the textbooks was an analytical distinction between two types of perspectives in the cultural representation of the textbooks: the outsider/tourist perspective and the insider/family perspective. The first perspective tends to focus on cultural differences, including a number of informative details about society and culture but presenting a relatively flat description of characters. The other tends to focus on both differences and similarities. It provides less information on society and culture, and the description of characters is more rounded. Among Sercu's conclusions was that intercultural competence is best supported if textbooks comprise many different perspectives, both from within and without, and if topics are clearly directed toward the knowledge and interests of the pupils.

Since the 1990s the national paradigm has been increasingly problematized, particularly within the teaching of English as an international language. The problem is illuminated by Risager's (2007) analysis of the international history of culture pedagogy since the 1880s, which includes discussion of discourses on language, culture, and nation, and which traces the transition from a national paradigm to the beginnings of a transnational and global paradigm, not only for English, but for any language taught as first, second, or foreign language.

One aspect of this development toward a more global outlook is the wish to include not only "center" countries like France in the teaching of French, but also other French-speaking countries and areas, taking a more international and perhaps postcolonial and global

perspective. An example could be the textbook for French, *Orientations*, described in Starkey (1991), which has been elaborated with a view to developing pupils' awareness of transnational and global issues.

Such a perspective toward culture in textbooks requires authors and analysts to reason in order to justify choices of cultural content. Finding little Canadian and Quebecois cultural content of beginning French language teaching materials in use in schools in the northern United States, Chapelle (2009) uses the transnational paradigm to argue that American students living in the northern United States should learn about the language and culture of Canada and Quebec. She points out the value of Canadian and Quebecois cultural content which offers opportunities to explore aspects of local historical, linguistic, and cultural diversity, such as the non-neutral, political role of language and identity in Canadian society, and the complex history of migration of French Canadians across the US–Canadian border. Such ideologically different perspectives are potentially useful in the US context, where a goal for foreign language teaching is for students to increase intercultural competence, which encompasses their ability to critically examine such American assumptions as the normality of monolingualism and the neutrality of language (Chapelle, 2010).

Such an analysis of cultural value needs to include not only the target culture but the students' own cultural background and needs. Adaskou, Britten, and Fahsi (1990) proposed, for example, that the production of textbooks for English taught as a lingua franca in Morocco focuses on the learners' own country, enabling them to describe and appreciate their own culture in communication with foreigners (see also the analysis in Cortazzi & Jin, 1999).

Research Purposes and Methods

Textbooks may be analyzed for a variety of purposes and from many different angles. First of all, it is important to distinguish between practical and scientific purposes. A practical purpose could be the evaluation of textbooks with respect to their usefulness in classroom situations, and this analysis could be guided by a set of established criteria—or could result in such criteria. The publications mentioned above, Doyé (1991) and Byram (1993), are examples of studies that are mostly evaluative in this way. In such research, the motivation is pragmatic and the methodology is chosen to produce useable, defensible results typically in the immediate context.

Research for scientific purposes can raise a number of philosophical and methodological questions: How is the object of study constructed—is it the text itself, parts of the text, parts of the context of the text, and so forth? Does the analysis focus on cultural representations, on text genres, on discourses, on the role of textbooks in society? And is the philosophical foundation of the analysis characterized by positivism, hermeneutics, critical theory, social constructionism, or other perspectives? Most of the other references in this article have scientific purposes, although not all are equally explicit about purpose and philosophy.

Methodology should be evident from the documentation of the study, and here we can see a range of different methods developing: from quantitative content analysis encompassing the counting of words or topics in larger amounts of texts (e.g., Chapelle, 2009), to more qualitative discourse analysis of selected passages (e.g., Kramsch, 1988; Chapelle, 2010) and impressionistic readings of textbooks (e.g., Risager, 1991).

Another example of a quantitative study is Dechert and Kastner's (1989) investigation of the interests of students of German (in the USA) and the actual cultural content of textbooks for German. They established a predefined list of 99 potential cultural topics

and asked 286 students at the first four semesters of German to fill out a questionnaire concerning their amount of interest in these topics. The results were then compared to the actual content of 10 textbooks, and in the discussion the authors emphasize that textbooks should reflect both students' interests and teachers' (textbook writers') views of what the students need to know. A study of teachers in Denmark and England, including their attitudes to and evaluation of the cultural content of textbooks, was undertaken both quantitatively and qualitatively by Byram and Risager (1999). Sercu (2005), with a group of teachers and researchers, conducted a cross-European quantitative study of language teachers' beliefs regarding intercultural competence teaching, including their views on teaching materials, and Sercu's (2000) study of Belgian learners' perceptions of Germany and of the sociocultural content of their textbooks was also conducted using a quantitative methodology.

Another approach to research is the critical analysis of textbooks seen as products embedded in wider institutional, cultural, and political contexts. Kramsch (1988), for example, conducted an analysis of the foreign language textbook as a social genre and a cultural product in its own right, including discussions of the role of publishers, state departments, and teachers in addition to a microanalysis of a number of textbooks for German with emphasis on the multitude of voices in dialogues and readings. Zarate (1993) emphasizes that textbooks and language teaching in general are historically embedded and therefore sensitive to the fluctuations of geopolitical relations. Dendrinos (1992) approaches textbook analysis from the perspective of critical discourse analysis, focusing particularly on the ideological content of textbooks, on the authority of the textbook, and on pedagogical and political discourse in relation to the subject of English (see also Auerbach, 1995, for a critical discussion of the authority of the textbook in ESL, English as a second language).

Sercu (2000) contains an extensive discussion of qualitative and quantitative approaches to textbook analysis, which may be useful for framing future research investigating foreign language textbooks. To date, however, analysis of cultural content in textbooks remains a relatively underexplored field of study in spite of the potentially important role of textbooks for the development of cultural knowledge and intercultural competence. A strong rationale for cultural content of textbooks seems to be an important beginning point for ultimately developing a range of relevant materials and experiences for language students to learn about and experience culture in a manner that leads to intercultural competence.

SEE ALSO: Critical Discourse Analysis; Cultural Representation; Culture; Materials Development; Teaching Culture and Intercultural Competence; World Englishes and Language Pedagogy

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Cummins, Jim

TOVE SKUTNABB-KANGAS

Professor James (Jim) Patrick Cummins (born July 3, 1949, in Dublin, Ireland) is one of the world's most influential researchers in bilingualism studies. His research has focused on various aspects of literacy development in multilingual school contexts, particularly the relationship between students' home languages (L1) and their developing proficiency in the dominant language(s) of instruction. He has also highlighted the interactions between societal power relations and teacher–students identity negotiation, arguing that only instruction that explicitly challenges coercive power relations in the wider society will be effective in promoting subordinated group students' academic achievement.

Jim Cummins grew up in Ireland and experienced firsthand through his schooling both immersion education and the challenges of reviving an endangered language (Irish). He started his studies at The National University of Ireland (psychology). After his PhD (1974, Alberta) he worked for two years in Dublin at the Educational Research Centre and then returned to Canada. Since 1978 he has been at the Modern Language Centre, OISE (Ontario Institute for Studies in Education), Toronto (see www.iteachilearn.org/cummins).

A prolific researcher and writer, Cummins has authored close to 20 books and edited an additional 11. He has also written almost 200 book chapters and more than 100 refereed journal articles. His work has focused on issues of policy and practice relating to the education of bilingual students and has been particularly influential in supporting the significant growth of bilingual and mother-tongue oriented multilingual education in countries around the world during the past 30 years.

Cummins's most influential work has involved the synthesis of apparently contradictory research findings and the articulation of theoretical constructs to resolve these contradictory findings. An early example is his 1976 paper "The Influence of Bilingualism on Cognitive Growth: A Synthesis of Research Findings and Explanatory Hypotheses." It hypothesized that the level of bilingual proficiency that students attained mediated the effects of bilingualism on their cognitive and academic development. Thus, the apparent contradiction between early studies (1920s to 1950s) reporting negative cognitive and academic consequences associated with bilingualism and more recent studies (1960s and 1970s) highlighting the potential cognitive benefits of bilingualism could be resolved by positing two thresholds of proficiency that students needed to attain (a) to avoid the negative effects associated with instruction through a weaker language, and (b) to experience the enhancement of cognitive and linguistic functioning that knowledge of two or more languages confers on the developing child. In other words, the threshold hypothesis (developed together with Pertti Toukomaa and Tove Skutnabb-Kangas) argued that educational treatment interacts with students' academic language proficiency to produce positive or negative educational and cognitive outcomes.

This theoretical work was expanded into the emerging debate on the merits or otherwise of bilingual education. Bilingual programs for minority group students, implemented on a limited scale in contexts such as the USA in the 1960s and 1970s, had become highly controversial. Opponents argued that dilution of the instructional time between minority students' L1 and the dominant language (L2) would inevitably result in deficient L2 academic development. In a widely cited paper published in the influential *Review of Educational Research* in 1979, Cummins drew on research carried out in Scandinavia, Canada, the USA,

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and elsewhere to propose the *interdependence hypothesis*. This hypothesis (also known as the *common underlying proficiency* [CUP] hypothesis) argued that literacy-related concepts and skills in L1 and L2 are interdependent, or manifestations of a common underlying proficiency, such that academic knowledge and skills transfer across languages under appropriate conditions of development (e.g., educational support for both languages). This transfer of concepts and literacy-related skills explains the fact that instruction through a minority language exerts no adverse consequences on students' academic development in the majority language despite less instructional exposure to the majority language. This holds true for students from both minority and majority language backgrounds in various kinds of bilingual programs.

In addition to work related to bilingual education during this period, Cummins also proposed a distinction between two dimensions of proficiency in a language—*basic interpersonal communicative skills* (BICS) and *cognitive academic language proficiency* (CALP). This distinction derived from an analysis of more than 400 teacher referral forms and psychological assessments carried out on students who were learning English as an additional language in a western Canadian city. It was clear from the data that students quickly gained conversational fluency in English but took considerably longer to catch up to grade expectations in academic aspects of language (e.g., vocabulary knowledge, reading comprehension). These data were consistent with previous research in Sweden that identified the "surface fluency" developed by Finnish minority group students in Swedish (their L2) (Skutnabb-Kangas and Toukomaa, studies for UNESCO).

A subsequent reanalysis of data from the Toronto Board of Education (Cummins, 1981) showed that, on average, students required five to seven years to come within a half standard deviation of grade norms on measures of academic language. The distinction between BICS and CALP has exerted a major influence globally on issues such as the amount and duration of instructional support deemed appropriate for immigrant and second-generation students and also the use of inappropriate psychological tests with immigrant and minority group students. However, it also led to accusations by a number of researchers that the distinction constituted a "deficit" theory which attributed students' underachievement to "low CALP." This interpretation was vigorously repudiated by Cummins (see Cummins, 2000, chap. 4, for the most complete discussion).

Although Cummins consistently acknowledged the central role of broader societal factors in determining students' academic development, his early focus was on psycholinguistic and psycho-educational considerations related to bilingualism and bilingual education. This focus shifted in the early 1980s partly in response to the misinterpretation of the construct of CALP but also because of the vehement rejection of bilingual education by media commentators and many policy makers in the USA. This rejection was clearly ideological in view of the fact that the research evidence was very clear: bilingual education represented a legitimate policy option with the potential to reverse patterns of minority group underachievement.

Cummins's 1986 paper "Empowering Minority Students," initially published in *Harvard Educational Review* and expanded upon in subsequent publications (e.g., his 1996 and 2001 [2nd edition] book *Negotiating Identities: Education for Empowerment in a Diverse Society*). This body of work integrated the previous psycholinguistic analyses and theoretical constructs into a broader framework that linked identity negotiation between teachers and students in the classroom to patterns of power relations in the broader society. Cummins distinguished between coercive and collaborative relations of power which correspond to the common distinction between "power over" and "power with." The former was defined as the exercise of power by a dominant individual, group, or country to the detriment of a subordinated individual, group, or country. This process is subtractive—the more power one player gets, the less is left for others. By contrast, collaborative relations of power are additive—the more power that accrues to one partner in the relationship, the more is

available for others to share. Based on this distinction, Cummins defined *empowerment* as *the collaborative generation of power*. The implication of this analysis is that any educational reform that seeks to close the achievement gap between dominant and subordinated group students will only be effective to the extent that it challenges the operation of coercive relations of power within the school and classroom, and, ultimately, the whole society.

Cummins's recent work has involved collaboration with educators aimed at creating interpersonal spaces in schools and classrooms that generate power for minority group students. For example, within the context of English-medium instruction, educators have implemented bilingual instructional strategies such as encouraging students to create and web-publish dual language books (in L1 and English) (see www.multiliteracies.ca). These *identity texts* hold a mirror up to students in which their identities are reflected back in a positive light, a very different message from the messages that schools have typically communicated to subordinated group students and their communities (see Cummins, 2009, for a summary of his recent work).

Summing up, comparing languages competence and school achievement of English mother-tongue children in French immersion programs, and (other) immigrant and other minority children (and later also indigenous/first nations children) in English-medium submersion programs made Cummins realize how differently the educational systems treated them, and how minority children were unfairly tested and labeled as deficient in terms of their capacities, background, and environment. This led Cummins to create *theoretical concepts*, today known and used everywhere in the world. He has continued to refine the concepts, to revise ways to test their validity and reliability (often working in schools, with children and educators, in many parts of the world), to relate them to school-internal and societal unequal power relations, to develop alternatives together with educators in schools. Cummins continues to educate teachers, school authorities, parents, politicians, and colleagues all over the world about the consequences of the unfair educational treatment of children. His work has deeply influenced hundreds of thousands of educators all over the world, and, through them, millions of children.

SEE ALSO: Curriculum Development in Multilingual Schools; Immersion Education; Materials Development for Multilingual Education; Minority Languages in Education; Mother-Tongue-Medium Education; Multicompetence; Multilingual Education and Language Awareness

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Curriculum Development in Multilingual Schools

CAROL BENSON

This entry describes contexts calling for multilingual schools, presents agreed principles of language and literacy learning, discusses international approaches to developing appropriate curricula, and indicates new directions in the field. Multilingual schools are defined here as schools serving learners who speak or will learn to speak—as well as develop reading and writing proficiency in—two or more languages.

Schools serving linguistically diverse groups of learners are often considered multilingual, and creative approaches have emerged to support and develop learners' home languages in such contexts. For example, rather than expecting individual teachers to be multilingual, teachers proficient in each relevant language may collaborate (Coltrane, 2002), IT and translation programs may be used (García, 2009), or classrooms may be organized by home language rather than by grade (Kosonen, 2006). While many of the same principles of language learning apply to these schools, the focus here is on multilingual programs that "exert educational effort" to promote communicative competence, literacy, and thinking skills in two or more languages (García, Skutnabb-Kangas, & Torres-Guzmán, 2006, p. 14).

Multilingual Schools for Whom?

Internationally, there are two common situations calling for multilingual schools. Situation A occurs in countries with one or more national languages—hereafter known as *dominant languages* (DLs)—serving learners from communities speaking regional, immigrant, or other minority languages—hereafter known as *nondominant languages* (NDLs); these terms were developed in collaboration with Kimmo Kosonen (see e.g., Benson & Kosonen, 2010). Examples are speakers of Navajo or Spanish in the United States, Breton or Arabic in France, Sámi or Somali in Sweden. Multilingual schools for these learners incorporate and sometimes develop their home or heritage languages while facilitating learning of one or more national DLs like English, French, or Swedish in the cases just mentioned. In Europe, such learners are often expected to learn an additional DL, giving them a repertoire of at least three languages; this is known as the "1 + 2" formula (European Commission, 2005; Baetens Beardsmore, 2009). It should be noted that in some situation A communities, multilingual schools are used to revitalize languages that have lost ground to DLs among younger generations.

Situation B occurs in countries characterized by societal bi- or multilingualism, where large majorities speak NDLs at home, acquire a lingua franca or language of wider communication outside the home, and must learn official DLs at school or in other formal domains. Countries like Nigeria (Bamgbose, 2000) and India (Jhingran, 2009), for example, have histories of curriculum development based on a three-language formula. Latin American and Asian societies are often bilingual, for example Quechua/Spanish in Bolivia or Hmong/Vietnamese in Vietnam, but schools may become multilingual with increasing public pressure to add "global" languages such as English to existing repertoires. Even for learners who speak DLs at home, policies have been adopted by situation B countries

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such as Bolivia and South Africa to encourage the learning of local NDLs and thus improve mutual understanding, but it has not been easy to overcome learners' neglect of NDLs in favor of "global" languages (Alexander, 2003; López, 2006).

Multilingual schools are increasingly requested in situations other than A or B, for example as enrichment programs in relatively monolingual contexts where access to additional languages and cultures is perceived to bring about cognitive, social, or occupational benefits. Language learning and cognition are clearly linked, and learners' metalinguistic awareness, or understanding of explicit properties of language (Bialystock, 2001), is thought to help them to learn additional languages as well as to think critically and flexibly. The Council of Europe (Language Policy Division, 2006) differentiates between the *multilingualism* of societies or schools and the *plurilingualism* of the individual, referring to the development of communicative competence in multiple languages over one's lifetime according to one's needs, and promotes mass plurilingualism as a means for achieving democratic citizenship, pluralist attitudes, social coherence and mutual understanding.

Multilingualism, Multiculturalism, and Multiliteracy as Curricular Aims

Because the field of bilingual education was originally designed to help speakers of NDLs to learn and use DLs, its extrapolation into multilingual contexts and practices has required a number of adaptations. Certain principles of language and literacy learning have enjoyed continued research support, while others have been held up to scrutiny. Perhaps the most important principle, particularly for speakers of NDLs, is that initial and continued literacy taught in the learner's home language (L1) provides the best platform for learning academic content as well as additional languages, while building up the learner's identity and self-esteem (Cummins, 2009). Known as "first language first" in some parts of the world (UNESCO, 2005), this principle is equally valid when applied to strengthening the learner's "first culture" and identity, even if the heritage language is not necessarily the strongest in the learner's repertoire, and even if the learner has more than one home language.

Another principle common to bilingual programs is to teach the second or foreign language (L2) orally for the first few years of school, after which learners begin to transfer literacy and learning skills across languages, a process that can be facilitated by explicit comparison and contrast of relevant aspects of the languages in question (Cummins, 2009). There is strong evidence that transfer occurs whether or not the languages are linguistically related (Cenoz, 2009) and whether or not they use the same writing system (Kenner, 2004); in addition, transfer is multidirectional, meaning that all of the learners' languages contribute to their linguistic and cognitive development (Bialystock, 2001). The traditional sequential approach (L1-to-L2), as well as the strict separation of languages which characterized the bilingual curriculum, have been challenged with the incorporation of multiple languages and literacies into the classroom (Cenoz & Genesee, 1998; Hoffmann & Ytsma, 2003). Now the most effective approaches are simultaneously additive (Baker, 2006) and dynamic (García, 2009), as they aim not only to build on the learner's strongest language(s) but also to work multidirectionally on the entire linguistic repertoire to achieve multilingualism and multiliteracies.

New conceptions of literacy have gone far beyond the acquisition of reading and writing skills in multiple languages. *Multiliteracies pedagogy* builds on the rich cultural and linguistic identities that learners bring to the classroom, exposing them to a range of new communicative modalities like information technologies and helping them gain critical insights into how knowledge and society are constructed (New London Group, 1996; Cummins, 2009). *Critical literacy* calls into question the dominance or nondominance of

languages in society and is integrally linked to *multiculturalism*, which involves respect for all languages, cultures, and people, and intercultural awareness. *Interculturalism*, the ability to mediate between languages, cultures, and peoples, has long been recognized as a feature of Latin American bilingual programs, and more recently has been operationalized to emphasize indigenous knowledge and values while challenging existing inequities between groups (López, 2006).

A final principle that applies as much to multilingual as to bilingual curricula is that instruction in an additional language as a subject is probably insufficient to prepare learners for using that language as a medium of instruction. The school curriculum is an important source of language development because it is cognitively demanding (Gibbons, 2002), but this implies that teachers must be able to scaffold meaning. Scaffolding involves such strategies as activating prior knowledge, giving learners structures or terms to use, and encouraging use of the L1 to process information, the latter resulting in higher-quality L2 or L3 output than if only that language is allowed (Cummins, 2009; Swain & Lapkin, 2005).

Promising Directions in Multilingual Curriculum Development

Based on the above principles and aims, a well-designed multilingual curriculum is likely to include the following components.

- A holistic language program that develops and assesses multilingual competencies, promoting metalinguistic awareness and multidirectional transfer.
- Content area instruction that draws on and develops languages purposefully across the curriculum while maintaining an appropriate level of cognitive challenge.
- Inter- and multicultural awareness activities that are emancipatory and strengthen learner identity, such as research projects that involve family and community members.

One such holistic language program has been adopted by the Ikastolas (Basque-medium schools) in the Basque Autonomous Region of Spain to work systematically with four languages: Basque L1, Spanish L2, English L3, and French L4. Its integrated language curriculum uses the L1 as the main language of communication and learning but gives appropriate roles to the other languages depending on their presence in the learners' environment outside school, the linguistic distance between languages, and the level of learners' cognitive development at each level of schooling (Elorza & Muñoa, 2008, p. 92). The curriculum begins with a set of common general competencies, recognizing that they can be learned in different languages, or that some—like metalinguistic awareness—are developed during the process of multilingual learning. The curriculum includes language-specific aims for oral and written competencies that differ based on multilinguals' needs in their societies. Based on these differing aims, evaluation criteria are developed and decisions made regarding which languages are introduced at what point in the curriculum, and how much time will be given to teaching them.

Such holistic language programs require new forms of language-enhancing classroom interaction that maximize learners' and teachers' linguistic resources. One such form is translanguaging, where multiple languages and discourse styles are engaged to negotiate meaning and affirm identity (García, 2009); for example, learners may read a text in one language, collaborate through another language to assemble the main points, and use yet another language for classroom discussion. Another form is transliteration, where learners of literacy may be encouraged to use the script of one language to write another, thus developing their metalinguistic capacities through written communication (Kenner, Gregory,

Ruby, & Al-Azami, 2008). Multimodal communication is also gaining attention, as teachers become more aware of the multitude of communicative forms that can be tapped for learning, including visual, iconic, musical, linguistic, and textual forms, which are just as applicable among minority youth in the USA (Harklau, 2003) as they are among Kashinawá teachers in Brazil, whose geometric *kene* patterns and figurative *dami* drawings nuance the meanings conveyed by written words (Menezes de Souza, 2005).

Teaching languages across the curriculum requires systematic planning of which languages will be used, how meaning will be supported, which aspects of language will be developed, and how understanding will be assessed. In Europe, *content and language integrated learning* (CLIL) exposes learners to meaningful language in content domains by working at realistic proficiency levels (Marsh, 2002). In low-income situation B contexts, a similar approach is taken using bi- or multilingual content materials to support teachers, students, and parents with the terminology and language structures they need to discuss content in the relevant languages (Malone, 2003; Mbude-Shale, Wababa, & Plüddemann, 2004). Assessment can also be bi- or multilingual by presenting questions in both or all languages and allowing learners to choose the language in which they respond, or by presenting different questions in different languages depending on the level of language production required. Such strategies are not unlike those of the European Schools (Baetens Beardsmore, 2009) or of multilingual immersion programs (Fortune & Tedick, 2008) where the integration of language and content maximizes exposure to all languages, and the integration of languages with each other "can soften the boundaries and probably foster the benefits of multilingualism" (Cenoz, 2009, p. 127).

There is need for advancement in the areas of multilingual assessment and multilingual teacher preparation. While the Common European Framework of Reference (Council of Europe, 2002) is useful for identifying different levels of language proficiency based on descriptors, the challenge is to go beyond the assessment of individual languages to fully recognize and describe multilingual communicative and multiliteracies competencies. Similarly, teacher development programs need to go beyond preparation for teaching individual languages to providing all teachers with multilingual competencies along with the knowledge and strategies for cultivating the same in their students.

SEE ALSO: Assessing Multilingualism at School; Assessment Across Languages; Bilingual Literacy; Cultural Awareness in Multilingual Education; Integration of Language and Content Learning; Language Planning and Multilingualism; Language Policy and Multilingualism; Literacy in Multilingual Classrooms; Materials Development for Multilingual Education

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Cut Scores on Language Tests

JAMES DEAN BROWN

Cut Scores and Standard Setting

A frequent question raised by test developers and users is what the cut scores should be for deciding who passes and who fails a new test. What should the standards be for passing, who should decide, and how can the fairness of the decision be demonstrated? These questions are raised because test users want to identify methods of making such decisions that do not appear arbitrary, but setting cut scores can be somewhat arbitrary. For example, in 1986, when I was director of the English Language Institute (ELI) at the University of Hawai'i, I arbitrarily decided that the cut scores for the ELI placement tests would be 50 and 60 (in *t* scores based on the fall 1986 administration of our placement test) for our listening, reading, and writing placement decisions. This meant that students who scored 49 or below on the listening tests would be placed into our intermediate-level listening course, those between 50 and 59 would be placed in the advanced course, and those scoring 60 or above would be exempt. The same cut scores were used for the listening, reading, and writing tests/courses. My reasoning was that I wanted to establish cut scores and then anchor them in that 1986 administration so that the ability levels of the students placed in each level would stay the same thenceforth.

Strictly speaking, nonetheless, the cut scores were arbitrarily assigned. Is that necessarily bad? Teachers make just such arbitrary decisions based on cut scores all the time when they use the following "traditional" grading scheme: 90% or above = a grade of *A*, 80–89% = *B*, 70–79% = *C*, 60–69% = *D*, and 59% or below = *F*. These cut scores are used for grading millions of students in classrooms across the United States, and such cut scores are widely accepted, yet they are arbitrary and not always fair—a fact that teachers admit when they use strategies like "changing the curve," adding 10% points to everybody's score, etc. In other words, there is some arbitrariness inherent in setting cut scores even when teachers draw upon traditionally accepted standards. When language-test users and developers want to set new cut scores or revisit existing ones, they draw upon professional practices to undertake a standard-setting process.

What Steps Are Involved in Standard Setting?

A number of options exist for standard setting, but the basic steps used in typical standard-setting methods (SSM) are as follows:

1. Choose an SSM (one that is easy to implement and compute, and that is easy to interpret and credible to lay people).
2. Choose judges or groups of judges who have a stake in the decisions being made (e.g., teachers, administrators, etc.).
3. Clearly describe all performance categories and candidate groups so that they will be suitable for making unambiguous judgments.
4. Train judges to use the SSM.

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5. Have judges rate test items, rubrics, candidates, candidates' work and score profiles (depending on the SSM being used), while minimizing the social effects of interactions between judges and keeping them focused on whatever data are involved.
6. Give feedback and discuss as appropriate (if judges will be allowed to change their ratings based on the discussion, they should do so independently).
7. Assemble the ratings and calculate or create cut score(s).
8. Have judges evaluate the standard-setting process.
9. Assemble validity evidence.
10. Report the results.

Note that some SSMs skip one or two of these 10 steps, while others add a step here or there, but most SSMs follow this general pattern (see Table 1 for an example of the actual steps involved in the Jaeger, 1982, 1989, SSM).

Table 1 Example of steps in the Jaeger (1982, 1989) SSM

1. Sample judges from all groups of stakeholders with an interest in the testing decisions.
2. Get judges to examine all items and decide (*yes* or *no* for each item) if students who pass the test should be able to correctly answer the item.
3. Share real student performance test data with the judges as well as the answers of the other judges.
4. Get the judges to once again decide (*yes* or *no* for each item) if students who pass the test should be able to correctly answer the item.
5. Calculate the standard for each judge by adding up the number of *yes* answers.
6. Determine the standard for each group of stakeholders by finding the median across judges in the group.
7. Decide the overall standard by using the lowest of the medians for all groups of judges as the passing score.
8. Report the results.

Options for Standard Setting

Over the years, numerous strategies have been proposed for mitigating the arbitrariness of standard setting (for a detailed overview of these strategies, see Hambleton & Pitoniak, 2006).

Along the line, researchers began to notice that standard-setting strategies can be classified into different categories. For instance, Berk (1986, pp. 139–40) examined 38 different SSMs and proposed that they fall into four categories: state (i.e., mastery/competency is viewed as either 0% or 100%); continuum (i.e., mastery/competency is viewed as continuously distributed); judgmental (i.e., mastery/competency is decided by one or more judges, independently of data); or judgmental-empirical (i.e., mastery/competency is decided by one or more judges based on data). Jaeger (1989, pp. 492–500) discussed state models, but argued that, for most practical situations, continuum models should be applied. He further proposed that continuum models should be divided into test-centered methods (i.e., those setting standards based primarily on test characteristics) and examinee-centered methods (i.e., those setting standards based primarily on examinee characteristics). In discussing the development of new SSMs, Hambleton, Jaeger, Plake, and Mills (2000) saw a need to further subdivide the test-centered methods and examinee-centered methods into four categories: (a) test items and scoring rubrics, (b) candidates, (c) candidate work, and (d) score profiles. Table 2 shows most of the main SSMs categorized into these four categories.

Table 2 Prominent SSMs in the literature

Categories of SSMs *Specific methods*	*Useful references for SSM*
SSMs involving review of test items and scoring rubrics	
Anghoff method	Anghoff (1971); Ferdous & Plake (2007)
Borderline examinee method	Hambleton & Plake (1995); Fowell, Fewtrell, & McLaughlin (2008)
Analytic method	Pitoniak, Hambleton, & Biskin (2003)
Ebel method	Ebel (1972); Fowell, Fewtrell, & McLaughlin (2008)
Nedelsky (1954) method	Nedelsky (1954)
Jaeger method	Jaeger (1982, 1989)
Item-mapping method	Hambleton, Swaminathan, & Rogers (1991)
Bookmark method	Karantonis & Sireci (2006)
Direct consensus method	Sireci, Hambleton, Huff, & Jodoin (2000)
SSMs involving review of candidates	
Borderline group method	Schoon & Smith (1996); Searle (2000)
Contrasting groups method	Livingston & Zieky (1982)
SSMs involving review of candidate work	
Item-by-item method	Loomis & Bourque (2001)
Body of work method	Kingston, Kahl, Sweeney, & Bay (2001)
Booklet classification method	Loomis & Bourque (2001)
Generalized examinee-centered method	Cohen, Kane, & Crooks (1999)
Analytic judgment method	Plake & Hambleton (2001)
Integrated judgment method	Jaeger & Mills (2001)
Work classification method	Pitoniak, Hambleton, & Biskin (2003)
SSMs involving review of score profiles	
Judgmental policy capturing method	Jaeger (1995a, 1995b)
Dominant profile method	Plake, Hambleton, & Jaeger (1997)
Item cluster method	Mills, Hambleton, Biskin, Kobrin, Evans, & Pfeffer (2000)

Standard Setting and Error

The standard-setting process provides a basis for setting cut scores. However, as in all human activities, decisions made on cut scores are error prone, especially near any given cut score. Clearly, the decisions made for examinees who are well below or above a given cut score are probably accurate. However, a problem arises for examinees near the cut score because scores are never 100% reliable, and examinees who are close to a cut score could conceivably end up on the other side of the cut score by chance alone if they were to take the test again. Fortunately, there are statistics that can help us estimate the unreliability of scores around a cut score in useful terms. The standard error of measurement (SEM) is one such statistic that can be applied if the test is norm-referenced. The SEM indicates the degree to which scores are likely to fluctuate around a cut score because of unreliable variance. For example, an SEM of 2.10 on a placement test indicates that examinees' scores would fluctuate ± 2.10 points with 68% probability if they were to take the placement test repeatedly. In other words, with a cut point of 25, the SEM of ± 2.10 points indicates that examinees who have scores between 22.90 (25 − 2.10 = 22.90) and 27.10 (25 + 2.10 = 27.10) are likely to fluctuate within that range 68% of the time, and therefore could conceivably end up on the other side of the cut point if they were to take

the test again. Indeed, students within the band of scores between 22.90 and 27.10 might well be misplaced—a fact that is far less likely for students further from the cut point.

Typically, the strategy that is used for making decisions in such cases is to identify students within the band of error (in this case, ± 1 SEM) of the cut point and gather additional information about them (e.g., a writing sample, an interview, feedback from previous teachers, etc.) to help make the decisions about them more reliable. In short, the SEM provides information that helps to identify examinees who might be categorized incorrectly because of measurement errors in norm-referenced scores so that additional data can be gathered about them that will help to make decisions about them more reliable. An analogous statistic exists for estimating the errors on criterion-referenced tests in terms of their dependability: the confidence interval (or CI). (For more information on both the SEM and CI, including how to calculate them, see Brown, 2005, pp. 188–90, p. 210, pp. 214–15; Brown & Hudson, 2002, pp. 167–8, pp. 184–7.)

Cut Scores and Reliability or Dependability

Another statistic that is useful in relation to cut scores is the phi(lambda), or $\Phi(\lambda)$. Because the degree of consistency (reliability for norm-referenced tests, or dependability for criterion-referenced tests) of test scores varies depending on where the cut scores are found in the score range, language testers may find it useful to examine the reliability or dependability of scores at various cut scores before using the cut scores for decision making. $\Phi(\lambda)$ provides an estimate of the degree of score consistency for decisions made with a particular cut score, while taking into account the distances of the scores from the cut score. Thus, language testers may find the $\Phi(\lambda)$ useful in two ways: (a) for determining the reliability or dependability of test scores at various cut scores to help them decide where a cut score should be placed, and (b) for estimating the reliability or dependability of an established cut score as part of a decision-validity study. (For more information on $\Phi(\lambda)$, including how to calculate it, see Brown, 2005, pp. 211–15 and 2007, pp. 17–18; Brown & Hudson, 2002, pp. 195–8.)

SEE ALSO: Assessment and Evaluation: Quantitative Methods; Assessment in the Classroom; Standard Setting on Language Tests; Test Design and Retrofit; Tests; Uses of Language Assessments

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Cyberpragmatics

FRANCISCO YUS

"Cyberpragmatics" was coined by Yus (2001, 2010a) as an attempt to study Internet-mediated communication (IMC) from a cognitive pragmatics point of view and, more specifically, from the theoretical framework of *relevance theory* (Sperber & Wilson, 1995), although other theoretical approaches were also addressed when appropriate.

Relevance theory claims that our cognition is biologically geared to the maximization of relevance from the different inputs that reach our minds. Since we cannot possibly pay attention to all the barrage of information that we can process in a specific context, human beings have developed an ability to filter out potentially irrelevant information and to focus their cognitive resources on what might provide informational reward. This biologically rooted ability is covered by the so-called *Cognitive Principle of Relevance*: "Human cognition tends to be geared to the maximization of relevance." However, the main focus of relevance theory is verbal communication. As soon as people speak to us, their utterances create expectations of relevance, and this is covered by the *Communicative Principle of Relevance*: "Every act of overt communication conveys a presumption of its own optimal relevance."

Crucially, aiming at optimal relevance when interpreting the speaker's utterance involves weighing up the likelihood of several interpretations, all of which are compatible with the utterance that has been coded. For an interpretation to be selected as the most relevant one, it has to be the interpretation that provides the best balance between two conditions:

- Condition (a): An assumption is relevant to an individual to the extent that the positive cognitive effects achieved when it is optimally processed are large.
- Condition (b): An assumption is relevant to an individual to the extent that the effort required to achieve these positive cognitive effects is small.

The picture is not one of dismissing any interpretation that is more effort-demanding than others. In reality, and also in IMC, we are often ready to expend additional mental effort if we obtain some supplementary reward (cognitive effects) in exchange. One of the aims of cyberpragmatics is to analyze why Internet users often find relevance in text-based communication even though several options of contextualization (Webcam, microphone) are available. It also analyzes how users fill the gap between what is coded and what is interpreted, and the role of technological aspects of IMC in the eventual assessment of relevance (cognitive effects vs. processing effort, as mentioned above). Besides, in Yus (2011) several relevance equations of effective Internet communication are commented upon in which a number of non-propositional *cognitive rewards* are proposed that the user may find when engaging in IMC (feelings of empathy, of connectedness, of identity shaping, etc.) and might produce supplementary effects. These were contrasted to a number of *environmental constraints* that may also play a role in the eventual assessment of relevance in IMC (familiarity with software; usability of the interface; type of navigation that the user is currently engaged in; current position—typically changing—of the medium in the scales of oral–written, visual–verbal, and synchronous–asynchronous; etc.).

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Specifically, several aspects are stressed and addressed by cyberpragmatics:

a In IMC, just as in face-to-face (F2F) communication, the *addresser users* have communicative intentions and have to devise their messages in such a way that the intended interpretation is selected by their *addressee users*.
b Internet users resort to inferential strategies when interpreting messages on the Net, but these do not differ from the ones that they use in the interpretation of utterances in F2F communication with physical co-presence. There is only one biologically rooted ability to turn words into relevant interpretations, regardless of the type of utterance, the channel used, and the richness of contextual information.
c *Addresser users* expect their virtual interlocutors to access some specific contextual information that enables them to reach the intended interpretation of their messages. Similarly, *addressee users* invariably access contextual information as an inherent part of their relevance-seeking inferential activity.
d An important claim in cyberpragmatics is that the characteristics of the different applications for Internet communication (chatrooms, Messenger, e-mail, Web pages, etc.) affect the quality and quantity of contextual information accessed by users, the mental effort devoted to interpretation, and the choice of an interpretation. Indeed, cyberpragmatics analyzes communicative exchanges that take place in all forms of IMC and what we can label their "material qualities" (basically their position on the verbal–visual and oral–written scales in terms of options for contextualization) will have an impact on the balance of cognitive effects (i.e., interest) and mental effort obtained during the relevance-seeking interpretation.
e There is a link between relevance and the interfaces of programs for IMC. The non-expert users who face problems in surfing the Net, using the applications, and so forth will face supplementary mental effort even before interactions with other users or the processing of documents from Web pages start. Expert users, on the contrary, will obtain the highest reward from the Internet without the burden of technology-related effort (Yus, 2003).
f Much of cyberpragmatic research focuses on the users' ability to connote their messages with different attributes of orality, typically found in the vocal (e.g., repetition of letters and creative use of punctuation marks) and the visual (e.g., emoticons) channels of oral interactions (see Bays, 2008, among others). Therefore, cyberpragmatics analyzes the challenges that users face when they attempt to compensate for this lack of orality. And very often more effort has to be devoted to tracking down underlying intentions, feelings, and emotions conveyed by text-based utterances (Yus, 2005).

In this sense, all the forms of IMC can be arranged on a *scale of contextualization* ranging from those with a high level of contextual support (video conference, Internet-mediated telephone, Webcam-mediated chatrooms, etc.) at one end to plain text-based communication at the other. In any case, there is always an informational gap between what is typed (i.e., coded) and what is interpreted, regardless of the level of contextual support. This accords with the so-called *underdeterminacy thesis* (Carston, 2002), which predicts gaps between what the speaker says and what the speaker intends to communicate, and also between what the speaker says and what the hearer interprets.

Needless to say, this filling of the gaps is made easier if the channel of communication is capable of providing a lot of contextual support, especially concerning visual and oral nonverbal information typically communicated in parallel with verbal utterances. If communication on the Net relies only on typed text, several additional informational gaps are generated that have to be filled inferentially.

Undoubtedly, users devise different strategies to *oralize* their messages and texts in order to make them richer in terms of contextualization, and cyberpragmatics also

addresses these strategies. For instance, in Yus (2005), it was concluded that what was labeled *textual deformation* (repetition of letters, creative use of punctuation marks, emoticons, etc.) aids in the communication of attitudes, feelings, and emotions in chatrooms. However, and not as predicted, addressee users failed to infer degrees in the intensity of these attitudes, feelings, and emotions related to the amount of text typed by the addresser user. This *textual deformation* seems to work as an "either/or strategy"; that is, if there is textual deformation more intensity is inferred, but different amounts of textual deformation do not lead to inferred degrees of intensity. Nevertheless, chatrooms offer great opportunities for language teaching. For instance, Demirbilek and Mutlu (2010) study chatrooms as purposeful communication that leads to increased language production and social interaction and, at the same time, promotes higher-order thinking skills, and hence offers nice opportunities for teaching.

g The assessment of relevance when interpreting IMC can also be altered by the qualities of the program interface (Yus, 2008, in press), often by gratuitously increasing the users' mental effort, since very often they have to devote supplementary cognitive resources to using that interface, besides the effort of selecting an interpretation. However, today's adolescents, typically "digital natives," are used to engaging in multitasking and in multithread conversations (Baron, 2008). For example, it is common to have several Messenger windows open simultaneously, and therefore this apparent constraint should pose no additional mental problem.

h An interesting focus of cyberpragmatic research concerns how advances in the level of contextualization provided by the interface (e.g., Webcam added to the instant messenger) generate (or not) better balances of cognitive effects and mental effort in the user's search for relevance. On paper, these improved interfaces should aid IMC by reducing the effort related to the use of the interface and by aiding in the correct choice of interpretations, but this is not always the case. For instance, avatar-mediated communication (e.g., Second Life) is supposed to be a richer medium of communication, but the effort demanded to control the avatar's nonverbal behavior may not be offset by the number of cognitive effects obtained in return. At the same time, though, in Second Life users can type their messages or use the audio facility (the latter being an increased level of oralization and hence of contextualization).

i Cyberpragmatics also analyzes the interpretation of discourses that have been exported to the Internet (especially from a printed format to an electronic one), and how the new medium generates alterations in the users' assessment of relevance and also in the decisions concerning how much information is conveyed and how it is organized and offered to the user. This is the case of newspapers and advertising, both of which exhibit new formats and ways of presenting information adapted to the requirements of the screen and to the level of context accessibility that the new reader/user can access compared to the reader of the printed version. For an application to second language (L2) teaching, see Tremayne (2008).

j Another area of research within cyberpragmatics concerns the social side of IMC, especially the way IMC is used to sustain and assess group membership and (personal) social networks (Yus, 2007). A growing number of social uses of the Internet are centered upon language as part of the effort to keep a profile in a Weblog or in a social networking site, to inform people of daily activities via Twitter, to use content generated in collective achievements such as Wikipedia, to manage virtual communities, and so forth. In these cases, the "social benefit" obtained from these forms of IMC offsets the effort required to keep this level of commitment to the other users.

Weblogs and social networking sites, as well as micro-blogging services such as Twitter, satisfy the user's individual and social communicative needs and provide interesting insights into how optimal relevance may be obtained not only in the

interpretation of messages but also in group-related assumptions and mutual network awareness. Profiles in social networking sites such as MySpace or Facebook are an excellent way of monitoring one's personal and social identities in terms of number of contacts, access to personal news items, and embedded instant messaging services. This is why they have become so popular in the last few years, in both everyday and L2-centered interactions.

k At the same time, one of the social qualities of the Internet involves discourses created by users for other users, the so-called Web 2.0, or the trend to user-generated content (as in Wikipedia). In terms of relevance, the proliferation of texts may be detrimental to the users' assessment of relevance. To start with, the high quantity of available information may alter the user's willingness and ability to filter it and process it in an efficient way. Besides, information on the Internet is often not structured in a hierarchical way, in the sense that there is no "authority" backing up the relevance and trustworthiness of what is about to be read (by filtering the potentially irrelevant information, trusting the source, etc.), and therefore the effort devoted to processing such information may be too high.

l Finally, illicit or nonlegal (or simply annoying) uses of the Net may also alter the user's estimation of relevance by uselessly increasing the effort to access the most relevant information. A clear example is the *spamming* of e-mails, which makes the reading of authentic and interesting messages utterly impossible (Freeman, 2009). This is frustrating for the users and a clear threat to an optimal balance of cognitive effects and mental effort. Similarly, so-called *pop-up advertisements* intrude on the user's current task, making the access to relevant information much harder. Finally, user-generated projects such as Wikipedia have been attacked by cyber-activists altering the content of its entries and hence lowering the users' level of trust in that site as a source of relevant information.

SEE ALSO: Politeness in Computer-Mediated Communication; Pragmatics of Asynchronous Computer-Mediated Communication; Pragmatics of Chat

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Davies, Alan

JOHN C. MAHER

Professor Alan Davies, a founding father and major theorist of the field of applied linguistics, is Emeritus Professor of Applied Linguistics at the University of Edinburgh. Davies grew up in South Wales of Welsh- and English-speaking parents. His early linguistic experience provided an awareness of the reality and paradoxes of multilingualism, power, and the politics of language. After taking a degree in English at the University of Oxford and seven years as an English teacher in the UK and Kenya, he developed the English Proficiency Test Battery (EPTB) for the British Council at the University of Birmingham, where he was awarded a PhD on "Proficiency in English as a Second Language" (1965). He was appointed to a lectureship at Edinburgh University in 1965, has taught at universities in Nepal and Hong Kong, and in 1991 became founding Director of the Language Testing Research Centre at the University of Melbourne. He served as editor of *Applied Linguistics* and *Language Testing*. He was chair of the British Association of Applied Linguistics, Secretary-General of AILA, and President of the International Language Testing Association (ILTA). He was in 2003 the first recipient of a Lifetime Achievement Award presented by the University of Cambridge Local Examinations Syndicate and ILTA. In 2006 he was awarded a Leverhulme Emeritus Fellowship for a study entitled *Native Speakers and Native Users*.

Davies has articulated a philosophy of applied linguistics as an independent and taxonomic discipline that aims to unify our experiential and theoretical understanding of language in use. His long career and substantive interests, articulated with sustained conceptual strength, span sociolinguistics, language acquisition, and language testing. Davies' works most relevant in this regard are: *Principles of Language Testing* (1990), *Introduction to Applied Linguistics* (2nd edition, 2007), and *The Native Speaker: Myth and Reality* (2003). In the heterogeneity and depth of Davies' work there are recurrent themes: the identity of applied linguistics in an interdisciplinary modern/postmodern world; the issue of idealization (*sic* abstraction) in language, especially in the debate on standard languages; the analysis of speech style and register; interlanguage and second language acquisition; and the central role of testing in applied linguistics. In the field of testing he has played a preeminent role in test development and theory as well in his insistence on the need for both a professional and humanistic orientation.

Applied linguistics, Davies suggests, is a "marriage of practical experience and theoretical understanding," specifically a) multifactorial, drawing on other disciplines such as sociology, education, politics and psychology; and b) a theorizing rather than theoretical discipline that investigates, analyzes, and offers recommendation on language problems (2004, 2005). Davies argues, radically, that being a "force field of social imperatives about language that drives speculation and theory," applied linguistics is an "unmarked form," a precursor of the field of linguistics, not the other way round. Responding to a relativistic or postmodern critique of applied linguistics as merely a collaborative collection of themes about language rather than a discipline, Davies argues that though, like most disciplines, it is blurred at the edges, applied linguistics has a history, professional participants, and a body of theorizing practice that constitutes the essence of the field.

There are Firthian echoes in Davies' approach to language: the notion that speech is not the "boundless chaos" that Samuel Johnson believed, but has lines and boundaries,

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prescribed rituals and episodes. Thus, abstraction from what Firth called the "mush of general goings on" is necessary for the individual both as actor and as analyst. The language teacher, Davies argues, engages in such activity (i.e. the methodics of selection)—grading and organization of materials and syllabus—which always involves various forms of sampling. Likewise, the linguist can only look at some data in the language corpus. Davies has frequently drawn attention to the fact that language use in various domains, such as reading and writing, is a single, coordinated activity of "composite nature" and something the reader or speaker "is no more aware of than is the taxi driver of the composite nature of car-driving" (Davis & Widdowson, 1974, p. 155). His study of language in "relatively-determined-contexts" led to work on textbook situations and idealized language (1978), studies of specific speech events such as the "Davies family breakfast," and culminated in the influential analysis of verbal interactions "Talking in silence" in Quaker meetings (1988).

In matters of language, Davies has invited applied linguists and language teachers to value irony and the elegant contradiction as much as the straightforward solution. This is evident in his contribution to the issue of language knowledge and the native speaker and the issue of standard languages. In an exhaustive and lapidary critique of the native speaker, Davies expounds a philosophy of language that hinges on the connectivity of applied linguistic analysis with various fields (psycholinguistic, literary, sociolinguistic) as it tries to account for the composite nature of our language operations but also on the paradox of language. He considers whether it is possible to become a native speaker of a language that is not your mother tongue and attempts an explanation of "the native speaker." Loss of heritage languages and the spread of world Englishes raise doubts about identity, while recent empirical work in second language acquisition and in language assessment questions the conventional view of ultimate attainment. Davies argues that while a noticeable difference exists between "native" and "non-native," the disparity noticeably affecting second language learning, it is still possible for a non-native speaker to become a native speaker. Davies argues that, with the exception of early language exposure, all characteristics of the native speaker are contingent. How far such contingent characteristics, such as grammatical intuitions, or creativity, can be acquired without substantive early exposure is difficult and rare. Thus the fundamental opposition between native and non-native, he concludes, is one of power: native speaker membership is determined by the non-native speaker's willingness to assume confidence and identity. We recognize the weakness of even educated native speakers to gain control over the resources of standard (written) English in order to communicate meaning, but language teachers still need to prepare materials in standard English. Thus, teachers must be made aware of the ongoing debate about conventional norms and prescription. Cognitive research investigates the native speaker, paying no attention to variation among native speakers. Sociolinguistics emphasizes variation, but when it needs to describe the native speaker (rather than native speakers), it too must idealize. Paradoxically, therefore, the cognitive and the social meet in an idealization which operationalizes itself as the standard language, the goal for both first and second or foreign language learners, achieved for both through education.

The "unacknowledged idealization of sociolinguistics" (1984) arises also when linguists discuss standard languages. The standard language, though uncertain and fugitive, is the model for language learners: the native speaker as social fact is the standard language. Indian English, Singapore English, and so on exist, but in order to gain institutional acceptability they need the confidence of their speakers. The irony of world Englishes, Davies (1999) has argued, is that while the goal of education remains British or American English, most world English users employ a local world English variety in their daily lives. However, it does not have the prestige of an exonormative variety, which is what is typically institutionally selected. This impacts on language testing. A test is an institutional event that

requires a description on which to base itself. Until world English users have sufficient confidence in their codes to proceed to description and to institutional use, world Englishes are not assessable. Pointing to such ironies Davies (1996) has eschewed linguistic imperialism, the claims of which he has characterized as being not falsifiable (what if "the dominated" wanted to adopt English and continue to want to keep it?) The unfalsifiable answer must be that they do not, they cannot, they have been persuaded against their better interests, and also that two cultures inhabit linguistic imperialism: one, a culture of guilt ("colonies should never have happened"); the other, that of romantic despair ("we shouldn't be doing what we are doing").

Davies has consistently highlighted the unique role of language (proficiency) testing in applied linguistics (1968, 1977). An early legacy is his development of a British Council-sponsored test for the selection of overseas students for entry to UK higher education. The English Proficiency Test Battery (EPTB) was widely referred to as the 'Davies' test and it remains a primary indicator of the foundation of modern professional language assessment. He has pointed out that language testing not only provides a critique of syllabi, courses, methods, and materials, measures progress among learners, and enables the selection of students for another stage of education, but that testing provides hypotheses in relation to our understanding of language and language learning. In this aspect, Davies helped connect the conceptual lines between language testing and the interlanguage studies of his Edinburgh colleague Pit Corder (1984). Language assessment provides a triple message about skill, the extent to which learners have attained proficiency; about proficiency, indicating the psycholinguistic and psychological provenance of the learner; about knowledge, indicating how native speakers and non-native speakers distinguish themselves in terms of their awareness of language (2007, p. 86).

Davies has drawn attention to the increasing need for ethicality linked to the growth of professionalism and is the leading voice in the view that language testers have an ethical responsibility to ensure that tests are fair to both test takers and score users, reliable indicators of language abilities to be measured, and supportive of the interpretations and decisions regarding test performance. Davies was a leader in the efforts of the International Language Testing Association (ILTA) to establish a Code of Ethics for the profession, and chaired the ILTA committee that drafted a set of Guidelines for Practice for language testers. For Davies, the importance of ethics is that it asks good questions. More interested in questions than in answers, he does not accept the view that applied linguistics is about promoting change: for him, its purpose is to question why the world is at it is.

SEE ALSO: Ethics in Language Assessment; Interlanguage; Native Speaker; Nativism

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de Bot, Kees

WANDER LOWIE

Kees de Bot is Professor at the University of Groningen, the Netherlands, where he holds the chair in Applied Linguistics and is Vice Dean in the Faculty of Arts of the University of Groningen. He was born on March 11, 1951 in Rotterdam. He graduated from the University of Nijmegen in General Linguistics and Applied Linguistics (1977), where he also finished his PhD (1982). He became Chair of Applied Linguistics and head of department at the University of Nijmegen in 1994. In 2002 he was appointed Chair of Applied Linguistics at the University of Groningen, where in 2008 he became director of the research school for Behavioral and Cognitive Science. Since 2009 he has been the vice dean of the Faculty of Arts and director of the graduate school of the Humanities there.

Kees de Bot is a trustee of the TESOL International Research Foundation and a member of the Program Committee of the Department of Modern Languages of Carnegie Mellon University. He is coeditor of the series *Studies in Bilingualism* (SIBIL) published by John Benjamins. He has published many books and articles in applied linguistics on such topics as language attrition, psycholinguistics, language policy, and dynamic systems approaches to second language (L2) development. He has supervised numerous PhD projects and has organized a large number of workshops and conferences. Apart from his worldwide reputation as an eminent researcher in applied linguistics, many people consider Kees de Bot as a connoisseur of fine wines and good food. He has a broad interest in literature and is a keen runner and skier.

In his professional career, Kees de Bot has worked on a variety of issues related to second language development and multilingualism. His PhD research concerned the use of visualizations of intonation as a teaching aid for L2 pronunciation. Although he has maintained a great interest in this area, his major work since his PhD has focused on foreign language attrition, language learning and language teaching policy, the psycholinguistics of bilingual language processing, and, more recently, the application of dynamic systems theory in SLD (second language development) and multilingualism. In addition, he organized a successful international symposium on gestures and second language learning in Groningen in 2006, and more recently edited an important volume in this field, together with Marianne Gullberg (Gullberg & de Bot, 2010). In the mid-1980s a group of researchers in Nijmegen developed an interest in language attrition. Initiated by Kees de Bot, Bert Weltens, and Theo van Els, this research led to numerous well-known publications over more than 20 years (e.g., Weltens, de Bot, & van Els, 1986; Schmid & de Bot, 2003). This research described the process of language attrition as a linguistic phenomenon, in addition to the processes behind attrition. In contrast to the previous *linguistic* approaches to language attrition, the Nijmegen group linked the cognitive process of language attrition to social interaction in language shift, dialect death, and foreign language attrition. Actively working in this area since the mid-1980s, Kees de Bot is seen by many as "the only constant factor in this quickly changing field" (Schmid & Köpke, 2004).

The conviction that language should primarily be regarded in the context of social interaction, which marked his contribution in language attrition, is also evident in de Bot's work on language policy. He made important contributions to the discussions on the relevance of second language acquisition and on minority languages in the Dutch and

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European contexts (e.g., de Bot & Gorter, 2005). In addition to his research into the nature and process of second language acquisition, de Bot has always emphasized the importance of the application of applied linguistic research to language teaching (de Bot, Ginsberg, & Kramsch, 1991; de Bot, 2007). Partly as a result of this, he has been involved in research into bilingual education (de Bot, 2000), and also in setting up and maintaining a system of quality control of bilingual secondary schools in the Netherlands (as an independent advisor of the European Platform). In addition, he contributed to the Common European Framework of Reference (de Bot & van Els, 2001) and its implementation into secondary and tertiary education in the Netherlands. His contribution to second language acquisition as a sociopolitical phenomenon is further evidenced in his work on language policy in bilingual societies (Bongaerts & de Bot, 1997; Berns & de Bot, 2005). In 2003 he organized a successful international workshop about sociopolitical aspects of language learning and teaching in Groningen.

Perhaps the best known of de Bot's work is his application of psycholinguistics to second language acquisition and multilingualism. This line of research was initially inspired by the proximity of Willem Levelt and his colleagues of the Max Planck Institüt in Nijmegen at the time of the publication of Levelt's seminal book, *Speaking* (Levelt, 1989) (see Weltens, 2011, in Suggested Readings below). The fact that this publication focused on speech production by monolinguals incited de Bot to propose his own bilingual speech model (de Bot, 1992). This adaptation of Levelt's model, including its reprints in handbooks, is one of de Bot's most frequently cited publications and is still often referred to today. Since then, the organization of the multilingual mental lexicon has been one of his profound interests and areas of expertise, and has led to a large number of publications on the subject (de Bot, 2004; de Bot & Lowie, 2010), also in relation to neuroimaging (de Bot, 2008a).

Most recently, Kees de Bot managed to combine all of the above insights into a new and comprehensive view of language development within the framework of dynamic systems theory (DST). Inspired by the developments in developmental psychology in Groningen at the onset of this century (Van Geert, 1998), and in the wake of Larsen-Freeman's work on complex systems (Larsen-Freeman, 1997), de Bot initiated a wide range of studies that took DST as a starting point (De Bot, Lowie, & Verspoor, 2005; De Bot, Verspoor, & Lowie, 2007; De Bot, 2008b; Verspoor, De Bot, & Lowie, 2011), and (co-)organized several workshops and symposia at conferences (e.g., at AAAL 2006 in Montreal; AILA 2008 in Essen; Anéla 2009 in Kerkrade; Innsbruck in 2010 and AILA 2011 in Beijing). De Bot and his colleagues showed that the most important characteristics of the application of DST to second language development are the focus on the process rather than products of development, and consequently the recognition of the relevance of within-learner variability as an indicator of development. The DST framework provides the vocabulary and the means to come to an understanding of empirical observations in subfields of applied linguistics that had thus far been very difficult to account for. For Kees de Bot, this framework provided a means to view language development (i.e., acquisition and attrition) as truly embedded in its social and psychological context.

In addition to his renowned research, Kees de Bot is also known as an excellent and very experienced teacher. In his teaching, he always manages to actively involve his students and is famous for his thought-provoking and often provocative questions. He is frequently invited to summer schools and winter schools (Landelijke Onderzoeksschool Taalkunde, LOT; Penn State) and was nominated for the Best Teacher of the Year award in Groningen in 2009.

In 2011, two of his former PhD students and now colleagues at the University of Groningen, Monika Schmid and Wander Lowie, edited a volume in honor of Kees de Bot for his 60th birthday (Schmid & Lowie, 2011). This volume contains contributions by key

figures in applied linguistics (Judith Krol, Susan Gass, Jan Hulstijn, Diane Larsen-Freeman, Lynne Hansen, Michael Clyne, Robert Schrauf, Bert Weltens, amongst others), reflecting the breadth of research carried out by Kees de Bot. In touching upon the range of de Bot's work, this book also provides a cross-section of research into applied linguistics between 1985 and 2010.

SEE ALSO: Attrition and Multilingualism; Dynamic Systems Theory Approaches to Second Language Acquisition; Gesture Analysis in Second Language Acquisition; Language Policy and Multilingualism; Organization of the Second Language Lexicon; Second Language Acquisition and Gesture

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DeKeyser, Robert

PATRICK REBUSCHAT

Robert DeKeyser is a Belgian applied linguist who is best known for his influential research and publications on the cognitive aspects underlying second language acquisition (SLA) and teaching. DeKeyser's work covers a variety of topics, including implicit and explicit learning, the role of practice in second language (L2) acquisition, language learning in study-abroad settings, and age effects in L2 acquisition. The linguistic focus in DeKeyser's work is usually on the acquisition of L2 morphosyntax (see, e.g., DeKeyser, 1995, 1997, 1998, 2005a; Goldschneider & DeKeyser, 2001). His research has been funded by many grants, including highly competitive awards from the National Institutes of Health, the Spencer Foundation, and the United States Department of Education.

DeKeyser was born in Varsenare, Belgium, in 1957. He pursued his undergraduate studies at the Catholic University of Leuven, where he obtained a BA in Romance Philology (1979), a Diploma in Spanish Studies (1979), a Certificate of Specialization in Psycholinguistics (1980), and his teaching credentials (French, 1980). He then moved to the United States to study at Stanford University, where he first obtained an MA (1982) and then a PhD in Education, with a minor in Linguistics (1986). After his doctorate, DeKeyser returned to Belgium to work on a research project funded by the Belgian National Science Foundation, before returning to the United States in 1988 to take up a faculty position at the Department of Linguistics, University of Pittsburgh. He moved to the University of Maryland, College Park, in 2005, where he is currently professor of Second Language Acquisition.

DeKeyser has published a substantial number of widely cited studies in journals such as *Studies in Second Language Acquisition*, *Language Learning*, *Applied Psycholinguistics*, *TESOL Quarterly*, *Annual Review of Applied Linguistics*, *Modern Language Journal*, and *Language Testing*. He has contributed a large number of invited chapters to influential state-of-the art volumes (e.g., Doughty & Williams, 1998; Robinson, 2001) and handbooks (e.g., Doughty & Long, 2003; Kroll & de Groot, 2005). DeKeyser's review articles have been particularly influential and represent the first—and sometimes the only—port of call for researchers and students interested in major topics in SLA, for example automaticity and automatization (DeKeyser, 2001), implicit and explicit learning (DeKeyser, 2003), age effects in L2 acquisition (DeKeyser & Larson-Hall, 2005; DeKeyser, in press), and skill acquisition theory (DeKeyser, 2007a). In addition to his article publications, DeKeyser also edited three influential volumes, *Practice in a second language* (DeKeyser, 2007b), *Morphosyntactic development in second language learning* (2005b), and *Testing second language acquisition theory in the lab* (Hulstijn & DeKeyser, 1997).

DeKeyser is also well known for his extensive service to the profession, especially in his role as editor of *Language Learning* (2005–10), one of the flagship journals in the field. He is on the advisory board of several book series and the co-editor of the *Studies in Bilingualism* series, published by John Benjamins. He has also served as external PhD examiner and external referee for promotion and tenure committees at many universities, and as ad hoc reviewer for funding bodies.

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Topics and Ideas

Age Effects in Second Language Acquisition

One of the most widely debated questions in SLA research concerns the role of age in L2 acquisition. The debate focuses on a key difference between first and second language acquisition, namely the fact that language acquisition in childhood usually results in native-like competence in one or more languages, whereas language acquisition in adulthood is unlikely to be as successful. This difference between child and adult learners, also known as the age-of-acquisition (AoA) effect, has often been explained in terms of a critical period for language development. The idea that there might be a critical age period for the acquisition of language is usually traced back to researchers such as Lenneberg. According to Lenneberg (1967), language acquisition from mere exposure to the linguistic environment is only possible before the critical period. After this period, learners cannot rely on the same learning mechanism to acquire language, with the consequence that their levels of ultimate attainment in the L2 will necessarily fall short of native-like ability.

The debate has centered on a series of questions, for example: Is there a critical period for language acquisition, as suggested by Lenneberg (1967), or can the age effects in L2 acquisition be explained by other factors (differences in quality and quantity of input, practice, social-psychological factors, etc.)? If there is a critical period, when does this period occur and how should it be explained? How does age affect the acquisition of the different elements of language (syntax, morphology, phonology, lexicon, etc.)? While these and other questions continue to be subject to debate, there is empirical evidence to suggest that younger learners do, in fact, have an advantage in ultimate attainment (though not in rate of learning), and that this advantage holds for both pronunciation and grammar learning. The decline of language learning ability seems to take place gradually, from ages 6–7 to 16–17. And, importantly, it appears that the AoA effect cannot be fully explained by factors such as input, use of L1 and L2, social-psychological factors, or length of residence. For comprehensive reviews of the literature see DeKeyser and Larson-Hall (2005) and DeKeyser (in press).

DeKeyser has been an active contributor to the debate on age effects in L2 acquisition (see, e.g., DeKeyser, 2000, 2007a). One of his widely cited studies, DeKeyser (2000), had two aims. The first was to extend Johnson and Newport's (1989) correlational study. Johnson and Newport asked native speakers of Chinese and Korean who had immigrated to the United States at various ages (3–39) to perform on an auditory grammaticality judgment test. Performance on the latter was used to assess their knowledge of a range of morphosyntactic structures in English. This allowed them to relate proficiency (as measured by performance on the grammaticality judgments) to the age at which subjects began learning L2 English. Johnson and Newport found a strong negative correlation of -.77 between AoA and L2 proficiency. DeKeyser (2000) extended this study by looking at a different population and avoiding certain methodological problems. Another aim of DeKeyser (2000) was to test the fundamental difference hypothesis (Bley-Vroman, 1988), which states that, while children are able to learn their native language(s) through implicit learning mechanisms, adults have largely lost this ability and have to rely on general learning mechanisms and analytic abilities instead. If this is the case, then one might expect verbal aptitude to play an important role in adult, but not in child, language learning. DeKeyser thus sought to determine whether the aptitude effect varies with age and the age effect with aptitude.

DeKeyser (2000) recruited 57 native speakers of Hungarian who were residing in the United States. The age of arrival range was 1–40, all participants had resided in the US for at least 10 years (average length of residence 34 years), and levels of education and occupational status varied widely. Subjects performed on an adapted version of Johnson

and Newport's (1989) grammaticality judgment test. In addition, subjects also completed a Hungarian verbal ability test (Ottó, 1996). DeKeyser found a strong negative correlation between AoA and proficiency (as assessed by the grammaticality judgments), r = -.63, which replicated Johnson and Newport's (1989) findings. DeKeyser also found that, after the age of 16, only those learners with high verbal aptitude scores also achieved high scores on the grammaticality judgment test. This suggests that the only way that an adult learner can achieve grammatical competence similar to that of a native speaker is by using analytical, problem-solving abilities, as predicted by the fundamental difference hypothesis. Aptitude does not predict ultimate attainment by child learners because the latter can rely on implicit learning mechanisms. More recently, DeKeyser, Alfi-Shabtay, and Ravid (2010) provide crosslinguistic support for these findings.

Second Language Acquisition as Skill Learning

If language acquisition in adults is qualitatively different, then how can this process be characterized? DeKeyser contributed to this question in several studies, the most influential being his experiment on the automatization of explicit L2 grammar rules. DeKeyser (1997) trained 61 subjects on an artificial language (*Autopractan*) that consisted of 32 vocabulary items and four morphosyntactic rules. At the beginning, subjects received explicit training on how the artificial language worked. Once they reached criterion on a set of metalinguistic tests, subjects received comprehension and production training for a period of eight weeks. Comprehension practice consisted of choosing between pictures displayed on a computer screen to match a sentence. Production practice consisted of typing the correct sentence corresponding to the picture. Subjects were divided into three groups: Group A received comprehension practice on rules 1 and 2, and production practice on rules 3 and 4. Group B did the reverse, that is, comprehension practice on rules 3 and 4 and production practice on rules 1 and 2. Group C received comprehension and production practice on all four rules. DeKeyser (1997) found that the learning of morphosyntactic rules was highly skill-specific, that is, large amounts of practice in comprehension and production led to great improvements in the practiced skill but not in the reverse skill. Importantly, he also found that these skills develop gradually over time, following the same power function learning curve as the acquisition of other cognitive domains (e.g., geometry, computer programming). DeKeyser (1997) interpreted these results as being consistent with skill acquisition theory, an information-processing approach that defines learning as the gradual conversion of declarative (explicit) knowledge into procedural (implicit) knowledge by means of practice (automatization) (see DeKeyser, 2001, for an overview).

Conclusion

DeKeyser's work has important implications for our understanding of L2 acquisition. His work on age effects has provided strong evidence for a quantitative decline of language learning ability and a qualitative shift in learning mechanisms (implicit vs. explicit) as a function of age before adulthood, at least for the case of morphosyntax. Moreover, his research on L2 acquisition has shown that providing adults with explicit knowledge can be beneficial, assuming this is followed by ample opportunities to practice. DeKeyser's work thus provides evidence for an interface between explicit and implicit knowledge. Furthermore, DeKeyser's research suggests that adult L2 acquisition can, in fact, be conceived of as an explicit learning process, that is, a learning process in which subjects rely on their analytic abilities and not on an implicit process of induction. This process is skill-specific and highly dependent on language aptitude, with adult learners who score high on verbal ability measures significantly outperforming learners with low verbal ability

scores. In terms of pedagogical implications, DeKeyser's (2000, 2010) observation that explicit learning processes are a necessary condition for achieving a high degree of proficiency in the L2 after childhood suggests that teaching approaches that deny adult learners the value of explicit, form-focused instruction are flawed. His work on automatization confirms that there is, in fact, a place for systematic and extended practice of rules in the teaching curriculum.

SEE ALSO: Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Critical Period; Explicit Knowledge and Grammar Explanation in Second Language Instruction; Explicit Learning in Second Language Acquisition; Practice in Second Language Instruction

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Depth of Vocabulary Knowledge

STUART WEBB

Depth of vocabulary knowledge refers to how well words are known. Developing vocabulary depth typically involves the accumulation of knowledge through encountering and using words in a variety of different contexts in order to learn the forms, meanings, and uses of words. Knowledge of a word's spelling, pronunciation, derivations and inflections, meaning senses, semantic associations, collocations, and grammatical functions, and when it may be appropriate or inappropriate to use it are all required to fully know words (Nation, 2001). Vocabulary depth is indicated by the extent to which these aspects of vocabulary knowledge are present, and this in turn signals the extent to which words may or may not be used successfully.

The term "depth of knowledge" was introduced as one dimension of vocabulary knowledge by Anderson and Freebody (1981) in contrast to a second dimension, breadth of knowledge. Breadth refers to how many words are known and is typically indicated by scores on tests of vocabulary size, such as the Eurocentres Vocabulary Size Test (Meara & Jones, 1990) and the Vocabulary Size Test (Nation & Beglar, 2007). Breadth is usually determined by the degree to which learners are able to link form to meaning. Being able to link form to meaning is an important step in vocabulary development because it increases the likelihood that words may be understood and used. However, it does not ensure that these words will be understood and used correctly and this is why there is also a need for learners to develop vocabulary depth. Several studies have found positive correlations between depth and breadth of knowledge (Nurweni & Read, 1999; Qian, 1999; Vermeer, 2001). However, in each of these studies there was partial overlap between the constructs measured by the tests making further research warranted.

It is important for teachers to consider depth when planning the vocabulary learning component of a course because accumulating the knowledge necessary to understand and use words fluently may often be a long process. Awareness of how different types of learning may affect vocabulary knowledge can help teachers to design and sequence activities to promote depth. Teachers may also look at depth of knowledge when diagnosing language weaknesses. Measuring depth of knowledge can show us what learners know and do not know about words. For example, unusual word combinations in speech and writing often signal limitations in knowledge of collocation, while an inability to produce different derived forms of a word may indicate a lack of knowledge of word parts. Awareness of vocabulary depth can also help teachers to see how tasks and activities contribute to learning and the need for different types of tasks to be used together to develop richer knowledge of words. It is also essential for researchers to take vocabulary depth into consideration when measuring learning. Measuring learning with a single test of form and meaning may only measure a fraction of what may be known about a word.

What Is Depth of Knowledge?

There have been many descriptions of vocabulary knowledge (Richards, 1976; McCarthy, 1990; Nation, 1990, 2001; Aitchison, 1994; Laufer, 1997; Henriksen, 1999; Miller, 1999;

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Table 1 Description of vocabulary knowledge (from Nation, 2001, p. 27)

Form	Spoken	R	What does the word sound like?
		P	How is the word pronounced?
	Written	R	What does the word look like?
		P	How is the word written and spelled?
	Word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express the meaning?
Meaning	Form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	Concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	Association	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	Grammatical functions	R	In what patterns does this word occur?
		P	In what patterns must we use this word?
	Collocation	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	Constraints on use	R	When, where, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this word?

Note. R = receptive knowledge, P = productive knowledge.

Schmitt, 2000; Read, 2004). However, there is no definition of vocabulary depth that is widely agreed upon. Nation's (2001) description of what is involved in knowing a word is the most comprehensive account of depth. He classifies vocabulary knowledge according to form, meaning, and use; each category contains three aspects of knowledge and each aspect of knowledge can be broken down into receptive and productive components. This results in 18 unique components of vocabulary knowledge. Vocabulary depth is the extent to which each of these components is present. Table 1 shows Nation's description of vocabulary knowledge.

Receptive or passive knowledge is what is required to understand words when they are encountered in listening and reading. Productive or active knowledge is the knowledge necessary to use a word in speech and writing. For example, receptive knowledge of written form involves recognizing the spelling of a word when it is encountered and receptive knowledge of form and meaning involves recognizing the meaning that a particular form conveys. On the other hand, productive knowledge of written form involves being able to spell a word correctly and productive knowledge of form and meaning involves being able to produce a word that conveys the intended meaning.

There is often an assumption that receptive knowledge precedes productive knowledge. However, this may only be true if we look at the individual aspects of vocabulary knowledge rather than the broader construct of knowing words. For example, the ability to recognize the spelling of the written form of a word is likely to precede the ability to spell it correctly, or the ability to recognize that a specific written form conveys a specific meaning is likely to precede the ability to convey a specific meaning using the correct word form. In contrast, it may be possible to spell a word correctly (productive knowledge of written form) or use the word with grammatical accuracy (productive knowledge of grammatical functions) before the meaning of the word is understood (receptive knowledge of form

and meaning). Thus, to examine receptive and productive vocabulary knowledge, it is necessary to differentiate between receptive and productive knowledge of individual aspects of knowledge rather than receptive and productive knowledge of words as a whole.

When considering vocabulary depth, it is important to differentiate between strength of knowledge and depth of knowledge (Nation & Webb, 2011). Strength of knowledge refers to how well a single aspect is known. Each of the aspects can be learned to different degrees, from no knowledge to varying degrees of partial knowledge to full knowledge. For example, being able to identify the correct spelling of a word (receptive knowledge of written form) from among a number of unrelated spellings may indicate minimal knowledge of written form. Identification of the correct spelling of the word from among a number of closely related spellings may indicate greater knowledge of written form, and correctly spelling the word may indicate full knowledge of written form. Strength of knowledge may move in both directions. Knowledge is likely to increase the more a word is encountered and used, but if there are long gaps between encounters, knowledge may decrease. Strength of knowledge provides some indication of depth of knowledge. However, because measuring strength of one aspect involves assessing only a portion of the construct of depth, researchers should be careful not to generalize from strength to depth. Gaining depth of knowledge involves learning all nine aspects of knowledge.

Measuring Depth of Knowledge

Research on assessing vocabulary depth is still in its infancy. Read (2004) reports that depth has been operationalized in research in three ways: precision of meaning, comprehensive word knowledge, and network knowledge. These categories provide some direction on how depth might be measured. However, each one is limited in the degree to which depth is measured, and overlap between the categories suggests that together they may still not provide an accurate assessment of depth.

The Vocabulary Knowledge Scale (VKS: Wesche & Paribakht, 1996) and the Word Associates Test (WAT: Read, 1993, 1998) are established tests designed with the purpose of measuring vocabulary depth. Both tests were useful improvements on traditional measures of form and meaning. However, both are limited in the degree to which they indicate depth. The VKS uses the following scale to measure depth:

1. I don't remember having seen this word before.
2. I have seen this word before, but I don't know what it means.
3. I have seen this word before, and I think it means _____.
4. I know this word. It means _____.
5. I can use this word in the sentence: _____.

Although different points on the scale may indicate an increase in knowledge, it is impossible to tell if there is an ordinal progression in any aspect of knowledge besides form and meaning. For example, at only point 5 on the scale is grammatical accuracy required. However, knowledge of the grammatical functions of an item may be present at a lower point on the scale; it is possible to use a word correctly in a sentence without knowing its meaning.

The WAT measures knowledge of three aspects—form and meaning, concept and referents, and collocation—and provides an overall score indicating how well items are known. However, it does not provide a separate measure of each of these aspects, so it is not clear to what extent each aspect is known. For example, one testee could score solely on their knowledge of form and meaning for all items, and another could score solely on

their knowledge of collocation. The test would show that both testees had a similar amount of knowledge and lacked some degree of depth (a useful finding) but would not differentiate between what was known and what was lacking. Moreover, if the known aspect was always form and meaning then the test would have little value as a measure of depth. Separate tests focusing on individual aspects may provide a more accurate measurement of depth.

A more useful approach to measuring depth is to examine multiple aspects of knowledge and measure the strength of knowledge of each of those aspects. A series of studies by Norbert Schmitt and his colleagues (Schmitt & Meara, 1997; Schmitt 1998, 1999; Pigada & Schmitt, 2006) and Webb (2005, 2007a, 2007b, 2008, 2009a, 2009b) have used this approach. Schmitt's (1998) study was particularly innovative as he used interviews to measure different degrees of strength of knowledge of written form, associations, grammatical information, as well as form and meaning. By measuring strength of each aspect of knowledge he was able to show that there is movement in multiple aspects of knowledge over time; thus knowledge of an aspect is not a dichotomy (complete or incomplete) but tends to gradually increase or decrease in degrees of knowledge. Webb (2005, 2007a, 2007b, 2009a, 2009b) examined the effects of different vocabulary-learning activities on five aspects of knowledge. He created receptive and productive tests to isolate and measure written form, form and meaning, association, collocation, and grammatical functions. In a study examining the effects of repetition on vocabulary knowledge, Webb (2007b) showed the value of measuring different aspects of knowledge to evaluate learning. As the number of repetitions increased, vocabulary knowledge increased to different degrees; measuring multiple aspects indicated significantly greater knowledge of some aspects but not others. The results would not always have indicated differences in knowledge if only a single aspect had been assessed. The research also highlighted the need for multiple measures at different sensitivities to measure strength of knowledge of each aspect. Often there was no difference in knowledge between groups at one level of sensitivity (receptive or productive), but there was a difference at the other level. This finding builds on Nagy, Herman, and Anderson's (1985) research, which demonstrated the importance of using multiple tests at different sensitivities to provide an accurate assessment of form and meaning.

Meara and Wolter (2004) argue for a different approach to measuring depth. They report that using a battery of tests to measure depth for a small number of words is impractical, and instead suggest measuring depth for sets of words in a similar way to how vocabulary size is examined. They use the V_Links software version 2.00 to measure knowledge of associations for sets of 20 words taken from the most frequent 1,000 words. The study provides a useful approach to how depth and vocabulary size could be measured individually to provide a more comprehensive measurement of vocabulary knowledge.

Developing Vocabulary Depth

Planning vocabulary learning is essential if learners are to develop vocabulary depth. Teachers must decide which words are to be learned during a course and how they will provide the opportunities necessary to develop knowledge of those words (Nation, 2008). A lack of planning may lead to an inability of students to successfully use the words that they have learned—a situation common to many foreign-language classrooms. Nation's (2001, 2007) four strands (meaning-focused input, meaning-focused output, language-focused learning, fluency development) provide a useful approach to developing vocabulary depth. Each strand may contribute to vocabulary development in different ways, and allocating a similar amount of time to learning in each strand is likely to lead to deeper learning than learning solely in one strand.

Language-focused learning includes deliberate learning of new words. Although activities can be created and modified to focus on multiple aspects of vocabulary knowledge, many activities focus on strengthening the link between form and meaning. This is a logical place to start with learning. The other strands can build upon this initial learning of form and meaning to develop the comprehensive vocabulary knowledge necessary to use and understand words fluently.

In the meaning-focused input strand, words should be encountered repeatedly in a variety of original contexts. It is well established that repeated encounters in context contribute to learning form and meaning but are also likely to help develop all other aspects of knowledge (Pigada & Schmitt, 2006; Webb, 2007b) with the mode of input (spoken or written) having an effect on the degree to which spoken and written form is learned. Meaning-focused input is likely to have a greater effect on increasing receptive knowledge than on productive knowledge.

Meaning-focused output involves using language in speech and writing. The meaning-focused output strand may help to push vocabulary knowledge from receptive understanding to productive use. The fluency development strand probably receives the least attention in courses. However, it also plays an important role in facilitating vocabulary depth. In this strand, the aim is to use or understand words in a native-like manner. Time pressure is one of the criteria to help facilitate increased processing speed and vocabulary fluency. It may be that this move toward native-like lexical access speed in each of the four skills may indicate the degree of word mastery.

Few teaching techniques are designed to develop all aspects of knowledge, and most are focused on strengthening the link between form and meaning. For example, to successfully complete matching activities, multiple-choice questions, and crossword puzzles, students typically need to correctly link form and meaning. There is justification for focusing on form and meaning because it allows the meaning of words encountered to be understood. Also, if there is overlap in L1 and L2 vocabulary knowledge, learners may gain knowledge of other aspects by linking L1 meaning to L2 form (Webb, 2007c). One aspect of knowledge that receives little attention in vocabulary-learning activities but deserves more attention is word parts. Learning word parts such as the prefixes mid-, mis-, and multi- and the suffixes -able, -ee, and -er provides knowledge that can be used to aid future vocabulary learning. For example, knowing that mid- in *midnight* means 'middle' and that -ee in *employee* means 'person' may help learners to understand other items that contain the same word parts when they are encountered, for example in *midsummer*, *midlife*, *referee*, and *nominee*.

The order of learning the aspects of knowledge may depend on how a word is learned. There is some evidence that, when words are encountered during reading, knowledge of written form is gained first (Pigada & Schmitt, 2006; Webb, 2007b). Schmitt (2010) suggests that typically the written and spoken form are most likely learned first followed by form and meaning and grammatical functions, while the aspects that relate to use may be learned last.

Students need to be aware of what is involved in knowing a word if teachers expect them to effectively learn words. Teachers can raise awareness of depth of vocabulary knowledge in a number of ways. Activities such as Schmitt and Schmitt's (1995) vocabulary notebooks, which explicitly focus attention on different aspects of knowledge, are useful for this. Concordances are also a useful tool for developing depth of knowledge. A concordance is a collection of examples of the use of a word. By seeing a word used in many different ways, knowledge of form, meaning, and use may be gained. Another useful approach is to use a sequence of activities that each focus on developing different aspects of knowledge. Sökmen (1992) provides an excellent example of how this might be done. She describes an approach which begins with students learning the form and meaning of unknown words. This is followed with activities that each focus on increasing

knowledge of another aspect of knowledge for those words until finally students may have gained knowledge of form and meaning, spoken and written form, word parts, associations, collocations, grammatical functions, and concept and referents.

Developing the students' vocabulary depth should also include measuring their depth of knowledge. This provides teachers with a more complete picture of the students' knowledge and also demonstrates to students the importance of learning other aspects as well as form and meaning. Tests and quizzes can vary the aspects of knowledge that are examined. For example, one quiz might measure knowledge of form and meaning and another might measure knowledge of collocation. The questions within a quiz might also be written to measure different aspects of knowledge. The following questions show one way in which different aspects of knowledge might be measured for a word.

Underline the word that is not likely to be used together with *accept* (receptive knowledge of collocation):

1. offer
2. holidays
3. invitation
4. responsibility

Underline the correct spelling (receptive knowledge of written form):

1. acept
2. acsept
3. accept
4. axept

Underline the incorrect derivation (receptive knowledge of word parts):

1. acception
2. accepting
3. acceptance
4. acceptable

Underline a word with an unrelated meaning (receptive knowledge of association):

1. decline
2. receive
3. refuse
4. reduce

Underline the correct sentence (receptive knowledge of grammatical functions):

1. She accepts.
2. It is accept.
3. It is an accept.

Conclusion

As we have seen, it is important for teachers, learners, and researchers to have an understanding of vocabulary depth. Developing depth of knowledge should influence how courses with a vocabulary-learning component are designed and how learners approach their vocabulary learning. Awareness of what is involved in knowing a word can highlight what aspects of knowledge need to be measured to help researchers to more accurately assess learning.

SEE ALSO: Assessment of Vocabulary; Explicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Lexical Collocations; Teaching Vocabulary; Vocabulary Acquisition in Second Language Acquisition; Vocabulary Size in a Second Language; Vocabulary Size in the First Language

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Describing and Illustrating Quantitative Data

TADAYOSHI KAYA

Descriptive statistics, which aim to quantitatively summarize, organize, and visualize data sets, will be explained in detail in this entry. By first dealing with your data descriptively, you will be able to familiarize yourself with them, comprehend them more profoundly, and choose the right statistics to analyze them. Descriptive statistics are defined as "the process of directly describing the characteristics of either populations or samples" (Van Blerkom, 2009, p. 216), and are the first tools with which to examine your data, before conducting any statistical analyses. With empirical and fictional data sets, three main concepts—describing data, displaying data, and transforming data—will be explored in order to understand how to describe and illustrate quantitative data in the field of applied linguistics.

Describing Data

Descriptive statistics, as Goodwin (2008, p. 135) describes, enable us "to turn a large pile of numbers that cannot be comprehended at a glance into a very small set of numbers that can be more easily understood." In this first section, methods of describing data will be examined in terms of measures of central tendency, measures of spread or dispersion, and measures of frequency.

Measures of Central Tendency

Measures of central tendency are the basic tools of descriptive statistics (Rasinger, 2008), and second language researchers usually apply one or more measures of central tendency in order to precisely understand the information of typical behaviors of language learners (Mackey & Gass, 2005). There are three commonly used measures of central tendency: mean, median, and mode.

The *mean*, or the *arithmetic mean* to be exact, is what most of us know as the "average," and is the most widely used statistic to find out where the center of data is located (Linn & Gronlund, 2000). It is simply "the sum of all scores divided by the total number of cases," and is represented by the symbol $\bar{x}$ (x-bar) when it is the mean of a sample, and by the symbol μ (the lower-case Greek letter "mu") when it is the mean of a population (Brown & Saunders, 2008). Regarding the sample mean, however, the *Publication Manual of the APA* (American Psychological Association, 2009) allows the use of M as well as $\bar{x}$. Imagine that you let a group of 15 students work with a vocabulary exercise and record the time spent in minutes by each student as follows:

37, 37, 40, 40, 40, 41, 41, 42, 43, 43, 44, 45, 46, 51, 51

By only looking at the raw data above, it is difficult to comment on the data on the spot. Therefore, we would calculate the mean and locate the "average" of all the scores in order to better understand the data. First, all the scores are added up (= 641), and are divided

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by the total number of the students (15), which gives us a mean time of 42.73 minutes. The mean value is used most commonly since it takes into account all the values. However, this statistic is very sensitive to extreme values (or *outliers*), especially when the number of participants is small (Mackey & Gass, 2005). Extremely high scores will move the mean value upwards, while extremely low scores will move it downwards. Thus, in the presence of outliers and small sample sizes, the use of the mean should be avoided.

Strictly speaking, the mean should be calculated with variables measured at the interval and ratio levels. Some statisticians argue that calculation of the mean for nominal data is nonsensical (e.g., the mean of gender), and that ordinal data is unsuitable for any calculation because of unequal intervals (Muijs, 2004; Brown & Saunders, 2008; Van Blerkom, 2009). As for ordinal data, however, there are many researchers in applied linguistics who apply statistics such as means, standard deviations, and some statistical tests to ordinal data, by treating them as an interval data equivalent. In practice, this less strict application of levels of measurement has been accepted in recent years, and the use of the mean with ordinal data is not considered necessarily problematic. See Warner (2008, pp. 6–10) for more detail.

When a mean score is not appropriate because of outliers, or when the data have small sample sizes, another alternative statistic for central tendency would be the *median* (Hatch & Lazaraton, 1991). In order to obtain the median, no mathematical calculation is involved; all the scores should be sorted from high to low, and the middle score is the median—the score at the center of the distribution which splits the group in half (the fiftieth percentile) (Dörnyei, 2007). In the case of the aforementioned example, 42 minutes, which is located at the center of the 15 participants, is the median of the data.

The median is not sensitive to outliers, but is only dependent on the center of distribution. For example, the medians of the fictitious data below (= 30) are identical in both cases.

Group 1: 10, 20, 20, 20, <u>30</u>, 35, 40, 40, 50
Group 2: 10, 15, 20, 25, <u>30</u>, 70, 75, 90, 200

The difference of the values below and above the median is ignored, and the high scores in the second group have no influence on the median (Norušis, 2008).

To explore the central tendency of nominal data, the mean or the median are not appropriate. Therefore, there is another type of "average," the *mode* (Muijs, 2004), which can also be used with ordinal, interval, or ratio data. The mode is the most frequently occurring score, and can be obtained from the largest number of participants (Clark-Carter, 2010). In the case of Group 1 in the data above, the mode is 20 (the most frequently obtained score), since there are three participants who obtained the same score—the highest number of participants of all. Unlike the mean and the median, this statistic can have more than one value. If one of the participants had obtained 40 points, for instance, there would have been two modes (called *bimodal*): 20 points and 40 points. In addition, the terms *a major mode* or *a minor mode* are sometimes used in studies, the major mode being the value with the highest frequency and the minor mode being the value with the second highest frequency (Asquith, 2008).

Measures of Spread, Dispersion, and Variability

It is insufficient to rely only on the central values; we also need to examine how data values are spread from or cluster around the central tendency. If we take a look at the vocabulary test scores from two different (fictional) classes shown in Table 1, the means and the medians of the two classes are exactly the same. A careful examination of the data, however, shows that the spread of scores in Class 1 (62 to 94) is much wider than that of Class 2

Table 1 Vocabulary test scores of two English classes (fictional)

Student #	*Class 1* (n = *12)*	*Class 2* (n = *12)*	
1	62	76	
2	70	78	
3	70	78	
			← First quartile
4	74	78	
5	78	80	
6	78	80	
7	82	80	
8	82	82	
9	88	82	
			← Third quartile
10	90	82	
11	92	82	
12	94	82	
Mean	80	80	
Median	80	80	

(76 to 82), indicating that other important information is missing. Since the measures of central tendency alone do not give us the whole story of the data, we also need to examine additional information on the spread, dispersion, or variability. There are three common measures of spread: the range, the interquartile range, and the standard deviation.

A simple and crude measure of this kind is the *range* (Linn & Gronlund, 2000), which can be calculated by subtracting the lowest value (the *minimum*) from the highest (the *maximum*). In the case of Table 1, the range for Class 1 is 32, while that of Class 2 is 6. This statistic is easy to obtain, but ignores all the data values but the lowest and the highest ones, and the rest of the values do not have any influence on the range at all (Brown & Saunders, 2008). Thus, outliers that can affect both the highest and lowest values might distort the value of the range. For this reason, the range is not used commonly in second language studies, and is not considered a reliable measure of spread (Mackey & Gass, 2005).

Another measure of spread is the *interquartile range*, which takes into account the middle 50% of the total scores. The interquartile range is the distance between the third quartile (75th percentile) and the first quartile (25th percentile), calculated by subtracting the first quartile from the third quartile. In the example in Table 1, the interquartile range of Class 1 is 17 (89 – 72 = 17), and the one for Class 2 is 4 (82 – 78 = 4). This method of calculation is the simplest one, cited in Linn and Gronlund (2000), but there exist other calculation methods for the interquartile range (see, e.g., Brown & Saunders, 2008). Through this calculation, the interquartile range is less affected by outliers than the range, because it omits the lowest and highest 25% of the data. Some researchers use *semi-interquartile range* (also called *quartile deviation*), which is obtained by dividing the interquartile range by 2 (Clark-Carter, 2010).

The most reliable measure of spread is the *standard deviation*. Unlike the range and the interquartile range, which only utilize some portions of the total data, this statistic takes into consideration the deviations from the mean of all scores. It is defined as "the square root of the average squared distance of the scores from the mean," a value that indicates

Table 2 Calculation table for standard deviation: vocabulary test scores of Class 1 (fictional)

Student #	*Class 1* (n = *12)*	*Difference from the mean*	*Difference squared*
1	62	–18	324
2	70	–10	100
3	70	–10	100
4	74	–6	36
5	78	–2	4
6	78	–2	4
7	82	2	4
8	82	2	4
9	88	8	64
10	90	10	100
11	92	12	144
12	94	14	196
	Mean = 80		Sum = 1080

"how all scores are spread around the mean" (Mackey & Gass, 2005, p. 259). The calculation of the standard deviation is more complicated, and an understanding of the concept is not intuitive.

To obtain the standard deviation, the first step is to obtain the mean value. In the case of Table 2, the mean is 80. The difference from the mean for each score should be calculated, and then squared. Next, find the sum of squared differences, and divide it by $n - 1$. This value is called *variance (sample)*, and it is 98.18 (1080 / 11) for the example. Typically, the denominator, $n - 1$, is used for a sample, while the denominator, n, is used for a population. Since it is rare to collect data for the entire population, $n - 1$ is usually used (Brown & Saunders, 2008). The variance obtained here is not expressed in the original units of the test scores, so it is useful to take the square root of the variance, called the standard deviation, in order to understand more intuitively; it is 9.91 ($\sqrt{98.18} = 9.91$). This final value, which describes the amount of spread of all the single values within the data, is the most reliable measure of spread. The letter s (*SD* or *sd*) denotes the standard deviation of a sample, while the lower-case Greek symbol sigma, σ, is used for a population (Howitt & Cramer, 2000).

Measures of Frequency

So far, we have mainly explored how to deal with interval data. In this section, instead of examining how much, we will see *how often* something occurs in nominal or ordinal data: the *frequency*, which is another important measure for descriptive statistics. When a phenomenon or a behavior is counted, the number obtained through mere counting is the frequency. In Table 3, the results of a corpus analysis are displayed in the form of a *frequency table*. This analysis was conducted with written academic corpora to investigate the difference in the sentence positions of linking adverbials (nominal data: Initial / Middle / Final) between native English speakers and English learners. From the column labeled "Freq." in Table 3, we can easily see that the native speakers used linking adverbials in the initial position 2,262 times, in the middle position 3,120 times, and in the final position

Table 3 Difference in the positions of linking adverbials

Position	*Native speakers*		*English learners*	
	Freq.	*%*	*Freq.*	*%*
Initial	2262	41.7	1194	61.5
Middle	3120	57.5	729	37.5
Final	44	0.8	20	1.0
Sum	5426	100.0	1942	100.0

Note. Frequencies are per 1,000,000 words.

Table 4 Results of questionnaire in two groups (fictional)

Group 1 (n = *500)*	*Freq.*	*Cum. freq.*	*%*	*Cum. %*
Strongly agree	184	184	36.80	36.80
Agree	128	312	25.60	62.40
Disagree	83	395	16.60	79.00
Strongly disagree	105	500	21.00	100.00
Total	500		100.00	
Group 2 (n = *400)*	*Freq.*	*Cum. freq.*	*%*	*Cum. %*
Strongly agree	123	123	30.75	30.75
Agree	139	262	34.75	65.50
Disagree	96	358	24.00	89.50
Strongly disagree	42	400	10.50	100.00
Total	400		100.00	

44 times, while the English learners used them in the initial position 1,194 times, in the middle position 729 times, and in the final position 20 times. This frequency table provides us with a better understanding of the results, as compared to just looking at the raw data or reading the results in a sentence.

A frequency table can also be used with ordinal data, as shown in Table 4 (the results of a fictional questionnaire in two different groups). The column labeled "Freq." shows the numbers of people (frequencies) in four ordinal categories. The next column, labeled "Cum. freq.," represents the *cumulative frequency*, which is "the running total of frequencies across all the classes (categories)" (Rasinger, 2008, p. 96). The first value in the cumulative frequency is identical to its frequency value. The second value, however, is the sum of the first frequency value and the second one (184 + 128 = 312). By having the cumulative frequency value, we can see that there were 312 people who answered in the affirmative (strongly agreed or agreed) in the questionnaire of Group 1, for instance.

The merely counted frequencies described above are also called the *absolute frequencies*, to be specific. When we want to compare the frequencies of more than one group, however, we need to explore each frequency in connection with the rest of data, in order to put them

on the same comparable measure. The third column, labeled "%," gives *percentages* of the data. For the frequency of the people who strongly agreed in Group 1, first, the absolute frequency (184) was divided by the total number of frequencies (500). This value is called the *proportion* (184 / 500 = .3680). The result (proportion) was then multiplied by 100 to obtain the percentage. Even though the absolute frequencies in Group 1 and Group 2 are not comparable because of the different total numbers, the percentages of the two groups can be compared. The percentage and the proportion are also called *relative frequencies*.

Displaying Data

Instead of looking at numbers in tables, sometimes people find it much easier to see the same data in graphics. With the advance of statistical computer software, such as SPSS (distributed by IBM), it has become much easier for researchers to create graphical data displays, and we encounter various types of visual representation of data in books and journal articles. Therefore, this section will be devoted to introducing different types of data display.

Pie Charts

Figure 1 displays the same percentage information as Table 4. This type of display is called a *pie chart*, named after its unique and distinctive shape. Unlike other displays, pie charts are not based upon *x*- and *y*- axes, but rather show the subcomponents of the total in a circle area (Clark-Carter, 2010). Pie charts are best used to display proportion or percentage data (Hatch & Lazaraton, 1991). There are 360° in a circle, and subcomponents in the data are represented as slices of the pie. In Figure 1, there are 184 (36.80%) people in Group 1 who strongly agree. In order to display this portion as a slice, 36.80% of the total degrees of the circle (360°) should be occupied in the pie, which is 132.48° (360 × .3680 = 132.48).

Bar Charts

With a pie chart, the portions of cases are expressed as slices or areas. In the case of the charts in Figure 2, however, the numbers of cases are represented by bars or lengths. This

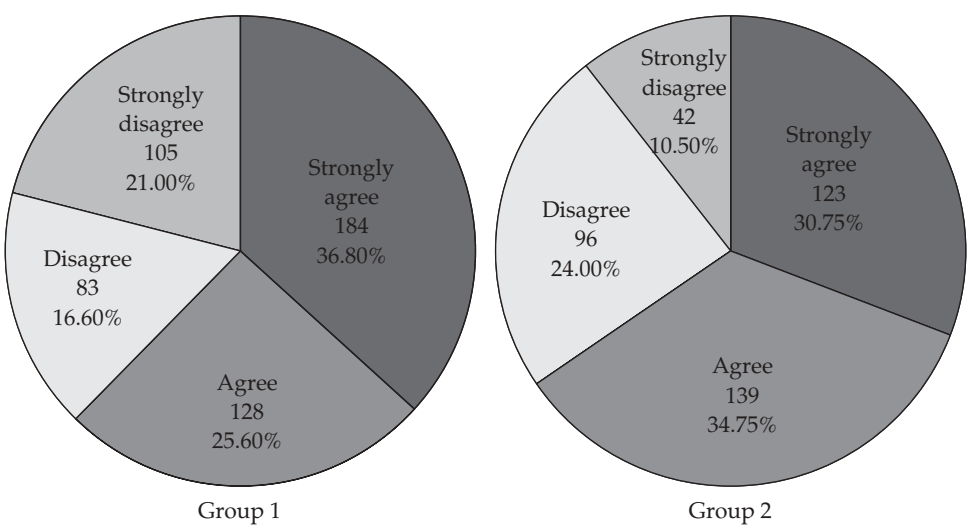

Figure 1 Pie charts of questionnaire results (fictional)

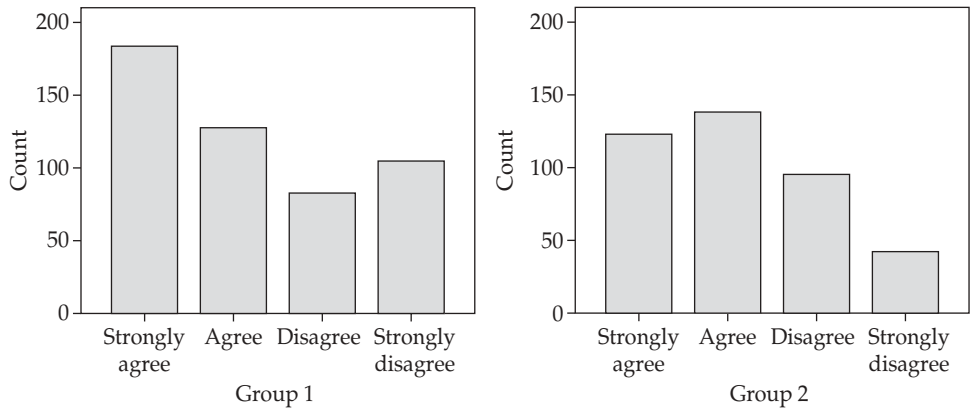

Figure 2 Bar charts of questionnaire results (fictional)

type of display is called a *bar chart*. The higher a bar is, the higher the data value is. In Figure 2, the *x*-axis (horizontal) shows the four categories of responses, and the *y*-axis (vertical) shows the frequencies. It is clear from the bar chart that the number of people who strongly agreed is the highest in Group 1, for instance. Also, by looking at the whole pictures of the two groups, it is possible to compare the trends of the two groups instantly.

Histograms

The next graphical display is a *histogram*, which is similar to a bar chart, except that each bar represents a range of values (Norušis, 2008) and that there is no space between the bars. In a histogram, the frequencies usually come from interval or ratio data, while a bar chart uses nominal or ordinal data. Brown and Saunders (2008, p. 48) state that histograms are utilized when we would like to "emphasize the highest and lowest values or the distribution of values for a variable." An example of a histogram is shown in Figure 3, the data of which come from an empirical data set collected by the author in 2002. The histogram shows the spread of scores in a computer (PC) familiarity test of 50 students.

The smooth bell-shaped curved line that is superimposed upon the histogram in Figure 3 is an ideal *normal distribution* for the sample ($\bar{x} = 33.76$, $s = 4.27$). The normal distribution, also called the *normal curve*, is a hypothetical distribution in which all the values of the population are assumed to be included in the data. In the normal distribution, the three measures of central tendency (the mean, the median, and the mode) are all in the middle of the curve. When an empirical distribution is similar to the normal distribution, we can apply the statistical characteristics of the normal distribution to the empirical one (Goodwin, 2008). That is, for a normally distributed data sample, we can assume that approximately 68% ($34.1 + 34.1 \approx 68$) of the data values fall into the (±) one standard deviation unit, and about 95% ($34.1 + 34.1 + 13.6 + 13.6 \approx 95$) into the (±) two standard deviation units (see Figure 4). The use of a histogram is important when we try to determine whether an empirical distribution is close to the normal distribution and when we examine how the data are spread, since empirical distributions can result in many different shapes.

Line Charts (Frequency Polygons)

Another way of displaying interval or ratio data is with a *line chart* or a *frequency polygon* (Van Blerkom, 2009). Figure 5 shows an example of a line chart based on the same data

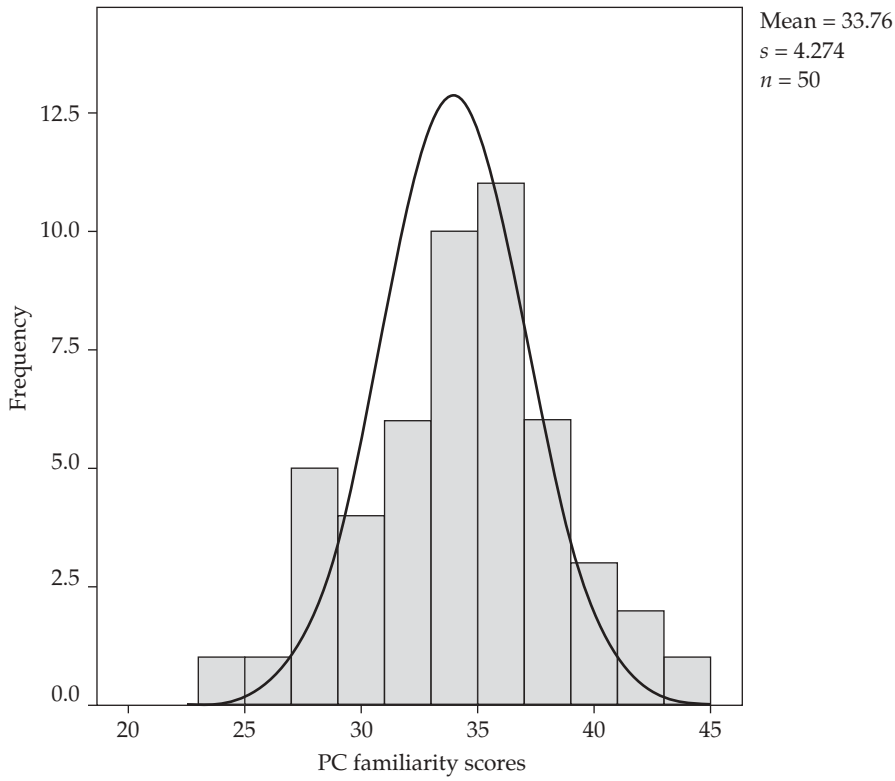

Figure 3 Histogram of PC familiarity scores

used in Figure 3. The difference, though, is the line drops located in the data (at the scores of 34 and 37), which cannot be detected in the histogram in Figure 3. Rasinger (2008, p. 103) also states that a line chart is "useful for displaying increases and decreases, or temporal sequences."

Stem-and-Leaf Plots

A *stem-and-leaf plot* is a variant of the histogram (Clark-Carter, 2010). While the histogram loses the actual individual scores which are grouped in each interval, the stem-and-leaf can provide us with the values of the individual observations, and preserve the values of raw frequencies (Linn & Gronlund, 2000). An example of stem-and-leaf plots is shown in Figure 6, based on the same data as Figures 3 and 5. The plot shows the actually observed values, by putting the first digits (or leading digits) in the *stem*, and the second digits (trailing digits) in the *leaf*. Each row in the plot represents a stem, and each observation is expressed as a leaf. In the second row of the plot, for example, we see this long line of numbers: 2.67788899. This indicates that there are eight different scores in the stem, 26, 27, 27, 28, 28, 28, 29, and 29.

Box Plots

Box plots are used to compare distributions, as is shown in Figure 7. The left-hand box plot was created based upon the data in Table 1. The box in the plot extends from the 25th percentile to the 75th percentile (the middle 50% of the data), and the whiskers (the vertical lines above and below) extend to the largest and smallest values within 1.5 box

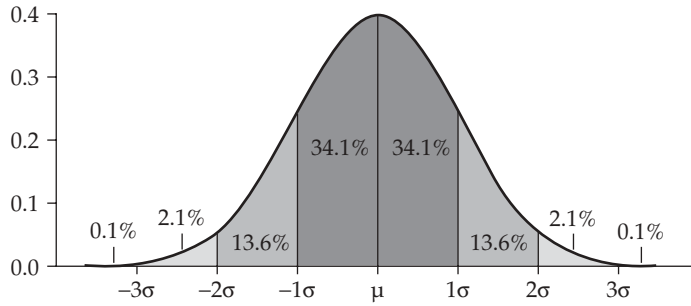

Figure 4 Standard deviation diagram (© 2007 Petter Strandmark [Wikimedia Commons, Creative Commons Attribution 2.5 Generic license] based on an original graph by Jeremy Kemp, in 2005-02-09)

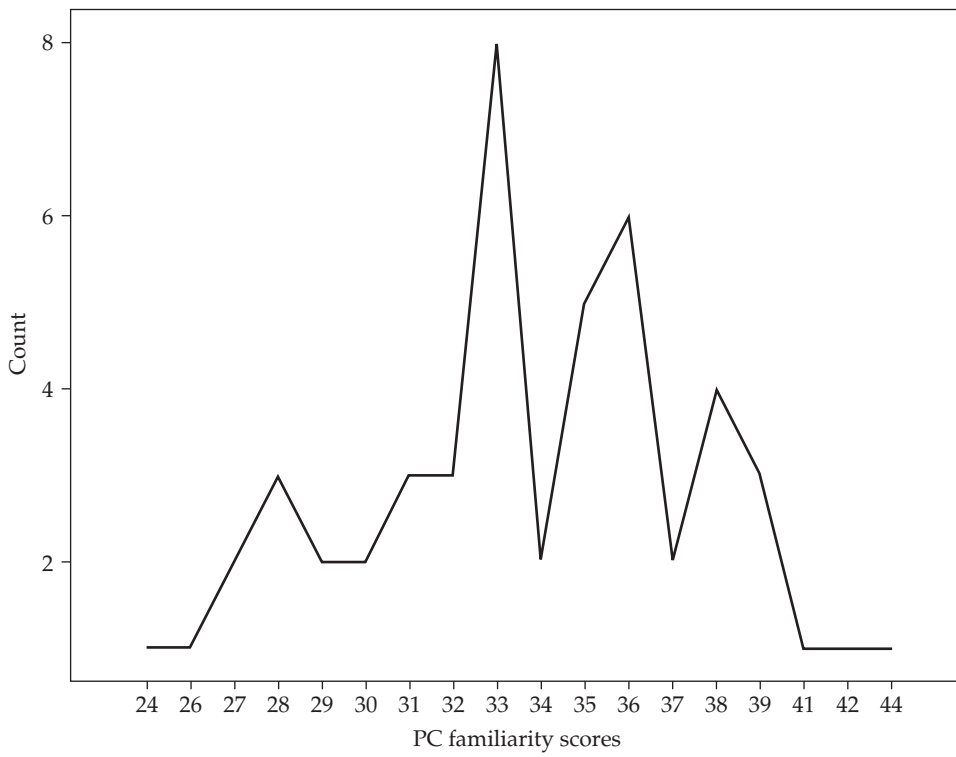

Figure 5 Line chart of PC familiarity scores

length (when computed with SPSS). The middle line in the box represents the median of the observed data (Norušis, 2008). By looking at the box plot, we can easily recognize that the variation of Class 1 is much wider than that of Class 2.

When the concept of the mean was explained in the previous section, the term "outliers" (extreme values) was introduced. Box plots are also used to detect outliers. In the box plot on the right in Figure 7, which shows the same PC familiarity scores as Figures 3, 5, and 6, there is a black spot above the upper whisker, and this is an indication of an outlier. Outliers can alter parametric analyses, and they need to be examined. Statistical analyses may be conducted with and without them. In some circumstances, outliers are removed

```
Frequency    Stem and leaf

   1.00      2 . 4
   8.00      2 . 67788899
  18.00      3 . 001112223333333344
  20.00      3 . 55555666666778888999
   2.00      4 . 12
   1.00      Extremes  (>=44)

Stem width:      10
Each leaf:     1 case(s)
```

Figure 6 Stem-and-leaf plot of PC familiarity scores

Figure 7 Box plots of vocabulary test scores (left) and PC familiarity scores (right)

from the data set, though this is not without its own difficulties. The spirit of honest reporting suggests the researcher explain why outliers were removed. See Larson-Hall (2010, pp. 91–2) and Mackey and Gass (2005, pp. 257–8) for more detail.

Transforming Data

When we conduct parametric statistical tests, to have a bell curve in our data is important because the normal distribution is often required. When an empirical data set is not normally distributed because of skewness or outliers, it may be necessary to transform the data so that the requirements and assumptions of statistical tests can be met. This might sound a little odd, but *transformation* to convert the data into a form which is suitable for parametric tests is perfectly legitimate (Clark-Carter, 2010). For instance, flights from New York to Tokyo that are expressed in terms of "hours" can be transformed and expressed in terms of "speed" as well. The transformation of time data into speed data does not change the nature of the flights.

When a raw data set violates the normality assumptions of a parametric test, *logarithmic transformation* is often used in order to normalize the shape of the original distribution. By

utilizing logarithms of the raw data, larger values can be squeezed and compacted while smaller values can be expanded, and it is possible to reduce the impact of larger values. Other than logarithms, squares, reciprocals, and square roots are also utilized for this type of data transformation (see Clark-Carter, 2010, for details). With the use of SPSS, transformations can be easily conducted. Transformation is a useful tool with which to normalize unevenly distributed data sets, and has its own place in dealing with difficult data. However, it should be also noted that data transformation decreases the obvious meaning of the original data, is not commonly used in modern practice, and is only used when necessary (Cramer & Howitt, 2004).

There is one more concept which should be considered with regard to the normal distribution: *standard scores*. When we have two kinds of data sets, it is difficult to compare them on the same scale. Let us suppose that one student has obtained 60 points on Test A ($\bar{x} = 50$, $s = 10$) and 50 points on Test B ($\bar{x} = 40$, $s = 5$). By looking at the raw scores, one might think that the student did well on Test A. However, this conclusion does not take into consideration the means and the standard deviations of the two tests. In order to make the two tests comparable on the same scale, it is necessary to convert the raw scores into standard scores and compare them. The most basic type of standard score is called *z score*, which is obtained by the calculation formula below:

$$z = \frac{x - \bar{x}}{s}$$

The lower-case z is assigned to this statistic, and a z score has a mean value of 0 and a standard deviation of 1, which indicates that a z score can be interpreted as "standard deviation units below and above the mean" (Van Blerkom, 2009, p. 196). In the case of the above example, the z score for Test A is 1 ((60 − 50) / 10 = 1), and the z score for Test B is 2 ((50 − 40) / 5 = 2). Therefore, on the basis of the z scores calculated here, we can conclude that the student did better on Test B, even though the raw score of Test B is lower than that of Test A.

Another popular standard score is *T score*, which is calculated by this formula:

$$T = \frac{x - \bar{x}}{s} \times 10 + 50$$

Essentially T scores are the same as z scores, except for the multiplication (×10) and the addition (+50). Since z scores are intuitively difficult to understand, T scores were developed by having a mean of 50 and a standard deviation of 10. The T score for the Test A is 60, while the one for Test B is 70. Standard scores are useful when comparing two scores on different scales when they are normally distributed, though it is important to remember that neither T scores nor z scores change the shape of the original distribution.

SEE ALSO: Inference; Probability and Hypothesis Testing; Quantitative Methods; Sampling: Quantitative Methods; Variables

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Descriptive Linguistics

SOLVEIG GRANATH

Introduction

When people who are not linguists consult a grammar book, it is usually because they want to find out the correct way of expressing something. This is the kind of information many grammars provide. Such grammars are referred to as *normative* or *prescriptive*, or sometimes *teaching grammars*, as this kind of grammar is often used in education. The underlying assumption which such grammars are based on is that rules can be established for the correct usage of a language. Descriptive linguistics rejects this notion of correctness: instead of prescribing how something *ought to* be said, it aims to systematically describe a language as fully and objectively as possible. Accordingly, descriptive grammars can be said to provide systematic descriptions of how the various components of language can be combined into sentences and other units of discourse. In sum, the ultimate object of descriptive linguistics is to describe in a non-judgmental fashion how language is structured.

Descriptive linguistics is often synonymous with *synchronic linguistics*, that is, studying the language at one point in time, and thus contrasts with *diachronic* (or historical comparative) linguistics, which studies and compares language change over time. In American linguistics, *descriptive linguistics* usually refers to mainstream linguistics from the beginning of the 20th century up until Chomsky's introduction of generative theory in the 1950s. Descriptive linguistics is thus not a simple but a multidimensional concept.

Historical Background

The theoretical groundwork of descriptive linguistics was laid by the so-called *structural linguists* in the early 20th century. In linguistics, as in other fields of study such as anthropology, psychology, and literature, structuralism typically involves describing contrasting features in terms of systems or structures. However, it would not have been possible for these ideas to develop and take the shape they did if it had not been for the contributions of philosophers and grammarians in earlier times. A basic assumption about language which has been around from classical antiquity is that language is ordered and regular. Following from this is the notion that words can be divided into classes. This categorization of words is at the very heart of descriptive grammar. In the Western tradition, it goes back to the Greek philosophers Plato and Aristotle. It was further developed by the Stoics, and by the time that Dionysius Thrax wrote his grammar in the first century BC, the parts of speech had been extended from Aristotle's three (nouns, verbs, conjunctions) to eight, which have in the main remained the same until the present day. One legacy from Dionysius Thrax's grammar that still appears in grammatical description is the *grammatical paradigm*, which specifies the inflected forms of words. An example of a verb paradigm in English is that of *be* in the present tense:

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Singular	Plural
I am	we are
you are	you are
he/she/it is	they are

In medieval times, as people began to travel more, there was an increasing demand for descriptions of languages. The grammar that served as the model at the time was Priscian's Latin grammar from the sixth century AD. One rather unfortunate consequence of this was that the Latin categories and terminological framework were taken over wholesale from Priscian's grammar and applied to languages that were structurally different. This is especially conspicuous in English grammars from the 18th century, in particular Robert Lowth's grammar from 1762. His is a prime example of a prescriptive grammar in that its aim was to lay down rules of correctness. Lowth's contemporary, the scientist Joseph Priestley, on the other hand, could be seen as a forerunner of descriptive linguists. In his *Rudiments of English Grammar* from 1761, he attempted to lay down rules based on the usage he observed.

The Emergence of Descriptive Linguistics

Linguistics, in the sense of the scientific study of language, started developing in the 19th century with scholars using comparative methods in their attempts to reconstruct Indo-European, the ancestor language of many European and Indo-Iranian languages. This type of study, which involves tracing the historical development of languages over time, is called *diachronic*. It was not until the early 20th century that interest shifted from the diachronic-historical perspective to a *synchronic* one, by which is meant looking at and describing language at one point in time. The change took place almost simultaneously on both sides of the Atlantic, but for different reasons. In Europe, the Swiss linguist Ferdinand de Saussure (1857–1913) gave a series of lectures at the University of Geneva in the years 1906–11, where he introduced the idea of *langue*, the underlying system shared by a community of speakers, as separate from *parole*, the individual act of speaking. The concern of linguists, according to Saussure, should be to describe this system. Another important part of Saussurean theory is that the individual pieces in the system get their values from the other parts that make up the system, rather than from pre existing categories outside the system. Although Saussure himself never published anything on these theories—the book that bears his name (*Course in General Linguistics*) was compiled after his death by two of his former colleagues, based on students' lecture notes—his ideas mark the beginning of structuralist linguistics in Europe. Structuralist linguists are often called "descriptive linguists," precisely because their concern is to map out and describe various parts of language.

In America, descriptive linguistics began as an outgrowth of anthropology. American anthropologists, under the leadership of Franz Boas (1859–1942), studied Native American cultures, and an important part of this study was the languages spoken by different tribes. The main reason why synchronic (rather than diachronic) methods were used was that the languages these linguists studied lacked written sources, unlike the Indo-European languages, many of which had a written tradition going back a long time. In order to learn about Native American languages, methods had to be worked out for describing them. With no written sources, field workers had to rely on information from the speakers of the various languages. What they would do was ask speakers to name objects, carefully write down the information they received, and make sure they recorded the sounds correctly. As Sampson (1980, p. 64) observes, their guiding principle was "Accept anything a native speaker says in his language and nothing he says about it." In this way, it was

possible to establish formal ways of determining the sound systems and grammars of these languages.

The foremost representative of American descriptive linguistics was Leonard Bloomfield (1887–1941). After the appearance of his *Language* in 1933, the approach to language in American linguistics became strongly empirical. The idea was that only what could be established objectively was considered reliable. This was in line with the predominant scientific paradigms of the day, those of logical positivism and behaviorism. The descriptivists began by determining what the smallest units of language were and proceeded step-wise to larger units, that is, from phonemes (sounds) to morphemes (parts of words) and (in the ideal model) from morphemes to syntax and utterances. Each system had to be described in its entirety before one could proceed to the next higher level; hence phonemic and morphemic analyses were the chief fields of research at that point in time. In retrospect, it is of course an illusion that each system can be studied independently of the others. For instance, in order to determine what phonemes a language contains it is necessary to take meaning into account, as the method of determining whether a sound is a phoneme or not is carried out by means of minimal pairs. To take an example from English, the minimal pair *pit–bit* shows that *p* and *b* are phonemes in English precisely because the two words have different meanings.

Whereas the Indo-European languages studied by European linguists shared many features due to their having a common ancestor (Indo-European), Native American languages belonged to many different language families and had features that differed radically from one language to the next. This led to the claim by American descriptive linguists that languages are infinitely diverse. These linguists, who based their descriptions on empirical evidence only, were highly skeptical of any pre existing framework for languages such as the Latin one, which had for so long influenced grammatical descriptions of English as well as other languages. The most radical attempt to break away from the Latin tradition can be seen in Fries's *The Structure of English* from 1952. Here, not only did he reject the traditional names of word classes and replace them with numbers, he also based the classification of words exclusively on formal criteria, thus rejecting such notional criteria as "a noun is the name of a person, place, or thing" (Fries, 1952, p. 67). He did this by setting up frames which were used to determine class membership. Accordingly, words belonging to Fries's class one fit into the patterns

(The) _____ is/was good.
_____s are/were good. (Fries, 1952, p. 78)

His examples—"Coffee is good," "Reports were good"—show that the words of this class to a large extent overlap with the traditional class of nouns.

Descriptive Linguistics after the 1950s

Whereas descriptive linguistics was the predominant approach to language in the first half of the 20th century, linguistic study became more diverse in the second half with the establishment of various schools of linguistics whose approaches to language differed in fundamental ways from, in particular, American descriptive linguistics. In the 1950s, Noam Chomsky introduced *transformational generative grammar* (TG), whose primary aim was to describe the grammatical "competence" of all native speakers, which, according to the theory, makes it possible for them to determine whether or not a sentence is grammatical (see, e.g., Chomsky, 1957). This type of grammar is usually referred to as *formal grammar*. Approaching language from a different theoretical perspective, *systemic-functional grammar*, developed by Michael Halliday (e.g., Halliday, 1985), attempts to account for how language

is used by investigating the choices speakers/writers make in the act of communicating. Of primary interest to adherents of this theory is how language functions in interaction. Modern descriptive linguists, on the other hand, with their empiricist outlook, continue to make use of language data in order to test and refine their descriptions of language. Accordingly, large bodies of data—so-called *corpora*—are collected and investigated in order to explain how a language works. In the early days of descriptive grammar, this work was done manually. Dating from this period are the grammars written by the Dutch grammarian Hendrik Poutsma (published in five volumes between 1904 and 1929) and the Dane Otto Jespersen, whose seven-volume grammar appeared between 1909 and 1949. These impressive works contain numerous examples of authentic language use from all kinds of sources, many of them from earlier periods of English. The majority of these sources were in the form of written texts, and it is written rather than spoken language that has been the primary source of data for descriptive grammars up to the present day.

One of the first large spoken corpora was collected by Fries (see above), whose book *The Structure of English* was based on a corpus of approximately a quarter of a million words of conversation which he recorded himself in the late 1940s (Fries, 1952, p. x). Some ten years later, Randolph Quirk and his team at University College London began the Survey of English Usage. The compilation of this corpus marks the beginning of linguists' efforts to assemble corpora which are as representative as possible of the language as a whole, of a certain variety (e.g., American English, Kenyan English), of a particular genre (i.e., a field of discourse such as fiction, religious sermons, sports reports), or of a register (e.g., casual vs. formal speech). The survey comprised 200 samples of texts of 5,000 words each (i.e., one million words in total), from a large range of domains. It is noteworthy that half of the corpus consisted of speech samples, later published electronically as the 500,000-word London-Lund corpus (Svartvik, 1990). By contrast, the Brown University Corpus of American English, compiled by Francis and Kučera a few years later, consisted only of written samples. It was comparable to the Survey of English Usage in size, but differed in that the number of samples was higher and each sample shorter (500 samples of text, each 2,000 words long). What was new about the Brown corpus was that it was computerized, which made it much easier for linguists to track words, phrases, and grammatical patterns. The latter was facilitated by lexical tagging, that is, each word received a tag at the end, giving information about its word class. The first attempts at tagging corpora were manual (see, e.g., Ellegård, 1978), but soon methods for automatic tagging were developed. In the following decades, corpora from other varieties of English were compiled to match the Brown corpus. At this time, very large corpora designed primarily for lexicography were also compiled. To date, spoken corpora have been underrepresented, as they take much longer to collect and transcribe, not to mention the fact that informed consent is needed from everyone whose speech is made part of a corpus. Still, electronic corpora, which give linguists easy access to a wealth of authentic material, have had an impact both on the content of descriptive grammars as well as on methodological approaches.

Descriptive Grammars

The three most important large-scale English reference grammars today vary in the extent to which they make use of corpus data. *A Comprehensive Grammar of the English Language* (Quirk, Greenbaum, Leech, & Svartvik, 1985), like its predecessor (Quirk, Greenbaum, Leech, & Svartvik, 1972), presents some data from the Survey of English Usage (see above), as well as from the Brown corpus and its British counterpart (LOB, the Lancaster-Oslo/Bergen corpus). Huddleston and Pullum (2002), in their *Cambridge Grammar of the English Language*, also include examples taken from corpora as a supplement to intuitive examples and examples which have been collected from other sources (Mukherjee, 2006, p. 339).

These two grammars can therefore be said to be *corpus-informed* rather than corpus-based, as most of their examples, including sentences which are marked as ungrammatical, are made up by the authors. There is also little mention of frequency of usage. The third big reference grammar, *The Longman Grammar of Spoken and Written English* (Biber, Johansson, Leech, Conrad, & Finegan, 1999) is, on the other hand, *corpus-based*, and information on frequencies and use of grammatical patterns as well as on the patterning of individual lexical items is provided throughout. Of these three grammars, *A Comprehensive Grammar of the English Language* and the *Longman Grammar*, although eclectic in the way they bring together principles from various schools, are basically descriptive, while the *Cambridge Grammar* is heavily influenced by generative theory (see Mukherjee, 2006, for an in-depth comparison of the three grammars).

As Chapman (2006, p. 10) points out, the fact that some approaches to language study are based entirely on observable facts (and for that reason are sometimes claimed to be theory-free) does not mean that they are free from certain underlying assumptions about language. For instance, when it comes to English descriptive grammars, one assumption is that words belong to different word classes; like teaching grammars, the principle of organization in most grammars is word class, each presented in a separate chapter. This is usually followed by a few chapters on clauses and word order. Another assumption is that it is possible to abstract away from the English used in different geographical locations as well as from situated use. Thus, the two large corpus-informed reference grammars mentioned above can both be said to describe English as if it were a unified whole. For this reason, they are sometimes referred to as *monolithic* grammars (Mukherjee, 2006, p. 346). *The Cambridge Grammar* (Huddleston & Pullum, 2002, p. 4) claims to present "Standard English," defined as "the kind of English which is widely accepted in the countries of the world," while *A Comprehensive Grammar* (Quirk, Greenbaum, Leech, & Svartvik, 1985, p. 16) sets out to describe the "common core" which is "present in all varieties so that, however esoteric a variety may be, it has running through it a set of grammatical and other characteristics that are present in all the others." The corpus-based *Longman Grammar*, on the other hand, describes English from the perspective of what the authors refer to as four "core" registers: conversation, fiction, newspaper language, and academic prose (see Biber et al., 1999, pp. 24f.). In addition, features of British and American usage are occasionally compared and contrasted. Also noteworthy is the inclusion of a description of *spoken* English, which was largely ignored (or given very little room) in earlier grammars. Here, Carter and McCarthy's corpus-informed *Cambridge Grammar of English* from 2006 should also be mentioned, in that it devotes a separate section to spoken language, coupled with a section on how usage varies depending on the social context.

A radically different methodological approach to data is referred to as the *corpus-driven* approach (Tognini-Bonelli, 2001). Whereas the starting-point for corpus-based studies is the linguist's intuitions or hypotheses about language patterns, corpus-driven research leaves it to the computer to find strings of words with high frequencies of occurrence. This kind of study is therefore *inductive* and focuses on how words combine—*collocate*—with other words to form phrases. One insight gained from corpus-driven methods is that speakers rely more on predetermined combinations of words than was previously thought. Sinclair (1991) refers to this as the *idiom principle*. People follow the idiom principle when they use a set phrase like *of course*. This contrasts with the *open-choice principle* which, as the name implies, gives speakers an option, so that after *of*, they may choose to use any of a number of words (such as *a/the/my/theirs*, etc.). Corpus-driven research has generated a new type of grammar, the *lexical grammar*, an example of which is *Pattern Grammar* by Hunston and Francis (2000). Because proponents of this approach claim to make minimal use of theoretical presuppositions, this can be said to represent an extreme pole in the quest for objectivity in descriptive linguistics.

SEE ALSO: Corpora: English-Language; Corpus Linguistics: Historical Development; Formal and Functional Approaches to Grammar; Generative Grammar; Pattern Grammar; Prescriptive and Descriptive Grammar; Systemic Functional Linguistics

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Descriptive Translation Studies

THEO HERMANS

The academic discipline of translation studies is of relatively recent date. While there has been profound and critical thought about matters of translation throughout history, traditionally much of it was ad hoc, evaluative, and concerned with particular genres such as literature or sacred texts. Sustained attention to translation in an academic context did not begin until around the mid-20th century, when, as a result of technological and socio-economic developments, the volume of translations increased substantially, especially in the industrialized world, and consequently the need arose to train professional translators. The first generation of academically trained translation scholars consisted primarily of linguists involved in translator training. In the 1970s and 1980s descriptive translation studies reacted against the prescriptive and exclusively linguistic outlook of that generation. Since then descriptivism has entered the mainstream of translation studies, and has in turn been challenged by more recent approaches.

Although the descriptivist paradigm in the study of translation is neither theoretically nor methodologically united, its main features may be summarized as an interest in translation as part of cultural history, a focus on translations as historical products, a preoccupation with literary translation, the adoption of a broadly functionalist framework, and a desire to contextualize and to valorize translation as a cultural practice.

This entry first explains the emergence of the descriptive paradigm in translation studies and then addresses specific aspects and developments. It concludes with an account of challenges and criticisms.

The Emergence of Descriptive Translation Studies

As early as 1953 John McFarlane, in an essay voicing unhappiness with the relentlessly judgmental nature of translation criticism, suggested that the study of translation might be conceived differently if it focused on empirical data and on explanation rather than on evaluation. The approach he recommended would be "diagnostic rather than hortatory" (1953, p. 93). Analysis, McFarlane proposed, should start from the assumption that "translation is as translation does" and from "an examination of what translation is and can be rather than what it ought to be but never is" (1953, pp. 92–3).

The essay went unnoticed at the time, and translation continued to be considered mostly in terms either of structural linguistics or of source-oriented literary criticism. McFarlane's ideas were not picked up until the early 1970s, when the Amsterdam-based American translator and researcher James Holmes brought together different groups of scholars in Western and Central Europe and in Israel who were thinking along similar lines. The Czech scholar Jiři Levý had compared translating to decision making in formal games, and sought to understand individual translations as reflecting different national or historical poetics and conventions (Levý, 1969). The Slovak scholar Anton Popovič (1976) viewed literary translation as involving a confrontation between the aesthetic conventions of the donor and of the receptor culture, resulting in inevitable shifts in meaning and expression. In Belgium José Lambert (1985) and André Lefevere (1982) engaged in projects studying translations in their historical contexts. Holmes himself wrote on different ways

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in which poetry could be translated and on such things as the temporal gap separating originals and translations. His key contribution was the 1972 essay "The Name and Nature of Translation Studies" (Holmes, 1988, pp. 67–80), in which he proposed a name for the discipline, that is, translation studies (rather than, say, translatology), and surveyed its various branches, emphasizing the primacy of theoretical and descriptive research and relegating practical applications, criticism, and translator training to a secondary position. Meanwhile in Israel Itamar Even-Zohar (1978; revised 1990) was developing a stratified theory of literature as a "polysystem" that would be able to accommodate traditionally marginalized phenomena such as popular fiction, children's literature, and also translated literature. Another Israeli, Gideon Toury (1980; revised 1995), was attempting a general theory of translation from an explicitly empirical viewpoint.

Personal connections were forged during a series of small-scale conferences held in Belgium and Israel in 1976, 1978, and 1980. They gave rise to what Diana Crane (1972) has called an "invisible college," an international network of like-minded researchers. A collection entitled *The Manipulation of Literature: Studies in Literary Translation* (Hermans, 1985) presented the descriptive approach to the wider community as a new paradigm, complete with a programmatic introduction and case studies.

Descriptivism was by no means the only innovation in translation studies in the 1970s and 1980s. In Germany Katharina Reiss and Hans Vermeer (1984) developed a strongly functionalist view of translation as an alternative to the dominance of linguistically inspired approaches. These were themselves undergoing what Mary Snell-Hornby (1986) termed a "pragmatic turn," more concerned with actual language use than with abstract linguistic structures. In the mid-1980s a group of researchers at the University of Göttingen began to produce a series of detailed studies geared primarily to literary translation into German from the 18th century onwards; they termed their approach "descriptive-historical," and engaged in a critical dialogue with the descriptivists gathered under the "Manipulation" banner (Schultze, 1987; Frank, 1989; Kittel & Frank, 1991; Kittel, 1992; Lönker, 1992; Poltermann, 1995).

Translation and Description

Since descriptivist researchers were keen to engage with actual translations, they did not want to waste time on attempts to define translation. James Holmes (1988, pp. 23–5) invoked Wittgenstein's idea of family resemblances to suggest the flexibility and open-endedness of concepts of translation across cultures—an idea that recently has been revived as a way of exploring translation in a global context (Tymoczko, 2007). Gideon Toury sidestepped the problem of definition by declaring that translation was whatever was regarded or accepted as translation in a given community at a particular time (1980, p. 43). Although this was a nominalist stance that begged more questions than it resolved, it meant that research could get underway without being paralyzed by issues of definition and delimitation.

Strictly speaking the descriptive label was a misnomer. It caught only one aspect of the new paradigm: its opposition to a prescriptive approach and, consequently, its unwillingness to evaluate translations. But descriptivism was more than that. It insisted on the study of translation as a discipline in its own right, regardless of possible applications in translator training, and despite the indifference of most literary studies to translated literature. At the same time, descriptive researchers were intent on doing more than merely describing. They sought to contextualize and to explain; some even wanted to arrive at predictions and generalizations, on the model of the sciences. Most, however, were content to engage with the history of translation and to develop methodological tools to do so.

Harald Kittel formulated the guiding questions for translation research as "*who* translated *what*, *when*, *why* and *in what way*, and *why* in this particular way?" (Kittel, 1988, p. 160; Frank, 1989, p. 6). At the methodological level several techniques designed to capture and tag the relation between originals and translations were tried and tested, but all ran into problems due to the need to interpret rather than merely log meanings, forms, and translation shifts.

Despite these hermeneutic difficulties, a great deal of historical research, much of it focused on literary texts and their translations, was generated. As a result, traditional concepts like that of equivalence were questioned, and attention turned instead to the conditioning factors of individual translations and the impact of translations on their environment. As the discipline gained academic respectability and project funding became available, larger bodies of work could be investigated. Looking at series of translations over longer periods rather than as isolated cases revealed regularities and patterns in the work of individual translators or of particular groups, periods, or genres. The concept of translation norms, which Levý and Popovič had already employed and Toury elaborated further, proved useful as a means of accounting for the preferential choices which translators appeared to make again and again. Beyond the concept of norms lay the value systems binding collectives together. The significance of the concept of translation norms, then, consisted not so much in the role of norms as constraints limiting the individual translator's freedom of action, but rather in the window they opened for researchers to gain insight into the conditioning of translation in different social, cultural, and ideological contexts.

This meant a widening of the horizons of translation studies, and the importance of descriptivism for translation studies lies in its contribution to these intellectual developments. One line of inquiry led to the historicizing of translation concepts and practices, and hence to a recognition of their diversity, contingency, and historical embedding. Whereas some early descriptivist studies entertained hopes of formulating universal, immanent laws of translation, the historicizing of translation pointed in the opposite direction and suggested an understanding of translation as a cultural construct bound to specific communities, times, and locations. The principles governing the encounter with historically remote periods could subsequently be projected onto studies dealing with translation across geographical and cultural divides (Hermans, 2006).

Parallel to the engagement with history there was a branching out into other forms of translation, including interpreting and audiovisual media. Here, too, early work had tended to be prescriptive or, in the case of interpreting, concerned with linguistic and cognitive factors. The focus gradually shifted to a consideration of contextual elements and questions of agency (Esselink, 2000; Pöchhacker & Shlesinger, 2002; Díaz Cintas & Remael, 2007).

Another line led to the role of moral, political, religious, and other factors that shape the production and reception of translations. This type of work was instrumental in bringing about what was called, in 1990, the "cultural turn" in translation studies (Bassnett & Lefevere, 1990). The cultural turn resulted not only in a contextualization of translation as a social and cultural practice, but also in an outlook that saw translation as just one practice among other forms of transmission and migration of cultural goods. Symptomatic in this respect was the work of André Lefevere, who in the course of the 1980s abandoned Even-Zohar's idea of a literary polysystem and its formalist and structuralist ambience, and instead developed his own theory of what he called "rewriting" (Lefevere, 1992). The term covered a broad swathe of phenomena from anthologizing to criticism, in addition to translation. Lefevere's emphasis on patronage and ideology in the historical manifestations of various kinds of rewriting brought into view larger social networks as well as political factors and power differentials. This emphasis aligned with postcolonial studies, with studies stressing the role of translation in shaping cultural identity, and with the burgeoning sociology of translation.

Although corpus-based translation research has not worked with the concept of norms in any significant way, its approach is entirely compatible with the descriptive paradigm, and indeed corpus-based studies often position themselves as an extension of descriptive work. Much early corpus-based research, whether it used parallel or comparable corpora (i.e., sets of translated and untranslated texts, or pairs of originals and their translations), was intent on discovering patterns and regularities within or across genres. More recently questions of style, evaluation, and point of view have also been explored with the use of corpus tools (Olohan, 2004).

Just as working with large computerized corpora led to new and different questions being asked, so the widening of horizons which descriptivism brought about in translation studies led to its transformation. As it began to tackle not just literary printed texts but audiovisual media, and as it spread beyond Europe and North America, its complexion changed. What was once a limited, distinct paradigm defined by its opposition to prescriptive studies and evaluative criticism has become a mainstream direction in translation research. While descriptivism broadened and deepened, it also absorbed criticism, primarily from postcolonial and deconstructive angles (Niranjana, 1992; Hermans, 1999). Deconstructive critics attacked descriptivism's neat separation of object-level and meta-level, and the illusion of value-free research. Postcolonial scholars pointed out the descriptivists' initial blindness to questions of power, the restriction to Western canonical literature, the unthinking application of Western theoretical models to other cultures, and the failure to recognize that the study of translation, like translation itself, was an ideologically conditioned cultural practice. These debates continue. However, they are now no longer about descriptivism as such; they concern the study of translation as a self-reflexive discipline in a global context.

SEE ALSO: Cognitive Approaches to Translation; Cultural Approaches to Translation; Functional Approaches to Translation; History of Translation; Linguistic Approaches to Translation; Literary Translation; Sociological Approaches to Translation; Text-Based Approaches to Translation; Translation Theory

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Determining Language Proficiency in Legal Contexts

MARGARET VAN NAERSSEN

In any legal case the nature and quality of evidence is critical. When there is an allegation of illegal activity by someone who is not a strong speaker of a language, proficiency in the language of the legal system is of concern. There are special challenges when language evidence involves non-native speakers (NNSs) (Eades, 1995, 2003).

Appropriate language assessment can be a valuable tool in legal cases involving NNSs. The focus here is on criminal cases. Three areas are covered:

1. contexts and selected concepts,
2. language assessment and legal questions, and
3. specific assessment concerns.

Other NNS issues are not included.

Language assessment is a discipline within applied linguistics. In legal cases experts may be called in to examine language evidence and possibly testify in court. In some legal systems experts are hired by one side in a case; in others by the court.

Setting the Stage: Contexts and Selected Concepts

In this section, three contexts are presented to suggest a potential range of NNS cases. These are followed by six concepts which are introduced to show their relevance in NNS cases.

Contexts include (a) alleged criminal activities, (b) interactions with law enforcement, and (c) case preparations and trials. First, with NNS communications (oral or written) in alleged criminal activities, key concerns include (a) the ability to understand enough to be held responsible for a decision to participate (or not) in alleged criminal activities, and (b) the ability to make one's self understood accurately enough that meanings and intentions are clear (Shuy, 2005).

Second, in law enforcement communications key concerns include the ability to (a) accurately make one's story understood during pre-arrest interactions, (b) understand rights when given a police caution or during a search request (Briere, 1978; Ainsworth, 1993; Shuy, 1997; Cotterill, 2000; Nakane 2007), (c) accurately make one's story understood during law enforcement interviews (Russell, 2002), and (d) understand details of formal statements resulting from law enforcement interactions (Jensen, 1995). Language evidence from these include police reports, confession statements, and recordings of communications with law enforcement (see Coulthard, 1996; Rock, 2007; also see, e.g., Berk-Seligson, 1990; Gonzalez, Vasquez, & Mikkelson, 1991; Cooke, Eades, & Hale, 1999; Carter-Balske, Kay, & Ramirez, 2007.)

Third, in communications during case preparations and trials, concerns include (a) the adequacy of legal counsel without an interpreter (Cooke, 2002), and (b) the ability to accurately make one's own story understood during preliminary hearings and trials.

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A key concern in all areas (contexts) is whether communications reflect truthful or deceptive language proficiency—either by a defendant to gain advantage in alleged criminal activities and legal proceedings, or by a native speaker pretending to be a NNS. Another concern with NNSs is their knowledge of and ability to understand legal proceedings: this can affect communications (Pavlenko, 2008).

Six key concepts are reviewed here to show their relevance in NNS cases: *language evidence*, *language sample*, *linguistic evidence*, *language proficiency*, and the assessment concepts of *reliability* and *validity*.

Language evidence includes written and recorded oral communications from, for example, law enforcement stops and requests to search, interviews, and wiretapped communications. In NNS cases two special areas of concern are (a) written transcripts of audio recordings and (b) oral evidence produced under questioning.

First, because transcripts of audio recordings of interactions can have many problems, in some legal systems transcripts are not considered *direct* evidence. Omissions of nonverbal features and pauses, inaccuracies, and other problems can significantly change meanings. Transcribing accurately can be especially challenging when speakers are NNSs. Transcripts are tools, but frequently inadequate, and must be used with caution. (Some sources on transcription concerns include Walker, 1986 and Shuy, 1998.)

Second, much has been written on questioning strategies in court, especially adversarial strategies. Similar strategies may occur in law enforcement interviews. Responses can become additional language evidence. When a NNS is recalling and reporting past events, references are more abstract than when communicating about the concrete "here and now." More advanced language skills are needed (see Cummins, 1981, on basic interpersonal communication skills and cognitive academic language proficiency; Halliday, 1994, on *ideational language* and *interpersonal language*). Additionally, NNSs may lack the confidence and language skills to communicate accurately under adversarial questioning. Also, court settings and the language can affect responses.

Language sample, in assessment contexts, refers to any oral or written language that becomes the subject of analysis to provide insight into the language proficiency of an individual. Language samples range from spontaneous communication to language produced under tightly controlled conditions, of very limited length, and with a narrow focus. In forensic contexts, language samples are the pieces of language evidence, and if of adequate length, may also provide insights on language proficiency.

Linguistic evidence is described here both to show its role in language assessment and that it is not the same as language evidence. When the findings of *analyses* of language evidence (including assessment data) are grounded in principled linguistic theory and practice, they become linguistic evidence. This evidence may assist the fact finders (judge/jury) who make final decisions in cases.

It is also useful to note what is *not* linguistic evidence. Simply because analysis is based on a *language* sample *does not* mean it is linguistic evidence. Useful information can be found in language samples, for example, in analyses of content: eye witness accounts might contain descriptions of what was heard or smelled, providing clues on truthfulness of eyewitness accounts to experts in that field. Also, native speakers may feel they can judge another person's language, but anecdotal evidence by a nonlinguist, giving impressions about a person's language skills, is *not* linguistic evidence.

Language proficiency "refers to the degree to which the student exhibits control over the use of language, including the measurement of expressive and receptive language skills in the areas of phonology, syntax, vocabulary, and semantics and including the areas of pragmatics or language use within various domains or social circumstances" (US Department of Education, Office of Civil Rights, *n.d.*). "Student" also refers to NNSs.

Reliability and *validity* are key concepts in language assessment. Experts in language assessment frequently deal with large examinee populations, thus, are concerned about the reliability of a test, its potential to produce similar results under similar conditions. In some legal systems, the rules of evidence promote reliability standards. They are seen as "scientific" means of evaluating both an expert's field and procedures. However, in legal cases, there is almost always only a single subject. Legal questions usually involve specific communicative events. These frequently are *not at all* similar to tasks commonly found on standardized tests: using a multiple-choice English grammar test is not valid for testing someone's ability to interact in a police interview. Thus, *reliable* tests might lack *validity* in a specific case. While some standardized tests may provide data of limited appropriateness, additional, more valid tasks might strengthen arguments. Experts may also need to demonstrate that validity is also a key assessment concept and may, in fact, override reliability rates.

Language Assessment and the Legal Question

When concerned with language proficiency in legal contexts, keeping an eye on the legal and linguistic questions is critical (see Figure 1). A preliminary examination of language evidence and background information can (a) help determine whether additional language evidence is needed, and (b) suggest language assessment tasks valid for the communicative events. This example shows how a legal question drives analyses of formal language evidence and additional language assessment data. Several areas of expertise were needed: conversation analysis, language assessment, and second language acquisition.

The Legal Question is: *Did the defendant, Mr. C, conspire with Mr. X to bomb an office building?* Law enforcement had planted recording devices: the recorded evidence suggested a possible conspiracy. Clarification of the legal term "conspire" provided linguistic implications. Addressing the Legal Question, a linguistically based question was posed, for example, *Using the language evidence, is there linguistic evidence that Mr. C understood the relevant conversations and agreed with plans to bomb the building?* Specific questions were used for analyses, including these: *Are the conversations coherent? Are there communication breakdowns?* A topic analysis of the conversations helped determine whether speakers were talking about the same or different topics. *Who initiates talk about what topic?* (Shuy, 1998). Then, remembering the word "conspire" in the Legal Question, a narrower question was asked: *Is the defendant only talking about repairing cell phones while the other person is talking about adding an explosive device to cell phones?* Then, as the defendant was a NNS, the expert asked: *Is there any linguistic evidence that Mr. C did/did not understand the other speaker's agenda?*

The expert determined that proficiency assessment could provide insights on the likelihood that Mr. C *did/did not* understand key communications. An appropriate oral interactive

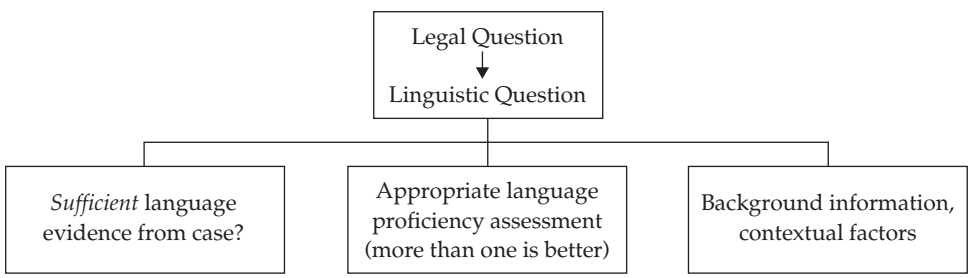

Figure 1 Identifying need for language proficiency support

proficiency assessment was done. Data from the formal evidence and the language assessment were analyzed. Mr. C's language use was also examined for consistencies in language development patterns, thus, considering the possibility that Mr. C was pretending weak language skills.

The analyses are then linked logically to the linguistic and legal questions. These *analyses* become linguistic evidence, which is reported to the attorney to use in determining a strategy. Later the linguistic evidence might be presented to the fact finders (judge/jury) to assist them in answering the Legal Question. However, it is beyond the scope of the expert to directly answer the Legal Question, even when efforts are made to trap the expert into doing so.

In legal contexts the purpose of language assessment has frequently been seen as simply providing a test score and a general opinion. However, there is danger in jumping from a test score to a legal question without developing connections. This is supported by the language testing field with a simple, but important logical process that parallels legal argumentation: evidence argumentation. This process considers the relevance of data and the value of the observations as evidence, including validity in testing (see Mislevy, Steinberg, & Almond, 2003; Bachman, 2005; McNamara & Roever, 2006; van Naerssen, 2009).

Experts report any limitations of assessment procedures and findings to the attorney. They also prepare for possible criticisms in court: while no test is perfect, a single criticism, not intelligently responded to, can destroy a carefully designed assessment effort. Also, language myths held by the fact finders can interfere with efforts by an expert to address the proficiency of a NNS (van Naerssen, 2007).

Selected Assessment Issues

Several important assessment issues are: locating the language analysis focus, truthfulness of language performance, audio-taping concerns, development of valid assessment tasks, and maintaining distance in reporting.

First, an expert distinguishes which language is being evaluated in each analysis. Is it the language of the NNS? Is it the language of the input, for example, a written confession statement or recordings involving conversations? Then, what is the likely ease or difficulty for the NNS interacting with this other language input? Also, how long ago was the language produced? Often in assessment the focus is on current abilities, progress over time, or predicting potential. In legal contexts, the primary focus is usually retrospective. The expert also has no control over the quality of language evidence already collected. Thus, aside from recordings/transcripts, examiners can only assess the language of the NNS in the present time. The expert might cautiously project back in time (a) to ask how likely it is the proficiency of the NNS could have significantly improved, and (b) to consider the ease or difficulty a NNS, at a specific proficiency level, might have had with the relevant communications.

Second, in cases involving language proficiency issues, the possibilities of both truthful and deceptive performance should always be considered. Experts in language acquisition, sociolinguistics, and assessment usually can detect consistencies and inconsistencies. If language performance is truthful, analyses usually reveal substantial consistencies; if deceptive, inconsistencies are likely to occur. It is highly *un*likely that a person could successfully deceive (or intentionally underperform) throughout lengthy samples of unplanned communications at different times (van Naerssen, 2007; O'Laughlin, 2009; English, 2010). When formal language evidence is limited, additional language samples, through language assessment, can help compare performance.

Third, audio recordings of oral testing are invaluable for analyzing patterns of language use and evidence of developmental levels. Fourth, while an expert may determine additional, more valid assessment is needed, it is not appropriate to simulate aspects of the alleged criminal activity. However, a simulation of a similar task could be done with different content.

Lastly, experts' statements are cautiously framed as probabilities about NNSs communicating at a specific proficiency level. They avoid stating that *because* a person scored at a specific level, that person *could/could not* have understood certain communications. A generalization (not naming the defendant) can be made, for example, "Based on the language evidence, it is highly *likely/unlikely* that a person with these tested abilities would have been able to successfully communicate in *x* activities."

SEE ALSO: Assessment and Testing: Overview; Cognitive Second Language Acquisition: Overview; Fairness in Language Assessment; Forensic Discourse Analysis; Internalization in Second Language Acquisition: Social Perspectives; Language of Courtroom Interaction; Language of Police Interviews; Legal Interpreting; Linguistic Disadvantage of Children in Legal Contexts

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Dialogic Inquiry and Teacher Talk in Second Language Classrooms

MARI HANEDA AND GORDON WELLS

The Case for Dialogic Inquiry

A sociocultural approach to language and literacy emphasizes the need for students to be actively engaged in jointly undertaken activities that involve the co-construction of knowledge through dialogue with teacher, texts, and peers. For it is through dialogue that students clarify, modify, and extend their understanding of curricular content as they attempt to formulate their thinking in speech, writing, and other modalities. Furthermore, it is through their engagement in such discursive practices that students appropriate the knowledgeable skills that these practices involve, including the use of the language registers specific to the different subjects of the school curriculum. Thus, in order to develop language competence and subject-matter knowledge, all students, but particularly second language (L2) learners, need to have many opportunities to participate in semiotic practices that promote both higher-order thinking and the use of a range of language functions, such as formulating questions, reasoning, and explaining. Nevertheless, as numerous studies of classroom discourse have reported, such dialogic interaction is still not the norm in practice. The question is therefore how to create opportunities for productive dialogue in the classroom.

The basis for an answer to this question was put forward early in the last century by Dewey (1938) when he argued that, instead of being treated as passive receivers of information, students should be encouraged to be active inquirers about issues arising from their own experience. The adoption of such an orientation to curriculum is almost certain to generate occasions for dialogue, for when students actively engage in investigation of an issue that is of interest to them, they naturally want to share what they have discovered. And, since they often arrive at different proposed solutions, there is an evident need for dialogue. For this dialogic inquiry (Wells, 1999) to be productive, however, certain conditions have to be met:

- The class engages in a shared inquiry about an issue which is, or becomes, of interest to all participants.
- Individual students must have relevant ideas, opinions, or experiences that they want to share.
- Others must be willing to listen attentively and critically and be able to discuss whether, and in what ways, different contributions are relevant.
- The teacher must share control and the right to evaluate with students.

In sum, what is needed is the creation of a classroom community of inquiry in which everyone feels safe to make contributions in the knowledge that their ideas will be taken seriously and responded to accordingly. For L2 learners this is particularly important, for when they know that what they have to say is more important than the language forms in which they express it, they are willing to take risks and, as in the case of infant learners

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of a first language, to learn how to talk from participation in conversation in which both they and their more expert interlocutors are dialogically engaged. However, as Alexander (2006) notes, in the classroom such dialogical engagement needs to be deliberately nurtured by the teacher helping students to listen to and build on each other's ideas in order to co-construct coherent lines of thinking with specific purposes in view.

It is important to stress that an emphasis on dialogue arising from students' inquiries does not mean that academic language and the registers of the different disciplines are neglected, for not all the different activities that are called for by the teacher's pedagogical goals are open-ended. For instance, when introducing a new topic or concluding a lesson, the teacher may use a more monologic discourse genre such as a mini-lecture to prepare her or his students for the activities to follow or to recapitulate the main conclusions drawn; students also encounter these academic registers as they read and write about the topics being studied. However, by adopting an overall orientation to collaborative inquiry, the teacher ensures that all activities allow for dialogic interaction in which students both develop their understanding of key concepts and appropriate the language for talking about them.

An Example of Dialogic Inquiry

In this section, we provide an example of dialogic inquiry, which is taken from an action research study by the second author in collaboration with a fourth grade teacher in California who had a large number of English language learners (ELLs) (Ball & Wells, 2009). Over a four-year period, this research tracked the annual enactments of a 10-week science unit in which students competed to make and improve vehicles so that they would travel as far as possible when released down an inclined plane. The typical lesson involved three phases: recapping progress to date, leading to a decision about the focus for the next practical investigation; a period of making modifications to vehicles and testing their effects; and, finally, a discussion of what had been discovered.

Particularly important was the teacher's combination of hands-on activities and second-hand investigations, which involved the reading of texts that reported other people's research (Palincsar, Magnusson, Collins, & Cutter, 2001). In this class, this took the form of a research notebook kept by Cynthia Clarke—a fictitious university student—who had observed skateboarders traveling down ramps. Opening the project by reading the questions Cynthia had recorded in her notebook, the teacher immediately engaged the students' attention as, familiar with skateboarding, they vied in offering possible answers and these, in turn, prompted questions and possible solutions for their own investigations of cars on ramps. Thus, it can be said that, by building on ELLs' lived experiences outside school, the teacher was able to engage the students in learning key concepts in the physics of motion as they used them in dialogic interaction to advance their practical investigation and to engage in related literacy activities.

This engagement led students to come to understand and use some of the key scientific concepts involved, such as "force," "gravity," "friction," and "momentum," in trying to explain the ways in which their cars functioned. At the same time, the whole class discussions met the criteria, described earlier, for dialogic inquiry. Particularly important in creating this form of dialogue was the teacher's way of leading the discussion. He encouraged students to initiate sequences of talk by offering conjectures and tentative explanations, while his own contributions consisted almost equally of open-ended questions and informative comments that moved the discussion forward; when following up on students' answers, he typically showed "uptake" (Nystrand, 1997), either by asking for further relevant information or by himself expanding on what they had said.

Implications of Dialogic Inquiry for ELLs

Participation in dialogic interaction is particularly important for school-aged ELLs for a number of reasons. First, as a means of encountering the additional language in use, it provides not only "comprehensible input" (Krashen, 1985) but also opportunities to learn how to engage in the genres of the different academic disciplines so that the learners may become academically competent participants (Schleppegrell, 2004). Additionally, when they are encouraged to participate in the co-construction of curriculum knowledge, ELLs are likely to have opportunities to produce longer and more complex contributions, namely "comprehensible output" (Swain, 2005). At the same time, as they participate in the ongoing discussion, ELLs are more likely to encounter varied perspectives on the topic under discussion, expressed by students as well as the teacher. Such opportunities to listen to multiple viewpoints expose them to diverse language models (Warren, Ballenger, Ogonowski, Rosebery, & Hudicourt-Barnes, 2001). Thus, in using their language resources to contribute to the ongoing classroom interaction, they simultaneously learn the social and communicative strategies needed to access and communicate the academic content. Furthermore, when ELLs are given significant interactive roles, they become recognized as legitimate members of the classroom community (Haneda, 2008). In other words, since interaction determines the nature of the co-membership students experience within the group, the identities they develop as particular kinds of person within the classroom community depend on the interactive roles they take on or have assigned to them in the course of dialogic inquiry.

SEE ALSO: Bakhtin and Second Language Acquisition; Collaborative Language Learning; Integration of Language and Content Learning; Silence and Participation in the Language Classroom

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Dictionary Use

HILARY NESI

Introduction

Dictionaries are tools which people use to access information about words. Their purpose is to provide "user-adapted access to data" (Leroyer, 2009, p. 113), so they must contain information that is relevant to users, and they must also have an access system to enable that information to be retrieved. The choice of information to include in a dictionary reflects the dictionary maker's beliefs about dictionary users' wants and needs, and the design of the access system reflects the dictionary maker's beliefs about the dictionary users' purposes, circumstances, and skills. These beliefs are not always made clear to users, however, and studies of dictionary use often reveal tensions between users' beliefs about the types of dictionary they should use and the types of dictionary they actually prefer to use, as well as ignorance regarding the range of dictionary types and the various features of dictionary access systems.

"Users in general never need information in general" (Tarp, 2009, p. 46). The type of information that a user needs will always depend on the type of user and the type of situation in which the need occurs. Applied linguists should be aware of the different types of dictionary user and dictionary using situations in order to inform their practice as dictionary designers, dictionary reviewers, and teachers of dictionary skills.

Different Types of Users

Dictionary users vary in terms of their familiarity with the target language, their familiarity with the specific registers of that language, their dictionary-using skills and experiences, and their educational level and scientific and cultural knowledge.

Bilingual Dictionary Users

Users of dictionaries in their own mother tongue and users of dictionaries in a second or foreign language have different needs. Most surveys of language learners' dictionary use, for example Atkins & Varantola (1998), Komuro & Yamada (2000), and Wingate (2002), have found that learners prefer to use bilingual dictionaries. This is especially true of low proficiency learners, because they are less likely to know second language (L2) word forms and are less likely to be able to understand L2 entries. Some bilingual dictionaries provide very detailed information, however, suitable for advanced learners or professional translators. Language teachers often encourage learners to use monolingual dictionaries because they believe them to be of better quality and more conducive to language acquisition. Bilingual dictionaries are sometimes thought to foster the false impression that there are exact translation equivalents for all words in one's native and target language and some have been criticized for their failure to provide appropriate translations (e.g., by Laffling, 1991). User studies suggest that "bilingualized" dictionaries which provide an L2 definition and a first language (L1) translation may be more effective than either monolingual and bilingual dictionaries (Laufer & Kimmel, 1997), but such dictionaries do not yet exist in all the major languages and are rarely found in electronic form.

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Many electronic dictionaries offer the opportunity to search multiple monolingual, bilingual, general, and specialized dictionary sources simultaneously. The bilingual components in these compilation dictionaries often contain mistranslations, yet they are widely used in many countries. The publishers of the *Kingsoft PowerWord* translation tool for English and Chinese, for example, claim that it has over 20 million users. Highly reputable monolingual dictionaries such as the *Concise Oxford English Dictionary* and the *Oxford Advanced Learner's Dictionary* are included in some electronic dictionary compilations, particularly those for handheld devices (pocket electronic dictionaries). Their inclusion helps to sell the product, but there is evidence to suggest that users rarely consult them and tend to rely on the bilingual sources instead (Nesi & Boonmoh, 2009).

Monolingual Dictionary Users

Large multivolume monolingual dictionaries, such as the *Oxford English Dictionary*, the *Dictionnaire de l'Académie française* for French, and the *Diccionario de la Lengua Española de la Real Academia Española* for Spanish, contain a great deal of historical information for language scholars, but are not really intended for general everyday use. Surveys have found that nonspecialists tend to use L1 dictionaries to check the meanings, spellings, or hyphenations of less common words (Jackson, 1988; Ripfel, 1990), so smaller general-purpose dictionaries which focus on current usage generally suit them better. The desk-sized general purpose dictionary is commonly treated as a highly authoritative source of language information, and even when such dictionaries aim to be descriptive rather than prescriptive they are used to provide proof of the correctness of given forms and usage. Such dictionaries are also consulted for evidence of a word's existence in the language, for example whilst playing word games (Quirk, 1973).

Compared to monolingual general-purpose dictionaries, monolingual dictionaries for language learners provide more help with grammar, pronunciation, and usage, and use simpler defining language. The compilers assume that language learners need more information about how to use words correctly, so the dictionary space that might have been used to define rare words is used to treat a smaller number of common words more fully, including, for example, information about collocations, word frequency and register, and more extensive illustrative examples. This difference between native speaker and learner dictionaries was more marked in the past, because many of the innovative features that were first introduced to help language learners, such as usage notes, corpus-based examples, and writing guide sections, are gradually being included in mainstream L1 dictionaries, while the coverage of learners' dictionaries tends to increase with each new edition. Extended coverage is a common selling point for publishers of all types of dictionaries and reviewers commonly treat this as a mark of quality, to the exclusion of other considerations such as the purpose and design of the dictionary (Nielsen, 2009).

Some learners habitually use general-purpose monolingual dictionaries rather than learners' dictionaries (Nesi & Haill, 2002), either because of the greater coverage, or because they are unaware of the differences between the two dictionary types. Publishers tend to give little indication of the type of user their dictionaries are primarily intended for, because they want to appeal to as wide a market as possible. This can give rise to confusion, and online book-purchasing sites sometimes include customer reviews warning language learners against buying certain L1 dictionaries because they do not contain sufficient language support, for example regarding the pronunciation of common words.

Younger Dictionary Users

Further distinctions can be made between users of different ages. Compared to desk-sized general-purpose dictionaries, dictionaries for children are smaller in size, with larger fonts

and reduced coverage. Like learners' dictionaries they tend to make use of illustrations for words whose meanings can be visualized, but which require complex language to define. In some dictionaries for young children pictures replace definitions entirely, and these might appear to be equally suited to non-native speakers in the early stages of learning a foreign language. In fact, however, dictionaries for native-speaker children often illustrate the meaning of words that the children already know, at least partially. In this case the pictures may be too imprecise to be useful to language learners who have never encountered the words before.

Alternative Dictionary Designs

All kinds of dictionary users are sometimes faced with the problem that they know the meaning but not the form of the word they want to find. Thesauruses are designed to help users in this respect, by grouping words into searchable conceptual categories. Visual dictionaries such as those in the *Oxford-Duden Pictorial* dictionary series are also organized conceptually and are particularly useful as a means of explaining technical terms for objects that can be visualized. Another approach to the same problem is provided by learners' dictionaries, such as the *Longman Language Activator*, which help users with limited vocabularies by listing as headwords only the basic words that they are most likely to know and suggesting in the entries for these words alternative forms with more specific meanings. Electronic dictionaries which enable searches for words within entries can perform a similar function, by showing which words are defined using the basic words the user has in mind.

Different Types of User Situation

According to Tarp (2009), dictionary users' needs are always "punctual" in that they are concerned with filling an immediate knowledge gap. In this they differ from other types of learning material such as textbooks which provide information to be learnt as part of the systematic study of a given topic. It might be argued that users sometimes approach a dictionary in order to memorize words and their meanings, using it as a 'learning dictionary' rather than as a "consultation dictionary" (Hausmann, 1977, p. 144). Tarp points out, however, that when this happens dictionaries "lose their distinctive nature as reference works" (2008, p. 46).

Cognitive Situations

In "cognitive" situations (Tarp, 2008) the user simply wants to use a dictionary to gain new knowledge. This situation can occur in many different social contexts, with any kind of dictionary, although the search functions in electronic dictionaries seem to make it particularly easy for users to browse dictionary information and store their findings for later review. Many online dictionaries enable users to 'jump' from entry to entry by clicking on words in the definition, for example, and some also provide facilities for copying entries and creating and annotating lists of words.

Communicative Situations

Communicative situations, on the other hand, occur when dictionary use is motivated by problems with language reception (while reading or listening), or production (while writing or speaking). In these situations users want to find the information they need as quickly as possible, with as little disruption as possible to the communicative activity.

Opinions are divided as to whether it is fair to allow dictionaries in foreign language examinations. Some argue that dictionary access might encourage cheating, especially in the case of electronic dictionaries which offer multiple additional information sources. The student informants in studies by East (2008) had mixed feelings about the value of dictionary use in examinations. It made them feel more confident, but they also thought that it took up valuable time. Whether using a dictionary can help candidates gain higher marks probably depends on the nature of the examination and on the candidates' dictionary-using skills.

Several studies have found that users often misread dictionary information and end up with a false or incomplete notion of word meaning and use. A variety of reasons have been given for this, for example that they pick out familiar words from the definition without referring adequately to the context (Miller & Gildea, 1985), or they have difficulty selecting the correct subentry, because they choose the first in the list, or mistake the word class of the search word (Nesi & Haill, 2002; Nesi & Boonmoh, 2009).

Dictionary Choice

The user's choice of whether to use a large or small print dictionary, an online dictionary, or a pocket electronic dictionary should be influenced by the purpose of the consultation and the physical circumstances of dictionary use. An online dictionary may be the best choice whilst word-processing an essay, for example, but the same user may prefer a print dictionary when reading a novel for pleasure.

Traditionally monolingual dictionaries have been oriented toward receptive rather than productive use, so the earliest learners' dictionaries were very innovative in the way that they provided pronunciation, grammar and usage information for writers and speakers. L1 dictionaries are now beginning to include these features too (see above).

Print-dictionary consultation is too slow for conversational needs and only the smallest are easily portable, so in the past dictionaries were not widely used to support speaking and listening. Pocket electronic dictionaries are much more convenient in this respect and studies report on their use by students when listening to teachers in the classroom, often also noting the teachers' disapproval of this kind of use (Stirling, 2005). Pocket electronic dictionaries with audio functions can even help users take part in conversations, by pronouncing difficult words.

Typically, dictionary skills are thought of as the skills needed to look up words and interpret dictionary entries. However, there is a strong case for also teaching users about the range of dictionaries on offer, and encouraging them to critically evaluate the advantages and disadvantages of different dictionary choices.

SEE ALSO: Bilingual Lexicography; COBUILD Project; Lexicography Across Languages; Monolingual Lexicography; Web-Based Lexical Resources; Webster and American Lexicography

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Discourse Analysis and Conversation Analysis

MEREDITH MARRA

Discourse analysis (DA) is an umbrella term which refers to a range of qualitative frameworks used for the empirical examination of language in use. The many different approaches covered by the term have diverse theoretical underpinnings, have a variety of disciplinary origins, and make use of distinct methodologies and tools. Within applied linguistics, there are a range of approaches to the analysis of talk including conversation analysis (CA), critical discourse analysis, and interactional sociolinguistics, as discussed below. While CA is normally treated as belonging to a category distinct from other DA approaches because of its theoretical assumptions, traditions, and data sources (Antaki, Billig, Edwards, & Potter, 2003; Wooffitt, 2005), DA and CA share the common goal of attempting to understand and interpret social reality as it is discursively (re)produced by interactants in context.

Approaches to the analysis of discourse gained popularity in the 1980s and 1990s in line with a general "discursive turn" in the social sciences (see, e.g., Harré, 1995). Academics across a number of disciplines (including philosophy, anthropology, social psychology, communication studies, management, and linguistics) increasingly rejected the artificiality of experimental design in favor of a more contextualized approach to research. The people under investigation in this research were no longer referred to as *subjects* to be manipulated, but rather as *participants* who were co-producers of their interactional accomplishments. Fixed and given categories such as age, gender, and status were questioned, and emphasis was placed on the way in which these social factors are negotiated within interaction, recognizing the meanings that participants assign in talk as well as the linguistic and discursive mediation of social lives. Discourse is thus understood as "a form of collaborative social action" (Jaworski & Coupland, 1999, p. 49).

A useful way of identifying the scope of discourse is to consider a distinction made by James Paul Gee (1990) following Michel Foucault (e.g., 1990) and Pierre Bourdieu (e.g., 1991). In Gee's terms, Discourse (written with a capital "D," that is, big "D" discourse) is used to refer to distinctive and institutionalized ways of thinking and interacting which represent certain values and attitudes and which are also recognized to be representing these; for example, the discourse of rugby or political discourse. Little "d" discourse, by contrast, is the (sometimes mundane) talk and conversations in which we participate every day, that is, language in use. Discourse analysts can focus on either, or indeed both, of these.

In exploring discourse, researchers take coherent stretches of language beyond the word, phrase, or sentence (Schiffrin, 1994), "text," as their unit of analysis. What is understood as text differs according to the approach adopted, but it is typically naturally occurring data, either spoken or written. While the various types of DA can be sorted according to the text mode (spoken, written, or more recently multimodal; LeVine & Scollon, 2004; Norris & Jones, 2005), or the theoretical underpinnings (e.g., critical vs. functional approaches), others have categorized types of DA according to the disciplinary origins (e.g., McCarthy, Matthieson, & Slade, 2002) or whether the analyst takes a macro- or micro-focus in their approach (e.g., Stubbe et al., 2003). To explain some key differences, three common approaches are described in more detail below. In making this selection, my criterion is

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the treatment of context; context is relevant for each, but what constitutes context, and the ways in which the analyst makes use of context, differ.

Conversation Analysis

Within applied linguistics in particular "conversation(al) analysis" has sometimes been used as a somewhat woolly synonym for DA, where "conversations" were regarded as the focus of a more general qualitative approach to analysis. This practice has largely disappeared with the rising popularity of conversation analysis (CA) as an analytic approach within the field, representing a specific school of thought.

CA is the study of "talk-in-interaction," and analysts are interested in the sequential organization of discourse including both everyday and institutional talk (e.g., ten Have, 2007, Hutchby & Wooffitt, 2008). The approach has developed from pioneering work by the sociologist Harvey Sacks and his colleagues Emmanuel Schegloff and Gail Jefferson (e.g., Sacks, Schegloff, & Jefferson, 1974) and is particularly influenced by the work of Harvey Garfinkel in ethnomethodology. Analysts use extremely detailed transcripts to represent the audio and video recordings of talk which are the primary source of data for analysis. Making use of this detail, the analysis focuses on micro-level linguistic features.

Analysts who take spoken discourse as their focus require a way of representing this data. When transcribing, researchers use certain conventions to represent discourse features such as pauses and overlaps, or paralinguistic information such as loudness or speed. The transcription conventions they use can be dictated by the approach (e.g., Jefferson's conventions which are used in CA) or developed to meet the requirements of the analyst. In either case, transcription remains a representation of the original data and any decisions made in these representations can have an effect on analysis. Elinor Ochs (1992) noted the significance of this in her arguments regarding "transcription as theory"; the way you interpret text is influenced by those features you choose to represent, and different conventions highlight different aspects of conversations and potentially different realities.

As a simple example of the kind of analysis undertaken by those working in CA, consider Example 1 below, which has been transcribed using typical CA notation (Atkinson & Heritage, 1984, following Jefferson). The transcript records information about the relative noise of the setting (line 1), a lengthened consonant *s:* and short pause *(.)* (line 4), that *what* is spoken very quietly while *then* is emphasized (line 5), for example. These details are all relevant to the analysis offered by the approach, as discussed below.

Example 1

1		((noisy background))
2	Richard:	or it might be that Dee's already found them
3		but they have to finish
4		what Dee's done and fill in the gaps: (.)
5		°what° Dee's started. .hhh then the
6		baseline report itse::lf (.) ((paper
7		flipping))which I think is fairly much this
8		the s:tuff we've go::t (..) with my
9		annotations? °heh heh°
		(..)
10	Liam:	yeah.
11	Richard:	up to he::re.
12	Liam:	yeah.

In the case of CA, the participants' reality is at the forefront of any interpretation. Analysts following this school restrict their use of contextual information in their interpretations to that of local context, or the context made relevant by the participants. This follows the reasoning that if the context is significant to the participants, there will be evidence of this within the interaction. Analysis relies on information within the recordings that is verified with internal evidence, evidence which gains significance as the result of repeated research into related phenomena.

Space allows for a mere hint at the issues that would be of interest in this kind of analysis. One issue, for example, could be the long uninterrupted turn that Richard is able to take between lines 2 and 10 (even though there are several opportunities to change speaker, or transition relevance places, which are not taken up by Liam). From this together with other detailed analysis we might draw the conclusion that Richard has more status in this context, based on his ability to retain the floor, and we might use the way in which his turn is produced in constructing this argument, as evidenced by pausing, vowel lengthening, volume, laughter, and so forth.

In other approaches, however, we might use information about the relative hierarchical status of the two speakers as a starting point for analysis, interpreting this kind of language behavior as evidence of that status. The CA approach is bottom-up in contrast to a top-down approach which would use existing and sometimes unchallenged contextual information. The stance on the amount of extra information we bring to our analysis has been a particularly heated debate between CA and a contrasting approach, critical discourse analysis (see van Dijk, 1999, as an example of this debate).

Critical Discourse Analysis

Critical social research has many offshoots including critical applied linguistics (e.g., Pennycook, 2001). Critical discourse analysis (CDA), which is within this critical school, shares a common concern about social inequality, and analysts consider the relationship and interaction of power, discourse, and ideology. Its roots lie in work by Marx, Habermas, and particularly Foucault. In CDA, the analyst is interested in how power is (re)produced in social practice through the discourse structures of unremarkable interactions, and the approach is conceptualized as top-down with a focus on power and how power is used, including both explicit power and naturalized dominance (e.g., Fairclough, 1995; van Dijk, 2008; Wodak & Meyer, 2009).

The approach contrasts markedly with CA in at least two ways: the contextual information which is brought to the interpretation by the analyst, and the methodological approach. In interpreting Example 1, for example, a CDA analyst could take the relative status of the two speakers as a starting point and question Richard's ability to dominate, not only in terms of talk time but also in the ways in which he is summarizing a position on the *baseline report* (lines 6–9) and simultaneously suggesting that this is the position that Liam should take. In addition while the CA approach uses detailed transcription and has a well-established methodology, CDA is much more methodologically eclectic (raising questions of validity and reliability from those in CA) and far less likely to focus on such fine-grained linguistic detail in the interpretations. For CDA the goal is to challenge "taken-for-granted" dominance, and in doing so the analyst makes connections between three different levels: ideology, the context (interpreted widely), and the text itself. In the case of the example, a CDA approach might, for instance, question the nature of the ideological stance that organizations should be divided into hierarchies which assign asymmetrical power.

A middle ground in terms of attention to context can be found in interactional sociolinguistics.

Interactional Sociolinguistics

As the name suggests, interactional sociolinguistics (IS) developed within sociolinguistics, following the traditions of two highly influential scholars, sociologist Erving Goffman (1963, 1974) and linguistic anthropologist John Gumperz (1982a, 1982b). Interactional sociolinguistics aims to analyze discourse in its wider sociocultural context, and draws on the analysts' knowledge of the community and its norms in interpreting what is going on in an interaction, rather than taking the overtly political agenda of CDA or the micro-sequential focus of CA (Schiffrin, 1994, and Swann, 2000, provide useful overviews; see also Tannen, 2005, as an example).

In this framework language is viewed as social interaction and analysts take a speaker-oriented perspective when describing the discourse (following Goffman), identifying "contextualization cues" which allow participants to make situated inferences about likely interpretations of utterances (following Gumperz). The analyst uses information about the sociocultural context with the theoretical reasoning that this context allows the opportunity to more fully identify the contextual presuppositions that figure in hearers' inferences of speaker's meaning (Schiffrin, 1994, p. 105). In practice, this includes such features as turn taking (like CA) and content (like CDA), as well as pronoun use, discourse markers (e.g., *oh*, *okay*, *well*), pauses, hesitations, and paralinguistic behavior, among a much wider range of relevant features.

In the case of Example 1, the *or* at the beginning of line 2 could be interpreted as a signal that Richard is providing one of a range of possibilities for Liam. His attitude about the likelihood of the possibility is signaled through the use of hedges: *or it might be that* . . . Further cues are provided in line 5 with the emphasized <u>*then*</u>, which operates as an utterance-initial discourse marker serving to orient the hearer (and speaker) to the fact that Richard is listing the next step for how they should proceed.

This short description of three divergent methods for analyzing a stretch of discourse has suggested the analysis of discourse can provide a range of insights. Each approach offers a different focus, yet all provide useful information about language in use.

Discourse Analysis for the Classroom

The emergence of a communicative approach to language teaching was a catalyst in the rising popularity of the use of DA in applied linguistics (Adger, 2001). The investigation of the discourse of language teaching benefited from early interest in a framework developed by the Birmingham School. This framework was developed to provide a systematic way of investigating classroom talk, particularly the structure of classroom interaction. Sinclair and Coulthard (1975) identified a three-part exchange as a recurrent and significant pattern within classroom practice: the IRF (initiation—response—feedback) exchange. We see these three components in action in Example 2, which was recorded in an advanced English-language classroom.

Example 2

1	Teacher:	[to Fiona] yeah and you look very smart already
2		color combination's great
3		we call it funky

4		you know what funky is?
5	Christian:	funky [mispronouncing the vowel]
6	Teacher:	funky [looking at student, drilling] looking a little bit unusual
7	Christian:	cool
8	Teacher:	cool yeah like you <u>your</u> hat [laughs]
9		yeah gotta be cool at the races

In line 4 the teacher asks the class if they understand *what funky is* (I). Christian seeks clarification by echoing the word (line 5), which is interpreted by the teacher as a lack of knowledge. Once the meaning is explained to him the student provides a synonym, *cool*, which is accepted as correct in line 8 (F). The response component of the exchange (R) can thus be seen in both lines 5 and lines 7, indicating the flexibility of the components within the framework, and hinting at the complexity of these exchanges in practice.

The focus on structure is only one of many more areas of interest in more recent approaches to the discourse of the classroom. For example, we might also be interested in the way in which the teacher disseminates cultural knowledge about living in the community (the interaction occurs in response to a newspaper article and photo about upcoming horse races and the associated fashion event, which is an important day in the social calendar for the community), or the way in which the teacher builds rapport with the class through her use of laughter, compliments, and choice of lexical items. There are countless possibilities offered by a discursive approach.

Discourse Analysis and Research Design

DA remains a vast but one of the least defined areas in linguistics (Schiffrin, 1994), and offers many benefits in terms of interpreting the ways in which we discursively construct our social lives. The sketch of a handful of frameworks provided here illustrates that DA means different things to different people. Most significantly, however, it is important to recognize that DA is theoretically grounded. Whatever approach the analyst chooses, DA provides a systematic, rigorous, linguistically informed, theoretically based analysis of data collected following specific (clearly defined) procedures.

One of the perceived weaknesses of a qualitative approach according to those who favor experimental designs is the validity and reliability of the research; the analyst has the potential to bring a biased lens to the interpretation. Silverman (2010) notes that this kind of qualitative research must be able to withstand scrutiny, be replicated, and avoid "anecdotalism." Increasingly researchers are being challenged to provide a warrant for their interpretations (Cameron, 2009, and Swann, 2009, provide recent discussions of warranting). One way in which analysts justify their approach is triangulation. To enhance the credibility of the analysis researchers compare their findings with other sources, including other data sets, existing research, and attention to evidence provided by participants, whether elicited through deliberate attempts, or as found in local context.

The issue of the credibility of a qualitative approach recognizes that there are multiple readings of any text. This is one of the strengths of a discourse analytic approach since good practice allows access to the complexity of social interaction. In terms of application, recognizing the assumptions, weaknesses, and strengths of a certain approach is an important consideration. This is summed up in a quotation from Stubbe et al. (2003, p. 380) on the range of discourse analytic approaches currently in use in the field and the responsibility of the analyst for the choices they make:

> Each approach therefore provides a slightly different lens with which to examine the same interaction, highlighting different kinds of context and respective features. These are not necessarily in conflict with one another (though in some cases the analyses and/or the theoretical assumptions underlying them are difficult to reconcile); rather, they are complementary in many ways, with each approach capable of generating its own useful insights into what is going on in the interaction, with the proviso that the framework adopted needs to be a good match for the research questions being asked.

Making an appropriate selection from the range of DA approaches and carrying out systematic analysis within a theoretical frame allows for productive understandings of the social interactions in which we engage and offers significant application within linguistics.

SEE ALSO: Classroom Discourse; Context in the Analysis of Discourse and Interaction; Conversation Analysis and Ethnomethodology; Conversation Analysis and Transcription and Data; Coulthard, Malcolm; Critical Discourse Analysis; Discourse Versus discourse; Gee, James; Interactional Sociolinguistics as a Research Perspective; Multimodal Discourse Analysis; Ochs, Elinor; Qualitative Sociolinguistics Research; Schiffrin, Deborah; Sinclair, John; Tannen, Deborah; Transcription; Validity in Qualitative Research; van Dijk, Teun A.

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Discourse Analysis in Language Assessment

ANNE LAZARATON

When second language (L2) learners take a language test, they are really only interested in one outcome: their scores. Likewise, language testers have been preoccupied with ensuring that these scores, which are the product of the assessment, are reliable and valid. In L2 performance assessment (where L2 learners produce speech or writing for assessment), the primary challenge is to ensure consistent ratings of language. Much work in oral language assessment (the focus of this entry) has been (and continues to be) devoted to ensuring both *inter-rater reliability* (the degree to which two or more raters agree on scores) and *intra-rater reliability* (or the degree to which one rater's scores are consistent across language samples and over time). In more recent years, issues of test *validity* (i.e., the process of making inferences from test results; see Messick, 1989; Moss, 1994) have emerged as a central concern for the language assessment community. This is particularly true for L2 speaking tests, where the interests of some scholars have shifted from a focus on rating consistency to the process of speaking assessment itself. That is, what typifies the language that interlocutors produce in speaking tests? And how can descriptions of that language feed into reliable and valid rating of test talk? *Discourse analysis* has proven to be a very promising method for discovering answers to these questions.

Discourse analysis (or DA) traces it roots to various disciplines—anthropology, linguistics, philosophy, psychology, and sociology, to name a few. Generally speaking, discourse analysis as it is practiced in applied linguistics has several defining features:

- An emphasis on *authentic* language data—authentic in the sense that it is produced spontaneously rather than elicited experimentally.
- Attention to the importance of *context*—the setting in which the discourse occurs, the participants who produce the discourse, and the roles, identities, and relationships that are involved in these settings and with these participants.
- Exploration of the interaction between and among speakers rather than of monologic talk. An important concept in this regard is *co-construction*, in which constructs such as actions, activities, and identities are seen as a product of interaction, rather than static entities that characterize an individual and his or her behavior. The significance of this idea for understanding talk-in-interaction is not news today, but for many years linguists, second language acquisition researchers, and language testers analyzed and assessed spoken language as if it were solely the cognitive product of a single speaker, with no important influence of those with whom the speaker is interacting (see McNamara, 1997). This fact accounts for the language tester-as-discourse analyst's interest in *face-to-face* speaking tests, where test takers speak with an interviewer or other test takers, or both, rather than in *computer-mediated* assessments, where test takers produce recorded, monologic talk in response to test prompts delivered via a computer (as in, most notably, the speaking section of the new Internet-based TOEFL test; www.toefl.org). Although some research has been undertaken to understand the test talk of the latter type (e.g., Lazaraton & Wagner, 1996), the most productive work has zeroed in on test discourse when interlocutors are co-present.

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- A careful transcription of discourse data, using any of a number of conventional transcription systems (see Swann, 2010).
- A rich, deep analysis is the usual goal of this approach, so concerns about obtaining the "proper" sample size and producing generalizable findings are not of primary importance. Related to this is the fact that quantification of discourse data is not a hallmark of the approach.

With this background in mind, we can consider why discourse analysis has been adopted as a viable means of understanding L2 test talk. A foundational article by van Lier (1989) questioned the assumption that speaking tests mirror natural conversation and called for a close analysis of the oral language produced in these assessments to determine what sort of "interactional event" it constitutes. That is, claims about the conversational nature of face-to-face oral proficiency tests and, thus, their validity as measures of L2 language ability, had not at that point been empirically verified; his paper marked a turning point for many scholars in the field.

Around the same time, Shohamy (1991), in a review of extant literature on DA in language assessment, further advanced van Lier's call for empirical research on the process of speaking test assessment. Specifically, she noted that speaking tests had been doing an adequate job of representing different discourse *types* (e.g., interviews, discussions, reports), but inadequate attention had been paid to test talk discourse *features* and how they are operationalized in rating scales. Her point was that the construction, implementation, and validation of rating scales for speaking test talk (i.e., marking schemes for features like pronunciation, interactive communication, language use, lexical resource, etc.) should be based on the *actual* linguistic features present in *actual* speaking tests rather than what experts hypothesize the features should be. This challenge has been taken up in studies that have looked at the relationship between both features of test discourse and the operationalization of rating scales, and their ultimate impact on speaking test scores. And discourse analysis, with its emphasis on process, context, co-construction, and careful analysis of transcribed language data, has been adopted as a primary analytic approach for investigating test talk.

Although space limitations preclude a comprehensive survey of this literature (but see the suggested readings list), we now turn to a summary of several foundational studies that have attempted to answer two questions: "What type of interactional event is a speaking test?" and "What is the relationship between the discourse produced in speaking tests and the rating scales used to evaluate the language produced?" More often than not, scholars who are interested in L2 test discourse attempt to answer both questions to some degree—which makes perfect sense because the two are intrinsically related. We take up the former question first.

Perhaps the most salient findings about the discourse produced in face-to-face oral language assessment relate to the structure of speaking tests as a form of "institutional talk" (see Drew & Heritage, 1992) that is demonstratively distinct from conversation. *Conversation analysis*, a discourse analytic approach that comes primarily out of sociology, has been fruitfully employed in these studies by directing research focus to the actions undertaken in the turn-by-turn construction of test talk. For example, research has confirmed that the discourse produced in speaking tests has an identifiable structure, one which has much more in common with the traditional interview than with spontaneous conversation. One rather obvious aspect of face-to-face speaking tests is that their structure is almost always dictated by an interviewer protocol or agenda (also known as an interlocutor frame). What is intriguing is the way that these agendas are more than physical documents; they are co-constructed in, by, and through the talk that takes place. Lazaraton, in her conversation-analytic research on ESL course placement interviews (1991), concluded

that "the encounters share features with conversation, but they are still characteristically instances of interviews, and interviews of a distinctive kind, for the participants" (p. 226; see also Johnson & Tyler, 1998 on this point).

Rather than analyzing the speaking test macrostructure as outlined above, a micro-interactional focus on interviewer behavior has also been revealing. So, when interviewers conduct and take part in a speaking test, a number of studies have found that interviewers routinely "accommodate" to the test taker(s) involved in predictable and definable ways. For example, Lazaraton's (1996) conversation-analytic study of 60 interviews from the Cambridge Assessment of Spoken English (CASE) pointed to CASE interviewers who routinely rephrased questions that test takers found difficult, supplied vocabulary, and completed, repeated, corrected, or repeated and corrected test-taker responses. There are two ways to view these results. On the one hand, this interviewer behavior seems to share some of the documented features of L1 (first language) speaker talk when conversing with L2 speakers in some L1–L2 conversation. As such, these findings imply that test talk mirrors more natural interaction, bolstering claims about test validity. On the other, the results were seen as problematic by the CASE test developers, who had empirical evidence that their interviewers modified their test talk in ways that potentially threaten the reliability of the test and scores derived from them, if the interviewers do not exhibit the same behaviors with different test takers. As a result, Cambridge ESOL, the producer of the CASE examination, undertook the development of more detailed interlocutor frames, implemented oral examiner checklists, and tightened up training and monitoring procedures for all Cambridge ESOL speaking test examiners and raters.

A more recent inquiry on this topic is Brown's (2003) case study of interviewer variation and its impact on test-taker performance and ultimately, raters' perceptions of candidate ability. Her discourse analysis of test talk in the speaking module of IELTS (the International English Language Testing System; www.ielts.org) by two interviewers who interacted with the same test taker at different times indicated how interviewer behavior may be a source of variability in the test. Retrospective verbal reports by the raters illuminated their perspectives on the test interactions; using discourse analysis and these reports, Brown was able to link interviewer behavior with different impressions (and ratings) of test-taker proficiency. As alluded to earlier, Brown also notes that

> Whilst claims to validity for conversational oral interviews as measures of nontest conversational skills are based largely on the unpredictable or impromptu nature of the test interaction, ironically this very feature is also likely to lead to a lack of standardization across interviews, and hence potential unfairness. (p. 1)

She calls for more work on defining the construct being measured in speaking tests, as well as a greater emphasis on careful training of interviewers, in addition to the ongoing efforts to train raters.

A similar study conducted by Ross (2007) investigated inter-interviewer variation, in this case, in the oral proficiency interview (OPI). Here, the same test taker took part in two OPIs, three months apart, with two different interlocutors. Ross's microanalysis of the talk produced by the interlocutors and the candidate suggests that, although the test taker appeared to "backslide" in the second interview, different interviewer styles do not necessarily lead to different ratings of oral proficiency.

Lest one be left with the impression that it is only speaking test *interviewers* whose behavior may be implicated in test scores, the behavior of a peer or partner in speaking tests that employ a *paired format* may also impact test ratings. Just as second language classrooms now rely on pair and group work in implementing class activities, language testers have also explored the utility of moving away from interactions directed by the

interviewer to ones in which the test takers talk to each other. As a result, our conceptualizations of "the interlocutor effect" in L2 test talk have necessarily expanded. Much more is now known about the paired format in speaking tests (as summarized by Taylor & Wigglesworth, 2009); this topic represents an additional strand of current research in speaking test assessment. That is, although characteristics such as the gender, cultural/L1 background, and language proficiency of one's interlocutor likely affects the *discourse* produced with a partner, the question remains whether this interlocutor effect influences *scores* on the test (see Lazaraton & Davis, 2008).

A recent endeavor to explore issues surrounding paired speaking tests is reported by Galaczi (2008), whose conversation-analytic study of 30 dyads audiotaped during a collaborative task in the FCE speaking test (First Certificate in English; www.cambridgeesol.org) focused on "fundamental conversation management concepts" as well as "global patterns of interaction" (p. 89) as a means to empirically construct speaking test rating scales. Her analysis of the discourse produced in peer–peer test talk pointed to three general forms of interaction between participants: (a) "collaborative interaction," marked by topic expansions, a balanced amount of talk, and listener support and attention; (b) "parallel," in which participants engaged in "'solo' vs. 'solo' interaction" (p. 102), producing equal amounts of talk, but advancing their own separate ideas, with only minimal acknowledgement of their partner's contribution; and (c) "asymmetric" where one participant was dominant and the other passive and the amount of talk produced was unequal. Her discourse evidence of these three interactional patterns was used to understand the relationship between these interactional styles and actual scores on the "Interactive Communication" subscale for rating FCE speaking tests. She ascertained that the descriptors at the higher end of the five-point scale (e.g., mentions of topic extension, follow-up questions), characterized the collaborative style of interaction, whereas lower-end descriptors were consistent with the parallel style. This aspect of her analysis suggests one avenue for applying discourse analytic research findings to speaking test rating scale construction and validation, and various rating scale revision projects have been based, in part, on the sorts of discourse analyses as described in this entry (see, for example, Galaczi & ffrench, 2007).

Through these and other studies regarding speaking assessment, discourse analysis has gained prominence as an approach to investigate issues such as performance, task type, rating, and validity. As a highly intensive process, discourse analysis provides a systematic method to gain detailed understanding of language use and context as well as considering their connection to the language involved in assessment.

SEE ALSO: Assessment of Speaking; Discourse Analysis and Conversation Analysis; Paired and Group Oral Assessment; Qualitative Research in Language Assessment; Rating Oral Language; Validation of Language Assessments

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Discourse Analysis in Literacy Research

REBECCA ROGERS AND MÓNICA PINI

Discourse Analysis in Literacy Research

Discourse analysis is a transdisciplinary set of theories and methods that have been widely used in literacy research. Over the past decade, there have been many empirical studies, edited books, essays, and reviews devoted to the areas of discourse studies generally and in literacy research in particular (e.g., Gee, 2002a; Collins & Blot, 2003; Burns & Morrell, 2005; Rex, et al., 2010). This is so because of the commensurability that exists between literacy research and discourse studies. Both are traditions that address language as a social semiotic practice that both constructs and represents the social world. Further, both address problems through a range of theoretical perspectives. Many of the problems that are addressed, particularly in a globalized world system, have to do with power and inequality. Discourse studies provide the tools for addressing the complexity of movement across literacy sites and practices in an increasingly global and digital world.

The study of discourse has a very long history and can be traced to language philosophers and social theorists such as Bakhtin (1981), DuBois (1903/1990), Pecheux (1975), and Wittgenstein (1953). Linguistic analysis in literacy research grew out of the work of sociolinguistics, linguistic anthropology, and cultural and media studies. Schools, classrooms, and literacy practices were looked to as sites for studying not only the microdimensions of classroom talk but also the ways in which social structures are reproduced at macrolevels. Discourse analysis in literacy research has been conducted on many different fronts and across the age span with a full range of research questions and approaches. Rex, et al.'s (2010) literature review, in particular, is a very good, comprehensive paper that includes over 300 studies in the field of literacy research that use discourse analysis.

Discourse analysis has been used within many areas in literacy studies—from the preparation of literacy teachers and professional development, to literacy policies and politics, to early literacy and academic literacies. It is important to note that we include some Latin American and Spanish authors who are developing work around these topics. In Latin America, discourse studies in relation to literacy are mostly framed in the field of communication or popular education (particularly influenced by the work of Paulo Freire), areas that are rich in practice but not very well developed in scholarship. Well known in Latin America is the work by Francisco Gutiérrez and Daniel Prieto Castillo, and more recently that by Jorge Huergo and Maria Belén Fernández (Gutiérrez & Prieto Castillo, 1991; Prieto Castillo & Van de Pol, 2006).

As one might expect, there is a diversity of theoretical and methodological perspectives across the studies. Indeed, we find a full range of analytic approaches including: systemic functional linguistics, conversation analysis, cognitive-linguistic approaches to metaphor, text linguistics, social semiotics, among others. Common across these studies is that discourse analysis is used to describe, interpret, and explain the relationships between texts, social practices, and society-wide processes. In general, these traditions share the assumption that because language is a social practice and because not all social practices are created and treated equally, all analyses of language are inherently critical (Gee, 2002b; Blommaert, 2005). In this entry, rather than recount the substantial amount of work that

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has been done in this area, we address three issues germane to approaches to discourse analysis in literacy studies and provide an example of a literacy study that has advanced our understanding of each concept.

Moving Beyond Printed and Spoken Texts

Discourse analysis has been critiqued for its emphasis on written and spoken texts as the source of meaning, often at the neglect of meanings made in other modalities (Street, 1984; Linell, 2007). In the field of literacy research, despite significant advances in social semiotic theory (Hodge & Kress, 1988), discourse analysis remained—until the end of the 20th century—primarily focused on written and spoken texts. However, the advance in multimodal pedagogies sparked the development of multimodal discourse theories and methods that could be used to examine multimodal designs. Important here is the development of a tradition called New Literacy Studies (New London Group, 1996) which recognized the many ways in which people use literacies in their daily lives from grassroots literacies, technoliteracies and racial literacies to media literacies, scientific literacies and transglobal literacies. From an ethnographic standpoint, this work raised questions about what literacy uses meant to its users, in context. Thus, claims were made that differences in literacy practices were not deficiencies but rather, differences in standpoints and culture. Multimodal pedagogies—such as those proposed by the New London Group—work consciously across semiotic modes to unleash creativity and reshape knowledge and learning. Of critical importance is that people act as designers of meaning and the recognition that literacy is not solely a linguistic accomplishment.

Related to this, and an area that continues to expand and deepen, is literacy research in global times. In part, the multimodal turn in practice and research has been a result of the increasing amount of digital, electronic, and globalized texts that structure lives. Indeed, the Internet, World Wide Web, and immigration/migration have accelerated the rate to which theories of multimodality are salient in today's educational climate (Blommaert, 2008). Taking an expansive view of digital literacies—one that includes popular cultural practices, everyday practices like workplace blogging, online shopping, and participation in online network sites—leads to the need for new and creative ways of examining such practices. As a result, a growing number of researchers are using discourse analysis to inquire into how meanings are made across literacy events and practices in a contemporary, globalized, and increasingly digital world and to study the quickly growing field of digital literacies. As a result of this semiotic turn in literacy studies, discourse analysis has been central in the development of New Literacy Studies and, in turn, the development of new multimodal pedagogies has sparked the development of new theories and methods of discourse analysis to examine such practices.

Multimodal Social Semiotics: An Example

Karen Wohlwend's research (2011) uses Kressian multimodal analysis and theories of social semiosis to understand how actions are made meaningful and social *in practice* rather than in representation. Taking up the sounds, words, images, and actions of children during a reading lesson in a kindergarten classroom, she examines instances of classroom activity to see how modes shape children's literacy learning and participation (Wohlwend, 2011). Wohlwend especially relies upon the mode of gaze as a way of revealing which modes were most apparent in a classroom literacy event and how the foregrounding of particular modes enforced a set of power relations (teacher/student; reader/nonreader) legitimated by prevailing educational discourses. Mapping the interplay of modes uncovers power

relations and social effects visible at the level of modes. Wohlwend argues that a clear understanding of tensions across multiple perspectives could help teachers to see discourses as resources and to act strategically with greater awareness. Multimodal analysis provides a way for early childhood teachers to see how the tangible everyday aspects of familiar classroom activity matter.

Considering the Multiethnic Roots of Discourse Theories

Discourse analysis in literacy research has been conducted across the globe, drawing on many different theories and models of discourse and communication. Despite this diversity, discourse analysis, as a field, has historically been influenced and developed by theories and methods of the North-Atlantic (Blommaert, 2005). This has been exacerbated by the predominance of English-based journals, research universities, and conferences that has shaped and continues to shape the field. Because of the influence of North-Atlantic epicenter of scholarship in discourse studies, theories of discourse tend to reflect monocultural values and perspectives. There is growing discontent with epistemological commitments of critically oriented approaches to discourse analysis, a set of theories and methods rooted in Western epistemologies, and its commensurability with understanding multicultural discourses (Dissanayake, 2003; Shi-xu, 2006, 2009; Ladson-Billings, 2003). This should be taken as a particular concern for field of literacy research given—as Rex et al. (2010) point out—so much of the scholarship in this area is concerned with issues of access, equity, and diversity.

There are two areas in which theories of discourse in literacy research might be rethought to be inclusive of multiethnic perspectives. The first is in the area of binarism and the dualism of thought which assumes an "either–or" nature of things (Shi-xu, 2009). The consequence of seeing the world in terms of binaries is the tendency to value causal relations and coherence instead of complexity and diversity. The binaries which structure Western thought (i.e. racist/antiracist; privileged/oppressed; literate/illiterate; able/disabled) neglect the dialectical spaces of social problems and solutions (Ladson-Billings, 2003; Shi-xu, 2009). In the literacy field, discourse analysis has proven very useful for problematizing the cultural models associated with binary modes of thought. However, this problematizing has been conducted within a Western epistemological frame. Further, less attention has been given to the ways in which dialectics of thought are discursively managed and mediated across people and practices (Lee, 2006).

Second, the well-known Western logic of thought "I think therefore I am" stands in opposition to the African-centered concept of "I am because we are" (Ladson-Billings, 2003). It has been well documented that Western communication, rooted in Cartesian structures, is constructed around the notion of the individual as the final arbiter of meaning. That is, Western epistemologies are focused on individualism, the primacy of the speaker's goals and a separation of mind and body. Shi-xu (2009) argues that theoretically, critically oriented forms of discourse analysis proceed from a view of language that views the individual speaker's goals and intentions as paramount. This view of communication stands in opposition to Eastern theories of communication (Shunqing, 2008; Shi-xu, 2009; Feng, 2009) where the intention is to be oriented toward the listener, the inter-subjective nature of the exchange and the focus on the collective, with the individual as part of the group. Examples of cultural, gender, and class specific discursive strategies and patterns are abundant in literacy studies. However, less work has explored the cultural logic of the epistemological and ontological structures underlying theories of discourse and associated forms of discourse analysis.

One response in the literacy field has been an increasing diversity of theoretical perspectives and methodological approaches that acknowledge—if not respond to—the need for

multiethnic models of discourse. For instance, discourse analysis in literacy research is being combined with perspectives such as: postcolonial, critical race, whiteness studies, feminist, sociocultural, or cultural studies. Such theories help researchers to rethink monocultural theories of discourse and show how the analytic procedures might be tailored to specific research questions and populations. What is needed, however, is what Dissanayake (2003) refers to as "creative and critical engagements with Western theories" (p. 25) that includes close scrutiny of Western theories of discourse—choice and intention or identity, for instance, in terms of multiethnic theories of communication.

Multiethnic Theories of Discourse: An Example

Medina's (2010) study of immigrant children's bilingual discussion of literature in an elementary school classroom in the United States provides a very good example of attending to multiethnic theories of discourse. Medina uses three of Gee's (2002b) seven building tasks (identity, world building, and connections) and ties them theoretically to theories of translocal cultural movement from cultural studies and postcolonial studies. She demonstrates how the students' interpretive processes in two literacy events—a discussion of a book and a storytelling event—transcended nation, history, and culture and yet, were also deeply rooted in place, time and culture. For instance, the narratives of "El coyote" and the legend of "La llorona" are tales that are widely told in Latin America and have multiple versions and meanings. The children in the group—from El Salvador and Mexico—drew on their cultural resources, personal experiences, transmedia connections, and imaginations to make meaning individually and collectively. Medina attends to how space and time are evoked in the discussion through content and function words.

She shows how the students drew on the discourses of time, place, and action and how meanings are expressed through certain discursive practices. For instance, Medina shows how Francisco shifted in his use of the local "I" to a global "we" in the discussion to open up the experience of border crossing to a collective experience (p. 51). Or, another example of discursive practices was how Juan explained "el coyote dicen que tiene tres pelos del Diablo" (The coyote it is said has three hairs of the devil). Medina writes,

> He constructed his comments using common linguistic devices of how oral traditions and popular stories are passed along and transformed. Juan's use of an implicit pronoun in Spanish in relation to the verb "dicen" (it is said that) suggests that some people somewhere say that the coyote has three hairs of the devil, but at this point the "they" is impersonal . . . this use of linguistic features shows the creation of a space for response that incorporates oral traditions. (p. 52)

Particularly useful about her scholarship is her careful description of her discourse analysis procedures and the way her theories of discourse, informed by translocality, provide insight into its shaping effects on identity and community.

Reconstructive Forms of Discourse Analysis

Most scholars of critically oriented discourse analysis have concerned themselves with a critique of power, domination, and oppression. By way of contrast, a number of scholars are calling for a focus on the relationship between literacy and productive uses of power (Luke, 2004; Martin, 2004; Scollon & Scollon, 2004; Janks, 2005). Luke (2004) points out the potential for what he calls "reconstructive" versions of discourse analysis that focus on how liberation, solidarity, and community are constructed. Martin (2004) refers to this

approach as "positive discourse analysis" which can provide a complementary focus on "how people get together and make room for themselves in the world—in ways that redistribute power without necessarily struggling against it" (p. 183).

In literacy research, much scholarship has examined the ways that literacy practices reproduce racist, sexist, classist social relations. Race in literacy research, for example, has most often been discussed in terms of discriminatory practices and policies. However, a positive discourse analysis would examine the discursive composition of antiracist practices and policies, those that create an alternative to dominant discourses in society. Further, there exists scholarship that has illustrated how schools might open up opportunities to non-mainstream students through documenting multiple literacies, ways of knowing, outside of school learning competence (e.g., Richardson, 2003). This has provided evidence for viewing these literacies as powerful practices. Yet we know less about the discursive contours of multimodal, multicultural, antiracist, socially just classrooms, curricula, and literacy policies. There is quite a bit of room in the area of positive discourse analysis in literacy research.

Positive Discourse Analysis: An Example

Margaret Price (2007) examined the academic literacies surrounding conferences and how they represent people with disabilities. She argues that conferences are often among the least accessible spaces that people with disabilities encounter since they combine routine inaccessibility of public spaces with conference participants' lack of familiarity with the space. She asks: How does each document imagine the disabled conference participant? She analyzed the verbal and visual choices made in the documents produced by eight professional organizations that explain its policy on accessibility surrounding the academic conference. Price explains her orientation toward positive discourse analysis in this way:

> In selecting the corpus, I deliberately attempted to identify leaders in the area of academic statements on disability policy. My aim is to ask what these statements are doing well, and how they might do it better, rather than to pooh-pooh work that, as I know from experience, involves a great deal of time and effort. This study attempts a "reconstructive" form of CDA through which I make three critical moves: identify the statements' actions to improve accessibility; provide suggestions for their potential revision, as well as for the writing of the new statements; and finally, ask what problems might inhere in kairotic professional spaces that these statements cannot address. (p. 6)

Important to note is Price's attention to organizations that have a record of sensitivity toward issues of disability, particularly in their "academic statements on disability policy" versus attending to those who do not show leadership in this area. Her findings draw attention to the justification of the documents, the relationships between authorship and audience, and how the documents enact accessibility through their design (e.g., layout, format, modality) and how they imagine their policies in practice at the conference. A few examples will provide insight into Price's use of reconstructive analysis.

About the authorship and audience of the document, Price analyzes an example from an APA document that requests readers to make contact with conference officials regarding disabilities, regardless of whether they themselves have a disability. This implies that everyone should be concerned with issues of access for people with disabilities. She also points out that the reader is offered a multimodal invitation to contact the office of disability issues, important to consider in light of accessibility.

In another example, Price analyzes each policy's web accessibility through the "links" between documents. Such linking, Price argues, provides insight into the kinds of beliefs,

relationships, and priorities that are established in the documents. She demonstrates how on the "General Information" page of the Pediatric Academic Societies' Annual Meeting, the links titled "Attendees with Disabilities" are equal in size to the links called "Abstracts." Price concludes, "policy regarding disability access takes on a value at least approaching, if not equal to, the value awarded to abstracts" (p. 17).

The results of the discourse analysis led to Price posing eight generative questions that she intends for professional organizations to consider in light of their policies on accessibility. A few examples are: "What audiences are imagined, addressed, and invoked?" and "What impairments or specific accommodations are mentioned, what kinds of disabilities do these account for, and which are left out?"

Closing Thoughts

The field of literacy research offers unique opportunities for developing discourse studies. As we have addressed the issues of multimodality, multiethnic theories of discourse, and positive discourse analysis, we pointed to examples of research that we think are particularly clear and transparent in their methodological approaches and procedures. The areas that we have reviewed above also pose continuing challenges for literacy researchers. First, it is often difficult for literacy researchers to step outside of discourses of education and schooling that they know well. This points to the need for increased reflexivity and interdisciplinarity which may shed contrast on otherwise taken-for-granted concepts. Second, as a field, we need to keep developing frameworks for global networks of knowledge, power, and discourses. Further, perhaps an obvious point is that literacy researchers may very well find kindred spirits in their study of discourse practices with folks outside of literacy studies and even outside of the academy. Novelists, journalists, activists, and therapists all work with discourse as part of their daily work and are interested in the effects language and literacy practices have on individuals and the social world. We are very interested in the ways in which people engage with discourse analysis in "literacy work" outside of the academy. Another productive direction might be a meta-analysis of the findings of discourse analysis within the field of literacy studies. The past ten years has resulted in many studies but we do not know the significance of these studies taken together. Also related is a need to examine the findings across fields such as political science, media, and law. This could lead to identifying common trends that might signal future directions for theory, practice, and social action.

SEE ALSO: Critical Analysis of Discourse in Educational Settings; Critical Discourse Analysis; Discourse Analysis in Literacy Research

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Discourse and Cognition

LAURA JENKINS AND JONATHAN POTTER

Cognition has been dealt with in discourse research in two distinct ways. First, building on cognitive psychology, but typically oriented to a critical agenda, cognition is seen as an underlying substrate of entities, processes, and mechanisms all of which have consequences for a person's conduct. In this view discourse and cognition are treated as distinct but related realms. Second, the tradition of ethnomethodology, conversation analysis (CA), and discursive psychology (DP) focuses on psychological matters as publicly available, demonstrable, and fitted to ongoing practices. In this view cognition is a practical participants' concern. Instead of a separate domain of discourse and cognition, psychological, cognitive, and emotional matters are built in interaction.

Discourse and Cognition as Separate but Interrelated Realms

Discourse and cognition are treated as distinct but linked entities within critical discourse analysis (CDA). The different theoretical and methodological approaches under the umbrella of CDA focus their analysis on the role of discourse in reproducing and challenging the social power (access to resources) of institutions and groups (Wodak, 1999). Analysis has typically focused on political speeches, policy documents, textbooks, radio shows, and newspaper articles. CDA attempts to identify the discursive structures, strategic properties and persuasive rhetoric that contribute to maintaining social inequality by exerting control over other groups, limiting their freedom or influencing their minds (Van Dijk, 1993). This latter form of "cognitive" power is enacted by strategies of persuasion and manipulation through text and talk.

The work of CDA seeks to explain how broader notions of power, dominance, and social inequality link with communicative interaction, text, and talk. It is the role of cognition that some CDA researchers argue is the necessary connector explaining the relationship between society and language (Van Dijk, 1993; Wodak, 2006). Mental models which access information already stored in the memory also get updated according to feedback in a recursive process. This view of the cognitive dimension is used to explain both text production and text comprehension (Wodak, 2006). Cognitive objects such as knowledge, beliefs, and attitudes are taken to drive the person's subjective interpretation of the social environment. Some of these objects may be socially shared but nevertheless individually and cognitively represented. This allows meanings to be widely accessible to groups of people and provides an account for the coordination of social action.

Wodak (2006) has developed an analysis of the rise of anti-Semitic discourse in the public and private sphere in Austria. Her approach is grounded in the notion that people hold cognitive attributes such as attitudes, stereotypes, and prejudices about specific social groups. She highlights the historical roots of prejudiced beliefs and the development of anti-Semitic stereotypes in political discourses, debates, and commonsense knowledge. Terms with explicit racial meanings have been recontextualized and turned into easily understandable insinuations with explicit prejudiced meanings based on the collective knowledge of the audience. So for example "East coast," which once referred to powerful Jewish lobbies in New York, was connected in Austrian discourses without this frame of

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reference, developing its own metaphorical structure. Perceptions, beliefs, and opinions about real or imagined communities are treated in CDA as shaped by such metaphors and narratives, which in turn guide a person's commonsense knowledge and decision making. Within this framework of understanding cognition, meanings produced in public and political discourses are tied to specific (in this case anti-Semitic) ideologies, and can become widely accessible and integrated into the cognitive models held by individuals. In this way metaphors, stories, and fantasies are stored cognitively and inform discourse practices, and thus can be passed down from generation to generation.

In seeking to examine how discourses express and legitimize inequality and dominance, and how the discourse is received in a persuasive manner, CDA casts the individual as possessing an internal mental organization that both produces and is informed by discourse. Cognition is described as an empirical bridge between social reality and discourse.

Puzzles and Possibilities: What Is the Status of the Cognitive?

CDA casts cognitive objects such as knowledge, beliefs, and attitudes as both shaped by and generators of discourse. The approach treats mind as a live, structured, causal entity. Unobservable mental representations of reality are taken to become visible by their consequences in discourse (Van Dijk, 2006). Cognitive states are used by people to explain others' behavior, and CDA endorses this presupposed existence of cognitive objects and theorizes how they inform discourse.

Cognition is treated as evidenced by patterns of discourse. There are at least two key problems with inferences of this kind. First, if the existence of cognitive objects is based on their presence in discourse, discourses that generate notions of cognitive states need to stand up to grammatical scrutiny. However, such discourses do not always accord with a cognitive theory. Through a grammatical analysis of discourse, concepts of mind and cognition can be dismantled in a way that demonstrates that the mental state ideas in discourse are mistaken. If someone says "I think in my head" this may be taken to show that the speaker possesses a "mind" in which ongoing cognitive processes generate thoughts that are not disclosed. However, critics such as Coulter (1999) note that "I" refers to the speaker as a person, the speaker is not located in his or her own head, and thus his or her thinking is not done there but rather in other locations, such as an office, apartment, or on the street. In this way the strong argument here is that the nonexistence of the mind can be proven conceptually.

In addition, discourse about the mind has so far been referred to as disembedded assertions that theorize cognition. Wittgenstein (2001) held that the meaning of an expression (for example about the mind) is not the object it represents; rather, meaning is determined according to its use in the practice of speaking a language. Confusions can arise when discourse analysis constructs speakers as in possession of a mind while ignoring the practices they are performing through their talk (Potter & Edwards, 2003).

Discourse Research as an Alternative Way to Analyze Cognition

CDA considers discourse and cognition as separate entities that are related or entwined in a way that would mean a person's cognitive processes could be accessed through language. This is one way in which cognitive assessment takes place in patients in cases of suspected neurological damage. In order to introduce an alternative route to cognitive analysis based on empirically grounded observations about interaction, we will look at a contrast between a classical inquiry into cognitive processing and a CA approach which involves accounting for how humans grasp the world and interact with one another

(Schegloff, 1999, 2006). This approach to analyzing cognition examines the resources people use in talk-in-interaction, the observable, ordinary human sociality in the details of actual instances of talk.

Schegloff (1999) studied the testing of a man whose brain hemispheres were severed to deal with neurological problems and subsequently had challenged linguistic abilities. Schegloff considers in great detail a sequence in which the patient demonstrates compliance to an indirect request to come closer to the table before the testing begins. The patient displayed an orientation to turn taking and sequence organization including the timing of his gaze and embodied responses to actions. Schegloff painted a sharp contrast between this analysis and the conclusions that the patient did not do well on cognitive tests related to commands and indirect requests. In this way, Schegloff demonstrated that rather than examining commands and indirect requests, the tests themselves focus on decontextualized actions that are not part of courses of actions that have naturally come about.

This approach offers an alternative form of cognitive analysis, which rejects the model that the prototype for human life is individuals planning and performing in isolation. Instead, discourse research examines the resources people bring to bear on what is relevant to them, requesting, inviting, offering, evaluating, making plans, understanding, and doing what humans do. This provides for a cognitive analysis that examines the production of cognitive objects in talk-in-interaction. One mental state that Drew (2005) describes as produced in talk is "confusion." Drew demonstrates the way in which confusion is generated through talk with resources such as initiating a repair on what has been said or through the characteristics of intonation. It is produced in ways that confound expectations based on conversational norms. In this way confusion is displayed or generated by interaction; it is produced in talk.

In a similar way, Heritage (2005) describes how a cognitive theme such as "recollecting" is embodied in interaction. Rather than considering change in cognitive processes as the subject of investigation, this sort of analysis can show how displaying a "change of state" in talk is relevant as part of interaction. Heritage demonstrates the way *oh* is a resource in interaction which displays receiving good or bad news, or can show that something relevant has been remembered. In the context of questions, responding with an *oh* can show that the questioner has not expected the answer, or simply confirm that the questioner has by receiving the answer changed in state from "uninformed" to "informed." In this way "*oh*-receipts" have been linked to displaying epistemic issues of who knows things and who has authority over knowledge. Again, these mental objects such as knowledge, and cognitive processes such as changes in knowledge or recalling information from memory, are analyzed as things generated in and for interaction.

In contrast to viewing discourse and cognition as separate entities that are in some way linked, cognitive objects have been shown to be produced in talk as useful deployable resources for the purpose of ongoing interaction.

Puzzles and Possibilities: What Is the Relationship Between Displays of Cognition in Talk and Underlying Cognitive States?

The analytic approach we have described above takes a different view of cognition from that of classical cognitive theorists, and grounds the analysis in the examination of everyday or institutional talk-in-interaction rather than analysis of tests or experimental methods. It seeks to demonstrate how what could traditionally be thought of as cognitive states and processes are relevant objects, produced to manage the everyday tasks in interaction. The relationship between discourse and cognition still remains complex. It leaves questions in relation to whether cognition exists as an underlying realm that is "represented" or "produced" in talk, and what the relationship is between this realm and the displays of cognition in talk.

In order to describe a connection between the two realms, Drew and Heritage draw a distinction between verbal conduct and cognitive states (Potter, 2006). However, the challenge is to show that it is a distinction that is discovered in their data, rather than something that is assumed. We can start to ask questions such as: How does the confusion that Drew describes as generated in interaction relate to a putative cognitive state of confusion? Does what is displayed in talk have related underlying states? In a similar way, the *oh* particles in Heritage's work are able to display a change of state, but are they necessarily accompanied by an actual cognitive or neurological change, and if so, how could these changes also be studied in their own right? At the least, these studies highlight interactional phenomena that are relevant to, and should be accounted for, in cognitive theories.

Discursive Psychology as a Way of Studying Cognition as a Practical Participants' Concern

In this final section we consider a field of study that focuses on the types of phenomena under the umbrella of "cognition" from a practical and interactional perspective. DP was developed as an approach to psychological issues as they appear in talk. Reference to mental states in everyday explanations and descriptions provides opportunities for the analyst to investigate the way mental states or psychological phenomena are used as a practice within interaction (Edwards & Potter, 1992). By examining psychological phenomena (such as cognitive states) as things that are constructed, attended to, and understood in interaction and psychological language, and broader "mental practices" as organized for action and interaction in talk and texts, DP reworks a range of concepts such as event memory, knowledge, attitudes, and script knowledge as discourse practices.

DP focuses on discourse as the primary means through which actions (everyday actions central to people's lives) are done and interaction is coordinated. The analytic focus is not on the cognitive processes themselves; rather it seeks to examine how people report on events, perform evaluative practices, and speak as if they have internal and privately owned cognitive processes. This approach remains noncognitivist, in that it does not seek to explain conduct by reference to cognitive states (such as motives or attitudes); however, these sorts of cognitive objects do become the focus of study (Edwards & Potter, 2005).

DP is characterized by three basic themes:

1. *Respecification and critique*. Topics typically considered to be cognitive processes are re-specified in terms of the discourse practices that they are part of. DP is a study of the way in which people report and explain actions and events as part of everyday and institutional activities. This focus on action often generates a critical stance on the view of cognition we have discussed above.
2. *Psychological thesaurus.* DP explores the situated uses of the psychological lexicon, with terms such as *angry*, *know*, *believe*, and *want*. These studies are grounded in empirical materials and demonstrate the specific and rhetorical uses of the concepts in interaction.
3. *Managing psychological implications*. DP also examines how psychological themes are handled and managed in situations in which they are not overtly labeled as such. These sorts of themes (such as agency, doubt, motive, intention, prejudice, and so on) can be produced or countered indirectly in talk. These may not be explicitly named or described but can be handled through event descriptions.

To illustrate the work of DP, let's consider an example of research in this area that explores both the explicit use of psychological terms and the way psychological themes

are inferred and managed in the turn-by-turn context in which they occur. Excerpt (1) is a fragment from an hour-long counseling session in which Connie and Jimmy (wife and husband) talk about their problems with each other. It is analyzed in more detail elsewhere (Edwards & Potter, 2005). The speaker here is Jimmy.

```
(1) [DE-JF:C2:S1:p.9]
01  And uh:: (1.0) Connie had a short skirt on
02  I don'know.
03  (1.0)
04  And I knew this- (0.6) uh ah- maybe I had
05  met him.
06  (1.0)
07  Ye:h. (.) I musta met Da:ve before.
08  (0.8)
09  But I'd heard he was a bit of a la:d ( ).
10  He didn't care: (1.0) who he (0.2) chatted
11  up or (.) who was in Ireland (.) y'know
12  those were (unavailable) to chat up with.
13  (1.0)
14  So Connie stood up (0.8) pulled her skirt
15  right up her side (0.6) and she was looking
16  straight at Da: ve (.) >°like that°< (0.6) and
17  then turned and looked at me (1.2) and then
18  she said w- (.) turned and then (.) back to
19  Dave and said (.) by the way that wasn't
20  for you.
```

In this extract Jimmy builds a picture of his wife as flirtatious, with his description in line 1 *Connie had a short skirt on*, depicting her as dressed in a sexually relevant or provocative way. In this way he makes his jealousy reasonable (unlike Connie's description of Jimmy as an endemically and recurrently jealous person), and Connie's behavior as inappropriately directed at a reputed *bit of a lad* named Dave (line 9). We can also see not only how the descriptive details included work, but also how important what might have been mentioned but is missing is. Of all that she wore, it is only the *short skirt* that is mentioned, and of all the skirt's describable characteristics, only its brevity is remarked on.

The description is positioned sequentially immediately before (and thus hearably relevant to) the introduction of Dave. We can hear Connie's motivation and character being set up here, as flirtatious, sexy, and targeting Dave (explicitly, in lines 15–16). These specific words, "sexy" and "flirtatious," are ours and not definitive, but the point is that something like that is implicitly conveyed. Rather than its being done overtly, those kinds of characteristics are made available inferentially. Connie's character, motives, and intentions (psychological matters) are built and countered by descriptions of witnessable things—her skirt and her actions, the proximity of those things to the descriptions of Dave, and their place in the narrative sequence.

Within this extract there is also the use of an overt psychological term, *I don'know*, in line 2. A cognitivist approach may hear this as simply an assertion of ignorance or uncertainty; however, looking more closely you can see that it is said parenthetically, with no explicit object. By examining it within its sequential context it is possible to see how it attends to Jimmy's own character, which as Connie has described is purportedly jealous, suspicious, and prone to obsessive monitoring of the details of his wife's clothing and behavior. The use just here of *I don'know* counters that by implying that he wasn't paying particular attention. This kind of interpersonal use of *I don'know* or *I dunno* in a

parenthetical way (rather than as an answer to a factual question) has been found across a range of materials as a way of handling the speaker's stake or interest in the content of a description (Potter, 1998). The way that discourse handles psychological categories is not just a matter of using overt psychological labels; expressions such as *I don't know* can do interactional work by attending to potential commonsense inferences.

Puzzles and Possibilities: What Are the Implications for Traditional Notions of Cognition?

Although uses of cognitive concepts such as *I don't know* are not independent of what *know* signifies as a "concept" or its dictionary definition, what people do when they use these terms (as Jimmy does in the extract above) is not well catered for by this "conceptual" understanding. The DP analysis highlights the distinction between this approach and a cognitivist explanation. The differences lie in both metatheoretical assumptions and methodological practices. Interactional research of this kind underscores the difficulty with considering the actor as a socially isolated problem solver, and makes plain the need to take account of socially shared and conventionalized procedures of interaction.

DP eschews psychological reduction and approaches cognitive issues as a topic of study from a practical and interactional perspective rather than as objects that explain conduct. It is not yet clear whether this form of research will satisfy the agendas of cognitive scientists seeking to explore the cognitive realm. Disagreements in theories of language (as abstractly representing cognitive objects rather than action-oriented) and very different methodological approaches (experimental studies versus descriptively based inductive studies) undoubtedly generate tensions. There is, however, across these fields immense potential for the building of fruitful (though complex) debate between cognitive scientists and interactional researchers.

SEE ALSO: Conversation Analysis and Emotion and Cognition in Interaction; Conversation Analysis and Ethnomethodology; Critical Discourse Analysis; Critical Discourse Analysis: History and New Developments; Discourse Analysis and Conversation Analysis

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Discourse and Identity

ANNA DE FINA

The relationship between language and identity has been a topic of interest for language scholars for centuries. As early as in the 1800s many philologists, including the famous brothers Jacob and Wilhelm Grimm, were proposing the idea that language reflected the collective identity of national communities. Benveniste (1971), one of the most important linguists of the 20th century, also stressed the centrality of identity in language through the notion of subjectivity. In his view, the direct or indirect presence of the speaker as a subject in the utterance had the power to transform language as an abstract system into discourse as an act of communication. In sum, theorizations about language and identity have always had a significant place in linguistics, but it is only in the last 20 years that this field has established itself as an area of investigation in its own right and as a field fundamentally concerned with discourse. Indeed, modern research on ways in which identity is constructed and conveyed in talk is firmly grounded in a view of language as discourse, that is as "actual instances of communication in the medium of language" (Johnstone, 2002, p. 2), and as phenomena embedded in concrete social contexts.

Because of its fundamentally cross-disciplinary status, the field presents a daunting variety and dissimilarity of theoretical and methodological orientations, thus fragmentation and eclecticism are widespread. This is partly due to the elusiveness of the concept of identity. Identities can be regarded as collective or individual, as social or personal, as mental constructs or as the product of actions. At the same time, language can be seen as reflecting, conveying, constructing identities or as carrying out all those functions at the same time. Discursive approaches to identity differ, among other things, on the role that they assign to language in the communication or construction of identities and on the type of identities that they study. With respect to the first point, although most scholars would agree that language both reflects and creates identities, the stress is usually placed on one or the other (not both) of these two processes. With respect to the second point, while some researchers deal primarily with social identities such as ethnic, gender, or class categories of belonging, others focus on personal identities, in other words on discursive projections about the persona as a whole; yet other researchers deal with collective, abstract constructs such as national or political identities. These differences notwithstanding, modern discursive conceptions about identity have, in one way or another, all been influenced by social constructionism. Inspired by the work of phenomenologists such as Berger and Luckmann (1967), social constructionists view the relation between the individual and the social world as one of mutual constitution. They argue that, although the social world appears to human beings as an objective reality, it is in fact constituted through human action and interaction and is not independent of it. From this perspective, people continuously create and recreate social reality and in turn are shaped by it in a dialectical process. Thus, identity is not seen as a concept that resides in the mind of the individual self, but rather as a process of construction that has its locus in social interaction. Another important point that social constructionist thinkers emphasize is that people do not have one unique and homogeneous identity but manage a complex inventory of possibilities for self-presentation. These notions are widely accepted in the field and underlie the work of most recent approaches to the study of identity.

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In order to highlight the contributions and methodologies of different orientations it is useful to subdivide them according to the type of identities that they analyze. Thus, discursive approaches to identity are divided below into two main categories: those that deal primarily with social identities, and those that focus on personal or biographical identities.

Social Identities in Discourse

Identity is often described in terms of people's sense of membership of social categories (Tajfel, 1981), but discourse analysts stress that language has a fundamental role in expressing and constituting such a sense of belonging. The linguistic anthropologist Kroskrity (1999, p. 111) for example defines identity as "the linguistic construction of membership in one or more social groups or categories." Social identities are large categories that may constitute points of reference for identification such as those pertaining to race, gender, age, or ethnicity. Thus, individuals and groups may describe themselves, for example, as males or females, as young or old, as Black or White. Two kinds of approaches have greatly contributed to current understandings about the interconnections between discourse and social identities: sociolinguistics approaches and conversation analytical or ethnomethodological approaches. Both these orientations share a focus on social practices (i.e., practical forms of social organization) and interaction as the central locus for the study of identity.

Sociolinguistic approaches have grown out of research on language variation, that is the study of how language changes according to the identity of speakers and the social contexts in which their talk takes place. In traditional sociolinguistic treatments of language variation, identity was seen as a variable that determined differences in language use. Classic sociolinguistic studies posited a correspondence between the social identity of a speaker (in terms of social class, gender, age, etc.) and the kind of language that this speaker would naturally produce. For example, in his studies about the American vernacular, the sociolinguist Labov (1972) illustrated how membership into categories such as class and age determined the way people pronounced the sounds of English. In his work, language was seen as reflecting the identity of the speaker. Such simple equation between social-identity categories and language use was later contested by proponents of accommodation theory (Giles, Coupland, & Coupland, 1991) who argued that speakers may change their accent and other prosodic, syntactic, and discursive aspects of their language within the same interaction in response to their interlocutors' identity by adapting to the speech of their interlocutors or, alternatively, diverging from it. Accommodation theory introduced two important elements in sociolinguistic theorizations about identity: the recognition that identity is an ongoing process related to all the participants in an exchange (not simply to the speaker), and the shift from the study of isolated linguistic elements to the analysis of discourse phenomena that, as we saw, is characteristic of recent orientations.

Sociolinguistic research that developed in the 1990s further refined this approach to identity by focusing on fine-grained analyses of how speakers use language varieties to convey and negotiate different kinds of social identities. A great deal of attention was devoted to the construction of ethnic and gendered identities in particular. Work on ethnicity demonstrated that there was no one-to-one correspondence between the use of an in-group ethnic variety (i.e., language spoken by members of the same group) and the expression of allegiance to that group. The work on language crossing of the British sociolinguist Rampton (1995) was particularly significant in this respect. The author demonstrated that young people in inner-city British schools creatively used and mixed language varieties that were not associated with their own ethnic group to express and negotiate a variety of identities in interaction. Research on code switching (i.e. the use of different languages within the same utterance) proceeded along the same lines, arguing that the use of in-group

language varieties was not automatically associated by speakers to claims of in-group identity (Auer, 1998).

Deeply influenced by the theorizations of the American sociologist Goffman (1981) on the centrality of interaction for understanding human behavior, these studies have in common the painstaking attention to the details of face-to-face interaction and to the symbolic strategies employed by participants to index their different identities. This research, together with investigation on gender identities (Eckert, 1995), has contributed to the development of a new paradigm dominant in the last decade in which associations between uses of language and social identities are not presupposed, but carefully investigated through the study of how identities are expressed and managed in the concrete social practices in which individuals and communities are engaged. Thus, sociolinguists study, for example, specific communities and the ways in which members convey and negotiate identities within typical activities and situations.

One of the offsprings of this theoretical–methodological orientation has been a shift in focus from the individual linguistic variables (sounds, accents, words) to styles, seen as combinations of different features such as accents, words, rhythm. According to the anthropologist Irvine (2001), styles crucially concern distinctiveness in that people adopt them in order to signal their identity as different from the identity of others. Underlying the research discussed above is the idea that, although identity may be openly proclaimed through linguistic means, it is often indirectly and symbolically conveyed. Sounds, words, expressions of a language and styles are continuously associated with qualities, ideas, situations, social representations, entire ideological systems. These in turn are related to social groups and categories that are seen as sharing or representing them. These associations are the most important basis for stereotyping, as social identities are paired with specific uses of language. The process of pairing language with symbolic meanings (and identities) is commonly referred to as *indexicality*, based on the idea that linguistic symbols "index" (Silverstein, 1976), or point to, elements of the social context through a process of meaning creation that rests on accepted social meanings while continuously modifying them. Thus, it may be said for example that the frequent use of the discourse marker "like," together with other linguistic elements, may index "youth" in the speech of an individual. But such association is not fixed and may disappear in time or across contexts.

Another important theoretical methodological frame for the study of identity, the talk-in-interaction approach, has been proposed by scholars close to conversation analysis and ethnomethodology. The focus of these disciplines is the study of language as a form of social action (conversational analysis) and the investigation of how everyday people go about communicating and understanding each other (ethnomethodology). Therefore, proponents of this movement are interested in how people perform social identities in natural situations of interaction. Among the central ideas proposed are the following (see Antaki & Widdicombe, 1998): First, having an identity means being cast into a category related to certain characteristics. Thus, identities are connected to social categories that are defined on the basis of their association with properties and activities. Second, associations between identities and social categories are not fixed, but indexical, in the sense that they can vary widely according to participants and social contexts. Third, identities are occasioned, that is they are invoked, made relevant, and negotiated within particular discursive exchanges, so they should not be seen as "belonging" to the individual or the group. Proponents of the talk-in-interaction movement emphasize that identities need to be made relevant in order to be significant in an interaction. Thus, they caution researchers against deciding in advance which identities may be important for participants in a communicative exchange. In other words, talk-in-interaction proponents believe that it does not make sense to analyze how, for example, being Black or White may affect the discourse of specific people, but that these social categories may be used by the analyst only when it is clear that they

are important to participants in an interaction in that they are directly or indirectly invoked by them.

As seen above, talk-in-interaction analysts build on a close association between categorization and identity construction, an idea that was already present in a number of lectures delivered by the sociologist Sacks (1992), who saw the discursive management of social identities as based on the process of relating categories to specific roles and activities. Indeed a core trend within talk-in-interaction approaches to identity has been membership categorization analysis (Hester & Eglin, 1997), a movement that has focused on the study of the specific ways in which participants in interaction ascribe to each other membership into social categories and create, discuss, and negotiate their meaning.

While sociolinguistic and conversation analytic approaches focus on social identities such as ethnicity and gender, collective identities, such as national or political ones, have been a privileged object of investigation for proponents of critical discourse analysis (Fairclough, 1989), that is scholars interested in using discourse analysis to fight social inequalities and prejudice. Critical discourse approaches to identity differ from social constructionist ones in that they have a sociocognitive-based conception of identities. This means that they see them as mental constructs that have a certain cognitive reality and that are constituted, among other things, by shared mental representations about self and others. These representations may be forms of knowledge, ideologies, attitudes, emotions, norms, and values (Van Dijk, 2009). Critical discourse analysts regard social identities as relatively stable constructs that exist in the minds of social actors before they engage in interaction, are not constituted in it, and are activated when people use them within concrete social occasions. Of course, social identities may be modified in interaction, but they have a strong cognitive component since they are learned through socialization and different discourse practices implemented within institutions such as education, public discourses, and mass media. Unlike social constructionist approaches, critical discourse analysis focuses on the expression of identities within large corpora (for example political speeches, public documents, newspaper articles, etc.) and pays more attention to language structures than to interaction. Researchers in the area focus on the analysis of topics, discourse strategies used to create and transform identities (for example strategies of inclusion or exclusion), and linguistic forms used to discursively convey them (for example pronouns and passive or active syntactic constructions). In studies of national (Wodak, de Cillia, Reisigl, & Liebhart, 1999) and political identities (Wilson, 1990), therefore, questions of agent responsibility and of ideological positioning are central.

In recent times scholars have also started approaching identity from a multimodal perspective. Multimodal discourse analysts regard identity as constructed through a variety of actions that can be realized not only in the discursive mode, but also in "other modes including gesture, gaze and posture" (Norris, 2007, p. 655). Such orientation greatly expands the range of phenomena that are regarded as pertinent for the discursive communication of identity.

Personal Identities in Narrative

The prime site for the analysis of personal identities within discourse studies has been narrative. The concept of personal identity has traditionally been related to the idea of the "self," but the view of the self that narratives may reflect or constitute is by no means uncontroversial. Indeed, while in many psychological theories of personality the self is seen as rational and unitary, observers of postmodern societies such as the sociologist Giddens (1991) regard it as essentially fragmented and discontinuous. Thus, there are profound disagreements among social scientists as to what the self is and how it is expressed

in language, but many scholars have converged on the study of narrative as the most important locus for its communication or constitution. This idea has been particularly central to the work of analysts associated with the so-called "narrative turn" in the social sciences (Polkinghorne, 1991; McAdams, 1993), a movement advocating the use of narrative as a research tool for collecting data and analyzing social phenomena. For many of these analysts the study of narrative is a point of entry into the teller's personal, social, and cultural identities. Thus, many "narrative turn" analysts propose a discursive biographical approach to identity. For example the psychologist McAdams states that identity is a life story (1993, p. 5) that individuals construct throughout their existence in order to give it meaning. Similarly, according to psychologist Bruner (1994, p. 53), people find their identities by becoming "the autobiographical narratives that they tell." These ideas have roots in theorizations about narrative that saw it as essential in providing unity and meaning to human experience. One such theory was proposed by the philosopher Ricœur (1984), who regarded narrative as constitutive of identity since it is through narratives that we know who people are. The biographical approach to narrative focuses on the way in which individuals construct their sense of self through the stories they tell, and therefore places emphasis on the themes of the stories and how they are strung together as a type of map of individual identities.

In other, more linguistically oriented approaches (see De Fina, Schiffrin & Bamberg, 2006), narrative is seen as an occasion for the discursive constitution of identity, not as an expression of it. Key to linguistic approaches are constructs that capture the dialogic nature of identity, the idea that identity is a process in which there is always implicitly or explicitly some "other." In that sense, narrative has been a fertile genre for exploring the variety of roles that narrators can exploit to convey identities because telling a story implies both constructing a fictional world and dealing with an interactional one. Narrative analysts have taken inspiration from Goffman's concept of "footing," or "the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance" (1981, p. 128). His proposed decomposition of the speaker into *author* (the agent that created the talk), *animator* (the agent uttering the talk), *principal* (the agent responsible for the talk), and *figure* (the character in the story) has been fruitfully applied to analyze identity in narrative. The idea of a dialogical self also underlies the important notions amply applied in narrative studies of positioning (Bamberg, 1997) and performance (Bauman, 1986). Positioning captures the fact that when telling a narrative people take positions not only toward the characters and events depicted in their stories, but also toward their listeners and the social issues at stake. These positions define the images of themselves that they want to negotiate in specific contexts. The idea of performance reflects the fact that telling the self constitutes an act of identity and that being someone is a form of doing. Performance also points to the "theatrical" strategies that people employ in order to index their identities.

It is important to keep in mind that investigations of social and personal identities are not as separate from each other as one may deduct from the exemplification above. Indeed, personal identities usually comprise allegiance to social identities, and on the other hand social identities are indexically associated with personal qualities.

SEE ALSO: Analysis of Identity in Interaction; Analysis of Narrative in Interaction; Conversation Analysis and Identity in Interaction; Cultural Identity; Identity and Second Language Acquisition; Multilingualism and Identity; Multimodality and Identity Construction; Narrative Discourse; Politeness and Face Research; Positioning in the Analysis of Discourse and Interaction; Pragmatics of Stance; Subjectivity

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Discourse and Interaction: Quantitative Methods

BELINDA CRAWFORD CAMICIOTTOLI

In discourse studies, the term *interactional language* broadly refers to language used by speakers and writers to establish and maintain interpersonal relations. Together with the analysis of form and meaning, discourse analysts explore the interactional dimension of language to understand the underlying social and cultural dynamics that characterize communication. Interactional language can be distinguished from transactional language, which is instead concerned with conveying messages and information (Brown & Yule, 1983). Interaction in discourse has been studied from at least three research perspectives. Within the tradition of conversation analysis (e.g., Sacks, Schegloff, & Jefferson, 1974), interaction is studied through question–answer sequences, back-channel markers (e.g., *yeah*, *mm hm*), and interruption markers (e.g., *excuse me*). Research grounded in interactional sociolinguistics (e.g., Gumperz, 1982) has investigated features such as forms of address (e.g., *Charlie*, *darling*) and markers of social rank (e.g., *madam*, *reverend*) that shed light on the roles of the discourse participants (Levinson, 1988). However, interaction is not limited to speech. It also comes into play when writers choose specific language for their texts as a way to engage readers in their arguments (e.g., *What would you say if . . .*). Like speakers, they accomplish this with interactional elements such as questions, first- and second-person pronouns, and positively or negatively charged vocabulary (Thompson, 2001).

In recent years, the methodologies of corpus linguistics have greatly expanded opportunities to study interaction in written and spoken discourse by making it possible to systematically analyze relatively large quantities of electronically stored language. Studies that use corpus tools are able to automatically retrieve items of interest and generate quantitative data, which is used as empirical evidence of how interaction is reflected in discourse. Although corpus linguistics is often associated with large-scale language research based on multimillion-word corpora, such as the British National Corpus, corpus techniques are also useful for analyzing smaller corpora in a two-phase operation: a preliminary computerized processing phase followed by the researcher's interpretive phase (Sinclair, 2001). This approach is particularly effective when working with corpora of specialized language with a specific research objective in mind, recently characterized by Partington (2007, p. 1547) as *corpus-assisted discourse study* (CADS).

The example of CADS provided here illustrates how interaction in discourse can be analyzed using quantitative methods. The study investigates interactional features of classroom discourse, in particular adjectives used by a professor of economics to express positive and negative attitudes toward content during a lecture. Specifically, this research aims to answer the following questions:

- Which adjectives are used to express positive and negative attitudes?
- Which types of adjectives are used more frequently than others?
- How are the adjectives distributed throughout the discourse?

In discourse analysis, positive and negative adjectives are considered to be resources for expressing evaluation, that is, language used to express feelings, opinions, and attitudes

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(Thompson & Hunston, 2000). When speakers or writers evaluate some entity as good or bad, they communicate their own values, staking out a position that may or may not be shared by others, and thus they move onto the interactional plane of communication. In teaching contexts, it is important to understand how evaluative adjectives are used by lecturers as key indicators of attitudes to convey their personal interpretation, and thus reinforce the lecturer–student relationship (Northcott, 2001).

This study utilizes a dataset extracted from the transcript of a lecture on the Japanese economy given at a British university. Data for computer-assisted discourse analysis can be procured in several ways, depending on the type of language needed and the research aims. For example, written data can be scanned from print or downloaded from online materials; spoken data can be obtained from pre-existing transcripts collected from the Internet or other sources, or recorded live and then transcribed into electronic files.

Identifying and Accessing the Data

The lecture data were collected for a research project targeting interaction in spoken academic discourse. After establishing contact with a lecturer who agreed to participate and authorize the use of his lecture, the lecture was recorded during a normal class period and subsequently sent to the researcher for transcription. The lecturer is a native speaker of British English and a highly experienced educator. The audience was made up of about 150 undergraduate students who were mostly native speakers of British English.

Transcribing the Speech

The lecture was transcribed into an electronic file by keyboarding the speech heard on the audiotape. However, before embarking on transcription, it was important to decide precisely what to describe and how to transcribe it (Bucholtz, 2000). Given the aim of the research, it was decided to transcribe features that could be relevant on an interactional level, including dysfluencies (e.g., pause fillers, false starts) and phonological reductions (e.g., *wanna*). Features of prosody (e.g., stress, intonation, vowel-stretching) were not transcribed as they were beyond the scope of the research. During transcription, appropriate markup was inserted based on conventions used in the Michigan Corpus of Academic Spoken English (MICASE; Simpson, Briggs, Ovens, & Swales, 2002) to indicate short pauses (,) and unintelligible speech (xx). False starts and repairs were also transcribed (e.g., *in the in the*). In addition, important contextual information about the event was typed within the characters "< . . . >" so that it would not interfere with automatic processing, but still be retrievable.

Preparing the Data for Automatic Processing

After transcription and markup, the data were saved in text-only format (i.e., a .txt file) to permit processing with two programs. The file was first run through the CLAWS4 (Constituent Likelihood Automatic Word Tagging System) part-of-speech (POS) tagger, a program developed by the University Centre for Computer Corpus Research on Language of Lancaster University (UK). The tagger automatically attaches a label (or tag) to each word that indicates its part of speech. When targeting an open word class (e.g., adjectives) rather than a finite set of items (e.g., personal pronouns), POS tagging is the most effective way to carry out accurate and exhaustive analyses. Figure 1 provides an illustration of the CLAWS tagging process. The untagged text file is first opened into the left column of the program screen, the tagger tool (JClaws—the graphical user interface to the underlying

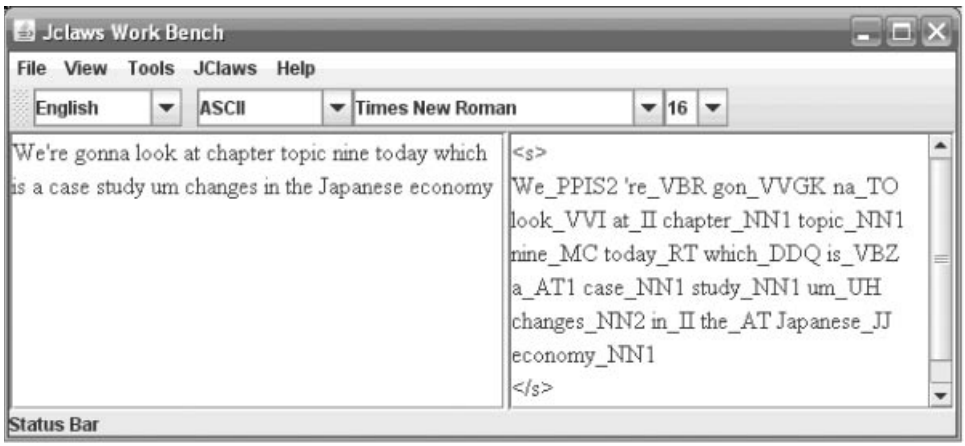

Figure 1 Sample of the tagging procedure (screenshot from the JClaws GUI for the CLAWS tagger program developed by UCREL, Lancaster University, UK)

Table 1 CLAWS tag legend (adapted from the UCREL CLAWS7 tagset retrieved from http://ucrel.lancs.ac.uk/claws7tags.html)

Tag	Lexico-grammatical item
PPIS2	1st-person plural subjective personal pronoun
VBR	are
VVGK	-ing participle catenative
TO	infinitive marker
VVI	infinitive
II	general preposition
NN1	singular common noun
MC	cardinal number
RT	quasi-nominal adverb of time
DDQ	*wh*-determiner
VBZ	is
AT1	singular article
UH	interjection
NN2	plural common noun
AT	article
JJ	general adjective

CLAWS tagging system) is then selected from the menu, and the tagged text then appears in the right column (see Table 1 for the tag legend). The tagged lecture transcript is then saved as a separate file for further elaboration.

Processing and Editing the Data

The saved tagged file was processed with WordSmith Tools (Scott, 2004) software suite, specifically with the concordancer. This is a tool that finds each occurrence of a particular

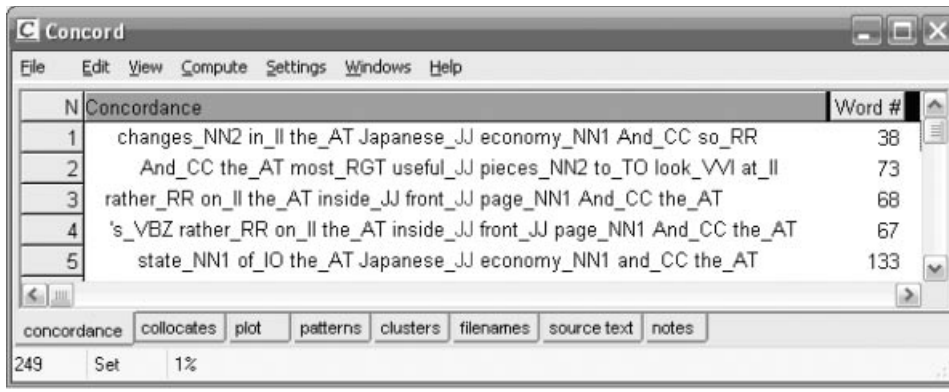

Figure 2 Sample of concordance lines (screenshot from WordSmith Tools, Scott, 2004)

word or phrase (the search item) and displays it in a vertical list of lines in which the search item is positioned at the center of the line, accompanied by a few words to the left and right to provide some context. To analyze evaluative adjectives in the lecture extract, a search was run on the general-adjective tag "JJ." In this way, it was possible to retrieve all words classified as general adjectives. The search returned 239 concordance lines with each adjective appearing to the left of the tag "JJ" (see concordance sample in Figure 2).

By default, the retrieved concordances are listed chronologically in the order in which items occur in the file. However, concordancers usually include a re-sorting function that allows users to order retrieved lines in different ways. This makes it much easier to group items and to discover interesting trends and patterns. Figure 3 shows a sample of concordance lines re-sorted by the first word to the left of the search item "JJ," thus displaying all instances of adjectives grouped and listed alphabetically.

The re-sorted data were then relatively easy to edit. Because the objective was to obtain frequency data for adjectives that explicitly express positive and negative attitudes, it was necessary to weed out many adjectives that did not do so in this context (e.g., *American* in lines 2–4 and *big* in the last line of Figure 3). The grouped adjectives could be quickly

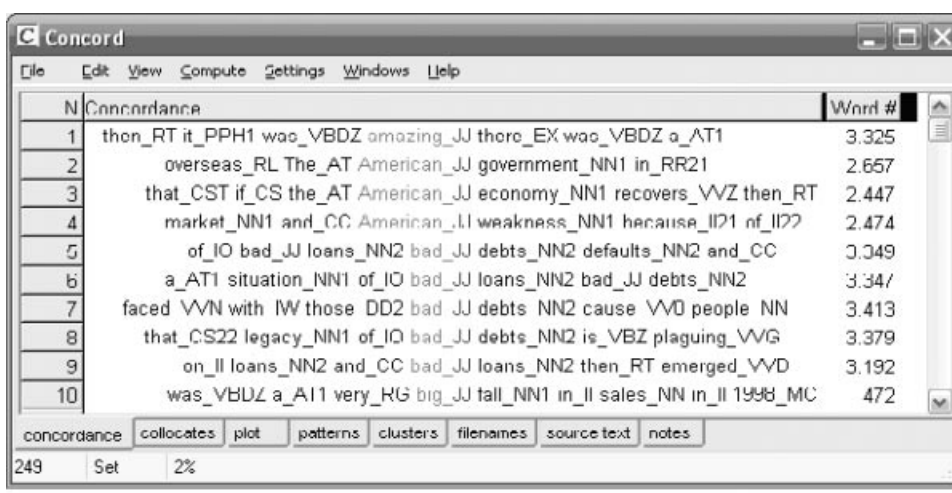

Figure 3 Sample of re-sorted concordance lines (screenshot from WordSmith Tools, Scott, 2004)

assessed in order to select unwanted neutral items for subsequent removal from the data. The distinction between positive/negative and neutral adjectives was usually rather straightforward. However, in some cases, positive or negative meaning could not be interpreted without seeing more text than what appears in the concordance line. This was done by activating a function that allows the item to be viewed in expanded text from the source file. For example, in line 1 of Figure 3, the connotation of the adjective *amazing* is not clear, so it was necessary to identify what was being described. Here the lecturer was referring to a series of economic crises that took place in Japan, so it turned out to have a negative sense. The adjective *competitive* also had to be interpreted in context. Although it does not inherently express an attitude, here the lecturer used it to evaluate companies in a positive way.

Displaying the Results

Once the list had been edited, it contained 30 concordance lines with both positive and negative adjectives. This output was further edited to select and save positive adjectives into one concordance file and negative adjectives into another. All the positive and negative evaluative adjectives used by the lecturer, along with their frequency counts, are listed in Table 2.

From the concordance lines, dispersion plots were computed, as shown in Figure 4 (positive adjectives) and Figure 5 (negative adjectives). Dispersion plots provide a visual image of the distribution of search items throughout a text, moving from the left (beginning of the text) to the right (end of the text). Each vertical line in the plot represents an occurrence of a positive (Figure 4) or negative (Figure 5) adjective. In addition, the plots show the source-file name, total words in the file, frequency count of the search item (hits), and the normalized parameter of number of occurrences per 1,000 words. The latter is useful when working with two or more datasets with different word counts. In that case, a simple comparison of raw frequencies would not give an accurate picture of variation across datasets. In addition, the plot reports the dispersion value that measures the uniformity of the dispersion, ranging from 0 (least uniform) to 1 (most uniform).

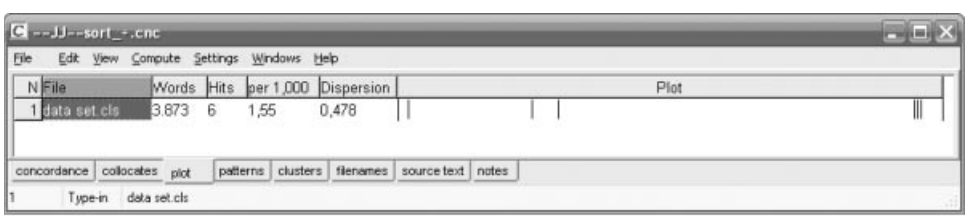

Figure 4 Dispersion plot of positive adjectives (screenshot from WordSmith Tools, Scott, 2004)

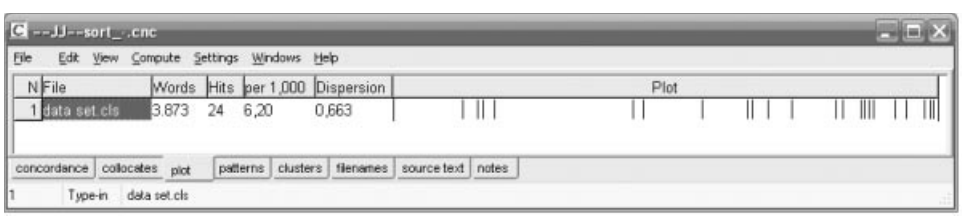

Figure 5 Dispersion plot of negative adjectives (screenshot from WordSmith Tools, Scott, 2004)

Table 2 Frequency counts of positive and negative evaluative adjectives

Positive evaluative adjectives	*Frequency count*	*Negative evaluative adjectives*	*Frequency count*
1. competitive	2	1. amazing	1
2. easy	1	2. bad	5
3. efficient	1	3. depressing	1
4. robust	1	4. difficult	2
5. useful	1	5. disadvantaged	1
Subtotal	6	6. dodgy	1
		7. fragile	1
		8. inefficient	2
		9. negative	4
		10. precarious	1
		11. severe	1
		12. tough	1
		13. uncompetitive	1
		14. unhappy	1
		15. weak	1
		Subtotal	24
Grand total			30

Interpreting the Findings

In this computer-assisted discourse analysis, the interpretive phase is of vital importance. Although empirical results yield interesting descriptive information, they offer little insight into the possible motivations underlying usage. The main findings of the quantitative analysis were that negative adjectives (n = 24) were four times as frequent as positive adjectives (n = 6) in this lecture extract, and also three times as varied, with 15 different negative adjectives versus only five different positive adjectives (see Table 2). To advance possible reasons for these differences, it was necessary to go beyond the data and consider the larger context of interaction. On a textual level, the content of the lecture that focused primarily on the problems of the Japanese economy likely influenced the high frequency of negative adjectives. This may also have triggered their wider variation, seen in the lecturer's choices of *amazing*, *dodgy*, *depressing* as creative alternatives to the more common *bad* or *negative*. On a broader disciplinary level, because economics has the fundamental objective of teaching learners to critically analyze economic problems, it stands to reason that negatively charged vocabulary would be relatively prominent.

The dispersion plots (Figures 4 and 5) indicate that the evaluative adjectives tend to cluster toward the end of the discourse. Follow-up analysis of these items in their context of usage showed that, in this part of the lecture extract, the lecturer evaluated the level of competitiveness and efficiency in diverse sectors of the Japanese economy, using both positive and negative adjectives (e.g., *competitive*, *uncompetitive*, *efficient*, *inefficient*) to point out important contrasts.

This analysis was based on an excerpt from an economics lecture as a way to exemplify the use of quantitative methods to investigate evaluative adjectives, which represent one form of interactional language in discourse. In particular, text analysis tools were used to produce descriptive profiles of positive and negative adjectives (i.e., their types, frequencies, and distributions) as outlined in the research questions. In larger-scale research, the dataset would include a large number of complete lectures given by different speakers on other topics of economics. The ideal size and composition of the dataset would depend on the purpose of the research. For research comparing disciplinary language, a contrastive analysis could be performed on economics lectures versus lectures in other subject areas.

For readers who would like to experiment with the quantitative descriptive techniques described above, the Michigan Corpus of Academic Spoken English (MICASE; Simpson et al., 2002) is an excellent source of transcribed spoken data that is freely available for research purposes. MICASE contains 1.8 million words of speech varieties that typically occur on a university campus (e.g., lectures, student presentations, advising sessions, dissertation defenses). It can be accessed at http://lw.lsa.umich.edu/eli/micase/index.htm. The MICASE site also provides a user-friendly search tool that generates frequency statistics and re-sortable concordance lines. Moreover, readers may refer to the CLAWS Web site at http://ucrel.lancs.ac.uk/claws/ for detailed information about this POS tagger. The site also provides a free online trial service that allows users to practice tagging text samples.

SEE ALSO: Analyzing Spoken Corpora; Concordancing; Corpus Analysis of Spoken English for Academic Purposes; Transcription

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Discourse in Action

RODNEY H. JONES

One of the most fundamental issues in discourse studies is understanding the relationship between what we say and write and what we do, that is, the relationship between *discourse* and *action*. Nearly all mainstream approaches to discourse analysis begin with the assumption that discourse itself *is* a kind of social action. Conversation analysts, for example, see talk as a matter of "paired action," genre analysts speak of genres as examples of "communicative actions," interactional sociolinguists focus on how people strategize discursive actions within an ongoing negotiative process with other social actors, and critical discourse analysts remind us that discourse constitutes and is constitutive of what they call "social practice."

The problem with approaches that conceptualize discourse *as* action is that there are a whole host of actions that we engage in everyday that do not involve discourse, or only involve it in a rather peripheral way, but still have an important relationship to discourse that may have been produced before these actions are carried out or may somehow follow from these actions. Scollon and Scollon (2005) discuss, for example, the actions involved in lighting a camp stove, actions which for experienced campers might not involve any talking or engagement with written text, but which invariably arise out of a complex history of discursive actions such as the writing and reading of advertisements, manuals, packages, and warranties or oral instructions given by an expert user to a novice. These actions subsequently give rise to other discursive actions such as the conversations that accompany the meals which the stove was used to prepare or written reviews posted online by satisfied (or dissatisfied) users of the stove, or papers filed in lawsuits by customers who have been injured using the stove.

Mediated discourse analysis is less interested in understanding discourse *as* a kind of social action and much more interested in understanding it insofar as it plays a role *in* the performance of social actions. This concern has its theoretical foundations in the work of the Soviet psychologist Lev Vygotsky (1981), who near the end of his life became interested in the notion of *mediation*. For Vygotsky, all human action (and thought) is mediated through cultural tools, some of which are physical (such as screwdrivers, camp stoves, and physical texts of all kinds) and others of which are psychological. Among what he termed "psychological" tools he included "language; various systems for counting; mnemonic techniques; algebraic symbol drawings; all sorts of conventional signs" (Vygotsky, 1981, p. 137).

The status of discourse as a *cultural tool* through which we mediate social action is not entirely clear-cut. On the one hand, we might consider discourse to be more of a *psychological tool*, given that it draws upon languages and signs. For mediated discourse analysts, however, (as for most discourse analysts), the interest is not so much in the "system" (be it language, algebra, or any other sign system) as it is in the instantiation of that system in concrete instances of use in which the system is embodied in some kind of material expression (i.e., a written text or sound waves spoken or broadcast). In other words, although mediated discourse analysts are certainly interested in how people form texts by drawing upon various semiotic systems, social languages, and speech genres (Bakhtin, 1986), their main concern is with discourse as a *physical object* that is used to take actions

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in the world. Therefore, the main concern is not what discourse *means* (as in many branches of linguistics), nor what it *does* (as in pragmatics and other similar approaches to discourse and social interaction), but what people *do* with it, and how these *doings* (not the discourse) work to construct individual identities and communities of practice (Lave & Wenger, 1991).

This formulation takes the traditional definition of discourse as "language in use" one step further: "language in use to *do something*." That "something" that discourse is used to do, not the discourse itself, is the starting point for mediated discourse analysis, for which any exploration must begin with Goffman's (1974) famous question: "What's going on here?"

Although many forms of discourse analysis are predicated on the notion that meaning is inseparable from "what's going on," that is, that discourse gets its meaning from the social practices in which it is embedded (Gee, 1999), most of these approaches conceptualize social practices in rather vague and generalized ways (e.g., having a meeting, eating in a restaurant), or as "social practice" (as a mass noun). This latter formulation, favored by many cultural critics, takes the notion of practice to an even greater level of abstraction, referring often to situations or forms of social organization rather than to people actually taking action in the world. An approach that focuses on discourse in action is less interested in these generalized social practices (or this notion of social practice) as categorical "types" of actions or relationships and more interested in the real time, unique, and irreversible actions that actually go into creating these larger situations and social formations. When practices are considered, they are considered as the "technologization" of particular sequences of actions that have become recognizable to particular groups as representing particular activities and identities. Even then, however, the focus remains on the discrete actions from which these practices are constructed, and how these actions are related to one another in chains of "conditional relevance," so that one particular action arises out of the actions preceding it and creates the conditions for the actions that follow (Jones & Candlin, 2003).

The notion of discourse *in* action, however, is not as simple and straightforward as it seems. In fact, one of the consequences of approaching discourse through action (as opposed to approaching action through discourse) is a new awareness of the problematic relationship between discourse and action, a realization that we cannot always read social actions from discourse or expect particular kinds of discourse to be used to perform particular kinds of actions. In his study of discourse about HIV/AIDS, for example, Jones (2007) found that talk about "safer sex" is often used to perform actions that have very little to do with safer sex, and, in fact, are sometimes part of patently unsafe sexual practices. In other words, discourse does not *cause* actions and actions do not *cause* discourse in any direct way. Rather, discourse and action exist in what Wertsch (1994, p. 205) calls a relationship of "tension between the mediational means as provided in the sociocultural setting and the unique contextualized use of these means in carrying out particular concrete actions."

At the center of an approach that focuses on discourse in action, then, is a preoccupation with who or what is responsible for actions that occur in the world, in other words, what the source of *agency* is. Traditional views of agency have seen it as a matter of individual intentionality or power. Mediated discourse analysis, on the other hand, views agency as a matter of the interrelationship among social actors, the cultural tools (including discourse) they are using (and the various affordances and constraints they embody), and the social circumstances in which they find themselves (including the ideological formations and relations of power that characterize these circumstances).

This focus on discourse in action has a number of practical advantages for the analyst, perhaps the main one being that it helps to solve the problem of deciding which discourse is worth analyzing and which is not. Many approaches to discourse make this choice based

on the particular theoretical concerns of the analyst rather than the real life concerns of those who actually produce and consume the discourse they are analyzing. As a result, while such studies often make important contributions to the advancement of theory, their contribution to solving the real problems of real people is sometimes less clear.

In contrast, a discourse in action approach typically begins with a site survey, a step that the Scollons (2004) refer to as "engaging the nexus of practice." Such a survey involves identifying the key social actors, the key actions, and the key cultural tools in a particular situation from the point of view of participants themselves through methods like interviewing and observing. The purpose of these interviews and observations, however, is not to gather data, but rather, to develop, in collaboration with participants, an understanding of the kind of data that needs to be gathered.

The phrase "discourse in action" also points to a vision of an *engaged* discourse analyst, one who, rather than standing apart from the people and actions he or she is studying, acknowledges that to study any social phenomenon involves being part of it, that "objectivity" is neither possible nor necessarily desirable. Thus, another important aspect of "engaging the nexus of practice" involves the analyst establishing what the Scollons call a "zone of identification," an understanding of where and how the interests of the participants and the interests of the analysts overlap, a thorough inventory of the perceptual limitations and biases of all concerned, and an examination of how these limitations and biases are inevitably part of any process of data collection and analysis. Mediated discourse analysts cannot stop at analyzing the actions of others, but must also face up to their own actions and how they affect the world that they analyze.

In the end, then, an approach that focuses on discourse in action points us toward the notion of the discourse analyst as a *social activist* who is actively engaged in helping people solve real world problems that are of immediate concern to them. It is not surprising, then that studies using this approach have focused on issues like HIV/AIDS prevention, racial discrimination, illegal immigration, and unemployment. While studies using this approach begin with "engaging the nexus of practice," they should ideally end with "changing the nexus of practice" in some positive way. Obviously, what constitutes positive change is highly subjective and dependent on the "zone of identification" the analyst has established with participants at the outset of the research. What is really at the heart of this goal of transformation is a process through which analyst and participants work together to become more conscious of their own actions and the kinds of social relationships and social "selves" that they give rise to.

Where this brand of activism differs from that sometimes associated with other approaches like critical discourse analysis is that it is not focused on processes of uncovering power relations, identifying victims, and assigning blame. Rather, it focuses on understanding and helping others to understand that the solutions to problems often lie not in attempting to grapple with large abstract social practices and social formations, but rather in grappling with the mundane, situated, local actions by which we build our social worlds moment by moment.

In this way, approaches that focus on discourse in action are closely related to models of "participatory action research" (Freire, 1970), which emphasize useful knowledge, problem solving, and social change. Such models strive to transform people, organizations, and communities by reducing the gap between knowledge and action. What this means for us as discourse analysts is that research is not seen as an aim in itself, but rather as part of a process leading to some kind of action that will benefit stakeholders. What it means for us as human beings and the other humans we interact with is that action should never be seen as separate from inquiry, that whenever we engage in action, the potential for learning exists. To put it more concisely, analysis without action is sterile and action without analysis is dangerous.

SEE ALSO: Analysis of Mediated Interaction; Mediated Discourse Analysis

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Discourse in Organizations

ABZ SHARMA AND DAVID GRANT

The study of *discourse in organizations* (also referred to in the literature as "organizational discourse studies") focuses on

> the structured collections of texts embodied in the practices of talking and writing (as well as a wide variety of visual representations and cultural artifacts) that bring organizationally related objects into being as these texts are produced, disseminated and consumed through social interaction. (Grant, Hardy, Oswick, & Putnam, 2004, p. 3)

These discourses "are always connected to other discourses which were produced earlier, as well as those which are produced synchronically and subsequently" (Fairclough & Wodak, 1997, p. 277). This means that discourses in organizations are intertextual in nature; that is, they are constituted by other discourses and the texts therein (Fairclough & Wodak, 1997; Sillince, 2007). Thus, while some researchers focus on a specific text in isolation, others carry out intertextual analyses whereby they examine the relationship of a given text to other texts and are able to show that the meaning attached to any particular organization-related issue or incident unfolds through the complex interplay of both socially and historically produced texts (Grant & Hardy, 2004).

The study of discourse in organizations has emerged as a significant field of inquiry over the past three decades. It has provided scholars with alternative ways in which to describe, analyze, and theorize the increasingly complex processes and practices that constitute "organization" (Grant et al., 2004, p. 1). Research in the field has generally focused on the social constructionist (Berger & Luckmann, 1967; Searle, 1995) effects of language in organizational settings. Its theoretical and disciplinary antecedents originate from the broader domain of discourse theory such that it is informed by a variety of sociological, sociopsychological, linguistic, anthropological, philosophical, and communication based studies. Given these broad antecedents, it is perhaps not surprising that a variety of methodological approaches has been used that allows for the study of specific features and forms of discourse in organizations. Researchers have drawn on methodologies involving, among others, metaphorical analysis, critical discourse analysis, narrative analysis, rhetorical analysis, and conversation analysis. They have applied these methodologies to a host of organization-related issues in order to generate new insights. These have included organizational change, corporate strategy, professional and organizational identity, power relations in organizations, management fads and fashions, organizational learning, decision-making, inter-organizational collaboration, gender and ethnicity and organizational culture. The range of methodologies available to the researcher wishing to conduct empirical studies of discourse within organizational settings can be seen as a virtue (Phillips & Hardy, 2002). It assists discourse-focused research into organizations to study a variety of issues at a variety of analytical levels (see below). It can also mean that the parameters of a research question are delimited by the array of methodologies available with which to test it. Further, the extensive choice of methodologies available facilitates analysis of an enormous range of data types (Phillips & Hardy, 2002; Grant et al., 2004).

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Discourses operate at a number of different levels. Five levels in particular—the intrapsychic, the micro, the meso, the macro, and the meta—provide distinct insights into organizing and organization. Further, and in line with the approach to the study of discourse in organizations outlined above, they are deemed intertextual in the sense that the texts within any level of discourse are linked to, and informed by discourses and the texts therein that occur at other levels.

Analyses of discourses at the *intrapsychic* level focus on discourses that occur within the individual's mind or psyche. These discourses are formed through processes of introjection (the unconscious adoption of other people's attitudes and beliefs) and internalization (the making of attitudes and behaviors into part of the individual's nature through learning or unconscious assimilation), which shape and frame the individual's mental maps and models. Studies of various organizing processes drawing on intrapsychic approaches show how discursively constructed meanings rooted in cognitively unconscious scripts, schemas, and frames impact on "sensemaking" (Weick, 1995). Other intrapsychic oriented studies have shown that shifts in mental maps and models among employees can be identified and altered through conversation and can thus lead to organizational change (Jacobs & Heracleous, 2005).

Micro level analyses of discourse in organizations examine the specific utterances and words that are used by individual organizational actors. They tend to be localized in their focus and to concentrate on situated talk through the use of, for example, conversation analytic techniques and ethnomethodology. Analysis of discourses at this level typically involves the examination of discrete episodes of talk in interaction (i.e., interpersonal exchanges) captured, for example, on audiotape recordings or video clips, or can involve the interrogation of specific written passages such as transcripts or documentation. Micro level approaches have been used to generate insights into the conduct of, for example, workplace meetings (Huisman, 2001) or bargaining and negotiation (Hamilton, 1997). In doing so they have focused on phenomena such as turn taking (indicating the dominance of particular individuals), forms of speech that affirm, for example, propositions of value or which create concern, and the use of interruption, hesitation, particular modes of address, different pronouns, and so on.

Meso level discourse analysis represents a departure from the detailed examination of language in use that is associated with micro approaches. The approach focuses on the discursive interactions that impact on the actions and behavior of individuals within, for example, a department or among a specific group of organizational actors who socially interact on a regular basis. It also considers how members' discursive accounts, often narrative-based or highly rhetorical, are synthesized by other members of these groups in order to form common understandings, patterns, and chains of association that condition social order among them (Putnam, 2008).

Macro level discourses can be seen to represent an amalgam of meso level discursive interactions about a particular organization-wide phenomenon. Interactions such as conversations and texts aggregate to form dominant thinking, institutional practices, and collective social perspectives (Ford & Ford, 1995). Such discourses have been the focus of studies concerning, for example, corporate culture (Alvesson & Kärreman, 2000).

Meta level discourses transcend the organization, and instead engage with work and processes of organizing at a societal level, and across institutional domains. Here, the focal point of analysis draws on broader texts that speak to the historical and social context, as well as the power relationships and struggles between actors and institutions. In doing so, meta level discourses may formulate standard thinking and ways of talking about certain types of social phenomena (Alvesson & Kärreman, 2000). Examples of such phenomena include "the market," "sustainability," and "social responsibility."

Research focusing on discourse in organizations may also be summarized using four dimensions: the theoretical versus empirical, the monomodal versus multimodal, the patterned versus non-patterned, and the critical versus pragmatic. These map the "multiple divergences and commonalities" in organizational discourse studies (Grant & Iedema, 2005).

First, whether a researcher adopts a theoretical or empirical orientation will impact on their approach to the study of discourses in organization and the insights that they generate. Proponents of the *theoretical* approach believe that language and discourse constitute the social world and reality, bringing social objects such as "individuals" and "organizations" into being. In adopting this approach, "discourse" is used as an abstract construct (i.e., there is no particular site of enactment or particular actors) to emphasize philosophical aspects of social organization and representation. In contrast, researchers who favor *empirical* approaches regard discourse in organizations as an empirical and analyzable phenomenon. Such approaches draw on a range of transcript or ethnographic data types including conversations, meetings, memos, and other correspondences as evidence for particular discourses in organizations. For example, Boje's (1995) study uses transcripts of stories told by leaders at Disney in order to highlight the contradictions and complexities of organizational life.

Second, researchers may limit their focus to the study of language in organizations, or they may also analyze other kinds of nonlinguistic devices. The former approach represents a *monomodal* orientation and is concerned with discourse as a linguistic phenomenon, viewing "talk" and writing as the foundation of social organization. Proponents of the monomodal approach study language-related phenomena such as the names, symbols, concepts, and categories used by people to objectify their experiences and thus make sense of the social world (Chia, 2003). Conversely, researchers adopting a *multimodal* orientation are concerned with a variety of nonlinguistic, "meaning-making" devices that show how humans "organize." In taking this approach, these researchers note that "discourse" not only comprises "systems of communication" (e.g., talk, text, body language, dress, and other observable behaviors), but also "grammars" of social order (e.g., rites, rituals, ceremonies, and practices). Iedema (2007) advances this viewpoint by suggesting that artifacts and symbols such as embodiment (the visible form of an idea), visualization (the formation of a mental image of something), architecture (the complex design and structure of things), and technology (the practical application of scientific knowledge) are meaningful manifestations of human "principles and intentionalities." A notable stream of empirical multimodal research about discourse in organizations is "actor-network theory." This theory asserts that both human and nonhuman phenomena potentially contribute to the formation of social and organizational life. Latour (1990), for example, argues that people and artifacts form relationships—"complete chains"—through which competencies and actions are distributed. To illustrate, we may use the example of motor vehicle manufacturing, which involves both human (e.g., designers, engineers, and assembly workers) and nonhuman actors (e.g., computers, software, and machines). In this example, human actors may interact with software and computer data in order to refine the designs for a new passenger motor vehicle, after which machines, which are assigned functions by human programmers, will co-assemble (with human actors) a prototype for further testing and development.

Third, researchers may seek to reveal patterns about discourse in organizational settings, or alternatively emphasize the absence of patterns. Studies adopting a *patterned* approach are often informed by the disciplinary and methodological practices of sociolinguistics and related fields, and draw attention to the ways in which discourse establishes patterned and predictable conduct. Moreover, and as Grant and Iedema (2005) have observed, such studies often examine discourse at three of the levels that have previously been identified: the micro, meso, and macro. These levels in turn correspond to the three main units of

analysis in organizational theory: the individual, the group, and the organization. For example, research into micro level discourses may highlight the values, attitudes, and beliefs of an organizational stakeholder, while studies of discourse at the meso level provide insights into the nature of group interactions such as meetings, negotiations, conflict, and team dynamics. Studies of discourse at the macro level might provide insight into organization-wide phenomena such as organizational culture change. More recently, the study of discourse in organizations has been influenced by postmodernism, which observes the organization as a melting pot of contradictory and ever-changing processes and practices. For example, postmodern perspectives have been used to explore the increasingly complex and unpredictable nature of "the market" and globalization forces. This introduces us to research that adopts a *non-patterned* approach. Non-patterned approaches to discourse in organizations privilege irregular, unusual, and singular accounts of organizational life. Proponents of this view argue that pattern-based studies of discourse are "monological" because they disregard a range of marginalized ideas and opinions in favor of analytical regularity and dominant discourses. Non-patterned approaches thus take a "dialogical" viewpoint, which appreciates the multiple independent voices and discourses that constitute organizational reality. Examples of non-patterned discourses include emotion, conflict, anti-managerial attitudes, jokes, nicknames, and graffiti (Gabriel, 1995; Grant & Iedema, 2005). These discourses often give voice to narratives and stories that run counter to dominant organizational meanings. As such, they occasion thought about what organizations are and what they do, and also what it means to be an organizational member. By illuminating and learning from new and marginalized kinds of meaning, it is argued that the organization emerges as a space for innovation and change, as members explore new meanings, new relationships, and new identities.

A fourth dimension of discourse in organizations is the extent to which such research critiques dominance and power structures in organizations. At one end of the continuum lie *pragmatic* commentators, who use discourse analysis with a view to changing and improving organizational practices. For example, pragmatic research calls attention to ways of improving teamwork and team effectiveness, the more effective management of change, and enhancing organizational performance (e.g., Shaw, 2002; Marshak & Grant, 2008). In contrast, *critical* commentators view organizations as political sites where actors contest meanings to serve their agendas and interests (Mumby, 2004). While the critical perspective broadly seeks to challenge established relationships of power, the aims of this research are varied. Some commentators seek to use critical discourse analysis to give voice to disenfranchised organizational actors, while others aim to unsettle dominant power structures and, consequently, "emancipate" these marginalized actors. Research from the critical perspective draws on various methods and approaches. Among these are stories and "ante-narratives" (Boje, 1995), which, as several commentators note, have gained purchase because they help organizational members who feel different to those around them to build a collective sense of identity. In this way, stories and antenarratives can be used as devices to subvert dominant power structures and ways of thinking in organizations.

As we have shown, studies of discourse in organizations draw on a variety of competing research objectives, approaches, and agendas. These perspectives, in turn, have encouraged debate about the challenges and directions of the field as it continues to grow. One key area of debate concerns claims by critical realist commentators such as Reed (2004) that studies of discourse in organizations overstate its constructivist properties such that language or discourse come to be seen as constituting material reality. For critical realists the material world, as well as the social processes and structures it generates, are ontologically prior to meanings that are contained in discursive interactions. In response to this criticism some discourse analytic researchers such as Fairclough (2005) have promoted an intermediate position. While highlighting the role and significance of discourse in effecting processes

of organizing and organization, this approach, in line with critical realism, takes into account the importance of the material effects and consequences of structures and institutions in shaping what we take to be reality.

A second debate concerns the reticence of researchers to show how discourse might be utilized as an instrument to effect change in organizations rather than simply studying it in order to make sense of change. Here, Marshak and Grant (2008) make four observations about the field of study's orientation to change. These authors note that discourses condition how we approach change, that discourses set the context for change, that discourses and change are influenced by power dynamics, and that discourses are a means to create change. On this final point, Marshak and Grant seek to demonstrate the value of discourse-based change interventions to organizational practitioners as well as researchers, suggesting that participation in discursive activities such as conversation, dialogue, and narrative give rise to new shared meanings and changed mindsets that promote organizational change and development. In taking this perspective, they can be seen to be adopting a position akin to the pragmatic orientation described above.

The study of discourse in organizations encompasses an array of multidisciplinary influences and methodological approaches and this has enabled researchers to engage with and interpret a variety of organization-related issues in ways that would not have been otherwise achievable. Notwithstanding these contributions, there are four main concerns for the field as it continues to develop. First, there is considerable scope for organizational research at the intrapsychic level of discourse analysis. Perspectives in the literature thus far highlight the existence of cognitive unconscious processes that influence individual thoughts, actions, and behaviors. However, the influence of metaphors, mental maps, schemas, and the like upon the formulation of organizational narratives, texts, and conversations and the effect of these in turn on organization and organizing have been underexplored (Marshak, Keenoy, Oswick, & Grant, 2000). Second, more work must be done on the intertextuality and recursivity of discourse in organizational settings. This requires further consideration of the social and historical contexts in which discourses emerge (Keenoy & Oswick, 2004) and further studies which show how the relationships between different levels of discourse and the texts therein, are ongoing and two-way, and the implications of this (Robichaud, Giroux, & Taylor, 2004; Sillince, 2007). Third, those carrying out studies of discourse in organizations need to create and apply methods, frameworks, and models that can cope with the increasingly complex and diverse communicative processes to be found in contemporary organizations. At the center of this is the intensification of communicative practices or "immaterial labor" (Iedema, Rhodes, & Scheeres, 2005). The contemporary workplace requires people to form interpersonal and affective relationships not only by talking to each other face to face and in close physical proximity, but also by using more frequent, faster, and more diverse kinds of communication. These are mediated by new information and communication-related technologies such as e-mail, Weblogging, tele- and video-conferencing, text messaging, and social media such as Facebook, Twitter, and LinkedIn. It is essential that researchers focusing on discourse in organizations are able to account for these developments and explain their significance for contemporary forms of organizing and organization. Finally, it is argued that researchers focusing on discourse in organizations must be more open to engaging with other disciplines of inquiry. For example, Grant and colleagues identify an opportunity "to explore how discourse analysis relates to other theories that are familiar to organizational scholars, such as institutional theory, sensemaking, and actor-network theory" (Grant et al., 2004, p. 26).

SEE ALSO: Analysis of Dialogue; Critical Discourse Analysis; Discourse and Cognition; Multimodal Discourse Analysis; Multimodality in Workplaces; Narrative Discourse; Rhetorical Discourse Analysis

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Discourse Markers

KERSTIN FISCHER

Discourse markers, comprising items like *yes*, *well*, *but*, *uh*, *oh*, and *uh-huh* (see, for instance, Schiffrin, 1987), are notoriously difficult to define, and the functional spectrum suggested for these items is huge, including functions as diverse as marking discourse boundaries, managing the turn-taking system, signaling speaker attitude, connecting text segments, and managing repair. Corresponding to their functional variability, many different terms for (subgroups of) discourse markers have been proposed, for instance, pragmatic markers, discourse particles, discourse connectives, feedback signals, backchannel tokens, interjections, text-relation markers, and so forth. Thus, one of the most prominent problems in the study of discourse markers is their definition and delimitation (see Hentschel & Weydt, 1989; Schourup, 1999; Fischer, 2006).

Discourse markers are generally taken not to have any truth-functional or propositional meanings, their meanings and functions rather being located on some pragmatic level, but even that may be a matter of degree. Especially those discourse markers that have connective functions may be rather close to the propositional content of the utterances they connect (e.g., Fraser, 1999). Examples from Fraser (2006, pp. 190–1) are

(1) *Sue isn't here, although she said she would be.*
(2) *Donna left late. However, she arrived on time.*
(3) *Fred a gentleman? On the contrary, he is a boor.*

In these examples, the discourse markers introduce a relationship of contrast between two states or events. The meanings of other discourse markers may, however, rather concern discursive or interactional functions, for example,

(4) Heritage (1984, p. 303, ex. 9)
R: I fergot t'tell y' the two best things that happen' tuh me t'day.
C: *Oh* super.=What were they.

(5) Louwerse and Mitchell (2003, p. 200)
Kathy: three times ex, minus four.
Nathan: three times e=x, minus four?
Kathy: *right.*
Nathan: *alright*, distribute first, *right*?
Kathy: *mhm.*

In these examples, we find the interjection *oh* and the feedback signals *right*, *alright*, and *mhm*, where *right* is used in two different positions and in two different functions; in addition to its back-channeling function, *alright* is used as a framing signal beginning a new topic. Discourse markers thus cover a broad functional spectrum. There are now hundreds of studies of various discourse markers in all kinds of contexts in numerous languages of the world that document the peculiar functions and uses of discourse markers in various situations. Given this huge spectrum of studies, we still know remarkably little

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about how discourse markers come to fulfill their functions and how this class of items, if it constitutes a single class, can be characterized (Fischer, 2006).

The situation is complicated by the fact that individual discourse markers usually exhibit functional polysemy, that is, the same discourse marker may fulfill several different functions characteristic of the word class. An example is *right* in its two uses in example (5) above. The challenge is thus, in addition to in-depth analyses of individual items in certain contexts, to account for the whole functional spectrum both of individual discourse markers and of the whole class, and to find the principles by means of which the field is structured and individual interpretations assigned.

On the functional level, there are different approaches to structuring the field and to accounting for the polysemy of individual discourse marker items. One of them is the minimalist approach, which aims at identifying those meaning components that are present in all instances of a particular discourse marker or in one of its subclasses. Minimalist approaches rely on finding the one meaning component shared by all uses of an item or of all items in a class in the hope to determine the most characteristic traits of this item or class. At the other end of the spectrum is the maximalist position which aims at working out the subtle interactive functions the items under consideration may have in different sequential contexts; conversation analysis, for instance, which is interested in identifying the discursive practices participants employ themselves in talk-in-interaction, takes such a position (see, for instance, Heritage, 1984, 1998, 2002). Most current approaches, however, use concepts that lie in between the two extremes (Fischer, 2006); either they make use of polysemy relationships which have been shown to be general relationships, or they combine a monosemy approach with other resources that account for the specific uses of a discourse marker (Fischer, 2006).

Approaches that rely on polysemy relations often base their investigations on data from language change, which makes a network of interrelated meanings of an item particularly plausible (see Mosegaard Hansen, 2006). The relationships they employ in their models have generally been shown to be at work for a broad spectrum of linguistic phenomena (see Sweetser, 1990) and which therefore can be assumed to have some cognitive validity. In contrast, approaches that rely on invariant meaning components tend to use synchronic data but make use of additional information that helps to account for the possible interpretations of an item in a particular context. In order to account for the functional spectrum of discourse markers, some of these approaches involve a model of discourse itself (see, most prominently, Schiffrin, 1987). For an overview of current approaches to the functional spectrum of discourse markers see Fischer (2006).

In addition to the functional considerations, several different formal features for the identification of discourse markers have been proposed. Discourse markers may, for instance, come in very different sizes; while some are short and monosyllabic, others may be rather large formulas, serving, however, very similar functions. Different languages seem to have different tendencies towards the one or other type, and some languages also make use of the whole spectrum, as for instance, French (Mosegaard Hansen, 1998; Nemo, 2006). However, of the formal features, syntactic position is the one that has been found useful for systematizing and disambiguating discourse markers the most.

A central feature for the classification of discourse markers, either explicit or implicit, is therefore the kind of position in which an item occurs. To some degree, this criterion can be used to distinguish between different classes of particles. For instance, hedges (see Kaltenböck, Mihatsch, & Schneider, 2010) can be distinguished from discourse markers with a "bracketing function" (Schiffrin, 1987) on the basis of their syntactic position. Likewise, German discourse markers and modal particles can be distinguished on the basis of their integratedness in the syntactic structure of their host utterances (Fischer, 2007);

while discourse markers generally occur outside of the syntactic boundaries of a clause, modal particles are integrated into the sentence structure (Diewald, 2006). In some languages, discourse markers are even restricted to certain syntactic slots, like the sentence-final particles in "Singlish" (Singapore colloquial English, see Gupta, 2006; Ler, 2006).

The position a discourse marker occurs in, often paired with a particular prosodic realization (see Välimaa-Blum, 2005), can also help to disambiguate its possible interpretations. Many of the functions discourse markers fulfill are directly connected to certain syntactic positions. An obvious example is the turn-taking function, which depends on the fact that a marker occurs utterance initially. Often, this criterion is made use of implicitly when particular approaches only consider markers with particular functions, such as the connecting function. Some markers, however, may occur in different positions, and in some cases, these positions may contribute to disambiguating polysemous items. In addition, systematic relationships between a syntactic slot and a particular interpretation have been identified. For instance, the positions of German discourse and modal particles can be associated with particular functions; there may be a functional overlap such that discourse and modal particles may fulfill similar functions; however, if so, they fulfill the same function in different ways (Fischer, 2007). If it is the case that syntactic positions are associated with particular functional interpretations, the position may impose certain meaning components on whichever item occurs in the respective syntactic position. Thus, the interpretation discourse markers may have been in part due to the syntactic position in which they occur, giving rise to a sign-based or constructional account (Fischer, 2010).

Syntactic position is also relevant in grammaticalization processes (Diewald, 2008). Diewald shows for German modal particles that they develop in certain positions, so-called critical contexts, that is, in positions that allow unusual interpretations. Initially, their modal particle interpretations may be restricted to these positions, especially certain sentence types. The more an item becomes grammaticalized as a modal particle, however, the more flexibly it is used in different syntactic positions. Auer (1996) furthermore suggests that the utterance initial position in which many discourse markers occur, the syntactic pre-front field, is associated with a framing function (1996, p. 310) and serves as a grammaticalization position, leading clauses and other linguistic material in this position to become routinized and idiomatic and eventually to become discourse markers (1996, p. 313).

Crosslinguistically there are problems using positional information in the definition of discourse markers since different functions may be encoded by similar positions, and different positions may be associated with similar functions across languages. Thus, which function a position is connected with is language specific; one example is the utterance external, final position of Singlish discourse particles, which arose from language contact. These items have similar functions as the German utterance medial modal particles. For instance, Ler (2006, p. 161) suggests that "*lah* is used when the speaker intends to draw on the shared assumptions behind the utterance." For instance, she sums up previous research by arguing that *lah* may function "as a marker of rapport and solidarity, comparable to the English 'filler' *you know*,

(6) Don't be shy lah. [We are friends]." (Ler, 2006, p. 155)

That is, the utterance-final discourse particle *lah* in this example is taken to indicate that there is a proposition in the shared context that speaker and hearer are friends, on the basis of which the current utterance needs to be interpreted. This is exactly the function Diewald (i.e., 2006, 2008) suggests for utterance medial, syntactically fully integrated German modal particles:

> The function an MP [modal particle] fulfills is indexical insofar as it points back from the linguistic unit in which the MP appears and relates the utterance to a proposition or speech-act alternative which the speaker regards as relevant and given. (Diewald, 2006, p. 407)

Thus, even though a particular function may be related to a particular syntactic position in one language, the same function may be expressed in another position in another language.

In addition, the Singlish examples presented in Ler (2006, p. 159) show that speakers themselves use discourse markers (which are part of the host language English) and discourse particles (which entered the variety through language contact) interchangeably

(7) A: So you know we are not spared *lah*. Okay we are not spared *lah*.
(8) B: Uhm nice to know that I am not alone in all this.
(9) A: You are not spared *okay*. (ICE-SIN-SIB-077)

To conclude, what one language uses discourse markers for may be realized very differently in another language (see also Fillmore, 1984; Aijmer, 1997). It needs to be considered that similar functions may be related to other syntactic positions in other languages before conclusions can be drawn as to the functional role of such positions. Nevertheless, studies that take syntactic positions into account systematically allow a comparison of the relationship between function and position and thus take us a step forward in our attempts to understand the formal and functional spectrum of discourse markers. Although constructions, that is, form-meaning pairs, such as associations between syntactic position and a particular functional interpretation, cannot be directly compared across languages (Croft, 2001), they could nevertheless provide a good starting point for investigations into the role of particular positions with respect to utterances in general, and thus lead to a better understanding of notions like integratedness, the pre-front field, or the bracketing position, which have been found to be defining in the systematization of the field (see Schiffrin, 1987; Schourup, 1999; Fischer, 2006).

To sum up, the definition and delimitation of discourse markers and their subclasses constitutes an open issue; while we have accumulated a considerable body of knowledge on individual markers and their functions, future work will have to consider the functional spectrum of these items and how it is organized, as well as explain the relationships between these functions. Furthermore, future work needs to attend to those factors determining the different interpretations and disambiguating a given discourse marker occurrence for the respective hearer. Attempts at understanding the formal and functional variability of discourse markers and the spectrum of formal and functional features involved may proceed on the functional level, identifying relationships between readings and involving models of discourse, or relate discourse marker interpretations to those factors determining their interpretations, one of which may be the contribution of the positions in which discourse markers occur.

SEE ALSO: Hedges; Pragmatic Markers; Schiffrin, Deborah

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Discourse Versus discourse

JAMES PAUL GEE

Discourse analysis is the study of language in use (Fairclough, 1992; Gee, 1999). When we use language to communicate we must signal to our listeners *who* we are (in the sense of what socially meaningful identity or role we are speaking out of) and *what* we are doing (what action or activity we are attempting to carry out). People talk and act not just as individuals, but as members of various sorts of social and cultural groups associated with different identities. For example, if a policeman says "You should move your car" we need to know if he is speaking in his role as a policeman and ordering us to move the car, or speaking as a helpful fellow citizen giving us advice.

We determine who is speaking to us—in terms of a social identity or role—and what the speaker is trying to accomplish not just from the words uttered but also from the context in which they were uttered. Context is composed of not just what has been said, but all that is physically present and whatever shared knowledge, beliefs, and culture speakers and listeners assume can be taken for granted. Further, language and context are reflexively related to each other: what we say encourages listeners to interpret the context in certain ways, but what we take the context to be guides us in how we interpret the meaning of what has been said (Duranti, 1997).

We do not invent our language, we inherit it from others. We understand each other because we share conventions about how to use and interpret language. We can most certainly innovate within these conventions—create new words, give new meanings to old words, find new ways of saying things—but these innovations must be shared with others. The social groups in which we share conventions about how to use and interpret language are many and varied. These groups include cultures; ethnic groups; professions like doctors, lawyers, teachers, and carpenters; academic disciplines; interest-driven groups like bird-watchers and video-gamers; and organizations like street gangs, the military, and sports teams. There are yet many other sorts of social groups. Each of them has distinctive ways with words associated with distinctive identities and activities.

There is no one word for all these sorts of groups within which we humans act out distinctive identities and activities. People have tried various names for them: cultures (broadening the term), communities of practice (Lave & Wenger, 1991), speech communities (Labov, 1972a, 1972b), discourse communities (Bizzell, 1992), activity systems (Engeström, Miettinen, & Punamäki, 1999), actor–actant networks (Latour, 2005), collectives (Latour, 2004), thought collectives (Fleck, 1979), and others, such as professions and institutions. Each label is meant to capture only some such groups, or only some aspects of such groups' practices.

Gee (1990; see also Gee, 1989, 1999) introduced the term "Discourse" with a capital "D" (so-called "big 'D' Discourses") for any such group and the ways in which such socially based group conventions allow people to enact specific identities and activities. He used this term because such groups continue through time—for the most part, they were here before we arrived on earth and will be here after we leave—and we can see them as communicating ("discoursing") with each other through time and history, using us as their temporary mouthpieces. Gee used the term "discourse" (with a little "d") for any stretch of language in use. The following discussion is based on Gee (1990, 1999, and their subsequent editions).

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Gee (1990, 1999) introduced the term "social language" for distinctive styles or varieties of language with which people enact specific socially recognizable identities and actions or activities. Social languages allow people to speak as certain types of African Americans, doctors, soldiers, gamers, mathematicians, gang members, bird-watchers, politicians, or any of a great many other groups. However, when we enact an identity in the world, we do not just use language all by itself to do this. We use language, but we also use distinctive ways of acting, interacting with others, believing, valuing, dressing, and using various sorts of objects and tools in various sorts of distinctive environments.

If you want to show you are a basketball player you cannot just "talk the talk," you have to "walk the walk" and do that with a basketball on a basketball court in front of other people. If you want to get recognized as a devout Catholic, you cannot just talk the "right" way about the "right" things, you also have to engage in certain actions (like going to Mass) with the "right" people (e.g., priests) in the "right" places (e.g., church) and you have to display the "right" sorts of beliefs (e.g., about the virgin birth of Christ from his mother Mary) and values (e.g., deference to the Pope). The same is true of trying to get recognized as a "Native American," a "good student," a "tough policeman," or a "competent doctor." You need to talk the talk and walk the walk.

A Discourse with a capital "D" is composed of distinctive ways of speaking and listening and often, too, distinctive ways of writing and reading. These distinctive ways of speaking and listening, and reading and writing, or both, are coupled with distinctive ways of acting, interacting, valuing, feeling, dressing, thinking, and believing. In turn, all of these are coupled with ways of coordinating oneself with ("getting in sync with") other people, and with various objects, tools, and technologies. All this is in the service of enacting specific socially recognizable identities. These identities might be things like being a Los Angeles Latino street-gang member, a Los Angeles policeman, a field biologist, a first-grade student in a specific classroom and school, a "SPED" student, a certain type of doctor, lawyer, teacher, African American, worker in a "quality control" workplace, man, woman, boyfriend, girlfriend, regular at the local bar, and so on through a virtually endless list.

Discourses are about being "kinds of people" (Hacking, 1986). There are different ways to be an African American or Latino. Thus, there are different kinds of African Americans or members of any other cultural group. To be a policeman is to act out being a particular kind of person. So is being a "tough cop," which is talking and acting as "sub-kind" of person within the "kind" of being a policeman. Being a SPED ("Special Ed") student is one way to be a kind of student: it is one kind of student. There are kinds within kinds.

Different kinds of people appear in history, and some disappear. At one time in history, in England and the United States, you could be recognized as a witch, if you "talked the talked" and "walked the walk" (and in some cases you might do so unintentionally). Now it is much harder to be recognized as a witch in many of the places where it was once much easier, though there are still places in the world where you may be recognized as a witch. That "kind" of person has largely disappeared in England and the United States.

The main point of taking about Discourses is to focus on the fact that when people "mean" things to each other, there is always more than language at stake. To mean something to someone else (or even to myself) I have to communicate *who* I am in the sense of what socially situated identity I am taking on here and now (Wieder & Pratt, 1990). I also have to communicate *what* I am doing in terms of what socially situated activity I am seeking to carry out, since Discourses (being particular kinds of people, and doing what they do) exist in part to allow people to carry out certain distinctive activities (e.g., for a policeman, arresting people; for a Catholic, taking communion; for a good student, getting an "A" grade).

Language is not enough for such being and doing. We have to get our minds and actions "right," as well. We also have to get ourselves appropriately in sync with various objects, tools, places, technologies, and other people. Being in a Discourse means being able to engage in a particular sort of "dance" with other people, words, deeds, values, feelings, objects, tools, technologies, places, and times so as to be recognized as a distinctive sort of *who* doing a distinctive sort of *what.* Being able to understand a Discourse means being able to recognize and participate in such "dances."

Discourses are not units or tight boxes with neat boundaries. Rather they are *ways of recognizing and getting recognized* as certain sorts of *whos* doing certain sorts of *whats*. One and the same "dance" may be recognized in multiple ways: in partial ways, in contradictory ways, in disputed ways, in negotiable ways, and so forth through all the multiplicities and problematics postmodernism has made so popular. Discourses, then, are matters of enactment and recognition.

All recognition processes have to satisfy a variety of constraints in probabilistic and sometimes partial ways. For example, something recognized as a "weapon" (e.g., a baseball bat or a fireplace poker) may share some features with prototypical weapons (e.g., a gun, sword, or club) and not share other features. And there may be disagreement about the matter. Furthermore, the very same object might be recognized as a weapon in one context and not in another. So, too, with being in and out of Discourses, for example, enacting and recognizing being-doing a certain type of street gang member, Special Ed student, or particle physicist.

While there is an endless array of Discourses in the world, nearly all human beings, except under extraordinary conditions, acquire early in life an initial Discourse within whatever constitutes their primary socializing unit. Early in life, we all learn a culturally distinctive way of being an "everyday person" as a member of our family and community. We can call this our "primary Discourse." Our primary Discourse gives us our initial and often enduring sense of self and sets the foundations of our culturally specific vernacular language (our "everyday language"), the language in which we speak and act as "everyday" (non-specialized) people.

As a person grows up, lots of interesting things can happen to his or her primary Discourse. Primary Discourses can change, hybridize with other Discourses, and they may even die. In any case, for the vast majority of us, our primary Discourse, through all its transformations, serves us throughout life as what I will call our "lifeworld Discourse" (Habermas, 1984). Our lifeworld Discourse is the way that we use language, feel and think, act and interact, and so forth, in order to be an "everyday" (non-specialized) person. In our pluralistic world there is much adjustment and negotiation as people seek to meet in the terrain of the "lifeworld," given that lifeworlds are culturally distinctive—that is, different groups of people have different ways of being-doing "everyday people."

All the Discourses we acquire later in life, beyond our primary Discourse, we acquire within a more "public sphere" than our initial socializing group. We can call these "secondary Discourses." They are acquired within institutions that are part and parcel of wider communities, whether these communities be religious groups, community organizations, schools, businesses, or governments.

As we are being socialized early in life, secondary Discourses very often play an interesting role. Primary Discourses work out, over time, alignments and allegiances with and against other Discourses, alignments and allegiances that shape them as they, in turn, shape these other Discourses.

One way that many social groups achieve an alignment with secondary Discourses they value is by incorporating certain aspects of the practices of these secondary Discourses into the early (primary Discourse) socialization of their children. For example, some African

American families incorporate aspects of the practices and values of African American churches into their primary Discourse, just as my family incorporated aspects of the practices and values of a very traditional Catholicism into our primary Discourse. This is an extremely important mechanism in terms of which bits and pieces of a valued "community" identity or "public" identity (to be more fully practiced later in the child's life) are incorporated into the child's "private," "home-based," "lifeworld" identity.

Social groups that are deeply affiliated with formal schooling often incorporate into the socialization of their children practices that resonate with later school-based secondary Discourses. For example, their children are encouraged (and coached) from an early age at dinner time to tell in quite expository ways stories that are rather like little essays; and parents interact with their children over books in ways that encourage a great deal of labeling and the answering of a variety of types of questions, as well as the forming of intertextual relationships between books, and between books and the world.

There are, of course, complex relationships between people's primary Discourses and the secondary ones they are acquiring, as well as among their academic, institutional, and community-based secondary Discourses. For example, when they go to school children acquire a secondary Discourse that involves the identity of being a student of a certain kind and using certain kinds of "school language." This identity and these forms of language can, at certain points, conflict with the identities, values, and ways with words which some children have learned at home as part of their primary Discourse. For other children there is a much better fit or match.

Here is one example of such a conflict (Scollon & Scollon, 1981). In some Native American groups, people of a subordinate status remain quiet in the presence of elders or those of a higher status who display their knowledge by speaking. School often requires children to display their knowledge by speaking to the teacher so that she can assess it. But the teacher is of higher status, the authority figure, and the child's home-based Discourse dictates listening, not speaking and displaying, in this sort of context.

Discourses can mix or be ambiguous. For example, an African American running for office might, in a church, be speaking and acting from a mixture of a church Discourse—seeking to get recognized as a Christian of a certain sort—and a political Discourse—seeking to get recognized as a politician of a certain sort. Or there may be ambiguity about which Discourse is in play at which time. When people speak and act they are "bidding" to be recognized as a certain kind of person; the "bid" may not always be successful, or the person may be recognized in different ways than he or she intended.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Critical Discourse Analysis; Discourse and Identity; Language and Identity; Language, Culture, and Context; Sociocultural Theory

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Suggested Readings

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Discourse: Mixed Methods

JOHN H. PARMELEE AND STEPHYNIE C. PERKINS

There are many fields where discourse can be studied, and there are many methods that can be used to study discourse. One such field is political communication, which includes US presidential campaign communication. Research on presidential campaign discourse tends to focus on the candidates' speeches, debates, and political advertising. However, while there are many studies that have examined the discourse found in presidential campaigns, only a few studies have done so using a mixed methods approach (Parmelee, Perkins, & Sayre, 2007). This article offers an example of how discourse can be studied in a more meaningful way using a mixed methods approach than by using any one method. One political ad—the first that Barack Obama's campaign released during his presidential run—is examined with a quantitative method (manifest content analysis), and a qualitative method (frame analysis), to demonstrate the value of mixed methods for studying campaign discourse.

Background to the Type of Discourse Being Examined

The first political ad Obama ran was not a traditional 30-second spot but rather a six-minute video, titled *Meet Barack*, which was featured prominently on his campaign Web site a year before the first primary began, and through his nomination win. Most presidential candidates during the last 20 years have used these long-form videos, which are known as "meet the candidate" videos (Parmelee, 2003). They combine biographical and issue information to establish an initial impression of the candidate during the pre-primary stage. The visual and verbal information contained in a video's story line is often pre-tested on party leaders and campaign-run focus groups, and revisions are sometimes done after that to make the candidate appear ideal for the presidency (Devlin, 1994; Parmelee, 2003). The videos, which are often the first advertising produced and disseminated by campaigns, are shown at major party functions to attract potential donors and likely voters. Journalists also see the videos, and the story lines contained within them can shape media coverage (Connolly, 1999). The Web now allows an ever-increasing number of people to watch and be influenced by such videos. Obama's Web site, for example, allowed and encouraged viewers to e-mail his candidate video to friends. The video was updated several times during the campaign. A later version of the video can be viewed at http://www.youtube.com/watch?v=WNaFb58C63o

Mixed Methods Research Design

A mixed methods approach can provide a recursive understanding of any kind of discourse. What is found using one method can enlighten and add context to what is found in another method. In this article, content analysis shows how Obama was presented as an "ideal candidate," based on previous research that indicates that there are certain "ideal candidate characteristics" that people expect in a president (Trent, Short-Thompson, Mongeau, Metzler, & Trent, 2005). In addition, frame analysis shows how those characteristics connected to

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a dominant theme, which provides added insight into the power of Obama's presentation. Three research questions were asked:

- RQ1: To what degree does Obama's candidate video display ideal candidate characteristics?
- RQ2: What frames are present in Obama's candidate video?
- RQ3: How do the ideal candidate characteristics that are in Obama's video relate to the frames that are apparent in the video?

Many mixed-methods research designs can answer multi-layered research questions such as these. According to Creswell, Plano Clark, Gutmann, and Hanson (2003), there are six such designs: sequential explanatory, sequential exploratory, sequential transformative, concurrent embedded, concurrent triangulated, and concurrent transformative. Research into the Obama video is an example of a sequential explanatory study. Sequential explanatory studies begin with a quantitative method and later utilize a qualitative method to put the quantitative results into some larger context. First a quantitative method, content analysis, examined which ideal candidate characteristics were evident in Obama's video. After that a qualitative method, frame analysis, helped to explain the importance of the content analysis findings by showing how the ideal candidate characteristics connected to the video's dominant frames to make the characteristics more persuasive.

Content Analysis and the Examination of Thematic Content

There are many aspects of discourse that content analysis can examine. However, it is important to remember that one should look only at manifest content, which is content that can be explicitly seen or heard. As a result the unit of analysis, which is the aspect of content being measured in a study, is often syntactical or thematic content. A content analysis of syntactical content might count the number of times certain words are mentioned in a speech or ad. In terms of Obama's video, thematic content was analyzed: specifically ten themes called "ideal candidate characteristics." Research over several decades indicates that there are ten personal and professional characteristics that people consider ideal for a presidential candidate to possess (Trent et al., 2005). It is important for candidates to verbally and visually display as many of these characteristics as possible, because research shows that candidates who do so can heavily influence how people perceive them (Parmelee, 2008).

Doing a proper content analysis requires that the thematic content under study, in this case the ten characteristics, be clearly defined, or operationally defined, so that the people doing the content analysis, called coders, will know precisely what to look for. The ten ideal candidate characteristics are listed below, along with their "operationalizations," or definitions, which are presented here in parenthesis: talks about the nation's problems (mentions problems facing America); has solutions to problems (mentions solutions that the candidate has been a part of or solutions the candidate is proposing); has moral character (talks about morality); faithful to spouse (shown with spouse as part of a strong family unit); experience in office (mentions the candidate's past legislative accomplishments or general political experience); honesty (mentions honesty, integrity, ethics); forceful public speaker (talks with passion or strength); energetic leader (shows energy, passion, enthusiasm); remains calm and cautious (never shows anger or exciteable temperament); military service (mentions candidate's military service). If the operationalizations fail to accurately describe the characteristics being analyzed, the coders might not find characteristics in the video even if they are there, which would be called a "threat to construct validity."

Table 1 Content analysis: absence or presence (visual and/or verbal) in Obama's 2008 candidate video of the "ideal candidate qualities" described in Trent et al., 2005

Ideal candidate qualities	*Coder 1*	*Coder 2*
1 Talks about the nation's problems	1	1
2 Has solutions to problems	1	1
3 Has moral character	1	1
4 Faithful to spouse	1	1
5 Experience in office	1	1
6 Honesty	1	1
7 Forceful public speaker	1	1
8 Energetic leader	1	1
9 Remains calm and cautious	1	1
10 Has done military service	0	0

1 = present; 0 = absent.

The ten ideal candidate characteristics, along with the operationalizations, were then put on paper, called a code sheet, so that the coders could mark which of the characteristics were apparent in the video. The coders individually viewed and coded Obama's video and noted the presence or absence of these characteristics, which could be displayed visually or verbally.

To control for the potential differences that race and gender might impose on how political advertising is viewed, one coder was an African American female and the other was a white male. Coders had to agree on what they found, to achieve what is called intercoder reliability, at least 80% of the time. In this study, intercoder reliability was 100%. Intercoder reliability can be calculated with one of several formulas, including one by Holsti (1969). In Holsti's formula, intercoder reliability = $2M/(N1 + N2)$, where M = the number of times the two coders agreed, N1 = the number of coding decisions by the first coder, and N2 = the number of coding decisions by the second coder. In this study, there were ten coding decisions for each coder because there were ten ideal candidate characteristics that they were looking for. After viewing the video, the coders agreed on all 10 characteristics. Table 1 shows the data set for the content analysis, which looked at one video, Obama's. However, the techniques described here could be used to analyze the discourse in a wide range of videos.

Frame Analysis and the Search for the "Central Organizing Idea"

While a manifest content analysis can examine the presence or absence of themes that researchers know in advance they are looking for, this method is not best at discovering and analyzing themes that researchers had not planned to look for. Frame analysis is the best method to reveal themes that emerge from the content being analyzed. All forms of communication, including political ads, tend to arrange information around a frame, which is the "central organizing idea or story line that provides meaning to an unfolding strip of events" (Gamson & Modigliani, 1987, p. 143). Entman (1993) noted that this organizing process, also called the framing process, involves selection and salience: "To frame is to select some aspects of a perceived reality and make them more salient in a communicating text" (p. 52).

In terms of Obama's video, the video's producer organized the verbal and visual appeals around a central theme, or frame, to provide meaning in an efficient package for viewers to absorb and interpret. However, there are an infinite number of frames that the video's producer could have chosen, so examining why certain frames were picked can provide insight into the type of audience being targeted and the video's overall objective.

There are several steps involved in conducting a frame analysis. A transcript must be made of the words and visual elements in the text being analyzed. The text should be viewed numerous times in order for the viewer to become familiar with all of the verbal and visual elements. Entman (1993) argued that frames can be discovered in any text by looking closely for "keywords, stock phrases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments" (p. 52). During the viewing process, it is important to take detailed notes of all the key words and images that apply. In reviewing the notes, close attention is paid to how the words and images are organized around one or two key themes. As a check against the subjectivity of any one researcher, multiple researchers should independently view the text and transcript. Afterward, the researchers compare their notes and locate the commonalities in their findings. The frame analysis of Obama's video followed the process described here, which revealed themes that emerged from the data.

Mixed Methods Results

Several steps were taken to make the quantitative and qualitative results comparable. The first step involved having the content analysis coders discuss with each other what words and images in Obama's video correlated with each ideal candidate characteristic. Once those particular words and images were known, it was possible to compare them to the key words and images that were recorded during the frame analysis. The final step was to find out if the words and images that were used to display ideal candidate characteristics were the same as the words and images that made up the video's dominant frames.

When discussing results from a mixed methods study, one can report each method's findings in a separate section or as part of one section. In the Obama candidate video study, the content analysis and frame analysis findings are discussed together.

In terms of the content analysis, the words and images used in Obama's video displayed nine of the ten ideal candidate characteristics. Military service was the only characteristic not displayed. In displaying these ideal candidate characteristics so fully, Obama was able to match the expectations that surveys during the last 20 years have shown are the most desirable in a presidential contender. The frame analysis revealed a dominant theme that ran throughout the video: unity. Obama was shown as a unifier with regard to politics, class, geography, and race. Furthermore, the words and images used to display most of the ideal characteristics also connected to the unity frame, which framing theory suggests would make the video more persuasive. Examples of the connections between the characteristics and the unity frame are given below.

Seven ideal candidate characteristics that were displayed in the video—talking about the nation's problems, having solutions to problems, honesty, experience in office, being a forceful public speaker, being an energetic leader, and remaining calm and cautious—were connected to the unity frame in terms of political unity. Obama addressed many concerns—gaps in the healthcare system, loose nuclear weapons, the need for tougher ethics laws to keep politicians honest—by talking about how he had built bipartisan coalitions to solve many problems during his years as a legislator in Illinois and in the US Senate. The video notes, "In all these efforts, he's brought Democrats and Republicans together for the common good" (AKP Message & Media, 2007). Emphasizing Obama's

bipartisanship shows his ability to be a political unifier and increases the chances that viewers will see him displaying the ideal characteristic of having solutions to problems. In other words, a legislator who reaches across party lines tends to have more success at passing legislation than one who is not successful at achieving working coalitions.

The ideal characteristics of forceful public speaker, energetic leader, and remaining calm and cautious can be seen whenever Obama is shown speaking, and especially during the opening and closing scenes of Obama's video, which are taken from his keynote speech at the 2004 Democratic National Convention. His speaking style is forceful and energetic, yet he avoids showing anger or the kind of exciteable temperament that clashes with the expectation of a calm and cautious leader. As he speaks he moves his arms vigorously, as opposed to keeping them idle at his side. He also points his right finger with force when he wants to add emphasis, but he does not point his finger directly at the crowd or the camera, which might seem intrusive or overly aggressive. The video begins with the convention crowd applauding when he says: "There is not a liberal America and a conservative America, there is the United States of America" (AKP Message & Media, 2007). This speech also connects to the unity frame by emphasizing the unity of the country rather than preeminence of any ideology.

The Value of Mixed Methods

A mixed methods approach is valuable because every method has limitations. Each method is designed to reveal answers to certain types of research questions, but not others. As a result, using only one method would limit the ability of a study to comprehensively answer all the questions posed. In this article, the first research question calls for a quantitative examination because what is being looked for are discrete elements—in this case, ten characteristics—that can be operationally defined before the data gathering begins, and then objectively measured numerically. The second research question requires a qualitative exploration to understand what dominant frames, or themes, are embedded in Obama's discourse. These are themes that might fall outside the preset operational definitions used in a quantitative content analysis. Such definitions demand, as Pauly (1991) put it, "consistency of denotation and absence of connotation. The language of everyday life, however, is lushly metaphorical, wildly contradictory, willfully connotative, and cynically strategic. What can researchers hope to know of human communication if their methods ban the play of meanings?" The third research question can be answered only after integrating the results from the content analysis and frame analysis. In other words, the third research question seeks to determine whether or not the ideal candidate characteristics present in Obama's video are connected to the video's frames. If the characteristics are linked to one or two dominant frames, framing research suggests the video will be more effective with viewers than if the characteristics fail to make this connection. The mixed methods design described in this article can be used to analyze a wide array of discourse, ranging from speeches and news reports to interpersonal communication.

SEE ALSO: Mixed Methods; Qualitative Methods: Overview; Validity: Mixed Methods

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Discourse: Overview

SIGRID NORRIS

"Discourse analysis is widely recognized as one of the most vast, but also as one of the least defined, areas in linguistics (e.g. Stubbs, 1983, p. 12; Tannen, 1989, pp. 6–8)" (Schiffrin, 1994, p. 5). As the quote suggests, discourse analysis encompasses a range of investigations, but many linguists would agree that discourse analysis is primarily concerned with spoken language. Quite often, discourse analysts examine spoken language by taking the utterance as their unit of analysis (Schiffrin, 1994, pp. 40–1). Utterances, or breath-units (Chafe, 1980), can be analyzed from a syntactic or sequential point of view or from a semantic or pragmatic point of view, thereby balancing the formal (investigation of patterns) and the functional (analysis of how utterances are used in context) perspectives. Thus, both form and function are of importance to discourse analysts. Yet, some analysts may be more interested in one and some more in the other. Regardless of the analyst's primary interest, TRANSCRIPTION is of great importance to all discourse analysts, as the transcribed utterances, the transcript, are the data that are later analyzed.

Discourse analysis is sometimes confused with conversation analysis and the entry on DISCOURSE ANALYSIS AND CONVERSATION ANALYSIS clearly shows where and how they differ. Another important distinction is made by Gee (1999) where Discourse (with a big "D"), on the one hand, encompasses the way social actors act and how they speak in a certain area of their life, so that we may speak of the Discourse of student life, the Discourse of homeowners, or the Discourse of dog-walkers. Small "d" discourse, on the other hand, largely overlaps with what discourse analysts generally view as discourse (see DISCOURSE VERSUS DISCOURSE).

In discourse analysis itself, several major directions or approaches to discourse are evident, including CRITICAL DISCOURSE ANALYSIS, DISCOURSE AND COGNITION, INTERCULTURAL DISCOURSE, MEDIATED DISCOURSE ANALYSIS or DISCOURSE IN ACTION, NARRATIVE DISCOURSE, and RHETORICAL DISCOURSE ANALYSIS. These approaches differ from one another in ways that are described in each entry.

Because discourse is used to accomplish many nonlinguistic goals, discourse analysis has developed around thematic orientations, some of which are included in the encyclopedia. Thematic directions often take one of the above approaches as their framework, but focus on larger thematic areas such as ANTICIPATORY DISCOURSE, CLASSROOM DISCOURSE, MEDICAL DISCOURSE, DISCOURSE AND IDENTITY, DISCOURSE IN ORGANIZATIONS, FAMILY DISCOURSE, IMMIGRANT DISCOURSE, or NEWS DISCOURSE, or focus on more narrow thematic areas such as DISCOURSE MARKERS or RHYTHM IN DISCOURSE. In the future, such thematic areas will undoubtedly continue to expand as discourse analysts expand the breadth and depth of their work in other areas.

SEE ALSO ON DISCOURSE: Bamberg, Michael; Bell, Allan; Candlin, Christopher N.; Ehlich, Konrad; Erickson, Frederick; Gee, James; Ochs, Elinor; Sarangi, Srikant; Schiffrin, Deborah; Tannen, Deborah; van Dijk, Teun A.

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Discriminant Function Analysis

SARA DA SILVA RAMOS AND SUSAN J. RICKARD LIOW

Discriminant function analysis (DFA) is a data-reduction technique used to make decisions about naturally occurring group membership. It can answer theoretical questions but has proved especially useful in applied research. In this entry we begin with an overview of DFA, describing the two types of DFA investigation and its three main procedures, followed by a summary of DFA's potential and its limitations. We then explain the steps needed for interpreting DFA results, and conclude with two recent examples of the use of DFA as a statistical tool in psycholinguistic research.

Overview

DFA works by extracting a linear combination of variables that maximizes the differences between natural group means, and allows identification of the variables that predict group membership from a set of predictors. The adequacy of this natural group classification is then compared with the membership in the groups of interest—the dependent variable (DV).

Conceptually, DFA may appear similar to regression but the independent variables are usually continuous, the DV is categorical (unlike linear regression) and can predict membership of more than two groups (unlike logistic regression). DFA is also different from both factor analysis and cluster analysis. When using DFA, the researcher is analyzing whether a set of measures (the independent variables) are useful to predict group membership by identifying which variables are the best discriminators between groups, rather than identifying the factors (latent variables) underlying a set of correlated variables, or clusters (groups) of individual cases based on similarities in the set of variables.

Two Types of DFA Investigations

Descriptive investigations: DFA is often used as a follow-up to MANOVA (multivariate analysis of variance, in place of a series of ANOVAs) for interpreting the major differences between groups. These differences might include measurements of participants' abilities on a battery of cognitive or linguistic tests. For example, DFA could be used to investigate the nature of the relationship between different abilities in children thought to be at risk for dyslexia; DFA would help by identifying which test(s) are the most useful for measuring cognitive or linguistic abilities, and which results best discriminate children at risk for dyslexia from typically developing children.

Predictive investigations: DFA can also determine the relative importance of a set of variables, or combination of variables, that reliably predict group membership. For example, DFA could be used as a time-saving means of selecting or allocating applicants for special training or employment, based on the outcome of previous experience with a successful pool of recruits.

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Three DFA Procedures

First, standard DFA results, in which all DVs are tested at the same time, are relatively simple and clear, and they offer parsimony in complex data sets. For example, 200 children from four nurseries differ on 10 variables (birth weight, age at first word, age at first step, height, weight, mother's education, father's income, number of siblings, birth order, hours spent sleeping). A health worker wants to know the relative influence of variables on children's literacy skill achievement in school (good, average, or weak). DFA could be used to identify the major differences between the four nurseries. The result might be that only two subjectively labeled dimensions—for example, "socioeconomic group" and "physical development"—are the two discriminant functions that have significant standardized canonical classification coefficients, and they account for 80% and 10% of the variance respectively.

Second, sequential (or hierarchical) DFA is often preferred to standard DFA because it allows the researcher to enter variables according to their ability to discriminate the two (or more) groups in a specific order. In this case, putting parental education and income first would maximize separation, but since these are not very amenable to intervention, the health worker would want to know which aspects of physical development might make a difference.

Third, stepwise DFA is statistically driven, and is only used when there are no a priori practical or theoretical reasons for giving precedence to DVs over others. The disadvantage of using statistical over theoretical or practical criteria is that it can lead to results that rely on trivial differences in relationships among variables (Tabachnik & Fidell, 2001). These will not be helpful for understanding the important differences between groups.

DFA Potential and Limitations

DFA is available in most statistical packages (e.g., SAS, SPSS, Statsoft, SYSTAT) and is easy to use (see Field, 2009). DFA's ability to account simultaneously for differences in combinations of variables between groups over and beyond differences across single multiple variables is perhaps one of the most powerful aspects of this technique. In addition, DFA can provide mathematical equations that enable the prediction of group membership in new cases, and it can assess the accuracy of this prediction. However, there are a number of issues to take into account when using DFA, and caution is needed to ensure reliability of the discriminant functions and their interpretation.

First, the general assumptions for parametric data must be met: Observations must be statistically independent; the data should be interval and randomly sampled; there should be multivariate normality for the DVs; and the assumption of homogeneity of variance–covariance matrices must be met (Box's test). Having equal sample sizes across groups is particularly important when using DFA for accurate prediction of group membership. Setting the probability of a case being assigned to a group based on the sample size (i.e., smaller groups to be less probable than larger groups) is one way of avoiding the problems associated with having unequal sample sizes. In addition, the sample size of the smallest group should exceed the number of predictor variables by more than two (Klecka, 1986). Therefore, in the above example where a health worker wants to predict literacy skill from 10 variables, there should be at least 12 observations (participants) per group. A few outliers in one group can greatly distort the results, so exploring the raw data and descriptive statistics before DFA is especially important. Most of the DFA assumptions can be tested in the same way as for univariate tests, such as regression or ANOVA. When there is a clear violation of the assumptions (especially nonhomogeneity of variance or small, unequal sample sizes) and eliminating outliers or transforming variables does not solve the problem, nonparametric solutions such as logistic regression should be used instead of DFA.

Additionally, most statistical packages are not well suited to deal with within-subjects designs, and so factorial designs are best investigated through MANOVA (but see Tabachnick & Fidell, 2001, for an example of use of DFA with a factorial design).

Steps in Interpreting DFA Results

If the DFA assumptions (see above) have been met, there are still five steps needed to ensure clear interpretation of the results, and to maximize the utility of DFA. The relevant output for these steps is available in most statistical packages, though the format and options for analyses and output of DFA differ across programs. For a detailed comparison between SAS, SPSS, and SYSTAT refer to Tabachnik and Fidell (2001).

Step 1 in interpreting the DFA results is to assess whether group membership can be reliably predicted from the set of DVs. This can be done by examining the significance of the Wilks's lambda and chi-square results associated with each function. Step 2 is to note how many dimensions (or functions) can reliably distinguish the groups within the pool of participants. The number of extracted functions is normally one fewer than the number of predicted groups, but it is not always the case that all functions extracted significantly improve the prediction of group membership.

Step 3 is to check whether the amount of variance is accounted for by the resulting function(s), and whether additional functions can add to the predictive power of the initial function. This is given by the canonical correlation associated with each function that, when squared, indicates the proportion of variance accounted for by the group of DVs in separating the groups according to that function. This type of information can be particularly important when deciding whether or not additional tests would be useful. In the health worker example (see above), further measurements might facilitate treatment planning if DFA can discriminate children with different types of dyslexia for allocation to different intervention programs. Alternatively, a common finding is that a combination of variables, rather than one variable, is essential for predicting group membership. For example, a combination of reading accuracy, reading comprehension, and phonological awareness test results might identify children at risk for dyslexia better than reading accuracy alone.

Step 4, the structure matrix of correlations between each discriminant function and the DVs, is important to an understanding of the meaning of the functions. This shows the correlations between each discriminant function and the DVs, and tells the researcher what variables differentiate the various groups. For example, overall reading accuracy may be strongly correlated with a first function that reliably discriminates children with dyslexia from normally developing children, but difference in performance between regular and irregular words in a spelling test might be useful for discriminating children with reading disabilities who have phonological difficulties from those who do not. In this situation, the second function would load more strongly on the task measuring regular–irregular discrepancies.

Step 5 is optional, but DFA results also provide a set of standardized canonical discriminant function coefficients that can be used for deriving discriminant function scores. The squared canonical correlation for each variate is also an appropriate measure of effect size for this test (Field, 2009). In addition, classification equations based on the classification function coefficients can be developed for each group, and enable the prediction of the most likely outcome in new cases. The resulting equations for each discriminant function, or group classification function, are similar to those obtainable in multiple regression. Individual standardized scores in each DV are multiplied by the respective standardized discriminant function coefficients (or classification function coefficients), and the products for all the predictors are added and compared with the group centroid. The adequacy of

Table 1 Classification accuracy table for the health worker example

Developmental status	*Predicted group membership*	
	Typical	*At risk*
Typical	Correct classification	**False positive**
At risk	**False negative**	Correct classification

the classification function for predicting group membership can be assessed by verifying the proportion of cases that are correctly classified. The "leave one out" classification is a simple procedure of cross-validation that verifies whether the classification for each case is correct, when data from that case are left out for deriving the classification function. When assessing the adequacy of the classification, it is important to distinguish between false positives and false negatives (see Table 1) and to consider the implications of either kind of misclassification. In the example of the health worker, a high proportion of false negatives could lead to a large number of children not being given intervention because they have been misclassified as typically developing. On the other hand, using a classification function that results in a considerable proportion of false positives will result in wastage of resources for intervention, because children will be identified as at risk when they are in fact developing typically.

Concluding Remarks and Examples

DFA is not a type of statistical analysis frequently used in psycholinguistics, or in applied linguistics more generally. This is probably because most theoreticians are less likely to be concerned with data reduction. They are usually looking for differences across groups on a series of variables, or in predicting variability in a particular trait or ability based on a set of predictors. In these types of designs, the researcher is more interested in investigating the effects of a manipulation on different groups, and other kinds of parametric analysis would be more appropriate (e.g., ANOVA, regression)—techniques that are more widely used and understood. However, DFA has a useful role to play when the researcher wants to investigate variable differences across naturally occurring groups; that is, the researcher decides which measures are relevant to collect for the main pool of participants and then assesses their ability to discriminate groups of interest.

Most of the current psycholinguistic research that has employed DFA has been aimed either at validating assessment tools for classifying or diagnosing individuals in different groups, or at assessing whether a combination of tests enables greater accuracy in classification or diagnosis than individual tests. Recent examples of the use of DFA in clinical practice include an assessment tool for bilinguals (Lim, Rickard Liow, Lincoln, Chan, & Onslow, 2008) and how a combination of subjective and objective data improves the identification of children with language impairment (Bishop & McDonald, 2009). Briefly, Lim et al. (2008) examined whether bilingual (English–Mandarin) participants' ratings about their language proficiency, frequency of language use, and domain of language used in each of their two languages were significant predictors for determining language dominance, as assessed by the overall responses to a self-report questionnaire. The researchers found that a combination of these variables could correctly classify language dominance well above chance in English-dominant, balanced, and Mandarin-dominant bilinguals. The classification results obtained through DFA were further validated by comparing the results

of each group in English and Mandarin vocabulary tests. Bishop and McDonald (2009) showed how a combination of language test scores and parental reports is a much more accurate way of diagnosing specific language impairment than using either of these methods alone. This example is a clear illustration of the unique potential of DFA compared with other statistical techniques; analyzing either test scores or parental report would yield differences across the normally developing and language-impaired children groups, but the DFA's combination of results from objective instruments and report techniques improves diagnostic accuracy.

DFA is thus particularly useful for studying groups that differ in complex ways across a number of variables. The two examples provided demonstrate the potential of DFA in validating psycholinguistic measures and tasks, as well as in assessing the clinical utility of such measures used alone or in combination.

SEE ALSO: Cluster Analysis; Describing and Illustrating Quantitative Data; Factor Analysis; Multiple Regression; Variables

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Distance Language Learning

CYNTHIA WHITE

Distance education offers individuals flexible access to language learning opportunities made possible by a range of technologies including print, audio, video, Web, and interactive conferencing. The evolution of large-scale distance language education from print-based correspondence courses came first with educational radio and broadcast television, then audio and videocassettes, and most recently computers with computer-mediated communication (CMC), interactive multimedia and Web-based video, audio, and multimedia. Ongoing innovation has offset one of the most significant limitations of distance language learning, namely the separation of teachers and learners, and made possible a range of technology-mediated ways to develop interactive competence in the target language. Significant shifts in perspectives and practices have taken place from traditional paradigms focused on independent learning facilitated by self-instructional materials to emerging paradigms focusing on learning as a social process supported largely by information and communication technologies. Distance learning contexts now comprise interconnected communities rather than a series of individual learners, opportunities for spoken online learning events, and authentic encounters with the target language culture and native speakers. The new ways of configuring and accessing distance language learning opportunities, independent of place and/or time, have been adopted by institutions as a means of expanding access to their courses. Changes in the positioning of distance learning opportunities from the margins to the mainstream have largely been due to the advent of CMC, combined with the demand for flexible access to language learning environments; distance language programs have been developed for less commonly taught languages such as Arabic, Chinese, Korean, and Basque, as well as for heritage languages such as Spanish and Italian. It would, however, be a mistake to equate distance learning opportunities with CMC, since a wide range of alternatives for distance learning exist, each with their related practices, including the use of telephone, radio broadcasts, video conferencing and interactive television, and Web 2.0 tools.

Distance language learning can be seen as having evolved through a number of successive waves, or generations (see, e.g., Wang & Sun, 2001), from print-based courses to current models using Internet-based real-time tools for spoken and written interaction and collaboration. The earliest documented forms of distance language learning were developed in Sweden in the 19th century, based around letter writing: Interaction was central to these courses as teachers replied to students' letters drawing out further topics of interest and returning the original correspondence with corrections. Larger scale courses were subsequently developed, using print to carry the educational content to the learners; interaction between teacher and learners was "one-way"—usually by post—with a time lag between mailing and response. A print-based model of correspondence learning was the predominant mode of delivery up to the 1960s: Written teaching dominated, in contrast to spoken teaching (Peters, 1998), and learning by reading was stressed. Few distance language courses were offered at this stage since the context did not support opportunities to develop skills in speaking and listening. This traditional paradigm emphasized independent learning facilitated by self-instructional materials with access to support, feedback, and, in some cases, face-to-face group learning opportunities. The next generation of course models

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emerged with broadcast language programs via radio and television, and later with audio- and video-based multiple media language courses. At this stage course development focused on enhancing the quality of students' individual interactions with specially designed printed materials, audio and videotapes, combined with the use of the telephone.

Computer technologies then extended learning opportunities into new realms. Multimedia systems were enhanced by online asynchronous learning environments which included interactive CD-ROMs, Web presentation of materials, and asynchronous CMC in the form of email and discussion lists. Virtual learning environments were adopted by some as merely an alternative medium for the transmission of distance learning materials associated with first and second generation distance language learning. However, it was clear that the new opportunities for communication and interaction changed the relationship between teachers and learners, requiring new roles, new skills, and new forms of expertise among teachers. The distinction between the use of technology for distribution purposes, as opposed to technology used for communication as in email and computer conferencing, became central to understanding exactly what was being offered by distance online language courses (White, 2006). Concerns about student access to learning environments emerged at this stage and a number of courses offered content in both traditional and online options (Reynard, 2003).

Satellite broadcast and interactive television (ITV) have been features of distance education systems in the USA (Oxford, Park-Oh, Ito, & Sumrall, 1993) and Australia (Evans, Stacey, & Tregenza, 2001). This group-based form of distance language education allowed instruction to be delivered to whole classes, and has been especially useful in schools compensating for a lack of local language teachers (Glisan, Dudt, & Howe, 1998). Live one-way satellite transmission has been supplemented by interactive elements including telephone links or fax, and later by email and synchronous CMC. Key issues associated with this paradigm include matching diverse student needs with the content and rate of progression in the broadcasts, the role of the ITV classroom teacher, and the challenge of sustaining student participation and motivation.

Distance language learning has also developed around interactive synchronous learning opportunities with the instructor and other students, as in audiographics, using written and spoken CMC, and oral–visual interaction through Internet-based video conferencing. Starting in the mid-1990s, the use of synchronous audio online, fundamental to audiographic learning environments, was pioneered by researchers at the Open University in the UK. The Lyceum environment—integrating audio, text, and graphics online—significantly extended opportunities for spontaneous interaction and collaborative learning activities supporting the development of interactive oral fluency (Kötter, 2001). The complexity of the multimodal environment, comprising voicebox, whiteboard, a concept map, a document facility, and text chat, was found by some students in the initial stages to be overwhelming, highlighting the importance of adaptive learning and the self-regulation of affect in distance environments. Subsequent enquiry into sociocollaborative task design and tutor training (Hampel, 2006) extended our understanding of what it means to use and foster the use of language online. Spoken online language learning has now emerged as a significant avenue of enquiry in distance language learning with a focus on the affordances and constraints of different online mediums for developing spoken interaction, the contribution of social presence, and the nature of oral competence and intercultural competence online (Lamy, 2004).

Video conferencing was first incorporated into distance language learning in the mid-1990s. A pioneering study carried out by Goodfellow, Jeffreys, Miles, and Shirra (1996) was based on pilot video-conferencing tutorials as part of a distance learning component in a professional English course. While they found evidence for the considerable motivational benefit of video conferencing for participants, there were specific effects on the language

used: delayed transmission disrupted turn-taking, inhibiting conversation and making body language and facial expressions much less useful than anticipated. The importance of explicitly building the connection between activities and practices in video-conferencing sessions and the other components of the language course emerged clearly in the study. Desktop video-conferencing tools have been extensively tested and refined for the teaching of Chinese by distance (Wang 2004) with a sustained focus on such pedagogical issues as task design, the development of communicative competence, and teacher learning.

CMC initially meant using text-based systems for interaction, and the most common forms in distance language learning were first email, then computer conferencing, and real-time chat. Student response to CMC components of distance language courses was initially more complex than expected: Some students were reluctant to participate, or preferred to use CMC for development of receptive competence, for example. The visibility of learners in CMC environments and evidence of lack of involvement, while initially disconcerting, led to new understandings of the importance of social presence online, the need for clear guidelines for students, and the development of teacher expertise in fostering participation online. Murray (2000) argued that CMC was responsible for a shift in the positioning of distance education from the margins to being recognized as a more mainstream form of provision of language learning opportunities. CMC then developed to include oral and written forms which could be used separately or in conjunction. The impact was such that CMC has been described as "the glue of language learning at a distance" (Blake, 2005); while distance language courses include a range of components and independent learning opportunities, they can be brought together, and held together, by regular CMC sessions, hence the glue metaphor. Specifically, CMC engages students, allows them to bring alive the language they study independently, and helps maintain motivation. Bimodal chatting, via sound and text, allows the textual mode to be used as support or backup to what students are doing in the voice channel, without interrupting the speaker. Distance language courses have extended the use of interactive opportunities that text chat offers to prepare students to participate successfully, without teacher intervention, in public chat rooms with native speakers (Tudini, 2005). Here too, the potential benefits of such tools depend on task design, the skills of the teacher, and the way CMC sessions are articulated into the course curriculum.

By the start of the new millennium the reach of distance learning experiences had extended significantly with technology-mediated access to authentic encounters with the target language and culture. While telecollaborative projects offer an authentic and purposeful intercultural experience, such projects are more complex to incorporate into distance language learning given the dispersion of participants. This potential disadvantage is, however, partially offset by the fact that distance students are accustomed to technology-mediated language use. Web 2.0 platforms have enhanced telecollaborative projects, allowing individuals and groups to contribute knowledge, opinions, ideas, and experiences and to form social networks. One example comes from vom Brocke, White, Walker, and vom Brocke (2010) where the two cohorts were distance students of German as a foreign language in New Zealand and English for the social sciences at Münster University, Germany. The configuration of tools provided students with a rich environment for collaboration: Students chose from among a wide range of communication tools, voice, and text, including chat, asynchronous discussion forums and wikis, to plan, exchange ideas, share information, negotiate, collect and analyze data, and provide feedback. In addition students extended these tools to include Facebook, YouTube, and blogs. Over a defined period of time (from two to six weeks depending on the project) students met online synchronously and asynchronously, and collaborated in small groups to complete tasks, activities, and projects that formed part of their course requirements. Including opportunities for students to reflect on features of the interaction and the way the project

developed, as well as to analyze their own contributions and what they learned, introduces an important reflective dimension to such projects, and raises awareness of the interrelated organizational, socioaffective, and sociocognitive elements in collaborative learning online (Mangenot & Nissen, 2006).

Technology has changed our understanding of what it means to teach and learn a language at a distance. Resistance to acknowledging distance language courses as a valid alternative to face-to-face classes has largely been overcome by the advent of CMC and pedagogical innovations that foster the development of collaborative exchanges and interactive competence online. Innovation in distance language learning can be seen as a move from a concern with the development and dissemination of learning materials, as in broadcast education, to a concern with interaction and learning as a social process supported largely by communication technologies. Both high-tech and low-tech distance language programs remain in use around the world: The low-tech infrastructure available to many teachers and students means that advanced technological enhancements are not an option. Descriptions of programs also include radio, telephone, mobile learning, web 2.0, and learning management systems (Wang & Chen, 2009). While new technologies often call for fundamental changes in instructional approaches and practices, technological innovation in distance language learning tends to take place well ahead of pedagogical innovation, though this gap is closing. The search for research and pedagogical paradigms appropriate for emerging forms of distance language learning opportunities will continue as technologies provide ever more sophisticated arenas for language learning.

SEE ALSO: Foreign-Language Distance Learning Programs; Instructional Computer-Assisted Language Learning; Multimodal Computer-Mediated Communication and Distance Language Learning; Technology-Supported Materials for Language Teaching

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Dörnyei, Zoltán

JUDIT KORMOS

Zoltán Dörnyei (1960–) has contributed greatly to our understanding of how individual differences affect the outcomes of second and foreign language learning. He is most well known for his work on language-learning motivation, but his research on communication strategies has also advanced the field of psycholinguistics. He is also the author of two very popular books on research methodology: *Questionnaires in Second Language Research: Construction, Administration, and Processing* (Dörnyei, 2010) and *Research Methods in Applied Linguistics: Quantitative, Qualitative and Mixed Methodologies* (Dörnyei, 2007).

Zoltán Dörnyei was born in Hungary in 1960, and he studied English literature and linguistics and art history at Eötvös Loránd University, Budapest. He gained his PhD in psycholinguistics in 1989. Between 1988 and 1998 he taught in Hungary, and since 1998 he has been working in the United Kingdom. He is currently professor of psycholinguistics at the School of English Studies, University of Nottingham.

Dörnyei's first major contribution to the study of second language motivation was his article published in 1994, in which he proposed a new pedagogical model of motivation, which had direct relevance for language teaching in foreign language contexts. Dörnyei's (1994) framework of L2 motivation extended Gardner's (1985) theory of motivation, which was based on language-learning situations in second language settings such as the acquisition of French in Canada. Dörnyei's new framework had three levels: (a) the *language level* (social dimension), which included social, cultural, and pragmatic values and attitudes related to the target language; (b) the *learner level*, which concerned the personal characteristics of the students, such as self-confidence and need for achievement; and (c) the *learning-situation level*, which described aspects of language learning in classroom settings. His framework proposed in 1994 and his consequent work in the 1990s on motivating language learners mainly focused on this last level. He argued that *course-specific motivational components*, which include the syllabus, the teaching materials, the teaching method, and the learning tasks, *teacher-specific motivational components*, which are related to the teacher's behavior, personality, and teaching style, and *group-specific motivational components*, which describe the dynamics of the learner group, are of key importance in classroom language-learning contexts. He elaborated the theory of how language-learning groups function in his book with Ehrman (Ehrman & Dörnyei, 1998) and with Murphey (Dörnyei & Murphey, 2003), and he proposed a comprehensive inventory of motivational strategies in the foreign-language classroom in his book *Motivational Strategies in the Language Classroom* (Dörnyei, 2001).

Dörnyei continued to refine and rework the conceptualization of language-learning motivation in further models. When proposing his process model of motivation, he argued that through investigating the time dimension of L2 motivation one can gain an insight into how motivation is generated and how it fluctuates and develops during the learning process (Dörnyei & Ottó, 1998). He recognized that in the case of L2 learning, which may take several years, there was a need to develop a construct that accounts for changes of motivation and includes a temporal dimension. In 2005, Dörnyei (Csizér & Dörnyei, 2005; Dörnyei, 2005) put forward another new model of motivation, the L2 motivational self system, which consists of three main components: ideal L2 self, ought-to L2 self, and L2

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learning experience. The ideal L2 self is one's ideal self-image expressing the wish to become a competent L2 speaker. The ought-to L2 self contains "attributes that one believes one ought to possess (i.e. various duties, obligations, or responsibilities) in order to avoid possible negative outcomes" (Dörnyei, 2005, p. 106). L2 learning experience covers "situation specific motives related to the immediate learning environment and experience" (p. 106). The model of motivational self system is based on Higgins's self-discrepancy theory (1987), in which it is argued that motivation is the result of someone's wish to reduce the discrepancy between one's ideal self (one's image of what one would like to become) and one's actual self (one's actual self-state). Motivation also comes about from the intention to lessen the gap between one's actual self and one's ought-to self (that is, one's perception of what significant others would like one to become). In his most recent book, *The Psychology of Second Language Acquisition* (Dörnyei, 2009), he places this model into the context of dynamic systems theory and argues that motivation is a complex system, which is situated in the learning environment and which closely interacts with learners' emotional and cognitive systems. The book reflects his current interest, which involves exploring the psychological processes underlying second language acquisition from the perspective of dynamic systems theory.

In addition to his theoretical work, he conducted a number of surveys on language-learning motivation in Hungary (for a summary see Dörnyei, Csizér, & Németh, 2006). Based on this experience, he prepared a detailed and user-friendly guide to questionnaire design in applied linguistic research (Dörnyei, 2010). In cooperation with Tseng and Schmitt, he also devised a new survey instrument measuring self-regulation in vocabulary acquisition (Tseng, Dörnyei, & Schmitt, 2006). This questionnaire is based on the reconceptualization of learning strategies as self-regulation capacity, and can serve as an example for the development of future questionnaires assessing self-regulatory ability in other areas of language learning.

Dörnyei has also advanced the field of psycholinguistics through his work on communication strategies. He suggested a new definition, according to which "every potentially intentional attempt to cope with any language related problems of which the speaker is aware during the course of communication" (Dörnyei & Scott, 1997, p. 179) can be considered a communication strategy. He proposed a new taxonomy of communication strategies and described the psycholinguistic processes involved in overcoming second language communication problems (Dörnyei & Kormos, 1998). He also investigated the teachability of communication strategies (Dörnyei, 1995) and argued that communication strategies can help the development of fluency of second language speech and should therefore be taught explicitly.

Zoltán Dörnyei is a versatile researcher in the field of second language acquisition, whose work has contributed novel insights into the psycholinguistic processes and factors in language learning.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Individual Differences in the Classroom; Motivation in Second Language Acquisition

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Douglas, Dan

VIVIANA CORTES

Dan Douglas has made groundbreaking contributions to the study of language for specific purposes (LSP) and language assessment, including his work on the novel exploration of certain specific registers, like the language of aviation, but most importantly with his work on assessment in LSP. His work on assessment focused on analyzing the development of assessment criteria for LSP and on exploring ways to derive these assessment criteria from the sources used to establish LSP test content and methods, that is, the analyses of specific purpose language use situations.

Academic Background

Douglas started his career in applied linguistics after he completed university studies in history and political science: He holds a BA in History and Political Science from Culver Stockton College in Canton, Missouri, and an MA in Ancient History, from the University of Missouri, Columbia. He obtained his MA in English as a Second Language at the University of Hawaii in Honolulu in 1972 and was immediately admitted to the PhD program in Applied Linguistics at Edinburgh University, in Edinburgh, Scotland, in the United Kingdom. He graduated from Edinburgh University in 1977 and his dissertation project, which was supervised by Alan Davis, was entitled *A Study of Reading Among Secondary School Pupils in a Developing Nation.* His study explored reading ability among secondary students in Botswana.

Academic Appointments

Douglas first became involved in teaching English as a second/foreign language in Botswana as a Peace Corps volunteer, teaching English language and literature at Gaborone Secondary School. While completing his MA at the University of Hawaii in Honolulu, he worked as a graduate teaching assistant in the English Language Institute at the university. While working on his doctoral studies, he held a position as a supervisor for English proficiency testing at Edinburgh University. From 1975 to 1977 he was a research fellow at the University of Khartoum in Sudan, where he worked on a research project that investigated directed study habits. Between 1978 and 1980, Douglas was a visiting lecturer at Hiroshima University in Japan, working for the Department of English Language Education and at the same time teaching graduate and undergraduate courses in ESL methods, testing, and theory. All these years spent abroad provided Douglas with ample knowledge in the teaching of English as a foreign language field and significant exposure to different scenarios for teaching LSP, providing hands-on experience in the areas he would focus much of his scholarship on in the years to come.

Douglas was back in the United States in 1980, where he worked three years as the supervisor for the Michigan English Language Battery Testing Program in the English Language Institute at the University of Michigan in Ann Arbor, investigating assessment topics and developing tests. From 1983 to 1985 he was the director of the English Language

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Institute at Wayne State University, in Detroit, Michigan, supervising an intensive English program with about 150 students. After a very brief period as an adjunct assistant professor developing English language evaluations and courses for international teaching assistants at Iowa State University, in Ames, Iowa, Douglas was hired as assistant professor for the English Department at this university, where he completed the rest of his academic career, being tenured and promoted to associate professor in 1990, promoted to full professorship in 1997, and retiring as professor emeritus in 2009. At Iowa State University, Douglas taught undergraduate and graduate classes in English for specific purposes, second language acquisition, academic writing for international students, and language assessment, as well as a wide variety of graduate seminars in testing LSP, and computer-assisted language assessment. He also acted as the coordinator for the TESL/Applied Linguistics program for 17 years. In 1998, Professor Douglas worked as a visiting professor in the Department of English Language Literature at Chukyo University in Nagoya, Japan, where he taught graduate and undergraduate classes in American language and culture, TESL theory, and language testing.

Throughout his academic career, he has been on 14 doctoral dissertation and more than 50 master's thesis committees, many of which covered LSP topics, both as director and member of committees in the English Department and in other departments at Iowa State University such as Architecture, Chemistry, Computer Science, Sociology, and in different programs in the College of Education. He also acted as external examiner in several doctoral dissertations and master's theses for the University of Toronto, the University of Melbourne, and the University of Western Australia.

Publications

Douglas has published an impressive number of influential books in the areas of LSP and language assessment. Among his most important books are his seminal study *Assessing Languages for Specific Purposes* (2000), for which he worked at the Universities of Lancaster and London in the United Kingdom in his sabbatical from Iowa State University, and his latest book, *Understanding Language Testing* (2010). In *Assessing Languages for Specific Purposes*, Douglas makes an invaluable contribution to the teaching of LSP and, particularly, English for specific purposes (ESP), providing ESP practitioners with a solid set of tools for ESP testing through a detailed and comprehensive description of his approach to test construction based on a model for test development previously introduced by Bachman and Palmer (1996). The book presents a thorough description of LSP tests, introduces various tools and procedures for LSP test development and use, and provides its readership with an overview of the dynamic qualities present in this type of assessment instruments.

Douglas considers LSP testing a special form of communicative language and describes it as different from general language testing in two main ways: it reflects specific language use and it calls for significant non linguistic background knowledge. Douglas emphasizes the importance of a thorough analysis of the target language situation and suggests using a variety of methods for this purpose, such as context-based research (Douglas & Selinker, 1994) or grounded ethnography (Frankel & Beckman, 1982). In addition, Douglas also discusses frequent problems in the development and use of LSP tests, such as the possible lack of specialized knowledge in test developers and test raters, suggesting this drawback could be overcome by close collaboration with expert informants throughout the test development and application process.

In his latest book, *Understanding Language Testing*, Douglas presents an introduction to language tests and test development aimed at novice ESL practitioners and beginning students of linguistics or language education looking for a first introduction to language testing. This book assumes no previous knowledge in its readership and uses examples

from a wide variety of languages to promote the understanding language testing procedures. Although the book is based on a strong theoretical rationale, it concentrates on practical assessment issues such as test use and development, test scoring systems, test result and statistics analysis and interpretation, and ethical issues in test design and applications. To these authored books, we must add Douglas's edited volume, *English Language Testing in Colleges and Universities*, published by the National Association of Foreign Student Affairs (NAFSA) in 1990 and 2003.

Douglas's interest in the investigation of language testing and the use of technology in language assessment is highlighted in two books coauthored with Carol Chapelle, his colleague at Iowa State University: *A New Decade of Language Testing Research* (1993), an edited book that presents selected papers from the 1990 Language Testing Research Colloquium, and *Assessing Language through Computer Technology* (2006). In this last book, Chapelle and Douglas present important state-of-the art concepts related to computer-assisted language testing (CALT) in order to help novice designers of computer-based language testing tools.

To this list of books we must add a series of monographs published by Educational Testing Services (ETS) that complete his list of published volumes, among which we need to mention *Testing Speaking Ability in Academic Contexts: Theoretical Considerations* (1997), which reports findings on the testing of Language for Academic Purposes (LAP). In addition, Douglas's numerous articles can be found in top journals in the field such as *Language Testing, ICAO Journal, English for Specific Purposes*, and *System*, among many others, as well as in many edited books.

Research Interests

Douglas has a variety of research interests among which we must list the use of new technologies in language assessment and the development of assessment tools for specific target language situations. Some of Douglas's most salient work in the area of LSP assessment can be read in articles that report the development and application of tests meant to show the language proficiency of aviation personal, which can promote safer radiotelephony, work that questioned the validity and impact of the assessment of the language of international civil aviation professionals (Douglas, 2004), and a survey of assessment criteria for LSP (Douglas, 2001), as well as the study of assessment criteria for veterinary students' communication skills and the investigation of three important issues—authenticity, specificity, and inseparability—in testing LSP.

Douglas was very active in grant proposal writing, obtaining more than $180,000 in funding for his research from private and governmental institutions, such as Educational Testing Service (ETS), Pearson Education, and the Iowa Department of Education. He was also awarded several internal grants at Iowa State University.

Regarding his service to the profession, Douglas was the coeditor for *Language Testing* from 2002 to 2007, a review editor for *TESOL Quarterly* from 1998 to 2001, and he is a current member of the editorial board of *English for Specific Purposes*, the *Journal of English for Academic Purposes*, *ESP Malaysia*, and the *Iran Language Institute Language Teaching Journal*. He served as vice-president and president to the International Language Testing Association (2004–6), and as secretary to the Midwest Association of Language Testers (MwALT) from 2001 to 2006, chairing the seventh annual conference for this association in 2005. He has also been a member of the National Advisory Board for the National Foreign Language Resource and Training Center at Michigan State University, serving two periods, from 1996 to 1999 and from 2006 to 2010. In addition, he worked as a member and consultant for a wide range of professional associations in the LSP field in the United States, Japan, and Hong Kong, among other locations. He has been an active member of the American

Association of Applied Linguistics (AAAL), the British Association of Applied Linguistics (BAAL), Teachers of English to Speakers of Other Languages (TESOL), and the International Language Testing Association (ILTA).

Douglas always emphasized the dissemination of his research through presentations in the most renowned conferences in the applied linguistics area such as the Conference for AAAL and the International TESOL Conference, as well as the Language Testing Research Colloquium in the United States and Canada, and as a guest speaker in numerous conferences and workshops in Korea, Japan, Dubai, Morocco, and the United Kingdom, to mention but a few.

SEE ALSO: Assessment of Academic Language for Specific Purposes; Assessment of Business and Professional Language for Specific Purposes; Authoring Tools for Language Assessment; Discourse Analysis in Language Assessment; Language Assessment and Testing: Overview

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Dudley-Evans, Tony

MAGGIE JO ST JOHN

Tony Dudley-Evans (born Sutton Coldfield, Warwickshire, 1943) is one of the leading figures in the development of English for specific purposes (ESP). He was an influential researcher in genre analysis, coauthor of a number of successful and significant textbooks, an innovator in teaching and research approaches, and editor of an important journal.

His career in English language teaching (ELT) began in the 1960s with the British Council in Libya, where his BA in Arabic (University of London) and Postgraduate Certificate in Education in ELT (University of Wales) came together in his teaching at Tripoli College, a secondary school that was set up in the time of King Idris and claimed to be "the Eton of Libya." It was in Tripoli that his friendship with John Swales began, one that ultimately led to a longstanding professional collaboration. But initially Tony was teaching John Swales and James Cormick to read and translate Arabic articles in the local newspaper *Al-Ra'id* (Swales, 2009, p. 81). From Libya Tony went to Tabriz in northwest Iran (Iranian Azerbaijan), initially as a lecturer and then as Head of the English Language Unit of the University, returning to the UK in 1975 to spend one year at Lancaster and Morecambe College of Further Education, teaching Venezuelan students, before his appointment at the University of Birmingham where he had a distinguished career until taking early retirement in 2001.

It was in Birmingham that his theoretical and practical contributions to academic literacy came to full fruition. He was Director of the English for Overseas Students Unit (later English for International Students Unit, EISU) for many years and later, in recognition of his contributions to the field, was promoted to Reader in English for Specific Purposes.

He first came to prominence as author and editor, with Martin Bates, of the pioneering *Nucleus* series of English for science and technology textbooks which adopted a notional approach and was "concerned with ways in which the scientist and technologist describes and measures forms and processes" (Bates & Dudley-Evans, 1976–80, Teacher's Notes, p. vi). At a time when much ELT was based on grammar translation, this series, with a core general science book and specific discipline extensions, was groundbreaking. So too was the involvement of team members in the publication process. The material was initially developed in the University of Tabriz where lecturers in the English Language Unit, mostly on British Council contracts, taught in various science and engineering departments. As a team they developed ESP materials to meet the students' need to read English language sources in their subject area.

The material focused on certain key notions or scientific concepts, such as properties and shapes, location, structure, measurement, process, and method, which Martin Bates's research had shown to be fundamental to technical and scientific description. The core textbook introduced these concepts, and then the subject-specific textbooks applied those concepts to texts in areas as diverse as engineering, agriculture, mathematics, medicine, and nursing science. The subject-specific textbooks were published by Longman between 1976 and 1980 in the *Nucleus* series with Martin Bates and Tony acting as editors, and Tony coauthoring the engineering text with Tim Smart and John Wall.

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The core text, written by Martin Bates and Tony, and published as *Nucleus: General Science* (1976), was "probably the most commercially successful EAP textbook" (Swales & Feak, 2001, p. 216) to date. Science students at colleges and universities worldwide studied with it, and over a 10-year period it was used in the science streams of all Egyptian secondary schools. There was a specific manual for teachers, and at annual teacher training courses for the teachers and inspectors Tony explained the philosophy and methodology underpinning the materials.

In the story of these materials one sees the concerns and principles which underlie all Tony's work, that is:

- It is rooted in practical teaching.
- It is imaginative in its exercise typology.
- It is based on collaboration.
- It recognizes the importance of social, institutional, and disciplinary approaches.
- It is grounded in research.
- It is concerned for the involvement and personal development of others.

The partnership with Martin was the first, and one of the most fruitful, of the many professional collaborations that mark Tony's career.

Another key partnership was with Tim Johns at the University of Birmingham where they instigated innovative interdisciplinary team teaching and materials development (Dudley-Evans & Johns 1980, 1981). They recorded lecturers in highway engineering and plant biology—disciplines with high proportions of postgraduate international students—and then set about developing teaching materials based on these recordings. They would first transcribe them and then produce handouts that both focused on discourse and language issues as diverse as the use of clichés, degrees of certainty, and recognizing the relative importance of information, and ensured that the students had made the necessary links, as expected by the lecturers, between key points in the lecture. The subject and ELT lecturers would then team-teach a session aimed at clarifying the students' understanding of the lecture as well as highlighting the ways of communicating in the discipline. A consequence of these sessions was both an increased understanding on the part of the students of the expectations of the course and their lecturers, and, on the part of the lecturers, an increased awareness of the difficulties international students might have in understanding linguistic aspects of the lectures and also the wording of examination questions. Tony himself wrote of this work that it "remains the most creative aspect of teaching I have ever been involved with" (personal communication).

This collaboration in team teaching ran in parallel with another on materials writing with John Swales. In the late 1970s Tony and John shared a house for half a year and spent some evenings jointly preparing in-house teaching materials in the area of academic writing for international students at Birmingham and Aston Universities, afterwards comparing notes on how those materials had worked with students before revising them for future groups. Classroom research thus fed directly into the preparation and revision of the teaching materials. Both of them used some aspects of this in later publications, John in *Academic Writing for Graduate Students* (Swales & Feak, 1994), Tony in *Writing Laboratory Reports* (Dudley-Evans, 1985).

Tony was much influenced by the work in genre analysis developed by John Swales in his groundbreaking research on article introductions (Swales, 1981). Tony's *Writing Laboratory Reports* took a genre-analytical approach to these fundamental documents. Tony researched the product and process of writing undergraduate scientific reports and developed materials at Birmingham to help international students write the reports required of them. He went on to use a similar approach to research different sections, particularly

discussion sections, of academic articles, and from there he explored other genres such as Masters-level dissertations. A joint research-based approach into the English of scientific research papers, a key genre for students in the late 1980s /early 1990s, was instigated by Tony and Tim Johns with all EISU staff in 1991. Tony had succeeded in obtaining samples of articles and letters to the prestigious research journal *Nature* and this was an early example of the corpus-led research for which Birmingham University became so famous (Johns, 2001).

Throughout his academic career Tony wrote and published articles about ESP, focusing on the interface between teaching and teaching materials, and research into the nature of texts. One third of his publications, including his books, are collaborations, with peers such as John and Tim, as well as in the craftsperson–apprentice model (Swales & Feak 2001, p. 215). As Director of EISU Tony was influential in the career development of several "novices," particularly students he supervised at PhD level and on the MA in Applied English Linguistics. Articles with Helena Zak (Zak & Dudley-Evans, 1986) and Andy Hopkins (Hopkins & Dudley-Evans, 1988) published in the journal *English for Specific Purposes* are examples.

Tony was a respected editor, serving for many years on the editorial board of the journal *English for Specific Purposes* before being invited in the late 1980s to become a coeditor with John Swales and Ann Johns. Over this period *English for Specific Purposes* became established as the key journal in ESP and a major voice in the discipline of applied linguistics. It was particularly noted for its encouragement of non-native speaker (NNS) authors who had not previously published in an international journal; young NNS authors were given specific help in bringing articles up to a standard for publication in an international refereed journal. Tony later coedited the journal with Peter Master and Diane Belcher.

Tony enjoyed collaborating with subject specialists to investigate the rhetoric underlying a particular discipline. A striking example of cross-disciplinary collaboration was his work with Willie Henderson, an economist at Birmingham, on the evolution and structure of economics papers. This work began with a research project investigating the problems in understanding the rhetoric of economics that mature students faced because of the mismatch of economic theory and reality. The research was undertaken by Ann Hewings (research assistant and later a PhD student of Tony's) under the supervision of Willie Henderson and Tony. Tony and Willie then carried out a historical (diachronic) study of the discourse of article introductions in economics journals. They published their findings in a volume they edited: *The Language of Economics* (Dudley-Evans & Henderson, 1990). This was followed by an interdisciplinary conference, and the collection of papers *Economics and Language* (Henderson, Dudley-Evans, & Backhouse, 1993) emerged from this.

Tony's ideas on the importance of subject specialist interactions are most fully developed in the book *Developments in ESP: A Multi-Disciplinary Approach* (1998), which he co-authored with Maggie Jo St John. They expounded an approach to ESP which requires deeper insights into disciplinary cultures and their social contexts to understand the discourses and the discourse communities, and a reflection within ESP classroom methodology of the ways of thinking and learning in those disciplines. This summary of major developments and charting of new ideas influencing the discipline is, in keeping with all his work, accessible and wide-ranging, encompassing both theory and practice, and continues to be a key source for students and teachers.

Tony Dudley-Evans is a man of great dedication, integrity, and passion. Alongside his professional career, he has been an enthusiastic supporter of jazz, chairing the organization Birmingham Jazz for many years. Early retirement from his academic career has enabled Tony to apply his professional principles to his love of jazz. He has become a full-time promoter in his home city, Birmingham, and he is also artistic director of the Cheltenham Jazz Festival. He teaches on the BMus and MMus jazz courses at Birmingham Conservatoire,

and his belief in the importance of supporting new talent has led to numerous gigs for local groups, many involving students and graduates. His understanding of social, institutional, and cross-cultural contexts makes him a firm favorite of touring musicians. His in-depth knowledge is based on proactively researching and listening to music of different genres, particularly music that cuts across genres.

He has thus applied the same principles to jazz promotion as are evident in his academic career in English for specific purposes. Interestingly, one of his all-time favorite albums is entitled *ESP*, an album recorded in the 1960s by Miles Davis with his second great quintet featuring Wayne Shorter, Herbie Hancock, Ron Carter, and the wonderful drummer Tony Williams.

SEE ALSO: English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Swales, John M.

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Dumas, Bethany K.

RUI SOUSA-SILVA

Bethany K. Dumas (1937–) is a prominent figure in current applied linguistics and, in particular, in forensic linguistics. Her long career and her wide-ranging research interests range from literature, qualitative and quantitative research methodology and discourse analysis to rhetoric, legal discourse, and language and the law. She has published widely on language variation, discourse analysis, and forensic linguistics/language in the judicial process, with a focus on jury instructions and product warnings.

Dumas began her training in language and linguistics. She received her BA in English from the Lamar University (Beaumont, Texas) in May 1959, followed by an MA in English from the University of Arkansas (Fayetteville) in May 1961. She received her PhD in English/linguistics from the University of Arkansas in May 1971 with her dissertation *A Study of the Dialect of Newton County, Arkansas*. She proceeded with her postdoctoral studies at the School of Oriental and African Studies (SOAS), University of London (UK) in 1970–1, where she studied Swahili. She also participated in the Linguistic Society of America Summer Institutes on variation (University of Hawai'i, 1977), computational linguistics (City University of New York Graduate Center, 1986), and syntax and computational linguistics (Stanford University, 1987). However, in the meantime Dumas had already acknowledged the relevance of legal studies to linguistics and developed a concern with the interaction between language and the law, which she consolidated when she received her degree of *Juris Doctor* from The University of Tennessee College of Law in May 1985. This allowed Dumas to combine her solid training in linguistics with training in law.

Dumas started her extensive academic career in 1959 as teaching assistant of English in the United States, at the University of Arkansas. Since then she has worked as instructor (Southwest Missouri State University, Springfield), instructor/assistant professor (Southern University, Baton Rouge, Louisiana), assistant professor/visiting associate professor (Trinity University, San Antonio, Texas), associate professor (The University of Tennessee, Knoxville), adjunct professor (University of Tennessee College of Law, Knoxville), and professorial lecturer (Georgetown University, Washington, DC). She is currently professor of English at The University of Tennessee (Knoxville). The renown of her work, both at home and abroad, led her to work as a visiting professor of linguistics at the University of Utah (Salt Lake City) in the summer of 2004 and as a lecturer at the Institut Universitari de Lingüistica Aplicada of the Universitat Pompeu Fabra (Barcelona, Spain) in May 2005.

Dumas is a member of several national and international professional organizations, boards, and commissions, both in linguistics and in law, including the International Association of Forensic Linguistics (IAFL). She acted as editorial board member of the journal *Forensic Linguistics: The International Journal of Language and the Law* from 1994 to 2003 (of which she is a reviewer), and is the editor of the journal *Language and the Judicial Process* (*LJP*).

As a renowned academic and researcher, Dumas has participated in several legal language workshops with police forces, attorneys and judiciary interpreters, and translators. She has made significant contributions on topics spanning from expert witnessing in trial demonstrations to legal translation and interpreting, interrogation techniques and victim assistance, problems and linguistic analysis of jury instructions, and custodial interrogation.

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Since 1984, she has testified or otherwise provided linguistic expertise in more than 60 cases in the United States.

Her most significant contributions to forensic linguistics are her analyses of jury instructions (Dumas, 2000), consumer product warning labels (Dumas, 2010), and ambiguous language in nonstatutory language (Dumas, 1998). She has proposed a model for jury reform by recognizing that the role of the jury as finder of fact needs to challenge the judicial perception that the jury must be highly constrained and controlled.

She is best known to the nonacademic community for her study on jury instruction adequacy in capital cases (Dumas, 1996). She testified (via affidavit) in the case *Jacobs v. Johnson*, claiming that Charles Bruce Jacobs, who had been convicted in 1987 for capital murder in Dallas County, Texas, was sentenced to death by jurors who had not understood the meaning of the term *reasonable doubt*—or not the least that there was no evidence that jurors understood the term as the court had intended. Dumas argued that the jury instructions presented serious comprehension problems for both lexical and syntactic reasons, including the use of the archaic word "thereof," difficult syntactic structure, failure to explicit what the options were and failure to clearly define the term "lesser included offense." Dumas and the other experts participating in the case concluded that the death sentence was imposed by jurors who did not understand their instructions, which violates constitutional rights and the foundations of the US criminal justice system. In an attempt to improve the comprehensibility of jury instructions, she proposed a rewritten version of the instruction that replaced all the problematic words with more ordinary words, and the confusing syntactic constructions with simpler constructions. More recently (Dumas, 2009), she drew upon the demonstrated principle that rewriting jury instructions using principles of plain language enhances their comprehensibility to propose a general set of principles for writing comprehensible jury instructions.

The relevance of Dumas's research and her institutional renown are attested by the number of fellowships and awards that she has received since 1970, as well as by the number of dissertations and theses directed, the institutional research and editorial positions held, and the media consulting that she has performed.

It is in her forensic discourse analysis that Dumas's theory is grounded in practice. Her seminal work and her leadership in the area of language and the law and her contribution to enhancing the comprehensibility of jury instructions and product warnings have made an important contribution to work in the judiciary system.

SEE ALSO: Forensic Linguistics: Overview; Language of Jury Instructions

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Duranti, Alessandro

ELIZABETH KEATING

Among contemporary linguistic anthropologists, Alessandro Duranti is unique in the breadth of his research and in his interdisciplinary engagement in theorizing relationships between language and culture. His work can be understood as a career-long interest in human creativity as expressed in linguistic (and other semiotic) forms, and the mediating influence of these forms on culture and social life. His work is highly influenced not only by formal linguistics, but by European and American philosophical and anthropological traditions. His earliest academic work at the University of Rome was on Korean syntax and semantics, but after beginning PhD study in the United States he also became interested in the social life of linguistic forms. These interests were perfectly synthesized in his ethnographic work on the role of grammatical forms in accomplishing social action, for example, how ergative case marking in Samoan could be manipulated by village chiefs and orators to negotiate agency and responsibility, one of many observations about language and culture in *From Grammar to Politics: Linguistic Anthropology in a Western Samoan Village* (Duranti, 1994). Later ethnographic work on the campaign trail in California, a contest for a US Congress seat, is another example of Duranti's approach to language, the video recorded data proving to be a rich source for understanding genre, the collaborative construction of meaning, and the materialization of locally relevant, taken-for-granted concepts such as democracy (Duranti, 2003, 2006a). Throughout his work he has developed and expanded his notion of "ethnopragmatics" (Duranti, 1993a, 2007) beyond a focus on the contextual life of language, local communicative practices, and speakers' attitudes, and toward the meaning and impact of those practices to language as an expression and realization of human agency more generally. Duranti is perhaps best known for his work on intentionality, both as it is perceived locally in different world areas, and the role of discursive practices in defining it (Duranti, 1993b, 2006b, 2008a). Most recently he has been reinvestigating the writings of Husserl on phenomenology in order to contribute to perhaps the most challenging anthropological question, understanding intersubjectivity and the limits and nature of sharing the perspective of the "other" (Duranti, 2009, 2010).

Early American cultural anthropologists saw language as a repository of cultural knowledge accessible to investigation by an ethnographer learning the language, living in the community and engaging in its daily practices. In recent work by linguistic anthropologists, such as Duranti, this has expanded to include how to theorize about language itself, its role as a non-neutral medium, and its potential to shape ways of thinking and being in everyday ritual and nonritual acts with others. Culture is not only contained in the language of stories that are told but in the encounters that make the tellings possible, the types of organization that permit some to participate and others to be left out, who can be competent in storytelling, who can direct the tellings, or ask questions or answer them. Duranti's work on Samoan language practices, for example, includes special attention to the linguistic encoding and performing of social inequality. This was shown in everyday practices such as greetings (Duranti, 1997a), which establish and maintain relationships, in conflict settings (Duranti, 1990), as well in the institutionalized contexts of churches and schools (Duranti and Ochs, 1986). His early work in Samoa, a society with a complex history in anthropological thought, and later work among the Samoan-American community in Los Angeles, led to groundbreaking insights into the role of indexicality in creating

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diasporic and globalized communities. It also led to new findings on literacy, particularly ways that Western cultural ideas permeate missionary-influenced schools through reading materials only partially adapted to local conditions, and the socialization of scientific discourse in Samoan-American households (Duranti, 1997b; Duranti and Ochs, 1997).

In his research, a sustained interest in verbal art and performance, especially what might be called the aesthetics of authorship and authority, manifests itself not only in an analysis of the formal properties of the speech forms *lauga* and *talanoaga* as they creatively emerge in Samoan oratory, or the way honorific forms are not used as predictably as speakers assume, but in his study of the role of the hearer in influencing speakers' talk. His examination of language use in public space has resulted in articles on code switching and conflict as well as on features of context. Context is highly underspecified in linguistic theories and in linguistic anthropology for the most part, although the use of new technological tools for data collection and analysis of complex materials (Duranti was a pioneer in this effort) have made rigorous investigations of the role of contextual features in meaning production possible.

An accomplished musician himself, he has always been interested in music as an aesthetic form, and recently how musicians use language and other symbolic practices to communicate and build harmonic, rhythmic, and melodic solutions (Duranti and Burrell, 2004). Using ethnographic methods to investigate the emergence, interpretation and dissemination of original creative forms led to new findings about the role of orality and written symbols in the aesthetics of improvisation among jazz musicians, which Duranti relates to verbal art genres in Samoa and elsewhere (Duranti, 2008b).

Duranti's approach and scholarship can be perhaps best be seen in his book *Linguistic Anthropology* (1997c), which integrates anthropological theories and methods with the work of conversation analysts and philosophers of language. In all of his writing, the concept of participation is central.

Duranti has been a professor of anthropology at the University of California Los Angeles since 1988, where he is now dean of social sciences. He has played an important role in the shaping of the field of linguistic anthropology. He is past president of the Society for Linguistic Anthropology and past editor of the *Journal of Linguistic Anthropology*. He coedited and cofounded (with Bambi B. Schieffelin) the *IPrA Papers in Pragmatics* (later renamed *Pragmatics*), and was associate editor for *American Ethnologist*. He has authored five books and a long list of journal articles and chapters in edited volumes, and edited or coedited 10 books and special issues. He is a fellow of the American Academy of Arts and Sciences and the recipient of the prestigious John Simon Guggenheim Fellowship. Through his classes and seminars at UCLA and at a number of universities where he has been invited to lecture over the last 20 years, he has taught, supported, and encouraged many linguistic anthropologists entering the field.

SEE ALSO: Anthropological Linguistics; Cultural Identity; Cultural Linguistics; Culture; Language and Identity; Linguaculture; Politeness and Face Research

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Dynamic Assessment in Second Language Acquisition

MATTHEW E. POEHNER

Dynamic assessment (henceforth DA) is a structured approach to interaction in which a teacher or assessor cooperatively engages with learners, helping them extend their performance beyond levels they could reach independently (Haywood & Lidz, 2007; Poehner, 2008). DA is contingent upon careful provision of support attuned to learner needs, recognizing that overly explicit support may deprive learners of the opportunity to take control of their performance, while support that is too implicit is of little value. In the general psychological and educational research literatures, DA has been employed primarily in the context of standardized testing, and support has taken the form of carefully scripted hints and prompts. In this way, support is weighted and either accompanies or is included in learner scores. In the L2 field, DA has been more prevalent in classroom settings, where it typically unfolds dialogically. Thus, DA with L2 learners, the topic of this entry, is characterized by negotiation of support to remain in step with learners' emergent capabilities.

Pedagogically, the value of DA interactions resides in the quality of support, or mediation, which is distinctly developmental in orientation. That is, the purpose of mediation is not merely to scaffold learners so that they formulate a correct answer but rather to help them arrive at new understandings that will in turn orient future performances. In this regard, DA is a systematic, development-oriented framework for teaching in group or one-to-one settings. However, as its name implies, DA also functions as a diagnostic activity. While conventional assessments generally interpret learner performances in a dichotomous manner, documenting only correct and incorrect responses, and establishing the "ceiling" or "threshold" of learner abilities, DA requires active intervention when performance begins to deteriorate in order to determine how learners respond to mediation and what forms of mediation are most helpful in overcoming problems. From a DA perspective, learner responsiveness to mediation is crucial to understanding how near they are to fully independent functioning.

As should be clear from this description, DA conceives of teaching and assessment as an integrated, cooperative activity wherein interaction and negotiation of mediation reveal the range of learner abilities while simultaneously promoting those abilities. Before considering the theoretical basis and current leading models of DA, an example will help to concretize how DA may unfold with L2 learners. The following interaction, reported by Poehner (in preparation), concerns a learner of L2 French completing oral narration tasks and struggling to control verbal aspect, emphasizing actions or states as completed, or perfective, at the time of speaking, or as ongoing or imperfective (e.g., "The dog ate its food" or "The dog was eating its food").

In French, the distinction between present perfective and imperfective aspect is encoded through the *passé composé* and *imparfait*, respectively. In contrast to the rule-based presentation of this distinction found in most French language textbooks, the teacher in this program, M, explained the linguistic concept of verbal aspect and how perfective and imperfective are both used intentionally to depict relations among past actions and events.

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Learners then attempted to follow this conceptual approach to regulate their use of *passé composé* and *imparfait* as they engaged in oral and written tasks, including narration. In the interaction below, a learner (A) is attempting to relate a scene from a film in which two male characters are discussing relationships and one offers advice to the other. A had originally produced the construction *il lui a dit qu'il devait parler avec Rebecca* ('He told him that he had to speak with Rebecca'), appropriately employing the perfective of the verb *dire* ('to say,' 'to tell') and imperfective of *devoir* ('to have to'). However, she subsequently expressed a lack of confidence in this selection and consulted with M. Rather than offering approval, M probes the reasons behind her selections:

1. M: so why *imparfait* rather than *passé composé* or
2. present tense or whatever?
3. A: um it's something that he should do he didn't
4. really indicate a specific time period but *lui a dit*
5. (said to him) because he said something to him very
6. specifically at that time but that he should talk to
7. him is kind of like open-ended did he do it or not
8. M: uh-huh yeah well now what if they used *passé*
9. *composé* what if someone said *il a dû parler avec*
10. *Rebecca* (he had to speak with Rebecca)? What about
11. that?
12. A: [does not respond]
13. M: because I agree with what you said about *imparfait*
14. I think that works that makes sense but what about the
15. *passé composé*?
16. A: I just . . . would think that it would . . . [to self] I don't
17. know how to explain [aloud] it just sounds a lot more
18. specific than just a general piece of advice [to self]
19. yeah or [aloud] or that . . .

In lines 3–7, A offers a reasonable explanation for rendering the two verbs as she did. Her explanation suggests she is attempting to employ the concept of aspect as a basis for choosing between *passé composé* and *imparfait*. It is only when M continues to explore the depth of her understanding, asking her to comment on an alternative construction (lines 8–11), that she begins to experience a problem. A's initial silence (line 12) is followed by an attempt to think through the matter, during which she alternates between speech directed to M and barely audible speech directed to herself.

M does not end the interaction here but reminds A of a pair of exemplar constructions they had discussed earlier that illustrate the perfective–imperfective contrast: *il était malade* and *il a été malade*, both of which would be rendered in English as 'he was sick.' A explains the difference between the two formulations as follows:

20. A: with the *passé composé* there's a distinct beginning
21. and end so a distinct time period that it encompasses
22. and the *imparfait* is looser . . . so *il a été malade* (he was
23. sick) now it's already happened
24. M: right there's some kind of completion there
25. A: yeah
26. M: so in this case you said um what *il devait parler*
27. (he had to speak) versus *il a dû parler* (he had to
28. speak)?

29. A: so the *passé composé il a dû parler* (he had to
30. speak) . . .
31. M: it's kind of similar right?
32. A: so I guess like he needed to talk to her and he did
33. talk to her in a specific period of time and it's over
34. now
35. M: right you're looking at it as something that's
36. completed

M effectively shifts the focus of interaction away from the matter at hand, prompting A to consider the *malade* constructions, and she responds with an accurate explanation of how the perfective and imperfective impart distinct meanings. In lines 26–8, M reminds her of her own use of the imperfective with the verb *devoir* in her narrative, and A explains how the meaning would be altered by selecting the perfective.

This interaction illustrates several key DA features. Most evident, of course, is that this is an interaction rather than a monologue in which A simply composes her narrative in response to a prompt, as would occur in most forms of assessment. In a non-dynamic approach, M would have simply rated A's performance, likely missing or ignoring the subsequent verbalization of her reasoning. A would likewise not have had an opportunity to revisit and discuss her use of aspect with M. In other words, the diagnosis would have likely overestimated A's control of verbal aspect and A would have missed the opportunity to refine her understanding. Through interaction with the learner, it became clear that while she did in fact employ a conceptual understanding of aspect as a basis for making selections during her narratives, she was not yet able to independently alternate between regarding a given event or action as perfective, or as imperfective.

Another point to consider in this exchange is the quality of the interaction itself, and notably the contributions made by both M and A. Assessments tend to be marked by immediate identification of correct and incorrect answers, and even the ubiquitous initiation-response-evaluation interactional pattern in classrooms follows a preference for correcting errors, either implicitly or explicitly. Here, however, correction is withheld in favor of probing the reasons behind the learner's initial (appropriate) construction and prompting her to consider an alternative. M does not offer recasts or reformulations, but instead guides A to reorient to the present dilemma in light of constructions they had previously considered. Importantly, it is A and not M who explains the meaning of the contrasting *malade* constructions, just as it is A who ultimately interprets the meaning of the perfective of *devoir*. Had A needed more explicit mediation, including leading questions and hints, these certainly would have been offered as she and M collaboratively raised questions, considered possibilities, and revised utterances. An overt correction and even explanation of relevant underlying principles may also have been a part of the interaction, but only if other forms of mediation had failed to provoke an appropriate response. Stated succinctly, the point of DA is not to correct learner errors but to mediate learners to self-correct.

While the preceding example might easily be construed as effective teaching that supports the learner's development, the point of DA is that it is also an important source of information about learners' emergent abilities—that is, an assessment. This clearly contrasts with formal testing situations, where learners are required to perform in isolation and any interaction or external support is avoided for fear of contaminating the sample of their abilities. In testing, assessment and teaching are not merely separate but mutually exclusive activities, as the conditions necessary for *promoting* abilities are viewed as incompatible with those for *understanding* abilities. For this reason, DA is more often likened to *formative assessment*, where efforts are made to relate assessments to teaching. Formative assessment,

also referred to as *assessment-for-learning*, encompasses a range of practices designed to inform teachers of learners' understanding of what has been taught (and possible need for further instruction), and may include informal classroom interactions (see Black, Harrison, Lee, Marshall, & Wiliam, 2003). In this regard, the question has been raised as to the relation between DA and formative assessment, and the extent to which these may be different terms referring to the same phenomena (e.g., Leung, 2007). To appreciate the difference between DA and formative assessment, it is necessary to consider the centrality of theory to both.

Formative assessment practices vary widely (Rea-Dickins, 2007), and researchers have begun to draw upon a number of theoretical perspectives both for validation and conceptualization, including social constructivism, feminism, and postmodernism (see Moss, 2003). DA stands apart in that it is a concrete instantiation of principles that position theory and practice as an integrated whole, a dialectical unity of practical, critical activity that is at once theoretically motivated and the basis from which theory develops (Newman & Holzman, 1993; Vygotsky, 1997). This view is a recurring theme running through the writings of the Russian psychologist L. S. Vygotsky, originator of the sociocultural theory of mind (henceforth SCT) and upon which DA is based.

The central premise of Vygotsky's (1987) account of mind is that unlike with animals, human mental functioning is not exclusively determined by biological instinct and direct response to environmental stimuli but is instead shaped in fundamental ways through participation in culturally organized activities with others. Put simply, the world that humans inhabit is socially and culturally mediated. Through interaction with others we develop the means to control basic psychological functions, including perception, attention, and memory. One of Vygotsky's major insights was that to understand how culture mediates thinking it is important to follow what he termed an *historical* approach, wherein abilities are studied during the process of their formation. It is for this reason that Vygotsky's empirical research was most often conducted with children. Moreover, eschewing traditional experimental procedures, Vygotsky's studies generally involved deliberate and systematic intervention—that is, the provision of cultural forms of mediation intended to promote development—in order to understand processes of development. Far from undertaking dispassionate documentation of observable behaviors, Vygotsky (1998) framed psychological research as a dialectical activity concerned not with measuring but with interpreting individuals, and this process involves supporting their development.

Perhaps Vygotsky's most well-known contribution to psychology and education is his conceptualization of the "zone of proximal development," or ZPD. Generally described as the difference between what an individual can achieve independently and what s/he can achieve with assistance, the ZPD has been called upon to describe virtually any form of instructional interaction and any kind of learning.

To appreciate how Vygotsky understood the ZPD as both a central feature of his theory and a practical response to problems in education, it is helpful to recall the historical circumstances in which he was working. Specifically, Vygotsky's research activities were carried out at a time when the newly formed Soviet state was building a centralized, compulsory public education system. A challenge with which Vygotsky was immensely concerned was meeting the needs of the wide range of children entering the schools who came from varied language and cultural backgrounds, including some who suffered extreme poverty as well as those from remote rural communities where literacy was virtually nonexistent. Vygotsky's response was a decidedly forward-looking approach to diagnosing abilities, in which the focus of assessment shifts from products of past development and foregrounds responsiveness to mediation as a way of understanding potential future development. Bronnfenbrenner (1977, p. 528) expresses this perspective through a statement he attributes to A. N. Leontiev: "American researchers are constantly seeking to discover

how the child came to be what he is; we in the USSR are striving to discover not how the child came to be what he is, but how he can become what he not yet is."

Vygotsky's initial use of the ZPD was as an alternative to conventional IQ tests, which he argued obscured processes behind performance and failed to capture abilities that were not yet fully developed but still emerging. Decades later, it was this application of the ZPD that captured the attention of psychologists in the West and eventually led to the first procedures described as "dynamic assessment" or DA (see Poehner, 2008). Vygotsky went on to advocate the ZPD as a basis for development-oriented pedagogies, reasoning that emergent abilities are most amenable to instructional intervention (Vygotsky, 1987, 1998). However, it is as a testing approach that the ZPD resonated most strongly with psychologists interested in assessing abilities and identifying learners with special needs. Consequently, DA practitioners have primarily concerned themselves with developing procedures for administering tests and other assessments that take account of learner responsiveness to mediation. In many cases, the assessment instruments are standardized tests and the mediation is scripted beforehand and arranged hierarchically from most to least implicit. The procedure is usually conducted by a clinical or school psychologist and the results, usually a score on the test as well as the number or level of mediating clues required, are reported and used as a basis for various decisions, including provision of special services. Lantolf and Poehner (2004) refer to these DA approaches as *interventionist*, noting that the extent to which teaching and assessment are integrated may be compromised as the priority is often to generate valid test scores rather than to promote development. Well-known models of interventionist DA include the "graduated prompt" approach (Brown & Ferrara, 1985) and the "*lerntest*" (Guthke, 1992).

Other DA practitioners have attempted to relate their assessments more directly to classroom teaching. For instance, in Greenberg's (2000) "cognitive enrichment advantage" method school psychologists collaborate with teachers to interpret results of DA procedures and generate recommendations for subsequent instruction, and Lidz's (2000) "curriculum-based DA" ties the assessment to instructional objectives and leads to individualized education plans for learners.

Nonetheless, teaching and assessment do not form the dialectical unity Vygotsky envisioned for his developmental pedagogy (Poehner, 2009). Minick (1987) has argued that the DA approach most closely aligned with Vygotsky is Feuerstein's "mediated learning experience" (MLE) (Feuerstein, Falik, Rand, & Feuerstein, 2003). In MLE standardization of the procedure is abandoned and tasks are completed jointly by the learner and the mediator, who is not limited in the forms of support s/he may offer. Owing to the highly dialogic and open-ended nature of Feuerstein's model, Lantolf and Poehner (2004) have termed this form of DA *interactionist*. Following Minick (1987), the flexibility of interactionist approaches affords the greatest potential for mediators to co-construct a ZPD with learners, as unforeseen problems may be pursued when they arise, the reasons behind learner choices may be discussed, and performances can be jointly reformulated. Indeed the L2 example presented earlier involving A and M illustrates these advantages. Conversely, the preference for standardization in interventionist DA, while perhaps limiting possibilities for creating a ZPD, nonetheless leads to assessment outcomes that are more easily interpretable using conventional means, including statistics. The decision of which DA approach best fits a particular context needs to take into consideration whether the primary focus is on the procedure itself and the need to generate scores to make comparisons or selections among learners, or whether it is on the learners' abilities and the goal of optimally promoting their development.

In the L2 field, DA has emerged only over the last several years (Lantolf & Poehner, 2004; Poehner & Lantolf, 2005), but has been quickly recognized as a powerful framework for integrating teaching and assessment as a unified activity that simultaneously offers

insights into learners' L2 abilities and promotes their development. While DA research in psychology and general education has focused predominantly on formal measures of ability, L2 DA studies to date have tended to favor classroom settings. Interactionist approaches have been followed in order to structure teacher–learner cooperative dialoguing as they work toward developing L2 abilities, including listening comprehension (Ableeva, 2008), oral narration (Poehner, 2008), and substantive-modifier accord (Lantolf & Poehner, in press). An issue that has arisen in this work concerns the feasibility of dyadic teacher–learner interactions in classrooms that routinely have 20 or more students. Poehner (2009) has begun to explore the possibility of *group dynamic assessment*, in which teachers endeavor to create a classroom ZPD, with learners who alternate between primary and secondary interactants in activities but are nonetheless able to attune to and benefit from mediation. Tasks employed must be beyond the capabilities of any individual learner, although some in the group will undoubtedly be closer to independently executing the tasks than others. A challenge to teachers is to continually challenge all learners, and this requires tracking the particular needs of each learner and the group.

Beyond negotiating the application of DA principles to particular L2 classrooms, there are ongoing efforts to implement DA in formal testing situations. Antón (2009) reports the use of DA in achievement testing of Spanish L2 learners' oral and written proficiency in a university undergraduate Spanish language program, arguing that a more nuanced view of learner abilities emerges through interactions. Erben, Ban, and Summers (2008) have implemented DA principles in the mandatory examinations of professional competencies which students must acquire as part of a preservice teacher education program. Their results document not only students' more positive attitude toward the exams, which they now perceive as learning opportunities rather than obstacles, but also a willingness on the part of some students to incorporate DA into their future classroom practice.

A project with which this author is currently involved seeks to develop a dynamic approach to language proficiency assessment that may be administered to large numbers of learners simultaneously. Standardized, multiple-choice tests of listening and reading comprehension in each of three languages—Chinese, French, and Russian—are administered via computer. Rather than a single attempt at each item, learners are permitted four tries, and after each incorrect response a mediating prompt of increasing explicitness is provided. In this way, the *computerized dynamic assessment* generates an overall score for the test as well as a profile of performance on individual sections of the test and the level of mediation required. Such information may be useful for placement decisions, as well as determining achievement and progression to higher levels of study. Each of these strands of research promises to deepen our appreciation of DA's relevance to L2 development, and additional applications will undoubtedly further refine our understanding of DA itself.

SEE ALSO: Assessment in the Classroom; Praxis and Second Language Acquisition; Vygotsky and Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Dynamic Systems Theory Approaches to Second Language Acquisition

WANDER LOWIE

Introduction

Dynamic systems theory (DST) is a theory of change. Starting in the 1960s, the theory has been used extensively in a wide variety of disciplines, from physics to biology and from meteorology to demography. Essentially, DST is an application of mathematics, in which change of complex systems over time is expressed in dynamic equations that describe how these changes take place as a function of time. Each next developmental step (or *iteration*) is determined by the state of the system at the preceding moment, which leads to unpredictable, nonlinear developmental patterns. DST has provided powerful accounts for the nonlinear, iterative development of natural phenomena. Examples of applications of dynamic systems that show iterative changes over time are found in reaching dynamics (when we reach for a cup on the table, we iteratively adjust the trajectory of our movement) and weather forecasts in unstable atmospheric areas (tomorrow's weather can be predicted accurately, but long-term predictions are no more than educated guesses due to the large number of dynamic iterations).

Recently, applications of DST have been developed within cognitive science (Thelen & Smith, 1994; Port & van Gelder, 1995) developmental psychology (Van Geert, 1998), and language development (Elman, 1995). Since the late 1990s, the theory has also been applied to second language acquisition (SLA) (Larsen-Freeman, 1997; Herdina & Jessner, 2002; De Bot, Lowie, & Verspoor, 2007). These and many other authors have argued that language can be seen as a complex dynamic system and that language development is a nonlinear, chaotic, and highly individual process that cannot adequately be described from a static point of view. Different authors have used different terminologies for complex dynamic systems. This difference is mainly caused by parallel developments in different areas of research. Within the applications to language development, the terms "complex systems," "complex adaptive systems" (Ellis & Larsen-Freeman, 2009), and "dynamic systems" (De Bot et al., 2007) refer to similar approaches, although "dynamic systems" is more frequently associated with studies that use mathematical modeling (e.g., Caspi, 2010).

The arguments for considering (second) languages as complex dynamic systems revolve around three crucial characteristics that can suitably be applied to language and language development: the existence of interconnected subsystems; the tendency to self-organization; and the occurrence of nonlinear, chaotic patterns of development. Each of these characteristics will be discussed in some detail below.

Subsystems

An important characteristic of dynamic systems is that they are constituted by numerous embedded subsystems that interact dynamically (Thelen & Smith, 1994). The concept of embedded subsystems is best illustrated by a well-known example of a dynamic system: a flock of birds. The dynamically changing shape of the flock is caused by the movements

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of the individual birds. Each bird in the flock can be seen as one subsystem in an interconnected set of subsystems. Subsystems are nested. Each subsystem can again consist of several nested, or embedded, subsystems. In the bird example, the bird's circulatory system, its skeletal system, its nervous system, and its digestive system are all subsystems that may again consist of subsystems. Similarly, the flock of birds is again embedded in its larger environment, characterized by a set of atmospheric conditions, such as humidity, wind, and temperature.

The application of subsystems to SLA is strongly associated with the model of the bilingual mind as proposed by Paradis (2004). Taking a neurolinguistic starting point, Paradis assumes the existence of subsystems within the language system, each of which has its own specialization, such as phonology, morphosyntax, and semantics. These subsystems are "isolable . . . and computationally autonomous . . . , have a specific purpose, and function as a component of a larger unit" (Paradis, 2004, p. 119). The nestedness of subsystems is also found in Paradis's model; within the linguistic subsystems (e.g., phonology, morphosyntax, and semantics), he assumes nested subsystems for each of the languages that a speaker is familiar with.

There is, however, one crucial difference between the way in which subsystems are defined by Paradis and dynamic subsystems. Basing his view on Fodor (1983), Paradis regards subsystems as modules that function only on each other's input and output, and holds that for each module "the internal functioning . . . is not affected by the internal structure or even the output of another module"(Paradis, 2004, p. 129). In a dynamic view, subsystems are not restricted to modularity, but actively interact with other subsystems. In an influential book on the continuity of human cognition, Spivey argues against the existence of self-contained modules, and maintains that cognition must be seen in terms of the "continuous probabilistic character of mental activity" (2007, p. 21). In this view, subsystems are not closed modules, but sets of related probabilistic computations over time. This means that subsystems in the dynamic sense are open and connected systems and that their internal structure is strongly interdependent on other subsystems. Evidence of the active interaction of subsystems can be found in the interaction between vision and language in Braille reading, expert lipreading, and the McGurk effect (Spivey, 2007). These examples show that cognitive subsystems are not only embedded in but also strongly interact with the physical subsystem, which is why cognitive subsystems are referred to as *embodied* (see also Lakoff & Johnson, 1999).

In sum, from a DST point of view, the language system can be assumed to consist of embedded subsystems for all levels of language production and perception, such as conceptualization, semantics, syntax, lexicon, phonology, and phonetics (also see Larsen-Freeman, 1997). Contrary to the modular approach, dynamic subsystems must be assumed to be open, interacting, and emergent systems (Spivey, 2007). Additional languages are not stored in different anatomical localizations, but may be considered as embedded functional subsystems in the dynamic sense, possibly nested within the phonological, morphosyntactic, and semantic subsystems, as proposed by Paradis (2004). This means that aspects of one language (e.g., the lexicon or the phonology) may affect those of other languages. This interaction is dynamic, meaning that it varies over time. In addition to the embeddedness of the language system within the cognitive system, the cognitive system itself has been shown to interact dynamically with the physical system of the body.

Self-Organizing State Space

A second characteristic of dynamic systems is that the global dynamic patterns of a system appear from the dynamic interaction of its subsystems. This is called "self-organization."

Self-organization occurs in any natural dynamic system, from cells in a body to the formation of sand dunes, and takes place in the system itself, in dynamic interaction with external influences. For instance, ripples in a sand dune emerge by the formation of sand grains according to the principles within the complex system of ripple formation. Self-organization is a very strong principle; even when the ripples are disturbed by footsteps in the sand, they will reemerge after some time.

In self-organization, the system as a whole is shaped by the interaction of lower-level subsystems. Research in the field of neuroscience shows that the coordinated behavior of the brain is also largely determined by self-organization (Kelso, 1995). The same conclusion is drawn from other findings in cognitive research. For instance, Van Orden, Holden, and Turvey (2003) show that the background noise in behavioral data recorded during reaction time experiments displays patterns of self-organization of purposeful behavior. Self-organization is also a key feature in current cognitive theories about language development. According to Van Geert, it is likely that language acquisition, like other phenomena expressing natural growth and development, is a self-organizational process (Van Geert, 2003, p. 659). Van Geert points out that self-organization can explain the emergence of complex grammar despite the poverty of input for the child acquiring language, and that no innate language learning property is required to account for the increase of language complexity. This position is corroborated by increasing amounts of evidence in favor of an emergentist view of language acquisition. Using computer simulations of connectionist neural networks, several studies of first language acquisition have shown that self-organization can give rise to the emergence of a complex language system (Li, Farkas, & Macwhinney, 2004). Similar positions have been taken for SLA (e.g., Hernandez, Li, & Macwhinney, 2005), and recently Ellis and Larsen-Freeman (2009) have provided additional evidence for the emergence of a second language (L2) system using a variety of measurements.

Due to their complexity as well as their constant fluctuations over time, self-organizing systems cannot be represented in a simple way. The situation in which a system is at one moment in time is its *state*. Since in dynamic systems many subsystems interact simultaneously, the state of a dynamic system is determined by the state of all of its subsystems. When the development of a subsystem over time is graphically projected, each of the system's subsystems makes up one of its many developmental dimensions. Since time is a crucial factor in dynamic systems, the description should take it into account that each of these dimensions can change. So the representation of the system describes the phase (in time) of each of the dimensions. The manifold of changing dimensions as a whole is therefore referred to as the multidimensional *phase state* of the system, which in mathematics is described as vectors in its *state space*. Each changing subsystem is one dimension in the system's state space.

Due to its inherent characteristics in relation to its sensitivity to external conditions, a dynamic system may be drawn to a point or path that specifies a particular volume of state space, called an *attractor state* (Thelen & Smith, 1994; Kelso, 1995). To take a strongly simplified example, the amplitude of a pendulum is determined by its physical characteristics in combination with gravity and friction. Given these characteristics, the pendulum is likely to follow a particular path, which can be seen as an *attractor* of the pendulum. Similarly, a system may be inclined to move away from certain states, which are referred to as *repellor states*.

To imagine the physical appearance of a phase state, a comparison is often made with a ball rolling over a surface that has both lumps (repellors) and holes (attractors). The movement of the ball can be seen as the trajectory of the system over time (Thelen & Smith, 1994). Since a complex system contains many dimensions, it can have multiple attractors and multiple repellors. A multitude of attractors and repellors creates "greater potential for any given trajectory to meander quite nonlinearly in its high dimensional state space"

(Spivey, 2007, p. 17). Not every attractor or repellor is equally strong; the holes can be deep or shallow, and the deeper a hole is, the more stable the attractor is and the more energy is needed to move the ball out of the hole.

Although attractors may cause parts of (sub)systems to be relatively stable, the entire state space can never be stable. Due to activity in some subsystems or changes in their environments, the system can be disturbed (*perturbation*) and consequently many dimensions of the state space can change, which can lead to a *phase shift* of the system (Abraham, 2003). From a DST perspective, this is how learning can be defined in terms of self-organization. With learning, "the entire attractor layout changes" (Kelso, 1995, p. 171). This view of learning is corroborated by studies of neural dynamics, showing that learning coincides with a dramatic reorganization of activity in neural populations (Jirsa & Kelso, 2000).

This implies that learning takes place over time, and is strongly dependent on the preceding state of the system. In other words, learning strongly depends on pre-existing knowledge. As Kelso puts it, "Learning, fundamentally, means the modification . . . of pre-existing capabilities," and it either competes or cooperates with the learner's existing capabilities (Kelso, 2003, p. 61). For language learning, the pre-existing capabilities include the state of any of the other languages a learner knows, and the state of any of the learner's subsystems at one moment in time will determine the learner's sensitivity to "input" at the next moment in time (Verspoor, Lowie, & De Bot, 2009). This interdependent view also implies that learning is not a gradual and smooth process, but may be abrupt and nonlinear as a result of competition and support between subsystems (Kelso, 2003). In sum, languages do not develop according to a predetermined sequence that is identical for all learners, but emerge as iterations from the system's self-organizing state space in interaction with its environment. Consequently, language development is a highly individual process.

Many authors refer to changes of the multidimensional state space in terms of *growth* (Van Geert, 1995). To feed the process of growth of a system, it is dependent on resources. Applied to L2 development, resources comprise the learner's internal capabilities, such as aptitude and working memory, as well as pre-existing capabilities and motivations. They also include external resources, such as the learner's environment, time, and material resources (books, TVs) (De Bot et al., 2007). The growth of the system is largely dependent on the availability of resources. "Limitations on resources," Van Geert argues, "are not only a delimiting factor on what would otherwise be exponential growth, but a crucial 'driving force' in development" (2003, p. 656). Focusing on a limited set of connected growers, several authors have simulated language development from a dynamic perspective. For instance, Bassano and Van Geert (2007) have investigated grammatical development by modeling a child's utterance length recorded from longitudinal data. Their simulations enable them to identify transitions that are indicative of the emergence of grammatical structure and show competitive and supportive relationships between components in the system. Caspi (2010) investigates different levels of vocabulary knowledge using a growth model of longitudinal data of L2 learners of English and demonstrates precursor relationships between receptive and productive knowledge levels. These developments are still in their infancy, but the use of modeling techniques may prove to be a powerful tool to investigate the factors that affect the self-organization of dynamic language systems.

Nonlinear Development

Traditionally, SLA is seen as a linear process, with a clear starting point (no knowledge of the L2) and a clear end point (native-like proficiency in the L2). Not all learners will achieve the ultimate goal of native-like proficiency, and those who do not are assumed to

stop developing somewhere along the line. Traditional research has focused on the individual contribution of each of the factors in achieving, or failing to achieve, the ultimate goal.

From a DST perspective, a person's language is a fully integrated system. Within this framework, it is simply impossible to isolate single factors affecting the process of language acquisition, because the system is more than the sum of all these factors. Motivation, aptitude, and all the other "factors" are strongly interacting components or subsystems within the system, and they change as a function of the system's previous point of development within a developmental context. And since the context in which the system operates is again a system in itself, any change of the language system will also change its context. In principle, a dynamic system can show linear development, but real-life dynamic systems tend to be complex, as they emerge from the interaction of the components of the system and the context in which they develop. The development of complex dynamic systems can therefore be described as *nonlinear* (Van Geert, 2003). While linear relationships are strictly proportional, nonlinear relationships are not proportional and are therefore unpredictable.

Nonlinearity in L2 development is best illustrated by contrasting a linear view and a nonlinear view. In a linear understanding, the learner's development is essentially the sum of all the factors affecting the learner. The assumption is that if we knew all of the learner's characteristics, such as aptitude, motivation, anxiety, age, learning strategies, the input, and all other external and internal influences (which of course is purely hypothetical), the learner's development could be predicted. From a nonlinear point of view, this would not be possible, because each subsequent iteration of a dynamic system develops as a function of the interaction of its subsystems in constant flux with the environment. For instance, at moments that are characterized by high levels of anxiety, the amount of motivation may simply be irrelevant. Similarly, successful social interactions may dramatically increase the learner's motivation. In other words, a change in motivation at one point in time may trigger a change in any of the other subsystems at the next point in time. Consequently, the individual contributions of each of these interactions cannot explain the development. Or as Van Geert puts it, "the effect of a dynamic process differs from the sum of its parts" (2003, p. 657). This also means that from a DST perspective, language does not develop in predetermined structures or a representative design. Rather, language development emerges from the interaction of its components, each of which has its own timing properties and each of which dynamically interacts with its contexts.

This "unruly" behavior of the system is referred to as *chaos*. Although this term is commonly interpreted as "completely random" in everyday language use, *chaos* in the DST sense of the word is not the same as random behavior, as there are limitations and forces that may push the system in a certain direction (see "attractors," above). It rather means that the development is *nondeterministic*, or *stochastic*.

The nonlinear, erratic patterns of development are often manifested in a great deal of variation found in learner data. Longitudinal studies into aspects of L2 development have demonstrated the nondeterministic nature of development and have shown the relevance of variability. An early example of a study concentrating on learner variability is the work done by Cancino, Rosansky, Schumann, & Hatch (1978), who, in the vein of other studies in that era, attempted to explain the variability in their data in terms of external influences. A recent micro-genetic reanalysis of their data using a DST perspective (Verspoor, Lowie, & Van Dijk, 2008) shows that the amount of variability strongly fluctuates between progress and decay ("acquisition" and "attrition"). The analyses also show that increased variability leads to a subsequent increase in development, but not linearly and only as a function of the dynamic interaction of factors over time. As Larsen-Freeman puts it, "there are no discrete stages in which learners' performance is invariant, although there are

periods in which certain forms are dominant . . . There appears to be a need for the necessary building blocks to be in place in sufficient critical mass to move to a period where a different form dominates" (2006, p. 592). This observation accounts for the necessity of variation in learner data. Variability in the learner's system can be seen as a precursor condition to making progress.

The relationship between the amount of intra-individual variation and language development was also shown in a study by Van Dijk and Van Geert (2007) on the development of spatial prepositions. Using analytic techniques such as ProgMax and RegMin, these authors show that developmental transitions in their data are characterized by discontinuities of intra-individual variability. While in traditional approaches to L2 development variability is often regarded as undesirable noise that blurs the "true score" and that stands in the way of finding significant differences between groups or conditions, DST regards variability as an essential characteristic of the system's process of self-organization that may signal changes and transitions. From an evolutionary perspective, we could even say that nothing would ever change if there were no variation.

An important implication of its chaotic, nonlinear, and highly variable nature, is that there is no end state of language development. While a native speaker variety may be a learner's ultimate goal and could be seen as one of the attractors of the system, it is not the system's only attractor. Neither is it likely that all of the components of a dynamic system reach an attractor state simultaneously. If this happened, we could speak of true fossilization. But given the availability of sufficient energy and optimal circumstances (e.g., attention, motivation, and practice), an attractor state is not irreversible. Moreover, even a seemingly stable state may still show a considerable degree of variability. The development (progress or decay) of the dynamic language system takes place at many different timescales, from decades to milliseconds. At the decade level, the language system is greatly affected by important socioeconomic events in life, from the first school years to marriage, migration, and retirement (Lowie, Verspoor, & De Bot, 2009). At the millisecond level, language is affected by recency and associations of language forms in the context of their use (Lowie, Verspoor, & Seton, 2010). Seen in the light of the constantly changing and chaotic properties of a dynamic language system, simultaneously affected by social and cultural variables, affective variables, age-related variables, and crosslinguistic variables, the continuous development of the language system may temporarily slow down in some of its subsystems, but is unlikely to ever come to a halt.

Conclusion

As many authors have argued, the main characteristics of dynamic systems, such as interconnected subsystems, self-organization, and nonlinear development, are in line with the observed dynamic nature of L2 development (Larsen-Freeman, 1997; De Bot et al., 2007). The application of DST to L2 development is very recent, and in spite of a boost of research using this framework in the past few years many questions still remain to be answered, partly because the framework has not yet been fully developed. For instance, the very nature of linguistic subsystems, including the subsystems of different languages, needs further elaboration. From a DST perspective, subsystems cannot be regarded as closed modules that operate independently, but the precise nature of the way in which different languages are embedded in the system is as yet unclear. Both neurolinguistic and psycholinguistic studies are needed to resolve this issue. Also the nature of representations needs further attention. If Spivey (2007) is correct, and there are no *things* in the mind but only *processes*, the firmly established distinction between procedural knowledge and declarative knowledge can no longer be maintained, and even deeply rooted distinctions like syntax versus lexicon will need to be abandoned (see Elman, 2011).

This is why many authors working in the DST field of L2 development have argued that a new start must be made after a century of theory formation about language and language development. Even though both theory formation and empirical work can be expected to develop rapidly in this field, dynamic models of language cannot be developed overnight. Not only is theorizing needed, but also new research paradigms must be developed to investigate language perception and production within a continuity-of-mind framework. For instance, computer modeling of L2 data is promising, but needs further development. The strongly reductionist computer models may reveal very relevant aspects of dynamic relationships in L2 development, but tend to be limited in their implications. Traditional approaches to L2 development have often reduced the acquisition process to a series of discrete events. Proponents of a DST approach to L2 development argue for the recognition of language development as a continuous, multidimensional process. This view will require a further change from product-oriented research to process-oriented research and implies a need for more micro-genetic longitudinal studies over longer periods of time. Such studies will allow for analyses using advanced statistical techniques like autocorrelation and time series.

And finally, the new insights may result in the adjustment of language teaching practices. If language development is indeed a highly individual process, language pedagogy will have to accommodate this. Language pedagogy will also have to take it into account that learning entails changes in a *self*-organizing system. This implies that languages cannot be *taught* in an "information processing" sense of the word, but that language teaching can only aim at creating optimal conditions and perturbations that invoke the desired phase changes in the multidimensional state space of what we simply call "language." There is nothing simple about that.

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; Variability in a Dynamic System Theory Approach to Second Language Acquisition

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Dynamics of Multilingualism

ULRIKE JESSNER

Introduction

Although multilingualism is not a new phenomenon in human society, it seems that in the age of globalization there is a growing interest in research into the phenomenon of multilingualism. Research curiosity in multilingualism both as an individual (in the European academic discourse often referred to as "plurilingualism") and as a social phenomenon has grown immensely over the last decades and, in this connection, scholars have started to develop more adequate theoretical frameworks oriented toward a multilingual norm. Although it has become widely known that language development in multilinguals changes over time and can include processes of language attrition or reactivation, numerous scholars interested in language acquisition still base their work on linear, static, and monolingual models of language development.

This entry will first focus on the complexity and diversity of language learning in multilinguals. Then dynamic systems theory (DST)/complexity theory (CT) as a new approach to investigating multilingual phenomena will be presented as an adequate thinking metaphor, if not a new theory, for the study of language development and multilingualism. The discussion will, therefore, start with a more general examination of the application of DST/CT to (second) language learning and then move on to the application of such an approach to the study of multilingual phenomena. The last section concentrates on the need for new perspectives in multilingualism research.

The Complexity and Diversity of Multilingualism

Since the mid-1990s, research on third language acquisition (TLA) and language learning in multilinguals or multilingualism has been increasingly intensified with the main goal being to describe multilingual phenomena in order to investigate differences and similarities between second and third language acquisition (see, e.g., Cenoz, Hufeisen, & Jessner, 2001, 2003; De Angelis, 2007; Aronin & Hufeisen, 2009a). An overview of the new discipline reveals that scholars have focused on sociolinguistic, psycholinguistic, and educational aspects of multilingualism. So far studies have mainly been carried out in the fields of crosslinguistic influence, the cognitive and linguistic effects of bilingualism on TLA, multilingual processing, child trilingualism, and teaching of third languages (see Jessner, 2008a; Hufeisen & Jessner, 2009). In recent years, differently oriented studies have been added which are concerned with the neurolinguistic aspects of the phenomenon (for a critical view see de Bot, 2008) or the economic value of learning more languages (Grin, Sfreddo, & Vaillancourt, 2010). The increase in studies on the contact of more than two languages has also forced researchers to rethink definitions used in a complex field with diverse interdisciplinary interests.

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Terminology

The term "multilingualism" covers a range of meanings. Whereas multilingualism is often used to refer to bilingualism (the most commonly studied form of multilingualism), a growing number of researchers take the strong stand that bi-, tri-, and quadralingualism should be seen as subtypes of multilingualism. They also believe that TLA is not extended second language acquisition (SLA) but presents a different language-learning process in various respects (see Jessner, 2008a). All in all, in the field of multilingualism, a variety of terms have been used to refer to identical phenomena. The variety of terms and their origins derive from (a) the complex nature of use of various languages in a multilingual context and (b) the researchers' backgrounds, ideologies, and purposes (for a detailed discussion see Kemp, 2009).

Additionally, the roles of L1 and L2 were clearly defined in traditional language-acquisition research until studies on language attrition started questioning the usefulness of the terminology in case of transitional bilingualism. Putting the research focus on the dynamics of multilingual (in the sense of more than two languages) development has certainly added more terminological problems. It has become clear that from a long-term perspective the term "L1" cannot easily be applied to a context where multiple languages are learned since dominance (level of proficiency or frequency of use) does not necessarily correspond to chronological order of acquisition.

Crosslinguistic Influence in TLA and the L2 Status

Crosslinguistic influences in a multilingual system not only take place from the first language to the second and vice versa but have also been detected from the L1 to the L3 and from the L2 to the L3 and vice versa. Combined crosslinguistic influence occurs "when two or more languages interact with one another and concur in influencing the target language, or when one language influences another, and the already influenced language in turn influences another language in the process of being acquired" (De Angelis, 2007, p. 21). This expansion of transfer possibilities shows that multilingual acquisition is a far more complex process than second language acquisition (SLA), where the role of the L1 in the development of the L2 has been researched extensively.

One of the most crucial questions in psycholinguistic research on TLA is related to the status of the L2 in third language learning. In a number of studies it turned out that in L3 production the speakers did not rely on their L1 as expected, but on their L2, and in several studies of learning an L3 of Indo-European origin it could be shown that L3 learners whose L1 is typologically unrelated to the L2 or L3 tend to transfer knowledge from their L2 or in the case of bilinguals from the related L1 (for an overview and list of TLA studies see Jessner, 2008a). The activation of prior language knowledge is influenced by factors such as psychotypology (perceived linguistic distance between languages), recency of use, the level of proficiency in the target language, the foreign-language effect, the tendency in language learners to activate an earlier second language in L3 performance, and the learner's perception of correctness of a target word (for an overview see De Angelis & Dewaele, 2009; Ó Laoire & Singleton, 2009).

Forms of Multilingual Learning

In contrast to second language acquisition there is a greater diversity when more than two languages are acquired. In TLA at least four forms of acquisition have been identified:

1. the three languages can be learned consecutively;
2. the three languages can be learned simultaneously;
3. L1 and L2 are learned simultaneously before learning the L3;
4. L2 and L3 are learned simultaneously after the acquisition of the L1.

If more languages are involved the number of forms increases. In their overview of forms of acquisition of seven languages Todeva and Cenoz (2009, p. 7) present 32 possibilities.

Multilingual Use

In many contexts in the world more than one language is used on a daily basis. Multilingualism can be encountered as an institutional, societal, discursive, and individual phenomenon. In Malaysia, for instance, it is common that language skills are developed in various languages for use in certain domains but that language proficiency in those languages is rather limited (Kärchner-Ober, 2009). This phenomenon is quite common in multilingual contexts and has led to the redefinition of multilingualism as a phenomenon which views language choice and proficiency as necessarily dependent on use in specific domains of life, thereby moving away from the notion of multiple monolingualism (Baker, 2006). The fact that "different aspects of life often require different languages" is called the "complementarity principle" by Grosjean (2010, p. 29).

Applying Dynamic Systems Theory to Multilingualism

Systems research has been known in other sciences such as meteorology, mathematics, neurology, psychology, and so on for some time (see overview of research in Briggs & Peat, 1989). Linguistics, or rather applied linguistics, has only recently started to focus on the usefulness of such approaches (Larsen-Freeman, 1997; Meara, 1999), but since 2000 interest in the application of DST to second language acquisition or multilingualism has grown considerably (Herdina & Jessner, 2002; Kramsch, 2002; De Bot, Lowie, & Verspoor, 2007; Larsen-Freeman & Cameron, 2008; Aronin & Hufeisen, 2009a). The most common terms used in academic discourse are chaos theory, ecological models, emergentism, dynamic systems theory (DST), and complexity theory (CT), and they all focus on the understanding of the behavior and organization of dynamic systems.

The dynamic model of multilingualism (DMM) applies DST to multilingual development and use (Herdina & Jessner, 2002). In DMM it is emphasized that "multilingualism" necessarily embraces all types of language acquisition but also concentrates on the changes in language learning in a multilingual context. In the following the main contributions that a DST approach offers to the study of multilingualism will be discussed.

Relating the Socio- to the Psycholinguistic Level of Multilingualism

According to DMM, the individual multilingual system is dynamic and adaptive. As an adaptive system the multilingual system, characterized by nonlinear growth and continuous change, possesses the properties of elasticity, the ability to adapt to temporary changes in the systems environment, and plasticity, the ability to develop new systems properties in response to altered conditions. A DST approach is able to take into account all the relevant characteristics of multilingual learning and use, such as nonlinearity, including language attrition as a common phenomenon of multilingual systems, and complexity in a changing system. Such an approach uses dynamic modelling to investigate properties of the dynamic adaptation to contexts in change.

DMM focuses on language development and language use in multilinguals as interdependent areas of language learning. Variation in multilingual development and use is strongly linked to the dependence of the system on social, psycholinguistic, and individual factors, not to mention the mode of language learning in the form of either natural or instructional learning, or various combinations of the two. For instance, the complexity and variability of the multilingual system are also influenced by individual cognitive factors such as motivation, anxiety, language aptitude, self-esteem, and so on, as well as social factors which can show influence on the linguistic aspects of the multilingual system.

As described by Briggs and Peat (1989, p. 148), "every complex system is a changing part of a greater whole, a nesting of larger and larger wholes." As already mentioned, emotions and other psychological factors play a bigger role than has long been assumed.

According to Larsen-Freeman and Cameron (2008) the intrinsic dynamics of the language learner are governed by social context, physical environment, and cognitive context so that learning and change are at once individual and social. Linguistic aspects of individual multilingualism are therefore shaped by the sociolinguistic settings in which the multilingual's life takes place. In 1965 Lambert established the distinction between additive and subtractive bilingualism because he was in need of an explanation of seemingly controversial results in early bilingual studies (see Lambert, 1977). It turned out that the factor of language prestige can exert enormous influence on various language-contact situations. More recently, Cenoz (2009) pointed out that vitality and status of languages have to be taken into account in studies of crosslinguistic influence and multilingualism.

Aronin and Ó Laoire (2003) present an ecological model of multilinguality or individual multilingualism. They state that multilinguality is intertwined with many, if not all, aspects of identity. The social and cultural environment plays a decisive role in the structure and specifications of multilinguality; in other words, language needs change according to the personal situation or even changes in identity, as found in the lives of migrants. Therefore, and for other reasons, in DMM perceived communicative needs, which are psychologically and sociologically determined and can also be subject to change, are identified as the driving force of language learning, language choice, and use. The speaker decides which language to use with whom and in which situation. And also when and why another language should be added to the multilingual's repertoire. One's decision to speak a particular language to a particular person at a particular moment is influenced by a number of factors such as language proficiency, language-mixing habits and attitudes, usual mode of interaction, kinship relation, socioeconomic status, situation, such as physical location, presence of monolinguals, degree of formality and of intimacy, and so on. According to Grosjean (2001) a trilingual person can function in a monolingual, bilingual, or trilingual mode with various levels of activation.

Holistic Thinking as a DST-Based Principle

In DMM a holistic approach is the necessary prerequisite for understanding the dynamic interaction between complex systems within a multilingual system. Such a view is a necessary presupposition of a dynamic view of multilingualism and assumes that the presence of one or more language systems influences not only the development of the second language but also the development of the overall multilingual system. The behavior of each individual language system in a multilingual system largely depends on the behavior of previous and subsequent systems, and it would therefore not make sense to look at the systems in isolation. Therefore in DMM, unlike mainstream SLA research, language systems are seen as interdependent and not as autonomous systems.

In other holistic approaches the relationship between the dynamics of language development and holism has not been discussed in particular. Cook (2006) introduces the concept of multicompetence, which he bases on Grosjean's work on the bilingual as a competent but specific speaker-hearer (2010). Since its creation, multicompetence as a kind of supersystem differing in distinct ways from the knowledge of monolinguals has established itself as the most widely used term for bilingual (and multilingual) competence in applied linguistics. In DMM, which acknowledges Cook's work, multilingual proficiency is defined as the dynamic interaction between the various psycholinguistic systems (LS_1, LS_2, LS_3, LS_n) in which the individual languages (L1, L2, L3, Ln) are embedded, crosslinguistic interaction, and what is called the M(ultilingualism)-factor. The latter refers to all the effects

in multilingual systems which distinguish a multilingual from a monolingual system, that is all those qualities which develop in a multilingual speaker/learner due to the increase in language contact(s) (see studies on the M-factor by, e.g., Peyer, Kaiser, & Berthele, 2010). Crosslinguistic interaction (CLIN) in multilinguals also refers to cognitive phenomena, a view which in the meantime has also been adopted by other researchers working on crosslinguistic influence, such as Jarvis and Pavlenko (2008).

The Butterfly Effect or Sensitive Dependence on Initial Conditions

The M(ultilingualism)-factor is an emergent property, which can contribute to the catalytic or accelerating effects in TLA. The multilingual system is not only in constant change but the multilingual learner also develops certain skills and abilities that the monolingual speaker lacks.

These are language-specific and non-language-specific or cognitive skills used in language learning, language management, and maintenance. In particular in the case of typologically related languages, a catalytic effect, that is a qualitative change in further language learning, has been detected in experienced language learners. What these skills and abilities have in common is their relatedness to a heightened level of metalinguistic awareness in multilingual learners and users, which can be seen as a function of the interaction between the systems. Metalinguistic knowledge or awareness of this knowledge influences further language learning or learning a second foreign language (see Jessner, 2006).

Whereas in SLA the learner refers to a monolingual norm, that is she or he bases second language learning on the acquisition of the first language (Herdina & Jessner, 2002, p. 131), in TLA a metasystem in multilinguals, which is the result of a bilingual norm, is developed. Following Lorenz (1972), who used the butterfly effect or sensitive dependence on initial conditions to refer to the unpredictability of dynamic systems, in DMM an M-effect which refers to this qualitative change in third language learning is assumed to exist in multilingual systems.

Challenges for Future Research

One of the main goals for future studies on multilingualism is to develop new perspectives which can meet the complexity of the field (Aronin & Hufeisen, 2009a). If we want to make moves in the field, a strong focus needs to be placed on the assessment of multilingual proficiency and this needs to be done from a holistic, DST-based perspective. This implies that in order to provide realistic or fair assessment of individual multilingualism all components of multilingual proficiency have to be included in the assessment, thereby going beyond purely linguistic measures. It has to be made clear not only that multilingual development can only be captured from a dynamic perspective but also that the complexity of multilingual proficiency needs to be included in the assessment (see for instance, De Angelis & Jessner, in press). One of the main subjects of future inquiry is the operationalization of metalinguistic awareness, previously suggested in Jessner (2008b).

Dynamic systems theory/complexity theory not only offers inspiring and challenging perspectives to the study of multilingualism, but also proposes abandoning old trails of thinking and avoiding falling back into old ways of thinking. As suggested by Aronin and Hufeisen (2009b), it is absolutely necessary to cross the second threshold, that is, following the crucial contributions by Grosjean and Cook on the bilingual view of bilingualism, we now have come to see that multilingualism can only be adequately researched by applying a multilingual norm to linguistic research. New perspectives such as those provided by Todeva and Cenoz (2009), who combined the emic (the multilingual's) perspective with the etic (the researcher's) perspective of multilingualism and applied dynamic systems

theory to multilingual narratives, present a most promising step forward in the development of the field.

SEE ALSO: Attrition and Multilingualism; Bilingual and Monolingual Language Modes; Bilingualism and Bilinguality; Bilingualism and Cognition; Crosslinguistic Influence and Multilingualism; Multicompetence; Multilingualism; Multilingualism and Emotions; Multilingualism and English; Multilingualism and Identity; Multilingualism and Metalinguistic Awareness; Multilingualism at Work

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Eades, Diana

KATE HAWORTH

Dr Diana Eades (1953–) is a key figure in the field of forensic linguistics (FL), especially due to her work on linguistic disadvantage faced by speakers of Aboriginal English in the Australian legal system. An important aspect of her work is a dedication to the practical, applied use of linguistic research for the furtherance of equality and justice, especially through increasing understanding within the legal system (and other professional groups) of the communicative challenges faced by speakers of nonstandard language varieties. Eades has been involved in FL since its earliest days, has acted as an expert linguistic witness in several cases, and has published extensively on FL-related topics for over 20 years to date. Key publications include the 1995 edited collection, *Language in Evidence: Issues Confronting Aboriginal and Multicultural Australia* (Eades, 1995a); *Courtroom Talk and Neocolonial Control* (Eades, 2008a), a critical sociolinguistic analysis of language and power in the courtroom; and *Sociolinguistics and the Legal Process* (Eades, 2010), an accessible introduction to this area. She continues to be an active and highly respected figure in the field.

Eades's initial research, including her PhD from the University of Queensland (Eades, 1983), involved ethnographic study of Aboriginal languages and communicative practices, which led to an involvement with Australian Aboriginal English in the legal process (see cases below). After holding posts as lecturer and senior lecturer at the University of New England, NSW, Australia, she became an associate professor at the University of Hawai'i, where she was actively involved in projects supporting the pidgin-speaking community, including in legal contexts through her membership of the State of Hawai'i Supreme Court Committee on Equality and Access to the Courts (1999–2002; 2002–5). In 2004 she moved to her current post as Honorary Research Fellow in the School of Behavioural, Cognitive, and Social Sciences at the University of New England, NSW, Australia.

Throughout this academic career, she has maintained an active research interest in language in the legal process, and especially issues of power, dominance, and social inequality as enacted and perpetuated through discursive practices. Her methodological approach, which she describes as critical sociolinguistics, involves detailed qualitative analysis of talk in legal contexts, and draws primarily on interactional sociolinguistics and ethnography of communication, integrated with analysis of the sociopolitical context in which the talk is produced. An important aspect of her work has been a recognition of the significance of pragmatic differences between Australian Aboriginal English (AE) and Standard English (SE), including the use of silence and of questions (e.g., Eades, 1993, 1994, 1996). These language features have a significant role to play in most legal contexts, especially the courtroom and the interview room, and Eades's work in this area is therefore of special interest and relevance.

Her research on communicative differences between AE and SE led to her involvement in several cases as an expert witness, including *R v Condren* (1987 *Australian Criminal Reports* 28, 261–99, Queensland Court of Criminal Appeal—see Eades, 1993, 1995b), and *R v Kina* (1993, unreported, Queensland Court of Appeal, November 29—see Eades, 1996). The main case with which Eades is associated is what is known as 'the Pinkenba case' (*Crawford v Venardos & Ors* 1995, unreported, Brisbane Magistrates' Court, February 24), in which

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police officers were charged with unlawfully depriving three Aboriginal boys of their liberty by driving them to a remote location "to reflect on their misdemeanours" (Eades, 2008a, p. 8), and then abandoning them there. Yet at a preliminary hearing, the case against the officers was dismissed after lengthy cross-examination of the boys which discredited both their story and their character. Eades's detailed analysis of the cross-examination, which is the focus of Eades (2008a), shows how the lawyers achieved this outcome by using linguistic strategies which exploited Aboriginal modes of communication (see also e.g., Eades, 2002, 2004, 2006).

A notable success of Eades's in bridging the gap between linguistic research and legal practice has been the publication of a handbook on Australian Aboriginal English written specifically for lawyers (Eades, 1992), which has made a direct and important contribution to reducing the disadvantage faced by Aboriginals in legal contexts. This practical impact is reflected in the fact that her work has on numerous occasions been cited in court judgments, official publications, and benchbooks. The 1992 handbook was adapted and republished in 2000 as *Aboriginal English in the Courts: A Handbook*, by the Queensland Department of Justice.

Eades has also turned her expert attention to the area of language analysis for the determination of origins (e.g., Eades, 2005, 2008b; Eades & Arends, 2004b). In response to growing concerns in a number of countries about the lack of linguistic validity in the official use of language analysis for the identification of national origin of asylum seekers, in 2004 she was part of an international group of linguists which produced 'Guidelines for the Use of Language Analysis in Relation to Questions of National Origin in Refugee Cases' (Language and National Origin Group, 2004). She also coedited a special section of the *International Journal of Speech, Language and the Law* on the topic (Eades & Arends, 2004a).

Eades was President of the International Association of Forensic Linguists (IAFL) from 1995 to 1999, and has also held the positions of Vice President (1999–2001) and Secretary (2005–9). She convened the second International IAFL Conference in 1995. She is currently coeditor of the *International Journal of Speech, Language and the Law*. She has also held the position of Vice President of the Australian Linguistics Society (1990–4), and is currently on the Editorial Board of the journal *Applied Linguistics*.

SEE ALSO: Intercultural Communication; Language of Courtroom Interaction; Linguistic Disadvantage of Children in Legal Contexts

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Early Bilingual Education

TINA HICKEY

"Early bilingual education" refers to a number of models of early years education offered to children aged between two and about five or six years. It operates at the critical nexus between home and school, offering children an opportunity to acquire a second language or to enrich their home language. Preschool education has long been recognized as promoting children's social and intellectual development, and in many countries children are also offered the opportunity to attend preschools where the medium of instruction is another language such as a heritage language, a nondominant local language, or a dominant language of another country. The models used vary, reflecting the different needs of multilingual countries as well as provision for migrant populations. This topic overlaps with *immersion education*, which tends to be defined as immersion education beginning in kindergarten and progressing through primary school.

Early bilingual education encompasses two basic models. *Dual immersion models* expose children to two languages in the preschool, one of which may be the native language of some or all of the children, and the other the dominant language of that community. An example of this model is the Spanish–English dual immersion program in the United States, where children receive part of their instruction through each language. The aim is to develop bilingual competence in both groups of children and to show parity of esteem to each language and culture. Such bilingual early education may be part of a bilingual education program that continues through elementary school and beyond, or it may be transitional, to offer short-term support to minority language children's L1 skills and to develop their L2 skills in preparation for mainstream schools.

Monolingual immersion models also aim to develop bilingualism, but use only one language as the medium of instruction. This model can be subdivided into two. The first is programs that use children's second language (henceforth L2) as the medium of instruction, with the aim of adding it to their unthreatened first language (henceforth L1). Such programs are sometimes characterized as promoting "elite bilingualism" (de Mejía, 2002), since the language added tends to be of relatively high status and poses no threat of replacing the children's mother tongue. An example is the classic Canadian immersion model, where children are taught through their L2 (French), while their mother tongue (English) is under no threat.

The second sub-model uses minority language children's home language as the medium of instruction, to support and extend it before they are exposed to the majority or community language, as a basis for later bilingualism. This type is found in Wales, in Welsh-medium preschools attended by both Welsh native speakers and English speakers learning Welsh. Such monolingual minority language preschools often are part of language revitalization movements aiming to develop bilingualism through consolidating the nondominant language in young native speakers before it is overwhelmed by the majority language, as well as helping L2 learners to acquire it. The need to support threatened home languages arises because of erosion of domains of use, limited numbers of speakers outside the home, and variations in parental proficiency and input. These pressures can affect children's cognitive and academic development, and therefore preschool education through the minority language can help children to develop their mother tongue—and their cognitive skills

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through that language—and to form peer-group networks through the minority language, helping to prevent marginalization and low self-esteem. This model is applied in revitalization efforts worldwide, in the teaching of Basque, Catalan, Frisian, Irish, and Māori, for example.

Baker and Jones (1998) note that both these monolingual and bilingual preschool models represent a "strong" form of bilingual education, maintaining minority first languages and adding new languages to children's repertoires. They contrast this with "weak" bilingual education: mainstream settings attended by migrant children which focus on developing competence in the dominant language, at best offering only transitional support for children's L1, mainly as preparation for L2 instruction. Mainstream monolingual dominant language settings with no special provision for migrant children offer submersion rather than bilingual education, frequently leading to loss or attenuation of the child's mother tongue and inadequate development of the target language that impedes cognitive and academic development.

Pedagogical Approaches

High-quality early years education has: clearly defined aims and objectives; a central role for play and talk; a developmentally appropriate curriculum for physical, social, emotional, and intellectual development with regular curriculum review; well-trained teachers working under knowledgeable supervision; small groups with a low pupil–teacher ratio; and meaningful participation by parents as educational partners. Edelenbos, Johnstone, and Kubanek's (2006) review of effective pedagogical practice in teaching foreign languages to young learners identified factors contributing to successful language learning relevant to both bilingual and monolingual models of early bilingual education, such as well-trained, resourced, and supported teachers with expertise in the target language and in language pedagogy. Folklinguistic beliefs about the "naturalness" with which young children learn languages need to be reviewed in light of research, and should not be interpreted as reducing the need for fluent, well-trained early years teachers with good knowledge of language pedagogy and an understanding of the role of play and talk in early education.

An adequate response to L1 minority language speakers' needs requires the development of appropriate teacher training, curricula, and work organization, as well as extra personnel to allow regular grouping by language ability. Delivery of pedagogically and linguistically appropriate provision in a minority language or through a child's L2 poses significant challenges, and requires bottom-up planning in order to integrate language teaching and enrichment effectively with the rest of the curriculum (Hickey, 2001). Every routine and learning activity of the early years' curriculum offers valuable language learning opportunities when suitably adapted. That adaptation includes marrying linguistically appropriate input with hands-on experience for children, with teachers using gesture, mime, and props, as well as offering appropriate simplification/repetition to help comprehension and take-up by L2 learners. In mixed groups of L1 speakers and L2 learners, L1 children also have needs, for enriched input and vocabulary development through more challenging stories and activities, and teachers need training and sensitivity in order to provide children with appropriate input for their different levels of language competence, while simultaneously supporting the other aspects of their development.

Offering developmentally appropriate activities and learning through play is highly demanding. Flexible work planning, rather than a "one size fits all" approach, is required in order to adapt to different language balances in different classrooms (Hickey, 2007). When the majority of children are L2 learners, there needs to be an awareness of the value of maximizing input from the teacher, who is the main source of target language input.

On the other hand, children who are able to speak the target language may have a different balance between teacher-led activities and activities with peers, provided use of that language is actively supported by grouping them with other L1 speakers regularly. This requires a shift in focus from de facto prioritization of L2 learning in such mixed groups, to equal provision for effective L1 maintenance and enrichment.

Dual Language Immersion Preschools

Two-way immersion programs in the United States group English-speaking and Spanish-speaking children, usually from kindergarten up. They aim to develop high levels of L2 proficiency in English speakers at no cost to their academic progress, and to provide mother tongue support for Spanish speakers and help their academic progress while they are acquiring English as L2. Providing at least some of the instruction through the nondominant language has been shown to help these minority children, despite the popular assumption that more time spent on the dominant language would benefit them more. Thomas and Collier (2002) show that the longer the support for the mother tongue, the better the school results for nondominant language children. Two-way immersion programs plan when each language is used, by allocating blocks of time (and sometimes different teachers) to activities in each language, so that children have access to age-appropriate input from native-speaker teachers. Barnet, Yarosz, Thomas, Jung, and Blanco (2007) compared the results of a two-way immersion preschool with a monolingual English immersion preschool for Spanish-speaking and English-speaking children. They found that the two-way immersion approach improved the Spanish of both the Spanish speakers and the English speakers, without losses in English language learning for either. However, Valdés (1997) cautions that the twin aims of two-way immersion—promoting L2 acquisition among majority language children, and education through their mother tongue for minority language children—have very different agendas, which need regular review with reference to intergroup relations and societal power structures.

Other applications of the dual-language model in early years settings include the "Hand in Hand" program in Israel (Amara, Azaiza, Hertz-Lazarowitz, & Mor-Sommerfeld, 2009), where Hebrew- and Arabic-speaking children are integrated in each class, with a teacher of each language team-teaching all subjects together. The model aims both to raise children's proficiency in the two languages, and to increase tolerance of diversity in a conflict situation. In other contexts, some schools in European Union countries offer European classes, starting with the youngest children, where half of the class are speakers of the national language and half of another language, teaching the whole curriculum in both languages (e.g., Europaschule Berlin offers German–Portuguese, German–Turkish, and German–English sections).

Early Bilingual Education: The Monolingual Dominant Language Model

This is the classic immersion model, in which a group of dominant language children are taught through the medium of another language. Variants of this model are now practiced internationally, with parents seeing social, economic, or cultural value in exposing their children early to a dominant language. This may partly be due to parents believing that young children "pick up" languages easily, although the research points to the advantage of starting young for acquiring an authentic accent in the L2 rather than speed of acquisition. The belief that preschoolers find language learning easy may be due to the fact that the demands made on them are relatively light, and that the language input to them is

grounded in "hands-on" experiences, daily routines, and self-explanatory activities, and in simple interactions with others, which aids comprehension and take-up. Young children are naturally motivated to take part in playful activities and less self-conscious about errors than older learners. Parents may be particularly attracted to early bilingual education because it seems less risky in terms of academic outcome than immersion education during the later school years. Parent- and state-led growth in monolingual dominant language preschooling is evident in the expansion of English immersion in countries such as Croatia, Italy, Hungary, and Israel (see Nikolov, 2010), and in China (Feng & Sunuodula, 2009). However, the EU's recommendation that citizens speak "mother tongue plus two" other languages has also contributed to some expansion of immersion preschooling in other languages (e.g., the Spanish-medium preschool in London; see Kenner & Hickey, 2008).

Nondominant Languages in Early Bilingual Education

Preschooling through the medium of lesser-used languages has played a pivotal role in the revitalization movements of many minority/heritage languages. It is generally easier for parents and language activists to establish a preschool offering an appropriate curriculum through a nondominant language than to attempt to establish a primary school. Surveys of pre-primary provision in lesser-used languages in Europe (van der Goot, Renkema, & Stuijt, 1994) have highlighted the importance of providing monolingual preschool immersion in endangered languages both to native speakers, who may be in need of mother tongue development and enrichment (Baker & Jones, 1998), and to dominant language children learning the target language as L2. Such provision helps to raise the status of the minority language in children's eyes, as well as in the local community, and promotes awareness of the need to maintain the language. Preschool education through the minority language confers sociocognitive benefits on the mother tongue speakers, helping them to consolidate their L1 skills and develop cognitively before acquiring the dominant language later. One example is the Irish-medium preschools known as *naíonraí*, which offer early immersion in Irish as L2 for the majority of children coming from English-speaking homes, but also provide mother tongue pre-primary education for the minority who are native speakers of Irish (Hickey, 2001). Other examples where preschool education has figured prominently in the growth of bilingual educational provision in revitalization movements include Māori's *Kohanga Reo* ("language nests") in Aotearoa/New Zealand (King, 2001), Welsh *cylchoedd meithrin* in Wales (Jones & Martin-Jones, 2004), and Basque *ikastolas* (Elorza & Munoa, 2008).

For many nondominant language children in postcolonial and other contexts in Africa, Asia, and Latin America, access to school is limited when education is delivered through a dominant language in an unfamiliar cultural context. Early bilingual education has been found to be an important factor in improving access to education in these contexts. Provision of mother tongue support preschools has been encouraged by UNESCO, UNICEF, and Save the Children as a way of promoting access to basic education, on the basis that it allows development of cognitive academic and linguistic proficiency in the home language, which transfers later to their L2. Research in Indian tribal groups (MacKenzie, 2009) has demonstrated that when preschool education begins in the nondominant home language, it allows children to develop their L1 skills and to begin to build competence in the L2 before they have to learn through it, resulting in better academic progress for these children, and lower drop-out rates.

Even where there is state support for preschool immersion in a nondominant language, many of these programs struggle with poor resources and difficulties arising from the dispersal of their speakers. In many cases they group native speakers with second language learners as a result of difficulty in making separate provision for the small numbers of

home language speakers of these languages, or because separate provision is considered unnecessary or divisive. Such mixed groups have been studied in Wales (Jones, 1991), Ireland (Hickey, 2001, 2007), Canada (Mougeon & Beniak, 1994), and in the Basque Autonomous Community (Zalbide & Cenoz, 2008). Where L2 learners and native speakers are mixed, research has identified deficiencies in the provision for native speakers, such as lack of language enrichment in input that is simplified for L2 learners, as well as insufficient promotion of the *use* of the language between mother tongue speakers of nondominant languages.

Developments and Challenges

Developments in this sector include expansion to offer provision in minority languages not previously supported, and new models, such as the Israeli one. Another ongoing development is in the area of plurilingual preschools, where instruction in a dominant international language is added, for example English in Basque-Spanish/French settings (Elorza & Munoa, 2008). While this may be attractive to parents who see greater economic or social value in the dominant language, it requires pedagogical and linguistic expertise from teachers, and adequate resourcing.

A continuing challenge in the sector concerns the difficulty in finding sufficiently fluent speakers of the target language who are trained in early years education. This contributes to the difficulty in providing differentiated input that adequately serves language learning by all children, whether mother tongue speakers of varying degrees of proficiency or second language learners. In some minority language preschools, volunteers with fluency in the language, including grandparents, are used as helpers to address the fluency gap. Another challenge is the need to develop teacher training to foster a more strategic approach to promoting target language *use* by children and the formation of strong peer networks through the language (Hickey, 2007). Mother tongue speakers of a minority language need some periods at least when they are deliberately grouped together for language enrichment activities, and to support target language use between children, to counteract a situation in which the local dominant language becomes the language of unofficial immersion in these groups.

Other ongoing challenges include difficulties in accessing appropriate materials for early years education in often under-resourced languages, and finding well-trained early years educators who are bilingual/multilingual, when their work is not adequately remunerated, since work with young children is often undervalued and assumed to require less skill. Only a fuller appreciation among other educators, parents, and educational planners of the value of providing high-quality, effective bilingual early education, in its varied forms and formats, will lead to the level of recognition and investment that this sector needs for optimal future development.

SEE ALSO: Bilingual Education and Immigration: Bilingual/Immersion Teacher Education; Bilingualism and Age; Cummins, Jim; Elite/Folk Bilingual Education; Empowerment and Bilingual Education; Endangered Languages; Immersion Education; Minority Languages in Education

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Early Bilingualism

ANNICK DE HOUWER

Early bilingualism arises when young children start to regularly hear two languages instead of just one. Children may hear these languages from birth, or they may start to hear a second language at a somewhat later age. In the first case, children are going through a process of bilingual first language acquisition or BFLA (Meisel, 1989; De Houwer, 1990, 2009). BFLA children have two first languages, namely Language A (LA) and Language Alpha (Lα), which typically are both spoken to them at home. This notation indicates that BFLA children have no chronologically first or second language. Children who are at first raised with just a single language (Language 1 or L1), and who start to regularly hear a second language (Language 2 or L2) at a later age are going through a process of early second language acquisition or ESLA (De Houwer, 1990, 2009). Typically, ESLA children hear only one language at home (L1), and meet the L2 in a group setting outside the home, such as a daycare center or a preschool. The L1 is usually a minority language.

This article first describes the major linguistic developments in BFLA and ESLA. After that, early bilingualism is considered from a more applied perspective. The focus is on bilingual children under the age of 6. These young children typically learn their two languages without the support of literacy or formal instruction.

The Major Linguistic Developments in BFLA and ESLA

BFLA children start to regularly hear two fundamentally different ways of speaking once they are born. Although it is not clear how exactly BFLA children learn to distinguish between their two languages, there is more and more evidence that they manage to do so in the first 7 months of life (Bosch & Sebastián-Gallés, 1997; Sundara, Polka, & Molnar, 2008).

By the time they are 1 year of age, BFLA children can understand several words in each of their languages (Leopold, 1939–49/1970; Cruz-Ferreira, 2006; De Houwer, Bornstein & De Coster, 2006). As is the case with monolingual children, there are great differences between BFLA children in how many words and phrases they understand (De Houwer et al., 2006). There are also differences in how many words BFLA children understand in each of their two languages.

Like monolingual children, BFLA children make language-like sounds in the first year of life, including sounds that resemble syllables. Longer repetitions of the same syllables (babbling) start to occur by the age of 7 to 9 months (e.g., "bababa gaga"; Ronjat, 1913; Leopold, 1939–49/1970; Cruz-Ferreira, 2006). For monolingual children it is unclear to what extent this babbling already reflects specific aspects of the one language they are hearing. For BFLA children, it is similarly unclear to what extent their babbling reflects characteristics typical of LA or Lα.

Around the first birthday, both monolingual and BFLA children start to make sounds that remind adults of specific words (Ronjat, 1913; Leopold, 1939–49/1970; Cruz-Ferreira, 2006). BFLA children do not necessarily start to say words in each of their two languages at the same time. In fact, there may be a time lag of several months between their saying a word in LA and in Lα (see Box 6.16 in De Houwer, 2009, p. 218, for an overview).

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Yet some BFLA children start to say words in each of their languages on the same day (De Houwer, 2009, p. 218).

Like monolingual children, BFLA children use word-like vocalizations in order to ask for things, comment on a state of affairs, draw someone's attention to a situation, and many more functions (Cruz-Ferreira, 2006). Both monolingual and BFLA same-aged children differ a lot from each other in the number of different words they can say (see Bates, Dale, & Thal, 1995, for monolingual children, and Conboy & Thal, 2006, for BFLA and ESLA children). In the second year of life, BFLA children who say a lot of different words in LA usually say a lot of different words in Lα as well. Conversely, BFLA children who say few different words in LA also usually say few different words in Lα (Conboy & Thal, 2006).

Children's pronunciation of early words is still quite immature, and can differ considerably from adult pronunciation. Like monolingual children, BFLA children may reverse sounds (e.g., 'puck' instead of 'cup'), may delete some sounds (e.g., 'uh' instead of 'Kuh', for German 'cow'), or may substitute sounds (e.g., 'heaby' instead of 'heavy'; Ronjat, 1913; Gut, 2000; Brulard & Carr, 2003). These phonological processes slowly give way to more adult-like pronunciations, but neither monolingual nor BFLA children sound completely adult-like by the time they are 6 (see the overview in De Houwer, 2009, Chapter 5).

Research into phonological development in BFLA children suggests that in many cases BFLA children develop two fairly separate phonological systems, but often it is hard to decide whether young BFLA children's sounds are used in a language-specific way or not. It may never be possible to fully know whether BFLA children's early phonological development is different for LA and for Lα. One issue here is that, often, BFLA children may hear one of their languages only from a single speaker. In that case, the way that individual speaker pronounces a language may be a fundamental factor in how the child will be learning to pronounce that language (De Houwer, 2009, Chapter 5).

As BFLA children start to approach their second birthday, most of them will be combining two words into a single utterance (e.g., 'no eat', 'daddy door'; Leopold, 1939–49/1970; Patterson, 1998; Deuchar & Quay, 2000; Cruz-Ferreira, 2006). The use of word combinations is an important milestone in children's language development. After all, just using single words is very limiting in terms of the range of meanings that can be expressed. Combining words is the foundation for building sentences. Some children, whether monolingual or bilingual, produce two-word utterances for many months. Other children use two-word utterances for only a very short time, and soon move on to saying three- and four-word utterances.

Once children start to combine more than two words they are often saying real sentences. These sentences usually have a word order that is correct in the language they are using (e.g., 'put in there'), and they may contain grammatical words and inflections (e.g., 'where's the baby?'; 'mommy change sheets'; Sinka & Schelletter, 1998; Almgren & Barreña, 2000; Serratrice, 2001). BFLA children usually combine words and inflections from the same language into a single utterance. When all the words and inflections in an utterance are from the same language, BFLA children are using a unilingual utterance. If words or inflections from two different languages are combined into a single utterance, the utterance is mixed.

Most of BFLA children's multiword utterances are unilingual. There is, however, large variation between BFLA children in the relative number of mixed utterances they use (De Houwer, 2009). Some children do not use any, while others use up to 30% of mixed utterances in a single recording of, say, a one-hour interaction (no higher proportion has so far been reported). The proportion of mixed utterances also varies considerably over time within the same child. Most of young BFLA children's mixed multiword utterances are in one language, except for a single noun that has been inserted from the other language.

There have been various theoretical accounts to explain the use of other types of mixed utterances (see, e.g., Cantone, 2007).

The structure of unilingual utterances as said by BFLA children usually follows the rules of the language the words are in. That is, when a multiword utterance has words only from Language A, the word-order rules and the grammatical properties of LA will be used. The same goes for Lα. The repeated finding of these facts for many different languages and many different language combinations (most recently reviewed in De Houwer, 2009, Appendix G) gives strong support for the Separate Development Hypothesis (De Houwer, 1990), which states that BFLA children develop two distinct morphosyntactic systems. Unilingual utterances as produced by BFLA children could in most cases have been said by monolingual children acquiring each of a BFLA child's two languages as their only one.

BFLA children may say unilingual utterances in each of their two languages. An estimated quarter of BFLA children, however, do not say unilingual utterances in each of their two languages, but only in one (De Houwer, 2007; whether these children generally use mixed utterances is not known). It is clear, then, that hearing two languages from birth is not a guarantee for actually speaking two languages. This differs from the monolingual setting, where children who have no hearing problems or suffer from neurological disorders all learn to speak the one language they are hearing.

As BFLA children grow into the preschool years, they continue to expand their vocabulary, improve their pronunciation, and expand the diversity and complexity of grammatical structures. They also learn to tell connected stories. BFLA children's language use in each of their languages closely resembles that of the adults who speak these languages to them. As is the case for monolingual children, though, young BFLA children's language use is still a fairly limited version of what adults are capable of. As for monolingual children, this gradually changes as they get older.

ESLA children's language development appears to be more variable than that of BFLA children. This is to be expected, given the different ages at which ESLA children start to learn their L2 and the different circumstances in which they learn their L2. Most studies of ESLA focus on children's L2 development rather than their L1 and concern children who first started to learn their L2 after age 3. Until they start to speak an L2, ESLA children's L1 language use resembles that of monolingual and BFLA children. Once ESLA children have achieved fluency in their L2, their L1 speaking skills may continue to develop, decline, or disappear altogether (Shin, 2005). How these differences in L1 use may affect development in the L2 is not known.

The studies of L2 development in children under age 6 so far suggest that on average it takes children at least 2 years of exposure to the L2 in an immersion-type school setting to start to be able to say non-imitated sentences in the new language (for an overview, see Genesee, Paradis, & Crago, 2004, Chapter 6). This runs counter to the common assumption that ESLA children learn their second language very fast. Instead, many ESLA children first go through a period in which they are just trying to make sense of what is going on in the L2 spoken around them, without attempting to speak it themselves. This is followed by first attempts to speak the L2 in formulaic utterances and single words. Gradually, the formulas are expanded into more varied sentences.

Like monolingual and BFLA children at an earlier age, ESLA children make mistakes when they start to build sentences that are not imitations. These mistakes often arise because a particular grammatical feature such as a plural -s ending in English was not pronounced. Children may also use incorrect grammatical features. These errors are comparable to the ones younger monolingual and BFLA children make in acquiring the same language. In addition, there are different kinds of errors that show a clear influence from the ESLA child's L1. On the grammatical level, the most common errors showing influence

from the L1 are word-order errors (Genesee et al., 2004). Many young ESLA children's early L2 utterances do not sound like those that monolingual children would say (but many others do). Yet, as time goes on, ESLA children may become indistinguishable from monolingual children.

A recent volume on phonological development in young ESLA children (Hua & Dodd, 2006) suggests that their development of a second language phonology may be influenced by their L1 as well. Thus, different patterns exist for different language combinations. Once again, there is a large degree of interindividual variation.

This finding of great interindividual variation is also apparent in ESLA children's lexical knowledge. Some children will know many words in both languages, others far more in one. Also, ESLA children may be able to discuss a particular topic only in one language. In BFLA children such specializations may occur as well. Although both BFLA and ESLA children will generally know more words in both their languages combined than monolingual children, ESLA children will generally have smaller receptive vocabularies in the school language than age-matched monolinguals (Bialystok, Luk, Peets, & Yang, 2009). When BFLA and ESLA children actually speak two languages, they may speak those languages at quite different levels. They may be much more fluent in one language than in the other, and know more words in one than in the other. Then again, with changing circumstances, the balance may change. There are also bilingual children who seem to speak each of their languages equally well.

Like BFLA children, ESLA children may produce mixed utterances. These have similar structures in both BFLA and ESLA children. Young bilingual children easily switch between unilingual utterances in LA or L1, unilingual utterances in Lα or L2, and mixed utterances. Their switching is influenced by sociolinguistic factors, such as the language use of the interlocutor, the expectations of the interlocutor, the place of interaction, the topic, and so on (see, e.g., De Houwer, 1990; Lanza, 1997; Deuchar & Quay, 2000). Both in the fact that they easily switch, and in the fact that they usually switch for clear sociolinguistic reasons, bilingual children resemble bilingual adults right from the start.

Applied Aspects of Early Bilingualism

Many bilingual children live in an environment that fosters their active and proficient use of two languages. Yet many others are not that lucky. They may understand two languages, but speak only one, much to their own chagrin or that of their family members, or they may speak two languages in ways that are unsatisfactory to their environment. In addition, frictions may arise in bilingual families that are attributed to the fact of bilingualism. Often, parents, teachers, and speech therapists expect child bilinguals to function at least as well as monolinguals in each of their languages. There is also a pervasive myth that young bilingual children are confused and cannot get their languages straight. This myth persists in large portions of society but the scientific evidence shows it to be what it is—an unfounded myth. As the overview in the first section of this entry has shown, young BFLA children can speak each of their languages without noticeable systematic influence from the other, and many ESLA children can learn to speak their L2 very well indeed.

Another persistent myth is the idea that children can learn a second language very fast. While some young children who are confronted with another language may indeed soon be able to say a few well-chosen words and phrases in that language, and may be able to effectively take part in informal conversations, it usually takes several years for ESLA children to master a language, just as it does in monolingual and BFLA children, who, however, have had the benefit of hearing their languages since birth. Learning to speak like a 6-year-old takes a 6-year-old monolingual child six years of practice and taking advantage of learning opportunities. ESLA children under the age of 6 may develop their

new language at a rate that is faster than for monolingual and BFLA children when they first start to speak, but the current evidence suggests that it still takes at least a year or two after initial regular contact with an L2 for young ESLA children to become fluent conversational partners (however, there is wide variation between young ESLA children in the speed with which they learn to speak their new language; see also Meisel, 2009; De Houwer, 2011).

Simply put, bilingual children need the time and opportunity to learn their two languages. For parents in a bilingual setting this simple fact means that they should talk to their children as much as possible. If parents use two languages at home, they should make sure to talk a great deal to their children in both. If parents speak one language at home, and the second language is used outside the home, the home language should be spoken very frequently. As children start to go to school, parents should try to expand their vocabulary in the home language, so that it remains an important vehicle for communication, and children get the chance to continue to develop in their L1. For teachers and speech therapists alike, the realization that bilingual children need the time and opportunity to learn their L2 will hopefully avoid a common reaction to ESLA children's initial silence at school, which is to see it as a sign of a language disorder (e.g., Shin, 2005). This silent period is in fact a normal, common feature of the L2 learning process: Children have to get used to the new language, and must learn to understand it. This takes time.

Many (preschool) teachers and speech therapists are concerned about early bilingualism, and want children to learn the school language well. They often believe that early bilingualism is an impediment to learning the school language (Shin, 2005; Genesee et al., 2004; De Houwer, 2009). In fact, many pediatricians, parents, and scholars have the idea that early bilingualism is just not possible, or only possible for exceedingly smart children. Yet the existence of many proficient bilingual children is the best proof that early bilingualism certainly is possible.

Still, negative attitudes toward early bilingualism persist. If there are any problems in a child's bilingual development, it is these negative attitudes that frequently are to blame (Shin, 2005; De Houwer, 2009). One particularly strong and detrimental effect of these negative attitudes is the frequent advice of teachers, speech therapists, and doctors to parents to stop speaking the minority language to their children. Parents often take this ill-conceived advice, with quite negative results: They can in many cases no longer communicate well with their children (since they may be switching to a language they hardly know), and the children are bewildered and upset that their parent all of a sudden speaks another language to them; many children see this as putting an undesirable distance between the parent and themselves, and find it hard to bear. On the other hand, in cases where children have problems communicating in either language, medical personnel often place the blame with a bilingual family environment, and may advise to stop talking the minority language at home, without addressing what later may surface as the real underlying problem, for instance, deafness.

The common "professional" advice to give up speaking a particular language to a child appears to assume that having less input in a language will increase knowledge of another language. There is absolutely no evidence to this effect. More seriously, this advice is morally and legally unacceptable. It goes against the United Nations Convention on the Rights of the Child, which states in Article 29, division (c), that the States parties to the Convention agree that the education of the child shall be directed to

> the development of respect for the child's parents, his or her own cultural identity, language and values, for the national values of the country in which the child is living, the country from which he or she may originate, and for civilizations different from his or her own. (United Nations, 1989)

In families that stop speaking the minority language, children will effectively become monolingual. As indicated in the previous section, many children with continued and regular bilingual input will end up speaking only one language (while often understanding two). Families will thus develop conversational patterns where parents address children in L1 and children respond in L2. In some cases, it may be no problem that the child speaks only one language. Many interviews with parents of such children and many reports in the literature (e.g., Shin, 2005), however, suggest that usually it does become quite a problem for the parents in these bilingual families that their children do not speak the minority, home language. In many cases, this effectively limits the communication between parents and children, and the transmission of many cultural values. Often, also, as children grow up, they are very sorry not to be able to communicate with members of their extended family, and not to be able to function in the country where the language they do not speak is being used.

The question is why so many children growing up in bilingual circumstances speak only one language instead of the expected two. In a survey of ca. 2,500 bilingual families in Flanders, connections were traced between parental language use and child use of the minority language. Those bilingual families where children spoke only a single language tended to be families where both parents used the majority language at home, and only one parent used the minority language. Parents who both spoke the majority as well as the minority language at home and parents who both spoke the minority language at home, with one parent in addition using the majority language, had much better chances of having children who spoke the two languages (De Houwer, 2007). Parents who only used the minority language at home had the most chance of having children who spoke two languages.

Several contributing elements can explain these findings but the most important one may be related to frequency of input: If only one parent speaks the minority language, but in addition that same parent also speaks the majority language, there may be less input in the minority language than in families where both parents speak the minority language (in addition to one or both also speaking the majority language). Second, families where both parents speak the minority language at home may create much more of an environment conducive to using that minority language. After all, the family already has two members speaking that language rather than just one. Parents may also be more inclined to speak the minority language with each other.

Another important factor contributing to whether bilingual children speak two languages or just one has to do with the communicative need to speak two languages rather than just one. If there is no communicative need to speak two languages, bilingual children will not do so. This communicative need is created in conversation. Some bilingual parents do not mind if their child speaks only one language at the beginning of speech. They are just happy that their infant can talk, and will respond to the child's utterances without focusing on the actual language the child used. They may answer a child's question in Italian with a response in German, if that is the language they usually use with their infant. These parents are using what Lanza (1997) has termed "bilingual discourse strategies"—conversational patterns that allow the use of two languages within a conversation. Other bilingual parents may be much less tolerant of the use of two languages within a conversation, and socialize the child into using mainly one language within a stretch of discourse. These bilingual parents use what is termed "monolingual discourse strategies" (Lanza, 1997). Although so far there have not been enough studies documenting these discourse strategies and their possible effect on children's language use, it is very likely that, if parents use mainly bilingual discourse strategies and allow the child's use of "the other" language (Lα), children have no need for speaking LA and will become part of that large group of children raised bilingually who understand two languages but speak only one.

The importance of communicative need is also a factor in ESLA. When children hear a new L2 at preschool but have friends there they can speak their L1 with, they will feel less of a communicative need to actually speak the new L2, and may be slower in developing any fluency in the L2. Becoming friends with children who speak the L2 will foster an ESLA child's L2 development.

There are many more important matters to mention about early bilingualism. The most important point, however, is that bilingual children need the time and the opportunity to learn to speak each of their languages. Given that, and a positive attitude from all involved toward the bilingual language-learning experience, children everywhere can become fluent speakers of two languages from early on.

SEE ALSO: Attrition and Multilingualism; Bilingualism and Bilinguality; Bilingualism and Speech Perception; Code Mixing; Code Switching; Early Bilingual Education; Minority Languages in Education; Multilingualism and Attitudes; Multilingualism and Language Rights; Receptive Multilingualism

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Ecological Approaches in Qualitative Research

RACHEL J. PINNOW

Introduction

When the term *ecology* first began to appear in applied linguistics research in the early 1990s it was referred to as the "greening" (de Castell, 1996) of these studies which followed a general trend in the "ecoization" (Benz, 2000) of the English lexicon. Today, the "greening" of applied linguistics research reflects both the growing awareness of the vital interrelatedness of language, language users, and environment as well as a pivotal shift away from prior mechanistic models of language acquisition and socialization (Kramsch, 2002). Ecology as both a metaphor and research paradigm serves to contribute to our understanding of the diversity of linguistic ecologies, the elements that preserve these ecologies, and the interplay of broader sociocultural factors that affect language education research worldwide.

Ecological approaches to applied linguistics research have evolved to address a multiplicity of perspectives for research exploring language in *context*. In this vein, qualitative methodological approaches are particularly well suited to ecological research as they view humans as *participants* in language use, shift, loss, and preservation rather than as subjects to be acted upon (a point well addressed in ecological approaches to language planning and policy). In the following sections the historic emergence of ecological research will be explored along with the main trends in ecological approaches to qualitative research in applied linguistics.

Emergence of Ecological Theory

Ecology, as a biological field of study, was introduced in the 19th century by German biologist Ernst Haeckel in order "to refer to the totality of relationships of an organism with all other organisms with which it comes into contact" (van Lier, 2004, p. 3). In the 1960s the term "ecology" entered the mainstream lexicon through the publication of Rachel Carson's *Silent Spring* (1962) which addressed the relationship and repercussions of human life and the biological environment. It was this focus on relations, interactions, endangerment, and diversity that invoked a metaphorical response in other fields of study such as anthropology, sociology, psychology, and linguistics.

In anthropology, Bateson (1972) popularized the term through his approach to the evolution of human mind and Ogbu (Ogbu & Simons, 1998) applied an ecologic framework to address academic achievement in schools. In sociology, researchers had already begun to connect the role of language in ecological behavior such as ethnic group membership as early as the 1940s and 1950s (Hollingshead, 1947; Hawley, 1950). In psychology, Bronfenbrenner (1989) and Gibson (1977, 1979) heavily shaped ecological theory. Bronfenbrenner (1989) posited a formal theory, *ecological systems theory*, which encompassed psychological, social, biological, cultural, and identity structures in human development. Gibson (1977, 1979) put forth an ecological theory of visual perception ultimately engendering the entire academic field of ecological psychology. Gibson's (1979) notion of *affordance* is a central tenet

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to an ecological approach in research and reflects his functionalist perspective on the nature of the acquisition of knowledge while differing profoundly from traditional structuralism. Viewing humans and environment as linked, but not in a mechanistic fashion, Gibson defined the concept of affordance stating "the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" (1979, p. 127). The emphasis on the emergent properties of affordance, between learner and environment, was introduced into educational linguistics by van Lier who cast these concepts within a broader semiotic perspective positing, "perhaps affordances can best be seen as 'pre-signs' that is, they may be the fuel that get sign-making going" (2004, p. 93).

While Gibson's (1979) approach to visual perception provided much needed theoretical perspective on the nature and acquisition of knowledge, linguist Einer Haugen (1972) provided a more direct link to language within an ecological perspective. Haugen provoked much research in applied linguistics when he posited the term *ecology of language* (1972, p. 328) in an effort to address the poverty of representation apparent in much linguistic research of that time. While Haugen was not the first to associate biological metaphor with language (see Voegelin, Voegelin, & Schutz, 1967), his ideas were a powerful impetus for linguistic researchers seeking to address the interplay of language, language user, and environment.

Haugen (1972) defined language ecology as "the study of interaction between any given language and its environment" (p. 325) claiming that languages have life, purpose, and form that appear outwardly as action but "live in the mind as potential" (p. 327) and therefore the life of language should be treated as dynamic and interdisciplinary. It has been this interdisciplinary quality that has proven to be fruitful for applied linguistics research in that the ecology of language is partly psychological, partly sociological and shaped by users (Haugen, 1972).

The two main trends in applied linguistics research that have emerged from Haugen's (1972) original work are ecolinguistics and ecology of language approaches. The histories of these two approaches are deeply intertwined (Lechevrel, 2009) with ecolinguistics examining language and environment from a linguistic perspective and ecology of language approaches taking a broader sociocultural perspective.

Ecolinguistics

Ecolinguistics emerged in the early 1990s as the study of "linguistic diversity and the interrelations between language and world from an ecological point of view" (Fill, 2002). Informed by the linguistic perspective of Haugen (1972) and the anthropological perspective of Sapir (1912), ecolinguistics traverses a continuum along which some linguists approach the study of language from an ecological perspective, while others examine ecological and environment problems from a linguistic perspective.

Ecolinguistic research has often relied upon action research methodology, case study methodology, ethnographic methodology, and discourse analytic approaches in order to address language preservation, endangerment, and linguistic ecologies (Fill & Mühläusler, 2001). Along this continuum is research in dialectical linguistics, an ecolinguistic approach that promotes politically and morally responsible approaches to language and linguistics research (Bang, Døør, Steffensen, & Nash, 2007).

Ecology of Language Research

Ecology of language studies employ "ecology" as both metaphor and paradigm in order to provide a conceptual framework for exploring the complex nature of language research

in shifting contexts. These studies emphasize the dynamic, complex, dialectical, and interrelatedness of language interactions in multilingual and multicultural contexts. Most importantly, this research clearly addresses the role of an ecological perspective in unmasking hidden ideologies and critiquing the norms and values that normalize power structures in various contexts.

In educational contexts, one primary focus has been in language education research with qualitative approaches addressing literacy and literacy practices that encompass the multiple ecologies of language learners (Barton, Drake, Perez, St. Louis, & George, 2004; Villalva, 2006; Pantaleo, 2009). This research takes an ecological perspective on literacy recognizing that "literacy" is ideological and highly interdependent with social ecologies from which it evolves. Due to this, recent research has found sociocultural theory useful in providing insight to the link between ecological psychology approaches and the specific affordances of language in context (van Lier, 2004).

Building upon an ecological perspective of literacy is research by Hornberger (2003) that approaches literacy and bilingualism as joint and highly compatible ventures in language education. In this vein of research an ecological perspective provides the framework for addressing multilingualism as a resource, rather than a problem, in the complex process of language acquisition. This point is of vital significance as "only a minority of the world's children acquire language in an environment that is monolingual" (Leather & Van Dam, 2003, p. 2). This research extends beyond the basic taxonomic structure of Haugen's (1972) original work to address the complexities of language acquisition to produce contextually relevant interpretations of acquisition data. Ethnographic and discourse analytic approaches abound in this strand of research in order to provide an emic perspective of the complex interplay of language in context.

Further ecological approaches to multilingualism, which continue to help dismantle English-centric and Western-centric approaches to language research, take into account the dynamic interplay of histories, cultures, economies, and languages of multilingual societies including shifts in discourse, literacy, and educational practices of these societies (Creese, Martin, & Hornberger, 2008). These studies emphasize the multicultural and multilingual history of various countries, powerfully countering erroneous claims that have traditionally posited monolingual and monocultural perspectives as central to the language acquisition and learning process.

Other research examines the language ecologies of diasporic communities (Creese et al., 2008). Many of these studies have found a link between the changing linguistic ecologies of various nations and sedentism, especially on the part of indigenous peoples. The fact that sedentism can greatly affect the socioeconomic status of various people groups (usually in a downward trend) and lead to the divestment of cultural traditions, rituals, and practices is troublesome and should be exploited in the controversy over the appropriateness of the ecological metaphor in applied linguistics research.

Recent research in multilingualism links broader sociopolitical agendas and discourse with classroom literacy practices (Creese et al., 2008) while other strands in ecology of language research attend to multiliteracies and the multimodal demands of literacy (Jewitt & Kress, 2003; Pahl, 2008; Berglund, 2009). These strands of research in applied linguistics take as their starting point the notion of literacies as multiple, dynamic, and interrelated to languages, language users, and environment. Moreover, qualitative approaches to multimodal research have provided innovative analytic methodology that take into account the multiple semiotic resources employed in discourse and metadiscourse in society and culture (Jewitt, 2009).

Conclusion

The aim of this entry has been to offer a view into the development of ecological approaches to qualitative research in applied linguistics. By examining the various strands of scholarly traditions that have contributed to our current approaches to ecological research it is possible to gain insight into how this research currently contributes to important shifts in applied linguistics research. As Fettes (2003) has stated, "ecological thinking does not come readily or unproblematically to us moderns" (p. 31). For this reason, as with the ecological crisis that we now face, continuing to establish a research paradigm that fully addresses the interrelatedness of languages, language users, and environment is crucial.

SEE ALSO: Bilingual and Multilingual Education: Overview; Language Policy and Planning: Overview; Multimodal Communication: Overview; Multimodality and Literacy

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Ecology and Multilingual Education

FRANCIS M. HULT

The *ecology of language* has its foundation in the work of sociolinguists and linguistic anthropologists in the late 1950s and early 1960s (e.g., Trim, 1959; Voegelin & Voegelin, 1964), but it was Einar Haugen (1972) who popularized the concept with his work in the 1970s. In the late 20th century, the ecology of language, sometimes known as "ecolinguistics" or "language ecology" (Makkai, 1993; Fill & Mühlhäusler, 2001), has become an umbrella term for a wide range of perspectives that seek to make connections between language and environment: using concepts related to ecology to understand social environments for multilingualism, analyzing discourses of environment and environmentalism, and describing relationships between biological and cultural diversity (Fill & Mühlhäusler, 2001).

While each of these perspectives is useful in its own way for understanding aspects of language in society, and all of them overlap in meaningful ways, the focus here will be on the first perspective since it is arguably the most widely used with respect to the study of language (in) education. In this regard, the ecology of language is a conceptual orientation to critical thinking about multilingualism that calls upon researchers to focus "on relationships among languages, on relationships among social contexts of language, on relationships among individual speakers and their languages, and on inter-relationships among these three dimensions" (Hornberger & Hult, 2008, p. 285). Thus, a distinctive feature of language ecology is its focus on the interplay between sociological and psychological aspects of multilingualism (Haugen, 1972, p. 352).

As a perspective on social environments for multilingualism, language ecology serves to highlight how different languages interact at individual and societal scales, with an eye toward relationships between them (Hornberger & Hult, 2008; Kramsch & Whiteside, 2008; Hult, 2010). It is not a prescribed methodology for (socio)linguistic analysis but a way of approaching the study of multilingual situations that might be facilitated by a wide range of methods from linguistic ethnography, (critical) discourse analysis, documentary linguistics, and linguistic landscape analysis, among others. Regardless of the methodology employed to execute a particular study, researchers following an ecological orientation tend to share a view of multilingualism as a dynamic and multilayered phenomenon such that one cannot study a single language in isolation but must always seek relationships among different languages and their speakers across varying scales of social organization (Haugen, 1972; Mühlhäusler, 2003). Considering the epistemological roots of language ecology, those working under its rubric have this perspective in common with many sociolinguists and linguistic anthropologists more broadly.

With respect to social environments, fundamental to an ecological orientation is the idea that all languages are interconnected in a worldwide sociolinguistic system (Calvet, 1999). Calvet (1999, p. 35) suggests that it is useful to see the worldwide system as a linguistic *ecosphere* that is composed of a series of nested linguistic *ecosystems* on varying scales, ranging from social groups to classrooms to schools to cities to regions to countries and beyond. Within and across these ecosystems, different languages occupy specific functional *niches* in relation to each other. A central project among researchers who work within this orientation is to understand the social, political, economic, and historical factors that influence those niches, especially with respect to the promotion of linguistic diversity through additive language education (Skutnabb-Kangas, 2000, pp. 365–78).

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Controversies and Debates

Several epistemological controversies have arisen around the ecology of language. These tend to relate to three major themes underpinning the ecological orientation: language evolution, language environment, and language endangerment (Hornberger 2002, p. 33). Fundamental to an ecological view is that languages change and develop in social contexts, mediated by the language choices and beliefs of individual speakers (Mufwene, 2001). Assumptions associated with this perspective have come under attack from several different perspectives.

With respect to language evolution, some critics argue that it is problematic to rely heavily upon notions of biological evolution since this runs the risk of overemphasizing a "survival of the fittest" mentality that obscures the role of human agency in language vitality and change (Edwards, 2002; Pennycook, 2004). In contrast, Mufwene (2001) holds that drawing upon principles of evolution does not preclude a focus on human agency. Rather, he contends, language can be seen as evolving symbiotically with human societies and cultures, including the conflicts and power inequities that are inherent in them.

The role of human agency is central to the language endangerment theme because researchers who work within the language ecology approach are often concerned with teasing out the factors that engender conflicts so they can be resolved through language policy and education in ways that foster harmonious coexistence among different languages (Phillipson & Skutnabb-Kangas, 1996). This goal for linguistic harmony, in response to language endangerment, is perceived by some as naive and as an indication that the ecology of language may be more about sociopolitics than linguistic science (Pennycook, 2004, p. 222; Edwards, 2008, pp. 17–20). In contrast, those who follow an ecological orientation view sociopolitics and linguistic science as intimately intertwined (Skutnabb-Kangas, 2000; Hornberger, 2002; Mühlhäusler, 2003).

The language environment theme has also received criticism, particularly around the issue of whether ecology is best applied to multilingualism metaphorically or seen as an actual state of affairs in the social world (Edwards, 2002, pp. 308–10). Those who are skeptical of language ecology have reservations about an organismal view of languages and relationships among them, with some even beginning to question the very nature of discrete languages and the concept of linguistic diversity itself (Pennycook, 2004; Makoni & Pennycook, 2007). A number of scholars working in language ecology, on the other hand, hold that languages are in very real ecological relationships (Mühlhäusler, 2003; Garner, 2004). As Garner puts it, "language is an essential aspect of the part we humans play in the ecology of our planet. It forms a part of the environment, in a complex but quite literal sense" (2004, p. 33). This view is especially prominent among proponents of the concept of biocultural diversity, who see a strong link between biological and linguistic diversity (e.g., Maffi, 2001).

Whether language ecology is taken literally or metaphorically, those who use it in their work share a view, along with many other (applied) linguists, that multilingualism is a normal condition in human societies and that inequitable relationships among languages need to be understood and addressed in order to foster parity for all people in a polity, regardless of the language(s) they speak, particularly with respect to education.

Contributions of Language Ecology

An ecological perspective calls attention to the fact that languages are situated in social environments. As such, the role of languages in education together with relationships between education and society are central considerations. As Mühlhäusler explains:

> Language teaching involves the introduction of a new language into an existing language ecology. There may be good reasons for doing this, and there are also good reasons for devoting much energy to the question [of] how newly introduced languages can be strengthened. However, it is equally important to pay attention to the affects [sic] of such an action on the wider linguistic ecology, and how this introduction affects the other languages, their speakers and their well-being. (1994, pp. 122–3)

Accordingly, from the point of view of language teaching, the ecology of language highlights the importance of being aware of the social and political environment in which language learning and teaching takes place. This includes, as noted earlier, paying attention to how language education relates to large-scale linguistic ecosystems like regions, countries, and cities as well as to small scales like communities, schools, classrooms, and interpersonal interactions.

The ecological impact of dominant languages on linguistic diversity has been a particularly salient issue. Skutnabb-Kangas, for example, advocates for an awareness of linguistic genocide in education, the process of killing a language either actively by preventing speakers (through force or violence) from using their languages or passively by enacting policies and educational practices that limit the resources and opportunities for minority languages in schools (Skutnabb-Kangas, 2000, pp. 318–74). In this vein, the study of educational language policies has been a focal area, particularly with respect to their role in restricting or expanding implementational spaces for different languages in educational domains (Hornberger, 2005) and with an eye toward how policies operate across varying scales of social organization (Hornberger & Hult, 2008; Hult, 2010). On an individual level, Nathan (2008) suggests that every person should reduce their *language footprint* by learning/using local languages rather than dominant world languages as much as possible when traversing linguistic ecosystems.

With respect to making connections across scales of social organization, an influential framework that has been used to guide ecological studies of multilingualism in education is Hornberger's (1989) continua of biliteracy. The 12 sets of continua that comprise this framework bring to light how different languages are situated relative to each other with respect to the context of biliteracy, development of biliteracy, content of biliteracy, and media of biliteracy. In terms of the ecological impact of dominant languages on minority languages, research using the continua of biliteracy shows that there is a tendency for educational systems to privilege monolingual, literate, and majority language practices and that additive language education requires creative ways of integrating minority languages in classrooms (Hornberger & Skilton-Sylvester, 2000; for a collection of studies that draw upon the continua see Hornberger, 2003).

Turning specifically to the classroom, language ecology also calls attention to how students learn and acquire language through interaction with teachers and peers. Classrooms are seen as simultaneously physical, social, and symbolic environments in which students' mental processes emerge in conjunction with opportunities to co-construct meaning using new forms and functions of language (van Lier, 2008). Work in this area of educational language ecology has focused on learners and the nature of language acquisition itself (e.g., Leather & van Dam, 2003) as well as on classrooms as spaces where individuals encounter diverse linguistic practices and ideologies (Creese & Martin, 2003).

More broadly, language ecology highlights the potential implications of different social settings as contexts for language teaching and learning. A long held dichotomy in language teaching is that of foreign- *versus* second-language settings. Work in this area considers the practicalities of language teaching and learning as it pertains to opportunities for encountering and using the target language outside of the classroom, benefits and challenges with respect to helping students develop linguistic and sociolinguistic competence,

the styles and registers that students need to acquire for intercultural communication locally or internationally, and even the tensions inherent in making a distinction between foreign- and second-language settings (e.g., Kramsch, 1993; Nayar, 1997; Tarnopolsky, 2008).

A substantial body of work in a range of theoretical and methodological traditions delves into different dimensions of the sociolinguistic settings in which language learning takes place. Linguistic landscape analysis, for example, is increasingly being used as a pedagogical tool for gaining insight into how students engage with multilingualism in physical environments (e.g., Dagenais, Moore, Sabatier, Lamarre, & Armand, 2009; Sayer, 2010). Current approaches to discourse studies highlight how learners gain socially situated language skills that facilitate their symbolic competence for the purpose of performing specific identities in particular social environments (Kramsch, 2002; Kramsch & Whiteside, 2008), while ethnographic and sociological work in the area of educational language policy illuminates ideological environments in which teaching and learning are situated (Hornberger, 2002).

Future Directions

Beginning in the 1990s, complexity theory began to emerge slowly in the field of (applied) linguistics (Hodge, 1990; Larsen-Freeman, 1997) as a way to begin to discuss relationships between small-scale and large-scale language behaviors. Complexity is becoming increasingly mainstream in language teaching and learning research, most notably with Larsen-Freeman and Cameron's (2008) book *Complex Systems and Applied Linguistics*, which sets out a number of core principles of complexity and how they might inform applied linguistic research. Chief among these core principles is a focus on a continuum of social scales ranging, for example, from individual students and teachers to lessons to classrooms to schools to national curricula (Larsen-Freeman & Cameron, 2008, pp. 201–2). A key aim of complexity-oriented research is to seek recurring (fractal) patterns across such scales in order to understand how they serve to mutually constitute one another as well as to ascertain how individuals navigate across them (Hodge, 1990).

This focus on scales of social organization echoes the ecology of language orientation to societal multilingualism as composed of a series of nested and interrelated linguistic ecosystems that are socially constructed by individual speakers (Calvet, 1999). Accordingly, the turn toward complexity in applied linguistics stands to have a fruitful and symbiotic relationship with language ecology in future research. Connections between complexity and language ecology are already beginning to be made in work that seeks to examine individual actions and choices within the context of dynamic and multilayered social systems. Kramsch and Whiteside (2008), for instance, have done so in elucidating how learners develop the ability to use language to situate themselves and others in particular subject positions and social realities, and Hult (2010) puts forward an approach to using methodological advances in discourse studies to investigate connections between individual social actions and sociopolitical forces in language policy systems.

In all, over the last 50 years, language ecology has remained a consistently useful conceptual orientation that has kept pace with trends in sociolinguistic research and proven flexible in its applicability to work conducted from a wide range of methodological traditions. As applied linguistics in the 21st century continues its focus on societal multilingualism, the ecological orientation is likely to maintain a consistent influence.

SEE ALSO: Bilingual Literacy; Bilingual and Multilingual Education: Overview; Chaos/Complexity Theory for Second Language Acquisition; Complexity in Multilingual Systems; Dynamics of Multilingualism; Language, Culture, and Context; Language and Globalization;

Language Endangerment; Language Evolution: Pidgins and Creoles; Language Planning and Multilingualism; Language Policy and Multilingualism; Linguistic Diversity; Linguistic Human Rights; Linguistic Landscape; Literacy in Multilingual Classrooms

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Economic Analysis of Language Policy and Planning

FRANÇOIS GRIN

Positioning the Approach

The economic analysis of language policy and planning (LPP) offers a systematic approach to the selection, design, and evaluation (whether *ex ante* or *ex post*) of LPP measures. It can be applied to issues as varied as the protection and promotion of minority languages; language education policy in multilingual countries; communication in multilingual political organizations such as the European Union; the language implications of immigrant integration; or the debate over the proper role of languages of wider communication.

In order to understand the nature and contribution of this approach, it is useful to recall the disciplinary origins of LPP, which are mostly found in three areas: first, the language sciences, with a solid tradition straddling sociolinguistics and the sociology of language (e.g., Ricento, 2006); second, law, with a particular emphasis on the notion of language rights; third, political science (e.g., Laponce, 2006), with contributions in normative political theory, where the emphasis is placed on the application to LPP of concepts developed in theories of justice (Kymlicka & Patten, 2003) and contributions in rational choice theory (Pool, 1991), which holds that actors are rational (meaning that they normally try to make the best use of their scarce resources), and that a similar criterion ought to be applied to the choice between alternative policy options.

This last approach is used in *policy analysis*, which provides a framework for comparing options and rules for choosing one (Grin, 2003). Policy analysis is usually anchored in political science, but many of its core concepts are imported from economics, and it is largely through the conduit of policy analysis that economic analyses can be brought to bear on language questions. Economics can also be applied to language without explicit reference to LPP, for example when estimating the rates of return of the investment in foreign language learning. In addition, some authors have stressed the embeddedness of LPP in the economic context (e.g., Lo Bianco, 1988). This type of knowledge can serve to inform policy choices by shedding light on some of their consequences. In this entry, however, we focus on the use of economics in explicit LPP choices, through policy analysis, which also provides a framework for including concepts and results from the various disciplines mentioned above.

Key Principles of Economic LPP Assessment

LPP as Public Policy

The term "policy" is sometimes used rather liberally to denote almost any type of language-related decision made by any type of organization, including private sector companies. In this entry, however, we use the more usual—and more restrictive—definition, in which LPP is conducted by official bodies or their surrogates—that is, directly or indirectly, by the state or by a group of states. It may, of course, carry implications for, or impose behavior

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on, individuals and the private sector (as in the case of labeling requirements with which firms must comply).

This raises the question of why the state should get involved at all, since many areas of human endeavor are arguably best left to the initiative of the private market. The answer is that although this works reasonably well, on balance, in the case of most "private" goods and services (from apples to car insurance), it does not work so well in the case of goods and services that present some collective characteristics, which prevent markets from operating efficiently. Thus, the unregulated language dynamics resulting from the uncoordinated learning and use of language(s) by billions of social actors (a linguistic "free market," as it were) typically generate outcomes like the spread of stronger languages and the decline or even elimination of others. If such outcomes are regarded as undesirable, this situation can be described, in analytical terms, as a case of *market failure*. Thus, as soon as *another* outcome is deemed socially preferable, it is perfectly justified, in the very logic of economic analysis, to entrust the state with the task of developing and implementing language policies (Grin, 2003).

It follows that the economic analysis of LPP is, obviously, not meant to dictate policy choices. Its task, rather, is to contribute to democratic debate by spelling out the consequences of pursuing various courses of action, from laissez-faire to more or less extensive policy intervention.

Comparison and the Counterfactual

As the above suggests, comparison is central to the whole approach. Fundamentally, economic analysis serves to compare competing options in a synthetic yet systematic fashion, taking their respective implications into account in the form of "costs" and "benefits," and then choosing the option that promises to yield the highest "net value" (benefits minus costs). A particularly delicate point is that of properly identifying the terms of comparison, or the *counterfactual*, of a course of a policy. Suppose for example that the authorities are contemplating measures to protect and promote a threatened language. The policy typically carries a certain monetary cost. The alternative, however, is not merely "doing nothing" and saving money; it also carries other consequences, some of them adverse, that will arise in the absence of the policy. The threatened language may drop out of use for lack of support, with concomitant disruption of social, cultural, and economic life in the corresponding language community, as well as loss of aggregate linguistic diversity. On balance, the *counterfactual* to the policy may thus turn out to be more expensive than initially assumed, which is why a full identification of the counterfactual is crucial.

Market and Nonmarket Value

When computing the costs and benefits of language policies, it is important not to confine them to narrow monetary effects, whether positive (benefits) or negative (costs). Economics is a framework for making choices, which carry consequences of all kinds. When a decision is made, it must be because, all things considered, it appears likely to generate the highest net value, *taking account* of nonmonetary effects. The latter are often called "nonmarket" effects, because they are not (or only very indirectly) observable through market prices. Here again, a prime example is environmental quality: it cannot be bought and sold on a market, yet it represents a perfectly relevant dimension of the choice between, say, two different policy plans for the use of a tract of land adjacent to a growing city. While market effects can be inferred from observable prices, estimating the value of nonmarket effects is trickier. Some techniques developed in environmental economics (particularly contingent valuation) could be adapted in the future to the assessment of the respective nonmarket benefits and costs of alternative *linguistic environments*.

Private and Social Value

The relative value of alternative options looks quite different depending on the level at which the analysis is carried out. What is best for individuals taken one by one may not be best for individuals as members of a group. This is particularly evident for second or foreign language learning. The rates of return on second language skills usually make the learning of one dominant language more profitable from the point of view of individual actors. Hence, simply encouraging the learning of this language would prima facie look like good policy. But this policy choice, by reinforcing a hierarchy of languages, may end up downgrading the status of all the other languages, thus ultimately eroding the relevance of the linguistic capital of the native speakers of the *non*dominant languages, and hence reduce their well-being. The learning of the dominant language needs accompanying measures to curb such negative effects, lest what looked at first like good policy turn out to be bad policy. This paradox proceeds from the network aspects of language, whose implication is that the sum of (individual) effects is not equal to the aggregate effect.

Efficiency and Fairness

A good policy is not only supposed to deliver the highest level of *net aggregate welfare*, taking account of market as well as nonmarket effects; this is an issue of resource *allocation*, or *efficiency*. It must also entail a fair distribution of welfare between actors and groups of actors, which raises questions of resource *distribution*, or *fairness*. In a policy analysis perspective, fairness is not a moral question; rather, it means identifying and measuring the shares of aggregate benefits and costs of a policy accruing to different actors or groups of actors. This exercise, of course, is only possible after the preceding ones have been carried out, and then it takes the difficulty one step further, because identifying relevant *groups* of individuals is very tricky. Typically, distributive analyses focus on socioeconomic categories, or occasionally on categories defined through other traits (like age or gender). In LPP, groups would normally need to be defined primarily in terms of linguistic attributes (their first language and their skills in other languages).

Concluding Remarks

The economics of LPP provides a framework through which language policy options can be systematically compared, in order to assist citizens and the authorities in making better-informed choices and selecting, among competing courses of action, those that are likely to deliver a higher level of welfare and a higher degree of fairness. Applications mostly concern the protection and promotion of minority languages (Grin & Vaillancourt, 1999; Grin, Moring, Gorter, Häggman, Ó Riagáin, & Strubell, 2002), second language acquisition and skills (Grin, 2005), bilingual communication in a multilingual context (Selten, 1997; Ginsburgh, Ortuño-Ortín, & Weber, 2005)—in addition to the growing literature in *language economics* (as distinct from its policy dimensions), not quoted here.

The economic analysis of LPP raises specific theoretical and empirical difficulties, many of which are not solved at this time, but which offer exciting scientific challenges and opportunities for interdisciplinary cooperation.

SEE ALSO: Language and Globalization; Language Policy and Planning: Overview; Multilingualism in Economic Activity

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Educational Research in Language Minority Students

AMANDA KIBLER AND KENJI HAKUTA

Introduction

The term "language minority student" encompasses a wide range of individuals who span ethnicities, ages, cultures, social and economic backgrounds, immigration histories, and levels of first and second language proficiency. The characteristic shared by members of this diverse group, however, is that their home languages are spoken by a minority of people in a given society: Turkish in Germany, Nahuatl in Mexico, or Chinese or Spanish in the United States, for example. While many language minority students are immigrants, others are indigenous members of a society or have family members who immigrated one or more generations earlier. Language minority students' home languages sometimes have official status in the majority society, but educational institutions are often not obligated to teach in students' home languages.

Language minority students have become prominent in schools as a result of increasing global migration and access to education. Because most compulsory educational systems are designed for language *majority* speakers in a given society, the education of language minority students poses unique challenges and has become a significant concern. Educational research is best understood in context, and so this review focuses primarily on research conducted in the United States.

What Types of Research Are Being Done?

Some of the typical issues found in educational research include, but are not restricted to: (a) program-focused research; (b) classroom-focused research; (c) language-focused research; and (d) student-, family-, and community-focused research.

Program-focused research investigates the relative effectiveness of various instructional program types. In the United States, much research attention has been devoted to the outcomes of bilingual education programs as compared to programs that use English as the primary or sole medium of communication. Several publications have synthesized results of studies on this topic (for example, August & Shanahan, 2006; Genesee, Lindholm-Leary, Saunders, & Christian, 2006). Program evaluations also focus on the impact of language policy decisions, such as Proposition 227, a controversial referendum in California that restricted bilingual education (Parrish, Perez, Merickel, & Linquanti, 2006).

Research at the classroom level includes investigations of both bilingual and English-only instruction. These studies address classroom practices aimed at developing oral language skills as well as first or second language literacy. Classroom research focuses on curricula and instruction not only in English as a second language or other language classrooms, but also in subject area classes (such as math, science, and language arts) in which language minority students are enrolled. This research has been undertaken using experimental comparisons as well as more interpretive and ethnographic approaches.

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Although it overlaps to some degree with the previous category, language-focused research takes a more linguistic perspective in its examination of education. Some of this recent work is concerned with genres of language demanded in classrooms and follows a systemic-functional approach to language (e.g., Schleppegrell, 2004). Other work offers proposals for what teachers should know about language so that they can enhance the development of students' linguistic repertoires (e.g., Valdés, Bunch, Snow, Lee, & Matos, 2005).

A final category of research examines language minority students' out-of-school experiences, their families, and the communities in which they live. Ethnographic and other qualitative approaches are employed to explore the linguistic, cultural, and social practices of minority communities (Vásquez, Pease-Alvarez, & Shannon, 1994; Zentella, 2005), the richness of students' out-of-school language use (Lam, 2004), and complexities of the immigrant experience (Fu, 1995; Lee, 2005).

What Are the Major Themes Found in this Research?

Among diverse strands of research, several key questions are fundamental to investigations focused on language minority students. The following section outlines some of these major themes.

How Does One Build on the Native Language?

This first question deals with educators' and researchers' responses to minority students' native languages and the roles these languages should play in schools and society. If educators and researchers decide to build upon native language skills, they may choose to do so based on studies indicating that the first language plays an instrumental role in acquiring a second and has important symbolic, cultural, and societal value. Alternatively, some approaches to educating language minority students regard the first language as largely irrelevant to the teaching of the second, and it is therefore not a focus of instruction or research. Decisions to actively eradicate the native language are more rare and often reflect political convictions rather than pedagogical considerations.

How Does One Build Second Language Proficiency?

Language minority educational research also addresses the question of how students can best learn a societal language in school settings. Curricula, pedagogy, student placement, and teacher training are all issues affecting students' second language development. One major research concern in this area is the extent to which students should be taught through explicit language instruction or through more inductive forms of learning: While many researchers and theorists agree that there should be a balance between the two approaches, the manner in which this balance should be achieved for students of different ages and proficiency levels is yet to be determined. An additional concern is that many minority-language students live in linguistically isolated communities with little access to speakers of prestigious varieties of the majority language.

How Does One Encourage Content Learning While Students Are Learning a Second Language?

Language minority students must continue learning academic subjects even while they are still in the process of acquiring the majority language. In some school settings—such as dual-language and maintenance or transitional bilingual programs—academic learning in subjects such as math, science, history, or language arts continues through instruction in the native language. In other school settings, the majority language is used for content

instruction with students at all proficiency levels. While some students with limited second language proficiency may be placed in mainstream academic subjects without assistance or accommodations, in many classrooms teachers attempt to tailor curricula and instruction to language minority students or collaborate with language teachers, processes which have been thoroughly documented in the research.

How Should Language Minority Students Be Assessed?

Assessment of language minority students, whether it occurs as part of daily instruction or as part of national or international standardized tests, continues to be a major concern for researchers. At the classroom level, language minority students without sufficient proficiency in the majority language have difficulty demonstrating their academic knowledge on these measures. In relation to the assessment of language proficiency, research continues into developing and refining large-scale tests to reflect current understandings of the nature of proficiency and the manner in which second languages develop over time (e.g., WIDA Consortium, 2007). Although schools may test students' first language proficiency—and many using bilingual instructional methods choose to do so—the primary focus of research and accountability is performance on assessments of English-language proficiency.

Why Isn't Language Just Language?

Educational researchers must cope with the reality that many language minority groups are also socially and economically marginalized in society: in the United States, for example, Spanish speakers not only are the largest group of students classified by schools as "limited English proficient"—comprising 75–80% of all such students—but also belong to households (labeled "Hispanic" on US census forms) with poverty rates twice those of White/non-Hispanic and Asian groups. While some language minority students and their families enjoy privileged positions in society, much educational research is focused on those students from underprivileged, marginalized communities who traditionally fare poorly in educational institutions. In this way, issues of equity, which are not solely related to language, are a major focus of educational research in this field.

Researchers must also acknowledge a significant disjuncture between linguistically oriented research and social reality. For example, linguists such as Chomsky (1968) have provided insight into first language acquisition, outlining the ways in which all people, excluding those with language disorders, become competent speakers of their native language. Common discourse in many schools, however, falsely depicts some language minority students as "semilingual," competent in neither their native nor second language. Theorists have also debunked the myth that some languages are linguistically superior to, or objectively "better" than, others; Labov's (1972) work documenting the sophistication of language use in African American Vernacular English-speaking communities is an early example of such research. Yet schools often, knowingly or unknowingly, uphold linguistic stereotypes that value an abstract (and linguistically slippery) notion of "Standard English" while simultaneously devaluing the varieties of English spoken by many language minority students. A tradition of critical literacy research (e.g., Gútierrez, Zitlali Morales, & Martinez, 2009) addresses these issues directly.

Looking Forward

As language minority populations continue to grow in schools, educational research focused on these students will likely increase as well. Educational systems are extremely complex, and efforts to improve the academic achievement of language minority students are likewise

multifaceted. Research from cognitive, psychological, pedagogical, social, sociocultural, critical, and policy perspectives should ideally work in concert to develop and accomplish a comprehensive language minority research agenda. This broader perspective can help researchers and practitioners understand factors contributing to academic success and failure as well as the place of minority languages, and their speakers, in society as a whole.

SEE ALSO: Bilingual Education; Immersion Programs; Instructed Second Language Acquisition; Integration of Language and Content Learning; Minority Languages in Education; Multilingualism and Minority Languages; Systemic Functional Linguistic Approaches to Teaching English-Language Learners

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Edwards, John

HANS J. LADEGAARD

John Robert Edwards (b. 1947 in England) was educated at the University of Western Ontario (BA in Psychology) and McGill University (MA and PhD in Psychology). He is a Chartered Psychologist and a Chartered Scientist, and a member of several prestigious societies, including the Royal Society of Canada, the British Psychological Society, the Canadian Psychological Association, and the American Association of Applied Linguistics. He is editor of the *Journal of Multilingual and Multicultural Development* and of the *Multilingual Matters* series, and is on the editorial board of 13 international journals. He is currently Professor in the Department of Psychology, St Francis Xavier University, Antigonish, Canada.

Edwards has written more than 250 articles, book chapters, and reviews, nine books, and five edited monographs. The broad disciplines covered in his writing include the social psychology of language, sociolinguistics, and the sociology of language, focusing on topics such as bilingualism and multilingualism (Edwards, 1994), language and education (Edwards, 2010a), minority languages (Edwards, 2010b), language and identity (Edwards, 1985, 2009), and language and disadvantage (Edwards, 1979, 1989).

Long before interdisciplinarity became a buzz-word, Edwards insisted that good scholarship must be interdisciplinary and eclectic, make use of methodological triangulation, and always pay due attention to the bigger social picture. He has criticized much of the existing work in the social psychology of language and sociolinguistics, arguing that the literature often reveals "an undesirable narrowness of perspective" (Edwards, 2009, p. 1). He argues that no analysis of language should proceed from a "stand-alone" perspective; consequently, we need to understand the sociological, political, and psychological aspects of language use if we are to understand why some languages die while others thrive. Whatever the topic, Edwards has always strived to illustrate, in multiple ways, the connections between language and identity, and this implies a stronger focus on the symbolic functions of language (i.e., language used as an emblem of groupness, as a symbol, as a rallying point; cf. Edwards, 1985, p. 17), as opposed to the communicative functions. This in turn "necessitates attention to the social and political settings without which that symbolism, that group 'marking', would be empty" (Edwards, 2009, p. 2).

Edwards' research has made significant contributions to the literature in several diverse areas, such as ethnicity and nationalism, language prescription, minority languages, language planning, constructed languages, and (language) attitudes and stereotypes. Particularly important are his contributions to the work on language and disadvantage in educational settings (Edwards, 1979, 1989, 2010a). His first book on language and disadvantage was published at a time when genetic deficiency theories (e.g. Jensen, 1973) and environmental deficiency theories (e.g., Bereiter & Engelmann, 1966; Bernstein, 1971) were strong in educational circles, and compensatory education was proposed as a means to "save" ethnically or socially disadvantaged children.

Edwards argued forcefully against these theories, claiming first, that sociocultural determinations of intelligence in standard IQ tests cannot be avoided; and second, that the implication of these theories is that certain groups and lower-class settings are seen as deficient because they do not exhibit middle-class practices and values. The school is

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essentially a middle-class institution promoting middle-class values and norms (including linguistic norms), and this is why some children with lower-class and ethnic minority backgrounds are seen as deficient. Consequently, Edwards argues that the environmental "difference" position is the only logically tenable theory and advocates that "we should make the different-but-not-deficient argument wherever and whenever possible. Social prejudice may be inevitable in stratified societies, but it is not monolithic" (Edwards, 2010a, p. 16). More recent research suggests that both genetic deficiency theories and environmental deficiency theories are alive and well in academic circles. Herrnstein and Murray (1994) and Nyborg (2005), for example, argue that genetic deficiency still applies. These scholars claim that certain groups are more intelligent than others (white people more than black people; men more than women). And the idea that some social environments lead to intellectual deficiency never really lost ground and remains powerful in educational circles (see Edwards, 2010a, chapter 5 for a discussion). This only goes to show that Edwards' work to rebut the evidence and to advance the environmental difference theory is as relevant as ever.

Another of Edwards' hallmarks is his attempt to refute the linguistic deficit hypothesis which still prevails in (many) educational contexts. Certain nonstandard accents or dialects, or certain minority languages, are seen as inferior or even inherently deficient. Consequently, it is argued, children should learn to speak the standard language. Many teachers believe that speakers of nonstandard accents and dialects will inevitably fall into "the language trap" (cf. Honey, 1983), and need to master the standard language in order to advance socially and economically. Edwards insists that value judgments about language are in fact social judgments about the people who speak them, and when nonstandard accents and dialects are seen as deficient, it is because they are usually spoken by people who are stigmatized in society.

Edwards' work has focused almost exclusively on the macro level of language use. He believes that "a broad-brush knowledge has more chance of applicability than fine-grained analysis" (Edwards, 2010a, p. 12). He is skeptical of much discourse-based language research, which he sees as inward-looking and "an incestuous preserve of little applied value" (p. 14). He criticizes ethnomethodology and its allies for being more like sects or cliques than scholarship—closed systems in which members talk to each other. The result, he argues, is that much research in these disciplines becomes a replication of the disembodied and decontextualized sterility which the ethnographic endeavor was meant to replace. Consequently, it has little or no relevance to larger social settings, such as classrooms. Although I agree with much of Edwards' critique of discourse-based language research and consider it a much needed contribution to the debate, I would argue that some of his claims may fall under the sweeping generalizations fallacy. Is it really fair to argue, for example, that "in many cases, discourse studies do not reveal much that is new" (Edwards, 2010a, p. 11)? Surely, the same criticism could be made of much quantitative research. The main problem with much discursive research is that it dismisses work in the quantitative paradigm (e.g., questionnaire studies and experiments). I would insist that we need insights from both "traditional" (quantitative) and "new" (qualitative) paradigms if we want to see the bigger picture Edwards is calling for. We need depth as well as breadth, and one single paradigm is not likely to give us both.

Edwards' writing style is direct, provocative, and refreshingly free from academic jargon, which means that researchers, students, and practitioners alike can read and benefit from his research. He is a man on a mission, and this may be one of the reasons why his works are so thought-provoking. Edwards is a scholar first and foremost and insists that scientific problems must be dealt with in a cumulative manner—this, he argues, is the hallmark of good science. But he also has a strong social and political message which permeates his scholarship: that the vast majority of issues that affect speakers of minority languages,

"foreign" languages, or nonstandard dialects have little to do with language. Rather, they are sociological, political, or psychological in nature: "they have to do with perceptions and prejudice, with stereotypes and assumptions, with power and subordination" (Edwards, 2010a, p. 12) and must be dealt with accordingly.

SEE ALSO: Bilingual Education; Ethnomethodology in the Analysis of Discourse and Interaction; Language and Identity; Minority Languages in Education; Multilingualism; Multilingualism and Identity; Multilingualism and Minority Languages

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Edwards, Viv

LYNDA PRITCHARD NEWCOMBE

Professor Viv Edwards was born in 1950 in the Rhondda Valley. Bilingualism has been an issue at both professional and personal levels throughout her life, having grown up in Wales and with the recent extension of her family to include new Polish members.

Professor Edwards holds a PhD in linguistics from the University of Reading where she started her teaching career. She worked as lecturer and reader in sociolinguistics at Birkbeck College, University of London before returning to the University of Reading where she is currently professor of language and education and director of the National Centre for Language and Literacy.

Edwards's work has always centered on language and education. She played a pioneering role in establishing this area as the nexus for cross-disciplinary researchers with the founding in 1987 of the international journal of the same name. She also edits the Multilingual Matters series on *New Perspectives on Language and Education*.

At an early stage in her career, however, her interests centered firmly on linguistic diversity in education. In the late 1970s and 1980s, Edwards was the first researcher to seriously study the language of children from the Caribbean whose parents had settled in the United Kingdom. Her book, *The West Indian Language Issue in British Schools* (Edwards, 1979), was based largely on her PhD thesis; and *Language in a Black Community* (Edwards, 1986) was based on fieldwork with young people of African Caribbean heritage living in the English Midlands. Aware of her "outsider" status, she passed responsibility for further work on this topic, wherever possible, to the insider researchers who were emerging in the 1990s (Edwards, 1994).

The collection of papers, *Multilingualism in the British Isles*, co-edited with Safder Alladina (Edwards & Alladina, 1990), was another landmark publication, offering the first in-depth discussion of many of the newer minority communities. Other research and publications focusing specifically on minority languages include the evaluation of the Twf Project in Wales which promotes the value of bilingualism to the parents of babies and young children (Edwards & Pritchard Newcombe, 2005a, 2005b); and the development of bilingual multimedia storybooks as a pedagogical tool in Basque, Catalan, Frisian Irish, and Welsh (Edwards, Monaghan, & Knight, 1999; Edwards, Monaghan, & Hartley, 2000; Edwards, Pemberton, Knight, & Monaghan, 2002), as part of the European Commission funded Fabula Project.

Teaching and learning—and particularly literacy learning—in multilingual classrooms has been a recurrent theme in her research and publications (Edwards 1983, 1998, 2009; Edwards & Redfern, 1992; Edwards & Corson, 1997). Her interest in literacy relates to her longstanding role as director of the National Centre for Language and Literacy and extends to learning materials, as demonstrated in her 1995 book with Sue Walker on *Building Bridges: Multilingual Resources for Children* and her current research on African language publishing for children.

Edwards's interest in Africa relates in part to family links with Zimbabwe and partly to supervision of PhD students working on literacy-related topics from across the continent. Collaboration with African colleagues as part of the Training for Early Literacy Learning Project and the current project on African language publishing has deepened this commitment.

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More recently, she has turned her attention to the pastoral and academic needs of Chinese students in higher education (Edwards & An Ran, 2007; Edwards, An Ran, & Daguo Li, 2008), linking her experience of work with international students at the University of Reading to growing concern around the responsibilities of universities as part of the internationalization agenda. In recognition of her contribution to the debate on Chinese students in British Universities, she was elected a fellow of the Royal Society of Arts in 2008.

Edwards's ability to synthesize the extensive and rapidly growing literature in this area is demonstrated in *Multilingualism in the English-Speaking World: Pedigree of Nations* (Edwards, 2004) which was selected as the British Association of Applied Linguistics book of the year in 2005.

Another characteristic which runs through all her work is her steadfast commitment to social justice.

SEE ALSO: Bilingual Education and Immigration; Bilingual Literacy; Literacy and Bilingualism; Literacy and Multicultural Education; Literacy in Multilingual Classrooms; Teaching Literacy; Varieties of World Englishes

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Ehlich, Konrad

WINFRIED THIELMANN

Biographical Details

Konrad Ehlich (1942–) is a German linguist. He studied Protestant theology, philosophy, German language and literature, linguistics, and oriental languages in Bielefeld, Heidelberg, Mainz, and Berlin. In 1970 he completed his masters degree in theology with a thesis on the categorization of verb conjugations in the linguistics of Hebrew. His dissertation on the deictic system of ancient Hebrew was accepted in 1976 and published in 1979. His postdoctoral dissertation on interjections was accepted in 1980 and published in 1986. After appointments as a lecturer/researcher at the Freie Universität Berlin and Universität Düsseldorf, in 1981 he accepted a professorship in linguistics and literature at the Katholieke Hogeschool Tilburg (now University of Tilburg) in Tilburg (Netherlands). Following this, from 1983 to 1992 he was the chair of German as a Foreign and Second Language at Universität Dortmund; from 1992 to 2007 he was the chair of the Institute of German as a Foreign Language at the Ludwig-Maximilians-Universität in Munich. He has been an honorary professor of Freie Universität Berlin since 2009. Over the course of his career Ehlich has contributed over four hundred publications to a wide range of linguistic disciplines, including general linguistics, pragmatics, discourse analysis, text theory, German as a foreign and as a second language, comparative academic language studies, applied linguistics, institutional communication, intercultural communication, language sociology, language policy, intonation, and Hebrew language and literature.

Functional Pragmatics (FP)

In collaboration with Jochen Rehbein, Konrad Ehlich developed a theory of linguistic action called functional pragmatics (FP), which constitutes the theoretical background of most of his publications. In FP, language is neither a "system of signs" (de Saussure) nor something hardwired into our brains (Chomsky). It is also neither a game (Wittgenstein) nor a stimulus (Bloomfield). With reference to Bühler's concepts of linguistic fields and the actional quality of language as well as Austin's and Searle's speech act theory, Ehlich and Rehbein conceive of language as a complex of form-function-nexus anchored in reality as societal practice. In societies, human beings pursue purposes which correspond to a societally elaborated system of needs. Purposes are transindividual—people belonging to a certain society know, for instance, how to avail themselves of the society's artifacts and institutions. They do so as a matter of routine. Some purposes can be pursued through linguistic action. Language, as a societally elaborated form, allows human beings to act on each other's minds. Through linguistic action, a speaker can provide the listener with knowledge, make the listener do something, and so forth. In their paper "Sprachliche Handlungsmuster," Ehlich and Rehbein (1979) demonstrate that the repetitive nature of societal reality leads to the societal elaboration of complex linguistic structures, *linguistic action patterns*, through which interactants regularly pursue purposes. Typical examples of such patterns are *question and answer*, *justification*, *request*, *promise*, *apology* and *assertion*. In their book *Muster und Institution* (Ehlich & Rehbein, 1986), which is entirely based on transcripts of authentic classroom discourse,

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Ehlich and Rehbein show that certain action patterns may be significantly altered by institutional usage: teachers, for instance, usually do not ask a question because they want to know something, but because they want to know if the students know something. In reconstructing linguistic action patterns from authentic discourse, FP, in contrast to conversational analysis, makes assumptions about the mental steps speakers and listeners take as they work through a pattern.

Linguistic Devices, Linguistic Purposes, Linguistic Procedures, and Linguistic Fields

In its attempt to reconstruct the nexus between linguistic and societal purposes as well as the nexus between linguistic actions and their constitutive devices, FP's approach to language is overall "pragmatic" (Ehlich, 1986b/2007); there are no autonomous morphological, syntactic, and lexical modules to which a pragmatic module can be "added." Language is an action form societally elaborated for the pursuit of purposes. As a consequence, language's intrinsic makeup is also purposeful.

In "Sprachmittel und Sprachzwecke," a study in linguistic engineering, Ehlich (1981/2007) demonstrates that the intrinsic makeup of languages is the result of material choices made by language communities. If, for instance, intonation is used to differentiate between linguistic units, the linguistic units of such a language, in order to carry intonation, tend to be monosyllabic, with optional opening and closing consonants. Even with a complex tonal system, such structures only yield about 5,000–10,000 tonal syllables, which means that languages organized in such a fashion are prone to developing a complex phraseology to satisfy lexical needs. As the device of intonation is already being used as a diacritic, it is no longer free to differentiate between basic illocutions. This is why tonal languages tend to have illocutionary particles. Different language types thus arise from very basic material choices.

Speakers can combine and integrate linguistic units so that they ultimately form complete speech actions. This is possible because linguistic units themselves possess actional quality. In FP, such linguistic units of actional quality are called *linguistic procedures* (Ehlich, 1986b/2007). Linguistic procedures can be part of five functional nexus—*linguistic fields*—which are probably constitutive of every language (Ehlich, 1986b/2007).

With a *symbolic procedure* from the *symbolic field*, the speaker makes the listener call upon a knowledge element. Employing a *deictic procedure* from the deictic field, the speaker makes the listener focus his attention on something that may be within the space of perception, but may also be part of other spaces within which deictics can be functional, such as discourse space, text space, or imagined spaces (Ehlich, 1979). Through *operative procedures* from the *operative field* (typically anaphora, plural and case suffixes, affixes of word formation, articles, word order, stress, etc.) speakers communicate the makeup of their utterances—for instance, the differentiation between the topic and the comment of an utterance. *Incitive procedures* such as interjections allow for direct interference with the listener's actions (Ehlich, 1986a). Through *expressive procedures* such as "*wonderful!*" speakers align themselves emotionally with listeners.

Ehlich treats word forms such as *ask-s* as *procedural combinations* (here: symbolic + operative). Speech actions arise from *procedural integration* (Ehlich, 1998a/2007)—typically by operational procedures working upon an elementary propositional basis consisting of symbolic procedures. The utterance *The doctor comes on Mondays* consists of an elementary propositional basis (*doctor–come–Monday*) which achieves the status of an assertion by operational procedures working upon this basis: Word order (positioning the subject before the predicate), anaphoric subject-predicate-agreement, plural suffix, and determination (*the*).

Ehlich not only expanded Bühler's notions of linguistic fields, he also produced empirically based detailed analyses of certain linguistic procedures. Apart from his book on the use of the deictic system in ancient Hebrew (1979), there are numerous studies on the function of deictics in texts (e.g., 1982/2007, 1989/2007) and on operative anaphora (e.g., 1982/2007, 1983c/2007) and articles (2003/2007). His book on interjections (1986a) is one of the first monographs to put forth a theory that fully explains the functionality of this class of expressions and empirically explores the most prominent German interjections.

Discourse and Text

Being a strong advocate of the primacy of the spoken word, Ehlich arrives at a very specific understanding of discourse and text (1983b/2007). *Discourse* arises when speaker and listener are copresent. Apart from monoprocedural utterances such as *there!*, discourse consists of speech actions, that is, procedural integrations. A speaker may utter several speech actions in a row as, for instance, when telling a story (Ehlich, 1983a/2007), so that discourse consists of a *concatenation of speech actions*. Or speaker and listener may work, in sequence, their way through a linguistic action pattern so that discourse consists of a *sequence of speech actions*.

Text is the result of societal problem solving with regard to the fleetingness of language: Texts are suspended linguistic action to overcome a speech situation where speaker and listener are not copresent (Ehlich, 1983d/2007). The message memorized by a messenger is a text, so are genealogies or myths passed on within oral societies to ensure the maintenance of essential knowledge (Ehlich, 1983b/2007). Thus, texts occurred prior to writing.

Whilst in discourse every speech action has a "here–I–now," that is, Bühler's "origo," as the center of deictic reference, textual language is characterized by "transcending the immediate 'origo'" (Ehlich, 1983b/2007, p. 555). The "here" in the message a messenger delivers is the "here" of the sender; the "today" in a letter is not the "today" of the reader. Deictics also play a very important role with regard to textual coherence. Writers use anaphora (e.g., *it*) to instruct readers that they can maintain their focus on a topic; they use anadeictics (e.g., *this*) to instruct readers to refocus their attention on a new topic (Ehlich, 1982/2007, 1983c/2007, 1989/2007).

Academic Language

At the Institute of German as a Foreign Language in Munich, Ehlich became very interested in the structure of the academic variety of German and other languages. In Ehlich (1995) he demonstrates that—despite previously held beliefs—academic varieties are not just characterized by terminology, but also by complex syntagmas made up of ordinary linguistic devices. Such syntagmas (e.g., *it is meanwhile widely held; we derive the following conclusion*) have a meaning particular to academia and they occur in most scientific discourses and texts. They constitute an *ordinary academic variety* that serves as a metalanguage for research. Other structures such as *currently there is no theory satisfying these requirements* also consist of ordinary language, but are due to the argumentative side of academic discourse. Academic texts, in the arts as well as the sciences, are very rich in theses argumentative, *eristic* devices (Ehlich, 1993). In contrast to terminology, ordinary academic language and eristic devices provide major obstacles even to very competent language learners, as they are syntactically complex, employ ordinary words in a way different from ordinary language, and have a meaning particular to academic culture.

In a situation where English is becoming more and more entrenched as the only language of science and research, Ehlich is continuing to make a case for academic plurilingualism.

One of the primary functions of any language is the *gnoseological function* (Ehlich, 1998b/2007), that is, the guidance a language provides in conceiving of the world and making this knowledge communicable. Languages differ significantly in how they serve this function. Hence, Ehlich has argued in numerous publications that the academic varieties of different languages provide complementary access to the phenomena under scientific investigation. Thus, the maintenance of academic plurilingualism ultimately serves the goal of scientific innovation.

Category Formation in Linguistics

Ehlich has made numerous contributions to the history of linguistics and linguistic category formation. In these publications he argues that linguistics, as a very old discipline, transports certain biases that have led to continuous misrepresentations of linguistic phenomena. In "Analytische Sedimente" Ehlich (2002a/2007) demonstrates that the ancient terms still in use for word classes (e.g., *noun*, *adjective*, *adverb*, *preposition*) are descriptive in a way that may actually be misleading. The term *preposition*, for instance, literally means "a word that stands before another." This description only recognizes the preposition and the word that follows. In the phrase *the vase on the table*, however, the preposition *on* establishes a relation between *the vase* and *the table*—a fact that is overlooked when analysts, guided by the term *preposition*, focus only on what comes after a preposition. Similarly, the term *noun* (Lat. *nomen*) is responsible for a semantics based on the functionality of proper nouns (i.e., names for individual entities), even though the semantics of most nouns (e.g., *table*, *invention*, *beer*) cannot be understood in these terms.

In "Medium Sprache," Ehlich (1998b/2007) argues that linguistics has tried for a very long time to abstract from the fact that language is a medium. As a medium, language cannot be described on its own, but only in relation to speaker and listener. Linguistic theory formation, however, has frequently attempted to conceive of language as an absolute object. A case in point is European structuralism erected upon Saussure's concept of *langue*: language as such, devoid of speech.

Further Areas

Ehlich has also substantially contributed to the following areas: theory of writing and written language (e.g., 1983e), language policy (e.g., 2007a, 2007b), language acquisition (e.g., 2005), language and literature (e.g., 2002b), and narratology (e.g., 1984).

SEE ALSO: Multilingualism and English; Pragmatics in the Analysis of Discourse and Interaction

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Elite/Folk Bilingual Education

ANNE-MARIE DE MEJÍA

Introduction: Why This Distinction Is Important

The literature on bilingualism and bilingual education is full of dichotomies. Thus, we hear frequent references to such "polar opposites" (Hornberger, 1989, p. 273) as: additive versus subtractive bilingualism, transitional versus maintenance models of bilingual education, and international versus intranational languages. If Hornberger is to be believed, we should be looking at a variety of dimensions represented on the continua of biliteracy, rather than at such dichotomies. Why then, it may be asked, is it important to distinguish between the notions of "elite" and "folk" bilingualism and bilingual education?

In order to answer this question, it is important to start with a historical perspective, looking at the genesis of these terms, how they were conceived, and how they have changed over the years. I will then go on to highlight key issues involved in this distinction, such as the separation engendered between these two different modalities, and will argue for the importance of engaging points of contact between what have been traditionally seen as two separate worlds. I will end by suggesting possible ways forward in the future.

Elite/Folk Bilingualism: A Historical Perspective

One of the earliest references I have been able to find to these terms is Anderson (1976) who, in referring to the language arena in Texas at the time talks about "popular" as opposed to "elite" bilingualism, characterizing the difference between them in the following manner: "popular bilingualism is the uncultivated use of two languages, most frequently English and Spanish in this part of the country, for the purpose of communication. It follows then, that elite bilingualism is the cultivated use of two languages" (Anderson, 1976, p. 497). This early formulation thus sets the scene for a hierarchical division of types of bilingualism and bilingual education, which we see developing in later writings on the topic.

A more well-known formulation of this dichotomy refers to "elite" and "folk" bilingualism, a distinction created by Fishman in 1977 in which he refers to folk bilinguals as language minority groups whose own language does not have a high status in the dominant language society in which they reside, while elite bilinguals are those who speak a dominant language in a particular social group and who also speak another language which gives them additional value within this group.

Paulston (1975, cited in Harding & Riley, 1986, p. 24) refers to "elite" bilingualism as "the privilege of middle-class, well educated members of most societies," a type of bilingualism which typically involves prestigious international languages (Edwards, 2004). For this reason, Baker and Prys Jones (1998) use the term "prestigious bilingualism." Valdés and Figueroa (1994, p. 12), on the other hand, talk about "elective" bilingualism in the sense that this concerns

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> individuals who choose to become bilingual and who seek out either formal classes or contexts in which they can acquire a foreign language . . . and who continue to spend the greater part of their time in a society in which their first language is the majority or societal language.

In the European context, James (2000, p. 31) observes that "English has moved from being a component of 'elite' bilingualism through 'cultural' bilingualism . . . to 'popular' bilingualism." In other words, English has become "popular" or widespread in many European countries, in the sense of being present "within the ecology of inter-society. . . or . . . intra-society communication," not just being used within education systems.

The related concept of "optional bilingualism" also focuses on the element of choice involved in this type of bilingualism. Elite bilinguals consciously choose to become bilingual or multilingual due to a perception of the advantages that will result from this decision. This determination has a number of important consequences, such as the type of education program selected and the consideration of actions taken to further incipient bilingualism or multilingualism in these individuals. The term "privileged bilingualism" echoes Paulston's (1975) notion of elite bilingualism as being available only to a small number of individuals who have the means to gain access to it (de Mejía, 2002).

The key element of choice is not associated with the category of folk bilingualism, which has been characterized as "the conditions of ethnic groups within a single state who have to become bilingual involuntarily, in order to survive" (Tosi, 1982, cited in Harding & Riley, 1986, p. 24). These have also been referred to as "circumstantial" bilinguals (Valdés & Figueroa, 1994) as they are often obliged to learn another language in order to be able to function effectively in the majority language society due to circumstances of immigration or displacement. Frequently, the first language of these bilinguals is in danger of being replaced by the dominant societal language, and this constitutes a subtractive context (Baker, 2006). It is interesting to note in this respect, however, that in the Japanese context, bilinguals who do not speak Japanese as one of their native languages would be likely to be classified as "folk" bilinguals (Masayo, 2001), thus emphasizing the importance of the national language in the recognition of the status of being bilingual.

Another set of terms: "voluntary/involuntary bilingualism" relates to the distinction introduced by Ogbu (1982) between voluntary and involuntary minorities in the USA. The use of these terms refers to the idea that African slaves and Mexican and Puerto Rican minorities have a different ("involuntary") type of relationship to the wider US society than do "voluntary" immigrants, such as European immigrants in the early twentieth century, and Central American and Southeast Asian immigrants in the 1970s and 1980s. The use of these terms foregrounds the notion that, while it is one thing to "choose" voluntarily to become bilingual from a position of privilege, it is quite another to have this imposed by circumstances, such as war, conquest, or slavery (de Mejía, 2002).

A study of the use and attitudes toward the Spanish language in New York (García, Martínez, Disla, & Paulino, 1988) reveals that the differing attitudes observed with regard to elite and folk bilingualism seem to stem from the fact that most of the bilinguals from the Hispanic communities interviewed in the study had learned English in their countries of origin. The authors conclude that "their linguistic behavior and attitudes vis-à-vis bilingualism are shaped by the notions of elite bilingualism which they bring from their country of origin, as well as by the prejudice toward folk bilingualism which they encounter in the United States" (García et al., 1988, pp. 508–9).

This clearly indicates the influence of social values in the differential valuation of these types of bilingualism, and, as Hélot (2007) notes, the two terms are clearly socially and ideologically marked and do not adequately account for the multiplicity of situations of bilingualism and multilingualism obtaining in the world. Indeed, Edwards (2004, p. 27)

reminds us that the distinction between these two traditions may well become further blurred as "elite bilingualism need not rule out motives of necessity more usually associated with the folk variety."

Key Issues in the Development of Elite/Folk Bilingual Education

Romaine (1999) criticizes what she sees as a bias in the literature toward the study of "elite" rather than "folk" bilingualism, with a resulting narrowness of focus to research questions posed in relation to children's simultaneous bilingual development. The author maintains that this has resulted in bilingualism and bilingual education being conceived of differently in minority and majority populations.

Smith (2003) endorses Romaine's vision of these distinctions, noting that these two traditions have usually been separated in the Mexican context. He adds that, in elite situations,

> bilingualism generally involves at least one European language of wider communication (such as English or Spanish), and bilingual education is typically undertaken voluntarily by families who recognize the prestige of bilingualism and are able and willing to devote considerable financial resources to raising bilingual children. (Smith, 2003, p. 9)

He also recognizes that in "folk" contexts, such as Mexico's indigenous and immigrant communities, the home language of young bilinguals is often underdeveloped and ignored in schools, leading to subtractive rather than additive bilingual processes.

Considering this historical imbalance and separation between these two traditions, we may ask how far it is possible to reconcile them and why it might be important to do so. Smith (2003) provides a number of powerful reasons for considering the two as related phenomena. First of all, he argues that, as from a cognitive perspective folk and elite bilinguals acquire new languages and develop languages they already use in similar ways, we should recognize the similarity of the underlying principles involved in both forms of bilingualism and bilingual education. He also raises the question of the implications of the rapid growth of English (associated with "elite" bilingual education programs) in relation to the disappearance of many of the world's smaller indigenous languages and asks how far the development of English should be seen as a priority in communities which are struggling to maintain the vitality of their native languages.

Smith's final justification for considering both forms of bilingual education is perhaps the most convincing of all. He maintains that "historical, institutional and ideological separation has prevented us from seeing ways in which [these programs] may actually be quite similar" (Smith, 2003, pp. 10–1). He goes on to say that issues concerning community identity and language allocation in bilingual programs, teacher training, and government-sponsored language policies and the role of literacy in bilingual teaching and learning are common concerns in any type of bilingual program and that educators can learn from ways in which these questions have been handled in different contexts.

Hamel (2008) also argues for an integrated policy of language and education in Latin America in relation to the specific domains of indigenous (folk) bilingual education and those pertaining to elite private education originating from European immigrant communities who settled in the subcontinent. He notes: "The two types of communities and their schools position themselves at opposite poles of social stratification and the scales of extreme inequality that characterize all Latin American countries, and their actors hardly ever cross paths or exchange words" (Hamel, 2008, p. 59).

In relation to Smith's vision of the positive value of educators seeing how common issues of language and education policy and practice have been dealt with in other contexts,

Hamel considers that there are two specific ways in which elite bilingual education programs can contribute to indigenous education. The first refers to the creation of contexts of learning which help to foster the development of self-reliance in minority language students' use of their own languages and cultures, enabling them to be "confident in their capability of learning and where the whole environment stimulates enrichment education" (Hamel, 2008, p. 92). Hamel sees the second, more "technical," contribution of elite bilingual education with regard to the development of communicative approaches regarding content teaching aimed at the development of linguistic and communicative proficiency in a second or foreign language. He considers this an area in which elite programs have a tradition of success, whereas in indigenous schools, these concerns are still in their infancy.

This discussion recalls the important contribution made by Hornberger (1991, p. 226) in her revisiting of bilingual education typologies, where she contends that enrichment bilingualism should be used in the broader sense that Fishman (1976) originally intended for it, "extending it beyond its elitist origins." She thus sees the defining characteristics of enrichment bilingual education as the fact that "majority language speakers as well as minority language speakers learn a second language; and the minority language is recognized as a potential resource for the nation" (Hornberger, 1991, p. 234). In this way language development and additive bilingualism, as well as cultural pluralism, are promoted and extended for all bilingual students.

Kendall King (2005) in her work with the Saraguro indigenous community in Ecuador has extended Hornberger's discussion by referring to the creation of an alternative enrichment bilingual education program which combines the additive goals of the "elite" model with speakers and languages which tend to be associated with "folk" bilingual educational provision. The author appeals for studies on Andean bilingual education "to move beyond the traditional dichotomy of . . . enrichment (typically English oriented) programs promoting additive bilingualism for elite students, on the one hand, and transition (Spanish oriented) programs promoting subtractive bilingualism for indigenous groups, on the other" (King, 2005, p. 11).

Conclusions and Future Developments

So what conclusion can we come to with regard to elite and folk bilingual education? One point which has become clear, I would maintain, from the above discussion is that in the words of Anderson (1976, p. 499), "Popular and elite bilingualism can be and must be reconciled." A dichotomy which may have been useful in its original formulation to draw attention to the differing values and ideological assumptions associated with these two traditions needs to be questioned and refashioned. We need to go beyond a binary vision in order to be able to represent the nature of bilingualism and multilingualism more appropriately in relation to the complex, shifting realities of the world today. As García (personal communication, March 20, 2005) acknowledges with regard to the situation in the USA, "The old paradigms of bilingual education do not work anymore. Bilingual situations today are fluid." The implication is that if we continue to use a naturalized discourse which focuses on dichotomies, barriers will continue to exist and the lack of a shared discourse will be exploited to create division, so that bilingualism in minority languages will continue to be seen as a disadvantage (Hélot & de Mejía, 2008).

In this article I have tried to suggest that the distinction between elite and folk bilingual education which was coined in the 1970s needs to be seen in the light of current global tendencies, where developments in majority language bilingual programs may be seen as having relevance to minority community programs, and where the linguistic and cultural

experiences of "immigrants, exiles, refugees and other 'transnationals'" may help to enrich bilingual and multilingual educational processes from their "double vision" and their "multiple ways of using . . . languages to voice an alternative worldview and a critical perspective" (García, Skutnabb-Kangas, & Torres-Guzmán, 2006, p. 10).

Although much of this discussion has centered on developments in Latin America, this does not mean to say that this is the only part of the world where these distinctions are discussed. For example, recently, Hélot (2007) has focused on the situation in France and has argued that the dichotomy of elite and folk bilingualism and bilingual education serves as part of a system of representations which reflects the unequal character of different bilingual situations and which, in turn, becomes discriminatory in itself. She reminds us that the distinction between folk and elite bilingualism still underlies the educational language policies of many European countries, which, while investing a great deal in developing elite forms of bilingual education in dominant languages, neglect and even stigmatize the bilingualism of children of immigrant backgrounds. The author recommends an integrated approach, or, in other words, "a way of thinking together of middle class children's bilingualism and that of minority (children), analyzing similarities, rather than differences" (Hélot, 2007, p. 38). Thus, Hélot maintains that the rejection of a dichotomized viewpoint may lead to a more nuanced vision of bilingualism in its social context, which may help to influence the social actors and to reduce the inequality between the two groups.

I would like to end this discussion of contrasting traditions by referring to an image which captures the double nature of the phenomenon under discussion, an image of "claroscuros" characterized by Barriga Villanueva (2007, p. 14) in her discussion of bilingualism in Mexico, in which "the luminous side is related to a high level of culture, of personal prestige . . . ; the dark side . . . is that which is related to the power and domination of a hegemonic language." I would suggest that one way forward in the 21st century would be to problematize these clear, unequal distinctions and help those interested in the development of a more integrated, equalitarian vision of bilingualism and bilingual education to go beyond these binary oppositions toward a deeper understanding of these complex, multidimensional interrelations.

SEE ALSO: Bilingual Education; Bilingualism and Bilinguality; Linguistic Diversity; Minority Languages in Education; Multilingual Education in Latin America; Multilingualism; Multilingualism and English

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Ellis, Nick

PATRICK REBUSCHAT

Nick Ellis (1953–) is a British psychologist who is best known for his influential research and publications on the cognitive aspects underlying second language (L2) acquisition and processing. A leading figure in L2 research, his work covers a wide range of topics, including implicit and explicit learning, emergentism, usage-based approaches to language acquisition, construction grammar, frequency effects in language, reading and spelling acquisition, and developmental dyslexia. In terms of methodology, Ellis has addressed these topics by means of behavioral experiments (e.g., Ellis, 1993; Ellis & Schmidt, 1997, 1998; Ellis & Sagarra, 2010), analysis of large-scale corpora (e.g., Ellis & Ferreira-Junior, 2009; Ellis & O'Donnell, in press), and computational modeling (e.g., Ellis & Schmidt, 1997, 1998; Ellis & Larsen-Freeman, 2009a). His research has been funded by a substantial number of grants, including highly competitive awards from the National Science Foundation (United States), the Economic and Social Research Council, and the Medical Research Council (both United Kingdom).

Ellis read psychology, philosophy, and physiology (PPP) at the University of Oxford gaining a BA in 1974. He then moved to the University College of North Wales (now Bangor University), to pursue postgraduate studies in cognitive psychology, receiving his PhD in 1978. After completing his doctorate, Ellis joined the School of Psychology at Bangor as a faculty member, an affiliation that would last for 26 years. In 2004, Ellis moved to the University of Michigan, where he is currently research scientist at the English Language Institute, professor of psychology, professor of linguistics, and associated faculty at the Center for the Study of Complex Systems. In 1992, Ellis was visiting professor at Temple University (Japan campus), in 2003, visiting professor at the University of Auckland, New Zealand, and in 2011, external senior fellow at Freiburg Institute for Advanced Studies. In addition, he is honorary research fellow at the School of Psychology, Bangor University.

Ellis is one of the most prolific contributors to the field of second language acquisition (SLA), with over 150 published journal articles and chapters to his name. His work has appeared in key journals such as *Studies in Second Language Acquisition*, *Language Learning*, *Applied Linguistics*, *Modern Language Journal*, *Language and Cognitive Processes*, *Annual Review of Cognitive Linguistics*, *Annual Review of Applied Linguistics*, *Quarterly Journal of Experimental Psychology*, and *Applied Psycholinguistics*. He also contributed a significant number of invited chapters to important state-of-the-art volumes (e.g., Robinson, 2001) and handbooks (e.g., Doughty & Long, 2003; Kroll & de Groot, 2005). In addition to his article publications, Ellis edited three influential volumes, namely *Handbook of Spelling: Theory, Process and Intervention* (Ellis & Brown, 1994), *Implicit and Explicit Learning of Languages* (Ellis, 1994), and more recently, *Handbook of Cognitive Linguistics and Second Language Acquisition* (Robinson & Ellis, 2008). He is also the coeditor of three special journal issues on "Language Emergence: Implications for Applied Linguistics" (Ellis & Larsen-Freeman, 2006a); "Language as a Complex Adaptive System" (Ellis & Larsen-Freeman, 2009b); "Input and Second Language Construction Learning: Frequency, Form and Function" (Ellis & Collins, 2009); and a special journal section on "Constructing a Second Language" (Ellis & Cadierno, 2009).

Nick Ellis has presented his work widely (over 240 presentations). He has given keynote addresses and invited talks throughout the world, from Japan, New Zealand, Taiwan,

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Singapore, and China via Turkey, Switzerland, Germany, France, Italy, Sweden, Finland, Denmark, Belgium, the Netherlands, Spain, the United Kingdom, and Ireland to the United States and Canada. Ellis is also well known for his service to the profession, especially in his role as editor (1998–2002) and general editor (2006–) of *Language Learning*, one of the flagship journals in the field. He is on the advisory board of several journals, adviser to the *Oxford University Press Applied Linguistics* series, and serves as a reviewer for many academic journals, publishers, and funding bodies, including the European Science Foundation, the National Science Foundation, the Wellcome Trust, and the Medical Research Council.

Topics and Ideas

The Associative-Cognitive CREED

Nick Ellis's views on the nature of language and cognition are expressed in a series of influential review articles and position papers (see especially Ellis, 1998, 2002, 2005, 2006a, 2006b, 2006c, 2007, 2011a, 2011b). Of particular relevance to the applied linguistics community will be the Associative-Cognitive CREED (Ellis, 2006a), a framework that summarizes Ellis's position succinctly. The Associative-Cognitive CREED holds that L2 acquisition is **C**onstruction-based, **R**ational, **E**xemplar-based, **E**mergent, and **D**ialectic. The basic units of language representation are *constructions*, that is, conventionalized form-meaning pairings, entrenched in the learner's mind. Constructions vary in size and complexity, ranging from simpler units such as morphemes (*anti-*, *-ed*) and words (*papaya*, *pineapple*) to more complex constructions such as idioms (*know the ropes*) or the ditransitive (SUBJ-V-OBJ1-OBJ2, *She gave him a mango*, *He baked her a cake*). Constructions are learned by exposure to positive input and by means of general cognitive abilities, that is, we learn language in essentially the same way as we learn anything else. Because of this, L2 acquisition is governed by the general laws of human learning, both associative (Ellis, 2006b, 2006c) and cognitive. Importantly, how a given construction is acquired and processed will depend, to a large degree, on its probability of occurrence in the input. Our tacit linguistic representations reflect the co-occurrence statistics of different constructions in the environment, and we make extensive use of this information when comprehending and producing utterances. Ellis (2002) provides a thorough discussion of the role of frequency in language acquisition and processing.

Constructions are frequently ambiguous—Ellis (2006a) gives the example of utterances such as "Wonderful!," "One, two, three," "Once upon a time," and "Won the battle, lost the war," which all share the opening sounds [wʌn], though the meaning in each case is different. Despite this ambiguity, language processing proceeds efficiently and we only rarely assign the wrong interpretation. Our language processor is said to be *rational* in the sense that its behavior is as efficient as it could be, given the problem it must solve. The mechanism is "optimally adapted" to its environment and deals with problems like ambiguity in the speech signal by considering several sources of information, including the frequency, recency and context of constructions. While much of our language use is formulaic, any theory of language also needs to account for our ability to generate novel constructions. According to the CREED, our linguistic knowledge corresponds to a "frequency-tuned conspiracy of memorized exemplars of construction usage" (Ellis & Larsen-Freeman, 2006b, p. 562). Some of these exemplars are more abstract and generative than others, e.g., the English plural construction [NOUN+*s*], the regular past tense construction [VERB+*ed*], or the covariational conditional construction (The Xer the Yer, as in: *The more, the merrier; The more you eat, the more you want*, etc.) We acquire these types of patterns by means of abstraction from a significant amount of exemplars, that is, they are *exemplar-based*. After

encountering a sufficiently large number of plural words (*dogs*, *cats*, *tables*, *chairs*, etc.) or past tense forms (*walked*, *jumped*, *placed*, etc.), we retain not just the specific exemplars, but also construct a representation of the underlying pattern (NOUN+*s* and VERB+*ed*, respectively).

Language is seen as a complex, dynamic system that *emerges* from interrelated patterns of experience, cognitive mechanisms, and social interaction (see the contributions in Ellis & Larsen-Freeman, 2009b). The complexity of language is the result of relatively simple developmental processes being exposed to a highly complex environment. The regularities that are captured in linguistic analyses (e.g., parts of speech, syntactic roles, etc.) emerge as the learner's perceptual, cognitive, and social functions derive structure from the environment. However, these regularities are held to be very different from the mental representations that underpin actual performance. That is, the brain does not process information by following a computational "rule," even though we can describe the linguistic behavior as being rule-like. According to the emergentist view, the initial state of language acquisition does not involve innate universal grammar, but builds instead from universals of social interaction, human embodiment, and the physics of our environment. From this starting point, we quickly respond to patterns present in the input and, through associative learning mechanisms, rapidly acquire frequency-tuned representations. Importantly, this learning process quickly becomes optimized to our specific linguistic environment, that is, the system becomes tuned and committed to the first language (L1). The flipside of this optimal adaptation to our environment is that, when we begin learning an L2 later in life, our experience with the new language is affected by prior associations. We perceive the L2 input through mechanisms that were tuned for a different linguistic system, which explains why L2 acquisition suffers from transfer effects. Ellis (2006b, 2006c) provides a convincing account of L1 interference in terms of associative learning theory.

Adult learners generally fall short of achieving native-like competence in the L2, and social-interactional or pedagogical intervention, for example, in the form of feedback, might be necessary to further promote acquisition. One of the reasons why feedback and other instructional techniques work is that they help the learner notice relevant cues in the input that they would not register otherwise. Adult learners can therefore overcome the limits imposed by a learning mechanism that is optimized for the L1 when provided with additional evidence from other discourse participants. In this sense, L2 acquisition is also a *dialectic* process, involving the language learner in a "tension between the conflicting forces of their current interlanguage productions and the evidence of feedback . . . that allows socially scaffolded development" (Ellis, 2006a, p. 111).

Implicit and Explicit Learning and Memory

One of the most widely debated questions in SLA research concerns the role of implicit and explicit learning and memory, and Nick Ellis has been an active contributor to this debate for the past two decades (see e.g., Ellis, 1993, 1994, 1995, 2005, 2007, 2011a). According to Ellis (2005, p. 306), the "bulk of language acquisition is implicit learning from usage," and most linguistic knowledge is unconscious. However, while most of L1 acquisition involves implicit learning, these mechanisms are insufficient for L2 acquisition because the learner's system is already tuned to the native language. L2 learners must therefore overcome the processing habits of the L1 by recruiting additional resources of explicit learning and knowledge. While there is no direct interface—explicit and implicit knowledge are quite distinct, involving different types of representation and different neural substrates, and one form of knowledge cannot be converted into the other—there is nonetheless a "weak interface." Explicit knowledge can affect implicit learning in a variety of ways (see Ellis, 2006a, 2007, for discussion). For example, it can help us overcome our L1-based,

default processing strategies by facilitating the noticing of linguistic features that we would fail to perceive otherwise. It can also promote the process of "noticing the gap," that is, when learners notice that the target language form is different from their own usage. Finally, explicit knowledge also plays an important role in the proceduralization and automatization of the L2, with conscious knowledge often guiding output practice, particularly in the initial stages of development.

Nick Ellis's work has had great impact on the field of SLA. Through his research and publications, Ellis played a major role in establishing SLA as a cognitive science and in connecting SLA researchers with other cognitive scientists (see e.g., the contributions in the seminal collections: Ellis, 1994; Ellis & Larsen-Freeman, 2006a, 2009b; Robinson & Ellis, 2008). Many applied linguists will have first encountered key topics in cognitive science and neuroscience by reading Ellis's review articles. Important examples include his publications on emergentism (e.g., Ellis, 1998, 2011a, 2011b), frequency effects (e.g., Ellis, 2002), and associative learning (e.g., Ellis, 2006b, 2006c). In addition, Ellis's research has also had important implications for our understanding of L2 acquisition. His studies support emergentist accounts of language and demonstrate how constructions emerge from usage (e.g., Ellis & Ferreira-Junior, 2009; Ellis & Larsen-Freeman, 2009a). His work highlights the importance of frequency in language (Ellis & Schmidt, 1997, 1998; Ellis, 2002) and of explicit knowledge in promoting L2 development (Ellis, 2005). Finally, Ellis's research also illustrates the central role played by learnt selective attention (e.g., Ellis & Sagarra, 2010) and associative learning processes in L2 acquisition (Ellis & Schmidt, 1997; Ellis, 2006b, 2006c).

SEE ALSO: Cognitive Linguistics of Second Language Acquisition; Connectionism; Corpus Study: Cognitive Implications; Emergentism; Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition

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Ellis, Rod

ROSEMARY ERLAM

Many readers will be familiar with Rod Ellis (1944–) as the author of a number of books in the area of second language acquisition, some of which they may well have on their bookshelves. The most ambitious of these, *The Study of Second Language Acquisition* (2008), presents an encyclopedic review of the field with which Rod's name has become synonymous. Rod's acclaim as a researcher and academic is, however, the end point of a professional career which encompasses three distinct stages, that of teacher, teacher educator, and, finally, researcher. In this respect it is a trajectory not unlike that followed by other applied linguists.

Teacher

Rod's career as a teacher began when he left the United Kingdom in 1965 with the aim of working and travelling overseas. Having recently completed a BA in English Literature at the University of Nottingham, teaching was an obvious choice and so he ended up teaching English at a Berlitz school in northern Spain. This work opportunity also gave him the chance to learn another language, Spanish, in a naturalistic setting. The experience contrasted dramatically with the more traditional way he had been taught German and French (under the translation method) and was to challenge ideas he had formed about language learning.

After four months in Spain Rod returned to London and took a job as a primary school teacher in London. He quickly learnt the need for effective classroom management and communication skills after the initial shock of finding himself with a class of "out of control" 10-year-olds. A year later, however, Rod was keen for some more overseas teaching experience and so took a position in a newly established secondary school in Zambia. From his point of view, it was the experience of a lifetime. The school was poorly resourced, with no electricity and few teaching materials, but the students were highly motivated and Rod joined a staff of other young teachers. One of these was Brian Tomlinson who, like Rod, was quick to identify a lack of suitable textbooks. Together they set about constructing their own grammar-teaching materials, which were eventually published as *English Through Situations* (1973). This was the first stage of Rod's lasting interest in textbook design.

Teacher Educator

Rod's teaching experience in Africa left him with a desire to pursue further study and so in 1970 he began an MA in Linguistics and Language Teaching at Leeds University. Following this he was appointed to a position as Lecturer at Nkrumah Teacher's College in Zambia. Thus began the second stage of Rod's career, that of language educator. Not long after beginning work at the Teacher's College Rod was joined by Brian Tomlinson and once again they enjoyed working together. The lectures that they gave to teacher trainees on the various aspects of teaching later became a co-authored book published in

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1980, *Teaching Secondary English: A Guide to the Teaching of English as a Second Language in Africa.* Rod's contribution to this book was a distillation of his early knowledge of language teaching, gained from his professional experience and study. Rod is, in retrospect, quick to identify a number of gaps—for example, there is very little on how learners learn a second language, and nothing on learner autonomy or on the social and pragmatic aspects of language use.

Researcher

In 1978 Rod returned to the UK from Zambia and started another Master's, in Education, at Bristol University. This course opened up for him the world of second language acquisition and allowed him to familiarize himself with up-to-date research in the area. It also allowed him to develop skills in research and, more importantly, helped him discover that he wanted to be a researcher. A job as Senior Lecturer at St. Mary's College, Strawberry Hill, London, afforded Rod the opportunity to take the next logical step—that of doctoral study. In his PhD he was interested in whether instructed language learners manifest the same order and sequence of acquisition as naturalistic language learners, and in what ways the interactions that they are part of in the classroom impact on their L2 development. The thesis led to the publication of *Classroom Second Language Development* (1984). At the same time Rod started working on an introductory textbook on second language acquisition, the highly successful *Understanding Second Language Acquisition* (1985). This book is still in print, has been translated into several languages, and in 1995 won the first BAAL prize for the best book in Applied Linguistics.

In 1984 Rod was appointed Head of the ELT Department in the Ealing College of Education (now Thames Valley University). This position afforded him the opportunity to continue with his research and so he pursued a number of areas of interest which were influential in shaping understanding of second language acquisition processes. One of these was the role that interaction plays in L2 learning. Another was the variability of learner language, an interest which eventually led to a book called *Second Language Acquisition in Context* (1987). This interest was the forerunner of a project that Rod was to embark on nearly 20 years later—the Implicit and Explicit L2 knowledge research project. A third project, entitled "The acquisition of German in a classroom context," spearheaded another enduring research interest, that is, the relationship between individual learner factors (language aptitude, motivation, etc.) and language learning. It also gave Rod a first taste of the experience of conducting qualitative research; he became firmly convinced of the advantages of research that drew on both quantitative and qualitative traditions. A new book published around this time, *Instructed Second Language Acquisition* (1990), dealt with another theme that has remained of interest to Rod throughout his career: investigating how research could be applied to teaching practice.

In 1989 Rod moved to Temple University Japan (TUJ) in order to teach courses on the Master's and Doctoral programs. This was also an opportunity for Rod to develop expertise in another area in which he has made a significant and highly successful contribution to the world of applied linguistics: he began to supervise doctoral students. Many of Rod's students have gone on to become well-known researchers in second language acquisition. During his time at Temple, Rod consolidated some of the ideas he had about grammar teaching and published what was to become a seminal article, "Second Language Acquisition and the Structural Syllabus" (1993). An enduring interest has been different approaches to focus on form in an instructional context.

While he was at Temple Rod published *The Study of Second Language Acquisition* (1994). This first edition was encyclopedic in its coverage of the field and comprised 824 pages,

61 of which were references. Its size represented the huge growth that had taken place in the field of second language acquisition since the publication of *Understanding Second Language Acquisition* in 1985. Henry Widdowson joked that it provided the reader with both mental and physical exercise. It went on to win the Duke of Edinburgh prize for the best book in applied linguistics of its year and was translated into Japanese and Chinese. At around the same time Rod published another textbook, *Let's Use English* (Ellis, Mbhele, Thembela, & Robinson, 1985–90), for primary school teachers in South Africa. This textbook drew on many of the ideas Rod had developed about language teaching through his study of and research in second language acquisition. It also enabled him to pursue further his interest in establishing links between theory and practice.

In 1993 Rod was appointed Professor in the School of Education at Temple University in Philadelphia, a position which necessitated a move to the USA. At Temple, Philadelphia, Rod was responsible for the TESOL program, teaching Master's-level courses and supervising doctoral students. His five years in Philadelphia were also extremely productive in terms of research and publications. He was able to continue with his already established interest and work in textbook writing, producing a series of graded readers and accompanying teacher guide for African primary school students, and co-writing an EFL textbook series, *Impact Grammar* (Ellis, Gaies, & Rost, 1998), for Asian students and a new English course for the West Indies, *Let's Work with English* (Ellis & Simmons, 2000). The *Impact Grammar* series was an opportunity for Rod to put his theoretical ideas about grammar teaching into practice. His book *SLA Research and Language Teaching* (1997a) presented and discussed a number of options for teaching grammar. It was also an opportunity for him to articulate the belief that research and theory should inform the practice of language teaching and vice versa. During this period Rod was invited to contribute to the Oxford Introductions to Language Study Series and the resulting text, *Second Language Acquisition* (1997b), is one that many readers are likely to be familiar with. The writing of it was a challenge in that Rod had to condense, into no more than 90 pages, an overview of the field he had previously taken over 800 pages to describe. This book has been very successful as an introductory textbook, however, and is still used today.

Research articles written by Rod around this time pointed to two growing areas of interest. The first of these was the role of interaction in classroom L2 acquisition, and the second was the use of tasks in the classroom. A later publication, *Task-based Language Teaching and Learning* (2003), allowed Rod to combine to some extent these two interests; it reflected his belief in the role that tasks could play in fostering the type of interaction that could lead to language learning. An edited volume was published later (*Planning in Task-based Performance*, 2005).

In 1998 Rod made a career move following an earlier visit to the Antipodes, where he had come to the conclusion that New Zealand was a place where he and his family could settle and be happy. He took over from Jack Richards as Professor and Director of the Institute of Language Teaching and Learning at the University of Auckland. Rod had the challenge and satisfaction of being instrumental in forming a new department, the Department of Applied Language Studies and Linguistics (DALSL), where he still holds the professorial chair.

A professional highlight for Rod in recent years has been a number of research projects that have allowed him to focus on and bring together his research interests. For example, a project looking at the incidental focus on form that can occur while learners are engaging in communicative tasks allowed him to combine his interests in classroom interaction and form-focused instruction. Another project, conducted with input from Cathie Elder, Shawn Loewen, and others, aimed to develop measures of implicit and explicit language knowledge and to use these measures to look at the effectiveness of different types of form-focused instruction and assess how these impact on language learning. This project

led to the publication of a co-authored book, *Implicit and Explicit Knowledge in Second Language Learning, Teaching and Testing* (2009). Another project looked at the effects of different types of written corrective feedback on L2 learning, contributing to the lively debate on the role that corrective feedback plays in L2 learning.

Recent years have also seen the publication of a number of highly successful books. Highlights include *Learning a Second Language through Interaction* (to which a number of Temple students contributed, 1999), *Form-focused Instruction and Second Language Learning* (2001), and, with Gary Barkhuizen, *Analyzing Learner Language* (2005).

When asked to reflect on his professional career, Rod comments that he feels extremely grateful for the opportunities he has had and the people that he has worked with. I am sure that those who know Rod and have worked with him would likewise express their gratitude but, in equal measure, their admiration.

SEE ALSO: Form-Focused Instruction; Implicit Learning in Second Language Acquisition; Individual Differences in the Classroom; Instructed Second Language Acquisition; Materials Development

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Emergentism

NICK C. ELLIS

The Mysterious Process

Saussure (1916) characterized the units of language as linguistic signs, the signifiers of linguistic form and their associated signified functions, concepts, or meanings. In Saussure's view linguistic signs arise from the dynamic interactions of thought and sound—from patterns of usage: "what happens is neither a transformation of thought into matter, nor a transformation of sound into ideas. What takes place is a somewhat mysterious process by which 'thought-sound' evolves divisions, and a language takes place with its linguistic units in between these two amorphous masses" (pp. 110–11). Thus began structuralist linguistics, the study of language as a relational structure, whose elemental constructions derive their forms and functions from their distributions in texts and discourse. This approach had significant impact upon applied linguistics too. Fries, the founder of the English Language Institute at the University of Michigan, distinguished between lexical and structural meaning, with structural meaning concerning the patterns relating a particular arrangement of form classes to particular structural meanings. In this view, language acquisition is the learning of an inventory of patterns, as arrangements of words, with their associated structural meanings. Fries's (1952) *Structure of English* presented an analysis of these patterns. Harris, founder of the first US linguistics department at the University of Pennsylvania, developed rigorous discovery procedures for phonemes and morphemes based on the distributional properties of these units. For Harris, form and information (grammar and semantics) were inseparable. He proposed that each human language is a self-organizing system in which both the syntactic and semantic properties of a word are established purely in relation to other words, and that the patterns of a language are learned through exposure to usage in social participation (Harris, 1991).

Structuralism, the dominant approach in linguistics for the earlier part of the 20th century, was overtaken in the 1960s by generative approaches. Grammar became top-down and rule-governed, rather than bottom-up and emergent. It was modularized, encapsulated, and divorced from performance, lexis, social usage, and the rest of cognition. The analysis of linguistic structures as functional patterns and their "somewhat mysterious" emergence from usage was no longer pursued within generative linguistics.

Yet language and cognition are mutually inextricable; they determine each other. Language has come to represent the world as we know it; it is grounded in our perceptual experience. Language is used to organize, process, and convey information, from one person to another, from one embodied mind to another. Learning language involves determining linguistic structures from usage and this, like learning about all other aspects of the world, involves the full scope of cognition: the remembering of utterances and episodes, the categorization of experience, the determination of patterns among and between stimuli, the generalization of conceptual schemas and prototypes from exemplars, and the use of cognitive models, metaphors, analogies, and images in thinking. Language is used to focus the listener's attention to the world; it can foreground different elements in the theater of consciousness to potentially relate many different stories and perspectives about the same scene. What is attended is learned, and so attention controls the acquisition of language

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itself. The functions of language in discourse determine its usage and learning. Language use, language change, language acquisition, and language structure are similarly inseparable. There is nothing that so well characterizes human social action as language. Cognition, consciousness, experience, embodiment, brain, self, and human interaction, society, culture, and history are all inextricably intertwined in rich, complex, and dynamic ways.

Despite this complexity, despite its lack of overt government, instead of anarchy and chaos, patterning pervades the complex system of language. The patterns are not preordained by god, by genes, by school curriculum, or by other human policy, but instead they are emergent from the interactions of the agents involved—synchronic patterns of linguistic organization at numerous levels (phonology, lexis, syntax, semantics, pragmatics, discourse genre . . .), dynamic patterns of usage, diachronic patterns of language change (linguistic cycles of grammaticization, pidginization, creolization, . . .), ontogenetic developmental patterns in child language acquisition, global geopolitical patterns of language growth and decline, dominance and loss, need and education, etc.

Various disciplines within cognitive science (including cognitive psychology, child language studies, cognitive linguistics, corpus linguistics, and connectionism) focus upon their own local patterns of interest to try to understand the processes by which they come about. But above and beyond these particular specialties, other approaches (including emergentism, complex adaptive systems, and dynamic systems theory) recognize that there are general principles which characterize the emergence of patterns in complex systems whatever their content or scale. This entry will first consider some of the specific disciplines focusing upon the patterning of information and its creation in human mind, brain, culture, and society, before introducing the study of emergence itself. It concludes with a view of language as a complex adaptive system (CAS).

Local Perspectives Upon the Mysterious Process

An overview of the ways in which relevant disciplines are studying the origins of patterns in language can be conveniently organized by first focusing upon Saussure's linguistic sign. However effective, this does not imply that the structure of language is primary, far from it—we should look to meaning and social communication for that.

The closest modern parallel to the sign as a basic unit of language representation is the *construction* as studied broadly within approaches which fall under the general umbrella of *usage-based theories* of language acquisition, views which hold that we learn language incidentally while engaging in communication. Constructions are the fundamental units of language acquisition and reflect the most direct embodiment of learners' communicative intentions. Some of the basic tenets of usage-based approaches to language and its acquisition, many of them explicitly addressed by Saussure (1916), are:

- Language is intrinsically linked to human cognition and processes of perception, attention, learning, categorization, schematization, and memory.
- Language is intrinsically symbolic, constituted by a structured inventory of constructions as conventionalized form–meaning pairings used for communicative purposes.
- Adult language knowledge consists of a continuum of linguistic constructions of different levels of complexity and abstraction. Constructions can comprise concrete and particular items (as in words and idioms), more abstract classes of items (as in word classes and abstract constructions), or complex combinations of concrete and abstract pieces of language (as mixed constructions). Consequently, no rigid separation is postulated to exist between lexis and grammar.

- Constructions may be simultaneously represented and stored in multiple forms, at various levels of abstraction (e.g., concrete item: table+s = tables and [Noun] + (morpheme +s) = plural things).
- Linguistic constructions (such as the caused motion construction, X causes Y to move $Z_{path/loc}$ [Subj V Obj Obl]), e.g., "He pushed it along" or "Crotchety Aunt Gemima grumbled the baby up to bed") can thus be meaningful linguistic symbols in their own right, existing independently of particular lexemes. Nevertheless, constructions and the particular lexeme tokens that occupy them resonate together, and grammar and lexis are inseparable.
- Language structure emerges ontogenetically from usage in particular contexts. Development is slow and gradual, moving from an initial heavy reliance on concrete items to more abstract linguistic schemas. This process is crucially dependent on the type and token frequencies with which particular constructions appear in the input. Storage of wholes depends on token frequency, schematization depends on type frequency.

Allied approaches researching the interplay of language and cognition concentrate upon broadly different facets of patterning (with some overlap at the intersections):

Cognitive linguistic analyses of language catalogue the inventory of the constructicon investigating the ways in which constructions are symbolic, their defining properties of morphological, syntactic, and lexical form being associated with particular semantic, pragmatic, and discourse functions (Croft & Cruise, 2004).

Corpus linguistic analyses of large collections of language show how there are recurrent patterns of words, collocations, phrases, and constructions, that syntax and semantics are inextricably linked, and that grammar cannot be described without lexis, nor lexis without grammar (Sinclair, 1991).

Construction grammar analyses of language show that much of communication makes use of fixed expressions memorized as formulaic chunks, that language is rich in collocational and colligation restrictions and semantic prosodies, and that the phrase is the basic level of language representation where form and meaning come together with greatest reliability (Goldberg, 2006).

Psychological analyses *of perception* investigate the ways in which human embodiment and our perceptuo-motor systems govern our representation of the world and the ways that language can guide our attention to these representations (Barsalou, 2008).

Associative learning theory analyzes how the learning of constructions as form-meaning pairings, like of all cue-outcome contingencies, is affected by: factors relating to the form such as frequency and salience; factors relating to the interpretation such as significance in the comprehension of the overall utterance, prototypicality, generality, redundancy, and surprise value; factors relating to the contingency of form and function; and factors relating to learner attention, such as automaticity, transfer, overshadowing, and blocking (Ellis, 2002, 2008b).

Cognitive theories of categorization and generalization analyze how schematic constructions are abstracted over less schematic ones that are inferred inductively by the learner in acquisition (Harnad, 1987). Prototypes, exemplars which are most typical of a category, are those which are similar to many members of that category and not similar to members of other categories. People more quickly classify sparrows (or other average-sized, average-colored, average-beaked, average-featured specimens) as birds than they do birds with less common features or feature combinations like geese or albatrosses. Prototypes are judged faster and more accurately, even if they themselves have never been seen before—someone who has never seen a sparrow, yet who has experienced the rest of the run of the avian mill, will still be fast and accurate in judging it to be a

bird. Such effects make it very clear that although people do not go around consciously counting features, they nevertheless have very accurate knowledge of the underlying frequency distributions and their central tendencies. The prototype emerges as the conspiracy of memorized exemplars.

Constructionist child language researchers gather dense longitudinal corpora in order to chart the emergence of creative linguistic competence in children's analyses of the utterances in their usage history and their abstraction of regularities within them (Tomasello, 2003).

Learning theory recognizes three major experiential factors that affect cognition: frequency, recency, and context (Anderson, 2000). Learning, memory, and perception are all affected by frequency of usage: the more times we experience something, the stronger our memory for it, and the more fluently it is accessed. The more recently we have experienced something, the stronger our memory for it, and the more fluently it is accessed. The more times we experience conjunctions of features, the more they become associated in our minds and the more these subsequently affect perception and categorization; so a stimulus becomes associated to a context and we become more likely to perceive it in that context. The power law of learning describes the relationships between practice and performance in the acquisition of a wide range of cognitive skills—the greater the practice, the greater the performance, although effects of practice are greatest at early stages of learning, thereafter diminishing and eventually reaching asymptote. The power function relating probability of recall (or recall latency) and recency is known as the forgetting curve. These three factors pervade the emergence, form, access, and processing of all mental representations.

Connectionist, *competition*, and *rational* models of language demonstrate the ways in which generalizations emerge from the conspiracy of memorized instances, the ways in which different cues and their cue reliabilities compete for activation, and the ways in which these representations provide the best model of language that is available from the learner's sample of experience, one that is optimized in its organization for usage (Bates & MacWhinney, 1987; Elman et al., 1996; Anderson & Schooler, 2000; Christiansen & Chater, 2001).

Psycholinguistic theories of the mental representation of language show that fluent language users are sensitive to the relative probabilities of occurrence of different constructions in the language input and to the contingencies of their mappings to meaning (Ellis, 2002; Gaskell, 2007).

Probabilistic and frequency-based theories of language analyze how frequency and repetition affect and ultimately bring about form in language and how probabilistic knowledge drives language comprehension and production (Bybee & Hopper, 2001). Distributional analyses of language also show the importance of Zipf's law (that the frequency of words decreases as a power function of their rank in the frequency table) at all levels in determining the structure and network characteristics of linguistic systems and the effects of these properties on learning (Ferrer i Cancho & Solé, 2001).

Sociocultural theory analyzes how language learning takes place in a social context, involving action, reaction, collaborative interaction, intersubjectivity, and mutually assisted performance, and how individual language learning is an emergent, holistic property of a dynamic system comprising many dialectic influences—social, individual, and contextual—involving the learner in a conscious tension between the conflicting forces of their current interlanguage productions and the evidence of feedback, either linguistic, pragmatic, or metalinguistic, that allows socially scaffolded development (Lantolf & Thorne, 2006).

The Scientific Study of Consciousness, its neural correlates, and its involvement in learning and memory (Koch, 2004) shows there are different forms of language learning; broadly, the implicit tallying and chunking that take place during usage (Ellis, 2002) and explicit

> learning in the classroom, sometimes a consequence of communication breakdown (Ellis, 2005, sections 3–4). Implicit learning from usage occurs largely within modality and involves the priming or chunking of representations or routines within a module, with abstract schemas and constructions emerging from the conspiracy of memorized instances. It is the means of tuning our zombie agents, the menagerie of specialized sensori-motor processors that carry out routine operations in the absence of direct conscious sensation or control. It is largely automatized. It operates in parallel. In contrast, conscious processing is spread wide over the brain and unifies otherwise disparate areas in a synchronized focus of activity. Conscious activity affords much more scope for focused long-range association and influence than does implicit learning. It brings about a whole new level of potential associations. It operates serially. Consciousness too is dynamic; it is perhaps the prototype example of an emergent phenomenon: the stream of consciousness is one of ever-changing states, each cued by prior state and perceptual context, the units of consciousness being identifiable as patterns of brain synchrony in time. The dynamics of language learning are inextricably linked to the dynamics of consciousness, in neural activity and in the social world as well.

As these diverse research efforts illustrate, language usage involves agents and their processes at many levels, and we need to try to understand language emergence as a function of interactions within and between them. This is a tall order. Hence Saussure's "mysterious process" and his observations that

> to speak of a "linguistic law" in general is like trying to lay hands on a ghost. . . . Synchronic laws are general, but not imperative. [They] are imposed upon speakers by the constraints of common usage. . . . In short, when one speaks of a synchronic law, one is speaking of an arrangement, or a principle of regularity. (pp. 90–1)

Nevertheless, a hundred years of subsequent work within the disciplines introduced above has put substantial flesh on the bones, as you will see if you follow up on the readings. And more recently, work within emergentism, CAS, and dynamic systems theory (DST) has started to describe a number of scale-free, domain-general processes which characterize the emergence of pattern across the physical, natural, and social sciences. The next section considers language in this light.

Common Mysteries of Emergence

Emergentism and *complexity theory* (Elman et al., 1996; Ellis, 1998; MacWhinney, 1999; Ellis & Larsen-Freeman, 2006; Larsen-Freeman & Cameron, 2008) analyze how complex patterns emerge from the interactions of many agents, how each emergent level cannot come into being except by involving the levels that lie below it, and how at each higher level there are new and emergent kinds of relatedness not found below: "More is different." These approaches align well with DST, which considers how cognitive, social, and environmental factors are in continuous interactions, where flux and individual variation abound, and where cause–effect relationships are nonlinear, multivariate and interactive in time (Ellis & Larsen-Freeman, 2006; de Bot, Lowie, & Verspoor, 2007; Ellis, 2008a).

> Emergentists believe that simple learning mechanisms, operating in and across the human systems for perception, motor-action and cognition as they are exposed to language data as part of a communicatively-rich human social environment by an organism eager to exploit the functionality of language, suffice to drive the emergence of complex language representations. (Ellis, 1998, p. 657)

Language cannot be understood in neurological or physical terms alone, nevertheless—neurobiology and physics play essential roles in the complex interrelations; equally from the top down, though language cannot be understood purely by introspection, conscious experience is an essential part too.

Language considered as a CAS of dynamic usage involves the following key features.

- The system consists of multiple agents (the speakers in the speech community) interacting with one another.
- The system is adaptive; that is, speakers' behavior is based on their past interactions, and current and past interactions together feed forward into future behavior.
- A speaker's behavior is the consequence of competing factors ranging from perceptual mechanics to social motivations.
- The structures of language emerge from interrelated patterns of experience, social interaction, and cognitive processes.

The advantage of viewing language as a CAS is that it provides a unified account of seemingly unrelated linguistic phenomena including variation at all levels of linguistic organization; the probabilistic nature of linguistic behavior; continuous change within agents and across speech communities; the emergence of grammatical regularities from the interaction of agents in language use; and stage-like transitions due to underlying nonlinear processes.

Characteristics of Language as a CAS

The following are seven major characteristics of language as a CAS, which are consistent with studies in language change, language use, language acquisition, and with the computer modeling of these aspects, which is a core component of CAS research (The Five Graces Group, 2009).

Distributed Control and Collective Emergence

Language exists both in individuals (as idiolect) as well as in the community of users (as communal language). Language is emergent at these two distinctive but interdependent levels: an idiolect is emergent from an individual's language use through social interactions with other individuals in the communal language, while a communal language is emergent as the result of the interaction of the idiolects. Distinction and connection between these two levels is a common feature in CASs. Patterns at the collective level (such as bird flocks, fish schools, or economies) cannot be attributed to global coordination among individuals; the global pattern is emergent, resulting from long-term local interactions between individuals.

Intrinsic Diversity

In a CAS, there is no ideal representing agent for the system. Just as there is no ideal representative consumer in an economy; similarly, there is no ideal speaker-hearer for language use, language representation, or language development. Each idiolect is the product of the individual's unique exposure and experiences of language use (Bybee & Hopper, 2001). Sociolinguistics studies have revealed the large degree of orderly heterogeneity among idiolects, not only in their language use but also in their internal organization and representation.

Perpetual Dynamics

Both communal language and idiolects are in constant change and reorganization. Languages are in constant flux, and language change is ubiquitous (Hopper, 1987; Ellis, 2008a). At the individual level, every instance of language use changes an idiolect's internal organization. As we define language primarily through dynamical rules rather than by forces designed to pull it to a static equilibrium, it shares, along with almost all complex systems, a fundamentally far-from-equilibrium nature (Holland, 1995).

Adaptation Through Amplification and Competition of Factors

CASs generally consist of multiple interacting elements, which may amplify and/or compete with one another's effects. Structure in complex systems tends to arise via positive feedback, in which certain factors perpetuate themselves, in conjunction with negative feedback, in which some constraint is imposed (for instance, due to limited space or resources). Likewise in language, all factors interact and feed into one another.

Nonlinearity and Phase Transitions

In complex systems, small quantitative differences in certain parameters often lead to phase transitions, that is, qualitative differences. Elman (2005) points out that multiple small phenotypic differences between humans and other primates (such as in degree of sociability, shared attention, memory capacity, rapid sequencing ability, vocal tract control, etc.) may in combination result in profound consequences, allowing means of communication of a totally different nature. Also, in a dynamic system, even when there is no parametric change, at a certain point in a continuous dynamic, system behavior can change dramatically, going through a phase transition. For example, constant heating of water leads to a transition from liquid to gas without having any parametric change. In language development, such phase transitions are often observed, for example developmental "lexical spurts" which often lead to rapid grammatical development (Bates & Goodman, 1997).

Sensitivity to and Dependence on Network Structure

Network studies of complex systems have shown that real-world networks are not random, as was initially assumed, and that the internal structure and connectivity of the system can have a profound impact upon system dynamics (Barabási, 2002). Similarly, linguistic interactions are not via random contacts; they are constrained by social networks. The social structure of language use and interaction has a crucial effect in the process of language change, and language variation and the social structure of early humans must also have played important roles in language origin and evolution.

Change is Local

Complexity arises in systems via incremental changes, based on locally available resources rather than via top-down direction or deliberate movement toward some goal. Similarly, in a complex systems framework, language is viewed as an extension of numerous domain-general cognitive capacities such as shared attention, imitation, sequential learning, chunking, and categorization. Language is emergent from ongoing human social interactions, and its structure is fundamentally molded by the preexisting cognitive abilities, processing idiosyncrasies and limitations, and general and specific conceptual circuitry of the human brain. Because this has been true in every generation of language users from its very origin, in some formulations language is said to be a form of cultural adaptation to the human mind rather than the result of the brain adapting to process natural language

grammar (Christiansen & Chater, 2008). These perspectives have consequences for how language is processed in the brain. Specifically, language will depend heavily on brain areas fundamentally linked to various types of conceptual understanding, the processing of social interactions, and pattern recognition and memory. It also predicts that so-called "language areas" should have more general, prelinguistic processing functions even in modern humans and, further, that the homologous areas of our closest primate relatives should also process information in ways that makes them predictable substrates for incipient language. Additionally, it predicts that the complexity of communication is to some important extent a function of social complexity. Given that social complexity is in turn correlated with brain size across primates, brain size evolution in early humans should give us some general clues about the evolution of language. Recognizing language as a CAS allows us to understand change at all levels.

Future Directions: Dynamic Structure

As the diverse research cited in this entry illustrates, understanding the emergence of language requires the full range of techniques of cognitive, social, and natural science. But more than that, it requires an overarching framework of emergentism, CAS, and DST.

A common opposition within linguistics is the contrast between Saussure and Vygotsky, between structuralist approaches to language and those that emphasize the processes of language use in social interaction, between thin and thick descriptions. Vygotsky's (1935/1986) *Thinking and Speaking* addresses that same mystery as Saussure's, and makes equal resort to metaphor; for example, "Consciousness is reflected in the word like the sun is reflected in a droplet of water" (p. 285). "The relation between thought and word is a living process; thought is born through words. A word devoid of thought is a dead thing, and a thought unembodied in words remains a shadow. The connection between them, however, is not a preformed and constant one. It emerges in the course of development, and itself evolves" (p. 255). Language emerges both in the Saussurian sign and the Vygotskyan process.

Language and usage are like the shoreline and the sea.

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; Cognitive Linguistics of Second Language Acquisition; Connectionism; Corpus Study: Cognitive Implications; Dynamic Systems Theory Approaches to Second Language Acquisition; Interaction Approach in Second Language Acquisition; Sociocultural Theory

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Emerging Technologies for Language Learning

ROBERT GODWIN-JONES

It's not possible to predict with any degree of certainty future developments in hardware and software and what they might mean for language learning. However, for the short term, there are trends which seem to point in likely directions. Several of these hold promise for enhancing language learning, but this entry will focus on the expansion of computing environments, which brings with it new options in network services and applications, as well as interesting collaborative opportunities. The current trends tend to converge in a likely scenario featuring a customized learning environment, ubiquitous access to learning materials/services, and extensive peer-to-peer learner networking.

Enhanced Mobile Devices

Desktop operating systems continue to develop and evolve, with new features making their appearance in each iteration. Of particular interest for language learning, however, is the emergence of operating systems for mobile devices, as they add new and powerful capabilities to both individualized and collaborative learning. Microsoft and Apple have slimmed-down versions of their operating systems for mobile devices—Windows Mobile and the iOS respectively. At the same time, operating systems designed from the outset to run on portable devices have emerged, including Android from Google and webOS from Palm. The most recent devices using advanced mobile operating systems feature improved Web access (mostly using the Apple-created WebKit), advanced multimedia (including nonstuttering video playback and video editing) and built-in social networking (with mobile versions of services such as Twitter and Facebook). They offer instant-on capabilities, both Wi-Fi and cellular network access, and touch screens with excellent readability for text and viewing for video. They also run on much faster 3G/4G networks, which greatly enhance data transfer for interactive programs and streaming media. Most also offer some degree of multitasking, or at least pop-up notifications, which allow collaboration and communication tools to interact with the user, even when another program is running in the foreground. Smartphones have in effect transitioned into fully capable hand-held computers.

A significant aspect of the new functionality of recent mobile devices comes from their extensibility, through the addition of third-party applications. The companies offering this service handle it in different ways. Most have created a software-development kit (SDK) which allows developers to create new programs or adapt existing programs. Developers have created a sizable number of applications ("apps") for the Apple iPhone, including a good number which feature language-learning tools or services such as dual-language dictionaries, grammar references, audio phrase books, flashcard programs, enhanced podcast access, or writing tutors. Given their popularity, we are likely to see many more apps created for major mobile platforms.

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Web Applications

Unfortunately, there are no standards for development of mobile applications, so that an app written for the iPhone (which uses Objective C for coding) will not run on an Android device (which relies on Java as its programming language). There is, however, an approach to creating mobile apps which will run on virtually any smartphone as well as on other devices which feature a full-functioning Web browser (i.e., supporting the latest formatting and scripting Web standards). This involves creation of a Web application, using an approach often called AJAX, which stands for asynchronous JavaScript and XML. This method uses commonly accepted and implemented Internet standards, with the user interface and interactivity relying on the HTML document object model (DOM) and cascading style sheets (CSS). This approach allows the app to take full advantage of Web services, including pulling information from a server in the background. With the arrival of enhanced Web page interactivity through the new version of the Web authoring language, HTML 5, AJAX Web apps will become even more attractive and powerful. An AJAX application for language learning will run on both desktop and mobile devices and is more universally compatible than an application built on a proprietary format such as Adobe Flash or Microsoft Silverlight, which require browser plug-ins that may not be available for all platforms.

The use of AJAX overcomes the "stateless" aspect of the Web, that is, no persistent connection to the server. The retrieval of XML data in the background is transparent to the user and results in interactions running much more efficiently, as the Web application does not have to wait each time server-based data is needed. One could envision an AJAX program for language learning which relies on access to an online dictionary, text collection, or other data set, preloaded for fast access. This might be used for ready access to text annotations or to bring in supplemental data such as graphics or audio. AJAX could also be a good approach in building an application based on a language corpus. A concordancing program, for example, could display a subset of results from a searched term, while retrieving but holding in reserve additional results. Another interesting example of an AJAX program is the Google Language API, which offers language detection, transliteration, and translation. It currently supports 85 different languages and 29 language pairings. There are many open-source AJAX libraries available which ease considerably the creation of Web applications. The OpenAJAX Alliance is working to improve compatibility across these different libraries. It should be mentioned in this context that Google has made its Android OS openly and freely available to device manufacturers, which has created a good deal of interest in Android development, given the fact that the OS is appearing in a variety of devices from phones to tablets.

Universal Syncing and Media Creation

Being able to access a language-specific data set would be a significant boon to language learning. Equally promising is the ability to sync automatically a student's progress in a language-learning program, especially where this features an intelligent language tutor (ILT). An ILT is a sophisticated piece of software that uses natural language processing (NLP) to analyze learner input. An ILT often also incorporates automatic speech recognition (ASR), which recognizes and processes users' spoken input. Such programs have progressed considerably in recent years and take full advantage of advances in fields such as second language acquisition, speech technologies, and computational linguistics. An ILT creates an interaction with a learner, which could range from a simple pronunciation drill to a full-sentence response to a question. The simpler the spoken input and the more restricted

the language context, the more likely it is that the language will be processed correctly and appropriate feedback supplied. At the same time, systems have been developed which strive to evaluate not only accuracy of language use, but also harder to quantify features such as complexity or fluency (Gamper & Knapp, 2002). The US Army has deployed a sophisticated ILT for mobile devices to provide assistance in understanding spoken Arabic. As processors on consumer-level mobile devices become more powerful, this kind of advanced language learning technology is likely to become more widely developed and used.

Programs which feature an ILT normally include a learner profile, which tracks the student's progress, maintaining a learning history which may include learner-specific goals and preferences (Heift, 2005). An AJAX ILT running on a smartphone could first check the learner profile on the server, loading needed parts of that user's profile into memory and returning the learner to the previous stopping point. There are programs currently available which feature this type of automatic syncing, such as the Amazon Kindle, which can sync reader data on multiple devices, taking the reader back to the last page read no matter what device is being used. The Palm's latest phone offers automatic Facebook syncing, and we are likely to see more complete syncing of social networking services on all platforms. This kind of data syncing is likely to become more important as learners accumulate more electronic gadgets capable of accessing the Internet. Companies are recognizing this need and creating syncing services such as Windows Live (Microsoft) or MobileMe (Apple).

Mobile devices now feature multiple communication options. Some, such as the iPhone, incorporate a virtual keyboard which offers text entry in multiple languages, as the touch screen keyboard can be changed easily from one layout to another. This is a particularly important feature for non-Latin alphabets such as Russian, Chinese, or Arabic. A touch screen can also accommodate handwritten input, which enables entering ideographs or pictographs. Switching the keyboard on an iPhone also changes the associated dictionary, which is used for auto-correction of text entry. Devices such as the iPhone and Android phones also feature voice recognition. While this is usually limited to specific applications, software extensions are becoming available which allow for incorporation of voice recognition into third-party apps. This feature, along with the voice synthesis usually accompanying it, is of significant interest to language learners, as one could envision a virtual conversation partner (once speech technologies become more widely available and reliably robust). Of course, audio recording is also possible on smartphones and other devices. This could function as a means for learners to record dialogs they might encounter in a study-abroad environment or to create podcasts for peer sharing.

Other features of new mobile devices offer equally intriguing possibilities for language learning. For example, the higher-quality cameras now incorporated into smartphones, allow for high-quality still-image and video capture. The new option of having multimedia production on what amounts to a hand-held computer means that the images can be uploaded to servers, but they can also be used in collaborative learning environments, such as language exchanges, field assignments, or study abroad. The GPS (global positioning system) capability adds geo-tagging to the mix and enables interesting possibilities for group dynamics based on location. This could take advantage of the location-aware social networking apps which have proliferated on mobile devices. One can add to that the possibility of creating mash-ups using overlays of freely available map data such as Google Maps. This could add a whole new dimension to studying and interacting with cultural sites. A 2008 study details use of GPS, cameras and mobile messaging for Chinese language learning (Anderson, Hwang, & Hsieh, 2008). The combination of location and communication capabilities could also make for a compelling environment for online learning games.

Cloud Computing and Widgets

The collaborative opportunities for language learners on all kinds of devices are enhanced by the availability of "cloud" resources. Cloud computing is the generally accepted term for services and applications which reside on Internet-accessible servers rather than on local machines and are made available on an on-demand basis. Many companies have created programs or services which rely on cloud access, including text editors, imaging programs, and even audio editing programs. Microsoft has adapted its bastion of desktop productivity, the Office Suite, to the cloud, as is the case as well for the well-known imaging application from Adobe, Photoshop. The advantage over local applications is the ability to access one's data and programs from a variety of locations and devices. Another crucial feature is sharing. Many of the cloud-based programs, such as Google Apps, were created with sharing as a major component. Using Google Apps, or similar services, it is easy to collaborate with the designated users or groups. Google Wave adds live synchronous sharing of text as well as of other media. Google, in fact, has been one of the foremost users of cloud computing, even creating a new operating system, Chrome, which relies on cloud access.

A concern with this approach is the necessity of ubiquitous Net access in order to access data or services. A component of the new HTML 5 will help to alleviate that problem. It allows for local storage of data that goes considerably further than the current browser storage capability, which uses Web "cookies," a system of key-value pairs stored locally as text strings. The new Web or DOM storage allows for saving data in an array, similar to the way HTML cookies are structured, but allows for much greater storage capacity. Also possible will be saving data to a lightweight local database. HTML 5 will add other features of potential interest to language learners and application developers, including the ability to stream audio and video without the need for a plug-in, as well as for timed media playback. The latter enables easier creation of applications which sync text or annotations with audio or video clips. It also supports drag-and-drop across all elements of the document object model, as well as standardizing in-browser rich-text editing. Google Wave was created as an HTML 5 application.

Applications residing in the "cloud" point to another trend—the multiplicity of applications the average user accesses from a variety of sources and vendors. Just as the monolithic operating systems are being joined by smaller, focused systems, the same is true for big computer applications. They are being supplemented, or in some cases even replaced, by small, single-purpose applications, often called widgets. These are applications created in Adobe Flash or using standard HTML/JavaScript, which can offer services such as online dictionary look-up, direct access to a social networking services, podcast listening, or viewing of announcements or other data pulled from a learning-management system. Language teachers are increasingly creating their own Web-based language-learning environments by collecting and displaying widgets on a page using services such as Netvibes, Pageflakes, or iGoogle. These are sometimes referred to as personal learning environments (PLE). They feature a great deal of flexibility in customization, as widgets can be dragged to a desired location or even from one Web page to another. A PLE for language learning might include widgets for chat, discussion forums, dictionary/encyclopedia lookup, course calendars, social bookmarking, a writing tool, media player, or foreign news feeds. They can also include such features as online quizzes and access to cloud-based file storage.

These tools provide an inexpensive and more flexible alternative to learning-management systems (also called virtual learning environments) such as Blackboard, the largest commercial vendor of such services. They also allow learners to create their own customized learning environments based on accumulating just those tools and services they find useful. Paralleling this development has been the rise of more flexible learning-management

systems, especially Moodle, which has attracted many users with its modular architecture, encouraging development of multiple add-on modules. The fact that it is open source has helped it gain popularity. Some have argued that it is this personalized, more open approach of the PLE that represents the future of language-learning technology, not the highly structured ILT (Wild, Mödritscher & Sigurdarson, 2008). At any rate, the trend toward greater learner autonomy seems to be accelerating as language learners continue to pursue learning opportunities outside the classroom and seek opportunities for language maintenance. More and more they are accessing those resources on the Internet and using smaller and smaller devices to do so.

SEE ALSO: Automatic Speech Recognition; Intelligent Computer-Assisted Language Learning; Mobile-Assisted Language Learning; Natural Language Processing and Language Learning; Text-to-Speech Synthesis Development; Text-to-Speech Synthesis in Computer-Assisted Language Learning

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Emic and Etic in Qualitative Research

NUMA MARKEE

The origins of the emic/etic distinction in linguistics are to be found in Pike (1967), who distinguished between phon*emic* and phon*etic* accounts of the sounds of language. As originally formulated, phon*emic* accounts are *member-relevant* rules about the sound contrasts of language that native speakers have inside their heads, while phon*etic* accounts are *researcher-relevant* distinctions about how these sounds are observably realized by native speakers. In modern ethnographic and conversation analytic interpretations of the emic/etic distinction (though not in Pike's original formulation: see Pike, 1967, pp. 38 & 39), emic, qualitative research precedes etic, quantitative research. As Watson-Gegeo (1988) puts it: "Ethnographic analysis is not exclusively emic. Rather, a carefully done emic analysis precedes and forms the basis for etic extensions that allow for cross-cultural or cross-setting comparisons" (Watson-Gegeo, 1988, pp. 580–1).

Unlike quantitative research, which is relatively unified in terms of its goals and procedures, qualitative research is comparatively heterogeneous in its aims and methodologies. For example, the guidelines for quantitative and qualitative research published in *TESOL Quarterly* (2003, pp. 157–78) contain a single entry for quantitative research, and three separate entries for *case study research*, *conversation analysis* (CA), and (*critical*) *ethnography* under the general rubric of qualitative research (see each entry for useful references pertaining to each of these subfields of qualitative research). Furthermore, note that these three examples constitute a very conservative list of bona fide qualitative methodologies: arguably, there should also be entries for, say, *ethnomethodology*, *hermeneutics, life histories, diary studies*, *content analysis,* and *survey research*, among other potential candidates.

While these examples of qualitative research are emic in the broad sense that they all invoke a participant's perspective as their point of analytic departure, it is important to realize that there are subtle differences in how this point of view is interpreted, particularly by ethnographers and conversation analysts. So, for example, Watson-Gegeo (1988, p. 576) notes that ethnography derives from anthropology and defines ethnography as "the study of people's behavior in naturally occurring settings, with a focus on the cultural interpretation of behavior." Furthermore, she identifies four principles of ethnographic research (pp. 577–9). More specifically, ethnography: a) focuses on the culturally contextualized behavior of groups of individuals; b) seeks to link the microcontext of, for example, classroom talk, to the macrocontext of a school, district, and society; c) is guided by a theoretical framework which frames the kinds of situations and research questions that researchers ask themselves; and d) seeks to understand a situation in its own terms as a means of generating grounded (i.e., emic) theory.

In contrast, CA is derived from a radical form of sociology founded by Garfinkel (1974). As Roger and Bull (1988) explain, Garfinkel coined the neologism "ethnomethodology" by combining the words "ethno" and "methodology" based on terms such as "ethnobotany" and "ethnomedicine," which refer to folk systems of botanical and medical analysis, respectively. More specifically, the term "ethnomethodology" "refers to the study of the ways in which everyday commonsense activities are analyzed by participants, and of the ways in which these analyses are incorporated into courses of action" (Roger & Bull, 1988, p. 3). These authors then go on to point out that CA has emerged as the most influential

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development within ethnomethodology, and that CA has also made important contributions to psychology, linguistics, and anthropology. On this reading, CA seeks to explain how, during the course of naturally occurring "talk-in-interaction" (i.e., ordinary conversation and institutional talk: see Schegloff, 1987) participants orient to the practices of turn taking, repair, and conversational sequencing, and also to the preference organization of adjacency pairs and repair sequences, as resources for the co-construction of talk in real time (Hutchby & Wooffitt, 2008). Thus, as I have already noted, ethnography and CA both share an interest in explicating how participants understand naturally occurring courses of action. However, there are major differences between these two disciplines in terms of how they handle culture, context, and the role of theory in emic knowledge construction.

Let us now investigate how these three notions are understood in ethnography and CA: First, as we have already seen, Watson-Gegeo's third emic principle of ethnography is that ethnographers are guided by a theoretical framework which frames the kinds of situations and research questions that they ask themselves. In contrast, CA adopts a perspective on what constitutes emic research which is epistemologically much more radical. For example, conversation analysts are not only "ethnomethodologically indifferent" (Garfinkel & Sacks, 1970, p. 63) toward a priori theories of social science (such as, for example, SLA), but they also regard theory as a *by-product* of empirical analysis (Markee, 2008).

Second, the role of context—which is probably one of the most contentious concepts in linguistics, anthropology, and sociology—is understood quite differently by ethnographers and conversation analysts. Part of the difficulty here is that, as Goodwin and Duranti (1992) point out, there is no widely accepted consensus regarding how to conceptualize context. However, by and large, ethnographers tend to invoke a broad range of macro- and micro-sociocultural factors (which, in descending order, might include the economic, political, social, educational, institutional, and classroom context of, say, gendered pedagogical talk) in order to understand a particular course of action. In contrast, conversation analysts tend to argue that talk functions as its own context. So, for example, Heritage (1988) argues that social order is to be found in the minutest details of talk-in-interaction and goes on to make the case that conversation analyses are simultaneously (and without contradiction) both context *shaped* and context *renewing*. That is, current talk is not only *shaped* by the talk that immediately precedes it, it also sets up a new sequential context through which speakers *renew* (i.e., maintain, adjust, or alter) their understandings of what happens in the next turn. This highly localized understanding of talk-as-its-own-context is obviously controversial from an ethnographic perspective and has given rise to the so-called "cultural critique" of CA (see Maynard, 2003, pp. 68–70), which, in brief, criticizes this notion of context as being far too limited (see, for example, Moerman, 1988). But in his counter-critique of ethnographic notions of context, Schegloff (1987, 1991) strongly argues that any appeals to ethnographic context to explicate talk-in-interaction must be grounded in the observable *relevance* that a particular piece of information has for *those* participants engaged in *that* piece of talk. In addition, Schegloff further suggests that analysts must be able to demonstrate the *procedural consequences* that these pieces of information have for the way in which the details of talk-in-interaction are analyzed. Given these respective positions, it is not surprising to find that whereas ethnographers routinely seek to show how different concentric circles of context are intertwined with each other, conversation analysts are wary of making any such macro/micro interconnections.

Finally, discussions regarding the role of culture in the two disciplines are beset by similar problems of definition and by arguments about what the scope of culture is. So, for example, Duranti (1997) reviews no less than six different perspectives on what culture is (these perspectives include formulations of culture as: a) distinct from nature; b) knowledge; c) communication; d) a system of mediation; e) a system of practices; and f) a system of participation). However, he refrains from providing a definition of his own

that synthesizes core characteristics from these different viewpoints. In contrast, culture in ethnomethodological CA is treated in a way that is reminiscent of the way in which context is treated in this discipline. So, for example, Benson and Hughes (1991) propose that any analysis of talk-in-interaction "in terms of the 'mechanism' by which that talk was produced *there* and *then*, is an explication of some part of culture" (Benson & Hughes, 1991, p. 130; emphasis in the original).

Thus, conversation analysts not only avoid invoking a priori etic theory as a means of framing their analytic interests, they also subscribe to the limited versions of context and culture discussed above. This has the further consequence that conversation analysts and ethnographers tend to have qualitatively quite different understandings of what constitutes an emic perspective on research. More specifically, while ethnographers often equate the use of an emic approach with *developing empathy with*, and *giving voice to*, participants, CA typically approaches the task of developing an emic account of language behavior in a more *technical* fashion. This stance famously prompted Moerman (1988, pp. x–xi) to rebuke CA for its preoccupation with the "dry bones" of talk, and for its "bloodless" and "impersonal" approach to "richly experienced human reality." As we have already seen, however, the ethnographic position on context and culture is vulnerable to the charge that, in their quest to capture the essence of richly experienced human reality, ethnographers ultimately have to rely on a methodologically unspecifiable notion of privileged access to what fundamentally constitutes our everyday humanity. Clearly, this debate is unlikely to end any time soon.

Conclusions

In summary, I have tried to demonstrate in this entry that while etic (quantitative) research is relatively homogeneous, emic (qualitative) research is much more heterogeneous in its ontological and epistemological assumptions. I have illustrated this idea by concentrating on the different meanings that the concept of "emicness" hold for ethnographers and conversation analysts. From the perspective of somebody who has carried out both ethnographic and conversation analytic research (see Markee, 1997, 2000, respectively), I am very comfortable saying that ethnographers and conversation analysts are clearly on the same side of the epistemological divide vis-à-vis the uniformly etic notions of experimental research. However, it is important to understand that there are also important differences within the broad church of qualitative research. Ultimately, ethnographers are interested in developing broad, integrated answers to "Why" type questions about the ways in which we live our lives. In contrast, conversation analysts ask "How" type questions about the ways in which we make sense of everyday courses of action. Both these quests are "emic" in nature, but it is important for applied linguists to understand that different questions lead to potentially quite different answers.

SEE ALSO: Analysis of Discourse and Interaction: Overview; Conversation Analysis: Overview; Culture and Context: Overview

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Empowerment and Bilingual Education

JIM CUMMINS

In educational discourse, the term *empowerment* has been used predominantly in the context of discussions of equity and social justice. Paulo Freire's (1970) influential volume, *Pedagogy of the Oppressed*, highlighted the intersections between education and societal power relations and articulated pedagogical and social strategies for confronting the oppressive influence of these power relations. Freire's analysis gained credibility from the fact that it was grounded in his efforts to create conditions for the development of literacy among Brazilian peasants by enabling them to think about the social conditions within which their work was embedded. Through a process of "conscientization," learners developed awareness about how oppressive societal power relations affected their lives and their emerging literacy skills enabled them to challenge the operation of these power relations.

Since then, numerous educational theorists have built on Freire's work to analyze the ways in which school failure is manufactured among marginalized students. The starting point for this analysis of student achievement is the assertion that societal power relations are relevant to all aspects of education (funding, curriculum, assessment, language of instruction, etc.). This may seem like an obvious or even trivial observation until one realizes that government-sponsored educational reform efforts in countries around the world, both historically and currently, have largely avoided reference to societal power relations as in any way relevant to student achievement. They have instead focused on "neutral" issues such as how effectively the curriculum is delivered by teachers or whether appropriate approaches to teaching reading have been implemented.

Theory and research focused on empowerment assumes relevance for bilingual education as a consequence of the fact that bilingual programs for linguistic minority students have frequently been implemented with the goal of increasing students' educational achievement. For example, in the USA, bilingual programs for Spanish-speaking students were initiated in the late 1960s in the context of the Civil Rights movement and subsequent federal legislation mandating equality of educational opportunity. It was assumed that the mismatch between the language of the home and the language of schooling contributed to students' educational difficulties. Thus, reducing this gap by means of (typically short-term) transitional bilingual education seemed to make sense as a strategy for increasing students' access to the curriculum.

This "linguistic mismatch" rationale for bilingual education has been critiqued as very much over simplified and inadequate to explain the empirical data (e.g., Cummins, 1979, 2001). It assumed that the causes of minority groups' educational difficulties lay in linguistic differences between home and school but ignored the fact that under different social and educational conditions linguistic mismatch did not impede students' academic progress. For example, no adverse effects of linguistic mismatch are evident in the outcomes of second language immersion programs for majority group students (e.g., Cenoz, 2009). Also, many groups of immigrant students from middle-class backgrounds perform well academically despite the fact that their home language (L1) is different from the language of the school (L2).

Explanatory frameworks that have attempted to go beyond linguistic mismatch have tended to invoke factors associated with societal power relations that affect not just

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linguistic minority students but all marginalized students. Gloria Ladson-Billings (1995) expressed the essence of these frameworks as follows: "The problem that African-American students face is the constant devaluation of their culture both in school and in the larger society" (p. 485). Empowerment, as an educational goal, is therefore explicitly aimed at challenging the devaluation of students' language and culture within the school and wider society.

One obvious way of challenging the devaluation of bilingual students' language and culture is to incorporate students' language as a medium of instruction within the school. Thus, bilingual programs automatically confer symbolic status and economic opportunities (e.g., teaching positions) for members of linguistic minority groups. However, not all bilingual programs are created equal with respect to their potential to create contexts of empowerment for linguistic minority students and communities. Some short-term or quick-exit transitional programs do not aim to develop bilingualism and biliteracy but simply use students' L1 as a bridge to English. The message to students and communities about the value of their culture and language may not be much more affirming than that communicated in monolingual programs.

In the sections that follow, the research on bilingual education is reviewed and the relationship of bilingual education to empowerment is elaborated. The central point to be made is that empowerment and the affirmation of student identities are promoted by a range of pedagogical factors, only one of which is the school's orientation to students' language and culture. Thus, bilingual education, by itself, is not a panacea for reversing underachievement if other aspects of students' schooling experience are not focused on empowerment.

Bilingual Education: What the Research Says

Although bilingual education has evoked considerable controversy in a number of countries (e.g., Esser, 2006), this public controversy contrasts with the considerable consensus among applied linguists regarding the outcomes of such programs. The research on bilingualism and bilingual education supports the following four conclusions:

1. *Bilingual programs for minority and majority language students have been successfully implemented in countries around the world.* The research on the effects of bilingual education for both minority and majority group students is unequivocal in demonstrating that well-implemented bilingual programs represent a legitimate policy option both to develop bilingual and biliterate skills and to promote students' academic achievement. Francis, Lesaux and August (2006), writing as members of the National Literacy Panel on Language-Minority Children and Youth (August & Shanahan, 2006) summarized their review as follows:

   > In summary, there is no indication that bilingual instruction impedes academic achievement in either the native language or English, whether for language-minority students, students receiving heritage language instruction, or those enrolled in French immersion programs. Where differences were observed, on average they favored the students in a bilingual program. The meta-analytic results clearly suggest a positive effect for bilingual instruction that is moderate in size. This conclusion held up across the entire collection of studies and within the subset of studies that used random assignment of students to conditions (Francis, Lesaux, & August, 2006, p. 397).

2. *The development of literacy in two languages entails linguistic and perhaps cognitive advantages for bilingual students.* A large number of research studies carried out since the early 1960s

report significant advantages for bilingual students on a variety of metalinguistic and cognitive tasks. Bilingual students get more practice in learning language (by definition) and this seems to sharpen their awareness of subtleties of linguistic meaning and form (see Bialystok, 2001 for a review).

3. *Significant positive relationships exist between the development of academic skills in L1 and L2.* This is true even for languages that are dissimilar such as Spanish and Basque (Cenoz, 2009). These cross-lingual relationships provide evidence for a common underlying proficiency or linguistic interdependence that permits transfer of academic and conceptual knowledge across languages. This transfer of skills and knowledge explains why spending instructional time through a minority language entails no adverse consequences for the development of the majority language. The research evidence for interdependence is summarized by Dressler and Kamil (2006) as part of the Report of the National Literacy Panel on Language-Minority Children and Youth (August & Shanahan, 2006). They conclude:

> In summary, all these studies provide evidence for the cross-language transfer of reading comprehension ability in bilinguals. This relationship holds (a) across typologically different languages . . . ; (b) for children in elementary, middle, and high school; (c) for learners of English as a foreign language and English as a second language; (d) over time; (e) from both first to second language and second to first language. (Dressler & Kamil, 2006, p. 222)

4. *The most successful bilingual programs are those that aim to develop bilingualism and biliteracy.* This conclusion was supported by of a major review of the US research literature (Genesee, Lindholm-Leary, Saunders, & Christian, 2006):

> There is strong convergent evidence that the educational success of ELLs [English language learners] is positively related to sustained instruction through the student's first language. . . . most long-term studies report that the longer the students stayed in the program, the more positive were the outcomes. (Lindholm-Leary & Borsato, 2006, p. 201)

In summary, the research on bilingual education demonstrates unequivocally that instruction through a minority language in the context of a bilingual program entails no adverse effects on students' academic development in the majority language. In fact, the trend is towards stronger academic performance by students in bilingual programs in comparison to those in monolingual programs.

The data, however, clearly show that far more than just medium of instruction is involved in reversing school failure. Specifically, it has been argued that intervention to address the real causes of underachievement among marginalized minority group students must take account of how societal power relations are translated into teacher–student interactions within the classroom (Cummins, 2001; García, 2009).

Empowerment as the Collaborative Creation of Power

Extensive research has been carried out by sociologists and anthropologists on issues related to ethnicity and educational achievement (e.g., Ogbu, 1978, 1992; Skutnabb-Kangas, 2000; McCarty, 2005; Bishop & Berryman, 2006). These studies point clearly to the centrality of societal power relations in explaining patterns of minority group achievement. Groups that experience long-term educational underachievement tend to have experienced material and symbolic violence at the hands of the dominant societal group over generations. A

direct implication is that in order to reverse this pattern of underachievement, educators, both individually and collectively, must challenge the operation of coercive relations of power in the classroom.

A framework proposed by Cummins (2001) explicitly links empowerment to bilingual education. This framework argues that within a societal context of unequal power relations, classroom interactions are never neutral—they are always located on a continuum ranging between the reinforcement of coercive relations of power and the promotion of collaborative relations of power. Coercive relations of power refer to the exercise of power by a dominant individual, group, or country to the detriment of a subordinated individual, group, or country. For example, in the past, dominant group institutions (e.g., schools) have required that subordinated groups deny their cultural identities and give up their languages as a necessary condition for success in the "mainstream" society.

Collaborative relations of power, by contrast, reflect the sense of the term *power* that refers to "being enabled," or "empowered" to achieve more. Within collaborative relations of power, power is not a fixed quantity but is generated through interaction with others. The more empowered one individual or group becomes, the more is generated for others to share. The process is additive rather than subtractive. Within this context, *empowerment* can be defined as *the collaborative creation of power.* Students whose schooling experiences reflect collaborative relations of power know that their voices will be heard and respected within the classroom. Schooling opens up identity options and amplifies rather than silences their power of *self*-expression.

Within this theoretical context, the crucial variable in predicting the extent to which any educational program or intervention will increase the academic achievement of minority group students is not simply whether L1 is incorporated into the instructional program but rather the extent to which the teacher–student interactions generate a sense of empowerment among the students. When the goal is to affirm students' identities and promote strong bilingual and biliteracy development, L1 incorporation is likely to contribute to the collaborative creation of power. However, quick-exit transitional programs are unlikely to create contexts of empowerment for bilingual students. By the same token, some programs that use the majority language as the predominant instructional medium (e.g., because they serve a linguistically heterogeneous student population) may adopt bilingual instructional strategies that strongly reinforce students' sense of pride in their own identities. Within these programs, students may be encouraged to use their L1 for group discussions or projects, to write in their L1 as well as the dominant language, and generally to showcase their multilingual talents (see Cummins, 2001, 2007 for examples). Empowerment, understood as the collaborative creation of power, can also be generated through instruction that evokes creative and critical thinking in ways that showcase students' intellectual, artistic, literary, or linguistic talents. Such showcasing of students' talents directly challenges the devaluation of the cultural capital of marginalized communities in the wider society.

In summary, theoretical frameworks organized around the construct of "empowerment" would predict that effective programs, regardless of whether they are labeled bilingual or monolingual, will enable bilingual students to carry out powerful intellectual work using both of their languages as cognitive and creative tools.

SEE ALSO: Bilingual Education and Immigration; Bilingual Literacy; Early Bilingual Education; Literacy and Bilingualism; Literacy and Multicultural Education; Minority Languages in Education; Mother-Tongue-Medium Education

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Endangered Languages

CONOR MCDONOUGH QUINN

Languages that are threatened with the loss of natural generational transmission are referred to as endangered languages. Language endangerment generally occurs in the later stages of language shift, that is, when a speech community moves away from their earlier variety, dialect, or language to a new one or new set thereof (Fishman, 1991). While the processes of endangerment and extinction have likely been constant throughout the history of human language, the scale and the pace of this loss—whose cumulative effect is the reduction of linguistic diversity—in the modern era appears to be uniquely intense, with up to half or more of the currently estimated 5,000–6,000 languages spoken today expected to be lost within a century or so (Hale et al., 1992). Both the nature of this loss and its consequences are complex and involve deep psychosocial factors as much as purely linguistic ones. Two common reactions to language endangerment include language revitalization and linguistic documentation, both of which present extensive challenges and opportunities for applied linguistics.

The sources of language endangerment are not uniform, but do generally present recurrent themes on both the broader external social/political/economic and the narrower community-internal and individual scales, corresponding in broad strokes to what Grenoble and Whaley (1998) refer to as macro- and micro-factors. From the macro-factor perspective, language shift can occur from sheer population loss of a speech community, due to war, disease, famine, or rather commonly, economically motivated outmigration, that is, dispersal into a diaspora that makes daily use of a given language no longer practical or meaningful/effective. Demographically stable communities, however, experience language endangerment just as readily when they are induced to shift for other reasons. Loss of prestige is a very common factor: It can be introduced through schooling, often reinforced by physical or social/emotional punishment of young speakers, or simply as a social contempt expressed in adult society by speakers of the dominant to the minority. As dominant languages are typically those spoken by the socioeconomically dominant, language shift is very often rationalized—both on the part of the speech community itself, or by outsiders—via ideological narratives of economic practicality, or homogeneous national identity. Hence, while there are exceptions, language endangerment is most typically experienced by minority and socioeconomically marginalized populations.

In addition to psychological internalization of the above factors, the internal or micro-factor side of language loss has as a primary component the local disruption of the social spaces in which the language has normally been used, and the shrinking of the range of such spaces. As most endangered languages have a primarily oral tradition (or no written tradition at all), full acquisition and rich fluency depends entirely on personal experience with other speakers. Reduction of the range of domains in which an individual can be exposed to the language commonly results in a feedback effect: otherwise fluent speakers who have knowledge or performance gaps are judged as imperfect speakers by more broadly experienced speakers (typically though not exclusively elders), leading the former to avoid situations of language use even more, and so intensify the process of contraction.

While a large population of speakers generally supports a language's maintenance, the importance of sheer numbers is secondary to the degree of transmission. A language can have no more than a few hundred speakers and still be less threatened than one with

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thousands, so long as it is still being learned and regularly used by children. As the factors affecting transmission are very fluid, languages can shift from stable to endangered extremely quickly, often within the space of one generation. For the same reason, endangerment is often not salient even as it happens, as since three coexisting generations of grandparent, parent, and child can represent complete fluency, intermediate competence, and complete non-speaker status. One still-living full generation of fluent speakers can and often does give the illusion that the language is not seriously threatened; even more so if the majority of the community are ambivalent or antipathetic with regard to maintaining the language.

Language loss is not uniform, either. During the process of language shift, competence in the language can range from various degrees of fluency, to "remembered" speaker (full fluency from childhood but fallen into disuse), to rusty speaker (substantial but limited competence due to an early shift from the threatened language to another), to semi-speaker (characterized by imperfect acquisition of the complete earlier form of the language, due to limited exposure) (Sasse, 1992). From this can also emerge "young people's languages": complete but markedly distinct variants of the source language used by younger generations that have been substantially altered by these sorts of incomplete transmission processes (Schmidt, 1985). Even after a speech community is reduced beyond even one notional native speaker, a language or features thereof can persist: in more or less full lexicogrammatical form as a liturgical or literary language, or both (as in the case of Hebrew, Latin, and Classical Greek, among others), or as a set of rote-memorized ceremonial phraseology, or as features influencing the variety of the replacing language(s) now spoken by descendants of the former speech community. The lexical, phonological, and syntactic influence of Irish Gaelic on varieties of English now spoken monolingually in Ireland is a frequently cited example. Semantic and pragmatic features of the earlier language too may cross over. Mixed languages may also persist after a community has shifted away from an original contributory language. Michif and Media Lengua—results of contact between French and Cree, and Spanish and Quechua, respectively—for example, have replaced the indigenous source language in some communities; such mixed languages can and do also exist alongside populations continuing to speak their source languages.

Complete language loss itself can be problematicized. The notion of dormant or "sleeping" language has been developed for languages that have experienced complete disruption of natural generation-to-generation transmission, but that persist in substantial enough recorded form to permit the possibility of revival as a useable linguistic instrument (Leonard, 2007). Wampanoag and Miami represent two (Algonquian) languages currently being actively revived by descendants of the original speech communities, to the extent that children are being raised with the revived language as one of their first languages. Israeli Hebrew is perhaps the most famous case of a sleeping language subsequently revived as a full-fledged daily use language. Zuckerman (2009) and Leonard (2007) offer thorough discussions of the relationship between such revived languages and their source(s), particularly the first languages of their revivers. Finally, the application of the terms *endangered* and *extinct* have both been called into question as inherently stigmatizing and, particularly when the latter is applied to dormant languages, inaccurate, and disenfranchising (Rinehart, 2006).

The current intensity of language loss can be attributed both to essentially technological factors such as increased mobility (physical, social, and economic), telecommunications, popular media, education, and also to ideological and political factors such as the spread of the notionally homogeneous nation-state and cultural imperialisms of various kinds. Language endangerment is thus strongly connected to other types of sociocultural dislocation.

With the loss of a given language also ripple out a host of ancillary losses. While loss of traditional language need not entail complete loss of traditional culture, language loss

is more often than not accompanied by loss of bodies of knowledge traditionally passed on via the language, ranging from the ceremonial/religious, historical, literary/rhetorical, technological, medical, and so on (Harrison, 2007; Evans, 2010); it is often observed that the loss of a language results in the loss of a whole unique worldview implicitly and explicitly encoded in language-specific form and usage. For discussion of how language loss affects and reflects the broader questions of biocultural/intellectual diversity, see Fishman (1982), Maffi (2001), and Dalby (2003), as well as Harrison (2007) and Evans (2010).

Often generational transmission of social norms and values is affected when languages are lost; as is coherent community identity. A traditional language frequently functions as a pervasive and potent marker of membership therein: both emotional and intellectual connections to previous/ancestral generations can be rendered much more tenuous with its loss. Sheer grief (and at times even shame) at the loss of a cherished part of personal, familial, and community heritage is a situation-specific but very common experience, salient and wrenching to its affectees, even as it can be missed or underplayed by strictly materialistic/utilitarian approaches to the role of language in human life.

For linguistics and related cognitive sciences, what is lost is the opportunity to investigate the full diversity of human linguistic potential. This is particularly crucial in the testing of universal claims about possible versus impossible human linguistic systems. Currently endangered and recently extinct languages have all offered unique contributions to the understanding of human language and by extension, human cognition. Damin, an auxiliary language traditionally used among the Lardil of Wellesley Island, North Queensland, Australia, for example, uses several phonetic mechanisms not found in any other known languages (and the only known click systems outside of southern Africa). It also exhibits an unparalleled intellectual creation: a carefully semantically abstracted lexicon of approximately 200 elements that can express the full range of the everyday Lardil language's much richer system (Hale, 1998). Many other features of human language which are evidently quite common as possible grammatical options remain under-researched and poorly understood because they are, by historical accident, chiefly only found in languages that are currently endangered/threatened: among others, these include polysynthesis, switch reference, and complex evidential contrasts.

At present there are two frequent active responses to language endangerment (i.e., beyond simple acceptance): language revitalization and language documentation. Both pose interesting challenges for applied linguistics. At the time of this writing, there is an emergent consensus (though see Newman, 1998, for an alternative view) that it is incumbent upon linguists (and policymakers) to support language revitalization, namely, active efforts to recover and restore an endangered language to active daily use in a speech community (Hinton & Hale, 2001; for introductory handbooks, see Hinton, 2002, and Grenoble & Whaley, 2006).

Simultaneously, an effort has emerged to document as many features of endangered languages as possible before their potential or even likely disappearance. Currently several institutions have been established that specifically support language documentation (see Online Resources). While language documentation of course can contribute substantially to language revitalization, the priorities of each do not necessarily overlap completely. Since unambiguous examples of thoroughly successful language revitalization efforts are still quite rare, focusing on documentation rather than revitalization can, particularly in academic circles, be seen as a more realistic use of limited resources to address language loss (see Bowern & James, 2010, for a challenge to this view).

That said, documentation and revitalization efforts more often than not go hand in hand, particularly because endangered language speech communities typically expect documentation (still most often done by outsiders) to contribute substantially to revitalization efforts. One recurrent difficulty in this domain is that the basic training for performing linguistic

research, even documentary field work, is at best only dimly overlapping with the psychosocial and pedagogical training necessary for effective revitalization work. In recent years there has been an increasing focus on transferring the crucial skill sets of both documentation and revitalization from outsiders (primarily academics) to community members (primarily educators and language activists), suggesting that the bulk of endangered language work will continue to embrace both kinds of response.

SEE ALSO: Indigenous Languages in the 21st Century; Language, Politics, and the Nation-State; Language Endangerment; Language Policy and Multilingualism; Linguistic Diversity; Linguistic Imperialism; Multilingualism and Language Rights

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Endangered Languages in Australia

NICK THIEBERGER

Australia has the dubious reputation of being home to many of the world's most endangered languages, and having been the home of many indigenous languages that are no longer spoken. This entry will not touch on the many endangered immigrant languages that are spoken on this continent, neither will we address Australian Sign Language, also an endangered language of Australia. Australian languages should be understood to encompass all indigenous languages of Australia, and include Torres Strait Islander languages, Meryam (a Papuan language of Torres Strait), and Tasmanian.

Before non-Aboriginal people arrived there were between 250 (Dixon, 2002, p. 2) and some 600 languages spoken in this continent. These different figures can, to some extent, be attributed to the shamefully little that has been recorded of Australia's indigenous languages. For a listing and details on each language see Austlang (Australian Institute of Aboriginal and Torres Strait Islander Studies, 2010).

Australian languages are considered to form a number of language groups or families, with one, called Pama-Nyungan by linguists, covering most of the country from Cape York to Western Australia, and the other 26 or so all clustered in the Top End and Kimberley region (Tasmanian languages have not been shown to be related to other Australian languages, but that is likely to be due to the long period of their separate development after sea levels rose in the Holocene). Pama-Nyungan languages typically use suffixes for tense and for case marking, while the northern languages typically use prefixes, among other diagnostic features (see Bowern and Koch, 2004). Archaeology tells us that people have lived in Australia for at least 60,000 years, but it is clear that the families of languages we know today have not been here for that long, with similarities across wide areas suggesting a relatively shallow time depth, maybe in the order of several thousand years.

While there were promising signs at settlement that Europeans may have learned local languages and been assisted by Aboriginal people to understand the country and how to live in it, that soon changed over much of the country to a more punitive model. Conflicts over land and resources resulted in guerrilla actions by indigenous people and massacres perpetrated by colonists, following the colonial frontier across the country. Aboriginal people from different language groups were concentrated in missions and reserves, and boarding schools took children away from their families. This concentration of speakers of different languages in missions and reserves promoted the use of English and also led to the development of lingua francas—pidgins and eventually creole languages that continue to perform important communicative functions for indigenous people. In part, it could also be the diversity of Australian languages that contributed to their eventual endangerment, as no one language dominated or was the focus of teaching and learning in the wider community (although Yolngu Matha and Pitjantjatjara could be seen as regional exceptions, being two popular Australian languages learned by non-Aboriginal people). Another contributing factor is the multilingualism that allowed Aboriginal people to add English to their repertoire, in contrast to the prevailing monolingualism of the dominant Australian society whose policies suggest it continues to think of bilingualism as subtractive rather than additive.

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McConvell and Thieberger (2001) note that there has been a decrease of 90% in the number of indigenous languages spoken fluently and regularly by all age groups in Australia since 1800 and a decrease in the proportion of the Aboriginal population who speak an indigenous language to 13% in 1996. More recently the National Indigenous Languages Survey (Australian Institute of Aboriginal and Torres Strait Islander Studies & Federation of Aboriginal and Torres Strait Islander Languages, AIATSIS & FATSIL, 2005) found that, of the 145 indigenous languages still spoken in Australia, 110 are critically endangered and only 20 could be considered strong.

Efforts to support the ongoing use of language have included community-based activities such as language courses for adults, preschool vernacular programs, and bilingual education programs (e.g., the Strelley schools and others in Western Australia). Governments have, at various times, provided support for these activities, but often without guarantees of longevity, so that programs have to support periods without funding, or even close down altogether. Government bilingual programs began in some South Australian schools in the late 1960s and bilingual programs were introduced in some Northern Territory and Western Australian schools from 1973 (Hoogenraad, 2001). Since then the programs have had patchy support from government.

Language curricula were developed in Western Australia (Hudson, 1994) and in South Australia (Senior Secondary Assessment Board of South Australia, SSABSA, 1996), and Purdie, Frigo, Ozolins, Noblett, Thieberger, and Sharp (2008) summarize a number of other educational programs involving Australian languages. These programs, in general, rely on speakers of the languages as teachers or curriculum developers. Furthermore, a number of collaborative linguistic projects have resulted from the dedicated efforts of both speakers and academic linguists, including text collections, dictionaries, and multimedia records of languages (see Nathan, 2010, for links). While few Aboriginal people have pursued academic study of their languages, notable exceptions are the late Dr. Raymattja Marika, Dr. Eve Fesl, and Jeanie Bell, who teaches at the Batchelor Institute for Indigenous Tertiary Education.

Academic research on Australian languages has been characterized as occurring in three main phases (McGregor, 2008), with the most recent starting in the 1960s. It is in this period that we have seen detailed grammatical descriptions of indigenous languages, with a few extensive dictionaries (for example, Henderson & Dobson, 1994).

There is increasing interest in the use of Australian languages and in relearning or supporting their continued use. The Aboriginal Languages Association was a lobby group formed by linguists and indigenous people in the 1980s and it organized conferences and helped to convince governments to fund language programs.

The Australian government has made some commitment to support for indigenous languages, with funding of a network of indigenous language centers. These centers initially started in the Kimberley (Hudson & McConvell, 1984) in the mid-1980s, then the Pilbara (Sharp & Thieberger, 2001) in 1987, and now are established all around the country. The current funding source is the Maintenance of Indigenous Languages and Records and in 2009–10 it funded 64 projects for AU$8.8 million.

There are also radio and television broadcasts in Australian languages. In the late 1980s there were 80 transmitters broadcasting local television and radio under Aboriginal control, often including local languages. More recently, as many as 96 remote indigenous broadcasting services (RIBS) provide local content, often including local languages. A very few feature films have been produced incorporating Aboriginal language dialogue, for example *Ten Canoes* (de Heer and Djigirr, 2006) and *Rabbit Proof Fence* (Noyce, 2002).

Some languages that were no longer spoken and were known for many years only from brief written records are now being "awoken" in revitalization programs. These programs occur from time to time in various places; examples include Gamilaraay (NSW) and

Nyungar (WA). Currently Kaurna (Adelaide, SA) is the best known example, and the community of relearners of Kaurna have been active in developing terms and delivering texts for public use of the language (Amery & Gale, 2008).

SEE ALSO: Pacific Creoles

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Endangered Languages in Canada

DONNA PATRICK

Canada is home to a great variety of indigenous languages, which comprise 11 language families. However, all of these languages are considered to be endangered. Among these language families, four—Algonquian, Athapaskan, Inuit, and Siouan—have languages that, while endangered, are still seen as "viable," predicted to remain in continued use (Norris, 2007, p. 23). Other languages, belonging to the Iroquoian and Tsimshian families, are being acquired as second languages (L2) and are the subject of ongoing language revitalization efforts, but have a small number of first language (L1) speakers and face an uncertain future. The languages that comprise the other five language families—Haida, Kutenai, Salishan, Tlingit, and Wakashan—are even more vulnerable.

According to the 2009 *UNESCO Atlas of the World's Languages in Danger* (UNESCO, 1995–2010), the most current source for information about language endangerment, there are 88 endangered languages in Canada. Despite the authority of this source, a definitive figure for endangered languages remains elusive. This is because it is difficult to determine what counts as a distinct language, what counts as an "endangered language," and what factors and social processes give rise to language "endangerment." In addition, many endangered languages in Canada are very much "alive," benefiting from ongoing language revitalization and renewal efforts and being used in diverse social contexts.

Languages and Language Varieties Identified as "Endangered"

Identifying the number of endangered languages in Canada depends, in the first place, on determining how many indigenous groups there are in Canada and how these groups and their language varieties are classified. For example, there are 50 or more endangered languages in Canada according to a classification based on the Canadian census (Norris, 2007). This figure differs significantly from the UNESCO *Atlas* figure of 88 given above. Yet this difference is attributable entirely to the way in which languages are counted in the two schemes. For example, while the census-based scheme identifies one Cree language, the UNESCO *Atlas* identifies seven distinct Cree languages. Further complicating such classification is that speakers themselves might take their local language variety to be a distinct language. As in other indigenous language contexts, the politics of distinguishing languages from language varieties (or dialects) in Canada plays a role in determining the number of endangered languages.

Classifying "Endangerment"

The notion of "endangerment" also gives rise to problems of classification, including what counts as an "endangered language" and what factors determine different degrees of "endangerment." This is because an array of dynamic social processes may enter into the determination of the degree of a language's vitality and viability, including social, political, and cultural processes affecting language learning and teaching in a given context as well as the social meanings and practices associated with indigenous language use.

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This problem of classification can be seen in both similarities and differences between classification schemes. According to the *Atlas* scheme, languages whose continued use is uncertain may be "vulnerable," "definitely endangered," "severely endangered," "critically endangered," or already "extinct." These categories reflect the measurement of a language's "vitality," involving such factors as the number of its speakers, materials development, media use, documentation quality, policies, attitudes, and intergenerational transmission. According to another scheme, that of Kinkade (1991) and Norris (2007), languages may be "viable with a large population," "viable but with a small population base," "endangered," "near extinction," or "already extinct." These categories reflect rather different factors, including the relative size of the population base and the number of younger speakers. Accordingly, the latter scheme classifies three languages, Cree, Ojibwe, and Inuktitut, as large, viable languages, and Montagnais, Micmac, Oji-Cree, Attikamek, Dene, Dogrib, Chilcotin, and Dakota also as "viable," though with fewer than 1,000 speakers each. In contrast, the *Atlas* scheme classifies 24 of 88 endangered languages as "vulnerable," the most viable category of endangered language (with the rest classified as even more endangered), including all of the "viable" languages mentioned in Norris (Cree, Ojibwe, Inuktitut, and Montagnais being broken down into additional languages).

Despite the categorization difference between the schemes, both still classify a language's viability on the basis of quantitative factors alone. Yet what emerges from the census-based research documented in Norris (2007) is that alongside a declining number of L1 speakers of indigenous languages in Canada (which now amounts to under 25% of the total indigenous population) is an increasing number of L2 speakers of these languages among the indigenous population (Norris, 2007, pp. 19–20).

Granting the challenges faced by efforts to define and classify endangered languages, what is clear from available survey data is that indigenous L2 learning and language use is a growing trend (Norris, 2007), and one that is not always adequately reflected in current measures of indigenous language vitality and viability. In light of this, more qualitative research is needed to determine how and why this L2 learning is occurring, what constraints and challenges exist for language revitalization, and what meanings and attitudes are associated with current indigenous language use.

Language Revitalization

Despite the rather negative impression of language viability created by language endangerment discourse (Duchêne & Heller, 2007), many endangered languages in Canada are, in fact, very much "alive" and used in a variety of contexts. While the use of Inuktitut and the attitudes associated with this use have received some scholarly attention (Norris 2007, p. 26; Dorais & Sammons, 2002), many other language revitalization contexts merit similar attention. This might include research that investigates the perspectives of language learners and educators as well as ongoing language revitalization and renewal projects.

In sum, every indigenous language in Canada is considered to be "endangered" to some degree, a fact highlighted by language survey and mapping research. However, there are serious limits to this quantitative and typological research. Many indigenous people, particularly children, are learning their ancestral languages, and many more express a desire to do so (Norris, 2007, p. 24). What might be needed, then, is research whose methodology is sociolinguistic, ethnographic, and collaborative and which seeks to provide more nuanced accounts of language in interaction, both within and across generations, and of the language attitudes and sociocultural values that accompany this use.

SEE ALSO: Endangered Languages; Indigenous Languages in the 21st Century; Language Endangerment; Literacy and Language Revitalization; Multilingualism and Language Rights; UNESCO and Language Policy and Planning

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English Across South Asia

TARIQ RAHMAN

The British East India Company, founded in 1599, introduced English in India in the elitist domains of power—government, administration, judiciary, military, education, commerce, and the media—between the 18th and the 19th centuries. British language policy, aimed at governing the empire (Cohn, 1985), passed from an Orientalist to an Anglicist phase following T. B. Macaulay's famous "Minute" of 1835 when English came to be used for elitist and higher education. Thus English became part of "cultural politics" (Pennycook, 1994) and was taught through its classics, which created an idealistic and morally inspiring image of the British and gave moral justification to British rule in India (Viswanathan, 1989). By the time British rule came to ended in 1947 English was a coveted "linguistic capital" in Bourdieu's (1991, p. 70) sense of the term. As such, it was an elite social class marker facilitating upward social mobility in urban, professional circles in South Asia.

English continues to enjoy this dominant status in South Asia despite resistance to it in the precolonial India (Gandhi, 1942, p. 62, 1980, p. 46), postcolonial Pakistan (Abdullah, 1976), Sri Lanka (Raheem & Ratwatte, 2004, pp. 94–6), and Bangladesh (Hossain & Tollefson, 2007, p. 248). These resistance movements were counteracted by the expansion of English through improved means of communication, especially in the electronic media and cyberspace (Crystal, 2004, pp. 64–91), and the aspiration of the expanding middle class for upward mobility both nationally and internationally.

The general pattern of the use of English throughout South Asia is that it remains the language of the elitist sectors of the state, the corporate sector, foreign-funded think tanks and nongovernmental organizations (NGOs), higher education, science and technology, and elitist educational institutions. Variations in the pattern are visible in Sri Lanka and Bangladesh. In Sri Lanka, the use of English was reduced in the state sectors when Sinhala became the official language in 1956. However, this made the Tamils resent the domination of the Singhalese and created ethnic conflict which ended after much bloodshed in 2009 (Kandiah, 1984; De Silva, 1996). However, English survived among the Westernized elite and, since 1995 when it was recognized as a national language, it has emerged as a language of privileged employment (Raheem & Ratwatte, 2004, pp. 98–103). In Bangladesh, the state patronized Bengali after 1971 when the country got its freedom after a war with Pakistan. However, the forces of globalization and the interests of the Westernized elite gradually brought English back through private education and non-state employment (Hossain & Tollefson, 2007, pp. 253–6). In Nepal, as the country opened out to the forces of globalization, the role of English increased in society (Sonntag, 2007, pp. 212–13). In Bhutan and Maldives English is used in the schools and its presence increases with increasing tourism.

In India and Pakistan English was never seriously questioned (Rahman, 1996, pp. 230–48; Agnihotri & Khanna, 1997, pp. 143–4) despite constitutional promises to remove it as an official language. In both countries it is seen as a vehicle of modernization and development and the language of cutting-edge research, the Internet, globalization, and international mobility, which is why there has never been an effort to remove it from the educational system though its supply is highly uneven and unjust.

South Asian governments teach most children, when they do teach them at all, through the vernacular languages, while reserving English for the elite of power and wealth.

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Higher education, especially in the science and technological subjects, is in English, while institutions in the periphery, as well as arts and humanities subjects which are considered of secondary importance, are taught in the vernaculars. This vernacular–English divide (Ramanathan, 2005) is contingent upon the distribution of power in South Asia rather than a free choice of the medium of education.

Elitist functionaries of the modernized sections of society, therefore, have near-native command over English, while the products of vernacular-medium education aspire to imitate them with varying degrees of success. In this sense, then, English is an imperialist language (Phillipson, 1992; Skutnabb-Kangas, 2000, pp. 372–4) which serves as a device for privileging the cultural hegemony of the West and maintains the cultural and intellectual domination of the English-using elite within South Asian countries. However, at least in the case of Pakistan, it is noteworthy that the English-using elite are politically more liberal, democratic, and tolerant than the vernacular-educated and religious-seminary educated people (Rahman, 2002, pp. 592–6). Thus, any attempt at changing the status of English ought to be situated in the complex set of economic, political, religious, and cultural variables which may affect the outcomes of such changes (Rahman, 2007).

South Asian countries shifted from teaching English through its literature and grammar-translation to ELT—English language teaching or the teaching of English as a second or foreign language—from the 1970s onwards. India led the change (Agnihotri & Khanna, 1995), but Pakistan (Rahman, 2002, pp. 315–20), Sri Lanka (Perera, 2008), and Bangladesh followed (Salim & Mahboob, 2001, pp. 141–51; Rahman, 2008). Like the teaching of literature, this too has a sociopolitical dimension, relating as it does to better acquisition of English among urban, elitist students than rural, nonelitist ones (Hall & Eggington, 2000).

One result of this emphasis on language was to bring about the recognition among teachers of English that non-native varieties of English—Indian English (Kachru, 1983), Pakistani English (Baumgardner, 1987; Rahman, 1990), Sri Lankan English (Passe, 1947), and so forth—should be recognized not merely as "incorrect" English but as alternatives. But these non-native varieties of English vary according to the first language and the degree of the exposure of the speaker to English.

While de-emphasizing the canonical works of English literature, the new emphasis on the language itself did not adversely affect the production of creative literature in English in South Asia. India produces most of this literature (Verma, 2000), but Pakistan has progressed from being a minor producer until 1991 (Rahman, 1991) to being a rising star in the field (Shamsie, 1997). Other countries too produce literature in English (Alam, 2006, pp. xv–xxiii). The major themes of this literature are the postcolonial tensions between tradition and modernity and search for an authentic identity.

In short, English is a dynamic presence in South Asia. On the one hand it is an elite marker which consolidates the Westernized elite's hold over wealth and power in the region but, on the other, it enables South Asians from the lower middle and middle classes to aspire for personal empowerment both nationally and abroad. That is why it is very much in demand and institutions promising to supply it to millions of aspirants are proliferating in thousands, mostly in the private sector. It is also a language of spontaneous personal use among the elite and its writers are winning recognition internationally. Despite its divisive potential—as a device for restricting access to the elite—it is regarded in a positive light as a promoter of upward social mobility. Thus, after the departure of the British, English has gained a stronger foothold in South Asia than ever before.

SEE ALSO: Language, Politics, and the Nation-State; Language Policy and Multilingualism; Language Policy and Planning: Overview; Linguistic Imperialism; National Language and English in India

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English and Multilingualism in Singapore

LISA LIM

To appreciate the situation of English in Singapore, one must recognize the multilingual context in which English has existed from the outset. Claimed by the British East India Company in 1819 as a nonsettler exploitation colony, Singapore saw both the introduction of English and the development of a multicultural, multilingual population that characterizes the nation today.

Its establishment as a trading post brought about a dramatic population increase from a few hundred to half a million within a century, a result of the rapid influx of immigrants from all over Asia, resulting in a mix of peoples and languages of heterogeneous origins (see Lim, 2010a, for a comprehensive account). The "Malays" included immigrants from various parts of the Malay/Indonesian archipelago who spoke not just Malay but also Javanese, Buginese, Boyanese; the "Chinese," largely from the southern coastal areas of China, spoke Hokkien, Teochew, Cantonese, Hakka, Hainanese; the "Indians" from the north and south of India as well as Ceylon had Tamil, Telugu, Malayalam, Punjabi, Bengali, Sinhalese as their languages. There were also mixed communities such as the Straits Chinese whose vernacular was Baba Malay, and Eurasians who spoke Portuguese Creole. During this era, Bazaar Malay, a form of restructured Malay, the lingua franca in the region for centuries, served as the interethnic lingua franca in Singapore, with Hokkien the intra-ethnic lingua franca for the Chinese. The formal introduction of English language was via English-medium schools, the first in 1823, which, while initially for the elite, rapidly increased in enrolment: by the late 1940s about a third of students were enrolled in English-medium schools. The English acquired was at the outset a second language for the local population.

At independence in 1965, Singapore's language policy embodied pragmatic multilingualism. English, the former colonial language, was retained as an official language, serving as the language of science and technology and of international trade and commerce, and as a neutral non-native language not associated with any of the Asian cultures and not the mother tongue of any of the ethnic groups, giving none an advantage. The three other official languages, Mandarin, Malay, and Tamil, referred to in official discourse as "mother tongues" (MTs), representing the three official races "Chinese," "Malay," and "Indian" respectively, were selected to act as cultural ballast and provide Asian values (see Wee, 2003; Wee & Bokhorst-Heng, 2005). English became the primary working language, and was made a compulsory language in schools, initially either as a first language, or as a second language in the vernacular (Chinese-, Malay-, or Tamil-medium) schools, and eventually, by 1987, as the medium of instruction in all schools, with the "mother tongue" learned as a "second language" in an English-knowing bilingualism system.

Up until the 1970s, Singapore society continued to be highly multilingual (Kuo, 1980, p. 51), with a typical repertoire of a Singaporean Chinese including the native Chinese dialect, the dominant Chinese dialect, Hokkien, one or more additional Chinese dialects, Bazaar Malay, and possibly English, Mandarin, Baba Malay and Malay (Platt, 1980, pp. 64–5). However, the active implementation of the postindependence language policies (Bokhorst-Heng, 1998), involving the aggressive promotion of certain languages over others—for

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example, the annual Speak Mandarin Campaign, started in 1979—had a significant impact on the multilingual situation and on English. Mandarin became the language most frequently spoken at home for the Chinese as a whole, increasing from 10 percent (1980) to 45.1 percent (2000), displacing other Chinese languages; 87 percent of the Chinese claimed to be able to understand Mandarin by 1988, and it became the language of choice for many younger Chinese Singaporeans' intra-ethnic communication in all domains. English started displacing Hokkien and Bazaar Malay as lingua franca from the late 1970s to early 1980s, especially amongst the younger and more educated, with some 70 percent of Primary 1 children in 1990 having English as a dominant language (Lim & Foley, 2004, pp. 5–6).

With new generations having a proficiency in English and using it as one of their dominant languages, in a context of contact with many other local languages, a restructured variety of English has evolved, Singapore English (SgE), which may be viewed as existing in a continuum from acrolect through mesolect to basilect, or as a more standard versus colloquial SgE. Quite swiftly, within some two decades, SgE underwent nativization, attaining endonormative stabilization, and Singaporeans can be said to be native speakers of SgE (Gupta, 1994; Lim & Foley, 2004). The linguistic features of SgE have been widely documented (e.g., Lim, 2004) with some particularly characteristic features being: the typological trio of zero copula, predicative adjectives and topic prominence (Ansaldo, 2009) aspects (Bao, 2005); discourse particles acquired from the local languages Malay, Hokkien, and Cantonese (Gupta, 1992; Lim, 2007); and Sinitic-type tone on particles and at word and phrase level (Lim, 2009a, 2010a, 2010b). What is noteworthy is how these reflect the multilingual nature of the contact dynamics, and also how more contemporary SgE seems to show more Chinese influence.

The increasingly widespread use of Singlish, the more colloquial/meso-/basilectal variety, led to the government's concern that it would adversely affect Singaporean's competence in Standard English and consequently their global intelligibility and economic competitiveness. The Speak Good English Movement (SGEM), launched in 2000, pits Singlish against "good English," discouraging its use in all domains, even intimate, informal ones where colloquial varieties of any language would be natural and expected (see Rubdy, 2001; Lim, 2009a).

In spite of the official stand on SgE, the variety has been widely embraced by its speakers, as evidenced in myriad online material (e.g., www.TalkingCock.com and www.mrbrown.com), as well as Singlish dictionaries. The variety has also been documented as being used in a fluid mix with more Standard English in teacher talk within a classroom setting for negotiating identities and achieving goals (Alsagoff, 2010). Such "glocalization" in the mixing of codes is not restricted to varieties of English. Given the multilingual setting that is Singapore, it is hardly surprising that code switching/mixing abounds: tight mixes of English, Mandarin and Hokkien, or English and Malay, and so forth, have been documented, noted for example, in the Grammar of Spoken Singapore English Corpus. What is particularly interesting is that such a plurilingual practice may be considered a mixing that is a single code in its own right (Lim, 2009b), one which characterizes the SgE speaker in today's multilingual ecology.

SEE ALSO: English in Asian and European Higher Education; Varieties of English in Asia

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English and the Vernaculars From a Postcolonial Perspective

VAIDEHI RAMANATHAN

This entry offers a situated account of English and vernacular literacy practices from a postcolonial perspective. Postcolonial scholarship in disciplines such as cultural studies and English literature has alerted us to the extent to which colonial rule partially created and reproduced negative images regarding "natives" so as to be better able to govern. Within applied linguistics, this awareness provides a necessary sociohistorical background against which to understand current grounded realities around language teaching and learning. Particular colonial policies in South Asian education—especially the divide between the English-medium (EM) and vernacular-medium (VM) assume neocolonial hues and dovetail directly with local societal stratifications (of caste and class) that exacerbate unequal conditions between those who are educated in the two tracks. Situated in an ongoing endeavor of a variety of local contexts in Ahmedabad, Gujarat, India, this entry calls attention to some key educational sites through which these inequities are reproduced, and some ways in which individual teachers and institutions assume the right to make conditions more just and equal. The entry concludes with a discussion of how a postcolonial research framework allows us not only to understand grounded inequities in terms of historical colonial pasts, but also how fellow humans draw on particular rationalizations to work toward moving us all to more a equal footing.

What Is Postcolonialism?

In simple terms, postcolonialism refers to points of view of people from formerly colonized countries regarding their colonial past. In terms of scholarship, it manifests itself as "speaking back" to colonial powers, often in the language of the colonizer. European colonial powers had in the 19th century assumed the right to take over entire countries—almost all of them non-Western—and sought to rationalize their takeover in terms of prevailing anthropological discourses that viewed non-Western peoples as "inferior, child-like or feminine, incapable of looking after themselves (despite having done so perfectly well for millennia) and requiring the paternal rule of the west for their own interests (today they are deemed to require 'development')" (Young, 2003, p. 2). Atrocities committed by colonial powers in the defense of building empires varied in different countries, with some cataclysmic events spurring local "subjects" toward fighting for independence. Within the Indian context, the Jallianwalla Bagh massacre of 1919 where General Dyer opened fire on an unarmed crowd of 20,000 people was a pivotal moment for freedom fighters such as Gandhi, Tagore, and Andrews (see Ramanathan, 2009) who sought to overturn more than 500 years of colonial rule (India Independence was won in 1947).

The policies and mandates that the English colonial powers set in place, especially in the field of education, were in many instances (including the South Asian context of India, Pakistan, Sri Lanka, and Bangladesh) ones of "divide and rule." This was a mode of operating that the Raj (as the English colonial power is known in India) devised so as to rule more effectively. The Raj needed Indians to run their empire and so offered English

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education to small numbers of Indians that would help them in this endeavor. This one colonial policy took root and went very deep into the South Asian ideological space to the point that EM education was deemed as having more cultural capital and symbolic power than an education in the vernacular (Gee, 1990; Kalantzis & Cope, 2002; McCarty, 2002, 2005), an ideology that is very visible, enacted, and real today. The general importance accorded to English and the extent to which it pervades the everyday life of the postcolonial person, has, from the point of view of some scholars, rendered the postcolonial identity "hybrid." Indeed, authors such as Verma (2010) write about "forked tongues" and the general deracination a person educated in EM feels because they do not have as intimate a connection with their local vernacular as they do with English (and so by extension may be seen to feel "less Indian"). Postcolonial scholarship often refers to this amalgam as being "hybridized" because a variety of colonial and vernacular resources inform personal identities. (Formerly colonized countries have also been called the "subaltern" since they remained on the margins of dominant hegemonic power structures.)

Locating the Research in India in This Framework

Ramanathan's long-term research endeavor with EM and VM teachers and students in Ahmedabad, Gujarat has to do with partially addressing ways in which colonial policies assume neocolonial laminations in current postcolonial India. Sixty-five years on from independence from the Raj, India has begun to rethink and change colonial education policies. But many colonial mandates remain and this entry addresses how everyday lived realities are negotiated. The pool of raw materials that forms the research on which the current discussion rests spans 1999–2011 and what is presented here is a most selective sample, and is not intended, by any means, to be comprehensive. This pool includes:

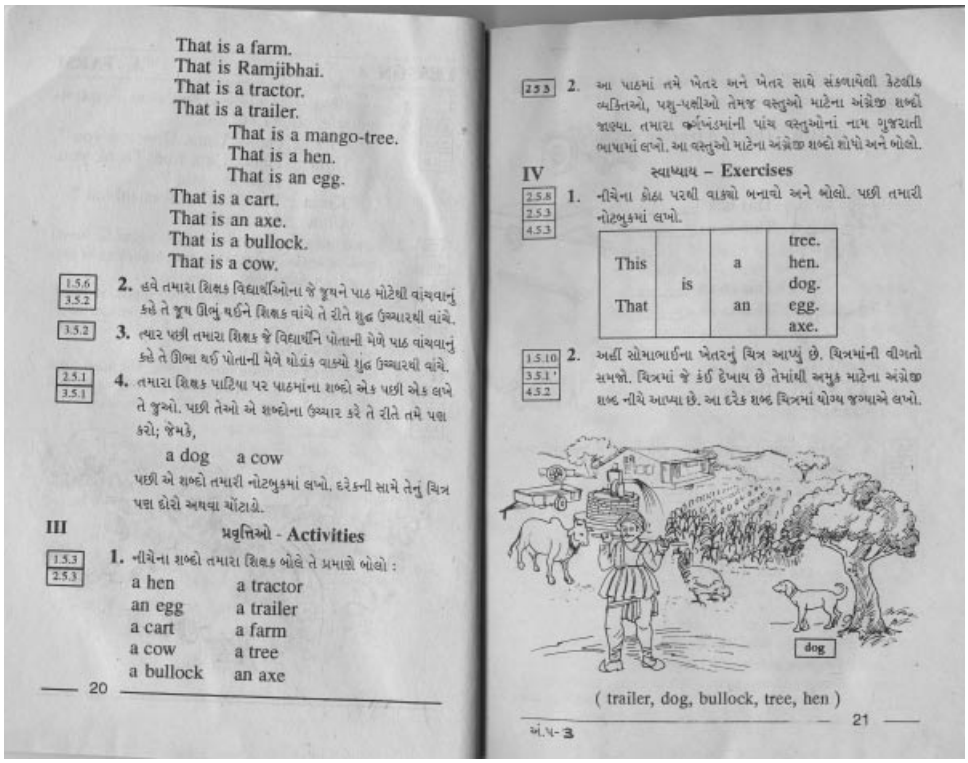
- close workings with three institutional contexts (an EM middle-class Jesuit college, a private EM middle-class business college, and an inner-city, poor VM women's liberal arts college);
- twenty-one semi-formal interviews with faculty members across the three institutions, each of which lasted about an hour and a half long, more than 80 interviews with EM and VM students, more than 109 hours of classroom observations in the three settings;
- a variety of written documents ranging from official bulletins, student writing, assignments, newspaper articles, exams;
- a range of informal discussion meetings where teachers freely exchanged ideas about teaching practices, workloads, institutional and state-level educational policies; and
- extensive engagements and interviews at the Gandhi Ashram where civic efforts at community building happens through non-formal education.

Instances of the English–Vernacular Divide

Vernacular-Medium Pedagogic Practices

One instance of the gulf between students educated in the EM versus those in the VM can best be exemplified by the use of vernacular learning practices such as choral recitation, which are commonplace in VM classrooms. The excerpt from a Gujarati-medium (GM) textbook illustrates this (see Figure 1).

The instructions in Gujarati (on page 21 of Figure 1) direct students to (a) stand up and repeat after the teacher, (b) to engage in single and choral repetition with partners enacting the dialogues, and (on page 20 of Figure 1) (c) to draw on the formulaic phrases



That is a farm.
That is Ramjibhai.
That is a tractor.
That is a trailer.
That is a mango-tree.
That is a hen.
That is an egg.
That is a cart.
That is an axe.
That is a bullock.
That is a cow.

1.5.6 3.5.2 **2.** હવે તમારા શિક્ષક વિદ્યાર્થીઓના જે જૂથને પાઠ મોઢેથી વાંચવાનું કહે તે જૂથ ઊભું થઈને શિક્ષક વાંચે તે રીતે શુદ્ધ ઉચ્ચારથી વાંચે.

3.5.2 **3.** ત્યાર પછી તમારા શિક્ષક જે વિદ્યાર્થીને પોતાની મેળે પાઠ વાંચવાનું કહે તે ઊભા થઈ પોતાની મેળે થોડુંક વાક્યો શુદ્ધ ઉચ્ચારથી વાંચે.

2.5.1 3.5.3 **4.** તમારા શિક્ષક પાટિયા પર પાઠમાંના શબ્દો એક પછી એક લખે તે જુઓ. પછી તેઓ એ શબ્દોના ઉચ્ચાર કરે તે રીતે તમે પણ કરો; જેમકે,

a dog a cow

પછી એ શબ્દો તમારી નોટબુકમાં લખો. દરેકની સામે તેનું ચિત્ર પણ દોરો અથવા ચોંટાડો.

III પ્રવૃત્તિઓ - **Activities**

1.5.3 2.5.3 **1.** નીચેના શબ્દો તમારા શિક્ષક બોલે તે પ્રમાણે બોલો :

a hen	a tractor
an egg	a trailer
a cart	a farm
a cow	a tree
a bullock	an axe

— 20 —

2.5.3 **2.** આ પાઠમાં તમે ખેતર અને ખેતર સાથે સંકળાયેલી કેટલીક વ્યક્તિઓ, પશુ-પક્ષીઓ તેમજ વસ્તુઓ માટેના અંગ્રેજી શબ્દો જાણ્યા. તમારા ક્રીબંડમાંની પાંચ વસ્તુઓનાં નામ ગુજરાતી ભાષામાં લખો. આ વસ્તુઓ માટેના અંગ્રેજી શબ્દો શોધો અને બોલો.

IV સ્વાધ્યાય – **Exercises**

2.5.8 2.5.3 4.5.3 **1.** નીચેના કોઠા પરથી વાક્યો બનાવો અને બોલો. પછી તમારી નોટબુકમાં લખો.

This	is	a	tree.
			hen.
			dog.
That		an	egg.
			axe.

1.5.10 3.5.1* 4.5.2 **2.** અહીં સોમાભાઈના ખેતરનું ચિત્ર આપ્યું છે. ચિત્રમાંની વીગતો સમજો. ચિત્રમાં જે કંઈ દેખાય છે તેમાંથી અમુક માટેના અંગ્રેજી શબ્દ નીચે આપ્યા છે. આ દરેક શબ્દ ચિત્રમાં યોગ્ય જગ્યાએ લખો.

dog

(trailer, dog, bullock, tree, hen)

અં.પ-૩ — 21 —

Figure 1 Excerpt from a Gujarati-medium textbook, Standard 5 (Nataraj & Joshi, 1999, pp. 20–1) © Gujarat State Board of School Textbooks, Gandhinagar

(*She is* _____, *She is* _____) and to repeat them singly or chorally. These modes of learning are evident in classroom interactions as well with teachers frequently eliciting choral responses from students. The following interactions from Sanskrit and English classes illustrate this:

Sanskrit-class excerpts:
1. T: *Kaya text laavanu cche?* (Which text is to be bought?)
Sts: (responding chorally): *Kaadambari text laavanu cche*. (Kadambari [a Sanskrit play] is to be bought.)
T: *Kyan thhi laavanu cche?* (Where is it to be bought from?)
Sts: *Ratan pol maathi laavaanu cche* (from Ratan pol)
2. T: *Tho eh vakhate Avanti eh, kone?* (So at that time Avanti, who?)
Sts: Avanti
T: *Avanti eh kharraab laagyu. Su laagyu?* (Avanti felt bad. What did she feel?)
Sts: (responding chorally) *Kharraab laagyu* (felt bad)
English-class excerpts:
3. T: *Kayaa form karvaana chhe ame*? (What form are we doing this year?)
Sts: Comedy form (said in English)
T: *Ane kaaya playwright vaanchvaanu chhe?* (And which playwright are we reading?)
Sts: Wilde

The English and Sanskrit classes had 8–10 such interactions, as opposed to an average of 2 per class in the content-area classes. The questions on the part of the teacher in each of these excerpts are uttered in distinct ways: slowly in a sing-song manner with an exaggerated rise at the end (Ramanathan, 2005a, 2005b). The general explanations given by the language teachers for using such practices range from "classical languages like Sanskrit have always been sung or chanted" and "singing and chanting allows you to memorize information" (taken from a faculty interview, hereafter [FI]) to "this is what they have been used to in school and other non-schooling areas" (FI). As shown elsewhere (Ramanathan, 2005a), such choral recitations are not unusual in the community, especially in discourse events such as "*kathas*" in temples where priests take certain Hindu myths and explain their relevance to everyday living *(Ameh katha maa kevi rithe kahiye cche*? How do we speak in kathas?), and at key junctures elicit choral responses. Breaking-off to ask questions in the middle of extended narrative turns to get an audience to respond together serves the dual purpose of ensuring audience participation as well as testing attention. One of the instructors who also gives these *kathas* in local temples (indeed, many of the students had attended them) maintained that chorusing responses—a vestige of a strong oral, vernacular tradition (Crook, 1996)—allows novices to engage in learning without apprehension of being judged. Several of the interviewed students said they often picked up "answers" from their friends in such responses and that they could recognize the intonational cues of their teachers' voices that prompted such responses because they were used to it in other relatively less non-academic, and non-institutionalized settings.

Divergent Pedagogic Goals in English-Medium and Vernacular-Medium Classrooms

Another very local instance of the English–vernacular divide is in the divergent pedagogic goals for English literacy for students in the two tracks of education. Called "minimal levels of writing," or MLLs, these writing requirements are mandated by the Gujarat State Board of Education, and are partially presented in Table 1.

Two noticeable writing-related differences above are: (a) writing for VM students is presented as a discrete skill and is addressed separately from reading, a feature that contrasts with writing and reading being presented as conjoined entities for EM students; and (b) that writing for EM students is essayist in orientation from early on: "writing paragraphs on given topics" versus "gaining the basic mechanics of English writing . . . with proper spacing" (EM and VM textbooks respectively, grade 5), or learning to write words and sentences neatly versus writing essays based on the texts (VM versus EM texts, respectively, grade 7).

Such instances of the "divide" necessarily force one to raise the following two questions: What can be done to make language-education issues more equitable? And how do researchers, policy makers, teachers, and institutions work at bridging such sociopolitical gulfs? The following section addresses examples of how particular instructors and institutions have found "back-door" ways of circumventing English- and vernacular-related divides.

Bridging the Divide by Harnessing Vernacular Resources

As explained elsewhere (Ramanathan, 2005a), recognizing that teaching their largely low-income students English is not going to empower them ("Teaching them English is not going to do it; that has to come later," [FI]), the VM teachers at the women's college have found non-conventional approaches to refashioning their educational realities by enhancing both the vernaculars and the self-esteem of their VM students. Interpreting "empowerment" and "pro-vernacular" in terms of addressing local, community problems,

Table 1 Divergent MLLs for GM and EM students (from Purani, Salat, Soni, & Joshi, 1998, pp. 1–3)

	Excerpts from MLLs from English textbooks used in the Gujarati-medium	*Excerpts from MLLs from English textbooks used in the English-medium*
Grade 5	*Writing*: Gains control of the basic mechanics of writing in English like capital letters, small letters, punctuation, writing neatly on a line with proper spacing Transcribes words, phrases, and sentences in English Writes cardinals up to fifty, telephone numbers, road signs Produces words and spells them correctly Writes numbers up to 50, telephone numbers, road signs	*Reading and writing*: Reading textual material and writing answers to questions based on and related to the text Reading and interpreting and offering comments on maps and charts Reading children's literature and talking about it Writing paragraphs on given topics Reading and writing simple recipes Reading and interpreting labels on wrappers
Grade 6	*Reading*: Reads aloud simple sentences, poems, dialogues, and short passages with proper pauses Reads and follows given directions Reads numbers up to a hundred *Writing*: Writes with proper punctuation marks Writes words and sentences neatly on a line with proper spacing, punctuation marks, and capitalization Writes answers to questions based on text material Writes simple guided compositions in 4–5 sentences on people, objects, or places Translates words and sentences from English into Gujarati and Gujarati into English	*Reading and writing*: Reading textual material and writing answers to questions based on the text Reading and interpreting simple abbreviations Reading narrative prose and adventure stories and talking about them Writing/building stories based on given questions/points Reading and using the telephone directory Writing captions for given photographs, pictures, maps, charts, diagrams and graphs Writing messages for telegrams Reading and interpreting labels on bottles
Grade 7	*Reading*: Reads aloud simple sentences Finds key words and phrases from a text *Writing*: Writes words and sentences and paragraphs dictated with correct spellings, proper punctuation marks Learns to write words and sentences neatly on a line with proper spacing and punctuation Writes answers to questions based on the text Writes simple guided compositions Writes informal chits [notes]—thank-you notes and invitations	*Reading and writing*: Reading textual material and writing answers based on the text Writing essays based on the text Reading literary stories and prose lessons Reading simple passages of reflective prose Reading and interpreting common instructions such as railway timetables Reading and interpreting maps, labels Reading short plays/passages/writing summaries

some teachers in the women's college began a local chapter of a nationwide social service sector (called the National Service Scheme, or NSS). This is a nationwide volunteer organization that trains students in the rudimentaries of social work and sends them out in teams to areas (primarily poor rural villages and farms) on special projects that range from inoculating babies in villages, to raising awareness about health issues, to doing investigations on the purity of water in particular regions. The primary aim for starting this project was to involve students in local, community issues, and while none of these projects are directly related to English or vernacular teaching, they are crucial to the pro-vernacular sentiments of the school. One of the teachers who started this social service project at the college specifically mentions the need to "awaken in students the spirit of self-reliance" (FI). As he says:

> Having them engaged in an extra-curricular project such as this makes them really strong citizens. They are learning to take pride in so many different things at the same time: their background, their home language, their communities . . . Now they are beginning to see that being in the VM is really valuable: many of them will not be able to do the community work if they did not know Gujarati . . . Suddenly they are realizing that they can be self-reliant with their mother-tongue. (FI)

While "empowering" at this college takes partial form in extracurricular activities (such as the NSS), "reawakening" seems to occur directly in classroom practice, where the focus seems to be more on being pro-vernacular as opposed to anti-English. The following views of a lecturer in Gujarati literature (at the women's college) illustrates this point:

> See, I begin with what they already know, and that is Gujarati. For most of these students, Gujarati is their mother-tongue. And once they have learned to appreciate Gujarati literature, once I have re-awakened their interest in stories in their mother-tongue, other kinds of literature open up. Slowly, I get them reading English literary texts, and we draw connections. Recently, I assigned *Sophie's Choice* and they really really loved it. We worked really hard and at the end of it, one of them talked to me about what she had learned from this text and the Gujarati novel we had just finished, about how complex life's choices are and we cannot make simple judgments about where people end up in their lives. I almost cried when she said that. For an 18 year old to say that with feeling meant that something in our class had clicked. Just sparks like that make everything in this place worthwhile. (FI)

"Reawakening" for this teacher, then, is not a matter of "removing English as much as it is of using vernacular and vernacular knowledges as ethical starting points" (note the irony here). While this teacher is not actively anti-English as she explains in the quote above, she very clearly stresses vernacular literature as a way into reawakening and empowering her students.

Winding Down: Articulating Implications

Each of the above local instances, whether they be around the colonial/postcolonial English–vernacular divide or around instances in non-formal domains where civic awareness and change happens, are spaces of unplanned language planning, the micro realms that Eggington (2002) argues need to be part of "formal" language planning, and an integral part of addressing policy studies in terms of their historical frames of reproduction. From a postcolonial perspective, this means educating ourselves about how colonial legacies of divide and rule, of historically reproduced demeaning images, and centuries of mental

conditioning about inferiority finds direct articulation in postcolonial realities.

But this postcolonial orientation to research isn't limited to the South Asian context. It is a perspective that can be applied to any research project in any part of our planet. It does, though, insist on at least two key strains: First, since this framework involves "speaking back" to colonial powers, it ushers in history, a discipline that has been generally regarded as marginal to applied linguistics. In terms of Ramanathan's research in India, it was necessary to gain a fuller sense of how the author was at that point in time—where she fitted in, how she saw herself, others, our planet—and to arrive at a rounder sense of historical conditions that exceeded the history that was taught in K-12. This meant being educated about colonial documents, especially as they pertained to language teaching, largely separatist schooling policies for Indians and the English, ways in which Indian history until 1947 was told to Indians by British historians (which, as mentioned earlier, was by and large unkind), the efforts of Indian historians writing Indian history, and how the author's own family background had differing relations vis-à-vis the English (both of her grandfathers worked for the Raj, but one was a staunch Gandhian, the other an Anglophile). History, then—personal, national, international—is crucial in the postcolonial endeavor.

The second key point that this framework implies is a deep commitment to recognizing how history plays itself out in contexts of inequity. Within applied linguistics, this could mean identifying ways in which unjust conditions get reproduced in everyday interactions (the consistent use of a certain dismissive or patronizing tone in interactions with poorer VM students, for instance), connections between these "smaller" contexts and other structural inequities (reproduced in textbooks, or in the low expectations on the part of teachers regarding VM students), and then further out into the larger culture (ideologies perpetuated by the media that equates EM people with "sophistication" and the VM with being "backward"). Bringing the past into understanding inequity in the present permits insights into colonizing policies that still hold sway; being alert to cross-questioning our own assumptions permits us to address shifts and transformations and agentive acts on the part of teachers and administrators to change conditions.

This postcolonial framework—wherein we recognize, acknowledge, and transform the infinitesimally small ways in which inequity gets reproduced—alerts us to disputes and conflicts around ownership, not just of geographic areas but of representations, and of what is involved in claiming the right to speak for one's self about one's past. The wresting back of historiography from "colonial powers" is all about assuming the right to claim reception and integrally impacts our engagements in applied linguistics.

SEE ALSO: Language Ideology: Overview; Language Learning and Teaching: Overview; Multilingual Education in India; Multilingual Identities and Multilingual Education; World Englishes: Overview

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English as Lingua Franca

CHRISTIANE MEIERKORD

Introduction

As Bolton (2000, p. 265) points out, "Today it is something of a cliché that English is a global language." As such, English is no longer used primarily by speakers for whom English is a native or first language (L1). Following its spread into the British settlement colonies, then into the trade colonies, and eventually into almost any nation, English assumes a multitude of varieties today. Many of these are second language (L2) varieties or foreign-language forms of English, whose speakers have an L1 other than English. More and more, English has come to be used for interactions between such individuals. They use English as a lingua franca.

Lingua francas are languages used for communication between speakers who do not share either of their first languages. As a lingua franca, English may, for example, be used for *inter*national communication between a German and a Japanese, but also *intra*nationally, for example between a Xhosa and a white speaker of Afrikaans in South Africa. The community of lingua franca users is, thus, a very heterogeneous one, comprised of individuals from a vast number of different linguistic and cultural backgrounds, and the constellations of speakers interacting in English as a lingua franca are ever changing.

This entry describes the history of research into English as a lingua franca, the central positions that have evolved, and the features which characterize English as a lingua franca at the various levels of language structure and use.

Researching English as a Lingua Franca

The term "lingua franca" originates from the label given to a pidgin that was spoken in the Mediterranean basin from the 15th to the 19th century (Wansbrough, 1996). Like English in its function as a lingua franca, this pidgin was an L1 to neither of its speakers. It was primarily used for restricted purposes in the ports and aboard the vessels that navigated the Mediterranean Sea. And since Lingua Franca was a trade language, the term *lingua franca* was first understood as synonymous with *auxiliary language*, and the use of a language as a lingua franca was strongly associated with its performing very specific and restricted purposes only. In 1953, however, UNESCO defined a lingua franca as "a language which is used habitually by people whose mother tongues are different in order to facilitate communication between them." This covers a very wide variety of communicative functions. And in fact, today, lingua francas have come—due to increased migration and interlingual relationships—to be employed for a variety of functions, which extend well beyond serving for business communication. As Meierkord and Knapp (2002) point out, the different languages used as lingua francas fulfill a range of different purposes. These vary depending on whether English is used as an *intra*national or as an *inter*national lingua franca and range from very restricted functions such as Airspeak or Seaspeak to covering refugee interviews (Guido, 2008). English is employed for governmental and administrative purposes in many postcolonial countries and as the medium of instruction in schools and tertiary education,

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and it also plays an important role in intimate, personal interactions, as a medium for creative writing, and as a language of religious communities.

Lingua franca communication in English has been studied from many perspectives. Scholarly interest in the use of English as a lingua franca can be traced back to the 1970s and 1980s, when it originated from within the paradigms of applied linguistics and intercultural communication studies. At the time, scholars started to investigate interactions taking place *between* non-native speakers of English. Authors discussed this as a particular type of interlanguage communication, whereas others have placed their emphasis on aspects related to intercultural communication (see Meierkord & Knapp, 2002, for details). Typically authors in those days did not explicitly use the phrase *English as a lingua franca*.

The label gained currency in the 1990s, when the topic and issues related to it were increasingly approached in a more empirical manner, particularly from within paradigms such as discourse analysis, conversation analysis, and interactional sociolinguistics. (An excellent and very comprehensive account of the various pieces of research on English as a lingua franca is available in Lesznyák, 2004.) Nevertheless, the topic has only emerged as a major field of research since the early 2000s, when corpus linguistics allowed for better-informed descriptions of the characteristics of lingua franca communication, and when evidence became available from more diverse contexts ranging beyond the academic to now also include the ones mentioned above.

World Standard English, Common Core, and Interactions Involving Different Englishes

Since the beginnings of scholarly discussions of English as a lingua franca, authors have proposed models to describe how English would perform this function. Some have even suggested that a new variety, restricted in terms of a reduced vocabulary and grammatical complexity, would best serve this function, being easier to learn than the ones based on the native speaker varieties, yet communicatively adequate. One of the earliest proposals for such a variety was Ogden's *Basic English* (Ogden, 1937), which combines a restricted set of grammatical rules with a lexicon of approximately 850 words. Similarly, *Nuclear English*, proposed by Quirk (Quirk, 1985), is characterized by a reduction of homosemy; of the complexity of, for example, restrictive relative clauses; and of the system of modal verbs.

Other authors did not attempt to design a new variety of English as an international lingua franca. Rather, they assumed that English would develop toward a homogeneous new variety without the active intervention of linguistic engineers. Crystal proposes that a form which he calls *World Standard Spoken English* would arise, a form that would coexist with other varieties. Crystal conceives this form of English as characterized by "careful pronunciation, conventional grammar and standard vocabulary" and as a variety which "takes the form, for example, of consciously avoiding a phrase that you know is not likely to be understood outside your own country" (1997, pp. 137–8).

Similar reasoning underlies some of the current discussions of English as a lingua franca, particularly visible in phrases such as "ELF-communication": Around the year 2000, scholars started to investigate lingua francas from a corpus linguistic perspective. Jenkins (2000) searched her corpus of authentic lingua franca English conversations for pronunciation features, both of native and non-native speakers, which led to unintelligibility and misunderstanding in her data. Based on her findings, she argues that a number of sounds, suprasegmentals, and articulatory settings could and should be modified in comparison to the British or General American English model. As a result, she proposes a *Lingua Franca Core*, in which, for example, /θ/ and /ð/ would easily be replaced by /t/ and /d/ or /s/ and /z/ without impeding intelligibility. Similarly the dark /l/ might be replaced by /ʊ/.

A number of projects resulted in the compilation of corpora of English as a lingua franca. For example, Seidlhofer compiled the Vienna–Oxford Corpus of International English at the University of Vienna (Seidlhofer, 2001), and Mauranen a Corpus of English as an Academic Lingua Franca at the University of Tampere (Mauranen & Ranta, 2009).

What these projects have in common is the overall aim of establishing a common core of lingua franca English, similar yet again to what had been conceived in the 1980s. However, while initial results seemed to indicate that such a core could be discerned, with features identified including a lack of third person singular *-s* to mark subject–verb concord, and a lack of tense inflections, redundant uses of prepositions, or replacement of infinitive constructions with *that*-clauses, it seems that this approach has not convincingly yielded results that point to the emergence of a homogeneous variety or core. At the universities of Berne, Basle, and Fribourg, Watts, Allerton, and Trudgill looked at what they had labeled *Pan Swiss English*, a form of non-native English which they held was emerging between native speakers of Swiss German, French, and Italian in Switzerland. However, Durham's (2007) careful analysis of English produced by L1 speakers of German, French, and Italian revealed that it was only with reference to the speakers' preference of *will* over *going to* that there seems to be focusing of the different Englishes toward a homogeneous variety. All other variables did not reveal a tendency to converge across the various L1 groups.

Upon reflection, the above results are not surprising: Interactions involving speakers of different L1s most likely involve very different Englishes, as they have been described from within the World Englishes paradigm ever since the 1980s. Very early and from within that paradigm, Smith (1984, p. 55) assumed that in uses of English as an international lingua franca (reflected in his term *English as an International Language*) individual users will employ a number of different forms of English, such as nativized varieties, and that participants using English as a lingua franca will need to cope with the resulting heterogeneity.

When speakers then engage in lingua franca communication in English—that is, if, for example, an Indian and a Japanese or a German and a Kenyan interact in English—this heterogeneity can best be described as what Meierkord (2004, 2012) has called "Interactions across Englishes" (IaEs).

IaEs as Heterogeneous and Involving Ever New Speaker Constellations

Given that speaker constellations are infinitely kaleidoscopic, IaEs occur in ever new constellations of Englishes and are highly heterogeneous. They include many different Englishes, all of which may be spoken at highly diverse levels of proficiency. Figure 1 illustrates those types of Englishes which can frequently be found in IaEs.

When English is regularly used for *intra*national communication, it has frequently developed into a nativized variety. In these, transfers from the speakers' mother tongues, which occur at the different linguistic levels, eventually stabilize, leading to new developments at all levels of language; for example, *He came to my office by four o'clock* (Nigerian English, McArthur, 2003, p. 279) or *One boy give a report to the teacher every morning* (Philippine English, McArthur, 2003, p. 346). Also, English is adapted to a new sociocultural context, as is most apparent in the lexicon of these varieties. For example, speakers of English in Nigeria have coined the expression *head-tie* to denote a piece of cloth worn around the head by the women in the country. The individual indigenized varieties spoken throughout the world have been thoroughly documented in a vast number of publications. However, the use of English as an *intra*national lingua franca almost always implies that speakers of various, at times mutually unintelligible, L1s interact. Often, their different L1s are reflected in their Englishes, for example in Afrikaans English, Black South African English, and South African Indian

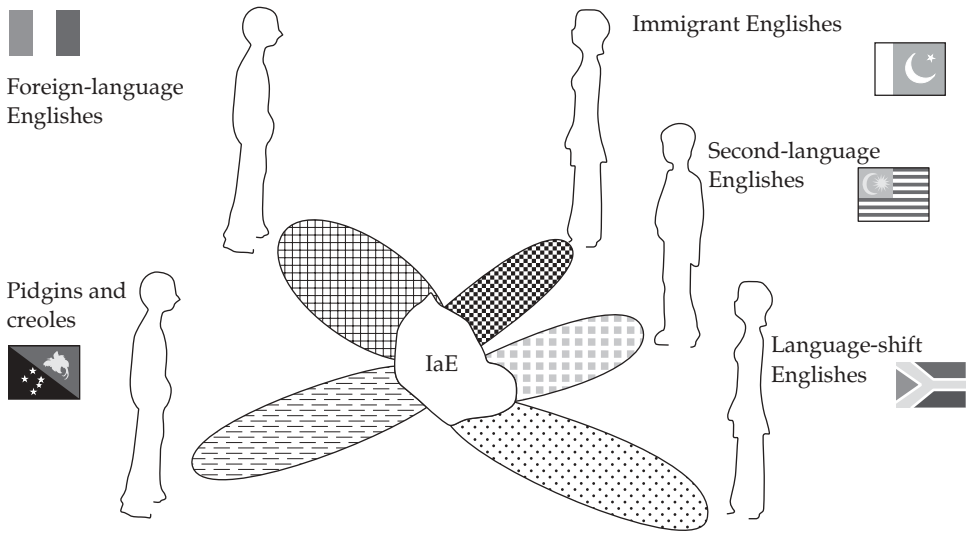

Figure 1 Interactions across Englishes

English. However, not much research has so far been carried out on the processes that characterize intranational IaEs.

Speakers of indigenized Englishes are also frequently involved in *inter*national interactions conducted in English as a lingua franca. Additionally, these interactions may involve speakers who have predominantly acquired English in a classroom context only and who have not fully acquired English. Their unstable interlanguages are approximative, transitional systems, which reflect the developmental stage of the individual learner. Their productions often contain structures which differ from both their L1 and standard varieties of English. Furthermore, they may be characterized by communication strategies, employed to compensate for deficits in the L2. For example, speakers use paraphrases to express lexical concepts when their interlanguage does not yet contain a specific lexical item.

Speakers potentially take their different Englishes into IaE, with all the features associated with them. As a result, IaEs are highly variable. The next section discusses what research has found to characterize speakers' factual behavior in these interactions.

Characteristics of IaEs

The characteristics of lingua franca communication in English have been investigated at the levels of vocabulary, syntax, and discourse. Meierkord (2005) documented that the lexicon of IaEs receives only very limited input from indigenized Englishes, such as Nigerian or Indian English. At the same time, it contains only few phrasal verbs or idioms which are usually held to characterize British or American English. In cases where these are used, speakers at times employ a form which has developed in their regional varieties. For example, a Nigerian speaker used *I wish you* sleep off, *so you can't go again, and you come back in*, where *sleep off* denotes the meaning 'sleep away'. The type–token ratio (7.95) of the conversations indicates that speakers in these IaEs use a restricted vocabulary. The analyses also revealed that speakers seldom employed derived or compounded words and thus use a simplified vocabulary, in comparison to native speakers of English. Very seldom, speakers creatively form new lexical items such as *misdecision* 'false decision') or

pressurous 'full of pressure'). In excerpt (1), a Pakistani speaker uses the items *supermarket* and *Saturday market* to refer to Camden Town flea market, since he does not know the item *flea market*.

```
(1)
01  Rashid:  I went to supermarket.
02  Anja:    Supermarket, wh[at supermar]ket?
03  Rashid:                 [I mean this-]  I mean..you said to this..Camden
04           Town market.
05  Anja:    Hm?
06  Rashid:  This Cam[den Town.]
07  Anja:            [Camden] Town market. It's not a supermarket.
08  Rashid:  Well, Saturday market.
```

In sum, the lexicon presents itself as reduced and culturally largely neutral. At the same time, it is unstable and heterogeneous in that items and strategies vary according to the participants of the individual conversations.

As regards grammar or syntax, Meierkord (2004) found that in her informal conversations speakers used very heterogeneous Englishes. Their productions were characterized by an overwhelming correspondence to the patterns of the traditional standard Englishes (British and American English); in fact, 88% of all utterances showed this. This correlated with the speakers' proficiency and peaked at 95% with those speakers from the Expanding Circle (Kachru, 1985) who had reached a very high proficiency level. Interestingly, speakers from Outer Circle countries who might potentially have used their localized Englishes stuck to standard varieties 94% of the time, at the level of grammar. Those utterances which differed from the standard grammars were characterized by transfer phenomena, developmental patterns, and nativized forms, while simplification, regularization, and leveling processes could also be observed. Speakers predominantly used grammatical constructions that conformed to those found in the standard varieties. Also, they preferred simple clauses and coordination over more complex sentences.

Similarly, at the level of pragmatics, speech acts were performed in a highly uniform manner and with particularly low variation in ritual speech acts. Excerpt (2) illustrates that high-frequency formulas are often employed to utter ritual speech acts such as leave-takes (lines 9 to 16). More recent studies (such as the ones collected in Mauranen & Ranta, 2009) largely confirm these various earlier findings.

```
(2)
01  Anja:    What did she put inside? . . . Apricots?
02  Tsu:     Peaches.
03  Anja:    Not bad.
04  Karwan:  I think it's peach.
05  Tsu:     Peaches.
06           (1m 40s)
07  Tsu:     Right. I finish this. Too sweet.
08           (18s)
09  Tsu:     See you everyone.
10  Torben:  ((clears his throat))
11  Karwan:  Yeah.
12  Anja:    See you.
13           (1m 6s)
14  Karwan:  OK. See you.
15  Torben:  See you.
16  Anja:    See you.
```

While the above findings indicate that individuals engaging in lingua franca communication in English use fewer lexical items and grammatical structures than are potentially available in (a) the standard varieties and (b) the local indigenized varieties associated with their home countries, other studies have looked at how speakers cope with the fact that they speak different varieties and the fact that they may not possess the full array of linguistic options. As explained above, this was one of the original motives for research into English as a lingua franca.

Individual authors, particularly Firth (1996), identified a number of strategies which interlocutors use to deal with the heterogeneity of IaEs successfully. As he and others (Meierkord, 1996; House, 2002; Lesznyák, 2004) explain, speakers tend to allow for deviations at the levels of grammar or vocabulary: they "let it pass" and "make it normal." Additionally, they utilize verbal, paraverbal, and nonverbal means available to successfully make up for any restrictions in terms of vocabulary, grammar, or pragmatic competences. At the discourse level, pauses occur frequently between and also within turns, possibly when learners pause to solve production problems. However, long pauses which occur between turns also seem to result from the speakers' reliance on pauses as turn-taking signals, which implies that they do not sufficiently recognize and produce other turn-taking signals. Laughter has been shown to be employed to substitute verbal back-channeling signals, but also to express insecurity and uneasiness in a situation where linguistic as well as intercultural insecurity is potentially involved. The mutual acknowledgment of difficulties and differences also results in highly cooperative behavior, particularly with participants who are not fully proficient. Speakers frequently co-construct turns, completing one another's utterances, and negotiate meanings. Additionally, the current speaker is supported through back channeling and links are established through a high amount of gambits.

Conclusions

Interaction in English as a lingua franca implies communication between speakers of different Englishes: indigenized forms, non-native or learner varieties, and immigrant Englishes, as well as pidginized and creolized Englishes, potentially meet, and as a result interactions in a lingua franca are highly heterogeneous. However, processes of leveling and regularization seem to operate, and, together with cooperative strategies at the level of pragmatics, compensate for potential insecurities and sources of miscommunication. Despite this predominantly successful cooperation of participants in IaEs, there are, of course, instances in which communication is impeded or where misunderstandings may not be resolved, as House (1999) documents.

SEE ALSO: Aviation English; Cultural Hybridity; Intercultural Communication; Intercultural Discourse; Lingua Franca and Language of Wider Communication; Pragmatics of Lingua Franca Interaction; Varieties of World Englishes

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English for Academic Purposes

LYNNE FLOWERDEW

Introduction

First, it is necessary to examine how the field of English for academic purposes (EAP) positions itself within the wider field of ESP (English for specific purposes). Figure 1 displays the two main subdivisions of ESP: EAP, the main focus here, and, to a much lesser extent, EOP (English for occupational purposes, addressing students' perceived future needs in the workplace).

What sets apart EAP from general English courses, for the most part, is the focus on students' needs encompassing the target situation analysis (objective needs focusing on the tasks and activities students will be using English for) and the present situation analysis (more subjective-type needs attending to personal information about the learners such as previous learning experiences, and so forth, and their current level of competence).

Key debates in the literature on EAP have raised both theoretical and practical issues regarding the essential nature of EAP and its ability to target students' needs. These issues are first discussed and then followed by an overview of the five main approaches (study skills; grammar and vocabulary; discourse/genre; critical; content-based) underpinning EAP pedagogy. A point to note in the following sections is the important influence the work of Swales has had in shaping both the theoretical underpinning and the practical implementations of EAP throughout the last 40 years.

Generic or Specific Attributes in EAP?

Proponents of the "common core" hypothesis maintain that there exists a generic set of skills, linguistic structures, and vocabulary found across a range of academic texts, regardless of discipline and genre, that are transferable from one academic discipline to another. Other EAP researchers, though, most notably Hyland (2002, p. 390), reject the concept of a generic skills set, such as "academic English" or "business English," making a strong case for "specificity" on account of disciplinary variation: "Disciplines have

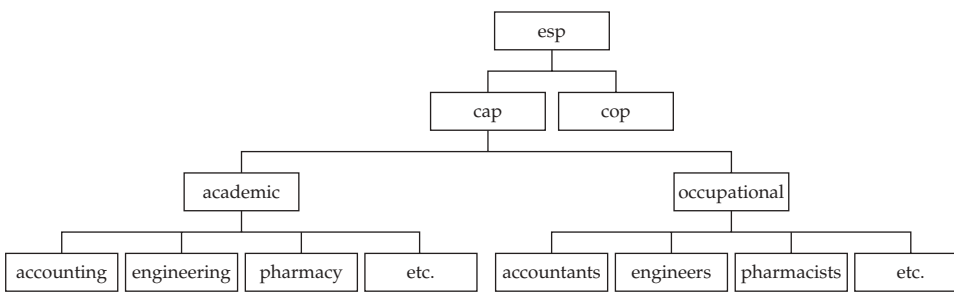

Figure 1 Subdivisions of EAP (Flowerdew & Peacock, 2001, p. 12, adapted from Dudley-Evans & St. John, 1998) © Cambridge University Press

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different views of knowledge, different research practices, and different ways of seeing the world, and as a result, investigating the practices of those disciplines will inevitably take us into greater specificity."

EAP researchers from opposing camps have analyzed computerized corpus data (i.e., large databases of academic text) to support their respective positions. For example, Coxhead's (2000) corpus-based research of vocabulary items in a 3.5-million-word corpus composed of written academic texts drawn from the disciplines of arts, commerce, law, and science supports the "common core" hypothesis, with its extraction of common vocabulary items forming an academic word list (AWL), also supported by Paquot's (2010) research on learner and expert academic language. However, Hyland and Tse's (2007) corpus analysis of seven key genres of academic writing (research articles, textbooks, doctoral dissertations, and so on) points to a discipline-based specific lexical repertoire. Other ESP studies of textbooks and research articles in which word lists from specialist disciplines are compared with Coxhead's academic word list also favor sets of discipline-specific lexis (many of these studies have been published in *English for Specific Purposes*). Perhaps, in this debate, a key point to note is that all these studies rely on different types of corpora and use different software for analysis, so it is not surprising that the findings differ and that this area is still fraught with controversies regarding the essential nature of EAP.

Arguments for and against implementing generic ("wide-angle") or specific ("narrow-angle") EAP courses are summarized in Basturkmen (2010). For example, a highly specific EAP course may not be very motivating for undergraduate students, but be deemed as highly relevant by postgraduate students engaged in writing dissertations. Moreover, often, in reality, it is not logistically possible to implement a narrow-angle course since the students are not a homogeneous group. The ongoing debate on common core versus specificity is an important one and will be taken up in the following discussion on the different pedagogic approaches to EAP, including a brief overview of their philosophical and theoretical orientations.

Approaches to EAP

Study Skills

As noted by Dudley-Evans and St. John (1998, p. 24) the main principle underlying the teaching of study skills (e.g., taking notes in lectures, reading textbooks) is that knowing grammar and vocabulary are not sufficient conditions for developing the ability to function in an academic environment and that "there is a need to address the thought processes that underpin language use." So, for example, a course focusing on academic reading skills would aim to target skills such as reading for relevant information and using contextual clues. Textbooks such as Jordan's (1990) *Academic Writing Course* are based on the functional-notional approach to materials, with units built around rhetorical functions such as comparison/contrast, cause/effect, and so forth. Published study skills materials in the 1990s often made use of simplified or specially written texts by the writer, although nowadays it is generally agreed that authentic texts are the preferred option in EAP to reflect the target language derived from the needs analysis. MICASE (Michigan Corpus of Spoken Academic English) and its British counterpart BASE (British Academic Spoken English), consisting of authentic lectures and seminars, have been exploited for devising study skills materials which take a generic perspective on skills. Such an approach is seen by Swales and Feak (2000) as having certain advantages such that students have an opportunity to compare and share academic experiences.

While more narrow-angle courses also have their respective advantages, a focus on disciplinary specificity may not be the only aspect to address in academic interactions.

Ethnographic studies of various oral modes of academic skills have pinpointed sites of communication breakdown. For example, Flowerdew and Miller (1995), based on their analysis of lectures in a second language environment, put forward a four-dimensional concept of culture to explain cross-cultural breakdowns: ethnic, local, academic, and disciplinary. An approach which encompasses a socially situated understanding of the academic communicative setting can thus also help to inform the EAP teaching and learning situation. See Flowerdew (2002) and Hyland (2006) for more details on ethnographic approaches to EAP. Tribble (2009, p. 401) notes the more home-grown nature of EAP materials displaying "a growing independence from published course materials," no doubt contributed to by a more localized perspective on EAP materials. Such an ethnographic dimension to EAP pedagogy would serve not only to address needs uncovered by the objective needs analysis but also to take into account more subjective-type needs associated with the learning and teaching situation.

Grammatical Structures and Vocabulary Items

Before the advent of the broad study skills approach in the 1980s, the field of ESP was first conceived in terms of a "register analysis" approach, specifically focused on EST (English for science and technology). The basic premise of this approach is that while scientific and technical writing use the same grammar as that of general English, certain grammatical structures and vocabulary items predominate. A seminal study by Barber (1988), based on "lexicostatistics," showed that the predominant tense is the present simple and the passive voice is used more frequently in EST than in general English. In this approach, teaching units are built around grammatical structures such as the use of the passive for process descriptions.

Barber's research also highlighted the importance of subtechnical—that is, core—vocabulary (general vocabulary that has a higher frequency in a particular field), such as "consists of" and "contains" in EST. This kind of vocabulary has been usefully defined through corpus-based analyses of particular EAP fields. Moreover, it is to be noted that vocabulary, rather than grammar, has been the focus of much recent EAP instruction for which corpus data have been exploited. For example, using a corpus of academic seminars on language and gender, international law and entrepreneurship, Jones and Schmitt (2010) devised a set of vocabulary materials targeting technical (e.g., "regional body"), general (e.g., "at the outset"), and colloquial (e.g., "gut feeling") discipline-specific vocabulary and phrases in the entrepreneurship seminars.

Discourse/Genre

Following the "register analysis" approach, the next major development in EAP, particularly in the filed of EST, took a discourse-based orientation, linking particular forms with particular rhetorical functions, such as defining, classifying, and so forth (Trimble, 1985), an approach underpinning much of the academic study skills materials described in the first section. However, the first discourse-based study to truly examine "specificity" in EAP, in Hyland's sense, was Tarone, Dwyer, Gillette, and Icke's (1981) study with its focus on the rhetorical and communicative purposes of the passive in research articles from the field of astrophysics.

Tarone et al.'s study marked a watershed in the field of EAP, and was followed by Swales's (1990) development of the concept of genre (a genre is conceived as a particular communicative event which has a specific communicative purpose recognizable by the users of the genre's discourse community). Genre analysis has had a profound and lasting influence on EAP applied linguistics research and teaching, such as Swales's CARS (create a research space) model for article introductions, as outlined in Table 1. The handbook

Table 1 A CARS model for article introductions (Swales, 1990, p. 141)

Move 1: Establishing a territory
Step 1 claiming centrality (and/or)
Step 2 making topic generalization(s) (and/or)
Step 3 reviewing items of previous research
Move 2: Establishing a niche
Step 1A counter-claiming (or)
Step 1B indicating a gap (or)
Step 1C question-raising (or)
Step 1D continuing a tradition
Move 3: Occupying the niche
Step 1A outlining the purposes (or)
Step 1B announcing present research
Step 2 announcing principal findings
Step 3 indicating RA (research article) structure

on thesis and dissertation writing by Paltridge and Starfield (2007) aptly illustrates the Swalesian concept of move structures applied to pedagogy. Building on Swales's work on genre, Johns (1997) advocates a "socioliterate" approach to academic literacy in which students come to grips with academic genres through drawing on their own experiences with genres and discourse communities to aid them in interpreting, producing, and critiquing (see Benesch 2001) texts from various academic contexts.

Another textual approach to genre is that of the "Sydney school" associated with Halliday's systemic-functional lingustics (SFL), in which genres are defined as staged, goal-oriented social processes. An example of the SFL approach to pedagogy is Hussin's (2002, p. 30) task-based instructional model for writing nursing care plans in the clinical part of trainee nursing programs in the academy (see Figure 2).

Critical

All the previous approaches imply a pragmatic orientation to EAP: that is, facilitating students to participate effectively in the academic community. However, proponents of a

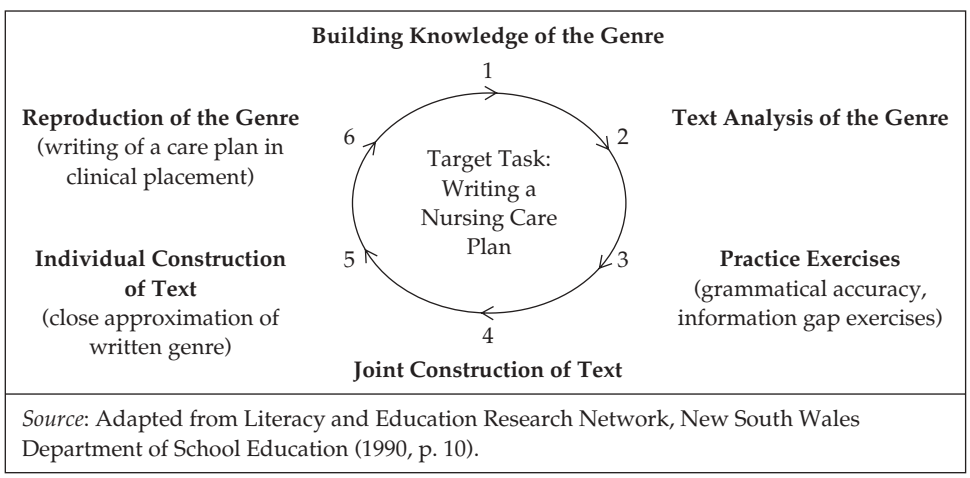

Figure 2 A genre approach to nursing care plans (Hussin, 2002, p. 30) © TESOL 2002

critical pedagogies approach take issue with this view of EAP for being too accommodationist toward power relations in the academy and failing to challenge the established status quo. As a result, the content of EAP courses has been criticized for its imposition of Westernized values and ideologies and also the lack of value attached to the culture and rhetorical practices of the students' native language.

This more critical approach led to contrastive rhetoric coming under attack, defined by Connor (1996, p. 5), a leading researcher and practitioner in the field, as "an area of research in second language acquisition that identifies problems in composition encountered by second language writers and, by referring to the rhetorical strategies of the first language, attempts to explain them." However, Connor (2004, p. 272) has more recently proposed a new term, *intercultural rhetoric*, to embody "the current dynamic models of cross-cultural research." Mauranen (1993), who compared the rhetorical strategies of Finnish and Anglo-American writers of academic research reports in the field of economics, was one of the first to call for greater tolerance toward different rhetorical styles most likely due to cultural factors. Since then, this greater acceptance of different rhetorical styles, and consequently the use of English as a lingua franca in the academy, has been gaining ground internationally; see the special issues of *Journal of English for Academic Purposes* on "Contrastive Rhetoric in EAP" (October 2004) and "Critical English for Academic Purposes" (June 2009). A slightly different perspective on this critical pedagogies debate is provided by Starfield (2004, p. 139) who used concordancing as "a strategic engagement with technology" as a means of further exploration of issues of power and identity in academic thesis writing. Starfield reports that students experienced a sense of empowerment when they realized they had readily available access to the language resources of authoritative English to expropriate for their own means.

Content-Based Instruction

The content-based instruction (CBI) approach is radically different from all the other approaches described above in that the main focus of instruction is the acquisition of disciplinary content (Brinton, Snow, & Wesche, 2003), thus providing another perspective on this issue of "specificity." In common with other EAP approaches, CBI makes use of authentic texts, but the syllabus is organized around subject content. While language is usually approached holistically, the balance between language and content has been an issue for debate. Skills are usually integrated, but see Evans, Hartshorn, and Anderson (2010) for CBI materials targeting reading of biology textbooks.

Conclusion

The five main approaches to EAP pedagogy together with their respective theoretical underpinnings have been discussed in relation to objective and more subjective target needs. Issues regarding a common-core (i.e., generic) versus disciplinary-specific pedagogy have also been raised. Two key areas which will have influence over the conceptualization and implementation of EAP in coming years are the increasing interdisciplinarity of subjects: for example, physics in medicine, and the role of English as a lingua franca with the internationalization of academia in the continually evolving and dynamic field of EAP.

SEE ALSO: Content-based Language Instruction; Critical Pedagogy; English for Nursing; Genre and Discourse Analysis in Language for Specific Purposes; Intercultural Rhetoric in Language for Specific Purposes; Language for Specific Purposes Research Methods; Needs Analysis and Syllabus Design for Language for Specific Purposes

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English for Business

CATHERINE NICKERSON

Introduction

English for business is referred to in the academic literature in a number of different ways, including English for business, business English (BE), English for specific business purposes (ESBP), international business English (IBE), and business English as a lingua franca (BELF). English for business can be considered as English for academic purposes (EAP) when it is taught as part of academic training. Many of the research methods used in EAP are also standard in investigating English for business. When English for business is taught in professional business settings, it overlaps with English for occupational purposes. Other areas of research that are relevant to English for business are sociolinguistics, intercultural communication, discourse analysis, and business communication.

English is used routinely for commerce and industry across national borders in all parts of the globe (e.g., Vandermeeren, 1999, discusses the European context; Li So-mui & Mead, 2000, focus on Hong Kong and the interaction between English, Cantonese, and Mandarin; the papers in Forey & Lockwood, 2010, report on the call center industry worldwide, etc.). It is almost always chosen as at least one of the official corporate languages used within a multinational corporation, even if both the corporation and its head office originate and are located in a non-English-speaking country. Such corporate language policies have had varying degrees of success. For example, Louhiala-Salminen, Charles, and Kankaanranta (2005) look at corporate mergers in Scandinavia and the successful introduction of English as a business English lingua franca by the Swedish and Finnish parts of the two corporations they study; Tanaka (2006) discusses the increasing use of English in corporations in Japan and the problems that this has caused for some Japanese employees; Gimenez (2002) reports on the impact of using English within the Argentinean subsidiary of a European multinational and the difficulties posed for many of the employees at the subsidiary as a result. In addition, English is often used in business transactions within national borders, in countries where it is one of the multilingual choices available as a result of that country's colonial past and shared history with an English-speaking country, for example in India, the Philippines, and Singapore, and it may also be used for pragmatic business reasons because there is an extensive expatriate business community who are unfamiliar with the local business language, as is the case in countries such as the United Arab Emirates. Finally, large parts of the world, for example the United States, Australia, Anglophone Canada, the United Kingdom, do business primarily in English, as it is the first language of most of the population. There are many millions of business English users across the globe who speak or write English on a daily basis to get their work done, and hundreds and thousands of business transactions are initiated, negotiated, and completed using English. Exactly how many people are involved is difficult to establish because of the wide range of different methodologies that have been used to measure this. In terms of economic value, however, a recent report suggests that first language speakers of English alone account for almost 30% of world gross domestic product (Graddol, 2006). The real value is clearly much larger if second and foreign-language users of English are also taken into account. Although English may ultimately be replaced by languages such as Chinese,

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Hindi, or Arabic as linguae francae in international business, most scholars agree that English will continue to dominate in business contexts at least for the next 50 years.

Because of its dominance, English has been analyzed more than any other business language. In the past two decades, researchers interested in English for business have looked at a variety of different forms of business communication, including business meetings, negotiations, presentations, sales letters, application letters, fax communication, e-mail, annual reports, reports, telex communication, advertising texts, and Web pages. They have also studied the consequences of using business English in such a widespread way across the globe, particularly for those people who do not speak it as a first language. Some researchers have focused only on how English is used for business (e.g., Boden, 1994, looks at business meetings in the United States; Hyland, 1998, looks at annual general reports in English produced by corporations in Hong Kong), while others have looked specifically at how English is used in business settings by speakers of other languages, including the challenges they face and the strategies they use to meet these challenges (e.g., Connor, Davis, & de Rycker, 1995, is a contrastive study of application letters written by US and Belgian writers). The findings of the studies in this second group have contributed both to our understanding of business English as an LSP (language for specific purposes) and also to our understanding of second language acquisition. A third group of researchers have contrasted English with other business languages, including Finnish (Yli-Jokipii, 1994), Chinese (*Putonghua*) (Zhu, 2005), and Arabic (Al-Ali, 2004), amongst many others. These studies not only tell us a great deal about business English, they also highlight the importance of national culture to national business culture in business interactions.

Much of the research has been data driven and because of this, it has been characterized by reference to a variety of different research approaches (see also the influence of Vijay Bhatia below). The remainder of this article will first review the main approaches that have been taken in researching written and spoken business English. It will go on to talk about those studies that have focused on the effects of using English, and it will conclude with a discussion on the future of English for business.

Researching Written and Spoken Business English

For written forms of communication used in business, the type of analysis generally referred to as genre analysis has been extremely influential on what we know about English for business and the ways in which we research it. Vijay Bhatia's 1993 publication *Analysing Genre: Language Use in Professional Settings*, extended an existing ESP (English for specific purposes) approach that had been pioneered by John Swales for academic writing, and reapplied it to some of the most important forms of written business communication that were in use at the time, such as application letters and sales letters. Genre analysis focuses on the communicative purpose of a text and attempts to explain how the content and form of the text contribute to this purpose. In his later publications, Bhatia has continued to develop this work with particular reference to strategic language use on the part of individual genre users and to the complex relationship between text and context. Many applied linguists interested in the written forms of English for business have been and continue to be influenced by Bhatia's ideas, including Leena Louhiala-Salminen (fax communication), Ulla Connor (application letters), Catherine Nickerson (e-mail correspondence), Anne Kankaanranta (e-mail correspondence), Yunxia Zhu (sales letters), and Elizabeth de Groot (annual general reports). Outside of genre analysis, Johns's study of cohesion in different types of business discourse is historically important (Johns, 1980), and the contrastive studies of business correspondence by Jenkins and Hinds (1987) and by Yli-Jokipii (1994) are landmark studies for the 1980s and 1990s respectively.

For spoken forms of communication, conversational analysis (CA) and discourse analysis (particularly the approach pioneered by John Sinclair and Malcolm Coulthard at Birmingham University in the United Kingdom) have been influential on our understanding of the ways in which English is used for business purposes. An important, and very accessible, study of spoken business English that uses a CA approach is Boden's account of meetings in the United States in three different sectors: health, academia, and business (Boden, 1994). CA allows Boden to deconstruct the interactions that take place within the meetings, and in doing so she shows the contrast between the three sectors, as well as the way in which the organizations involved are shaped by language use. Mirjaliisa Charles's work on British business negotiations using discourse analysis (e.g., Charles, 1996) has also been very influential, as has the work by Bargiela-Chiappini and Harris on meetings and other forms of spoken business communication, both in English and in other languages (e.g., Bargiela-Chiappini & Harris, 1997). In the course of the last decade, much research looking at spoken forms of business communication in English has tended to take a similar discourse approach, focusing on the specific types of strategies that business people use to communicate. The 2004 study by Poncini, for instance, focuses on the evaluation strategies used in multicultural business meetings held in English, alongside other languages (Poncini, 2004). It shows that the use of evaluation can help to build a sense of shared common purpose between the meeting participants, even if they do not speak English as a first language. Likewise, the study of English as a business lingua franca in Finnish and Swedish corporate mergers by Louhiala-Salminen et al. (2005) shows that different discourse strategies are associated with different national cultures, and that these may be interpreted by the participants in a meeting in both positive and negative ways. Finally, the Language in the Workplace Project, based at Victoria University Wellington in New Zealand, is an ongoing study of communication in the workplace, directed by Janet Holmes, which uses a number of different methodological approaches. The methodologies used in the LWP project, together with the project's findings, are accessible via the project's Web site, together with a range of publications related to the project (www.victoria.ac.nz/lals/lwp/).

The Effects of Using English

In the course of the last decade, a small group of researchers has begun to investigate the effects of using English in business: they have talked to business people who speak English as a second or foreign language about what their experiences are if they need to use English, and they have talked to the users of different kinds of written texts about their attitudes to those texts and the ways in which they are influenced by them. In the first group of studies, the work by Rebecca Marschan-Piekkari from the mid-1990s onwards has shown that business people may face a number of complex challenges when they are asked to use English to complete their work-related tasks, particularly those who work in multinational corporations. Marschan-Piekkari has discussed the evolution of shadow structures that coexist alongside official corporate structures, as a direct consequence of the requirement to use English. These are unofficial hierarchies that are determined by an individual employee's level of language proficiency in English and not by their actual seniority within the corporation. The survey by Charles and Marschan-Piekkari (2002), for instance, looks at the impact of adopting English in a multinational corporation as a global corporate language. The findings reveal a number of problems directly related to the use of English, such as difficulties in comprehending accent, insufficient translation of English into the languages used at subsidiary companies, and feelings of isolation due to a perceived lack of proficiency in English. Other studies that have looked at the effects of opting for English in business meetings and other types of communication in multinational

corporations include Gimenez's (2002) study of the use of English at an Argentinean subsidiary company and Tanaka's (2006) study of the use of English at a corporation in Japan. Although all these studies identify a series of communication difficulties that lead to feelings of disempowerment as a result of the decision to use English, they also suggest that many business people are able to use English effectively and successfully despite the fact that it may be only one of several languages that they speak.

In the second group of studies investigating the effects of using English, the emphasis has been on the response of readers to business texts in English, often in an experimental setting. In these studies a group of people were presented with business texts that use English, such as an advertisement in English, and they have then been asked to speculate on how the use of that English influences them, for example on their attitude to a product presented in an advertisement in English or on their willingness to buy that product. Some studies have also tested whether people are able to comprehend or translate the English in the texts that are presented to them. The 2005 study by Nickerson, Gerritsen, and van Meurs is an accessible example of this type of study conducted within the European context; it looks at the use of English in glossy advertising and its impact on the relevant consumer population (Nickerson et al., 2005). The findings of studies like these suggest that the use of English for business may not always be appreciated if it is used in promotional texts targeted at a non-English-speaking audience. More importantly, they also suggest that the English may not always be understood by the people that those texts are trying to reach.

English for Business in the Future

The teaching and training of English for business is a multi-billion-dollar industry and several applied linguists have referred to this as the *commodification* of language. This means that English is exploited as a commodity for commercial purposes in teaching and training packages, without considering the needs of real users in real business contexts. An internet-based search using the terms *English for business* and *business English*, for instance, provides around 457 million and 537 million hits respectively, many of which are references either to commercially produced teaching or training materials, or to commercially run training courses. Although many users of English for business across the globe will never interact regularly with Western business people, and will use English primarily in their own region, such as the Asia Pacific region, or indeed within their own country, for example India, Hong Kong, Singapore, Malaysia, the Philippines, British and American varieties of English still tend to dominate both in teaching materials and training courses. There is also considerable evidence that the business English that is presented in commercially produced materials in fact has little to do with real business English; several researchers have shown that there is a large difference between what real business people say or write and what the commercially produced materials present as models that are then used to teach them (e.g., Nelson, 2006).

English for business in the future will be shaped by (a) the need to know more about intercultural interaction and how this impacts commerce and industry, (b) the need to know more about what real business people say and write across the globe, and (c) the need to know more about multimodality and what this means for Web-based forms of business communication. The *flattening* of the world and the increasing influence of emerging economies such as India and mainland China will lead to more multilingual workplaces and more multinational organizations. English for business will continue to play an important role as both an international and intranational business language, and at the same time it will become increasingly disassociated from its Anglo-Saxon roots. This means that in situations where English is used either as a lingua franca or as an international business

language it will invariably function as a "neutral and a shared communication code" and the business people who use it will not consider themselves either as "non-native speakers" or as "learners" (Louhiala-Salminen et al., 2005, p. 404). Because of this, an understanding of national cultures in general and national business cultures in particular will become extremely important, alongside business English, in developing the language skills and intercultural communicative competence that is required to do business effectively. Related fields such as intercultural communication and intercultural interaction will continue to be influential (see especially the work of Helen Spencer-Oatey, e.g., 2000) and there will be an increasing need to produce textbooks that incorporate the research that has been conducted in international business settings in the last 20 years. Finally, as English continues to dominate Web-based forms of communication, an understanding of the role played by multimodality together with business English, for example in the combination of text, visuals, and sound, will underpin the development of more complex and dynamic forms of business communication in the future. Several applied linguists have begun to deconstruct the characteristics of different forms of multimodal business communication that are often produced in English, and it seems likely that this line of inquiry will continue to be of interest in the future.

SEE ALSO: Bhatia, Vijay; Culture and Language for Specific Purposes; Discourse in Organizations; Genre and Discourse Analysis in Language for Specific Purposes; Multilingualism at Work; Teaching Business English

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English for Medical Purposes

JOHN SKELTON

Introduction

English for medical purposes (EMP), as applied linguists would call it, and communication skills in medicine, as medical educationalists would call it, have developed alongside each other over the last 40 years, though not always being fully aware of each other. Both EMP and communication skills are burgeoning disciplines; among fairly recent summaries of a variety of areas are Gotti and Salager-Meyer (2006), Ainsworth-Vaughn (2001; on doctor–patient communication), Fleischman (2001; on medical language), and Shi (2009).

But working across two traditions has its problems. As Roberts and Sarangi point out, "the vast majority of discourse specialists and applied linguists work from . . . outside [the profession] in," and therefore face issues "of identity, roles, authority and credibility" (2003). The history of EMP to some extent exemplifies the lost opportunities which follow from this.

The Doctor–Patient Encounter

A recognition that the healing art involves more than the use of clinical remedies is as old as the practice of healing itself. After all, at times when the healer has had limited capacity to alter the course of nature (that is to say, for most of human history) what mattered was self-presentation, the ability to inspire confidence, sometimes through the presentation of medicine as a dark and mysterious art. The great Canadian physician Sir William Osler once visited a sick child wearing his academic gown, and being told that the child therefore thought he was a magician, visited him for 40 consecutive days, always in his gown. The child recovered. This is part of "bedside manner," a phrase commonly attributed to the Victorian cartoonist George du Maurier, in the 1880s. Osler's own thoughts on the appropriate bearing for the doctor ("imperturbability" without "hardness") were delivered in his magisterial lecture, "Aequanimitas" (1889/1932).

Today these areas are reflected in the drive towards "patient-centeredness" in the medical encounter (see, e.g., the work of the Picker Institute) which echoes general educational views on the importance of learner-centeredness. Indeed, they are the manifestation of the same principle in the different professions of medicine and education: a belief in the importance of the person being served rather than the expert.

The need for a holistic approach to the medical encounter has been widely accepted as a principle since the 1970s, though the evidence building up at that time was that doctors either chose not to, or did not know how to, undertake holistic discussions. It is now routine to recognize that all doctor–patient encounters have a clinical, social, and psychological dimension. For example, a patient may be diagnosed with multiple sclerosis (MS) and offered *clinical* support (drugs). But the MS may impact on the patient *socially* (through inability to work) and *psychologically* (the patient is stressed). It should be added, however, that while this model suits chronic illness, it has less meaning for clinical encounters within the acute specialties—a doctor is unlikely to waste time exploring the patient's feelings in the middle of a medical emergency. This area is less well-researched, and infrequently taught.

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Research into the Doctor–Patient Encounter

The issue of how to describe and explore the nonclinical areas that clinicians need, and of how to be patient-centered, has focused from the 1970s on communication skills.

The central result has been to endorse and teach a list of desirable "behaviors" as "doing" patient-centered interaction, in what is basically a counseling model. This conclusion derives from what is known as "process-outcome" research, and the bulk of literature reviews in the field have focused on it. The behavioral findings are detailed in Kurtz, Silverman, and Draper (2005), and in Maguire and Pitceathly (2002).

A major study from the 1970s was that by Byrne and Long (1976), who collected and transcribed over 2,000 consultations in primary care (i.e., family medicine) settings, and identified six "phases of the consultation." These were: establishing a relationship, discovering reason for attendance, conducting verbal/physical examination, considering the condition, detailing further treatment/investigation, and ending the consultation. This study was enormously influential, but though the authors were pioneers within medicine, they had no particular expertise in the type of research they were employing (see Mishler, 1984).

The most influential of the many other attempts to identify the structures of the consultation is the work of Debra Roter, who has developed and applied Roter's Interaction Analysis System (RIAS) in a wide variety of settings. The system can, it is claimed, "provide reasonable depth, sensitivity, and breadth while maintaining practicality, functional specificity, flexibility, reliability, and predictive validity to a variety of patient and provider outcomes" (Roter & Larson, 2002, p. 243). Categories in the system, of which there are 39, are divided into "task-focused" and "socio-emotional." Byrne and Long and their successors, and Roter, thus seek to divide the consultation into thematic areas in a manner not dissimilar to that of genre analysis.

Much of the research is driven by a perception that doctor and patient need better ways of hearing and understanding each other. Versions of conversation analysis or discourse analysis, such as discursive psychology (Edwards & Potter 1992) have explored the issue, and Mishler, in the classic study mentioned above, makes the point with particular elegance. The clinical encounter is where the "lifeworld" of medicine and the "lifeworld" of the patient come into contact.

More recently, too, there has been a great deal of interest in the role of narratives in medicine (that is, in the "stories" patients tell their doctors; Greenhalgh & Hurwitz, 1998). This is perceived in particular to be a way of helping doctors properly to understand what patients mean, and is also another way of recognizing that meetings between doctors and patients are not merely about clinical facts.

Communication skills research has been centered around the process-outcome approach, however, since this seems to offer the kind of cause–effect pattern between observable behaviors ("processes") and responses that epitomizes objective, empirical study. With qualitative work, acceptability within academic medicine has always been limited, because of the perceived subjectivity of the methodology. There are difficulties with what academic medicine is prepared to count as "evidence" (Brown, Crawford, & Carter, 2006). Teaching, too, has tended to focus on developing specific behaviors, though some approaches (e.g., Makoul, 2001) seek to go further.

The links between process skills and outcome are problematic (Skelton, 2008), however. There is little recognition that any skill may be carried to excess: eye-contact is a "good thing," according to most studies, but presumably eye-contact for the entirety of the interview is not, and so on. Similarly, specific "behaviors" have generally predictable consequences only at the level of common sense. It's clearly good practice to encourage patients to be exact (Maguire & Pitceathly, 2002) but it hardly needs research to tell us this.

Writing Medical Research

The study of academic research writing within English for academic purposes (EAP) is hugely influenced by John Swales (e.g., Swales, 1990). The tradition generally derives from a standard social constructionist perspective which Myers (1989) among others drew to the attention of applied linguists. A specific question in more recent times has been the disadvantages that researchers in some parts of the world may experience, not just because they have less access to research funding, but because their language use and understanding of EAP conventions may deprive them of easy access to the global research academy. Salager-Meyer has been a considerable voice here, and has called for, for example, open access and greater representation on advisory boards for "periphery" scholars (Salager-Meyer, 2008). This is normally seen principally as a matter of providing access to less affluent countries, and in part also as an issue of language bias.

Within academic medicine, the driving force behind how research is conducted and written up is the evidence-based medicine (EBM) movement. The movement arose originally through a recognition that much of what doctors actually did—the decisions they made, the drugs they prescribed—relied partly on custom and a level of informed anecdote, rather than research. From the early 1990s, therefore, there has been a great deal of work concerned with developing a better understanding of clinical trials. One aspect of this has been the development of a hierarchy of trials, with the randomized controlled trial (RCT) at the top, and in part this has been linked to an increasing desire to control the way in which findings are presented in the literature. Another important aspect has been the development of the systematic review, a formalized and detailed way of reviewing previous literature which allows researchers to build on previous work with greater confidence. The work of the CONSORT Group has been particularly important in the drive to ensure the careful development of research methodologies, and presentation of findings (see CONSORT, 2010).

The key motivation for controlling the presentation of findings, however, was explicitly to minimize the risk of exaggerated claims being made. The controversy surrounding the MMR vaccine, which started with a paper in *The Lancet*, provides an example with global repercussions. The paper sought to demonstrate a link between the MMR vaccine and autism in children. After aspects of the published study were found to be "misleading" by the UK responsible body, the General Medical Council (GMC) the paper was finally retracted by *The Lancet* in 2010. The possibility of misrepresentation has resulted in sophisticated discussion within the main journals about what Richard Horton, the editor of *The Lancet*, calls "the manipulation of language to convince the reader of the likely truth of a result" (Horton, 1995). Journal editors have in recent years often sought to control the presentation of research by providing a level of detail by way of "instructions to authors" which resembles a kind of move-structure analysis. "Structured abstracts" and "structured discussions" are thus increasingly common.

Talking and Writing About Certainty

Much recent debate in applied linguistics has been concerned with the representation of certainty in academic text, often under the label of "hedging." This and associated topics within EAP have been taken up particularly by Hyland (1998), and have also been studied specifically within EMP.

However, the concept of uncertainty has a very different flavor within academic medicine, where it has loomed large in recent years. Partly it is seen as a cognitive issue, linked to the study of how clinical decisions are made. It is often suggested that the structure of

the medical curriculum makes it difficult for doctors and students alike to make appropriate decisions. During their training they have moved quickly from one specialty to the next, with few encouragements to stand back and integrate the understanding gained from a placement with a particular specialty into their overall knowledge. Partly also it reflects a growing recognition that doctors often cannot make decisions with certainty because the evidence is insufficient or ambiguous; yet the fact remains that they must enter into dialogue with patients, and explain what they know and do not know, what they are sure of and what they are not. This is true even, and perhaps particularly, of such sensitive areas as talking to seriously ill patients (e.g., in response to the question "How long have I got, doctor?"), or discussion about genetic risk. Thus "managing uncertainty"—part of which is inevitably describing and communicating uncertainty—is perceived as a key element in the role of the doctor, and typically appears in statements issued on behalf of bodies set up to safeguard the patient and define the duties of the profession. Communication teaching in this area is therefore concerned with the appropriate use of the hedging devices studied by linguists, though the linguistic research is unfamiliar to clinical teachers.

Professionalization and the Role of the Doctor

The focus on managing uncertainty is typical of the broader conceptualization of what a doctor is in contemporary medical education. A major focus of contemporary attention is "professionalism" (see, e.g., Stern & Papadakis, 2006). This includes such things as probity, confidentiality, and the like, but also involves general areas of "communication" in a broad sense, with some of these areas being particularly matters of cross-cultural difficulty: for instance, how to work as part of a team in a new setting, and how to use language to present oneself successfully to patients and colleagues as competent, confident, and compassionate. In other words, the question of self-presentation and interaction has broadened out again from "communication."

Breaking Bad News

If there is one area of communication in which medical students will inevitably be given practice, it is breaking bad news (BBN). This most typically involves telling a patient (for training purposes, normally a role player) that he or she has a life-threatening illness, though as Fallowfield and Jenkins (2004) point out in an authoritative review of the literature, "bad news" need not be potentially terminal. BBN showcases the counseling style of consultation that is usually taught. However, there are other foci of attention, even within the teaching of BBN. For example, students and doctors must be realistic while offering (appropriate) hope, must describe the situation clearly, negotiate and explain the next steps, and be clear about how certain it is possible to be.

BBN, particularly when working across cultures, also presents doctors with difficult dilemmas. For example, the ethical imperative in Western, English-speaking countries is to tell the truth and protect the patient's confidentiality. But this is not the case worldwide, where doctors may collude with a patient's family to conceal the true nature of illness from the patient.

Cross-Cultural Aspects of Self-Presentation

BBN is one of many areas, in other words, where cultural expectations may get in the way of particular models of good professional practice.

Cross-cultural aspects of the challenges faced by international medical graduates (IMGs), including aspects of general professionalization, are the subject of a special issue of *Academic Medicine* (2006). As Whelan (2006) points out, even the most "fluent" IMG may find certain

things "baffling." These include: "the structure and hierarchy of American medicine, the role of nurses and other health care colleagues, the concepts of informed consent and shared decision making, issues of confidentiality and documentation" (p. 177). The list could be considerably extended.

An "unprofessional" doctor may be ethically dubious—cutting corners, demonstrating little respect for patients, and so forth. But where IMGs are concerned there is in addition the question of whether their good intentions shine through: whether they can perform professional behavior, as it is judged in that context. Medical students and qualified doctors (including IMGs) routinely undertake communication skills examinations, usually using role-play simulations, where there is a premium on an overt patient-centeredness. There are, however, many settings around the world where a doctor-centered, more paternalistic attitude might be perceived as representing a reassuring level of competence and confidence.

The fact that IMGs are likely to struggle because consultation styles differ from country to country is typically stressed in the many courses around the world that prepare students for the examinations IMGs have to take in order to practice in, for example, the USA (US Medical Licensing Examination Step 2 test), or the UK (General Medical Council Professional and Linguistics Assessments Board). Even when IMGs have "a very high level of language proficiency," Eggly, Musial, and Smulowitz (1999) found a "perception by faculty and colleagues of language deficiencies and decreased satisfaction by patients." They concluded that there was a "need for assessment and training of IMGs in the important area of language skills for doctor–patient communication," and that this was a task for which EMP teachers were "uniquely suited."

Finally, one other relevant aspect of professionalism in many parts of the world is the question of dealing with patients from different cultures. The value of translators under these circumstances is fairly well-established, but beyond that, there is the fact that many doctors work in very multicultural environments, where there is no realistic hope that they will understand either all the languages spoken by patients, or the cultures they represent. The need to be aware of major cultural patterns (the different reactions of a Hindu and Muslim patient questioned about alcohol use) while being constantly alert to the individuality of particular patients is a difficult balancing act.

The Future

The agenda for EMP is complex. For spoken language, the battle to get "communication skills" accepted in medical training has been largely won in some parts of the world, but not all. It has, however, been won at just the point when the relationship between professional attitudes and the way these surface as appropriate professional behavior is coming center stage. How professionalism should be identified, and what its real impact is on quality of healthcare, are not really known (despite a generally high level of debate). For written language, the development of the EBM movement has led to the creation of new genres (e.g., the systematic review), and more generally to a renewed focus on how research should be presented, and the globalization of research has led also to the study of such matters as language bias in publication. For both spoken and written language, nevertheless, there are types of communication that remain poorly understood: referral letters, clinical notes, the type of reflective writing increasingly required by medical students, the short communications typical of the ward round, communication between doctors and other health professionals, and so on. Finally, it is worth noting that some existing teaching materials are suitable for both native speakers and IMGs. The British Academic Spoken English (BASE) and Written English (BAWE) corpora (Nesi & Thompson, 2006; Nesi,

Gardner, Thompson, & Wickens, 2007) include examples of text types that students will encounter during academic medical training, for example. Tokyo Medical University (2008) gives open access to a range of authentic consultations with transcripts, multiple choice tests on clinical topics (in English), and reading material: and there are DVD materials available on a wide variety of communication topics (e.g., Hull, Skelton, & Wiskin, 2006).

SEE ALSO: English for Academic Purposes; English for Nursing; Genre and Discourse Analysis in Language for Specific Purposes; Research Articles in English for Specific Purposes; Teaching English for Medical and Health Professions

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English for Nursing

SUSAN BOSHER

English for nursing is a specialty within English for specific purposes (ESP), which attempts to understand and describe the many ways in which English is used in the clinical setting in nursing, as well as in nursing education. Needs analyses have been conducted at various levels of nursing education to identify the communicative tasks and language skills necessary for success in the field. The results of these needs analyses have been used to develop materials and coursework for ESL prenursing and nursing students, as well as professional nurses preparing to enter the workforce in English-speaking countries.

English for Medical Purposes

Only recently has English for nursing been recognized as a specialty within the field of English for specific purposes, separate from both English for health care, which tends to address the needs of health-care workers at the lower end of the occupational scale, and English for medical purposes, which focuses on internationally educated doctors, or international medical graduates. Likewise, within applied linguistics, discourse analysis on health-care communication has focused on the doctor–patient relationship, even though nurses are the most widely represented profession in health care and spend the most time with patients (Candlin & Candlin, 2003).

Internationally Educated Nurses and Immigrant Nursing Students

Within English for nursing, the emphasis has tended to be on reentry programs for internationally educated nurses (Hussin, 2002; Frank, Andersen, & Norvell, 2008) and on international students at the graduate level (Cameron & Williams, 1997; Cameron, 1998) despite the fact that the majority of linguistically diverse students in nursing programs today are immigrant students at the undergraduate level (Bosher, 2010b). Although internationally educated nurses have already completed their education in nursing, they may encounter issues communicating effectively with patients and colleagues in a health-care system that is often quite different from the one they trained in. Immigrant students, on the other hand, may be more fluent in spoken English and more familiar with the local culture and health-care system, but they may lack the academic reading and writing skills necessary to successfully complete a nursing degree.

Regardless of the nursing shortages in developed countries and the widely recognized need in nursing education to diversify its workforce, there has been little collaboration between ESL professionals and nurse educators, and, until recently, few support services or courses have been provided on a regular basis to help prepare immigrant students for the academic, language, and cultural demands of nursing programs.

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Research in English for Nursing: Discourse and Needs Analyses

Research in English for nursing has generally consisted of two types: (a) identifying the language and communicative skills and tasks of nursing (Marston & Hansen, 1985; Cameron, 1998; Hussin, 2002), and (b) identifying the academic, language, cultural, and social needs of ESL students in nursing programs (Bosher, 2001, 2010a; Bosher & Smalkoski, 2002; Leki, 2003; Bosher, 2006; Hussin, 2008).

In their needs analysis of licensed practical nurses (LPNs), Marston and Hansen (1985) identified forms and functions of language use that students would need in their work: asking questions of clients; describing spatial relationships; using relative clauses to answer questions about a patient or to specify a patient; describing procedures; making requests of patients, nurses, and doctors; and using precise language for charting.

In his needs analysis of international graduate students in nursing, Cameron (1998) identified five categories of need: (a) accuracy in speech production, at the levels of pronunciation, vocabulary, grammar, and discourse; (b) academic performance, including aspects of reading, writing, speaking, and listening, as well as critical thinking and moral reasoning; (c) clinical performance, including five types of communicative behavior: getting information, transmitting information, translating information from one medium to another or from one audience to another, utilizing different channels of communication, and interacting socially as well as professionally in the clinical setting; (d) understanding cultural and dialectal variation in English; and (e) language and socially based inferencing skills.

Hussin (2002), in her needs analysis of immigrant nurses in Australia, identified the following language tasks in nursing: taking a nursing history of the patient; writing nursing care plans; giving and receiving change-of-shift reports; writing progress notes; writing discharge summaries, incident reports, and referral letters; making and receiving phone calls; using language while providing nursing care; teaching patients and families about health care topics and providing care to the patient after discharge; and participating in team meetings about patients. Hussin (2002) also developed an extensive list of informational and interpersonal language skills that nurses need to use to complete these tasks with patients and their families, as well as with coworkers.

In a subsequent article, Hussin (2008) identified four areas of concern with regard to the clinical performance of ESL students in nursing: (a) students were not communicating with patients while they were providing care, (b) students were not indicating when they did not understand instructions, (c) students were not able to pronounce medical terminology clearly, and (d) students were not taking an active role in their interactions and meetings with professional colleagues. In response to these concerns, a program was developed to provide support at five levels: (a) professional development of clinical supervisors, (b) workshops for students before clinical examinations, (c) one-on-one work with individual students on pronunciation, (d) on-site supervision of "at-risk" students in the clinical setting, and (e) development of Web-based materials.

In a needs analysis of ESL students in an associate-degree nursing program, Bosher and Smalkoski (2002) found that the clinical setting posed the greatest challenges for students. The course they subsequently developed focused on the most difficult communicative tasks for ESL students in the clinical setting: asserting oneself with patients, coworkers, and nursing instructors; communicating clearly and effectively with elderly patients; understanding clients who speak nonstandard English; using stress, intonation, and nonverbal communication appropriately; understanding and using small talk with patients; and asking for clarification. The needs analysis also identified other challenges that ESL students face: feeling self-confident and comfortable enough to ask for assistance from other students and nursing supervisors; understanding how culture influences interactions with clients; understanding directions given by instructors and following through with step-by-step

procedures in performance tests and clinical examinations; understanding client protocols and information that is stated about clients during protocols; and documenting appropriately and correctly in clients' records.

Bosher (2006), in her needs analysis of ESL students in a baccalaureate-degree nursing program, assessed the degree of difficulty of 74 academic, language, and culture-related skills and tasks that were identified as necessary for success in the program, using questionnaires developed for both ESL students and nursing faculty. Although faculty reported considerable variation in their experiences with ESL students, faculty and students rated the following tasks or skills as most challenging for ESL students: taking multiple-choice tests; incorporating Western perspectives on culturally sensitive content, such as sexuality and mental health, into practice; using effective reading strategies; asking questions in class; editing papers for grammatical errors; organizing and presenting ideas clearly and effectively in papers; preparing for clinical examinations; asking personal questions of clients; and managing time effectively.

The results of this needs analysis indicate the importance of addressing both academic and clinical skills in course design and materials development in English for nursing (Bosher, 2010b). Academic skills in nursing are similar to academic skills in the social and natural sciences. Nursing students must be able to apply reading strategies and skills to complex reading material, usually in textbook format; apply listening strategies and skills to lectures; take notes to supplement lecture outlines; study effectively for tests; participate actively in discussions; ask questions in class; and write research papers.

In the clinical portion of their nursing courses, students must learn how to complete highly specialized assignments, such as nursing care plans, which have proven to be particularly challenging for ESL nursing students (Bosher, 2001, 2010a; Leki, 2003). These assignments are long and exhaustive and must be completed for each patient the student is assigned to care for. These plans require students to research a client's medical diagnosis and write out a detailed plan of care that reflects the nursing process of assessing the client, identifying an appropriate nursing diagnosis, creating appropriate goals or desired outcomes for the client, implementing interventions to achieve those goals, and evaluating the client's progress toward achieving them. These care plans require a considerable amount of research about the client's medical condition and various nursing interventions and must demonstrate the student's ability to think critically about data collected through both a physical and psychosocial assessment of the patient and information gathered from multiple written sources.

In addition, students need to be able to communicate effectively in the clinical setting (Bosher, 2010b). They need interviewing skills to gather information from clients, therapeutic communication skills to help clients cope with their situation, and assertiveness skills to speak up in difficult situations. Nursing students also need to chart accurately and appropriately the nursing care they provide, and they need to give and receive accurate information during change-of-shift reports.

Discipline-Specific Writing in Nursing

Another area of related research has been writing in the field of nursing. Several studies have sought to identify the genres of writing required in nursing programs (Gimenez, 2008). Other studies have investigated how students acquire discipline-specific literacy in nursing programs (Bosher, 2001, 2010a; Leki, 2003) and in the profession (Parks & Maguire, 1999). Leki (2003) describes the challenges that one undergraduate student encountered with nursing care plans, in part because of difficulties she encountered evaluating the psychosocial needs of patients.

In a study of writing in the profession of nursing, Alster (2004) critiques the generally poor quality of writing in nursing, which unduly influences the writing of nursing students, and argues for a more open approach to writing that would encourage students to write in ways that are both more personally engaging, as well as grounded in critical thinking. She also advocates for an approach that would more actively involve students in creating knowledge in the profession and in critiquing the ideas of others, processes that would help to initiate students into the nursing discourse community.

Assessing Language Proficiency in Nursing

Most recently, there has been research focused on developing a more valid and reliable means of assessing language proficiency in nursing. The Canadian English Language Benchmark Assessment for Nurses (CELBAN) is an occupation-specific language proficiency test (Epp & Lewis, 2008) used with internationally educated nurses who are seeking to reenter the nursing profession in Canada. The test development process included an analysis of target language use, specifically situational language use by nurses and types of language tasks used and the percentage of time spent on each type of task during observations. Findings of this analysis indicate that over half of nurses' time is spent with clients (56%), compared to family (10%) and professionals (34%), and that over half of their time is spent on the following three language tasks: asking for information (22%), explaining (21%), and giving instruction (9%).

Linguistic Bias in Multiple-Choice Nursing Course Exams

The wording of multiple-choice items on nursing course exams has been identified as a major barrier to success for ESL nursing students (Bosher, 2003, 2008). Researchers (Bosher & Bowles, 2008) have investigated the effects of unnecessary linguistic complexity on students' comprehension of test items. Linguistic modification, or the attempt to reduce the linguistic complexity of test items without affecting their construct validity, offers one way to reduce the language load of test items (Abedi & Lord, 2001) and, therefore, to assess more accurately students' knowledge of nursing content.

Conclusion

As nursing programs become more culturally and linguistically diverse, awareness of the need for collaboration between ESL professionals and nurse educators should increase. In addition, there are many ways in which the culture of nursing education needs to change, to create a more welcoming and supportive learning environment for all nursing students (Bosher & Pharris, 2008).

SEE ALSO: English for Medical Purposes; Materials for Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes; Teaching English for Medical and Health Professions

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English for Occupational Purposes

ALMUT KOESTER

Introduction

English for occupational purposes (EOP) refers to the specific ways English is used in different work and professional situations. It is often considered to be one of two main subdivisions of English for specific purposes (ESP), the other being English for academic purposes (EAP). Like English for specific purposes or language for specific purposes (LSP), the history of English for occupational purposes is closely bound up with developments within English language teaching and the emergence of courses aimed at preparing students and trainees to use English in specific professional, academic, and occupational contexts. In fact, the term English for occupational purposes is often considered to be synonymous with the teaching of such courses. The growth of EOP as a major branch of ESP can be linked to the emergence of English as an international language or "lingua franca" of business and work.

Because of their practical aim to develop the language and skills needed for work, what is taught in EOP courses should be based on needs analysis, that is on finding out what tasks will be performed in English in the target situation (Dudley-Evans & St. John, 1998). Since the mid-1990s, a considerable amount of research on how English is used in different workplace contexts, especially in business, has been conducted; however, there is not always a strong link between this research and what is taught in EOP courses (Bargiela-Chiappini, Nickerson, & Planken, 2007). This entry will provide an overview of research into English used in different occupational and workplace contexts and will discuss the relevance of this research for teaching EOP.

Surveys in English for Occupational Purposes

An obvious way to discover what communicative tasks people carry out in their work is to ask them. For this information to be useful for teaching EOP, it is important to know which tasks are performed in English, rather than in the national language. Surveys have been carried out in a number of countries to find out such information, for example Barbara, Celani, Collins, and Scott (1996) conducted a survey to discover how English was used in a variety of business organizations in Brazil; and in a more recent survey, Chew (2005) focuses specifically on the tasks carried out by new graduate employees in the banking sector in Hong Kong. In the European context, a widely read magazine for English learners in Germany (McMaster, 2008) conducted a survey among approximately 1,000 readers who use English in their work. The tasks most frequently performed in English, according to the survey results, included reading and writing emails, speaking on the telephone, and reading letters and job-specific literature. Interestingly, the most frequent tasks were not necessarily the ones respondents felt they had difficulty performing in English, as primarily spoken tasks, with telephoning and small talk at the top, were cited in the list of those tasks that were felt to be problematic.

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Such surveys are a good starting point for deciding what to include in an EOP syllabus; however, in order to discover what language is used in these workplace tasks, it is necessary to study workplace texts and interactions.

Analyzing Language and Interactions at Work

It is, in fact, quite difficult to specify the characteristics of English for occupational purposes, as this term covers a very wide range of occupations and professions. Many studies have focused on specific occupations, with business, healthcare, and the legal professions receiving special attention. In order to discover what is distinctive about EOP, a useful question to ask is how it is different from everyday language. Drew and Heritage (1992, p. 22) have identified three dimensions of interaction that distinguish institutional talk (of which workplace talk is a subcategory) from everyday conversation:

1. *Goal orientation*: "an orientation by at least one of the participants to some core goal, task or identity . . . conventionally associated with the institution";
2. "*Special and particular constraints* on what one or both of the participants will treat as allowable contributions to the business at hand"; that is, on what it is considered appropriate to say or how interactions are structured;
3. "*Inferential frameworks and procedures* that are particular to specific institutional contexts"; that is, what is said and done is interpreted against the background of the institutional context.

The impact of these three dimensions is that the language used in the workplace is more restricted in many ways than that used in social interactions. A further characteristic of workplace interactions (and institutional interactions in general) is that they are often asymmetrical (Heritage, 1997); that is, there is often a difference in the relative power or relevant knowledge between the participants, for example between doctors and patients or bosses and employees.

Beyond such general insights into the distinguishing features of language used in the workplace, corpus analysis has provided useful quantitative findings on the characteristics of English for occupational purposes, in particular in business situations, since around 2000. A corpus is a computer-based collection of written or spoken texts, which can be analyzed for recurring linguistic features using a number of analytical tools. Two corpora of spoken workplace interactions are:

- the Cambridge and Nottingham Business English Corpus (CANBEC) consisting of 64 meetings (approximately a million words) from business sectors (mostly in the UK) such as the pharmaceutical industry, information technology, and manufacturing;
- the business subcorpus of the Hong Kong Corpus of Spoken English (HKCSE) consisting of 30 hours (262,000 words) of workplace interactions in Hong Kong businesses.

The latter corpus includes a wide range of workplace situations, such as interviews, service encounters, and telephone conversations, while CANBEC consists mostly of meetings.

By comparing the language used in workplace corpora like this with corpora consisting of social interactions, it is possible to gain an insight into which words, expressions, and phrases are frequent in occupational settings. A comparison of CANBEC with a subcorpus consisting of social and family conversations from the Cambridge and Nottingham Corpus of Discourse in English (CANCODE) revealed some unexpected findings (Handford 2010). Not only were words typically associated with the world of work, such as *meeting*, *business*,

or *order*, more frequent in CANBEC; but so were some fairly general words, for example *problem* and *issue*, as well as grammatical words, such as the pronoun *we*. These findings point to the importance of problem solving as a key activity in the workplace and the emphasis on the group (the team, professional group, or organization), rather than the individual. Such quantitative findings based on the analysis of large amounts of text provide valuable information for course book writers and syllabus designers. Corpus findings are beginning to have an impact on the content of EOP course material, as shown in some recent publications, such as McCarthy, McCarten, Clark, and Clark (2009)—a corpus-informed business grammar.

Besides corpus analysis, which is a fairly recent method for analyzing workplace interactions, discourse analysis, conversation analysis, and genre analysis are frequently used to study the ways in which English is used in occupational settings. Discourse analysis is a qualitative approach to examining how language is used in written and spoken texts within particular social contexts. Conversation analysis is similar; however, it focuses exclusively on spoken interactions and involves a particular method of analyzing such interactions in great detail and attempting to make sense of them from the participants' point of view (see Drew & Heritage, 1992). Genre analysis can be described as a type of discourse analysis that aims to describe the characteristics of particular text and interaction types that recur in specific social and institutional situations and display regular patterning. As language is frequently used in the workplace in specialized types of text (e.g., correspondence and reports of various kinds) or spoken interactions (e.g., meetings, presentations, job interviews), genre analysis is a particularly useful method for describing workplace language. A genre can be described as having a particular communicative purpose (or set of purposes) and a particular structure and lexicogrammatical patterns (Bhatia, 1993).

Workplace genres can be identified at a fairly general level (see Yates & Orlikowski, 1992); for example, a genre such as the workplace meeting occurs across different occupational sectors and is characterized by distinctive, recurring features, such as the role of the chairperson, minutes, and an agenda (even if not all meetings have these features). Other genres are only used in a particular occupation or workplace, and some genre studies have focused on identifying the range of different genres used within a profession or organization and examining how these interact with one another. An example of this is Devitt's (1991) study of all the texts written and used by tax accountants and how these written genres are integral to their work. In terms of pedagogical applications in EOP teaching, identifying the characteristics of genres that are frequent across occupations provides useful insights for courses aimed at heterogeneous groups of EOP learners. On the other hand, for groups of homogeneous learners from the same occupational group or workplace, for example in the case of on-site teaching, surveying, and analyzing the specialized genres used in that particular occupation would be useful for identifying the specific needs of such groups.

The Social Dimension of English for Occupational Purposes

The kind of patterning identified in workplace genres is revealing not only of the language used, but also of the people who use the genres and of how they interact with one another. Genres are used and recognized by groups, not just by individuals, and therefore they tell us a great deal about the groups or "communities," such as occupational groups or co-workers, who use them (see Wenger, 1998, on "communities of practice" and Swales, 1990, on "discourse community"). Researchers investigating workplace discourse using discourse analysis as well as genre analysis have become increasingly interested in the social and

interpersonal dimension and the role played here by language. Examples of research in EOP with such a sociolinguistic orientation can be found in studies deriving from the Wellington Language in the Workplace Project, a database of workplace interactions from a variety of occupational settings in New Zealand, such as government departments, small businesses, and factories (see Holmes & Stubbe, 2003). Social aspects of workplace interactions investigated include power and politeness, humor, small talk, and gender (e.g., Holmes, Marra, & Burns, 2001; Holmes & Stubbe, 2003).

This move toward a more social orientation of research in EOP is paralleled by a more holistic approach to teaching EOP. Whereas in its early days the focus in EOP/ESP teaching was primarily on vocabulary and grammar, it is now more on communicative skills, including social skills. Belcher (2004, p. 173) summarizes this trend as follows:

> Perhaps because of their heightened awareness of the array of social, material and affective factors that can motivate and facilitate language learning, and of what language learning can accomplish beyond smoother workplace interactions, some number of on-site EOP specialists now see their role as widening to include more than language teaching.

Nevertheless, there is still a gap between research and teaching in this area (at least as far as can be judged from published course material), and much that can be learned from research findings regarding the language used to perform social and interpersonal functions in workplace interactions (see Koester, 2010).

Conclusion

In sum, English for occupational purposes refers both to the ways in which English is used in workplace settings and to the teaching of courses that aim to prepare learners to communicate in English in occupational settings. With needs analysis at the heart of this kind of teaching, research into EOP is of key relevance to the content of EOP syllabuses and teaching material. The aim of this entry has been to provide an overview of the different approaches to discovering how English is used in workplace settings and to show how the findings from such research can be applied to teaching EOP.

SEE ALSO: Conversation Analysis and Institutional Interaction; English as Lingua Franca; English for Academic Purposes; English for Business; English for Medical Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Historical Development of Language for Specific Purposes

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English for Science and Technology

THOMAS ORR

English for science and technology (EST), sometimes called English for science and engineering (ESE), has two definitions. In one, EST refers to the spoken and written English that is needed for work or study in science and engineering. In the other, EST refers to English language education that supports science and engineering.

EST as Language

In the first definition, where EST labels a specific domain of English, EST refers to all of the spoken and written English used in science labs and engineering classes; conferences, meetings, and trade shows; and at factories, corporate offices, and construction sites for academic or professional purposes related to technical or scientific aims. Some of this English is very general in nature, such as small talk before the start of a project meeting. Other forms are highly technical, such as lab reports, design specifications, and patent applications. What makes this domain of language "EST" is not so much the characteristics of the English but, more importantly, the nature of its purpose for work or studies in scientific and engineering fields, which influences the form and content of the English. Success in learning this English is not measured by one's ability to produce English discourse that reads or sounds like EST, but rather genuine mastery is determined by one's ability to obtain successful results from using it in scientific and technical contexts. Identifying, understanding, and profiling this English, so that it can be taught, is one of the most important goals of EST research.

EST as Education

In the second definition, where EST designates a specific educational focus, EST refers to both the research of the language used for studies or employment in science and engineering and the development and delivery of training in this language to improve academic or workplace performance. At the introductory levels, EST education is typically designed for non-native speakers (NNS) of English, since the instructional content may simply consist of material that the average educated native speaker (NS) already knows. But at more advanced levels, EST training may also address the learning needs of NS, since technical discourse and documentation is typically unknown by both groups of learners. In applied linguistics, EST is normally considered a specialization within the field of English for specific purposes (ESP), but it also draws heavily upon the expertise of other fields to achieve good results.

History of EST as Education

English language training for study or employment in fields of science or engineering has probably been around for as long as there has been technical or scientific work carried out in English in which people from other language communities have wanted to participate. Unfortunately, few records remain from the language's earliest years of existence to tell

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us how this English was specifically used, taught, or learned for early technical and scientific activities, but there are some things we do know.

For example, we know that from the 16th to the 18th centuries, nearly all of the technical dictionaries, encyclopedias, and manuals that were used for learning technical English were written by scientists and engineers, while general English grammar and composition was learned from textbooks written by philologists. In 1563, for example, the artist and architect John Shute wrote the first reference book in English on the building design and English terminology of ancient Roman architecture. In the late 1600s, member scientists of the Royal Society (established in 1660) actively taught and wrote in English about scientific procedures and discoveries, in addition to the proper English required to describe them. And in the 1700s, some members of the Royal Society also began to produce technical encyclopedias and dictionaries to provide more detailed instruction. One of these was the *Lexicon Technicum: Or, an Universal English Dictionary of Arts and Sciences: Explaining not Only the Terms of Art, but the Arts Themselves* (1704) written by John Harris, a scientist, mathematician, and theologian. And another with an equally long title that was characteristic of the times was *The Language of Botany: Being a Dictionary of the Terms Made Use of in that Science, Principally by Linneus: With Familiar Explanations, and an Attempt to Establish Significant English Terms. The Whole Interspersed With Critical Remarks* (1793) written by the botanist, conchologist, and theologian Thomas Martyn. Beyond the general English learned from grammar textbooks (e.g., *A Short Introduction to English Grammar, With Critical Notes*, Lowth, 1775), it can be reasonably assumed that most of the additional technical English required for work was probably learned by consulting material produced by technical experts as well as learned through immersion in English-speaking environments and on-the-job training in technical apprenticeships—a useful way to learn workplace English that still remains popular and effective today. This early English training for scientific and technical endeavors was not yet labeled EST, but these beginnings of technical English instruction for specific purposes laid the foundation for most of the developments that evolved thereafter.

The next historical phase in the evolution of EST as a line of educational work took place during the 19th century. In this phase, great changes took place as the industrial revolution began to trigger radical alterations in education and employment, along with significant advances in science and technology that made higher levels of competence in academic and professional English much more important. One of the most noticeable changes in education during this century was the founding of hundreds of new colleges and universities in English-speaking countries, with educational programs and research labs to promote the advancement of science and engineering. These new programs required that faculty members not only understand their fields more broadly and deeply, but also made it necessary for them to teach it, research it, and write about it in English at higher levels of professional sophistication. Some of the universities with science and engineering programs that were established in the 1800s were the University of Manchester in England (1824), University of Toronto in Canada (1827), University of Melbourne in Australia (1853), Massachusetts Institute of Technology in the United States (1865), and the University of Auckland in New Zealand (1883). There were also hundreds of others. At these schools, English education for technical studies and employment became more firmly embedded in the formal instruction provided by professors in the science and engineering departments, with gradually increasing assistance coming from English department faculty who had enough interest in science and engineering, and familiarity with its linguistics, to be valuable to the students.

Another significant change in the 1800s that influenced EST was the establishment of many new professional societies, publications, and conferences for the advancement of science and technology. These included professional societies like the Institution of Civil

Engineers (1818) and the Chemical Society (1847), as well as the Association for the Promotion of Technical Education (1889) and the Society for the Promotion of Engineering Education (1893). Three examples of scholarly publications that began at this time are the *American Journal of Science* (1818), *Nature* (1869), and the *Physical Review* (1893). Publications in the technical journals and magazines of this era not only featured the discoveries and practices of science and technology, but also addressed the English of science and technology. Sir William Richard Gowers's article on "The art of writing in relation to medical and scientific work," published in the *British Medical Journal* in 1895 is one good example.

One additional and yet very significant change in the 1800s that increased the value of learning workplace English was the rapid expansion of technical and industrial jobs in English-speaking nations that employed large numbers of recent immigrants who did not speak English as their native language. This massive movement of work in the 19th century from agriculture to industry and from non-English-speaking nations to English-speaking ones greatly increased the demand for specialized English language training. Some of the resources that were developed at this time to help meet the needs of workers in technical occupations were dictionaries in Europe like *The Imperial Dictionary, English, Technological, and Scientific* (1859) by John Ogilvie, a lexicographer and mathematician. There were also popular newspapers with a technical focus such as the *Scientific American* (1845), which advertised itself as a family newspaper for workers in agricultural, manufacturing, and mechanical trades as well as for children and students who were preparing for these lines of work. Books by educators that were intended to promote reform in vocational language and training were also written at this time. One such book was *Systematic Technical Education for the English People* (1869) by John Scott Russell, whose background in engineering and education inspired strong passions for better education in technical fields.

In the 20th century, the number of articles and textbooks on English education for science and engineering continued to grow, as did the number of language professionals with greater interest in this new line of work. Much of the research, publication, and education that supported language learning in the early 1900s was still not called EST at that time, but prolific activity by content experts, linguists, and a growing new breed of technical writing specialists continued to expand English language awareness and training for technical and scientific work. Two of the most revolutionary discipline-specific textbooks on English in the first half of the century, according to technical writer and historian Robert Conners (1982), were *The Theory and Practice of Technical Writing* (Earle, 1911) and *English for Engineers* (Harbarger, 1923). These were written primarily for NS, but NNS used them in class as well, since both kinds of students were expected to attain the same level of professional competence.

It was after World War II, however, that English language education grew and matured the most. International partnerships in rebuilding war-torn governments, economies, and infrastructure, as well as the development of increasingly cheaper means for global transportation and communication, brought English to the forefront as the world's most important language for international communication and cooperation. The rapid postwar growth and internationalization of universities in the United States and other English-speaking countries also increased the value of learning English for academic purposes. With English now as the preferred global language for international work and studies, this greatly increased the demand for more sophisticated discipline-specific English education to satisfy the vast majority of non-native English-speaking scientists and engineers in the world who needed English for work and professional development. This heightened demand for discipline-specific English training consequently generated enough professional attention in the growing field of applied linguistics for the work to be now officially labeled "English for science and technology" by the specialists who taught it. Some of the most influential people in the development of EST as the name for this specialization within the

field of ESP were Larry Selinker, John Lackstrom, and Louis Trimble at the University of Washington in Seattle. Their work, begun in 1967, spawned several papers and presentations, along with enough experience to eventually generate one of EST's most influential books, *English for Science and Technology: A Discourse Approach* (Trimble, 1985). Other applied linguists also began to engage in EST in the 1970s and 1980s, publishing papers about their work and their research in general language education journals like *TESOL Quarterly* (established in 1967), and later in the *ESP Journal* (established in 1980), which later became *English for Specific Purposes: An International Research Journal*. In parallel to the establishment of EST as a bona fide profession, which now principally addressed the needs of NNS, another field called "technical communication" developed to focus on meeting the technical English training needs of NS. This gravitation to two different professions—EST for NNS and technical communication for NS—still exists today in the 21st century; however, the lines between the two specializations have begun to blur into what some call "professional communication," for lack of a better term. For the most part, however, applied linguists who support the English language training needs of NNS in science and engineering still call themselves EST specialists, no matter what level of EST (the language) they teach.

EST Research

EST research is normally conducted to meet the information needs of two different audiences: EST educators and EST learners. Research carried out for EST educators is similar to the research in other specializations within English for specific purposes; it seeks to identify specific tasks that a specific group of learners need to perform in academic or workplace contexts, and then assesses what kind of instruction will best fill the gap between the learners' present skills and the skills that are required to complete those tasks successfully. Principally, this research involves identifying and describing the spoken scripts and written genres in English that facilitate these tasks, but at deeper levels the research also investigates how this English can be used more effectively in context to obtain the most satisfactory results. Additionally, the research must also uncover the most appropriate mental perspectives, amounts of content knowledge, attitudes, body language, emotions, tones of voice and other relevant features that can enable this English to accomplish its goals. Some of the necessary information for this research can be gathered from surveys and interviews of the target learners in order to understand their objectives, skills, and preferences. Other information can be gathered from stakeholders, such as employers, clients, customers, and co-workers to understand their expectations. And further information can be gathered from the research findings published by others. The results of this EST research are normally used to help educators make decisions about how best to meet the needs of their own specific set of learners. But if the findings are significant or the instructional approach is especially impressive, the material can also be published to help other educators working in similar contexts. EST research designed for EST educators is usually published in books or periodicals read by applied linguists.

EST research carried out for EST learners is similar to that carried out for EST educators, except this kind of research is normally designed to help graduate students or working professionals at much higher levels who are interested in substantial research-based advice to help them develop their professional communication skills further. The emphasis of this work is much less on English for academic purposes as it is on English for professional purposes, and is usually sophisticated enough to speak to the information needs of both NS and NNS alike. Research of this variety is normally published in books or periodicals read by scientists, engineers, and language researchers working at the higher ends of EST—like the journal *Transactions on Professional Communication*, published by the Institute of

Electrical and Electronics Engineers—and may be authored by EST researchers, technical communication researchers, or researchers in other areas, including experienced professionals in science and engineering themselves. EST research for higher-level learners is clearly the most challenging, and yet this deeper understanding of communication designed to educate working scientists and engineers is also vital for improving EST instruction at the beginning levels since this higher-level research can explain successful discipline specific language use in much greater detail as well as shed more light on where EST learners ought to be heading in their English language acquisition.

EST Training

EST training comes in many different forms and sizes since it is specifically tailored to fit the unique situation of each learner. At the smallest end, EST training may consist of a workshop or seminar at an engineering conference to help engineers give better conference presentations, one-to-one writing assistance to help scientists improve their English on returned journal article manuscripts, English instruction embedded in a university software course to help students write better software documentation, or a special training course to help NNS graduate student teaching assistants prepare to teach NS undergraduates in introductory science or engineering courses. At the opposite end, EST training may consist of entire courses or curriculums within science and engineering departments to meet the discipline-specific English training needs of all the students, or it may consist of in-house programs within major companies that are responsible for providing EST training and document production for all aspects of corporate communication. EST training can be highly personal (e.g., face-to-face) or highly technical (e.g., online independent study). What is most important, however, is its suitability for the specific instructional content, learning objectives, and learning context. Sophistication in technologies, classroom facilities, or instructional resources mean very little in EST if the learners cannot successfully carry out the target tasks in English at the end of their training that the EST instruction was designed to train them for.

EST Teachers

EST teaching is a highly challenging profession that requires significant time, commitment, and expertise. It also requires a wider range of knowledge beyond English linguistics and language education. Those who obtain the most impressive results from their teaching tend to have the following characteristics:

- a good understanding of languages;
- a strong understanding of English linguistics;
- a strong understanding of human nature and communication;
- a strong understanding of teaching, learning, and assessment;
- a good understanding of science, engineering, and related fields such as math and business;
- a strong understanding of English use in science, engineering, and related fields;
- a strong understanding of EST education and research;
- a very strong interest in helping people—the most essential requirement for successful EST.

Teachers who excel in EST also tend to be committed to EST as their life work and continually seek to develop themselves professionally.

EST in the Future

EST technically began when the very first non-native speaker of English sought assistance with learning the English required for work or study in science or engineering, and EST will continue as long as the need for English training in technical fields remains. Presently, the demand for EST teachers exceeds the supply of available candidates, and thus the field remains rich in employment opportunities for this very important work.

SEE ALSO: Corpus Analysis of Scientific and Medical Writing Across Time; Language for Specific Purposes: Overview

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English in Asian and European Higher Education

SARAN KAUR GILL AND ANDY KIRKPATRICK

The internationalization of higher education has led to a noticeable increase in the number of courses and degrees taught through the medium of English. One of the main reasons is the fact that higher education is a lucrative industry. As a result, there is a need to internationalize curricula as part of the strategy to attract students from different parts of the world to universities in varying locations of the globe. Another reason is that nations want to be active players in the knowledge economy and thus there is the need to be able to access and contribute to the latest advances in the field of science and technology. All of these align with the need to attract international students and staff and to publish and be cited internationally, both important criteria of the Shanghai Jiaotong and the Times Higher ranking schemes for universities.

In a study commissioned by the Academic Cooperation Association (ACA), Wachter and Maiworm (2008) investigated the number of English-taught programs in European higher education for the year 2007. They discovered that some 2,400 degrees were now taught in English in continental Europe, with the major move towards English-taught programs being in the Netherlands and Northern Europe, although there was also evidence of a significant shift towards English-taught programs in Spain. They identified 774 English-medium degree programs in the Netherlands, 415 in Germany, 235 in Finland, and 123 in Sweden. Phillipson (2009) questions the Swedish figure, saying the data from the Swedish National Agency of Higher Education shows that as many as 480 out of a total of 680 MA degrees are taught in English.

Wachter and Maiworm's findings for 2007 contrasts with those of their earlier 2002 study which reported that English-medium tuition in continental Europe was still a relatively marginal phenomenon with only 700 English-medium degree programs (Maiworm & Wachter, 2002). This sudden and rapid increase of English in higher education has led Coleman to argue that "it seems inevitable that English, in some form, will definitely become the language of higher education" (Coleman, 2006, p. 11). Nevertheless, Wachter and Maiworm hold a more sanguine view, pointing out that "despite the steady growth, in no country are English taught programmes anywhere near challenging the survival of the domestic language" (Wachter & Maiworm, 2008, p. 91).

This increase in English-medium programs has been mirrored by the increase in scholarly publications in English. For example, Hamel reports that even the journal of the *Association Internationale de Linguistique Appliquée* (and note the French title of the organization) has, since 2003, become an English-only publication. He states that "the present pre-eminence of English language use in scientific publications has already severely reduced multilingualism in the field, and may eliminate the status of any other language as an international language of science" (Hamel, 2007, p. 66).

In the European context, this relatively sudden and rapid shift to English-medium programs is one consequence of the Bologna Process, named after the Bologna Declaration signed on June 19, 1999 in Bologna. The main aim of the Bologna Process is to create a European higher education area (EHEA) which will facilitate academic cooperation and

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staff and student exchange within Europe. To date 46 countries have signed up (Bologna Process, 2010). The adoption of English as the common language to facilitate academic cooperation and exchange has led to the argument that "what emerges unambiguously is that in the Bologna Process, internationalization means English-medium higher education" (Phillipson, 2009, p. 37).

In order to attract international students, many countries in Asia have opened their doors to a model of transnational education with collaborative links with foreign institutions of higher learning, a move that itself necessitates a change in language policy from national languages to English.

Malaysia was one the earliest Asian countries to develop transnational private higher education opportunities for its citizens and to also develop the nation as a regional hub of education (Gill, 2004, p. 140). Malaysia provided higher education opportunities in English as far back as the 1980s. This was when Malaysian educational entrepreneurs responded to a sudden local need for cheaper international degrees by developing a system whereby students did two years at a Malaysian private college and then through "credit transfer" could enter the third year of US universities. Based on this model, they then went on to initiate "twinning programs" ("1 + 2" and "2 + 1") with British and Australian universities in the late 1980s.

As a consequence, Malaysia has come to have some 100 private colleges and private university-colleges, which have partnership programs with universities in Australia, Great Britain, the United States, and other English-speaking countries.

In addition, there are now a total of more than a dozen private universities established after 1997–8 when the economic crisis set in. These include engineering universities set up by the three public utility corporations in Malaysia, Telekom (the national telecommunications company), Tenaga Nasional (the national electricity board), and Petronas (the national petroleum company) to branch campuses of foreign universities, as mentioned below (Gill, 2004, p. 141).

Presently, in the Asian region, private higher education has become a significant money making venture—all of this contributes to global academic capitalism. As a result, there is tremendous interest from British, American, and Australian universities to export their education to Asia. This has contributed to the growth of English-medium universities in Asia. Examples include Nottingham University which has campuses in Ningbo, China and in Malaysia. Chapman University from the United States of America has a campus in Singapore as has the University of Newcastle, UK, which has set up a medical campus in Malaysia. Leeds Metropolitan University has a campus in Bhopal, India and the University of Liverpool has a campus in China, and Monash University has a campus in South Africa and Malaysia.

These Asian countries and universities are trying to establish themselves as education hubs and attract international students from the region. Not only does this bring the university income and prestige, it can also be attractive to regional students as fees and living expenses are appreciably lower than those in countries such as the United Kingdom, the United States of America, and Australia, where many international students currently study.

In China, as the country prepares to participate fully in the World Trade Organization (WTO), universities and colleges have been instructed to use English as the main teaching medium for selected professional subjects, including information technology, biotechnology, new-material technology, finance, foreign trade, economies, and law. This change was affirmed in a circular from the Education Ministry in China, which said that 5% to 10% of universities' total courses must be taught in a bilingual manner in 3 years' time. These instructions came after Premier Zhu Rongji made the following statement in June 2001 at one of the premier business schools in China (the Qinghua University Economics and

Management School): "I hope all the classes will be taught in English. I don't worship foreign languages, but we need to exchange our ideas with the rest of the world" (*South China Morning Post*, 2001).

Even Indonesia, the country that was a role model for Malaysia in its own language planning stages, is pragmatically relaxing its control over mother-tongue medium of instruction in favor of English, in order to attract international students. This is reflected by an advertisement for a medical degree from Padjadjaran University as a program that is conducted fully in the English language (*The Malay Mail*, August 14, 2001).

In Japan, Waseda University is one of the universities nominated by the Japanese Ministry for Education, Culture, Sports, Science, and Technology to participate in the Global 30 Project for establishing core universities for globalization (http://www.waseda.jp/eng/news09/100215e.html). This has led the university to offer a total of nine undergraduate and postgraduate degree courses in English in politics, economics, science, and engineering, beginning in September 2010.

The rise in the number of Asian universities offering degree courses through English has been seen as a threat to the privileged position occupied by prestigious universities in the United States and the United Kingdom (Kirkpatrick, 2009). In a report compiled in 2009 for the British prime minister, Gordon Brown (UK/US Study Group, 2009), leaders of several American and British universities call for the establishment of an "Atlantic Trust" by which American and British universities will partner universities from other parts of the world, ostensibly to foster the "development of a global civil society which will bind universities and countries together through common values and principles." Yet this is framed as part of a challenge of "extending the UK/US model to third locations" (2009, p. 3) and the language through which this will be achieved is English.

Despite the increase in English-medium programs, the national languages in respective Asian and European countries are not forgotten (although other languages often are). Apart from Singapore, which made the decision to use English as their main medium of instruction in the entire educational system including universities, many other nations in Asia have adopted a bilingual system of education. This is to ensure that there is a balance between national and international needs and challenges manifest through linguistic educational policies. A clear case is demonstrated by public universities in Malaysia that use English for courses of science and technology and Bahasa Melayu for social science and humanities. Yet how precisely to introduce this limited notion of bilingual education (the national language + English) remains the subject of controversy and experimentation. One principle being tried is that of "parallel languages" (Preisler, 2009), but this has yet to be defined. At one extreme it means that all subjects should be taught in the national language and English. At the other extreme, universities may simply offer courses in English as they so wish. Preisler suggests, however, that the notion of "complementary" languages needs to be introduced where "the two languages will be functionally distributed within the individual programme according to the nature of its components, that is, the national or international scope of their academic content and orientation of their students" (Preisler, 2009, p. 26).

At the Hong Kong Institute of Education students take degrees in Cantonese, Putonghua, or English, and many degrees have some modules taught in Cantonese and others in English. However, the situation at the other seven government universities in Hong Kong demonstrates how slow institutions have been to embrace the notion of complementarity as all, with the exception of the Chinese University of Hong Kong, are English-medium only universities. This is despite the government's policy of creating a citizenry that is trilingual in Cantonese, Putonghua, and English and biliterate in Chinese and English. Thus the overwhelming majority of higher education degrees and programs in a Chinese city with a population of more than 7 million are taught (officially, in any event) only

through English. In other words, complementarity is not the norm for higher education in Hong Kong—English-medium only is.

In forecasting global demand for international higher education, Bohm, Davis, and Pearce (2002, cited in Ng, 2009) found that by 2025, Asia will represent some 70% of total global demand and an increase of 27% from 2000. Within Asia, China and India will represent the key growth drivers, generating over half of the global demand in international higher education by 2025 because of their booming economies.

SEE ALSO: English in Higher Education in the Postcolonial World; Language Policy and Planning: Overview; Multilingualism and Higher Education; Multilingualism in Economic Activity; Status Planning

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English in Higher Education in the Postcolonial World

ANDY KIRKPATRICK

The internationalization of higher education has seen an exponential increase in the use of English in higher education throughout the world, both as a medium of instruction and assessment, and as the language of scholarship. For example, more than 40 countries have signed up to the Bologna process, the aim of which is to create a European Higher Education Area (EHEA) in which staff and student mobility and academic cooperation of various forms will be facilitated. This has led to the adoption of English as the principal medium of instruction. "What emerges unambiguously is that, in the Bologna process, internationalization means English-medium higher education" (Phillipson, 2009, p. 37). This trend toward English-medium higher education can also be seen throughout the postcolonial world, including many countries where the language of the colonizers was not English.

The internationalization of higher education has, until recently, been primarily characterized by the movement of students from postcolonial and other societies to receive an education in the West, with the US, the UK, and Australia being the major "receiving" countries. As these international students pay fees, their importance as a source of income for Western universities should not be underestimated, especially as there are some 2 million such students (Howe, 2009). At the same time, the movement of these students overseas deprives their home countries of much needed capital. As many international students decide or are invited to remain overseas, it also deprives their home countries of talent. Not surprisingly, therefore, many of the "sending" countries have themselves established local education hubs in order to attract fee-paying students and to discourage their own students from traveling overseas. As this almost always requires courses to be taught in English, former British and American colonies where English has become institutionalized and where it remains a medium of instruction in higher education are at an advantage.

Malaysia provides an interesting example. During the 1980s, the government adopted a policy of Malaysianization. This included a move to the use of the local language, Malay, as the medium of instruction at the university level. One result was to create a flood of students of Malaysian nationality, but who were not ethnically Malay, to study overseas. Australian universities did particularly well from this development. More recently, Malaysia has reversed this policy and has positioned itself as an education hub (Gill, 2004). Currently, there are more than 100 colleges which have some form of partnership with overseas universities. Some Western universities have established campuses in Malaysia itself. More significantly, Malaysia has allowed the setting up of its own private universities, of which there are now 12. One such is the Petronas University of Technology, established in 1997 by the national oil company. This offers English-medium courses in science and engineering, and the university's journal, *Platform*, is English-medium. Another example is the English-medium Tunku Abdul Rahman University, which offers a wide range of courses to fee-paying students.

A postcolonial setting where English-medium university education is heavily entrenched is Hong Kong. Six of the eight government-funded universities are English-medium. Only the Chinese University of Hong Kong is officially bilingual and only the Institute

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of Education is officially trilingual (Cantonese, Putonghua, and English). The language policies of the six English-medium universities undermine the Hong Kong government's policy of creating citizens who are trilingual in Cantonese, Putonghua, and English and bilterate in Chinese and English, as this creates a wash-back effect into secondary schools. Parents demand English-medium secondary education for their children in order to prepare them for university education. Those who can afford it send their children to private English-medium schools, a development that can be seen throughout the world: "To actually forsake the public school system that teaches in your own language for the private one that teaches in English is an increasingly common phenomenon" (Wang, 2007, p. xiv).

Hong Kong, therefore, provides an example of where the desire to set up an education hub—and so teach through English—clashes with the official language policy. Further examples are easy to find. In the Philippines, the move to modernize the national language, Filipino, and make it a language of higher education has been derailed by the prestigious universities offering only English-medium higher education (Gonzalez, 2007).

It is not only countries that have a history of "English" colonialism that are setting up English-medium higher education courses. Despite Malaysia's efforts to keep local students in Malaysia, some are choosing to go to Russia to obtain a medical degree. These degree courses are offered in English at a number of Russian universities, including Moscow Medical Academy, and cost about a quarter of the fees of equivalent degrees in Australia and Britain.

China's University and College Admission System (CUCAS; www.cucas.edu.cn) provides a list of Chinese universities which offer English-medium degrees. These include 40 universities which offer "Western" medical degrees. Many also offer some form of business degree through English. This is in response to remarks made by the then Chinese premier, Zhu Rongji, when he visited Tsinghua University's School of Economics and Management: "I hope all classes will be taught in English. I don't worship foreign languages, but we need to exchange our ideas with the rest of the world" (China varsities to teach in English, 2001).

The trend to English-medium higher education and the setting up of regional education hubs to attract foreign fee-paying students has occasioned criticism from those who argue that international education should be multilateral and multilingual: "We should move beyond the so-called established order dominated by Anglo-Saxon paradigms and develop systems and standards that could preserve national heritage and promote rich cultural traditions" (Mok, 2007, p. 447).

In effect, however, the courses offered in English suggest that financial gain for the course provider is often the major motivation for such courses. In the context of East Africa, "the challenge is to establish forms of knowledge that are responsive to the development needs of Africa" (Ogachi, 2009, p. 343). However, instead of providing courses that might be useful for Africa's development, many international universities offer a raft of courses in marketable subjects such as business administration. Examples include the Indira Gandhi Open University (IGOU), which has a recruitment office in Nairobi, Kenya. IGOU offers courses in business, education, commerce, and public administration, but not in science and technology. "Internationalization of higher education in the region has not embraced science and technology oriented academic programs" (Ogachi, 2009, p. 345).

Africa is trying to create regional collaboration in higher education. For example, the Southern African Development Community (SADC) protocol on Education and Training has set equal university fees for all citizens from the SADC region (Jowi, 2009). The East African community is working on a similar protocol. However, many Kenyan students currently study in Uganda because the fees there are lower. They also appear to be happy to enroll in less prestigious universities: more than 50 percent of the students enrolled at Uganda's Kampala International University (KIU) are foreign, mostly from other parts of

East Africa (6,715 out of 13,938). Yet KIU is not even ranked among the top 500 African universities. Education is Uganda's fourth largest foreign exchange earner (Ogachi, 2009, p. 338). Not surprisingly, the medium of instruction is English.

Countries that were French colonies and where French became institutionalized in the same way that English did in the postcolonial era are also rapidly moving to the use of English in higher education. Clayton (2006) records a telling account of this in Cambodia at the then named Institut de Technologie du Cambodge. In 1993, the students protested against the medium of instruction being French and called for it to be changed to English. As AUPELF, the French francophone agency, was funding the institute, they insisted on retaining French as the medium of instruction. In the end, extra support for and classes in English were also provided. Later, more than 80 percent of students at the Royal Phnom Penh University chose English as their first foreign language. According to one Ministry official, "teaching French instead of English is in fact an indirect punishment for students because it so clearly limits their opportunities" (Clayton, 2006, p. 222).

A similar trend toward English and away from French can be discerned in previously francophone Vietnam:

> When Vietnam embarked on economic reforms in 1986 . . . it promoted a nationwide rush to learn English . . . English classes were crammed with not just students but also professionals such as doctors and engineers as well as retired government officials, senior police, army officers and diplomats. (cited in Ho & Wong, 2004, p. 1)

As mentioned earlier, English has also become the international language of scholarship. It is "by far the most important language of scientific and scholarly conferences" (Ammon, 1996, p. 26). Ninety percent or more of the information in the Science Citation Index "is extracted from journals in English taken mostly from English language journals" (Truchot, 2002, p. 10). Universities in the postcolonial world (and indeed elsewhere) are placing increasing pressure on their academics to publish in English. Chinese academics earn more for publishing in English than for publishing in Chinese-language journals. This is threatening publication in local languages as the move toward English "has already reduced multilingualism in the field and may eliminate the status of any other language as an international language of science" (Hamel, 2007, p. 66).

This move toward publication in English—and therefore the dissemination of knowledge through English—may also be threatening the status of knowledge written in languages other than English: "African academic discourse has been dominated by the use of English, French and Portuguese, with English the most dominant" (Jowi, 2009, p. 269). It is only in rare instances—Ethiopia is a case in point—where the national language is also the language of scholarship. Even in Hong Kong, a Chinese city of more than 7 million people, English remains the major language of scholarship despite the increasing power and influence of China itself.

The dissemination of "local" knowledge through English may also essentially alter the nature of the knowledge being disseminated (Kirkpatrick, 2009). Not only are problems of translation legion, but the need to adopt Western scientific paradigms can radically affect the knowledge. An example is traditional Chinese medicine where the fundamental concept *qi* has been variously translated as: "that which makes things happen in stuff"; "stuff in which things happen"; "energetic configuration"; "a configuration of energy"; "(finest matter) influences"; "emanations"; "vapours" (Scheid, 2002, p. 48). At the same time, the diversity of practice and ambiguity characteristic of traditional Chinese medicine (Hsu, 1999) has been replaced by the need for a "unified and homogenous knowledge" (Scheid, 2001, p. 270). The tension between the traditional diversity of practice and the modern need for a unified knowledge is captured in the editorial notes of the *Australian*

Journal of Acupuncture and Chinese Medicine: "The AJACM acknowledges the diversity of Chinese medicine theories and practice, and encourages the integration of research, practice and education. It promotes the use of rigorous and appropriate research methodologies in the field of Chinese medicine . . ." In practice, it may not be easy to marry a diversity of theories and practice with rigorous and appropriate research methodologies.

It is clear that the internationalization of higher education has seen an increase in the use of English as a medium of instruction and assessment, along with an increase in the use of English as the language of international scholarship. While the adoption of a single language facilitates international exchange and collaboration in higher education, it also threatens the role of other languages in higher education. This threat has been recognized in Europe, especially in the Nordic countries, where language policies are in place which are designed to revitalize the national languages as languages of scholarship and higher education. Thus, in their study which showed a significant growth of the number of English-medium programs being offered by European universities between 2002 and 2008, Wächter and Maiworm concluded that "Despite the steady growth, in no country are English taught programmes anywhere near challenging the survival of the domestic language" (2008, p. 91).

It is more difficult to take this sanguine approach in many postcolonial settings where "it seems inevitable that English, in some form, will definitely become the language of higher education" (Coleman, 2006, p. 11). While some universities in India have switched to Hindi and regional languages, English remains the most common medium of instruction. African languages play a minor role in higher education, especially in sub-Saharan Africa. In the postcolonial societies of Asia, many universities offer only English-medium education. And even in societies which have never been colonized or were once colonies of other European powers, the number of English-medium courses is increasing. This not only undermines the role of local languages in higher education but also creates a unilateral exchange of knowledge. The commodification of education and the fact that the "North" dictates imitative modernization in developing countries (Altbach & Knight, 2007) mean that "there is currently an uneven balance of knowledge exchange" (Jowi, 2009, p. 274). This uneven knowledge exchange is conducted almost entirely through English. The domination of English creates advantages for those countries that use English as a medium of instruction and research, but often this is at the expense of the development of their own national languages as languages of education and scholarship. This means that the internationalization of education, far from bringing equality and equal opportunity, may "deepen the relations of dependency of local higher education institutions on higher education institutions in industrialized countries" (Jowi, 2009, p. 333).

It would be timely, then, for universities in postcolonial settings to develop and implement bilingual policies, possibly taking their lead from the examples set by the Nordic countries. These might include a system of complementary languages by which "the two languages are functionally distributed within the individual program according to the nature of its components" (Preisler, 2009, p. 26). This would require, for example, the six government-funded universities in Hong Kong which currently offer only English-medium courses having to adopt English–Chinese bilingual policies.

These bilingual policies should extend to the language of scholarship. International education needs to be multilateral and multilingual (Mok, 2007; Kirkpatrick, 2011). One way of maintaining or revitalizing the use of local languages as languages of scholarship is to develop bilingual journals. These used to be common, but, largely for cost reasons, have become rare. Despite its French title and the nature of the subject, even the *Association Internationale de Linguistique Appliquée* has published articles only in English since 2003 (Hamel, 2007). With the ever-increasing use of English in higher education, it is perhaps time that such bilingual journals were re-established.

SEE ALSO: English in Asian and European Higher Education; English(es) and Academic Publishing; Language and Globalization; Language Planning and Multilingualism; Language Policy and Multilingualism; Multilingual Education in Africa; Multilingual Education in India; Multilingualism and Higher Education; National Language and English in India

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English in the Nigerian Novel

EDMUND BAMIRO

The Nigerian English novel (NEN) represents creative writing by English-speaking Nigerian bilinguals who use English to re-create typical Nigerian sociolinguistic, cultural, and emotional contexts. Like other postcolonial English novels, NEN is defined by two linguistic imperatives: heteroglossia and nativization. The term heteroglossia was coined by Mikhail Bakhtin to indicate "the multiplicity of actual 'languages' which are at any time spoken by the speakers of any 'language'" (Dentith, 1995, p. 35). Consequently, "the novel is the form which not only takes advantage of heteroglossia but, when it is most authentically itself, is the form which exploits, celebrates, and revels in the multiplicity of language" (p. 38). Nativization refers to "the linguistic readjustment a language undergoes when it is used by members of another speech community in distinctive socio-cultural contexts and language contact situations" (Kachru, 1992, p. 235).

NEN provides abundant examples of how the varieties of English used in the Nigerian context diverge from British or American norms. Three main varieties of English have been identified in Nigeria and in other ESL situations: the lower variety (basilect), which is the "context" variety associated with the illiterate and semiliterate population; the intermediate variety (mesolect), which is the intranationally accepted variety; and the higher variety (acrolect), which is the internationally intelligible variety (Bamiro, 1991a, pp. 7–8).

The basilect manifests in NEN in the use of Nigerian Pidgin English and other nonstandard forms by people in the lower social stratum. As a communicative strategy, the basilect is often employed in NEN to characterize the status of interlocutors, to reveal social classes, and to provide local color (Bamiro, 1991b). In the following example from Ekwensi's *Jagua Nana* (1961), the female protagonist uses pidgin to attack male chauvinism in Nigeria; the standard English equivalent follows in brackets.

> All de young men in Lagos dem talk sweet sweet—like you doing now, Freddie. But when dem get a gal on de bed, you never see dem again. And if dem give de gal belly, she mu' carry de belly alone, and dem will run and lef' her. Is very bad of de young men. (p. 19)
>
> [All the young men in Lagos are glib talkers—just like you are talking now, Freddie. But once they have succeeded in making love to a girl, you never see them again. And if they make a girl pregnant, she alone will be responsible for the pregnancy as the young men will abandon her.]

The mesolect represents language use mostly associated with Nigerian English. In addition to being used at the highest level of government and administration in Nigeria, the averagely educated Nigerian speaks the mesolectal variety and it serves as the communicative norm. Mesolectal forms in NEN are especially found at the levels of lexico-semantics, syntax, and pragmatics. For example, basing his analysis on the novels of Ike, Omotoso, and Alkali, Bamiro (1994) illustrates 10 lexico-semantic categories in NEN. The significant category of translation equivalents is itself a bundle of contextually dependent features related to figurative language, proverbs, modes of reference, loan translations, prayers, invectives, ritual communication, panegyrics, idiomatic expressions, and kinship terms.

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For instance, kinship terms such as *mother*, *father*, *brother*, *sister*, *cousin*, and *wife*, as used in NEN, are characterized by a more extended meaning than what obtains in British or American English.

Also, by reference to the novels of Achebe, Okara, Ekwensi, Aluko, Alkali, and Omotoso, Bamiro (1995) highlights several syntactic forms that differentiate NEN from the traditional linguistic canons of English literature. Prominent among these are focus constructions which underlie the logic of many Nigerian languages. For instance, the reduplicated item *well-well* in "Some of us can take competition *well-well*" (Omotoso, *Memories of Our Recent Boom*, p. 141), translates in Yoruba as *gidi-gidi*.

As documented in NEN, the acrolect not only signifies the elusive linguistic target which most Nigerians never acquire, but also represents hypercorrection toward the norms and code of the native speaker of British or American English. Winford defines hypercorrection as "the attempt by linguistically insecure speakers to replace features of their everyday speech by forms which are regarded as prestigious" (1978, p. 282). Consequently, in most contexts the acrolect is used to satirize Nigerians who feign the English native speaker's linguistic behavior. In the following example from Oyegoke's *Broken Ladders*, a high school student uses the acrolect to affect learnedness:

> I was thrown into a state of temporary apoplexy, asphyxia, and physical coma when I read your last missive. A sledge-hammer punch from the great Mohammed Ali on the massive jaws of George Foreman couldn't have been more devastating! I read your letter and was colossally dazed to hear that your yes on that momentous day was a little less than a yes. (p. 39)

The hypercorrection derives from uncommon vocabulary and allusion to American celebrities like Ali and Foreman.

On the whole, English in NEN shows that although the basilectal and mesolectal varieties may be nonstandard in formal terms, they nevertheless make a very strong case for regarding English as a language with multiple cultural identities and traditions. Consequently, these features of NEN are systematic and predictable, giving it a linguistic status quite distinct from the dominant code of standard English. English in the Nigerian novel can then be construed as a dialect made up of its own rules, which function regularly to promote communication amongst various narrators and characters in the texts.

SEE ALSO: Varieties of English in Africa

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English(es) and Academic Publishing

ULRICH AMMON

It is common knowledge that English is the global language of science, in written as well as oral communication, also used extensively by non-Anglophones (Ammon, 2001; Carli & Calaresu, 2003). Preference for English is more pronounced in natural than in social science, and least in the humanities (Ammon, 1998, pp. 137–79). Figure 1 illustrates the proportions of major languages in natural and social science publications, though the databases may be somewhat biased in one direction or the other. The diagrams suggest a greater degree of hegemony of English for the natural than the social sciences, though the visual comparison is impaired by the logarithmic ordinate for the social sciences which is meant to facilitate comparison between languages. For the natural sciences such comparison is of hardly any interest, since shares of publications are generally very low. For the humanities there are no globally representative databases available, but numerous bits and pieces of information strongly suggest that national languages still play a greater role there, due to topics as well as to text style, traditions, and terminology.

The upper part of Figure 1 also shows that French and German were of similar rank as languages of publication of the natural sciences early in the 20th century, which—as numerous anecdotal data indicate—was also true for the social sciences and the humanities, but has not been confirmed by comparably representative data. English was, however, better placed globally by colonialism and national economies even then, and its ascent was accelerated by World War I, Nazism, World War II, and the Soviet Union's fall by weakening competitor languages. The United States rose to become a global center of science, and the dominance of its language was enhanced by superior resources for research, development of bibliographic databases, citation indices, abolition of universities' foreign language requirements (forcing others to use English), and halo effects like the extension of academic prestige to the language (Ammon, 1998, pp. 179–204). Accordingly, American English is the preferred choice in most academic publications, especially again in the natural sciences, though British English is often accepted as equally adequate. Other varieties of the pluricentric language, especially those of postcolonial countries, are, however, largely excluded from the more prestigious scientific publications, not to speak of non-native forms.

To call English the "lingua franca" of science camouflages the actual language divide. English is not a lingua franca in the sense of being a non-native language for all its users like medieval Latin. It is an asymmetric global language, whose advantages are unequally distributed. It serves virtually everyone for global contacts and helps spread innovations and thus enhances scientific development. However, non-native speakers invest much more than native speakers (through learning) in creating the public good of a common language (Van Parijs, 2008), but still remain plagued by poorer skills, which often exclude them from publications and other participation in science. The native speakers dominate as gatekeepers to publishing and funding (Burrough-Boenisch, 2006; Flowerdew, 2008). There is also an Anglophone-centered flow of information and perception of scientific achievement (Durand, 2001), since non-Anglophones read publications in English while Anglophones hardly read any in other languages. Their linguistic advantage carries over to their countries' competitive advantage in science and scientific publication and the pull of their universities.

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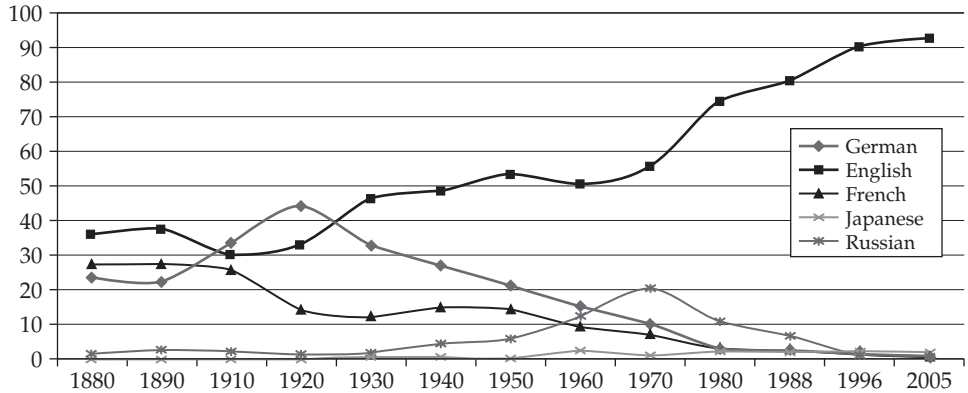
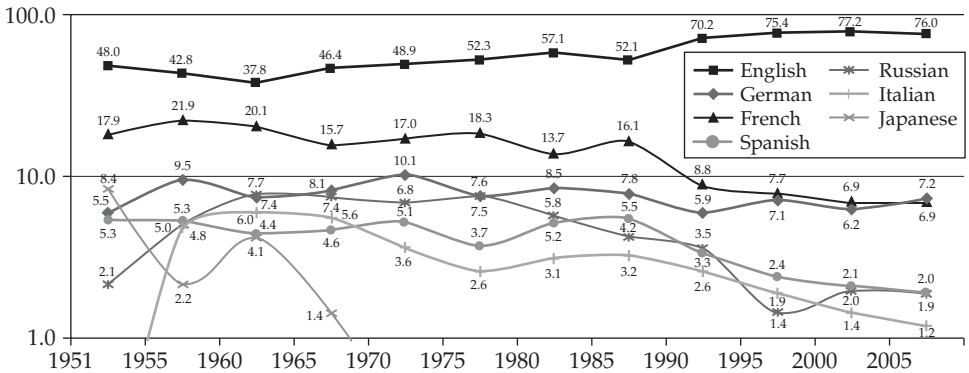


Natural sciences: data based on Tsunoda (1983); Ammon (1998, pp. 137–62); *Biological Abstracts*; *Chemical Abstracts*; *Mathematical Reviews*; *Index Medicus* and *Medline*; *Physics Abstracts*



Social sciences: data based on *International Bibliography of the Social Sciences (IBSS)*

Figure 1 Percentage shares of major languages in science publications worldwide

Anglophones tend to object that they, in turn, are deprived of the multitude of views which multilingualism entails. Nobody, however, prevents them from acquiring foreign language skills. Passive skills would, in fact, do, while non-Anglophones have to acquire active skills in English. Anglophones, however, abstain from learning foreign languages. Their linguistic disadvantages, which they tend to claim, can at least be said to be their own choice, while for non-Anglophones, a lack of skills in English often means foreclosure of an academic career. Weighting overall advantages and disadvantages of both sides remains, however, a challenging research task.

Communicative difficulties arise from any non-Anglophone background, especially from different text conventions (Clyne, 1987). Terminology can be a considerable problem especially in the social sciences and the humanities, where English is sometimes more and sometimes less detailed than other languages. Thus, to pick just two examples from sociology, English *social class* corresponds to the German *soziale Klasse* (antagonistic, Marxist tradition) or *Sozialschicht* (non-antagonistic) and *identity* to the Japanese 主体性 *shutaisei*, 独自性 *dokujisei*, or 自己認識 *jiko-ninshiki* with different shades of meaning. Thus, concern based on the hypothesis of linguistic relativity seems valid for social science and the humanities, since cultural differences are encapsulated in languages' semantic structures.

It would, however, also imply that non-Anglophones who avail themselves of the semantic resources of at least two languages have a cognitive advantage, though this certainly would not fully compensate for their communicative handicaps. In these veins, a single language of science would not only enhance scientific progress (through wider communication), but also hamper it by ignoring other languages' cognitive potential. Such assumptions, however, need corroboration. To the overall development of science, a global language still seems to be more conducive than restrictive.

Such conduciveness would be enhanced by reducing linguistic barriers erected by English. While they exist for all non-native speakers, they are disproportionately high for two groups: (a) for those whose languages have only recently lost international standing (French, German) or who have newly become involved in global communication (e.g., Russians) and who therefore have not adjusted to the recent situation; and (b) for those with a language of great structural distance from English and ensuing learning difficulties (e.g., Chinese, Japanese, Koreans). While the problems of the former will abate, those of the latter persist.

Research into problems and practical help could be stimulated by awareness campaigns (like La Madeleine, 2007; Carli & Ammon, 2008). Scientific organizations should deal with the problems and develop proposals for amelioration. There is need for more training in writing scientific texts in English during study (Swales & Feak, 2000) and for more editorial support for publishing (Burrough-Boenisch, 2006; Flowerdew, 2008), ideally with professional as well as linguistic aids (Benfield & Feak, 2006), which could be financially supported by publishers. In the long run, automatic translation may bridge the language divide, or skills in English may become so ubiquitous that Anglophones lose their advantages. Finally, non-native speakers, forming a vast majority, may gain normative control, as adumbrated by "International English" (Seidlhofer, 2003), or even transform English into a new, though closely related language, which could be renamed to suggest neutrality to something like "Globalish." It would have to be a multicentric language with traces from numerous linguistic backgrounds whose varieties would, however, be similarly mutually intelligible as those of today's English (see Ammon, 2006, pp. 25–7).

SEE ALSO: English as Lingua Franca; Language and Globalization; Varieties of World Englishes

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English-Language Learners and Subject Area Tests

RONALD W. SOLÓRZANO

Introduction

Students whose first language is not English bring a different set of language skills and background knowledge that is seldom recognized or utilized in English-medium classroom instruction nor used in assessments of their learning or knowledge (e.g., National Research Council, 1999; Gandara & Contreras, 2009). In fact, their native language is typically seen as a barrier to their subsequent success in all-English classrooms. Complicating this matter is the use of tests—either English proficiency tests or subject area tests—to determine when students are "ready" for all-English instruction and testing as well as to determine what in fact they do know. In the latter case, their true subject area knowledge may not be reflected in their test scores because of their limited English language. The fact that test scores on subject area tests do not have the intended meaning for this population of test takers is a fundamental problem for the validity of test interpretations and uses. Consequently, researchers have devoted much energy to better understanding (a) general issues with testing English language learners, (b) subject area tests and ELLs, and (c) opportunity to learn.

General Issues With Testing English-Language Learners

Among the most prominent issues with a potentially negative impact on ELLs are improper test development and use and varying definitions of English language proficiency and "academic English" (National Research Council, 1999; Solórzano, 2008).

Test Development and Use

While tests in general are becoming more prominent in the school accountability landscape, their importance for ELLs is rising also. Unfortunately, most tests are not designed or developed with ELLs in mind, yet these students are held to the same grade-level expectations as their native English-speaking peers. For example, most standardized tests used with ELLs are not "normed" using ELL populations and English language proficiency is assumed in subject area tests. Even though various achievement, standards-based, and language proficiency tests may be technically suspect for ELLs, they are used for multiple purposes including high-stakes decisions such as promotion, retention, program placement, and graduation. In some cases, districts use only one or two tests to satisfy these multiple purposes and this raises the "stakes," so to speak, for ELLs.

The *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999—hereafter referred to as the *Standards*) state:

> It is important to consider language background in developing, selecting, and administering tests and in interpreting test performance . . . Test norms based on native speakers of

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> English either should not be used with individuals whose first language is not English or such individuals' test results should be interpreted as reflecting in part current level of English proficiency rather than ability, potential, aptitude or personality characteristics or symptomatology. (p. 91)

Challenges related to using one test for multiple purposes have been addressed by the psychometric community. For instance, the National Research Council (1999) reminds us that "each of these purposes can be achieved only if the test is valid for the particular purpose for which it is being used, and it is important to note that tests valid for one purpose may be invalid for others" (p. 20). This is a crucial point in that tests used to evaluate teacher or program effectiveness may not be designed to evaluate both simultaneously. This therefore calls into question decisions based on the results of these tests.

Indeed, the *Standards* (1999) remind us that:

> For all test takers, any test that employs language is, in part, a measure of their language skills . . . Test use with individuals who have not sufficiently acquired the language of the test may introduce construct irrelevant components to the testing process. (p. 91)

Given the importance of language in test construction and subsequent test use and interpretation, language is an important consideration when it comes to developing, administering and interpreting tests—whether norm-referenced or criterion-referenced.

Varying Definitions of English Proficiency and Academic English

In order to determine adequate levels of English proficiency for the purposes of content area instruction and assessment, we need to define English proficiency. Government and educational agencies use various definitions of proficiency based on an assortment of English language proficiency tests, but controversy remains in this area (Rivera, Vincent, Hafner, & LaCelle-Peterson, 1997; Rumberger, 2000). For example, Pray (2005) argues that "defining language proficiency using discrete psychometric properties . . . fails to assess language used in naturally occurring contexts" (p. 389).

Haber (1985) reported on a disconnect while analyzing the link between one test used in schools in the United States, the language assessment scales (LAS), and content areas by concluding, "if the test [LAS] is to be used for a more fine-grain analysis of language proficiency or to predict future school achievement, then the test is inadequate . . . because of serious theoretical and methodological difficulties in test construction" (p. 809). On the other hand, other earlier tests defined and measured English proficiency differently. For example, Mahon (2006) reported that scores on the Woodcock-Munoz language survey (WMLS) related to the Colorado student assessment program (CSAP), a content area assessment. The WMLS purportedly reflected skills similar to those on the CSAP.

While earlier English proficiency tests were based on definitions of English proficiency reflecting discrete grammatical properties, post NCLB language assessments in the United States have become more closely aligned to state content standards as test developers tried to define "academic English" needed for classroom success. For example, as a result of enhanced assessment grants (Title III, NCLB Act) several English proficiency assessment projects were held to align English assessment to state content standards. Generally, these new assessments attempted to link English language proficiency to academic content standards. The English Language Development Assessment (ELDA) defined academic English as "(1) language used to convey curriculum-based, academic content, and (2) the language of the social environment of a school." The Comprehensive English Language

Learning Assessment (CELLA) defined academic English as the "body of knowledge, strategies and skills necessary for students to participate in school activities and learn from content instruction" (Rebarber et al., 2007, p. 65). And the ACCESS/WIDA "offers a continuum of expected performance of English-language learners as they progress through the language development process to acquire the English language skills necessary for reaching academic parity with their English proficient peers" (Bauman, Boals, Cranley, Gottlieb, & Kenyon, 2007, p. 82).

However, linking English language proficiency (ELP) assessments with ELP standards and academic content standards is not necessarily an easy task. Moreover, differentiating and assessing for "academic" and "conversational" language remains a challenge—even for this new generation of assessments. While acknowledging the superiority of the current assessments to past assessments, Abedi (2007) concludes, "there have been controversies over what is covered under the concept of academic English," and he asks, "who decides how academic English proficiency should be captured within the ELP assessments? How should we evaluate the content and psychometric properties of ELP assessments that test academic English proficiency?" (p. 127). (Another question that could be added is "which content?" That is, who decides the content area/knowledge and disciplines from which children receive instruction and are tested? This topic, however, is beyond the scope of this entry.) This issue was recognized in California during a "linkage and alignment" evaluation of the statewide English proficiency test (California English Language Development Test—CELDT), the English Language Development (ELD) standards, and the statewide content standards conducted by Murphy, Bailey, and Butler (2006) on behalf of the California Department of Education. The authors report:

> Considering the lack of correspondence in the complexity of the content area standards as compared to the ELD standards and the CELDT, it is apparent that scores on the CELDT do not reflect the range of achievement expected for all students (p. 57).

Kato, Albus, Liu, Guven, and Thurlow (2004) also found this potential disconnect between proficiency tests and content standards.

> The different viewpoints on what constitutes academic English . . . makes the design, implementation, and interpretation of such a proficiency test complex at best, especially when translating back the results into what academic language skills a student truly needs for success across content classrooms such as reading and mathematics. (p. 1)

The authors compared results between the Test of Emerging Academic English (TEAE) and the Minnesota Comprehensive Assessment (MCA). In this case, the TEAE—designed "to gauge growth of emerging academic English language skills across all grades" did presumably represent those skills related to the MCA—especially at the lower grades (e.g., 3rd and 5th). This wasn't necessarily the case at the upper grades (e.g., middle and high school).

How to align English proficiency tests closely to the skills and content reflected on subject matter tests remains unclear. More "linkage studies" are needed in this area to determine the predictive validity of ELP assessments relative to content standard tests. One thing is clear, as Fast, Ferrara, and Conrad (2004) remind us: "[ELP assessments] are not tests of academic content . . . no external or prior content-related knowledge is required to respond to test questions" (quoted in Abedi, 2007, p. 127). As a consequence, alignment to content standards may be elusive.

Subject Area (Content) Tests and English-Language Learners

Subject area or content-based tests test the subjects taught in schools (subject area and content area will be used interchangeably throughout). In many cases these subject areas are presented to teachers as content standards which drive the K-12 curriculum. The typical subject areas emphasized in schools (e.g., social sciences, math, English language arts, sciences) are tested at the end of the year. In many cases, these tests are used to determine adequate yearly progress (AYP), school quality/improvement, student promotion/retention, graduation, and potentially teacher salary. Because of the multiple uses of these tests, they are considered high stakes and are used for various purposes. For English-language learners these tests can be invalid because they introduce multiple language challenges to the testing process and may not align with classroom instruction.

Referencing the work of several in this field, Abedi (2002) reminds us that because "most standardized content-based tests (such as science and math tests) are administered in English and normed on native English-speaking test populations, they may inadvertently function as English language proficiency tests" (p. 232). He continues, "English language learners may be unfamiliar with the linguistically complex structure of test questions, may not recognize vocabulary terms, or may mistakenly interpret an item literally" (p. 232).

Complicating this issue is that the actual content areas tested contain additional language characteristics that further challenge ELLs' academic success. Content areas have their own "language registers." Furthermore, some disciplines may have a higher "language demand" than others. Echoing this sentiment, Abedi (2002) found in his analysis of four state and urban school districts from across the US that

> The level of impact of language proficiency on assessment of ELL students was greater in content areas with a higher level of language demand . . . analyses show that ELL and non-ELL students had the greatest performance differences in reading, and the least performance differences in math, where language has less of an impact on the assessment. (p. 254)

He reports that "language factors may have a more profound impact on the [content area] assessment outcome than other background variables such as family income and parent education, particularly for ELL students" (p. 242). This finding is particularly significant to ELLs in that it highlights the importance of language (L1 and L2) and the quality of the instructional program rather than using familial or cultural deficit models to explain poor achievement (Solórzano & Solórzano, 1995).

Along these same lines, Roberson and Summerlin (2005) review the work of others and conclude that "the language of mathematics contains several types of vocabulary: ordinary terms, technical terms, symbolic expressions, and terms with multiple meanings" (p. 10). As such, literate students who also master the mathematics language register (MLR) could be considered biliterate. So, ELLs must learn the English language at relatively high levels in addition to learning the language of the subject (content) area tested.

Finally, Francis and Rivera (2007) discuss *academic registers* which consist of higher-order thinking and writing skills such as reading abstracts and writing reports, and *sub-registers* which are directly related to different disciplines such as science, economics, and so forth. In this case, the authors argue that English learners cannot access these "registers and sub-registers" with conversational English alone.

Similarly, Murphy et al. (2006) observed during their "linkage and alignment study" that "each content area has standards with unique traditions, lexicons, expectations, and assumptions" (p. 57). This presumably was why the assessments did not link up as closely as expected. Apparently, these unique attributes need to be learned and acquired almost

like an additional specialized language—a language that may not be included in ELP assessments. Therefore, we need to determine whether ELLs are "biliterate" both in terms of learning the academic language specific to the content area as well as the elevated English proficiency necessary to express this content knowledge in classroom settings and on standardized tests. ELLs need to have the opportunity to learn *both* the academic English language and the content/subject area in their instructional program.

Opportunity to Learn (OTL)

When examining ELLs' academic success it is important to understand the link between what is on the subject matter tests and what ELLs are being taught in their classrooms. For ELLs, much of their classroom work centers on learning the English language. For example, in California, ELLs learn English based on the English language development (ELD) standards which are organized according to the strands of the English language arts standards. It is clear, however, that these ELD standards are not aligned with the subject area (content) standards (Murphy et al., 2006). One result of this disconnect may be seen in the consistent low achievement test scores for ELLs (US Department of Education, 2009). And while achievement gaps between ELLs and native English speakers still exist, it is also evident that many ELLs are behind grade level, thus prompting remedial or compensatory-type instruction. So combining remedial work with English proficiency instruction calls into question whether English learners are in fact receiving grade-level instruction—the grade-level subject area content that state tests measure. It is additionally troubling when results from these test scores are used for high-stakes decisions—whether to determine teachers' salaries or for graduation. The *Standards* (1999) warn, "When test takers have not had the opportunity to learn the material tested, the policy of using their test scores as a basis for withholding a high school diploma . . . is viewed as unfair" (p. 76).

Herman and Klein (1997) provide a comprehensive framework of opportunity to learn that includes: curriculum content, instructional strategies, and instructional resources. Regarding *curriculum content*, the issue is whether ELLs have had the opportunity to learn the specific grade-level subject matter tested. Again, as discussed above, it is important to note that ELLs may not be receiving adequate grade-level content instruction while they are learning the English language. Abedi, Courtney, Leon, Kao, and Azzam (2006) found when analyzing data for eighth grade algebra students that this was the case. They reported that ELLs were "in classes with less content coverage" (p. 73). This is problematic in that a rigorous curriculum is essential for subsequent college participation (Huber, Huidor, Malagón, Sánchez, & Solórzano, 2006).

Instructional strategies help learners acquire the skills necessary to compete and do well on state tests. The skill set that ELLs typically receive to meet English language development standards are less complex than the skills needed for learning the subject area content standards (Murphy et al., 2006)—especially in the higher grades (Kato et al., 2004). Test scores continually bear out the fact that ELLs score low on achievement tests in all content areas tested (US Department of Education, 2009). Clearly, ELLs are not receiving the necessary skills and content during their classroom instruction to do well on these tests nor are they receiving the "academic English" instruction to navigate the content areas—especially at the lower English proficiency levels.

And finally, *instructional resources* typically include quality teachers and up-to-date materials, for example, support staff, technology, labs, and so forth. The quality of teachers is paramount to ELLs' success, yet in many cases, their teachers are the least qualified and least experienced. Furthermore, the lowest performing schools usually have more underprepared teachers than high performing schools (Woodworth et al., 2009). Unfortunately,

in most cases, English-language learners attend these low-performing schools. Furthermore, quality teaching for ELLs also means having the ability to integrate English learning with content learning instruction. This level of training and skill is missing in many ELL classrooms.

These OTL components are absolutely necessary for ELLs to have a competitive chance at succeeding on subject area tests. In fact, McClung (1979) links OTL to "Instructional validity" in that "Instructional validity is an actual measure of whether the schools are providing students with instruction in the knowledge and skills required by the test" (p. 683). Yet not all schools are meeting this "validity" issue as ELLs' English language proficiency level becomes the criteria for receiving quality subject-area instruction. The question is how do we get ELLs to an English language proficiency level in a timely fashion to benefit from content area instruction and where necessary, when do we insist on L1 instruction to get us there.

Discussion

English-language learners bring a unique educational attribute to the classroom—a different language. This language has historically been seen as a deficit by mainstream educational institutions rather than as an asset or "fund of knowledge" or as "capital" (Moll, Amanti, Neff, & Gonzalez, 1992), to be taken advantage of and built upon in the educational process. The deficit view treats their language as a problem that obstructs learning and subsequently creates a lower class of students who eventually do poorly in school and related tests. This self-fulfilling prophecy of poor achievement represented by traditional schooling practices and "deficit" thinking (Solórzano & Solórzano, 1995) has resulted in the acceptance of test use with ELLs that violates all of the tenets of test validity as put forth by the *Standards* (1999), the National Research Council (1999), and decades of research (Solórzano, 2008). That is, tests are being used to place, reclassify, evaluate, and promote ELLs when in fact the tests were not developed with these multiple purposes in mind.

Positive attempts have been made to link English language proficiency (ELP) assessments with ELP standards and subsequently state content standards and related content tests. This is a step forward. As this pedagogical link between ELP assessment and subject matter content moves along the ELL educational pipeline, the ultimate goal is improved classroom instruction that considers ELLs' special language assets and provides them grade-level subject matter knowledge. However, it is not clear to date that English language proficiency tests can predict or prepare ELLs for subsequent academic English proficiency or subject area achievement. As a result, ELLs are typically tested on subject matter that they have not had the opportunity to learn. It is this opportunity to learn the subject matter that challenges teachers and test makers. Until ELLs' language proficiencies (in both L1 and L2) can be maximized during instruction and assessment, no true achievement outcome in their second language can be assessed, much less used, for high-stakes decisions.

SEE ALSO: Assessment of Young English-Language Learners; Bias in Language Assessment; Fairness in Language Assessment; High-Stakes Language Testing; Uses of Language Assessments; Validation of Language Assessments

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English-Only Movement

TERRENCE G. WILEY

English has long been the common and dominant language in the USA. Nevertheless, supporters of official English and restrictive English-only policies maintain that the common language is under threat from the numerous minority languages in the country (Crawford, 2008). The relationship between the dominant language and minorities languages is often depicted as a struggle between the common language and minority languages. From a demographic perspective, however, it is important to understand that the vast majority—over 98%—of those residing in the USA speak English, and those who speak other languages are mostly bilinguals. Thus it is difficult to understand how English is under threat if most of those who speak other languages also speak English. One argument that can be advanced is that about one third of those who speak English do not speak it well, but there is evidence that those who do not speak it well desire to speak it better, as is evidenced by the demand for English as a second language programs (Wiley, 2005).

Historical Background

During the British colonial period, English achieved dominant status over other European languages in the colonies. Generally there was tolerance toward other European immigrant languages. Tolerance, however, did not extend to all languages and speakers. Enslaved Africans were not allowed to speak their native and ancestral languages, and, beginning in the late colonial period in the southern colonies, compulsory English illiteracy statutes were imposed whereby it became illegal for the enslaved to learn to read and write English. American Indians were generally treated as members of separate and subordinate nations with whom treaties could be negotiated. There were many efforts by missionaries to promote literacy in indigenous languages, largely as a means of proselytizing Indians, as well as attempts to teach them English. During the American Revolution, one of the first acts of the Continental Congress was to pass an appropriation for Indian education for the purpose of pacification (Wiley, 2000, 2004).

The question has often been raised regarding why the USA did not designate English as an official language in the US Constitution of 1789. There are several reasons. First, the dominance and common utility of English was self-evident—it functioned as if it were the official language; second, the founders were generally tolerant toward language diversity and minority rights, except toward the enslaved; third, they did not want to offend speakers of European languages other than English who had just supported the revolutionary cause against England. Thus its functional role and status precluded the need for its "official" designation (see Heath, 1976a, 1976b; Daniels, 1989; Baron, 1990).

In the early 19th century, there was a considerable effort to promote a standard American English, or "American language," though this was through private commercial means, rather than official governmental means. Largely through the efforts of Noah Webster, the focus was on regularizing spelling and pronunciation of the language. Webster wanted to differentiate the standard American variety from the language of the English. He was generally more preoccupied with eradicating regional variations in American English, and

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in making the spoken form conform to the written, than with defending the language from threats from other languages (Simpson, 1986).

From the early years of the Republic through the mid-19th century, the federal government pursued an aggressive agenda of territorial expansion. As a result of annexation, military conquest, and imposed treaties, numerous indigenous and nonimmigrant language minority peoples were incorporated from the former French Louisiana territory, former Spanish Florida, as well as Texas and other former Mexican territories. After English was briefly designated as the official language of the newly annexed Louisiana Territory, there was some initial resistance, so French regained standing with English in Louisiana. The federal government chose not to impose English on its newly acquired territories from Mexico in the southwest.

Up to the Civil War (1861–65), attitudes and policies toward language diversity in the USA were mixed. There was relative tolerance toward European immigrant languages in many states. In 1837, for example, Pennsylvania passed laws allowing for German bilingual education (NEA, 1987). There were, however, strong anti-immigrant sentiments, particularly in eastern urban areas with large immigrant populations. These were particularly evident in the Know Nothing movement of the 1840s and 1850s. The compulsory illiteracy laws, which were imposed on enslaved African Americans during the colonial period, persisted in southern states until the end of the Civil War. In the aftermath of the forced relocation of native Americans in the "Trail of Tears" (1831–38), some American Indian tribes, most notably the Cherokee, successfully ran their own schools and achieved impressive levels of native language literacy and biliteracy in English. In the latter decades of the 19th century, however, English-only boarding schools became a tool for the deculturation of native cultures and "pacification" of Native Americans (Wiley, 2000).

From 1867 to the end of the Spanish American War (1898–1901), the USA added Alaska, Hawaii, the Philippines, and Puerto Rico to its growing international empire. English education was imposed in Puerto Rico and the Philippines, and, in the case of Hawaii, the native language was restricted. On the US mainland, high levels of European immigration increased until World War I. During the war, there was a wave of anti-German sentiment and widespread xenophobia which culminated in English being designated as the official language in a majority of states. In some states, such as Nebraska, it became illegal to teach German or foreign languages in lower grades. In 1923, the Supreme Court (*Meyer v. Nebraska* 262 US 390) ruled against the Nebraska English-only statue. The ruling, however, was a partial victory for English advocates, because it affirmed right of states to require English as the medium of instruction. English-only boarding school instruction for American Indian children persisted into the early 1930s (Wiley, 2000, 2004).

Following World War II, language minority issues increasingly came to be seen in the light of federal racial desegregation initiatives. The correlation between low educational achievement, racial segregation, and language minority status—particularly for students of Mexican origin—became a focus of civil rights advocates. By the mid-1960s, bilingual education came to be seen as an appropriate accommodation for non-English-speaking minority children. In the wider sociopolitical context, bilingual accommodations were also allowed for voting and legal proceedings. Following the failure of the San Francisco school district to provide any accommodation for non-English-speaking immigrant children of Chinese origin, the Supreme Court ruled in *Lau v. Nichols* (414 US 563, 1974) that schools had to provide some proactive means of teaching English and making the curriculum comprehensible. These victories of language minority advocates were short-lived, however, because by the latter 1970s, bilingual education had come under attack by those who questioned any attempts to accommodate speakers of languages other than English (Wiley, Lee, & Rumberger, 2009).

The Rise of the Contemporary English-Only Movement

The contemporary English-only movement grew out of organized efforts in the 1980s to promote the official status of English while restricting bilingual accommodations. In 1981, Senator S. I. Hayakawa (1906–92), a Canadian immigrant of Japanese ancestry, semanticist and former president of San Francisco State University, introduced a constitutional amendment to make English the official language of the USA. That effort failed, and since the 1980s subsequent versions of the proposed amendment likewise have been unsuccessful.

To further his cause, in 1983, Hayakawa joined with Dr John Tanton, an ophthalmologist and proponent of population control and environmentalism, to found U.S. English (http://www.us-english.org). U.S. English was affiliated with the Federation for American Immigration Reform (FAIR), which lobbies for restrictive immigration policies. Initially, U.S. English was well funded with endorsements from well-known celebrities, including Walter Cronkite. Following the public release of a controversial internal memo by Tanton, which was seen as anti-Latino, Tanton resigned and some celebrities such as Cronkite disassociated themselves from the organization. Although efforts to promote a federal constitutional amendment to make English the official language have thus far been unsuccessful, U.S. English has pursued a more successful strategy in promoting English as the official language among the states, where some 26 have passed official English laws since the founding of the organization (NEA, 1987; Crawford 1992; Wiley 2004).

Another highly visible organization, English First (http://englishfirst.org), was established in 1986 with three goals: to (a) make English the official language of the USA, (b) allow children the opportunity to learn English, and (c) eliminate what the organization considers to be ineffective and expensive multilingual policies. The organization's first president, Larry Pratt, was also executive director of the Gun Owners of America as well as Secretary of the Council on Inter-American Security. The latter organization published a report in 1985 that depicted Hispanics as a national security threat and bilingual education as fostering cultural apartheid (NEA, 1987; Crawford, 1998; Wiley, 2004).

There has been organized opposition to the English-only movement, largely from academic organizations involved in language teaching and civil rights advocacy. In 1987, for example, English Plus (http://www.massenglishplus.org) was founded by opponents of English-only policies, who supported a cultural rights amendment which sought to promote linguistic and cultural diversity. A number of educational organizations have passed resolutions opposing English-only policies. These include Teachers of English to Speakers of Other Languages (TESOL), the Linguistics Society of America (LSA), the American Association for Applied Linguistics (AAAL), and the National Education Association (NEA). The major concerns posed by critics of the official English movement are that it threatens the civil rights of language minorities and the government's ability to accommodate their educational, economic, and political access. Beyond that, critics see the movement's priorities as working against the need to promote languages other than English which are needed to make American businesses more competitive in international markets (Crawford, 1998; Wiley, 2004).

One major criticism of the English-only Movement is its association with anti-immigrant agendas which have particular impact on Latinos. These policies received widespread endorsement by a majority of those voting. In Arizona, for example, voters have supported official English policies while also endorsing policies that make it illegal to teach English to undocumented adults. Given such widespread support, some scholars, such as Tatalovich (1995) have attempted to assess how deeply held the popular endorsement of English-only policies are and which elements of the population most supportive. Tatalovich concluded that the first phase of the movement was dominated by debates between elite politicians, who aligned with the issues largely along racial lines with pro-Latino politicians opposing

English-only policies. The second stage involved mass activism along social class lines with the middle class largely endorsing English-only policies. The more recent phase at the national level has seen a strong linkage between English-only and anti-immigration policies. According to Tatalovich (1995), this third phase shifted emphasis from the states back to the federal level and is potentially more politically inflammatory than it was during the Americanization Movement (1914–25).

Other political scholars, such as Donahue (1995), have argued that the public debate over English-only policies has been made more controversial because of political opportunism:

> What matters is that . . . to achieve leadership, one must first become widely known. In what seems to be an utterly cynical value, problems of truth and falsity can be dealt with not at the outset, but later . . . indeed, truth may simply be a matter of what one can get the public to believe. (Donahue, 1995, p. 117)

Propositions 227 and 203

In California, beginning in the late 1990s, Ron Unz, a private businessman, sponsored and succeeded in passing a controversial proposition (227) called "English for the Children," which resulted in restricting bilingual education. The arguments for Proposition 227 advanced by Unz were based on the following premises: (a) English is the language of opportunity and social mobility; (b) immigrant minority parents are eager to have their children learn the language; (c) schools have a moral obligation to teach English; (d) California schools have performed poorly in educating immigrant children, as indicated by their high dropout rates; and (e) young immigrant children acquire second languages easily (Wiley, 1999).

Advocates of bilingual education generally had little argument with the first three assumptions regarding the importance of English and the necessity to teach it. The fourth assumption, however, that bilingual education causes high dropout rates among language minority children, was questionable at the time because only about 30% of California's then 1.4 million language minority students had received any bilingual education support, prior to passage of Proposition 227, even though they were eligible. The fifth assumption, that young immigrant children rapidly acquire second languages was—and continues to be—the most controversial claim because it is not supported by research evidence (Wiley et al., 2009; Gandara & Hopkins, 2010). It is also contradicted by the fact that many English-speaking monolingual children have difficulties mastering English literacy skills in school (Wiley, 1999).

In 2000, Unz followed with another successful antibilingual education proposition (203), in Arizona. Again, since the passage of Proposition 227 in California and 203 in Arizona, there is little evidence that English-only education has improved educational performance and growing evidence that it has not (Wiley et al., 2009; Gandara & Hopkins, 2010). Unfortunately, during the political campaigns for Propositions 227 and 203, many news writers gave more attention to the anecdotal opinions of pundits opposed to bilingual education than to the findings of educational researchers. Since the implementation of Proposition 203 in Arizona, a controversial structured English immersion (SEI) model has been implemented requiring immigrant children to be separated from those in mainstream instruction for four hours per day. Researchers (Gandara & Hopkins, 2010; Lillie et al., 2010) have raised concerns that many children are falling behind their native English-speaking peers.

The Future: Beyond False Dichotomies

Whether future generations will be as favorable to English-only policies in the USA as those of the recent past remains to be seen. As long as the either–or logic of the English-only ideology prevails, in which a struggle between English and other languages for dominance is presumed, there can be little progress in expanding the linguistic capacity of the country. Fear of language conflict and bilingual education limits the opportunity to develop the linguistic resources of multilingual minority populations. Thus we may well wonder what the long-term consequences to American society will be, given the significant intergenerational loss of heritage languages (Rumbaut, 2009), which results for English-only educational policies. It is likewise apparent that foreign language teaching is on the decline (Rhodes & Puhfahl, 2010), which has implications for the USA's ability to function in the multilingual global society and be competitive in the global economy. With the vast majority of Americans speaking only English, surely the more serious issue facing the USA is how to retain languages being lost while expanding the teaching of the world's languages more broadly.

SEE ALSO: Bilingual Education and Immigration; Heritage Languages and Language Policy; Multilingualism and Ideology

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Epistemology and Ontology

GRAHAM CROOKES

Introduction

Since the 19th century, central concepts related to knowledge, of interest to philosophers, educators, and scientists, have been analyzed using a small group of primary categories; the core three are metaphysics, epistemology, and axiology. Within these, the large area of epistemology and a subcategory within metaphysics, namely ontology, are sometimes paired as terms of analysis to indicate important positions within the domain of research methodology that might be called the philosophy of research, and also as the basis for understanding positions in politics, pedagogy, and other similar areas. The two terms are often used together in introductory or preliminary discussions of research positions; second language (SL) authors often reference the co-authored works of Guba and Lincoln (e.g., 1994) as major sources for this. The terms are also of relevance to SL teachers and other professionals in the broad field of applied linguistics. In this chapter I will first define the terms "ontology" and "epistemology" as they occur within their home base of philosophy. then take up some points concerning their use in SL research as a practice intended to result in SL-related knowledge. Many of the issues involved have been in existence as long as humans have philosophized, theorized, and researched. It also seems that some of the same issues play themselves out repeatedly in different but related areas of our field. Thus the social nature of knowledge, the role of interpretation, the degree to which knowledge is well-founded, knowledge of language itself, and SL professionals' knowledge all turn on epistemological and ontological matters.

Ontology Within Metaphysics

Metaphysics is the study of the most abstract, potentially universal, conceptions; philosophical systematizers conventionally break it into three parts: cosmology, theology, and ontology—the nature of what is. This study has not always been valued. Of the area of metaphysics as a whole, Hume (1748/2004, p. 107) wrote, "Commit it then to the flames: for it can contain nothing save sophistry and illusion," a position endorsed later by the logical positivists. In the present context, ontology is seen as relevant to an understanding of research procedures and products in general, because all scientific theories, and by implication all research methodologies, have a metaphysics (Harré, 1985). That is to say, they all (explicitly or implicitly) take a position on the nature of the things to which they are referring, or the entities they are trying to identify or theorize, and the meanings of the basic concepts they are working with.

The use of the term or concept of ontology in research contexts is often related to whether researchers are trying to arrive at knowledge of an objective, real world, or to obtain knowledge of entities that are conceived as not "given," that is, not independent of human action or of embeddedness in human culture. Attempts to deal with these matters have not been helped by the tendency to do so simplistically, with dichotomies being particularly pernicious. Thus if we say that there is a "real" world, the one apparently given to us by our senses, then the supposedly singular alternative position, once the first position has

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taken hold of the label "realist," is presumably "antirealist." At this point those opposed to the first position are immediately backed into a corner by the "commonsense" question, "surely you are not saying that this world does not exist?" The response is to say, indeed, that is not what we are saying. But what is the position, then? It is that the ontological nature of the objects of the research inquiry are much less well-grounded than might otherwise be thought; that they have an existence, yes, but it is one made relative by their ineluctable implicatedness in human existence. Discussions of this topic in an SL context, and even in education contexts, have usually not been informed by a full awareness of the historical extent and diversity (beyond binaries) of the philosophical contexts involved.

Ontologies are often associated with one of three main schools of philosophical thought, namely idealism, realism, and pragmatism. Thus one can talk about an idealist ontology, a realist ontology, or a pragmatist ontology (and of course, many variants or intermediate positions). Similarly, ontological positions are referenced or specified in terms of other (grand) theories. In the past some spoke of a materialist (or dialectical materialist) ontology (Lenin, 1908/1972, p. 57); equally well at the present time one can refer to a "leftist ontology" (Strathausen, 2009). Thus in ontological explorations in SL research contexts we are concerned with what we mean when we say that a theoretical concept in our area exists and when we are obliged to specify or investigate its nature (e.g., Al-Amoudi, 2010). This applies to rules, to the nature of the SL learner, to language, to the entities "acquired" in second language acquisition (SLA) processes, to learner identities, to cognitive structures, and so on. Perhaps the most important ontological question or area facing SL researchers is to what degree the objects of their investigation, most obviously language, are socially constituted. This question, for example, is tackled by Zuengler and Miller (2006), whose entire discussion of the difference between cognitive and sociocultural views of language in SLA is specified in terms of ontological perspectives. Furthermore, if one accepts that some concepts (or objects) under investigation are socially constructed, one can then subject the term "society" itself to inspection. If a conflict theory of society is entertained, that means our basic understandings of language, or of the person, are themselves socially constructed in a contested manner. If a critical theory of society is to be engaged with, a critical ontology follows, in which the ontological status of a language, for example, might be seen as having, say, an inherently patriarchal or class character. Or for example, concerning discourse, it would be found to have a strong tendency to obscure (to the benefit of a ruling class) as opposed to be transparent, or to manifest understandings accompanying those of indigenous people or other oppressed groups in colonial or postcolonial social contexts (see Kincheloe, 2006). Finally here, note that though most ontologies refer to "substances," it has also become possible to refer to "process ontologies" (Thorne, 2005).

Epistemology

Epistemology is the domain of philosophy which concerns the sources and nature of knowledge. This entry is concerned with research as a source of knowledge, though other sources are recognized in epistemological discussions. For example, in societies where particular forms of religion (especially charismatic or fundamentalist) hold political power and strongly influence what passes for knowledge, revelation and authority are two such sources. Intuition is a source of knowledge that has been identified even by some mainstream philosophers such as Kant. However, in secular societies, two sources are given general lip service: reason—that is, the exercise of rational judgment—and empirical research.

Scheffler's (1978) review of this area helps identify some subdomains within epistemology. He identifies the question "what is knowledge?" as the primary focus of epistemology, but provides four other related questions:

> [Second,] the evaluative question: "What knowledge is most reliable or important? . . . [which] asks for a classification of sorts of knowing . . . [Third,] the genetic question: "How does knowledge arise?" To answer this question is to give an account of the processes or mechanisms by which knowledge develops; it is, typically, to provide some model of the mind that may render learning processes intelligible. Fourthly, there is the methodological question: "How ought the search for knowledge be conducted?" . . . Fifthly . . . the pedagogical question: "How is knowledge best taught?" (p. 5)

Besides the matter of knowledge itself, SL specialists must concern themselves with sorts of *knowing*, an important area for us, reflecting our ontologies of language. The "genetic" question is equally important. Considering the genesis of knowledge, one epistemological position allows for innate knowledge of language; others dispute this or emphasize that knowledge comes about through learning. And as a consequence, arguments among those concerned with universal grammar-based theories of SLA are often framed using the term "epistemology." Thus theories of learning in general or SL learning in particular, inherently important for the teacher and potentially important for the researcher (as a person engaged in learning about a phenomenon), come in here. As White (1998, pp. 3–4) says,

> That area of philosophy known as epistemology has been concerned with questions of how knowledge is acquired and the distinction between knowledge and belief . . . Questions about how we learn are closely related to these epistemological preoccupations and rest on them to a large extent. The scientific enterprise of learning theory rests on a variety of related epistemological positions and cannot be understood except in terms of them.

The fourth of Scheffler's questions raises the matter of the search for knowledge. This requires addressing both (a) the philosophy of scientific research methods and (b) the status of professional knowledge vis-à-vis scientific knowledge. Applied linguistics has certainly concerned itself with the first area in the past, and recently has begun to develop a literature in the second area.

After a period of struggle and confusion, the SL field seems willing now to encompass a plurality of research methods, with their diverse epistemological associations. This is consistent with general positions in educational and social science research (even including psychology) and is signaled by the increased acceptance and promotion of "multiple methods" (e.g., Creswell & Clark, 2007). Nevertheless, substantial differences concerning epistemologies of inquiry persist. The most obvious one concerns the matter of interpretation. At one end of a spectrum of positions, interpretation is to be minimized through investigative practices which support objectivity (or intersubjective agreement), and to be corrected out of existence through, eventually, peer review and replication or disproof. Alternatively, interpretation can be seen as inherent to human perception, and a process without which there is no understanding in the first place; as crucial to the study of, in particular, social matters, so that informed and possibly guided subjectivity is actually the desired target. Although the position favoring interpretation still seems more radical (and this is because of the persistent dominance of "scientism" in popular culture), it has coexisted with the other extreme position within European philosophies since the earliest times (all the way back, that is, to ancient Greek philosophies; not to mention similar distinctions to be found in Chinese and Indian philosophical systems). Since SL research is an interdisciplinary project, we may see these different positions as reflecting allegiances to other SL-related disciplines, with some SL researchers orienting to cognitive science conceived of as objectivist and others orienting, say, to anthropology, with its long-standing interpretivist stance. (Or equally, in pursuit of historical awareness, we may come to see this as reflecting the *Methodenstreit* ['methods debate'] which engaged the social sciences in Europe shortly after their creation, during the late 19th century.)

Modern analytic philosophy has mostly presented epistemology as individualistic in nature, but in the last few decades a social epistemology has been developed. This is part of the coming together of philosophical and sociohistorical empirical studies of knowledge, following Bachelard (e.g., 1936/1984; Tiles, 2005) and Kuhn (1962). Social epistemology (as its name suggests) emphasizes studying the way knowledge arises from and is supported by social forces and practices. A critical spin on this was visible in sociological analyses of the history of science (e.g., Barnes, 1974) which brought out the role of power, or of socially located perspective, or the influence of other theories (such as racist, eugenicist, or imperialist theories of humanity) in the development of ideas that were given (for a while) the backing of science. The European tradition in the history of ideas (e.g., Canguilhem, 1988; directly following Bachelard) flowered in the work of Canguilhem's student Foucault, whose well-known theorizing of the interrelationship of knowledge and power leads to a position summarized by philosopher of education Noddings: "Many philosophers today suggest we abandon traditional questions of epistemology, and describe truth locally, as a function of power or as an artifact of language and question the extent to which true statements can point to things outside language, while still being able to be truth-telling (or lying) within specific contexts" (Noddings, 1995, p. 105). Recent years have also seen the development of "standpoint epistemologies," of which feminist epistemology is the best-known. This position asserts that the inner view is more authentic, above objectivity; bias (reconceptualized as a standpoint) is unavoidable, and the only way to avoid pernicious bias is to include the views of all interested parties in accounts and arguments, rather than attempt to screen them out. Finally here it may be noted that epistemology, historically, has tended to be descriptive, but it is possible to develop a prescriptive or normative epistemology by bringing in aspects of axiology (i.e., ethics). A normative social epistemology of research leads to the position that research knowledge must be useful, otherwise its conduct is in some sense unethical.

Theories of Knowledge in Mainstream and Second Language Research

Epistemology also encompasses the development of theories of knowledge, important (obviously) because knowledge is the product of research. These theories can be placed on a spectrum between foundationalist and antifoundationalist poles; the latter pole has more recently come into a primary position. Foundationalism advances the position that truth claims can be based in some indubitable or self-justified beliefs. Logical positivism was a foundationalist enterprise, aimed at arriving at statements about reality that could be verified; its core position in this area was known as verificationism. Quine (1969) and Popper (1959) subjected this position to sustained critique, maintaining (successfully) that while normal methods of science can plausibly establish the falsity of general statements, they cannot establish the truth of such statements. In the absence of a verificationalist position (that of the logical positivists), a historical, or temporal, account of how knowledge has been arrived at is to be used to justify it. That is, we are persuaded of the plausibility of a statement, even one arrived at through quantitative procedures, through its support, which comes from the social processes of scientific reporting and judgment exercised through a public process of peer review and follow-up work.

It is valuable to trace this mainstream scientific position, of Popper, back a few steps. It is similar to that of the pragmatists, such as Peirce and Dewey (Hutcheon, 1995). Dewey's epistemology, like most of his work, reflects his interest in unifying dichotomies opened up by the two major philosophical schools of his time: idealism and empiricism. The first

assumes that knowledge is of ideal forms; the latter that it is of the real world, to which we are assumed to have more or less direct access. Dewey based his position on our status as human beings in the real world, and indeed as beings subject to evolution. Thus for him, knowledge was only obtained through our action on the world, and in some sense subject to survival constraints (see Boyles, 2006).

> Emphasis on the reciprocity of theory and praxis, knowledge and action, facts and values, follows from [a] post-Darwinian understanding of human experience, including cognition, as a developmental, historically contingent process. (Siegfried, 1995, p. 730)

Dewey's position also suggests a way to cut through the common theory/practice division: theoretical knowledge is that which is arrived at through practical inquiry (usually by teachers) when reflected upon and tested in practice.

Then just as language can be seen as having structure, but also as socially created and manifested, as individual but also social in nature, so can knowledge. Knowledge can be seen as knowing, and as itself a social practice rather than something individual. This is equivalent, in epistemology, to moving from an individualist, foundationalist epistemology toward one which is more social and antifoundationalist. Besides Dewey, the influential work of Thomas Kuhn on the social dimensions of scientific theory test and lend further support to the social, antifoundationalist position on knowledge, as did the philosophical work of Gadamer (e.g., 1960/2004).

> Gadamer's view was that it is a mistake to think of knowledge (knowing-that, but also knowing-how) as something that occurs outside the traditions in which we are brought up and through which we are taught to see the world. Instead, we should see knowledge as something that occurs in our interaction with the world by means of these traditions.
>
> What Gadamer struggled against—and what Descartes and Hegel were struggling for—was the idea that there could be a pure standpoint, untainted by our traditions and our prejudices, from which any knowings-that could be had . . . Gadamer denied that there was any such kind of pure knowledge. He argued forcefully that in order for there to be knowledge there had to be language, and that language always occurs in the context of traditions in which viewpoints develop, social relations form, and individual lives unfold. (May, 2001, p. 79)

This position emphasizes the importance of our own locally situated, locally developed knowledge, even in the generation of research-based knowledge. It also suggests the possibility that knowledge tends to be "interested," that is, again, reflects the views, traditions, and standpoints of those who create it.

In due course, the understanding of knowledge as a social practice has joined with lines of influence deriving from sociocultural theory and activity theory and has become more prominent in mainstream social science and in studies of language learning and teaching. Given the organizational locations of SL research and teaching, an interpretation made of this perspective by organizational theorists and knowledge utilization researchers ought to be useful. Orlikowski (2002, p. 249) refers to this position as

> a perspective on knowing in practice which highlights the essential role of human action in knowing how to get things done in complex organizational work. The perspective suggests that knowing is not a static, embedded capability or stable disposition of actors, but rather an ongoing social accomplishment, constituted and reconstituted as actors engage the world in practice.

Thus researchers' knowledge is not necessarily the knowledge of an individual scientist or researcher, but rather the knowing practices manifested by groups of scholars (and teacher-researchers) in social organizations under better or worse (emancipatory or oppressive) conditions.

Constructivist Epistemology and Second Language Research Knowledge

A constructivist epistemology derives substantially from Kant (1998), who rejected both the innate ideas view of rationalism and the position of the early empiricists. Kant's opinion was that we can never know the world in itself, only the world as it is constructed. Piaget (e.g., 1937/1954) developed Kant's position by saying that Kant was wrong in thinking of these structures as static and given. Like rationalists, Piaget assumed mechanisms of mind that make knowledge possible, but like empiricists, he theorized that organisms test their knowledge against the world of sensory experience (thus to some extent his is a non-foundational epistemology). The position that knowledge is constructed by learners and is not the result of passive reception has now produced several varieties of "constructivism."

Thus, we can talk about weak as well as strong constructivism. Then, much learning takes place in social interaction rather than just working with the environment, or "facts" alone, and this takes us to the Vygotskyan variant: social constructivism. If we say "all knowledge is mediated by our cognitive structures and theories," we can go on to say (following Hegel: Westphal, 2003) that those structures are social and historical in nature; if we add the possibility that these are almost always accompanied by real-world cultural artifacts which play a crucial role in learning we are then in the realm of "activity theory" (a.k.a. sociocultural historical theory, with its own epistemological positions; see, e.g., Thorne, 2005). Finally, radical constructivism emphasizes the way that a person's experienced world is what is arrived at through the process of knowing rather than the discovery of a pre-existing world. Most of these varieties of constructivism have had influence on SL and foreign-language teachers' understandings of how students learn (Reagan, 2002). They also apply to the researcher's discovery processes, a form of learning, within the social processes of science.

Knowledge of Second or Foreign Languages and Language Teachers' Knowledge

SL researchers are of course quite familiar with the always-continuing debate concerning what knowledge of language really is; that is, answers to the question "What does it mean to know a language, or a second language (L2)?" In particular, in contradistinction to the early concern of epistemology with propositional knowledge, many SL researchers would accept that knowledge of a language includes "knowing how" (Ryle, 1949, pp. 29, 38). In addition, this "know-how" pertains not just to the construction of grammatically correct sentences. It also involves knowledge that enables those sentences to function effectively when communicating within another culture; in which case, knowledge of language has to be encased within knowledge of a (second) culture (cf. Gadamer, 1960). This is knowledge also accessed and utilized by SL professionals in general, most obviously SL teachers.

I conclude this entry with a brief reference to the matter of teachers' knowledge, because many (though not all) SL researchers would regard L2 research as of limited worth if not contributing to the knowledge of L2 professionals. For this topic, on one hand we have, in the SL domain, work on teachers' knowledge of SL research of (e.g., Bartels, 2005). We can assume that some of the knowledge Bartels identifies (formal knowledge of language

and of SLA, and knowledge about applied linguistics) that derives from SL research is of a more or less propositional nature, and thus unproblematic. On the other hand, we have work in mainstream education. Munby, Russell, and Martin (e.g., 2001) have summarized characterizations of teachers' knowledge from 20 years' work in the area. These and other researchers of teachers' knowledge (including SL specialists) have noticed its sometimes tacit, knowledge-in-use character and suggest that it may be embodied in scripts, rules of practice, metaphors, narratives, and cases, and have thus pointed out its situated, particularistic, and nonpropositional nature (see Crookes, 2009). The transliteration of Ryle's dichotomy to the cognitive terms "declarative knowledge" and "procedural knowledge" is also relevant. It raises (once again) the matter of how formal, theoretical knowledge gets (or does *not* get) transformed into practice. The idea that knowledge of practice begins as declarative knowledge and when automatized becomes procedural knowledge, mentally encoded in a nonpropositional form, provides another partially useful metaphor for understanding the difficulties implied by the theory/practice divide (though it suggests a fairly high level of ontological complexity). It has been suggested that the term "praxis" (theoretically grounded knowledge, reflected on) overcomes this problem (see Pennycook, 2004). It is thus not possible to bring this discussion of extremely long-standing matters to a simple conclusion. Rather, it seems important to note that the status of the final destination of SL research-based knowledge (the SL professional) is epistemologically and ontologically unclear at the present time, a matter likely to justify further investigation and analysis of SL ontologies and epistemologies.

SEE ALSO: Cognitive Constructivism; Knowledge Claims; Positivism and Postpositivism; Praxis and Second Language Acquisition; Qualitative Methods: Overview; Realism; Vygotsky and Second Language Acquisition

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Erickson, Frederick

ALLA V. TOVARES

Frederick D. Erickson is George F. Kneller Professor of Anthropology of Education at the Graduate School of Education and Information Studies and an affiliated professor in the Department of Applied Linguistics at the University of California, Los Angeles. Erickson's work has made significant contributions to the theory and methodology of applied linguistics, especially in the areas of ethnography, discourse analysis, and sociolinguistics. Erickson has explored face-to-face interaction in institutional and familial settings and has an impressive research and publication record. Through the lens of microethnography, Erickson has advanced conceptualizations of listenership as a type of active engagement in interaction and has worked extensively on the musicality of speech. He pioneered multimodal discourse analysis, linked analysis of talk with social theory, and fostered interdisciplinary research and practice.

Biography

Frederick Erickson began his academic career at Northwestern University as an undergraduate majoring in composition and music history, earning his Bachelor's degree in music in 1963. He also earned his Master's degree in music history (1964) from Northwestern. It was his interest in music and ethnomusicology (Erickson's teacher was the renowned ethnomusicologist Alan Merriam) that not only profoundly influenced his understanding of everyday discourse, but also shaped his lifelong commitment to education, its theory and practice. As an undergraduate student, Erickson formed a volunteer music-tutoring program in one of Chicago's inner-city neighborhoods. As a result of this experience, Erickson was employed full-time in youth work, concentrating on employment and literacy education. He was also involved in the civil rights movement and community organizing.

Erickson returned to Northwestern University to pursue graduate studies in anthropology and education. As a graduate student, Erickson was influenced by his professors Edward T. Hall, Ethel Albert, and Paul Bohannan. The scholars whose work has influenced Erickson's research include John Gumperz, Dell Hymes, Erving Goffman, Gregory Bateson, William Labov, Adam Kendon, Courtney Cazden, and Emanuel Schegloff. Since receiving his PhD in education in 1969, Erickson has been on the faculty of the University of Illinois-Chicago, Harvard University, Michigan State University, and the University of Pennsylvania. He also taught at several Summer Institutes of the Linguistic Society of America, was a visiting professor of linguistics at the University of Konstanz, Germany, and a visiting scholar at the Center for Multicultural Education at the University of Washington. Erickson has served on the editorial boards of *Teachers College Record* and *Research on Language and Social Interaction*. Erickson's contributions to the field of anthropology of education have been widely recognized. He is the recipient of numerous awards and distinctions; among them are the George and Louise Spindler Award for outstanding scholarly contributions to educational anthropology and the Spencer Center for Advanced Study in the Behavioral Sciences and the Annenberg Public Policy Center Fellowships. Erickson's Web page is http://www.gseis.ucla.edu/faculty/members/erickson

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Institutional Discourse and Gatekeeping Encounters

When he was 28 years old, Erickson began working on the project that would become a seminal work on institutional discourse: *The Counselor as Gatekeeper: Social Interaction in Interviews* (Erickson & Shultz, 1982). Together with Jeffrey Shultz, Erickson analyzed audio and videotaped academic advising interviews between junior college students and their advisors. Erickson and Schultz brought to the forefront the concept of institutional gatekeeping as a type of an encounter "in which two people meet, usually as strangers, with one of them having the authority to make decisions that affect the other's future" (p. xi). Through a detailed analysis of verbal and nonverbal behavior of the students and their counselors, the authors demonstrated that counselors, as "institutionally authorized gatekeepers," were more likely to judge than to advocate for the students whose patterns of behavior—including speech, gestures, eye contact—differed from those of counselors'. At the same time, a shared background established an advisor–advisee comembership, an advantageous outcome for the students.

This work highlighted that in institutional settings people who come in contact with one another "may come from different speech communities even though they are members of the same linguistic community" (Erickson & Shultz, 1982, p. 8). For instance, *The Counselor as Gatekeeper* explained how mismatched patterns of speaking and listening created uncomfortable moments between White counselors and their African American counselees. Specifically, while White participants kept eye contact during listening and would break their gaze when speaking, African Americans demonstrated a reversed pattern: they kept eye contact when speaking and would break it when listening. The study revealed the inner workings of race, class, gender, ethnicity, language, and culture in institutional gatekeeping encounters.

Speaking and Listening

The Counselor as Gatekeeper was influential in identifying listenership as an important element in interaction. Erickson (1986) further elaborated on the role of the listener on the speaker and metaphorically compared the complexity of speaking to another person to "climbing a tree that climbs back" (p. 316). Erickson conceptualizes listening and speaking as inextricably linked, and the listener as "an active agent in the joint production of oral text" (p. 300). Furthermore, speakers' expectation of how listeners should signal their interactional involvement is based on the patterns of their (sub)cultures. Erickson's analysis of a videotaped job interview shows that the interviewee's speech became more hesitant when the interviewer broke eye contact and regained fluency when the interviewer restored eye contact. During a retrospective viewing session (a research technique Erickson was among the first to use to analyze discourse), the interviewee, an Italian American, indicated that he perceived the lack of eye contact as the absence of interest on the part of the interviewer. The interviewer, a German American, explained his behavior as an attempt to create a more relaxed atmosphere because he noticed that the interviewee was nervous. These mismatched expectations of how to show listenership resulted in "complementary schismogenesis" (Bateson, 1972), or increasing distance and misunderstanding between the interlocutors who did not share (sub)cultural patterns. The findings of Erickson's research are in line with the instances of the mismatched interactional styles elucidated in research by Gumperz (1982a, 1982b) and Tannen (1984). Erickson's work shows that any interaction is a joint activity, and speakers' discourse is affected by the perceived (in)adequate listening response.

The Musicality of Speech

Erickson's understanding of social interaction as a joint production is reflected in the type of transcription notation that he uses to represent real-time face-to-face communication (e.g., Erickson, 1982a, 1982b, 2003). A trained musician, used to recording musical performances, Erickson has applied his skills as a performer and his knowledge of music history and ethnomusicology to everyday interaction and put forward a type of "quasi-musical" transcription of talk. Edwards (2003) refers to such transcription as "partiture notation" in which

> turns by different speakers are put on different lines in a manner similar to instruments on a musical score. This form highlights the collaborative aspect of interaction—that is, that discourse is a unified "accomplishment" achieved jointly by multiple participants. (Edwards, 2003, p. 327)

Erickson's "partiture notation" was further validated by Scollon (1982), a linguist and a musician himself, who also, and independently from Erickson, used a quasi-musical type of notation to transcribe everyday talk.

Erickson uses "quasi-musical" notation to indicate the relative temporal location of stressed syllables within intonation units (1982b) and timing of talk in classroom discourse and in family dinner interaction (1982a, 1992, 1996). Erickson's work demonstrates that the musicality of speech "focuses the listener on key information points in the speech stream and cues moments of what conversational analysts have called 'transition relevance' at which turn exchange between speakers is appropriate" (Erickson, 2003, p. 12). Such moments of "transition relevance" coincide with the moments when listeners can provide verbal or nonverbal feedback to speakers. Further elaborating on the musicality of speech, Erickson shows how cadences, or rhythmic patterns that typically occur at approximately equal intervals in time, allow listeners to "anticipate a tactically crucial next moment, as signaled by speech prosody" (2003, p. 32). Erickson (1996) also uses Greek notions of *chronos* and *kairos* to further explore the idea of timing in talk as linked to the rhythmic organization of face-to-face interaction. While *chronos* refers to a technical "clock" understanding of time, *kairos*—which is of more interest for Erickson—is "humanly experienced" time, a social sense of time. Erickson shows that it is *kairos* that enables some students to anticipate the next moment in interaction and "steal turns from other children who were teacher-designated speakers" (1996, p. 37).

Multimodal Analysis of Talk

In his analysis of everyday face-to-face interaction, Erickson pays careful attention to the kinetic or paralinguistic activity of interlocutors: how gaze, posture, and gesture co-occur with speech and influence verbal behavior. Since his early work (e.g., Erickson and Shultz, 1982; Erickson, 1982b), Erickson has been using videorecording as a method of capturing both verbal and nonverbal aspects of interaction, and his transcripts typically include detailed diagrams of the postural positions, interpersonal distance of the speakers, and descriptions of other paralinguistic activity.

In his study of a dinner table conversation in an Italian-American family, Erickson (1982b) shows how, in the course of a dinner, the rhythm of talk is interrelated with the rhythm of people's actions, and the body movements of the participants correlate with phonetic emphasis of speech. Erickson argues that discourse coherence is achieved through a careful coordination of verbal and nonverbal resources and strategies: "Taken together, the

simple syntax, simple speech rhythm, and obvious table geography are sets of resources that make for an almost foolproof system for fluent production of topical items in real time" (1982b, p. 62).

Talk and Social Theory

For Erickson, talk is not only a joint production of speakers and listeners achieved through verbal and nonverbal resources, it is a social construction. Erickson's interest in linguistics stems from his concern with social and educational processes. He often collaborates with teachers and focuses on social interaction as essential to the learning process. In "Going for the Zone" (1996), Erickson analyzes classroom interaction against the backdrop of neo-Vygotskyan theory of learning. Elaborating on Vygotsky's (1978) notion of the "zone of proximal development" (a range of what children can do independently and what they can achieve with the help and guidance from others), Erickson examines various aspects of real-time social interaction in the classroom. He goes on to suggest that, "as teachers and students interact in classrooms, they construct an ecology of social and cognitive relations in which influence between any and all parties is mutual, simultaneous, and continuous" (Erickson, 1996, p. 33).

In his recent book, *Talk and Social Theory* (2004), Erickson links a detailed analysis of specific interactions, or microethnography, with larger social structures, bringing together the "micro" and the "macro" in his analysis of social interaction. For Erickson, neither "macro" nor "micro" is sufficient in isolation; instead, only in the "tension of paradox" can they be studied and understood (Erickson, 2004, p. 197). He stresses the active role of interactants who do not merely adopt and follow social rules, but rather adapt to those rules in creative ways (p. 163). Erickson puts forward a metaphor of "wiggle room" to show how people, in a selective "bricolage-like" manner, appropriate existing social structures and instruments (with their affordances and constraints) and put them "to new and uncommon use" (p. 173). Erickson's work suggests that social theory can benefit from a detailed analysis of everyday interaction as a site where the local and the global are at play. This book received an Outstanding Book Award for 2005 from the American Educational Research Association.

SEE ALSO: Discourse in Action; Multimodal Interaction Analysis; Rhythm and Timing in Interaction; Rhythm in Discourse

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Ethical Debates in Research on Language and Interaction

MAGDALENA KUBANYIOVA

When we talk about ethics in applied linguistics research, we typically refer to at least two distinct, albeit interrelated, areas: an ethical conduct in research involving human subjects and the moral ends of our research activity. The first set of concerns has traditionally been embedded in institutional review boards (IRBs) or codes of ethical practice, such as *Recommendations on Good Practice in Applied Linguistics Research* (BAAL, 2006) or *TESOL Quarterly Research Guidelines*. With a few exceptions, these have until recently not received much scholarly attention beyond the routine treatment in research methods manuals. On the other hand, engagement with values and moral purposes of applied linguistics research has been pursued alongside the epistemological debates in the field (Cameron, Frazer, Harvey, Rampton, & Richardson, 1994; Firth & Wagner, 1997) and reflections on the relevance and social use of applied linguistics has become even more prominent in recent years. For example, the key theme of the annual meeting of the American Association for Applied Linguistics (AAAL) in 2009 concerned the relevance of applied linguistics to the real world and the usefulness of applied linguistics research for language teachers was explored at the annual conference of the International Association for Teachers of English as a Foreign Language (IATEFL) in the same year. Scholars have examined the values and purposes of applied linguistics in general (Bygate, 2005), or in relation to specific subdisciplines, such as language testing (McNamara & Roever, 2006), language teaching (Johnston, 2003; Crookes, 2009), forensic linguistics (Shuy, 2009), or second language acquisition (Ortega, 2005; Thomas, 2009).

Nevertheless, an increasingly changing landscape of language and interaction research involving diverse linguistic, sociocultural and sociopolitical, virtual as well as material, contexts, collaborative research relationships or multimodal means for collection, analysis, and presentation of language data has renewed the urgency with which the field needs to engage with both moral ends and moral conduct. The purpose of this entry is to offer an overview of key themes in the current debates on these issues.

The General Landscape of Ethics in Research on Language and Interaction

Most language and interaction research requires ethical clearance typically granted by IRBs or similar institutional bodies. The general ethical criteria which inform these procedures are typically derived from three core principles that serve as moral standards for research involving humans: *respect for persons*, which binds researchers to protect the well-being of the research participants and avoid harm or potential risks or both; *beneficence*, that is, ensuring that the research project yields benefits while minimizing harm; and *justice*, or in other words, a fair distribution of research benefits. To comply with the first principle, language and interaction researchers are typically required to produce evidence of informed consent and of measures taken to protect the participants' privacy and maintain anonymity. The principles of beneficence and justice have received far less attention in IRBs or

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codes of practice and the usefulness to communities who participate in our research and who are supposed to benefit from it is typically interpreted only in the sense of offsetting potential risks, or in other words, to establish the so-called "risk/benefit ratio."

However, debates about both these principles are alive and well outside the procedural ethics framework. For example, Ortega (2005) has argued that the principle of justice has been consistently overlooked in certain domains of language and interaction research. She has warned that the requirement of fair distribution of research benefits becomes problematic when certain types of L2 populations are persistently neglected, which, as she argues, is overwhelmingly the case in instructed SLA research.

Similarly, the principle of beneficence and, more broadly, relevance and social utility has been debated among applied linguists. Bygate (2005), for instance, has proposed a definition of applied linguistics as a "pragmatically motivated study of language" (p. 571), highlighting the need to *address* rather than simply *describe* real-world problems. Ortega (2005) has maintained that engaging with the social usefulness of applied linguistics research should be no less important than maintaining methodological rigor or examining epistemological assumptions and the calls for including social value in the criteria of quality of both quantitative and qualitative research resonate across the articles in the same special issue of *The Modern Language Journal*.

An interesting line of argument has been put forward by Cameron et al. (1994) who have questioned the adequacy of traditional ethics as a guiding framework for language research, because, as they argue, such a model is based on a positivist view of research that is primarily *on* rather than *for* and *with* the human subjects. They propose *advocacy* and *empowerment* as alternative ways of thinking about and doing language research and highlight interaction with the researched as a central criterion of worthwhile and beneficial research. Even they admit, however, that such approaches may not be possible or even desirable in certain research contexts. Indeed, concerns expressed within forensic linguistics (Shuy, 2009) or ethnography (Hammersley, 2006) about the problematic nature of the advocacy or empowerment stance make it apparent that debates on what constitutes ethical language research practice are far from resolved with the introduction of these alternative frameworks, and the contours of the ethical landscape in this area are far from drawn.

Related to the notion of social utility are concerns about the actual use or, as Shohamy (2004) clearly illustrates, misuse of research results. She rejects the notion that the researcher's task is complete once the report has been handed in. Ethical research, she argues, implies research that is socially responsible and that, in turn, may require the researcher to get actively involved if their results are misused to justify unethical policies. Although Shohamy has referred to language testing research in particular, her arguments strongly resonate with many other areas of language and interaction research.

As can be seen from this overview so far, the field is conscious of and has engaged with some important debates on ethical research practice. What is therefore somewhat perplexing is the silence on ethical issues in most current overviews of language research (see Thomas, 2009). This overall tendency may be due to the fact that researchers working within the positivist paradigm tend to treat ethics in the same vein that is suggested in IRBs. That is, ethical practice is ensured if rigorous procedures have been followed and ethical clearance obtained. As the examples from research practice documented below demonstrate, however, this is rarely (if ever) the case in research involving humans. On the other hand, ethical considerations related to moral ends of research, including values and ideologies, have been an intrinsic concern of researchers working within, for example, the critical paradigms. Values, however, are always guided by beliefs about how things ought to be and it is only natural that values of those initiating or pursuing research may clash with those participating in it, using it, or funding it. A deeper and more explicit

engagement with ethical research practice seems therefore warranted on both accounts. What follows in the next section is an illustration of some specific ethical concerns which have been raised by language and interaction scholars in recent years.

Selected Ethical Debates in Applied Linguistics

Managing Research Relationships: Endangered Language Documentation Fieldwork

Holton (2009) reflects on his engagement in endangered language documentation fieldwork in two distinct geographical and sociocultural settings, Alaska and eastern Indonesia. Although the purposes of his projects were similar in both contexts, the two settings required a very different application and interpretation of ethical principles. For example, while the idea that the researcher might profit from the products of the language documentation project was considered unethical and was likely to cause resentment and closed doors in Alaska, forfeiting economic gain in eastern Indonesia could easily be interpreted as ignorance of or even disrespect for the locally established traditions.

Another issue, also echoed in the work of O'Meara and Good (2010), concerns the notion of community and the ethical principle of community-based research. Holton problematizes the concept of community, pointing out that although its boundaries may be clear to an outside body, such as a funding agency or even a researcher who has not as yet been socialized into the research environment, a layered picture emerges when community is defined locally. Therefore, while the collaborative and participatory nature of fieldwork research is emphasized as a basic criterion of good practice in almost all methodological literature on fieldwork, including language research, it may not always be clear who is representative of the "community," whose views should be consulted, whose voices heard, and whose agendas included in the research.

Related to this is the issue of research relationships. While exercising the position of expertise, authority, and power may be seen as inappropriate in Western notions of ethical practice, not assuming those positions in other contexts may be highly problematic and jeopardize the legitimacy of the project in the eyes of the community as well as threaten the researcher's reputation. Huss (2008) is well aware of the importance of outside experts in endangered language documentation projects, but stresses that in these important emancipation efforts, the initiative must come from inside the speech community rather than from the outside. Yet, this very point raises ethical concerns in situations where such initiatives are either not in evidence to start with or peter out as the research progresses.

Collecting and Analyzing Interactional Data: The Bilingual Turn in Second Language Acquisition Research

The native speaker (NS) versus non-native speaker (NNS) dichotomy and monolingualism as a norm have been problematized in many areas of applied linguistics (Cook, 1991; Firth & Wagner, 1997). For instance, we know from empirical evidence that a violation of NS pragmatic norms in NNS talk may not necessarily be an example of failure, as is often interpreted in traditional SLA research, but can reflect the L2 speakers' intentional use of L2 to convey emotions, such as anger and frustration (Dewaele, 2007) or that using languages alongside each other in bilingual classrooms can be a reflection of legitimate linguistic practices in which bilingual users engage to pursue a variety of social and functional goals (Creese & Blackledge, 2010).

Yet, while the need to account for the multilingual reality has been acknowledged in the field of SLA, Ortega (2010) has argued that this awareness has not been translated into

the actual SLA research practices of the collection and analysis of data. NS versus NNS sampling without any consideration to the speakers' "history of usage," excluding languages from SLA data and pervasively unilingual analyses of interaction which fail to capture the rich resources bilingual speakers draw on to convey meanings all continue to perpetuate the monolingual bias. This, Ortega has argued, is unethical because by hiding languages and adopting unhelpful labels, we inevitably construct L2 users as deficient, which is hurtful and must be redressed in the way we talk about SLA research, design it, and analyze the multilingual data it generates.

This is a significant and long-due shift in debates on ethical SLA research practice. At the same time, however, there is a need to acknowledge that recognizing multilingual realities and adopting a more positive discourse in our research does not necessarily make it immune from further potential ethical dilemmas. This is especially the case if our commitment to multilingualism is not shared by the research participants and conforming to a monolingual norm is seen by them as vital to the pursuit of their goals.

Consent and Representation: The Use of Digital Technologies for Recording and Studying Language Practices

The rapid development of digital technologies has opened up new research avenues and numerous possibilities for collecting insightful language data, be it on interaction, learner language, negotiation of social and virtual identities, literacy practices, and many others (see Chapelle, 2004). More accessible ways of capturing language interaction through audio and video recordings, including the increasingly widespread Web 2.0 tools offer virtually unlimited options for studying linguistic practices of diverse populations. Many scholars have also embraced the opportunities that the new technologies offer for sharing research results, enabling direct access to participants' authentic language and interaction (Shohamy, 2004) through videos, photos, podcasts, or blogs. With these opportunities come new responsibilities, however, and as Scollon and LeVine (2004, p. 5) warn,

> The primary question now is not: Do we have or can we develop the technology needed to record the behavior of others? The primary question is: What rights does an academic researcher have in relationship to and in negotiation with her or his subjects of study?

Thus a whole new ethical landscape emerges where traditional ethical concerns such as informed consent, privacy, or anonymity have to be rethought in relation to virtual environments where different rules may apply.

For example, even when the research participants may have foregone their right to anonymity, does their consent always imply awareness of the full range of possible uses of the resulting multimodal data? And how far does the researcher's ethical responsibility extend in relation to how the research participants are represented? For instance, while swearing and all kinds of coarse vernacular language may be examples of authentic communication that the new technologies have increasingly made possible for researchers to access, does the participants' consent also include their agreement to be portrayed in an unfavorable light?

Another issue of representation has been raised by Jones (2004) with regard to the analysis of computer-mediated communication (CMC). As his account illustrates, people engage in CMC, such as instant messaging, for various purposes and goals and under a range of circumstances. Yet, the CMC research reports leave the readers with the impression of a virtual vacuum that bears no connection with the physical and psychological worlds that the people behind the computers inhabit as they produce the texts appearing on the screen. Representing those contexts more fully through multiple data collection

methods, rather than simply stopping at the screen edge and separating the virtual from the material world, is an important ethical challenge that language researchers in the 21st century face.

The Situated View of Ethical Research Practice

The above examples demonstrate that there is no ethical blueprint for language research and tensions and dilemmas can arise in the specific research contexts regardless of the methodological or epistemological approaches adopted by the researchers. This is because the above-mentioned principles of respect for persons, beneficence, and justice, but also others, such as inclusivity (Purvis, 2008) or empowerment (Cameron et al., 1994), are all grounded in a priori definitions of good practice. Drawing on the work outside of applied linguistics (Guillemin & Gillam, 2004; Haverkamp, 2005; Helgeland, 2005) and using examples from her research with English language teachers in Slovakia, Kubanyiova (2008) has shown that *ethically important moments* may arise in the course of specific research, for which these *macroethical* principles may hold ambiguous, contradictory, or no answers at all. She has therefore proposed a more situated approach to applied linguistics research involving humans, adopting two *microethical* frameworks for ethical decision making: *ethics of care* and *virtue ethics*.

The *ethics of care* model's underlying premise is that research is primarily a relational activity demanding the researcher's sensitivity to, and emotional identification and solidarity with, the people under study (Helgeland, 2005). However, rather than being given labels, such as "vulnerable" or "marginalized" persons who require the kind of protection set out in the macroethical principles, the research participants are seen as "specific individuals, located in specific situations that require actions based in care, responsibility, and responsiveness to context" (Haverkamp, 2005, pp. 149–50).

Virtue ethics theory, on the other hand, originates in Aristotelian ethics and stresses the researcher's ability to recognize microethical dilemmas as they arise in the concrete research practice (Haverkamp, 2005). It does not place an emphasis on following principles but rather on the development of the moral character of the researcher, their ability, and willingness to discern situations with potential ethical ramifications as they arise in the research practice, and their ability to make decisions that are informed by both *macroethics of principles* and *microethics of care*. The researcher's reflexivity is an indispensable tool in pursuing ethical decisions, which facilitates the understanding of both the nature of research ethics and how ethical practice can be achieved (Guillemin & Gillam, 2004).

While some ethical codes of practice (e.g., BAAL, 2006) have started to recognize the situated nature of ethics, few provide specific guidance for situations in which macro- and microethical concerns clash. One exception is the *Canadian Code of Ethics for Psychologists* (CPA, 2000), which integrates macro- and microperspectives of ethical research practice, recognizes the complexity of ethical decision making and the need to establish a hierarchy where different core principles conflict, and concedes that firm prioritizing will not always be possible and that ethical decisions in those instances will have to be a matter of the researcher's personal conscience.

Conclusion

The examples in this overview have shown that what is ethical research practice in language and interaction research needs to be constantly negotiated and renegotiated in the context of the specific research project. While it is critical for the field of applied linguistics to continue to reflect on the macroethical principles, it is also important to

acknowledge sensitivity to ethically important moments at the microlevel as one of the key responsibilities of language and interaction researchers (Kubanyiova, 2008). This approach to ethical decision making resonates with Hornberger's (2006) view that in order to advance our understanding, we must approach our research with humility and respect for both communities and individuals, and is in full agreement with the latest theorizing in applied linguistics research, namely complexity theory, which

> in connecting local and the global, keeps active what is specific about individuals and their actions. Since each action or decision has the power to affect all that it is connected to, our ethics must apply at that local level. Ethical responsibility is thereby placed on agents and actors in complex systems, as we hold that we all are, and is to be applied to all actions and decisions, in the language classroom as elsewhere. (Larsen-Freeman & Cameron, 2008, p. 226)

SEE ALSO: Advocacy in Language Teaching; Empowerment and Bilingual Education; Ethics in Language Assessment; Ethics in Research; Translators' Code of Ethics; Values in Language Assessment; Values in Language Teaching

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Ethics in Language Assessment

LYNDA TAYLOR

Introduction

The term "ethics" normally refers to a set of accepted beliefs and practices intended to constrain behavior and to promote the common good. In Western society at least, the second half of the 20th century was characterized by a quest for social ethics. Alan Davies, a leading academic in the field of ethics in language assessment, highlights work by Rawls (1972) and Gauthier (1986) in the development of contemporary social ethics (Davies, 2004). Echoing Rousseau (1762/2004) two centuries earlier, they endorsed the notion of "a social contract" according to which rules constraining individual and institutional behavior are accepted as part of the social cooperation needed to achieve advantages and benefits for all.

An Explicit Social Ethics in Language Assessment

Since the early 1990s there has been particular interest in and debate over the ethics of language assessment, both within the language testing community and beyond. This does not imply a previous lack of concern about ethical practice in assessment, nor a tendency on the part of language testers to behave in unethical ways. Ethics in language testing has been embodied in traditional concerns for test validity and reliability, and language testers have always acknowledged the important, often high-stakes, role played by language tests, with their potential to influence people's life choices in education and employment. In light of this, strenuous efforts were made to ensure fairness in language tests and the use of test scores. In the 1990s, however, language testers sensed a need to articulate the ethics of their field more explicitly, for themselves and wider society. Several factors contributed to this development.

The latter part of the 20th century saw an upsurge of interest in ethics generally, illustrated by frequent attachment of the word "ethical" to spheres of public life, for example *ethical foreign policy*, *ethical trading*. The world of language assessment was not immune from this trend, sometimes perceived as a mark of the postmodern age. At the same time, organizational bodies and work domains underwent a process of increasing professionalization and this involved them in developing their own domain-specific codes of ethics and guidelines for good practice (Davies, 2004). For the emerging language testing profession, these trends coincided with a deepening understanding of the complex influence of assessment in language education and in wider society. Discussions about test washback and impact gathered pace during the late 1990s and early 2000s reflecting growing awareness of the consequences of testing, intended and unintended, positive and negative. This paved the way for in-depth exploration and analysis of the sociopolitical dimensions of language assessment, with some expressing concern over the potentially unethical use of tests as instruments of power and social control. Traditional assumptions about the balance and exercise of power within the language assessment context began to be challenged, partly stimulated by the application of critical theory in academic studies (Shohamy, 2001). There was increasing recognition of the wide range of stakeholders, both individual and

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institutional, who are involved in language assessment, and the perspectives of test takers and other stakeholders in the testing enterprise were more actively sought and integrated into testing practices (Taylor, 2000; Mathew, 2004). Changes in discrimination legislation and developments in English language pedagogy worldwide meant that greater attention was focused on meeting the specific needs of growing test-taker populations seeking access to assessment opportunities, for example test-takers with disabilities, and young language learners. In addition, scrutiny focused upon the responsibilities of institutional test providers, and demands for both appropriate structures of accountability and systems of quality assurance were addressed (Van Avermaet, Kuijper, & Saville, 2004). Finally, advances in measurement theory and practice (e.g., expanded concepts of validity, new analytical techniques, computer-based testing) prompted consideration of ethical questions and challenges arising out of academic research and new technologies.

Influenced by the growing professionalization of social practices, a strong ethical milieu thus emerged for language testers towards the close of the 20th century. During the 1990s and 2000s, the field responded by steadily professionalizing itself, and by developing explicit values and standards for its beliefs and behavior as a community. This was largely achieved through systematic and sustained debate of ethical issues and questions in professional journals and at academic conferences. An early symposium on the ethics of language testing was held during the 1996 meeting of the Association Internationale de Linguistique Appliquée (AILA) in Finland, leading to a special issue of the journal *Language Testing* on this theme in 1997. The same year the international language testing community's annual conference, the Language Testing Research Colloquium (LTRC), took as its theme "Fairness in language testing," reflecting the growing focus on matters of test standards, test bias, equity, and ethics for testing professionals (Kunnan, 2000). Two years later, LTRC 1999 included a symposium entitled "Rights and responsibilities of testers and test takers in language testing settings: ethics, policy, practice and research." In 2002 a language assessment ethics conference was specially convened and this led in 2004 to a special issue of the newly established international language testing journal *Language Assessment Quarterly* entitled "The ethics of language assessment." In little more than a decade, therefore, the subdiscipline of ethics in language assessment had become well established within the professional language testing community. The professional ethics of the field of language assessment continue to evolve, informed by the wider literature in ethics and moral philosophy (Kunnan, 2008).

Professional Associations, Codes of Ethics, and Codes of Practice

Concern to establish ethical values and to ensure responsible professional practice in language assessment contributed to the creation of language testing associations around the world. Among the earliest were the Association of Language Testers in Europe (ALTE) in 1990, a consortium of institutional language test providers in the European arena, and the International Language Testing Association (ILTA) in 1992, an association for individual (and later institutional) members. There followed other national and regional professional associations such as the Japan Language Testing Association (JLTA) and the European Association for Language Testing and Assessment (EALTA).

All these organizations established committees or subgroups tasked with drafting and developing quality standards, ethical codes, and professional guidelines for their associations, in the expectation that such statements would help promote socially and ethically responsible behavior among their members, and could be used to communicate to others the fundamental principles and processes underpinning responsible test development and use. The drafting process built upon earlier work undertaken by the Joint Committee on

Testing Practices in the USA to produce *The Code of Fair Testing Practices in Education* (1988, 2004) and the AERA/APA/NCME *Standards for Educational and Psychological Testing* (1999) which set out technical, industry standards for test development, production, and delivery; the new professional codes for language assessment, however, addressed matters extending well beyond a test's technical qualities. A key aspiration was to ensure that test washback onto the learning curriculum and classroom and the impact of test use in wider education and society would be as positive and beneficial as possible. Examples of such professional codes include the ALTE *Code of Practice* (1994), the ILTA *Code of Ethics* (2000), the EALTA *Guidelines for Good Practice* (2006) and the ILTA *Guidelines for Practice* (2007).

A broad theoretical distinction can be drawn between a *code of ethics* and a *code of practice*. A *code of ethics* typically articulates a set of universal and foundational principles, sometimes amplified with a series of annotations for clarification or elaboration. A *code of practice* usually seeks to instantiate these high-level principles in some detail, and it may reflect the requirements of local practice and the demands of particular cultures. In practice, however, this distinction is not always as clear-cut as either the theory or the labels would suggest: some codes of practice tend to read more like a code of ethics, and what are essentially codes of practice are often instead labelled "guidelines for (good) practice."

The ILTA *Code of Ethics* derives from the universal principles of "beneficence, non-maleficence, justice, a respect for autonomy and for civil society." The ILTA *Code of Ethics* (ILTA, 2000) is partnered by separate ILTA *Guidelines for Practice* (ILTA, 2007) on the grounds that, while the *Code of Ethics* focuses on the morals and ideals of the profession, the *Guidelines for Practice* identify the minimum requirements for practice in the profession and focus on the clarification of professional misconduct and unprofessional conduct. Both codes were drafted by an ethical subcommittee appointed by the ILTA executive board, then reviewed and discussed by the association's membership, before being approved at the association's annual conference. ILTA recognizes that the codes need to be responsive to needs within the profession and that, in time, both codes will require revision in response to changes in language testing and society.

Davies (2004) and Thrasher (2004) highlight the complex relationship between a code of ethics and a code of practice. They discuss the difficulty of moving from a set of universal, high-level principles, based upon the golden rule of "do no harm," to a document which aims to spell out in practical terms what language testers should and should not do in their day-to-day work. Developing such a code of practice presents various dilemmas, especially at an international level.

First, the contexts around the world where language assessment takes place vary considerably; standards or practices which it is realistic to expect or demand in one context may be unrealistic or unreasonable in another. While a code of ethics may achieve universality, codes of practice tend to require cross-cultural interpretations. Nonetheless, Thrasher (2004) demonstrates how a universal code of ethics formed a valuable backdrop to the development of a workable code of practice in a particular situational context, language testing in Japan, helping to inform and justify the rules that went into it.

Second, codes of ethics, and particularly codes of practice, raise the issue of what should happen if individuals or institutions contravene the principles or good practices enshrined in ethical codes. Davies (2004) notes the subtle tendency for ethical frameworks to become legalistic (over time) and warns that they can become mere ritualized window dressing. The language testing community has for several years debated how and by whom the profession should be "policed" and what penalties or sanctions could be imposed upon those who fail to uphold the code. Failure to uphold the ILTA code of ethics risks withdrawal of membership. Some argue for a stronger policing role for the professional associations, especially with regard to institutional test providers. Others advocate an alternative approach in which quality management systems are established as a means of

improving and guaranteeing standards. Van Avermaet et al. (2004) discuss a framework involving an ethical code, a set of minimum standards, and a process of self-assessment and external auditing, which together enable a continuous process of self-evaluation and quality improvement that takes account of issues of contextualization and diversity.

Finally, there remains a question over how far language testers can be held ethically responsible, in any absolute sense, for uses to which their tests are put, especially when such decisions lie far beyond their control.

Accommodations in Language Assessment

One important area for ethical consideration in language assessment has been the extent to which the particular needs of candidates in certain minority groups or with special requirements are acknowledged and properly addressed. This has become an important measure of the social responsibility or ethical standing of any language test provider and the principle applies whether the test provider is an individual classroom teacher devising a local test for her own students or an examination board offering high-stakes international tests on a large scale. Test takers with disabilities, whether temporary or permanent, constitute one such significant group in education and civic life. Educational, employment, and social opportunities for people with disabilities have increased steadily over recent years. Combined with a greater awareness of individual human rights and associated legislation, this has led to increased demand for access to testing and assessment provision. Language test providers routinely need to be able to offer special arrangements for test takers with visual, hearing, or other physical impairments, or learning difficulties. Providing such arrangements typically involves departing from established testing protocol, modifying test content, format, or administration so as to minimize the impact of those test taker attributes that are irrelevant to the ability construct being measured. For example, a test taker with a broken wrist is likely to need the assistance of a scribe to record her listening test answers or to complete the writing part of the test. Similarly, a visually impaired candidate may need a specially prepared braille or enlarged print version of a reading test for him to demonstrate his reading ability. Such special arrangements are typically referred to as test "accommodation(s)," "modifications," or "adaptations"; they are made in the interests of fairness and equity so that, as far as possible, the test taker can take the test on an equal footing with other candidates.

Most of the published research relating to accommodations in language assessment has been conducted in the USA with English-language learners (ELLs) who are typically immigrants and indigenous groups in school-based learning and assessment contexts (see Abedi, 2008). Much of this research focuses on the language of instruction, though some studies have investigated the effectiveness and validity of accommodations for language learners with disabilities. Studies of this nature can be difficult to design, carry out, and interpret, and findings can be contradictory or inconclusive. It is not surprising, therefore, that decisions about the nature and extent of modification to language test content and delivery often tend to be based upon professional judgment informed by ethical values and practical considerations. More research, both theoretical and empirical, is needed among test-takers with disabilities to inform language testers' policy and practice in this area, especially with regard to the effectiveness and validity of accommodated tests. Ethical considerations pertain equally to the interpretation and use of scores from accommodated tests since adaptations to test content, format, and delivery risk changing the ability construct, and thus the meaning of the test scores. Taking an equally ethical view, it is important that sufficient and relevant information about test score meaning is properly communicated

to test users (such as university admissions officers or employers) who will have to interpret and make decisions based on test outcomes. In some cases, it may be appropriate to add an endorsement (or "flag") to a test taker's certificate, indicating that some objectives of the test could not be assessed due to the candidate's disability in some respect. However, this approach raises other ethical issues and needs careful handling to ensure that it does not unduly or unfairly label test takers as having taken a modified test and thus lead to them suffering subsequent discrimination. The example of language test provision for test-takers with disabilities conveniently highlights the complex challenges that can confront language testers as they seek to work out in practice a commitment to behaving ethically.

Developing Assessment Literacy in the Public Domain

The development of standards, ethical codes, and guidelines for good practice has to some degree made the business of designing and developing language tests more transparent and accessible. However, it also risks promoting a view of language testing as technical and specialized, best left to professional experts properly qualified to attain industry standards. This has ethical implications for nonspecialists who find themselves increasingly involved, either directly (e.g., classroom teachers, university lecturers) or indirectly (e.g., college admissions officers, immigration officials, parents), in producing and using tests and test scores. Such stakeholders may be keen to improve their assessment knowledge and skills, but they may feel discouraged from doing so by perceptions of the field's growing professionalization. Both Davies (2008) and Spolsky (2008) express concern that the process of professionalization over the last 25 years has isolated the language testing field from other academic disciplines, including applied linguistics and fellow social sciences. This may be equally true for the profession's relationship with the wider world of education and society. One might speculate that the language testing community's preoccupation with technical and measurement qualities in testing from the 1960s to the 1980s, followed by a focus on developing its own professional ethic during the 1990s, means it has failed to encourage wider public understanding of assessment principles and practices, including the ethical dimensions of assessment.

Assessment literacy is crucial in a world where the testing of language skills (for a second, third or additional language) has moved from periphery to centre stage. Language tests, and the scores they generate, are increasingly used across contemporary society worldwide: within education, from primary age to higher education; in employment contexts, from the professional registration of health professionals to health and safety issues in the catering or construction industry; and, more controversially, in migration and citizenship policy and practice around the world. Spolsky observes that "testing has become big business" (Spolsky, 2008, p. 297), not simply in commercial terms; Shohamy notes "the societal role that language tests play, the power that they hold, and their central functions in education, politics and society" (2008, p. xiv). There are not just more people taking tests; growing numbers are directly involved in selecting or developing tests, in using test scores for decision-making purposes, or both. Thus language assessment continues to raise important ethical issues and challenges not only for the profession but for society as a whole; and language testers have a continuing duty to promote assessment literacy within their professional community and beyond in pursuit of ethical testing practice.

SEE ALSO: Assessment of Young English-Language Learners; Fairness in Language Assessment; Language Assessment Literacy; Language Testing and Accountability; Language Testing and Immigration; Values in Language Assessment; Washback in Language Assessment

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Ethics in Research

NARIYO KONO

In earlier volumes of applied linguistics (Kaplan, 2002; Davies and Elder, 2004) ethics was included as part of the definition and history of research in applied linguistics. As the discipline of applied linguistics research flourishes and applied linguists make strides towards "the resolution of language-based problems in the real world" (Grabe, 2002, p. 12), its growth has brought to light the natural consequence of research: how we can effectively and ethically conduct our research so that we can make contributions to others and society.

Different aspects of ethics should be considered, depending on the goals or phases of each project. For example, qualitative research projects may pay close attention to the development of good relationships between the researcher and participants (due to the demands of nurturing a close or long-term relationship). In comparison, quantitative-focused researchers may be more concerned about how they initiate contact with their participants and avoid misunderstandings that can arise from irregular communication. Researchers who employ both methodologies or combine various techniques will have to cope with what arises from all aspects of their project and its goals. Further, if we consider the relationship between qualitative and quantitative research methods as a natural continuum, rather than an artificial dichotomy, we begin to see that each gradation of that continuum represents a different set of ethical questions. And in the face of this complexity, looking at ethics in a broader context can give us tools to approach these issues and help us make better decisions.

This entry will follow critical developments of ethics in roughly chronological order. It begins with the history of the human subject, examines how ethical aspects came to be included in research, continues by examining ethical principles, and covers some related policies. It then moves into relevant theories of ethics and uses this theory exploration to unlock some of the complexities embedded in this subject. Finally it highlights some research situations that require special attention as part of the application of ethical issues in applied linguistics. This entry is intended to provide overall ethical guidance that applies to qualitative, quantitative, or the combination of both approaches. Some sections may apply more strongly to one type of research than another, so researchers can apply the most appropriate lessons to ethical choices they have to make in their own research.

History of the Human Participant

According to Dunn and Pharm (2001), there are three main historical events that led the USA to create ethical standards in biomedical and behavioral research: the Nuremberg doctors' trial of 1946, the 1960s thalidomide tragedy, and the Tuskegee syphilis study exposé of 1972. In all of these tragic cases, the participants were the victims of medical experiments and were not given what was needed to make a fully informed choice. In some cases they were even forced to be part of the experiment regardless of the fact that potential risk or harm was predicted before the experiment began. The National Research Act was passed in 1974 and required regulations for protecting human participants by implementing informed consent and regular review of research by institutional review boards (IRBs). The US government established the National Commission for the Protection

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of Human Subjects of Biomedical and Behavioral Research as part of that Act, and the commission wrote the Belmont Report to identify ethical principles and develop guidelines accordingly (National Commission, 1979). The *human subject (or participant)* is defined as "a living individual about whom an investigator (whether professional or student) conducting research obtains: a) data through intervention or interaction with the individual; or b) identifiable private information" (Department of Health and Human Services, 2009). Research institutions in the USA are required to form a review committee, to register that body as the official IRB with the Federal Office of Human Research Protections, and to publicly post their own policies in adherence with the federal code of regulations.

Basic Ethical Principles

There are three basic ethical principles outlined to protect persons who participate in research in the USA (National Commission, 1979): autonomy, beneficence, and justice. The Belmont Report addressed moral requirements and applications based on these principles.

Autonomy is defined as respect for persons, encompassing two moral imperatives: "first, that individuals should be treated as autonomous agents, and second, that persons with diminished autonomy should be entitled to protection" (National Commission, 1979, p. 5). As a consequence, *informed consent* is a mechanism that guards autonomy: first by making potential participants fully aware of the research, and second by protecting their choice of participation. The autonomy of all individuals is to be protected, which means that special consideration must be given to those whose capability of self-determination is disadvantaged for any reason (including immaturity, debilitating illnesses, or physical handicaps). This means acquiring permission from a child's parent or guardian or soliciting consent from a trusted caretaker of the handicapped, for example. There are three components that every consent form should contain: information, comprehension, and voluntariness. Informed consent also should be considered as a "process of information exchange" between researchers and participants "before, during and sometimes after the study" (Dunn and Pharm, 2001, p. 21).

Beneficence is another important principle that the National Commission endorses. The principle entails first doing no harm to the research participants, and second maximizing the benefit to them while minimizing possible harms (National Commission, 1979, p. 6). Researchers are required to assess the full risks and benefits that their research project presents to the participants. It is the researchers' responsibility to assure that their research will be valuable and not harmful to all persons involved.

The last principle is *justice*. The National Commission emphasizes fairness of participant selection: that participants should be selected based on their relevance to the research rather than convenience in order to avoid manipulation of the study. Researchers are required to assess fairness of participant selection and procedures.

Types of Categories of Research

According to the Code of Federal Regulations, written by the Department of Health and Human Services (DHHS), research is defined as "any systematic investigation designed to develop or contribute to generalizable knowledge" and is categorized by three types of review statuses (DHHS, 2009). Most social science or educational research (compared to studies involving medical treatments) is assumed to present little risk to the participants, but protecting the rights of participants in such studies cannot be ignored. The level of risks to participants is a determining factor as to which research category a project is assigned: *exempt (waived)*, *expedited*, or *full review*. Researchers are required to file their

applications with IRBs, who review the applications at the institutional level, even in cases the researcher considers exempt. Following is a list of some of the categories that are applicable to research in applied linguistics (though there are additional regulations not covered here) that would apply to other science fields (e.g., biology, clinical practices). For the complete set of regulations, see the Code of Federal Regulations: Title 45 Public Welfare revised January 15, 2009, effective July 14, 2009 (DHHS, 2009).

Exempt (Waived) Review

Many survey, interviews, and public observation studies in the USA are exempt under revised federal regulations, and the IRB will consider a waiver of review for the following:

1. Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as: (a) research on regular and special education instructional strategies, and (b) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.
2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observations of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; or (b) any disclosure of the human subjects' responses outside the research could reasonably place these subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.
3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under exemption 2 above if: (a) the human subjects are elected or appointed public officials or candidates for public office, or (b) federal statutes require without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
4. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. Secondary data that has identifiers falls under this waiver.
5. Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (a) public benefit or service programs, (b) procedures for obtaining benefits or services under those programs, (c) possible changes in or alternatives to those programs or procedures, or (d) possible changes in methods or levels of payment for benefits or services under those programs (DHHS, 2009).

Expedited Review

If the research activities involve only *minimal risk* and belong to one of the following categories, the study proposals will be eligible for expedited review procedures. These procedures do not require a convened committee meeting, which affords them a shorter review process. Minimal risk is defined as

> the probability that the magnitude of harm or discomfort anticipated in the proposed research is no greater in and of itself than those ordinarily encountered in everyday life, or during the performance of routine physical or psychological examinations or tests. (DHHS, 2009).

This review procedure may also apply to research proposals that represent minor changes to projects that received approval within the prior 12 months.

1. Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis). (Note: Some research in this category may be exempt from the DHHS regulations for the protection of human subjects, 45 CFR 46.101(b) (4). This listing refers only to research that is not exempt.)
2. Collection of data from voice, video, digital, or image recordings made for research purposes.
3. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies (DHHS, 2009).

Full Review

If the research involves greater than minimal risk or involves special populations (*vulnerable participants*), it requires a full review by the IRB. Vulnerable participants refers to "Group/individual that cannot give informed consent because of limited autonomy (e.g., children, mentally ill, prisoners)" and also to participants "who may be unduly influenced to participate (e.g., students, subordinates and patients)" (Dunn & Pharm, 2001, p. 224).

Extensions of IRB

Many institutions and professional organizations have developed procedures guarding ethical principles. In the USA and Canada, the review of research by IRBs, obtaining informed consent, and institutional assurances of compliance are the three mechanisms to protect human participants. In the field of applied linguistics, these federal regulations are also applied to our research at individual and institutional levels, even though most research projects in the applied linguistics field do not pose the same sense of risk as medical studies. Both the American Psychological Association (APA) and Canadian Psychological Association (CPA) have outlined ethical principles regarding the code of conduct of psychologists (CPA, 2000; APA, 2010). These were developed for psychological practice and as such recognize even the subtlest impact our interactions can have on others. On the topic of justice, for example, the National Commission focused solely on fairness in selection of participants, whereas APA's code of ethics states not only equal access to psychology, but equal quality through all processes, procedures, and services (APA, 2010). These codes of ethics provide practical guidance that can be applied well beyond the field of psychology. For additional reference, see guidelines or codes developed for specific fields or other countries, including those developed by the American Educational Research Association (AERA, 2005), the Linguistic Society of America (LSA, 2009), and the Australian Institute for Aboriginal and Torres Strait Islander Studies (AIATSIS, 2011).

Theories of Research Ethics

Several scholars have contributed to the development of theories on research ethics, where *theories* refer to ideological orientations, while *guidelines* refer to practical directional guides. The subjective value of theories, by their very nature, is a debate unto itself. For completeness, some of the applicable and best known theories are highlighted here. To begin a

journey through ethics theories, the contribution of two sociolinguists will be inspected: Labov's two principles and the follow-on work of Wolfram's ethical theory proposal (Labov, 1982; Wolfram, 1993). And, though from a different field, Thomas's (1996) exploration of several theories will help form a solid foundation for the survey of theories on ethics. Tying things together, Kubanyiova's (2008) examination of theories is a recent contribution to this field. Finally, the ecological perspective of research ethics is proposed as an integration of some of these theories.

Labov (1982) suggested that scientists have the responsibility to prevent error, where error is defined as "a widespread idea or social practice with important consequences that is invalidated by his own data" (Labov, 1982, p. 172). Labov calls this the *principle of error correction*. Labov's second theory is called the *principle of debt incurred*, which is explained as linguists' ethical responsibilities to use the linguistics information gathered from a speech community for the benefit of the community when it is needed.

Wolfram (1993) proposed a third principle, called the *principle of linguistic gratuity*, defined as "Investigators who have obtained linguistic data from members of a speech community should actively pursue positive ways in which they can return linguistics favors to the community" (p. 227). It is quite common in linguistic studies that researchers (especially those who are not members of the community in which the research is centered) will learn about the language and culture related to the project, whether they are documenting an endangered language, studying cultural learning methods, or teaching a second language. This learning is generally required in order to fulfill the purpose of the study, but Wolfram's final principle gives the direction that researchers should use this knowledge to return something of value to the place and people of research.

The next three frameworks are explained by Thomas (1996) as: (a) *deontological*, (b) *teleological* (or *consequential*), and (c) *postmodernist* (or *dialogic*). He focused on the first two frameworks in his work in 1996, and noted that the third perspective is comparatively rare. The first framework can be described as rule-based, where causes are judged and prescribe an action. His second theory, teleological, suggests decisions are made based on the judgment of their outcomes. He described this as a: "perspective, associated with, but not exclusive to, utilitarianism, [which] operates from the premise that ethical behavior is determined by the consequences of an act" (p. 109). His third suggested theory, dubbed postmodernist or dialogic, sees ethics emerging out of natural dialogue rather than from rules or firm guidelines.

Thomas's theory development shows why people who clearly have a moral compass and systematic approach to ethical issues can still have different perspectives. Each research project involves a range of ethical scenarios, and each scenario might benefit from a different tactical approach to resolving ethical dilemmas. Not surprisingly, ethics is part of every encounter or exchange with another person or group. Being able to adapt theories and apply guidelines to diverse situations is a vital talent for successful researchers.

In addition to the ethical protocols set forth by each field and the theories developed to better understand the motivations behind them, there is another dimension to ethics coined by Guillemin and Gillam (2004): *macroethics* and *microethics*. Kubanyiova (2008) argued that the growing situated research in applied linguistics necessitates a more contextual approach to ethical needs (*microethics*), as compared to the more general and standardized procedures defined by IRB (*macroethics*). Drawing on her own classroom research experiences, Kubanyiova describes many sensitive situations, so-called *ethical tensions*, where researchers need to be cognizant of the significance of their own person in a research scenario. As an example, she observed a case where a teacher-participant had to face embarrassment or psychological pain during an interview session where the participant was invited to reflect on the instructor's teaching. Even though the macrolevel of ethical safeguard guarantees voluntariness of research participants, some power relationships

may still exist that inhibit refusal or participation. More examples of circumstances that implicitly inhibit that which protocols aim to protect are: a colleague of the researcher is invited to participate, a student of the researcher is asked to participate, or a family relation is a study subject. Kubanyiova considers these "unethical at the micro-level" (2008, p. 510). Kubanyiova further suggests an integrated approach by promoting the "symbiotic relationship between macroethics and microethics" (p. 507). A summary of her main points is:

- integration of macroperspectives and microperspectives of ethical research practice,
- acknowledgement that principles may conflict and may therefore need to be balanced in ethical decision making,
- acknowledgement of the potentially complex process of ethical decision making,
- admission that the complexity of dilemmas in qualitative research precludes firm prioritizing of principles. (p. 507)

Researcher awareness of ethical aspects of research has increased in recent literature. We need to continue to collaborate in meaningful discussions, share new examples, and develop guidelines on both theoretical and practical levels, especially for situated research. The survey of theories covered here can serve as a useful reference and an elicitation of future discussions on this complex and important issue.

Applications in Applied Linguistics

In her article on qualitative theory and methods in applied linguistics, Davis (1995) reviewed research trends in second language and acquisition and identified psychology, linguistic anthropology, and education as prominent disciplines that have influenced (or have been influenced by) applied linguists. Davis warned of some ethical dilemmas that researchers might encounter in the field and power relationships that might exist in research settings.

The exploration of ethical concerns in field literature is traditionally scarce, according to several critics in the field (Nunan, 1997; Corrigan, 2002; Dörnyei, 2007). But recent research methodology publications have begun to dedicate sections to ethical concerns (Dörnyei, 2007; Paltridge & Phakiti, 2010). Dörnyei's book included a chapter on quality criteria, research ethics, and other research issues in applied linguistics with an emphasis on the ethical aspects of research. He also warned us not to "simply import ethical guidelines from other fields" (p. 71).

Dörnyei (2007) assumes that the relationships between researchers and participants in qualitative studies might present unique obstacles due to the constantly evolving nature of such research processes. He included some examples of how to develop and maintain balanced relationships with participants as well as how to end the project without leaving participants feeling used. He calls these *ethically relevant moments* (p. 67) and stresses that ethical frameworks need to be "more participant- than researcher-friendly" (p. 64).

The recent research methods book in applied linguistics by Paltridge and Phakiti (2010) presents more ethical considerations in a systematic way by offering an ethical consideration section in several chapters. One of the chapter authors also advises that researchers guard against unfair elimination of participants that arises out of purely statistical processes, suggesting that selection should be made with the human dimension in mind. She also includes an example of an ethical dilemma on equal treatment:

> As researchers design studies, there is often a control group against which to measure the effects of a particular treatment. But, here too, there is an ethical question. If we have reason to believe that our treatment is beneficial, then we have recruited volunteers who will not receive the treatment. (Gass, 2010, p. 16)

According to Dörnyei (2007), there are eight areas where applied linguists might face particular challenges in the educational setting: the amount of shared information, relationships between researchers and participants, data collection methods, anonymity, handling collected data, ownership of data, sensitive information, and testing (p. 65).

These are application examples included in the general research methodologies. The final section below will introduce some of special cases for situational research ethics including cyberspace, international research, collaborative research, and endangered languages research.

Special Cases for Situational Research Ethics

There are many discussions, as well as some case studies, on research ethics in the emerging research arena of computer-mediated research or research in cyberspace. Some problem cases have been reported, and further guideline development is underway (Boehlefeld, 1996; King, 1996; Reid, 1996; Frankel & Siang, 1999). Cyberspace challenges some of the basic assumptions society has made about boundaries, but more importantly has blurred the distinction between private and public. Consequently, some new research methods, which mine data from chat rooms or study social networking postings, call for even newer microethical guidelines in order to protect the participants' privacy. King (1996) encourages us to think beyond the stereotypes of private/public perceptions on the internet: "While it is true that the newness of this phenomenon and the transitory nature of many cyberspaces makes assuming details about others hazardous, basic human nature remains unchanged. People are protective of their sense of privacy" (p. 199). The analysis of and reporting on study data must be done carefully. This is even more problematic as conventional protocols of the IRB exempt cyberspace-based research due to its stereotyped public nature; researchers must take care to approach this with all the same ethical principles already outlined. Reid (1996) discussed the issue of informed consent in the study of online communities and suggests that the researcher should "negotiate the potential consequences of our [researchers'] desire to pursue and create knowledge" (p. 6).

Some other cases, such as international research, also require extra attention regarding legal procedures (including copyright issues or foreign institutional requirements). Current regulations are not imposed on international scholars who are hosted in the USA, relying on the policies of their home institutions. What are the ethical implications, for example, when international scholars perform field research in indigenous communities but are exempt from the macroethical policies (e.g., informed consent or IRBs) of the hosting institution due to international status?

Eades (2010) introduces examples of complex situated research topics that require legal attention, including sociolinguistic analyses in court hearings and police interviews. These situations present unique ethical complications, such as the use of interpreters, involvement of hearing-impaired people, people who are immature or developmentally disabled, lawyer–client relationships, and varieties of speakers' languages (dialects, creoles). These situations can be delicate and require a firm grasp of microethics.

Another case for special attention is collaborative research or community-based research, which requires partnership with other sectors, such as industry, academic institutions, government entities, or other language communities. In collaborative research, we have to integrate the perspectives of multiple researchers. This means the research agenda, methodologies, and research processes all must be cooperatively negotiated between the partners' institutional and individual ethical perspectives. Many cases of collaborative research might produce challenging situations or ethical dilemmas to which the research team must respond.

In the emerging field of endangered language maintenance and revitalization (including language documentation), there are frequently even more ethical concerns that researchers face through the complete life of their research (and even beyond it). *Language ownership* is one of the central factors that motivate (and potentially also discourage) participants in maintenance or revitalization of their languages. Some of the ethical challenges researchers face here are: How do participants share their language with researchers? How do researchers protect the participants' language rights, which might be something beyond the normal purview of the researcher's training? If the participants wish their languages to be documented yet remain private, how can researchers be rewarded (rather than punished) in their scholarly career without publishing research results? What research method or paradigm can or should researchers select when the language faces endangerment?

Crowley (2007) suggests that researchers be aware of the power struggle between language speakers and language specialists, questioning to what degree the researcher can claim ownership of community or language knowledge. Such power struggles are diverse and often implicit, and include conflicts such as community versus academic, mainstream society versus indigenous society, and insiders' versus outsiders' perspectives. Nathan (2010) raises the issue of "access and usage rights" (Austin, 2010, p. 8). He offers a detailed deposit form and web-based access to a language archive system, so that community members can define access controls. This is one approach to preventing coercion and protecting the confidentiality of sensitive language materials, which come with strict familial or community guardianship.

When dealing with communities of different cultural backgrounds, the researcher will have to first absorb and learn the participants' viewpoints through an intercultural lens. The research itself should be negotiated with the participants so the research outcomes are mutually beneficial. Existing institutional ethical guidelines will help guide researchers in designing their research, but even more may be needed when working with endangered language communities, for example. In that setting, researchers require intercultural and communicative competence in order to gain the necessary trust, which will become central in their fieldwork.

Conclusion

Research practices must embrace macroethical structures as well as apply constant detailed ethical attention in order to progress our research in applied linguistics. Moreover, our definitions of research ethics are shaped through cultural, personal, and societal lenses. Riley (2004) argues that most judicial systems set up along the Western model do not have adequate mechanisms for handling indigenous intellectual property rights, which value communally held knowledge rather than strict individual or corporate rights. The more we wish to enrich our applied linguistics research and to contribute to our own (and others') societies, the more we see the need for solid ethical research foundations in order to properly serve our local and global communities. We should build on existing theories, utilize all the available guidelines, and engage in continuous dialogue with colleagues and participants. Through this *ecological approach*, we will deepen and broaden our perspectives on research ethics in applied linguistics.

SEE ALSO: Beliefs in Second Language Acquisition: Teacher; Classroom Research; Critical Applied Linguistics; Ecological Approaches in Qualitative Research; Emerging Technologies for Language Learning; Endangered Languages; Ethics in Language Assessment; Legal Language; Quantitative and Mixed Methods: Overview

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Ethnicity

LISE PAULSEN GALAL

Ethnicity is a concept denoting difference. In order to hold a particular ethnicity, a person or a number of persons are defined as belonging to a particular ethnic group. Many researchers agree that ethnic groups have to be understood as imagined communities and discursive formations through which differences are accorded social significance (Hall, 1992; Bauman, 1996; Jenkins, 1997; Bulmer & Solomos, 1999; Barker & Galasinski, 2001). However, what constitutes ethnic difference? Not only do the kinds of differences ascribed significance vary between different ethnic groups, but also the basis for understanding ethnicity as a social force produces conflicting perspectives. If the difference of significance for one group is language, for another religion, for a third territorial autonomy, what then is ethnicity? And what makes the difference socially significant? Is it political ambitions, primordial lineage, or historical heritage? Different disciplines and different scholarly traditions have had different answers to these questions. In order to identify the most prevalent uses of the term, three main perspectives or discussions on ethnicity will be presented. Inspired by Brubaker (2004), one way to distinguish between different approaches to the study of ethnicity is to explore ethnicity, first, as group belonging, second, as identification and representation, and, third, as social practice. This distinction is analytical, since all three aspects will be part of any ethnicity. Since ethnicity has become theoretically central in other disciplines than the ones traditionally working with ethnicity, such as sociology, social anthropology, and history (Bulmer & Solomos, 1999, p. 2), the three perspectives will at the same time highlight distinctive disciplines and traditions. The more different disciplines adopt ethnicity as an analytical concept, the more it becomes essential to keep up a critical discussion of the methodological value of the concept. Therefore, a short presentation of key issues of this discussion will conclude this entry.

The term "ethnicity" derives from the more commonly used "ethnic," which again derives from the Greek word *ethnos*. The meaning of ethnicity is rather unclear, since it sometimes refers to a quality of an ethnic group and, at other times, to a quality of the member of an ethnic group (Chapman, McDonald, & Tonkin, 1989, p. 15). This uncertainty reflects the different approaches favoring either the group or the individual perspective. The Greek term *ethnos* was used as a synonym for non-Christians and non-Jewish pagans, but also for tribes, groups, and bands of people unlike one's own (Hutchinson & Smith, 1996, p. 4). Thus, from the very start the concept refers to a dichotomy between "us" and the ethnic "others." "We" were seen as the norm while the ethnic aspect connoted deviance from the norm. To this regard, a hierarchical dimension is added to the terminology of ethnicity. However, ethnicity is not always theorized as a concept that signifies hierarchical differences. On the contrary, from a functionalist and culture-relativist tradition, ethnicity has parallelized any ethnic group as culturally equal and therefore also in principle as politically equal. This is the key concept for claiming political rights as an ethnic group, and this approach has introduced a discussion between many theoretical positions explaining the dynamic of ethnic group belonging.

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Ethnicity as Group Belonging

Ethno-national movements, ethnic revival, and ethno-politics are all concepts referring to group belonging. The key question is how ethnicity, as conveying commonality and connectedness, becomes a basis for identity politics. Two interconnected issues are part of this discussion. First, how to explain the sociopolitical force of ethnicity; second, how to explain the revival of ethnicity?

The force of ethnicity as a basis for politics has been deemed archaic and conflicting by Marxists as well as liberal thinkers. Its continuous influence has also given rise to a number of theories. Partly, the modern strength of ethnicity has to be understood in the perspective of the modern national state and nation-building processes. The German historian and nationalist Herder called for an understanding of a nation built on ethnic commonality and solidarity as the legitimate foundation for border drawing and national independence. He introduces ethnicity as a legitimate basis for politics by referring to primordial, descent-based ties and connectedness closely associated with territoriality and a shared language (Pecora, 2001). This legitimacy was closely related to ethnicity and it was argued as being constitutive of a natural group compared to self-chosen civic group belonging. Later, with the introduction of functionalism as a theoretical paradigm, the same cultural relativist approach was introduced within anthropology. Thus Geertz, back in 1963, was leaning toward a functionalist tradition arguing for the overpowering qualities of certain kinds of ties. Though, as Hutchinson and Smith emphasize, Geertz reasoned that the authenticity of these was to be found in the individuals' ascription of primordial roots to religion, blood, race, language, and custom (Hutchinson & Smith, 1996, p. 8). Even if the primordial understanding of ethnicity has since been theoretically challenged and rejected, it is important to bear in mind that the essentialist character of this understanding is still the basis for ethnic categorization and exclusion in social practices with material and political consequences.

The political organization in modern national states spreading throughout the 19th century was in the 20th century followed by a range of ethno-national movements due to postcolonial and postwar border drawings. Thus, the ethnic revival was prevalent among indigenous people and national minorities, claiming political rights or independence with reference to their ethnicity, unique culture, and territorial belonging. Their claims are based on ideas about ethnicity as primordial identity. Whereas anthropologists and colonial advisors during the colonial period had been active participants in defining the ethnic differences and groups, the following theoretical dismissal of a deterministic and functionalist concept of culture lead to a likewise theoretical rejection of the primordial claim. As theoretical self-reflection within the field of anthropology had made anthropologists aware of the problem with reification and representation of the "ethnic other," the approach toward ethnicity as a social force shifted in accordance with the general change within anthropology. One objection was that the primordial approach was not able to explain change in ethnicity or how ethnic groups are maintained while language and myths (the cultural content) are changed.

The anthropologist Barth has been the epitome of this change due to his 1969 essay on ethnic groups and boundaries. He introduced what today would be named an interactionist (or transactionalist) approach toward ethnicity (Jenkins, 1997). Barth claims that ethnicity is not the result of group characteristics, but rather the result of the relations to other ethnic groups. It is the boundary between groups, or the differentiation, that creates the group. Ethnicity is relationally constituted. So the content of the group's practices and culture can change, people can leave or join the group, without changing the ethnicity of the group (Barth, 1969). Jenkins (1997), a British anthropologist, later elaborated on the interactionist approach. He points out that ethnicity seems not to be defined by content

insofar as it sometimes refers to linguistic differences, and other times to religious, political, or cultural differences. What defines the difference that makes a difference is not the content but the relation(s) of the group. The difference that makes a difference depends on which group(s) the ethnic group defines itself and is identified in relation to. In this way, ethnic identity is similar to other social identities that have to be understood relationally. Thus, what makes it ethnic is not a certain amount of characteristics, but a certain idea—in other words, that identity is collectively inherited through generations as the foundation of a "natural" rather than a will-based community. However, Jenkins stresses that, even though the ethnic group is not defined by content, the ethnic relations generate different cultural content. This imagined ethnic community is maintained through reiterated boundary lining to the "other," in which the group is reconstituted (see Barth, 1969). The boundary lining can be seen as an expression for simultaneously external and internal categorizations, which makes power an inevitable aspect of ethnic relations. Jenkins (1997) emphasizes the strength of external categorization for ethnic identification and thus highlights the possible stigmatizing aspects of ethnicity.

Another critical approach toward the essentialist perspective and the use of ethnicity for political ends can be found among the so called instrumentalists or circumstantialists, who mostly are presented as the quintessence of opponents of the primordialists. So instrumentalists argue that the claim of indigenous groups for ethnic particularity is by and large the result of uncertain traditions and colonizers and anthropologists' categorizations and reification of an indigenous culture which was constructed in the interest of the powerful. What is called authentic is a construction (Keesing, 1989; Roosens, 1989). It is the reproduction of the "White men's Indians." The social group being constituted as ethnic is therefore not the result of primordial authentic roots, but of power relations, and political and socioeconomic interests. Ethnicity is not to be considered a natural, content-based phenomenon, but a social and political construction. By referring to the implicit reconstruction of the colonizers' categorizations, the instrumentalists also point out the risk of further stigmatizing the indigenes rather than empowering them.

A standard objection against the instrumentalist approach, and its focus on rational choices, is that it cannot explain why or how specific symbols and cultural aspects are experienced as authentic and real by the group itself. Why those symbols and not others? Thus, anthropologist Cohen argues: "it is clear that identity (however inexplicit), boundary (however elusive and nebulous) and authenticity (however contested and contestable) are matters in which people invest huge value" (2000, p. 5). Likewise, despite the fact that ethnic groups are imagined communities and ideological entities, ideas do also carry with them material consequences, in the form of the politicized nature of ethnicity (Bulmer & Solomos, 1999, pp. 4–5), but also as cultural practices. Thus, Smith (1986), professor of sociology, stresses the importance of myths and symbols playing an important role as tool for memory in unifying populations and ensuring continuity over generations. He represents what was later labeled an ethno-symbolic approach (Hutchinson & Smith, 1996, p. 9). The focus is on the emotional intensity and historical heritage of ethnic groups. Hutchinson and Smith (1996, p. 6) suggest a definition of an ethnic group in accordance with this approach: "a named human population with myths of common culture, a link with a homeland and a sense of solidarity among at least some of its members."

This definition might be inadequate though when the talk falls on migrant groups categorized and institutionalized through ethnic terms. They may not feel a sense of solidarity or share myths of common culture, even though they are signifiers of a certain ethnicity and categorized as such. This locates the reason for some to distinguish between ethnicity referring to ethno-national groups and ethnicity as referring to migrant groups in a global setting (Holton, 1998, pp. 148–50). At least, it supports the approach where ethnicity is explored rather as a category than as a group.

Ethnicity as Identification and Representation

Notwithstanding the fact that ethnicity refers to group identity of some kind, increasingly the concept is related not only to the understanding of the group as such, but also to the understanding of the individual members' identification with ethnicity. At the same time, the use of ethnic categories is not only a question of self-identification, but also one of categorization of the ethnic "other." Categories of self-identification and social ascription become the issue (Barker & Galasinski, 2001). Instead of referring to the ethnic group as a social entity, ethnicity becomes a discursive construction including performative and signified aspects of ethnicity. The turn toward discursive perspectives is closely related to the emphasis on the social and cultural complexity of a global world, wherein the movement of people across borders has raised new questions about the understanding of, for instance, belonging, integration, cultural identity, cultural conflicts, and the relationship between place and identity. The landscapes of group identity—the ethnoscapes—have changed (Appadurai, 1990). Hence, how does ethnicity become part of these processes?

The focus on ethnic categories is part of a general critical rethinking of concepts like race, nation, gender—and ethnicity. They are categories that have been presented as objective, even natural, analytical categories, though they are social and historical constructs (Bourdieu, 1989; Miles, 1989; Hall, 1992). They are "representations formed through regulatory discourses of power" (Barker & Galasinski, 2001, p. 125). Anthropology, cultural studies, and postcolonial studies introduced a debate on representation in the 1980s wherein a similar critique of the stereotypical and reified representation of the "other" was raised (Clifford & Marcus, 1986; Hall, 1992). Consequently, a range of studies has since critically examined discursively produced ethnicities. Some have critically analyzed the construction of national majorities' hegemonic discourses on ethnic minorities and how these have come into being in the media, in politics, or as commonsense discourse (van Dijk, 1984). Others have analyzed how members of an ethnic categorized group interact with the external categorization and in the process reproduce, reject, negotiate, mediate, transgress, internalize, or reconstruct the ethnic category imposed (Hall, 1992; Bauman, 1996).

This overall interest in the simultaneous process of internal and external categorizations has been applied across disciplines. The individual's navigation within different and potential opponent categorizations has increasingly been the object for anthropology and psychology. Within classical social psychology the focus has been on how the ethnic and other stigmas affect the identity and identity strategies of the stigmatized, particularly when the ethnic "other" internalizes the negative attributes of the stigma (Tajfel, 1978). Whereas this might result in constructions of the ethnic "other" as defined by a "negative" identity, the focus on agency and subject positioning within social studies has introduced a more active ethnic agent, not being reduced to its stigma.

In a migrant setting, an individual community member might simultaneously be a member of other communities (Hall, 1992; Bauman, 1996; Levitt & Glick-Schiller, 2004). Rather than exploring the ethnic element per se, ethnicity becomes one element among several, since the individual in a complex society conveys multiple identities and possible transnational identities. The individual might simultaneously belong to different communities within the receiving country and to different nations, and take part in cross-border practices. Thus, the significance of ethnicity becomes positioned, situational, and contextual, on the one hand, and an expression of hybridity, syncretism, and mixture, on the other. At the same time, this approach has adopted an identity concept, where the process of identification is the key point. Ethnic identity is about coming into being through the identification with ethnic signifiers. In this context, the ethnic category is a subject position offered to the individual. Furthermore, and according to this perspective, the ethnic subject position should not be studied in isolation from other subject positions like gender, nationality,

class, age, and so on. Today, an intersectional approach seems almost an inevitable component of ethnic studies. The point is that social categories have to be analyzed as mutually constructed and hierarchialized.

Researchers with an interest in politicized aspects of interaction between the majority's categorizations of the ethnic "other" and the minority's possibilities for identity and political claims have also taken up this issue. They emphasize how the majority's categorizations become institutionalized through politics, like laws of citizenship, integration, asylum, and so on, and how these define "opportunity structures" for the ethnic minority to be contained by (Soysal, 1994; Statham, 1999). Statham (1999) demonstrates how the antiracism politics of Britain construct its minorities with racial categories and thereby privilege political claims with reference to racial identities over ethnic and religious identities. He argues how the institutionalized racialization directly affects the patterns of political claims among minority groups.

Ethnicity as Social Practice

Whereas the presented theories on ethnic group belonging focus on how to explain the motivation for ethnic revival and movements, and the theories on ethnic categorizations focus on discursive constructions of ethnicity, ethnicity has also been studied as a social practice with a stronger focus on self-understanding as "situated subjectivity" and the "practical sense" that persons have of themselves and their social worlds (Bourdieu, 1990; Brubaker, 2004, p. 44). This approach emphasizes emotional and cognitive aspects of ethnicity. Bentley (1987) argues with Bourdieu that ethnicity must be analyzed as habitual dispositions. In this perspective, "sensations of ethnic affinity are founded on common life experiences that generate similar habitual dispositions" (Bentley, 1987, p. 32). Thus, the reproduction of the collective position of an ethnic group within a differentiated social field depends on established dispositions of habitus (p. 41). Consequently, in order to explain the ethnic mobilization, the researcher needs to identify these dispositions that are a prerequisite for mobilizing the followers (p. 47).

The social-practice perspective does not ignore the differential aspect of the group, but, rather than analyzing the power relations involved, it focuses on the outcome of the relations and how the relations are sustained through social practice. It seems to claim that ethnicity is not only constituted relationally or as a reaction toward or reproduction of ethnic differentiation. As a critical response to the focus on labeling the "other," Ortner reminds us that ethnic-minority groups are not defined only by the lack of power in relation to the (ethnic) majority. Their culture is not only reactive, but also proactive (Ortner, 2006, p. 50). Ethnic-minority strategies against domination have been epitomized as "ad hoc and incoherent, springing not from their own senses of order, justice, and meaning, but only from some set of ideas called into being by the situation of domination itself" (p. 50). Ortner argues that ethnic groups have their own politics which have to be studied in accordance with the ethnographic ideal about thick description rather than the thinning culture, which the focus on power relations seems to produce.

Worth a mention here is also sociolinguist Fishman who in the socialization of the family finds habitual, language-based, inherited dispositions for solidarity and loyalty toward one's ethnic group. Despite of an almost primordial approach to the metaphysical and mystical power of emotional experiences of paternity, he suggests an analytical framework for analyzing different aspects of ethnicity: ethnicity as being, doing, and knowing. Ethnic being is according to Fishman (1989) a bodily and directly experienced reality, just as language is a bodily experience. Ethnic doing is more negotiable and refers to often linguistically expressed traditions, such as songs, sayings, prayers, rites, jokes, and riddles.

Ethnic knowing refers to the idea of the language of the authentic, where language contains knowledge. The perspective on doing can be said to be in accordance with Smith's focus on the symbolic reproduction of ethnicity. Likewise, it is possible to argue that ethnicity is reproduced through social practices of storytelling and narration. Ethnicity is reproduced through memories about the ancient past and passing down memories through generations. Through telling stories about an often nostalgic past within the ethnic community, ethnicity is practiced and reproduced (Tonkin, 1992).

However, the risk of these approaches is to reproduce a functionalist explanation, where the group is self-sustaining. As Ortner (2006) points out, it is not a question of leaving out the external power relations, but neither should one reduce ethnicity to only a result of external categorizations.

Ethnicity as a Methodological Challenge

The overall change from the understanding of ethnicity as a natural, primordial phenomenon to ethnicity as a discursive formation has left an important impact on the methodological reflections related to the studies of ethnicity. The researcher is reminded not to take commonsense categories for granted (Bourdieu, 1989) and to resist the naturalization of ethnic identity (Jenkins, 1997). In other words, the researcher should not uncritically adopt categories of ethnopolitical practice as his or her categories of social analysis. It is necessary to distinguish between ethnic categories and groups (Jenkins, 1997; Brubaker, 2004, p. 12), given that a person being categorized as an ethnic "other" does not necessarily belong to or identify with the ethnic group in question. Furthermore, by taking the ethnic category for granted, the researcher risks "ethnicifying" a given conflict, event, person, group, or phenomenon, and thus taking active part in the institutionalization of the social significance of particular ethnic differences. Ethnicity is fundamentally a way of perceiving, interpreting, and representing the social world; it is not a thing in the world but a perspective on the world (Brubaker, 2004, pp. 17–18). Therefore the researcher needs to reflect on how he or she takes part in reproducing specific ethnic perspectives on the world. In order to avoid a blind reproduction of a commonsense and politicized use of ethnicity, the researcher needs to ask the question "how is ethnicity constructed?" and to explore this process of construction within the field under study.

Another aspect to consider is how the researcher potentially takes part in displacement or reduction of a societal problem by letting different analytical categories conflate. "Race" has in some circumstances been replaced by the concept of ethnicity as a concept of difference, and in that process the institutionalized racism inscribed in the category has been silenced by a seeming respect for ethnic differences (Miles, 1989). Also, socioeconomic inequalities risk being hidden by a seeming tolerance for ethnic differences within a multicultural context. Consequently, the researcher should not subscribe to a broader, inclusive notion of ethnicity without recognizing the intersectional aspects of, for instance, "race," class, gender, age, religion, and ethnicity, and understanding the particular aspects each brings to symbolic distinction and social division (Ruane & Todd, 2010, p. 2). This is the only way to secure an explanatory purchase on ethnicity.

SEE ALSO: Cultural Hybridity; Cultural Identity; Discourse and Identity; Ethnomethodology in the Analysis of Discourse and Interaction; Human Rights; Multiculturalism and Second Language Learning; Nation; Race; Researcher Reflexivity

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Ethnographic Approaches to Literacy Research

DAVID BARTON

The Development of Ethnographic Approaches to Literacy

In the past 30 years new ethnographic approaches to literacy research have been developed, and a wide range of studies of the role of reading and writing in society have been carried out. Historically, the study of reading and writing in applied linguistics drew upon psychological approaches to the "skills" of reading and writing, but the field has more recently drawn its inspiration from anthropological traditions. Early on, Basso (1974) referred to the ethnography of writing. A few years later, when providing an overview of the sociolinguistics of reading and writing, Stubbs argued for the need for ethnographic studies as so little was known about people's uses of literacy (Stubbs, 1980, p. 164). In the USA a key foundation of literacy studies was the work of Shirley Brice Heath (1983) researching the disjuncture between family and school ways of using language and literacy in Appalachian communities in the USA. Heath's use of the concept of "literacy event" became central to literacy research and was partly developed in parallel with the notion of "speech event" used in research on the ethnography of communication.

The other key idea for literacy research alongside literacy events is that of "literacy practices," stressing the idea that reading and writing are located in social practices. Applying the term "practices" to literacy has its roots in the work of the British anthropologist Brian Street. His research in Iran (1984) provided a broader theory of literacy based on social practices, which was taken up by applied linguists developing the field of what is referred to as (new) literacy studies. Literacy practices and literacy events complement each other: Practices refer to the general cultural ways of using reading and writing, and literacy events are particular instances of people drawing upon their cultural knowledge (Barton, 2007, pp. 35–7). The hallmark of much literacy studies research has been detailed investigations of particular situations. Identifying the literacy events often provides a good starting point for a research study. Researchers then identify particular configurations of literacy practices in different contexts, which can be referred to as different literacies. The concept of literacy practices provides a way of bringing broader cultural and structural aspects into a specific situation, and linking literacy practices to issues of power. Practices can be seen as theoretical, describing regularities and patterns which are abstracted from particular events. Ethnographic approaches examine people's practices in particular contexts, and they provide both a framing theory and a methodology.

Overview of Studies

There has now been a range of ethnographic studies of literacy reported in books, articles, dissertations, and conference papers over the past 30 years, covering home and community life, workplaces, and educational settings. In examining these studies, at the outset we need to distinguish the idea of "doing an ethnography" from using "ethnographic approaches."

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Historically, anthropologists carried out long-term intensive studies of a whole culture and then wrote "an ethnography." Many of the studies of literacy are narrower and more focused, and they can be described as drawing upon ethnographic approaches without being full ethnographies (as discussed in Bloome & Green, 1992).

Ethnographic studies have identified the distinct literacies in different domains of life. For example, studies examine everyday life (Barton & Hamilton, 1998), including multilingual contexts (Martin-Jones & Jones, 2000). Often they have a specific focus, such as religion (Kapitske, 1995), or workplaces (Belfiore, Defoe, Folinsbee, Hunter, & Jackson, 2004), or prisons (Wilson, 2003). Work covers a range of cultures including Street's work in Iran, mentioned earlier, Ahearn's study of the writing of love letters in western Nepal (2001), and a set of studies of adults in everyday settings in South Africa (Prinsloo & Breier, 1996). There has been a study of the place of writing in an indigenous community in Ecuador (Wogan, 2004) and of scribes and their clients in Mexico (Kalman, 1999). Vernacular texts and practices have been studied in Tuvalu (Besnier, 1995), in central Africa (Blommaert, 2008), and in Namibia (Papen, 2007). A recent set of studies of everyday life and workplaces draws together research from English-speaking and French-speaking countries (Barton & Papen, 2010), and there are studies of literacy practices on the Internet.

Such studies demonstrate that social practices around literacy vary and also, more fundamentally, that what is meant by the terms "literacy," "reading," and "writing" differs across cultures; and that these activities can have different roles in people's social practices. Furthermore, not just crossculturally but within different contexts in the same culture, such as the home and the workplace, and even within the same activity, there can be different meanings of reading, writing, and literacy.

Many studies focus on education. Cruikshank (2006) is a good example of a study which mixes the ethnographic approaches of literacy studies with discourse analysis, focusing on teenagers' use of technology and the links between home and school; the study identifies the importance of networks, mediation, and roles. Purcell-Gates (2007) provides a set of case studies looking for "new pedagogies for new literacies" (p. x). The studies in Street (2005) also cover many educational sites. The set of studies in Mahiri (2004) identify the literacies in the everyday lives of urban youth, illustrating wide-ranging possibilities of learning in and out of school. Other work unpacks the dynamics of different literacies within classrooms.

Characteristics of Ethnographic Approaches

These studies are diverse in their methodologies. Nevertheless, there are some overarching characteristics of ethnographic approaches. One defining characteristic of ethnographic approaches is that they are interested in locating particular instances in their broader cultural context. Understanding this cultural context involves making sense of specific activities, and in this way ethnographic studies of literacy are interpretative. This means accepting that there can be different perspectives on an event, and that its participants can have different perceptions of it. Contemporary ethnography accepts uncertainty, and it accepts that different people have different understandings of the same situation. This has always been important for research into literacy where, in education for example, the term has often been disputed, with teachers, policy makers and researchers having different perspectives on its significance; and many studies therefore start with an investigation of the meaning of the term. The fundamental question *what is literacy?* recurs throughout such research.

A further important characteristic of ethnographic approaches to literacy research is the focus on individual perspectives, and an interest in the sense-making and theorizing of participants. Being interpretative also means that analysis involves sense-making and

theorizing on the part of researchers. This sense-making aspect of ethnographic research is crucial, and most of the theorizing about the nature of reading and writing which has developed the field so dramatically in the past two decades has been in relation to the qualitative data obtained from ethnographic studies.

Individual studies identify themes about the nature of literacy. One of the strengths of the field is that we can now view a wide range of studies and identify repeated findings and common themes. This builds a powerful base of evidence. For example, one repeated finding from literacy studies research has been the importance of other people in a person's literacy practices. Barton and Hamilton (1998), for instance, have shown the importance of the networks of support in which individuals are located. Other research has referred to the scribes, mentors, brokers, and mediators of literacy practices, and the significance of people acting as part of broader groups, whether they are identified as "communities of practice" or "affinity groups." In general, an ethnographic approach shifts the focus of research from the lone individual, common in traditional psychological paradigms, to the activity or the interaction in which people participate, and to broader institutional structuring.

Deborah Brandt (2009), drawing on historical research, talks of the role of individuals and institutions acting as "sponsors" of literacy practices, and as supporters and facilitators for people. Institutional sponsors can include businesses, governments, and religions. These sponsors support specific views of the nature of reading and writing, and advocate on behalf of these views. Such concepts help the researcher go beyond specific sites, and see the dynamics of texts moving across contexts. The detailed work of literacy studies shows the ways in which written texts are detachable from the social situation that originally produced them, or from the place where they were first used (as in Blommaert's study, 2008). Written documents are constantly being reused and recontextualized, and they move between physical places and social spaces. Texts therefore need to be studied in terms of what they are, beyond a specific moment of use. This brings in the dynamics of power, including issues of gender and unequal access.

These studies offer a set of theoretical concepts, such as *networks*, *sponsors*, *textualization*, and *brokers*, which are useful in understanding literacy. They can also be used to challenge myths about literacy as individualized, decontextualized skills, and an important role for ethnographic data has been to provide a critique of such misperceptions. Even the basic concepts of *literacies* or *practices* have been powerful in enabling people to reconceptualize literacy.

Methodology and Methods

As with all research, there is a close link between theory and methodology in ethnographic literacy research, and each informs and constrains the other. The view of literacy as being part of social practices which are inferred from events and mediated by texts requires a certain methodology for empirical research. The methods of data collection and analysis require attention to detail, and they draw on the underlying philosophy of examining particular instances in order to understand broader patterns. In a single study researchers may integrate a variety of methods including observation, interviews, the analysis of texts, the use of photography, and more. Researchers in the studies reviewed above have been innovative in developing methods which are ethical, responsive, and collaborative and have been part of a more general "reflexive turn" in qualitative research.

Methodology is much broader than the research methods and covers everything from the first formulation of the research, through to analysis and impact, and including the writing up of research. Attention to methodology has grown in the past 20 years as ethnographic research has been seen as part of the social sciences, and as a crucial component

of qualitative research. Ethnographic approaches to literacy have developed alongside other qualitative approaches to provide more explicit methodologies (as in Barton & Hamilton, 1998, chapter 4) and to address the issues of research methodology which have to be faced by all social sciences (as in Denzin & Lincoln, 2008). These approaches need to address general social science concerns such as sampling and validity, and the nature and systematicity of evidence. For instance, a multimethod approach within any one study is a particular strength: that a piece of evidence is corroborated by more than one sort of data is an important form of rigor. Such research needs to understand the sorts of generalizations which can be made from specific cases, even though these may be quite different from those made in quantitative research paradigms. The way in which cases are chosen needs to be made clear, and the idea of a "telling case," for instance, is not a straightforward issue. It is always important to know what a case represents, and why it was selected. And, when writing about it, there are issues of representing other people's perspectives which need to be addressed.

It can be revealing to locate ethnographic approaches in these broader research traditions. Often ethnographic methodologies include other qualitative approaches such as history, narrative analysis, or grounded theory. (See Merriam, 2009, who distinguishes these approaches clearly, pp. 21–37.) Literacy as social practice can be used as an orienting theory, the theory which a researcher starts out with and which is used to provide initial framing for the studies. Other "mid-level" social theories can come in as explanatory theories, which are used to make sense of the data. Studies have drawn on a broad range of theories, such as actor network theory (Hamilton, 2001) and institutional ethnography (Smith, 2005); these are distinct approaches which nevertheless focus on the contemporary, textually mediated social world. One aspect of these developments is the way in which they move the starting point of the research from the practices of individual people to broader cultural practices. See, in particular, the work of Scollon and Scollon (2003). Other studies juxtapose ethnographic approaches with discourse analysis. These become powerful ways of researching and analyzing texts and practices. Another way of broadening literacy studies has been to locate it in the developing field of linguistic ethnography, in Britain for example, and this is likely to be a productive development (Creese, 2010). And one final methodological development is a shift from ethnographic approaches solely associated with lone scholars and individual interpretations, to collaborative ethnography involving researchers working in a variety of ways with each other and with informants.

The Value of Ethnographic Studies of Literacy

Ethnographic approaches to literacy provide a distinctive contribution in many areas. Although such studies look initially at people's practices, that is the uses and meanings of literacy for them, rather than starting with the aspect of learning, many studies are rooted in educational concerns. Focusing on individuals' everyday uses of literacy is important for educational research in that it enables links to be made between what goes on in education and what happens in other domains of activity, such as everyday life including workplaces. Heath's (1983) work, discussed earlier, was foundational in that it was based on questions about the relation between language and literacy in home and school in different communities; and that issue has remained fundamental to much literacy research in the USA, as in many of the studies mentioned above.

These studies provide data which can be used by practitioners, policy makers, and researchers when planning educational provision, from curriculum design to details of classroom activities, and on to broader issues of relations with communities. Nevertheless,

what counts as acceptable evidence is different for different groups of people. Crucially, if we are concerned with literacy education, what makes sense to a learner and what convinces a practitioner is something which resonates with, and develops from, their situated practice. And this may be very different from what convinces a policy maker. In developing a theory with a set of related terms, literacy studies offer educational practitioners an enriched language to communicate with when discussing literacy issues. The language of "literacies," "practices," and so on, can provide a powerful alternative discourse for framing language and literacy issues, one which includes a critical voice articulating learners' perspectives. Such studies also suggest methods for investigating literacy practices, and for reflecting on and selecting practices which practitioners can draw upon. Bringing data, theory, and method together, the approach of literacy as social practice can be developed into a social practice pedagogy.

Focusing on individuals' perspectives is important when discussing issues of learning, especially where researchers are interested in the links between everyday learning and learning in educational contexts. It is here that an ethnographic stance is crucial. When adopting an ethnographic approach in such studies, this may mean being well-meaning, respectful, and ethical, and such approaches may be necessary for carrying out effective research which has an impact on practice. To give a specific example, in our study of adult learners and the uptake of learning opportunities (Barton, Ivanic, Appleby, Hodge, & Tusting, 2007), issues of motivation, recruitment, retention, and persistence were raised by practitioners and policy makers in the field of adult literacy education. Central to these issues, though not always acknowledged, is the question of learners' perceptions. Learners are the active agents in being motivated, in deciding to attend and to stay in class, and to engage and persist in their learning. The learners are central in these educational issues, which all hinge on issues of identity, agency, reflexivity, and subjectivity. Understanding these concerns of learners is essential for effective pedagogy, and they are issues which can best be addressed by ethnographic research.

An ethnographic approach starts with a distinct epistemology, or theory of knowledge, and provides a distinct discourse about literacy. Different epistemologies presuppose different views of the world, and can lead to clashes and misunderstandings. Ethnographic approaches therefore need to interact with other approaches in addressing the complex problems which face education, and society more generally. Researchers need to consider what a particular approach can offer, and what it cannot. They need to understand the complementarity of other qualitative approaches, such as history and mass observation, and also to make links with a variety of approaches from different traditions, especially with various strands of quantitative research such as surveys and cohort studies.

The importance of ethnographic research on literacy is much broader than its impact on education. As well as providing a critical discourse within education, it can also be used to challenge contemporary discourses about the changing workplace which, like education, often draw upon a narrow skills discourse, and imply a "deficit discourse" of blame. One finding implicit in this line of research is that most contemporary social practices involve texts of some sort. In carrying out many activities in life people use texts, and there is an increasing "textualization" of life. This means that literacy is a component of most social practices, and that we live in a textually mediated social world. Paying attention to aspects of literacy in a social practice is particularly important at a time when social life, and especially the technologies of knowledge and communication, are changing rapidly. Ethnographic research on literacy, with its emphasis on texts and practices, is well placed to understand these changes, to address contemporary issues such as globalization and migration, and to provide a powerful analysis of language in new contexts of writing, such as online spaces.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Literacy in Community Settings; Literacy Practices in Virtual Environments; Multimodality and Literacy; Qualitative Literacy Research; Sociolinguistic Studies of Literacy

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Ethnographic Approaches to Second Language Acquisition Research

KATHRYN A. DAVIS

Ethnographers have long engaged in sociocultural studies of first language socialization, second language development, and situated language use. Early scholars who combined interests in anthropology and the study of language included Edward Sapir, Benjamin Whorf, and Kenneth Pike. As a linguistic researcher, Pike drew on early ethnographies, such as the work of Malinowski and Whorf, in arguing for understanding language as embedded in structures of human behavior. While linguistic anthropology was stabilizing as a recognized discipline, Chomsky's psychologically oriented theories of innate universal grammar began to emerge in the late 1950s. Early differential perspectives between context-embedded and psychological-based language-development theories foretold later divergence in epistemological and methodological approaches to second language acquisition inquiry.

This account focuses on the historically situated development of ethnographic approaches to language studies in relation to the emerging field of second language acquisition. It is intended to show how major social-science research eras have impacted qualitative language studies and further suggest current and future research trends in second language research. Rather than a strict chronology, the following discussion of modernism, interpretive trends or blurred genres, and postmodernism assumes the melding of eras and ongoing crossover of epistemological, theoretical, and methodological approaches.

From Modernity to Modernism

The first Western ethnographers wrote positivist field experiences that were considered valid, reliable, objective, and timeless representations of social, cultural, and linguistic behaviors. Although early anthropologists considered themselves free of bias, they commonly viewed the "other" whom they studied as strange and primitive. Thus, ethnography at this time embodied an amalgamation of positivism, colonialism, and context-oriented structuralism. Although linguistic ethnography and language acquisition as framed by Chomsky were both grounded in positivist epistemology, the mind–context epistemological divide during the modern era widened as sociologists and anthropologists began to move away from traditional deterministic views of language learning and use towards constructivist approaches to the study of communication.

In his groundbreaking book *The Presentation of Self in Everyday Life*, sociologist Erving Goffman (1956) suggested that individuals actively construct their social identities rather than passively perform particular cultural prescriptions for social behavior. He argued for studying how individuals construct identities and mutually negotiate meaning in face-to-face interaction. Based on Goffman's work, sociolinguists such as Sacks and Schegloff studied organization of turn taking in conversation and classroom discourse. This work influenced the conceptualization of conversational analysis (CA) that explores interaction as minute-by-minute co-construction of discourse and interaction as it unfolds over time. Implicit in this approach is the assumption that select sections of taped and transcribed interaction are sufficient for researcher analysis and interpretation of meaning making.

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In direct opposition to Chomsky's cognitive language theories and decontextualized approaches to communicative studies, anthropologist Dell Hymes (1974) proposed the ethnography of communication. He argued that speech acts and other communicative events cannot be fully understood without attending to culture and context. Gumperz (1982) bridged the study of interaction and culture through his "crosstalk" research that explored how taken-for-granted background assumptions affect negotiation of meaning in intercultural encounters. His theories of "contextualization cues" significantly influenced interactional sociolinguistics (IS), a combined sociology and linguistics approach to examining discourse strategies across cultural, ethnic, racial, and gender backgrounds. Both IS and ethnography of communication theories and methods influenced studies of cross-cultural communication in classrooms (Cazden, John, & Hymes, 1972); participation structure differences between community and classroom interactive norms (Philips, 1983); and comprehensive analysis of sociocultural language and literacy expectations in racially, economically, and culturally diverse communities (Heath, 1983). Heath's study was notable in its use of a wide range of research methods (participant observation, interviewing, discourse and textual analyses); the scope of the study (working-class black community, working-class white community, and middle-class white or black community members and teachers); and the influence on the theoretical shift from cultural-deficit to cultural-difference explanations for school failure.

Other ethnographic approaches to the study of language and culture at this time included language acquisition and socialization research (e.g., Schieffelin & Ochs, 1986) and Erickson's extensive work on micro-ethnography (1986). These approaches focus on close observational and textual analysis interpreted through an ethnographic understanding of cultural and social context. Qualitative research accounts during this era generally followed a framework of analysis intended to determine how social behavior and interaction operate in systematic ways that signal situated identities. With increasing qualitative interest in the study of language interaction and socialization, many ethnographers and sociologists sought to formalize qualitative methods. Researchers (e.g., Glaser & Strauss, 1967) tended to promote rigorous methods based on the postpositivist epistemological tenets that truth and knowledge are rational, objective, unified, and can be approximated in ethnographic or qualitative descriptions.

At this same time, first language acquisition psycholinguistic case studies (e.g., Brown, 1973) and Chomsky's (1975) cognitive-based language acquisition theories led to the development of the second language acquisition (SLA) branch of applied linguistics. SLA drew heavily on formal linguistics and its associated field of sociolinguistics which was largely viewed as the study of language use. The notable work of sociolinguists such as Labov and Bernstein tended to take positivist or postpositivist perspectives in utilizing the analytical, quantitative, and structured-interview research methods that then dominated the field. Thus, the emergence of SLA founded on cognitive theories and psychological models of scientific inquiry as well as sociolinguistic structuralist accounts diverged from ethnographic studies of language or literacy socialization or use and the co-construction of meaning through interaction.

Interpretive Trends and Blurred Genres

In landmark publications, anthropologist Geertz (1983) brought into question the nature of reality and the centrality of local studies. More specifically, he argued that all anthropological writings are interpretations of interpretations and, thus, the observer has no special insight into reality. Geertz suggested that ethnographers explore local situations and acknowledge the interpretive nature of analyses and presentation of findings. He also

argued that an interpretive approach implies the blurring of boundaries between the social sciences and the humanities. Researchers subsequently have sought new models of truth, method, and (multimodal) representation while increasingly engaging in reflexivity and calling into question issues of gender, class, and race. A blurring of research-methods boundaries and terminology has similarly occurred across social-science fields and increasingly in applied linguistics. In Denzin and Lincoln's (2005) *Handbook of Qualitative Research*, interpretive qualitative research and interpretive ethnography are used interchangeably.

One of the clearest shifts within applied linguistics toward interpretive research approaches was in the field of gender studies. Research and theoretical perspectives in this area began to move from viewing gender as an individual and generalizable trait toward studying gender as a social construction within specific cultural and situational contexts (Eckert & McConnell-Ginet, 1992). A notable interpretive and gendered representation of blurred genres is Anzaldúa's (1987) *Borderlands/La Frontera: The New Mestiza*. In this bilingual (Spanish and English) collection of essays and poems, Anzaldúa explores the notion of identity through her own multilingual and sociocultural experiences as Chicana, lesbian, and activist. She challenges traditional and modernist binary, apolitical, monolingual, and scientific representations of social inquiry through using literary venues to define "borders" as an inhabited space and legitimate identity. While applied linguists have not challenged written representations to a similar degree, there has been a growing tendency toward contesting dominant Western or modernist paradigms through alternative (non-Western) knowledge and genre constructions.

An increasing number of ethnographic studies within and across multilingual contexts began to emerge at this time, particularly in the fields of language policy and planning, language learning, and schooling. Ethnographies began to take on a political edge in advocating for equitable language and culture schooling. Hornberger's (1989) extensive language policy and planning work with Quechua communities and schools supported indigenous language maintenance. Davis (1994) argued for bottom-up language planning through her ethnographic study of multilingual schooling and class variation in language socialization and use in Luxembourg. Valdés's (1996) landmark ethnographic portrait of Mexican families in the USA promoted schooling that respects culturally diverse families. Zentella (1997) advocated for multilingual-education reform through her ethnographic study of Puerto Rican children in New York that documented the complex linguistic and social nature of growing up bilingual. While ethnographic studies of bilingualism have greatly increased since the 1970s, SLA studies have tended to focus on monolingual competence in studies of cognitive-based language development. Yet theorists such as Ortega have recently urged the SLA field to include research on bilingualism. At the same time, ethnographers who work in the SLA and education fields have increasingly moved toward interpretive qualitative or ethnographic studies that draw on postmodern epistemology and theories which consider the multilingual and multimodal nature of inquiry.

Postmodernism

In the 1980s and 1990s postmodernism began to take hold in SLA and the larger field of applied linguistics. Postmodernism considers the nature of knowledge as multifaceted, locally situated, and time and context bound. This philosophical position opposes research assumptions of political neutrality and argues instead for examination of power relations in language and literacy studies. Poststructuralism specifically refutes the notion that language can be understood in structuralist terms as a network of systematically linked propositions and coherent organized units. During this era, new-literacies studies scholars (e.g., Gee, 2000) advanced research based on the premise that, rather than a set of static,

decontextualized, and discrete skills, literacy is always dynamic, multifaceted, power laden, and situated in local practices. Applied linguists and socially situated SLA researchers have increasingly focused on language and cultural diversity in investigating multiple communication channels, hybrid textual forms, and new local and global social relations. Rampton's (1995) study of hybrid language crossing, in which Afro-Caribbean immigrant youth learned Punjabi, revealed how competing discourses transformed into collaborative language learning. Postmodern SLA interpretive qualitative or ethnographic studies also focus on power relations from ever-evolving, changing, locally and politically situated perspectives. Norton (2000) drew on poststructuralist theories of social identity and used data from diaries, questionnaires, individual and group interviews, and home visits to describe how five immigrant women in Canada created, responded to, and resisted opportunities to speak English. She further argued for reframing the notion of language-learner motivation as investment realized in situated interaction and dependent on social needs and desires. Lam's ethnographic case studies (e.g., 2000) examine the complexity of culture, identity, audience, and media that emerge in new forms of multimodal and bilingual online writing. Lam (2000) and Warschauer's (1999) ethnographic studies emphasize the centrality of identity and potential for an increased sense of agency through technology-based second language writing and other multimodal literacies. Duff (2004) investigated intertextuality or discursive hybridity associated with spontaneous references to pop culture in ethnographic descriptions of teacher-led discussions in a Canadian high school. Increasing numbers of ethnographic studies are also based in geographic regions other than North America and Europe. Kanno's (2003) study of four bilingual schools in Japan found that bilingual children are socialized into stratified school visions of future social positions of their students. Lin and colleagues draw on postmodern theories in collaborative analyses of coauthor narratives that argue for appropriating English, expanding identities, and revisioning TESOL (Lin, Wang, Akamatsu, & Riazi, 2002).

Researchers and theorists have also utilized a range of approaches to theorizing social and political meanings that can inform local studies. Critical scholars such as Pennycook, Phillipson, and Skutnabb-Kangas have long offered textual and social analyses that further understanding of the political and social meanings of actions such as those associated with English imperialism and globalization. Alim, Ibrahim, and Pennycook's (2009) edited volume provides qualitative descriptions of a global hip-hop movement in which languages, cultures, and styles are appropriated, integrated, and transformed by youth.

A growing number of language, literacy, and education specialists (Luke, 2002) are calling for participatory research approaches to addressing inequitable educational outcomes. Participatory action research (PAR) has evolved as a collaborative effort among members of social communities and researchers to bring about democratic and emancipatory investigations of processes and outcomes (Davis, 2009). PAR works toward placing local participants at the center of investigations while striving to awaken a sense of injustice among those with material and cultural power. Luke (2002) argues that the right to research for gaining strategic knowledge necessarily involves emancipatory discourses defined by Freire and colleagues as "forms of talk, writing, and representation that are counter-ideological and act to articulate and configure collective interests in transformative ways" (cited in Luke, 2002, p. 105). Luke specifically calls for critical discourse analysis that provides a positive thesis of productive discourses of power. This position suggests that "we would need to begin to capture an affirmative character of culture where discourse is used aesthetically, productively, and for emancipatory purposes" (Luke, 2002, p. 98). Davis (2009) described agentive research among youth in Hawaii that involved investigating multifaceted heritage-language and cultural identities while interrogating, challenging, and appropriating academic English practices. Canagarajah's reflections on future directions for research on multiliteracies emphasizes the need for transnational ethnographic studies

of students developing rhetorical negotiation strategies that modify, resist, or reorient to expectations for written academic discourse.

The postmodern social-science era saw exponential growth in the number and range of interpretive ethnographic and qualitative studies in applied linguistics and associated fields. Historical boundaries between qualitative-research approaches blurred and notions such as culture, context, and identity were understood as interpretive, ever-evolving, changing, and locally and politically situated. Journals such as *TESOL Quarterly*, *Anthropology and Education Quarterly*, *Journal of Language, Identity, and Education*, and *Critical Inquiry in Language Studies* promote multicultural, multilingual, non-Western, transnational, and various forms and representations of interpretive ethnographic or qualitative studies.

Contested Methods

While postmodern social scientists hold that qualitative research can no longer be viewed from a neutral or objective positivistic perspective, the present also offers a politically charged space of contested methods (Denzin & Lincoln, 2005). Many applied linguists have adopted the view that class, race, gender, and ethnicity intersect to shape identity and interact in transnational spaces so that inquiry reflects a multicultural and often multilingual process. Yet SLA researchers have taken a conserving position toward epistemologies, theories, and research methods. For example, tensions between social-anthropological and cognitive perspectives were portrayed in a 1997 special issue of *The Modern Language Journal* on SLA research in which Firth and Wagner led with a reconceptualization of SLA research that sought to "enlarge the ontological and empirical parameters of the field" (1997, p. 285). Firth and Wagner suggested that, beginning in the 1960s, tension has existed between "on the one hand, acknowledgement of the social, contextual dimensions of language, language acquisition and learning, and on the other, the centrality of the individual's language cognition and mental process" (p. 288). These authors concluded that, while language is a cognitive function, it is also "fundamentally a social phenomenon, acquired and used interactively, in a variety of contexts for myriad practical purposes" (p. 296). A number of second language researchers from both theoretical positions responded to the Firth and Wagner position in this special issue. In 2004 Watson-Gegeo further advanced the social-anthropological position by stating that "cognition originates in social interaction and is shaped by cultural and sociopolitical processes: These processes are central rather than incidental to cognitive development" (p. 331).

In the meantime, political events concerning language learning in the USA and in other nations indicate movement toward a postpositivist, monolingual (or ESL or EFL), and standardized curriculum and assessment in public schools and associated research funding. In the USA, the Department of Education Office of Bilingual Education and Minority Language Affairs became the Office of English Language Acquisition in 2001, thus signaling a major shift from support for bilingualism to an English-only policy. The subsequent No Child Left Behind Act resulted in nationwide curriculum and assessment policies founded on "scientific-based evidence." While this movement provided support for scientific-based inquiry among SLA scholars, many applied-linguistics activists such as Wiley (see Wiley & Wright, 2004) continue to argue for grounding research, evaluation, and theory in multilingualism, multiculturalism, and local control of education. There is also a growing social-justice movement across disciplines and geographic locations that argues for attending to issues of class, race, gender, and ethnicity as these are associated with language and power (Denzin & Lincoln 2005; see also the 2010 AAAL special session on "Linking Academic and Advocacy Interests among AAAL Members"). While researchers argue for social-justice-based research within the academy, indigenous and non-Western

scholars have engaged in a full-scale attack on Western epistemologies and research methodologies (Smith, 2005). Indigenous researchers such as Smith advocate for decolonizing the academy's scientific practices as they move toward local control of socially situated inquiry.

Current and Future Trends in Ethnography and Second Language Acquisition

The multifaceted histories of qualitative and ethnographic studies have allowed present-day researchers to engage in inquiry representing traditional, modern, and postmodern historical movements. Researchers can now draw on a vast array of paradigms, inquiry strategies, and methods of analysis depending on their theoretical and philosophical preferences. Interpretive ethnographers interested in second and multiple language development have also historically held and currently take an interdisciplinary and multimethod approach to understanding the nature of language learning and use. Many SLA scholars also now recognize both the social-contextual and the cognitive characteristics of second language learning and, thus, support interpretive ethnographic and qualitative studies of language acquisition. Current and future interpretive ethnographic and qualitative research trends generally lean toward breaking down traditional binary positions and moving toward acknowledging multiple epistemologies and methods in exploring the complex and sociopolitically situated nature of language acquisition.

SEE ALSO: Agency in Second Language Acquisition; Bilingual Literacy; Heritage and Community Languages; Identity and Second Language Acquisition; McCarty, Teresa L.; Multiculturalism and Second Language Learning; Multilingual Identities and Multilingual Education; Multilingualism and Language Rights; Shohamy, Elana; Skutnabb-Kangas, Tove

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Ethnography of Communication as a Research Perspective

GRAHAM SMART

This entry provides an introduction to the "ethnography of communication" for qualitative researchers interested in possibly adopting the methodology to study the complex interrelationship between language and the sociocultural context of its use within a particular social group. The entry begins with some background on the origins of the ethnography of communication and the tradition of inquiry that subsequently developed, next describes the theoretical model underlying the approach, and then offers prospective researchers a series of questions to explore as a starting point for their inquiry.

The "ethnography of communication," a qualitative research methodology introduced by anthropologist, sociolinguist, and folklore scholar Dell Hymes in his seminal 1962 paper, enables a researcher to study the distinctive configuration of discursive conventions, options, and constraints—that is, the "ways of speaking"—that structure the communicative activities of any given social group. An approach combining ethnography, the description, and analysis of culture, with linguistics, the description, and analysis of language, the ethnography of communication centers on the concept of the "speech community" (Bloomfield, 1933)—a group of people sharing a linguistic code as well as norms of discursive interaction, expression, and interpretation. In the decades since Hymes first conceived the ethnography of communication, researchers following in the same tradition have used the methodology to describe and explain the ways of speaking of many different speech communities in a wide range of geographical regions, while at the same time contributing concepts and theories to a larger meta-understanding of patterns of communication across human cultures.

Hymes occupies a place in a line of researchers that includes Franz Boas, Edward Sapir, and Benjamin Whorf, all of whom explored the relationship between language and culture through fieldwork among North American indigenous peoples. At the same time, Hymes also shares a lineage with Bronislaw Malinowski, J. R. Firth, and Firth's student Michael Halliday in arguing that much of the meaning of language derives from the particular social context in which it occurs and that therefore the analysis of socially situated utterances and their contextually construed meanings must be central to the study of language. This latter stance can be seen as a reaction against the formal abstraction of Ferdinand Saussure's structural linguistics, and then later, for Hymes, as a counter to the primacy of Noam Chomsky's focus on a universal context-free grammar and ideal speaker-listeners.

While Hymes originally called his innovative methodology the "ethnography of speaking," implying a focus on spoken language, he and linguist John Gumperz soon reconceived the approach along broader lines as the "ethnography of communication" (Gumperz & Hymes, 1964), with the possible objects of study expanded to include

> the various available channels, and their modes of use, speaking, writing, printing, drumming, blowing, whistling, singing, face and body motion as visually perceived, smelling, tasting, and tactile sensation [along with] the various codes shared by various participants, linguistic, paralinguistic, kinesic, musical, and other. (p. 13)

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Hymes (1981) would also later adapt the approach in a specialized form that he termed "ethnopoetics" to identify patterned poetic elements in transcriptions of oral narratives and folk tales conveying the myths of North American Aboriginal peoples.

Most of the other researchers who have applied the ethnography of communication and contributed to its development over the decades since its inception, however, have focused their work on spoken language, including, among the more prominent, Gumperz, Joel Sherzer, Gerry Philipsen, Richard Bauman, Susan Irvin-Tripp, and Muriel Saville-Troike. Saville-Troike's *The Ethnography of Communication: An Introduction*, originally published in 1982 and now in its third edition (2003), has played a significant role in elaborating Hymes's approach and in popularizing it among researchers in the fields of sociolinguistics and cultural anthropology. Saville-Troike's volume provides a comprehensive account of the goals, theoretical underpinnings, research methods, and eventual products of the ethnography of communication. What is perhaps most valuable in the book for a researcher new to the ethnography of communication, however, is its highly detailed description of data types, procedures for eliciting information from informants, and methods of analyzing data—with much of this description illustrated through concrete examples.

The diversity of the speech communities studied by researchers using the ethnography of communication as a primary methodology can be inferred from this list of six book-length studies: *Kuna Ways of Speaking: An Ethnographic Perspective* (Sherzer, 1983); *Linguistic Convergence: An Ethnography of Speaking at Fort Chipewyan* (Scollon & Scollon, 1979); *Puerto-Rican Discourse: A Sociolinguistic Study of a New York Suburb* (Torres, 1997); *Literacy Practices in a Rural Community in Pakistan* (Farah, 1992); *Functions of Language in the Classroom* (Cazden, John, & Hymes, 1972); and *Changing Times, Changing Minds: Language Socialization in Hungarian English Schools* (Duff, 1993). For readers seeking further examples of the use of ethnography of communication as a research methodology, Philipsen and Carbaugh (1986) have published a bibliography of over two hundred studies employing the approach, and Saville-Troike also notes additional studies in her 2003 volume.

Hymes's Theoretical Model

On a conceptual level, the ethnography of communication, as originally conceived by Hymes, proceeds from the assumption that conventionalized norms of language use within a speech community are inseparable from patterns of social action and social organization. Accordingly, in Hymes's theoretical model, social life within a speech community is characterized by a distinctive pattern of "speech situations," "speech events," and "speech acts" that together comprise the communicative activities of the community. (As an example, consider the following: a retirement party with colleagues and friends—a speech situation; a conversation between the newly retired individual and a long-time work colleague—a speech event; and a compliment from the colleague regarding the retiree's career accomplishments—a speech act.)

In its focus on the communicative functions performed by language, Hymes's theoretical model resonates with the work of Roman Jakobson, John Austin, and John Searle. Hymes's model is also clearly reminiscent of literary critic and rhetorician Kenneth Burke's "dramatistic pentad"—comprising act, scene, agent, agency, and purpose—proposed by Burke as an analytical tool for examining discursive events. Hymes studied under Burke at Indiana University, and the two scholars subsequently maintained a decades-long correspondence and had a mutual influence on one another's work. Hymes (2003) readily acknowledged his debt to Burke as an inspiration for his model of speech situations, speech events, and speech acts: "My sense of what I do probably owes more to Kenneth Burke than to anyone else" (p. x).

In an extension of his theoretical model of the speech community and its constituent elements, Hymes (1966, 1985) introduced the concept of "communicative competence"—playing off the distinction that Chomsky (1965) had earlier made between "linguistic competence" and "linguistic performance"—to describe what an individual needs to know and be capable of doing, both linguistically and in social relations, in order to communicate effectively within a particular speech community according to its local "ways of speaking." Looking at language acquisition, Hymes (1972) describes what such communicative competence involves, using the experience of a child as an example:

> We have to account for the fact that a normal child acquires knowledge of sentences not only as grammatical but also as appropriate. He or she acquires competence as to when to speak, when not, and as to what to talk about with whom, when, where and in what manner. In short, a child becomes able to accomplish a repertoire of speech acts, to take part in speech events, and to evaluate their accomplishment by others. This competence, moreover, is integral with attitudes, values, and motivations concerning language, its features and uses, and integral with competence for, and attitudes towards, the interrelation of language with the other code of communicative conduct [viz. social interaction]. (pp. 277–8)

In communicative competence, Hymes originated a concept that would be widely appropriated by researchers in language education from the late 1970s onward, particularly in the fields of second language and foreign-language teaching, reflecting the extensive use of the ethnography of communication in educational research (Duff, 2002). In what came to be known as the "communicative approach," language learners are introduced very early in their course of instruction to the use of authentic language in the particular situations and social interactions in which they are ultimately aiming to participate, whether these situations and interactions occur in academic, workplace, or community settings—so that the end goal of language learning plays a central part in its means of achievement (Canale & Swain, 1980).

"Doing Ethnography"

For Hymes (2003), any credible general theory claiming to describe and explain the interaction of language and social life across speech communities must be derived from empirical field research within single communities: "Underlying the diversity of speech within communities . . . are systematic relations, relations that, just as grammatical and social structure, can be the object of empirical inquiry." (p. 30) According to Hymes (1977), a researcher undertaking such inquiry should focus on

> the local form of general properties of social life—patterns of role and status, rights and duties, differential command of resources, transmitted values, environmental constraints. [An ethnography] locates the local situation in space, time, and kind, and discovers its particular forms and center of gravity, as it were, for the maintenance of social order and the satisfaction of expressive impulse. (p. 25)

Muriel Saville-Troike (2003) provides a researcher intent on "doing ethnography" (p. 4) within a speech community with a broad initial question to consider: "What does a speaker need to know in order to communicate appropriately within [this] speech community, and how does he or she learn?" (p. 2) Proceeding from this starting point, the aspiring researcher can look to Hymes himself (1967) for a more detailed set of questions regarding the "ways of speaking" that organize communicative activities within the community:

> What [forms of language] are used, where and when, among whom, and for what purpose and with what result, to say what, in what way; subject to what norms of interaction and of interpretation; as instances of what speech acts and genres of speaking? How do community and personal beliefs, values and practices impinge upon the use of language, and upon the acquisition of such language by children? (p. 8)

Narrowing the focus to specific communicative events occurring within a speech community, Hymes (1967) provides four additional questions for the researcher to investigate: "1. What are the communicative events, and their components, within a community? 2. What are the relationships among them? 3. What capabilities and states do they have, in general, and in particular events? 4. How do they work?" (p. 25).

In order to pursue these various questions within any given speech community, the researcher would need to conduct two kinds of inquiry—emic and etic. A significant part of the culture-specific knowledge needed to answer the questions mentioned above requires that the researcher gain an emic, or insider-like, perspective that can be achieved only through prolonged experience as a participant-observer within the speech community under study, with a year spent working in the community sometimes cited as a minimum duration (Saville-Troike, 2003). Depending on the researcher's status within the speech community and his or her access to a cross-section of reliable informants, the data to be gathered might include observational field notes, interviews with individuals in a range of different roles and social contexts, a collection of artistic and other material artifacts, as well as secondary published sources containing insider-supplied information on the history, demographics, and social organization of the group.

For the second kind of inquiry—conducted from an etic, or outsider, position—Hymes's (1972) model includes a set of sixteen factors that can be used to analyze a speech event: message form, message content, setting, scene, speaker, addressor, audience, addressee, purposes (goals), purposes (outcomes), key, channel, forms of speech, norms of interaction, norms of interpretation, and genres. To facilitate the researcher's work, Hymes offers an acronym for use as a mnemonic for identifying the various facets of a speech event: SPEAKING. Hymes lists eight such facets—**s**etting, **p**articipants, **e**nds, **a**ct sequences, **k**ey, **i**nstrumentalities, **n**orms, and **g**enre. Farah (1998) describes this heuristic in some detail:

> (**S**) Setting including the time and place, physical aspects of the situation such as arrangement of furniture in the classroom; (**P**) participant identity including personal characteristics such as age and sex, social status, relationship with each other; (**E**) ends including the purpose of the event itself as well as the individual goals of the participants; (**A**) act, sequence or how speech acts are organized within a speech event and what topic/s are addressed; (**K**) key or the tone and manner in which something is said or written; (**I**) instrumentalities or the linguistic code i.e. language, dialect, variety and channel i.e. speech or writing; (**N**) norms or the standard socio-cultural rules of interaction and interpretation; and (**G**) genre or type of event such as lecture, poem, letter (p. 26).

Conclusion

For language researchers, a key aspect of the theoretical model underlying Hymes's ethnography of communication is its detailed description of the different elements comprising the sociocultural context of language use. While other theoretical representations of context have appeared over the years to rival Hymes's model as a conceptual tool for researchers wishing to explore the complex interrelationship between language and sociocultural context within a particular social group—such as the discourse community (Bizzell, 1982), the community of practice (Lave & Wenger, 1991), and the activity system (Cole &

Engeström, 1993)—Hymes's notion of the speech community and its constituent features remains an important concept for qualitative language research. At the same time, the recognition of similarities across ethnographic accounts from geographically and culturally diverse field studies in individual speech communities by researchers using the ethnography of communication to study local patterns of relationship among language, social knowledge, and communal behavior continues to strengthen our general theoretical understanding of language-in-use and linguistic competence across cultures.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Critical Ethnography; Hymes, Dell; Institutional Ethnography

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Ethnomethodology in the Analysis of Discourse and Interaction

ILKKA ARMINEN

Ethnomethodology is a branch of research that studies people's tacit, unacknowledged, taken-for-granted resources of social action, their common sense, and their interactional competence. According to its founder, Harold Garfinkel (1967, p. 1), the "central recommendation" of ethnomethodology "is that the activities whereby members produce and manage settings of organized everyday affairs are identical with members' procedures for making those settings 'account-able'"; that is, ethnomethodology assumes that the meaning of a social phenomenon is equivalent to the methodical procedures through which participants build and maintain its sense.

Accountability is the key concept of ethnomethodology (Heritage, 1984). Social actions and experiences are accountable; they can be recognized, identified, described, and characterized. Through this "accounting" of actions and experiences, they become regular and fall under the normative order. Hence, ethnomethodology proposes a bottom-up approach for the constitution of societies and cultures: The methods whereby people render and make their experiences accountable are the methods whereby they maintain the social order for which they are accountable. This "reflexive" and "incarnate" character of the production of social order inevitably makes people's everyday lives and their common sense a rich and profound topic for research.

Basic Assumptions

Ethnomethodology is founded on the topic/resource shift that allows the reservoir of everyday knowledge normally taken for granted to be opened up to research (Zimmerman & Pollner, 1970). The fundamentals of social action are made objects of study. Ethnomethodology aims at revealing the primary features of social actions by discovering their foundation in the situated practices at the face-to-face level. Social order is not given top-down, but something that participants work to achieve. Nor are meanings of language or social actions given, but context-bound, deriving from their context of production. Finally, rules and regularities are seen as resources for interpretations that guide the participants as sources of understanding, rather than external forces that mechanically compel actors. The idea is not to deny the existence of power relations, but to acknowledge that, whatever the social relationships are; they are subject to procedures and methods of reasoning. Ethnomethodology refuses to treat human beings as "judgmental dopes."

Ethnomethodology is (in)famous for the "breaching experiments" of Garfinkel (1967), in which he instructed an experimenter to behave in some ordinary situation in inappropriate and, by common standards, senseless ways. In the experiments, the subjects "vigorously sought to make the strange actions intelligible and to restore the situation to normal appearances" (Garfinkel, 1967, p. 47). These experiments demonstrated the participants' use of commonsense expectations, their accounting practices, and the resulting moral force of cognition. The demonstration of the moral force of the routine grounds of everyday life

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explicated the procedures through which the normality of everyday life was achieved in the course of social interaction.

The ethnomethodological program can be summarized in four core assumptions (Arminen, 2005):

1. The meaning of a social phenomenon is equivalent to methods through which participants sustain its sense.
2. Language use is indexical, that is, it is bound to its context; there are no objective meanings.
3. The social order is the participants' methodic achievement; there is no transcendental basis for societies.
4. Rules and regularities are not natural laws but resources for interpretation for the participants.

The methodological implications of ethnomethodology include:

1. naturalism—studies should concentrate on real events, that is, the use of naturally occurring data is favored;
2. non-ironical stance—the participants' own actions and orientations are the source of meaning, and a researcher does not possess superior knowledge a priori; and
3. observational science—studies focus on what can be observed.

Theoretical Background

Garfinkel has told the following story about the origins of the idea of ethnomethodology:

> In 1954 Fred Strodtbeck was hired by the University of Chicago Law School to analyse tape-recordings of jury deliberations obtained from a bugged jury room. Edward Shils was on the committee that hired him. When Strodtbeck proposed to administer Bales Interaction Process Analysis categories, Shils complained: "By using Bales Interaction Process Analysis I'm sure we'll learn what about a jury's deliberations makes them a small group. But we want to know what about their deliberations makes them a jury." (Garfinkel, Lynch, & Livingston, 1981, p. 133)

Subsequently, ethnomethodology developed a response to Shils's complaint. It began investigating the properties of reasoning and practical action that are the participants' ways of producing this particular activity (Garfinkel, 1967). From its onset ethnomethodology developed as a distinct alternative to standard scientific approaches that survey average properties of the phenomena. The aim of ethnomethodology is to catch the defining features, the "just whatness" of mundane activities that make them what they are; that is, what the methods, means, and procedures are through which an activity like jury deliberation is being done.

Originally, ethnomethodology was inspired by the phenomenology of Husserl and Schutz (Heritage, 1984); but it transposed their inquiries about the appearance of phenomena in the world onto studies of the members' methods of doing *being-in-the-world*. The range of ethnomethodological studies has been astonishing, covering topics from jazz improvisation (Sudnow, 1978), snitching (Wieder, 1974), and proving mathematical theorems (Livingston, 1986) to "doing being ordinary" (Sacks, 1992; for further studies, see Garfinkel, 2002). All of these studies have focused on the methods of *doing* things—if nothing else, *doing being ordinary*; how people manage to give an impression of being more-or-less like everybody else. Routine is seen not as a statistical average, but as a skilled achievement.

Ethnomethodological Study of Discursive Practices

Early ethnomethodology achieved the elevation of people's everyday practices and commonsense reasoning to research topics. It investigated practical activities in their own right, adopting a policy according to which "the features of socially organized activities are particular, contingent accomplishments of the production and recognition work of parties to the activity" (Zimmerman & Pollner, 1970, p. 94). Hence, the orderliness of discourse was seen as the situated accomplishment whose methodical nature could be explored. The under-analyzed properties of everyday reasoning that were taken for granted were to be shifted from unreflexive resources to the topics of study. Further, this program restrained the analyst from using a priori theorizing or any other external resources to explicate the nature of the activity in order "to sustain the sense of an objective structure of social activities" (Zimmerman & Pollner, 1970, p. 100), which is the participants' own achievement. On the face of it, this was a new, rigorous, and distinctive program for the study of discursive practices.

Classical ethnomethodological studies focused on various mundane matters such as the maintenance and breaches of trust, construction of gendered identities (e.g., the study of "transsexual Agnes"), and the filling in of bureaucratic forms (Garfinkel, 1967). In these classic studies, Garfinkel did not try to refute the existence of rules, norms, or regulations, but focused on the indispensable, ingenious, mundane practices through which rules, norms, and regulations were put into force in particular and context-dependent ways (Heritage, 1984). The topics of ethnomethodology vary, but are unified by their focus on the details of the accomplishment of discursive practice. It has developed into a program for the scrutiny of the foundational role of talk and interaction for discursive practices, in both everyday and institutional settings.

Schegloff and Sacks (1973) summarized well the perspective shared by all classical ethnomethodological studies:

> We have proceeded under the assumption (an assumption borne out by our research) that in so far as the materials we worked with exhibited orderliness, they did so not only to us, indeed not in the first place for us, but for the co-participants who had produced them. If the materials (records of natural conversation) were orderly, they were so because they had been methodically produced by members of the society for one another, and it was a feature of the conversations we treated as data that they were produced so as to allow the display by the co-participants to each other of their orderliness, and to allow the participants to display to each other their analysis, appreciation and use of the orderliness. (p. 290)

Sacks and his colleagues initiated a research program that was to be called conversation analysis (CA). All ethnomethodological studies are directed to the mundane details of everyday life through which the social world in its multiplicity is formed. CA focuses on the foundational role of talk and interaction for social action. Originally, CA was an extension of the ethnomethodological paradigm of accountable action (Heritage, 1984). Interactants in conversation treat each other's behavior as normatively sanctionable, and the regulative patterns of talk-in-interaction become normatively constituted. Through this normative underpinning, talk-in-interaction becomes an institution in its own right, in which the interactants orient to the patterns of interaction as a normative standard that enables regular social interaction. CA treats interaction as a structurally orchestrated enterprise. Contributions in interaction are sequentially implicative: They delimit the range of possible next contributions by making some types of actions conditionally relevant. In this way, the context of interaction is endogenously constructed and becomes an orderly achievement. The participants orient themselves to this orderliness of interaction, and their

orientations provide the basis of the intersubjectivity of social action and the orderly course of interaction (ten Have, 1999; Arminen, 2005).

The emphasis on studying talk as a way of *doing* linked CA to ethnomethodological sociology (Garfinkel, 1967). Early ethnomethodology and CA shared also the presupposition that phenomena are properly investigated through observation and discursive reporting so that others can make use of these reports for further inference and action. As a whole, ethnomethodological studies of social interaction have established the existence of face-to-face behavior as an emergent social fact. Harvey Sacks coined the phrase "order-at-all-points," which can be taken as the primary methodological principle of CA (Sacks, 1992). That is, social interaction may be approached as a systematically organized whole; even the smallest details should not a priori be seen as irrelevant. In this way, Sacks and his colleagues managed to establish a new, autonomous field of study (Schegloff & Sacks, 1973; Sacks, Schegloff, & Jefferson, 1974).

"Radical" Ethnomethodology

Later, in the 1970s, Garfinkel developed what has come to be known as "radical ethnomethodology." This approach began within "studies of work" which sought to analyze the actual material practices that compose ongoing, situated, day-to-day work practices (Heritage, 1984). In all they promised a rigorous analysis of materialized competencies of work activities in real settings (Lynch, 1993). The themes of these studies include the achievement of teamwork, the role and uses of artifacts for work practices, and the spatial organization of the workplace. The studies have shown how the coordination of work is supported by artifacts such as procedural diagrams, maps, job descriptions, and project plans. Ethnomethodological studies have helped to acknowledge the relevance and constitutive role of semiotic resources and spatial arrangement of the workplace for the organization of activities.

The program of studies of work later led to social studies of science in a form of laboratory ethnography (Garfinkel et al., 1981; Lynch, 1993). In another direction, Lucy Suchman's (1987) exposition of the problem of human–machine communication formed the bedrock for a wide spectrum of studies that address human–computer interaction and computer-supported cooperation. Ethnomethodology has proven to be useful for laying out basic properties of human–computer interaction that promise insights for the design of information technology. Dourish and Button (1998) have investigated the possibilities of approaching system design from the ethnomethodological perspective. They seek to establish for ethnomethodology "a foundational place in the very notion of system design, rather than simply being employed as a resource in aspects of the process, such as requirements elicitation and specification" (Dourish & Button, 1998, p. 395). Among others, they have introduced the notion of accountability for systems designers. This could be used for reprogramming by revealing what became invisible in the initial programming. In all, ethnomethodology has regained a prominent position in science and technology studies, which has also had a profound impact on research methods, reflected in Latour's (1986) ironic remark: "Will the last person to leave the social studies of science please turn on the tape-recorder?"

Recently, workplace studies and anthropological studies of practices have increasingly drawn on a combination of methods from CA, ethnomethodology, and ethnography (Suchman, 1987; Goodwin, 1994; Heath & Luff, 2000). Both workplace studies and anthropological studies of practices have tried to develop a perspective from which to investigate discursive practice as situated accomplishment that emerges from its practical management within language, social configuration, and material resources (Goodwin, 1994; Heath & Luff, 2000; Arminen, 2005). These approaches have adopted aspects of activity theory to

address social actions more distinctly, and not to prioritize verbal communication. As a whole, talk and other actions are in a reciprocal relationship; they facilitate each other in accomplishing the task they are contributing to. It is the coordination of talk and action, not talk as such, that establishes the sense of the ongoing action (Goodwin, 1994).

Future Prospects

This new synthesis of CA, ethnomethodology, and ethnography promises to fulfill the original promise of ethnomethodology to invigorate our understanding of discursive practices and revive Sacks's original vision of the science of social life (Sacks, 1992). The resulting approach can lead to studies of discursive practices that increase our understanding of day-to-day social practices by re-specifying their interactional substratum. The emerging ethnomethodological social science can contribute to our grasp of the diversity of discursive practices.

Initially, Sacks contemplated the idea of a science of social life that would analyze the practices that permit people to see and feel the way they do (Sacks, 1992; Arminen, 2005). Starting from Garfinkel's original idea of ethnomethodology, the goal was to be retrieved from what-everybody-knows: The elementary properties of discursive practices that compose the taken-for-granted basis for ways of life were to be explored (Sacks, 1992; Silverman, 1998). The idea was to grasp the relevant details of actions to "reverse engineer" the foundations of societal life. As such, Sacks did not aim to narrow down the scope of research to the level of interaction only. In fact, he became interested in conversations only incidentally, because the ease of recording allowed access to actual reproductions of lived life that were critical for the scientific study of social life (Sacks, 1992).

More recent studies of interaction which make use of video recording unite the analysis of verbal and physical action in their activity context. Moreover, ethnographic materials provide a background understanding for a more detailed scrutiny of videotaped (inter)actions. Ideally, the use of multiple data sources opens a hermeneutic circle in which the details of (inter)action are interpreted vis-à-vis their ethnographic context, the sense of which is clarified by reference to the actual interaction. Video recordings provide an opportunity to test the validity of ethnographic insights by providing reportable evidence of instances of the phenomena studied. The production and coordination of social action in real time through talk and visual conduct are inspected by combining videotapes with the study of spoken interaction so that the mutual constitution of talk and action is revealed. Talk is studied with the help of CA transcription conventions and methods, and visual actions are inspected along with the stream of speech, which discloses the sequential flow of activities as an organized whole.

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Multimodality; Conversation Analysis: Overview; Conversation Analysis and Transcription and Data; Discourse in Action; Discourse Analysis and Conversation Analysis

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Explicit Knowledge and Grammar Explanation in Second Language Instruction

ROSEMARY ERLAM

What Is Explicit Knowledge and Why Is It Important?

Explicit knowledge is knowledge that a learner has *about* a language and that he or she is conscious of and able to report in some way (Ellis, 2008). For example, many learners know and can explain that in English you need an 's' on verbs when you use them with a subject such as *he*, *she*, or *John* to talk about something in the present. There has, in the past, been disagreement over whether helping learners develop explicit knowledge helps them acquire language: Krashen (1981) famously suggested that it didn't. More recently, however, a growing body of research evidence suggests that helping learners develop explicit knowledge may speed up language acquisition (Ellis, 2008) even if it doesn't alter the course of it. In their meta-analysis Norris and Ortega (2000) presented evidence to show that instruction that encourages the development of explicit knowledge makes a significant difference to language learning outcomes that is unlikely to be attributable to chance. In answering the question of how explicit knowledge may help acquisition we need to acknowledge the significant role that has been given to attention in second language learning ever since Schmidt (1990) proposed his noticing hypothesis. Schmidt's proposal that learners will only learn what they pay attention to suggested a rationale for drawing learners' attention to specific language features. Further support for the importance of developing explicit knowledge comes from skill acquisition theory, which argues that second language learning starts with an explicit representation of linguistic forms and that this explicit representation provides a basis for the implicit learning that follows (DeKeyser, 2007).

Grammar Explanation Is One Way of Building Explicit Knowledge

There are a number of ways of helping learners develop explicit knowledge, often referred to as different ways of having a focus on language form. Ways of encouraging learners to focus on form can vary in terms of how explicit and implicit they are. For example, at the implicit end of the continuum we have a technique such as input flood, where learners are exposed to lots of examples of specific language features but their attention is not otherwise explicitly drawn to these. Grammar explanation belongs more to the explicit end of the continuum, because learners are explicitly told about the workings of a form, a function, or both, and encouraged to attend to the specific linguistic features, and to try to understand them. However, as we will see below, grammar explanation can vary too along a continuum in terms of how explicit it is.

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In the remainder of this entry, I will distinguish grammar explanation from grammar practice in much the same way that Hedge (2000) differentiates between "presenting and explaining grammar" and "grammar practice activities." In other words, I will assume that grammar explanation aims to help students develop *understanding* of specific grammatical features, whereas grammar practice aims to help them produce or perform these features correctly.

What Is Grammar Explanation?

For many, the idea of grammar explanation will evoke the notion of grammar rules. Traditionally, explicit methods of grammar instruction tended to be limited to explanations of rules followed by opportunities to complete activities illustrating these rules. This was most evident in the PPP model (i.e., present, practice, produce) widely promoted in teacher handbooks (Ur, 1996; Hedge, 2000). Today, the value of rules in helping learners understand how language works is acknowledged, although research has suggested some caveats. Green and Hecht (1992) showed that German learners of L2 English did not know grammar rules they had been taught, but not knowing rules did not mean that they were unable to recognize and correct mistakes in English. They concluded that being taught rules may help learners along the way to language learning, that is, help them acquire language, but that learners may outgrow a dependence on rules.

While presenting grammar rules is certainly one type of grammar explanation it is, nonetheless, not the only way of explaining grammar. Other ways of helping students understand how language structures "work" in the L2, include, but are not limited to (Simard & Jean, in press),

- sentence analysis—using arrows or color and so forth to show the relationship between different components of a sentence;
- contrastive analysis—comparing language features in the L1 and the L2 or with another L2;
- translation;
- giving learners conjugations or declensions, or presenting other language features paradigmatically (e.g., in a chart or table);
- syntactic manipulation—manipulating specific constituents of a phrase or sentence, for example turning a declarative sentence into an interrogative;
- labeling or classifying components of a phrase or sentence.

Some of these approaches to explaining grammar (and the last is a case in point) may involve familiarizing learners with metalingual knowledge, that is, the knowledge of technical terms used to describe language (e.g., noun, transitive verb, etc.). However, explicit knowledge of a language does not necessarily require knowledge of the metalanguage that is used to describe it. Learners can be given explanations in simple, nontechnical language, and indeed there is some evidence to suggest that this is how they may best remember them (Elder, Erlam, & Philp, 2007).

Another approach to grammar explanation is Lantolf's (2007) concept-based approach. Lantolf queries the quality of grammar explanations often given to learners, complaining that they are piecemeal, rather than coherent, and theoretically informed. In his concept-based approach learners are given grammatical explanations and then encouraged to verbalize their understanding of what they have learned. In this way learning becomes visible and incomplete learning can be modified through feedback until the learner demonstrates that she or he has formed a deep understanding of the relevant grammatical concepts.

A Deductive or Inductive Approach to Grammar Explanation

In a deductive approach to grammar explanation, students are given explicit information about a particular target structure, usually prior to language practice activities. Processing instruction (VanPatten, 2004) is an example. In processing instruction, the language structure targeted is one that has been demonstrated to present input-processing difficulties for students. Students are given information about the structure, including information about why it is difficult for them to process it; they then work at structured input activities which help them process the structure correctly.

In an inductive approach, which is more implicit, students are given examples of the target structure in context and encouraged to form hypotheses and conclusions about it themselves. This may be followed by an explanation or a rule given by the teacher, but may not. One example of an inductive approach to grammar explanation is "consciousness-raising" (Ellis, 2002). A consciousness-raising activity isolates a specific linguistic feature for learners to attend to, provides them with data which illustrate this feature, and encourages them to use intellectual effort to understand it.

While many textbooks still present foreign language grammar explanations deductively, Haight, Herron, and Cole (2007) argue in favor of "guided induction," where the instructor and learners construct together an understanding of a particular language structure through a series of student–instructor interactions. Haight et al. claim that this approach is supported by a sociocultural and constructivist theory of learning (Lantolf, 2000). They tested this approach with L2 learners of French who were taught eight target structures, some through a guided induction approach, and some through a deductive approach. Results showed that the guided inductive instructional approach led to gains that were statistically significantly better than the deductive instructional approach. The researchers conclude that these findings accord with cognitive theories of learning which see learning as involving problem solving and engagement on the part of the learner.

One of the difficulties in drawing conclusions from the research about the effectiveness of these two approaches to grammar explanation is that inductive instruction has been carried out in different ways in studies looking at its effectiveness (Erlam, 2003). For Herron and Tomasello (1992) a potential problem with inductive instruction is that there is no guarantee that the learner will "induce" the underlying grammatical concepts correctly. One way of dealing with this problem is to check the understandings that learners have derived and to correct any misunderstandings.

Other Options for Grammar Explanation

Options for how grammar explanation may be implemented present choices in terms of preparation, timing, motivation, and context. First, grammar explanation can be either planned or unplanned. In the former option there has been some advance preparation for the grammar focus, while in the latter instance it may be that the teacher decides, without prior forethought, to briefly take time out from a particular activity in order to deal with an error that he or she has noted during the lesson. Second, grammar explanation can vary in terms of its timing in relation to a classroom activity or task, that is, it can be either preemptive or reactive. In the former, the teacher may anticipate knowledge that students will need to complete a particular task or activity and incorporate a focus on this *before* the task is undertaken. A reactive explanation may be given *after* a particular task, perhaps in response to errors that the teacher has observed. Research has shown that corrective feedback that includes grammar explanation and that is given in reaction to students' errors can be effective for learning (Ellis, 2008). Third, grammar explanation can be

motivated either by students (student initiated) or by the teacher (teacher initiated). In the former it is most likely that a student asks a question that leads to a subsequent explanation whilst in the latter it is the teacher who decides that the explanation is necessary. Lastly, grammar explanation may be integrated or isolated (Spada & Lightbown, 2008). In the former, a focus on the target structure takes place in context, for example, in a communicative activity where the focus is on meaning. In the latter the preselected linguistic forms that are the focus of the instruction are presented out of context. Research evidence increasingly suggests that a focus on linguistic form in a context where students are engaged in using language as a tool to communicate is more effective. Indeed there is evidence to suggest that it may not be the grammar explanation per se that is most effective for learning, but the opportunity for learners to attend to language forms, and to associate them with the meanings they convey (VanPatten & Oikennon, 1996). In other words, grammar explanation may be effective because it focuses learners' attention on linguistic features and helps them make form–meaning mappings.

It is important to recognize that these options with regard to grammar explanation are not mutually exclusive but may overlap with each other. For example, grammar explanation may be unplanned, reactive, and integrated.

Factors That May Determine Choices in Grammar Explanation

There is some evidence to suggest that grammar explanation (in particular the more explicit forms) may be more effective for adolescents and older learners who are more academically and cognitively mature than for younger children who haven't yet developed analytic skills. Younger children may learn more implicitly and be less able to benefit from an explicit focus on language structure. Another factor to consider is learner aptitude. Some learners have high language analytic ability and are better able to infer grammar rules or make linguistic generalizations than others. There is tentative research evidence to suggest that learners who have high language analytic ability may be more able to benefit from an inductive approach to grammar explanation because they are more skilled at hypothesis testing. Other learners may do better with a more deductive approach (Erlam, 2005).

Conclusion

In conclusion, when it comes to helping learners develop explicit knowledge through grammar explanation, it is important to remember that one size does not fit all. A differentiated approach to grammar instruction may well be one that works best. It may sometimes be appropriate to use a deductive approach, at other times an inductive approach. At times it may be appropriate to give a rule, at other times some other form of grammar explanation may be more suitable.

SEE ALSO: Age-Appropriate Instruction and Assessment for School-Age Learners; Aptitude in Second Language Acquisition; Learner Readiness; Using Metalanguage in Teaching

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Explicit Learning in Second Language Acquisition

CARMEN MUÑOZ

An introduction to explicit learning needs to refer to implicit learning as well, either as the other extreme of a dichotomy or of a continuum. Reber (2003, p. 488) notes that the tendency to view the implicit–explicit issue in an either/or framework is almost certainly a mistake: "Virtually everything cognitively interesting that people do is a complex blend of consciously controlled processing that is declarative in nature and implicit, automatic functioning that lies largely outside of awareness." With this initial cautionary note, the following paragraphs provide an introductory presentation of explicit learning, and related concepts from cognitive psychology. This introduction then focuses on the role of explicit learning in second language acquisition (SLA), and ends with a reference to the role of explicit learning in the explanation of age-related differences in second language (L2) learning.

Following N. Ellis (1994, p. 1) explicit learning is a "conscious operation where the individual makes and tests hypotheses in a search for structure." This contrasts with his definition of implicit learning as "acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations." Though there is still significant debate concerning the explicit–implicit issue, it may be claimed that the crucial difference between explicit and implicit learning is consciousness of the structure being learned or lack of it, respectively. Explicit learning is also associated with effortful processing whereas implicit learning is associated with automatic processing. In addition, there exists strong evidence that explicit and implicit learning are subsumed by different neuroanatomical structures.

Reber (2003) notes that the link with conscious control explains that explicit systems are relatively recent arrivals on the evolutionary arena, more recent than implicit systems, which function procedurally and largely independent of top-down control. Because explicit systems are recently evolved, they are less robust in the face of disorders and dysfunctions than implicit systems, which are older and form the foundation for later developments. Thus, explicit cognitive functions are severely impaired in a large number of psychiatric and neurological disorders, while implicit learning and implicit memory processes remain intact. Likewise in aging populations, implicit processing is almost intact while consciously controlled cognitive functions begin to decline as seen in explicit tasks (such as problem solving, reasoning, and long-term memory).

A number of concepts related to explicit and implicit learning need to be distinguished from one another, namely explicit and implicit knowledge, declarative and procedural knowledge, and explicit and implicit memory. Explicit and implicit knowledge are to be seen as the product of the process of learning (Schmidt, 1994). A term used sometimes as a synonym for explicit knowledge is declarative knowledge. Declarative knowledge is knowledge "that" something is, in contrast to procedural knowledge that is knowledge "how" to do something. Explicit memory is memory of a past event with conscious awareness, whereas implicit memory is memory with no awareness. Different types of evidence make clear the dissociation between explicit and implicit memory. Patients suffering from

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retrograde amnesia perform very poorly on explicit tasks but their implicit memory processes remain intact. On the other hand, patients with aphasia have impaired implicit memory for language (or of its automatic use) without loss of explicit knowledge. In the brain, explicit memories are claimed to engage various areas of the neocortex (especially the frontal and temporal lobes) as well as the hippocampus, whereas implicit memories are claimed to reside in different regions of the neocortex and not to be subserved by the hippocampus (Paradis, 1994).

Explicit Learning in a Second Language

The explicit–implicit distinction is often referred to as the learning-acquisition distinction in the field of SLA (e.g., Krashen, 1985, 1994). It has generated essential theoretical debate with important pedagogical implications, namely, whereas there is general agreement that much of L1 acquisition reflects implicit learning, no such consensus exists as for the role of implicit and explicit learning in L2 acquisition. As in cognitive psychology, in the L2 literature on explicit and implicit learning the defining feature is awareness of what is being learned or lack of it. Hulstijn's (2005, p. 131) definition of explicit learning is a good illustration: "Explicit learning is input processing with the conscious intention to find out whether the input information contains regularities and, if so, to work out the concepts and rules with which these regularities can be captured."

An important issue in the explicit–implicit discussion relates to the differential effectiveness of explicit and implicit learning as a function of the nature of the element of the grammar to be learned (DeKeyser, 2003). It has been argued that for complex structures that are hard to learn explicitly, implicit learning is advantageous (e.g., Reber, 1993; Krashen, 1994; Robinson, 1996). It has also been suggested that there may be different degrees of usefulness of explicit teaching for different levels of difficulty. Thus, when the rule is easy, instruction can speed up the explicit learning process and when the rule is difficult, instruction may enhance later implicit acquisition by increasing the chances of noticing. However, rule difficulty is an individual issue and it is subject to factors such as an individual's language learning aptitude or language learning experience. As for the objective difficulty of the rule itself, a number of factors seem to play a role besides its complexity, among them salience, novelty, abstractness, subset–superset relationships, scope and reliability of the rule, semantic redundancy, and the possibility of item learning (see Hulstijn & de Graaff, 1994; Hulstijn, 1995). In this respect, DeKeyser (2003, p. 334) concludes that "the harder it is to learn something through simple association, because it is too abstract, too distant, too rare, too unreliable, or too hard to notice, the more important explicit learning processes become." Relatedly, Hulstijn (2005) discusses three factors whose interaction may affect the feasibility of explicit and implicit learning modes: (a) the regularity and complexity of the system underlying the data (the more regular and simple the more suitable for explicit learning); (b) the frequency and salience with which learners are exposed (the more salient and infrequent the more suitable for an explicit learning mode); and (c) learners' individual differences in knowledge, skills, and information processing styles (previously acquired metalinguistic knowledge and metacognitive problem-solving strategies may facilitate the use of explicit learning).

In general, studies in SLA have sought to infer the kind of learning that has taken place, explicit or implicit, by examining the products of learning, that is, explicit or implicit knowledge (R. Ellis, 2009a). In contrast to implicit knowledge, explicit knowledge is verbalizable, but verbalizing a rule or feature need not entail the use of metalanguage. DeKeyser (2009) distinguishes three different meanings or layers of "metalinguistic knowledge." The first is simply the awareness of what is right or wrong in a given sentence, without necessarily knowing why. This kind of knowledge can be implicit. The second

layer is metacognitive knowledge about one's linguistic behavior, and this sense corresponds to explicit. The third refers to the knowledge of language about language, that is, the ability to verbalize for which explicit knowledge is a necessary but not a sufficient condition.

An issue of both theoretical and pedagogical relevance is the measurement of explicit and implicit knowledge. The difficulty of measuring explicit and implicit knowledge arises from the problems involved in operationalizing concepts such as awareness and verbalization, and it is aggravated by the fact that the explicit–implicit distinction might be better represented as a continuum rather than a dichotomy. However, measuring explicit knowledge may be easier than measuring implicit knowledge. R. Ellis and his colleagues have worked on the development of tests to measure explicit and implicit knowledge. In their research project explicit knowledge is conceptualized as involving primarily analyzed knowledge (i.e., structured knowledge of which learners are consciously aware) and secondarily as "metalanguage" (in the sense of knowledge of technical terms). The operationalization of the explicit and implicit knowledge constructs draws on seven criterial features: (a) degree of awareness, that can be measured by asking learners to respond retrospectively whether they made use of "rule" or "feel" in responding to a task; (b) time available, which leads to distinguish between tasks that are performed without any time pressure or tasks that are time-pressured and consequently demanding on learners' short-term memories; (c) focus of attention, whether the task prioritizes accuracy or fluency; (d) systematicity, whether learners are variable or consistent in their response to a task; (e) certainty, assuming that maybe learners are less confident in their responses to a task that draws on explicit knowledge; (f) metalanguage, that will be related to learners' explicit (analyzed) knowledge; and (g) learnability, that assumes higher levels of explicit knowledge than of implicit knowledge in learners who began learning the L2 as adolescents or adults (R. Ellis, 2009b, pp. 38–9). In short, the tasks used to measure explicit knowledge in their studies have two main characteristics: they need to be performed without any time pressure and they need to involve explicit declarative facts that a person knows about language. By means of a factor analysis, R. Ellis and his colleagues were able to show that two factors, which they assumed to correspond to explicit and implicit knowledge, underlie the different tests used (e.g., explicit knowledge underlies metalinguistic knowledge tests and implicit knowledge underlies elicited oral imitation tests).

A problematic aspect of explicit learning is the gap existing between learners' explicit knowledge and use, which DeKeyser (2009) interprets as a gap between, on the one hand, insufficiently proceduralized/automatized explicit knowledge and, on the other hand, very limited implicit or automatized knowledge or both. This is observed, for example, when learners can verbalize a rule and yet they do not apply it in spontaneous unmonitored speech. Krashen (e.g., 1985) uses this to argue that what has been *learned* explicitly can never lead to implicit (*acquired*) knowledge that is ready for fluent use. In Krashen's view L2 instruction should only provide comprehensible input, that is, opportunities for implicit acquisition. As for explicit learning, it plays a role only in L2 production through monitoring. Krashen's distinction between "learning" and "acquisition" separates explicit and implicit learning in a way that has come to be known as the noninterface position. In contrast, a direct interface is argued for by those who consider that explicit knowledge can be converted into implicit knowledge through practice. In between these two extremes, weak interface positions are suggested that assume a less direct causality. One version of this intermediate position argues that explicit knowledge can contribute indirectly to the acquisition of implicit knowledge by promoting some of the processes that are believed to be responsible for it, such as "noticing" or "noticing the gap" between the input and the learner's existing linguistic competence, that is, facilitating attention to form in the input (see R. Ellis, 2009a). The most recent formulation of DeKeyser's strong interface position may arguably be considered also a weaker version. According to DeKeyser (2009, pp. 126–7),

explicit knowledge does not turn into implicit knowledge in the sense that the more there is of one kind, the less there is of the other:

> What it means is that the presence of one is conducive to, or plays a causal role in the development of the other . . . [and] while explicit learning certainly does not necessarily lead to eventual automatized, let alone implicit, knowledge, the likelihood of learners achieving a fairly high degree of automaticity in their use of a structure keeps evolving in parallel with their declarative knowledge about that structure.

Another distinction that needs to be made is that between explicit learning and explicit instruction. Explicit instruction does not necessarily lead to explicit learning (and neither does implicit instruction necessarily result in implicit learning). An instructional treatment is considered explicit when rules are explained to learners (deduction) or when learners are directed to attend to forms and arrive at rules (induction) (DeKeyser, 1995). Conversely, an instructional treatment is considered implicit when neither presentation of rules nor instructions to attend to forms are part of the treatment. Both laboratory studies and classroom studies that have compared explicit and implicit instructional treatments have shown an advantage for explicit instruction. In laboratory experiments this advantage is slightly stronger for deductive learning conditions than for inductive learning conditions (Robinson, 1996). A problem noted by DeKeyser (2003), however, is that these studies are of rather short duration, which benefits explicit learning since implicit learning is slow. Only a handful of classroom studies have compared otherwise identical implicit and explicit instructional treatments. In this case also the scant evidence shows an advantage for explicit instruction. Norris and Ortega (2000) carried out a review and meta-analysis comparing explicit and implicit instructional treatments. The results of their analysis suggest that explicit instruction is more effective than implicit instruction, although several problems have been pointed out with this conclusion. For example, many of the studies relied on methods of measuring acquisition that favored explicit instruction (see Doughty, 2003). In fact, this is an area in which no consensus exists, and while there is evidence in the literature pointing to a positive role for attention to form, there is a dearth of research into the role of attentional focus within implicit learning. Recent research has focused on the effectiveness of different kinds of feedback (more explicit or more implicit), and has pointed to the importance of the explicitness of feedback in helping learners to notice and learn explicitly (e.g., Lyster, 2004; Mackey, 2006).

Explicit Learning and Age-Related Differences

The distinction between explicit and implicit learning has been associated with the issue of the differential success of child and adult L2 acquisition. Two findings in the area of age-related studies are relevant to the discussion of the role of explicit learning in SLA. First, it has been observed that older learners are faster during the initial stages of L2 acquisition, particularly at learning morphosyntactic features, both in informal and in formal language learning contexts (Krashen, Long, & Scarcella, 1979). The superior efficiency of older learners is seen as related to their superior verbal analytical abilities. Older learners' use of "top-down" analytical procedures makes explicit learning tasks, such as problem solving or reasoning, easier (Muñoz, 2006). In contrast, younger learners are usually observed to reach higher levels of proficiency, often near-native or native-like levels of proficiency in the L2. This has been ascribed to their using implicit learning mechanisms, which are "bottom-up" systems (DeKeyser, 2000). These systems are slower at first but, as in first language acquisition, lead to successful acquisition through gradually inducing the underlying structure of the various structured components of language.

The second finding is concerned with differences in long-term attainment observed in the results obtained in foreign-language learning contexts relative to the results obtained in informal or naturalistic learning contexts. In the latter, naturalistic language learners who are younger when they begin learning the L2 generally reach near-native levels of proficiency. In foreign-language learning settings younger starters have not been observed to reach higher levels of proficiency than older starters after the same amount of instruction. Muñoz (2008) has suggested that young learners may not be able to make use of implicit learning mechanisms in foreign language settings because the input they are provided with may not be sufficient for them to pick up patterns and induce the underlying structure. In such contexts older learners may still use their superior analytical procedures and benefit from form-focused explicit instruction, which would explain their relative superiority. In the long term, when learners who started at a younger age can also benefit from explicit learning mechanisms, differences due to starting age of learning may disappear and other factors, both intrinsic (e.g., individual differences in language learning aptitude and learners' motivational orientations) and extrinsic (type and amount of contact with the target language) may play a greater role.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition

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Exporting Applied Linguistics Technology

BRIAN BUDGELL

Introduction

Applied linguistics has the ability to solve important real-world problems, and in this entry we examine one such instance: the application of the technologies of corpus linguistics to facilitate inter-professional and intra-professional written communications in the domain of biomedicine and health. The problem facing this domain may be stated very simply as follows: Most stakeholders operating in the domain of biomedicine and health are not sufficiently fluent in the lingua franca of the domain—biomedical English—to perform at their best level. This means that education, research, clinical practice, and health policy formulation and implementation are all weakened (e.g., Egener, 2008). All of this seems counterintuitive, since the average person assumes that clinicians and researchers are highly educated and therefore fluent in their own working language. The truth, however, is that many health professionals and scientists are obliged to work in a second language —English—in which they are not particularly adept. The end result of this compromised fluency is likely to be less effective health care which translates into economic inefficiencies, and unnecessary suffering and death. There are many good examples of poor communications having catastrophic effects on quality of care (e.g., Rinke, Shore, Morlock, Hicks, & Miller, 2007; Velo & Minuz, 2009). Particularly since the 1980s, this has spurred concern for accuracy, completeness, and transparency in reporting of research findings as manifested in manuscript content guidelines (see www.equator-network.org). However, until very recently the involved professions have not been particularly introspective where written language skills are concerned.

Therefore, in this entry, we will examine how the methods of corpus linguistics have been used to:

- define the written languages of biomedicine and health;
- develop a fair, valid, reliable, and sensitive instrument to assess fluency in the written languages of biomedicine and health; and
- develop learning resources to facilitate fluency in the written languages of biomedicine and health.

Much of the research and developmental work described herein has been conducted under the auspices of the Centre for Biomedical and Health Linguistics, and the various learning and assessment tools described in this entry can be accessed on their Web site at www.bmhlinguistics.org.

Defining the Languages of Biomedicine and Health

Many would argue that biomedical English has established itself as the international lingua franca for the domain of biomedicine and health. Even in countries where English

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is not a national language, English is often the language of instruction for post-secondary courses in the biosciences and especially in the health sciences. Furthermore, biomedical researchers are encouraged to publish their studies in English-language journals, as these are likely to have a considerably higher impact factor (a numerical rating of importance) than journals published in some other language (Mueller, Murali, Cha, Erwin, & Ghosh, 2006). As a consequence, it is now said that most authors publishing English-language articles in biomedicine and health are not native English speakers. Indeed, a number of non-English-speaking countries are concerned about a "hollowing out" of biomedical and health knowledge in their own languages, and see this as an injustice which requires countermeasures.

The imperative of studying and publishing in English therefore places a considerable burden on a great many members of the community of biomedicine and health. Furthermore, even though these community members may have attained certification (e.g., Test of English as a Foreign Language or International English Language Testing System) of competence in general or academic English, they often struggle in their post-secondary studies, and in their efforts as researchers to publish findings which could improve our collective understanding of human health.

The incongruence between written general English and written biomedical English is readily apparent, and it has been argued that the differences are sufficient to justify removing the reference to "English" and instead using a term such as "biomedical language" (Budgell, Miyazaki, O'Brien, Perkins, & Tanaka, 2007a). One naturally expects that biomedical language would have its own esoteric lexicon. However, only recently have efforts been made to quantify lexical features of biomedical language. These studies confirm that General Service List (GSL) words (the 2,000 most commonly occurring word families in English) and the Academic Word List (AWL) words (the 570 word families commonly encountered in academic settings) make up the majority of words found within biomedical journal articles. English-language programs focus on these words, and so most learners are quite familiar with them before entering post-secondary studies. However, the GSL and AWL words alone are insufficient to provide fluency in the literature of biomedicine and health. It has been estimated that one needs to be familiar with the meanings of approximately 95% of the words on a page in order to be able to read fluently and to infer the meanings of unknown words (Hirsh & Nation, 1992; Laufer, 1992). So-called "off-list" words, words which belong to neither the GSL nor the AWL, generally make up in excess of 15% of words in biomedical texts. Consequently, learners need to know the meanings of some proportion of these off-list words in order to achieve 95% coverage. Analyses of corpora of professional journals in nursing (Budgell, Miyazaki, O'Brien, Perkins, & Tanaka, 2007b), public health (Millar & Budgell, 2008), and midwifery (Chiba, Millar, & Budgell, 2010) have permitted the identification of key words within the professional literature of each one of these fields. More specifically, specialized software can perform a statistical comparison of word frequencies to determine which words occur significantly more often in the biomedical realm than in general English. Thus, not only do we confirm our intuitive sense that biomedical language is different from general English, but we know quite precisely how it differs in terms of vocabulary, and this, of course, allows language learners to focus their efforts on those key words which occur most often.

In addition to lexical differences, we also see differences in grammatical conventions, for example that the passive voice is overrepresented in biomedical literature in comparison to general English. However, readability, as measured by scales such as Flesch Reading Ease, is not that challenging (Budgell et al., 2007b; Millar et al., 2008; Chiba et al., 2009). Collectively, these findings suggest that acquisition of biomedical language could be greatly facilitated by focusing learning strategies on key words, commonly recurring phrases, and the more commonly encountered grammatical patterns.

Developing a Fair, Valid, Reliable, and Sensitive Instrument to Assess Fluency in the Languages of Biomedicine and Health

A number of tools now exist to assess communicative competence in general English and in some specialized domains such as business. However, there is no widely accepted instrument for measuring fluency in the languages of biomedicine and health.

The development of corpora of various domains in biomedicine and health does permit the formulation of test items which are specific to the lexicons of these domains, and it is possible to identify patterns of usage and grammatical conventions which are overrepresented and therefore likely to be of particular importance in biomedicine and health.

Using this approach, a Test of English for bioMedical Purposes (TEbMP) has been developed and piloted with health sciences students in Australia, China, Japan, and Malaysia. Applying item response theory, questions have been screened to eliminate test items of inappropriate difficulty or poor sensitivity—questions which were either much too easy or much too difficult for the majority of test takers, and questions which failed to reliably distinguish between test takers with different levels of ability. On this basis it has been possible to assemble a bank of questions which reliably discriminate between test takers with higher and lower levels of communicative competence (Periera & Budgell, 2007; Perkins, Budgell, Miyazaki, O'Brien, & Tanaka, 2007). Figure 1 illustrates representative results from

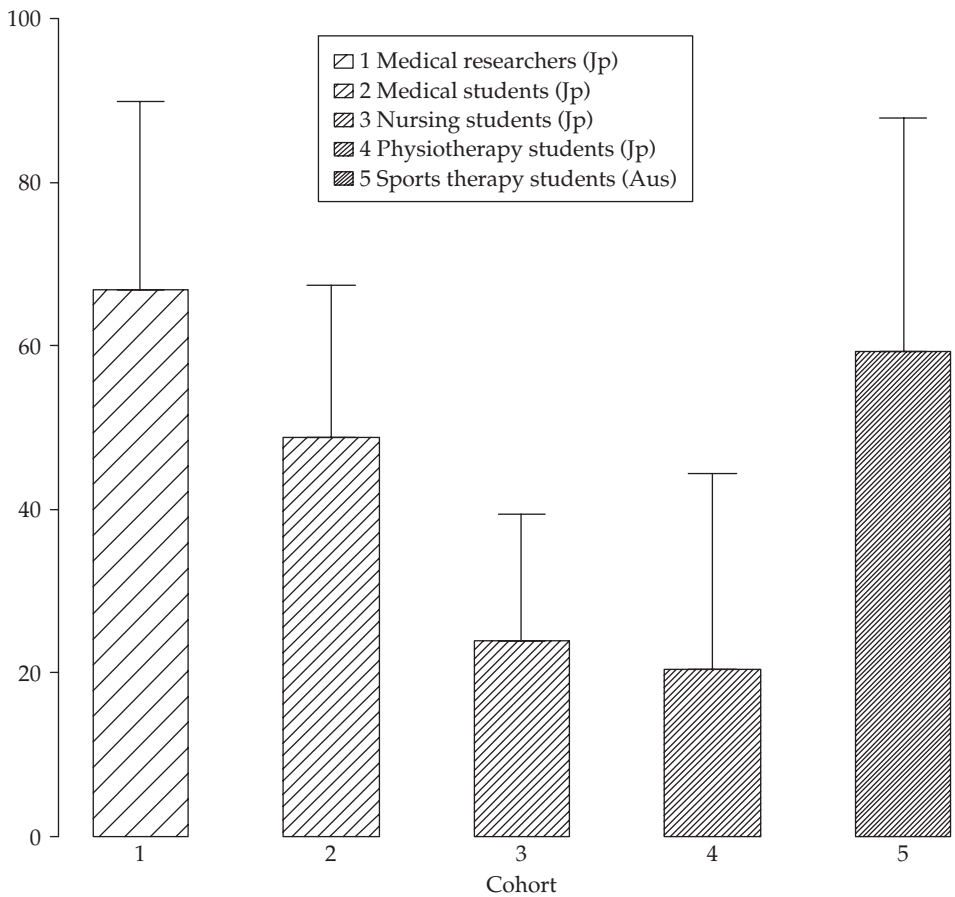

Figure 1 Mean score and 95% confidence intervals of different cohorts on a 25-question version of TEbMP

a pilot exam of only 25 previously validated questions testing vocabulary, grammar, and usage. The histograms represent normalized scores and the error bars represent 95% confidence intervals. The figure demonstrates that Japanese medical doctors enrolled in a master's program for clinical research (cohort 1) have a marginally better grasp of biomedical language than first year students in an Australian sports therapy program (cohort 5). However, both of these cohorts performed better than first year Japanese medical students (cohort 2), and much better than first year Japanese nursing (cohort 3) or physiotherapy students (cohort 4). These results are both logical, based on prior language education, and congruent with the verbal skills demonstrated by these groups. Thus a very brief examination can discriminate quite effectively between candidates with different levels of fluency in biomedical language.

Work on the TEbMP question bank continues with collaborators in Asia, Australia, Europe, and North America, with a view to developing an assessment system which would have international portability and would reflect real-world abilities in the working language(s) of the biomedicine and health community.

Developing Learning Resources to Facilitate Fluency in the Languages of Biomedicine and Health

It is self-evident that identifying a target language will make acquisition that much more efficient. The corpora of biomedicine and health which have been developed so far allow learners and faculty to identify key words which learners are most likely to encounter in their studies. As described above, it is accepted that one needs to understand approximately 95% of the words within a text in order to be able to read fluently. For reading in general English, this translates into knowledge of approximately 15,000 words—a formidable challenge for someone learning a second language. Intuition might lead one to predict that an even larger vocabulary is necessary for fluency in a biomedical specialty, but this turns out not to be the case. Figure 2 illustrates, using the example of midwifery, how much more efficient vocabulary acquisition can become using an informed, targeted approach. With only the 2,000 GSL word families and the 570 word families of the AWL, a reader would

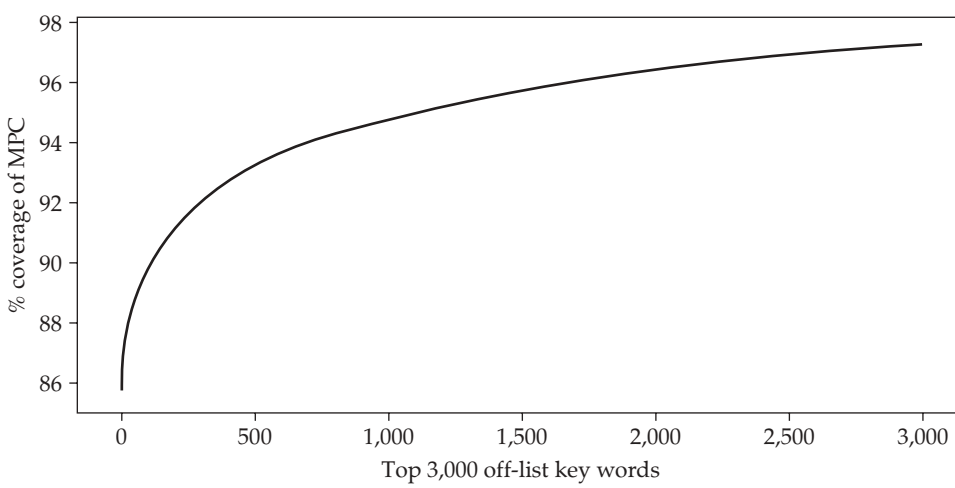

Figure 2 Percentage coverage of the corpus of midwifery and perinatal care (MPC) versus supplementation of GSL and AWL with off-list words

have approximately 86% coverage of midwifery texts. With the addition of a mere 242 off-list key words, this rises to approximately 90% coverage, and as few as 1,000 off-list key words provide 95% coverage—the threshold for reading fluency. Thereafter, the addition of another 1,000 or 2,000 off-list words only provides incremental increases in coverage. Thus, focusing on highly prevalent key words within one's specialty can reduce to a fraction the time and effort required to achieve functional reading literacy.

Corpora and key-word lists are now available for nursing, public health, midwifery, chiropractic, and acupuncture, and are being incorporated into language learning programs at a number of institutions. Corpora of randomized controlled clinical trials, meta-analyses and systematic reviews, and the neurosciences are also at different stages of development and analysis.

Beyond lexical research, biomedical and health corpora can be analyzed for grammatical and rhetorical conventions. Such studies confirm the high prevalence of the passive voice and hedging devices in biomedical writing. They also reveal highly formulaic patterns of discourse. Making these conventions explicit for authors and readers is likely to relieve much of the burden of writing and interpreting academic papers. The analyses referred to have been incorporated into online learning programs for authors (see www.bmhlinguistics.org) and a concordancer (search engine) which permits authors to search corpora for authentic examples of usage of words and phrases input by the user (www.bmhlinguistics.org/joomla2/more-about-joomla/25-about-bmh/150-introducing-cqpweb). More recently, the biomedical publisher Springer has emulated this model with its own concordancer, allowing users to search its massive archives of biomedical and health journals (see www.springerexemplar.com).

In summary, the methods of corpus linguistics make explicit and quantifiable the distinctions between written general English and the written language(s) of biomedicine and health—also called biomedical English. This allows learners and educators to focus their efforts on the aspects of language which learners are most likely to encounter. More efficient language acquisition frees time and energy for the other important responsibilities of these professionals, and facilitates the development, dissemination, and implementation of new knowledge which improves the human condition in very concrete ways. Explicit knowledge of written biomedical language also permits meaningful assessment of competency, which preserves the integrity of educational and licensing standards.

SEE ALSO: Corpus Analysis of Scientific and Medical Writing Across Time; English for Medical Purposes; Health-Care, Medical, and Mental Health Interpreting; Medical Discourse; Medical Translation; Teaching English for Medical and Health Professions

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Factor Analysis

YASUYO SAWAKI

Factor analysis is a multivariate statistical technique developed in the early 20th century. In factor analysis, relationships between observed variables and latent (unobservable) factors are examined in an attempt to find a parsimonious explanation of the pattern of relationships among variables. There are two types of factor analysis. Exploratory factor analysis (EFA) is a data-driven approach often employed in early stages of an investigation. For example, EFA is useful when the underlying empirical factor structure of a newly developed instrument is explored. In contrast, confirmatory factor analysis (CFA) is a theory-driven approach often employed in later stages of an investigation, such as validation of an existing instrument. CFA is appropriate when there is a strong enough theoretical and empirical basis to hypothesize the underlying factor structure of a given instrument. EFA and CFA can be combined within a single study as well. In such a study, an EFA is typically conducted as a preliminary analysis. Its results are then used to guide a subsequent CFA. This entry focuses primarily on an overview of some key features of EFA. CFA can be viewed as a special case of structural equation modeling (SEM).

Previous Applications of Factor Analysis in Applied Linguistics

Recognized as a powerful statistical analysis tool, factor analysis has been applied to a bulk of applied linguistics studies. Factor analysis is often used, for instance, in second language acquisition (SLA) and language assessment studies that involve development and validation of survey and assessment instruments. For example, Bachman, Davidson, Ryan, and Choi (1995) conducted EFAs separately on the Cambridge First Certificate in English (FCE) and the Test of English as a Foreign Language (TOEFL) to identify the tests' factor structures. Then, Bachman et al. (1995) explored the comparability of the constructs assessed in the FCE and TOEFL subtests by conducting another EFA across the two tests. For another example, Vandergrift, Goh, Mareschal, and Tafaghodtari (2006) combined EFA and CFA within a single study for the development and validation of a new survey on L2 learners' metacognitive awareness and strategy use in listening. First, the authors conducted an EFA of a large sample to finalize the survey content. Then, they validated the factor structure of the resulting survey by conducting a CFA on a different sample. Factor analysis can be used for descriptive purposes as well. For instance, Biber, Conrad, Reppen, Byrd, and Helt (2002) conducted an EFA to summarize various linguistic features of texts in an academic language corpus and identify linguistic characteristics that distinguish different spoken and written registers in academic English.

The Logic Behind Factor Analysis

Factor analysis—both EFA and CFA—is based on the common factor model. In common factor analysis, an observed correlation matrix is usually analyzed. The logic behind the common factor model is that, when a set of variables correlate with one another, they do so because they tap the same construct represented by a latent factor to certain degrees.

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A primary goal of EFA is to identify an optimal number of latent factors (called a factor solution) that sufficiently explains the pattern of relationships among observed variables. The common factor model decomposes variances of observed variables into two parts: (a) common variance (the variance that is influenced by a latent factor[s] shared across different variables), and (b) unique variance (the remaining variance that cannot be explained by the common latent factor[s]). The unique variance has two subparts: unique score variance that can reliably be explained by factors not included in a factor model and variance due to measurement error. A resulting EFA model is evaluated in the extent to which it reproduces the observed correlation matrix.

Key Steps and Decisions Involved in EFA

EFA is readily accessible to practitioners because it is implemented in major statistical packages such as SAS and SPSS. However, a thorough understanding of the methodology is essential for a successful EFA application because various decisions made in each of the four main steps of EFA below can affect analysis results in important ways.

Step 1: Verifying Appropriateness of Study Design and Data for EFA

Fabriger, Wegener, MacCallum, and Strahan (1999) and Floyd and Widaman (1995) discuss various study design and data requirement issues of consideration in determining whether conducting EFA is appropriate. For example, variables subjected to a common factor analysis should be on interval or quasi-interval scales. Caution should be exercised when variables scored for two categories such as right or wrong (dichotomous variables) are factor analyzed (see Floyd & Widaman, 1995, for further details). Second, at least three to five variables are required to identify a latent factor. Thus, for example, only up to three factors can meaningfully be extracted from a 10-item survey. Sample size is another important issue. An EFA based on too small a sample would yield results that are not generalizable to another sample. Recommendations on appropriate sample sizes for EFA in the literature vary greatly. According to Fabriger et al. (1999), previous research suggested that a sample size of as small as 100 may be acceptable under certain conditions. However, a required sample size depends on various issues such as the strength of correlations between factors and its indicator variables, reliability, and distribution of variables, and the number of factors to be extracted. Finally, normality of data and linearity of relationships among pairs of variables should be examined. If one or more variables are not normally distributed, or if nonlinearity is found, transformation of affected variables may be applied before conducting an EFA (see Tabachnick & Fidell, 2007, for further details).

Step 2: Determining the Number of Factors to Extract

A next step is to analyze data empirically to determine how many factors to extract. Some criteria developed for this purpose are based on eigenvalues for the correlation matrix. For each matrix, eigenvalues are calculated for as many components as the number of observed variables. An eigenvalue indicates how much variance of a set of variables a given component explains. The goal of this analysis is to identify the number of components that have large enough eigenvalues to explain interrelationships among observed variables. Among the most widely used criteria is Kaiser's criterion (Kaiser, 1960), where as many factors as the number of eigenvalues exceeding 1.0 are retained. Another is the scree test (Cattell, 1966), where a line graph of eigenvalues of different components is examined to identify the last substantial drop in the slope. While relatively less common, another approach along this line is parallel analysis (PA) (Horn, 1965), where eigenvalues obtained

from real data are compared against those obtained from multiple samples of random numbers (see Hayton, Allen, & Scarpello, 2004, and Liu & Rijmen, 2008, for more details). Besides the methods based on eigenvalues above, information about the goodness-of-fit of a given factor solution is available when maximum likelihood (ML), discussed below, is used to extract factors. Various authors suggest using multiple criteria in determining how many factors to extract because these criteria do not always produce accurate results. In particular, research has shown that Kaiser's criterion often produces misleading results. Moreover, in the subsequent steps, alternative factor solutions should be examined carefully for substantive interpretability and parsimony in order to identify an optimal factor solution.

Step 3: Extracting and Rotating Factors

Once a rough number of underlying latent factors is identified, a mathematical function is fitted to data in order to extract an intended number of factors. Statistical packages offer various factor extraction methods for analyzing continuous data. For instance, a popular factor analysis method—principal factor analysis—does not assume multivariate normal distribution of variables. In contrast, ML, which is gaining popularity lately, assumes multivariate normality. Despite the strong distributional assumption, a notable advantage of ML is the availability of additional information about the goodness-of-fit of a proposed factor solution. In addition, statistical packages often list principal component analysis (PCA) as a factor extraction method option. Note, however, that PCA is a mathematical data-reduction technique that is not based on the common factor model. PCA is more appropriate, for example, for creating a composite variable that retains a maximum amount of information from a larger number of variables for further analyses.

Model parameter estimates, such as factor loadings and inter-factor correlations, are among the key information obtained from an EFA run. A factor loading is a standardized estimate of the strength of the relationship between a given observed variable and a latent factor, which is analogous to a standardized regression coefficient in multiple regression analysis. An inter-factor correlation can be interpreted like a true correlation between a pair of factors, which is adjusted for measurement error.

When only one factor is extracted, factor loadings from the initial solution can be interpreted directly. However, when multiple factors are extracted, a mathematical transformation called factor rotation is applied to the initial factor solution to improve its interpretability. There are two types of factor rotation methods. One is orthogonal rotation, which does not allow factors to correlate with one another. When there is a possibility that factors are correlated, using an oblique rotation is more reasonable.

Step 4: Interpreting Key EFA Results

The last step is to carefully interpret analysis results. Suppose that an investigator designs a survey on L2 learning strategy comprising eight items, where cognitive strategy use is assessed with Items 1–4, and metacognitive strategy use with Items 5–8. The items are based on a seven-point Likert scale, which can reasonably be treated as a quasi-interval scale. Suppose further that the investigator expects that the two factors are correlated with each other because they represent different aspects of a broader construct (L2 learning strategy). Table 1 presents a pattern matrix, which contains factor loadings after an oblique rotation, for a two-factor solution for this hypothetical survey.

In EFA applications, a factor loading with an absolute value exceeding 0.3 or 0.4 is often considered salient (Brown, 2006). Table 1 shows that Items 1–4 load on Factor 1, and Items 5–8 load on Factor 2. Thus, the two factors can be interpreted as a cognitive strategy factor and a metacognitive strategy factor, respectively. Factor loadings of items and correlations

Table 1 Factor loadings for a hypothetical survey example

	Factor 1	*Factor 2*	*Communality*
Item 1	0.66	0.05	0.44
Item 2	0.55	0.09	0.31
Item 3	0.45	0.10	0.21
Item 4	0.80	0.15	0.67
Item 5	0.05	0.60	0.36
Item 6	0.22	0.50	0.31
Item 7	0.10	0.70	0.50
Item 8	0.25	0.75	0.65

among factors are used to calculate communality, or the estimated proportion of the variance of an item explained by latent factors included in a factor model. For example, Item 4's loadings on Factor 1 (λ_{41}) and Factor 2 (λ_{42}) are 0.80 and 0.15, respectively. If the obtained inter-factor correlation (ϕ_{21}) is 0.30, the communality of Item 2 is $\lambda_{41}^2 + \lambda_{41}^2 + 2\lambda_{41}\phi_{21}\lambda_{42} = (0.80)^2 + (0.15)^2 + 2(0.80)(0.30)(0.15) = 0.67$ (Brown, 2006, pp. 90–1). Thus, these two factors explain 67% of the variance of this item, while the remaining 33% is left unexplained.

Guidelines for Conducting EFA

When used appropriately, EFA can provide a strong empirical basis for developing and validating various types of instruments and for summarizing language data. It is unfortunate, however, that EFA has often been criticized in the literature. This is not because of fundamental weaknesses of the technique itself, but primarily because of its frequent misuses in previous applications. For example, in their useful guidelines for conducting EFA, Fabriger et al. (1999), Floyd and Widaman (1995), and Preacher and MacCallum (2003) lament that many previous EFA applications involved a series of suboptimal decisions concerning the number of factors to retain as well as factor extraction and rotation methods. While these criticisms were raised in other fields, applied linguists should keep their points in mind as well. Relatively nontechnical and yet comprehensive introductions to factor analysis such as Brown (2006) and Tabachnick and Fidell (2007) should prove useful for understanding basic principles and procedures of EFA.

SEE ALSO: Multiple Regression; Statistical Analysis of Test Results; Structural Equation Modeling; Structural Equation Modeling in Language Assessment

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Fairclough, Norman

HUHUA OUYANG

Norman Fairclough (1941–) is currently emeritus professor of linguistics at Lancaster University. Fairclough's line of inquiry is generally referred to as textually oriented discourse analysis (TODA), and he is widely acknowledged as one of the main leaders of critical discourse analysis (henceforth CDA). His main efforts have evolved around the objective to reveal the sociological nature of language as constituting and constituted by social relations and social changes through power and ideology.

His major contribution as a linguist lies in introducing critical social theories into language studies, different from or in opposition to the tradition of formal linguistics that concentrates only on the "scientific" mechanism of language. Specifically, Fairclough (1989) has pointed out that mainstream linguistics—the study of grammar—isolates language from its historical and social context; that pragmatics is unrealistic in assuming equal and cooperative relationships between interlocutors; that sociolinguistics, though having *described* unequal power distribution in language use, has not set out to *explain* complex interrelations of language and power.

Much of Fairclough's philosophical sources are from critical theories, such as the works of Pierre Bourdieu, Jürgen Habermas, and particularly Michael Foucault. Foucault's (1972) social theory of discourse had a heavy impact on Fairclough's theoretical framework in developing CDA. Foucault sought to understand the relationship between discourse, knowledge, and power and contended that often taken-for-granted social constructs (e.g., conventions, crime, and justice) are products of power, which is creative and contested in nature and actually constructs the system of knowledge.

While drawing upon critical social theories for his research, Fairclough challenges the contributions of Foucault and other social theorists for being too abstract and theoretical, and not analyzing particular instances of discourse (Fairclough, 1989). Therefore he has applied the critical perspective to detailed analysis of actual texts (verbal, written, or visual). Along with other critical discourse analysts, such as Ruth Wodak, Teun van Dijk, Günther Kress, and Theo van Leeuwen, Fairclough has expanded the scope of both language and social studies and brought an interdisciplinary or transdisciplinary approach to discourse studies.

The central objective in Fairclough's analysis is to raise the critical consciousness of language users, by revealing dialectical relations between language, power, and ideology. According to Fairclough (e.g., 1989), there is a widespread underestimation of the significance of language in the production, maintenance, and change of social relations of power. Power exists in various modalities; it is exercised through *coercion* not only by the use of physical violence but also by coercive language, but it is also and most notably exercised linguistically through the manufacture of *consent*. Ideology is the prime means of such manufacturing of consent. Commonsense assumptions (for instance, taking authority and hierarchy in consultations between doctors and patients as natural), embedded in particular conventions and determined by the underlying power relations, are ideologies. Using language is the most common form of social behavior where people rely habitually on such commonsense assumptions.

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In *Discourse and Social Change* (1992), Fairclough outlined a three-dimensional theoretical framework for critical discourse analysis (1989, 1992, 1995b), which makes possible a systematic description, interpretation, and explanation of discourse as social practice. Text, discursive practice, and social practice constitute three dimensions of this discursive analysis framework, corresponding to the analysis at the local, institutional, and societal levels. Text is at the center of the analysis. For analyzing the textual dimension, Michael Halliday's systematic functional linguistics and its three domains of ideational, interpersonal, and textual analysis are adopted (Halliday, 1978). The second dimension of analysis is concerned with the production, distribution, interpretation, reproduction, or transformation of texts. Discursive practices are mediators between microlevel texts (at the first dimension) and macrolevel sociocultural practices (at the third dimension), where orders of discourse and power are realized through interdiscursivity.

Fairclough has pushed his research far beyond the domain of language studies into social studies (for instance, media and organizational studies), by focusing more on the social function of discourse as a constitutive and transformative element in wider processes of contemporary social change, and addressing a wide range of issues including racism, immigration, gender, education, war, terrorism, welfare, unemployment, knowledge economy, information society, and globalization.

Globalization is a central theme of Fairclough's more recent work (e.g., Fairclough, 1995a, 1995b, 2000; Chiapello & Fairclough, 2002), where he has explored the dialectic between the global and national/local, a two-way process of conditioning and shaping. Globalization is seen not merely as an economic process (or ongoing and incomplete tendency) based on neoliberalism and fostering neocapitalism, but also as a more general process affecting politics and culture. The *representation* of these processes and their relations are scrutinized as a crucial force producing a new global order. The struggle to impose or resist the new order hence becomes to a considerable extent a struggle for or against new language.

In his 2006 work *Language and Globalization*, Fairclough has stressed the significance of nondiscoursal elements, such as social agency, arguing that discourse changes cannot be translated into social changes without the strategic action of social agents. There are circumstances and conditions which may restrain discourse-led changes. Local social agents may employ discourse strategies to *recontextualize* new or globalist discourses to maximize their interest in their sociocultural, historical, and political contexts. In contrast with his previous research, which is primarily conducted in developed countries, Fairclough has expanded his research area to the third world, including countries like Thailand, Romania, and Hungary. The expanded geographical feature, together with the balanced focus on both discoursal and nondiscoursal elements in discourse analysis, indicate a new and further development in CDA.

Sharp criticism from the field of linguistics (e.g., Widdowson, 1995; Stubbs, 1997) has been addressed to the work of Norman Fairclough and his CDA colleagues, arguing that the analysis of the CDA school confuses discourse analysis with textual interpretation, and that CDA analysts' own (often ideological) interpretations are privileged over others', which could damage or even destroy the objectivity of their research.

The criticism targeted at CDA seems to be based on a positivist view of "objectivity." Instead of presuming spurious neutrality about social issues, CDA argues that social science researchers should be open with their readers about their positions and aim to raise critical language consciousness among the public by integrating various approaches to discourse analysis (Fairclough, 2000). Fairclough (1989) has made explicit his own political position as a socialist with a generally low opinion of the social relationships in his society (Britain) and a commitment to the emancipation of the people who are oppressed by them. He prefers to use the term "trans-disciplinary research" to describe CDA (2003), accentuating the point that CDA gains its development through a long-term dialogue

between disciplines and theories with each drawing upon the concepts, categories, and logics of the others to pursue its own development rather than being reduced to others. This orientation helps critical discourse analysts to reconcile being both critical (in terms of doing social research with political commitments) and scientific (in terms of obtaining evidence from linguistic analysis).

The substantial changes brought about by globalization in contemporary social life have made power struggles more of an ideological type and, thus, more opaque and hidden. The exercise of power is increasingly achieved through the ideological workings of language. However, as Fairclough has explicated (e.g., 1989, 1992), there is a gap between the level of critical consciousness which the contemporary position of language demands and the level it actually attracts. Resistance to and attempts to change hegemonic and unequal power relations are continuously happening, but the effectiveness of these efforts depends on the development of a critical consciousness of domination and its ways of realization. He has further advocated the inclusion of *critical language awareness* in the school curriculum, from the understanding that the educational system has the major immediate responsibility for producing differentials in access to social resources, and "any system of education is a political way of maintaining or modifying the appropriation of discourse, along with the knowledge and powers which they carry" (Foucault, 1972; see Fairclough, 2000).

As a consequence of the over-reliance on the ahistorical, de-ideological, and socioculturally insensitive frameworks, which come mainly from linguistics, applied linguistics—including TESOL as a discipline—has long suffered from short-sightedness, ethnocentricity, and (subtle and covert) hegemony (Ouyang, 2004, p. 12). The situation has been increasingly attributed to the global symbolic domination of the English language, whereby in less developed areas such as China, TESOL has been exploited as a tool of colonization by the West (Phillipson, 1992; Pennycook, 1994, 1998). For learners, teachers, researchers, and administration staff involved in English-language teaching and learning, it becomes almost a must to have a sense of social responsibility toward appropriating English language as a social discursive mediator in tackling hegemony and inequity. Whether in voting for language policies sensitive to local culture or choosing textbooks or multimedia technologies from publishers of various backgrounds, in fighting against the institutional dominance of "quantitative" research over "qualitative," or in understanding everyday classroom routines and rituals (such as questioning about truth or turn taking for identity negotiation as socialization processes for conservative or liberal citizenship), Norman Fairclough's notion of "critical language awareness" certainly can be a powerful weapon to have.

SEE ALSO: Critical Analysis of Political Discourse; Critical Discourse Analysis; Critical Discourse Analysis and Critical Applied Linguistics; Language Ideology and Public Discourse

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Fairness in Language Assessment

STEPHEN STOYNOFF

Introduction

In the past few decades, the term *test fairness* has been appearing with increasing frequency in the applied linguistics literature. According to the *Dictionary of Language Testing*, test fairness

> is concerned with the consequences of testing for individuals, groups or society as a whole. It relates both to the *validit*y of a given test as an index of *ability* and to the whole testing process insofar as it reflects or contributes to social equity. (Davies et al., 1999, p. 199)

As the definition implies, the notion of fairness in language assessment is broad and much of the research can be categorized into two strands: investigations of fairness as it pertains to the test itself and fairness as it relates to the social consequences associated with test use.

From a psychometric perspective, test fairness has been viewed as a basic issue of equity and the absence of bias in measurement. Does the assessment unfairly advantage one group of test takers over another for reasons other than what the assessment is intended to measure? The typical response to the question has been to analyze the test performance of different groups of test takers based on salient characteristics (e.g., first language, country of origin, and gender) in order to determine if selected aspects of the test (test items, administration, or scoring procedures) favor one group of test takers over another. By investigating and identifying potential sources of unfairness in tests, test developers are able to address them and thereby improve the quality of the assessment.

Concern for the impact of tests, on individuals, teaching and learning, and society at large, has begun to affect the test development and evaluation process (Kunnan, 2000, 2004, 2008; McNamara & Roever, 2006; Bachman & Palmer, 2010). Messick (1989a) is widely credited with integrating developments in validity theory into an expanded unified conceptualization of validity that considered the value implications of test interpretation and the social consequences of test use (p. 20). His unitary validity concept provided both a rationale for investigating the values and social consequences associated with test interpretation and use and a framework within which to link these considerations explicitly to construct validity (Messick, 1989b). Messick (1989a) argued that the "evaluation of the social consequences of test use as well as of the value implications of test interpretation, all contribute in important ways to the construct validity of score meaning" (p. 19).

Conceptualizations of and Approaches to Fairness in Assessment

Educational measurement specialists have been interested in fairness issues for decades, and their views have shaped the discourse in applied linguistics. For example, the influence of Messick, Kane, Willingham, and Cole, among others, is evident in the views of fairness articulated by Kunnan (2004) and Xi (2010). Willingham describes test fairness as

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"comparable validity across all aspects of the assessment process from the initial design to the consequences of use," and, for Willingham, the principal concern is the need to determine and address sources of "noncomparability" (1999, p. 221). From this perspective, fairness is connected to "equity, validity, and bias" (Willingham, 1999, p. 219). Xi (2010) adopts essentially the same perspective, albeit with additional restrictions: fairness is "comparable validity for *identifiable* and *relevant* groups across all stages of assessment, from assessment conceptualization to the use of assessment results" (p. 154).

Kunnan has devoted considerable attention to fairness in language assessment. In early work, he proposed three fairness concerns (validity, access, and justice) that he believed ought to be addressed in test development and use. Validity was characterized in terms of the need to establish *equal construct validity* for test score interpretations across various test-taker groups and relevant test-taker characteristics by controlling for bias in test content, format, item or test functioning, and use of language or stereotyping. Access concerns represented the various constraints imposed on test takers due to financial, geographical, or personal (e.g., a disability or impairment) circumstances, a lack of prior opportunity to learn test material, or a lack of prior experience with test conditions and equipment. Justice concerns had to do with societal equity based on the consequences of testing and included legal challenges that established remedies or protections for test takers or limits on the use of test scores (Kunnan, 2000, pp. 3–4). From this perspective, fairness is a superordinate concept and validity is embedded in it.

In Kane's view, validity and fairness are closely related and the extent to which one concept is subsumed by the other concept depends upon how broadly or narrowly each is defined. He prefers to define both notions broadly and does not consider either concept to be fully incorporated into the other. According to Kane (2010), fairness in language assessment can be defined generally in terms of *procedural* fairness and *substantive* fairness. The former has to do with "a lack of bias for or against any individual or group" (2010, p. 178) while the latter "requires that the score interpretation and any test-based decision rule be reasonable and appropriate, and in particular, that they be equally appropriate for all test takers (at least roughly)" (p. 179).

McNamara and Roever (2006) contend that current approaches to test development and use provide insufficient attention to the social role and function of tests. While the authors do not define fairness per se, they refer to "social fairness" and the need to avoid "bias in favor of or against test takers from certain social groups, particularly minorities" (p. 6). They believe that social fairness can be promoted by investigating differences in test-taker performances (particularly differential item functioning) and by adopting ethical and professional behavior based on codes of ethics and fairness guidelines.

Fairness Frameworks

Conceptual frameworks are useful in defining a construct and focusing investigations of it. Based on developments in educational measurement and applied linguistics, Kunnan has elaborated his conceptualization of fairness and proposed two complementary frameworks for addressing fairness concerns, a test fairness framework and a fairness context framework. The former comprises five test qualities (*validity*, *absence of bias*, *access*, *administration*, and *social consequences*) that are considered key fairness concerns in test development and use (Kunnan, 2004, p. 27). Because tests exist in complex environments, it is difficult to account for all the potential factors that affect them. The fairness context framework seeks to account for the macro-level influences operating in a given situation, and these include "the political and economic, the educational, social, and cultural, and the technological and infrastructure, and the legal and ethical" factors that are in play (Kunnan, 2008, p. 240).

Xi (2010) has proposed a framework for investigating fairness concerns that reflects the current emphasis in educational measurement on an argument-based approach to validation (Kane, 2006; Chapelle, Enright, & Jamieson, 2008; Bachman & Palmer, 2010). Kane (2006) posits two types of validation arguments: the interpretive argument and the validity argument (p. 23). An interpretive argument offers a general rationale for the interpretation of individual test scores and any decision(s) based on the scores, whereas a validity argument offers an evaluation of the interpretive argument based on an analysis of the evidence both for and against the proposed interpretations and uses of test scores (Kane, 2010). In Xi's framework, fairness is viewed as a fundamental aspect of validity. Test developers conduct investigations of "the comparability of scores, score interpretations, score-based decisions and consequences for sub-groups" (Xi, 2010, p. 157) and integrate the results into a fairness argument that then becomes part of the validity argument.

Much of the empirical fairness research conducted to date has sought to identify test items and influences that lead to differential performance on language assessments across different groups of test takers. One important area of research has been investigations of the extent to which test items function differently for different groups of test takers (differential item functioning or DIF studies). DIF analyses allow test developers to detect possible bias in language assessments. Based on a meta-analysis of DIF studies published between 1990 and 2005, Ferne and Rupp (2007) concluded that studies are only beginning to be conducted on language assessments outside of North America and language assessments that include multiple item formats, multiple subgroups of test takers, and the use of multiple DIF methods. The authors called for future studies (a) to include more information on the characteristics of study participants and the assessment, (b) to present an adequate rationale for the choice of subgroups in the analyses, (c) to explain the causes of DIF, and (d) to select an appropriate DIF method based on the characteristics of the assessment.

Other fairness research has examined the effect of test-taker background factors on the test performance of certain groups (Weigle, 1998), the effect of rater behaviors on test scores across groups (Brown, 1995; Lumley & McNamara, 1995), and the invariance of factor structures of test scores for different groups (Bae & Bachman, 1998; Striker & Rock, 2008). For a list of the range of investigations conducted on language assessments, see Kunnan (2000). While empirical studies have represented one approach to fairness concerns in language assessment, the establishment of standards of professional conduct has been another.

Fairness Standards and Guidelines

As noted previously, developments in allied disciplines have influenced how applied linguists address fairness in language assessment. A noteworthy example is the work of a joint committee comprised of representatives of three US professional associations. This authoritative group produced the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council of Measurement in Education, 1999) and the *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 2004). Fairness receives major treatment in the *Standards* and the four chapters devoted to it address concerns for fairness in testing and test use, the rights and responsibilities of test takers, testing individuals of diverse linguistic backgrounds, and testing individuals with disabilities. The *Code* complements the *Standards* and offers professionals a practical guide to "fulfilling their obligation to provide and use tests that are fair to all test takers regardless of age, gender, disability, race, ethnicity, national origin, religion, sexual orientation, linguistic background, or other personal characteristics" (p. 2).

Davies (2008) has highlighted the importance of standards and ethics in shaping professional conduct. The international language testing community has engaged in extended debate on what principles and practices ought to be endorsed by the profession. These discussions culminated in the development and dissemination of professional codes of ethics and practices by the International Language Testing Association and the Association of Language Testers in Europe. Many test publishers have adopted the standards and practices advocated by authoritative professional groups. Educational Testing Service, for example, has aligned its practices with those in the *Standards* and created fairness review guidelines that provide practical guidance on how to minimize unfairness in the test development process and how to conduct fairness reviews of tests.

Fairness review guidelines can assist test developers in both identifying and mitigating influences on test scores that are not attributable to the test construct. For example, limitations in test takers' knowledge (linguistic, topical, or cultural) that are unrelated to the test construct may result in differential performance by some groups. Test content that evokes strong emotional reactions may distract and therefore compromise test takers' performance. Additionally, when a test is delivered in a way that makes it more difficult for test takers with disabilities, it is likely to contribute to construct-irrelevant variance in scores and undermine the validity of score inferences made on the basis of the test takers' performance.

Accommodations are one way to mitigate the effect of test delivery on test takers' performance, and major testing programs routinely offer accommodations to test takers with disabilities. Depending upon the nature of the disability, an accommodation may include the provision of an interpreter, an alternate format (Braille or larger print), or additional time to complete the test. Some of the most frequently used test accommodations include modifying the (a) presentation format, (b) response format, (c) time allocation, and (d) test setting. Although these accommodations appear in the chapter of the *Standards* (American Educational Research Association, American Psychological Association, & National Council of Measurement in Education, 1999) that addresses the assessment of individuals with disabilities, Elder and Davies (2006) have suggested that accommodations, in particular modifications in how the test is delivered, may also be warranted when users of English as a lingua franca are assessed on their ability to communicate in Standard English. At present, there is a paucity of empirical research on the effect of accommodations on test takers' performance on language assessments, and because accommodations may influence performance and the validity of score inferences, it is important to investigate the effect of various accommodations on the performance of those groups that receive them as well as those that do not.

Fairness and the Consequences of Tests and Testing

It has been well documented that social, political, and educational forces affect test use (Spolsky, 1995; Shohamy, 2001; McNamara & Roever, 2006). Given the power of tests and the potential for them to be used in ways that are unfair and undemocratic, Shohamy has argued that a critical stance (critical language testing) must be taken toward language testing (Shohamy, 2001). Lynch (2001) agrees and submits that critical language assessment takes "gender, sexuality, class, ethnicity, race, ideology, identity, and culture" into consideration in the language assessment process (p. 362). For those who adopt a critical perspective, the validity evidence used to justify the assessment process will include judgments about the ability of the process to improve the circumstances of those in the assessment context and assist them in confronting and eliminating the "oppression, inequality, and injustice" that exists in their lives (Lynch, 2001, p. 368). The advocates of this perspective have raised important questions about the social consequences of test use.

Concerns for the consequences of testing have also led to more investigations of the use and impact of language assessments. Although a number of empirical studies of test consequences have been published (Cheng, Watanabe, & Curtis, 2004; Wall, 2005; Hawkey, 2006), they have not examined whether a language assessment has a differential impact on different test-taker groups. In cases where high-stakes decisions are made on the basis of test results, as for example in the use of tests for immigration and citizenship purposes, it is important to investigate the impact of the assessment on different groups of test takers and to provide evidence that the assessment does not advantage certain groups.

Current immigration policy in the United Kingdom requires those who are seeking citizenship or permanent residency to demonstrate English language proficiency equivalent to level B1 of the *Common European Framework of Reference for Languages* (Blackledge, 2009). Such an explicit language proficiency requirement clearly advantages those who have had more extensive exposure to English over those who have not. Moreover, the use of a language assessment for this purpose not only underscores the extraordinary power of tests in society, but it also illustrates the significant social consequences that can result from test use.

Fairness in Classroom Assessment

Basic fairness concerns, such as the absence of bias in the assessment, the equitable treatment of all test takers during the assessment process, the opportunity to learn what is assessed, and the appropriate use of assessment results, are as relevant to classroom assessment as they are to the development and use of large-scale tests. Camilli (2006) maintains that promoting equity and fairness in classroom assessment is not as much about treating every student the same as about giving every student the optimal opportunity to learn by differentiating among them. In addition to using age-appropriate assessment procedures, fairness in classroom assessment means focusing on student learning and allowing students to demonstrate what they have learned, using an array of assessment procedures suitable for the assessment purpose (Shepard, 2000). Students are better able to display their knowledge and skills when they know the purpose of the assessment, the expected response, the criteria for judging their performance, and when they have multiple opportunities to demonstrate on multiple measures what they know and can do (Camilli, 2006; Shepard, 2000). Recent educational reforms have expanded the curriculum in many school systems. In addition to demonstrating that they have met content knowledge standards, students often must demonstrate that they are able to solve real-world problems, engage in critical thinking, and employ metacognitive strategies. For classroom assessment to be fair, the assessment procedures need to be aligned with the curriculum standards, and the procedures need to be appropriate for making judgments about students' achievement in a classroom context.

Conclusion

Fairness constitutes a major focus and a fundamental consideration in language assessment, although assessment specialists continue to debate conceptualizations of fairness and approaches to it. Future progress on fairness concerns will benefit from frameworks that adequately represent the construct as well as empirical research that examines all aspects of fairness. Test developers, policy makers, test users, and test takers are served by developments in language assessment that promote fair tests and fair testing practices.

SEE ALSO: Ethics in Language Assessment; Language Testing and Immigration; Uses of Language Assessments; Validation of Language Assessments

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Family Discourse

CYNTHIA GORDON

Introduction

"Family discourse" refers to a diverse area of study that draws on theories and methods of discourse analysis to examine everyday family communication. Scholars in this area analyze the form conversation takes as well as its functions, which means that they consider not only what is said when family members talk to one another, but also how it is said, by and to whom, at what moment, for what purposes, and with what outcomes. "Family discourse" also refers to the area's object of study, typically (but not exclusively) naturally occurring interactions between nuclear family members which are audio- or video-recorded, transcribed, and systematically analyzed. Family discourse research investigates how members of families use language to jointly accomplish everyday family life. In other words, this field of research illuminates how family members together create discourse, as well as how discourse creates families. Among the areas studied are family storytelling, play, arguments, apologies, requests, and so on.

Studies in and of family discourse aim to provide detailed, textured, contextualized understandings of family conversations. They demonstrate how fundamental social, cultural, and linguistic processes—including development of communicative competence, relationship negotiation, and identity creation—actually occur. Further, studying family discourse lends insight not only into the nuances of family communication, but also human interaction more generally. Indeed, family discourse research has contributed to development and extensions of key theoretical notions in the field of discourse analysis, including those relating to how speakers convey relational information and identities through talk (e.g., politeness, positioning); how people construct meaning in social situations (e.g., framing); how people draw on previous communicative experiences in interaction (e.g., repetition and intertextuality); how individuals tell stories and why (e.g., various types of narrative analysis); and how people accomplish meaningful action (e.g., speech acts). It increasingly makes cross-cultural comparisons, addresses family diversity, and investigates intersections between family communication and other institutions (e.g., workplaces and the media).

In what follows, general approaches and methods of family discourse research are first outlined. Then, an overview is provided of key findings pertaining to important social processes achieved through family discourse: pragmatic socialization, belief and value socialization, relationship negotiation, and identity construction. Finally, larger implications of family discourse scholarship—for both the discipline of discourse analysis and the study of family communication—are identified and discussed.

Approach and Methods: Discourse Analysis and Data Collection and Transcription

Discourse analysis, a collection of interconnected approaches to the study of language in social context, provides the primary theoretical and methodological frameworks for family discourse research. These approaches—prominent among them conversation analysis,

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interactional sociolinguistics, the ethnography of communication, and pragmatics—are generally (but not exclusively) qualitative, and draw on diverse fields, including linguistics, sociology, and anthropology. The bulk of family discourse studies—in efforts to understand how family members actually use language in day-to-day life, how family conversations are structured, and the role of talk in accomplishing the "work" of family—center on the analysis of naturally occurring, everyday family interactions.

Many studies of family discourse have examined the talk of heterosexual, two-parent, white, nuclear families, of roughly middle socioeconomic class, with one or more children. However, it is commonly acknowledged that a diversity of families exists; this diversity is seen as increasingly worthy of scholarly attention, ranging from diversity of culture to sexual orientation of parents. For example, Blum-Kulka (1997) compares and contrasts family discourse across three cultural groups, Jewish Americans, American Israelis, and Israelis; Pash (2008) examines the discourse of families with gay co-parents.

There is a notable emphasis on one context of family discourse: family dinner, which is both meaningful to families and convenient to study. One or more dinners is video- or audio-recorded. In some cases the researcher is a family member (e.g., Watts, 1991); in others, a researcher is present as either guest or as videographer. Recent collaborative studies investigate family talk across various contexts, however, including and beyond dinnertime. For example, a study by Tannen, Kendall, and colleagues conducted at Georgetown University involved continuous daily self-recording by adult family members over one week (e.g., Tannen, Kendall, & Gordon, 2007). A larger, multidisciplinary study by Ochs and colleagues at the University of California, Los Angeles involves family members being video-recorded and observed across multiple days and contexts. Findings of these two projects were published together in a special issue of the journal *Text & Talk* edited by Tannen and Goodwin (2006). The study by Ochs and colleagues, in addition to looking across situational contexts in which family members interact, takes a cross-cultural perspective, as data were collected in the United States, Italy, and Sweden.

Additional studies have considered family interaction in institutional contexts such as family therapy (e.g., Aronsson & Cederborg, 1994) and parent–teacher–pupil conferences (e.g., Adelswärd & Nilholm, 2000). How people talk about family interactions and relationships has also been investigated through analyzing data collected in interviews with one or more family members (e.g., Tannen, 2008).

In order to conduct discourse analysis of family conversations, these must be recorded and transcribed. Specific transcription conventions used, while manifesting some variation, share an orientation toward capturing details. Most transcriptions capture all words uttered; information about pitch, intonation, and tone of voice; and features of conversation like simultaneous talk and hesitations. Aspects of nonverbal communication are also transcribed, sometimes in extremely detailed ways, when video recordings are used. Detailed transcription of talk facilitates analyses of the micro-conversational features that constitute family interaction.

Some family discourse studies accompany recording with ethnographic interviewing (e.g., Blum-Kulka, 1997), direct observation by a researcher (e.g., Tannen et al., 2007), and post-recording interpretation checking with participants (e.g., Tannen et al., 2007). These methodological steps contextualize recorded data and serve as a means of validating analyses.

In sum, capturing interaction through recording and transcribing makes possible discourse analysis of family talk.

Family Discourse and Social Processes

Family discourse scholarship has yielded important insights into social processes that constitute families, including pragmatic socialization of children, creation of family beliefs and values, relationship negotiation, and identity construction. (Note that while discussed in discrete sections, these areas necessarily intersect; for instance, while parents socialize children, they also negotiate their relationship with them and teach them what identities are valued and how these are displayed.)

Pragmatic Socialization

Pragmatic socialization, according to Blum-Kulka (1997, p. 3), refers to "the ways in which children are socialized to use language in context in socially and culturally appropriate ways." Family interaction provides a key context in which children learn how to do things like "choose and introduce topics for talk, respond appropriately, tell a story, or develop an argument" (Blum-Kulka, 1997, p. 3). Research has considered how parents direct children's behavior, as well as how children are taught to narrate, take conversational turns, and so on. Studies reveal how socialization is shaped by notions of "linguistic politeness," which refers to "the culturally complex rules for what is said and how it is said relative to goals, interactants, context and culture" (Blum-Kulka, 1997, p. 13). Research into pragmatic socialization thereby highlights how children are socialized into language use, as well as the role of cultural ideologies and norms in this process.

For example, Blum-Kulka (1997) compares the mealtime discourse of three groups (Jewish American, American Israeli, and Israeli families). She explores shared organizational principles of "dinner talk," uncovering for instance that mealtime interactions across the groups are structured by the dual goals of socializing children into appropriate uses of language and being sociable with them. However, she also identifies cultural variation. One area of difference is in narrative socialization and participation. She noted, for example, that a particular ritual—"telling your day"—was recurrent in the American families, but was not in the Israeli families (see also Ochs & Taylor, 1995). Whereas in American families, singly told stories are celebrated, in Israeli families, tellings tended to be characterized by active participation of multiple parties who jointly "own" the tales. Further, adults in Israeli families had higher levels of participation as storytellers than in American families, where children took up larger proportions of narrative space. So whereas in all the families children were taught how to participate in narrative talk, this occurred in different ways. One major difference was that American families used dinner table talk as "an opportunity to focus on the children as narrators" (Blum-Kulka, 1997, p. 106), which echoes a child-centered family ideology suggested to be characteristic of middle-class mainstream American culture (by Blum-Kulka, 1997, p. 265; see also Varenne, 1992).

How parents perform control acts is another important area of inquiry in parent–child socialization. For instance, Tulviste, De Geer, and colleagues identify cross-cultural similarities and differences. Tulviste, Mizera, De Geer, and Tryggvason (2002) compare what they call "regulatory comments" in Estonian, Swedish, and Finnish families with an adolescent child. While the authors did not find cultural differences in regulatory comments regarding table manners and rules of conversation, they found that the Swedish family discourse was more symmetrical than in the other two groups: Swedish adolescents commented more on other family members' behaviors than did Finnish and Estonian adolescents. This finding is consonant with research by Ochs and Taylor (1995) who found in the discourse of American families they analyzed that parents often commented on, or "problematized," children's behavior, but the reverse rarely occurred.

In summary, studies of pragmatic socialization in family discourse uncover how socialization practices pertaining to language practice differ (and do not differ) across groups, and how behaviors that children are socialized into relate to broader cultural expectations about language use. They also demonstrate how socialization occurs on a moment-by-moment basis in family conversations.

Socialization of Family Beliefs and Values

Family interaction is a site not only for language socialization, but also for the socialization of attitudes and beliefs. Thus family discourse scholars have considered how children are socialized to think and feel in culturally and family-appropriate ways.

Studies taking a cross-cultural perspective have identified similarities and differences in the values socialized and how socialization occurs. For example, Ochs, Pontecorvo, and Fasulo (1996) examine how children are socialized into food preferences and attitudes in white American and Italian families. They found that while across both groups food is depicted as nutrition, a reward, pleasure, and a material good, in American families low priority was given to food as pleasure, while Italians saw food primarily as pleasure. In addition, whereas American families made distinctions between children's food and adults' food, Italian families emphasized the development of individual food preferences.

Studies have also outlined a range of linguistic strategies that play a role in value socialization. For instance, Gordon's (2007) analysis of political socialization demonstrates how through repetition, referring terms, and storytelling, parents and their son (age 4 years 10 months) jointly socialize one another into a shared political identity. Analyzing the discourse of the same family but in a different context, Tovares (2007) shows how repetition of and response to material on television can be used to identify and negotiate shared values. For example, the mother, watching a television cartoon with the child, draws on the text of the cartoon to support her own view regarding personal hygiene (that one person should not borrow another's toothbrush).

On a broader level, M. H. Goodwin (2006) and C. Goodwin (2007) examine how shared attention is established in family interaction; such attention is a fundamental precursor to accomplishing both pragmatic and value socialization. These studies also demonstrate the role of both linguistic and nonverbal behavior in collaborative socialization processes.

Relationship Negotiation

Families can be considered constellations of relationships that are continually negotiated in talk. How parents and children, husbands and wives, and, to a lesser extent, siblings, (re)create relationships in discourse has been examined by a range of scholars. A primary focus has been on the relational dimension of power or hierarchy. For example, Varenne (1992, see especially chap. 4) focuses on the struggle for power between parents discussing household affairs, and Watts (1991) centers his analysis of one family's discourse on how power is claimed, distributed, and contested.

Narrative has been identified as a primary site for exerting power. For instance, Erickson (1990) finds that family hierarchy plays itself out (and is reinforced) in how a conversation develops in one Italian American family: a gendered topic of discussion (bike accidents) enables the father and sons to reassert their place in the family hierarchy, whereas a contribution by a daughter is ignored. Similarly, Ochs and colleagues (e.g., Ochs & Taylor, 1995) identify a narrative pattern in middle-class American families that serves to (re)assert the father's role as head of the family. In this pattern, which they refer to as "father knows best," the mother invites the child to tell a narrative, the child does so, and the father passes judgment on the child's behavior. Further, the authors found that fathers also judged the mothers' behavior. For instance, a mother tells a story about a workplace experience;

the father then evaluates her behavior as incompetent. While mothers do critique the behaviors of fathers, they were found to do so far less frequently. Ochs and Taylor (1995, p. 117) suggest that cooperation of family members in the creation of the "father knows best" pattern gives fathers a "platform for monitoring and judging wives and children," thereby reinforcing a family hierarchy based not only on generation (parents over children) but also on gender (fathers over mothers).

Relationships are not only characterized by power, however; as Tannen (2001) points out, relationships are continually and simultaneously negotiated in terms of power and solidarity, closeness and distance. Thus she suggests that "father knows best" could additionally be analyzed as the mother attempting to create connection between father and child. Tannen (2008) investigates multiple dimensions (closeness and distance, similarity and difference) in sisters' relationships as these are portrayed in narrative discourse. Kendall (2006) examines how alignments shift moment by moment in communication occurring when one parent arrives home from work and encounters the other parent waiting with the child. She demonstrates how parents can manipulate alignments to (re)establish family harmony. Gordon (2009) highlights the role of repetition and intertexuality in negotiating alignments of solidarity, criticism, teasing, and play in family discourse.

Relationship negotiation has additionally been examined in institutional encounters (medical, educational, etc.) involving family participation. For example, Aronsson and Cederborg (1994) investigate conarration in family therapy and identify various ways family members and the therapist manipulate voice to construct both supportive alignments and opposition. The father, for instance, parodies the son as a way of discrediting him, which leads the daughter to supportively align with her sibling.

In summary, multiple dimensions of family relationships have been considered, primarily but not exclusively in private family conversations. Scholars have identified how specific linguistic devices are used to accomplish relationship negotiation, while also highlighting the shifting nature of alignments in family talk.

Identity Construction

While negotiating relationships, family members simultaneously create family role identities in interaction. Identity construction in families has been investigated on the level of the individual and of the family group. Studies in this area have increasingly emphasized the constructed, fluid nature of identity, and the complex discursive practices involved.

Kendall (2007), for example, shows how gendered identities pertaining to the work–family interface are created in the discourse of two families with one young child. Although parents in these families espoused ideologies of equality in parenting, and mothers and fathers both worked outside the home, in practice the ways they spoke positioned the mother as primary caregiver for the child, and the father as breadwinner. Adelswärd and Nilholm (2000) demonstrate how a mother creates her own maternal identity in a parent–teacher–pupil conference while also helping her child, who has Down syndrome, create a positive self-identity. For example, the mother elaborates and interprets her daughter's turns, which serves both to aid her child's engagement in the conversation and to construct for herself the identity of supportive, good mother.

Scholars have also focused on how shared family identities (as opposed to individuals' identities) are constructed in discourse. For instance, Blum-Kulka (1997) and Tulviste et al. (2002) and others have considered how, through language, family members create and reinforce a larger cultural identity (e.g., Israeli, American, Estonian). While families are shaped by their larger cultural context, each family is also distinctive; each family can be considered as "a small community of speech, an organic unit that shapes and maintains itself linguistically" (Tannen, 2001, p. xvii). Gordon's (2009) analysis of the discourse of

two families, each consisting of two parents and one young child, supports this notion. For instance, members of one family often spoke using marked voices and accents, which helped to create a shared identity as theatrical performers, and as people who appreciate playfulness in everyday life.

Discussion: Implications of Family Discourse Research

Family discourse scholarship reveals how family members use language to accomplish the social tasks of everyday family life, most notably teaching children about how to use language and about family beliefs, negotiating relationships, and constructing identities. It thus has implications for the broader study of family communication and for discourse analysis.

The study of family discourse is the study of communication in family settings. Much scholarship on family communication (in fields such as psychology and communication studies) emphasizes self-report data, quantitative analysis, or analysis of content as separate from linguistic form. The qualitative orientation of discourse analysis, and its consideration of naturally occurring talk of family members as it unfolds moment by moment, adds not only methodological variety but also contextually sensitive perspectives to the field of family communication, including how family discourse intersects with culture and other institutions. The study of family discourse is also, in essence, the study of discourse. And, family discourse research has made substantial contributions to discourse analysts' understanding of how language functions in everyday social activities and processes. It has added important insights into cultural and gendered elements of talk, narration as social practice, theories of meaning making and identity creation, and our understanding of various relational dimensions and linguistic strategies. It thus contributes substantially to the field of applied linguistics.

SEE ALSO: Discourse and Identity; Narrative Discourse; Politeness; Pragmatic Socialization; Transcription

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Suggested Readings

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Family Literacy

VIVIAN L. GADSDEN

Family literacy encompasses a broad array of literacy practices and relationships between children and parents and within families. It may be interpreted as a single concept, in which the focus on literacy is complemented by attention to families, or it may be examined as a multidimensional concept in which families and literacy are studied in tandem to inform and deepen our understanding of the intersections between the two areas of inquiry. To provide an overview of the field, this entry examines these interpretations of family literacy within past, current, and emerging theory, research, practice, and policy.

The Context

Most research in family literacy has been aligned with one of two broad conceptual frameworks that examine, among other questions, the following: what counts as family literacy, which families are studied under the heading of family literacy, what programs are designed and with what purposes and content, and for whom are programs designed? One framework examines cultural and social practices of families. It demonstrates the ways in which these practices inform the nature and course of support to families and build on family members' knowledge and experiences. Much of this work draws upon anthropological and linguistic traditions that use several empirical methods: ethnographic-focused approaches, narratives, discourse analyses, and naturalistic observations. The studies that have resulted are among the most significant in extending the field's focus on literacy as more than reading and writing and shaping our understanding of the range of literacies that constitute families' knowledge, that are available within families, and that families use to navigate their worlds. Developed around a co-constructivist approach to literacy, the research has not been readily translated into family-literacy instructional programs or curricula, nor does it fit neatly into paradigms associated with the field or heavily reliant upon formal assessment measures.

A second broad framework focuses on enhancing children's school achievement. Much of the research and practice derived from this framework is found in studies of parent–child reading and parent–child participation in school-based or out-of-school literacy programs. Because of the specific purpose of improving children's school achievement, this framework typically uses experimental methods and assessment measures similar to those used in K-12 settings to determine change in students' performance. Although families' cultural and social practices are often discussed, these practices tend to take on a relatively insignificant role, compared to the emphasis on children and parents developing reading skills. Challenges attributed to this framework include: the singular focus on poor families as living in literacy-poor contexts; an emphasis on the cognitive dimensions of literacy as opposed to its social dimensions; failure to consider the ethnic and economic diversity of families and family practices; and an assumption that literacy—in the absence of changes to structural and social barriers—will help move poor families from poverty to well-being.

Family literacy is both considered a separate area of research and practice and attached to related areas of study, for example early literacy and early childhood development (e.g., Head Start), K-8 literacy (e.g., Even Start), adolescent and adult literacy, two-generation and

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intergenerational learning, and English-language learning. It examines a range of perspectives regarding the composition of families, the reciprocity of literacy learning within households and between home and school, and the relationship between language and linguistic practices. A significant subset of the work investigates the ways in which language and literacy are experienced and adapted in limited English-speaking families (e.g., English-speaking child and non-English-speaking mother) where children serve as language brokers for parents and grandparents (see Weinstein-Shr, 1995; Campano, 2007). Such brokering may occur in English-speaking families with low formal literacy as well (Purcell-Gates, 2004) and repositions the expected role of parent as knower and child as learner to child as knower and parent as learner.

National attention to demographic shifts in the USA, enhanced understanding of the possibilities for teaching and learning, and increasing attention to family literacy across national borders has expanded the field. Compared to the early years of family literacy, we know considerably more, yet not enough, about the types of families who are served (i.e., by social class, ethnicity, and race), the nature of family-literacy experiences, the increases in the numbers and range of programs located within and outside formal school settings, and the relative success of family-literacy efforts for children and adults. This progress demonstrates incremental and strategic efforts in the field and is reflected in an upsurge in the number of empirical research studies, teacher-led projects that aim to address the literacy needs of families, and international studies.

Family Literacy: Issues Past and Present

Although the history of family literacy may direct us to different points of origin, our current conceptualizations of family literacy are arguably linked to the 1960s, when US federal laws on educational access and equal opportunity were being challenged as discriminatory. In response, reading researchers were asked to explain the poor school achievement of minority children from low-income homes. Some studies (e.g., Durkin, 1966) had already been completed, and a wave of others emerged to examine the influence of both families and verbal language—that is, nonstandard dialects such as Black or African American Vernacular English (AAVE)—as essential precursors to children's reading or as an explanation for the children's poor reading. The studies focused primarily on reading rather than either writing or broader ideas of literacy. In some discussions, reading problems were attributed to "deficits" in the linguistic and literacy experiences of children resulting from their "disadvantaged" families and low-income communities; in others, they were attributed to "linguistic difference" in which AAVE was determined to be a legitimate, systematic, and rule-governed variety of English. Noted linguists such as Labov (1972) argued that judgments regarding whether language is standard or nonstandard were not linguistic but could be ascribed instead to the vagaries of access and equality in society. Goodman and Buck (1973) suggested that teachers held attitudes about the dialect that were problematic and that may account for some of the differences between the reading success of African American children and that of White children. The implicit message of this work on linguistic difference was that AAVE should no more interfere with reading than other spoken dialects. The subtle indictments of families are noted in a recent work by Baugh and Smitherman (2007), who suggest that African American students in schools were routinely receiving learning and speech pathology placements which at a minimum resulted in a misplacement of effort, taking attention away from the failures of instruction and pointing to the failures of the family, dialect, and child.

The responses to the arguments around deficit and difference were polarizing and continue to be complicated. However, family-literacy research in the 1980s built upon this

work; examined social and cultural practices; and focused on the sociolinguistic, cultural, or contextual factors that influence literacy learning (see earlier discussion of the two dominant frameworks). Drawing upon but extending beyond metacognitive and sociocognitive approaches, the work highlighted the sociocultural dimensions of literacy learning and urged a more critical analysis of how language and literacy learning are experienced within and across diverse cultural, social, and community settings. Four major publications, drawing upon sociocultural/sociocontextual theories, significantly informed our understanding of language and literacy processes and practices in families and the reciprocity of learning within them: Denny Taylor's (1983), *Family Literacy: Young Children Learning to Read and Write*, which examines six middle-class White families and their children, all of whom were successfully learning to read; Shirley Brice Heath's (1983) *Ways with Words*, which examines the continuity of literacy practices in home and school and the bidirectionality of learning between them in a Black working-class, a White working-class, and a White middle-class community in the Piedmont Carolinas; Teale and Sulzby's (1986) study on emergent literacy, which began to revise some of the deficit perspective and to argue for a more in-depth analysis of the relationship between home interactions and children's academic achievement; and Taylor and Dorsey-Gaines's (1988) study of literacy contexts of poor, inner-city African American families, determining that these homes were steeped in rich practices and traditions with oral and written texts. Other critical discussions during the same period complemented these studies in examining the discourses of Black and Latino children in and out of school and their families.

At the same time as these works appeared, policy efforts were being directed to building programs and practice that would give parents the necessary knowledge, awareness, beliefs, and attitudes to support their children. Family-literacy programs were seen as one option in stemming the tide of low literacy and became driven by policy makers' interpretations of the need. Considerable attention was placed on practice, with comparatively limited support for research. Several programs emerged and have been sustained, with varied foci on skills and cultural practices, for instance the Kenan Model developed by the National Center for Family Literacy, the Missouri Parents as Teachers program, and Home Instruction Program for Preschool Youngsters (HIPPY), to name a few. From the work conducted by Parecki, Paris, and Seidenberg (1997), we know that, while some program models use approaches that reflect a combination of recent instructional innovations in the field of reading, others provide little or no instructional or assessment framework. Programs tend to "pick and choose" from existing models to develop a curriculum that responds to the specific needs of the families they serve. Parecki and her colleagues (1997) noticed immediately when examining family-literacy models that there were few instructional or assessment ideas and tools, yet practitioners in their study identified these needs as the most critical voids in their work. A subsequent study by Parecki (2009) describes an interactive reading program that she created and reinforces the importance of developing the field, noting that there is no ready-made approach that fits all programs.

Auerbach's (1989, 1995) three models—intervention/prevention, multiple literacies, and social change—still hold currency in describing the conceptual, pedagogical, and programmatic possibilities for family literacy. The intervention/prevention approach is consistent with historical efforts to eradicate low literacy among poor, undereducated parents, through a series of programs and approaches designed to replace home practices with school-like approaches. The approach speaks to the power of school literacies and the poverty of home and community literacies. The multiple-literacies approach takes up this sociocultural perspective in a particular way by examining the much-discussed mismatch between the expectations and practices of school-based literacy learning and the home practices of children who are not achieving in school. It argues for "investigating and validating students' multiple literacies and cultural resources in order to inform schooling" (Auerbach,

1997, p. 157), using a range of approaches—from utilizing community resources and cultural artifacts in the classroom to engaging parents as co-constructors of the research and inquiry process, to learning about family histories and experiences as a precursor to teaching, to immersing teachers in the home contexts of parents. A third approach, social change, is focused on multiple literacies and the role of power hierarchies in sustaining political and social structures that alienate rather than engage learners and their cultural histories. Auerbach's categories do not address all the different issues. Some studies that appear to fit under one model may well have components that fall under one or both of the others, for example, multiple literacies and social change.

At present, several long-standing and emerging issues are revising and expanding the field of family literacy. First, since the 1990s, family literacy's focus on parent–child interactions, home practices, and intergenerational literacy has led to increased empirical research on children and families—varying in type, nature, and intensity—participating in programs and the degree to which programs build upon research. However, as a field, family literacy's identity within discourses in the larger field of language and literacy is still fragile. Particularly interesting and controversial have been the increased governmental demands for rigorous randomized studies that stress learning outcomes without also addressing the pathways to those outcomes. In decrying the absence of well-designed experimental research, several discussions have identified a need for higher-level assessment of children's early learning in family-literacy programs. Emphasis on evidence-based approaches from 2000 to the present reinforces this position. While such perspectives are valid, they do not capture completely or accurately the complex problems facing programs and their efforts to address these problems; nor do they reflect the range of studies that have provided us with necessary portraits of family-literacy learners so that we understand the scope of the problem.

Second, the field is beginning to consider the diversity of families and family forms. Questions related to the composition of families; the nature of relationships in families; the presence of two parents (or absence of one parent), grandparents, and extended family; the home languages used; and the significance of race and class raise the need to examine the intersection between family and culture and the ways in which culture is embedded in the practices of individual family members who are learning literacy in programs. Most of these studies use cultural frames of reference to examine family literacy and acknowledge their importance in accessing and engaging families, as well as determining what learners know, what they want to know, and what they are wiling to invest. In the 1990s, Purcell-Gates (1995) and Gadsden (1998), among others, proposed a framing of family literacy in which the family is at the center of resulting pedagogical models. More recently, researchers in the USA and other parts of the world have examined the complexity of family-literacy practices within low-income families, focusing on issues of power and identity, as parents with sometimes limited formal literacies aim to negotiate the school experiences of their children, and on the discursive practices and traditions in the family (see Rogers, 2003; Johnson, 2009).

In addition, the field is only beginning to explore the possibilities around multiple issues—new and old. One of these areas focuses on the potential around technologies in working with and studying different types of families and family configurations. Although still limited, discussions of multimodalities and digital literacies have appropriately migrated from K-12 literacy to family-literacy research and practice. Another area points to the increasing attention to English-language learners, as the intersections of language and literacy continue to be a fertile area of inquiry. Past research on immigrant parents yielded data to suggest that the parents were both highly concerned about and supportive of their children's performance in school but also concerned about the cultural loss that their children experience in the USA (see Duran, Duran, Perry-Romero, & Sanchez, 2001;

Suárez-Orozco & Suárez-Orozco, 2001). Other work on young children and families (see Dudley-Marling, 2009; Fantuzzo, Gadsden, & McDermott, 2011) points to the possibilities for building home–school connections in replacing deficit.

Future Directions: A Few Thoughts

Family literacy draws on multiple traditions and areas of study, but is not firmly situated in any. This fledging identity creates insecurity and opportunity. For many researchers and practitioners, as is true in K-12 schooling, issues-related outcomes and assessment will represent a nagging subject; for others, the instructional focus of programs will be the greatest concern; and for others still, the primary question will focus on cultural difference, race, and poverty and how they are examined and addressed in research and practice.

Several other issues are receiving attention:

- *Culture and teaching*. At all levels of teaching, the questions of what culture is and how to speak to students' culture represent both pressing and uncomfortable issues. Research since 2004 in literacy (see Gonzalez, Moll, & Amanti, 2005) and in family literacy (see Mui & Anderson, 2008) has informed a more expansive notion of culture and social networks.
- *Learning environments that attend to different forms of participation and linguistic and literacy repertoires, as well as new technologies*. Gutiérrez, Zitlali Morales, and Martinez (2009) and Lee (2005), among others, have discussed the importance of environments that are open to the range of knowledge that students bring and the need for these environments to be situated to invite this knowledge as areas upon which to build. Such learning environments make greater use of technology and digital modalities in building on the knowledge of families and to teach and study families (see Kress & van Leeuwen, 2001).
- *Immigrant and language-minority families*. The recent US governmental responses to immigrants and public attention to the issue of second languages make the present and immediate future an important time to examine these critical issues. Such discussions draw upon interdisciplinary knowledge to identify the border crossings of these families.
- *Increased attention to families, not limited to parents, with special attention to issues related to women and fathers*. The emergence of women's issues in adult and family literacy has provoked questions about gender more broadly. A similarly growing body of work examines the issues of men, mostly as fathers. As might be expected, much of our attention has been directed to parents, most significantly mothers, who have been identified over time as influencing children's school achievement more than any other human resource prior to and during school. Fathers are increasingly an area of study, and other family members contribute in meaningful ways to the discourses of literacy in family settings (see Gadsden, 2003).

The changes in family literacy represent the increasing cross-fertilization of ideas and theoretical and practice-focused perspectives on family practices and family learning. The question that persists is whether family literacy, with a focus on families, will draw upon and build broader conceptualizations that consider the culture of the family itself, the ways in which different definitions of family define families and family life, the nature of social relationships, and the changing faces of families in the USA that affect when, how, and under what conditions children and families engage and share literacies.

SEE ALSO: Ethnographic Approaches to Literacy Research; Literacy and Bidialectalism; Literacy in Community Settings; Literacy and Multicultural Education; Sociolinguistic Studies of Literacy

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Feminist Research

JUDITH BAXTER

Background

Feminist research emerged across the social sciences to "give voice" to women's activities, lived experiences, and perspectives, a mission which had been conspicuously missing in mainstream research. Originating within the context of the women's movement of the 1960s and 1970s, "modernist" feminist research was principally concerned to document women's lives and voices, to illuminate gender-based stereotypes and biases, to unearth subjugated, "feminine" knowledge, and to challenge the basic structures and ideologies that oppressed women. The primary purpose of feminist research was therefore emancipatory: to promote social change and social justice for women round the world. Within the field of gender and language, feminist scholars sought to show the dual power of language—as a repressive, patriarchal tool for constructing women's social, economic, political, and academic subordination, but also potentially as a creative force for female self-expression, empowerment, and consequently cultural transformation.

However, in recent years, postmodernist scholars have challenged this version of feminism—and therefore "feminist research" as a unified project—on a number of grounds. First, they argue that the term "women" cannot be simplistically distinguished from "men" as a biological or social category: In numerous individual cases the boundaries are blurred (see Bergvall, Bing, & Freed, 1996, for discussion). Second, women cannot be reduced to a single group with a uniform experience, ethnicity, class, culture, sexuality, or gendered existence. For example, the experience of a white, middle-class professional woman with a well-paid job might be considerably different to that of an Indonesian woman who leaves her family to work as a "mother's help" for affluent employers in the West, and sends her wages home (Letherby, 2003). Third, some men (for example, gay or transgendered individuals) are also subject to restrictive gendered practices and identities. Finally, there is no single, agreed approach to feminist research. Scholars hold different perspectives, ask different questions, draw from diverse methodologies and methods, and apply multiple lenses in order to make their analyses of feminist issues. Some feminist researchers use traditional methodologies largely involving quantitative methods but ask new questions, while others work primarily with qualitative methods to challenge, contest, and upset these approaches, or create new, multidisciplinary methodologies of their own.

Historically within the applied linguistics field of gender and language, there has always been a diversity of approaches to feminist research even before recent theoretical complexities. Early research relied on the anthropological principle of introspection or "native speaker intuition." The widely acknowledged pioneer in the field, Robin Lakoff (1975) made anecdotal observations about the ways in which American women were socialized to use language in a "ladylike" way, which made them sound more tentative, hesitant, and less confident than men. Similarly, Dale Spender (1980) also based her thesis of "man-made language" (such as the "false" generic singular pronoun "he" in academic writing to denote women as well as men) on anecdotal, observational data.

Subsequent gender and language research was far more empirically based and drew principally on recorded observations of small-scale social interactions, interview data, and

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subsequent discourse analysis. There were three theoretical strands to such research. *Dominance theory* studied "mixed-sex" interactions to consider the ways in which men used conversation as a mechanism of social power to dominate women through linguistic features such as interruptions, verbosity, silences, and back-channeling (e.g., Zimmerman and West, 1975). *Difference theory* similarly studied short stretches of conversation, but usually in single-sex contexts, to show that women's talk was an outcome of different linguistic subcultures, and should be reevaluated from a feminist perspective as "different but equal" (e.g., Tannen, 1993; Coates, 1996). More recently, *social constructionist theory*, currently the dominant research paradigm and postmodernist in spirit, explores language as a means of gendered construction (e.g., Crawford, 1995). Like dominance and difference theories, this approach analyzes linguistic interactions in transcripts, but with the purpose of showing how speakers construct or resist their varied identities as male, female, intersexed, transgendered, and so on. Social constructionist theory also studies the ways in which gender stereotypes such as the "trophy wife" or the "ball-breaker female leader" are constructed, reinforced, and contested in a range of texts in public domains such as the mass media.

Feminist Epistemologies

Arguably, three key epistemological principles continue to guide both modernist and postmodernist feminist research as follows.

Political Motivation

While scholars no longer perceive feminist research as a unified project, even quite radical feminist poststructuralists such as Ramazanoglu (2002) consider that the "only" ground on which something distinctively feminist can be claimed for the use of diverse methodologies is:

> some shared political and ethical commitment that makes [researchers] accountable to a community of women with moral and political interests in common . . . Feminist research is politically *for* women; feminist knowledge has some grounding in women's *experiences*, and in how it *feels* to live in unjust gendered relationships. (Ramazanoglu, 2002, p. 16)

For *modernist* feminist research, this "political and ethical commitment" was an essentialist quest to locate the causes of women's oppression in the structures and practices of language and/or society, in order to instigate material changes in women's lives. As Williams (1996, p. 66) notes, women's oppression was variously thought to be the result of "capitalism, patriarchy, capitalist patriarchy, patriarchal capitalism, a dual system of exploitation and oppression or patriarchy as male control over women's sexuality, fertility and/or labour." For *postmodernist* feminism, the emphasis shifted away from apparent root causes in material conditions or labor relations, and toward an analysis of the discursive positioning of "women" and "men." In simpler terms, individuals of any gender are positioned by "discourses"—culturally produced ways of seeing the world—many of which are gendered and discriminatory. The thrust of postmodernist research has been to deconstruct fixed gendered and sexed categories (such as "woman" or "man"), in order to reveal the shifting, fluid, relational, and socially constructed nature of such categories and their associated practices. By showing that gender is not static and unchanging, determined either by biology or capitalist material conditions, postmodernist research has indicated that individuals are agentic and capable of transformation: At different times and in different places, the distinction between women and men should cease to matter. However, Holmes (2007), among

others, has proposed that it remains expedient to retain the categories of "women" and "men" in feminist research, as there is a danger of losing sight of the continuing quest for gender equality and social justice.

Female Experiences

The well-worn slogan of the women's movement, "the personal is political," encapsulates a significant trend within feminist research to reveal what is going on in women's lives (and men's in relation to women's). Letherby (2003) argues that this was important because historically, women's experiences, concerns, and language use were given scant attention by the male research establishment. When they were included, they were viewed in sociolinguistic terms as "not male," "the other," and therefore "not the norm" or somehow deviant. Feminist research has therefore been concerned to fill in the missing gaps in "androcentric" history, literature, and academic research by reclaiming and telling the stories of women's experiences and lives.

"Feminist standpoint epistemology" offers one kind of "successor science" to existing dominant social science paradigms within feminist research. In order to reveal the supposed "truth" of women's lived experiences, this epistemological approach draws upon a range of qualitative research methods such as life histories, in-depth unstructured interviews, diaries and autobiographical writing. According to Harding (2007), feminist standpoint theory leads to a holistic, integrated, connected knowledge rather than a reductive and analytically orientated, "masculine" knowledge. As a parallel research strand in the gender and language field, Coates (1996) recorded and analyzed how a group of professional women co-construct close friendships by sharing stories, anecdotes, and news. Social constructionist research has since moved on to explore how people of different genders construct and "negotiate" competing aspects of their identities through storytelling, social interaction, and conversation (e.g., Pichler, 2008). Arguably, diversity of *gendered* experience has replaced *female* experience as focal within current gender and language research.

Role of the Author and Reflexivity

Feminist research has been influential within the social sciences for acknowledging a personal responsibility for what scholars write. Traditionally the authorial self has been left out of academic writing in order to convey a sense of authority and academic impartiality. When an author uses "I," she or he questions traditional styles of academic writing where "we," "the author," and "he" are meant to represent distance and objectivity. Weber (1949) was one of the first to argue that the personal and political values of the researcher affect the selection and conduct of research, but his solution was to consider how potential "biases" could be eliminated. This tension between subjectivity and objectivity remains unresolved in feminist research—writers such as Harding (2007) argue for a "strong objectivity" in feminist research in order to correct the omissions and exclusions of traditional positivist research, whereas others, such as Hesse-Biber and Lina Leavy (2007), take the constructivist position that all research is located in the social world and inevitably influenced by it. Such a view questions how the researcher as author is positioned in relation to the research process, and how the process affects the outcome in terms of the choice and design of the research, fieldwork, and analysis, and its editorship and presentation.

The concern to be *self-reflexive*—that is, explicitly self-referential about the researcher's own values, beliefs, and interests, as well as the choices he or she makes throughout the research process—has become a striking feature of much recent gender and language research. Baxter (2010) for example, discusses the possible effect on respondents of her own gender as an interviewer in her study of female and male business leaders: Male leaders, for example, were keen to demonstrate their "caring side" to her while female

leaders wanted to convey their assertive side. Kamada (2010) examines the idea that she may have changed the lived reality of six mixed-ethnic teenage girls during the course of her research study by arranging opportunities for this group of female friends to meet and talk about their perceived identities on a regular basis: opportunities they might not otherwise have had. Such self-reflexivity is particularly pertinent to feminist research with its mission to "give women a voice"—both those of the researcher and the participants.

Feminist Methodologies

Feminist research in the social sciences, and specifically in gender and language, is characterized by an extraordinary range and diversity of methodologies. There is arguably less variety of approach at the *data collection* stage: Most current research in the field is ethnographic in spirit, involving local, contextualized, qualitative explorations of gender. There are exceptions to this; for example, the increasingly popular use of corpus linguistics involves the analysis of (often) preexisting, large-scale corpora, using dedicated computer software to quantify patterns and trends in decontextualized language (Baker, 2006). Much more typically, however, a researcher will spend time in a natural setting (a home, a classroom, a business meeting, a workplace, a community support group), observe and record linguistic interactions within the setting, and perhaps triangulate or supplement this with other qualitative data, such as semistructured interviews, focus groups, or documentary analysis.

The diversity of research methodologies in feminist research is more commonly to be found at the *data analysis* stage: particularly crucial to the critique of gendered language in context. Harrington, Litosseliti, Sauntson, and Sunderland (2008) have identified at least eight "methodologies" in regular use by gender and language researchers: sociolinguistics, ethnography, corpus linguistics, conversation analysis (CA), discursive psychology, queer theory, critical discourse analysis (CDA), and feminist poststructuralist discourse analysis (FPDA). As an illustration, this entry will briefly consider three methodologies that have had a strong impact on feminist research in the field: a "bottom up" ethnomethodological approach (CA), a "top-down" critical approach (CDA), and a combined dialogic approach (FPDA).

Conversation analysis is a bottom-up approach to linguistic data in the sense that it analyzes how speakers co-construct their lived realities through the sequential organization of naturally occurring talk. In one way, CA appears to be at odds with feminist research in that it does not recognize prior variables or analyst agendas (such as feminism or gender), but asks that linguistic data is analyzed on its own terms. In the late 1990s, CA was reclaimed by and for gender and language study. Feminist conversation analysis aims to systematically identify "the interactional practices that show the relevance of gender as a structuring force in conversation" in order that "the structures and practices are further interrogated for how they may be implicated in social inequalities such as sexism" (Weatherall, 2010, p. 223).

Critical discourse analysis is a top-down perspective of linguistic data in the sense that it has the explicit agenda of deconstructing unequal power relations in spoken and written texts, which are always analyzed within their social context. While this appears to mirror the feminist quest to challenge the basic ideologies and structures that oppress women, many feminist scholars do not identify with CDA as it has arguably foregrounded the social categories of class and race over gender in its analyses. However, Lazar (2005, p. 3) has devoted a collection to "feminist" CDA, which aims to "theorise and analyse the particularly insidious and oppressive nature of gender as an omni-relevant category in most social practices." Its value for feminist research is that it analyzes language at the

level of the word, sentence, and overall discourse structure in order to make wider generalizations about oppressive gender relations.

Feminist poststructuralist discourse analysis is an explicitly postmodernist approach to linguistic analysis in that it does not critique gender relations in a binary way ("dominant male" versus "dominated female"). Rather, it analyzes how both speakers can shift between different subject positions in the course of a single interaction so that they are at times relatively powerful, and at other times powerless. The value of FPDA to feminist research is that it does not presume a "victim" status for all women or an "oppressor" status for all men, but encourages a more nuanced, multifaceted feminist analysis (Baxter, 2003). FPDA uses a combination of microlinguistic analysis of single interactions and macroanalysis of "gendered discourses" over time, to show how dominant discourses can silence or peripheralize the voices of women—but also to reveal how women can resist such discourses.

Conclusions

Feminist research currently exists in a dynamic interplay between modernist and postmodernist approaches. While modernist scholars conduct research in order to enable change in the lives and conditions of women around the world, postmodernist researchers consider that the quest is more epistemological: to expose the oppressiveness of the category of "gender" itself. Whatever version is chosen, feminist research perceives all stages of the research process as a *holistic* endeavor: from a set of theoretical perspectives to developing a methodology, from analyzing data to producing an interpretation of the findings. The quest to give women a voice—by means of both the research process and the research outcomes—offers feminist research its unique coherence. Feminist research is indeed feminist theory in action.

SEE ALSO: Analysis of Discourse and Interaction: Overview; Conversation Analysis: Overview; Corpus Linguistics: Overview; Critical Discourse Analysis; Qualitative Methods: Overview

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First Language Development of Grammar

GISELA HÅKANSSON

Introduction

How children acquire language, and in particular, grammar, is a question that has intrigued both scholars and parents for centuries. How is it possible that a young child is able to learn such a complex phenomenon as language? This entry will present research on developmental stages in early grammar and how children learn and overgeneralize inflections. Most examples will be taken from English, but some other languages will also be used as examples.

Research on language acquisition centers on the question of nature versus nurture, that is, how much knowledge children have from the start, and how much they learn from their environment. In a famous debate between the psychologist Burrhus Frederic Skinner and the linguist Noam Chomsky in the 1950s two possible answers were suggested. Skinner claimed that children learn language by generalizing from observations, while Chomsky argued that the input is too "impoverished" for this to be possible, and that children have an innate learning faculty that does the job. For ethical reasons, it is impossible to prove or disprove either of these claims by exposing children to experiments where they are deprived of linguistic input. For the last 60 years, this unresolved controversy has been the root of much empirical research into the development of grammar in children.

Developmental Stages

One question for researchers interested in learning about children's innate abilities is whether grammar develops in predetermined stages—as in cognitive development. The Swiss developmental psychologist Jean Piaget (1971) identified four maturational stages within a child's cognitive development, which he termed "qualitative leaps." A question for researchers of child language acquisition is whether similar stages can be discerned in grammatical development. Some indications of a staged development in language acquisition are found in the transition between "one-word" and "multiword" utterances. Children's first utterances are short, and follow certain systematic patterns. Around the age of one year, children typically use single word utterances (although the concept of "word" may be different from that found in adult language), for example, *Mommy*, *Daddy*, *Uh-oh*, and *Bye-bye*. This "one-word" stage is followed by a "two-word" stage where utterances like *Read book* and *Mommy read* are common, and then a "multiword" stage, with utterances like *Mommy read book*.

In the 1960s one of the most prominent researchers in the field, the American psychologist Roger Brown, designed a pioneering study together with colleagues Ursula Bellugi and Colin Fraser. The aim was to capture possible stages of language acquisition in more detail by studying children's grammatical development over time. They studied English-speaking children who had just started producing multiword utterances and

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Table 1 Semantic two-word relations in early speech (after Brown, 1973)

Semantic relation	*Example*	*Semantic relation*	*Example*
Agent–action	Mommy read	Entity–locative	Book table
Action–object	Read book	Possessor–possession	Mommy sock
Agent–object	Mommy book	Attributive–entity	Big dog
Action–locative	Sit here	Demonstrative–entity	There ball

recorded them on a regular basis until they had reached a stage where multiword utterances were common. The study was longitudinal and dealt with spontaneous speech data from three children, Adam, Eve, and Sarah, in interactions with their parents. It is interesting to note that the three children differed in age of onset of multiword utterances (Eve, 18 months, and Adam and Sarah, 27 months), but that their subsequent development was the same. One of the analyses outlined by Brown (1973) was based on the concept of semantic relations. He suggested that it is semantic relations that keep early multiword utterances together, such as agent–action (*mommy read*), possessor–possession (*mommy sock*). Table 1 illustrates the most frequent semantic relations found in the two-word utterances of the children. Interestingly, these relations were found not only in English-speaking children, but also in children speaking other languages: other Indo-European languages such as Swedish and Spanish, as well as non-Indo-European languages such as Finnish and Samoan. Such crosslinguistic similarities support the notion of a universal first stage in a semantically based grammar used before syntax commences, a stage that is independent of specific features of different languages. The phenomenon could, however, be alternatively explained by contextual influence—it could be a result of the structures used by caregivers when interacting with children.

In the examples above, what is striking is that the grammatical markers are missing. The children tend to say *Mommy read* instead of *Mommy reads*; *read book* instead of *read the book*, *book table* instead of *the book is on the table*, and so forth. This way of structuring utterances is commonly referred to as "telegraphic speech," since it is reminiscent of the style used in telegrams, where one would pay for each word. Instead of writing *My train is delayed and I will arrive at midnight* one would write *Train delayed, arrival midnight.*

Grammatical markers, that is, words and inflections, enter the child's speech as his or her vocabulary grows. It has been observed that when a child's vocabulary increases there is not only a quantitative increase, but also a qualitative change: Words of different types begin to be used. A child's earliest vocabulary is dominated by content words from the open classes, such as nouns and verbs, produced in short utterances. Later, closed-class words emerge, such as prepositions, pronouns, and conjunctions. These words are known as grammatical words, since they carry little meaning but instead express grammatical functions. Furthermore, as a child's vocabulary grows, inflectional markings become more common. It has been suggested that a child needs to know a "critical mass" of words before grammar starts (Marchman & Bates, 1994).

Based on results of the analysis from the three children Adam, Eve, and Sarah (plus some additional data), Brown (1973) suggested a stage model for the development of grammar, a model which is still in use, for example in the diagnosis of language disorders. The model is based on mean length of utterance (MLU), which is a measure of the number of morphemes in a child's utterances, and on the occurrence of certain grammatical morphemes. Brown's analysis focused on 14 morphemes, representing both bound (-ing, -s, -ed) and free morphemes (prepositions, auxiliaries, and copula verbs). Together, these measures form five stages in the model: from Stage I with an MLU of 1.75 and very little grammatical morphology; through Stage II with an MLU of 2.25 and using present progressive

-ing, prepositions *in* and *on*, and plural *-s*; to Stage V with an MLU of 4.00 and all the 14 morphemes. Brown's results indicate that children's grammar is acquired in stages, or by passing milestones, with individual variations in rate but not route of development.

Inflections and Overgeneralizations

Another study on children's innate capacities is Jean Berko's (1958) investigation into the acquisition of inflections. At the time of this study, it was commonly assumed that children learned inflections by memorizing words together with their endings, but Berko's results showed that this was not the case. She designed a test (the Wug test) to investigate the acquisition of English inflections, for example plural (*girl-s*), and tense (*play-ed*), by using invented words such as *wug* and *to rick*, which could not have been heard before, and therefore not memorized by the child. The child was asked to produce these invented words in different contexts. The experimenter presented the child with pictures of objects and said: "This is a wug. Now there is another one. There are two of them. There are two ___." Another example was "Here is a man who likes to rick. Yesterday he did the same thing. Yesterday he ____." The results showed that the children were able to add inflections to a word, and produce forms like *wug-s*, and *rick-ed* even though they had not encountered these words before. Berko's (1958) finding was a breakthrough in language acquisition research, in that it demonstrated in an experimental way that children do not memorize endings, but rather use some kind of abstract rules of inflection. Studies from other languages with obligatory inflectional markings have given the same results: children are able to apply rules to unknown words. When children have discovered how to apply morphological markings, they may even "overuse" the rules and overgeneralize the same markings to all lexical items.

The development from a stage of child language where no inflection is used to a stage of overgeneralization is illustrated in the following examples, taken from the Manchester corpus in the CHILDES database (Child Language Data Exchange System; MacWhinney, 2000). (In the first example the child Carl is one year and eight months old, in the second example he is a year older.)

(1)
Carl: in there brum brum.
Mother: oh it's jumping?
Carl: it jump.

Notice that Carl is a proficient conversational partner, when it comes to interaction. He plays an active role in the conversation with his mother. Interestingly, he is only partly imitating what his mother is saying, while systematically leaving out certain words, for example the contracted *s* that stands for the copula verb *is* (*it's* becomes *it*). Furthermore, the verb *jump* is not inflected for third person singular (*it jumps* becomes *it jump)*. A year later, when Carl is two years and eight months, he uses third-person singular inflections (*wants* and *goes*) and overgeneralizes the regular past tense *-ed* on come (*comed* instead of *came*)

(2)
Mother: I made a big bridge.
Carl: he wants to go back to the services.
Carl: and he goes into tunnel and he comed out the tunnel.
Carl: and he can't see his tunnel.
Mother: he can't see the tunnel?

The form *comed* is particularly interesting from a theoretical point of view, since it reveals that Carl is not simply imitating adult speech, but rather creating his own system. When children begin to use more and more words with inflections, they tend to go through a period of trying out this rule system in a more systematic way. The rules become over-generalized, and irregular words are treated as regular. For example, English verbs will appear in the form of regular past tense as *comed*, and *breaked*, instead of *came* and *broke*. Some term this developmental process "U-formed learning," since children may first use the correct form *came* and then the incorrect *comed*, seeming to move backwards, before settling for the correct form *came*.

Crosslinguistic Comparisons

Most research on children's development of grammar has centered on the acquisition of English by monolingual children. As regards verb morphology it has been found that English-speaking children have an early focus on whether an activity is past or non-past, since this is obligatorily expressed. However, this is not the way time is organized in all languages. Children learning Inuktitut instead have an early focus on the difference between future and non-future. This is because, in Inuktitut, future markers are obligatory whereas past markers are optional. This means that Inuktitut children hear many more verbs marked for future than for past—and therefore use this structure (Swift, 2004). The acquisition of morphology has been discussed a lot in studies of grammatical development in English-speaking children. However, in other languages the acquisition of word order may be a topic of more interest. In the acquisition of German for example, there is an interlocking of verb morphology and verb placement, which has been shown to be an issue of fundamental interest to the field of child grammar development (e.g., Meisel 1992). German children between two and three years of age show evidence of a developmental relationship between the emergence of morphological markings of finiteness on verbs and the placement of the finite verb in the second position of the clause. Before German children start marking finiteness, verbs are always placed in final position, but when they start using finite forms, finite verbs are placed in second position, and infinitives are still placed in final position. In fact, it is suggested (in the universal grammar framework) that the verb morphology triggers parameter setting of "verb-second" (Clahsen & Penke, 1992).

In many parts of the world, documented particularly in Europe and North America, infants are treated as conversational partners from birth. Parents, other adults, and older children spend much time with the baby, talking, chanting, and singing. The particular way of interacting has been labeled Baby Talk (other terms are "motherese" and "infant-directed speech"). For example, significant differences in fundamental frequency and articulation of speech sounds have been found between speech directed to an adult and speech directed to infants (e.g., Garnica, 1977, Kuhl et al., 1997). Grammatical structures are also adjusted. The adjustments are seen in shorter sentences, less subordination, fewer verbs in past tense and fewer first- and second-person pronouns. Baby Talk has been assumed to be beneficial for language acquisition, helping the child analyze the linguistic input. However, cross-cultural studies show that the language acquisition process is robust enough to also occur in other contexts. For example, in families in Guatemala, Samoa, Papua New Guinea, Java, and Inuit communities in Canada, children learn by observing others rather than being involved in verbal interaction themselves (e.g., Ochs & Schieffelin, 1995). In these cultures, the children are not expected to interact, and the adults do not use the typical pattern with high and variable pitch.

Traditionally, most research on first language acquisition has dealt with the development of only one first language, but there are also scholars who study bilingual first language

acquisition, that is, when the child is exposed to more than one language simultaneously from the start (De Hoewer, 1990; Meisel, 1990). The results show that children are able to acquire more than one language as first language, in the sense that both (or all three) languages follow the same developmental path as that of monolingual children of the respective language, and also that the bilingual children attain the same native competence. The critical age for acquiring two languages as first languages is suggested to be around three and half years (Meisel 2009).

Summarizing the issue of first language development of grammar, empirical research has shown that the developing grammar grows gradually and it is characterized by stages. Children start with only lexical words, proceed to grammatical words and endings, and continue to complex sentence with embedded clauses. Around the age of three, children seem to have grasped the basics of their grammar. This rapid and smooth development toward the complexities of an adult grammar has been explained by reference to a combination of inborn capacities and language exposure.

SEE ALSO: Corpus Analysis of Child Language; First Language Vocabulary Acquisition; MacArthur–Bates Communicative Development Inventories

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First Language Vocabulary Acquisition

EVE V. CLARK

Children produce their first words anywhere between 12 months and 24 months of age. And they add steadily to their vocabulary from then on, at a rate estimated at around nine words a day up to age six (Clark, 2009). However, children understand more than they can produce, so measures of early vocabulary acquisition assess both comprehension and production (e.g., Fenson et al., 1994). At the same time, this comprehension/production asymmetry is life long: speakers of a language consistently understand more varieties than they can produce, and so have a comprehension vocabulary that surpasses what they use themselves in production (Clark & Hecht, 1983). Some researchers have noted a "spurt" in word production in children aged 1;8–1;10 where they start to produce more new words per week than they had in preceding months. However, as McMurray (2007) showed, this apparent spurt does not result from children starting to learn a larger number of words at this point, but rather from their increasing articulatory skill that allows them to add in new words with less practice as they get older. Lastly, neurological studies show that as children become familiar with specific words in their first two years, they show greater left-hemisphere activation for them. In contrast, unfamiliar words show activation in both hemispheres (e.g., Mills, Plunkett, Prat, & Schafer, 2005).

How many words are children aiming for? In English, adult vocabulary size has been estimated at between 50,000 and 100,000 words. Between ages two and six, children acquire around 14,000. After that, in school, they are exposed to some 3000 new words a year from textbooks alone, as well as to new words from a variety of nonschool sources including reading books at home, newspapers and magazines, and radio and television shows. Bilingual children may ultimately learn close to double such numbers, depending on the extent of their language use and literacy in both their languages. In short, children will master a general vocabulary for everyday use plus a range of more specialized domains as they go through school, pursue different interests, and eventually follow a profession.

For each new word, set phrase, or idiom they are exposed to, children must learn the form—this requires being able to identify that form in the stream of speech and retrieve from memory; and they must assign to each form some meaning. They can then identify that form on later occasions as well as adjust the meaning first stored in memory until it matches adult usage. The process of mastering meanings derived from adult uses in context may take several years, but children typically use words as soon as they have assigned them *some* meaning, however incomplete from the adult perspective. In essence, children need to learn the conventions on words and their meanings for the community they belong to, and then observe these conventions as they themselves use the language (Clark, 1993).

In mastering the meaning of a new word, children must master both its reference and its sense: Its reference from adult uses in referring expressions like *the lizard*, and its sense from identifying the other words each such expression is linked to, here for instance: *snake*, *reptile*, *gecko*, *flies*, *sunbathing*, *cold-blooded*, and so on. Meanings are associated with specific forms, such that no two forms carry exactly the same meaning—this is the principle of contrast, and this, along with conventionality, appears to govern both child and adult assumptions about new words (Clark, 1990, 1993).

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The earliest vocabularies children acquire are very similar across languages. They consist of words for a few people (e.g., *mummy*, *daddy*, *baby* [the child himself]), some animals (e.g., *dog*, *cat*, *bird*), toys (e.g., *ball*, *block*, *doll*), small household objects (e.g., *light*, *clock*, *key*) and utensils (e.g., *bottle*, *cup*, *spoon*), activities and states (*up*, *down*, *off*, *there* [as completes an action]), and certain routines (e.g., *night-night*, *peek-a-boo*) (Clark, 2009). As children add more words to their repertoires, they extend and elaborate these domains. For example, they add other words for animals, e.g., *mouse*, *horse*, *duck*, *chicken*, then *cow*, *rabbit*, *goat*, *lion*, and so on. In each case, they must learn the adult extension of the new word—what it can refer to and how it is related to other words already known. At first children often over-extend new words, using *dog*, for instance, for sheep, goats, and cats, all smallish four-legged mammals. Over-extensions like this allow children to talk about things for which they lack the relevant conventional terms, and they disappear once children learn the other words they need, e.g., *sheep*, *goat*, and *cat* (Clark, 1973; Thomson & Chapman, 1977). By age two or so, children assume there are words for objects and events, and they become more likely to ask for those words when they lack them.

As children learn more vocabulary and come to analyze the component parts of words—stems and affixes—they also coin words to fill gaps. In English, they construct new nouns—*climber* for "ladder," *plate-egg* for "fried egg," *car-smoke* for "exhaust," and new verbs—*oar* for "row," *scale* for "weigh," even *decoration* for "decorate." This begins as early as age two, and continues lifelong. When children coin new words, they initially make the simplest changes possible in the elements they use. In English, they frequently make verbs from nouns, with no change in word form beyond the choice of inflections. Or they combine two bare nouns in a root compound by adding the appropriate stress pattern (primary + tertiary) to the two elements, as in *gárden-màn* for "gardener." Only later do they begin to rely on suffixes like the agentive *-er* or on prefixes like *un-*. They also opt for transparency of meaning, favoring root compounds like *mágic-màn* (for "magician") or *cár-mènder* (for "mechanic"). Transparency also leads them to avoid vowel changes in an adjective like *volcanic*, where they instead retain the second syllable vowel from the noun *volcano*. Finally, children favor options that are more productive over those that are less productive in adult speech. For new agent nouns in English, for example, they prefer to add the suffix *-er* over the suffixes *-ist* or *-ian*. The options adults favor provide them with starting points for the construction of new words (Clark, 1993).

Adults play a direct role in how children expand their vocabularies. They supply new words all along, at times explicitly and frequently implicitly. Their explicit offers of new words may be flagged by the syntactic frames used to introduce them, e.g., <u>*That's*</u> *a crab*, <u>*This is called*</u> *an oatcake*. Adults often then elaborate on new terms they have introduced, with talk about general properties, class membership, allusions to prior experience with the same or some related object, and definitions (Clark & Wong, 2002; Clark, 2007). As a result, adults commonly allude to other words that are closely related in meaning, and so link the new word to these other terms from the same domain. For example, after using the noun *jib*, adults will produce, among others: *mainsail*, *sailboat*, *wind*, *sailing*, *triangle*, *steer*, *rudder*, *water*, *rope*, *spinnaker*, *sheet*, *ratchet*, *hull*, *bottom*, *blow*, and *gaff-rig* (Clark, 2010; see also Hills, Maouene, Maouene, Sheya, & Smith, 2009). This helps children both place new words in the relevant domain, and link them to others they already know.

Adults commonly locate new entities in a domain by talking about their class membership, about their parts and properties, and about their actions and functions. And they do this for new nouns, verbs, adjectives, and prepositions (e.g., Clark, 2010). They also expand their children's vocabularies still further with reading—reading to them, especially early on, and later having them read for themselves (e.g., Davidson & Snow, 1995). Family mealtime conversations provide children with yet another setting in which to extend their vocabulary with discussion, definition, and argumentation (e.g., Beals & Tabors, 1995).

The scaffolding provided by conversational interaction also helps in four- to six-year-olds' acquisition of new science terms in the elementary classroom. Without this scaffolding—talk about what the new terms mean and how they are related to other more familiar words—children fail to learn (Best, Dockrell, & Braisby, 2006).

In short, the more language children hear in conversational interaction, the greater their vocabulary growth. This appears to be particularly important for children's first few years of language acquisition. Hart and Risley (1995) found that the amount of time adults spent talking directly with their children was highly correlated with the children's later vocabulary size and with their general success in school several years later. Of course, parents who talk more to their two- and three-year-olds, will continue to talk more to their five-, seven-, and ten-year-olds as well. So exposure to language, to the greatest extent possible, appears to be critical. While Hart and Risley found a general effect of social class, with middle-class parents talking much more with their children than lower-class or welfare parents, there is individual variation among parents within any social stratum, and this too has an effect on children's vocabulary acquisition. Moreover, children who acquire vocabulary earlier, process familiar words with greater speed, and are thus more receptive early on to dealing with new words as they are exposed to them (e.g., Fernald, Perfors, & Marchman, 2006). More adult talk with children early on is associated with early vocabulary growth and faster processing from an early age.

In summary, children start to acquire vocabulary very early, typically producing their first words early in their second year. And they add steadily to the stock of words they can produce as they get older. The rate at which they add new words appears to depend on the range of words they are exposed to. And the more words they hear in their early years, the larger their vocabularies by the time they enter school. Exposure to how new words are used is critical, and conversational interaction is therefore one of the main routes to expanding a young child's vocabulary. As children get older, conversations are supplemented by reading of all kinds and by exposure to a variety of different settings for language use: books, plays, poetry, film, radio, and TV. But the starting point appears to depend on conversations between adult and child.

SEE ALSO: Assessment and Testing: Overview; Depth of Vocabulary Knowledge; Early Bilingualism; Native Speaker; Organization of the Second Language Lexicon; Pragmatics: Overview

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Fishman, Joshua A.

LARISSA ARONIN

Joshua Aaron Fishman (July 18, 1926–) is one of the most influential figures in American and world sociolinguistics of the second half of the 20th and of the 21st century. He is the founder of the sociology of language as a separate field of research. As one of the founding figures of sociolinguistics, he has made a substantial contribution as a thinker, editor, and theorist. He influenced several main fields of inquiry: language planning, language revitalization and maintenance, bilingualism and multilingualism, small languages and globalization. Among his 85 books, many monographs, and hundreds of articles and chapters are seminal works on language and ethnicity, language and religion, bilingual education, sociology of Jewish languages, Yiddish, medical anthropology, and test construction.

In 2010 the National Heritage Language Resource Center at UCLA established the Joshua Fishman Award for Outstanding Contributions and Leadership in the Heritage Language Field. In 2004 Fishman was awarded the Linguapax prize (UNESCO). Fishman founded the *International Journal of the Sociology of Language* (De Gruyter) and has been its general editor since 1973. He also founded a major book series in the sociology of language—*Contributions to the Sociology of Language* (De Gruyter)—which he has edited since 1971. Many of his books and articles have become classics and their titles are widely referred to in the sociolinguistic literature; among these are "Who Speaks What Language to Whom and When?" (Fishman, 1965), *Reversing Language Shift* (Fishman, 1991a), and *Can Threatened Languages Be Saved?* (Fishman, 2001).

Born in a Jewish neighborhood in Philadelphia, into a family of Yiddish-speaking immigrants from Czarist Russia who were remarkably devoted to their mother tongue, Fishman grew up exceptionally sensitive and intellectually tuned into Yiddish. At the age of 18, he graduated from Olney High School which had high standards and offered a range of disciplines which fostered Fishman's multidimensional and multidisciplinary thinking.

The young Fishman was among those few who seriously pursued Yiddish studies, including literature, history, and social issues. In addition to attending public schools he was also studying Yiddish at elementary and secondary levels in a Workmen's Circle school. In his little free time, at the age of 13, he founded and regularly contributed to a Yiddish youth journal, *Yungtruf*. When this journal's offices were transferred to New York in the mid-1940s, the editorial board was expanded to include several other activists, notably Uriel Weinreich. The Weinreich family exerted great influence on Fishman. He studied Yiddish with Max Weinreich during the summer of 1948; Max Weinreich became a model of academic excellence. He and his son Uriel involved Fishman in the YIVO (Institute for Jewish Research) committees, conferences, and publications.

Fishman completed his BS (major in history, minor in Spanish) and MS (psychology) at the University of Pennsylvania on a Mayor's Competitive Scholarship from 1944 to 1948. His PhD dissertation completed in 1953 at Columbia University was in social psychology ("Negative Stereotypes Concerning Americans Among American-Born Children Receiving Various Types of Minority-Group Education"). This comprehensive education, following his rigorous schooling, early experiences, and commitment to Yiddish, governed by his outstanding intellectual abilities, created his unique perspectives on language in society. His natural curiosity and fascination with the multinational and multilingual nature of

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mankind as well as a circle of outstanding colleagues and friends—Einar Haugen, John Gumperz, Charles Ferguson, Dell Hymes, and others—stimulated his academic and social activities.

Fishman's professional appointments included a position of educational psychologist for the Jewish Education Committee of New York in 1951 and a postdoctoral fellowship on quantitative methods in the social sciences at Columbia University in 1953 and 1954. From 1955 to 1958 Fishman directed research at the City College of New York (now City College of the City University of New York), where he taught the sociology of language. In 1954 he became responsible for research at the College Entrance Examination Board. In 1958, he was appointed associate professor of psychology and human relations at Pennsylvania University, where he was also the research director of the Albert M. Greenfield Center for Human Relations. In 1966 Fishman accepted a post as professor of psychology and sociology at Yeshiva University in New York, where he also served as dean of the Ferkauf Graduate School of Social Sciences and Humanities (1963–6) and as vice-president for academic affairs (1973–5).

His major work on language-related data started with the revision of the 1960 national US census questions. It was continued and expanded when Fishman received a long-term (1960–4) research grant from the Language Research Section of the Office of Education, which he later took to Yeshiva University. The purpose of this grant was to determine the "non-English language resources of the United States."

Early Seminal Concepts

Fishman's famous "Who Speaks What Language to Whom and When?" was published in 1965 and since then has served as a basic reference and inspiration in dealing with numerous areas referring to language, its use, and its teaching. The article focuses on patterns of language use within bilingual and multilingual settings. Fishman's first major contribution to the sociology of language was his pioneering work, *Language Loyalty in the United States* (1966), in which, along with the quantitative data, Fishman provided theoretical systematization to language maintenance and language shift.

Domain

Fishman's well-known concept of the domain of language behavior (Fishman, 1964, 1965) evolved from the need to account for patterns of language choice in bilingual communities whereby the use of particular languages in stable bilingual contexts is habitually associated with specific topics, settings, and groups of interlocutors, that is, different domains of use. Fishman defined a domain as a "cluster of social situations typically constrained by a common set of behaviour rules," and as a "social nexus which brings people together for a cluster of purposes" (1965, p. 75). Fishman maintains that the use of one language rather than another in such situations is not random, and he offers an exposition of the topical, situational, and group regulations of language choice.

Fishman identified five widespread domains: family, education, employment, friendship, and government and administration. His concept of domain provides a way of abstracting general regularities from actual language choice and his domain analysis illuminates patterns of language choice in various contexts in a multilingual society.

Diglossia

In 1967 Fishman extended Ferguson's concept of diglossia by applying it to the alternating use of different languages (Fishman, 1967). He thinks of typological relatedness as irrelev-

ant in this connection. For him the essential criterion for a diglossic situation is that in such situations language varieties exhibit "compartmentalization"—a clear separation of social functions. He suggests the following four ways in which individual monolingualism, individual bilingualism, and societal diglossia (in his broader definition) operate in speech communities: (a) with both bilingualism and diglossia (e.g., Guarani–Spanish bilingualism in Paraguay); (b) with diglossia but without bilingualism (e.g., the use of classical and colloquial Arabic in Egypt); (c) with bilingualism but without diglossia (e.g., German–English bilingualism in Germany); and (d) (very rare) with neither diglossia nor bilingualism (e.g., monolingual parts of the USA).

Sociology of Language, Societal Emphasis

Fishman is the key figure in the establishment of the field of the sociology of language as a distinct kind of sociolinguistics. Sociology of language is understood as the discipline which focuses on a language's effect on a society, while sociolinguistics seeks to study the effect of the society on the language. Both fields are closely related. Cumulatively Fishman's writings from the 1968 onward amount to a coherent and clear theoretical foundation for defining the field of the sociology of language. He dwells on the problems and prospects of the sociology of language, the relationship of macro- and microsociolinguistics, and the question "what has sociology of language to say to the teacher?" (1968, 1972a, 1972b).

Fishman insists that language behavior is social behavior (1972c, p. 358). From early on Fishman realized that the neglect of language use by both linguists and sociologists is detrimental to all fields of inquiry connected with language and society. To face this unmet interdisciplinary challenge Fishman devoted constant efforts to convincing linguists and sociologists of the vital importance of both fields of knowledge to inform, fertilize, and enrich each other. In this connection Fishman calls for the necessity of preparing genuinely interdisciplinary specialists.

Yiddish

Fishman himself considers the most important of all his enterprises to be his intellectual and moral dedication to small and unappreciated languages on all continents, and particularly to his own mother tongue, Yiddish. The case of Yiddish is taken up by Fishman as a private, community, and humanistic matter. The linguistic situation of this non-territorial language involves internal rivalry from Hebrew and external competition from majority languages—English, German, Russian, and, to a lesser degree, Polish. The economic, political, cultural, and demographic factors, and the fact that Yiddish is an Ausbau language with a close linguistic relationship to German, significantly weaken the chances of this small language surviving.

Fishman has been making continuous efforts to support, revitalize, and promote Yiddish. His wife, Gella Schwied, is also committed to Yiddish as a teacher, teacher educator, and poet. In 1980 Fishman edited the special issue of the *International Journal of the Sociology of Language* entitled 'Sociology of Yiddish' (Fishman, 1980). The issue contains five articles dealing with Yiddish, including his own article which provides a theoretical analysis of the attaching of high-culture functions to a language of everyday life. Several Yiddish-related publications followed, some in both Yiddish and English, including *Never Say Die! A Thousand Years of Yiddish in Jewish Life and Letters* (1981), *Yiddish: Turning to Life* (1991b), *In Praise of the Beloved Language: A Comparative View of Positive Ethnolinguistic Consciousness* (1996). These works allowed him to develop early on the conviction that weak languages were far from over and done with.

Fishman holds a balanced view of the status of Yiddish today. He believes that only some sectors of the population will use "small" languages for all functions, and that most will just use some of them. It is difficult for Yiddish to perform all the high functions, but there are still a lot of functions available for the small language in order for it to remain of extreme importance to the speech community.

His latest concerns are the enforcement and coordination of language-planning decisions pertaining to Yiddish. He suggests that manifold activities, going beyond moral suasion, could provide a support base in fighting attrition in the face of multiple obstacles.

Fishman also writes a monthly column on sociolinguistics for a Yiddish newspaper, *Forverts* (Yiddish), and regularly contributes to the quarterly *Afn shvel* (Yiddish).

Reversing Language Shift and the Status of Threatened Languages

Fishman as an international authority is best known for his scholarly research and editorial activities in language planning. He was at the forefront of research into language status in developing multilingual nations (Fishman, Ferguson, & Das Gupta, 1968; Fishman, 1974), and since then has discussed and examined many cases of language planning in all parts of the world. His essential writings contain the treatment of all the dimensions and directions of language planning, including language education policy and in-depth works concerning ethnicity, identity, and language (1987, 1999). Fishman reexamined the distinction between status planning and corpus planning and emphasized the huge variation of language situations, societal goals, ideologies, variety of expectations and hopes vis-à-vis language planning (2006).

Fishman's contribution is especially crucial for the area of reversing language shift—a special branch of language policy which he defined (1991a, 1993, 2001). Research and thinking on Yiddish gave Fishman a constantly self-renewing perspective on minorities which led him to insights into the plight of other small and unappreciated languages. Fighting the assumption that small languages would inevitably decline, Fishman demonstrated the resilience and ability of "small" languages and "little" traditions to survive and creatively adapt.

Human values, feelings, and commitments as well as financial and organizational efforts play a significant role in language revitalization and maintenance; still, they cannot ensure the desired result. It is vital that language be passed on by parents to the child, and through a daily community life. In view of rather frequent failures to reverse minority-language situations despite a range of measures taken, Fishman (1991a) argues that priorities have to be observed in order to successfully halt language decline. A Graded Intergenerational Disruption Scale for Threatened Languages (GIDS) (1991a, 1993) can be used as a sequenced set of such priorities. The scale consists of eight stages or steps (Stage 8 signifies the most threatened situation); it aims to show how far a minority language is disrupted and provide a plan for language reversal.

Globalization, Bilingualism, and Multilingualism

In Fishman's comprehensive theoretical outlook, minority language interests coexist harmoniously and are reinforced by a global perspective. In "The New Linguistic Order" (1998) he identifies the crucial trends in the radically changed world—the unprecedented spread of English and its role, and the remarkable diversification of languages in use. Fishman writes on national languages and languages of wider communication (1972c),

and on the nuances and realities in the use of English as a global language (e.g., Fishman, Conrad, & Rubal-Lopez, 1996). He also deals with multilingualism in New York City in a book coedited with Ofelia García (García & Fishman, 2002). His diverse body of work constitutes a comprehensive harmonious view on world languages from social, philosophic, ethical, ethnic, moral, historic, and personal perspectives.

Fishman has been associated with many universities and research centers. His visiting appointments and fellowships include those at the Center for Advanced Study in the Behavioral Sciences (Stanford University) and the Institute for Advanced Study (Princeton University); he has been visiting professor and visiting scholar at the School of Education, Applied Linguistics and Department of Linguistics (Stanford University); adjunct professor of multilingual and multicultural education at the School of Education (New York University); visiting professor of linguistics at the City University of New York Graduate Center. Fishman is a "Distinguished Research Professor of Social Sciences" at Yeshiva University (1966), professor emeritus (1988), a Linguistic Society of America professor (1980), and an honorary doctor of letters at the Free University of Brussels (1986).

SEE ALSO: Bilingual and Multilingual Education: Overview; Endangered Languages; García, Ofelia; Hymes, Dell; Multilingualism

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Flege, James

THORSTEN PISKE

James Emil Flege was born in Cincinnati, Ohio, in 1950. He obtained a PhD degree in linguistics from Indiana University in 1979. His PhD dissertation, supervised by Robert F. Port, was entitled "Phonetic Interference in Second Language Acquisition." From 1980 until 1982, Flege worked as a postdoctoral trainee in speech and hearing sciences, first at the University of Florida and then at Northwestern University. In 1983, he joined the Department of Biocommunication (later known as the Division of Speech and Hearing Sciences), a clinical and research unit at the University of Alabama at Birmingham (UAB). There he set up a large-scale research program funded by several grants from the National Institutes of Health in order to investigate how, and to what extent, the ability to learn speech and language changes across the lifespan. After publishing more than 90 journal articles and 18 book chapters and establishing himself as one of the most, if not the most, influential researcher in the field of second language (L2) speech learning, he retired from UAB in July 2006. Throughout his career Flege's success at obtaining research grants allowed him to collaborate with colleagues such as Ian R. A. MacKay and Grace H. Yeni-Komshian in large-scale studies examining immigrant populations, and to invite young researchers from North America, Europe, Australia, and Asia to work in his laboratory. His former postdoctoral fellows, whose research has been strongly influenced by his ideas, include Ocke-Schwen Bohn, Susan Guion Anderson, Anders Højen, Satomi Imai, Serena Liu, Diane Meador, Murray J. Munro, Thorsten Piske, Anna Marie Schmidt, Kimiko Tsukada, and Ratree P. Wayland.

Most of the work carried out in Flege's laboratory was devoted to the field of L2 speech learning. According to Flege (1988, p. 226), this field examines the processes by which language learners come to "articulate or perceive a speech sound differently after (as compared to before) massive exposure to a foreign language." For the last 30 to 40 years, the role of different variables in L2 speech learning has been investigated in many increasingly detailed experimental studies. Many of these have examined the effects of "subject" variables on immigrants' success in learning to perceive and produce the sounds of an L2. Among these Flege has mainly focused on age-related variables, such as the age of first intensive exposure to the L2 (hereafter referred to as age of L2 learning), the quantity and quality of the L2 input learners receive, first (L1) and second language use, amount and type of L2 instruction, and motivational and affective variables (e.g., Flege, Munro, & MacKay, 1995). Many of the studies carried out by Flege and his colleagues have also investigated the influence of phonetic variables on L2 speech perception and production. These studies have produced important findings showing how the similarities and differences between L1 and L2 phonetic systems may affect the process of L2 speech learning (e.g., Bohn & Flege, 1992; Aoyama, Flege, Guion, Akahane-Yamada, & Yamada, 2004). Some of this work has shown that L2 speech perception and production are not only determined by subject and phonetic variables, but that they are also dependent on "contextual" factors such as the speaking rate at which speech samples are produced or the lexical frequency of the test words used in an experiment (e.g., Schmidt & Flege, 1996; Imai, Walley, & Flege, 2005). Finally, in a few studies Flege has addressed the role social factors, such as a learner's ethnic identity or varying attitudes toward foreign accents, play in the perception and production of L2 speech (e.g., Flege, 1987).

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Since the late 1980s and the mid-1990s, research in the field of L2 speech learning has been stimulated by the two most influential theoretical constructs in the field: Best's perceptual assimilation model (Best & Tyler, 2007) and Flege's (2003) speech learning model (SLM). Both models hypothesize that the learners' success perceiving (and producing) non-native speech sounds depends on the perceived relationship between sounds in their L1 and the L2. The major purpose of Flege's SLM is to account for age-related changes in L2 speech learning. A core tenet

> is that L2 learners of all ages can auditorily detect cross-language phonetic differences, and that they retain all of the original capacities used during L1 speech learning, including the ability to establish new representations and to convert the sensory-based information stored in perceptual representations into articulation. (Flege, 2009, p. 177)

In many of their studies, Flege and colleagues have put the different hypotheses of the SLM to empirical test. The results of these studies have shown that compared to immigrants who begin learning an L2 in late adolescence or early adulthood, those who start in childhood usually have a better overall pronunciation of the L2 (e.g., Piske, MacKay, & Flege, 2001), have a better pronunciation of L2 vowels (e.g., Flege, MacKay, & Meador, 1999) and consonants (e.g., Tsukada et al., 2004), identify L2 consonants better (e.g., MacKay, Flege, Piske, & Schirru, 2001), and discriminate English vowels more accurately (e.g., Flege & MacKay, 2004). On the whole, then, these findings show that the earlier an L2 is learned, the more native-like its pronunciation and perception will usually be. However, Flege's work also shows that early exposure to an L2 is insufficient in itself to guarantee native-like perception and production of the L2 (e.g., Flege, Frieda, & Nozawa, 1997; Højen & Flege, 2006) and that a learner's success in perceiving and producing the sounds of an L2 is also dependent on factors other than age of L2 learning. These factors include amount of continued L1 use (e.g., Piske et al., 2001), quantity and quality of L2 input (e.g., Flege & Liu, 2001), and training in the perception and production of the L2 (e.g., Flege, 1989).

Another important finding of Flege's studies is that bilinguals who perform well in the L2 sometimes do not perform equally well in their L1. For example, MacKay et al. (2001) reported that several native Italian learners of English who produced the English /b/ consonant accurately, did not produce the Italian /b d g/ consonants with the prevoicing that characterizes Italian stop consonants produced by monolingual speakers of Italian. Moreover, Flege, MacKay and Piske (2002) observed that native Italian immigrants to Canada who were dominant in English showed difficulties in translating English sentences into Italian. Such findings suggest that as bilinguals gain experience with an L2, their abilities in the L1 will most likely also be affected by this experience so that that over time they may show signs of L1 attrition.

Much of Flege's work has yielded findings that are consistent with the major predictions of the SLM. For example, the studies examining the perception and production of L2 speech sounds have supported the prediction that production accuracy is limited by perceptual accuracy. Moreover, careful examinations of the L2 performance of learners who began learning an L2 either in childhood or in late adolescence/early adulthood have usually supported the view that age-related effects in L2 speech perception and production are not due to the passing of a neurologically based critical period, but that they arise from changes in how bilinguals' L1 and L2 phonetic systems interact across the lifespan, and that how the L1 and L2 systems interact depends on the state of development of the L1 phonetic system at the time when L2 learning begins.

Flege's research has not focused exclusively on questions pertaining to the perception and production of L2 speech sounds. In a few studies, he and his colleagues have also examined the effects of different subject variables on the acquisition of L2 morphosyntax

(e.g., Flege & Liu, 2001). Findings from these studies suggest that success in acquiring the grammar of an L2 is determined by variables substantially correlated with age, but not by age of L2 learning itself. They suggest that success in L2 grammar learning depends upon the amount of time L2 learners spend in schools where the L2 is the medium of instruction, the amount of time spent using the L2, and the amount of L2 input received from native speakers. Like the results obtained in research examining L2 speech perception and production, these results support a view Flege has repeatedly expressed in his articles, that is, that researchers should not be "dogmatically committed" to just one predictor of L2 learning, but rather that they should acknowledge that successful L2 learning is dependent on a wide variety of variables that are often confounded (e.g., Flege, 2009, p. 189).

In summary, James Flege's research has provided invaluable insights into the nature of L2 speech learning and produced many important findings regarding potential sources of variation in L2 learning in general. It has also been highly influential in establishing methodologies that are now used by many L2 researchers. We can, therefore, be sure that Flege's ideas will continue to stimulate research in the field of L2 learning for many years to come.

SEE ALSO: Bilingualism and Cognition; Bilingualism and Speech Perception; Foreign Accent; Phonological Acquisition; Speech Perception

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Fluency

PAULINE FOSTER

Introduction

Though the term "fluency" may apply equally to the language skills of reading, writing, or listening, it is most commonly applied to speaking. Fluent speech can be defined simply as that which flows easily without noticeable pausing or backtracking. Lennon (2000, p. 26) goes further: in addition to being rapid and smooth, fluent speech is the lucid and efficient translation of thought into speech. Fillmore (1979) goes further still: fluent speech is easily produced, coherent, creative, imaginative, and appropriate. We can see in these definitions that fluency is closely associated with what we might otherwise call eloquence, but while not everyone can claim to be eloquent, most of us are able, most of the time, effortlessly to string words together grammatically without needing to pause frequently or abandon unfinished phrases. This is so universal in humans that it is hardly noticed, but it is an extraordinary skill. Adult native speakers of English, for example, have an everyday vocabulary in excess of 30,000 words (Field, 2004, p. 283) and can select, retrieve, combine, and articulate them in grammatical strings at a rate of between 100 to 240 words per minute. To put this another way, Goldman-Eisler (1968) reported articulation rates of between 4.4 and 5.9 syllables per second. Humans can converse at these speeds for hours without fatigue, making only the occasional slip, estimated by Field to occur only once per 1,000 words. This is evidence for a very efficient storage and retrieval system. When it fails, as it very occasionally does, the speaker is left struggling to recall a word which she knows full well is stored in her mental lexicon. Known as the *tip of the tongue* phenomenon, it stops an utterance mid-stream and sets the speaker off on what can be a determined search.

Fluency and Models of Speech Processing

Currently the most influential model for speech processing is Levelt's (1989, 1993). It has three serial components for speech production: the *Conceptualizer* acts as a preverbal stage where ideas to be expressed are selected and organized; the *Formulator* is where these ideas are encoded into linguistic form through the retrieval of the required words and grammatical structures; the *Articulator* then translates these forms into a phonetic plan which is executed by the neuromuscular system controlling the vocal tract. Obviously, for this model to deliver fluent speech there has to be a degree of parallel processing. If this were not the case speech would be characterized by very frequent pauses as articulation waited upon the next concept to be hatched and delivered for formulation, and conceptualization of the next idea would be waiting upon articulation of the previous one to be complete. For smooth and rapid speech, conceptualizing a prelinguistic idea proceeds while the previous one is in the process of being articulated, and formulation operates on partially complete information as the Conceptualizer feeds in what is to be said rather than waiting for the Articulator to catch up. For native speakers at least, parallel processing of ideas and articulated speech can be achieved easily because the necessary grammatical

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and phonological encoding draws on automatized linguistic knowledge which can be accessed and executed very fast.

The speed of native speaker speech poses a problem for a generative model of language which gives a central position to the creative power of syntactic rules (e.g., Chomsky, 1965). But as Pawley and Syder (1983) and many others since have pointed out, while this model of language predicts the generation of an infinity of novel and grammatical utterances, in practice nothing of the kind is seen. Rather than using their grammatical competence and large vocabulary to generate completely innovative combinations of words, humans everywhere produce utterances made up of combinations that others in their speech community use. There are many kinds of these, including fixed phrases (*It's a question of priorities*), sayings (*There's no time like the present*), metaphors (*as nice as pie*), collocations (*flatly refuse*), phrasal verbs (*get along with*), and partially fixed phrases that require the insertion of one or two words (*that's the last time I'll ever ask x to y for me*). Native speakers of English who produce any of these have not constructed the expression from scratch, using their knowledge of rules and vocabulary, but have retrieved them as chunks of words stored whole in their memory. Novel paraphrases (*no time is similar to the present*, *equal to pie in niceness*) might well be grammatical, but they are obviously bizarre and highly unlikely ever to be produced.

The careful collection in the last 25 years of huge corpora of authentic language samples and the development of computer software than can analyze them have revealed the remarkable pervasiveness of this phenomenon in both speech and writing. Reviewing the evidence from corpus analysis, Sinclair (1991) concluded that language processing was guided in the main not by grammatical principles but by an idiom principle whereby utterances are constructed from collocational patterns. If this were not the case, and if humans were routinely coming out with novel combinations of words, they would presumably have to speak more slowly because it would take longer for Levelt's Formulator to build an utterance one word at a time. But if we see speech as the chaining together of fixed or partially fixed strings of words selected whole from memory, then the remarkable fluency of native speakers is accounted for.

Extreme rapidity of speech rate, such as exhibited by cattle auctioneers, who have been shown to reach speeds of 400 words per minute (Crystal & House, 1990), is only possible when the language is made up, entirely in this case, of fully predictable, highly ritualized, formulaic chunks. A professional auctioneer has practiced saying such formulae over and over again, and he is comprehensible to his audience because they are completely familiar with such formulae and do not have to decode them word by word. By contrast, the health warnings delivered at a very high speech rate at the end of American television commercials for pharmacological products such as painkillers are not highly ritualized except for the final breathless, "*Use only as directed*." As a result, the exact content of the warning can be very hard to comprehend. Comprehensibility is not, however, the issue. Advertisers might be obliged to broadcast the contraindications of their product, but they are not obliged to do so at a speech rate which viewers can follow. This is the auditory equivalent of small print.

Patterns of Pausing in Speech

So far we have discussed fluency in terms of ease of completing an utterance without noticeable pausing. The word "noticeable" is important here. A stream of speech which might strike a listener as very fluently delivered will nevertheless contain many pauses. There is considerable evidence (Pawley & Syder, 2000) that when speakers pause they are more likely to do so between clauses rather than in the middle of them, delivering fluent runs of syntactically complete units. The slight deceleration of speech rate at the approach

of the clause boundary, the pause before the next clause starts, and the slight acceleration of speech rate as the next clause is delivered is evidence for a model of speech planning in which clause-length units of language are encoded one at a time, using partially or fully prepackaged chunks.

When speech is closely transcribed, the pauses and repeated words can make it look far more dysfluent than it sounded to the listener. To illustrate, here are two short transcripts from a BBC discussion program; the pauses are measured to the nearest half second, with those less than half a second shown as (.):

> They are saying, look (1.0) we want to try try to dodge some of the difficult decisions (.) on tax and that means the (0.5) cuts to public spending (.) will be much bigger (.) as a result.

> Disposing rubbish is really really expensive a really really expensive business (.) we face we face massive fines from the EU if we don't if we don't recycle, you'll you'll have huge increases in your council tax bill so (.) let's actually get on and recycle (.) let's reduce the amount of of of rubbish. (BBC, *Daily Politics*, June 2010)

Both of these are examples of extemporaneous, relatively unplanned speech. But even when speech is carefully prepared beforehand, the speaker might still insert a few pauses and repeat a few words in order to come across as more natural. Occasional hesitations do not mar speech. In fact, they aid the process of comprehension. Coupled with intonational rises and falls, they helpfully spell out for the listener the syntactic framework of the utterance as it is delivered. Someone speaking without pausing at all (except to breathe, of course) might strike the listener as rather indifferent to being understood, or perhaps distressed, or else determined not to let anyone else get a word in edgeways. But while short pauses are normal and necessary, long ones are not. According to Jefferson (1989), pauses in English conversation that last for 1.0 second and more become noticeable periods of silence in the speech stream, something which speakers try to avoid unless they are trying for a dramatic effect. Silence is so dispreferred that unfilled pauses of more than 1.0 second will invite the listener to step in and fill them by starting their own turn. To prevent this, speakers fill pauses with little place-holding sounds (*er* or *um*) or else with such expressions as the sometimes maligned *you know*, *like*, *I mean*, and *sort of*. These signal that the speaker has perhaps decided to abandon the formulation of her current utterance midway in order to start again, or perhaps is still trying to complete the formulation of a thought by, for example, finding just the right word. The same place-holding effect can be achieved through repetition of a word or phrase while the next part of the utterance is made ready to articulate, as illustrated in the two transcripts given above. Dysfluencies, such as false starts, repetitions, and assorted fillers, are testament to the fact that speakers monitor what they are saying "online," and may have to pause and restate something which is not a satisfactory formulation of their thought. It is only when these come thick and fast that speech becomes noticeably, and perhaps annoyingly, dysfluent.

In an ordinary conversation most people, most of the time, construct their turns in ways which maintain fluency between speakers. When conversational analysis was first undertaken in the 1970s, researchers such as Sacks, Schegloff, and Jefferson (1974) showed that, in English at least, when two or more speakers are conversing their turn taking conforms to certain rules that minimize inappropriate interruptions, sudden changes of topic, or embarrassing silences. Constructing sequences of utterances across turns requires skillful timing and anticipation of so-called "transition relevance points," where one speaker stops and another starts. A fluent conversation is one in which changes of speaker happen with minimum overlap and minimum gaps.

All normally healthy people are more or less fluent in producing speech, but some are clearly more fluent than others. It is important to consider therefore the extent to which the ability to construct a stream of speech without undue hesitations, pauses, or false starts is a stable characteristic of a given individual speaker, or something affected by the context. For example, some people obviously have a slower than average speech rate, or typically change tack mid-phrase, or pepper their utterances with filled pauses no matter what they are talking about or who they are talking to. Others are able to produce smoother or faster than average speech regardless of circumstances. These stable characteristics might reflect individual differences in working memory capacity, or individual predilection for "online" monitoring and adjusting of utterances in progress. However, a speaker's dysfluency can reflect also a deliberate choice on their part in order to appear truthful, cautious, respectful, or unthreatening as the context demands. Glibness, after all, is a pejorative synonym for fluency which suggests insincerity, superficiality, or a lack of concern, and is something therefore to be avoided. But because a speaker who is dysfluent may be seen to be betraying nervousness, or even guilt, a fine line needs to be trod between being too fluent and not fluent enough.

An extended silence can denote something menacing or unpleasant. In this example from Frankel (1984, p. 3) the doctor's 2.2 seconds of unfilled silence conveys very bad news:

Patient: This chemotherapy (0.2) it won't have any lasting effects on havin' kids, will it?
Doctor: (2.2)
Patient: It will?
Doctor: I'm afraid so.

Schoolchildren learn early on that answering a teacher's question with unfilled silence is a safe way of being disrespectful. Other marks of dysfluency (hesitations, slow speech rate, repetitions, filled pauses) can be also be deliberately employed by a speaker to add another layer of meaning to what they are saying. For example, these show respect for the listener, or tactfulness if the listener is in an embarrassing situation. They show a proper tentativeness in asking for favors or in negotiating a delicate matter. When complex instructions are being given, slow and repetitious speech allows the listener time to understand properly. Slow speech can simplify messages for the very young, or the very confused. Used inappropriately, however, such a speaking style can be very patronizing. "Elderspeak" is the term used to describe the slow (and loud) register which some people seem to shift into when talking to the elderly, regardless of whether the person is deaf or not, or mentally impaired or not.

Language Pathology

Medical conditions can have obvious effects on fluency. Disease or damage to the left hemisphere of the brain, where the language centers are usually located, result in aphasia, or problems in converting thought to language. In Broca's aphasia, the sufferer, despite understanding language normally, has the greatest difficulty constructing utterances and her speech becomes very slow and very labored, as if she were in a permanent "tip of the tongue" state. In Wernicke's aphasia, by contrast, the sufferer produces streams of speech which are very fluent, but which lack coherence, as if (using Levelt's model) the Formulator does not organize thought properly, sending instead very garbled strings to the Articulator, which faithfully produces them. Sufferers of Wernicke's aphasia have comprehension problems also, and so are tragically unaware that their speech is incoherent. As far as they

know, they are speaking normally and fluently and are frustrated when others fail to understand them. Conditions such as Parkinson's disease, cerebral palsy, and muscular dystrophy do not affect the language centers in the brain, but cause dysarthria or weakness of the facial muscles, leading to frustratingly slow or uncoordinated speech.

Perhaps the most common medical problem affecting fluency in speech is stammering (also known as stuttering). While everyone produces hesitations, false starts, and repetitions to some small degree, stammerers can produce an inordinate number of these, some lasting a painfully long time before the speech stream is resumed. It is accompanied by tension and embarrassment, which combine to make the problem worse. There is no one defined cause for stammering. It is thought to arise from a combination of genetic, neurophysiological, and developmental factors, and there is no defined therapy. Fortunately, it is far more common in children than in adults, so in most cases it does resolve. However, it is estimated that 1% of adults in the United States have a persistent stammer, with men outnumbering women by a ratio of three to one (www.stutteringhelp.org).

Fluency in a Second Language

So far, we have considered fluency only from the perspective of native speaker performance. From a second language learner's perspective, fluency is most often viewed as a measure of overall proficiency because their knowledge of the language can be reflected in the speed with which they can use it to formulate and articulate thoughts (de Bot, 1992). People who are beginners in a second language speak slowly and hesitantly, and often lose their way in an utterance, perhaps abandoning it or switching into their first language to avoid communication breakdown. They may have difficulty with pronunciation and need to articulate words with conscious effort. As they acquire greater knowledge of the grammar and vocabulary, and greater ease in pronunciation, their speech rate typically goes up, the incidence of hesitations, revisions, and pausing goes down, and the number of words they produce between pauses increases, all of which is evidence for increasing automatization.

Investigations of fluency in second language acquisition (Skehan & Foster 1999; Derwing, Rossiter, Munro, & Thomson, 2004) use measures such as speech rate, pausing, false-starting, lexical replacements, and syntactic reformulations to explore how learners' performance changes across time or across task and discuss their findings in terms of how they illuminate influences on second language development. Pausing is especially interesting in this regard. As noted above, native speakers have been shown to punctuate their stream of speech with pauses more often at clause boundaries than in the middle of them. But second language learners are just as apt to pause in the middle of clauses as at the end of them. This is a function of three problems involved in using an imperfectly known language: lack of secure and automatized knowledge of grammatical structures; insufficient store of individual vocabulary items; and insufficient store of partially or fully formed sequences of vocabulary items. All conspire to make frequent and untimely pausing inevitable. As a learner's knowledge of the language increases and becomes more secure, pausing in the middle of clauses decreases, and length of run (i.e., how many words are strung together between pauses) grows longer.

It is important to bear in mind, however, that second language learners have been language users since childhood, and if they are relatively dysfluent in their first language they are likely to be dysfluent in their second language for exactly the same reasons. Fluency is prized in second language assessment as a sign of how much a learner knows, while dysfluency is taken as a measure of what he doesn't know or knows only imperfectly. As we have seen, it may equally be a sign of an individual speaker's natural speaking style, or an individual speaker's decision to give an impression of deference or thoughtfulness.

An important issue for second language assessment is to distinguish between a learner's ease of production and his eloquence, that is, the coherent, creative, and imaginative use of the language that Fillmore (1979) included as dimensions of fluency.

The ability of speakers fluently to encode ideas into speech, and of listeners fluently to decode speech back into the thought that inspired it, is a remarkable skill which only the human species has evolved. It would not be nearly so remarkable if it were as slow as, for example, the laborious spelling out of words in Morse code. Its speed means we can talk nearly as fast as we think, and we can decode even faster than that, able to predict the end of someone's utterance before he gets there, and even finish for him if he falters. The rapid and efficient exchange of information on a limitless scale gives the human species a powerful adaptive advantage and might be described as its most important defining characteristic. Most of us, most of the time, take fluency of language so completely for granted that we scarcely notice it. When it is compromised, as in the case of brain damage, disease, or physical trauma to the vocal tract, it is a profoundly distressing disability.

SEE ALSO: Analysis of Silence in Interaction; Assessment of Speaking; COBUILD Project; Conversation Analysis and Turn Taking; Formulaic Language and Collocation; Lexical Priming; Rating Oral Language; Rhythm and Timing in Interaction; Spoken Word Production in Second Language Acquisition

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Focus Groups

DEBBIE G. E. HO

In a church meeting room, a group of widows compare their experiences. One woman complains that other people wanted her to stop grieving within six months but that it really takes much longer. Another woman produces murmurs of agreement throughout the groups when she adds that the second year is sometimes harder than the first (Morgan, 1989).

In Chicago, a group of young African American mothers talk about what it is like to be on welfare. They all agree that it is a hard life, but to hear them tell it they have what it takes to get along despite their obvious problems. Still, as the discussion wears on, their stories are more and more about how hard it is and less about their own ability to rise above their circumstances (Jarrett, 1993).

In a school in Brunei, a non-native English-speaking country in South East Asia, a group of senior high school students talk about their English classes. Most complained about the monotony of lessons and the assessment system in the school. Despite their complaints, the students lamented about their low grades and how this would affect their chances of getting a job or further education (Ho, 2006).

Each of the above examples describes a piece of research using focus groups. As can be seen, a focus group is not just a group of people coming together to talk. Rather, it is a small structured group with selected respondents normally chaired by a moderator. Specifically, focus groups are special groups in terms of size, purpose, composition, and procedures. They are specially set up to explore specific issues and respondents share and respond to comments, ideas, and perceptions brought up in interactive group discussions. It is thus, a "carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive non-threatening environment" (Krueger, 1994, p. 6).

Two key characteristics are exhibited in focus group interviews—it is focused in that it is a collective activity around a small number of specific issues (e.g., welfare system, abortion), and it is interactive, where group dynamics and forces are crucial to successful discussion. These two characteristics make a focus group interview a potentially powerful qualitative research tool in the social sciences. Here, respondent responses are not limited by a set of predetermined questions and the interviewer does not take a leading role as that found in traditional interviews. Thus, respondents are encouraged to disclose information that could be of the highest value to the research.

Originally dominant in marketing research (e.g., Hayes & Tatham, 1989; Greenbaum, 1993), focus group interviews were not known to social scientists up until about a decade ago. Today, research in the social sciences, education, and even health science using focus groups is appearing in academic journals at an increasing rate (Kitzinger, 1993; Morgan, 1997; Ho, 2006).

Is It the Right Method for Your Research?

Among all the research methods in the social sciences, it is important for a researcher to gauge from the outset if a focus group interview is the right method for his or her type

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Table 1 The appropriateness of focus group interviews

Focus groups are useful for:	*Focus groups are not useful for:*
• finding new information (e.g., a new product) and consolidating old information (e.g., examining people's habits) • gaining a variety of perspectives on a topic from respondents themselves (i.e., their beliefs, views, attitudes, motivations, etc.) • exploring respondents' shared experiences of everyday life (e.g., language use, culture, etc.) • brainstorming and generating ideas resulting from respondents providing different angles to problems and offering different solutions • exploring controversial and complex issues (e.g., Chiu & Knight, 1999).	• research that seeks for consensus of opinions or looks to educate people • seeking sensitive information that should not be shared in a group • statistical projections • polarized issues where a group discussion could intensify the conflict • research where other methodologies can produce better quality information more economically • sensitive topics where it is difficult to ensure the confidentiality of data produced.

of research. Table 1 provides a clear summary of when it is and when it is not appropriate to use focus group interviews (Krueger & Casey, 2000; Litosseliti, 2003).

How to Organize a Focus Group

The key areas to consider when planning a focus group interview are the selection of respondents, the drawing up of an interview guide and the role of the moderator.

Selecting Respondents

Here, the emphasis is on getting "information-rich" respondents (Krueger & Casey, 2000), "those from which one can learn a great deal about the issues of central importance to the purpose of the research" (Patton, 1990, p. 169). The crucial question is: "Who has the greatest amount of insight on this topic?" Some focus groups consist of different types of people who can give information on a topic from different perspectives (e.g., getting parents, teachers, food service people, and students to talk about what nutritional foods should be served in elementary school canteens). Focus groups generally consist of between six to twelve people, although there is no fixed rule on group size. Too few, however, may not yield sufficient data while too many may not give enough opportunities for all individuals to contribute.

Designing the Interview Guide

The interview guide sets the agenda for the group discussion. It should incorporate contributions from all who have a stake in the research under study. Although, the moderator may not be the sole person responsible, she or he nevertheless needs to be brought into the designing process of the interview guide in order for him or her not only to be comfortable with the instrument, but also to understand the intention behind the questions.

Interview guides are organized in such a way that questions are less structured and the length of discussion is neither too long nor short. Lengthy discussion on a topic could be exhausting for the respondents. Moreover, questions are sequenced so that general, unstructured questions usually come first and more specific ones are placed at the end. They are also flexible to allow for the nature of a focus group to operate. Examples of the type of questions are: *how do you feel about XYZ? What thoughts went through your head while you watched the program?* It is important that the moderator not "lead" or influence the respondents in any way but to let them talk about their own experiences, feelings, and attitudes.

Sometimes, a researcher may pretest the interview guide before actually using it, either through a mock focus group interview or individuals. Pretesting the guide provides an opportunity to determine if the wording of a question is appropriate and easily understood.

The Focus Group Moderator

As moderators deal with the dynamics that constantly emerges during a focus group discussion, they play a key role in its success. They must know how to handle the "rational man" syndrome (Scott, 1987, p. 35) where respondents tend to give the "right" and "socially acceptable" responses as opposed to those that reflect their actual feelings and viewpoints on the issue under discussion. Also a good moderator is able to gently draw respondents into the discussion, encourage them to interact with one another, let the discussion flow naturally with little intervention and listen well without being judgmental or authoritative. Included among the personal of traits of good moderators are qualities such as empathy, openness, insightfulness, and flexibility. Further information on what makes good qualitative moderators can be found in Stewart and Shamdasani (1990).

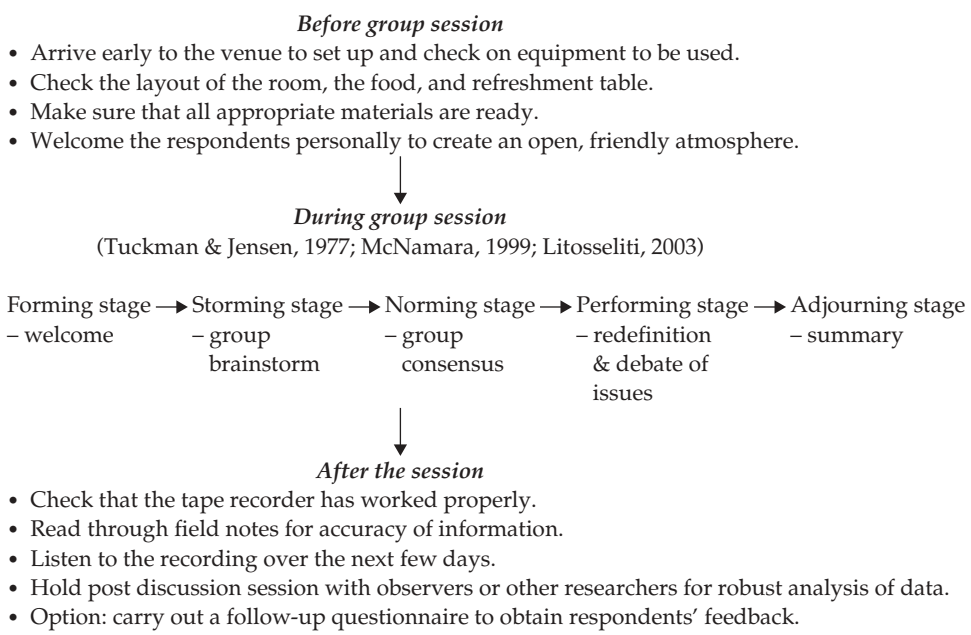

Figure 1 Stages of a focus group interview

Conducting a Focus Group

There are basically three main stages to conducting a focus group interview: before group session, during group session, and after group session. Figure 1 sets out a general overview of the transition of stages in such interviews.

Analyzing Focus Group Data

Because of the open-ended nature of focus group interviews, the analysis and interpretation of findings require judgment and care (Frankland & Bloor, 1999). In this section, we will consider first the possible types of data that form the basis for analysis before going on to the methods of analysis most frequently used with such data.

Types of Data as Basis for Analysis

One type of data commonly used is data from an unabridged transcript, supported by field notes taken by the researcher. The transcript could run anywhere from 30 to 50 pages.

The second type of data could be that extracted from a tape recording of the discussion. The result is an abridged transcript, which is less time consuming than the transcript-based strategy. The focus here will be a careful listening to the tape recording of each focus group, then developing an abridged transcript condensed to the relevant and useful sections of the discussion. The analyst, however, must have a thorough understanding of the purpose of the study to develop an abridged transcript. The transcript may be between 15 and 30 pages.

The third type of data is note-based data which relies mainly on field notes with audio and video recordings as support data. This type of data can be speedily obtained, although its quality will depend upon the ability of the assistant moderator in capturing relevant information. The moderator's notes may be sketchy and incomplete because she or he had to concentrate on the discussion. The note should distinguish between instances of direct quotes and the note taker's paraphrases of respondents' comments.

Methods of Analysis

One quick and cost-effective method of analyzing a transcript is the cut and paste technique or what Krueger and Casey (2000, p. 132) call the "long-table approach." Frequently, this method relies heavily on a single analyst who determines which segments of the transcript are significant, develops a categorization system for the data gathered, decides on representative statements, and then interprets them. The result is a high level of subjectivity and potential bias. For a more reliable analysis, multiple analysts could be recruited to code the transcript independently before a consensus is reached. Steps in applying this technique can be found in Stewart and Shamdasani (1990) and Krueger and Casey (2000, pp. 132–7).

Another common method is the use of content analysis. Here, key points in the discussion are identified and then categorized. Categories are exclusive and well defined in that all statements must fit into one category rather than many categories (Gillham, 2000). Content analysis is an interpretative approach and therefore includes extracting examples from the data. Today, computers are used to assist in content analysis which helps to reduce the time-consuming and tedious task of data making.

One other method of analysis worth noting is data indexing. Here, pieces of data from the transcript are not assigned a single code, nor are they given a final and absolute interpretation. Rather than the exclusive coding of material, each piece may be assigned

Table 2 Strengths and weaknesses of focus groups

Strengths of focus group interviews	*Weaknesses of focus group interviews*
• Provides for a large amount of data quickly and at less cost than individual interviews. • Provides immediate opportunities to clarify responses, for follow-up questions and for probing responses. • Allows for varied and different viewpoints/perspectives within an interactive group. • Can be used to explore a wide range of issues/topics, even complex behaviors and phenomena. • Can be used for obtaining data from children, nonliterate individuals, and "marginal" groups. • Good as primary or supplementary sources of data during the initial or late stages of a research study. • Acts as a compromise between participant observation and individual interviewing as it is less controlled than traditional interviewing and more controlled than participant observation.	• Biased data due to group influence and dominant members. • Analysis and interpretation of findings may be subjective due to the open-ended nature of focus groups. • Susceptible to moderator bias and manipulation leading respondents to respond to his/her own prejudices. • Difficult to make generalizations due to limited number of respondents and lack of representative samples. • Requires considerable logistic effort (e.g., Crabtree, Yanoshik, Miller, & O'Connor, 1993) and resources (Litosseliti, 2003).

several, nonexclusive index-codes and be open to a number of possible interpretations. The final interpretation is postponed until the piece of data can be compared with all the other data having the same index-codes. Thus, emphasis is on inclusiveness rather than exclusiveness. Further information on data indexing can be found in Barbour and Kitzinger (1999).

Analysis of focus group data can take a wide range of approaches, from speedy, highly subjective impressionistic analysis to sophisticated computer-assisted types of analysis. There is no best approach. Rather, the approach used should be consistent with the original purpose of the research.

Strengths and Weaknesses of the Focus Group

Like all other research methods, the focus group interview has its strengths and weaknesses as listed in Table 2.

Ethical Issues

A research study is governed by moral values and principles that act to protect all involved during the research process. As in other methods of social research, there are a number of important ethical decisions in the planning of a focus group interview. Even before embarking on a focus group, a decision must be made on how much information should be given to respondents about the research in an honest and truthful way. Also, let respondents know from the beginning what is expected of the group (Gibbs, 1997), for example,

freedom to speak, no pressure to speak or provide answers, and how much to disclose. Tell them their discussion may be recorded, observed, or both and provide reasons why.

Assure respondents that their contributions will be kept confidential although the issue of confidentiality in a focus group discussion may be more difficult because what respondents say is shared with others in the group. However, effort must be made to keep data obtained anonymous and any publication of such data should be done in such a way as to protect the identity of respondents. Respondents in focus group discussions are expected to keep confidential what they hear during the sessions.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Ethical Debates in Research on Language and Interaction; Ethnomethodology in the Analysis of Discourse and Interaction; Participation Frameworks and Production Formats in the Analysis of Discourse and Interaction

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Foreign Accent

ROY C. MAJOR

One of the first things a native speaker (NS) notices about a non-native speaker (NNS) is a foreign accent. Curiously, even listeners unfamiliar with a language can identify a foreign accent in that language, suggesting that foreign-accent recognition may involve salient universal perceptual factors (Major, 2007). A foreign accent is a pronunciation deviating from what a NS expects another NS to sound like. For example, a NS of American English pronounces *bet* and *bat* differently but a NNS might pronounce them identically. A foreign accent occurs because a NNS's foreign-language system (the *interlanguage*) is different from a NS's. Even NSs of different dialects of the same language have different linguistic systems; for example, in some parts of the USA *Dawn* and *Don* are pronounced identically, but in other areas they are pronounced differently. If the NNS's interlanguage progresses to the point where it is identical to the language of a NS then the NNS has no foreign accent, an accomplishment that becomes less and less common as second language learners grow older. The degree of foreign accent can be measured by various means (Flege, Munro, & Mackay, 1995; Flege, Frieda, & Nozawa, 1997; Munro & Derwing, 1998; Southwood & Flege, 1999; Major, Fitzmaurice, Bunta, & Balasubramanian, 2002; Munro, Derwing, & Morton, 2006), the most common being listeners judging speakers as native or non-native or rating them on a scale ranging from "no foreign accent" to "very heavy foreign accent." Heavy foreign accents can hinder intelligibility. However, there are many compounding factors (Munro & Derwing, 1998, 2001; Munro et al., 2006; Major, 2007), such as speaking rate, familiarity with particular accents, and attitudes ("I can't understand 'those people'" vs. "I love an *x* accent and I have no trouble understanding *x*-speakers").

For our purposes, "first language" (L1) refers to the person's first or native language. "Foreign language" and "second language" (L2) will be used synonymously, regardless of whether the language is the second, third, fourth, or *n*th language.

Why Is a Foreign Accent so Difficult to Overcome?

It is commonly observed that adult L2 learners rarely achieve native pronunciation, although they may master other aspects of the language. However, this observation can be misleading. Imagine you are an intermediate learner of English engaging in small talk for two minutes. You may be able to avoid certain vocabulary, complex grammar, and abstract topics and thus produce native grammar and vocabulary that does not reveal any shortcomings in your knowledge of these aspects of language. However, if you have pronunciation problems with /r/ and /l/, it would be next to impossible to avoid all words with /r/ and /l/, even for 30 seconds. Your foreign accent thus exposes you soon after you open your mouth, but your grammar and vocabulary may not. (Note: sounds, not letters, are represented between slashes / / or square brackets [ ], for example the last sound in *rough* is /f/ or [f].)

Another reason why foreign accent is so noticeable is that it is easily detectable by degrees. When the pronunciation is just a little off a NS can hear slight differences: "Her /r/ isn't quite right" or "His /s/ sounds like a Texan but the rest of his accent doesn't."

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However, for much of the basic grammar of a language, it is either native or non-native—there is no in between: "I she like" is non-native and "I like her" is native. Accent versus grammar is somewhat analogous to playing a violin versus playing a piano. On the piano you either hit the right note or you don't, but on a violin, if you can only almost hit the right note, it sounds terrible.

The amount of exposure to and use of the L2 and L1 can affect foreign accent. In general, the more L2 exposure and use and the less L1 use, the more native-like the L2 accent (Flege et al., 1997; Moyer, 2004). Age of learning the L2 is even more important. The notion that after a certain age (commonly believed to be puberty) it is impossible to learn an L2 with native mastery is called the critical period or the critical period hypothesis (first proposed by Lenneberg, 1967, for L1 acquisition). There is mixed evidence for the existence of a critical period for grammar and cultural phenomena because it is virtually impossible to test all grammatical and sociocultural knowledge of an L2 speaker.

Debate also exists regarding the role of the critical period in accent. Although the vast majority of studies on accent demonstrates that, when learning a foreign language, the younger the better (Asher & Garcia, 1969; Oyama, 1976; Munro, Flege, & MacKay, 1996; Scovel, 2000), a handful of studies demonstrate that highly gifted L2 speakers can pass for native, suggesting that there may be no critical period (Ioup, Boustangui, El Tigi, & Moselle, 1994; Bongaerts, Van Summeren, Planken, & Schils, 1997; Moyer, 1999). Regardless of whether one argues that age is a critical factor, all researchers acknowledge that age is inextricably linked to social, cultural, and psychological factors, such as attitudes toward the target language and culture.

Moyer (2007) found positive orientation an important factor in achieving a more native-like accent. However, having a positive attitude does not necessarily correlate with the desire to sound native. It is well known that one's accent is a mark of identity, be it a regional dialect or an L2. Americans can order sushi, soufflé, tacos, and baklava without ever feeling like they will lose their national identity, but when one starts sounding like a native in the L2, the speakers of that person's L1 may reject him or her as abandoning them: "You've left us"; "You've been gone too long." Age may play a role in such attitudes. For instance, a 3-year-old would probably not have issues with cultural identity because it has not been firmly established. However, in US high school foreign-language classrooms, teachers often remark that students with very good pronunciation are often considered show-offs by their fellow students. This is somewhat akin to adult NSs of English who may seem just as pretentious when they flaunt their near-native pronunciation of foreign words such as *Bach*, *Debussy*, *van Gogh*, *de rigueur*. Furthermore, a society's prevailing attitudes toward various accents can influence speakers' desires to overcome their own accents. It is commonly observed that many British and French immigrants to the USA do not lose much of their foreign accents, but these accents generally have higher prestige than many other accents, for example a Spanish or Middle Eastern accent.

Two Main Linguistic Sources of Foreign Accent: L1 Transfer and Universals

L1 transfer occurs if the phonology (sound system) of the L1 operates when speaking the L2. Transfer can be positive or negative. *Positive transfer* occurs when L2 and L1 phenomena are the same, a free ride so to speak. For example, because French and English both have a /ʃ/ (the *sh* sound in *she*) a French speaker and an English speaker have no problems with /ʃ/ in each other's language. However, *negative transfer* or *interference* occurs when L2 and L1 phenomena are different, which results in a foreign accent. A NS of English who recognizes a French, Spanish, or Japanese accent can do so because of negative transfer.

Spanish speakers of English often have problems with English /ʃ/ and substitute a /tʃ/ sound (the *ch* sound in *cheese*) because most varieties of Spanish have a /tʃ/ but no /ʃ/ sound. In contrast, Spanish speakers also transfer their /tʃ/ to English /tʃ/, a case of positive transfer. (To listen to examples of different accents of English see http://web.ku.edu/~idea/.) Note that because French has no /tʃ/ sound French speakers would tend to transfer their /ʃ/ sound to English, a case of negative transfer. Thus, what can be positive transfer in one language can be negative transfer in another language. These examples above are called *sound substitution*.

Transfer encompasses not only sound substitution, but also *phonological processes*, which affect how the basic sounds are pronounced in different positions in a word. Try this experiment. Place your hand close to your lips. Pronounce *spare* and then *pair*. If you are a NS of English you will feel much more air expelled for *pair* than for *spare*. Dutch, French, Portuguese, Spanish, and a host of other languages do not have this *aspiration* (in this case, the basic /p/ sound is more precisely represented phonetically as [p^h]) and English speakers pronouncing these languages will tend to automatically produce [p^h]) when speaking these L2s, giving them a foreign accent. (Therefore, a NS of English pronouncing French *père* 'father' may pronounce the first sound as [p^h] instead of [p], and the same process may also apply to /t/ and /k/.) Such processes are largely unconscious to NSs. In contrast, NSs are very aware of the basic sounds (phonemes) of their own language (represented by //), for example, an English speaker knows /s/ and /z/ are different sounds (regardless of spelling: *lazy*, *easy*, *greasy*), but probably is unaware that the *k* in *kill* and *skill* are different (i.e., [k^h] and [k]).

A third type of transfer is called *phonotactic transfer*, which concerns the sound patterns of a language—for example, which sounds can begin or end a word (in English a word can end but not begin with an *ng* sound), what sounds can occur next to other sounds (Spanish has /s/, /p/, and /r/ but a word cannot begin with /spr/ or end with /rps/ as in English *spray* or *harps*), and how syllables are made up (in Japanese, Italian, or Portuguese a syllable usually has to end with a vowel). Thus, Japanese, Italian, and Portuguese speakers may insert vowels and pronounce *dog* as *dogu*, *dogay*, and *doggy* respectively, and a Spanish speaker may say *espray* for *spray*. The same phenomenon occurs when foreign (loan) words are adopted into the language: In Brazilian Portuguese, *picnic* and *Big Mac* are pronounced *peekyneeky* and *Biggy Macky* and in Japanese, *Big Mac* and *McDonald's* are pronounced *Biggu Macku* and *Makudonarudo*.

Another type of transfer occurs at the level of *prosody*. Prosody includes stress, pitch, intonation, rhythm, and even voice quality (e.g., sounding nasal, breathy, or guttural). An Italian may speak English with Italian intonation and a French speaker may tend to stress the last syllables in English. The rhythm of languages also differs. Spanish tends to have syllables of equal length regardless of stress, whereas in English the stressed syllables are much longer than the unstressed syllables. Compare, for example, the pronunciation of the same word, *banana*, in English and in Spanish (*plátano* in some Spanish dialects). English speakers will tend to cut short the unstressed syllables when speaking Spanish (the first and last syllable in *banana*), giving them a foreign accent.

Speech style can also influence foreign accent. Generally, the more careful the style, the less foreign accent there is. A NS of English who studies Chinese for six months and practices daily pronouncing the word for *mother* (*ma*, which has a high-level tone in Mandarin) may after six months sound native for this one word, but most probably the same person will have a foreign accent in conversation. Transfer operates across styles. Accordingly, an L1 phenomenon that occurs only in casual speech will usually transfer to casual speech in the L2 but not to the formal variety. For example, in informal speech in Japanese and Brazilian Portuguese vowels become whispered and deleted. Thus, Japanese *sukiyaki* sounds like *skiyaki* and Portuguese *lápis* 'pencil' sounds like *laps*. Curiously and

fortuitously for these speakers, accuracy for some words in English can actually be better in casual speech. Thus, in careful speech a Japanese speaker of English may say *sukai* for *sky* but in running speech may pronounce it accurately. Likewise, a Brazilian carefully pronouncing *laps* might say *lappeess*, but in running speech pronounces it accurately.

Although transfer is important in foreign accent, some substitutions cannot be traced to the L1. Such instances are called *universal substitutions* because, regardless of the language, they are common in first language acquisition, yet they do not occur in adult NSs of that language. Nemser (1971) reported that when pronouncing English /θ/ (the first sound in *thick*) Hungarian learners produced [sθ], which occurs neither in native English nor in Hungarian. Major (1986) found that American English speakers learning Spanish /r/ used a sound that was neither native Spanish nor English; rather it was made in the back of the mouth, similar to a French or German *r*-sound (phonetically [ʁ]), even though none of the speakers had studied French or German). Overgeneralization is another example of universals. The band Sublime's "Caress Me Down" is in English and Spanish. In a live performance (http://www.youtube.com/watch?v=fvEj5iZMEpU), the lead singer pronounces the Spanish trilled /r/ accurately but he also pronounces the single *r* between vowels in the same way, unlike NSs of Spanish, who make a distinction (the *r* in *perro* 'dog' is trilled [r], whereas in *pero* 'but' it is [ɾ], similar to the *tt* in English *gotta go*). Listen to the following footage: *quiere* 1:28, *ahorita* 1:29, *trataron* 1:33, *dinero* 1:41. Similarly, in "Toes" (Zac Brown Band: http://www.youtube.com/watch?v=lB8Nkn3Xjes, 3:00) the *r*s in *señoritas*, *quiero*, and *dinero* are pronounced inaccurately with the trill. All of the above examples are called universal substitutions because they cannot be attributed to the L1 or L2 and in fact they occur in children learning their first languages. Children often overgeneralize rules and patterns of sounds and substitute various non-adult NS sounds when learning their L1s. L2 speakers that sound near-native but not quite native often produce universal substitutions. A speaker's accent may not sound like a Spanish, French, German, or Russian accent, even though the speaker's L1 is one of these languages. Perhaps the /r/ *is* a little strange or exaggerated, but definitely not a Spanish, French, German, or Russian r-sound.

An L2 speaker whose accent is the result of universals is generally more advanced than one whose accent is the exclusive product of transfer. Transfer demonstrates a lack of mastery of the L2, in other words absence of learning. It could be said that a person with the heaviest of accents is in fact not using the L2 phonological system at all (although they might still be using the lexicon and grammar of L2): The speaker is merely using the L1 system—but using all foreign words. On the other hand, substituting something other than L1 phenomena demonstrates progress, even though it might not be native-sounding. The notion that universals represent a more advanced stage was proposed by Major (1987, 2001). His ontogeny phylogeny model claims that, at initial stages of L1 acquisition, transfer predominates and over time decreases, but at initial stages universal factors are infrequent, and then they gradually increase and finally gradually decrease. Major also proposes that these same patterns hold as style becomes more formal. For example, transfer is more frequent in casual speech than in reading a word list. In simple terms, the model means that learners start with what they know (L1). Later they attempt something new, though not getting it right (universals). For style, in reading a word list they can overcome their L1 accent but in casual conversation they concentrate on the topic, not pronunciation, so the L1 accent surfaces.

Why Are Some Phenomena More Difficult to Learn Than Others?

Difficulty often occurs when L1 and L2 phenomena are similar. Oller and Ziahosseiny (1970) found that speakers whose native languages did not use the Roman alphabet made

fewer spelling errors in English than speakers whose languages did. Although limited to spelling, their study implies that, if any L1 and L2 phenomena are very similar, the L2 speaker may not notice differences and may continue to substitute the L1, never mastering the L2. In the speaker's mind "a rose is a rose is a rose is a rose" can be translated as "a /p/ is a /p/ is a /p/ is a /p/." Thus, an English speaker thinks of English /p/ as the same as French /p/, and uses the English aspirated [p^h] for French unaspirated [p] (see example above for *père/pair*). The L2 speaker thinks it is accurate but the L1 listener notices that something is slightly off. Taking an example from German, the German /u/ sound (e.g., *du* 'you') is made much farther back in the mouth than the /u/ in most American and British dialects of English, so the English /u/ sounds non-native to a German speaker, even though English speakers may think English and German /u/ have the same sound. A third example from Brazilian Portuguese concerns the sound /v/. Portuguese /v/ is made with much more friction than English /v/ so an English /v/ in Portuguese sounds like a Spanish accent to Brazilians. Flege's speech learning model (1995) captures the effect of similarity on L2 acquisition. It claims that similar sounds are harder to learn than dissimilar sounds because speakers classify similar sounds as "equivalent" (his term). Flege and others have carried out dozens of studies supporting this claim, often finding learners able to master dissimilar sounds but not equivalent sounds. Major's ontogeny phylogeny model (2001) adds to this notion, by claiming that similar phenomena are acquired very slowly because L1 transfer predominates, and as a consequence universal factors are relatively unimportant compared to L1 transfer. However, one problem with any claims about similarity is that it is often difficult to precisely define "similar" and "dissimilar."

In addition to L1/L2 similarity there are some phenomena that are intrinsically difficult to learn, regardless of one's L1. These *marked* phenomena are rare in the languages of the world and in L1 acquisition are acquired after other phenomena. American English /r/, a marked sound, occurs in only about five percent of the languages of the world (Maddieson, 1984), and children learning English as their first language usually experience difficulty with /r/. Most 2-year-olds have no trouble pronouncing *Mommy* but much trouble pronouncing *cereal*. Likewise, in L2 acquisition, marked phenomena are difficult to master. Arabic has two types of *k*-like sounds, one similar to English and one made much farther back in the mouth (phonetically [q]; in Arabic, the first sound in *Koran* is [q], not [k]). Making these two different sounds is difficult for speakers whose L1s have only [k] (which includes most languages of the world). Navajo and Amharic have *ejectives*, difficult sounds for L2 learners whose L1s do not have them (most languages of the world). The Navajo word for arrow is *k'a'* (listen to http://www.phonetics.ucla.edu/course/chapter11/navajo/n15.aiff). *Clicks* occur in many South African languages (see the film "The Gods Must Be Crazy" and "The Click Song" by Miriam Makeba, heard widely in the USA in the 1960s: http://www.youtube.com/watch?v=2Mwh9z58iAU). Although many languages make *click* sounds in interjections, such as English *tsk tsk* or *giddy up* (and even the sounds infants make when sucking and kissing are technically clicks), the numerous clicks made in such languages as Xhosa and !Kung are difficult for L2 learners (Xhosa has 18 different clicks).

Eckman (1977) was the first researcher to formalize the effects of markedness in L2 acquisition. His markedness differential hypothesis claims that unmarked phenomena are acquired before marked phenomena. Major's ontogeny phylogeny model (2001) also addresses markedness: Marked phenomena are acquired more slowly than unmarked phenomena and the role of universals is much greater than the role of L1 transfer, in contrast to similar phenomena where these roles are reversed. The reason why universals are more prevalent in more marked phenomena is that after the initial stages of L1 transfer the speaker attempts a non-L1 sound but does not hit the L2 target accurately, resulting in a universal substitution. Another reason why universal substitutions are prevalent in marked phenomena is that there may be no similar L1 sounds. For example, there are

no obvious English consonants equivalent to Xhosa clicks. Because marked phenomena are difficult, the learner repeatedly fails to hit the L2 target, using a range of universal substitutions.

Conclusion

The formation and change in an individual's foreign accent is governed by many interrelated factors. Non-linguistic factors include L2 exposure, L1 and L2 use, age of learning, and sociocultural and psychological factors, such as attitudes toward the target language. The two most important linguistic factors are L1 transfer and universals. In turn, a listener's perception of a foreign accent is influenced by all of the above factors.

SEE ALSO: Accent Reduction; Comparative Phonetics and Phonology; Intelligibility; International Phonetic Alphabet; Phonological Acquisition; Phonological Analysis; Sound and Spelling; Speech Perception

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Foreign-Language Distance Learning Programs

CYNTHIA WHITE

In foreign-language programs, learning and teaching have traditionally taken place in close proximity, and at particular points in time. A defining feature of distance language programs is the separation in physical space, time, or both space and time between sources of instruction and learners, with the distance being mediated by technology. Early forms of distance language programs were developed according to two distinct approaches: the American model comprised group-based learning delivered by satellite or videoconferencing technologies while the European model centered on print-based independent learning opportunities, supplemented later by the use of the telephone, face-to-face opportunities, audio, video and CD-ROM. The advent of computer-mediated communication (CMC) which provided opportunities to take part in synchronous and asynchronous learning events with others online then superseded both models. The structures of distance language programs remain, however, diverse (Blake, 2009) and include various permutations of media use, interaction, and support: print-based courses with online support systems, classes delivered via satellite to different sites augmented by interactive opportunities online and Web 2.0 tools, and podcasts supplemented by text-based materials and chat facilities, are all examples of distance language programs. Theorizing of distance language learning has developed through research into instructional voice (Holmberg, 1985), learner autonomy (White, 2003, 2007), task-based language teaching (Doughty & Long, 2003), teacher expertise (Hampel & Stickler, 2005; Levy, Wang, & Chen, 2009) and identity (White, 2007). The learner–context interface theory (White, 2009), for example, frames distance learning as a form of critical adaptive learning, encompassing how individual learners construct their learning environment, negotiate meaning, and regulate both themselves and their context. Important lines of enquiry in foreign-language distance learning programs concern course development, task design, learner support, teacher expertise, affective aspects of distance learning, and questions relating to innovation and best practice.

Developing appropriate resources is often perceived as the central challenge for distance language learning, and much attention has been given to the process of constructing course content. In earlier course models, predetermined content functioned as the main source of instruction stressing the importance of providing a "teaching voice" within the materials and developing a "guided didactic conversation" with learners (Holmberg, 1985). Emphasis was also placed on developing materials which fostered learner engagement with the content and developed independent learning skills through the use of self-assessment questions and reflective action guides. The explicit philosophy underpinning such language programs was to adopt a preemptive approach to supporting learners by anticipating their needs and difficulties, and endeavoring to equip them with all the learning resources, skills, and strategies they would need (Hurd, Beaven, & Ortega, 2001). Candlin and Byrnes (1985) broke new ground with a contrasting approach based on the development of open materials as the core of distance language programs: their open curriculum encouraged learners to go beyond the course materials to engage with language resources in their environment and to make choices in terms of the content and goals of their learning.

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As a pedagogical innovation it represented a fundamental shift in what was considered possible in teaching at a distance, and elements of this approach were incorporated into subsequent language programs. More recently attention has been given to developing opportunities for CMC-based interactions and increasingly rich multimedia delivered via the Web (Blake, 2005), as well as to opportunities that encourage learners to participate in authentic social computing networks (Tudini, 2007).

Task design in distance foreign-language programs has been informed by cognitive and interactionist SLA theory (Reinders & White, 2010), most notably through the contribution of Doughty and Long (2003). The ten design principles they identify are concerned with activities, input, learning processes and learners, and how these may be implemented in a distance learning context. Doughty and Long's framework has guided task design in videoconferencing, audiographic conferencing, and multimodal environments as well as enquiry into interaction and negotiation of meaning in those environments. Important avenues of research have included tracing how the materiality of multimodal environments influences learners' and teachers' responses to different task features, and the activities developing around tasks.

The nature of teacher expertise in distance language programs has been explored to a significantly lesser degree than in face-to-face classroom settings. Moving from classroom settings to teach languages at a distance involves shifts in three broad areas: learning to use new forms of communication and interaction, developing skills in and awareness of new and unfamiliar domains, and adjusting to the complex scale of processes in developing and delivering distance language programs. These changes require distance language teachers not only to develop new teaching practices in new mediums but to undergo a shift in their identity as language teachers (White, 2007) and their understanding of language teaching and learning activities. A taxonomy of skills for teaching languages online has been developed based on distance language programs and beginning with more general skills of working with the technology and its constraints and possibilities, then moving on to the social skills of community building, with the highest level comprising skills in teaching languages creatively and developing a personal teaching style online (Hampel & Stickler, 2005). Opportunities to develop both technological and pedagogical skills have included experiential learning events where teachers are learners, virtual peer support networks based on sharing responses and experiences (Ernest & Hopkins, 2006), and online practice teaching, including both individual teacher lessons and team teacher sessions (Levy et al., 2009). Investigations into student perceptions of the qualities of effective distance tutors have emphasized the importance of affective and organizational dimensions of tutor engagement (Murphy, Shelley, & Baumann, 2010).

Learner support is integral to the quality of learning and teaching experiences in distance language programs: it involves interacting with learners about their needs, interests, priorities, concerns, choices, and reflections on their learning as they emerge throughout a course. Support comprises cognitive, affective, and organizational dimensions (White, 2003) including, for example, providing feedback on target language use, paying attention to the morale, motivation and agency of learners, providing technical support, or enrollment advice and troubleshooting online. One of the earliest studies into feedback came from Hyland (2001) who highlighted the critical role of feedback in not only responding to students' performance, but in guiding the way students engage with the course and the strategies they use; feedback as a means of demonstrating interest in students' learning and providing encouragement was also emphasized. Importantly, the study highlights the situated nature of feedback, and argues for both teacher training in providing feedback and learner training in making effective use of it. Research in different contexts reveals that it is difficult to make generalizations about learner support since it tends to be a highly

situated, pragmatic activity, influenced by institutional climates and such sociocultural factors as student expectations, teacher expertise, and ideas about how students learn language at a distance. Dreyer, Bangeni, and Nel (2005) document their research into the needs of higher education students developing English for tertiary study in South Africa; they argue for the value of a contextual, proactive approach in setting up support programs which, it is argued, need to be responsive to the dynamic nature of individual learners as they progress through a course as well to the continuously changing contextual factors impacting on language learning.

The role of affect in learning a language at a distance is a more recent avenue of enquiry and relates to the more isolated study context, separation from peers and the teacher, and reduced or altered forms of social contact and interaction. In terms of emotions, the predominant focus has been on anxiety (Hurd, 2007), on the aspects of language learning that give rise to emotions, and on the regulation of negative affective states through such strategies as self-reinforcement, self-encouragement, self-motivation, and self-talk (White, 2003). Specific aspects of course design and delivery identified by students as facilitating a positive learning experience include ensuring clarity in materials, providing encouraging feedback, and careful scaffolding of tasks particularly at beginner levels, and giving support that takes account of the personality characteristics and life stages of learners (Hurd, 2007). Both motivation and confidence in one's capacity to cope with the challenges of distance learning have been identified as central to success (White, 1999), as have locus of learning and affective strategy use (Bown, 2006).

Foreign-language distance learning programs now hold an important place in the landscape of language-learning opportunities, offering flexible access to increasingly rich learning environments. Research into distance learning programs has now entered its fourth decade with evidence of a growing interplay between theorizing, research, and practice particularly in course development and task design, teacher learning, affective dimensions of distance language-learning processes, and the affordances of particular learning environments. In an important recent article Blake (2009) explores the particular challenges of research into distance language programs while providing compelling arguments for further enquiry into the effectiveness of distance learning for languages and best practices in distance pedagogy. While the emergence of distributed and blended learning opportunities has blurred the distinction between distance programs and classroom programs, it has revealed clear gaps in our knowledge to guide the articulation of distance learning environments into more traditional course formats, and how these relate to curricular and pedagogical goals. Pursuing that avenue of enquiry is a key challenge for the field, and will shed further light on both the potential and affordances of distance language programs.

SEE ALSO: Distance Language Learning; Instructional Computer-Assisted Language Learning; Multimodal Computer-Mediated Communication and Distance Language Learning; Technology-Supported Materials for Language Teaching

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Foreign-Language Teaching for Students With Language-Learning Problems

RICHARD L. SPARKS

Learning disability (LD) is a generic term that describes academic learning problems in reading, writing, and mathematics. As specified by US federal law, LD is defined as follows:

> A disorder in one or more of the basic psychological processes included in understanding or using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations . . . the term does not include children who have learning disabilities, which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage. (US Department of Education, 1968, p. 34)

Since the term was first coined by Dr. Samuel Kirk in 1963, LD has proven to be one of the most confusing, contentious, and contradictory of the disabling conditions. In fact, no single problem has plagued research in LDs more than the lack of an empirically valid definition for LD (Fletcher, Lyon, Fuchs, & Barnes, 2007). Consequently, the field has also been unable to reach consensus on a logically consistent, easily operationalized, and empirically valid classification system for diagnosing students as LD. For example, students have traditionally been classified as LD on the basis of discrepancies between their scores on standardized measures of intelligence (IQ) and achievement, that is, reading, math, and written language. However, research since the late 1980s has found this approach does not yield a group of learners with common cognitive or achievement profiles. As a result, students classified as LD constitute a heterogeneous group and are not distinguished in meaningful ways from students with generic learning problems. For example, poor readers classified as LD exhibit the same pattern of information-processing deficits, that is, phonological processing, as poor readers not classified as LD (Stanovich, 2005).

In terms of teaching foreign languages, too, the LD label has generated considerable confusion. The purpose of this entry is to review and describe (a) the relationship between first language (L1) and second language (L2) learning problems, (b) research on L2 learning problems, and (c) research on teaching strategies for low-achieving and at-risk L2 learners. The work reviewed in this entry has been largely conducted in the United States and concerns foreign-language (L2) learning that begins in high school.

Linguistic Coding Differences Hypothesis and L2 Learning Problems

Sparks and Ganschow proposed the linguistic coding differences hypothesis (LCDH) to explain why students exhibited L2 learning problems and to demonstrate the connections

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between L1 and L2 learning (Sparks, 1995; Sparks & Ganschow, 1995). In the LCDH they speculated that (a) L1 skills serve as the foundation for L2 learning; (b) both L1 and L2 learning depend on basic language-learning mechanisms; and (c) problems with one component of language, for example, phonological processing, will have a negative effect on both L1 and L2 learning. In addition, they speculated that students with L1 learning problems would likely have lower L2 aptitude. The authors' studies (e.g., see reviews in Ganschow & Sparks, 2001; Sparks, Patton, Ganschow, & Humbach, 2009a, 2009b) as well as research in other contexts, for example, in Finnish and Hebrew (see Dufva & Voeten, 1999; Kahn-Horwitz, Shimron, & Sparks, 2006), have supported the tenets of the LCDH.

Initially, the LCDH was applied to the problems of students classified as LD. As LD students began to enroll in L2 classrooms in the late 1980s and early 1990s, both foreign language (FL) and special educators *assumed* that these students would experience L2 learning problems because LDs are generally language based and L2 learning involves the learning of language. For example, in the early 1990s, the author of this entry and his colleagues, all of whom are LD specialists, described links between language-based LDs and L2 learning and initially used the term *foreign-language learning disability* to describe students' problems with L2 learning. However, they quickly changed their minds when their research findings revealed that there were no differences between L2 learners classified as LD and other low-achieving (non-LD) L2 learners. Studies over the next 15 years confirmed these findings and have shown that there is not a unique "disability" for L2 learning (Sparks, 2006).

Research on L2 Learning Problems

Except for Paul Pimsleur, little or no empirical research with students who exhibited L2 learning problems or students classified as LD prior to the 1990s had been conducted. Since that time, Sparks and Ganschow have conducted numerous studies that have found strong connections between students' L1 skills and their L2 aptitude, L2 oral and written proficiency, and L2 classroom achievement. These studies have compared (a) high- and low-achieving L2 learners, (b) low-achieving L2 learners and L2 learners classified as LD, and (c) students classified as LD who passed L2 courses and LD students who received course substitutions and waivers for the LD requirement. (For a comprehensive review of studies cited here, see Ganschow & Sparks, 2001; Sparks, 2006; Sparks, Humbach, & Javorsky, 2008.)

In studies that have compared high- and low-achieving L2 learners enrolled in L2 classes, findings have shown that high-achieving L2 learners exhibit significantly stronger L1 skills in, for example, word reading, pseudo-word decoding, spelling, writing, grammar, and in L2 aptitude on the Modern Language Aptitude Test (MLAT) than low-achieving L2 learners, even after controlling for differences in cognitive ability. In most studies, the primary L1 difference was found on measures of phonological processing, that is, speech sounds and sound-symbol relationships. In other studies, high- and low-achieving L2 learners who displayed stronger L1 skills and higher L2 aptitude also achieved higher levels of oral and written L2 proficiency. In recent longitudinal studies, L1 skill differences in reading and language between high- and low-proficiency high school L2 learners have been found to emerge as early as the primary grades (Sparks et al., 2009a).

Studies that have compared low-achieving (non-LD) high school L2 learners with students classified as LD enrolled in L2 courses have found that there are no cognitive (IQ), L1 achievement (e.g., reading, spelling, vocabulary), or L2 aptitude (MLAT) differences between these two groups. In recent studies that followed students over several years, no significant differences were found in early L1 literacy skills, cognitive ability, L2

aptitude *as well as* L2 oral and written proficiency, L2 word decoding, L2 spelling, and L2 classroom achievement among low-achieving learners and LD students in L2 classes.

In a series of studies with postsecondary learners, students classified as LD were divided into groups defined by whether or not they exhibited IQ (aptitude)-achievement discrepancies. The findings revealed no differences in college entrance exam scores, L2 aptitude (MLAT), college L2 grade point average (GPA), or graduating college GPA between the discrepancy-defined groups. (In the United States, course substitutions and waivers for students classified as LD are commonplace [Sparks, 2008].) When LD students who had received course substitutions for or waivers from the college L2 requirement were compared with LD students who had passed college L2 courses, no differences were found in IQ, academic achievement (reading, writing, language, math), graduating GPA, and ACT/SAT scores, or on demographic variables (e.g., tutoring in the L2, time of LD diagnosis). Moreover, L2 course grades for those LD students who had completed L2 courses in high school and college were primarily A, B, and C, which showed that students classified as LD often do well in L2 courses. (In the United States, grades range from highest [A], to average [C], and lowest [F].)

The aforementioned findings in relation to LD students are important because they show that students classified as LD (a) do not routinely exhibit problems with L2 learning, (b) do not exhibit L1 skill or L2 aptitude differences or more severe L2 learning problems than other low-achieving L2 learners, and (c) do not exhibit distinct learning profiles or unique problems with L2 learning when compared to students classified as LD who have succeeded in L2 courses. The findings suggest that like all other academic skills, L2 aptitude and L2 proficiency occur along a continuum of very strong to very weak language learners and that L2 learners classified as LD, like non-LD learners, are represented along this continuum.

Research on L2 Teaching Strategies

Despite the growing body of evidence that L2 learning is strongly related to students' L1 skills, L2 teaching strategies for students classified as LD and low-achieving L2 learners have focused primarily on non-cognitive variables such as affect, learning styles, learning strategies, and personality (see Ehrman, 1996). However, Sparks and Ganschow have argued that low-achieving L2 learners have a cognitive difference (or deficit) that is reasonably specific to *language* skills (Sparks, 1995; Sparks & Ganschow, 1995). Their studies have shown that students' anxiety about or motivation for L2 learning are related to their levels of L1 learning skills and L2 aptitude, both of which have been found to be predictive of oral and written L2 proficiency and achievement (Sparks & Ganschow, 2007; Sparks et al., 2009b). To date, well-designed studies using non-cognitive variables to teach L2s have not produced evidence showing that lowering anxiety, increasing motivation, using learning strategies, teaching to individual learning styles, and matching instruction with personality have significantly improved the L2 proficiency of low-achieving L2 learners, LD or otherwise. (For differing points of view on non-cognitive variables and L2 learning, see MacIntyre, 1995, and Sparks & Ganschow, 1995.)

However, evidence has shown that instruction in language skills can be effective in teaching L2s to low-achieving learners and students classified as LD. For example, Demuth and Smith (1987) developed an experimental course for at-risk university students that emphasized explicit instruction in language structure, particularly grammar and contrastive analysis of students' L1 and their L2. More recently, Downey and Snyder (2001) reported success with a modified L2 program in Italian, Spanish, and Latin for postsecondary students in which direct instruction in language skills was provided.

In order to teach low-achieving and LD students, L2 researchers and L2 classroom teachers could examine research related to L1 reading, which has shown that the teaching of reading is best accomplished by directly teaching domain-related skills, that is, skills related to reading (Vellutino, Fletcher, Snowling, & Scanlon, 2004). Likewise, direct teaching of other language skills, for example, grammar, and vocabulary, are domain related because they teach skills related to language. Both L1 and L2 researchers have suggested that the fundamental competencies in reading—decoding and comprehension—are the same in both L1 and L2 reading (e.g., see Koda, 2007; Sparks, 2009). In a recent longitudinal study, half of the variance in high school students' L2 decoding and spelling skills was explained by their L1 decoding and spelling skills in elementary school, and 40% of the variance in L2 reading comprehension was accounted for by L2 decoding skills (Sparks, Patton, Ganschow, Humbach, & Javorsky, 2008). Other recent studies have found evidence for long-term cross linguistic transfer of L1 skills in elementary school to L2 skills in high school (e.g., Sparks et al., 2009a, 2009b).

To teach domain-related skills, some educators have suggested that L2 instruction for low-achieving and LD learners can best be provided through a structured language approach that has been found to be helpful in teaching at-risk and low-achieving students to read and spell their L1 (Sparks, Ganschow, Kenneweg, & Miller, 1991). In this method, the teacher initially introduces the sound-symbol correspondences in the L2. As students learn the sound-symbol system of the new language, the sounds are combined to form words. Grammatical rules are presented one at a time in structured exercises. A daily lesson plan is used and lessons are carefully sequenced from those with simple to increasingly complex sound–symbol relationships and rule systems. The L2 teacher coordinates this teaching approach with a regular L2 curriculum. The primary reasons for using this teaching method are that the lessons (a) focus on the *direct* teaching of language skills in the L2; and (b) teach skills that involve the primary areas of weaknesses in the students' L1, that is, phonology and grammar. Empirical studies using this approach have shown that (a) low-achieving L2 learners, including L2 learners classified as LD, significantly increased their L1 skills and L2 aptitude (MLAT) scores over one to two years of L2 instruction; and (b) low-achieving L2 learners (including LD students) in high school taught by this approach in Spanish over two years exhibited no differences in L2 proficiency (reading, writing, listening, speaking) when compared to high-achieving L2 learners taught using traditional L2 instruction (Sparks et al., 1998). These findings suggest that direct instruction in language skills has the potential to improve L2 learning for low-achieving and LD learners in L2 classes.

Conclusion

More empirical research for teaching L2s to low-achieving learners is needed. The paucity of research on teaching methods for students with L2 learning problems is due, at least in part, to the adoption of policies by secondary and postsecondary institutions that allow students classified as LD to obtain waivers from or course substitutions for the L2 requirement. These policies suggest to L2 educators that there is something different about the L2 problems of students classified as LD. Yet, evidence has shown that there are no cognitive, L1 achievement, or L2 aptitude differences between low-achieving L2 learners and students classified as LD enrolled in L2 courses; classification as LD is irrelevant as to whether students will exhibit problems with L2 learning; and explicit teaching of L2 language skills to low-achieving and LD learners will benefit both groups.

SEE ALSO: Aptitude in Second Language Acquisition; Crosslinguistic Influence and Multilingualism; Teaching English as a Foreign Language to Students with Specific Learning Differences

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Forensic Discourse Analysis

LORNA FADDEN

Introduction

Diverse areas of criminal and civil investigation and law have benefited from discourse analysts' research and its practical applications. Covert police recordings can be analyzed for manipulation (Shuy, 2005), suicide notes can be verified for authenticity (Shapero, 2011), question and answer sequences in police interviews are scrutinized to demonstrate how much evidence is produced by investigators and how much by suspects (Hill, 2003), power imbalances are addressed illustrating the conversational disadvantage for suspects and witnesses (Heydon, 2005), true and false confessions are distinguished (Kassin & Gudjonsson, 2004), defamation lawyers consult linguists to prove or disprove malicious intent (Shuy, 2010), contracts (Stygall, 2010) and product instructions and warnings (Shuy, 2007) are assessed for communicability and clarity. In these and other areas, forensic linguists have applied the descriptive techniques of discourse analysis to address three dimensions: what speakers/writers say, what audiences/readers hear, and the role that context plays in the interpretation of the message.

The domain of discourse analysis itself is vast and linguists describe naturally occurring language (as opposed to the constructed examples that often form the basis of study in syntax and semantics) in order to explain the constructions and conventions that underlie communicative practice. The broader areas in forensic discourse analysis touch on speech acts (Austin, 1962; Searle, 1969), speakers' cooperation (Grice, 1975), turn taking (Sacks, Schegloff, & Jefferson, 1974), coherence and cohesion (Halliday & Hasan, 1976), and institutional discourse (Drew & Heritage, 1992). To demonstrate the application of discourse analysis to answer forensic questions, four areas are highlighted: given and new information, narrative analysis, topic attribution, and ambiguity resolution.

Example Analysis I: Given and New Information

As part of a decades-old battle to exonerate Derek Bentley of the 1952 murder for which he was convicted and executed, Malcolm Coulthard examined statements Bentley made to police upon his arrest (Coulthard & Johnson, 2007, pp. 173–80). Bentley, who was 19 years old, and his friend, 16-year-old Christopher Craig, were caught in the middle of an attempted burglary on the roof of a London warehouse. Bentley had already surrendered to police when Craig shot two officers, wounding one and killing the other. Despite Bentley's being unarmed, both were found guilty of murder. Craig was handed a life sentence as he was under 18, while Bentley was sentenced to death.

In order to convict Bentley of murder, the prosecution in part needed to demonstrate that Bentley at least knew that Craig had a gun. His alleged knowledge of the weapon was supported by the 44-sentence statement taken by police, sworn to be Bentley's own, unaided narrative. Sentence numbers reflect those in the original statement.

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(21) We hid behind a shelter arrangement on the roof.
(22) We were there waiting for about ten minutes.
(23) I did not know he was going to use **the** gun.
(24) A plain-clothes man climbed up the drainpipe and on to the roof.
(25) The man said: "I am a police officer – the place is surrounded." (Coulthard & Johnson, 2007, p. 175)

Highlighting the importance of this passage to the jury, the judge made much of the determiner "the" to modify "gun." He reasoned that if the first mention of the gun had been paired with indefinite determiner "a," then it might be argued that Bentley did not know about it. However, the specificity of the noun phrase in "I did not know he was going to use *the gun*" was enough to assert that Bentley did indeed know of it. In other words, because the gun was revealed as given information (*the* gun), as opposed to new, or otherwise unspecified (*a* gun), Bentley had to have had a specific gun in mind. In the interview, however, "the gun" would have been given information between the interlocutors, and line 23 then, was most likely produced in response to a question from police. (See Gundel, Hedberg, & Zacharski, 1993, for a discussion of givenness.)

Later in the statement, Bentley appears to contradict himself by claiming not to know that Craig had a gun. This contradiction would be used to discredit his account of the events.

(39) I knew we were going to break into the place.
(40) I did not know what we were going to get – just anything that was going.
(41) I did not have **a gun**, and I did not know Chris had one until he shot. (Coulthard & Johnson, 2007, p. 175)

That Bentley first said that he did not know Craig would use the gun (23) presupposes that Craig did indeed have a gun that Bentley knew about. The contradiction obtains in (41) when Bentley said that he did not know that Craig had one until Craig used it. This contradiction damaged Bentley's credibility.

Example Analysis II: Narrative Analysis

Narratives represent series of events told by one individual, often chronologically, comprising a longer turn, progressing uninterrupted by other participants, except perhaps for back channels. Broadly speaking, a narrative is composed of a background or orientation for the events, any actions, reactions, and complications, and a conclusion (Labov & Waletzky, 1967). Narratives are composed of events and states that manifest, and do not ordinarily include events and states that do not manifest, unless there is good reason to do so, a principle that Coulthard applies to demonstrate problems in Bentley's narrative. Again, sentence numbers represent those in the original statement.

(6) A little later Norman Parsely and Frank Fasey called.
(7) **I did not answer the door or speak to them.** (Coulthard & Johnson, 2007, p. 177)

The negative in (7) is warranted because responding to a caller at the door is the expected action. Because that is not what occurred, it is worth noting in the narrative. Negatives appear elsewhere in Bentley's statement, but without being reasonably linked to the surrounding discourse.

(16) Chris then climbed up the drainpipe to the roof and I followed.
(17) Up to then **Chris had not said anything.**
(18) We both got out on the flat roof at the top.
(26) He caught hold of me and as we walked away Chris fired.
(27) **There was nobody else there** at the time.
(28) The policeman and I then went around the corner by a door. (Coulthard & Johnson, 2007, p. 177)

Nothing in the prior discourse supports the need to report that Craig *had not said anything* (17), nor that no others were present (27). In any situation, there is "an infinite number of things that did not happen and thus the teller needs to have some special justification for reporting any of them to the listener, in other words there must be some evident or stated reason for them being newsworthy" (Coulthard & Johnson 2008, p. 176). In these cases, the negative elements likely result from a question or assertion posed by police collecting the statement. Coulthard concludes therefore that Bentley's account of what happened was not a narrative in the truest sense, but created out of dialogue between Bentley and the investigators, as their questions and assertions led him to provide details of evidentiary importance, then converted into monologue form.

Bentley received a posthumous pardon on July 30, 1998, and the case remains a landmark in forensic linguistics because language evidence was used both to convict Bentley, and to exonerate him.

Example Analysis III: Topic Attribution

When gathering evidence, investigators may covertly record suspects' speech. Assuming that incriminating topics arise in the recordings, they must be clear and they must be attributed to the right speaker in order to be forensically useful. The case of Texas v. T. Cullen Davis relied heavily on one such covert recording where at trial, Roger Shuy testified for the defense regarding what was said and who produced the damning words (Shuy, 2005). Davis had been charged with the 1976 murder of his wife's lover and her daughter. The wife, Priscilla, survived the shooting, and Davis was later charged with soliciting the murder of her and the judge overseeing their divorce, a man with whom he believed she had become intimately involved. Davis would be acquitted after three trials.

During the investigation, one of Davis's employees, David McCrory, told police that not only had Davis confessed to him that he was responsible for the deaths, but that Davis also ordered him to arrange the murders of Davis's wife and the judge. McCrory cooperated with police, and wore a hidden recording device to capture the interaction shown below. Bracketed portions represent overlapping speech; italicized portions represent physical actions caught on video surveillance.

Davis	McCrory
I told him that, uh, to treat you like any other employee and, uh, so don't give me too much pressure in that regard. I can't, uh, say you're gonna be gone a day or two every week or so.	
(Davis gets out of the car and walks to the trunk)	
	Well look, this fuckin' murder business—

You better—	
	—is a tough son of a bitch.
alright,	
	Now you got me into this
[give me]	[into this goddamn deal]
[give me]	[right?]
a little	
[noti-, advance notice	[Now I got j-]
	I got Judge Edison dead for you
good [inaudible],	
	I'll get the rest of them dead for you.
	You want a bunch of people dead,
	right?
alright but I	
[uh, you know]	[di-, di-]
	Help me too,
[inaudible]	[okay?]
I got to have an alibi ready for Art when the-	
	Okay?
When the subject comes	
[up]	[alright]
(Davis comes back to the front door of the car.)	
So give me some advance notice,	
	I will.
warning.	
	I gotta go.
(McCrory gets out of the car and leaves) (Shuy, 2005, pp. 46–7)	

Shuy indicates that two different topics co-occur. Davis is talking about McCrory missing work and having to account for absences. McCrory is talking about the hit that Davis has allegedly placed on various individuals. In natural discourse, speakers tend to produce turns that are cohesive and that transition smoothly from one another. No such cooperation is evident in this sample. During the trial, Shuy used the side-by-side transcript as shown to demonstrate to the jury that each speaker maintained his own topic, neither addressing or responding to the other's. Furthermore, the key topic relating to the solicitation of murder was spoken by McCrory while Davis was outside of the vehicle. The "good" and "alright" on the transcript might appear to be Davis's concurrence with McCrory's explicit reference to "getting people dead"; however, "neither was uttered in a response intonation, but rather as low-pitch discourse markers related to his own topic" (Shuy 2005, p. 48).

When looking at the two streams of discourse, it cannot be argued that Davis himself said anything incriminating, nor that he agreed with any part of McCrory's topic. Moreover, we cannot be certain that Davis even heard McCrory because he was outside the car, and concurrently talking on his own topic. Shuy refers to this type of covert recording strategy as a "hit-and-run" where the cooperating witness produces the incriminating words for the recording in such a manner that the suspect is either unaware or unable to respond. For language to be incriminating, it must be both cohesive with surrounding discourse, and, if not from the mouth of the suspect, it must be evident that the suspect is in unambiguous agreement with what is said.

Example Analysis IV: Resolving Ambiguities

Defamation cases involve language that a plaintiff claims harms his or her image, or the image of a corporate identity. In some cases, however, it is not clear whether the alleged offending language is indeed defamatory. When the language in question is ambiguous, discourse analysts may be consulted to examine the context to help resolve what the speaker or author meant. A simple example of ambiguity and contextual resolution is shown:

1	A: Nice hat. B: Thanks! I just got it.	2	A: Nice hat. B: What's wrong with it?

The nice hat example shows how the same words can be interpreted as delivering two different speech acts: (1) a compliment; and (2), an insult. Contexts, both social and linguistic, allow speaker B to interpret speaker A's utterance. If speaker A is otherwise being congenial, and expresses levity in her voice with higher pitch, B will know she has been paid a compliment. If speaker A is not otherwise congenial, or a sneer accompanies her utterance, B will know that A is insincere.

In defamation cases, where two sides are in dispute over the same language, "Linguists can analyze the discourse content in which the alleged defamation takes place, and sometimes even offer help about the difficult-to-prove requirement that the offending language contains actual malice or a reckless disregard for the truth" (Shuy, 2010, p. 31).

Speakers ordinarily leave little room for ambiguity or uncertainty and generally we adhere to the cooperative principle (Grice, 1975). When we violate the cooperative principle, we do so in order to achieve some conversational goal, such as when Speaker A is being insincere in (2). Should ambiguity or uncertainty arise, a repair is initiated, and either the speaker will self-correct unprompted, or the hearer will request clarification (Jefferson, 1974; Sacks, 1995). In a 1996 defamation case, Roger Shuy (2010) identifies ambiguities in a news broadcast that were exploited to lead viewers to conclude that Terri Stokes was responsible for murdering her husband, when in fact there had never been sufficient evidence to charge her.

In 1993, Dennis Stokes was shot and killed as he slept in his bed in his Minnesota home. Deputy Sheriff Tom Johnson led the investigation, and, as with many murder investigations, the victim's spouse was the first to come under suspicion. In fact, Stokes's wife, Terri, would turn out to be the only suspect, a point that had been raised repeatedly in media coverage of the case. Despite the intense focus on the victim's wife, the investigation did not uncover sufficient evidence linking her to the murder. At issue in this case was not that Terri was a suspect, but rather that Johnson had "singled her out" as the only one who could have committed the crime (Shuy, 2010, p. 60). In different broadcasts throughout the investigation, Johnson repeatedly states that Terri was the sole suspect—a statement that would be exploited later to paint a picture of certain guilt.

In an *American Journal* broadcast featuring the Dennis Stokes case, a reporter presents some of the details from the night of the murder. In an interview with that reporter, Deputy Sheriff Johnson expresses an ambiguity that was left unresolved, but owing to the repeated coverage in which he focuses on Terri as the only suspect, the only reasonable interpretation the audience can make links Terri to the crime.

Reporter:	The night of the murder, Terri had been sleeping at her brother and sister-in-law's, a half-hour away . . . Still, Investigator Johnson says Terri was alone downstairs, and might have secretly left the house during the night.
Johnson:	We don't have enough evidence to show, to prove that she did it beyond a reasonable doubt. I think we have a lot of reasons why. (Shuy, 2010, p. 60)

On its own, Johnson's last sentence is ambiguous, possibly prompting the hearer to ask "why she did what?" But given that Johnson had been saying throughout the investigation that Terri was the only suspect, his "reasons why" can only be interpreted as the reasons why she killed her husband. The reporter made no effort to resolve this ambiguity, or even address another possible interpretation.

Later in the broadcast, the reporter exploits another ambiguity to the detriment of Terri's image. By this time, Terri had moved from Minnesota to Idaho, and a news team, accompanied by her former mother-in-law Joyce Stokes, carried out an "ambush interview."

Reporter:	Joyce Stokes was left with no answers to the questions she came all the way to Idaho to ask.
Joyce:	I don't know why she won't talk to me. If she's not guilty, why won't she talk to me? Why doesn't she tell me she's sorry? She won't do it.
Reporter:	You're one hundred percent sure that Terri killed Dennis.
Joyce:	One hundred percent. There is no doubt about it. (Shuy, 2010, p. 61)

Ambiguity arises in Joyce's "Why doesn't she tell me she's sorry?" As Shuy points out, an apology is a speech act acknowledging and accepting responsibility for an offense. On its own, Joyce's question could be pleading for an apology for Terri's not speaking with her mother-in-law, or it could be pleading for an apology for the murder of her son. The ambiguity, however, is resolved in two ways. First, the reporter has already established in this and earlier coverage that the central topic is Terri's likely guilt. Second, the reporter resolves Joyce's ambiguity by shifting the topic from talking to her former daughter-in-law, to seeking confirmation that Joyce believes that Terri is guilty of Dennis' murder.

Terri Stokes was never charged for the murder of her husband, nor was anyone else, and the crime remains unsolved. The media reporting of Johnson's narrowly focused investigation tried her for the crime nevertheless.

Conclusion

Scholars and practitioners working in the area of forensic discourse analysis call upon an "eclectic selection of tools and a developmental approach" when analyzing a forensic text (Coulthard & Johnson, 2007, p. 14). Finding theoretically grounded solutions to problems in a forensic text necessitates a broad and deep understanding of the field of discourse analysis, to give an understanding of what was said, what was heard, and the role of context. And as the examples above show, language evidence can be central to a criminal or civil matter.

SEE ALSO: Coulthard, Malcolm; Critical Discourse Analysis; Forensic Linguistics: Overview; Inference and Implicature; Language of Police Interviews; Shuy, Roger

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Forensic Linguistics: Overview

NICCI MACLEOD

Broadly defined, "forensic linguistics" refers to the study of the interface between language and the law. Thus, there are two overarching areas of research and practice within the field: the linguistic study of legal texts and processes, sometimes referred to as "language of the law" or "language and law," and the provision of linguistic evidence in criminal and civil cases, sometimes referred to as "forensic linguistics" narrowly defined.

Authorship Analysis

The term "forensic linguistics" is generally accepted to have come into being with the publication in 1968 of Jan Svartvik's *The Evans Statement: A Case for Forensic Linguistics*. There, he analyzed four statements that Timothy Evans, executed in 1950 for the murder of his baby daughter, was alleged to have made following his arrest. Using both qualitative and quantitative methods Svartvik demonstrated considerable stylistic discrepancies between the statements, thus raising serious questions about their authorship. Questions of authorship remain one of the central concerns of forensic linguists to this day. As well as offering a sociolinguistic profile of an author, linguists are often requested to comment on the likelihood of an individual having authored a particular text, with techniques for identifying valid and reliable style markers subject to ongoing debate and development (Chaski, 2001; Grant & Baker, 2001; McMenamin, 2001).

Perhaps the most well known example of the use of linguistic authorship analysis in a criminal context is that of the Unabomber. Between 1978 and 1995, a number of letter bombs were sent to targets across the United States, many of them universities and airlines. In 1995, a letter was sent to the *New York Times* promising that the bombings would stop if the paper agreed to publish the sender's manifesto. The 35,000-word manifesto, "Industrial Society and its Future" was published jointly by the *Times* and the *Washington Post* in late 1995. Shortly afterwards, a man named David Kaczynski, having read the manifesto and compared it to earlier writings of his brother Ted, became convinced his brother was the author and alerted the FBI. After a raid on Ted Kaczynski's remote log cabin in Montana, FBI agents recovered a number of documents that had been authored by Kaczynski, which they subjected to linguistic analysis. Particular words and phrases were identified that appeared in both the manifesto and Kaczynski's other writings, and it was these similarities that formed the basis of the FBI's claims that Kaczynski was the Unabomber. Although they were challenged by the opposing expert at Kaczynski's trial on the basis that the words and phrases in question were quite common, and to be expected in persuasive writing—items such as *at any rate*, *in practice*, and *on the other hand*—the FBI were able to demonstrate with the use of an Internet search engine that, while frequent in isolation and in combinations of two or three, the only search returns on documents containing *all* the items were online versions of "Industrial Society and its Future." The case thus provided an "illustration of the consequent forensic possibilities that idiolectal co-selection affords for authorship attribution" (Coulthard, 2004).

The matter of authorship has also been key in overturning convictions that have occurred as a result of miscarriages of justice where, like in the Evans case, there are suspicions that

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incriminating documents have been partially or wholly fabricated, or the origins are at any rate not what the police originally claimed them to be. Examples include Derek Bentley, the Bridgewater Four, and the Birmingham Six (see Coulthard & Johnson, 2007).

As well as ransom notes, suicide notes, threatening letters, police statements, and the like, practitioners in the field have found themselves required to comment on the likely author of texts from increasingly diverse domains of language use, including Internet relay chat and mobile phone text messaging, as technology has progressed. These issues are discussed in HISTORY OF FORENSIC LINGUISTICS.

Plagiarism

A related area that has interested linguists is the development of techniques for identifying plagiarism in texts: that is, the unacknowledged use of another author's work. As well as obviously being a matter of concern in an academic context (Johnson, 1997), this issue is also of interest in literary contexts and as far as it relates to copyright law and trademark disputes.

Coulthard and Johnson (2007) identify several problems with the way plagiarism is defined in university guidelines, beginning with the focus on substantial verbatim borrowings when most cases involve some degree of editing of borrowed texts. Further to this, they claim, there has been a commitment to establishing intentionality in plagiarism cases, which is incredibly difficult to achieve. Thus, linguists often find themselves being asked by universities to contribute to discussions on how best to identify student plagiarism, and techniques for doing so have been based on the concept of idiolect—that is, the language of the individual. Although a certain degree of overlap is expected between the vocabularies of two authors writing on the same subject, we would nevertheless expect to find that not only will their choices differ from each other's, but that the *same* author writing on two separate occasions on the same topic will make different choices to express their meaning. As Coulthard and Johnson explain, "in any comparison of two texts, the more similar the set of items chosen, the greater the likelihood that one of the texts was derived, at least in part, from the other text" (Coulthard & Johnson, 2007, p. 187). Such insights have led to the development of software such as CopyCatch Gold (Woolls, 2003) to identify the level of lexical similarity between texts. For more discussion see the entry on PLAGIARISM.

Linguists have also been called upon to provide their input in disputes over commercial trademarks, acting as expert witnesses in cases where companies have claimed ownership not merely of a name, but of particular morphemes. Often the issue is the extent to which a trademarked term has slipped into general usage with a generic meaning. This issue is discussed in LINGUISTIC ANALYSIS OF DISPUTED MEANINGS: TRADEMARKS.

Forensic Phonetics

Naturally, linguistic evidence in criminal or civil cases can be spoken as well as written, and it is with the former type of evidence that forensic phoneticians concern themselves. Speaker identification—the question of whether two or more recordings of speech (from suspect and perpetrator) are from the same speaker—forms a significant proportion of their work and this can be achieved with the phonetician's ear alone, with speaker identification software, or a combination of the two.

Forensic phoneticians are also called upon to create sociolinguistic "profiles" of unknown speakers, drawing on their knowledge of regional and social variation to build up a picture of a speaker in order to narrow the search for suspects. This was the case in the famous

"Yorkshire Ripper" enquiry during the late 1970s in the United Kingdom (Ellis, 1994). A cassette recording of a man claiming to be the killer was sent to police investigating a series of murders of women in the north of England, and Ellis was able to ascertain that the speaker was from the Sunderland area in the northeast of the country. On the basis of further investigations he was able to narrow the speaker's origin down to a small village on the north bank of the River Wear. Convinced the voice on the tape was that of the "Ripper," the police relocated their search, against the advice of the linguists involved in the case. As it transpired, the police had misjudged the significance of details provided in the recording, and the speaker on the tape was a hoaxer. Peter Sutcliffe, who had spent his entire life in West Yorkshire, was convicted on 13 counts of murder in 1981. The hoaxer, who was responsible for the diversion of police resources to the wrong part of the country at a crucial stage of the investigation, remained undetected until 2005, when on the basis of new DNA evidence John Humble was identified as a suspect. The opinion of forensic phoneticians was sought again (French, Harrison, & Windsor Lewis, 2006), and preliminary investigations revealed a number of important similarities between the hoax tape and Humble's voice.

Forensic phoneticians are also required at times to give their opinions on the use of voice line ups in criminal investigations and evaluate the competency of ear witnesses, assess the content of disputed utterances, and assess the authenticity of recordings (French, 1994).

Legal Language and Comprehensibility

As Coulthard and Johnson (2007) point out, "anyone who hears the term '*legal language*' thinks immediately of grammatically complex, sparsely punctuated, over-lexicalized, opaque written text" (Coulthard & Johnson, 2007, p. 35). Explanations for this specialized code are to be found in both the history of common law (to this day legal English displays heavy influence from French), and in how the language needs to function (Tiersma, 1999). Certain legal tasks can only be accomplished with certain performative utterances, for example, and the need for precision, in both spoken and written legal language, is paramount (Gibbons, 2003). However, as many linguists working in the area have noted, this has frequently meant compromising on comprehensibility, rendering legal language "impenetrable . . . criticized for its obscure expressions and circumlocutions and tortuous syntax, apparently meaningless repetitions and archaisms" (Coulthard & Johnson, 2007, p. 37). While some have argued that the complexity of legal English is an intentional attempt to alienate and disadvantage the layperson, convincing them of the necessity for legal professionals in interpreting crucial texts, others have understood it as merely a by-product of legal drafters' striving for ambiguity-free, precise language.

Gibbons (2003) sets out to identify the comprehension difficulties experienced by many speakers of English when faced with the legal register, and goes some way toward addressing these issues. He points out

> the Common Law presumes that "ignorance of the law is no defence". If the law is presented in language that cannot be understood by the people to whom it applies, this presumption can lead to grave injustice as well as logical absurdity. (Gibbons, 2003, p. 162)

Thus, the intelligibility of legal texts is of crucial importance if we want to ensure equality before the law. Unsurprisingly, then, law is a context around which the Plain Language movement have organized many of their campaigns, with some success (Gibbons, 2003).

One type of legal text that has roused significant interest from linguists in terms of its comprehensibility is judges' instructions to juries (Tiersma, 1999; Dumas, 2002; Heffer, 2006). As well as the complex syntax of the LANGUAGE OF JURY INSTRUCTIONS, particular specialist phrases such as "reasonable doubt" and "lesser included offence" have been singled out as potential problem sources. Dumas (2002) pays particular attention to the problems inherent in such phrases, focusing on a case which had resulted in the defendant receiving the death sentence, and in which she herself had later delivered an expert report on the comprehensibility of a set of jury instructions. Dumas notes that

> there was a high likelihood that jurors understood some key terms in several different ways and that they understood some terms in ways different from those intended by the Court . . . the death sentence was imposed as a result of decisions made by jurors who had not understood their instructions. (Dumas, 2002, p. 247)

Spoken Legal Interaction

As forms of institutional talk, the interaction that occurs between police officers and suspects or witnesses in a police station, and between lawyers and witnesses or defendants in court, is inherently asymmetrical. That is to say, all participants do not have equal speaking rights, or equal access to the same interactional resources. Rather, the speaker who represents the institution—the police officer or the lawyer—controls the direction and structure of the interaction in order to address particular institutional goals. This, coupled with their increased knowledge about the relevant processes, puts institutional representatives in a position of advantage, thereby often disadvantaging lay participants. Many linguists have therefore drawn their data from these settings, in order to better understand how interactional control is exerted, how participants are disadvantaged, ways in which control can be resisted, how accounts are negotiated, and so forth. In some cases, particularly when the lay participants happen to be children, or vulnerable adults, researchers have studied these patterns in order to make recommendations for practitioners.

Heydon (2005) provides an overview of police interviewing in Australia grounded firmly in linguistic analysis, noting that, unsurprisingly, interviews with suspects are typically constructed of chains of question-and-answer adjacency pairs, with first pair parts being routinely allocated only to interviewers. This recurrent pattern, she observes, has the effect of maximizing interviewers' access to interactional resources while simultaneously restricting suspects' access to those resources. Suspects, unlike interviewers, are not able to produce first pair parts that introduce, maintain, or suppress topics—while interviewers have the power to initiate disjunctive changes of topic, suspects must rely on gradual step-wise transition and topic development confined to second pair parts. These issues of power and interactional control in suspect interviews are also explored in Haworth (2006) and Newbury and Johnson (2006), which both draw on data from police interviews with the prolific serial killer Dr. Harold Shipman to demonstrate ways in which interviewees can actively resist and challenge interviewers' powerful position and controlling interactional behavior.

Shifting the focus to police interviews with *witnesses*, Rock (2001) explores the process of producing a written witness statement as a result of several stretches of spoken interaction. She notes that some significant alterations are made to interviewees' original accounts, such as the removal of hedging and uncertainty, as well as a failure to investigate seeming contradictions. A statement is therefore the product of a series of negotiations between witness and statement taker, rather than a verbatim record of the witness' words as we might expect.

Within the context of the courtroom, where it has been noted that "it is difficult to imagine a context where verbal behaviour plays a more crucial role" (Harris, 1994, p. 156), linguists and discourse analysts have again tended to focus on the manifestation of institutional power and ideology (e.g., see Matoesian, 1993; Conley & O'Barr, 1998). The courtroom is a site where patriarchal and middle-class ideologies are expressed and enforced upon the laypeople involved, and there are several linguistic means by which this is achieved. In his study of the micro-linguistic processes at work during a rape trial, for example, Matoesian (1993) noted that rape victims are re-victimized by defense lawyers through these processes. Given the constraints on the types of turns witnesses are entitled to produce in this context, lawyers are able to make strategic use of silence to cast doubt on witnesses' credibility; they are able to manipulate question form to further constrain witnesses' responses; and they can be selective in reproducing elements of witnesses' accounts in order to best support their client's version of events. Though, as in police interviews, resistance on the part of the cross-examined witnesses is possible, it is generally short-lived. Thus, "the linguistic resources available to the lawyer are simply too many and those available to the witness too few" (Conley & O'Barr, 1998, p. 27).

The interviewing and cross-examining of children in criminal contexts has also been scrutinized from a linguistic perspective (Brennan, 1994; Aldridge & Wood, 1998; Aldridge, 2007). The use of closed questions, for example, has been shown to prove quite problematic for children, as have (to varying degrees) negatively formed utterances, nominalizations, multifaceted questions, specific and difficult vocabulary, quotations, repetition, and grammatical embedding (Brennan, 1994). Despite the research and resources that have gone in to training police officers in age-appropriate questioning techniques, and the positive impact this has had on children's experiences of the police interview, the effects have yet to reach the courtroom. Problems identified by Aldridge (2007) center on question form and the dominant and repetitive style of cross-examination, "where the child is disempowered and the jury is led by the lawyer's questioning" (Aldridge, 2007, p. 79). Aldridge goes on to make recommendations for judges to take a more controlling role over lawyers' questioning style, in order to remove the child witness from this powerless position. These issues are discussed in the entries on FORENSIC DISCOURSE ANALYSIS, LANGUAGE OF COURTROOM INTERACTION, LANGUAGE OF POLICE INTERVIEWS, and LINGUISTIC DISADVANTAGE OF CHILDREN IN LEGAL CONTEXTS.

Cross-Cultural Issues and Legal Interpreting

The last 20 years have seen a growing interest from sociolinguists in addressing the difficulties encountered by speakers of varieties other than the official language when they come into contact with the legal process. The focus has been on topics as diverse as needs assessment for legal interpreting; the role of the interpreter in the communicative process; assessing national origins of asylum seekers; and the experiences of indigenous groups and other non-native speakers of the dominant language within the investigative and judicial settings.

Eades (1994), for example, focuses on miscommunication between Australian Aborigines and representatives of the Australian legal system, which arises out of a clash between the two groups' verbal and nonverbal communicative norms. For example, while directly seeking information with interrogatives is a relative rarity in Aboriginal English, this is the unmarked choice for speakers of standard English. Furthermore, the legal process in Australia is based on question-and-answer sequences at every stage (Eades, 1994, p. 241). Questions provide lawyers and interviewing officers with a powerful resource for controlling talk in the courtroom and interview room, and all witnesses are therefore disadvantaged

to some extent in these types of interaction. However, for Aboriginal people the disadvantage is compounded by a number of specific differences between their own variety of English and that of the court. Communicative difficulties encountered by Aboriginal suspects have wide-reaching consequences for their experiences of the system, and have been identified as a potential contributory factor to their overrepresentation within the courts and prisons. Research such as Eades's has resulted in suggestions for developments in the ways that Aboriginal people are treated by the legal system.

Berk-Seligson (1999) discusses one particular effect of court interpreting on testimony—the interpreter's impact on the coerciveness of leading questions—in the context of US courts. Finding that a significant proportion of the leading questions drawn from her Spanish-English data were interpreted inaccurately in terms of their pragmatic force, she concludes that even fully certified interpreters make an overwhelming number of errors in this regard. While interpreters performed well in transmitting the *semantic* content, the intended coerciveness of lawyers' questioning was often lost. Thus, she claims, pragmatic equivalence is not achieved, and non-English or limited-English defendants lose their right to be "linguistically present" at their own trials. Her recommendations include a greater emphasis on pragmatic force and coerciveness within interpreter training programs and certification examining boards, thus minimizing the potentially damaging shift in pragmatic force that can be caused by inaccurate interpretation during the process of LEGAL INTERPRETING.

Professional Organizations

The International Association of Forensic Linguists (IAFL), www.iafl.org, consists of linguists working in all areas of language and law, and exists to promote the exchange of ideas between academic linguists and legal and investigative practitioners, as well as to alleviate language-based inequality in legal contexts. Developing the practice and ethics of linguists' expert testimony is a further goal of the association.

The International Association for Forensic Phonetics and Acoustics (IAFPA) www.iafpa.net, seeks to foster research and provide a forum for the interchange of ideas and information on practice, development, and research in forensic phonetics and acoustics, and set down and enforce standards of professional conduct and procedure for those involved in forensic phonetic and acoustic casework.

The International Journal of Speech, Language and the Law (IJSLL), www.equinoxjournals.com/ojs/index.php/IJSLL, is the official journal of both the IAFL and the IAFPA, and publishes peer-reviewed articles on all aspects of language and law on a biannual basis. The journal also carries reports on legal cases, PhD abstracts, conference reports, and book reviews.

SEE ALSO ON FORENSIC LINGUISTICS: Berk-Seligson, Susan; Broeders, A. P. A.; Butters, Ronald R.; Cotterill, Janet; Coulthard, Malcolm; Determining Language Proficiency in Legal Contexts; Dumas, Bethany K.; Eades, Diana; French, Peter; Gibbons, John; Kniffka, Hannes; Legal Language; Legal Translation; Linguistic Analysis of Disputed Meanings: Threats; Linguistic Human Rights; Nolan, Francis; Prison Language; Shuy, Roger; Solan, Lawrence M.; Tiersma, Peter; Turell, Maria Teresa

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Formal and Functional Approaches to Grammar

RICARDO MAIRAL USÓN

Introduction: The Initial Controversy

Over the past three decades the world of linguistics has been a witness to the controversy between formal and functional models of language. Formal approaches, which reduce linguistic analysis to a question of symbol manipulation thus focusing on compositional semantics, syntax and word classes (e.g., noun, verb), became dominant in linguistics with the advent of Noam Chomsky's transformational-generative grammar (TGG; Chomsky, 1965). In contrast, functional approaches, with Michael Halliday as one of its main exponents, were more concerned with the way people use language in context to communicate (see Halliday, 1978). Although, formal and functional approaches are commonly treated as opposed to each other, it must be borne in mind that they were formed independently. Chomsky's TGG, in fact, started as a reaction to behaviorism in linguistics, a tradition that can be traced back to Bloomfield's work, *Language* (1933), and his emphasis on dealing only with observable phenomena (among them stimulus-response behavioral patterns). Chomsky aggressively criticized behaviorism and developed a mentalistic and innatistic position about language and language learning. Halliday's systemic functional grammar (SFG), in its turn, has its origins in British linguist John R. Firth's emphasis on approaching linguistic analysis in terms of the different systems that are at work at a given level of description and in terms of the context-dependent nature of meaning.

Chomsky's Universal Grammar

Chomsky's influence peaked in the 1980s, with *Government and Binding Theory* and the emphasis on principles and parameters in the context of *Universal Grammar* (Chomsky, 1986). He started off from the assumption that children can learn the intricacies of their mother tongues in a surprisingly rapid and effective way on the basis of a deficient input of data. Such kind of learning suggests that all human beings are genetically endowed with an innate set of basic linguistics principles—a "Universal Grammar"—that guide them in their acquisition of complex human languages. Acquiring a native language is thus seen as a matter of parameterizing the universal principles that people are born with. Consequently, the linguist's task is not to describe linguistic output but rather to discover the mental makeup that underlies linguistic output, the so-called Internal language or I-language, as opposed to External language or E-language, which refers to the real output strings. In more recent times, Chomskyan linguistics has been inspired by the so-called Minimalist Program (Chomsky, 1995), which makes emphasis on the notions of economy of derivation and economy of representation. The new program features a derivational bottom-up approach to syntactic description, which replaces the top-down representations of X-bar syntax and makes use of two basic operations called merge and move. The first operation accounts for how syntactic objects are combined into new objects (e.g., "drink"

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and "water" into "drink water") and the second for movement of constituents within a syntactic representation.

The Rise of Alternative Formal Approaches to Generative Linguistics

The generative approach had an interesting side effect since it gave rise to a number of alternative approaches to grammar within the context of formal models; each model was the result of emphasis on different areas of syntax that had not been adequately dealt with by generative grammarians. Examples of such alternative models are David Perlmutter and Paul Postal's relational grammar, which takes grammatical relations such as subject, object, predicate, and so forth, as primitives, Bresnan's (1982) *lexical functional grammar* (LFG), which analyzes grammatical alternations as holding between lexical forms rather than through the application of rules at clause level (see also Bresnan, 2001), or Gazdar's *generalized phrase structure grammar* (GPSG), which, in contrast to *generative grammar* (GG) is monostratal but uses phrase structure marking characterized by the inclusion of derived syntactic categories (see Gazdar, Klein, Pullum, & Sag, 1985).

The World of Functionalism

In parallel to the development of formal approaches to linguistics, other linguists turned their eyes to philosophers of language such John L. Austin and John R. Searle (the fathers of *Speech Act Theory*; see Austin, 1962; Searle, 1969), Paul Grice (who accounted for implicit meaning on the basis of conversational maxims; Grice, 1975), and sociologists such as Emanuel Schegloff and Harvey Sacks, who were the originators of *Conversation Analysis* (see Sacks, Schegloff, & Jefferson, 1974). In this context, other linguists, such as Michael A. K. Halliday, Simon C. Dik, Talmy Givón, and Robert Van Valin decided to deal with the ability of social, contextual, and pragmatic factors to motivate grammatical phenomena (see, for example, Halliday, 1978; Foley & Van Valin, 1984; Givón, 1984, 1995, 2001; Dik, 1997a, 1997b; Halliday & Matthiessen, 2004; Van Valin, 2005; Hengeveld & Mackenzie, 2008).

Halliday's approach, usually referred to as *systemic functional grammar* (SFG) laid emphasis on the idea that grammar is shaped by our experience of interaction in sociocultural contexts. Hence, SFG associates the notion of external explanation to social factors, that is, language is conceived as part of a social system of meaning or "social semiotics" (Halliday, 1978). In this approach, grammatical description was regarded as a matter of accounting for the ability of speakers to make choices from the intricate network of systems that give structure to language and map such choices simultaneously onto linguistic expressions in a meaningful way. Halliday's grammar contemplated three broad dimensions of linguistic description that corresponded to the three great functions of language, that is, the ideational, interpersonal, and textual functions. The ideational function organizes our experience of the world and our way of reasoning on the basis of this experience. The interpersonal function deals with the speakers' personal assessment of the contents of their messages and with their social function (the equivalent of speech act value in other theories). The textual function is about the way the message is structured in terms of informational prominence (thematization and topicalization) and of its cohesiveness. As for the way form is motivated by meaning in Halliday's grammar, the actual configuration of a sentence (and of text) is the result of giving phonological shape to a combination of meaningful grammatical options. The approach is essentially paradigmatic, since the syntagmatic

properties of clausal constituents arise from the meaning potential each option has within a system. The interaction between transitivity and voice is a case in point. A clause can be effective (i.e., it has an object) or descriptive (i.e., it has no object). If it is effective, there is a choice between active and passive, which means that passive grammatical form (where the object becomes unmarked theme, thus serving an option from the textual system), with its syntagmatic properties depends on the way the transivity system works paradigmatically.

Van Valin's *role and reference grammar* (RRG) and Dik's *functional grammar* (FG) argue that a functional approach to language needs to embed semantics and syntax within the "all-encompassing framework" of pragmatics. This view is expanded to include discourse in FG's successor, *Functional Discourse Grammar* or FDG (Hengeveld & Mackenzie, 2008), which sees the discourse "move," rather than the clause or the sentence, as the greatest unit of analysis. RRG, FG, and FDG place greater emphasis on syntagmatic issues but they are also sensitive to the paradigmatic properties of grammar (e.g., originally in FG predicates were organized into classes through stepwise lexical decomposition and terms and operators were classified into different contrasting sets). However, the descriptive elements have not been fully systematized in terms of networks as has been the case in SFG.

RRG and FG also postulate that linguistic theory needs to achieve three standards of adequacy, that is, psychological, pragmatic, and typological, besides the widely accepted standard of explanatory adequacy (i.e., the goal to account for the largest amount of phenomena through the least number of rules or principles), which was first postulated by Chomsky. According to the standard of psychological adequacy, grammatical explanation needs to be compatible with empirical findings in psychology about human processing and conceptualization (Dik, 1997a). The standard of pragmatic adequacy seeks to make the linguistic account sensitive to the role of language as a tool for communication. Finally, typological adequacy is attained when the linguistic account formulates generalizations that are valid across languages.

Both FG and RRG, although semantically and pragmatically motivated, feature a formal descriptive apparatus. For example, FG predicate frames are fully explicit semantic representations with feature specifications and their associated variables; predications, propositions, and illocutions are constructed on the basis of operators that have different predicates, terms, and other higher-level structures within their scope. Halliday's grammar, although it gives detailed descriptions of functionally motivated form, makes no use of a formal descriptive apparatus based on operators and variables, such as the one in FG. This characteristic of Dik's FG makes it fit nicely into the context of formal grammars, with two crucial differences: (a) in Dik's approach linguistic explanation makes use of pragmatic and discourse categories (especially in FDG); (b) grammar is semantically motivated and therefore formal categories should be interpreted within the larger framework of semantics and pragmatics.

Dik's FG is essentially a meaning construction model that gives rise to fully specified semantic representations at different levels of description (predicational, propositional, illocutionary), which thus become available for morphosyntactic realization. Form is the result of realizing meaning representations in such a way that form–meaning pairings are not arbitrary but motivated. However, the FG derivational system lacks a syntactic level of representation, as has been postulated in FDG and also in RRG.

RG postulates a syntactic level, which consists of a number of syntactic templates that associate with the resulting semantic logical structures. RRG, like Dik's FG, makes use of the layered approach to semantic representation, which consists of predicate specifications that have variables within their scope. However, syntactic specifications are not the result of a set of realization rules but rather of a direct one-to-one mapping from meaning to form and from form to meaning, where two macro-roles, actor and undergoer, play an

essential semantics–syntax linking role since they generalize across specific semantic argument types. One of the most outstanding contributions in RRG is the bidirectional linking system in that it maps both from syntax to semantics and from semantics to syntax. In this way it models aspects of what both the hearer and the speaker do in a communicative exchange. Most other theories, including FG, are unidirectional, in that they attempt to account only for what in RRG and FDG terms is the semantics-to-syntax linking. This way of dealing with syntax provides RRG with a robust formal apparatus that is at least as successful as the corresponding systems of purely formal model. But the RRG proposal has the advantage over formal models of being capable of dealing with the semantics–syntax interface and of endowing the model with a clear pragmatic and discourse dimension. For example, RRG makes use of focus assignment patterns, which, although different from the treatment by Dik and Halliday (see Butler, 2003), brings this approach into line with other functional approaches.

Toward a Possible Complementariness of Approaches

It is often taken for granted that the formal and functional approaches of language are mutually exclusive since the former are a case of I-linguistics while the latter are E-linguistics. However, as we have seen, this is not actually the case since formal models have increasingly focused on the efficiency of the system while functional models have made serious attempts to deal with the structural properties of language and to capture them through a formally explicit descriptive apparatus. Interestingly enough, Chomsky himself in *Rules and Representations* seemed to suggest that the two approaches are compatible when he claimed that the "study of performance and the study of competence are mutually supportive" (Chomsky, 1980, p. 226). Chomsky made the distinction between competence and performance as far back as 1965, as he was trying to determine the scope of linguistic theory. Competence, which was the object of linguistic theory, was defined as the perfect knowledge that an ideal speaker-hearer, living in a completely homogeneous speech community, has of his language. Actual performance, in contrast, was characterized as being affected by "such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic)" (Chomsky, 1965, p. 3). However, later on Chomsky became aware that performance included pragmatic principles such as those postulated by philosophers of language and processing constraints—such as construal phenomena largely explored by cognitive scientists concerned with language—which actually gave shape in systematic ways to the speaker's output. While functional linguists and later on cognitive linguists, such as Lakoff (1987) and Langacker (1987), argued that such principles and constraints had a direct impact on morphology and syntax, Chomsky still believed that syntax could be described with independence of external factors. However, he decided to refine the competence/performance distinction (which he has never discarded) and proposed the division of labor between E-linguistics, which focuses on speakers' performance (understood in a broad sense), and I-linguistics, which focuses on speakers' competence (understood in the restricted sense of syntax and syntactically relevant elements from outside syntax proper). Chomskyan linguistics thus became I-linguistics, while functional and cognitive-linguistics approaches, which postulated the semantic, pragmatic, and discourse motivation of syntactic phenomena, were a matter of the E-linguistics perspective.

Functional linguistics has generally taken a negative stand on the Chomskyan approach, which has usually been judged as depriving linguistic explanation of its true character since linguistic form is generally motivated by its function and can thus be better understood with reference to the latter (see Dik, 1986). However, there are structural relationships

in language which can be stated with independence of possible functional motivations. One such relationship is captured by the notion of government. A governor has to be a node that does not dominate the governee while the nodes that dominate the governor are maximal projections and dominate the governee. The structural notion of government is useful to account for the generalization that a *that*-complementizer cannot be immediately followed by a trace resulting from movement. Consider the following sentence,

(1) Whom$_i$ did you say [t$'_i$ that [he saw t$_i$]]?

In (1) the movement of "whom" to the sentence initial position has left a trace, t$_i$, which is governed by the verb "saw." However, note the ungrammaticality of

(2) *Who$_i$ did you say [t$'_i$ that [t$_i$ saw John]]?

In (2) the *that*-complementizer is followed by a trace, which makes the sentence ungrammatical. The structural principle that makes use of this government relationship is known in the generative linguistics literature with the name of Empty Category Principle. This principle, in fact, is but a way of accounting for the fact that it is generally more difficult to move up a *wh*-word from a subject position than from an object position. The issue is more complex, but even this partial description is enough to make us appreciate the value of purely structural relationships in linguistic description and explanation.

However, whatever the value of some formal explanations, on many occasions, a functional account may cast greater light on grammatical processes than a purely formal perspective. By way of illustration, we may consider the problem of the broad and narrow scope of *whether*-complementizers as described in Hoekstra and Kooij (1988) and the more functionally oriented motivational explanation provided by Radden and Panther (2004, pp. 11–13). Consider:

(3) Where did John say that we had to get off the bus?
"John said where that we had to get off the bus?"
"John said that we had to get off the bus where?"
(4) Where did John ask whether we had to get off the bus?
"John asked where whether we had to get off the bus?"
"*John asked whether we had to get off the bus where?"

Example (3) is either a question about the place where John said something, that is, that the protagonists have to get off the bus (which is a case of wide scope of *where*), or about where the protagonists should get off the bus (which is a case of narrow scope of *where*). However, in example (4) only the wide scope reading is possible, that is, a question about where John asked a question. Obviously, *that*-clauses allow extraction of elements while *whether* is a barrier to this process. The problem with this description is that it does not account for why we have such a barrier. But we can find motivations for this barrier outside syntax. Radden and Panther observe that say is one of the most neutral, non-salient verbs of communication. In (3) the information that is more relevant or foregrounded is the location to get off the bus; in (4), in contrast, which makes use of a more specific speech act verb, the addressee's attention is drawn to the communicative act itself, which favors the wide scope interpretation.

Often functional explanations are useful to account for other linguistic phenomena for which a purely formal account is impossible. For example, think of the phenomenon known as *enriched composition* (Jackendoff, 1997). As Jackendoff observes, there are verbs like *enjoy* and *begin* in English that canonically subcategorize a non-finite verb as their governed

complement: *He enjoyed/began dancing the Polka/drinking pale lager*. But it is also possible to find these verbs with a nominal complement: *He enjoyed/began the Polka/the pale lager*. The problem in these cases is that the kind of action carried out by the protagonist (the clausal subject) is implicit and has to be determined on the basis of the context. Evidently, it is not possible to compose the meaning of verbs like *enjoy* and *begin* and their nominal complements on the basis of syntactic relations. Jackendoff (1997, p. 61), whose work straddles the boundaries between formal and cognitive-functional linguistics, proposes a solution based on expanding the meaning of the complement by looking into its world knowledge structure. Interestingly enough, this solution amounts to recognizing that the complementation pattern of *enjoy* and *begin* is motivated by factors that are external to syntax, which is the way problems of this nature are accounted for in functional and cognitive approaches to language. Ruiz de Mendoza Ibáñez and Pérez Hernández (2001) use external criteria and argue that a high-level metonymy, *object for action*, is responsible for licensing this phenomenon.

The concept of motivation has thus become central to functional linguistics (see Givón, 1995, p. 16; Butler, 2003, p. 51), but it is not exclusive of this orientation (Gonzálvez & Butler, 2006, pp. 49–50). In fact the search for motivation is also central to cognitive linguistics, as explicitly claimed in the earliest work of the founding fathers of this movement (e.g., Lakoff, 1987; Langacker, 1987). The difference is that functionalists seek motivation in the social or communicative, or both social and communicative, aspects of language use, whereas cognitive linguists tend to look for motivation in the way we perceive and interpret experience. But, ultimately, since the social aspects of language are based on cultural convention, which is often grounded in the way people interpret experience, the cognitive linguists' understanding of motivation overlaps with the functionalists' use of this notion and provides a clear point of contrast with formal approaches where meaning is seen as merely interpretive.

SEE ALSO: Generative Grammar; Halliday, M. A. K.; Systemic Functional Linguistics

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Formal Models of Bilingual Speech Production

DAAN HERMANS

Overview

How do bilinguals manage to produce words in the language in which they intend to speak? This is a puzzling question that has occupied many researchers working in the field of bilingual word production. Since the early 1990s, analyses of slips of the tongue and experimental studies have revealed that both a bilingual's languages are activated when bilinguals produce words in one language. The observation of cross-language activation has raised the question of how bilinguals exert control over their bilingual speech production system. This seems to be especially vital for unbalanced bilinguals who intend to speak in their less dominant language. Two different types of proposals have been put forward in the literature. This entry describes the available evidence on cross-language activation and presents two views on how bilinguals exert control on their bilingual speech production system. Finally, there is a discussion of one study on monolinguals, unimodal bilinguals (e.g., English–Italian bilinguals) and bimodal bilinguals (e.g., American Sign Language–English bilinguals) that demonstrates how studying different groups of bilinguals may provide a unique opportunity to reveal the fundamental characteristics of word production in bilinguals.

Cross-Language Activation in Word Production

To date, the most compelling experimental demonstration of cross-language activation that extends all the way to the level of phonology in language production has been reported by Colomé (2001). Colomé conducted a series of phoneme-monitoring tasks with Catalan–Spanish bilinguals. Participants were asked to decide whether or not a particular phoneme was part of the Catalan name of the picture. The phoneme was either part of the Catalan name of the picture (/t/ in *taula* 'table'), part of the Spanish name of the picture (/m/ in *mesa* 'table'), or not part of either the Catalan or Spanish names of the picture (/f/). The rationale was that if the Spanish name of the picture were phonologically co-activated during the phoneme monitoring task in Catalan, participants should take more time to correctly reject a phoneme that was part of the Spanish name of the picture than an unrelated phoneme. In a series of experiments, this prediction was confirmed (see, for similar results using the picture–picture paradigm, Colomé & Miozzo, 2010).

Another quite convincing demonstration of cross-language activation has been found in studies in which the naming latencies for pictures with cognate or non-cognate names were compared (Costa, Caramazza, & Sebastián-Gallés, 2000; Hoshino & Kroll, 2008). Cognates are translation equivalents with similar orthography, phonology, or both, like the English and Spanish words *lamp* and *lampara*. Non-cognates are translation equivalents with a different orthography, phonology, or both, like the English and Spanish words *table* and *mesa*. Costa et al. instructed Catalan–Spanish bilinguals and Spanish monolinguals to

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name pictures with non-cognate and cognate names. The rationale was that if the names of the pictures in both languages were phonologically co-activated, bilinguals, but not monolinguals, should name pictures with cognate names faster than pictures with non-cognate names. Again, the results confirmed this prediction. A subsequent study by Hoshino and Kroll (2008) demonstrated that cross-language interactions persist even when the two languages are distinct in their written form, as in the case of Japanese–English bilinguals. The results described above suggest that the parallel activity of similar phonology across the two language alternatives creates convergence that facilitates processing, and suggest that cross-language activation is a natural part of language production in bilinguals.

Recently, studies on bilingual word production have started to investigate the scope of cross-language activation (e.g., Jared & Kroll, 2001; Hermans, Ormel, van Besselaar & van Hell, in press). These studies have drawn upon Grosjean's notion of the bilingual continuum. Grosjean (1998) has argued that the extent to which a bilingual's languages are activated during language production depends upon a variety of factors such as (a) the proficiency of bilinguals in both languages, (b) their knowledge and expectations of the language proficiency and language preference of the interlocutor(s), and (c) the knowledge of their language communities on code switching and language mixing.

In line with this proposal, Kroll, Bobb, and Wodniecka (2006) conducted an extensive review of the experimental evidence obtained in the previous two decades, and concluded that the bilingual language production system is a dynamic system that can operate in different language activation states, depending on, for instance, task demands and the composition of the stimulus list. Hermans et al. (in press) obtained evidence in support of the proposals mentioned above. Hermans et al. found that cross-language effects in a phoneme monitoring task in the second language (L2) were affected by the proportion of filler pictures with cognate names in unbalanced first language (L1) Dutch–L2 English bilinguals. Cross-language activation effects were observed when (a proportion of or all) filler pictures had cognates names in Dutch and English, but not when the filler pictures consisted of exclusively pictures with non-cognate names. In other words, although the scope of cross-language activation has yet to be determined, the results from experimental studies conducted so far have revealed cross-language activation during language production.

More evidence for cross-language activation was obtained in an extensive study by Poulisse (1999) on speech errors in natural L2 speech production of L1 Dutch speakers with different levels of proficiency in L2 English. Poulisse found that about 30% of the errors unbalanced bilinguals produced during L2 speech production carried traces of the L1. More than one-fifth of the errors were lexical substitutions, in which speakers produced an L1 word instead of the intended L2 word (e.g., *yes, she heeft (has) uh she has uh, big ears*). Interestingly, the number of cross-language lexical substitutions sharply decreased as the level of L2 proficiency of bilinguals increased. To illustrate, third-year high school students produced more L1 lexical substitutions during L2 speech production than did second-year university students. This finding suggests that the control bilinguals can exert over their speech production system grows as their L2 proficiency increases (Abutalebi & Green, 2007). Interestingly, Poulisse (1999) also observed a few so-called code blends (e.g., *two form which bow towards elchother*, a blend of L2 English *each other* and its L1 Dutch translation equivalent *elkaar*). The observation of crosslingual blends is consistent with the experimental evidence on cross-language phonological co-activation described earlier.

In evaluating how informative slips of the tongue are for monolingual and bilingual speech production models, it is often argued that such slips may result from an occasional derailment of the language production system. In this scenario, slips of the tongue do not reflect the "normal" process of lexical access in bilinguals. However, one should be very cautious in dismissing evidence from studies analyzing slips of the tongue in natural language production. Work on language production in bilinguals constitutes a relatively

new scientific field. As a consequence, work on developing and falsifying theories of word production in bilinguals has gone hand in hand with the search for appropriate experimental paradigms. To illustrate, the usefulness of two paradigms that have been used most frequently in bilingual word production research, namely the picture–word interference task (Hermans, Bongaerts, De Bot, and Schreuder, 1998; Costa, Miozzo, & Caramazza, 1999) and the language-switching task (Meuter & Allport, 1999), has recently been challenged (Finkbeiner, Almeida, Janssen, & Caramazza, 2006; Kroll, Bobb, Misra, & Guo, 2008; Colomé & Miozzo, 2010; Hermans et al., in press). The results obtained from studies in which one of these paradigms were used will therefore be excluded from this review.

Theories of Word Production in Bilinguals

Bilingual models of word production have drawn heavily upon the Levelt's (1989) theory of language production in monolinguals. Central within this theory is the process of lexical access, during which conceptual representations are mapped onto lexical representations. Lexical access comprises two steps: lemma selection and phonological encoding. Lemma selection is often viewed as a competition process in which lexical items which match or partly match the conceptual specifications are activated, and compete for selection (but see Finkbeiner, Gollan, & Caramazza, 2006; Mahon, Costa, Peterson, Vargas, & Caramazza, 2007). Within this framework of language production, models of bilingual word production started to emerge in the last decade of the 20th century.

Central within all models is the notion that the language in which a speaker intends to speak must be specified at the conceptual level. De Bot and Schreuder (1993) have pointed out that information regarding the language in which a speaker intends to express his or her thoughts, the so-called language cue, must be specified in the conceptual message, as languages differ on how combinations of conceptual primitives are expressed by combinations of lexical items.

In the models proposed by Costa et al. (1999) and LaHeij (2005) this language cue guarantees the selection of words in the appropriate language (see Figure 1). These models assume that the intention to speak in a language will either increase the activation level

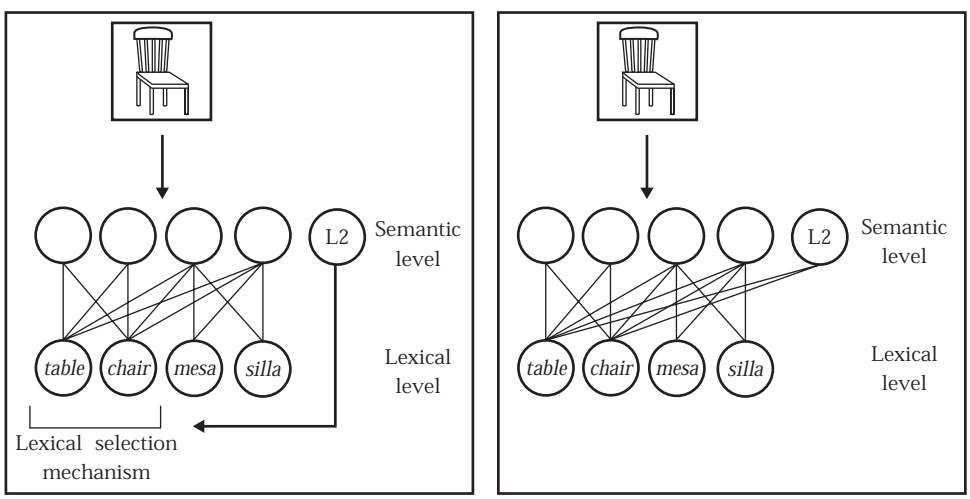

Figure 1 Models of "easy lexical access" in bilinguals: Costa et al.'s (1999) on left; LaHeij's (2005) on right

(or lower the selection threshold) of lexical candidates in the target language (LaHeij, 2005; Finkbeiner et al., 2006) or inform the lexical selection mechanism to consider only lexical representations for selection that belong to the language selected for production (Costa et al., 1999).

Although they are different in their assumptions on how language information is used to select words from the language selected for production (see for a review Finkbeiner et al., 2006), these models assume that the selection of words in the appropriate language is guaranteed naturally and quite automatically by the intention to speak in that language. One of the appealing advantages of these models of "easy lexical access" in bilinguals is that they require the postulation of just one simple mechanism to explain how bilinguals are usually able to produce words in the appropriate language.

In contrast, the inhibitory control (IC) model proposed by Green (1998) assumes that the intention to speak in a language itself is not sufficient to guarantee the selection of lexical candidates in the language selected for production (see Figure 2). In Green's model, language control is achieved through the implementation of so-called competing "task schemas" that in more general terms guide an individual's behavior by specifying the goal of that individual in situations that allow multiple possible actions. However, the selection of a particular task schema ("speak in the L2") itself is not sufficient in controlling activation in the language required for production (e.g., Kroll et al., 2008). Green's model assumes that lexical representations for the language not selected for production are activated and compete for selection. These lexical representations need to be reactively suppressed, especially when unbalanced bilinguals intend to speak in their weaker language. As pointed out by Finkbeiner et al. (2006), Green's IC model has built upon Levelt's (1989) speech production model in its assumption that selection through competition characterizes lexical access in bilinguals. This assumption has recently been challenged in the monolingual domain (Mahon et al., 2007, but see for an alternative selection-through-competition account Abdel Rahman & Melinger, 2009).

Both types of models can explain most of the experimental results obtained in phoneme monitoring tasks, picture naming tasks, and picture–word interference tasks (see for a review Finkbeiner et al., 2006). In part, this is due to the different conceptions of these experimental paradigms that have allowed alternative explanations for the same experimental findings. Recently, researchers have turned to different experimental paradigms

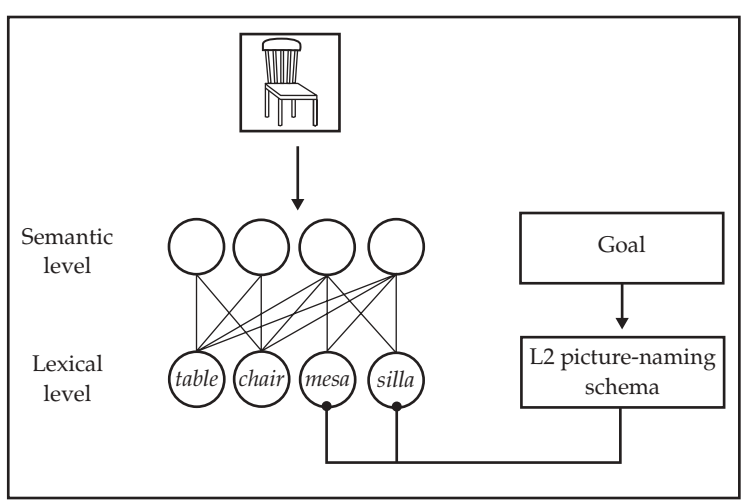

Figure 2 Green's (1998) inhibitory control (IC) model

to investigate whether or not the postulation of an additional mechanism, like a reactive inhibition mechanism, is necessary to explain how bilinguals are able to control their languages.

Do Bilinguals Need Inhibition to Exert Control Over Their Bilingual Production System?

Kroll et al. (2008) reviewed recent behavioral, effective refractory period (ERP), and neuroimaging studies. The authors concluded that although the available evidence is far from conclusive, it suggests that a bilingual's two languages are activated in parallel, and compete for selection. Kroll et al. argued that the postulation of an IC mechanism seems to be consistent with a wide variety of findings observed in behavioral studies (Christoffels, Firk, & Schiller, 2007; Wodniecka, Bobb, Kroll, & Green, in press) and in ERP and neuroimaging studies (Rodriguez-Fornells et al., 2005; Rodriguez-Fornells, De Diego Balaguer, & Munte, 2006; Abutalebi, & Green, 2007; Christoffels et al., 2007).

Christoffels et al. (2007) observed a language dominance reversal effect in their study on word production in Dutch–German bilinguals. This effect refers to the finding that, whereas picture naming in the L1 is usually faster than picture naming in the L2, this advantage disappears or is even reversed in experiments in which participants have to name pictures in a mixed language setting. Thus, Christoffels et al. observed a large mixing cost for the L1, but not for the weaker L2 (in the behavioral measures). This finding demonstrates that there is a mechanism that enables bilingual speakers to inhibit lexical representations in this (artificial) language mixing setting. However, it does not necessarily imply that such a (rather proactive) inhibitory mechanism is actually used in language production.

More direct evidence for IC in language production was obtained by Wodniecka et al. (in press, cited in Kroll et al., 2008). Wodniecka et al. used a competitor priming paradigm which involves a study and a test phase. Some of the pictures in the study phase were named in the same language in the study and the test phase (congruent condition), some of the pictures were named in different languages in the study and the test phase (incongruent condition), and some pictures in the test phase were not presented in the test phase (new condition). Wodniecka et al. argued that if bilingual word production is not characterized by competition and suppression, then naming a picture in a test phase should not be affected by the language in which the picture was named at the study phase. In other words, pictures in the congruent and incongruent conditions should be named faster than pictures in the "new" condition (attributable to repetition priming of the picture, its concept, or both). However, the results contradicted this prediction: Facilitatory effects were only observed for pictures that were named in the same language in the study and the test phase. Wodniecka et al. concluded that the absence of a facilitatory effect in the incongruent condition reflects an inhibitory component that counteracts the facilitation.

Results from neuroimaging studies also support the notion of an IC mechanism (Rodriguez-Fornells et al., 2005, 2006; Abutalebi & Green, 2007; Christoffels et al., 2007). To illustrate, Rodriguez et al. (2006) argued that language production in bilinguals requires cognitive control executed by the dorsal-lateral prefrontal cortex (DLPFC), an area that has been strongly associated with executive function. Rodriguez et al. proposed that the DLFPC mediates cognitive control in bilingual speech production through the interplay between a top-down selection-suppression mechanism and a local inhibitory mechanism.

Finally, in several studies bilingualism has been found to be associated with cognitive advantages (for a review see Bialystok, 2005). Bialystok and colleagues have argued that the requirement to resolve cross-language competition leads to cognitive benefits for bilinguals in the domain of executive function. In other words, the cognitive advantages found

in bilinguals are assumed to reflect an enhanced ability to ignore irrelevant information and to reduce conflict among competing alternatives. Note that this explanation of the cognitive advantages found in bilinguals fits well with Green's IC model. Although the cognitive advantages of bilinguals may also be explained by alternative models of bilingual word production, it has not been sufficiently addressed by these models.

Interim Summary

Studies on bilingual language production have revealed that both a bilingual's languages are activated when bilinguals produce words in one language. The evidence described in the previous sections is consistent with the view that words from both a bilingual's languages compete for selection, and that IC is necessary to prevent bilinguals from producing words in the language not selected for production (Kroll et al., 2008). However, it is important to note that, at present, there is no direct evidence available which demonstrates either within-language or cross-language competition during language production in bilinguals (Finkbeiner et al., 2006, Abutalebi & Green, 2007). One of the challenges in the field of bilingual word production is to seek new experimental paradigms that can address this question more effectively.

Bimodal Bilingualism

One exciting possibility is that language production studies on unimodal and bimodal bilinguals may reveal some of the answers to the questions that need to be readdressed (Kroll & Hermans, in press). Bimodal bilinguals have one language that is signed and another that is written or spoken. For instance, children of deaf adults (CODAs) typically acquire both a sign language and a spoken language from birth. Emmorey and colleagues have argued that the language production system of bimodal bilinguals is fundamentally different from the language production system of unimodal bilinguals (Emmorey, Borinstein, Thomspon, & Gollan, 2008; Casey & Emmorey, 2009). For unimodal bilinguals, the articulatory systems are the same for both languages (vocal channel), and constrain how bilinguals deal with parallel activation of lexical representations in both languages during language production. Unimodal bilinguals can only speak in one language at a time, and must exert control on their language production system to avoid confusion by their interlocutors.

For bimodal bilinguals, the articulatory systems involved in the production of sign language (manual channel) and spoken language (vocal channel) are different. This allows them (to some extent) to produce words and signs simultaneously. A study by Emmorey, Borinstein, et al. (2008) revealed that even in the absence of an interlocutor (retelling a cartoon), bimodal bilinguals often produce code blends in natural language production.

Emmorey, Luk, Pyers, and Bialystok (2008) hypothesized that if the observed benefits to executive control for unimodal bilinguals can be ascribed to negotiating cross-language competition during language production, then only unimodal bilinguals, but not bimodal bilinguals, should reveal the executive function advantage. Emmorey, Luk, et al. (2008) administered a flanker task to unimodal bilinguals, bimodal bilinguals, and monolingual control participants. They found that monolinguals and bimodal bilinguals responded more slowly than unimodal bilinguals. No differences were found between the bimodal bilinguals and the monolinguals. The researchers concluded that the source of the bilingual advantage in executive function is localized at the level of choosing between competing alternatives along the same speech channel. It seems difficult to account for the findings observed by Emmorey, Luk, et al. (2008) without assuming that word production in unimodal bilinguals is characterized by competition that is resolved through a reactive IC

mechanism. This is the first piece of research to demonstrate how studies that include bimodal bilinguals can provide insights into the fundamental characters of bilingual word production.

Summary

How do bilinguals manage to produce words in the language in which they intend to speak? The answer may be straightforward and may be very appealing in its simplicity: The intention to speak in a language guarantees the selection of a word in the appropriate language. But alternatively, bilinguals may have to deal with cross-language competition by suppressing lexical candidates every time they produce a word. At present, there is no conclusive answer on how bilinguals exert control over their speech production system, even though several findings in the literature support the notion that the intention to speak in a language is not sufficient to exert control over one's bilingual language production system. At this point, the development of new experimental paradigms seems to be an absolute necessity to address this question in more depth. Nevertheless, the research findings obtained so far seem to support a statement Grosjean made over two decades ago: "Neurolinguists, beware! The bilingual is not two monolinguals" (Grosjean, 1989).

SEE ALSO: Bilingualism and Bilinguality; Bilingualism and Speech Perception; Bilingual and Monolingual Language Modes; Inhibition and Control in Second Language Acquisition; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition

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Formal Models of Bilingual Lexicons

NATASHA TOKOWICZ AND ALBA TUNINETTI

A number of models have been developed to describe the representation and processing of words in a bilingual's two languages. These models vary in the extent to which they make predictions regarding the development of proficiency versus describe a discrete stage of proficiency, in the extent to which their predictions are supported by formal mathematical formulas versus verbal descriptions, and, among the mathematical models, whether they propose that information is stored in localist representations (i.e., each item that is represented is stored in a single unit) versus distributed representations (i.e., each item that is represented is stored as the pattern of activation across a set of units). See Thomas and van Heuven (2005) for further discussion of the differences between these types of models in the bilingual domain.

Memory Representation Models

Some models of the bilingual lexicon are descriptive models that emphasize the way that word forms and meanings are represented in memory, and how words in the two languages and their meanings are interconnected. These models vary in terms of whether they propose that words from the two languages have direct access to meaning or not, and whether the relative strength of the connections varies among the representations.

One well-known memory representation model of the bilingual lexicon is the revised hierarchical model proposed by Kroll and Stewart (1994). This model is a descriptive model that was proposed to explain how first and second language words and their meanings are stored in memory, how they are interconnected, and how these interconnections change as a function of second language proficiency. The interconnections in the model vary in terms of their relative strength and direction. The revised hierarchical model is considered hierarchical because it hypothesizes that words and their meanings are stored at separate levels of representation. It further proposes that words in the two languages are stored separately from each other (i.e., in different memory stores), but that they access a shared meaning store. Lastly, the revised hierarchical model proposes that the interconnections among these representational stores are asymmetric, with first language words having stronger connections to their meanings than second language words. The connection from second language words to their translation equivalents in the first language is stronger than the reverse; this asymmetry reflects the over-reliance on first language mediation in the initial stages of some types of second language learning.

As a result of the asymmetric connections in the model, initially, translation from the first language to the second is proposed to involve access to meaning. This is because first language words are strongly connected to meaning, and will rapidly and automatically activate them. Furthermore, translation from the first language to the second will be slow and relatively error-prone because it requires that a second language word be activated via the relatively weak connection between meaning and a second language word. The revised hierarchical model also makes the prediction that with increased second language proficiency, the connection between second language words and their meanings will become

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stronger. As a result, translation from the first language to the second will become increasingly fast and decreasingly error-prone. On the other hand, translation from the second language to the first is always predicted to rely on the strong connection from second language words to their first language translations. Thus, it is predicted that translation in this direction typically will not involve activation of meaning and therefore will be faster and less prone to error. Translation from the second language to the first is also predicted to be less influenced by meaning-related factors such as whether words are processed in semantically organized versus randomly ordered lists (Kroll & Stewart, 1994; see also Kroll, van Hell, Tokowicz, & Green, 2010). With increased proficiency, translation from the second language to the first is hypothesized to remain relatively more stable than translation from the first language to the second; therefore the two directions of translation become more similar and there is a decrease in the translation time and accuracy asymmetries.

The revised hierarchical model incorporates aspects of two previous descriptive models, the word association and concept mediation models of Potter, So, von Eckardt, and Feldman (1984). These models did not make predictions about changes in representation with increased second language proficiency. According to the word association model, second language words are directly connected to their translation equivalents, and they are connected to meaning only through these translation equivalents. Therefore, this model predicts that translation in both directions should occur solely via word-to-word connections. By contrast, the concept mediation model proposes that both first and second language words have equal access to meaning and therefore translation in both directions should be conceptually mediated. The revised hierarchical model expanded on these models by making predictions regarding changes that occur as a result of increased proficiency in the second language.

Two additional memory representation models that describe how words in the bilingual's two languages are interconnected are the distributed feature model (e.g., de Groot, 1992) and the distributed representation model (e.g., van Hell & de Groot, 1998). These two models are descriptive in nature and were not developed to account for changes as a function of increased second language proficiency. These models propose that first and second language words have equivalent access to meaning. The distributed feature model is similar to the revised hierarchical model in that it posits that first and second language words are stored separately but that they access the same meaning representations. Importantly, it also proposes that meanings are stored as sets of distributed features, and translation "equivalents" are likely to vary in their meaning overlap across languages. In particular, the model posits that concrete words, which refer to perceptible entities, are more likely to share features across languages than abstract words, which refer to imperceptible entities. Similarly, cognate translations, which share both meaning and lexical form, are proposed to share more aspects of meaning across languages than noncognate translations, which share meaning but not lexical form. The distributed representation model is an adaptation of the distributed feature model that represents both lexical form and meaning as distributed features, so it describes meaning and form similarity in a continuous fashion. These features allow the model to account for differential effects for cognates and for interlingual homographs, which share lexical form but are not translation equivalents.

The revised hierarchical model and distributed representation model have been combined into a single model called the distributed lexical/conceptual feature model (Kroll & de Groot, 1997) that applies the asymmetric connections of the revised hierarchical model to the distributed framework of the distributed representation model. This more recent model captures graded overlap at the lexical form and meaning levels while making predictions regarding changes that come with the development of second language proficiency.

Word Recognition Models

Some models of the bilingual lexicon are focused on the process of (visual or auditory) word recognition. These models make assumptions regarding the representations of words in the two languages and whether words from the language not currently in use compete for activation during the recognition process. These models are aimed primarily at describing the stable state of proficient performance, but also can simulate some aspects of less-proficient performance. Some of these models have been implemented mathematically, as described below.

The bilingual interactive model (BIA), posited by van Heuven, Dijkstra, and Grainger (1998), is an extension of the interactive activation model put forth by McClelland and Rumelhart (1981). The interactive activation models were used to simulate word recognition within a monolingual language system. The BIA model extended this framework to describe bilingual word recognition. Like the interactive activation model, the BIA model is limited to processing the orthographic features of visually presented words.

The BIA model is mathematically implemented and therefore can be used to simulate performance. The model consists of four layers of nodes, at the feature, letter, word, and language node levels. The nodes take letter representations from printed words as their visual input. Each letter activates words in either language that have the same letter in the same position, and inhibits words that do not overlap with the visual input in terms of the letter-to-location correspondence (Thomas & van Heuven, 2005). Interaction in the model arises from lateral inhibition, which occurs when an active node at a given level of representation reduces the activation of other nodes at that same level of representation. In other words, the more evidence that supports, for example, the presence of the word "cat," the more inhibition there will be of words that are not "cat." Additionally, the BIA model operates under the assumption of an integrated lexicon and nonselective language access, which assumes that both languages are activated during processing of either one (Thomas & van Heuven, 2005).

An important aspect of the BIA model is the addition of language nodes to the original interactive activation model. Because words are connected to the node of the language to which they belong, the model contains a basis for making a language decision (i.e., to what language does this word belong?) and can raise the activation of one language while inhibiting the other. This latter mechanism allows the model to account for differences in performance across experiments because the language nodes can serve as a type of language filter. Furthermore, the model is able to simulate data suggestive of selective access under some patterns of language node activation. The BIA model can also illustrate the effects of relative second language proficiency by adjusting the resting levels of activation of words, the method also used to simulate word frequency effects in the model.

To address the absence of phonological and semantic representations in the BIA model, Dijkstra and van Heuven (2002) proposed the BIA+ model, which is a descriptive model. Like the BIA model, the BIA+ model also has an integrated lexicon across languages and assumes nonselectivity. Whereas the BIA model used strong top-down inhibition from the language nodes to account for different patterns of findings in various tasks and stimulus contexts, the BIA+ model replaces this with a task/decision component that is affected by extraneous (extra-linguistic) factors and has the same effect on the model results. These models have progressed far in helping to explain bilingual word recognition during varied tasks, but future research is still needed to describe the effect of perceptual processing and context on bilingual word recognition more explicitly.

One effort to incorporate semantics in this framework is the semantic, orthographic, and phonological interactive activation (SOPhIA) model (van Heuven & Dijkstra, 2001), which

is a mathematically implemented version of the BIA+ model. This model is undergoing further development with the goal of describing additional bilingual word recognition phenomena.

A related model of word recognition is the bilingual interactive model of lexical access (BIMOLA) proposed by Grosjean (1988) to account for spoken word recognition. Like the BIA and BIA+ models, BIMOLA was inspired by an interactive activation model, specifically the TRACE model of speech perception (McClelland & Elman, 1986). Unlike the BIA and BIA+ models, BIMOLA assumes selective access of words in the first and second language, such that the only competitors for activation are within-language competitors.

Memory Representation Versus Word Recognition Models

Recently, a debate has emerged regarding the relative merits of the memory representation versus word recognition models. Specifically, some researchers feel that memory representation models such as the revised hierarchical model should be left behind in favor of more recent word recognition models such as the BIA and BIA+ models (Brysbaert & Duyck, 2010; Brysbaert, Verreyt, & Duyck, 2010). This position has been challenged by other researchers who acknowledge the specific contributions of all models because they allow researchers to articulate ideas more clearly and to advance understanding (Kroll et al., 2010). Having a variety of types of models may be especially important to consider in light of the dimensions along which the memory representation and word recognition models vary, as described here.

Self-Organizing Map Models

Some models of the bilingual lexicon seek to explain how it is possible for a bilingual to maintain separation between their two languages. In particular, self-organizing map models (Kohonen, 2001) have been used as a method for understanding how representations are organized. These models are mathematical (connectionist) models that use particular trained sequences. Several versions of this kind of model have been developed to explain various facets of the bilingual lexicon. The DevLex-II model (Li, Zhao, & MacWhinney, 2007) has an input lexicon made up of phonological features, a semantic map that includes semantic features based on co-occurrence metrics, word associations, and other information as presented in a thesaurus, and an output lexicon made up of phonological output features. This model has recently been extended by Zhao and Li (2010) to describe how the time at which a second language is learned relative to the first language impacts second language vocabulary development and use. This version of the DevLex-II model was trained on words in three orders: (a) the two languages presented simultaneously, simulating simultaneous bilingualism; (b) the first language presented first with second language words presented shortly thereafter, simulating early learning; and (c) the first language words presented first with second language words presented much later, simulating late learning. The model proposes that when words from the two languages are learned simultaneously, the words organize into separate representational spaces and the semantic and phonological representations for the first and second language are the most distinct. When the second language is learned early, these representations are still quite distinct, but when the second language is learned late, the representations are the most similar, indicating that the second language is parasitic on the first.

Word Production Models

The models described above all focus on representation or comprehension. Relatively fewer models have focused on the details of bilingual language production. The models that do focus on bilingual production are descriptive models that describe a discrete point in second language proficiency. These models make predictions regarding the degree to which candidates in the two languages are considered during the speech production process.

Speech production in monolinguals and bilinguals is thought to progress from the conceptualization of the message, at which point an idea is generated. Then, appropriate lexical candidates are identified. These are words that could be used to convey the intended message, and words that are related to those words. Finally, the phonology that is used to express the selected word is activated.

Monolingual and bilingual production differ in terms of the stage at which lexical candidates are identified. Models of bilingual production generally agree that candidate lexical items are considered from both of a bilingual's languages. These candidates are activated because they are related to the intended message in terms of meaning, even if they are not in the intended language. At present, bilingual production models differ in the extent to which they predict that the selection mechanism itself is language selective or nonselective in nature (i.e., whether words from one versus both languages are considered for output).

Production models with a language-specific selection mechanism (e.g., Costa & Caramazza, 1999) assume that the production system is insensitive to the activation of words from the nontarget (unintended) language and therefore words from the correct language will typically be selected. Thus, words from the nontarget language become activated but are not considered candidates for production. This type of model requires some form of a blocking mechanism, such as a language tag on each word along with a checking mechanism to ensure that only words from the target language are selected.

By contrast, production models with a language-nonspecific selective mechanism (e.g., Poulisse & Bongaerts, 1994; Hermans, Bongaerts, de Bot, & Schreuder, 1998) assume that words from the nontarget language are considered candidates for production because the system chooses the most highly activated word regardless of the language to which it belongs. To prevent speech in the nontarget language, this type of model requires that words from the target language be activated to a higher level than words from the nontarget language, or the implementation of a mechanism that suppresses activation of words from the nontarget language. Bilingual production models with language nonselective mechanisms therefore predict that the ease of producing words in the target language is affected by the activation of words in the nontarget language (i.e., the two languages compete).

Conclusion

In sum, various models have been proposed to explain the nature of the bilingual lexicon. These models vary along several important dimensions. The majority of these models are descriptive models, including the revised hierarchical model, the word association and concept mediation models, the distributed feature and representation models, the distributed lexical/conceptual feature model, the BIA+ model, BIMOLA, and the word production models. The few mathematically formalized models include the BIA model, SOPhIA, and DevLex-II. The revised hierarchical model, the distributed lexical/conceptual feature model, and DevLex-II have specifically been used to describe changes as a function of increased second language proficiency. The word association model and the revised hierarchical and

distributed lexical/conceptual feature models (for early proficiency) propose indirect access to meaning from the second language. Some other models assume that words in both languages have equivalent access to meaning (the concept mediation model, the distributed feature and representation models, SOPhIA, and the word production models), and yet others do not directly address meaning representation (BIA+ and BIMOLA). All of these models share the feature that they have helped to advance our understanding of several core issues in the study of the bilingual lexicon.

SEE ALSO: Formal Models of Bilingual Speech Production; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Psycholinguistic Approaches to Vocabulary; Spoken Word Production in Second Language Acquisition; Spoken Word Recognition in Second Language Acquisition; Vocabulary Acquisition in Bilinguals

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Form-Focused Instruction

LAURA COLLINS

The term *form-focused instruction* describes any pedagogical practice undertaken by second language (L2) teachers with the goal of drawing their students' attention to language form. The "form" may consist of phonological (sound), morphosyntactic (word form and word order), lexical, pragmatic, or orthographical aspects of language. The instruction may be intensive, targeting a specific language feature or set of features, or it may be extensive, addressing a range of problem areas as they arise. The instruction may also vary along a continuum of explicit to implicit techniques and may involve preplanned or spontaneous (incidental) attention to language (both defined in more detail below). The concept has not always been understood in such broad terms, but Ellis's (2001) definition, offered in his introduction to the anthology *Form-Focused Instruction and Second Language Learning*, is the one that is increasingly adopted in contemporary scholarship on L2 teaching and learning.

The term owes its origin to a distinction, first articulated by Long (1991), between *focus on form* and *focus on forms.* The latter, frequently referred to as "traditional grammar teaching," typically describes a teaching approach that follows a structural syllabus focused on a predetermined list of language forms (e.g., articles, verb tenses, prepositions, etc.). In contrast, *focus on form* describes pedagogy in which some attention to language form is integrated within an overall approach focused primarily on communicating and understanding messages in the L2 (e.g., during a discussion of a recent field trip, the teacher provides some guidance on the use of past verb forms). While the attention to form in both approaches results in reflection on language as an object, Doughty and Williams (1998) note that "focus on form *entails* a focus on formal elements of language, whereas focus on formS is *limited* to such a focus, and focus on meaning *excludes* it" (p. 5, emphasis in the original).

Following the publication of Long's (1991) seminal paper, the term "form-focused instruction" initially appeared in the literature as an equivalent of "focus on form" (Spada, 1997). The conceptualization of focus on form, however, quickly moved beyond Long's more restricted notion of a spontaneous, reactive response of a teacher to a learner's error or gap in knowledge, typically in the form of feedback, to encompass preplanned or proactive communicative activities that address observed problem areas for specific populations of learners (e.g., Doughty & Varela, 1998). A further distinction which has emerged is the notion of "preemptive" form-focused instruction, in which teachers anticipate potential problem areas prior to or during a communicative activity (Ellis, Basturkmen, & Loewen, 2001), as opposed to reacting to actual attested areas of difficulty, either immediately or in subsequent lessons. For some scholars, however, preemptive pedagogy does not respect the "problematicity" criterion (Williams, 2005) (i.e., an instructional response to actual learner need), seen to be an essential component of focus-on-form episodes.

More recently, the scope of form-focused instruction (hereafter referred to as FFI) has broadened further such that focus on form (however it is defined) and focus on forms are now both considered to be types of FFI by many scholars, although certainly not by all. Indeed, some have argued for the preservation of the distinction through the use of separate terms, such as "formS-focused instruction" and "FonF instruction" (e.g., Doughty

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& Williams, 1998, p. 4; see also Doughty, 2004). The consequence of the "varied interpretations and plethora of rather similar terms" (Williams, 2005, p. 671) that have arisen is that any discussion or empirical investigation of the different issues associated with FFI typically begins with a clear statement of the intended meaning of the term.

There are a number of theoretical and empirical topics related to FFI that have received attention in the applied linguistics literature. In the 1990s a fundamental issue in the North American research context was whether FFI would lead to measurable learning gains, as part of a larger debate over the role of instruction in L2 acquisition. As research showing some benefits for such an approach across a range of languages, learners, and instructional contexts has accumulated, the attention has shifted to specific aspects of FFI, such as the assessment of the relative effectiveness of different types of FFI. One dimension involves examining the degree of explicitness of the attention to language. On the more implicit end of FFI are techniques employed to "boost" the input learners are exposed to, such as seeding written or oral input or both with examples of the target forms (*input flooding*; e.g., Trahey & White, 1993; Bell & Collins, 2009), highlighting the forms in written text to make them more salient (*textual enhancement*; e.g., White, 1998), or restatements of learners' utterances with the errors repaired (*recasts*; e.g., Lyster & Ranta, 1997). More explicit techniques include statements of rules or patterns (e.g., VanPatten, 2004), with some research focused on whether this is best done inductively, where learners induce the rules or patterns from input, or deductively, where learners apply rules they are given in practice activities (e.g., Erlam, 2003). Other examples of explicit FFI are the use of comparisons between learners' first language and the L2 (e.g., White, Muñoz, & Collins, 2007), and forms of feedback which elicit attempts at utterance repair on the part of the learners (*prompts*; e.g., Ammar & Spada, 2006). Although Norris and Ortega's (2000) meta-analysis found more evidence in support of explicit form-focused approaches, to date there has been far less research attention paid to implicit types of instruction and to measuring implicit types of knowledge (Doughty, 2004). This is thus an area for future research. Another under-researched area is the timing of FFI; that is, whether the instruction is more effective if the form focus is integrated into communicative activities or conducted separately in isolated lessons (Spada & Lightbown, 2008). The theoretical issue here is whether the cognitive process of mapping form and meaning, and the subsequent retrieval of this learned information in real-time communication (*transfer-appropriate processing*), are facilitated by a simultaneous focus on form and meaning during the same instructional activity.

Other issues that continue to motivate research on FFI include whether FFI is more effective or necessary for certain forms than for others, investigated in both laboratory (e.g., DeKeyser, 1995) and classroom contexts (e.g., Spada, Lightbown, & White, 2005); the timing of FFI with respect to learners' developmental readiness (e.g., Mackey & Philp, 1998); and the interaction between different FFI approaches and individual differences among learners such as working memory and analytical ability (e.g., Robinson, 1997). Although there has also been research demonstrating the feasibility of engaging in FFI with young L2 learners (e.g., Harley, 1998; Bouffard & Sarkar, 2008), the interaction between the individual variable of age and FFI is yet another area that merits further investigation.

SEE ALSO: Explicit Knowledge and Grammar Explanation in Second Language Instruction; Instructed Second Language Acquisition; Learner Readiness; Roles for Corrective Feedback in Second Language Instruction

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Formulaic Language and Collocation

NORBERT SCHMITT

It is now clear that vocabulary typically behaves not as single words which are held together by syntax, but rather has a strong tendency to occur in multiword phraseological units. Formulaic language is very common in language overall, in both spoken and written modes. For example, Erman and Warren (2000) calculated that 52–8% of the language they analyzed was formulaic, and Foster (2001) came up with a figure of 32% using different procedures and criteria. Biber, Johansson, Leech, Conrad, and Finegan (1999) found that around 30% of the words in their conversation corpus consisted of lexical bundles, and about 21% of their academic prose corpus. Howarth (1998) looked at frequent verbs in a social science/academic corpus and found that they occurred in either restricted collocations or in idioms in 31–40% of the cases. This research convincingly shows that formulaic language is no mere peripheral feature of language, but rather is a ubiquitous and essential feature of how it is used.

The Functions of Formulaic Language

Being such a big part of language, it is not surprising that formulaic language as a phenomenon is not homogeneous (although many researchers treat it as if it is). It realizes different purposes in language use, including transacting routinized meanings (*that'll be X dollars* = typical way for American shopkeepers to state the cost of a bill), and smoothing social interaction (*yeah, it is* = a routinized way of agreeing with an interlocutor's assertion) (Schmitt & Carter, 2004). It also provides the building blocks upon which one can create more extended strings of language (e.g., with collocations (*valid point*), and with lexical bundles: *it should be noted that* = a standard academic phrase which highlights a point of interest (Biber et al., 1999).

Moreover, one reason that formulaic language is so widespread is that it lexicalizes a wide number of referential, textual, and communicative functions in discourse. It can be used to express a concept (*get out of Dodge* = get out of town quickly, usually in uncomfortable circumstances), state a commonly believed truth or advice (*too many cooks spoil the soup* = it is difficult to get a number of people to work well together), provide phatic expressions which facilitate social interaction (*nice weather today* is a nonintrusive way to open a conversation), signpost discourse organization (*on the other hand* signals an alternative viewpoint), and provide technical phraseology which can transact information in a precise and efficient manner (*2-mile final* is a specific location in an aircraft landing pattern) (Schmitt & Carter, 2004). Likewise, Nattinger and DeCarrico (1992) argue that formulaic language fulfils the functions of maintaining conversations (*How are you?*, *See you later*), describing the purposes for which the conversations take place (*I'm sorry to hear about X, Would you like to X?*), and realizing the topics necessary in daily conversations (*When is X?* (time), *How far is X?* (location)). In fact, one might suppose that for every conventional activity or function in a culture, there will be associated phrasal vocabulary. If that is so, there are bound to be a large number of formulaic expressions, perhaps even a larger number than that of single-word vocabulary.

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Formulaic sequences become particularly important in language use when we consider their pragmatic value. For instance, they are very often used to accomplish recurrent communication needs. These recurrent communicative needs typically have conventionalized language attached to them, such as *I'm (very) sorry to hear about* . . . to express sympathy and *I'd be happy/glad to* . . . to comply with a request (Nattinger & DeCarrico, 1992, pp. 62–3). Because members of a speech community know these expressions, they serve as a quick and reliable way to achieve the desired communicative effect. Formulaic sequences also realize a variety of conversational routines and gambits and discourse objectives (Coulmas, 1979, 1981). They are typically used for particular purposes and are inserted in particular places in discourse. For instance, formulaic sequences regularly occur at places of topic-transition and as summaries of gist (Drew & Holt, 1998). Most (all?) conventional speech acts are realized by families of formulaic language and not normally by original expressions (*I'm very sorry* versus *I am feeling apologetic toward you*). Overall, understanding the pragmatic role of formulaic language can tell us much about the nature of interaction (McCarthy & Carter, 2002).

Moreover, formulaic sequences do more than just carry denotative meaning and realize pragmatic function. They can often have a type of register marking called *semantic/collocational prosody* (Stubbs, 2002; Sinclair, 2004; Hunston, 2007). This is often negative—for example, the verb *cause* frequently has a negative evaluation (*cause pain, cause inflation*). However, semantic prosody can also be positive, as in collocations that form around the word *provide* (*provide information, provide services*). This semantic prosody is one means of showing a speaker/writer's attitude or evaluation. For example, their stance can be indicated concerning the knowledge status of the proposition following the formulaic item (*I don't know if X* indicates uncertainty about X), their attitude toward an action or event (*I want you to X* shows a positive attitude toward this action), and their desire to avoid personal attribution (*it is possible to* avoids a directly attributable suggestion) (Biber, Conrad, & Cortes, 2004). Likewise, the choice of formulaic sequences can reflect an author's style and voice (Gläser, 1998). Formulaic sequences can also be used to encode cultural ideas, as Teliya, Bragina, Oparina, and Sandomirskaya (1998) have demonstrated for Russian.

Acquisition of Formulaic Language

The learning of individual words is incremental and each word has its own particular learning burden (Nation, 1990; Schmitt, 2000), and there is no reason to believe that formulaic language is any different in this respect. This would suggest that many formulaic sequences are partially known for a number of exposures until the point where they become mastered. Certainly, some L1 acquirers learn and use formulaic sequences before they have mastered the sequences' internal makeup. For example, they sometimes seem to acquire an initial phonological mapping of formulaic sequences proceeding from the whole to the individual parts, but with some elements still incompletely grasped, especially the unstressed phonemic constituents (e.g., Peters, 1977; Plunkett, 1993). In L1 acquisition, children with expressive tendencies (having interactional goals; focusing on the social domain) were more likely to learn formulaic expressions than children who had tendencies to name things with individual words (Nelson, 1973). This points out the importance of formulaic language in promoting the kind of social integration which promotes language acquisition in general. In L2 acquisition, formulaic sequences are also relied on initially as a quick means to be communicative, albeit in a limited way. This can lead to faster integration into a peer group, which can result in increased language input. Wong Fillmore (1976) found this was the case with five young Mexican children trying to integrate into an English-medium school environment. She identified eight strategies the children used, and at least three of them directly involved formulaic language:

- Give the impression, with a few well-chosen words (phrases), that you speak the language.
- Get some expressions you understand, and start talking.
- Look for recurring parts in the formulas you know.

The use of formulaic sequences enabled the realization of these strategies even though the children's language capabilities were quite limited. Furthermore, the use of formulaic sequences to facilitate language production is not restricted to L2 children. Schmidt's (1983) study of Wes is a good example of the phenomenon in L2 adults; Wes's speech is filled with formulaic language as a means of fulfilling his desire to be communicative, but not necessarily accurate. Additionally, Adolphs and Durow (2004) found that the amount of social integration into the L2 community (with presumably a commensurate need to be communicative in the L2) was linked to the amount of formulaic language produced in the speech of L2 postgraduate students.

But formulaic sequences may provide language learners with more than an expedient way to communicate; they might also facilitate further language learning. For L1 learners, it has been proposed that unanalyzed sequences provide the raw material for language development, as they are segmented into smaller components and grammar (Peters, 1983). For example, when a child realizes that the phrase *I wanna cookie* (previously used as a holistic unit) is actually *I wanna* + *noun*, he or she gains information about the way syntax works in the language, as well as the independent new word *cookie*. A number of studies suggest that some children segment formulaic sequences into smaller units, and in doing so, advance their grammatical and lexical knowledge (see Wray, 2000, for one review). It seems that formulaic sequences serve the same purpose for L2 learners (e.g., Myles, Hooper, & Mitchell, 1998; Bardovi-Harlig, 2002). Moreover, there is little doubt that the automatic use of acquired formulaic sequences allows chunking, freeing up memory and processing resources (see Kuiper, 1996; and Ellis, 1996, who explores the interaction between short-term and long-term phonological memory systems). These can then be utilized to deal with conceptualizing and meaning, which must surely aid language learning.

L1 children are exposed to many formulaic sequences in their input, but how do they decide what to analyze and what to keep at the holistic level? Wray (2002) suggests that a "needs-only analysis" is the mechanism. Rather than segmenting every sequence into the grammar system, children will operate with the largest possible unit, and only segment sequences when it is useful for social communication. Thus the segmentation process is driven by pragmatic concerns (communication), rather than an instinctive urge to segment in order to push grammatical and lexical acquisition. The default would be to not analyze, and to retain holistic forms. Thus children maintain many formulaic sequences into adulthood, even though the components of those sequences are likely to be stored individually as well (perhaps being acquired from the segmentation analyses of other formulaic sequences). This suggests that dual storage is the norm. (It is useful to note that the notion of "holistic storage" is actually a metaphor. There is yet no conclusive evidence as to whether formulaic sequences are actually stored in memory as wholes, or whether they are simply computed very efficiently in a manner which gives them the characteristics of holistic units.)

Of course, relying on holistic versus analytical approaches to language acquisition and use is not an either/or proposition, and children will use both approaches in varying degrees. However, Wray and Perkins (2000) and Wray (2002) suggest that the relative ratios between the approaches may change according to age. During phase 1 (birth to around 20 months), the child will mainly use memorized vocabulary for communication, largely learned through imitation. Some of this vocabulary will be single words, and some will consist of sequences. At the start of phase 2 (until about age 8), the child's grammatical awareness begins, and the proportion of analytic language compared to holistic language increases, although with overall language developing quickly in this phase, the

amount of holistically processed language is still increasing in real terms. During phase 3 (until about age 18), the analytic grammar is fully in place, but formulaic language again becomes more prominent. "During this phase, language production increasingly becomes a top-down process of formula blending as opposed to a bottom-up process of combining single lexical items in accordance with the specification of the grammar" (Wray & Perkins, 2000, p. 21). By phase 4 (age 18 and above), the balance of holistic to analytic language has developed into adult patterns.

The course of formulaic sequence development is more difficult to chart in L2 learners. Typically there is early use of formulaic sequences, often after a silent period. As learners' proficiency improves, there is a reasonable expectation of language which is more accurate and appropriate. In natives, this is achieved to a large extent through the use of formulaic sequences (e.g., Nattinger & DeCarrico, 1992). Unfortunately, the formulaic language of L2 learners tends to lag behind other linguistic aspects (Irujo, 1993), but this is not so much a case of the amount of formulaic language use, but rather a lack of native-like diversity. This is probably largely due to a lack of sufficient input. Irujo (1986) suggested that one specific class of formulaic language (idioms) is often left out of speech addressed to L2 learners, leading to a lack of idioms in learner output. More recently, Durrant and Schmitt (2009) show that a more general type of formulaic language (collocations) seems to be tuned to frequency, with L2 learners producing frequent, but not infrequent, collocation pairs. Furthermore, Siyanova and Schmitt (2008) showed that spending a year in an English-speaking country (with presumably a great increase in the amount of L2 input) led to better intuitions of collocation.

However, it may not be just the *amount* of input that is crucial, but also the *quality*. Siyanova and Schmitt (2007) found that the amount of exposure to native-speaking environments did not have an effect on the likelihood of using the multiword verbs. This, however, might be explained by Adolphs and Durow's (2004) findings that sociocultural integration was the key to their case-study learner's acquisition. This suggests that it may not be exposure per se that is important, but the kind of personalized and engaging exposure that presumably occurs in a socially integrated environment.

The nature of formulaic language and its acquisition is likely to become of ever-greater interest as the field turns to more pattern-based models of language acquisition—e.g., pattern grammar (Hunston & Francis, 2000) and usage-based theory (Tomasello, 2003)—which posit that the human facility for language learning is based on the ability to extract patterns from input, rather than being under the guidance of innate principles and parameters which determine what aspects of grammar can and cannot be acquired (see Langacker, 1987; Bybee, 1998; Ellis, 1996, 2002). For example, this line of thinking suggests that we learn the letter sequences which are acceptable in a language (the consonant cluster *sp* can be word-initial in English, but *hg* cannot) simply by repeatedly seeing *sp* at the beginning of words, but not *hg*. This learning is implicit, and may not be amenable to conscious metalinguistic explanation. Of course, learners may eventually reach the point where they can declare a "rule" for this consonant clustering, but the rule is an artifact of the pattern-based learning, rather than the underlying source of learning (e.g., Bod, 2006).

This pattern-based learning also works for larger linguistic units, such as the way in which sequences of morphemes combine to form words (*un-question-able, un-reli-able, un-fathom-able*). Moving to words, we gain intuitions about which words collocate together and which do not (*blonde hair, *blonde paint*; *auburn hair,* but only for women, not men). Many of these collocations must be based solely on associative pairing, because there is often no semantic reasoning behind acceptable/nonacceptable combinations (**blonde paint* makes perfectly logical sense). Neither are most collocations likely to be learned explicitly, because they are not normally taught, and even if they are, only possible cases are illustrated, not inappropriate combinations. Longer formulaic strings, which are also based on

patterns rather than rules, seem to fit very nicely with such sequence-based models of acquisition as well. Time will tell whether this kind of model best captures the mechanics of formulaic sequence acquisition (and that of language in general). However, one thing seems certain; given the increasingly evident importance of formulaic sequences in language use, convincing explanations of the mechanics of their acquisition must become an essential feature of any model of language acquisition.

Non-Native Use of Formulaic Language

Formulaic language is very widespread in L1 language use (e.g., Biber et al., 1999; Erman & Warren, 2000; Foster, 2001). But what about non-native speakers? There is a widespread feeling that formulaic language is especially problematic for L2 learners, and its lack/misuse is a major reason why L2 output can feel unnatural and non-native-like, at least in their compositions (most research on formulaic language has focused on written discourse). Research has only partially supported this impression. We can look at non-native mastery of formulaic language along at least three dimensions: amount of use, accuracy/appropriacy of use, and quality/speed of the underlying formulaic intuitions. There is a growing literature about the first two dimensions, but only embryonic research on the last. Let us look at each dimension in turn.

Amount of Use

It is easy to assume that that problem with non-natives is that they simply to do not use as much formulaic language as natives. This is largely incorrect, although there can be an element of avoidance (Laufer & Eliasson, 1993; Laufer, 2000). A series of studies have found that L2 usage depends on *which* formulaic sequences one is focusing on. It is now clear that non-natives actually use *more* of certain favorite formulaic sequences which they know well and tend to overuse as "safe bets," compared to natives (Granger, 1998; de Cock, 2000; Foster, 2001). Conversely, they use *fewer* of other sequences, presumably because they do not know them as well and are not as confident in their use (e.g., Granger, 1998; Howarth, 1998; Foster, 2001). One type of formulaic sequence which seems to be particularly underused is multiword verbs. For example, Altenberg and Granger (2001) found that their EFL learners had great difficulty with the verb *make*, especially the delexicalized uses, such as *make a decision* and *make a claim*. This is particularly problematic as high-frequency verbs like *make, look,* and *do* are used in numerous formulaic sequences. Interestingly though, Granger, Paquot, and Rayson (2006) compared formulaic sequences in a one-million-word native-speaker academic corpus and one million words from the ICLE learner corpus (International Corpus of Learner English) and found more cases of overused formulaic sequences than underused ones.

Durrant and Schmitt (2009) go some way in explaining which formulaic sequences are overused and which underused. Using a corpus composed of written academic output from Turkish and Bulgarian university EFL students and a mixed group of international university students studying in the UK, they found that these students tended to use frequent premodifier-noun collocations at a rate similar to native students. (Congruently, Siyanova and Schmitt (2008) found that their non-natives used adjective–noun collocations in frequencies similar to natives.) These are the kind of collocations which are identified by measures which give a relatively heavy weighting to frequency, such as the *t* score statistic (*good example, long way*, *hard work*). However, the non-natives produced many fewer low-frequency collocations (*densely populated, bated breath, preconceived notions*), even though these combinations are very strongly linked. (This kind of lower-frequency, but tightly bound, collocation is better identified by the mutual information [*MI*] collocation statistic).

Because of their strong ties, and relative infrequency, they are likely to be especially salient for natives, and so their absence in non-native output is particularly noticeable. The authors conclude that the lack of these "MI" collocations is one key feature which distinguishes native from non-native production. In terms of acquisition, L2 learners seem to be able to acquire and use the collocations which appear frequently, but do not seem to pick up as many nonfrequent collocations, whose individual component words may also be infrequent in themselves. This is highly suggestive of the role of frequency in the acquisition process. This is supported by Ellis, Simpson-Vlach, and Maynard (2008), who found that for natives, it is predominately the *MI* of a formulaic sequence which determines processability (as measured by reaction-time experiments), while for non-natives, it is predominately the *frequency*.

Accuracy/Appropriacy of Use

Oppenheim (2000) found that much of the language which her non-native subjects produced in consecutive speeches on the same topic consisted of the same recurrent word strings, but that most of these were idiosyncratic in comparison to native-speaker norms. Thus, just because L2 learners produce formulaic language, it is not necessary formulaic in the sense of matching what natives would produce.

Nesselhauf (2003, 2005) gives us some idea of how formulaic language can be "non-native." She extracted 1,072 English verb–noun combinations from 32 essays in the ICLE written by German university students. Almost one-quarter of these collocations were judged to be incorrect; moreover, the L1 was deemed to be an influence in 45% of the errors. However, the incorrect usage was often the result not of combining words in an unconventional way, but of using conventional word pairs in ways which are not appropriate (Nesselhauf, 2005). This suggests that the difficulty learners have is not only that of learning which words go together, but also learning how to employ the chunks they know. Therefore, at least for the more frequent collocations, the problem may not be so much in the *amount* of formulaic language learners use, but in using the formulaic sequences they know *appropriately* in the right contexts.

Quality/Automaticity of Intuitions of Formulaic Language

So formulaic sequences can be overused, underused, and misused by non-native writers (most of this research has been based on analysis of written text), but they are definitely used; there is no question that L2 output is devoid of formulaic language. But how good are the non-native intuitions of this language? There is little research which addresses this; however, three studies found that non-native intuitions were not as well developed as native intuitions.

Siyanova and Schmitt (2008) directly compared native and non-native judgments of the frequency of high-frequency, mid-frequency, and low-frequency adjective-noun collocations on a six-point Likert scale. They also measured how long it took to make these judgments. They found that the natives had fairly good intuitions of the collocation frequency, and that they made their frequency judgments relatively quickly. Compared to these native norms, the non-natives judged the high-frequency collocations as being lower frequency, and judged the low-frequency collocations as being much higher. Furthermore, natives were able to distinguish the frequency difference between mid- and high-frequency collocations, but the non-native as a whole were not. Interestingly though, the non-natives who spent a year or more in an English-speaking country were able to make this distinction. Also, the non-natives took much longer to make their frequency judgments. Taken together, Siyanova and Schmitt conclude that the non-natives' intuitions were not as developed as the natives', nor were they as automatized.

Hoffman and Lehmann (2000) elicited native and non-native speakers' intuitions regarding 55 collocations from the BNC with high log-likelihood scores (mainly adjective–noun and noun–noun pairs). Respondents were presented with each node in a questionnaire, and were asked to supply the collocates. On average, the native speakers supplied the "correct" collocate in 70% of cases, which, like the results in Siyanova and Schmitt, indicates relatively good intuitions by the natives. The non-natives did far less well, achieving an average accuracy of only 34%. This shows a major gap between the native and non-native intuitions, although in absolute terms, the non-native results (producing about one third of the collocates) still indicate considerable knowledge.

This poorer intuitive mastery is reflected in learners' production. While natives tend to resort to formulaic language to get through time-pressurized communicative situations, non-natives do not seem to make greater use of formulaic language in such cases, either in speech or writing (Foster, 2001; Nesselhauf, 2005). In terms of speech, non-natives tend to use many recurrent dysfluency markers (such as filled pauses and hesitation markers), although it seems that extensive interaction with native speakers enables them to overcome this (de Cock, Granger, Leech, & McEnery, 1998; Adolphs & Durow, 2004). However, in terms of writing, neither amount of use nor accuracy of collocation appears to increase with time spent in an English-speaking country (Yorio, 1980; Nesselhauf, 2005). So, although a year or more spent in an English-speaking country can lead to better *intuitions* of collocation (Siyanova & Schmitt, 2008), it seems difficult to extend this into increased *production* of formulaic language.

Conclusion

It seems that mastery of formulaic language takes a long time to acquire and is a hallmark of the highest stages of language mastery. Language testers have picked up on this and often include items which focus on phraseology in their highest-level examinations. Formulaic language is an important element of language overall, perhaps *the* essential element. Research into it is only now gaining momentum, but given its ubiquitousness and demonstrated processing advantages, it looks to be one of the most important areas of inquiry in the applied linguistics field for the foreseeable future.

SEE ALSO: Corpus Linguistics in Language Teaching; Teaching Vocabulary

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Formulaic Sequences

ALISON WRAY

Definition

A "formulaic sequence" is broadly defined as a string of words with a meaning or function different from that of its component parts and which, for that reason, is hypothesized to be processed holistically (Wray, 2002, p. 9). Examples include idioms (e.g., *to take someone to the cleaners*, meaning 'to charge someone too much money'), common social routines (e.g., *mind how you go*, which is used for leave-taking), and many common collocations, including multiword verbs (e.g., *put down*, with at least two holistic meanings, 'denigrate', 'euthanize'; *come by*, meaning 'acquire'; *go and* VERB, meaning '*VERB* unexpectedly or unadvisedly' (as in 'he went and paid for me to get in'; 'don't go and catch a cold, will you').

While the types above are relatively uncontentious, debate occurs regarding expressions whose holistic meaning is hardly different from their compositional one. For example, *have a nice day* carries, in its US usage at the end of customer service encounters, strong contextual and pragmatic overtones associated with the whole expression. Yet it also breaks down semantically. Judging whether such examples should count as formulaic depends on the researcher's preferred theory. Theories proposing that a word string *first* develops a holistic meaning different from its literal meaning, and *then* becomes holistically processed, can treat *have a nice day* as moving toward formulaicity but not yet there. However, theories such as "needs only analysis" (see below) do not require a word string to be noncompositional before it is holistically processed, and can view *have a nice day* as formulaic despite its compositionality, since it carries features of meaning and function that are tied to the string as a whole.

Functions

A major role of formulaic sequences seems to be enhancing fluency in relatively routine situations (e.g., Pawley & Syder, 1983), so as to reduce the overall processing load. Using prefabricated expressions is only appropriate when we are not trying to say something new. However, even when we are, a partly prefabricated frame that we complete with novel information can still reduce processing. In fact, this mix can actually highlight what is new, as Kuiper (1996) observed in auctions. Research on oral traditions of storytelling, reviewed and discussed in Wray (2008a, chap. 4), shows how performers can blend the conventional content of a culturally recognized piece of literature with their own unique contribution as creative artists.

Evidence

Several types of evidence indicate that formulaic sequences are indeed holistically processed. In clinical linguistics it has long been known that some socially motivated expressions survive in acquired language disorders (e.g., Wray, 2010; for reviews, see Van Lancker, 1987; Wray, 2002, chaps. 12–14; Wray, 2008b). This suggests that these expressions do not

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require online assembly, and perhaps are stored in, or accessed from, areas of the brain other than the left hemisphere language centers.

The fluency with which formulaic sequences are produced is also indicative of holistic —or at least privileged—production processing, and a range of other phonological characteristics, including faster pace, underdefined weak syllables, assimilation within the word string and little if any at the boundaries, and a reduced number of tone units compared to an equivalent novel expression, are also consistent with holistic processing (Lin, 2010). Research that tracks eye movement during reading (e.g., Conklin & Schmitt, 2008; Columbus, 2010) and electrical activity in the brain (e.g., Tremblay, Derwing, Libben, & Westbury, 2011) offers independent confirmation of this observation, as well as providing opportunities for a more fine-grained differentiation between subtypes of formulaic sequence.

Research Foci

Current issues in research include the question of whether formulaicity is absolute or is graded on a continuum (for a discussion of the issues, see Wray, 2002, pp. 62–5), how best to identify formulaic sequences in spoken and written text (e.g., Wray, 2002, chaps. 2–3; Wray, 2008a, chaps. 8–9; Wray, 2009), and the relationship between formulaicity and frequency. The first of these questions is important because without a continuum model it is difficult to account for the native speaker's collocational knowledge. Opinion varies as to whether collocations count as formulaic language. Is it plausible to suppose that a native speaker stores specific knowledge of all the different nativelike collocations, particularly since collocations are tendencies rather than definite associations? There are good reasons to hypothesize that collocational knowledge is based on observations of frequency of co-occurrence in input, even though frequency is not a panacea in accounting for formulaicity (see below).

Regarding identification, it is easy to fall into circularity, using examples to establish definitions, and definitions to identify examples. Furthermore, it remains difficult entirely to obviate human judgment, even in corpus-based approaches. So interest has focused on how to minimize subjectivity and maximize replicability. The new approaches for adducing independent evidence of holistic processing (see "Evidence" above) are a promising way to ground the claims of formulaicity, providing a point of reference for explorations of the more difficult or borderline cases.

As for the question of frequency, the availability of large corpora and of sophisticated search tools has led to considerable research activity focused on identifying the most frequently occurring multiword strings, normally termed "lexical bundles" (e.g., Biber, 1988). Although there are, on the one hand, good reasons for arguing that frequent word strings are important for our understanding of how we construct text, and, on the other, that a holistically processed word string, being easier to produce, is likely to be used more often than a nonformulaic equivalent, it still does not follow that the most frequent strings are always holistically stored, nor that every holistically stored string will be frequent. Many of the word strings identified as lexical bundles in corpora are implausible as holistic units (e.g., *I think I*), while many plausibly holistic units (e.g., *don't you dare* VERB; *kick the bucket*) are not frequent in absolute terms, because the meaning (or nuance of meaning) they convey is not called for all that often.

Theoretical Issues

As some of the examples used above indicate, formulaic sequences are understood often to be only partly fixed, so they include one or more gaps for morphological or lexical variation. Whereas it would be impossible for humans to store enough fully lexicalized

multiword expressions to handle every message they might hear or need to express, the storage of partly lexicalized frames presents a viable alternative to grammatical models in which only morphemes and words are lexically stored, with multiword strings always constructed by rule.

Broadening the range of lexical units stored in memory to include items several words long does not conflict with the notion that most words also have their own form–meaning representation in the lexicon. It does, however, downgrade the assumption that words are always primary and special in psycholinguistic terms. As a result, it becomes easier to explain the difficulty of pinning meaning onto particular words without reference to the other words they occur with, including grammatical particles and many words that are collocate-dependent (e.g., *take* in *take care of*, *take account of*, etc; *red* in the context of *hair*, *wine*, *meat*). It also helps explain observations made in grammatical theory, such as that verb patterns contain meaning independent of the identity of the verb (Hunston & Francis, 2000). For instance, the pattern V NP NP, as classically exemplified by *he gave Mary a book* and *I'll send you a letter*, seems to convey the meaning of doing something for a beneficiary even when a different verb, that does not normally have that meaning, is used: *they felled him a tree*; *can you wash me a plate?* In addition to Hunston and Francis's pattern grammar, there are strong points of similarity here with construction grammar (Goldberg, 2006), usage-based grammar (e.g., Tomasello, 2003), and emergent grammar (e.g., Hopper, 1998).

Yet, because humans clearly do have the capacity to construct utterances on a completely novel basis, using grammatical rules, it behoves researchers into formulaic language to explain why formulaic sequences exist. Wray's (2002, 2008a) "needs only analysis" model proposes that, during language acquisition, infants associate a meaning with the largest unit they can (often several words long), only breaking the material down further if they need to. They are thereby able to produce back to their carers, with relatively little effort, complete messages that are likely to be easily recognized and understood. Noticing where variation does occur in input, the child gradually identifies the loci of variable items, without discarding the fixedness of others, which creates the most effective balance between saying what one needs to say, and saying it in the way others would say it.

Wray's (2002) model proposes that the underlying drive in the child is to manipulate others to provide for them physically, mentally, and emotionally, and this accounts for the preoccupation with expressing ideas in the way most likely to be correctly interpreted. That is, the child seeks not only to keep his/her own processing to a minimum, but also that of the hearer. It remains in our interests into adulthood to use the language that hearers are most likely to understand, which explains why we often adapt our patterns of language as we move from speech community to speech community.

Thus, two side effects of "needs only analysis" are a developing sensitivity to the language patterns of those with whom we affiliate, which provides strong social bonds and anchors identity, and a strong intuition about what "sounds right"—a capacity that filters the total of potential grammatical sentences in the language, to create the subset actually said by native speakers.

This idea meshes well with Sinclair's (1991, p. 114) proposal that we process words as groups if we can (the idiom principle), and only engage with them individually when we need to (the open-choice principle). It explains how word groups can sustain details of meaning that are not found in the separate components, and why certain word groups are preferred over others with similar meaning, as corpus research demonstrates.

Formulaic Sequences in SLA

It is the sensitivity to the idiomatic subset of the grammatical possibilities in a language that seems most difficult for adult L2 learners to master, particularly in contexts with limited opportunities to hear, and little motivation to affiliate with, native speakers.

The needs of post-childhood learners are different from those of young children, and include, often, that of sustaining their own L1-centered identity. They also have, it seems, a need—whether caused by maturation, culture, education, or literacy—to "manage" the L2 using smaller units and rules, which will tend to prevent them noticing and learning the formulaic sequences that constitute idiomaticity (Wray, 2002).

Not surprisingly, researchers worldwide are interested in finding out the best way to overcome these hurdles and enable adult L2 learners more closely to approximate native-like knowledge and performance. Key questions include: How can formulaic sequences be effectively introduced in the classroom (for one discussion, see Wray, 2000)? Does a focus on genuine communicative tasks offer particular opportunities for mastering routine expressions (e.g., Gatbonton & Segalowitz, 1988)? Should the form of formulaic sequences be explicitly studied, or deliberately ignored? Researchers in China have demonstrated that text memorization can improve general proficiency (Ding, 2007; Dai & Ding, 2010), though clearly an over-reliance on memorized material could bring its own problems.

The Future

The past 15 years of research into formulaic sequences have generated a number of claims that future work needs to confirm or challenge empirically. For instance, it is commonly asserted that native speakers know a huge number of formulaic sequences but, so far, specific quantification has been elusive. Similarly, it is generally assumed that our knowledge of formulaic sequences is essentially stable, but this remains unsubstantiated. In addition, formulaic sequences are now increasingly recognized by linguists as a central, rather than peripheral, facet of our linguistic knowledge, which means they need to be accommodated in theory, and taken into account when lexis and grammar are under investigation.

SEE ALSO: Lexical Collocations; Pattern Grammar; Pragmatic Routines; Technology and Phrases

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Fossilization

ZHAOHONG HAN

What Is Fossilization?

Fossilization is deemed a central characteristic of second language (L2) acquisition (Selinker, 1972; Bley-Vroman, 1989; Long, 2003). Since its inception, the construct of fossilization has sparked a great deal of interest from both L2 researchers and teachers, although the concept is not always well understood or applied.

Since the late 1960s, the field of second language acquisition (SLA) has been preoccupied with incomplete or divergent acquisition. In particular, attention has been drawn to the fact that "[Learners] achieve very different degrees of language mastery. Few, it seems, achieve native-like proficiency. Some stop (or, to use Selinker's [1972] term, 'fossilise') at a very elementary level. Others come between the two extremes" (Perdue, 1993, p. 8). The issue of fossilization has thus come to the fore, referred to first by Selinker (1972, p. 215) as a psycholinguistic phenomenon manifested as

> linguistic items, rules, and sub-systems which speakers of a particular L1 [first language] tend to keep in their IL [interlanguage] relative to a particular TL [target language], no matter what the age of the learner or amount of explanation and instruction he receives in the [target language].

Following Selinker's initial formulation, a plethora of definitions and applications of the term have emerged, which collectively point to several attributes of fossilization, such as (a) persistent deviance; (b) resistance to external influence, including explicit instruction and corrective feedback; and (c) being out of the learner's control. However, it also appears that most of these definitions have missed out on the key premises upon which fossilization was initially predicated (Selinker & Lamendella, 1979, p. 373):

> The conclusion that a particular learner had indeed fossilized could be drawn only if the cessation of further [interlanguage] learning persisted *in spite of the learner's ability, opportunity, and motivation to learn the target language and acculturate into the target society*. (emphasis added)

Synthesizing early and more recent conceptions, Han (2004) updates the definition of fossilization as a process whereby learning ceases in spite of (a) adequate motivation to learn, (b) abundant exposure to input, and (c) plentiful opportunities for communicative practice. Central to the original as well as to the updated definition is that fossilization is *selective* and *local*, rather than global. Han and Odlin (2006, p. 8) have hypothesized that "L2 acquisition will never have a global end state; rather, it will have fossilization, namely, permanent *local* cessation of development" (emphasis added). This hypothesis has been amply supported by research on L2 end-state grammars (see, e.g., Franceschina, 2005; Lardiere, 2007). Overall, fossilization has so far been reported for child, adolescent, and adult L2 learners in naturalistic and classroom contexts.

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Historically, research on fossilization has largely been descriptive, with its main thrust documenting stabilization of interlanguage forms in individual learners in case studies (for a review, see Han, 2004, 2011). Continuing that tradition, contemporary research has primarily engaged with two overarching questions: What linguistic elements are prone to fossilization and what drives selective fossilization? Answers to such questions have highlighted the cognitive complexity of (adult) L2 acquisition relative to first language (L1) acquisition and child L2 acquisition.

What Linguistic Elements Are Prone to Fossilization?

According to the fossilization literature, morphosyntactic features prone to fossilization come in two types. The first type concerns so-called "soft" features, which appear to lie at the interface between syntax and semantics, syntax and pragmatics, and syntax and discourse (for discussion, see Sorace, 2005). The second type concerns grammatical functors (Lardiere, 1998; Franceschina, 2005; Han, 2008), such as nominal and verbal inflections and articles. These linguistic features, as research from various theoretical perspectives has demonstrated, are hard to acquire and may permanently defy complete acquisition (Han & Lew, in press).

By way of illustration of Type 1 features, Han (2006) reports on a seven-year longitudinal study of two advanced L1-Chinese speakers of L2-English, showing that, despite their high motivation to learn and daily communicative interaction with native speakers of English, the case subjects nevertheless fossilized in their use of English unaccusative verbs. The fossilization manifested itself in persistent conflation of the transitive and intransitive variants of verbs of causative alternation (examples 1a and 1b), its extension to verbs that can only be used intransitively (2a and 2b), and persistent variational use of transitive and intransitive forms (3a and 3b).

(1a) My thinking way has been changed a lot since joining Fanta.
(1b) My English was not improved.

(2a) Gass is arrived.
(2b) Our phone bill arrived this morning.

(3a) Relay event against Listserv is now disappeared.
(3b) We expect that this will gradually disappear.

These problems involve linguistic features putatively at the interface of syntax and semantics (Levin & Rappaport Hovav, 1995). Put simply, the problems concern form–meaning mapping.

With respect to Type 2 features, research from multiple perspectives has provided converging evidence to suggest that grammatical functors constitute a prime area of fossilization (e.g., Lardiere, 2007). Traditionally, grammatical functors as a whole are treated as purely formal features; they are considered noncommunicative or meaningless. Yet research from a cognitive-linguistic perspective has revealed that some (if not all) grammatical functors, in fact, are "soft" (Han, 2008) and, inasmuch as they encode abstract concepts, are similar to the interface features noted above, highly susceptible both to crosslinguistic interference (Slobin, 1996) and to fossilization. What seems to distinguish them from syntactic-interface features (Type 1) is that their acquisition is more contingent upon restructuring of an L1-based conceptual and semantic system than the latter, and, in particular, of L1-based thinking for speaking or writing (Slobin, 1996). For instance, the acquisition of the English plural *-s* morpheme requires, among other things, the knowledge of what to pluralize,

how, and when to pluralize. Of that knowledge structure, the last component has proven the most elusive for L2 learners from certain L1 backgrounds, for example, an L1 that is largely non-inflectional. Indeed, what appears to unite the fossilizability of Type 1 and Type 2 features is that they both involve complex form–meaning–function mappings, the hardest task of all in L2 acquisition (Han & Lew, in press).

The contribution of fossilization research to the general understanding of SLA is by no means confined to identifying a constellation of *acquisitionally complex* features (Han & Lew, in press); it has also illuminated factors driving their incomplete learning.

Why Selective Fossilization?

Research on fossilization has established that fossilization is local and selective; it happens only selectively in certain domains and subsystems, while other parts of the learner system successfully converge on the target (for ample evidence, see Lardiere, 2007). What explains such selectivity?

Han (2004) culled some 50 factors from the literature, broadly categorizing them as environmental, cognitive, neurobiological, and socioaffective factors contributing to fossilization. Two of these factors have garnered most consensus: native-language (NL) influence and biological maturation (or the so-called "critical period" effect). However, it is readily recognized that neither factor alone or in combination can provide a sufficient explanation for the selective character of fossilization.

More recently, assuming that native language, maturation, and universal grammar (UG) all impose constraints of sorts on (adult) L2 acquisition, Han (2009) hypothesizes that it is the interaction between *L1 markedness* (viz., frequency and form–meaning–distribution variability) and *L2 input robustness* (viz., frequency and form–meaning–distribution variability) that leads to selective fossilization. This is illustrated in Figure 1.

According to this selective-fossilization hypothesis, the interaction between L1 characteristics and L2 input conditions portends differential consequences for L2 acquisition. Thus, all things being equal, a given L2 feature may fall in the acquisition zone (Zone II in Figure 1) *if* the L1 counterpart is marked (i.e., infrequent and inconsistent) and *only if* the L2 input is robust (frequent and consistent); conversely, a given L2 feature may fall in the fossilization zone (Zone IV) *if* the L1 counterpart is unmarked (i.e., frequent and consistent)

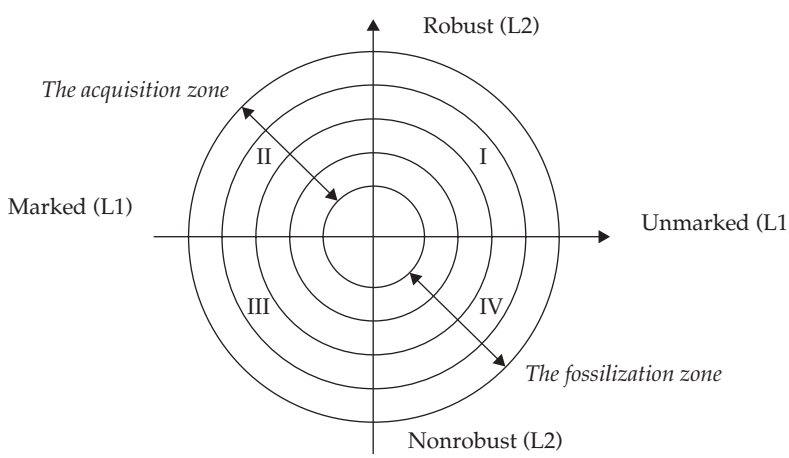

Figure 1 Selective fossilization © ZhaoHong Han

and *only if* the TL input is nonrobust (i.e., infrequent and inconsistent). Zones III and I, on the other hand, are "gray areas" where either acquisition or fossilization may occur, contingent upon the strength of individual learners' memory capacities, for instance. Hence, the hypothesis predicts that fossilization (and acquisition) is selective, in both an inter- and an intra-learner sense, since combinations of L1 characteristics and L2 input conditions can vary from learner to learner, and, likewise, for the different domains and subsystems of an individual learner.

While this hypothesis has yet to be tested empirically, the fact that it singles out L2 input conditions as codeterminant of acquisition or fossilization naturally raises the question of whether input conditions can be improved, through instruction, for example. This and the more specific question of whether instruction can prevent fossilization, or, conversely, whether instruction can promote it, have been with us for a long time, and thus deserve a brief note here.

Can Instruction Constrain or Induce Fossilization?

It has long been held that the vast majority of L2 learners, in particular adults, are unable to acquire the target language to a reasonable extent, unless being subjected to formal instruction. Such conviction is fueled by several strands of research showing that instruction improves both the rate of acquisition and ultimate attainment; that older (instructed) learners have an initial developmental edge over younger (uninstructed) learners; that older learners do as well as younger learners vis-à-vis certain aspects of morphosyntactic acquisition; and that instruction eliminates learner errors, thereby improving accuracy and averting fossilization. All these findings serve to confer to instruction the status of an effective alternative, capable of compensating for older learners' cognitive deficiencies, presumably incurred by neurobiological changes, L1 interference, and lack of a robust UG.

However, from very early on the SLA literature also reports that instruction can induce negative effects on learning. Even discussing the recent task-based language teaching, Skehan and Foster (2001, p. 205) caution that:

> Unless it is appropriately handled, a task-based approach can over-emphasize the importance of just "getting the job done" at the expense of the central purpose of pedagogy: improving target language ability. As a consequence, it is more likely to have the effect of encouraging comfortable fossilization than that of promoting interlanguage (IL) development.

Instruction, then, can both stimulate and stall learning. Research has shown that instruction, on the one hand, may constrain fossilization such that, when fine-tuned, it can destabilize persistent and resistant interlanguage constructions, but, on the other hand, it can also breed fossilization (Han & Selinker, 1999).

Conclusion

The construct of fossilization is fundamental to understanding (adult) L2 acquisition. Although empirical research has firmly established its psychological and physical reality, the construct itself has nevertheless remained controversial to the present day, due primarily to epistemological differences in how learning and education are construed.

The history of SLA research shows, however, that the construct of fossilization has survived all prejudices against it, and, contra the expectations of some, has continued to function as a critical heuristic in SLA inquiries and a pillar for SLA theory construction, particularly as they relate to such central issues as ultimate attainment, the critical period,

the role of instruction, negative evidence, and the role of UG, to name a few. Any SLA theory claimed to be adequate must demonstrate a capacity for explaining and predicting both learning and nonlearning (Gass & Selinker, 2008). Understanding fossilization may also aid teachers' pedagogical practice. For example, being aware of which grammatical elements are prone to fossilization and understanding their different underpinnings can help improve teachers' sensitivity to the differential nature of grammatical elements, and help them set realistic expectations for the duration and outcome of teaching and learning. This should help maximize "the usability of the available resources to individual learners" (Han, 2004, p. 175), the most essential goal of L2 education.

SEE ALSO: Critical Period; Crosslinguistic Influence in Second Language Acquisition; Interlanguage; Learner Varieties; Linguistic Relativity; Modularity in Second Language Acquisition; Task-Based Learning: Cognitive Underpinnings; Thinking for Speaking in Second Language Acquisition; Universal Grammar and Second Language Acquisition; Working Memory in Second Language Acquisition: Complex; Working Memory in Second Language Acquisition: Phonological Short-Term

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Frame Analysis

YOUN-KYUNG KIM

The concept of "frame" is a useful tool to explicate how people interpret and at the same time construct their interactions coherently in specific interactional situations. To account for the exceedingly complex, but coherent nature of human interactions, the term "frame" is frequently used in the literatures in various disciplines including linguistics, sociology, anthropology, and so on. As Tannen (1993) contends, the notion of frame "provides a theoretical foundation for the discourse analysis of interaction" (p. 4). This entry describes the conception of frame by Bateson (1972), explains the notion of frame and its associated notions of keying and footing proposed by Goffman (1974, 1981), discusses various perspectives of frame or frame analysis used in different studies, and finally introduces some studies of discourse analysis that apply the concept of frame and its associated notions.

Bateson's Conception of Frame

The concept of "frame" is traced back to Bateson (1972), who relates "frame" to "metacommunicative" level of abstraction of verbal communication. According to Bateson, human verbal communication operates at three levels of abstraction: first, the denotative level (i.e., referential level); second, the metalinguistic level (i.e., the subject of communication is language); and third, the metacommunicative level (i.e., communication regarding the intention and goal of an interaction). On the metacommunicative level, the interactants signal to each other the intention of the communication, so they can interpret what is really going on in the interaction and continue to construct the interaction coherently. Bateson states, "a frame is metacommunicative . . . [E]very metacommunicative message is or defines a psychological frame" (p. 188). In other words, frame is "a superordinate message about how the communication is intended" (Tannen, 1984, p. 23).

To illustrate frame, Bateson uses an example of monkeys that are *playing* by engaging themselves in interactive actions (e.g., biting) that are similar to but not the same as those of *fighting*, and he says "[T]his phenomenon, play, could only occur if the participant organisms were capable of some degree of metacommunication, i.e., of exchanging signals which would carry the message 'this is play'" (p. 179). The frame of "this is play" allows the animals to interpret the potentially hostile move, such as biting, as not intended for enmity, which otherwise would be the interpretation at the denotative level of communication. Bateson also gives an example frame of "this is ritual" coming from peace-making ceremonies in the Andaman Islands, where "peace is concluded after each side has been given ceremonial freedom to strike the other" (p. 182).

Frame is a "psychological concept" (p. 186), but to explain this, Bateson uses a physical analogy of the picture frame: frame delimits a class or set of messages in such ways as a picture frame directs the viewer not to interpret the picture in the same way that she may use in interpreting the wallpaper outside the frame. In this sense, "frame defines, either explicitly or implicitly, the set of messages about which it communicates" (Bateson, 1972, p. 188). As Ensink and Sauer (2003) puts it, "the term 'frame' is, when applied to discourse, a metaphorical term . . . A frame thus gives structure to both an object itself and to the way the object is perceived" (p. 2).

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"Frame," "Keying," and "Footing"

Bateson's concept of "frame" gets its theoretical complexity in Goffman's elaboration of "frame" and his notions of "keying" and "footing," as presented in *Frame Analysis* (1974) and *Forms of Talk* (1981). According to Goffman (1974), a "frame" consists of "principles of organization which govern social events . . . and our subjective involvement in them" (pp. 10–11); that is, through frames, people organize experiences, and identify and define social interactions, in order to participate and maintain involvement in them. Frame refers to the fact that "discourse participants need a shared sense of the way in which the discourse is framed, i.e., an overall sense of the function of the discourse in the social situation" (Ensink & Sauer, 2003, p. 2).

Also, Goffman (1974) introduces a central concept in frame analysis, which is "the key" or "keying." In an analogy of music, the key or keying refers to patterned change or *transformation* of the primary frame into another frame. Referring to Bateson's example of animals playing, Goffman explains,

> this play activity is closely patterned after something that already has a meaning in its own terms—in this case fighting, a well-known type of guided doing . . . In brief, there is a transcription or transposition—a transformation . . . of a strip of fighting behavior into a strip of play. (pp. 40–1)

Goffman refers to the process of transformation or transcription as "keying," stating that

> I refer here to the set of conventions by which a given activity, one already meaningful in terms of some primary framework, is transformed into something patterned on this activity but seen by the participants to be something quite else. (pp. 43–4)

Goffman's later work, *Forms of Talk* (1981), introduces another nonseparable concept of frame—"footing." "Footing" is defined as

> the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance. A change in our footing is another way of talking about a change in our frame for events. (Goffman, 1981, p. 128)

In other words, footing indicates how the participants view one another in relation to themselves in a specific frame. Therefore, footing can be viewed as participants' social role relations and their perceptions of the role relations in frames, which often determine and shift frames. Goffman also says change in footing does not necessarily mean that the prior alignment is terminated but can be on hold to be reinstated. As an example, Goffman refers to a study of a pediatrician in a medical research/training facility, who continuously switches code back and forth, "addressing her youthful patients in 'motherese,' now sustaining a conversation-like exchange with the mother, now turning to the video camera to provide her training audience with a running account couched in the register of medical reporting" (p. 156). Also, Goffman maintains that footing or change in footing is commonly "language linked" (e.g., speaker's code switching, pitch, volume, stress, and tonal quality), and provides a rationale for linguistic analysis of footing, or frame in general, by saying, "linguistics provides us with the cues and markers through which such footing become manifest, helping us to find our way to a structural basis for analyzing them" (p. 157).

Various Perspectives of Frame Analysis: Interactive Frame and Cognitive/Knowledge Frame

Admittedly, however, the concept of "frame" has been used in various, but complex, ways in different disciplines, such as linguistics, anthropology, sociology, artificial intelligence, ethnography of speaking, and interactional sociolinguistics (Tannen, 1993; Tannen & Wallat, 1993; Lee, 1997; Ensink & Sauer, 2003). For example, a type of frame is referred to, when Gumperz (1982) describes "speech activity" as a "means through which social knowledge is stored in the form of constraints on action and on possible *interpretation* [emphasis added]," in which "a set of social relationships [is] enacted about a set of schemata in relation to some communicative goals" (p. 166). A similar concept to frame is also involved, when Gumperz refers to interactive process as "contextualization," which is defined as "the identification of specific conversational exchanges as representative of socio-culturally familiar activities" (p. 162). Along this line, "contextualization cues" are defined as linguistic features signaling the on-going speech activity and contextual presuppositions in it (Gumperz, 1982, p. 131). The concept of contextualization cues relates to above-mentioned Goffman's (1981) remarks on how footing or changes in footing are "language linked" (p. 157). Connecting Gumperz's work with Goffman's concepts of frame and footing, Schiffrin (1994), in the discipline called *interactional sociolinguistics*, defines that frame—as interactional order underlying social situations and encounters—provides and constrains *contextual presuppositions* for accurate interpretations or *situated inferences* of speakers' meanings. Schiffrin views contextualization cues not only as signals for changes in footing, and thereby frames, but also as "framing devices"; that is, contextualization cues indicate the frame in which an utterance should be interpreted (p. 103).

On the other hand, according to Tannen (1993), the discussion of frame rests on the notion of "expectation," which is basically formed by one's past experience of the world. Specifically, Tannen (1993) uses the term, "frame," to refer to "structures of expectation," and emphasizes the role of knowledge structure in shaping expectation and framing interactions, stating that "on the basis of *one's experience of the world* in a given culture, one *organizes knowledge* about the world and *uses this knowledge* to predict interpretations and relationships regarding new information, events, and experiences [emphasis added]" (p. 16). Tannen contends that the concept of "structures of expectation" underlies the discussion of "frame," "schema" used by Bartlett, and "script" used by Schank and Abelson (all cited in Tannen, 1993, pp. 15–18). By saying this, she places all of these terms or concepts on the similar conceptual dimension, focusing on *cognitive* aspects of frame. That is, Tannen (1993) uses frame as *expectation* and *knowledge structure* (cognitive/knowledge frame), while Bateson and Goffman use frame as *interpretational* and *inferential* dimension (interactive frame).

To show that the notion of frame can be understood as *structures of expectation* based on past experience, Tannen (1993) has investigated oral narratives in which young women retell events in a film to other women under an experimental condition. According to the results, while various overlapping levels of frames operate (e.g., a frame of storytelling, a frame about the content of the story in the film, and others) within the frame of oral narratives in the context of an experiment, the speakers' language use reveals the imposition of their expectations on the content of the film, and the evidence of the speaker's expectations is showed and categorized in 16 types of their language use—omission, repetition, false starts, backtrack, hedges, negatives, contrastive connectives, modals, inexact statements, generalization, inference, evaluative language, interpretation, moral judgment, incorrect statements, and addition. In a slightly different vein, Lee (1997) uses a concept of a *cognitive frame* from a perspective of cognitive grammar, especially in association with "profiling"

by Langacker and "radial category" by Lakoff (all cited in Lee, 1997, p. 339). In his discourse analysis of family arguments, in which competing frames held by different family members conflict and cause disagreements, Lee contends that *interactional frames* (i.e., the mode of interaction) is related to *cognitive frames* by shedding light on interpreting the specific utterances or words.

The interaction between *cognitive frame* and *interactive frame* is also recognized in the study of Tannen and Wallat (1993). Acknowledging various uses and concepts of frame as discussed above, Tannen and Wallat (1993) describe these uses of frame in terms of *interactive* and *cognitive* dimensions, and categorize them into two types: "interactive frames of interpretation" and "knowledge schemas" (pp. 59–61). "Interactive frames of interpretation" is Bateson's and Goffman's notion of frame (interactive frame); "knowledge schemas" are similar to Tannen's concept of frame (cognitive/knowledge frame), defined as "participants' expectations about people, objects, events and settings in the world, and ways to interact" (p. 60), which is dynamic by being continually revised according to the participants' experiences. According to Tannen and Wallat, both the *interactive frame* and *knowledge schema* interact and affect the participant's comprehension of specific utterances. Along this line of thoughts, in their study of pediatrician investigating a child in the presence of the mother, Tannen and Wallat show how mismatch in knowledge schemas (cognitive/knowledge frames) between the doctor and mother can trigger frame changes among "examination" frame, "consultation" frame, and "reporting" frame (interactive frames).

These two dimensions of frame—interactive frame and cognitive/knowledge frame—are also recognized by Ensink and Sauer (2003), but they argue for another separate category or type of frame—*footing* and *keying* (changes in frame) (Goffman, 1974, 1981)—to be added to this categorization. Especially, Ensink (2003) emphasizes that Goffman's (1974) concepts of the "key" or "keying" (i.e., patterned transformation of a frame to another one) should be elaborated and regarded as a separate category. Ensink argues that different frames (such as "fighting" and "playing") are not on the symmetrical level. For example, we can say "monkeys play that they are fighting," but we cannot say "monkeys fight that they are playing." That is, "fighting" is a frame in its own right, but cannot embed another frame; however, the frame of "playing" can embed another one. "Fighting" is a primary frame, but "playing" is a transformational frame containing or embedding the primary frame within it. Ensink contends that the interactive frame is subcategorized into "proper interactional frames," which is a primary frame its own right (e.g., monkeys fighting in Bateson's example), and "transformational frames" in which proper interactional frames are modified (e.g., monkeys playing in Bateson's example) (p. 67). As Ensink maintains, the transformational frames are the "key" in Goffman's notion (1974)—patterned change(s) of the primary frame into another frame. If the transformations of frames are not recognized by participants, fundamental communicative misunderstanding occurs. Participants embed or de-embed frames to restore intended interpretation, and thereby, transformational frames influence interpretation. Basically, Ensink (2003) argues that since proper interactive frame (i.e., primary frame in Goffman's term) and his transformational frame (i.e., the key or keying in Goffman's term) are in asymmetrical relationship, the transformational frame should be recognized as a separate type in frame and frame analysis.

Studies of Frame Analysis

Other studies used frame analysis to analyze interactions, some of which are introduced here. Some studies show how all communicators, including psychotic patients and children, use framing to organize their discourses and manage divergent interactional tasks. In the frame of a psychiatric interview, Ribeiro (1993) shows how the seemingly incoherent

psychotic discourse of a 61-year-old thought-disorder patient actually achieves coherence while shifting frames coherently (i.e., psychiatric interview frame and the frame of psychotic crisis) and talking in different roles. Hoyle (1993) discusses how three eight- and nine-year-old boys manage footing and frame shifts in their sportscasting play by signaling these shifts through the ways they use names and pronouns.

A nonseparable concept of frame—"footing" (Goffman, 1981)—has been investigated in various social contexts. For example, Straehle (1993) shows how teasing among three conversationalists plays a role in negotiating their footing among themselves. That is, the three conversationalists do not engage in the frame of teasing in the same way; the meta-message which frames their unique teasing relationship is their relative closeness and types of relationships among them. Schiffrin (1993) examines the frame of sociolinguistic interviews, in which an interactional move, "speaking for another," negotiates footing among the informants by providing them with opportunities to shift styles and identities. Kendall (cited in Kendall & Tannen, 2003, p. 559) uses notions of frame and footing in examining family dinner talk in terms of how parents create gendered identities. In this study, the mother accomplishes multiple tasks in several interactional frames, whereas the father participates minimally, and maintains only one frame at a time in more symmetrical footing with the daughters.

More recent studies examined another important concept of frame analysis, which is the "key" (Goffman, 1974). Jacobs (2003) analyzes the frame of press releases, especially focusing on the concept of the "key." He sees the frame of press releases as keys, and since the reporter expects and calculates in advance the role of the report, he calls this calculation "pre-keying." He regards pre-keying in press releases as indication of increased influence of the media in social life. Cowper (2003) applies the concept of frame to her analysis of real and satirized political interviews to show how the primary frame of normal political interview is transformed or "keyed" to the satire, within which the behavior is patterned after those in the primary frame.

Some studies use frame analysis in the studies of interactions involving non-native speakers of English or different cultural groups, as well as native speakers of English. Watanabe (1993) investigates cultural differences in framing a speech event, that is, group discussion, in a university setting by comparing four American group discussions with three Japanese group discussions. She contends that in the same kind of speech event or frame, participants from different cultures may interact differently due to their differences in framing interactions. Kim (2009) applies frame analysis, in conjunction with contextualization cues (Gumperz, 1982), to the discourse analysis of university writing center interactions involving native and non-native speakers of English. This study shows how different layers of frames held by tutors and students conflict and at the same time intertwine within the frame of writing center conference, as evidenced in the volubility (turn length and distribution) and questions (question types and frequencies) of the participants.

Conclusion

Since the conception of "frame" for analyzing interactions in Bateson (1972), various scholars in different disciplines have refined and elaborated on this concept and have used it in various dimensions or perspectives in their analyses of interactions—that is, frame analysis (e.g., Goffman, 1974, 1981; Tannen, 1993). Frame is basically assumed to be underlying a coherent interaction, and research in frame analysis tends to use the concept in conjunction with other notions or methods of discourse analysis. Some recent studies attempt to add theoretical elaboration and complexity to the notion of frame and frame analysis, more firmly establishing frame analysis as an independent research area (e.g., Ensink, 2003).

SEE ALSO: Cognitive Models of Interaction; Context in the Analysis of Discourse and Interaction; Ethnography of Communication as a Research Perspective; Interactional Sociolinguistics as a Research Perspective; Tannen, Deborah

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Francis, Nelson

CHARLES F. MEYER

Winthrop Nelson Francis (also known as Nelson Francis) was a renowned historian of the English language, dialectologist, and corpus linguist. He is best known as cocreator (with Henry Kučera) of the Standard Sample of Present-Day American English (or Brown Corpus, as it is commonly called), the first computer corpus ever created. The Brown Corpus was a major accomplishment: not only did it provide the linguistic community with the first machine-readable electronic database of edited written American English, but it opened the era of corpus linguistics and provided a model for corpus compilation and analysis that extends to the present.

Nelson Francis was born in Philadelphia, PA in 1910 and died at the age of 91 in 2002 (much of the biographical information in this section is taken from Kučera, 2002). Francis's initial exposure to language study resulted from the classical education he received in Latin, Greek, and French both in primary school and as an undergraduate at Harvard. Francis's interest in language grew while he attended graduate school at the University of Pennsylvania, where he wrote a doctoral dissertation that was a translation of the late 13th-century French text *La Somme le Roi* by Lorens d'Orléans ('*The Book of Vices and Virtues*'), published in 1942. Following receipt of his doctorate, he received a teaching position at Franklin and Marshall College in Lancaster, PA, where he taught many courses, including Old English and the history of the English language, from 1937 to 1962. During this period, the American structuralist movement dominated linguistic thinking in the United States, an influence that can be seen in one of Francis's early books, *The Structure of American English* (1958). This textbook brought the perspective of structuralists such as Charles Fries to a description of phonetics, phonology, morphology, syntax, and dialects, and it also reflected a strong commitment by Francis to teacher education.

In 1962, Francis became a professor of linguistics and English at Brown University in Providence, Rhode Island. Shortly after assuming this position (1963), a textbook he had written, *The History of English*, appeared, and he began a lengthy collaboration with Henry Kučera, also a professor of linguistics at Brown. The two worked together to create the Brown Corpus, a corpus of edited written American English consisting of different types of written texts published in 1961. At this time, the generative movement was gaining influence in the United States at the expense of key structuralist tenets, such as the need to base linguistic analyses on empirical data. Thus, the Brown Corpus was not warmly received by many members of the mainstream linguistic community. Francis (1992, p. 28) comments that a leading generative grammarian of the time (unnamed in his commentary) characterized the creation of the Brown Corpus as "a useless and foolhardy enterprise" because speaker intuitions (not a corpus) were "the only legitimate source of grammatical knowledge about a language."

But while many linguists may have felt that a corpus was merely a repository for the study of "old ideas," the Brown Corpus was actually a novel undertaking at the time. Pre-electronic corpora had existed prior to the Brown Corpus. For instance, Otto Jespersen based the seven-volume *A Modern English Grammar on Historical Principles* (1909–49) on a large collection of printed texts. But the Brown Corpus was the first corpus to be distributed in a computerized format, and to employ a rigorous methodology for text collection that is still relevant and widely employed.

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To plan the overall design of the corpus, Francis and Kučera held a conference at Brown University in 1963 that was attended by John B. Carroll, Philip B. Gove, Patricia O'Connor, and Randolph Quirk. After considerable discussion, conference attendees decided that the corpus would be 1 million words in length, and contain 2,000 word excerpts taken from texts published in 1961 that represented the following genres of edited written American English (Francis & Kučera, 1979):

Informative Prose
- press: reportage, editorials, and reviews
- religion
- skills and hobbies
- popular lore
- *belles lettres*, biography, memoirs, and so forth
- miscellaneous (e.g., government documents, foundation reports)
- learned

Imaginative Prose
- general fiction
- mystery and detective fiction
- science fiction
- adventure and western fiction
- romance and love story
- humor

The size and composition of the corpus was based on a number of methodological assumptions that emerged at the conference. First, to adequately sample the range of variation in written English, differing types of informative and imaginative prose needed to be selected. For instance, because a newspaper editorial is different from a scientific article, examples of both kinds of writing needed to be included so that the different kinds of English inherent in each were represented in the corpus. The same kind of thinking guided the choice of the other categories too. Of course, not every type of written English was included in the corpus. Verse was excluded because it is a very specialized form of imaginative language.

While breadth of coverage influenced the choice of genres to be included in the corpus, other considerations (some primarily logistical) affected the decision to restrict the length of the corpus to one million words and to include text excerpts (rather than complete texts). At the time that the corpus was created, optical scanning did not exist. As a result, the entire corpus had to be keyed in by hand, requiring that the overall length of the corpus be kept to a reasonable length (see the entry for Henry Kučera for more information on the computational aspects of the corpus). To insure that as many different texts and writers as possible were included, it was decided that ca. 2,000 word excerpts from a given text be included. The selection of texts and excerpts necessitated very specific selection criteria. Potential texts in a given category were randomly selected, as was the specific page in a text from which the 2,000-word excerpt would begin to be collected. An encoding scheme also had to be developed. For instance, the symbol **. was used to mark a period ending an abbreviation (as in etc**.) from one ending a sentence. Even though the issues that Francis and Kučera had to address when creating the Brown Corpus have long been resolved, it is important to realize just how seminal work on the Brown Corpus has been to the development of subsequent corpora.

The first version of the corpus was released in 1964 (five additional revised versions have been released since then). In 1967, Kučera, Francis, and Carroll published a book,

Computational Analysis of Present-Day American English, that provided word frequency information based on the Brown Corpus. Although word frequency lists had been created previously, this was the first such list that was based on a carefully collected group of texts and that contained frequency information not just for the entire corpus but for the individual genres of the corpus. One problem with the lists contained in this book is that they were based solely on the orthographic forms occurring in the corpus. Thus, as Burchfield (1985, p. 66) notes, "Homonyms like *bear* (verb) and *bear* (animal) were lumped together." To rectify this deficiency, in 1982, Francis and Kučera published a second book, *Frequency Analysis of English Usage: Lexicon and Grammar*, containing an updated word frequency list based on a lexically tagged version of the Brown Corpus. In a tagged corpus, each word is assigned a part of speech label. Thus, in *The bear is hungry*, *bear* would be tagged as a noun, and in *You bear full responsibility*, it would be tagged as a verb (further information on the set of tags for the corpus is given in the entry for Henry Kučera). Obviously, frequency lists based on a tagged corpus provide more accurate information on the distributions of words. Still, they cannot distinguish words having the same part of speech but different meanings. For instance, *bank* is a noun in both *I withdrew money from the bank* and *We stood by the bank of the river*, but has a completely different meaning in each sentence.

Following the creation of the Brown Corpus, Francis continued work in both corpus linguistics and other areas of linguistics. In 1983, he wrote an introductory text on dialectology entitled *Dialectology: An Introduction*. At the Nobel Symposium in Stockholm in 1991, he delivered a paper, "Language Corpora BC" (later published in Francis, 1992), that described pre-electronic corpora, such as the print-based corpora used as the basis for citations in Samuel Johnson's 1755 *A Dictionary of the English Language* and the *Oxford English Dictionary*. The "BC" (Before Computers) in the title was intended to stress the notion that while computerized collections of texts are a very recent phenomenon, grammarians have for centuries been analyzing texts by hand for purposes of linguistic analysis.

In 1995, both Francis and Kučera were honored at the 16th annual meeting of the International Computer Archive and Modern and Medieval English (ICAME) held in Toronto (see also the ICAME Web site at http://icame.uib.no/). A special session was convened at which various speakers described the important contributions that they had made to the development of the field of corpus linguistics. Speakers at the session noted the influence the Brown Corpus had had on subsequent corpora (a summary of the responses was published in the *ICAME Journal* in 1996). For instance, several corpora replicated Brown but with comparable written texts from other national varieties of English: the London–Oslo–Bergen (LOB) Corpus (British English), the Wellington Corpus (New Zealand English), and the Kolhapur Corpus (Indian English). The Freiburg–Brown Corpus of American English (FROWN) and the Freiburg–LOB Corpus of British English (FLOB) were similar to Brown and LOB but contained written texts published in the early 1990s, thus enabling historical comparisons. The International Corpus of English (ICE), which contains components representing the various national varieties of English (such as American, British, Irish, East African, and New Zealand English), has a similar design to Brown. Each regional team is creating a 1 million-word corpus divided into 2,000 word excerpts. However, spoken as well as written English is included.

Although more recent corpora have become larger and more diverse in composition, they all owe their existence to the important groundwork that Francis and Kučera laid in creating the Brown Corpus.

SEE ALSO: Corpora: English-Language; Kučera, Henry

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French, Peter

JONAS LINDH

Peter French (1953–) is honorary professor in the Department of Language and Linguistic Science at the University of York. He is probably the world's most experienced speech scientist in respect of forensic casework. He has been consulted as an expert witness in more than 5,000 cases arising from countries throughout the world and has appeared in court on over 200 occasions. The cases in which he has been consulted have been heard before courts of all levels, including International Commissions of Enquiry and the International War Crimes Tribunal. With regard to the latter court, he provided evidence for the genocide trial of the President of the former Yugoslavia, *United Nations v. Slobodan Milošević* (http://www.icty.org/case/slobodan_milosevic/4). In the United Kingdom his involvement in the case *R v. Ingram, C., Ingram, D., and Whittock, T.*—the so-called "'Who Wants to Be a Millionaire?' Fraud Trial"—received wide media attention (French & Harrison, 2004).

After reading linguistics and phonetics at the University of Manchester, Professor French went on to complete a PhD thesis on conversation analysis at Bristol University in 1982. Thereafter, his early research interests and publications were broadly based and eclectic, integrating methods, findings, and insights from the disciplines of child language development, traditional dialectology, conversation analysis, and phonetics. With regard to phonetics and conversation analysis, his study of the prosodic features of interruptions, conducted with John Local (French & Local, 1983), was the initial step leading to the now firmly established field of study, the phonetics of talk-in-interaction (sometimes referred to as "interactional phonetics"). He held academic positions as phonetic fieldworker, research assistant, lecturer, and then senior lecturer before the well-known dialectologist, the late Stanley Ellis (http://www.leeds.ac.uk/secretariat/obituaries/2009/obituary6698.html), persuaded him to become involved in forensic phonetic casework in the mid-1980s. After trying to juggle the often-conflicting demands of an academic position with those of a growing forensic practice, the latter held sway and he left his full-time academic post in 1989.

In that same year French organized the first Annual Conference on Forensic Phonetics, which was held at St. John's College, York (now York St. John University). A further conference was held the following year at the same location before the founding of the professional organization, the International Association for Forensic Phonetics (IAFP) in 1991. Professor French was elected as the Association's first chairman and subsequently reelected four times. In 2006, at the end of his fifth period of office, he was elected president of what had by then become the International Association for Forensic Phonetics and Acoustics (IAFPA) (www.iafpa.net), a position that he still holds. He is also a member of the International Phonetic Association, a registered professional member of the British Association of Academic Phoneticians, a fellow and UK secretary of the International Society for Phonetic Sciences, a fellow of the Royal Society of Arts, a fellow of the Royal Society of Medicine, and a fellow of the Institute of Acoustics.

In 1990, he coauthored with John Baldwin one of the earliest full-length overview texts on forensic phonetics (Baldwin & French, 1990). Since then he has periodically produced updated conspectus articles, which have been published in a variety of sources (French,

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1994, 2007; Foulkes & French, 2001, 2011; French & Harrison, 2006). His major continuing contribution to the research community has been to reflect the problematic connection between research and practical casework. Case studies have been published mainly in *The International Journal of Speech Language and the Law* (formerly *Forensic Linguistics*) (French, 1998; French & Harrison, 2004; French, Harrison, & Windsor Lewis, 2006), of which he was a founding editor and presently coedits.

In recent years, he and members of his company, JP French Associates Forensic Speech and Audio Laboratory, have worked in close collaboration with colleagues from the Universities of York and Cambridge, in particular with Professors Paul Foulkes and Francis Nolan and Dr. Dominic Watt. Their contributions to the field of forensic speaker comparison have been in three key areas. First, they have sought to emphasize the importance of gathering data on inter- and intra-speaker variation in respect of potentially speaker-discriminating phonetic and acoustic variables. Second, they have pioneered and continue to undertake research on the reliability of automatic speaker recognition systems when operating with real UK forensic recordings, and on the integration of such systems into forensic speaker comparison test batteries. Third, and perhaps most prominent, has been Professor French's work on a logically coherent framework for expressing conclusions in forensic speaker comparison cases (French & Harrison, 2007). Whilst finding almost unanimous favor in the UK forensic speech community and being adopted by nearly all UK practitioners, the framework was opposed by some proponents of the likelihood-ratio (LR) framework for the interpretation of evidence in forensic speaker comparison cases (Rose & Morrison, 2009). The major argument centers around how one can best present and evaluate the conclusions in speaker comparison cases logically, while avoiding expressions which result from misunderstanding the concept of conditional probability. Within the numerical LR approach, the evaluation of results involves one calculating the ratio of the likelihood of finding a combination of correspondences/differences between the known recording of the suspect and the criminal recording on the proposition that they are of the same speaker, over the likelihood of finding the same evidence on the proposition that they reflect different speakers. From French's perspective, we lack the demographic data to make this numerical calculation and he points to difficulties in defining relevant reference populations. Instead, he has argued, we should express conclusions verbally, potentially in two steps. The first step involves presenting a decision on whether the speech in the known and criminal samples is *consistent* with having been produced by the same person. If there is a positive outcome to the consistency decision, one progresses to the second step, which involves an impressionistic, experience-based assessment of the degree to which the features common to the samples are unusual or *distinctive*. The counterarguments put forward by Rose and Morrison (2009) are, inter alia, that this approach "considers speech features as discrete"; its authors "propose distinctiveness statements while acknowledging the absence of information upon which to base them" and that "the absence of a way of relating the consistency and distinctiveness assessments does not help the trier-of-fact to interpret them." The debate on these issues has been extended by a further rejoinder from French, Nolan, Foulkes, Harrison, and McDougall (2010) to the Rose and Morrison critique. Both positions, however, emphasize the importance of changing the concept of identification to comparison, as the former implies knowledge of a hypothesis given the evidence, which would be a logical flaw.

Aside from Professor French's own research, one of his greatest contributions to the field of forensic speech science has been to create opportunities for others to conduct research and undertake casework in that area. He has done this by working stalwartly over the years to bring the subject into the public arena for open discussion, and, in the early days, by encouraging those who harbored skepticism toward forensic speaker comparison work to become involved in the activities of the IAFPA.

More recently, Professor French has worked with Paul Foulkes on planning and developing the world's first MSc degree in Forensic Speech Science in the Department of Language and Linguistic Science at the University of York. French continues to lecture on the degree and supervises a number of PhD students in the department. He has also provided in-house training to technical and scientific staff of the Metropolitan Police in London and to the FBI and United States Secret Service in Washington DC.

JP French Associates has grown in size and stature over the years and its staff continue to initiate research and methodological developments. We can expect the forensic speech science community internationally to benefit from and grow alongside these advances, thanks to the work of Peter French.

SEE ALSO: Forensic Linguistics: Overview; Nolan, Francis; Voice Quality

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Functional Approaches to Translation

CHRISTIANE NORD

Translation studies is still quite a young discipline. It started as a branch of applied linguistics in the 1960s, partly pushed by a growing interest in machine translation (see Oettinger, 1960), partly under the influence of Bible translation (see Nida & Taber, 1969). The need for a theoretical groundwork for translator and interpreter training, which became particularly pressing in Germany and other European countries during the 1970s, triggered several profession-oriented tendencies in translation research, among them the investigation of the translation process by thinking-aloud protocols (TAPs; Lörscher, 1991) and functionalist approaches (see Nord, 1997), to name but two.

Historical Background

A functional perspective on translation is not an invention of the 20th century. From the beginning, translators like Cicero (106–43 BCE), Jerome (348–420), Martin Luther (1483–1546), or the German theologian and philosopher Friedrich Schleiermacher (1768–1834) reflected on their translation activity and found themselves confronted with a fundamental dilemma: They could either translate literally or even word for word, keeping as close to the source text as possible, which often resulted in a text that was hard to read or even incomprehensible for the target audience, or they could translate the sense instead of the words, as St. Jerome put it in his *Letter to Pammachius*, producing a text that was acceptable and easy to read for the target audience but—depending on the linguistic and cultural distance between source and target—might require a large amount of rephrasing and restructuring and give rise to misinterpretations. The motive for choosing one strategy or the other could be seen, for example, in the type of text that had to be translated (e.g., holy vs. profane in the case of Jerome, literary vs. pragmatic in the case of Schleiermacher), in the translation norms of the target culture (e.g., foreignizing vs. domesticating, see Venuti, 1995), or in the communicative purpose that had to be achieved by the target text (e.g., dynamic equivalence, Nida, 1964). But with the advent of linguistics-based approaches to translation, these viewpoints, which had their origin in the practice rather than in the theory of translation, were replaced by a strictly linguistic perspective searching for equivalence relations between language systems. Even Nida converted to a Chomskyan model of the translation process, in which source-text surface elements (grammar, meaning, connotations) are analyzed as linguistic kernel or near-kernel structures that can be transferred to the target language and restructured to form target-language surface elements (Nida, 1976, p. 75). This model, with equivalence mainly on word and phrase level as the key concept, dominated the first phases of what was to become translation studies.

In the early 1970s, the German scholar Katharina Reiss, still firmly drawing on an equivalence-based concept of translation, developed a translation-oriented text typology intended to serve as a guideline to translators (Reiss, 2000), in which she postulated that an analysis of the type represented by the source text would set the standards for the production of the target text, because the latter had to be a representation of the same text type as the former. But drawing on her own experience in translation practice, Reiss recognized that there were certain limitations to this iron rule of equivalence, of which

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the "functional" category is of particular importance. This category includes the specific function of a translation in contrast with that of the original (e.g., in résumé translations, translations for study purposes, Bible translation, adaptations of literary works for the stage), and the possibility that the target text might address a different kind of audience than the source text (as in translations of adult literature for children or popularizations of specialized texts for a lay audience). It is this functional category in her model that is considered today to be the starting point of functionalism in translation theory, although it was regarded as an exception to the rule of equivalence by the author herself, who never really turned away from an equivalence-based approach.

It was Hans J. Vermeer, whose teacher at the School for Translation and Interpreting of Heidelberg University was, in fact, Katharina Reiss, who broke with linguistic translation theory and turned Reiss's model upside down. In the framework of his theory, which he named *skopos* theory (*skopos* being the Greek word for "purpose, aim"), change of audience and function(s) is the rule, whereas establishing (some kind of) "equivalence" may be one among various possible purposes.

Drawing on action theory (von Wright, 1968), Vermeer defines translation as a particular type of action which, like every human activity, is geared toward a purpose. Human actions take place in situations, situations are embedded in cultures, and hence any evaluation of a particular situation, of its verbalized and nonverbalized elements, depends on the status it has in a particular culture system (Vermeer, 1978). In this situation, a text is used to transmit a message from a sender to a receiver, and the way this message is "wrapped up" by verbal and nonverbal means depends on the specific norms and conventions of behavior regarded as acceptable in a particular culture.

This model is based on a new concept of what a text is. Vermeer considers a text to be an "offer of information" (Reiss & Vermeer, 1984, pp. 73–6). Faced with this offer, any receivers (among them, the translator) choose the items they regard as interesting, useful, or adequate to the desired purposes. In translation, the chosen informational items are then transferred to the target culture using the presentation the translator believes appropriate for the given purpose. In Vermeer's terminology, a translated text or *translatum* is thus a new offer of information in the target culture about some information offered in the source culture and language.

Basic Concepts and Ideas of *Skopos* Theory

According to *skopos* theory, the prime principle determining any translation process is the purpose of the overall translational action. This fits in with intentionality being part of the very definition of any *action*. Apart from the term *skopos*, Vermeer uses the related words *aim*, *purpose*, *intention*, and *function*. In order to avoid confusion, I have proposed a basic distinction between *intention* and *function* (Nord, 2005b, p. 53). *Intention* is seen from the viewpoint of the sender, who wants to achieve a certain purpose with the text, but it is the receivers who, depending on their own communicative needs and expectations, attribute a particular *function* to it. In an ideal situation, the sender's intention will find its aim, in which case intention and function would be analogous or even identical. But since function is not a quality inherent in a text, it cannot be "changed" or "preserved" in the translation process. Rather, translational, that is, mediated, communication has to cross a language-and-culture barrier, and what was "sent" with a particular intention on one side of it, may be "received" in a different function on the other. It thus seems quite plausible that the larger the cultural (and usually also temporal, geographical, etc.) distance, the less probable it becomes that intention and function are identical, and receivers sometimes assign certain functions to a text which the sender never dreamed of.

If it is no longer the source text that sets the standards for translation, as assumed by equivalence-based theory, we have to ask who decides what the standards should be. The answer is fairly obvious. Translation is usually done by assignment. A client needs a translation for a particular purpose and commissions a translator. In an ideal case, they would provide as much information as possible about the purpose, the audience, time, place, and medium of the intended communication, and the function the text is intended to fulfill. This information would constitute a *translation brief*. The brief does not tell the translator *how* to go about the translating job, what translation strategy to use. These decisions depend on the translator's responsibility and competence. Since reality is usually far from ideal, translators often have to infer the necessary information from the translational situation or ask the client to provide it. But it is obvious that if the purpose is clear it is much easier to produce a *translatum* which fits this purpose.

In such a framework, equivalence as a once-and-for-all standard for translation quality is obsolete. Instead, we would speak of *adequacy*. Adequacy is a relative concept: A target text is (or is not) adequate to the requirements of the translation brief. If the brief requires equivalence, equivalence would be adequate. If the brief requires some other relationship between source and target text, an equivalent translation would be inadequate.

One of the great merits of *skopos* theory is to have brought culture to the fore. For Vermeer, a culture is "the entire setting of norms and conventions an individual as a member of his society must know in order to be 'like everybody'—or to be able to be different from everybody" (Vermeer, 1987, p. 28). Cultural features have been termed "culturemes." A cultureme is a social phenomenon of culture X that is regarded as relevant by the members of this culture and, when compared with a corresponding social phenomenon in culture Y, is found to be specific to culture X. "Corresponding" here means that the two phenomena are comparable under certain definable conditions (Vermeer & Witte, 1990, p. 137). For example, they may be different in form but similar in function (as in taking a train vs. going by car vs. riding a bicycle to reach your workplace) or vice versa (e.g., *to have coffee* in England in the morning vs. *tomar un café* in Spain after dinner vs. *Kaffee trinken* in Germany in the afternoon). Translating means comparing cultures. Translators interpret source-culture phenomena in the light of their own culture-specific knowledge of that culture, from either the inside or the outside, depending on whether the translation is from or into the translator's native language and culture. A foreign culture can only be perceived by means of comparison with our own culture. If every action is to be seen in the context of a specific culture, this applies to translation as well. We may thus assume there are various culture-specific concepts of what constitutes translation or a translational action.

Applications to Translator Training

Right from the outset, *skopos* theory had a considerable impact on translator training, first in Germany and, after some of the early works by Vermeer and his followers had been published in English, Spanish, or Portuguese, also in other parts of the world. University-based translator training has quite a long tradition in Germany, but teachers, who had usually been trained in foreign-language acquisition, linguistics, or literary studies themselves, followed language-oriented, equivalence-based models in their translation classes, which did not really prepare students for the profession. Therefore, *skopos* theory was welcomed particularly by translator trainers, who had been looking for a practice-oriented, applicable theoretical groundwork and methodology for some time. With a view to professional translation, it seemed to make sense to use the intended function(s) as a guideline for both novices and professional translators. In their book *Strategie der Übersetzung*

("Strategy of Translation") of 1982, Hönig and Kussmaul showed that "adequacy" to a given aim, which is formulated in a *translation brief* (in German, *Übersetzungsauftrag*) is a much more plausible standard for translation quality than "equivalence," particularly because equivalence has not really been defined in a satisfactory way so far, and "functional equivalence," which Nida postulated for translating the Bible for missionary purposes, is not always possible, let alone desired. The so-called "functionalists" of the second generation adapted *skopos* theory to teaching methodology (e.g., Kussmaul, 1995), translation quality assessment (e.g., Kupsch-Losereit, 1985), translation-oriented text analysis and translation typology (e.g., Nord, 2005b), claiming that it was useful for the translation not only of advertising or technical texts (e.g., Göpferich, 1995; Schmitt, 1999) but also of opera libretti (e.g., Kaindl, 1995), literary works (e.g., Nord, 1997, pp. 80–103) or even biblical texts (e.g., Nord, 2005a). Although Vermeer had claimed that his model was a general theory which applies to both translating and interpreting, most of his followers focused on translating in the written mode. However, the Austrian scholar and practicing conference interpreter Franz Pöchhacker has shown in a well-documented study (Pöchhacker, 1995) that functionalism can also be fruitfully applied to conference and other forms of interpreting. In order to set a limitation to the otherwise unlimited range of possible translation purposes for one specific text, and to account for culture-specific concepts of translation, particularly with regard to the translation of sensitive or ideological texts, Nord (1997, pp. 123–8) introduced the ethical category of loyalty into functionalism. Loyalty is the responsibility translators, as experts in two languages and cultures, have toward their partners in translational interactions. It is not a category referring to a static relationship between texts, as equivalence or fidelity, but an interpersonal category referring to a social relationship between people.

Conclusions

After having been confined to the German-language area for quite some time, *skopos* theory and functionalism are now accepted worldwide, both for teaching and research. It is particularly useful in multilingual and multicultural societies, like South Africa, because it is:

- a pragmatic model, accounting for the situational conditions of communicative interaction, and for the needs and expectations of the addressees or receivers of the target text and even making them the most important yardstick of translational decisions;
- culture-oriented, giving consideration to the culture-specific forms of verbal and nonverbal behavior involved in translation;
- consistent, because it is able to establish a coherent theoretical and methodological framework which can serve as a guideline for an intersubjective justification of the translator's decisions in any type or form of translation assignment, permitting any translation procedures that would lead to a functional target text, without infringing on the translator's loyalty obligations;
- practical, including all the forms of transcultural communicative mediation needed in professional translation practice;
- comprehensive, since it can be applied to any translation process, including those where some kind of (functional, formal, informational, etc.) equivalence is required.

Functionalism is not, as is sometimes criticized, a theory of adaptation. Although the general focus is on the audience and its needs and expectations, these may, in certain cases, include even a literal or word-for-word translation if the commission requires "to translate

literally in order to show the structural particularities of the source language" as in interlinear translations for linguistic purposes (see Vermeer, 1989, p. 100).

Moreover, it is an expert model in the sense that it attributes to translators the prestige of being experts in the field, competent to make purpose-adequate decisions with full loyalty toward their partners. In this sense, functionalism is a chance for the development of a fully-fledged profession of translation studies as an important scholarly discipline.

SEE ALSO: Assessment of Translation; Cognitive Approaches to Translation; Cultural Approaches to Translation; Translators' Code of Ethics

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Functional Grammar

DANIEL GARCÍA VELASCO

Functional Grammar

The theory of *Functional Grammar* (FG) was originally developed by the late Simon C. Dik and his associates at the University of Amsterdam, the Netherlands. It takes a functional approach to the study of language which is reflected in (a) the description of language as an instrument of social interaction whose main function is the establishment of interhuman communication; (b) the requirement that language structure be studied within the framework of the rules, principles, and strategies which govern its communicative use and (c) the integration of functional relations in the organization of the theory.

FG also aims at developing a formal system of representation in which linguistic analyses can be stated in an explicit way. This commitment to explicitness and rigor in grammar construction is also reflected in Dik's self-imposed standards of adequacy, clearly reminiscent of those proposed by Noam Chomsky for generative grammars. Standards of adequacy are defined as requirements which grammar models must meet if they are to provide a satisfactory account of natural language. Dik proposes the following (Dik, 1997, p. 13):

- *Pragmatic adequacy*: FG should state the properties of linguistic expressions in such a way that it accounts for the way in which they are used.
- *Psychological adequacy*: FG should be compatible with validated hypotheses and well-established findings about human language production and comprehension.
- *Typological adequacy*: FG should be able to provide grammatical descriptions for any natural language and to capture the similarities and differences among them.

Another relevant aspect of Dik's program is the integration of functional and communicative relations in the organization of the model. In particular, FG employs three types of functional relations: semantic functions, pragmatic functions, and syntactic functions. *Semantic functions* specify the roles of participants in a situation or event; they include notions such as Agent (i.e., the entity performing the verbal action) or Goal (i.e., the entity affected by the verbal action). *Pragmatic functions* characterize the status of constituents in a linguistic expression as given or prominent/new information; and *syntactic functions* relate to the perspective from which an event is presented. Thus, in the active sentence *the old elephant is eating an apple*, the event is presented from the point of view of the Agent *the old elephant*, which receives Subject syntactic function. However, in its passive counterpart *an apple is being eaten by the old elephant*, the event is presented from the perspective of the Goal *an apple*, which is promoted to Subject function.

Communicative relations are also integrated in the organization of the model. Dik understands communication as a social activity with which speakers effect changes in the body of general knowledge of their addressees. Those changes may involve two different dimensions. On the one hand, there are those which affect the content of the message in a broad sense and, on the other, those which relate to the relation between speakers and addressees. These two dimensions correspond to the *representational* and *interpersonal* functions (terms

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taken from Bühler, 1934, and Halliday, 1970, respectively) and are incorporated as independent levels in the architecture of FG.

Finally, the functional-communicative orientation of the theory is also reflected in the use of the notions *predication* and *reference*, inspired by Searle's (1969) work, which constitute the building blocks of the grammatical component in FG. Predication is seen as the establishment of a relation among participants or the assignment of a property to an individual. Reference is viewed as a cooperative process with which a speaker guides the addressee to the identification of the entity about which he wishes to predicate something.

The Organization of Functional Grammar

FG is a bottom-up grammar—that is, the generation of a linguistic expression starts with the selection of lexical items from the lexicon component and proceeds upwards to the creation of a complete expression. In accordance with the standard of typological adequacy, FG structures have a clear semantic and pragmatic orientation, as FG practitioners believe that it is from that perspective that a universally valid representation system may be constructed. This means that FG structures contain abstract elements representing linguistic information which will be expressed in different ways across languages. For example, English forms the past tense of regular verbs by adding the suffix *-ed*, whereas German uses *-te* for weak verbs. Both, however, are represented as "Past" in FG structures and converted into the actual form for each language at the end of the derivation.

The theory is divided in three main blocks: the *fund*, which contains both the basic and derived lexemes of a language; the *layered structure of the clause*, which takes care of the construction of grammatical representations; and the *expression component*, which converts the representations created by the grammar into the actual linguistic utterances. Figure 1 offers a simplified picture of the model as given in Dik's (1997) presentation of the theory.

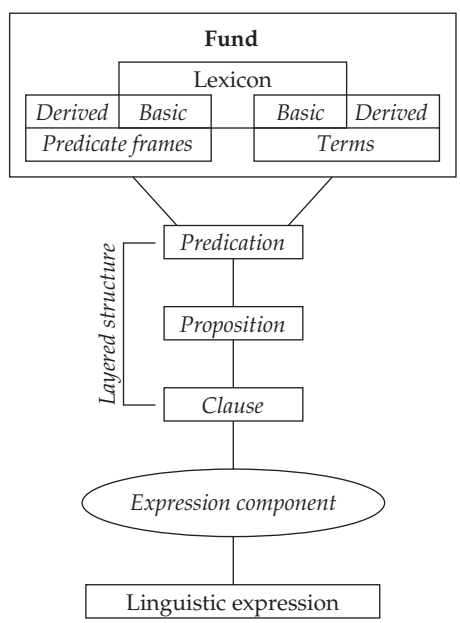

Figure 1 The general organization of Functional Grammar. Adapted from Dik (1997)

The fund may be informally described as a dictionary as it contains all the lexemes or predicates of a language. It is divided into two main parts—the lexicon, which contains basic lexemes, and the fund itself, which also includes derived predicates created by productive word-formation rules. The standard version of the theory recognizes three types of predicates: verbal, adjectival, and nominal, which are stored in the form of *predicate frames*, structures which define the number and type of obligatory participants or arguments that the lexeme requires. An example of a verbal predicate frame is given in (1).

(1) give [V] $(x_i$: <animate>$)_{Agent}$ $(x_j)_{Goal}$ $(x_k$: <animate>$)_{Recipient}$

(1) states that the verb *give* takes three argument positions, represented by the variable "x" which refers to a first-order entity (roughly individuals and (in)animate objects). The argument variables, which receive different subindices to indicate they designate different entities, realize the semantic functions Agent, Goal, and Recipient (i.e., the entity to which/whom something is transferred). Those positions may include restrictions (e.g., "animate") which must be satisfied by the lexemes occupying them. The units which fill up an argument position are named *terms* and constitute the structural correlate of the above-mentioned referential function. Just like predicates, terms may be basic (typically proper nouns and pronouns) and derived. Derived terms range from simple units such as *a house* to complex phrases containing adjectives, possessors, or relative clauses (e.g., *the teacher's magnificent house that he bought last year*). The construction of derived terms simulates a cooperative process in which speakers guide their interlocutors to the identification of entities about which they wish to predicate something. The general schema of term formation is given in (2).

(2) $(\Omega x_i$: predicate_1 (x_i): predicate_2 (x_i): . . . : predicate_n $(x_i))$

The variable "x" can be modified by *term operators*, represented by the variable Ω, and can in turn be restricted by one or more predicates. Dik (1997, p. 132) offers the following representation as an example of a term expression (d = definite, 1 = singular).

(3) $(d1x_i$: elephant [N] (x_i): old [A] $(x_i))$
"the old elephant"

In accordance with the dynamic interpretation of term construction, the structure given in (3) could be paraphrased as an instruction from speaker to addressee as follows: "identify a definite singular entity x_i such that the property 'elephant' applies to x_i, such that the property 'old' applies to x_i."

The main difference between Dik's initial presentation of FG in 1978 and the 1989/1997 model was the adoption of a *layered structure of the clause* following the proposal in Hengeveld (1989). On the basis of the study of the alignment and scope of the categories aspect, tense, and mood, Hengeveld proposed a number of layers in the organization of the sentence: the *predication*, the *proposition*, and the *clause*. Each layer would have an ontological correlate according to Lyons's (1977) classification of entity types. FG representations thus make use of different variables, one for each layer, corresponding to the entity the speaker wishes to describe with the associated structure. Each layer can be further modified through different categories, which are called *clausal operators* if they receive grammatical expression (typically tense, aspect, or mood) or *satellites* if they receive lexical expression (roughly adjuncts or adverbials). Table 1 shows the relevant correspondences.

To illustrate the FG analysis of the sentence with a concrete example, let us consider the representation of the expression *probably, the old elephant is eating an apple in the zoo*. In this

Table 1 Layers, entities, and variables in Functional Grammar

Layer/unit	*Type of entity*	*Variable*
Clause	speech act	E
Proposition	possible fact	X
Predication	event	e
Term	individual	x

sentence, the speaker describes one event in which the old elephant engages in the activity of eating an apple. This is constructed on the basis of the predicate frame of the lexeme *eat*, which offers one slot for the Agent of the action and another one for the Goal.

(4) eat [V] $(x_i$: <animate>$)_{Agent}$ $(x_j)_{Goal}$

It is in the Agent position that the term representation in (3) is inserted, whereas the Goal slot is filled up by the term "an apple," which is constructed with the nominal lexeme "apple" plus the term operators "singular" (1) and "indefinite" (i):

(5) eat [V] $(d1x_i$: elephant [N] (x_i): old [A] $(x_i))_{Agent}$ $(i1x_j$: apple [N] $(x_j))_{Goal}$

The representation in (5) constitutes a basic or nuclear predication, which is further modified in our next representation by the operator Prog (progressive aspect). This completes the description of the event or situation, which is represented by the variable "e". The event is located in time by the operator Pres (present tense) and in space by the satellite *in the zoo*; note that this satellite is constructed just like any other term expression plus the semantic function Location, which will be converted into the preposition *in* at the expression component.

(6) Pres e_i: [Prog eat [V] $(d1x_i$: elephant [N] (x_i): old [A] $(x_i))_{Agent}$
$(i1x_j$: apple [N] $(x_j))_{Goal}$] $(d1x_k$: zoo [N] $(x_k))_{Location}$

The representation in (6) closes the representational level, the stage of the derivation at which the content of the message is fully specified. Languages also offer grammatical means through which speakers can present an event or situation in accordance with their communicative intentions. FG captures those means at the interpersonal level. In the derivation of the example at hand, the speaker evaluates the actual occurrence of the event described in (6) as "probable" through the proposition satellite *probably*; note that given that this adverb does not belong into the description of the portrayed event it is formally marked off from the rest of the sentence by an intonation pause. Finally, the whole linguistic expression is characterized as a declarative speech act, which is represented through the clause operator DECL.

(7) DECL E_i: [X_i: [*Representational level in (6)*] (probable [A])$_{Manner}$]

FG representations such as (6)–(7) are also enriched with syntactic functions, which would allow for an active or passive expression of the example, and pragmatic functions, with which FG captures the dimensions of new and given information through the assignment of Focus and Topic function to the constituents in the representation. In FG, pragmatic functions are only recognized in a language if they have a formal impact in the clause and are thus considered responsible for special markers or construction types. In English,

cleft-sentences and existential *there*-sentences are examples of constructions motivated by pragmatic function assignment. Hence, a cleft expression such as *it is the old elephant that is eating an apple in the zoo* is due, among other factors, to focus assignment to *the old elephant* in (6).

Finally, the expression component is responsible for converting the information presented in (6)–(7) into the actual linguistic utterance. It comprises two basic sets of rules, *realization* and *constituent order rules*. Realization rules follow a simple general format which assigns a value to a function. For example, the formation of gerundive forms in English would conform to a general pattern in which the operator for progressive aspect takes a verbal predicate as its argument.

(8) Prog (verbal predicate) = verbal predicate *-ing*

In the representation (6), the application of (8) produces the form *eating* as output. The linear order of linguistic expressions is taken care of by constituent order rules which are also part of the expression component. FG representations are not ordered and merely reflect scope relations through bracketing. The theory postulates *placement rules* which situate constituents in the appropriate position on the basis of general ordering principles and the syntactic and pragmatic status of the relevant unit. Placement rules work in tandem with *functional patterns*, which define possible sentence structures for a given language and provide positions for the units in FG representations. The following are the functional patterns for English declarative and interrogative sentences respectively:

(9) a. P1 S Vf Vi O X
b. P1 Vf S Vi O X

In these patterns, P1 represents a universal initial position, which is used for special purposes such as the placement of constituents with Topic or Focus function. S and O are positions reserved for units with Subject and Object function, respectively, whereas V, which can be subdivided into finite (Vf) and infinitival (Vi), is the position for the main verb in the clause. Finally, X is the position for other constituents, typically satellites. The units in our example would thus be ordered as follows:

(10)	P1	S	Vf	Vi	O	X
		The old elephant	is	eating	an apple	in the zoo

Similarly, an interrogative *wh*-question would make use of pattern (9b), with the *wh*-element taking P1 position as it expresses focal information.

(11)	P1	Vf	S	Vi	O
	Where	is	the old elephant	eating	an apple

The expression component is also responsible for the assignment of the relevant intonation and stress patterns to linguistic expressions, which may also be sensitive to the nature of the utterance (interrogative, declarative, etc.) or the emphasis conferred to a given constituent.

Functional Discourse Grammar

Several FG practitioners have felt that the theory is not pragmatically and psychologically adequate (Butler, 1991), and to some extent this has motivated the birth of its successor

Functional Discourse Grammar (FDG), whose full-length presentation is Hengeveld and Mackenzie (2008). As for pragmatic adequacy, some authors noted that the 1997 model contained two major obstacles to progress toward a truly functional theory: (a) the fact that research in FG concentrated almost exclusively on the analysis of the sentence and its constituents, and (b) the lack of integration of FG into a theory of verbal interaction. As for psychological adequacy, the number of studies in FG that make reference to the results of psycholinguistic research is rather limited, which means that the theory has remained untested from a psycholinguistic point of view.

Accordingly, although FDG shares with FG the same methodological assumptions and organizational properties, it also presents two major differences: its discourse motivation and its top-down orientation.

FDG notes that a considerable number of grammatical phenomena relate to units that are either larger or smaller than the clause and for that reason cannot be adequately described by a sentence grammar. In particular, many verbal exchanges are not realized in the form of fully fledged sentences, but rather in the form of fragments, or nonclausal units. Hence, FDG replaces the sentence with the *discourse act* as a basic unit of grammatical analysis. The following utterances are examples of nonsentential discourse acts.

(12) a. John!
b. A pen.
c. To the market.

The expression in (12a) may act as a vocative or address to initiate a verbal interaction, whereas (12b) and (12c) can serve as natural replies to a question. Hence, apart from their nonsentential nature, what these expressions have in common is that they serve as complete contributions to discourse interaction and must obviously be studied within the context in which they occur. At the same time, there are linguistic phenomena that relate to the organization of connected discourse and extend their influence over several sentences and cannot be properly understood by analyzing isolated expressions.

A second difference between these models relates to their architectural orientation. Unlike FG, FDG is a top-down grammar in which the generation of a linguistic expression starts from a communicative intention which ultimately leads to the grammatical coding of a piece of information and its final articulation or execution. The top-down organization of FDG is a reflection of its commitment to the standard of psychological adequacy and is strongly inspired by the psycholinguistic work of Levelt (1989).

Finally, and with an aim to integrate the grammar component in a theory of verbal interaction, FDG includes two adjacent components to grammar proper: the conceptual and the contextual components. The *conceptual component* is responsible for the creation of a communicative intention and the construction of a preverbal message, i.e., a conceptual structure that will serve as input to the grammar. The *contextual component* represents the speech situation and includes both linguistic and nonlinguistic perceptual information that is potentially relevant for the creation of new communicative intentions and conceptualizations. FDG, as a linguistic theory, is centrally concerned with the grammatical component, and reference is made to the adjacent components as far as they are relevant in accounting for linguistic phenomena. For example, in Spanish the sex of speakers may be relevant for choosing the appropriate gender marker in an expression.

(13) a. Estoy cansad*o*
'I'm tired'; (male speaker)
b. Estoy cansad*a*
'I'm tired'; (female speaker)

Hence, the choice of the relevant suffix is dependent upon properties of the speech situation which are captured at the contextual component. Similarly, information contained in the conceptual component may be relevant for understanding grammatical and lexical choices. Thus, the use of the pronoun "it" in an expression like *it is eating an apple in the zoo* will only be communicatively felicitous if the addressee can find out the referent of the pronoun; the speaker tacitly assumes that the individual the pronoun refers to will be identifiable for the addressee (typically because it has been introduced previously in the discourse). This assumption is made at the conceptual component and motivates the choice of a pronoun over a proper noun or a complex term.

SEE ALSO: Formal and Functional Approaches to Grammar; Generative Grammar; Grammar and Discourse; Pragmatics and Grammar; Searle, John R.; Systemic Functional Linguistics

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García, Ofelia

MARÍA E. TORRES-GUZMÁN

Ofelia García, Professor in the PhD Program in Urban Education and Hispanic and Luso-Brazilian Literatures and Languages at the Graduate Center at the City University of New York, is a renowned international scholar in the fields of bilingual and multilingual education, the education of minoritized language groups, language policy, and the sociology of language. She emigrated from Cuba as an 11-year-old in 1961 and began her career as a bilingual/ESL teacher in New York City in the early 1970s. Her work in institutions of higher education began in the late 1970s when she became an instructor at SUNY, Old Westbury, while she worked on her doctorate, which she received in 1981 from the Graduate Center, City University of New York, in the area of Hispanic and Luso-Brazilian literatures and languages. García has taught at various New York-based institutions—Yeshiva University, the City College of New York, the Brooklyn Campus of Long Island University, and Teachers College, Columbia University—and completed two postdoctorate fellowships in sociology of language and bilingualism in 1981 at Yeshiva University and in the Institute of Political and Social Science Research at the University of Michigan, Ann Arbor, in 1990. Her academic career was briefly interrupted by a five-year stint as the Dean and academic leader of Long Island University, Brooklyn Campus.

Her numerous edited volumes, 84 articles, two recent coauthored books, as well as her recent *Bilingual Education in the 21st Century* (García, 2009) are a testimony to a very healthy scholarly life.

García's initial academic interest was in the area of Spanish literature from a sociolinguistic perspective—in poetry, in Cuban and in Puerto Rican literature. She published during this period, for example, *Veinte años de literatura cubano-americana*, with Silvia Burunat (Burunat & García, 1988), and "La problemática del idioma en el ensayo puertorriqueño" (García, 1984). The significantly emergent issues of the mid to late 1980s—language variations in Latino communities and bilingual education—had an impact on her thinking and writing at this time. During this period, she coedited *English Across Cultures, Cultures Across English* (García & Otheguy, 1989), and *U.S. Spanish: The Language of Latinos* (Wherrit & García, 1989). Both of these books illustrate her language base beginnings, but the literary concerns, while continuing until the end of the 1980s, began to turn toward the sociolinguistic aspects of language. In this period, she also examined language attitudes, intergenerational shifts, and the ethnic press primarily within the New York City Latino communities.

She also tackles the sociological issues of language in educational settings, that is, within bilingual education. Her initial work in this area is within the educational settings among Cubans in the Miami area. Her *focusschrift* (García, 1991) in honor of Joshua A. Fishman, her mentor, positions her within the pioneers of languages in schooling from an international perspective. She works in the fields of sociology of language, sociolinguistics, language planning, and language policy. In this area, she is known for the metaphor of the language garden when she compares attending to the multiple languages children bring into schools to the gardener who attends to different types of flowers in the garden, and to multilingualism as the beauty of the many colors of a well-designed garden. In her writing, García's ability to capture the essence of the concepts she wants to communicate

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in image forms, and her knack for capturing appropriate and contemporary images, became a trademark.

Upon leaving the deanship of Long Island University, Brooklyn Campus, she joined Teachers College, Columbia University where the mark of a new era of transformation begins. One of the first pieces of writing that illustrate this new stage in her life is "Lost in Transculturation" (García, 2006) where she considers how the movement of people and things globally begin to show up in the shifts of immigration and how these are manifested in the transformations of the field of bilingual education models such as dual language education. This period was extremely productive as she began to consider new ways of thinking about issues of language in classrooms.

One can think about the transformations in three ways. García's work with Gregorio Luperon High School, a Latino Newcomer School that receives new Spanish-speaking immigrant children, was the site for work with colleagues, like Lesley Bartlett, through which they painstakingly document a speech community model of bilingual education where hybrid linguistic practices assist the children in their translocal world. This work, jointly with Lesley Bartlett, is covered in an article entitled "A Speech Community Model of Bilingual Education" (García & Bartlett, 2007) and in a forthcoming book (Bartlett & García, in press).

A second direction of García's work is in challenging the international world to imagine multilingualism in new ways. The Language Symposium at Teachers College Columbia University, cochaired with María E. Torres-Guzmán, was an event from which two books emerged. The first was *Imagining Multilingual Schools* (2006), coedited with Tove Skutnabb-Kangas and María E. Torres-Guzmán. The second is *Global Perspectives on Multilingualism* (2009), by María E. Torres-Guzmán with Joel Gómez. The result of these volumes is a survey of what exists as understandings of multilingualism and how globalization calls for transformations within the field. While the main focus continues to be language planning and language policy, the emergence of policy in the context of classrooms is innovative.

Lastly, she began to focus on redefining and reinventing ways of speaking about what is occurring in classrooms. With Jo Anne Kleifgen and Lori Falchi, she examined issues of equity and redefined how to speak about children in bilingual classrooms, moving from the parochial "English-language learners" to a more descriptive term, "the emergent bilingual." This work is found in *Equity in the Education of Emergent Bilinguals* (García, Kleifgen, & Falchi, 2008) and was part of the Educational Equity Campaign at Teachers College, Columbia University. It is also the basis for her book, coauthored with Jo Anne Kleifgen, *Educating Emergent Bilinguals* (2010).

In addition, in her work with kindergarteners and elementary children in New Rochelle bilingual schools, García documents her seminal work on translanguaging, where she consolidates new critical sociocultural theoretical ways of thinking about bilingual learning processes. Translanguaging proposes a definition of "sense-making" from the speaker's rather than from a language perspective, from a bilingual rather than a monolingual speaker's perspective, and it embraces all student or teacher uses of bilingual/multiple discursive practices.

This work on translanguaging in classrooms emerges from García's theoretical framework of bilingualism in the 21st century as *dynamic* (and not simply subtractive or additive). This conceptualization, documented with cases from around the world, is best found in *Bilingual Education in the 21st Century* (García, 2009). She continues this work, emphasizing the urban context, at the Graduate Center, CUNY.

Most recently García has published two coedited books: *Negotiating Language Policies* (Menken & García, 2010) and *The Handbook of Language and Ethnic Identity* (Fishman & García, 2010). A second volume of the latter book, focusing on the success–failure continuum

of language and ethnic identity efforts, is in press. She is presently involved in a large-scale research project on Latino students in New York City high schools.

SEE ALSO: Baetens Beardsmore, Hugo; Bilingual Education; Bilingual and Multilingual Education: Overview; Empowerment and Bilingual Education; Literacy in Multilingual Classrooms; Mother-Tongue-Medium Education; Multilingual Education in North America; Qualitative Research on Bilingualism and Multilingualism; Teacher Education for Multilingual Education

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Gass, Susan M.

CHARLENE POLIO

Susan M. Gass (1943–), born in Boston, Massachusetts, is a university distinguished professor in the department of linguistics, and Germanic, Slavic, Asian, and African languages at Michigan State University in East Lansing, Michigan. A well-known and prolific scholar in the area of second language acquisition (SLA), she has also held several administrative positions at Michigan State University including director of the English language center and founder and director of the PhD program in second language studies. She received the Paul Pimsleur Award for Outstanding Research given by the American Council for the Teaching of Foreign Languages in 1996, and in 2002 she was chosen as the recipient of the American Association for Applied Linguistics (AAAL) Distinguished Scholarship and Service Award. She has been the president of both AAAL (1986–7) and the *Association Internationale de Linguistique Appliquée* (2002–8). With Larry Selinker, she has authored what is probably one of the most widely used textbooks in the field of SLA, *Second Language Acquisition: An Introductory Course*, whose third edition was published in 2008. She has also edited two series, *Second Language Research: Theoretical and Methodological Issues* with Jacquelyn Schacter and *Research Methodological Issues* with Alison Mackey. Gass has served on several editorial boards including *Applied Linguistics* and *Studies in Second Language Acquisition*, the latter of which she continues to serve as associate editor. Gass completed her BA in Italian at the University of California, Berkeley, followed by an MA in Italian at Middlebury College in Vermont. After working in Italy, she received an MA in linguistics at the University of California, Los Angeles followed by a PhD in linguistics at Indiana University.

Universals in SLA

Gass's dissertation, the results of which were published in 1979 in *Language Learning* (Gass, 1979), was one of the first studies to examine universal tendencies in SLA. In other words, certain patterns of learning were found to be common across learners with a variety of first and second languages. With regard to the acquisition of relative clauses, Gass found that learners followed developmental sequences that would be predicted by Keenan and Comrie's (1977) noun phrase accessibility hierarchy. Gass's research has been widely cited and related findings were confirmed in other studies. Research continues on relative clauses in second language acquisition with other researchers questioning whether the noun phrase accessibility hierarchy can account for development in Asian languages or written language. As for other linguistic universals, including those suggested by formal approaches and universal grammar, Gass (1997) has claimed that the study of such universals in SLA are not mutually exclusive with approaches that focus on interaction as driving language learning. Indeed, such linguistic universals may simply constrain language learning.

Research Methods

Gass has published several articles on research methods (e.g., Gass, 1994, 2001) including a call for more detail in reporting research to enable replication in SLA (Polio & Gass,

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1997). She has also authored three books on research methods. *Stimulated Recall Methodology in Second Language Research* (2000), coauthored with Alison Mackey, paved the way for researchers to include stimulated recall as a technique to more deeply investigate SLA learning processes. Gass's research on learners' perceptions of recasts (Mackey, Gass, & McDonough, 2000) was one of the earliest SLA studies to use such a technique. She has published two other books on research methods, *Second Language Research: Methodology and Design* (with Alison Mackey, 2005) and *Data Elicitation for Second and Foreign Language Research* (with Alison Mackey, 2007b). She continues to edit books in her research methods series that have included topics such as case study research, priming, and thinking aloud.

Interaction Research

While an assistant professor at the University of Michigan in Ann Arbor, Gass began investigating the role of interaction in second language learning, the area that she is now best known for. Work on the role of interaction had started at UCLA with Evelyn Hatch and Michael H. Long, who claimed that language ability developed through learning to communicate. Gass, however, had not collaborated with either, having left UCLA in 1976. With Evangeline Varonis, she published two studies on non-native-speaker comprehensibility (Varonis & Gass, 1982; Gass & Varonis, 1994). The link between interaction and the ability of non-native speakers to understand and be understood was emerging as a major factor in language learning. In 1983, Gass co-organized the tenth Conference on Applied Linguistics, entitled *Language Input: Learners' Use and Integration of Language in Context*. Some of the papers from this conference resulted in a coedited book, with Carolyn Madden, which included several influential chapters, including Merrill Swain's paper on the role of output in second language learning. One of Gass's most influential studies (Gass & Varonis, 1994), published in *Studies in Second Language Acquisition* was one of the first to show empirically a link between negotiation and learner production in a short-term study. Others (e.g., Pica, 1994) went on to postulate why negotiation might aid learning and what the possible long-term learning effects of interaction might be. Many other studies have gone on to demonstrate the link between interaction and longer-term development.

Gass continued to publish on the role of interaction and to explore how different variables affect interaction and the outcomes of interaction, including how the ordering of input and interaction can affect the learning of different areas of language (Gass & Alvarez-Torres, 2005) and how heritage and nonheritage learners perceive interactional feedback differently (Gass & Lewis, 2007). Along with Alison Mackey (Gass & Mackey, 2006, 2007a), Gass wrote two overviews of the interaction approach that in particular highlighted the relationship of interaction to input, output, and feedback, as well as the importance of attention. In 2009, a volume edited by Alison Mackey and Charlene Polio on interaction was published in Gass's honor.

Although she described the interaction approach as having some properties of a theory (Gass & Mackey, 2007a), Gass has never claimed that an interaction approach to SLA is a complete and causal theory of SLA. Indeed, she has acknowledged that frequency (such as in usage-based approaches) may be significant (Gass & Mackey, 2002) as well as universal constraints (Gass, 1997). Responding to a critique of her research (and of other more cognitively oriented research) by Firth and Wagner (1997), Gass (1998), using the apples and oranges analogy, explained that social views of language are most definitely not incompatible with the more cognitive approaches taken in much of the interaction research. Indeed, this complex interplay of cognitive factors (e.g., working memory), social factors (e.g., relevance of the interaction), contextual factors (e.g., frequency), and affective factors (motivation) have all been related to interaction in the learning process.

Other Publications

Gass continues to produce publications that provide overviews of the field of SLA (Gass, 2009a, 2009b). In addition to the introductory SLA textbook, Gass continues to work on additional overviews of the field. *The Handbook of SLA*, to be published by Taylor & Francis/Routledge, is a 35-chapter handbook coedited with Alison Mackey. Another edited volume with Alison Mackey on research methods in SLA is currently in progress for Wiley-Blackwell.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Hatch, Evelyn; Interaction Approach in Second Language Acquisition; Long, Michael H.; Typology and Second Language Acquisition; Verbal Report

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Gee, James

TOM RANDOLPH

Introduction

James Paul Gee (1948–) is a preeminent cross-disciplinary analyst and researcher of human learning. Blending passions for applied linguistics and education throughout his career, Gee has also done research in psychology, cognition, anthropology, and communication. He has been a prolific and innovative discourse analyst since the early 1980s, but first became widely known for his pioneering work in new literacy studies (NLS), which replaced a traditional understanding of "literacy" with a sociocultural one (Barton, 1994; Street, 1995; Gee, 1996). He has since followed that research thread to the impact of digital literacies in and out of the classroom. To widespread critical acclaim and popularity, Gee's work is currently reimagining "school" in light of 36 learning principles shared by all good video games (Gee, 2003c, 2005b, 2007). He has authored 13 books, several of which have seen multiple editions, coauthored three others, and his research has been published in more than 150 scholarly articles, book chapters, reviews, and handbooks. He has served on the editorial boards of *Anthropology and Education Quarterly, Cognition and Instruction, Critical Inquiry in Language Studies*, and *Digital Culture and Education*. His work has been funded by numerous grants from the Spencer and MacArthur foundations. A representative collection of papers and other work is at www.jamespaulgee.com/publications.

Academic Background

James Paul Gee was born in 1948 in San Jose, California, and completed all of his formal education in that State. After studying liberal arts, Latin and Greek, he earned his first formal degree in Philosophy in 1970 from the University of California at Santa Barbara. Four years at Stanford University's School of Education and Department of Linguistics culminated in a terminal degree in Linguistics in 1975.

Though his professional academic career began with positions as a Chomskyan (briefly, linguist Noam Chomsky's belief that all people "share the same biological capacity for human language" [Gee, 2003b, p. 4]) theoretical linguist at Stanford University and Hampshire College, the "social turn" (Gee, 1999) of his research gained momentum in the early 1980s when he took a position as an applied linguist in the School of Education at Boston University in 1982, where he started new graduate programs that adopted an integrated approach to language and literacy. At the personal (internal) level, Gee (2003b) describes the "social turn" as a battle of identities; on the professional level, his ongoing analysis of the social and cultural aspects of language while both the theoretical and applied linguistics camps declined to accept him underscored the validity of his perspective on society; simply put, Gee sees the most useful view of society as being made up of individuals negotiating degrees of membership in multiple "Big D Discourses," where discourses are ways of interacting with language and all other mediational means (Wertsch, 1998) such as technologies, texts, clothing, and other people, so as to construct one identity or another. Such a perception of social practice revealed the need to reconceptualize

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linguistic research and discourse analysis (the study of language in use) in particular. In *Social Linguistics and Literacies: Ideology in Discourses* (Gee, 2007), "literacy" becomes a count term, each literacy being multimodal and situated or embedded uniquely in one discourse (Gee, 1989), and all linguistic meaning (and by extension all relevant linguistic analysis) is seen as situated in the social practices of people constructing and negotiating multiple identities within and across multiple discourses. While the Tashia Morgridge Professor of Reading at the University of Wisconsin at Madison, Gee wrote a definitive guide to the field, *An Introduction to Discourse Analysis: Theory and Method* (Gee, 2010), which is now a leading academic resource.

This theoretical and methodological perspective has guided James Paul Gee's career ever since, and is arguably the key element of new literacy studies. NLS and other research movements (Gee identifies 13 in Gee, 1999, including ethnomethodology, situated cognition, cognitive linguistics, connectionism, and postmodernism) view the mind as a social entity embedded in the world, rather than the largely private one favored by behaviorists, and the mind's learning as occurring entirely through pattern recognition from experiences situated within discourses. In *The Social Mind: Language, Ideology, and Social Practice*, Gee (1992) describes how memories, beliefs, and other seemingly "private" mental objects are constructed in a sociocultural context that is inherently ideological and political, and how through self-deceptive narratives, people tend to privilege the discourses of which they seek to be recognized as members. His collaboration as a critical discourse analyst—CDA is an analysis that recognizes that all language is social and political, and all research and analysis grounded in the perspective of the researcher (Gee, 2003a)—in *The New Work Order: Behind the Language of New Capitalism* (Gee, Hull, & Lankshear, 1996) written while holding the Jacob Hiatt Chair in Education at Clark University, explores the language of the global discourses of the New Capitalism and their implications for schools and literacy. While at Clark, Gee's decade-long focus on an integrated theory of language, literacy, and schooling provided the framework for several school-based projects run by the Hiatt Center for Urban Education at Clark University, and a Spencer Foundation funded after school science project.

Throughout his career, James Paul Gee has been concerned with the relationship (or lack thereof) between how people learn in and out of schools; more specifically, he has used discourse analysis to identify why some (usually underprivileged) children fail school, while others succeed (See Gee, 2003b), and, as digital literacies have materialized in the past two decades, answered this question by arguing strongly for a pedagogical shift in American schooling toward game-style domain (formerly "discourse")-based experiential learning. He points out that to stay in business, game producers have to get a lot of people to choose to learn the skills and tools (what Gee calls "the design grammar" [Gee, 2002]) needed to solve extremely complex and rigorous problems situated within the semiotic domain of a particular game. A semiotic domain is the set of one or more modes of interaction (e.g., oral or written language, gestures, sounds, symbols) used by the group of people who identify themselves as members of a domain to communicate distinctive messages to each other. Gee argues that academic content (including and perhaps especially linguistic), such as biology facts, is more deeply and usefully learned as a by-product of becoming literate in the social language (the discourse, or register, or linguistic style) and semiotic domain of biologists (Gee, 2005a). In other words, biology is a "game" that certain types of people learn to "play." (Gee, 2005a, p. 34)

In 2003, Gee published *What Video Games Have to Teach Us About Learning and Literacy*, which described 36 principles that distinguish good learning games, and argued that American schools needed to embrace these principles if they hoped to graduate the digitally literate students who would be able to succeed in America in the 21st century (Gee, 2003c). Since 2007, James Paul Gee has also been the Mary Lou Felton Presidential

Professor of Literacy Studies in the Department of Curriculum and Instruction at Arizona State University, and his research has been supported by four MacArthur Foundation grants. He is currently researching the Our Courts: 21st Century Civics Project (www.ourcourts.org) as a member of the technology and design team.

Major Contributions and Ideas

Gee's work in discourse analysis provided a model of interdisciplinary linguistic research, and as such *Social Linguistics and Literacies: Ideology in Discourses* in 1990 was a founding text of the new literacy studies, and a major contribution to the nascent field of sociocultural approaches to language and literacy (Gee, 1990). His specialization as a linguist differentiates him from other experts in situated learning, and some of his unique contributions are his analyses of situated language that reveal the inequities among discourses. For example, Gee demonstrates the significance of an individual's primary discourse, the "ways with words, deeds, things, thoughts, and feelings that, as children, we associate with being a 'person like us' (like our socializing group)" (Gee, 2003b, p. 15), on success in school by analyzing an African American child's linguistic prowess as a storyteller to discover why she was judged a failure at language by her Anglo teacher, who had a different set of linguistic expectations. Gee described a number of "secondary discourses" prevalent in schools, and showed how some families' social practices, such as dinner table reporting, build a base for literacy in school-based secondary discourses (with their specialist varieties of language) into their children's primary discourses (and vernacular language), and some families' social practices do not. Thus Gee identified American schools as institutions that privilege certain types of identity formation, and recognize (grant particular status to) different identities in different ways, and American school students as people who feel either that they are suited for school, or they aren't.

Gee further contributed to the dialogue on school reform by developing the implication of this work into a research agenda that has impacted numerous disciplines connected to literacy, cognition, and education. The primary implication for schools of a discourse (now domain)-based view of literacy is that all meaning, whether in the world or in texts, is situated in the moments of learners' experiences, that if learners are to use schools to learn to think and act in the world, they must experience the world in school. In other words, schools must provide students with scaffolded (sequenced in increasing cognitive complexity) apprenticeships and interaction with more- and less-literate peers and masters of non-school domains (Gee, 2000), so that they can become literate in the social languages (registers or styles of natural languages), design grammars (the multimodal syntax of the domain), and other semiotic modalities of those domains. Gee's work in the past decade has been toward integrating children's passion for and literacy in digital media with the needed education reform.

Gee's perspective on semiotic domains further specifies the role of language in society and the requirements for sociolinguistic literacy. Each semiotic domain uses a different social language with its own vocabulary and syntax, discourse and pragmatic systems. One learns the domain's social language by learning to situate ever more complex meanings in that domain, beginning the process by apprenticing to more masterful members, and ultimately approaching mastery and insider status oneself if the process is not broken off. Through this lens Gee shows language to be inextricable from the other modalities (e.g., equations, symbols, images, gestures, artifacts) and practices of people claiming varying degrees of membership in the domain's "affinity group" (Gee, 2002). Thus, "authentic learning" is "learning that leads to mastery of the semiotic domain's design grammar and growing membership in its associated affinity group" (Gee, 2002, p. 3).

Such a view places Gee himself in the situated learning affinity group (see Lave & Wenger, 1991), and reveals why Gee sees the simulation approach of good video games, which immerses novice gamers in semiotically rich and authentic virtual worlds (semiotic domains) and through repeated plays scaffolds their literacy in the domain toward mastery, as one obvious solution to the education crisis. In *What Video Games Have to Teach Us About Learning and Literacy* (Gee, 2003c), he derives 36 learning principles from his study of the learning a game player undertakes when mastering a new game, and expands his suggestions for education reform beyond video gaming to include "games" that honor these principles. These principles cover learner-participation conditions that replicate real-world language learning, including active and critical participation in at least a subset of a real domain from the outset, interconnectedness of multimodal semiotic systems and texts within and perhaps across semiotic domains, embodied experience of texts in multiple social identities, and authentically motivating and concentrated social practice. An Internet search reveals that these principles have been taken up by videogame designers, educators, and graduate students worldwide in multiple modalities and media.

SEE ALSO: Cognitive Constructivism; Cognitive Models of Interaction; Conceptualizing and Researching "New Literacies"; Critical Discourse Analysis; Discourse Analysis in Literacy Research; Discourse and Identity; Historical Development of Literacy Research; Literacy Practices in Virtual Environments; Multimodal Discourse Analysis; Teaching Literacy; Technology and Literacy

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Gender and Second Language Acquisition

JULIA MENARD-WARWICK

Research on gender and language learning has generally followed larger trends of gender theory in applied linguistics. Thus, over the past several decades, such research has often been situated within what Cameron (2005) terms the *difference* paradigm of language and gender research, concerned with overarching linguistic differences between men in general and women in general (in contrast to a more explicitly feminist *dominance* paradigm, which has researched women's subordination through language). However, more recent language and gender research has come to emphasize a third paradigm: gender *diversity*, which seeks local explanations for observed differences between men and women in particular contexts (Eckert & McConnell-Ginet, 2003; Cameron, 2005).

Contemporary researchers in applied linguistics have come to define gender as "a system of social relations and discursive practices" (Pavlenko & Piller, 2001, p. 17). Thus, current theory sees gender not as an essential attribute of the individual human being, but rather as a way for people to position each other in socially meaningful (and often stereotypical) categories such as "men," "women," "jocks," or "homemakers" (Eckert & McConnell-Ginet, 2003). These gendered categories, sometimes referred to as subject positions, exist in relation to each other (e.g., "homemaker" in relation to "breadwinner"), and in relation to gendered institutions, such as schools or corporations. Each category additionally involves forms of social action (practices), such as playing football or watching soap operas. These practices can be seen as discursive in that they connect to social discourses, characteristic ways of referring to and evaluating common topics, such as sexuality or education (Fairclough, 1992). Considering gender from this perspective, it is important to remember that gendered social relations and discursive practices vary markedly across social contexts and situations of use; that they are historically and socioculturally specific; and that they may be resisted as well as embraced by individuals or social groups.

In coming to view gender in this fluid and dynamic way, applied linguistics has moved away from previous attempts to identify universal contrasts between "men's language" and "women's language." Exemplifying this earlier approach, Green and Oxford wrote in 1995, "If gender differences appear in many studies across different cultures, this suggests that biological and/or socialization-related causes for these differences might exist and that these causes might have a real, if subtle, effect in the language classroom" (p. 266). In their study of L2 learning strategies among university English students in Puerto Rico, they found, for example, that female students were significantly more likely to use what they refer to as "rather global strategies" (p. 289), such as "skim then read carefully," a finding which they connect to previous research on women as "global learners." Interestingly, the one strategy used more often by men, "watch TV or movies in English," was explained as due to the fact that English-language programming in Puerto Rico was dominated by sports coverage (popular with men), while women were more likely to watch Spanish-language soap operas (telenovelas).

Green and Oxford's argument that "gender difference trends in strategy use are quite pronounced within and across cultures" (1995, p. 291) is based on extensive research. Nevertheless, as Chavez points out in a discussion of this research, "it becomes difficult

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to compare findings across studies [due to] . . . a lack of consistency in labels and corresponding definitions" (2001, p. 177). The picture that emerges from a broad literature review into gender differences in language learning (e.g., Chavez, 2001) is that differences between male and female language learners are easy to find—but that these differences tend to be inconsistent across contexts. For example, contrary to Green and Oxford's 1995 contention that women tend to be more "global" learners than men, Brantmeier (2003) found men more likely to use "global" strategies than women for L2 reading comprehension—but only when reading a passage designated by the researcher as "male-oriented" (chosen to appeal to stereotypically masculine readers).

Such research on gender and language learning often notes the theoretical distinction between "gender" (masculine/feminine) as cultural and "sex" (male/female) as biological, but may nonetheless conflate the two concepts as synonymous in practice, as in Brantmeier's (2003) use of the term "male-oriented," which implies that men by nature of their biology will be interested in reading about boxing. Even researchers such as Chavez (2001), who argue that gender differences result from socialization, nevertheless have some tendency to look for patterns of gender difference on small cognitive measures (such as the amount of correct vocabulary identified on listening comprehension tests), and then to explain these differences as perhaps due to common socialization practices across "European–American" communities.

Cameron's "gender diversity" paradigm (2005), in contrast, avoids such sweeping generalizations, and prioritizes local explanations for observed gender differences. A good example of such an observed difference would be the tendency among the Puerto Rican men who filled out Green and Oxford's 1995 survey to watch sports on English-language cable television—a practice that could potentially have a helpful effect on their listening comprehension in English. Of course, gendered discursive practices such as watching television sports coverage often transcend local contexts, but also vary significantly between and within them, depending on a number of social factors, from language proficiency to social class. Because of this variability in local realizations of gender, it has become common to discuss "masculinities" and "femininities" as plural terms (Eckert & McConnell-Ginet, 2003; Cameron, 2005).

Since the beginning of the 21st century, researchers have begun to examine how learners' gendered identities shape and are shaped by their L2 development (e.g., Pavlenko, Blackledge, Piller, & Teutsch-Dwyer, 2001; Davis & Skilton-Sylvester, 2004; Langman, 2004). Although identity is a word with many definitions, it is useful to see identity within language-learning contexts as "a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities" (Wenger, 1998, p. 5). Moreover, because individuals often belong to multiple communities and may have multiple roles and relationships even within small social groups, identities are best conceptualized as multiple rather than unitary. A number of studies show that when learner identities are discounted, resistance rather than learning is likely to result (e.g., Norton, 2000). Likewise, when language and literacy development become congruent with learner identities, learning is enhanced (e.g., Ibrahim, 1999). Because gender affects group participation (Eckert & McConnell-Ginet, 2003), identity development tends to be highly gendered, as is the situated learning that occurs from participation in discursive practices (Wenger, 1998).

In a review of ethnographic findings on multilingualism and gender, Ehrlich found that speakers' acquisition of language varieties often depended on participation in cultural and workplace practices that varied by gender: "Men and women may have differential attitudes towards and concomitantly differential motivation and incentive for learning or using languages . . . depending on the particular way that gender identities and gender relations are constituted in that community" (1997, p. 430). In this regard, some studies of immigrant

women and families have emphasized the gendered constraints that work against language and literacy development. For example, in Rockhill's (1993) research in a southern California Latino community, she found that men had more opportunity to learn English in the workplace, and that family pressures, including domestic violence, kept many women from pursuing English-language education. Similarly, in a study of Portuguese factory workers in Canada, Goldstein (1997) observed that men's mechanical or technical positions at work enabled them to improve their English through contact with non-Portuguese speakers, whereas women's labor on the production lines tended to segregate them in a monolingual Portuguese environment.

In contrast to the above authors' emphasis on how the gendered practices of immigrant communities can impede women's language learning, Norton's study of immigrant women in Canada (Norton Peirce, 1995; Norton, 2000) significantly introduced a new concern with language-learner agency. For example, Norton illustrates how one woman drew strength from her maternal identity to overcome anti-immigrant prejudice: having come to Canada so that her children could have a better future, Martina used her developing English skills to keep contemptuous coworkers or unscrupulous landlords from jeopardizing her family's finances. In Norton's analysis, when mainstream Canadians employed a discourse that positioned immigrants as ignorant and exploitable, Martina was able to "set up a counter-discourse . . . by resisting the subject position immigrant woman in favor of the subject position mother" (2000, p. 127).

Norton's focus on agency, as well as on the ways that gendered identities, practices, and discourses affect language learning, has continued in subsequent ethnographic studies. For example, in McKay and Wong's 1996 study of Chinese immigrant youth in California, one boy's identity as a popular athlete facilitated making friends with English-speaking classmates; this improved his speaking skills but gave him less reason to focus on academics. Ibrahim (1999) wrote about Francophone African youth in Canada who acquired English through participation in practices and discourses of hip-hop—within an environment where identities such as "rapper" or "DJ" were more open to young men than to their female counterparts. In contrast, when Gordon (2004) studied a Lao refugee community in Philadelphia, she found women learning more complex English than their husbands through their gendered participation in "domestic events," such as interacting with school personnel, selling used cars, and advocating for their children in the juvenile justice system.

Indeed, going beyond Ehrlich's (1997) contention that men's and women's language learning depends on the gendered practices of their communities, Menard-Warwick (2009) argues that L2 learning is more crucially shaped by the ways in which individuals respond to the gendered discourses of their families and local communities. In an ethnographic study, she contrasts two Latina immigrants in California, one of whom began studying English at home after her husband convinced her that she needed the language to protect her children from urban perils—while the other acquired English in the workplace after a long battle with her husband who believed her place was in the home. Hruska (2004) has a similar focus on learner agency within an overall context of male dominance. In a study of English learners in a US kindergarten, she found that the child whose L2 skills developed the most was a boy who managed to transcend gender binaries and make friends with both male and female classmates. Conversely, Teutsch-Dwyer (2001) chronicled how the masculinities of a Polish immigrant in California tended to limit his lexical and grammatical acquisition as his conversational participation was scaffolded by overly supportive female coworkers.

Although the above studies all consider gender in North American immigrant communities, similar gendered trends have been found in other learning contexts. Western women in Siegal's 1996 study found the gender roles encoded in Japanese phonology and morphosyntax to be in conflict with their own assertive subjectivities. As one said about

a Japanese female acquaintance, "I cannot stand the way she talks. She is so humble all the time. I don't want to be that humble" (p. 356). Therefore, in Siegal's analysis, these learners' identities conflicted with the acquisition of pragmatic competence in Japanese. In widely cited research on study-abroad students in Russia, Polanyi (1995) found that female students' contact with Russian speakers was severely limited by experiences of sexual harassment, and as a result women did not develop oral skills to the same extent as the men in their study-abroad group. Talburt and Stewart (1999), in a case study of an African American student in Spain, additionally noted that these problems of sexual harassment can be intensified by racism.

In studies of foreign-language learning, Sunderland (2000) and Carr and Pauwels (2006) contrast the experiences of boys and girls in classrooms in England and Australia respectively. Both found that boys' participation in classroom interaction was constrained by gendered discourses of masculinity that saw language learning as a feminine field. While some teachers in Carr and Pauwel's study were able to counteract these discourses by engaging boys in active learning through Internet technology or drama, even boys who were dedicated language learners felt social pressure to concentrate on more "masculine" pursuits such as sports or science. As a young male participant in Sunderland's study claimed, "boys have a limit what [*sic*] they can do" (2000, p. 168). As a result, Sunderland argues that "the type of femininity being 'performed' or constructed in this class by the teacher and the girls was a distinctly academic one relative to the boys' masculinity" (2000, p. 168).

Here Sunderland cites Butler's theory of performativity (1999), which has profoundly influenced gender studies over recent decades, but which has inexplicably been little used in studies of gender and language learning. Introducing language and gender studies, Eckert and McConnell-Ginet write that gender should be seen not so much as something that people have, but rather as something that people do: "Gender doesn't just exist, but is continually produced, reproduced, and indeed changed, through people's performance of gendered acts" (2003, p. 4). While L2 scholarship has paid little attention to this theoretical perspective, a number of current scholars in the related field of literacy research describe individuals "performing" gender in literacy events and practices (Blackburn, 2002–3). For example, Finders (1997) describes a clique of early adolescent girls who enacted a "normal teenager" version of femininity through such literacy practices as writing notes in class and reading fashion magazines. Similarly, Dutro (2002–3) shows how boys performed masculinity through public choices of reading materials in their fifth-grade class. These studies emphasize powerful connections between learning and identity, demonstrating how literacy development becomes particularly intense when it enacts valued identities (Blackburn, 2002–3). Applications of this theory to studies of L2 learning would be a valuable direction for future research.

To conclude this discussion, it is clear that much of the research on L2 acquisition and gender can be classified within two early paradigms of language and gender research (Cameron, 2005): either a feminist focus on men's linguistic dominance over women (e.g., Rockhill, 1993) or a less political emphasis on gender differences (e.g., Green & Oxford, 1995). However, since the emerging picture of gender and L2 learning across a number of studies is considerably more complex than either of these paradigms might allow, research into gender and language acquisition has necessarily begun adapting itself to Cameron's third paradigm (2005), that of gender diversity. Thus, we can look forward in future to research on gender and SLA in even more diverse linguistic contexts, including study-abroad programs, foreign-language classrooms around the world, online communities, intercultural families, and immigrant neighborhoods. It would be helpful if, as in Teutsch-Dwyer's 2001 study, more of this research balanced detailed descriptions of learners'

gendered social contexts with close analysis of their specific trajectories of linguistic development (lexical, grammatical, pragmatic, etc.). We can additionally hope that this research will increasingly demonstrate an ever greater theoretical sophistication drawn from the larger fields of applied linguistics and gender studies.

SEE ALSO: Analysis of Gender in Interaction; Cameron, Deborah; Conversation Analysis and Gender and Sexuality; Family Literacy; Feminist Research; Identity and Second Language Acquisition

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Generalizability Theory in Language Testing

ATTA GEBRIL

Introduction

Reliability investigation in educational measurement, and consequently in language assessment, primarily focuses on estimating the consistencies and inconsistencies in test scores. The question here, as Lado (1961, p. 31) puts it, is whether "a test yields the same scores one day and the next if there has been no instruction intervening." Examples of possible sources of inconsistencies could be test administration conditions, test content, or raters. Classical test theory (CTT) has been traditionally used to examine score reliability since the beginning of the 20th century (Traub, 1997). In CTT, a test score, which is called an observed score (X), is a combination of a true score (T) and an error score (E) as manifested in the following model: $X = T + E$. When investigating score reliability, the objective is to estimate the true (T) and error (E) scores. In the early 1970s, Cronbach and his colleagues introduced generalizability theory (G theory) as an alternative methodology that can provide more information about sources of variability in test scores (Cronbach, Gleser, Nanda, & Rajaratnam, 1972).

Brennan (2003) defines G theory as a measurement model that "provides an extensive conceptual framework and set of statistical machinery for quantifying and explaining the consistencies and inconsistencies in observed scores for objects of measurement" (p. 3). He argues that both CTT and analysis of variance (ANOVA) are the parents of G theory, but he cautions in another paper that G theory is not intended to replace CTT or limited only to traditional ANOVA (Brennan, 2000). Looking at the CTT model ($X = T + E$) and also the G theory definition, it is evident that G theory attempts to investigate the same issues addressed in CTT. However, CTT provides only one error term (E) and falls short of accounting for different sources of error. Making use of ANOVA, G theory can disentangle different sources of errors. In addition, the interaction between these sources of errors could also be reported in a generalizability analysis. For example, in a writing assessment context, a number of variables could confound test results, such as, tasks, raters, scoring rubrics, and so forth. In a CTT analysis, the relative contribution of these variables to a test score could not be quantified. Yet in a G theory analysis, the researcher can provide information about these variables and their relative contribution. Other advantages of G theory over CTT include providing a unified approach to assessing reliability for both norm-referenced and criterion-referenced situations, and also optimizing measurement for a specific testing context (see below).

Conceptually, Messick (1989) looks at G theory from two different standpoints: reliability and transfer. Generalizability as reliability refers to "the consistency of performance across the tasks, occasions, and raters of a particular assessment which might be quite limited in scope," but generalizability as transfer refers "to the range of tasks that performance on the assessed tasks is predictive of" (Messick, 1996, p. 250). Perhaps generalizability as reliability is relatively clear since it has to do with the long-standing definition of reliability; however, generalizability as transfer might need more explanation. The context

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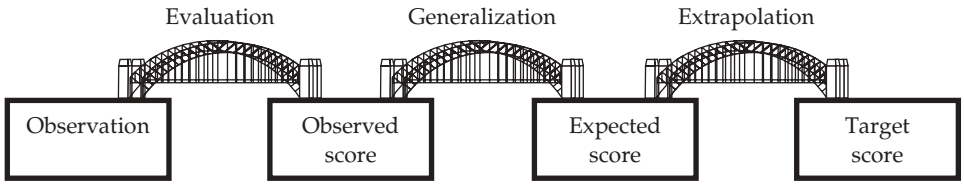

Figure 1 The bridge analogy representing the chain of inferences in an assessment context (Chapelle, Enright, & Jamieson, 2008, p. 10). © 2008 by the Taylor & Francis Group

of speaking assessment provides a good example. A language teacher/tester judges a test taker's speaking ability based on a limited number of tasks, rather than all the possible speaking tasks in the target language use (TLU) domain (Bachman, 1990). However, we make inferences from the observed behavior (test tasks on the speaking test) about all the speaking tasks in the TLU domain. This process, as Kane, Crooks, and Cohen (1999) argue, depends on an interpretive argument that incorporates a chain of inferences. Kane et al. (1999) present a model that shows how this mechanism functions in an assessment context using the bridge analogy. In this model, there are three inferential bridges, each of which requires support for any assumptions or claims made by a test developer/user. As shown in Figure 1, the first of these three bridges is called evaluation and it is established when performance on a specific test is quantified in the form of an observed score. The second bridge focuses on generalization and refers to the inferences made about the expected performance of an examinee, statistically inferred from his or her observed score, across all the tasks in the universe of generalization (Kane et al., 1999). The final link or bridge is extrapolation and refers to the examinees' expected scores, being reflective of their actual ability and scores that they would have obtained in the target domain (Chapelle, Enright, & Jamieson, 2008). Clearly, any test design and administration decisions impact the quality of the interpretive argument and accordingly affect score generalizability. When we have a strong interpretive argument, we are confident to a great extent that a test score is an accurate representation of the ability of interest.

Basic Concepts in G Theory

This section addresses a number of G theory concepts that the reader might not be familiar with, including test facets, decision and generalizability studies, and more importantly the different generalizability indices.

One of the important aspects of G theory is the identification of sources of variation in test scores. Sources of variation are called "facets of measurement" in a G study and are identified by the researcher or test developer when conducting a generalizability analysis. For example, in a one-facet design, say items on a multiple-choice test, sources of variation include object of measurement (in G theory terminology, object of measurement refers to persons/test takers and is denoted as p) and the facet of interest "items" denoted as (i). In this design, the variance (denoted as σ^2) components are as follows: persons $\sigma^2(p)$, items $\sigma^2(i)$ and the interaction of persons and items $\sigma^2(pi)$. So, a test score variance $\sigma^2(Xpi)$ in this one-facet design is represented in the following formula:

$$\sigma^2(Xpi) = \sigma^2(p) + \sigma^2(i) + \sigma^2(pi)$$

In generalizability theory, the object of measurement variance $\sigma^2(p)$ is analogous to true score variance in CTT. The other variance components obtained from the different facets,

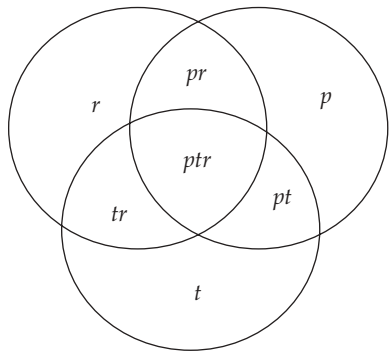

Figure 2 Variance components in a two-facet design

such as items (i), and raters (r), and also the interaction between these facets, may contribute to different types of error variance. These types of error variance in generalizability theory are comparable to the error term in CTT.

A researcher may decide to focus on more than one facet in an assessment context. For example, Gebril (2009) used a two-facet design looking at the impact of both tasks (t) and raters (r) on test scores. As shown in Figure 2, this design has seven variance components: *person* $\sigma^2(p)$; task $\sigma^2(t)$; *rater* $\sigma^2(r)$; the interaction of persons and tasks $\sigma^2(pt)$; the interaction of persons and raters $\sigma^2(pr)$; the interaction of tasks and raters $\sigma^2(tr)$; and the triple interaction of persons, tasks, and raters $\sigma^2(ptr)$. This could be summarized in the following formula:

$$\sigma^2(X_{ptr}) = \sigma^2(p) + \sigma^2(t) + \sigma^2(r) + \sigma^2(pt) + \sigma^2(pr) + \sigma^2(tr) + \sigma^2(ptr)$$

In G theory, we differentiate between two types of studies: generalizability (G) studies and decision (D) studies. While the main purpose of a G study is to estimate the different variance components, a D study makes use of the G study data to optimize the measurement for a certain decision-making purpose (Shavelson & Webb, 1991). In other words, the G study variance components are utilized in a D study to compute reliability indices under different conditions. In simple mathematical terms, a D study variance component signifies the ratio of the G study variance component and its respective sample size that is defined by the researcher. It is worth mentioning that the object of measurement variance is the only component that does not change in both studies since this value refers to the test taker's universe/true score. In the writing assessment example provided earlier, if two raters scored the essay, then a D study can use this information to estimate the changes in score reliability when using different numbers of raters. For example, we can decrease the number of raters from two to one (as shown below in the sample study) or increase it to three. Then, based on the analysis, these scenarios provide information for test developers about score reliability under different conditions, so that they can make decisions with regard to how many raters could be employed for a specific assessment context.

It is also important to distinguish between two types of decision-making situations in G theory: absolute and relative decisions. When absolute decisions are made, scores are compared to a set of criteria. In relative decisions, the relative standing or rank order of test takers is of interest. This distinction is of crucial importance since the components of measurement error are based on how the decision is defined (Brennan, 2001). Accordingly, the G theory indices used will depend on whether norm-referenced or criterion-referenced

interpretations are made based on test scores. Generally, there are four main indices obtained from a generalizability analysis: generalizability coefficient $E\rho^2$, phi coefficient $\hat{\Phi}$, absolute error variance $\sigma^2(\Delta)$, and relative error variance $\sigma^2(\delta)$. Both generalizability and phi coefficient are analogous to traditional reliability indices in CTT. A generalizability coefficient is used in situations where norm-referenced interpretations are of interest and it is computed based on relative error variance. On the other hand, a phi coefficient is used in criterion-referenced contexts and is computed based on absolute error variance. Absolute error variance is generally larger than relative error variance since it often includes all variance components except for the object of measurement variance $\sigma^2(p)$. Consequently, the phi coefficient will be smaller than the generalizability coefficient, given that both depend on error variance indices as mentioned earlier. For more information about how to interpret different score reliability indices, see Brennan (2003) and Johnson and Johnson (2010).

One final point that needs clarification in this section is the difference between univariate and multivariate generalizability. In univariate G theory, there is only one universe score for the object of measurement, while multiple universe scores could be obtained for the same object of measurement in multivariate generalizability theory (Brennan, 2003). That is why multivariate generalizability analysis is used when a test has a number of sections or subtests, and subsequently there is interest in investigating composite score reliability. Having one universe score does not permit univariate analysis to look into composite score reliability based on a number of test sections or subtests. Gebril's study presented in the following section explored two types of writing tasks: integrated and independent. Since Gebril (2009) analyzed the two tasks separately, univariate generalizability analysis was employed. Had independent and integrated tasks in this study been considered as subsections of the same test, multivariate generalizability analysis should have been used. For an example of a multivariate generalizability analysis, see Gebril (2010) and Brennan, Gao, and Colton (1995).

An Example of a G Theory Study

To better illustrate the concepts and terminology in G theory, the study of Gebril (2009) can serve as an example. This study investigated score reliability of both independent and integrated writing tasks. More specifically, the study attempted to answer the following questions regarding the use of integrated and independent tasks in an academic writing context:

- What percentage of the total score variance can be attributed to persons, tasks, and raters?
- What is the effect of successively increasing both the number of tasks and raters from one to four on score reliability?

To answer these questions, 115 English as a foreign language (EFL) students were asked to complete two independent and two reading-to-write tasks. These essays were holistically scored by three raters, who received training before scoring these tasks. Accordingly, the universe of admissible observations (UAO) for this study includes two facets: tasks (t) and raters (r). The study used a "fully crossed" design ($p\ x\ t\ x\ r$): The word "crossed" (denoted as x) means that all test takers responded to the same test tasks and these tasks were scored by the same raters. In some G theory studies, examinees take different tasks or the tasks are scored by different raters; these are called "nested" designs. For the purpose of this discussion, the focus will be on the independent tasks data only.

Table 1 Generalizability analysis for a writing test

Sources of variation	*VCS for G study* $n_t = 2$ & $n_r = 3$	*VCs for D study* $n_t = 2$ & $n_r = 1$	$n_t = 2$ & $n_r = 2$
$\sigma^2(p)$	0.149	0.149	0.149
$\sigma^2(t)$	0.000	0.000	0.000
$\sigma^2(r)$	0.000	0.000	0.000
$\sigma^2(pt)$	0.098	0.098	0.049
$\sigma^2(pr)$	0.015	0.015	0.008
$\sigma^2(tr)$	0.007	0.007	0.002
$\sigma^2(ptr)$	0.181	0.336	0.045
σ^2 (δ) relative error		0.290	0.102
σ^2 (Δ) absolute error		0.301	0.103
$E\rho^2$ G coefficient		0.336	0.594
$\hat{\Phi}$ phi coefficients		0.331	0.590

Notes: n_t = number of tasks; n_r = number of raters

As pointed out earlier, the main purpose of a G study is to estimate the variance components (VC) for the different facets/effects using ANOVA procedures. As shown in Table 1, the VC for person (*p*) is (.149). This value refers to the person's expected mean score across all tasks and raters in the UAO (as mentioned earlier, this value is similar to true score variance in CTT). The estimated VC of task mean score is (.00), which indicates that all tasks in the UAO have the same difficulty level. The same value was obtained from the rater (*r*) facet, which shows rater consistency. As for the interaction VCs, these values refer to the relationship between the different test facets. For instance, there is a relatively large VC for the interaction of persons and tasks (*pt*), which suggests different rank ordering of persons across different tasks. The VC for the (*pr*) interaction has a relatively small value, which indicates that test takers were rank ordered similarly by different raters. Some of the VCs are very close to zero (some of them actually have a value of zero as shown in the task and rater VCs), suggesting that these components do not contribute to score variability. In conclusion, the total score variance in this design consists of seven different components shown in the first column of Table 1. These G study VCs are used to estimate the D study VCs, which will be explained next.

In this study a number of hypothetical scenarios were suggested to investigate the impact of increasing the number of tasks and raters on score reliability. The focus of this section will be only on two D studies where the number of raters was increased from one to two while keeping the number of tasks constant, as Table 1 shows. As mentioned earlier, there are four main indices obtained from a D study: generalizability coefficient, phi coefficient, absolute error variance, and relative error variance. In the following section, a description of how these indices vary with changes in the number of tasks and raters is presented. The D study results shown in Table 1 demonstrate substantial improvement in score reliability when moving from one rater ($n_r = 1$) to two raters ($n_r = 2$) while keeping the number of tasks constant ($n_t = 2$). For example, the generalizability coefficient jumped from .336 ($n_r = 1$) to .594 ($n_r = 2$). The same happened with the phi coefficient, which improved by a value of .26. So, as shown in this data set, it might be better to use two raters in this assessment context. To conclude, these scenarios provide invaluable information for testing programs when making test-related decisions.

G Theory Software

A number of computer programs are available for generalizability analysis, and most, if not all, of these programs are accessible as freeware. These different programs come with manuals that offer step-by-step guides for organizing and analyzing data.

The most widely used suite of programs was developed by Robert Brennan and is available for download from http://www.education.uiowa.edu/casma/computer_programs.htm. This package is called the GENOVA suite, and includes the following computer programs for generalizability theory analysis:

- *GENOVA*: This computer program is used for univariate generalizability analysis. It can run both G and D studies.
- *mGENOVA*: This computer program is used for conducting multivariate generalizability analysis with both G study and D study capabilities. It is worth mentioning that this program is used with a limited number of designs.
- *urGENOVA*: This program is used to estimate the variance components for unbalanced random effects (for more information about unbalanced designs, see Brennan, 2001). urGENOVA does not have D study capabilities.

EduG is another generalizability analysis program with a simpler layout. It can be downloaded from http://www.irdp.ch/edumetrie/englishprogram.htm. This program is ideal for those who have basic understanding of generalizability theory and need a user-friendly interface. For more information about EduG, see Cardinet, Johnson, and Pini (2010).

Conclusions

G theory is a powerful tool for estimating the consistencies and inconsistencies in test score and for also providing test developers with scenarios that can help them make informed decisions related to test development and administration. G theory could be used effectively in investigating the relative contribution of different facets to test precision. For example, the rater facet is always an issue in language testing, especially in language performance assessment. Testing programs have to make decisions with regard to the number of raters needed for a certain test. For instance, the decision whether to use two or three raters hinges on the score dependability of data obtained from a D study based on a scenario including two raters and another one including three. The task facet is another variable of interest in test design. G theory can also provide information about the impact of increasing or decreasing the number of test tasks. Accordingly, the final number of test tasks is identified based on the precision indices obtained from a generalizability analysis. Testing programs can also make use of the powerful tools of G theory in their test validation studies in order to optimize the measurement precision of their exams. The Test of English as a Foreign Language (TOEFL) program is a good example of how generalizability analysis is used in test validation. Educational Testing Services (ETS) conducted a number of studies to investigate the score reliability of the TOEFL test using G theory (e.g., Lee & Kantor, 2005). From the previous discussion, it is clear that G theory has wide applications in language test development given its powerful tools and the rich data obtained from a generalizability analysis. The currently available generalizability software has made the relatively complicated G theory calculations easier, and hopefully these new computer programs will encourage more language testers and teachers to use G theory in test development and validation.

SEE ALSO: Reliability in Language Assessment

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Suggested Readings

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Generative Grammar

SATU MANNINEN

Generative grammar is an approach to linguistics which is usually associated with Noam Chomsky and his followers, starting in the mid-1950s and continuing to the present day. Generative grammar has had a number of different names through its development. These include transformational grammar (TG), transformational-generative grammar (TGG), standard theory (ST), extended standard theory (EST), principles and parameters model (P&P), government and binding theory (GB), and the minimalist program (MP). For an overview of the development, see, for example, Ouhalla (1994, 1999); Newmeyer (1996); Cook and Newson (2007); Freidin (2007). A number of alternative approaches have branched off the "Chomskyan" mainline. These include lexical-functional grammar (LFG, see e.g., Bresnan, 2001; Dalrymple, 2001; Carnie, 2002), generalized phrase structure grammar (GPSG, see e.g., Gazdar et al., 1985), and its successor head-driven phrase structure grammar (HPSG, see e.g., Pollard & Sag, 1994; Carnie, 2002; Levine & Meurers, 2006), and optimality theory (OT, see e.g., Prince & Smolensky, 2004). What often distinguishes these alternative approaches from the "Chomskyan" mainline is their stand on how many linguistic levels there are, and how these levels should be related to each other (i.e., via *transformations* or through some other formal mechanism).

Generative grammar, in its various forms, assumes that all linguistic phenomena can be subject to formal analyses, and that they can, in fact, be best explained in such terms. Generative grammar is therefore in opposition to the functional family of linguistic theories, which assumes that language is essentially a means of communication between humans, and that all linguistic phenomena should therefore be analyzed in terms of their communicative function.

Within Chomskyan traditions, the grammar of a language is thought to consist of several separate components; what these components are and what they should be called has varied a lot over the years. I will start with an overview of the processes and terminology used within the (early) minimalist traditions, and then go back in time and discuss some key concepts (for overviews, see e.g., Chomsky, 1993, 1995, 2000; Radford, 1997, 2004; Ouhalla, 1999; Carnie, 2002; Adger, 2003; Hornstein et al., 2005; for accessible overviews within preminimalist traditions, see e.g., Radford, 1988; Haegeman, 1994; Ouhalla, 1994). One of the key components is the lexicon, which can be thought of as a list of lexical items in a language and their idiosyncratic properties. In order to form a given expression in a language, such as the sentence *The dog ate the bone* in English, a speaker must first select a set of lexical items known as the "numeration" or the "lexical array" from the lexicon. These lexical items are then combined, through a series of operations, in the syntactic/computational component of the grammar. This process is known as the *derivation*. The task of the syntactic/computational component is to form expressions which can serve as input to the two interpretive components of grammar. The phonological component maps the "sound aspects" of the expression into a phonetic form representation, while the semantic component maps the "meaning aspects" of the expression into a semantic or logical form representation. The task of the phonetic form and semantic/logical form representations is to *interface* with the language-external systems of speech and thought. We can think of these representations informally as "instructions" about sound and meaning to the systems of speech and thought: these "instructions" tell the speaker-hearer

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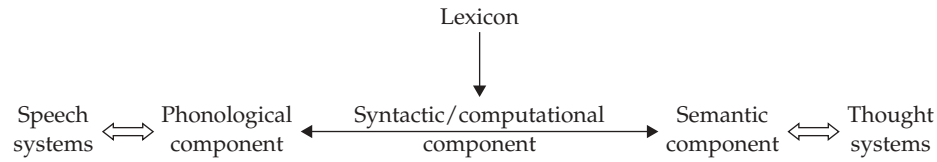

Figure 1 Components of grammar

something about (for example) the pronunciation and the intended interpretation of the expression. We can represent the separate components of grammar as shown in Figure 1; the block arrows represent the points where the system interfaces with the language-external systems of speech and thought.

The idea that the syntactic/computational component is able to produce all and only the well-formed expressions of a language has been part of generative grammar from its early days. According to Chomsky (1965, p. 8) a generative grammar is then "simply a system of rules that in some explicit and well-defined way assigns structural descriptions to sentences."

A well-formed expression is one that can be assigned a structural description by the grammar; in minimalist terminology, this means that the expression can be "interpreted" by the language-external systems of speech and thought. An ill-formed expression is, in turn, one that cannot be "interpreted" by the language-external systems. The idea that an expression can be "interpreted" is related to the notion of *convergence* (e.g., Chomsky, 2000, p. 95). If an expression is *legible* at an interface level (i.e., if it consists solely of material that can be "understood" by the language-external system in question) the derivation is said to *converge* at that level. If the derivation fails to converge, it is said to *crash*. This happens, for example, when an expression that is intended to interface with the speech systems still contains "instructions" about meaning and interpretation. Because such "instructions" are incomprehensible to the speech systems, the derivation crashes and results in ill-formedness (i.e., in an expression that cannot be assigned a structural description).

Innateness and Universal Grammar

The syntactic/computational component of grammar is able to produce an infinite number of well-formed expressions in a language, by applying, often recursively, a finite set of formal grammatical rules. These rules are subconscious, in the sense that they are part of the mind/brain of an ideal speaker-hearer. According to Chomsky (2000, pp. 90–1) there is

> a faculty of language FL, a component of the human mind dedicated to language. . . . FL can be regarded as a "language organ," in the informal sense in which visual system, the immune system, and the circulatory system are commonly described as organs of the body.

One of the central—and most controversial—ideas in generative grammar is that the language faculty has an initial state which is *genetically endowed*. This means that human children are genetically programmed to learn language. The initial state of the language faculty is known as *universal grammar*; it may be characterized informally as the rules or principles that are common (i.e., universal) to all human languages. Experience of a particular language (such as the actual words, phrases, and sentences that children hear native speakers use in different speech situations around them) serves as the input to each

child's language faculty incorporating universal grammar, and provides the child with a means for developing the grammar of that particular language. The idea is, then, that certain aspects of grammar are determined by universal rules or principles which are genetically endowed and innate, but that experience (i.e., exposure to primary linguistic data from a particular language) determines if the child will grow up speaking English, Swedish, Japanese, or something else. For more detailed accounts, see, for example, Chomsky (1965, 1986, 1995, 2004, 2005, 2007); Chomsky, Fitch, and Hauser (2002).

Haegeman (1994, p. 14) and Carnie (2002, p. 23) discuss some simple examples of how the rules or principles provided by universal grammar can result in differences between individual languages. It is widely known that sentences in natural languages contain elements that are traditionally labeled subjects and objects. These elements need not appear in the same order in all languages, however. In English, illustrated in (1) below, objects normally follow the lexical verb in linear order, whereas in Japanese, illustrated in (2), they precede it (examples from Haegeman, 1994, p. 14):

(1) John hit Mary.

(2) John-ga Mary-o but-ta.
John-particle Mary-particle hit-past
'John hit Mary'

The pattern in (1)–(2) is an instance of what is known as the *head parameter*; this parameter allows the grammarian to capture the fact that in some languages, heads systematically precede their complements in linear order, whereas in others, they follow them. In a head-first language like English, this parameter predicts that the verb should come before the object in linear order, and that the language is likely to have prepositions instead of postpositions, whereas in a head-final language like Japanese, the parameter predicts that the verb should come after the object, and that the language is likely to have postpositions instead of prepositions. All grammatical variation between individual languages should be reducible to such parameters; the task of universal grammar is to specify the binary choice of values for each parameter.

Competence and Performance

In the 1960s, Chomsky proposed a distinction between *competence*, that is, native speakers' implicit knowledge of their language, and *performance*, that is, how native speakers put their implicit knowledge of language to use (how they use the language in different speech situations). The grammarian's task was to provide a description of native-speaker competence: to describe what native speakers really know when they know their language, so they are able to distinguish the *well-formed* expressions in their language from the *ill-formed* expressions. Providing a description of performance was necessarily outside the scope of inquiry (and it still is); this disinterest in language use is one of the reasons why generative grammar has been so heavily criticized especially within the functional family of linguistic theories.

The distinction between competence and performance is closely intertwined with the notion of descriptive and explanatory adequacy. A grammar is said to be *descriptively adequate* if it is able to "correctly describe the intrinsic competence of the idealized native speaker" (Chomsky, 1965, p. 24). A grammar that is *explanatorily adequate* is, in addition, able to provide some insight into the underlying linguistic structures in the human brain (Chomsky, 1965, pp. 25–6). So, instead of merely listing sets of universal properties of

natural language grammars, a system that is explanatorily adequate must be able to explain how children learning a specific natural language can succeed in selecting a descriptively adequate grammar for their language, on the basis of a limited amount of primary linguistic data. In recent years, attention has also been given to the question of why natural language grammars should have the properties that they have in the first place (e.g., Chomsky, 2004, 2005, 2007).

I-Language and E-Language

In the 1980s, Chomsky proposed a distinction between I(nternalized)-language and E(xternalized)-language, which is similar but not identical to the competence versus performance distinction. An E-language approach to linguistic theorizing treats language as an observable pattern of human action or behavior. Language, as the object of study, is externalized, in the sense that it is "understood independently of the properties of the mind/brain" (Chomsky 1986, p. 19). In contrast, an I-language approach treats language as a mental object; language is "some element of the mind of the person who knows the language, acquired by the learner, and used by the speaker-hearer" (Chomsky 1986, p. 22). Because language, in the sense of I-language, is a property of the human brain, the study of language must consequently be seen as a branch of (cognitive) psychology.

Levels of Representation and Transformations

Most "Chomskyan" approaches to language assume that the linguistic system has different *levels of representation* encoding systematic information about linguistic expressions. The earlier versions of generative grammar distinguish between two levels: *deep structure* and *surface structure*. The former is seen as the locus of semantic interpretation, while the latter corresponds to the actual (phonetic) form of the expression. This means that ambiguous expressions, such as *Flying planes can be dangerous* (from Chomsky, 1965, p. 21), must have different deep structures, but share the same surface structure form. Deep structures are mapped onto surface structures via series of *transformations*. A transformation is a formal linguistic operation that allows the two levels of representation to be placed in correspondence. We can represent the system as shown in Figure 2; the surface structure corresponds (roughly) to the phonetic/semantic form representations in Figure 1, and the transformations correspond to the syntactic/computational component.

One of the best-known transformations is *movement*. A simple example is given in (3) and (4).

(3) The dog is barking.
(4) Is the dog barking?

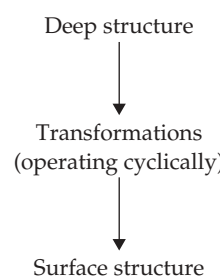

Figure 2 Levels of representation in early generative grammar

The *yes/no question* in (4) has been formed from an underlying declarative sentence in (3), by moving the auxiliary verb *is* across the sentence subject (i.e., the noun phrase *the dog*). The moving element can be either a head (head movement) or a phrase (phrasal movement). Examples of phrasal movement include *wh*-movement, exemplified in (6), passivization (8), and topicalization (10); the moved phrases are in italics. Movement leaves behind a *trace* in the original position; this is indicated by an italicized *t*:

(5) Is the dog eating the bone?
(6) *What* is the dog eating *t*?

(7) The dog ate the bone.
(8) *The bone* was eaten *t* (by the dog).

(9) The dog ate the bone.
(10) *The bone*, the dog ate *t* (. . . but the shoe, it left alone).

In generative traditions, the derivation of an expression is often represented in the form of a tree diagram; one of the best-known theories of phrase structure is *X′-theory* (X-bar theory), which aims to bring out the common properties of different syntactic constituents, such as NPs, VPs, and so on. See, for example, Chomsky (1970); Jackendoff (1977); Radford (1988); Haegeman (1994).

In the 1980s, standard government and binding theory posited four levels of representation: D(eep)-structure, S(urface)-structure, phonetic form, and logical form. The levels are again related via series of transformations, as shown in Figure 3.

The difference between government and binding theory and the system illustrated in Figure 1 is that each level of representation can be illustrated in the form of a (different) tree diagram, and is subject to different requirements. D-structure is the starting point of the derivation: it is also the level where an expression's semantic properties correspond to its grammatical properties. This means that semantic subjects correspond to D-structure subjects, and semantic objects to D-structure objects. S-structure is the point where the derivation splits into two parts: the branch that leads to phonetic form allows the expression to interface with the language-external system of speech, and the branch that leads to logical form is the locus of semantic interpretation. It also allows the expression to interface with the language-external system of thought. Characteristic of government and

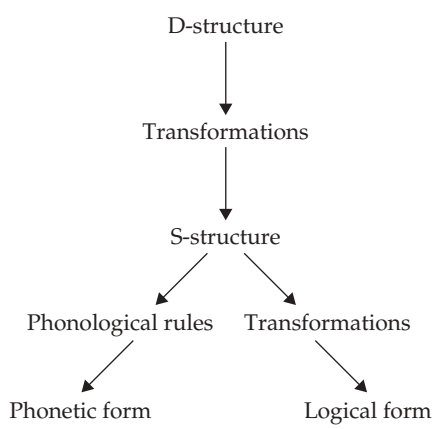

Figure 3 Levels of representation in government and binding theory

binding theory is that movement operations can be either *overt* (i.e., mappings from D-structure to S-structure) or *covert* (i.e., mappings from S-structure to logical form). An example of covert movement is so-called quantifier raising, which is taken to explain sentences such as (11) with scope ambiguity (i.e., the fact that they can have two readings):

(11) Everyone loves someone.
'For every person in the world, there is some other person who s/he loves'
'There is one specific person who everyone else in the world loves'

In government and binding theory, the different readings assigned to sentences such as (11) are treated as a result of the quantifiers having moved to different structural positions; as this movement has taken place after S-structure, it is not reflected in the overt (phonetic) form of the expression (May, 1985; Haegeman, 1994).

The minimalist approaches to language restrict the levels of representation to those that are required by *virtual conceptual necessity*—namely, to those that interface with the language-external systems of speech and thought. As the task of grammar is to ensure that a well-formed expression is assigned both a form and an interpretation, the levels of phonetic form and semantic/logical form are seen as being independently motivated on conceptual grounds. The derivation proceeds by merging material that has been selected from the numeration or lexical array, or by moving material from a structure that has been created earlier. Instead of X'-theory, minimalist approaches make use of the simple *bare phrase structure* theory. (Chomsky, 1995, 2000, 2001; Carnie, 2002; Adger, 2003; Radford, 2004; Hornstein et al., 2005).

Many recent minimalist approaches argue for what is known as *multiple spell-out*. This means that there is no *single* point in the derivation of an expression where the material that is relevant only for phonetic or for semantic interpretation is sent off to the phonetic form or the semantic/logical form branch. Instead, material can be sent off to these branches several times in the course of the derivation of an expression. The idea is that expressions are built *cyclically*, bit by bit, and when a specific point in derivation is reached, the material can be sent off to be interpreted. These bits are known as *phases* (Chomsky, 2001, 2006; Radford, 2004).

Nontransformationalist Approaches

There exist a number of alternative versions of generative grammar; these include lexical-functional grammar (LFG; e.g., Bresnan, 2001; Dalrymple, 2001; Carnie, 2002), generalized phrase structure grammar (GPSG; e.g., Gazdar et al., 1985), and its successor head-driven phrase structure grammar (HPSG; e.g., Pollard & Sag, 1994; Carnie, 2002; Levine & Meurers, 2006), and optimality theory (OT; e.g., Prince & Smolensky, 2004). LFG is characterized as being constraint-based, unification-based, and nonderivational, in the sense that structures are not seen as having been derived from other structures, via operations such as movement. Although LFG makes use of a number of different levels of representation, each of these is seen as modeling a different dimension of grammatical substance. They are not related via transformations; instead, they are associated by principles of functional correspondence.

HPSG is similar to LFG in being constraint-based, unification-based, and nonderivational. However, unlike LFG, which makes use of multiple levels of representation, HPSG is *monostratal*, in that it assumes only one level of representation. This level is encoded in a complex sign structure, and it contains information about phonology, syntax, and semantic interpretation all at the same time. This means that in HPSG grammars, a lot of information must necessarily be stored in lexical entries.

OT is a system where each input (such as a set of words) is thought to give rise to a set of outputs (e.g., a set of different sentences). Each output is evaluated with respect to a hierarchy of constraints, and the one with the least violations of these constraints is selected as the optimal candidate. Since the mid-1990s, OT approaches have been successfully employed especially in (morpho-)phonological research.

SEE ALSO: Cognitive Grammar; Formal and Functional Approaches to Grammar; Functional Grammar; Prescriptive and Descriptive Grammar; Systemic Functional Linguistics

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Generative Second Language Phonology

FRED R. ECKMAN

Introduction

Generative second language (L2) phonology attempts to characterize the underlying mental system used by adult language learners to produce and perceive L2 pronunciation patterns. This entry covers the historical context and the objectives of research programs in generative L2 phonology, describing some of the field's major findings over the past several decades.

Early Approaches to L2 Phonology

One of the earliest, best-known, and most straightforward proposals for explaining second language phonological patterns is the contrastive analysis hypothesis (CAH), which dates from the middle of the last century (Lado, 1957). Work on L2 phonology from the CAH perspective claimed that structural differences between the native language (NL) and target language (TL) were paramount in accounting for L2 utterances. The goal of these studies was to explain L2 learning difficulty. During this period, a phonological analysis consisted of a description of the phonemes of a language along with the distribution of their allophones. Phonemes are the sound units that function to distinguish the words and morphemes in a language, whereas allophones are sounds that are variants of phonemes in the language, and therefore do not function to distinguish words. Within the CAH framework, L2 pronunciation errors were attributed to differences among the phonemes and their distribution within the respective NL and TL, often leading to the L2 learner transferring phonemes from the NL to the TL.

In the decades following the postulation of the CAH, some studies supported it. However, many others ran counter to the hypothesis, and led ultimately to its demise. On balance, research within the CAH paradigm showed that, whereas NL influence played a role in explaining some aspects of L2 pronunciation patterns, the influence of the NL could not explain all of the facts. It became clear, therefore, that other principles were necessary to explain L2 learning difficulty. Since that time, research in L2 acquisition has sought to address this need. Attempts toward this end include proposals pertaining to the similarities between the NL and TL, facts about the relationship between production and perception, and principles of markedness.

Similarity between the NL and TL is a key concept in two important models focusing on the role of L2 perception, the speech learning model (SLM) developed by Flege (1995), and the perceptual assimilation model (PAM), proposed by Best (1995). The concept of "equivalence classification" is invoked in the work of Flege (1986, 1987), especially within his SLM, in which he hypothesizes that TL sounds that are "equivalent" or "similar" to NL sounds are difficult to acquire because the learner perceives these TL sounds as being the same as the NL sounds. When TL segments are perceived as equivalent to those of

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the NL, the learner does not establish a new phonetic category, that is, a set of variant pronunciations considered by the speaker to be the same sound, for the TL sounds. However, learners do set up new phonetic categories for TL sounds that are perceived as different from those of the NL. This, in turn, enables the learners to progress in acquiring these new phonetic categories. A similar approach to perception is taken within the PAM, in which non-native segments are perceived according to their similarities and differences relative to the native sounds.

Another principle introduced into SLA theory to help address problems with the CAH is typological markedness. The idea behind markedness is that binary contrasts or oppositions between certain linguistic elements (e.g., voiced and voiceless consonants—consonants articulated with the presence or absence, respectively, of vocal cord vibration; or open and closed syllables—syllables that, respectively, end in a vowel or in at least one consonant) are not simply polar opposites. Instead, one member of the opposition is considered to be privileged in that it occurs more widely, both across and within languages. This term has taken on different definitions within several distinct approaches to linguistics (Battistella, 1990). In L2 phonology, markedness, as defined in (1), was incorporated into the CAH as a measure of relative difficulty, forming the markedness differential hypothesis (MDH) (Eckman, 1977).

(1) *Typological markedness*
A structure X is typologically marked relative to another structure Y if every language that has X also has Y, but every language that has Y does not necessarily have X.

The MDH predicted that a given TL structure would be more difficult if that structure were different from the corresponding NL representation, and if it were also more marked than the NL structure. Whereas the CAH attempted to explain L2 learning difficulty only on the basis of differences between the NL and TL, the claim behind the MDH is that NL–TL differences are necessary, but not sufficient, for such an explanation. Therefore the MDH incorporated the concept of typological markedness as a measure of relative difficulty. Over the last three decades numerous studies have addressed the claims of the MDH, showing that typological markedness is a reliable predictor of difficulty, that there are cases where the directionality of difficulty between the NL and TL involved in a language-contact situation follows the predictions of the MDH, and that the relative degree of difficulty corresponds to the relative degree of markedness (Anderson, 1987; de Jong, Silbert, & Park, 2009).

The final proposal that we will discuss is the similarity differential rate hypothesis (SDRH), formulated by Major and Kim (1996). The SDRH reprises the idea from Wode (1976) and from Flege's SLM (1995) that dissimilar sounds may be easier than sounds that are similar to those in the NL. The SDRH claims that dissimilar structures are acquired more quickly than similar structures, with markedness as a mediating factor. According to this hypothesis, "rate of acquisition" is the basis for explaining many L2 pronunciation errors, not difficulty, as is stated in both the CAH and the MDH.

In summary, we have identified several proposals addressing some of the perceived shortcomings of the CAH. Thus, conventional wisdom within the field of L2 phonology is that, although the learner's NL has a role to play in explaining certain aspects of learning difficulty, NL influence is by no means sufficient to account for all L2 pronunciation patterns. Moreover, all the frameworks discussed in this section continue to be invoked by researchers to address questions and problems in L2 phonology.

More Recent Approaches to L2 Phonology: Interlanguage

Interlanguage (IL), a term coined by Selinker (1972), refers to the mental system representing the L2 learner's version of the TL. This mental system is used to produce and understand utterances of the TL. The IL grammar of the L2 learner must be different in at least some respects from both the NL grammar and the TL grammar. This is true, on the one hand, because the L2 utterances produced by the learner are different from that learner's NL utterances, and, on the other hand, because the L2 utterances of the learner are also distinct from those produced by native speakers of the TL. On this view, second language acquisition becomes the construction of a mental grammar, the interlanguage. And although the acquisition of this IL grammar may be based in part on structures transferred from the NL, and in part on input from the TL, the IL is to some extent independent of both the NL and TL, because at least some L2 patterns are not part of either the NL or TL.

An example of this kind of IL pattern in L2 phonology was reported in Altenberg and Vago (1983). The authors found that native speakers of Hungarian learning English exhibited an L2 pattern motivating a rule of word-final devoicing, that is, a pattern in which words that normally end in a voiced consonant are pronounced with the corresponding voiceless consonant. This conclusion is intriguing, as neither the grammar of the NL nor the grammar of the TL has a word-final devoicing rule, because both languages have a voice contrast in word-final position. Thus, the devoicing rule in the ILs of the Hungarian learners of English is independent of both the NL and TL in that it is not attributable either to NL transfer or TL input. This rule, however, is attested in other languages of the world, including Catalan, German, Polish, and Russian.

To summarize, the concept of interlanguage led directly to the possibility that L2 patterns could emerge that were independent of both the NL and TL. This possibility raised the question of whether IL grammars are in fact similar in important respects to L1 grammars.

Constraints on IL Grammars

With the postulation of the notion of interlanguage, the objective of SLA theory, and by inclusion, generative L2 phonology, changed from explaining learning difficulty in L2 acquisition to addressing the question of why IL grammars are the way they are. The response that the research programs of this era have given to this question is along these lines: "SLA is the way it is because IL grammars are the way they are; and IL grammars are as they are because they are constrained by general linguistic principles." In the case of L2 generative phonology, the constraints are principles of phonological theory, and within this context, it is also possible for explanations to hark back to the role of the learner's NL. Thus, a number of proposals hypothesized that various linguistic principles interacted with the NL grammar to explain L2 phonological patterns. Approaches to L2 phonology differed on which kinds of theoretical principles the investigators proposed as constraining IL grammars, and on the extent to which the learner's NL interacted with these constructs. We now turn our discussion to the kind of principles that were proposed as constraining IL grammars.

The development of phonological theory during this period led to a number of general principles and concepts from phonology, including distinctive features—articulatory properties of sounds; the types of rules postulated; underlying representations—representations of words within a grammar in terms of phonemes; and derivations—a mapping of underlying representations onto pronunciations. All were seen as a way of accounting for L2 utterances. As nonlinear proposals made their way into phonological theory, prosodic hierarchies (Zampini, 1997), metrical grids (Archibald, 1995, 1997), and feature geometry

(Brown, 1998, 2000) were also employed as explanatory principles in L2 phonology. These can be characterized as aspects of describing or representing words and morphemes in terms of hierarchies of phonological properties as well as a linear string of sounds. An additional source for constraints was linguistic universals, interpreted in the broadest sense, including typological generalizations and principles of universal grammar (UG). Typological generalizations are empirical statements that divide languages into different types based on the presence or absence of certain structures, such as voiced contrasts, plurals, definite articles, and various sentence types. UG is postulated to be an innate, cognitive device consisting of a set of principles that children employ for internalizing a grammar of their native language. More recently, as many theoretical phonologists have turned from rule-driven grammars to constraint-based analyses, studies have focused on L2 pronunciation in terms of optimality theory (OT). In OT, grammars consist of a set of ranked constraints instead of a set of rules, and constraint rankings and re-rankings in the learner's interlanguage determine the time course of acquisition (Hancin-Bhatt & Bhatt, 1997; Broselow, Chen, & Wang, 1998; Hancin-Bhatt, 2000, 2008). During this era, one of the important recurring themes in L2 phonology has been the reporting and proposed explanation of L2 phonological patterns that are not directly attributable either to the learner's NL or to the TL, but may be attested in the phonologies of other languages. Indeed, it is this kind of evidence that purports to show the fundamental properties involved in the acquisition of L2 phonology. Given this context, we now turn our discussion to some of the proposals for how L2 interlanguage phonologies are constrained.

The first example to be discussed involves the employment of prosodic hierarchies and metrical grids to account for the stress patterns of L2 learners. A prosodic hierarchy is a structural representation of the phonological domains relevant to the application of rules, with the phonetic segment being the smallest domain, the syllable the next larger, the prosodic foot consisting of a pair of syllables the next larger, and so on, with the utterance being the largest and most inclusive domain. A metrical grid is a structural hierarchy of the syllables and prosodic feet of a given utterance from which properties of stress can be predicted. Such constructs have been invoked (e.g., Archibald, 1993, 1995, 1997) to account for the acquisition of L2 stress patterns. Archibald found that the NL had a role to play in IL stress patterns in that L2 learners transferred some, or all, of their NL metrical grid into the IL grammar, but that the NL principles that applied to these grids may operate differently in the IL grammar than they do in the NL or in the TL.

Other kinds of phonological constructs have also been put forth as constraints on IL grammars; these include aspects of feature geometry and underspecification, along with principles governing the well-formedness of syllables. We first take up the use of features and then turn to syllables.

Brown (1998, 2000) proposed feature geometry and underspecification as explanatory devices for L2 pronunciation patterns. Feature geometry is a system of representing segments in which phonological features are not unordered bundles of properties, but are instead structured hierarchically so that some features are dependent on others. Underspecification is a system for representing the underlying representations of segments that takes advantage of the fact that some properties of sounds are predictable, that is, they constitute a regularity, on the basis of other properties. These predictable aspects of sounds are redundant for making contrasts, and are not represented underlyingly. All features are completely specified only when the segments are realized phonetically. Assuming that feature geometry and underspecification are principles that constrain IL phonologies, just as they constrain L1 grammars, Brown employed them in her analysis of the acquisition of several English contrasts by speakers of Japanese, Korean, and Mandarin.

Studies involving principles of syllable structure as a constraint on IL grammars have been carried out, for the most part, using NLs which are much more restrictive than English

in the kinds of syllables they allow. Sato (1984) conducted one such study of two Vietnamese-speaking brothers, aged ten and twelve; she elicited utterances exclusively through spontaneous conversations. Although Vietnamese allows only clusters consisting of a consonant and a glide in onsets, that is, clusters containing a consonant followed by a [j] or a [w] sound, and permits only singleton codas, Sato's data contained numerous tokens of syllable-initial and syllable-final consonant clusters. More recently, Hansen (2004) carried out a year-long study of two Vietnamese learners of English, mapping the development of onsets and codas as a function of several linguistic and contextual factors. Some longitudinal studies have raised the question of whether the development of L2 syllable structure is linear. Both Hansen (2001) and Abrahamsson (2003) concluded that coda development over time was U-shaped rather than linear.

We now focus our attention on the proposal that linguistic universals act as constraints on IL grammars, and then conclude this section with a discussion of the framework of OT. Within this context, there are two schools of thought on linguistic universals, namely typological generalizations and UG, and we begin our discussion with the latter.

A parameter of UG is a constraint on grammars that specifies how grammars can differ from each other with respect to a given structure. An early study that utilized a parameter as an explanatory principle was Broselow and Finer (1991), which invoked the minimal sonority distance (MSD) parameter to explain the performance of Korean and Japanese learners of English on the production of onset clusters.

The MSD parameter uses the sonority index (SI), from Selkirk (1982), which assigns a numerical value to relevant segment types according to the segment's sonority. In general, sonority can be defined in terms of how open the mouth is when the sound is articulated, with stop sounds being the least sonorous and vowels being the most sonorous, and with other sound types occurring in between stops and vowels. The greater the sonority of the segment, the greater the value assigned by the SI. As shown in (2), sonority increases from left to right on the SI scale, and the corresponding values assigned are shown in (3).

(2) *Sonority index (Selkirk, 1982)*
Stops < Fricatives < Nasals < Liquids < Glides

(3)

Segment class	*Value*
Stops	1
Fricatives	2
Nasals	3
Liquids	4
Glides	5

The idea is that the MSD parameter characterizes the systematic variation found in the kinds of syllable onsets allowed crosslinguistically, specifying for any given language the minimal numerical difference that must exist between the segment classes for any complex onset type to be allowed by the language in question. If the value calculated for any given cluster is equal to or greater than the value specified by the MSD for that language, then the onset cluster is allowed in that language; if the resulting value is less than that number, the cluster is disallowed.

The most interesting point in the Broselow and Finer (1991) study was the finding that their subjects neither simply transferred the value of the MSD parameter of the NL into the IL, nor evidenced TL-like values of this parameter. Rather, the subjects produced IL patterns that were somewhere in between the NL and TL settings, providing another instance in which interlanguage grammars obey general principles of phonological theory.

An approach to L2 phonology that invoked generalizations from the other school of

universals, typological markedness, is the structural conformity hypothesis (SCH) (Eckman 1991), stated as in (4).

(4) *The structural conformity hypothesis (Eckman, 1991, p. 24)*
The universal generalizations that hold for primary languages hold also for interlanguages.

Consistent with the point made in the above section on interlanguage, the strongest kind of support for the SCH is an L2 pattern in which the structures adhere to universal principles, but the patterns in question are not directly derivable from either the NL or the TL. This type of evidence has been adduced in a number of studies, including Altenberg and Vago (1983), Eckman (1991), Carlisle (1998), and Eckman and Iverson (1994), among others.

Having described a number of proposals for how IL phonologies are constrained by general principles and linguistic universals, we conclude this section with a discussion of the framework of OT as it has been applied to the explanation of L2 phonologies.

The most significant difference between a grammar within OT and a grammar within other phonological approaches is how well-formedness is described. In rule-based grammars, a well-formed representation is characterized by constructing a set of rules, that is, a grammar, which, if adhered to, will yield grammatical utterances. Grammatical deviance is described by showing that ungrammatical representations violate at least one of the principles of the grammar. Within OT, on the other hand, grammars consist of a universal set of constraints instead of rules. The constraints represent criteria for well-formedness. The assumption is that no language can satisfy all of these criteria; therefore, the constraints of the grammar can be violated, and conflicts among constraints are resolved by ranking them for any given language. Thus, within the framework of OT, grammars of particular languages result from different rankings of the universal constraints. Any ranking of these constraints should yield a grammar of some language, and any grammar of a language should conform to one of the possible rankings of the constraints.

In recent years several important studies on L2 phonology have been carried out within an OT framework. Hancin-Bhatt and Bhatt (1997), for instance, reprised and extended the Broselow and Finer (1991) study of the acquisition of English complex onsets by native speakers of Japanese and Korean. The authors concluded that OT gives a superior account of the data because it characterizes the differences between Japanese and Spanish solely in terms of the ranking of identical constraints, making it clear that the language-particular differences were the basis for the pronunciation errors. In another OT analysis, Broselow et al. (1998) illustrated how the simplification strategies used to modify English codas by native speakers of Mandarin could be explained as "the emergence of the unmarked," which is one of the ways that OT grammars can represent an L2 pattern that is independent of both the NL and TL.

Conclusion

To summarize, the study of L2 pronunciation patterns can be divided historically into earlier studies considering the patterns only in terms of the native and target languages, and those investigating L2 phonology from the standpoint of the mental system of the L2 learner, the interlanguage grammar.

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SEE ALSO: Crosslinguistic Influence in Second Language Acquisition; Foreign Accent; Interlanguage; Phonetics and Phonology: Overview; Suprasegmentals: Stress; Typology and Second Language Acquisition

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Genesee, Fred

DONNA CHRISTIAN AND AILEEN BACH

Fred Genesee (1948–) is a researcher and professor of psychology whose work has shaped the fields of bilingual and second language (L2) acquisition and education. For decades he has taken a comprehensive approach to the investigation of language acquisition and learning, from instruction, including the effectiveness and suitability of immersion programs for all students, to theoretical advances in bilingual and L2 acquisition, to methodological issues in assessing communicative competence, to literacy development in second language learners. He is well known for reaching across professional boundaries, engaging parents, teachers, administrators, policy makers, and researchers in discussing issues in multilingual and multicultural communities.

Fred Genesee, a native of Canada, completed his undergraduate degree in Honors Psychology at the University of Western Ontario in 1969, and went on to complete a Masters and PhD in Psychology at McGill University in 1970 and 1974, advised by the distinguished psychologists Wallace E. Lambert and G. Richard Tucker. After several years as head of research for the Protestant School Board of Greater Montreal, Quebec, working with French immersion programs, in 1978, he became a faculty member in the Psychology Department at McGill University, where he continues to work today. Over the course of his career, Genesee also spent time at several other universities, including the University of Hawaii at Manoa (1984–6) as visiting professor in the Department of English as a second language, and the University of California, Davis (1997–8), where he served as director of the Division of Education.

Genesee's career began at a critical and highly contentious time for language planning in Montreal as French became increasingly prominent and important in Montreal and throughout the province of Quebec. Many English-speaking families were seeking educational options that would enhance their children's competence in French so that they could better adapt to this changing linguistic landscape. French immersion was created to respond to their needs. This model of bilingual education, devised by McGill University psychologists Wallace Lambert and G. Richard Tucker, with Wilder Penfield at the Montreal Neurological Institute, and a group of English-speaking Montreal parents in the mid-1960s, involved "immersing" English-speaking students in French for 100% of their instruction in kindergarten to grade 2. Genesee collaborated with Lambert and colleagues for decades, studying and working with Canadian immersion programs, contributing to the body of research on bilingual and L2 acquisition, and supporting the spread of the immersion approach to the United States and elsewhere.

Research on these pioneering immersion programs led Genesee and his colleagues to tackle a variety of topics, including the nature and effectiveness of different types of immersion education, the sociocultural, affective, and cognitive outcomes of participation in immersion programs, and the suitability of immersion for students with different learner characteristics (see Genesee, 1987, for a review of this early work). In all of his work, Genesee has consistently invited discussion and collaboration among parents, teachers, and school administrators, as well as policy makers and researchers from a diversity of fields. As a result, he is respected and admired by members of all of those groups.

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Genesee's research has contributed greatly to the field's evolving understanding of basic constructs in bilingualism and second language acquisition. For example, an important question his research has addressed is whether the languages of children who acquire two languages simultaneously are represented in the brain separately or as one entity. In the case of young bilinguals, many have postulated that code switching, or using two different languages in a single sentence or conversation, is evidence that children do not distinguish between their two languages, and that their languages are represented in a single system in the brain until they learn to distinguish between the two (e.g., Volterra & Taeschner, 1978). In contrast, Genesee (1989) showed that young bilingual children are sensitive to the different contexts in which to use each of their languages, arguing against the view that young bilingual children go through an initial stage when their two languages are fused or indistinguishable. In addition, research by Comeau, Genesee, and Lapaquette (2003) showed that young bilingual children can systematically adapt their rate of code switching to that of their interlocutors, suggesting that code switching is actually a reflection of bilingual children's sociolinguistic competence.

With regard to L2 learning, a key question has been whether learners acquiring an L2 later in life are able to achieve native-level proficiency, given the claims of the critical period hypothesis, which states that there is an optimal developmental period for learning a language, beyond which native proficiency in a language cannot be obtained (Lenneberg, 1967). Genesee, along with his colleague Lydia White, addressed a common methodological flaw in studies that claimed to demonstrate that late L2 learners are unable to attain native proficiency, pointing out that they had only demonstrated a *tendency* for this to be the case (White & Genesee, 1996). They argued that in order to determine whether late L2 learners have the neurocognitive capacity to access the same psychological mechanism that early L2 speakers use to achieve native-level proficiency, late L2 learners who demonstrate native-like proficiency should be investigated. He continues to explore issues of the brain and second language learning with his graduate students and colleagues at McGill (e.g., White, Genesee, & Steinhauer, 2009).

Genesee has also conducted pioneering research on language acquisition in diverse and special populations, including international adoptees (e.g., Gauthier & Genesee, 2011), children with language learning disorders (Paradis, Crago, Genesee, & Rice, 2003), students considered at-risk for educational failure, and very young children (from infants to preschool age) (Genesee, 2009). Through his research, he has pushed the boundaries of inquiry on basic notions of bilingualism and the populations whose language accomplishments merit our attention.

Genesee has made strong contributions not only to language education practice and research in Canada, but also in the United States and around the world. Building on his groundbreaking work on French immersion and bilingualism in Canada, he joined research teams working on similar issues elsewhere and collaborated on publications that document multilingual education in diverse settings (Cenoz & Genesee, 1998; Christian & Genesee, 2001). In the United States, as immersion programs gained attention, he became a resource and colleague for those seeking to implement and conduct research on immersion, and helped to build the emerging field of dual language education (with its emphasis on bilingualism through school-based programs that provide literacy and content area instruction to all students through two languages). He also focused on issues in the education of English-language learners more broadly and worked extensively on research, technical assistance for schools, and materials development for teachers. His influence has spanned program alternatives, instructional approaches, special education, and literacy for the English learner population (Genesee & Lindholm-Leary, in press). In 2001, he was appointed to the National Literacy Panel on Minority Language Children and Youth, tasked by the US Department of Education to synthesize the current state of knowledge on the topic

(e.g., Genesee & Geva, 2006). In addition to having written a number of enlightening books for the research field, such as *Learning Through Two Languages* (Genesee, 1987) and *Educating English Language Learners* (Genesee, Lindholm-Leary, Saunders, & Christian, 2006), Genesee has also coauthored a number of practitioner-oriented handbooks, such as *Dual Language Instruction* (Cloud, Genesee, & Hamayan, 2000), *Dual Language Development and Disorders* (Genesee, Paradis, & Crago, 2004), and *Literacy Instruction for English Language Learners* (Cloud, Genesee, & Hamayan, 2009) which have served as valuable resources for practitioners in the field. This broad range of achievements demonstrates Genesee's lifelong commitment to seeking new knowledge and applying it to improving the lives of individuals.

The fields in which he works have recognized Genesee's achievements on countless occasions. In 2004, for example, he was awarded the Canadian Psychological Association Award for Distinguished Contributions to Public or Community Service in Canada, and in 2008, he received the Promoting Bilingualism award from 2Way CABE, the branch of the California Association for Bilingual Education that focuses on two-way immersion education. His research has also been honored, as with the 1990 Paul Pimsleur Award for Research in Foreign Language Education from the American Council on the Teaching of Foreign Languages. He has served on the boards of numerous professional organizations, including the International Association for the Study of Child Language, the American Association for Applied Linguistics, and the Center for Applied Linguistics. He also served as President of Teachers of English to Speakers of Other Languages (TESOL) from 1994 to 1995.

Genesee's contributions to the field of bilingual and second language acquisition and education are both broad in scope and grounded in a strong commitment to influencing practice. He has been instrumental in the progress of dual language education in North America and beyond, as a researcher of immersion and other bilingual and second language education programs. He has also contributed greatly to current theoretical debates in the field, challenging psycholinguistic theories of bilingual and second language acquisition to reflect accurately the bilingual and second language learner. He nurtures contacts across traditional academic boundaries, and communicates his research findings in ways that are accessible to diverse audiences including families, practitioners, theorists, and policy makers. His vision for multilingual education has enriched both the field of applied linguistics and the lives of language learners around the world.

SEE ALSO: Bilingualism and Bilinguality; Educational Research in Language Minority Students; Immersion Education; Multilingualism

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Genre and Discourse Analysis in Language for Specific Purposes

KEN HYLAND

Language for specific purposes (LSP) refers to a distinctive approach to language education that focuses on the particular linguistic features, discourse practices, and communicative skills used by target groups. Its success depends on accurately identifying what these features and practices are so they can be taught to students, and this has been greatly assisted since the late 1980s by the emergence of genre analysis. Genre analysis has become established as one of the most popular and productive frameworks for the study of specialized communication in academic, professional, and institutional contexts. Essentially, the approach is used to describe texts within textual and social contexts, rejecting the idea that individual texts should be treated in isolation from either their use or other texts. This entry will offer an overview of the importance of genre and discourse analysis in this area of research and pedagogy.

Discourse and Genre Analysis

Discourse analysis is a collection of methods for studying language in action, looking at texts in relation to the social contexts in which they are used, but this broad definition has been interpreted in various ways across the social sciences. This is because language is an irreducible part of social life, and connected to almost everything we do. Discourse analysis, in fact, spreads between two poles, giving more or less emphasis to concrete texts or to institutional social practices, but generally tending to focus on language phenomena that occur above the level of the sentence. Genre analysis is a more specific form of discourse analysis that focuses on any element of recurrent language use, including grammar and lexis, that is relevant to the analyst's interests. Genres are the recurrent uses of more-or-less conventionalized forms through which individuals develop relationships, establish communities, and get things done using language. As a result, genre analysis sees texts as representative of wider rhetorical practices and so has the potential to offer descriptions and explanations of both texts and the communities that use them.

Genre analysts set out to offer descriptions of "typified acts of communication" based on the form and purposes of texts. Fundamentally, genres are kinds of broad rhetorical templates that writers draw on to respond to repeated situations; users see certain language choices as representing effective ways of getting things done in familiar contexts. Genre analysis is therefore grounded in the assumption that the features of a similar group of texts depend on the social context of their creation and use, and that those features can be described in a way that relates a text to others like it and to the choices and constraints acting on text producers. This is the very stuff of communication. O'Sullivan, Hartley, Saunders, Montgomery, and Fiske (1994, p. 128), for instance, argue that "genres are agents of ideological closure—they limit the meaning-potential of a given text," while writers can rely on readers already having some knowledge and expectations about the conventions of a genre. We know immediately, for example, whether a text is an essay, a joke, or a recipe, but we can also recognize innovation, irony, and creativity. Genres can thus be

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seen as a kind of tacit contract between writers and readers, influencing the behavior of text producers and the expectations of receivers.

While approaches to genre differ considerably in the emphasis they give to text or context, the research methods they employ, and the types of pedagogies they encourage, text-analytic varieties have had most impact in LSP contexts. These approaches are influenced by Halliday's (1994) view of language as a system of choices that link texts to particular contexts through patterns of lexico-grammatical and rhetorical features (Christie & Martin, 1997), and by Swales's (1990) observation that these recurrent choices are closely related to the work of particular discourse communities whose members share broad social purposes. These purposes are a key element of the context of a text and the rationale of a genre; they help to shape the ways it is structured and the choices of content and style it makes available. The following sections discuss the aspects of language usually studied, the relationship between genre and context (both social and textual), and the application of research to pedagogy.

Genre Structures and Features

Perhaps the most fruitful line of research in LSP has been to focus on *genre as text*, with the aim of exploring the lexico-grammatical and discursive patterns of particular genres to identify their recognizable structural identity, or what Bhatia (1999, p. 22) calls "generic integrity." Analyzing this kind of patterning has yielded useful information about the ways texts are constructed and the rhetorical contexts in which such patterns are used, as well as providing valuable input for genre-based teaching.

Some of this research has followed the move-analysis work pioneered by Swales (1990), which seeks to identify the recognizable stages of particular institutional genres and the constraints on typical move sequences. Moves are the typical rhetorical steps that writers or speakers use to develop their social purposes, and recent work on academic genres has produced descriptions of the results sections in research articles (Bruce, 2009), dissertation acknowledgments (Hyland, 2004c), and grant proposals (Connor, 2000). In professional contexts, research has explored the structures of genres in direct mail letters (Upton, 2002) and in management and legal cases (Lung, 2008).

While analyzing schematic structures has proved an invaluable way of looking at texts, analysts are increasingly aware of the dangers of oversimplifying by assuming blocks of texts to be mono-functional and ignoring writers' complex purposes and "private intentions" (Bhatia, 1999). There is also the problem raised by Crookes (1986) of validating analyses to ensure they are not simply products of the analyst's intuitions. Transitions from one move to another in a text are, of course, always motivated outside the text as writers respond to their social context, but analysts have not always been convincingly able to identify the ways these shifts are explicitly signaled by lexico-grammatical patterning.

Research has therefore tended to move more toward examining clusters of register, style, lexis, and other features that often distinguish particular genres. One feature of academic genres to receive attention is writers' use of *evaluative that* constructions in articles and dissertations (Hyland & Tse, 2005). This is a structure that allows a writer to thematize evaluative meanings by presenting a complement clause following *that* (as in *We believe that this is an interesting construction*). Other recent studies have looked at circumstance adverbials in student presentations (Zareva, 2009), interactive features of undergraduate lectures (Morell, 2004), and the common four-word collocations, or lexical bundles, in student dissertations (Hyland, 2008). In other domains, research has identified genre characteristics such as the use of conjunctive cohesion in EU documents (Trebits, 2009) and metadiscourse markers in professional e-mails (Jensen, 2009). A feature of much recent

work has been to investigate how persuasion in various genres is accomplished not only through the ways ideas are presented, but also by the construction of an appropriate authorial self and the negotiation of participant relationships.

Genre and Community

The importance of genre to LSP studies results from the growing body of evidence that professional and academic discourses represent a variety of specific literacies, so that what counts as convincing argument, appropriate tone, persuasive interaction, and so on is managed for a particular audience (Hyland, 2004a). More specifically, researchers have become sensitive to the ways genres are written and responded to by individuals acting in concert with others. This community-based orientation to literacy draws attention to the idea that we communicate as members of social groups, each with its own norms, categorizations, sets of conventions, and ways of doing things.

Essentially, members of a community usually have little difficulty in recognizing similarities in the texts they use frequently, and they are able to draw on their repeated experiences with such texts to read, understand, and perhaps write them relatively easily. This is, in part, because writing is a practice based on expectations. The process of writing involves creating a text that the writer assumes the reader will recognize and expect, and the process of reading involves drawing on assumptions about what the writer is trying to do. Writer and reader assemble sense from a text by anticipating what the other is likely to do by making connections to prior texts.

Genre analysis therefore reveals the ways that genres reflect and construct the communities that use them, as Swales observes:

> In-group abbreviations, acronyms, argots, and other special terms flourish and multiply; beyond that, these discourse communities evolve their own conventions and traditions for such diverse verbal activities as running meetings, producing reports, and publicizing their activities. These recurrent classes of communicative events are the genres that orchestrate verbal life. These genres link the past and the present, and so balance forces for tradition and innovation. They structure the roles of individuals within wider frameworks, and further assist those individuals with the actualization of their communicative plans and purposes. (1998, p. 20)

The idea that people acquire, use, and modify texts while acting as members of academic, occupational, or social groups offers a powerful way of describing communities and understanding the communication needs of students in professional and academic contexts.

A recent development in genre studies has been the growth of ethnographic approaches as a way of accessing features of the context and of the processes of production that may explain particular aspects of genres. Research into situated academic discourse, such as J. Swales's "textography" (1998) and A. Johns's "students as researchers" work (1997), indicates how ethnographic methods, such as observation of physical sites of genre activity and interviews with individuals who read or write a genre, can provide access to these communities and their genre use.

Genre Constellations

Another aspect of context lies in the ways that texts relate to other texts, forming "constellations" with neighboring genres (Swales, 2004). An important aspect of such constellations is that we almost never find genres in isolation. A useful concept here is that of "genre

sets," referring to the part of the entire genre constellation that a particular individual or group engages in, either productively or receptively (Devitt, 1991). Textbooks, lab reports, and lectures, for instance, may be key genres for many science students, while discussion postings and online tutorials are genres more familiar to distance-learning students on teaching English to speakers of other languages (TESOL) programs. We can also approach genre constellations through "genre chains," a term that refers to the way spoken and written texts cluster together in a given social activity. Thus genres sometimes follow each other in a predictable chronological order, such as a job application that involves a step-wise procedure through job advertisement, curriculum vitae, application letter, interview, and so on.

Moving beyond the immediate context to the wider "context of culture," genres can be seen as institutional social practices. From this perspective, genres are loosely arrayed in a *network* as each interacts with, draws on, and responds to another in a particular setting. This view refers to Bakhtin's (1986) concept of intertextuality and the fact that every utterance reacts to other utterances in that domain. While this totality is constantly changing, analysis can help show how text users are linked into a network of prior texts according to their group membership. These interconnections can be characterized as both intertextual and interdiscursive. "Interdiscursivity" concerns the use of elements in a text that carry institutional and social meanings from other discourses, reflecting the conventions, values, and practices of neighboring discourses.

One example of how an institutional genre is linked into a web of interdiscursivity is the undergraduate syllabus (Afros & Schryer, 2009), which is linked not only to other course documents and texts but also to wider understandings of the institution and the discipline itself. As the authors point out:

> The syllabus reveals that the social creation of knowledge taking place in the course draws on lectures, textbooks, and other in-class and out-of-class learning/teaching activities as much as on the ongoing discussion in the academic field, adult education, university policies, and many other texts and communities. Instructors utilize the syllabus not only to manifest their membership in multiple discourse communities, but also to socialize students into (at least, some of) them. (p. 231)

Thus, the syllabus highlights the interdependences between the classroom, research, and institutional genres.

Genre Pedagogies

The findings produced by genre studies have had a major impact on LSP teaching. This is because genre descriptions ground teaching in research and support learners through an explicit understanding of how target texts are structured and the reasons they are written as they are. The potential advantages of genre-based instruction for writing can be summarized as follows (Hyland, 2004b):

Explicit	Makes clear what is to be learned to facilitate the acquisition of writing skills.
Systematic	Provides a coherent framework for focusing on both language and contexts.
Needs-based	Ensures that course objectives and content are derived from target needs.
Supportive	Gives teachers a central role in scaffolding students' learning and creativity.

Empowering	Provides access to the patterns and possibilities of variation in valued texts.
Critical	Gives students the resources to understand and challenge valued discourses.
Consciousness raising	Increases teachers' awareness of texts and helps them confidently advise students on writing.

While these characteristics are not unique to genre pedagogy, no other approach seeks to realize them all.

LSP practitioners employ genre pedagogies as a means of emphasizing what is to be learned, organizing instruction around the genres that learners need and the social contexts in which they will operate (Hyland, 2004b). This typically involves adopting a scaffolded pedagogy to guide learners toward control of a genre based on whole texts selected in relation to learner needs. Based on sociocultural learning theory (Vygotsky, 1978), scaffolding is a metaphor of learning that refers to the supportive behaviors by which an expert can help a novice learner to gradually achieve higher, independent levels of performance. In LSP classrooms it involves active and sustained support by a teacher who models appropriate strategies for meeting particular purposes, guides students in their use of the strategies, and provides a meaningful and relevant context for using the strategies.

Texts and tasks are therefore selected according to learners' needs and genres are modeled explicitly to provide learners with something to aim for, namely an understanding of what readers are likely to expect. One approach widely used in Australia is the teaching–learning cycle (e.g., Feez, 1998), which helps inform the planning of classroom activities by showing the process of learning a genre as a series of linked stages. Here the teacher provides initial explicit knowledge and guided practice, moves to sharing responsibility for developing texts, and gradually withdraws support until the learner can work alone. The key stages of the cycle are

- setting the context—to reveal genre purposes and the settings in which it is commonly used,
- modeling—analyzing representative samples of the genre to identify its stages and key features and the variations that are possible,
- joint construction—guided, teacher-supported practice in the genre through tasks that focus on particular stages or functions of the text,
- independent construction—independent writing by students monitored by the teacher,
- comparing—relating what has been learned to other genres and contexts to understand how genres are designed to achieve particular social purposes.

Each of these stages seeks to achieve a different purpose, and so is associated with different types of classroom activities and teacher–learner roles (Hyland, 2004b, pp. 130–40).

Critiques

Genre approaches have not been uncritically adopted in LSP classrooms. Situated-learning theorists (e.g., Dias & Pare, 2000), for example, argue that writing is always part of the goals and occasions that bring it about and that it cannot be learned in the inauthentic context of the classroom. Such a view, however, ignores the fact that second language (L2) students are often at a considerable disadvantage in such unfamiliar naturalistic settings and that genre-based teaching can cut short the long processes of situated acquisition. Critical theorists have also attacked genre teaching, for accommodating learners both to existing modes of practice and to the values and ideologies of the dominant culture that

the valued genres embody (e.g., Benesch, 2001). Genre proponents, however, contend that this argument can be leveled at almost all teaching approaches, and that learning about genres does not preclude critique but, in fact, provides a necessary basis for critical engagement with cultural and textual practices.

Finally, genre teachers have had to defend themselves against process adherents and the charge that genre instruction inhibits writers' self-expression and straitjackets creativity through conformity and prescriptivism (e.g., Dixon, 1987). Obviously the dangers of a static, decontextualized pedagogy are very real if teachers fail to acknowledge variation and apply what Freedman (1994, p. 46) calls "a recipe theory of genre." But there is nothing *inherently* prescriptive in a genre approach. There is no reason why providing students with an understanding of discourse should be any more prescriptive than, say, providing them with a description of a clause or the parts of a sentence. The fact is that genres *do* have a constraining power that inevitably limits the originality of individual writers. Selecting a particular genre implies the use of certain patterns, but this does not *dictate* the way we write: it enables us to make choices and facilitates expression. The ability to create meaning is only made possible by the possibility of alternatives. By ensuring these options are available to students we give them the opportunity to make such choices, and for many LSP learners this awareness of regularity and structure is both facilitating and reassuring.

Conclusions

LSP instruction seeks to help demystify prestigious forms of discourse, unlock students' creative and expressive abilities, and facilitate their access to greater life chances. To accomplish these goals teachers require a systematic means of describing texts and of making their students' control over them more achievable. In short, a well-formulated theory of how language works in human interaction has become an urgent necessity in the field of teaching languages for specific purposes. Genre pedagogies are a major response to this need, providing teachers with a way of understanding how writing is shaped by individuals making language choices to achieve purposes in social contexts.

SEE ALSO: Critical English for Academic Purposes; Genre-Based Language Teaching; Swales, John M.; Systemic Functional Linguistics; Writing and Genre Studies

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Genre-Based Language Teaching

CHRISTINE M. TARDY

The basic principle of genre-based language teaching is that awareness of the forms, purposes, and social contexts of texts will aid in writing development. In applied linguistics, the term "genre" is used to refer to forms of communication that have become conventionalized through repeated use. Genres are created by social groups, such as academic or professional communities, to carry out various goals of the group. Common genres in academic disciplinary contexts include, for example, research articles or book reviews, while common genres in business contexts may include memos or project proposals. Learning such genres involves learning the socially preferred "ways of doing" within the community. Because key modes of communication within communities are often *generic*, learning to engage in these genres receptively and productively can be essential to success as a group member. The goal of genre-based language teaching is to facilitate this process.

Beyond this general shared goal, approaches to genre-based language teaching vary somewhat. One prominent approach to genre-based teaching draws on principles of systemic-functional linguistics (SFL). This approach was developed largely out of early work by James Martin, Francis Christie, and Joan Rothery, who proposed genre-based pedagogy as an alternative to the process approach and its emphasis on student centeredness and personal genres, arguing that process pedagogy further marginalized students from non-dominant socioeconomic and linguistic groups. Because of these scholars' connection with the University of Sydney, those associated with this approach are at times referred to in the USA as "the Sydney School." The approach was developed to respond to the needs of students in K–12 school settings. Despite its continued affiliation with Australian-based scholarship, SFL-oriented genre-based teaching is implemented around the world in a range of contexts, including K–12 literacy education, foreign language education, and vocational language education. The notion of genres within the SFL orientation is theoretically grounded in Hallidayan functional linguistics (Halliday, 1994) and are defined as social processes, the intersection of social patterning and textual patterning (Cope & Kalantzis, 1993). Common categories of genres in this view include, for instance, narrative, description, report, discussion, and recount. SFL-oriented genre-based teaching aims to help learners explicitly identify the textual features of such genres so that they can more effectively produce them on their own. Early examples of genre-based teaching in this approach were based largely on a cycle of discovery, which included modeling of the genre, joint construction of a generic text, and independent construction of a generic text. While this particular cycle may not be followed in all instances of today's SFL-influenced genre-based teaching approaches, they generally share the principle of helping students draw explicit connections between language structure, purpose, and social power.

A second prominent approach to genre-based language teaching is associated with English for specific purposes (ESP) and has developed largely out of early work by John Swales and Tony Dudley-Evans. Recognizing that texts vary both linguistically and rhetorically in different disciplinary communities, Swales developed a method of analyzing the structural components of a text according to each component's rhetorical purpose or function (Swales, 1981, 1990). He referred to these components as "rhetorical moves" and the analysis of these components as "move analysis." Drawing on his own experience as an ESP instructor, particularly with advanced academic writers, Swales argued that a

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conscious awareness of these moves—as well as other characteristic features of the target genre—can facilitate a mastery of the genre. Genre-based pedagogy in ESP, then, is characterized by awareness-raising activities in which students are themselves investigators of the target genre. Such activities commonly include analysis of linguistic features, such as common lexicogrammatical structures, and rhetorical structures, such as moves or perhaps practices for citing sources. As theories of genre have evolved to increasingly recognize the extent to which genres are rooted in the changing practices and values of their users, genre-based teaching in ESP has also begun to incorporate the social nature of genres to a greater extent. In addition to analyzing a genre's linguistic and rhetorical features, students in genre-based classrooms may now also investigate the procedures through which a genre is carried out within a particular social group, the structures of power within the social group, or the network of genres that work together to carry out group activities. Such tasks aim to help students build insight into the ways in which texts themselves shape and are shaped by the users and their socially preferred "ways of doing."

Closely related to ESP genre-based teaching—sometimes considered a branch of it—is the socioliterate approach to genre teaching described by Ann Johns (1997). While this approach shares the theoretical orientation of ESP and an emphasis on awareness raising, it is sensitive to the needs of undergraduate university students, who contend with different writing contexts than writers in highly specialized academic or professional contexts. The goal of this approach is for students to continually revise and build their theories of genre and to apply their genre knowledge to analysis and critique of the texts that they encounter (Johns, 2002). Like other approaches to genre-based teaching, attention is given to students' development of a meta-awareness of and metalanguage for discussing texts and contexts.

An additional orientation to genre-based teaching can be found among North American scholars of university writing instruction, focused implicitly on first language writing development (e.g., Devitt, Bawarshi, & Reiff, 2003). Though scholars in this area have recognized and drawn upon some applied linguistics scholarship, the orientation is more firmly grounded in the discipline of rhetoric. As such, the goal of genre study within this orientation is often to understand the social context through the text; in contrast, SFL and ESP genre study generally aims to understand the text through the situational context (Flowerdew, 2002). Emphasizing rhetorical context over form, this approach to genre-based pedagogy engages students in analysis and critique of common school genres. Students may, for example, analyze course syllabi or argument papers with the aim of understanding the rhetorical "scenes" in which such writing takes place (Devitt, Reiff, & Bawarshi, 2004). Students can then apply their complex understanding of writing contexts to making informed decisions about their own writing.

The small number of studies of genre-based language teaching have found support for the approach in several contexts. For instance, studies have found that genre-based teaching can benefit students' motivation, metalanguage, and development of rhetorical knowledge; the presence of sample texts and modeling practices also appears to have benefits for learners (Tardy, 2006). Nevertheless, genre-based pedagogy has not been without its critics. There has been considerable debate, for example, as to whether professional genres, as socially embedded practices, can or should be taught in the classroom (see Freedman, 1993a, 1993b). Similarly, some have expressed concern that teaching genres would imply that they are static in nature, when in fact they shift over time and across social contexts (Freedman & Medway, 1994); this criticism would seem less applicable to pedagogical approaches in which students learn to analyze genres rather than learn static features of genres. Finally, it has been argued that genre-based pedagogy serves to maintain current power structures by encouraging students to conform to—rather than challenge—existing norms (Pennycook, 1997).

The theoretical principles of genre-based language teaching are grounded most explicitly in theories of nonliterary genre. Though many contemporary adaptations of these approaches draw on rich interdisciplinary genre theories, early iterations were heavily influenced by more specific theoretical definitions. Early SFL-oriented approaches, for instance, were shaped by Martin's definition of genre as "staged, goal-oriented process" (Martin, 1993, p. 142), while ESP-oriented approaches have been perhaps most influenced by Swales's (1990) definition of genres as goal-oriented communicative events situated within a social group. Rhetoric-oriented approaches have often drawn heavily on Miller's (1984) definition of genre as a social action. More recently, genre scholars have drawn on theoretical perspectives across orientations, sharing a similar focus on the socially situated and intertextual nature of genres.

In writing instruction, genre-based language teaching has been associated with the postprocess movement. In contrast to the individualist orientation of process-based approaches, genre-based teaching emphasizes a social perspective, seeing written texts and writing practices as context-dependent (Hyland 2003). More implicitly, genre-based language teaching approaches draw on the cognitive principle of noticing, which posits that conscious attention to particular forms can facilitate learning of those forms (Schmidt, 1990). Hyland (2007) also observes that such awareness raising benefits teachers by increasing their confidence in advising students on genre writing.

SEE ALSO: Dudley-Evans, Tony; Genre and Discourse Analysis in Language for Specific Purposes; Johns, Ann; Swales, John M.; Writing and Genre Studies

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German for Specific Purposes

HEIDI BYRNES

Background and Scholarly Context

German for specific purposes (GSP) refers to courses that explicitly connect learning the German language in the classroom with using it in the world of work and the professions, whether that work is course-concurrent (e.g., internships and practica), part of study abroad (again often including internships), or the student's future career. In the United States, the focus of this contribution, GSP courses are typically offered in colleges and universities; in Europe, especially in Germany, they are also taught in proprietary schools, in institutes associated with universities or technical universities, in trade schools, and by the Goethe Institut, a government-funded organization that advances the presence of German language and cultural activities around the world.

GSP is a response to contemporary social and professional needs, especially in the globalized environment of commerce, trade, banking, and business, as well as in manufacturing, engineering, and the sciences. Those changed needs reflect changed student interests with regard to learning a language (Rarick, 2009). At the same time a GSP presence also constitutes an internally directed critique inasmuch as it uncovers divergent philosophies about the educational values, goals, and responsibilities of higher education foreign-language (FL) departments and their programs. It is therefore small wonder that the established faculty often interprets these developments by sharply juxtaposing a valued traditional liberal arts and humanities orientation against the undesirable "instrumental" quality of a GSP component. What is more surprising is that such characterizations persist even in times of dramatically shrinking enrollments, particularly in upper-level classes.

Seen in this fashion, GSP is part of a larger shift in higher education toward an expertise orientation. How that is played out is almost entirely driven by local conditions. Particularly successful realizations of GSP can comprise an entire degree program, such as the five-year dual degree German and Engineering program at the University of Rhode Island (Grandin, Einbeck, & von Reinhart, 1992; Rarick, 2009). More common are course-based offerings in Business German, where some are well integrated into the existing program and constitute minors or recognized tracks, others remain stand-alone offerings (for different manifestations, see, e.g., the programs at the University of South Carolina, Clemson University, Eastern Michigan University, Georgetown University, Georgia Tech, Michigan State University, Purdue University, the University of North Carolina-Charlotte, the University of South Carolina, Texas Tech, and the Thunderbird graduate school at the University of Arizona).

GSP offerings tend to be seen as opportunistic and lacking a coherent educational vision. Structurally they often reside outside academic departments in "institutes" and "centers," the most frequent of these being federally funded Centers for International Business Education (CIBERs). A different optic would recognize their unusually close and advantageous collaboration with professional schools. Not surprisingly, their theoretical grounding has been questioned because they often lack a coherent linking of language and content (e.g., Hoecherl-Alden, 2000; Weigert, 2004; Rinner & Weigert, 2006). It is therefore questionable whether one can speak of a new discipline as Cothran and Gramberg (2000) do, all the

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more so as the last two decades show advances primarily in terms of better program delivery through increased options for instructional materials, enhanced collaboration among programs (including resource sharing), and more widespread and more varied use of technology (see Hager, 2007). In short, many of the themes sounded earlier on for language for specific purposes (LSP) (see Uber Grosse & Voght, 1991; also the updated discussion in Lafford, 2011) continue to characterize the contemporary discussion in GSP (Wiggers, 2010) while conceptually oriented advances that might engender public debate and lead to generalizable insights and substantive changes are very nearly absent.

GSP programs are best understood in the context of developments in FL studies in the United States that began in the mid to late 1980s. While they have some affinity to LSP considerations in other languages, especially the highly developed and dominant programs in English for specific purposes (ESP) (Swales, 2000), dynamics in FL teaching have been much more influential. Five directions have been particularly noteworthy. First, the proficiency movement, the US version of emphasizing communicative abilities and performance *in* a language rather than knowledge *about* a language, rejected the earlier focus on grammar, downplayed the importance of literary texts, demanded "authenticity" of activities in the classroom and instructional materials, privileged "learner-centered" instruction that considered students' interests and motivations, and, through the ACTFL oral proficiency interview, became outcomes-oriented and aware of the need for internal and external accountability. Second, the "language across the curriculum" (LAC) movement (Adams, 1996) sought to include content from disciplines other than FL literary-cultural studies. Third, "content-based instruction" (CBI) was yet another way of overcoming a continuing emphasis on grammatical form while neglecting college-level content (Krueger & Ryan, 1993). Fourth, task-based instruction foregrounded meaningful interactive language use in order to accomplish real-world objectives on the assumption that this would foster language development (Bygate, Skehan, & Swain, 2001). Fifth and finally, the recent European innovation of "content and language integrated learning" (CLIL) (see, e.g., http://www.goethe.de/ges/spa/dos/ifs/en2747558.htm), combines subject matter content with language instruction, mostly English at the secondary level. Taken together, these movements provided a favorable context in which GSP could become a presence in the larger field of German-language instruction.

GSP received its first extended treatments in publications in the early 1990s. The fall of the Berlin Wall in 1989 and Germany's subsequent unification considerably heightened interest in the study of German at the very moment when enrollments at many institutions in the US had begun to fall, in some cases even to the point of endangering the existence of entire degree programs and departments (Rarick, 2009). More important, these stunning political developments in Germany attracted students from outside the humanities disciplines. Retaining them beyond existing language requirements demanded that connections between German and their fields of study be made in a way that would be more explicit, more deliberate, and more goals- and outcomes-oriented than earlier CBI and LAC efforts had been.

How that was accomplished in US colleges and universities is extraordinarily situated, if not to say idiosyncractic. Grandin, Einbeck, and von Reinhart (1992) mention six factors for the planning and implementation phase of a GSP program: (a) accommodating a multitude of career-oriented interests; (b) attending to different motivations for language learning in line with different interests, including quite unabashedly instrumental motivations that a liberal arts orientation tends to shun as unattractive; (c) respecting different attitudes of language learning as a means to an end; (d) relating the different purposes and anticipated contexts for language use to different linguistic needs on the part of the learners (e.g., content-specific vocabulary, progression of syntactic structures, various types

of discourse, register); (e) carefully selecting pedagogical approaches in light of different student backgrounds and skills; and (f) respecting different learning and cognitive styles.

Virtues and Drawbacks of GSP Programs

The unmistakable practice and learner orientation of the previous list is at once virtue and drawback. The following are key manifestations of both dynamics in the life of GSP programs.

Program and Degree Status

Many GSP programs have a tenuous status by comparison with the well established academic FL departments. GSP offerings have typically appeared as a result of the extraordinary personal initiative of one or a very few faculty members who argued for the viability, even necessity of offering GSP courses in order to respond to student interests. Often, they hardly qualify for the term "program." Whether GSP courses are offered within the FL department or reside within a "center," whether they count toward the major or minor or are electives, whether they are taught regularly or so infrequently as to get little traction in an institution—all of these factors greatly depend on local conditions.

Administrative Support

Similarly unstable is the administrative support for GSP, at the departmental level and above. Assuming that budgetary support springs from perceived intellectual-academic value, GSP programs often fight an uphill battle, trapped in an unfortunate dichotomy between a negatively positioned instrumental versus a positively valued liberal arts interpretation. This is so although GSP programs regularly affirm their intellectual link to the humanities and find ways of realizing it programmatically (e.g., Grandin, Einbeck, & von Reinhart, 1992; Hoecherl-Alden, 2000). The meeting point for both positions is the much-invoked term of "culture" (see below).

Even so, GSP initiatives inherently seek interdisciplinary connections beyond the inner circle of humanities disciplines, a move that frequently is cheered in the abstract but frowned upon in concrete cases, not least because of the ever-present concern of being reduced to purely service status, with no discernible intellectual center or educational merit. Unfortunately, that possibility can be unwittingly abetted by faculty and administrators in the other units. A particularly plausible route for making interdisciplinary connections and attaining a recognized programmatic status and more stable administrative support is via CIBERs, often themselves grant-funded environments and linked to business or professional schools. Other linkages under the umbrella of GSP involve similarly burdened interschool and interdisciplinary ventures.

Upper-level administrators tend to be much in favor of the educational thrust of GSP, in part because they see it as a welcome response to student interest and one way to counteract the unsustainable low-enrollment advanced literary-cultural studies courses within German programs. But even that does not readily translate into academic-administrative long-term support for GSP, since such a shift involves risk-taking with regard to an institution's internal and external educational identity.

Faculty Availability

Without exception, the GSP literature refers to faculty resources as a critical dilemma for the field. Typically educated in literary-cultural studies, faculties feel ill prepared—and therefore unwilling—to handle the at times highly complex subject matter in the social

sciences (e.g., business) and the hard sciences and engineering. Aware of the considerable time investment in needed GSP materials creation they understandably shy away, all the more so as the faculty reward system continues to privilege traditional publishing activities. As a result, contingent faculty or even graduate students often sustain the effort as best they can (Grair, 2010), further strengthening the detrimental fault lines and hierarchies of FL departments.

Faculty Expertise and Competence

Beyond faculty availability lie issues of faculty competence and faculty development. GSP publications readily acknowledge that faculties who lack an educational background in technical, scientific, or business fields might be considered (and consider themselves to be) unqualified to teach such courses. In reply they emphasize that the role of faculties in GSP courses is less one of conveying the details of disciplinary content and more one of facilitating overall communicative abilities in German, starting at the beginning of instruction and gradually moving toward upper performance levels (von Reinhart, 2001; Rarick, 2009). Such a pedagogy would also allow students to be the "subject matter experts," a shift in power relationships that is seen to be favorable in communicatively oriented classrooms. The dilemma of faculty expertise is likely to remain as long as a GSP orientation has no presence or status in graduate education, the setting for the education of the future faculty.

Need for Curricular Thinking

The orientation of GSP toward advanced, professional ability levels is difficult to conceptualize, much less realize programmatically for two overriding reasons. First, integrated curricula spanning the full four-year undergraduate sequence and thereby capable of sustained continued language development are notoriously rare in college FL departments, including German departments. Second, inasmuch as GSP offerings often come about because of tenuous, accommodating, even defensive postures, they are often even less capable of developing a principled conceptual framework for a comprehensive GSP curriculum.

Under those conditions curriculum is what is deemed to have been "successful" elsewhere, with "workability" often being elevated to "model" status for initiatives in one's own institutional context. Beyond the URI program (Rarick, 2009), only the GSP courses within the explicitly genre-oriented and task-based curriculum within the German Department at Georgetown University show principled curricular thinking and, with that status, are fully integrated into the department's degree requirements and its efforts of moving students toward advanced forms of multiple literacies. Otherwise, programs debate what should be included in a "GSP curriculum" (Borst & Schenck, 2007), affirm the central role of "culture" (Hoecherl-Alden, 2000), and suggest diverse content areas. Not surprisingly the EU and Germany's position within it receive repeated mention (Weigert, 2004; Rinner & Weigert, 2006; Hedderich, 2009).

The Central Role of Study Abroad

GSP programs are unique for their heavy emphasis on study-abroad opportunities in both forms, academic study and internships in the professional environment in question. In fact, the breadth and quality of the internships offered in full-fledged GSP programs, particularly in Business German, are a key attractor and a key indicator of their success. In addition, the privileged non-negotiable status of study abroad *cum* internship has a favorable washback effect on the at-home program inasmuch as it strongly points to certain curricular needs and their appropriately integrated pedagogies (von Reinhart, 2001).

The need to assure that students perform well in their study-abroad internships also translates into a compelling presence for "culture" that may well exceed that found in "regular" humanities programs, all the more so as GSP programs are keenly aware of and can readily point to the impact of different cultural contexts on the conduct of professional work (Hedderich, 1999; Grair, 2010). Such cross-cultural preparation is crucial in light of Kinginger's (2008) finding that the value of a sojourn abroad, both for language learning and greater cross-cultural sensitivity, depends on the qualities of students' experiences abroad as they interact with members of the other culture *and* their own personal stances in relation to those experiences. Both factors are explicitly attended to in GSP programs in the direct link to students' chosen career paths. While no published studies exist, the admirable retention rates documented at URI as well as the graduates' strong job placement record as indicated by internal studies provide highly suggestive corroborating evidence for the value of the nexus of work, study abroad, and the academic program itself (Rarick, 2009).

Performance-Oriented Pedagogies

Beyond the pedagogical practices that describe a communicative orientation, GSP pedagogies show several unique and highly desirable characteristics. The following stand out: (a) task-based teaching can become "real" with a palpable sense of immediacy and relevance; (b) collaborative project work can be taken directly from the world of the professions (e.g., engineering; business), thereby endowing in-class tasks with meaning and purpose (Setje-Eilers, 2007; Hager, 2009); (c) the prevalence of case studies, particularly in the business world, can be directly translated into extended, linked educational activities that advantageously blur the line between the inside world of the classroom and the outside world of work (Hoecherl-Alden, 2000; Ulrich, 2000); (d) additionally, all modalities can be readily connected, for example, purposeful reading, collaboratively discussing an issue in order to achieve a consensual course of action, and then presenting it formally, orally or in writing, in order to convey its key points and purposes (Weigert, 2004); (e) the task of learning rich disciplinary and technical vocabulary, a formidable hurdle for L2 learners, can be connected to a knowledge base that students generally already have (von Reinhart, 2001); (f) the need to acquire advanced ability levels, particularly in oral and written presentations and in negotiation environments, can be motivated and readily translated into demands and formats that show much similarity between classrooms and the world of work (Rarick, 2010); and (g) the purposive and audience-oriented nature of communication in the professions translates into the possibility of focusing on diverse verbal strategies of representation and patterns of meaning-making as they prevail in particular professional environments (Ryshina-Pankova, 2010).

In addition, the dearth of suitable instructional materials, the demand for up-to-date information on specific professional topics, the collaborative nature of the world of work, and the pervasive use of technology for information gathering and sharing and also for interacting in the world of the professions motivates a central position for technology in GSP education, turning it into medium and message, learning environment and professional environment, student-centered opportunity and work-oriented necessity (Hager, 2007).

Materials Development

As mentioned, lack of appropriate materials is a major challenge for GSP professionals and a constant focus of their attention. Once more, the disadvantageous situation is addressed primarily through collaboration and information sharing of materials that were developed through local initiative and on the basis of local experience of "what worked,"

for instance, in a particular course. In that sense, materials development in GSP is even less well theorized and supported by well-specified principles than it is in the FL overall.

Embracing an Assessment Orientation

Finally, an emphasis on assessment distinguishes GSP from regular German instruction. To date, opportunities for expanding horizons regarding classroom-based assessment in linked content and language learning remain to be seized in GSP as they do in FL studies in general (Byrnes, 2008). On the other hand, the non-negotiable demands of certification and licensing in the professions, the need for recognition of international standards, and the transferability of examination results have resulted in a noteworthy presence of diverse testing regimes in GSP. Most prominent are the intermediate-level, 2-day *Zertifikat Deutsch für den Beruf* (ZDfB; Certificate in German for Professional Purposes; http://en.wikipedia.org/wiki/Zertifikat_Deutsch_f%C3%BCr_den_Beruf), at the B2 level of the Common European Framework of Reference, and the even more challenging (above the C1 level) *Prüfung Wirtschaftsdeutsch* (PWD, Examination German for Business, http://www.dihk-bildungs-gmbh.de/index.php?id=8). They exert the kind of positive and negative curricular and pedagogical pressures, along with materials preferences and the need and opportunities for faculty development, that are commonly associated with national and international testing regimes.

With such characteristics, GSP presents considerable innovations for linking content and language learning, classrooms and the professional world, and learning in instructional settings and life-long learning. To date, it realizes the potential in an educational environment that, more often than not, is unsupportive of those efforts. Yet, as higher education considers its mission in relation to the nature of knowing and learning and as FL studies wrestles with assuring that FL programs enable students to acquire high levels of linguistic and intercultural competence for a globalized world, insights gained in GSP have the potential of showing useful directions for educationally sound practices.

My thanks go to Damon Rarick for personal communication about issues in GSP and to Mackenzie Barrow, my graduate research assistant, for help in compiling the bibliography.

SEE ALSO: Assessment of Business and Professional Language for Specific Purposes; Assessment of Cultural Knowledge; Common European Framework of Reference; Content-Based Language Instruction; Culture; Integration of Language and Content Learning; Materials for Language for Specific Purposes; Task-Based Assessment; Teaching for Internationalization and Critical Citizenship

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Gesture Analysis in Second Language Acquisition

MARIANNE GULLBERG

Gestures—or bodily "actions that have the feature of manifest deliberate expressiveness" (Kendon, 2004, p. 15)—are an integral part of how we communicate. When we speak, we typically also gesture, and we deploy this rich expressive resource in sophisticated, systematic, and nontrivial ways (Kendon, 2004; McNeill, 2005). Contemporary gesture research shows that gestures are closely linked to language and speech in production, comprehension, and development. Gestures reflect and interact with cultural, linguistic, cognitive, and more general aspects of communication, showing systematic variation across a range of measures in each of these domains (see Kendon, 2004; McNeill, 2005). Although the predominant function of gestures is under debate (Kendon, 1994), scholars generally agree that gestures serve both addressee-directed ("interactive") and speaker-directed ("internal") functions in communication. Speakers thus produce gestures for addressees to convey meaning and structure; to clarify, disambiguate, and highlight messages; to regulate turn taking; and so forth (Holler & Beattie, 2003; Bavelas, Gerwing, Sutton, & Prevost, 2008; Streeck, 2009). Addressees also attend to and process gesture and speech together as an integrated message (Cassell, McNeill, & McCullough, 1999; Willems & Hagoort, 2007). Conversely, speakers produce gestures for themselves to help organize thoughts and facilitate their own expression (Kita, 2000).

Under this view, gestures are an integral part of communication in the same arena as speech and language, subject to crosslinguistic, sociolinguistic, and psycholinguistic variation. They therefore become a natural extension of second language (L2), foreign language (FL), and bilingualism studies, where they can be examined as a system to be acquired (the acquisition of gestures), as a medium of development (the effect of gestures on acquisition), and as a window on language development (gestures in acquisition). Gesture analysis can shed new light on familiar issues such as crosslinguistic influence, interlanguage, communication strategies, the role of interaction and collaborative processes, the role of multimodal input and output (processing) for acquisition and use, pragmatics, classroom practices, effects of study abroad, assessment, (mono- and bilingual) native-likeness, and so forth (see papers in Gullberg, 2006, 2010; McCafferty & Gullberg, 2008; McCafferty & Stam, 2008). This entry does not exemplify these research domains or discuss their theoretical underpinnings, but instead focuses on methodological aspects of gesture analysis.

Gesture Analysis in L2, FL, and Bilingualism Studies

What to Study and Measure

As in all research, the design and methodological details of studies involving gestures depend on research questions and theoretical frameworks. Decisions must be made concerning the choice between observational, naturalistic versus structured, elicited, and experimental designs; longitudinal versus cross-sectional formats; and case versus group studies. Multimodal behavior is complex and it is important to determine exactly what

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behavior (e.g., manual gestures, gaze direction, head movements, etc.) and what dimensions thereof are relevant (e.g., presence–absence, gesture frequency or rate, form, meaning, function, timing relative to speech, contextual use, order in sequence). That is, it is crucial to specify how gestures are identified and the relevant unit(s) of analysis. For example, gestures are variously defined as gesture "phrases" (all movement between two major resting positions: hands on lap—movement—hands on lap) or as gesture "strokes" (only the nucleus or apex of individual movements, disregarding preparatory movement or retractions of hands). Different gesture definitions obviously influence other analyses (e.g., of gesture rate), especially where gesture units are analyzed in relation to spoken units of analysis such as turns, utterances, clauses, or speech exactly aligned with the gesture. Methodological rigor and explicitness are crucial to replicability.

Note again that there is no simple way to determine the measures for a given research question that are most relevant to L2/FL/bilingual studies, but it depends on the theoretical framework. Studies have employed all dimensions listed above, but most frequently gesture rate (Pika, Nicoladis, & Marentette, 2006), gesture form and meaning (Choi & Lantolf, 2008), timing (Stam, 2006), function (Gullberg, 1998), and degree of co-expressivity with speech (Brown & Gullberg, 2008). Most studies involve gesture production, whereas studies of gesture comprehension are very rare.

Tasks and Participants

Like speech, gesture production is influenced by a range of contextual variables. Some tasks, settings, and topics are more conducive to gesture production than others. Naturalistic studies often do not use any "tasks" but record whatever activities interlocutors are engaged in. Elicitation tasks, in contrast, are often designed to promote spontaneous gesture production while keeping the content of speech and contextual variables constant to facilitate comparison across participants, and—importantly—minimizing speakers' conscious awareness of their own gesture production. Most researchers hide the fact that gestures are of interest until after task completion. Elicitation tasks often involve narratives or story retellings, picture or video description tasks, or referential communication tasks on spatial or action-related topics. Some tasks also involve practical actions and object manipulation such as the use of dictionaries (Platt & Brooks, 2008). Since gestures are more frequent in dialogic face-to-face interaction (Bavelas et al., 2008), tasks and settings are often dyadic with confederate or naive interlocutors, although the private speech and gesture of individual speakers are also studied (McCafferty, 1998). Gestures are also more frequent when new information is conveyed for a communicative purpose (McNeill, 1992), making experimenters, who demonstrably already have relevant knowledge, unsuitable interlocutors. Finally, because gesture production co-varies with speech, tasks typically aim to elicit more than individual words or single utterances.

Gesture comprehension tasks could include everything from questionnaires, picture naming, and similarity judgment tasks to electrophysiological measures of the brain's activity during comprehension.

Participants are typically L2/FL users at different levels of proficiency and fluency, bilinguals, and often also (monolingual and bilingual) native speakers as control groups. L2/FL users/bilinguals are often observed using both their languages (typically counterbalancing language order across participants in experimental studies). The same selection criteria apply as for other L2/bilingual studies regarding language background, age of exposure, proficiency, FL versus L2 learning, usage patterns, gender, socioeconomic background, and so forth. Note that since there is individual variation in the general propensity to gesture such that some participants hardly gesture at all, it may be necessary to record many more participants than are included in the final analysis to reach acceptable sample size. Unfortunately, the dropout rate is typically not reported.

Finally, in studies where comparisons are made of speech and gesture across groups, tasks, or time points, it is important to establish baselines. If L2/FL/bilingual speakers' gesture production is to be compared to that of monolingual/native speakers, it is crucial to establish the baseline variation in both groups. It is equally useful to determine variation within an individual, for instance to compare the same individual speaking the first language (L1) versus the L2, or the L2 in a simple versus a hard task, in fluent versus disfluent speech, before versus after some training intervention or study abroad, and so forth.

Data Collection

The study of gesture requires audio and video data, now typically in digital form. If video data are collected, participants' anonymity and privacy must be protected, and written consent to use video data, specifying contexts of use (seminars, scientific conferences, publications, etc.) should always be collected.

For production data collection, technical decisions to be made include the type of video (analog vs. digital), video format and sampling rate (number of video frames per second; PAL 25-NTSC 30), number of cameras (to capture an individual speaker vs. all speakers or the whole scene; details of face, etc.), recording angles (en face, from the side, from above, etc.), lighting and background, and use of separate audio-recording devices (recommended). In laboratory settings, motion capture technology allows body movements to be recorded in three dimensions (rather than two on video) using reflectors attached to the body tracked by infrared cameras. This technology provides high spatial (0.5°) and temporal (2 ms) resolution and allows for semi-automatic analysis. Further practical decisions concern the location (at home, in the classroom, in the lab), seating arrangements (face-to-face, side-by-side, with or without intervening furniture, physical distance between interlocutors, etc.), the visibility of cameras, and so forth.

For comprehension, technical decisions include the form and display medium of gesture data (static vs. dynamic images, display on TV/computer vs. big screen, small vs. life-sized projection, etc.), and the form of response data (interview data, questionnaires, immediate recall protocols, reaction times, etc.). In all cases, instructions should be explicit and replicable.

Transcription, Coding, Analysis

Gesture studies must transform visual data to easily analyzable formats via transcription and coding. A range of (free) software is available to annotate digital video (e.g., ELAN, www.lat-mpi.eu/tools/elan; Anvil, http://www.anvil-software.de/), the use of which facilitates the establishment of inter-rater reliability.

Determining how and what to transcribe is challenging since gesture studies lack a standardized transcription scheme (for two influential approaches see McNeill, 1992, 2005; Kendon, 2004). Most schemes target the temporal relationship between speech and gesture (when does the gesture move relative to speech?) and the kinetic properties of gestural movements (what moves where and how? i.e., articulator, place of articulation, movement trajectory, hand shape). Transcription usually proceeds frame by frame, although semi-automated systems are being developed.

Many further classification schemes (see Kendon, 2004, for an overview) invite scholars to code semantic or functional properties of gestures such as co-varying dimensions of iconicity, deixis, metaphoricity, and rhythm (McNeill, 2005) and communicative functions (e.g., self-regulation, attention-directing). Other coding categories include degrees of co-expressivity between speech and gesture, location in gesture space, and gesture size. Such coding schemes allow questions like the following to be addressed: Do L2 speakers

express missing lexis in gesture instead of in speech (co-expressivity)? Do English–Japanese bilinguals switch gesture size depending on language (location in space/gesture size)? Careful analyses of accompanying speech are also vital.

Analyses in L2/bilingual studies typically compare native monolingual to non-native bilingual speakers and often examine accuracy and appropriateness to determine degree of acquisition, proficiency, and native-likeness. This is more challenging for gesture than for speech. Only one gesture type, conventionalized gestures or "emblems," with fixed form and meanings like the thumbs-up sign, can be coded for well-formedness. However, other, non-conventionalized gestures lack such standards. Comparisons must instead be based on more fluid measures such as similarities in preferential usage patterns.

Gesture rate, frequently analyzed in L2/bilingual studies (Pika et al., 2006), should be based on a computation of gesture frequency per some unit of speech rather than time (e.g., number of gestures/100 words) to account for the fact that gesture production co-varies with amount of speech. L2 speakers may be disfluent and speak and gesture slowly. Comparisons to native speakers should reflect this difference.

Given the range of phenomena to study and the covariation of gesture with multiple aspects of communication, L2/bilingual gesture studies require creative designs and analyses. Both qualitative and quantitative approaches are needed to improve our understanding of speech–gesture interaction across cultural, linguistic, and learning contexts.

Gestures and speech form an audiovisual ensemble and gesture analysis opens new vistas on the full range of L2 speakers' communicative and linguistic resources. As such, it is a crucial addition to the applied linguist's analytical toolbox.

SEE ALSO: Conversation Analysis and Multimodality; Rhythm and Timing in Interaction; Second Language Acquisition and Gesture; Thinking for Speaking in Second Language Acquisition; Transcribing Multimodal Interaction

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Gibbons, John

RICHARD POWELL

John Gibbons (1946–) is a major contributor to the fields of bilingualism and forensic linguistics. He is now semiretired in Australia, but his London roots still remain clearly detectable in his accent. While studying for his BA in Spanish and French at Exeter University, Gibbons spent a year in Spain teaching English. The experience sparked an interest in English-language teaching (ELT) as a way of pursuing his passion for travel. Graduating from Exeter in 1968, he took a Certificate in Education before spending two years teaching English and French at a Nairobi high school. He returned to the UK to teach English to immigrant children and in 1973 completed an MA at Lancaster University, focusing on linguistics for ELT. He subsequently took up a lectureship at the University of Hong Kong, initially in the Language Centre and then at the Education Faculty, where he trained English teachers and taught applied linguistics. The vibrant sociolinguistic environment of Hong Kong brought an enduring fascination with bilingualism. He wrote his doctoral thesis on Hong Kong bilingualism for Reading University under the supervision of Peter Trudgill and Frank Palmer, and gained his PhD in 1983. Some of this research was published as *Code-Mixing and Code Choice* (Gibbons, 1987).

Central to this work is the hypothesis that one language choice made by many Hong Kong speakers is a mixed code neither entirely Cantonese nor entirely English. While Cantonese tends to dominate this mixed code, it includes a great deal of English, especially nouns and verbs. Gibbons found the reason for inserting English vocabulary to be not so much that equivalent Cantonese words don't exist, or are unknown to particular speakers, but rather that speakers subconsciously find English terms more appropriate for certain topics and in certain social settings. An example frequently cited in the research is academic discussions in universities. The idea of mixed code as a positive language choice is now widely accepted in sociolinguistics.

In 1983 Gibbons took up a lectureship in Michael Halliday's Linguistics Department at the University of Sydney, running the MA program in applied linguistics. In 1987 he helped organize the AILA Congress in Sydney and coedited (with Halliday and Howard Nicholas) the subsequent collection *Learning, Keeping and Using Language* (1990). In Sydney he also expanded his interest in bilingualism and language maintenance, coauthoring a number of studies on the maintenance of Italian with Camilla Bettoni. His research, with Elizabeth Ramirez, into the maintenance of Spanish was summarized in *Maintaining a Minority Language* (2004).

An invitation to be an expert witness in a court case involving a second language speaker was the catalyst for Gibbons' other major academic interest: the relatively new field of forensic linguistics. Gibbons worked as an expert linguist on more than 30 cases for bodies such as the New South Wales Police, the Australian Federal Police, the Refugee Review Tribunal, and many prominent legal practices.

Forensic linguistics also has the wider meaning of the study of how law and language interface. With this sense in mind, Gibbons has authored a number of major texts on the nature of legal language and discourse, including *Forensic Linguistics* (2003), which was subsequently translated into Chinese and Japanese, and *Language and the Law* (1994), which was shortlisted for the 1995 BAAL book prize. He was chief editor (with H. Nagarajan,

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V. Prakasam, and K. V. Thirumalesh) of *Language in the Law* (2004) and coeditor (with Maria Teresa Turell) of *Dimensions of Forensic Linguistics* (2008). With Dennis Kurzon he coedited a 100,000-word section on "Law and Language" for the *Encyclopedia of Language and Linguistics* (2005). One of Gibbons's aims has been to show how lawyers control witnesses by asking them questions that encourage them to fit their answers into a particular interpretation of the evidence while leaving them little room to present a rival picture. He has been active in encouraging police forces to issue clearer advice to suspects about their rights while under arrest. His experience of Spain and Latin America has enabled him to draw comparisons between the civil law systems of that part of the world and the adversarial legal systems found in most of the English-speaking world.

Gibbons served as President of the International Association of Forensic Linguists and as convener of the AILA Scientific Commission on Forensic Linguistics. He has published 60 academic papers, including four in the journal *Applied Linguistics*. He has also authored texts for English as a second language. His work, especially in the field of forensic linguistics, has attracted wide media attention, with newspaper reports, television appearances, and 20 radio interviews, including one for the BBC on voice identification of Osama bin Laden.

At the end of his career in Sydney, Gibbons returned to Hong Kong for three years from 2002 as a Professor at Hong Kong Baptist University, where he edited with Ng Sik Hung a special issue of *Journal of Language and Social Psychology* on "Thinking Bilingual and Acting Bilingual" (2004).

Now living in Melbourne, Gibbons is an honorary Adjunct Professor at the University of Western Sydney and holds dual British and Australian citizenship. He continues to receive invitations to teach courses around the world, most recently at the University of Malaya, Cardiff University, and Akita International University in Japan. He is on the editorial boards of the *International Journal of Speech*, *Language and the Law*, the *Journal of Multilingual and Multicultural Development*, and *Translation Watch Quarterly*.

SEE ALSO: Bilingualism and Bilinguality; Code Mixing; Code Switching; Forensic Linguistics: Overview; Halliday, M. A. K.; Language of Courtroom Interaction; Legal Language

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Gimson, A. C.

JOHN WELLS

Professor Alfred Charles (A. C.) Gimson (1917–85) was the most influential British phonetician of the second half of the 20th century. He is known particularly as the author of the standard work *An Introduction to the Pronunciation of English* (1962).

Gimson grew up in London. He received his secondary education at Emanuel School in Wandsworth and then studied for a BA degree in French at University College London (UCL). It was there that he first came into contact with phonetics, by way of classes in French phonetics taught by Hélène Coustenoble in the Department of Phonetics headed by Professor Daniel Jones, the world authority on English pronunciation (and that of many other languages). He graduated with first-class honours in 1939, whereupon Jones recruited him as an assistant. Within a few weeks, however, World War II broke out. Gimson was called up into the British Army, where he put his language skills to good use, serving with distinction as a liaison officer first with the Free French and then with the Free Polish forces. By the end of the war in 1945 he had been promoted to the rank of major.

At that point Daniel Jones intervened to enable him to be discharged early from the army, to join the UCL Department of Phonetics as a lecturer. This was despite the fact that Gimson not only had no doctorate, but not even a master's degree. This shortage of qualifications would nowadays mean that such an appointment would be inconceivable. In the special circumstances of the immediate postwar situation, however, it was not unique.

Gimson never did acquire any higher degrees. Nevertheless, UCL did not hesitate to promote him in due course first to reader and then to professor, as the holder of the chair in phonetics previously occupied by Jones.

As well as general lecturing duties, Jones speedily enrolled Gimson to assist him in the task of running the International Phonetic Association (IPA) and helping to edit and proofread its journal, *Le Maître phonétique*. This journal was unique in that it was printed entirely in phonetic transcription. Many of the articles were in English, but the administrative matter was all in French, as were many of the short illustrative anecdotes published in its [parti dez elɛv] (*partie des élèves*, or Learners' Section). Gimson's ability in French phonetics, including the ability to write French in phonetic transcription, was clearly vital. In 1950, on Jones's recommendation, Gimson was elected secretary and treasurer of the association, a role which also involved the editorship of the journal. He remained a key figure in the IPA until his death 35 years later.

Over the first 20 years of Gimson's editorship of the journal, he gradually moved it more and more from being a members' newsletter with short scholarly notes to becoming a mainstream scholarly journal. But as a publication it was held back by the insistence on the exclusive use of phonetic transcription both for editorial matter and for articles by contributing phoneticians. This severely restricted the pool of potential contributors, while even those who could handle the task of composing in phonetic transcription may have felt inhibited when they attempted to express themselves on more technical or intricate matters. Furthermore, it restricted the size of the readership, since it made the journal inaccessible to all except the initiated, those who could read English and French (and sometimes other languages) in phonetic transcription. In those pre-electronic days it also made it very expensive to print, since the type could be set only by specially trained compositors. In 1970 Gimson made the important decision to switch the journal to ordinary

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spelling, and to rename it *Journal of the International Phonetic Association* (*JIPA*). Since then *JIPA* has gone from strength to strength.

The IPA sponsors the International Phonetic Alphabet but does not specify a unique transcription system for particular languages. Thus there can be several competing IPA symbol sets applied to English. Not only in the IPA journal but also in the wider world, until the 1960s the phonetic transcription of English had mostly followed Jones's "quantitative" system, in which the long vowels were written with length marks and the short ones using the same symbols without the length marks. Thus *bead* was written as [biːd] and *bid* as [bid], *caught* as [kɔːt] and *cot* as [kɔt]. There was also a less widely used, "qualitative," notation system in which length marks were not used but the distinction between long vowels and the corresponding short ones was captured by the use of different letter-shapes: *bead* was written as [bid] and *bid* as [bɪd] (or alternatively [bɪd]), while *caught* was [kɔt] and *cot* was [kɒt]. Meanwhile in the United States other scholars had been experimenting with such notations as [biyd], [bid], [koht], [kot]. Over the period 1950–60 Gimson experimented with various other transcriptional solutions for "Southern British" English, trying them out in the journal. Finally he hit on the system which has now been adopted by almost all British phoneticians and has become the standard phonetic notation in British-published dictionaries and textbooks. This is a "qualitative-quantitative" system in which both length marks and distinct letter shapes are used to distinguish the pairs of vowels. We now write *bead* as [biːd], *bid* as [bɪd], *caught* as [kɔːt], and *cot* as [kɒt].

Gimson's other main transcriptional innovation for English was the replacement of Jones's [ou] (oʊ) in words such as *goat* by [əu] (əʊ), thus reflecting the 20th-century pronunciation change in which the first element of this diphthong became central and unrounded rather than back and rounded.

These transcriptional decisions were launched on a wider audience in *An Introduction to the Pronunciation of English* (Gimson, 1962). This quickly established itself as the authoritative reference book on Received Pronunciation (RP, the widely accepted standard way of pronouncing British English). It has undergone several substantial revisions since then: a second edition was published in 1970 and a third in 1980. After Gimson's death a fourth edition, revised by Susan Ramsaran, was published (Gimson, 1989). Following Dr Ramsaran's withdrawal from academic life, subsequent editions have been edited and extensively revised by Alan Cruttenden, under the revised title *Gimson's Pronunciation of English* (Cruttenden, 1994), with subsequent editions in 2001 and 2008. Gimson's book has thus been the standard work on the subject for half a century and is likely to retain this position for many years more.

Gimson also produced two textbooks aimed at the English as a foreign language (EFL) market. The first was *English Pronunciation Practice* (Arnold & Gimson, 1965/1976) and this was succeeded by *A Practical Course of English Pronunciation: A Perceptual Approach* (Gimson, 1975). As the title implies, the latter in particular places great stress on ear training as a necessary part of pronunciation learning. The influence of American structuralism can be seen in Gimson's extensive use of minimal pairs for exercises in both perception and production.

In 1971, on the retirement of Dennis Fry, Gimson became head of a newly amalgamated Department of Phonetics and Linguistics at UCL, combining Jones's Department of Phonetics with the Department of Linguistics founded by M. A. K. Halliday. (This amalgamation was reversed in 2007 when UCL reorganized it into two "research departments" of speech, hearing, and phonetic sciences on the one hand and linguistics on the other.) Prior to Gimson's appointment, there had been no undergraduates registered in the department: under Jones and then Fry, phonetics had been taught only to students from other departments, occasional students, and postgraduates. Under Gimson there came to be two undergraduate degrees provided by the department: the BA in Linguistics and the BSc in Speech

Sciences. Not only as head of department at UCL, but also as a council member of the College of Speech Therapists (now the Royal College of Speech and Language Therapists, or RCSLT), Gimson played a major role in making speech and language therapy (SLT) an all-graduate profession. Previously, the accrediting qualification had been a licentiate or diploma rather than a bachelor's degree. Nowadays, though, SLT training in Britain and Ireland is usually delivered in the form of a three- or four-year university first degree, accredited by the RCSLT. (In the United States, on the other hand, such training is delivered exclusively at the master's level—which is also possible in the United Kingdom.)

During the last 10 years of his life Gimson suffered from heart problems, which were treated with the then recently discovered beta-blocker drugs. He died from an unexpected heart attack while mowing his lawn using a manual lawn mower.

Although this biographical note reveals his full name, Gimson never used his first names: he always published as A. C. Gimson or A. C. G. Even his friends and colleagues did not know what his initials stood for. In the university and among phoneticians he was always known formally as (Professor) A. C. Gimson and informally simply as "Gim." (In both the long and short forms of his surname the [g] was "hard," i.e., a velar plosive.)

SEE ALSO: Phonetics and Phonology: Historical Overview; Phonetics and Phonology: Overview; Pronunciation Models

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Gorter, Durk

ALEX M. J. RIEMERSMA

Durk Gorter (born 1952 in Friesland, the Netherlands) grew up bilingually in Frisian and Dutch from birth. He was educated in sociology at the University of Groningen, the University of Amsterdam, and the University of California Santa Barbara (USA). His PhD thesis was on language use and code switching of local civil servants and their clients in Friesland (Gorter, 1987a, 1993).

In 1978 Durk Gorter was the first scholar in the sociology of language appointed at the Fryske Akademy, the research institute on the language, history, culture, and society of Friesland (founded in 1938). As from 1994, he combined his work at the Fryske Akademy with a part-time professorship of Frisian sociolinguistics at the University of Amsterdam. His appointment, in 2008, as a research professor with the Ikerbasque foundation at the University of the Basque Country (in Donostia-San Sebastián, Spain) is a significant development in his academic career. He continues to be involved in joint research activities between the University of the Basque Country and the Fryske Akademy.

His main fields of research are multilingualism, comparative studies of European minority languages in education, and the linguistic landscape. He has participated in various European research projects, edited books and special issues of journals in his fields of specialization, and has been involved in the organization of international meetings such as the series of International Conferences on Minority Languages (ICML) that started in 1980 (Gorter, 2009).

He started his career as one of the researchers in the project "Taal yn Fryslân" (Language in Friesland; 1979–84); this is the most complete and highly valued survey on language use and language attitudes in Friesland. It comprises a thorough sociological study with over 1,000 respondents throughout the province of Friesland. The study focused on language competencies, language use in various domains (education, media, church life, and leisure time), as well as reading habits, language attitudes, ideology, identity, and language policy. The study included also the use of Dutch as the majority language and the non-Frisian dialects within Friesland (Gorter, Jelsma, Van der Plank, & De Vos, 1984; Gorter, 1987b). The survey was repeated a dozen years later as the project "Taal yn Fryslân op 'e nij besjoen" (Language in Friesland revisited; 1993–6). The overall results showed that while the oral use of the Frisian language (94% of the population understand Frisian and 74% are able to speak Frisian) as well as the reading competence (65%) remained stable, the reported proficiency in Frisian writing increased from 11% in 1980 to 17% in 1994 (Gorter, 1994; Gorter & Jonkman, 1995). The survey project in Friesland was part of the European Language Surveys Network (1994–9), which comprised similar survey projects in the Basque Country, Ireland, Wales, Catalonia, and Galicia.

Long before that Durk Gorter had become active on the European level. He was one of the founding fathers, together with, among others, Dónall Ó Riagáin and Helen Ó Murchú, of the European Bureau for Lesser Used Languages (EBLUL). This European organization for the protection and promotion of regional or minority languages in the European Union was created after the adoption of the Arfé resolution by the European Parliament (in 1981). He served on the Board from 1982 to 1990.

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In 1987 the Mercator network was set up, with the help of the European Commission, to store and collect documentation and information and to carry out research on minority or regional languages. It comprised three centers: Mercator Education in Ljouwert/Leeuwarden hosted by the Fryske Akademy, Mercator-Media in Aberystwyth (Wales), and Mercator-Legislation in Barcelona. The network centers closely cooperated to offer a broad range of information services. In his position as project leader of Mercator Education, Durk Gorter initiated several projects—among others, the Regional Dossier series which to date reflects over 40 minority languages of Europe (www.mercator-research.eu). Furthermore, important studies on teaching materials, teacher training, preschool provision, and trilingual education were carried out. Around the time of the start of Mercator Education, in April 1988, he was one of the organizers of a European conference on primary education of and in minority languages in the so-called EMU project. Over 100 delegates representing more than 40 minority language communities came together in Friesland for the first time during the European Union's existence to discuss issues surrounding primary education (Sikma & Gorter, 1990).

Through his work for Mercator Education and his research publications Durk Gorter contributed significantly to European comparative studies on language planning policies regarding regional and minority languages (Extra & Gorter, 2001, 2008; Cenoz & Gorter, 2005, 2008a; Gorter, 2008). He was also a member of the stakeholder group on languages for the preparation of the Lifelong Learning Program 2007–13 of the European Union and he did advisory work on language diversity for the Council of Europe.

From 1998 to 2005 Durk Gorter was also the President of the Berie foar it Frysk, the Frisian Language Advisory Board to the provincial government of Friesland. During his two terms as president he contributed greatly to the shaping of Frisian language policy in the field of public authorities, education, and the media, based on his great scholarly expertise. The Frisian Language Advisory Board has substantially influenced the renewed Covenant on the Frisian Language and Culture which was agreed between the central Dutch government and the provincial administration of Friesland in 2001 for a period of 10 years. The Board was also involved in guiding the process of implementation. The idea of co-responsibility of provincial and local municipalities for language planning was developed in a "menu system" based on a similar menu system in part III of the European Charter for Regional or Minority Languages of the Council of Europe.

In the Network of Excellence SUSDIV (Sustainable Development in a Diverse World) (2005–11) in the 6th European Framework Program, he became one of the task leaders. In this network he was able to develop the dimension of language diversity and multilingualism, amongst other things, through a focus on the newly developing field of linguistic landscape studies (Gorter, 2006; Cenoz & Gorter, 2008b; Bracalenti, Gorter, Santonico Ferrer, & Valente, 2009; Shohamy & Gorter, 2009; Gorter, Marten, & Van Mensel, 2011).

In his recent post at the University of the Basque Country Gorter has established the Donostia Research Group on Education And Multilingualism (DREAM, www.multilingualeducation.eu). His innovative research projects on multilingual education in the Basque Country (where Basque, Spanish, and English are used) compared to Friesland (where Frisian, Dutch, and English are taught), already show some interesting outcomes (Gorter & Cenoz, 2010; Cenoz & Gorter, 2011).

Durk Gorter's work has influenced the comparative study of European minority languages. He has been seminal for the development of linguistic landscape studies and currently he is involved in promising new work on multilingualism and education.

SEE ALSO: Language Policy and Multilingualism; Linguistic Diversity; Linguistic Landscape; Minority Languages in Education; Multilingual Education in Europe

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Graded Readers

RICHARD R. DAY

Introduction

Graded readers occupy an unusual space in foreign language (FL) teaching—unusual because many in the FL profession, particularly teachers, regard them as a valuable and indispensable resource while others, particularly FL researchers and theorists, view them with disdain. The strengths and weaknesses of graded readers (GRs) are discussed in this entry, with the aim of showing how helpful they can be not only in the teaching and learning of FL reading but in overall FL learning.

What Are Graded Readers?

When GRs made their first appearance in FL classrooms in the 1930s, they were reduced from the originals (e.g., classics, fairy tales, novels). The reduction (or simplification) involved using vocabulary and syntax appropriate for the grade (or level). However, as Hill notes (1997, p. 57), GRs originally written for FL learners appeared in the 1960s. As a result, terms such as "reduced" or "simplified" are not now generally used when discussing GRs. Rather, it might be more accurate to use the term "appropriate"—appropriate vocabulary, syntax, length, complexity, and genre for a particular grade.

The vocabulary used in GRs is determined primarily by frequency of occurrence. Unfortunately, each publisher uses its own frequency list so it is a bit difficult to say that the 200 most frequent headwords in a series from one publisher is the same as the 200 most frequent headwords in a series from another publisher.

In addition, GRs are sometimes based on analyses of commonly occurring words in related course materials. Authors also are allowed to use words not in its vocabulary list for a particular level if doing so helps the story work better. Words outside a publisher's list may be illustrated (particularly at lower levels), paraphrased, or put in context. Finally, some publishers allow authors to use words from the list for the next level up. Words that are outside of a level's list are given in a glossary at the end of a GR.

Another characteristic of GRs is appropriate syntax, which means beginning levels have easy syntax while higher levels use more complex structures. As with word-frequency lists, publishers have their own lists of grammatical structures and there is no uniformity among publishers about what grammatical structures are the easiest.

In addition to appropriate vocabulary and syntax, the length of GRs is controlled. The lower the grade, the shorter the GR. GRs written for beginners may be 10 to 15 pages with many illustrations to help convey meaning. GRs written for advanced learners may be 80 to 100 pages with few, if any, illustrations.

GRs are also controlled for their degree of complexity. For example, the plot of a GR novel written for beginners (e.g., a starter level or stage) would not be as involved as a plot of a GR novel written for advanced learners (a Level 6). In addition, in the starter GR novel, there would not be as many characters as in the Level 6 novel.

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Day and Bamford (1998) see GRs as "language learner literature." They write:

> We see the term of *language learner literature* as analogous to the terms *Young Adult Literature* and *children's literature*—established genres in their own right. It includes fiction and nonfiction, original writing, and texts adapted for language learners. But whatever form it takes, language learner literature presupposes the integrity that marks genuine writing: that it be not a lesser version of something else but a fully realized, complete-in-itself act of communication between author and audience. The basis for judging the success or failure of language learner literature is therefore identical to that of other writing: the response of its readers—the sense they make of the experiences they have. (p. 64)

Therefore, another important characteristic of GRs is that there is a wide variety of genres, from fiction to biography to stage plays to factual texts (e.g., Oxford University Press's *Factfiles*). GRs are written for a range of ages and tastes (e.g., romance, mystery).

Most GRs are in English, although there are some in French, German, Italian, and Spanish (Hill, 2008, p. 184). GRs in other languages (e.g., Mandarin, Arabic, Japanese) are needed.

Uses of GRs in FL Teaching and Learning

The primary use of GRs in FL classrooms is to teach FL reading. Most FL-reading experts posit two main approaches to the teaching of FL reading: extensive reading and intensive reading.

The intensive-reading approach may be seen as having three categories: grammar translation; comprehension questions and language analysis; and comprehension work and strategies. When GRs are used in an intensive approach, their roles are to provide a source for language study, for pre- and post-reading activities, strategy training, and vocabulary activities. Some GR series have many such activities either at the end of each chapter or at the end of the books. In addition, the learners may or may not read a complete GR.

An extensive-reading (ER) approach uses GRs very differently. The goal is for students to learn to read the FL. In an ER program, reading GRs is the primary focus. When students finish a GR, they select another one that is easy, interesting, and enjoyable, and read. They may engage in activities based on the GRs (e.g., Bamford & Day, 2004).

GRs are the foundation of an ER approach. Without GRs, an ER program cannot get off the ground. In a typical ER program, students start with GRs that they can read easily and that they find interesting and enjoyable. These initial GRs are in what Day and Bamford (1998, p. 92) call the students' "reading comfort zone." As they read a number of GRs in their reading comfort zones, they gradually move to the next level. So GRs that were initially too difficult become appropriate as the students' reading ability improves. Their reading comfort zones have expanded. Ideally, the GRs serve as a bridge to texts written for L1 readers.

When students read a great deal of easy books that they select and read for overall understanding, they learn to read (e.g., Iwahori, 2008), develop positive attitudes and increased motivation to read, learn the FL (e.g., Yamashita, 2004), and make gains in oral fluency, vocabulary, grammatical knowledge, and writing (see Day & Bamford, 1998).

A third use of GRs is to teach FL literature—a class reader approach (e.g., Greenwood, 1988). The focus is on the story itself and students examine the GR for its plot, theme, setting, and so on. GRs may also be used to teach extensive listening (e.g., Brown, Waring, & Donkaewbua, 2008) when a GR comes with an audio source. Lastly, GRs may be the basis for a complete FL curriculum (e.g., Macalister, 2008). Hill (1997, 2008) claims that GRs have everything needed for students to learn the FL.

Issues in the Use of GRs

GRs, according to advocates, are a rich and valuable resource that belongs in an FL curriculum. However, GRs have detractors. Perhaps the most widespread criticism of GRs is that the language is simplified or not authentic and learners who read GRs develop strategies that are not appropriate for reading unsimplified language (e.g., Honeyfield, 1977). There have been numerous rebuttals to this issue (e.g., Day, 2003). Among the points they make are:

- There are multiple definitions of "authentic materials," from texts written for L1 readers with no modifications (Scarcella and Oxford 1992, p. 98) to "a[n authentic] text can be one which is written for native speakers . . . or it may be a text intended for a language learner group" (Swaffar, 1985, p. 17).
- Materials written for an L1 audience and used with no modifications are too difficult for beginning and intermediate FL learners.
- Authenticity is not found in the text but in the relationship between the text and the reader.

A related criticism is that the simplified language of GRs is insufficient for FL learning. There is a robust literature that convincingly demonstrates that FL learners who read GRs in an ER program learn to read and increase their vocabulary knowledge (e.g., Pigada & Schmitt, 2006). Further, Day and Bamford (1998) summarized investigations of ER programs demonstrating gains in oral fluency, writing, and grammatical knowledge.

The Future of GRs

GRs have a long, albeit controversial, history. Given the developments with e-books and various devices to allow us to read texts digitally, we might wonder if traditional, hard-copy GRs will be replaced by e-GRs (see Eldridge & Neufeld, 2009). Whatever form GRs may take in the future, it is most likely a safe assumption that they will continue to play a valuable role in FL teaching and learning.

SEE ALSO: Authenticity in the Language Teaching Curriculum; Teaching Reading

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Grammar Analysis Techniques

WILLIAM CRAWFORD

The term grammar, while covering a wide range of topics ranging from the rules that generate phrases and clauses in a given language to the rules of "acceptable" language prescribed in usage books and style manuals, is used in this entry to refer to the structural description of rules that govern the linguistic behavior of a group of speakers. The unit of analysis for grammatical description of this type involves phrases and clauses (as opposed to intraclausal descriptions, the domain of discourse). From an *applied linguistics* perspective grammatical analysis is most relevant in two general areas: grammatical description and theoretical approaches to the development of grammar (in both first and second language contexts). These two areas can be quite different from one another, as descriptive approaches to grammar are not always concerned with making theoretical claims on language representation (as in many approaches to formal linguistics) or developmental claims (as seen in research in the area of second language acquisition). Grammatical description is, however, an important first step in theoretical work on grammatical development/change in that something needs to be described before it is explained. For example, a grammatical description may note that there are differences in the order of prepositional phrases following head nouns so that *the student of French with long hair* is an attested form but *the student with long hair of French* is not. This descriptive fact of English can be further explored from a theoretical perspective outlining the different structural relationships between a head noun and its associated prepositional phrases, and proposing an abstract syntactic category that accounts for this difference. The focus in this entry is on the grammatical analysis of English. The broad category of grammatical analysis covers both descriptive and theoretical claims of grammatical development or representation. This entry outlines the various techniques that have been used to analyze grammar from a variety of perspectives with a specific focus on second language development.

Counting Features

One of the most common techniques in grammatical analysis involves the quantitative analysis of selected grammatical features in a given set of data. Hinkel (2002) counted a wide range of grammatical features including tense, aspect, passive voice, infinitives, participles, noun clauses, relative clauses, and adjective clauses in both native and non-native argumentative essays to determine the extent to which the number and type of clauses in native essays differed from those produced by non-native essays. In this method of feature counting, Hinkel calculated a percentage rate for each grammatical feature by dividing the number of a given feature by the total number of words in each essay. Once the individual ratio for each feature in each essay was calculated, she ran a nonparametric statistical comparison (Mann–Whitney *U* Test) to compare the non-native essays by language background and with the native essay group.

Another method for counting grammatical features is found in the *Longman Grammar of Spoken and Written English* (*LGSWE*, Biber, Johansson, Leech, Conrad, & Finegan, 1999). This comprehensive grammatical description of English describes grammatical features in over 40 million words from four different registers: face-to-face conversation, academic

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writing, news writing, and fiction writing. Since one main purpose of the *LGSWE* was to describe the distribution of grammatical features by comparing the frequency of a given feature across the four registers (which were not equal), the method for counting features involved computing ratios of the raw number of a feature in a given register divided by the total number of words in that register and then multiplied by 1,000,000. This process, called normalization (see Biber, Conrad, & Reppen, 1998), provides frequency counts on a scale (per million words) which allows for comparison across corpora of different sizes. For example if a given feature occurred 100 times in a spoken corpus of 1 million words and the same feature occurred 75 times in a 2-million-word corpus, it would be appropriate to normalize these counts by dividing the number of occurrences into the total number of words and multiplying the resulting number by a factor of 10 (e.g., 100, 1,000, 1,000,000). Using this procedure, normalization of the two corpora per million words would show that the given feature occurs 100 times per million words in spoken language and 150 times per million words in newspaper language. Additionally, due to the large amount of data, quantitative analyses in corpus linguistics often use automatic grammatical tagging, a process by which grammatical features are counted by computer programs (Leech, Garside, & Bryant, 1994). Grammatical tagging allows the researcher to use computer software programs to identify different grammatical categories, including parts of speech and grammatical constructions such as phrase types, clause types, and semantic classes of verbs.

Obligatory Contexts and Target-Like Usage

Obligatory context refers to cases where the presence of a given grammatical form is required. For example, in a sentence such as *She go to the store,* the subject–verb agreement rules of English require that the verb have the third person -s inflectional morpheme in order for it to meet the grammatical rules of Standard English. In such instances, the form of the verb that includes this inflectional morpheme—*goes*—is obligatory. Studies using the criteria of use in obligatory contexts approach are concerned with the extent to which a learner is supplying an accurate form when it is required by the context. In this sense, acquisition of a form is determined by the extent to which a learner is using the correct form in an obligatory context. First used in L1 acquisition research to compare the presence or absence of morphemes in child language by reference to occasions where a morpheme would be present in adult language (Dulay & Burt, 1973), the concept of obligatory context is also used in second language acquisition research (see Meisel, Clahsen, & Pienemann, 1981). Obligatory context research in language acquisition is generally determined by dividing the number of correct uses in obligatory contexts by the number of obligatory contexts and then multiplying by 100 to arrive at a percentage of correct suppliance. For example, if a learner has provided 15 correct forms out of 20 obligatory contexts, the percentage would be 75%. Some (e.g., Cazden, 1972) have claimed that acquisition is determined when the learner has used the correct form in an obligatory context at a rate of 90%. However, there are problems with this approach. For example, in some cases it is not always clear what the obligatory context is. In English, phrasal verbs with non-pronominal objects may occur directly after the phrasal verb—*He picked up the book*—or between the verb and particle—*He picked the book up*. In this case, there are actually two obligatory contexts, so calculating suppliance in obligatory context would require identification of variable contexts. Another problem with obligatory context research is that while obligatory context suppliance can provide information on how accurately a given learner uses a grammatical structure in the context in which it is required, it does not take into account cases where a form is supplied in a nonobligatory context such as *I traveling*

to Italy last summer. A suppliance in obligatory context approach would not count the progressive form of the verb and would potentially miss cases where a form appears in contexts where it is not permitted.

Another approach to characterizing grammatical development uses the concept of target-like usage, which characterizes language by analyzing all of the cases where a given grammatical feature appears (i.e., both obligatory and nonobligatory contexts). Calculating target-like usage involves adding the number of correct uses in obligatory contexts and the number of uses in nonobligatory contexts, dividing this by the total number of obligatory contexts, and then multiplying by 100 to arrive at a percentage. For example, if a given feature was used correctly 15 times out of 20 obligatory contexts but also overused the form an additional 5 times, the target-like use rate would be 60%. Pica (1984) has shown how these two approaches can arrive at very different conclusions by reference to the same data. While both obligatory context and target-like usage include the concept of accuracy in their analytical procedures, the decision to use either of them depends on the extent to which the research is interested in characterizing accuracy by reference only to obligatory contexts, or whether it is also interested in the extent to which a form is used both accurately and inaccurately. It should be noted here that both of these approaches require reference to native-speaker norms, and some have argued (e.g., Bley-Vroman, 1983) that such a comparison does not take into account the learner language in its own right. Such a criticism can be more readily addressed in a target-like use approach, which is not wholly concerned with accurate use of a given grammatical form.

Form–Function Analyses

Form–function grammatical analyses are based on the theoretical assumption that meaning (i.e., function) is primary in language and that grammar, semantics, and pragmatics are mutually dependent on each other. The types of analyses that are used in this framework are employed for both descriptive and theoretical reasons. The *LGSWE* is perhaps the most comprehensive example of form–function description of English grammar using a corpus-linguistics methodology. The *LGSWE* analyzes large samples of language gathered from specific situations of use (i.e., registers) by (a) identifying the frequency of grammatical (or lexical) features from texts and (b) providing a functional explanation for the quantitative findings. For example, the *LGSWE* reports that progressive aspect is more common in face-to-face conversation than in academic and news writing. This finding is then given a functional explanation related to the situational variables associated with face-to-face conversation such as purpose of communication and shared physical context, which results in a greater use of progressive aspect relative to academic and news writing.

In another approach to form–function analysis, language is seen in terms of pairings or "mappings" of grammatical form to semantic or pragmatic function, and function to grammatical form. The most widely accepted form–function view of language is found in Halliday's (1994) systemic functional grammar (SFG). While the intricacies of SFG are too complicated to describe here, the theoretical claim of SFG is that grammatical form can be related to three basic functions (each with a set of subfunctions). The main aim of SFG is to provide an explanation for how spoken and written texts are constructed to reflect the set of functions that comprise the basis of language.

Form–function analysis is also used in studies of language development. In a classic form–function mapping study, Huebner (1983) showed that the article *the* (produced by the learner as *da*) followed a set of developmental stages that corresponded to the extent to which the speaker believed that the noun following the article was known to the hearer, referred to a specific referent, and was functioning as the topic of the sentence. Using a

case study to illustrate the acquisition of the definite article, Huebner showed that the acquisition of the grammatical form of the definite article preceded the gradual acquisition of the target-like functions associated with it.

Error Analysis

The analysis of errors in learner language has a long history in the field of second language acquisition and teaching. In the late 1950s, L2 learner performance was thought to be related to the differences in the language systems of the native language and the target language (i.e., interference). In the 1960s and 1970s, an interest in looking at actual language performance resulted in the technique of error analysis. In this methodological approach to L2 acquisition, it was believed that a systematic account of learner errors served as the basis for language acquisition and teaching. It was further believed that errors (as opposed to mistakes, see Corder, 1967) should be viewed as systematic in the sense that they were indicative of a given learner's linguistic development. Although error analysis helped to shape the concept of interlanguage, it was not tenable from a theoretical perspective. One methodological problem with error analysis was the difficulty in selecting the linguistic source of the error. For example, if a learner produces a sentence with an agreement error such as *What factor make this successful?,* it is not clear whether the error is due to the lack of third-person singular marking on the verb or due to the lack of plural on the noun. Furthermore, it has also been shown (particularly in developmental sequence research) that certain learner errors can be indicative of language development.

While error analysis is no longer a popular theoretical tool for tracking L2 development in the sense that all errors are not equal (see discussion of developmental sequences below), the investigation of learner errors is still a popular issue in the field of L2 writing. Error-tagging (as seen in the Cambridge and the Longman learner corpora) can be helpful in showing frequent error types related to language background and proficiency level or other situational factors. Additionally, the concept of error is also relevant in the debate over the efficacy of error correction in L2 writing (see Ferris, 2006).

Accuracy, Fluency, and Complexity

The concepts of accuracy, fluency, and complexity are well represented in language-development research. The definition of these three concepts is hardly agreed upon by researchers, and this issue is addressed in the often-cited book by Wolfe-Quintero, Inagaki, and Kim (1998) where the authors report on a wide range of studies looking at complexity, accuracy, and fluency and the statistical support for the different ways these terms have been measured.

Of the three concepts, grammatical complexity is the most contentious. Complexity frequently uses the t-unit as a unit of analysis. First used to characterize the development of the writing of high-school-aged students by Hunt (1965), the t-unit consists of an independent clause and all associated dependent clauses. Complexity has traditionally been measured by calculating the ratio of number of clauses divided by the number of t-units, and grammatical development using the t-unit is characterized by the extent to which the ratio increases across grade levels in L1 high school students (Cooper, 1976) as well as proficiency increases in L2 learners (Hirano, 1991). Extending the concept of complexity to include a wider range of grammatical features and constructions in addition to the t-unit has also been a more recent development in research on grammatical complexity. Rimmer (2006) has argued that complexity is not solely related to the t-unit. For example, one can consider (a) different types of clauses (finite versus nonfinite) or (b) phrasal complexity

such as length of noun phrases or adverbial complementation as a measure of grammatical complexity.

Accuracy is defined as the extent to which language production adheres to a given language norm (even though what actually counts as a norm is dependent on language variety) or to situational variables such as level of formality or mode of communication. Hirano (1991) calculated a ratio of error-free t-units as a measure of linguistic accuracy; however, there are problems in identifying (and agreeing upon) errors, as noted by Polio (1997). One major factor in accuracy measure is to consider the extent to which individual errors are counted or whether a more holistic approach is used to characterize accuracy. While individual error counts can be useful in identifying specific types of errors, it is often difficult to establish agreement of these error types among different raters. Holistic accuracy scores do not provide information on specific error types but can often result in more agreement among raters.

Fluency has been used to refer to general overall language ability as evidenced by the amount or relative ease of language production, generally guided by the assumption that fluency is a good indicator of language ability. Fluency is measured in a number of different ways in both speech and writing. It has been measured in speech by reference to rate, number, and type of dysfluencies and pauses (Tavakoli & Skehan, 2005). In writing, fluency has been defined as the extent to which a given text adheres to the expectations of the audience in a given situation (Reynolds, 2005), by number of characters produced in a given span of time or text (Levy & Randsell, 1995), or by t-unit length (Hunt, 1965).

In addition to the variety of ways in which complexity, accuracy, and fluency have been measured, each of these terms is also important in various theoretical approaches to language development. The concept of syntactic complexity has been used in research investigating the extent to which explicit instruction (or lack of it) results in syntactically more complex structures—an area of investigation known as instructed SLA (Doughty & Williams, 1998). The importance of accuracy in SLA is related to Swain's comprehensible output hypothesis (Swain, 1985), which maintains that understandable production by L2 learners is a necessary condition in second language acquisition. Fluency has been considered to be a measurable aspect of L2 growth in the form of automatized procedural skill (Chenowith & Hayes, 2001). From a methodological point of view, complexity, accuracy, and fluency are often used as dependent variables in studies of language development with independent variables being proficiency, instructional treatment, or grade level.

Developmental Sequences

Work on developmental sequences (Pienemann, 1998) has shown predictable stages of grammatical development with learners from typologically different language backgrounds. Developmental sequences have been shown to occur for target-language word order, question formation, and negative structures and are best suited for researchers interested in the development of these particular structures. For example, in the negative sentence *I don't like that*, a learner may go through five stages of production with the target sentence being the fifth and final stage (i.e., stage one where a negator is placed directly before the verb in a subjectless sentence (*No like that*); stage two where there is a subject and a negator with no auxiliary verb (*I no like that*); stage three where there is variation between the presence or absence of an auxiliary verb (*I no like that/I don't like that*); stage four where a negator occurs with modal verbs (*I can't do that*) but not with an auxiliary verb (*I no like that*); and stage five where there is target-like production of the grammatical structure (*I don't like that*). Analyzing grammar with respect to developmental sequences allows for certain structures (even those that are not target-like) to be categorized into different types (or stages) and analyzed in relation to the extent to which they relate to other attested

stages of a given grammatical construction. For example, a learner who makes a stage-three error can be considered to be further along in their acquisition of negative structures than a learner making a stage-two error. Thus, grammatical analysis from a developmental-sequence perspective shows that not all errors are equal from a developmental perspective; some errors are more indicative of linguistic development than others.

SEE ALSO: Corpora: English-Language; Corpus Linguistics: Overview; Descriptive Linguistics; Interlanguage; Register

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Grammar and Discourse

OLGA DONTCHEVA-NAVRATILOVA

Grammar and discourse are key notions in linguistic studies, and are associated with two aspects of linguistic analysis. The study of grammar describes the system of rules and principles underlying the form and meaning of words, phrases, clauses, and sentences. The study of discourse explores language structures used in actual communication and analyzes the meaning conveyed by text in context, taking into consideration the participants' motivations, intentions, and purposes. Thus grammar and discourse may be seen as imposing different constraints on the selection of language resources that speakers of a given language have at their disposal. When we use language, considerations of grammar determine the set of structures available for the expression of a certain meaning and govern the choice of grammatical against ungrammatical forms, while discourse considerations motivate the selection of those grammatical means which can express context-dependent meanings and intentions in the most appropriate way. This entry will outline the most important aspects of the interaction between grammar and discourse, focusing in particular on the use and function of grammatical structures in different contexts of use and on the way grammar contributes to the organization of discourse.

Discourse Studies of Grammar

In recent years the study of grammar has gradually moved from a sentence-based to a discourse-based perspective. Discourse-based studies of grammar arose as a response to a growing awareness among linguists that the structural analysis of words, phrases, and sentences considered in isolation from communicative contexts is not enough to explain how grammatical structures are used in actual communication. The complex relationship between grammar and discourse is explored from different perspectives, reflecting the fact that the term "discourse" has different meanings to different researchers working in the heterogeneous field of discourse analysis. Despite the variation that exists, definitions of discourse and related approaches to discourse analysis may be seen as falling into three main categories: (a) language in use, (b) a stretch of language beyond the sentence, and (c) a culturally, institutionally, and ideologically determined social practice (Schiffrin, Tannen, & Hamilton, 2001, p. 1). Obviously, grammar is relevant to all these strands in discourse analysis. Nevertheless, most studies of grammar and discourse are associated with the first two approaches, since, as Biber, Connor, and Upton (2007, p. 1) observe, the third approach to discourse is rather socioculturally oriented and does not focus on purely grammatical phenomena.

Grammar can also be understood in a more restricted or in a broader sense. While commonly used to denote the morphology and syntax components of language, within some approaches to the study of language, such as generative grammar, the scope of grammar is extended to include pronunciation and meaning or to indicate a general theory of language (Jackendoff, 2002). Fundamentally, when approaching grammar from a discourse perspective, the study of language structure cannot be categorically delimited from semantic and lexical considerations. This is why many discourse studies influenced

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by Halliday's (1985) functional-systemic theory use the term "lexicogrammar" to account for the interdependence of grammar and lexis in the process of encoding and decoding language meanings. In spoken discourse, some grammatical structures may in addition acquire phonological characteristics, for instance the phonological reduction of *going to* to *gonna* for the expression of intention or future meaning.

Discourse studies of grammar are typically empirical and frequently corpus-based. While dealing with the study of linguistic forms in actual communication, they use frequency analysis to determine the regularities of distribution of grammatical structures in discourse, and detailed analysis for the interpretation of the pragmatic (or communicative) value of established patterns of use. For example, recent studies have looked into the functions of the *get*-passive in spoken discourse (Carter & McCarthy, 1999), the use of non-extraposition in speech and writing (Kaltenböck, 2004), and the functions of the discourse marker *instead* in spoken and written discourse (Fraser, 2007). Most investigations are carried out on a selected discourse sample representing a particular language variety, and their findings cannot always be generalized as valid for any kind of context. This is because the functional specialization of some grammatical structures may be dialect-, register-, or genre-specific, reflecting differences in the circumstances of context, production, and processing typical of the respective language variety. However, the study of context-specific grammatical patterns is highly important because, when conventionalized in a particular context, these function as indicators of that context and may be exploited by users to create context-dependent associations (e.g., *I'm gonna* and *I gotta* are associated with informal spoken discourse). A growing number of discourse studies of grammar share a pedagogical perspective, aligning with Hughes and McCarthy's (1998, p. 280) view that, by exploring structural choices and issues of appropriateness in relation to language learning, the discourse-based approach promotes an awareness of interpersonal features of grammar and provides insights into areas of grammar previously lacking satisfactory explanation.

Functions of Grammar in Discourse

It is now commonplace to recognize that grammatical structures can perform various functions in discourse. There is, however, considerable difference between the way in which formalism, as illustrated by the generative-grammar tradition, and functionalism, represented by approaches building upon the traditions of the Prague School of Linguistics (Dušková, 2003) and systemic-functional theory, understand the notion of function. Formalist approaches advocate the primacy of the study of syntactic functions of grammatical forms at phrase, clause, and sentence level. Within a usage-based view of grammar, the focus is on the frequency of distribution of grammatical elements and their potential to acquire their own pragmatic and semantic characteristics, which have an impact on language variation and change (Bybee, 2010). The functional approach draws on Jakobson's (1960/1990) and Halliday's (1985) categorizations of language functions, which relate grammatical forms to the purposes participants want to achieve in communication, or, as Biber, Johansson, Leech, Conrad, and Finegan (1999, p. 41) observe, functions can be assimilated to tasks performed by linguistic features in discourse. Despite some variation in the categorizations of language functions, generally they can be subsumed under three basic macrofunctions: ideational, interpersonal, and textual.

The basic assumption of the functional approach is that these macrofunctions constitute the basis of the grammatical structure of a language, for grammar provides the means for the expression of participants' purposes in meaningful interaction. The ideational function, often regarded as the primary function of language, is performed by linguistic structures which identify referents in the context and convey propositional information about these

referents. Typical grammatical structures expressing ideational meanings include declarative clauses, presenting referents and propositions about them, and relative clauses and appositives specifying referents' identity. When conveying the interpersonal function, linguistic structures determine some aspect of the relationship between the participants taking part in the interaction and their attitude toward what is being communicated. For example, interrogative and imperative clauses regulate the interaction between the participants, while modality markers and stance adverbials indicate subjective attitudes, feelings, and emotions. Finally, grammatical structures performing textual tasks contribute to the build-up of coherent discourse by organizing the information structure or creating cohesion relations in text.

Variation in the Form and Functions of Grammatical Patterns in Discourse

In most languages grammatical structures may have several alternatives which express nearly equivalent meanings. However, these cannot be regarded as optional variants, because structural choices are influenced by various discourse factors. This kind of variation in English can be illustrated by numerous constructions. For instance, Biber et al. (1999) point out that pronoun realization in relative clauses is dependent on several factors, such as the type of relative clause, the animacy of the referent, and the context of use. While the relativizers *who* and *which* occur both in restrictive and non-restrictive clauses in more formal contexts, *who* is used exclusively with human head nouns and *which* typically does not combine with animate heads (1a). *That* combines with both human and nonhuman heads in restrictive clauses and triggers colloquial associations (1b). The omission of the relative pronoun is possible whenever the gap is not in subject position; it is favored in restrictive relative clauses with a pronominal subject because the subject form of the pronoun clearly indicates the beginning of a new clause (1c).

(1a) The account which we develop of turn organization should be adequate to the analysis of conversation.
(1b) I used to have more friends that would come for a drink on a Saturday night.
(1c) I have lost the book I bought last week.

Choices of word order in adverbial positioning reflect variation in the functional specialization of adverbs. Thus in the case of *actually*, an adverbial associated primarily with spoken discourse, the initial position (2a) indicates a secondary linking function related to contradicting the expectations raised in the previous discourse (Oh, 2000; Taglicht, 2001) in addition to its function related to the expression of stance (2b).

(2a) Actually, I find it difficult to explain this situation.
(2b) I find it actually difficult to explain this situation.

The retention or omission of the complementizer *that* is dependent on the lexical verb, the subject of the main clause and the context of use. *That* is retained in academic prose especially when the main clause uses the passive voice (3a). The omission of the complementizer typically correlates with an informal conversational context, discourse and mental verbs (e.g. *think, guess, believe, say*), and pronominal subjects (3b).

(3a) We were told that the situation was difficult.
(3b) I think I'm ready *vs.* I'm ready, I think.

The case of the omission of the *that*-complementizer after the verb *think*, as in *I'm ready, I think*, is of particular interest, because it shows that established discourse patterns may over time turn into new grammatical conventions. This is related to the phenomenon of grammaticalization, which is defined as the process whereby "lexical items or phrases come through use in certain highly constrained local contexts to be reanalyzed as having syntactic and morphological functions" (Hopper & Traugott, 2003, p. 100). As several recent studies have shown, the clause *I think* with omission of the *that*-complementizer has been grammaticalized as a stance marker expressing modal certainty (Thompson, 2002; Ariel, 2009). As a result, similarly to adverbials, *I think* is not restricted to one position in the sentence. Other examples of grammaticalization in English are the *going to* structure for the expression of future time and *now* as a topic-changer (Aijmer, 2002).

Grammar and the Organization of Discourse

A prominent aspect of the relationship between grammar and discourse concerns the role of grammar in structuring discourse. When the participants in an interaction create and interpret a discourse, they perceive it as a meaningful whole fulfilling a particular purpose in a context of use. This involves the use of grammatical structures for organizing the information flow and the use of cohesion markers to guide the listener or reader toward the intended discourse interpretation.

Information Processing and Grammar

While approaching discourse processing from a psychological perspective, the study of information structure is concerned with the degree of familiarity and unexpectedness of the information conveyed to participants in communication and with the way in which given and new information is structured at sentence and text level. At sentence level, information structure is related to the syntactic structure of the sentence. In most languages, a normal or unmarked word order is associated with the occurrence of less prominent thematic elements at the beginning of the sentence and the positioning of more prominent elements at the end (e.g., Halliday, 1985; Firbas, 1992; Hajičová, Partee, & Sgall, 1998). In languages with flexible word order, such as Finnish or Czech, the perspectivization of the sentence toward the rheme or focus, in other words the most prominent sentence element, is considered to be the main principle regulating word-order choice. However, languages with a more or less fixed grammatical word order, such as English or French, have developed special structures to indicate the communicative value of sentence elements. While in spoken discourse prominence may be indicated by intonation, in written language it is the ordering of the components of the syntactic structure that indicates their relative importance.

When presenting and organizing information within a text, the speaker or writer can use a variety of grammatical structures to present some items as thematic and established in the text, and others as rhematic and more prominent. For instance in English, the grammatical constructions available for structuring information include the passive-voice construction, cleft structures, inversion, extraposition, and left- and right-dislocations. As Huddleston and Pullum (2002, p. 1365) observe, these structures differ syntactically from the more basic or canonical constructions in the language in the way in which information content is presented. By changing the normal word order of the sentence by breaking it into two parts, cleft structures help the speaker or writer to identify clearly the most prominent element in the sentence (4a), while left-dislocations are used primarily to reintroduce and highlight given information (4b).

(4a) It is the brown jumper that I am looking for.
(4b) Roger, I haven't seen him for ages.

The passive voice can be used to leave the agent unexpressed because it is clear from the context (5a), unknown, or unimportant from the point of view of the discourse. When a subject noun phrase is very long, the passive (5b) allows it to be moved to sentence-final position to abide by the end-weight principle (Quirk, Greenbaum, Leech, & Svartvik, 1985).

(5a) The parliament was dissolved.
(5b) The project was carried out by scientists who have developed a new method for data analysis.

In academic discourse the passive is associated with leaving generic subjects unexpressed (6a), thus establishing the action as the focus of attention (Biber et al., 1999, p. 938). The use of the passive with the impersonal *it*-construction in self-sourced reports helps reduce author visibility (6b) and may be interpreted as a hedging device (Charles, 2006, p. 509).

(6a) Information processing has been studied from different perspectives.
(6b) It has already been pointed out that there is a tendency to overuse passives in academic writing.

Coherence, Cohesion, and Grammar

In actual communication, words, clauses, and sentences are put together to form a well-connected spoken or written discourse which makes sense in a particular situational context. The unity of a discourse is accounted for in terms of coherence, defined as the unity of meaning and communicative purpose perceived in discourse in a context of use (Cook, 1989), and cohesion, based on semantic and formal relations between the elements of a discourse which are expressed in that the interpretation of the meaning of one element in the discourse is dependent on the meaning of another (Renkema, 2004). Despite variation in views on the interdependence of cohesion and coherence, most researchers agree that discourse coherence is enhanced by markers of cohesive relations holding between lexical items and grammatical structures which overtly connect clauses and sentences (e.g., Hoey, 2001).

Perhaps the most comprehensive account of grammatical cohesive devices is provided by Halliday and Hasan's (1976) book *Cohesion in English*, in which the authors identify four classes of grammatical cohesive ties: conjunctives, reference, substitution, and ellipsis. Substitution, the replacement of one language item by another, and ellipsis, the omission of recoverable elements normally required by grammatical structure, are very similar procedures, and some linguists refer to ellipsis as substitution by zero. The omission or substitution of nominal, verbal, or clausal elements is typical of spoken discourse where it creates cohesive links between adjacent turns in a conversation (7a, 7b).

(7a) Is she coming? I think so. (verbal substitution)
(7b) Have you heard his story? Yes, I have. (clausal ellipsis)

While substitution and ellipsis operate on a local level which typically connects adjacent sentences and clauses, reference expressions may interact with lexical cohesion to form extensive cohesive chains which may connect larger segments of discourse. Reference expressions are those language items whose semantic interpretation is achieved by reference to something else in the discourse or in the situational context. Prototypical

reference devices are personal and demonstrative pronouns which may be anaphoric (i.e., referring backward to preceding discourse) or cataphoric (i.e., referring forward to upcoming discourse). The choice and use of reference devices depends on the semantic and grammatical distinctions in the pronominal system of a language (e.g., number, gender) and on the established patterns of use (Wales, 1996). While anaphoric reference is very frequent (8a), cataphoric reference is less common, and, as Halliday and Hasan (1976, p. 68) claim, "*this*, together with the parallel use of *here*, is the only significant instance of cataphoric cohesion in English" (8b).

(8a) Robert arrived late. He was extremely tired.
(8b) What I want to say is this: I will never give my support to your project.

The cohesive effect of referring expressions results from their potential to establish their referents as thematic across larger parts of the text, thus organizing discourse by reflecting what Tanskanen (2006, p. 109) calls topical segments.

Conjunctives may create relations of addition, contrast, cause, and temporal sequence holding at local and global level. For instance, *actually*, *however*, and *still* create relations across longer stretches of discourse, while *but*, *now*, and *then* establish local coherence relations (Lenk, 1998). Cohesive relations established by linking adverbials may be external, that is referring to relations between experiences of the participants in the communication (9a), or internal, organizing the flow of the discourse itself (9b).

(9a) (First he finished the book.) Then he fell asleep.
(9b) (First he was exhausted.) Then he was unable to decide what to do.

Grammatical cohesion is not always restricted to the relations described above. Some researchers (e.g., Quirk et al., 1985) extend the scope of grammatical cohesion by including such phenomena as voice, tense, and aspect.

Conclusion

Discourse-based studies of grammar seek to explore how patterns of grammar are used in the context of actual communication. While studying the distribution of forms across different spoken and written registers and genres, the discourse-based approach enables us to see that functional and structural variations in language are systematic and principled. It also shows how grammar is used to organize a stretch of language into a coherent and cohesive discourse. In short, discourse-based studies of grammar reflect an awareness of the fact that without an adequate understanding of discourse-affected choices it is impossible to understand or learn a language properly.

SEE ALSO: Connectives; Discourse Analysis and Conversation Analysis; Formal and Functional Approaches to Grammar; Functional Grammar; Grammatical Variation in Adolescent Language; Information Structure

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Grammar and Doctor–Patient Communication

DANIEL HUNT AND KEVIN HARVEY

Many forms of health communication are, principally, realized through spoken interaction. Although written language forms an important part of many health communication routines, studies into health language have predominantly focused on verbal interaction, in particular the general practitioner–patient consultation (e.g., Mishler, 1984; ten Have, 1989; Heritage & Maynard, 2006). The doctor–patient dyad has come to typify exchanges between health professionals and patients, with research identifying a number of grammatical and stylistic properties that inhere in this type of encounter. Identifying and describing these grammatical features in context has enabled researchers to provide both theoretical and practical insights into the dynamics of the medical encounter, insights that have contributed significantly to the study of health practitioners and patients (Sarangi, 2004, p. 2) and have deepened our understanding of contemporary healthcare.

This entry examines a number of the grammatical features that occur in and characterize the discourse of the medical interview. To offer some insight into the variable contextual use of spoken grammar, both syntactic characteristics that maintain professional authority and those that actively involve the patient in interview process are considered. In order to present a more comprehensive and varied survey, the focus also extends beyond purely physician personnel and their interactive routines. The aim in so doing is to represent other healthcare workers who have featured less frequently in health language studies, as well as drawing attention to the communicative routines of personnel who, besides frontline doctors, play an essential, if overlooked, role in the healthcare system.

Grammar and Spoken (Health) Communication

As Carter (2004, p. 25) observes, grammars of English have been based upon written language, taking the written mode of expression as "a benchmark for what is proper and standard in the language." Consequently, spoken language, and the grammar of spoken language, has been comparatively under-studied. Given that spoken language represents communication at "full stretch" (Carter, 2004, p. 26), it is noteworthy that the grammar of spoken language has been, until recently, relatively neglected. It is not surprising, therefore, that a number of grammatical features common in spoken language do not conform to accounts given of them in traditional descriptive grammars (McCarthy & Carter, 1995). One might even go as far as saying that, for 20th-century linguistics, many of the linguistic features typical of spoken communication have been dismissed as "peripheral" to grammatical enquiry (Carter, 2004, p. 26).

Despite the research emphasis on written communication, the analysis of grammatical features in spoken health language affords an effective means of interrogating patterns in healthcare communication, enabling us to identify grammatical commonalities that characterize this particular mode of professional interaction. Spoken health communication routines possess a number of recurring lexicogrammatical signatures, thumbprints that characterize clinical encounters and distinguish them from other forms of spoken inter-

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action. Accounting for the full range of these linguistic signatures is beyond the scope of this entry and so, accordingly, the focus will be restricted to a selection of grammatical features that best demonstrate both the exchange of information and power play that have been routinely identified in a range of spoken healthcare encounters. As will soon become apparent, these characteristic grammatical features do not simply function as mere structural constituents of talk. Rather, they play a dynamic and vital part in determining the outcome of clinical interviews, reflecting the goals of the institutions in which such exchanges take place, as well as reflecting the shifting roles and identities negotiated by the participants throughout interaction as it unfolds moment by moment.

Grammar and Control

The grammar of spoken interaction plays a pivotal role in constructing and negotiating our own social identities and those of our interlocutors. Within the context of a clinical interaction, speakers have institutionally defined roles—patient, nurse, doctor, physiotherapist, psychiatrist, and so on—that align with unequal distribution of power in social interactions. Traditionally this has been born out in the contextual authority of doctors to shape the medical encounter, investigating the complaint of the patient, providing a diagnosis and prescription on a subsequent course of action. However, the authority of the health practitioner in the medical encounter is neither inherent nor absolute and may be questioned or undermined by themselves or the patient. Thus professional identity and its attendant authority and interactional control is something that both doctors and patients must continually negotiate through discourse, of which grammar plays a fundamental role.

Ribeiro's (1996) illuminating study of psychiatric discharge interviews provides a powerful example of the uses of spoken grammar to control a clinical encounter. Ribeiro analyzes extracts from the interview of a 61-year-old Brazilian woman who has been admitted for 20 days following an acute psychotic episode. Both extracts are largely structured by the elicitations of the interviewer, a 25-year-old psychiatrist, who asks the patient a number of closed questions, beginning with:

(1) Doctor: You were born on what date? . . .
(2) Patient: On January 11th.
(Adapted from Ribeiro, 1996, p. 185. Ellipses represent pauses of half a second)

Unlike the normal grammatical structure of a *wh-* question such as "What date were you born on?" the doctor brings the grammatical subject, *you*, to the front of the clause, rather than the adjunct. Restructuring the question in this way immediately establishes the focus of the interview upon the patient by grammatically emphasizing the patient herself in the question's syntactic structure. From the start of the interaction, the doctor indicates that the patient is the subject of the interview, constructing her as a patient who is being examined, rather than, for example, attempting to establish a more symmetrical relationship. A number of the doctor's subsequent questions also have a marked grammatical form:

(5) You have a son, don't you?
(11) You also have a granddaughter, don't you?
(23) You live with your two sisters, don't you?
(Adapted from Ribeiro, 1996, pp. 185–6)

In all three of these examples, the doctor deviates from the typical syntax of an interrogative clause, again fronting the subject *you* to retain emphasis on the patient. Yes-or-no

questions such as those used by the doctor establish an "adjacency pair" (Schegloff & Sacks, 1973; McCarthy, 1998), in which the patient's next utterance is conditioned by what the doctor has said; that is, in order to maintain the flow of the conversation, she is obliged to immediately answer the doctor's question. The questions are also formulated as negative tags, added on to the end of freestanding, affirmative clauses. Carter and McCarthy aver that as well as allowing a repetition—and hence further emphasis—of *you*, tag questions are "highly interactive in that they may constrain the range of possible or desired responses from the addressee" (2006, p. 725), with negative tag questions in particular conveying an expectation that they will be affirmed. Thus not only does the adjacency pair established by the questions mean the patient's utterances come in the form of answers, the content of her answers are strongly constrained by the marked grammatical form of the doctor's questions. That is, the negative tag questions limit the patient's ability to disagree with the doctor or to provide more expansive answers to her questions without also risking a challenge to the discursive structures established by the doctor. Utilizing grammatical structures particular to spoken grammar, the healthcare professional is able to determine the development of the conversation along strict lines that allow her to maintain interactional control and demonstrate her professional authority over the patient. Accordingly, the patient frequently gives the contextually appropriate, minimally informative responses.

However, when asked about her granddaughter, the patient changes noticeably. She becomes more animated, making increased eye contact and smiling more frequently. There are similar changes in the grammar of her responses:

(12) Patient: She's my life
. . .
really. I am crazy (about her).
I like (her) ve-
. . .
(16) Patient: I don't take care of her because my daughter-in-law takes
very good care, y'know. . . .
I just see her, and all that. (I don't)
(17) Doctor: Do you always keep in touch with them?
(18) Patient: Oh, yes, <u>always</u>. . . .
well as much as possible I do, y'know doctor . . .
(Adapted from Ribeiro, 1996, pp. 185–6. Words in round brackets indicate uncertain transcription; underlining indicates prosodic stress)

As Ribeiro notes (1996, p. 187), the patient now begins to use more complicated syntax, including previously absent adverbs and adverbial clauses to elaborate upon her answers. She says she "always" keeps in touch, before modifying this with the adverbial clause "well as much as possible." She also makes repeated use of the discourse marker "y'know." *You know* occurs frequently in spoken language and particularly in casual conversation and is used to express a subtle range of meanings. It is generally regarded as a means of foregrounding the interpersonal nature of a conversation, highlighting a common ground of shared knowledge with an addressee and expressing intimacy and rapport with them (Aijmer, 1984, 2002; Fox Tree & Schrock, 2002). The patient's use of *you know* here foreshadows similar expressions when she is later discussing the pain of childbirth:

(2) Patient: . . . I thought childbirth was terrible. the pain, . . . y'know,
. . .
(6) Because the pain is terrible, isn't it, doctor.
(Ribeiro, 1996, p. 179).

In each case the patient uses interpersonal discourse markers when discussing personal feelings to attempt to create a sense of mutual understanding and to encourage the doctor to align with her experiences, underlined by her direct address to the psychiatrist herself in "y'know doctor." In these isolated exchanges, the patient uses grammatical discourse markers typical of informal speech in conjunction with prosodic signals and paralinguistic body language to demonstrate a capacity for the casual interaction that characterizes life outside of psychiatric institutions. This shift into the grammatical structures of casual conversation signifies an attempt to establish a more personal genre of interaction than is offered by the clinical interview hitherto, and one in which the patient can also occupy an alternative identity to that of psychiatric patient. These attempts to establish a noninstitutional genre of conversation, in which professional medical authority would be less relevant, are swiftly curtailed by the doctor who recommences her closed questions and refocuses the interview squarely on the patient by using her title and name: "Where do you live, Mrs Cardozo?" (Ribeiro, 1996, p. 186).

Despite being an exit interview in which the patient must demonstrate her capacity to rejoin society beyond the psychiatric institution, the patient is prevented from linguistically conveying a personal social identity. Rather, the particular grammatical constructions used by the interviewing healthcare professional prevent the interview from proceeding on a casual footing, maintaining her professional identity and Mrs Cardozo's conversational deference. Where the patient seeks to reframe the interview and identify herself as a grandmother, making use of the appropriate grammatical structures of involved, casual conversation, her efforts are prohibited by the doctor's ensuing questions (see Fairclough, 1992, pp. 137–49). As Ribeiro rightly asserts, the doctor's discursive strategy, in which her grammatical choices play a fundamental role, "seems rather at odds with the rehabilitating purpose of a psychiatric treatment" (1996, p. 190). Thus, not only do the doctor's grammatical choices largely control the course of the interview, they also control the social identity the patient is able to inhabit, something which will have a significant impact on whether or not she is released from institutional care. Such research serves as a reminder that the lexicogrammatical choices that act to maintain clinicians' professional identity need not be in the interest of patients themselves.

Grammar and Patient Involvement

The diversity of contemporary healthcare practice means that medical information is now dispensed by a range of professionals through a variety of different media, including e-mail, real-time Web messaging, and telephone conversations, each of which engender specific communicative parameters and constraints. Foremost among these is the distance between the healthcare professional and the individual seeking medical advice, meaning that symptoms must be discussed and their severity assessed without the potential for visual or physical assessment of the patient. One contemporary example of such technology-mediated clinical discourse is the British NHS Direct service, a 24-hour telephone helpline established in 1998 to offer expert medical advice and information to callers in the United Kingdom. As part of a wider project involving the compilation and interrogation of the million-word Nottingham Health Communication Corpus, researchers made several recorded calls to the NHS Direct service with a view to investigating the details of this novel professional–patient interaction. Subsequent research into the data (Adolphs, Brown, Carter, Crawford, & Opinder, 2004; Adolphs, Atkins, & Harvey, 2007) has revealed a number of discursive strategies deployed by clinicians to compensate for the lack of physical proximity and provide a comprehensive appraisal of the patient. Most notably, the healthcare professionals on the NHS Direct service make a number of grammatical and lexical choices to maximally involve the patient-caller in the encounter through the

stages of symptom assessment, advice giving, and conversation closing. Most obviously, this can be seen by the frequent use of back channels. These one-word response tokens such as "yeah," "mmm," and "right," are common in conversation but occur significantly often in the health advisor's speech. Typically considered a means of demonstrating active listening and encouraging further talk (McCarthy, 1998, p. 58), within the clinical context they encourage patients to continue speaking and provide as much information as possible. Further, the minimal syntax of back channels—"right" as opposed to "that is right"—ensures that they do not constitute interruptions that would cut the patient-caller short. Larger grammatical structures are also evident. For example, in one call recorded by researchers the female healthcare advisor makes extensive use of coordinating conjunctions while attempting to develop a picture of a male caller's complaint:

Advisor: Yeah? No shortness of breath or gasping for breath or anything?
Patient: No.
Advisor: No? Or any swelling to your mouth or your tongue or anything?
Patient: Erm [1.5 second pause] no I don't think so.
Advisor: No. Okay. And so there's no swelling anywhere to your face or anything?
. . .
Advisor: But your face isn't swollen or you know obviously=
Patient: No.
Advisor: =swollen or your arms or your legs you know obviously=
Patient: No.
Advisor: =swollen?
(Equals signs indicate "latching" of turns, with no break in speech between speakers.)

As the extract shows, the healthcare advisor repeatedly makes use of *or*-conjunctions to chain together possible symptoms that the patient may be experiencing. These lists form the substantive part of interrogative clauses that require patients to evaluate their own condition against the listed symptoms. The use of conjunctions in this way serves several interactional purposes. First, by coordinating a number of possible symptoms which appear in related bodily areas—the mouth and face, the arms and legs—the health advisor can progress through the list of potential symptoms much faster than if each was asked in a discrete question, allowing more call time to be dedicated to subsequent advice-giving. Second, the syntactically coordinated symptoms consistently end with the use of the vague tag question "or anything?" which encourages the patient "to disclose symptoms which he or she might not otherwise have considered, nor thought relevant to the practitioner" (Adolphs et al., 2007, p. 67). This "symptoms plus vague tag" question structure creates a list of nonexclusive, nonexhaustive symptoms that guide callers to a particular part of their body and encourages them to offer any information that might be relevant. Rather than being interactionally insignificant, the use of the vague "or anything" in this context is highly valuable in eliciting all potentially salient information from the patient and thus conducting a thorough analysis of the ailment. Further, the placement of "or anything" as the conclusion of coordinated structure means that the potential symptoms represented by "anything" are syntactically equal to the more precise symptoms listed by the advisor, and thus are articulated as being of equal contextual importance. This combination of syntactic structure with vague language elegantly functions to involve patients in the interaction, prompting them to consider all possible symptoms and articulate anything they believe could be relevant.

The extracts also contain examples of the healthcare advisor using "you know." This discourse marker functions outside of the main clause structure of the advisor's utterances, and serves to negotiate the relationship between the professional and the caller. Specifically,

the use of "you know" immediately prior to "obviously swollen" indicates that the patient would be aware of what constitutes a swelling and, as with the psychiatric exit interview discussed above, foregrounds shared knowledge between speakers. Within the context of the clinical interaction, this also signifies that medical expertise does not rest solely with the healthcare advisor, as she indicates that the caller has some knowledge relevant to his own medical condition. Again, this serves to involve callers in the assessment of their symptoms, potentially eliciting relevant information that can substitute for the lack of proximity between patient and professional. Importantly, listener-oriented discourse markers such as "you know" also assist in generating a sense of rapport with the patient that helps reduce the imposition involved when the health advisor subsequently dispenses advice and instructs patients on additional ways to seek treatment. Establishing this concordant relationship also means the patient is more likely to follow a clinician's prescriptions after the end of the encounter. For Western health services troubled by issues of patient compliance, creating a personable and trusting relationship with a patient is an increasingly salient aspect of a successful clinical encounter (Segal, 1994).

Conclusion

This entry has revealed the importance of seeing grammar as working in conjunction with, and being inseparable from, lexis. Indeed, it could even be argued that, following Hoey (2005, p. 1), grammar is an outcome of lexical arrangement. Whatever the case, the health communication routines examined above posses unique and recurring grammatical features that determine the course of such interactions. Although the grammatical interrogation was not exhaustive, with the focus limited to a selection of key syntactic features, the analysis revealed how healthcare professionals are able to marshal particular syntactic structures to help achieve immediate discursive goals, such as assessing patients, while also managing macro-level interpersonal relationships through discourse. The use of particular grammatical structures will vary between individual speakers and the tasks in which they are engaged. Nevertheless, grammar plays a significant interactional role in facilitating the provision of healthcare through patient–professional interaction.

SEE ALSO: Conversation Analysis and Institutional Interaction; Conversation Analysis and Interview Studies; Conversation Analysis and Therapy; Critical Discourse Analysis and Critical Applied Linguistics; Discourse Markers; Medical Discourse

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Grammar and Electronic Communication

SUSAN C. HERRING

Introduction

How new digital communication technologies are affecting language and language change has excited considerable speculation and inspired a growing body of scholarship. At the heart of this question is the notion of grammar, or the set of structural rules that govern the composition of words, phrases, and sentences in a language. Language purists worry that electronic communication (also known as computer-mediated communication, or CMC) is corrupting the grammar of their language. The features of "Netspeak" (see below) are for the most part grammatical innovations, although scholars do not generally view their effects as detrimental.

To begin, grammar in electronic language must be understood somewhat differently from its usual sense as applied to speech. While the grammar of spoken language includes phonology, morphology, and syntax, in text-based CMC phonology is largely irrelevant; typography and orthography take over the functions of sound. Grammar in CMC also differs in that electronic language, as a new and still emergent phenomenon, has not yet had time (or attained the requisite social status) to become formalized in "rules"; rather, it exhibits patterns that vary according to technological and situational contexts (Herring, 2007).

This entry is primarily concerned to describe these patterns. Specifically, its focus is structural characteristics in text-based CMC at the utterance level (for an overview of discourse-level features, see Herring, 2001). It favors the English language, since most language-focused CMC research to date has analyzed English; however, a section on other languages is included. The structure of the lexicon is excluded, except insofar as it involves word formation processes that originated in CMC. Due to space constraints, the coverage is necessarily representative, rather than exhaustive, of the findings that have amassed since computer-mediated language first attracted research attention more than 25 years ago.

E-Grammar in English

As a convenience, the set of features that characterize the grammar of electronic language is referred to henceforth as *e-grammar*, although the use of this term is not intended to imply that there is a single grammar for all varieties of computer-mediated language. One linguist, David Crystal (2001/2006), has suggested as much (using the term "Netspeak" to refer to CMC as a single language variety), but considerable empirical evidence points to e-grammar as varying systematically across languages, contexts, users, and technological modes (e.g., Johanyak, 1997; Bieswanger, 2007; Herring, 2007).

The presentation that follows is organized according to the traditional hierarchy of grammatical phenomena in linguistics. It proceeds from the microlevels of typography and orthography, through morphology at the word level, to syntax at the utterance level.

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Typography

In text-based CMC, typography refers primarily to the use of nonalphabetic keyboard symbols such as numbers, punctuation, and special symbols such as <, $, and @. It also includes nonstandard capitalization (including ALL CAPS, lack of initial capitalization, alternating uPpEr AnD lOwEr case, and so-called "camel case," or writing compound words or phrases together with MedialCapitals), as well as emoticons, or sequences of keyboard characters that prototypically imitate facial expressions (e.g., :-D and :-P represent a laughing face and a face sticking out its tongue, respectively). Western-style emoticons are viewed at a 90-degree angle, whereas Asian-style emoticons are viewed straight on, e.g., 0_o (a confused face) and <.< (eyes looking sideways); both types are used in English CMC. Emoticon use is widely claimed to be one of the defining typographical characteristics of electronic language (e.g., Crystal, 2001/2006), although studies of emoticons in English CMC report that they occur less often than popularly believed, that the overwhelming majority are simple "smilies" :-) or "winkies" ;-), and that emoticon use varies according to CMC mode and user gender (for an overview of emoticon research, see Dresner & Herring, 2010).

Other typographic characteristics of CMC include repeated punctuation (*!!!, ?!* . . .) and the substitution of numbers or letters for words or parts of words (e.g., *4* 'for', *2day* 'today', *ur gr8* 'you're great'). This latter usage is also sometimes classified as nonstandard spelling; indeed, there is considerable overlap between nonstandard typography and nonstandard orthography in CMC, and the two often co-occur.

Except for emoticons, which may be composed entirely of typographic symbols—and excluding as outside the scope of grammar drawings composed of keyboard characters, such as @}>--',--- to represent a rose (Werry, 1996)—the most conceptually extreme manipulation of typography in plain text English CMC is Leetspeak or Leet. In Leetspeak, some or all letters of a word are replaced by nonalphabetic symbols based on graphic resemblance; thus, Leet becomes *1337* or *133+*, and *@$$* is a common profanity. The name Leet comes from "elite," and the style of writing originated among early Internet users as a kind of secret code, especially among hackers exchanging pirated files; it has since become popular in a number of online gaming communities. Some adepts claim it is a language variety with its own vocabulary, morphology, and grammar (Wikipedia, 2010a).

More common in CMC in general is the occasional replacement of words or parts of words with numbers or letters to save keystrokes, to symbolize a playful communication style or social identity, or to do both. Repeated punctuation is also common—although it makes messages longer, not shorter—to express affect (repeated letters, an orthographic strategy, functions similarly). Such nonstandard typography is especially common in short message service text messaging (SMS), where the message buffer is limited to 160 characters, followed by synchronous CMC modes such as chat and instant messaging (IM), in which exchanges are typically rapid and social in nature; it is also found in e-mail, even in professional contexts (Murray, 2000; Anis, 2007; Cho, 2010).

Orthography

Nonstandard orthography is widely considered to be a defining characteristic of computer-mediated language, and indeed, e-communication often manifests spelling practices that suggest loosened orthographic norms. These include abbreviation (acronyms, clippings, vowel omission as in *pls* for 'please', etc.); phonetically motivated letter substitutions (e.g., *z* for 's'); spellings that imitate casual or dialectal pronunciations (e.g., *wassup?* for 'what's up?'); eye dialect (e.g., *sez* for 'says'); and spellings that represent prosody or nonlinguistic sounds, such as a "calling voice" (*helloooo*), laughter, and other (nonhuman) noises.

Language prescriptivists typically view such practices as misspellings or errors (Thurlow, 2006). In fact, the proportion of nonstandard spellings that are unintentional is very low among native speakers. Abbreviations save keystrokes, as do some phonetic spellings, and representing speech in writing is a manifestation of the "orality" of much text-based CMC (e.g., Cho, 2010). Moreover, representations of nonlanguage sounds enrich CMC in the absence of auditory cues. These representations often accompany other kinds of textual performance, including indications of actions, for which an entire set of orthographic/typographic conventions has developed, such as *w* for a wink (e.g., Werry, 1996; Cherny, 1999).

Early studies such as Cherny's and Werry's emphasized the playfulness and creativity driving these phenomena, especially in recreational chat environments. However, recent research suggests that a relatively small number of nonstandard spellings (e.g., *u* 'you', *msg* 'message', *wanna* 'want to') have become conventionalized and occur most often in mainstream online contexts, while unique formations are less common (Kapidzic, 2010).

A counterexample to this trend is "lolspeak," the fractured text that accompanies images of "lolcats," which were popularized on the Internet several years ago by a photograph of a cat captioned *I can has cheezburger?* Lolspeak remains popular in the image forums where it originated, and it is sometimes used (minus images) for humorous effect in other CMC contexts, including Facebook status updates. Another counterexample is the language use of fans of the character "Ali G," as created by the (White) British comedian Sacha Baron Cohen, on Web sites and discussion boards; fans imitate Ali G's spoken style, which is a mix of Jamaican Creole and Southern British English street language, through creative spelling and unconventional grammar and lexis (Sebba, 2007). Like Leetspeak, these cases represent special registers in which a concept (replacement of letters with other symbols; cats' imaginary "bad English"; a comedian's humorous language style) generates unbridled orthographic (as well as morphological and syntactic) creativity.

Morphology

Relatively few descriptions of computer-mediated language mention morphology. Those that do mainly note the emergence of a few productive word formatives (e.g., *e-, cyber-, hyper-*) and the outcomes of word formation processes such as clipping (e.g., *nick* from 'nickname'), blending (e.g., *netizen* from 'network citizen'), acronyms (e.g., *lol* 'laugh out loud', *jk* 'just kidding', *OMG* 'oh my god', *wtf* 'what the fuck'), semantic shift (e.g., *flame* 'unleash invective on a computer network', from *flame* 'to act conspicuously homosexual'; *spam* 'Internet junk mail', from *spam* 'a type of canned meat'), and conversion from one part of speech to another (e.g., *text* as a verb; *spam* as a verb). These processes are not unique to CMC, but they have been especially productive on the Internet, generating many new words that are increasingly making their way into dictionaries of Standard English.

Less commonly attested word formation processes include outright neologisms, such as *newbie* (sometimes clipped to *noob* or *n00b,* 'an inexperienced person'), and conventionalization of frequently occurring typographical errors, such as *teh* ('the'). Leetspeak claims both of these, along with several productive derivational and inflectional suffixes, including *-age* (e.g., *flamage*, from the verb 'flame'), *-zor* (parallel to Standard English *-er/-or*), and *-zorz* (which intensifies the meaning of a verb, as in *pwnzorz* 'really defeat', from *pwn*, itself a conventionalized misspelling of the word 'own'). These suffixes are not in general use.

The most creative examples of e-morphology have been reported in playful, self-contained contexts, for example in a multiplayer online game (MOG) (Nilsson, 2009); in a social MUD (multi-user dimension), a type of text-based virtual world (Cherny, 1999); and in e-mails exchanged in a private sibling code (Rowe, in press). MOGs, in which interaction can be intense and fast-paced, generate numerous acronyms and shortened forms specific to the

game context, e.g., *gg* ('good game'), *wtb* ('want to buy'), and *lvl* ('level'). Examples from the social MUD, which Cherny describes as a relatively closed community of computer geeks, include the productive derivation of verbs from interjections (e.g., *Mike cools*, meaning 'Mike says "cool"') and verb reduplication (e.g., *nodsnods*) to indicate a repeated or emphatic action. The sibling code, which originated between two sisters in childhood but increased in use when they started e-mailing as adults, produced such novel words as the clipping *immuze* ('immunizations') and *fibin'* (acting like a type 'five' (*fibe*), i.e., avoiding), which involves both semantic shift (from 5 as a numeral to 5 as a personality type) and conversion (from a noun to a verb).

As these examples illustrate, more than one morphological process may operate on a single word, and unconventional morphology sometimes combines with unorthodox typography and/or orthography.

Syntax

The syntax of computer-mediated English, when it deviates from standard syntax, is sometimes described as "telegraphic" and fragmented. Parts of speech such as articles and subject pronouns may be elided in informal style, and messages that do not contain a complete grammatical clause (with a subject and finite predicate) are common, especially in CMC modes characterized by brief, informal messages, such as chat, IM, SMS, and microblogging. The usual reason given for elision is to save keystrokes (e.g., Murray, 2000), whereas sentence fragments may be caused by people typing speech-like utterances; or by the requirement in some CMC systems that messages be brief, which can lead users to break longer utterances into several messages (e.g., Baron, 2010); or by both.

CMC syntax also diverges from the standard when users attempt to represent a non-standard language variety, such as African American Vernacular English (often via copula deletion or invariant 'be') or Ali G's fractured style (Sebba, 2007). Moreover, special registers of CMC sometimes evolve productive syntactic strategies not found in other CMC modes, such as preposition deletion in the MUD register described by Cherny (e.g., *John laughs Lynn*), the double-inflected-modal *can haz* construction in lolspeak, and nominalization of verbal predicates for emphasis in Leet (e.g., *Au5t1N is t3h r0xx0rz*, literally 'Austin is the rocks-er', meaning 'Austin really rocks'; Wikipedia, 2010a).

A syntactic innovation particular to CMC environments is third person singular present tense performative utterances, also called "emotes." Emotes are commands that cause the user to perform a social action by logging a description of that action into a chat window; in a MUD, for example, when Kim types "/waves," the message *Kim waves* is displayed (Cherny, 1999). Emotes started as pre-programmed shortcuts in online game environments, where they are still popular. Until recently, Facebook promoted the use of similar-looking third person present tense utterances by providing the default prompt *[Username] is* . . . for first person status updates. Both systems sometimes give rise to inconsistent pronoun and tense usage, as in *Susan waves goodbye and puts on my hat* and *Jim Cosmo is just saw a meteorite*. For the most part, however, such mixed constructions are assumed to be unintentional and (at least mildly) infelicitous.

Related to emotes are predications that can function alone as complete performative utterances, such as *waves*, <grin>, *confused*, and *in a bad mood*. Semantically, such "performative predications" may involve virtual actions or states. Structurally, they may be inflected or uninflected, and they are often set off by typographic brackets. Rather than being pre-programmed, they are typed out by the user, although a number are highly conventionalized. A common type expresses vocalizations, such as *sigh(s)/sob(s)/laugh(s)/lol(s)*, that could also be expressed via typed representations of sound (e.g., *hahaha*) or emoticons. Note that the acronym *lol* may be inflected like a verb; it may also represent a

pulse of laughter (*lololol*) or be spelled as it is pronounced (e.g., *lawl*, *lulz*), or both, especially in teen chat (Kapidzic, 2010). Most popular in social chat environments, where they originated, performative predications are also common in other CMC modes.

Many researchers have measured the frequency of grammatical function words, such as pronouns, determiners, modal auxiliaries, and negation, in electronic corpora. CMC can be distinguished from traditional genres of speech and writing according to these measures; typically it falls between the two extremes, with synchronous chat closer to casual speech and asynchronous modes such as e-mail closer to formal writing (e.g., Ko, 1996; Yates, 1996). Correlations have also been reported between frequency of grammatical markers and nonlinguistic phenomena, such as lying in CMC (e.g., Hancock, Curry, Goorha, & Woodworth, 2008), gender of blog authors (Herring & Paolillo, 2006), and bloggers' psychological response to trauma (Cohn, Mehl, & Pennebaker, 2004).

E-Grammar in Other Languages

Structural features of CMC in languages other than English have been less studied (see Danet & Herring, 2007), although this varies by language: German CMC, for example, has received considerable attention (in German), and the typography and orthography of French CMC have been described in several works by the late Jacques Anis (in French). At the other extreme, the structure of many languages used online remains virtually undescribed (e.g., Russian, Korean, African languages), at least in venues accessible to Western readers. Furthermore, typography and orthography have been better described than morphology and syntax, and some languages raise issues (such as code mixing) that blur these levels of analysis. Nonetheless, several general findings can be noted.

First, contrary to Crystal's (2001/2006) claim, "Netspeak" is not universal. While there is ample evidence that CMC users in other languages play with typography and orthography (see, e.g., Nishimura, 2003 for Japanese Web boards; Anis, 2007 for French SMS; Herring & Zelenkauskaite, 2009 for Italian SMS); different strategies are favored in different languages and used in different proportions, as Bieswanger (2007) demonstrated through a systematic comparison of English and German SMS.

Second, and relatedly, languages that make use of non-Roman writing systems have often had to use ASCII (plain text) in CMC environments (although this is changing due to Unicode and programs that convert QWERTY keyboard symbols to characters in other languages), requiring creative adaptation (Danet & Herring, 2007). Some languages exhibit both sound-based and graphic-based character substitutions. For instance, the Greek letter theta is written in plain text CMC both as "th" (representing its sound) and as "8" (approximating its appearance in the Greek alphabet) (Tseliga, 2007; for an analogous practice in Arabic, see Palfreyman & al Khalil, 2003). These Romanized forms may in turn create new language varieties, as in the case of "Greeklish," which in addition to being written in the Roman alphabet is characterized by less sentence-initial capitalization, more emoticons, and more English borrowings (e.g., "message," "pc," "sorry," "sex") than Greek written in the Greek alphabet (Tseliga, 2007).

This leads to the third observation, which is that English influences other languages used online, through borrowing of computer-related terms and e-grammar conventions. Lee (2007) found, for instance, that Cantonese in Hong Kong dyadic chat, which is written in a mix of Romanization and Cantonese and Mandarin characters, includes many English "Netspeak" features, along with the use of numerals to represent sounds (e.g., *99* 'nighty night' in Chinese English pronunciation). Code mixing of a local language with English or another regional lingua franca occurs often in bi- and multilingual environments. For example, in Web forums and chatrooms for Greeks, Turks, and Persians living in Germany,

mixing of the native languages and German takes place on multiple linguistic levels: lexical, phrasal, propositional, and discourse-pragmatic (Androutsopoulos, 2007a).

English is not the only language with special online registers. German rappers post messages on Web forums in which they imitate "hiphop speech" in a mix of German and English (Androutsopoulos, 2007b). Russian *padonki* (an intentional misspelling of *podonki* 'riff-raff', 'scum') is a subcultural phenomenon reminiscent of lolspeak, characterized by erratic spellings and gratuitous use of profanity for comic effect (Wikipedia, 2010b). The *Fakatsa* style popular among Israeli girl bloggers, which replaces Hebrew letters with graphically similar numbers and Roman letters, somewhat resembles Leetspeak (Vaisman, in press).

Nonstandard language use online poses problems for machine translation. Climent et al. (2003) found this to be true even in academic newsgroup postings in two structurally similar languages, Catalan and Spanish. The available research suggests that structural irregularities are prevalent in CMC, even if for the most part e-grammar adheres to standard language norms (see Thurlow, 2006).

E-Grammar and Language Change

More than 25 years ago, Baron (1984) predicted that the Internet would change language for the worse. More recently, Stein (2006) predicted that it would accelerate the rate of language change. What limited diachronic studies of online language are available suggest that e-grammar tends to become, if anything, more standard over time (e.g., Herring, 1998), but that in subcultural and interpersonal contexts of intensive, self-contained interaction, such as the private sibling code analyzed by Rowe (in press), e-grammar may evolve at an accelerated pace.

Many e-grammar innovations have been adopted by the wider community of Internet users. Features such as emoticons and certain acronyms and spellings have been taken up across the Internet, including being borrowed into other languages' CMC. Others, such as emotes and "performative predicates," have also extended productively beyond their source contexts. Even features of special registers such as Leet, lolspeak, and online rapper language are attested outside their source contexts, although such usage is often tied referentially to its original contexts of use.

The evidence is less clear as regards the diffusion of e-grammar into language use offline and into languages themselves, as codified in grammars and dictionaries. Dictionaries are certainly including more CMC and computer-related terms all the time. Yet evidence of the spread of other CMC practices to a language as a whole tends to be anecdotal. Several years ago, National Public Radio in the USA broadcast a segment about teens speaking "Netspeak" abbreviations (e.g., pronouncing *lol* as /lawl/ and *I <3 u* as 'I heart you'). Marketers sometimes use nonstandard online forms, including from lolspeak and padonki, in billboards and advertisements (see, e.g., Wikipedia, 2010b). Such uses seem humorous, however, and self-consciously Internet referential.

At the same time, self-report studies indicate that young people are increasingly using e-grammar in their offline writing (e.g., Pew Internet & American Life Project, 2009). Rather than this causing a decline in young people's language skills, Plester, Wood, and Joshi (2009) found that greater knowledge of SMS abbreviations was associated with higher word reading, vocabulary, and phonological awareness measures. While this research is limited, and many gaps remain, it suggests that language change is being affected and effected by Internet communication, and that if anything, e-grammar enriches rather than impoverishes language users and languages themselves.

SEE ALSO: Analysis of Mediated Interaction; Multilingualism and the Internet; Orthography; Pragmatics of Asynchronous Computer-Mediated Communication; Pragmatics of Chat; Pragmatics of Short Message Service; Prescriptive and Descriptive Grammar

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Grammar and Literature

NINA NØRGAARD

At its most basic level, literature is language. Through language, literary texts represent—or rather construct—characters, settings, plots, experiences, feelings, and ideas, and while linguistic knowledge is by no means a prerequisite for the analysis of literature, such knowledge may help the literary critic understand and describe the ways in which meaning is created by linguistic means in literary texts.

Academic interest in the grammar of literature basically started with the Russian Formalists in the early 20th century, gained momentum in the 1960s and early 1970s, and developed into what is now known as "stylistics," or sometimes more specifically as "literary stylistics" or "literary linguistics." Stylisticians explore the application of linguistic frameworks and methodologies to the description and analysis of literature as well as other types of text such as advertising, political oratory, legal documents, different types of media discourse, academic writing, etc. The texts put up for analysis are typically examined with respect to their phonological, lexical, grammatical, semantic, pragmatic, or discoursal features, or, as is quite often the case, with respect to various combinations of these.

Along with developments in modern linguistics, the study of the grammar of literature has branched off into various specialized subfields. As a consequence of this, modern stylistics has grown into a varied landscape of subbranches such as historical stylistics, cognitive stylistics, corpus stylistics, pragmatic stylistics, and others which are based on, inspired by, and sometimes also suggesting adjustments to the linguistic paradigms from which they spring. Other branches are oriented toward context in some respect. An example of this is feminist stylistics, which is concerned with the linguistic manifestation of gender relations in text. In spite of the different concerns and foci of the different branches, a common denominator for all is a central interest in the linguistic "how" of meaning making, that is, in how meaning is created by linguistic means.

Stylistics is often described as a "tool box" or "tool kit" consisting of linguistic concepts and methods that literary critics may employ for linguistic substantiation of their analysis of literature. While some stylisticians may limit their choice of "tools" to one compartment of the stylistic tool box according to the linguistic orientation of their approach, others may be more eclectic and choose more freely among all the tools available.

Formalist Stylistics

Characteristic of much of the early work done on the grammar of literature was an overriding concern with form. The Russian Formalists wished to qualify the analysis of literary texts by basing such analysis firmly on concrete observations about the formal grammatical features of the texts in question. They were particularly interested in poetic form, or "literariness" (see Jakobson, 1960), and focused primarily on the formal features that made a text poetic and set it apart from other types of text. According to Jakobson (1960), the poetic function of language is dominant in texts that "focus on the message for its own sake." "Message" here equals wording and grammar, and texts which are marked as poetic

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are consequently those whose phonological, lexical, and grammatical choices draw attention to themselves and thereby to the literariness of the text or passage in which they occur. Parallelism and deviation from the linguistic norm are examples of formal features which were seen to mark a text as poetic, and poetry was the text type favored for analysis.

When the interest in the grammar of literature gained a foothold outside Eastern Europe in the 1960s and early 1970s—most prominently in Britain and the United States—stylisticians were much influenced by the work done by the Russian Formalists and members of the Prague School of Linguistics. The focus on grammatical form and structure was largely continued, as was the interest in texts which displayed a high degree of literariness. Critics, in turn, saw these early stylistic studies as mechanical descriptions of grammatical form which were far detached from relevant interpretation, and furthermore accused the formalist approach of ignoring the social, historical, and pragmatic contexts of the passages and texts put up for examination (e.g., Weber, 1996, p. 2). Notwithstanding these alleged weaknesses, the formalists clearly laid the foundations of stylistics in various respects, in particular by their insistence on anchoring the analysis of literature solidly in the actual grammar and lexis of the text, and by the consistent, systematic nature of their approach.

Functionalist Stylistics

As a reaction to the formalist focus on grammatical form and detachment of language from context, many stylisticians in the late 1970s and onwards turned to newly emerging linguistic paradigms whose main concern was with grammatical function and the social role of language. Most influential among these in stylistics was Michael Halliday's Systemic Functional Linguistics (Halliday, 1994). Halliday gives emphasis to the social function of language in use and the consequent necessity of examining language in context, and furthermore privileges semantic function over grammatical form. The Hallidayan approach is characterized by linguistic constructivism, that is, the belief that language does not neutrally represent meaning, but actively constructs, or "construes" it. It furthermore privileges the text, rather than the sentence, as the main unit of description, which makes it a useful tool for those interested in analyzing the grammar of more extensive pieces of literature such as the novel and play texts.

It is central to the Hallidayan model of language that language use is claimed to simultaneously express ideational (alternatively: experiential) meaning (to do with the linguistic representation of experience), interpersonal meaning (to do with the relations between interlocutors), and textual meaning (relating to the linguistic organization of text). The model provides a functionally oriented descriptive grammatical apparatus for the three types of meaning, which is employed in literary stylistics for examinations of the ways in which literary characters, actions, settings, etc. are constructed ideationally, interpersonally, and textually by linguistic means (Toolan, 1998; Nørgaard, 2003). A good example of this is provided by Kennedy (1982) in an analysis of ideational meaning in the passage from Joseph Conrad's *The Secret Agent* (1907) where Mrs. Verloc kills her husband. Ideational meaning concerns the way the world is represented, or constructed, linguistically in terms of configurations of participants, processes, and circumstances. In his analysis, Kennedy demonstrates how Mr. Verloc, by being represented as the participant of mental processes of perception ("heard," "saw," "take in") and intransitive material action processes which do not extend to other participants ("waited," "was lying," "expired"), is constructed as a passive observer of his own death. Mrs. Verloc, on the other hand, is constructed as somehow detached from the act of killing she performs, since parts of her body and the knife with which she kills her husband are represented as the active participants (or agents) of the deed, as exemplified by the following sentence: "Her right hand skimmed

lightly the end of the table, and when she had passed towards the sofa the carving knife had vanished without the slightest sound from the side of the dish" (Conrad in Kennedy, 1982, p. 86).

The emphasis given to linguistic constructivism and context by the functional approach to language furthermore opened the way for new branches of stylistics with a pronounced contextual slant. One such approach is that taken in feminist stylistics, which focuses on the linguistic manifestation of (unequal) gender relations in literary as well as nonliterary texts. From a feminist perspective, Burton (1982), for instance, demonstrates how the female protagonist of Sylvia Plath's *The Bell Jar* (1963) is constructed as passive and powerless by linguistic means. Critical stylistics is another approach to the grammar of literature which focuses on linguistic constructivism more generally, examining how inequality, power structures, and ideology are expressed and maintained by different texts (Fowler, 1986; Simpson, 1993; Jeffries, 2010).

Cognitive Stylistics

Another branch of stylistics, which has grown very strong since its emergence in the early 1990s, is that of cognitive stylistics. Following developments within the linguistic paradigm of cognitive linguistics and related fields such as blending theory and conceptual metaphor theory, cognitive stylistics aims to combine "the kind of explicit, rigorous and detailed linguistic analysis of literary texts that is typical of the stylistics tradition with a systematic and theoretically informed consideration of the cognitive structures and processes that underlie the production and reception of language" (Semino & Culpeper, 2002, p. ix). Cognitive stylisticians are thus concerned with the reader's conceptualization of the text in the process of reading with particular emphasis given to the linguistic aspects of the text that prompt particular conceptualizations. Meaning is thus not considered to reside in the text alone, but is regarded as a dynamic product of the text and the reader's mental processing of it. In the analysis of literature, it is also considered, for instance, how the linguistic construction of a character's "mind style" (see Fowler, 1986) reflects how this character perceives the world around him or her. In an analysis of John Fowles's *The Collector* (1963), Semino (2008) examines how the male protagonist, Clegg, who is a butterfly collector, conceives of the young woman, Miranda, whom he kidnaps, in terms of a butterfly. Through this "conceptual metaphor," meanings related to butterflies (the so-called "source domain") are "mapped" onto Miranda (the "target domain"), and, according to Semino (2008, p. 272), "the BUTTERFLY metaphor does not simply affect Clegg's language and thoughts, but also guides his actions." At the same time, Clegg's use of the butterfly metaphor and its concrete linguistic realization in the novel furthermore function as linguistic triggers which govern the reader's conceptualization of Clegg and his thoughts and actions. The references to butterflies and butterfly collectors activate the reader's background knowledge of such phenomena, which thereby comes to play a role in the meaning created in the reader's processing of the text.

Corpus Stylistics

With the rapid advances in computer technology, the computer has seriously entered the field of stylistics as a tool for those who wish to base their examination of the grammar of literature solidly on large amounts of empirical data. Where, previously, stylistic analysis had to be done manually, computer software now enables the analyst to perform quantitative investigations of linguistic phenomena in very long texts, such as the novel, or even in all the novels of a particular writer, several novels from a particular decade or

century, and so forth. Corpus methods can, of course, also be employed for the analysis of shorter texts. Often, the text put up for examination is measured against a reference corpus of similar types of text in order to detect both conventional and more unconventional patterns of lexis and grammar in the text examined. In an analysis of Joseph Conrad's *Heart of Darkness* (1902), Stubbs (2008), for example, employs corpus stylistic methods to qualify the claims by more traditional literary studies of the text that a number of content words such as "fog," "mist," "vague," and "indistinct" support the novel's general theme of vagueness and uncertainty. Running the text through relevant computer software reveals, for instance, how these lexical items are actually part of a much larger group of related words, a so-called "lexical field": "blurred," "dark/ly/ness," "dusk," "fog," "gloom/y," "haze," "mist/y," "murky," "shadow/y," "shade," "shape/s/d," "smoke," "vapour." This observation is supported by a search for grammatical words which likewise express vagueness and uncertainty: "something," "somebody," "somewhere," "somehow," "some," "like" (as preposition), "kind of," "sort of," as well as for the verb "seemed." When comparing these findings against two reference corpora of respectively a large corpus of fiction and an even larger written corpus, Stubbs finds that the frequencies of these words in Conrad's novel are considerably higher than in the two other corpora. While acknowledging the limitations of such word frequency lists, Stubbs nevertheless argues that "there must be some relation between frequent vocabulary and content, and frequency lists are one essential starting point for a systematic textual analysis" (2008, p. 234). To further qualify his analysis, he backs it up with an examination of collocation, that is, of words that occur together in more than regular frequency and thereby create certain connotations, as, for example, "*grass* [which] is usually associated with death, decay and desolation" (Stubbs, 2008, p. 237). Finally, Stubbs's corpus stylistic examination of *Heart of Darkness* also reveals a high frequency of words with negative prefixes: "impossible/ity," "uneasy/iness," "unexpected/ness," "impenetrable," "inconceivable/ly," "incredible," "indistinct/ly," "intolerable/ly," "unknown," "incomprehensible," "inscrutable," "unearthly," and "unsound." Based on linguistic knowledge that negative constructions often imply that the positive was expected, he interprets the extensive use of negatives by Conrad in the following way: "the frequent negatives represent a world which is strange, foreign, alien, contrary to cultural expectations" (Stubbs, 2008, p. 239). While some are worried that the corpus approach to the language of literature will fail to capture the special nature of literary art, others, like Stubbs, see this approach as a useful tool for handling large amounts of literary-linguistic data and for empirically testing the analyst's intuitions about the text.

Multimodal Stylistics

One of the most recent developments in stylistics is the growth of interest in what is referred to as "multimodal stylistics." Proponents of this branch of stylistics aim to extend the stylistic tool kit with analytical tools that will allow equally systematic analyses of texts which, in addition to wording, make use of further semiotic modes such as typography, color, layout, and visual images for their construction of meaning. To that end, multimodal stylisticians draw on various approaches to multimodality, most prominent among them that of Kress and van Leeuwen (1996, 2001), Baldry and Thibault (2005), Forceville (1996), and others, who have set out to develop "grammars" for different semiotic modes and their multimodal interaction in communication. In *Reading Images: The Grammar of Visual Design* (1996), for example, Kress and van Leeuwen sketch out a grammar for visual images and page design which—with a base in Hallidayan linguistics—demonstrates how visual modes, like the verbal, create ideational, interpersonal, and textual (or "compositional") meanings. From a cognitive perspective, scholars such as Forceville (1996) and Currie

(2004) investigate multimodality in respectively advertising and film, yet the cognitive approach to multimodality can also be applied in the analysis of literary texts (e.g., Gibbons, 2010). When analyzing the grammar of literature, multimodal stylisticians hence operate with an extended notion of "text" which in addition to the verbal comprises a range of different semiotic modes. Even the most conventional literary text is perceived as multimodal, since printed verbal language always automatically involves modes such as typography, layout, and color. The extended multimodal stylistic tool box furthermore allows the analyst to handle more experimental literature such as Jonathan Safran Foer's *Extremely Loud and Incredibly Close* (2005), which employs elements such as visual images and color as well as special typography and layout for its meaning making. In addition to this, the multimodal approach also enables more comprehensive stylistic analysis of the novel, for instance, since it provides grammatical tools for describing the way meaning is created by paratextual elements such as the book cover and other aspects of the novel's material realization (Nørgaard, 2010).

Concluding Remarks

Even if some of the early proponents of stylistics aimed to make the analysis of literature more objective and "scientific" than more traditional literary criticism by basing their analysis on linguistic theory and methodology, it should be noted that no analysis can ever be objective; not even that which is anchored solidly in the lexis and grammar of the text. Like all other types of analysis, the analysis which focuses on the grammar of literature will necessarily be colored by factors such as the analyst's individual intuitions, preferences, and foci as well as the linguistic/stylistic paradigm and methodology employed. In spite of this reservation, the application of linguistic theory and methodology (ideally) ensures informed, rigorous, and systematic analysis which is based firmly on the actual wording of the text, and furthermore provides the analyst with a consistent metalanguage by means of which the analysis can be conducted.

Stylistics is now an established field of research with its own journals and international associations. The Poetics and Linguistics Association (PALA) and the International Association of Literary Semantics (IALS) are currently the most prominent academic associations in the field, while *Language and Literature* (http://lal.sagepub.com/), *Journal of Literary Semantics* (www.degruyter.de/journals/jls), and *Style* (www.style.niu.edu) are relevant journals to consult for those with an interest in the interface of language and literature. Due to its interdisciplinary nature, the focus on the grammar of literature as well as other types of text has furthermore gained a place in education, where courses in stylistics aim to improve students' analytical and practical skills at a linguistic level, while at the same time making more explicit the link between linguistic and literary disciplines of various language degrees.

SEE ALSO: Corpus Analysis of Literary Texts; Halliday, M. A. K.; Multimodal Text Analysis; Qualitative Research in Rhetoric and Stylistics; van Leeuwen, Theo

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Grammar and Social Class

RONALD MACAULAY

Both terms in this title are problematic. Grammar is sometimes used in a very broad sense, as when Chomsky (1965, p. 4) says that the grammar of a language "purports to be a description of the ideal speaker-hearer's intrinsic competence." In this sense, the notion of grammar includes semantics, syntax, morphology, phonology, and phonetics. In contrast, Cheshire and Edwards (1993, p. 35) report on "a survey of British dialect grammar" in which their "aim was to obtain information on dialect syntax." Their notion of syntax, however, includes morphology, as do other contributions to Milroy and Milroy (1993), whose work is subtitled *The Grammar of English Dialects in the British Isles*. The emphasis in the present entry is on grammar interpreted narrowly as syntax.

Social class remains a controversial subject despite attention from a number of scholars in recent years. No clear method of identifying social-class membership has appeared. As Gilbert observes, "there is as much art as science in the study of social stratification" (2003, p. 16). This complicates the question of social-class differences in language, since different investigators have employed different methods of determining social-class divisions. Some have treated social class as a continuum and divided it into categories on the basis of certain criteria. Other investigators have treated social class as a dichotomy with two polarized categories, and still others have used several discrete social-class divisions. These differences in approach are likely to be problematic only if there are conflicting results from sociolinguistic investigations of similar situations. In what follows, social-class differences will be examined only with respect to differences between middle-class and working-class speech in Britain because this is the situation that has been investigated most fully.

The greatest problem, however, is that there has been very little investigation of variation in syntax. Most sociolinguists dealing with social-class differences have concentrated on phonological and (less frequently) morphological variables. Some of the reluctance probably followed from Lavandera's (1978) observation that syntactic differences were different from phonological and morphological variables because the variants could not be considered semantically identical. One consequence of this is that a different approach is necessary for studying syntactic variation. There is also the major problem that studying syntactic variation requires larger and more varied samples of speech than are needed for phonological and morphological variables.

The problem of investigating social-class differences in syntax is further confounded by the lack of evidence on spoken syntax. As Cheshire and Stein (1997, p. 2) observe, "there is a sorry lack of empirical data on the syntax of speech." It has often been pointed out that syntactic analyses based on a speaker's intuition are dependent on the norms of written language and provide no direct evidence of how people actually speak. The codification found in dictionaries reinforces the identification of the standard language with the written form. Thus there is a danger that spoken forms will be labeled nonstandard on the basis of their difference from written norms. What is needed for the examination of class differences in grammar is a data set from a stratified sample of speakers who have equal opportunities to express themselves in an unconstrained situation for a sufficient period of time to allow them to use a variety of syntactic expressions. In the absence of categorical differences, the measure of variation will be frequency of use.

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The pioneer in the empirical study of social-class differences in linguistic features other than pronunciation was Bernstein (1959, 1962). Bernstein's insight was to set out a number of testable hypotheses about social-class differences in speech. He reported the results of recording sessions with groups of 10 middle-class and 14 working-class boys aged 15 to 18, discussing the abolition of capital punishment. Bernstein's methodology was totally inadequate and contaminates his results (Macaulay, 2005, p. 43), but for many years his findings received serious consideration.

Bernstein claimed that the working-class boys used more of what he calls "sympathetic circularity markers" (1971, p. 97 [1962, p. 223]), including discourse markers such as *you know* and tags such as *isn't it*, *ain't it*, and *wouldn't he*. His figures for sympathetic circularity sequences convert to frequencies of 2.53 per 1,000 words for the middle-class boys and 14.14 per 1,000 words for the working-class boys. He also found that the middle-class boys used *I think* more frequently than the working-class boys, whereas the latter used the sequence *I mean* twice as frequently. Bernstein excluded *I mean* from the analysis "as it was considered a simple reinforcing unit of the previous or subsequent sequence and likely to be an idiosyncratic speech habit" (1971, p. 98 [1962, p. 224]).

Bernstein also developed measures of subordination, complexity of the verbal stem, and use of the passive. In all cases the middle-class boys scored significantly higher than the working-class boys. Bernstein found that the middle-class boys used significantly more "uncommon adverbs" and "uncommon adjectives." Finally, Bernstein found that the middle-class boys used fewer personal pronouns overall but used the pronoun *I* more frequently than the working-class boys did.

Macaulay (1991) provides comparable evidence of social-class differences in a stratified sample of speakers in Ayr, Scotland. Six middle-class and six working-class adults were interviewed by the same interviewer. The interviews were transcribed in their entirety and stored as computerized texts. Each line of the transcript was coded according to 49 different syntactic categories. Consistent with Bernstein's findings, the middle-class speakers did in fact "exhibit a greater use of subordination in general and a more frequent use of subordinate noun clauses in particular" (Macaulay, 1991, p. 106), but there were no clear social-class differences in the use of passives. In some cases the differences were slight and no tests for statistical significance were carried out.

Contrary to Bernstein's finding, the middle-class speakers used *you know* (2.1 per 1,000 words) almost as frequently as the working-class speakers (2.3 per 1,000 words; Macaulay, 1991, p. 145). However, Bernstein's observations on adverbs were fully supported. The middle-class speakers used derived adverbs ending in -ly with a frequency of 8.9 per 1,000 words compared with a frequency of 2.6 per 1,000 words in the working-class interviews.

Several investigators have reported on social-class differences in the use of *you know*. Dines (1980, p. 16) reports that two unpublished Australian studies, Poole (1973) and Brotherton (1976), found "a higher frequency of *you know* in lower-working-class speech," but does not give more details. Huspek (1989, p. 665) found *you know* to be frequent in the speech of the workers he interviewed but he did not interview middle-class speakers, so there are no comparative figures. Stubbe and Holmes (1995) found *you know* to be significantly higher in working-class speech in New Zealand, though they admit that in New Zealand research "social class divisions are fluid and the concept must be used with caution" (1995, p. 67). Woods (1991, pp. 146–7) found the use of phrases signaling sympathetic circularity to be significantly more frequent in working-class speech but he also reports "that the percentage of speakers who use signals of sympathetic circularity is high in all social classes" (1991, p. 146).

In 1997, Stuart-Smith recorded a stratified sample of 17 adults and 16 adolescents in Glasgow (Stuart-Smith, 1999). Participants were asked to choose a friend or acquaintance with whom they would be willing to talk for half an hour in the presence of a tape recorder,

without the investigator being present. The sample was balanced by age (adolescents 13–14 and adults 40+), social class (middle class and working class), and gender. The tapes were transcribed in their entirety and provided evidence for the analysis of a number of syntactic and discourse features (Macaulay, 2005).

As in Ayr, there were no significant differences in the use of *you know* by middle-class speakers (3.29 per 1,000 words) and working-class speakers (3.49 per 1,000 words; Macaulay 2005, p. 66) but there were differences as to where the sequence occurred in the clause. In the middle-class conversations 50% of instances occurred in medial position in the clause and 32% in final position. The working-class speakers used *you know* predominantly in final position (65%) and only 10% used it in medial position (Macaulay, 2005, p. 69). The latter figures are for the adults only as the adolescents seldom used *you know* (0.86 per 1,000 words).

In contrast to the results from Ayr, both the middle-class adults and the adolescents in Glasgow use the passive significantly ($p < .05$) more than the working-class speakers. The frequency for the middle-class adults was 3.06 per 1,000 words compared with 1.77 for the working-class speakers. The figure for the middle-class adolescents was 3.01 compared with 2.70 for the working-class adolescents. The adolescents had a higher proportion of *get*-passives. The Glasgow working-class adults used modal auxiliaries more frequently (17.84 per 1,000 words) than the middle-class adults (11.64 per 1,000 words, $p < .02$). There were no social-class differences in the use of modals in the Glasgow adolescent conversations or the Ayr interviews.

Although he was not able to establish this in his 1962 empirical study, Bernstein had earlier characterized what he was then calling a public language (the form used by "the unskilled and semi-skilled strata") as employing "short, grammatically simple, often unfinished sentences, a poor syntactical construction with a verbal form stressing the active mood" (Bernstein, 1971, p. 42). Bernstein here seems to be confusing speech with writing. Short, syntactically simple clauses are characteristic of impromptu speech, in which the passive voice is rare. Most of the clauses in the Glasgow conversations contain a single finite verb (85% for the adults and 93% for the adolescents). There are no social-class differences among the adults but for the middle-class adolescents the proportion is 86% compared with 99% for the working-class adolescents. It is not always noted that Bernstein's results are based solely on the speech samples of adolescent boys.

One set of constructions—dislocated syntax—is used more frequently by working-class speakers both in Ayr and in Glasgow: demonstrative focusing ("and that was you shut in the house for a week"), clefting ("it's them that's running it now"), noun-phrase preposing ("an auld auld man he was you ken"), left dislocation ("Mr Patterson he was a gentleman"), and right dislocation ("she was a very quiet woman my mother"; Macaulay, 2005, pp. 93–5). The working-class speakers in both Ayr and Glasgow used these constructions significantly more frequently ($p < .001$) than the middle-class speakers did. These constructions are obviously more complex than simple SVO clauses, which is contrary to Bernstein's claim.

As in Ayr, there were significant social-class differences in the use of derived adverbs ending in -ly. The middle-class speakers used such adverbs with a frequency of 11.89 per 1,000 words compared with 4.97 for the working-class speakers ($p < .001$). However, the difference was not only in the use of "uncommon adverbs." The working-class speakers rarely used *very* and *quite*: they used *very* with a frequency of 1.0 per 1,000 words compared with the frequency of 3.49 per 1,000 words for the middle-class speakers ($p < .001$). Similarly, the working-class speakers used *quite* with a frequency of 1.0 per 1,000 words compared with the middle-class speakers' frequency of 2.49 per 1,000 words ($p < .002$). Both groups of adolescents barely used *very*, but the middle-class adolescents used *quite* more than twice as often ($p < .01$) as the working-class adolescents.

Bernstein (1971, p. 102) found that the middle-class boys used significantly more adjectives than the working-class boys. In Ayr, the middle-class speakers used adjectives twice as frequently (22.41 per 1,000 words) as the working-class speakers (11.74 per 1,000 words), which is statistically significant ($p < .05$). There was a similar pattern in Glasgow with both the adults and the adolescents. The middle-class adults used adjectives with a frequency of 34.16 per 1,000 words compared with 24.74 per 1,000 words for the working-class adults. The middle-class adolescents used adjectives with a frequency of 29.79 per 1,000 words compared with 24.74 per 1,000 words for the working-class adolescents, but in neither case were the differences statistically significant. The middle-class adults, however, used evaluative adjectives (e.g., *brilliant*, *horrendous*, *impeccable*) twice as frequently as the working-class speakers ($p < .004$).

Bernstein (1971, p. 104) found that the middle-class boys used fewer personal pronouns than the working-class boys. This was true of the Glasgow speakers, both adults and adolescents, but the differences were not statistically significant. In both Ayr and Glasgow, the middle-class speakers used significantly more *wh*-forms of relative pronouns (*who*, *which*) than the working-class speakers, both adults and adolescents ($p < .001$).

Macaulay (2005) examined 42 discourse features in the Glasgow conversations and found 46 statistically significant differences, of which only 10 referred to social-class differences, compared with 16 for gender differences, and 20 for age differences. This underlines the danger of taking one subset of the population (e.g., adolescent boys) and generalizing the results to the population as a whole. Bernstein's methodology was totally inadequate (Macaulay, 2005, pp. 43–4) but his insights were remarkably acute, and many of them have been confirmed in the results cited above. It is unfortunate, however, that few researchers followed his example in conducting an empirical study of social-class differences in grammar. If they had, there might have been much more to report in the present entry. It is to be hoped that future researchers into social-class differences in language will pay more attention to syntax. In order to do that, they would be advised to follow the examples of Stuart-Smith (1999) and Docherty and Foulkes (1999) in collecting extended examples of spontaneous conversation.

SEE ALSO: Language and Identity; Register; Societal Pragmatics; Sociolinguistics: Quantitative Methods

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Grammar and the Influence of Society and Culture

ANNA GLADKOVA

Introduction

The influence of society and culture on grammar is studied within two major approaches. The sociolinguistic approach analyzes grammatical variation (along with any other linguistic variation) in relation to societal variation and cultural norms. Society and culture are treated closely in this approach with a particular focus on a "behaviorist" interpretation of culture (see Sarangi, 2009). The most prominent work in this regard is research done by William Labov and others (e.g., Labov, 1972, 1980, 2006).

An approach that is mainly concerned with the influence of culture on language is ethnosyntax. Here a "mentalist" or "semiotic" interpretation of culture (see Sarangi, 2009) is of more importance. This entry will represent the perspective of the ethnosyntax approach.

The term "ethnosyntax" was coined by Wierzbicka (1979) to introduce a new perspective into grammatical studies with a particular focus on cultural meaning. She defines connections between grammar and meaning as follows:

> Every grammatical construction encodes a certain meaning, which can be revealed and rigorously stated, so that the meaning of different constructions can be compared in a precise and illuminating fashion, both within one language and across language boundaries.
>
> Grammar is not semantically arbitrary. On the contrary, grammatical distinctions are motivated (in the synchronic sense) by semantic distinctions; every grammatical construction is a vehicle of a certain semantic structure; and this is its *raison d'être*, and the criterion determining its range of use. (Wierzbicka, 1988, p. 3)

Ethnosyntax is a form of language studies which relies on the view that language and culture are closely connected. The most relevant interpretation of "culture" in this regard has been offered by the anthropologist Clifford Geertz. In his view, the concept of culture denotes "a historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes towards life" (Geertz, 1973, p. 89). As emphasized by Wierzbicka, a key to decoding cultural meanings embedded in grammatical structures lies in a semantic approach to studying grammar.

Two senses of ethnosyntax can be distinguished—a "narrow" and a "broad" sense (Enfield, 2002; Goddard, 2002). Ethnosyntax in a "narrow" sense aims to locate and articulate cultural understandings that are embedded in the meanings of particular grammatical structures. Ethnosyntax in a broad sense studies how pragmatic and cultural rules affect the use of grammatical structures. Ethnosyntax in this sense is comparable to other studies in the area of pragmatics, such as ethnopragmatics (Goddard, 2002, 2006) and ethnography of speaking (e.g., Gumperz & Hymes, 1972).

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The following discussion will provide examples of studies in ethnosyntax in its broad and narrow senses. It will also focus on two traditionally distinguished components of grammar—morphology (inflection and word formation) and syntax (a system of rules which describe how all well-formed sentences of a language can be derived from basic elements).

Before proceeding, a methodological remark is due. When it comes to identifying cultural themes in language the metalanguage of description is of paramount importance. Since the goal of a cultural analysis is to identify cultural ideas as they are embedded in language, it is crucial to avoid an ethnocentric bias in the analysis. This can be achieved by the use of a language-neutral methodology known as the natural semantic metalanguage (or NSM; see www.une.edu.au/bcss/linguistics/nsm/). NSM comprises 63 empirically identified universal meanings (along with a limited number of more complex meanings known as semantic molecules), which combine with each other in certain ways to form a mini-language. This metalanguage lies at the core of every language (e.g., Goddard & Wierzbicka, 2002; Goddard, 2008). NSM is applied in semantic studies of words and grammatical constructions to formulate explications, as well as in studies of cultural and pragmatic factors underlying language use to formulate cultural scripts. Several of the examples provided in this entry represent studies which rely on the use of NSM as a methodological tool.

Cultural Ideas Reflected in Morphology and Syntax

Morphology

Diminutives are an interesting example of a linguistic phenomenon encoding cultural meaning at the level of morphology. The term "diminutive" refers to a formation of a word that conveys the idea of "smallness" of the object or quality named, generally in conjunction with an attitude of intimacy or endearment toward it. This phenomenon is found in many languages, but its scope and exact semantic content vary from language to language. Here this variation will be demonstrated using Russian, Columbian Spanish, and Australian English.

Russian has a highly developed system of expressive derivation. It applies to nouns, adjectives, and adverbs (e.g., *nos* 'nose.NOUN.MASC.SG' > *nosik* 'nose.DIM'; *solnce* 'sun.NOUN.NEUT.SG' > *solnyško* 'sun.DIM'; *krasivyj* 'beautiful.ADJ.MASC.SG' > *krasiven'kij* 'beautiful.DIM'; *bystro* 'quickly.ADV' > *bystren'ko* 'quickly.DIM'). The system of expressive derivation in personal names is also extremely rich and is largely consistent with the one for nouns. For example, a feminine name *Ljudmila* has the following derivatives (among others): *Ljuda*, *Ljudočka*, *Ljudka*, *Ljudok*, *Ljudusik*, *Ljudasik*, *Ljudaša*, *Ljusja*, *Ljus'ka*, *Ljusik*, *Ljusenok*, *Mila*, *Miločka*. A masculine name *Jurij* has the derivatives *Jura*, *Juročka*, *Jurik*, *Juron'ka*, *Juranja*, *Juraša*, *Jurčik*, *Jurasja* (among others). A list of comparable length can be produced for almost any Russian personal name. Each form conveys a different meaning, and the choice of the form depends on the attitude the speaker wants to express toward the addressee. The nuances of these meanings, however, are difficult for cultural outsiders and learners of a language to grasp (see Gladkova, 2007). There is a strong association between diminutives and small children (as diminutives are used to talk about and to children), but they are also used among adults in colloquial speech.

Wierzbicka (1992) argues that with a meaning-based approach to grammar one can unravel cultural information embedded in the derivative forms of personal names and communicate it successfully to language learners. She proposes semantic formulas as representations of meanings of models of expressive derivation. We will illustrate her studies on the basis of two forms only. The most common forms with the suffix *-očka* (*Juročka*, *Ljubočka*) suggest a particularly small size and good feelings associated with

small children, not simply children as such. The invariant of meaning of this form can be represented in universal human concepts as they are identified in NSM as follows (see Wierzbicka, 1992, p. 247):

(1) *Ljudočka*, *Juročka*
  (a) I feel something good towards you
  (b) like people feel when they say things to small children

The suffix *-ik* has boyish associations, in both masculine and feminine forms. Thus the invariants of meaning are as follows (see Wierzbicka, 1992, p. 251):

(2) *Jurik*, *Marik* (masculine names)
  (a) I feel something good towards you
  (b) like people feel towards small boys

(3) *Ljusik*, *Svetik* (feminine forms)
  (a) I feel something good towards you
  (b) I feel something good when I say things to you
  (c) I want to say things to you as if you were a small boy, not a small girl

Formulas of this kind allow us to show overlapping components of meaning in the structures under investigation as well as their differences. Explications (1), (2), and (3) have identical components (a). Their differences lie in the fact that explication (1) has reference to "small children," while explications (2) and (3) have reference to "small boys" with (3) also containing reference to "small girls."

Reference to small children has not been shown to apply to all forms of expressive derivation in Russian as it is not relevant in the forms with the suffix *-en'ka* (e.g., *Katen'ka*, *Miten'ka*) and with the suffix *-uška* (e.g., *Nikituška*, *Annuška*) (Wierzbicka, 1992). This fact suggests that a reference to children cannot be claimed to be an invariant of meaning for all forms of diminutives in Russian.

Linguistic elaboration in the domain of expressive derivation in Russian has a significant cultural importance. In particular, this elaboration can be related to two important cultural themes of Russian. First, it is reflective of a general cultural value placed on an open and spontaneous display of emotions. Second, it relates to the value of displaying affectionate feelings in intimate personal relations. These cultural rules can be formulated in the form of cultural scripts as follows (see Wierzbicka, 1999):

(4) [many people think like this at many times:]
  it is good if other people can know what someone feels

(5) [many people think like this at many times:]
  if I know someone well
  when I feel something good towards this someone
    it is good if this someone can know it
      when I say something to this someone

(6) [many people think like this at many times:]
  if I know someone well
  when I say something to this someone
    it is good if this someone can know what I feel towards this someone
      when I think about this someone

Spanish, like Russian, is also rich in expressive derivation. However, there is no complete overlap between the two systems. Travis (2004) employs Wierzbicka's approach in analyzing a diminutive suffix *-ito/-ita* in Columbian Spanish. She identifies its several uses on the basis of a corpus study and demonstrates that this suffix serves several functions—from its core uses in relation to children to expressing affection, contempt, and hedging speech acts. Travis argues that the use of diminutives in Colombian Spanish is based on the prototype of using a diminutive when speaking to children and, therefore, implies feelings of the kind that can be felt when speaking to children. This prototype can be formulated in the form of a cultural script as follows (see Travis, 2004, p. 261):

(7) [many people think like this at many times when they say something about someone:]
when I say this about this someone, I feel something good towards this someone
like people can feel towards a child when they are saying something to this child

Travis notes that semantic and pragmatic functions of a diminutive in Spanish differ from the ones in Russian in that a Spanish prototype of a diminutive is child-focused, while in Russian it is not.

Australian English has a distinctive diminutive form, such as *Chrissy prezzies* (Christmas presents), *barbie* (barbeque), *salties* (salt-water crocodiles), *freshies* (fresh-water crocodiles), *Brissie* (Brisbane), *Tassie* (Tasmania). Goddard and Wierzbicka (2008) argue that the use of this "diminutive" is different from the use of a "regular" diminutive (e.g., *birdie*, *horsie*) in that it involves abbreviation and it does not convey a "childish effect." The Australian forms reflect a "familiarity" effect (they apply to objects or phenomena very familiar to people in Australia) and the "unimpressed" or "undaunted" attitude that "it is not a big thing" (as a shortened form of the word indicates). Goddard and Wierzbicka (2008) propose the following explication for these forms:

(8) *barbie, freshies*
(a) something
(b) when I say this about it, I think about it like this:
(c) "it is not something big
(d) when I say something about it, I don't want to say it with a big word
(e) people here don't have to think much about things like this
(f) because they know things like this well"
(g) when I think about it like this, I feel something good

This explication demonstrates differences in meaning between the Australian forms and Russian and Spanish forms. It also shows differences in underlying cultural values; rules of "emotion expression" in Russian (scripts (4)–(6)) are not applicable to the Australian context where the expression of emotions is toned down.

Thus, with the help of a refined methodology of semantic analysis it can be demonstrated that "diminutive" forms in Russian, Columbian Spanish, and Australian English convey cultural attitudes and that these attitudes differ across these languages. Other well-researched examples of culturally salient morphology are honorifics in Japanese (e.g., Loveday, 1986; Prideaux, 1970), Korean honorifics and cultural scripts (Yoon, 2004), case in Polish (Wierzbicka, 2008), and reciprocal constructions (Nedjalkov, 2007; Wierzbicka, 2009).

Syntax

As an illustration of how cultural meaning can be conveyed at the level of syntax, we will consider a link between constructions with the verb *let* in English and cultural ideas of "personal autonomy" and "nonimposition" on the basis of Wierzbicka's (2002) study.

The existence of a large number of constructions with the verbs *make*, *have*, and *let* in English allows Wierzbicka (1988, 1998, 2002) to argue for the cultural salience of the domain of causal relations in modern English. She shows that for each verb it is possible to distinguish several semantic invariants of constructions, all characterized by a slight difference in meaning. On the basis of a detailed semantic analysis she proposes the following classification of constructions with the verb *let* and formulates a semantic prototype for each of the constructions:

Let of "permission" (*She let him go to the party*)
Let of "non-interruption" (*She let him sleep*)
Let of "apparent indifference" (*She let him cry*)
Let of "non-prevention" (*She let him fall*)
Let of "tolerance" (*Let her be!*)
Let of "shared information" (*Let me know what happened*)
Let of "offering to perform a service" (*Let me open the door for you*)
Let of "suggestion" (*Let's do Z!*)
Let of "cooperative dialogue" (*Let me conclude by saying . . .*)
Let of "cooperative interaction" (*Let me talk to him*)
Let of "cooperative thinking" (*Let me think . . .*)

Wierzbicka compares the English constructions with similar constructions in German and Russian, showing that these languages have less semantically diverse causative constructions and that some of the English constructions do not have idiomatic equivalents in either German or Russian.

Wierzbicka puts forward a hypothesis explaining cultural roots of this elaboration in English:

> as democracy developed in a large-scale modern society—first of all, in America . . . —a new style of human relations evolved, to accommodate the need for both an increased scale of interpersonal interactions and a new footing on which these interactions were to be conducted . . . The new managerial type of society, too, needed an increased scale of interpersonal causations: for the society to function smoothly and efficiently, lots of people had to be, roughly speaking, told what they were to do. This had to happen, however, in the context of a democracy, where people might be willing to take "directions" or to follow "instructions" but not to obey "orders" or "commands." (Wierzbicka, 2002, p. 166)

Other interesting examples of studies exploring cultural attitudes embedded in syntactic structures are Wierzbicka (1992) and Goddard (2002) on dative constructions in Russian (e.g., *Mne ne spitsja* 'I.DAT no sleep.REF') and the cultural themes of "fate" and "passivity."

Grammatical Structures and Cultural Influence on Their Use

In this section we provide an illustration of variation in the use of grammatical structures due to the influence of cultural factors. As a case study we will consider Eades' (1982) research on information-seeking techniques in Australian Aboriginal English in Southeast Queensland. The author shares her personal experience of collecting linguistic data in the area and reports difficulties she faced in trying to elicit information from Aboriginal people. She notes that commonly Aboriginal people are "confused, dysfluent or noncompliant when questioned by means of an interrogative sentence like *Were you very young?*, the most usual type of question for MCWA [Middle-Class White Australian] people" (Eades, 1982, p. 65).

Eades identifies several linguistic models of information-sharing techniques in Aboriginal English, among them using a declarative clause with question intonation, "triggering," and the use of interjections and repetitions. She explains "triggering" as

> a technique consisting of devices, often followed by silence, intended to lead the knowledgeable person to impart information. In the most common triggering strategy the person desiring substantial information makes a relevant statement, presenting something he already knows about the topic. This is followed often by silence and then by the knowledgeable person talking on that topic, if he desires. (Eades, 1982, p. 76)

Interjections and repetitions (e.g., *yeah*, *mm*, *oh*, *what?*, and the like) are also commonly used to encourage the speaker to give further information. Eades notes that direct questions are also used to elicit information, but less frequently than other strategies.

Eades explains the specificity of this practice, as compared to Anglo-English, by a prevailing different system of personal relationships, as well as a different cultural attitude to information and knowledge in Australian Aboriginal societies. Socialization among Aboriginal people is strictly regulated by their kin relationships. Eades comments:

> Traditional Aboriginal society . . . was and is based on small-scale groups. Each person has a particular kin relationship with every other person with whom he comes into contact—if not a blood relationship, then by extension, a classificatory kinship relationship. These kin relationships play a crucial part in all interaction. . . . Clearly, then, the great need to compel interaction between people in MCWA society doesn't exist in traditional Aboriginal society. (Eades, 1982, p. 67)

Regarding cultural rules governing sharing information and knowledge she writes the following:

> In Aboriginal society . . . knowledge is not free and easily-acquired good. Knowledge is acquired or passed on as a part of social interaction and is subject to strong controls in many instances. For example, much knowledge of religious and ritual matters is strictly controlled so that only initiated men may know certain songs, stories and places. (Eades, 1982, p. 69)

Concluding Remarks

Language is highly sensitive to cultural and societal processes. Grammatically elaborated areas of a language commonly embed meanings or ideas that are particularly salient in the collective psyche of a people. Knowledge of these meanings or ideas can equip cultural outsiders with more effective and successful tools of communication with the representatives of the culture.

This entry has provided some examples of studies illustrating cultural significance of grammar within the approach of ethnosyntax. These investigations are of particular importance to applied linguistics in general and language teaching in particular. The proposed formulas can be applied in language teaching to explain meanings and use of grammatical constructions. The use of universal human concepts makes it possible to translate these formulas into any language without any change in meaning.

SEE ALSO: Cross-Cultural Pragmatics; Crosslinguistic Differences in Grammar; Culture; Language, Culture, and Context; Pragmatics and Culture; Pragmatics and Grammar; Teaching Grammar

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Grammar and the Research Article

LYNNE FLOWERDEW

Introduction

The research article (RA) is one of the most important genres in academic discourse, one reason being that progression in an academic career can hinge on the quality and quantity of an academic's publication record. Style manuals on how to write and publish a research article tend to be rather prescriptive with regard to tense usage, invariably give advice encouraging the use of an objective and impersonal style characterized by grammatical constructions such as the passive and nominalizations, and sometimes advocate the avoidance of personal pronouns *I* and *we*. But to what extent does this advice hold true when measured against analysis of authentic RAs?

Theoretical Framework

An optimum starting point for an overview of the RA is Swales's chapter 7 in his 1990 seminal volume on genre analysis and his follow-up work revisiting the RA in his 2004 publication on research genres, as most studies approach analysis of RAs from this theoretical perspective. Broadly speaking, genres are a social construct which shape and are shaped by the ways we interact, thus underscoring the importance of role relationships among writer and reader(s) (Berkenkotter & Huckin, 1995). The role of grammar in the RA has mainly been investigated within a paradigm of the *structural* and *rhetorical* conventions of this genre. *Structural* refers to the classic IMRD organization—that is, Introduction, Methods, Results, and Discussion sections of experimental research articles—although as noted by Swales (2004, p. 208), this standard pattern would not be applicable in the case of theoretical RAs as found in the disciplines of theoretical physics, mathematics, and some areas in economics, which employ a logico-argumentative model. *Rhetorical* conventions relate to the communicative purpose of the RA overall (RAs are uncontestedly viewed as persuasive artifacts), or to the communicative purpose of individual sections or "moves" within different sections. For Swales "A 'move' in genre analysis is a discoursal or rhetorical unit that performs a coherent communicative function in written or spoken discourse" (2004, p. 228). For example, prototypical moves in RA Introductions, the most widely researched section, would include "establishing a territory," "establishing a niche," and "occupying the niche," commonly referred to as the CARS (create-a-research-space) model. In the 1980s most genre-based research on the RA centered on analysis of small samples of one or two texts, whereas later studies make use of computerized corpora of RAs.

It is against this backdrop of the structural and rhetorical conventions revealed through genre analysis, also taking into account disciplinary differences among hard and soft knowledge domains (sciences/engineering vs. humanities/social sciences), that the "grammar" of the RA is mainly reviewed. The focus is thus on how and why certain grammatical devices constituting the "technical grammar" of English (see Halliday & Martin, 1993) are deployed to perform different rhetorical functions in addressing both peers and the wider academic community.

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Tense Usage

Style guides for writing the RA can be somewhat prescriptive, reducing tense usage to the set of following "rules":

- Use the present tense for stating previously published findings which have become accepted scientific knowledge or are a universal truth.
- Use the past tense for the description of methods and results in the current study.
- Use the past tense for attribution of sources (e.g., *Smith reported that . . .*).

Let us now see how these rules hold up in light of findings on tense usage, a grammatical category which was the focus of much of the early research on RAs. While the second piece of advice is borne out by research findings (see, e.g., Nwogu's 1997 genre-based research on a corpus of 30 medical research papers), the other two are somewhat incomplete.

While it is true that the present tense is used for stating findings which have become accepted scientific knowledge, such as "Streptomycin inhibits the growth of *M tuberculosis*" (Day & Gastel, 2006, p. 192), this statement presents only half the picture. Researcher-writers report or state previously published findings for a variety of communicative purposes. Lackstrom, Selinker, and Trimble's (1973, p. 133) research, one of the first studies to align tense choice with rhetorical purpose, shows that *past research* is presented in both the past and present perfect tenses. When the past research does not bear directly "in terms of importance-on the work" described in the report, the past tense is used. In contrast, when the past research is directly related "in terms of importance-to the work" described, the present perfect tense is used.

Lackstrom et al.'s (1973) observation that the use of the present perfect signals "importance-to the work described" can be seen in terms of Swales's moves in RA Introductions. In the opening "establishing a territory" move, the present perfect is used for claiming centrality and making topic generalizations. An example from Oster (1981, p. 78), taken from the introduction to a chemical engineering report, reads as follows: "Sustained isothermal, concentration oscillations *have been observed* in recent experimental studies involving the oxidation of either CO or H_2 over metal catalysts [1–9]. Various mechanisms *have been suggested* to explain this interesting phenomenon." The present perfect can also be found in the second move of the Introduction, "establishing a niche," with some form of negative marker to counterclaim or indicate a gap in the field, such as "In contrast to the large number of investigations of wall-to-wall head transfer in gas-fluidized beds, comparatively little [2–7] *has been published* on heat transfer in liquid-fluidized beds" (Oster, 1981, p. 78), serving to mark a shift to the writer's own work (Myers, 1992), that is, "occupying the niche." Nwogu (1997) reaches a similar conclusion in his genre analysis of medical RAs when he states that in reviewing related research in the Introduction the present perfect is used for research whose results have implications for new research, a use listed in general reference grammars.

The above examples from Oster are both nonintegral citations, that is, where reference to the author is given in parenthesis or by footnote numbers. Integral citations are those where the name of the cited author occurs in the citing sentence, usually as subject, and are far more common in the soft sciences (Hyland, 1999). While, as stated previously, style guides recommend using the past tense for integral citations with the author in subject position, as in *Smith reported that . . .* , research findings show the situation to be far more complex than is reflected in this bald statement, as the past, present perfect, and present tenses are all possible. Swales (1990, p. 154) suggests that the choice of tense depends on how far the writer wishes to distance themselves from the reported findings, with the present tense used to pave the way for a critical discussion.

As for the presence of verbs in the continuous or progressive forms, Swales (1990, p. 137) points out that these forms "occur very rarely, if at all, in *any* section of an RA." While this observation is valid for RAs in the science and engineering fields, Hyland's (1998, p. 120) corpus-based research across a variety of disciplines shows that philosophers and sociologists occasionally use the progressive aspect to present their work: "*In this way I am confronting fundamental issues of critical social science practice* (Soc[iology])." Hyland states that this type of dialogic narrative exposition allows the writer to project themselves into the text and express their authorial stance.

Nominalization

The writers of style guides and applied linguists agree that one of the functions of nominalization in science writing is to create an aura of impersonal objectivity, similar to the use of passive verbs. Compare the two sentences below from Halliday (1993, pp. 61–2):

> We used an ISOL and thus could experiment even where it was difficult.

> The experimental difficulties were resolved by the use of an ISOL.

What is often omitted from mention in style guides, though, is that nominalizations allow the writer to pack a lot of information into the noun phrase (NP), which, like passives, can make the meaning less explicit. Martinez (2001, p. 233) gives the following example of nominalizations from a biology RA: "Incubation of washed normal human platelets . . . results in significant increase in platelet-bound antibodies." If the verb *incubate* were used instead of its nominal form *incubation*, the underlying concept would have to be expressed across two sentences instead of compressed into one; for example, *Normal human platelets were washed and left to incubate. This resulted in . . .* Dubois (1982, cited in Swales, 1990) has noted the effect of "stacking" in noun phrases that takes place across sentences and clauses; for example, in the NP *the heavy beef heart mitochondria*, *mitochondria* is used as a premodifier when it is referred to later in the RA, *well coupled mitochondrial particles*. Biber and Gray's (2010) three-million-word corpus-based study of RAs provides further support that writing in the RA is structurally "compressed," involving complex nominalizations. The sentence "these stages are marked by the appearance of new systemic mechanisms and corresponding levels of complexity" (p. 6), while simple in terms of syntactic structure, with only one main verb, contains multiple prepositional phrases embedded within the NP. As Biber and Gray point out, this belies the common belief that academic writing is structurally elaborate through relative clause use in which meaning relations are expressed explicitly.

Passive Versus Active Voice

Some style guides recommend using the passive voice to maintain impersonalization, while others specify the use of either solely *I/we* or the passive. Is this advice contradictory? Moreover, if there is a choice between active and passive, what determines this choice?

Sometimes, it is the information structure of the sentence which determines whether the active or passive is used. According to Halliday's (1978) given–new paradigm and his principle of end-weight, information new for the reader, and also long and complex elements, tend to be placed toward the end of the sentence (see Biber, Johansson, Conrad, & Finegan, 1999, for more details). Such is typically the case with equations. In the sentence "The radiative transport is described by the aediative diffusion equation," the equation

described is quite long (and may also be new information for the reader). As new information usually carries a high information load, the two typically converge, as in the following: "Equating the two temperatures, for example, yields . . ." (Tarone, Dwyer, Gillette, & Icke, 1988, p. 201). However, the given–new information paradigm does not seem to operate in Methods sections of RAs, where new information is often placed in subject position, giving the impression "that Methods sections often read like checklists" (Swales, 1990, p. 168).

Methods sections in *experimental* RAs tend to be dominated by impersonal passive constructions, as commonly noted in style guides and also confirmed by corpus findings (Martínez, 2001). However, as *theoretical* RAs do not have clearly discernible Methods sections but rather consist of a series of arguments to build a case for a specific phenomenon (Swales, 1990), they employ more active verbs overall. Passive verbs in the Methods section in RAs are usually agentless, placing focus on the objects under investigation and thus used as a distancing strategy by the writer-researcher, as in "The subjects were tested individually in a quiet room at their school" (Martínez, 2001, p. 237). It is important to note, though, that the active voice can also signal impersonality when used with an inanimate subject. Consider the following two examples from Rundblad's (2008, p. 25) analysis of Methods sections based on nine medical research articles:

(1) interviews *were carried out by* researchers blind to the duration or sequence of blocks. (*BMJ* 2001).

(2) *This well validated semistructured interview* uses investigator based criteria to assess the frequency and severity of antisocial behaviours (*BMJ* 2001).

Rundblad points out that in both sentences the research method (i.e., the interview) rather than the researchers is the object of study. A metonym (*interview* in example 2), a rhetorical strategy used to describe something indirectly, serves to obscure and anonymize the researchers (using a possessive adjective would render the information less impersonal, as in *Our semi-structured interview uses* . . .). However, when an active form occurs with the subject *we*, this combination brings the writer's voice into the text, as in *In our semi-structured interview, we used* . . . More information is given on the use of personal pronouns below.

Personal Pronouns

In addition to the use of a personal pronoun to introduce or discuss research methodologies, other purposes identified by Hyland (1998, pp. 118–19) are to organize arguments and structure texts, as in *In this paragraph we report a comparison between* . . . , and to explicitly indicate the writer's stance toward findings or to align themselves with a theoretical position, as in *I argue for* or *we concur with*. This exclusive use of *I* and *we*, to refer solely to the writer and other people associated with the writing, is also conceived as a form of self-promotion (Kuo, 1999; Harwood, 2005). The use of the inclusive pronoun *we* referring to the writer and reader together is mainly confined to RAs in philosophy to engage readers rhetorically in the text, as in "we cannot expect this paradox to . . ." (Hyland, 1998, p. 113). Imperatives and phrases such as *let us consider*, found to occur across all disciplines, are other devices whereby writers seek to involve the participation of the reader (Swales et al., 1998; Hyland, 2002). Thus, contrary to the advice given in some style guides to maintain an objective, impersonal style, the pronoun system is exploited by writers of RAs for maintaining the writer–reader relationship and allowing the writer an authorial voice.

Stance Markers

The way that writers position themselves toward the propositional content of the RA is realized through a variety of stance markers. Four types of stance markers, namely self-mentions, attitude markers, boosters, and hedges, are listed in Hyland's (2005, pp. 178–82) taxonomy, based on his corpus analysis of 240 RAs from eight disciplines. Self-mention covers the pronoun system outlined above. Attitude markers indicate the writer's attitude toward the propositions, conveying surprise, agreement, importance, and so forth. Sentence adverbs, such as *unfortunately*, and adjectives, such as *logical, remarkable*, are used to explicitly signal writer attitude (attitude is indicated less explicitly through the use of subordination and comparatives). Boosters, adverbs modifying verbs, as in *we obviously do not see*, and adjectives, as in *this seems highly dubious*, help writers to present their work in an assured, confident style. However, while claiming significance and contribution to the field for their work, at the same time writers also use a variety of hedging devices to present information as an opinion rather than fact, for a variety of reasons: as a politeness strategy and to save face (Myers, 1989), and to conform to the rhetorical conventions of the discourse community to forestall anticipated criticism to the work presented (Hyland, 1996). Hedges are typically realized by modal verbs expressing possibility (*may, might*), semi-auxiliaries (*seem, appear*), compound hedges (*it may suggest*), adverbs (*probably*), and approximators (*somewhat, occasionally*) (Salager-Meyer, 1994).

Conclusion

Grammar and the RA have been discussed from a discourse-based rhetorical perspective within a genre-based framework. While advice in style guides on the use of nominalizations, the passive, and tense usage is generally sound, findings from applied linguistic research point to a much more nuanced and complicated picture of how the "technical grammar" of English operates in RAs.

SEE ALSO: Grammar and Discourse; Research Articles in English for Specific Purposes; Rhetorical Discourse Analysis; Tense and Aspect

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Grammar Teaching and the Workplace

LYNDA YATES

Introduction

Recent reviews of workplace language use and education make frequent reference to skills, competencies, or literacy, and grammar per se scarcely rates a mention (see, for example, Roberts, 2005, 2010; Duff, 2008; Newton & Kusmierczyk, 2011). More concerning, perhaps, is the invisibility of grammar in many workplace-related needs analyses (see, for example, Cowling, 2007). There are several causes for this tendency to focus on communicative skills and downplay the role of grammar in workplace settings. The history and geography of second language acquisition (SLA) research have influenced attitudes to grammar teaching, as have the perceptions that sentence-level descriptions have their limitations in explaining authentic communication. Popular misconceptions of what it is to learn and use a language, aided and abetted, no doubt, by lingering childhood memories of stultifying teacher-fronted grammar lessons in school, have also played a role.

While it is certainly appropriate for workplace language training to have a major focus on developing communication skills relevant to task, audience, and context, if learners are to extend and develop these skills creatively so that they can respond to new demands and new contexts, then they will also need to understand the role of grammar in making and understanding meaning. Moreover, adult learners themselves place a high value on learning grammar, and see appropriate lexicogrammatical control as an important part of achieving their language and communication goals (Rodríguez, 2009). The issue, therefore, is not one of whether grammar has a place in language programs for and in the workplace, but how it can be integrated in a sociolinguistically sensitive way that best highlights for learners the crucial role it plays in successful spoken and written communication at work.

The focus of this entry is to explore some of the ways in which grammar is relevant to the teaching and learning of language, particularly English, in and for the workplace. I will first briefly discuss some of the influences on the teaching of grammar in English-language teaching (ELT) generally before considering the contribution of developments in discourse and functional grammars, genre, language for specific purposes (LSP), and recent research in workplace interaction to workplace language education.

Attitudes to SLA, Grammar, and Language Teaching

As in other sectors, workplace language teaching methodology and curriculum have been influenced by debates in SLA. The work of Krashen and colleagues in the 1970s and 1980s fostered strong forms of communicative language teaching that eschewed an overt focus on form in the classroom, particularly in North America. However, following research in Canada and elsewhere suggesting that some explicit attention to form might be necessary, or at least useful (see discussion in Rodríguez, 2009), there has been a renewed interest in focusing on form in language teaching, including in workplace contexts (Dyson, 2002; Lewandowski, 2007).

Similarly, trends in the teaching of writing have impacted on attitudes to the role of direct attention to grammar. In the 1980s, process approaches to writing sought to move

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away from the direct teacher-fronted instruction and overly mechanistic attention to grammar found in some classes by emphasizing the role of the individual creative writing process supported by language conferences (Raimes, 1983). Such approaches downplayed the role of overt grammatical instruction in a bid to allow writers to find their own individual voice and express their own meanings (but see Hegelheimer & Fisher, 2006, for a more recent, corpus-informed approach to providing a grammatical reference resource to supplement process approaches). This focus on the individual voice, however, found its critics in those concerned that not all developing writers had the same wealth of literary experiences on which they could draw. There was growing interest, therefore, in the value of guiding students through the analysis of model texts which involved explicit attention to generic structure and grammatical construction. Genre approaches offered the potential to focus on both context-relevant texts and the underlying systems of meaning that gave rise to them. In some areas, therefore, an overt focus on lexicogrammar underpinned by genre analysis and functional grammar gained in momentum, and was adopted not only in schools but also on workplace programs for adult immigrant learners particularly in Australia (Joyce & Burns, 1992).

Language in the Workplace and Workplace Programs

The recent period of rapid industrial change has increased the demand for language skills in the workplace. Globalization and mass migration have meant that English is increasingly used as a lingua franca in multinational corporations and multicultural workplaces. Of course, workplaces vary enormously not only in size and character, but also in their workforce, and consequently in their practical and sociolinguistic concerns. Language programs designed to prepare adults for the workplace—and sometimes conducted in the workplace—are therefore similarly diverse, and range from white-collar professional and graduate-level programs, offering managers and technical experts the opportunity to fine-tune their language proficiency, to classes addressing the on-the-job demands on factory-floor operatives or preparing newly arrived immigrants to find a job.

For those working in what Roberts (2010) refers to as "the wrong kind of multilingualism" (p. 221), that is, blue-collar workers in low-level multicultural industrial environments, restructured ways of working have required higher levels of proficiency in both spoken language and literacy. The sophisticated interaction required by teamwork and newly implemented quality assurance systems, for example, can marginalize those less proficient in English, while the increased requirement for the documentation of various functions and processes that were previously only reported orally places greater demand on literacy skills (Mawer, 1992; Hunter, Belfiore, Defoe, Folinsbee, & Jackson, 2008).

How language is actually used in the workplace has been researched from a range of perspectives, including language socialization and ethnographies, corpus linguistics, various kinds of discourse analysis and speech acts, and conversation analysis (see discussion in Duff, 2008; Newton & Kusmierczyk, 2011). While in such studies spoken language has often been the focus of attention, studies of workplace or technical language for overtly pedagogical purposes, that is, for language for specific purposes (LSP) or English for academic purposes (EAP), have often focused on written communication.

The issue of how workplace language education should be approached and what it should cover is a contentious area. There is tension between perspectives which view workplace programs unproblematically as offering low-level immigrant workers the opportunity to improve their English and thus a pathway to social and economic advancement, and a concern that by focusing on workplace-relevant basic instruction, programs may simply reinforce and reproduce the inequities of the system (Warriner, 2010; and see discussion

in Roberts, 2005). However, an effective program would surely both seek to extend learners' proficiency in ways that address current workplace needs and seek to build the foundation for their language needs into the future. In order to build this foundation, it is vital for learners to do more than gain control of formulaic language: they also need to develop an understanding of the systematic ways in which grammar is used to construct meaning through extended interactions and texts.

In line with strategic concerns to be industry-relevant, however, national goals, guiding principles, and curriculum frameworks for immigrants tend to be framed in terms of communicative objectives and skills, as in, for example, the Canadian Benchmarks and the Certificates of Spoken and Written English in Australia. Such frameworks can, however, as we shall see below, combine very successfully with a focus on functional grammar. Thus even curricula and objectives which are not expressed in overtly grammatical terms can nevertheless allow a focus on how structure contributes to meaning in context. In this way they can provide the basis for syllabus and teaching approaches that will enable learners to develop a control of English that is not limited to their current jobs but transferable to different workplaces and situations.

Genres and the Workplace

Genre approaches are compatible with competency-based curriculum frameworks and the pragmatic needs of the workplace in that they offer a way of analyzing and teaching language that focuses on how texts are structured and realized in context to express meaning. Cheng (2008) identifies three broad strands that have been influential: the new rhetoric approach to written composition; the genre approaches based on systemic functional grammar taken in Australian school and adult contexts; and English for specific purposes (ESP) approaches to written text. The latter two are particularly applicable in workplace contexts.

The text-focused teaching approaches taken in Australia and elsewhere draw on systemic functional grammar (Halliday, 1985) and genre theory. These fostered a close attention to both the purposes of a text and the lexicogrammatical choices made by the speaker or writer to achieve their communicative goal. Language use is seen as goal directed, purposeful, and related to both the wider cultural context and the specific influential context of the situation. The former gives rise to socially crafted ways of achieving a particular purpose or genres that have identifiable stages in which different lexicogrammatical patterns are characteristic. These patterns are the result of deliberate and systematic choices that reflect the specific context of situation in which they are produced (for further detail see, for example, Coffin, 2003). It is this close connection between the structure of texts and how and why they are realized that makes genre approaches so appropriate for adult language learning in workplace-relevant contexts.

In Australia in the 1990s, genre analysis work on language across the curriculum in schools was extended to adult and workplace contexts. The national Adult Migrant English Program (AMEP) adopted a competency-based centralized curriculum in line with changes to the national vocational curriculum framework, and a genre approach offered a useful way of highlighting structural and grammatical features of sample texts. It provided learners with insight into the social purposes behind texts used across a range of workplaces and thus a way of understanding the social contexts in which they were embedded. Guided through learning and teaching cycles to produce similar texts, they were able to focus on language and literacy in integrated programs which combined both skills development and a grammatical focus (Joyce & Burns, 1992).

Used to learner-centered curricula, some teachers were wary of the kind of text-focused teaching–learning cycles encouraged by genre approaches and the unfamiliar grammatical

terminology that mastering them entailed. Others, however, found that approaching grammar through text with the explanatory power of functional grammar helped them to highlight for learners—and understand for themselves—why texts took the particular form that they did. One teacher, for example, describes how participation in an action research project on the use of genre with workplace learners revolutionized the way in which she taught grammar and allowed her to move from a somewhat hit-and-miss approach, based on what students had requested and a vague notion of what learners needed, to an approach which enabled her to select the grammatical focus for classes in a more principled way. This involved choosing texts that were relevant for learners and exploiting them in ways that helped to build up grammatical understandings appropriate to their level of proficiency (Lukin, 1995).

As noted above, the LSP goals for white-collar workers and professionals, like those of others in the workplace, have frequently been seen in terms of the spoken and written skills required in business contexts, rather than knowledge of or expertise in grammar. This has favored a focus on spoken skills such as giving presentations and negotiating, or report writing, or the particular demands of a profession or background discipline rather than an explicit focus on the role of grammar (Skulstad, 1999). As in other areas of workplace communication, the need to develop skills, especially spoken skills, is a recurrent theme in feedback from students and workers seeking to improve their workplace language. Yet effective communication in the professions, as elsewhere, relies on being able to express meaning in ways appropriate to the relevant community. It therefore demands not only the ability to reproduce a series of forms appropriately in context, but also the ability to manipulate the lexicogrammatical system that underlies them (Skulstad, 1999; Forey, 2004).

Essential to this kind of creative mastery is also a deep understanding of how and why lexicogrammatical choices are made. A large body of work in LSP, especially ESP, has therefore also drawn on systemic functional grammar as a way of exploring specialized genres and discourses, explaining the relationship between author, audience, and background discipline, and informing language preparation programs for the professional workforce. This drive to provide richer and more explanatory accounts of the structural and lexicogrammatical features of professional and specialized texts, and also to give greater insight into their professional and disciplinary underpinnings, has fuelled a movement away from a reliance on sentence-level linguistics and surface-level grammar and to the use of functional and discourse grammars (Bhatia, 2002).

Discourse and Spoken Grammar

Of great potential interest to those interested in the role of grammar in workplace language education are insights from discourse approaches to grammar. Over the past couple of decades, advances in technology have allowed the examination of large corpora of data, and this has facilitated investigation into how lexicogrammar is actually used over longer spoken and written texts, and how it is used differently across contexts. This ability to analyze longer stretches of language has led to new understandings of how Standard English works and has also helped to illuminate points of grammatical usage that were otherwise difficult to explain to learners. Thus features that are easily explained through reference to sentence-level structure, such as subject–verb concord, determiner–noun agreement, and so on, can be distinguished from those that are discourse-sensitive, such as tense, aspect, and modality, and that are best described in terms of speaker or writer meaning in context over extended texts. Thus grammar should be seen as interacting with discourse and text structure (Celce-Murcia, 1990).

Discourse approaches have also highlighted the differences between spoken and written English (Hughes & McCarthy, 1998; Carter & McCarthy, 2006; Rühlemann, 2008) and thus

potentially liberated ELT, including workplace language education, to see that grammatical accuracy and spoken fluency are not incompatible. Helping adult learners to realize that the grammatical constraints of spoken language are not necessarily the same as those expected in written text is by no means trivial. This insight would have helped me 30 years ago as I struggled to answer the distraught adult learner who asked me very seriously why he was studying grammar when native speakers did not seem to use it! Thus features of spoken grammar can take their place alongside other descriptions of language use to flesh out what it means to use a language in context.

Since the goals for learners of language for the workplace vary around the world, however, it is relevant to consider the issue of how far naturally occurring native-speaker (NS) English is an appropriate goal for everyone. Those communicating with NSs of different varieties will have a vested interest in understanding and perhaps also controlling features of that NS variety, and discourse and spoken grammars are able to provide crucial insight into these and how they fit together in actual communication. Others working in environments where English is a lingua franca (ELF) may, of course, target different goals. For both, however, the ability to access models and explanations derived from long stretches of text will be an advantage. Yet it seems that the old habits die hard, and the full impact of these changes in the way we approach grammar teaching has yet to be fully felt in ELT generally (see Conrad, 2000; Timmis, 2005; Mumford, 2009), and in workplace programs.

One very valuable source of insight into how language is actually used in the workplace and thus how effective communication is achieved there is the output from the Language in the Workplace Project (LWP) (www.victoria.ac.nz/lals/lwp). In a series of studies of naturally occurring language data collected in a variety of New Zealand workplaces, the LWP team has been able to illustrate how people at work project, negotiate, and manage their identities on a day-to-day basis.

Although the analytical focus of much of their work has been sociolinguistic rather than overtly grammatical (for example, Riddiford & Joe, 2010), there are also clear implications for targeted grammatical instruction. In addition to providing relevant models for immigrants seeking to improve their workplace readiness, such studies provide careful analyses of how grammatical forms are actually used to achieve particular communicative goals in the workplace. These authentic descriptions can usefully complement studies which have used elicited data to investigate similar issues. Thus, for example, informative descriptions of authentic requesting behavior in an office (Vine, 2004) corroborate insights from work-relevant role-play studies (Yates, 2010) and can be used for focused instruction (Riddiford & Joe, 2010). In their different ways, these studies highlight how important it is for newcomers to be able to accurately manipulate grammatical form in order to be socio-pragmatically effective in the workplace. As in the discourse and functional approaches to workplace language discussed above, it is the attention to how form functions in context to make meaning that matters, rather than the form itself.

Conclusion

While many workplace-oriented language programs need to address short-term communicative needs or focus on improving specific skills, this should not be at the expense of providing learners with the ability to understand and control the systems underlying not only how but also why language is used in the way that it is. Whatever curriculum framework or goals are adopted for a workplace program, therefore, it is essential that attention be paid to how grammatical choices contribute to meaning, and thus to a need for a focus on grammar. Without this, learners will struggle to acquire the creative control that they need in order to generalize their language learning and transfer their language skills to other contexts and situations.

However, grammar teaching still has not completely shaken free of its checkered past, and hangovers from previous unimaginative, context-poor approaches to pedagogy still color attitudes to its place in workplace programs. This is a pity, since grammar is not only fun and relevant to workplace language goals, but also vital to a pedagogy of empowerment.

SEE ALSO: Functional Grammar; Systemic Functional Linguistics

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Grammatical Variation in Adolescent Language

ANNA-BRITA STENSTRÖM

Introduction

Language change is unavoidable, and affects grammar as well as vocabulary and pronunciation. It "occurs when one group consciously or unconsciously takes another as its model, and copies features from its speech" (Aitchison, 2001, p. 83). What is involved is not simply a change from old to new patterns, however. Language change involves variation in that old and new patterns coexist for a certain period of time before the new pattern takes over. An obvious example of grammatical variation is French negation, conventionally expressed by *ne* + *pas*, but where the particle *ne* tends to disappear so that *je ne sais pas* 'I don't know' exists side by side with *je sais pas*.

Undeniably, adolescents are the real trendsetters in today's society, where being young is something to strive for when it comes to language, as well as in relation to clothing and lifestyle. The language used by adolescents in metropolitan centers is particularly interesting, since innovations tend to spread from there to the periphery. A recent example is the Spanish pragmatic marker *en plan* used as a quotation marker, equivalent to the British English *like*, which was first observed in the language of Madrid adolescents and did not appear in the province until a couple of years later.

Clearly, grammar is far less exposed to change than vocabulary, but when it does change, the new tendencies are generally first observed in adolescent conversation, which is characterized by simplified syntax, nonstandard verb forms, sentence fragments, and an abundance of pragmatic markers; these are all representative of conversational grammar in general, but are found much more frequently in adolescent conversation. Conversational grammar should not be regarded as "bad," however. The nonstandard use of *go* in the form *I goes*, for instance, cannot simply be considered bad grammar, since it helps the speaker save processing time as an example of 'pronominal symmetry' (Rühlemann, 2008).

In this entry, grammatical variation will be discussed as it appears in adolescent language in terms of grammaticalization, syntactic simplification, and intensification. For lack of a large-scale variety of corpora of adolescent conversation, most of the examples are from British English and peninsular Spanish, as represented in COLT (the Bergen Corpus of London Teenage Language; see Stenström, Andersen, & Hasund, 2002) and COLAm (Corpus Oral de Lenguaje Adolescente de Madrid), both of which are accessible for research online (http://gandalf.aksis.uib.no/colt and http://gandalf.aksis.uib.no/cola). Examples from other languages will be provided to the extent that mention is made either in the literature or in articles on the Internet.

Grammaticalization

Much of what is going on in adolescent conversational grammar is the result of grammaticalization. A definition suggested by Androutsopoulos (2000, p. 158) includes "not only the development of grammatical items from lexical ones, but also their development

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from existing grammatical material, as well as word order changes and the fixing of syntactic patterns," a definition that will be adopted here.

A typical result of grammaticalization is the development of quotation markers. They all express reported speech without an explicit verb of saying, a tendency that appears to be a crosslinguistic phenomenon of adolescent speech. The use of *be like* in this function, which was apparently first adopted by middle-class Californian girls (Romaine & Lange, 1991), has spread not only from the USA to Canada, where it is the most used quotative among young speakers, females in particular, but also to England, Scotland, and further. This usage is a phenomenon shared by boys and girls in the London vernacular, while Macaulay (2001) observed that, in Glasgow, the boys preferred *go* in this quotative function. In addition to *be like* and *go*, he mentions the use of *go like that*, *be like that*, and simply *be*. His hypothesis regarding the historical development goes as follows: *go* > *go like that* > *be like that* > *be like* > *be*, based on findings in the Glasgow area (2001, p. 16). By contrast, the only forms used by the London boys and girls in COLT are *go* (*she goes, I knew Laurie*) and *be like* (*and I'm like, and I'm like, scum!*). The recently discovered expression used as a quotative marker in the Madrid adolescents' speech, *en plan* (*y yo en plan, qué es esto?* 'and I like what's this?'), turned out to be a typical female feature (Stenström, 2006). German adolescents have adopted the single word *so* (*und ich so: cool! and er so: hä?* 'and I said: cool! and he said: what?'), while young Swedes use *ba* from *bara* 'just' (*han ba, du kan ju ringa* 'he just you could give a ring').

Another fairly recent example of grammaticalization is the development of the Swedish noun *typ* 'type' into a pragmatic marker meaning '(something) like' (*han är typ studentrepresentant* 'he is like a student representative'). Interestingly, the same use of the word *tipo* was discovered in the Madrid youth vernacular (*es rock español pero tipo Mago de Oz o algo* 'it's Spanish rock music like Mago de Oz or something'), the difference being that Swedish *typ* can be added as an afterthought (*hon är socialarbetare . . . typ* 'she is a social worker . . . or something'). Corresponding examples in French are *il s'est fait casser la gueule façon* 'he has got a beating like' and *c'était un sport genre marrant* 'it was a sport kind of ridiculous'.

In the sections that follow there will be several cases of grammaticalization, for instance in terms of generalization and reanalysis, as well as numerous borderline cases. These will not be discussed, however, for lack of space.

Simplification

Simplification is an important ingredient in adolescent speech but, as Reppen (2001, p. 198) puts it, while "adults use a greater variety of linguistic resources and combine those resources in different ways . . . students accomplish the same purposes with a more limited set of resources."

The Sentence or Clause Level

In adolescent conversation, speaker turns tend to be short with sentences consisting of a simple clause, a fragment, or a single word. Narrative sequences, on the other hand, contain longer sentences, where discourse and pragmatic markers usually serve as cohesive and bonding devices. Overall, coordination is the predominating sentence pattern.

In French young speech there is a tendency to simplify syntactic patterns to avoid complex (redundant) grammatical rules. Sourdot (1997) points to the use of the same questioning strategy regardless of question type, as when the direct form *qu'est-ce que* is used instead of the indirect form *ce que* in indirect questions, as in *Je ne sais pas qu'est-ce qu'il a fait* instead of the grammatically correct *Je ne sais pas ce qu'il a fait* 'I don't know what he has done'. The London boys and girls substitute regular question tags either by

the invariant tag *innit*, or more often *yeah* (*You've read this book called Roll of Thunder, yeah?*). In Androutsopoulos (1997), which has provided all the German data in this article, it is reported that German adolescents tend to place the verb in non-final position in clauses beginning with the conjunctions *weil* and *obwohl*.

The Phrase Level

The noun phrase

Some nouns are exposed to a change of category. One is the Spanish *cañon* 'cannon', when serving as a postposed adjectival modifier (*María es una tía cañon* 'Maria is a fantastic girl'), and the Swedish *kanon*, with *kanon* in subject-complement position (*Maria är kanon* 'Maria is fantastic'), in either case a recent phenomenon. Other examples are taboo nouns in adjectival position (*I'm crap at cricket*; *It's a shit school*).

Examples of nonstandard English are the use of the demonstrative pronoun *them* as a premodifier (*where did you get them boots from?*), the irregular use of the prop word *one* (*yeah but my ones, my platforms are out*), and the irregular form of reflexive pronouns (*they know how to defend theirselves*).

What seems to be a general phenomenon in adolescent language is the use of so-called "general extenders" (Overstreet & Yule, 1997), items that replace nouns that can be understood from the context: English *and/or stuff* (*like that*), *and that*, *or whatever*; Spanish *y todo eso* 'and all this', *o algo* 'or something'; German *und/oder etwas* 'and/or something'; Swedish *å sånt där* 'and something like that', *eller nåt* 'or something'; and so on.

The adjective phrase

Spanish adjectives are sometimes used as nouns (*El anormal este que . . .* 'This abnormal [situation] that . . .') and even as adverbials, for instance *bonito* instead of *bien* (*canta/baila bonito* 's/he sings/dances well'). The adverbial use is also observed in French youth language, as in *Je le kiffe grave* instead of *gravement* for *Je l'aime beaucoup* 'I like him a lot', which typically reflects an effort toward simplification (Sourdot, 1997).

In German youth language adjective inflexion is avoided by means of borrowings from English (*mit der fucking Hausarbeit beschäftigt* 'busy doing the fucking housework'). In substandard youth speech, even domestic adjectives tend to be uninflected. Overall, there is a language typological drift toward English in German adolescent speech.

The adverb phrase

Change of category also affects adverbs used as adjectives. This is observed in the Madrid vernacular (*Vete a ver "la Roca" que está fenomenalmente* 'You should go and see "La Roca" it's great'), where the adverb *fenomenalmente* is used as a subject complement, and a similar tendency is observed in French (*ce type il est trop* 'this guy he's too much').

Aijmer (2008) demonstrates the development of *obviously* from an evidential adverb into a pragmatic marker and of the epistemic modal adverb *definitely* into an intensifier in the London teenage vernacular. Also worth noting is the use the adverb *well* as an adjective intensifier (*well cool/good/weird*, etc.), a usage that has spread to the adult population, and the placement of *enough* before the modified adjective (*it's enough good*) instead of after it, as in the standard language.

The verb phrase

A typical feature of London adolescents' speech is the use of reduced verb forms (e.g., *dunno*, *wannit*, *dunnit*, etc.). Other examples of verb-phrase simplification are the missing auxiliary in *so you 0 seen him round the school*, irregular use of the Q-tag (*sounds good to you don't it*), past participle for imperfect (*this is the one we done last night*), irregular verb forms

(*I ain't wore much of my platform to school*), active for passive (*it's meant to wear like this*), and irregular tense forms in conditional sentences (*if we'd have left early we still could . . .*). Nonstandard past-tense forms such as *seen* and *done* and invariable *don't* have also been observed, in Australian youth speech for instance (Eisikovits, 1998, p. 43).

Another example is "pronominal symmetry," where the same verb form is used regardless of person, as in *I says*, *she don't*, and so on. Cheshire and Fox's recent study of London English (2009) points to a variable pattern of leveling to *was* across person, number, and polarity (*you was*, *we wasn't*, etc.) and *were* in clauses with negative polarity (*It was still good, weren't it*). French adolescents, too, tend to simplify the verb conjugation, reducing the temporal system to present, future, and *passé composé* (perfect). A change of construction is represented by the intransitive use of transitive verbs, as in *il assure, ça craint* ('he assures that this is dangerous').

A recent trend in Spanish youth speech that is spreading is to replace *ser* with *estar* for permanent qualities (*está tope de buena* 'she's super'). Moreover, verbs used as transitive in the standard language are used with a new significance with *se* 'oneself' attached (e.g., *atacarse* 'get nervous'), and there is a predilection for reflexive constructions (*Ya te has hecho otra página?* 'Have you made a new Web page yet?'; see Herrero, 2002). In addition, transitive constructions with a direct object, such as *pegar* 'hit', are often replaced by verb + *de* (e.g., *dar de*: *dar de puñetazos* 'give punches'). Similarly, in German youth language, there is a growing use of constructions using *tun* 'do' instead of other verb constructions.

The prepositional phrase

Simplification often leads to reduction. Take for instance the loss of the preposition *of* in *he looked out 0 the window*. A frequent example of prepositional reduction in Spanish youth language is the so-called "quéísmo," where *que* alone is used instead of *de que* (*Tuvimos suerte 0 que no nos pillaron* 'Fortunately, they didn't get hold of us'). A type of prepositional simplification that occurs in German adolescent language is to let the prepositions *wegen* 'because of' and *während* 'during' be followed by a dative instead of genitive nominal construction in line with *mit* 'with' and *zu* 'to'.

Negation

Negation attracts simplification as well as multiplication. A typical example of simplification, mentioned in the introduction, is the widely spread French *ne*-dropping, as in *je sais pas*, *il faut pas*, and *je crois pas* instead of the correct forms *je ne sais pas* 'I don't know', *il ne faut pas* 'one shouldn't' and *je ne crois pas* 'I don't think'. This usage is by no means restricted to adolescent language, though this is where it is likely to be most frequent. Today, *ne* is used so seldom in many varieties of French that the question is no longer when and why it is deleted, but when and why it is used. Today, *ne* is considered to be a device used for emphasis, signaling a particularly strong negation, rather than simply a negative particle.

As regards simplified negation in other languages, London adolescents sometimes replace a negative *do*-construction simply with *never* (A: *You did*; B: *No I never*), while German youth tend to use *null* 'zero' and *nix* 'nothing' to avoid the inflected form *kein/e*.

Intensification

The need to put extra emphasis on a message is a predominant feature of adolescent speech style. This is emphasized by Herrero (2002), who argues that the information structure in adolescent conversation has two aims: to be as efficient as possible and to facilitate information processing. A frequently adopted intensifying strategy is fronting, as in *The*

books you can give them to me tomorrow, where the object is moved to the front to achieve prominence, or *How clever you are*, where the subject complement is moved to the front. Fronting is probably a universal phenomenon, typical of conversational grammar in general.

Although taboo and swearwords are by no means unique to adolescents, adolescents tend to use them as intensifiers more frequently than adults do. Taboo expressions are often inserted without forming part of the syntactic structure, as in *What the hell is it?* with special emphasis on the verb, and *Y yo estaba de puta madre con él* 'I was for fuck's sake with him', with the emphasis on the prepositional phrase *con él*. Or they can be integrated in the syntactic structure as adjectival and adverbial modifiers, as in *it's a bloody microphone* and *it's bloody awkward*, or inserted in a word, as in *unfuckingtouchable*. *Fuck/ing* is a particularly versatile intensifier in terms of syntactic function, more so than other taboo intensifiers, which partly explains its frequency (*she's a right fuck*; *fucking disgusting*; *a fucking sexist*; *I fucking hate him*, and so on).

London adolescents (girls in particular) have a predilection for the intensifier *really* (*really massive*, *cool*, *pissed-off*). A popular intensifier among non-English adolescents is *super*, which turned out to be used much more often by Madrid than London adolescents. Other common intensifiers in Spanish young speech are the slang expressions *mola* 'I like it a lot', *guay* 'excellent', and *mazo* 'much'. In German youth language there is a predilection for fairly 'regular' intensifiers (*echt*, *total*, *wirklich*), while the adjectives *grym* 'cruel', *sjuk* 'sick', and *fet* 'fat' have recently been adopted as intensifiers by Swedes.

Negative intensification is expressed by negative polarity idioms such as *I don't give a damn/fuck/shit* by London teenagers. Corresponding expressions are likely to be found in youth language overall. In addition, there are frequent examples of multiple negation, such as *They didn't say nothing*, *Mum don't have to do nothing* (with invariable *don't*), and the even more complex construction *I ain't telling you no more cos I don't know none* (Palacios, 2011).

A frequent way to intensify the contact between the speakers consists in using "contact checks," such as English *look* and *listen* and the Spanish very frequent equivalents *mira* and *oye*. Probably even more efficient are the German *aber hallo!* and the corresponding Swedish *men hallå!* Vocatives, too, have an intensifying effect. They are extremely common in Madrid teenagers' speech, but are comparatively rare in London teenagers' speech (see below). By and large, the relative shortage of vocatives uttered by London boys and girls is substituted by their frequent use of *you know* as a kind of attention-calling and bonding device.

Gender Differences

The most salient exponent of grammaticalization in English and Spanish adolescents' language seems to be the use of *be like* and *en plan* as quotation markers (see above), both of which dominate in the conversations of girls.

As regards simplification, the most noticeable feature in the talk of London teenagers is the frequent use of the contracted forms *ain't* (boys) and *innit* (girls), followed by negative concord, used almost equally often by both genders, and the less frequent multiple negation, used by girls alone. Another typical feature is the replacement of regular question tags by the invariant forms *innit* (boys) and *yeah* (girls). Overall, London girls use the largest variety of nonstandard grammatical features, while boys adopt certain nonstandard features more frequently. Common to both English, in particular, and Spanish girls is the more frequent use of simplification realized by general extenders (e.g., *and everything*, *y todo*). In the talk of Madrid teenagers, one notices above all the tendency to use category shifts involving adjectives and adverbs, which seems to affect both genders with no apparent

difference, and the recent trend to replace *ser* 'be' with *estar* 'be' for permanent qualities.

Intensification by adjectives and adverbs dominates in the speech of girls in both corpora, in particular English *really* and Spanish *todo* 'completely', though the boys tend to use the strongest items. Intensifying taboo expressions predominate in the Madrid teenagers' talk, in the boys' talk in particular, while the girls dominate among the London teenagers. When it comes to swearing, the boys dominate in both corpora, both in terms of frequency and in terms of strength. The three most common taboo words in COLT represent the three typical domains of sex, religion, and excretion, while those in COLAm are restricted to the sexual domain.

What distinguishes the two corpora even more is the frequency and impact of vocatives. The female vocatives dominate in COLAm, especially *tía* 'girl' and (to a much lesser extent) the male vocatives in COLT (e.g., *man*). The fact that vocatives are far more common in the Madrid teenagers' speech overall seems to point to their more intimate and involved style.

A challenging and intriguing question to be considered in the future is the impact of the reduced style of e-mail and SMS messages and the contact with ethnic minorities on the development of adolescent grammar and its influence on the standard language.

SEE ALSO: Conversational Grammar; Crosslinguistic Differences in Grammar; Grammar and Discourse; Grammar and Social Class; Pragmatic Markers

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Grammar in Academic Writing

PHILIP M. SHAW

Academic discourse (the language, organization, and rhetoric of academic texts) is a member of a set of discourses called "language for specific purposes" (LSP), which include business, legal, and technical discourse. These discourses occur in spoken and written texts of many sorts. Their vocabulary and grammar can be called their registers, so that one could speak of a general academic written register characterized, for example, by formality and precision, and, within that, of the register of chemistry, characterized above all by a particular terminology. But all these LSP discourses are also characterized by having a particular set of genres (i.e., types of texts with a particular purpose and audience, for example textbooks, research articles, student essays). They use the grammar of the general language but the frequency and functions of some features are different, depending partly on the genre.

Earlier research tended to look at "languages for science and technology" (Trimble, 1985; Hoffman, 1985) as a whole and identify grammatical/lexical features of a generalized register without reference to their functions in a particular context, but since the 1990s studies of academic writing have tended to examine the vocabulary and grammar of specific genres in specific disciplines (Swales, 1990), and very often from the perspective of their pragmatic or rhetorical functions. There has recently been considerable interest in the phraseology of academic writing, that is, the way words co-occur with one another, but, like research focused on word choice, this is not discussed here.

Written academic texts can be divided into the categories of research genres (articles, monographs, abstracts, proposals, etc.), learner genres (essays, exam answers, reaction pieces, etc.), and educational genres (textbooks, Websites, lab instructions, etc.). Texts in all three categories can be divided by discipline: each discipline has its own conventions and style and a common core of terms and other register features. There have of course been immense changes of genre and rhetoric over time. Many disciplines in all languages share a broad rhetoric which can be traced back to the rise of scientific writing in modern Western languages (as opposed to Latin) in the 17th century (Valle, 1997). The discourse of modern scientific research writing in this tradition aims to create the impression that the writer "lets the facts speak for themselves" in a modest, impersonal, unemotional way (although this effect requires a particular rhetoric and manipulation to make the intended points). The focus here is on the language of writing by researchers for their peers (research genres) in this modern tradition.

Hoffman (1985) gives a list of characteristics of special-purpose language focusing on academic writing (and many typical of expository writing in general), with examples from Russian, English, French, and German. It includes predominantly crosslinguistic formal features, with some functional, including a restricted set of tenses and somewhat specialized functions for them, predominance of the third person of verbs and specialized uses of first person *I/we*, frequency of the passive voice, deverbalization (that is finite verb expressions are relatively less frequent and participle phrases, nouns, and adjectives replace them), specific functions of modality (*can be used*, etc.) as expressions of "hedging" (moderating the confidence of an expression), and complex nominals including a high proportion of nongradable adjectives (English, French, Russian) or compounds (German). To this can be

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added explicit cohesion and a restricted range of sentence types with only specialized interrogatives and imperatives used to create engagement with the reader (see below). In a different theoretical context, Halliday (1993) distinguishes between a dynamic style with complex clause patterns (many coordinated and subordinated finite clauses), simple phrase structure and low lexical density, and a synoptic style with rather few finite clauses, complex phrase structure, and high lexical density. The style of academic writing is synoptic.

As noted above, attention has shifted to the functions of the features of academic writing within the genres where they occur, either in the empirically oriented tradition of Swales (and Bhatia, and especially in the 2000s of Hyland), or within systemic-functional theory (Halliday, 1993). Some functional categories are pervasive features like expressions of writer stance and engagement, such as hedging (*it is **perhaps** the case that*, *we **might** suggest that*), others are more local ones like reference (*Schmidt (2003) suggests that . . .*) or knowledge claim (*We therefore suggest that . . .*). There are also moves in genres like "indicating the gap," which is typical of the introductions to academic articles and states something like *as yet no one has investigated X* or *there has been little research on X*. These can have many grammatical/lexical exponents, and similarly grammatical/lexical categories like "modal verbs" or "personal pronouns" can perform several functions, so that mapping one to the other is not easy. If we search for instances of *suggest/propose*, and so forth, we will come up with a grammatically fairly uniform set of instances, but some will exemplify reference while others will exemplify knowledge claim.

Within research writing the main attention has been on the research article in the natural sciences and medicine. In 2010 such writing was mostly in English, but many of the characteristics of academic language are similar across languages (including Chinese and Japanese; see Mohan et al., 2007), because science has always been an international activity. Differences among the rhetoric of different languages may come partly from differing national traditions (Kretzenbacher, 2001) or audiences but are largely due to different linguistic resources to express the same general pragmatic purposes. Thus Fløttum, Dahl, and Kinn (2006) contrast one particular resource for impersonal expression in three languages: the availability in French of the multiply ambiguous generic pronoun *on*, in Scandinavian languages of the everyday unmarked but referentially more restricted generic *man*, and in English only of the stylistically marked and rather infrequent generic *one*. Work on articles in English (mainly) as a second language seems to show that both rhetoric and grammatical features can be transferred from the first (or another familiar) language to another language in which one is writing, but this is almost always confounded with differences in the size and nature of the audience aimed at, so that claims of transfer of rhetoric are not uncontested (Burgess, 2002).

In general, the grammatical features of the language of scientific research articles and theses which have attracted attention are those that reflect the aims and conceptual patterns of the disciplines to which were contributed. The features are not usually unique to these genres or disciplines but merely of different frequency in research writing by comparison with other registers. In an attempt to describe features of academic writing in several languages, reference is made here to the extensive work in German on *Fachsprache* (much of it at the register level; see Kalverkämper & Baumann, 2010), and to work on French and Spanish. A high proportion of academic writing nowadays, however, is in English and this justifies giving most attention to this language.

Noun Phrase Characteristics

Academic writing is often in Halliday's synoptic mode, hence noun phrases are mostly complex with extensive pre- and postmodification, and their heads are often nominaliza-

tions expressing processes or qualities, whereas sentence patterns may be relatively simple. A common pattern is the development of such complex nominals so that a concept introduced as *The high power density of lasers permits the surface melting of many materials* (itself a good example of complex noun phrases in a simple syntactic structure) can later be recalled encapsulated as *laser melting* (Bhatia, 1992). The noun phrases may include premodifying nouns and postmodifying prepositional phrases but particular attention has been given to reduced relatives of the type *the energy levels displayed in the hyperfine transitions*. Vande Kopple (1998) associates finite relative clauses with less established concepts that may need tense and modality for full expression, and nonfinite (reduced) clauses with well-established concepts that only need to be referred to. Research in pioneering spectrometry, he found, was reported in more dynamic terms, while in modern spectroscopy the style is more synoptic.

Personal Pronouns

Complex nominals and thematization patterns are, broadly, expressions of the subject matter of the text. Alongside this there are manifestations of interpersonal meaning, characterized by Hyland (2005) as engagement (features that manipulate the reader's involvement in the text, including rare uses of *you* and common uses of a *we* that includes the reader) and stance—features that express the writers' attitude to the content presented namely hedgers, boosters (*clearly*, *obviously*), attitude markers (*unfortunately*, *hopefully*), and self-mention. This last refers to language which replaces the prevalent impersonality of academic writing with more personal expressive devices, for rhetorical effect. Self-mention is often used as a way of highlighting and differentiating original contributions and decisions. The issue of author presence is complicated because the effect, whether of stance or involvement, depends on five variables: reference of *we*, date of publication, language/culture, number of authors, and discipline. Different uses of *I/we* evoke different degrees of "author presence" in the text (Harwood, 2005) so that inclusive *we* ("we humans," "we researchers," "we scientists," including the reader) used for logical argumentation creates engagement but is quite nonintrusive in terms of stance, while an exclusive *I* or *we* used to claim a new finding is a bold rhetorical move. Earlier dates of publication tend to mean fewer personal pronouns academic writing, since broadly speaking research writing is becoming more personalized across cultures and disciplines. The effect of language or culture seems to be that papers in English are leading this trend toward a more personal style, so single-authored papers in English tend to have more instances of *I* than those in German, and these more than French, with single-authored Russian (and Bulgarian) hardly using *I* at all (Vassileva, 2000). However writers in French, Russian (Vassileva, 2000), and Spanish (Martín-Martín, 2009) are much more able to use the equivalent of *we* for a single writer than users of English and German. Single authors are common in the humanities and rare in the hard sciences, so *I* is less frequent, and perhaps more marked, in hard science for this reason alone, but usage and editorial policy differ across disciplines within these broad fields. It should be noted that use of *you* and of directives and questions is much more common in educational genres like textbooks, reflecting the greater need to ensure the engagement of the reader in these genres.

Tense

Academic writing tends to use a limited range of tenses and aspects in all languages, as Hoffman (1985) noted, and to use these tenses in special ways. Rather like pronouns, tense choice can be used to create immediacy for one proposition and distance for another.

Liddicoat (2004) notes, for example, that the subjunctive and the past simple are both extremely rare in French scientific writing. Most verbs are in the present tense and nearly all the rest in the past (*passé composé*). Accounts of procedures were normally written in the present and a switch to the past indicated a particular decision of the writer, or in accounts of other researchers' work, backgrounding to suggest lower relevance. Conventions for tense usage varied somewhat across the sections of the articles (a frequent finding in several languages) (Swales, 1990). In English the present (mainly) and the present perfect co-occur in discussions of the current state of knowledge in introduction and discussion sections, while the past is more frequent in method and results (Biber, Connor, & Upton, 2007). Liddicoat concludes that effects of foregrounding and backgrounding are not so much inherent in verbs forms as results of choosing a form which is marked or unmarked in the context of neighboring tenses. Findings about the significance of tense choice show that it is very dependent on the lexical verbs involved and the function of the text section examined (Swales, 1990), but one can say that in English the past seems to be used to refer to specific results and procedures, and elsewhere to indicate less immediate relevance, while the present and present perfect indicate greater generality, greater immediate relevance, or both.

Thematization

The theme in a sentences is an element that is prominent because it comes early. It is often a realization of the topic. Thus in *Jane saw him today*, *Jane* is thematic, but in *Today Jane saw him*, *today* has been thematized. In academic writing it is common to thematize the object of study (often as a complex nominal) rather than the actor, both to achieve an impersonal effect and to structure the text around its key content. This can be achieved by using the passive voice, which is the unmarked pattern for actions in academic writing, as in *The liquid was heated*, making *the liquid* the topic of the sentence. A related thematization feature available in English is the use of the active voice with a nonanimate subject *This thesis argues that*, *The graph shows that . . . calculation shows*, a type of metonymy. Both devices de-emphasize agency where it is not rhetorically useful. Thematization is used as ways of structuring the text according to disciplinary aims and needs: it has been shown that thematized material (often grammatical subjects, whether of active or passive verbs) varies considerably across disciplines (Gosden, 1993; Gunnarsson, 1997) and even subdisciplines (MacDonald, 1994). Strategic use of impersonality enables writers to focus attention on facts or, exceptionally, to use personal reference to highlight their own contribution (Tarone, Dwyer, Gillette, & Icke, 1981) as in *we argue that . . .*

Cohesion

Cohesive devices in academic writing are of course members of the same set as those in other formal writing, but some items may be more frequent in the general register or in the register of a particular discipline, and explicit cohesion may be especially important. A general finding is that logical connectors like *therefore* are somewhat less frequent in research writing than in student or educational texts, presumably because in the latter categories it is important to make causal and other logical links explicit to display one's knowledge or to help novices, respectively, while in research writing one can presuppose knowledge of likely relationships. Complex nominals probably play an important part in cohesion instead. Nominals like *this complicated issue* that refer to (the content of) a stretch of text, that is not referring to a previous instance of *issue* (Francis, 1994) are called retrospective labels. They have numerous functions: textual, in marking coherence between a

previous string and the present one; evaluative, in allowing the writer to express a stance toward the content, as important or difficult or much-discussed, for example; and ideational, in that many of the labels allow the writer to characterize a set of propositions as *behavior* or *projects*.

Moreno (2004) looks at expressions of result or logical consequence in English and Spanish academic writing on business. She arranges a number of different structures on a scale of explicitness. The most explicit are retrospective labels. Then she has "fuzzy" retrospective labels like *this* unspecified by a lexical item, and implicit labels without any realization: these are either conjuncts (*therefore*) or expressions, like *the implication is* or *we may conclude*. In both languages implicit labeling was twice as frequent as explicit, and in other ways too, the distribution of resources was similar across languages. There was some tendency to greater precision and more personal evaluation in the English link, as found in other studies of other features.

Hedging

The interplay of functional, semantic, and grammatical-lexical categories is well illustrated by the case of the function "hedging," the semantic notion "epistemic modality" (the use of modal verbs and adjectives to indicate how certain or true something is), and various grammatical categories, such as adverbs, modals, and verb phrases which can express it. *Perhaps X is Y* and *It may be suggested that X is Y* use different realizations of epistemic modality to hedge the confidence of *X is Y*, while *X is roughly Y* uses a realization of approximation to do something similar. The category is important because one of the main difficulties in academic writing is to adjust the strength of the claim, to make it as strong as possible while maintaining credibility and approval in the eyes of the peers who are reading it. Vold (2008) and Martín-Martín (2009) show that hedging by means of approximation and epistemic modality is more frequent in English-language articles than in Spanish or French, conceivably reflecting a larger and more critical audience.

Intertextuality, Citation, and Knowledge Claims

The essence of research writing is that the current text is explicitly linked to other texts, extending, confirming, or disconfirming their findings. The textual reflection of this feature of the scientific process is intertextuality. This has attracted research attention because practices and the lexis used vary widely across disciplines. Intertextual references can be made (A) with or (B) without a reporting expression of some kind, and if a reporting verb is used the author's name may (B1) or may not (B2) be integrated into the sentence. Examples are:

A: *Weights vary between 1 and 5 grams (Schmidt, 2003).*
B1: *Schmidt (2003) found that weights varied between. . . .*
B2: *Weights have been found to vary . . . (Schmidt, 2003).*

In the hard sciences type A predominates, in the social sciences and humanities type B1 is much more common, reflecting the way knowledge is constructed in the disciplines. Both the tense of the reporting verb and the lexical verb chosen can indicate the writer's stance toward the finding reported. Verbs like *argue* in the present are more common in political science than in materials science (Charles, 2006); verbs like *find* in the past show the opposite pattern. The same set of forms is used to make the author's own knowledge claims (do the results *show* something or just *suggest* it?) and in the hard sciences the choice

of a lexical verb to define one's own knowledge claim (rather than to qualify others') is crucial.

As this survey of some features that have been discussed shows, much attention has been paid to stance and engagement, that is, to personal and interpersonal functions of the language of academic writing. The challenge for the future is to tackle linguistic manifestations for the particular ways of thinking of the disciplines in a way that will help learners acquire and practitioners understand explicitly the language that structures and is structured by their thought patterns.

SEE ALSO: Corpus Analysis of Written English for Academic Purposes; English for Academic Purposes; English for Science and Technology; Genre and Discourse Analysis in Language for Specific Purposes; Hyland, Ken; Intercultural Rhetoric in Language for Specific Purposes; Metadiscourse; Swales, John, M.; Writing and Genre Studies; Writing and Language for Specific Purposes

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Grammar in Language Teaching and Education

TAMMY SLATER AND JINRONG LI

If we were to open up a dictionary and begin reading, it would be obvious that despite our ability to construct meaning from the words on the page, we would not be able to interact with the writing in the same way as we do for other texts. Dictionaries do not use grammar in the same way as we typically use it for communication. Language users manipulate the grammar to construct experience in particular ways for particular purposes, and language education throughout history—both second and foreign-language teaching—has acknowledged this by including some form of grammar instruction in its curriculum. Research has revealed that contemporary language teachers and learners share an overwhelming belief in the importance of grammar study for successful language learning (e.g., Borg & Burns, 2008; Jarvis & Szymczyk, 2010). Yet as Ellis (2006) argued, issues around the teaching of grammar have continued to plague the field of second language education. This entry presents a chronology of grammar teaching, noting the constant back-and-forth movement between deductive/explicit and inductive/implicit approaches, an issue that continues to be at the center of much research today. Moreover, given the continuing growth of technological innovations, we will also look at the role that technology has played in the teaching and learning of grammar.

Before embarking on a discussion of grammar in language teaching, however, it would be useful to define what we mean by "grammar." Since the end of the classical period, the term has shifted in meaning and usage from its initial focus on writing and the art of letters to its current reference to the *rules* of language, language form. As an examination of language-teaching textbooks over the years will confirm, these rules have played a critical role in teaching language, both by appearing as explicit statements that students must learn and practice, or in lessons which aim to help the learner form rules from the input.

Some of the earliest words on grammar in language teaching, those of St. Augustine, suggested that having a practical command of a language was more important than the memorization of grammatical rules. St. Augustine advocated the use of dialogues through which language learners could discover the patterns (Kelly, 1969). Throughout the Middle Ages and into the 19th century, there was regular movement between presenting grammar rules for practice, based on the grammatical analysis of Latin and Greek (focusing on the eight parts of speech: nouns, verbs, participles, articles, pronouns, prepositions, adverbs, and conjunctions), and teaching through more inductive presentations of grammar, through reading, speaking, and imitation, to allow students to internalize the patterns for practical use. These two perspectives clashed even within similar time frames. In 1506, for example, Comenius drafted works that reflected a primarily inductive approach to language learning, yet in 1520, Erasmus insisted that formal grammar teaching was necessary in the beginning levels, albeit he conceded that advanced speakers could be taught using more inductive methods. Thirty years later, attacks on the teaching of grammar again appeared in the writing of Lubinus (Kelly, 1969). This back-and-forth movement between teaching inductively or deductively (or implicitly versus explicitly) was to continue throughout the centuries.

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In the late 18th century (1780s), lasting well into the 20th in some areas, learning a foreign language involved analyzing the grammar of that language, memorizing the rules, and applying those rules in translation. The emphasis was on the written form of the language with little or no time spent on oral skills. This *grammar-translation method*, as it came to be known because of the two features that critics most disliked about it, originated in Germany (Richards & Rodgers, 1986; Howatt, 2004) with the best-known courses those of Ollendorf in the 1840s (Kelly, 1969; Howatt, 2004). The method involved the presentation of a grammar rule, a short list of vocabulary, and items to be translated for practice. Later in the 19th century, Karl Plotz strengthened the hold that the grammar-translation method had on language education, moving from authentic texts to passages that were constructed to match clearly and unambiguously the rules and vocabulary being presented (Kelly, 1969). This approach to language teaching has persisted in this format through to the present era in many countries (Richards & Rodgers, 1986; Brown, 2001; Hinkel & Fotos, 2002).

Late in the 19th century and into the 20th, the pendulum began to swing back to inductive grammar teaching as the *direct method* of language instruction became popular. This method, its name often used synonymously with the *Berlitz method*, was characterized by its exclusive use of the target language in teaching. The belief was that languages should be learned in a fashion similar to the way the first language is acquired, and translation, in opposition to the previous ideas of language study, was deemed unnecessary. Grammar was not presented deductively as rules but was made evident through the patterns and progression of the material, and learners acquired the rules of grammar inductively through imitation, repetition, speaking, and later reading (Howatt, 2004).

In the early 20th century, linguistic analysis moved away from the eight parts of speech that had been used for teaching and analyzing Greek and Latin to structural or descriptive linguistics, which analyzed language through its phonology (the sound system), morphology (the smallest meaningful combination of sounds), and syntax (the combination of units of communication). With this shift, along with the influence of behaviorist psychology, the *audiolingual method* (ALM) was introduced to the language education scene in the 1950s (Kelly, 1969; Hinkel & Fotos, 2002; Howatt, 2004). The emphasis of ALM was on oral skills; speech was to come before writing, with grammar rules learned inductively through pattern drills comprised of basic conversational sentences that the students were to memorize as accurately as possible. With the vocabulary load controlled and the patterns graded for teaching progression, the rules of grammar were to become a set of habits that could be acquired through stimulus and response techniques. Reinforcement when the student was successful as well as immediate and thorough feedback for the correction of errors were considered critical to ensure that mistakes would not persist.

Reacting to the very behavioristic practices of ALM and influenced by Chomskyan views on the nature of language as rule-governed, language educators once again moved toward the teaching of grammar deductively. The *cognitive approach* to language learning held that learners needed to know only a basic number of grammatical rules to create and understand sentences. The idea was that speakers have access to a universal grammar (UG), which all humans are born with. The parameters of this UG are set during the acquisition of the speaker's first language as a result of input. The language curriculum therefore had to identify the properties of grammar that would allow learners to reset the parameters of their UGs, if necessary, so that they could make generalizations that would result in correct grammatical utterances in the target language. Grammatical consciousness-raising was encouraged so that learners would understand the rules, and explanations of the target language grammar in the learner's first language were accepted.

Beginning at about the same time, in the 1960s, *notional/functional syllabuses* appeared, which organized grammatical content on the basis of what was needed to fulfill certain

communicative functions or situations, such as "Asking for help" or "At immigrations." These syllabuses, which move from beginner (easy) to advanced (difficult) and range from highly controlled to the free production of the target grammar and vocabulary, continue to be reflected in many contemporary textbooks where various language-practice and grammar activities revolve around a communicative function or situation (Brown, 2001). Grammar is played down in favor of the function or situation, but with the recognition that certain grammatical forms appear naturally in certain situations, offering opportunities for specific grammar practice.

The next era, what Brown (2001) referred to as "the spirited 1970s," spawned a collection of innovative language teaching methods that varied in their approaches to and presentation of grammar, although they all favored an inductive approach to teaching grammar. Five of the more popular methods are presented here (see Brown, 2001, or Richards & Rodgers, 1986, for more detail). Both *total physical response* and the *natural approach* made use of first language acquisition studies and placed listening comprehension first, offering input so that learners could internalize and acquire the language before having to use it. An understanding of grammar was thus developed inductively. *Suggestopedia* was another method that aimed to allow learners to determine the grammar inductively, by having them listen to large amounts of text accompanied by baroque music. The mind, according to the method's creator, was more susceptible to learning and retaining information when it was in a relaxed state. The fourth method, the *silent way*, was a discovery-learning approach that involved cooperation and problem solving amongst learners with little input from the teacher. Learning a language was done by manipulating Cuisenaire rods and looking at charts of vocabulary and pronunciation. As with the previous three methods, the structure of the language was determined inductively through learner problem solving, with the idea that learner-driven discoveries are more meaningful and lasting than teacher-instructed ones. The fifth method from this era, *community language learning*, used translation and no predetermined content, and again grammar was gleaned through the input. The method placed the teacher in the position of counselor, with the learners determining the theme and content of any given session. Conversation was built up by the learners, with each individual adding to the conversation with a comment that the teacher would translate from the native language into the target language, and that the learner would repeat. The session was audiotaped, and together the learners attempted to discover the rules of the new language. Thus as with all the methods of the spirited 1970s, grammar teaching was done inductively.

The arrival of the 1980s brought an emphasis on *communicative competence*. Chomsky had used the term *competence* to mean "the speaker-hearer's knowledge of the language" (Chomsky, 1965, p. 4) or "intrinsic tacit knowledge" (p. 140), distinguishing it from *performance*, which he defined as "the actual use of language in concrete situations" (p. 4). But from a social perspective, what people knew about language and what they did with it were very much intertwined. Sociolinguists such as Hymes (1972) thus argued in favor of including the notion of appropriateness within the definition of competence by stating that "there are rules of use without which the rules of grammar would be useless" (p. 278).

Out of this era, the theoretical framework for communicative competence, one of the most influential theories in the field of language testing, was proposed by Canale and Swain (1980) as an attempt by the authors to "establish a clear statement of the content and boundaries of communicative competence—one that will lead to more useful and effective second language teaching, and allow more valid and reliable measurement of second language communication skills" (p. 1). The framework emphasized

> preparing second language learners to exploit—initially through aspects of sociolinguistic competence and strategic competence acquired through experience in communicative use

> of the first or dominant language—those grammatical features of the second language that are selected on the basis of, among other criteria, their grammatical and cognitive complexity, transparency with respect to communicative function, probability of use by native speakers, generalizability to different communicative functions and contexts, and relevance to the learners' communicative needs in the second language. (p. 29)

Thus the framework brought grammar knowledge to the forefront of language acquisition and considered communicative competence to be the interaction and relationship between grammatical and sociolinguistic competence.

Along with the creation of this framework, and arising in part from observations that many English-language learners knew the rules of grammar but could not use them to communicate effectively (Hinkel & Fotos, 2002), *communicative language teaching* (CLT) arose. This approach aimed to move beyond grammar study and synthetic contexts to authentic language use in the classroom and beyond. Meaning became paramount, fluency was valued over accuracy, with grammatical explanation acceptable if it helped the learner learn to communicate (Brown, 2001), although explicit grammar teaching and error correction were initially not features of CLT (Hinkel & Fotos, 2002). The idea that learners could understand the meaning of the message and learn from it if the input is comprehensible and minimally beyond the learner's current ability became attached to CLT, particularly in immersion programs where language was taught alongside content. Through CLT, fluency became the goal in English as a second language (ESL) classrooms where the target language was being used to share and learn. Grammar thus once again took an inductive approach. Communicative tasks became the vehicle for teaching, with language teachers intervening in ad hoc ways to help with grammar correction as they noticed difficulties.

Despite success in developing fluency through CLT programs, research revealed that learner errors were not being attended to satisfactorily or systematically, and issues of fossilization—errors becoming permanently part of the speaker's language—surfaced, bringing a renewed interest in grammatical form, but one that could be approached in a meaning-centered way, compatible with the communicative approach. Research began to be carried out on the effectiveness of explicit grammar teaching versus a more implicit grammar instruction within the context of communicative tasks. Spada and Tomita (2010) conducted a meta-analysis to examine explicit versus implicit grammar instruction in an effort to inform educators about the types of grammatical features that would benefit from each. They concluded that explicit instruction was more effective with both simple and complex grammar structures, but noted that implicit instruction may simply take longer to be effective. Batstone and Ellis (2009) argued for both types, stating that learners must learn to make connections between grammatical form and the meanings that such forms signal, and that learning these mappings involves connecting what the learners already know to what they are learning, making the learner aware of the grammar being taught (see also Ellis, 2006), and giving learners opportunities to practice grammatical forms in a meaning-centered way.

Research has also been carried out on implicit teaching, in particular examining the role of corrective feedback in language development (see Sheen, 2010). Teaching grammar implicitly in the context of tasks can be done by offering either explicit feedback, feedback that lets the learner know that a mistake has been made, or implicit feedback, where the learner must infer from the feedback that his or her utterance is not correct. Implicit feedback is typically given through recasts, confirmation checks, and requests for clarification. In a meta-analysis of the effectiveness of corrective feedback, Li (2010) concluded that over the short term, explicit feedback worked better than implicit, but mirroring Spada and Tomita (2010), the author stated that implicit feedback was perhaps more effective over the long term.

The discussion so far has focused primarily on language learning through classroom-based, face-to-face interaction, but in recent years grammar learning and teaching have been shaped by *computer-assisted language learning* (CALL) applications as innovative technologies have become integrated into the language-learning processes (see Chapelle, 2009; Godwin-Jones, 2009). At its most classroom-based level, technology can offer language teachers interesting tools for teaching grammar either deductively or inductively. PowerPoint presentations, for example, can use animation, color, and other manipulations to make the grammatical form more salient to the learner, a necessary step in promoting grammatical accuracy as noted above. Web sites offer interactivity and interesting ways to access information and can be easily adapted and updated. In keeping with the view that second language acquisition (SLA) might be enhanced by the growing possibility of human–computer and human–human interactions, the idea grew that CALL activities could facilitate grammar teaching and learning in two main ways. First, they could create diverse and individualized opportunities for learners to interact with computer-based resources. With these resources, students who wish to focus on explicit grammar-learning independently would have, through technology, the opportunity for self-study using vast numbers of activities to make the practice more interesting. Second, CALL activities could be used as intermediate channels to help learners expand their communication with native speakers (NSs) and other non-native speakers (NNSs), providing a more implicit and communicative approach, a natural way of linking form and meaning. These two ways of using technology to teach grammar will be discussed below.

The resource-oriented approach started with online grammar tutorials and gap-filling or multiple-choice exercises created using authoring software such as Hot Potatoes. Despite criticisms of the mechanical nature of such materials, these resources continue to be regarded as important. There are also computer-based proofing tools such as grammar and spell checkers. Other tools, such as LanguageTool and AbiWord, have also been developed to handle a wider variety of languages and more advanced syntactic and semantic analysis and thus provide tailored feedback to help improve grammatical accuracy in writing.

The emergence of *natural language processing* (NLP) parsing technology has given rise to the development of intelligent CALL, or ICALL, which aims to provide more "differentiated" feedback based on learners' interaction with the language-learning resources (Godwin-Jones, 2007, p. 12). ICALL has been regarded as particularly promising for grammar teaching because it can address specifically defined areas of knowledge. The effectiveness of an ICALL program depends, to a large extent, on its ability to recognize learners' written input and to retrieve appropriate feedback. Typical ICALL programs are designed to tackle a specific grammatical point through explicit instruction, opportunities for practice with a focus on form and meaning, and immediate feedback on error awareness raising and correction.

Another major technological resource for teaching grammar is the corpus. Publicly available resources include the COBUILD Concordance Sampler, the British National Corpus, and corpora compiled by individual researchers, who can then load the data to existing concordancers such as MonoConc, AntConc, or Sketch Engine for learners to explore. The consensus is that corpora and concordancers can increase students' exposure to authentic language data and thus enhance language learning, although the approach has been open to negative reactions because of the amount or work required by the learners.

The role of computer technology in providing learners with opportunities to interact and thus learn grammar in a much more implicit way has also been examined. Researchers have identified three main types of computer-mediated communication (CMC) as having potential for facilitating grammar teaching and learning. These will be addressed below.

Text-based synchronous CMC (SCMC), for example, has shown promise for developing grammatical competence because it offers opportunities for meaning negotiation and helps

learners notice language form. Specifically, SCMC has been shown to encourage learners to use a wider range of lexical choices, more formal and complex sentence structures, and a broader variety of discourse markers. Although it has been a concern that online discourse is characterized by off-task discussions and inaccurate language use, the adverse effects on language accuracy may be a result of a combination of the types of tasks carried out in SCMC, the complex interaction between complexity and accuracy in second language (L2) development, and the speculation that learners might have perceived SCMC as mostly an informal medium.

The role of asynchronous CMC, such as forums or discussion boards where learners can initiate or post in response to a message, has also been examined, with the main controversy being whether the time delay between interactions provides learners adequate time to reflect upon language form or inhibits them from seeking assistance on linguistic issues because of a lack of immediate feedback. Inaccurate language use has also been evident in asynchronous CMC, although it is more complex and formal than that found in SCMC.

A third way of using technology as mediating channels is telecollaboration, which usually refers to projects involving e-mail exchanges and synchronous text-based chat. The main advantage of e-mail is that it gives more time for learners to reflect upon and compose a message and thus encourages a focus on form.

As with the face-to-face contexts discussed earlier, corrective feedback within online approaches, which are primarily done through writing, has been researched as an issue in grammar teaching. Several studies have suggested that although the mode and delivery may have shifted from the oral, face-to-face classroom to written, online chats or e-mail, the issues of uptake and understanding using corrective feedback (explicit or implicit) have remained.

This entry has examined historically the role of grammar in language teaching. There is ample evidence of a pendulum swing between teaching grammar explicitly/deductively and providing the tasks and activities that encourage students to learn grammar inductively. Moreover, even when the times have favored more inductive approaches, a focus on grammar has persisted through the types of feedback offered and available, whether explicit or implicit, as evidenced by the research carried out on such activity. Similar issues and questions about the best approach to use for teaching grammar have persisted throughout the years. Ideas of how best to develop learners' grammatical competence have indeed pervaded language teaching and will likely continue to be a central concern for research and pedagogy.

SEE ALSO: Content-Based Language Instruction; Corpus Linguistics in Language Teaching; Teaching Grammar

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Grammar in Political Debate

ANITA FETZER

Introduction

Applied linguistics examines the use of language in various contexts. One of them is political debate, referring to communicative exchanges between professional politicians in parliament and other institutional settings, between representatives of the media and politicians, and between politicians and the public. Political debate may also refer to the abstract field of political discourse, comprising political interviews and speeches, and political discourse in printed and electronic media.

The analysis of political debate considers the evasive use of language, metaphor and political equivocation, for instance. The results are not only of relevance to the scientific community but also find practical application by politicians, political advisors and speech-writers, and journalists and media personnel.

In the following the relationship between grammar and political debate is investigated, contextualizing the concepts of grammar and political debate, discussing political debate in the media, and illustrating some of the most pervasive communicative strategies.

Grammar

The meaning of the word "grammar" is rather complex. It may be used to refer to the system by which words and morphemes are organized into larger units, or it may be used to refer to a particular description of such a system in a codified text (a reference grammar), or even to the branch of linguistics dealing with such descriptions.

In ordinary language, grammar tends to be conceived as synonymous with prescriptive grammar, instructing language users how to build sentences in accordance with language-specific rules. The rules generally stem from the fields of syntax, especially word order and subject–verb agreement, and morphology, in particular inflectional morphology. From that perspective, grammar represents a normative system. Prescriptive grammar informs interlocutors whether a sentence is built in accordance with the codified rules of grammar and therefore counts as a grammatical sentence or whether it deviates from the rules and needs to be corrected. Because of its normative design, the rules of prescriptive grammar are considered to obtain in almost any communicative setting, irrespective of whether a sentence is used in formal or informal contexts.

In linguistics and language studies, "grammar" refers to a descriptive type of grammar containing all the necessary and sufficient rules which are required to build a grammatically correct sentence. Descriptive grammar is concerned with the "rules by which words change their forms and are combined into sentences" and with "the study or use of these rules" (Longman, 2007, p. 763). The latter entails both a linguistic-competence anchored system of rules and a performance-based use of rules in context. In a more specific reading, grammar is defined as "(1) the systematic study and description of a language, a group of languages, or language in general in terms of either syntax and morphology alone or these together with aspects of phonology, orthography, semantics, pragmatics, and word formation" (McArthur, 1992, p. 446).

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The minimal unit of investigation in descriptive grammar is the clause and its constituents. More recently, the frame has been extended to cover the domain of discourse, analyzing the necessary and sufficient conditions which assign a stretch of text the status of well-formed discourse. Discourse grammar accounts for information structure, thematic structure, sequential organization and discourse connectives, to name but the most prominent ones. It may also accommodate constraints for the differences between spoken and written language, and between formal and informal context. The difference between spoken and written language is of particular importance for descriptive and functional grammars: Syntactically speaking, clauses tend to be less complex in spoken language. Semantically speaking, spoken language favors less abstract terms, and, pragmatically speaking, it displays a higher frequency of personal pronouns and other deictic expressions (see Biber, Johansson, Leech, Conrad, & Finegan, 1999).

Grammar is an extremely complex system and that is why it is almost impossible to cover the analysis of all its constitutive systems in an appropriate manner. Against this background, grammar tends to concentrate either on form or on meaning and function. Consequently, there are syntax-based grammars examining the structure of the language (e.g., Haegeman & Guéron, 1999), syntax-based grammars focusing on structure and on aspects of register and style (e.g., Greenbaum & Quirk, 1990; Biber et al., 1999), semantics-based grammars analyzing the question of how meaning is coded in linguistic structure (e.g., Dixon, 1991), and functional grammars investigating the question of how language functions with respect to the linguistic representation and construal of social reality (e.g., Givón, 1993; Halliday, 1994). While syntax-based grammars tend to conceptualize grammar as an autonomous system, which is relatively independent from society and culture, semantics-based grammars and functional grammars examine the connectedness between linguistic structure, linguistic meaning, and context, as is reflected in critical discourse analysis (Fairclough, 1995; van Dijk, 1998). In the latter paradigms, the intentionality of communicative action and the context- and genre-dependent instantiation of rules and constraints are considered explicitly. This is also the case in communicative grammar, in which grammar and strategic interaction are investigated (Leech & Svartvik, 1994).

Political debate is connected intrinsically with society and culture, and hence with meaning and function. Consequently, its analysis needs to be informed by a sort of functional grammar which may account for (a) communication and strategic interaction, and (b) the linguistic representation of social reality, for instance Hallidayan linguistics (Simon-Vandenbergen, 2000).

Political Debate

Analogously to grammar, politics is conceptualized differently in the field of political science and in ordinary language. On a more general level, politics refers to "ideas and activities relating to gaining and using power in a country, city etc.", and on a more specific level it refers to someone's "political beliefs and opinions" (Longman, 2007, p. 1266). Furthermore, it may denote the "activities of people who are concerned with gaining personal advantage within a group, organisation etc." (p. 1266). In political science, research on politics entails research on political parties, political power, power structures, struggle for power, participation in power, and power and representation. It is also concerned with political systems, forms and structure of government, and political philosophy.

Politics is a multifaceted concept, which operates on the macro level of society as regards the art and science of government concerned with guiding or influencing governmental policy, winning and holding control over a government, political actions and practices, or policies. In the domain of party politics, politics refers to the management of a political

party, to the conduct and contests of parties with reference to political measures or the administration of public affairs, or to the advancement of candidates to office. In that sense, politics entails the total complex of relations between people living in society. On the micro level, politics is seen as "doing politics" in everyday life, concentrating on political agents and their political practices, for instance participating in political decision-making processes, communicating political decisions to the general public, or negotiating between competing interest groups.

Both macro and micro politics require language as a means of communication in order to exercise governmental control and to communicate felicitously in the political arena. Similarly to rules in grammar, which specify what counts as grammatical, well-formed, and appropriate, there are rules in the domain of politics, which specify what counts as political action, to employ speech-act-theoretic terminology (Searle, 1969), and which specify how politics *is done*, to employ a term from the field of ethnomethodology (Garfinkel, 1994). For instance, considering the possibility of having a house built may count as a private-domain anchored personal decision if two (or more) individuals intend to build that house for their own purposes. If the house in question was to be an official building, for instance a prison, school, or kindergarten, the decision to have the house built would count as a political decision, which would need to undergo institutional decision-making procedures.

The context-dependent nature of communicative action has consequences for political discourse, which is not only concerned with institutionalized politics but also with political processes, such as political discussion and decision-making processes. In mass-media-based societies, political discourse is primarily presented in the media.

Political Discourse in the Media

Political discourse in the media is a complex phenomenon: It is institutional discourse, media discourse, and mediated political discourse. As institutional discourse, it differs from everyday conversation in being subject to institutional constraints. As media discourse it is different from other types of institutional discourse by being, above all, public discourse addressed to a mass-media audience. As mediated political discourse, it is the outcome of the encounter of two different institutional discourses – those of politics and of the media.

The traditional concept of politics is anchored to the public domain of society but also interfaces with micro domains. It enters the private spheres of life through media and, in mediatized mass democracies, this is for most people the only way in which they ever encounter politics.

Political debate is performed orally using the grammar of spoken language: It displays features of interactiveness and involvedness, as is reflected in the strategic use of pragmatic markers, presupposition, and epistemic modality, and the use of various forms of regional dialect, which is referred to as conversationalization in critical discourse analysis (Fairclough, 1995; Fetzer, 2008). Political debate is also performed in the written mode using the grammar of written language. Naturally, political debate uses other relevant semiotic codes in a strategic manner, such as nonverbal communication, typography, music, and party-political logos and emblems. The interplay of the different semiotic codes allows political agents and media personnel to communicate their goals felicitously, appropriately, and persuasively (see Fairclough, 1998; Fetzer, 2006; Lauerbach & Fetzer, 2007).

Political debate uses various discourse genres, such as statement and speech in the contexts of election campaign, summit meeting, business meeting, or party conference; interview in the contexts of TV or printed media; multiparty discourse in the context of panel interview and parliamentary debate; and report, analysis, commentary, editorials,

or letters to the editor. All the discourse genres are employed strategically to "talk politics" and to talk about politics, persuading the general public or particularized subgroups to support a politician and their party or government. Moreover, the discourse genres do not occur in a void but are embedded in journalistic news discourse and may be repeated as sound bites in later programming (Lauerbach, 2004). Ordinary people may also join in mediatized political discourse in audience-participation programmes, such as panel interviews, standing in for the interviewer and asking questions, or through members of the home audience calling in or sending e-mails.

From a pragmatic angle, political discourse in the media can be conceived as communicative action (Fetzer & Weizman, 2006). As in all types of persuasive discourse, the differentiation between perlocutionary act (Austin, 1980) and perlocutionary effect (Searle, 1969) deserves particular attention. The relevance of the distinction between intention and effect is highlighted by Chilton and Schäffner, who state that the perlocutionary effect "is . . . of crucial importance in political discourse analysis in particular, because it points to the potential discrepancy between intended effect (that is, effect that some hearers may infer to be intended) and the actual effect on the hearer" (2002, p. 11).

The following sections present selected topics in political discourse analysis, demonstrating the context-dependent use of grammar and the intended perlocutionary effects.

Personal Pronouns in Political Debate

Personal pronouns are an important means of referring to communication partners while at the same time signifying the nature of their interpersonal relationship as regards power and solidarity (Mühlhäusler & Harré, 1990). Pronouns are not just a very economic way of expressing reference – they are also of immense importance in how we interpret and signify the world around us. This is particularly relevant to the context of political debate in which political agents present themselves, their allies, and opponents in and through the media.

In political debate, political agents and media personnel frequently do not only speak on behalf of themselves but rather represent a collective voice, such as a political party or the government of a media institution. They may speak for themselves as individual political agents or they may speak on behalf of a collective political agency. Self-references may thus entail both singular reference and collective reference, and may express singular and collective agency. By saying "*we*'re putting a large amount of money into public services, into schools, into hospitals, law and order" the British prime minister refers to both himself and his government, while in "*we* did change *our* position on it", he makes use of *inclusive we*, referring to a group including speaker, hearer, and some other people. In political debate, the latter tends to express solidarity. *Exclusive we* refers to a group of people including the speaker but excluding the hearer, expressing power. *We* may also express the widely accepted *pluralis maiestatis*.

There are other examples of multiple reference. The English pronoun *you* can refer to the addressee in the singular and in the plural, and it can be used to express generic reference, meaning "somebody" or "one", including the speaker. In political debate it can refer to an unspecific, indeterminate group, such as a political party, as in "the point *I* was making is *you* won't solve the problem by saying the Conservatives want to sound tough." Here *you* does not refer to an actual individual but rather to the individual as a representative of that group. The referential domain of *you* is so elastic that it can even embrace the whole of humanity (Wilson, 1990).

To add a further level of complexity, the meaning of personal pronouns can shift as the status of the participants shifts in interaction. This may occur in terms of social roles (e.g.,

a politician may speak in her or his social role as prime minister and in her or his social role as spouse or parent) and in terms of roles in talk (e.g., members of the audience may take on the role of interviewer) and footing (e.g., the participant may speak as author or as principal; Bull & Fetzer, 2006).

The strategic use of pronouns is of particular relevance to the investigation of political debate, which has become an instance of media communication and mass speaking (Fairclough, 1995). In that particular context, alignment and solidarity is expressed through the strategic use of language. Here, the group indexical *we* is considered to be a major factor in mass speaking. Because of an individual's multiple social, discursive, and interactional roles, a personal pronoun can refer to more than one identity and therefore can express multiple meanings. For instance, the pronoun *we* might refer to the dyadic set of politician and interviewer, but the set might also include the audience in the studio, the audience at home, the party the politician represents, or the government of which he or she might be a member. Given their not always clear-cut domains of reference and the possible multiple meanings expressed, it is not surprising that political agents use personal pronouns to good effect, for example to accept, deny, or distance themselves from responsibility for political action; to encourage solidarity; to designate and identify both supporters and enemies.

Discourse is an important instrument in exercising political power and control. In political debate interlocutors present their own identities and the identities of others by using personal pronouns in a strategic manner, expressing inclusion and exclusion, and power and solidarity.

Transitivity: Agents and Non-Agents in Political Debate

Another means of exercising political power and control is managing the way in which social agents are represented in discourse: They can be presented as agents (i.e., as intentional beings who are in control of their actions) and they can be represented as passive agents (i.e., as powerless agents on whom actions are performed and who are thus not in control of what they do). An important grammatical device is to represent active agents as "doers" in their congruent realization as grammatical subject, logical subject, and psychological subject, and to represent non-active agents ("non-doers") in the semantic role of patient (Halliday, 1994). For instance, in the clause "the prime minister has announced drastic cuts," "the prime minister" is grammatical subject, logical subject, and psychological subject. The clause "drastic cuts have been announced" contains the grammatical subject "drastic cuts," which is also psychological subject but not logical subject. Here, the intentional agent, who announced the cuts, is not represented overtly and needs to be inferred from context.

In discourse, agents may not be represented at all and thus may be excluded from the discourse altogether. This may be achieved by the use of nominalizations and other types of grammatical metaphor. Exclusion of agents may be done consistently throughout the discourse, but there may also be temporary suppression or backgrounding. Other relevant means of representation are genericization, for instance "politicians have lost touch with reality," and specification, which is usually realized in parataxis, as in "politicians, bureaucrats, and ecologists." Furthermore, there is indetermination, when social actors are represented as anonymous individuals (e.g., as "people") and differentiation, when their identity is made explicit (e.g., "Mr Smith, leader of the community centre"). Generally, there tends to be a close connection between the social roles that agents are given and their grammatical roles in discourse (van Leeuwen, 1996).

Metaphors in Political Debate

Metaphors are seen as an important device for representing social reality from a different angle, thus contributing to a richer concept while at the same time distorting what is considered to be external, objective reality. In cognitive semantics, metaphor is not only assigned the status of a temporary distortion but seen as a fundamental device for classifying external reality. Thus, metaphors are at the heart of rhetoric, (social) stylistics, and cognitive linguistics (Chilton, 2004; Musolff, 2004). Political worldviews are categorized along the lines of moral conceptual systems, for instance as strict father morality or as nurturant parent morality (Lakoff, 2002).

Metaphors are seen as a fundamental device for categorizing and classifying the external world, and it is their classifying force that makes them an indispensible means in political debate.

Concluding Remarks

In our mass-mediatized world, politics is conducted in and through the media. To communicate felicitously and persuasively, political debaters need to use the grammatical repertoire of language in both a context-dependent and a strategic manner. Only then may they succeed in getting across their ideas, policies, opinions, and criticism.

By using personal pronouns, cognitive metaphors, or active and passive voice, political debaters may foreground a particular piece of information, thus highlighting its relevance. They may, however, also background some piece of information, hedging its importance in order to remain indirect, evasive, or diplomatically unclear, and by selecting the appropriate genre for their communicative intent (e.g., Twitter, interview, or talk show) political debaters may present themselves as committed, emotive, and powerful political agents.

SEE ALSO: Conversational Grammar; Grammar and Discourse; Grammar and the Influence of Society and Culture; Grammar and the Media; Grammatical Variation in Adolescent Language; Hedges; Pragmatic Markers

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Grammar in the Law

JAN CHOVANEC

Legal language is seen as a specialized register, that is, a functionally differentiated variety of language used in certain professional contexts. As such, it can be described in terms of its conventional lexicogrammatical features. Yet, it is difficult to generalize its salient linguistic characteristics because the concept of "legal language" covers a very broad range of different, though related, legal discourses. The written language of legal documents may perhaps be seen as the most representative form, possibly followed by written or spoken judicial decisions that make up case law. Significantly, however, there are other genres, such as the spoken discourses of courtroom interaction, legal consultation, and police interrogation. In all these contexts language is used in characteristic ways, and the typical lexicogrammatical features of one discourse type will not necessarily overlap with those of another. Nevertheless, despite this degree of contextual diversity, these particular legal discourses will be described here with respect to their typical grammatical features—features that may contribute to the general perception of "legal language" as complex and unintelligible. This description will be followed by an account of the trend toward the simplification of legal language at the level of syntax, which has, over the past few decades, increasingly affected the ways in which legal documents have been drafted. Grammar, however, has yet another role in the law: it can be the actual bone of contention in disputes over the interpretation of complex legal language and, importantly, also as forensic evidence. In the latter case, linguists are called upon to analyze textual evidence and seek any departures from expected norms—at the grammatical and other levels—in an effort to establish idiosyncratic styles and identify the authors of disputed texts.

Grammar in Written Legal Discourses

The language of the law has traditionally been described as having a tendency to be "wordy," "unclear," "pompous," and "dull" (Melinkoff, 1963, p. 24). Indeed, the "convoluted" syntax of written legal texts is among the characteristic markers of this register: it plays an almost ritual role in identifying it (see Coulthard & Johnson, 2007, p. 37). The addressees of legal texts are not only those who are bound by them (legal subjects) but also legal professionals, such as judges, who may be called upon to interpret a given text with respect to the intertextual framework of other legal texts.

Written legal texts depart from everyday language in various respects. Owing to the different circumstances under which they are produced and received, legal texts should not be viewed through the prisms of discourse norms of other genres (be they spoken or written). Legal drafters write highly formulaic, noncreative texts that are impersonal and devoid of any originality, often with entire sections directly copied from other documents or form books. After careful planning, they remove any linguistic redundancies that are so typical of everyday language and that generally help to make a text easier to process. On the receiving end, written legal texts are not assumed to be understood after a single reading—either by lay readers or legal professionals. Some texts, such as legislation, are to be engaged with repeatedly, that is, reread, scrutinized, and eventually interpreted. The process of interpretation of legislative rules—which are purposely general and all-inclusive

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—consists in their application to the details of a particular case. This means engaging in the highly contextualized practice of identifying similarities and differences between a given situation and legal rules, that is, finding whether the particular details are in harmony with or in violation of the law.

Although specialized registers typically do not have distinct grammars (Gibbons, 2003, p. 55), the grammar of legal language—especially that found in operative documents—does differ in many respects from everyday language. There is a marked preference for impersonal constructions, passives with deleted agents, nominalizations, and complex nominal phrases. Other salient grammatical phenomena include specific cohesive means, modal verbs, sentence complexity, grammatical coordination (between clausal, adverbial, nominal, and other elements), nominalized expressions (with the necessary implication of a high degree of lexical density), logical structure, and syntactic discontinuities.

Cohesion

In general, written legal texts such as legislation and contracts prefer extreme explicitness. For the sake of precision and unambiguity, pronominalization tends to be avoided, as is the use of synonyms (except in coordinated binominals). While the former might create ambiguities, the latter might imply non-equivalence and hence the existence of two (or more) independent concepts. Instead, legal texts will reuse the same lexical item because such consistency meets the requirement for accuracy of legal language. Cohesion is thus marked by the preference for one particular means of lexical cohesion, namely repetition, at the expense of pronominalization and substitution. In non-legal contexts, a similar degree of lexical repetition would be seen as excessive and redundant. In fact, it is precisely the over-explicit repetitiveness that may contribute to the stereotypical perception of legal texts as unnatural and "wordy." Clearly, this indicates that legal texts are wrongly judged when evaluated by the discourse norms of other genres.

Yet legal texts in English rely heavily on another system of achieving cohesion: the use of complex adverbs of the *herein*-type, which are rarely found in other registers or in everyday language. These adverbs are composed of two elements, whose meaning is compositional: the pronoun *here* or *there* and one or two relevant prepositions. The order of these elements is opposite to the corresponding prepositional phrases: for example *herewith* = with this document, *thereinbefore* = coming earlier in that document. While adverbs with *here-* refer endophorically to the actual text (or a particular segment of the text) in which they are used, adverbs with *there-* refer exophorically to other texts, illustrating the intertextuality of written legal discourses.

Although these complex adverbs may occasionally lead to notorious ambiguities in interpretation (e.g., *hereunder*—under this document, or under this section of the document?), they are, all in all, a very efficient means of constructing cohesion and achieving crossreferencing in legal texts. By allowing for condensation at the phrasal level, they enable the drafter to omit information that is, in most cases, irrelevant or obvious. As a result, the information load (and the lexical density) of the sentence is reduced.

Thanks to their universality, such adverbs also enhance the formulaic character of legal texts in which the equivalent prepositional phrases would have to be much more specific and tied to the local verbal context. In other words, these complex adverbs make it possible for the author to avoid the specification of details whenever the texts need to refer to themselves or their parts: thus, for instance, *the parties hereto* comes to substitute the open set of alternatives such as "the parties to this agreement/contract/addendum/convention/treaty/," and so on, while *hereunder* succinctly replaces the more specific "under this document/deed/contract/section/paragraph/article/," and so on. In this sense, such formulaic complex adverbs help legal professionals—who habitually deal with such texts—to produce and process legal texts in a more automatic and condensed manner.

Modality

In legislation and contracts, the modal verb *shall* is used with a "mandatory" force, that is, to impose obligations (while *must* and *have to*—which are common in conversation—tend to be avoided: see Trosborg, 1995). The mandatory meaning is also conveyed through the present tense, especially in performative utterances representing the "constitutive" nature of law (grants of rights, assumptions of obligations, etc.). Less frequently, *shall* also appears in future references and in predictions. Other modals have similarly dual functions: *may* (as well as *can*) expresses permission and possibility, sometimes leading to ambiguities and requiring legal interpretation over whether the deontic or the epistemic meaning was intended. The putative *should* is frequent in conditionals to express a theoretical possibility.

The Sentence and Grammatical Transformations

Legal documents follow the rules of written grammar and are probably the most removed from the syntax of spoken conversation. One legal sentence typically consists of many clauses which would be formulated as a sequence of independent sentences in non-legal contexts. Sentences are usually very long; in the past, a whole document could even be constructed from a single, unpunctuated sentence. (One reason for this practice was the attempt to prevent any subsequent insertions of punctuation marks which could alter the meaning of the original manuscript.)

Clauses in legal texts are linked in two distinct ways: paratactically and hypotactically, with nonfinite clauses being particularly frequent. While *parataxis* leads to the cumulative linking of clauses that could easily stand on their own in other genres, *hypotaxis* concerns the subordination of clauses and clausal elements, often with several levels of embedding. Such coordination and subordination of finite and nonfinite clausal elements adds not only to the notorious length of legal sentences but also to their syntactic complexity. As a result of the elaborate syntax—combined with high lexical density—legal texts may turn out to be difficult to understand, especially by the lay public.

As with other genres of official and impersonal communication, legal language often uses *verbo-nominal predication*. This means that a clause contains a semantically vague verb resembling a copula and acting as little more than a mere carrier of the grammatical categories. The semantic core of the predication, by contrast, is shifted to the nominal element (e.g., *to provide* → *to make provisions about*). Conceptually, verbo-nominals recategorize processes into products (that is, turning intangible but dynamic "happenings" into concrete but static "things"). As a result, they become comparatively more open to quantification as well as to clausal and adverbial qualification (see below).

Legal texts frequently use the *passive voice*. This diminishes the role of the semantic agent, who either is expressed through an optional sentence constituent (that is, a prepositional phrase with *by*), or, more frequently, disappears from the clause entirely. Unexpressed agents of passives and past participles make legal texts not only more impersonal (thus contributing to the "objectification" of the content), but also more general and universal (e.g., passives such as *it is deemed*, *it is understood*, *it is to be interpreted as*, etc., which leave the agency open to an unspecified doer). In addition, the passive has a significant textual function, especially in languages with a relatively fixed word order, such as English. By allowing sentence constituents to be rearranged within a clause, the passive helps to satisfy the principles of end-weight and especially end-focus. As a result, sentence structure can more adequately reflect the natural progression from known to new information, thus meeting the requirements of functional sentence perspective (theme–rheme, topic–focus articulation).

Present and past participles are used frequently as adjectival modifiers. As nonfinite clausal elements, they significantly condense the syntactic structure of the sentence. In this way,

they pack more information into the clause, making the texts not only grammatically more complex but also cognitively more difficult to unravel. The same holds for some *adjectives* (e.g., *an offence punishable under section 182*) and *nominalizations*, which have a similar clause-condensing function (e.g., *permission*; *termination*; *compensation*). These nominal transformations actually represent underlying processes and can be potentially expanded into their full clausal equivalents. It is in such finite clauses that, to use Halliday's terms, these "grammatical metaphors" find their congruent (that is, primary) realizations. Further complexities arise from the morphological structure of some grammatical metaphors (e.g., *unimpeachable*) and their combinations into extended groups (e.g., *review of arrangements for judicial appointments and removals*; Northern Ireland Act, 2009).

Syntax of Legislative Writing (Legislative Writing and Syntactic Discontinuities)

The grammar of legislative writing reflects the cognitive structuring of its content in terms of the underlying legal norms: concrete sentences, with their grammatical and syntactic structures, are mapped onto the abstract provisions. Legislative texts must meet the requirements of precision and unambiguity, yet they must also allow for all-inclusiveness and discretion in the actual decision-making practice. The syntactic structure of legislative provisions is built on the structure of the directive "rule of law," which has been described by the legal theorist Hans Kelsen (2006 [1949], p. 45) as "*If A, B ought to be.*" This is known as the *legal norm*, which has a mandative and normative character (unlike the "law of nature," which relies on the causative relation of "*If A, then B*"). It is used for imposing obligations and conferring rights (cf. the older views of law as "the binding command" or "the legislator's will").

At the syntactic level, the legal norm comes to be realized through *conditional sentences*, introduced with conjunctions such as *if*; *where*; *provided that*; *unless*; *in the event of*; and *in case of*. Conditionals typically follow one of two abstract patterns: "*If X, then Y shall do Z*" and "*If X, then Y shall be Z*" (Crystal & Davy, 1969; Bhatia, 1994). The legislative provision then consists of three elements: participants, processes, and circumstances. In legal theory, these are known as the legal subject (Y), that is, the party subject to the provision; the legal action (Z), that is, the actual right, obligation, or prohibition imparted through the law; and the case description (X), that is, the circumstances that need to be present for the application of the main provisionary clause consisting of the legal subject (Y) and the legal action (Z). Occasionally, other structures may convey the conditional meaning as well, for example relative clauses and various post-nominal specifications, as in the following sentence: *A person desiring to appeal against such decision as is mentioned in subsection (2) shall give a written notice to the Authority specifying the decision against which he wishes to appeal and the grounds upon which such appeal is made*; Broads Authority Act, 2009.

Legislative provisions thus follow a *two-part interactive cognitive structure*: the main provisionary clause is interrupted at various syntactic openings by numerous qualifications (preparatory, operational, and referential), which are "meant to answer legal questions and doubts, and offer clarifications about various aspects of the main provision" (Bhatia, 1994, p. 152). The two moves (that is, the provisionary clause and qualifications) interact and result in making the provision—and the legal norm—precise and unambiguous. Thanks to this, the syntax of legislative provisions closely follows the process of legal reasoning. The actual processing of legislative writing then consists of the extraction of the main provisionary clause (that is, the legal action that is to apply to the legal subject), which is embedded in numerous specifications, limitations, and intertextual references. The qualifications then modify the main provision by significantly limiting the scope of its applicability.

The interaction between the provisionary clause and the attendant qualifications disrupts the unimpeded syntactic progression of the sentence because the qualifications are inserted at any available place whenever the need arises to specify the nature of the legal action. This results in unexpected *syntactic discontinuities*, which are characteristic also of other kinds of written legal language. Individual elements within a sentence are immediately qualified by means of phrasal or clausal insertions, sometimes even across phrase boundaries and at the expense of expected patterns of word order. The insertions may be very extensive and themselves subject to further qualifications, giving rise to several levels of embedding (e.g., *The Secretary of State may by order made by statutory instrument make transitory or transitional provision or savings in connection with the coming into force of any provision of this Act*; Northern Ireland Act, 2009). As a result of syntactic discontinuities, a legal text may appear awkward (hence the frequent accusations of legal style as "tortuous"), though it becomes very effective in conveying the intended meaning. Syntactic discontinuities illustrate that in legal language, style is subordinate to precision and unambiguity. These goals are pursued even at the expense of readability, for the lay person or legal professionals alike.

At the same time, however, precision in legislative instruments is balanced with *flexibility* and all-inclusiveness. Over-explicit lists and enumerations tend not to be provided. Instead, flexibility is achieved primarily lexically through such subjective terms as *reasonable*, *relevant*, and so on, which are to be interpreted against the specific circumstances of a case. These lexical items allow for discretion in judicial decision-making (see Maley, 1994, p. 27).

Grammar in Spoken Legal Discourses

The spoken language of law takes on a variety of different forms. It includes police interviews, courtroom interrogation, expert witness testimony, lawyer–client interviews, jury deliberation, and other genres (see Cotterill, 2003; Heydon, 2005, etc.). The lexicogrammatical complexity and textual patterning of legal–lay and legal–legal discourses may also reflect different modes of habitual reasoning (e.g., narrative vs. paradigmatic, see Heffer, 2005). When allowed to use the narrative style, the litigants may, for instance, use passives and impersonal constructions, thereby eliminating semantic agents. In this way, they may inadvertently render their accounts inadequate for legal purposes (Conley & O'Barr, 1990).

Courtroom interaction is shaped by particular contextual and power relations that have an impact on not only the discourse structure of the speech event (in terms of sequencing, turn taking, etc.) but also its microlevel grammatical realization. In different stages of a trial, there is a tendency to use different grammatical constructions. This preference is directly tied to the ultimate aims of the interactants, that is, the co-construction of one's own account and the destruction of the opposing party's story. Thus *direct examination* (known as "examination in chief" in British English), marked by a cooperative and supportive mode, tends to include a higher proportion of open-ended questions, allowing for answers that are more narrative.

By contrast, questions in *cross-examination*, marked by a combative and adversarial mode, tend to be asked differently: as yes/no questions and, significantly, narrative statements with question tags. The tags are either grammatical or lexical, sometimes appended as separate questions (e.g., *Correct?* or *Is that right?*). As information-seeking questions occur less frequently, responses are often limited to mere yes/no confirmations.

Grammatical forms used to ask questions may be arranged on scales reflecting increases in coerciveness, information control, information deniability, and so on (Gibbons, 2003). For instance, some syntactic transformations, such as nominalizations and statements

projected in reported speech, may be difficult to deny because they present the crucial proposition in the form of an embedded presupposition that is taken for granted. Various jurisdictions place restrictions on the admissibility of leading and captious questions that suggest the desired answer or contain unproven suppositions (e.g., *I suggest . . . ; I put it to you that . . . ; Is it not the case that . . . ?*).

Questions asked during dialogic courtroom interrogation employ frequent *repetition* and *structural parallelism*, often for rhetorical and strategic purposes and with the aim of influencing the jury. Similar phenomena appear in the lawyers' opening and closing speeches, which are preplanned and nonspontaneous speech events of the "written-to-be-spoken" type. Such monologues contain interactive phenomena (means of direct address, questions, commands) addressed to the jury as the actual and explicitly ratified recipients of messages in the complex multi-party participation framework of courtroom discourse.

Some *discourse markers* are used in specific ways. Lawyers, for instance, often preface their utterances with the "so" summarizer in order to emphasize the previous sequence and draw logical inferences. Since the questioners' inferences come in the form of yes/no questions, they are difficult to contradict (Johnson, 2002; Cotterill, 2003). Courtroom interrogation also includes other phenomena typical of spoken language, such as hesitation, false starts, and reformulations. These occur especially when defendants and witnesses who, subjected to face-threatening acts, are forced to provide unrehearsed and dispreferred responses, are made to concede some facts detrimental to their case, and are found to have lapses of memory about past events.

Communication in the courtroom follows *conversational norms* different from the usual norms of authentic conversation; the operation of some pragmatic principles and maxims is modified or suspended. Silence, that is, the non-production of any verbal response, assumes various meanings, ranging from a lack of knowledge to an admission of guilt (see Kurzon, 1995).

The Simplification of Legal Grammar

Legal language has been negatively commented on for centuries. Some of its early critics included the English king Edward VI (1547–53), the British satirist Jonathan Swift, and the US president Thomas Jefferson, among others (see Asprey, 2003). The English language probably attained the height of its verbosity in the 18th century (Melinkoff, 1963), not only in law but also in other domains, such as literature. Criticism has been levied against both vocabulary (archaisms, binominals, complex prepositions, French and Latin expressions) and grammar (complicated syntax, passives, impersonal constructions, formulaic phrases). The negative public attitude has become lexicalized into commonly used pejorative labels referring to legal language, such as legalese, gobbledygook, and legal jargon.

The complexity of legal language is sometimes explained in terms of *privileged access*. It is argued that lawyers use complicated language as a means of intentionally and willfully mystifying their activities, that is, in order to preserve their professional exclusivity and to prevent the public from understanding their discourse. However, many legal genres—such as contracts—face the "two-audience dilemma": they are produced by lawyers for non-lawyers, yet are ultimately interpreted by other legal professionals (Gibbons, 2003).

Criticism of legal language is sometimes misguided, conflating two separate issues: "legal style" and "bad style." Some of the calls for plain language are directed less against particular registers, such as legislation and contract law, than against the overcomplex style that is often found in official and institutional contexts. Simplification for the sake of clarity has traditionally been promoted in various style manuals, which have enjoyed wide

popularity for over a century (see such classics as H. W. Fowler's *The King's English*, 1906, E. Gowers's *The Complete Plain Words*, 1954, and George Orwell's critical essay *Politics and the English Language*, 1946).

Systematic attempts to simplify legal language date from the 1970s. Several US banking and insurance institutions started rewriting some of their legal documents for the public, motivated partly by a desire to increase their market share and partly by the need to follow new consumer legislation requiring "plain language." Legislative drafting in the US is now also guided by explicit instructions on plain language style. Other, mostly English-speaking, countries followed suit, introducing various grassroots initiatives calling for language reform and demanding that in democratic societies people, as the subjects of legal norms, have the "right to understand." Although the grounds for language simplification have been repeatedly questioned by linguists, who have provided functional explanations for the peculiarities of legal language, the trend toward simplification seems to have the support of the general population.

More recently, many public and government institutions have successfully rewritten their documents for the public, assisted by the recommendations or the commercial editing services of plain-language groups. Typically, the rewriting removes impersonal constructions, extensive embedding, and long sentences, as well as the passive voice, which has been subject to prolonged criticism despite its well-defined grammatical functions.

Linguist-led simplification of legal language has also been successful. In the US, jury instructions in many jurisdictions have been rewritten to make them more intelligible, and significant progress has been achieved internationally with the comprehensibility of police cautions (called "Miranda warnings" in the US), which have also been simplified (see Cotterill, 2000; Gibbons, 2003). Some linguistic simplification, such as the replacement of some archaic vocabulary, has also resulted from recent judicial reform by Lord Woolf in the UK (1999).

Grammar as Linguistic Evidence

Over the past decade, the new discipline of forensic linguistics has drawn on various levels of linguistic analysis, including grammar, in order to provide evidence in legal cases. Lexical collocations and syntactic structures have been linked to the idiosyncratic use of language and treated as likely markers of personal identity, especially in cases of disputed authorship. Syntactic analysis has helped to reveal inconsistencies in the alleged use of language by individuals, for example in cases where evidence was doctored by the police. For instance, Coulthard (2002) showed in the 1998 retrial of the infamous 1950s UK case of Derek Bentley that what had been originally presented as a verbatim monologic witness statement—on the basis of which Bentley was executed—was in fact a multivoiced text. The all-too-frequent negative statements were found to be traces of dialogue, that is, answers to questions, while the position of the discourse marker *then* in the post-subject rather than the initial position was established as a typical feature of police language. Forensic linguistic evidence is also crucial in cases of textual borrowing, for example plagiarism.

SEE ALSO: Forensic Discourse Analysis; Forensic Linguistics: Overview; Language of Courtroom Interaction; Language of Jury Instructions; Language of Police Interviews; Legal Language; Lexicogrammar

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Grammar of English as a Lingua Franca

BEYZA BJÖRKMAN

English today has reached global dimensions no other language has come near before. It is used in a very large number of domains and is spoken by millions of people for various purposes. English as a lingua franca (ELF), that is, as a vehicular language among speakers of different mother tongues, represents the largest use of English in the world today. In fact, those who speak English as a lingua franca greatly outnumber the native speakers in the world.

For anyone interested in language, and especially for those involved in applied linguistics, such a widespread use of a language constitutes a very exciting field. A natural first step is to investigate this language use and describe it. This entry has as its main aim to provide a brief description of grammar usage when English is used as a lingua franca, as well as bring to the fore some critical issues on the topic. First, the reasons for the need to describe English as a lingua franca will be discussed, followed by important studies and corpus work on the topic. Then a sample ELF setting will be examined, elaborating on grammar usage. Finally, some points of debate will be discussed with references to relevant literature and the sample ELF setting.

Why Describe English as a Lingua Franca?

Investigating ELF usage in a number of domains (e.g., engineering, business), settings (e.g., universities), and countries (e.g., European and other) is useful for four main reasons. It is important to raise awareness in this kind of use of English in today's world, where English is used mostly by its non-native speakers. First, those who use English as a lingua franca communicate predominantly with other non-native speakers. On this note, they do not need to consider cultural issues to the same extent as those who speak English to communicate with native speakers.

Second, ELF needs to be described for theoretical reasons (Mauranen, 2005, p. 273). Being a contact language, it deserves to be studied just like pidgins and creoles have been researched. Doing research within ELF is likely to reveal very interesting results since, like speakers of pidgins and creoles, ELF speakers come from extremely diverse backgrounds and the numbers of those who speak English as a lingua franca are constantly growing. These factors together make the situation even more complex (Mauranen, 2005, p. 273) and ELF even more deserving of being studied properly.

Third, different ELF settings should be studied for linguistic descriptions to be available. The use of English as a lingua franca is a different function of the language with a variety of adaptations of native forms. To allow for the testing of theoretical hypotheses and looking into areas where ELF usage is applicable, descriptions are necessary (Mauranen, 2005, p. 274). One certainly needs some anchoring in this respect. What was earlier available as a point of comparison was the native speaker norm and model. Because of the specific nature of ELF situations where speakers come from various backgrounds, the native speaker model is not an appropriate point of reference when evaluating communicative effectiveness (Mauranen, 2005, p. 274).

ELF research challenges the homogeneity of grammatical systems, speech communities, and competence. In today's largely heterogeneous world, we need heterogeneous language

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models (Canagarajah, 2006, p. 211). The global English speech community where speakers come from a wide range of first language backgrounds is by no means homogeneous, which brings the reality that the language used cannot follow a homogeneous model. English today is used in this global community with varying degrees of competence, and the results of research within different ELF settings have shown us that speakers in ELF settings seem to achieve effectiveness despite the heterogeneity (Canagarajah, 2006, p. 211).

Finally, descriptions of ELF are necessary for possible applications of it. Those who need to operate in ELF settings along with decision-makers in ELF settings, for example, managers of international universities, need to gain a better understanding of it, to be able to determine what to pay attention to, what to avoid and what to prioritize. The large number of speakers who speak English as a lingua franca and settings legitimizes the need for research about the ELF phenomenon.

Studies on the Grammar of English as a Lingua Franca

Although research into ELF started relatively recently, the proliferation of investigations that have been carried out on different aspects of it has been dramatic. The increasing use of English as a lingua franca in a wide range of settings opens up possibilities for carrying out studies of varying nature. In any attempt of describing and analyzing language use, form, that is, grammar, plays a pivotal role, as meaning cannot be created without grammar.

The release of two important corpora, free for use by researchers, has already provided researchers with substantial data, resulting in studies on ELF grammar. A useful and important preliminary here, before moving on to a review of these studies, is a brief review of these corpora that provided data for large-scale investigations on form.

The Vienna–Oxford International Corpus of English (VOICE; www.univie.ac.at/voice) is a large spoken corpus project led by Seidlhofer with recordings of about one million words of mainly English produced by speakers of continental European languages from professional, educational, and informal settings (VOICE). Projects based on this corpus have provided valuable information on ELF settings, predominantly with reference to lexicogrammar. VOICE includes an estimated 1,250 ELF speakers with approximately 50 different first languages at the time of writing, and comprises a wide spectrum of speech events from different domains, functions, and participant roles. Another very important corpus project is the English as a Lingua Franca in Academic Contexts corpus (ELFA; www.eng.helsinki.fi/elfa) from Finland, being the largest work on ELF usage in academic settings. It supplies authentic data from naturally occurring speech events, representing crucially high-stakes academic events. ELFA contains one million words of transcribed speech of approximately 131 hours of recorded speech and has 650 speakers from 50 different first languages. Both these corpus projects have contributed considerably to our knowledge on the grammar of ELF.

To many, the list provided by Seidlhofer on some early observations constitutes the set of grammar commonalities of ELF usage (Seidlhofer, 2004). Among these observed commonalities are (Seidlhofer, 2004, p. 240):

Dropping the third person *-s* (e.g., *He say*);
The interchangeable use of the relative pronouns *which* and *who* (e.g., *The man which was here yesterday . . .*);
The non-standard usage of articles in general;
Invariable tag questions, for example, *isn't it? No?*;
Redundant prepositions, for example, *study about*;
High frequency of some verbs of "high semantic generality," for example, *do, have, make*;
Using *that* clauses instead of infinitive clauses, for example, *I want that . . .* ;
Increased explicitness, for example, *black color*.

The existing studies on the grammar of ELF reveal considerable nonstandardness and divergence from standard norms. Some of the features that were proposed as commonalities above seem to find support from studies that are based on empirical data.

To begin with, in an investigation of the *third person -s* in group discussions, there were 29 cases of third person singular *-s* and 15 cases of superfluous *-s*. However, almost 80% of all cases followed standard norms in the corpus (Breiteneder, 2005). Another item in the list of commonalities is the invariable question tag, for example, *isn't it?* This item, along with some other nonstandard usage, is investigated in another study where the data are made up of four hours of naturally occurring exchange student talk (Hülmbauer, 2007). These studies arrive at similar conclusions: correctness and effectiveness do not go hand in hand, and such variations of usage in ELF situations are natural developments that are based on functional usage (Hülmbauer, 2007, p. 29).

Another interesting feature of grammar in ELF settings is the usage of the progressive aspect (i.e., -ing). Although it is not included in the list by Seidlhofer, it is reported to be common in ELF usage (Ranta, 2006; Björkman, 2008a, 2008b). Speakers in ELF situations often seem to opt for the *-ing* form instead of the simple form regardless of what the situation might require (Björkman, 2008a, 2008b). Support for this comes from a comparative work based on the ELFA and MICASE (The Michigan Corpus of Academic Spoken English), showing that the progressive form was used in a larger variety of contexts by speakers in ELF settings. However, it was actually used in a "standard-like" way in 87% of all the cases (Ranta, 2006, p. 111). Another study related to tense usage reported from a German university where students display a variation of tense and aspect usage (Erling, 2002). The reason, as suggested in the results, was not because the students lack that particular usage in their mother tongue, but because it simply was not essential for communication (Erling, 2002, p. 11). In a broader study carried out in the same setting, an examination of attitudes and motives of university students studying through the medium of English revealed a wide range of nonstandard features. The variation in the features investigated was dealt with similarly: nonstandard norms were accepted based on communicative effectiveness, which is then related to the phenomenon of new Europeanism where individuals use English in a "non-culturally restricted way." This new Europeanism brings with it the need to accept variation in forms based on comprehensibility instead of conforming to native speaker norms (Erling & Bartlett, 2006, p. 33).

In another analysis focusing on the use of English in international settings, an analysis of 22 hours of naturally occurring interactions reports grammatical choices that the speakers made (Meierkord, 2004). The results of this study indicated a surprising 9% only of divergent usage, that is, usage that did not conform to the standard norms of English. This study differs from the others mentioned here with its approach to the source of nonstandardness: the divergent usage was investigated in terms of first language backgrounds. The finding that is of highest relevance to this encyclopedia entry is the set of underlying patterns in usage that coincide with patterns in new Englishes, for example, patterns such as not marking plurality (Meierkord, 2004, p. 113). ELF is described as a heterogeneous language form that is heavily shaped by speakers' first language backgrounds. In addition, she claims transfer phenomena, developmental patterns, and nativized norms as well as simplification, leveling, and regularization strategies characterize ELF speech (Meierkord, 2004, p. 129).

The aforementioned studies on the grammar of ELF reveal considerable nonstandardness and divergence from standard norms but also communicative effectiveness despite the nonstandardness. At first glance, the nonstandardness may, rather simplistically, be taken as simply erroneous non-native speaker production. For a better understanding of the issue, however, one needs to search beyond the surface forms and look at underlying patterns of nonstandardness, for example, reducing redundancy or creating extra explicitness, at a finer level of linguistic detail.

Grammatical Commonalities and Underlying Patterns in an ELF Setting

An example ELF setting comes from Sweden, where English is increasingly being used as the medium of instruction in higher education, especially in engineering, natural sciences, and medicine. Large numbers of exchange students, foreign scholars, and Swedish lecturers and students all face a variety of tasks that they need to complete through the medium of English on a daily basis.

The data from this example setting, totaling up to 69 hours of recordings (27 hours of classroom group-work, 42 hours of lectures), reveal interesting facts about ELF grammar. In order not to allow for incidentalism, that is, reporting features that are not necessarily common, a general problem in corpus studies (Swales, 2002), a strict set of criteria have been applied to all the grammatical features here. The feature had to be used by five speakers of different first languages, in both lectures and group work, for a minimum of ten times. Only the features that fulfilled these conditions were included in the findings, as candidates for "commonalities."

The following are the features that met the requirements, and are therefore presented as the commonalities of ELF grammar, accompanied with examples from the material, in Table 1:

Table 1 The grammatical commonalities found in the present material

Grammatical commonalities	*Examples from the material*
Not marking the plural on the noun	*They have a range from 50 to 500 meter.* *Typically you want to have five kilogram of oxygen.* *For example, you take two piece of glass.*
Article usage	Superfluous or incorrect articles *You will have a efficiency curve . . .* *If you go to the Belgium, all the highways are lit.* *You can use it in the different ways.* Missing articles *From those figures, you can have ▼ idea what reasonable speed . . .* *You can add timing interphase for ▼ memory system.* *Who has paid for the infrastructure? That's always ▼ interesting question.*
Double comparative/ superlatives	*Much more safer, much more wider, more bigger, the most cheapest available biowaste.*
Subject–verb agreement	*I will talk about how a turbine operate in the system.* *However, the blades was not that good developed.* *There is a further method which are sensitive to porosity in rocks.*
Tense and aspect issues	*A Francis turbine is using the whole turbine equation (instead of uses).* *Typically the energy of the sun is emitting . . . (instead of emits).*
Passive voice	*They are not directly affect by these concentrations.* *It can be happened that sometimes . . .*
Nonstandard question formulation	*Why is such a difference in the diagram here between the blue and the red then? (missing "there")* *Why is not good to combust directly? (missing "it")* *Why this quotation only on one side? (missing helping verb)* *Why the function looks like that? (usage of "do")* *What other equation I would use? (word order in questions)*
Word order	*I don't know what is the aim.* *We can't judge how solid is the ground.* *Here you see how does it look like.*
Negation	*It is a not very good generator.* *It has not always a low complexity.* *This point is supposed to not move.*

There were nine types of grammatical commonalities in the present setting, as displayed in Table 1. Among the features, the only one that disturbed communication was nonstandard question formulation (Björkman, 2008a, 2008b). On this note, ELF usage in this instructional setting shows a considerable level of nonstandard grammar that does not interfere with communicative effectiveness.

The features found in this example ELF setting could be subsumed under the following categories in terms of their communicative effectiveness: (a) nonstandard usage that leads to overt disturbance in communication, that is, nonstandard question formulation; (b) successful reductions of redundancy, for example, not marking the plural on the noun; (c) devices that increase comprehensibility and create extra explicitness, for example, unraised negative (see "negation" in Table 1); and finally (d) other nonstandard features that do not interfere with communication (see Table 3). Categories (b) and (c) seem to be strategies speakers in lingua franca settings employ to get the message across.

Based on these results, transparency seems to emerge as a characteristic of grammar usage in ELF settings. The grammar features appear to be based on functionality. It seems reasonable to suggest that the features that serve a function seem to be preferred by speakers in lingua franca settings whereas those that are redundant are dropped, for example, third person *-s*. A feature is kept if it does not interfere with communication, if it aids communication, and is functional.

Critical Issues on the Grammar of ELF

How Common Are ELF Commonalities?

A critical issue on the commonalities of nonstandard grammar reported in Table 1 and elsewhere is how common, or uncommon, they actually are in comparison to standard forms. Apart from a few studies (Meierkord, 2004; Breiteneder, 2005; Ranta, 2006; Björkman, 2010), this issue remains relatively neglected in the ELF enterprise.

Table 2 gives the frequency of the grammatical commonalities found in the Swedish setting referred to here, comparing the standard and nonstandard production in lecturer speech and student group-work, both from instructional discourse.

Table 2 The standard versus nonstandard usage of the grammatical features in percentages

	Usage in lectures		*Usage in group-work*	
	Standard usage	*Nonstandard usage*	*Standard usage*	*Nonstandard usage*
Not marking the plural on the noun	94%	6%	82.5%	17.5%
Article usage	98%	2%	95.2%	4.8%
Double comparative/ superlatives	99%	1%	98%	2%
Subject–verb agreement	98%	2%	98.2%	1.8%
Tense and aspect issues	98.5%	1.5%	100%	0%
Passive voice	96%	4%	85.2%	14.8%
Nonstandard question formulation	94.5%	5.5%	81.2%	18.8%
Negation	98.2%	1.8%	98%	2%

The figures reveal, rather strikingly, the very low frequency of these features in the present material. Only a minority of instances were nonstandard. The results of the present investigation indicate that variability is a characteristic of ELF usage. These results indicate that ELF is not a variety, if it is the traditional meaning of the term *variety* to which one intends to refer.

Regardless of the type of variation in usage, a set of solid features, referred to as "common core" (Quirk, Greenbaum, Leech, & Svartvik, 1985, p. 16), is required that cut across an entire variety. However esoteric a variety may be, it has running through it a set of grammatical and other characteristics (Quirk et al., 1985, p. 16). In this sense of the term, as regards grammar, ELF usage does not constitute a variety, for there is variability of usage and the ratio of nonstandardness over standard features is relatively low.

The Grammar of ELF With Reference to World Englishes, Creoles, and Learner Language

A critical issue to address here is the resemblance of the so-called ELF features to some varieties of English. The lists presented here and by Seidlhofer (2004, p. 20), have considerable overlap with the features of World Englishes, creoles, and learner language. A quick run-through of five different sources on the features of World Englishes (Crystal, 1995; Mesthrie, Swann, Deumert, & Leap, 2001; Mesthrie & Bhatt, 2008), creoles (Crystal, 1995; Mesthrie et al., 2001; Mesthrie & Bhatt, 2008), and learner language (Swan, 1980; Hultfors, 1986) reveals forms that cut across these groups, as shown in Table 3.

The comparison in Table 3 is by no means exhaustive, and it is not a review of a large number of sources. The aim here was not to outline all the features that run across all the reported features of World Englishes, creoles, and learner language, which would be beyond the scope of this entry and would need to touch upon issues such as language contact, variation and change, linguistic norms and their acceptability, ownership of the language, and expression of social identities (Seidlhofer, 2009, p. 236). The present list took the features found in the sample Swedish setting as the basis and checked whether the same features were found by other sources in World Englishes, creoles, and learner language. Although it is a relatively quick run-through of few sources, these overlaps do surface.

It seems reasonable to suggest that the reason for these overlaps is not that these language forms are all the same, but that it is due to the demands of functional communication. A close analysis of the types of nonstandard usage in the present setting reveals more than merely nonstandardness; there are tendencies such as increasing explicitness, for example, unraised negation, reducing redundancy, and dropping the third person *-s*. If a feature shoulders an important role in communication, that is, if it is communicatively dynamic, it seems to be retained whereas in the opposite case, it is omitted.

This review also answers the question whether ELF usage is *sui generis*, a question of debate raised in a number of studies. The features that cut across World Englishes, learner language and ELF settings show clearly that ELF usage is formally not *sui generis* since none of these features are unique to ELF usage. If ELF were *sui generis*, there would be very large numbers of unique and consistent nonstandard usage without any variability. This is not the case in this setting or in the literature. It is quite remarkable that apart from a few studies, ELF research has neglected to consider this.

Conclusion

In this overview, the focus has been on grammar usage in ELF settings. The existing research has shown certain types of nonstandardness and certain patterns of grammatical choice, pointing to a strong association between the grammatical choices and effectiveness

Table 3 The types of variation of grammar found in an ELF setting, in World Englishes features, creoles, and learner language

Types of variation in grammar	*A sample ELF setting from instructional discourse*	*World Englishes*	*Creoles*	*Learner language*
Nonstandardness that causes overt disturbance	Nonstandard question formulation	—	—	—
Devices that increase comprehensibility and create extra explicitness	Pre- and Post-dislocations/ Heads and Tails	Y (Mesthrie et al., 2001, p. 307; Mesthrie & Bhatt, 2008, pp. 81–82)	Y	Y (Swan, 1980, p. 498)
	Double comparative/ superlatives	Y (Mesthrie & Bhatt, 2008, p. 85)	Y	—
	Unraised negation	—	—	—
Reductions of redundancy	Not marking the plural on the noun	Y	Y (Crystal, 1995, p. 347; Mesthrie & Bhatt, 2008, p. 52)	—
	Subject–verb agreement issues	Y	Y (Crystal, 1995, p. 347; Mesthrie & Bhatt, 2008, pp. 65–66)	Y
	NonS analytic comparative	(Mesthrie & Bhatt, 2008, p. 85)	—	—
Other nonstandard features	NonS word forms	Y	—	Y (Hultfors, 1986, p. 148)
	Tense and aspect issues	Y	Y (Mesthrie & Bhatt, 2008, p. 60)	Y (Swan, 1980, pp. 414–430, 457–463; Hultfors, 1986, p. 96)
	Passive voice	Y	Y	Y (Swan, 1980, pp. 407–414)
	Word order	Y	Y/N Question word order not included (Mesthrie & Bhatt, 2008, pp. 78–81)	Y/N Question word order not included (Hultfors, 1986, p. 139)
	NonS Plural forms/ countability	Y	Y (Mesthrie & Bhatt, 2008, p. 52)	Y (Swan, 1980, pp. 137, 138; Hultfors, 1986, p. 59)
	Article usage	Y	Y	Y (Hultfors, 1986, pp. 42–56)

Y stands for "Yes" and indicates the presence of that particular feature.

in ELF usage. It is, however, critical that we acknowledge the low proportion of such usage in any discussion of grammar, as well as overlaps of ELF usage with World Englishes, creoles, and learner language.

SEE ALSO: Conversation Analysis and Lingua Franca; Corpus Analysis of English as a Lingua Franca; English as Lingua Franca; House, Juliane; Pragmatics of Lingua Franca Interaction

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Grammar: Overview

KARIN AIJMER

In a section on applied linguistics and grammar it is appropriate to start by considering what we mean by grammar and how our conception of grammar has changed as a result of developments in linguistic theory. Functionalist theories of language have for instance drawn attention to the uses of language and how grammatical features can be explained in terms of their functions. For the purposes of applied linguistics it is important to have a broad understanding of grammar which includes both syntactic structures and their uses. Moreover we have witnessed a change from prescriptive to descriptive grammar. Modern grammars are usually descriptive. DESCRIPTIVE LINGUISTICS describes the grammatical system at large based on the observation of how grammatical structures are used. A prescriptive approach to grammar, on the other hand, embodies the idea that only some grammatical forms are correct (see PRESCRIPTIVE AND DESCRIPTIVE GRAMMAR). A descriptive approach has provided the model for scholarly grammars such as Quirk et al. (1985), Huddleston and Pullum (2002), Biber, Johansson, Leech, Conrad, and Finegan (1999), and Carter and McCarthy (2006).

Grammar is often treated as invariant. However there is not "one English grammar" but language varies across contexts of use. The study of spoken English has for instance shown that there is a grammar of conversation which is distinct from the grammar of other varieties. In this overview, the first part of the discussion will concentrate on functional and formal approaches to grammar. This discussion will be followed by a section on CONVERSATION GRAMMAR. The next section will contain a description of grammar in different varieties. In the last section the discussion will concentrate on how grammatical theory and innovations such as the use of corpora are relevant to language teaching.

Functional and Formal Approaches to Grammar

The state of the art in grammar is characterized by a controversy between FORMAL AND FUNCTIONAL APPROACHES TO GRAMMAR. The formal approach to grammar is exemplified by Chomsky's model of transformational, GENERATIVE GRAMMAR. Generative grammar focuses on the speaker's "competence" rather than performance and describes competence as a set of innate syntactic rules which function independently of external factors in the environment.

Functional models on the other hand are concerned with how language is used in communication and how grammatical phenomena are affected by social, pragmatic, or contextual factors. Functional models include SYSTEMIC FUNCTIONAL LINGUISTICS whose founding father is Michael Halliday. According to Halliday, language is shaped by its use in sociocultural settings and is part of a system of "social semiotics." In this system language has three metafunctions depending on whether it is associated with human experiences (ideational function), the interaction with others (interpersonal function), and the organization of the message with regard to information structure and cohesion (textual function).

FUNCTIONAL GRAMMAR is a theory of language use originally developed by the late Simon C. Dik and his associates at the University of Amsterdam. The aim of functional

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grammar is to develop a formal system where the formal categories are functionally and pragmatically motivated and described in a rigorous and explicit way. Compare Butler (2003) for a discussion of other members of the functional family of grammars including the Role and Reference Grammar developed by Foley and Van Valin (Foley & Van Valin, 1984). COGNITIVE GRAMMAR can also be regarded as functional since the uses of language in text and discourse are essential to this approach as well. However the view on linguistic categories as prototypical continua with a core and periphery is special to this approach.

In many linguistic theories and approaches lexis (vocabulary) and grammar are not seen as separate components but as interacting with each other (LEXICOGRAMMAR). In a lexically driven approach to grammar the emphasis is on the patterns of structure and use. PATTERN GRAMMAR (Hunston & Francis, 2000) categorizes words into patterns on the basis of their co-occurrences with other words. Hunston and Francis found, for example, that there is a restricted number of English verbs such as *think, know, see* co-occurring with *that*-clauses. Their findings were based on the empirical analysis of the collocational patterns of the verbs in large electronic corpora.

Biber et al. (1999) have shown on the basis of large-scale corpus investigations that recurrent word combinations can be of different length and that they do not need to be grammatical units. So-called lexical bundles (see LEXICAL BUNDLES AND GRAMMAR) are illustrated by *I don't know why* or *can I have a.* They are interesting for language teaching since learners have to produce chunks of idiomatic English. Words can also be associated with a special lexicogrammatical environment. SEMANTIC PROSODY can for instance explain how a word or construction carries with it an evaluation that something is bad (*in case of fire*).

LINEAR UNIT GRAMMAR represents another departure from traditional descriptive models of grammar. The emphasis is on conceptualizing how the message is divided up into units which are easy to process ("chunks") and how grammar is basically linear rather than hierarchical. Linear unit grammar is essentially a contribution to the description of spontaneous speech and has a number of applications for communicative teaching and interpreter education.

The interest in the relationship between GRAMMAR AND DISCOURSE has led to research into METADISCOURSE, that is, linguistic features commenting on the content of the text. Metadiscourse is an important feature of academic discourse, especially academic writing (see GRAMMAR IN ACADEMIC WRITING). CONNECTIVES (e.g., lexical items such as *however* and *furthermore*) are studied in applied linguistics because they express semantic and formal relations contributing to the coherence of discourse. Linguistic features may also be associated with the INFORMATION STRUCTURE. Speakers and writers may for instance change the order of words in order to present something as new or given information.

Conversational Grammar

For a long time grammars dealt with written language only and spoken language was regarded as inferior to writing. There is now a growing awareness of the importance of spoken language and the difference between the grammar of conversation and the grammar of Standard English. In CONVERSATIONAL GRAMMAR the forms are understood in terms of their accommodation to the conditions under which conversation takes place, for example, the temporal constraints making it impossible to retrace one's steps.

Many pragmatic phenomena such as pragmatic markers are closely associated with their occurrence in conversation. Pragmatic markers are little words such as *you know, I mean* whose function in conversation is to maintain harmonious relations between the

participants and to prevent disruptions in conversational coherence. However, the relationship between PRAGMATIC MARKERS and grammar is controversial since pragmatic markers are "inserts," that is, they are placed in a special slot outside the proposition (Biber et al., 1999). Pragmatic markers are closely associated with fluency and with nativeness and should not be ignored in textbooks and in classroom teaching.

The term SPEECH ACTS was first used by philosophers interested in "how to do things with words" (Austin, 1962). Grammarians interested in functions refer to the speech act functions associated with sentences, for example, asking someone to do something (*can you open the window*). Functions such as requesting can be expressed both directly (by an imperative) and indirectly by means of a question.

A speech act can be mitigated by HEDGES in order to make it more polite. The notion hedge refers to a broad category of words "which make things fuzzier or less fuzzy" (Lakoff, 1972). However, the term is also used to describe the mitigating (or reinforcing) force of speech acts.

We notice finally that many traditional categories such as ADVERBS and TENSE AND ASPECT can have discourse functions. Changes in tense or aspect can for instance be used to signal what is background or foreground in a narrative. MODALITY can be interpreted broadly as a pragmatic notion referring to speaker attitudes. The prototypical modal forms are the modal auxiliaries but modality can also be realized by adjectives, adverbs, lexical verbs, or pragmatic markers.

Grammar and Variability

Grammatical structures are not stable but can vary depending on a large number of variables. These variables can be traditional sociolinguistic factors such as age, gender, and class. "Change in progress" may be first seen in the language of adolescents (see GRAMMATICAL VARIATION IN ADOLESCENT LANGUAGE). A much discussed ongoing change which is both regional and spearheaded by adolescents is for instance the use of *be like* as a quotative introducing reported speech (Andersen, 2001). Social class (see GRAMMAR AND SOCIAL CLASS) is another variable which has been studied with regard to phonology and morphology and to a lesser extent with regard to grammar. The influence of society and culture on grammar (see GRAMMAR AND THE INFLUENCE OF SOCIETY AND CULTURE) is studied in the field of "ethnosyntax." According to Wierzbicka (e.g., 1979), who uses the term, grammatical structures can encode ways of thinking specific to a certain culture. The study of CROSSLINGUISTIC DIFFERENCES IN GRAMMAR may also be of interest to applied linguists since the differences may result in transfer. REGISTER focuses on language variation due to the situation of use. Typical registers each with characteristic grammatical and lexical features are, for instance, doctor–patient communication (see GRAMMAR AND DOCTOR–PATIENT COMMUNICATION), political debate (see GRAMMAR IN POLITICAL DEBATE), or the law (see GRAMMAR IN THE LAW). Academic writing (see GRAMMAR IN ACADEMIC WRITING) is included among languages for special purposes and the research article (see GRAMMAR AND THE RESEARCH ARTICLE), abstracts, proposals, and so forth, are regarded as special genres each with their own grammatical and lexical features.

A number of changes have affected the grammar of electronic communication (see GRAMMAR AND ELECTRONIC COMMUNICATION) used in chatrooms and blogs on the Internet. The interest in the grammar of literature (see GRAMMAR AND LITERATURE) and its special properties has now developed into a new discipline of literary stylistics. It explores the use of linguistic methodologies in the analysis of the language of literature as well as in other types of text such as recipes or advertisements.

Grammar and Language Acquisition

There is an ongoing debate about how children acquire grammar centering on innateness versus learning by observation. This is discussed in the entry on the FIRST LANGUAGE DEVELOPMENT OF GRAMMAR. Conversely, LANGUAGE ATTRITION refers to the loss of grammatical features, for example, as a result of aging or the loss of grammatical features in L1 by L2 speakers.

Language teaching is a major area in applied linguistics. Grammar instruction in second and foreign-language teaching is by tradition very strong as pointed out in the entry on GRAMMAR IN LANGUAGE TEACHING AND EDUCATION. However, there is little agreement about the best approach to teaching grammar and the pendulum has moved back-and-forth between deductive and inductive teaching methods. In recent years grammar teaching methods have also been influenced by the availability of corpora (Aijmer, 2009). See also the discussion of different uses of corpora in the entry on TEACHING GRAMMAR AND CORPORA.

Grammar is often neglected in language programs in the workplace in favor of the teaching of communicative skills but grammatical correctness is central to the achievement of communicative competence (see GRAMMAR TEACHING AND THE WORKPLACE). However, the goals relating to correctness in the use of language may differ if the speakers are non-native speakers communicating with native speakers or if they are speakers using English as a lingua franca to communicate with other non-native speakers (GRAMMAR OF ENGLISH AS A LINGUA FRANCA).

Finally, we need to mention some foreground figures who have made major contributions to the description of the uses and structures of language and have therefore been important in applied linguistics. This section contains biographical notes on Geoffrey K. PULLUM and Ruqaiya HASAN.

SEE ALSO: Biber, Douglas; Greenbaum, Sidney; Johansson, Stig; Leech, Geoffrey; Quirk, Randolph; Sinclair, John; Svartvik, Jan

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Greenbaum, Sidney

CHRISTIAN MAIR

Sidney Greenbaum (1929–96) was born in London on December 31, 1929, a member of East London's orthodox Jewish community. Already holding BA and MA degrees in Hebrew and Aramaic (University of London) and a religious minister's diploma from Jews' College, he obtained a Postgraduate Certificate in Education in 1954 and worked full time as a primary school teacher for a number of years. During this period he managed to keep up his academic interests in the study of languages and language but increasingly refocused them on the subject of English (BA Hons, 1957). In 1965 he joined the Survey of English Usage at University College London where he completed his PhD under the supervision of his mentor and subsequent collaborator Randolph Quirk. The degree was conferred in 1967 and the thesis published in 1969 as *Studies in English Adverbial Usage*—the start of an academic career which took him to the United States for an extended period. For most of this time in the USA his academic home was the University of Wisconsin at Milwaukee, which he joined in 1969 and left as a full professor in 1983 when he returned to London to succeed Randolph Quirk as Quain Professor of English. He retired in 1990 while continuing to serve as a research professor and director of the Survey of English Usage until his untimely death on May 28, 1996 during a lecture tour through Russia. As a human being, Sidney Greenbaum presented a complex personality: sociable at conferences, lovably eccentric and generous with his advice on some occasions and to some of his colleagues and students, withdrawn into himself and less than conciliatory with others.

Sid Greenbaum's contributions to applied linguistics, and in particular to corpus-based applied linguistics, are twofold. Throughout his professional career, like his mentor Randolph Quirk, he was a mediator between the professional linguistic establishment and a general public keen on advice on matters of English usage; in the last few years of his life he successfully launched the International Corpus of English (ICE), the first corpus project allowing for serious and comprehensive comparative research on the "old" and "new" Englishes.

As a grammarian with a readership extending far beyond academia, he was tireless in making the case for an enlightened contemporary notion of "good English" which was to be based on solid documentation and analysis of empirical language data, and no longer on the haphazard collection of prescriptive folklore handed down from the past. His specific contribution to descriptive linguistic research on English grammar was the combination of corpus analysis and systematic elicitation of native-speaker judgment and performance. In its meticulous attention to detail, a work such as *Elicitation Experiments in English: Linguistic Studies in Use and Attitude* (1970, coauthored with Randolph Quirk), detailing the ingenious ways in which such elicitation experiments can be set up, is a model even today. *Good English and the Grammarian* (1988a), the title of a collection of essays, might well serve as the motto informing this side of his work.

As a coauthor, with Randolph Quirk, Geoffrey Leech, and Jan Svartvik, of *Grammar of Contemporary English* (1972), the subsequent *Comprehensive Grammar of the English Language* (1985), and their several spin-offs, he secured a position for himself among the most eminent grammarians of the English language. Success within academia, however, was never sufficient for him and in numerous publications he appealed to a general literate public. For

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example, *Oxford English Grammar* (1996) admirably combines accuracy of description and accessibility to the lay reader. It is in this work, incidentally, that he states his notion of good English most clearly, arguing that

> good English is sometimes equated with correct English, but the two concepts should be differentiated. Correct English is conformity to the norms of the standard language. Good English is good use of the resources available in the language. In that sense we can use non-standard dialect well and we can use standard language badly. (Greenbaum, 1996a, p. 17)

In applying this insight in works such as the revised version of Sir Ernest Gowers's classic *The Complete Plain Words* (1987) and the *Longman Guide to English Usage* (1988, with Janet Whitcut), Sidney Greenbaum, the mediator, placed great emphasis on detailed analysis and steered clear of the type of wholesale condemnation of the prescriptive tradition which would have alienated an at least partially conservative readership.

On assuming the directorship of the Survey of English Usage, the institution where he had started his academic career as a research assistant almost twenty years before, he seriously began to explore for himself the potential benefits of digitizing corpus data and analysis—a rather profound re-orientation for someone who, as he did, felt more comfortable in the position of the philologist than the computational linguist and data cruncher. His very own and original contribution to applied corpus linguistics is the creation of the ICE, designed to make possible systematic comparison of regional varieties of standard English, including second language varieties and varieties with a creole substrate, over a wide range of spoken and written textual genres (Greenbaum, 1988b, 1996b). When the idea of ICE was first floated in the early 1990s, it was met with skepticism if not mild mockery by some in the corpus-linguistic community who felt that there was little point in compiling another set of "small" one-million-word corpora at a time when other research groups were embarking on the compilation of the British National Corpus, with its 100 million words. More sociolinguistically minded critics, on the other hand, tended to point out that there was no way of ensuring that a particular text sample collected could be said to "match" its equivalent from another corpus in constellations as diverse as monolingual native-speaking New Zealand and multilingual English-using India or East Africa.

While Sidney Greenbaum spared no effort to recruit collaborators from around the globe and get other projects on their way, his own attention was devoted to the British component, ICE-GB. An assiduous and successful fund-raiser, he managed to secure the resources to produce a corpus which is searchable as plain text, but also with part-of-speech annotation and syntactic parsing, with integrated project-specific software allowing access to the material in very sophisticated ways at all levels. This gold standard of corpus compilation and annotation serves as a benchmark for the other ICE teams, even though it has not quite been reached by any of them. However, it is testimony to Sidney Greenbaum's foresight that the ICE project continued to grow even after his premature death and that now there are 10 additional subcorpora which are completed and available to the linguistic community (Australia, Canada, East Africa, Hong Kong, India, Ireland, Jamaica, New Zealand, Philippines, Singapore), and several others which are in the making at various stages of completion at the time of writing (2010). Most prominent among these and the most eagerly awaited is ICE-USA, but also Canada, Fiji, Malta, Nigeria, and South Africa, among others. As documentation of the speech of educated "model" users of English in these various contexts, the corpora have enormous potential when it comes to issues such as devising realistic norms of English in education in second language contexts or, more generally, modeling the "pluricentricity" of standard English in the 21st century. The latest use to which ICE-GB was put (by Sidney's doctoral student and successor as director

of the Survey of English Usage, Bas Aarts) was to combine it with parts of the London–Lund Corpus to produce the Diachronic Corpus of Present-Day Spoken English (DCPSE), the first corpus which makes possible research on diachronic developments in spoken English in "real time."

SEE ALSO: Corpora: English-Language; Quirk, Randolph; Tests

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Grounded Theory and Qualitative Research

DEBORAH R. DILLON

What Is Grounded Theory?

"Grounded theory" (GT) is a term used by many researchers to describe a general method of developing theoretical constructs inductively from data sources gathered as part of a qualitative research study. This method is in contrast to initiating a research study with a particular theory that one wants to prove or disprove, and then collecting data to support the preselected theory. It is also different from a qualitative study that is essentially descriptive analysis. Briefly, within the general view of "a GT approach," researchers conduct inquiry to generate theory inductively from data collected, typically using a "construct-oriented" approach (e.g., creating categories that describe patterns in the data). They accomplish this by using systematic and thorough procedures. As researchers collect data, they simultaneously analyze these data using induction, deduction, abductive reasoning, and verification to develop theory. This theory provides a full explanation of a process or scheme associated with particular phenomena. During the analytical process, researchers become more familiar with the data and develop hypotheses, insights, and questions that are used to drive further data collection and analysis, and refinement of the theory. A visual model is produced from the analysis that displays a coding diagram of the theory, and the tone of the research indicates that a scientific process has been undertaken, while also being sensitive to the data and ideas generated from it (Creswell, 1998, p. 43).

While GT is appropriate for many qualitative studies, scholars in the field would argue that there are important differences between GT as *an approach or general method* and GT *as methodology* (GTM). The latter is not only a perspective or approach for developing theoretical ideas, but also includes attention to the philosophical and theoretical perspectives held by the researcher that undergird the study (Bryant & Charmaz, 2007; Birks & Mills, 2011). GTM also rests on a set of procedures for conducting research, including how data are analyzed and how theory is developed and reported. However, the idea that there is one approach to doing GT research is open to debate, and some researchers believe that theory generation—while important—is not the only benefit that results from GT studies (see Corbin's introduction to Corbin & Strauss, 2008). Researchers can also use this approach to develop rich analyses of complex phenomena to address a wide array of research problems. As Corbin noted (Corbin & Strauss, 2008), a set of concepts provides a useful common language that researchers can work from as they build a body of knowledge and seek to impact practices. For the purposes of this entry, GTM as a detailed methodology and way of generating theory will be described.

What Are the Origins of Grounded Theory Methodology?

GTM is a well-developed set of procedures or analytic techniques designed with a particular end in view: creating a formal, substantive theory that explains a particular sort of social phenomena. GTM is based on the tenets of field research, where investigators "seek

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to move beyond particular meanings to identify general patterns and regularities in social life" (Charmaz, 1983, p. 93). Generating theory, then, requires that we take what we learn from observations and interactions with participants and indicate what these data tell us about the group upon which they are based, and about the social life of similar groups. Working between generating theory and staying true to the specific phenomena and participants under study provides a creative tension that researchers work within.

A rich history and database are associated with GTM. The database is used by many researchers and has resulted in a large number of publications in journals across many discipline areas. GTM was developed collaboratively by Drs Barney Glaser and Anselm Strauss (now deceased). Strauss studied at the University of Chicago and was greatly influenced by interactionist and pragmatist thinking. Thus, GTM is deeply rooted in the field of sociology, and these ideas became its foundational premises. Symbolic interactionist ideas relate to studying the empirical social world, the world of everyday experiences and group life, looking to understand what people experience and do (Blumer, 1969). A study of the empirical social world begins with the act of inquiry, by asking questions about the world under study; researchers then use the information gathered from these questions to formulate problems that will be examined and will guide inquiry. The analyst's work is to view the problem under study through a flexible lens, free to shift as new knowledge is gained, in order to correctly situate the phenomena under study. Because of premises such as its focus on understanding the nature of experience, the importance placed on generating theory grounded in reality, and the belief that researchers must get into the field in order to understand phenomena, GT is termed *fourth generation symbolic interactionism* (Denzin, 1992).

Strauss worked with Glaser on a seminal study designed to study the experience of dying, and it was through this work that the methods outlined in the seminal text *The Discovery of Grounded Theory: Strategies for Qualitative Research* (Glaser & Strauss, 1967) were generated. These initial ideas evolved in scope on the basis of new ideas and research studies (Glaser & Strauss, 1978), primarily developed by students of the two scholars. Glaser left academia to pursue publishing and consulting work worldwide. The two scholars interacted again when Strauss and his student Juliet Corbin published the *Basics of Qualitative Research: Grounded Theory Procedures and Techniques* (1990). Glaser's writings indicate a different perspective on GT than his colleague's, focusing on GT as a method and on the substance of the resulting theory that emerged. Glaser did not focus on the use of any particular philosophical or theoretical underpinnings to the research because he felt this diminished the potential of GT by constraining the researcher. Instead, he focused on the process of induction, and the researcher's skills and creativity in developing emerging categories from the data, seeking objectivity through the examination of multiple cases of a phenomenon under study. In contrast, Strauss was more interested in validation criteria and developing systematic approaches to doing research, by focusing on GT as a set of strategies and techniques that researchers could draw from when engaged in inquiry.

Historically, researchers have discussed what are called "moments" in qualitative research and the place that various GT approaches hold within this system (Denzin & Lincoln, 2005). Most agree that GT started in the "second moment" when the 1967 book was published. Later works, such as Strauss and Corbin's work, were critiqued as lacking attention to ontological and epistemological issues such as how researchers view the world, what counts as knowing and understanding phenomena under study, and the role of the researcher—all needed to design a high-quality study (Birks & Mills, 2011). Subsequently, GT researchers developed theoretical frameworks that GT methods and methodology are embedded within. Corbin and Strauss (2008) enlarged their discussions of GT by attending to philosophical issues such as pragmatism and interactionist theories from the Chicago Sociology traditions, themes that Strauss actually outlined years earlier (Strauss, 1987). The

focus on pragmatism influenced the development of axial coding, with this perspective serving as a focal point for the grounded theories that these researchers developed (Kelle, 2005). Researchers note that GT has moved to a "fifth moment" in which attention is paid to the role of the researchers with participants, the importance of writing and grounding the final write-up in the data, and the outcomes of this research particularly in terms of evoking change in society. Charmaz (2005, 2006) argues that GT methodologists need to move beyond the positivist origins of GT and incorporate many of the methods and questions posed by constructivists over the past 20 years as well as by social justice theory advocates. She believes that this will allow researchers to become more nuanced and reflexive in their practices, and impact social change. Several educational researchers continue to draw upon a pragmatist's perspective to undergird GTM, in which researchers study practical problems, identified by participants or in the field, and the goal is to press change to improve situations and individuals' lives (see Dillon, O'Brien, & Heilman, 2000).

How Is Grounded Theory Methodology Carried Out?

Glaser and Strauss's seminal text, *The Discovery of Grounded Theory*, documented in detail the procedures for engaging in GT research, and these ideas were embellished by various researchers in later years. First, data are collected in a variety of forms such as interviews, observations, field notes, documents, and conversations. These data are analyzed with the goal of developing *concepts* or *conceptual categories* that describe basic social processes, and are supported by *properties* that describe the qualities of the categories. To generate the categories and properties, researchers engage in *open or substantive coding*. They read their data and begin to code all different types of actions, events, and processes—anything related to the research questions guiding the study—and write analysis notes in the margins of the documents they are working on. This process is time-consuming because the researchers are carefully coding many concepts as they work through considerable numbers of data. Second, the initial codes the researcher generates from data are compared to new codes that are identified in new data that are collected. This often results in the merging, modification, and clarification of codes. This back-and-forth, cyclical process of comparing new data with previous data that have been collected and coded is called *constant comparative analysis*. The process also sets the stage for *core codes* to be developed and initial theory to be formulated. Strauss and Corbin (1990, 1998) outline a third step where the researcher engages in *axial coding*, wherein data are put together in new ways after open coding, allowing the researcher to make connections between categories. In particular, the researcher selects one open coding category, places it as the central phenomenon, and then relates all other categories to it.

During these analytic processes, researchers look at "conditions, context, action/interactional strategies and consequences" (Strauss & Corbin, 1990, p. 96) as they code data. By this point in the analysis process, the researcher is ready to commit to a set of core codes. The next step is for researchers to use *selective coding* of data, using the set of core codes to guide the coding and filtering out of data that have little importance to the core categories and supporting properties. Note, the filtered-out data are not totally discarded. Instead, they may be used to test the constructs later in the process or provide discrepant or conflicting explanations of events or actions.

Once a large enough number of the data have been carefully analyzed in this manner, researchers begin to selectively sample new data that are collected, using the core codes. This is called *theoretical sampling* and is followed by the development of *theoretical codes*, or the process of connecting theoretical ideas to the data. Researchers know that theoretical sampling and coding are key to seeing how various concepts come together into a

theory that addresses one's research purpose and questions. It is important that these theories are not introduced too soon, but are developed carefully during the analysis process. Often theories are conceptualized and clarified *theoretical memoing*, or the creation of notes and maps or drawings that a researcher develops during analysis. Glaser (1978), in particular, discusses the importance of memoing, reporting that "Memos are the theorizing write-up of ideas about substantive codes and their theoretically coded relationships as they emerge during coding, collecting and analyzing data, and during memoing" (1978, p. 83). Glaser and others (Wolcott, 1990; Alvermann, O'Brien, & Dillon, 1996) also indicated that it is critical to engage in memo and other forms of writing early and often during data collection and ongoing analysis of data. When researchers write and sort memos, they are engaged in a critical process that allows new ideas to emerge and the connection of ideas, leading to a theory that intricately explains the phenomenon under study. In the final product, the categories and properties generated throughout the data analysis processes, along with the theoretical memos, are used to explain conditions, context, action/interactional strategies, and consequences. Tables, figures, and data excerpts are used as evidence to support the write-up, and the theory generated is linked with the existing literature in the field. What follows is an example of GTM in action, to serve as an illustrative case of the specific processes a researcher undertakes when engaging in this form of inquiry.

Grounded Theory in Practice

In Dillon's dissertation research (1985), later reported in Dillon (1989), she reports on a year-long GT study of one teacher and his students in a low-track secondary English-reading classroom in rural Georgia. Her research purpose was to generate a description and interpretation of the social organization in the classroom. Of special interest in this study were the actions and patterns of actions the secondary teacher displayed during daily classroom lessons, how these actions were formed and influenced by the students' actions, and how the actions impacted the social organization of the classroom and the cognitive and affective learning of the students. Four research questions guided the data collection:

1. What is the nature of the social organization in the observed classroom?
2. What verbal and nonverbal actions/patterns of action does the teacher display as he interacts with students that have low reading ability? How does the context of the learning situation/social organization influence the teacher's actions/patterns of action?
3. How does the teacher perceive and interpret his own actions in various contexts involving students that have low reading ability? Does the teacher perceive his actions changing when working with students that have average or above-average reading ability?
4. How do the students in the observed class and administrators of the school perceive and interpret the actions of the teacher during lesson interactions?

Dillon merged an ethnographic approach, designed to address the classroom, school, and community cultural influences played out in the classroom, and a more fine-tuned classroom interaction analysis, addressed by the lens of symbolic interactionism (Denzin, 1978). Primary data for the study were collected in the form of field notes, and audio- and videotaped lesson transcriptions were collected during an exploratory phase from September through February on a weekly and two-weekly basis, and from March through May on a daily basis. In her role as participant observer, Dillon sat with the students during

class, participating in the activities; talking with them before, during, and after lessons; and writing field notes. Her daily site visits culminated in conversations with the teacher, Mr Appleby, after class, during his planning period. These primary data sources were triangulated with secondary data sources including (a) structured and informal interviews, (b) questionnaires, and (c) documents/artifacts.

Dillon collected and analyzed the data simultaneously using the constant comparative method (Glaser & Strauss, 1967). Her process involved combining inductive behavior-category coding with simultaneous comparison of all incidents observed, and was used with all data. Her daily analysis procedure consisted of fleshing out, reading, and rereading field notes; listening to and transcribing audio- and videotapes; looking for patterns of actions/meanings in the data; and reflecting on the data by writing theoretical memos (Glaser & Strauss, 1978) or analytic insights. She continued this process as she collected data, looking for incidents that confirmed or disconfirmed her initial assertions about the social organization in the classroom. These initial assertions included theories that Dillon thought undergirded Appleby's actions, in particular the delicate balance between teachers who help students learn and teachers who help students learn helplessness. Dillon constructed theoretical memos depicting her thinking processes as she tested assertions, and she looked for key linkages in the data connecting similar instances of the same phenomenon (e.g., her observation and interpretation of an event or action, as compared to those of the three key informants and Appleby). After the school year ended she continued to test and retest her assertions and the categories and properties that were emerging, examining and reexamining all data. Part of her analysis process included cutting apart one copy of all field notes and interview transcripts and placing common incidents together on colored sheets of paper—a separate color for each category. This process helped her display the data in order to count the number of incidents under each category to see if saturation had been reached. (Saturation is reached when a researcher has multiple instances of a phenomenon that occurs over several contexts and time frames, reassuring the researcher that she has evidentiary warrant to support an assertion.) She also continued to read the intact copies of the data to keep a holistic picture in mind. During the analysis process she asked Appleby to read, react to, and help her firm up the assertions and the categories, properties, and instances of data under these assertions.

The emerging theory that Dillon generated from the data analyses was that the social organization in the observed classroom was constructed jointly by Appleby and his students; Appleby assumed the role of translator and intercultural broker (Erickson, 1986) during teacher and student interactions. In this role, he worked to provide a bridge between students' home culture and school culture. He also interacted with students in ways that met their cognitive and affective needs. Thus, Appleby established an environment in the classroom that resulted in reduced resistance to learning and increased active participation during lessons. Dillon generated 11 categories, each with 5–10 properties (Dillon, 1985) that supported her theory. In a later analysis (Dillon, 1989), she took the 11 categories and consolidated these into three core interrelated categories: (a) Appleby established an open, risk-free environment; (b) he strategically planned and structured lessons to meet the interests and needs of his students; and (c) he implemented lessons in which all students could be active, successful learners. In her write-up, Dillon defined each category and provided evidence using vignettes, excerpts from field notes, interview comments, and documents. For example, for the category "Implementing lessons in which students can actively participate," Dillon showed how Appleby created the environment, planned the content to be learned, and structured lesson activities to promote students' active, meaningful learning. Three properties supported the category of implementing lessons where students could actively participate: (a) allowing students to use their natural language during lesson interactions and transforming the teachers' language to match that of his

students, (b) anticipating possible difficulties students might have with assignments and adapting lessons to meet the needs of students, and (c) bridging gaps or scaffolding between the background knowledge students had and new concepts and materials they were to learn. To show Appleby as scaffolding instruction (property [c] above), Dillon shared a clip from a lesson on *The Old Man and the Sea.* During these interactions Appleby helped students bridge the gap between a previously read portion of the story and the portion they were going to read next, and explained difficult vocabulary using verbal and non-verbal means.

> Appleby: *LaVonne, tell us a few things about the story thus far. How long has the old man been without fish?*
> (A group of students answer with LaVonne. Appleby asks LaVonne if she'd like to read aloud from the text—she agrees. As she reads Appleby stops her at the points he would have stopped at, and fills in information he believes his students need to know in order to understand the rest of the story.)
> Appleby: *Ok, bait, bait in this story is not like you may be used to. It's fish you use to catch other fish—not worms like some of you asked.* (and a bit later in the lesson)
> Appleby: *Ok, turtle-ing—now this is how you used a ship with a crow's nest.* (He stops to explain what a crow's nest is for a student that asks. Appleby also explained how bad the glare from the sun on your eyes was during the whole process.) (Lesson Transcription—4/30)

After this example, Dillon interpreted the data clip for readers, describing how Appleby attempted to build background knowledge for his students as they read by teaching vocabulary in the context of the story, in the belief that this is more meaningful for the students. Dillon concluded her overall analysis by bringing all the categories and properties together, weaving the emerging theoretical ideas she had generated as she presented her findings together for the reader. In the end, Dillon linked her emerging theory with previous research, and pressed the field forward in new directions—theoretically and methodologically—with her concluding section about what makes a teacher effective.

Deconstructing the Example

What criteria are used to determine the quality of GTM studies? The excerpt above shows how GTM was used by a qualitative researcher who worked to understand events in one context, over time, where large numbers of data were systematically collected and analyzed in an ongoing fashion. Initial speculations were compared with subsequent data, and the researcher used a variety of systematic analysis strategies to discern patterns in actions, events, and perspectives held by participants. The resulting assertions were larger units of explanation for what occurred in this classroom and why, and the categories and properties delved into facets of the assertion statement to illuminate specifics in the setting, thus offering stronger arguments for the assertion. Each category and property was clearly defined, and data excerpts that best illuminated that category or property were provided, usually from more than one data source.

The most important criterion used to judge GT studies focus on validity, although not in the traditional sense of this term. Studies are judged by whether the concepts (categories and properties) put forth closely fit the phenomena they purport to explain. A careful and thorough process of constant comparative analysis helps to ensure this result. In addition, the findings of the study should be relevant to the participants under study, and the theory should be workable in indicating how the problem is resolved or the phenomena under study are understood. In a strong study the theory can also be modified, through additional constant comparative analysis, to reflect new and relevant findings (Glaser &

Strauss, 1967; Glaser, 1978, 1992). Strauss and Corbin (1990) elaborate on these key ideas, indicating two levels of criteria for evaluating a GT study. The first level includes seven criteria and focuses on a series of questions that readers might ask as they read a study and that enables the readers to make judgments about the components of the research process and the resulting write-up. These questions focus on how the sample was selected, how major categories emerged, what evidence led to these, how the theoretical sampling process unfolded, what the emerging hypotheses were, and how and why core categories were selected. The second level of criteria focuses on the empirical grounding of the study and includes the following set of questions:

> Are concepts generated? Are the concepts systematically related? Are there many conceptual linkages and are the categories well developed? Do they have conceptual density? Is much variation built into the theory? Are the broader conditions that affect the phenomenon under study built into its explanation? Has process been taken into account? Do the theoretical findings seem significant and to what extent? (Strauss & Corbin, 1990, pp. 252–7)

These researchers note that the criteria are guidelines, to account for future innovations in the field. But they follow this statement with a caveat, noting that it is critical for GTM researchers to be forthcoming with their research processes and procedures to help readers understand the quality and value of studies.

GTM is a substantive area of research and provides a flexible, yet carefully thorough set of procedures for researchers to use when trying to understand complex problems or events in context, and over time, where large numbers of data are collected and need to be systematically analyzed to result in an explanation that will be of use to the participants involved in the research. This approach continues to evolve to meet the needs of researchers and their interests (Charmaz, 2005), and when used by skilled and thoughtful researchers, it can advance many fields where it is employed.

SEE ALSO: Case Study; Ecological Approaches in Qualitative Research; Epistemology and Ontology; Interviews in Qualitative Research; Positivism and Postpositivism; Qualitative Corpus Analysis; Qualitative Literacy Research; Qualitative Teacher Research; Researcher Reflexivity; Validity in Qualitative Research

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Guilherme, Manuela

ALISON PHIPPS

Manuela Guilherme's contribution to applied linguistics is in the field of intercultural education and intercultural communication. She was born in Mozambique, in a highly multilingual and multicultural environment, and went to Portugal in order to graduate in German and English philology at the University of Lisbon. She worked there for many years as a foreign-language teacher and as a teacher educator. In 2000, after moving to the UK and studying at Durham University, she was awarded a PhD. Her PhD was a distinctive examination of Mike Byram's concept of *savoir s'engager*—knowing how to engage politically—which is elaborated in his *Teaching and Assessing Intercultural Communicative Competence* (Byram, 1997). Guilherme's investigations had previously involved, and continued to involve, substantial study visits to various universities in the USA, namely the California Foreign Language Project at Stanford University, Brown University, University of California (Davis), and California State University (Fullerton), among others, in order to carry out research on critical pedagogy within the context of bilingual education programs and intercultural communication. It also involved detailed empirical work with Portuguese teachers of foreign languages. It used both quantitative and qualitative methods in an innovative blend, and engaged a range of critical philosophical, pedagogic, and poststructural thought. She brought new influences to intercultural language education through combined study of Habermas, Derrida, Freire, and Giroux.

Guilherme's PhD thesis (Guilherme, 2000) was awarded the Emma Birkmaier Award by the American Council on the Teaching of Foreign Languages and the *Modern Language Journal* in 2001. This groundbreaking thesis marked the beginning of a distinguished academic career in critical intercultural language education with a particular focus on education for citizenship. Guilherme published her doctoral work as *Critical Citizens for an Intercultural World* (Guilherme, 2002) in the Multilingual Matters series *Language, Intercultural Communication and Education*, edited by Michael Byram and Alison Phipps. Her book remains one of the leading publications in the series and is recognized as a crucial and original contribution to work on critical intercultural citizenship. What distinguishes Guilherme's scholarship is her blend of practical application, empirical rigor, and theoretical synthesis. She combines considerable understanding of theoretical concepts with a critical outlook on language pedagogy to develop new models which can indeed be applied in classroom practice in language teaching. Her interdisciplinary model for teaching and learning foreign cultures is a significant and much-cited example (Guilherme, 2002). It combines the fields of intercultural communication, critical pedagogy, and intercultural communication to demonstrate how foreign-language teaching and learning index the development of critical citizenship. As such, and through this first monograph, Guilherme sets an agenda for foreign-language/culture education in Europe and the Global South, with the aim of bringing a critical agenda to a field dominated by functional approaches.

In 2001, Guilherme was appointed as a social scientist researcher at the Centre for Social Studies at the University of Coimbra, Portugal, a world-leading research center for critical and postcolonial interdisciplinary studies. Here she published a jointly edited special issue of the journal *Language and Intercultural Communication*, and a stand-alone edited volume,

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Critical Pedagogy: Political Approaches to Language and Intercultural Communication, with Alison Phipps (Phipps & Guilherme, 2004). From Coimbra, she successfully coordinated two significant European projects:

- INTERACT—Intercultural Active Citizenship Education (VI European Framework and Fundação Calouste Gulbenkian) developed European work in the field of Critical Intercultural Citizenship: http://www.ces.uc.pt/interact (2004–7);
- ICOPROMO—Intercultural Competence for Professional Mobility, which focused on the development of intercultural competence for multicultural teamwork (Leonardo da Vinci Programme and the European Centre for Modern Languages, Council of Europe). http://www.ces.uc.pt/icopromo/; http://www.ecml.at

Both projects were marked by considerable empirical research and the development of modules and activities which would develop the critical awareness which, for Guilherme, is central to education for intercultural citizenship. Through the research and scholarship underpinning her primary conceptualization of both projects, elaborated through the team research, Guilherme went on to publish widely in the field. In 2010 an edited volume, *The Intercultural Dynamics of Multicultural Working* (Guilherme, Glaser, & Mendez-Garcia, 2010) was published, which brought new data and theory into the field of intercultural working and which drew on sociolinguistics, business communication, intercultural education, critical pedagogy, and foreign language pedagogy and brought critical perspectives into professional training for mobility.

As an associate professor and senior researcher at the Institute of Education, Universidade Lusófona de Humanidades e Tecnologias, Lisbon, Guilherme has been developing the concept of intercultural responsibility, that she proposed within the scope of the ICOPROMO project in order to further the term of "intercultural competence" in the European context. In addition, she is also involved in various European Union–Latin America research projects focusing on higher education development, as well as on citizenship and intercultural and language education, based mainly in Portugal, Spain, Brazil, and Mexico, where her doctoral empirical study questionnaire (2000) has now been implemented.

SEE ALSO: Byram, Michael; Citizenship Education; Critical Pedagogy; Intercultural Communication; Intercultural Competence; Intercultural Learning

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Haberland, Hartmut

BENT PREISLER

Hartmut Haberland (b. 1948) is a German-Danish linguist whose main contributions to applied linguistics, within the areas of pragmatics and sociolinguistics, include being founder, in 1977 (with Jacob L. Mey), and coeditor of the internationally recognized *Journal of Pragmatics*. He was thus a prime mover in the redefinition of linguistics as an interdisciplinary study of language as social practice, at a time when linguistics was being strongly influenced by mentalism and transformational grammar. Haberland's earlier research also inquired into the role of language in what was later to be known as information technology, computer linguistics, and "man-machine" communication (www.ruc.dk/~hartmut/). Later work focuses on the relationship between languages in multilingual societies and the role of language in interactive speech communication, as reflected in phenomena such as language alternation and language choice. His research interests also comprise language policy, and he is a well-known participant in the Danish language debate concerning the relationship between Danish and English as an international language. He is a founding member of the international research center CALPIU (Cultural and Linguistic Practices in the International University), which was first conceived at Roskilde University in 2003 (www.calpiu.dk).

Haberland was born in Hanover, Germany, in 1948. He studied German Language and Literature, General Linguistics and Philosophy in (West) Berlin and Stuttgart. He wrote his MA thesis within the area of Computational and Algebraic Linguistics in 1971. Since 1974 he has been living and working in Denmark, becoming a Danish citizen in 2005, his place of employment being Roskilde University. His past international experience, besides periods of employment at the Freie Universität in Berlin and the University of Düsseldorf (Germany), includes teaching at Copenhagen University (Denmark) and being an exchange professor at the University of Athens (Greece) and a visiting scholar in Japan (Dokkyo University, Saitama Province, 1995) and China (Beijing University of Foreign Studies, 1996). He taught at the Guangzhou Summer School of Pragmatics, China (2006), and carried out research-related work in Osaka (Kansai University), Japan, and the Hong Kong Institute of Education (2009), where Haberland is a Senior Research Fellow (External) of RCLEAMS (Research Center into Language Education and Acquisition in Multilingual Societies). More information is available online (www.ied.edu.hk/rcleams/).

The first widely known work (co-)authored by Haberland was a textbook, *Soziologie + Linguistik. Die schlechte Aufhebung sozialer Ungleichheit durch Sprache* (Hager, Haberland, & Paris, 1973), used at a number of universities in Europe for several years. The *Journal of Pragmatics* was founded by Haberland and Jacob Mey in 1977. In the editorial of the first issue, the authors defined pragmatics, not as an aspect or branch of linguistics, but as *a way of doing* linguistics (Haberland & Mey, 1977). There was thus no need for the classic distinction between "pure" and "applied" linguistics. Linguists were not to describe an abstract language "competence" but a concrete language "performance," which—just like any other social action—is a manifestation of social and societal conditions and practices. "The pragmatic question *par excellence* is therefore not: What does an utterance mean? But: How did this utterance come to be produced?" (p. 8), and the theoretical foundations of human socialization processes, including linguistic ones, are also the foundations of linguistics itself. As an extension of this line of thinking, Haberland's writings reflect

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a general concern with the relationship between interaction and text, spoken and written language: to be analyzed, an utterance has to be decontextualized, thereby becoming a text (entextualization), which can be recontextualized (e.g., Haberland, 1994, 1999).

As another, related topic to which he has made several important contributions, Haberland—himself of German origin—is concerned with *language contact* as an aspect of social and ultimately cultural contact, obviously inspired both by his own encounter and experiences of many years with Danish language and society, and by his cross-cultural marriage (his wife is Irish). This has led to a preoccupation with the functions of language in face-to-face interaction, particularly the (sociolinguistic) question of "what makes people choose one language over another, if they have a choice?" His early works dealt with the languages of smaller European nations. Not surprisingly, when the awareness dawned that English was becoming the language of globalization and the dominant *lingua franca* of the world, Haberland became interested in the functions of English vis-à-vis other languages within societies or environments, or both, where English is not a native language (e.g., Haberland, 1989). In 1991 he coauthored (with three other linguists all of whom were non-native speakers of Danish) a provocative and much debated article on the danger of the Danish language being swallowed up piecemeal as its various functions are gradually taken over by English (Haberland, Henriksen, Phillipson, & Skutnabb-Kangas, 1991), thus co-initiating the debate on the influence of English in Denmark, which is still going on. English is often believed to be taking over various social "domains" (e.g., advertising or education), so that by the same token the local languages suffer "domain loss." As a worst-case scenario, Denmark is thought liable to become a "diglossic" (Fishman, 1967) society, with English as the high-status language used in official and public domains, and Danish the low-status language of informal, private domains among family and friends. However, Haberland's critical analyses of the "domain (loss)" concepts have pointed out that "domains," if anything, are empirically based constructs whose objective existence can only be verified through sociolinguistic research; as mere a priori subjective notions, "domains" cannot in themselves be used as a basis for sociolinguistic investigation.

Haberland's critique, on sociolinguistic grounds, of the popular explanation of how English is supposed to be supplanting other languages, domain by domain, should be seen in relation to his general concern with the global role of English, inspired by concepts such as "hegemony" (Gramsci, 1992–6) and "globalism" (Beck, 2005), see Haberland (2009). Within the framework of the CALPIU research center his research focuses on the complementary notion of "localization," analyzing the role of the local language (*in casu*, Danish) in transnational student mobility—particularly transnational students' need for and success in using local languages as languages of internationalization.

Haberland is coeditor (with Jacob Mey and Kerstin Fischer) of a new international journal, *Pragmatics and Society*, which appeared in the summer of 2010.

SEE ALSO: Cross-Cultural Pragmatics; English as Lingua Franca; Language and Globalization; Linguistic Relativity and Second Language Acquisition; Multilingualism; Politeness and Face Research

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Halliday, M. A. K.

JONATHAN WEBSTER

For over half a century, Professor Michael Alexander Kirkwood (M. A. K.) Halliday (1925–) has been engaged in practicing "appliable" linguistics. Approaching language from the vantage point of meaning and purpose, Halliday provides a theoretical framework, known as systemic functional linguistics (SFL), for dealing with questions about how and why we come to use language as we do for being and becoming who we are.

Born Easter Monday, April 13, 1925, in Leeds, Yorkshire, England, Michael Alexander Kirkwood Halliday grew up with two fascinations: one was China, the other language. In early 1942, Halliday volunteered for the national services' foreign language training course, and succeeded in being selected to study Chinese. After spending a year serving overseas in India with the Chinese Intelligence Unit, doing counterintelligence work, he was pulled back to London to teach Chinese to new recruits. The need to explore pedagogical questions about Chinese became his first source of attraction to linguistics.

After leaving the army in 1947, Halliday decided to pursue his degree from the University of London externally in China. He enrolled as a student at Peking University, where he took classes in the Chinese Department. After completing his London degree, he worked in China for the Chinese Industrial Cooperatives for about six months before re-enrolling at Peking University. Luo Changpei, who Halliday had met during his earlier study there, took him on and started training him in historical linguistics and Sino-Tibetan studies. After about six months or so, however, it became clear to Luo that Halliday really wanted to work on Chinese dialects, so Luo arranged for Halliday to study under Wang Li at Lingnan University in Canton, about 1,500 miles to the south of Peking (Beijing).

Wang Li was conducting a phonetic survey of the widely differing varieties of Cantonese of the Pearl River Delta in southern China. Complementary to the ongoing phonetic survey, Halliday developed a grammar questionnaire to investigate not only the differences between Mandarin and Cantonese grammar but also how local dialects differed in their grammar from Cantonese.

Both Luo Changpei and Wang Li influenced the development of Halliday's thinking, as evidenced by his paper "A Systematic Interpretation of Peking Syllables" (1992/2006), in which Halliday combined traditional Chinese phonology, as interpreted by Luo and Wang, with prosodic phonology as developed by Firth.

In 1956, one year after Professor Halliday completed his PhD at Cambridge, but three years before the subsequent publication of his PhD dissertation "The Language of the Chinese 'Secret History of the Mongols'" (1959/2006), his paper "Grammatical Categories in Modern Chinese" was published in the *Transactions of the Philological Society* (1956/2006). In this paper he put forward a scheme of grammatical categories for the description of "Modern Pekingese formal colloquial," or, as he described it, "the type of Chinese which a foreigner learns" (Halliday, 1956/2006, p. 210). The textual basis for this description came from a small corpus of spoken material, which he recorded in Peking and elsewhere.

While at Cambridge, Halliday became increasingly committed to general linguistics and especially to working with colleagues in the Linguistics Group of the British Communist Party. Although Firth was at the other end of the political spectrum, Halliday found considerable common ground between the Cambridge Linguistics Group's thinking about

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language and Firth's emphasis on the social nature of language, his central concern with meaning, his integration of the paradigmatic and syntagmatic modes of order, his sense of multiple patterning in language, his requirement of flexibility, and his clear distinction between general (theoretical) and particular (descriptive) categories.

Halliday also took part in the activities of the Cambridge Language Research Unit (CLRU), which was founded by Margaret Masterman. Whereas computer specialists saw machine translation as essentially an engineering problem, the CLRU instead considered it to be primarily a linguistic problem, requiring powerful theoretical tools for analyzing and synthesizing text. In the course of their discussions on the principles for representing linguistic structure, Halliday recalls putting forward his arguments for formalizing paradigmatic relations. However, as he recalls, "I did not know how to do it—and I totally failed to persuade anyone else of this!" (Halliday, 1993/2005a, p. 138). Since then, however, he has made significant progress toward advancing our knowledge of how one can indeed "model language paradigmatically: that is, as choice, with the system network as organizing concept" (Halliday, 1995/2005, p. 208).

In 1960, some two years after taking up the position of lecturer in general linguistics at Edinburgh, Halliday completed "Categories of the Theory of Grammar" (1961/2002), which proved foundational in the development of SFL. In 1963 he moved back to London, where as director of the Communication Research Centre at University College, he approached the Nuffield Foundation with a project for working on the grammar of English from an educational standpoint, with a view to curriculum development at primary and secondary level. The outcome was the Nuffield (later Schools Council) Programme in Linguistics and English Teaching, with a project team composed of primary school, secondary school, and university teachers. The materials developed through this collaborative effort included *Break-through to Literacy*, *Language in Use*, and, indirectly, *Language and Communication*.

Also in the 1960s, Halliday produced a phonological description for English intonation, which was based on his study of recorded texts of casual conversation among educated speakers of British English, supplemented by his own observations of naturally occurring speech, including his own. He analyzed intonation as a complex of three phonological systems, tonality, tonicity, and tone, these being interdependent with rhythm. Halliday also noted how the pitch contour of speech figures prominently in the exchange of information, foregrounding new information from that which is otherwise recoverable from the discourse and its context of situation. (See Halliday, 1963a/2005, 1963b/2005, 1967, 1985/2005.)

In the 1970s, prompted by his experience of working with teachers of English as a mother tongue and their questions about how children develop their ability to use language, Professor Halliday conducted an intensive study as a participant observer of his own son's developing linguistic ability from 9 months to $2^1/_2$ years of age. The methodology was simple—using notebook and pencil to record Nigel's utterances. The data proved rich, providing a wealth of insight into how a child learns how to mean. Building on the work of Basil Bernstein, Halliday proposed a set of seven functions, the first six serving as the basis of interpreting the language of very young children: (a) instrumental, (b) regulatory, (c) interactional, (d) personal, (e) heuristic, (f) imaginative, and (g) informative. Through studying Nigel's language development, Halliday aimed to test his hypothesis that, in the transition to adult speech, these functions would appear, approximately in the order listed (see Halliday, 1975/2003).

In early 1976 Halliday moved to the University of Sydney as foundation professor of linguistics, and served as head of the department for its first 10 years. In 1979 he was elected a fellow of the Australian Academy of the Humanities, and in 1989 he became a corresponding member of the British Academy. He retired as emeritus professor from the University of Sydney at the end of 1987.

In the early 1990s, Halliday spent some time working with the COBUILD project at the University of Birmingham. It was there that he collaborated with Zoe James in a study of the systems of polarity and primary tense in the COBUILD corpus, and whose findings are reported on in "A Quantitative Study of Polarity and Primary Tense in the English Finite Clause" (1993/2005b). In 2002, he became the inaugural recipient of the AILA gold medal award for exemplary scholarship in the field of applied linguistics. He is currently advisor to The Halliday Centre for Intelligent Applications of Language Studies (City University of Hong Kong), which bears his name.

Perhaps because Halliday was a language teacher turned linguist his perspective has always been grounded in how we use language, and his goal has been to achieve an "appliable" theory leading to an understanding of the enabling power of language. His work has been of interest to educators, computer scientists, and practitioners in various professional fields. What comes across in Halliday's writings is a man with a great social conscience and strong convictions. While he makes no exaggerated claims about being able to radically transform language and society, he nevertheless sees the contribution linguists can make through achieving a better understanding of the power and potential of language for doing both good and bad.

This biography of M. A. K. Halliday is adapted from "M. A. K. Halliday: The Early Years, 1925–1970" (Webster, 2005), which was compiled from two sources: a previously unpublished interview conducted with Professor Halliday in 1987 by Gunther Kress, Jim Martin, and Ruqaiya Hasan; and "M. A. K. Halliday" by Keith Brown and Vivien Law (2002).

SEE ALSO: COBUILD Project; Lexicogrammar; Suprasegmentals: Intonation; Systemic Functional Linguistic Approaches to Teaching English-Language Learners; Systemic Functional Linguistics

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Hamp-Lyons, Liz

DEBORAH CRUSAN AND ALAN DAVIES

The work of Liz Hamp-Lyons (1946–) in applied linguistics, particularly in the area of second language writing and second language writing assessment, continues to have an impact on the field. In addition to these foci, she has made major contributions in the areas of teacher preparation, English for academic purposes, the assessment of speaking and listening, school-based assessment, large-scale testing, and test development. An international scholar, she has been one of the first second language writing assessment researchers to be recognized by and make inroads into the L1 composition world.

Education

As a young woman in England, Hamp-Lyons earned a Certificate of Education from the University of Leicester and began a career as a teacher. In 1976, she received an Advanced Diploma in English Language Teaching (ELT) from the University of Exeter, followed in 1978 by an MA in Language Education also from Exeter. She received her PhD in Applied Linguistics from the University of Edinburgh in 1986, focusing on writing assessment for her dissertation.

Academic Appointments

After a stint in Malaysia as an EFL teacher, Hamp-Lyons moved to the University of Edinburgh and a position with the Institute for Applied Language Studies (IALS). IALS had been charged with a major validation study of the English Language Testing Service (ELTS) test, launched a few years earlier by the British Council. Because of its unique English for specific purposes (ESP) construct, the test remained contentious in theory and cumbersome in practice. Hamp-Lyons pursued the validation, developing a special interest in the assessment of writing, which was central to the ELTS definition of specific purposes. That interest in writing assessment became the topic of her doctoral studies and remains as one of her main research interests.

In 1986, Hamp-Lyons took a position in the United States at the University of Michigan, Ann Arbor. At Michigan, she wore two hats: she worked in language testing at the English Language Institute (ELI) and served as associate director of the English Composition Board, at that time one of the premier composition programs in the United States. In that position, she managed the development of the writing assessment used to place all first year students into composition classes at the university, a monumental task. Because of her dual appointment at Michigan, she was able to bring together her rich experience in English as a foreign language, her growing interest in writing, and her skills in language testing. After moving from Michigan, Hamp-Lyons served as director for research in Applied Language Studies and coordinator of the MA in Applied Linguistics the University of Colorado, Denver, from 1990 to 1996.

In 1996, Hamp-Lyons moved to Hong Kong Polytechnic University (PolyU) as chair professor of English and head of the Department of English. In 1998 at PolyU, in addition

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to her other positions, she became director of the Asian Centre for Language Assessment Research, an important juncture for researchers from the Chinese mainland where English learning, teaching, and assessment were growing very fast. Because of its primary focus on language rather than literature, the English department was a very suitable environment for Hamp-Lyons's work. Thanks to her predecessor, funding had been secured for a new English-language proficiency test, so Hamp-Lyons, with the help of Tom Lumley and Sari Luoma, developed the Graduate Skills Language Proficiency Assessment (GSLPA) to assess the English proficiency of Hong Kong university students at graduation. This special purpose test, making use of varieties of English native to Hong Kong, both in terms of accent and in terms of discourse patterns, was very much ahead of its time and should have been championed by proponents of World Englishes. Although the test still exists, it has fallen victim to political infighting among Hong Kong universities and to unease in official circles about the prospect of moving away from tests such as IELTS and TOEFL.

For nearly a decade, Hamp-Lyons concentrated on applied linguistics developments in Hong Kong. Then for a period of one year, she was at the University of Melbourne, Australia, where she acted as director of the Language Testing Research Centre and honorary professorial fellow in the School of Languages. Currently, she holds honorary appointments as special professor in English Language Education at the University of Nottingham, England, guest professor at Shanghai Jiaotong University in China, and honorary faculty of education professor at the University of Hong Kong and takes part in research activities and supervision, consulting, conducting funded research projects, and honorary professorial activities.

Journal Articles, Book Chapters, and Journal Editing

Liz Hamp-Lyons is widely published in the field of applied linguistics and TESOL. Her articles appear in journals such as *Annual Review of Applied Linguistics*, *Applied Linguistics*, *Assessing Writing*, *College Composition and Communication*, *College ESL*, *English for Specific Purposes*, *English Teaching: Korea Association of Teachers of English*, *ESP Malaysia*, *Higher Education Review*, *The International Journal of Interdisciplinary Social Sciences*, *Journal of Second Language Writing*, *Language Learning*, *Language Testing*, *Melbourne Papers in Language Testing*, *Modern Language Journal*, *Open Learning*, *Prospect: Journal of Australian TESOL*, *RELC Journal*, *System*, *TESOL Quarterly*, and *World Englishes*. She has published numerous book chapters with Boynton-Cook, Cambridge University Press, Gunther Narr, Lawrence Erlbaum, MLA, NCTE, Routledge, Sage, Springer, and TESOL. She is the founding editor of the *Journal of English for Academic Purposes* and has coedited that journal with Ken Hyland since 2001. Also since 2001, she has been the editor of *Assessing Writing*. She served as coeditor (with Tom Lumley) of a special issue of *Language Testing* (Vol. 18, No. 2) on *Assessing Languages for Specific Purposes*, and in 1999 she served as editor of an endowed supplementary issue of *English for Specific Purposes*. From 1993 to 1998, she served as coeditor of *English for Specific Purposes: An International Journal*. She is a current member of the editorial boards of *Asia-Pacific Journal of Language in Education*, *English for Specific Purposes*, *Journal of Second Language Writing*, *Language Assessment Quarterly*, and *Writing & Pedagogy*. She is also a consulting reader for a wide range of journals. Through her editorial work, she has mentored scholars, both veterans and those new to the field, and brought them into international conversations about issues such as English-language teaching, second language writing, and the assessment of writing.

Books

Hamp-Lyons has authored several books that have been quite influential, especially in the field of second language writing and writing assessment. With Ben Heasley (1987), she wrote *Study Writing* (currently in its second edition), a text for intermediate to advanced writers who wish to develop their skills in academic writing in English. Her Hampton Press book with Bill Condon (2000), *Assessing the Portfolio: Principles for Practice, Theory, and Research*, is an exploration of the theoretical foundations of portfolio assessment, an in-depth discussion of types of portfolios, when they should be used, how they should be used, and how their use affects writing programs. Bringing together her testing and writing interests, she wrote a student manual on the Test of English as a Foreign Language, *Preparing for the TOEFL Test of Written English* (1989). Her edited collection, *Assessing Second Language Writing in Academic Contexts* (1991), is one of the first volumes to push for the direct assessment of writing, a cutting-edge notion at the time of publication.

Research Contributions

Over the years, Professor Hamp-Lyons has received very large grants to fund the many research projects in which she has been involved. In Hong Kong, she has explored the impact of high-stakes ESL assessment on secondary schools, curricular alignment in junior secondary English-language teaching, and many other aspects of testing and its impact on schools. Throughout her career, she has involved her students in her research. Other important research projects include countless research student support grants to study such issues as testing reading for specific purposes, test preparation, the role of critical thinking in learning to write, washback studies, and progress assessment in distance education. Further, she has been an advocate for fairness in testing, supporting the creation of the International Language Testing Association's Code of Ethics, an important step for language testers.

Hamp-Lyons has presented the results of her research in places such as Australia, Canada, China, Germany, India, and the United States, has supervised the work of countless doctoral students, and has been external examiner for students in the United States, Australia, Hong Kong, and British Columbia. She has served as external reviewer for tenure and promotion cases around the world. To say that Liz Hamp-Lyons has had a tremendous impact on the field of applied linguistics, second language writing, and second language writing assessment is an understatement. She is a great teacher-researcher with particular understanding of and empathy with language teachers. Her far-reaching influence will be felt for a long time.

SEE ALSO: Assessment of Writing; Teacher Education for Language for Specific Purposes; Teaching Writing; Washback in Language Assessment; Writing Development in Second Language Acquisition; Writing and Language for Specific Purposes

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Hasan, Ruqaiya

ANNABELLE LUKIN AND GEOFF WILLIAMS

For the field of applied linguistics, language must first and foremost be considered as it functions in the exchange of meanings. This foregrounding of the meaning-making potential—indeed, raison d'être—of language, coupled with an assiduous interrogation of what follows from taking this position, characterizes the over 50-year career in linguistics of Ruqaiya Hasan (1931–). She has built on a theory and method which follows from principles about language–meaning–reality connections developed by scholars such as Saussure, Whorf, and Firth. In seeing language as a "shaper of reality for those who use it," she has urged linguists to "abandon the externalist view that meaning is something external to language." She argues instead for a linguistic model

> that is capable of doing two seemingly disparate things at once: first, we need to show that meanings are the very artifact of language and so are internal to it; and secondly, that these linguistically created meanings nonetheless pertain to our experience of the world around us and inside us. (Hasan, 2009 p. 136)

Hasan's first academic position (in 1954) was as lecturer at a training college for teachers of the Deaf in Lahore, Pakistan. Forty years later she retired as emeritus professor from the Department of Linguistics at Macquarie University in Sydney, where she had worked continuously since arriving in Australia in 1976. Her undergraduate studies (in English Literature, Education, History) were conducted at the University of Allahabad, which she followed with an MA in English Literature at the University of the Punjab. In the decade and a half she lived in the UK, she completed a postgraduate diploma in applied linguistics, and a PhD (both taken at the University of Edinburgh), and then held three research fellow positions funded under grants from the Nuffield Foundation. The last of these was in the Sociological Research Unit, where she worked with Basil Bernstein, directing the project on sociolinguistic aspects of children's stories. While at Macquarie, she conducted research over a 10-year period into the role of everyday talk between mothers and children in establishing a child's orientation to modes of learning, which formed the basis of her research on semantic variation (Hasan, 2009). She also investigated the structure of reasoning in everyday talk.

Hasan's work draws on Michael Halliday's systemic functional theory, a linguistic framework in which meaning mediates the relationship between linguistic form and the "eco-social environment." In her words, "I have a feeling there is continuity from the living of life right down to the morpheme" (Hasan, 1996, p. 1). She has argued the case for why Halliday's theory is most suited to explaining the pervasiveness, elasticity, and power of language. Halliday has recently coined the term "appliable linguistics" to mean a linguistic theory capable of being drawn on for the description of any kind of linguistic activity, indeed a theory itself shaped and theorized under the pressures of accounting for the breathtaking diversity of human discourse.

Hasan has extended the applicability of Halliday's model with the development of several powerful descriptive tools or frameworks. One is her proposal regarding "generic structure potential" (Hasan, 1985a), both a theoretical and a methodological statement on the analysis of text structure and its relation to context of situation. It displays the character

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of all Hasan's tool-like proposals in that it is situated within a full account of the relation of the relevant terms to a general linguistic theory. Hasan shows how text structure is a function of all aspects of the social context (in systemic functional theory, the aspects of field, tenor, and mode). She also relates text structure to texture, by showing how texture is the working out, for specific instances of social interaction, of the higher-order abstractions which give a text its shape as an instance of a register (see Halliday & Hasan, 1976; Hasan, 1984a, 1985a, 2011c).

Having shown, with Halliday, how one can produce a robust and systematic account of meaning, linguistic form, and social context, Hasan has also indicated how a meaning-oriented perspective on language can resolve another pseudo-dichotomy, that between mind and society: "human life as we know it is fashioned in the dialectic processes of both language and society; all meanings are social and all meanings are cognitive" (1993, p. 379). The first two volumes of her collected works (Hasan, 2005, 2009) show her nearly 40-year-long interest in bringing Halliday's linguistic theory into dialogue with both psychology and sociology. Hasan argues that it is a function of the "exotropic" quality of Halliday's theory that this dialogue is possible: "an exotropic theory is not confined within the bounds of its object of study. Rather it is cosmoramic, typically embedding its central problematic in a context, where the processes of its maintenance and change originate in its interaction with other universes of experience" (Hasan, 1999a, p. 51).

Her dialogue in these two volumes is, principally, with Vygotsky's work on semiotic mediation, with Bernstein's work on pedagogic discourse and the reproduction of class relations, and with Labov's arguments against "semantic variation," a concept in sociolinguistics for which he was responsible (e.g., Weiner & Labov, 1983). Using Vygotsky's and Bernstein's work, Hasan shows that

> there is a logical relation between a subject's social positioning and the mental dispositions, habits of the mind, the orders of relevance which they bring to bear on whatever they encounter in their social life: there exists an ineluctable relation between one's social positioning, one's mental dispositions and one's relation to the distribution of labour in society. (2005, p. 152)

Contra Labov, Hasan's research provides robust empirical evidence, based on analysis of language use in natural social contexts, that semantic variation is undeniable. Hasan's findings validate Bernstein's "coding orientation theory," the idea that one's orientation to meaning in context varies, systematically, on the basis of one's social positioning.

Naturally, this research has had important implications for education. But Hasan has not engaged directly with the content of classroom practice, a "deliberate decision on my part" (2011a, p. xvi). She has concerned herself instead with learner identity, and with the way social issues impinge on the processes of education (Hasan, 2011a, p. xi). For Hasan, learner identity is formed in the process of everyday living (e.g., Hasan 1984b). Understanding the "fashions of speaking" (Whorf, 1956, pp. 158–9) that learners bring should be the foundation of any educational process. While decisions about content and instructional methods are obviously important, "none of these are likely to make any difference unless the learner can make sense of what he/she is receiving as discourse" (2011a, p. xiv).

All of this work has depended on the development of the notion of "relevant context" (see Hasan, 1980, 1999b, 2012). Applied linguistics can be said to define itself by the application of linguistic theories to contexts of human interaction. Hasan has developed, sharpened, and operationalized Halliday's notion of social context—borrowed originally from Malinowski, developed in the work of Firth, and ultimately brought within the scope of a linguistic model with Halliday. Hasan has shown that context is "a semiotic construct"; that the reason language is means to so many ends is that the ends were created by language itself.

Hasan's contribution is perhaps unique for the degree to which she has extended a general linguistic theory, at the same time that she has made profound inroads into the study of important aspects of society and culture. The diversity of contributions she has made to general linguistic theory is remarkable, and includes studies of lexis and lexicogrammar (e.g., Hasan, 1987; also 2011d), a description of the semantic unit of "message," studies in cohesion and coherence, a theory of text structure in relation to social context, and the development of a robust, theoretically delineated conception of context. The contexts of language use to which she has turned her formidable critical eye include the culture/systems of education, everyday talk in the formation of identity, language and ideology, pedagogy and verbal art (see Hasan, 1971, 1985b, also 2011e). On pedagogy, she coined the term "reflection literacy," defined as "literacy for educating to produce knowledge" (Hasan, 2011a, p. 199). This orientation to learning as a platform for students to become agents of knowledge production, rather than simply reproduction, goes back to the work on verbal art with which she began her academic career. Hasan produced a linguistic conception not just of the language of literature, but of the teaching of literature "to enable the learner to produce an independent reasoned 'reading' of some existing work in literature" (Hasan, 2011b). Her decision to take on the question of how to teach literature in these terms she describes as academically "the most important decision of my life" (Hasan, 2011b).

SEE ALSO: Halliday, M. A. K.; Systemic Functional Linguistics

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Hatch, Evelyn

HOSSEIN FARHADY

Evelyn Hatch (b. 1929) is Professor Emerita at UCLA Department of TESL/Applied Linguistics. She began her studies at UCLA in the 1960s, completing, in fairly rapid succession, a BA in political science, an MA in linguistics, and a PhD in education. This broad academic background reflects Hatch's diverse interests in her career in applied linguistics. In addition to being an exceptional teacher, Hatch has been a leader in several areas, especially in second language acquisition, research methods, and discourse analysis. Although it is truly difficult to do justice in writing about her services to the profession, the following touches the tip of the iceberg.

As a teacher and an administrator, Hatch had remarkable accomplishments. Before joining UCLA TESL (teaching English as a second language) department, Hatch had taught English in Egypt at the American University of Cairo (AUC) to Palestinian students, and ESP (English for specific purposes) classes to Cuban refugees who were her students at Mt. St. Mary's College. By the time she joined UCLA faculty in the mid-1960s, the TESL department at UCLA was cooperating with and directing many projects in universities and academic organizations around the world. Hatch worked on many of those projects—first in Peace Corps training of EFL (English as a foreign language) to teachers (and nurses) in Ethiopia, Nigeria, and in Central America. Then she joined the program for Navajo teachers during a summer course that promoted an ESP approach to courses such as electrical engineering. She later returned to Egypt to direct the UCLA team that helped establish the National Center for the Development of English Language Teaching (CDELT) at Ain Shams University, where she was awarded the Ain Shams Medal for service to English-language teaching on the occasion of the 10th anniversary of the CDELT. During her stay there from 1977 to 1982, she assisted the General Directorate for In-Service Training on numerous occasions, giving her access to schools and training programs all over the nation. She also served as team leader to evaluate the Integrated English Language Program in Egypt for the Ministry of Education.

In addition, Hatch has enjoyed a dynamic career both at home and abroad. She has worked with many distinguished scholars around the world. She was among the first educators to visit and participate in seminars in Moscow, Barnaul, Kiev, and the early programs in Hungary. Through TESOL (teaching English to speakers of other languages) Summer Institutes, the Summer Linguistics Institutes, Fulbright, and other organizations, she visited Morocco, Barcelona, Berne, Edinburgh, and major institutions in Australia and delivered invited plenary talks in many countries. Hatch also served in many programs and project evaluation activities. She gained skills in the area of evaluation through her own projects that had to be evaluated. She received grants from major funding agencies (Ford Foundation, USIS, AID, UCLA, etc.) that often brought outside experts to the projects. Observing them at work, she developed skills needed for evaluation. She frequently assisted the department in evaluating overseas projects, especially those in China.

Following the establishment of an annual English Language Teaching and Research Forum in Cairo with her students, Hatch founded the Second Language Research Forum (SLRF) at UCLA, the only major conference in the field organized entirely by graduate students. In the early years, hosting SLRF would rotate between the UCLA and USC

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applied linguistics programs. Upon Hatch's retirement, past students and colleagues established the Evelyn Hatch Award for excellence in graduate students' research at UCLA in recognition both of her own influential research career and the encouragement she gave to all who worked with her.

As well as her remarkable achievements as a teacher and an administrator, Hatch has made even more significant contributions to several disciplines in applied linguistics and, in fact, has been a leader in areas such as second language acquisition, discourse analysis, and research methodology. During her PhD studies, she took a research position at Southwest Regional Laboratory (SWRL) working on child first language experiments (the topic of her PhD dissertation) and acquisition of reading skills. The models of research design and analyses employed in SWRL influenced her future work to a great extent. Working on these projects, she realized the overlap of cognitive, social, and linguistic factors in language learning and developed a multidimensional perspective on issues in applied linguistics. She strongly believed that many disciplines should be integrated in applied linguistics in order to find solutions to language-related issues. Two publications that perhaps best show this major theme of her work are Hatch, Shirai, and Fantuzzi (1990), and Hatch and Yoshitomi (1993).

When the UCLA certificate program was evolving into an MA program, Hatch began implementing her ideas by offering new courses. The initial certificate program included core courses in methodology, English grammar, contrastive analysis, and practice teaching. With her interest in second language acquisition that was ignited by Professor Werner Leopold, Hatch suggested that some elective courses in her areas of research be added to the program. The first course was in second language acquisition, and the outcome of teaching that course was the collection of readings for second language acquisition (SLA) published in 1978; it became, and remained, a main textbook for SLA classes for a long time.

In the 1970s, when research on second language acquisition expanded, researchers proposed different models to explain and account for the processes underlying SLA. Among many others, Hatch (1978a) suggested discourse analysis as a methodology for the study of SLA. According to this model, language learning evolves out of learning how to carry on conversations. In other words, syntactic structures develop from communicative interactions and most language acquisition processes are the result of conversational growth. Hatch enriched this model by connecting it to simplified input and claimed that appropriate simplified input "promotes communication, establishes an affective bond, and serves as an implicit teaching mode" (Hatch, 1979, p. 1). With the popularity of discourse studies in the field, Hatch offered a course on discourse analysis. The class materials were later published as a book on discourse analysis (Hatch, 1992), which was the winner of the Kenneth W. Mildenberger Prize awarded by the Modern Language Association.

Closely related to SLA and discourse analysis was the need to establish a better understanding of the psycholinguistic processes involved in SLA. To this end, Hatch offered a new course on psycholinguistics to capitalize on the cognitive aspects of language acquisition. Through the course, she emphasized the need for considering the overlapping dimensions of cognitive, social, and linguistic aspects of language acquisition processes. The materials for teaching this course resulted in the publication of a book on psycholinguistics (Hatch, 1983), which was awarded the American Library's Association award for best notification.

Both at CDELT and in the UCLA MA program, Hatch discovered that teachers and trainers needed special preparation in understanding and conducting solid research in applied linguistics. To fulfill this need, she offered a course on research methodology in applied linguistics and, in order to prepare course materials, she asked Hossein Farhady, then a PhD student, to work with her in writing a book for the course. Hatch and Farhady

(1982) was the first book in research methods to appear in applied linguistics, and had a great influence on the future of research in the field. Upon her return to AUC as a Distinguished Visiting Professor to teach and also to continue her work with CDELT, Hatch observed that both at CDELT and at UCLA, candidates had broadened their research horizons and implemented various research methods beyond what was introduced in Hatch and Farhady. To meet the emerging needs, she revised the book with another graduate student, Anne Lazaraton, and made an almost new book that included new developments in research methods and statistics (Hatch & Lazaraton, 1991), which is still used as a textbook of research methods in applied linguistics in many universities. Hatch (Hatch et al., 1990) held a position that is nowadays known as mixed method and process-oriented research by stating that research is a discovery process rather than a product to be published, that there is no a single answer to the questions, that answers interact, and that the interactions can lead to more interesting areas of research.

One of her admirable features was that Hatch always offered opportunities to her students in preparing the materials for various courses and then publishing them. Hatch/Farhady and Hatch/Lazaraton were just a couple of them. She also gave an opportunity to Cheryl Brown to work toward preparing materials for courses she was teaching at USC, Arizona State University, and the TESOL Summer Institute. One of the outcomes of this cooperation was a book called *Vocabulary, Semantics, and Language Education* (Hatch & Brown, 1995). Again, the Modern Language Association awarded it the Mildenberger Prize for that year.

Hatch no longer works, except as a teacher aid in Los Angeles area elementary classrooms where many, often most, are children who are becoming bilingual. She is still working as a docent at the Antelope Valley Indian Museum and helping with outreach programs to 3rd and 4th grade classrooms. And, of course, she is still writing letters of recommendation for her former students and colleagues, reading and evaluating articles for a few journals, and occasionally receiving research papers from avid applied linguists from around the world.

It is not easy to do justice to Evelyn's services to the field of applied linguistics. It is certain, however, for decades to come, the field of applied linguistics will remember and value Hatch's contribution to the field and will respect her for her outstanding accomplishments.

SEE ALSO: Conversation Analysis and Language Acquisition; Discourse Analysis and Conversation Analysis; Input Processing in Second Language Acquisition; Quantitative and Mixed Methods: Overview; Sentence and Discourse Processing in Second Language Comprehension

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Health-Care, Medical, and Mental Health Interpreting

CLAUDIA V. ANGELELLI

Introduction

Health-care interpreting occurs between users and providers of health-care services (including mental health) who do not share the same language. It involves the transfer of verbal and nonverbal messages across languages in real time. The language of health-care providers is mainly the societal language(s) of the country where the medical encounter takes place and the other language is that of the migrant and the migrant's family, that is, members of linguistic minorities. Health-care interpreting serves the latter user group ensuring their access to health services. Both in urban and rural areas, when speakers of linguistic minorities seek access to health-care services, communication between them and health-care providers who speak the societal language is enabled by interpreters.

Health-care interpreting has unique features that distinguish it from other types of interpreting. Unlike conference interpreting that most frequently is done in one direction only, in a simultaneous mode, and with more prolonged segments of discourse, health-care interpreting is a bidirectional communicative activity, done in a consecutive mode, with shorter segments of discourse. Unlike court or legal interpreting which is adversarial, health-care interpreting is assumed to be a consensual activity. This means that all the participants, that is, the service user (also called the patient or client), the service provider (either the health-care professional or the administrator of the organization), and the interpreter share the same goal: successful diagnosis and therapy.

Health-care interpreting should not be confused with medical translation. While medical translation involves the communication of a written message into another language in written form and a certain period of time is allocated for the task, health-care interpreting involves the communication of oral or signed messages in real time. In addition to the difference between the written and oral forms and the time constraints, health-care interpreting conceptualizes communication as the result of human interaction. As such, it means brokering messages that are formed not only by words but also by body language, facial expressions, and gestures during an interpreted communicative event.

In the USA, the end of the 20th century and the beginning of the 21st witnessed important changes affecting health-care delivery to limited-English-proficient patients. As part of the nation's effort in the 1960s to protect the civil rights of minorities, Title VI of the Civil Rights Act of 1964 and recent federal initiatives require health-care organizations that receive federal funding to provide meaningful language access for limited-English-proficient patients. Even when other legislation also supports these requirements, minimal progress has been made within most health-care systems to achieve the intent of these regulations. From attempts to match patients' and providers' native language, to hiring face-to-face or remote professionals, or ad hoc interpreters, or resorting to family or community members as temporary language facilitators, health-care organizations continue to explore creative solutions to bridge the linguistic barrier between providers seeking to assist patients and patients seeking medical assistance (Metzger, 1999; Angelelli, 2004a; Ticca, 2007).

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Settings

Health-care interpreting generally occurs in mainly health-care (governmental and non-governmental) settings such as hospitals, doctors' offices, community clinics, and some types of social-services offices. Unlike conference, court, or legal interpreting which generally occur in front of an audience, and interactions are public, health-care interpreting interactions are private. In these settings interpreters work face-to-face, over the telephone or via a teleconference. Health-care interpreters, capable of processing and conveying information in two languages, often work under conditions of critical and extreme pressure in which the patient's life may be at stake.

Recent technological developments coupled with high demands for service and the low supply of educated professionals willing to work under the current state of affairs (low salary, limited conditions of workplace) have transformed the job of health-care interpreters significantly. Nowadays, rather than brokering communication during traditional face-to-face encounters and observing healthy conditions in their workload (e.g., taking breaks every 30 minutes of uninterrupted work), health-care interpreters perform their roles via the speakerphone, regular teleconferencing, or videoconferencing, working for extended periods of time without breaks (Meyer, 2001; Angelelli, 2004a, 2007). These changes in the workload and settings complicate the task at hand even more.

Parties Involved

In a health-care-interpreted communicative event there are three parties: the health-care provider, the patient, and the interpreter. Because the need for interpreters in medical settings has grown exponentially, the supply of qualified interpreters to meet that need is not sufficient. In the absence of a qualified interpreter, speakers of minority languages who need to seek health care resort to what is available to them. Sometimes the role of the interpreter is played by bilingual-service providers (e.g., a laboratory technician), bilingual janitors, friends, family members, or members of the community who are proficient in English. These bilingual speakers who may or may not have had experience in interpreting are asked to step in and to help broker communication. They do it with various degrees of success based on their expertise and experience or lack thereof. This can lead to serious consequences that undermine equal access to services. It is generally agreed that, if available, a professional interpreter is always the best choice.

Internationally, perhaps the most controversial issue around professional versus non-professional or ad hoc interpreters is the use of children, who may be friends or family members of the patient, as the patient's interpreter.

End users (patients or clients) of health-care interpreting are generally migrants that settle in the new country looking for better opportunities. Health-care professionals speak societal language and frequently use medicalese. In health-care encounters, there are salient differences in social factors, such as level of education, socioeconomic status, and so on, between providers and patients. Health-care interpreting generally occurs across a wide range of social factors (gender, ethnicity, socioeconomic class, education, age, and nationality) and gulfs of cultural differences. Health-care interpreting may also occur where differences in socioeconomic status between providers speaking the societal language and end users are not that significant. These are cases of patients who are temporarily visiting an area to seek more affordable medical treatment in other countries where they do not speak the language (e.g., Germans in Korea or Americans in Mexico). Finally end users may also be tourists who may need medical assistance during their stay or seniors who decide to retire to a foreign country/community (e.g., the British who retire to Spain).

Role

A health-care interpreter is an individual capable of processing and conveying information in two languages, often under conditions of critical and extreme pressure. Their role is multifaceted and complex. It is not limited to encoding and decoding messages into a different linguistic code or the exercise of cognitive skills (content selection, memory, anticipation, split attention). It also entails managing the bilingual dialogue, controlling the traffic of communication, monitoring the interaction, recognizing sources of misunderstandings and addressing them, as well as displaying empathy. All of these, coupled with the fact that interpreters may walk into a case without any preparation (Meyer, 2001), add to the intricacy of the role. In the course of their jobs, medical interpreters comprehend and produce language of various degrees of complexity. They alternate between target and source languages, rural and urban varieties, and they work with speakers whose level of education ranges from second grade to graduate school. This means that interpreters navigate speech communities in which there are asymmetrical relations between speakers of more and less dominant societal groups. In addition to the social factors of each of the parties for whom they work, interpreters bring their own self and their own personal set of social factors to the interaction, adding to the difficulty. As the interaction does not happen in a social vacuum, but rather it occurs within one institution that is permeable to the mandates of society, various layers of institutional and societal influences surround the interpreted communicative event. This adds to its complexity and the complexity of the interpreter's role (Angelelli, 2004b).

Since the supply of professional or qualified interpreters cannot begin to match the demand for service, sometimes institutions rely on telephone interpreting services to facilitate communication with patients and families. This resource may be especially helpful for speakers of less commonly spoken languages. In discussing the issue of volunteers who play the role of the interpreter, scholars have different views when it comes to accepting less qualified (or untrained) individuals to do the job. Some believe that even when volunteers may not be the best option it would be unthinkable not to allow volunteers such as family members and friends to play that role. Hospitals are yet not equipped to face the demand for interpreting services. This is both due to the cost of the services as well as to the short supply of qualified interpreters (Garcia, Roy, Okada, Perkins, & Wiebe, 2004; Meyer, 2007, in Ticca, 2007). Banning volunteers may result in limiting access to health-care on the part of linguistic minorities. In addition some researchers do not consider family members interpreting for their loved ones as necessarily problematic (Edwards, Temple, & Alexander, 2005; Green, Free, Bhavnani, & Newman, 2005). Others argue that confidentiality may be jeopardized when family or friends play the role of the interpreter (Fiola, 2003) or that it may be emotionally distressing for them in the case of serious medical problems (Jacobs, Kroll, Green, & David 1995). When language assistance is needed and professional interpreters are not available, ad hoc interpreters are called but this is problematic (Garcia et al., 2004).

Research in Health-Care Interpreting

Research in health-care interpreting comes from different fields and is not abundant. There has been little cross-fertilization between research on cross-cultural communication conducted in applied linguistics (specifically in interpreting studies or communication in the workplace), sociology, or communication and relevant research conducted in the medical field (Angelelli, 2008). Research performed in the medical field, generally of a quantitative nature, tends to focus mostly on error and compliance and on the economic aspect of

providing language services. Results of medical studies have shown that in a health-care setting, the lack of a common language and culture between patients and providers is a barrier to effective communication. In addition this barrier decreases the quality and accessibility of health care. If language barriers are not overcome, adverse health consequences including poor medical care, misdiagnosis, inappropriate medication and hospitalization may occur. These communication issues are also associated with a higher rate of resource utilization for diagnostic studies, as well as with decreasing understanding in patients of their disease processes, which has a subsequent impact on their compliance with treatment and follow up care (Bonacruz Kazzi & Cooper, 2003).

Results of studies from interpreting and applied linguistics, sociology and communication, resorting both to qualitative and quantitative methods, tend to problematize the complexities of the crosslinguistic interaction, as well as its power differentials, while focusing on the role of the interpreter and of the language. From quantitatively assessing interpreters' perceptions and beliefs in their roles, to qualitatively observing health-care interpreters as they enact their roles and interviewing them as they describe their interactions in their own words, studies discuss the extent to which interpreters play an active role in the interaction and the consequences of such participation (Angelelli, 2007). Research has also discussed the risks of not using qualified interpreters (Meyer, 2001; Fiola, 2003; Garcia et al., 2004).

Teaching and Learning

The teaching and learning of health-care interpreting involves the development of skills in at least six different areas. These are: cognitive-processing, interpersonal, linguistics, professional, setting-specific, and sociocultural (Angelelli, 2006). Most of the short courses commercially available that offer training in health-care interpreting generally devote time to terminology or the ethics of the profession and they may not even discuss information-processing skills. More elaborate programs focus on information-processing skills and linguistic ones, and may not dive into the specifics of the medical setting and the interpersonal role of the health-care interpreter.

Since interpreting entered academia to meet a pragmatic need (rather than to become an object of study), research questions about practice, the various aspects of the medical settings, and the practitioners, which are essential to understand the underlying complexities of the interpreted communicative event, were deferred to the market need of practitioners. Logistical questions focused on conducting training took priority over questions that were designed to understand what a well-rounded education of interpreters may look like. For example, based on educators' personal experience and opinions rather than on research, many programs that teach health-care interpreting are reduced to teaching terminology related to the field. As a result, health-care interpreters have a range of educational backgrounds with some holding a master's degree in medical interpreting and others having received no education in the field (Angelelli, 2004a, 2006). The truth is that there are limited educational opportunities for health-care interpreters to pursue. For staff interpreters, training occurs at the workplace. As Garcia et al. (2004) suggest, hospital-trained interpreters are found to be a valuable and much-needed resource to facilitate communication with limited-English-proficient patients and families and as noted by Flores et al. (2003) interpreting errors that have potential clinical consequences occur more frequently with ad hoc interpreters than with hospital-trained interpreters.

Theory and research on health-care interpreting are generally not part of the hospital in-house training program and important findings are ignored by practitioners. By bringing theory and research to bear in the education of health-care interpreters, students become

aware of the role they may or may not choose to play and of the power they have as interpreters. They learn how to use their interpersonal skills effectively, and to understand the responsibilities and duties that arise from their tasks. Students need to learn that health-care interpreters, like interpreters in general, are co-participants who share responsibility for effective communication. They also need to reflect on the consequences of their participation.

Testing/Certification

To date there is no national certification for health-care interpreting. Therefore, there is no standard method of assessing linguistic and interpreting skills of those employees if or when health-care organizations wish to provide meaningful language access to linguistic minorities by hiring bilingual staff to interpret.

Currently there are no universally agreed rules for health-care interpreters working in different types of medical encounters. This makes it difficult to define the construct of health interpreting skills or competencies to be tested. Therefore, interpreters working over the phone, via a teleconference, or face-to-face are not assessed on how they react to the different impacts that each of these types of interactions place on them, on their role, and so on.

For staff interpreters, testing is generally done by an in-house test created by the organization for which the interpreter works and it is limited to some exercises on memory or terminology, for example. When testing is more comprehensive, whether it is done in-house or by interpreting agencies or organizations, it also tends to focus on areas of information processing (memory, analytical skills), language proficiency, and specific medical terminology. Although the measurement of cognitive and linguistic skills, as well as specific terminology, is essential while testing interpreters, it provides only a partial view (Angelelli, 2006). The role that interpreters play during a health-care interaction (i.e., the display of the interpreter's agency, human interaction, knowledge of limits, etc.) is not assessed. This role, however, is crucial to the successful and responsible performance of interpreters. In many cases, interpreters are not even aware of the agency they possess, nor are they always conscious of the consequences of exercising it (Angelelli, 2004b).

As we know from the literature (Metzger, 1999; Angelelli, 2004a) other skills (such as interpersonal or social ones) are as crucial as cognitive and linguistic skills, but are seldom measured. This means that constructs such as neutrality, objectivity, and invisibility are prescribed by codes of ethics and assumed, but not tested. Nor is there a mechanism for enforcing codes of ethics or standards of practice for either interpreters or agencies/organizations hiring interpreters. This knowledge is also not tested.

The Professionalization of Health-Care Interpreting

The evolution of health-care interpreting as a profession can best be illustrated by a continuum that encompasses indifference toward communication issues, or the denial thereof, dependence on ad hoc interpreters, generic language services, and full-fledged interpreting services. Health-care interpreting is striving to establish itself as a profession. It continues, however, to be perceived as a less prestigious variety of interpreting, practiced mostly by ad hoc interpreters. This perception is also evident in the fees that health-care interpreters are able to demand. They are significantly lower than those received by conference and court interpreters. Clearly, this perception of a less prestigious practice is not due to a lack of complexity within the health-care interpreting field.

A characteristic of a profession is the access to a body of knowledge shared by its members. This corpus is composed of theories and research that, in turn, inform pedagogy and practice. When discussing professionalism, the issue of education—which lies at the basis of any profession—has been almost overlooked and has always been subordinated to economic priorities and market needs. Logistical questions directed to conducting training take priority over questions that are designed to understand what a well-rounded education of interpreters may look like and how it would account for the differences in settings where interpreters work. This leaves practitioners who care about their work in a state of confusion as to who is qualified to practice and who is not, what makes a professional interpreter or what experience or training are necessary (Angelelli, 2006). Professional associations have yet to grapple with these issues.

Ethics

There are various codes of ethics and standards of practice in countries such as Canada, Spain, and Australia. In the USA there are codes both at state and national level (e.g., California Healthcare Interpreting Association and National Council for Interpreting in Healthcare respectively). In general codes for health-care interpreting are not significantly different from codes for conference or court interpreters. Most of them discuss faithfulness to the meaning of the original message, accuracy and completion in the interpreted rendition (i.e., interpreters should not add or omit anything), and confidentiality. Even when health-care interpreting differs significantly from other types (e.g., court or conference), only a few codes explicitly mention interpreter behavior that goes beyond the conduit encoder–decoder, and to which interpreters sometimes resort, that may include advocating for the patient.

Some health-care interpreters see the provision of language assistance as a human right. Some hospitals ask interpreters to perform duties outside interpreting (e.g., accompanying patients to the pharmacy, helping to push a wheelchair). Therefore interpreters have to reconcile ethical guidelines of professional associations with workplace requirements. In some cases interpreters may not observe prescriptive guidelines (e.g., related to confidentiality or faithfulness) if they felt there was a serious risk to the health or life of the patient. For example, if a mental health patient told an interpreter some confidential information (e.g., former attempts of suicide) that is relevant to the interpreted encounter, the interpreter may decide to step out of the prescribed role, breach confidentiality and inform or explain the situation to the provider. Another example illustrates the tension between impartiality as an ethical principle of professional associations' standards of practice or codes and the policies of interpreters' employers and agencies: in many health-care institutions and interpreting agencies, interpreters are required to play the role of an advocate or a social worker.

SEE ALSO: Conference Interpreting; Interpreting Techniques and Modes; Legal Interpreting; Liaison Interpreting; Medical Translation; Models of Interpreting; Professionalization of Interpreters; Quality in Interpreting; Signed Language Interpreting Profession; Signed Language Interpreting: Types, Settings, and Modes; Translation and Interpreting and Bilingualism

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Heath, Shirley Brice

JENNIFER MCCREIGHT, ROBERTA GARDNER,
JAYE THIEL, AND JOBETH ALLEN

Shirley Brice Heath (1939–), a linguistic anthropologist, works at the macro and micro levels to study language in political and sociocultural contexts. The largest body of her ethnographic work examines the ways that children and young adults develop language and social practices in families, friendship groups, and community youth organizations. She received a BA (1962) from Lynchburg College, an MA (1964) from Ball State University, and a PhD (1970) from Columbia University where she specialized in Cultural Anthropology and Linguistics, Comparative Education, and Latin American Studies. She holds the Margery Bailey Professorship in English and Dramatic Literature and a Professorship in Linguistics (Emerita) at Stanford University, where she taught from 1980 to 2003. She was professor at large, Brown University (2003–10) and has taught at the University of Pennsylvania; Kings College, University of London; University of Witwatersrand, Johannesburg, South Africa; University of Washington; and the University of Colorado. Her awards include a MacArthur Fellowship, the Grawemeyer Award in Education (with Milbrey McLaughlin), the George & Louise Spindler Award in Educational Anthropology, the Distinguished Scholarship and Service Award, American Association for Applied Linguistics, and the Distinguished Educator Award from the American Education Research Association. A prominent voice in applied linguistics internationally, Heath has conducted research in Mexico, Guatemala, South Africa, the United States, England, Germany, Australia, and Sweden.

Heath's earliest work focused on language policies in Mexico (1972) and the United States (1981). In the 1970s, she began ethnographic fieldwork with families in textile mill communities in the southeastern US Piedmont region. She studied 300 families in White, working-class Roadville and nearby Black, working-class Trackton, reporting this decade of work in her ethnography *Ways With Words* (1983/1996; henceforth *WWW*) which remains a cornerstone in applied linguistics, showing the relationship between micro- and macro-level discourse, and the effects of children's early language and literacy experiences on their lives inside and outside of school. Employing Hymes's "ethnography of communication," with its focus on connections among language, community, and identity, Heath studied discourse in these communities as shared events, embedded in social practices. Heath (1982) developed the notion of literacy events, an interaction around a piece of writing, as a tool for examining various forms and functions of oral and written language. She documented very different "ways with words," both in ideology and use, by linking shared language practices to larger societal discourses. She found that the rich language and literacy skills of children in Trackton were not initially valued in school. Questions in school bore little resemblance to parental interrogatives; Trackton parents did not ask "known-answer" questions, so their children were often confused when teachers requested them. School texts and tests called for literal answers; Trackton children were skilled at metaphor, imaginative stories, and arguing claims. Children from Roadville did well in primary grades, but less well by third grade, when school tasks demanded more than factual recall. In contrast, the literacy background of the townspeople's children largely matched that of school and led to school success. In the second part of *WWW*, Heath and

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the teachers developed strategies for connecting home and school language and literacies. Similarly, Heath and Mangiola (1991), rejecting the label "at risk," referred to "children of promise" and described effective classroom literacy programs and strategies for culturally and linguistically diverse students.

While Heath did not detail the language and literacy practices of mainstream middle-class "townspeople" in *WWW*, she did so with former student Shelby Wolf in their joint analysis of Wolf's daughters' interactions with their parents around books, which they referred to as "the braid of literature" (Wolf & Heath, 1992). Their work documented literary language and imaginative play in the girls' preschool and early elementary years literacy development and socialization. The analysis of literary events emphasized the use of a sociocultural lens to magnify relations between oral and written language and cognitive styles. Heath also collaborated with Wolf in England, exploring the role of language as students created visual and dramatic arts.

Though much of Heath's research centers on learning environments beyond the school, her micro analyses of how young people interact in youth organizations, community sports, and after-school collaborative projects illustrates the vital importance of subject-matter knowledge transmitted within schools. She also illustrates the cultural lag of academic language in comparison with everyday language uses. She provides comparative analysis of peer interactional language practices and the communication demands of financial literacies and the world of employment.

Consistent with her focus on youth in out-of-school settings, much of Heath's ethnographic fieldwork from 1987 to the present has been with young people in poor and working-class community organizations in the United States, England, Sweden, and the townships of Johannesburg, South Africa. She has illuminated social and language development of youth heavily immersed in the arts and sciences, including environmental projects, social justice, enterprise development, and educational inclusion. By working with peer and adult mentors on sustained projects that are deeply meaningful, youth develop the language and literacy skills necessary to contribute to the wider learning communities around them (Heath, 1993). Far more often than in the 1970s when Heath researched *WWW*, she found that the language development of older children and adolescents takes place largely in the space of communal activities and "roles that legitimate membership and overarching purpose of the group" (Heath, 1999, p. 72). These settings account for the positive correlation Heath found between increasingly complex language of adolescents and their sustained involvement in purposeful planning and work in community organizations. Within these groups, young people learn through observation, experimentation, and intense communal participation. When young people take on these responsible roles, they experience the importance of organizational, scientific, and mathematical knowledge. Additionally, Heath has found that young learners both interpret and employ the use of multimodal literacies as they gain competence in linguistic arenas focused on problem solving and group goals (Heath & Wollach, 2007). She calls for linguists to resist the seductiveness of studying only the utterances of young children and to give more attention to the language development of older youth (Heath, 1998, 2008).

Heath's *Words at Work and Play: Three Decades in Family and Community Life* (2011b) follows families of Roadville and Trackton across three generations, from the recession of the early 1980s (chronicled in Heath, 1990) through the recession of 2008. She weaves micropatterns of home and community life into a tapestry of macroeconomic changes after the textile mills closed and families relocated in search of employment. Everyday patterns of language use among peers have shifted syntax, genres, and styles in relation to patterns of play, work, and solitary technology use. Talk tends to center on the present with strong emphasis on the performative. Deliberations around project development, imagined scenarios, and problem solving occur primarily in collaborative projects either in families

or in after-school and weekend peer activities. Exploratory play outdoors and in creative building and art-making projects has moved indoors where entertainment, communication, information searches, and work take place through electronic technologies. Heath (2010, 2011a) heralds new language and literacy opportunities around joint community-based projects, such as community gardening, environmental action, the arts, and local social issues.

One of Heath's contributions is reflection on her own work. Heath (1993) noted that deCastell and Walker (1991) revealed how her literary experiences influenced *WWW*, employing the romance (and disenchantment) of the child, cycles of fate, and power struggles. Growing up as one of a few White children in a predominantly Black community in the southern United States, Heath described her childhood as bicultural and African American Vernacular English as one of her dialects (1993, 2011a). Her early bicultural socialization gave her a unique perspective for studying the communities of Roadville and Trackton, although she faulted herself for rarely including her own speech in reported conversations in *WWW*. In *Words at Work and Play* (2011b), she admits herself into the text as speaker and coparticipant in the families' lives narrated in the volume.

In addition to challenging herself as an ethnographer, Heath also challenges educational researchers. In a review of key contributions of linguistics to the study of language in education, Heath (2000) highlighted ways in which microstructural linguistic elements relate to macrostructures, such as classroom routines or school policies; she called for future educational researchers to ground themselves in linguistics and other disciplines, such as anthropology, sociology, or psychology, that are related to understanding the context of language use. Her research methodology text *On Ethnography* (Heath, Street, & Mills, 2008) provides detailed advice on collecting data through extended observation, artifacts, conversations, interviews, textual sources, and immersion in the field. Heath et al. emphasized asking open-ended questions, disrupting dichotomies, conducting thorough literature reviews, using the constant-comparative framing of data collection, generating conceptual memos, and building theory.

Heath's detailed accounts of language and literacy in communities across the globe have enlightened and challenged linguists, ethnographers, anthropologists, and educators. Future contributions are likely to illuminate the worlds of young people in "artscience," including the exploration, creation, design, and promotion of youth projects in music and video production, outdoor adventure, environmental conservation, and ecotourism ventures.

SEE ALSO: Discourse and Identity; Discourse in Organizations; Ethnography of Communication as a Research Perspective; Family Discourse; Hymes, Dell; Multimodality and Literacy

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Hedges

WILTRUD MIHATSCH

History of the Term

Inspired by the idea of degrees of category membership as developed by fuzzy set theory, Lakoff (1972, p. 195) coined the term "hedge" for "words whose job is to make things fuzzier or less fuzzy." His definition of hedges thus includes both expressions such as *sort of* or *roughly* as well as *strictly speaking* or *par excellence*. Although Lakoff focuses on the semantico-logical properties of hedges, he also mentions the importance of discourse aspects and hedged performatives like *I suppose that*, which Robin Lakoff had pointed out to him (Lakoff, 1972, p. 213). The term "hedge" itself is inspired by the expression "to hedge a bet" and alludes to the discourse function of reducing communicative risks. The term is adopted very quickly, however, the focus soon shifts to pragmatic aspects of hedges, and mitigation, that is, the reduction of the force of speech acts. This shift can be seen in Fraser (1975), who further develops the analysis of hedged performatives. Fraser (1980) then extends his analysis to mitigation in general, that is to linguistic procedures reducing negative effects on the speaker or hearer. Brown and Levinson (1987) analyze the use of hedges serving negative politeness, that is minimizing the infringement upon the speakers' or hearers' autonomy. Most pragmatic analyses are based on data from spoken informal language, but an increasing number have looked at academic and professional communication, for instance Prince, Bosk, and Frader (1982). The term "hedge" is expanded to include the mitigation of speech acts, and also restricted to hedges making semantic categories fuzzier, therefore excluding "less fuzzy" hedges such as *strictly speaking*, as in Prince, Bosk, and Frader (1982). They employ the term "hedge" to refer both to more fuzzy hedges as discussed by Lakoff (1972) affecting category membership as in (1), which they call "approximators," as well as those operating on the illocutionary level, which do not affect the semantic content of an utterance and which they call "shields," as in (2):

1. His feet were **sort of** blue.
2. **I think** his feet were blue. (Prince, Bosk, & Frader, 1982, p. 85)

In a similar vein Hübler (1983) classifies hedging expressions according to the linguistic level they operate on, and distinguishes understatements on the propositional level from hedges in a narrower sense, which reduce speaker commitment. A comparable distinction based on the nature of the linguistic element modified by a hedging expression can be found in other studies. Caffi (2007) suggests the most complex and detailed classification to date. Her "bushes" correspond to "approximators" in Prince, Bosk, and Frader (1982), while her use of the term "hedge" refers to mitigation on the speech act level. She reserves the term "shield" for any kind of deictic shift leading to mitigation.

All these analyses start with mitigating functions and then set out to explore linguistic expressions fulfilling those functions. Another strand of research concentrates on particular hedging expressions such as *sort of* and *kind of* and their functions (see, for instance, Aijmer, 1984 and Kay, 1984). In recent years this approach has gained impetus with large corpora available for form-based searches. Aijmer (2002) investigates the discourse effects

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of *sort of* as well as list extenders such as *and that sort of thing*. This approach is mainly found in studies that consider hedges as pragmatic markers, and is also adopted in diachronic analyses. The changes leading to hedging expressions are usually considered grammaticalization or pragmaticalization processes (see, for instance, Aijmer, 2002). Furthermore, hedging phenomena are often analyzed in other contexts, for instance in the context of metadiscourse and metalinguistic functions, an important aspect of many hedges. Shields, in particular, show a certain overlap with (epistemic) modality and evidentiality. The emphasis on discourse functions has also led to a series of analyses, the most important being Channell (1994), which study approximation as a subtype of purposive vagueness, beside placeholders and indefinite quantifiers, which all avoid precision. Thus we observe a shift from semantic analyses of hedges to studies of hedges in use. This tendency explains why studies of hedges in terms of illocutionary force, that is shields, now prevail and why in many studies the distinction between approximators and shields is not taken into account. However, this may also be due to the difficulty of pinpointing the exact effect of a hedge in context. Despite this serious problem and although many hedges such as *like*, *sort of*, *kind of* are now polysemous, the difference between approximators and shields (following Prince, Bosk, & Frader, 1982) is linguistically fundamental. The distinction can be seen in diachrony, since in most cases one function is more basic, and the other derived. Synchronically, one of the two functions may arise as an implicature, which may in some cases become part of the conventional meaning of the expression (Mihatsch, 2010).

I will therefore give an overview of the different functional types of hedges following Prince, Bosk, and Frader (1982). Formally, hedges can be adverbs, adjectives, modal verbs, list extenders, suffixes, parentheticals, or, when they are well entrenched, pragmatic markers, but also non- and paraverbal devices such as gestures and intonation. Furthermore, approximation is not necessarily flagged by hedges. Relevance theory and the new field of lexical pragmatics (Wilson & Carston, 2007) study contextual effects such as narrowing and loosening, that is metaphorical extension and approximation, as an outcome of hearers' interpretations of lexical expressions guided by the principle of relevance at utterance level.

More detailed overviews of the state of the art can be found in Caffi (2007), Clemen (1997), and Kaltenböck, Mihatsch, and Schneider (2010); see also Schröder and Zimmer (1997).

A Classification of Hedges

As mentioned above, Prince, Bosk, and Frader (1982) offer a useful, not too fine-grained, function-based systematics of hedges, which distinguishes between approximators and shields. Approximators create a semantic effect. They enlarge the extension of another linguistic expression and correspond to Lakoff's (1972) "more fuzzy" hedges. Within the category of approximators, Prince, Bosk, and Frader (1982) distinguish between adaptors such as *sort of*, which render lexical categories more flexible, and rounders such as *roughly*, which signal imprecision in the numerical and temporal domain. Shields are further subdivided into plausibility shields such as *I think*, expressing doubts, and attribution shields such as *presumably*, which weaken speech acts by attributing information to a source other than the speaker. Although these distinctions are linguistically fundamental, a closer look at the polysemy patterns of hedges, as well as their discourse effects, clearly reveals rather fuzzy categories with many transition zones.

Approximators

Prince, Bosk, and Frader (1982) further distinguish between adaptors and rounders within the class of approximators. From a semantic perspective, adaptors are used to broaden

the lexical meaning of nouns, adjectives, and verbs in order to accommodate referents or concepts not usually referred to by the unmodified expression, but sharing some, though not all, of the defining features of the lexical expression modified by an adaptor. The relation between the literal, narrower meaning of the modified expression and the target concept is that of similarity. Unsurprisingly, many of the most frequent adaptors are derived from expressions establishing similarity relations, as with the comparison marker *like*, and also—via an intermediate step—*kind of* and *sort of*. Certain adaptors have a deintensifying effect when used with gradable lexemes, as in *sort of tall*, or express near-accomplishment when used with telic expressions, as in *practically finished*. These scalar effects can be more or less strong. Quirk, Greenbaum, Leech, and Svartvik (1985, pp. 597–602) distinguish several types of "downtoners" according to the strength of their deintensifying effect.

As for their discourse functions, adaptors without scalar effects are used for the description of ad hoc concepts, and they may help to compensate for memory loss, lexical gaps, and word-finding problems; thus they are associated with typical problems of speech planning. Depending on the participants and the topic of conversation adaptors may adapt the degree of precision. Derived from uses of adaptors flagging metaphors, which are a special case of similarity-based transfer, some of the more entrenched adaptors may indicate marked uses such as special idioms, figurative uses, connotations, style shifts, and so on (Aijmer, 2002, chap. 5). These uses are clearly metadiscursive and create a certain distance between a speaker and an utterance. This also explains why they may become rounders, as in the case of *like* (Mihatsch, 2010).

Another derived function is the use of both scalar and non-scalar adaptors as mitigating devices. Directive speech acts such as face-threatening orders, and assertions expressing strong opinions, tend to be softened when they contain approximators. Mitigation, which softens speech acts, can then arise as a result of implicatures, as pointed out by Fraser (1980, p. 344). Certain adaptors, such as *like*, have become fully entrenched as shields.

The highly productive implicatures and the frequent semantic changes which may fossilize those implicatures explain why the boundaries of the categories as defined by Prince, Bosk, and Frader (1982) tend to be fuzzy, and why forms such as *sort of*, *kind of*, and *like* are now polysemous and are used as adaptors, downtoners, rounders and shields.

Semantically, rounders such as *approximately*, *roughly*, *about* enlarge the extension of numerals and/or temporal expressions and thus have the same effect as adaptors. However, rounders are expressed by another set of linguistic items, although there are some overlaps, mainly as a consequence of functional changes (see Mihatsch, 2010). The semantic effect of rounders can be described as opening up a zone around a value on a scale, but not as a relation of similarity with a prototype as in the case of adaptors. Since time indications and numerals are conceptualized by the aid of scales, many rounders are the result of spatial metaphors, as in the case of *about* and *around*. Like deintensifying adaptors, some rounders may be limited by boundaries: a maximum in the case of *up to*, a minimum in the case of *over*.

Rounders are used when more precise information is not available or not required. They may help to reduce the risks a speaker runs when referring to quantities or temporal information. Like adaptors they may thus soften assertions or orders on the utterance level. However, at least in English, this function is still not fully conventionalized in particular rounders, but may arise as an implicature. Unlike adaptors, rounders are not used to compensate for word-finding problems since numerals and temporal indications are highly frequent linguistic items, and since rounders cannot signal metaphors they do not flag stylistic markedness. All in all, rounders seem to fulfill a much more limited array of discourse functions, and are therefore less pragmaticalized than adaptors.

Shields

Shields do not modify the semantic content of an utterance, but weaken the force of speech acts, that is, they operate on a pragmatic level, and therefore have wider scope than approximators. Prince, Bosk, and Frader (1982) further subdivide this category into plausibility shields and attribution shields, according to the underlying communicative strategy leading to mitigation. Similarly Caffi (2007, pp. 266–9) distinguishes several subtypes of mitigation devices on the grounds of the strategies involved. She chooses the term "hedge" for expressions softening speech acts, for instance by weakening the authority of the speaker (*if I am right*), by expressing doubts concerning the correctness of execution of a speech act as in *so to speak*, *how shall I put it?*, or the reduction of speakers' or hearers' obligations of belief by epistemic means and subjectivizing devices such as *perhaps*, *in my opinion*. Many modal particles also belong to the category of hedges, although the link between modal particles and hedging is not usually made in the literature, as Clemen (1997, p. 243) points out.

Within the group of hedges Caffi furthermore distinguishes different types on the basis of the modified speech act type, thus on the function rather than the strategy involved, and opposes "lenitive mitigation," mitigation affecting directive speech acts which reduce hearer obligations, and "tempering mitigation," modifying assertions by weakening speakers' commitment (Caffi, 2007, pp. 85, 220–4). Shields are therefore important devices operating on an interpersonal level, which help to soften potentially face-threatening acts, but may also establish a relation of solidarity between speaker and hearer or reflect differences regarding social status. These functions also explain distinctive gender-based usage patterns.

Some shields such as *like* are not specialized in any way, but seem to be all-purpose shields. Caffi's category of shields, that is mitigators based on any kind of deictic shift, includes some attribution shields of Prince, Bosk, and Frader (1982), and includes strategies such as passive voice, backgrounding, and so on.

At utterance level, according to Prince, Bosk, and Frader (1982), shields—as well as Caffi's hedges—may be interpreted as approximators when taking a narrow scope, just as approximators may be used for mitigation.

Applications

In line with the tendency to study pragmatic rather than semantic aspects of hedging, this phenomenon has become an important topic in a variety of applications.

Most applications rely on methods of discourse and conversation analysis. Frequently studied discourse types in the domain of hedging research are political discourse, institutional communication, medical discourse, academic discourse, media discourse, and communication in educational settings. It is interesting to note that many hedges are associated with certain registers; compare, for instance, a colloquial rounder such as *about* with a more formal rounder such as *approximately*. However, these restrictions may disappear when colloquial elements enter into institutional discourse and vice versa; see Fairclough's notion of "conversationalization of discourse" (Fairclough, 1992).

Text and discourse analyses also consider questions traditionally treated in rhetorics, since hedging can be a very efficient technique of persuasion. A related line of research investigates the effects of hedges on readers or listeners. Recall and acceptance of text content tends to be enhanced by the use of hedges (Crismore & Vande Kopple, 1997).

Another field of application deals with sociolinguistic aspects of hedging, that is the influence of parameters like age, gender, social status, power, ethnicity, and educational background on the use of hedging devices. Crosslinguistic analyses of the use of hedging reveal interesting differences between languages and cultures. For instance, Crismore,

Markkanen, and Steffensen (1993) find that Finns use more hedges than Americans, and Finnish men more than women.

A new line of research exploits patterns of hedging for diagnostic purposes. Elisabeth Gülich and Martin Schöndienst employ methods from conversation analysis in order to distinguish between epileptic and nonepileptic anxiety (see Epiling, http://www.uni-bielefeld.de/lili/forschung/projekte/archiv/epiling).

Studies dedicated to second language acquisition and second language teaching point to the importance of mastering the use of hedges, especially when learning a new language.

Conclusion

The history of hedging research is remarkable since the study of this ubiquitous phenomenon in both spoken and written language has gained more attention now in several fields of applied linguistics and pragmatics than in classic areas of linguistics such as syntax and semantics. However, there are still many areas in applied linguistics where hedging research needs to be undertaken, especially in languages other than English.

SEE ALSO: Conversational Implicature; Interlanguage Pragmatics; Metadiscourse; Modality; Politeness and Face Research; Pragmatic Markers

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Heller, Monica

MELISSA MOYER AND MIREILLE MCLAUGHLIN

Monica Heller was born in Montreal, Canada and was trained in Linguistics and Anthropology at University of California, Berkeley where she received her PhD. Her career has been dedicated to understanding the role of language in social, economic, and political processes. She has followed the changing linguistic ideologies underlying the transformations of Francophone Canada. She takes a critical interpretative approach to the study of language and society. For Heller, a critical sociolinguistic perspective is concerned with problematizing relations of power together with a focus on language understood as *practice* and as a form of *social action*. Key to this position is the idea that all social reality is constructed. In practice this approach consists in looking at situated language use in interactions in order to see how language is mobilized in processes of categorization. Heller observes that linguistic practices and ideologies are mobilized to legitimate processes of social exclusion that take place in key institutions of society linked to the nation-state and work sites of the new economy. Another element of this approach is a critical self-reflection with respect to the location of her research and the production of academic knowledge in the deployment of power relations. Heller's understanding of ongoing social processes of structuration that are shaped—but not determined—by neoliberal economic practices is at the root of her approach to language and power. Communicative creativity or the agency of social actors is constrained by the unequal distribution of communicative resources, a fact that results in positioning people in different ways in terms of their access to the resources or services provided by key social institutions. Institutional and individual trajectories intersect, creating discursive spaces where power over valued or legitimate communication is controlled, hence having important consequences for access to key material and symbolic resources.

Ethnographic fieldwork and the study of multiple sites is one of the principal means used for showing the interconnectedness of wider social processes with institutional ideologies, interpersonal relations, as well as social categories of language and identity. Ethnographic data consisting of participant observations, field notes, interviews, discourses, interactions, images, and institutional documentation are brought in to triangulate her analyses and to make the connection between interactional orders and institutional processes. Heller has applied this methodological perspective, together with these conceptions of language and society, to her work on bilingualism and code switching as a resource, schools as institutions of social (re)production, postnationalism and language practices in a global world, and the commodification of language in key sites of the new economy.

Bilingualism and Code Switching

Heller's work on bilingualism and code switching contests the notion of bilingualism as the coexistence of two objective, bounded linguistic systems. It also argues that language is not simply connected or correlated to societal and cultural factors but, rather, it is a practice that is socially and politically embedded. Linguistic ideologies linked to discourses of the nation-state that developed in the 19th century in particular have favored notions of monolingualism as the ideal norm for conceptualizing languages; as a consequence,

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bilingualism constitutes, in nationalist ideologies, a threat to the linguistic and cultural unity desired. The communicative forms and practices associated with bilingualism and multilingualism show, first, how language is connected to social process and, second, how social meanings and relations of power are established and maintained. Heller took up in her early work the notion of code switching as a particular kind of language practice. She looked at a Toronto-French language minority school and a Montreal brewery where code switching was understood as another resource available in the speech economy of the community. Code switching, she found, was a way to manage conflict between French and English speakers at a time when the Canadian and Quebec governments were undertaking the *francisation* of the public and private political and economic spheres. It is also understood as a shared frame of reference that allows for interpretations of solidarity (convergence) or distancing (divergence). In cases where shared knowledge is not available, code switching allows interlocutors to be purposely ambiguous. This attention to code switching at the micro interactional level in schools and the brewery corresponds to Heller's concern about the way the political and economic changes in Canada were experienced by individual members of the community. When framed in a larger social context of *francisation* and a shift toward an economy of services, code switching can be used as a strategy by drawing upon symbolic resources in order to gain access or to deny access to valued resources in a given marketplace. Inspired by the thinking of Bourdieu and Gumperz, Heller also holds that valued linguistic resources in a bilingual community are unequally distributed where certain people decide what ways of speaking count as legitimate language in a given context.

Minority Schools

Heller's interest in school resides in the school's role as a state agency of social and cultural reproduction but also as a site of struggle and contestation of centralized state policies in the management of minority language education. School, according to Heller, legitimizes the distribution of particular types of linguistic and cultural capital that have an accepted value in Francophone Canadian and global labor markets. It also is a site of struggle around the definition of legitimate national identities, in addition to a space of struggle for the social reproduction or transformation of a specific linguistic order. It becomes a space where state institutions manage the multilingualism of its citizens.

The French-language minority schools she studies in Toronto, Canada arise from the mobilization of nationalist ideologies that seek to construct schools as homogeneous discursive spaces with a standardized language that serves to define minority identity, thus reproducing ideologies of language as a bounded and territorialized system. School becomes an institution confronted by the diversity brought by multilingual speakers from other parts of Canada and the French-speaking world which challenge traditional ideas associated with Francophone nationalism. Heller analyzes how the nationalist understanding of Francophone identity creates spaces of inclusion and exclusion and leads to struggles between the school administration, staff, parents, and students around the notion of legitimate Francophone cultural and linguistic capital. The link between language and identity connected to the Canadian state and its educational program is also explored by examining language, as ideology and as practice and the way it is key in producing and contesting social inequalities within the terrain of the school.

The work in schools focuses on linguistic resources (such as the knowledge of standard French, vernacular French or English, among other languages) and the way they circulate. This leads Heller to examine the manner in which these resources have different values for social actors in the discursive space of the school and to look at how this is linked to

the labor market, where she studies the stakes of the emerging new economy. Interviews with parents of school students indicated that social actors participating in minority spaces such as the school were increasingly abandoning the politics of Francophone identity in favor of a new, more pragmatic position where access to multiple linguistic and cultural resources was considered a valuable asset in gaining access to and being successful in activities of the new economy. The school context leads her to an understanding of some of the ways the commodification of language begins to be taken up by French minority speakers.

Postnationalism, Language, and Social Process

Heller's understanding of postnationalism is related to the role of language in how the nation-state is coping with social, political, and economic changes since World War II. The traditional welfare state has been key in the development of Francophone institutions and its discursive spaces in Canada. Today, the Canadian nation-state is currently being challenged and forced to reexamine its role in a globalized world where there is a much greater diversity in all spheres of life, brought about by a greater mobility of people, information, and goods. One of the changes that the postnationalist state is facing in its redefinition is a shift in discourse, which has moved from the protector role of the state as the guarantor of the rights and welfare of its citizens to a neoliberal discourse of the state as a mediator for economic development and profit. Some of the social processes Heller looks at where the changing role of language can be observed are the growth of the service economy, the adaptation of Taylorist management techniques of control and regimentation to activities of the new economy, and the flexibility in work sites that involves the mobility of production sites as well as workers who need the ability to communicate in certain ways and in more than one language or variety. The sites Heller has studied over time where these processes can be observed include call centers, beer brewing factories, developments in the mining of profitable raw materials, ethnolinguistic cultural groups involved in the organization of festivals at tourist sites, schools, and niche markets where local branding and authenticity get constructed. A close-up look at the mobilization of language and discourses in the multiple sites studied by Heller across time and space show how linguistic and material resources are produced and distributed and how the political-economic conditions position and constrain social actors and their chances of mobilizing these resources in given contexts.

Commodification of Language

The commodification of language, according to Heller and others, has become a theme of current sociolinguistic interest because of the ways the new globalized economy is taking up language. As the exchange of information has become central for establishing and maintaining social and commercial ties, language and multilingualism skills play a key role in the emergence of global networks. The expansion of markets beyond the boundaries of nation-states requires the ability to communicate in other languages in order to buy and sell products and services. Information and communication technologies are another important dimension upon which the current economy hinges, and these new forms of communication provide a practical means for overcoming time and space and the constraints they traditionally imposed on communication used for the expanding global markets. An economy that is becoming increasingly service-based also depends on language and communication.

The political-economic conditions Heller observes in the case of Canada show the shift from discourses about language that take up the protection of identity to discourses about its commodification or its value on an economic market. This change is challenging the state- and community-based systems of the production and distribution of linguistic resources. The emphasis on the exchange value of language enters into tension with older ethnonationalist ways of defining both authentic and standard language performances on the basis of community. Heller notes, however, that while nationalism is challenged by the new economy, it is often mobilized to market niche products in a global market.

Her research shows how linguistic practices are used by producers to add value to many different kinds of local product—for example, the way French-speaking regions sell themselves as "perfectly" bilingual to potential call-center investors, or how Quebec producers of cheese and soap use heritage to tap into images of an authentic French tradition, or how tourist sites make symbolic use of linguistic varieties to attract a global public. As commodification opens up new markets, new actors are competing with established elites in order to position themselves and their products in the new economy. Language becomes a terrain of social action as actors compete to define what counts as legitimate, authentic, and standard linguistic performances. The commodification of language thereby raises tensions with regard to questions of authenticity and standardization. This ability to produce, access, or measure either an authentic or standard language performance is a source of power in the new economy.

SEE ALSO: Bilingualism and Bilinguality; Critical Ethnography; Multilingual Education in North America; Multilingualism; Multilingualism and Ideology

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Heritage and Community Languages

TERRENCE G. WILEY

The expressions *heritage* and *community* languages generally refer to minority languages used in countries where there are dominant or official languages that have greater status and/or numerical dominance. In the USA, for example, the expressions "heritage language" and "heritage language speaker/learner" have been in vogue since the late 1990s. Although the labels seem new, some heritage and minority community languages predate the founding of the country (Fishman, 2001). The various labels that can be applied to minority languages are often problematic because a single label applied to languages with complex historical and sociocultural situations is insufficient to capture all aspects of their conceptualization. Moreover, the labels applied by linguists do not always correspond to those of the speakers themselves. Thus, defining heritage and community languages can be problematic.

There is no consensus regarding the use of these terms. In the USA, for example, the label "heritage language" is sometimes used to refer to immigrant, indigenous, and former colonial languages. In Australia the expression "community language" is used to refer to immigrant languages. Before "heritage language" gained popularity in the USA, it previously had been used to refer to minority immigrant languages in Canada. Some of the reservations about the expression are that it conveys a sense of minority status, which is backward looking, focused on past traditions, rather than a sense of vibrancy that reflects either contemporary life or future possibilities (Baker & Jones, 1998). Thus, for some, "community language" may be preferred. Despite these issues, the heritage language label has shown considerable resiliency, especially in the USA. For the purposes of this discussion, both expressions will be taken as equivalent.

When the label is applied to those learning their professed heritage language, the expression raises some questions regarding the relationship between language proficiency and family or ancestral identity. The issue becomes, "Who can legitimately be a considered heritage language learner? Which is more important, affiliation with an ethnolinguistic group or proficiency in the target language?" (Wiley & Valdés, 2000, p. iii). From an identity perspective, one can be considered a heritage language learner even though she or he may have little or no proficiency in the heritage language. Proficiency, however, is important from the viewpoint of educational placement. Addressing and sorting out the needs of heritage learners, who have some knowledge of—and proficiency in—their heritage language, versus those who are truly second or foreign-language learners has proved to be an important placement and instructional consideration for many language programs. Thus, the programmatic labels we apply to heritage language learners are important, because they help to influence the perception and standing of the learners and their languages. Deciding what types of learners should be included under the heritage language label likewise raises important issues related to group inclusion and exclusion and individual identity. In language revitalization efforts, ethnolinguistic affiliation is important because some learners, who have a desire to establish a connection with a family or ancestral language, may not be speakers of that language yet may feel a strong obligation to learn it. Nevertheless, for instructional purposes, assessment of proficiency is also important. Thus, for pedagogical purposes, Valdés (2000) has defined a heritage language speaker as

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one "raised in a home where a non-English language is spoken . . . who speaks or merely understands the heritage language, and who is to some degree bilingual in English and the heritage language" (p. 1).

Additional questions can be asked about which "heritage" language best represents immigrants who were second language learners of the dominant language in their home countries because they were speakers of minority languages or dialects in their countries of origin. Consider the rapid growth of Mandarin as the heritage language of choice among Chinese immigrants. Many from China speak mutually unintelligible Chinese "dialects" as their home languages. After immigrating to their new country, they may encourage their children to study Mandarin—not because it is their native language or regional dialect, but because it is the larger common language of China. The same types of choice may be made among immigrants from South Asia, who may encourage their children to study Hindi if they are from India or Urdu if they are from Pakistan, rather than their local or regional South Asian language. The choice between Hindi and Urdu, which are mutually intelligible but use different written scripts, may be further influenced by religious affiliation, with Muslims opting for Urdu and Hindus choosing Hindi. African Americans, on the other hand, may want to study Swahili because it is used as a lingua franca in parts of Africa, even if it is not their ancestral mother tongue. In these cases, the choice of a "heritage" language may actually be a surrogate that allows them to connect with a wider ancestral culture through language. These are choices that cannot be made by language planners, but must be made by the members of the ethnolinguistic groups themselves (Wiley, 2001a).

Program and Sociolinguistic Considerations

In describing educational programs for heritage language learners, various labels other than "heritage" are being used, such as "foreign" or "bilingual" language education. Although heritage language learners often enroll in these programs, the programs themselves may not be overtly attuned to the students who populate them. The vast majority of those being taught Spanish in the USA, for example, are taught Spanish as a foreign language. There are, however, a minority of programs that are designed as "Spanish for Native Speakers" (SNS) (Wiley, 2007). These programs recognize that those enrolled have considerable knowledge and functional proficiency in Spanish but have not had the opportunity to develop literacy or a wider range of social registers in the language.

As previously noted, "community language" and, we may add, "community-based" language education are terms that may be used as alternatives to the heritage language education label. This emphasis on community is important because of the vital role that communities play in promoting the intergenerational maintenance of languages. Frequently, this role has been played outside of formal schooling or publicly funded education. Many immigrant community language programs are supplemental. They are conducted through churches, temples, mosques, or secular volunteer efforts. Similarly, there are many indigenous language community-based efforts to help preserve and promote native languages. To ensure that heritage language programs are relevant to the community, it is essential that members of the community be directly engaged through their own agency in promoting their languages in ways that are authentic for their members and reflective of their aspirations and interests (Corson, 1999).

Determining what the educational emphasis of a program should be is important for ensuring that the language learning experience will be meaningful for the members of the community. Language and instructional choices involve sociolinguistic considerations regarding which forms and varieties of language will be taught and how much emphasis

should be placed on literacy or oral proficiency (Horvath & Vaughan, 1991). Informal or colloquial varieties of languages may vary considerably from their written standard forms. Language learners may have knowledge of, and some proficiency in, the informal varieties but may not have mastered the formal standard used in school or in social situations requiring more formal registers. Regional varieties of a language may be used colloquially by members of a community along with a standard variety. A written standard taught in school can vary substantially from the variety used at home. Within the community, attitudes toward different dialects also may diverge from those of teachers, who focus only formal varieties. Thus, the characteristics of community language varieties, as well as the attitudes toward those varieties, need to be understood by those teaching heritage and community languages (Horvath & Vaughan, 1991; Wiley, 2001a).

Diglossic functions of language are also important to consider because different varieties of a language may be used to fulfill different social functions in the community. Regional varieties of Arabic, for example, are very different from classical written Arabic and are not used in the same social contexts as contemporary spoken Arabic. Thus, heritage and community language educators also need to be aware of how different varieties function and who uses what varieties for what purposes in specific social contexts (Horvath & Vaughan, 1991).

For many heritage and community language speakers, two or more languages are used by their communities to fulfill major communicative functions. In a Chinese heritage community in the USA, for example, Taiwanese (southern Min) may be used for informal purposes, Mandarin for others, and English for still others. Thus, in some situations three or more languages may be used together, with considerable code switching among speakers. Not all the members of the wider heritage language community will be equally fluent in all of the languages used to fulfill all of the major communicative functions. Thus, it is important for language educators to gain an appreciation of the different roles that different languages play in multilingual communities and the different attitudes toward them. Again, it is also important to remember that the judgments of linguists and language educators regarding different language varieties are not always parallel to those of members of the language community to be served. Therefore, it is important to keep a community focus in designing curricula.

Policy Considerations

Historically, in the USA and other countries with large immigrant populations, heritage language maintenance and promotion issues have often been framed from an immigrant perspective, with only secondary focus on the presence of indigenous language minority communities. From an immigrant language perspective, the English-speaking majority tends to see the loss of heritage languages as a kind of rite of passage into the dominant language and culture. Therefore, efforts to encourage the preservation and promotion of immigrant heritage languages pose challenges if there is little governmental support, a situation which results in preservation efforts being largely left to the resources and efforts of language minority communities themselves. These efforts tend to be short lived. In the USA, for at least the last century, there has been a three-generational shift to English, and there is recent evidence that for some groups this is becoming a one-generational shift (Veltman, 1983; Rumbaut, 2009).

The role of governments in the formation of heritage language policies is another important area for consideration. In countries with centralized language policies, the government may determine the status and legitimacy of minority languages. Under federal systems, such as in the USA, language policies may be determined at the federal, state, or local

level. States may establish their own policies as long as they do not conflict with federal law. Localities may do the same as long as they do not contradict federal or state policy. US federal laws that permitted bilingual education as an accommodation to help minority children transition to English, for example, became an area of considerable misunderstanding and contestation.

Some opponents of federal- and state-funded bilingual education contended that its real goal was to promote minority languages. They argued that it is improper for the government to promote any single language other than English. Some proponents of bilingual education, however, have noted that transitional bilingual programs further the process of Anglification because their target outcome is promoting English rather than bilingualism and biliteracy (Ruíz, 1995). With the exception of recent modest federal support for the preservation of Native American languages, and the State of Hawaii's recognition of Hawaiian as a co-official language with English, there has been little governmental endorsement of heritage languages in the USA. Historically, at the state and territorial governmental levels there is a longer record of restriction. This was particularly the case during and shortly after World War I, and again in recent decades with the reemergence of the "English-only" movement (Wiley, 1998).

Most efforts to promote heritage languages have been carried out though community-based efforts, in weekend or supplemental classes after school. In the USA, there have been several constitutional challenges contesting language restrictionism. Two noteworthy cases are *Meyer v. Nebraska* 262 US 390 (1923), which overturned a state statute making the teaching of German illegal, and, of particular importance for heritage and community language education, *Farrington v. Tokushige* 273 US 284 (1927), wherein the US Supreme Court affirmed the right for heritage language instruction through private and community-based efforts. During the late 19th and early 20th centuries, the US federal government prohibited the use of Native American languages and mandated Native American children to attend government-run, English-only Indian boarding schools. Since the early 1990s the federal government has reversed its policies and has recently appropriated modest funding for the promotion of Native American languages (Wiley, 2001b).

Language policies can be categorized based on their goal. They may seek to promote, accommodate, restrict, or suppress a language. Ruíz (1995) makes an additional distinction among three types of promotional policies: *endoglossic*, *exoglossic*, and *mixed* language policies. "Endoglossic policies are those that give primacy to and promote an indigenous language of the community" (p. 75). In the USA, indigenous languages tend to be local and regional in use, but they are not generally taught as languages of wider communication. *Exoglossic* policies are intended to promote languages of wider communication. *Mixed* policies attempt to promote languages both within and beyond the local or regional community. Policies designed to preserve native languages in the USA are, thus far, largely *exoglossic*—intended to affect local and regional indigenous communities.

What has been the impact of various language policies on the experiences of different groups of heritage and community language speakers? Although there is substantial evidence that prior to the 20th century there was a language policy climate of relative tolerance toward European immigrant languages and their speakers, the experience of enslaved African Americans and Native Americans was marked by overt efforts to eradicate their languages and cultures (Toth, 1990; Wiley, 1998). Other groups, such as speakers of Hawaiian, experienced a parallel fate (Benham & Heck, 1998).

Thus, the recent shift toward Hawaiian and Native American languages is of both symbolic and pragmatic significance in advancing a reversal of language shift and their maintenance (Wilson, 1999). McCarty and Watahomigie have also noted a number of successful American Indian programs that have been implemented with federal bilingual education funding (McCarty & Watahomigie, 1999). Given the vicissitudes in the history

of language policies toward Native Americans, Ruíz (1995), however, suggests developing endoglossic policies at least for the short term, even if in the future support for these is removed by the federal government. He reasons that "the language policy planning decisions made now will help communities achieve the continuity of tradition that has served them well up to now" (1995, p. 79). Ruíz's recommendation is basically one of using government policies to promote heritage languages during favorable times, while relying on community-based efforts to preserve their own languages over the long term. Thus, there is a role for government-supported top-down programs as long as they are endorsed by, and congruent with, bottom-up efforts initiated by heritage and community language speakers themselves (Hornberger, 1997; Corson, 1999; May, 1999; McCarty & Watahomigie, 1999).

SEE ALSO: Bilingual Education; Heritage Languages and Language Policy; Language Policy and Planning: Overview; Literacy in Community Settings; Teaching Indigenous Languages

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Heritage Language Teaching

GUADALUPE VALDÉS AND AMANDA KIBLER

The term *heritage language* has come to be used widely by those concerned about the study, maintenance, and revitalization of non-majority languages around the world. The phrase has been defined broadly as well as more narrowly. In its broadest sense, found in the sociolinguistic community, heritage language refers to any non-majority language with which individuals have a personal connection (Fishman, 2001). In this case, it is the historical and personal connection to the language and the commitment to strengthening and preserving it for future generations that is salient, regardless of the actual proficiency level of heritage speakers. The foreign-language teaching profession currently uses the term *heritage student* in a more narrow sense to refer to a student of language who is raised in a home where the non-majority language is spoken. In this case, the focus is on speakers' exposure to and level of heritage language (re)acquisition. Students may speak or merely understand the heritage language and may be to some degree bilingual in the majority and the heritage language. For language educators, the developed functional proficiencies of heritage language students are different in important ways from those of the traditional foreign-language student. This entry will discuss the concerns and efforts of the foreign-language community related to supporting appropriate instruction for heritage language students.

Within the profession of foreign-language education the use of the term *heritage language speaker* is relatively new. Many scholars trace the term *heritage language teaching* from the Canadian context, where ongoing efforts have been made to preserve and revitalize non-majority languages such as French and Ukrainian, among others. Such teaching has been known by other names as well, such as ancestral, minority, ethnic, and, particularly in Australia, community language instruction. Heritage language first became a term of general use in North America in the Standards for Foreign Language Learning (www.actfl.org/i4a/pages/index.cfm?pageid=3392), developed by the National Standards in Foreign Language Education Project in 1996. As currently used, the term heritage language refers to all non-majority languages, including those spoken by indigenous populations.

Despite having a common label, heritage language students are an extremely heterogeneous group. To deal with this complexity, researchers have proposed the notion of a continuum to describe heritage speakers' use of their first, and in some cases, second languages. For example, Polinsky and Kagan (2007) suggest a continuum model, similar to that used with Creole languages, to measure speakers' relative linguistic proximity to the language to which they were exposed as children. The field of foreign-language education continues to search for ways to describe learners more precisely who enter the classroom with strongly developed proficiencies in their ancestral languages.

In its twenty-five-century history, the foreign-language teaching profession has primarily ascribed to cognitivist (in-the-head), rather than social interactional (in-the-world) views of language acquisition and use. As a result, teachers of heritage language students often know little about language variation, societal bilingualism, or language contact. Without an understanding of the sociolinguistic factors influencing heritage language speakers, foreign-language professionals may view students' language from an overly prescriptivist perspective, focusing on the ways heritage speakers "say/write it wrong," and use a monolingual native-speaker norm to evaluate the competence of heritage language speakers.

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Such a monolingual perspective is misplaced because, as Grosjean (1985), among others, explains, bilinguals are not simply two monolinguals in one: they have acquired two knowledge systems to carry out their particular communicative needs, which may be quite unlike those of monolingual native speakers who use a single language in all communicative interactions. In this sense, heritage speakers are users, rather than simply learners, of their first (L1) and second (L2) languages. Building upon Cook's (2002) notion of the "L2 user," Valdés has suggested elsewhere that heritage language students may be more appropriately described as "L1/L2 users" (Valdés, 2005).

Most early heritage language teaching focused on Spanish-language contexts. Until the mid 1970s, foreign-language teaching professionals taught Spanish almost exclusively to monolingual Anglophones. However, the increasing number of Spanish speakers entering the country from the 1970s onward began to have a significant effect on the Spanish-teaching profession at both the secondary and the postsecondary levels. In some cases, these students were more fluent in the language than their teachers were, but they could not talk *about* the language using the terminology found in the teaching of traditional grammar. Many of these students had no experience reading and writing in Spanish, and they often spoke stigmatized varieties of their heritage language. There was little agreement among Spanish-teaching professionals about effective pedagogy for these students, but students were often seen as needing remediation that would help undo the "damage" that had been done at home.

Since that time, however, many more languages have been taught in heritage settings, and heritage language instruction has received greater research attention. The greatest challenge currently facing the foreign-language profession in teaching L1/L2 users who elect to maintain or develop their L1 in formal instructional settings is designing instruction that is not only appropriate for students' current and future needs but also based on coherent theories of instructed language acquisition for these particular groups of learners. Of the recent efforts focused on describing the features of heritage students' language, some of the most engaging work in this area investigates issues of incomplete language acquisition and language attrition (e.g., Polinsky, 2005). While this linguistic work is in an early stage, it has significant potential to influence the assessment, placement, and teaching of heritage languages in classroom contexts. What is still unknown, however, is how heritage language students' language and knowledge systems may be restructured or reshaped by formal instruction.

Pedagogically focused research into heritage language teaching has explored curriculum design and instructional methods (e.g., Douglas, 2005; Colombi, 2009), assessment (e.g., Fairclough, 2006), textbooks and materials selection (e.g., Leeman & Martinez, 2007), or a combination of these (e.g., Kondo-Brown & Brown, 2008). Some articles focused on heritage language teaching are written by practicing heritage language teachers and describe personal instructional experiences rather than empirical investigations. Other instructionally focused studies attempt to delineate differences between the classroom-based linguistic performance of heritage speakers and traditional foreign-language students (e.g., Kondo-Brown, 2005). An additional visible concern in the literature on heritage language pedagogy at the university level is the need to prepare these students to be successful in traditional university foreign-language programs, as language majors and eventually as scholars.

Related research focuses on the students and teachers participating in heritage language classrooms. Descriptions of heritage teacher-training experiences (e.g., Anderson, 2008) as well as studies of heritage teacher beliefs and practices (e.g., Lacorte & Canabal, 2005) provide insight into instructors' perspectives in the classroom. In relation to students who are placed in heritage language classrooms, the negotiation of multilingual identities is an issue that has received significant attention: Blackledge and Creese (2008), for example,

have investigated how these students negotiate identities in ways that subvert traditional "heritage" labels placed upon them.

Recent developments in heritage language teaching demonstrate the growth and expansion of this field. While Spanish, and to a lesser extent, Russian, have often been the focus of heritage language scholarship, recent publications indicate an increasing interest in the teaching of Chinese, Japanese, and Korean heritage languages (e.g., Kondo-Brown & Brown, 2008; Lee & Shin, 2008) and the teaching of Spanish in "new Latino diaspora" communities (e.g., Harklau, 2009; Bateman & Wilkinson, 2010). Linguistic research into heritage language speakers now investigates an impressive range of languages, from Armenian to Finnish to Vietnamese, and as heritage language programs become more common in these languages there will likely be an increase in pedagogically focused research about them as well. The *Heritage Languages Journal* (www.heritagelanguages.org/), an online publication established in 2003, the National Heritage Language Resource Center (www.international.ucla.edu/languages/nhlrc/), and the National Foreign Language Center (NFLC) Alliance for the Advancement of Heritage Languages (www.cal.org/heritage/) are valuable new resources available to teachers and researchers interested in heritage language teaching.

Heritage language teaching has also expanded beyond the secondary, university, and community language classrooms with which it has been traditionally associated. In the United States, for example, demand for highly skilled speakers of non-English languages has become an important focus for national defense initiatives, such as the National Security Education Program's English for Heritage Language Speakers Program, which aims to develop and use heritage language speakers' multilingual proficiencies. Language maintenance efforts are also undertaken in elementary schools serving immigrant children, including in-class or after-school instruction in what schools often refer to as students' "primary" languages (e.g., Curdt-Christiansen, 2006).

Much remains to be learned about the effects of language instruction on heritage speakers, and recent publications suggest several directions for future investigations. In 2002, a panel of researchers at the Second National Conference on Heritage Languages in America outlined several key research questions relating to heritage language ecologies, ideologies, measurement, and literacy (Campbell & Christian, 2003). More recently, Polinsky and Kagan (2007) have suggested that a longitudinal study of instruction, using measurable outcomes, might provide insight into the impact of different pedagogical approaches for different types of heritage students. Heritage language teaching raises a number of important theoretical issues relevant to practitioners and researchers alike, and the field would also benefit from additional research into language acquisition processes, including language attrition and incomplete acquisition—topics that cannot be addressed fully here—as well as the acquisition and use of heritage speakers' receptive and productive grammars, the sources of heritage speakers' "flawed" language production, and speakers' acquisition of multiple registers, genres, and dialects in the heritage language.

SEE ALSO: Bilingualism and Bilinguality; Literacy and Heritage Language Maintenance; Multicompetence; Multilingualism and Minority Languages; Teaching Indigenous Languages

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Heritage Languages and Language Policy

KENDALL A. KING AND JOHANNA ENNSER-KANANEN

Defining Heritage Languages

The term *heritage language* (HL) was first used in the Canadian context to refer to any "language other than English and French," and intended to reference the languages spoken by indigenous (First Nation) people or by immigrants (Cummins, 1991, pp. 601–2). Clyne (1991) modified the definition for the Australian context to include any language other than English (LOTE). US researchers and policy-makers adopted this version in subsequent years.

While HL is often taken to be the language used in home or familial contexts (Campbell & Peyton, 1998), others point to HL's broader cultural associations and significance. Fishman (1999) further broadens the definition of HL, suggesting that HL can refer to any "language of personal relevance other than English" (cited in Van Deusen-Scholl, 2003, p. 216). Kondo-Brown (2003) synthesizes Wharry's (1993) term "ancestral" and Fishman's (2001) three subcategories of HL: HL refers to any ancestral language, including those that are *indigenous* (e.g., Navajo or Ojibwe), *colonial* (e.g., Dutch or German in the USA), and *immigrant* (e.g., Hmong or Somali in the USA); thus the HL might or might not "be a language regularly used in the home and the community" (p. 1).

The label "heritage" has been problematized as outdated and linked with primitivism (e.g., Baker & Jones, 1998). Indeed, "heritage" suggests a trait or asset gained through birth, such as property or DNA, when language is not fixed but rather the product of interaction. Baker and Jones (1998) also note that alternatives like *ethnic* and *ancestral language* hold similar connotations while, as Van Deusen-Scholl (2003) points out, *primary* and *native language* often reflect inaccurate assessments of language competence. Outside of North America, the terms *allochthonous language*, *home language*, and *language of origin* are in wider use (Van Deusen-Scholl, 2003). In Europe, an important distinction is made between *indigenous* or *regional* minorities (RM), whose (language) rights are often legally protected, and *refugee* or *immigrant* minorities (IM), who generally do not enjoy the same status (Extra & Gorter, 2001). Despite efforts of the Council of Europe to raise the status of minority languages (MLs), many remain endangered (De Bot & Gorter, 2005). Similarly, in the USA, the position of many HLs remains fragile (Van Deusen-Scholl, 2003).

Defining HL Learners

HL learners are often differentiated into those who identify culturally with the HL versus those who speak it at home (Valdés, 2001). Similarly, Kondo-Brown (2003) points out that defining oneself as a HL learner often depends on identity orientation rather than linguistic proficiency. Van Deusen-Scholl (1998, 2003), in turn, suggests a distinction between heritage learners and learners with a heritage motivation, which aligns with Carreira's (2004) labels "HLL1" and "HLL2." Carreira (2004) also argues that a definition of HL learners has to take "identity, language, and family background" into consideration (p. 18).

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In the USA, HL learners have been defined more narrowly as those who were raised in non-English-speaking homes, who have receptive or productive HL skills, and are to some degree bilingual (Valdés, 2001). These individuals have often received all their formal schooling in English with limited opportunities to develop HL literacy skills. In turn, Wiley (2001) suggests a more socially contextualized definition of HL learners and stresses the importance of definitions that serve to empower HL learners. These definitions are important as they "undergird decisions about course and program design, materials selection, placement and assessment of students, and teacher training" (Carreira, 2004, p. 2).

HL learners represent an extremely diverse group. In the USA, by far the largest and fastest growing HL population are Latinos, a group comprising greatly different Spanish proficiency levels, cultural backgrounds, as well as varied dialects, goals, and needs (Van Deusen-Scholl, 2003). While much of the research and policy work has focused on this population, other HLs, including Korean, Arabic, Chinese, Hindi, Persian, and Urdu, have received growing attention in recent years.

US Language Policy for Heritage Languages

US language policy (LP) for HLs has expanded rapidly in the last decade concomitant with growing recognition of a long-standing contradiction in language and education policy. Specifically, the great majority of HL speakers are schooled primarily if not entirely in English (and as a result transition to English dominance or monolingualism), and then later taught a "foreign" language (FL) in high school, college, or both, often with limited success (Wright, 2007). Most LP initiatives for HLs recognize that traditional foreign language classes are inappropriate for HL learners (Carreira, 2004) as they fail to build effectively upon the linguistic and cultural competencies that HLs have gained outside of formal schooling.

HL education policies also seek to harness the linguistic competence in HL communities as a national resource. Following 9/11, language competence was recognized as a critical and long-neglected US national security issue as it became clear that there were insufficient numbers of qualified individuals fluent in "critical languages" such as Arabic or Korean. Cultivation and training of US citizens with HL backgrounds were viewed as relatively quick and efficient means of meeting this need, and one recognized through federal funding by the US Department of Education for the National Heritage Language Resource Center (NHLRC). The Center's mission is to develop effective pedagogical approaches to teaching HL learners, first by creating a research base and then by pursuing curriculum design, materials development, and teacher education. Additional LP work for HLs has been funded through the National Security Language Initiative (NSLI), which seeks to expand and improve the teaching and learning of strategically important world languages, in particular through the STARTALK program (http://startalk.umd.edu/), which aims to increase the number of Americans learning, speaking, and teaching critical need foreign languages.

In addition to these federal LP efforts, a number of schools and programs at the K-12 and university level aim to provide language instruction for HLs. The bulk of these have been directed at Spanish HL learners (Valdés, Fishman, Chávez, & Pérez, 2006). Yet substantial need remains. For example, most postsecondary institutions do not offer any HL courses (Gonzalez Pino & Pino, 2000), and while calls for teacher training for HL learners date back more than 30 years (Valdés, 1981), there are few programs or standards for training teachers to instruct Spanish to native speakers.

Looking Ahead

As suggested above, few programs are designed specifically for HL learners; most often they attend FL classes (Van Deusen-Scholl, 2003), especially at the tertiary level. More HL-specific materials, teacher training, assessment tools, and opportunities for community-based learning are urgently needed (Van Deusen-Scholl, 2003).

More generally, the field of HLs is challenged by the heavy federal emphasis on a narrow handful of "critical languages," that is those deemed to be critical to US national defense (e.g., Arabic, Pashtu, Korean). As noted above, these HLs have benefited from substantial support, while others (e.g., Hmong, Ojibwe, Somali) largely have been overlooked (King, 2009). As widely noted (e.g., Sandrock & Wang, 2005), this narrow prioritization of a handful of select languages is short-sighted given that the languages in need will no doubt change very quickly in step with world events; a better, long-range goal would be the active cultivation of a wider and deeper pool of Americans with second language skills of all sorts.

Even more broadly, perhaps the biggest challenges to all HLs in the USA are the general immigration politics and powerful English-only ideologies that undergird a rapid shift to English. For instance, SB1070, passed in the state of Arizona in April 2010, requires that immigration status be ascertained by local law enforcement when there is "reasonable suspicion that the person is an alien who is unlawfully present in the U.S." While what might make a person "reasonably" suspect is not legislated, one might soundly infer that speaking Spanish (or another HL) would raise suspicion. Laws such as these not only hurt the individuals who live in fear of being jailed for speaking a HL, they weaken the entire nation by promoting the squandering of valuable linguistic resources.

Despite these and other unfavorable policies in the USA (e.g., the No Child Left Behind Act) and elsewhere, HL speakers and HL programs of some sort are likely to carry on. Indeed, as Hornberger (2005) notes, the "contested and ever-shifting" meaning of HL is "the surest evidence of the adaptability and long-term survival of heritage languages in our ever-changing world" (p. 608).

SEE ALSO: Bilingual Education and Immigration; Endangered Languages; Heritage and Community Languages; Heritage Language Teaching; Indigenous Languages in the 21st Century; Language Policy and Multilingualism; Literacy and Heritage Language Maintenance; Minority Languages in Education; Teaching Indigenous Languages

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High-Stakes Language Testing

ANTONY JOHN KUNNAN

Introduction

Definition

Whether a test is considered high stakes or not depends not on the testing instrument per se but whether the test is used as the main basis for decision making for a major career path or life changing event. In other words, when decisions based on the interpretation of test scores or evaluations (of a single test) can lead to consequences for test takers, and when these consequences radically alter test takers' major career path or life event, such tests are termed high-stakes tests. For example, in all modern societies, there are high-stakes tests, such as high school graduation tests, college undergraduate entrance tests, university graduate or professional degree entrance tests, professional licensing tests (for medical doctors, nurses, lawyers, pilots, architects, musicians, etc.), employment tests, and immigration and citizenship tests. In these tests, score interpretations provide distinctions such as pass or fail, high or low grades, competent or not competent, and so on. Such categorizations can lead to serious consequences for test takers and therefore these tests are often called high-stakes tests.

High Stakes for Whom?

It is obvious that test takers face pressure in high-stakes tests to perform well. This means they have to know the subject matter well and conditions of the test (particularly in terms of the test tasks, sections, speededness, etc.), use appropriate test-taking strategies, and respond to test tasks efficiently in the time allotted. All this is extremely important as life and career-changing decisions may be made based on a single high-stakes test score. But not all high-stakes tests turn out to be high stakes for test takers. For example, in the United States under the concept of school accountability in the No Child Left Behind Act, there is no negative impact of poor performance on the students themselves. However, school principals and teachers are under pressure to improve their students' scores annually, because if their students do not improve, school managements could be changed, teachers may lose their jobs, and accreditations may be revoked.

In other cases, not all test takers in high-stakes tests put pressure on themselves to perform well and to get the desired benefit. For example, if a test taker who takes a high school graduation test (typically considered a high-stakes test) does not care about the outcome (and therefore does not prepare or take the test seriously), then the test may not work as a high-stakes test for him or her because of the low investment in it. At the other end of the stakes spectrum is a low-stakes test such as a class quiz that is not going to have any impact on a test takers' life or career but, if a highly motivated student in school or college, or an adult in a hobby course takes such a test very seriously he or she might put himself or herself through the same pressure situation as in a high-stakes test.

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High-Stakes and Standardized Tests

Many high-stakes tests are also large-scale standardized tests which are administered to large groups of test takers in centralized locations (of the paper and pencil variety) and in standardized conditions (examples, parallel forms of tests, uniform administrative measures). This is typical of high school graduation tests or college or university entrance tests, professional licensing tests, or employment tests. Such standardized tests, typically based on content and performance standards, are widely used mainly because of the convenience associated with administration, scoring, and reporting. But in some contexts, high-stakes tests are not administered on a large scale or are not standardized; examples include high-stakes tests for immigration or citizenship.

Examples of High-Stakes Tests in Schools and Universities

High-stakes tests are most common in schools and universities around the world either as school-level graduation tests (or school-leaving or exit examinations) or as university entrance tests. Three such tests are described below.

The French *Baccalauréat*

The French *baccalauréat*, often known as *le bac*, has more than a 200-year history. Established by Napoleon Bonaparte, the *baccalauréat* is a an examination taken by students in their final year of high school (known as the *lycée*) to demonstrate their achievement in school subjects so that based on the examination results students can be placed into university and the *grandes écoles*. When the *baccalauréat* was first designed, it was an oral examination of letters and humanities in Latin and Greek; today, it has evolved into a complex set of examinations of three types: the first type of exam is the *general* exam which has three series: sciences, economics and social sciences, and literature. Then there is the *baccalauréat technologique* and *baccalauréat professionnel*. The exam series is large scale and administered on the same time and day to all test takers in the country. The questions require essay-type responses and could take about 20 hours of testing time depending on the number of classes taken by the students. Successful passage of the exam series is considered completion of the French secondary education.

The CAHSEE

The California High School Exit Examination was recently introduced largely due to the federal mandate under the No Child Left Behind legislation. All high school students in California need to pass this exam in mathematics and English in order to receive a school-leaving diploma. According to the California Department of Education, the purpose and content of the CAHSEE is to improve achievement in public high schools and to ensure that students who graduate from public high schools can demonstrate grade level competency in reading, writing, and mathematics. Similar school-leaving diploma examinations are being introduced in many states in the United States.

The TOEFL

The Test of English as a Foreign Language, developed and administered by the Educational Testing Service, Princeton, is arguably the most well-known large-scale language assessment in the world. The TOEFL has become mandatory for non-American and non-Canadian non-native speakers of English applicants to undergraduate and graduate programs in United States and Canadian English-medium universities. Although the test has become

popular worldwide, the content and structure remained more or less the same over three decades. In the 1990s, a revision project began with TOEFL staff and the Committees of Examiners and Researchers with the intention of revising the TOEFL to include more communicative constructed-response tasks, direct assessments of speaking and writing, integration of skills and modes, more diagnostic information to score users, and the possibility of computer delivery. Given the high-stakes nature of the TOEFL, the revision process was deliberate and long. The Internet-based TOEFL that is administered worldwide today is the result of these revision efforts.

Examples of High-Stakes Tests in the Workplace

High-stakes tests are becoming increasing popular in the workplace. These assessments are used for screening of applicants for employment and promotion to higher levels in professions that require specific abilities. Examples of this type of assessment include assessment for civil service, health and business professionals, language teachers, court interpreters and translators, tour guides, and air traffic controllers. Here is a description of a few such tests.

Chinese Imperial Civil Service Examination

It can be argued that the earliest known high-stakes tests were the Chinese Imperial Civil Service examination system instituted in China as early as the Han Dynasty (202 BC), continued during the Ming and ending with the Qing emperors in 1905—the longest, almost continuous, examination system, at 1299 years. These examinations were supposedly created to reduce the power of the aristocracy and create a bureaucratic class that was obedient to the emperor. They were promoted and interpreted as a way of identifying merit and capability, and offering equal opportunity thus making social mobility possible. These examinations, which were held at the district, prefectural, provincial, metropolitan, and the palace levels, were in spoken Mandarin (the official spoken dialect) and written classical Chinese. The examinations tested knowledge of the classics from the *Five Classics* and the *Four Books*. Thus, classical erudition, historical knowledge, literary style, poetry, the esoteric art of calligraphy, and the infamous rigid, formulaic parallel-prose style of the eight-legged essays were considered the symbols of the Confucianized gentry-officials. However, left out from the examination pool were large classes of individuals whose parents and families did not have the means of allowing their sons to prepare for the examinations instead of working in the fields. Additionally, the use of Mandarin as the spoken language of the examinations and the use of archaic written classical Chinese privileged the Mandarin-speaking northeast but excluded other geographical regions of China.

The TOEIC

The *Test of English for International Communication*, developed and administered by Education Testing Services, Princeton, assesses everyday English skills of people working in an international environment. It traditionally consisted of listening and reading comprehension sections in a two-hour 200-item multiple-choice test. More recently, it introduced speaking and writing sections which are optional. The test is designed to reflect actual English language use in the workplace although no specialized workplace language is required to be successful in the test. Many international employers and agencies use the test for employment or promotional purposes.

Other Tests

Many current workplace related tests for civil service, health professionals, business, and tourism around the world can be considered high-stakes tests as they are sometimes the only measure of language proficiency. A few examples include the former *Occupational English Test* used for immigrant health professionals in Australia, the *Canadian English Language Benchmark Assessments for Nurses* designed to assess the communication skills of internationally educated nurses whose first language is not English, Cambridge ESOL's *Business Language Testing Service* designed to assess business communication in English, French, German, and Spanish and the *Business English Certificates* at three levels (preliminary, vantage, and higher) which are linked to the Common European Framework of Reference for Languages.

Examples of High-Stakes Tests for Immigration and Citizenship

In more recent times, high-stakes tests have begun to enter the context of immigration and citizenship. Many countries require applicants to take a standardized language assessment in the dominant language of the country they wish to immigrate to or of which they want to become a citizen. Some of the countries that have citizenship (or naturalization) tests include the Australia, Canada, Estonia, Germany, Korea, the Netherlands, United Kingdom, and the United States. A few of these tests are described here.

The US Naturalization Test

Although Naturalization Acts from 1790 onwards have controlled and restricted immigration and citizenship, it was the Immigration and Nationality Act of 1952 that enshrined both the English language and the history and government requirement. This Act required applicants for citizenship to demonstrate their ability to *speak, write, and read English and to demonstrate their knowledge of US history, principles, and form of government*.

Until the late 1980s, this requirement was managed by a variety of immigration courts or immigration examiners. The first US Naturalization Test was designed and administered in 1991. But there were many problems with the test. For example, examiners used different sentences for reading and writing, different content for listening and speaking, different levels of difficulty in the sentence writing, unknown passing criteria, and the history and government questions encouraged memorization of discrete facts with little understanding of the material (see Kunnan, 2009, for more details).

Due to these problems, the test was redesigned. The new test, which has been in operation from October 2008, has the following format: (a) applicants would have three chances to read and write a sentence in English based on a vocabulary list, (b) sentences for reading and writing would cover US history and civics, (c) applicants' answers to questions normally asked about their application (N-400) during the interview would form the speaking test. The redesigned test was expected to address the concerns raised with the old test. But so far, all indications are that the redesigned test is no better than the old test as it still requires much memory of facts and figures, very little English language proficiency, and shows continued variability in test items between examiners. This high-stakes test continues to remain a hurdle in the naturalization process for applicants whose first language is not English.

German and Estonian Tests

Germany and Estonia are two countries that have recently enacted legislation that offers citizenship to its residents. In the case of Germany, ethnic Germans (*Aussiedler*) from the

former Soviet Union and other Eastern European countries are granted the right to resettle in the Federal Republic of Germany. But since 1996, prospective *Aussiedler* and their family members have been subject to a German language test that is administered by an immigration examiner. In Estonia, after breaking away from the Soviet Union, the government wrote laws to make the Estonian language the sole official language and required basic Estonian language for Estonian citizenship. The impact of this policy is that a significant percentage of the Russian-speaking residents of Estonia (particularly, the older generations) are likely to be disenfranchised due to the Estonian language requirement. Thus, such high-stakes tests are used by governments to implement and enforce their immigration and citizenship policy.

Major Criticisms and Possible Safeguards

In general, large-scale high-stakes university, college, and workplace (and some immigration and citizenship) tests are often criticized on many grounds especially when these tests impact different groups of test takers, but many safeguards that can eliminate or reduce the disadvantages of high-stakes testing are available. First, one of the sharpest criticisms of high-stakes tests, that they are used for decision making without any additional information, can be blunted if the various stakeholders (score users like admissions officers, employers, citizenship, and immigration examiners) make decisions using many different pieces of information (such as course grades, recommendation letters, job interviews, etc.) and do not rely only on scores from high-stakes tests.

Second, stakeholders (mainly test developers and score users such as admission officers or employers) ought to conduct studies to show that the tests not only have the appropriate qualities but that the consequences of the tests' scores and decisions made based on them are beneficial to test takers, the community, and society in general. If tests are having a detrimental effect on the test-taking community, then more scrutiny of the test would be necessary. In other words, the welfare of the community should be one of the main considerations in using such tests.

Third, necessary systematic validation research studies ought to be conducted by the test development agencies to show to the test users (test takers, test score users, and other consumers of test information) that the tests, their score interpretations, decisions, and related claims can be defended. In fact, these tests need to meet the highest standards of test development, test score interpretation, and decision making. This will go a long way to demonstrate to the stakeholders and the public that the tests are in fact appropriate measures and therefore decisions based on the test scores will be useful and beneficial to the test-using community (see Tindal & Haladyna, 2002, for a discussion of related issues).

Fourth, comprehensive test evaluations need to be conducted on a regular basis for the particular purpose for which the tests are being used. These evaluations need to be based on established standards such as the APA, AERA, and NCME (1999), and include deliberative forums (with policy makers, test developers, test takers, and community members) as recommended by Heubert and Hauser (1999).

Fifth, an independent oversight body that has the authority and responsibility to review tests, test reports, research studies that defend the claims of tests, and overall usefulness of tests could ensure that tests are beneficial to the community (see Madaus, Haney, Newton, & Kreitzer, 1997, for more on this topic).

Sixth, test takers who are unable to take part in high-stakes tests ought to be given alternative assessments so that their career and life chances are not diminished because of the nature of the tests they are required to take. This obviously applies to test takers with disabilities but also to test takers who are expected to take such tests in their second or third languages or in unfamiliar test conditions.

Finally, government (often encouraged by private agencies) need to avoid legislative mandates that violate professional testing and evaluation standards so that new tests that are developed and launched are not in conflict with established ethical and professional practices.

Conclusion

Although high-stakes tests might be useful in many contexts, stakeholders need to understand the limitations of these tests and use multiple sources of information in making decisions on test takers. In addition, the safeguards presented in the previous section regarding conducting research studies and complying with current testing standards are both critical steps in addressing the many criticisms of high-stakes tests. The safeguards are critical as high-stakes tests are here to stay and we have to learn to use them in the best way we can. As Cizek (2005) puts it, "High-stakes tests: we don't know how to live with them, we can't seem to live without them" (p. 50).

SEE ALSO: Assessment of Listening; Assessment of Reading; Assessment of Speaking; Language Testing and Immigration

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Historical Development of Language for Specific Purposes

SUE STARFIELD

Learning and teaching a language for specific rather than general purposes is an approach that began to develop after World War II and has shown continued growth since then, both theoretically and methodologically. This entry focuses on the 1960s–1980s when the fledgling movement began to make a substantial contribution to the field of language learning and teaching. In a survey of the emergent field, Strevens (1977, p. 146) identified what he termed "special purpose language teaching" as being part of a "major, world-wide educational tide of change." Robinson (1980) notes that the first conference devoted to language for special purposes (LSP) teaching was held in 1969. Initially, LSP referred to language for special purposes, although much of the work being done was, in fact, in the area of English for special purposes (Robinson, 1980). According to Robinson, the term "specific" soon replaced "special" as special was thought to put the emphasis on restricted languages rather than on the specific purposes of the learner and the range of resources the learner might need to access. The LSP learner was not, therefore, learning the language for general educative purposes or for the study of literature in which the language was the subject matter of the course, but rather as a means to the "acquisition of some quite different body of knowledge or set of skills" (Robinson, 1980, p. 6). Thus, from early on, context and content became key issues in LSP pedagogy: in what context would learners be using the language skills and what content would they need to access through the language? Similar approaches to foreign-language teaching were being adopted by other languages; *le français fonctionnel* (Vigner, 1980) was developed as a reaction to audio visual methodologies and traditional grammar-focused teaching under the influence of communicative approaches to language learning and teaching. While LSP was intended to meet the communication needs of rapidly industrializing nations and overcome local barriers to communication by promoting "global" languages such as English or French, we now know that this was often at the expense of local languages.

This entry's focus is, however, on ESP as its development essentially parallels developments in other languages. For many EFL educators, ESP was perceived and portrayed as a radical, modern, more scientific departure from previous approaches. It was seen initially to concentrate more on reading and less on speaking and writing; to use authentic texts from the specific fields learners were to engage in; to require a degree of communication between language teacher and subject specialist; and, in the main, for the syllabus and teaching materials to be based on notional, functional, and communicative criteria that would help learners meet the communicative needs of their chosen field of practice (see Strevens, 1977).

The origins of this approach cannot be separated from the enormous social changes and massive economic development that occurred after 1945, in what has been called the third wave of globalization (Robertson, cited in Kumaravadivelu, 2006), as Europe struggled to rebuild itself and newly independent Asian and African countries sought to modernize. In line with the modernization agenda, LSP was seen as more efficient, being targeted to the specific needs of the learners in workplace or academic settings. The rise and rise of multinational capitalism during this period also encouraged the development of LSP teaching,

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seen as a means of improving workplace productivity and facilitating trade. Simultaneously, ideologies of progress, and the desire to facilitate international communication, student exchange, and understanding were supported by organizations such as the United Nations in the hope of preventing future world wars and created a fertile terrain for LSP development. In Europe, the work of the Council of Europe to promote foreign-language learning across what was eventually to become the European Union led to influential developments in needs analysis and syllabus design, which will be discussed further below. Again the agendas of trade and commerce and greater understanding between nations were intertwined.

These somewhat contradictory aims and intentions are at the heart of LSP and are the source of some of the critiques that have arisen more recently (see, e.g., Pennycook, 1997; Benesch, 2001). Benesch documents what she calls an "unofficial history" of ESP in which large-scale ESP development is seen to be driven less by goals of global communication and understanding but more narrowly by the growth of US oil interests in the Middle East from the 1960s onwards. She illustrates this view by quoting from a presentation by Strevens at a 1971 conference on "Adult English for National Development" held in Beirut: "The profession can now say . . . to the oil industry or to a shipping firm or even to a government . . . describe accurately the precise achievement in English that you require, we can "engineer" a system that will reach this target" (Strevens, 1971, cited in Benesch, 2001, p. 30). Organizations such as the British Council, the Ford Foundation, and the United States Information Agency (USIA) were also instrumental in promoting ESP in particular and contributed to the establishment of English as the dominant language of science and technology and commerce (Hutchinson & Waters, 1987; Benesch, 2001). Robinson (1980, p. 3) notes that much ESP work in the period prior to 1980 was being carried out at sites such as the Regional English Language Centre in Singapore; the University of Khartoum, Sudan, which produced a publication called *English for Special Purposes in the Middle East and North Africa* (*ESPMENA Bulletin*), and the University of Chile in Santiago, underlining the global spread of ESP. Many of the early proponents of ESP such as Swales, Dudley-Evans, and Robinson developed their ESP approaches in the newly independent states, often working on British Council funded projects, while much of the early dissemination of their work and the work of others in the new field was through British Council publications in the ELT Documents series (see Robinson, 1980, for a comprehensive bibliography and Swales, 1985).

The link to the postcolonial context is explicit in *The Linguistics Sciences and Language Teaching* (Halliday, McIntosh, & Strevens, 1964), an influential text that set out a pedagogical agenda for LSP based on functional linguistics, in particular the study of register. The book's title promised a more scientific approach to language teaching. The authors argued that "only the merest fraction of investigation has yet been carried out into just what parts of a conventional course in English are needed by . . . power station engineers in India, or police inspectors in Nigeria; even less is known about precisely what extra specialised material is required" (Halliday et al., 1964, p. 189). While identifying need and context as important categories, the task of the linguist was, in their view, to carry out "detailed studies of restricted language and special registers" based on "large samples of the language used by the particular person concerned." The importance of what came to be called "authentic" texts—that is, texts that learners were likely to encounter in their work or study situation—is also evident in their thinking. Halliday and colleagues' emphasis on specific sublanguages or registers was seminal to the development of inter alia the many LSP and ESP subfields that are still studied and taught today—for example, English for medical purposes; English for law; English for nursing; English for science and technology; and English for academic purposes in addition to numerous occupational sublanguages such as English for business or occupational purposes and vocational or workplace English.

As LSP grew out of concerns to provide an approach to language learning and teaching that was distinct from "general" purpose or traditional literature or humanities-based language teaching, it is not surprising that its initial focus was on language for science and technology. As Benesch (2001, p. 5) points out, this trend was supported by a "postwar boom in funding for sciences and technology by the United States and the United Kingdom [that] included subsidies for English language teaching."

English for science and technology (EST) research was influenced by register analysis and took the form of frequency studies of lexical items and grammatical features of science texts. Huddlestone's (1971) study of a 135,000 word corpus of scientific English looked for clause- and sentence-level patterns. Early approaches to ESP pedagogy reflect the influence of what Swales (2000, p. 60) has called a "simplistic relationship between linguistic analysis and classroom activities." According to Swales (1985, p. 17), the first English for specific purposes textbook was Herbert's (1965), *The Structure of Technical English,* based on a "serious and detached investigation into the characteristics and the language found in science and engineering written texts." Textbooks developed on the basis of register analysis include Ewer and Latorre's (1969) *A Course in Basic Scientific English,* from a study of 3,000,000 words of modern scientific English (Benesch, 2001, p. 5). Criticisms of this approach included the following: analysis was confined to sentence level; the restricted range of grammar and lexis provided an insufficient basis for a textbook on English for science and technology; reading passages lacked authenticity; the approach focused overly on form at the expense of meaning and communication; and whether special registers could, in fact, be clearly identified (Robinson, 1980; Dudley-Evans & St John, 1998).

Although much critiqued in the later literature, it is interesting to note, as Paltridge (2009) points out, that the development of sophisticated software has led to a resurgence of interest in and greater development of the potential of register analysis for our understanding of both written and spoken discourse.

Partly as a response to the difficulties experienced with register analysis, and under the influence of communicative approaches to language teaching and theoretical frameworks such as speech act theory and functional linguistics, applied linguists began to examine texts beyond the level of the sentence in terms of their overall discourse structure and their rhetorical purpose or communicative function. The emphasis shifted to language use and how meaning was produced in the performance of communicative acts. Early exemplars of this approach include *Industrial English* (Jupp & Hodlin, 1975), which explicitly adopted a functional approach to analyzing the language needed by factory workers in the UK, signaling a clear intention to move away from the linguistic/structural syllabus to what people do with language in the workplace. In the USA, Lackstrom, Selinker, and Trimble (1973) examined organizational patterns in EST texts, particularly at the paragraph level; these were assumed to differ significantly from those of other registers. The nine-volume *English in Focus* series, edited by Allen and Widdowson between 1974 and 1980, featured textbooks in areas such as physical science, mechanical engineering, medical science, education, social science, and biology. The series follows a rhetorical–functional approach based on Widdowson's (1979) view that scientific discourse can be seen as a set of rhetorical acts such as giving instructions, defining, classifying, exemplifying, and so on. This early interest in texts and the relationship between form and function (communicative purpose) laid the foundation for the development of studies of genre and the concept of discourse community, which have become central to ESP (see Swales, 1990).

These early approaches to ESP were based on the belief that identifying the specific variety of language or discourse functions of the particular domain of future study would meet the learners' communicative needs and sustain student motivation. As most ESP learners were adults, they were also assumed to have more clearly identifiable needs then younger learners. Needs analysis was used to carry out target situation analysis to better

specify the communicative language functions required within the specific context and develop appropriate syllabus content (see Hutchinson & Waters, 1987; Benesch, 2001). Munby's (1978) *Communicative Syllabus Design* can be seen as an attempt to provide a more theoretically informed and systematic approach to needs analysis through detailed lists of microfunctions which the ESP practitioner would need to complete prior to commencing syllabus development. Although largely unimplementable in the real world of ESP, and discounted today, the approach had the merit of placing needs analysis, situation, function, and context at center stage in LSP and alerting LSP practitioners to the multiple variables that needed to be considered when adopting a communicative approach. The more sophisticated needs analyses approaches in use today can be seen to have evolved in part as a reaction to Munby's work.

Munby's needs analysis model was a precourse analysis that the course developer carried out once, prior to implementation, and did not take into account institutionally available resources. In contrast, Richterich and Chancerel's (1977) influential approach to needs analysis (developed for the Council of Europe to identify the needs of adults learning a foreign language) is an ongoing process, not a one-off event carried out prior to the commencement of a course. In this approach, the learner, the educational institution, and the employer separately identify their needs, which may include available resources; objectives; curriculum; or teaching methods. Methods were largely quantitative and included surveys and questionnaires and content analyses but also nondirective interviews, language-attitude scales, and job analyses.

Hutchinson and Waters (1987) developed a critique of what they called the "language-centered approach" (p. 54) to target situation analysis which, while using subject area texts, simply produced lists of linguistic features to be learned and often led to materials that were demotivating for students. Hutchinson and Waters's significant contribution was to focus on the learning needs of the learner: what the learner needs to do in order to learn. They thus directly engaged with the question of motivation and with theories of learning. They argued that teachers need to focus on the underlying competencies and learning skills that lecturers assume students will have and will enable them to reach the target performance, rather than concentrating simply on linguistic features of specialized texts. In arguing against the existence of specialized varieties of English, Hutchinson and Waters can be seen to be in favor of what has become known as a "common core" approach rather than a highly subject-specific one, which obviously has implications for the role of the ESP teacher (Dudley-Evans & St John, 1998).

Widdowson (1979) further attempted to define the role of the ESP teacher in a way that would circumvent some of the difficulties experienced by essentially humanities-trained teachers of English. His theoretical position was also influential in materials development at the time. He argued that the underlying processes of scientific inquiry were universal, that they existed independently of their realizations in different languages, and that students entering higher education would already have been initiated into these concepts and procedures as they were realized in their own language. What the students did not know was how to communicate this knowledge in English. According to this view, the role of the ESP teacher was therefore to help the students to communicate in English the knowledge of science they already had. However, those working in contexts where students' knowledge of science was not well established due to poor schooling, and where teachers could not rely on students' prior knowledge, found that many of the textbooks which were based on the rhetorical–functional approach as conceptualized by Widdowson (see Robinson, 1980; Swales, 1985; Starfield, 1990) did not meet their students' learning needs. Starfield (1990) discovered that her South African students had not been taught science at high school in their first language at a level that would have enabled them to acquire the universals Widdowson describes and had therefore to acquire both English and science at

university. English-language teachers struggled to respond to the students' multiple learning needs, which often led to the development of team teaching—in which subject specialist and language teacher collaborated to varying degrees—and other contextualized approaches to instruction in many parts of the world (Kotecha, Rutherford, & Starfield, 1990; Dudley-Evans & St John, 1998). ESP practitioners also found that they needed to either significantly adapt materials produced elsewhere or develop their own local materials to meet local needs.

The degree of subject area knowledge required by language teachers and their relationship with content-area specialists and specialized texts are issues that continue to be posed in LSP. Whereas Kotecha, Rutherford, and Starfield (1990) and Johns and Dudley-Evans (1980) and others' realization that language needed to be embedded in content and context in some way for students led to team-teaching, language and content integration, and linked courses (Benesch, 2001), others such as Spack (1988) saw the role of the language and writing teacher as being about teaching general skills of inquiry and principles of rhetoric, leaving subject-specific conventions to subject specialists. The debate has continued, with Hyland (2002) again posing the question as to how specific ESP needs to be and how much content-area knowledge the ESP teacher or applied linguist requires. While Hyland argues for specificity as the cornerstone of ESP, he does acknowledge that real institutional constraints may hamper this. Tarone, Dwyer, Gillette, and Icke, writing in 1981, stressed how essential was the subject specialist's contribution to their study of the rhetorical structure of two astrophysics texts.

In a recent overview of ESP developments through the last decade of the 20th century and the early years of the 21st century, Belcher (2006, p. 135) notes that there would probably be agreement that "[n]eeds assessment, content-based teaching methods, and content-area informed instructors have long been considered essential to the practice of specific-purposes language teaching." Although frameworks for interpreting these "distinguishing features" of ESP have continued to evolve, and the initial vision of the language teaching profession's task adopted by Halliday et al. (1964) has been shown to be more complex than these authors could have envisaged, the similarity of these concerns and those identified by Strevens in 1977 point to a continuity of purpose within specific-purposes teaching.

SEE ALSO: English for Science and Technology; Genre and Discourse Analysis in Language for Specific Purposes; Hyland, Ken; Needs Analysis and Syllabus Design for Language for Specific Purposes; Swales, John M.; Teacher Education for Language for Specific Purposes; Trimble, Louis

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Historical Development of Literacy Research

NICOLE M. MARTIN, MARIA SELENA PROTACIO, HSUAN-YI HUANG, NAI-CHENG KUO, AND DOUGLAS K. HARTMAN

Introduction

The history of literacy research is like a series of slow, undulating waves. Just as a wave reaches its crest, it wanes and another overtakes it. The ebb and flow of literacy scholarship follows a similar pattern. In this entry we focus on the *topical* shifts in literacy research during the last 140 years by using the language arts as our analytic frame (i.e., reading, writing, speaking, listening, viewing, and visually representing; National Council of Teachers of English [NCTE] and International Reading Association [IRA], 1996).

Six overlapping periods of literacy research are outlined below. Beginning with the study of physical processes associated with literacy (1870s–1920s), the succession of overlapping topics include the effectiveness of literacy instruction (1910s–1980s); the cognitive modeling of literacy processes and development (1970s–mid-1980s); the development of literacy in social, cultural, and linguistic contexts (early 1980s–early 2000s); the impact of policy on literacy instructional research (late 1950s–early 2000s); and the expansion of literacy across media and spaces (1950s–2010s). Literacy research in each of these periods focused on varying aspects of the six language arts.

The transitions from one period to another were set in motion by common undercurrents, such as shifts in theoretical and political winds, inexorable methodological movements, and technological surges in the media. The recurrent theme across all six periods is the subsumation of *speaking*, *listening*, *viewing*, and *visually representing* into *reading* and *writing*.

Literacy Processes (1870s–1920s)

The dawning of research on literacy focused largely on the physical processes of reading, writing, speaking, and listening. The earliest research on literacy was focused almost exclusively on reading.

Reading

Studies published during this period focused on the physical processes of reading, such as eye movements, perceptions during reading pauses, visual perception, inner speech, reading fatigue, reading rates. For example, Dodge's (e.g., 1899) early research investigated the perception, movement, and reaction of the eye during reading. And Huey (1898, 1900, 1901) as part of his dissertation at Clark University examined eye movements using an ingeniously designed apparatus. He later published a classic tome on *The Psychology and Pedagogy of Reading* (1908) which synthesized all the extant reading research in print on both sides of the Atlantic. A few studies during this period, such as Thorndike's (1917) study on "Reading as Reasoning," presaged a later move to study the cognitive processes of reading.

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Writing

A small number of studies focused on the physical and technical processes of handwriting, such as its neurological underpinnings and issues of speed, legibility, accuracy, perception, muscular control, motion, and spelling. For the most part, writing instruction during this period was rooted in the formalist tradition of mastering penmanship, grammar, usage, and style through prescriptive and formulaic genres like the five-paragraph theme, and writing research did not stray too far from this ideological leash. Even with the advent of the typewriter, research largely focused on the physiological aspects of hammering print on paper. While the earliest signs of writing-as-a-process appeared in the 1910s, empirical research on writing-as-a-process did not emerge until half a century later.

Speaking

During this period, research on speaking focused on the physiological processes of the oral reading act. Because reading was largely enacted as an elocutionary or performance practice, the new science of pronouncing words with force, clarity, and correct intonation examined the underlying physical mechanisms to identify principles that could inform instruction in oral reading. Textbooks throughout the 1800s contained both "readers" (i.e., the initial and middle texts in the series) and "speakers" (as the later, elocutionary texts in the series were called), with the *McGuffey Readers* serving as the archetypal textbook series based on this blend of readers and speakers. During the latter part of the 1800s, the physiological research on speaking made its way into the instructional methods and materials of a new generation of speaker texts, such as McGuffey's *New Juvenile Speaker* (1860). The research on declamatory speaking during this period even extended to studying the physical processes of gesture that related to the spoken word, known then as "visible action in speech."

Listening

Research on listening was nascent during this time period. Two journals served as the primary venues for physiological research on listening and hearing: *The Volta Review* and the *American Annals of the Deaf*. One of the earliest education-related studies (Erickson & King, 1917) compared the recall of information presented to students visually and aurally. With radio emerging as a medium for entertaining, informing, and educating the masses, academic and instructional interest in listening comprehension gained widespread traction when several seminal pieces of scholarly work were published in the 1920s.

Literacy Instruction (1910s–1980s)

The topics and focus of literacy research enlarged considerably from the 1910s to 1980s. Reading and writing research turned in a number of directions, while speaking and listening research gradually rose in visibility, only to later disappear.

Reading

Reading research greatly expanded between the 1910s and 1980s. Animated by ideas and philosophies from many disciplines, two waves of research livened the move to optimize instruction. From the 1910s to the 1930s, researchers studied text-centered instructional approaches, such as drill and practice and integrated high school content area lessons (e.g., Robinson, Faraone, Hittleman, Unruh, & Fitzgerald, 1990).

After a lengthy period where behaviorist tenets prevailed, a flood of reader-centered instructional studies appeared from the late 1950s to the 1980s. The studies investigated such topics as

- reading comprehension instruction (e.g., text structure analysis, story grammars),
- code- and meaning-based approaches to learning to read,
- college reading,
- critical reading,
- comparative reading,
- the effects of technology on reading growth,
- graphic organizers,
- non-traditional early reading methods,
- illustrations,
- imagery generation,
- metacognitive training,
- semantic mapping,
- social learning techniques, and
- visual presentation methods.

Writing

Like studies of reading instruction, the writing research also shifted direction. Until the waters stilled in the 1940s, researchers focused on topics such as the writing of texts (e.g., writing words; Hamilton, 1920) and out-of-school writing (e.g., Hildreth, 1936). When a new wave of studies appeared in the 1970s, writer- and school-focused studies washed ashore. Researchers investigated topics such as children's emergent writing, teachers' instructional practices, and genres in academic writing.

Speaking

Research on speaking was quiescent for much of the period. When basic research on human speech appeared in the late 1960s, an upsurge in instructional research followed. For example, researchers studied oral language in classrooms, children's language use, young children's peer interactions, and classroom language practices.

Listening

Research on listening was also in the background for many years. Before the 1950s, less than a handful of studies focused on listening and instruction (Anderson, 1952). Beginning in the 1950s, insights from listening development informed a wave of listening instructional studies. Researchers studied many instructional topics, such as the role and outcomes of school-based listening instruction (e.g., audio-taped readings, advanced organizers), time spent listening in school, critical listening, and the nature and effects of classroom interactions.

Literacy Processes and Development (1970s–Mid-1980s)

In the middle of the 20th century, archival journals were filled by new forms of basic research on literacy. A new generation of researchers studied literacy processes and development. They invented and crossed theoretical, conceptual, methodological, and analytic boundaries.

Reading

The building interest in research on basic reading processes (e.g., causes of reading difficulties, reasoning, remembering; Weaver & Kintsch, 1991) stimulated two new and related waves of reading research in the 1970s and 1980s. Researchers studied topics such as readers' strategies, interactions between texts and readers, teacher and student thinking, and

neurological reading processes. They also explored developmental trajectories and factors, including reader (e.g., automaticity and phonological awareness) and text variables (e.g., graphics, macrostructure, sentence length). Finally, they developed new models of the reading process.

Writing

Two long-term research movements—which focused on writing development and processes—undulated their way across the writing research scene in the 1970s and 1980s. Preceded by earlier topics of interest (e.g., Hildreth, 1936), researchers

- investigated topics such as the modes of composing and the variables that influence the writing process;
- crafted theoretical models of the writing process;
- examined genres in academic writing;
- explored young children's growth as spellers and writers; and
- called for more studies on the acquisition, nature, and use of writing.

During the 1970s and 1980s, writing research examined the integration of composition and other langauge arts, by comparing writing to other literacy domains and exploring how these domains could foster children's writing development.

Speaking

Foreshadowed by earlier research (e.g., Petty, 1967) and fueled by a review of the extant literature on speech communication development (e.g., Allen & Brown, 1976), research on speaking surged in the 1970s and 1980s with investigations into the processes of language and children's development. Researchers examined topics such as language-in-use (e.g., peer-to-peer interactions, disciplinary discourse); language rules, systems, and structures; and the functions of language. They also studied patterns (e.g., audience sensitivity) in children's language use and development across different contexts (e.g., arguing, informing, imagining). Finally, researchers started to explore the relationships among speaking and other literacy domains (e.g., reading and writing).

Listening

During the 1970s and 1980s, research on listening was integrated with other domains. In addition to studies of basic listening processes (e.g., individuals' capacities to process oral information, the relationship between listening and intelligence; Foulke & Sticht, 1969), researchers in other literacy domains studied listening processes and development. They examined, for example, connections between listening and reading, and the relationship between listening and school achievement.

Literacy Development in Social, Cultural, and Linguistic Contexts (Early 1980s–Early 2000s)

The emergence of sociocultural and sociolinguistic learning theories marked the beginning of another period of research. The undercurrent of research during this period was the idea that literacy was more than the ability to read and write; rather literacy was intertwined with culture, context, and language.

Reading

In the early 1980s, Heath's (1983) seminal piece, *Ways with Words*, examined how contexts play significant roles in shaping how individuals are exposed to and interact with texts. Running against the earlier current of finding the best way to instruct students in reading, this wave of research highlighted how children's cultural, linguistic, and socioeconomic backgrounds need to be taken into consideration. Researchers during this time examined how children's backgrounds figured into their literacy learning and developed related theoretical frameworks (e.g., culturally relevant pedagogy, culturally responsive instruction, funds of knowledge, and primary and secondary "Discourses"). Researchers also looked at other topics, including classroom contexts and how they impact students' affect and motivation, home literacy contexts and the role that families play in reading development, and the reading processes of second language learners.

Writing

During this period, researchers built upon and refined extant models of writing to improve their explanatory and predictive precision (e.g., Hayes, 1996). For example, they incorporated students' use of cultural resources in their writing. Other research during this time examined writing as a vehicle for personal expression, explored how writing is connected to identity formation, and investigated how dialogue and social interaction influence writing.

Speaking

Researchers added to the literature which explored how speaking or dialects influenced reading skills. They focused on sociolinguistic alternatives in teaching reading to nonstandard speakers and how Black dialect affected performance on a reading test (e.g., Hunt, 1974–5).

Listening

Research on listening explored how instructional activities (e.g., reading aloud) impacted students' listening comprehension and word knowledge (e.g., Elley, 1989; Sinatra, 1990).

Literacy Research in a Policy Context (Late 1950s–Early 2000s)

Federally funded literacy research first emerged in the 1950s–1960s as concerns about educational equality surfaced. During the 1980s, researchers responded to federal funding priorities by increasing their focus on schools' instructional accountability. In the late 1990s and early 2000s, federal funding agendas prioritized questions that closed the achievement gap with designs that met scientific rigor.

Reading

Early influences on federally funded literacy policy came from the *Brown v. the Board of Education* decision in 1954, where the ruling in favor of an egalitarian purpose for education meant that reading for all was a standard to be set, funded, and reached (e.g., McGill-Franzen, 2000; Valencia & Wixson, 2000). Thereafter, many policy initiatives supported educational initiatives that funded reading research, including the National Defense Education Act (NDEA) in 1958, Elementary and Secondary Education Act (ESEA) in 1965, Head Start program in 1965, Bilingual Education Act (Title VII of ESEA) in 1968, and the Education for All Handicapped Children Act in 1975.

Under the NDEA, several large-scale reading research projects such as Project English and the First Grade Studies were established. Under the ESEA, 19 research and development (R&D) centers were created to conduct, oversee, and disseminate research on many educational topics. One of these centers focused exclusively on reading research: the Center for the Study of Reading (founded in 1976 at the University of Illinois, Urbana-Champaign). Another center focused on adolescent reading issues: the National Research Center on English Learning and Achievement (located at the State University of New York at Albany).

In the 1980s, federal policy initiatives shifted toward increased school accountability. Known as the "standards" movement, several successive initiatives developed and used reading standards to hold schools accountable for student learning: the National Commission on Excellence in Education (NCEE) report *A Nation at Risk* in 1983 (NCEE, 1983), the revised ESEA in 1988, the retitled ESEA of Improving America's Schools Act in 1994 (IASA), and the more recent No Child Left Behind (NCLB) legislation in 2001.

Federal funding priorities shifted to early reading in the late 1990s and early 2000s, for example the National Research Council's report on *Preventing Reading Difficulties in Young Children* (Snow, Burns, and Griffin, 1998), the National Reading Panel's review of reading instruction and research in 1997 (www.nichd.nih.gov), President Bush's Good Start, Grow Smart early learning initiative in 2002, and the US Department of Education programs Reading First in 2001 and Early Reading First in 2005, all stressed early reading instruction.

Writing

The federal policy initiatives that supported writing research were far fewer than those in reading—and sometimes embedded within the reading policy initiatives. The earliest and most visible policy move to impact writing research took shape when the NDEA established the Iowa Writing Project in 1967. Less than a decade later, in 1974, James Gray, his colleagues, and the Bay Area Writing Project established the National Writing Project (NWP) at the University of California, Berkeley. Later, in 1986, the ESEA-funded Center for the Study of Writing (CSW) was founded at the University of California, Berkeley (in partnership with Carnegie Mellon University). The CSW conducted, oversaw, and disseminated research on a range of writing topics.

Literacy Across Media and Spaces (1990s–2010s)

Widespread access to new technologies prompted a shift in focus for literacy reserach. For instance, the medium for literate activity (e.g., analog to digital; desktop to laptop to handheld) became an important aspect of literacy research.

Reading

The earliest studies examining media use in education were conducted in the 1960s (e.g., Witty & Kinsella, 1962). Subsequently, researchers focused on the effects of television on children's reading comprehension and language development. During the 1980s and 1990s researchers investigated the effects of media (e.g., film, video, and audiovisual equipment) on children's reading comprehension and language development.

The expansion of literacy research from static material to dynamic interfaces gained considerable momentum during the 1990s and 2000s. With the development of new digital technologies and software tools, widely accepted conceptions of literacy expanded to include constructs such as spatial knowledge and tool use. New conceptual labels—such as *third space* and *fifth dimension*—migrated into scholarly work to help researchers understand and explain how "new literacies" are enacted with digital tools in a range of spaces

(Coiro, Knobel, Lankshear, & Leu, 2008). The focus of literacy research has also shifted to the study of professional and community spaces where complex, dynamic, iterative, ill-structured, and interactive reading practices occur.

Writing

Writing research begin to focus on new types of media (e.g., graffiti) and spaces (e.g., city structures) during the late 1990s. In Conquergood's (1997) study of street literacy, he found that people wrote or drew on locations in a cityscape to release their voices and express their thoughts. He noted that there was no specific rule to interpret graffiti, "Although I have tracked through several graffiti texts in order to illustrate the structural conventions and complexity of this writing system, gangster grammatology exceeds the 'model of the text'" (p. 366). In addition to street literacy, research on composition also became important in understanding the development of writing across media and space (e.g., Mesa, 1997).

SEE ALSO: Conceptualizing and Researching "New Literacies"; Discourse Analysis in Literacy Research; Ethnographic Approaches to Literacy Research; Heath, Shirley Brice; Literacy: Mixed Methods; Policy Analysis and Document-Based Literacy Research; Psycholinguistic Studies of Literacy; Qualitative Literacy Research; Sociolinguistic Studies of Literacy; Video Documentation and Analysis in Literacy Research; Writing and Genre Studies

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Historiography

PAUL KEI MATSUDA

What Is Historiography?

Historiography is the methodology for historical research. In applied linguistics, historical research is a form of metadisciplinary inquiry (Matsuda, 1998, 2005) that seeks to establish knowledge about the field itself—its origins and development as well as the development of various ideas and institutional practices (such as graduate programs, departments, conferences, publications, and research centers). As such, historical research may not contribute directly to the goal of applied linguistics—to address language-related issues that affect language users and uses as well as ideological conditions that surround them. Rather, it provides an understanding of the historical, institutional, and ideological contexts in which disciplinary inquiry takes place, providing the field with a shared sense—albeit multiple and competing—of who we are, where we came from, what we have been doing, and how. This knowledge, in turn, helps members of the field critically assess its current state and consider where it might, could, or should be going. Historical knowledge is also useful in orienting newcomers to the field, such as graduate students and other novice researchers, as well as researchers from other, related fields seeking to understand and contribute to the collective knowledge-making enterprise. Historical research can also provide useful examples of knowledge or practice that are still relevant today; at the very least, it can help avoid reinventing the wheel.

Historical knowledge provided by metadisciplinary inquiry is especially important during the formative years of a field, when it is trying to establish its own identity and legitimacy by establishing its intellectual heritage, by identifying important exigencies, by documenting successes (and failures) in institutionalizing, or by dissociating itself from its predecessors (e.g., Titone, 1968; Darian, 1972; Allen, 1973; Diller, 1978). Once the field is established, existing historical narratives—history written by the victors—begin to circulate and take on the status of orthodoxy, giving rise to *received history*. The received history is often reproduced in the form of chronological literature review in introductory chapters of professional books without the critical examinations that are characteristic of historical scholarship. Historical accounts based on received history are often strikingly similar to one another, and they do not often provide justifications for periodization (deciding when certain historical periods began and ended), for taxonomies implicit in the historical narrative, or for what gets included or excluded. In other words, received history is history without historiography.

The existence of a received history can be an indication of how well established a field is, and it can be useful in providing a sense of stability and coherence, giving novice researchers something to grasp as they enter the field. Ultimately, however, it is a false sense of stability and coherence because an academic field is often diverse and always in flux, and there are multiple and competing perspectives, reflecting the situatedness of various researchers (Atkinson, 2000; Kaplan, 2000). The most serious problem of received history is that it tends to legitimize dominant axiology, epistemology, and methodology while excluding alternative perspectives—a different interpretation of the present based on a broader understanding of the past. This situation, if left unexamined and unchallenged,

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can in turn lead to intellectual stagnation which discourages critical dialectics and generation changes, and eventually to the shortage of new research questions and the demise of the discipline. Disciplinary historians' work, then, is not only to generate new historical knowledge but also to constantly reexamine and revise existing knowledge, providing alternative perspectives and resituating the historical knowledge in the current dynamics of the discipline (e.g., Musumeci, 1997; Matsuda, 2006).

The intellectual work of disciplinary historians includes the following (North, 1987, p. 71):

1. Identifying the Problem
   EMPIRICAL STAGE
2. Identifying Relevant Texts
3. Searching for Relevant Texts
4. Assembling and Validating Relevant Texts
   INTERPRETIVE STAGE
5. Seeking Pattern(s) in Texts
6. Explaining the Pattern(s): Creating a Narrative
7. Relating New Narrative to Existing Narratives: The Communal Dialectic
8. Dissemination to a Wider Audience

What distinguishes serious historical inquiry from mere chronological literature reviews is the level of rigor by which historians evaluate historical evidence and interpretations to establish and critique historical facts and narratives. That is, serious historians need to be aware of the socially constructed nature of historical knowledge, which is always contingent and open to reinterpretation.

Historical Data

Historical research is predominantly qualitative, hermeneutic (i.e., interpretive), and narrative in nature (Casanave, 2005), although quantitative data can also be used to document trends and developments. (Examples of quantitative data may include the number of applied linguistics doctoral programs, the number of multilingual students in a school system, the number and percentage of sessions on a certain topic at a conference, and the number of publications on a given topic.) Historians consider all available sources of data (i.e., historical evidence) to establish *historical facts* (or disestablish existing ones) and examine how they fit into a large and complex network of historical knowledge to construct plausible historical narratives (or problematize existing ones).

Sources of historical data can be broadly classified into primary and secondary. *Primary sources* provide evidence to establish historical facts—people, places, things, and events, as well as how those elements were interpreted and represented at the particular historical moment under investigation. *Secondary sources* are representations of historical facts as well as interpretations and analyses of those facts, their interrelationships, and their implications. Primary sources are analogous to original data collected by the researcher in an empirical research project, while secondary sources correspond to sources cited by the researcher to construct the research problem or knowledge gap, to corroborate the findings, to support an interpretation of data, or to indicate alternative perspectives.

In metadisciplinary history, the boundary between primary and secondary sources is not always clear cut. For example, Kelly's (1969) *25 Centuries of Language Teaching*, which provides a historical analysis of various language teaching methods since antiquity, is a secondary source to contemporary historians of language teaching in many cases because it represents existing historical knowledge about language teaching. Historians may use

this source to identify an existing interpretation of historical developments or to point out the limitations of the history as represented by Kelly. Alternatively, it can be used—alongside other histories produced by his contemporaries—as a primary source to establish how the history of language teaching was represented at the time, revealing some of the values and assumptions of his time. In other words, the distinction between primary and secondary sources is a functional one based on how the source is being used—whether we are examining the history of language teaching through Kelly's work (as a secondary source) or we are examining his study as part of a historical development (as a primary source).

Historical sources may come in various shapes and forms. In metadisciplinary inquiry—which is a self-conscious inquiry into the history of the discipline by an insider—much of the historical data comes from published texts in the field, such as books, journal articles, conference proceedings, textbooks, and the like. Particularly useful to disciplinary historians are introductions in books and editorials in journals, where values and assumptions as well as the authors' and editors' intentions are often made explicit. When the same book is available in multiple editions, the comparison of different editions can provide a glimpse of how a particular concept or subfield evolved over time. Many of the published sources are available at various universities and national libraries, although the availability varies from library to library. When certain documents are not available locally, librarians may be able to help obtain them from other libraries. In many countries, librarians from the researcher's institution can write letters to another university library requesting access to needed materials. In some countries, such as the United States, librarians can help obtain publications that are not locally available through interlibrary loan or consortia of libraries. Other libraries, such as the British Library, provide document reproduction services to users worldwide (for a fee).

For historical work related to language and education policies (e.g., Hornberger & Vaish, 2008), government documents and court records provide the essential historical evidence related to language legislation, funding, and court rulings. Census data and other sources of demographic information—such as *Open Doors* (Institute of International Education, 2009), which documents the international exchange of students and scholars between the United States and other countries over the years—are valuable in establishing the distribution of language users. Newspapers, magazines, and other periodicals can also provide important information that provides a sense of larger social, economic, and political contexts. TV shows, movies, and other audiovisual materials may also be useful depending on what claim the researcher is trying to support or refute. Unpublished documents or publications of limited circulation, such as manuscripts, conference papers, letters, and e-mail messages, can also prove important sources of historical data that may not be available in published sources. Some unpublished documents have been preserved by database services such as ERIC Document Reproduction Services. In recent years, a growing number of unpublished documents have been made available on the Internet.

Historians can also draw on *archival sources*. An archive is a collection of documents and artifacts preserved by archivists for the purpose of later examination. At many university libraries, archivists collect, select, and preserve documents such as memos written by administrators, in-house publications related to programs, manuscripts, conference and note papers written by notable researchers, and even assignments and student papers. The English Language Institute (ELI) at the University of Michigan, for example, has its own library and librarians who maintain historical documents related to the Institute. Other documents that can shed light on Michigan's language teaching programs before the ELI can be found at the Bentley Historical Library at Michigan. Since archived documents are usually not available elsewhere, historians travel to specific archives to gain access.

Historians who study a relatively recent historical period may use oral or written history interviews to collect narratives provided by individuals who have lived through particular

historical events to gain their perspectives on how various historical events evolved and what those developments meant to those people. It would be useful, for example, to ask well-established researchers to tell their stories about their involvement in the development of an applied linguistic organization or to recount their perspectives on the evolution of a concept or methodology. Of course many of those recountings happen in their own conference presentations and publications. While those accounts provide rich, insiders' perspectives, the quality of the accounts needs to be carefully evaluated through the processes of internal criticism (see next section).

Evaluating Historical Sources

Historical sources are evaluated through the processes known as external and internal criticism. *External criticism*, on the one hand, is concerned with the credibility of the source itself. When was this source written and by whom? How widely was it circulated? Has this source been edited extensively after the death of the author? For example, the authorship of *Rhetorica ad Herennium*, a Roman rhetorical treatise once attributed to Cicero, has now been widely disputed ([Cicero], 1954). The text can still be useful in understanding a conception of rhetoric during the period, but it is not appropriate if used as a source for discussing Cicero's thoughts on the organization of persuasive discourse. Although these questions may seem less relevant to relatively recent sources that tend to have more reliable records of authorship and other information, the questions cannot be dismissed entirely. For example, published works may reflect the interventions of reviewers and copy editors, distorting the authors' original intentions. Another example is the date of publication; copyright dates are not always reliable as a way of establishing the chronology because publishers sometimes use future copyright dates to extend the shelf life (e.g., a book published in December 1999 may be registered with the copyright date of 2000). In many cases, new ideas, data, and interpretations are introduced into the field first through oral presentations before they appear in print or digitally.

Internal criticism, on the other hand, is concerned with the quality of information and perspective provided by the source. A researcher who is studying the history of applied linguistics at Columbia University might be tempted to cite Darian (1972) to suggest that Columbia was the first university in the United States to offer an English language support program, in 1911. Although Darian does so claim, he does not provide any supporting evidence, and there does not seem to be any other source available to corroborate his assertion; in fact, Kandel (1945) contradicts Darian by pointing out that Columbia was not able to create "special provisions" for international students until 1923 (p. 50). A broader investigation of the history of English language support programs in US higher education (e.g., Matsuda, 1999, 2005) suggests that 1911 happens to be the year that Joseph Raleigh Nelson established his English course for international students at the University of Michigan, a historical fact that has been documented by several sources (Norris, 1966; Allen, 1973; Fries & Fries, 1985) and supported by archival evidence (e.g., syllabi, activities, and student papers available at the Bentley Historical Library at Michigan). It is likely, then, that Darian mistakenly attributed the creation of the first program to his alma mater. The situation may change if further archival research uncovers new evidence to suggest that a similar program was also created at Columbia.

Organizing and Presenting Historical Knowledge

Historical inquiry can take many different forms depending on the purpose, scope, and organization of the project. One approach, known as the *history of ideas*, is to trace the

development of ideas, providing an overview of various layers of meaning attached to a particular one (e.g., Leki, 1991; Ricento, 2000; Thomas, 2004; Berns & Matsuda, 2006). This approach is useful in establishing intellectual heritage and sources of influence as well as the evolution of particular ideas in various institutional, geographic, or sociopolitical contexts. Another approach to historical inquiry takes a close look at a particular individual, program, or organization, in ways similar to case study research. This type of historical inquiry can be presented alone with a great number of historical details or episodes. Those descriptions can also be compiled into a series of descriptions about major people, entities, and events in order to establish a chronology of events and to document the origin and development of ideas and practices as well as their interrelationships (Howatt, 2004). Yet another approach is to construct narratives about the development of applied linguistics, its subfields, or particular organizations or programs by weaving together various historical facts, making assertions about their relationships or the consequences of certain developments (e.g., Matsuda, 2001). *Revisionary* or *critical historiography* seeks to problematize dominant historical narratives by examining and rewriting the narratives, whether by identifying gaps and contradictions in the historical narrative (e.g., Musumeci, 1997; Matsuda, 2006) or by focusing on historically marginalized populations and perspectives (e.g., Matsuda, 1999).

In reality, these approaches are not mutually exclusive. The boundaries between different approaches are not static, and a single historical study may combine multiple approaches. All of them, including revisionary and critical historiography, participate in the construction of historical narratives, the process that imposes certain ways of understanding and organizing historical reality (Casanave, 2005).

Challenges to Historical Knowledge

One of the major challenges facing historians of applied linguistics is that there are so few of them. While some examples of serious historical scholarship do exist within the field of applied linguistics, they are still few and far between. Few graduate programs seem to offer coursework on the history of applied linguistics, beyond a brief discussion at the beginning of an introductory course. Historiography is also not widely discussed in publications, even in books on research methodology (for a notable exception, see Matsuda & Silva, 2005). In order for productive communal dialectic to take place, more applied linguists need to become aware of the nature of historical knowledge, how historical knowledge is constructed and negotiated, and how it influences the way we imagine our discipline—its past, present, and future.

SEE ALSO: Critical Discourse Analysis: History and New Developments; History of Multilingualism; Policy Analysis and Document-Based Literacy Research

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History of Forensic Linguistics

SUSAN BLACKWELL

Forensic linguistics (FL) is a relatively young discipline compared with other branches of applied linguistics. The earliest attested usage of the term "forensic linguistics" dates from 1968, with the publication of Jan Svartvik's analysis of four statements purportedly made to the police by Timothy Evans in which he confessed to strangling his wife and baby daughter in 1949. While in the second half of the 20th century a number of linguists produced reports of this kind for courts or about legal cases in various countries (see, for instance, Shuy, 1982a, 1982b; Eades, 1988; Butters, 1990), they could not be described as sharing an academic discipline, let alone a methodology: as Malcolm Coulthard puts it, "the work was usually undertaken as an intellectual challenge and almost always required the creation, rather than simply the application, of a method of analysis" (Coulthard, 1995, p. 1).

This situation was to change rapidly in the early 1990s, when a series of seminars took place culminating in the establishment of the International Association of Forensic Linguists (IAFL), the International Association for Forensic Phonetics (IAFP), and the journal *Forensic Linguistics: The International Journal of Speech, Language and the Law*.

The earliest gatherings of forensic linguists appear to have taken place in Germany: in 1988 the Bundeskriminalamt (BKA, Federal Criminal Police Office) in Wiesbaden organized a two-day conference in FL, while 1989 saw a number of conferences at Mannheim University organized by the late Lothar Michel. These latter were primarily concerned with forensic handwriting analysis but also accommodated presentations on other aspects of FL. From 1990 to 1992 the German Applied Linguistics Association (GAL) had a session (*Arbeitskreis*) on forensic linguistics in its program each year (in Göttingen, Mainz, and Saarbrücken respectively).

The Bundeskriminalamt can also be credited with pioneering the phonetic-acoustic tradition of forensic speaker identification, which is now practiced in government forensic laboratories in a number of EU countries including Germany, Austria, Sweden, the Netherlands, and Spain (Broeders, 2001). Meanwhile, in the UK Peter French organized conferences in York on forensic phonetics and linguistics, leading to the establishment of the IAFP in 1991.

The 1st British Seminar on Forensic Linguistics took place at the University of Birmingham on March 20–22, 1992, on the initiative of Malcolm Coulthard, and was attended by participants—mostly academic linguists and lawyers—from Australia, Brazil, Germany, Greece, Ireland, the Netherlands, and Ukraine as well as the UK. There was a consensus that an international association was needed, and it was from this gathering that the IAFL was born. The 2nd British Seminar on Forensic Linguistics followed within months, on November 14, 1992.

Following the founding of the IAFL, the discipline became visible on the academic conference circuit: the first IAFL Conference took place in Bonn, Germany on July 14–16, 1993, and a Special Symposium at the AILA (International Association of Applied Linguistics) Conference, Amsterdam was held on August 13 the same year, chaired by Professor Hannes Kniffka. Since then, the IAFL has convened conferences every two years, in various countries: a full list of these can be found on the IAFL Web site. The 1995 and 1997 conferences

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were held in Australia and the USA respectively, indicating that the discipline had become truly international and that linguists in these countries, who had been testifying in court and publishing in academic journals for some years, had now become part of an international network which was helping to shape the discipline. The 4th IAFL Conference in 1999 proved to be larger than any of its predecessors, with over 80 participants from 13 different countries in four continents. Approximately 30 solo papers were presented, plus two symposia, a plenary lecture, and a software demonstration. For the first time in IAFL history it was necessary to organize parallel sessions. It is fair comment, though, that the participants still came predominantly from the English-speaking world and from common law legal systems modeled on the English one, with its adversarial rather than investigative courtroom ethos and the consequent polarization of expert witnesses into the "prosecution" and "defense" camps. Many academics feel uncomfortable in such a culture and would prefer to be called as experts for the court rather than for one of the opposing sides. Those who have served as expert witnesses for the court in a "civil law" system, on the other hand, have been heard to express the sentiment that the less confrontational culture of the Roman law model does not encourage rigorous thinking in the way that the cut-and-thrust of cross-examination does.

By the mid-1990s the discipline had come of age and the need for a journal was felt. Accordingly *Forensic Linguistics: The International Journal of Speech, Language and the Law* (original title) was established in 1994, published by Routledge, to serve as the official organ of both the IAFP and the IAFL. Its editors expressed the hope that it would "play a pivotal role in further developing, refining and testing . . . methodologies, in disseminating the results of research and in making available experience from case studies" (French & Coulthard, 1994, p. viii). It was "intended to appeal to readers and contributors from a number of different sub-disciplines of linguistics, as well as to solicitors, barristers and judges who have little or no prior knowledge of the concepts and terminology connected with linguistic study" (p. viii).

Birmingham 1999 was the first in the IAFL conference series to have its own Web site, created by Jess Shapero. At the time this was a pioneering effort, enabling potential participants around the world to remain informed about changes to the program without having to rely on the postal system. A general IAFL Web site (now at www.iafl.org) was established at around the same time, which continues to provide resources for members including an online searchable bibliography of research in language and law.

Another resource facilitating communication between the widely dispersed academic community with interests in FL was the discussion list instigated by Sue Blackwell. This rapidly expanded from a collection of e-mail addresses in her personal mailbox in the mid-1990s to a formal list hosted from 1998 by Mailbase in Newcastle, and then from 2000 by JISCMail, the national academic mailing service for the UK; "forensic-linguistics" currently has some 500 subscribers and has acquired a reputation for lively and witty exchanges, with only occasional outbursts of acrimony requiring intervention by the list owner.

In 2001 the list became the forum for a heated debate about the likely background of the individual(s) who had sent letters containing anthrax to a number of public figures in the USA including senator Tom Daschle. The consensus that emerged was that, despite the misspelled "penacilin," nonstandard syntax such as "we have this anthrax" and "you die now," and the final exclamation "Allah is great," the sender was likely to be a non-Muslim native speaker of American English. This assessment appears to have been correct: in 2008 the FBI prepared to prosecute Bruce Edwards Ivins, a white Roman Catholic scientist working at the US government's biodefense laboratory in Fort Detrick, Maryland. He committed suicide before the trial could proceed, but on August 6, 2008 federal prosecutors declared him to be the sole culprit for the attacks which had claimed five lives. In February 2010 the FBI formally closed its investigation.

By the end of the century conferences such as "Law and Society" and the American Association for Applied Linguistics regularly included symposia on FL. In 2002 a Scientific Commission on Forensic Linguistics was established by AILA.

The provision of university courses in FL grew steadily. By the end of the 20th century, undergraduate and/or postgraduate taught modules were emerging at universities in the USA, England, Wales, Australia, China, Hong Kong, Finland, Germany, Japan, and South Africa, to name but some of the better known examples. All the same, the provision was rather ad hoc and tended to depend on the research interests and enthusiasm of individual academics. Many countries still had very little to offer students wanting to pursue formal study in FL. An attempt was made to fill this lacuna by providing a series of international summer schools in forensic linguistic analysis, initiated by Malcolm Coulthard. The first of these was held at Anglia Polytechnic University in 2000, followed by four similar events in Birmingham and one in Łódź, Poland.

Łódź also played host to the "Language and the Law: East Meets West" conference in September 2005. The biennial IAFL conferences were clearly no longer sufficient to meet the demand for the exchange of ideas in the field, particularly for those academics in European countries whose resources did not permit travel to the USA or Australia. The Łódź event in 2005 was followed by the 2nd IAFL European Conference on Forensic Linguistics/Language and the Law in Barcelona in 2006, and by annual conferences at Adam Mickiewicz University, Poznań from 2006. The fact that academics from countries like Spain and Poland were now taking a lead in organizing conferences signaled a welcome shift away from the Anglo-centric, common-law bias which had tended to dominate the field in the first decade of the discipline's active life.

The IAFL biennial conferences have nonetheless remained an important focal point for the discipline, not least because they provide the locus for the IAFL's organizational meetings and election of officers. The IAFL has also occasionally felt the need to pass resolutions taking a position on current political issues of concern to its members. Most famously, at the Business Meeting held at the Sydney conference in July 2003 the Association unanimously carried a resolution proposed by Diana Eades condemning the Australian government's use of so-called language tests in determining the national origins of asylum-seekers. Citing research by Dr. Eades and her colleagues (Eades, Fraser, Siegel, McNamara, & Baker, 2003), the motion condemned the tests as "unprofessional and unreliable" in both their assumptions and their methods, and called on the Australian government to desist from using the process until its reliability had been independently established.

Since its beginnings in 1994 the FL journal has undergone changes of both name and publisher: it is currently published by Equinox and entitled, since 2003, *The International Journal of Speech, Language and the Law*. The change in title of the journal reflects an emerging debate—perhaps even a tension—within the FL community concerning the scope of the discipline. The initial use of the term indicated, as Svartvik's paper had done, the application of grammatical, lexical, and textual analysis to disputed documents, often for the purpose of giving expert evidence in court regarding authorship. However, from the earliest conferences of the IAFL other strands were apparent: lawyers discussed conflicting interpretations of terms used in court and linguists expressed concern over the frequent miscommunication between police officers and speakers of nonstandard language varieties, while courtroom interpreters presented papers examining the "linguistic human rights" of defendants and the often deficient quality of the interpreting services available to them. While in the early days papers on forensic phonetics (acoustic voice analysis, speaker identification from recordings) were commonly included in IAFL conferences, such work is now felt to belong to the territory of the International Association for Forensic Phonetics and Acoustics (IAFPA), which predates the IAFL and holds its own annual conferences (http://www.iafpa.net/conf.htm). The change in the journal's title reflects, on the one hand,

the need to mark explicitly the inclusion of forensic speech analysis as a distinct discipline, and on the other hand the expansion of the nonphonetic aspects of FL to take in a wide range of areas of overlap between language and law, no longer restricted to expert evidence in legal or quasi-legal settings.

"Forensic linguistics," then, rather like the term "applied linguistics," has come to have both a broad and a narrow definition. The narrow meaning denotes the application of linguistic methods to the production of expert evidence, concerning for example disputed confessions (Coulthard, 1994), trademark disputes (Okawara, 2006), threats and attempts at extortion (Shuy, 1993), taped conversations in which individuals allegedly offer bribes (Shuy, 2005), suicide notes (Shapero, 2011), and disputed authorship and alleged plagiarism (Kniffka, 2000). The broader meaning—better labeled "language and law"—extends to the study of courtroom discourse (Solan, 1993; Tiersma, 1999), legal interpreting and translating (Berk-Seligson, 1990), the readability/comprehensibility of legal documents and jury instructions (Tiersma & Curtis, 2008), the comprehensibility of the police caution ("Miranda warning" in the USA) issued to suspects (Cotterill, 2000), linguistic minorities in the legal process (Eades, 1994), children in the legal process (Walker, 1999), and numerous other areas where language and law interact with each other. Judith Levi (1994) offered one early overview of the literature in all these areas and more, which was so comprehensive that it is still regarded as an invaluable guide to the field.

One of the long-standing aims of the IAFL has been to educate the legal profession about the role of linguists and the scope of linguistic evidence. While forensic linguistics inevitably overlaps with fields such as psycholinguistics and sociolinguistics, and its practitioners often deal with the same documents as colleagues working in ESDA (Electro-Static Detection Apparatus) or handwriting analysis, they will take pains to emphasize that they cannot give a professional opinion on whether or not a witness is lying, or could have written their statement unaided by the police. Conversely, the input of lawyers and judges has proved invaluable in enlightening linguists as to how they are viewed by the legal profession and how they are expected to frame their expert evidence. The Daubert ruling of 1993 in the USA was a watershed for expert witnesses working within the common law system, and it is largely thanks to the work of academic lawyers with an interest in language, such as Larry Solan and Peter Tiersma, that linguists have understood the necessity of being shown to engage with the standards of testability, peer review, acceptability, and known error rate (Solan & Tiersma, 2004).

The English legal system also appeared to be formalizing its standard for expert witnesses when, against a background of several high-profile convictions being overturned with the discrediting of the "experts" who had given evidence, an Independent Forensic Science Regulator was appointed in February 2008 and the Council for the Registration of Forensic Practitioners received some £2.9 million in grant aid with the requirement to be self-financing by March 2010. This has not occurred, however: according to a written answer in the House of Commons by the Home Secretary, this was largely due to the withdrawal of support by the police, which removed 70% of the Council's income (Hansard, HC Deb, May 11, 2009, c522W). The Council duly closed in 2009: it is not clear what organization will succeed it and what effect this will have on expert witness testimony by linguists.

Notwithstanding the lack of a framework for expert witnesses in many countries, cases of expert linguistic evidence in court have been many and varied, ranging from trademark violations, extortion, and plagiarism to aboriginal rights, terrorist bombings, and pedophile murders. Many of the early cases concerned appeals against convictions which had taken place years or even decades earlier. Probably the most extreme example of this was the posthumous pardon of Derek Bentley, whose guilty verdict was overturned in 1998 after 46 years, partly as a result of Malcolm Coulthard's report showing that the allegedly

"verbatim" record of Bentley's confession was no such thing. (By then, Bentley's notoriously ambiguous utterance "Let him have it," after which his accomplice Chris Craig shot and killed a police officer, had become the title of a 1991 film telling the story of this miscarriage of justice.)

The first case in an English court where linguistic evidence formed the sole or main grounds for allowing the appeal to be heard was probably that of *R. v. Daniel Raphaie* in 1996 in the Court of Appeal, Criminal Division (EWCA Crim 299). In cases such as this, the "youth" of forensic linguistics as an academic discipline was a crucial factor, since in the English legal system appeals cannot be based on evidence which was, or could have been, heard at the original trial. The court accepted that it would not have been possible for linguistic evidence concerning the contemporaneity of the police record to have been considered at Mr. Raphaie's original trial in 1989, since methods of forensic linguistic analysis had yet to be developed at that time. (In the event the appeal was allowed on legal grounds and Sue Blackwell's linguistic evidence was not heard.)

Linguists may of course give evidence for the prosecution as well as for the defense or the appellant. Perhaps the most famous instance in a US criminal case is that of the "Unabomber," so called because the principal targets of his mail-bomb attacks were universities and airlines. Following the publication in newspapers of the Unabomber's "manifesto" in 1995, a certain Ted Kaczynski contacted the FBI claiming to have recognized his brother Theodore's writing style, including the expression "you can't eat your cake and have it too," which although less common than "you can't have your cake and eat it" turned out to be an attested older variant. FBI special agent James Fitzgerald consequently conducted an analysis comparing Theodore Kaczynski's language with that of the Unabomber's manifesto: this was sufficient to persuade a judge to issue a search warrant for Kaczynski's cabin in Montana, the results of which led to his conviction and life imprisonment.

In recent years there have been a number of cases involving the analysis of the language of text messages sent from mobile phones. Typically the messages have been sent after the owner of the phone has disappeared, and the allegation is that the person responsible for abducting and murdering them has sent messages from their phone to allay suspicion and delay the hunt for the missing person. One particularly striking example was the conviction in February 2008 of David Hodgson for the murder of Jenny Nicholl, despite Hodgson's denials and the fact that her body had not been found since her disappearance almost three years earlier. The jury was persuaded by linguistic analysis showing that text messages sent from her mobile phone were unlikely to have been written by her but were closer to the style of Hodgson, her former lover.

A similar case is that of the trial of Peter Chapman in March 2010 for the murder of teenager Ashleigh Hall, whom he had befriended through the Facebook social networking site before arranging to meet her. The language of text messages sent from both his and Ashleigh's mobile phones was analyzed by John Olsson and contributed to Chapman's conviction.

While there is still no single accepted methodology in FL, the use of computer-readable language corpora is becoming increasingly common. General corpora such as the Bank of English are used for comparison purposes, and corpus tools such as concordances and collocation software are used to extract potentially significant patterns. There remains a need for specialized corpora of language in legal contexts (Blackwell, 2009), although collections of text messages are beginning to grow and have been used in the studies mentioned above.

May 13, 2008 saw the launch of the Centre for Forensic Linguistics at Aston University, which has hosted the FL Summer School, now an annual event, since 2006 and where Malcolm Coulthard now holds the world's first professorial chair in forensic linguistics.

The Centre now also runs a distance-learning master's program in FL. Master's courses are also currently being taught at the Universities of Bangor, Barcelona, Cardiff, Hofstra, and Pompeu Fabra (where the University's ForensicLab was officially opened in 2010), training what might be termed the "third generation" of students of language and law. Such developments, along with the growing acceptance of linguistic evidence in the courts of many countries, may well indicate that, two decades since the first seminars took place, the discipline has now achieved "critical mass" and will continue to extend its reach into the territory of both law and linguistics.

SEE ALSO: Corpus Analysis in Forensic Linguistics; Forensic Discourse Analysis; Forensic Linguistics: Overview; Language of Courtroom Interaction; Language of Jury Instructions; Language of Police Interviews; Legal Interpreting; Legal Language; Linguistic Disadvantage of Children in Legal Contexts; Linguistic Human Rights

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History of Interpreting

DÖRTE ANDRES

In the Bible, Prov. 18:21 reads "[D]eath and life are in the power of the tongue." These ancient words convey the fact that language is a powerful tool, upon which life and death (may) depend. Solomon was certainly not referring to interpreters but, nevertheless, interpreters work with language, and they can use words to exercise power. There are many accounts of the power of interpreters. Some of these show that the question of life or death often depended on the interpreter. Other accounts illustrate the responsibility invested in interpreters and how the right or false handling of that responsibility determined the fate of individuals and even peoples. What do we know about interpreters in history? What were their tasks? Locating historical accounts of interpreters is arduous, since accounts are few and far between and most interpreters are only mentioned in passing (Hermann, 1956; Roland, 1982; Bowen, Bowen, Kaufmann, & Kurz, 1995; Wilss, 1999; Pöchhacker, 2000; Wiotte-Franz, 2001; Andres, 2008). Although more information is now available concerning the "Eastern world" (Kaufmann, 2005; Lung & Li, 2005; Lung, 2006), most accounts refer to the "Western world," which is thus the focus of this entry.

Evidence can be found about the work of interpreters going back to the age of the pyramids. Interpreters were working for the state, the church, the military, for adventurers, conquerors, and diplomats. They were often needed but rarely mentioned:

> interpreters have been largely ignored by historians for two reasons. First, there is often a total lack of historical documentation. People of power and influence in centuries past seldom considered a mere interpreter's name to be worth recording. Secondly, most historians, confined to "important" events and to the limitations imposed by the desired size of their books, cannot be expected to include every intriguing tidbit they may uncover. (Roland, 1982, p. vi)

Interpreters' multilingualism often gave rise to suspicion, as the interpretation was hard to control and nobody really knew what the person being interpreted was actually saying. The suspicion was often justified because most early interpreters were prisoners or slaves. Conquerors brought the conquered to their native country in order to teach them the language of the conquerors and to use these prisoners as interpreters in subsequent conquests. The common understanding was that the mere knowledge of two languages sufficed to make a person an interpreter. It soon became apparent, however, that the knowledge of two or more languages alone did not bring the desired outcome, as the loyalty of the interpreter in question was essential for successful communication.

Interpreters in Ancient Egypt

The oldest available sources about interpreters date back to ancient Egypt, where interpreters worked at the pharaoh's court. By the third millennium BC, the Egyptians had already abandoned nomadism, and the settlements and realms which had developed were unified under King Menes in 2920 BC. From the city of Memphis he tried to protect his kingdom against the surrounding peoples. The kingdom was divided into districts, which

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were governed by nomarchs. Thus, a huge administrative system soon encompassed all of Egypt. At the time, all foreign peoples—Nubians, Libyans, and Asians—were considered to be "barbarians" and not equal partners. In order to communicate with these "barbarians," the court employed interpreters, just as for trade with foreign countries and for military expeditions. Inscriptions on the walls of the tombs of the princes of Elephantine, in the Egyptian border region with Nubia, date back to about 2600 BC. In this region the Egyptian and Nubian peoples mingled and the inscriptions show that the nomarchs were often bilingual and often half Nubian. They were diplomats responsible for economic, military, and political affairs at the pharaoh's court, bearing the title of "overseers of dragomans" as mentioned in the inscriptions in the tombs. The relief found in the tomb of Haremhab also depicts these facts (Aegyptologie, *n.d.*, Scene 76-1f). The relief depicts an audience with the pharaoh Tutanchamun. Vassals (probably) from Syria and Libya lie at his feet and ask him for food and shelter from invading enemies. Haremhab, who was a prince before he became pharaoh, is located between the two parties. He is depicted as a double figure situated slightly below the pharaoh. The left figure informs the pharaoh of the problems of the vassals while the right figure passes on the pharaoh's words to the actual interpreter. This interpreter is also depicted as a double-figure, symbolizing his role as intermediary. Slightly bowing, the left figure of the interpreter stands at Haremhab's feet, looking up to him and listening devoutly to the words of the nomarch. The right figure passes on the response of the pharaoh to the vassals, standing on equal footing with them. The depiction leads to the conclusion that interpreters were not regarded very highly. Their social status was probably equal to that of merchants and seamen, as can be deduced from the hessian loincloth worn by them, which alludes to the mute trade between the primitive peoples who printed the price of their goods on these cloths. Accordingly, interpreters were individuals of fairly low rank and were not much respected (Gardiner, 1953; Hermann, 1956; Thieme, 1956; Kurz, 1985, 1986).

Interpreting in Ancient Greece and the Roman Empire

In antiquity, interpreting was an important profession which was exercised by many individuals in diplomacy, in the military, and in administration. Interpreting was considered to be a profession in its own right and interpreters greatly facilitated communication between the different peoples (Wiotte-Franz, 2001). There is proof of interpreters' existence: Wiotte-Franz (2001) has compiled a catalogue of interpreters in antiquity, 61 of whom are listed by name, 112 anonymously. This valuable publication includes ample detail with regard to the interpreters' activities, their spheres of influence, and even their achievements.

Interpreters also played an important role in the area of philosophy. Alexander the Great gave the Greek historian Onesikritos the assignment to conduct research into the philosophical teachings of the Indian ascetics (Wiotte-Franz, 2001, p. 149). A discussion took place between Onesikritos and Dandamis, the oldest of the Indian wise men. Three interpreters were present during the discussion and, since there was apparently no Greek–Indian interpreter available, the first interpreter probably interpreted Dandamis's words into an Iranian dialect, after which the second interpreter translated them into Aramaic. The third interpreter then conveyed the words from Aramaic into Greek (Franke, 1992, p. 93). Communication problems arise as the three interpreters do not grasp the meaning of what is said, rendering them unable to convey the opinions of Onesikritos, who subsequently announces that communication through interpreters was like pure water flowing through swamplands (Strabo, 1961, 15.1.64).

Like the Egyptians, the Greeks also considered their language the only one worthy of human usage. They also regarded foreigners as "barbarians" and were generally unwilling

to learn new languages. Interpreters in those days often had bilingual parents or they were "barbarian children" who learned Greek as slaves in Athens (Wiotte-Franz, 2001).

In contrast to the Greeks, the Romans were often bilingual, and an educated Roman was expected to speak two languages. Greek and Latin were taught in schools and the two languages were considered equal. Young Romans studied abroad in Greece. In the Roman Empire, interpreters were used not only in order to overcome language barriers but also to satisfy national pride, to distance oneself from foreigners, thus increasing one's own prestige (Gehman, 1914, p. 56). The Roman Senate was one of the main administrative bodies which regularly employed interpreters, as Carthaginians and Hispanics were only allowed to speak with interpreters (Cicero, 1923, II, p. 131). The same held true for the Roman courts. Interpreters thus belonged to the "apparitores"—those in steady employ of the administrative system. By means of the Latin language and interpreters, the Roman Empire demonstrated its military and political power (Cassio Dio, 1844, pp. 78,6,2).

Accounts from the era of the Roman Emperor Caracalla illustrate how dangerous an interpreter's work could be. Since interpreters were considered potential betrayers of secrets, Caracalla executed all interpreters who were present during secret negotiations right after the conclusion of such talks in order to rule out any risk of betrayal, as the interpreters were the only witnesses to what had been said (Cassio Dio, 1844, pp. 78,6,2).

There are records about the work of interpreters in the context of peace negotiations. Prokop reports that the Persian envoy Isdigusnas was sent to Constantinople by the Persian ruler Chosroes I to negotiate with the Romans in AD 548 (Wiotte-Franz, 2001, pp. 131–2). He was accompanied by his interpreter Bradukios. The envoy and his party stayed in Constantinople for 10 months after having been received with hospitality and great honors, which were mainly bestowed upon the interpreter, who was allowed to dine at the emperor's table. Prokop's account indicates that interpreters were of low social standing and would usually be expected to stand behind the emperor to interpret during meals. The honor granted to Bradukios, however, led to his ultimate demise. Chosroes—who suspected that the honor of dining with the emperor had only been bestowed upon the interpreter because he had earned it by betraying Roman interests or by having conducted secret negotiations with the Romans—ordered Bradukios to be executed upon his return to Persia.

Interpreters in the Middle Ages

There are a range of written records on interpreters, albeit fragmented, stemming from Christian late antiquity and the Roman Empire. Written culture as a whole declined with the onset of the migration period, so that information on interpreters is particularly sparse until the eighth century. It is not until the high and late Middle Ages that interpreters once again begin to emerge.

French medieval heroic epics called *chansons de geste*, for instance, illustrate the distinct social standing of the interpreter in the Middle Ages. His title "maistre latimier" is proof of a certain renown and places him in a particular occupational class (Glässer, 1956, p. 70). Thus, Charlemagne asks for God's blessing for an interpreter who had converted to Christianity and was especially devoted to him (Gächter, 1936).

Proselytization was a much more problematic context for interpreting. The beginning of the crusades, launched by the Western church at the end of the 11th century to free Jerusalem and the Holy Land from the rule of the "infidel" Muslims, saw interpreters increasingly being used in missionary work, with their performances minutely commented on. Louis IX sent Wilhelm von Rubruk to the Mongolians, since a rumor in the Western world claimed Khan Sartach had converted to Christianity. Rubruk had orders to investigate these rumors

and initiate permanent missionary work among the Mongolians. Presumably, Louis also hoped for Sartach as an ally in his fight against the Saracens. Upon his return, Rubruk drafted an *Itinerarium* which included notes on his interpreter Homo Dei, in other words Abdullah (Bowen et al., 1995, p. 252). Homo Dei appears to have been of Muslim descent. He possessed neither the necessary language skills in Tartar nor the requisite understanding of the philosophy of religion to provide an adequate mediation. Whenever Rubruk wants to preach, his interpreter refuses his services:

> "Do not make me preach, since I do not know how to express these things". He was right. Later, when I acquired some little knowledge of the language, I noticed that when I said one thing he would say something totally different, depending on what came into his head. After that I realized the danger of speaking through him, and chose rather to say nothing. (Rubruk, 1990, p. 108)

During the exceedingly strenuous journey into the winter months, Rubruk's fellow travelers and guides long for the comfort of God's Word. However, Homo Dei is so incompetent that Rubruk realizes it would be dangerous, if not impossible, to have the doctrine translated by such an interpreter, notable not only for his ineptitude but also for his insobriety (Rubruk, 1990, p. 179).

Since interpreters are mentioned by name during the Middle Ages, their line of work was obviously in demand, well established, and widespread; however, it also becomes clear that it was of doubtful reputation, particularly in the religious realm (Atiya, 1970, p. 75).

Interpreters in the Modern World

An interest in religious expansion is only one of many motives behind expeditions to Africa and voyages from the Old to the New World. Other objectives are trade, power, and the conquering of new lands. Since not enough interpreters were available in the 16th century, interpreters were "obtained" according to contemporary customs, meaning that members of the indigenous population, for instance, were kidnapped and taught the language of the conquerors. It stands to reason that this method did little to endear the conquerors to the future interpreters. These often retaliated, either by escaping or by betraying their "employers" at the first opportunity. This method was followed by Columbus, too, who during his conquests sought to capture natives on the various islands so that they might later serve him as interpreters and guides. He hoped that taking the prisoners' wives along to Spain would buy him the loyalty of the indigenous men. However, the prisoners' numerous escape attempts made it clear to him that he could trust these interpreters only to a very limited extent (Kolumbus, 1981, pp. 128–30, November 1492; Dircksen, 2006, pp. 209–11).

Hernán Cortés, by contrast, had the services of two competent and loyal interpreters to rely on: the shipwrecked Geronimo de Aguilar and the indigenous slave Malinche (Lanyon, 2001). Aguilar had been shipwrecked near the Jamaican coast in 1511, whereupon he spent several years as a slave of the Maya, learning their language. Nevertheless, he never ceased to hope for rescue. His hopes were met when the expedition landed and Cortés took him on board. Aguilar proved exceedingly useful to the Spanish, for whom he interpreted during their talks with the Maya.

Malinche was a gift for Cortés, which he received at the beginning of his conquest in 1519. As a child, she was sold to the Maya. Díaz del Castillo (1968) relates how she fell victim to her own mother's plotting: having remarried after the death of Malinche's father,

her mother wanted to establish her son from the later marriage as sole heir. When Cortés landed on the coast, Malinche was a slave to the local Maya. She, too, quickly proved invaluable as a language facilitator for, as the Spanish advanced further into the heartlands toward Tenochtitlan, Geronimo de Aguilar suddenly ceased to understand the natives. They no longer spoke the Mayan language, but instead used Nahuatl, the language of the Mexica, which Malinche was familiar with. Her command of both the Mayan language, learned during her stay with the Maya, and of Nahuatl made her indispensable for Cortés. "Her job was remarkable for the Spaniards" (Araguás & Jalón, 2004, p. 135).

In 1517, the Spanish seafarer Francisco Hernández de Córdoba sailed on an expedition from Havanna to Yucatán by order of the Spanish conquistador Diego Velásquez de Cuellar. The Spanish remained with the Mayan people for a few days but failed to understand their language. They therefore took two young Indians—who received the Christian names of Melchorejo and Julianillo (Díaz del Castillo, 1968, pp. 42–50)—back to Cuba, where they were to be trained as interpreters. Julianillo died there; Melchorejo learned Spanish and was taken along on the next expedition to Tabasco to act as interpreter. This, however, never bore fruit: Melchorejo escaped at the first opportunity and allied himself with the local Indians against the Spanish (Díaz del Castillo, 1968, p. 76).

During his second expedition to the west coast of South America, the Spanish explorer Francisco Pizarro took three Incas on board to be trained as interpreters. Two of these were Felipillo and Martinillo. In 1532 Pizarro returned to Peru, intending to exploit the state of civil war in order to conquer the country and gain control over the considerable gold deposits. Felipillo acted as his interpreter but proved to be totally incompetent (Roland, 1982, pp. 64–5; De la Vega, 1983, pp. 467, 479; Kurz, 1991, p. 3).

In French Canada Jacques Cartier—on his first voyage to Canada in 1534—captured two Iroquois and took them to France to train them as interpreters. On his second voyage in 1535, the two Indians were used to help him as interpreter-guides, but only did so as long as their own people's interests did not oppose those of the French (Delisle & Woodsworth, 1995, p. 259).

The French explorer and founder of French Canada, Samuel de Champlain, was more successful. In 1608, he instituted the system of *interprètes-résidents* (Delisle, 1977, pp. 6–8; Bowen et al., 1995, p. 257). Young Frenchmen lived among the Canadian native tribes in order to learn their language and culture, gain their trust, and thus further the interests of the French conquerors (Dionne, 1963; Morison, 1972).

Interpreters played an active role in the Ottoman Empire as well as in the conquests of the New World. Since the government of the Ottoman Empire made it a principle never to converse with other powers in writing, communication was dependent on the so-called Levantine dragomans. Embassies in the capital, but also consulates in many provincial cities, relied heavily on them, since few of the foreign ambassadors/consuls spoke Turkish, and interpreters were needed for all talks and discussions with the Turkish side. However, the interpreters were accused of incompetence, mistranslation, and disloyalty, and of serving their own interest and selling their services to the highest bidder (Lewis, 1999). Mistranslation was frequently due to the fact that dragomans were too frightened to be able to interpret properly and to honestly transmit messages that the Turkish might take as an insult. This stemmed from fear of a violent Turkish reaction, since the Turkish historically did not subscribe to the Western principle that the bearer of bad news was not to be held responsible for the content of the message. It was not uncommon for interpreters to be abused verbally or physically, jailed, or even hanged or impaled simply for transmitting unpalatable messages to the sultan (Corbett, 1928, p. 122; Roland, 1982, p. 54), so all the embassies in Constantinople faced the problem of having to find competent, trustworthy, and brave interpreters. European powers consequently decided that the only solution was to train people of their own (Lewis, 1999).

Interpreters and Interpreting in the 20th Century

Until the end of World War I, a distinction was rarely made between interpreters and translators. It was assumed that a language expert could be called on for both. During the interwar period, the number of high-level contacts increased due to the development of large international organizations like the League of Nations (1919) and the International Labour Organization (ILO; 1919), and the need for interpretation into many languages multiplied: This marked the inception of what we know today as consecutive interpreting. During speeches, interpreters took notes in special shorthand that had been developed for this purpose, and interpreted what had been said afterwards.

The high quality of the League of Nations' interpreters has been stressed repeatedly; among them were Paul Mantoux (Jalón, 2004a, pp. 24–5) and André Kaminker (Ranshofen-Wertheimer, 1945, pp. 140–2). However, they are also known to have acted without authority. When a speaker complained to André Kaminker that the interpretation did not correspond to what he had said, the interpreter replied laconically: "No, sir, but it is what you ought to have said" (Longley, 1968, p. 4). It seems that this behavior was not held against him. The work of the League of Nations' interpreters was evidently worth being commented on in detail by historians. Consequently, interpreters were much more in the spotlight than ever before (Jalón, 2004a, pp. 53–5).

Since consecutive interpreting took up almost as much time as the original speech and hence prolonged meetings considerably, another form of interpreting was developed, which was to be less time-consuming: simultaneous interpreting (Jalón, 2004a, pp. 139–42). During simultaneous interpreting, the speaker speaks into a microphone which connects him/her directly with the interpreter, who in turn is connected to the listeners. Listeners can select the desired channel and thus the desired language. At first, interpreters fought bitterly against this technique. They feared they might not have the time to think about what they had heard or to find the most elegant expression.

This new interpreting technique was employed during the Nuremberg trials (1945–6), which were interpreted into English, French, Russian, and German. The interpreters sat in close proximity to the accused; the individual booths were only separated at the sides by glass panes. Three interpreters worked in each booth: The English booth for example contained one interpreter who interpreted from German into English, one who interpreted from French into English, and one who interpreted from Russian into English. The interpreters worked into their respective native tongue. There is a plethora of literature on how they perceived the trials (Gaiba, 1998; Sonnenfeldt, 2003; Stupnikova, 2003; Jalón, 2004a; Behr & Corpataux, 2006; Kalverkämper & Schippel, 2008; Ramler, 2008). The simultaneous interpretation not only made it possible to shorten the trials considerably, but also contributed to the popularization of the simultaneous technique, which was to some extent also used at the international military tribunal for the Far East (1946–8) in Tokyo (Kurz, 2004; Takeda, 2008; Torikai, 2009).

During the second half of the 20th century, simultaneous interpreting became more widely accepted and was subsequently used at the United Nations from 1947 (Jalón, 2004b), as well as at the EU for the interpretation of its 23 official languages. In 1953, the institutionalization of interpreter training and the growing professionalization of interpreters led to the foundation of the Association Internationale des Interprètes de Conférence (aiic), an international professional association of conference interpreters. Today, aiic has more than 2,800 members in more than 90 countries.

This was also the time when the first interpreter autobiographies were published, providing an insight into the work of interpreters in the 20th century (Dollmann, 1948, 1956, 1963; Schmidt, 1952; Ekvall, 1960; Jacob, 1962; Birse, 1967; Weit, 1970; Walters, 1990; Bereschkow, 1991; Kusterer, 1995; Palaschtschenko, 1997; Korchilov, 1999). More recent

harrowing insights into the work of interpreters in conflict or war zones are also available (Kahane, 2007, 2008), for example from Yugoslavia (Stahuljak, 1999; Suljagić, 2005; Dragovic-Drouet, 2007; Nuhanović, 2007), from Darfour (Hari, 2008), from Iraq (Goldfarb, 2005; Williams, 2006; Palmer, 2007; Guidère, 2008), or from international criminal courts like the ICTY (Stern, 2002; Hajdu, 2006; Seleskovitch, 2008) and from prisons like Guantánamo and Abu Ghraib (Saar & Novak, 2005; Willemsen, 2006; Khan, 2008).

Since the 1950s, interpreting has undergone an impressive development with regard to its diversity. New fields and types have been added, such as community interpreting and signed language interpreting, and new technologies and means of communication have been introduced. Media interpreting has increased, as well as video interpreting, telephone interpreting, and interpreting via the Internet. The tedious search for terminology in a dictionary has become outdated. Interpreters now compile glossaries for preparation on their computers, and using a computer in the booth has become the rule rather than the exception. Researchers are constantly developing new tools, like Personal Digital Assistants (PDAs), which are to some extent already being used for interpreting, for instance in the public health sector or in war zones; the Phraselator, which was used in Afghanistan (Afghanistan, 2002); the Multilingual Automatic Speech-to-Speech Translator (Mastor) (IBM, 2006), for soldiers in Iraq; or PDA-Phones (PDA-Phones, 2005), which were used in Munich during the FIFA World Cup.

In today's globalized world, translation has gained new relevance. Interpreters are more indispensable than ever in a global society, since communication is a fragile commodity in a multiethnic and multilingual environment. In the interest of all and in order to minimize conflict, it is to be preserved: "Translation it is that openeth the window to let in the light" (Bible, preface to the King James Version).

SEE ALSO: Translation and Interpreting: Overview

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History of Language Teaching Methods

SUZANNE K. HILGENDORF

Language teaching methods refers to the set of teaching practices, approaches, and materials used by instructors to facilitate foreign-language (FL) learning. Throughout history, methods have responded to the changing goals of language learning, for example, communicating with foreign trade partners, supporting missionary efforts to spread religion, reading academic scholarship and sacred texts, or, most recently, facilitating interaction on transnational and global levels. Language teaching methods therefore have prioritized different skills, for example, listening comprehension, speaking, reading, and writing, given the needs of learners and the values of societies. Various theoretical understandings of second language acquisition (SLA) and FL pedagogy have further informed teaching methods. In particular, new research developments, emphases, and trends in the related disciplines of linguistics, literature studies, education, and psychology have shaped thinking on the most effective ways to teach FLs.

Undoubtedly a rich array of teaching traditions exists throughout the world. Due to space limitations, this account is restricted to methods developed in Europe and North America. The entry initially outlines historical factors that shaped the first formal teaching methods. It then describes the numerous methods developed since the 19th century.

Early History

In Europe, written records concerning FL teaching first appear in the fifth century AD (Musumeci, 2009, p. 43). Rather than discussing language teaching in general, these writings largely address the instruction of Latin, which had been the official language of the Roman Republic (509 BC to 27 BC) and Roman Empire (27 BC to AD 476). With a singular status as the primary FL throughout much of Western and Central Europe as well as the Mediterranean region, Latin functioned as "the universal language of scholarship, education, government, and the marketplace" (Musumeci, 1997, p. 4). A second language widely taught during this period was Greek, due to the influential achievements of classical Greece (ca. fifth and fourth centuries BC) in politics, philosophy, the arts, sciences, and literature.

Following the fall of Rome, Latin maintained its standing as primary language of wider communication for centuries, even though it was eventually no longer spoken as a native language (L1) and evolved into the distinct regional varieties of the present-day Romance languages and dialects. Thus for more than 1,000 years FL teaching was primarily understood with reference to Latin and to a lesser extent Greek, the classical languages in which most academic, literary, and sacred texts had been written (Musumeci, 2009, p. 43).

The Grammar-Translation Method

By the end of the Middle Ages, language study gained broader significance as universities were established throughout Europe and the *Studia humanitatis*, or studies in the humanities, grew in popularity. The dominant teaching method during this period was grammar-translation (G-T), which had evolved out of the historical focus on learned writings in

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Latin and Greek. As its name suggests, G-T emphasized a thorough understanding of the target language (TL) grammar along with extensive exercises in translating texts between the TL and the learner's L1. Learning involved studying vocabulary lists and memorizing grammatical paradigms illustrating the various forms, for example, of verbs. Teaching activities included lectures with deductive, or explicit, grammar presentations, the recitation of memorized passages, and dictation exercises, all of which were facilitated by discussion in the L1. The TL was regarded as an object of study, with instruction also providing learners greater understanding of their L1 (Musumeci, 2009, p. 52; Rodgers, 2009, p. 345).

With instruction dealing primarily with Latin, G-T was oriented to the grammatical characteristics of that language. Grammatical terms were coined in Latin, and teaching focused on the language's extensive case system (Neuner, 1995, p. 182).

The Direct Method

Vernacularization in Europe beginning in the 15th century, which saw the increasing use of local languages in domains traditionally reserved for Latin, brought a broader understanding of FL study. By the late 19th century, the exclusive focus on classical languages expanded to include the contemporary modern languages of Europe, and the fact that, for example, French, German, and English had large L1 speech communities increased the importance of oral skills.

As a result, the direct method (DM) was developed, modeled on beliefs about L1 acquisition. Based on the fact that children hear a significant amount of language before producing speech, DM prioritized initially teaching listening comprehension through immersion, that is, the exclusive use of the TL in instruction. Teaching consequently first focused on the tangible environment and concrete objects. Speaking skills next were taught through direct language use, preferably by having learners perform the physical actions of what was said (Omaggio, 1986, p. 57). Various linguists contributed aspects to this method, which often were counter to established G-T practices. In 1874, Lambert Sauveur advocated for inductive grammar teaching, requiring learners to discover rules on their own based on the language input received, and in the late 19th century the US language school founder Maximilian Berlitz introduced an emphasis on conversational language use. Earlier, in 1866, Gottlieb Heness had introduced the natural method, a variant more closely replicating L1 acquisition (Adamson, 2004, p. 607; Neuner, 2007, p. 228).

Audio-Lingual Method

Developments in the fields of linguistics and learner psychology in the first half of the 20th century brought new impulses to language teaching. Ferdinand de Saussure's research conceptualizing language as a formal, static system introduced a structural approach to language study. In North America, linguistic interest in documenting Native American languages cultivated a disciplinary emphasis on spoken language, while in learner psychology the behaviorist framework, developed chiefly by B. F. Skinner, viewed learning as a conditioning process based on stimulus and response. Language learning was seen as an issue of habit formation, with speech being a response to linguistic stimuli (Omaggio, 1986, pp. 22–6; Neuner, 1995, pp. 183–4).

The audio-lingual method was developed in the 1940s and 1950s, emphasizing the study of recurring patterns in language, especially the phonological (sound) and morphological (word construction) systems, and the development of oral skills. As in L1 acquisition, language learning was believed to have a natural order, progressing from listening comprehension and speaking to reading and writing. Still incorporating inductive approaches

to grammar, instruction focused on memorized dialogues and pattern drills, as it was believed acquisition was facilitated by repetition, restating information, and practicing verb and noun forms (Omaggio, 1986, pp. 60–2; Rodgers, 2009, p. 346).

Cognitive Approaches to Language Teaching

Noam Chomsky's linguistic research on the cognitive dimensions of language acquisition significantly challenged the tenets of behaviorism and ALM. In Chomsky's (1959, pp. 56–8) critical review of Skinner's *Verbal Behavior* (1957), among his strongest arguments was the observation that L1 speakers interpret novel utterances, that is, sentences they have never heard before; therefore language acquisition cannot simply be an issue of mimicry as exemplified in ALM dialogue memorization exercises. Rather than relying on an inventory of linguistic stimuli and conditioned responses, language acquisition must involve rule-governed, deep processing in the brain.

Chomsky's scholarship led to a modernization of DM. One particularly influential cognitive theory for FL pedagogy was Stephen Krashen's (1982) monitor model. His five hypotheses included (a) a distinction between (subconscious) language acquisition and (conscious) language learning; (b) the recognition of a natural order for the acquisition of grammatical form, which is impervious to the sequence in which form is taught; and (c) the need for comprehensible input (i + 1). Krashen's model inspired many popular new methods, including Tracy D. Terrell's (1982) highly influential variation of the natural approach prioritizing the teaching of communication skills over grammatical form (Omaggio, 1986, p. 75).

Communicative Language Teaching

Since the 1970s, there has been "widespread acceptance . . . of communicative competence as the goal of [foreign] language learning" (Mitchell and Myles, 2004, p. 3). The recognition of communication as an interpersonal/social behavior, as a "continuous process of expression, interpretation, and negotiation of meaning," has influenced language teaching to incorporate such aspects into the learning experience (Savignon, 1997, p. 14).

The sociolinguistic conceptualization of communicative competence comprises several component competencies. In addition to grammatical competence, there is sociolinguistic competence: appropriate language use within a particular context of situation; discourse competence: language use beyond the sentence level; and strategic competence: mastery of communication tactics, that is, paraphrasing, circumlocution, guessing, and so forth (Canale and Swain, 1980; Savignon, 1997, pp. 40–4).

As outlined by Lee and VanPatten (2003), one major distinction of communicative language teaching (CLT) is the role of the instructor, which shifts from that of the transmitter of knowledge (Atlas complex) to being a resource person/architect responsible for creating student-centered learning activities that facilitate the exchange of information and negotiation of meaning. With students working primarily in pairs and groups, teaching further addresses learning strategies and individual learner styles.

Conclusion

Although FL teaching methods have evolved over centuries based on learner goals and advances in research, in practice instructors continue to draw on approaches from the past, which is a testament to the historical significance of G-T, DM, and ALM. This occurs in

spite of extensive training in CLT, most likely because of the challenging nature of reconceptualizing one's understanding of both SLA and the methods for facilitating that process. Instructors inevitably are most intimately familiar with the methods they experienced firsthand as language learners themselves, and these have been perpetuated over generations. They are so pervasive that even teachers who believe they employ CLT in actuality may use, for example, ALM exercises, such as when having students do partner activities that in fact only require them to repeat "correct" responses to provided queries, as opposed to having them truly communicate by exchanging information and negotiating meaning. These realities speak all the more to the importance of raising awareness of the rich history of language teaching methods.

SEE ALSO: Cognitive Linguistics of Second Language Acquisition; Grammar in Language Teaching and Education; Krashen, Stephen; VanPatten, Bill

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History of Multilingualism

RITA FRANCESCHINI

Multilingualism is a human potentiality which can be developed when circumstances permit it anywhere and at any time throughout human evolution: Sporadic or prolonged language contact between populations through cohabitation, trade, intermarriage, conquest, exploration, travel, or shared interests raises the desire or need for exchange. These direct contact situations heighten the probability that speakers and entire groups become able to understand, speak, or write several languages, to a greater or lesser degree (functional multilingualism).

Multilingualism can also develop through mediated means, like an interest in studying written texts, through administrative acts or religious practices expressed in languages other than the commonly used one, or through teachers. All these contribute to form a dynamic landscape of language diversity with regional, historical, cultural, and ideological differences. Broadly speaking, what multilingualism means is the use of more than one language socially, or in everyday life by individuals or groups or in institutions (Franceschini, 2009, pp. 33–4).

The interest in exploring all these facets of multilingualism with historical depth is still in its infancy. The state of the art is built on case studies mainly from cultures with widely available written documentation; unfortunately, these are not necessarily the regions with the highest language diversity (today these include Papua New Guinea, Indonesia, Nigeria, and India; see Nichols, 1992), where colonial languages were often imposed as well (mainly English, Spanish, and French).

The traces or reports of the different phenomena of bilingual speech or writing—such as code switching, code mixing, code alternation, and accommodation to speakers of other languages—bilingual annotation of texts (in glosses for example), and different types of mediation and translation can be found in written documentation. Since an individual does not usually master different languages to the same degree, we can deduce that, in the past, some individuals' languages were used and understood in a limited way or only for specific purposes (for reading or for ritual purposes, for example). Thus, receptive multilingualism (which is not passive at all) can be practiced when each person understands another language to some extent and needs not acquire a perfect command of it (Braunmüller, 2007).

Entire languages like pidgins or lingua francas—also sign languages—emerged from the need for intercultural communication and for specific functions (mainly for trade) (Wurm, Mühlhäusler, & Tryon, 1996): One of the most durable lingua francas was used in the Mediterranean from the 13th to the 19th century for trade, naval communication, communication with foreigners, and other practical situations. This Mediterranean lingua franca (which also gave this phenomenon its name) was a sort of grammatically simplified mixed language based on several Italian vernaculars (Venetian, Genoese) with a fluxing addition of French forms and other languages from the Mediterranean basin, thus being comprehensible to people with different linguistic backgrounds.

Languages can come under pressure: A language can fade out of the repertoire of an individual or a group. This language shift can take place over generations, when a group moves to another linguistic environment or when the social circumstances and power relationships are negative to the maintenance of the original language(s): Conquests,

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colonization, migration, and minority contexts may create the conditions for language loss and therefore contribute to diminishing multilingualism. The forced assimilation of Native Americans to English culture is one such case. People may, by contrast, be determined to maintain an inherited language against the pressure of others, signaling group solidarity through its use too (as in the maintenance of Basque to this day as a pre-Indo-European language or the case of Hebrew in the Jewish culture, maintained around the world through religious practices).

The most interesting topics in the history of multilingualism are how attitudes toward multilingualism have changed over time, and how ideology, mainly nationalism, has forced people toward monolingualism.

Sumerian and Ancient Egypt

One of the oldest sources documenting an administration's need to train people for multilingual purposes in a large empire goes back to the Sumerians: A huge number of multilingual vocabularies and grammars on clay tablets (ca. 2600 BC) impressively show that multilingually skilled persons, mainly civil servants, were deliberately trained to be able to speak and write in the different languages of the empire, such as Sumerian and Akkadian (Kramer, 1981, pp. 3–7; Titone, 1986, pp. 10–12, 25–6; van Hoof, 1991, pp. 7–8). Similar texts were also found from the Hittite Empire (till 1180 BC) (Macqueen 1986, pp. 24–5); and the same holds true for a multitude of ancient Egyptian sources (found in El-Amarna, for example, in 1400 BC).

Egypt preserves a long history of multilingual scriptural practices: From the arrival of the Greeks up to the ninth century AD one can trace bilingual texts for over a millennium. A large collection of papyri, for example, contains writings from various levels of society, private letters (written perhaps with help from scribes), and administrative documents in Demotic, Greek, Latin, Coptic, and Arabic (Papaconstantinou, 2010).

The Roman Empire (up to the Fourth Century AD)

From the early Republic on, Latin was in contact with a multitude of other languages spoken in the vast territory of the Roman Empire, for instance Oscan, Gaulish, Punic, Aramaic, and Greek. Adams (2003, p. xxi) argues that a substantial part of the population in contact with Romans, and the Romans themselves, must have been bi- and multilingual. Evidence is given through traces of code switching from inscriptions to literary texts (for example in the works of Plautius and Lucilius; Cicero's code switching in his personal letters is described in Swain, 2002).

Important institutions in the Roman Empire were multilingual: In the army, Latin and Greek were used, and the latter played an important role in the eastern part of the empire, where it assumed the role of a lingua franca. People with non-Latin languages as their L1 had to choose between learning Latin or Greek alongside maintaining their inherited language(s), or shifting completely to the language of authority, Latin, by giving up the language of their ancestors. In the west of the Roman Empire, a shift to Latin was the most common tendency, but in other countries communication through Greek formed a consistent pattern (Adams, 2003, p. 757).

Another important institution was slavery: Many slaves were Greek and also worked as teachers in upper-class families, in Rome for example. This fostered the learning of Greek as a prestigious language (Adams, 2003, p. 762).

The Roman Empire did not have an explicit language policy, imposing the learning of Latin, but the expectation—and the necessity—to learn Latin was pretty convincing:

For socially powerful interaction, submitted alloglott speakers had to come to grasps with the language of the dominators. A certain pragmatism combined with a dismissive attitude toward local languages (except Greek, which was admired) seems to have prevailed over an officially spelled-out policy. And, mainly in the west, a certain degree of disregard for regional languages like Etruscan and Oscan seems to have contributed to reducing their use (Adams, 2003, p. xix).

Another attitude is noticeable: Non-Latin speakers seemed to accept the new Latin language alongside their old, without giving up the rules of their native tongues. This can be seen in inscriptions when names are maintained, for example. Sometimes, in accordance with the bilingual surroundings, people had two different names, as has been observed in Etruscan or North African gravestone inscriptions. Thus, names becoming more and more Latinate in the same family signaled an increase in the bearer's level of identification with Latin-language culture (Adams, 2003, pp. 213, 755).

Overall, Latin adopted a large number of words of Greek origin and, all over the Roman Empire, L2 speakers of Latin spoke it with accent and mastered it to different degrees. These forms of spoken substandard Latin—or so called Vulgar Latin—were the main foundations for boosting the development of Latin in non-native speakers. The bilingualism of ordinary people, and not only those who were literate, then, played an important role and became the foundation for the development of the precursors of the later Romance languages.

The Middle Ages

Medieval societies developed in a multilingual context and profited from sources in Arabic culture. The spoken languages were far from being unified or codified as they are today, but were open to the needs of practical purposes. Knowing several languages was seen as something useful, necessary for carrying out one's tasks, for trade, for communicating in church networks, and for governing. Educated people were at least bilingual with Latin as the main language of instruction. Scholars such as Raymond Lulle (ca. 1232–1316) knew Latin and Arabic, and wrote in Catalan and Occitan.

Multilingualism could be spread not only through erudition, but also via class distinctions, as in the case of the middle and upper classes in England after the Norman conquest of 1066. These classes had to learn and apply French. This kind of bilingualism was mainly diffused at the end of the 12th century, reaching—as Short (2009) calculates—not more than 15% of French–English bilinguals in the middle of the 14th century. In 1362 the opening speech of parliament was given for the first time in English rather than French. The population was mainly monolingual, the clergy trilingual with Latin (Short, 1980). The testimony of language-learning manuals (the oldest at our disposal dates back to 1396) shows that French at that time had to be learned anew for the special purposes of jurisdiction and administration (Kristol, 1995). Nevertheless, this early period of elite bilingualism left profound marks on much of modern English vocabulary.

Britain was multilingual in another, very practical, sense because of its vast trading activities: In its ports merchandise from all over the world was registered and, as in all great ports, people communicated in several languages and the creation of functional trade languages, with mixed lexical forms, was common (Trotter, 2003).

An example of how spoken vernaculars changed status and became languages of prestige can be seen in the social history of the old Southern Netherlands (with Flanders), which developed into a territory of great commercial and cultural prosperity, generating a highly diversified society in a cultural border region where three languages were socially accepted. Latin was used—as elsewhere in Europe—for all written purposes up to the 11th or 12th century. The awakened self-consciousness and rise in social status of the merchant classes elevated the spoken (and not yet standardized) "vernacular languages" all over

Europe into a more prestigious position: In Flanders, for example, French was used as well as Dutch as the lingua franca in the courts and in literature from the 12th century onwards. Vernacular languages appeared later in administrative texts too, contributing to an overall intelligibility for a large population, since mastery of Latin was increasingly restricted to the clergy (who favored it for some centuries). Documents, then, could be written in two languages. The spoken vernaculars (Italian, English, French, and German, for example) were generally more suitable than Latin for the practical purposes of international medieval commerce (Prevenier & de Hemptinne, 2005).

It was not only in this time and in this part of the world that merchants were among the most multilingual people. It was quite common for young merchants to spend time in another city, learning the necessary new language "hands on." Traces of this practice can be seen in learning materials, as documented for example by a collection of dialogues in Venetian and Bavarian dating from 1423 (Rossebastiano Bart, 1984). Also in the 13th to the 14th centuries we know of similar didactic dialogues which were used in Novgorod and Hamburg, aiming to sustain the acquisition of German and Russian. As in other parts of the world, it was simply a prerequisite in the Hanseatic League (a trade alliance extending along the Baltic and North Sea) for successful trade activities to have linguistically skilled merchants (Braunmüller & Ferraresi, 2003).

Dialogue books, grammars for language learning in five, six, or more languages, and polyglot dictionaries were diffused not only for erudition, but also in pocket format, apparently for those who traveled (Hüllen, 2005; Considine, 2008). The topics in the latter books clearly reveal their practical purpose: Conversations that include negotiations, pricing, sales discussions, asking for addresses, and so on show the necessity to be directly in touch with people in the relevant trade places. The learning of several languages at that time does not seem to have been so uncommon (Franceschini, 2002).

An attitude grounded in practical thinking can also be seen in the Golden Bull decree of 1356 in Nuremberg, where Emperor Charles IV advised the princes to have a multilingual education so that they would be able to rule their land with more political intelligence. He recommended that the sons of the Prince Electors, already strong in German, learn Latin, Italian, and Czech from the ages of 7 to 14, for the same reasons (Schneider, 1996, pp. 74–75). We know from the first emperors of the Habsburg dynasty how many languages they mastered: The first language of Maximilian I (1493–1519) was German, his most important L2 was French, and he also mastered Flemish, Italian, and Slovenian, and to some extent also English, Spanish, Latin, and Czech. The mastery of four to five languages was the minimum for emperors right up to relatively recent times (Goebl, 1997, p. 112).

Another revealing example of the management of several languages in bilingual or multilingual cities or regions is the city of Fribourg/Freiburg (Switzerland), situated in the French–German transition zone. In the 14th and 15th centuries five language varieties were used in spoken and written communication: Latin, French, Francoprovençal, German, and Swiss German (Alemanic). Hybrid forms were regularly used, with a high degree of interpenetration and widespread borrowing. Code switching between German, French, and Latin can be found in letters as well as in the minutes of the city council (Lüdi, 1985).

In literature, several forms of multilingualism were widespread in the Middle Ages: A poem could contain verses or strophes in different languages (as in Raimbaut de Vaqueiras' *Descort*), without explanation. In a sort of fusion, languages were used in an intertwining manner in literary or scientific texts too; one can imagine that this also happened in speech. In terms of an approach to multilingualism, these practices are signs of a non-puristic attitude with respect to the mixing of languages and emphasize the crucial role of overall multilingual practices in the Middle Ages up to the 16th century.

So, for centuries, multilingual abilities were not highlighted because they were simply normal for doing a job well (see also Braunmüller & Ferraresi, 2003, p. 3). Nor was perfect

command of a language an issue, as it is in contemporary discourse. We can assume that functional multilingualism was seen as the norm, and that non-ideological, pragmatic attitudes prevailed. Attempts to enforce one language in connection with state power were not very pronounced. Enemies were made, but not because of language differences. The seizing of linguistic differences in order to create hostility emerges very clearly later, when the idea of a pure and unified nation is raised. The ideology of the nation-state began to emerge slowly over the next centuries, giving colonialism its roots.

Moving On to Early Modernity and the Rise of the Nation-State

In terms of multilingualism, the period of the Renaissance (15th to the mid-16th century) was characterized by the attempt of humanists to return to pure Latin and Greek, after the decline—in their view—during the Middle Ages. This negative attitude toward the "Babel-like," mixed use of languages or the autonomous development of Vulgar Latin in the Middle Ages opened the way for the search for a pure form, as well as for a monolingual and nationalistic ideal (fully developed in modern times through romanticism and nationalism). In the same way, spoken regional languages were codified, which means that a certain homogenization took place due also to the necessity to have unifying norms when printing books (increasingly available from the beginning of the 16th century) (Burke, 2004). Nevertheless, mixed texts did not completely disappear, but achieved another status in an exceptional sphere.

The age of Enlightenment (mid- to late 17th and 18th century) brought language learning into focus as a subject to learn by following rules: Increasingly grammars of single languages were written and therefore standardized. The basis of many new, empirical sciences was established in this period. Rationality was highlighted. Homogenizing, purist attitudes began to prevail. The Académie Française, for example, was founded in 1635 and had to guarantee the purity of the French language, thus avoiding influences from other languages. Learning "foreign" languages was an objective to achieve by learning in a guided way, and attaining perfection was perceived as more desirable than pragmatic, functional mastery. Against this background, one could be proud to know another language perfectly, as can be seen in the reports from Frederick the Great of Prussia (1712–86), who ostensibly showed his fluency in French and wrote it on a daily basis, not only by corresponding with Voltaire (Petersilka, 2005) and Goethe, but also by writing letters in French to his sister.

Apparently, multilingualism was no longer part of a self-evident practice but was seen as an exceptional competence. A divide can be seen: Learning other languages came under control, and either became an achievement for the elite (like French in the courts of Russia in the 19th century) or was relegated to socially excluded minorities and disregarded.

From the 19th century on, the formation of nation-states was carried out in an overall ideology of cultural homogenization, where multilingual communities were forced into monolingualism. The Habsburg Empire was a noticeable exception to this rule, not seeking to unify linguistically but pursuing a pluralistic language policy. From the time of Empress Maria Theresa's school reform of 1774 onward, lessons could also been held in the respective native language of the children. Foreign languages were taught according to local conditions and requirements. The use of foreign languages in school was due to the commitment to the ideals of the Enlightenment, not only to show respect to minorities. In a special school model ("utraquism"), different subjects could be taught in different languages in primary schools; today we would perhaps call them CLIL-schools.

German in the Habsburg Empire was not institutionalized as a state language, and assimilation was not explicitly intended. Thus, in the constitution of 1867, all languages

spoken at the time were considered equal, schooling in the mother tongue guaranteed. However, another article clearly stated that no nationality should be forced to learn the language of another and, as a result, utraquist schools were gradually replaced by more monolingual "nationality schools." Toward the end of the empire (1919), nationalistic ideologies prevailed and destroyed the efforts for coexistence between ethnic groups (Rindler-Schjerve & Vetter, 2007, pp. 56–9).

Among highly multilingual groups, we have to mention Jews as an outstanding multilingual community: Persecutions, expulsions, and opportunities have scattered the Jews around the world and they have protected their roots fiercely despite the influences of other languages and cultures. Such experiences have enabled Jews to be important mediators and translators, to be flexible, and to have a sense of relativity toward language and culture. In new territories, varieties of Judeo-Arabic and Judeo-Greek were developed by the second generation for in-group communication. In modern times, in Eastern Europe, for example, a repertoire could include languages from three different language groups: Semitic, Slavic, and German. Hebrew and Aramaic were used alongside local dialects and the language of power (such as Polish, Russian, Czech, German, or today English). Yiddish can be traced back to the end of the first millennium as a fusion language of the Ashkenazim, where German, Hebrew, and Russian, for example, can be merged into one word, as in *Shlimezalnik* 'an unfortunate person' (*schlim* + *mazl* + *nik*). Preserving the "Holy tongue" (written Hebrew and Aramaic) in the core of their repertoire, it was an "essential multilingualism" (Harshav, 2008) that enabled the Jews to maintain essential common cultural traits.

From the early 19th century on, the prevailing ideological discourse in Europe has tied together the notions of nation, language, and identity. The standardization process which began for practical purposes (such as that of the new book-printing techniques in the 15th and 16th centuries) became ideological. National languages became fixed and the "pure use" of them was seen as the only attainable mastery, which had the effect of stigmatizing those who spoke with an accent, and bi- and multilingual people in general (Braunmüller, 2007). By tracing sharp national boundaries and postulating nations with only one national language, nationalism creates language minorities. In modern nation-states all over the world, overt or covert suppression of minority languages was (and is) all too common (Thomason, 2001).

Linguistic Diversity in the Former Colonial World

South America shows a high linguistic diversity with respect to other countries (highest in the Pacific): Due to migrations, population displacements, and colonization in modern times, the language diversity pattern in South America shows a discontinuous, patchwork-like image. A functional divide between indigenous languages and the languages of the European colonialists seems to be typical, as is the assimilation of the European languages: During the Inca expansion, interrupted by European colonization from the 16th century onward, Quechua had the function of a lingua franca in vast areas of the Andes, and other populations adapted it, or shifted to it definitively. European colonization then became intrinsically linked to Christianization, for which priests initially tried to use the indigenous languages. Grammars of local languages were written (the first for Quechua in 1560). The overall language policy was one of assimilation, clearly from the 17th century on, with widespread attitudes of devaluation of the indigenous languages on the part of the colonizers. A high number of linguistic groups became extinct during the colonial period. In the territory of Ecuador, for example, only a dozen of the 30 or so languages known to have been spoken at the time of the conquest were maintained (Hornberger & King, 2001).

The African continent also figures among places with high scores in linguistic diversity (around 250 languages are currently spoken in Nigeria, for example); one can imagine

that it was not very different in the past. Due to the presence of multiple home languages (through intermarriage, for example) and the use of a huge amount of lingua francas (like Wolof and Krio) for practical reasons, there seems to be a rooted pattern of individual multilingualism in Africa; moreover, for those who are educated or living in major cities, a colonial language (French, English, German, or Dutch) can enter the repertoire. Languages are seen as a resource, as a necessity for practical action (Adegbija, 1994).

Colonial languages were imposed as official languages by the colonial powers in Africa and South America, but also in other parts of the former colonial world such as India, and they often maintained this position even after such countries gained independence in the 20th century. The social repertoire of these societies often includes a supranational language or a language of international communication, usually the language of a current or former colonial or cultural power, which covers the spheres of science and culture and is complementary to the national languages. Despite this powerful umbrella function, the inherited patterns of multilingualism can be preserved, as is the case today in India, Pakistan, Bangladesh, and Nepal, which have been multilingual countries from the time of their earliest recorded history (Kachru, Kachru, & Sridar, 2008).

Worldwide Lines, Forces and Tendencies

From the above examples, the main lines and general driving forces behind multilingualism in history emerge as follows:

1. Multilingualism is seen as a social phenomenon and as a capacity of individuals or groups which can be best studied in contact situations. These are more likely in regions with high language *diversity*, which is greatest in the Pacific area and in the "New World," and lowest in the "Old World." Because the available historical documentation shows the inverse pattern, we found our observations were still biased.
2. In contact situations, the need to cope with multilingual communicative situations is pressing. The *strategies* used seem to have been widespread in the past and include help from translators, sign languages, creating functional trade codes, partial (or total) acquisition of the other language in speaking and writing.
3. When language contact goes along with the establishment of *power* (conquests, for example), hierarchies of prestige prompt speakers to adopt a new language. However, it does not follow from this that the original languages disappear as a rule. Languages can coexist and be preserved despite the presence of continuing political forces.
4. Establishing explicit language *policies* is a relatively new practice. Fluid, pragmatic choices were almost common in the past in Europe and prevail in highly diversified societies.
5. The *ideological overload* with respect to languages as identity markers and symbols of nations is more typical of modern times, with special focus on the Old World.
6. *Codification* comes along with technical development, administrative needs, and the necessity for widespread communication. It produces homogenization in a variable, regional use, as well as a divide between the written and spoken language.
7. Partial, *functional command* of several languages is the main rule in multilingual practices and was more accepted in the past, and more prevalent outside the Old World.

SEE ALSO: Colonialism and Language Policy and Planning; History of World Englishes; Intercultural Learning; Lingua Franca and Language of Wider Communication; Linguistic Diversity; Multilingualism

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History of Translation

JUDY WAKABAYASHI

The Object of Inquiry

Translation historiography explores changes in the practice and conceptualization of translation over time and space, as well as the causes of these changes. It helps contextualize the practices and ideas of the past, relativize those of the present, and identify regularities, interconnections, turning points, and advances. Studies of translation history are not a new phenomenon. Yet only recently has this emerged as a subdiscipline that draws on insights and methodologies from both translation studies and historiography but that has an "awareness that translation history might actually have a method, with its own concepts, procedures and results" (Pym, 1998, p. 13). Translations and translators are influenced by and can influence their communicative context, and they have had an important impact in the following main areas of cultural history suggested by Delisle and Woodsworth (1995): the invention of alphabets, the development of languages, and the writing of dictionaries; the emergence of national literatures and the shaping of their form and content; the creation and dissemination of knowledge; the power relations between different regions and countries; the practice and spread of religions; and the transmission of cultural goods and values, a category that "permeates and is permeated by" all the other domains (Neubert, 2001, p. 188).

This has led to two complementary approaches to the relationship between translation and history: (a) "what can translation mean for the understanding of history, in particular of cultural practices" and (b) "what can history mean for the understanding of the multifarious forms of translation (a process, a product, a trope, an institution, a theory, etc.)" (D'hulst, 2010, p. 397). Historians such as Rafael (1988) and Howland (2002) have focused on the former approach (translation *in* history or history *through* or from the perspective of translation), but most translation scholars focus on the history *of* translation. Virtually any aspect of translation—for example, its processes and products and their relationship with the sociocultural context, the lives and work of translators, translation theories, translator training, workplace structures, the impact of institutions and technology—can be examined from a historical perspective. Yet the focus has long been on the textual level at the expense of processes (e.g., canonization, the use of translations), the discourses surrounding translation, or the human, professional, and cross-cultural (rather than nation-based) aspects. Within this focus on textual aspects there has also been a privileging of canonical literary and religious works, to the neglect of other genres (e.g., popular literature and official or commercial texts) and translations that did not identify themselves as such.

Research Questions and Source Collection, Evaluation, and Interpretation

The approach to "doing" translation history depends on the subject matter and research question. Broadly, however, Lambert (1993, pp. 13–14) advocates combining a focus on

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internal questions about how particular translators proceed with a focus on *external* questions about the context in which these translators work. The hypotheses guiding the research need to be examined on the basis of the data so as to corroborate, refine, or refute them.

Both in relation to historical theories and practices, the data search—what Pym (1992, p. 3) calls translation archeology—can usefully focus around the questions of "who," "where," "what," and "when" (and the reverse questions of "who *not*," etc.), alongside translation criticism ("how" and "how *not*"). Thought-provoking sample questions can be found, for instance, in Delabastita (2005, pp. 35–8), D'hulst (2010, pp. 399–403), Lambert (1993, pp. 11–12), St-Pierre (1993, pp. 66–8), and Woodsworth (1998, p. 101). Relevant primary sources (those originating in the period under study) range well beyond source texts and translations (including successive drafts and re-editions with textual variants) to include, for example, comments by translators, patrons, and critics; publishers' documents; documentary evidence of reader reactions; manuals for training translators; contracts and court records; business records and statistics about the language industry; client-generated instructions; personnel records; eyewitness accounts; paratextual and visual sources such as book covers and paintings of translators; and comparable original texts in the target language. Secondary sources (whose distinction from primary sources is not always clear) include, for example, bibliographies of translated works (and analogous bibliographies of nontranslated works), biographies of translators, descriptions of past translation theories, reviews of past translations, and accounts of translator-training institutions of the past.

Critical evaluation of sources involves considering their authenticity, scope, and quality; the sociocultural and mental context of their production; the audience; the intended and actual purpose; the author's credibility and stake in controlling the narrative; any biases, assumptions, omissions, and internal or external contradictions; the surface and deeper meanings; the use of language to lead readers to a particular conclusion; whether terms used have a different meaning from today and from the apparent equivalent in the historian's language; and any subsequent intervention by editors or compilers.

Yet quantity and quality of historical data are not enough. The nub of the historiographical enterprise lies in testing hypotheses against the evidence, interpreting and explaining the facts and forces—focusing on the "why" and "with what effect" (Pym, 1992, p. 3)—and arranging the data in a systematic and meaningful narrative. It should also be noted that historiographical methods are to some extent culture-specific—for example, East Asian translation historians tend to emphasize documentary research over theoretical approaches, which Sato (2002, p. 128) notes are "a highly Western tradition."

Writing Translation History

The writing of translation history involves arranging evidence in a form that transcends simple sequential description—that is, in a connective narrative that is composed on a thematic, concept-led, or other meaningful basis and that infers links among the facts so as to produce an explanation of the hierarchy and interaction of significant direct and indirect causes (e.g., chance; the actions of individuals; large-scale practices, processes, and structures such as colonization, migration, the introduction of printing) and the consequences. The writing process is shaped not only by the available data but also the historian's assumptions and methodology, potentially leading to differing interpretations. Translation historians can learn from the growing awareness among historiographers that the narrative is not a neutral reconstruction of reality or *the* past, but *one* possible construction (representation) filtered through the sources and the historian's present-day "situatedness," (pre)conceptions, and interpretations, even when attempts are made to perceive the past on its own terms. Postmodernism has made historians more attentive to their subjective position and the language and rhetoric in their own writing and the records, as well as voices

that have gone unheard because they are excluded from power. Constructing an ordered narrative provides explanatory coherence, but it has the potential for manipulating the facts and argument in line with a preconceived outcome or ideological position, so it is vital to interrogate our intentions, assumptions, inferences, criteria of proof, and choice of categories and narrative form and to acknowledge evidence that fails to fit the hypothesis. Master narratives (e.g., imperialism, nationalism, modernization, market forces) that attempt to integrate and give meaning to long-term events and phenomena as part of a purposeful development have attracted criticism as being artificial, antihistorical, and overreaching yet restrictive.

One counterbalance to all-encompassing grand narratives is to provide diverse and more complex perspectives through microhistory (see Adamo, 2006), which reduces the scale of observation to a close-up focus on very specific and either typical *or* atypical texts, episodes, locations, phenomena, topics, groups (e.g., diasporic language communities) or individuals so as to penetrate behind apparent uniformity. Microhistory is characterized by the detailed procedures, not the small scale, and it can be used on objects of any size, which are studied not in isolation, but in their context. This acts as a link between systems and the individual, to whom agency and the "livedness" of experience are restored. Microhistorians argue that the textured details connect the whole and that microanalyses can contain broad implications, revealing patterns that transcend the item under investigation while modifying macrohistory by highlighting apparent exceptions. Anomalies are regarded as a potentially rich "sign of a larger, but hidden or unknown, structure" (Peltonen, 2001, p. 349), and microhistories rise above anecdotal data because of the intensive examination of their verifiability and relevance. Ginzburg (1993, p. 24) argues that doubts, misrepresentations, hesitations, and silences—that is, the historian's "search for truth" and the limitations of the evidence—must become *part* of the narrative account. Microhistory helps counter excessively theoretical abstraction, and facts or phenomena are easier to prove or refute with this approach. Potential disadvantages include the lack of representativeness (although generalization is not regarded as a significant goal of microhistory) and the overlooking of larger patterns and different contexts. These drawbacks can be overcome by accumulating microhistories and regarding the micro and macro as complementary.

One aspect of the writing of history that distinguishes it from mere chronicles is periodization, but this is often uncritically based on homogenizing or largely arbitrary constructs such as centuries, eras (e.g., dynasties or reigns), or periods (e.g., ancient, medieval, modern). These are often related to broad cultural history (e.g., the Renaissance), major periods in national (rather than cross-cultural) history (e.g., China's Cultural Revolution), literary currents (e.g., the Romantic period), or generic categories (e.g., the novel). Although ideas and practices of translation are affected by external forces in the source and target cultures, a more appropriate periodization would be based on processes, movements, events, and texts more directly relevant to translation itself (e.g., whether verse was rendered as verse or prose). Some scholars (e.g., Steiner, 1975, pp. 248–50; Chesterman, 1997, p. 20) have proposed periodizations of translation, but it is important to note that periodizations are specific to particular translation traditions. It is also vital to recognize the coexistence and interaction of long-term, midterm and short-term periods in translation history and to consider the need for periodizations tailored to more specialized histories, such as that of women translators or translation theories.

Sample Approaches to Translation History

Although translated works might in a sense be viewed as historical "events" (especially, for instance, when a translator adopts an innovative approach), one feature of translation history is its text-based rather than event-based nature (alongside its translator-centered,

interlinguistic, and cross-cultural aspects). Hence methodologies focusing on texts—for example, literary historiography, bibliometrics—are instructive for translation historians. Book history, with its focus on the physical object, is relevant in such areas as the impact of material causes (e.g., increasing literacy, mass production of paper, the transition from manuscripts to the print medium, the invention of computers) in allowing quicker production of translations, broader dissemination, and greater longevity and in arresting textual and linguistic drift, thereby bolstering the ideal of accuracy. Focusing on books does, however, neglect translations appearing in other influential forms such as newspaper or periodical serializations.

Lambert (1993, p. 6) regards descriptive translation studies as "one of the most explicit indications of the rediscovery of history in Translation Studies and hence of the development of a new type of historiography." Nevertheless, Pym (e.g., 2009, pp. 24, 28) has criticized the descriptive (rather than explanatory) and purportedly objective focus of descriptive translation studies, and he argues (1998, p. 115) that focusing on translation norms emphasizes stability at the expense of change or conflict. Pym (1998, p. 112) advocates focusing on debates (between people, or contradictions between actual translations and what is said about translations) as indicators of tension or conflicting norms (and hence possible change). This focus on disagreements is potentially more useful in raising questions than is Pym's own concept of regimes (1998, pp. 125–42), which focuses on shared aspects. Pym (2009, p. 35) also critiques Toury's notion (1995, p. 12) that translators operate primarily in the interests of the target culture, with the target culture governing their decisions. Instead Pym argues that translators themselves can help shape the target culture, and he proposes the notion of professional intercultures, whereby translators can work in locations influenced by more than one culture and functioning "as a cultural space with its own membership rites, norms of behavior, ideologies and ethics" (2009, p. 38). Prosopographical study of any collective characteristics (biographical and otherwise) that define translators as an occupational group, as well as their relationships and activities, might provide insights into professional intercultures, although this concept does not account for the not uncommon historical situations where translators worked in virtual or comparative isolation from each other.

One relatively neglected area is the history of the reception of translations—macroanalytical and microanalytical studies of who read what translations at different times and places and, more importantly, how and why they were read (for pleasure, curiosity, self-improvement, etc.). In the past translations were not necessarily read in the same ways as today—for example, they might have been read aloud or collectively; their scarcity might have enhanced their value; or readers might have regarded translations as a whole as harmful to the receiving culture. Readers' contacts with and responses to translation(s) are evident through text selection guides; what translated works readers owned or borrowed from libraries; their diaries, memoirs, letters to publishers or translators; marginalia written in translations as an indicator of interpretative strategies; contemporary depictions "in fiction, autobiographies, polemical writings, letters, paintings, and prints" (Darnton, 1992, p. 152); censorship records; and school curricula. Much work remains to be done on past ideals and assumptions underpinning the reading of translations. As Darnton (1992, p. 142) notes, however, "the documents rarely show readers at work, fashioning meaning from texts, and the documents are texts themselves, which also require interpretation." Historians could also usefully study how the reading of translations has affected history—Darnton (1992, p. 161) cites Mao's reading of Marx as an example.

Since translating is a social (not just textual) practice, another approach to translation history is to study changes in the relationships among social agents (e.g., translators, authors, clients), structures (e.g., political, economic, legal, religious, training, educational, and professional conditions and institutions), and processes (e.g., urbanization) and the

creation and reception of translations. Wolf (2010, p. 341) suggests a variety of sociologies —of agents (e.g., how translators are socialized by norms), of the translation process, of the cultural product, and even of translation studies itself. There is an increasing number of studies of translation sociology (e.g., Pym, Schlesinger, & Jettmarová, 2006; Wolf & Fukari, 2007), although not always from a historical perspective even though sociological issues are amenable to historical study. One approach is to focus on largely neglected groups, such as the history of nonliterary translators. In historiography as a whole, however, there has been a move away from the tendency to view individuals "as products of the systems to which they belonged" (Howell & Prevenier, 2001, p. 115), with greater emphasis being given today to cultural and intellectual history. Nevertheless, Wolf (2010, p. 342) argues that social and cultural practices are inextricably connected "in terms of power, ideology," and so on.

The intellectual history of translation examines the production, changes, and migration of discourses (theoretical, philosophical, critical, literary, academic, social, institutional, methodological, popular) on translation across time, space, and contacts with other disciplines or under the effect of external constraints. D'hulst (2010, p. 400) points out that theories are not the only mode of reflection on translation (alternatives include prefaces and criticism, for instance) and that the theory-oriented approaches dominating historical research in recent decades are underpinned by a problematic, teleological view of history "as a means to highlight the 'progresses' of translation theory." In turn Pym (1998, p. 10) warns that "The focus on theory can thus become a way of producing explanations so powerful that they effectively obscure the complexity of the past, particularly when historians overlook the strategic and frequently defensive roles played by theorization." D'hulst (1995, p. 19) argues that the primary aim of the historian of translation theories is their optimal reconstruction according to the viewpoint of those who conceived them and the viewpoint of their users. This relativistic stance should not, however, preclude the incorporation (but not imposition) of insights from a contemporary perspective, which are "complementary and not substitutive" (D'hulst, 1995, p. 33). Beyond the theories themselves, it is also important to examine their reception and impact (e.g., among translators, translator trainers, scholars of translation), that is, their relationship with translation practices and the surrounding discourses.

One key debate focuses on the respective roles in translation history of individuals (e.g., theorists) and systems or forces operating at the level of groups, societies, or even "universal laws." The latter and currently more dominant approach is associated in particular with descriptive translation studies, but has attracted criticism for treating translators as subordinate to institutions or norms (even if this subordination takes the form of resistance) and for overlooking "the agency of translators themselves who can decide to flout rules, invent translation strategies, and inject all sorts of unpredictable elements into translations" (Tymoczko, 2007, p. 183). Awareness of the role of individuals has led Pym (2009, p. 45) to propose a humanizing approach—not as a strict methodology, but as "a mode of asking questions that may lead to unforeseen answers." He argues (2009, pp. 32–6) that studying translators allows researchers to unearth the obscure, follow the multidiscursive (how translators brought together the different professional discourses in which they participate in the receiving system, such as translating, writing, editing, publishing, teaching), accept translators' multiple allegiances (not just to the target culture), and trace their movements. Pym (2009, p. 37) maintains that translatorial subjectivity can be revealed more directly "by asking biographical and sociological questions, or looking critically at the language in prefaces, correspondence and the subject's texts other than translations," without resorting to "intricate textual criticism." Crisafulli (2002, p. 40), however, advocates a composite approach of considering the translator's biography and declarations of intent and assuming that "the translator's outlook will surface at specific

sensitive points of the target text (including paratexts)" in the form of modifications or interpretations based on this outlook.

An alternative that transcends the structure/agency debate is the study of the interaction between individuals and transindividual factors in translation history. One way of connecting individuals and systems is Pierre Bourdieu's categories of *habitus* (dispositions "acquired by individuals through experience and socialization," Wolf, 2010, p. 339), *field* (the "social positions occupied by individuals and institutions," Wolf, 2010, p. 339), and *capital* (economic capital, social capital in the form of networks, cultural capital in the form of education, knowledge, etc., and symbolic capital in the form of prestige). For instance, D'hulst (2010, p. 402) suggests that the habitus or "coming into being" of translators (and related agents) can be studied from perspectives such as "intellectual and social backgrounds (training, gender, socio-economic, ideological and cultural profile), production (translational, critical, authorial etc.), group formation and network relations" (D'hulst, 2010, p. 399).

The study of synchronic professional intercultures overcomes the monocultural tendency in Bourdieu's concepts and lends itself to actor-network theory (see Buzelin, 2005) or social network analysis. Although an offshoot of systems theory, social network analysis crosses national and other boundaries to look at:

> how relationships, especially social pressures, around a person, group, or organization affect beliefs or behaviours. . . . it sidesteps the discussion whether change was "external" or "internal". It focuses attention away from "cores" and "peripheries". . . . it accepts that actual networks overlapped, changed, and decayed. Perhaps most importantly, it puts real people back into . . . history, rather than only rises and falls, trends, movements, and developments. (Gordon, 2008)

A similar approach can be applied not only to professional networks among translators but also to intellectual networks among translation theorists, despite the greater difficulty of demonstrating intellectual contacts and influences. Gordon (2008) recognizes that social network analysis "does not handle change well unless one can do repeated iterations of the net over time," so he concludes that it needs to be undertaken in conjunction with other approaches.

Quantitative approaches help contextualize qualitative studies of translation history, providing a counterbalance to the frequent focus on canonical works or famous translators by capturing a broader picture that can include more commonplace and peripheral translations or individuals. Quantitative methods (e.g., cluster analysis, time series analysis) can handle greater masses of data and allow more rigorous testing of hypotheses, leading to more valid and precise conclusions and helping to reveal blank spaces as well as patterns, tendencies, and relationships that go beyond chance. These approaches can also raise new questions, revise traditional periodizations, and facilitate comparisons. Yet not all research questions in translation history (e.g., theories) involve quantitatively measurable or categorizable indicators, and quantitative data are not always available or of sufficient historical significance to merit study. Other problems include lack of representativeness or comparability, distortions (e.g., census figures probably do not include part-time and freelance translators), the mechanistic and impersonal focus, the reductionist nature of statistical categories, and the need for training and often collaboration on the part of researchers. As with qualitative approaches, it is essential to proceed to careful explanation and interpretation of the data. Although quantitative approaches to historiography failed to live up to initial expectations, there has been some revival recently in response to overly theoretical postmodern approaches, and translation historians could benefit from further exploration of such approaches. Ultimately, however, any method is justified only if it produces superior results, and quantitative methods might be best suited to providing

supportive evidence for qualitative approaches rather than acting as "the foundation stone of a whole argument" (Hudson, 2000, p. 20). A combination of methods can offer a more holistic perspective and help compensate for any drawbacks of individual approaches.

Toward Integrative Translation History

Little has been written about the conceptualization and methodology of comparative translation historiography, perhaps in reaction to the dangers of sweeping comparisons or because of practical difficulties arising from the need for expert knowledge of more than one translation tradition. Nevertheless, much can be gained by tracing the (dis)continuity of translational practices and ideas across cultures. Once any parallels have been identified, the next step is to determine whether there is a causal connection and why. An even greater contribution to the field can be made by identifying practices and ideas that are *without* parallels elsewhere. Comparative studies are a step toward what Woodsworth (1998, p. 104) calls a "rejoining of the pieces"—a task that calls for collaboration.

SEE ALSO: Bible Translation; Commercial Translation; Cultural Approaches to Translation; Descriptive Translation Studies; History of Interpreting; History of Multilingualism; Norms of Translation; Scientific and Technical Translation; Sociological Approaches to Translation

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History of World Englishes

BRAJ B. KACHRU

Introduction

The history of the construct of "World Englishes" (WE) has evolved over a short period of not more than five decades. It was in 1978 that two path-breaking, independently organized conferences were planned in two parts of the USA.

The first two-week conference organized by Larry E. Smith at the Culture Learning Institute of the East-West Center in Honolulu, Hawaii, took place in April. It was followed by a three-day conference in June–July organized by Braj Kachru in conjunction with the Linguistic Institute of the Linguistic Society of America hosted by the University of Illinois at Urbana-Champaign in the USA. The two conferences were ideologically almost identical. They shared like-minded participants from major English-speaking parts of the world except that the Honolulu conference did not have any participants from Africa.

At the end of the Honolulu conference, Braj Kachru and Randolph Quirk (1981) described it as a "unique learning experience":

> there were almost as many varieties of English—native and non-native, western and non-western—as there were participants . . . all of them used the English language to debate, discuss, and argue questions which concern both native and non-native users of English, as well as the global uses of English in various sociolinguistic contexts in different parts of the world. (p. xiii)

The participants at the Honolulu conference included Christopher N. Candlin (Lancaster), Ruth Crymes (Honolulu), M. L. Boonlua Debyasuvarn (Bangkok), Randolph Quirk (London), Jack C. Richards (Singapore), H. H. Stern (Toronto), Peter Strevens (Cambridge), Mayuri Sukwiwat (Bangkok), Mary W. J. Tay (Singapore), Irene F. H. Wong (Kuala Lumpur). The Illinois conference, like the Honolulu conference, "broke the traditional pattern of such deliberations: no inconvenient question was swept under the rug. The professionals, both linguists and literary scholars, and native and non-native users of English, had frank and stimulating discussions" (Kachru, 1982, p. xiii).

The issues related to English were discussed in divergent linguistic and cultural contexts and realistic generalizations were made using relevant empirical data. The Illinois conference was primarily attended by English specialists from Africa, South Asia, East Asia, and from the Inner Circle of English. The participants included Ayọ̀ Bamgbọ̀ṣẹ (Nigeria), Elinor G. Barber (Ford Foundation, New York), Eyamba G. Bokamba (Illinois), Charles A. Ferguson (Stanford), Joshua A. Fishman (New York), Melvin J. Fox (Ford Foundation, New York), Shirley Brice Heath (Stanford), Yamuna Kachru (Illinois), Henry Kahane (Illinois), Peter H. Lowenberg (California), Rodney E. Moag (Texas), Cecil L. Nelson (Indiana), Larry E. Smith (Honolulu), S. N. Sridhar (Stony Brook, New York), James Stanlaw (Illinois), Peter Strevens (UK), and Edwin Thumboo (Singapore). In retrospect, one might say that the Hawaii and Illinois conferences

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> blazed the trail for a new approach which provides a realistic framework for looking at English in a global context, and for relating concepts such as appropriateness, acceptability and intelligibility to the pragmatic factors which determine the uses of English as an international or intranational language. (Kachru & Quirk, 1981, p. xx)

These conferences provided insightful new direction with an unparalleled assembly of scholars. WE colloquia were organized in cooperation with Teachers of English to Speakers of Other Languages (TESOL); once with the International Association of Teachers of English as a Foreign Language (IATEFL) in Belgium; and twice with the Georgetown University Round Table on Languages and Linguistics (1986 and 1987; see Lowenberg, 1988).

In August 1986, yet another conference was organized, again at the East-West Center, Honolulu, with focus on "Language and power: Cross-cultural dimensions of English in media and literature." The aim of this conference was to explore the concept of linguistic "power" and of English with a cross-cultural perspective; and to provide data for the study of such "power" from various English-using countries in the domains of literature and the media (film and journalism).

In 1988, an interim committee met at the International TESOL Convention in Chicago and unanimously agreed to the formation of the International Committee for the Study of World Englishes (ICWE).

Formation of the International Association for World Englishes (IAWE)

In April 1992, the ICWE met at the University of Illinois at Urbana-Champaign as a cosponsor of a conference on "World Englishes Today." The conference also celebrated the formal launch of the International Association for World Englishes (IAWE). Since then, the presidents of IAWE have been elected from a variety of countries: Larry E. Smith (1993–6), Braj B. Kachru (1997–8), Anne Pakir (1998–2000), Ayọ̀ Bamgbọ̀ṣẹ (2001–2), Kingsley Bolton (2003–4), Margie Berns (2005–6), Bertus Van Rooy (2007–8), Daniel R. Davis (2009–10), and Zoya Proshina (2011–12).

The location of each conference indicates IAWE's international profile: University of Illinois at Urbana-Champaign; International Center, Nagoya, Japan; East-West Center, Honolulu, Hawaii; National University of Singapore; Tsukuba University, Japan; Portland State University, Oregon; University of Potchefstroom, South Africa; Syracuse University, New York; Purdue University, West Lafayette, Indiana; Chukyo University, Nagoya, Japan; Regensburg University, Germany; City University of Hong Kong; Linguistic Society of the Philippines, Cebu, Philippines; Simon Fraser University, Vancouver, Canada, Monash University, Melbourne, Australia.

In August 1994, IAWE crossed the borders of the Western world. The first East Asian conference was organized at Chukyo University, Nagoya, Japan, under the directorship of Sanzo Sakai.

World Englishes and "WE-ness"

The concept of World Englishes has multiple constructs, yet it is agreed that the term "symbolizes the functional and formal variations, divergent sociolinguistic contexts, ranges and varieties of English in creativity, and various types of acculturation in parts of the Western and non-Western world" (Kachru, 1997, p. 212). This concept emphasizes what may be characterized as "WE-ness." The dichotomy between *us* and *them* (the native and non-native users) is not part of the construct of the language:

> English is a valuable linguistic tool used for various functions. The approaches to the study of world Englishes, therefore, have to be interdisciplinary and integrative, and different methodologies must be used (literary, linguistic, and pedagogical) to capture distinct identities of different Englishes, and to examine critically the implications of such identities in cross-cultural communication and creativity. (Kachru, 1997, p. 212)

The time was right to reevaluate the exhausted theoretical and applied paradigms. These paradigms were imposed on what was termed the world of "non-native" Englishes. Consider, for example, the following 20 points: the spread and stratification of English; the characteristics of the stratification; interactional contexts of WE; the concept of WE; WE in diaspora; English-using speech communities across cultures; dynamics of English-using speech communities; conceptual frameworks and WE; the bilingual's literary creativity and canonicity; multicanons of literatures in WE; nativization and Englishization; fallacies about users and uses; monolingual paradigms and heteroglossic Englishes; the power and politics of English; codification and authentication; the gate-keepers of the sacred cows; the faces of hegemony; the genres of atonement, guilt, and lies; Caliban's weapons; teaching WE. (These 20 points are discussed in Kachru, 1997, pp. 213–37.)

The overused and misleading concepts of "native" and "non-native" are functionally uninsightful, particularly in multilingual social contexts. A fitting answer to the "native speaker" myth, and the function of "native speaker" in pedagogy and research, is given by the late Charles A. Ferguson in these words:

> Linguists, perhaps especially American linguists, have long given a special place to the "native speaker" as the only truly valid and reliable source of language data, whether those data are the elicited texts of the descriptivist or the intuitions the theorist works with. Yet much of the world's verbal communication takes place by means of languages which are not the users' "mother tongue," but their second, third, or *n*th language, acquired one way or another and used when appropriate. (Ferguson in Kachru, 1992, p. xiii)

The Three Concentric Circles and World Englishes

At the 50th anniversary of the British Council in London in 1985, the diffusion of World Englishes (without using the term WE) was explained in terms of the *Three Concentric Circles*: the Inner, Outer, and Expanding Circles. This characterization of the construct was not based on any hierarchical priority, or preferential ranking. It explains that:

> The Inner Circle is *inner* with reference to the origin and spread of the language, and the Outer is *outer* with reference to geographical expansion of the language—the historical stages in the initiatives to locate the English language beyond traditional English-speaking Britain; the motivations, strategies, and agencies involved in the spread of English; the methodologies involved in the acquisition of the language; and the *depth* in terms of social penetration of the English language to expand its functional range in various domains, including those of administration, education, political discourses, literary creativity, and media. (Kachru, 2008, p. 568)

The *Expanding Circle* does not have a history of British colonization. This Circle is fast expanding in its use of English. It has developed numerous varieties (see Kachru & Quirk, 1981).

The term "Inner" Circle refers to a historical reality: a reality in the development of the language and its diffusion. The concentric circle representation

> embodies a long historical context within which the English language has evolved, expanded, converged and altered to form distinct identities. The triad, it is explained, . . . takes into consideration their histories, the colonial designs, the linguistic manipulation within each circle, and the impact of colonial expansion and that of the Imperial Raj. The historical contexts of the Expanding Circle and the phases of the induction of English are not necessarily shared with the Outer Circle. (Kachru, 2005, p. 219)

The Three Circles have their distinct histories and functions for the English language. However, all the users of Englishes are integral parts of the World Englishes. In McArthur's concept, the Three Circles construct indicates "the democratization of the attitudes to English everywhere in the globe." In his view:

> This is a more dynamic model than the standard version, and allows for all manner of shadings and overlaps among the circles. Although "inner" and "outer" still suggest—inevitably—a historical priority and the attitudes that go with it, the metaphor of ripples in a pond suggests mobility and flux and implies that a history is in the making. (McArthur, 1992, p. 334)

World Englishes: The Journal

The history of the journal *World Englishes: Journal of English as an International and Intranational Language* (*WE*) demands an explanation. The first issue of the journal *World Englishes* is marked volume no. 4 and issue no. 2. *WE* is a reincarnation of *World Language English* but has different aims and a different pedagogical agenda. It was published by the Pergamon Press at Oxford, UK. The editorial in the first issue of *WE* explains that "in its reincarnation *WE* represents a new idea, and a new credo. That explains the new name, the new format, and the new editorial board" (Kachru & Smith, 1985, p. 209). McArthur, commenting on *World Englishes* (1985) and its acronym *WE*, says that the logo:

> serves to indicate that there is a club of equals here . . . The editorial board considers the native and non-native users of English as equal partners in the deliberations on users of English and its teaching internationally . . . the acronym *WE* aptly symbolizes the underlying philosophy of the journal and the aspirations of the Editorial Board. (1993, p. 334)

The first issue of *WE* was "dedicated with professional respect and personal affection to Sir Randolph Quirk, FBA."

In 2006 Kachru and Smith, after 21 years, passed on the responsibility of editorship of *WE* to Kingsley Bolton and Daniel R. Davis. Margie Berns also made admirable contributions during the two years when she was a coeditor with Daniel Davis.

Content Analysis of *WE*

The content analysis of papers published from 1985–2005 in *WE* shows the range of topics that the journal has covered (see Table 1).

The figures in Table 1 demonstrate that

> on many issues, for example contrastive discourse analysis, the politics of English worldwide, the analysis of bilingual creativity, *World Englishes* has been a pioneer in opening up areas of inquiry that have later expanded into distinct fields of their own. (Bolton & Davis, 2006, p. 6)

Table 1 Contents of *WE* vol. 4(2) through vol. 24(3)

Topic area	*Number of articles*	*Percentage of total articles*
Discourse/genre/text	99	15.3%
The sociology of language	88	13.6%
Applied linguistics	83	12.8%
Areal studies	74	11.4%
Contact linguistics	63	9.7%
A "feature-based" approach	61	9.4%
Critical linguistics	56	8.7%
Bilingual creativity	55	8.5%
English corpus linguistics	18	2.8%
Lexicography	17	2.6%
World Englishes theory	14	2.2%
English studies	11	1.7%
Pidgin and Creole studies	8	1.2%
Total	647	100%

Bolton and Davis (2006) rightly emphasize that "a striking feature of the journal has always been the ability to break new ground and to expand the vision of our work as researchers and educators" (p. 6).

The journal *WE* raised three conceptual questions: What does the concept "Englishes" imply both theoretically and functionally? What are the demanding research areas that deserve immediate attention? And what is the intended readership on whom the journal should focus?

In 1985, Kachru and Smith provided an answer to these concerns in *WE* (1985, p. 210):

> "Englishes" symbolizes the functional and formal variation in the language, and its international acculturation, in West Africa, in Southern Africa, in East Africa, in South Asia, in Southeast Asia, in the West Indies, in the Philippines, and in the traditional English-using countries: the USA, the UK, Australia, Canada, New Zealand.

We further emphasized that:

> The language now belongs to those who use it as their first language, and to those who use it as an additional language, whether in its standard form or in its localized forms. The recognition of this functional diversity is so important that we have indicated it in the sub-title of *WE*. (1985, pp. 210–11).

The twentieth anniversary of *World Englishes* (2006) was a year of celebration. The following are the reflections of what some international scholars had to say (Alatis et al., 2006).

> a. The journal *World Englishes* has become one of the most highly regarded publications . . . the acronym *WE* itself symbolizes the inclusiveness. (James E. Alatis, Georgetown University, Washington, DC)

b. *WE* has been a forum of rigorous, yet civil scholarly exchange based on inclusiveness and openness of dissenting voices and contradictory views from around the world. (Margie Berns, Purdue University, Indiana)

c. A very happy birthday to a dear journal that has helped me grow intellectually, opened my eyes to research areas akin to creolistics, broadened my conception of "language evolution under contact conditions," trained me to see how differentially English has evolved in diverse settings, prompted me to rethink the meaning of the terms "colony" and "colonization" and to pay attention to the distinction between "colonist" and "colonizer," and encouraged me to be more global and less parochial. (Salikoko S. Mufwene, University of Chicago, Illinois)

d. *WE* went global long before globalization was a buzz word. The editors were visionary in entering new scholarly territory, and the journal remains exceptional as a forum for a diversity of voices approaches. (Robert Phillipson, Copenhagen Business School, Denmark)

e. Congratulations to the editors on the splendid success of *WE*. This energetic and scholarly work over 20 years is rewarded by the international impact the journal has had. (Randolph Quirk, University of London and Gabriele Stein, Sprachwissenschaft, Heidelberg)

f. *WE* is responsible for a tremendous ever-growing body of essential scholarship. New directions apart, special issues and symposia have focused on particular themes and area studies. Given its extensive network of senior young scholars, and the authority it commands, we can be certain that field, interest, direction and dynamics are secure and flourishing. *WE* as a whole is far greater than the sum of its parts. (Edwin Thumboo, National University of Singapore, Singapore)

g. The essential and unique value of *World Englishes* over the past 20 years has been to give legitimate status to uses of English that do not conform to Inner Circle norms, and to represent them not as derived varieties but as independent versions of the language in their own right. This is a major achievement and it has given momentum to the gradual recognition that English can no longer be claimed as the property of its native speakers but belongs to all those who have appropriated it for their own social and communicative purposes. (Henry Widdowson, University of Vienna, Austria)

h. Looking back over 20 years of its influence on academia and societies world over, the journal is destined to continue to grow like wine—improving every year. Congratulations, and viva *World Englishes*. (Yasukata Yano, Waseda University, Tokyo, Japan)

Intelligibility, World Englishes, and the Smith Paradigm

A concerned observer of the English language who raised pragmatic questions about the much-debated issue of "intelligibility" did so on the basis of his research in all three circles of Englishes. This was Larry Smith with his team at the East-West Center in Hawaii. In his paper presented in Nagoya (2003), Smith explained: "World Englishes by definition exhibits variation, therefore, it is natural that intelligibility becomes an issue for those using world Englishes across cultures" (Smith, 2003, p. 52). Smith provided a contextually appropriate construct for explaining "intelligibility" in World Englishes. In his paper, he discussed definition of intelligibility, comprehensibility, and interpretability; intelligibility versus comprehensibility; comprehensibility versus interpretability; intelligibility and comprehensibility versus interpretability, and their relation to fluency and cultural competency.

These were pragmatic questions not discussed before in the teaching of English in Asia, Africa and other parts of the world. It was taken for granted that the model for teaching English was in the hands of the colonizers. Studies by Smith and others provide yet more empirical evidence to open doors for new conceptualizations of World Englishes (Smith & Rafiqzad, 1979; Smith & Bisazza, 1982; Sridhar & Sridhar, 1992; Smith, 2003; Smith & Nelson, 2006; Smith, 2009).

In the ongoing and never-ending debate about the issue of intelligibility and its constructs, Smith (2009) comments:

> Although we may never be able to totally understand another person's feelings or perspectives in cross-cultural situations . . . we can attempt to increase our likelihood of understanding or at least decrease the possibility of misunderstanding by developing a greater awareness of three of the dimensions of understanding (intelligibility, comprehensibility and interpretability). (p. 17)

In 1985, in the first issue of *World Englishes*, C. L. Nelson provided additional data to Smith's research with the title, "My language, your culture: Whose communicative competence?" A more detailed and updated version was published later (Smith, 1992).

Nelson has designed his 2011 publication on intelligibility from a pedagogical perspective. As Smith so aptly remarks about Nelson's book: "It is highly instructive to have the question of intelligibility across the Three Circles be constructed not only in terms of traditional pedagogical norms and economic advantages, but also taking into consideration linguistic ecology, international pragmatics and sociocultural realities" (Nelson, 2011, p. ix). The book focuses on the following topics: "understanding" and intelligibility in World Englishes; intelligibility, comprehensibility, interpretability; hybridity, creativity, and intelligibility in World Englishes; intelligibility in English-language teaching; and intelligibility and the ongoing expansion of Englishes.

World Englishes: Questions and Answers

The following questions were asked by Jacqueline Kam-mei Lam, chief editor of *The Hong Kong Linguist*, in an interview with B. B. Kachru (Lam & Kachru, 1999). They are very appropriate and relevant even a decade later.

> JKL: *When did you first begin to use the term "world Englishes"? Had anyone else used the term at that time, or were you the first?*
>
> BBK: The use of the term actually goes back to the 1970s. I had been using the term "world Englishes" in my seminar at Illinois before it was proposed to Pergamon Press, Oxford as the title for a reincarnated journal when they invited Larry Smith and me to "re-launch" *World Language English*. In 1985, *World Englishes: The Journal of English as an International and Intranational Language* was launched. The term "World English," without pluralization, had been used in some contexts earlier. The reincarnated journal, as Tom McArthur says, "has been a vehicle for the discussion, both general and specific, of varieties of English worldwide, and has in the process firmly underlined the neologism *Englishes* in linguistic and educational circles. The journal's editorial stance is that all 'world Englishes' (native and non-native) belong equally to all who use them and merit serious and consistent study both individually and collectively" (1998, p. 61).
>
> One might say that world Englishes (WE) captures several demographic and contextual characteristics of the cross-cultural profile of the English language. The following come to mind: the functional range and the depth of penetration of the language in various levels of society; the resultant localized innovations and creativity in the language; the multi-cultural and literary identities of the language and its multiple canonicity; and indeed the agony and ecstasy about the global presence of the language.
>
> In the use of this term, the emphasis, then, is on the "WE-ness" that is associated with the medium and its multiple messages or mantras. This conceptualization of English . . . naturally rejects the perpetuated dichotomy between "us" and "them"—between "native" and "non-native." As we know, it is this dichotomy that the "ELT (English Language

Teaching) Empire"—to use the Australian lexicographer Susan Butler's term—has cultivated and nurtured. It is again this dichotomy that underlies the on-going culture wars about the language . . . We must emphasize that this "WE-ness" is embodied in various strands of Englishes across cultures and languages: their reaches and ranges of uses are unparalleled.

The English language is used in Asia and Africa as a medium to articulate various types of cultural emblems and also as a sociopolitical linguistic weapon. I have often mentioned in my writings the insightful and refreshing ways in which Nigeria's Wole Soyinka, India's Raja Rao, the Philippines' F. Sionil Jose, and Singapore's Edwin Thumboo use the English language to represent their distinct cultural identities—in other words, to use the medium as an emblem. Soyinka believes that his people "carved new concepts in the flesh of white supremacy" by the "conversion of the slaving medium into an insurgent weapon" (Soyinka, 1993, p. 88). India's Vivekananda (1863–1902) used the same linguistic weapon—both in his multilingual country and the West—for conveying the message of Vedanta and for setting up the Ramakrishna Mission for spiritual and social awakening. Vivekananda's pragmatic mind crossed the stifling linguistic boundaries and argued that "the British Empire has given us a machine and I will put the ancient truths of Vedanta in it, broadcast them to the world and make them run like a fire." The Indian monk used the medium with elegance and success across the Western world. It is all these worlds the medium represents—the Asian world, the African world, and indeed, the Western world. This is, therefore, not a minor achievement, and I believe that we should celebrate it, and participate in using the medium for articulating our visions. We at last have a medium that to a large extent realizes the dream of a "universal language." What we need, then, is to reevaluate our traditional conceptualizations—theoretical, methodological, and pedagogical—about the current functions of English in a variety of global contexts. That, of course, is happening, but with resistance because all types of interests are involved. And we should not underestimate the economic interests that determine the debate about whose standard, whose model, and whose pedagogical materials are to be used world-wide. (See also Tam, 2004)

JKL: *As a journal editor I must also ask you about your journal "*World Englishes.*" Has it developed as you expected, or has it taken on a life of its own that sometimes surprises you?*

BBK: Well, the way the journal *World Englishes* has evolved has not exactly surprised us. Larry Smith and I had realized that there was actually a space for a professional journal to represent the sociolinguistic, cultural, political, and economic realities about the global presence of the English language—I mean all the dimensions of it, the linguistic and literary issues and also the agonies and ecstasies. The senior and aspiring researchers and educators in English studies received the journal with contagious excitement, especially in Africa, Asia and other regions where English is an additional language. These were voices whose creativity in the language and identity with it in varied cultural contexts had hardly any international scholarly resource for expression or discussion. We believe that *WE* provided that scholarly resource.

. . . *WE* has a unique character and represents multiple voices—and we have sustained that multidisciplinary representation and international presence, African, Asian, European, North American, and so on, during the past fifteen years.

I don't think I can say it better than Tom McArthur did (1993, p. 334) referring to the logo-acronym of the journal. He observed that the logo "serves to indicate that there is a club of equals here." In McArthur's interpretation of the logo, he rightly emphasizes that the emphasis is on "the democratization of attitudes to English everywhere on the globe." This interpretation, as McArthur adds, also dissolves the trinity of ENL, ESL, and EFL nations. I think the concept "world Englishes" certainly represents that fact about the current status and functions of global English. (See also Boyle, 2004)

Resources for the Study of World Englishes

The history of World Englishes and its constructs has been discussed not only in the English language but also in languages such as Chinese, German, Japanese, and Russian. A list of major studies in English for research on World Englishes includes the following: Bamgbọṣẹ, Banjo, and Thomas (1995), Smith and Forman (1997), Boyle (2004), Tam (2004), Kachru (2005), Bolton and Kachru (2006a, 2006b), Y. Kachru and Nelson (2006), Bautista and Bolton (2008), and Kachru, Kachru, and Nelson (2006), Kachru and Smith (2008).

SEE ALSO: Acculturation in World Englishes; English(es) and Academic Publishing; Intelligibility in World Englishes; Linguistic Creativity and World Englishes Literatures; Research Methods and World Englishes; Varieties of World Englishes; World Englishes and Language Pedagogy; World Englishes and the Role of Media

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Holliday, Adrian

TREVOR GRIMSHAW

Best described as a sociologist of applied linguistics, Adrian Holliday (1950–) has made substantial contributions to our understanding of how international language education influences the (inter-)cultural realities of individuals within diverse settings.

Holliday began his academic career with a BSc in sociology and a Postgraduate Certificate in Education specializing in social science. This background continues to inform his work. After a year teaching in a British state secondary school, he spent most of the 1970s working on British Council ESP curriculum development projects in Iran. He obtained his MA from Lancaster University in 1980. As a British Council curriculum adviser he established the ESP language center in Damascus University (Syria), then worked on a national preservice language teacher education project based at Ain Shams University, Cairo (Egypt). He completed his PhD at Lancaster University in 1991 under the supervision of Dick Allwright and Michael Breen. Based on his experience in Egypt, his thesis examined the relationship between local and expatriate project personnel.

Since 1991 Holliday has been based at Canterbury Christ Church University, where he is currently professor of applied linguistics and head of the graduate school. In the 1990s he played a leading role in BATQI (the British Association of TESOL Qualifying Institutions), contributing to the design of the first common framework of accreditation for TESOL certificate, diploma, and masters programs. He acknowledges that he has learned a lot from the work of his doctoral research students.

Holliday's early research referenced classic social theorists, including Schutz (1967), Bernstein (1971), and C. Wright Mills (2000). In more recent work he has drawn upon postmodern and postcolonial theory. Social action theory has served as a constant frame of reference throughout.

Holliday challenges the essentialist view of culture and language that prevails within popular discourse and the positivist paradigm of social science. This views cultures as homogeneous and mutually exclusive entities that are associated with a particular country and language. Holliday argues that this perspective leads to negative cultural stereotyping and ethnocentrism. In contrast, he views cultures as discursive constructs that must be discovered in process. These can exist on any scale, for example, an international association of TESOL practitioners or an informal order within a university department. Holliday proposes the notion of "small cultures" which can serve "as an interpretive device for understanding emergent behavior, rather than seeking to explain prescribed ethnic, national or international difference" (1999, p. 237). Holliday's "host culture complex" (1994, p. 29) sees the language classroom as one of numerous overlapping and interacting cultures, where local discourses may at times exert greater influence than national or international ones.

Holliday's research is characterized by a critical qualitative approach, involving the ethnographic techniques of thick description and bracketing. He describes this methodology in a handbook for novice social science researchers (2007).

Holliday has applied a sociological imagination to many of the key issues and concepts associated with the TESOL profession of the Anglophone West: language needs analysis, authenticity of materials and tasks, communicative classroom practices, learner-centeredness,

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learner autonomy, and the management and evaluation of language teacher education programs.

A leading figure in the "appropriate methodology" movement, Holliday published the first book on this topic (1994). Developing ideas from his doctoral research, he uses the metaphor of "tissue rejection" to explain cases where expatriate "Western" curriculum developers attempt unsuccessfully to graft incompatible innovations onto an unreceptive host academic culture. To achieve cultural continuity, Holliday proposes the ecologically sensitive method of "ethnographic means analysis" (1994). His aim is to develop hybridized forms of pedagogy that combine communicative language teaching with features of the local culture.

In more recent work Holliday has explored the politics of Self and Other within the context of international English language education and the broader field of intercultural communication. He has popularized the term "native-speakerism," which describes the cultural chauvinist ideology implicit in the promotion of TESOL methodologies generated by the Anglophone West (2005). This leads Western trained educators to construct their non-native students and counterparts as deficient ("passive," "uncritical," "rote learning," "teacher dependent," etc.) and compels them to seek (often unwittingly) to "correct" these imagined deficiencies.

However, Holliday rejects the simplistic dichotomization of "center" and "periphery" that characterizes Phillipson's (1992) linguistic imperialism thesis, seeing this as the perpetuation of an "otherizing culturist discourse" (Holliday, 1997, p. 415). He also challenges Jenkins's (2000) notion of a standardized English as a lingua franca (ELF) as an antidote to the marginalization of the "non-native-English speaker" (Holliday, 2008). He argues that, in order for the TESOL profession to develop, it must overcome false dichotomies and become more inclusive. For this same reason, Holliday has in recent years sought to distance himself from the acronyms BANA and TESEP, which in earlier publications (e.g., 1994) he himself had suggested for describing distinct professional-academic cultures of TESOL (*B*ritish, *N*orth *A*merican, *A*ustralasian, private sector vs. "*TE*rtiary, *SE*condary and *P*rimary" state sector).

A handbook on intercultural communication (Holliday, Hyde, & Kullman, 2010), coauthored with Canterbury colleagues, suggests a range of non-essentialist strategies that could be employed by readers within the fields of communication studies, linguistics, and sociology. The book argues that "all communication is intercultural" (2010, p. xv), since identity construction, otherization, and representation occur in all areas of society.

Holliday (2011) takes a "critical cosmopolitanist approach" in exploring how cultural chauvinism operates within a context of unequal global power relations. The tendency of academic and professional communities to seek conceptual certainty encourages reductionist notions such as the dichotomy of individualism/collectivism. These neo-essentialist ideological constructs may lead us to assume that cultural differences are insuperable. However, Holliday insists upon individual agency, emphasizing the fact that interpretations of culture are derived from personal circumstances.

Holliday's theoretical stance has evolved over time. His self-reflexive methodology has helped him to stand outside prevailing discourses and to develop a progressively more nuanced understanding of the processes of cultural interaction. In sharing his conceptual breakthroughs with the reader, he offers a model to new and more experienced researchers. His work helps us to appreciate the interdisciplinary nature of applied linguistics and the valuable contributions it can make to other fields.

SEE ALSO: Anthropological Linguistics; Critical Applied Linguistics; Critical Pedagogy; Cultural Identity; Culture; Language, Culture, and Context; Nation

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Hornberger, Nancy H.

FRANCIS M. HULT AND DAVID CASSELS JOHNSON

Nancy Hughes Hornberger (b. 1951) is an internationally recognized scholar in language planning and policy, bilingual education, and biliteracy. Her work emphasizes relationships between policy and practice in multilingual education, with an emphasis on equity and justice for immigrant minorities and indigenous peoples. Peru and Bolivia have been central foci for field research during her career, though she has consulted and conducted research throughout the world.

Professional History

Her interest in languages and bilingualism began while she was growing up in California. Her fifth grade teacher, having just been introduced to the audio-lingual method, began teaching Spanish as an elective, and her parents encouraged her to participate. Later, as a teenager, she was an exchange student in Brazil, which sparked an interest in the Portuguese language as well as Latin American studies.

Hornberger continued to pursue her interests at Harvard University, where she earned a bachelor's degree in Hispanic-American History and Literature in 1972. Immediately after completing her undergraduate studies, Hornberger, inspired by programs blossoming in Massachusetts and New York following the 1968 passage of the Bilingual Education Act, decided to pursue graduate studies in bilingual education at New York University, earning a master of arts degree in education in 1973. She soon had another opportunity to pursue her interest in Latin America.

She and her husband, Stephan Hornberger, whom she met at Harvard, were approved by the Lutheran Board of Missions to do missionary work in the Andes. They worked in Peru from 1974 through 1979. During the first six months, they studied Quechua at the Instituto de Idiomas, an ecumenical missionary training center administered by the Maryknoll Fathers and Brothers, in Cochabamba, Bolivia. Here they received intensive language training from native-Quechua-speaking instructors, which included daily four-hour classes in the mornings followed by audio-lingual training with cassette tapes in the afternoons. They were, at the time, also living with a Quechua-speaking family, which afforded them the opportunity to use Quechua for daily interactions.

Studying Quechua in Cochabamba led to a major scholarly contribution. In order to learn new words in Quechua, they created an extensive set of vocabulary cards. The instructors were impressed with the cards and encouraged the Hornbergers to publish them as a resource that other students of Quechua could use. By 1977, they had expanded upon these cards to create the *Trilingual Dictionary: Quechua of Cusco, Spanish, English* (Hornberger & Hornberger, 1977). The dictionary would be revised twice, with the third edition heavily changed to reflect the official Peruvian alphabet (Hornberger & Hornberger, 1983, 2008; see Hornberger, 1995a). This dictionary, which emerged directly from language teaching and learning, exemplifies the relationship between research and practice that continues to be the hallmark of Hornberger's work.

After five years in Peru, recognizing that additional graduate study was necessary in order to engage in more advanced development work, Hornberger decided to pursue

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doctoral studies. She was accepted to the program in Educational Policy Studies at the University of Wisconsin-Madison in January 1980. At Madison, she worked under Richard Ruiz, along with a small group of other doctoral students who were also interested in language and policy. In the summer of 1980, Hornberger won a scholarship to attend the Linguistic Society of America (LSA) Institute at the University of New Mexico. It was here that she first encountered Joshua Fishman, whose work would come to influence her dissertation research as well as other work throughout her career. At the LSA Institute, she also studied with Peruvian sociolinguist Rodolfo Cerrón Palomino and educational linguist Courtney Cazden.

In January 1982, Hornberger returned to Peru, with her family, to conduct dissertation research. She worked in the highland communities of Kinsachata and Visallani. Her study (Hornberger, 1985, 1988), which compared beliefs about language and language use across classrooms and communities in light of developments in bilingual education policy, was groundbreaking in its integration of principles and methods from ethnography, sociology of language, and language planning. She earned a PhD in educational policy studies with a minor in linguistics from the University of Wisconsin-Madison in May 1985.

Soon after completing doctoral work in Madison, Hornberger was hired as an assistant professor at the University of Pennsylvania Graduate School of Education, where Dell Hymes had been appointed dean. A major focus of Hymes's vision as dean was to advance the linguistic anthropology of education, which included establishing a doctoral program in educational linguistics (Hornberger, 2001a, 2009a). Hornberger's work, with its intersecting focus on education, bilingualism, and policy, matched well with Penn's program, and she joined the faculty of the Language in Education Division in the fall of 1985. As a junior faculty member, she would sit in on Hymes's courses on linguistic ethnography, gaining new insights that would continue to shape her own view of educational research (Hornberger, 1995b). Later, as a senior faculty member, Hornberger was appointed director of the doctoral program in educational linguistics, a position she continues to hold. Over the 25 years that she has been on the faculty at Penn, Hornberger has supervised over 40 doctoral dissertations, written over 100 articles and chapters, and authored or (co-)edited 30 books and volumes. Her work has contributed to shaping the field of educational linguistics and inspired scholars throughout the world.

Major Contributions

Hornberger's first flagship publication was her book-length monograph, *Bilingual Education and Language Maintenance*, published in 1988, the written result of 15 years spent living in highland Peru and working with Quechuas and Quechua language education. She describes the central concern of this seminal ethnographic work as follows:

> I am concerned with how best to use and teach languages in schools, and with the possibilities for including minority groups in schools through use of their language, and in society through their participation in schooling. These concerns, in turn, are shaped by my own assumptions about language, education, and social justice, namely that: multiple languages and cultures are inherently valuable for society, that all groups in society have a right to participate equally in that society, and that education must be available to all. (Hornberger, 1988, p. xv)

This, from the preface to her 1988 monograph, reveals what would become major themes in her work: (a) the macro–micro connection in language policy and education; (b) the importance of (bilingual) education in maintaining and validating indigenous and minority languages; and (c) a commitment to social justice and activism for minority and indigenous

peoples and languages. Out of these initial concerns, another important theme has emerged throughout the years: (d) a comparative streak engendered by Hornberger's advocacy for different languages and peoples around the world.

The breadth and depth of Hornberger's research, and her formidable record of publications, have led to many important theoretical and empirical contributions that continue to lead and inspire. She has been a forerunner in combining macro- and micro-sociolinguistic research methods and her work is decidedly interdisciplinary, yet grounded in the field of educational linguistics (Hornberger, 2001a). She has led the way in using ethnography to establish connections between macro-level language planning and policy and micro-level language policy, practice, and education in multiple contexts including South America, especially Andean countries and languages (Hornberger, 1987a, 1987b, 1988, 1998, 2000; Hornberger & King, 1996), and the United States, with particular attention to Puerto Rican and Cambodian communities in Philadelphia (1990, 1996, 1997a; Hornberger & Micheau, 1993; Hornberger & Hardman, 1994; Hornberger & Skilton-Sylvester, 2000).

As the field of language planning and policy (LPP) has become increasingly more critical, with the focus being on how policies are instruments of power that marginalize cultural and linguistic minorities, Hornberger has continued to offer a more complex yet evidence-based perspective of the multiple agents and contextual layers that potentially have power in LPP, and she has been a persistent advocate for the power of bottom-up agency (Hornberger, 1997b, 2005, 2009b; Ricento & Hornberger, 1996; Hornberger & Johnson, 2007). She discussed, in more detail, important findings from this line of work in her 2008 plenary address to the American Association for Applied Linguistics when receiving the Distinguished Scholarship and Service Award (Hornberger, 2008b), which, in turn, was translated into an article for *Language Teaching* (Hornberger, 2009b).

To summarize her vision of policy and practice: (a) Language policies *can* marginalize minority language use and users, but language polices can also create space for multilingualism, and multilingual language policies have opened spaces for bilingual education throughout the world (e.g., Hornberger & López, 1998; Hornberger, 2006b). (b) Language in education policy is a tool to preserve indigenous and minority languages. Bilingual education, and especially maintenance or developmental bilingual education (Hornberger, 1991), has become a powerful ally in the maintenance and revitalization of indigenous and minority languages (Hornberger, 1997a, 2006a, 2009b; Hornberger & Johnson, 2007). (c) Still, top-down language policies may not necessarily be enough since "any policy may fail if there is no bottom-up support" (Hornberger, 2009b, p. 199). This has become an accepted tenet in the field of LPP, in part because of Hornberger's work in Peru showing that national multilingual policies that promoted Quechua did not necessarily translate into classroom practice (Hornberger, 1987b, 1988). (d) Schools are not always enough, either. Even though schools and educators play a powerful role in the maintenance of indigenous and minority languages, like national language policies, schools, as well, may not be enough (see also Fishman, 1991). For example, Hornberger and King (1996) argue that the instruction and use of indigenous tongues in schools extends their use, and increases their status, yet the schools' linguistic impact may be limited and the "responsibility of reversing the language must not be left solely upon the shoulders of the school . . . such school-based initiatives crucially rely on surrounding and supporting community initiatives" (Hornberger & King, 1996, p. 439).

Along with these important findings on language planning, policy, and education, Hornberger has made numerous theoretical and conceptual contributions and proposed robust frameworks and heuristics that continue to guide a new generation of researchers. The conceptual framework for bilingual education models (Hornberger, 1991) made great strides in teasing out the multiple (often conflicting and confusing) definitions and descriptions of different bilingual program types. Her continua of biliteracy (Hornberger, 1989,

2002, 2003, 2004; Hornberger & Skilton-Sylvester, 2000) is a robust, comprehensive, yet flexible model to guide the use, learning, and teaching of two or more languages in and around writing. Her Integrative Framework for Language Policy and Planning Goals combines three decades of scholarship into an incredibly useful guide to the approaches, types, and goals of language policy and planning (Hornberger, 1994, 2006b). As well, Hornberger has made important strides in incorporating the ecology of language as both metaphor and paradigm in LPP, examining how languages and policies are situated in relation to each other within particular linguistic environments (Hornberger, 2002; Hornberger & Hult, 2008).

Hornberger does not tend to refer to herself as an activist but her concern with social justice is clear and both her research on bilingual education policy and practice and her advocacy for a multilingual ecology have inspired researchers and educators throughout the world. Beginning in the 1990s, Hornberger has tirelessly trekked across the globe to consult on language policy and education matters, advocating for bilingual policies and practices all along the way, and building collaborative working relationships with other scholars and educators. This work has been a foundation for comparative analyses across multiple contexts including Bolivia, Peru, Paraguay, Ecuador, Brazil, Wales, the USA, India, South Africa, New Zealand, Sweden, and Singapore, which affect multiple languages including (among others) Spanish, Quechua, Māori, Guarani, Khmer, Shawandawa (i.e., Arara), Afrikaans, Sepedi, English, Sámi, Singlish, Zulu, and Xhosa (see Hornberger, 1997a, 1998, 2000, 2001b, 2002, 2008a; Hornberger & Chick, 2001; Hornberger & Johnson, 2007; Hornberger & Hult, 2008; Hornberger & Vaish, 2009).

This work, in and of itself, has opened spaces for bilingual education policy and practice within particular contexts but the comparative streak in her published work has also illuminated the *connections between* different contexts and thus Hornberger has helped create a worldwide network of educators and scholars whose efforts contribute to a global project aimed at protecting and supporting minority languages and peoples (e.g., Hornberger, 2008a). One such partnership, begun in the late 1990s, is her ongoing collaboration with the South African scholars Neville Alexander and Carol Bloch and their work on the Project for the Study of Alternative Education in South Africa (PRAESA), which promotes the use of minority African languages as mediums of instruction in African schools. Bloch describes Hornberger as an "inspiration and a support for our work in South Africa." Not only has her continua of biliteracy been used as a framework for biliteracy education in schools, but her advocacy for African languages and bilingual education and her position as a well-respected researcher has benefited their efforts in multilingual policy and practice: "Sometimes, when you are working deep in a particular context where the need is so great, the problems so huge, and the opposition so vociferous and unacknowledging, it helps enormously to have support from authoritative 'outside' voices" (C. Bloch, personal communication, 2010). As a result of this collaboration, Hornberger has written extensively about language education policy in South Africa and the burgeoning multilingual population in South African schools, engendered by the dismantling of the apartheid educational system and a new constitution of 1993/1996 which embraced multilingualism as a national resource (Hornberger, 1998, 2001b; Hornberger & Chick, 2001; Hornberger & Vaish, 2009).

The praise of her colleagues, the extensive list of publications, the advocacy work throughout the world, and the inspirational and essential contributions are all testaments to Nancy H. Hornberger's impact upon the field thus far; yet, a quick look through the reference list that follows reveals that her publication output in recent years has not slowed in the slightest, evidence that her indomitable ingenuity will continue to prosper and inspire well into the future.

SEE ALSO: Bilingual Literacy; Ecology and Multilingual Education; Indigenous Literacies; Language Planning and Multilingualism; Language Policy and Multilingualism; Language Policy and Planning: Overview; Literacy and Bilingualism; Literacy in Multilingual Classrooms; Minority Languages in Education; Multilingual Education in Latin America

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House, Juliane

SHOSHANA BLUM-KULKA

Juliane House is emerita professor of Applied Linguistics and senior member of the German Science Foundation's Research Center on Multilingualism. She has been a leading figure in applied linguistics for several decades, making significant contributions to several areas including translation, intercultural communication, cross-cultural pragmatics, and discourse analysis, and more recently to the understanding of the role of English as lingua franca. She was amongst the first scholars who understood early on the relevance of pragmatic theory for applied linguistics, and has widely demonstrated its significance for theoretical issues in translation quality assessment, intercultural communication, and second language learning and teaching.

Juliane House was educated at German and Canadian universities. She obtained a diploma in English, Spanish, and international law from the University of Heidelberg in Germany, and continued her undergraduate and graduate studies at the University of Toronto, specializing in linguistics and applied linguistics. On her return to Germany she served as a lecturer and researcher for five years at the University of Bochum (1974–9) and was subsequently (1979) appointed Professor of Applied Linguistics at Hamburg University, where she remains to date. She has been involved in several large-scale innovative research projects in contrastive studies of English and German, native and non-native communication, speech act realization patterns, translation and global English, and has published widely in both German and English.

Juliane House's pioneering PhD dissertation, "A Model for Translation Quality Assessment," laid the ground for the introduction of pragmatic models of language use to translation studies. This seminal work, first published in 1977, has been revised and republished several times, most recently in 2009, and continues to be highly influential. The model originally drew on pragmatics, Hallidayan linguistics, and discourse analysis, and was later enriched by taking into account the interdependency of language, culture, and situation (House, 2009). House's ongoing work on translation assessment is richly informed by her detailed contrastive discourse analyses of German and English. This line of work has revealed important cross-cultural differences in the pragmatic systems of the two languages, as manifested in the use of gambits, opening phases in conversation, topic introduction, speech act realization patterns, and discourse strategies (House, 2006).

House's extensive contrastive–pragmatic work is further linked to issues of language learning and cross-cultural misunderstanding(s). In a theoretically and methodologically innovative large-scale project, she and her colleagues (with Edmondson, Kasper, and Stemmer, 1976–81) pursued the learning of the pragmatics of discourse via analyses of role-played native–non-native and native–native interactions. This project provided an empirical and pedagogical basis for the then relatively new communicative approach to language teaching by highlighting crosslinguistic differences in language use between German and English, by revealing German L2 interlanguage pragmatic phenomena, and by providing an interactional grammar of German for its teaching communicatively as L2 (House & Edmondson, 1981; Edmondson, House, Kasper, & Stemmer, 1984). This project can be counted among the very first studies of L2 pragmatics.

Cultural differences in ways of speaking can also lead to misunderstandings. One of House's important contributions to intercultural communication was in showing the impact

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of such cultural differences in communicative styles by speakers of different languages on intercultural misunderstandings, demonstrating the role played by such differences for culture clashes and for the perception of misunderstanding and (im)politeness (House, 2000, 2007; House, Kasper, & Ross, 2003).

Cross-cultural differences in pragmatic systems were also the focus of the Cross Cultural Speech Act Realization Project (CCSARP), headed by Blum-Kulka, House, and Kasper. The study integrated linguistics, speech act theory, and politeness theory in demonstrating cross-cultural and situational variation in the performance of requests and apologies (Blum-Kulka, House, & Kasper, 1989). This study laid the foundations for the empirical study of speech acts in different languages, developing a theoretically motivated methodological framework for the analysis of speech acts realization patterns across cultures. One of the important contributions of the study was in showing that cross-cultural variability in speech act realization patterns is a gradient phenomenon—all languages studied made use of the full repertoire of a given speech act, but they did so with great contextual (within-language) and cultural (across languages) variability.

More recently, House has become, on the basis of her multifaceted research on English as a lingua franca (ELF), a strong advocate for the need to consider ELF as a hybrid, functionally flexible, and open-ended language of communication, rather than as a threat to national languages and multilingualism. One part of her argument is based on findings from studies considering the impact of English on central genres in other languages. She has shown, in her comparative studies on translation and parallel texts in pairs of two languages, that contrary to initial expectations, and despite the wide use of English in the second half of the 20th century, signs of Anglicization in terms of discourse norms remain scarce over a period of 30 years. Thus translations were shown to go through a "cultural filter," adapting the texts to major target language discourse norms like preference for "content orientation" (in German) versus "addressee orientation" (English) (Becher, House, & Kranch, 2009). A further step in the argument considers the effectiveness of non-native–non-native ELF communication; her studies have shown that despite the presence of native ways of speaking that filter through to ELF in such interactions, participants manage to communicate effectively, with very few misunderstandings (House, 2003, 2010).

To conclude, Juliane House is a versatile and innovative scholar, with a clear voice on many central issues in applied linguistics. The diverse topics she is and has been interested in are motivated by an unfailing quest for understanding the impact of culture on language use, linked by an underlying pragmatic and functional linguistic theoretical outlook, and typified by an ongoing commitment to considering the "applied" implications of her findings —be it for language teaching, translation, or intercultural communication.

SEE ALSO: Assessment of Translation; Cross-Cultural Pragmatics; English as Lingua Franca; Intercultural Communication; Intercultural Discourse; Politeness; Pragmatics of Lingua Franca Interaction; Speech Acts

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Hulstijn, Jan H.

JANNY LEUNG

Jan H. Hulstijn (1947–) is a Dutch scholar whose research is primarily concerned with incidental and intentional second language (L2) vocabulary learning, implicit and explicit L2 grammar learning, automatization of L2 lower-order processing skills, and language proficiency (LP). He postulates that there is a fundamental difference between implicit and explicit learning, although explicit learning incidentally provides opportunities for implicit learning. His joint proposal with Laufer, called the involvement load hypothesis, predicts that vocabulary retention is determined by the depth of processing required by the learning tasks. On a broader theoretical level, he works toward a unified account of L2 acquisition, representation, and processing, arguing that the apparently divergent approaches of symbolism and connectionism may be reconciled in a hybrid model. His theory of LP proposes a distinction between basic language cognition and higher language cognition.

Hulstijn has led many large-scale longitudinal and cross-sectional studies in second language acquisition (SLA) and his works have appeared in international journals such as *Applied Psycholinguistics*, *Language Learning*, *The Modern Language Journal*, *Studies in Second Language Acquisition*, and *Second Language Research*. He has published in English, Dutch, French, and German.

Professional Life

Hulstijn's doctoral thesis, completed with the University of Amsterdam, was titled "Monitor Use by Adult Second Language Learners." After obtaining his doctorate in 1982, Hulstijn worked for one year as a research associate at the Modern Language Centre of the Ontario Institute for Studies in Education in Toronto with a grant from the Netherlands Organization for Scientific Research (NWO). He worked at the University of Leiden and the Vrije Universiteit Amsterdam between 1983 and 1998, and has been professor of second language acquisition at the University of Amsterdam since 1998. He was guest professor at the University of Leuven, Belgium (2002), and Stockholm University (2005) and is a project leader of multiple NWO grants.

Ideas

When compared with research on L2 grammar learning, progress in L2 lexical research has been slow in recent decades, despite the fact that words are central to language. While teachers and researchers have limited control over what people do to intentionally commit new words to memory, incidental vocabulary learning seems to lend itself to controlled empirical investigation. Incidental vocabulary learning refers to the unintentional picking up of unfamiliar words; for instance, it is commonly accepted that people pick up vocabulary during reading tasks.

Hulstijn has made continued efforts in finding out the factors that are conducive to incidental vocabulary learning, especially the ones that affect not only immediate comprehension but longer-term retention. Hulstijn (1992) shows that words whose meanings

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were correctly inferred from context during a reading task were subsequently remembered better than words explained by a synonym. Hulstijn, Hollander, and Greidanus (1996) have also found that the vocabulary items that were looked up in the dictionary during a reading task yielded much higher retention scores than the same words in the marginal gloss condition. Looking up words in an L1–L2 dictionary and applying them in a composition also seems to produce better retention than looking up in an L2–L1 dictionary for comprehension purposes (Hulstijn & Trompetter, 1998). The motivation to look up words in a dictionary during reading may be boosted by pre-reading test announcements and post-reading vocabulary tasks (Peters, Hulstijn, Sercu, & Lutjeharms, 2009). Added together, these studies suggest that some tasks are superior to others in terms of incidental vocabulary learning, and the superior tasks tend to be ones that involve greater depth and elaboration of processing.

However, it remains obscure what makes processing deep or elaborate. In collaboration with Laufer, Hulstijn has attempted to operationalize the notions of depth of processing and elaboration in the context of L2 vocabulary learning by proposing the involvement load hypothesis (Laufer & Hulstijn, 2001). *Involvement* is a motivational-cognitive construct that consists of three basic components: *need*, *search*, and *evaluation*. According to the hypothesis, retention of unfamiliar words is dependent upon the degree of involvement in processing these words. In a study involving English as a foreign language (EFL) learners in Israel and the Netherlands, Hulstijn and Laufer (2001) found that retention of incidentally acquired vocabulary is contingent on the amount of task-induced involvement, lending support to their hypothesis.

Apart from involvement load, Hulstijn (Hulstijn & Laufer, 2001; Hulstijn, 2002a) has also emphasized the importance of placing frequency in an overarching theoretical framework of language acquisition. He has pointed out that implicit knowledge, such as that of form–form connections, may be more susceptible to frequency effects than explicit knowledge, such as that of form–meaning connections. Frequency also seems to affect receptive language more than productive language.

While explicit learning may occur incidentally or intentionally, implicit learning may only take place incidentally. Hulstijn believes that research on implicit and explicit learning is of critical value to the study of SLA (Hulstijn, 2005), since such research potentially offers an explanation for the differential success in first language (L1) acquisition and SLA, a central controversy in the study of language acquisition. Hulstijn has argued that L1 acquisition relies principally on incidental and implicit learning mechanisms, and that it would be of obvious pedagogical interest to find out what L2 domains might best benefit from implicit or explicit learning modes.

Hulstijn has changed his view substantially over the years on the interface problem of explicit and implicit learning. He first switched from a strong interface position (1990) to a weak one (1995), according to which explicit grammar instruction facilitates foreign language acquisition. Although later in his career he has moved to a non-interface position (i.e., holding that explicit knowledge cannot be transformed into implicit knowledge; see 2002b and below), his belief that explicit learning somehow (albeit indirectly) facilitates implicit learning still stands. Hulstijn (1995) acknowledges that some L2 learners have no explicit knowledge of grammar rules, but can apply them correctly, while others keep on making errors despite their explicit knowledge of the rules. However, he does not believe that grammar teaching should be eschewed altogether. In fact, since implicit learning may take an extremely long time and extensive input might not be available, and attention to form is required for the acquisition of word order rules (Hulstijn & Hulstijn, 1984), it is advisable to promote explicit learning in an instructional context (Hulstijn, 2002b).

For teachers who are torn between the choice of teaching difficult grammar rules and leaving easy features to be picked up by learners, or teaching simple rules that can be easily comprehended by students, Hulstijn (1995) postulates that explicit teaching and practicing are more useful for some types of grammar rules than others. The five criteria that he considers relevant are scope, reliability, frequency, mode of command, and comprehensibility of explanation.

Not only are humans able to produce complex, structured, and regular utterances, they are also able to learn fuzzy, prototype-like categories. A successful language acquisition theory should therefore incorporate both types of cognition, Hulstijn argues. Noting that both symbolism and connectionism are relevant for SLA, Hulstijn urges for a reconciliation between the two approaches, and for more research on the types of linguistic principles, rules, or elements that may be learned by associations (1997, 2002b, 2003). In an effort to integrate the two accounts from a non-nativist, emergentist perspective, Hulstijn (2002b) propounds that sub-symbolic knowledge may be learned implicitly, and components (most likely lexical units) of the distributed knowledge network might elevate to the status equivalent of "symbols," while symbolic rules may be constructed via explicit learning. He also speculates that lower linguistic domains (such as acoustic perception) are more likely to take the form of sub-symbolic representations and higher domains (such as pragmatics) might consist of more symbolic representations. Although explicit knowledge cannot be converted into implicit knowledge, explicit learning might create opportunities for implicit learning, since the latter is an unstoppable information processing mechanism that automatically accompanies any explicit learning activity. His influential view is at odds with perspectives that call for research efforts in ensuring "pure" explicit or implicit learning conditions (e.g., DeKeyser, 2003).

At the methodological level, Hulstijn (1997) has made the following recommendations for laboratory-type SLA research: (a) Experimental treatments to subjects should be of sufficient length; (b) a construct should be measured with more than one task or under more than one task condition; (c) caution should be exercised when measuring reaction times of responses given by non-native speakers; and (d) retrospective interviews or questionnaires should be used at the end of an experiment.

Although Hulstijn sees a valuable role for explicit instruction on the educational agenda, he argues that automaticity of lower-order information processing, which is achieved through implicit learning, is a prerequisite for L2 proficiency, and suggests that SLA researchers should be encouraged to investigate the extent to which SLA is a gradual process or skill acquisition (1997).

Hulstijn cites L1 and L2 acquisition as prime examples of skill acquisition, which typically proceeds slowly and gradually and leads to automatization (Hulstijn, Van Gelderen, & Schoonen, 2009). In line with the non-interface position, he argues that automatization is done through implicit learning and neural network construction which is incidental to explicit learning, rather than through the actual automatization of rules (2002b). Skilled behavior is effortless and is faster than rule application. In his latest language ability theory, Hulstijn (2011a, 2011b) proposes a distinction between basic and higher language cognition, and a distinction between core and peripheral components of LP, which the author contends will help explain individual differences in language achievement.

SEE ALSO: Explicit Knowledge and Grammar Explanation in Second Language Instruction; Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Incidental Vocabulary Acquisition

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Suggested Readings

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Human Rights

HUGH STARKEY

Human rights provide a way of looking at the world. Since the publication of the Universal Declaration of Human Rights (UDHR; United Nations General Assembly, 1948), all human beings have potential access to a shared language to describe and name ways in which human dignity may be violated and can be protected. This is facilitated by the existence of 375 different language versions of the Declaration, demonstrating a commitment by the United Nations (UN) to communicating directly with people irrespective of the official status of their language.

Naming something as a human rights issue carries considerable moral weight since all nation-states are in principle committed to upholding human rights. It follows that such naming should be undertaken with caution. However, if a claim can reasonably be established that something is a human rights abuse, the moral case may give political leverage, including the possibility of solidarity from others around the world. It may also be possible in some circumstances to seek legal redress. This entry provides some background information on human rights; it reviews a number of issues where language may be a significant issue in struggles for dignity and human rights; and concludes with some reflections on the contested concept of linguistic human rights.

Defining Human Rights

It has been argued that the development of human rights occurred because human beings felt the need, in the light of human vulnerability, for agreement on moral, political, and legal principles that might protect individuals (Turner, 1993). The principles are abstract and can thus be applied to any context and in any political system. They recognize that human beings live in society and depend on others for their survival and well-being. These standards provide a common point of reference for officials, teachers, and individuals living as members of societies that, with globalization, are composed of people from a wide diversity of cultural, ethnic, religious, and linguistic backgrounds. Human rights are only meaningful when known and understood. However, they are not simply normative standards for encouraging pro-social behavior, but also a set of principles for critically engaging with social and political realities. In other words human rights are essentially associated with struggle (Osler & Starkey, 2010).

Human rights are often spoken of from a historical perspective as having developed in three generations or waves (Klug, 2000). Although human rights are indivisible, this metaphor can remind us of historic struggles (Bowring, 2008). First-wave rights are those civil and political rights necessary for meaningful citizenship. They are associated with the Enlightenment and with struggles for freedom from the arbitrary and unjust actions of colonial powers and of monarchs claiming the divine right to rule. Exemplary historic declarations, asserting equality of rights and the right of subjects to rebel against tyranny, are the United States Declaration of Independence (1776) and the French revolutionary Declaration of the Rights of Man and of the Citizen (1789). Some phrases and formulations drawn directly from these declarations are recognizable in the 20th-century declarations and covenants.

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The second wave of human rights is associated with social and economic rights. These rights are included in the UDHR and they have their origins in trade-union struggles from the 19th century. Third-wave rights are sometimes called solidarity rights. They are associated with major struggles of the post–World War II period: decolonization; development; peace; and environmental protection. Solidarity rights bring together rights from the previous waves.

The metaphor of generations or waves of rights tends to emphasize the difference between groups of rights rather than their interdependence and indivisibility. One of the key drafters of the UDHR, René Cassin, proposed an alternative model that presents four groups of rights as pillars, holding up an edifice of internationally agreed human rights. Each pillar helps support the edifice of the UDHR, imagined as a classical Greek portico, and each bears equal weight (Cassin, 1951).

The foundations of the portico are the preamble and the first article, a statement of belief in what has developed as natural rights theory, namely that "all human beings are born free and equal in dignity and rights." This is followed by a normative statement of how people should behave toward each other. "They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." The formulation consciously echoes the American and French declarations from the 18th century.

The pillars of the UDHR portico symbolize four key concepts, namely dignity, liberty, equality, and solidarity, the last three recognizable as the motto of the French Republic. Cassin clusters the articles as: personal rights; rights in civil society; public freedoms and political rights; and economic, social, and cultural rights. The pediment capping the edifice represents an international order essential for the realization of rights; understanding that rights imply duties to the community; and a recognition that freedoms do not extend to those actions that jeopardize the rights of others.

The UDHR introduced a new concept of universality. Previous struggles established citizenship rights guaranteed at national level. The essence of human rights, as expressed in the UDHR, is that they are universal and not the gifts of national governments. This great conceptual innovation introduced in the UDHR was theorized by Cassin, based on his experiences representing displaced World War I veterans in Europe (Winter, 2006). Veterans were being denied their rights because they did not hold formal citizenship status. Yet they were clearly members of the communities where they lived. Cassin argued that domicile as well as citizenship should be a source of rights. In other words, rights attach to individuals, wherever they live—they are not the gift of the nation-state. Once rights are conceived as belonging to the individual as human being rather than as citizen of a nation-state, the concept of human rights is possible.

The UDHR was a performative act by the world's nations. It supported a vision of peace based on democracy and the rule of law and set a moral standard. However, declarations cannot in themselves protect vulnerable human beings; laws are also needed to enforce the standards and ensure that state institutions respect human dignity and fundamental freedoms. There are now some 200 human rights instruments, including declarations, resolutions, guidelines, conventions, and covenants that make up a body of international human rights law (Morsink, 1999). Human rights are universal principles at a high level of generality. They are thus distinct from many other forms of rights such as civil rights or citizenship rights, which depend on membership of a particular nation-state. Human rights can be invoked in struggles for equality, fundamental freedoms, fair treatment, and due process. Human rights claims refer to internationally recognized instruments. It is not legitimate to invoke human rights in order to limit the rights and freedoms of others, nor to undermine the principles of the United Nations (UDHR, Article 29).

The centerpiece of international human rights law is the International Bill of Human Rights. This is made up of the International Covenant on Civil and Political Rights (ICCPR;

United Nations, 1966a) and the International Covenant on Economic, Social and Cultural Rights (ICESCR; United Nations, 1966b), together with the UDHR. The Convention on the Rights of the Child (CRC; United Nations, 1989) is the most ratified of the instruments of the United Nations. Its acceptance in principle and in law by all the world's governments is a demonstration of the universality of a discourse of human rights, though this does not extend to observance. The rights guaranteed in international law become effective when they are operationalized by legal and policy instruments at the level of the nation-state.

The most developed international system of legal human rights protection is the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR; Council of Europe, 1950). The ECHR provides legal protection for most of the civil and political rights within the UDHR. It covers all residents in the jurisdiction of the 47 member-states of the Council of Europe. States accept that they will not resort to torture or the death penalty; nor interfere with matters of conscience and belief, free expression, peaceful assembly, personal property, correspondence, and choice of marriage partner; nor discriminate in guaranteeing these rights. Individuals can take their case to the European Court of Human Rights, which has powers to bring member-states to account and oblige them to change their legislation.

Human Rights and Languages

The exact status of demands for ensuring that national minorities including linguistic minorities have access to the full range of human rights is contested. While there is clear recognition that there is often discrimination against minorities, there is reluctance on the part of some governments to accept the need for special measures, let alone special rights, for minorities. Consequently, the Declaration on the Rights of Persons Belonging to National or Ethnic, Religious and Linguistic Minorities (United Nations General Assembly, 1992) has not developed to the status of a convention. However, in Europe the UN declaration inspired two treaties that have particular relevance in the context of languages. The first is the European Charter for Regional or Minority Languages (ECRML; Council of Europe, 1992) and the second the Framework Convention for the Protection of National Minorities (Council of Europe, 1995). These came into force in 1998, having been ratified by about half of the member-states of the Council of Europe. Certain states, notably France and Turkey, have been reluctant to sign because they do not recognize any official classification of their citizens by ethnicity, religion, or language.

The UDHR provides a language and a discourse for naming manifestations of discrimination and denial of rights. Article 2 affirms equal entitlement to all the rights in the Declaration and specifically includes language as one of several grounds that must not be used to justify denial of equal rights. It was considered necessary to state this because language may be a factor in ensuring, for example, equality before the law (Article 7) and a fair hearing (Article 10). Consequently, Article 14 of the ICCPR and Article 6 of the ECHR insist on prompt and detailed information to be provided to any accused in a language they understand and on the free assistance of an interpreter. The principle here is equality in the right to justice rather than the right to use any given preferred language. Indeed, the right does not extend to the use of the mother tongue in court proceedings and is considered to be satisfied if the accused has access to a bilingual lawyer (Henrard, 2001).

Other rights of particular concern to linguistic minorities are the right of freedom of expression and the right to receive and impart information (UDHR, Article 19), the right of freedom of peaceful assembly (UDHR, Article 20), and the right to participation in government and public service (UDHR, Article 21). The human rights of children include the right to a name (CRC, Article 7), the right to education, and the right to receive an education that respects the child's "own cultural identity" (CRC, Article 29). Children from

minority groups have "the right, in community with other members of his or her group, to enjoy his or her own culture, to profess and practise his or her own religion, or to use his or her own language." This echoes the same commitment, extending to all persons belonging to minorities, already part of the International Bill of Rights (ICCPR, Article 27).

Linguistic Human Rights

The concept of linguistic human rights is a shorthand expression not recognized specifically in international human rights instruments. It is associated particularly with the pioneering work of Skutnabb-Kangas and Phillipson (1995). It brings together lawyers and applied linguists to provide the conceptual underpinning to a political and militant project to combat injustices to members of linguistic minorities and to curb the assimilationist trends that threaten the existence of numerous languages in the world (Skutnabb-Kangas, 2000).

It is closely associated with a number of recognized approaches, such as the rights of persons belonging to linguistic minorities (United Nations General Assembly, 1992) and the concept of minority languages (Council of Europe, 1992). The principle of protection for minorities predates human rights instruments, having been elaborated under the League of Nations in the 1930s. Claims to linguistic human rights are based on rights to freedom from forced assimilation to a majority culture.

Following a close reading of relevant instruments of international law, Henrard defines a minority as "a population group with ethnic, religious and linguistic characteristics differing from the rest of the population, which is non-dominant, numerically smaller than the rest of the population and has the wish to hold on to its separate identity" (2001, p. 43). Minority rights may be conceptualized as ensuring equal human rights to persons belonging to minorities. Just as women and children have specific human rights conventions, so it is recognized that minorities may face discrimination even when granted formal equality if this is at the expense of forced assimilation. Minorities may require measures that promote substantive as well as formal equality in access to rights. The principle of equal access to rights is also a limiting one and does not imply privileges or rights additional to those that may be claimed by all human beings.

Although the concept of minority rights and of cultural rights, which includes language rights, is well established in international law, there is not universal recognition that such group rights are in fact human rights. By definition human rights apply to individual human beings and not to collectivities (Donnelly, 2003). In fact, as secular states such as France and Turkey conceive of human rights, the concept of rights for groups or communities is problematic since it is also a fundamental human right to be able to leave or disassociate oneself from a group, including religious, ethnic, and language groups, which may be oppressive. Since human rights apply equally to all human beings they are exercised in a social context of awareness of the rights of others. Although freedom of expression in a language is also archetypically a collective cultural activity, the right may be claimed by individuals as part of a group rather than by a group to protect itself (Reidel, 2010). This conception of language rights allows for multiple identities and avoids essentializing (Sen, 2006).

Examples of situations that concern the use of language and have been proposed as denials of linguistic human rights include: refusal of official recognition to a name because it is associated with a minority (e.g., Kurdish names in Turkey); failure to provide support within the education system for speakers of foreign or minority languages; banning communication in certain languages in school classrooms and playgrounds and for prison visitors (Skutnabb-Kangas & Phillipson, 1995).

The first of these issues, regarding naming, may be presented as a human rights issue insofar as the state's regulations on naming discriminate against names associated with

a minority. The use of a personal name is closely associated with identity and sense of personal dignity. The Convention on the Rights of the Child guarantees the right to a name, but it does not specify the right of parents to unrestricted choice of name. Opposing such linguistic discrimination is part of a wider struggle for justice and human rights.

The second issue can be framed in terms of the right to education. Children whose mother tongue is not the language of the education system may well require support in order fully to benefit from the educational opportunities offered. This applies both to migrants and to minorities. However, there are many ways in which language support may be provided and, although education in the medium of the mother tongue is in the best interests of the child (a principle of children's rights), there may also be circumstances when the disproportionate cost of providing it might draw resources away from other equally deserving children. This is a political issue that may gain purchase from using a human rights claim in circumstances when it is one of a number of discriminations. It is noticeable, however, that there is no attention to the languages of migrants in the European Charter for Regional or Minority Languages. Migrant language communities have to rely on general human rights instruments to support their struggles.

The third issue of banning the use of certain languages in schools and prisons is certainly a curtailment of freedom of expression that is hard for a liberal state to justify. Whether these examples can helpfully be bundled together within a concept of linguistic human rights, rather than just linguistic rights, is contestable. One key issue is the status claimed for languages associated with ethnic minorities and the prioritization of these over other language struggles including access within a given language community to powerful varieties of language. Blommaert observes that claims for linguistic human rights may originate in or be allied to "politicized narratives produced by politically mobilized ethnolinguistic groups with a developed political ideology that celebrates language as the distinctive feature of nationhood" (2001, p. 136).

Conclusion

It is undoubtedly the case that, where nation-states have been constituted around a dominant national language, freedom of expression and freedom of information in minority languages including migrant languages has been a site of struggle. In many cases this has been linked to campaigns for autonomy or independence. Identification with separatist movements renders the concept of linguistic human rights politically controversial. What a focus on minority languages within a human rights regime may facilitate is an awareness of the kinds of discrimination that may occur and those areas of public life including education, the judiciary, administrations, media, cultural activities, and economic and social life where dominant monolingualism may be discriminatory (Council of Europe, 1992).

SEE ALSO: Citizenship Education; Council of Europe Language Policy and Planning; Endangered Languages; International Law in Language Policy and Planning; Language of Courtroom Interaction; Language and Globalization; Language , Politics, and the Nation-State; Linguistic Diversity; Minority Languages in Education; Role of Linguistic Human Rights in Language Policy and Planning; Skutnabb-Kangas, Tove

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Hyland, Ken

PILAR MUR DUEÑAS

Ken Hyland (b. 1951), a well-known and frequently cited scholar in English for academic purposes (EAP) research, has contributed significantly to his field by putting forward comprehensive and well-structured analytical frameworks. His research has aimed at discerning the discoursal encoding of the writer–reader relationship, which, in the academic sphere, influences and is influenced by disciplinary membership and the intended audience. Hyland's research has continuously underlined the interpersonal component of academic written exchanges. For a long time it was believed that scientific and academic knowledge was objectively and impersonally presented as a mere reflection of an external reality. However, due to a large extent to Hyland's groundbreaking research, it is now well attested that knowledge is socially constructed and that certain discoursal conventions and expectations need to be met for a text to be judged as credible and persuasive by the writer's peers. In this context, Hyland has had a large role in unveiling the interpersonal forces driving academic communication.

One area of inquiry to which Ken Hyland has made significant contributions is in the study of what is called *metadiscourse*. Metadiscourse refers to "those aspects of the text which explicitly refer to the organisation of the discourse or the writer's stance towards either its content or the reader" (Hyland, 2000, p. 109). Drawing on previous accounts of metadiscourse (Vande Kopple, 1985; Crismore & Farnsworth, 1990; Crismore, Markkanen, & Steffenson, 1993; Mauranen, 1993), Hyland refined its categories and established a framework which has proved remarkably fruitful and has inspired a great deal of academic discourse research. Hyland (1998, 2000) organized metadiscourse into textual and interpersonal categories. Within textual metadiscourse he included the analysis of logical connectives (which express a connection between ideas), frame markers (aimed at structuring the discourse into discourse acts or text stages and which include sequencing markers, label stages, announcements of goals, and topic shifts), endophoric markers (which refer to other parts of the discourse), evidentials (indications of source materials), and code glosses (which introduce further information for the reader to grasp the writer's intended meaning). Under interpersonal markers he grouped hedges (terms expressing the writer's lack of full commitment to the accompanying proposition), boosters (elements marking certainty and conviction), attitude markers (indications of affective evaluation, including attitude verbs, necessity modals, and adjectives), relational markers (devices intended to bring readers into the text and which comprise second person pronouns, question forms, imperatives, and digressions), and person markers (references to the author(s) through first person pronouns and possessive adjectives).

Hyland then argued for a stronger interpersonal view on metadiscourse, where metadiscourse is understood as the cover term for discourse devices which embody the writer–reader interaction (Hyland, 2005a). Hyland and Tse (2004) presented a revised interpersonal model of metadiscourse, in which they articulated a distinction between external and internal text features, metadiscourse being restricted to those features which make an internal (in-text) reference.

Much of Hyland's work has been devoted to exploring these metadiscourse categories as deployed in a wide array of academic genres, mostly in research articles, but also in

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abstracts, textbooks, master and PhD dissertations, acknowledgments, final-year student reports, textbooks, and book reviews. His analyses look into the ways in which writers build convincing arguments and how metadiscourse contributes to positioning the author in relation to the text and in relation to readers in ways that are conventional and expected in particular disciplinary communities. Hyland's research findings have had important influences on academic language teaching.

Hyland's (2005b) model of writer–reader interaction based on the concepts of stance and engagement also provides a key framework for the analysis of academic communication. Stance is the expression "of a textual 'voice' or community recognized personality" (Hyland, 2005b, p. 176) and encompasses the use of hedges, boosters, attitude markers, and self-mentions. Engagement, on the other hand, is the way through which "writers relate to their readers with respect to the positions advanced in the text" (Hyland, 2005b, p. 176). It encompasses the use of reader pronouns, directives, questions, and personal asides. With this model Hyland stresses how scholars need to offer a novel and valuable contribution to the body of disciplinary knowledge in rhetorically appropriate terms. This entails projecting a credible authorial voice, making appropriate judgments, establishing their credentials, and opening space for alternative views and evaluations, while claiming solidarity with, responding to, and bringing in their potential readers.

Hyland has applied the models outlined above in numerous corpus-based studies. His cross-disciplinary analyses have mostly, but not solely, focused on the analysis of a corpus of 240 research articles from 8 disciplines (mechanical engineering, electrical engineering, physics, biology, marketing, philosophy, sociology, and applied linguistics), totalling 1.4 million words. He has frequently complemented the quantitative data analyses with valuable ethnographic data taken from interviews with informants in the above disciplines following a semi-structured format. This process has enabled him to dig deeply into the discursive practices of the members of these communities and discover the rhetorical preferences of academic discourse communities. Hyland (2005) has reported a higher inclusion of interactive and interactional features in the soft-discipline (e.g., philosophy or sociology) texts than in the hard-discipline (e.g., physics or engineering) texts. The higher degree of interactional features, especially hedges and engagement markers, in the soft sciences is interpreted by Hyland to result from the more interpretive, less abstract nature of knowledge in the social sciences and humanities. Alternative voices and appeal to solidarity with readers are claimed to be strong in the social sciences and humanities. On the other hand, writers in the hard disciplines tend to downplay interactional positions, which results in a less reader-inclusive rhetoric stressing the impartiality and linearity of science production. His results also suggest differences in the use of interactive features in research articles across different disciplines, mainly regarding endophorics (i.e., markers that refer to information on other parts of the text), and especially, evidentials (i.e., markers which indicate the source of information from other texts). Academics in the more discursive, soft disciplines need to more clearly establish the contextual link between their research and previous work, as knowledge tends to be recursive, rather than cumulative. Overall, this comparison of discourse choices in research article writing across several fields has enabled Hyland to identify relationships between the ways in which disciplines see the world and conduct research, and the ways they socially turn this research into publishable articles.

Hyland has extended a cross-disciplinary approach to the study of other academic genres in addition to the research article, namely textbooks (Hyland, 2005), second language (L2) postgraduate writing (Hyland, 2004; Hyland & Tse, 2004), and book reviews (Tse & Hyland, 2006, 2008, 2009). He explains differences in the use of metadiscourse markers in textbooks and in L2 master and doctoral dissertations in soft versus hard disciplines as a direct consequence of the importance that personal interpretation plays in the former, more discursive disciplines. Hyland stresses how these genres are rhetorically constructed in

ways that mirror the building of knowledge in professional academic genres in a particular disciplinary community. Interestingly, book reviews have been approached from a double analytical perspective, taking both discipline and gender as variables (Tse & Hyland, 2006, 2009). In general, Hyland and his coresearcher do not find relevant gender differences in the use of metadiscourse features in philosophy, sociology, and biology book reviews. Male and female reviewers seem overall to portray themselves and their readers and express their views in rather similar ways, although to different extents in each of these three disciplines. Disciplinary affiliation, rather than gender, impinges on the reviewers' discursive choices.

Besides cross-disciplinary and gender-based analyses of academic writing, Hyland has compared student writing with professional writing (Hyland, 2009) and has explored differences between research article writing and popular writing (Hyland, 2009, 2010). According to Hyland (2009), popularizations, or science journalism, present distinctive rhetorical and discursive features from scholarly writing. Contrary to what tends to be the case in research articles, popularizations follow a deductive rhetorical pattern and present the main finding at the beginning of the text to foreground novelty. Information in these popular texts is framed so that it is likely understood by the nonexpert audience; thus, definitions and explicit indications of links between ideas become key rhetorical strategies. Also, the source of the information is commonly stressed in popularizations as a way of achieving reliability. Finally, the different communicative purpose of popularizations leads to "glamorizing material for a wider audience" (Hyland, 2009, p. 170). This includes an array of attitude markers expressing the writer's affection as well as a low number of uncertainty features. The different communicative purpose of popular science inevitably calls for different discursive and rhetorical features from scientific research reporting.

This cross-generic approach to the analysis of academic discourse has led Hyland (2010) to propose the term *proximity* to subsume both the way writers show authority by displaying an array of disciplinary conventions (proximity of membership) and the way writers show the material in such a way that it meets readers' expectations (proximity of commitment). Proximity is achieved differently in popular science and in research articles. Hyland finds that in popular science articles proximity entails the presentation of research so that it is easily processed by nonspecialists, whereas in research articles proximity entails the presentation of research following the conventions of the academic disciplinary community (i.e., displaying familiarity with the position of one's research in relation to previous literature, describing methods accurately, presenting results in a cautious way, and making claims which are supported on the basis of these). Proximity, explored through the analysis of organization, argument, credibility, stance, and engagement, helps unveil the different ways in which writers negotiate meaning with different audiences and for different purposes.

Through his overall analysis of academic discourse in general and through his detailed cross-disciplinary, cross-gender, and cross-generic studies of academic interaction in particular, Hyland has shown how language plays a crucial role in the social practices of the academia. It is through discourse that academics respond to the expectations, beliefs, and conventions of a given discipline, create their own identities and engage with their readers, constructing an effective argument. Thus only by appropriately managing discourse can academics significantly contribute to the process of knowledge creation in their communities.

Ken Hyland has shaped the recent directions of research on and teaching of written academic English. Besides his contributions to the field of EAP through published articles, chapters, books, and edited volumes, he was also the founding coeditor of the *Journal of English for Academic Purposes* for seven years and he is now coeditor of *Applied Linguistics*. All in all, his more than 15 books and over 140 articles and chapters have established him as a leading scholar in academic discourse studies.

SEE ALSO: Corpus Linguistics: Overview; English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Metadiscourse; Research Articles in English for Specific Purposes

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Hymes, Dell

SUZIE WONG SCOLLON

Geosemiotics

Dell Hathaway Hymes (1927–2009) was a linguistic anthropologist most widely known for developing, with John Gumperz, the study of the ethnography of communication with the mnemonic S-P-E-A-K-I-N-G (Gumperz & Hymes, 1972), discussed below. To educators he is best known for the concept "communicative competence." He was one of very few to serve as president of the American Anthropological Association, the American Sociological Association, the Linguistic Society of America, and the American Folklore Society. He founded the journal *Language in Society* in 1972 and edited it for two decades. Hymes is known primarily for advocating the study of language as a social phenomenon, the study of linguistic relativity or relations between language and culture, and the problem of equality of linguistic resources.

Background

Growing up in Portland, Hymes attended Reed College for a year before being drafted into the Army for two years of service in South Korea. Returning to Reed, he completed his BA in 1950, with a critique of Christopher Caudwell as an undergraduate honors thesis in literature and anthropology. He learned from Professor Lloyd Reynolds the value of looking for antecedents of social phenomena in historical formations. Grounded in Marxist theory and informed by his experience in the US Army, Hymes sought to use anthropological knowledge to improve society and bring about equality. As a student he urged activism, a stance that brought trouble for him during the McCarthy era (Scollon, 2004). After introductions to Warm Springs Indians by Professor David French, he spent four decades working with recorded texts of indigenous languages of the Pacific Northwest.

From Reed Hymes went to Indiana University to study linguistics and folklore with Karl Voegelin, a student of Edward Sapir. His doctoral dissertation, completed in 1955, analyzed Kathlamet locative postpositions. A course with Harry Hoijer in Athabaskan at UCLA led to Hoijer recommending Hymes when Harvard was looking for a social scientist; he taught at Harvard from 1955 to 1960, then at University of California, Berkeley from 1960 to 1965. He then taught in the anthropology department at University of Pennsylvania, moving to folklore and folklife in 1972, and becoming dean of the school of education in 1975. He moved to the University of Virginia in 1987, retiring in 1998 as Commonwealth professor of anthropology emeritus.

Contribution

Perhaps his most widely recognized contribution is the notion of "communicative competence," put forth to challenge Chomsky's dichotomy of competence versus performance. He underlines child socialization as the heart of descriptive sociolinguistics:

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> Within the social matrix in which it acquires a system of grammar a child acquires also a system of its use . . . In such acquisition resides the child's sociolinguistic competence (or, more broadly, communicative competence), its ability to participate in its society as not only a speaking, but also a communicating member. (1974, p. 75)

He cited Malinowski, calling language a "mode of action" (1974, p. 75).

Hymes advocated an ethnographic approach to "investigate directly the use of language in contexts of situation, so as to discern patterns proper to speech activity" (1974, p. 3). Such functional and structural analysis was advocated by the Prague Circle and by Sapir (1974, pp. 5–6). An ethnography of speaking "would be a linguistics that had discovered ethnographic foundations, and an ethnography that had discovered linguistic content, in relation to the knowledge and abilities for use of knowledge (competence) of the persons whose communities were studied" (1974, p. 116).

The interaction of language and social life is thus at the heart of the ethnography of speaking or, more broadly, the ethnography of communication. Gumperz and Hymes saw the ethnography of communication in part as a restoration of attention to situated speaking in the wake of Chomsky's isolation of language and its study as an autonomous discipline. They were interested in the ecology of language, its relation to both natural and social environments. A concern with participants and the functions communicative events serve for them was fed by Kenneth Burke's focus on language as action arising from motives rather than simple physical motion (Hymes, 1974, p. 21).

Hymes used ethnography of communication to make a significant contribution to the theory of linguistic relativity, arguing that the effect of a language in shaping one's worldview and behavior would depend on the age and other circumstances under which one learned the language, whether it was a first or second or "nth" language, which generations spoke it and how fluently and how effectively, and so forth. A speaker's ability with a language would influence its effect on his or her thought or reality.

Though Hymes did not believe in the strong version of the Sapir–Whorf hypothesis, that the language one speaks determines one's thought and reality, he did have to reorient his thinking in order to understand the way speakers of Kathlamet Chinook talk about going from here to there or from there to here. Because, as he pointed out, there are no grammars written by native speakers, linguistic anthropologists had to figure out how aboriginal languages work by studying texts transcribed from oral performance.

With Dennis Tedlock and others, Hymes pioneered ethnopoetics, the treatment of oral narrative as lyric drama rather than prose (Hymes, 1981). Utterance-initial particles in Native American oral narrative performance mark change of scene or action, with structural units of two and four or three and five parts. "Narrative segments are marked at the beginning by a standard particle sequence" (Hymes, 1981, p. 103). Patterns emerge among lines rather than within lines as in metered verse, and he called these "measured verse" (Bringhurst, 2008, p. 221). The material came largely from Kathlamet texts dictated to Boas by Q'elti, a master storyteller, over a hundred years ago.

Hymes encouraged anthropologists to study not only primitive peoples but contemporary government and other institutions, and was particularly concerned that linguistic anthropologists work to prevent further destruction using nuclear weapons. As dean of education at the University of Pennsylvania, he and his students sought to apply the ethnography of communication to education in and out of the classroom. Susan Philips (1972, 1983) showed that communicative patterns learned by Warm Springs Indians at home carried over into the classroom, where they interfered with learning behavior expected by non-aboriginal teachers. Hymes introduced this work, saying, "an understanding of rules of speaking is indispensable to understanding failures and to increasing success in bicultural education" (1974, p. 124).

Components of Speaking

As a mnemonic to conveniently classify the components of situated communication, Hymes devised a SPEAKING grid on which to plot relationships among components:

S Setting
P Participants
E Ends
A Act sequence
K Key
I Instrumentalities
N Norms
G Genres

Setting, for example, can be related to participants, genres, or any of the other components. For instance, in central Oregon signs are placed more plentifully in the town of Madras than on the Warm Springs Indian reservation, where they occur only at sites frequented by strangers (Hymes, 1996, pp. 39–40). Signs can be considered a *genre*, defined by combinations of ends, placement, and means (writing and graphics).

Participants relates to setting when children in school speak Standard English in the classroom and other languages and codes on the playground. The same participants communicate differently in distinct settings, with different instrumentalities.

Ends and *key* relate when children attempt to humor their elders by coaxing cookies out of them, say.

Norms for speaking may differ with male relations present or absent, with women from some societies more willing to speak as authorities when no men are present.

Conclusion

Hymes's contribution to sociolinguistics centers on the notion of communicative competence, with which he called into question Chomsky's distinction between competence and performance. Appropriate performance, he argued, is part of communicative competence. Knowing how and when to tell a story is more important than being able to generate innumerable sentences that make no sense except as examples of aberrant usage.

Communicative competence entails a kind of grammatical knowledge of the components of speaking, laid out in a grid of setting, participants, goals, and the rest. It is an internalization of community norms for ways of speaking, gesturing, signaling, and other modalities of communication—a grasp of the place of language in the community, its varieties, styles, genres.

An ethnography of communication which specifies the linguistic resources available to learners can help reduce linguistic inequality. This and prevention of nuclear conflict were among Hymes's principal concerns. These were interwoven with the theory of linguistic relativity, which he broadened to include the ways of speaking of an individual: in which communities at which stages of life she learned particular linguistic varieties.

Hymes was profoundly influenced by his study of Native American folklore as well as grammatical categories. In particular, the Sun's myth was indelibly entwined with the bombing of Hiroshima. In one of his last public presentations to linguists, he read part of his translation of the myth. The destruction of a whole people that it conveyed brought to his mind not only Hiroshima but the war in Iraq. His relating of morphology to global affairs was an inspiration to many linguistic anthropologists.

SEE ALSO: Classroom Discourse; Sapir, Edward; Subjectivity

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Identities and Language Teaching in Classrooms

DIANE DAGENAIS

What is the relationship between learners' identities and their language-learning experiences? How are identities constructed in language classrooms and what does this imply for students and teachers? Over the last decade, applied linguists have paid increasing attention to questions such as these, as have scholars in such related fields as second language acquisition (SLA), language education, and sociolinguistics. Studies examining the links between learner identities and language-learning contexts have revealed that the ways learners define themselves, are defined by others, and are positioned in social interaction have an observable impact on their learning experiences. This body of scholarship has contributed to advancing new theoretical insights on identity construction in language-learning situations.

Identity and Language Learning: Theoretical Developments

Recent interest in social theories of identity and language learning marks a departure from earlier discussions of identity in research that attended primarily to individual learners' personality traits, motivations, and learning styles. As Block (2007) signaled, identity issues were raised more or less directly over 30 years ago in a series of psycholinguistic studies of second-language learning, but were never fully taken up at the time. He noted, for example, that Lambert (1972) wrote about the development of a bicultural identity among French/English bilinguals; Schumann (1978) proposed that second language learning was related to a sense of self and a process of acculturation; and several others examined how affective factors impact on language learning. In this research, identity was considered as a variable associated with an individual's language-learning strategies, language and ethnic identity were correlated, and ethnolinguistic groups were seen as cohesive entities.

These perspectives were first challenged by Norton Peirce (1995), who called for the development of a more nuanced theory of identity that could better account for the relationship between language learners and their learning contexts. To articulate how larger social forces shape local learning situations, she drew on poststructuralist theories of language as embedded in relations of power and proposed investment as a sociological construct to complement the notion of individual motivation advanced in social psychology. She argued that learners who are highly motivated might not invest in learning language in environments that are problematic for them and do not allow them to see possibilities for a return on their investment.

Since then, several researchers (e.g., Norton, 2000; Toohey, 2000; Pavlenko & Blackledge, 2004; Block, 2007) have helped advance social theories of identity that view language as a discursive practice of negotiating meanings and social positioning and consider linguistic groups to be heterogeneous. Identity construction is described as a process of imagination whereby learners define themselves in relation to others with reference to past, present, and future imagined communities (Kanno & Norton, 2003). In other words, as people learn a language, they refer to their past language-learning experiences and imagine how the target language might allow them to affiliate with new social networks.

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The Construction of Learner Identities

Observational and interview data from qualitative studies of language learning conducted in multilingual contexts have shown how people respond to the identities attributed to them. Adult immigrant English-language learners who participated in Norton's (2000) study were seen to adopt a number of strategies to resist stigmatizing identities that positioned them in a negative light in social interactions with employers, instructors, and other language learners. Multilingual adolescents in Lamarre and Dagenais's (2003) study rejected attempts to associate them with one linguistic or cultural group, preferring instead to define themselves in relation to multiple groups and within a transnational frame of reference that crossed boundaries of nationality, ethnicity, and language. Similarly, contributors to Pavlenko and Blackledge's (2004) edited volume examined how identities are negotiated in varying ways in relation to discourses of discrimination and empowerment in a wide range of learning situations internationally.

Longitudinal studies conducted in schools have documented how students are assigned fixed identities that serve to rank them according to academic competencies and language proficiencies. Based on ethnographic methodologies, this research reveals how bilingual and multilingual youth are afforded limited opportunities at school to display linguistic and cultural knowledge acquired in family and community settings. Toohey's (2000) study with English-language learners in kindergarten demonstrated how those who were identified as less skilled were marginalized and had fewer opportunities to engage in language interactions in the classroom. Likewise, analyzing data from a study of the language practices of French immersion students from immigrant families, Dagenais, Day, and Toohey (2006) found that, while these children might identify themselves in small-group interactions as multilinguals who were literate in multiple languages, teachers who focused only on the language of instruction and participation in large-group activities overlooked these expressions of identity and in some cases even defined these youngsters as at risk academically. In her analysis of social-studies lessons in an urban high school, Duff (2002) examined how one teacher and second language learners in her class positioned themselves discursively in teacher-led discussions. This study revealed that, when the teacher tried to draw on students' background knowledge and experiences, some learners resisted this and chose to not reveal aspects of themselves in class. Duff's research underlined the importance of understanding why students may do this and considering what identities they may or may not want to adopt in classroom interactions.

Supporting Student and Teacher Identities in Inclusive Classrooms

In light of such research results, some teacher–researcher groups have been established in Canada recently with the objective of creating classrooms that are more inclusive of diverse identities and language practices. Partners in these projects have documented home- and community-language practices to engage children in multilingual and multimodal literacy activities at school.

For example, in the Multiliteracies Project, a multisite collaboration between groups of students, educators, and parents in Toronto and Vancouver, children produced "identity texts" (Cummins, 2006) at school in which they expressed aspects of their experiences using a range of modalities. To create these texts, the children included various media such as oral and written language, sound, visual images, and digital technologies and they were encouraged to draw on whatever linguistic and cultural resources were available to them.

Similarly, in a Toronto primary school that serves as the site for a project entitled "Emergent Multiliteracies in Theory and Practice: Multicultural Literacy Development at Elementary School," students, educators, and researchers have collaborated over a number of years to explore how diverse identities might be recognized at school through multimodal literacy activities (Lotherington, Holland, Sotoudeh, & Zentena, 2008). Partners in the project have worked on rewriting traditional children's stories to include varied cultural reinterpretations, multilingual versions, and a broad array of visual media and digital technologies.

In an action-research project entitled "Éveil aux langues et à la diversité linguistique chez des élèves du primaire dans deux métropoles canadiennes," students enrolled in French-language primary programs in Montreal and Vancouver worked with their teachers and researchers to photograph the multilingual landscape of their communities (Dagenais, Moore, Sabatier, Lamarre, & Armand, 2008). They also examined a variety of written, audio, and visual materials in several languages in the context of language-awareness activities aimed at including multiple languages in the curriculum; developing an understanding of the different groups with which children and teachers identify and affiliate; and stimulating a broader interest in local, national, and international linguistic and cultural diversity.

Researchers working on a project situated in Vancouver entitled "A Sociocultural Investigation of Literacy Instruction for Children Learning English as a Second Language" collaborated with teachers, children, and parents to produce inventories of outside-school multilingual literacy practices in the community (Smythe & Toohey, 2009). They found that documenting these practices provided students with powerful opportunities to enhance their spoken and written competencies as they photographed their communities and created other visual representations of their lives and, to do so, relied on linguistic and cultural resources rarely visible in school.

Innovative projects such as these are promising because they examine critically whether activities in which students and teachers share aspects of their identities and cultural knowledge enable learners to engage more actively in classroom interactions.

Conclusion

In sum, in contrast to earlier sociopsychological theories of identity as individual attribute, contemporary theories of identity are based on poststructuralist perspectives that consider the relationships between identity construction and issues of power in social contexts, including educational and classroom situations. Identities are seen as dynamic, multiple, and sometimes conflicting social constructions, and in classrooms the identities attributed to learners and those they take up themselves have been shown to affect their investment and participation in language interactions. Learners are considered to have agency and to be capable of resisting problematic identities to negotiate more powerful social positions, as the situation allows. In keeping with this perspective, teams of teachers and researchers have begun exploring possibilities for recognizing how diverse identities as well as linguistic and cultural practices and affiliations developed out of school might serve as pedagogical resources and facilitate learning in language classrooms.

SEE ALSO: Agency in Second Language Acquisition; Identity and Second Language Acquisition; Silence and Participation in the Language Classroom

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Suggested Readings

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Identity and Second Language Acquisition

BONNY NORTON

To understand the vibrant and increasing interest in identity and second language acquisition (SLA), it is important to understand changing conceptions of the individual, language, and learning in the field. Each of these areas is associated with broader trends in the social sciences, which represent a shift in the field from a predominantly psycholinguistic approach to SLA to include a greater focus on sociological and anthropological dimensions of language learning, particularly with reference to sociocultural, poststructural, and critical theory (Norton & Toohey, 2001; Block, 2007b; Morgan, 2007). SLA researchers who are interested in identity are interested not only in linguistic input and output in SLA, but in the relationship between the language learner and the larger social world. They question the view that learners can be defined in binary terms as motivated or unmotivated, introverted or extroverted, without considering that such affective factors are frequently socially constructed, changing across time and space, and possibly coexisting in contradictory ways within a single individual. These researchers have examined the diverse social, historical, and cultural contexts in which language learning takes place, and how learners negotiate and sometimes resist the diverse positions those contexts offer them.

Many researchers interested in identity and SLA are also interested in the extent to which relations of power within classrooms and communities promote or constrain the process of language learning. It is argued that the extent to which a learner speaks or is silent, or writes, reads, or resists, has much to do with the extent to which the learner is valued in any given institution or community. In this regard, social processes marked by inequities of gender, race, class, ethnicity, and sexual orientation may serve to position learners in ways that silence and exclude. At the same time, however, learners may resist marginalization through both covert and overt acts of resistance. What is of central interest to researchers of second language identity is that the very articulation of power, identity, and resistance is expressed in and through language. Language is thus more than a system of signs; it is a social practice in which experiences are organized and identities negotiated.

Theoretical Framework

Changing conceptions of the individual, language, and learning in the social sciences have had a significant impact on theories of identity in the field of SLA.

Changing Conceptions of the Individual

In the 1970s and 1980s, much research on language learning investigated the personalities, learning styles, motivations, and other unique characteristics of individual learners, and conceived of language learners with reference to relatively fixed and long-term traits. Such research was consistent with humanist conceptions of the individual dominant in Western philosophy, which presupposed that every person—the "real me"—had an essential,

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unique, fixed, and coherent core. In more recent theory, as Weedon (1997) notes, poststructuralism depicts the individual as diverse, contradictory, dynamic, and changing over historical time and social space. The individual is conceived of as a "subject," in that the individual can be subject *to* a set of relationships in one social site, or subject *of* a set of relationships in another social site. In the former, the individual would be in a relatively powerless subject position; in the latter, the individual would have greater power relative to other individuals. The central point is that the individual's "subjectivity," or what could be considered their "identity," is always constituted in relational terms; the individual never stands apart from the social world, but is always an integral and constitutive part of it.

Such theory has great relevance for SLA theory in that it provides insight into the conditions under which language learners can speak, read, or write. In those contexts in which a language learner is valued, and is in a subject position of relative power, the learner will be encouraged to engage in social interaction; in those contexts in which a learner is marginalized and powerless, opportunities for social interaction will be more limited. However, in poststructuralist theory, structural constraints and social conditions are never entirely determined. Through human agency, language learners who struggle to speak from an identity position of relative powerlessness may be able to reframe their relationship with their interlocutors and claim alternative, more powerful identities from which to speak, thereby enhancing language learning.

Changing Conceptions of Language

Of particular interest to identity theorists is that poststructuralism foregrounds the central role of language in theorizing the relationship between the individual and the social world: "Language is the place where actual and possible forms of social organization and their likely social and political consequences are defined and contested. Yet it is also the place where our sense of ourselves, our subjectivity, is constructed" (Weedon, 1997, p. 21). Poststructuralist theories of language build on, but are distinct from, structuralist theories of language, associated predominantly with the work of Saussure (1966). For structuralists, the building blocks of language structure are signs that comprise the signifier (or sound-image) and the signified (the concept or meaning). Saussure asserted that neither the signifier nor the signified preexists the other and that the link between them is arbitrary. He saw the linguistic system itself as guaranteeing the meaning of signs, and each linguistic community as having its own set of signifying practices that give value to the signs in a language. Poststructuralists, in contrast, take the position that structuralism cannot account for struggles over the meanings that can be attributed to signs in a given language. The signs /feminist/, /research/, /SLA/, for example, can have different meanings for different scholars within the same linguistic community. Thus, while structuralists conceive of signs as having idealized meanings and of linguistic communities as being relatively homogeneous and consensual, poststructuralists argue that the signifying practices of societies are sites of struggle, and that linguistic communities are heterogeneous arenas characterized by conflicting claims to truth and power.

Changing Conceptions of Learning

With reference to theories of learning, many traditional paradigms in psychological research conceive of SLA as a primarily cognitive process. More recent work has attempted to investigate language learning as a socioculturally situated social practice (see Lantolf, 2000; van Lier, 2004; Zuengler & Miller, 2006). This research conceptualizes second language learning as relational activity that occurs between specific speakers situated in particular sociocultural contexts. Notions of the sociality of learning (Vygotsky, 1978) are particularly

important in this regard, in that they contest views of language learning as individual minds acquiring linguistic, or even sociolinguistic, competence. Learners are seen as members of social and historical collectivities, who appropriate the practices of a given community, rather than as individual language producers. Anthropologists Lave and Wenger (1991) argue that learning is an integral and inseparable part of social practice, as newcomers learn from old-timers in the performance of community practices. Their notion, "legitimate peripheral participation," represents their view that communities are composed of participants who differentially engage with the practices of their communities, and that this engagement or participation in practice constitutes "learning." They stress the importance of local analysis of communities, and point out that conditions vary with regard to ease of access to expertise, opportunities for practice, consequences for error in practice, and so on.

Identity on the SLA Agenda

Changing conceptions of the individual, language, and learning have helped to place identity on the SLA agenda. Many scholars (Ricento, 2005; Zuengler & Miller, 2006; Block, 2007a; Swain & Deters, 2007; Menard-Warwick, 2009) cite Norton's theorizing of identity (Norton Peirce, 1995; Norton, 2000) as central in framing contemporary understanding of identity and language learning. Poststructuralist theory, particularly that associated with Weedon (1997) and Bourdieu (1991), is central to Norton's theories of identity, which she presents as multiple, a site of struggle, and subject to change. Of central interest are the ways in which language learners understand their relationship to the social world, how that relationship is constructed across time and space, and how the learner understands possibilities for the future. Every time language learners interact in the second language, whether in the oral or written mode, they are engaged in identity construction and negotiation.

Norton's construct of "investment," which complements constructs of motivation in SLA (Dornyei, 2001), is inspired by the work of Bourdieu (1991), and signals the socially and historically constructed relationship of learners to the target language and their often ambivalent desire to learn and practice it. If learners "invest" in the target language, they do so with the understanding that they will acquire a wider range of symbolic and material resources, which will in turn increase the value of their cultural capital. While psychologists might ask, "To what extent is the learner motivated to learn the target language?" the identity theorist asks, "What is the learner's investment in the target language practices of this classroom?" A learner may be a highly motivated language learner, but may nevertheless have little investment in the language practices of a given classroom or community, which may, for example, be racist, sexist, elitist, or homophobic. There may also be important discrepancies between a language learner's conception of good teaching, and the practices of a given classroom. Thus, despite being highly motivated, a learner could be excluded from the language practices of a classroom, or perhaps resist certain classroom practices, and in time be positioned as a "poor" or unmotivated language learner. The construct of investment has sparked considerable interest and research in the field (McKay & Wong, 1996; Skilton-Sylvester, 2002; Pittaway, 2004; Haneda, 2005; Cummins, 2006; Potowski, 2007; Arkoudis & Davison, 2008; Norton & Gao, 2008).

An extension of interest in identity and investment concerns the imagined communities that language learners may aspire to join when they learn a new language. The term "imagined community," originally coined by Anderson (1991), was introduced to the language-learning community by Norton (2001), who argued that in many language classrooms, the targeted community may be, to some extent, a reconstruction of past communities and historically constituted relationships, but also a community of the imagination, a desired

community that offers possibilities for an enhanced range of identity options in the future. These ideas, inspired also by Lave and Wenger (1991) and Wenger (1998), are more fully developed in Kanno and Norton (2003) and Pavlenko and Norton (2007), and have been productive across diverse research sites (Carroll, Motha, & Price, 2008; Dagenais, Moore, Lamarre, Sabatier, & Armand, 2008; Kendrick & Jones, 2008). An imagined community assumes an imagined identity, and a learner's investment in the second language can be understood within this context.

There is now a wealth of research that explores the relationship between identity and language learning, testament to the fact that issues of identity and power are now central to theories of language learning and teaching. Key books include Norton (2000), Toohey (2000), Pavlenko and Blackledge (2003), and Block (2007a). Further, the award-winning *Journal of Language, Identity, and Education*, launched in 2002, ensures that issues of identity and language learning will remain at the forefront of research on SLA, applied linguistics, and language education in future years. As discussed in the next section, there is an increasing interest in identity categories in language learning, identity and resistance in language learning, and identity and digital language learning.

Key Directions in Identity Research

Identity Categories

While much research on language and identity explores the multiple and intersecting dimensions of learners' identities, there is a growing body of research that seeks to investigate the ways in which particular relations of race, gender, class, and sexual orientation, among others, may impact the language-learning process. Innovative research that addresses these issues does not regard such identity categories as "independent variables," but rather as sets of relationships that are socially and historically constructed within particular relations of power. Three key books, all published in 2009, exemplify interest in race, gender, and sexual orientation, respectively (however, see Norton, 2010, for a broader overview).

In the book on *Race, Culture, and Identities in Second Language Education*, edited by Kubota and Lin (2009), authors from diverse regions of the world address the extent to which race, racialization, and racism are relevant to second language learning and teaching. Of central interest are the ways in which Whiteness influences students' and teachers' sense of self, and how discourses of racialization, including colorblindness, influence the construction of language teacher and student identities. Kubota and Lin argue persuasively that issues of race have not been adequately addressed in the field, and that the colorblind perspective has important limitations. At the same time, they argue that the field should address racialized norms not only in relation to Whiteness, but in relation to the multiple and complex ways in which racism is practiced in diverse sites and communities.

With regard to gender, Menard-Warwick (2009) examines the ways in which the complex gendered life histories of Latin American immigrant adults in the USA shape their participation in both the English-language classroom and the education of their children. Although these adult immigrants saw themselves positioned in multiple ways by their community and by the larger society, it was gender identities that emerged as a key factor in their decisions to pursue English-language competence at particular times in their lives. Menard-Warwick found that different adults understood gendered practices in different ways, which depended on their unique histories and present circumstances. She also found that gendered discourses strongly influenced classroom practice, but that students did not engage with these discourses in uniform or consistent ways.

In a similar spirit, Nelson (2009) explores the extent to which sexual orientation might be an important identity category in the language classroom. Of central interest is the way

in which a teacher can create a supportive environment for learners who might be gay, lesbian, or transgendered. Nelson contrasts a pedagogy of inquiry, which asks how linguistic and cultural practices naturalize certain sexual identities, most notably heterosexuality, with a pedagogy of inclusion, which aims to introduce images as well as experiences of gays and lesbians into curriculum materials. Nelson's approach can fruitfully be applied to other issues of marginalization, helping learners to question normative practices in the target culture into which they have entered.

Identity and Resistance

The relationship between language, identity, and resistance has become a compelling and fruitful area of research in language education. While larger structural constraints and classroom practices might position learners in undesirable ways, learners, with human agency, can resist these positions in innovative and unexpected ways, as the following two examples illustrate. In exploring what he calls the subversive identities of language learners, Canagarajah (2004) addresses the intriguing question of how language learners can maintain membership of their vernacular communities and cultures while still learning a second language or dialect. He draws on his research with two very different groups, one in the USA and the other in Sri Lanka, to argue that language learners are sometimes ambivalent about the learning of a second language or dialect, and that they may resort to clandestine literacy practices to create "pedagogical safe houses" in the language classroom. In both contexts, the clandestine literacy activities of the students are seen to be forms of resistance to unfavorable identities imposed on the learners. At the same time, however, these safe houses serve as sites of identity construction, allowing students to negotiate the often contradictory tensions they encounter as members of diverse communities.

The second example of identity and resistance is drawn from Talmy (2008), who investigated the multiple ways in which English-language learners in a Hawaiian high school resisted being positioned as "ESL students" in their dedicated ESL classes. While the school-sanctioned ESL student was expected to bring required materials to class, read assigned fiction, do bookwork, meet assigned dates, follow instructions, and work for the full class session, resistant ESL students engaged in a wide variety of oppositional activities, including leaving materials "at home," talking with friends, and playing cards. Talmy describes how ESL teachers began to change their practices in response to the resistance of their students, necessitating a shift in teacher identity. He also notes that the students' actions paradoxically turned the ESL program into a program that did little to meet the students' learning or educational needs.

Identity and Digital Language Learning

The affordances of digital technology have been investigated by a number of scholars interested in identity and language learning, and this trend will likely strengthen in future years. Lam (2000), for example, found that immigrant youth in the USA were fashioning identities for themselves in computer-mediated transnational networks as multilingual, multicompetent actors. In so doing, they were able to provide for themselves new language-learning opportunities that seemed denied to them in their school, in which they were stigmatized as immigrants and incompetent language users. In another part of the world, White (2007) examined two distance language-teaching programs in Australia, both of which were responding to the need for a wider range of foreign languages in schools. She concluded that as innovations in distance learning and teaching expand, it is imperative that the field find ways of addressing the philosophical, pedagogical, and professional issues that arise, and that issues of identity, for both teachers and learners, are significant

factors in each of these domains. The interest of many emerging scholars in what digital technologies may mean for language learning and learner identities will no doubt add to our increased understanding of this relationship in the future.

Conclusion

In 1997, Firth and Wagner argued persuasively that the field of SLA needed to expand its ontological and empirical base in order to become more theoretically robust. The vibrant research in identity and SLA demonstrates convincingly that language acquisition is not only a complex cognitive process, but also a profoundly social practice.

SEE ALSO: Critical Applied Linguistics; Cultural Awareness in Multilingual Education; Multilingualism and Identity; Poststructuralism; Subjectivity

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Ideology in Research Methodology

LUIZ PAULO MOITA-LOPES

Any consideration of research methodology necessarily involves accounting for ideological issues. This is so because research is carried out and reported through discourse, and discourse—that is, how we go about the world using language—is inseparable from ideology (Volosinov & Bakhtin, 1929/1981; Fairclough, 1989): "the word is an ideological phenomenon *par excellence*" (Volosinov & Bakhtin, 1929/1981, p. 31) in the sense that it brings about particular meaning effects. Therefore, research discourse is also ideological. Ideology, however, has been defined differently in philosophy (empiricist, idealist, Marxist, among other traditions) with a view to accounting for how we produce ideas in our minds on the basis of external objects and to explaining false consciousness, in some theoretical perspectives (Hawkes, 1996). Volosinov and Bakhtin's (1929/1981) argument that we cannot escape ideology is, however, illuminating here, suggesting that our ideas, values, and views of the world are intrinsic to discourse, to how we interactionally position ourselves in the world vis-à-vis others, and, accordingly, to the choices we make in the world, including, consequently, the object of our research choices, to how we design ways of producing new knowledge.

Or, as Volosinov and Bakhtin (1929/1981, p. 95) point out: "in fact, we do not pronounce or hear words, but truth or lies, good or bad, important or trivial, pleasant or unpleasant things etc. The word is always impregnated with content or with ideological or experiential meaning." Consequently, when we utter words in the world, we speak from a particular position, which places us ideologically in social life, bringing about particular semantic effects: "it may help to see ideology . . . as a particular set of effects within discourses" (Eagleton, 1991, p. 194). If knowledge production in the social and human sciences is a way of constructing social life while trying to understand it, knowledge production is therefore a social construction or a way of acting in the world, which reflects particular ideologies, including the traditions of investigation within which researchers have been educated or which they have embraced.

In spite of the fact that, in many contemporary research circles in the social and human sciences, the Foucauldian position that "truth is of this world" (Foucault, 1979, p. 12) is a truism, and that researchers operate within "regimes of truth" (Foucault, 1979, p. 12), which legitimate specific particular procedures and practices, the equation of truth finding with knowledge production still guides much of the work done in these fields, including the area of applied linguistics (AL). This is so because, like any area of research in the social and human sciences, the field of AL borrowed the idea of research and the principles that guide such an endeavor from the positivistic perspectives of the natural sciences. Nevertheless, opposing the positivistic tradition, the interpretativist view is becoming more and more relevant in the area of AL, as will soon be shown. What is discussed here are the ideologies which underlie both research methodology traditions. It must be said that the issues involved in these particular "regimes of truth" are presented in a necessarily simplified manner. They involve much more complex issues in the philosophy and sociology of science than can actually be accounted for here. The aim is to draw as clear a picture about them as possible so that the underlying ideologies can be uncovered. Also, researchers in their practices will not necessarily fit either of those two positions neatly.

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Those two traditions reflect an old philosophical debate, which started out in antiquity: the nomothetic and the hermeneutic modes of inquiring about the world (Ochsner, 1979). This debate is related to two different views about whether the social world exists independently from our knowledge of it or not. In the nomothetic tradition, truth finding is constitutive of the research endeavor. As mentioned above, this tradition is what has been conventionally called positivistic research, that is, it has a deep concern with constructing new knowledge which is founded on the idea that the researcher is necessarily separated from the object of his or her investigation: a view which is contrary to the Foucauldian idea about truth. The positivistic position therefore characterizes what is thought of as value-free or ideology-free research.

Research is then constructed on the crucial principle that it is possible for the researcher to produce objective, replicable, and falsifiable knowledge. Statistics are therefore fundamental in determining the validity of findings since particular statistical tests which are adequate to specific research designs can demonstrate the significance level of results and can, so to speak, determine how truthful they are. This particular ideology as regards research methodology is still prevalent in a lot of what is called AL research due to the deep influence positivism has exerted across the academic world.

In this tradition, it is the observable experience of the fact that matters and such a position implies particular methodological procedures to approach the object under investigation. In the positivistic view, the social world variables have to be standardized and controlled and as such they can be statistically dealt with so that findings, resulting from inferential statistical tests, can be generalized to other contexts. "Reality," as it were, can be reduced to a cause and effect relationship, which becomes observable by means of standardization processes and through hypothesis testing in experimental research. What matters is objectivity since the social facts resist our will (Hughes, 1990). Obviously, the positivistic researcher is aware of the difficulties of constructing research designs which are value-free when dealing with human beings and social facts.

That is the reason why the investigation methodology includes procedures that try to account for this difficulty: manipulating variables, hiding a tape-recorder, concealing the research objective from the interviewee, and so forth, so that one can find "truth," so to speak, as it really is. However, as will be discussed below, "when the object of observation is human behavior the problem is endemic" (Cameron, Frazer, Harvey, Rampton, & Richardson, 1992, p. 7). Probably, because it is inspired in the natural sciences and, therefore, in the power they have traditionally had in research funding bodies, this view of research in many parts of the world is very frequently considered the legitimate manner of knowledge production or, in fact, what research entails. In AL, Hatch and Farhady (1982) well exemplifies the positivistic tradition.

Other researchers, nevertheless, have imagined research through an episteme that is conceptually very far from the kind of positivistic AL research methodology briefly mentioned above, although they are also interested in empirical findings. These researchers have been operating within an interpretativist framework in which it is impossible to separate the researcher from the object of his or her investigation. In fact, it is not desirable to do so. The nature of the investigation object in the social and human sciences is so different from that of the natural sciences that it does not make sense to use natural sciences research procedures in the social and human sciences. This is particularly relevant because researchers and their views of the world are understood as a constitutive part of the socially constructed research object under scrutiny.

The nature of the social world is of such complexity that it is necessary to discover adequate means and procedures to do research in the social and human sciences. What is specific to the social world is the fact that the meanings that characterize it are constructed by human beings, who interpret and reinterpret the social world around themselves or the

social object under investigation, constructing therefore not a single "reality" but several. That is to say that the fact that human beings are language users makes it inadequate to use natural sciences procedures to do research in the social and human sciences:

> unlike physical phenomena, social actors give meaning to themselves, to others and to the social environments in which they live. They can describe what they do, explain and justify it, give reasons, declare their motives, decide upon appropriate courses of action, try to fit means to ends, and so on. (Hughes, 1990, p. 96)

That is to say, they themselves and the world in which they live are discursively and socially constructed. Research in this field has to account for the plurality of voices in action in the social world, and has to take into account that this fact involves issues related to ideology, power, history, and subjectivity. That is not to imply that positivistic research is ideology-free, since one cannot escape ideology in any discursive action, as pointed out above, but in the interpretativist research mode ideology is considered intrinsic to the research act. In this tradition, it is not possible to ignore participants' views of the social world to investigate it. On the contrary, these very views are what matters since the social world is believed to be constructed by human beings.

Instead of statistical findings resulting from inferential statistics, what is paramount in the interpretativist tradition are the meanings provided by different participants in the research operation, which can together provide a possible interpretation to what is being investigated. Instead of objectivity, the focus is on intersubjectivity. It is the participants' views that construct the social world, which depends on human beings for its existence. What characterizes the approach to what is being investigated is not the personal observable experience, but rather an indirect approach through the interpretation of the several meanings that constitute the research object, deriving from different research instruments (interviews, audio and video recordings, field notes, introspective protocols, and so forth), which allow for data triangulation.

In this tradition, generalization has to be understood from a different perspective since it does not derive from an observable cause. It is generalization that is constructed intersubjectively and that grants privilege to specificity, contingency, particularity, and situatedness. It is believed that it is impossible to control the variables, to use a positivistic category, which characterize human beings and the social world, so that one can demonstrate the cause of an observable fact. Standardization of variables is understood as constructing a distorted "reality," produced by the very investigation procedures that bring about research results. Such results are of no interest because they do not account for the multiplicity of meanings people attribute to the social world when they construct it.

What matters consequently is intersubjectivity: the meanings which we construct, disrupt, and reconstruct when we interact with one another. It is intersubjectivity that allows us to get closer to what we are investigating by comparing the meanings participants of the social world give to what is under scrutiny. The focus is on process features of the social world instead of on a standardized product, as in the positivistic mode. Ethnographic methodologies (van Lier, 1988; Rampton, 2006) can well exemplify this tradition in AL.

What has been contentious here in these two traditions are different coexisting paradigms that operate within distinct views of the world or ideologies: the possibility of separating human beings, their ideas, feelings, values, political positions, and so forth, from the act of doing research and, in fact, the desirability of doing so. Therefore, the two different kinds of metaknowledge discussed with respect to the research operation in AL imply different ideologies or produce different semantic effects.

Another insightful way of looking into these two research methodology ideologies is by comparing modernist and postmodernist theorizing. While modernist theories may be

equated with positivistic principles, it could be said that postmodernist theories may be related to the interpretativist position. Modernist research focuses on the construction of big generalizations or narratives which can explain what is going on in the world by appealing to totality, universality, homogeneity, and essentialism; therefore, statistical procedures that may collaborate with constructing big narratives by amassing a lot of statistical data and by ignoring qualitative aspects of the investigation make a lot of sense. Postmodernist theories, on the other hand, center on plurality, contingency, heterogeneity, and situatedness, which implies that what matters are the meanings and discourses that people resort to in order to live life in particular circumstances or contexts.

It is no wonder that what is of concern within postmodern theories is the construction of small narratives which help to explain life locally. This view is therefore well aligned with ethnographic principles, to keep to the research methodology mentioned above, since they provide methodological means to deal with particularity, situatedness, and local contingency, as well as with the social constructionist nature of social life. That is not to say, however, that interpretativist research is a corollary of the postmodernist theories that have recently shaken the humanities and the social sciences, since the interpretativist tradition is part of the old hermeneutic mode of inquiry which gained new strength in the 20th century long before postmodernist theories came about. However, because of its concern with particularity, locality, situatedness, and contingency, this type of research seems to capture the postmodernist view of the world as being constructed by discourse locally, here and now, rather than being explained in terms of cause-and-effect relationships that result from standardized variables and that allow for big narratives and generalizations, typical of a positivistic perspective.

The criticism that postmodernist theories have raised in connection with the so-called modernist view of the social subject as ahistorical, homogeneous, and essentialized, and therefore ignored, have also been crucial in attempting to redescribe who the subject of research in AL is. This trend has introduced the need to retheorize the subject in AL in terms of gender, sexuality, race, social class, and so forth, drawing attention, as a consequence, to the subject's heterogeneous, fragmented, and performative nature. These two issues may be thought of as the discursive and the somatic turns in AL.

For many contemporary applied linguists (Pennycook, 2001; Rampton, 2006; Moita-Lopes, 2006a), there is a need to retheorize AL in relation to recent social changes we are experiencing in society (e.g., reflexivity: Beck, Giddens, & Lash, 1994; time–space compression: Castells, 1999; fluidity: Bauman, 1992), which make the use of modernist theorizations of society and of our actions in them nonsensical or meaningless. Accordingly, modernist research ideologies have been questioned since they seem to be inadequate to account for such changes and for the necessity of redefining commonly used theoretical constructs in the field such as language (Makoni & Pennycook, 2006); identity (Moita-Lopes, 2006b); speech community (Rampton, 2006), for example. There is a demand for an AL which is tuned in with the zeitgeist of our times, which cuts across the humanities and the social sciences in general.

In particular, there is a concern, in many circles, with the development of an AL that aims at thinking beyond the given traditional epistemological limits of this field. Such an AL is specially interested in the production of "a narrative which changes the present," as the cultural theorist Venn (2000, p. 2) points out, or in the construction of alternatives for the present, based on the understanding that many of the narratives we were told about who we are or about what the world is like are in crisis or are being seriously questioned. This perspective purposefully blends in a concern with doing research and doing politics so that in the very research design the possibility of social reinvention or of considering new alternatives for our lives is directly dealt with: an issue which seems to be paramount in applied research. This point is particularly relevant if it is true, as

mentioned above, that "truth in the social sciences [and in the humanities] could be refigured in terms of regimes of truth and of instruments for instituting the particular forms of sociality which theory theorizes" (Venn, 2000, p. 4).

There is still a last point which emphasizes the need to see ideology as intrinsic to the research operation. This is an issue raised by the sociologist Boaventura de Sousa Santos (2001, p. 18): What happens to a world in which "'reality' seems to be definitely ahead of theory?" The contingency, the rapidity, and the unexpected events of contemporary life have shown that practice is more relevant than theory in our times or that "theory is practice under another name" (p. 19). Within these conditions, it is impossible to claim or to keep to an analytical or to a theoretical perspective. This position questions the difference between theory and practice: a very cherished dichotomy in the field of AL, which constituted one of its tenets for a long time, particularly because of its relationship with the positivist need of "critical distance" from the object of investigation.

If such a difference does not make any sense anymore, what is necessary is to say "no" to the ideal of "critical distance and acknowledge the necessity of continually searching for critical proximity" (Santos, 2001, p. 19): a vital concern in applied studies. Such proximity must go in the direction of those research participants situated in social practices in which researchers operate: a fundamental ethical issue. This is a point which is related to the question already raised that the researcher is intrinsically involved with the knowledge he or she produces: "knowing, being and desiring are seen to relay each other" (Venn, 2000, p. 15) in the act of knowledge production. Instead of placing AL on a very clear basis from which to work, this position emphasizes the need of thinking of research in this field as a problematizing practice (Pennycook, 2001), in which AL is understood as an area of investigation being continually reconstructed and anchored on unstable and movable grounds.

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Iedema, Rick

THEO VAN LEEUWEN

Rick Iedema (1954–) is a discourse analyst and semiotician whose work in health communication, organization studies, and organizational semiotics has made important and innovative contributions to discourse analysis and social semiotics as well as to the fields with which his research has been primarily occupied. He has played a prominent role in introducing discourse analysis in organization studies and health communication, and continues to publish in international journals of discourse analysis as well as in medical journals and journals of organization studies. His earlier work, which used detailed linguistic and multimodal analysis to shed light on organizational interaction as well as on media discourse (Iedema, Feez, & White, 1995) and the construction of reality in documentary film (Iedema, 2001a) is still widely cited, and his concept of "resemiotization" (Iedema, 2001b) was highly influential in shifting the focus from textual analysis to the kind of combination of textual analysis and ethnographic observation that characterizes more recent work in social semiotics, such as the work of Kress and Jewitt (e.g., Kress et al., 2005). His later work became on the one hand increasingly interventionist and consultative, focusing on improving hospital communication, and thereby patient care, but also continued to develop his theoretical and methodological outlook, with an emphasis on combining the microanalysis of face-to-face interactions and documents with the macroanalysis of contemporary organizational practices; and on the aims and methods of discourse analysis in a time when stable organizational structures, resulting in predictable textual patterns, make place for instability and constant change, in organizational structures as well as in the discursive practices that realize them.

Iedema's concept of resemiotization (Iedema, 2001b) is indebted to Bernstein's concept of "recontextualization" (e.g., Bernstein, 1990) as well as to Bruno Latour's account of the creation of facts in science (e.g., Latour, 1990), in which scientists' intuitions transform into experimental practices which, in turn, transform into generalizations that acquire the status of facts. However, Iedema sees resemiotization as a textual practice that is fundamental in creating organization, a practice of "writing order to structure work" (2003a: 175). The discourses that structure organization, he argues, are first negotiated in face-to-face meetings, then resemiotized as authoritative written documents, and finally enshrined in work practices, or even in bricks and mortar. His study of the planning of a new health facility is a key example. Meetings between the architect planners, bureaucrats, and future users tentatively move toward a sense of agreement, in which some voices, and some interests may be marginalized or silenced. These are then transformed into written documents which are not only more formal and general but also more authoritative and non-negotiable than the spoken discourses which they resemioticize. Grammatical intricacy (e.g., "welfare workers working with students") changes into lexical density (e.g., "student welfare workers"), qualifiers become classifiers and are no longer negotiable. And tentative formulations (e.g., "Um, but yes basically we do want it to be kept separately, so that eh the other patients don't get sort of affected by people who were brought in") become authoritative and imperative directives ("the patient admission area . . . needs to allow discrete transfer of patients"), and then architect drawings, which are even less negotiable, as by this time significant resources have been committed (Iedema, 2003a: 144), In this

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way Iedema places the characteristic differences between speech and writing described by Halliday (1985) in their social and historical context, explaining them, rather than only describing them. As speech becomes writing, a "difficult set of interactions" changes into "an organizationally productive outcome: the architect planner has been able to produce a planning report with designs and a tender for the builders that got signed off by all stakeholders" (Halliday, 1985, p. 145).

The concept of resemiotization also includes broad changes in the semiotic landscape, for instance, the contemporary move towards visualizing things that were formerly done with words only (Iedema, 2003b). As an example, Iedema shows how Apple, in 1992, provided "getting started" instructions for the buyers of a new computer in the form of a booklet couched in imperative language, with bolded warnings ("**Important!**"), and with illustrations that visually elaborated written descriptions. By 1999, this had become a fold-out brochure in which description of the computer's features was only visual, in which text and image were complementary rather than rephrasing each other, and in which the imperative nature of the writing was downgraded and the "importance" of warnings indicated by central location in the picture, rather than verbally. As in the case of the hospital-planning meeting, Iedema said, such resemiotizations should be studied as processes. Discourse analysis should have a historical dimension, even in the case of more long-range histories, such as the histories of genres ("resemiotization enables us to pose 'supra-logogenetic' questions about how documentaries or displays themselves come about as semiotic constructs through the deliberations of writers, filmmakers, planners and builders," Iedema, 2003b, p. 49) or the history of writing itself, as Iedema shows in an overview of the history of writing as a history of organizational control (Iedema, 2003a, chap. 5). Finally, resemiotization often occurs simultaneously in different fields, along the lines of quite similar "schemes." Abstract modernism, for instance, manifested itself not only in art, but also in magazine layout, home decoration, and so on (Iedema, 2003b, p. 44). This way of combining the "objective-analytical" analysis of semiotic artifacts or events with the—theoretically underpinned—study of their historical genesis is one of Iedema's key contributions to social semiotics.

Iedema's *Discourse of Post-Bureaucratic Organization* (2003a) is both the most complete statement of the earlier stage of his work, and the beginning of his later work. It underpins his approach to discourse analysis theoretically, methodologically, and historically, with a chapter on the history of organizational discourse from early Mesopotamian writing to Fordism and the recent "post-bureaucratic" turn away from a focus on the alignment and control of unruly workers to engagement, enthusiasm, and initiative as driving forces for inspiring workers and organizing the workplace. Along with an account of resemiotization, it discusses the "symbolic violence" which can occur in face-to-face meetings, as the voices and interests of less powerful participants are marginalized or silenced. And it contains an important account of medical record keeping and the consequences of replacing paper-based records with electronic patient care information systems, which change individual, case-based records with an "externally regulated scriptural regime" (Iedema, 2003a, p. 166) that forces clinical practitioners to use predetermined categories, functions to link different stakeholders together, even extra-locally, and allows "evaluation, calculation and intervention" (p. 150) on a hitherto impossible scale.

The concluding chapter of the book signals the second phase in Iedema's work, a move away from a tradition of discovering stable regularities and patterns in texts, and from taking up an objective outsider's stance, whether descriptive or critical, toward a "more volatile, political, confronting and involved" discourse analytical practice, which therefore "may not always translate into products that are amenable to accepted notions of academic purpose, output and identity" (Iedema, 2003a, p. 204). From here on Iedema focused on

large-scale research projects aiming not only at analysis and critique, but also at improving discursive practices that tend to be conducted in ways that bear risks for hospital patients, such as "handovers" between ambulance drivers and emergency doctors, the interactions and procedures relating to dying patients in intensive care units, and the open (honest) disclosure of "adverse events," for instance to the family of patients who have died as the result of such events. While continuing to focus on organization and communication, the question is now one of how the organization and communication of clinical work impacts on patients' safety and well-being, and also, increasingly, on the role of affect, both in internal communication, for instance in teams, and in the communication between clinicians or other hospital representatives and patients.

In this work Iedema's approach to discourse analysis changes, and no longer aims at discovering patterns and regularities, for instance the generic structure and use of language in paper-based medical records, but at finding "non-obvious traces" (Iedema & Scheeres, 2009). In an unstable environment, characterized by constant change, what matters, Iedema argues, is not to look for stable patterns, but to look for tensions that may either give rise to new solutions, or turn out to be symptomatic of problematic issues that need to be addressed. In other work, for example, the work on open disclosure, his research is primarily based on a thematic, rather than a linguistic or generic analysis of interviews with patients, supplemented with questionnaires, from which principles for improved disclosure are then extrapolated (Iedema et al., 2010). In yet other work (Iedema, Long, Carroll, & Lee, 2006), the researcher becomes a "video ethnographer," who records the everyday practices of clinicians and then engages them in a process of video reflexivity which allows potentially problematic processes that have become invisible as a result of habitualization to become visible, discussable, and open to change. A striking example is the story of a nurse who "was used to spend hours on the ward with a clipboard to rate clinician compliance with rigid personal-protective equipment and hand-washing rules," but now, in the video record of her everyday environment, saw "footage of clinicians examining patients' wounds and then leaning on the bed rail, transferring potentially infectious material to a place where other people could pick it up and carry it further again" (Iedema & Carroll, 2010, p. 74). In work of this kind, research is on the one hand "subjugated to the needs of practitioners," and yet also remains "based on well-established theoretical principles" (Iedema & Carroll, 2010, p. 73). Researchers engage clinicians in a dialogue that leads to common understandings and insights, and to changed practices. While recognizing the influence of Fairclough (1995), who first moved critical discourse analysis into the area of corporate culture and organizational discourse and first linked discourse analysis with social theory, Iedema distances himself here from the kind of critical discourse analysis that interprets and critiques institutional texts but does not lead to close engagement with the institutions and practices it criticizes or to developing strategies for change, and that does not acknowledge positive aspects of the new work order, such as worker involvement and increased accountability.

In this new work, Iedema acknowledges the need to "recognize the relativity in situated practice, including their own," and explicitly problematizes the balance between engagement and distance that is needed for self-reflexivity. But, while in earlier work (Iedema, 2003b), he uses close textual analysis, for instance, to criticize a television documentary for its selective focus on patients and doctors, and for backgrounding and marginalizing the point of view of hospital administrators, he now argues that the selectivity of the camera can be overcome by negotiation over "what to film, what footage to screen back, how to see the footage and what conclusions to draw from it" (Iedema & Carroll, 2010, p. 76), and moves away from the balance between text analysis and ethnography that can be found in other social semiotic work, such as the education research by Kress and his

associates (e.g., Kress et al., 2005). Iedema is well aware that his radically engaged approach to research may invite critique, but adamant that "the relativization and historization of practices, identities, knowledges and values" must go together with "the building of solidary relationships through transformation" (Kress et al., 2005):

> No doubt, the paradigm presented here challenges discourse analytical conventions much as it upsets social scientific expectations about appropriate methodologies, authoritative findings and generalizable outcomes. But if discourse analysis is to have relevance in the contemporary world, it will only do so if it can capitalize on its most significant achievements: the relativization and historization of practices, identities, knowledges and values, and the building of solidary relationships through transformation. (Iedema & Carroll, 2010, p. 82)

SEE ALSO: Discourse: Overview; Medical Discourse; Multimodal Communication: Overview; Multimodality in Workplaces

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Imaginary Words

PAUL MEARA

Imaginary words—sometimes also called pseudo-words, nonsense words, or nonce words—are strings of letters which resemble real words but do not actually exist as words in a specific language. Thus, 'shern' is a plausible letter string for English, but does not appear as a word in any of the standard dictionaries.

Imaginary words have been used in a number of experimental methodologies in applied linguistics, notably in yes/no vocabulary tests, in tests of inferencing the meaning of unknown words, and in tests of short-term memory skills in L2 learners (Meara & Jones, 1990; Beeckmans, Eyckmans, Janssens, Dufranne, & Van de Velde, 2001; Mochida & Harrington, 2006). Imaginary words are also sometimes used in psycholinguistic studies of word recognition, principally in lexical decision tasks. The discussion that follows will illustrate some of the factors affecting the construction of imaginary words in English, and some problems that arise when they are used as stimuli in experimental studies. The broad lines of the argument apply not just to English, but *mutatis mutandis* to other languages as well. There are, however, some special considerations that apply in languages which have more restrictions on their word structure than English does.

Imaginary words used in psycholinguistic studies need to be carefully constructed so that they do actually conform to the orthographic and phonological rules of the relevant language. Orthographic rules are generally easy to state: 'lbonk', for instance, is not an acceptable imaginary word in English because English does not allow lb- clusters in word initial position. Similarly, 'blijnd' is not an acceptable imaginary word in English because English does not code vowels with this letter sequence—in fact it does not allow -ij in any position. Likewise, English does not allow -yc or -tn in word final position, so these constraints would rule out imaginary words like 'headyc' or 'thatn'. The interaction between phonological considerations and orthographic ones are sometimes more difficult to deal with, and some important statistical patterns make possible words in English very unlikely. 'Klutt', for example, is a possible English word, but an improbable one: few English words begin with kl- and few end with -tt. The combination makes 'klutt' very easy to identify as an imaginary word.

In some of the early psycholinguistic studies in English, researchers adopted a somewhat cavalier attitude toward these rules, and assumed that it was sufficient to change a single letter in a real word to generate an acceptable imaginary word. Thus, 'book' might generate 'kook' by changing the initial 'b' for a 'k', 'crook' might generate 'clook' by changing the 'r' for an 'l', or 'cook' might generate 'couk' by exchanging an 'o' for a 'u'. This approach, though still widely used, is only partially successful. Changing single letters randomly fails to respect the distribution of letters in real words—swapping a 't' for a 'j' or 'k' in any word is unlikely to produce an imaginary word which looks convincing. Typically this procedure produces forms which bear a superficial resemblance to English words, but differ from real words in subtle ways. In the example above, 'kook' is only marginally acceptable as an imaginary word. 'K' is relatively infrequent in English words, so a word which contains two 'k's stands out. English also seems to have a preference for monosyllabic words not beginning and ending with the same consonant, and words with these characteristics are phonologically marked. Taken together these two features mean that

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'kook' deviates quite significantly from the norm of what an English word should look like, even though it is technically a possible word. Similar arguments apply to 'couk'—there are plenty of English words that begin with cou-, but they are all pronounced [kau] rather than [ku], and only a handful of them are monosyllables. 'Clook' is the best of these three items, but even this form is statistically unusual, as there are no real words in English that end in -look apart from 'look' itself.

A further problem with the change-one-letter approach is that not all positions within a word are equal, and they have different effects on readers. Letters at the beginning of a word seem to be much more salient than letters in the interior of a word. Altered letters within a word are often not noticed by readers, whereas they will often fail to recognize the original form of a word where an initial letter has been altered. Changes at the ends of words tend to be salient because the endings of words tend to be more regular and predictable than other segments. Changes here will stand out because they are statistically unusual.

Particular problems arise when we try to construct imaginary words that are longer than the examples above. Changing a single letter in a long word hardly ever produces a wholly acceptable imaginary word—'aliphant', 'elethant', and 'elephand' are all orthographically plausible in English, but readers tend to see them as variants or misspellings of 'elephant', rather than words in their own right.

Longer words also present problems because of morphological constraints. In English, it is possible to construct imaginary words by combining morphemes that do not normally appear together. For example, 'infradiction', combining infra- as in 'infrared' and -diction as in 'contradiction', seems to work, as does 'megamatic', combining mega- as in 'megaton' with -matic as in 'automatic'. Again, however, some care needs to be taken in combining morphemes which can be interpreted, even though they do not actually exist in common usage. 'Pyrostasis' probably does not exist as a word in English, but if it did, it would probably mean something to do with 'fire' and 'stability'. Pyro- is a Greek morpheme for fire, and -stasis is also a Greek morpheme meaning stability. Putting these two morphemes together gives you a form which is interpretable at some level by anyone who is at least passingly familiar with the way learned words are constructed in English. This is very different from the examples that we considered in the previous paragraph, where 'clook' provides no clues as to its meaning. One could argue that an advanced learner who claims to know the meaning of 'clook' is just wrong, but an advanced learner who claims to know the meaning of 'pyrostasis' is actually demonstrating some high-level knowledge of the way English morphology works. This suggests that data based on readings of imaginary words need to be treated with some caution.

A particular problem with using imaginary words with L2 speakers is that these subjects will often misread these items as real words that they know already. 'Leddy', for example, looks like a good imaginary word, but is sometimes read by L1 French speakers as 'lady', a high-frequency familiar form. Some particularly complex issues arise when we use imaginary words with speakers whose L1 stresses the consonant structure of words. Arabic is a good example of this. L1 Arabic speakers tend to confuse words like 'mountain' and 'maintain' and 'mention'. These subjects might be expected to react to imaginary word forms like 'moonten' or 'monteen' in a way that you would not expect to find in L1 speakers of French or German. In fact, the use of imaginary words as stimuli in experiments is more problematical than it looks at first sight.

Consider an experiment in which subjects are asked to read an L2 text and infer the meaning of a number of unknown words. A common practice here is to select a reading passage and to replace a number of real words with a set of imaginary words. This is generally done to ensure that none of the subjects being tested knows any of the target words. Thus, we might replace the form 'elephant' in the sentence *The elephant used its*

trunk to pull the bananas from the tree with 'aploquom', giving us *The aploquom used its trunk to pull the bananas from the tree*. Subjects are then required to infer the meaning of 'aploquom'. Assuming that the subject is familiar with elephants, there are two possible scenarios that we have to deal with. One scenario is that the subject doesn't know the word for 'elephant' in English, but can identify from the text that this is the intended meaning. This subject then infers that 'aploquom' might mean 'elephant'. This seems like a straightforward case of lexical inferencing—though it raises some awkward ethical issues about whether it is appropriate to teach subjects words that do not mean what they think they mean. The second scenario is that the subject already knows that 'elephant' is the name for this animal in English, and assumes therefore that 'aploquom' means something else. It could be the name of another animal with a trunk that likes bananas (some kind of monkey with an extended proboscis, perhaps), or it could be a special kind of elephant, but this raises the question of how 'aploquoms' differ from ordinary 'elephants'. This second case is clearly not a straightforward example of lexical inferencing.

In general, experimenters often assume that these imaginary words have no specific meaning, but this does not necessarily mean that they are not meaningful in other senses. In the case of 'pyrostasis', we have already seen that words with meaningful parts can sometimes have an implicit meaning that can be computed on the fly. It is often possible to assign imaginary words to specific parts of speech because of their morphology: 'miligrate', for example looks like it might be a verb, 'fluctual' looks like an adjective, and 'banderage' is probably a noun. Beyond this, some imaginary words are typically judged by native speakers to be more meaningful than others—largely because of their resemblance to other real words. Thus, real words in English beginning with gl- and a front vowel tend to

Table 1 A set of proper names which make good imaginary words for experimental studies

balfour	tooley	ralling	channing	dowrick
mundy	lauder	troake	attard	cordle
milne	lester	roscrow	trimble	gummer
mabey	bethell	wray	bundock	lorey
windle	scanlan	twose	martlew	wardle
jagger	pocock	perryman	mott	gurley
kitely	allard	werrell	lovelock	maidment
pardoe	wallage	noot	newbold	twining
braden	griffing	barnden	mingay	pallot
artigan	amiel	scobie	peebles	morphew
youde	kearle	condick	pilbean	seward
gamage	randle	todd	asslam	cunnion
maltass	greenaway	hallett	roy	jarvis
pegler	bamber	hackett	isted	lowry
heseltine	murtagh	hapgood	catling	hamp
shattock	rawling	candish	hurd	moffat
keir	hislop	scally	hubbard	walter
arnott	hyde	baldry	lampard	beamand
scudamore	weate	mabbitt	turley	buttle
milne	lomax	marriott	galpin	overend
venn	connery	pauling	perrin	swithin
hudd	mollet	kemble	stroud	garrick
limbrick	alden	widgery	rhoden	arbus
auner	ryan	hignall	gasson	peart
bartle	allaway	loveday	barmion	tebbit

be associated with light, whereas real words beginning with gl- and a back vowel tend to be associated with dark. We might expect imaginary words with these characteristics to have similar associations.

Table 1 provides a short list of imaginary words which address some of these issues. The items in this table are all names culled from the UK telephone directory. This provides a check that the item is indeed an acceptable form in English, and generally meets the phonotactic constraints of English (see also The Irvine Phonotactic Online Dictionary at www.iphod.com). The items do not have a commonly accepted meaning, though they may be familiar to some readers in the sense that they know a person with this particular name. For example, 'heseltine' was a minister in Mrs. Thatcher's government. This makes the form familiar to some people, and it may have some associations for readers who are aware of Heseltine's political views. It does not have any intrinsic meaning however. This property makes items of this sort good candidates for stimuli in experimental studies. Note, though, that using proper names will not work in other languages where naming conventions are stricter than they are in English.

In summary, imaginary words play a useful role in applied linguistic research, but their use is not always as straightforward as it seems at first glance, and some care is needed in the interpretation of research which uses them extensively.

SEE ALSO: Online Psycholinguistic Methods in Second Language Acquisition Research; Psycholinguistic Approaches to Vocabulary

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Immersion Education

ROY LYSTER AND FRED GENESEE

Immersion is a form of bilingual education that provides students with a sheltered classroom environment in which they receive at least half of their subject-matter instruction through the medium of a language that they are learning as a second, foreign, heritage, or indigenous language (L2). In addition, immersion students receive some instruction through the medium of a shared primary language, which normally has majority status in the community. School contexts where individual minority language students find themselves without any first language (L1) support and with a majority of native speakers of the target language do not qualify as immersion programs and are instead regarded as "submersion" classrooms. Immersion education and "content and language integrated learning" programs known as CLIL (see Mehisto, Marsh, & Frigols, 2008) can be regarded as similar variants of bilingual education insofar as CLIL, like immersion, aims to integrate content and language instruction. In practice, immersion programs include a wide range of languages, whereas English is the predominant L2 in CLIL programs. As well, while immersion programs view academic achievement and language development as equally important, CLIL programs can vary with respect to how much emphasis they place on acquisition of academic content through the L2.

Alternative models of immersion differ with respect to the grade level when the L2 is used for academic instruction, amount of instructional time taught using the L2, and the number of grades when academic subjects are taught in the L2. One can distinguish *early immersion* (beginning in kindergarten or grade 1) from *delayed* or *middle immersion* (beginning in grade 4 or 5) and *late immersion* (beginning in grade 7, or the initial grades of secondary school). Programs also differ with respect to the amount of instruction through the L2—in *early partial immersion* programs, only 50% of instruction is ever taught in the L2; in *total immersion programs*, all instruction for one or more grades is through the L2. Notwithstanding such variation, most immersion programs aim for (a) advanced levels of functional proficiency in written and oral forms of the L2, (b) normal levels of L1 development, (c) grade-appropriate levels of achievement in academic subjects, and (d) cultural pluralism through increased intercultural competence. An additional goal in many contexts is to promote active use of the target language beyond the classroom.

Immersion programs have been instituted in countries around the world for a variety of reasons. Some of these reasons are to promote national policies of bilingualism and multilingualism (e.g., French immersion in Canada, Swedish immersion in Finland, and Basque, Catalan, and Valencian immersion in Spain), national languages in countries with large populations of students who do not speak the national language (e.g., Estonian immersion for Russian-speaking students in Estonia), proficiency in important regional, world, or heritage languages (e.g., English immersion in Japan, Hebrew immersion in Canada), and the survival of languages at risk of extinction (e.g., Mohawk in Quebec).

Research has found that immersion students attain the same levels of achievement in all aspects of the L1 as students attending non-immersion programs, although they may experience short-term lags in literacy development during grades when the L2 is used as the exclusive language of instruction. They also demonstrate the same levels of achievement in academic domains as students in non-immersion programs. Likewise, immersion

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students attain advanced levels of functional proficiency in written and oral aspects of the L2 that is significantly superior to that of students who receive traditional L2 instruction for short periods each day. Their comprehension skills are generally greater than their production skills. Immersion students with more exposure to the L2 tend to achieve higher levels of L2 proficiency than students with less exposure whereas there is little, if any, difference in L1 achievement among students in different program models. In other words, more and earlier exposure to the L1 does not guarantee higher levels of achievement than less or later exposure to the L1. Evaluations have also shown that immersion programs are suitable for students with a wide range of background characteristics, including students with typologically similar (e.g., French and English) and dissimilar L1s and L2s (e.g., Japanese and English), students from different socioeconomic backgrounds, students with different levels of academic ability, and minority as well as majority cultural group students.

Second Language Development

Despite their impressive functional L2 proficiency, immersion students do not attain native-like expressive language skills, even after 10 to 11 years in the program. More specifically, L2 usage is often marked by lexical and syntactic transfer from the L1, restricted vocabulary and simplified grammar, and is non-idiomatic (e.g., Harley, 1992). In a large-scale study of the L2 proficiency of French immersion students in Canada (Harley, Cummins, Swain, & Allen, 1990), immersion students, in comparison to native speakers of French of the same age (i.e., 11–12 years old), performed as well on measures of discourse competence, but were clearly less proficient on many aspects of grammar, and especially with respect to verbs. They also performed significantly differently on all sociolinguistic measures. These findings have led to discussions of and research on whether the primary focus on content that characterizes immersion is necessarily the most effective way to promote L2 proficiency.

These shortcomings in L2 proficiency can be linked to initial conceptualizations of immersion pedagogy, which are now thought to have underestimated the extent to which the target language needs to be attended to. Many researchers now concur that for immersion and other content-based approaches to be effective, the instruction must be language-rich and discourse-rich. One way to include a greater focus on language in immersion is through form-focused instruction, which includes pedagogical techniques that draw learners' attention to form–function relationships in the target language (e.g., Spada, 1997). Form-focused instruction is usually embedded in meaningful tasks and, thus, differs in consequential ways from traditional grammar lessons that emphasize memorization of forms out of context. The distinction between form-focused and traditional grammar instruction is important in discussions of immersion pedagogy because, in spite of claims that immersion education entails language learning through content alone without any accompanying L2 instruction, a considerable amount of traditional grammar instruction has been observed in immersion classrooms, but with indeterminate effectiveness (see Swain, 1996).

In contrast, a series of quasi-experimental studies conducted in French immersion classrooms yielded variable but, overall, positive results for form-focused instruction designed to target linguistic features known to be problematic for L2 learners of French: perfective and imperfective aspectual distinctions (Harley, 1989), conditional mood (Day & Shapson, 1991), second-person pronouns (Lyster, 1994), and grammatical gender (Harley, 1998; Lyster, 2004a). In a review of these studies, Lyster (2004b) found that the most effective instructional treatments were those that were more form-oriented than meaning-oriented. Meaning-oriented tasks, such as the creation of childhood albums and the design of futuristic space colonies, were found to be similar to other types of content-based activities

routinely encountered in immersion and, thus, were less effective at changing students' use of accessible and recalcitrant interlanguage forms than were form-oriented activities designed to draw attention to the structural properties of target forms in the context of role plays or language games.

Research into immersion pedagogy (e.g., Allen, Swain, Harley, & Cummins, 1990) calls for a less incidental and more systematic instructional approach to ensure continued language growth in the case of lexical and grammatical development alike, yet with necessary differences between vocabulary and grammar instruction. A less incidental approach to vocabulary instruction is called for that goes beyond techniques that only facilitate comprehension and that also includes those that develop awareness of the structural and generative properties of words. In the case of grammar instruction, a more focused approach is also warranted, but with less decontextualized analysis of the target language in terms of its structural parts, and more systematic reference to form/meaning mappings in the target language during meaningful interaction and content-based instruction. The need for somewhat different approaches is called for in light of what teachers are currently doing as a result of the overriding nature of content-based instruction. That is, because much content instruction is lexically oriented, teachers are naturally inclined to focus on vocabulary more for the purpose of comprehension than for drawing explicit attention to the formal and generative properties of words. At the same time, because content instruction and its lexical orientation do not readily bring grammatical issues to the forefront, teachers are more inclined to do so either incidentally or in a decontextualized manner. Yet, for students to be in a better position to reap the benefits of learning their L2 through content, researchers recommend less teaching of the formal properties of grammar out of context (e.g., memorizing verb paradigms and parsing sentences) and more attention to form–meaning connections in the context of content-based instruction.

A counterbalanced approach to immersion pedagogy integrates both form-focused and content-based instruction across the curriculum in complementary ways that interweave opportunities for instructional input, student production, and classroom interaction. In terms of instructional input, immersion teachers can draw on a gamut of techniques that range from those designed to facilitate comprehension of subject matter to those designed to make language features more salient through noticing and awareness activities. In terms of student production, immersion teachers need to ensure a range of opportunities that vary from content-based tasks designed to promote the use of the target language for academic purposes, to practice activities designed to promote the proceduralization of target language forms that tend otherwise to be avoided, misused, or unnoticed. In terms of classroom interaction, teachers have a range of instructional techniques at their disposal that vary from the use of implicit feedback, such as recasts that scaffold interaction in ways that facilitate students' participation, to feedback in the form of prompts and other signals that push learners beyond their use of recalcitrant interlanguage forms.

At-Risk Students: The Case of Reading Acquisition

Despite evidence of the success of immersion for students in general, there is ongoing discussion of the suitability of immersion for students who face academic difficulties (e.g., Genesee, 2007). In fact, there has been little investigation of individual differences in achievement among immersion students and, in particular, students who experience academic difficulties related to reading. Competence in reading is critical for academic success, especially beyond the primary grades when students are expected to master increasingly complex and abstract academic subject matter and skills presented through written text. Reading is equally important in immersion. Despite the overall success of immersion

students with respect to reading achievement, there is a high rate of attrition from immersion programs due, in part at least, to reading difficulty (e.g., Obadia & Thériault, 1997), but we have little understanding of why some immersion students struggle when learning to read. Understanding individual differences in reading achievement is critical for determining the suitability of immersion for students who might experience academic difficulty because of reading difficulties and, as a result, withdraw from the program. A better understanding of reading achievement among immersion students, especially in the primary grades, would make it possible for early identification of those at risk for reading difficulties and for planning differentiated instruction that could eliminate or at least reduce the academic challenges they face as a result of reading difficulties. Research on monolingual students has shown that early identification and early targeted intervention can maximize response to intervention and help prevent reading difficulties altogether (e.g., Scanlon, Gelzheiser, Vellutino, Schatschneider, & Sweeney, 2008). These issues are particularly important in communities, such as Quebec and Estonia, where the target language is critical for communication in the larger community.

Research conducted in Canada on students in early French immersion programs indicates that students who experience difficulty learning to read in immersion are also likely to experience difficulties in a non-immersion program (Genesee & Jared, 2008; Erdos, Genesee, Savage, & Haigh, 2011). This research has also expanded our understanding of struggling L2 readers in ways that are useful for classroom practice. To be specific, a critical component of learning to read is word decoding and, not surprisingly, the most prevalent difficulty faced by students with reading difficulty, either with respect to single word reading or text reading, is decoding. It has been found that struggling L2 readers, like struggling L1 readers, have particularly poor phonological awareness skills and letter-sound knowledge which, in turn, are correlated with poor decoding skills (August & Shanahan, 2006; Erdos et al., in press). Research has also shown that the word-reading skills of struggling L2 readers, like those of struggling L1 readers, improve significantly following explicit phonics and phonological awareness instruction. Moreover, students with good phonological awareness skills and letter-sound knowledge in the L1 also have good phonological awareness and letter-sound knowledge in the L2. In fact, the phonological awareness skills and letter-sound knowledge of kindergarten students in their L1 can predict their L2 phonological awareness, letter-sound knowledge, and decoding skills up to three years later (Erdos et al., 2011). It is likely that the magnitude of these correlations is related to the similarity between the two languages (French and English in the case of these studies), and smaller crosslinguistic correlations might be found in the case of typologically different languages, such as English and Chinese, or English and Hebrew, for example.

Although less extensive, the available evidence on reading comprehension indicates that reading comprehension difficulties in an L2 are similar to those experienced by L1 readers (Bishop & Snowling, 2004; Erdos et al., 2011). Both types of struggling readers have poor decoding skills. They also have weaknesses related to oral language, including both semantic and syntactic aspects of language, underlining the importance, noted earlier, of optimizing the oral language development of immersion students. This is especially important during the early grades in order to enhance reading comprehension skills and academic achievement later on. Considerably more research is needed into this aspect of reading in order to specify with certainty the exact nature of the language weaknesses of struggling readers.

The above findings have important implications for educational policy and practice. From a policy point of view, they argue for policies that are inclusive; that is to say, policies that do not preclude or discourage students who face academic difficulties related to reading from participation in immersion. Such policies are also recommended on the grounds

that the components of reading that pose difficulties for struggling L2 readers (i.e., phonological awareness and letter-sound knowledge for decoding along with oral language competence for text comprehension) are fundamental components of learning to read that all learners must master. Moreover, teaching such skills falls within the purview of classroom instruction. Addressing the needs of struggling L2 readers within the context of classroom instruction is a matter of planning differentiated instruction that reflects individual students' strengths and needs with respect to the critical foundation skills that underpin reading (i.e., phonological awareness, letter-sound knowledge, and oral language competence). Individual students' strengths and weaknesses can be assessed in the L1, before students have acquired proficiency in the L2, because of the strong crosslinguistic correlations that have been found. In this way, it is possible to identify and provide individualized intervention for students who are at risk for reading difficulty early on in immersion.

Once identified, immersion students who demonstrate persistent difficulty or failure to master the targeted skills (especially the foundational skills of phonological awareness and letter-sound knowledge) despite individualized instruction would then be recommended to a learning or reading specialist who, following appropriate further assessment, would provide more individualized, extended intervention. Such students might, in fact, have a specific reading impairment which would qualify them for specialist services in some educational districts. Another important implication of reading research findings for immersion classrooms is the importance of planning systematically, as noted earlier, for early oral language development that will support literacy and academic achievement in the higher grades. Thus, a comprehensive approach to early reading instruction in immersion, one that aims to meet the needs of all students, should include a focus on language proficiency along with a focus on the foundational skills that support reading acquisition.

Conclusions

Extensive research has shown that L2 immersion programs in their varied forms are effective in achieving advanced levels of functional proficiency in an L2. At the same time, participation in immersion does not jeopardize students' L1 development or academic achievement despite the fact that students receive less language and academic instruction in the L1 than students in non-immersion programs. While the overall content-based approach which is the hallmark of immersion has proven effective in developing high levels of communicative ability, ongoing research has highlighted the advantages of pedagogical interventions that integrate a greater focus on language into subject-matter instruction. Research on individual differences in L2 reading acquisition indicates that struggling readers in immersion are likely to experience the same difficulties in a non-immersion program and, moreover, that the difficulties they face entail the same foundational skills that all students must master in order to read with fluency and accuracy. With its variations in grade-level entry point, target languages, and academic subjects associated with each target language, immersion education is a flexible form of bilingual education. It will continue to evolve as it incorporates relevant research findings about effective instructional practices and develops differentiated instruction to respond to individual learners' needs in increasingly diverse student populations.

SEE ALSO: Bilingual/Immersion Teacher Education; Content-Based Language Instruction; Content and Language Integrated Learning; Form-Focused Instruction; Immersion Programs; Integration of Language and Content Learning

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Immersion Programs

SIV BJÖRKLUND

Language Immersion

As a term, *immersion education* can be traced back to the 1960s and to Canada, where a new, intensive language education program model showed that young majority English speakers gained functional mastery of a new language in a French immersion program at no cost to their first language development (Lambert & Tucker, 1972). Since then, the immersion method of learning a language among students who mostly have no personal regular bilingual family contacts to fall back upon has awakened worldwide interest. Consequently, language immersion is used today as an umbrella term for many types of bilingual programs in a variety of linguistic environments. Sometimes the term immersion is misused for transitional bilingual programs which aim at assimilating speakers of minority languages to a dominant majority-speaker community (i.e., submersion). In some contexts there is also a certain skeptical wariness toward the indiscriminant use of the term, since the definition of majority and minority status of the languages involved is vital for the definition of immersion. Immersion is thus easily entangled with subtle emotional and attitudinal comeanings associated with language-policy strategies.

Essential Features of Immersion

Though immersion programs can be designed somewhat differently, there are essential features which identify them as programmatic language immersion.

First, immersion education programs are defined as additive programs which offer bilingual enrichment to their students. At the start of the program, students are mostly monolingual or have only limited skills in the immersion language. The development of the first language of the students will be at no risk even if the immersion language is extensively used as the medium of instruction during the students' school day. Today most immersion programs are set up as *second language immersion programs* (e.g., French immersion in Canada, Welsh immersion in Great Britain, Swedish immersion in Finland) because a major consideration is the local/regional people's perception of the necessity and benefit of being able to use two languages in daily life, for example, in the job market. In this case, immersion arises from outside school and the perceived need from the surrounding bilingual society to improve language learning in school. By contrast, in *foreign-language immersion programs* (e.g., English immersion in Hong Kong) the motivation for immersion often comes from a wish to move away from existing language-learning praxis in schools and to offer students more efficient tools to function in a more global and hence increasingly multilingual future. In this case immersion arises from within the school system and the perceived need to improve language learning in order to meet future challenges.

Second, to be defined as immersion, the immersion language must be used as the medium of instruction for a number of different subjects; that is, academic content is used as a vehicle for teaching and learning the language. To fulfill this vital feature of immersion, some minimum criteria for both the intensity of exposure to the immersion language

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and the duration of the provision must be met. With regard to intensity, Genesee (2004) mentions that the criterion for this is "at least 50% of the prescribed non-language-related curriculum of studies for one or more years" (p. 549). Regarding duration, virtually all well-known and well-established immersion programs are program-based, running for several years and with a holistic long-term design. This extensive exposure and long duration puts immersion education in the position of being the most content-driven program in a categorization of programmatic levels of integrating content (Met, 1998). In the end, then, any immersion program takes into account the time devoted for each language within and between different subjects over a number of years, as well as instruction time in the immersion language, on the one hand, and in the first language, on the other. The same long-term and holistic approach is not automatically applied within a typical content-based instruction (CBI) or content and language integrated learning (CLIL) provision. Yet, CLIL, which has become a central content-based programmatic goal in a recent framework strategy developed by the European Commission (2005), is often confused with the term immersion. In particular, in Europe, CLIL is under strong development but today generally comprises only one or two content subjects (e.g., social sciences, mathematics) and therefore may include minimally only one subject teacher with linguistic competence in the language used as medium of instruction in that specific subject. Furthermore, it affects the individual student's school day differently, since in CLIL students can only be surrounded by the language to be learned for a small part of the school day. By contrast, immersion students will spend approximately half to the whole of their school day surrounded by that language. Furthermore, in order to be successful in immersion, teachers must be open to innovative strategies (see e.g., Met, 1998), since there is no escape to a strict division between language and subject teaching.

Third, immersion programs were originally developed for monolingual majority speakers who have a strong support for their first language in the surrounding society. Therefore, most immersion classes are linguistically homogeneous (monolingual classes of majority speakers). Nevertheless, geographically varying linguistic conditions can be taken into account in the establishment of programs. In some contexts, the balance between a majority and a minority language is defined regionally, not nationally. In areas with endangered minority languages, immersion programs in some cases offer an opportunity to promote minority language and culture for both majority and minority students. In this case, the ratio of majority and minority speakers is balanced in order to get an optimal language program for each individual student. For example, we now know from results from Welsh and Irish immersion programs that a greater portion of minority speakers is essential for successful individual bilingual development when the immersion language is a threatened minority language. Yet another example of varying linguistic conditions is the United States, where the characteristics of *one-way* immersion programs are similar to the above-mentioned original immersion classes (consisting of only majority speakers), whereas in *two-way* immersion (or *dual immersion*) programs, both majority and minority language speakers with dominance in their first language and home support for this language are grouped together (e.g., see Lindholm-Leary, 2001).

Fourth, immersion is principally open to all students. This optionality can itself potentially function as a self-selection criterion; that is, only motivated parents or students choose an immersion program. Furthermore, as immersion is in particular developed for bilingual enrichment for students in a majority context, it is sometimes referred to as a prestigious or self-selective program with motivated students (see, e.g., de Meija, 2002). Nevertheless, results obtained within immersion programs clearly show that immersion can be beneficial for many kinds of students, and it has proven to be effective even for students who are predicted to be low achievers at school. Several studies have been carried out involving students with special needs and students at risk. For example, research results from

immersion in Catalonia (Artigal, 1991) have shown that when immersion attracts students from lower socioeconomic backgrounds, they get the same positive results as reported for other immersion programs. Since the individual factors, needs, and pedagogical strategies related to these student populations in immersion (and elsewhere) are extremely diverse, generalizations are still too imprecise and more studies are needed. The tendency is, however, that even if some students in immersion exhibit limited cognitive or linguistic capacity, they learn to use the immersion language, which is an enriching experience and an advantage for any student living in a bilingual local milieu (e.g., Laurén, 2006). In addition, teaching strategies and strategies for efficient classroom work have been identified and are constantly being scrutinized and refined within immersion (see Snow, 1987; Swain, 1988; Cummins, 1998; Met, 1998; Lyster, 2007). These strategies seem to be crucial not only for developing efficient immersion programs but also for helping students who run the risk of underachievement.

Results of Immersion

Ever since the advent of immersion programs, the design of immersion has involved a holistic evaluation component. These evaluations have always combined a focus on second language development with a thorough assessment of first language development, in addition to evaluation of overall content achievement. All in all, no other language education program has been scientifically evaluated to the same extent as immersion. Because typically the immersion curriculum is the same as the local/regional/national curriculum where the immersion program is implemented, meaningful comparisons are possible. This is typical not only of the first Canadian immersion programs but of other immersion programs all over the world.

Results have consistently shown that immersion students' ultimate attainment in their first language development and content development equal that of non-immersion students. In fact, immersion research results tend to point in the direction of the same positive effects on intellectual and linguistic progress as is the case with other balanced bilingual individuals (for cognitive benefits of bilingualism see Cummins, 1984; Genesee, Lindholm-Leary, Saunders & Christian 2006; Bialystok 2007).

Throughout the history of immersion evaluation, special attention has also been paid to the second language outcomes of the students, since this is the main reason for the establishment of immersion programs. Same-age native speakers of students' immersion language are often used as comparative reference groups, which clearly shows the high expectations set up for immersion education. Generally, receptive skills are described as being at near-native levels by the end of the program, and productive skills are reported to be more varied and seemingly dependent on many factors, such as students' active use of the immersion language not only inside but also outside the school milieu, pedagogy in the classroom, and attitudes and motivation of individual immersion students.

Motivation and Multilingualism as Orientations Within Future Immersion

In the original Canadian context, three main program alternatives linked to the students' age at the outset of immersion have been developed (*early, middle* and *late* immersion); within these alternatives, the intensity of exposure varies between *total/full* immersion and *partial* immersion. In Canada as well as in many European countries, early immersion programs are the most common variants, whereas in other countries (e.g., Australia) late immersion programs have become very popular.

In many immersion programs motivation forms a crucial factor affecting enrollment. Even though all immersion programs are enrichment bilingual programs, there are different reasons to participate in immersion. For example, programs in Canada and Finland are mainly established to enhance and make more efficient use of the official bilingualism of the country. Consequently, the motivation of immersion students and parents to enroll their children in immersion tends to be more instrumental, as good knowledge of the immersion language is useful for future carrier opportunities and suchlike. Other immersion programs are more oriented toward language maintenance (e.g., immersion in the Basque country, Catalonia, Wales, and Ireland) and language revitalization (indigenous language immersion programs, e.g., Hawaiian immersion). Even though the cultural component is a natural part of immersion teaching in all variants of immersion, it becomes more accentuated in the language maintenance or revitalization immersion programs, as the motivation to enroll is more integrative, and knowledge of the culture is equally important as (or even more important than) immersion language skills.

Immersion began as a language education program in which one immersion language was the focus of attention. However, there are today multiple-language immersion programs. In *double immersion* (e.g., in Canada; see Genesee, 1998), two immersion languages are used as media of instruction in content teaching. During the first part of the school day the medium of instruction is immersion language one, and during the second part immersion language two is used. Naturally, first language instruction is also included as a third element in this kind of program. In Europe, where two or three languages are often obligatorily included in regular compulsory schooling, an increasing portion of European immersion programs now orient themselves toward multilingual goals, where a main immersion language is extended with additional languages as well. For the additional languages the results are encouraging, as students appear to be able to benefit from having learned the main immersion language (see Björklund, 2005; Cenoz, 2009).

Conclusion

Since its first implementation in the mid-1960s, immersion education has grown rapidly in both variety and diversity. There are a few crucial distinguishing features which have remained constant across this diversity of contexts, populations, and motives for establishment. The intensive second language exposure within the program has lead to closer investigation of immersion programs than many other language-related programs. Because of this scientific interest in immersion, much is known about how immersion works, and the design of future programs can be backed up with an abundance of research results. On the other hand, more research is needed in order to explore pending issues, particularly sociolinguistic factors such as the status of individual languages in different contexts and their relationship with the motivational and attitudinal dimensions that in turn influence students' language learning processes and outcomes.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Bilingual Education; Bilingual/Immersion Teacher Education; Content-Based Language Instruction; Content and Language Integrated Learning; Immersion Education

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Immigrant Discourse

ANNA DE FINA AND MIKE BAYNHAM

Introduction

Before introducing the topic of this entry, it needs to be clarified that the term *discourse* is employed here to refer to language in use as organized and culturally shaped ways of talking embedded in concrete social practices (see Gee, 1996, p. 131, on this point). Discourse refers here both to ways of representing reality and ways of linguistically interacting. Bearing this definition in mind, it can be said that the study of discourse phenomena related to migration is relatively recent. In the 1980s and 1990s migrants and migration figured in linguistic research mostly in indirect ways in that migrants were seen basically as agents or patients of important linguistic processes that were of interest to different disciplines within the field. For example, within language acquisition research immigrants were constructed as "L2 learners" and their linguistic productions were analyzed in order to demonstrate the existence of interlanguages, that is, intermediate linguistic systems that develop dynamically toward the target language (see Krashen, 1982), or of natural sequences of acquisition of grammatical constructions in different languages (see Rutherford, 1982).

Immigrants and immigrant languages also figured prominently in sociolinguistics, particularly in studies of language contact (a field inaugurated by Haugen, 1953) and of phenomena related to it. Within sociolinguistics immigrants were regarded as speakers of "minority languages," or "languages of origin," and as bilinguals, multilinguals, or both. Scholars were trying to assess how the languages they spoke changed over time through contact with other languages, to what extent they underwent partial or complete shift, what social factors influenced those changes. To this extent research into "stable" language varieties has always been informed by an understanding that these were shaped by processes of migration and mobility, but in classic sociolinguistics language forms migrated rather than people: thus, the focus remained still very much on language structures.

An exception to this trend was the subfield of code-switching studies (Blom & Gumperz, 1972/1986) in which analysts were developing more dynamic models to explain how and why bilinguals shifted from one language to another, mixed different language varieties, or both. Scholars within that field who took an interactional perspective started becoming interested in the discourse dynamics of those switches and their function in terms of identity negotiations (Auer, 1998). The sociolinguist John Gumperz (1982) also underscored the significance of different cultural/pragmatic expectations and modes of communication in intercultural encounters. Thus, "immigrants" and their ways of using language started occupying center stage in studies of intercultural communication, as is still evident in the research into immigrants and institutional encounters (whether related to health, education or work) which is described below.

These different traditions in linguistics have something in common: they were not focusing on immigrants as such or on migration as a social phenomenon, and were mostly concerned with the language varieties spoken by immigrants rather than with discourse by and about immigrants. In the late 20th and early 21st century the situation changed radically with the development of a more socially responsive sociolinguistics and the shift

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of attention to discourse. Over this period as well interest in migration spread exponentially in all the social sciences. Indeed, migration has become an extraordinarily visible phenomenon due, among other things, to the increased internal and external mobility that characterizes postmodern societies, globalization phenomena that allow for unprecedented connections between people who are spatially and geographically separated, the increase of multilingual and multicultural contact spaces in the world, and the centrality of discourses about migration in political struggles all over the planet. All these phenomena have brought migration and immigrants to the attention of discourse analysts, contributing to the birth of a new burgeoning field of inquiry.

In this entry the focus is on discourse-based approaches to migration, that is, on studies that have the following broad foci: *discourse on immigrants*, *discourse by immigrants*, and *institutional interactions involving immigrants*. We conclude by briefly reviewing a developing research agenda studying the multilingual performance of the children (and grandchildren) of immigrant families, which might be called a *discourse of polylingual performativity*, and considering the impact of new digital media in shaping the language practices of the 21st century, including of course discourses of migration.

Underpinning the development of these areas of studies has been a theoretical shift in focus in sociolinguistics and discourse studies. One aspect characterizing this shift has been the move toward the investigation of new configurations of time and space brought about by processes of globalization and therefore the birth of a sociolinguistics of movements and flows which does not presuppose the existence of stable relations between identities, languages, and places or a neat separation between centers and peripheries. A second important aspect has been the focus toward the study of interactional sites and processes that clearly reveal the impact of power struggles and of the unequal distribution of linguistic resources on the life of individuals and communities.

Discourse on Immigrants and Migration

One strand of research engages with the discursive representations of immigrants and migration in the public domain. Analyses focus on policy, the legislative sphere, and the political rhetoric that drives it, but also on the media (indeed in questions of immigration, the discourses of the media and public policy can be seen as very closely calibrated). Methodologies for such studies include critical discourse analysis, corpus analysis, and linguistic ethnography. However, most research, particularly on parliamentary discourse and on representations of immigrants in the press, is inspired by critical discourse analysis (e.g., Martín Rojo & van Dijk, 1997, on Spanish parliamentary debates), sometimes combined with other methodologies such as corpus analysis (e.g., Baker et al., 2008). Critical discourse analysis focuses on ways in which power abuse and inequality are enacted and reproduced in and through discourse, thus researchers in this field regard public discourse on migration as embedded in wide social processes linking it to ideological constructs and practices such as nationalism (Wodak, de Cillia, Reisigl, & Liebhart, 1999) and racism (van Dijk, 1993). It has been shown in the literature that the post-9/11 discourses identified as dominant are increasingly driven by nationalist agendas and anxieties over borders, community cohesion, and security. At the same time, researchers have noted how there has been an analogous increase in emphasis in the public policy domain on citizenship, integration, and social cohesion as closely linked to competence in the national language. Thus, recent studies illustrate how mainstream language ideologies have informed the policies regulating and implementing language testing in connection with the acquisition of citizenship (see Piller, 2001). This research of course targets what Hinnenkamp (2003) has called "they codes" rather than "we codes," and public discourses which contribute to "othering" immigrant subjects by speaking of, or about, or for "them," rather than

opening up spaces where "they" may have a voice or acquire discursive agency. A discussion on the question of voice and the speech/writing of the immigrant subject now follows.

Discourse by Immigrants

Psychologists regard migration as one of the processes that most profoundly unsettle and reshape people's life. The focus of their studies is on the cognitive and emotional states of the individual. But there is also a great deal of research on migration in the social sciences that has traditionally focused on social processes and structures. The phenomena that have received the most attention are assimilation processes as measured and assessed through the use of quantitative measures and external indexes such as intermarriage rates or language maintenance. However, discourse perspectives on migration start from very different theoretical and methodological premises. On the one hand, they emphasize the need to analyze what migrants themselves say about their experience in order to understand the processes that change their lives. On the other hand, they argue for the constitutive nature of discourse in the construction of identities, stances, and worldviews. It should not come as a surprise then that many of the studies that take as their object the discourse of immigrants, that is, the way they construct and represent their experiences, have focused on narratives.

The "narrative turn" in the social sciences (Bruner, 1991) has indeed had a strong impact on the kind of research that has been conducted in the field in the last 30 years. Narrative turn proponents emphasized the importance of qualitative research as a way of understanding social phenomena and proposed narrative both as a data collection tool and as an object of analysis. For narrative turn analysts giving people the opportunity to tell their stories was also a way of providing them with the possibility of being heard. From a similar perspective then, narratives of migration are seen as particularly useful to study and understand how people deal with social processes of uprooting and "unsettlement," or more in general, with great personal and social changes (Baynham & De Fina, 2005). Thus, scholars in this field are interested in the ways in which people reconstruct traditional processes of displacement from one country to the other, but also how they talk about country internal displacements due to forced relocation or border changes.

The Discursive Construction of Immigrant Identities

Interest in narratives told by immigrants also centrally concerns the construction of identities as scholars investigate how immigrants deal with the "unsettling" of stable notions of self and of place and how they express and negotiate belonging. Work on identity and narrative investigates different aspects that may both reflect existing self-perceptions by immigrants and shape them. As immigrants leave their countries they are forced to abandon old definitions of who they are and to find new ones. At the same time, they are confronted with inventories of identities that are imposed on them through public discourses and practices. Thus, some scholars have focused on ways in which immigrants categorize themselves in terms of ethnicity, gender, and class on their positioning with respect to existing social identity categories (see De Fina, 2003, 2006; Pavlenko & Blackledge, 2004; Meinhof & Galasinski, 2005). Research on life stories told by immigrants has also brought to light questions of agency and coherence showing how difficult it is for people who have been uprooted to achieve a sense of purpose and empowerment (McElhinny et al., 2008).

Narrative analysts have also greatly contributed to sociolinguistic reflection on the relationships between identity, space, and place as they have pointed to the many discourse

strategies and mechanisms through which narrators index affiliations and emotional belonging through positioning in space and time, for example, by tying distance or closeness to different places and moments (see Baynham, 2004).

The study of the construction and negotiation of identities by immigrants is not confined to narratives told in interviews but extends to many other kinds of communicative situations and to different generations (for example children or descendants of immigrants). For example, recent studies have analyzed identity displays in family interactions (Giampapa, 2004) and peer group conversation or play (Lytra, 2007). Finally, as will be seen below, scholars have focused on language styles and performance, particularly among young immigrants and the children of immigrants, as indexes of distinct identities (Jørgensen, 2008).

Another area in which research on immigrant identities has been particularly productive is the investigation of discourse by immigrants in relation to L2 usage and learning. Psychological and social processes related to speaking a minority language or learning the language of the host country are objects of reflection and occasions for different kinds of positioning for immigrants. Thus research in this area investigates, for example, how learners conceptualize their own success or failure and their belonging to or distancing from the national community (see Farrell, 2008), what kind of "investment" (Norton, 1995) or emotional involvement connects them to their second language, and how they talk about their language experiences (De Fina & King, 2011).

In all these studies identities are seen as constructed and negotiated in discourse and interaction, and therefore as essentially multiple and hybrid. Thus, research on immigrant identities has contributed to dispelling preconceived and stereotyped notions about immigrant communities and individuals. At the same time, researchers in the field have also promoted a reflection on the centrality of power processes in the construction of identities, particularly in the case of vulnerable social subjects such as immigrants.

Institutional Interaction Involving Immigrants

A further strand of research examines the interactions of immigrants in institutional contexts. This research is based on two simple, interrelated, but far-reaching propositions: (a) that for migrants in a new society, access to the crucial material and symbolic resources that enable survival and integration is mediated through repeated face-to-face interactions with institutions; (b) that these face-to-face interactions are significantly shaped by changing policy environments and institutional arrangements as well as sometimes volatile national political and media attitudes toward diversity, integration, citizenship, and accompanying ideologies concerning who should have access to what resources, and how.

Drawing on well-established frameworks for investigating institutional discourse, this research aims to analyze the role of language practices in the domains of *health*, *education*, and *work*, to understand how language practices in these domains are shaped both by the dynamics of face-to-face encounters and by the constraints of the political, policy, and institutional environment. Among the questions posed are the following: What linguistic factors enable and constrain access for migrants to health services, education, and work, what languages and forms of communication get used, when, why, and where, and what are the consequences for the migrant? Institutions can organize and deploy communicative resources by using different modes (oral and written) and modalities (visual, with mediators or interpreters, formal and informal, via written language). Not all such communicative practices are the same and the way they get organized (or not) in a given institution has consequences for migrants seeking access to services and resources.

Applied linguistic research in the area of health relevant to migration has focused overwhelmingly on issues of intercultural communication and mediation through formal and

informal interpreting and cultural brokering (see Valdes & Angelelli, 2003). Unsurprisingly, the most characteristic research focus has been on the medical consultation. Microanalysis of interpreted interactions shows the voice of the patient often disappearing as a result of selective interpreting, and the interpreter's alignment with and recruitment into the communicative purposes of the physician (see Davidson, 2000). The interpreted medical consultation is an example of what is known as a gatekeeping encounter, another area in which research has been productive. Indeed, in relation to the workplace, the research of Roberts and Campbell (2005) examines employment interviews as gatekeeping devices for migrant applicants whose education and work experience has been largely out of the UK, identifying a "linguistic penalty" for migrant applicants, if their education, training, and work experience has been in their country of origin.

Historically education has been the most sustained area of focus for applied linguistic work on the language situation of immigrants. Research has focused on (a) education and training provision for adult migrants, either on arrival or ongoing (see Cooke & Simpson, 2008), and (b) the language issues involved in the education of the children of migrants, both in mainstream schooling and in complementary schooling (see Blackledge & Creese, 2009). Issues in relation to (a) include language learning opportunities and access to them through policy (see Cooke & Simpson, 2008; Baynham & Simpson, 2010), particularly the current impact of citizenship on ESOL pedagogy (see Cooke, 2006), the learning trajectories of ESOL learners (see de Costa, 2010), and, indeed, the learning identities of bilingual learners (see Kanno & Norton, 2003; De Fina & King, 2011). Issues in relation to (b) include the impact of policy, linguistic barriers to access to curriculum achievement in the dominant language, and also opportunities to maintain and develop bilingual skills. In relation to the education of children from migrant communities, important studies look across from home to school and back again (see Gregory & Williams, 2000).

In Conclusion: Toward Norms of Polylingual Performativity

As suggested above, the official and public discourses on immigrants and immigration as exemplified in the media, in language policies, and the law are constructed within a frame of nations, borders, security, and integration, and of othering processes such as the construction of a "they" rather than a "we." This orientation is indeed embedded in the term immigration itself (in-migration, immigrants are the ones who come in, "they" cross "our" borders) and reflected in the highly emotional language used by the media to talk about this topic. Oral narrative creates a space for immigrant voices, one of the reasons why it is so significant in the articulation of identities. Institutional interactions provide other opportunities for agency, despite the formidable forces and constraints that work against the rights of marginalized people in such contexts, as shown in Maryns's (2006) work on the silencing of asylum seekers in official interview.

In conclusion, some current trends and directions in research that look beyond the borders of the nation-state to migration trajectories, transnational spaces, and flows are examined. As Low and Lawrence-Zuñiga have put it: "This process of cultural globalization creates new translocal spaces and forms of public culture embedded in the imaginings of people that dissolves notions of state-based territoriality" (2003, p. 25). This tendency combines with the emergence of new linguistic and cultural practices among second and third generation members of immigrant families as shown in research by Hinnenkamp (2003) and Jørgensen (2008) who analyze emergent polylingual styles among young people of immigrant origin. A further development which troubles the stability of the nation-state construct is the diffusion of new digital media which, as Lam (2006) and others have shown, are creating online and virtual spaces for transnational multilingualism. Warschauer (2009) points out how the translocal varieties produced in these contexts often involve

multilingual mixes and blends, such as switches to Arabic or Chinese incorporated into English orthography. No doubt it is out of these emergent social and linguistic forms that future discourses of migration in a globalized and networked world will be shaped.

SEE ALSO: Bilingual Education and Immigration; Discourse and Identity; Language Ideology and Public Discourse; Language Testing and Immigration; Literacy and Transnational Migration; Multilingualism and Ideology

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Implicit Learning in Second Language Acquisition

PATRICK REBUSCHAT AND JOHN N. WILLIAMS

The process of implicit learning, essentially the ability to acquire unconscious knowledge, is an elementary and ubiquitous process of human cognition. Everyday life offers many examples of implicit learning: First language, socialization, music perception, and many other skills are often thought to be acquired in an implicit fashion (Berry & Dienes, 1993). The field of second language acquisition (SLA) has a long-standing interest in implicit and explicit learning (see DeKeyser, 2003; Williams, 2009, for overviews). To a large degree, this interest was sparked by Krashen's (1981) proposals and the ensuing debates on the implicit–explicit interface. In the following entry, we will first define the term *implicit learning* and briefly describe characteristics of implicit knowledge. We will then discuss (lack of) awareness as a criterion of implicitness and review several studies that focused on the implicit learning of a second language (L2). The entry concludes with suggestions for future research.

What Is Implicit Learning?

The term implicit learning was first employed by Arthur Reber (1967) to describe a process during which subjects acquire knowledge about a complex, rule-governed stimulus domain without intending to and without becoming aware of the knowledge they have acquired. These two dimensions, *intentionality* and *awareness*, are central to the notions of implicit and explicit learning in the psychological literature. In the research tradition started by Reber (1967), the use of the term *implicit* is generally restricted to those situations where subjects have acquired unconscious (implicit) knowledge under incidental learning conditions. If incidental exposure in an experiment results in conscious (explicit) knowledge, for example, when subjects were able to figure out the rule system despite not having been told about its existence, the learning process is usually only characterized as being incidental and not as implicit. The same applies for those experiments that do not include a measure of awareness. The term *explicit learning* is usually applied to learning scenarios in which subjects are instructed to actively look for patterns, that is, learning is intentional, a process which tends to result in conscious knowledge.

In Reber's (1967, exp. 2) seminal study, subjects were given letter strings such as TPTS, VXXVPS, and TPTXXVS and simply asked to memorize them. Unbeknownst to the subjects, the arrangement of letters was determined by a finite-state grammar. After the memorization task, subjects were informed that the previous letter sequences had been generated by a complex system. They were then given new letter sequences, only half of which followed the same grammar, and instructed to judge whether the test sequences were grammatical or not. Reber (1967) found that subjects judged 79% of all letter sequences correctly, which indicated that simple memorization of grammatical strings was sufficient for subjects to derive information about the underlying grammar. Interestingly, when asked to verbalize the rules that generated the letter strings, subjects were unable to do so. In other words,

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subjects were able to acquire knowledge without intending to (after all, they did not know they were going to be tested, nor were they informed in advance about the existence of the grammar) and without becoming aware of the acquired knowledge (they were unable to verbally describe the grammar). Reber (1967) used the term implicit learning to differentiate this process from that of explicit learning, a learning process where the individual deliberately forms and tests hypotheses about the stimulus domain.

The past decades have resulted in a relative consensus on several characteristics of implicit learning and knowledge. For example, Reber's (1967) basic finding that subjects can exploit the structure inherent to the stimulus environment incidentally has been frequently replicated and appears very robust. It is widely accepted that implicit learning gives rise to a sense of intuition, that is, "people do not feel that they actively work out the answer" but rather make "particular responses because they 'feel' right" (Berry & Dienes, 1993, p. 14). Implicit knowledge seems to be more robust in the face of neurological disorder (e.g., Knowlton, Ramus, & Squire, 1992) and in the face of time, that is, it appears longer lasting than explicit knowledge (Allen & Reber, 1980). In contrast to explicit learning, successful implicit learning is less affected by individual differences (Reber, Walkenfeld, & Hernstadt, 1991), and it also seems to place fewer demands on attentional resources (e.g., Dienes & Scott, 2005).

Awareness as a Criterion of Implicitness

Despite the considerable interest in the topic of implicit and explicit learning within the field of SLA, we know surprisingly little about the contribution of implicit learning to L2 acquisition. This is, in part, due to methodological reasons. Although there are several theories about the role of implicit and explicit L2 learning, it is difficult to adjudicate between them because of the difficulty of determining whether exposure resulted primarily in implicit or in explicit knowledge (Williams, 2009). If we intend to characterize the contribution of implicit learning to L2 acquisition, we need to be able to measure whether the acquired knowledge is implicit or explicit.

In psychology, the most commonly used criterion for disentangling these types of knowledge is awareness (or lack thereof). Implicit knowledge is unconscious knowledge which subjects are generally not aware of possessing. Explicit knowledge is conscious knowledge which subjects will be aware of possessing, though they might still not be able to verbalize it. There are several ways of measuring whether or not the acquired knowledge is conscious or unconscious (see Rebuschat, in press, for a comprehensive overview).

One of the most common procedures is to simply prompt subjects, at the end of the experiment, to verbalize any rules they might have noticed while performing on the exposure task. In this case, knowledge is considered to be unconscious when subjects show a learning effect (e.g., above-chance performance on a grammaticality judgment task), despite being unable to describe the knowledge that underlies their performance (e.g., Reber, 1967).

Another possibility is to compare subjects' performance on direct and indirect tests. The *direct* test is a measure that explicitly instructs subjects to make use of their knowledge (e.g., an untimed grammaticality judgment task). The *indirect* test assesses subjects' performance without instructing them to use their acquired knowledge (e.g., an elicited imitation task). Ideally, subjects should not even know they are being tested. Here, knowledge is considered unconscious if an *indirect* measure clearly indicates a learning effect (in our example, spontaneous self-correction of ungrammatical items during the elicited imitation task), even though a *direct* measure shows no evidence of learning (e.g., subjects are unable to distinguish grammatical and ungrammatical items when asked to do so).

Finally, one could also determine whether subjects acquired conscious or unconscious knowledge by collecting confidence ratings and judgments about the kind of knowledge

used to make the decision, known as "source attributions" (Dienes & Scott, 2005). This can be done, for example, by asking subjects to perform on a grammaticality judgment task and to indicate, for each judgment, how confident they were in each decision (e.g., guess, somewhat confident, very confident) and what their decision was based on (e.g., guess, intuition, memory, rule knowledge). Subjects' knowledge can be considered unconscious when (a) the grammaticality judgments for which subjects reported to be guessing are actually significantly above chance, and (b) when there is no correlation between the reported confidence level and the observed level of accuracy. In both of these cases, subjects are not aware of having acquired knowledge.

What Can Be Learned Implicitly in L2 Acquisition?

Very few studies explore systematically the acquisition of implicit knowledge by L2 learners. In SLA, a significant body of work has investigated incidental language learning (see Hulstijn, 2003, for a review), but these studies tend to concentrate on vocabulary acquisition and do not include measures of awareness, so it is unclear whether the acquired knowledge is actually implicit. Numerous SLA studies have compared implicit and explicit instructional methods, and even though explicit instructional methods produce larger learning effects than implicit methods it is still not clear to what extent either instructional approach resulted in truly implicit knowledge. There is also a large body of work in developmental psychology, especially in the statistical learning tradition (see Saffran, 2003, for a review), but here the learning conditions are sometimes far from incidental (e.g., subjects might be instructed to actively discover words in a continuous speech stream), nor do these studies include any measures of awareness. The review below will focus on studies that exposed subjects to the target structures under incidental learning conditions and established that the acquired knowledge was implicit according to the awareness criterion.

Form–Meaning Connections

The ability to associate forms and meanings lies at the heart of language learning and processing, and there is evidence that adult learners are able to acquire novel form–meaning mappings implicitly (e.g., Williams, 2005; Leung & Williams, 2011). For example, Williams (2005) exposed subjects to a semi-artificial language consisting of English words and four artificial determiners (*gi*, *ro*, *ul*, and *ne*) which encoded both distance (near vs. far) and animacy (animate vs. inanimate). At the beginning, subjects were told that the determiners functioned like English determiners, except that they also encoded distance: *gi* and *ro* were used for near objects, while *ul* and *ne* were used for far objects. Importantly, subjects were not informed that the artificial determiners also encoded animacy: *gi* and *ul* were used with animate objects, whereas *ro* and *ne* were used with inanimate objects. The role of animacy in determiner usage thus served as a hidden regularity. Subjects were exposed to the semi-artificial language under incidental learning conditions, that is, they did not know they were going to be tested. Retrospective verbal reports served as a measure of implicit and explicit knowledge. In the testing phase, Williams (2005) observed a significant learning effect: In a sentence completion task, subjects were significantly more likely to select determiners according to the noninstructed meaning dimension (here, animacy) even when they were completely unaware of its relevance to determiner usage.

Further support for Williams' (2005) finding that subjects can acquire form–meaning connections implicitly comes from a study conducted by Leung and Williams (2011). Subjects were exposed to an artificial determiner system by means of a novel reaction time task. The study used the same system as Williams (2005), except that here *gi*, *ro*, *ul*, and *ne* encoded age (children vs. adults) and agency (agent vs. patient) instead of distance and

animacy. Before the experiment, subjects were told that *gi* and *ro* were used with personal names referring to adults, whereas *ul* and *ne* were used with personal names referring to children. Subjects were not told that the choice of determiner also depended on the thematic role of the noun phrase: *gi* and *ul* were used with agents, while *ro* and *ne* were used with patients. In the experiments, subjects saw a picture on the computer screen that was accompanied by an auditory description. For example, the trial might consist of a picture of a girl kissing a boy on the cheek and an auditory description such as "Kiss ul Mary a boy on the face." The subjects' task was to indicate the location of the named individual in the image (left or right) by pressing the appropriate response key. In the first 114 trials of the experiment, the artificial determiner system followed the rules outlined above, but in the final 16 trials (the violation block) the rules were reversed, that is, *gi* and *ul* were used with patients instead of agents. Learning was assessed by measuring the time it took subjects to identify the location of the named individual. The conscious or unconscious status of the acquired knowledge was assessed by means of verbal reports after each part of the testing phase.

The verbal reports showed that, at the end of the experiment, 80% of subjects remained unaware of the simple rules that determined the choice of determiners. Despite remaining unaware of the system these subjects' response times to locate the named individual slowed significantly when the rule system was changed, suggesting that they had learned the relationship between the determiners and the thematic roles implicitly.

Syntax

In the case of syntax, several studies have shown that adult learners can acquire L2 syntax incidentally, that is, without intending to (e.g., Rebuschat & Williams, 2006; Cleary & Langley, 2007; Rebuschat, 2008). For example, Cleary and Langley (2007) focused on the retention of syntactic patterns as a result of incidental exposure. Adult subjects were presented with meaningless word sequences that followed the same syntactic pattern (essentially English phrase-structure, for example, *beautiful transportation shed temporary plants, mechanical consumers submit colder songs, efficient dreams write better umbrellas*, etc.) After exposure, subjects were given a recognition task that required them to rate the likelihood that each test item had been presented before. The testing set included three types of sequences: *studied strings* (repetitions from training), *critical lures* (novel sequences that followed the same pattern as the studied strings), and *new strings* (new sequences that did not follow the pattern of the studied strings). Cleary and Langley found, as expected, that subjects rated studied strings highest and new strings lowest. Interestingly, however, they also found that ratings were significantly higher for critical lures than for new strings. In other words, if a novel word sequence followed the same syntactic pattern as the training sequences, subjects were more likely to think that they had encountered it before, even if this was not actually the case. Cleary and Langley (2007) suggest that this ratings effect occurred because subjects derived an abstract representation of the syntactic structure underlying the training sentences. That is, incidental exposure to new word patterns resulted in knowledge that was, at least partially, independent of the items utilized in training.

Evidence that the acquisition of non-native syntax can occur not just without intention but also result in unconscious knowledge was provided by Rebuschat (2008) and Francis, Schmidt, Carr, and Clegg (2009). Rebuschat (2008, exp. 3) exposed subjects to a semi-artificial language consisting of English words and German word order under incidental learning conditions. The exposure task required subjects to judge the semantic plausibility of 120 sentences, for example, "In the evening explained Rose that the profit below the estimate remained" (plausible) and "Today beheld Chris that the earth around the tomato

rotated" (implausible). The exposure task thus required subjects to process the sentences for meaning. In the testing phase, subjects were informed that the word order in the previous sentences was not arbitrary but that it followed a "complex system" instead. They were then instructed to listen to 60 completely new sequences, only half of which followed the same rule system as the one they had just been exposed to. Those sequences that did obey the rules should be endorsed as *grammatical* and those that did not rejected as *ungrammatical*. Importantly, subjects were not only required to judge the grammaticality of each item. They were also asked to report how confident they were in each grammaticality judgment (guess, somewhat confident, very confident) and to indicate what the basis of their judgment was (guess, intuition, memory, rule). The analysis of the grammaticality judgments showed a clear learning effect, that is, subjects were able to acquire the new grammatical system incidentally and to use this knowledge in a transfer task. The analysis of the confidence ratings and source attributions further showed that, while subjects were aware of having acquired some knowledge, this knowledge remained unconscious. In other words, subjects displayed intuitive knowledge of the L2.

Francis et al. (2009) investigated the incidental learning of basic word order patterns by adult native speakers of English. Subjects initially performed an oral reading task, during which they were exposed predominantly to one type of three-word sequences, depending on which group they had been assigned to. One group was exposed mostly to noun-noun-verb strings (say, *steak cop learned*), while the other group was exposed mainly to verb-noun-noun strings (*pierced Jane oil*). Both of these sequence types are *nondominant* in that they do not occur in English. The arrangement of the words was random, that is, no meaningful utterances were used. Subjects were presented with three-word strings and instructed to read the three words out loud. Oral reading time for each sequence was used as an indirect measure of learning. The first phase of the reading task (eight learning blocks) served to expose subjects to exemplars of the nondominant word order. The second phase (one testing block) was used to assess whether subject groups had acquired knowledge about their respective training sequences and whether this knowledge could be generalized to novel sequences with the same underlying structure. Francis et al. found that reading speed decreased as a result of exposure and that this pattern held for strings encountered during the learning blocks as well as for strings that followed the nondominant word order but had not been presented before. Their study confirms that adults can acquire new word order patterns incidentally and that the exposure resulted in abstract, generalizable representations. Interestingly, Francis et al. also report that only a few subjects were able to generate strings that followed the training pattern when prompted to do so in a grammar generation task. This suggests that the incidental exposure resulted, at least in some participants, in implicit knowledge.

Future Directions

A review of the literature on implicit language learning shows that adult learners are able to acquire form–meaning mappings and L2 syntax without becoming aware of the acquired knowledge. At the same time, we know relatively little about several key aspects of implicit L2 learning. First, we need to know more about what aspects of the L2 can and cannot be acquired as a mere result of exposure and without explicit treatments. Second, the issue of individual differences in implicit and explicit L2 learning has received very little attention, despite its relevance for classroom instruction. Third, we need to know more about the influence of prior knowledge. For example, how does prior linguistic knowledge (L1, L2, L3 . . .) influence the implicit learning of a new language (L2, L3, L4 . . .)? Finally, we know too little about the role of attention in implicit L2 learning. There is a vast literature

that focuses on the role of attention in L2 learning, but the aim of these studies is to examine whether or not awareness correlates with learning and not to investigate what demands, if any, implicit learning places on attentional resources. Considerably more empirical research is necessary before the precise role of implicit learning in L2 acquisition can be fully determined.

SEE ALSO: Explicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Incidental Vocabulary Acquisition

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Incidental Learning in Second Language Acquisition

JAN H. HULSTIJN

The term incidental learning is used, in applied linguistics, to refer to the acquisition of a word or expression without the conscious intention to commit the element to memory, such as "picking up" an unknown word from listening to someone or from reading a text.

Imagine someone asked you to describe the living room of a house you have often visited, such as the house of your best friend. You will probably have no difficulty in describing the room and the items in it, in great detail, although it is unlikely that you ever made a deliberate attempt to remember as much of this room as you can. You will probably have no difficulty either remembering the room of the hotel you were staying in, for a single night, a couple of weeks ago. But it is unlikely you will remember the room of the hotel where you spent a night three years ago. These examples illustrate, in an informal way, what is usually meant when researchers say that people "incidentally learn" or "pick up" factual knowledge, such as words, names, dates, events, descriptions, or explanations seemingly without effort.

Incidental learning stands in contrast to intentional learning, which refers to a deliberate attempt to commit factual information to memory, often including the use of rehearsal techniques, like preparing for a test in school or learning a song by heart.

History of the Terms Incidental and Intentional Learning

The terms incidental and intentional learning were originally used in the middle of the 20th century in the heyday of American behaviorist psychology, conceptualizing learning in terms of stimulus-response contingencies (Postman & Keppel, 1969). Researchers experimentally investigated human learning by providing human subjects with information (such as a list of words) under two conditions. In the intentional condition, subjects were told in advance that they would afterwards be tested on their recollection of the materials to which they were going to be exposed. Subjects in the incidental condition were not told that they would be later tested. Thus, originally, the terms incidental and intentional learning referred to a methodological feature of learning experiments, pertaining to the absence or presence of a notification whether subjects would be tested after exposure. Later, psychologists used incidental-learning experiments in combination with different orienting tasks. For instance, Hyde and Jenkins (1973) asked subjects to rate each word in a word list as to their pleasantness (a semantic orienting task) or to record the part of speech of the words (a nonsemantic orienting task). When subjects were later given a surprise recall task (i.e., in an incidental-learning setting), subjects in the semantic condition were able to recall more words than those in the nonsemantic condition.

Bransford, Franks, Morris, and Stein (1979) introduced the notion of *transfer-appropriateness* to explain why they found, in a learning experiment involving word lists, that participants who had been administered compatible learning and recall tasks (semantic–semantic, or nonsemantic–nonsemantic) achieved higher retention scores than participants who were given incompatible learning and recall tasks (semantic–nonsemantic, or nonsemantic–semantic).

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The notion of transfer appropriateness may help to illustrate the difference between incidental and intentional learning. Thus, as participants in an intentional vocabulary learning task are told in advance that they will be tested after the learning phase, they will try to store the to-be-learned word information in a form perceived as transferable to the test situation. In contrast, processing instructions during the learning phase in an incidental learning setting may or may not be conducive to successful transfer to the test situation. For instance, participants in an incidental learning vocabulary learning experiment who are instructed to pay attention to the meaning of some new words which appear in a reading text are likely to perform much better on an unexpected receptive posttest than on an unexpected productive posttest.

The notion of transfer-appropriateness also underscores the crucial importance of the instruction (in learning experiments often called the orienting task) because the instruction is the instrument with which the researcher or teacher can control or manipulate students' attention to the information to be learned.

In 1972, Craik and Lockhart proposed the depth-of-processing theory, claiming that the chance that some piece of information will be stored in long-term memory is not determined by the length of time that it is held in short-term memory but rather by the shallowness or depth with which it is initially processed. This theory has survived, in adapted form, until the present day (Lockhart & Craik, 1990; Craik, 2002). Laufer and Hulstijn (2001) used Craik and Lockhart's depth-of-processing theory to formulate their involvement hypothesis for second language vocabulary learning. Laufer and Hulstijn (2001) proposed the notion of *involvement*, consisting of (a) a motivational component, comprising the *need* to determine a new word's meaning, and (b) a cognitive component, comprising *search* (e.g., dictionary look up) and *evaluation* (e.g., evaluating whether the information obtained from the dictionary applies to the verbal and nonverbal context). Retention of hitherto unfamiliar words is claimed to be conditional, in general, upon the degree of involvement in processing these words. (For a detailed account of the history of the terms incidental and intentional learning, see Hulstijn, 2001, 2003.)

Incidental and Intentional Learning Versus Implicit and Explicit Learning

In the applied linguistics literature, the terms incidental and intentional learning are sometimes used in connection with the terms implicit and explicit learning. Although the meanings of incidental and implicit learning and the meanings of intentional and explicit learning overlap, they refer to different constructs in different domains of inquiry. The terms implicit and explicit learning are used in current theories of second language acquisition (and in cognitive science in general) to refer to, respectively, the unconscious and conscious learning of facts or regularities in the input materials to which subjects in learning experiments are exposed. In second language acquisition studies, the regularities usually pertain to grammatical phenomena (e.g., a morphosyntactic rule). Implicit knowledge is believed to be spread out over various regions of the neocortex, while explicit knowledge is assumed to reside in a particular area of the brain (the medial temporal lobe, including the hippocampus), independent of the areas where implicit knowledge resides. In this (neuro)cognitive domain of scientific inquiry, implicit and explicit learning are sometimes said to take place incidentally and intentionally, but these two labels do not play a crucial role in theoretical accounts of learning, simply because the behaviorist learning theories of the previous century have lost their prominent role. In contrast, the terms incidental and intentional learning are still being used in the vocabulary-learning literature, albeit not associated to current cognitive or neurocognitive theories of the processing mechanisms

involved in learning or the locus of learned information (Hulstijn, 2005).

Word Knowledge

Before considering several factors affecting vocabulary learning, whether incidental or intentional, it is important to properly understand what it means to know a word.

A lexical entry in the mental lexicon of the average adult, literate, native speaker contains a number of semantic features (its core meaning or meanings, its pragmatic and stylistic meanings, and the collocations in which it frequently occurs) and a number of formal features (its grammatical word class, its morphophonological make up, its auditory and articulatory phonetic forms, and its orthographic shape). The features of a lexical entry are intrinsically or associatively related to each other and to features of other entries, even across language boundaries (involving translation equivalents in another language) while the strength of these relationships may vary (Meara, 2009). Generally, the most difficult association for a first or second language learner to acquire, is the association between the word's core meaning and its phonological form because, for a large majority of so called base words (monomorphemic words), the association is completely arbitrary (e.g., why is a dog called "dog" and not "cat" or "table" or "sanon"?).

The Acquisition of a Large Vocabulary

Although estimation figures differ, it is safe to say that adolescent native speakers of English who have completed high school, have a receptive vocabulary of at least 20,000 base words (i.e., words without the inflectional forms, derivations or compounds that can be made of it, such as "open," but not "opened," "opener" or "door opening") (Nation, 2001). The accepted view is that they cannot have learned such a large number of words solely by means of explicit vocabulary instruction. Rather, they must have learned most words in an incremental way through repeated encounters through listening and reading. Furthermore, even though many words (in L1 and L2) are learned intentionally in the context of the school curriculum, not all words learned intentionally will be remembered for ever. In general then, several interrelated questions need to be answered. First, if it is true that most of the information stored in people's memories has been "picked up" incidentally, how do we explain this phenomenon of incidental learning? Why do people not pick up *all* information to which they have been exposed? Second, why do people not retain all information that they have learned intentionally? In a nutshell, the answers to these questions read as follows. Learning, whether incidental or intentional, is mainly a matter of selective attention and elaborated processing, or, as Eysenck (1982, p. 203) put it: "memory performance is determined far more by the nature of the processing activities engaged in by the learner than it is by the intention to learn per se." In other words, a critical feature of human memory appears to be *how* one processes information and not whether one processes information with or without the intention of remembering (Baddeley, 1997; Craik, 2002). Rich, elaborate processing, however, is not enough either. New information will seldom leave a lasting trace in memory if not frequently reactivated, what Baddeley (1997, p. 123) called "elaborative rehearsal," involving the formation of connections between the new information and information already known. In the case of learning a new word, processing of it in different contexts will create and strengthen its links with other words in the mental lexicon, increasing its recall. What we commonly call "forgetting" is mainly a matter of not using information frequently, whether picked up incidentally or learned intentionally. This fact is succinctly expressed by the common phrase "use it or lose it." In conclusion, asking the question of whether people with large vocabularies have acquired

the words in it incidentally or intentionally is not instrumental to explaining people's success in the acquisition of large vocabularies. While the absence or presence of a learning intention does not play a decisive role, vocabulary acquisition is first and foremost determined by the nature and frequency of the processing of new words.

Consequently, the recommendation of massive reading and listening activities and the discouragement of intentional vocabulary learning is based on an ill-informed understanding of the terms incidental and intentional learning. Incidental vocabulary learning is not necessarily more effective than intentional learning nor is intentional vocabulary learning more effective than incidental learning. Incidental acquisition-through-reading is a slow and error-prone process with small vocabulary gains (Nation, 2001; Read, 2004; Laufer, 2005; Brown, Waring, & Donkaewbua, 2008). Readers do not always notice unfamiliar words when reading a text. If they do, guessing the meaning is not always possible. Moreover, many people possess poor inferencing skills. Thus an incidental task (i.e., a task without forewarning that a retention test will follow) allowing learners to process new vocabulary only superficially or even skip new words altogether will produce little knowledge of new words. In contrast, one could think of an intentional task (i.e., a task with forewarning of an upcoming retention task) forcing learners to process new vocabulary elaborately (e.g., "read the following text, look up the meaning of any words you don't know in your dictionary, summarize the text's contents in about five sentences, and learn the new words looked up. You will later be tested on your knowledge of the words in this text"). The last ten years have witnessed the publication of dozens of studies (e.g., Peters, Hulstijn, Sercu, & Lutjeharms, 2009), giving empirical evidence for the claim that the low incidence of vocabulary acquisition through reading ("input only") can be substantially boosted by techniques that make students *look up the meaning of* unknown words, *process* their form–meaning relationship *elaborately*, and process them *again* after reading ("input plus").

SEE ALSO: Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Incidental Vocabulary Acquisition; Vocabulary Acquisition in Second Language Acquisition

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Incidental Vocabulary Acquisition

SUSANNE ROTT

Incidental vocabulary acquisition is generally described as the "picking up" of new words when students are engaged in a reading, listening, speaking, or writing task. That is, incidental acquisition refers to the absence of the conscious intention to commit a word to memory. It is not to be confused with the notion of implicit learning. For example, we talk about incidental acquisition when a learner encounters an unfamiliar word in a text, attempts to understand its meaning to better comprehend the text, and is able to recall the word (or parts of it) after having completed the reading task. Typically readers attempt to understand the word by making an educated guess about the meaning from context (inferencing), glancing at a gloss (L1 translations or L2 synonyms) in the margin of the text, or by looking up the word in a dictionary.

Incidental Vocabulary Acquisition Through Reading

Since the 1990s incidental vocabulary acquisition has become a central research area for adult second language lexical development. Acknowledging the number of about 15,000–20,000 word families (Nation & Waring, 1997) a second language learner has to acquire to reach advanced language levels, Krashen (1989) argued in his seminal article that the majority of words cannot be learned by looking them up in a dictionary. In the context of his input hypothesis, he proposed that vocabulary and spelling is mostly acquired through exposure to comprehensible input such as reading. Further recognizing the complexity of the mental lexicon, researchers agree that students cannot develop a functional second language lexicon only by memorizing the bilingual word lists found in most textbooks. In fact, besides a word's basic meaning, orthography, pronunciation, and word class, advanced language use requires the command of a word's pragmalinguistic functions, its syntactic frames, and its meaning in conventionalized and metaphorical expressions (e.g., Nation, 2001; Schmitt & Carter, 2004). Naturally, reading provides rich lexical input which is vital to developing many of these aspects of words. Ellis described reading as the "ideal medium" for vocabulary acquisition. Print material allows learners more time for processing a new word, "whereas in speech [the word] passes ephemerally" (1994, p. 40). Yet, studies assessing the default hypothesis of reading as a main source for lexical development have shown that only a small number of words are "picked up" during reading (e.g., Horst, Cobb, & Meara, 1998).

Consequently, reading as a main source for lexical development may be too unpredictable in an instructed language-learning setting where advances in word learning need to be assessed. In fact, studies on word inferencing and text comprehension have shown that learners need to know about 95–8% of the words in a text to comprehend the text well enough to be able to infer the meaning of unfamiliar words (Laufer, 1992; Hu & Nation, 2000). Coady (1997) described the relationship between literacy skills and lexical learning as being both a vicious and a virtuous circle. L2 readers who have not developed fluency in reading read slowly, stumble over words, and have limited text comprehension. As a result they dislike reading, read infrequently, and thereby have infrequent opportunities for incidental word acquisition. In turn, L2 readers with a larger L2 lexicon and strategic

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higher-order reading skills comprehend text better, read more frequently, and therefore have more opportunities for lexical growth.

Cognitive Processes

Other studies have drawn attention to the cognitive mechanisms involved in acquiring words while reading. For instance, Hulstijn (2001) has pointed out that a lack of a prior intention to learn a word while reading does not exclude the possibility of learners directing attentional resources to processing a word. In fact, researchers generally agree that acquisition depends on "the quality of information processing when an unfamiliar word is first encountered" (p. 258) and subsequently on the "quantity and quality of rehearsal" (p. 258) in working memory as the word is processed.

Laufer (2003) explains why reading a text for meaning may not trigger the cognitive processing mechanisms essential for word learning. For example, noticing (Schmidt, 2001) a new lexical form or a new meaning for an already familiar word form is generally considered a prerequisite for establishing a form–meaning connection to be stored in memory. As L2 readers focus on comprehending a text, they may fail to notice a new word form or meaning because they are able to comprehend the idea without understanding each word. Likewise, learners may fail to understand the word in its context, skip it, and thereby fail to acquire its meaning. At the same time, learners may not realize that a word's meaning is unfamiliar when encountering polysemes (a word that has multiple meanings) and homonyms (a word that sounds and is spelled the same as another word but has a different meaning) of words they already know. For example, polysemes require conceptual understanding of conventionalized expressions (e.g., the meaning of "break": *He broke his leg*; *Who broke the news* [announce]?; *He broke his promise* [failed to keep]; *He broke yet another record* [improved]), whereas homonyms require the ability to differentiate between contexts (e.g., a file: used to put papers in, or a tool). However, even if L2 readers notice a new word, they may not be able to infer the correct word meaning because the context does not provide sufficient clues; the readers do not have the relevant background knowledge necessary to infer the meaning, or they end up inferring an incorrect meaning because they do not understand the context well enough.

Rott (2007) has further pointed out that processing a text for its meaning and processing a word to be retained in memory may involve different cognitive mechanisms. If both processes draw on the same limited pool of processing resources, they might be in conflict. That is, shifting attention to individual words may interfere with text comprehension, while a lack of attending to specific words may hinder lexical retention. Additionally, L2 learners may have to encounter words repeatedly in order to learn them (e.g., Horst et al., 1998), a requirement which seems unlikely in an instructional learning environment where exposure to the target language is limited to course materials.

Lexical Intervention Tasks

Addressing the shortcomings of an uninstructed reading-based approach to vocabulary acquisition, researchers have been exploring lexical intervention tasks to ensure that learners notice specific words and process the correct meaning. Although the majority of lexical intervention studies have been based on reading as a source for learning, a few have started investigating oral input or interaction tasks. The main goal of classroom-based investigations has been to identify task characteristics that explain why some interventions are more effective for long-term word retention than others. The majority of these investigations were conducted in an information-processing framework, sharing the assumption that

superior word acquisition and retention depend on a deep level of processing. Craik and Lockhart (1972) postulated that processing the meaning of a new word leads to a deeper level of processing as compared to processing a word's phonological form. Other researchers have emphasized the effectiveness of a more elaborate encoding of words through rich associations of multiple word aspects, such as the processing of spelling, pronunciation, grammatical category, basic meaning, and collocational aspects (see Hulstijn, 2001). Multimedia based studies have further stressed the encoding of multiple word representations at the semantic, pictorial, and phonological levels (e.g., Mayer, 2001).

Rott (in press) categorizes these intervention tasks as follows:

1. Enhancing the noticing of hitherto unfamiliar words and thereby foster the processing and learning of these words. Typically the assignment of the correct word meaning is enhanced with L1 translation, L2 synonym, multiple choice, and pictorial types of glosses provided in the margin of the text;
2. Increasing the frequency of exposure to new words to increase the chance that an initial memory trace is retained. Consequently, additional word aspects can be acquired during subsequent encounters with the word;
3. Training word inferencing strategies to foster correct meaning assignment;
4. Providing access to a dictionary, concordance (electronic list of word occurrences with the immediate contexts), or other multimedia resources to process form–meaning connections elaborately and to learn the context-specific meaning of a word;
5. Supplying post-reading vocabulary activities to ensure the processing and rehearsal of words;
6. Using output activities at the sentence or discourse level to trigger the noticing of a lexical gap, enhance the processing of the word's meaning, and foster a deeper level of processing and rich associations;
7. Encountering input texts that are either simplified or elaborated by the researcher to foster the noticing of words. Likewise, providing opportunities to clarify the meaning of words during partner activities results in reflective language usage and modified output.

While some studies compared the effect of the intervention task on word gain to a control condition that did not receive any word enhancements, others compared the effect of different interventions by manipulating the quality and quantity of word processing. Moreover, the interventions vary greatly. Some interventions are more obtrusive (e.g., by requiring learners to use the word to be learned) and others are less obtrusive (e.g., such as the provision of glosses). Some are used while completing the main task (reading, writing, listening, interaction), others are completed afterwards. As these studies vary greatly in set up and procedures, findings do not provide definitive guidance as to which lexical interventions are more effective. And a cohesive account of how to transfer research results to the language classroom has been missing.

Recent Developments

In an effort both to provide guidelines for materials design and to determine the instructional value of lexical intervention tasks, Laufer and Hulstijn proposed the construct of task-induced involvement in order to "operationalize general constructs such as noticing, elaboration, motivation, or need, at the micro level of learning tasks" (2001, p. 9). The motivational-cognitive construct of involvement entails three components: need, search, and evaluation. Each of these three components can be present or absent when processing

a new word. Initial investigations (e.g., Hulstijn & Laufer, 2001) have not been conclusive about the generalizability of the construct to all tasks at all language levels.

Moreover, more recent studies on the effect of extensive reading suggest that previous studies underestimated incidental word acquisition. Longitudinal case studies which tracked students' full and partial word gain (e.g., Pigada & Schmitt, 2006) suggest that partial word gain measures are essential to assess the effectiveness of reading. Establishing a memory trace during an initial encounter with a word can be filled in during subsequent encounters and reduces the learning effort necessary to retain the word long-term. Likewise, the use of corpus technology, which allows the collection of topic, genre, or modality specific texts, not only provides students with individualized reading materials but also offers the individualized assessment of word acquisition (Horst, 2005).

Finally, many L2 researchers agree that at the initial L2 learning stage large quantities of words (2000–3000 word families) can be learned effectively with intentional word-learning exercises. After learners have established a large enough lexicon to read more fluently, researchers recommend that instructional programs should be expanded to include extensive reading opportunities (e.g., Nation, 2001).

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Formulaic Language and Collocation; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Input Processing in Second Language Acquisition

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Indigenous Languages in the 21st Century

TERESA L. MCCARTY

The world's 370 million Indigenous people represent 4% of the global population but speak 60 to 75% (4,000–5,000) of its languages (UNESCO, 2005). The contexts in which Indigenous languages are spoken range from that of Quechua, spoken by 8–12 million people in six South American countries, to Sámi in Scandinavia where five of 10 original languages are used as mediums of instruction in three Nordic states, to the USA and Canada where more than 200 Native languages are spoken—nearly all highly endangered—to the Indian subcontinent with 84.3 million tribal people who speak several hundred mother tongues, to sub-Saharan Africa, where a proliferation of Indigenous mother tongues compete with a handful of powerful colonial languages for a place in school curricula. Uniting these diverse sociolinguistic contexts and peoples is a history of colonization, physical and linguistic genocide, and deterritorialization. Language education policy has long been a primary tool for wielding colonial power and a principal means of linguistic and cultural assimilation. At the same time, recent decades have witnessed the rise of counter-hegemonic Indigenous movements focused on language and education rights. This entry considers the sociohistorical background for these movements and examines the language maintenance, revitalization, and revival initiatives they have spawned.

Sociohistorical Context

Despite a rich legacy of oral and written literary traditions and the presence of contemporary autochthonous literacies and education systems, Indigenous languages have been largely ignored and denigrated in Western and Western-modeled schooling—a common practice with regard to minoritized languages in the context of national schooling throughout the world. In sub-Saharan Africa, this occurred as European missionaries constructed an artificial multilingualism whereby closely related African varieties (similar to British and American English) were recorded as distinct tongues. These linguistic boundaries became the template for dividing African peoples territorially and for "de-Africanization" through the privileging of colonial languages for high-status purposes, including schooling (Makalela, 2005). In North America, from the 17th through much of the 20th century, Native children were forcibly removed from their families and compelled to attend distant residential schools where "no Indian talk" was a cardinal rule (Spack, 2002). During the same period, Australian Aboriginal and Torres Strait Islander children, known today as the "stolen generation," were forcibly taken from their homes to distant schools where they were prevented from learning their heritage language and suffered physical and emotional abuse. Similarly, in Nordic countries Sámi children were punished for speaking their language in school (Magga & Skutnabb-Kangas, 2003). In Latin America, centuries of segregated schooling aimed to purge Indigenous languages as part of the colonial project of building monolingual/monocultural national identities (López, 2008).

Mother-tongue schooling is still denied to millions of Indigenous children, with both individual and societal consequences. In the USA, American Indian and Alaska Native

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students are 73% more likely to be placed in remedial education programs, often on the basis of linguistic differences (National Caucus of Native American State Legislators, 2008). In both the USA and in Canada, colonial schooling has led simultaneously to the loss of Indigenous languages among children and to their stigmatization as "limited" speakers of the national language. In India, where only 26 Indigenous languages are used as mediums of instruction in the primary grades, a quarter of young children face severe challenges because their home language differs from the school language (Jhingran, 2009). In short, Indigenous children throughout the world are overrepresented on the negative side on all linguistic and educational indices (Skutnabb-Kangas & Dunbar, 2010). Moreover, the exclusion of Indigenous mother tongues from schooling creates what Mohanty, Mishra, Reddy, and Ramesh (2009) call a "vicious circle of language disadvantage" whereby Indigenous languages are considered inadequate for schooling, making them vulnerable to language shift and justifying further exclusion as mediums of instruction in school.

Contemporary Indigenous Movements for Linguistic Self-Determination

Recent decades have seen a significant repositioning of these power relations as a widespread Indigenous activism has taken hold. Throughout Latin America, policies promoting bilingual intercultural education (EIB) are commonplace (King, 2008; López & Sichra, 2008). In Norway, the 1987 Sámi Language Act makes Sámi and Norwegian coequal; a more recent Norwegian national curriculum reform marks the first time in the history of the Nordic countries that a Sámi-specific curriculum has held equal status with the national curriculum (Hirvonen, 2008). In the USA, the 1990/1992 Native American Languages Act and the 2006 Esther Martinez Native American Languages Preservation Act support ongoing language recovery efforts (Warhol, 2011). In Aotearoa/New Zealand, the Māori language has co-official status with English and New Zealand Sign Language (May, 2005). In post-apartheid South Africa, official language policy includes nine Indigenous languages and the option for children to be taught in the official language of their choice (Makalela, 2005).

At the international level, the United Nations in 2000 established the 16-member Permanent Forum on Indigenous Issues with a mandate to advise the United Nations on Indigenous issues relating to education, the environment, language and culture, economic and social development, health, and human rights. In 2007, the United Nations General Assembly approved the *Declaration on the Rights of Indigenous Peoples*, which includes provisions "to revitalize, use, develop and transmit . . . [local Indigenous] histories, languages, oral traditions, philosophies, writing systems and literatures" (2007, Article 13[1]).

These "top-down" policies and programs are complemented by a host of "bottom-up" or grassroots language education efforts worldwide (Hornberger, 2008). In a recent study of medium of instruction policies in Ethiopia, Heugh (2009) found that students who have the benefit of mother-tongue schooling for the full length of their primary schooling (eight years) perform as well as or better than their peers in English-medium classrooms on assessments of English, science, and mathematics. In the Indian states of Andhra Pradesh and Orissa, mother-tongue education in 1,495 schools and 18 Indigenous languages has improved student competencies in literacy and numeracy while increasing school attendance and enhancing school–community relations (Mohanty et al., 2009). In the southwestern USA, long-term Navajo bilingual education programs have led to the "four-fold empowerment" of students, parents, Native teachers, and tribal education leaders (Holm & Holm, 1995). In Hawaii and New Zealand, Hawaiian- and Māori-medium education has enabled Indigenous children to achieve educational parity with their White peers while revitalizing these threatened mother tongues (Wilson & Kamanā, 2006; Hill & May, 2011).

Even in communities with "sleeping" languages—those lacking native speakers but with documentation and a living heritage language community (Hinton, 2001; Leonard, 2008) —bold language revival efforts are under way. In the USA, for instance, the Wôpanâak Language Reclamation Project is using the 1663 Eliot Bible and historic legal documents written by native speakers to restore language-learning opportunities for Wôpanâak heritage-language tribal nations, whose last native speaker died in 1908. The project has credentialed two Wôpanâak linguists, developed a 10,000-word dictionary, and created a "no English" curriculum for learners of all ages (Ash, Fermino, & Hale, 2001).

Summary and Future Directions

While the contemporary circumstances for Indigenous languages are highly diverse, they share the goals of self-determination and social justice. These efforts have produced impressive linguistic and educational gains. Yet they face ongoing challenges from the combined pressures of globalization, homogenization, and socioeconomic stratification (McCarty, 2003). In Indigenous communities, linguistic repression, racial discrimination, and economic injustice are enduring language-policy themes.

The sustainability of Indigenous languages entails the empowerment of their speakers. Moving forward into the 21st century, language planning and policies that promote self-determination and equity are prerequisites for the revitalization and maintenance of Indigenous mother tongues.

SEE ALSO: Heritage and Community Languages; Heritage Languages and Language Policy; Indigenous Literacies; Status Planning; Teaching Indigenous Languages

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Indigenous Literacies

LYNN MARIO T. MENEZES DE SOUZA

Indigenous literacies are an important new area of research and discussion in applied linguistics marked by various controversies and issues of importance. These begin with the controversy around the concept of indigeneity. The term is generally used by those located in mainstream or dominant social groups, often within a context of former European colonization, to refer to minority and regional groups whose languages and cultures are considered to be restricted to small groups in isolated regions and to have historically existed prior to the mainstream or dominant (colonizing) culture(s) and language(s) within the same nation. As such, synonyms for the term *indigenous* include "first nations," "aboriginal" or "tribal," or even "amerindian."

It is precisely because the term *indigenous* is used by those located in the dominant culture that many of the controversies around *indigenous literacies* arise. These begin with the very concept of *literacy*, which, like the term *indigenous*, originates in the values and knowledge systems of dominant Eurocentric cultures and is transferred, often unproblematically, to refer to the writing practices of the indigenous cultures.

Historically, if *writing* is understood as a means of recording or registering information and knowledge, this has often meant that forms of writing which originated and were practiced in so-called indigenous communities and which had no correspondence in the knowledge and writing systems of the dominant mainstream community were not even perceived or valued as writing. Examples of this include, in the Andes, the use of knots by the Incas in the *quipu* system and the use of designs woven into ponchos and blankets to record and register important cultural information (Howard-Malverde, 1997); in the Amazonian region the use of iconic markings on ceramics, wood, and skin were and are also used to register information (de Souza, 2006). Moreover, many of the so-called cave drawings encountered in various parts of the world are accepted as forms of registering and recording information (Brandão, 1937).

Located in dominant and often colonizing cultures, analysts of writing have tended to privilege and take for granted their own knowledge systems and have used them as a basis for evaluating nondominant, indigenous modes of writing. Thus Sampson (1987), Brotherston (1979), Munn (1973), and Mallery (1972), for example, in an analysis of different writing systems, consider nonalphabetic ("semasiographic" or "iconic") writing systems to be less efficient and less developed than alphabetic writing systems. This conclusion is based on the assumption that alphabetic writing as a code that represents sound and voice is considered to be self-sufficient and nondependent on previous knowledge, permitting a text to be read by readers distant in time and space from the original writer and the original moment of the writing of the text. Thus, the assumption goes, texts written in previous centuries may be read and understood today and texts written by writers at a great distance from prospective readers may supposedly be sent and read with little or no difficulty for the readers.

However, what this assumption ignores is that reading and writing are not simply a matter of composing in or deciphering alphabetic codes, but are embedded in social practices (Street, 1984; Barton, Hamilton, & Ivanic, 2000) which greatly affect the forms that writing and reading take. A knowledge of the alphabetic code of one's language is not sufficient to help a reader read texts embedded in social practices of which she is not a

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member or a participant. For example, if a reader is not familiar with the social practices of reading the legal, academic, or medical texts of her community, the mere knowledge of the alphabetic code of her language will not help in understanding such texts.

Thus it is that writing as a social practice involves a connection between the *representational codes* (used to represent sounds in the alphabetic system) and the *knowledge system* of a particular community or culture. Furthermore, the fact that analysts often take their own codes and knowledge systems as yardsticks for perceiving or judging the existence, lack, or deficiency of writing systems of indigenous communties indicates a connection between *power* and writing systems. The result of this connection between power and knowledge is that the systems of the dominant (in which the analysts and policy-makers are generally located) are taken as the unquestionable measures against which nondominant indigenous practices are measured (see Mignolo, 1995 for a discussion of the knowledge and power collusion).

This connection between writing, knowledge, and power in indigenous literacy is particularly noticeable in the difficulty many analysts in dominant cultures have to perceive and value nonalphabetic, *visual* forms of indigenous writing. Analysts such as Derrida (1974) have pointed to how in dominant Western cultures knowledge is believed to be represented and expressed through *speech* and recorded in *alphabetic* writing as a representation of speech. Derrida refers to this as *phonocentrism* where voice and speech are privileged as vehicles of knowledge and recorded on paper as alphabetic writing.

In some indigenous cultures, such as many of those of the Americas and Australia, it is not voice but *vision* (in some cases both vision and voice) that is considered to be the *source of knowledge* (de Souza, 2008). In these cultures, knowledge originates in ways of seeing such as dreams or visions (Benedict, 1922). Just as in *phonocentric* cultures, these vision-based cultures also register and preserve their knowledge by writing it down on a material base such as wood, textiles, ceramics, or stone, as we have seen above.

However, as knowledge is not deemed to be primarily expressed through voice but through *vision*, the means of recording this knowledge is *visual* and not sound-based or alphabetic. Thus the knowledge is recorded as it is thought to have been seen, *visually*, in the form of *drawings*. And as writing is a form of social practice and therefore ruled by convention, this visual writing, far from being arbitrary and individualistic, will depend on and follow the community's preestablished conventions for visual representation, varying from figurative representational forms to more abstract, nonrepresentational forms (de Souza, 2003).

Unfortunately, considering that in dominant Eurocentric alphabetic communities "drawings" are considered to be decorative and secondary to alphabetic writing, and moreover, as a result of the power–knowledge–writing connection, it is not uncommon for forms of indigenous visual writing to go unnoticed or to be considered by analysts and policy-makers as mere doodles of distracted individuals of nonindigenous dominant groups. This in turn results in the belief of the dominant community that these indigenous communities have no forms of writing of their own. Given the Western *phonocentric* belief that knowledge is represented through alphabetic writing, and coupled with the belief that the only developed form of writing is alphabetic, it is not uncommon for this to result in an unvoiced assumption that these indigenous communities have no knowledges of value. This in turn generates so-called "developmental" policies for not only making these indigenous communities literate in alphabetic writing, but also for supplying them with the knowledges they are deemed not to have.

Policies of indigenous literacy and education often aim well meaningly at eliminating these alleged deficiencies of indigenous communities, but often generate or perpetuate complex conflicts between indigenous and dominant concepts of knowledge, language, and writing.

The conflicts of language which arise in issues of indigenous literacy are generally of two main and interconnected types: the phenomenon of bilingualism and the concept of the "standard" language.

In some societies, such as Brazil, it was common in policies of indigenous literacy education to assume that indigenous communities should be made *initially* literate in the local indigenous language and subsequently made literate in the dominant national language. The ideological mainstay of these policies was to assimilate indigenous communities to the national language and culture.

Given the difficulty in perceiving the nonalphabetic visual forms of literacy already existent in these communities, this dominant policy assumed that these communities should first be made (alphabetically) literate in their own, indigenous languages. It was assumed that this would preserve previously unwritten indigenous languages and value indigenous cultures and knowledges. However, as these languages were not written, alphabetic scripts had to be developed and, more signficantly, a *standard* written form of the indigenous language had to be created.

Curiously, it is probable that the concept of a fixed standard language, like the concept of a fixed systematic grammar, is the complex *consequence* of generations of using writing in a literate culture and probably not the *origin* of such a culture. Yet linguists have not hesitated in producing standard forms of indigenous languages in nonliterate cultures for the purposes of literacy teaching. The standard form of the indigenous language in question would be based on abstract linguistic notions of system and standard (originating, let us not forget, in the dominant, nonindigenous knowledge systems), with little or no regard for the conflicts and discrepancies these may cause in indigenous knowledge systems. In the case of Brazilian indigenous cultures, for example, the concept of a neutral, universal norm, be it of language or knowledge, is completely alien to their knowledge systems, which privilege forms marked for the *perspective* of speakers and knowledge producers. This means that rather than neutrality, universality, and normativity, these cultures privilege contextually marked and locally valid forms of language and knowledge (de Souza, 2006). The concept of a "standard" whose value/meaning is considered to be stable and unchangeable for all users, independent of context and speaker, is alien to these cultures and yet they are expected to accept and use such a concept in their everyday uses of writing in their "own" indigenous languages.

Once again the power factor and inequality predominate in indigenous literacy (see, e.g., Grossman, 2006 for a discussion of a related secret/sacred conflict in Australian indigenous cultures).

In these official policies for indigenous literacies, once established, the alphabetically standardized form of the indigenous language is taught until literacy skills are considered to have been developed. However yet again, attention should be called to the concept of literacy being presupposed in such policies. If it were indeed a policy that conceived of literacy as *social practice*, then it cannot merely teach *how* to use the indigenous written language which has never been used in the community; it has to ironically and simultaneously *create* a social practice in the community for the use of the new alphabetically written indigenous language. As we have seen, this invented practice may cause serious conflicts with the exisiting knowledge systems of the indigenous community (de Souza, 2006) and may detrimentally affect them.

Moreoever, it may create in newly literate indigenous readers a complex sense of deficiency of available knowledge in the written indigenous language. When this is coupled with the subsequent teaching of literacy in the dominant national language and the wealth of available resources in this nonindigenous written language, indigenous learners may indirectly be being taught how "deficient" their own language and culture are.

A final important issue in indigenous literacy is the orality/literacy debate. In light of the now widely accepted rejection of the "great divide" (Street, 1984) theories which separated societies into oral and literate and showed that all societies possess elements of both literacy and orality, it is worth remembering that many indigenous communities which have been submitted to influences from and/or contact with dominant alphabetic cultures may manifest juxtaposed or coexisting multimodal forms (Finnegan, 2002) and practices of literacy, which interweave oral, written, and visual elements. These may be forms which not only *preexisted* the influence of alphabetic literacy, such as the already mentioned forms of *visual* literacy, but may also appear as new, hybrid forms of writing. Examples include 19th-century North American Plains Indian ledger drawings (see plainsledgerart.org), Australian aboriginal dot painting (Johnson, 2007), papunya, or Brazilian Amazonian *kene* writing (de Souza, 2003). In all these cases, new material artifacts, such as pencils, paper, colors, paints, and so on, were introduced into the indigenous culture through contact with the dominant culture and resulted in new forms of nonalphabetic writing-as-registration-of-knowledge, previously nonexistent in both the indigenous and the dominant cultures, but which portray characteristics of both: indigenous visuality and the use of nonindigenous paper and writing implements.

Thus a critical issue in dealing with indigenous literacies is for the analyst to be constantly self-consciously and self-critically aware of her cultural presuppositions in terms of knowledge, language, and writing and how these are deeply embedded in an alphabetic, phonocentric, literate culture. Being unaware of this may not only impede the prospective analyst's understanding of indigenous literacy practices which are distant from and dissimilar to dominant nonindigenous practices, but more seriously may unwittingly also continue to treat indigenous cultures and peoples as deficient, unequal, and inferior.

SEE ALSO: Indigenous Languages in the 21st Century; Multimodality and Literacy; Multimodal Text Analysis; Orthography

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Individual Differences in the Classroom

TIM MURPHEY AND JOSEPH FALOUT

Introduction

Individual differences (IDs) is the notion that each individual person comprises a unique combination of aspects that might determine learning outcomes. The traditional focus depicts these aspects as fixed traits (e.g., personality types or learning preferences) that are often measured through scale-based surveys and linked by statistics to other traits or to outcomes-based dimensions (e.g., proficiency). Recent, emerging understandings instead view IDs as socially interdependent, malleable states developing over time. To describe these dynamics, research methods are also expanding. This entry draws from emerging epistemologies such as dynamic systems (Ushioda), poststructuralism (Norton), and sociocultural anthropology (Rogoff). Most of the research cited below is the authors' own and has been conducted in Japan with adult learners of English as a foreign language (EFL). This selection contrasts with much research on IDs being conducted in Europe, North America, and other Western contexts for EFL, and which is often focused on young learners and on learners from bilingual and bicultural societies.

Some IDs are dynamically emerging amalgamations of motivations and identities through time, depending upon the emotional-cognitive and situational states of individuals and groups, interacting in complex and chaotic sociocultural and sociohistorical systems. We discuss the co-constructed malleable unity of past, present, and future selves (identities) in learning communities and how many IDs emerge, mediated by (a) perceptions of past events, (b) present group dynamics and the mutual influence of participants, and (c) the plans, goals, and dreams stimulated by our imagined communities and possible selves. What might matter more for learning is not *what* learners experience as much as *how* they perceive and react to their experiences; how they internalize their positive and negative experiences in relation to their academic self-concept, cope in their thoughts and behaviors, engage in learning through their self-regulatory capacities, and how their learning theories about themselves determine future action (Dweck, 2000). Rogoff (1995) writes, "Any event in the present is an extension of previous events and is directed toward goals that have not yet been accomplished. As such, the present extends through the past and future and cannot be separated from them" (p. 155).

While traditional research shows how the past influences the present and future, research on possible selves (Markus & Nurius, 1986) and imagined communities (Norton, 2001) allow us to see how future projections change present action as well. Figure 1 depicts a person operating in three planes of time simultaneously, in which any one plane can become more consciously dominant depending upon the dynamics of the circumstances. The past may continually influence the present through the antecedent conditions of the learner (ACL); near peers in present communities of imagination (PCOIs) (Murphey, 2008) can mutually influence perceptions of the past, present, and future and become models for one another (Murphey & Arao, 2001); and possible selves and imagined communities are products of our possible pasts and presents. These influences emerge through the

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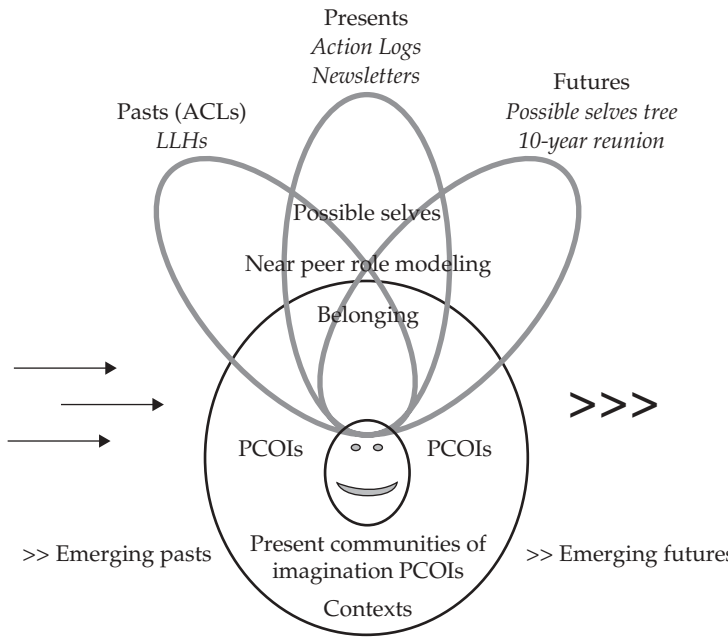

Figure 1 Three overlapping mind times situated in emerging contexts © Tim Murphey and Joseph Falout

meaning making of individuals and groups rather than through predetermined rules. This resonates with Ushioda's (2009) "person-in-context," capturing "the mutually constitutive relationship between persons and the contexts in which they act—a relationship that is dynamic, complex and non-linear" (p. 218). Therefore, to consider IDs is to consider the complex system of interdependent interactions of individuals in the specific local community of practice, our everyday classrooms.

Knowledge of antecedent, present, and future conditions of the learner can offer teachers and researchers valuable information about students' IDs that significantly impact their learning and their behavior in classes. While we need to increase the ways we find out and use such information, we already know that using, for example, language learning histories (Murphey & Carpenter, 2008) and surveys can inform us about ACLs; journaling, action logging, and newsletters (Murphey, 1993) can inform us about present conditions from the students' perspectives; and certain activities, such as imagining a 10-year class reunion or constructing a possible selves tree, can help students imagine and aim for future desired conditions. Teachers are inviting the development of students' thinking when focusing attention on these times and topics, which should help students to construct meanings about their learning lives that help them better cope with the past and present to project more healthily into the future. We recommend enlisting students as coresearchers in such activities to increase their own sense of agency in the meaning making of the past, present, and future, as they learn from each other's IDs and stimulate greater willingness to communicate in the group (Murphey & Falout, 2010).

Antecedent Conditions of the Learner

Learners' histories merge into present psychological states called the ACL, which are carried into new academic situations (Gorham & Millette, 1997). These factors can include

self-efficacy, expectations of success, attributions of success or failure, task value, goal orientation, and self-concept. They are malleable through social interaction and dependent on task-specific activity. Therefore ACLs are not set traits; they are fluctuating and adaptable emotional-cognitive states, mediated by specific social environments which influence outcomes.

The construct of ACL has been applied to studies in motivation and second language acquisition. In Falout and Maruyama (2004), learners experiencing a streak of negative affect toward learning English had concurrent losses in motivation through exposure to monomethodical teaching, lack of progress, and loss of self-confidence, ending up with lower proficiencies and more negative ACLs than learners who had longer periods of positive affect, who had higher proficiencies and more positive ACLs. Falout, Elwood, and Hood (2009) confirmed that affective states and self-regulatory capacities correlated with proficiency outcomes, whereas frequency of demotivational experiences did not, indicating that ACL could be a predictor of learners' future possible selves. There was evidence that the number of times learners had negative experiences was irrelevant, but that learners who could control their affect and behaviors about learning English became more proficient and reported higher ACLs. Such learners displayed more frequent use of self-regulating behaviors when struggling with learning English.

Carpenter, Falout, Fukuda, Trovela, and Murphey (2009) investigated how learners with different ACL levels lost and regained their motivation. Figure 2 shows that those with higher positive ACLs reported earlier remotivation by using motivational and metacognitive learning strategies in greater types and frequencies, and were influenced positively by significant others in their social environment for becoming remotivated to learn English. For instance, high positive ACL students were more diligent with tasks, both self-regulated and teacher-regulated, alongside taking short breaks to recharge their energy to study. Negative ACL learners showed a lack of abilities and learning strategies in greater types and frequencies to regain control and self-confidence after setbacks, displaying a tendency toward isolated, helpless states.

The salient difference among these learners was their self-appraisals in relation to academic experiences. ACLs provide useful information about IDs that teachers can use to design activities that might help students develop more holistically, activities that are done in a PCOI and lead to positive possible selves.

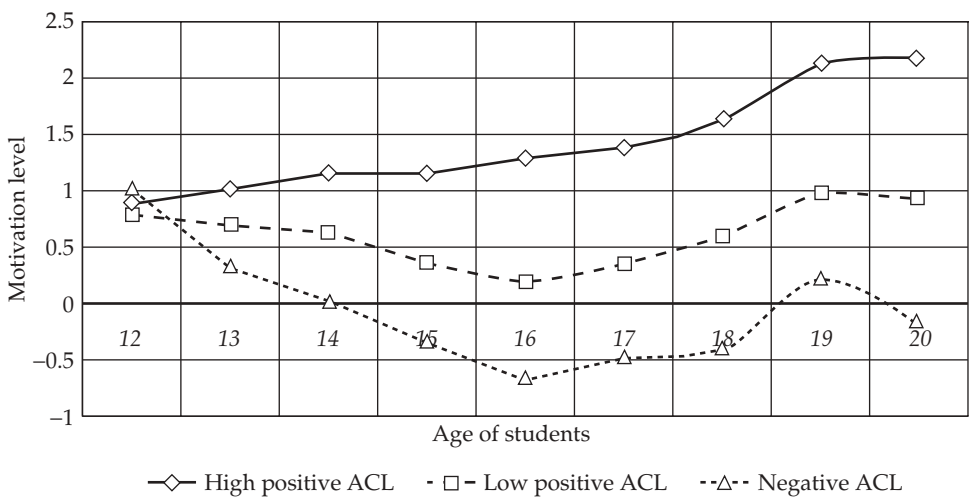

Figure 2 In-class motivation time lines © Tim Murphey and Joseph Falout

Present Communities of Imagination, Imagined Communities, and Possible Selves

Students also have IDs concerning their ability to collaborate with their present group and conceptualize their futures. Norton (2001) introduced the concept of *imagined communities* in language education to explain different patterns of learners' investment in learning their target language. Imagined communities are groups we think we belong to but whose members cannot be known with certainty. Researchers since Norton have shown that students' investments in learning greatly depend on their beliefs, the type of their imagined communities, and their propensity to envision possible selves. All these are mediated by socializing with near peer role models (Murphey & Arao, 2001) in their PCOIs.

Fukada's (2009) quantitative analysis of 248 university student surveys found a strong correlation between the extent of out-of-class autonomous learning activities and their imagined communities—students who were not active out of class reported not imagining strong imagined communities while those who were active had strong and more specific imagined communities.

When classes engage in activities concerning students' pasts or future projections, they do so within their PCOIs, the resources within present groups, enriched by near peer role modeling, positive emotional contagion, and good group dynamics which create nurturing communities of practice and co-constructed imagined communities and possible selves. Murphey and Carpenter (2008) showed how students were able to remember seeds of agency in their past language learning histories, share them in the present, and inspire each other to act more in the future. When individual approaches and thoughts about learning tasks, second language socializing, and futures are shared in a second language class as course content, students can become more hopeful, with pathways thinking and agency thinking, and stimulate more willingness to communicate.

SEE ALSO: Agency in Second Language Acquisition; Beliefs in Second Language Acquisition: Learner; Identity and Second Language Acquisition; Motivation in Second Language Acquisition

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Inference

JAMES DEAN BROWN

Using Inferences in Quantitative Research

An *inference* is a conclusion or implication that results from examining evidence or using logic, and *inferring* is the process that leads from the evidence or logic (or both of these) to the conclusion or implication. In quantitative language studies, researchers make inferences: (a) about constructs from variables, (b) about populations from samples, and (c) about probabilities using inferential statistics.

Drawing Inferences About Constructs From Variables

The key to understanding how researchers draw inferences about constructs from variables is to first understand three terms: constructs, operationalization, and variables. Once these terms are clear, understanding the relationships among them will clarify how inferences about constructs are drawn from variables.

The *constructs* of interest in language research are typically things that go on in the human brain. For example, the construct *language proficiency* is primarily a mental process. Other constructs include mental attributes such as motivation, anxiety, learning strategies, extroversion, and so forth. Such constructs, more precisely known as *psychological constructs*, are the central theoretical concepts that are typically being studied in language-learning research, because they are viewed as important psychological characteristics or traits operating in the participants' brains that might be related in important ways to language learning (which is itself a construct).

Unfortunately, researchers cannot observe psychological constructs directly because constructs happen inside learners' brains. Instead, researchers *operationalize* constructs, which simply means that they devise ways to measure or otherwise observe and quantify the constructs. For example, the Modern Language Aptitude Test (MLAT) is sometimes used to operationalize the language aptitude construct. Study participants answer questions on the MLAT, which are scored; the scores are then used as numerical definitions of the construct (i.e., the language aptitude construct is operationalized) such that, relatively speaking, a person with a high score has a lot of language aptitude and a person with a low score lacks language aptitude; these numbers are then used as a language aptitude variable that is studied statistically. The measures used to operationalize constructs and form variables can take the form of tests, questionnaires, countable observations, etc.

Variables are things that typically vary among people or over time. Language researchers focus on and manipulate variables when they do research. Variables can be operationalized constructs such as language aptitude, motivation, and pragmatics ability. But researchers may also be interested in studying the effects of gender, age, nationality, text types, etc., each of which can typically be established as a variable by simple observations, even though they are not constructs.

The key to understanding the relationships among constructs, operationalization, and variables is to realize that there is a big difference between a theoretical construct that is being investigated and the numbers derived from some measure of that construct, which are used to operationalize that construct as a variable. For instance, if the construct is

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language aptitude and the MLAT is used to operationalize that construct, then the MLAT scores serve as a numerical representation of a student's language aptitude. However, at best, such operationalizations are indirect reflections of the constructs involved and are not the constructs themselves, much like Plato's allegory of the shadows cast by the fire on the cave wall: we can never see the shadows directly, but we infer from the reflection what the shadows represent. Similarly, we can never see a psychological construct directly; we can only *infer* from the operationalized variable that it is present and how strong it is.

Clearly, the links among constructs, operationalization, and variables are inferences and not absolute one-to-one correspondences. Hence, these links must be supported by convincing arguments. Presenting such arguments is the researcher's responsibility but peer reviewers and, ultimately, the readers of language studies must judge whether researchers have presented convincing arguments for their inferences.

Drawing Inferences About Populations From Samples

Language researchers also make inferences about populations based on what they find in samples. *Samples* are subsets of participants (or other countable objects) drawn from some larger population in such a way that the subset can be said to represent the larger population. Researchers use samples to minimize the amount of effort and resources needed for their research.

In contrast, a *population* is the entire group of people that the researcher is interested in. For example, a researcher might be interested in the entire population of students studying Korean at the University of Hawaii (UH) or all the texts in Turkish language newspapers. A population needs to be well defined and described if sampling from that population is to work well and lead to correct inferences about the population. However, in some cases, clearly defining and describing a population can be surprisingly difficult. For instance, imagine trying to define and describe the population of all ESL students in the United States. In cases like this, researchers typically shift their interest to a target population that *can* be defined and described more narrowly, such as all the ESL students at the UH. In the process, the inferences that can be made (i.e., the degree to which the results can be generalized) by sampling from the population are considerably circumscribed to that narrower population of ESL students at UH.

If *sample data* are adequately selected (i.e., the sample is truly representative of the population), then the researcher can make the inference that the results based on the sample should also be representative of results that would be obtained if the researcher studied the entire population (with a certain probability or within a certain range of error). The adequacy of such inferences will depend on how well the population is defined, how adequately the sample represents the population, how well the sampling technique serves the purposes of the research, and how large the sample size is (both in absolute terms and relative to the population size). For example, a sample of 100 Turkish newspapers could be randomly selected from a list of all newspapers in Turkey and then one editorial could be randomly selected from each newspaper. If that procedure meets the needs of the research and the sample size is deemed large enough, the sample could arguably be said to represent the population of all the editorials in Turkish newspapers.

Drawing Inferences About Probabilities From Inferential Statistics

Statistical inferences involve "using probability and information about a sample to draw conclusions (inferences) about a population or about how likely it is that a result could

have been obtained by chance" (Vogt, 1993, p. 220). Generally, these two purposes are called *estimation* and *hypothesis testing*.

Formally, *estimation* is concerned with drawing inferences from a sample about the mean, standard deviation, and so forth, of a population. Procedurally, such estimation is done by calculating statistics to estimate parameters. *Statistics* are numerical indicators that most often describe the central tendency and dispersion of sets of numerical data in samples. Common statistics of central tendency are the mean, mode, median, and so forth, and common dispersion statistics are the range, standard deviation, semi-interquartile range, and so on. (Statistics are usually symbolized with roman letters, e.g., the sample mean = M; the sample standard deviation = SD). *Parameters* are analogous numerical indicators of central tendency and dispersion *in the population*. Parameters are usually symbolized with Greek letters (e.g., the population mean = μ; the population standard deviation = σ).

Statistics are used to estimate *parameters*. Or put another way, parameters are inferred from statistics. Thus, when researchers describe the distributions of numbers in their studies with statistics, the notion that these statistics are most often estimates of analogous parameters in the population should always be on the minds of researchers and readers alike.

Formally, *hypothesis testing* is "the branch of statistical inference concerned with deciding between two (or sometimes more) hypotheses about some aspect of a distribution, such as the mean, median, variance, shape, etc. for the population of interest to the experimenter" (Yaremko, Harari, Harrison, & Lynn, 1986, p. 96). Put another way, hypothesis testing is a way of drawing inferences about the probability of a particular result being obtained by chance alone. *Inferential statistics* are used for this purpose. Common inferential statistics include t tests, F ratios, chi-square values, and so forth.

When a t test is applied, the hypothesis is about the probability that the difference between two means occurred by chance. For instance, a researcher might arrange for two randomly assigned groups of students to get six months of intensive French language training: a treatment group (one that got intensive *method X* training) and a control group (one that got intensive *traditional* training). The researcher gives an overall French proficiency test to both groups after the treatment and wants to know if the mean for the treatment group is higher than the mean for the control group. Since two means are only very rarely *exactly* the same, even if they are based on random numbers, the researcher finds that the two means are different. However, it is important to consider whether the difference between the two means is just a chance occurrence or could be due to the difference between method X and traditional language training.

Starting from a neutral stance, the researcher proposes a *null hypothesis*, that is, that the means of the two groups are the same (or vary from each other only by chance). Given the researcher's theoretical reasons for designing the study, a reasonable *alternative hypothesis* would be that the mean of the treatment group will be higher than the mean for the control group. However, another alternative hypothesis would be that the mean of the control group could be higher than the mean for the treatment group. To sort this out, the researcher could compare the two means using a simple t test. If the t test turns out to be significant at say $p < .01$ and the mean for the treatment group is higher, the researcher can reject the null hypothesis and conclude that there is only a 1% likelihood that the observed difference between the means occurred by chance alone. Because the mean for the treatment group was higher than the mean for the control group, the researcher accepts that alternative hypothesis and infers from all of this that method X treatment worked significantly ($p < .01$) better than the traditional language training. How much better method X worked is a separate issue, but that can be determined by examining the magnitude of the difference between the two means. In any case, based on the probability found above, the researcher can be very certain that the resulting mean difference was not just a chance fluctuation.

Typically, *F* ratios are used to make similar means comparisons when more than two means are involved. Correlational analysis involves examining whether a correlation coefficient observed in a study differs from the correlation that would be expected to occur by chance alone. A chi-square analysis involves investigating whether the observed frequencies in a study differ from the frequencies that would be expected to occur by chance alone. And so forth. The details of the hypotheses being tested and the procedures being followed vary considerably from inferential statistic to inferential statistic, but the nature of the inferences is always similar: that is, deciding between two or more hypotheses, starting with some version of a null hypothesis (of no mean difference, no correlation, no difference between observed and expected frequencies, etc.).

Conclusions

Clearly, inferences play an important role in quantitative language research. Researchers commonly use variables to make inferences about constructs, use samples to make inferences about populations, and use inferential statistics to make inferences about the probabilities that observed statistics did not occur by chance alone. In fact, most quantitative studies involve the entire three-part chain of inferences just described. Researchers and the readers of research must pay special attention to deciding if each of these inferences is sound and if the three types of inferences taken together form a cogent overall argument. If any link in this chain turns out to be weak, the overall structure of the study is threatened. Put more strongly, if the inferences in a study do not make sense separately or together, the study should probably be rejected by reviewers and ignored by readers.

SEE ALSO: Comparing Two Independent Groups; Comparing Two Related Samples; Probability and Hypothesis Testing; Quantitative Methods; Sampling: Mixed Methods; Sampling: Quantitative Methods; Variables

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Inference and Implicature

MICHAEL HAUGH

Inference Versus Implicature

An implicature is a type of speaker meaning that goes beyond what is literally said. Inference, in contrast, refers to the cognitive processes by which participants figure out meaning beyond what is said. Consider the following conversation:

Bart: Dad, Mom's spending more time at Moe's than you are.
Lisa: They seem awfully chummy.
Homer: Just what are you inferring?
Lisa: I'm not inferring anything. You infer, I imply.
Homer: Well that's a relief.
("Mommie Beerest" in *The Simpsons*, Price & Kirkland, 2005)

In this example, Bart and Lisa can be understood to be implying that Marge (Homer's wife) might be having an affair with Moe. This latter proposition counts as an implicature, and it is drawn through a process of inference. Homer, being Homer, next commits the classic mistake of conflating implicature with inference, to which Lisa responds with the well-worn dictum that speakers imply, while hearers infer. Dispute about the distinction between implicature and inference, however, is not restricted to popular discourse. On the one hand, many scholars view implicatures as if they can be treated as essentially synonymous with (nonlogical or pragmatic) inference (Sperber & Wilson, 1995; Levinson, 1983, 2000; Carston, 2002). On the other hand, other scholars insist that assimilating implicature to inference constitutes a conceptual and analytical error (Horn, 2004; Bach, 2006). Horn (2004) contends, for instance, that "speakers implicate" and "hearers infer" (p. 6). It is important to note, however, that this dictum rests on the technical notion of *implicate*, which is speaker-intended. It is thus not synonymous with the folk notion of *imply*, which involves meaning beyond what is said that is not necessarily speaker-intended, but rather may arise from the words themselves or how a hearer might normally interpret such words. On this latter view, then, while implicatures may be ascertained through inference by hearers, they are ultimately determined by the speaker's intentions.

There is reason to suspect, however, that Homer might not be entirely wrong in inadvertently mixing up what is implied with inference. Indeed, his claim that Lisa (and Bart) are inferring something here is actually correct in two senses. Both Lisa and Bart have inferred from their mother's recent behavior (e.g., spending a lot of time with Moe, getting on very well with Moe, and so on), along with real-world knowledge about how affairs involving married partners normally arise, that she might be having an affair with Moe. And they have also presumably inferred that, if they raise this behavior with their father, Homer might come to the same conclusion about the possible implications of Marge's behavior. Inferences are involved not only in interpreting what is said (by others and oneself), but also in recipient design, that is, the cognitive processes whereby we bear in mind the possible interpretations of, or effects on, our audience when producing an utterance. Inferences are not only made by hearers, then, but are in fact made by all participants in interaction.

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The underlying assumption that implicatures are determined by speaker intentions is not entirely correct either, despite Lisa's implicit claim to the contrary. In various types of literary texts, such as poetry, for instance, the writer may intentionally leave the choice of possible implicatures open for the reader. And in interaction, speakers may be taken to be implying something that is contrary to their intention (so-called "unintended implicature"), or they may intentionally leave the interpretation of what has been implied open to the hearer. While Grice anticipated such issues in originally reserving the term "implicature" to refer to an intentionally conveyed meaning in addition to what is said (thereby restricting it to the speaker), and proposing the term "implicatum" to refer to the product of this process (which thus arises from inferences drawn by either the speaker or the hearer), this distinction was gradually obscured in later writings (Haugh & Jaszczolt, 2012). Undermining the classic dictum that "Speakers implicate, hearers infer," then, is the realization that implicature is not restricted to the domain of speaker(-intended) meaning, but can also arise as a joint meaning at the level of discourse.

However, while the straightforward association of implicature with speakers and inference with hearers has been recently questioned (see Horn, 2012), the more fundamental distinction between implicature as a species of meaning and inference as a kind of cognitive process (or product) nevertheless remains. The key difference between the two is that, while speakers can be held interactionally or morally accountable for implicatures, neither speakers nor hearers are held accountable for all the inferences they make when participating in interaction, unless they display such inferences through saying or implying.

Types of Implicature

An implicature is commonly conceptualized in pragmatics as a form of speaker-intended meaning that arises in a principled way from the cooperative principle and conversational maxims through defeasible inferences. It is also generally claimed that two different types of implicature can be distinguished on the basis of the distinction between conventionalized reasoning across contexts (default inference) and once-off reasoning in particular contexts (nonce inference). The former can be termed default implicatures, while the latter can be termed nonce (or particularized) implicatures, with a further distinction possible between default implicatures that arise across all contexts unless otherwise cancelled (generalized implicatures), and those that only require a minimal context in which to arise (short-circuited implicatures). In the following excerpt from a recording of a telephone conversation between friends, for instance, we can observe examples of both default and nonce implicatures.

(1) WSC: DPF006: 0:18

18	C:	Whadaya doing tonight?
19	S:	I dunno, what are you gonna do?
20	C:	Oh I've been invited to a party that I don't wanna really want to go to.
21		Hope to find an excuse.
22	S:	Oh right. I see.
23		Um, haveya seen Lethal Weapon?

Cameron's initial question, "Whadaya doing tonight?" (line 18), is in the form of a standard preinvitation (Schegloff, 2007, p. 129). In other words, in a minimal context, namely, two friends talking on the phone, the speaker normally implies through this utterance-type that he/she is going to subsequently invite the recipient to do something together if the preparatory condition that has been invoked is met (i.e., that the other person is available).

Steve orients to this possible invitation (and thus the default implicature, more specifically, a short-circuited implicature) by inquiring about what the invitation might involve (line 19). This default implicature, however, is suspended by Cameron's next turn when he outlines the preparatory conditions for another kind of invitation, namely, an invitation from Steve (lines 20–1), thereby implying that he would like Steve to invite him somewhere (and so provide the means by which he can be excused from going to a party he doesn't want to attend). This latter implicature through which Cameron solicits an invitation from Steve arises from specific contextual information, and thus it counts as a nonce implicature. The change in Steve's understanding of the upshot of Cameron's prior utterance in line 18 in light of this qualification (in lines 20–1) is evident from his use of "oh" and "right" (line 22), by means of which he receipts "new" information and understanding respectively (Heritage, 1984; Schegloff, 2007, p. 118), and his subsequent issuing of an invitation sequence (data not shown) starting with a standard preinvitation (line 23) (see Haugh, 2009, pp. 104–7).

Although a standard Gricean account would make reference to the cooperative principle and conversational maxims in explicating these implicatures, such an account was never actually meant by Grice to constitute the basis of a formal psychological model for how hearers figure out what has been implied (or implicated in more technical parlance). Thus, while a distinction between default and nonce inference can be drawn in principle, the question remains as to what kinds of inferences are actually involved in generating these implicatures. A related question is how to account for the fact that such inferences may be revised in subsequent discourse due to their inherently defeasible nature, and, moreover, that different inferences may be drawn by different participants in the same interaction. The former question, relating to what types of inference underlie implicatures, has been tackled primarily by those working in cognitive–philosophical pragmatics (sometimes termed pragma-linguistics), including neo-Gricean theorists (e.g., Levinson, 2000) and relevance theorists (e.g., Sperber & Wilson, 1995). The latter issue, relating to the contingent and emergent nature of inferences, has primarily been the focus of scholars working within the sociocultural and interactional paradigm in pragmatics (sometimes termed socio-pragmatics).

Types of Inference: Cognitive–Philosophical Perspectives

Inference is a basic form of reasoning whereby we draw consequences that a proposition logically has when the truth of the first proposition guarantees the truth of further propositions (leading to entailments), or consequences that seem necessary, permissible, or reasonable for one to draw (leading to implicatures, among other things) (Woods, 2010, p. 218). The former type encompasses logical inferences that are not strictly open to error. The latter types of inference are generally characterized as defeasible, which means they always allow for the possibility of error. In other words, they may not seem necessary, permissible, or reasonable in certain situations. We can further distinguish between defeasible inferences that are monotonic and those that are nonmonotonic. Monotonicity refers to the property of inferences whereby the addition of new information does not reduce the set of what is known. In other words, no matter what further premises are added to a given premise set (provided none of the existing ones are erased), the set of conclusions can only increase. Nonmonotonicity, on the other hand, refers to inferences where their present reasonability may be lost upon the addition of new information. Examples (2) and (3), adapted from Carston (1995, p. 224), nicely illustrate this difference.

(2) Monotonic inference

Premises:	All humans are fallible. Cameron is a human.
Conclusion:	Cameron is fallible.

(2′)

Premises:	All humans are fallible. Cameron is a human.
Additional premise:	All humans need water to survive.
Conclusions:	Cameron is fallible. Cameron needs water to survive.

(3) Nonmonotonic inference

Premise:	Cameron has eaten three of the cakes.
Conclusion:	Cameron hasn't eaten four of the cakes.

(3′)

Premise:	Cameron has eaten three of the cakes.
Additional premise:	If Cameron has eaten three of the cakes, he's bound to have eaten more.
Revised conclusion:	Cameron may have eaten four of the cakes.

In the case of example (2), we can see that the addition of a new premise does not negate the previously drawn conclusion, but rather only augments the set of conclusions (as seen in [2′]). However, in the case of example (3), the addition of a new premise does indeed negate the initial conclusion (as seen in [3′]).

Deductive inference is generally considered monotonic, while inductive and abductive inference are generally considered nonmonotonic, although the former can also be deemed nonmonotonic when considered from the perspective of soundness as opposed to validity (Woods, 2010, p. 219). All three types of inference, namely, deductive, inductive, and abductive inference, have been called on by various scholars to explain how implicatures are calculated.

Grundy (2008), for instance, argues that an implicature is recovered through inductive inference on Grice's account, and so it constitutes "a probabilistic conclusion derived from a set of premises that include the utterance and such contextual information as appears relevant" (Grundy, 2008, p. 102). Others have claimed that the recovery of conversational implicatures is better accounted for through appeals to abductive reasoning (i.e., inference to best explanation; Allot, 2010), or its formal analogue, inference to best interpretation (Atlas, 2005). The key difference between inductive and abductive inference is that the former involves reasoning "from particular instances to a general hypothesis," while the latter involves reasoning where "the conclusions are based on a best guess" (Allan, 2006, p. 652).

Somewhat controversially, Sperber and Wilson (1995) proposed in earlier work that deductive reasoning is central to the recovery of implicatures (but see Carston, 2002). They suggested that implicatures can arise, for instance, through deductive inferences drawing from the speaker's original utterance along with additional premises sourced from encyclopedic information. One key problem with a reliance on deductive inference in recovering implicatures, however, is how to establish the closed set of propositions required for strict deduction. There is no solution given in relevance theory as to how the hearer decides

which premises to include and which to exclude, except by the circular argument that the premises selected are determined by calculations of relevance (roughly defined as positive cognitive effects relative to processing effort), which in turn determines what the hearer understands to have been implied by the speaker (Cummings, 1998). The circularity of such an approach arises from the fact that calculations of the relevance of the contextual premises are determined by the hearer's calculations of the relevance of what is implied.

While debates continue about the utility of these traditional types of defeasible inference in understanding implicatures, it has become increasingly apparent that other types of inference are also required to fully account for the generation of implicatures, including, according to Cummings (2005), elaborative and presumptive inferences. Elaborative inferences are knowledge-based inferences used to "establish causal connections between events and construct intentional relations between actions within reasoning," with this knowledge often involving "behaviour tendencies and everyday routines" that serve "to specify normality or typicality conditions on inference" (Cummings, 2005, pp. 91–3). The following example illustrates this claim.

(4) A: I'm out of milk.
B: There's a shop at the end of the street. (Cummings, 2005, p. 102)

In order for A to understand that B is implying that A can get milk from the shop at the end of the street, real-world knowledge is required, namely, that corner shops stock commonly used groceries, including milk. In other words, this implicature cannot be recovered without recourse to an elaborative inference involving (stereotypical) real-world knowledge.

Presumptive reasoning is also arguably crucial to the recovery of implicatures, since implicatures are almost always subject to revision based on the addition of further contextual information, but are nevertheless often held to be communicated, at least provisionally, by hearers. One kind of presumptive-reasoning system proposed by Cummings is "argument from ignorance," where a proposition is accepted as true because there is no evidence that it is not true (or vice versa) (Cummings, 2005, p. 109). On this view, then, presumptive and elaborative inferences are processing "shortcuts" that are "grounded in experience and associative links" (Capone, 2011, p. 1748).

The move to consider these other types of inferences in the interpretation of implicature, however, indicates an important change in our conceptualization of inference, namely, seeing them as arising relative to *contexts* rather than locally computed (Jaszczolt, 2005; Horn, 2009; see also Levinson, 2000). Such a move thus suggests that there needs to be more attention paid to emerging sociocultural and interactional perspectives on inference.

Sociocultural and Interactional Perspectives on Inference

One key criticism of cognitive–philosophical approaches to inference is that they have placed too great a burden on global reasoning processes without proper consideration of the manner in which inferences are situated in, and contingent on, the interplay of participants' utterances and understandings of those utterances in interaction. As Knippen (1995) has argued, our understanding of inference and its role in generating implicatures needs to be "restructured to reflect the extent to which more restricted mechanisms and processes sensitive to local cues guide the interpretation of language in conversation" (p. 127). It was noted in discussing example (1), for instance, that Steve's understanding of what was implied by Cameron's initial utterance in the excerpt depended on shared knowledge about the interpretation of that utterance-type among friends (i.e., it was situated), and that it changed in light of Cameron's subsequent utterance (i.e., it was contingent).

The claim that inference is situated, and thus sensitive to elements of both local and broader societal contexts, has been made by a number of scholars working in different paradigms. Gumperz (1982), for instance, argues in advancing his notion of conversational inference that interpretations are "situated or context-bound," a point that is echoed by Bilmes (1993), who also suggests that implicature may involve "uniquely cultural understandings." In the following exchange, for example, there is a (cultural) assumption that having sex before marriage is not only desirable but also permissible.

(5) (One teenage boy asks another after B has had a date with a girl)
A: What did you get?
B: I kissed her.

In order for A to infer that B is implying that he did not have sex with the girl, A must make recourse to particular (cultural) knowledge about what can happen on dates (at least in some parts of the world). To treat inferences as situated is to recognize that implicatures are informed by "sociocultural knowledge and currently negotiated common ground" (Marmaridou, 2000, p. 248), or by "social regularities" in their interpretation (Mazzone, 2009, p. 344).

The claim that inference is contingent has also been advanced in a number of studies that have examined the ways in which meanings arise in actual interactional data (as opposed to constructed examples; Bilmes, 1993; Arundale, 2008; Haugh, 2008, 2009; Hirsch, 2010). One key finding has been that implicatures cannot necessarily be traced analytically to the prior intentions of individual speakers (including their communicative intentions). This is because participants reciprocally afford and constrain interpretations of implicatures by the adjacent placement of subsequent utterances, through which they display their understandings of the interactional import of prior and forthcoming utterances. In example (1), for instance, we can see how the response of the recipient (Steve) helps constrain what is implied among the potential interpretations initially afforded by the speaker's (Cameron) first utterance, an understanding which is subsequently qualified by the first speaker (Cameron). Approaches that conceptualize the inferential work underlying meaning and communication as contingent and nonsummative (Arundale & Good, 2002; see also Haugh, 2009) thus arguably deserve further consideration in analyses of implicature. In this way, we may start to really address the fundamental problem of how speakers and hearers come to joint understandings (or diverging understandings) that something has indeed been implied in actual interaction.

SEE ALSO: Conversational Implicature; Pragmatics in the Analysis of Discourse and Interaction; Pragmatics and Cognition

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Information Retrieval for Reading Tutors

MAXINE ESKENAZI AND ALAN JUFFS

Reading tutors are one example of an intelligent tutoring system. Such intelligent tutors seek to integrate content knowledge and instructional principles with models of an individual learner's knowledge and beliefs. In this way, an intelligent tutor can provide individualized instruction appropriate to the stage of development of the learner in the targeted knowledge domain. In this context, the use of information retrieval (IR) for reading tutors is relatively recent (Brown & Eskenazi, 2004) and stems from the strong desire on the part of language educators to give students practice in a realistic environment that goes beyond second language textbooks. In this case, the realism is provided by the authentic texts that are retrieved from the Internet. An authentic text is a text that has not been created or edited specifically for a (second) language learner. The challenge in using authentic documents to teach reading and vocabulary is that, unlike documents prepared by teachers expressly for their students, the materials typically obtained from the Internet are not homogeneous in content and in difficulty. This means that a simple search, containing one or several words and using a common search engine such as Google, will not retrieve documents that are satisfactory for use in tutoring. To find usable documents, the content of the Web pages that are found must be filtered, annotated, and presented to the student in an appropriate environment.

Intelligent computer-assisted language learning (ICALL) instruction in reading and vocabulary rests, first, on a body of research that has established the words students need to know from word frequencies in extensive spoken and written corpora (Nation, 2001). Second, instructional activities stress student *interaction* with online materials, either mediated by an online workbook (Zapata & Sagarra, 2007) or with some interlocutor (Smith, 2004). Activities that promote frequent exposure and deeper processing are also thought to be more beneficial (Laufer & Hulstijn, 2001; Folse, 2006). Reading and vocabulary tutors' ability to provide immediate, individual feedback and training has been shown to be helpful in promoting long-term retention of vocabulary items practiced through CALL (computer-assisted language learning). Finally, optimal spacing of practice sessions with intelligent tutors has also been of interest (Pavlik & Anderson, 2005) and should be incorporated into instructional programs in ICALL. (See Goodwin-Jones, 2010, for an overview of recent developments.)

Before beginning to develop instructional activities that reflect the considerations just discussed, three major processes are followed when using IR for reading tutors. First, there is a process to choose documents: finding them, filtering them, and annotating them. Second, there is a process to choose documents for an individual student: modeling the knowledge of the student and defining what they need to learn. Finally, there is a process for correctly presenting documents to students in a pedagogically meaningful manner. When these processes are implemented, the documents and the way they are presented succeed in serving a student's needs and the learning goals, rather than dictating them. A specific case of a reading tutor is the reader-specific lexical practice program (REAP) developed at Carnegie Mellon University (http://reap.cs.cmu.edu/); its development was

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guided by the process described in the following paragraphs. Illustrations are provided from the REAP tutor.

Choosing Documents

A simple search of the Internet for documents may retrieve many Web pages that are useless for a student who is learning to read. For example, a teacher may look for documents that are on a topic that can spur much classroom discussion, such as "the death penalty." A simple search for this expression will return many different sorts of documents. Some will be legal documents with terms and specific syntax that make it hard for the learner to understand the document. Others will be lists of addresses to Web pages that concern the topic: those lists, in themselves, are readable. Yet others will contain many unknown words, again making the document hard to understand. To avoid these issues, obtain pertinent documents, and avoid a long search through many Web pages, it is better to not directly use a search engine, but rather to search for documents, filter them, and shape them into a usable database.

Searching for Documents

The search is set up on a server that is fast and has sufficient memory to store many documents that may contain images. While it is possible to simply store the documents for as long as it takes to process them and then just keep their Web address (URL) and the annotations resulting from the processing, Web pages change and disappear constantly, so with memory being relatively inexpensive, it is better to store the entire Web pages that have survived the filtering process.

Searches are "seeded," that is, they are given a set of URLs to start with. They collect the Web pages at those addresses and then follow all of the links that are on those pages, also collecting the linked pages. They then follow all of the links on the second set of pages, collect those Web pages, and so on. This can be continued until a set of a certain number of Web pages, say 50 million, is collected. This creates a database of material that can be accessed at runtime for the student in place of a direct Web search. A Web search could be performed in real time as the student waits, but if this is done, given that the search is looking for a document with very specific characteristics, this could take a long time. There are also some institutions that do not allow direct access to the Internet from their computers. It is generally accepted that the "offline" creation of a database, that is, before a student starts to use a reading tutor, is preferable. The number of documents to collect is variable according to need. In general, given the filtering process described below, somewhere between 1 and 5 out of 1,000 documents is kept at the end of the whole filtering process. There must be a sufficient number of documents remaining in the database after filtering so that selection can operate according to topic, word content, or level.

The search can be performed separately from document filtering, but this means that a very large number of documents must be kept in the system until filtering can be carried out. It is therefore often useful to run the search and feed the documents immediately into the filters so that both processes are carried out in parallel.

Filtering Documents

When a very large set of Web pages has been collected, they must be filtered for cohesion, for readability, for topic, for objectionable words, and for target word content. The last

criterion, target word content, assumes that, like many approaches to teaching reading, the tutor will be teaching vocabulary as the essential means of improving reading skills (Perfetti, Landi, & Oakhill, 2005; Perfetti, Wlotko, & Hart, 2005).

Since Web pages can be simple lists, or incoherent text, the first filter is aimed at eliminating anything that is not a cohesive text and it is responsible for most of what is eliminated. It is possible to use a parser for this task (Heilman & Eskenazi, 2006). In this case, the parser will give a score as to how well each sentence in the document has parsed (that is, corresponded to a string of words or parts of speech that is regularly observed in the language). By combining the scores of all of the sentences in a document into one overall parser score and determining a threshold for the parser score (after examining typical acceptable and nonacceptable Web pages), and retaining only the Web pages that are above that threshold, Web pages with poor text are eliminated. It is also possible to use measures of cohesiveness such as Coh-Metrix (Graesser, McNamara, Louwers, & Cai, 2004; Coh-Metrix, 2009) instead of a parser for this task. The term "Web page" has been used so far since the contents up to this point are not necessarily coherent documents. Now that this filtering is passed, we can use the term "documents."

Another issue that must be addressed in finding appropriate documents for each individual student to read is that some good, cohesive documents are difficult to read because they contain vocabulary or grammatical constructs (the latter especially in the case of non-natives) that the student has not yet learned. It is therefore desirable to annotate the documents as to their level of readability. Rather than eliminating documents, this process tags them as to level (K-12, for example), and thus enables the intelligent tutoring system to find documents that are at just the right level of difficulty for the student. Readability filtering can be accomplished by making a statistical representation of the words in the document (Collins-Thompson & Callan, 2004) or by using a representation that combines knowledge of both words and syntactic constructs (Heilman, Collins-Thompson, Callan, & Eskenazi, 2007). In general, a collection of sample documents that have been classified at the target levels by some criterion is used to construct the statistical models so that a new incoming document can be compared to these models.

After determining readability, documents can be annotated as to the topic that they address. Again, this process does not reduce the number of documents. Allowing students to choose documents on the topic of their choice is useful because it has been found that students learn better when they are reading something that they are interested in (Heilman, Juffs, & Eskenazi, 2007; Heilman et al., 2010). A set of topics is predetermined and a collection of documents on the topics to be annotated is assembled. An incoming document is compared to this, usually using a comparison of vocabulary content. The students are given a checklist of topics when they begin using the reading tutor and their choices are saved and matched with corresponding documents. Figure 1 is taken from REAP and provides a list of topics available.

The next step in the filtering process does eliminate documents. It is a search for objectionable words and expressions. It usually employs a handmade list. In addition to specific words, it is possible to block specific URLs or groups of them. For example, when teaching non-native students from certain countries, religious references have been found to be offensive and sets of URLs can be added to a "do not use" list.

The next process is again not intended to eliminate documents, but to classify their contents. As most reading tutors concentrate on teaching new vocabulary, this step finds words and annotates the documents for the words that they contain. Using either a handmade list of target words that the students should learn, or some generally accepted list such as the Academic Word List (Coxhead, 2000), each document is annotated with the words in this list that it contains and the frequency with which each word occurs in the document. Eventually, the words that have more than one meaning should also be annotated

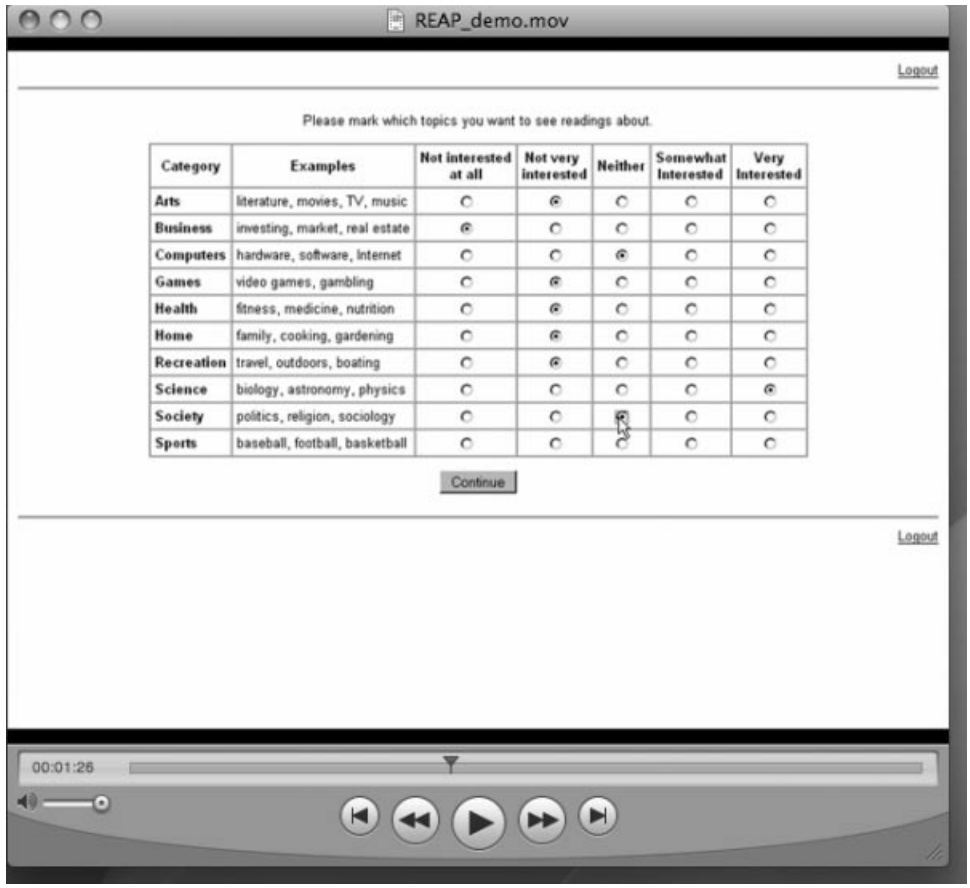

Figure 1 Screenshot from the reading tutor called "REAP" (http://reap.cs.cmu.edu/) showing a reading topic checklist

as to which of the meanings is used in the document (Kulkarni, Heilman, Eskenazi, & Callan, 2008). In this way, the student can learn new meanings. Also, if there are post-reading questions, the meaning of the word in the questions can be matched to the meaning of the word in the document. This implies that there is a set of questions of some sort that are also annotated as to the meaning of the word.

Creating a Database of Documents

The documents that remain after filtering have a series of annotations (parser score, list of words, readability level) in some easy-to-access format for the intelligent tutor. The tutoring system is created in a way that enables rapid access to the document labels and the documents themselves. In general, once the intelligent tutor has found a candidate document to present to the student (it will find several in order to give the student the choice of what they want to read), it will also obtain something about the document to show the student so that he or she can make their choice. This can be the first few sentences or first 100 words of the document. More advanced systems may automatically summarize the contents of each document; that summary is kept as another annotation of the document and presented to the student when they are choosing the documents. Summarization is

still an error-prone process and so the use of snippets from the beginning of the document has been preferred.

It should be noted that this process is language independent and thus can be used for any language where a significant number of documents can be found on the Internet. The REAP system, for example (Heilman, Collins-Thompson, Callan, & Eskenazi, 2006), was created in English and subsequently other versions have been made for French and for European Portuguese (Marujo et al., 2009).

Intelligent Tutoring: Choosing the Right Document for a Specific Student

In order to choose the right document for a student to read, the intelligent tutor must possess information about the documents (as they have been annotated in the processes above) and have a model of what the student knows. The system must therefore be provided with a student model that represents the individual student's word knowledge when the student begins, and that changes while he or she uses the tutor. This model may be initialized by entering the level of the student (say fifth grade). The system can then automatically load a set of words that the student is presumed to know. However, the best way to initiate the student model is to have each student take a pretest that attempts to determine their vocabulary knowledge (at least for the target words). There can be many different types of questions, cloze type being the most frequently used (Pino, Heilman, & Eskenazi, 2008). It has, however, been found (Heilman, Zhao, Pino, & Eskenazi, 2008) that simply asking students whether they know a word may be just as effective in some cases. It was found that when a student said they did not know a word, there was a close correspondence with their performance for that word on cloze questions. On the other hand, there was no correspondence for words that the student said they did know. This result is useful for two reasons: first, it enables the system to present many words in little time for the pretest. Second, it enables the intelligent tutor to know which words the student does not know and thus to concentrate on finding them first in the documents.

Once the intelligent tutor has presented documents to the student and the student has chosen a document to read, the intelligent tutor can update the student model in one of two ways. The simplest way is to just increase the value of knowing a word by some measure for each word that is in the document that the student is reading. A better way is to present the student with post-reading questions and to use the scores from their performance on those questions to update the student model.

A system can automatically create cloze questions (Pino et al., 2008) and, since it can generate them, it can also score the answers to them. When teachers are presented with automatically generated cloze questions, they generally accept about 65% of them as being useful. Therefore, present practice uses a fixed set of target words with a fixed, manually generated set of cloze questions, about 5–10 cloze questions per word, per meaning. The questions are annotated with the meaning of the word if it has several, and they are randomly selected for presentation.

Presenting Documents for Use by Students and Teachers

There are several scenarios of how an intelligent tutor for reading that uses IR can be employed. They range from a teacher's use in search of a document to use in class without the tutor, to group use of the tutor, to individualized use of the tutor.

In some cases, a teacher may simply be looking for a document to be used in class either to be read on paper or to be accessed directly through its URL. As in the case of the unfiltered

documents above, the teacher may have to spend an inordinate amount of time searching through documents that a search engine found for "the death penalty" for one that can be used. However, if the tutoring system can be used as a search engine, then the teacher can input "the death penalty," "reading level 6," and words = "review," "inaccurate," "legal," to find an appropriate, coherent document much faster.

If the teacher has a computerized classroom, then they may want the students to all read the document within the tutoring system. One same document can be presented to the whole class and post-reading questions can follow. There can also be a set of pre-chosen documents that the students can read later at their own pace.

Finally, students can use a tutor of this kind to read on their own with documents that the intelligent tutor automatically selects according to the procedures described above. In this case, it is useful to give the students help as they are reading the document. There are several types of help that can be used. First, the post-reading questions can be of help to the student by, once their answers have been recorded, giving them the answer to the question, so that they can immediately learn something about a word. While the student is reading a document, there are several types of help that can be used. First, seeing a definition of a word may help them. For this, they can open a separate window on their computer and use an online dictionary, as illustrated in a screenshot from REAP in Figure 2.

If, however, there is some reason for the tutor to track the words they have looked up, then it is preferable to embed a dictionary in the system itself. Here again, if a word has several meanings the meaning in the definition that is shown should in some way be

Figure 2 Screenshot from the reading tutor "REAP" (http://reap.cs.cmu.edu/) showing target vocabulary words

made to match the meaning of the word in the document. Another type of help is to show examples of a chosen word in other sentences. The system can also use either recorded speech (for a small, predetermined set of words) or speech synthesis in order for the student to be able to hear the word, since some words may be known aurally, but not visually. Finally, the tutor can permit the student to look up any unknown word or word he or she is unsure of. This feature can assist the student and inform teachers if they are overestimating students' knowledge of common words.

Helpful Additions to a Tutor

It has been observed that a good tutoring system will also count the number of presentations of each word, favoring several presentations of each word over just one presentation of many words in optimal spacing for long-term retention (Pavlik & Anderson, 2005; Cobb & Horst, 2011). Other aids that make learning with a tutor of this kind more effective are "use this word in a sentence" questions. This type of question cannot at present be graded automatically and so requires the blended participation of a teacher. But the time invested by the teacher is gained back by better learning since this form of question requires the most active (sentence creation) participation of the student.

It is also helpful to allow the student to have access to the system outside of assigned class time. Allowing students to search for interesting documents encourages more time on task, which has been shown to improve learning. Also, as mentioned above, it is desirable to keep the images in the documents. These add interest and often aid in understanding a text. Students using the tutor are accustomed to the advanced graphics of Web documents, and will expect the same from the tutor's offerings. Finally, it has informally been observed that the way that the teacher reacts to using the tutor (presenting it as a great aid or as a nuisance) has a great effect on student participation and thus on learning. A reading tutor using information retrieval should be seen as an extension of teacher time and as an aid. It should represent a saving of time and not require significant effort to include in a class. And, as a way to monitor student knowledge through direct access to the student model, it should enable a teacher to keep better track of each and every student's progress.

SEE ALSO: Computer-Assisted Vocabulary Load Analysis; Corpus Analysis for a Lexical Syllabus; Intelligent Computer-Assisted Language Learning; Learner Modeling in Intelligent Computer-Assisted Language Learning; Technology and Learning Vocabulary; Technology and Usage-Based Teaching Applications; Vocabulary Size in a Second Language

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Information Structure

JEANETTE GUNDEL

Introduction

Natural languages offer speakers a variety of options for expressing the same basic informational content. For example, in English, the sentences in (1a)–(1i) below can all be used to convey the information that a person named Sally won a contest.

(1) a. Sally won that contest.
b. The contest, Sally won.
c. There was a contest that Sally won.
d. This contest was won by Sally.
e. She won a contest.
f. It was Sally who won the contest.
g. What Sally won was the contest.
h. (As for) that contest, Sally won it.
i. She won the contest, Sally.

The possibilities can be further multiplied by placement of a prominent pitch accent on different constituents of these sentences.

The term "information structure" has been used to refer to the kinds of distinctions exemplified by the sentences in (1), both at the level of meaning and at the level of morpho-syntactic and prosodic form used to express that meaning. It is widely assumed that these options reflect different ways that information expressed in a sentence is conceptualized, depending on (a) the entity that the utterance is primarily about, as distinct from new information asserted, questioned, and so forth about this entity; and (b) assumptions about the addressee's knowledge/memory and attention state. Such factors provide the basis for explaining why the sentences in (1) cannot be used appropriately in the same context.

Work on information structural concepts within the Western grammatical tradition can be traced back to at least the second half of the 19th century. The German grammarians Gabelentz (1868) and Paul (1880) used the term "psychological subject" for what is now called topic, ground, or theme, and "psychological predicate" for what is now called comment, focus, or rheme. Work by the Czech linguist Mathesius in the 1920s (e.g., Mathesius, 1984) initiated a rich and highly influential tradition of research in this area within the Prague School that continues to the present day. Also influential has been the seminal work of Halliday (1967) and, within the generative linguistic tradition, Chomsky (1971), Gundel (1974), Kuno (1972, 1976), Kuroda (1965), Reinhart (1981), among others. More recent work is cited below.

The next section addresses the question of what kinds of phenomena are included under the term "information structure." It is followed by a section that provides a brief overview of how information structure is formally expressed across languages.

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What Is Information Structure?

The term "information structure," originally introduced by Halliday (1967), has been widely associated with the distinction between given and new information expressed in a sentence. There continues to be disagreement and confusion, however, regarding the exact nature of information structural primitives themselves, and their relation to one another. Some of the confusion has resulted from conflating two distinct types of givenness/newness. Following Gundel (1988), these are described as "referential givenness/newness" and "relational givenness/newness." The terms "information structure" and "information status" have been used interchangeably by many authors for both concepts and both will therefore be discussed here.

Referential Givenness/Newness

Referential givenness/newness involves a relation between a linguistic expression and a corresponding nonlinguistic entity in the speaker/hearer's mind, the discourse (model), or some real or possible world, depending on the analyst's assumptions about where the referents of these linguistic expressions reside. Some representative examples of referential givenness concepts include various senses of referentiality and specificity, the familiarity condition on definite descriptions (e.g., Heim, 1982), the activation and identifiability statuses of Chafe (1994) and Lambrecht (1994), the hearer-old/new and discourse-old/new statuses of Prince (1992), the levels of accessibility of Ariel (1990), and the cognitive statuses of Gundel, Hedberg, and Zacharski (1993). For example, the cognitive statuses on the Givenness Hierarchy in Table 1 represent referential givenness statuses that an entity mentioned in a sentence can be assumed to have in the mind of the addressee.

The Givenness Hierarchy (Gundel et al., 1993)

in focus	activated	familiar	uniquely identifiable	referential	type identifiable
it	*this* N/*this*/*that*/*SHE*	*that* N	*the* N	*indefinite this* N	*a* N

Note. *SHE* here represents all stressed personal pronouns. Uppercase letters here and elsewhere in the entry indicate location of a prominent pitch accent.

Gundel et al. propose that determiners and pronouns across languages signal these cognitive (memory and attention) statuses as part of their conventional meaning. The relevant English forms are listed here below each status. A speaker's assumptions about the status of some entity in the mind of the addressee thus constrain the forms that may be appropriately used in referring to that entity, and the lexical items in question provide information as to how or where the intended referent can be mentally accessed. Since the statuses are in a relation of unidirectional entailment (i.e., each status entails all lower statuses on the hierarchy, but not vice versa), lexical items provide increasingly more specified information about cognitive status as one moves up (from right to left) on the hierarchy. For example, in (1e), the indefinite article *a* informs the addressee that he or she is only expected to access a representation of the type of thing described (type identifiable), which should be possible just in case the addressee understands the meaning of the word *contest*; the definite article *the* in (1b) and (1i) instructs the addressee to associate a unique representation of a specific member of that type (uniquely identifiable); the demonstrative determiner *that* in (1a) provides the information that the intended referent is to be accessed by selecting a representation that already exists in memory (familiar); the demonstrative determiner *this* in (1d) provides the information that the intended referent is to be associated with an

entity in current awareness (activated) and the pronoun *she* in (1i) provides the information that the intended referent is not only in awareness, but in current focus of attention. The relation of unidirectional entailment that holds between statuses also gives rise to implicatures which result from interaction of the Givenness Hierarchy with general pragmatic principles (Grice, 1976; Sperber & Wilson, 1995). This includes, for example, the implicature that the interpretation of an indefinite article phrase is at most referential, that is, not uniquely identifiable, familiar, and so forth (see Gundel et al., 1993). Referential givenness concepts have also been shown to play a role in such linguistic phenomena as sentence accent and word order. Greater degrees of referential givenness are associated with weaker stress (see, e.g., Ladd, 1972; Chafe, 1994; Lambrecht, 1994) and also with right attachment/dislocation, as in (1i) above (Gundel, 1988; Vallduví, 1992).

Relational Givenness/Newness: Topic–Focus Structure

Relational givenness/newness involves a partition of the semantic-conceptual representation of a sentence into two complementary parts, X and Y, where X is what the sentence is about and Y is what is predicated about X. X is given in relation to Y in the sense that it is independent and outside the scope of what is predicated in Y. Y is new in relation to X in the sense that it is new information asserted, questioned, and so forth about X. For example, (1a) above may be used to describe a particular event of a person named Sally winning a contest, from the perspective of Sally, where Sally is what the sentence is about and what is predicated about Sally is that she won a particular contest that is already familiar to the addressee. The same event may be described from the perspective of the contest, as in (1d) or (1h), where the contest is what the sentence is about and what is predicated about the contest is that Sally won it. Terms used to denote relational givenness/newness concepts include psychological subject and predicate (e.g., in the works of Gabelentz and Paul mentioned above), presupposition–focus (e.g., Chomsky, 1971; Jackendoff, 1972), background-focus (e.g., Krifka, 2006), topic–comment (e.g., Gundel, 1974), and theme–rheme (e.g., Vallduví, 1992), among others. The term "topic" will be used here for what has variously been called psychological/logical subject, theme, and ground; and "information focus" will be used for what has variously been called psychological/logical predicate, rheme, and comment. The relational notion of information focus (as complement of topic) should not be confused with the referential notion "in focus," which refers to the cognitive status of a discourse referent.

Referential and relational givenness/newness are logically independent, as seen in (2).

(2) A. Who called?
B. Pat said SHE called. (Gundel, 1980)

If *SHE* in (2) is used to refer to Pat, it is referentially given in virtually every possible sense. The intended referent is presupposed, specific, referential, familiar, activated, in focus, uniquely identifiable, hearer-old, and discourse-old. But it is at the same time relationally new, and therefore receives a focal accent here.

How Is Information Structure Formally Expressed Across Languages?

Information Structure and Prosody

An association between prosody and information structure has been shown to hold in a variety of typologically and genetically diverse languages, where the most consistent way of marking information structure is through placement of a prominent pitch accent within

the comment/focus (see, e.g., Gundel, 1988). Moreover, as illustrated in examples (3) and (4) below, assignment of prominent pitch accent to the relationally new, focal constituent overrides the weaker stress that is typically assigned to constituents with a high degree of referential givenness, that is, ones that are in focus or at most activated.

The crucial role that prosody plays in marking information structure is compellingly illustrated in the following example from Lambrecht (1994, p. 133).

(3) Nazis tear down antiwar posters

As Lambrecht notes, most people, when asked to interpret a written sentence like (3) in the absence of any contextual cues, would assign a prominent pitch accent to the direct object (antiwar posters), the default accentual pattern that people normally assume when presented with written sentences in isolation, yielding an interpretation where the topic and focus coincide with the grammatical subject *Nazis* and the grammatical predicate *tear down antiwar posters* respectively. Such an interpretation would be likely, for example, in a context where (3) is uttered during a discussion about Nazis. What is particularly compelling about this example is that, as Lambrecht points out, the interpretation of the sentence, as well as the accentual pattern we assign to it, changes dramatically when we are provided with the context in which he first encountered the sentence. Lambrecht notes that the sentence was "written with a felt pen across a poster protesting the war in Central America. The poster had been partly ripped down from the wall it had been glued onto." Provided with this additional contextual information, the prominent pitch accent now shifts to the subject and the resulting interpretation, that people who tear down antiwar posters are Nazis, is truth-conditionally distinct from the one we assign to the sentence when prominent pitch accent is on the direct object.

A new or contrastive topic typically receives some sort of prosodic prominence as well, resulting in sentences with two prosodic peaks, as in (4b) below.

(4) a. What about Fred, what did he do?
b. FRED ate the BEANS.

In languages like English and German, the pitch accent that marks information focus is distinct from the one that marks a contrastive topic. In English, for example, (4b) as an answer to (4a), would have a simplex high tone (H*) accent on "beans" and a complex, low followed by high (L + H*) accent on "Fred" (Pierrehumbert, 1980). But in response to a question like "What about the beans, who ate them?" *Fred* would have an H* accent and *beans* would have an L + H* accent. However, not all languages distinguish prosodically between information focus and a contrastive or newly introduced topic. Thus Fretheim (1992) argues that the pitch contours that encode contrastive topic and information focus in Norwegian are not distinct. For example, (5), with a prosodically prominent subject as well as a prosodically prominent direct object, could be a statement about Fred or a statement about the beans. There is no intonational phenomenon in Norwegian that enables the hearer to uniquely identify topic and focus in an utterance of (5).

(5) FRED spiste BØNNENE
Fred ate beans.the
"Fred ate the beans"

Similarly, according to Vallduví and Vilkuna (1998, p. 89), information focus (their "rheme") and contrast (their "kontrast") are "associated with a single high tone accent" in Finnish; and the distinction between the two is coded syntactically rather than prosodically.

Information Structure and Morphosyntax

All human languages appear to have different syntactic constructions for describing the same event or state of affairs, depending on information structural concepts such as those discussed above. The structure most widely and consistently associated with syntactic encoding of relational givenness–newness is one where a constituent referring to the topic of the sentence is adjoined to the left or right of a full sentence comment/focus. Such prototypical topic–comment structures (also known as left or right dislocations), exemplified in (1h) above (*That contest, Sally won it*), are relatively unmarked in so-called topic-prominent languages like Chinese and Japanese (Li & Thompson, 1976). In some of these languages, for example Japanese and Korean, topic or focus may also be marked morphologically (see, e.g., Kuroda, 1965; Kuno, 1972; Gundel, 1988; Lee, 1999).

Languages differ, however, in the consistency with which information structure is directly mapped onto surface syntactic structure. For example, as noted in Chao (1968), the grammatical predicate of a sentence and what he calls the "logical predicate" (here "information focus") frequently do not coincide in English. Chao illustrates this point with the following exchange between a guide (A) and a tourist (B).

(6) A: We are now passing the oldest winery in the region.
B: Why?

The source of the humor here is that the English sentence uttered by the guide has two possible interpretations. On one interpretation, the information focus coincides with the grammatical predicate, *are now passing the oldest winery in the region*. On the other interpretation, the information focus includes only the direct object, *the oldest winery in the region*. The tourist (B) seems to be questioning the first interpretation, but it is the second interpretation that the guide actually intended to convey. Chao notes that the humor would be absent in Chinese because the guide's intended message would be expressed by a structure that more literally translates as "What we are passing now is the oldest winery in the region." Thus, while the different syntactic constructions are available in both languages, Chinese more consistently exploits the syntactic option for directly mapping information structure onto syntactic structure.

Similar differences are found even among very closely related languages. For example, while cleft sentences such as those in (1f) exist in all Germanic languages, they are much more frequently used in Norwegian and Swedish than in English (Johansson, 2001; Gundel, 2006). Gundel (2006) proposes that this difference is due to a stronger tendency to map syntactic structure directly onto information structure in Norwegian and Swedish. Specifically, these languages exhibit a strong tendency to keep information focus out of subject position and to encode presupposed material as a single constituent in the subordinated cleft clause, for example, *who won the contest* in (1f).

Sentence structures like (1b) (*The contest, Sally won*), where an argument is displaced from its canonical position and appears sentence-initially, are also well suited to syntactic encoding of information structure, as they make the distinction between topic and information focus structurally explicit. But the specific mapping between the information structure and the syntax can vary. Thus the sentence initial constituent, *the contest* in (1b), may refer either to the topic (e.g., as an answer to "What about the contest?") or to the information focus (e.g., as an answer to "What did Sally win?" Corresponding to this distinction, the sentence-initial phrase would also have two different pitch accents in English. As noted above, however, this is not the case in Finnish or Norwegian, for example.

Similarly, a clefted constituent, for example *Sally* in (1f), typically marks the information structural focus, while the content of the cleft clause is presupposed and topical. (1f) would thus be an appropriate response to "Who won the contest?" In English, an utterance with

this interpretation would have a prominent H* pitch accent on the clefted constituent. However, cleft sentences like (1f) (and their counterparts in other languages) do not always have a single prominent pitch accent on the clefted constituent. The accent associated with information focus may also fall within the cleft clause. Hedberg (2000) argues that in such "all news" clefts, the information focus includes both the cleft clause and the clefted constituent, as in (7) below and the most prominent accent falls at the end of the cleft clause.

(7) [Beginning of a newspaper article] It was just about 50 years ago that Henry Ford gave us the weekend. On September 25, 1926, in a somewhat shocking move for that time, he decided to establish a 40-hour work week (*Philadelphia Bulletin*, cited in Prince, 1978, p. 898)

Conclusion

Human languages differ in the manner and extent to which information structural concepts such as topic, focus, and various degrees of referential givenness are directly and unambiguously encoded by linguistic form (syntax, prosody, morphology, or some combination of these). However, it is generally agreed that information structure has important reflexes in the grammars of all human languages, and its expression and interpretation cannot be completely reduced to general pragmatic principles governing human interaction or to other cognitive/pragmatic abilities that are independent of language.

At the same time, however, it is evident that information structural concepts are pragmatically relevant categories with clear pragmatic effects, including the appropriateness/inappropriateness of sentences with different possibilities for information structural interpretation in different discourse contexts. The relevant question then is which information structural concepts and properties are purely linguistic and which are derivable from more general pragmatic principles that govern language use.

SEE ALSO: Crosslinguistic Differences in Grammar; Grammar and Discourse; Pragmatics and Cognition; Semantic Prosody

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Inhibition and Control in Second Language Acquisition

DAVID W. GREEN

Acquiring a second language (L2) is a dynamic process. New word forms can change how concepts of even common household objects (such as "bottle") map onto their referents in the physical world (e.g., Ameel, Malt, Storms, & Van Assche, 2009). New expressions can change the way events are conceptualized and causal statements are understood (e.g., Wolff & Ventura, 2009). The dynamic effects of L2 acquisition do not end there. Acquiring a second language exerts profound effects on the dynamics of speech production itself (Green, 1998). Understanding such dynamics is vital if we are to understand the process of L2 acquisition and speech performance in bilinguals.

Acquiring a second language challenges the process of speech production. How this challenge is met is the subject of experimental research and theoretical debate. A basic challenge concerns how a person acquiring an L2 avoids intrusions from their first language (L1). The words and concepts of the L1 are better known and more practiced. Indeed, initial acquisition may connect the words of L2 directly to translation equivalents in L1 (Kroll & Stewart, 1994). In consequence, when speaking in the L2, translation equivalents in the L1 may be active. How is a speaker able to select the words of L2 over those in L1?

Conceivably, given a direct link between concept and word in the L2, L1 words are simply blocked out or filtered out from the production process (e.g., Finkbeiner, Almeida, Janssen, & Caramazza, 2006). If so, there is no basis for predicting the conceptual changes noted above and no reason to expect intrusions from the L1 into the L2. However, words from the L1 do intrude, at least occasionally, and especially when proficiency in the L2 is low (e.g., Poulisse & Bongaerts, 1994). Such intrusions also appear more commonly in children than in adults and perhaps in older rather than in younger adults (Bialystok, 2001). This pattern suggests that both languages are active, even if only the L2 is intended, and that alternate expressions in the L1 and L2 compete to control speech production. Data from a variety of experimental paradigms tell the same story (e.g., Lee & Williams, 2001; Marian & Spivey, 2003). The pattern also intimates that frontal regions of the brain may be part of the mechanisms of speech control in bilinguals. Such regions develop slowly in childhood and are among the first to show age-related declines in efficiency (Craik & Grady, 2002).

On this view, language control recruits mechanisms external to the language system to resolve language conflict and interference (Green, 1998; Abutalebi & Green, 2007). On the assumption that exercise of such a mechanism improves its efficiency or capability (Bialystok, 2001), we can also account for the advantage bilinguals show in certain nonverbal tasks that require them to inhibit misleading information. Compared to their monolingual peers, bilingual children, young adults, and older bilinguals are less affected by distracting information (e.g., Bialystok, 2009).

The data also suggest that control of the system may change with proficiency in the L2 (Costa, Santesteban, & Ivanova, 2006). The links between concept and word form may strengthen. In addition, practice may make it easier to actually pronounce a word in the L2 (i.e., execute its motor program). Such changes may be expected to reduce the competitive effects of the L1 but do not guarantee their absence. Consider how the activation

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of L1 may change during the course of a conversation in L2 when the speaker aims to be in a unilingual rather than in a bilingual mode (Grosjean, 1998). There will be cues to the L1 that may lead to a temporary increase in the activation of the L1. Such cues include the topic of the conversation, such as talk about a holiday taken in a country where the L1 is spoken, and linguistic cues, such as the use of a word similar in sound and meaning to one in the L1 (i.e., a cognate). Research looking at transient increases in control demands is in its infancy, but there is research on language switching that is helpful in understanding some of the mechanisms that are involved in language control and that are likely to be important in L2 acquisition. Such studies point to the important role of inhibition.

Consider a switching experiment in which speakers name single digits in either their L1 or their L2 on the basis of a color cue. A French–English bilingual speaker, for example, may be required on one trial to name a digit (e.g., 8) in English and then on a following trial to name another digit also in English (a non-switch trial) or to name it in French (a switch trial). Predictably, individuals take longer to name digits on switch compared to non-switch trials. However, what is remarkable is that that they take even longer when the switch trial requires them to name in their L1 compared to their L2 (Meuter & Allport, 1999). Such a result suggests that in order to switch into their L2 in the first place they strongly inhibited their L1 and so switching back into L1 takes longer as naming must overcome the effects of such inhibition. This asymmetry in the cost of switching into L1 versus L2 disappears when proficiency is high in both languages (Costa et al., 2006). More recent work indicates that inhibition affects the language as a whole and not simply items in the category being named (Philipp & Koch, 2009).

If inhibitory processes play a role when individuals are switching between languages, what role might they play during the course of L2 acquisition? In a novel study, Levy, McVeigh, Marful, and Anderson (2007) asked participants to repeatedly name pictures either in their L1 (English) or in their L2 (Spanish). After this naming phase, participants had to produce an L1 word corresponding to one of the presented pictures that rhymed with a cue in L1. So, for example, a participant might be presented with a cue such as "break: s_____" where the intended target was "snake." Levy et al. (2007) found that participants generated significantly fewer target words if they had named the picture in their L2 (e.g., saying "culebra" to a picture of a snake) compared to their L1. They interpreted their data as support for the notion that the sounds of words in the L1 are suppressed during naming in the L2 at least during the early stages of L2 acquisition when there is still a marked difference in the time to name pictures in the L1 and in the L2.

More dramatic effects might be envisaged when the L2 is acquired during study abroad. Immersion may restrict the competitive effects of the L1 and encourage a direct linkage between concepts and word forms in the L2. In the first experimental study of its kind, Linck, Kroll, and Sunderman (2009) examined the extent to which immersion aids L2 acquisition because it reduces the activity of the L1. Their results are consistent with this possibility. They contrasted the performance of young American university students learning Spanish in Spain with a matched group learning Spanish in the classroom in the United States. One linguistic task was translation recognition. A Spanish word was presented followed by an English word and participants pressed a "yes" button to indicate that the second word was a translation of the first or a "no" button to indicate that it was not. The word pairs included correct translations (e.g., "cara–face") and distractors that required a "no" response. Two distractor conditions are pertinent. In the lexical-neighbor condition the English word was similar in visual form to the Spanish word (e.g., "cara–card"). In the semantic-neighbor condition, the distractor was related in meaning to the correct translation (e.g., "cara–head"). Each condition included its own control pairs that were incorrect translations unrelated in either meaning or form to the Spanish word or to its correct translation. The key data are the differences in reaction time between the distractor

trials and their controls. Most interestingly, compared to non-immersion learners, immersion learners rejected lexical neighbors more rapidly and semantic neighbors more slowly. Indeed immersion learners showed no interference in the lexical-neighbor condition. Overall, these data are consistent with the intriguing possibility that immersion learning facilitates L2 acquisition by inhibiting L1 and its word forms and emphasizing the semantic pathway from lexical concept to word form.

In conclusion, acquiring a second language involves mechanisms of language control. Such mechanisms are required to manage the competition between languages. Initially effective acquisition may be achieved at the cost of accessibility to L1 word forms or sounds. With an increase in proficiency, such mechanisms monitor and control the language of use. The detailed operation of these mechanisms and their neural substrate is an open field for 21st-century research.

SEE ALSO: Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Organization of the Second Language Lexicon; Second Language Representation in the Brain; Vocabulary Acquisition in Second Language Acquisition

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Inner Speech in Second Language Acquisition

MARÍA C. M. DE GUERRERO

Though commonly associated with talking to oneself in silence, inner speech is a much more encompassing and consequential phenomenon than internal self-talk. Inner speech is a socially derived mechanism that makes possible verbal (symbolic) thought. Lev Vygotsky (1986), who may be considered to date the foremost proponent of a theory of inner speech, maintained that to understand verbal thought it was necessary to trace the development of inner speech to its ontogenetic precursors. Working within a socio-cultural-historical approach to cognition, Vygotsky (1986) saw the genesis of inner speech as the development of the capacity to "think words" (p. 230) silently. Children, Vygotsky claimed, start using language in a purely social fashion to communicate with others. However, through the process of internalization of sociocultural experience, at about school age children begin to use social speech to mediate mental functions. In this process, speech ceases to be merely social; it acquires psychological status; it becomes intellectual speech for the self.

The intellectualization of social speech entails not only a change in function but a transformation in structure, Vygotsky (1986) observed. As social speech turns into speech for oneself, first in the form of vocalized egocentric (or private) speech and subsequently inner speech, there is a gradual shedding of external traits: Audible vocalization is inhibited; expanded syntax turns abbreviated and elliptical; and, most importantly, semantic structures begin to operate on the basis of condensed, agglutinated, and idiosyncratic senses of words. For this reason, Vygotsky described inner speech as being "to a large extent thinking in pure meanings" even though "it still remains speech, i.e., thought connected with words" (p. 249). At times, however, inner speech may adopt a more expanded and elaborated form, for example, in the process of planning what we are going to say or write (Vygotsky, 1986, p. 243) or as we talk to ourselves (Vocate, 1994). What is important in inner speech, Vygotsky (1986, p. 244) argued, is semantics, not phonetics. Semantically, Vygotsky pointed out, inner speech relies on *sense* (*smysl*)—all the fluid, dynamic, and personal evocations of a word that arise from its multiple contexts of use—rather than *meaning* (*znachenie*), the more definite and stable senses of a word, such as those fixed upon in dictionaries.

Inner speech develops as a consequence of internalizing a culturally specific system of signs and communicative practices. For people who grow to speak only one language, this process ultimately results in primary language (L1) inner speech, or inner speech mediated by meanings acquired through the L1. The acquisition of one or more additional languages is, however, a normal phenomenon for many people at any chronological age. What happens, then, when a language additional to the L1 is learned? A host of questions come to mind when inner speech is looked at from a second language acquisition (SLA) perspective: What is the nature of the inner speech of people who have acquired or are acquiring one or more L2s? Can inner speech mediated by the L2 evolve from the acquisition of L2 social speech? What role does the L2 play in mental functioning? Can an L2 mediate thinking the way an L1 does? And, can instruction influence the development of L2 semantically based inner speech?

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One route for the study of inner speech among L2 learners has been through the observation of the audible private speech vocalizations learners produce when engaged in L2 verbal tasks. This approach follows Vygotsky's genetic method, that is, the notion that higher psychological functions should be studied in their formation. In this view, inner speech can best be understood when examined through its developmental forerunner: egocentric (private) speech. A study by Centeno-Cortés and Jiménez (2004), which followed this line of research by examining the externalized private thinking processes of Spanish-L2 learners, revealed that advanced proficiency participants could use the L2 for reasoning purposes more than intermediate ones, yet resorted to the L1 when the cognitive task became too challenging, a finding that suggests that, when it comes to certain complex mental operations, the L1 might be a more effective tool than the L2 to mediate thinking.

Rather than focusing on private speech, some research has addressed the internal—though not directly observable—manifestations of inner speech in SLA. Ushakova (1994), for example, reporting an experimental project involving learning new words from an artificial language, concluded that the influence of inner speech semantic structures acquired through the L1 "can rarely, if ever be completely eliminated" (p. 136) in L2 acquisition. Other studies relying on self-report data (Guerrero, 1994, 1999, 2004; Gutiérrez, 2000), as well as research on verbal thought, bi/multilingualism, and L2 neurolinguistic processes (see review in Guerrero, 2005, chap. 3), suggest that, given certain conditions of language learning, it might be possible—though not easy—to develop inner speech based on an additional language beyond the L1.

Because inner speech is internalized social speech, two key conditions seem necessary for this development: (a) intense exposure to and participation in an L2 community of speakers and (b) major internalization of the L2. A strong positive correlation between advanced proficiency in the other language and use of the L2 in inner speech was evidenced in Guerrero's (1994, 1999) and Gutiérrez's (2000) survey studies involving college level L2 and foreign-language (FL) learners. Similarly, the presence of the L2 in inner speech processes has been documented among speakers who have attained high levels of L2 mastery, such as immigrants who have acquired a new linguistic identity and modified their conceptual and semantic foundations on the basis of the L2 (Pavlenko & Lantolf, 2000; Larsen, Schrauf, Fromholt, & Rubin, 2002). The possibility thus arises that in cases of very advanced proficiency and intense exposure to another language, this might become an alternative linguistic resource—no doubt with strong ties to the L1—to mediate inner speech activity.

Reports indicate that low proficiency L2 learners do experience covert speech behavior in the L2, but this does not mean they have yet developed the capacity to mediate their thinking through L2 inner speech. At early stages of L2 acquisition, it has been found that learners make subvocal use of the L2 mainly for rehearsal or playful purposes. In a study involving learner diaries, Guerrero (2004) was able to detect some of the intramental processes that low proficiency ESL college learners characteristically undergo both inside and outside the classroom, namely, silent repetition and imitation of L2 models, trying to understand language heard or read, mentally experimenting with and reflecting on L2 forms and meanings, and planning what or how to say something in the L2. Guerrero hypothesized that these are essential processes in the internalization of the L2, a key requirement for its eventual development as a tool for thought.

Sustained ability to think verbally through the L2 comes with greater proficiency; however, this capacity is usually not developed uniformly across all cognitive domains or for all communicative purposes, even in cases of L2 ultimate attainment. L2 inner speech may be effective or operative for certain cognitive functions and not for others. A study by Cook (1998), which surveyed internal and external uses of the L2 among proficient speakers of more than one language, revealed great variety in the extent to which they used the L2 for self-communicative purposes. For example, there was an overall preference

for use of the L1 for verbal cognitive tasks such as counting things or adding up, equal use of the L1 or L2 for remembering phone numbers, and a bias for the L2 for keeping a personal diary. The results, however, showed great variation among the participants not only according to the task but also to their L1 background and knowledge of other languages.

In another recent survey (Dewaele, 2009), the researcher asked a large-sized group of multilinguals (N = 1,579) which language they preferred to use for mental calculations, such as arithmetic, and for inner speech (as in the question "If you form sentences silently, what language do you typically use?" [p. 255]). Frequent or constant use of the L2 was reported specifically for mental calculations by a third of the participants and by more than half of the respondents for inner speech. The participants tended to use less their third (L3) and fourth languages for these cognitive functions. The study also found a significant effect of age of acquisition on frequency of inner speech in the L2 and the L3, with higher rates of use among early acquirers (people who had started learning their additional languages at ages 3–7) than among late acquirers.

The type of inner speech a person activates is highly related to contextual demands. Verbal tasks, such as listening, speaking, reading, and writing, for instance, necessarily call for inner speech mediation. Among L2 users, bilinguals, and multilinguals, these tasks involve more than one language at the person's disposal in inner speech. Studies reviewed in Guerrero (2005) show that use of the L1 as a meaning-making tool and sometimes as translation mechanism in inner speech activity decreases with greater L2 mastery but increases with task difficulty. The use of L2 inner speech that occurs in the act of reading FL texts, for example, was investigated in a series of experiments reported by Sokolov (1972). In this research, when the FL texts had been simplified and learner proficiency was high, comprehension proceeded swiftly as a process of selecting meaningful units, focusing on key words, and making generalizations without translation. Difficult passages and low proficiency, on the other hand, resulted in greater unfolded inner articulation of the written text and efforts at translation (pp. 147–54). Sokolov's experiments highlight the essential role that inner speech, in the form of concealed verbalizations while listening or reading, has in understanding and retention of L2 material.

The capacity to engage in L2 inner speech that occurs as a result of major internalization of the L2 seems to be accompanied by substantial changes in word meanings and conceptual structures. Research suggests that advanced L2 or FL learners, bilinguals, and multilinguals restructure their L1 conceptual and semantic foundations on the basis of new lexicalized and grammaticized meanings offered by additional learned languages (Pavlenko, 2005). Whereas researchers speculate on whether such conceptual and semantic bases respond to multiple conceptual stores (one language—one store) or to a common underlying system of meanings (see discussions in John-Steiner, 1985; Kecskes & Papp, 2000; Pavlenko, 2005), the fact remains that for multicompetent individuals inner speech activity involves a complex and dynamic process of activating two or more ways of understanding and representing the world. For these individuals, inner speech implies constructing meaning through the multiple senses of words acquired in more than one language.

When extensive reconceptualization through a new language occurs, profound changes in personal identity may also take place. Because inner speech is vital not only for establishing discursive relations with the outside world but also with oneself, the appropriation of a new meaning-making system frequently results in a new, bi/multilingually mediated person (for accounts of self-reconstruction in the autobiographical narratives of advanced bilinguals, see Pavlenko, 1998; Pavlenko & Lantolf, 2000). The long, complex, and often painful process of translating oneself into another language as a result of conceptual changes in inner speech has been poignantly described by Eva Hoffman, a Polish-born writer who became highly proficient in English as an immigrant in Canada and the US. In her words,

> When I talk to myself now, I talk in English. English is the language in which I've become an adult, in which I've seen my favorite movies and read my favorite novels . . . In Polish, whole provinces of adult experience are missing. I don't know Polish words for "microchips," or "pathetic fallacy" . . . If I tried talking to myself in my native tongue, it would be a stumbling conversation indeed, interlaced with English expressions. (Hoffman, 1989, p. 272)

Finally, an SLA perspective on inner speech naturally leads to pedagogical considerations. Whereas development of L2 inner speech can occur in naturalistic settings and in the absence of formal L2 instruction, educators can do much to foster in learners the ability to think through a new language. Two points will be mentioned in this respect. First, it is important to note that the development of L2 inner speech is not a prerequisite but an outcome of social interaction in the L2. Without significant participation in meaningful classroom activities conducted in the L2, there cannot be sufficient internalization and conceptual restructuring to enable effective thinking through the L2. Second, it seems desirable to raise the topic of inner speech to metalinguistic awareness so that learners can gain control over it and intentionally deploy it for their benefit.

SEE ALSO: Internalization in Second Language Acquisition: Social Perspectives; Private Speech in Second Language Acquisition; Sociocultural Theory; Vygotsky and Second Language Acquisition

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Innovation in Language Teaching and Learning

DAVID CARLESS

The study of innovation in language education began to generate particular interest only from the 1980s onwards, with important early contributions including Kennedy (1988) from a UK perspective and Henrichsen (1989) from a US one. The former was significant in establishing the management of educational change as an emerging subdiscipline of applied linguistics. Before that time, the complexities and challenges of introducing educational change were often underestimated or insufficiently problematized. In recent decades, interest in the topic of innovation has grown substantially, particularly in general education in the work of scholars such as Michael Fullan (e.g., Fullan, 2001) and Andy Hargreaves (e.g., Hargreaves, 2003), and also in language education, as evidenced by recent books: Murray (2008), Alderson (2009), and Wedell (2009).

For the purposes of this entry, I define innovation as an attempt to bring about educational improvement by doing something which is perceived by implementers as new or different. I use it interchangeably with the term "change." Examples of innovation in language education over the past few decades include new pedagogic approaches, such as task-based language teaching; changes to teaching materials; technological developments, such as computer-assisted language learning; and alternative assessment methods, such as the use of portfolios. A further major strand of innovation concerns the expansion of language education in various EFL contexts; for example, English in the school sector starting increasingly early at elementary school level.

The management of innovation is a critically important field because the development of education rests in its hands. The litany of failures of educational reforms indicates that an enhanced understanding and implementation of the principles and practice of the management of educational change would make a major contribution to the discipline. The wider field of applied linguistics needs to pay greater heed to the insights that innovation theory and practice can contribute (Waters, 2009).

The main rationales for change are indicative of the centrality and ubiquity of innovations. Governments, school managers, teachers, or all of these want to make education more effective for students. Innovations may help schools to keep up-to-date with the latest developments or research findings, and can also be a force to encourage educational equity and fairer opportunities for diverse sections of society. Educational change may also contribute to the development of economic competitiveness. There are less idealistic reasons for innovation too. Governments and policy makers sometimes want to create a facade of being up-to-date or to create an aura of activity. Changes may also be made so as to strengthen accountability systems or for short-term political advantage (Wedell, 2009). In the globalized world, governments also sometimes feel encouraged or impelled to indulge in policy borrowing, the adoption of innovations which other industrialized countries have been implementing.

Innovation is extremely difficult to engineer successfully, and the classic work by Rogers (2003) outlines five oft-cited factors which influence end users' responses: relative advantage, compatibility, complexity, trialability, and observability. Reforms which are perceived

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by individuals as having greater relative advantage, compatibility, trialability, and observability and less complexity are likely to be adopted more rapidly and efficiently than other innovations. Much of the applied linguistics literature documents failed (or relatively unsuccessful) attempts at innovation. While on the one hand this is probably a realistic appraisal, it is not always clear precisely how success or failure is judged or perceived. Most reforms have positive, negative, and unanticipated impacts. Innovations which do not achieve all their (overambitious?) objectives should not necessarily be classified as failures. The success of innovations should be gauged by the extent to which students are making more learning progress than before the innovation was implemented (Van den Branden, 2009).

The main barriers facing innovation can be broadly grouped into three categories:

- *Teacher-related*: lack of teacher ownership or understanding of the innovation; change not congruent with existing teacher values and beliefs; negative attitudes, often engendered by the additional workload entailed; teachers are often emotionally bound up in existing practices; and change can be personally threatening.
- *System-related*: poor communication and lack of mutual trust between change agents and frontline implementers; putting too much emphasis on the intricacies of the innovation itself and not enough on consideration of how it could be implemented; lack of appropriate resources to support the innovation; insufficient professional development and support for teachers; failure to bridge the gap between rhetoric and reality; cynicism engendered by previous failed attempts at innovation; failure to align a pedagogic innovation with the requirements of high-stakes examinations.
- *School-related*: lack of supportive culture for change; conservative forces within a school; lack of support or understanding from senior management; inadequate school-based resources; student difficulties in adapting to teacher change, particularly if the rationale has not been persuasively articulated.

Markee (1997) makes the useful distinction between primary innovations (changes to teaching materials or pedagogy) and secondary innovations (organizational changes which provide enabling support for the primary innovation). One of the reasons for lack of success in implementing change is failure to promote secondary innovations.

While much of the above applies to most educational changes regardless of the specific discipline, particular issues in language education are contextual and cross-cultural considerations. Reforms in language education, for example, often involve exporting innovations originating in the Anglophone world to developing countries in which English is a second or foreign language. It is sometimes the case that pedagogic values, such as learner-centered, communicative, or process-oriented approaches, clash with different, though equally valid, philosophies which may put greater emphasis on whole-class direct instruction, examination preparation, or more product-oriented teaching. A classic work exploring some of these dilemmas, using data from Egyptian classrooms, is Adrian Holliday's (1994) book. More recently, Wedell (2009) has argued that we need to put people and contexts at the core of the innovation process, and similarly Carless (2011) puts forward the case for "contextually grounded approaches" to pedagogic innovation. A key theme in all three of these works is that innovations need to be designed in ways which are receptive to and respectful of both local classroom realities and wider national cultures.

In view of the multiple challenges facing the implementation of innovations, it is worth considering under what circumstances there are prospects for success. The following conditions act as facilitating factors:

- The innovation is not overly ambitious and has support from sufficient relevant secondary innovations.
- It has appropriate time frames and seeks to facilitate early, small-scale success which generates momentum and positive sentiments.
- Teachers are brought on board at an early stage, and feel belonging and ownership that is of more than a token nature. These teachers may act as brokers, "champions," or opinion leaders.
- Effective institutional-based professional development and support are built into the project.
- The innovation is contextually and culturally appropriate, and does not promote values which are incongruent with those of implementers.
- Problem-solving strategies are built into the project and there are change-management strategies to tackle challenges arising.

Conditions such as the above are probably rarely present in the complex arena of educational change. Following from this, a potential way forward for innovation in applied linguistics would be the dissemination of more exemplars of good practice. We have learned much from past failures and may learn even more from further stories of success. A valuable contribution comes from documented accounts of successful medium- or large-scale innovations in the school sector. A useful example is a discussion of the implementation of task-based teaching of Dutch as a second language (Van den Branden, 2006) in schools in Flanders. In this case, strategies to promote the innovation included teacher education which itself incorporated experiential task-based principles and coaching based in the classrooms of teacher participants. The latter is especially valuable in view of its emphasis on supporting classroom implementation of the innovation.

By way of conclusion, I briefly suggest some avenues of further research and ways forward for innovation in applied linguistics. There is a need for more longitudinal studies of innovation, and particularly useful would be studies of the sustainability of innovations or how they are modified over time. Retrospective analyses could also be valuable, such as studies which review how an innovation moves through stages of adoption, implementation, and then abandonment, renewal, or institutionalization. Finally, more contributions on the management of innovation in language education from scholars outside the main Anglophone countries would be particularly welcome (Waters, 2009).

SEE ALSO: Language Assessment in Program Evaluation

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Input Processing in Second Language Acquisition

SUSANNE E. CARROLL

Language acquisition requires analysis of speech and text used around us. This entails that we *process input*, that is, we perceive, classify, and understand verbal stimuli. A model of language processing is shown in (1).

(1) Input(s) → [Speech and language processors] → Output(s)

The term *input* refers to linguistic stimuli (oral, written, gestural) that occur in a physical environment (for example, in a conversation, or in reading a text such as this one). Stimuli are perceived and processed by dedicated units of mind called *processors*. In the case of a conversation, input is moving air (or visual stimuli relevant for signed language and gesture, or both); outputs are parsed syllables, recognized words, analyzed sentences, and meanings. These are linguistic outputs. Other information, such as speaker identity and the fact he has a cold, may also emerge (paralinguistic outputs). Processors analyze such inputs and create such outputs by drawing on universal properties of language (*universal grammar*), previously acquired knowledge of the language in question, knowledge transferred from another language, and knowledge of the world (encyclopedic knowledge).

A model of language acquisition is shown in (2).

(2) Input(s) → [Learning mechanisms] → Output(s)

Here *outputs* are acquired knowledge, what the language learner comes to mentally represent that she did not know before learning occurred. Outputs in (2) are part of the "black box" in (1). These outputs might be words (vocabulary), knowledge of constraints on word combinations (grammar), knowledge of possible sounds of a language (phonetics and phonology), or rules of appropriate language behavior (sociolinguistics and pragmatics). What are the inputs to learning mechanisms? This is a matter of some debate; the debate turning on one's theory of language learning.

Most researchers use the term *input* in both processing and acquisition research to refer to stuff outside the learner's mind/brain, physically present in the environment. Yet sounds, visual marks, or gestures produced in a communication may be linguistic or nonlinguistic (e.g., sneezes, doodles, scratching). Learners must crucially distinguish linguistic from nonlinguistic stimuli, and assign to each appropriate functions.

Consider an example of ostensive definition (with gesture) in second language acquisition (SLA); a speaker wants to teach a learner of German a new word. She points to a picture of a male person wearing a black suit, white shirt, and red tie, and says: *Das ist Hubert* [dasɪsthubɛːt] 'That is Hubert.' For the learner to learn a new word *Hubert*, he must

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segment the sound form [hubɛːt] from speech, infer that it is a word of German, infer that the speaker intends this word to refer to the person in the picture (and not to his haircut, nose, or tie), infer that the depicted entity is indeed a person, and, crucially, infer that the sound form [hubɛːt] names this particular person and no other person who is wearing a black suit or a red tie. In this learning context, inputs to learning will include the speaker's ostensive intention to refer to Hubert (as cued by pointing), visual cues to Hubert's identity provided by the picture (black suit, white shirt, red tie), and the crucial semantic distinction between proper and common nouns. Thus, input is not merely the speech sounds [dasɪsthubɛːt]. Rather it overlaps with features of the learning context and it may also include prior encyclopedic knowledge (e.g., that people tend to bear proper names), and prior linguistic knowledge (e.g., that proper names are noun phrases when they refer).

Two Approaches to Input

There are two basic theoretical approaches to input: *physicalist*, and *mentalist*. Physicalists treat inputs in (2) as identical to inputs in (1), in our example the speech sounds: [dasɪsthubɛːt]. Physicalists argue correctly that only physical properties can be directly observed, counted, and analyzed. They conclude, more controversially, that only such properties *should* be primitives in a theory of input processing (Bates & MacWhinney, 1989). Physicalist approaches are the foundation of emergentist SLA theories; they inhere in Corder's (1967) distinction between "input" (what is said to the learner) and "intake" (what the learner "takes in" or processes); they subserve L2 interaction research, itself a by-product of first language acquisition research on the nature of speech used in conversations with children. Exemplar-based research, claiming that learners encode in memory physical instances of speech, also adopts this approach.

Recall that what is available in the physical environment is moving air, marks on a page, pixels on a computer screen, hands and arms in motion. While frequencies of moving air are indeed measured and analyzed in phonetic studies, what is of interest to SLA researchers is how learners come to represent abstract linguistic units, their properties, and constraints on their use. We ask questions like: How many times does a learner have to hear a given *word form* to recognize it in continuous speech? How are word segmentation and word learning affected when *syllable boundaries* do not match *word boundaries*, as in French *les heureux amis* [le$zœrø$zami] where the underlined consonant re-syllabifies onto the next word ("$" indicates the syllable boundary). Do observed developmental stages reflect an increase in the complexity of *sentences* to learners? Such questions about the relationship between input and SLA draw on constructs (*word, syllable, sentence*) none of which is physically present or directly cued in verbal stimuli.

Mentalist approaches to input define it precisely in terms of such abstract, nonphysical properties (*word*, *syllable*, *sentence*, and many others). If segmentation of a word from the speech signal relies on the ability to compute statistical relationships between syllables (low between *ist* and *Hu-*, high between *Hu-* and *bert*), then input to the learning mechanism extracting words must include representations of syllables. Both *word* and *syllable* are highly abstract constructs; they are also essential inputs to various language-learning problems. It follows that such learning problems cannot be solved unless, or until, syllables and words are mentally represented.

The hypothesis that language learning demands the distinctions encoded in mental representations is the basis for the claim made by generative grammarians that input to language learning is "impoverished." Input is impoverished when there is no physical basis in stimuli for the knowledge that results, as here with respect to *word*, *syllable*, and *sentence*. The claim is made explicit in Carroll's (2001) *autonomous induction theory* (AIT) and Lightfoot's (2006) *cue-based acquisition*. In such theories, mentally represented distinctions

are the inputs in (2). These inputs will include universal meaning–form mappings, such as (PERSON ↔ NP), a mapping that will permit our learner of German to create a syntactic unit from a representation of Hubert as a PERSON concept. They will also include universal formal constraints on grammars, such as that noun phrases contain a noun head, or that both phrase and head are defined as sets of abstract grammatical features; for example, [+N, –V, 3rd person, +singular, –plural . . .]. For Carroll and Lightfoot, grammatical features and constraints are also part of the input, and universal grammar provides the learner with the ability to cognize the relevance of a linguistic property for a grammatical learning problem. Lightfoot's cue-based learning also hypothesizes that universal grammar provides innate cues to grammatical parameters of crosslinguistic variation. In such theories, studying input requires more than counting the frequency of verbs and modals in speech addressed to learners; it requires a theory of universal grammar.

Numerous studies provide information about the verbal stimuli learners are exposed to in classrooms and in conversation. Yet precise information about the relationship between specific properties of verbal stimuli and what learners actually learn has been slow to emerge. Longitudinal studies of migrant workers showed this population got little exposure to the L2 and many learners fossilized early. The most successful learners were those who acquired native-speaker friends or partners. From this we draw the conclusions "No input, no learning" and "Rich and frequent input, much better learning." However, these conclusions appear to conflict with first exposure research showing extremely rapid word learning on minimal exposure (Rast, 2008). Part of this conflict can be resolved by the fact that much SLA research assesses learning through cognitively demanding speech production tasks (such as free conversation). Only more recently have researchers attempted to track the time course of initial representations through discrimination and other receptive tasks.

Meaning as Input

The (PERSON ↔ NP) rule above is an example of how meaning is an input to grammar learning. Language educators have been particularly interested in the role of meaning to promote learning in the classroom. Krashen (1985) formulated the *(comprehensible) input hypothesis* attempting to explain the apparent success of immersion education over conventional foreign language tutoring, arguing for enriched input. The input hypothesis states that learners acquire L2 knowledge when presented with comprehensible input. Comprehensible input is speech that is understood but contains linguistic features, constituents, or structures that are just one step beyond the learner's current linguistic competence; that is, these properties are not parsed. These ideas were captured in the slogan "Acquisition = $i + 1$."

The comprehensible input hypothesis presupposes the logic stated above ("Rich input, better learning") and led directly to interaction research and VanPatten's input processing theory. As with other ideas, what matters are the technical details: How does knowledge of, for example, the mass/count distinction (*2 books*, **2 cutleries*, **much book*, *much cutlery*) emerge from the input? Implicit in the input hypothesis (made explicit in VanPatten's research, 1996) is the assumption that grammar is acquired from semantic inputs (as in the (PERSON ↔ NP) rule). The input hypothesis asserts that comprehended (but not parsable) input results in acquisition. Since the grammar does not yet contain the relevant distinctions, grammar learning must be driven in such cases by inference based on visual or nonlinguistic cues present in the learning context or information activated from memory. However, even a casual reading of a serious grammar book will reveal that the correspondences between meanings and grammar are complex and indirect. We saw above that the meaning of *Hubert* is not "wears a black suit, white shirt and red tie," although this might be precisely all that the learner knows about Hubert from inspecting a picture

of him. English speakers conceptualize mass nouns like *cutlery* and *furniture* as individuals, not substances, and rely on the presence or absence of plural marking to figure out how to interpret ambiguous words like *stone* (*2 stones*, *some stone*) (Barner & Snedeker, 2005). Such aspects of grammar only partly reflect conceptual contrasts. This well-established fact has clear implications for functionalist approaches to SLA. Long (1996) claimed that the "negotiation of meaning" will drive L2 acquisition forward because interaction with native speakers makes intended meanings clearer. However, speaker intention and speaker meaning may be irrelevant to learning specific grammatical distinctions. MacDonald (2010), for example, shows that intermediate and advanced Korean learners of English can correctly interpret a sentence *Who has more ketchup/shoes?* when looking at pictures. They use conceptual knowledge to decide which referents can be counted (because they are INDIVIDUAL concepts) and which should be assessed in terms of volume (because they are SUBSTANCE concepts). Interestingly, these learners also correctly count out the *furniture* cases. What they cannot do is correctly decide *Who has more stones/Who has more stone?* where making the choice depends on the prior ability to grammatically analyze the presence/absence of the grammatical plural marker. Korean does not have plural marking like English and transfer from Korean in this case is not possible. The moral of the story here is "Much input can be correctly interpreted in the absence of knowledge of plural marking." So what input would necessitate learning it? The answer is far from obvious.

More Than One Mechanism? Counting Exemplars Versus Extracting Structure

Word frequency is a recurrent factor in discussions of memory and word recall, and patterns of language learning. Its role is, however, complex and indirect. For example, it is a robust finding that lexical categories emerge in spontaneous speech before grammatical words like *a, some*, or the complementizer *that*. This result is not due to the absolute frequency of word forms in verbal stimuli. Functional categories are far more frequent in speech than any particular noun or verb. Frequency notwithstanding, words used in concrete references (like *John bought bread*) appear sooner than other kinds of words in spontaneous speech (Klein & Perdue, 1993, p. 4) and appear to be easier to memorize from lists of semantically unrelated words (de Groot & Keijzer, 2000). The evidence that humans are indeed sensitive to statistical properties of verbal stimuli is considerable, but this does not preclude the application of mechanisms that detect, recognize, and extract structure. Indeed, Endress and Bonatti (2007) provide, in the realm of segmentation and word learning, evidence that there are at least two kinds of learning mechanisms: pattern extraction mechanisms and statistical computation mechanisms. Endress and Bonatti found that learners, on the basis of minimal exposure, with little effect of increased familiarity, rapidly extracted word-length forms of three syllables (σ1σ2σ3) exhibiting a predictable dependency between the first and third syllable. This pattern is typical of many inflected words, including German regular past participles, such as <u>ge</u>-mach-<u>t</u> 'made', <u>ge</u>-spiel-<u>t</u> 'played'. These researchers attribute such results to "structure extraction mechanisms," consistent with input studies revealing a rapid ability to extract generalizations based on meaning–form correspondences, and both phonological and morphological regularities (Carroll, 1999). Importantly, the relationship between the first and the second syllable or the second and the third was much less predictable, with the second syllable functioning like a variable, σ1Xσ3. This did not mean that learners did not learn items containing sequences such as Yσ1σ2 or σ2σ3Z. With repeated exposure to the same input, they did. Endress and Bonatti claim that this kind of learning is due to mechanisms computing statistical relations between syllables, which operate more slowly and are affected by increased exposure to input.

Intervention Research

Mentalistic approaches treat feedback and correction to learner errors as forms of input because, when interpreted as an intention to correct, intervention can cue the learner to the presence of errors in her speech or writing. But does it constrain learning? Carroll and Swain (1993) looked at the effects of explicit and implicit feedback (prompts) and correction on the learning of specific kinds of linguistic abstractions related to the English alternations shown in (3):

(3) a. John gave [a book]$_1$ [to Mary]$_2$
b. John gave [Mary]$_2$ [a book]$_1$

After exposure to pairs subjects produced errors like (4):

(4) John gave to Mary a book.

The goal of the study was not to induce learners to produce (3b) rather than (4), but rather to see whether feedback and correction could lead learners to acquire two *constraints* on the alternation, one of which is prosodic (only verbs which are monosyllabic or have stress on the first syllable can alternate), one of which is semantic (verbs alternate only when the direct object of the preposition *to* is animate). If adult learners are relatively insensitive to the exact form of utterances, as Klein and Perdue (1993, p. 39) assert, then they should not have learned the appropriate prosodic constraints on the alternation in the absence of direct intervention. If intervention can have no effect (as some generativists have asserted), then the alternation would not be learnable at all. In fact, intervention led learners to internalize both constraints on the alternation, showing that at least some abstract properties of grammar can be acquired through intervention.

Since then many laboratory and classroom studies have investigated the effects of recasts, "prompts," and other forms of interaction, looking at rates of efficacy of one form of intervention over another, and whether learners of one level of proficiency will respond better than learners of another (e.g., Lyster, 1998; Lyster & Izquierdo, 2009). Yet much of this work has been concerned not with how learners initially form correct mental representations of previously unknown distinctions, but rather with issues of recall and planning in speech production. Such work is relevant to fluency of production, accessing memory, and control. The pressing question remains: Do interventions lead the learner to retrench from a too-general generalization on a variety of language-learning problems? On this question, the jury is still out.

Current Trends

Studies that clearly establish a direct (causal) relationship between types of input or directly observable, physical properties of the learning environment, on the one hand, and learning, on the other hand, have been the exception rather than the rule. Input processing research continues to have the flavor of a cottage industry; small groups of individuals conduct studies on diverse kinds of learning problems, with diverse kinds of learners, in diverse learning contexts, using different pairs of L1 and L2. This diversity, perhaps typical of SLA research more generally, makes it difficult to draw firm conclusions. Some researchers have begun looking at absolute beginners to control what prior knowledge of the L2 learners have. In particular, a substantial body of studies on word segmentation now exists using stimuli from artificial languages. This research has implications for common (but unsupported) claims that perceptual salience drives L2 word learning, for in

these studies learners segment words from a continuous sound stream in the absence of prosodic cues to the boundaries of prosodic units. Other studies using natural language stimuli have shown that new words can be segmented after only a small number of exposures. Some researchers have explored how L2 words that sound similar to known L1 words can activate those L1 words, facilitating segmentation. Still other work examines relations across words (like agreement). What remains to be attempted is the kind of long-distance phenomena that require hierarchical structural relations and not merely locally sequenced forms, such as relations between verbs and mood, as in *Je veux que tu t'en ailles* 'I want that you leave', where the verb *ailles* must be in the subjunctive. Here as elsewhere, input processing research seeks to relate SLA current research on both speech and language processing and on learning mechanisms, framing questions by drawing as well on the rich legacy of 150 years of investigation into the sounds and structures of language.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Emergentism; Explicit Learning in Second Language Acquisition; Formal and Functional Approaches to Grammar; Generative Grammar; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Learner Varieties; Modularity in Second Language Acquisition; Phonological Acquisition; Spoken Word Recognition in Second Language Acquisition; Universal Grammar and Second Language Acquisition; Vocabulary Acquisition in Second Language Acquisition

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Input-Based Instructional Approaches

EVE ZYZIK

An observable fact of the language acquisition process is that no language, be it the first (L1) or the second (L2), can be learned successfully without extensive and meaningful exposure to that language. Accordingly, all theories of second language acquisition (SLA) attribute a significant role to *input*, which can be succinctly defined as the language in the learner's environment. Input is often referred to as "raw data," "primary linguistic data," the "stimulus array," or the "positive evidence" available to learners. Input can be both aural and written. One of the fundamental questions in SLA is whether input is a sufficient condition for acquisition to occur, or whether other elements (e.g., attention, noticing, feedback, and output) are equally essential. Thus, many instructional approaches combine exposure to the target language with opportunities for output and interaction. Nevertheless, there are some approaches to L2 instruction that prioritize input, many of them proposing innovative ways of manipulating the input in order to maximize learning outcomes.

Since input is a property of the learner's external environment, it can be objectively described in terms of factors such as frequency, consistency, and complexity. However, it is important to point out that measuring input conditions in SLA is much more challenging than in child language acquisition. There is a long tradition in L1 research of tracking a child's linguistic environment and seeing how acquisition parallels what the child is exposed to. For example, Hart and Risley (1995) estimated that children acquiring English as an L1 were exposed to between 10 million and 30 million words between the ages of one and three. Since SLA occurs in various contexts (naturalistic, immersion, and classroom), it is difficult to obtain similar estimates of how much input L2 learners actually get. Nevertheless, some important progress has been made by examining input properties of classroom speech (Collins, Trofimovich, White, Cardoso, & Horst, 2009) and through first exposure studies (Rast, 2008) in which input is carefully controlled and recorded from the initial moment of contact with the target language.

Early Input-Based Approaches

The emphasis on aural input in L2 teaching methods can be traced back to the Direct Method in the 19th and early 20th centuries, which also emphasized speaking and correct pronunciation. Subsequently, in the 1960s and 1970s, input-based approaches were promoted by Asher (1969) and Winitz and Reeds (1973). Beginning in the early 1980s, the case for input was made by Krashen (1982) as part of his Monitor Model, a theory whose central tenet was the Input Hypothesis (later known as the Comprehension Hypothesis). Krashen has consistently defended the idea that language acquisition is primarily a subconscious process driven by exposure to comprehensible input: "we acquire language and develop literacy when we understand messages, that is, when we understand what we hear and what we read" (Krashen, 2009, p. 81). It is evident that Krashen's ideas are not limited to aural input. In fact, the Comprehension Hypothesis has been invoked to make the case for reading programs such as free voluntary reading.

Krashen's theoretical ideas regarding the crucial role of input were implemented in L2 classrooms beginning in the early 1980s through the Natural Approach (Krashen & Terrell,

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1983). The Natural Approach aims to develop communicative ability by providing the learner with abundant input, while at the same time limiting learner production and creating a relaxed learning environment (i.e., a low affective filter). The premise of the Natural Approach is that L2 acquisition is very similar, if not identical, to L1 acquisition. Thus, the classroom should be a space where language development can proceed "naturally" via acquisition activities that do not force learners to speak before they are ready. For example, a typical Natural Approach classroom might involve the teacher telling a story (supplemented with gestures and pictures to make the input comprehensible) and the students demonstrating their comprehension by answering yes/no questions.

As the Natural Approach became increasingly popular in some language programs and served as the basis for a widely used Spanish textbook (*Dos Mundos*), Winitz (1981) developed the Comprehension Approach, endorsing the idea that extensive listening promotes linguistic development. Unique to the Comprehension Approach are the pedagogical materials that accompany it: *The Learnables* (Winitz, 2002) consists of audio lessons and matching picture books. The materials focus on recognition of common vocabulary and structures rather than "authentic" communicative situations. These materials are particularly suited for self-study and can be used to supplement comprehension-based classroom instruction. One of the particularities of *The Learnables* is that learners are explicitly discouraged from repeating the words and phrases they hear, as this is believed to encourage transfer of L1 pronunciation patterns.

Despite some differences, the Natural Approach and the Comprehension Approach share the same fundamental objectives: (a) provide the learner with large quantities of input that is made comprehensible by various means; (b) limit learner production in the initial stages; (c) avoid error correction, except when an error interferes with meaning and impedes comprehension. It should be noted that both approaches adopted earlier techniques, most notably Total Physical Response (Asher, 1969) in which students perform actions (e.g., stand up, sit down) based on the teacher's verbal commands and physical modeling of them. The Natural Approach also makes use of small-group and pair activities, which are also commonly found in the Communicative Approach.

Contemporary Input-Based Approaches

The methods described previously are broad in scope, that is, no attempt is made to manipulate the input to focus on particular grammatical structures. There exists, however, another category of instructional activities that seek to make a particular feature of the L2 grammar more salient and thus more likely to be noticed by the learner. These activities fit under the broad category of focus on form (FonF), which subsumes a range of pedagogical interventions that aim to draw attention to formal aspects of the language in the context of meaning-oriented activities. Alternatively, these techniques can also be classified as input enhancement, a term first coined by Sharwood Smith (1993) and subsequently used to refer to deliberate attempts to make the input more salient for learners.

One way of making a given feature of the L2 grammar more salient is to increase the frequency with which it occurs in the input, commonly known as an input flood. As the name suggests, an input flood involves manipulating the input in order to "flood" the learners with an increased number of exposures to the target structure. A good example of this technique is found in the research of Trahey and White (1993), who focused on adverb placement in English. They created aural and written materials that contained an abundance of adverbs in all possible positions in English. Learners received one hour of

this specially designed input over 10 days. Most importantly, the learners were not directed to pay attention to the word order of the sentences, making the input flood a truly implicit technique. The results indicate that the input flood was effective in advancing learners' knowledge of grammatical sentences containing adverbs, but did not allow them to discover what is ungrammatical. This suggests that positive evidence may not be sufficient to master certain L2 grammatical structures. VanPatten and Leeser (2006) further note that flooding the input increases the probability that learners will notice a particular form or structure, but it does not guarantee it. Despite these drawbacks, the advantages of input flood are ease of implementation and unobtrusiveness (i.e., it does not disrupt the flow of communication).

Input flood, described above, can make use of both aural and written input. An additional option for increasing the salience of particular forms in written input is text enhancement (TE). This technique involves the use of boldface, italics, or other typographical alterations (e.g., underlining, highlighting) that are designed to promote noticing of the target language form. For example, White (1998) used boldface and highlighting to make the English possessive determiners (*his/her*) more salient for her Francophone learners. That study, however, did not yield beneficial results for learners in the TE group (i.e., all groups showed improvement in attempted production and accuracy). Leow (2001) casts doubt on the efficacy of TE after finding no significant advantages in terms of noticing, comprehension, or intake of textually enhanced forms. A recent meta-analysis of TE (Lee & Huang, 2008) found that learners who read enhanced texts slightly outperformed learners who were exposed to the same forms without enhancement (effect size [*d*] = .22). In other words, TE was more advantageous than input flooding, albeit by a small margin. Also noteworthy is the finding that TE had a small yet deleterious effect on reading comprehension measures, which suggests that paying attention to form and meaning simultaneously may be difficult for L2 learners.

Another input-based option for targeting problematic grammatical forms is processing instruction. Processing instruction (PI) is a type of FonF that seeks to manipulate the way in which learners process input, thus leading to better intake. Crucially, this approach identifies the specific processing problem that causes learners to ignore some aspects of the input or process it incorrectly. Once the processing problem has been identified, PI activities can be designed to improve learners' processing strategies. This is done through a combination of three components: (a) explicit information about the structure or form (usually provided in the learners' native language), (b) information about the processing strategy they should abandon or adopt, and (c) structured input activities that force learners to pay attention to the form(s) in the input. PI is much more explicit than other input-based techniques (e.g., input flood, TE): learners are told what to notice and how to process it. The structured activities are designed in such a way that the linguistic form must be attended to, which meets the criterion of task-essentialness (Loschky & Bley-Vroman, 1993). Often, this means that the input is stripped of lexical cues to meaning so that priority is given to the form. For example, in order for learners to process past tense morphology correctly, temporal adverbs (e.g., *yesterday*, *last week*) are omitted. Learners indicate their comprehension by matching what they hear to a picture, selecting a response from several options, or writing one-word responses to specific questions. Structured input activities make use of both aural and written input, and there is a progression from individual sentences to connected discourse. PI has generated theoretical debate in the field (DeKeyser, Salaberry, Robinson, & Harrington, 2002) and has been the focus of many empirical studies, including recent attempts to isolate the effects of explicit information as an independent variable (Fernández, 2008).

Conclusion

Input-based instructional approaches have gradually shifted from general comprehension-based methods inspired by Krashen's Input Hypothesis (e.g., Natural Approach) to more focused techniques that manipulate the input to make some features more likely to be noticed, either by increasing their frequency (e.g., input flood) or by altering learners' processing routines (e.g., PI). These contemporary methods span the range from implicit to explicit, whereas the earlier approaches were committed to implicit exposure only. A parallel shift is that input-based approaches have become more accommodating of output. While early comprehension-based approaches intentionally limited learner production and even saw output as potentially harmful, more recent input-based techniques are compatible with output-based approaches and are easily incorporated into task-based and communicative classrooms.

SEE ALSO: Form-Focused Instruction; History of Language Teaching Methods; Input Processing in Second Language Acquisition; Krashen, Stephen; Output-Based Instructional Approaches; VanPatten, Bill

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Institutional Ethnography

MEG GEBHARD

Institutional ethnography (IE) is a method of inquiry that describes institutional situations in detail and analyzes how people's actions and interpretations make these situations recognizable as particular kinds of institutional contexts (Smith, 2005). IEs are distinct from other kinds of ethnographies because they attend to how everyday experiences are socially constructed within institutional contexts, such as schools, hospitals, or workplaces. IE is also a form of sociological theory that draws on phenomenology, ethnomethodology, Marxism, and poststructuralist forms of discourse analysis. IE was developed in the 1980s by Dorothy Smith, a Marxist feminist sociologist who was interested in problematizing male-centered and normalizing approaches to understanding social phenomena (Smith, 2005). Her goal was to develop a feminist research strategy for analyzing and potentially changing inequitable social dynamics within organizational contexts by analyzing these contexts from women's perspectives to illuminate how women's lives are shaped by "complexes of relations that are textually mediated" (Smith, 2005, p. 10). She argues that these textually mediated relations of power operate in bureaucratic discourses and form "ruling structures" that organize women's social roles across time and space (2005, p. 10). Using the metaphor of DNA, Smith maintains that socially organized knowledge and ideologies constructed in one location are packaged in bureaucratic forms and then replicated and unpacked in multiple, more distal locations as a means of regulating local activities and social dynamics among individuals (Smith, 1993). These bureaucratic texts therefore wield an enormous amount of power in contemporary life, especially when they are used to justify the allocation of resources.

While initially a methodology used in feminist sociology, IE is now used by researchers in social sciences, education, human services, and policy research to analyze how institutional relations shape not only the everyday worlds of women, but also other nondominant groups. Some examples of IEs include Diamond's (1995) investigation of profit making in nursing homes, DeVault's (2008) edited volume on inclusion and exclusion in workplaces in the New Economy, and Comber and Nixon's (2009) analysis of teachers' work in an era of high-stakes accountability. The methodological features of these studies are that they are interdisciplinary; begin with a microanalysis of everyday practices and then make connections to macropolitical forces; rely on long-term observations, ethnographic field notes, interviews, and institutional documents; use methods that explore how power travels within and across institutional boundaries; and attempt to merge research and practice in service of an equity agenda (Smith, 2005; DeVault, 2006; Taber, 2010).

Institutional Ethnography and L2 Literacy

These conceptual and methodological features of IE are exemplified in studies conducted by several second language (L2) literacy scholars, including Harklau (1994a, 1994b, 2000), Olsen (1997), and Gebhard (2004). These researchers have explored the implications of micro classroom and macro institutional discursive practices on L2 literacies by conducting longitudinal ethnographic case studies of English-language learners (ELLs) attending public schools in the United States. Data types used in these studies included semi-structured

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interviews with institutional actors (e.g., students, parents, teachers, administrators), the collection of different types of texts produced by participants (e.g., samples of students' work, teachers' lesson plans, textbooks, students' school records, and policy documents), and detailed field notes from observations of classroom and school life. In addition, these studies analyzed data inductively and recursively by identifying emerging themes and developing analytic codes, which in turn influenced subsequent data collection and analysis. Last, each of these studies relied on the triangulation of data sources and member checking to verify findings.

Harklau (1994a, 1994b) analyzed how tracking structures influenced the language-learning trajectories of four ELLs attending a US high school. She found that low-track classes were poor L2 learning environments because low-track students had exposure to truncated, inauthentic reading material, little practice in composing extended texts beyond the word or sentence level, and few opportunities to participate orally in peer-directed learning activities. As a result, the texts they produced could be described as ungrammatical, awkward, and academically deficient. In a subsequent study conducted in 2000, Harklau used IE methods to follow ELLs in their last year of secondary school and first year in college. She found that those who were constructed as "the good kids" in high school were subsequently characterized as underachieving in their college ESL classes when compared to international students (Harklau, 2000, p. 36). Harklau describes how institutional discourses regarding who ELLs are and the nature of the resources they bring to collegiate studies resulted in tensions between students and instructors, threatened students' persistence in learning academic English, and ultimately weakened their commitment to remaining in college. In line with the goal of IEs to merge research and practice in service of an equity agenda, Harklau concludes that as a result of this study, the college faculty began to reorient their curriculum to draw on the diverse experiences and resources ELLs bring to college ESL instruction.

Similarly, Olsen (1997) describes institutional practices that produce inequities, but examines how issues of race are implicated in the process of L2 learning. In a two-year study she describes how Madison High School (a pseudonym) celebrated diversity on the surface but continued to produce a stratified hierarchy based on English proficiency and race. She writes that the task of learning English in high school "is accompanied by another major task—becoming racialized into a highly structured social order, where one's position is determined by skin color" and where, as a result, one has "very unequal access to resources, opportunities, and education" (p. 11). She illustrates these findings by analyzing the schooling experiences of a recent immigrant from Brazil named Sandra. At the beginning of the study, Sandra felt pressure to define herself as White, Black, or Latino, when these categories ran counter to her understanding of herself as Brazilian. By the end of the study, however, the pressure she felt to fit in led her to place herself on the racialized social map that structured social interactions at Madison High. The peer group she aligned herself with was a group of Latina girls she described as "*cholas* . . . the tough girls" (p. 108). Moreover, Olsen maintains that the socialization of ELLs into racialized peer groups included the adoption of specific dispositions toward school. For students like Sandra who identified with the Latino race track, this meant giving up on the notion that social mobility might be achievable through education. As Olsen makes clear, Sandra's attitude toward schooling was not a matter of succumbing to the whims of her peers. Rather, institutional practices cultivated and reinforced peer group dispositions. For example, Olsen describes two school structures at Madison, one in the Newcomer Center for ELLs and the other at Madison High proper, which tracked students according to their perceived academic ability. Olsen describes the Newcomer Center as a marginal space on campus with overcrowded classes that lacked academic rigor and were taught by inexperienced, often unqualified teachers who described their assignments as "low-status" or "overwhelming" (Olsen, 1997, pp. 167–8).

As a result, Olsen argues, ELLs had serious gaps in their education. Following Harklau (1994b), Olsen says that the portion of the school day in which ELLs attended classes at Madison did little to fill in these gaps because tracking practices assigned Latino and Black students disproportionately to low-level classes and White and Asian students to honor and college preparatory classes, further reinforcing the construction of racialized identities and the creation of race-based conditions of academic advantage and disadvantage (see also Ibrahim, 1999; Talmy, 2008).

Building on Harklau's and Olsen's work, Gebhard (2004) examines how ELLs, teachers, and school administrators attempted to respond to dynamic political, economic, and historical forces shaping school reforms in the United States and how these responses influenced ELLs' academic trajectories and teachers' abilities to act as agents of social change. Using IE methods, Gebhard (2004) analyzed how patterns of institutional and classroom discourses intersected in an elementary school serving Latino and African American families during the height of the economic boom in California's Silicon Valley. This school received funding from a state policy initiative and a high-profile corporate sponsor to implement school restructuring plans representative of organizational changes taking place in "high-tech," "high-performance" workplaces (Gee, Hull, & Lankshear, 1996). These reforms were characterized by a belief that teaching and learning should not be organized to look like factory piecework or the "old work order." Rather, following discourses influencing the organization of "knowledge work" in the "new work order," and the discourses of constructivist pedagogy, school reformers argued that students should participate in project-based, collaborative teamwork in accomplishing purposeful academic tasks and that teachers, administrators, and families should approach the management of schools through shared decision making and a flattening of hierarchical structures (Gee et al., 1996, pp. 24–5).

Gebhard's (2004) analysis demonstrates that restructuring resulted in classroom spaces that were technologically well-equipped and less institutional in character (e.g., access to computers and the Internet, uses of lighting, music, and living room furniture). In addition, students were constructed more as self-directed actors than as consumers of facts, and teachers were positioned more as consultants than as information givers. However, in regard to literacy practices, these reforms also placed ELLs and their families in jeopardy in new and ironic ways. Specifically, becoming and remaining a student at this school meant achieving high scores on standardized tests given in English. Room for negotiating the rights of students who were not proficient in English was possible if parents were able to fit a rather narrow definition of what it meant to be a responsible parent. This definition necessitated that immigrant parents not only have some fluency in English, but also adopt culturally specific roles such as "parents as partners" and "parents as volunteers." The degree to which the parents of focal students understood the roles they were expected to play and/or the degree to which assuming these roles was a possibility varied and had profound implications for their children. For example, one focus student's mother worked as an unpaid bilingual aide for a full year and was thus able to secure her daughter's future at the school. Another mother was able to keep her son in good standing because she played a key role in the school's fund-raising event. However, the parents of a third student, "Alma," had less flexible work schedules and were less proficient in English. Both of these factors contributed to the teachers' perceptions that Alma's family was less able to support her and she would be better off attending a less academically rigorous school despite the fact that her ability to complete assigned tasks over the course of the study was almost identical to her peer ELLs. In providing a microanalysis of Alma's textual practices over two years, Gebhard (2004) shows how ELLs, despite interacting in a well-equipped classroom, still participated in literacy practices that were distinctively modern in character. These practices constructed language as a system of parts and language

learning as the silent assembly of these parts (e.g., the completing of grammar worksheets, copying texts accurately). In addition, teachers evaluated ELLs' work in ways that valued individual activity, adherence to formal rules, and efficiency. These more factory-like approaches to teaching and learning, echoing the logic of the old rather than the new work order, denied ELLs like Alma access to the literacy know-how that was socially distributed around them. As a result, over the two years of this investigation, Alma's ability to produce academic texts changed very little, thus making it unlikely that she would remain enrolled at this school or be able to position herself favorably in the future in the rapid redistribution of wealth and power taking place in the Silicon Valley at the time.

Conclusion and Implications for L2 Research

Harklau's, Olsen's, and Gebhard's research illustrates the potential of using IE concepts and methods in analyzing the academic literacy trajectories of ELLs participating in US educational systems. Collectively, these studies support an argument for pursuing more robust ways of conceptualizing and researching how institutional contexts, teaching contexts, learning contexts, and language development are mutually constructed through discursive practices in schools. In making this argument, Gebhard (1999) calls for a reconceptualization of classroom L2 learning as an institutional phenomenon given that L2 research has tended to render school-based language learning as occurring in isolated islands of classroom practice without analyzing how classroom textual practices are shaped by broader historical, political, and economic forces associated with institutional educational systems. Drawing on the scholarship of Harklau (1994a, 1994b, 2000) and Olsen (1997), as well as theorists such as Halliday and Hasan (1989), Fairclough (1992), and Peirce (1995), she outlines the principles of such a perspective. Following the characteristics of IE, these principles include: (a) grounding an analysis of the origin and structure of students' sociolinguistic knowledge in their daily semiotic practices; (b) analyzing learner variables as socially constructed, not as descriptors of stable mental states; (c) conceptualizing contexts as created by successive turns at talk and uses of print and as influenced by how learners are institutionally positioned in time and space in relation to meaning-making resources (e.g., technology, curricular materials, peer expertise, professional educators); and (d) analyzing the role schools play in legitimating the distribution of privileged discourses, including academic literacies. A research agenda guided by such a framework is needed given the degree to which economic changes, demographic shifts, and new forms of hybrid multimodal communication pose challenges to traditional schooling practices.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Analysis of Discourse in Educational Settings; Critical Ethnography; Critical Theory and Literacy; Ethnographic Approaches to Literacy Research; Ethnomethodology in the Analysis of Discourse and Interaction; Feminist Research; Poststructuralism; Research Methods and Sociocultural Approaches in Second Language Acquisition

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Institutional Pragmatics

HANH THI NGUYEN

Introduction

Institutional pragmatics is an umbrella term that refers to research on how linguistic utterances obtain their meanings in the context of institutions, that is, the workplace. Institutional pragmatics is usually not considered a unified subfield of pragmatics, as research on this topic draws on an eclectic range of methodologies and theoretical approaches, including speech act theory, politeness theory, discourse analysis, interactional sociolinguistics, conversation analysis, and critical discourse analysis, among others. Although these approaches and methodologies differ in their perspectives on the study of social interaction, they have all contributed significantly to the understanding of meaning making in institutional contexts. This entry brings together research in diverse and sometimes radically dissimilar approaches in order to provide an overview of how meaning is produced and understood in institutional settings.

Unlike ordinary conversations, language use in the workplace is under certain institutional constraints, which affect how meaning is interpreted and produced. These institutional constraints make up what are called the "*felicity conditions*" for speech acts (Searle, 1969) or the "*frame*" (Goffman, 1974) of the interaction. In Searle's speech act theory, a speech act's illocutionary force is realized only when its felicity conditions are met. For example, an utterance such as "I hereby sentence the accused to eight months of imprisonment" achieves its illocutionary force only when produced by a judge in a courtroom. The same utterance, if said outside of this institutional context, for example, at the judge's home, would not have the same meaning and effect, because its felicity conditions are not satisfied. Another useful way to look at language use in institutional settings is to view the institutional context as the "frame" (Goffman, 1974) for participants to interpret what type of activity it is, what is going on, and what roles are being played (see also Thornborrow, 2002, on discursive roles and institutional identities). In the example above, the courtroom setting enables us to interpret the utterance as a court decision with legal implications and that the speaker is a judge. The institution thus provides the context for language use, and participants orient to features of the institution in their verbal and nonverbal conducts.

At the same time, the institution is continually *enacted* in talk. While each utterance and action is shaped by the context of the institution, it also *renews* and *creates* the institution (Heritage, 1984; Drew & Heritage, 1992). By orienting to institutional goals and constraints, participants define what type of institution it is. As an example, let us examine the following excerpt.

Example 1, adapted from Gibbons (2006, p. 253),

```
A:  What if I try the south pole of this magnet and the north pole of
    that magnet/ yes Francois/ come on/ a sentence.
B:  The south pole and the north pole will attract.
A:  Good boy/ good Francois/ all right and let's try the south pole of
    this magnet and the south pole of the other magnet/ Stephanie?
C:  The south pole and the south pole will repel.
A:  Good.
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Based on how the participants carry out the interaction, one can surmise that this interaction takes place in a classroom. More specifically, by producing inquiry–response–feedback sequences (Sinclair & Coulthard, 1975; see also Mehan, 1979), the participants index their roles as teacher (A) and students (B and C) and construct the activity as an accountable teaching activity in a classroom context. In short, the institution is both the *product* and the *project* of talk (Drew & Heritage, 1992; see also Sacks, Schegloff, & Jefferson, 1974; Heritage, 1984).

Characteristics of Institutional Discourse

Research on institutional pragmatics demonstrates that talk at the workplace has three main characteristics in contrast with ordinary, casual conversations (Drew & Heritage, 1992). First, participants in workplace interaction typically orient to some *institutionally defined goals*, *tasks*, and *identities*. In different institutional contexts, the degree of orientation to these tasks and goals may vary. In emergency phone calls for example, participants orient more strictly to the goals of the interaction (Zimmerman, 1992) than, say, in a language class (Nguyen, 2007) or a service counter at the post office (Carter & McCarthy, 1997). In the first type of institutional context, participants typically do not insert exchanges that deviate from the core goals of the interaction. In contrast, in the second type of context, goal-oriented activities such as instruction giving and correction (in a classroom setting) and requests (in a service encounter) at are often interspersed with or embedded in exchanges that orient to relationship building (see also Coupland, 2003; Holmes, 2003). Institutions also vary in how negotiable their goals are. In emergency phone calls, there is little room for negotiation of the interaction's goals, but in some other institutional contexts, for example, visits by nurses to first-time mothers at their homes, participants are shown to negotiate locally what the task is at a given moment in the ongoing talk (Heritage & Sefi, 1992). A second notable feature of institutional talk is that participants usually orient to some specific and implicit *constraints* on what contribution is permissible and what contribution is not. For instance, Zimmerman (1992) showed that in emergency phone calls, when a caller attempted to tell a riddle, the call taker refused to participate in that activity and tried to orient to the official business before terminating the call. Similarly, in patient consultations at the pharmacy, the pharmacist might orient away from extensive storytelling by the patient in order to bring the conversation back to the task of advice giving (Nguyen, 2003). A third and final feature of institutional talk is that participants orient to some *inferential framework* that are specific to each institution. For instance, in a courtroom, the professional may withhold expressions of surprise or sympathy when the lay participant makes certain claims or descriptions that may, in other settings, receive a surprise or sympathy response (Atkinson, 1992). The withholding of these expressions is not treated as disaffiliative because of the inferential framework associated with the given institutional context. Likewise, in job interviews, repairs are often withheld by interviewers when the candidate provides an answer that displays a misunderstanding of the question (Button, 1992). The lack of repair in the context of a job interview is not to be taken as an indication that there are no issues with understanding, but it is taken as an indicator of the candidate's incompetence or inability to answer the question. In short, it is through their orientation to the tasks, constraints, and interpretational frameworks of a given workplace that participants construct the type of speech exchange systems that brings the institution into being.

Research on institutional pragmatics has covered a wide range of topics; the main focus has been on the analysis of how lexical choice, speech acts, the sequential organization of talk, and role relationships are performed as situated in specific institutions.

Lexical Choice in Institutional Discourse

First, lexical choice is a key resource through which participants can index and renew the institutional context in discourse. In the excerpt below concerning a patient's shoulder pain, the doctor uses several technical terms, "adhesive capsulitis" (line 27), "arthritis" (line 169), "tendonitis" (line 170), "bursitis" (line 171), and "adhesive capsulitis" again (lines 171–2). The use of these technical terms indexes and evokes the speaker's role as a doctor as well as the context of the interaction as a medical institution.

Example 2, from Robinson (2003, pp. 37–8),

```
18  DOC: So what can I do for you today.
19  PAT: W'll- (.) I have (.) som:e shoulder pa:in.
20       a:nd (0.2) a:nd (.) (from) the top of my a:rm.
21       a:nd (0.2) thuh reason I'm here is because >a couple
22       years ago< I had frozen shoulder in thee other a:rm,
23       an' I had to have surgery. and=( ) this is starting
24       to get stuck, and I want to stop it before it gets
25       stuck.
26       {(0.4)/.hhhh}
27  DOC: A[d h e : s i]ve capsuli[tis.  ]
28  PAT:  [I'm losing ]          [Ri:gh ]t.
29  PAT: I'm losi:ng (0.4) range of motion in my a:rm.
((Doctor performs history taking and physical examination))
168 DOC: . . . uh: ba:sically (be- ee-) there're
169      several possibilities. if it's an arthri:tis, .hhh
170      it's (i- th-) if it's a tendonitis, .h or if it's a
171      bur:sitis, or even if it's an adhe:sive
172      capsul>itis=which< [(it's) ve]ry unlikely you
173 PAT:                    [  Mm hm  ]
174 DOC: would have now.
```

Of note, while the patient uses lay expressions to refer to his condition ("I had frozen shoulder," "this is starting to get stuck," "before it gets stuck," lines 22–5), the doctor reformulates the patient's description into a technical term, "adhesive capsulitis" (line 27). In fact, the patient seems to be familiar with the term (as evidenced in his production of the acknowledgment token "right" in line 28); however, it is the doctor who introduces the term. The participants' different formulation of the same concept may index the asymmetry in their institutionally defined roles.

It is important to note that lexical choice in institutional talk involves not only the choice of technical terms over lay vocabularies, but also the choice among different ordinary formulations. Jefferson (1974), for example, showed how a defendant in court self-corrected and replaced the colloquial term "cop" with "officer," a term that is not technical but serves to index his orientation to the context of the courtroom (pp. 191–2). Other types of formulation that participants may use to orient to the institutional setting involve the choice of references to time, place, and events (Drew & Heritage, 1992), pronouns (e.g., the use of first personal plural pronouns *we*, *us* by doctors, Drew & Sorjonen, 1997), and formulaic expressions (e.g., expressions of concern such as "I'm a bit concerned" in calls to a child protection helpline, Potter & Hepburn, 2003).

In short, a speaker's word choice can index and construct the institutional setting as well as his/her own institutional identity. Word meanings are thus arrived at in the context of the institution and the identities of the people involved.

Speech Acts in Institutional Discourse

Another topic of much research within the scope of institutional pragmatics is speech acts. Here again, various approaches, especially conversation analysis, have shed light on how actions are performed in institutional contexts that are beyond Searle's and Austin's original and limited conceptualization of speech acts. Discourse in a specific institutional setting may contain speech acts that are unique to that setting, such as the voire dire is a speech act unique to courtroom interaction (Shuy, 1995). It is, however, more often the case that speech acts found in ordinary conversations are realized slightly differently in institutional contexts. For example, arguments in political interviews are often employed to persuade the audience rather than to seek and provide the validity of an argument as in ordinary conversations (Fetzer, 2007). Another speech act, request, is performed differently in commercial settings and in everyday interaction. In ordinary conversations, requests often have a dispreferred format, that is, having prerequests and hesitation markers (Schegloff, 2007), due to issues of face and solidarity. These pre-sequences and hesitation markers allow for the requestee to imply a negative response before the actual request is produced. In service encounters, Vinkhuyzen and Szymanski (2005) demonstrated that requests do not usually show a dispreferred format; customers tend to produce their request immediately after the greeting and without any pre-sequences or hesitation. In situations involving a negative response, this procedure leaves the business employee little or no opportunity to indicate prior to the customer's request that it will not be granted. Another difference that was found is that since the customer's request and the business' fulfillment of that request is the main purpose of the encounter, business employees tend to engage in extensive responses when a request cannot be fulfilled; when applicable, these responses may involve suggestions for self-service. For a final example, Maynard (1992) showed that the delivery of bad diagnostic news in medical settings is similar to bad news delivery in ordinary conversation in that it often involves a preface in which the news giver produces talk that allows the news recipient to infer or guess what the bad news is. However, this type of preface is more explicit in encounters between doctors and parents of children with developmental disabilities, and takes the form of perspective-display series, in which the patient's perspective is co-implicated. This procedure then renders the actual bad diagnostic news delivery as confirmation of what has been said and allows the bad news to be presented not as the doctor's independent assessment, but as a co-constructed assessment built on what the patient already knows. The diagnosis, then, has more chance to gain the patient's acceptance.

Structures of Interaction in Institutional Discourse

Much research on institutional pragmatics has also been on the description of the sequential structure of interaction at specific workplaces. The act sequence or the order of events in a given institutional setting contributes to the makeup of the institution and assists in the interpretation of talk and other meaning-making conducts in a given institutional setting. Some institutions have rather fixed sequential structures, for example, plea bargaining sequences (Maynard, 1984). Others have sequential structures that are more negotiated, for example, pharmacist–patient encounters (Pilnick, 2001; Nguyen, 2008; Watermeyer & Penn, 2009). Similarly to the study of speech acts, here, researchers have also found that the same type of sequential structure in ordinary conversations may take on a slightly different shape at the workplace. Jefferson and Lee (1992), for example, demonstrated that while in ordinary conversations the response to troubles-telling by another party normally involves some orientation to the trouble teller, in emergency ambulance service calls, this response often displays orientation to the trouble itself and not the trouble teller. When

the service supplier produces additional responses that also orient to the trouble teller, these responses function to "humanize the service encounter" (p. 544). On the practical level, the description of how actions are sequenced in an institutional setting may provide useful implications to enhance communication. Robinson (2003), for instance, examined the structure of problem solving in acute care visits and found that doctors and patients typically engaged in this sequential structure: Establishing a medical problem as a reason for the visit—gathering additional information (history taking or physical examination)—diagnosis delivery—treatment recommendation. Based on this description, Robinson recommended two ways to encourage more active patient participation in medical encounters: The physician may provide interactional space in the first move for patients to express more than one concern, and the physician may allow for more room for the patient to response to the delivery of the diagnosis rather than moving on to treatment recommendation right away.

Role Relationships in Institutional Discourse

Finally, an important area of research that falls under the umbrella of institutional pragmatics focuses on the dynamics of role relationship among participants at the workplace, particularly on issues of control and power. Research shows that institutional agents may control the discourse via the management of topics (e.g., Nguyen, 2006, 2008) the management of agenda (e.g., Holmes, Stubbe, & Vine, 1999; Robinson, 2003), the use of questions and question types (Atkinson & Drew, 1979; Harris, 1984; Philips, 1987; Frankel, 1990), the evocation of expert knowledge (Nguyen, 2006), the production of certain speech acts such as directives and approvals (Holmes et al., 1999), the production of and response to accounts (Fisher & Groce, 1990), and the use of second-position (which is more advantageous) in arguments (Hutchby, 1996), to name only a few. Some institutional practices may also marginalize certain groups differentially, leading to asymmetric power relationships. Roberts and Campbell (2005), for instance, informed us that the practices of job interviews in the UK may favor a "standard" narrative, which penalizes non-native candidates who do not know how to manage this interactional resource.

While it is true that the institutional agent often have a higher degree of power and control as defined by the institution, it has been shown that the layperson might utilize certain linguistic resources to resist and undermine this power and control. Haworth (2006), for example, showed that in a police interview, the suspect (in this case, a medical doctor accused of murdering a patient and forging her will) breached the expected question–answer sequences introduced by the police and asserted his own expertise in order to challenge the interviewer's institutional status (see also Harris, 1989). Along similar lines, Pilnick (1998) showed that a patient with chronic disease may use her knowledge about the condition to resist the pharmacist's advice in patient consultations. Power relationship at the workplace is not fixed and given, but is continually maintained and negotiated.

Conclusions

In the last few decades, institutional pragmatics has contributed much to the understanding of how meaning is created and interpreted in the context of the workplace. The findings in this area can provide useful implications for intervention and improvement of communication within institutions as well as between institutions and the public. There are, however, several questions that are still open and invite further inquiry. First, as institutions change in the ways they conduct business, naturally further research is needed to examine the changing pragmatics of these institutions. For example, with the fairly

recent trend of outsourced call centers, there has been some research on the pragmatics of this new type of discourse (e.g., Friginal, 2008). Questions about how new technologies and protocols affect meaning making at the workplace will continue to intrigue researchers working on the domain of institutional pragmatics. Another important question that has not yet been fully answered is the development of pragmatic competence in a given institutional setting. Most research on institutional pragmatics to date tends to take the pragmatic competence of the institutional agents as well as laypersons as given and stable. We currently know little about how this competence evolves (Zimmerman, 1999; Sanders, 2003). Efforts to develop this area of research can be seen in the works by Mertz (1996, 2007), who provided a glimpse into the socialization processes in law school classrooms as part of learning to think and talk like a lawyer. Another effort in this area is the works by Nguyen (2003, 2006, 2008) who traced the development of interactional competence by pharmacy novices in patient consultations at real-life pharmacies. Nguyen showed, for instance, how pharmacy novices learned to construct their expert role in discourse, sometimes by withholding technical talk, and how they learned to organize the sequential structure of the interaction in order to accomplish work-related tasks more effectively. Knowledge about how abilities such as these develop in institutional settings can benefit the training of professionals.

SEE ALSO: Conversation Analysis and Institutional Interaction; Corpus Analysis of Language in the Workplace; Discourse in Organizations; Frame Analysis; Participation Frameworks and Production Formats in the Analysis of Discourse and Interaction; Speech Acts

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Instructed Second Language Acquisition

SHAWN LOEWEN

Instructed second language acquisition (ISLA) refers to the subfield of second language acquisition (SLA) that investigates any type of second language (L2) learning or acquisition that occurs as a result of the teaching of the L2. It has also been called "guided," "tutored," or "formal" SLA. Learners' self-study of the target language can constitute a type of L2 instruction; however, L2 instruction is generally considered to occur within a classroom context. As such, ISLA does not encompass L2 learning that occurs outside the classroom as people use the target language in their everyday lives (sometimes called naturalistic SLA). The defining feature of L2 instruction is that there is an attempt by teachers, or instructional materials, to guide and facilitate the process of L2 acquisition. The value of L2 instruction has been debated, with some theorists claiming that although instruction may help people learn explicit rules about the target language, it has little impact on learners' ability to use the L2 for communicative purposes. Nevertheless, there is some consensus that, in addition to improving learners' metalinguistic knowledge, L2 instruction can affect the ways in which L2 features are acquired. It can increase learners' rate of L2 acquisition, and it is valuable, if not crucial, in assisting learners to achieve advanced levels of target language proficiency.

The implementation of L2 instruction has changed over time, due in part to changes in the dominant theories of first and second language acquisition. However, a perennial controversy is the amount of emphasis that should be placed on grammar instruction versus communication in the L2 classroom. This debate is evident in the characteristics of several influential L2 instruction methods. One early example is the grammar translation method, based on 19th-century methods of teaching classical languages, which relied heavily on the explicit teaching of vocabulary and grammar rules to enable learners to translate texts both from and into the target language. Reactions to the grammar translation method included the direct method, which emphasized the exclusive use of the L2 in the classroom and an inductive approach to teaching grammar rules.

In the 1950s and 1960s, the influence of behaviorism on L2 instruction was seen in the audio-lingual method, which viewed imitation, repetitive drills, and pattern practice as optimal methods of L2 instruction. Subsequently in the early 1980s, the importance of naturalistic types of L2 use and interaction in the classroom were seen in the natural approach (Krashen, 1981; Krashen & Terrell, 1983) and communicative language teaching (CLT) (Savignon, 2005). The natural approach asserted that providing learners with large amounts of comprehensible input was the necessary and sufficient condition for L2 acquisition and that explicit grammar instruction played a limited and non-essential role in L2 acquisition. Similarly, CLT emphasized the importance of using the L2 for meaningful interaction in the classroom and de-emphasized the role of explicit grammar instruction. An example of the implementation of CLT, popular particularly in Canada, has been immersion instruction in which primary and secondary school students attend content classes, such as mathematics and science, in the target language.

However, in the late 1980s and 1990s, researchers found that exclusive reliance on CLT in the classroom did not always result in learners who could use the L2 accurately. As a

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result, there were efforts to find effective ways of teaching so that learners' L2 production would be both accurate and fluent. To that end, Michael Long proposed a tripartite distinction in L2 instruction: focus on meaning, focus on forms, and focus on form (Long, 1991, 1996). Focus on meaning instruction coincided with the strong version of CLT, which focused exclusively on communication at the expense of grammar instruction. Focus on forms, similar to traditional grammar instruction, emphasized grammar rules, and the decontextualized presentation of the language. Focus on form was Long's proposal to integrate brief attention to language items within meaning-focused instruction. Types of focus on form include corrective feedback within communicative activities, input flood in which a communicative activity is seeded with numerous exemplars of a targeted linguistic structure, and input enhancement in which targeted linguistic structures are highlighted in some way. In addition to focus on form, several current methods for combining attention to L2 accuracy and fluency include task-based language teaching (TBLT) (Ellis, 2003), content-based instruction (CBI) (Lyster, 2007), and processing instruction (VanPatten, 2004). TBLT employs tasks as a means to engage learners in authentic communicative activities as well as to draw attention to specific linguistic features. CBI is similar to immersion instruction, although typically more support for accurate L2 use is provided. Finally, processing instruction attempts to rectify learners' incorrect L2 processing strategies by providing learners with explicit information about such strategies and then providing learners with input to practice new processing strategies.

In addition to the debate between meaning-focused and form-focused instruction that has shaped many of the approaches to L2 instruction, there are additional factors to consider in ISLA. For example, the degree of explicitness of grammar instruction is currently debated. Perspectives such as CLT and focus on form generally suggest that L2 instruction should be relatively implicit in order to avoid detracting from the communicative aspect of instruction; however, there is increasing evidence suggesting that more explicit types of L2 instruction may be more effective for L2 learning (Norris & Ortega, 2000). Another consideration in L2 instruction is the contrast between deductive and inductive instruction. The former involves explicitly presenting grammar rules to learners, while the latter involves learners in identifying patterns in the L2 input or making comparisons between the first and second languages. Finally, issues such as the duration and intensity of L2 instruction, the optimal age at which to begin L2 instruction, and the role of individual differences in L2 instruction are also important considerations.

In sum, numerous L2 instruction options continue to receive attention both for classroom pedagogy and ISLA research. In spite of different methods and features, the most significant aspect of the field of ISLA remains its investigations into the optimal conditions for L2 learning in the classroom.

SEE ALSO: Explicit Knowledge and Grammar Explanation in Second Language Instruction; Form-Focused Instruction; Language Learning and Teaching: Overview; Role of Instruction in Second Language Acquisition Theories

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Instructional Computer-Assisted Language Learning

CAROL A. CHAPELLE

In second language teaching and learning, computer technology extends the types of interactive activities that learners can work on in and outside of the classroom, and therefore it has affected the way that many teachers teach and learners learn. Teachers might, for example, ask students to seek specific information on the Internet in preparation for an information gap activity in class; teachers might indicate awkward expressions in a student's essay and show the student how to find examples of target language collocations in a corpus; and teachers might organize a virtual collaboration between their students and proficient speakers of the target language in another country. These activities and many more add significantly to the repertoire of activities that learners can engage in because of three affordances offered by technology: human–computer interaction, distance written and oral communication, and access to a community with data and creative opportunities on the Internet.

Learners' Interactions with the Computer

Language learners have a variety of opportunities for interaction with the computer through the use of tutorial software designed specifically for language learning. The best examples contain linguistic input that is interesting and engaging for learners to listen to or read in addition to opportunities for help and practice with the language. For example, learners can watch and listen to videos that have been segmented in a manner that allows for stopping to check for comprehension and to provide the learner with help (Rost & Fuchs, 2004). Help includes repetitions, a dictionary, grammar explanations, and additional images. This process of interactive listening contrasts with non-interactive listening such as one normally does in television watching; interactive listening allows for stopping to get help (Chapelle, 2005).

Helpful interactions are also available to learners as they write and—to some extent—as they plan for speaking. Students can interact with an online grammar checker, dictionary, and corpus of target language texts to gain pertinent help as they write or plan to speak (e.g., Burston, 2001). Interactions that occur as the learner is attempting to use language to make meaning may be particularly rich whether this occurs during comprehension or production (Chapelle, 2003).

Interactions Between Students and Other Language Users

New forms of communication over networks and on the Internet have opened up a range of activities allowing learners to connect, interact, and collaborate with other target language speakers and most notably with peers who are speakers of the target language (Chun, 2008). The first explorations of learners engaging in synchronous written online communication with local peers in the language class (e.g., Chun, 1994) found positive results:

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Each learner seemed to participate more than he or she would in a traditional face-to-face classroom with oral language. Some evidence also suggests that the use of written language for conversation provides good opportunities for acquisition of vocabulary (Smith, 2004) and is an effective adjunct to oral face-to-face conversation, probably because of the opportunity for students to inspect and reflect on linguistic form in the written language (Payne & Whitney, 2002).

Interactions between learners and other language users in remote locations have opened a new set of opportunities for developing pragmatic competence and exploring intercultural communication (Belz & Kinginger, 2003). Students are paired or placed into groups to work on assigned projects as part of their classroom learning with students at a remote location with whom they inadvertently explore the intricacies of cross-cultural communication (Ware & Kramsch, 2005).

Teacher-guided communication and collaborative activities represent only part of what many language learners are doing with computer-mediated communication for language learning. Some language learners seek out additional opportunities for interaction in the target language beyond what they are assigned in class. For example, social networking (e.g., Facebook) can provide connections with peers who speak the target language and opportunities to design sites using the target language.

Linguistic Databases and Web 2.0

The World Wide Web offers many opportunities for learners to access linguistic data and use the target language creatively in Web 2.0, which refers to the types of sites that allow users to create and contribute their own information. The pedagogies for helping learners to use electronic corpora for language study have been discussed by the technology enthusiasts in the field for many years, but now that learners have access to the multimodal collection of linguistic and cultural information on the Web, such pedagogies are more widely useable. In fact, the wealth of authentic texts, dictionaries, and searchable linguistic data creates the opportunity and need for new pedagogies. For example, genre-based writing pedagogy can be developed in new ways through the use of the Internet.

The capacity for creative use of language in conjunction with visual communication is extensive as students construct their own Web sites, blogs, and online communities. Some find that the tools provided in today's electronic environments make possible rich opportunities for project-based learning—sometimes in cross-cultural collaborations (Kern, 2006).

Language Learning?

It is tempting to look at these new opportunities as offering clear benefits for language learning, and some evidence exists for the quality of some of the practices outlined above under some circumstances. However, rather than attempting to assess whether or not such practices are superior to classroom learning, it is useful to note that many of the tools and practices are used by many learners naturally while they are using their foreign language. This fact alone—that learners expect to use technology for language use and learning—provides an impetus for language teachers to incorporate good technology practices into their teaching repertoire.

Computer technology affords professionals in many areas novel perspectives on their everyday practices. In language teaching, it prompts instructors to examine more carefully the processes of language teaching and learning so that they may help to prepare learners to choose and use technologies. In this context, we might conceptualize the language proficiency that is the target of language teaching to include the ability to select and use

technological resources during performance to increase the quality of their writing and speaking production as well as their comprehension in reading and listening.

SEE ALSO: Computer-Assisted Language Learning Effectiveness Research; Computer-Mediated Communication and Second Language Development; Corpora in the Language-Teaching Classroom; Intelligent Computer-Assisted Language Learning

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Integration of Language and Content Learning

BERNARD MOHAN

Mothers and caretakers help their children to learn language and learn about the world simultaneously. How can teachers similarly integrate language and content learning?

Today there are large and increasing numbers of learners who learn content areas and disciplines through the medium of a second language. For many of these students, and particularly for language minority students, second language medium education is challenging. Goldenburg (2008) states that in US national testing in 2007 nearly half of fourth grade students in the English-language learner (ELL) category scored "below basic" in mathematics—the lowest level—and nearly three-quarters scored below basic in reading. His research review finds that students need academic language development for school success. The vital task of integrating the explicit teaching of academic language within content lessons requires the coordination of language and content objectives (Echevarria, Vogt, & Short, 2007). Students need to understand the different ways language is used to construct content knowledge in disciplines like mathematics or history.

Models of language and grammar can be divided broadly into formal models, which describe the language system only, and functional models which describe both the language system and how it is used to make meaning in discourse and context. A functional model of language (Derewianka, 2007) is required to describe academic reading comprehension and how academic language is used to construct content knowledge.

The traditional model of language used in the ELT field is a formal one, identifying the parts of speech and the rules for combining them into sentence structures. While communicative language teaching "foregrounded language use over knowledge of language forms and conceptualized that use in terms of communicative tasks, even the most elaborated assessment framework, that by Bachman and Palmer (1996), upheld the separation of language knowledge from topical or content knowledge" (Byrnes, 2008, p. 37), and did not analyze how language constructs content knowledge in discourse.

We will describe Halliday's systemic functional linguistics (SFL) model of language and show how it addresses the academic construction of content knowledge in discourse and defines the integration of language and content in linguistic terms.

Language as Functional Resource for Meaning

Halliday views the language system as having three dimensions of meaning: the ideational function, which represents our experience of the world; the interpersonal function, which mediates interaction; and the textual function, which structures the flow of information. Functional grammar describes how each of these dimensions of meaning is encoded in wording (realized in the lexicogrammar). At the center of ideational meaning, for example, is the interpretation of experience as processes involving people and things, which are realized in the functional grammar of the clause as processes, participants and accompanying circumstances (time, place, manner, and so on). Ideational meaning in discourse is close to what is commonly understood as "content."

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Citing research that fewer than one-third of eighth and twelfth graders read at levels necessary for school success, Fang and Schleppegrell (2008) explain how secondary content teachers can foster content area literacies by using functional language analysis to engage students in analyzing the ways language constructs knowledge in science, history, mathematics, and language arts textbooks. Teachers and students discuss the meaning in the language patterns of these texts using a functional metalanguage that covers ideational, interpersonal, and textual meanings. In science, for example, students analyze the technical, abstract, dense, and tightly knit features of science language so that they can understand the scientific knowledge and values it constructs.

Thus, by drawing on an SFL grammar that relates *wording* to *meaning*, learners are better able to interpret the academic *language* of their science textbooks to understand and critically assess their science *content*. In this integrated view, language constructs content knowledge through a grammar of meaning. Mohan, Leung, Low, and Slater (2010) offer an extended discussion of integrated language and content assessment, showing how functional analysis of meaning in text provides a common ground between language assessment and content assessment.

In Halliday's view of language development, which resonates with Vygotskyan theory, the child gradually develops the metafunctions of adult language "through constant, contextualized interactions with caregivers who are acutely sensitive to the child's emergent linguistic system and who provide supported opportunities for the child to participate in the negotiation of meaning" (Derewianka, 2007, p. 851). Painter (1999) shows how the child learns the culture system and language system simultaneously through talk, in a dialectic between language system and process, theory and practice. She gives a detailed account of the development of ideational meaning as the child uses language to learn about the world.

Halliday regards language as the primary means of learning about the world, views knowledge or content as meaning, a resource for understanding and acting on the world, and sees learning as a process of making meaning. Language is also the primary evidence for assessment of what a person has learned.

Integrated Assessment

The vexed but crucial area of integrated assessment brings central problems of integration into clear focus. Byrnes (2008) reviews the research literature on assessing content and language, reporting that the field finds it difficult to move beyond the traditional assessment of language as separate from content and that little work is based on a linguistic theory that addresses meaning and content. Obviously there is a "blind spot" which needs overcoming.

Assessment can be divided into summative assessment (assessment *of* learning), performed for the purposes of reporting and grading, and formative assessment (assessment *for* learning), as in classroom-based teacher assessment. For a variety of reasons, formative assessment of integrated language and content offers more promising and strategic avenues of research and development at the present time. For instance, according to a synthesis of more than 4,000 research studies, formative assessment for learning practices can double the rate of student learning (Wiliam, 2007/8).

The Assessment Reform Group in Britain states that formative assessment or assessment for learning should be recognized as a central element in classroom practice:

> tasks and questions prompt learners to demonstrate their knowledge, understanding and skills. What learners say and do is then observed and interpreted, and judgments are

> made about how learning can be improved. These assessment processes are an essential part of everyday classroom practice and involve both teachers and learners in reflection, dialogue, and decision making. (Assessment Reform Group, 2002, p. 2)

Clearly, language is used as a means of assessment of content in "assessment for learning" dialogues; they are everyday examples of integrative assessment. But to overcome the "blind spot," such examples require analysis as functional assessment for learning (FAL), that is, functional analysis of language as a means of assessment.

Research on focus on form distinguishes between explicit assessment, where the learners are given explicit feedback on error, rule statements or other metalinguistic explanations, and implicit assessment, where the learners' attention is directed more implicitly, as in recasts of form. Both explicit and implicit assessments can contribute to learning. We will distinguish similarly between more explicit FAL and more implicit FAL.

In the next two sections, explicit FAL will be discussed in relation to genre and implicit FAL in relation to register. Notice that both genre and register relate wording and meaning, language and content, and therefore integrate language objectives and content objectives.

More Explicit Functional Assessment for Learning

SFL work on genres (Martin & Rose, 2008) initially concentrated on literacy development in the elementary school and focused on the genres to be learned at that level, such as recount, procedure, narrative, and explanation. In this approach, learners are guided to analyze good text examples of a given target genre, noting its stages of schematic structure and the language features that realize them and discussing the role of aspects of ideational, interpersonal, and textual meaning in the text. In other words, students learn to analyze the ways that language constructs knowledge in texts. This is followed by writing texts as a collective activity and later by writing texts independently. An important aim is to develop the learner's capacity to review and assess instances of text types or genres, and to develop a metalanguage to do so. From an explicit FAL perspective, this capacity is fundamental if learners are to engage in FAL assessment of texts. For instance, in a research account incorporating this approach, Schleppegrell (2010) reports one eight-year-old ESL pupil assessing another's recount: "Your *recount* doesn't have an *evaluation*. You need to have a *being* or *sensing process* at the end."

Later SFL work on genre engaging with the secondary and tertiary curriculum explored how the "subject specific" nature of the language of a discipline constructs the knowledge of the discipline. For example, Schleppegrell, Greer, and Taylor (2008) prepared history teachers to engage students in talk about language and content as they read difficult history texts. Consistent with a movement within history education to focus on improving students' discipline-specific reasoning, learners analyzed wording that constructs time and cause, attributes agency, and presents judgment and interpretation, using a functional metalanguage, for example, identifying the elements of a clause as processes, participants, and circumstances. Qualitative and quantitative data supported the effectiveness of the approach in improving students' reading and writing skills in history as well as their overall understanding of historical content. Again, learners and teachers were positioned to engage in explicit FAL while reading history texts critically. A participating history teacher commented metalinguistically on language and content relations: "[My] students need strategies to help them comprehend. The sentence chunking helps students analyze what is happening in history by looking carefully at the processes and participants in the text" (Schleppegrell et al., 2008, p. 182).

More Implicit Functional Assessment for Learning

With respect to a discipline (e.g., the field of mathematics) a register is a resource for creating meanings, a "meaning potential," a system of meanings which can interpret and produce texts of the field in context. In this view, when teachers assess learners' knowledge, they are assessing how well the learners construct and interpret meanings of the register of a discipline. This view of register links together the types of implicit FAL strategies below.

Functional recasts (Mohan & Beckett, 2003) are one type of implicit FAL strategy. They occur when an utterance is recast into a more functionally appropriate variant, as when (1a) is recast into (1b), a more literate, academic and scientific variant in the register, by rewording its causal relation into a more grammatical metaphorical form. (1b) is evidence that the teacher has an intuitive linguistic understanding of what is appropriate in the register.

(1a) ESL Student: To stop the brain's aging, *we can use our bodies and our heads*.
(1b) Teacher: [RECAST] So we can prevent our brain from getting weak *by being mentally and physically active*?

Gibbons's (2006) study of elementary ESL children in a teaching unit on magnetism showed teachers making recasts into a scientific register during teacher guided reporting (TGR). More broadly, the teachers carefully created a cycle of shifts in *mode and textual meaning*, where they guided learners from the practical discourse of here-and-now magnetism experiments to more theoretical, academic discourse requiring explicit statements of knowledge in the register of magnetism. In a study of younger elementary ESL children learning a magnetism unit, Mohan and Slater (2005) describe how the teacher designed and executed the unit to engage learners in a theory–practice dialectic of *field and ideational meaning* between practical meanings of experiments (tasks) and theoretical meanings of magnetism. Finally the teacher formatively assessed the children's resultant ideational knowledge of the meanings of magnetism by having them interpret the unfamiliar case of ring magnets. In doing so, she guided them to draw inferences from these meanings and give reasons for these inferences, rather than repeat the meanings by rote. Mohan and Slater (2006) found a similar theory/practice dialectic in a grade nine high school science class on matter, where the science teacher built up a framework of ideational meanings in the science register and then formatively assessed them in problem solving tasks which again required the students to draw inferences backed with reasons based on register meanings, for example, drawing inferences from the scientific meaning of "density" as opposed to "weight."

Thus these teachers showed considerable intuitive understanding of register relations between wording and meaning as they recast, guided student reporting, shifted mode, created a theory–practice dialectic around practical cases, and assessed meanings of registers through reasoned inferences.

Making Implicit Assessment Explicit in a Theory–Practice Dialectic

Can this intuitive understanding be raised to consciousness? In an elementary history class, the teacher explicitly guided ESL students to assess themselves in their cooperative group work, counseling them to decide on answers rather than guess, support answers with reasons, and discuss reasons critically (Leung & Mohan, 2004). Beckett and Slater (2005)

found university EFL students who needed improvement in academic discourse but who participated reluctantly in course work aimed at academic discourse, preferring traditional work on grammar and vocabulary. Beckett and Slater therefore guided action research throughout the course so that students systematically assessed their own ongoing learning experiences for relations between academic language, content, and "academic skills" (e.g., classify, explain). At the end of the course, the majority of the students approved of their integration of language and content learning as a valuable means to academic discourse development.

Such consciousness-raising suggests the future possibility of a more articulated, comprehensive, and systematic FAL.

Conclusion

An appropriate functional model of language and learning treats content as meaning in text and makes it possible to analyze how language constructs and construes content knowledge. Functional assessment for learning is a vital area for future research development and educational practice. Research on explicit FAL needs to extend teachers and learners' capacity for metalanguages of assessment. Research on implicit FAL needs to identify the range of implicit FAL strategies and help teachers and learners build on them consciously and creatively. And there is a need to expand theory–practice dialectics between explicit and implicit FAL.

SEE ALSO: Formal and Functional Approaches to Grammar; Lexicogrammar; Qualitative Research in Language Assessment; Systemic Functional Linguistics; Writing and Genre Studies

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Intelligent Computer-Assisted Language Learning

TRUDE HEIFT

Intelligent computer-assisted language learning (ICALL) integrates natural language processing (NLP) and artificial intelligence (AI) modeling into CALL. NLP is concerned with the interactions between computers and human languages, while techniques of artificial modeling aim at creating an individualized learning experience by providing a unique set of system responses and interactions between a learner and the computer. NLP and AI modeling have played a significant role in the development of our thinking about CALL, its design and implementation. For instance, Nerbonne (2003), in his chapter on NLP in CALL in the *Oxford Handbook of Computational Linguistics*, argues that recent advances in NLP have much to contribute to CALL. More specifically, Nagata (1996) concludes from one of her user studies that only CALL programs that make use of the full potential of the computer, mainly by providing immediate and appropriate feedback, will produce higher learning results.

This entry first discusses the challenges that NLP faces in processing human language and then highlights the diversity and range of ICALL applications that have been developed over the past few decades. The entry then focuses on intelligent language tutoring systems (ILTSs), as one particular type of ICALL environment, and describes its pedagogical benefits with respect to corrective feedback and individualized instruction. Some of the findings that have resulted from research with ILTSs and their implications for pedagogy will be presented.

What Is ICALL and What Are the Challenges?

Natural language processing (NLP) is a field of computer science that studies the problems of automated understanding and generation of natural human languages. In natural language understanding, the computer takes written or spoken language input and turns it into a formal representation that captures phonological, graphological, grammatical, semantic, and pragmatic features. In contrast, natural language generation is the reverse process of going from a formal representation to natural language output.

Natural language understanding faces many challenges whereby each language presents its unique problems. For instance, some written languages like Japanese, Chinese, or Thai do not have single-word boundaries. However, any significant automated text segmentation and analysis requires the identification of word boundaries, thus posing difficulties for NLP systems designed for those languages. Second, in most spoken languages, the sounds representing successive letters blend into each other, which makes the identification of discrete characters a demanding task. Moreover, in natural speech there are hardly any pauses between successive words; the location of those boundaries usually must take into account grammatical and semantic constraints, as well as context. Third, language can be highly ambiguous (e.g., lexically, syntactically), which is extremely challenging for automated text and speech processing (for examples see http://en.wikipedia.org/wiki/Natural_language_processing).

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The challenges that NLP faces are compounded when it comes to imperfect or irregular input, commonly found with learner language. In language learning errors occur, not because the student's knowledge is a strict subset of the expert knowledge, but because the learner possesses knowledge potentially different from the expert in quantity and quality. For example, foreign-language learners may commit errors that are influenced by their mother tongue. Accordingly, to process a sentence that in addition to the typical challenges of natural understanding also contains non-native errors can result in an explosion of possible sentence analyses and interpretations, because some of the grammatical constraints that generally mark and identify well-formed sentences are relaxed. For instance, a system designed for native speakers of English puts restrictions on subject–verb agreement. However, errors in subject–verb agreement are typical mistakes made by language learners. Accordingly, for an ILTS to process and analyze such an ill-formed sentence, the constraints on subject–verb agreement must be relaxed for the system to produce a successful sentence analysis.

To address these challenges, statistical natural language processing, for instance, uses methods to resolve some of the difficulties, especially those which arise from the ambiguous use of language that can lead to misinterpretation (e.g., lexical and syntactic ambiguity). Methods for disambiguation commonly involve the use of corpora whereby the NLP system searches through large quantities of text to collect information on the common usage of particular linguistic constructions. In addition, and with respect to learner language more specifically, the processing domain can also be constrained to handle some of the difficulties. For instance, ICALL applications often focus on less sophisticated language such as that produced by beginners or intermediate learners. The task itself can also be limited (more constrained exercises as opposed to open essays) or some error types can be emphasized over others (e.g., morphology versus pragmatics). Finally, systems can focus on a limited set of linguistic components (morphology, lexis, etc.) and/or restrict the text-processing procedures to a shallower level.

The two main components required for natural language processing are a parser and a grammar. A parser is one of the components in an interpreter which checks for correct syntax and builds a data structure implicit in the input tokens that the user provided. Most modern parsers are at least partly statistical; they rely on a corpus of training data which has already been annotated, that is, parsed manually. This approach allows the system to gather information about the frequency with which various constructions occur in specific contexts. The parser often uses a separate lexical analyzer to create tokens from the sequence of input characters. In addition, an ICALL system generally consists of a grammar that defines the valid sentences in a language. Finally, a semantic component is required to analyze the meaning of words or the sentence. These components then allow ICALL systems to create a learner-centered, individualized learning environment by also employing AI methods and techniques that predefine information about the learner and/or the task, thereby resulting in a unique set of system responses and interactions.

ICALL Applications

In addition to more general NLP tools (e.g., automatic speech recognition, text-to-speech synthesis, automatic text summarization, machine translation), a number of ICALL systems have been developed over the past decades. They can be classified into roughly three categories:

- data-driven learning tools,
- text tools, and
- intelligent language tutoring systems.

Data-driven learning tools favor a learner-centered explorative approach, where students are encouraged to try different possible solutions to a problem by, for example, the use of concordance programs that employ annotated unilingual or parallel corpora. The Compleat Lexical Tutor (http://www.lextutor.ca/), for instance, provides a means for learners of English to encounter and explore words in a variety of contexts. Learners can first search for a word to gain a deeper knowledge of the use and meaning of the word and then complete a task (e.g., a cloze exercise) that is automatically created by the system.

In contrast to data-driven learning tools, text tools consist of foreign-language writing and reading aids, lexical and morphological analyzers, as well as text assessment tools that measure text complexity. For instance, the Microsoft Research ESL Assistant (Leacock, Gamon, & Brockett, 2009) is a prototype Web-based proofing tool that allows ESL learners to examine their writing. The system's architecture consists of a combination of error-correction modules that target specific error types and utilize machine-learned components and heuristic rules. A language model component filters out spurious suggestions.

Finally, intelligent language tutoring systems (ILTSs) have been developed for the past thirty years for a wide range of native and target languages as well as different proficiency levels (Heift & Schulze, 2007). For instance, Robo-Sensei is a commercial ILTS for Japanese for all proficiency levels (Nagata, 2009); TAGARELA teaches Portuguese to beginners (Amaral & Meurers, 2007), and The "etutor" is a comprehensive language-learning environment for all proficiency levels of German (Heift, 2010a). The following section focuses on ILTSs more specifically.

Intelligent Language Tutoring Systems

Unlike Web 2.0 learning environments (e.g., blogs, WebQuests) in which language learners create and design their own space by working collaboratively with peers, ILTSs provide a learning environment in which learning activities are typically performed individually. ILTSs are primarily designed to support form-focused instruction by identifying ill-formed grammatical construction in learner output (see e.g., Schulze, 2008). Interestingly, a recent study by Peters, Weinberg, and Sarma (2009), which compared different learning environments, emphasizes the value and place of form-focused instruction in the current language classroom. Peters et al. (2009) investigated language students' perceptions about the effectiveness of different technologies, and the authors found that traditional types of computer-assisted activities are judged to be more useful than newer activities such as blogs and WebQuests. Moreover, the study revealed that students tend to prefer (and judge to be more helpful) computer-assisted activities that are noninteractive or performed individually.

However, after thirty years of development and research of ILTSs (for a chronology of ICALL systems, see Heift & Schulze, 2007), these systems nowadays are rarely limited to form-focused instruction but instead, and due to their sophisticated underlying technologies, allow for more diverse learning environments. For instance, Dickinson, Eom, Kang, Lee, and Sachs (2008) designed an ILTS that is embedded in a synchronous computer-mediated communication (CMC) environment. The system provides feedback on particle usage for first-year L2 Korean learners while they chat in CMC. Moreover, Harbusch, Itsova, Koch, and Kuhner (2008) designed a virtual writing environment for German for elementary-school children, The Sentence Fairy, which deploys natural language generation technology to evaluate and improve the grammatical quality of student output. Most other ICALL systems provide a combination of form-focused and meaning-focused instruction. For instance, the activity types in the etutor (Heift, 2010a) allow for grammar practice as well as reading comprehension and/or cultural knowledge. In addition, the etutor also supports discovery learning in the form of exploration of learner language. For this, user submissions

were compiled over five years, and from those a common learner corpus was constructed that allows students to explore learner language according to various parameters. Accordingly, learners can examine interlanguage or task-specific phenomena, and the benefits in this respect have been well documented (see Granger, 2003). Moreover, these large data sets also allow language instructors and researchers to examine the design of language learning material in addition to a wide range of other research topics (e.g., use of help options, interlanguage studies).

Learner Feedback

The main advantage of ILTSs over more traditional CALL environments lies in the error-specific feedback that an ILTS can provide in response to learner output. Traditional CALL programs are generally based on string-matching algorithms: that is, the student response is compared letter-for-letter against an answer key. In contrast, using sophisticated NLP technologies an ILTS identifies and interprets errors as well as correct constructions in learner input and generates appropriate, informative learner feedback accordingly.

Over the past decades, research has sought evidence that feedback in CALL makes a difference in language development, and more specifically what kind of feedback makes a difference. One of the early studies investigating different feedback types for Japanese grammar instruction found that "intelligent" feedback (with a metalinguistic explanation) was more effective than traditional feedback (e.g., *wrong, try again*!) (Nagata, 1996). A number of studies followed (see e.g., Pujolà, 2001; Heift, 2010b; Rosa & Leow, 2004; Bowles, 2005) and the results generally support the claim that students benefit from the more explicit feedback, because they subsequently perform better on particular target language structures and students' grammatical awareness is subsequently raised.

A few studies have also considered learner strategies with respect to corrective feedback in CALL rather than focusing solely on learning outcome. For instance, Brandl (1995) studying L2 learners of German found that the learners' language skills influence their preference for a particular feedback type in CALL programs. More specifically, results indicate that lower-performance learners have a more limited set of strategies for processing feedback than learners at higher proficiency levels.

Evidence for effects of computer-generated feedback has also been sought in studies examining learner error correction behavior, referred to as learner uptake, in response to distinct feedback types. This body of research (see e.g., Lyster, 2007) proposes that successful uptake is the biggest predictor of learning, and even in instances where no learning takes place at a particular moment, it suggests that learners notice the feedback and thus process it. As a result, researchers tend to view learner uptake as facilitative of L2 acquisition. Findings of studies with ILTSs report significantly more learner uptake for the feedback type that provides detailed corrections (see e.g., Heift, 2010b).

Individualized Instruction

Research in second language acquisition (SLA) has also investigated learner variability, or interlanguage (IL) variation, by examining linguistic, psycholinguistic, and sociolinguistic constraints and with the goal of explaining why speakers choose, consciously or subconsciously, their forms of speech. This body of research has provided evidence of extensive variability in learner language that can be attributed to individual differences, task variables, as well as external variables (see e.g., Tarone, 1988; Gass, Madden, Preston, & Selinker, 1989). All of these are said to affect the learners' learning processes.

An ILTS can adapt and tailor instructional materials and content to its users with AI techniques that are used to model the individualized learning experience and guide pedagogical decision-making. The goal here is to create learning programs that come closer to natural language interaction between humans than has been the case in traditional CALL. ILTSs. For this, the ILTS constructs a so-called learner model, which is a description of the learner's current skill level along with the student's learning styles and preferences relative to the learning task. Commonly, these models make some assumptions about learners by determining their current knowledge state, which requires the ILTS to observe and record their interaction with the learning system. Measuring learner knowledge, however, is a highly complex task due to a number of variables that have to be considered in assessing and capturing the individual differences that warrant individualization at any given point in time (Heift & Schulze, 2007). A number of learner models have been described and implemented and, most commonly, they are used to generate individualized feedback and unique learning paths for each learner (see e.g., Bull, 2000; Amaral & Meurers, 2007).

Conclusion

ILTSs have added a new dimension to more traditional CALL environments due to their sophisticated underlying technologies. NLP and AI modeling techniques provide the analytical complexity underpinning an ILTS, thereby resulting in a more learner-centered, individualized language-learning environment. Unlike earlier applications that primarily focused on grammar taught in more traditional learning environments, more recent applications reflect a wide range of teaching and learning approaches by also addressing a variety of language skills.

SEE ALSO: Learner Corpora; Learner Modeling in Intelligent Computer-Assisted Language Learning; Learner Response Systems in Second Language Teaching; Natural Language Processing and Language Learning; Roles for Corrective Feedback in Second Language Instruction; Technology-Supported Materials for Language Teaching

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Intelligibility

MURRAY J. MUNRO

Intelligibility is an aspect of speech with far-reaching consequences for human communication. Schiavetti (1992, p. 13) described it as "The match between the intention of the speaker and the response of the listener to the speech passed through the transmission system." Thus intelligibility is not an inherent characteristic of speech or of speakers, but a consequence of the interplay of linguistic and nonlinguistic factors affecting all the participants in communicative situations. It is of particular importance in second language (L2) teaching, the study of World Englishes, and speech-language pathology. Although intelligibility can be applied to both oral and written language and is influenced by grammar, vocabulary, discourse factors, and pragmatics, this entry focuses exclusively on speech intelligibility, and the aspects of oral production and perception that affect it.

Speakers

In almost all speech acts, speakers aim for intelligibility—to be understood by their interlocutors. Exceptions are rare, though a prisoner of war might feign poor language competency for self-preservation, an entertainer might aim for a comic effect with unintelligible speech, or a child might engage in nonsensical vocal play. Apart from such cases, the results of unintelligibility are almost uniformly negative, ranging from minor inconvenience to injury and death. At the milder extreme are simple miscommunications due to unclear or ambiguous phonetic content that are often repaired through conversational adjustments. Examples of the other extreme are the potentially devastating consequences of misunderstandings between airline pilots and air traffic controllers.

Intelligibility can be compromised by both permanent and transitory characteristics of the speaker. These include speech disorders, and physical or emotional states such as illness, injury, shock, and inebriation. However, the impact of such speaker factors on intelligibility can be understood only in terms of listeners' responses. Some types of language disorders may render a speaker's utterances unintelligible to most listeners. Yet family members who are accustomed to hearing disordered speech may comprehend it readily. Likewise, an accent associated with a particular dialect or with L2 learning is not inherently intelligible or unintelligible. Rather, it may be perfectly intelligible to some listeners, but not to others. Brown (1989) also noted that intelligibility is not necessarily reciprocal, such that easy comprehension of accent X by a speaker of accent Y does not automatically entail the reverse.

Intelligibility can vary because of factors within a speaker's volitional control, such as articulation rate, volume, register, and voice quality. A speaker may adjust these aspects of speech to accommodate the listener. Ferguson (1975) considered speech adjustments for the hearing impaired, children, and L2 adults as different manifestations of the same general phenomenon of "simplified speech." In fact, an important thread of work in the speech sciences examines how speakers modify their productions when instructed to produce "clear speech," as opposed to talking in a conversational style (Payton, Uchanski, & Braida, 1994). That research indicates that speakers can intuitively improve their own

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intelligibility when speaking in noise or interacting with hearing-impaired people. Parallel work in the fields of first and second language acquisition focuses respectively on "caregiver speech" and "foreigner talk," both of which aim at enhancing the comprehension of listeners who have not fully acquired a language. Studies of the latter register—speech directed at L2 users—indicate that foreigner talk entails reduced speaking rates with increased pausing, greater loudness, more marked stress, and clearer enunciation. However, these adjustments are not always helpful to L2 listeners, and popular beliefs about their effectiveness are sometimes mistaken. Derwing (1990), for instance, found that increased pausing could actually be counterproductive. In stock humor, speaking more loudly to L2 listeners is often derided as inappropriate, and even regarded as a sign of ignorance on the part of the speaker. Yet the fact that L2 listeners are strongly affected by noise (see below) means that louder speech may actually be beneficial to them even when it would be of no help to native listeners. Understanding the full effects of speech adjustments on listeners continues to be an important topic in empirical work, with many problems as yet unresolved.

Listeners

Just as speakers typically strive to be understood, listeners normally aim to understand. However, different listeners who hear the same acoustic message may respond differently, and even the same listener may find a particular speaker more or less intelligible at different times. Such interlistener and intralistener variability result from the listeners' language experience, attitudes, and expectations, and physical and emotional states that affect perceptual and attentional processes.

The effects of language experience on speech comprehension are linked to language competence and exposure to different accents. Speakers of a particular dialect may understand that dialect better than nonspeakers. Speaking with a particular L2 accent can also afford intelligibility benefits to listeners when they hear speakers with the same accent (Hayes-Harb, Smith, Bent, & Bradlow, 2008). However, the advantage appears to be small and variable across listeners (Major, Fitzmaurice, Bunta, & Balasubramanian, 2002; Munro, Derwing, & Morton, 2006). A variety of familiarity benefits may also exist for native listeners in the comprehension of L2 speech. Gass and Varonis (1984), for instance, found better comprehension when listeners were familiar with the topic, with L2 speech in general, with the specific accent of the L2 speaker, and with the particular speaker. In fact, listeners may show adaptation to L2 speech even after very brief encounters with it (Clarke & Garrett, 2004).

Rubin (1992) found that listeners' situational expectations can influence how they understand speech. In that study, American listeners who viewed an Asian face when hearing a recorded lecture understood less of the lecture than when they heard the same recording paired with a Caucasian face. Because there was nothing different about the phonetic material in the two conditions, the effect was probably due to the listeners' stereotyped expectations about speakers from different ethnic backgrounds.

Listeners may show poorer comprehension of speech when they are fatigued or distracted. Another obvious hindrance to speech perception is hearing loss, which may be temporary in some cases, or long-term because of aging. Less well-known, however, is the research showing that even elderly listeners with normal hearing have more difficulty than younger listeners in understanding foreign-accented speech (Burda, Scherz, Hageman, & Edwards, 2003). That effect is probably due to changes in central processing mechanisms that decline with age.

Transmission Systems

Much intelligibility research in the 20th century was concerned with engineering issues relating to transmission systems, notably telephone and radio, as well as to recording devices, room acoustics, and the presence of noise. Virtually all speech transmission entails some noticeable degradation of the acoustic message. Yet listeners can often adapt to less-than-ideal listening conditions by taking advantage of redundancy in the speech signal along with contextual information. One example is the "cocktail party effect" in which listeners succeed at understanding the utterances of a single speaker in a field in which many conversations are simultaneously in progress. Telephone systems entail another type of message degradation in that they transmit acoustic energy up to only about 4 kHz. As a result, minimal pairs such as 'sit' and 'fit' cannot be distinguished over the phone because the acoustic properties of /s/ and /f/ differ only at frequencies outside that range. Telephone users, however, are rarely aware of this limitation because contextual factors normally help them to recover the speaker's message.

Brown (1989) noted that speech degradation resulting from transmission systems is of particular concern to L2 speakers, especially those who work in fields in which electronic communications are required. The difficulties they face are twofold. First, L2 speakers tend to experience poorer speech comprehension in reverberation and noise than do native listeners (Takata & Nábělek, 1990). Second, native English listeners sometimes experience a greater decrement in comprehension when hearing non-native speech in noise than when hearing native speakers (Munro, 1998).

Intelligibility Assessment

Intelligibility falls on a continuum, in that the degree of match between a speaker's intention and the listener's response varies across situations. To account for this variation, suitable ways of assessing intelligibility are required. However, measurement is complicated by the absence of a single agreed-upon definition of the concept. Nonetheless, the fact that intelligibility arises out of communicative acts requires that it be operationalized in terms of listeners' responses to speech. Considering the cognitive and sociocultural aspects of intelligibility, one cannot assess intelligibility simply by asking listeners whether or not they have understood something that a speaker has said. In the first place, listeners sometimes believe they have understood an utterance, when in fact they have not (Brown, 1989; Munro, 1998). Second, a declaration that a listener finds a speaker's utterance unintelligible cannot necessarily be taken at face value, because listeners sometimes have motives for discrediting, humiliating, or discriminating against particular speakers.

To minimize these concerns, researchers have developed a number of protocols for intelligibility assessment. The most widely used measure in the speech sciences is the percentage of words correctly transcribed by listeners in a write-down task. This approach eliminates the problem of having listeners reflect inaccurately on their own comprehension, and concerns about listener biases are partly alleviated because responses from many listeners are pooled for any particular speech sample. Therefore, this type of intelligibility score is not simply the idiosyncratic evaluation of a single listener. Another word-counting approach relies on cloze tests (e.g., Rubin, 1992), in which listeners fill in missing words in a partially transcribed text as they listen to the speaker.

Despite their convenience and apparent objectivity, word-counting approaches sometimes present a misleading picture of intelligibility. For example, missing one critical word in some utterance might obscure the overall interpretation of the message, while missing

several words in some other utterance might still permit a clear understanding. Yet the "words correct" score in the first case would be higher than in the second. Alternative approaches to intelligibility assessment evaluate comprehension at a broader level than individual words. True or false sentence verifications by listeners (e.g., "grass is green") have been used for both natural and synthetic speech (Munro & Derwing, 1995; Pisoni, 1997). Comprehension questions based on speakers' narratives have also been employed, and listeners sometimes provide a summary of speakers' utterances (Perlmutter, 1989).

Applications

Pronunciation Teaching

It is not known when intelligibility was first raised as an issue in L2 pedagogy. In his textbook for language learners and teachers, *The Practical Study of Languages*, Sweet (1900) identified it as a central goal in pronunciation teaching. That view has been echoed throughout the 20th and 21st centuries (Morley, 1991; Derwing & Munro, 2005) and serves as the basis for the "intelligibility principle" (Levis, 2005, p. 370). It contrasts with the "nativeness principle" according to which L2 learners are encouraged to aim for native-like speech production. Even in 1949, Abercrombie argued that the latter goal is not only unnecessary for successful L2 acquisition, but in many cases unachievable, pointing out that effective English pronunciation teaching requires that language specialists determine the phonological factors that most affect intelligibility. Important theoretical discussions of the issue have appeared in the literature since that time. Some of these, such as Catford (1987) and King (1967), have focused on the functional load of segmental distinctions, a frequency-based approach which recognizes that not all minimal contrasts in English are of equal importance. In particular, high functional load contrasts are assumed to be the most critical distinctions for speech intelligibility, and should therefore receive more attention in the classroom. Other discussion concerns the relative significance of segmental and suprasegmental phenomena, with many scholars, including Abercrombie (1949) arguing that suprasegmental factors may be especially important.

Although theoretical approaches to intelligibility provide a helpful framework for understanding the concept, the question of how best to address intelligibility in language teaching must be resolved through empirical testing, which as yet has yielded only modest results. Two lines of empirical work can be identified. The first concerns phonetic influences on intelligibility. Both correlational (Derwing & Munro, 1997) and quasi-experimental (Tajima, Port, & Dalby, 1997) designs are used to identify patterns in L2 speech production that underlie misunderstandings by listeners. A second line of work comprises pedagogical studies in which language learners are tested before and after instruction to determine whether pedagogical interventions lead to a significant improvement in intelligibility (e.g., Perlmutter, 1989). The small number of studies of this type have tended to confirm that a general program of pronunciation instruction can indeed be effective and that a focus on suprasegmentals can also be beneficial. However, care must be taken when applying research findings in the pronunciation classroom because few studies have actually examined intelligibility as a dependent variable. A more common focus in the literature has been accentedness, sometimes on the expectation that matters that affect strength of accent should also affect intelligibility. However, the accentedness construct is of doubtful value in language pedagogy, because it is only partially correlated with intelligibility (Derwing & Munro, 1997, 2005). Therefore, a reduction in accentedness does not necessarily entail an improvement in intelligibility.

World Englishes

For several decades, studies of World Englishes have examined the mutual intelligibility of diverse English varieties (see Nelson, 2008, for an overview). The growing use of English around the world has raised the importance of this issue for international communication and English-language teaching. In one early investigation, Smith and Rafiqzad (1979) presented over 1,300 listeners with speech samples representing US English and English from several regions in Asia, including Hong Kong, India, Japan, and Korea. The listeners, also from various Asian regions, found a US English speaker to be the least intelligible of all. That outcome underscores the fact that inner circle English varieties are not inherently more intelligible than any others, and that expecting international learners of English to emulate native English pronunciation models may sometimes undermine mutual understanding (see Jenkins, 2002). Rather, a pragmatic orientation on English-language teaching requires that learners strive for pronunciation patterns that are intelligible to whatever audience they normally interact with. Studies of English as a lingua franca inevitably regard intelligibility as a central issue as English continues to evolve in different ways around the world.

Aviation

Air traffic control systems depend on radio communications in which noise and distortion are common. Intelligibility is further complicated by the fact that English is the lingua franca of aviation, so that pilots and air traffic controllers speak with a variety of native and non-native accents. Because of these complexities, and the inevitability of human error, American aviation authorities have documented thousands of cases of communication breakdowns, some resulting in major air disasters (Cushing, 1995). Specific miscommunications can be traced to multiple sources including message ambiguity, listener distraction, and equipment malfunction. In some cases, phonetic similarity has compromised intelligibility. Cushing (1995), for example, cites two cases in which 'to' and 'two' were confused. In one instance, a controller uttered the phrase "cleared two seven," meaning that runway 27 was cleared for landing. However, the pilot understood the phrase as "cleared to seven" and descended to 7,000 feet. In the other case, the phrase "two four zero zero" was misunderstood as "to four zero zero," and the pilot descended to 400 feet rather than 2,400 feet. Four deaths resulted from the ensuing crash. These cases point to the need for phonetic analyses of air traffic communications so that appropriate strategies can be developed to prevent their recurrence.

Speech Technology

Technological innovations have led to dramatic growth in the number of human–computer interfaces employing computer-generated (synthetic) speech and digitally manipulated natural speech. The intelligibility of these systems is critical for disabled users who cannot speak—and therefore use a computer to "speak" for them—and for those who require computers to "read" electronic documents to them. It is also important for businesses, libraries, and other organizations that use automated telephone systems to serve their clients. Not surprisingly, much research has focused on assessing listeners' comprehension of synthetic speech under various listening conditions (see Pisoni, 1997). Intelligibility is assessed using the same protocols described above, so that systems can be adjusted to achieve optimal effectiveness. On a related matter, the growing use of automatic speech recognition (ASR) raises special issues for L2 speakers because ASR software tends to perform poorly on foreign-accented speech. These systems require further refinement if they are to be successfully used with speakers from linguistically diverse backgrounds.

Forensic Linguistics

Forensic investigations sometimes require specialists to determine the linguistic content of poor-quality recordings made with hidden microphones or wiretaps. Intelligibility can also be an issue in the analysis of cockpit voice recordings following an air disaster, particularly if high levels of background noise occurred. Recovering messages in these situations requires a combination of technical expertise to enhance the acoustic properties of the message and knowledge about language to help establish the most likely message content.

Conclusion

Intelligibility is an interdisciplinary topic with important ramifications for all fields of study that entail spoken communication. Many of the theoretical constructs and research protocols now used to investigate intelligibility in applied linguistics are rooted in acoustical engineering and studies of speech and hearing disorders. Despite the very different goals that motivate intelligibility research across disciplines, the vast, still-expanding literature reflects the fact that intelligibility ranks above other concerns in successful human interaction. Without intelligibility, all other aspects of speech become irrelevant because communication—the transmission of a message from one person to another—has already failed.

SEE ALSO: Foreign Accent; Forensic Linguistics: Overview; Intelligibility in World Englishes; Pronunciation Instruction; Speech Perception

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Intelligibility in World Englishes

CECIL L. NELSON

Intelligibility comes into English ultimately from the Latin verb *intellegere*, "to perceive." As the "state or quality" of being intelligible, it is commonly and naturally glossed as language that "makes sense" or "is understandable." Since the purposes of language use (outside any purely aesthetic goals) involve communication, degree of intelligibility must be the primary criterion of success in linguistic exchanges. Making sense comprises such components as transmission of speakers' or writers' attitudes toward topics and participants and the category of speech act that given productions represent. For example, an utterance may be intended straightforwardly or ironically, and all participants must share common perceptions of the situation as well as of language use for that production to be perceived as intended. For example, saying "Nice day out" to an acquaintance will be intended and probably received differently if both participants know that the day is sunny and pleasantly warm or that it is rainy and cold.

Thus, intelligibility in a general use may be equated, or nearly so, with "meaning." However, as the distinctions between semantics and pragmatics show, "meaning" is a broad construct which may depend on elements ranging from linguistic knowledge (e.g., sound inventories and grammaticality) to world awareness (e.g., the current state of the weather or the results of a recent political election).

Putting the right sounds (letters or other symbols, in the case of writing) together in the right order to make recognizable or plausible words, arranging words to create well-formed syntactic phrases, and so on may individually and collectively affect intelligibility. Thus, overemphasizing one or another component in teaching language may be a disservice to learners.

The current situation of English in its diasporas across the world as a primary, principal, secondary, or just additional language, depending on its context, has motivated considerable discussion of intelligibility in the literatures of sociolinguistic research and language pedagogy. Since varieties of English are noticeably—if unsurprisingly—different from one another, the question immediately arises: "Is my English going to be intelligible in a given context, with participants whose variety of English and proficiency in it may be unknown to me in advance?"

One category of proposals to address this concern has involved adoption of a standard English to be promulgated everywhere. Such suggestions naturally call up questions of the model of English that is to fill this role. An often-cited presentation of this view is that of Quirk:

> The relatively narrow range of purposes for which the non-native needs to use English (even in ESL countries) is arguably well catered for by a single monochrome standard form that looks as good on paper as it sounds in speech. (1985, p. 6)

Jenkins (e.g., 2007) argues for adoption (by "non-native" English users) of a "Lingua Franca Core" of phonological features. But such proposals leave it unclear who is to teach any single standard variety or how its wide acceptance will be achieved.

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Smith (e.g., 1992) is a proponent of a natural development view which accords with the "sociolinguistic realism" of the World Englishes school of thought (e.g., B. B. Kachru, 1985, 1997). In one succinct passage, Smith (1992, p. 75) points out that variety, even to the point of mutual unintelligibility, has always been a part of English, as of any language so globally dispersed. Echoing Catford (1950), Smith asserts that open-minded exposure to as many varieties of English as possible is the way to increase the likelihood and level of intelligibility in new situations and contexts.

Further, Smith has spoken convincingly to components of intelligibility alluded to above (for a summary explication, see Y. Kachru, 2008, pp. 309–11). *Intelligibility* in a narrow, technical application of the word refers to phonological criteria up to the level of producing and apprehending plausible words and collocations. *Comprehensibility* operates over the kinds and scope of variables typically associated with comprehension of or assigning meaning to text. *Interpretability* involves successful transmission and apprehension of motive for a linguistic production.

Thus, the "Nice day out" example is *intelligible* to a recipient who hears the sounds in their component and overall sequences and from them perceives the words and the overall utterance as a valid English sentence (grammatically incomplete, but an assertion nonetheless). It is so intelligible as written on this page, *mutatis mutandis*. The message is *comprehensible* if it conveys its component and overall meanings to the recipient: this is a comment on the current acceptable state of the weather. Considering the hearer's awareness and appreciation of existing conditions, it may be taken as positive, neutral, or negative (ironic). The recipient's *interpretation* is perhaps the least under the control of the producer. The utterance may have been intended, and may or may not be regarded as, for example, a mere phatic time-filler, a genial greeting, or a complaint with an implied desire for commiseration.

Degree of intelligibility may be checked, for example, by dictation or repetition tasks (e.g., Smith & Rafiqzad, 1979; Munro, Derwing, & Morton, 2006); comprehensibility by information questions or restatements (Smith & Bisazza, 1982; Kirkpatrick, Deterding, & Wong, 2008); interpretability by means of more detailed investigation of hearers' or readers' affective responses (Smith, 1992, pp. 83–4).

Literature on "intelligibility" must be read with attention to given writers' definitions of the term (and also of "comprehensibility," etc.). Kirkpatrick, Deterding, and Wong (2008, p. 361), for example, refer explicitly to "the occasional switch [in their text] between the technical and general definitions of [intelligibility]," and "comprehensibility" is defined by Munro, Derwing, and Morton (2006, p. 112) as "the listener's estimation of difficulty in understanding an utterance."

SEE ALSO: Kachru, Braj B.; Kachru, Yamuna; Quirk, Randolph

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Interaction Approach in Second Language Acquisition

ALISON MACKEY AND JAEMYUNG GOO

The interaction approach to second language acquisition posits that learners can benefit from taking part in interaction because of a variety of developmentally helpful opportunities, conditions, and processes which interaction can expose them to. These include input, negotiation, output, feedback, and attention.

Input

Input, as an essential component in the language acquisition process, refers to the language or linguistic data to which learners are exposed in their environment, usually through listening and reading (or in the case of sign languages, from visual/spatial language). L2 (second language) learners develop linguistic knowledge and formulate hypotheses about the language being learned based on input. Because input performs this fundamental and critical function in second language acquisition (SLA), SLA researchers have attempted to describe linguistic patterns and characteristics in the input and investigate how these relate to second language learning. One type of input was originally known as "foreigner talk," a term coined by Ferguson (1971), who defined it as a "register of simplified speech . . . used by speakers of a language to outsiders who are felt to have a very limited command of the language or no knowledge of it at all" (p. 143). Based on his "foreigner talk" data, Ferguson found that native speakers made numerous adjustments in almost all linguistic areas (e.g., lexicon, phonology, and syntax) in an effort to avoid communication breakdowns and make input more comprehensible to learners. More specifically, foreigner talk is characterized by a slow speech rate with clear articulation, fewer idioms, high-frequency vocabulary, fewer pronoun forms, many definitions, short simple sentences, repetitions and elaborations, and the movement of topics to the front of the sentence, to name just a few (see Hatch, 1983; Ellis, 2008; Gass & Selinker, 2008 for overviews). Another type of input that learners can receive is interlanguage talk defined as speech (as input) addressed to learners by other learners (see Ellis, 2008, for an overview). Interlanguage talk is often less grammatical than foreigner talk, but involves helpful processes like negotiation for meaning, which is widely assumed to be beneficial for L2 learning because learners typically face more communication problems in learner–learner interaction, although negotiation is possible in all conversations regardless of the interlocutor. This sort of input is often studied in a pedagogical L2 classroom context, since L2 learners' fluency can be enhanced through increased opportunities for language practice (see, for example, Long & Porter, 1985).

Reflecting the important role of input and input modifications to enhance comprehension during interaction, SLA researchers have investigated whether and how different kinds of input affect learner performance in comprehension and production (e.g., Long, 1985; Pica, Young, & Doughty, 1987; Ellis, Tanaka, & Yamazaki, 1994; Gass & Varonis, 1994; Loschky, 1994). For example, researchers have studied a range of input types, including simplified input (premodified input made less complex and more comprehensible), interactionally modified input (modified input through interaction with an interlocutor), and baseline

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input (unmodified input). Long (1985) conducted two consecutive experiments of the same kind using two versions of a taped lecture on the topic of Mexico. One was targeted at native speakers, which he called the NS version (baseline version); the other was targeted at non-native speakers, which he called the FT (foreigner talk) version. The FT version was premodified. He observed the benefits to comprehension, comparing the linguistically premodified version and the baseline input version, and found that the NNS (non-native speaker) comprehension was better when the input was premodified than when it was unmodified. However, other research has shown that providing premodified input alone, without negotiation opportunities, may be insufficient for language learning to occur (Pica et al., 1987; Ellis et al., 1994; Gass & Varonis, 1994; Mackey, 1999).

In a related line of work, Pica et al. (1987) examined the impact of interaction on comprehension by comparing two input conditions: interactionally modified input (without premodification, but with opportunities for interaction with a NS), and premodified input (a simplified version using more frequent words and simple structures). Their participants, 16 learners of English as a second language, were asked to pick 15 items and place them on a board based on directions read by the NS. They found that interactional modification resulted in better comprehension than premodified input, and also argued that it was not the reduction of complexity, but the repetition and rephrasing of input content during interaction that facilitated comprehension. Similarly, Loschky (1994) compared three conditions to examine the role of input and interaction in production: (a) unmodified input with no interaction, (b) premodified input with no interaction, and (c) unmodified input with interaction. His results showed that negotiated interaction facilitated L2 comprehension in vocabulary learning compared to non-interaction, and that premodified input did not always guarantee better comprehension. He also suggested that unmodified input with interaction may better serve learners' needs than premodified or unmodified input with no interaction. Gass and Varonis (1994) also found that subjects who had received premodified input were less able in terms of L2 production than subjects who had received unmodified input. Ellis et al. (1994) also argued for the superiority of interactionally modified input in comprehension and vocabulary acquisition, compared to premodified input. Building on this work, Mackey (1999) explored the benefits of interactionally modified input in terms of actual learning, measured as the acquisition of English question forms. She found that the groups that actively engaged in conversational interaction were more likely to show sustained development than the groups that did not. Swain (1985) agreed, arguing that "it is not input per se that is important to second language acquisition but input that occurs in interaction where meaning is negotiated" (p. 246). Next, we turn to how negotiation for meaning during interaction benefits L2 learning.

Negotiation for Meaning in Interaction

As briefly illustrated above, research has shown that negotiation for meaning during interaction results in better learning outcomes than input without interaction opportunities. Negotiation for meaning is important in L2 learning because it provides L2 learners with feedback, comprehensible input and opportunities to produce output, and thus helps to maintain the flow of communication. Long (1996) defines negotiation as "the process in which, in an effort to communicate, learners and competent speakers provide and interpret signals of their own and their interlocutor's perceived comprehension, thus provoking adjustments to linguistic form, conversational structure, message content, or all three, until an acceptable level of understanding is achieved" (p. 418). He suggests that "negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the NS or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways"

(pp. 451–2). Not only does negotiation enhance the comprehensibility of the message, but it also makes certain linguistic features of form–meaning relationships salient so that they become more available for acquisition (see also Pica, 1994; Gass, 1997). These potential benefits of negotiation were also emphasized by Pica (1994) who argues that "the twofold potential of negotiation—to assist L2 comprehension and draw attention to L2 form—affords it a more powerful role in L2 learning than has been claimed so far" (p. 508).

Negotiation for meaning involving interactional adjustments or conversational modifications can be initiated by either learners or their interlocutors, whether native speakers or fellow learners. Second language learners can benefit from both types of interactions. Learner-initiated negotiation can lead them to receive interactionally modified input, and interlocutor-initiated negotiation via negotiation moves (or corrective feedback) can lead them to produce modified output. Negotiation for meaning begins with clarification requests designed to elicit clarification of the interlocutor's preceding utterance (e.g., *What do you mean?*, *What?*, *Pardon me?*), confirmation checks designed to elicit confirmation that the preceding utterance has been correctly understood by the speaker (e.g., *Do you mean X?*, *X, right?*), or comprehension checks intended to check whether the hearer has understood the preceding utterance made by the speaker (e.g., *Do you understand?*, *OK?*). Below is an example of negotiation for meaning that occurs in a NS–NNS dyad in Korean in a foreign language context. In this episode, the NNS initiates a negotiation by making a clarification request (*Cemcangi mwe eyyo?* 'What is a fortune teller?') because she does not understand what the NS means by the word *cemcangi* ("fortune teller"), but later obtains a definition of the word by receiving modified output by the NS:

(1) Negotiation for meaning
NS: *Cemcangi-nun eti isseyo?*
Fortuneteller-TOP where be-Q?
'Where is a fortune teller?'
NNS: *Cemcang?*
NS: *Cemcangi.*
'Fortuneteller.'
NNS: *Cemcangi mwe-eyyo?* ← Clarification request
Fortuneteller what-Q?
"What is a fortune teller?"
NS: *Cemcangi nun milay-lul malhyecwu-nun salam i-eyyo.*
Fortuneteller TOP future-ACC tell-give-REL person-be-DEC.
'Cemcangi is the person who tells you the future.' (Jeon, 2007, pp. 390–1)

As mentioned earlier, negotiation during interaction also provides opportunities for learners to produce modified output, which can lead them to engage in additional cognitive processes, based on feedback that they receive on their problematic production. We now turn to the role of output in SLA within the interaction approach.

Output in Interaction

Output generally refers to the language that L2 learners produce. In a seminal piece of research, Swain (1985) delineated the limitations of input and emphasized the importance of output as evidenced in her analysis of data collected in French immersion classrooms. She pointed out that even after several years of receiving comprehensible input, Canadian French immersion students still failed to accomplish a full capacity in the target system, attributing the failure to the lack of opportunities to produce output and limited interaction. She suggested that second language learners be pushed to produce output, further arguing

that they need to be "pushed toward the delivery of a message that is not only conveyed, but that is conveyed precisely, coherently, and appropriately" (p. 249). She also added that "being pushed in output, it seems to me, is a concept parallel to that of the $i + 1$ of comprehensible input. Indeed, one might call this the comprehensible output hypothesis" (p. 249). In line with this, Swain, Pica, Holliday, Lewis, and Morgenthaler (1989) suggested that comprehensible output is an outcome of linguistic demands on the part of learners when NSs signal comprehension difficulty. Swain's (1985, 1995, 2005) comprehensible output (sometimes known as pushed output) changed the conceptual paradigm with respect to output. From a traditional view, output was conceived as a way of practicing what has previously been learned and as a way of eliciting additional input, but Swain extended its role to representing a fundamental part of language learning (Gass & Selinker, 2008). The concept of pushed output is demonstrated in the NS–NNS interaction shown in (2) below, taken from Mackey (2002). The NNS was pushed by the NS to come up with the appropriate expression. This can be seen both in the example, and in the learner's own words during an interview which took place where the learner saw and heard herself interacting, and was asked what she was thinking at the time of the interaction:

(2) Pushed output

NNS: And in hand in hand have a bigger glass to see.
NS: It's err. You mean, something in his hand?
NNS: Like spectacle. For older person.
NS: Mmm, sorry I don't follow, it's what?
NNS: In hand have he have had a glass for looking through for make the print bigger to see, to see the print, for magnify.
NS: He has some glasses?
NNS: Magnify glasses he has magnifying glass.
NS: Oh aha I see a magnifying glass, right that's a good one, ok.

Stimulated recall:
In this example I see I have to manage my err err expression because he does not understand me and I cannot think of exact word right then. I am thinking thinking it is nearly in my mind, thinking bigger and magnificate and eventually magnify. I know I see this word before but so I am sort of talking around around this word but he is forcing me to think harder, think harder for the correct word to give him so he can understand and so I was trying, I carry on talking until finally I get it, and when I say it, then he understand it, me. (Mackey, 2002, pp. 389–90)

The excerpt clearly epitomizes Swain's suggestion that "learners need to be pushed to make use of their resources; they need to have their linguistic abilities stretched to their fullest; they need to reflect on their output and consider ways of modifying it to enhance comprehensibility, appropriateness, and accuracy" (1993, pp. 160–1).

Working from the perspective of output as a learning mechanism, Swain (1995, 2005) proposed three functions of output in SLA, in addition to its obvious role in enhancing fluency (and automatization): noticing, hypothesis testing, and metalinguistic functions. First, for the noticing function, while attempting to produce output learners may notice that they do not know how to accurately say or write what they intend to convey in the target language. Second, the hypothesis testing function indicates that learners test their hypotheses of some forms of the target language by using their output. Lastly, the metalinguistic function enables learners to become aware of their own language as well as their interlocutor's language use in the output.

Swain and Lapkin (1995) provided empirical evidence of these functions in their study with French immersion students in a writing context using a think-aloud task. While analyzing the think-aloud protocols, they identified units called "language-related episodes" (LREs) to research the benefits of the role of output. A language-related episode was defined as any part of interaction in which learners talked about their language use, including questioning and correcting their language as well as their interlocutors' language. The results revealed that the three aforementioned functions occurred in this type of output-generating task, and the communicative needs in the task led learners to focus on the form and the accuracy of their output.

Research testing the output hypothesis has been somewhat mixed to date. Izumi, Bigelow, Fujiwara, and Fearnow (1999) found evidence for a beneficial role of output in SLA, providing partial support for its noticing function. However, no empirical support for the output hypothesis in SLA was evidenced in Izumi and Izumi (2004); although there is also some solid empirical support, for example, in McDonough (2005). Example (3) shows modified output in process:

(3) Modified output
Learner: what happen for the boat?
NS: what?
Learner: what's wrong with the boat? (McDonough, 2005, p. 89)

In the study from which this example was taken, McDonough (2005) examined the effects of opportunities for modified output on English question development. Clarification requests were selected as a means of eliciting modified output opportunities. Four interactional groups were compared: the enhanced opportunity to modify, opportunity to modify, feedback without opportunity to modify, and no feedback groups. The results showed that modified output following clarification requests was the only significant predictor of English question development.

Feedback in Interaction

Interactional feedback is another crucial feature of interaction. In particular, negative feedback, information involving indication of a learner's incorrect use of the target language, has received a great deal of attention in interaction research. Negative feedback has been claimed to serve as an effective tool for drawing learners' attention to L2 forms, helping them to notice their linguistic gaps and focus on specific L2 forms in the subsequent input, which may promote accuracy in their future use and L2 development as a whole (Schmidt, 1990, 1995, 2001; Pica, 1994; Swain, 1995, 2005; Swain & Lapkin, 1995; Long, 1996, 2007; Gass, 1997, 2003).

Recognizing the potential of negative feedback in SLA, White (1987) has argued that the provision of negative feedback can be a useful way of informing French-speaking learners of English that an adverb cannot be placed between a verb and an object in English, which is possible in their L1, French. Because positive evidence or input does not provide any information on the grammatical constraint as to English adverb placement, unless they specifically notice the absence of the word order (subject + verb + adverb + object) in the input that they receive, it is unlikely that they will discover the English constraint on their own. Even though they receive explicit instruction on this constraint, negative feedback functions as an important reminder to learners. In addition, although it is still possible for learners to detect the difference between the French and English adverb placement rules through positive input in their linguistic environment, negative feedback leads learners to

"narrow the range of possible hypotheses that can account for the data," in the words of Carroll & Swain (1993, p. 358).

Negative feedback can be provided in several different forms with varying degrees of explicitness/implicitness. Explicit feedback clearly indicates that the learner's utterance or some part of it is ungrammatical (e.g., explicit correction as in *You said X, but it's ungrammatical, you shouldn't include Y in it*). Depending upon the type of explicit feedback, the corrected version may or may not be provided; for instance, explicit correction includes the corrected form(s), but metalinguistic feedback does not, so learners need to modify their original utterance, as shown in (4):

(4) Metalinguistic feedback
Student: Men are clever than women.
Researcher: You need a comparative adjective.
Student: Men are cleverer. (Ellis, 2007, p. 349)

Feedback during interaction can also be delivered in more or less implicit forms, including negotiation moves (i.e., clarification requests, confirmation checks, comprehension checks) and recasts. Implicit forms of feedback are of particular interest within the interaction approach because their interruption of the communicative flow is kept at a minimal level, and thus meaningful interaction is maintained. As in the case of explicit feedback, the corrected form may or may not be included in implicit forms of feedback. Thus, the absence of the corrected form leads learners to self-correct their utterances. For instance, a clarification request does not include the corrected version, but does require learners to modify their original utterance:

(5) Clarification request and modified output
NNS: Here and then the left.
NS: Sorry? ← Clarification request
NNS: Ah here and one ah where one ah one of them on the left. ← Modified output
NS: Yeah one's behind the table and then the other's on the left of the table. (Mackey & Philp, 1998, p. 339)

Two instances of confirmation checks are observed in example (6). The NS's confirmation checks signaling lack of clear understanding make the NNS suspect that there was a problem with her utterance. Thus, the NNS produces modified output in an attempt to make her utterance more comprehensible to the NS:

(6) Confirmation checks
NNS: There's a [besən] of flowers on the bookshelf
NS: a basin?
NNS: base
NS: a base?
NNS: a base
NS: oh, a vase
NNS: vase (Mackey, Gass, & McDonough, 2000, p. 473)

Another form of implicit feedback with the corrected form is a recast. Recasts are defined as

> reformulation of all or part of a learner's immediately preceding utterance in which one or more nontargetlike (lexical, grammatical, etc.) items is/are replaced by the corresponding

target language form(s), and where, throughout the exchange, the focus of the interlocutors is on meaning, not language as object. (Long, 2007, p. 77)

In (7), the NS provides a recast by reformulating the NNS's preceding ungrammatical utterance. Then, the NNS modifies some part of her original utterance:

(7) Recast
NNS: Your picture how many how many cat your picture?
NS: How many cats are there in my picture? ← Recast
NNS: Yeah how many cats? (Mackey, 1999, p. 561)

In part because recasts are provided immediately following a learner's ungrammatical utterance, the intended meaning of which has already been understood, they are considered to create optimal conditions for the promotion of L2 learning during interaction (Long, 1996, 2007). Despite ample evidence for a facilitative role of recasts (see Long, 2007, for a review and Mackey & Goo, 2007, for a meta-analysis where they found large mean effect sizes on all three posttests), the role of recasts in L2 learning has been contested in interaction research. Skeptics cast doubt on the effectiveness of recasts in L2 learning on account of relatively fewer instances of immediate learner response to recasts compared to other forms of feedback, such as clarification requests (e.g., Lyster & Ranta, 1997; but see Long, 2007, and Mackey & Philp, 1998, for counterarguments). These skeptics have pointed out that a recast may be interpreted as responding to the content of an utterance, but not the relevant L2 form, or as an alternative way of saying the same thing because reformulations are also provided following grammatical utterances. These properties of recasts may result in relatively fewer instances of learner responses, compared to other types of implicit feedback, which prompt learners to self-repair. Learners may be less able to perceive recasts as corrective feedback in certain linguistic areas not related to meaning such as morphosyntax (Mackey et al., 2000). However, as recasts do not require learners to modify their output by repeating the recasts they receive or acknowledge, relatively few instances of repetitions of recasts or acknowledgments may be present. And, this lack of immediate response cannot be equated with a lack of L2 learning (Mackey & Philp, 1998; Long, 2007). In fact, without the participatory (response) demands on learners, there may be fewer cognitive demands on them when they receive recasts, giving them additional time to process and learn from them. And indeed, some research has found that immediate responses and learning are not equated, and a great deal of research has found that recasts are associated with L2 learning (see Mackey & Goo, 2007, for a meta-analysis).

In addition to an increasing amount of research on input, output, and corrective feedback, interaction researchers have also investigated L2 learners' cognitive capacities and relevant processes (e.g., noticing) because any benefits of interaction almost certainly depend on L2 learners' cognitive capacities. For instance, learners who are able to notice the corrective nature of feedback may benefit from feedback more than those who are not. This line of research has recently gained much popularity.

Noticing, Attention, and Working Memory in Interaction Research

It has been argued that attention and awareness involved in learners' cognitive processes have significant implications in learning a second or foreign language (e.g., Schmidt, 1990, 1995, 2001; Robinson, 2003). Ideally, learners need to be able to attend to linguistic stimuli in the target language and be aware of input and their own output in any learning context

for subsequent learning to occur. In his noticing hypothesis, Schmidt (1990, 1995) claimed that in order to learn a certain aspect of their L2, learners need to notice the relevant material that they encounter in their linguistic environment, and that awareness at the level of noticing may be a sufficient condition for input to become intake. He further noted that awareness at the level of understanding, which refers to the ability to analyze, compare, and test hypotheses about linguistic input, is helpful, but not necessary. In his later work, Schmidt (2001) softened his stance on noticing, stating that the more learners notice, the more they learn, because it is difficult to prove absence of noticing and to distinguish zero noticing from inability to remember and report what learners have noticed. Schmidt suggested that "intentionally focused attention may be a practical (though not theoretical) necessity for successful language learning" (Schmidt, 2001, p. 23).

In a similar endeavor, Robinson (2003) suggested that attention plays a crucial role in selecting information for processing, dealing with attention-demanding tasks, and maintaining energetic states and performance on a task. He claimed that "noticing involves that subset of detected information that receives focal attention, enters short-term working memory, and is rehearsed" (2003, p. 655). Noticing (and higher levels of awareness), according to Robinson, is the result of rehearsal mechanisms (maintenance or elaborative rehearsal) that send information captured in short-term working memory to long-term memory. He also pointed out that task demands and individual differences in memory and attentional capacities may affect noticing and higher levels of awareness.

Given the possibility that cognitive capacities may determine the level of noticing (e.g., the noticing of input and feedback) during interaction, and because working memory (WM), among other cognitive variables, mirrors the ability to control attentional resources to maintain information while processing, it can be assumed that individual differences in WM may impact the extent to which L2 learners benefit from interaction. Accordingly, L2 interaction researchers have recently begun to investigate this potential relationship between WM and interactional benefits (e.g., Trofimovich, Ammar, & Gatbonton, 2007; Mackey, Adams, Stafford, & Winke, 2010; Mackey & Sachs, in press). In Mackey et al. (2010), learners with higher working-memory capacity (WMC) showed a tendency to produce more modified output than those with lower WMC. Mackey and Sachs (in press) recently conducted a study with nine elderly Spanish-speaking learners of English (mean age: 72) and found a significant association between WM (L1 listening span) and the development of English question forms. Interestingly, Trofimovich et al. (2007) found WM did not play any significant role in L2 learning, nor was it associated with noticing. Obviously, such mixed findings indicate that more research, preferably with larger samples, needs to be conducted in order to confirm or disconfirm the validity of the findings observed in the above-mentioned studies and further examine the interrelationship among WMC, noticing, modified output, and L2 development.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Input-Based Instructional Approaches; Instructed Second Language Acquisition; Output-Based Instructional Approaches; Roles for Corrective Feedback in Second Language Instruction; Task-Based Learning: Cognitive Underpinnings; Working Memory in Second Language Acquisition; Working Memory in Second Language Acquisition: Phonological Short-Term

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Interactional Sociolinguistics as a Research Perspective

YULING PAN

Introduction

Interactional sociolinguistics (IS) refers to an integrated approach to discourse and language use in interaction. It originated from a scientific inquiry of how to account for linguistic and cultural diversity in everyday communication, how to uncover systematically communicative practices that are shaped by cultural schemas and macrosocial conditions (Gumperz, 1999). "Its theoretical foundation is the notion that expectations and conventions regarding ways of signaling meaning are automatic and culturally relative" (Tannen, 2005a, p. 205) and the primary goal is therefore "to understand how language works to create meaning in interaction" (p. 205). Before discussing the details of interactional sociolinguistics, let us consider an example from a survey interview interaction, in which a Chinese–English bilingual US Census Bureau enumerator is asking for information from a Chinese-speaking immigrant. The enumerator is trying to ascertain if the respondent lived at a specific address on a specific date:

Example: English translation of an interaction in Chinese between a census enumerator (E) and a Chinese-speaking respondent (R).

E: Did you live here on April 1st?
R: This is the situation: we just . . . we just bought this house. Just moved in.
E: Ah, you just moved in.
R: It hasn't even been ten days.
E: Ah, it hasn't even been ten days? *Based on what you just said, what about April 1st? Where were you living on April 1st?*
R: Not here, on April 1st I was in a different place, I was . . .
E: Ah, on April 1st you were in a different place.
R: We . . . we just moved here on May 1st.
E: Ah, you just moved here on May 1st.
R: Correct. Correct.

In this interaction, the enumerator repeated the respondent's answer in almost every turn. Repetition was used as a rhetorical device in order to probe deeper, a means to extract information, or a means of transitioning to another question. At the same time, the enumerator managed to engage the respondent, so repetition also functioned as a means to maintain rapport. This shows that repetition plays an important role in this exchange and is an effective device for communication between two Chinese speakers.

When addressing native English-speaking respondents, Chinese–English bilingual enumerators continued to rely on this repetitive rhetorical pattern, which often led to frustration, exasperation, and passive-aggressive anger on the part of some respondents. They appeared to perceive this literal repetition of their responses as a sign of language incompetency on the part of enumerators.

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This example shows that "tiny" linguistic features (such as repetition) have an important role in constructing meaning (Tannen, 2005a, p. 207). However, interlocutors' interpretations of such linguistic features are affected by their communicative practices which are shaped by cultural schemas, upon which inferences are drawn. In the case of Chinese interviews, repetition is perceived positively. When the same feature is used by a Chinese–English bilingual to English speakers, it leads to misunderstanding and negative stereotypes of the speaker, and it has a negative impact on the interaction.

Interactional sociolinguistics is concerned with issues exactly like these. It seeks to uncover how language functions to evoke the contextual presuppositions that affect interpretation, and what presuppositions are at work in a particular talk exchange (Gumperz, 2001). IS also seeks to provide "replicable methods of qualitative sociolinguistic analysis that can provide insights into the linguistic and cultural diversity characteristic of today's communicative environments, and document its impact on individuals' lives" (Gumperz, 1999, p. 453). In the example of the interaction between two Chinese speakers, repetition evokes the presupposition that the speaker is being polite and engaging, as shown by evidence (Pan & Kádár, 2011) that contemporary Chinese politeness is conventionally expressed through discursive strategies, including repetition. The two Chinese participants shared this cultural knowledge of the politeness practice and the norms of interpretation of this linguistic feature. However, in the interaction between an English speaker and a Chinese bilingual, repetition evokes the interpretation that the Chinese bilingual is incompetent or inefficient in English. The shared knowledge needed to interpret repetition is missing and the cultural schemas for interpreting repetition are different.

In the following sections, discussions will center on key concepts in interactional sociolinguistics, its origin and development, its research methodology, and how interactional sociolinguistics can be used as a research tool for studying language interaction in various settings.

Origin and Development

Interactional sociolinguistics has its origin in three disciplines: anthropology, sociology, and linguistics, and is rooted in a deep concern with the interaction between language, culture, and society. Looking at communication from the perspective of linguistic anthropology, John J. Gumperz demonstrated in his influential work *Discourse Strategies* (1982) that speakers can share grammatical knowledge but contextualize utterances differently (based on "contextualization cues") due to differences in cultural backgrounds. His work makes the following main arguments. First, the meaning, structure, and use of language are socially and culturally relative. This means the interpretation of meaning and language use depends on sociocultural contexts in which the communication takes place, as well as on the sociocultural knowledge of the interlocutors. Second, cognition and language are affected by social and cultural forces; to understand these effects, a theory of communication is needed, integrating grammar, culture, and interactive conventions into a framework of concepts and analytical procedures. Third, what we perceive in an interaction is determined by culture, so communication difficulties can ensue when people from different cultures speak to each other (even if they speak the same language). Finally, these difficulties lead to misunderstandings, stereotypes, and inequalities among individuals. Gumperz's work laid the foundation for analysis of miscommunication, communication styles, and cross-cultural communication in later IS work.

IS also draws on sociological theories from the work of Erving Goffman on how language is situated in social life, and how it reflects or adds to particular social circumstances (Goffman, 1959, 1981). Goffman's work on self and society provided two important concepts

for IS: (a) the relationship between interpersonal meanings and social structure are balanced by careful attention to symbolic value of what is said and done, as well as abstract forms of social life; (b) the concept of face, that is, the positive social value a person takes for him- or herself, which needs to be maintained through social interaction. Maintaining face is achieved in avoidance rituals and presentation rituals. For instance, in our opening example, the enumerator was successfully using repetition in order to appeal to the respondent's positive face or his desire to be valued and respected by others; but unfortunately, this contextualization cue did not function in the same positive way in the interaction with the native English speaker.

Gumperz's and Goffman's ideas were incorporated into linguistics by Brown and Levinson (1987), Schiffrin (1987), and Tannen (1989, 2005b) in three distinct areas: linguistic politeness theory, coherence in discourse, and conversational style. Brown and Levinson incorporated Goffman's notion of face and attempted to develop a universal model for linguistic politeness. Their seminal work generated great interest among linguists to study politeness phenomena across cultures. Many linguists, in particular those who have studied politeness phenomena in East Asian cultures (e.g., Ide, 1989; Gu, 1990; Pan, 2000), have contested and modified their politeness model. This has led to the establishment of politeness research as an independent research area (e.g., Watts, 2003; Mills, 2003).

Schiffrin's (1987) work on discourse markers and how coherence is created not only through language but also through aspects of interaction is anchored in an IS perspective. She sees context as the ground motivation for inference and interpretation of ongoing speech activity and that "both the meaning and the motivation of an utterance are contextualized" (Schiffrin, 1994, p. 132).

Tannen's (1989, 2005b) work on conversational style incorporated Gumperz's notion of contextualization cues and exemplified to great detail how conversational styles (e.g., high-involvement styles, in which rapid-fire questioning shows interest and involvement, not intrusion or impatience) were created through linguistic strategies and contextualization cues and the impact that conversational styles had on spoken genres.

Key Concepts

Diversity: Interactional sociolinguistics acknowledges inherent linguistic and cultural diversity in communicative environments and takes diversity as its main research interest and research focus. It aims to pinpoint communication breakdowns or misinterpretations due to different interpretative assumptions that are shaped by cultural differences.

Context: IS takes context as its analytical focal point, asking how language is used to reflect macrolevel and microlevel social meanings. IS focuses on "context and culturally specific situated inferences that members rely on to convey communicative intent" because IS "assumes that the interpretative assessment always builds on locally or context specific background knowledge that takes the form of presuppositions that shift in the course of an encounter" (Gumperz, 1999, p. 458).

Contextualization cues: In Gumperz's terms, "a contextualization cue is any feature of linguistic form that contributes to the signaling of contextual presupposition" (Gumperz, 1982, p. 131). Contextualization cues are aspects of language and behavior that relate what is said to the contextual knowledge that contributes to the presuppositions necessary to the accurate inferencing of what is meant. They include "signaling mechanisms such as intonation, speech rhythm, the choice among lexical, phonetic, and syntactic options . . . said to affect the expressive quality of a message but not its basic meaning" (Gumperz, 1982, p. 16). In this way, contextualization cues inform social interaction and cognitive processes;

they allow interlocutors to "rely on indirect inferences which build on background assumptions about context, interactive goals and interpersonal relations" to interpret what is happening (Gumperz, 1982, p. 2). When speakers share contextualization cues, interaction proceeds smoothly.

Frame: Goffman's concept of frame is an important tool for IS, used to analyze moment-to-moment interaction. IS focuses analysis on how contextualization cues indicate which frame the interlocutors are in, such as "I'm joking" or "I'm serious," and whether contextualization cues for the frame at a particular moment are shared by interlocutors. Oftentimes, communication breakdowns or misinterpretations occur due to the misperception of a frame.

Footing: Goffman (1974, 1981) describes footing as "the alignments we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance. A change in our footing is another way of talking about a change in our frame of events, . . . participants over the course of their speaking constantly change their footing, these changes being a persistent feature of natural talk" (Goffman, 1981, p. 128). Contextualization cues are important strategies to signal a change in footing.

Face: Goffman's notion of face (1955, 1967), that is, the positive social value a person takes for him- or herself, which needs to be maintained through social interaction, was incorporated into IS through Brown and Levinson's (1987) work on linguistic politeness. Brown and Levinson further separated face into "positive" versus "negative" face needs. "Positive face" denotes the wish to be appreciated by others, and "positive politeness" is the fulfillment of this wish. "Negative face" means the wish not to be imposed upon by others, and its accomplishment is "negative politeness." Politeness is employed when a certain act threatens "face," that is, it has a redressive (conflict-avoiding) function. Setting out from the claim that politeness is a redressive act, Brown and Levinson argue that in order to describe politeness in a certain culture researchers need to look into "local" strategies of redressing because "cultural differences . . . exist and work down into the linguistic details of the particular face-redressive strategies preferred in a given society or group" (p. 15).

Conversational style: The notion of conversational style originates from Tannen's (2005b) work analyzing conversation among friends. In Tannen's view "individual stylistic choices are not random but constrained by overriding stylistic strategies that are conventionalized ways of serving identifiable universal human needs" (p. 17). Conversational style broadly refers to linguistic (lexical or syntactic forms) as well as paralinguistic (speed, pause, or pitch) devices that signal two aspects of universal human needs: connection and distance. Linguistic devices employed to signal the need for connection are called "involvement strategies," such as claiming commonality, or closeness. Linguistic devices signaling the need for distance are called "independence strategies," including lexical or syntactic forms of deference or honorifics. Miscommunications arise when participants do not share the same interpretation or perception of the strategies for signaling involvement or independence. For example, Tannen (2005b) showed that, in her study, New Yorkers tended to speak quickly and used high-involvement style, such as asking a series of questions and overlapping with other speakers, while Californians spoke at a much slower pace, and participated minimally in the conversation. What is intriguing is that the differences in conversation style can easily lend themselves to misperception of the speakers.

Research Methodology of Interactional Sociolinguistics

Interactional sociolinguistics draws on naturally occurring talk as data. This includes conversations in various social settings, interviews, or any face-to-face interaction. The analysis depends on transcribed data and looks for breakdowns in communication and then tries to understand the sources for breakdowns. Similar to conversation analysis, IS analyzes turn-by-turn exchanges to understand how participants form inferences based on an utterance. But while CA focuses on uncovering structural or organizational mechanisms (e.g., adjacency pairs, turn-taking practices) in conversations, IS focuses on whether participants share the same conversation mechanisms or the same interpretation for these mechanisms. For example, members of different cultural groups may have different expectations for turn-taking practices (e.g., how long a speaker can hold the speaking turn), or different speeds in talking, or different levels of tolerance for silence in conversation.

IS takes language use in context as its central theme, but its methodology is different from that used in pragmatics. Pragmatics traditionally uses constructed language data to derive a theory about language use. IS departs from this tradition and uses naturally occurring talk as its primary data for investigation, relying on transcribed talk to conduct the analysis and to draw interpretations of communicative practices. But there is one important step in the analysis that IS offers which is different from other methods. That is, an IS analyst would use another set of data to triangulate his/her interpretation of the analysis. For example, Tannen (2005b) played back recorded conversations to the original participants to see if her interpretations or assumptions matched what the participants thought was going on in the conversation. Pan, Scollon, and Scollon (2002) used focus group discussions with participants of recorded telephone conversations to understand their reasons behind an observed practice and behavior.

Gumperz (2001) summarized the IS analysis procedure as consisting of two stages. First, ethnographic research is needed at the initial stage to: (a) provide insight into the local communicative environment, (b) discover recurrent encounter types most likely to yield communicative data relevant to the research problem, and (c) find out through observation, interviewing key participants, and checking one's own interpretations with them how local actors handle the problems they encounter and what their expectations and presuppositions are. In the second stage, the following activities should be conducted: (a) select events that reflect representative sets of interactions for recording, (b) scan recorded materials at two levels of organization: content (lexical, syntactic, etc.) and pronunciation/prosodic information, and (c) produce a transcript including verbal and nonverbal perceptual clues that interlocutors may rely on as part of the inferential process. "This procedure enables us not only to gain insights into situated understandings, but also to isolate recurrent form–context relationships and show how they contribute to interpretation" (Gumperz, 2001, p. 224).

IS research methods make use of ethnographic and linguistic methods to investigate language use in interaction. Scollon and Scollon (2001) summarize it well: after identifying people from different cultural groups who are in social interactions with each other, and through a close analysis of the discourse actually produced,

> the analyst would first identify breakdowns in communication, then try to find the sources of the breakdowns in the language used as well as in the misinterpretation of the contextualization cues. Differences between the participants would most likely be understood as arising from a history of socialization to different groups and therefore a misunderstanding of contextualization cues in the actual situation of communicating with each other. (Scollon & Scollon, 2001, p. 545)

Interactional Sociolinguistics: Bridging Theory and Practice

IS has become a widely used method in investigating linguistic interaction in various social settings. The fields that have benefited from IS research are varied, ranging from interpersonal communication and intercultural communication to professional and institutional discourse. In the forefront of interpersonal communication is Tannen's work on gender differences in conversational style (1990, 1994), talk between different generations (2006) and among sisters (2009). The central theme in her work is that human interaction always tries to strike a balance between the needs for connection and independence. Her work offers insights into these dual human needs, and shows how mismatches in conversational style lead to misinterpretation of the exhibited need, and as a result, there is a misperception of individuals using certain conversational styles. Tannen's work has impacted not only the field of sociolinguistics, but also the general population. Through her work, linguistic analysis is seen as something useful and accessible to people who want to know how to improve communication with their family members and coworkers.

IS's contribution to discourse analysis in professional and institutional domains has far-reaching and significant influence on many disciplines, such as medical contexts (e.g., Ainsworth-Vaughn, 1992, 2001; Hamilton, 1994, 2004; Hengst, Frame, Neuman-Stritzel, & Gannaway, 2005; Hamilton, Gordon, Nelson, & Kerbleski, 2006; Ramanathan-Abbott, 2009), court cases (e.g., Shuy, 1982, 2001), and classroom interaction and cultural practices in the educational domain (e.g., Adger, 2001). Discourse analysts have been able to pinpoint the mismatch in expectations or interpretations between interactants which can lead to serious consequences, including social inequality, discrimination, or mutual stereotyping.

Conclusion

Since the establishment of interactional sociolinguistics as a research perspective, discourse analysts have adopted this theoretical stance and analytical framework to analyze discourse and interaction in various social settings and professional domains. Oftentimes their analyses have resulted in practical solutions for real-life problems in human interaction and communication. Scholars in this field are motivated to identify communication problems due to linguistic and cultural diversity and address social issues through examination of language use.

SEE ALSO: Ethnography of Communication as a Research Perspective; Frame Analysis; Tannen, Deborah

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Intercultural Communication

JOCHEN REHBEIN

"Intercultural communication" is the mediation of cultural differences between social groups through verbal or nonverbal interaction. This kind of bridgeover requires specific techniques necessary for creating the participants' mutual understanding, as will be shown.

Empirical Research on Intercultural Communication

Intercultural communication (IC) as a topic of empirical linguistic research did not arise before the 1960s. Though ethnology and comparative anthropology discussed the concept of culture, structural linguistics described languages in relation to cultures, and the young political sciences dealt with international communication, it was the article of ethnolinguist Hans Wolff on "interlingual communication" in closely related African languages (1964) which opened the view on untranslated cross-cultural verbal exchanges.

Still, culture and language remained abstract addenda to each other; their interwovenness was not the object of consideration. The turn to empirical fieldwork evolved with sociolinguist John Gumperz studying multilingual communities in India and interethnic communication in the USA. Gumperz grounded his research on tape recordings of multilingual talk, using mainly ethnomethodological, conversation-analytic, and communicative-dialectological concepts for a qualitative analysis of the data (Gumperz, 1982, 1992; Gumperz & Roberts, 1991).

From the late 1960s on, due not only to science-internal but also to social developments —as awareness of racism in the USA and, in Europe, of the suppression of linguistic and social minorities and traditional peoples as well as of growing migration from poor to rich, industrial societies—the domain of intercultural communication expanded to a discipline with a vast production of literature. Nowadays, globalization with its worldwide trade and commerce and the flux of capital increases migration and mixes languages and cultures. Questions of IC now extend to nearly all national and international domains of life, generating publications in all academic disciplines. In the view of applied linguistics, one can classify the various strands of IC under the subdivisions of *language politics*, *species of discourses and texts*, *community interpreting and translation*, and *institutional talk* including learners' discourse.

Main approaches to IC partially overlap, partially complement each other in methods and objects: a semantic-conceptual, mainly comparative approach including semantics of speech acts (Wierzbicka, 1991), an ethnomethodological, conversation-analytic approach including interactional stylistics and rapport theory (Di Luzio, Günthner, & Orletti, 2000; House, Kasper, & Ross, 2003; and many others), and functional-pragmatic discourse analysis (Rehbein, 1985; Knapp, Enninger, & Knapp-Potthoff, 1987; Koole & ten Thije, 1994; and many others). Thanks to these diverse approaches, IC has deployed into a field which combines basic and applied research and in which conceptions about language(s), society, communicative structure, culture, and the role of mental processes are in contest and in argument. (See Risager, 2006 for various approaches to "language" and "culture"; Straub, Weidemann, & Weidemann, 2007 and Spencer-Oatey & Franklin, 2009 for interdisciplinary studies on intercultural competence and communication.)

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Misunderstandings

A striking example from John Gumperz illustrates the impact of cultural facets: A black graduate student is sent out after an initial phone contact to interview a black housewife in a low-income quarter. The husband opens the door with a smile:

> Husband: So y're gonna check out ma ol lady, hah?
> Interviewer: Ah, no. I only came to get some information. They called from the office.
> (Husband, dropping his smile, disappears without a word and calls his wife.) (Gumperz, 1982, p. 133)

According to Gumperz, the husband's communicative withdrawal was a reaction to the interviewer's failure to give a formulaic reply (e.g., "Yea, I'ma git some info" (~ I'm going to get some information)) to his own (typically black) formula "check out." Instead, the black interviewer's answering style showed that he was not "on the husband's wave length," proving that the black interviewer and the black interviewee(s) belong to the same ethnic group but to two distinct social groups. Therefore, they lacked a common basis of trust and confidence. Following Gumperz, verbal routines are identifiable according to their phonological, morphological, and lexical forms of expression which are learned "by interacting with others in institutionally defined networks of relationships" (1982, p. 134). Furthermore, the example shows that the communicative difference is due to the difference in the linguistic varieties of the social groups. Therefore, in theorizing IC, "culture" has to be conceptualized as an interactional process instead of opposing alien cultural blocks.

The discourse dependence of understanding and misunderstanding was also illustrated by Bremer, Roberts, Vasseur, Simonot, and Broeder (1996) who deal with transcribed communication between native speakers of a Western European language and immigrant adult second language learners. In House et al. (2003) several taxonomies of misunderstandings are discussed; in most of them, the category "topic" plays an important role, because specific cultural knowledge is projected into the commonality versus noncommonality of discourse topics.

Social Groups and Their Rapports

In intercultural communication, "social group" is the minimal melting pot of *common* knowledge, *common* language, and *common* social strata of social actors (see Straub et al., 2007 drawing on Bourdieu's theory of social classes and groups). In short, groups are constituted by their common stock of *presuppositions* mostly tied to a common linguistic variety, and create, through common verbal and nonverbal forms, *action systems* (Ehlich & Rehbein, 1972).

Individual actors belong to a variety of action systems, for example a group of educators, immigrants, a family, patients, special readerships, linguistic minority groups within a social majority, and so forth, switching action systems if necessary. Thus, action presuppositions do not form a static repertoire of knowledge, but play an active *standardizing* role in individual action.

Action systems have limits which determine the range within which communication occurs. Limits to communication and memberships are difficult to address due to their presuppositional character, of which the individual actors are barely aware, since presuppositions are givens which transcend the individual person. Not until cultural action comes into play is there any reflection on presuppositions, their range and limits (see below).

Several studies by Spencer-Oatey consider the "rapport" between social groups as a principal topic of IC (e.g., Spencer-Oatey & Franklin, 2009). Rapports between social groups

can roughly be subclassified into *cross-societal rapports* (in sojourns in a foreign country, in cross-border communication, with asylum seekers and refugees); *intrasocietal rapports* (majority–minority groups); *institutional rapports* (agent–agent, agent–client relationships); *inter-/intra-generational* rapports. In analyzing IC, each subclass of rapport needs to be made explicit.

Patterns, Institutions, Discourse Types/Genres

Prefabricated structures of communication as patterns of action, institutions, and various types of discourse are often realized by routinized actions as well as connected with expectations of a relatively fixed sequential order. For example, in asking, a person expects to be answered, just as the responding person expects the asking person to appreciate his or her answering—these expectations are constituted as a discourse structure *avant la lettre.*

Early studies of Japanese and other foreigners *making a complaint* in German retail shops prove that, owing to their divergent communicative traditions, actors have divergent expectations regarding both linguistic form and sequences of the complaint. Misunderstandings arise, for instance, when, due to their presuppositions, actors introduce differing *pattern knowledge* into the same constellation of the action. Still, such problems of communication cannot be categorized as merely a "failure," because actors can build bridges between their divergent knowledge structures on the basis of a common institutional purpose.

Clyne (1994) examined intercultural communication at work in Australian companies executed in English by workers for whom this was not their first language. In coping with the power structures of the workplace, each group of immigrants used their own discourse patterns in order to save their face in terms of their own cultural values. Apologies predominated among Europeans, directives among European men, commissives among Southeast Asian women. Fundamentally, discourse patterns and expectations can be attributed to cultural value systems, more particularly to "sociocultural interactional parameters" (e.g., truth, harmony, uncertainty avoidance, individuality, etc.) and "discourse-cultural parameters" (e.g., content orientation, directionality). This applies to both spoken and written communication.

"Institutions" are functional complexes of varied scope such as medical care, administration, law, school and university, the family, the church, the (public) media, and economic facilities such as production (in companies) and circulation (in trade), and so on. Communication in institutions is prestructured as regards the sequences within the more comprehensive communicative units. The actors inside institutions can be divided into two main social groups: the representatives or *agents*, and the users or *clients* of the institution (see Ehlich & Rehbein, 1994). The particular forms institutions assume are defined by differing social traditions. This affects how institutional sequences are prestructured in the knowledge of agents and clients from different cultural backgrounds, and necessitates cultural bridging particularly in institutional talk (see Rehbein, 1985; Griesshaber, 1987; Clyne, 1994; Pauwels, 1994; Di Luzio et al., 2000; House et al., 2003 among others). Since in many countries trouble-free communication between agents and clients who speak a different language is in the public interest, interpreters and translators are often employed to bridge the communicative gap.

Emotion as Ingredient of Intercultural Communication

Emotions are processes of the mind which may be universal, but their expression often turns out to be culture-specific as well. The reason lies in the *action systems* discussed above, and also in the fact that, linguistically speaking, emotions originate from speech actions

like threatening, refuting, insisting, insinuating, and so forth. Take, for example, the typical eastern Mediterranean facial expression of denying by raising one's eyebrows or tilting one's head backwards, or a sojourner's cry for help when in jeopardy that may be incomprehensible for onlookers, that is, possible helpers. In general, this is what happens with the signals of understanding/nonunderstanding in IC: if they are not comprehended, negative emotions tend to be the consequence.

Beside repertoires of nonverbal communication (see Ekman et al., 2009), there are three *linguistic fields* which pragmatics has identified as being salient for the expression of emotion:

- the *incitement field* as interjections of disgust, apprehension, pleasure, surprise, grief, and so forth, including silence;
- the *tinge field* as the mysterious prosody of fairy tales, or the imitating intonation in ironic mimicry; many languages contain a large number of mimetic words, which vividly depict sounds, states of mind, manners of action, and so on—all of them expressive procedures of emotions;
- the *symbol field* (lexicon): emotion has a linguo-conceptual basis (Wierzbicka, 1999) which guides the interpretation of constellations laden with feelings; in IC, frictions due to the interlocutors' distinctive symbol fields of emotion can arise.

Emotions are quasi-automatically called forth, but, nevertheless, are based on interpretations of a constellation (the *gestalt* of a bear is interpreted as danger; see Chafe, 2007). An essential of IC, then, is that, because of difficulties in mutual understanding, the gap of the intercultural differences in the appraisal of emotion becomes sensitive—to one of the participants at least.

For Matsumoto, Yoo, and LeRoux, adjusting one's emotions is important for a successful IC of sojourners and immigrants. This requires thinking "critically about situations, events, and people" and "openness of mind and flexibility to adopt alternative positions to what one is familiar with and accustomed to" (2007, p. 82).

As a consequence, the intercultural gap between the social groups can be bridged by reflexive procedures of discourse which realize aspects of the "cultural apparatus" (see below). Such reflexive procedures could help to downgrade destructive emotions in otherwise conflagatory intrasocietal rapports originated by whatever kind of presuppositions (whether racial, ideological, denominational, etc.). This is best illustrated by the cultural impact of *verbal politeness*, whose linguistic action patterns (e.g., greeting, asking, apologizing, to name just a few) as deep structures of communication are produced in a manner specific to a language.

Beyond Misunderstanding: Discursive Interculture

When the interactants try to build communicative bridges by developing common action systems, this leads to an intercultural discourse or even to a *discursive interculture* (Koole & ten Thije, 1994, p. 200). In their book *The Construction of Intercultural Discourse*, Koole and ten Thije transcend the narrow concept of IC seen as misunderstanding, failure, problems, and deficit. In contrast, they perceive it as the common construction of new forms of understanding. Analyzing transcribed team discussions of Dutch advisers with immigrant teachers of Surinamese, Moroccan, Turkish, and other backgrounds they found that the interactants developed new patterns and discourse forms. This new approach has been thoroughly expanded in Bührig and ten Thije (2006) under the trend-setting title "beyond misunderstanding."

Intercultural bridging of an institutional type was observed in medical discourse in which German doctors gave non-German patients instructions. Perplexingly, actions which ought to have taken place as a result of the doctors' speech actions were often blocked by the patients due to mental reservations in their sequential action position. Eventually, this led to a *cooperative opposition*, which did not erupt into an open quarrel but was not resolved either. The ambivalence inherent in this type of discourse is perhaps best described by the French word *rencontre* (meeting in a friendly or hostile sense). Instead of being a failure of communication, a rencontre activates communicative structures which steer the discourse over long stretches (see articles in Pauwels, 1994).

Last but not least, *negotiations* are institutional discourse forms taken up by groups or their representatives with the aim of initiating a process of intercultural communication. They occur in economic, administrative, political, and international institutions (diplomacy) (Ehlich & Wagner, 1995).

Cultural Apparatus: Intercultural Mediation by Reflection

In the above example of an encounter of black persons from distinct social classes, no bridging of the gap ensued because both clung to their presuppositions as routinized forms of speaking and acting. But IC *could* have succeeded if one of the interactants had *reflected* their verbal routines and signaled awareness of the social distance, perhaps by a smile, a gesture, a quip or, even, by a switch into the other's linguistic variety. Thus, standardized forms of acting and speaking which lead to the actors' getting entangled in aporetic ways of communication are *deconstructed through reflection*. At the same time, reflection *construes* means of true understanding by making recourse to a higher level of *mediation*, creating innovative forms of communication. This complex mediation which is an ensemble of specific techniques is to be understood as "cultural action." Successful cultural action may involve a switch of languages or varieties.

On the basis of authentic scenarios, the model of cultural action has been presented in Rehbein (2006) under the term "cultural apparatus." The term "apparatus" refers to Gramsci and to Baudry's "l'appareil de base," meaning a device for—intercultural—mediation by means of restructuring mental processes through *reflexive procedures*. The application of the cultural apparatus is based on a "cultural load" which emerges when routinized forms of interaction are employed. If cultural action is suppressed at these points, because there is no restructuring of the mental processes involved, the cultural load of these forms leads to a process of reifying which insulates the action systems even more strongly against reflection.

Using in-depth analyses of German doctors' inquiring if Turkish and Portuguese patients have questions concerning their upcoming operation, Bührig (2009) found that these patients never had any questions, and draws the conclusion that this has to do with routinized *action practices* presupposed by the doctors themselves. If the doctors had applied the cultural apparatus by means of a comment or another kind of interactional add-on, this could have enabled the patients to voice their own medical interests against predominant institutional routines.

Prejudices are based on the repetitive usage of unquestioned systems of presuppositions which, themselves, stem from previous cultural action and become unreflected knowledge by being repetitively used with everyday familiarity, and so will intersperse IC as a "cultural filter" (House, 1997). The cultural apparatus induces techniques which help to reflect the cultural filter so that, in IC, prejudices are possibly deconstructed.

In a nutshell, the cultural apparatus is a cross-culturally operating device which consists of specific techniques meant to bring about a *reorganization* of underlying mental processes

(as fixed forms of thinking, quasi-automatic emotions, etc.), with the result that the actors suspend the standardized sequence of action and thematize the problems in a process termed "negating action."

Aspects of Further Research

A principal sector of research is to elaborate empirically based intercultural techniques for *intercultural training* in diverse societal institutions (Spencer-Oatey & Franklin, 2009). A long-term objective of research, therefore, is *to promote multilinguality in intercultural communication* in order to better meet the needs of agents and clients and to improve institutional talk in monolingual settings, too. Especially, the scandalous lack of IC in bureaucracies, asylum-granting institutions, and courtrooms should be focused upon. Important research topics are ideological barriers and clashes between minorities and majorities as well as between groups and societies of different religions. Diverse modes of communication beside the verbal ones, for example nonverbal modes and prosody, should be looked into. Intercultural in the sense of interlingual communication in large, "global" cities with growing immigrant populations is a rising topic of research, in particular multilingual models of living, working, and laughing together should be outlined on the basis of quantitative and qualitative research.

In designing concepts of intercultural learning and formation, one should make use of Byram's comprehensive model of intercultural competence. Byram shapes a framework of five basic parameters—that is, *savoirs*—against which linguistic, sociolinguistic, and discursive objectives of teaching and learning of intercultural competences can be counter-checked and assessed: *attitudes* (*savoir être*), *dispositions/orientations to act* (*savoir s'engager*), *knowledge* (*savoirs*), and *skills* as *savoir comprendre* and *savoir apprendre/faire* (Byram, 1997, chap. 5).

Last but not least, and beyond communication in the well-known lingua francas, the worldwide potential to converse multilingually in closely related languages by means of receptive multilingualism should be sounded (Rehbein, ten Thije, & Verschik, in press). Applying the cultural apparatus seems to be especially necessary in confrontations in economic and political settings (based on cross-societal, intrasocietal, or institutional rapports). Empirical linguistic studies of IC in educational settings yield deeper insight into the intertwining of multilingualism and the cultural apparatus. As we know from the careers of "thirdculture kids" in international schools, the acquisition of several languages does not only increase the sensitivity for a diversity of cultures, but fosters skills in adjusting better and more quickly to unfamiliar environments. Multilingualism enhances the individual's command of the cultural apparatus.

SEE ALSO: Cultural Linguistics; Culture; Intercultural Competence; Language, Culture, and Context

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Intercultural Competence

MICHAEL BYRAM

Competence

"Intercultural competence" has become a sufficiently established phrase to justify the publication of a handbook (Deardorff, 2009). "Intercultural" as a term in language teaching emerged in the 1980s as a development of the concept of "communicative competence," which was by then widely agreed to be the aim of foreign-language teaching and learning (Byram, 1997, p. 3).

As Fleming (2009) shows, however, the notion of "competence" and competence statements in language teaching is more complex than their unquestioned use in many publications and curricular documents would imply. The use of "competence" ranges from general statements describing an undifferentiated global ability in the formulation of teaching and learning purposes, to the precise descriptors of specific observable behaviors, often referred to as "can-do" statements. Yet none of these uses is precise until contextualized and exemplified. "Intercultural competence" is a phrase best used when describing a person's abilities in context.

Models of Intercultural Competence

Models of intercultural competence (IC) are thus only a first stage of clarification. They begin to describe different aspects of IC for a variety of purposes. Models themselves have different functions and often hide a normative purpose behind a descriptive appearance. What Spitzberg and Changnon (2009) call "adaptational models" may describe what happens to people in a new environment but may equally imply a moral obligation that they should adjust or adapt to that environment.

Models of IC can be differentiated in terms of their disciplinary origins. Many are psychological. They attempt to describe or prescribe the psychological stages of response to a new environment. One influential stage model of "intercultural sensitivity" (Bennett, 1986) defines a continuum of responses and implies that moving from stages of ethnocentricity to stages of ethnorelativity is a matter of progress, and is highly desirable. Another influential model (Byram, 1997) has different, pedagogical purposes, and emphasizes the notion of competence as a means of offering teachers an approach to planning and assessing. It too has a normative intention: to clarify what teachers and learners should set as their general aim, and to prescribe the components of IC which can be taught and learned within the traditions and realities of foreign-language teaching. A third group of models is that which describes or prescribes social interactions and the competences not only of "the stranger" but also of "the host." In language-learning terms this could include what might be expected of the mother-tongue learner of the "host language and culture" as well as the foreign-language learner of the "target language and culture." However, this is seldom if ever formulated as a pedagogical aim and reflects the assumption that it is the newcomer who should make efforts to overcome linguistic and all other demands of interaction. The commonly cited "When in Rome, do as the Romans do," though apparently

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harmless, implies that the onus for change is on the newcomer, that Romans themselves need not change nor welcome newcomers and what they might bring to the enrichment of the life of Rome.

Models are useful to identify the elements which make up the complexity of IC, although models also inevitably simplify in order to do this. There are many elements, which have differing significance in differing contexts and applications, and there is a danger that lists of the kind presented by Spitzberg and Changnon (2009, pp. 36–43) simply include everything which is desirable in any human interaction, thus becoming useless in practice. Models emphasize some elements over others according to their disciplinary origins and purposes. Some focus on psychological traits necessary for a successful sojourn and how these might be managed by the individual or those who are in some sense in charge of them. Others focus on capturing the factors in the environment which impact on the sojourner and the host and how these might be reconciled. Others again specify the competences a sojourner needs to acquire in order to cope with a new environment. Few, surprisingly, include linguistic competence even though many implicitly refer to the need for successful communication skills, but, as Kramsch and Whiteside (2008) have argued, people need not only communicative competence in a language but symbolic competence and an understanding of the power relations involved in linguistic communication.

Contexts and Applications

A need for IC may arise in many situations. It is normally assumed that another "culture" is involved, that an individual will need to conduct business, study, or simply live for a shorter or longer period—perhaps for the rest of their life—in an environment which is "strange." Furthermore it is usually assumed that this new experience will include an unfamiliar language. Such situations can arise within a foreign country or one's own. Even though the former case is the usual focus, mobility within one's own country can involve all the dimensions of mobility to another country, including experiencing a new language.

Mobility to another country often brings the additional factor of a significantly different set of values. Most important among these because they are fundamental to any kind of adjustment or adaptation are the understandings of the relationships of the individual to social groups and to other individuals. Models and approaches to IC have hitherto largely been constructed on the values, relationships and behaviors considered normal and taken for granted in a European tradition, whether in Europe itself or in North America. This ignores the variations between, say, social relationships in the south of Italy and the north of Norway—or even the north of Italy—but greater differences are identified when the traditions of other continents are examined (e.g., Nwosu, 2009). Models of IC in other continents remain to be developed and the consequences for modeling intercultural interactions across continents—thus far modeled only in a European framework—will have radical effects on the field.

Although a different language is expected to be a central dimension of mobility, the inclusion of language experience of a new environment is not often thematized in models of IC, whatever their origin. This is notably the case in psychological and sociological models where the time and effort required for language learning are not appreciated, but it is also problematic in pedagogical models. In pedagogy, Risager (2007) has documented the long tradition of the role of culture in language teaching, but she also shows that the relationship between "language" and "culture," between "language" and "thought," has been left obscure. The essential factor in teaching and learning which can clarify these relationships for pedagogical purposes is the notion of "awareness," both cultural awareness and language awareness. Reflection on language and culture as part of the learning

process will allow learners to see the complexity of the language–culture nexus as summarized most effectively by Risager (2006).

Although psychological and sociological models have arisen from the need to analyze and prepare people for mobility, pedagogical models may include other purposes too. Teaching for intercultural competence in the institutions of a society's education system should include general educational aims: the development of the individual's values, personality, and capacity for social relations. Curricular aims for language teaching focus on understanding of otherness irrespective of the present or future usefulness of IC for mobility. This can be seen for example in the English-language curriculum for China 2001 or in proposals for "intercultural communicative language teaching" in New Zealand.

Assessment or Measuring of Intercultural Competence

The assessment of an individual's actual or potential IC may be crucial in a number of contexts. In business and commerce, the IC of managers in international companies is crucial, whether they are working in their home environment with people from other countries, or sent by their company to work in a branch in another country. In such cases batteries of tests and activities can be used (e.g., INCA, www.incaproject.org).

In pedagogical contexts, if IC is posited as an outcome of foreign-language teaching, there is a need to assess that outcome in individuals' learning or in the evaluation of the teaching program as a whole. Assessment and evaluation can be carried out with the use of psychological tests in pedagogical as in business contexts and lists of such tests are available (e.g., Fantini, 2009). The use of such tests in pedagogical contexts for examination purposes is, however, an underdeveloped research area, where questions of feasibility and ethics are likely to be crucial (Nold, 2009).

Self-assessment is another option which may also encourage autonomous learning but must be tailored to the psychological development of learners as exemplified in the "Autobiography of Intercultural Encounters," a suite of materials for teachers and learners (see www.coe.int/lang).

SEE ALSO: Cultural Awareness in Multilingual Education; Teaching Culture and Intercultural Competence; Teaching for Language Awareness

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Intercultural Discourse

SUZIE WONG SCOLLON

> Guy has ordered a goose for the Thanksgiving dinner we agreed to share. He and Cecilia enjoyed a roast goose at our home some years ago and he had asked for and followed our recipe with great success. He sends an e-mail asking whether I can eat mashed potatoes and gravy. I reply that since we never served that with goose, which was roasted Cantonese style, it would never occur to me. To which he replied that he had been filling in the menu according to his North American habits and assumptions.

The presence of Cantonese style roast goose in a Thanksgiving dinner is a bit of intercultural discourse. My husband Ron and I served it several times, first in Fairbanks, Alaska, then in Haines, then in Washington, DC where Guy and Cecilia live. In their experience, the savor of roast goose was most salient. When they obtained the recipe by phone years later, they simply put it in the slot formerly filled by roast turkey.

Key notions in this entry are discourse analysis, mediated discourse analysis, semiotic aggregate, and nexus analysis. To explicate the text of a simple e-mail exchange, reduced here to the essence, I will need nexus analysis, the methodological arm of mediated discourse analysis, which examines the role of discourse in taking action.

In an article "Intercultural Communication as Nexus Analysis," Ron analyzed a breakfast we once made of tea and bannocks (Scollon, 2002). He argued that only by opening the circumference of the making of breakfast could anything intercultural be uncovered. I will treat intercultural discourse as semiotic aggregates or actors taking action using discourses as means for mediating action. In taking action, some elements of a semiotic aggregate are foregrounded or attended to, while others are backgrounded or ignored. In replying to Guy's e-mail, I ignored everything around me, focusing on the words on the screen.

> *Guy*: I bought the goose. Can you eat mashed potatoes and gravy?
> *Suzie*: I can eat mashed potatoes but have never had them with roast goose.

The exchange does not meet any of the three assumptions Ron contended saturates most 20th-century thinking about intercultural communication (Scollon, 2002, p. 3):

Interculturality is to be found in spoken discourse.
Miscommunications are the test.
A priori definitions such as race are made.

To find spoken discourse, we must expand the circumference of the analysis in time and space. A relevant phone conversation with Guy and Cecilia took place some six months before, when we agreed to spend Thanksgiving together and roast a goose for dinner. There was no miscommunication as we were able to reconcile our different underlying assumptions embodied in our historical bodies. Race is not salient in the interaction, though Guy is Anglo-American, Cecilia is Mexican, and I am Chinese American.

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Discourse Analysis

Intercultural discourse analysis evolved out of early work in discourse analysis focusing on the analysis and interpretation of texts on one hand and critical sociocultural, sociological, or historical analysis of orders of discourse or discursive formations on the other (Scollon & Scollon, 2001). An early use of the phrase was concerned with the construction of identity in intercultural discourse (R. Scollon, 1995). The author suggests that traditional objections to plagiarism reflect an ideological position, established during the European Enlightenment, which privileges a concept of the autonomous individual person distinct to that period of history but uncritically accepted in contemporary legal and educational circles.

A textbook *Intercultural Communication: A Discourse Approach* had the title "Interdiscourse Communication" in the contract but was unilaterally retitled by the publisher. The use of "interdiscourse" was intended to highlight the distinct discourse systems of gender and profession which can be more systematically specified than "culture."

Similarly, an earlier paper "Sex Differences in Intercultural Discourse: An Empirical Analysis" was classified as "intercultural communication" (Schneider & Jordan, 1980) for want of a general category called "Intercultural Discourse."

The word "culture" is problematic in that we tend to see culture as the description of exotic behavior by distant people, while what *we* do is regarded as normal. Thus plagiarism is regarded as something *they* do out of ignorance or perversity. Intercultural discourse analysis looks at what occurs when participants from different cultural backgrounds join together to accomplish a task, whether short-term such as having a meal or boarding a ferry or working on a team that meets monthly over the course of a year to make recommendations for educational policy. Koole and ten Thije (2001) examined how a team of Dutch and Surinamese educational specialists, all speaking Dutch, constructed a common ground of word meanings.

The concept of "discourse systems" works as a strong antidote to the tendency to reify cultures and engage in overgeneralization and oversimplification, which is evident in so much that goes under the rubric of "intercultural communication." Rather than a set of reified categories, culture is seen as an ongoing process of construction and negotiation among individuals. The notion of "interdiscourse communication" allows more inclusive focus on an entire range of communication across boundaries of groups or discourse systems.

As Silverstein (2005) observes, the ethnography of speaking highlighting the pragmatics of language in use constituted an anthropology of praxis in which "cultures" and discourse can be seen as the process of names of particular languages and cultures being appropriated and assimilated into global, transnational, "nation-statist," regional, and local projects.

Mediated Discourse Analysis

Mediated discourse analysis grew out of anthropological linguistics, new literacy studies, critical discourse analysis, sociocultural psychology, all fields which dealt with "culture" in one form or another. The fundamental principle of mediated discourse analysis is that actions such as obtaining a boarding pass or serving a meal are more central than discourse whether spoken or written. Specimens of discourse such as passports, tickets, recipes, e-mail exchanges, or conversation are treated as means with which to mediate action. The unit of analysis is the actor and means together.

Nexus analysis is the historical and ethnographic aspect of mediated discourse analysis (Scollon, 2008, p. 22). It can "make visible the sociocultural, political, historical, or

ideological sources of action in the present for both the participants and the analyst" (Scollon, 2002, p. 15).

Semiotic Aggregates

Semiotic aggregates are "very complex systems of the interaction of multiple semiotic systems" which enable human action (Scollon & Scollon, 2003, p. xii). As an example of nexus analysis (Scollon & Scollon, 2004), I will extend the timescale as well as the places on earth by which this dinner is viewed, and then show how these distant elements form and interact with historical bodies. The dishes assembled for this dinner were placed there as a result of the interaction of the primary semiotic system of Thanksgiving Day which began in the autumn of 1621 with various historical and contemporary systems of food distribution, preparation, and consumption with origins in Europe, America, and south China.

A Thanksgiving dinner is part of a semiotic aggregate of which roast turkey has been central since the mid-19th century in New England. Cranberry sauce, stuffing, gravy, mashed potatoes, rolls, and pumpkin pie have been included since the 20th century. Ron's family, the Scollons, included rutabaga puree and spiced butternut squash.

Though there now exist diverse aggregates of Thanksgiving dinner, for our purposes we can simply say that we reconciled two and enjoyed a meal none of us had eaten before but all found delectable. In the planning of the menu for this Thanksgiving dinner, while the roast goose recipe has been in the Wong family for generations, the fact that Cecilia is Mexican is not relevant.

The discourse relevant to the preparation of the meal begins with a recipe first published by Gail Wong in 1953, in the second edition of *From Hawaii: Authentic—Original Chinese Recipes*, printed in 1966 and presented to me by my father. We first used the recipe in 1980. Some two decades later we prepared roast goose and served it to Cecilia and Guy. In late 2008, the recipe was relayed to Guy over the phone and they served a goose on Christmas Eve.

Then there was the e-mail exchange, followed by Guy and myself shopping together for the constituents of the meal, discussing as we shopped. I told him about Ron's sister Dorothy's butternut squash and selected sour apples for the Alsatian apple tart I fixed. We prepared kale according to a method learned from a colleague from Dalmatia. Guy found a recipe for butternut squash on the Internet. Asparagus was on the menu, and while I do not recall having had asparagus on Thanksgiving, it was part of the meal served to the Civilian Conservation Corps in 1935 (Wikipedia). With these vegetables we also served a mixture of basmati and wild rice.

The roast goose recipe traveled with us from Honolulu to Alaska to Washington, DC, back to Alaska then to Seattle. The recipe for Alsatian apple tart started in a book we ordered when we ran a bookstore in Haines, went to Hong Kong, DC, back to Haines then to Seattle. I have e-mailed it here and there and know it by heart. The recipes for Dalmatian kale and Dorothy's butternut squash are also part of my historical body. A thoroughly American meal prepared with one imported sauce was a semiotic aggregate assembled from materials grown in North America, from methods originating in southern China and Europe, carrying among its components a history of immigration.

Social interactions on my part involved dozens of people over the course of more than half a century beginning when I fed geese in the back yard and first ate roast goose on a New Year's Eve. As a semiotic aggregate, the meal integrated semiotic systems of dining, shopping, cooking, telephone conversation, e-mail, published recipes, transportation, and agriculture, to mention a few. By extending the timescale by which we view this one meal,

we see complex discourses carried across time and space in texts, material practices, and historical bodies of participants.

Intercultural Discourse as Nexus Analysis

> Several days after Thanksgiving I sit down to lunch with the mother and sister of a friend who has gone to work. Lunch is leftover turkey soup, a dish of sautéed greens, rice for me and Chinese bread for the others. The sister has never eaten turkey before and remarks that it is "nan chi," 'difficult to eat'. The mother complains it has no flavor. When a dollop of ketchup fails to make it palatable, she complains that it still has no taste.

What makes this an instance of intercultural discourse? I was not addressed but was a bystander who agreed completely with their assessment of the delectability of the turkey. We were all guests who felt obliged not to waste food that was not spoiled but simply tasteless. I think we all wished the turkey had not been purchased and roasted then boiled in unsalted water and left in large quantities for a small household, a family of five including the visitors from Guangdong, China.

The members of the family were all born in China. They speak to each other in Putonghua. They eat similar food, but the homeowners who have lived in Virginia for three decades have adopted some American practices. They add very little salt to their food for health reasons. The mother and sister who live in China, on the other hand, continue to eat food with comparatively heavy doses of salt.

Differences in food habits developed during three decades in which the hosts earned advanced degrees and worked for the US government in Virginia. Their habitus or historical bodies diverged from the ones who stayed in China. Yet it is not a simple matter of American versus Chinese, as the hosts still identify as Chinese, speak Putonghua and cook Chinese food for the most part, albeit with less salt than is used in China.

The meal of turkey, greens, rice, and bread can be seen as a semiotic aggregate in which semiotic systems of Chinese and North American prandial practices interact to enable three women to eat lunch. It was intercultural largely in its constituents. The spoken discourse was largely comprehensible to me and there was no significant difference in language, culture, race, or ethnicity. Though I am American and they are Chinese, I spoke little and there was no apparent misunderstanding. Only by extending the timescale do we consider differences between American and Chinese ways of eating illuminated by trajectories of different participants and foods.

A nexus analysis would point up the ideological nature of inquiry motivated by activist interest in change. Its goal is to discover points of change and transformation that will allow new and more effective nexus of practice. Turkeys bred for copious amounts of breast meat, artificially inseminated so they can reproduce, cooped up in environmentally polluting concrete boxes, are hardly expected to be flavorful. As a nexus analyst I would hope to bring about change in the production and consumption of such denatured fowl.

As we have seen, with a wide enough perspective, intercultural discourse is as widespread among family members who share language and "culture" as anywhere else. Two sisters grow up with the same parents, brothers, sisters, aunts, and uncles, living in a boat, speaking Tlingit until they go to school, and live on land in a tent and later a house. As octogenarians they live on the family property, each with her own house and husband. They speak to each other in a mixture of Tlingit and English.

Their father played Hawaiian music on a slack key guitar and learned to count in Cantonese and eat soy sauce and rice, a legacy of life on the Pacific Rim the sisters continue to enjoy. They both teach Tlingit at the nearby university. Yet, religious differences that have intensified in the latter half of their lives constitute cultural barriers that make traditional

ceremonies uncomfortable. The birthday party of the sisters' mother was a semiotic aggregate of fundamentalist Christian testimony and prayer, Hawaiian music and dance, Tlingit food, and contemporary American pop music, desserts, and soda pop.

Opening up the circumference of a family celebration of birth or death would make visible the trajectory of the sisters' parents through residential school thousands of kilometers away, forced use of English, alcoholism, poverty, compulsory schooling for the sisters and their siblings, and conversion to Christian fundamentalism. In short, the whole history of Russian and American colonization of their homeland would come into the picture.

Bureaucratic Security

Mina and Suzie are at a ferry terminal on Haida Gwaai intending to board a ferry to Prince Rupert, British Columbia, scheduled to depart in a few hours. Suzie presents her passport and obtains a boarding pass. Mina, seated some ten meters from the ticket counter and too drunk to walk, gets Suzie to take her passport to the ticket agent.

TA: You have to bring your passport yourself.
M gets up and staggers to the counter.
TA: For your own safety I cannot let you board.
M (outraged): I have to catch a plane back to India tomorrow!
TA: We cannot allow you to board.
M: Can I talk to your supervisor?
TA: I AM the supervisor. You can get on the ferry tomorrow night and get the train the next morning. If we tell them you're on board they'll wait for you.
M: I'm going tonight. Can you call the captain?
TA: He's busy. If you try to board I'll have to call the RCMP.
S to *M*: I'll wait for you at the train terminal.

At a very superficial level, we can guess from this abbreviated transcript that Mina is Indian and that prima facie makes this an instance of intercultural discourse. However, the supervisor who is a First Nations Canadian probably does not see herself as discriminating against an Asian Indian. From her perspective, a drunk is a drunk, Indian or not. Mina herself, though she vociferously protested being denied passage, realized the next day how outrageous her behavior had been and apologized.

Of the three assumptions regarding intercultural communication, there is spoken discourse and racial difference, but there is no overt miscommunication. Rather, the communication is very clear. It becomes a matter of who has the authority to enforce her action. With the weight of the RCMP against her, Mina has no recourse but to protest.

The ferry terminal is a semiotic aggregate of semiotic systems of homeland security as well as safety and accountability interacting with semiotic systems of ticketing and monitoring of alcohol consumption as well as selling food and beverages.

Stepping back in time and across the globe in space, we can see that many drunk passengers have boarded ferries and the great majority have arrived without mishap at their destination, though many ferries have sunk and many passengers drowned. A nexus analysis might uncover a recent ferry sinking and stricter identification of passengers following terrorist attacks in 2001. Across the Pacific in Asia, however, ferries sink from overloading. An activist might wish to change what might seem like the over-bureaucratization of public transport.

Mina may have been displaying an attitude of personal freedom developed during her days as a college student during the hippie era. Also at play might be a practice of

interdependence, with servants and family at home in India. In fact, I was instrumental in maintaining her codependency, having provided the rum. Drunk or not, it might seem natural to her to have someone else take her passport to the ticket counter. She may have been counting on me to get her safely on board, and on the ferry to arrive without mishap while she slept it off. In India, she said, ferries were often crowded to overflowing with inebriated passengers. However, the ticket agent uncritically acting as an enlightened modern person assumed that each passenger should be able to walk unaided, though there were passengers in wheelchairs, and would not consider two of us as a unit capable of safely boarding.

Conclusion

Two of the above examples have shown that intercultural discourse is as widespread among family members as anywhere else, even when they speak the same languages. With an MDA focus on concrete actions taken by social actors in real time, intercultural discourse can sometimes be detected only with nexus analysis, widening the circumference in time and space, with the goal of disrupting and making visible a priori settings such as Mexican, Chinese, or Indian.

Central to nexus analysis are the historical body, discourses in place, and interaction order, at the nexus of which is a social action. Also important is the semiotic aggregate, an interaction of complex systems which by foregrounding and backgrounding enable human action.

An MDA would shift the focus from the discourse to the action being taken. Then a nexus analysis would examine those actions for the role of discourse in their production. As a kind of discourse analysis it can make visible the sociocultural, political, historical, or ideological sources of action in the present for both participants and analyst.

SEE ALSO: Anthropological Linguistics; Critical Discourse Analysis: Overview; Hymes, Dell; Jones, Rodney H.; Scollon, Ron

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Intercultural Learning

ADELHEID HU

Intercultural Learning and Intercultural Competence

Along with the important objective of communicative competence in foreign-language learning, intercultural learning has been emphasized, especially since the 1980s, as a main objective of foreign and second language pedagogy (Bredella & Christ, 1995; Hu & Byram, 2009a). Some approaches consider the two as complementary—Byram (1997) refers to "intercultural communicative competence" when he stresses the meaning of complementarity, and refers to Hymes's early ways of describing the notion of communicative competence. The strong link between language and culture has often been stressed (e.g., Kramsch, 1998). Affective aspects like prejudices, the importance of willingness to engage with others (Byram, 1997), and the role of preexisting linguistic and cultural knowledge, on the basis of which learners acquire new knowledge—often conceptualized in terms of schema and script theories (Schank & Abelson, 1977)—have become increasingly important for research on language and cultural learning. Relativization and decentring from an often unconscious cultural imprint and understanding cultural otherness have been conceptualized as learning goals and objectives. Zarate's notion of "le regard croisé" (Zarate, 2003) or "to see ourselves as others see us" also helped to implement the concept of decentration. Intercultural understanding and empathy in particular have been thoroughly discussed in the context of foreign-language learning (Bredella, 1992; Hu, 1998; Harden & Witte, 2000).

Concurrently, competence orientation in education systems in general and language teaching and learning in particular became one of the most important developments in Europe. In this respect, the Common European Framework of Reference is a milestone for the development of foreign-language teaching (Council of Europe, 2001). The impact of this document throughout Europe was attested by survey and it has been widely translated both in Europe and beyond. A particularly relevant point was the formulation of levels of partial competences and the general orientation of foreign-language teaching toward output and outcomes instead of, as in the past, toward input and content. In this new context, the earlier theoretical work on intercultural learning and understanding shifted more to the question of intercultural *competence*—a term that in the Anglophone context as well as in the field of business communication had already been widely used for a while (Byram, 1997; Glaser, Guilherme, Mendez Garcia, & Mughan, 2007). In this development, the concept of intercultural competence becomes—on the curricular and normative level—an important goal. Nonetheless the concept remains as fuzzy as ever and is at risk of not being realized in concrete ways in curricula or having a substantial role in language teaching because of the simultaneously developing pressure for visible and measurable realizations of competences. Zydatiss describes the dilemma as follows:

> The question is, whether language teaching as a whole should fundamentally reject this outcomes-orientated thinking, at least in certain parts—for example in the teaching of literature or in the content dimension of intercultural learning—or whether, in its own interest, it would better be actively involved in this process (for example in order not to be completely ejected from the curriculum). . . . If literature teaching and the teaching of

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> intercultural learning want to link their aims to foreign language teaching, they must engage actively with the conceptualization and validation of test tasks or at least make their demands clear vis-à-vis the education policy in this respect. (2006, pp. 258–9, my translation)

The pressure is tremendous, and schools, teachers, and theorists are well advised to find practical operationalizations for teaching and learning as quickly as possible and to present applicable models—especially for the assessment of intercultural competence. In fact, this has already led to significant attempts to develop exercises in intercultural competence (see for example Huber-Kriegler, Lázár, & Strange, 2003) and to propose levels of intercultural competence (Béacco, 2004; see INCA Project at www.incaproject.org). Nonetheless, the problem remains that the assumed developmental stages of intercultural competence are not empirically founded and that they are presented in universalist terms, in other words independently of context and age of learners. Furthermore, these approaches use existing concepts of "culture," "difference," "identity," and "interculturality," which from a cultural studies perspective are questionable. What is presented under the key word "intercultural competence"—not least in education policy position papers—is often an agglomeration of everyday concepts and attitudes which are put aside in scientific research on these issues. There is a mismatch and, in part, a contradiction between theory building in cultural studies on the one hand and intercultural positions focused on practical applications on the other. At the same time it is evident that cultural theory seldom provides concrete starting points for empirical research design or the development of teaching in practice. The challenge in the development of empirical research designs and exercises for teaching and learning is therefore not to fall short of the established theoretical and empirical knowledge base.

Despite these current tendencies (for a thorough discussion of the assessment of intercultural competence, see Hu & Byram, 2009b), this entry will focus on some hermeneutical aspects of intercultural learning, namely the problem of understanding cultural otherness ("Fremdverstehen"; "savoir comprendre") and the concept of culture itself with its epistemological consequences for intercultural learning. The entry will conclude with some remarks about the current challenges for research, in the field of both intercultural learning and intercultural competence.

Understanding Cultural Otherness: An Essential Part of Intercultural Learning

In the context of intercultural learning, understanding plays an important role. The circle of researchers around Herbert Christ and Lothar Bredella in particular has reflected on intercultural understanding in the context of foreign-language learning, namely the problem of the oversimplification of foreign-language learning in the course of the communicative turn in foreign-language teaching:

> Lately, communicative teaching has repeatedly been accused of oversimplifying the meaning of communication. The accusation is justified in view of the fact that the communication targeted in foreign language teaching barely encouraged the learner to query what the other intended and meant by his utterance. Thus, it did not trigger any interpretation process through which the learner could activate and jeopardize his world knowledge and his moral concept. It is only when the act of interpretation is centered that it becomes evident that understanding is a dynamic and risky educational process that has repercussions on self-understanding and one's own world-view. (Bredella & Christ, 1995, p. 10, my translation)

Thus, understanding is not perceived as mere "rule-governed decoding" (p. 10), but rather as a creative act which can lead to identity changes.

However, the core problem of intercultural understanding remains the following: How can one understand otherness without reducing it to one's own understanding? To what extent is understanding linked to the preconception of the understanding person and, in that sense, not capable of allowing unconditional understanding of the other? To what extent is understanding even a mere act of projection that amplifies ethnocentric views instead of overcoming them? (See Bredella, 1994, pp. 21–3; for a very fundamental debate on this issue from a hermeneutical–philosophical perspective, see Kögler, 1992). While some questioned understanding as a didactical concept (see, e.g., Hunfeld, 1993), others, Bredella in particular, advocated until recently (see Bredella, 2007) a concept of understanding that goes beyond such an appropriation. From their point of view, understanding otherness is an interplay between an inside and an outside perspective as a "dynamic and infinite educational process that has repercussions on self-understanding and one's own worldview" ("dynamischen unabschließbaren Bildungsprozess mit Rückwirkung auf das eigene Selbst- und Weltverständnis"; Bredella, 2007, p. 11).

Intercultural Learning as a Change of Perspectives

One basic assumption is that the understanding process oscillates between two perspectives: an embraced "emic (inner) perspective" and an "etic (outside) perspective." Emic perspective means that the other's culture should be understood from the inside. In other words, it is an attempt to see the other's culture through the eyes of the members of that same culture. This involves temporarily suspending one's own values, norms, and behavior patterns and practically "immersing" oneself in the other culture. By contrast, adopting an outside perspective means that the other's culture is always seen through one's own eyes and understood based on one's unavoidable preconceptions. This implies that one does not absolutely assimilate the other culture but learns to interpret the phenomena from a critical and distant attitude. According to Bredella and Christ, the interplay and the interlocking of those perspectives generate a productive understanding of otherness that is characterized by empathy as well as by critical reflection.

In his 2007 article, Bredella differentiates the idea of outside perspective even more by distinguishing between outside perspective I and II. Outside perspective I refers to the understanding of phenomena pertaining to a foreign culture on the basis of one's own preconception. Outside perspective II occurs when outside perspective I is modified by the attempt to adopt the inside perspective:

> Then [by adopting the outside perspective I], we however find out that we have to learn to suspend our perceptions and opinions and develop an inside perspective that will allow us to see the otherness as being different from oneself. That way we learn that the foreign language and the foreign culture not only constitute a distorted form of our own language and culture but that they also follow their own laws of logic. That does not mean that our perceptions and opinions have disappeared, they come back into play on a reflected level that hence comprehends also the other's opinions and views, I shall call it the outside perspective II. (Bredella, 2007, p. 24, my translation)

When one adopts the outside perspective II, this means not only that an alignment with one's own preconception has occurred but, even more, that a third space can develop that transcends otherness and oneself. The outside perspective II expresses the idea that the understanding process always starts from one's own reference point—even when adopting the inside perspective—but that one's horizon can be expanded and a third space can even emerge.

Intercultural Learning and the Concept of Culture

Since the 1990s, a deconstruction of essentialist concepts of culture has been observed in culture studies and cognate disciplines. There is a broad consensus that cultures are never independent of the observer's perspective. Even though it still prevails in regular theories today, the longtime prevalent concept of cultures as being coherent and delimitable entities is considered obsolete. Instead, a discursive reflexive concept of culture that has the property of creating meaning is now being embraced: "Culture seems to be a process of progressive reflexive semantization through which resources for meaning are constantly being created and distributed but at the same time can be subverted and destroyed" (Böhme, 2000, p. 356, my translation). Thus, culture and language are indivisible. Göller relates this explicitly to the phenomenon of intercultural communication:

> Human creation of meaning, intracultural and intercultural communication and interaction as well as reference to self, to the other and to the world—in other words, the human cultural assignment of meaning per se—is primarily bound to language, it is conveyed through language. This is valid for all forms of intracultural and intercultural exchange. . . . Language and culture are very closely entwined. (Göller, 2000, pp. 330–3, my translation)

Simultaneously, beside this epistemological change of perspective, the accent is not laid on the collective consensus anymore; instead, disparities, antagonism, syncretism, hybridity, idiosyncratic patterns of meaning and processing take center stage. Culture is not considered anymore as the "integrative adhesive" ("integrativer Kitt") of society (Hörning & Winter, 1999, p. 8). On the contrary, the objective of reflexive critical work is now to debunk cultural homogeneity as an orchestration (for more on new metaphors in the description of cultural phenomena, see Hu, 2005). Eventually, the "category of power" has also gained in importance for cultural issues. Wägenbaur for example refers to objectifying and essentializing culture concepts in particular as "metaphorical-metonymical means of enforcing power interests"(Wägenbaur, 1995, p. 23).

This new view of culture also has an impact on intercultural learning and intercultural communication: it is a challenge for traditional positions, which seem to prevail unquestioned especially in foreign-language didactics (see Risager, 1998). The discourse taking place in the interaction becomes more important than the "category of origin": intercultural communication and intercultural learning occur when interlocutors have exchanges about cultural plans, demarcations, values, or norms, when they argue, or when they position themselves within one of those norms. Hence, in that sense, intercultural communication can definitely also occur between speakers of the same language or the same country. It is understandable—but not self-evident—that interlocutors who hail from different and distant world regions and who speak different native languages would rather come to speak about cultural themes as mentioned above (see Hu, 1999, pp. 297–8).

For intercultural learning, these developments in culture theory definitely represent a challenge. The issue of interculturality and the concept of foreign culture have been deprived of their matter-of-factness and, in the course of time, examined more closely (see for example, the recent discussion on "transcultural learning" and "intercultural learning" in Bredella, 2010, pp. 126–45).

Current Challenges for Research on Intercultural Learning and Intercultural Competence in Language Pedagogy

Current research focuses particularly on the following matters: how to empirically reconstruct intercultural learning processes in the context of foreign-language teaching, how

developments in this context can be represented, and which tools allow the measurement of intercultural competences. Currently, there are different approaches: While researchers of the DESI study group have actually tried to evaluate intercultural competences by means of pedagogical psychology (see Hesse, Göbel, & Jude, 2008), others have been opposing that procedure and advocate "softer" evaluation forms such as self-reflexion (see Byram, 2009, and the "Autobiography of Intercultural Encounters" presented there). The current state of research is marked by a trend toward interdisciplinarity and an internationalization of the matter. By way of example, Hu and Byram (2009a) have reflected on the different approaches of cultural studies, pedagogical psychology, and developmental psychology. Unresolved questions are, for instance:

- How does subjective knowledge about the cultural basis of traditions, norms, and modes of behavior develop?
- When and how do children learn that culture affects human thinking and behavior, and what role does the learning of another language play in this?
- How does children's and young people's understanding of ethnic and national belonging develop and how do stereotypes and prejudices develop?
- What types of studies of intercultural competence can learners undertake at specific ages and stages of cognitive development?
- Which research approaches can enable the reconstruction of cultural learning processes (interviews, discourse analysis, video recording of lessons, etc.)?
- What is characteristic of "cultural learning processes" (changes of patterns of interpretation, self-relativization, capacity for empathy, attempts at change of perspective)?
- What is the relationship between cultural and foreign-language learning?
- Which curricular aims are appropriate for which age groups?
- Which scientifically validated methods can allow the measurement and evaluation of intercultural competence?

In spite of varying premises of research, interdisciplinarity is indispensable for further development within this field. At the same time, it is important for the practice of teaching to develop exercises that systematically foster intercultural competences and make them evaluable (see Caspari & Schinschke, 2009).

SEE ALSO: Assessment of Cultural Knowledge; Cultural Awareness in Multilingual Education; Culture; Intercultural Competence; Intercultural Discourse; Intercultural Understanding With Literary Texts and Feature Films; Language, Culture, and Context

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Intercultural Rhetoric in Language for Specific Purposes

ANA I. MORENO

Introduction

Intercultural rhetoric (IR) is a research field that seeks to identify and explain some of the rhetorical and stylistic accommodations that multilingual writers need to make in order to achieve their communication goals *interculturally*. It is this concern with rhetorical and stylistic accommodations that distinguishes IR studies from other contrastive studies more concerned with potential transfer at lexicogrammatical levels. IR in language for specific purposes (LSP) is a branch of IR which restricts its research concern to texts written by academic and professional writers. It offers a framework for investigating hypotheses about cross-cultural differences in LSP rhetoric and style, that is, contrastive rhetoric (CR) hypotheses, which may explain some of the revisions that multilingual writers need to make in order for their texts to be successful across cultures. Most IR research has focused on multilingual writers communicating in English, mainly because of the special attention given to writing instruction in US universities over the past half-century and of the dominance of English as an international code of communication (Atkinson & Connor, 2008). IR in LSP rests on the premise that when multilingual writers produce texts in English they are likely to transfer rhetorical and stylistic features typical of related LSP texts written in the language and writing culture into which they have been socialized.

These types of hypotheses have been substantiated since the late 1980s by empirical observations of differences in the preferred rhetorical patterns and stylistic features of specialized texts written in English as a first language (L1) and in languages other than English as L1s as well (e.g., Spanish, Chinese, French, Polish, Portuguese, Italian, Ukranian, Russian, German, Bulgarian, Japanese, Arabic, Slovene, Czech; see "Suggested Readings" for some examples). Given its ultimate aim to apply results to language teaching and learning in ESP classrooms, IR research in LSP is not so much interested in comparing individual writing styles as in comparing recurrent tendencies in rhetoric and style, as well as in writing processes and practices across cultures (e.g., Alvarez Angulo & García Parejo, 2010). As is often claimed, being aware of such differences in rhetoric and style may be helpful to multilingual writers in ESP because making nonstandard choices in these respects may create effects of rhetorical and interpersonal inefficiency with important practical consequences for them, such as the greater need to revise their texts.

From CR to IR

The contrastive rhetoric (CR) hypothesis was first launched by Robert Kaplan in his 1966 seminal paper, based on the analysis of a large sample of essays written in English as a second language (L2) by multilingual students at an American university. Since then, various developments have taken place, helping IR to consolidate as a research field in its own right within applied linguistics (AL). On the one hand, the field has expanded its

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scope by studying a larger variety of features and genres in LSP as used by expert writers (see below), as well as student writers. It has also broadened its framework by incorporating the study of hypotheses about the accommodation that takes place in settings where English is used as a lingua franca, where none of the participants are native speakers of English (Connor, 1999). On the other hand, it has improved and expanded its methods by employing increasingly rigorous and sophisticated research designs (see below) and by paying greater attention to the sociocultural contexts of the genres and the writing practices in the cultures under comparison (see below) in order to research the CR hypothesis. Given the present broader scope of CR, Ulla Connor, a leader in the field, has suggested adopting the term "IR" to highlight its current state (Connor, 2004). This term has been accepted and is now being built upon.

Influences and Recent Developments

As with many other fields in applied linguistics, IR research in LSP has developed in parallel with advances in many related research traditions and methods, such as genre analysis, (critical) discourse analysis, pragmatics, contrastive analysis, translation, composition studies, corpus linguistics, statistics and ethnographic methods. For instance, scholars' inspiration has often been drawn from genre analytic frameworks employed in describing written LSP texts as exemplars of situated genres, or classes of communicative events (Swales, 2004). The field has also developed in parallel with advances in ESP pedagogy, such as those involved in task-based and genre-based language teaching approaches.

Rhetorical and Stylistic Features Compared

IR research in LSP has continued investigating writers' preferred ways of organizing ideational meaning. Thus many studies have focused on rhetorical structures, paragraph organization, placement of topic sentences, sentence and paragraph length and complexity (coordination/subordination), thematic development, and textual metadiscourse. It has also considered the text resources involved in signaling writers' authoritativeness, or tentativeness, and their attitude toward the ideas referenced in the text, as well as the type of relationship established with their readers. Thus more recent IR studies have focused on interpersonal metadiscourse (e.g., engagement markers, hedging and boosting devices, writers' visibility and invisibility strategies, attribution, and other evaluation resources). A few studies have also uncovered differences in the type of ideational meaning included in LSP texts, such as the relative absence/presence of certain language functions or the type of comments that it is appropriate to make on comparable things in comparable genres.

Toward Greater Validity and Comparability

One important improvement incorporated in the field has derived from scholars' concern with establishing increasingly valid comparisons (Connor & Moreno, 2005). To that aim, various measures have been taken in recent studies. On the one hand, cross-cultural preferences in LSP rhetoric and style have been uncovered by directly analyzing texts written by successful writers in their respective L1s. As has often been emphasized, in order to verify whether or not multilingual writers' need for accommodation when writing in English as an international language may be related to differing writing expectations and practices in their L1s, it is essential to know exactly what these are in texts written by expert writers. The importance of matching comparable writers by considering their level of expertise, among other things, has been emphasized on various fronts (e.g., Neff, Ballesteros, Dafouz, Martínez, & Rica, 2004).

On the other hand, studies have tried to define their population of texts more carefully in order to improve the comparability of the corpora employed in analyses (Moreno, 2008). As a result, they have focused their comparisons on particular genres (e.g., research articles [RAs], RA and conference abstracts, academic book reviews, editorials and letters to the editor, grant proposals, business request letters, newspaper articles, editorials, and so on) and part-genres (e.g., the RA introduction, the method or the discussion section). For instance, in his study of 160 RA abstracts in experimental social sciences, Martín-Martín (2003, p. 25) shows that, while the English abstracts in his corpus largely follow the Anglo-American practices prevalent in international journals, consisting of Introduction, Methods, Results, and Conclusion, the Spanish abstracts show a lower tendency to include a Results unit, and to justify their work in their research field as a way of establishing a niche in their Introductions.

Some scholars have also raised the importance of comparing comparable textual concepts, such as metadiscourse or evaluation (Connor & Moreno, 2005; Moreno & Suárez, 2008), and of obtaining increasingly meaningful cross-cultural results transferable to possible ESP teaching applications. To this end, studies have started to focus their comparisons on more restricted functional text units and meaning systems within a given genre. For instance, in their intercultural study of writers' visibility and invisibility strategies, Moreno and Suárez (2011) restrict their comparison to text fragments functioning as praise and criticism of a book under review (i.e., two given language functions), construing what the books are worth (i.e., by means of the appraisal system of appreciation) in a given genre (academic book reviews) across (British and American) English and Castilian Spanish. Their results show how writers from these two groups tend to choose similar rhetorical options, but they do so to very different degrees. In particular, the preferred choice by British and American scholars is to create a textual voice for themselves that presents itself as speaking on behalf of other readers, thus creating a perspectivizing face-saving effect. By contrast, Castilian Spanish literary scholars prefer to create an objectivizing face-saving effect by speaking on behalf of an impersonal entity.

Toward Greater Representativeness and Reliability

Recent IR studies into LSP have also incorporated developments from corpus linguistics and have used statistics to achieve greater representativeness and reliability. Thus, they have tended to analyze larger samples of specialized texts. Also, in collecting comparable corpora, most studies have variously taken into account other contextual features that may also affect the content and shape of discourses (e.g., the (sub)discipline, the historical time, the specific language variety, and the specific purpose of the genre). Furthermore, a few scholars have applied statistical tests to show whether the identified differences are statistically significant or not (e.g., Salager-Meyer, Alcaraz Ariza, & Zambrano, 2003; Moreno & Suárez, 2011); and a few others have taken measures to guarantee the reliability of researchers' interpretations, for instance, by applying inter-rater reliability tests that show the degree of agreement among raters (e.g., Burgess, 2002).

Going Beyond Texts Into Contexts and Cultures

Ever-changing conceptualizations of writing as a socially constructed activity and process have also led a few researchers to employ qualitative methods in order to look beyond the texts themselves into their contexts of production and interpretation, as suggested in Connor (2004). Their main aim has been to obtain sociocultural information that may help them to explain the uncovered quantitative contrastive results, thus leaving behind the speculative suggestions made by earlier quantitative studies. For instance, Burgess, Fumero Pérez, and Díaz Galán (2006) carried out a study of successive manuscripts submitted

internationally by an established Spanish scholar in the field of educational psychology, and examined the responses given by the journal editor and peer reviewers to these drafts during a six-month revision period. They discovered that the reason why this researcher would omit establishing a niche in his RA introduction was reticence on his part to criticize earlier work in the field and to foreground his own contribution. For their part, in their study of the frequency and type of critical comments (positive/negative) in academic book reviews of literature, Moreno and Suárez (2009) interviewed the reviewers in their sample via e-mail. This study concludes that the differences identified are motivated by a different understanding about the purpose of the genre, difference in the size of the academic communities, and different editorial practices.

Conclusions

IR has become an interdisciplinary, applied, and dynamic research field. It provides validity, comparability, representativeness, reliability, explanatory power, and transferability of research findings to current ESP pedagogy. Application of cross-cultural insights into ESP in intercultural settings is expected to be seen in future ESP teaching applications. As Moreno (2010) suggests, bringing in explanatory cross-cultural results is especially suitable for pedagogical approaches with critical pragmatic orientations, that is, those that "synthesise the preoccupation with difference inherent in critical pedagogy and the preoccupation with access inherent in pragmatic pedagogy" (Harwood & Hadley, 2004, p. 366). After all, raising multilingual writers' awareness of cross-cultural differences in LSP rhetoric and style according to audience type, as well as in writing practices and processes, will bring in more complex explanations for textual differences (see Canagarajah, 1996) and encourage more active negotiation of multiple rhetorics (see Kubota & Lehner, 2004).

SEE ALSO: Corpus Analysis of Language in the Workplace; Corpus Analysis of Written English for Academic Purposes; Critical Pedagogy in Language Teaching; Genre-Based Language Teaching; Genre and Discourse Analysis in Language for Specific Purposes; Metadiscourse

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Intercultural Understanding With Literary Texts and Feature Films

LOTHAR BREDELLA

Is it possible to promote intercultural understanding with literary texts and feature films? What has to be considered in answering this question? In the first section I shall outline the structure of intercultural understanding (*Fremdverstehen*). In the next section I shall discuss the ontological status of literary texts and feature films in order to decide whether they can make a claim to knowledge. Formalists assert that they are unable to do so because they are self-referential and do not refer to the outside world. I shall refute the formalist concept of art by pointing out that literary texts and feature films create models of reality and "magical mirrors" (Turner, 1988, p. 42) which allow us to see the world in a new light. Then I shall consider the process of reception since it influences the knowledge that literary texts and feature films convey. On the basis of the insights gained I shall show in the concluding section how reading literary texts and watching feature films can promote intercultural understanding.

Intercultural Understanding (*Fremdverstehen*): Taking an Inner and Outer Perspective

If we want to understand the members, values, and institutions of a foreign culture, we must step out of our own frame of reference and reconstruct that of the foreign culture with its own rules, conventions, attitudes, and values. Is such a transition from one culture to another possible? Radical relativists argue that it is not because there are no transcultural concepts which enable us to evaluate the differences without an ethnocentric bias. On the one hand, the relativists are right: there are no pre-given transcultural concepts and standards. But on the other hand, they are wrong: we can invent these in negotiations and also learn to develop empathy, which enables us to take the other's perspective. Empathy, however, does not mean that we become identical with the other. If this were the case, we would not know that we understand him or her. Nussbaum (2006, pp. 32–3) writes: "if one really had the experience of feeling the pain in one's own body, then one would precisely have failed to comprehend the pain of another *as other*."

In understanding others we transpose ourselves into them in order to find out what it is like to see the world from their perspective. This demands that we gain a certain distance from our views, attitudes, feelings, and values, but we cannot bracket them completely because then we would no longer understand others as fellow humans. Hence Vetlesen (1994, p. 204) can write with reference to Gadamer: "Empathy thus entails a *Sichmitbringen*, not a *Sichaufgeben*" [We must *bring ourselves* and must not *disregard ourselves*]. Empathetic understanding differs from the third-person perspective which directs our attention to objective features without considering their significance for the experiencing subject in order to establish law-like connections between them (for the significance of empathy for the moral and aesthetic experience see Bredella, 2010, pp. 149–62).

The understanding of others has been explored by the Giessen postgraduate center Didaktik des Fremdverstehens (Didactics of Understanding the Foreign). Two different

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perspectives are involved in *Fremdverstehen* or intercultural understanding: an inner and an outer perspective. Taking the inner perspective means that we transpose ourselves into others and attempt to see the world through their eyes because we want to understand how they see the world. Understanding also means that we take an outer perspective and see their world through our own eyes. The second-person perspective makes us respond to the others' words and actions and brings our own views and values into play. Understanding is dialogical, for understanding others cannot be separated from understanding ourselves (for the interplay of the two perspectives see Bredella, Meißner, Nünning, & Rösler, 2000; Bredella & Christ 2007; for different goals in intercultural understanding see Bredella, 2010, pp. 89–108).

When we reconstruct the frame of reference of a foreign culture we must take into account the fact that cultures are not homogeneous but heterogeneous and that they are characterized by disputes among their members regarding what is right and wrong. This implies that the others are not only shaped by their culture but also shape it in turn, and that they are creative and reflexive human beings whose individual perspectives have to be taken into account. Hence intercultural understanding presupposes not only inner and outer perspectives but also collective and individual perspectives (see Bredella, 2010, pp. 93–95, 103–5). Literary texts and feature films are well suited for making us aware of how people differ in a foreign culture. But before we can consider their significance for intercultural understanding we must deal with the objection that they cannot be relevant for intercultural understanding.

The Ontological Status of Literary Texts and Feature Films

According to formalists, poets cannot lie since literary texts are self-referential; they cannot raise a claim to knowledge nor can they tell us something about the world we live in. The formalists recognize a division of labor in modern cultures: sciences provide us with reliable knowledge; ethics explores how we should act; and aesthetics and art liberate us from the world of knowledge and ethics, enabling us to enjoy forms for their own sake. This formal concept of aesthetics makes us aware that religion, politics, and morality in modern cultures can no longer prescribe the functions art has to fulfill but it is unable to illuminate the various functions art fulfills for its recipients. And the formal concept is wrong if it assumes that it is the main function of art to make us forget the world we live in (for a discussion of the different functions of art and a critique of formalism see Bredella, 2010, pp. 33–6).

If we want to understand why the reception of literary texts and feature films is educationally significant, it is helpful to regard them as models of reality and as "magical mirrors" (Turner). Models simplify reality and direct our attention to certain features while neglecting others. Thus they enable us to become aware of new connections, which allow us to see things in a new light. This concept of art makes clear that works of art do raise a claim to knowledge although they are not obliged to adhere to documentary fidelity. Writers and directors can invent characters and actions in order to reveal something about reality. Aristotle maintained that poetry was more philosophical and more serious than history because it presented human possibilities. Two and a half thousand years later, the novelist Milan Kundera (1990, p. 42) made a similar claim: "A historian tells us about events that have taken place. By contrast, Raskolnikov's crime never saw the light of day. . . . Novelists draw up the map of existence by discovering this or that human possibility." Presenting possibilities and models of reality are forms of knowledge. Hence Kundera (pp. 5–6) can say: "A novel that does not discover a hitherto unknown segment of existence is immoral. Knowledge is the novel's only morality."

According to Turner, works of art hold a mirror up to us. They can fulfill this function because they are magical mirrors: "they exaggerate, invert, re-form, magnify, minimize, dis-color, re-color, even deliberately falsify, chronicled events" (Turner, 1988, p. 42). For example, postcolonial literary texts and feature films explore the effects of colonization on colonizers and those colonized. We would depreciate their value by saying that they are merely self-referential and are unable to reveal something about colonization and make us see it from a new perspective. We might not agree with the presented perspectives but this indicates that our views and values are addressed and that our self-concept is at stake in responding to the literary texts and feature films about colonization. Their intention is not to make us forget reality but to get involved with it. Yet this involvement is shaped by the process of reception.

The Process of Reception

What is characteristic of the situation of reception? In watching films it becomes obvious that we as spectators cannot enter the rooms on the screen and change the course of events. We can only enter them imaginatively in order to experience the significance of these events for our understanding of the world. In a similar way we create the world of literary texts in which we are only observers. For instance, we cannot tell Othello that his wife is innocent. How do we evaluate this situation of reception? In the well-known essay "The Role of the Onlooker," Harding points out that onlookers, although they make no direct operative response, are able

> to assess the event in the light of all the interests, desires, sentiments and ideals that they can relate it to; and that they feel it to be noteworthy, commonplace, agreeable or disagreeable, tragic, funny, contemptible, heroic – to mention a few of the cruder responses. (1937, p. 250)

This indicates that observing is an important activity. According to Shusterman (2002), art as dramatization means that events and actions are taken out of their ordinary contexts and presented in such a way that we as engaged onlookers can respond intensely and freely to them: "Because art's experience is framed in a realm alleged to be apart from the wearisome stakes of what we call real life, we feel much more free and secure in giving ourselves up to the most intense and vital feelings" (Shusterman, 2002, p. 237). For Nussbaum (1990, p. 48), spectators are more circumspect: "Since the story is not ours we do not find ourselves caught up in the 'vulgar heat' of our personal jealousies or our angers or in the sometimes blinding violences of our loves." For Bakhtin the literary text is not a linguistic object whose stylistic and structural features we register, but an utterance which encourages us to respond intensely with our emotions and values:

> So long as we simply see or hear something, we do not yet apprehend artistic form; one must make what is seen or heard or pronounced an expression of one's active, axiological relationship, one must enter as a creator into what is seen, heard, or pronounced. (Bakhtin, 1990, p. 305)

The situation of reception makes it possible that we are involved *and* are able to observe being involved. According to Rosenblatt, aesthetic reading means that

> the reader's selective attention is focused on *what he is living through during the reading event*. He is attending *both* to what the verbal signs designate *and* to the qualitative overtones of the ideas, feelings, images, situations, characters that he is working out under the guidance of the text. (Rosenblatt, 1981, pp. 21–2)

Turner stresses that spectators are in a privileged situation "where [they] are allowed to think about how they think, about the terms in which they conduct their thinking, or to feel about how they feel in daily life" (Turner, 1988, p. 102). Literary texts and feature films are important for a culture because they encourage their recipients to negotiate their self-descriptions:

> No society is without some mode of metacommentary – Geertz' illuminating phrase for a 'story a group tells itself about itself' or in the case of theatre, a play a society acts about itself – not only a reading of its experiences but an interpretative enactment of its experience. (1982, p. 104)

The aesthetic experience does not liberate us from the world we live in but makes us reflect on our experience of it. Hence it is educationally significant.

The formalists see an unbridgeable gulf between aesthetics and ethics. Yet the analysis of the process of reception shows that the two realms are interdependent. Ethics needs aesthetics for the development of an ethical sensibility, and aesthetics needs ethics because without it literary texts and feature films could not challenge our views and values. According to Wayne Booth, we should regard a literary text as a good friend who wants to convince us of a certain worldview. Nussbaum takes up this metaphor and develops its implications for the process of reception:

> What does this new friend ask me to notice, to desire, to care about? How does he or she invite me to view my fellow human beings? Some novels, he [Booth in *The Company We Keep: An Ethics of Fiction*] argues, promote a cheap cynicism about human beings and lead us to see our fellow human beings with disdain. (1998, p. 100)

This indicates that we are ethically involved in understanding literary texts and feature films.

The Significance of Literary Texts and Feature Films for Intercultural Understanding

I pointed out in the opening section that empathy is important for intercultural understanding because it helps us to understand what it is like to be in the other's situation and to recognize the other's self-descriptions. It is an essential aim of literary texts and feature films to encourage us to transpose ourselves into others. We can say that there is an inherent connection between intercultural understanding and the reception of literary texts and feature films. Nussbaum (1998, p. 88) directs our attention to this inherent connection when she writes: "Narrative art has the power to make us see the lives of the different with more than a casual tourist's interest—with involvement and sympathetic understanding." In understanding stories we learn more about the thoughts, emotions, attitudes, and values of others than in personal encounters because writers, directors, and actors are experts in articulating these: "it is for this reason that literature is so urgently important for the citizen, as an expansion of sympathies that real life cannot cultivate sufficiently. It is the political promise of literature that it can transport us, while remaining ourselves, into the life of another, revealing similarities but also profound differences between the life and thought of that other and myself and making them comprehensible, or at least more nearly comprehensible" (Nussbaum, 1998, p. 111). Literary texts and feature films can promote intercultural understanding because they enable us to see forms of life beyond our own range.

In the essay "Redemption from Egoism" (and one could add "Redemption from Ethnocentrism") Rorty (2003, p. 9) points out that novels can make us see what appears meaningless or appalling from the outer perspective as meaningful and attractive from the inner perspective. Even if we do not approve of the others' self-descriptions, our knowledge about them makes it possible to "have a more educated, developed and sophisticated moral outlook."

We often regard members of foreign cultures as inferior and as enemies we intend to destroy because we believe that otherwise they will destroy us. In "Human Rights, Rationality, and Sentimentality," Rorty (1993) asks how we can overcome this vicious circle and bring people to see in others not enemies but fellow human beings. In his opinion, we will not succeed by pointing out to them that reason tells us that we have to respect the dignity of every human being. They will reject this argument because they cannot imagine that "membership in a biological species is supposed to suffice for membership in a moral community." They will even be

> morally offended by the suggestion that they should treat someone who is not kin as if he were a brother, or a nigger as if he were white, or a queer as if he were normal, or an infidel as if she were a believer. (Rorty, 1993, p. 125)

Hence it is necessary to make them see in the other whom they despise a fellow human being. According to Rorty, stories might bring about such a change because they make their recipients transpose themselves into others so that they see the world through their eyes and experience that others suffer as they do when their children die or when they are driven out of their homes (Rorty, 1993, p. 129). Stories promote our ability "to see the similarities between ourselves and people very unlike us outweighing the differences" (p. 129). Of course, these effects will only come about if we do not regard stories as self-referential linguistic objects but as utterances "that engage us behaviorally or ideologically" (Bakhtin, in Morris, 1994, p. 33).

SEE ALSO: Culture; Intercultural Competence; Intercultural Discourse; Teaching Translation and Interpreting; Values in Language Teaching

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Interlanguage

ELAINE TARONE

Interlanguage (IL) refers to the linguistic system of learner language produced by adults when they attempt meaningful communication using a language they are in the process of learning. The construct of interlanguage was proposed by Larry Selinker in 1972, and stimulated the first research studies in the new field of second language acquisition. It continues, in modified form, to provide a useful general framework for research in that field. Here we will summarize the original formulation of the hypothesis in 1972, and then review subsequent modifications and expansions of the hypothesis.

The most fundamental claim of the interlanguage hypothesis is that the language produced by the adult learner when he or she attempts meaningful communication in a foreign language is systematic at every level: phonology, morphology, syntax, semantics, and pragmatics. The interlanguage system is fundamentally autonomous and patterned. It is not a random hodgepodge collection of unsystematic errors, but clearly, it is neither native language (NL) nor target language (TL); it is a separate transitional linguistic system that can be described in terms of evolving linguistic patterns and rules, and explained in terms of specific cognitive and sociolinguistic processes that shape it.

Another important claim is that the processes of interlanguage acquisition and use are typically unconscious and not open to introspective analysis by the learner. Indeed, the learner is typically not aware of the linguistic characteristics of the language he or she is unconsciously using, often perceiving the linguistic forms being used in IL to be "the same" as forms in both NL and TL. If learners are asked about interlanguage rules that they use in their own unrehearsed, meaningful communication, they will not be able to give an accurate account of those rules. Rather they may describe TL rules they have consciously learned in the classroom, but these are not the interlanguage rules they actually use when focused on meaning.

One of Selinker's most controversial claims is that interlanguage always "fossilizes"—it stops developing at some point before it becomes identical with the target language system. In other words, adult second language learners never reach their goal—they can never produce the target language as accurately as someone who acquired it natively.

Origins of the Concept of Interlanguage

The general idea that the language of second language learners is an autonomous linguistic system, distinct from both NL and TL, was developed at about the same time by three scholars (see Selinker, 1992, for a detailed account). Nemser (1971) referred to learner language as an "approximative system," and Corder (1967, 1981) called it "transitional competence." Eventually, the term "interlanguage" (Selinker, 1972) was the one that caught on. The construct was developed in reaction to generally accepted claims by contrastive analysts such as Lado (1957) that the second language learner's language was shaped entirely and only by the transfer of linguistic patterns from the native language. Lado had argued that because of learners' reliance on their NL rules, a good contrastive analysis of the NL and the TL could accurately predict all the difficulties that learners would encounter in trying to learn the TL. However, there was little if any empirical evidence to support

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this claim. In the late 1950s and the 1960s, there were virtually no systematic attempts to observe learner language and document the way in which learner language developed, and no data were reported which could independently and objectively verify the strong claims of the contrastive analysis hypothesis that language transfer was the sole process shaping learner language.

The chair of the Department of Applied Linguistics at Edinburgh University S. P. Corder (1967) was the first to publish the alternative hypothesis that second language learners may not begin with their system of NL rules and gradually modify those in the direction of TL. Rather, he argued that second language learners are more like first language learners, beginning with an essential, simple, probably universal grammar. In Corder's view, second language learners had a "built-in syllabus"—different from the teacher's syllabus—which could guide them in the systematic development of their own linguistic system, or "transitional competence." Calling for the empirical study of learners' errors, Corder hypothesized that researchers would find evidence—not of the wholesale transfer of NL rules but of the idiosyncratic linguistic system that learners were building. Errors would become a source of valuable data for research into the nature of the second language learner's "built-in syllabus." Applied linguists began to carry out "error-analysis" studies.

During a 1968–9 Fulbright stay at Edinburgh University where he worked with Corder and other scholars, Larry Selinker developed the construct of "interlanguage" to flesh out the view of learner language as an autonomous linguistic system, and not just a collection of errors. Published in 1972, his paper "Interlanguage" was intended to stimulate research into the structure and development of the linguistic system evidenced in the learner language spontaneously produced by adult second language learners.

Defining Interlanguage

"Interlanguage" was defined by Selinker (1972) as the separate linguistic system evidenced when adult second language learners spontaneously express meaning using a language they are in the process of learning. The linguistic system of interlanguage encompasses not just phonology, morphology, and syntax, but also lexis, pragmatics, and discourse. Interlanguage (IL) differs systematically from both the learner's native language (NL) and the target language (TL) being learned. The IL is not just a relexification of the NL morphosyntactic system—NL rules with TL vocabulary; in other words, NL transfer is not the only process that shapes IL. Just as clearly, what the learner is producing is not the TL morphosyntactic system—the IL has a distinctive and systematic set of rules that differs in describable ways from the TL rule system.

Central to the notion of interlanguage is fossilization—the tendency of the learner's interlanguage to stop developing short of the learner's goal. Fossilization was initially claimed to occur only when adults acquire a second language after puberty. Children acquiring second languages were thought to have the ability to reengage their innate capacity for language-specific acquisition (or universal grammar, UG) and thus to avoid the error pattern and ultimate fossilization which characterize the interlanguages of adult second language learners.

Selinker felt that fossilization results because adults acquiring second languages use more general cognitive processes, which he referred to as "latent psychological structure," rather than an innate language-specific UG, which he referred to as "latent language structure" (Lenneberg, 1967). He identified five cognitive processes that constitute the latent psychological structure and shape interlanguage linguistic systems: (a) native language transfer, (b) overgeneralization of target language rules, (c) transfer of training, (d) strategies of communication, and (e) strategies of learning.

Native language transfer plays a role in shaping interlanguage rules. While it is not the *only* cognitive process involved (as contrastive analysts like Lado claimed), there is ample research evidence that crosslinguistic interference does influence the development of interlanguage rules. Selinker (1972, 1992, following Weinreich, 1968, p. 7) suggests that the cognitive process underlying transfer is that learners make *interlingual identifications*: they perceive certain units as *the same* in their NL, IL, and TL. So, for example, they may perceive NL *table* as exactly the same as TL *mesa*, and develop an interlanguage in which *mesa* can (erroneously in terms of the TL) be used in expressions like "table of contents," "table the motion," and so on. Selinker followed Weinreich in pointing out an interesting paradox in second language acquisition: in traditional structural linguistics, units are defined in relation to the linguistic system in which they occur, and have no meaning outside that system. However, in making interlingual identifications, second language learners typically "stretch" linguistic units by perceiving them as the same in meaning across three systems. An interesting research question is, how do they do this? And what sorts of units are used in this way: linguistic units like the taxonomic phoneme or the allophone, or syllables, for example? Selinker raises questions about the ability of traditional linguistic frameworks, based as they are on assumptions of monolingualism, to handle interlanguage data in which interlingual identifications across three linguistic systems play a central role.

A second cognitive process is overgeneralization of target language rules. This is a process which is also widely observed in child language acquisition and is sometimes called a *developmental* process: the learner shows evidence of having mastered a general rule, but does not yet know all the exceptions to that rule. So, for example, the learner may use the past tense marker *-ed* for all verbs, regular and irregular alike: *walked, wanted, hugged, laughed, *drinked, *hitted, *goed*. The overgeneralization error is clear evidence of progress, in that it shows that the learner has learned the general language rule; the next step is to learn the exceptions to the rule. To the extent that second language learners make overgeneralization errors, one might argue that they are using the same process as that employed by first language learners. Many of the early stages of development in SLA, such as early stages in the acquisition of English questions, can involve the cognitive process of overgeneralization, as when learners overgeneralize SVO statement word order, thus producing stage 3 questions.

Transfer of training occurs when the second language learner applies rules learned from instructors or textbooks. Sometimes this rule application is successful, but sometimes the resulting interlanguage rule is erroneous. For example, a lesson plan or textbook that refers to the English past perfect tense as the "past past" can lead the second language learner to erroneously use the past perfect for events in the absolute distant past (all events which occurred long ago) without relating these to any more recent past event or time frame, as in the isolated statement, *"My relatives had come from Italy in the 1800s." Another example is the use of overly formal classroom expressions in conversations with peers outside the classroom. Such errors resulting from transfer of training have been called "induced errors."

Strategies of communication are used by the learner to get meaning across when the interlanguage system does not yet provide the requisite forms to do so in a native-like way. In the attempt to communicate meaning (for example, to refer to an electrical cord in English) when the IL does not contain the exact lexical item needed, learners can use a variety of strategies of communication. So, for example, they can use an approximate term (*a tube*); describe its function (*a kind of corder that you use for electric thing I don't exactly the name*); or describe its appearance (*a wire with eh two plugs in each side*). Sometimes the linguistic forms and patterns used in such attempts, if they prove successful in communicating with the interlocutor, persist for a time in the learner's interlanguage.

Strategies of learning are the learner's conscious attempts to master the target language. Examples of such strategies are the use of mnemonics to remember target vocabulary, the memorizing of verb declensions or textbook dialogues, the use of flash cards, and so on. Clearly, such strategies are often successful, but they can also result in error. For example, the mnemonic mediator word may become confused with the TL word. An example of the latter might be that an English-speaking learner of Spanish might use a mediator word *pot* in order to remember that the Spanish word for *duck* is *pato*—but might end up using the English word *pot* in interlanguage productions.

Selinker's five hypothesized cognitive processes have in fact been shown in empirical studies to affect the construction of interlanguages.

The Relevant Data for the Study of Interlanguage

What data should be used to study interlanguage rules? According to Selinker (1972), the relevant data are utterances produced by second language learners when they are trying to communicate meaning in the target language in unrehearsed situations. Other data are irrelevant—learner utterances produced in response to classroom drills and exercises, and learner introspections and intuitions about what is grammatical in the target language. In such activities, the learner's attention is focused on grammar rules or target language forms. Such data, according to Selinker, do not provide information about the interlanguage system that underlies spontaneous unrehearsed speech production. Rather, it tells you what the learner has consciously learned about the target language system, and not what the learner actually uses to generate IL utterances in meaning-focused communication.

From the beginning, other scholars disagreed with Selinker about what data should be used to study interlanguage. Corder argued that researchers ought to draw upon a wide range of data sources—including learner intuitions of grammaticality—in exploring learners' language. Others, particularly those investigating the role of universal grammar in SLA, shared Corder's perspective. But Selinker argued that when one uses these different data elicitation techniques, they provide information about different linguistic systems. There are, after all, three linguistic systems involved in the mind of the learner: NL, IL, and TL. If one asks a learner whether a given sentence is grammatical, one cannot be sure whether that learner's response is based upon the NL norm, the IL norm, or the learner's perception of the TL norm. All these responses may be different from the IL norm revealed in that learner's utterances produced in the attempt to communicate meaning. In essence, the most basic research-design question involved in the study of interlanguages—what data shall we use to study interlanguage?—raises very complex issues concerning the relationship between intuitions of grammaticality, language production, and language perception, very similar to issues raised by Labov (1970) in sociolinguistic work. This issue is still unresolved in SLA research, and in fact is complicated by research cited below that shows systematic style-shifting in interlanguage accuracy depending on the learner's attention to speech, which in turn is affected by interlocutor and other contextual features.

The Revised Interlanguage Hypothesis

There have been some modifications and expansions to the interlanguage hypothesis since it was proposed in print in 1972. Some of these have been hinted at and will be expanded upon below.

The original interlanguage hypothesis was restricted to apply only to adults acquiring second languages. However, subsequent studies in French immersion programs in Canada showed that children produced interlanguages that were apparently fossilized, and had

substantial influence from native-language transfer. There appeared to be sociolinguistic reasons for this phenomenon; the children received native-speaker input only from their teacher and gave each other substantial non-native input. They had not usually been given enough opportunity and incentive to produce what Swain (1995) called "comprehensible output"—attempts to produce the interlanguage in meaningful communication with others.

A second expansion of the IL hypothesis occurred in response to the growing interest in the influence of universal grammar on the development of interlanguage. Universal grammar is assumed to be central to the development of natural languages; but is interlanguage a natural language? Selinker's initial hypothesis argued that IL is not, following this reasoning: (a) Natural languages are produced by universal grammar (UG); (b) but interlanguages, unlike native languages, fossilize and evidence native language transfer; (c) interlanguages therefore must be produced by cognitive processes other than UG; (d) therefore ILs do not have to obey language universals. Adjemian (1976) took the opposing position, arguing that interlanguages *are* natural languages (although, unlike other natural languages, IL rule systems are "permeable" to invasion from NL and TL rules systems). In this view, interlanguages are products of the same universal grammar (UG) that produces native languages. As natural languages, interlanguages have to obey language universals. Unlike other natural languages, ILs fossilize because of complex changes in cases where parameters have already been set for the NL, and a TL with different parameter settings must be learned. Debate on this issue has certainly been ongoing and lively (White, 1990).

A third change to the interlanguage hypothesis has been a growing interest in the way interlanguage forms shift and change in different social contexts (Tarone, 1979, 1988). Increasing research evidence shows that learners can produce a significantly more fluent, grammatical, and transfer-free interlanguage in some social contexts than in others, and even that social contexts can change developmental sequences in SLA (Tarone & Liu, 1995). International teaching assistants, for example, may be more fluent and grammatical in lecturing on their academic field than when talking about an everyday topic like favorite foods or bicycling (Selinker & Douglas, 1985). Key processes such as fossilization may be more prominent for a given learner in one context than in another. Bayley and Tarone (in press) review variationist SLA studies and conclude that these show that much of the variation that we see in learner language is systematic. Variation in interlanguage production, documented in dozens of variationist studies, certainly has profound implications for data elicitation and analysis in research (Preston, 1989, 2002; Tarone, 2007; Geeslin & Gudmestad, 2010). Variationist researchers argue that because production of given interlanguage forms varies systematically in relation to accompanying linguistic variables, task, topic, focus on form, interlocutor, and so on, then researchers need document the contextual factors in play in each elicitation, and use sophisticated statistical tools to model interlanguage. Conceptually, the chameleon-like character of ILs raises serious questions about whether and how traditional linguistic notions that were developed to account only for monolinguals in fact apply to the bilingual mind. This is a complex problem for SLA researchers to resolve.

A fourth issue is the phenomenon of fossilization itself. How inevitable is fossilization? What are the forces that lead to the cessation of learning? Scovel proposed the Joseph Conrad Phenomenon, to draw attention to the very common case where an adult learner's phonological system may fossilize, but the morphology, syntax, and lexicon may not, continuing to develop into full identity with the target language. Scovel (1988), like Selinker, argues that the causes of phonological fossilization are neurolinguistic in nature, and related to the process of cerebral lateralization, which is completed at puberty. But there is certainly disagreement among interlanguage researchers as to both the inevitability of fossilization, and (relatedly) the causes of fossilization (Han, 2004). Typically, those who

argue that fossilization is caused by sociolinguistic forces (such as group pressure to conform to NL norms) also argue that fossilization is not an inevitable process. Such researchers suggest that if learners can identify with the TL social group, or if their need is great enough, they will be able to continue learning the second language until their production/perception is indistinguishable from that of native speakers. This issue also is far from settled.

There has been some change in the way some of the psycholinguistic processes shaping interlanguage are viewed. For example, native language transfer is now viewed as operating selectively: some things transfer from the NL to influence IL, and some things do not. A crucial question at present, therefore, is: what gets transferred? Can we predict in advance which NL characteristics will influence an IL and which ones will not? One promising notion is that of multiple effects: when NL transfer combines with other influences, such as markedness factors, learning strategies or transfer of training, then there will be greater likelihood of fossilization. So, for example, an early stage of verbal negation common among all second language learners involves putting a negator (like *no*) before the verb. Spanish does negate verbs this way (as in *Juan no habla* for *John doesn't talk*) and Spanish speakers acquiring English L2 are more likely to fossilize at this stage (producing *John no talk*). Thus, negative NL transfer has the effect of amplifying the possibilities for fossilization when it interacts with other influences, such as stages of L2 acquisition. The psycholinguistic process of learning strategies first identified by Selinker (1972) has become a focus of considerable research (Cohen and Macaro, 2008). This research has led to many educational applications, such as the establishment of workshops and handbooks to train students to use language learning strategies (e.g., Mikk, Cohen, & Paige, 2009).

Finally, research on interlanguage has expanded far beyond its original focus on phonology, morphology, syntax, and lexis, to include the sociolinguistic component of communicative competence. Research on interlanguage pragmatics now includes comparative work on the way learners execute speech acts across three linguistic systems (Kasper & Rose, 2003).

The interlanguage hypothesis provided the initial spark that ignited a field of research on second language acquisition/learning, and it continues to provide a broad and productive framework for research across multiple theoretical orientations. The research questions it originally raised continue to be among the most central and interesting research questions in the field.

SEE ALSO: Critical Period; Cross-Cultural Pragmatics; Crosslinguistic Influence in Second Language Acquisition; Fossilization; Grammatical Variation in Adolescent Language; Interlanguage Pragmatics; Lado, Robert; Learner Varieties; Selinker, Larry; Swain, Merrill; Tarone, Elaine; Universal Grammar and Second Language Acquisition

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Interlanguage Pragmatics

J. CÉSAR FÉLIX-BRASDEFER

Interlanguage pragmatics (ILP), or second language (L2) pragmatics, is the study of how learners, whether adults or children, acquire the ability to produce and understand communicative action in an L2, such as refusing an offer for food, asking a professor to write a letter of recommendation, complaining about an unfair grade on the final exam, or knowing when it is appropriate to remain silent in conversation. Pragmatic knowledge, one aspect of learners' communicative competence, is comprised of two components necessary to communicate effectively in an L2: The first, pragmalinguistic knowledge, refers to the linguistic resources that are available in a particular language and that are necessary to express a specific communicative effect. This includes knowledge of different forms and their meanings. For example, the form *I can't* (literal form) can be used in English to express a refusal to an invitation. But when refusing an invitation to a birthday party a speaker can select from a variety of other linguistic forms to convey the refusal; for example, *Thanks, but I really can't*; *I'm sorry, but I have plans*; *I don't know, I have to think about it*. The second component, sociopragmatic knowledge, refers to knowledge of social conventions at the perception level, such as an awareness of the differences in social distance or social power among interlocutors. For instance, it includes knowledge of what expressions are appropriate (or are not appropriate) to use in an L2 when refusing a professor's advice to take a class or apologizing to a friend for crashing his or her car over the weekend.

Overall, ILP is concerned with how L2 learners learn how to *do things with words* over time in the learner's own country (foreign language settings) or in natural contexts where the target language (TL) being learned is spoken by native speakers (NSs) of the learners' TL (L2 settings) (see also Leech, 1983, and Kasper & Rose, 2002, chap. 1).

This entry is organized as follows. First, I present the scope of ILP, which includes its definition as an interdisciplinary field, two perspectives on pragmatics with implications for ILP research, and the role of pragmatic transfer. The next section highlights the role of pragmatic development in an L2 from three views, and finally, I present the conclusion.

Defining the Scope of Interlanguage Pragmatics

ILP lies at the intersection of the study of second language acquisition (SLA) and pragmatics. ILP, like SLA and pragmatics, is an interdisciplinary field that has been studied from various theoretical, analytical, and methodological perspectives.

SLA

The field of SLA examines how learners, whether children or adults, of an L2 (or third or subsequent languages), with (limited) exposure to that L2, sequentially learn or do not learn its linguistic system, namely, the sound system (phonology), vocabulary and word formation (morphology), how meaning is expressed in words or sentences (semantics), and how sentences are formed (syntax); SLA investigates the degree of proficiency that learners achieve in an L2. In addition, SLA examines the extent to which learning is conditioned by individual differences such as age, gender, motivation, aptitude, proficiency in the native language, or cognitive styles (e.g., learning with visual or auditory input),

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among others (for more information on the scope of SLA see Gass & Selinker, 2001; Long, 2007; Ellis, 2008). When analyzing the production and comprehension of L2 learners, SLA researchers often refer to three linguistic systems: (a) the language produced by L2 learners, referred to as the interlanguage (IL); (b) the learner's native language (NL), also called the mother tongue, or the first language (L1); and (c) the TL or the language being learned (Selinker, 1972).

Perspectives on Pragmatics

Pragmatics dates back to philosophical thinking of the early 19th century and was introduced by the American philosopher Charles W. Morris (1901–79) as one of the three components of semiotics, the science of signs. Specifically, Morris defined pragmatics as "the study of the relation of signs to interpreters" (1938, p. 6). In modern linguistics, pragmatics is broadly defined as the study of language use in context. Pragmatics can be analyzed from two perspectives: the cognitive-philosophical view (or Anglo-American pragmatics) and the sociocultural-interactional view (or European-Continental pragmatics) (Huang, 2007; Haugh, 2008).

Under the first view, pragmatics is considered to be one of the components of the mental grammar (similar to phonology, morphology, semantics, or syntax) and includes concepts such as deixis, speech acts, and conversational implicature. Deixis has to do with reference, specifically the various ways in which languages encode the features of the context of the utterance (e.g., "Move *this* book *here* and *that* one *over there*"). The study of speech acts or speech act theory, introduced by British philosopher John L. Austin (1911–60) in *How to Do Things With Words* (1962) and later revised and expanded by American philosopher John R. Searle (1932–), represents one of the most frequently studied topics in ILP. The focus of analysis in ILP has been on what Searle called the "illocutionary force" of the speech act (i.e., the communicative force of an act such as requesting or promising), indirect speech acts (Searle, 1975) (e.g., "*I was wondering* whether you would have time to write me a letter of recommendation"), and Searle's five-way classification of speech acts (1969, 1976): representatives (informing, stating), directives (asking, requesting), commissives (promising, refusing), expressives (complimenting, congratulating), and declarations (appointing, declaring).

The concept of conversational implicature was introduced by British philosopher Paul Grice (1913–88) to show how meaning expressed by the speaker (speaker meaning), not directly encoded in the words, can be inferred (recognized) by the hearer (Grice, 1975). For example, if speaker A says "Has John arrived?", and speaker B responds "There is a blue car in the driveway," one can infer, under the appropriate circumstances and based on shared assumptions between the interlocutors, that John has arrived. The ability to interpret implicature in an L2 was initially investigated by Bouton (1994). He examined the ability of advanced non-native speakers of English living in the United States to interpret various types of implicatures in English (e.g., irony and indirect criticism) using a cross-sectional design (i.e., with data collected from learners at various proficiency levels). It was found that the learners' ability to interpret implicatures in American English seemed to have been achieved during the first 17-month period. After 17 months in the L2 culture, the learners' ability to interpret most implicatures stabilized, and progress was slow. While the acquisition of L2 implicature may take time, it has also been shown that pedagogical intervention seems to facilitate learning (Rose & Kasper, 2001; Rose, 2005).

Regarding the second view, the sociocultural-interactional perspective, pragmatics is concerned with social interaction and takes into account both the speaker's message and the interlocutor's response to that message. The field of ILP has adopted the methodology and theoretical frameworks initially proposed in the field of cross-cultural pragmatics for

contrasting two or more languages in the analysis of requests, apologies, refusals, suggestions, and so forth. First, with respect to methodology, the methods commonly used to collect speech act data include written questionnaires, role plays, scaled-response questionnaires, and multiple-choice questions. The study of speech acts also includes the analysis of authentic discourse (natural conversation or institutional discourse such as service encounters), elicited conversation, interviews, diaries, and verbal reports (learners' verbalizations of linguistic action). Second, regarding the theoretical frameworks utilized, ILP has mainly employed Brown and Levinson's 1978 universal model of linguistic politeness (Brown & Levinson, 1987) to examine whether NSs of a given culture or L2 learners employ linguistic strategies that are oriented toward satisfying the hearer's positive face through positive politeness strategies (e.g., agreeing with the interlocutor; use of in-group identity markers such as *come here, honey*) or negative face realized through negative politeness strategies (e.g., being conventionally indirect, as in *Can you please pass the salt?* or use of hedges such as *I think that John is coming too*).

Learners' ability to express politeness in an L2 is a frequent topic of study in ILP research. For example, one of the earliest cross-sectional studies on the development of L2 requests is Scarcella's (1979) analysis of the emergence of polite features when performing English (role-play) requests in two learner groups: one group of beginners and one advanced group. The author found that the learners' use of internal modifiers to express politeness in their requests (e.g., *please, maybe, kind of, I think*) improved with increasing proficiency. Using role-play data, other studies have shown that direct requests decrease and a preference for conventional indirectness (using higher levels of polite requests) emerges with higher proficiency (Achiba, 2003; Hassall, 2003; Félix-Brasdefer, 2007).

The notion of pragmatic transfer plays an important role in ILP research. In ILP, transfer occurs at both the pragmalinguistic and the sociopragmatic level. First, pragmalinguistic transfer may occur when learners transfer specific expressions from their L1 to communicate linguistic action and these features coincide in form and function with those forms used by NSs of the TL (positive transfer). On the other hand, negative transfer (or interference from the L1) occurs when pragmatic features from the L1 are transferred inappropriately to the L2; for example, when US learners of Spanish use the conventionalized form in English *I'm sorry* to express an apology in Spanish (L2) (e.g., *lo siento*). This represents an instance of negative pragmatic transfer (or an instance of pragmalinguistic failure), as *lo siento* does not occur among NSs of Spanish with the same frequency, in the same contexts, and with the same function as in the TL (Márquez Reiter, 2000, pp. 151–2). Second, sociopragmatic transfer occurs when learners transfer the sociocultural norms or perceptions with regard to their understanding of social distance or social power from their L1 to the L2, although there may be differences between the L1 and L2. For instance, an insistence after an offer or following a refusal to an invitation represents a sociocultural expectation in many cultures (e.g., Peru, Mexico, China), while in other societies an insistence may be viewed as an imposition or inappropriate behavior (e.g., United States).

Nevertheless, before making generalizations with respect to pragmatic transfer, one must also consider the role that universal pragmatic competence plays in learners' production and comprehension of linguistic action. That is, adult learners come to the classroom equipped with different types of implicit (pragmatic) knowledge and ability to do the following: knowledge of the rules of politeness; knowledge of the form and use of communicative acts (e.g., refusing, requesting); knowledge of the sequential structure of conversation (e.g., turn taking, repair, openings and closings); and knowledge of formal and informal registers (e.g., talking to a professor vs. talking to a close friend) (see also Kasper & Rose, 2002).

In general, regardless of the unit of analysis or the method selected to examine communicative action, the ultimate goal of ILP is not only to analyze learners' ability to produce

and comprehend linguistic action in formal and informal situations in an L2, but also to determine how learners acquire the pragmatic system of the TL through social interaction over time. As a result, ILP examines learner language from two angles: how L2 learners produce and comprehend linguistic action (requesting, refusing, apologizing; L2 *use*) and how they develop the ability to produce and understand action over time in an L2 (L2 *learning*). In particular, in ILP the focus is on making associations between the form, function, and communicative effect of a particular action (requesting, refusing) in the context in which L2 production or comprehension takes place (Beebe, Takahashi, & Uliss-Weltz, 1990; Kasper, 1992, 1998).

Pragmatic Development in a Second Language

A central topic in ILP concerns how learners of second (or third, fourth, or subsequent) languages develop the ability to produce and comprehend linguistic action over time. Pragmatic development has been examined in at least three ways: pragmatic development in naturalistic settings, pragmatic development in study-abroad contexts, and pragmatic development as a result of classroom instruction. Each of these will be examined below.

Pragmatic Development in Naturalistic Settings

Research on pragmatic development as a result of exposure to input in naturalistic settings began in the early 1980s and has examined learners' ability to perform and comprehend different speech acts (e.g., requests, refusals, suggestions) and different conversational practices (e.g., greetings, farewells) in different contexts, namely, everyday encounters, classroom settings, and institutional settings (e.g., in student-advising sessions). For example, research has shown that over time some adult learners of English develop the ability to make appropriate rejections (e.g., *Can I think about it?*) and suggestions (e.g., initiated suggestions) when negotiating their class schedule with their advisers (Bardovi-Harlig & Hartford, 1993). With respect to the acquisition of requests, five stages of development have been identified: The first stage begins with minimal linguistic forms expressing an intention to request (e.g., *Me no pencil*); in the second stage learners start using routine formulas (e.g., *Let's play the game*) and rely on imperatives (e.g., *Open the door*); in the third stage there is the presence of conventional indirectness and other language forms (e.g., *Can you pass book?*); in the fourth stage learners become creative with language and use different forms and tenses (e.g., *Could I have another chocolate for my friend*?). Finally, in the fifth stage learners use a wide range of requests in a variety of contexts. (See Achiba, 2003, and Kasper & Rose, 2002, chap. 4, for a detailed analysis of L2 pragmatic development.) In general, it should be noted that each of the stages that account for pragmatic development may vary from learner to learner, according to the age and gender of the learner as well as to individual differences such as motivation, the topic of the conversation, the context of learning, foreign language (FL) versus second language (SL) contexts, and so forth.

Pragmatic Development in Study-Abroad Contexts

Pragmatic development has also been documented among learners who study abroad for different periods. Unlike learners who study an L2 in the FL classroom with limited access to natural input, learners in study-abroad (SA) contexts may improve their pragmatic knowledge as a result of exposure to authentic input from NSs of the TL and frequent participation and varied opportunities in the target culture. To observe pragmatic development in SA contexts, researchers often compare the development of learners who receive

instruction at home (AH) in the FL classroom with that of learners in SA contexts. The learner data are usually collected at various times (prior to departure, during, and at the end) to examine whether learners who are exposed to the TL during an SA experience improve their knowledge in various aspects of pragmatics at both the production and (and to a lesser degree) comprehension levels in communicative acts such as requesting, apologizing, advising, and conversational activities, namely, greetings, repetition, self-repairs, and accuracy checks.

Pragmatic Development as a Result of Classroom Instruction

Although learners who are exposed to pragmatic input in naturalistic settings acquire certain aspects of pragmatics over long periods, adding an instructional component facilitates the learners' ability to produce and interpret linguistic action. That is, learners who receive instruction in pragmatics, through explicit or implicit teaching, and participate in activities which raise their awareness of communicative actions, outperform those who do not receive instruction (Bardovi-Harlig, 2001). Many aspects of pragmatics can be taught in the classroom, but teachers need to incorporate elements that are appropriate to the level of proficiency of the student. For instance, certain aspects of linguistic action that are not linguistically complex (e.g., greetings, compliments, openings and closings) can be taught at the beginning levels of instruction in the classroom by means of making input salient (e.g., bolding certain elements necessary to make a request), followed by communicative activities that help the learner notice both the form and function of particular expressions used in a specific context. Other concepts in pragmatics that require sophisticated linguistic knowledge can be taught at more advanced levels of proficiency at the discourse level, such as issuing and declining invitations, which require negotiation of these actions across multiple turns. (Studies that examined the effects of instruction in L2 pragmatics include Bardovi-Harlig, 2001; Rose & Kasper, 2001; Rose, 2005.)

Conclusion

ILP studies how learners of L2s at various proficiency levels acquire linguistic and nonverbal action over time as a result of exposure to input alone in the classroom (FL contexts), through exposure to natural input in the host environment and in everyday interaction with NSs of the TL (SL contexts), or as a result of pedagogical intervention in the classroom. Learning an L2 requires not only knowledge of the linguistic system of the TL (sounds, word formation, sentence structure, and meaning), but also knowledge of the linguistic and nonverbal resources necessary to perform and understand communicative action according to the sociocultural expectations, rules of (im)politeness, perceptions of social distance and power, and the various mechanisms of social interaction, such as opening, closing, and repairing conversation (for an in-depth discussion of these topics see Gass & Houck, 1999; Kasper & Rose, 2002; Ishihara & Cohen, 2010; Tatsuki & Houck, 2010). Thus, ILP should go beyond speech acts as single units of analysis, and instead focus on the analysis of communicative action at the discourse level using theoretically and pedagogically informed models. In this way, we will advance our understanding of both the learning process and the pedagogical value of L2 pragmatics in the classroom.

SEE ALSO: Austin, John L.; Classroom Research on Pragmatics; Conversational Implicature; Politeness; Pragmatic Development in Study-Abroad Contexts; Pragmatics Research Methods; Pragmatic Transfer; Searle, John R.; Sociocultural Theory and Interlanguage Pragmatics; Speech Acts Research

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Suggested Readings

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Internalization in Second Language Acquisition: Social Perspectives

EDUARDO NEGUERUELA-AZAROLA

A social perspective to teaching and learning a second language in the field of second language acquisition (SLA) utilizes the notion of internalization to capture both the social origin of learning—even in private settings—and the non-mechanistic or simplistic quality of the processes involved in learning and communicating in new languages (Lantolf & Thorne, 2006; Lantolf & Poehner, 2008).

Research on internalization explains how the social plane is the starting point to construct new meanings when we learn a second language. When learning a new language, our social communicative activity is the origin for noticing and understanding words and phrases. These words and phrases, which we encounter in oral and written discourse, are then transformed into personal meanings; and at the same time, our personal meanings are again transformed into social communication. This continuous transformation of social meanings into private meanings and private meanings into social ones partly explains the richness and complexity of the second language learning processes.

Describing and understanding the specific connection between our social speech and our inner order and its critical role in learning a second language is the goal of research on internalization in SLA. This connection is not direct or simple. As learners of new languages, many of us have experienced how the social context provides a rich source of experiences for communicating with others. We hear new words, notice new sounds, and try using phrases that we just heard or read. However, we also experience that it is not only about noticing language features and using them to communicate in a social setting. Some features of languages are not easily noticed and used. Second language teachers, and sometimes even friends who communicate in the second language better than we do, often give us feedback about language features that we keep using incorrectly, mistakes we make with pronunciation, and phrases we keep forgetting when we write. The connection between what we learn in social settings and what we take away and use in different contexts, what we internalize and take with us, is not simple and direct.

From a pedagogical point of view, in second language teaching, research on the internalization of second languages is thought to be the key to understanding learning processes from a sociocultural perspective. Consequently, understanding and promoting internalization is the key to properly organizing adequate teaching efforts in classroom settings (Lantolf, 2003). This is the basis for a conceptual approach to teaching languages (Negueruela, 2003).

The category of internalization reaches the field of SLA from the field of social psychology, specifically sociocultural theory (Wertsch, 1985; Lantolf, 2000). Internalization is a psychological construct that articulates the connection between the world outside us—our external bodily experiences in the contexts in which we live—and the world inside us—our internal experiences, that is, our self-conscious awareness.

According to Vygotsky (1930/1978), internalization processes originate socially in concrete human activities and are culturally mediated by semiotic tools, primordially language. Internalization is not immediate and mechanical but mediated and transformative. When

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internalization takes place, an external activity performed in the world becomes imitated, appropriated, transformed, and performed as an internal one in one's thinking world (Vygotsky, 1930/1978). Internalization is the origin of mediated thinking, and it is always connected to externalization: the communicative act of making visible our conceptualizations.

From a psychological point of view, the development of mediated thinking is nonlinear and non-incremental. Mediated thinking through conceptual categories does not proceed from simple to complicated. Conceptual categories as tools for thinking are not internalized by adding a few meanings or features to a word definition. Conceptual categories as tools for thinking are created, internalized, and transformed when used for thinking in communication with the self (Vygotsky, 1934/1986).

Each transformation changes the relationships between concepts, and the connection between concepts and referents. It is not only about the meaning of concepts, but also how they are used and applied for thinking. More sophisticated and theoretical concepts are different tools with different qualities when compared to simple unsystematic everyday conceptual meanings (Kozulin, 1998).

Systematic concepts, as tools for mediated thinking, allow us to look at the world differently. It is not the same to look at the world through sunglasses, binoculars, a photo camera, a video camera, or even a kaleidoscope. And to push the metaphor, video cameras are not simply constructed or used as more complicated eyeglasses. There needs to be a transformation in the form, the use, and the function of the tool.

Mediated thinking is also distributed and situated, always social even in private settings. From a sociocultural perspective, all contexts are social: Our social history accompanies us even when we are alone. And all contexts are private: We are always private beings making sense of the world even in social settings (Vygotsky, 1971). Consequently, internalization does not equate internalized thinking with thinking inside our heads. According to Salomon (1991), internalization is a process of internally developing orienting tools for thinking through them about the world in the world (repetition intended). Social and private planes merge in internalization processes. Internalized psychological cultural tools are only meaningful in human activity, be that in a primarily social or primarily private context.

The notion of internalization was articulated by Lev S. Vygotsky within the fields of psychology and pedagogy in the 1920s. Based on the work of Vygotsky, a contemporary social view on internalization is articulated through sociocultural theory (SCT; see Daniels, Cole & Wertsch, 2007; Valsiner & Rosa, 2007). For SCT, contemporary social ways of acting are fundamentally cultural. Culture is, directly put, history in the present (Cole, 1996). Based on proposals emerging from social views on human thinking in the late 19th and early 20th centuries (see Valsiner and van der Veer, 2000), Vygotsky (1930/1978) argues that internalization is the reconstruction of an external operation into an internal one. This reconstruction is not direct. The concrete and material circumstances and reality of the outside world cannot be directly reconstructed inside our immaterial minds. The doing in the world, acting, is different from the doing in our minds, thinking. The materiality of doing in concrete contexts is different from the immateriality of thinking in our minds.

The question is then: How does the social outer world enter the inner world of thinking if both worlds are different in quality, that is, one is material and the other is immaterial? The issue is that there cannot be a direct unmediated connection between the two worlds. The lack of direct connection between our outer and inner life is the basis for what is referred to as "Cartesian dualism" (Lantolf & Thorne, 2006).

Strong Platonist-oriented cognitivists would argue that there is no such connection. That which is unique about human thinking is preprogrammed and already present and represented from birth in embryonic form. From this perspective, internalization is only a question of maturation in the right environment. Upholding the opposing view, strong behaviorists, or even some strong constructivists, agree with cognitivists in the lack of

connection between the outside and the inside world. However, strong behaviorists will argue that the world and its mental representations are completely constructed and assimilated from the outside through social activity. The inside is just an empty but responsive repository. From a strong behaviorist perspective, internalization is a direct and immediate apprehension of the world and its representations. In such a view, our inner order has little effect on our representations.

A sociocultural view of internalization does not concur with either strong cognitivist or strong behaviorist or even some strong constructivist takes. SCT offers an alternative cultural option. There is a connection between our mind/thinking being and our bodily/acting experiences in the world. But it is not a direct connection; it is a historical one using cultural artifacts that are only susceptible to being internalized through socially mediated activity (Vygotsky, 1930/1978). Hence, Vygotsky proposes that the connection from the outside to the inside is mediation that leads to internalization.

Human development, ontogenesis, is a historical process fostered by mediation through cultural semiosis: the use of culturally inherited signs (i.e., language) as tools for communication and conceptualization. This is the sociocultural solution that overcomes the still pervasive Cartesian dualism in human sciences. The outside/body/social and the inside/mind/private are connected in ontogenesis, in our development as humans, when our personal natural evolution is transformed through participating in socially constituted culturally mediated significant activities. Through internalizing cultural ways of mediated thinking we learn to self-regulate our activities. The outside world is the origin of our thinking tools, but this social origin needs a historical transformative avenue into the human mind. To be sure, there is not an immediate connection. The way in for socially originated thinking processes, which are material in origin but immaterial in consciousness, is primarily by using mediation through speech.

Thinking mediated by speech, communicative activity using human language, allows for the internalization of mediated semiotic representations. Perception mediated by speech or other semiotic tools becomes conception. This process explains the emergence of higher forms of human consciousness: intentional memory, voluntary attention, planning, conceptualization, and categorization. All these uniquely human forms of thinking are intentional (there is a conscious attempt to make sense of the world), social in origin (we first act together with others before acting independently), but historical in substance since higher forms of thinking are mediated by historical semiotic means, which consist of languages—fundamentally—but also music, mathematics, or drawing. Furthermore, language as a cultural tool becomes more powerful with literacy. Literacy is a historical, social, and semiotic activity that allows for transforming speech into a permanent and powerful written artifact for the creation and interpretation of linguistic representations.

More precisely, how does language, or better yet speech—written or oral—transcend the Cartesian dualism in internalization? Speech is a human tool with dual qualities. It is dual in the sense that it is bidirectional. It has a material side and directs our behavior in the world, but it is also abstract and creates psychological representations directing our attention in our thinking world. Thus, it is material in the sense of objective—sound and writing are physical in nature—and immaterial—the meaning is abstract and fluid but contextually situated and concrete through specific senses (Vygotsky, 1934/1986). It is both social and communicative—it allows for transaction and interaction—but it is also private and conceptual—it constructs representations and orientations. As mentioned above, these dual qualities of speech can be theoretically constructed as dualisms (repetition intended): as in a strong cognitivist point of view—all representations of the world are internal and the outside reality is minimally relevant—or in a strong behaviorist point of view—the outside world determines our views socially, but not historically, and our inside reality is just a biological container.

In a social and cultural point of view on internalization, the duality of language overcomes dualisms (repetition intended). Language is social and historical but also private: a meaning for the other is a meaning for the self and vice versa. Communication with each other is simultaneously a process of conceptualization. Once we are socialized through culture, we are always social, even in private settings, since our history always accompanies us through our verbally mediated thinking processes. Still, not all forms of thinking are mediated through semiotic means. Direct sensory perceptions, unmediated memory, direct planning, unsystematic categorization are still present in our thinking.

Our most powerful ways of thinking are mediated by cultural tools, generally linguistic signs. Our past experience, personal and social, is cultural and becomes intentional memory—a conscious attempt to remember—through stories in the form of written and oral narratives constructed and reinterpreted again and again through our interactions. Our present, our orientation to the world through categorization, is not about perception but about conception mediated through linguistic taxonomies, through expository texts of different genres: from news and editorials to instruction manuals. Our future, our planning, is based on historically constructed artifacts that are semiotic in nature: calendars, maps, plots, clocks, and argumentative texts of all types, which delineate alternate and preferred futures.

Internalization leads to the emergence of higher forms of consciousness, but mediation is the key to understanding the development of symbolic means. As humans we are always making sense of the world through the most powerful tool we have at our disposal: the historical powers of meaning making through language. Linguistic mediation is central in internalization from a social perspective. But language is a tool without *a priori* instructions. We learn to use it through communication, but it only becomes visible in formal settings, fundamentally schooling. Language instruction is central in schooling. Indeed, literacy, academic or other types, is an essential activity for amplifying and reorganizing the cultural powers of mediated thinking through language.

In formal educational settings, internalization addresses the social/outer origin of developmental processes which are qualitatively transformed from social/outer into self/inner thinking processes during learning activity (Kozulin, 2003). The importance of formal educational settings in modern societies allows for a distinction between everyday concepts and theoretical or scientific concepts, according to Vygotsky (1934/1986). Everyday concepts are mediated understandings of the world internalized in the course of everyday experience. These understandings are not as systematic as theoretical meanings constructed in school settings.

The internalization of conceptual categories is a long process that begins in school and lasts our whole lives. Vygotsky (1934/1986) elaborates on the different developmental stages of conceptual development (heaps, complexes, pseudoconcepts, and theoretical concepts) which lead to internalization during human ontogenesis. Conceptual meanings are the core for the internalization of higher mental processes. Concepts are historical tools of the cultural mind that are internalized in social settings. The critical link is the use of concepts as a tool for understanding. However, internalization is not an easy-to-promote process. Transformative imitation, as a process of transformation of external activity from the interpsychological plane, activity with others, to the intrapsychological plane, solo activity, is the origin of internalization.

From the point of view of formal teaching, how can teachers promote internalization in learning activity? Vygotsky argues that teachers need to first acknowledge the social origins of all learning. That is, a task that a learner cannot do by herself or can only do with the help of others is transformed into a task that she is able to do by herself, and sometimes even inside her head. This understanding is the basis for the notion of the zone of proximal development (ZPD). However, in a SCT view to second language learning, learning

and development are not the same processes (Negueruela, 2008). Again, the critical link is the notion of mediation; that is, the process of internalization is not based on the direct transformation of ideas or actions, but on acting through semiotic means, fundamentally using linguistic signs as psychological tools for understanding.

Not all cultural tools are susceptible to being internalized and not all learning implies internalization in a developmental sense. There are certain conditions for internalization as a transformative developmental process. First, the nature of the internalization process leads only to learning or learning and development. As Salomon (1991) argues, there is a difference between simply learning (cultivation or mastery of cultural artifacts) and internalization (thinking through specific cultural tools). In second language acquisition, one can learn morphology, syntax, or words, but internalization is about development: using words-concepts as thinking tools to make sense of the world. Second, the nature of the internalized tool we use is critical. Some cultural tools cannot become psychological representations for thinking. Internalizing a semiotic representation with thinking capabilities depends on the nature of the tool used and what we do with it. Mastering the use of a spreadsheet can be attained through learning, but thinking about calculus in terms of spreadsheets can only occur as a result of development. And finally: How do we engage with psychological tools? We need to mindfully engage and use psychological tools (conscious awareness), that is, use the conceptual tool in learning activity, being aware of what we do and how we apply a conceptual representation.

The construct of internalization has been criticized from both the innatist/cognitivist and the behaviorist/constructionist camps. On one hand, innatists like Fodor (1980) argue that internalization cannot explain individual development. Vygotskyan principles would answer that development is not individual but social. On the other hand, some scholars taking a constructionist stance argue that internalization is still a cognitive construct that does not take into account the social aspect. Rogoff (1995) maintains that internalization solidifies a dichotomy between the social and the individual. Vygotskyan ideas would reply that internalization is not about distinguishing between the social and the individual but about cultural mediation. Other constructs have been proposed as alternates to highlight different aspects of human ontogenesis. Notions such as mastery, emphasizing the tool and material quality of human mediation, or the notion of appropriation accentuating the social origin and quality of human activity, have been proposed (see Wertsch, 1998). In any case, a transformative understanding of internalization already acknowledges the social and cultural complexity of developing a social mind through semiotic mediation.

In the field of second language acquisition, sociocultural researchers (Lantolf & Thorne, 2006; Lantolf & Poehner, 2008) utilize internalization as a key theoretical construct to understand how second language learning and development proceeds in both formal teaching and non-formal contexts. Internalization highlights and captures the nonlinear quality of development of new semiotic—meaning-making—tools of communication and conceptualization when learning new languages. Specifically, internalization, as an analytical category, has been linked to two main areas: research on private speech in second language learning with an internalization function and research on conceptual instruction to promote internalization.

Research on internalization and private speech in second language acquisition provides insights into how learners use private speech in order to consciously internalize features of a new language they may find complicated (Lantolf, 2003). For instance, Ohta (2001) shows how Japanese learners engage in delayed imitation and find corrective feedback in situations where it was not intended as such. Learners do talk to themselves in social settings such as classrooms to promote the internalization of phonological, grammatical, and lexical issues that are challenging for them. Lantolf and Yáñez (2003) also illustrate how a Spanish learner softly repeats grammatical issues for herself in an attempt to internalize

them. McCafferty (2008) documents how Japanese learners of English utilize gesture as material foundations for constructing and potentially internalizing conceptual metaphors for the notion of an ideal marriage. McCafferty argues that perceptual actions in the form of gesture are instrumental in internalization processes in second language communication and conceptualization. In the end, research on internalization focusing on private speech and private gesture establishes a connection between the use of private speech with an internalization function and the use of speech in social externalization. Evidence in studies as the ones presented above suggests that adult language-focused private speech in classrooms is "acquisition in flight" (Lantolf & Thorne, 2006, p. 206).

In the case of internalization and teaching for second language development, Negueruela (2003) argues that second language development is as a conceptual process where instruction should be aimed at promoting the internalization of conceptual categories. Recent research on concept-based instruction fostering internalization of conceptual categories has centered on the teaching of grammar categories such as verbal aspect, modality, or voice in Romance languages to English speakers (Negueruela & Lantolf, 2006; Lapkin, Swain, & Knouzi, 2008; Negueruela, 2008); teaching of academic writing through the internalization of the concept of genre (Ferreira & Lantolf, 2008); or teaching of academic discourse to international teaching assistants (Thorne, Reinhardt, & Golombek, 2008). These studies illustrate how conscious attempts to use concepts as tools for understanding promote the internalization of conceptual categories as tools for orientation. The internalization of conceptual categories not only promotes a higher degree of conceptual awareness but also has an influence on linguistic performance. For instance, Negueruela and Lantolf (2006) document improvement in performance in Spanish written narratives where learners start using preterit and imperfect with better coherence and accuracy after learners engaged in conceptual reflection and private verbalization about the notion of verbal aspect.

Research from a social perspective on internalization in the field of second language development is still in its infancy. There is evidence that a transformative understanding of internalization is very promising to capture how learners develop new meanings of the world when learning to use a new language. Internalization from a social perspective in the field of second language acquisition is a semiotic transformative bridge between what we think and what we do when we learn to communicate in a new language.

SEE ALSO: Inner Speech in Second Language Acquisition; Private Speech in Second Language Acquisition; Sociocultural Theory

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International Law in Language Policy and Planning

ROBERT DUNBAR

Principles of relevance to language policy and planning are found in a wide range of international legal and quasi-legal instruments. The former category is comprised primarily of treaties, some global in scope and others regional (primarily European); these treaties create binding legal obligations for states, but generally only for those which have agreed to be bound by them. The latter category includes a variety of resolutions, documents, guidelines, recommendations, and other statements, generally made under the auspices of an international organization, and having varying degrees of political salience and moral force, but which do not yet constitute binding legal obligations. Most of the relevant principles in both categories are set out in human rights or minority rights instruments, although the developing international law on indigenous peoples is of importance in relation to policy for the languages of such peoples. There is only one treaty that is specifically directed at language, the European Charter for Regional or Minority Languages (the "European Charter"), a regional instrument which currently applies to 25 Council of Europe member states. Thus, there is no single, coherent global regime for managing linguistic diversity; at best, international law relevant to language planning and policy resembles a patchwork quilt, and one often having gaps and frayed edges.

International human rights law contains a number of principles of relevance, and creates certain minimum standards that reflect a language policy which is generally tolerant of linguistic diversity but which does relatively little to promote it. Relevant treaties include the United Nations' International Covenant on Civil and Political Rights, a treaty of global scope, and important regional treaties such as the European Convention on Human Rights, the African Charter on Human and Peoples' Rights, and the American Convention on Human Rights.

International human rights standards impose limits on what states may do to prohibit the use of a particular language or to enforce the use of an official language in private (i.e., non-state) contexts. For example, basic civil and political rights such as the right to freedom of expression and the right to freedom of association protect individuals from excessive interference by the state in the use of any particular language in private communication, in publishing and other privately owned media, in clubs, associations. and churches, and in commercial contexts (for example, an important international tribunal has ruled against attempts to prohibit use of a nonofficial language in signage displayed to the public in shops). Thus, aggressive policies of assimilation which involve significant restrictions on the use by individuals of a particular language are inconsistent with international human rights law. Furthermore, the right to freedom from discrimination, which protects against discrimination based on language, has been used by international tribunals to restrict the ability of states to single out a particular linguistic group for adverse treatment (for example by directing state functionaries not to use a particular language to communicate with the public even where those functionaries speak that language themselves), and may require privileges extended to one linguistic group also to be extended to others that are in comparable circumstances.

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Generally, though, international human rights standards show considerable deference to state language policy decisions, such as the choice of an official language and the requirement that such a language be used in public institutions such as parliaments and courts and as the medium of education in schools. Indeed, international human rights standards require states to use nonofficial languages only exceptionally: for example, most of the major international human rights treaties require states to provide interpreters to people who are held in detention or face criminal prosecution, but only where the individual does not speak or understand the official language. However, international human rights law is dynamic, and the positive value that is increasingly attached in broader international law to cultural diversity—a trend that has already begun to have an impact on important international human rights tribunals such as the European Court of Human Rights—may lead to interpretation of the international human rights canon in ways that will require state language policy to become more positively supportive of different linguistic identities. Furthermore, although its potential has not yet been fully explored in a linguistic context, broader equality law, and in particular the right to equal protection of the law, may in time require states to take measures to address inequalities which result from official language policies (for example, difficulties faced by nonspeakers of official languages in accessing certain key public services, which may require the provision of translators or of service providers who speak the relevant nonofficial language).

Principles which require states to go beyond a policy of tolerance of linguistic diversity, and which may require them to take measures to actively support such diversity, have tended to appear only in international legal standards for the protection of minorities. Standard setting has been most pronounced in periods in which alleged and real mistreatment of minorities has threatened international peace and security. In the post–World War II era, there was relatively little activity until the early 1990s, when the intercommunal violence unleashed in parts of Eastern Europe by the collapse of communism led to a burst of standard setting, the most important product of which is the Framework Convention for the Protection of National Minorities (the "Framework Convention"), a regional instrument which currently applies to 39 Council of Europe member states. A number of important principles relevant to language policy can be discerned in these contemporary instruments; a significant limitation, however, is that these principles form binding legal obligations for a relatively limited number of states because, aside from those contained in the Framework Convention, they are frequently not set out in legally binding instruments.

First, many of these instruments provide for the teaching of minority languages, or for instruction through the medium of such languages, at least at primary and secondary level. Second, these instruments also often provide for the provision of services by public bodies and administrative authorities through the medium of minority languages. In both cases, though, such provision is limited to those areas in the state in which there are significant concentrations of people belonging to the relevant linguistic minority or to areas traditionally associated with that minority, and is subject to conditions such as the existence of sufficient levels of demand. Third, these instruments generally make some provision for minority language media, including access to airtime on public radio and television broadcasting services, although they tend not to be very specific as to numbers of hours of such broadcasting, scheduling, and so forth. Some instruments, such as the Framework Convention, also contain provisions on the right to recognition of personal names in a minority language, and on the use of minority-language place names and other topographical indicators on signage in areas with which linguistic minorities are traditionally associated.

As the only international treaty specifically directed at language, the European Charter deserves particular mention. Although it also came into force in the 1990s, it was a response not to reemergent ethnic conflicts but to concerns which had emerged in the early 1980s about the loss of linguistic diversity attendant on "the inevitably standardising influence

of modern civilisation and especially of the mass media." In this sense, it has much in common with some of the standard setting engaged in by UNESCO over the last decade in respect of cultural diversity (which may be of indirect relevance to linguistic matters: see "References," below); the preamble to the European Charter makes clear that its overriding purpose is cultural. The European Charter contains a number of general objectives and purposes on which states "shall base their policies, legislation and practice" in respect of all of their regional or minority languages, including the need for resolute action to promote them in order to safeguard them, and the facilitation and encouragement of their use in public and private life. Then, the Charter contains a wide range of much more detailed provisions, some of which states may apply in respect of those languages that the states themselves designate, in areas such as education, the legal system and the courts and tribunals, administrative authorities and public services, the media, cultural activities and facilities, and economic and social life. The Charter is similar to contemporary minorities' standards in generally limiting provision to geographical areas of the state in which speakers of the languages are present in significant concentrations, and conditioning provision on sufficiency of demand for the relevant services. Significantly, the Charter does not apply to languages of newer immigrants, but only to languages traditionally found on the territory of the state (e.g., Basque, Galician, Catalan in Spain; Welsh, Irish, and Scottish Gaelic in Britain; and so forth).

Finally, there have also been important developments over the last 20 or so years of relevance to the languages of indigenous peoples. Two instruments are of particular importance: the International Labour Organization's Convention (No. 169) Concerning Indigenous and Tribal Peoples in Independent Countries of 1989, which creates binding legal obligations for the 20 states which have agreed to it, and the 2007 United Nations General Assembly Declaration on the Rights of Indigenous Peoples which, strictly speaking, does not (but is nonetheless of considerable political importance). Of perhaps greatest importance in terms of language policy are the provisions of both these instruments which emphasize the teaching of indigenous languages and, in particular, teaching through the medium of such languages, to indigenous children.

From the foregoing, the following observations can be made. First, international human rights law creates a general minimum standard of tolerance of linguistic diversity. Second, international law is increasingly recognizing that states are under some obligation to both accommodate and foster diversity; however, obligations to take positive measures in support of linguistic diversity still tend to be limited to minorities- and indigenous-specific instruments, and most of the legally binding standards have been developed regionally, in Europe. Third, where international law does impose obligations to take such positive measures, it generally only requires this of the public sector; as with many domestic legal regimes which support the promotion of minority languages, there is no explicit provision for the imposition of duties with regard to language use on the private or voluntary sectors. Fourth, instruments frequently make reference to rights of speakers and obligations of states to speakers, but aside from the European Charter, generally do not require consideration of the vitality of speech communities or of the extent to which state policies are effective in promoting such vitality, and may therefore offer a limited basis for holistic language planning. Interpretation and application of relevant principles is, however, dynamic, and there is the potential for an even sharper focus to develop on issues such as the actual vitality of minority language communities, and, with it, on the adequacy of state policies in fostering vitality. By the same token, many of the recent developments of relevance have, as noted, come about as by-products of increasing international attention to minority questions. However, interest in the international community in such questions has waxed and waned over the last century or more, and, depending on what path contemporary debates about multiculturalism take, the future may equally see the development of international law in ways that are not so supportive of linguistic diversity.

SEE ALSO: Council of Europe Language Policy and Planning; Indigenous Languages in the 21st Century; Language Rights in Language Policy and Planning; Linguistic Human Rights; Linguistic Legislation; Role of Linguistic Human Rights in Language Policy and Planning; UNESCO and Language Policy and Planning

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International Phonetic Alphabet

ADAM BROWN

Introduction

The International Phonetic Alphabet (IPA) is a set of symbols designed to be used for representing the speech sounds of languages of the world. This set of symbols has many uses. Linguists, especially from SIL International (formerly called the Summer Institute of Linguistics), have devised new writing systems for previously unwritten languages, basing the new system on the IPA. It is also used widely in language teaching. Singers wishing to know the correct pronunciation of lyrics in unfamiliar languages rely on IPA transcriptions of the sounds (Castel Opera Arts, *n.d.*; IPA Source, *n.d.*). Extensions to the basic IPA have been made to allow for the representation of clinical speech (Duckworth, Allen, Hardcastle, & Ball, 1990), and voice quality (Ball, Esling, & Dickson, 1995).

It should be emphasized at the outset that the IPA is a phonetic alphabet, not a phonemic or phonological one. That is, it is a set of symbols that allow analysts to represent speech sounds regardless of the language being spoken, and regardless of the functional status of the sounds in that language.

Perhaps the most pervasive use of symbols based on the IPA is in dictionaries, in particular those produced in the UK for English, for indicating the pronunciation of words. This is especially important for English, since the correspondence between letters in the spelling and sounds in the pronunciation is poor, for instance the different sounds represented by the *ch* letters at the beginning of *chest*, *chef*, and *chemist*. As a result, learners who guess the pronunciation of newly encountered words from the spelling may end up with mispronunciations. With the advent in the last two decades of CD-ROMs and Internet materials accompanying dictionaries, with sound files of the pronunciation of words, dictionary transcriptions have perhaps assumed lesser importance than in the past. In light of the comment made in the previous paragraph, the symbols used in dictionaries are not IPA, in that they are language-specific. They are, nevertheless, based on IPA symbols.

IPA symbols proper should therefore be enclosed in conventional square brackets ([]) rather than the conventional slash brackets (//) which show that the symbols represent phonemes in (the accent of) the language being discussed (as in dictionaries). Symbols for phonemes in an accent of a language are thus the broadest type of transcription, in that they show explicitly the least detail. Transcriptions that show more than the minimum detail can be classified as narrow to varying degrees. It follows that, while there are over a hundred symbols in the IPA, only a small subset of the total will be needed in representing the sounds of a particular language. For instance, in transcribing English, there is no need to use the symbols for non-pulmonic consonants, or tones, because these do not occur in English.

The International Phonetic Alphabet is one of the main products of the International Phonetic Association (also abbreviated as IPA; hereinafter they are written as IPAssociation and IPAlphabet). The IPAssociation conducts examinations in use of the IPAlphabet for English (International Phonetic Association, *n.d.*), consisting of phonetic transcription of a written passage, phonetic transcription of a dictated passage, and oral production from transcription.

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While use of the IPAlphabet is widespread around the world, it is not universal. Some US analysts use the American Phonetic Alphabet (APA), which was originally developed for the purpose of transcribing Native American languages. UK dictionaries mostly use the IPAlphabet, but many US dictionaries use a form of respelling.

History

Early attempts at a set of phonetic symbols included one by Alexander Melville Bell (1819–1905), the father of Alexander Graham Bell, the inventor of the telephone. Alexander Melville Bell was famous as a teacher and writer on the subject of speech. His system, known as Visible Speech (Bell, 1867), was aimed primarily at the deaf, and used symbols that resembled the position and movement of the vocal organs to produce the sounds.

Henry Sweet (1845–1912) devised two phonetic alphabets. One, called the Organic Alphabet, was derived from Bell's Visible Speech. The other, named Broad Romic, used symbols that were, or resembled, letters of the Roman alphabet, and was derived from a set of symbols devised by Isaac Pitman (1813–97) and Henry Ellis in 1847. It is clear, however, that even Sweet himself favored Broad Romic; his *Primer of Phonetics* (1890) was based on the Organic Alphabet, but by 1908, he was using Broad Romic for his book *The Sounds of English*.

However, it was the IPAssociation, established in 1886 under the leadership of Paul Passy (1859–1940), that in 1888 produced an alphabet widely acknowledged and used. (For reproductions of the 1888 alphabet and other early charts, see MacMahon, 1996. On the history of the IPAssociation, see Albright, 1958; MacMahon, 1986.) Famous early members of the association included Henry Sweet, Wilhelm Viëtor (1850–1918), and Otto Jespersen (1860–1943). The person from among the membership of the IPAssociation who contributed most to the development and popularization of the IPAlphabet was Daniel Jones (1881–1967), who joined the association in 1905. He himself experimented with various notations, and the alphabet as a whole has been subject to various updates. Sweet had envisaged individual languages having their own phonetic alphabet, but Jones argued that there should be one alphabet that could be used for speech sounds in all languages.

The principles underlying phonetic transcription in general, and the IPAlphabet in particular, were stated in 1888 (also see International Phonetic Association, 1999, Appendix 1):

1. Each sign should have its own distinctive sound.
2. The same sign should be used for the same sound across all languages.
3. As many ordinary Roman letters should be used as possible, and the usage of new letters should be minimal.
4. International usage should decide the sound of each sign.
5. The look of the new letters should suggest the sound that they represent.
6. Diacritics should be avoided when possible, as they are difficult to write and hard to see.

Jones introduced several modifications to the IPAlphabet system. He standardized the convention of showing consonants produced at the front of the mouth, such as [p], on the left of the chart, and those at the back, such as [k], on the right. But perhaps his greatest contribution is the cardinal vowel system. While consonants in general involve some easily described contact between articulators, vowel sounds are produced by holding the tongue in certain positions in the oral cavity with little or no contact. The cardinal vowel system plots the position of the highest point of the tongue within the total possible vowel space. Cardinal vowels are used as reference points, mostly on the periphery of that space, and vowel sounds in any language can be described by comparing them to cardinal vowels.

Jones first met Jespersen in 1926, when Jones was invited to a Copenhagen Conference convened by Jespersen to discuss the various transcription systems in use at the time. As Collins and Mees (1998, pp. 315–16) surmise, "it must have appeared to Jones at one stage that Jespersen and his associates were indeed about to wrest the authority for setting standards for phonetic symbolization from the IPA [Association]." Wholesale changes to the IPAlphabet were proposed, and Jones was asked to secure the approval of the IPAssociation membership for them. While most of the changes were rejected, some were adopted, such as the symbols for clicks (since superseded), bilabial fricatives, and retroflex consonants. However, the greatest outcome was that the IPAssociation remained as the worldwide arbiter of phonetic transcription.

The IPAlphabet has undergone several periodic revisions. Major ones took place in 1900 and 1932. The latest major revision was in 1989 at the Kiel Convention, organized solely to consider updates to the alphabet. It was considered that advances in speech technology and the discovery of several previously unknown sounds and sound types had made the existing IPAlphabet out of date. Minor revisions have since taken place, in 1993 and 2005 (International Phonetic Association, 2005). It is a testimony to Jones's expertise that his cardinal vowel system still largely represents the vowel section of the IPAlphabet. For instance, in the 1993 revision, the symbols [ɵ, ɞ] were reinstated, having originally been proposed by Jones in 1933. A comprehensive description of phonetic symbols is given by Pullum and Ladusaw (1996).

Until it was superseded in 1971 by the *Journal of the International Phonetic Association* (http://journals.cambridge.org/action/displayJournal?jid=IPA), the association's journal, entitled *Le Maître Phonétique* (or *m.f.*, for short), insisted on publishing articles written only in IPAlphabet transcription. Articles in traditional spelling could only be published as supplements. Jones argued against this, pointing out that it was a hindrance to the journal's articles reaching a wider audience.

The International Phonetic Alphabet, English Spelling, and Dictionaries

Given that English spelling is in general a poor indicator of the pronunciation, it is not surprising that most of the people involved in the creation and revision of the IPAlphabet and other phonetic alphabets were native English speakers and writers. The Irish playwright George Bernard Shaw willed part of his estate toward a competition to produce a phonetic alphabet for writing English; unfortunately, the estate could only afford to publish one book, a Shavian alphabet version of his play *Androcles and the Lion*. Henry Sweet wrote a book entitled *The Principles of Spelling Reform* (1900). H. G. Wells, author of *The War of the Worlds*, was a vice-president of the Simplified Spelling Society (nowadays called the English Spelling Society, www.englishspellingsociety.org). Daniel Jones was a president of the society, and its current president is John Wells (b. 1939), former professor of phonetics at University College London.

Daniel Jones consistently used IPAlphabet-based transcription beginning with his articles in *Le Maître Phonétique* in the early 1900s, and in his *English Pronouncing Dictionary*. The first edition of the dictionary was published in 1917. The 14th edition (1977) was edited by his successor as professor of phonetics at University College London, A. C. Gimson (1917–85), and established a set of phonemic symbols for English (often referred to as EPD 14 transcription) still widely used in British dictionaries. The current 17th edition is entitled the *Cambridge English Pronouncing Dictionary* (Roach, Hartman, & Setter, 2006). The *Longman Pronunciation Dictionary* (Wells, 2008) gives, besides broad English transcriptions, narrow phonetic transcriptions of the original pronunciation of foreign words, such as *genre*, English [ʒɒnrə], French [ʒɑ̃:ʁ].

The International Phonetic Alphabet Itself

It is clearly beyond the scope of this entry to describe the IPAlphabet in any detail. Instead, the main features of the IPAlphabet will be explained. This should provide the springboard for the interested reader to investigate it further, preferably with the help of a trained teacher.

The IPAlphabet chart is given in Figure 1. The chart is adapted from the International Phonetic Alphabet (2005). To download the chart, see International Phonetic Association (2005).

Symbols for consonant sounds are divided into three. Pulmonic consonants involve an airstream coming from the lungs, and constitute the vast majority of consonant sounds in languages of the world. English has no non-pulmonic speech sounds. Three classificatory dimensions are shown. The place of articulation (where the sound is made) is represented by the different columns; for instance, the sounds [p, b, m], as in English *pie*, *buy*, *my*, are all produced by the two lips, and are thus called bilabial. The manner of articulation (how the sound is made) is shown by the rows; for example, the sounds [f, v, θ, ð, s, z, ʃ, ʒ, h], as in English *fine*, *vine*, *think*, *this*, *sue*, *zoo*, *ship*, *mea<u>s</u>ure*, *hat*, are all fricatives, in that air escapes with a hissing noise through a small hole left between the articulators. The state of the vocal cords is shown by placing voiceless sounds (where the vocal cords are not vibrating) on the left of a cell, and voiced sounds (with vocal cord vibration) on the right; thus, the sounds [s, z] are the same, except that [s] has no vocal cord vibration, while [z] does.

As the note in the diagram explains, shaded areas denote articulations judged to be impossible. For instance, the glottal stop (as in a Cockney pronunciation of *better* [beʔə]) involves the two vocal cords coming tightly together. The vocal cords cannot at the same time be vibrating for voice. So only a voiceless glottal stop is possible.

Non-pulmonic consonants include various types of click sounds. In English-speaking cultures, they are used for paralinguistic effect, such as the *tut-tut* or *tsk-tsk* showing disapproval or annoyance, and the *gee-up* to a horse. However, in many languages of southern and east Africa, they are speech sounds combining with other consonants and vowels into words.

Other symbols for consonants include those that involve more than one simultaneous articulatory gesture. For instance, the [w] sound involves both a rounding of the lips (labial) and a movement of the tongue toward the soft palate (velar). All English speakers pronounce this voiced sound at the beginning of words such as *witch*, while many Scottish and southern US speakers distinguish this from its voiceless equivalent [ʍ] as in *which*.

The vowel chart is essentially the cardinal vowel system devised by Jones. It also uses three main classificatory dimensions. First, vowels produced with the highest point of the tongue toward the front of the mouth are shown conventionally on the left, and those toward the back on the right. Second, vowels produced with the tongue close to the roof of the mouth and with the teeth close together are plotted at the top, while those where the tongue is far from the roof, enabled by lowering the jaw and leaving a large space between the teeth, are at the bottom. Finally, vowels produced with lip rounding are on the right of a pair, with unrounded vowels on the left.

The suprasegmental section of the chart relates to those features that extend over more than one consonant or vowel segment. They include ways of marking stress, length, intonation (all found in English), and tones (found in tone languages such as Mandarin and Thai).

The final section gives various diacritics to be added to symbols to show particular phonetic features. For example, there is a burst of voiceless air (aspiration) when the [p] of *pie* is released; this can be shown explicitly by [pʰaɪ]. The [t] sound is usually alveolar;

CONSONANTS (PULMONIC) © 2005 IPA

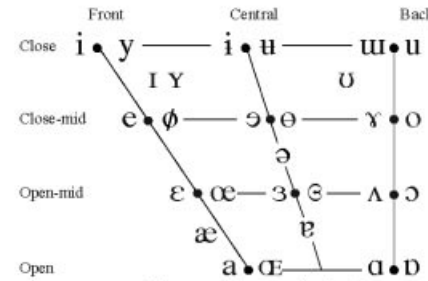
	Bilabial	Labiodental	Dental	Alveolar	Post alveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

CONSONANTS (NON-PULMONIC)

Clicks		Voiced implosives		Ejectives	
ʘ	Bilabial	ɓ	Bilabial	ʼ	Examples:
ǀ	Dental	ɗ	Dental/alveolar	pʼ	Bilabial
ǃ	(Post)alveolar	ʃ	Palatal	tʼ	Dental/alveolar
ǂ	Palatoalveolar	ɠ	Velar	kʼ	Velar
ǁ	Alveolar lateral	ʛ	Uvular	sʼ	Alveolar fricative

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

OTHER SYMBOLS

- ʍ Voiceless labial-velar fricative
- w Voiced labial-velar approximant
- ɥ Voiced labial-palatal approximant
- ʜ Voiceless epiglottal fricative
- ʢ Voiced epiglottal fricative
- ʡ Epiglottal plosive
- ɕ ʑ Alveolo-palatal fricatives
- ɺ Voiced alveolar lateral flap
- ɧ Simultaneous ʃ and x

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary. k͡p t͡s

SUPRASEGMENTALS

- ˈ Primary stress
- ˌ Secondary stress ˌfoʊnəˈtɪʃən
- ː Long eː
- ˑ Half-long eˑ
- ̆ Extra-short ĕ
- | Minor (foot) group
- ‖ Major (intonation) group
- . Syllable break ɹi.ækt
- ‿ Linking (absence of a break)

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. ŋ̊

̥	Voiceless	n̥	d̥	̤	Breathy voiced	b̤	a̤	̪	Dental	t̪	d̪
̬	Voiced	s̬	t̬	̰	Creaky voiced	b̰	a̰	̺	Apical	t̺	d̺
ʰ	Aspirated	tʰ	dʰ	̼	Linguolabial	t̼	d̼	̻	Laminal	t̻	d̻
̹	More rounded	ɔ̹		ʷ	Labialized	tʷ	dʷ	̃	Nasalized	ẽ	
̜	Less rounded	ɔ̜		ʲ	Palatalized	tʲ	dʲ	ⁿ	Nasal release	dⁿ	
̟	Advanced	u̟		ˠ	Velarized	tˠ	dˠ	ˡ	Lateral release	dˡ	
̠	Retracted	e̠		ˤ	Pharyngealized	tˤ	dˤ	̚	No audible release	d̚	
̈	Centralized	ë		̴	Velarized or pharyngealized	ɫ					
̽	Mid-centralized	e̽		̝	Raised	e̝	(ɹ̝ = voiced alveolar fricative)				
̩	Syllabic	n̩		̞	Lowered	e̞	(β̞ = voiced bilabial approximant)				
̯	Non-syllabic	e̯		̘	Advanced Tongue Root	e̘					
˞	Rhoticity	ə˞	a˞	̙	Retracted Tongue Root	e̙					

TONES AND WORD ACCENTS

LEVEL			CONTOUR		
ȅ or ˥	Extra high		ě or ˩˥	Rising	
é ˦	High		ê ˥˩	Falling	
ē ˧	Mid		e᪽ ˦˥	High rising	
è ˨	Low		e᪾ ˩˩	Low rising	
ȅ ˩	Extra low		eᪿ ˥˦˥	Rising-falling	
↓	Downstep		↗	Global rise	
↑	Upstep		↘	Global fall	

Figure 1 The International Phonetic Alphabet © 2005 International Phonetic Association (IPA) www.langsci.ucl.ac.uk/ipa

however, before dental sounds such as [ð], it can also be articulated as a dental sound with the upper teeth as the passive articulator, as in *out there* [aʊt̪ðeə].

The International Phonetic Alphabet on the Computer

One of the main works on transcription is Abercrombie (1964). In it, he explained various dichotomies regarding transcription: simple versus comparative transcription, allophonic versus phonemic transcription, symbols versus conventions, and quality versus quantity transcriptions for certain English phonemes. Another criterion related to whether the symbols could easily be produced using a typewriter; this was important at that time, as many linguists carrying out fieldwork on languages carried typewriters with them to type up transcriptions. Nowadays typewriters have been replaced by portable computers, so this criterion has largely disappeared.

Nevertheless, the question of producing phonetic symbols on computer remained, as many phonetic symbols do not correspond to letters of the Roman alphabet. There were two main problems with this. First, researchers needed to be sure that the symbols could be produced not only on their own computer (usually by the downloading of an extra, phonetic font), but also on other computers, for example the computer of any other person they e-mailed documents to, or for PowerPoint presentations. Second, researchers needed to know what to type on the keyboard in order to produce the desired symbol.

Around 2003, the first problem was solved by the adoption of Unicode, a standard for the encoding of characters for the world's languages and for specialized fields like phonetics (Wells, 2007). Lucida Sans Unicode, supplied as standard on many computers, contains most common phonetic symbols. Freely downloadable Unicode phonetic fonts include Charis SIL, Doulos SIL, and Gentium (http://www.sil.org).

The second problem was resolved in various ways (outlined by Wells, 2007). A unique code number for each symbol may be keyed in, while holding down the Alt key (see International Phonetic Association, 1999, Appendix 2; Wells, 2010). A more user-friendly method is to download a virtual keyboard (University College London, 2009).

Conclusion

While the IPAssociation "exists to promote the study of the science of phonetics and the applications of that science" (International Phonetic Association, 1999, frontispiece), its chief product is without doubt the IPAlphabet. It was originally devised in the late 19th century shortly after the founding of the association. Although Daniel Jones is well known as the popularizer of the alphabet, he was only five years old when the association was established, and considerable acknowledgment is due to Henry Sweet's Broad Romic alphabet.

Readers wishing to investigate the IPAlphabet further should do the following. First, the *Handbook of the International Phonetic Association* (International Phonetic Association, 1999) (subtitled *A Guide to the Use of the International Phonetic Alphabet*) explains the alphabet, its history, its principles, and its use in much more detail than is possible here. It also contains IPAlphabet transcriptions of passages from 29 languages; such specimen texts were a common content of *Le Maître Phonétique* and still feature in its successor, the *Journal of the International Phonetic Association*.

Second, phonetics is a tactile and auditory subject. For this reason, the best way to study is to learn from a qualified teacher. It has often been said that the best and most traditional way to learn the cardinal vowels is from someone who was trained by someone (who was trained by someone . . .) who was trained by Daniel Jones.

Finally, there are various Web sites containing information about the IPAlphabet, some of them with clickable symbols with hyperlinks to sound files of the sounds.

SEE ALSO: Orthography; Phonetics and Phonology: Overview; Segments; Sound and Spelling; Suprasegmentals: Intonation; Suprasegmentals: Stress; Suprasegmentals: Tone; Voice Quality

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Internationalization and Localization

REINHARD SCHÄLER

Internationalization and localization are two key steps in the preparation and translation of digital content for international markets and have formed part of the globalization strategies of multinational digital publishers since the mid-1980s. Internationalization is a prerequisite for localization and refers to the process of designing (or modifying) digital content and software so as to enable users to work in the language of their choice (i.e., allowing them to use their specific characters and scripts when using the software even if the software itself is not localized), and to isolate the linguistically and culturally dependent parts of an application in preparation for localization (so that these can be modified without interfering with the core functionality of the application). Localization then refers to the linguistic and cultural adaptation of digital content to the requirements and locale of a foreign market, and the provision of services and technologies for the management of multilingualism across the digital global information flow.

Bringing Digital Content to the World

The localization industry emerged in the mid-1980s, when US-based software publishers looked at ways to increase the return on investment for their original products by expanding into new markets which were ready to buy and use their products, then mainly office-type applications such as word processors and spreadsheets. The publishers found these markets in Europe and Asia, in the highly developed economies of countries such as Germany, France, Italy, Spain, and Japan, where a growing number of users of personal computers needed applications to run on their newly acquired hardware (Schäler, 2003).

In order to sell applications originally developed for the US-based market in these countries, however, publishers needed to adapt these applications to the needs and the requirements of the new users. The first companies to offer an adaptation service to digital publishers realized that what they were offering was very different from a straightforward translation service, that is, that they were offering a service that included translation, but had a much wider scope. Therefore, this service needed to be positioned differently, as a localization service. Over time, the demand for new products and more sophisticated localization services grew with the number of users of personal computers and, later, with the development of the Internet and the World Wide Web. Today, a wide range of digital content is being localized, from basic office applications to Web sites, from video games to the software controlling medical equipment. The number of publishers of digital content is growing and their business sustains a localization and translation services industry that was worth US$25 billion in 2013, according to Beninatto and Kelly (2009). While this is a considerable amount of revenue, it is a fraction of the value that the localization service providers have created in financial returns for their clients, many of whom now generate more than 60% of their revenues from their international business divisions.

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Table 1 Vectors of scalability and growth

Vectors	*Initial*	*Intermediate*	*Future*
Geography and languages	Europe	Asia	Global
Standards	Trial and error	Proprietary	Open
Content	Manuals/user interface	General technical	Any digital content
Rationale	Return on investment (ROI)	Investment	Rights-based
Medium of delivery	Documents and boxed products	CD-ROM	Online
Culture	Conventions	Values	Rights

Vectors of Scalability and Growth

The development of the localization industry can be captured by six vectors of scalability and growth: geography and languages, standards, content, rationale, medium of delivery, and culture (see Table 1). Each of these vectors points from an initial state to a future state, passing through an intermediate state that approximately captures today's situation.

Localization started in Europe and initially aimed at making manuals and user interfaces of software applications accessible to new users in their own languages, taking into account their cultural preferences and conventions such as date and time formats, number formats, currency signs, and collating sequences. The rationale behind this effort was to create an additional and almost immediate financial return on investment for the multinational developers of the original digital content. The localized content was transferred to diskettes and shipped as a boxed product. The effort that went into these early localization projects was immense: There were no agreed and widely used standards; digital content was often ill prepared for localization; localizers themselves were mostly learning on the job and had no access to formal training; the time (delta) between the release of the original language version of a product and that of the localized versions could be up to nine months; and publishers limited their localization efforts to their core products and around half a dozen languages promising the highest return.

The situation at the beginning of the second decade of the 21st century is dramatically different. With the development of the Internet and the World Wide Web, digital content has become ubiquitous for many people in the developed world. These people demand access to any kind of content in their own languages and according to their personal cultural preferences ("the person is the ultimate locale") as soon as the original content becomes available ("simship," i.e., the simultaneous shipment or release of the original and localized versions of a product). The type of digital content being localized today into up to 100 language versions ranges from software applications to Web sites, from video games to computer-based learning (Microsoft, 2007).

The implications of this growth in volume, number of languages, and content type are manifold and require increased automation, standardization, and interoperability; reuse of material; and the development of professional education and training programs for localizers.

Moving up the Value Chain: Internationalization

Internationalization is a prerequisite for localization. It is an activity that moves localization up the value chain, closer to the teams that design, develop, and author the content to be localized (Microsoft, 2010). Proper internationalization of digital content right from the start avoids the potential need for far more costly redevelopment work further down the line, when localization teams might discover problems preventing them from adapting the digital content to the requirements of different locales (e.g., country/language pairs such as Canada/French or Canada/English).

Digital content can be internationalized, even if there are no plans to subsequently localize it. There are two central aspects to internationalization, namely:

- The process of designing (or modifying) digital content and software so as to enable users to work in the language of their choice (even if the software itself is not localized). This includes the use of a universally recognized standard for the encoding of characters, that is, Unicode.
- The process of isolating the linguistically and culturally dependent parts of an application in preparation for localization. This includes, for example, the use of resource files with language-specific content that can be easily accessed, translated, and integrated into existing applications so that the language of the interface or content can be switched with minimum effort and without interfering with the core functionality of the application. Using this mechanism, the language of the interface of a spreadsheet, for example, can be easily changed without having any effect on the functionality of the formulas that calculate the values in the cells of the spreadsheet.

There are a number of ways to determine whether digital content has been internationalized. For example, specialized tools are available to check the code base or to ensure that characters have been encoded according to best practice (W3C, 2010). One of the central strategies to determine internationalization compliance is pseudo-translation. Original strings are automatically replaced with strings representing characters of the target language and are expanded by a certain percentage according to predefined algorithms in order to mimic a translation and to determine the effect this translation would have on a particular product. Pseudo-translation would, for example, highlight cases where "translated" strings are truncated or "cut off" and no longer fully visible because they expanded during translation and now no longer fit into the space originally provided for them.

The main strategies for pseudo-translation are

- adding leading characters to the start of each string,
- substituting one or more characters,
- adding padding characters, and
- adding trailing characters to the end of each string.

Using the appropriate technology, digital content can be pseudo-translated almost effortlessly into a variety of languages, where the algorithm uses different characters but the logic is the same:

English: Find at source and fix once for every language.
German: ößFind ät ßöürce änd fix önce för every längüägeAaBbCc Ddßö
Japanese: ソポFind 無t source 無nd fix once for every l無ngu無geAaBbCc Ddポソ

Internationalization issues and defects that can be discovered using pseudo-translation include the following:

- *Externalization*: Long-established internationalization guidelines strongly encourage the separation of content visible to the consumer from the functionality of the platform, interface, or application that uses it. Strings should not be hard coded but externalized, that is, kept in a separate file that is then referred to by the actual code. Strings remaining in English following pseudo-translation have not been externalized, might be hard coded, and will require the attention of the original development team.
- *Expansion*: Strings often expand when translated from one language into another, especially if English is the source language. Pseudo-translated digital content can highlight the effect of translation on the layout, that is, a layout distortion, in the target language version of that content.
- *Corruption*: Applications that are not internationalized might not be able to handle characters and scripts of particular target languages. For example, some languages such as Japanese require double byte encoding (because of the number of characters or symbols that require unique code points to be assigned) when some applications can only handle single byte encoded characters (because they were never designed to work in other than Western European languages). Instead of displaying the characters expected, these applications display placeholders or alternative characters. By inserting characters of the target language into the digital content during pseudo-translation, this problem can be discovered early and easily, and before it can cause major problems during localization.
- *Concatenation and use of variables*: Developers often make use of concatenated strings and variables to improve the efficiency of their code, keeping the strings to be used by an application to a minimum. String concatenation, as well as the use of variables, makes assumptions about the structure of the language in which they are used and can often not be carried over into another language if this language requires, for example, a different word order, gender, or use of plural forms. For example, while in English a noun in the singular can usually be transformed into its plural form by simply adding an *s*, other languages such as German have many different ways of forming the plural version of their nouns. Pseudo-translated strings identify concatenated strings by marking the end and the beginning of individual strings. Concatenations must be referred to and resolved by the developers of the original content.
- *Other*: In addition to the above, pseudo-translation makes developers think about internationalization earlier; allows for the compilation of a complete file list to be worked on during localization; simulates the localization process, allowing for a verification of the file formats being dealt with and the build environment; supports more accurate project planning; and allows for a quick assessment of new languages.

Pseudo-translation allows for a quick and inexpensive internationalization test. Internationalization issues can thus be spotted early and be corrected even before localization starts. Localization issues are moved up the value chain, expensive testing of localized products can be significantly reduced, and issues can be identified in the source before they become expensive-to-correct problems in multiple language versions.

The Localization Process

The main stages of localization include project analysis, preparation, translation, engineering, testing, release, and project review. For a long time, translation has been the most

expensive of these stages, which is why most efforts were directed toward translation automation. The introduction of translation memory systems at the beginning of the 1990s brought the single biggest change to localization. These systems were the first building blocks used by multinational digital content publishers to develop "localization factories." These are automated translation and localization platforms that hardly require human intervention, are capable of automatically processing up to 98% of content, and deliver file processing speeds of around 45 seconds per file (Jewtushenko, 2003). With the importance of machine translation (MT) in localization growing, translators are no longer required to translate source material but instead are asked to post-edit material that was pretranslated by hybrid automatic translation systems, including translation memory and machine translation systems.

Digital content providers are under significant pressure to reach a level of sophistication in task and process automation to produce more language versions of an increasing volume of digital content of acceptable quality while continuously driving down their cost base (Dunne, 2006a; Dunne & Dunne, 2011). They have recognized that existing tools and technologies need to be integrated on demand and become interoperable within a flexible, configurable, dynamic, and extensible translation and localization platform. While first instances of these platforms have been developed as bespoke and generic third-party systems, they still only partially cover the requirements for open standard compliance—for example, with the XML-based Localization Interchange File Format (XLIFF)—and for interoperability of component technologies, as well as for adaptable, flexible, and dynamic process management (workflow).

A localization process based on sophisticated translation and process technologies requires translators (or *localizers*) with a significantly different skill set than that supported by training courses in traditional translation studies (Schäler, 2007). As Locke (2003) points out, it is critical that academic course offerings are supplemented by professional certification programs such as those offered by the Institute of Localization Professionals (TILP).

Localization for All: Access to Information as a Human Right

One of the challenges of current mainstream internationalization and localization efforts is the need to become more inclusive. As an anonymous blogger (2008) on a well-known localization industry blog said: "Information should not be the right of those who speak a G-7 language." Most of the localization decisions—that is, whether or not to localize specific digital content into specific locales—are based on financial criteria: Internationalization and localization have become an instrument of the economic globalization strategies of large multinational corporations, when the industry could take up the challenge to develop models that would allow them to extend their efforts beyond that of catering for purely commercial requirements (Schäler & Hall, 2005).

Access to information and knowledge in *your* language is now considered a fundamental human right (De Varennes, 2001) that is deeply rooted in the legal systems of many countries where it is considered to be as important as access to health care and other potentially life-saving services. While people in the northern hemisphere claim these rights for themselves, they do not always afford them to others, as there is a cost involved in the realization of these rights. At the same time, there is a *human* cost resulting from this denial of service which, in turn, results in life-threatening information poverty. Organizations such as the Rosetta Foundation are collaborating with organizations, industry associations, and initiatives such as the Globalization and Localization Association (GALA) and the Localization World Conference series, as well as with nonprofit organizations such as Health Information for All by 2015 (HIFA2015), to claim the right of access to information

in their own languages for those to whom this right has so far been denied because they cannot pay for it. Crowdsourcing—that is, strategies to involve the "crowd" in localization—and new technologies supporting collaborative localization and translation provide advanced support frameworks for these efforts.

SEE ALSO: Computer-Assisted Translation; Language and the Digital Divide; Technology and Culture; Technology and Terminology; Technology and Translation

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Interpreting Techniques and Modes

BARBARA AHRENS

Interpreters provide communication between persons who do not speak the same language. They convert the message and the contents of speeches that are presented in one language into another language. The language of the original speech is called the source language, while the other language is known as the target language. In interpreting, speeches or segments of speech are also referred to as texts, i.e., the original speech is the source text and the interpreted speech is the target text. In spoken language interpreting, interpreters act on orally presented texts and deliver a spoken text in turn. In signed language interpreting, interpreting is done either between spoken and sign language and vice versa or between sign languages (Corsellis, 2008, pp. 3–4).

Interpreting does not imply a word-for-word rendering of the source text, but an idiomatic delivery of the original message in the target language in accordance with the linguistic and cultural conventions and norms of the target language. In specific settings, e.g., in court, accuracy and verbatim requirements may considerably influence the choice of target language wording (Hale, 2004, p. 3).

When providing this communicative service, interpreters can utilize different interpreting techniques and modes. The choice of mode depends on the situation and the setting, the degree of formality, the length of the speech (segments) that is (are) to be interpreted, and the availability of the technical equipment necessary for certain interpreting modes.

On the basis of their processing characteristics in general and the time flow of the source and target text presentation in particular, *consecutive interpreting* and *simultaneous interpreting* are the most general modes which can be distinguished. All other types of interpreting with their specific techniques fall into one of these two categories. Hybrid modes combine consecutive and simultaneous processing specificities. Also in signed language interpreting, the alternation of simultaneously and consecutively rendered segments can be observed, e.g., spoken into sign language (simultaneous mode) and vice versa (consecutive mode).

Consecutive Interpreting

Consecutive interpreting (CI) is the most ancient and natural form of interpreting, as it does not require any technical equipment. It has been practiced ever since people or communities of different cultures and languages have had contacts—whatever the purpose of these exchanges might have been (belligerent, peaceful, commercial, political, etc.) (Pöchhacker, 2004, p. 15).

In any form of CI, the target text is produced after the delivery of the source text. The source text can either be an entire speech or a passage of a long speech that is interpreted paragraph by paragraph. Source texts thus vary in length from one sentence or a few minutes up to 10 to 12 minutes (Kalina, 1998, p. 23).

In CI, the speaker delivers his or her speech in the source language. The interpreter listens and analyzes the incoming text, memorizes its message, partly through memory, and partly by taking notes. When the speaker finishes or pauses, the interpreter takes over and renders the message in the target language by retrieving the memorized information from his or her memory and notes.

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A consecutive interpreter needs sound analytical text-processing skills and has to be able to quickly detect text structures and argumentative patterns on the basis of logical links and connectors, as well as thematic progression. Additionally, he or she needs speaking skills since CI implies being present in the room, e.g., sitting at the same table with the delegation(s) or person(s) he or she is working for. Since CI is considered proof of analytical skills and interpreting strategies, CI is still an integral part of interpreter training at universities and interpreting schools (e.g., Sawyer, 2004) as well as of conference-interpreter accreditation tests of institutional employers such as the United Nations (UN) or national ministries (Ahrens, 2009, p. 364).

Memory plays an important role in CI. Most of the source text information is stored in medium-term mnemonic structures from where it has to be retrieved. Retrieval is supported and triggered by the interpreter's notes. During the delivery of the original speech, the interpreter is free to take notes using a special note-taking technique which is content-based instead of word-based. Note taking is a highly individualized tool since the way an interpreter records source text content depends on his or her own processing skills, general knowledge stored in long-term memory, familiarity with the topic, and his or her experience in CI. Note taking, however, is not an exclusive tool of conference interpreters; it is also used in any type of community interpreting, in court, etc. (e.g., Corsellis, 2008, p. 75; Kelly, 2008, p. 36).

CI techniques are often categorized according to the setting and situation where they are practiced: CI assignments with the delivery of long and formal speeches belong to the domain of conference interpreting, using CI on very official and high-level occasions, such as ministerial press conferences or after dinner speeches, when CI offers high-quality target texts as far as language and style are concerned.

But there is also the widely used "short consecutive" interpretation (Pöchhacker, 2004, p. 19), i.e., where shorter passages or even single sentences are to be rendered in the target language. Short consecutive can be done either with or without notes. Many interpreters tend to note down at least proper names and figures, even in very short passages. In short consecutive assignments, the interpreter often works in both directions—from the source into the target language and back—mostly without notes and in dialogic constellations, such as bilateral negotiations or liaison settings. Due to this bidirectionality, these CI forms are also referred to as bilateral interpreting (Pöchhacker, 2004, p. 16).

Short consecutive can be regarded as the typical mode for the most natural and ancient type of interpreting, which is called "community interpreting" (Longley, 1984, p. 178), but also "liaison interpreting" (Gentile, Ozolins, & Vasilakakos, 1996) or "dialogue interpreting" (Wadensjö, 1998, p. 50). It has been practiced—usually as face-to-face CI—since there have been contacts between different linguistic and cultural groups. In these types of interpreting, settings and situations define the interpreting technique applied. They have more of a conversational nature and are thus more interactive, such as in many community, social, or medical settings, where foreigners, migrants, and refugees, etc. require interpreting services for their conversations with the authorities, schools, physicians, etc. Because of the settings in which it takes place, this kind of interpreting is also called "public service interpreting (PSI)" (de Pedro Ricoy, Perez, & Wilson, 2009).

CI in community or PSI settings is characterized by intrasocial relations rather than international connections, such as the more or less institutionalized contacts between different linguistic and cultural communities living in one country (see the examples given in the foregoing). Nowadays, multiethnic societies are a common phenomenon all over the world; thus the need for intrasocial interpreting services is increasing. In countries with a long tradition of immigration, such as the United States of America, Canada, Australia, or Sweden—just to name a few—the need for interpreting has been acknowledged officially since the 1960s, whereas in other countries it took more time to raise awareness

for these matters (e.g., Pöchhacker, 2004, pp. 14–15). This is also true for signed language interpreting (e.g., Napier & McKee, 2010). Consecutive community interpreting not only requires linguistic and translational skills, but also a high degree of intercultural competence and awareness. This becomes particularly evident in cross-cultural medical encounters where the interpreter serves as an intermediary for both sides with their different languages and underlying cultural values, beliefs, and norms (Angelelli, 2004, pp. 18–25).

Although CI is practiced in most cases in face-to-face situations, a remote form of CI is telephone interpreting, which is provided for business and nowadays also increasingly in public service and medical settings. It requires sound CI skills including well-trained memory and note-taking skills because via the telephone, the source text segments can be rather long (Kelly, 2008, p. 36). In the conference-interpreting domain, conversations over the telephone are interpreted in the consecutive mode, too (oral communication given by interpreters from national ministries, January 2010).

CI in any setting offers several additional advantages and disadvantages besides language and style—which are of utmost importance on formal occasions. Because this mode does not require any technical equipment it can thus be used in any room or even in mobile settings when the interpreter accompanies a delegation or group of people. These are arguments which are especially important in times of budget constraints or for space reasons. In community-interpreting assignments, low remuneration, professional training, and professionalization continue to be a problem in many domains and countries, although an increasing number of training courses and awareness-raising measures are being offered nowadays (e.g., Roy, 2006; Corsellis, 2008; de Pedro Ricoy, Perez, & Wilson, 2009).

Due to the interpreter's consecutive performance of target-text segments after the delivery of source-text segments, CI is a time-consuming mode since the delivery of the target text requires additional time. Therefore, it is an interpreting mode which is only used when two working languages are involved, e.g., at bilateral meetings. With regard to the time spent in meetings, consecutive interpreters are often asked to deliver a target language summary of the source text.

Simultaneous Interpreting

Simultaneous interpreting (SI) is considered to be the most spectacular interpreting mode since the interpreter listens and speaks at the same time, i.e., the target text in SI is an immediate rendering of the source text message. Due to its time-efficiency, it has become the dominant interpreting mode for international—and thus multilingual—meetings, such as for example those held at the UN. SI is considered to be the mode representing conference interpreting at its best. Nevertheless, simultaneous processing of the source and the target text can also be found in specific forms of SI used in settings other than conference interpreting.

Generally speaking, SI requires technical transmission equipment and a soundproof booth for the interpreters. The source text is presented via a microphone; the sound is transmitted into the booth where the interpreters listen to the text via headphones. While the interpreter is listening to the incoming source text in the original language, he or she starts producing the target text in the respective target language. The interpreter in the booth speaks into a microphone and the target text is transmitted to the audience of the interpreted text in the conference room. The audience listens to the interpretation via headsets, thus, in SI, the audience of the original speech and the audience listening to the interpreted version can sit in the same room and receive their respective texts at the same time—simultaneously!

Simultaneous interpreters work in teams of two or three interpreters per booth, according to the length of the meeting and the complexity of the topic of the conference. They

take turns of approximately 30 minutes per interpreter because of fatigue, loss of concentration, and limited cognitive resources from which they have to recover during a colleague's turn of 30 minutes.

Simultaneous interpreters listen to and analyze the source text by segmenting it into meaningful chunks, i.e., they store incoming elements in their short-term memory until they build up a meaningful chunk of information that can be uttered in the target language while continuing to listen and analyze the subsequent elements of the source text. Both CI and SI are not mere "parroting" or a word-for-word rendering of the source text, but involve strong cognitive effort in order to grasp the source-text message that has to be communicated in the target language. Due to the time they need for source-text analysis and segmentation of meaningful chunks, simultaneous interpreters work with a time lag, the so-called "ear-voice span" (Goldman-Eisler, 1972, p. 128). This is the time that elapses between the first element of a source-text chunk and the start of production of this very chunk in the target language. Experiments have shown that the average ear–voice span is 4–5 words or 2–3 seconds (e.g., Lederer, 1981, p. 290), but it is an individual parameter that might vary due to the density and complexity of incoming chunks, proper names and figures, the interpreter's familiarity with the topic and the speaker, his or her experience in SI, or his or her fatigue, which means that the ear–voice span is not fixed at a determined value, but varies during the course of a speech.

As SI requires technical equipment for the transmission of the acoustic and visual signals of the source and the target text, it can be performed over long distances. In addition to the traditional conference setting where the booths are in the conference room with a direct view of the speaker(s) and the audience, there are also so-called remote interpreting settings where the interpreters are not in the same room with the speaker and the audience; and under extreme circumstances, the speaker and the audience might also be at separate locations. Nowadays, video-conferencing technology can integrate SI equipment for the simultaneous interpreting of video conferences (Brähler ICS, 2011). Research and developments in this field of SI have been triggered by technological progress and pressure on conference budgets, etc. (Braun, 2006, pp. 6–7). The setting and the technology used in video-conference interpreting have to fulfill certain technical standards in order to guarantee the sound and picture quality required for SI (AIIC, 2002). The latest development in SI is the use of Internet technology in order to offer SI online via the World Wide Web (Lang, 2009).

One special type of SI is simultaneous interpreting in the media, as practiced nowadays during live broadcasts of important political, cultural, or sports events (Kurz, 1997, pp. 198–202). Media interpreting imposes special requirements for interpreters with regard to their resistance to stress, spontaneity, speed, as well as flexibility and tolerance in dealing with sometimes difficult technical conditions and, occasionally, unusual working hours (Kurz, 1997, p. 196). Moreover, television networks and TV editors expect a mode of speaking on the part of the interpreter that is "media-oriented," i.e., it should be similar to that of trained moderators and speakers in the media (Kurz, 1997, p. 203).

Another variant of SI is simultaneous interpreting with a written text. Here the interpreter in the booth has a written manuscript of the speech in the source language, but this document is always subject to the premise that it has to be checked against delivery, because speakers may deviate from their prepared texts. As a comparison of the written text and the acoustic input represents an additional requirement during the comprehension and analysis phase in the SI process, SI with a written text represents an especially complex form of SI.

Even if SI generally requires the corresponding conference technology and is, therefore, also referred to as "booth interpreting" (Kade, 1967, p. 9), it is also applied in situations in which no booth is available (e.g., for space or cost reasons). This form of SI is known

as whispered interpreting (*chuchotage*), where the interpreter works simultaneously without a booth by whispering the interpretation directly into the listener's ear. Whispered interpreting is a form of SI which is also often practiced in community-interpreting settings or in court, e.g., in order to speed up procedures (Corsellis, 2008, p. 25). This special form of SI is very taxing physically, as the interpreter is directly exposed to all of the acoustic influences and disruptive factors in the room and frequently even has to assume an uncomfortable posture behind or next to the person listening to him or her. For this reason, whispered interpreting is only feasible for one to two listeners. If the number of listeners is larger, SI with booths should be used. Whispered interpreting is also partly practiced using a wireless system comprising headsets and a microphone for the interpreter, which was originally developed for plant tours, etc., but which is also used in SI settings (frequently because of a presumed pressure to economize) (Farwick, 2009, pp. 45–6). However, it absolutely cannot replace the customary simultaneous interpreting booth. Whispered interpreting, with or without a wireless system as described in the foregoing, cannot adequately replace either real SI or CI and is accepted by interpreters only under certain circumstances, as a rule (e.g., lack of space, very small number of listeners, etc.).

Hybrid Manifestations of Interpreting

By hybrid manifestations of interpreting we mean those techniques during which the source text is not presented orally or through sign language but in writing, or which can be characterized by a mix of the previously described modes of consecutive and simultaneous interpreting. As far as the alternation of different forms of CI and SI is concerned, both court interpreting and signed language interpreting can be considered hybrid modes.

With sight translation, the source text is solely available in writing, in contrast to SI with a text. From a written text, the interpreter formulates the target text while simultaneously reading the text, quasi in real time. In other words, this technique is similar to SI.

Another hybrid form is known as "simultaneous consecutive interpretation," where the reproduction of the interpreting is done consecutively; but the interpreting technique is simultaneous because the interpreter is not interpreting on the basis of his or her memory and note taking, but on the basis of a recording of the source text. With this technology-assisted interpreting mode, the interpreter records the source text on a digital voice recorder during the presentation and listens to it by means of a small headphone while simultaneously interpreting this speech into the target language (Ferrari, 2007). In terms of the time flow of the source- and target-text presentation, simultaneous consecutive is a consecutive mode, which explains its hybrid character. Even if this mode is viewed as being a guarantee for the completeness of the interpretation for certain fields of application, such as at court (Camayd-Freixas, 2005, p. 40), tests of this mode have tended to show drawbacks in comparison with traditional CI (Pöchhacker, 2007).

Court interpreting is a form of interpreting which holds a special position within the modes of interpreting, owing to its special characteristics. In addition to aspects such as the legal basis and the formal requirements in the respective legal systems, the statutorily defined role of the interpreter or the language pairs required (e.g., González, Vásquez, & Mikkelson, 1991; Hale, 2004), it is especially the mix of interpreting modes which makes interpreting in court such a challenge. Depending on who needs an interpretation at any given moment, the interpreter whispers, then interprets consecutively or provides a sight translation (e.g., when documents are being presented) (Driesen, 1985, p. 36). The rapid alternation of mode requires high concentration and a certain familiarity with the modes in question. With the exception of international courts, such as the International Criminal Court or the European Court of Justice, at which SI is used, court interpreting at national

courts can be classified as a hybrid form, as different modes are used in constantly alternating sequences.

As already mentioned above, signed language interpreting is provided simultaneously when sign language is the target language. When interpreting into spoken language, the target text can either be delivered consecutively or simultaneously (Corsellis, 2008, pp. 3–4). In the latter case, it could be done by whispering if only one or two listeners are present. If more people need simultaneous interpretation into spoken language, the interpreter will have to use a wireless system comprising a microphone for the interpreter and headsets for the audience.

SEE ALSO: Community Interpreting; Conference Interpreting; History of Interpreting; Legal Interpreting; Liaison Interpreting; Media Interpreting; Signed Language Interpreting: Types, Settings, and Modes

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Interviews

DEBBIE G. E. HO

The interview is one method applied linguists use to explore language-related problems. Most interviews are carried out as conversations between people, including the researcher and a respondent whose beliefs, opinions, attitudes, and feelings are relevant to the language issues investigated. Interviews are typically used in exploratory and qualitative research to gather data about beliefs of individuals or groups, but different types of interviews are used for different purposes, including data collection in quantitative research.

Types of Interviews

Broadly speaking, three types of interviews are used in applied linguistics research: the structured, semi-structured, and unstructured interview (see Table 1, which highlights their characteristics). In the structured interview, the researcher decides upon the questions in advance and the interview adheres strictly to a script. The structured interview thus provides for the most robust test of a hypothesis. For example, the question "How many languages do you speak?" might be asked in a structured interview on multilingualism. The advantage of structured interviews is that they can be efficient and suitable for a large sample. The recording of relevant information can be accomplished without time-consuming transcription, and the data are easy to analyze. The reliability of the administration is not difficult to arrange with a trained interviewer, in the sense that all respondents are asked the exact same questions and given similar clarifications. The consistency in the research procedure serves to minimize influence from both the interviewer and the research instrument, thus increasing the probability of producing reliable findings. Respondents' anonymity can be easily guaranteed in structured interviews if a large sample is used. On the other hand, there are clear disadvantages to such interviews: they produce only simple descriptive information, and they can fail to obtain any depth and individuality in people's perspectives or viewpoints due to the structured responses they elicit.

A semi-structured interview addresses this problem by allowing the interviewer some room for improvisation by following up respondents' responses to the fixed questions. After asking for languages that a respondent speaks, for example, the interviewer may ask, "Do you have specific times that you use each language?" to encourage the respondent to reveal more about the relative role of each language in his or her life. Answers to the follow-up question could provide information about the relative strength and importance of each language to the respondent. This form of interview is most common in qualitative work where there is a desire to hear what respondents have to say on topics or areas identified by the researcher. Examples of such interviews can be found in Kvale (1996) and Ho (2006). The most diverse and common type of interview, the semi-structured interview has several advantages, such as the reliability of obtaining specific types of information from respondents and allowing for freedom to stray from a rigid script or schedule. It allows for improvisation on topics to be explored, particularly things which are of interest to all parties concerned. One difficulty with the semi-structured interview is in analysis. It is more difficult to achieve a "reliable" analysis of open-ended responses as the interviewer may need to explain some questions to some respondents but not all.

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Table 1 Types of data and corresponding interview types

Type of data	*Interview types*	*Interview characteristics*
Quantitative: • Data can be labeled and categorized clearly. • Data are easily subjected to statistical analysis and inference frequently follows. • The focus is on trends of whole samples rather than a detailed study of a few cases.	• Structured interviews.	• The interview is usually used for gathering basic background information, e.g., age, educational level, gender, age, etc. • A "positivist" approach, i.e. that there are objective facts out there to be discovered through robust study leading to generalizations and laws explaining a phenomenon. • The interview schedule is fixed and rigidly followed. • Respondents are expected to answer only what is asked. • Data are analyzed to produce numerical summaries.
Qualitative: • Data are in the form of complex stories, images, description. • Data are not easily labeled or categorized. • Data are often not open to generalizations.	• Semi-structured and/or unstructured interviews. • Open-ended questions.	• The interview yields complex data. • The emphasis is on subjectivity involving respondents' subjective perspectives, feelings, etc. • The analysis can be complicated. • Conclusions reached may be open to criticism, further discussion, etc. • Respondent's perspective is, however, confined to items selected by the interviewer. • There is no explanation of the respondent's input, but only those selected by the interviewer in advance.

Finally, compared to structured interviews, individuals in semi-structured interviews might be easily identifiable, which compromises the assurance of respondents' anonymity.

The latter two issues are also challenges for the unstructured interview, which is also known as naturalistic, intensive, autobiographical, in-depth, narrative, or nondirective (Holland & Ramazanoglu, 1994). The unstructured interview is based on a list of broad topics or themes and is explorative in nature. The direction it takes is largely set by the respondent. Respondents, for example, could be led into relating a story or an event through a question such as, "I hear that students at this school often play jokes on the English teachers. Have you ever done this?" The interviewer uses a prompt which consists of a list of possible topics to be explored. An example of the unstructured interview is ethnographic interviewing (Atkinson, Coffey, Delamont, Lofland, & Lofland, 2002). In applied linguistics, this data collection method is most often used early in a study as a means of generating a script for subsequent semi-structured interviews. Other examples of unstructured interviews can be found in Lutterall (1997) and Whyte (1943). In an unstructured

interview, the most important consideration is to obtain rich information about the topic rather than consistency in administration and data analysis. Therefore, reliability in elicitation and analysis of respondents' responses is not the goal. Further readings on the issue of reliability and validity in interviewing can be found in Minichiello, Aroni, Timewell, and Louis (1990), and Seidman (1991), and Burns (2000).

The main advantage of an unstructured interview is that it allows the researcher to hear the issues that the respondents raise and their own words as they describe their beliefs and perspectives. Researchers conducting unstructured interviews seek a nonpositivist view of social science knowledge which is able to provide findings that are different from those provided by other types of studies. However, such researchers also face a number of challenges. First, transcribing an unstructured interview can be time consuming. It is more difficult to gain commitment from respondents because such interviews can be quite lengthy. Added to this is the difficulty of ensuring respondents' anonymity due to the small sample size typically used in such studies and the distinctive features that lie in the data. These make it easy to identify individuals in the report. Informants may also express their perspectives using measured words in view of their understanding that they may be identified. When more than one respondent is interviewed at a time, researchers can conduct a focus group interview. The focus group format can include about eight to ten respondents. The aim is not so much to gather facts from individuals, but to explore the range and depth of "shared meanings in an area" (Gubrium & Holstein, 2002, p. 58). The idea is that public opinion can be solicited more effectively in an environment where respondents are encouraged to communicate with one another through conversation.

Interview Tools

The guiding framework for structured and semi-structured interview investigation is the interview schedule that is drawn up prior to the actual interviewing. The interview schedule is a list of all the questions the researcher believes are useful for obtaining information about the event or phenomenon under study. A good starting point to designing an interview schedule can be found in Lofland (1971). The questions included in the interview schedule are those that may have either direct or indirect bearing on the research. The questions are sorted and discarded accordingly based on relevance and time constraints.

The type of questions included in the interview schedule may consist of closed and open-ended questions. Closed questions are more restrictive and they limit the range of possible responses. In contrast, open-ended questions act as triggers to motivate respondents into talking freely about the topic under discussion. Open-ended questions are more appropriate if the goal is to collect information about people's experiences and opinions. However, the value of such open-ended questions in a structured interview is "double-edged" (Arksey & Knight, 1999). Because responses to open-ended questions can be long and detailed, they can prove difficult and time consuming to analyze.

Another interview tool is an interview guide, which is often used for semi-structured and focus group interviews. The design is similar to the interview schedule but typically includes more open-ended questions in order to promote communication. Since the goal is to probe and prompt responses, clarification, and elaboration, the interview guide includes both core questions and prompts that can be used as follow-up questions to generate more complete and in-depth responses. The guide also includes techniques for returning to more neutral ground following personal or emotionally charged topics. The interview guide often concludes with questions that allow respondents to add to the information that has already been disclosed. For a detailed overview of steps in conducting successful interviews, see Burns (2000).

Although there is an association between interview type and question type, it is not an exclusive relationship. Closed questions, for example, are often asked even in unstructured and semi-structured interviews, particularly in collecting background information. And an open-ended question may be asked in a more structured interview.

Ethical Considerations

Interviews involve ethical issues that must be considered, particularly the need to protect the rights of the participants. One of the main ethical considerations is to obtain the respondent's consent. Voluntary participation should always be sought and the researcher should keep in mind that respondents have the right to withdraw at any time. Consent may be needed at more than one level when institutions or some populations are involved. For example, a researcher may obtain consent from a school administrator, but this does not necessarily imply that consent from the teachers or students in that school can be assumed.

Another ethical consideration that frequently arises is how much information should be given and when. Sometimes, providing detailed information about the research topic in advance of the interview can affect participants' responses. If this is the case, then any vague or misleading information should be corrected in a debriefing session. Confidentiality is also an ethical concern in interview research as the participants' identities can be revealed through their answers, particularly in semi-structured or unstructured interviews. To ensure confidentiality, data that identify the respondents in any way should not be reported. If the study contains information that is potentially recognizable to others, then consent for publication must be obtained. Protecting the privacy of participants through the use of fictitious names and concealing identifying features are important issues in the reporting of interviews, as a breach of confidentiality could lead to undesirable ethical and legal consequences.

SEE ALSO: Analysis of Dialogue; Ethics in Research; Focus Groups; Interviews in Qualitative Research; Validity: Mixed Methods

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Interviews in Qualitative Research

KATHRYN ROULSTON

Interviews are social interactions in which researchers ask questions of people for the purpose of collecting data for social research. Research interviews are a subset of a larger group of interactional events called "interviews," all of which are characterized by question–answer sequences. These include clinical interviews, counseling interviews, forensic interviews, job interviews, and journalistic interviews. Social science researchers have used interviews for many decades to study language, language use, and language learning —topics central to applied linguistics. Applied linguists have incorporated qualitative interviews in research designs, including case studies, mixed methods studies, oral and life history studies, and ethnographies to examine language use and experiences of language learners. Unlike studies in which researchers use quantitative methods to analyze interview data (e.g., studies of language variation or dialect atlases), studies using qualitative interviews focus on examining peoples' experiences, perspectives, and meaning making. While interviewers conducting standardized surveys ask questions in predefined sequences and participants' responses are guided by preestablished coding schema, qualitative interviewers take a less structured and more open approach to asking questions and discussing research topics with interviewees. Interviewers guide talk via semi-structured interview guides, and talk is more open-ended or conversational in nature. Whereas standardized survey interviewers must ask the same questions in the same sequences to multiple participants, qualitative interviewers emphasize individual participants' meaning making with a view to generating *etic* or "insider" descriptions of lifeworlds. Therefore, qualitative interviewers follow up on participants' talk by asking further questions that generate varying descriptions among individual participants.

Forms of Interviewing in Qualitative Research

Although researchers frequently use the term "qualitative interviews" generically to describe interactions in which question–answer sequences are used to elicit information about informants' lives, opinions, attitudes, and experiences, more specific terminology has developed in methodological literature to describe various forms of qualitative interviewing. The focus group is one form of group interview that is widely used in social science research. Common types of individual interviews include phenomenological, ethnographic, feminist, oral, and life history interviews. While these labels are discussed separately for heuristic purposes here, in practice labels overlap and are often used in complementary and interchangeable ways. For example, researchers might combine terms to describe a research design (e.g., "feminist ethnography" and "narrative life history").

Phenomenological Interviews

Phenomenological interviews are informed by an interest in generating data that describe human experience in rich, detailed, and nuanced ways. Developed by Edmund Husserl (1859–1938), phenomenology as a philosophical approach to examining the essential aspects or "essences" of human experience has developed into diverse strands. Some researchers situate their use of phenomenological interviews within these respective traditions—such

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as Husserl's transcendental phenomenology or Martin Heidegger's (1889–1976) hermeneutic phenomenology. Others view any open-ended qualitative interview as "phenomenological" in intent, when defined as focusing on aspects of "human experience." If the purpose of a qualitative interview is to develop deep understanding of participants' experiences, understandings, and meaning making, then much qualitative research relies on phenomenological assumptions even if these are not made explicit in research design statements. Researchers who use interviews informed by phenomenology stress the importance of asking open-ended questions of participants that provide opportunities for them to give detailed descriptions of particular experiences and the meanings ascribed to those experiences, for example:

> Think of a time when you have experienced _____, and describe that for me.

The interviewer takes the role of a neutral coresearcher who assists interviewees to freely articulate lived experiences with little input or comment from the interviewer. Well-placed follow-up questions elicit further description of the event or experience that is the focus of inquiry. Christine Sorrell Dinkins (2005) has described innovations to the phenomenological interview in which the interviewer uses a Socratic approach to question participants in order to elicit the reasoning for their answers, rather than simply focusing on generating descriptions of their experiences. Here, the interviewer plays a more active role in following up on participants' responses and questioning, rather than accepting at face value interviewees' reports.

Ethnographic Interviews

Ethnographic interviews draw on many decades of practice described by anthropologists and sociologists in which researchers spend extended periods of time in field settings observing events and activities in naturalistic settings, participating in various cultural events, collecting various forms of data such as documents and artifacts, writing field notes, and talking to participants. In ethnographic traditions, the researcher's lengthy participation in research sites, as well as his or her reflections and questions about scenes, activities, and actions observed informs how questions are asked, and what topics are discussed. In addition to informal interviews and conversations, researchers may also arrange more structured, formal interviews. Both informal and formal ethnographic interviews may be conversational in style, yet questions posed are formulated in relation to the phenomenon of inquiry (e.g., Spradley, 1979). For example, researchers may want to learn about how events and activities routinely unfold, or what folk terms are used by members of a community, through questions such as:

> Tell me about a typical day for you.
> Tell me how you usually do *x*.
> What words do you use to describe *y*.

Doris S. Warriner (2007) provides an example of how informal and formal ethnographic interviews with participants—in this case, students, teachers, and administrators—might be combined with participant observation in her ethnographic study of language learning of women refugees in an adult ESL (English as a second language) program.

Feminist Interviews

Feminist interviews have been developed and described over the past 30 years, and stem from a focus on addressing women's experiences through the lens of feminist theories

(e.g., Hesse-Biber, 2007). Feminist research is characterized by the use of a variety of interview forms, including life history, narrative, conversational and ethnographic interviews, or focus groups. What distinguishes an interview as "feminist" is the focus on developing ethical relationships with women and doing research that forwards feminist agendas. Sociologist Marjorie DeVault (1990) proposes a number of feminist interviewing strategies, including exploring women's terms and categories, rather than those imported to the interview setting by the researcher; listening sensitively for moments within interviews in which women do not fully articulate their experience and pursuing these in greater depth; representing women in respectful and ethical ways in reports; and writing up research findings in ways that may be understood by audiences new to feminist agendas.

Oral and Life Histories

Oral and life histories have long been used by historians to record people's life experiences and chronicle events (Ritchie, 2003). In this form of interview the researcher elicits stories from participants providing details of their lives and events relevant to the research topic. Researchers who value realist accounts may use documentary data to check the facts provided by participants in order to validate the truthfulness of descriptions. In contrast, qualitative researchers using postmodern perspectives are more likely to focus on social justice issues rather than a search for "truth," and use multiple theoretical perspectives—such as critical and feminist theories—to analyze oral histories (e.g., Janesick, 2010). Exemplifying how life history interviews can inform the study of language, Sandra Kouritzin (1999) examined first language loss through a multiple life history case study. This study presented data in the form of individual life histories, in addition to a cross-case analysis of data, demonstrating two forms of analysis and representation common to narrative inquiry. Julia Menard-Warwick (2007) also used life history interviews in her ethnographic study of identity and second language learning. Data analysis involved coding to identify central themes, as well as discursive analysis of a narrative to examine performances of gender.

Designing Qualitative Studies That Use Interviews

A number of steps are involved in designing studies that employ qualitative interviews. These include (a) ensuring that interview data are well suited to examination of the research questions posed, (b) considering criteria for sampling and participant selection, (c) developing an interview guide with questions aligned with the interview tradition selected, (d) gaining approval for human subjects research and considering ethical issues, (e) recruiting participants and scheduling interviews.

First, qualitative interviews are used by researchers working from a range of theoretical traditions (e.g., interpretivist, emancipatory or critical, and deconstructive or poststructural), using a variety of research designs (e.g., case study, ethnography, participatory action research, life history, narrative inquiry, and so forth). When selecting methods, *researchers must ensure that the data generated will be effective in responding to questions*. For example, a research question that focuses on *how* people accomplish certain activities and actions could be examined via naturalistic data which demonstrate the phenomenon of interest in situ. Participants' interview descriptions will provide recollections about activities, rather than data about *how* the activity is accomplished. Qualitative interviews are well suited to examining research questions that focus on participants' meaning making, reflections on experiences, life stories, and perspectives of activities and events.

Second, research proposals describe the *selection and sampling methods* used by researchers to specify the criteria by which a specific population is chosen for inclusion in a study, as well as how potential participants will be sampled. Since qualitative interviews are time

intensive both in terms of conducting interviews and transcribing and analyzing data, qualitative studies are likely to have fewer participants than large-scale studies involving national samples. There are a variety of criterion-based sampling strategies commonly used by researchers using qualitative interviews (see LeCompte & Preissle, 1993). These include snowball or network sampling in which succeeding participants assist with identifying potential participants, reputational case sampling in which the researcher seeks recommendations from experts or gatekeepers in a community, or theoretical sampling in which participants are recruited to further examine a particular phenomenon identified in initial fieldwork. Researchers make decisions with respect to selection and sampling criteria in conjunction with deciding on the projected numbers of participants, as well as duration and number of interviews. Decision making is informed by the cost and time line for a project and the resources needed to complete it.

Third, *initial interview guides* are prepared during the design phase of a study. Researchers formulate questions with reference to the form of interview selected (e.g., phenomenological, ethnographic, oral or life history, or feminist) and relevance to the research questions posed. It is a useful step to project the kinds of information anticipated in response to specific interview questions and check if the hypothesized data respond to the research questions. Researchers frequently test interview guides in pilot studies to discover whether interview questions are effective and how they might be revised. In this phase, it is worthwhile examining if participants make sense of questions in the ways that interviewers intend.

Fourth, although specific procedures vary across countries, researchers seek *institutional approval for research involving human subjects*. This invariably involves submitting a proposal to the human subjects review board of the researcher's university (in the USA, these are called Institutional Review Boards). In the case of studies that involve other institutions such as courtrooms, hospitals, or schools, researchers also seek approval for research from administrators or review boards within the specific community. Ethical issues to be dealt with in interview research include adequate explanation of the purpose of research projects to potential participants ("informed consent"), safeguarding data, and ensuring confidentiality of participants' identities. Other issues—such as representation of participants, dissemination of findings, handling data that are potentially harmful to participants, or reporting information concerning participants' activities that cause concern (e.g., an adolescent's report of self-harm, or abuse)—may arise in research projects in relation to specific topics, settings, and participants. Researchers must give careful thought to these issues in order to respond sensitively on a case-by-case basis.

Fifth, once institutional approval for a study has been obtained, researchers must devise steps to *recruit participants and schedule interviews*. The methods by which participants are recruited will vary considerably according to the research design of the study. For example, in ethnographies, participants might be recruited personally by the interviewer after some months of participant observation. In a study in which interviews are the sole method of data collection, a researcher might invite participants via a notice on an electronic listserv, by placing fliers in public spaces, or by advertising in newspapers. In some settings, effective recruitment relies on the recommendation of a knowledgeable gatekeeper in a community, and researchers may need to spend considerable time in relationship building prior to conducting interviews. Once participants have been recruited, the researcher must schedule interviews at a mutually agreed-upon location. Researchers commonly use digital equipment to audio record interviews, and it is useful to avoid scheduling interviews in public spaces, since external noise inhibits the production of high-quality recordings. It is important for interviewers to double-check recording equipment prior to interviews, have extra equipment at their disposal in case of failures in technology, and to become familiar with the technologies required to record, download, transcribe, and safeguard the storage of audio files and transcriptions for later retrieval.

Conducting the Interview and Asking Questions

A "good" interview is commonly understood as one in which participants are forthcoming and cooperative in their engagement with interviewers. Numerous methodological descriptions of how to formulate and ask questions recommend that qualitative interviewers ask open questions, allow sufficient wait time for participants to answer, follow up responses with thoughtful probes to elicit further description, and listen respectfully to participants. For interviewers using semi-structured and unstructured formats that seek participants' narrative descriptions, "probes" or follow-up questions of the following types are helpful in eliciting elaboration of prior talk:

- You mentioned _____, tell more about that.
- You mentioned _____, how do you define that? *or* what does that mean to you?
- You talked about _____, could you describe a specific example of that?
- You've told me about _____, what was that like for you?

Interviewers might also clarify their understandings of participants' talk via closed questions, such as:

- Would I be correct in saying that _____?
- I've understood you to say that _____. Is that right?
- Would you agree that _____?

Interviewers must also reflect on their subject positions in relation to the research topic and research participants so that they can adequately prepare to ask the kinds of questions that might be discussed with participants. For example, researchers conducting interviews about topics with which they are very familiar—"insider research"—run the risk of understanding participants to such a degree that they fail to elicit sufficient description, since achieving mutual understanding relies less on talk than it does on background knowledge of the topic. On the other hand, researchers examining topics in settings in which they are "outsiders" may need to prepare intensively for interviews in order to know what questions might be asked and how to ask them.

Researchers must negotiate differences in culture, gender, ethnicity, age, status, and nationality—among many possible subject positions—in order to use qualitative interviews effectively with members of groups to which they do not belong. Given the huge variety of topics that researchers explore, and the infinite number of differences that potentially exist between researchers and participants of their studies, it is useful for interviewers to examine who they are in relation to the research topic and potential participants (for an example of this kind of discussion, see Warriner, 2007, pp. 311–12). Interviewers can access much advice on conducting cross-cultural interviews, and how researchers might work with groups with whom they do not share category membership (e.g., in terms of race, culture, ethnicity, language use, status, gender, health or disability, age, sexual orientation, etc.) (see Gubrium & Holstein, 2002). This is a complex issue that must be examined throughout a project, since interviewers sometimes find that even though they share a category membership with a participant (e.g., race or gender), participants may not be forthcoming in interviews because they orient to another category membership (e.g., status or education).

Issues in Conducting Interviews

In addition to seeking information and descriptions from participants, some researchers have aimed to engage participants in critical discussion of topics with a focus on

challenging or transforming participants' understandings (Freeman, 2006; Brinkmann, 2007). The impetus for this approach to interviewing is to stimulate reflection and critical inquiry within the interview setting, rather than regard interviews as simply a way to collect facts and descriptions from participants. Given that there has been a long history of social science research that has used interviews of all forms to do just that, there are few examples of research that indicate how dialogic approaches to interviewing unfold in practice and how research designs might invite participants to participate in emancipatory agendas instigated by researchers.

Researchers have also made use of the growth of the use of information and communications technologies globally to use *telephone and online modes of communication to conduct interviews*. Because new technologies offer a multiplicity of ways to talk to participants, researchers must consider a range of complex issues in relation to research design and ethics. Interviewers might conduct interviews via asynchronous (e.g., e-mail) or synchronous tools (e.g., chatrooms or instant messaging; Salmons, 2010). Researchers have conducted interviews face to face using Voice over Internet Protocols (VoIPs) such as Skype™; or using avatars in a massive multiplayer universe (MMU) such as Second Life (see James & Busher, 2009, for further discussion of theoretical issues involved in online research). While researchers expand the possibilities for recruitment of participants through use of online modes of communication, use of these interfaces complicates research by provoking questions about what counts as "real," and the evidentiary status of data gained from participants who the researcher might never meet in person. Different modes of communication both afford and limit interaction between interviewers and participants. For example, asynchronous formats such as e-mail provide opportunities for participants to think carefully and reflect before responding to questions. This may be particularly helpful for participants with certain disabilities that impede face-to-face communication. Yet, the lack of visual cues in e-mail can also lead to misunderstandings that may be more difficult to sort out than in face-to-face interaction.

Theorizing Interviews

Research interviewers sometimes express concern that certain ways of asking questions or responding to participants "bias" interview data. For example, this might include researchers asking "leading" questions of participants that assume certain kinds of experiences, or contributing to conversations in ways that provide subjective information about interviewers' beliefs, experiences, and opinions. The notion of "bias" is premised in positivist assumptions about the production of knowledge about the social world. From this perspective, it is possible and desirable for researchers to take "neutral" stances toward research topics and participants, and the interviewer's objective is to elicit data that are reflective of "truthful" descriptions of participants' psychological states and descriptions of "actual" worlds. This view of interview data and the human subject has been seriously questioned over several decades by researchers taking up postpositivist stances toward inquiry.

Researchers taking a constructionist perspective of research interviews view interview interaction as a socially situated encounter in which the interviewer and interviewee co-construct data collaboratively in an "active interview" (Holstein & Gubrium, 1995). From this perspective it is not possible for researchers to lay aside their subjectivities—that is, how personal biographies, social status, and locations such as race or gender interact with the topic of interest and participant—in order to maintain neutral stances. Rather than excavating "truth" about human subjects' experiences, the active interviewer's interests are displayed in the formulation of follow-up questions that take some topics as important while overlooking others. Even minimal responses to what participants have said, such as

expressions of surprise ("Oh!"), skepticism ("Really?"), or silences demonstrate interviewers' interests in research topics.

Steven Talmy (2010) has characterized two main ways in which qualitative interviews have been used in the field of applied linguistics: (a) an "interviewing as research instrument" approach, or (b) an "interviews as social practice" approach. In the former approach, a neopositivist conception (Alvesson, 2003) informs the project, in that the interview strives to ask neutral and unbiased questions to which the interviewee may provide answers that are taken as indicating actual and real interior and exterior states of affairs (Baker, 2004). In the "interviews as social practice" approach, interviews are viewed as accounts that are co-constructed in site-specific and contextually located encounters with particular interviewers and are not necessarily read as indicating "real" states of affairs. Rather, data may be viewed as possible ways of discussing topics, or "talking culture" (Baker, 2000). Talmy (2010) argues that there is a need for researchers in applied linguistics to demonstrate greater awareness of the theoretical assumptions about interviewing and the interview subject underlying research studies, and what these imply for claims made based on interview data.

Steve Mann (2011) argues that researchers in applied linguistics might pay more attention to four "discourse dilemmas." These include how interview data are co-constructed by speakers, attention to the interviewer's work, the interactional context of interviews, and consideration in analyses of both "what" is said and "how" accounts are produced by speakers. Mann offers a number of parameters of sensitivity that might be considered by researchers to develop a more critical approach to the use of qualitative interviews.

Transcribing and Analyzing Interview Data

In the broader field of qualitative inquiry, the topical content of interviews has been the focus of transcription practice, and interview excerpts are frequently stripped of the context in which they were produced in representations of findings. Sociolinguists, on the other hand, have developed sophisticated approaches to transcribing linguistic data that attend to the paralinguistic features of talk (e.g., Bucholtz & Du Bois, *n.d.*). Applied linguists, therefore, draw on a range of conventions to transcribe interview data (see Poland, 2002), with choices depending on the theoretical underpinnings of the study. Selecting what features of talk might be transcribed, then, is inextricably linked to the analytic approach that will be employed to describe, interpret, and represent data. For example, both thematic and constant comparative methods of analysis derived from grounded theory approaches focus on the topical content of talk, or words spoken. Inductive approaches to analysis reduce interview data to key concepts and ideas through an iterative process of coding. Codes are then sorted and categorized to develop "themes" or "grounded theory" responding to the research questions. This approach demonstrates an "interviewing as research instrument" perspective (Talmy, 2010), in which data are seen as a "resource" to examine topics of interest. Analytic methods that take an "interviews as social practice" approach (Talmy, 2010)—such as some forms of narrative analysis and conversation analysis—view the co-construction of research interviews as a "topic" of analysis, and may use conventions that provide information about paralinguistic features of talk to examine phenomena such as turn taking, sequential structure, and repair.

The wide array of work represented by *narrative inquiry* approaches to research demonstrates both of these theoretical tendencies. For example, Amy Tsui (2007) conducted a study using narrative inquiry to explore the experiences of an EFL (English as a foreign language) teacher's formation of professional identity in mainland China. This article uses the participant's multiple stories to construct a chronological account that focuses on identity formation over time. Other researchers have examined the structure of participants'

storytelling (e.g., Riessman, 2008, for a review of structural approaches to analysis). Interestingly, the model of narrative structure developed by William Labov and Joshua Waletzky (1997) in their study of language variation, while influential in narrative inquiry, has been challenged by researchers who have attempted to replicate the sociological interview method in other settings (Milroy, 1987).

Quality in Interviewing

The "quality" of qualitative interview studies must be assessed in relation to the theoretical assumptions employed in the study, and the discourse community in which a researcher situates his or her work (Hyland, 2000). Thus, researchers must attend to the standards by which the quality of a particular study might be judged within a particular discourse community when designing and conducting a research study (Freeman, deMarrais, Preissle, Roulston, & St. Pierre, 2007; Roulston, 2010), and provide rationales for decisions which push the boundaries of normative research practices. Judgments concerning the merit of a particular study involve assessing the design of a study, how interviews were conducted, representation and interpretation of interview data, and whether researchers have presented sufficient evidence to warrant claims.

SEE ALSO: Conversation Analysis and Interaction in Standardized Survey Interviews; Conversation Analysis and Interview Studies; Focus Groups; Interviews; Narrative Discourse; Phenomenology and Hermeneutics; Transcription

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Invented Languages in Language Policy and Planning

HUMPHREY TONKIN

The impulse to create languages has a long history, extending back at least to the "Lingua Ignota," essentially a simplified Latin, devised in the 12th century by the Abbess Hildegard of Bingen (1098–1179). The impulse is related to a strain of linguistic perfectionism traceable through much of human endeavor, particularly in the Western tradition. In Christian contexts it is sometimes related to a desire to rediscover the supposed ur-language, the Adamic, unfallen language, spoken by Adam and Eve in the Garden of Eden. Invented languages are sometimes literary exercises, for example, the language of the Utopians imagined by Thomas More (*Utopia*, 1516), or the nonsense languages in Rabelais's *Gargantua* (1534) and *Pantagruel* (1532) and Shakespeare's *All's Well that Ends Well* (1603). In our day, such imaginary languages include Elvish and the numerous other languages that ornament the fiction of J. R. R. Tolkien (1892–1973), derived particularly from his lifelong interest in Anglo-Saxon and Scandinavian philology. The language of *Star Trek*, Klingon, composed by Marc Okrand, has gained cult status and has its devoted followers and practitioners (Okrent, 2009; on invented languages in general see Blanke, 1985; Duličenko, 1990; Albani & Buonarotti, 1994; Lo Bianco, 2004). A second branch of invented languages consists of so-called a priori or philosophical languages, created from first principles (without reference to existing languages) as taxonomies or classifications of all known phenomena and their interrelationships. The best known of these systems of logic is the language of John Wilkins (1614–72) in his *Essay Toward a Real Character and Philosophical Language* (1668). Wilkins's language inspired Peter Mark Roget in the compilation of his *Thesaurus* (1852). Other contemporaries of Wilkins who speculated on the possibility of creating a linguistic system that would explain the natural order include René Descartes, Isaac Newton, and Gottfried Leibniz (Knowlson, 1975). Today, such linguistic systems as Loglan and Lojban, and minimal languages like Toki Pona, are inheritors of this tradition.

A third branch consists of a posteriori languages, modeled on existing languages (Blanke, 1985; Schubert, 2002). Though some are intellectual exercises (the creation of "conlangs" has a considerable following on the Internet and elsewhere), others are serious proposals to confront "the language problem"—the assertion that linguistic diversity impedes international communication and is best overcome by an easily learned neutral language advantaging no particular language group. Study of the conditions and requirements for such a language is known as *interlinguistics* (Schubert & Maxwell, 1989). It has implications for numerous branches of linguistics and language pedagogy.

Other strains of invented languages, outside the scope of this entry, include restricted codes for special purposes (such as weather forecasting), interlanguages created for the use of machines, and projects for new writing systems (so-called pasigraphies).

Most languages intended for international use borrow elements from a wide range of existing languages, though some are based on a single language, with the intention of simplifying this language and thereby making it more accessible to non-native speakers or users. There are numerous examples of simplifications of Latin (e.g., Latino Sine Flexione of Peano), Slavic languages, German, Romance languages, and English. They range from naturalism (closely following the forms and characteristics of conventional ethnic languages)

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to schematism (use of a priori elements and systems along with borrowings from existing languages).

The two best known planned languages are Volapük (1879), created by the polyglot Catholic priest Johann Martin Schleyer (1831–1912), which enjoyed initial popularity but quickly faded, in part because of its inherent difficulty and in part because of internal quarrels; and Esperanto, created over a number of years by a young Jewish oculist, Lazar Ludvik (Markovich) Zamenhof (1859–1917) and published in Warsaw in 1887. Esperanto lies midway on the naturalistic–schematist continuum, consisting of a system of roots drawn from existing languages to which affixes can be added according to an entirely regular system, thereby allowing for the building of a large vocabulary on a relatively minimal set of lexemes (Gledhill, 1998). Less successful but serious attempts at a posteriori languages include Occidental (later known as Interlingue; Edgar de Wahl, 1922); Interglossa (Lancelot Hogben, 1943), based on Greek and Latin but with grammatical elements from non-Indo-European languages; and Interlingua (Alexander Gode, 1951), resulting from the work of the International Auxiliary Language Association (IALA) founded in New York in 1924 by Alice D. Morris. Interlingua, based on Romance languages, enjoyed some brief popularity as a language for scientific abstracts.

Volapük and Esperanto were the only two planned languages to develop a significant language community, and thus perhaps the only two that can be labeled *languages* as opposed to *language projects* (while the imaginary language Klingon has an enthusiastic following, there are few who can claim to speak or use it with any fluency: see Okrent, 2009, pp. 272–81). Esperanto spawned the breakaway project Ido early in the 20th century, but Ido's proponents were always few in number. Esperanto, by contrast, has an active following in the tens or perhaps hundreds of thousands, and those with some knowledge of the language may number a million or more. Esperanto's lexis is based on major European languages, though grammar and syntax display characteristics of many language families. There are speakers and users in most countries of the world, a large literature, an extensive Internet community, and a well-established oral culture. In contrast to Schleyer, whose proprietary control stifled Volapük's development, Zamenhof was acutely sensitive to the need to build a community of speakers; much of Esperanto's durability is due to the fact that the community took ownership of the language quite early on (Blanke, 2009).

The term "planned languages," often used to describe such languages created for practical use, is probably the preferred term today (Blanke, 1987; Schubert, 2002; other terms include "constructed languages," "auxiliary languages," "interlanguages," "international languages," and "universal languages," each with its terminological nuances). In some measure, all languages are planned, since they are controlled and shaped by elites and their institutions (schools, academies, the press, etc.). In corpus planning, there is a continuum, not always recognized by language planning specialists, between largely unplanned languages (ethnic or "natural" languages) at one extreme and fully planned languages at the other. Such languages as Bahasa Indonesia, heavily planned as the language of the newly independent Indonesia, and Modern Hebrew, derived primarily from a single linguistic source but with admixtures from other cognate languages, occupy a midpoint on that continuum. Basic English (C. K. Ogden, 1930), a lexical simplification of English, commanded some attention from English teachers and those interested in the Third World dissemination of English, including Winston Churchill, but was the model for George Orwell's subtractive Newspeak (*Nineteen Eighty-Four*, 1949). Numbers of smaller languages for which modern terminology has had to be created (Icelandic, Irish, etc.) lie close to the unplanned end of the spectrum but employ corpus planning academies and institutes. Planned languages often offer models to corpus planners—for example the Austrian Eugen Wüster (1898–1977), pioneer of the standardization of scientific terminology, the Estonian

Valter Tauli (1907–86), and the pioneer of Bahasa Indonesia, the writer Sudan Takdir Alisjahbana (1908–94), all influenced by Esperanto.

At Columbia University in the 1920s and 1930s psychologist Edward Lee Thorndike (1874–1949) studied the speed at which planned languages could be acquired, as compared to ethnic or "natural" languages, thereby advancing investigation of the relative ease of acquisition of planned languages (mostly Esperanto) that has resulted in several educational experiments, particularly in Britain and Germany (Maxwell, 1988). Evidence suggests that exposing children to Esperanto as a second language helps them understand how languages are structured and gives them confidence to advance to the study of further languages. This "propedeutic" use of Esperanto in acquisition planning continues to attract the attention of educators and schools (e.g., Project Springboard in the United Kingdom). Esperanto's apparent ease of acquisition has also assisted non-Europeans (e.g., in China and Japan) in acquiring Indo-European languages.

Among planned languages, the most advanced examples of status planning can be found in the Esperanto movement (Janton, 1993; Tonkin, 1997). Zamenhof regarded status planning as well as corpus planning as important to the success of his language. Today, Esperanto users and speakers form a complex and interactive community. A World Esperanto Congress, convened in a different part of the world each year, brings some 2,000 Esperantists together. The Congress features meetings of the various international Esperanto organizations, including the Universal Esperanto Association (UEA), the principal general organization of Esperanto speakers (founded in 1908, with members in over 100 countries and affiliated national organizations in some 60 countries), professional organizations (teachers, scientists, railway workers, lawyers, etc.), religious and special-interest organizations (Catholics, Buddhists, vegetarians, chess players, etc.), and the Esperanto Academy and the Literary Academy of Esperanto. Plays in Esperanto are presented, literary competitions held, and concerts of classical and popular music organized.

Language-cultivation activities go on also at hundreds of smaller meetings, national, regional, and international, taking place during the year. They are supplemented by the publication of books in Esperanto, both fiction and nonfiction, and a flourishing musical culture. The Esperanto Academy monitors language development, but intervenes only minimally, with the result that the language is constantly evolving. Thousands of books have been translated from ethnic languages into Esperanto and the language is sometimes used as a bridge language for translation, particularly between Asia and Europe. The Esperanto holdings of the Austrian National Library in Vienna are perhaps the most extensive in the world, and there are also large collections in libraries in the Netherlands (Rotterdam), Switzerland (La Chaux-de-Fonds), Germany (Aalen), Japan (Tokyo), and Britain (Stoke-on-Trent). Dozens of periodicals appear regularly, along with numerous radio broadcasts, both free-air and Internet. The learning and use of the language is assisted by textbooks and Web sites for acquiring it (the best known Web site is lernu.net), and there are hundreds of dictionaries, both general and specialized; Zamenhof's initial vocabulary of less than 1,000 word roots has grown to 20,000 or more, from which many thousands of additional words can be formed.

The Esperanto movement has its external language policy. Efforts to promote the language in schools and business go back to the 1900s. In the 1920s, two trends were evident: advocacy of Esperanto in the context of the League of Nations, leading to its adoption as a "clear" language for telegraphy, but not to the broader acceptance by the League that its supporters desired; and its promotion as the language of international socialism in the years following the Russian Revolution. When Stalin succeeded Lenin, he condemned Esperanto as cosmopolitanism, and many Russian Esperantists lost their lives in the Great Purges of the late 1930s or were banished to the Siberian gulags (Lins, 1988). The situation improved after Stalin's death. Esperantists fought in the Spanish Civil War and Esperanto

was strongly identified with the Catalan independence movement and with left-wing movements in China and Japan. By contrast, Hitler condemned it in *Mein Kampf* as the language of Jews, and the German Esperanto movement was suppressed (Lins, 1988).

After World War II, the Universal Esperanto Association petitioned the United Nations to support Esperanto. The petition, referred to UNESCO (United Nations Educational, Scientific, and Cultural Organization), resulted in a UNESCO resolution in 1954 recognizing Esperanto's contribution to international understanding. Consultative relations with UNESCO and the UN were established, and UEA remains active in both bodies as a non-governmental organization. In the 1970s a proposal by the Australian ambassador Ralph Harry for the staged adoption of Esperanto as the working language of the UN attracted some attention. A UNESCO resolution of 1985 reaffirmed its interest in Esperanto's role in improving international and intercultural understanding.

While Zamenhof and his followers advocated Esperanto primarily as a solution to the lack of a common language, UEA today, though promoting the use of Esperanto in general, stresses the Association's role in favoring language equality and language rights, and opposing the hegemony of major national languages in international affairs, which it views as discriminatory. UEA's Prague Manifesto (1996) characterizes Esperanto as the language of democratic communication. The complex internal language situation in the European Union (Wright, 2009), where all official languages of member states are formally accorded equal recognition, has led to proposals for the adoption of Esperanto as an internal language of communication, but they have so far gained little traction (Phillipson, 2003; Grin, 2005; Christiansen, 2006; Fiedler, 2010). Much as Basic English was advocated in the 1930s, there have also been numerous recent proposals for the use of simplified forms of English and tolerance of non-native English in international discourse (e.g., Ammon, 2003). The Esperanto movement has been active in the study of language policy (LP) and planning, organizing occasional global symposia of LP experts in the so-called Nitobe series, convening meetings of scholars of Esperanto and interlinguistics, facilitating study of language issues at the international level, and exploring the costs of language difference in international affairs.

SEE ALSO: Language and Globalization; Language Policy and Planning: Overview; Prestige Planning; Russification in the Soviet Era; Status Planning; UNESCO and Language Policy and Planning

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Johansson, Stig

HANS LINDQUIST

Stig Johansson (1939–2010) was born in Sweden but later became a Norwegian citizen. He studied at Lund and then at Indiana University, where he received a PhD in linguistics in 1968. After working as a lecturer and research fellow in Lund (1968–76) he was professor of Modern English Language at Oslo University between 1976 and 2008. He was Doctor *honoris causa* at Lund University, Sweden (1999), member of the Norwegian Academy of Science and Letters, and honorary member of the Japan Association for English Corpus Studies.

Early Work: The Lancaster–Oslo/Bergen Corpus and the Beginning of ICAME

Johansson's early publications (e.g., Johansson, 1975, 1978) bear witness to a strong interest in contrastive linguistics and second language learning, and these and other areas of applied linguistics, like translation studies, have been important components in his work throughout his career. His intense involvement with corpora started when he spent a year as a Leverhulme Fellow at Lancaster University 1973–74. There Geoffrey Leech and collaborators had begun the collection of what was then the Lancaster Corpus. A close cooperation between Lancaster University, Oslo University, and the Centre for Computing in the Humanities at Bergen University ensued, resulting in the eventual completion of the Lancaster–Oslo/Bergen (LOB) Corpus in 1978 (Johansson, Leech, & Goodluck, 1978). Johansson was later also closely involved in the part-of-speech tagging of this corpus (Johansson, 1986).

At a meeting in Oslo at the beginning of 1977, Johansson together with Geoffrey Leech, Jan Svartvik, W. Nelson Francis, Jostein Hauge, and Arthur O. Sandved formed the International Computer Archive of Modern English (ICAME), which to begin with was to include the Brown Corpus, LOB, and the London–Lund Corpus of spoken British English, the last-mentioned being digitized by Jan Svartvik and his team at Lund. Johansson became the "coordinating secretary" of ICAME and remained so for the next twenty years. In this role, he was central in the development of corpus linguistics. In persuading the Finnish historical corpus linguist Matti Rissanen to succeed him as coordinating secretary, Johansson suggested that ICAME should stand for the International Computer Archive of Modern *and Medieval* English, and that is now the official interpretation of the acronym.

Johansson's interest in the technical questions of tagging and mark-up led him to participate in the conference which led to the Text Encoding Initiative (Vassar College in 1987) and the development of the TEI guidelines for the representation of texts in electronic form. He was elected chair of the Text Representation Committee and the TEI workgroup for spoken texts.

From Hand-Collecting to Corpus-Based Studies

Johansson (1980) dealt with plural attributive nouns of the type *tapes affair, fees scandal, drugs problem*, and so forth, specifying the conditions favoring this relatively new and

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insufficiently described construction which seemed to be on the rise. The work is based on material collected from newspapers and periodicals but also from other sources including the Brown and LOB corpora and radio and television. In principle, Johansson used the traditional collecting method of predecessors like Jespersen but in addition he carried out supplementary elicitation tests to access users' judgments. The work shows Johansson's strong emphasis on the importance of amassing sufficiently large quantities of authentic material for linguistic investigations. In his conclusion he writes: "Our problem is definitely one which could not have been solved by 'writing-desk' linguistics. . . . The present study was undertaken in the conviction that linguistics progresses through the mutual interaction of the linguist and his material" (Johansson, 1980, p. 119).

Hofland and Johansson (1982) is a pioneering computer-based frequency study, comparing word frequencies in British and American English based on the Brown and LOB corpora. The methodology was further refined and developed in Johansson and Hofland (1989), where the authors provide a statistical description of the LOB Corpus in minute detail, arguing that such detailed description can be useful not only for the linguistic study of grammar and lexis, but also for stylistics and natural language processing. The first volume gives word frequencies and tag frequencies for the corpus, while the second lists all tag combinations and word combinations. The investigation of tag frequencies yields a number of interesting results, showing quite clearly that the different genres in the LOB Corpus are characterized by different proportions of word classes. For instance, informative prose has more nouns, determiners, verbs, prepositions, and adjectives whereas imaginative prose has more verbs, pronouns, and somewhat more adverbs. Although this may not be surprising, the authors are able to give the real, hard figures. As for regional differences, a comparison with the Brown Corpus showed that there were only small differences between British and American English in this respect. A detailed study of the tags of grammatically ambiguous words, that is, words that received two or more tags, provided data of a type that is essential for natural language processing.

Going Multilingual

In 1994, Johansson and a team of researchers in Oslo began a new venture, the creation of an English–Norwegian Parallel Corpus (ENPC), to be used for contrastive analysis and translation studies. The corpus was completed in 1997 and was later tagged (Johansson, Ebeling, & Oksefjell, 1999/2002). The corpus consists of Norwegian source texts matched with their English translations, and English source texts matched with their Norwegian translations, in all approximately 2.6 million words. The genres are fiction and non-fiction. According to the compilers, this makes a range of investigations possible:

- contrastive studies based on parallel original texts;
- contrastive studies based on original texts and their translations, going from source text to translation or from translation to source text, or both; and
- various types of translation studies, for example, focusing on (a) translation problems viewed from either language, (b) deviations of translated texts as compared with original texts in the same language, and (c) general features of translated texts (Johansson et al., 1999/2002).

In Johansson (1998) the distinction between different kinds of parallel corpora is laid out in a lucid manner and a terminology is suggested:

- bilingual/multilingual comparable corpora (original texts in different languages),

- bilingual/multilingual translation corpora (original texts and translations into other languages), and
- monolingual comparable corpora (original and translated texts in the same language (p. 4n).

The ENPC combines all these three types. However, Johansson brings up a number of problems with translation corpora that researchers should be aware of. First, not all types of texts get translated, so the corpus will not be representative of the total body of texts in a language. Second, the translations may be more or less strongly influenced by the idiosyncrasies of the individual translators. Finally, translated text may be influenced by interference from the source text, and there may be general traits typical of all translations that distinguish them from original texts in the same language. These effects need to be controlled for. The ENPC was developed in close collaboration with Swedish colleagues in Lund and Gothenburg who compiled the English–Swedish Parallel Corpus (ESPC), which has the same structure and to a great extent the same English original texts.

The ENPC was later extended to include German, Dutch, and Portuguese, thus laying the foundation for the Oslo Multilingual Corpus which includes a trilingual English–Norwegian–German corpus, French–Norwegian and German–Norwegian parallel corpora and a translation corpus of Norwegian originals translated into English, German, and French. These corpora were developed within the research network Språk i Kontrast (SPRIK) with Johansson as codirector.

In a separate extension of the Oslo Multilingual Corpus, eight distinguished professional translators were asked to make Norwegian translations of two texts, a short story and a scientific article. In this way, eight parallel translations of these two texts were obtained and could be used for investigations of variation in translation.

However, compiling the texts is only the beginning. In order to be able to search them efficiently, they must first be aligned, that is, each sentence or unit in the originals must be related to its translation. This is not a trivial task since the division into sentences is rarely identical in originals and translations. Ideally, the texts should also be tagged for part of speech. In his 1998 article, Johansson illustrates with three case studies how the corpus can be used. The first is a case where there is no obvious translation equivalent in the target language: the Norwegian modal particle *nok* gets a number of different translations, among which the adverb *probably* is the most frequent. However, looking at translation in the opposite direction, it turns out that *probably* is rarely translated into *nok*, which shows that translators sometimes miss the most natural translation and produce translations which deviate from original texts in the target language. Another finding was that in many cases *nok* was not translated at all: there was zero translation.

In the second case study the Norwegian translations of the notoriously difficult noun *mind* were analyzed. Johansson found a large number of different Norwegian nouns used in the translations, but also many kinds of circumlocutions with no particular noun corresponding to *mind*. This was especially the case when *mind* was part of a fixed phrase in English. In the third case study Johansson shows how correspondences, which on the surface look straightforward like that between Norwegian *hende* 'happen' and English *happen*, turn out to result in a number of different patterns in the translation. In conclusion, Johansson argues convincingly that computer corpora "may even transform our ideas of what a linguistic description should be like. With the availability of corpora in machine-readable form, we can imagine a new generation of linguistic descriptions, which combine dictionary, grammar, and corpus" (Johansson, 1998, p. 21). This, he claims, has both theoretical and practical implications.

In a later collection of case studies based on multilingual corpora, Johansson points out that through the compilation and use of translation corpora, contrastive linguistic studies

have developed from comparing the structures of the languages involved in the abstract to studying these structures in use (Johansson, 2007, p. 6). He calls for the creation of more multilingual corpora, covering more languages, more registers and spoken language, but stresses that these should be organized in a principled way and encoded to some accepted standard like that proposed by the Text Coding Initiative (pp. 304–5).

Grammar Writing

Johansson was involved in a number of grammar writing projects. Together with Per Lysvåg he wrote the contrastive *Understanding English Grammar* (1984) for the Norwegian market, followed by *English Grammar—Theory and Use* (1998), written with Per Lysvåg and Hilde Hasselgård. He also contributed to the *Longman Grammar of Spoken and Written English* (Biber, Johansson, Leech, Conrad, & Finegan, 1999), where he was the principal author of four chapters amounting to approximately one third of the text.

Conclusion

Johansson made important contributions to corpus linguistics and the application of corpus linguistics to real-world problems in a number of ways: as a diligent compiler and developer of corpora, as an innovative and pioneering corpus user, as author of important scholarly articles and books, as editor of collections of articles and journals, as a grammar writer, as initiator of international organizations, as organizer of conferences and symposia, and as supervisor and advisor to many doctoral students and colleagues. From the beginning of the 1970s he was at the center of the development of corpus linguistics, ever active in developing new methodologies, compiling corpora and exploring new avenues of research, often together with colleagues. However, he had always been mindful that corpus work needed to be complemented with other types of research. In Johansson (1991) he writes:

> A word of warning should be added in conclusion. Corpus work is not the be-all and end-all of linguistics. The ultimate aim is the study of language(s), through corpora and other means. Linguists who neglect corpora do so at their peril, but so do those who limit themselves to corpora. In practice, there will often be a division of work, with some linguists focusing on theory building and others on corpus work. This is not a problem as long as we realize the limits of our approach and respect other lines of investigation. An open mind is the best guide in linguistics, as in research in general and indeed in life itself. (p. 6)

SEE ALSO: Corpora: English-Language; Corpus Analysis in Translation Studies; Corpus Linguistics: Historical Development; Crosslinguistic Differences in Grammar; Leech, Geoffrey

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Johns, Ann

SUNNY HYON

Known internationally for her expertise in English for specific purposes (ESP), genre studies, and second language (L2) writing, Ann Johns has been influential in various applied linguistics contexts. Johns began her teaching career as a history and English teacher in an Illinois middle school. She later moved to California, completed her PhD at the University of Southern California, and was a professor in the Departments of Rhetoric & Writing Studies and Linguistics & Asian/Middle Eastern Languages at San Diego State University (SDSU). At SDSU, she was also the founding director of the American Language Institute and director of the Center for Teaching and Learning. Although retired from SDSU since 2002, Johns has remained highly active in scholarship and teacher development, focusing particularly on academic literacy issues for undergraduate and secondary school students. She was co editor for the journal *English for Specific Purposes* and has served on the editorial boards of *Journal of Second Language Writing*, *TESOL Quarterly*, *Journal of English for Academic Purposes*, *ESPecialist*, and *English for Specific Purposes*. Johns's research spans several areas, including academic discourse, ESP needs assessment, and genre theory and pedagogy for reading and writing curricula.

Academic Discourse

In the area of academic discourse, Johns has studied features of specific disciplinary texts and of academic writing more generally. In a study of one undergraduate student's "visual/textual interactivity," Johns (1998) demonstrates that visual display of data and argumentation around that display are central values in economics. Another investigation draws on the expertise of two successful engineering grants writers (both non-native English speakers) to examine rhetorical features that appeal to their grant-reviewing audiences (Johns, 1993). These features include connecting to the reviewers' research interests, establishing a research gap, making an appropriate claim, and incorporating mathematical formulas and visual illustrations. Interestingly, the writers' winning proposals contain multiple L2 grammatical errors, leading Johns to suggest that "among some audiences, then, a 'foreign accent' in writing is accepted or ignored" (1993, p. 84). In terms of general characteristics of academic writing, Johns (1997) synthesizes work by Peter Elbow, Clifford Geertz, and Alan Purves, observing that academic prose tends to embody—among other features—explicitness and clarity, early introduction of argument, metadiscoursal "sign posts," authorial distance and objectivity, and a guarded, hedged stance.

ESP Needs Analysis

As an ESP expert, Johns has an orientation to needs analysis, using various approaches to assess needs in academic contexts. In early work, she surveyed university faculty about the most important skills for undergraduate and graduate students, finding that reading and listening outranked the productive competencies of writing and speaking (Johns, 1981). Taking a more text analytic approach, Johns and Paz (1997) identified problematic

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gaps in students' abilities to summarize scientific texts. By comparing teacher and student summaries, the authors found that while teachers appropriately followed the text's own schema for describing a physical structure, students' summaries lacked such framing and included nonessential information. Recently, Johns and Makalela (in press) discuss a critical ethnography approach to needs analysis, in which ESP consultants reflect on their own "frames, intentions, and purposes" that might either serve or be destructive in the target context.

Johns has also attended to students' own perspectives on their language and literacy needs. She interviewed a Vietnamese American undergraduate "Luc" to investigate why he—like many other non-native English speakers—failed English department writing proficiency exams (1991). From their conversations, Johns found that this high-achieving major succeeded on his science writing exams because of his familiarity with the writing prompt organization, the class concepts and vocabulary, and the concerns of his audiences. Luc's expertise in these areas, however, was irrelevant on the university's writing competency exam, which he had failed multiple times and which required background knowledge outside his areas of study. Johns's findings raise important questions about institutional assessments of students' literacy needs and abilities.

While concerned with identifying needs relevant to students' situations, Johns (1988a) cautions against using needs analyses to create static representations of target contexts. Disciplinary "truths" and knowledge-making practices change via both large-scale paradigm shifts and individual instructor idiosyncrasies. Johns thus argues that "we must look at the academic milieu as a fluid target culture, one that should be continuously analyzed and exploited for the purposes of ESP" (1988a, p. 25). One way for ESP courses to embrace this fluidity is for students to become "ethnographers in the academic culture" (1988b, p. 57). As such, they learn to critically examine the knowledge claims, writing tasks, and instructor and student roles in their specific courses, and in so doing develop the "rhetorical flexibility" to navigate whatever context they encounter (Johns, 1997, 2008, 2009b).

Genre and Academic Literacy Development

Students are foregrounded as literacy investigators in Johns's *socioliterate approach* to academic development, a framework that also emphasizes *genre*, which Johns calls "the most social constructivist of literacy concepts" (2009b, p. 205). Johns (1997) explains that in a socioliterate classroom, students study various genres—both "homely" ones like wedding invitations and obituaries, and academic ones like textbooks and classroom writing tasks—in order to understand how all texts are constructed in context and dependent upon reader and writer roles. While such an approach combines elements of traditional form-oriented instruction and learner-centered pedagogies, it is centrally social constructivist in viewing all textual forms and individual processes as situationally shaped.

Johns (1997) details various in-class and at-home activities for implementing a socioliterate approach, including moves analyses of timed essay prompts, identification of discipline-specific vocabulary, interviews with faculty about their textbook selections and recommended reading strategies, and participant observation of class lectures. She also illustrates how these and other socioliterate tasks work in her own classrooms. In writing classes with Generation 1.5 students (i.e., US-resident L2 students with both native- and non-native English speaker characteristics), for example, Johns asks students to collect and analyze genres from their own communities, such as flyers, church programs, invitations to raves, and articles in *Low Rider* magazine. In this way, students develop sensitivity to genre and genre variation, which they can also apply to academic genres (Johns, 1999, 2009b). Students in her classes write texts in various genres as well, including classroom genres like research papers and genres of disciplinary experts like abstracts (Johns, 1995). In one class, students'

favorite assignment was writing a memo to the university president, which required them to research the president's values and interests and consider how these and other factors should shape their memos (Johns, 1999). In other courses, Johns has asked students to defy traditional templates (e.g., by postponing the thesis until the conclusion) in order to "destabilize their often simplistic and sterile theories of texts" (Johns, 2002, p. 240).

Johns has implemented these various socioliterate activities in "linked" reading/writing classes that first-year SDSU students take while simultaneously enrolled in a General Education course such as Western civilization, psychology, or geography. The linked arrangement provides an ideal context for students to investigate academic community practices and to learn to analyze new genres. For Johns, this constitutes a real *genre awareness education* that "will prepare students for the academic challenges that lie ahead" (2008, p. 239). Such an education is in contrast to mere *genre acquisition training*, which teaches students to reproduce a specific text type but not to deconstruct future genres (see Russell & Fisher, 2009, for the genre awareness vs. genre acquisition distinction that Johns adapts). Johns argues that a genre awareness focus is also more intellectually engaging for Generation 1.5 students, who are often placed in "remedial" English courses that ask them "to produce the same types of texts over and over again," such as the five-paragraph essay (2009b, p. 203).

Indeed, Johns's focus on first-year literacy courses has made an important contribution to genre studies, where relatively little attention is given to pedagogical applications for undergraduates, especially those from linguistically diverse backgrounds. Developing genre-based pedagogy for these novice student populations is a complex undertaking, says Johns (2008), for applications must both address the complexity of genres and be accessible. She acknowledges that she is in an "ongoing search" (p. 237) for genre-based literacy curricula, for which there is no one definitive method but rather various possibilities and approaches. Exploring one such possibility, Johns (2009c) advocates giving students experiences with a variety of written "response types" (Carter, 2007) that recur across undergraduate courses: problem-solving/system-generating responses, empirical inquiries, responses calling for research from sources, and responses calling for performance. Through engaging in and reflecting on such assignments, as well as interviewing faculty about them, undergraduates can learn to negotiate a variety of literacy situations. Johns's focus on undergraduate EAP (English for academic purposes) curricula occupies an important nexus between L1 and L2 composition studies and between different strands of genre theory. Both L1 and L2 compositionists are concerned with genre but, while L1 scholars tend to emphasize the contextual factors shaping genre, L2 genre researchers attend more to genre structures and lexicogrammatical features. By integrating formal and situational concerns, Johns's socioliterate approach melds these two worlds. Her work also draws from various schools of genre, as seen in her 2002 edited volume *Genre in the Classroom*, which includes scholars from three central genre paradigms: the Sydney School, English for Specific Purposes, and the New Rhetoric.

Teaching and Curriculum Development

Johns has fostered cross-disciplinary collaboration in teaching and curriculum development as well. At SDSU, she worked with ESP and L1 rhetoric specialists in founding the Department of Rhetoric and Writing Studies. She also began SDSU's Integrated Curriculum, a program in which first-year undergraduates take literacy courses linked with a General Education course. The program is the first of its kind in the California State University system and has increased student retention and created curricular partnerships between faculty.

Outside of her university, Johns has also been highly active in teaching projects with local secondary schools. As a result of her high school collaborations, she developed a manual for student research to help instructors design and evaluate research assignments. In addition, she wrote a three-semester college-readiness literacy curriculum for the Advancement Via Individual Determination (AVID) program. The materials outline activities related to writing prompt analysis, purpose-driven reading, focused note taking, and source integration (Johns, 2009a). Through these and other projects, Johns has put her socioliterate approach into motion, helping at-risk students flourish in academic contexts.

On the international level as well, Johns is a well-known and well-traveled educator and materials developer. As John Swales observes, she has been the "U.S. supreme ambassador at large for ESP" (Johns & Swales, 1998, p. 22), giving presentations and workshops in more than 20 countries, including Algeria, Egypt, France, Hungary, Italy, Jordan, Lebanon, Mexico, Pakistan, Singapore, and Tunisia. Daoud (1998), a former Johns student and now a Tunisian ESP expert, notes that Johns is highly effective "in the way she tunes in to her audience, whether using a local text to illustrate a particular genre, answering questions with quick insight into the interlocutors' hidden agenda, or proposing practical solutions appropriate to the local teaching/learning context" (p. 92). Her ability to connect with these diverse teaching situations has borne fruit in instructional materials: she created a reading/writing curriculum for freshmen at the University of Limpopo, South Africa, and contributed to a cross-curricular literacy program at Sabanci University in Turkey (2009a). In addition, she assisted Antonine University in Lebanon to develop ESP courses for a variety of majors.

Ann Johns has said that she wanted to be a cabaret singer but instead found that "teaching provides some of the same opportunities. And in the end, it is much more gratifying" (2009a). Although the world of cabaret may have lost a great talent, we in applied linguistics surely gained a perceptive scholar, a gifted teacher, a lucid writer, and a tremendous advocate for students.

SEE ALSO: English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes; Teaching Literacy; Teaching Writing; Writing and Language for Specific Purposes

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Johnson, Samuel and Lexicography

PATRICK HANKS

Samuel Johnson (1709–84) was not the first but was surely the greatest of all English lexicographers. Unlike most writers of dictionaries, he was not only a lexicographer but also a leading man of letters. His output was enormous: literary criticism, biographies, weekly journalism, poetry, an edition of Shakespeare, a grammar, and a novel poured out of him. He was also a great conversationalist—a "clubbable" man, to use his word. He evidently had an obsessive-compulsive personality (a considerable advantage for a lexicographer, who has to have enough stamina and compulsion to wade through thousands of words, day in, day out, year in, year out, providing detailed and consistent accounts of the meaning and use of each one). People who met him remarked on his strange compulsive and uncontrollable nervous jerks and tics; modern neurologists have diagnosed him as probably suffering from Tourette's syndrome. Despite his prodigious output, Johnson not infrequently castigated himself for idleness.

As a young man, he attended Oxford University for a year, but his family ran out of money and he left without a degree. He claimed to have received the following advice from his tutor: "Read over your compositions, and wherever you meet with a passage which you think is particularly fine, strike it out." Twenty-six years later, some of his friends and admirers in Oxford, notably Thomas Warton and Francis Wise, persuaded the university to grant him an honorary degree, just in time for him to able to append the letters "A.M." (*Artium Magister*, "Master of Arts") after his name on the title page of his dictionary.

In the 1740s Johnson was already recognized as an important figure on the London literary scene, though hardly as the preeminent figure that he later became. Nevertheless, his reputation for literary skill, sound judgment, energy, and reliability was high enough to persuade a consortium of booksellers to club together in 1746 and put up the money to commission him to write, single-handed (except for a few clerks to copy out quotations), a dictionary that would serve to "fix" the language in what was then believed to be its current state of perfection, throw out slang, cant, and other "low words," and serve as a guard against linguistic change.

In the early 18th century there had been a great deal of lexicographical activity in England, notably Nathan Bailey's very popular *Universal Etymological English Dictionary* of 1721, the first work to attempt to record *all* the words of English (as opposed to listing and explaining only so-called "hard words"). Moreover, there had already been several calls for a prescriptive dictionary on the model of the Italian dictionary of the Academia della Crusca and the French dictionary of the Académie Française. In the 18th century, as in every other era before and since, literati believed, however irrationally, that linguistic change is bad and that the language was "going to the dogs." Influential men such as Lord Chesterfield as well as the commissioning booksellers convinced themselves that Johnson was the man for the task of fixing the language and preserving its purity. Shortly after starting work, Johnson published his *Plan of an English Dictionary* in the form of a letter addressed to Chesterfield, by way of soliciting the latter's patronage (which perhaps had already been offered informally). In it he made it clear that he intended to take on, albeit with some misgivings, the role of arbiter of correct English that was being thrust upon him. The *Plan*

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also shows that in 1747 he shared the widespread belief that etymology is a good guide to the correct meaning and use of words. And he set out some principles for the ordering of definitions:

> It seems necessary to sort the several senses of each word, and to exhibit first its natural and primitive signification; as, To *arrive*, to reach the shore in a voyage: *he arrived at a safe harbour*. Then to give its consequential meaning, to *arrive*, to reach any place, whether by land or sea; as, *he arrived at his country-seat*. Then its metaphorical sense, to obtain any thing desired; as, *he arrived at a peerage*. Then to mention any observation that arises from the comparison of one meaning with another; as, it may be remarked of the word *arrive*, that, in consequence of its original and etymological sense, it cannot be properly applied but to words signifying something desirable; thus we say, *a man arrived at happiness*; but cannot say, without a mixture of irony, *he arrived at misery*.

However, by the time he arrived at publication in 1755, Johnson's view of the function of a dictionary and the nature of language had changed. The true significance of Johnson as a lexicographer is that, in the course of compiling his dictionary, he came to understand that a living language has its own dynamic and that it can never be "fixed" or "purified." He developed the principle that a dictionary maker must record the language as he or she finds it, not attempt to regulate it. By doing so, he spared the English language the impertinence of an academy of learned men impotently debating the acceptability or otherwise of behavioral phenomena (patterns of word meaning and word use) which they have no power to alter. Reddick (1996) also argues that Johnson's brilliance as a literary critic was sharpened by his work on the dictionary.

Johnson, then, is remarkable for his profound insight into the nature of a living language. This insight had cost him dear. When he started out in 1746, Johnson assured his backers that he would complete the work within four years. He set up a framework on sheets of paper, following the principles outlined in the *Plan*. Under each headword, an amount of space was left on the page that he estimated would be sufficient to accommodate the text. Evidently he judged the amount of space needed for each entry by comparing existing dictionaries. Citations were copied by his amanuenses (from books that he had marked up) into the spaces left; Johnson himself then wrote the definitions and etymologies. But after three years it was becoming clear that this system was not working. As more and more citations were collected, Johnson discovered more and more new senses that needed to be added, while according to Reddick (1996) he felt an increasing need to reorganize the entries and "shape" the supporting citations by judiciously cutting out irrelevant parts of the text. By the end of 1749, Johnson was in deep trouble. He had reached only as far as letter C, the money originally agreed had almost all been used up, and the papers on which he had so confidently set out his framework were becoming so cluttered with insertions and alterations that they were unacceptable to the printer. A lesser man would have admitted defeat and given up. Johnson had the magnificent humility to recognize the problem and start over. The work that had already been done was rewritten, incorporating Johnson's new insights into words and their meanings. Needless to say, his financial backers were not happy at this huge setback. They were even less happy when they discovered that instead of devoting himself single-mindedly to the dictionary, Johnson had committed himself, in order to keep body and soul together, to writing two issues a week of a journal, *The Rambler*, which he continued to do in parallel with working on the dictionary for three years.

It has sometimes been claimed that Johnson relied heavily on the definitions in previous dictionaries. The myth even got about that there is in existence an interleaved copy of Bailey's dictionary with Johnson's additions slipped in. This is not the case. On the contrary,

a scholarly study by Starnes and Noyes (1991) showed that Johnson's definitions were often highly original, capturing the essence of the word's meaning more accurately and succinctly than any previous dictionary. Other important studies are by Sledd and Kolb (1955), Clifford (1979), and Reddick (1996).

In discussions of Johnson as a lexicographer, much has been made of the occasional flashes of wit in his definitions. Here is a famous example:

> **Patron.** . . . One who countenances, supports or protects. Commonly a wretch who supports with insolence, and is paid with flattery.

This particular definition was a jibe at Lord Chesterfield, who had done nothing to support Johnson during his nine long years of impoverished struggle and then presented himself to the public as a patron of the work when it was published, without evincing the slightest understanding of Johnson's insight into the unstable nature of a living language. Johnson wrote a famous letter to Chesterfield, asking him, with unconcealed sarcasm, "Is not a patron, my lord, one who looks with unconcern on a man struggling for life in the water, and when he has reached ground, encumbers him with help?" To his credit, Chesterfield admired the letter greatly and showed it to his friends and visitors. Some years later, the two men were reconciled.

Another example of a Johnsonian sally is:

> **Pension.** . . . An allowance made to any one without an equivalent. In England it is generally understood to mean pay given to a state hireling for treason to his country.

This witticism was to rebound on him several years later, when he was awarded a pension of £300 a year in recognition of his services to lexicography and the English language.

Occasionally his delight in using obscure or ponderous words got the better of him:

> **Cough.** . . . A convulsion of the lungs, vellicated by some sharp serosity.
> **Network.** . . . Any thing reticulated or decussated, at equal distances, with interstices between the intersections.

No doubt Johnson indulged himself in such wording at least in part to keep his spirits up, because, as he wrote (illustrating the adjective *dull*), "making dictionaries is dull work." However, we must not allow delight in famously verbose definitions such as these to obscure the fact that the vast majority of Johnson's definitions are brief, brisk, and workmanlike. A few examples will have to suffice:

> **Coruscation.** . . . Flash; quick vibration of light.
> **Sacerdotal.** . . . Priestly; belonging to the priesthood.
> **Surreptitious.** . . . Done by stealth; gotten or produced fraudulently.

Johnson is often credited with being the first lexicographer to support his definitions systematically with citations from literature, and this is true as far as English is concerned. However, in fact the principle that a dictionary should record citations as well as definitions had already been established in the Latin dictionaries of Ambrogio Calepino (1502) and Robert Estienne (1531) and was also followed by the prescriptive dictionaries of the French and Italian Academies. Johnson's purpose in citing from literature was rather more ambitious: not merely to illustrate the correct usage of words but also to instruct and delight the reader. As Reddick (1996) shows, he chose some examples because he approved of the writer's sentiments and rejected others because he did not. His aim was to select

citations from "authorities"—writers who both expressed admirable sentiments and were masters of elegance and style. Nevertheless, as he ruefully admitted in the Preface, "words must be sought where they are to be found," so many less-than-elegant citations are given. His coverage of the terminology and scientific terms of his day was extensive, often supported by long citations from specialist writers. Hanks (2005) argues that Johnson was 200 years ahead of his times because he insightfully addressed many of the theoretical issues involved in lexicography and language teaching, including the problems of foreign borrowings, phrasal verbs, compound nouns, and *-ing* forms; the difficulties of definition writing; and the competing needs of foreign learners and native speakers as dictionary users. (This article appears in McDermott & Moon, 2005, which contains six other important papers on Johnson as a lexicographer.)

Johnson's work remained the standard dictionary of English until the end of the 19th century, when it was superseded by the Philological Society's *New English Dictionary on Historical Principles*, later rechristened *The Oxford English Dictionary* (OED; 1884–1928).

SEE ALSO: Monolingual Lexicography; Traditional Approaches to Monolingual Lexicography; Webster and American Lexicography

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Jones, Daniel

BEVERLEY COLLINS AND INGER M. MEES

Daniel Jones (1881–1967), the greatest British phonetician of the 20th century, was born in central London on September 12, 1881. Excelling in phonetic observation and description, and the application of phonetic science to the problems of the real world, Jones always regarded himself as being first and foremost an applied linguist.

Jones was educated at two private schools, Radley College and University College School, and at Cambridge University, where in 1903 he obtained a bachelor's degree in mathematics (converted to MA in 1907). Whilst still a student, he developed his remarkable practical language talents, attending vacation courses in France and at Marburg in Germany, where in 1900 he was introduced to phonetics by a famous language teacher of the day, the Australian William Tilly (Collins & Mees, 1999, pp. 12–17), whom he ever afterwards held in high regard.

After graduation, Jones was forced to study law by his father (a leading London barrister), but was permitted to spend a year in France, where he befriended the eminent French phonetician Paul Passy of the University of Paris. Passy, a second major influence, recognized Jones's unusual talents and encouraged him to sit the examination of the International Phonetic Association (IPA). Jones passed his IPA certificate with brilliant marks, but it turned out to be the only linguistic qualification he ever obtained (although he was later awarded honorary doctorates from Zurich, 1936, and Edinburgh, 1958). He also received private tuition from the great linguist Henry Sweet, who was to prove the third main influence on Jones's life and work.

Jones passed his law examinations in 1907 but never practiced as a barrister (he later claimed to have set fire to all his law books). Instead, he accepted a temporary part-time position in phonetics at University College London. The subject was in its infancy as an academic discipline, but soon gained popularity under Jones's inspired teaching. In 1912, Jones established a phonetics laboratory at UCL, where in the same year he was appointed head of the new phonetics department—the first such to exist in a British university. After briefly replacing Henry Sweet at Oxford, Jones returned to London and in 1921 was awarded a chair at UCL; he remained there until retirement in 1949, when he became professor emeritus.

From the outset of his career, Jones concentrated on applied phonetics. His publications bear witness to this, since most are concerned with the utility of phonetics for either language description, language acquisition, or phonetic lexicography. His most successful early book was *The Pronunciation of English* (1909), a brief description of standard educated British English pronunciation. The far more comprehensive *Outline of English Phonetics*, aimed at non-natives, appeared in 1918 and was the first full account of what Jones was later to term "received pronunciation" (RP). Its general descriptive framework was adopted throughout the linguistics world, and deeply influenced Bloomfield and the American structuralist school.

In 1912, Bernard Shaw produced *Pygmalion*, a play which Shaw used explicitly to inform the general public about the importance of phonetics. He is known to have received advice from Daniel Jones on practical matters, and it is now thought that it was Jones (rather than Henry Sweet) who was the real-life original of the play's main character, the phonetician

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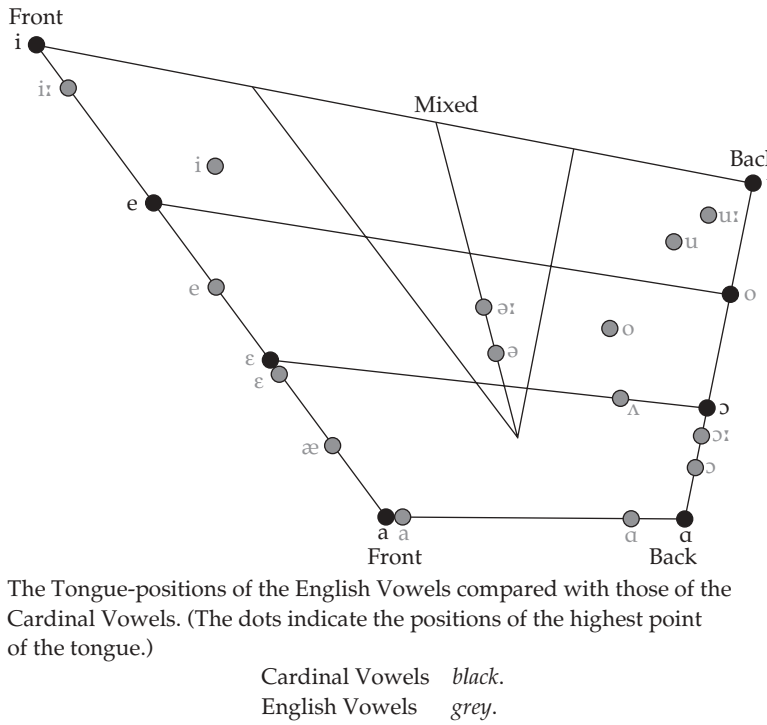

Figure 1 The earliest published form of the cardinal vowel diagram (Jones, 1917a, p. ii). Note that in the original the English vowels are printed in red. Reprinted with permission of Mrs. M. Stanbury © Estate of M. Stanbury

Henry Higgins. To divert any suspicion that Higgins was in fact based on Jones, and thus avoid any threat of libel, Shaw muddied the waters by inserting into the Preface of the published version of the play (1916) numerous references to the recently deceased Sweet and to the Poet Laureate Robert Bridges—while carefully omitting mention of Jones himself (Collins & Mees, 1999, pp. 97–103).

In 1913, Jones coedited (with Hermann Michaelis) the *Phonetic Dictionary of the English Language.* This was the first attempt at a dedicated pronunciation dictionary for English in more than a century—apart from one brave earlier effort by the Swede Jon Arvid Afzelius (1909). Both books were soon swept away by the success of Jones's own *English Pronouncing Dictionary* (1917a), which speedily became the accepted authority on British RP usage; it remains in print (in updated form) to the present day.

An article in *Nature* (1917c) allowed Jones a first exposition of his influential cardinal vowel theory. Originating in part from Passy, it provided a clear-cut dual-parameter model for vowel description based on (a) tongue-arch height and (b) lip shape. Jones subsequently elaborated the theory, devising a system of eight rounded and eight unrounded vowels at supposedly equidistant articulatory intervals, plus two high central vowels (Collins & Mees, 1995). He made three recordings of the cardinal vowels in 1917d, 1943, and 1956, of which the last is best known. The cardinal vowel system—despite being in some disrepute today owing to contradictory instrumental evidence—has been extensively employed since its inception, and much present-day vowel description derives ultimately from Jones's model. It is of note that a diagram largely based on Jones's scheme is a prominent feature of the current 2005 IPA chart (see Figure 1).

In his research, Jones is notable for the precision of his phonetic observation, always insisting on working directly with native-speaker informants rather than relying on the accounts of other linguists. He pioneered the description of non-European languages, producing groundbreaking early outlines of Cantonese (Jones & Woo, 1912), Tswana (Jones & Plaatje, 1916), and Sinhalese (Perera & Jones, 1919), and today the value of this extremely accurate early research on tone languages is receiving due recognition. His subsequent descriptions of Tswana, much in advance of their time, provided the first detailed overviews of a register tone language, including diagrammatic representations of the concept of downstep (Jones & Plaatje, 1916, pp. xxv–xxxi; Jones, 1917b, 1928). Jones's seminal work on African languages was later expanded by his London colleagues, including Lilias Armstrong, J. C. Carnochan, C. Doke, Eugénie Henderson, A. N. Tucker, and Ida Ward.

In the field of European languages, his *Pronunciation of Russian* (Trofimov & Jones, 1923) was for many years the sole reliable phonetic description of the language available in English. At the very end of his life, Jones rewrote this book (with Dennis Ward), and it came out posthumously with the new title *Phonetics of Russian* (Jones & Ward, 1969). A landmark publication appeared in 1927, namely *Colloquial French*, coauthored with Emile Stéphan. It included a startling novelty—numerous phonograph discs with 90 minutes of native-speaker French for imitation. It is arguably the most successful early example of the use of the audiolingual method in language teaching in the history of applied linguistics.

As early as 1917, Jones publicly used and promulgated the term "phoneme" in its current sense, being the first writer in the Western world to do so. He acknowledged borrowing the idea from Baudouin de Courtenay, choosing to interpret the concept simply as a "family of sounds" having close physical or acoustic relationship. As a result of Jones's work, the phoneme principle became firmly established in British linguistics well before the advent of either the Prague school or American structuralism; see Jones's own (1957) historiographical survey. A nervous breakdown in 1920 somewhat diminished the dynamism of Jones's production of full-length books, but he went on producing numerous articles and making important revisions to his major publications (see Collins & Mees, 2003). He devoted much effort to what he hoped would be his monumental work, *The Phoneme* (1950), but its reception was a disappointment. Although the reliability of the language data it contained was acknowledged, what was felt to be Jones's outdated theoretical position and undue emphasis on applied linguistics approaches drew harsh criticism from many postwar linguists, who were by now accustomed to more sophisticated analyses.

Jones was also a major player in many other areas of applied phonetics. In cooperation with Passy, he ran the IPA (assistant secretary 1906–27; secretary 1927–50; president 1950–67) and was editor of *Le Maître Phonétique*. He was largely responsible for the increasing acceptance of the IPA alphabet worldwide, and was a constant supporter of English spelling reform. He also helped devise, with varying degrees of success, new Roman alphabets for many African and Asian languages. He was a member of the BBC Advisory Committee on Pronunciation, and from 1942 onward was the BBC's chief pronunciation adviser, being to a large extent responsible for reinforcing the notion of "BBC English" as a standard for broadcasting. In 1926, in the third edition of the *English Pronouncing Dictionary*, he revived the 19th-century term "received pronunciation" and introduced the abbreviation "RP" (p. viii). He regarded a model such as RP as being essential for non-native learners, but simultaneously deprecated attempts to prescribe any form of standard speech for natives. He was a committed libertarian with regard to standards of pronunciation, and repeated constantly that the task of the phonetician was not to pass value judgments but to "record accurately" and be a "kind of living phonograph" (1917a, p. ix). In this spirit, he proved a perceptive observer of language change, and was, for example, the first to mark the development of glottalization in British English, and the increasing influence of basilectal London speech on RP (Collins & Mees, 2001), thus presaging the development of what is nowadays termed "Estuary English."

With the passing of time, Jones's writings, especially in the field of applied phonetics, have achieved the status of classic works, remaining outstanding for their phonetic detail, perceptive observation, and clarity. His ideas and methodology always demonstrated an overwhelmingly practical bias, indeed certain of his publications—such as the pamphlet "The Aims of Phonetics" (Jones, 1937)—drew criticism from some quarters for their utilitarian bias. Nevertheless, many basic aspects of Jones's practical approach to the subject were adopted by his younger colleagues and pupils, notably A. C. Gimson, J. D. O'Connor, Peter Ladefoged, and J. C. Wells, and continue to influence applied phonetics to the present day, in particular the fields of language acquisition and pronunciation teaching.

Despite being crippled with arthritis, Jones continued to be active in linguistics until well over the age of 80. He died at his home in Gerrards Cross, England, on December 4, 1967.

SEE ALSO: Gimson, A. C.; International Phonetic Alphabet; Ladefoged, Peter; O'Connor, J. D.

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Jones, Rodney H.

JACKIE JIA LOU

Rodney H. Jones (b.1959) is currently the Associate Head of the Department of English, City University of Hong Kong, where he has been teaching since 1995 (home page: http://personal.cityu.edu.hk/~enrodney). Jones received a BA in English Literature from the University of Virginia in Charlottesville, an MFA in Creative Writing from the University of Kansas in Fayetteville, an MPhil in English from City University of Hong Kong, and a PhD in Linguistics from Macquarie University, Sydney. His research interests include youth cultures, computer-mediated communication (CMC), multimodal discourse analysis, mediated discourse analysis, discourse and sexuality, and health communication.

Jones's main contribution to applied linguistics lies in his ethnographic study of the production and consumption of multimodal discourse. In the spirit of mediated discourse analysis (Scollon, 2001; Scollon & Scollon, 2004; Norris & Jones, 2005), he does not assume a priori the central role of multimodal texts in social interactions. Rather, taking a participatory ethnographic approach, he sees these texts as embedded in the complex interactions among semiotic and material environment, social interactions, relationships, and identities. In particular, his work focuses on the actions involved in the production and consumption of these texts. This view of Jones's is grounded in his empirical research in three main areas: computer-mediated communication and youth literacy, computer-mediated communication and homosexuality, and skateboarding.

In his earlier work on computer-mediated communication, Jones uses the term "site of attention" to describe CMC as an activity in which users rapidly switch among multiple online and offline interactions (Jones, 2005a, 2009d). Using participatory ethnographic methods such as diaries, screen movies, and Webcams, Jones is able to expand the context of CMC beyond the screen to participants' homes or classrooms and is able to observe other parallel social interactions in which participants engage, for example, watching TV, answering a phone call, or talking to parents (Jones 2001, 2002, 2004, 2009d). Instead of regarding this practice as simply multitasking, Jones (2005a, 2010) argues that it shapes a kind of attention structure, as a result of the participants' habitual interactions with the semiotic, material, social, and cognitive spaces. This site of attention, however, is disrupted when the computer is transplanted from a media-rich environment to a computer-mediated classroom with rigid spatial and social order. Therefore, he argues that the inability to pay attention in a classroom is not the fault of the student or the computer, rather the consequence of a conflict between the usual site of attention and a new set of spaces.

Adopting a more microanalytical approach to multimodal discourse, Jones has also studied online interactions between gay men. By taking into account the actions these participants take before, after, or during these interactions, Jones's focus is not on the meaning of multimodal texts but on their functions. For example, at the initial stage of online encounter between gay men, the exchange of photos is an important social action, which determines whether it will turn into a longer-lasting interaction or relationship (Jones, 2005b). In another article, on televideo cybersex, Jones (2008) argues that verbal text plays only an ancillary role in support of nonverbal interactions.

More recently, Jones's interest in CMC and multimodal discourse has shifted from the "site of attention" to the "site of display," more specifically, the computer-mediated multimodal representations of human bodies, which he calls "bodies without organs," giving

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a new meaning to the term coined by Deleuze (Jones, 2009a, 2009b, 2009c, in press-a). Examining social networking sites for gays and lesbians, Jones (2009b, 2009c) discusses the wide range of staging and viewing tools that participants employ in the production of an attractive profile. He argues that "a 'site of display' consists of more than just what is displayed. It is an interaction between the display and those who use it" (2009c, p. 114). Turning to the skateboarders in Hong Kong, Jones (2009a, in press-b) outlines the various functions of the bodies without organs. Looking at online skateboarding videos and, more importantly, the skateboarding and technological actions which went into the production of the videos, Jones argues that the bodies without organs have profound impacts on the skateboarders' physical bodies. As reflective and anticipatory tools, these skateboarding videos simultaneously showcase past achievements and motivate them to practice and perfect future movements.

Synthesizing his research in these different areas, Jones (in press-a) reminds us of the importance of understanding action in the study of language and discourse. In this sense, his work is relevant not only for researchers doing multimodal discourse analysis but also for anyone interested in language as *used* by people.

SEE ALSO: Analysis of Discourse and Interaction: Overview; Analysis of Mediated Interaction; Discourse in Action; Ethnomethodology in the Analysis of Discourse and Interaction; Multimodal Discourse Analysis; Positioning in the Analysis of Discourse and Interaction

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Kachru, Braj B.

CECIL L. NELSON

Braj B. (Behari) Kachru was born in Srinagar, Kashmir, India, in 1932. "Kachru," by the way, is an Englishization of his name, which is from the Kashmiri word *katsur*, "brown." His family are Pandits (from Sanskrit *paṇḍit*, "learnèd man, scholar"); that is, he is by heritage as well as by inclination a seeker after rational explanations and a willing instructor of willing students.

Professor Kachru's first-acquired language was Kashmiri. Because of a medical misdiagnosis, he did not attend school as a boy. He was tutored at home in low-pressure pursuits, including painting and Hindi. He started learning English as a teenager. In 1949 he entered Sri Pratap College in Srinagar; he graduated from the newly established Jammu and Kashmir University in 1953 with an honors degree in English, having also studied English and Sanskrit at Amar Singh College in Srinagar. In 1955, he received his MA in English literature and language from Allahabad University in Uttar Pradesh, India. It was there that one of his teachers, the late P. E. Dustoor, motivated a change in his intellectual focus from literature to language study. This shift notwithstanding, Professor Kachru's love of literature has remained strong throughout his life, as witness his book currently in progress on the Kashmiri poet Dina Nath "Nādim."

After his MA at Allahabad, Professor Kachru attended linguistic institutes in Poona (now Pune), where he came into contact with scholars who are among the founders of linguistics as it is known today, including William Bright, Gordon Fairbanks, Charles Ferguson, and John Gumperz. In 1957, he was appointed a fellow of the Deccan College Research Institute for linguistics, and studied under Henry Gleason. It was here, reports Professor Kachru (1992b, p. 68), that he began "to think seriously about Indian English; its status, roles, and academic position."

In 1958, Professor Kachru was selected by the British Council in New Delhi to join the school of applied linguistics at the University of Edinburgh. His teachers there included distinguished linguists: David Abercrombie, J. C. Catford, M. A. K. Halliday, Peter Ladefoged, Angus McIntosh, and Peter Strevens—and, very importantly, J. R. Firth, who was a visiting professor. Firth's influence was apparent in Professor Kachru's attention to context and contextualization in his emerging sociolinguistic view of English in India, and later in its other varieties across the world. He completed his PhD thesis, "An Analysis of Some Features of Indian English: A Study in Linguistic Method," in 1962. His fellow students at Edinburgh included others who are now among those frequently referenced in theoretical and applied linguistics literature, such as Ayọ Bamgbọṣe, Ruqaiya Hasan, and Rodney Huddleston.

Before Professor Kachru's graduation from Edinburgh, there occurred a chance meeting which turned out to shape the course of his next steps in his fields of study and, by extension, the lives of generations of future students. The late Robert Lees, then the head of the linguistics program in the department of English at the University of Illinois (Urbana, USA), gave a lecture at Edinburgh in 1961. Graduate student Kachru attended the talk and was among the select group who went out to dinner with Lees that evening. Lees had a reputation (which he had reinforced in his interactions at Edinburgh) for a certain forcefulness in his expressions of his views and beliefs. Professor Kachru apparently gave as good

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as he got in the evening's discussions. Not long after, Lees wrote to Halliday asking for his recommendations for possible candidates for a position at the University of Illinois, and, in particular, he wondered if "the Indian boy" who had gone to dinner with them would be interested in it (Kachru, 1992b, p. 71). Following the completion of his PhD and after an intervening year during which Professor Kachru fulfilled a commitment to teach at Lucknow University in India, he joined the University of Illinois program, later to become the Linguistics Department, in 1963, and subsequently became a force in the building and direction of the unit until his retirement from teaching and departmental duties in 2002. This chain of events was the start of his life long devotion and attachment to the university and to its university-town setting. (Indeed, his Illinois automobile license plate designation is "BBK 63.")

Professor Kachru assumed the chair of the linguistics department in 1969. In a posthumously published retrospective article on the history of linguistics at the University of Illinois, the venerable Henry Kahane wrote a telling line about "Braj Kachru, our sociolinguist, who with extraordinary energy and never-failing gentlemanliness steered the department from its modest beginnings to a complex and flourishing University unit" (Kahane, 1992, p. 39).

Professor Kachru may justly be called the progenitor of the school of thought now widely recognized under the label "World Englishes." Since the end of World War II, with the rush to "independence" of former colonized countries such as India, where the English language was solidly established in bureaucracies and education systems, English had assumed its role as a global language of wider communication. With his publication in 1965 of an article in *Word* entitled "The *Indianness* in Indian English," Professor Kachru began the evolution of "sociolinguistically realistic" observations and interpretations (see the title of his 1985 paper) of the features and functions of varieties of English around the world. He often has pointed out, with a smile, that "If I ask for tea, and I get tea, my English must be working." His arguments were persuasive to great numbers of professional colleagues and, of course, to his many PhD students.

Among his numerous awards and important positions, two clearly stand out for Professor Kachru himself. He was selected as a member of the University of Illinois Center for Advanced Study, and served as its director from 1996 to 2000. And he was designated Jubilee Professor of Liberal Arts and Sciences in 1992.

Two conferences in 1978, one in April at the East–West Culture Learning Institute, Honolulu, organized by Larry E. Smith (see Smith, 1981), and the other in June/July at the Linguistic Society of America Institute at the University of Illinois, organized by Professor Kachru, resulted in publications which formed the bases for the study of World Englishes today. Papers presented at the Illinois conference appeared in the edited volumes *The Other Tongue: English Across Cultures* (Kachru, 1982, and a substantially revised second edition, Kachru, 1992a). That this work's second edition is still in print and widely used is a testament to the fundamental character of its aims and of its presentations. Those are just two, albeit important, items in the long list of Professor Kachru's publications. Substantial collections of his own work are in his volumes *The Indianization of English* (1983) and *The Alchemy of English* (1986), the latter of which was awarded joint first prize in the Duke of Edinburgh competition in 1987. Among his most recent publications to date are the monograph *Asian Englishes: Beyond the Canon* (2005) and the coedited *Handbook of World Englishes* (2006). Altogether, he has authored and edited over 25 books, and has written well over one hundred papers, articles, and reviews. A much sought-after speaker at professional conferences, he has presented papers and plenary and keynote addresses at meetings of every notable organization having to do with language and English studies across the world.

Professor Kachru and his close colleague Larry E. Smith founded the influential journal *World Englishes* in 1985 (as volume 4, issue number 2, assuming the editorship and changing

the name from the former *World Language English*; see Kachru & Smith, 1985), and an organization for students and professionals in World Englishes studies, the International Association for World Englishes, in 1992 (see Kachru, 1997).

Professor Kachru met his life partner and professional collaborator, Professor Yamuna (Keskar) Kachru, in 1957 in Dehradun, Uttar Pradesh, India, at the Summer Institute of Linguistics. She joined him and the faculty at the University of Illinois in 1965, and they have been institutions, severally and jointly, within that institution for going on five decades. The Kachrus have two children: Amita, a medical doctor, and Shamit, a research physicist.

This printed sketch cannot possibly come close to capturing the stimulation, intellectual workout, and often, pure fun and entertainment of sitting with Professor Kachru as *guru* or as social conversationalist (the roles are often indistinguishable) in the living room of the Kachrus' home on the southeast side of Urbana. Those students fortunate enough to have had those experiences surely regard them as among the most important shaping forces in their lives. The gentlemanliness that Kahane's expression of appreciation referred to comes through in all of Professor Kachru's dealings with friends, colleagues, and students. While he may have professional opponents, and even occasionally detractors, it is safe to say that he has no enemies. No one can fail to be embraced by his good humor combined with unassailable intelligence. A force in applied linguistics, Professor Kachru continues to shape the paths of the fields in which he works.

SEE ALSO: History of World Englishes; Kachru, Yamuna; Linguistic Creativity and World Englishes Literatures; Varieties of World Englishes

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Kachru, Yamuna

LARRY E. SMITH

Yamuna (Keskar) Kachru was born in Purulia (now in West Bengal) on March 5, 1933 where her father was a medical practitioner. She grew up in United Provinces and Bihar states in a traditional Maharashtrian Brahmin household. Her mother tongue was Marathi but she also became fluent in Hindi, Bengali, and English. As an aside, she comments that her English sounds "bookish" because that is how she learned it—from books! She was always an outstanding student, completing her BA from Bihar University in 1953 and her MA in Hindi language and literature from Patna University in 1955 where she was awarded two gold medals for excellence.

Yamuna was invited to teach at the University of London School of Oriental and African Studies in 1959. She taught and conducted research on Hindi there and was awarded a PhD degree in linguistics in 1965. The topic of her thesis, which was the first analysis of Hindi based on the Chomskyan model, was *A Transformational Treatment of Hindi Verbal Syntax* (1965).

In 1965 Yamuna was invited to join the Department of Linguistics and the Division of English as an International Language at the University of Illinois at Urbana-Champaign and remained there until she took early retirement in 1999 so that she could devote full time to research and writing. While on faculty she wrote a number of books and over fifty research papers on various aspects of Hindi grammatical structure. In addition to her research, Yamuna was active in teaching Hindi to speakers of other languages. Her work has inspired other scholars to produce many linguistic descriptions of Hindi at universities all over the world. She has also conducted typological research on other Indian languages, including Bengali, English, Kashmiri, Marathi, and Urdu. Her coedited book with Braj B. Kachru and S. N. Sridhar, *Language in South Asia* (2008), reflects some of this work. Because of her recognized scholarly promotion of Hindi and distinguished career in linguistics, she was given the prestigious Presidential Award from the President of India in New Delhi on September 14, 2006.

Yamuna was also active in the training of teachers in the MA in teaching English as a second language program at the University of Illinois. Her work on Indian English, English as an international language, and World Englishes is equally impressive. She is particularly well known for her research on conventions of politeness, communicative styles, contrastive rhetoric, discourse strategies, discourse interpretation, and speech acts in World Englishes. The celebrated *Handbook of World Englishes*, coedited with Braj B. Kachru and Cecil L. Nelson, was published in 2006; her coauthored book with Cecil L. Nelson, *World Englishes in Asian Contexts,* was published in 2006; and her coauthored book with Larry E. Smith, *Cultures, Contexts, and World Englishes*, was published in 2008.

Yamuna and her husband Braj B. Kachru are the founding pillars of the International Association for World Englishes (IAWE) and the organization's professional journal, *World Englishes*: *Journal of English as an International and Intranational Language.* They continue to provide direction and inspiration for both.

Yamuna takes great pride and interest in her students. More than forty scholars have completed their PhD under her supervision. All report that they consider themselves blessed to have had the opportunity to study under such a brilliant, supportive, and open-hearted scholar.

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Yamuna's greatest joy clearly is from being the wife of Braj B. Kachru, the mother of Amita (a medical doctor) and Shamit (a physicist), and the grandmother of Sasha and Ila.

SEE ALSO: Kachru, Braj; Politeness; Speech Acts Research

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Kasper, Gabriele

ALFRED RUE BURCH

Gabriele Kasper (1948–) is a professor of second language studies at the University of Hawai'i at Mānoa. She is a noted scholar in the field of interlanguage pragmatics, and has been cited as a major figure in the ongoing shift from cognitivist/rationalist perspectives in second language acquisition (SLA) to more socially grounded approaches.

While completing her doctoral degree at Ruhr-Universität Bochum, she conducted work with Willis Edmondson, Juliane House, and Brigette Stemmer which drew upon diverse theoretical strands such as universal pragmatics, speech act theory, conversation analysis, and other forms of discourse analysis in order to examine the communicative competence of German learners of English after following a standard curriculum, and also laid the groundwork for the field that would come to be known as interlanguage pragmatics (ILP) (Edmondson, House, Kasper, & Stemmer, 1984). Her dissertation, completed in 1980 and published as a book in 1981, focused on first language (L1), second language (L2), and interlanguage interaction, and extended Selinker's (1972) notions of transfer, overgeneralization, and "transfer of training" in interlanguage performance into the study of L2 pragmatics.

From 1981 to 1988, Kasper taught in the Department of Linguistics at Åarhus Universitet in Denmark, where she began an extensive collaboration with Claus Færch (University of Copenhagen). Her work with Færch melded psycholinguistic and discursive perspectives on second language learning and use, leading to books on communication strategies (Færch & Kasper, 1983) and verbal report in second language research (Færch & Kasper, 1987), as well as a number of book chapters and articles on topics such as language transfer, comprehension, and management of discourse in the foreign language classroom. During this time, she also became involved in the Cross-Cultural Speech Act Realization Project (CCSARP) with Shoshana Blum-Kulka (Hebrew University of Jerusalem) and Elite Olshtain (Tel Aviv University), which examined how the production formats of requests and apologies vary situationally and cross-culturally across 10 languages and language varieties. The project implemented the Discourse Completion Test (DCT) and developed a coding scheme for examining these speech acts (Blum-Kulka, House, & Kasper, 1989) which has been highly influential in L2 pragmatics research, and led to publications on the production of requests by L1 speakers of Danish and German in L2 English and L1 speakers of Danish in L2 German.

After Claus Færch's untimely passing in 1987, Kasper moved to the Department of English as a Second Language (now Second Language Studies) at the University of Hawai'i at Mānoa, first as a visiting professor (1988–9), and then as a permanent faculty member from 1989. Her arrival coincided with the establishment of one of the first federally funded National Foreign Language Resource Centers (NFLRC) at the University of Hawai'i and the launch of the ESL Department's doctoral program in second language acquisition. These events had a profound impact on the direction of Kasper's research, as her students' interests and backgrounds in East Asian and Southeast Asian languages opened new avenues of inquiry for research on pragmatics. The NFLRC, with a mission to develop resources for the teaching of "less commonly taught languages," provided an infrastructure in which Kasper and her students could explore pragmatics in Japanese and Chinese, as

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well as L2 English by speakers of those and other languages. The early NFLRC-supported research led to studies on pragmatic transfer and the relationship between assessment and the production of apologies, L1 and L2 pragmatics in Japanese and Chinese, and on ILP data collection methods (Kasper & Dahl, 1991), an area on which she has continued to work (Kasper & Rose, 2002; Kasper, 2008).

Kasper and Blum-Kulka's (1993) coedited volume *Interlanguage Pragmatics* gave name to the field that she had helped to develop over the previous 17 years, establishing a productive research focus on interlanguage use. Her tenure as a visiting professor at Temple University in Tokyo (1993–4) introduced researchers in Japan to the field of ILP. During the latter half of the decade, Kasper moved away from comparative studies in pragmatics toward a focus on the development of pragmatic ability (Kasper, 2001). Her work with Richard Schmidt (Kasper & Schmidt, 1996) helped to bring ILP into the wider SLA mainstream by extending traditional SLA routes of inquiry to pragmatic development, while her work with Kenneth Rose (City University, Hong Kong) extensively reviewed work on key topics in ILP development (Kasper & Rose, 2002) and examined instructed learning of L2 pragmatics (Rose & Kasper, 2001).

Kasper's work on L2 oral proficiency interviews (House, Kasper, & Ross, 2003) introduced a new direction in her research as she turned to conversation analysis (CA) for the examination of how interviewers design questions (Kasper, 2006). This turn led to extensive work using CA, including research in the classroom (Tateyama & Kasper, 2008) and outside (Kasper, 2004). In this line of work, Kasper has recently explored issues such as conceptualizing and demonstrating L2 language learning and development with CA, the role of extraneous theory in CA for SLA, re-specifying cognition and affect in CA and discursive psychology, CA's potential for critical analysis, and the use of CA for qualitative research in applied linguistics (Markee & Kasper, 2004; Kasper, 2009; Kasper & Wagner, 2011). Her recent coedited volume with Hanh thi Nguyen (Nguyen & Kasper, 2009) continues her contribution to this ongoing research program.

SEE ALSO: Blum-Kulka, Shoshana; Conversation Analysis and Interview Studies; Conversation Analysis and Second Language Acquisition: CA-SLA; House, Juliane; Interlanguage Pragmatics; Pragmatics: Overview; Pragmatic Transfer; Speech Acts Research

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Kniffka, Hannes

BLAKE STEPHEN HOWALD

Hannes Kniffka (1942–) is emeritus professor of general linguistics at the University of Bonn, Germany. Kniffka's research and scholarship focus on numerous aspects of *forensic linguistics*—where language, and the linguistic analysis thereof, is evidence in a given legal proceeding—including authorship analysis, threat, and defamation analysis. *Working in language and law: A German perspective* (2007) summarizes several approaches to defamation analysis (Kniffka, 2007, chap. 5) and authorship analysis (Kniffka, 2007, chaps. 6–8). Kniffka employs various methodologies based in general theoretical linguistics and anthropological and sociolinguistics; (e.g., semantics [lexical], pragmatics [speech acts (Austin, 1962), Gricean implicature (Grice, 1975)], syntax, onomastics [names], terminology, and text linguistics). In terms of defamation, Kniffka illustrates how determining whether an utterance is an untruth (or merely insulting) requires attention to individual interactive and cultural elements. For authorship analysis, Kniffka possesses a principled and systematic perspective. In particular, Kniffka's treatment of orthographic data and other sociologically based aspects of language (punctuation, prescriptive grammar), which have proven to be problematic in authorship analysis (e.g., Chaski, 2001), is well balanced, insightful, and effective. The importance of this work cannot be overstated as participants to the legal system are often asked to analyze language—giving their thoughts, impressions, and assumptions on a disputed issue. Kniffka's research has worked to ensure proper understanding of linguistics is brought to the legal forum.

Beyond particular linguistic analyses and applications, Kniffka has made significant contributions to overarching policies in the *practice* of forensic linguistics (e.g., linguistic conduct in legal proceedings and the legal system's response to linguistics). The practice of forensic linguistics investigates the legal parameters, rules, and procedures that govern the application of linguistics (and any science) in legal proceedings. Kniffka's published work in this aspect of forensic linguistics (especially in the German legal system) appeared as early as 1981 and included such topics as expert testimony (Kniffka, 1981, 1994), interdisciplinary relationships with law enforcement and other forensic sciences (Kniffka, 1989), ethical considerations (Kniffka, 1993a), and general theories and methodologies (Kniffka, 1990, 1993b). Much of this work predates any other works of this kind in any jurisdiction and is of primary concern for any scientist interacting in the legal system (many of Kniffka's policy insights are summarized in *Working in language and law* as well). Kniffka (1981) is in fact the first scientific description of linguistic expert testimony in court, providing a systematic perspective based on opinions given in German courts in the 1970s.

Kniffka received his PhD in linguistics from the University of Bonn in 1968 (general linguistics, historical and comparative linguistics, Indic philology). During his PhD studies, Kniffka was a fellow of the German National Academic Foundation. Kniffka attended Stanford University and was advised by Charles A. Ferguson from 1968 to 1970 on a postdoctoral fellowship of the Education Foundation of the German People (Studienstiftung des deutschen Volkes). After a fire destroyed his belongings in 1970, including two book manuscripts, Kniffka was an instructor at the Defense Language Institute in Monterey, California, and an instructor in Classical Greek at California State University at Hayward from 1970 to 1972. Back in Germany, Kniffka was an assistant professor at the Institute

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for German Language and Literature at the University of Cologne from 1972 to 1981. There he also did his "Habilitation" in general linguistics with Hans-Jakob Seiler.

Kniffka was a professor of linguistics, German, and English at the King Abdul Aziz University in Jeddah, Saudi Arabia from 1981 to 1987, a lecturer in German linguistics at the German School of Shanghai International Studies University, Shanghai, PR China from 1987 to 1988 and a professor at the University of Bonn from 1989 to 2008. Kniffka is active in the forensic and broader applied linguistic community; regularly giving conference presentations and organizing panels at the International Association of Forensic Linguists (IAFL) and the Association Internationale de Linguistique Appliquée (AILA) conferences. Kniffka is a founding member of the IAFL and organized its first international conference at Bonn University in 1993. Kniffka also organized the first "forensic linguistics" session of AILA in Amsterdam in 1993. He is also a founding member of International Language and Law Association (ILLA).

SEE ALSO: Linguistic Analysis of Disputed Meanings: Threats

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Knowledge Claims

TRINE DAHL

Knowledge claims are very basic units in research communication. However, to provide a concise definition of the concept *knowledge claim* is not so easy. We may consider it as a mental construct that is verbalized in speech or writing and which relates to a specific field of knowledge. In applied linguistics, knowledge claims are central to all investigations of texts involving research. We may, for example, consider how historians and political scientists present their findings (the basis for new knowledge claims) in the genre of the research article: Are the findings presented in a bold (unhedged) or more tentative (hedged) form? Or, we may compare how historians and political scientists deal with previous research (representing currently accepted knowledge) cited in their articles: Is it openly criticized, or rather outlined in a more neutral way? Knowledge claims are studied within several theoretical frameworks, by means of various methodological approaches, and in terms of a number of different pragmatic and linguistic aspects. This entry will present knowledge claims in relation to the following issues: (a) different assumptions about knowledge, (b) textual and linguistic features associated with knowledge communication, and (c) how knowledge claims are researched in applied linguistics.

Different Assumptions About Knowledge

The link between a particular knowledge claim and a knowledge field (representing the basis for an academic discipline) implies that the nature of the claim is related to the nature of the knowledge which is represented in the cognitive territory (Becher & Trowler, 2001) we are dealing with. While some elements of scientific arguments may be said to be field-invariant (Toulmin, 1958), others are field-dependent. All fields make use of data to draw conclusions. The nature of the data, however, may vary. Therefore, what counts as knowledge to some extent varies with the disciplines we study. Claims which are formulated in research-based texts may rest on quantitative or qualitative observations (or both), or on more subjective insights. In a natural science discipline like medicine, for example, knowledge production is often linked to large-scale statistically based studies. Thus, in a medical report, the claim that smoking causes cancer will be based on numerical data showing a significant difference in the occurrences of cancer in the smoker and the non smoker groups. In social science disciplines, for example economics, new knowledge may come from specific constellations of arguments that are fact-based or fact-backed. A paper dealing with the topic of unemployment will typically make use of statistics. But the economist must also explain why the computer model used in the study is based on a particular combination of "social" factors which may be relevant for unemployment, for example gender, education, wage levels, or labor mobility. In humanities disciplines, for example philosophy, researchers to some extent draw on subjective perceptions. In a philosophy essay, therefore, the philosopher's way of arguing for a claim will be different from what we find in natural and social science, because the research questions are different: Issues like "How do we know what we know?" and "What is ethical or moral behavior?" must be dealt with by means of research methods other than those used in medicine and economics.

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What we at a given point in time consider to be the content of a discipline represents knowledge that has gained acceptance in the associated research community over time. New claims may challenge this common knowledge base. A new claim may lead to modifications of the base if it is found to be more valid than the old one: The earth is flat → *the earth is round*. In other cases, a new claim modifies an old claim: Smoking is dangerous, not only to smokers, *but also to nonsmokers exposed to cigarette smoke*. Sometimes, new claims expand the knowledge base, because the research deals with aspects which have not been studied before. This happened, for example, when the development of magnetic resonance imaging (MRI) technology in medicine made it possible to observe brain activity directly. In linguistics, the availability of powerful computers has made it possible in recent years to establish and search large electronic corpora. Computer linguists are therefore now able to reveal patterns of regularity regarding linguistic phenomena which manual investigations of texts could not provide.

In the positivist tradition of science—which was long prevalent (and to some extent still is) in the natural sciences and many social science disciplines—what counted as knowledge were phenomena that we could observe and then describe in an objective way. In the late 19th century, the philosophical movement of pragmatism (Peirce, 1905), and some decades later, the postpositivist view of what knowledge is, gained ground. In these approaches to scientific activity, observations are not objective, but dependent on current theory as well as the observer's cultural experiences. Therefore, knowledge cannot be separated from the culture and context in which it evolves. This change in the view of science also had implications for how we look upon knowledge representation in texts. In the rhetoric of science tradition, Bazerman (1981) gave the following description of the relationship between knowledge and text: "Texts bring together worlds of reality, mind, tradition, and society in complex and varying configurations, and knowledge is in those words that sit in the middle" (p. 379). Today most applied linguists, to varying degrees, take a social constructionist approach to knowledge communication. This implies that individuals (academics) learn to become fully fledged and competent members of particular sociocultural groups (research communities) through active participation in the language-based practices which the groups are involved in. As "academics work within communities in a particular time and place . . . it is this intellectual climate which determines the problems they investigate, the methods they employ, the results they see and the ways they write them up" (Hyland, 2009, p. 12). In this perspective, the text becomes a site for interaction where knowledge is co-constructed between writer and reader. In applied linguistics, the branches of pragmatics and discourse analysis represent particularly useful approaches to bring out salient features of textual knowledge construction. Most studies have a pedagogical aim: How can newcomers to an academic field present their research contribution in a manner that is acceptable and convincing in terms of the reporting practices of the discipline?

Textual and Linguistic Features Associated With Knowledge Communication

Knowledge claims have mainly been studied in written genres. In the genres of the research article and the scientific report, the academic writer focuses on the presentation of his or her new claim. In book reviews, the writer's claim is directly based on the assessment of someone else's claim. Knowledge claims are also the foundation of the pedagogical genre of the textbook. Put simply, textbooks report the current state of knowledge, that is, the aggregate of accepted knowledge claims in a field. In recent years, the development of spoken corpora such as for example MICASE (Simpson, Briggs, Ovens, & Swales, 1999) has made it easier to study how knowledge is communicated in oral genres, such as the university lecture (Ädel, 2008) and the conference presentation (Rowley-Jolivet, 2002).

In most academic disciplines, the research article (RA) is the most important genre for creating new knowledge. Previously, the writer's claim (or claims) tended to be presented only in the discussion section(s) of the RA. In recent years, the trend in many disciplines has been also to introduce the reader to the claim at some point early in the text. Swales and Najjar (1987) reported that in physics it had become increasingly common to mention the principal findings in the introduction section of the article. Berkenkotter and Huckin (1995) confirmed this development in their study of other science disciplines and stated that "the introduction occupies the same physical location it always has, but it contains much more bottom-line results than it used to" (p. 35). They likened RA introductions to news reports and suggested that since academics have become increasingly pressed for time, they need to be informed early in the text of items which carry high news value. This enables them to decide quickly whether the whole text is worth reading or not. Later studies have arrived at similar results for yet other disciplines (Swales, 2004). RA titles have also become more informative, and they may even take the form of complete sentences (Berkenkotter & Huckin, 1995). In the natural sciences, the title in fact sometimes represents the full claim made in the paper: "Spatial awareness is a function of the temporal not the posterior parietal lobe" (from an article published in *Nature*, cited in Fahnestock, 2004, p. 20) or "Cu^{2+} ions interact with cell membranes" (from an article published in *Journal of Inorganic Biochemistry*, cited in Haggan, 2004, p. 296).

The interpersonal aspect of knowledge construction implies that much research focuses on identifying linguistic manifestations of the interaction between writer and reader in the text, as well as the pragmatic function these various linguistic traces have. In many social science and humanities disciplines, the negotiation of knowledge entails a writer who is visible, at least in the Anglo-American writing tradition (Hyland, 2005). In such disciplines, academic writers may introduce the claim by *We find that . . .* and *I argue that. . . .* In the natural sciences, on the other hand, writers have a less prominent place in the textual knowledge construction process. It is the procedures and the data that speak, and therefore it is not *we* or *I*, but *the data* which *show that. . . .* Another reflection of an active and involved writer is the use of metatextual devices to make sure that the reader immediately notices the new claim. Expressions such as *The main contribution of this paper is that . . .* and *Our key finding is that . . .* serve the function of drawing attention to the knowledge claim. Advocacy of the newsworthiness and importance of the claim is also a rhetorical strategy that writers in many disciplines make use of today. An increasing amount of self-promotion by means of evaluative statements such as *These studies provide the* ***first*** *empirical evidence that . . .* and *That [x is the case] is an* ***important*** *finding, because . . .* (Lindeberg, 2004; Hyland, 2009) indicates that academic knowledge communication is taking on features which are more typically associated with commercial marketing techniques.

Yet another aspect that is considered in linguistic analyses of knowledge claims is the strength of the claim. In the two RA titles cited above, the claim is boldly presented: *. . . is a function of, . . . ions interact with*. No reservations, this *is* the case. However, new knowledge claims are often presented in a more tentative manner by means of hedging devices such as modal verbs, adjectives, adverbs, and so forth. Thus, the outcome of a study *seems to indicate that . . .* and findings *may possibly be interpreted as . . .* In some cases, of course, the hedging is a reflection of the fact that the claim cannot be categorically stated. It may be based on incomplete data; the methods used in the study may be imperfect, etc. Tentative claim making has also more generally been considered as a politeness strategy (Myers, 1989). In such a framework, an unhedged claim may represent a face-threatening act. In other frameworks, hedging is seen as a reflection of the interactive negotiation process: The writer allows the reader to decide whether the claim is acceptable (e.g., Hyland, 1998).

To anticipate and assess the reader's reactions is an important part of the writing process, both when writer and reader share the same knowledge background and when they

do not. In the latter case, the communication situation is characterized by knowledge asymmetry. The academic writer must then adapt the presentation of the claim to a less specialized or even nonspecialist audience that lacks the appropriate knowledge background for understanding the claim. Such situations occur when new research on issues of general interest, for example global warming, is presented to government decision makers or members of the general public. Claims in policy reports and popular science magazines are communicated by means of very different textual strategies than those used in the technical and scientific papers intended for the writer's peers. What happens to claims in such adaptation processes is discussed in, for example, Fahnestock (1986). In another paper (Fahnestock, 2004), the focus is on "how a scientific argument can be adapted for different audiences with different needs, interests and background knowledge and yet remain recognizably the same argument" (p. 8). This implies that we should not only study changes between versions; "It may also be worthwhile to ask what stays the same" (p. 9).

How Knowledge Claims Are Researched in Applied Linguistics

The various aspects of claim construction and communication mentioned in the first two sections of this entry are all relevant for studies in applied linguistics. The basic approach taken in many studies is *comparison* of texts that differ with respect to one or more variables. The most common variables are genre, discipline, and language. Knowledge construction in the research article may be compared with that of the book review (e.g., Hyland, 2000). Within the genre of the research article, one discipline may be compared with that of another (e.g., Holmes, 1997, on history, political science, and sociology; Fløttum, Dahl, & Kinn, 2006, on medicine, economics and linguistics). In terms of the language variable, a number of different research scenarios may be established. Due to the unique position of the English language in the global research community, we often compare English texts (written by native or non-native speakers) with texts in other languages (e.g., Fløttum et al., 2006, on English, French, and Norwegian). We may also focus on how individual scholars present and argue for their research contribution. The scholars who are singled out for such case studies are typically those who have played a major role in their field. Hyland (2008), for example, considers the prose style of John Swales, one of the most influential people in the field of English for academic purposes. Hyland finds Swales's writing to be "not the faceless discourse which academic prose is often caricatured to be, but a style of writing infused with the subjectivity of a writer making decisions, weighing evidence and drawing conclusions" (p. 146). Gotti (2009), in a study of the economist John Maynard Keynes's style in his classic book *General Theory*, concludes that "Keynes did not always shape his arguments in a way that would meet the standard expectations of his readership" (p. 298). Such studies of individual writers show that the generic and linguistic conventions which are established through investigations of academic discourse are not absolutes. There is room for developing a personal voice.

In terms of theoretical framework, genre theory (Swales, 1990) is used in many studies that involve knowledge construction. Genre studies focus on how writers within various disciplines exploit a particular text format or schema, and how argumentation patterns and rhetorical strategies may change in response to changes in the communities where the genre is used as a vehicle of knowledge dissemination. The observation (mentioned in the second section of this entry)—that, due to changed information needs, writers in many disciplines now present the new claim in the introduction section of the RA—represents such a study. The participatory aspect of knowledge communication is accommodated within the conceptual framework of metadiscourse (Hyland, 2005). This framework deals with discourse features that relate to the interaction between writer and reader (e.g.,

the use of personal pronouns and metatext) and that contribute to building rapport between the communication partners. The somewhat elusive notion of evaluation (Hunston & Thompson, 2000) is also relevant to the study of knowledge claims, for example to describe the process of situating new knowledge in relation to old: *While Jones (2006) only considers . . . , our findings are based on . . .* (e.g., Lindeberg, 2004). In such cases the writer uses comparison, which is one of the most basic elements in evaluation, together with promotion to demonstrate that the new knowledge is superior to the old.

In terms of methodology, the development of large electronic corpora and of specific corpus linguistic methods have made it possible to carry out quantitative analyses of linguistic phenomena in representative collections of entire texts. Statistical tests, typically based on frequencies, are applied to the data to support or reject hypotheses about tendencies in linguistic practices. However, it is a problem that knowledge claims are realized linguistically in a number of different ways. In addition, there is no general agreement on the kind of unit that represents a claim. In the context of the research article, it has been described as "an item . . . which the writer puts forward to be added to the sum of knowledge agreed upon by the community of that discipline" (Hunston, 1993, p. 133, note 2). This "item" may be a proposition (Myers, 1992), or an argument which is constructed over several propositions (Dahl, 2008). Due to the lack of a structurally well-defined search unit, it is usually necessary to include manual stages, even in analyses which are based primarily on automated corpus searches. One example of such an analysis is a search procedure with a point of departure in words which writers typically use to signal knowledge claims. Nouns like *finding* and *result* and verbs like *argue* and *suggest* commonly serve this function. However, it may not be possible to rely on such a simple search procedure alone. In a research text several "voices" are present. In addition to the writer's voice, other researchers' voices are included, most commonly through citations when the writer is positioning the new claim in relation to what others have claimed. Thus, the verb *argue* refers to the writer's own claim when it occurs in combinations with a first person pronoun: *In this paper,* ***we argue*** *that. . . .* In combination with a third-person pronoun or proper name, on the other hand, the verb refers to claims made by others: ***He/Smith*** *(2009)* ***argues*** *that. . . .* Therefore, single-word search procedures may have to be refined to include combination searches. In most cases, it is still necessary for the applied linguist to read through the corpus texts in order to make sure that all the claims which are relevant for a particular investigation have been identified. Manual stages are also required in the analysis phase to identify the pragmatic function of, for example, hedging in the claim presentation process. Since applied linguists often study texts from knowledge areas where they themselves are not experts, qualitative methods such as questionnaires and interviews with the academic writers are useful to uncover the pragmatic intentions behind the knowledge claim features which are identified in a corpus-based analysis (e.g., Hyland, 2002; Dahl, 2009).

SEE ALSO: Corpus Analysis of Spoken English for Academic Purposes; Corpus Analysis of Written English for Academic Purposes; English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Metadiscourse; Positivism and Postpositivism; Pragmatics in the Analysis of Discourse and Interaction; Swales, John M.

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Kramsch, Claire

PAIGE WARE

Claire Kramsch is an international scholar whose fields of interest include second language acquisition, applied linguistics, discourse analysis, social and cultural theory, multilingualism, and the applications of each field to language teaching and learning. Colleagues point to Kramsch as a key voice in helping to shift the field of foreign and second language teaching and learning from a focus on structures and strategies to include a much more complex intertwining of culture, discourse, power, literacy, pragmatics, semantics, and ideologies. Over the last 30 years, her scholarly work has provided the field with theoretical and empirical writings that bring these various interdisciplinary lenses into mainstream discussions of language acquisition. She has introduced constructs such as "third place" (Kramsch, 1993), "third culture" (Kramsch, 2009c), and "symbolic competence" (Kramsch, 2006), all of which allow educators and researchers to grapple with changing conceptions of what it means to learn and teach languages in an increasingly multilingual, multicultural, and multimodal world. Themes in her work include an insistence that language not be taught or conceived as separate from culture (Kramsch, 1993, 1998, 2009a; Kramsch & Thorne, 2002); that literature and language be viewed as mutually informing and interdependent (Kramsch, 2000); and that symbolic and historical aspects of language and their centrality in maintaining existing relations of power be made central within an ecological approach to language use and learning (Kramsch, 2008a, 2009c; Kramsch & Whiteside, 2007, 2008). Across all themes, Kramsch grounds her ideas in the experiences of language learners and teachers as they are situated within classroom, institutional, social, cultural, political, and ideological contexts and forces.

Kramsch completed her studies in German language and literature at the Université de Paris-Sorbonne in 1959. She then moved to Germany, where she taught French at the Institut Français in Freiburg before emigrating to the United States. For 23 years, her first academic home in the US was at the Massachusetts Institute of Technology, during which time her tenure included several years as a German professor and as the head of the Department of Foreign Languages and Literatures. In 1989, she accepted a position as Full Professor in the Department of German at the University of California at Berkeley, and three years later was offered also an affiliate professorship in the Graduate School of Education. While anchored professionally at UC Berkeley, Kramsch has also been a visiting professor at the University of Jyvaskyla in Finland, the University of Vienna in Austria, the University of Michigan, Penn State University, Cornell University, the University of Arizona, and the Interuniversity Center in Yugoslavia.

A close reading of the intellectual influences behind Kramsch's work is provided in her biographical memoir of Pierre Bourdieu (Kramsch, 2008b), in which she traces his life and work by using her own biographical trajectory as an interpretive lens. In this account, she describes how she, like Bourdieu, began her career in the study of philosophy in France, but eventually began to critically reflect on the training she had received. In a thoughtful and intimate recounting of events, she describes both her physical relocation from Europe to the United States, as well as the intellectual shifts that resulted from pivotal influences such as the experience of reading Bourdieu while teaching at MIT. She develops the notion of a reflexive, or Bourdieusian, stance to research, in which "researchers make explicit

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whom or what they are directing their research against, what social and personal factors have triggered their research interests, what institutional and political conditions of possibility have made their object of study into what it is" (Kramsch, 2008b, p. 45).

Such an ethically aware, grounded stance is very much alive in Kramsch's work. The sheer volume of her scholarly writing is impressive: 11 authored or edited books, 68 refereed journal articles, and 79 chapters. Those familiar with her work would smile at the bureaucratic flavor of such a numerical accounting of her publications, as she is known for challenging reductionism. She argues against a primary focus in language education on quantifiable results, instrumental goals, and metaphors of efficiency. Instead, she has offered the field decades of thought-provoking and pivotal pieces that have done much to shift the course of language education toward more complex, situated views of language, communication, culture, and power.

Almost 20 years ago, her book *Context and Culture in Language Teaching* (1993) helped articulate unease in the field that language teaching was becoming too divorced from context. In this book, she criticized traditional views of language that put faith in universal meanings and in an idealized native speaker, and she instead advocated an approach "more interested in fault lines than in smooth landscapes, in the recognition of complexity and in the tolerance of ambiguity, not in the search for clear yardsticks of competence or insurances against pedagogical malpractice" (1993, pp. 1–2). Her carefully laid out argument, punctuated by classroom examples, caught fire among colleagues and helped usher in a focus on context, variability, and difference. She also proposed the theoretical construct of a "third place" that "preserves the diversity of styles, purposes, and interests among learners, and the variety of local educational cultures" (p. 247). The book's contribution to the field was acknowledged in 2009 with the coveted Modern Language Association (MLA) Kenneth Mildenberger Prize, which honors book-length contributions to the fields of language, literacy, culture, and literature that carry implications for teaching foreign languages.

More recently, Kramsch has written about *symbolic competence*, a construct that, as she explains, "does not do away with the ability to express, interpret, and negotiate meanings in dialogue with others, but enriches it and embeds it into the ability to produce and exchange symbolic goods in the complex global context" (2006, p. 251). Symbolic competence is born out of an ecological view of language learning and encompasses linguistic forms, communicative choices, embodied experiences, emotional responses, and historical and moral dimensions. She has used this analytical construct to analyze language learning in institutional contexts (Kramsch, 2008a) and in multilingual settings (Kramsch, 2009b; Kramsch & Whiteside, 2007, 2008), and most recently at the individual level in her book *The Multilingual Subject* (2009c). This book explores the subjective aspects of language acquisition by analyzing data from published language testimonies and memoirs; from language learners' journals, interviews, and surveys; and from online data from learners in multilingual communicative contexts. It was awarded an MLA Kenneth Mildenberger Prize for 2009 and promises to gain momentum as an anchor text that provides the field with a theoretical and empirical frame for understanding language education in an increasingly connected, multimodal, and plurilingual world.

The import of Kramsch's scholarly work is reflected not only in her written work, but also in her service to the field. Across the last 20 years, she has averaged eight keynote speeches, plenary addresses, or workshops each year at universities in Asia, Australia, Europe, North America, and Southeast Asia. In these talks, she offers thought-provoking theoretical and pedagogical insights into the intertwined relationships of culture and language as well as critical analyses on topics as diverse as multilingualism, intercultural theory, literacy and technology, metaphoric imagination, language ecology, identity formation, and discourse and gender analysis. She has been acknowledged through awards from

many professional organizations and through invitations to serve on editorial boards and in leadership positions. Awards include the aforementioned MLA Kenneth Mildenberger Prize in 1993 and 2009, the Distinguished Service Award from the Modern Language Association in 2000, and the Distinguished Scholarship and Service Award from the American Association for Applied Linguistics (AAAL) in 2008. The Goethe Institute has thrice honored her work, first with a Certificate of Merit in 1986, later with a series of grants to conduct trilingual/tricultural teacher training seminars in 1994, and most recently, with a prestigious Goethe Medal in 1998 for promoting intercultural understanding between Germany and the United States. She has received two honorary doctorates, one from the Middlebury School of Languages in 1998, and another from St. Michael's College in 2001. She has served on editorial boards of 14 prominent refereed journals; she served as coeditor of *Applied Linguistics* from 1999 to 2004; and she is currently the editor and founder of the new *L2 Journal*. She was the president of AAAL in 1994 and has served on numerous other commissions, councils, and advisory groups.

In all of her work, Kramsch has insisted on making connections to language teaching, and her own craft as a teacher—whether in the classroom or as a workshop leader or discussant—has inspired generations of students, scholars, and colleagues. She is an ardent supporter of idea exchange and has organized countless courses, colloquiums, and other venues for sharing and critique. She has helped organize international conferences on language ecology, plurilingualism, and intercultural learning. She has also brought politically difficult topics into conference discussion spaces, including a colloquium at AAAL that addressed the controversial involvement of the US Department of Homeland Security with federal language funding. In 1994, she founded the Berkeley Language Center, which has blossomed into a center for workshops and colloquiums as well as a virtual space for exchanging ideas and resources for language education. Also at Berkeley, she has developed several cutting-edge courses, such as a language ecology course that brought in interdisciplinary lectures and a Language and Power course which has, as one former student writes, "legendary status with waiting lists to get in" (A. Whiteside, personal communication, 2010). When awarded the prestigious UC Berkeley Distinguished Teaching Award in 2000, she commented that for every class, she tries "to spark students' interests while challenging their intellect . . . to create a context in which together we can experience new ways of seeing things that, at first sight, might look familiar" (http://teaching.berkeley.edu/dta00/kramsch.html).

It is appropriate for a discussion of Kramsch's contributions to the field to conclude with an acknowledgment of her rhetorical style. Her writing carries a recognizable stamp of rigor, freshness, and elegance, as it provides insightful juxtapositions of thought and unique analytical lenses. The examples she uses are drawn from a wide range of arenas, including literary texts, sociological studies, philosophical treatises, and interactional data. In her recent book *The Multilingual Subject*, she provides a typically poignant turn of phrase to describe the import of foreign language study for many students: "Yet below the radar of tasks and exercises, the students discover in and through the foreign language subjectivities that will shape their lives in unpredictable ways" (2009c, p. 3). In a similar vein, below the radar of this brief account of Kramsch's work—the lists of publications and the short synopses of her complex work—students and colleagues discover in her work subject positions and ideas that have shaped our professional lives and our field in unpredictable, and invaluable, ways.

SEE ALSO: Ecological Approaches in Qualitative Research; Multilingualism and Identity; Teaching Culture and Intercultural Competence

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Krashen, Stephen

KATY ARNETT

Stephen Krashen was born in Chicago, Illinois, in 1941. He earned a PhD in linguistics from the University of California, Los Angeles, and is currently professor emeritus of education at the University of Southern California's Rossier School of Education. He spent most of his career at this institution, arriving in 1975 following a two-year turn at Queens College in New York. Krashen retired from teaching in 2002, but remains an active and vocal scholar. To date, his publication record stands at nearly 500 books, articles, chapters, and monographs, along with countless conference presentations, plenary sessions, and keynote addresses.

The initial phase of Krashen's career focused on framing understanding about how second languages (L2) are acquired. Krashen had been an active scholar since the 1970s, but it was his work in the 1980s that firmly established him as an early leader in the field of second language education. In 1981, Krashen published *Second Language Acquisition and Second Language Learning*, which used his previous work with adult learners of second languages to explore, in greater detail, his monitor theory. Monitor theory maintains that adult learners of a second language have two ways through which to develop their proficiency in the target language: acquisition, which exists at a subconscious level, and learning, which exists at a conscious level. Of the two, acquisition is viewed as most critical to the mastery of the L2, as it enables the individual to use the L2 knowledge he/she has unconsciously gathered through natural exposure to meaningful language. Learning, on the other hand, serves the more modest role of supporting the conscious recruitment of monitoring processes to help regulate and repair the quality of the L2 that has been produced, a product of the acquisition system. The following year, he published *Principles and Practices in Second Language Acquisition*, which is often regarded as his seminal text on second language acquisition and clearly outlined his influential nativist perspective on L2 development. The text introduced the "monitor model," consisting of five formal hypotheses that were designed to offer a comprehensible explanation of the development of second language proficiency. These hypotheses include: (a) the acquisition-learning hypothesis; (b) the monitor hypothesis; (c) the natural order hypothesis; (d) the input hypothesis; and (e) the affective filter hypothesis. In 1983, Krashen collaborated with Tracy Terrell to publish *The Natural Approach*, which endeavored to help practitioners translate the various aspects of his theories on second language acquisition to classroom practice.

Krashen's initial hypotheses, based on evidence from differing domains of research, have been noted for their intuitive appeal to classroom practitioners, particularly in relation to the affective filter hypothesis (Lightbown & Spada, 2002, p. 40). The ideas introduced in these three texts permeated his work for the next decade, as they fueled vigorous theoretical development within the field by inciting systematic debate about the distinction between learning and acquisition, the role of input in shaping language knowledge, and the emotional needs of the learner in the classroom (e.g., Krashen, 1985, 1999). These issues have been recast into contemporary constructs that continue to be debated and researched, such as the interface between explicit and implicit knowledge, the distinct contributions of input, comprehension, and content-based learning to second language development, and the centrality of affect in language learning.

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Krashen's interest in the development of literacy became a greater focus in the 1990s, largely as an outgrowth of his work with the input hypothesis, which has always been one of his central contributions to the field of second language acquisition and which he has since refined and relabeled as the comprehension hypothesis (2001). According to the comprehension hypothesis, language acquisition happens when we understand messages that have been conveyed to us, through speech or writing. Comprehension of written messages (reading) is the basis for our literacy development, that is, the ability to use sophisticated language structures, accurately spell, and apply appropriate style conventions in writing (Krashen, 2004). Krashen (2003, 2010) argues for the use of free voluntary reading experiences as a way to strengthen one's reading capacity and, more notably, as a way to possibly remedy two significant challenges in the experience of developing L2 proficiency: using the language in more authentic ways and gaining academic language competence. Recent large-scale, rigorous research into the benefit of extensive reading and reading for pleasure has provided confirming evidence for this position (e.g., Beglar, Hunt, & Kite, in press). This line of inquiry dominates much of Krashen's current work, which also includes the impact of poverty on access to reading opportunities, questioning the need for extensive instruction in phonics and phonemic awareness, the need to limit the number of standardized tests in school settings, summer reading programs, and stronger school and public libraries, among other themes. With this phase of his scholarship, Krashen's influence now extends beyond the field of second language education (e.g., Shin & Krashen, 2008).

The 1990s also saw the development of another aspect of Krashen's scholarship: the vocal support of and advocacy for bilingual education. In this decade, the political landscape in California led to considerable debate and contention about the educational programming needed to effectively meet the needs of the state's growing population of English-language learners (ELLs). The debate ultimately culminated in the passage of a ballot initiative known as Proposition 227, which led to the end of most traditional bilingual programs in that state, in favor of an intensive, one-year structured English immersion program (Crawford, 2008). Krashen's prior research in second language acquisition was consistently cited in the lead-up to the vote as proof of the positive impact of bilingual education, and he actively engaged in additional scholarship designed to question the logic and research being used by opponents of bilingual education to advance their argument and to challenge the replacement model of structured immersion and question its impact (e.g., Krashen, 1996, 1999). As part of this debate, as well, Krashen has also explored the status, maintenance, and impact of heritage languages for ELLs (e.g., Cho, Shin, & Krashen, 2004).

Krashen's five-decade career has left an indelible legacy in second language education, offering insights into key aspects of language acquisition and teaching, from theoretical understandings of how language is acquired, to methods for enacting theories, to the programming opportunities that can help or hinder student success, to the components of powerful reading experiences, among other inquiries. He has also provided a model for effective scholarly advocacy in applied linguistics.

SEE ALSO: Advocacy in Language Teaching; Bilingual Education; Graded Readers; History of Language Teaching Methods; Input-Based Instructional Approaches; Role of Instruction in Second Language Acquisition Theories

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Kress, Gunther

JEFF BEZEMER AND JAN BLOMMAERT

Gunther Kress (1940–) is a linguist, semiotician, and social theorist. Cofounder of critical linguistics, critical discourse analysis, and social semiotics he has worked across the humanities and social sciences, synthesizing ideas from Marx and Foucault with literary studies, transformational generative linguistics, systemic functional linguistics, sociolinguistics, cultural studies, media studies, and design studies. He has written extensively on power, ideology, discourse, genre, pedagogy, multimodality, representation, and communication, including more than 15 books. He earned a Doctor of Letters from the University of Newcastle, Australia, in 1988, and was made Doctor of the University by the University of Technology, Sydney in 1993 in recognition of his achievements. The impact of his ideas extends well beyond academia, in particular in literacy and education, advertising, and graphic design.

Kress's career path cuts across different continents. He studied English literature at the University of Newcastle, Australia (1962–1966). In the final year of this undergraduate program he focused on linguistics, engrossing himself in the work of Noam Chomsky. Upon completing his degree he moved to Europe, first to Germany, where he was a *Lektor* for a year, and then to England, where he worked as a research fellow and later as a lecturer in Applied Linguistics at the University of Kent (1967–71). From Kent he commuted up to London to do a postgraduate course in linguistics at University College London, where he was supervised by Michael Halliday. He then became a lecturer in linguistics at the University of East Anglia, Norwich, where he developed critical linguistics with Robert Hodge, Roger Fowler, and Tony Trew, coauthoring *Language and Control* (Fowler, Kress, Trew, & Hodge, 1979) and *Language as Ideology* (Kress & Hodge, 1979). As editor of *Halliday: System and Function* (1976) he also helped settle the naming of Halliday's linguistics, which until then was variously called either system structure theory or system function theory.

He moved back to Australia in 1978, inaugurating and heading up the School of Communication and Cultural Studies at the South Australian College of Advanced Education, Adelaide (1978–83) before moving to the Institute of Technology, Sydney, where he was dean of the Faculty of Humanities and Social Sciences. In 1987 he became professor of communication at the University of Technology, Sydney. During this time in Australia, Kress continues to teach and write about language and power (Kress, 1985, 1988), introducing critical linguistics (and critical discourse analysis, as it was now beginning to be called) to the emerging field of cultural and media studies. He also wrote *Learning to Write* (1982), in which he reflects on (his own) children's developing sense of writing, and embarks on two collaborative projects, a second project with Robert Hodge, who had already moved back to Australia in 1977, and a project with Theo van Leeuwen.

With Hodge Kress developed the premises and concepts from critical linguistics to explore other modes of representation, such as image, sculpture, photographs, paintings, and layout in magazines and on billboards. They named their approach after Michael Halliday's *Language as Social Semiotic* (1978), taking from him the idea that language is one of many semiotic resources available within a culture. Unlike Halliday, and unlike some others who took Halliday's ideas on power and control forward and continued to name their approach critical discourse analysis (such as Fairclough, 1989), Hodge and Kress

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aimed to look across semiotic resources, and named their approach *Social Semiotics* (1988). With van Leeuwen Kress continued to develop a social semiotic approach to image, culminating in *Reading Images* (1990, published by Routledge in 1996). Socially and culturally organized sets of semiotic resources would later become known as "modes," and "multimodality" became a key concept of social semiotics. Multimodality highlights that meaning is always made in different "modes"—speech, gesture, facial expression, writing, color, music, and so forth—which have different *affordances*. Modes allow only certain messages to be articulated, and their affordances are socially conditioned. This insight would be crucial for the later part of Kress's career.

Kress moved back to England to become professor of English at the Institute of Education, University of London in 1991; and, in 2008, professor of Semiotics and Education. Now in an institutional environment which is focused on teaching and learning, he developed social semiotics along educational lines. Drawing on his encounters with Basil Bernstein, he weaved in notions of curriculum and pedagogy. He took part in the New London Group (1996), discussing the future of literacy and education in a global world and new media. In *Before Writing* (1997) and *Early Spelling* (2000) he continues to think about "learning" through making and engaging with text, seeing sign making as creative, transformative acts.

Back in England, Kress focused increasingly on "multimodality"—not only understood as an approach to the theory and analysis of "print text," as mediated through books, magazines or screen, but of all forms of representation and communication, including "talk"—and of the relations between them. This understanding is articulated in *Multimodal Discourse* (2001), the product of a second round of collaboration with Theo van Leeuwen, who was based at the London College of Printing in the late 1990s. The book title features "discourse," not "semiotics," as the former had become more "speakable" (Hodge, 2009), making it the preferred title for publishers. Multimodality became the starting point for a number of research projects which Kress led in the 2000s. Funded by UK research councils, and working with Carey Jewitt and others he explored the multimodal production of science and English in classrooms, on screens, and in textbooks (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001; Kress et al., 2005; Bezemer & Kress, 2008), focusing on social, cultural, and technological change and its relation to multimodal representation and communication (Kress, 2003).

Since Kress's pioneering work multimodality has become a widespread approach to research, with a distinctive set of methods for collecting and analyzing data of all kinds, complementing, in particular, applied linguistics and ethnography (see Jewitt, 2009). That said, as this has been adopted across disciplines "multimodality" does not necessarily imply the premises and concepts of Kress's or indeed others' versions of social semiotics (such as the Scollons's geo-semiotics). While manifold and under constant revision these premises and concepts may be summarized under three headings: sign making, multimodality, and change.

The notion of the *sign* is borrowed from traditional semiotics. Signs are elements in which the signified ("meaning") and signifier ("form") have been brought together. In Kress's *social* semiotic take, the "sign" is always viewed in relation to its "making." *Sign making* builds in part on the Hallidayan notion of choice, which proposes that sign makers choose from a range of resources, all of which have different meaning potential and social effects. But it also highlights that sign makers choose not just from preexisting, fixed resources, but instead actively make signs: "Signs are *made*—not used—by a sign-*maker* who brings meaning into an *apt* conjunction with a form, a selection/choice shaped by the sign maker's *interest*." (Kress, 2010, p. 62). Thus "sign making" foregrounds the agency and creativity of sign makers, while acknowledging that the resources that they draw upon are always limited and shaped by the social environment and circumstances of use.

Multimodality provides a radical alternative to the common "verbal–nonverbal" dichotomy, which positions the verbal as the unmarked, dominant resource for making meaning, and the nonverbal as the marked, auxiliary resource. Kress's multimodal view holds that (a) communication is always and inevitably multimodal, and (b) that each of the modes available for representation in a culture provides specific potentials and limitations for communication, that is, affordances. The first assumption implies the need (for applied linguists, educationalists, etc.) to attend to all modes that are active in an instance of communication. The second assumption implies the need to attend to the specific meanings carried by the different modes in communicational ensembles. A *mode* is defined as a socially shaped cultural resource for making meaning. Image, writing, layout, speech, and moving image are examples of modes. Modes have differing modal resources. Writing for instance, has syntactic, grammatical, and lexical resources, graphic resources such as font type, size, and resources for "framing," such as punctuation. Writing might make use of other resources, for instance, the resource of color. Speech and writing share aspects of grammar, syntax, and lexis. Beyond these, speech has intensity (loudness), pitch and pitch variation (intonation), tonal/vocal quality, length, and silence. Image has resources such as position of elements in a framed space, size, color, shape, icons of various kinds—lines, circles—as well as resources such as spatial relation; and in the case of moving images, the temporal succession of images, "movement." Thus modes have different affordances, which shape representation.

The interrelation between *social*, *cultural*, *technological*, and *representational* change is another central premise in the work of Kress. In short, he aims to account for the practices, aesthetics, ethics, and epistemologies of text production in an era where vertical power structures are increasingly being replaced by horizontal, participatory structures (Kress, 2008). This project entails not only a reevaluation of pre-Internet notions of authorship such as "plagiarism" and "copying" in view of, for example, emerging discourses and genres on social networking sites, but also developing an understanding of the implications of representational changes in "old" yet still widely used media, with image being ever more widespread, for instance in information books and textbooks (Kress, 2005).

Looking at Kress's career to date, the order in which the three key premises were just discussed can be seen to reflect a chronological order. The notion of the sign emerged from the recognition, in the early 1970s, of the centrality of power in society, which was lacking so prominently in the linguistics of Chomsky. A decade on, in the 1980s, social semiotics emerged from the recognition of the centrality of drawings and other images in meaning making, which culminated in the notion of multimodality. Another decade on, the focus on "change" emerged in the wake of the World Wide Web and the recognition of the centrality of the screen and its representational implications. In all three periods, Kress has been among the first to draw our attention to what soon became taken for granted. Taken together, the three premises are an immensely powerful social theory of meaning, with wide ranging ramifications for applied linguistics, the humanities, and social sciences, and beyond.

SEE ALSO: Critical Analysis of Multimodal Discourse; Halliday, M. A. K.; Multimodal Discourse Analysis; Multimodality and Literacy; Scollon, Ron; van Leeuwen, Theo

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Kroll, Judith

ANA I. SCHWARTZ

Judith F. Kroll (1948–) is a distinguished professor of psychology, linguistics, and women's studies at the Pennsylvania State University. Throughout her career she has made significant contributions across the fields of cognitive psychology, psycholinguistics, and applied pyscholinguistics—too numerous to capture here in full. For example, the revised hierarchical model (Kroll & Stewart, 1994) broke new ground for research on bilingualism by providing a framework for understanding the cognitive architecture of bilingual memory. The model provides an explicit account of how bilinguals connect words across their two languages to their underlying concepts. With this framework in place, researchers interested in issues of acquisition could test specific predictions regarding how these connections are edified through acquisition. Because of the model's broad applicability across theoretical and applied domains it has served as an impetus for interdisciplinary research across the cognitive sciences and linguistics. For both the applied linguist interested in issues of L2 acquisition and the cognitive scientist interested in L2 representation the model offers a clear illustration of the intricate nature of how a word is represented with how it is developed.

Dr. Kroll started her career by first earning her Bachelor's degree from New York University with a major in psychology and a minor in mathematics. She then went on to earn her master's (1972) and PhD (1977) in cognitive psychology at Brandeis University. During her graduate career she was also a research associate and affiliate with MIT where she collaborated with Dr. Mary Potter, her postdoctoral adviser, on several projects and publications.

Any description of Dr. Kroll and the theoretical impact of her work is incomplete without highlighting her passionate scientific inquiry and her dedication to building a vibrant research community; because this has provided the foundation for modern theoretical advancements in the study of bilingualism. Perhaps one of Dr. Kroll's most well known contributions is the "revised hierarchical model" authored by Kroll and Stewart in 1994. While many scientists and scholars are familiar with this model and applied its assumptions in their own work, far fewer will be familiar with the particular circumstances that led to its inception. The story of how the model came to be formulated perfectly exemplifies (a) the importance of bridging scientific theory with real-world observations; (b) recognizing a research opportunity, especially when it arises unexpectedly; and (c) remaining open to new directions of research and collaborations. In the early part of her career Dr. Kroll's work focused on the cognitive representations of objects and words and published a series of papers examining how words and their underlying concepts are represented and accessed from memory. These studies provided evidence that concepts are stored separately from their associated verbal codes (or labels), in contrast to the assumptions of the dual coding theory proposed by Paivio (e.g., Paivio & Lambert, 1981). In 1984, a seminal paper by Dr. Potter and others (Potter, So, Von Eckardt, & Feldman, 1984) examined the nature of the connections between concepts and labels for bilinguals, who necessarily have at least two labels for each concept. Findings from this study supported the "concept association hypothesis," which assumes that, even in a weaker second language, labels are directly linked to their underlying concepts. Shortly after its publication, Dr. Kroll was reviewing the paper in one of the courses she taught at Mount Holyoke College (where she was then

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associate professor). A student in the class had just returned from a year abroad in Germany. She insisted that she could "never turn off the [English] language" and that her personal intuitions simply did not resonate with the concept association hypothesis. This led to the formulation of an honor's thesis in which she and Dr. Kroll tested novice, English-German bilinguals (Dr. Kroll reckoned that they managed to test each and every German-speaking student on the Mount Holyoke campus at that time). In contrast to the Potter et al. (1984) study, the findings supported a word-association hypothesis, which assumes that in earlier stages of acquisition, L2 words are indirectly linked to their underlying concepts via the L1 translations.

A year after publishing these results in *Practical Aspects of Memory*, Dr. Kroll was on sabbatical in the Netherlands. Being a parent to ten-year-old twins and having recently earned tenure, it was the perfect time for her to focus exclusively on writing. However, not only was she in a community in which she was surrounded by highly proficient bilinguals, she had also recently met two new colleagues, Wido la Heij and Annette de Groot, whose programs of research also included cognitive aspects of bilingualism. Furthermore, a recent Mount Holyoke graduate who had worked with Dr. Kroll as an undergraduate, Erika Stewart, visited the Netherlands for a few weeks. At the time it would have been hard to predict that a week's worth of intense data collection in Amsterdam would lead to an entirely new direction in Dr. Kroll's career.

The initial purpose of the revised hierarchical model (RHM) was to provide an account for the translation asymmetry observed in L1-dominant bilinguals who acquired their L2 relatively late. The translation asymmetry refers to the fact that for unbalanced bilinguals, translation from L2 to L1 (aka backwards translation) is faster than translation from L1 to L2 (aka forwards translation). The RHM accounts for this asymmetry by reconciling the seemingly opposing hypotheses of concept mediation versus word mediation. The central assumption is that there is an asymmetry in the relative strength of the connections between L1 and L2 words with their underlying concepts. When bilinguals are more dominant in their L1 words from this language have stronger connections to their underlying concepts, thus activation of words in the L1 is more likely to engage semantics than activation of L2 words. Words in the L2, on the other hand, are more strongly connected to their translations in the L1 than their underlying concepts. As a consequence, translation from L2 to L1 is faster than the opposite direction because it does not require conceptual mediation.

It was initially assumed that the stronger connection between L1 words and concepts was operational irrespective of whether activation flowed from words to concepts (such as when translating) or from concepts to words (such as when naming a picture). However, more recent evidence from Dr. Kroll's laboratory and others suggests that the key asymmetry exists in the lexicalization of concepts, which is when activation flows from concepts to the corresponding lexical items.

The RHM has since provided a springboard for advancement in the cognitive understanding of the bilingual mind. It has been cited over 600 times in publications from an impressively wide range of applied and basic disciplines (Google Scholar). This impact is at least partially due to the fact that it is a cognitive model whose underlying architecture is responsive to changes in language proficiency allowing it to be tested across a variety of bilingual participant populations. Furthermore, its assumptions remain relevant and convergent with more recent developments in cognitive modeling. For example, the RHM predates connectionist approaches to the modeling of cognitive processes, which emphasize competitive processes between representations. Yet, the RHM's assumption of an asymmetry in the lexicalization of L1 and L2 words dynamics can be easily accommodated within connectionist competitive dynamics. When a bilingual person attempts to lexicalize concepts in the less dominant L2 there is strong competition from the readily activated L1 labels thus increasing the cognitive cost associated with suppression of this competition needed to produce the weaker L2 label.

Shortly after her sabbatical in the Netherlands a position opened up in the Department of Psychology at the Pennsylvania State University where she has since pursued the study of the cognitive nature of bilingualism. The interest in bilingualism grew exponentially in the 1990s and into the new millennium. The roster of scholars from abroad that came to visit Penn State grew and grew. Several new faculties with active research programs in language and bilingualism were hired within various departments in the College of Liberal Arts and the number of people joining Dr. Kroll's laboratory meetings continued to rise. To put it perhaps too simplistically, just a few years before the creation of the Center for Language Science at Penn State, membership of Dr. Kroll's laboratory was spilling out into the hallways; clearly the interest in the scientific exploration of language at Penn State had outgrown the physical confines of the laboratory walls.

Her more recent work examines more closely the competitive dynamics between a bilingual's two languages and the subsequent cognitive consequences of negotiating this competition. The emerging picture is that production in the L2 requires inhibition of the L1. Dr. Kroll and her colleagues have observed effects of this inhibition across a range of measures including behavioral data, ERP measures of the early stages of speech planning, and in the phonetic realization of words.

Judith Kroll continues her research within the newly formed interdisciplinary and internationally active Center for Language Science at Penn State. This vibrant center represents a collaborative network of researchers and scholars across a diversity of fields such as cognitive and developmental psychology, speech and communication disorders, linguistics, both applied and theoretical, as well as a diversity of institutions of higher learning across the United States and Europe. Dr. Kroll's collaborative approach to science and scholarship is the foundation upon which this center was built. It is striking how the simple act of gathering scholars from different disciplines in the same room can lead to an explosion of ideas, new questions, and directions in one's career. There is no better learning opportunity for beginning scholars than to observe renowned scientists from fields as diverse as linguistics and developmental psychology co-design a study addressing a shared issue of interest by merging their expertise and scientific approaches.

Throughout her career Judith Kroll has been active in promoting the advancement of women in science. Through her mentorship of students and junior colleagues in the United States of America and Europe, she has had a significant impact on the number of women with active and impactful careers in science. Through her efforts in establishing and maintaining organizations such as Women in Cognitive Science, she has given voice to the unique challenges faced by women and gave many the confidence to break silence in the face of inequity. Thanks to the confidence she reinforced in them, many of those female junior scholars now have the tools to pass on this mentorship to the latest generation of incoming female scientists. Thus, Dr. Kroll's impact on science encompasses advancement in theory as well as future scholars. This dual focus on scientific theory and community remains an example that her students, past, present, and future, hold to and refer to as they build their own research programs.

SEE ALSO: Bilingualism and Cognition; Bilingualism and Multilingualism: Quantitative Methods; Inhibition and Control in Second Language Acquisition; Organization of the Second Language Lexicon; Second Language Representation in the Brain

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Kučera, Henry

CHARLES F. MEYER

Henry Kučera is recognized for doing some of the earliest work on computers and language in the late 1950s. He drew upon this expertise to collaborate with Nelson Francis to create the standard sample of present-day American English (or Brown Corpus, as it is commonly called), the first computer corpus ever produced. The Brown Corpus marked the first time that a systematically selected collection of written texts had been made available in a computer-readable format. The methodology that Kučera and Francis developed to create the Brown Corpus proved so influential that it ushered in the era of corpus linguistics and served as a model for many future corpora that were developed.

Henry Kučera was born in 1925 in what was at the time the country of Czechoslovakia. He lived in Czechoslovakia until 1948, when, because of his student activism at Charles University in Prague, he was forced to flee the country following the establishment of a communist government. After a brief stay in Frankfurt working for the IRO (International Refugee Organization), he emigrated to the United States in 1949. Shortly after arriving in the United States, Kučera pursued a doctoral degree in Slavic languages at Harvard University, receiving his PhD in 1952. He then taught at the University of Florida in Gainesville until 1955, when he joined the faculty at Brown University initially as a professor of Russian and German and later (until his retirement) as a professor of Linguistics and Slavic languages.

Kučera's interest in language computation began in 1959 while he was doing a cross-linguistic study of phonological structures (Mitchell, 1993). To aid in his analysis, he had a mathematics instructor teach him how to do computer programming in exchange for language lessons in Russian. As his skills in computing developed, Kučera began teaching in 1962 a course at Brown in computational linguistics. One of his "students," as Kučera (2002, p. 307) recollects, was Nelson Francis, who after joining the faculty that year had decided to take Kučera's course. At the suggestion of the noted American structuralist W. Freeman Twadell (who at the time was chair of Linguistics at Brown), Kučera and Francis decided to begin work on the Brown Corpus.

To plan the overall design of the corpus, Kučera and Francis held a conference at Brown University in 1963 that was attended by John B. Carroll, Philip B. Gove, Patricia O'Connor, and Randolph Quirk (Francis & Kučera, 1979). After considerable discussion, conference attendees decided that the corpus would be one million words in length, and contain 2,000 word excerpts taken from texts published in 1961 that represented the following genres of edited written American English (see the entry for Nelson Francis for more details on the methodological considerations that led to the size and composition of the Brown Corpus):

Informative Prose
- press: reportage, editorials, and reviews
- religion
- skills and hobbies
- popular lore
- *belles lettres*, biography, memoirs, and so forth
- miscellaneous (e.g., government documents, foundation reports)
- learned

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Imaginative Prose
- general fiction
- mystery and detective fiction
- science fiction
- adventure and Western fiction
- romance and love story
- humor

By modern standards, computer technology in the early 1960s was relatively primitive, making the creation of the Brown Corpus a technologically complex enterprise. Kučera (2002, p. 307) comments that computers of the era were huge machines with only 50KB of RAM—less internal memory than the modern-day mobile phone. Before data to be used in the Brown Corpus could be processed, it had to be keyed in on punch cards or paper tape, a process that took more than a year to complete.

The first version of the corpus was released in 1964 (five additional revised versions have been released since then). Because the earliest versions were encoded on magnetic tape, the corpus could only be accessed and analyzed after the tape had been read into a mainframe computer and punch cards created to examine some aspect of the corpus. For instance, in Meyer's (1983) analysis of punctuation usage in the Brown Corpus, punch cards were produced that enabled searches for the strings such as *; and* or *; but*. In order to retrieve all instances in the corpus of the coordinating conjunctions *and* and *but* had to be preceded by a semicolon. The output of these searches was used to generate statistical information on the types of punctuation used to separate coordinated items, and to provide examples to illustrate the various uses of punctuation.

In 1967, Kučera, Francis, and Carroll published a book, *Computational Analysis of Present Day American English*, that provided word frequency information based on the Brown Corpus. Although word frequency lists had been created previously, this was the first such list that was based on a carefully collected group of texts and that contained frequency information not just for the entire corpus but for the individual genres of the corpus. Generating a frequency list of one million lexical items was a computationally intensive endeavor that required "14 hours of continuous dedicated processing on a million-dollar computer with the aid of six tape drives" (Kučera, 2002, p. 307).

Because the word frequencies were based only on the orthographic forms of words in the corpus, it was not possible to distinguish, for instance, the frequency of *walk* as a noun from its frequency as a verb. To make such distinctions, a set of 77 lexical tags was created. A lexical tag is a part of speech label that is associated with a particular word. For instance, three tags were created to describe all of the forms associated with the verb *do*:

Tag	*Form*
DO	do
DOD	did
DOZ	does

Lexical tags such as these were then assigned computationally to each word in the Brown Corpus by a computer program designed at Brown University called "TAGGIT" (Greene & Rubin, 1971). To assign a given tag to a word, the TAGGIT program analyzed the corpus in various stages (described in detail in Francis, 1979). First, the program searched the entire corpus, attempting to find each word in the program's lexicon. If a given word was located, it was assigned whatever tags were associated with the word in the lexicon. However, if no match was found, then a second attempt was made to associate the ending of the word with a list of suffixes and word class tags associated with the endings. If a

match was still not found, the word was arbitrarily tagged as a singular or mass noun, a verb (base form), or an adjective. Previous analyses had determined that these were the most frequent word classes found in the corpus. At this stage of the analysis, 61% of the words had one tag, and 51% had suffixes associated with one tag. The remaining words were subjected to various types of disambiguation. Even though this process was done semi-automatically, 23% of the remaining tags had to be manually inspected to determine the most appropriate tag.

The tagged corpus served as the basis of a second book, *Frequency Analysis of English Usage: Lexicon and Grammar* (Francis & Kučera, 1982). Unlike the original frequency list, the list in this book was able to provide frequency information by part of speech. Thus, separate frequency counts were available for *walk* as a noun and as a verb. The tagged Brown Corpus was a groundbreaking achievement "not only because it was the first [tagged corpus] and laid down the methodological groundwork for word class tagging but because it provided an accurate tagged corpus which could be used as a reference by other tagging systems" (Hockey, 2000, pp. 94–5). For instance, the original CLAWS tagger (http://ucrel.lancs.ac.uk/claws/) was modeled after TAGGIT, and was used to tag the Lancaster/Oslo/Bergen (LOB) Corpus, a corpus of edited written British English modeled after the Brown Corpus. A later version (CLAWS4) was used to tag the British National Corpus (BNC), a 100-million-word corpus of spoken and written British English. Over time, taggers have become much more accurate, with some able to achieve an accuracy rate as high as 96% without any human intervention.

Following the creation of the Brown Corpus, Kučera continued work in both corpus and computational linguistics. He developed a three-million-word database that served as the basis of citations included in the *American Heritage Dictionary of the English Language*, the first edition of which was first published by Houghton Mifflin in 1969. In the early 1980s, Kučera did additional work for Houghton Mifflin, designing one of the earliest context-sensitive spell checkers. This spell checker was able to analyze the context in which homophones and homonyms such as *to*, *two*, or *too* occurred to determine which was the correct spelling (Webber, 2007). In 1992, a festschrift for Kučera was published, honoring the work that he had done in both Slavic studies and computational linguistics (Mackie, McAuley, & Simmons, 1992).

In 1995, both Kučera and Francis were honored at the 16th annual meeting of the International Computer Archive and Modern and Medieval English (ICAME) held in Toronto (see also the ICAME Web site at http://icame.uib.no/). A special session was convened at which various speakers described the important contributions that they had made to the development of the field of corpus linguistics. Speakers at the session noted the influence the Brown Corpus had had on subsequent corpora (a summary of the responses was published in the *ICAME Journal* in 1996). For instance, the Lancaster/Oslo/Bergen (LOB) Corpus replicated Brown but with written texts representing British rather than American English. The Freiburg–Brown Corpus of American English (FROWN) and the Freiburg–LOB Corpus of British English (FLOB) were similar to Brown and LOB but contained written texts published in the early 1990s, thus enabling historical comparisons. The International Corpus of English (ICE), which contains components representing the various national varieties of English (such as American, British, Irish, East African, and New Zealand English), has a similar design to Brown. Each regional team is creating a one million word corpus divided into 2,000 word excerpts. However, spoken as well as written English is included.

The work that Kučera has done over his career (much of it with Nelson Francis) has had a long-lasting effect. Not only was he instrumental in starting the field of corpus linguistics but he and Francis have greatly influenced the manner in which linguistic corpora have been designed and analyzed. All corpora created since Brown have benefited

from the methodological insights into corpus construction and analysis that Kučera and Francis pioneered.

SEE ALSO: Corpora: English-Language; Francis, Nelson

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Kumaravadivelu, B.

LYNN HASBANY

Nobody who enters Professor Kumaravadivelu's office can miss the huge, colorful world map that hangs on the wall behind his desk. It is not the Mercator map that most of us are familiar with since elementary school. This map, drawn by the German cartographer Arno Peters, projects a different view of the world. This view seeks to correct the Eurocentric bias by not making Europe the center of the world; instead the equator is placed at center view and the other areas are sized proportionately. "Start seeing the world differently," Kumaravadivelu never tires of telling his inquisitive visitors.

"Seeing the world differently" is what Kumaravadivelu is all about. His scholarly work in three areas of applied linguistics—the teaching of culture, language teaching methods, and language teacher education—all represent his desire and determination to think outside the box.

The teaching of culture has recently gained prominence owing to the ongoing processes of cultural globalization. Kumaravadivelu contends that the existing sociological concepts of assimilation, multiculturalism, and hybridity do not adequately address the political, religious, and cultural complexities that cultural globalization has brought about. Hence, he has proposed cultural realism as an alternative. Cultural realism seeks the development of global cultural consciousness that results not just in cultural literacy but also in cultural liberty. It requires a willingness and ability "to learn from other cultures, not just about them. Learning about other cultures may lead to cultural literacy; it is learning from other cultures that will lead to cultural liberty" (Kumaravadivelu, 2008, p. 237). In his book *Cultural Globalization and Language Education* (Kumaravadivelu, 2008), he has presented pedagogic principles and classroom strategies for raising global cultural consciousness in the language learner. Recognizing the significance of his contribution, the Modern Language Association has awarded its Kenneth Mildenberger Prize for Outstanding Research Publication to his book.

If Kumaravadivelu's work on the teaching of culture urges practitioners of applied linguistics to explore beyond the conventional concepts of culture, his idea of postmethod pedagogy asks them to go beyond the traditional concept of method. For a long time, the field of English-language teaching has been unsuccessfully engaged in finding the best method. Arguing that what is needed is not an alternative method but an alternative to method, Kumaravadivelu has proposed the concept of postmethod. In two of his widely acclaimed books—*Beyond Methods: Macrostrategies for Language Teaching* (Kumaravadivelu, 2003) and *Understanding Language Teaching: From Method to Postmethod* (Kumaravadivelu, 2006c)—he presents a macrostrategic framework designed to help both beginning and experienced teachers to develop a systematic, coherent, personal theory of practice.

Kumaravadivelu continues his quest for out-of-the-box solutions in the area of language teacher education as well. In a forthcoming book, *Language Teacher Education for a Global Society: A Modular Model* (Kumaravadivelu, in press), he points out that current approaches to language teacher education, focusing as they do on discrete subjects such as methods, second language acquisition, curriculum design, and testing, ignore the processes of economic, cultural, and educational globalization and their unfailing impact on language education. He sees an imperative need to design a comprehensive model that pulls together

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various strands of thought in a meaningful way. Accordingly, he has designed a modular model that consists of five modules: Knowing, Analyzing, Recognizing, Doing, and Seeing. The model is aimed at fundamentally transforming language teacher education.

In addition to being a scholar and a teacher, Kumaravadivelu continuously aspires to be a public intellectual. He believes that intellectuals have an obligation to help the general public be well informed. This view is reflected in the op-ed pieces that he writes periodically for the *San Jose Mercury News*, a leading newspaper in the Bay Area of California where he lives. He writes them with the same critical insights that mark his professional writing. For instance, in "Americans should be able to watch al-Jazeera English TV" (Kumaravadivelu, 2006a), he asserts that the American people are "long on opinions and short on facts" and stresses that they should be able to watch the currently unavailable Al-Jazeera English-language television station to better understand the Islamic world. In another, "Generals lacked courage of conviction by not speaking up sooner" (Kumaravadivelu, 2006b), he criticizes retired American generals for speaking against the Iraq War after their retirement, not before. In yet another, "Our prejudices, our selves" (Kumaravadivelu, 1997), he chastises our tendency to blame others for their religious, cultural, and ethnic prejudices without realizing that we ourselves harbor them.

To understand what drives Kumaravadivelu to persistently propagate ideas that go against the grain, his friends and colleagues have looked for clues in his early life and education. Born in a small town in the state of Tamil Nadu in South India, he had a rather modest beginning. His father was a primary school teacher and did not have the economic means to send all five of his children to college. His brothers and sisters, all older than him, had to stop after high school and seek much-needed employment. However, his father was determined to send him to college. With his help and with the help of his working siblings, he managed to boldly go where nobody in his family had gone before—to college.

After earning a BA and an MA in English literature from the University of Madras, he started teaching English at the university. A turning point came when the British Council in India offered him a Fellowship to go to Lancaster University in England to pursue a second Masters degree, this time in Linguistics for Language Teaching. It was there that he was initiated into the field of applied linguistics by some of its prominent practitioners. His preparation in applied linguistics continued at the University of Michigan, USA, where he earned his PhD. He believes that his studies at the universities of Madras, Lancaster, and Michigan have helped him synthesize the best of three educational traditions, and have shaped his personal and professional philosophy that is unmistakably reflected in all his work as a scholar and a teacher.

Kumaravadivelu's further readings in poststructuralism, postmodernism, and postcolonialism have motivated him to see the language classroom not just in its linguistic complexities but also in all its historical, political, social, and cultural ones. Consequently, one hears in his writings, speeches, and classroom teaching an undaunted critical voice. In an interview to the university newspaper, his departmental colleague Peter Lowenberg said: "He's not afraid if something he says or writes is not accepted by the mainstream" (2008). In fact, he exhorts his students to develop a critical voice too. And, he does it with irritating persistence. He has been known to warn his students at the onset of a term that nobody's culture is safe from reproach in the class, as he encourages them to take a new view of what constitutes culture. As well as being a critical voice, he is also a thoughtful voice. What Professor John Murphy of Georgia State University wrote about him sums up a common sentiment: "Few writers are as capable as Kumaravadivelu of engendering in a reader the feeling that you are in the hands of a thoughtful, and always thought provoking, guide" (Murphy, 2007, p. 243).

SEE ALSO: Citizenship Education; Critical Pedagogy; Cultural Hybridity; Culture; Multiculturalism and Second Language Learning; Postcolonial Studies

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Language Attrition

ELISABETH AHLSÉN

What Is Language Attrition?

Language attrition can be defined as a reduction, weakening or loss of a first, second, third, or more language in an individual person or in a community. The focus of research in this area is on language attrition in individuals, even though the definition of the term also includes the attrition of a language within a community (i.e., language death, when languages with few speakers gradually disappear). From typological as well as, for example, psycholinguistic or sociolinguistic perspectives, interesting parallels can be found between attrition of a language in an individual and attrition of a language in the whole community. For theoretical and applied linguistics, both are of equal interest, but this entry focuses on attrition in the individual.

Some researchers define attrition in the individual more narrowly. According to Köpke and Schmid, attrition is "the non-pathological decrease in a language that had previously been acquired by an individual" (2004, p. 5). The community or research area of language attrition has its origin in the 1980 conference "Loss of Language Skills" (Lambert & Freed, 1982). By including the word "non-pathological" in the definition, cases of L1 loss in an L1 environment due to aphasia, dementia, and so on are excluded. Interestingly enough, cases of L1 loss by normal aging are not excluded by the inclusion of this term. They are, however, not usually studied within this area and will, therefore, also be excluded here.

Even the narrow definition, however, retains the problem of what should be classified as "attrition" of an acquired L1, L2, and so on. Given that the term "non-pathological" has excluded some attrition phenomena, with, for example, neurological causal factors, the following question arises: How should we regard "attrition"—should we regard it as "normal" or "abnormal" language deterioration? Where is it reasonable to draw the line between normal influence between languages in a bilingual or polyglot and a state or process that can be called attrition of one or more languages? This question has not been solved and it is perhaps reasonable not to try to draw a definite line, but to consider these phenomena as varying more gradually (see Schmid & Köpke, 2007).

Language attrition can occur for many reasons. A monolingual person can lose his or her first and only language, a bilingual person can lose one or both of his or her two languages, and a multilingual person can lose one or more of his or her languages. This can take place in an environment where one or more of these languages are used to varying degrees. The degree of attrition can vary and different parts or aspects of language can be affected.

There are many possible conditions where language loss can occur. According to a taxonomy suggested by van Els (1986), L1 can be lost in an L1 environment, in cases of aphasia and dementia. This can also be studied in normal aging. The L1 can also be lost in an L2 environment (minority communities, migrants). The L2 can be lost in an L1 environment (e.g., by students who do not use their L2) or in an L2 environment (e.g., by older migrants reverting to the L1 in their own minority group).

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Research on Attrition

Research has mainly investigated attrition of L1 in an L2-dominated environment and attrition of L2 in an L1-dominated environment. The first case comprises studies of migrants and language minorities, while the second case concerns second language learners and their maintenance of a learned L2. Subjects are, for example, children or adults who have lived abroad for a period and then returned to their original country, or persons of different ages who have been subjected to different pedagogical methods or environments for foreign-language education. Such research focuses on aspects of language, such as, typically, lexicon, grammar, or phonology. Studies of semantics (other than lexical) and especially pragmatics are more rare.

Typical Findings

The most typical case of L1 attrition is when migrants are exposed to a new language, and learn the new language while they are less exposed to the L1 (Schmid & Köpke, 2007). One finding is that L1 attrition is seen first and most clearly in the lexicon (i.e., mainly for nouns, verbs, and adjectives) and considerably less in grammar and phonology, in cases of migration after puberty (Schmid, 2009). The semantic potentials of the L2 items seem to influence the knowledge of corresponding items in the L1, thus giving them a slightly changed meaning (Pavlenko, 2003). Diminished lexical access in picture naming and a less diverse lexicon in conversation have also been noted (e.g., Schmid, 2002; Montrul, 2008). Knowledge of morphogrammatical features and syntax are typically not very much affected. What can be seen is an increased variability in the use of features and rules affected by the contact between the two languages (see, e.g., Tsimpli, Sorace, Heycock, & Filiaci, 2004).

Age Effects

The L1 remains fairly stable, at least concerning grammar, for many years in persons who migrate after puberty. In contrast to this, persons who migrate before puberty can suffer considerable L1 attrition (Ammerlaan, 1996; Pelc, 2001; Schmid, 2002; Schmid & Köpke, 2007; Bylund, 2009). One example is of Korean adoptees (3–10 years old) in France who lost their L1 completely (Pallier, 2007). These findings support the idea of a pre-puberty critical period for language acquisition and of a need for L1 input during the full period.

Similarly, an L2 acquired to a native-like level by young children living abroad can be completely lost when they move back to being exposed only to their L1 (in contrast to adults, who learn more slowly and less, but more easily retain some of the L2 after their return; Hansen & Reetz-Kurashige, 1999).

In general, it is important to consider the age factor in all studies of attrition, since many of them concern fairly old individuals and the effects of aging also have to be taken into account. Such effects are often mixed with more "prototypical" language-attrition phenomena in bi- or multilinguals, although some differences have been described by Goral (2004). Other studies concern children who might not have "total mastery" of their L1 to begin with.

Regression

Based on early studies of attrition, Jakobson (1941) proposed a regression hypothesis suggesting that the aspects of language that were acquired last would be forgotten first. Although some evidence supports this hypothesis, it must also be recognized that many other factors are involved, such as contact phenomena between the languages, proficiency, age, literacy, linguistic features in common between L1 and L2, and possibly a threshold

effect of proficiency. As a result, clear evidence concerning this hypothesis is considered inconclusive (Yukawa, 1998; Keijzer, 2007).

Frequency of Use and Automaticity

It seems reasonable to assume that use (and, thus, rehearsal) would help to sustain a language (e.g., Paradis, 2007). No strong correlations between use and attrition of one language in a context where another language is mainly used have been found, however, according to Schmid and Köpke (2007). Results are so far not conclusive and more studies of this factor are needed.

Similarly, the hypothesis that the more automatic linguistic aspects or skills are, the more resistant they are to attrition requires additional research. However, difficulties affecting fast lexical retrieval of specific target words do figure among the first signs of attrition. This leads to more variability in word choice and more circumlocutions (Olshtain & Barzilay, 1991). Quick and accurate access of target words is replaced by word substitutions, slower speech, an increase in pauses and hesitations and also of repairs and false starts, in other words signs of an increased need for communication self-management (for a closer description of such phenomena, see Allwood, Nivre, & Ahlsén, 1990). In bi- and multilingual persons lexical borrowing and code switching are additional strategies.

Motivation

Another prediction by Paradis (2007) is that motivation should influence the degree of attrition. Positive or negative emotions toward a language, a culture, a situation, or an environment would increase or decrease the ability in that particular language in relation to a competing one. There are considerable methodological problems in trying to assess, for example, emotions at the time of migration. Schmid (2002) interviewed German Jews in a study that points to a strong case of rejection and thereby attrition of a language after migration. Motivation is also a determining factor of achievement of L2 in schools and of use of L2 outside the classroom (Gardner, Lalonde, Moorcroft, & Evers, 1987).

Proficiency

High proficiency among L2 learners, according to Gardner et al. (1987), leads to better retention of the L2, whereas it does not by itself lead to more use of the L2 outside the classroom—that only occurs in combination with high motivation (see above). However, a problem arising in the study of proficiency is the need to try to establish a baseline of language proficiency before the start of attrition in bi- or multilingual persons. This is a challenge because it requires the researcher to identify prospective study participants before their attrition occurs.

These are only some of the many areas that are being investigated to better understand the causes and contents of attrition. Other interesting areas include the intersection of attrition with the type of schooling that a language learner receives. A study comparing immersion schools with non-immersion schools by Murtagh (2003) pointed to language acquired through immersion being more resistant to language attrition. In all of these studies, however, methodological issues need continued attention in order to strengthen understanding of factors affecting attrition.

Methodological Concerns

The fact that language attrition is a long-term phenomenon means that it would ideally be studied longitudinally. However, language attrition has almost always been studied at

a point in time when attrition has or has not taken place, that is, long after acquisition of the language in question and long after the influence of the competing language or the lack of exposure to the affected language started. There is therefore often no firsthand data on proficiency, frequency of use, motivation, and so on with respect to the (two) languages at hand at the time when the process of attrition might have started, and it is not always easy to even identify that point in time. Further, it cannot be assumed that attrition has taken place at a certain linear pace over a number of years. As in all studies concerning longitudinal phenomena, many factors are likely to have affected individuals as well as groups, both the studied groups and potential control or reference persons or groups.

The spoken language of research subjects has not been well described. Spoken language corpora have been studied for a number of years, but only for a number of languages and focusing on certain phenomena. It is therefore hard to identify points of comparison between a speaker's two or more languages. Language tests and translation tests have not been very successful and are not considered to be very helpful by researchers in this area. Interviews and questionnaires only give information about what the subjects believe or want to say or write that they believe about their own language proficiency, use, attitudes, and so on. The results can be very different from what is revealed by, for example, a video recording of language use, since language use is not in all respects totally conscious or reflected upon in advance. The formulation of questions can also bias the answers. This applies even more to interviews and questionnaires concerning past events, past proficiency, attitudes, and so forth. Reliability and validity of measurement is, thus, not easy to establish in such studies, due to the lack of direct ways of studying the relation between different causal factors and resulting attrition phenomena.

Many studies are conducted to find causes of attrition phenomena. But there is often no direct way of determining the relation between potential causal factors and observed phenomena. Results are therefore often inconclusive with respect to hypotheses about causes, for example, of differences in language proficiency between groups where social and language typological factors cannot easily be separated in the conclusions (see Goral, 2004).

Even the most basic questions about the definition of attrition are addressed in different ways in the research. Different perspectives exist (depending on differences in adherence to theoretical frameworks) concerning how the "object of attrition" should be described. Definitions mention "loss of a first or second language," "loss of the ability to use the language," and "loss of underlying linguistic knowledge." There is also a fuzziness inherent in defining what "language attrition" is, as opposed to simple language change, lexical borrowing, code switching, and so on in a group or an individual.

Extending the Scope of Attrition Research

Few studies have extended the scope of language attrition studies, using the term "attrition" in a wider sense, although, as can be seen above, L1 attrition caused by normal aging is not really excluded by the more narrow definition of language attrition. Goral (2004) compared features of L1 attrition in normal aging with phenomena described in L1 or L2 attrition studies. One similarity between the two "conditions" was that the possible background factor of less exposure to and use of the language could apply in both cases, since an advanced age often relates to a reduced work and social life, as well as to fewer demands on various types of language use in general. The second background factor of interference from another language only applies to attrition in bi- or multilingual persons. Another similarity is seen in the features of language, where both groups show simplification, use of unmarked forms, generalizations, and word substitutions. Yet another area where both

groups have difficulties concerns comprehension of complex materials. It has, however, been claimed that in older persons it is not linguistic features that are affected, but rather memory and other aspects of cognitive processing (Caplan & Waters, 1999). Differences found between the two groups can also, at least partly, be an effect of differences in tasks and methods of study.

A reasonable way forward in this area, where theories and methods from related areas could be incorporated and perhaps offer new insights and approaches, would be to apply methods used for studying one form of "language decline" or attrition in a wide sense to other forms, in order to make comparisons possible. This would also make the studies more directly relevant for linguistic theory in general, as well as for a number of applications. One example of how this could be done, mentioned by Goral (2004), is that more detail about lexical retrieval in the L1, L2, and so on could be identified by using methods and examples from neurolinguistic studies of attrition in normal aging, aphasia, or dementia. Breakdown patterns could be identified which would possibly point to features that are generally more vulnerable as well as features that are only specifically affected by one of the conditions for specific reasons. Attrition, decline, or loss of language offers fascinating data, and it is a challenge for the future to further develop the approaches to be used in studying them.

It is rather striking that the area of research seems to exist mainly within these limitations. The number of multilingual persons in today's world is huge and there is, in principle, no reason to focus only on L1 and L2, when L3, L4, and so forth are just as important. Furthermore, the terminology of L1 and L2 implies a sequential order of acquisition of the two languages, whereas it is quite common for two languages to be acquired simultaneously. Apart from the choice to exclude the possible areas of language attrition through language extinction and pathological L1 attrition, there is, therefore, also a defocusing (and almost omission) of research on attrition in multilingual persons and persons who acquire more than one language at a time.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Attrition and Multilingualism; Bilingual Education and Immigration; Bilingualism and Cognition; Dynamics of Multilingualism; Immersion Education; Multilingualism and Aphasia

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Ladefoged, Peter

PATRICIA A. KEATING

Peter Ladefoged (1925–2006) was one of the great phoneticians of the 20th century, a pioneer in instrumental phonetic fieldwork who was equally interested in theoretical linguistics, especially distinctive feature theory. During his career, Ladefoged produced 10 books and over 140 other publications.

Born in Sutton, Surrey, England, he attended the University of Cambridge from 1943 to 1944, when his education was interrupted by war service in the Royal Sussex Regiment. In 1947 he resumed his education at the University of Edinburgh, where he received an MA in 1951 and a PhD in 1959. He studied phonetics with David Abercrombie, who himself had studied with Daniel Jones and was thus connected to Henry Sweet. Ladefoged's dissertation was on *The Nature of Vowel Quality*, specifically on the cardinal vowels and their articulatory versus auditory basis (Ladefoged, 1962). At the same time, he began important research projects with David Broadbent, Walter Lawrence, M. Draper, and D. Witteridge, with his first publications appearing in 1956. His 1957 paper with David Broadbent, "Information Conveyed by Vowels," was particularly influential (Ladefoged & Broadbent, 1957).

In 1959–60 Ladefoged taught in Nigeria, and thus began his lifelong commitment to instrumental phonetic fieldwork. He returned to Africa in 1961–2 to do the work that resulted in *A Phonetic Study of West African Languages* (Ladefoged, 1964). In its introduction he wrote,

> I do not know of any previous attempt to use data provided by palatograms, linguagrams, casts of the mouth, photographs of the lips and spectrograms all of the same utterance, supplemented by tracings of cine-radiology films and pressure and flow recordings of similar utterances of the same word. (Ladefoged, 1964, p. xvi)

With phonetic descriptions of 61 languages, this work remains unique. Ladefoged also was part of a Ford Foundation project in East Africa that resulted in the 1972 book *Language in Uganda*, which aimed to describe for the Ugandan government the current language situation in the country so that the government (not linguists) could arrive at a language policy, for example, regarding a national language and language teaching (Ladefoged, Glick, Criper, Prator, & Walusimbi, 1972).

When not in Africa, Ladefoged taught at Edinburgh until he moved permanently to America in 1962, joining the UCLA English department. In 1966 he moved to the newly formed Linguistics department, where he established, and directed until 1991, the UCLA Phonetics Laboratory, which became the most prominent linguistic phonetics laboratory in the world. Not long after he arrived at UCLA, Ladefoged was asked to work as the phonetics consultant for the 1964 movie *My Fair Lady*. He advised on equipping Henry Higgins's phonetics lab, he made all the phonetic transcriptions seen on-screen, and it is his voice heard producing the vowel sounds.

During his career Ladefoged became a worldwide field linguist, visiting Nigeria, Botswana, Ghana, Uganda, Tanzania, Sierra Leone, Senegal, India, Yemen, Papua New Guinea, Nepal, Thailand, Brazil, Mexico, Australia, Korea, Scotland, the Aleutians, and China. Much of his fieldwork remains unique to this day. Fieldwork on little-studied

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sounds and instrumental laboratory phonetics were two cornerstones of Ladefoged's career. He loved laboratory phonetics, and instrumental analysis was always a key component of his fieldwork. Many data collection and analytic techniques in the field were originated or refined by him (and often tried out on himself). His instantly classic *Sounds of the World's Languages* (with Ian Maddieson) summarized his knowledge of all the sounds he had studied, and remains the definitive reference work (Ladefoged & Maddieson, 1996). His 2003 book *Phonetic Data Analysis: An Introduction to Phonetic Fieldwork and Instrumental Techniques* teaches other linguists his methods (Ladefoged, 2003).

Much of Ladefoged's fieldwork contributed to documenting the phonetic properties of endangered or otherwise under-studied languages, and he served on the board of directors of the Endangered Language Fund. His field recordings and notes have been digitized and are publicly available online (http://archive.phonetics.ucla.edu/). However, Ladefoged was not a champion of language preservation for its own sake. Controversially, he believed that linguists should not judge or try to influence speakers' decisions to give up a minority language in favor of greater education and opportunity for their children, or in favor of national unity over tribalism. "It is paternalistic of linguists to assume that they know what is best for the community" (Ladefoged, 1992, p. 810).

However, the ultimate aim of his studies of the world's sounds was to understand what sounds are possible in languages. His particular passion was the theory of phonetic features for representing phonological contrasts: What features should be proposed in order to distinguish all the contrasts of the world's languages? Should these features be articulatory or auditory or some of each? A related concern was the International Phonetic Alphabet: Ladefoged instigated its expansion in the early 1990s to include symbols for more sounds, he was a key figure in the preparation and publication of a new *Handbook of the IPA* (International Phonetic Association, 1999) describing the principles behind the alphabet, and he worked to ensure that computer fonts of the alphabet would be widely available.

Much of Ladefoged's early laboratory research on English was in the area of speech production, from electromyography of speech respiration to tongue positions of vowels to articulatory-acoustic modeling. While much of this research had potential clinical applications, Ladefoged's own original motivation was modeling speech production, first in hardware and later in software. In turn this led to an interest in applied phonetics for speech synthesis by computer and for speech technology more generally. Finally, over the years Ladefoged consulted on many cases of forensic speaker identification, especially cases involving "voiceprinting." He argued that it was generally not possible to be sure that two voice samples were from the same person.

Ladefoged was also a dedicated and successful teacher, winning the UCLA Alumni Association's Distinguished Teaching Award in 1972. His 20 PhD students included such influential figures as Vicki Fromkin, John Ohala, Ian Maddieson, Louis Goldstein, and Cathe Browman. His textbook *A Course in Phonetics* (now coauthored with Keith Johnson) is the standard in phonetics (Ladefoged, 1975). It draws on his extensive fieldwork experience and has shown generations of students the richness of linguistic sounds. Ladefoged developed computer-based teaching materials for this and other courses before this practice was common, materials now used online all over the world.

His many honors include the 1985 Festschrift edited by Vicki Fromkin, *Phonetic Linguistics: Essays in Honor of Peter Ladefoged for his 60th Birthday*; the UCLA College of Letters and Sciences Faculty Award in 1991; the Gold Medal at the XIIth International Congress of Phonetic Sciences in 1991; the Silver Medal in Speech Communication of the Acoustical Society of America in 1994; honorary doctorates from the University of Edinburgh in 1993 and from Queen Margaret University, Edinburgh in 2002; and the special session "Phonetic Linguistics: Honoring the contributions of Peter Ladefoged" at the October 2005 meeting of the Acoustical Society of America. He was president of the Linguistic Society of America

in 1978, of the Permanent Council for the Organization of International Congresses of Phonetic Sciences in 1983–91, and of the International Phonetic Association in 1987–91. (Also see Peter Ladefoged's Web page at www.linguistics.ucla.edu/people/ladefoge/)

SEE ALSO: Abercrombie, David; Endangered Languages; International Phonetic Alphabet; Jones, Daniel; Technology and Phonetics

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Lado, Robert

SPIROS PAPAGEORGIOU

Born to Spanish immigrant parents, Robert Lado (1915–95) had a personal and a political interest in the teaching of English (Kramsch, 2007). He received his PhD in 1951 from the University of Michigan and served as the Director of the English Language Institute (ELI), which was founded by Charles Fries in 1941 to conduct research in teaching English as a foreign language and to test new scientifically based materials for the teaching of English (www.lsa.umich.edu/eli). The funding of the ELI was part of the US State Department's counteroffensive against fascist Germany, which was aiming to expand the teaching of German in Latin America (Kramsch, 2007). Because of President Roosevelt's postwar "Good Neighbor Policy" to promote pan-American cooperation, the mission of the ELI was to develop language and cultural programs for Latin American professional personnel and students. Fries and Lado, who succeeded Fries as the Director of the ELI, conducted contrastive analyses of English and Spanish linguistic systems. These analyses led to the development of the audio-lingual method of language teaching which formed the basis for the intensive English training courses in the ELI. Lado went to Georgetown University in 1960 and served on the faculty and as the Dean of School of Languages and Linguistics between 1961 and 1973. He contributed significantly to the expansion of the School, received honorary doctorate degrees and authored more than 100 articles and 60 books on languages and linguistics (Alatis, 1999). He helped establish English departments in five Spanish universities and founded the Lado International College (www.lado.edu).

In his book *Linguistics across Cultures: Applied Linguistics for Language Teachers* Lado (1957) maintained that a learner will find elements of a foreign language easy if they are similar to elements of the native language, and difficult if they are different. The aim of the book was to train teachers to make comparisons between L1 and L2 systems and help students overcome such difficulties. As Lado's work was associated with the behaviorist language learning theory of Contrastive Analysis (CA), which attributed language errors to L1 interference, his work was discredited, even though, thanks to Lado, researchers were drawn to the possibility of L1 influence on L2 learning. Swan (2007) argues convincingly that criticism of Lado's work was unfounded and that he clearly did not claim in his book that all language errors were due to L1 interference (for which CA was severely attacked). Nevertheless, sentences from the book have been quoted in isolation and criticized, whereas the many original ideas that Lado provided were ignored, as was his own clarification that learner problems based on contrastive analysis are hypothetical and should be checked against the learner's output (Ringbom, 1999). In fact, as Alatis (1999) points out, Lado's rich theory on CA was so important to the field of second language acquisition (SLA) that he has been referred to as the "indirect father" of SLA.

Lado's contribution to the field of language testing has long been valued and recognized. The recommendations in his book *Language Testing: The Construction and Use of Foreign Language Tests* (Lado, 1961) dominated, according to McNamara (2000, p. 89), the field's practice for two decades. Emphasizing the need for measurement theory behind testing techniques, Lado was attacked by the British communicative testing movement for advocating a discrete-point approach, where elements of language are decontextualized and tested in isolation. Such criticism has been characterized as "unjust" (Davies, 2008b, p. 329). In fact, as Fulcher (2000) points out, Lado was concerned about how reliably oral ability

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could be assessed and how valid inferences based on oral tests could be, given the limitations of sampling from the TLU (target language use) domain; however, he never suggested that oral skills should not be assessed at all, as some of his critics claimed. Moreover, Lado's emphasis on measurement theory combined with theories of structural linguistics for the construction of language tests was a major contribution to the field of language testing (Spolsky, 1995, p. 150).

Lado's 1961 volume, "the first book of its kind ever published" (Alatis, 1999, p. 771), was intended for teachers of foreign languages and was a first, serious attempt to present language testing in relation to theories of linguistics, language teaching, and learning, as well as measurement. Until that time, language testing was "a neglected area" (Green, 1965, p. 558), despite its obvious link to language teaching, and the literature "said little about the techniques and underlying principles of language testing" (Heiser, 1970, p. 43). The 27 chapters are grouped into five parts, whose titles would seem to fit a textbook on language testing even nowadays:

- general introduction and theory of foreign language testing;
- testing the elements of language;
- testing the integrated skills;
- beyond language;
- refining and using foreign language tests.

It has been acknowledged as a "pioneering book" (Spolsky, 1995, p. 352) and of tremendous breadth (Davies, 2008b, p. 330).

Lado's attempt to rely on theory was, according to Spolsky (1995, p. 150), a crucial step toward the professionalization of the field of language testing. His work, and that of his students and colleagues at the University of Michigan, resulted in some of the early tests in the field, on which TOEFL (Test of English as a Foreign Language) was modeled (Davies, 2008a, p. 4). The International Language Testing Association (ILTA) initiated in 1996 the Robert Lado Memorial Award, also known as the ILTA Best Graduate Student Paper Award, for the best paper presentation by a graduate student at the annual Language Testing Research Colloquium (LTRC). The award was established in recognition of Lado, "by all accounts the founder of modern language testing research and development, and an internationally renowned scholar" (www.iltaonline.com). The theme of the 33rd LTRC, "Half a Century of Language Testing: Back to Basics," hosted by the English Language Institute of the University of Michigan, reflects this recognition, 50 years after the publication of the 1961 volume. Despite the advances of the last five decades, Lado's work remains significant for language testing and other fields.

The author would like to thank colleagues at the University of Michigan for their useful comments on an earlier version of this entry.

SEE ALSO: Assessment and Testing: Overview; Crosslinguistic Differences in Grammar; Crosslinguistic Influence in Second Language Acquisition; Interlanguage; Language Assessment Methods

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Language Analysis for the Determination of Origin (LADO)

HELEN FRASER

Language analysis for the determination of origin (LADO) is a relatively new branch of applied linguistics. Generally considered a forensic application, it is used by governments to assess asylum seekers applying for refugee status.

The United Nations' 1951 Geneva Convention defines a refugee as a person with a well-founded fear of being persecuted in their home country for reasons of race, religion, nationality, membership of a particular social group, or political opinion. Asylum seekers who arrive in a country which signed the Geneva Convention, and are able to demonstrate such a well-founded fear, can claim the status of refugee, giving them rights of immigration to that country.

Since many asylum seekers, for a variety of reasons, arrive without reliable identity papers, the first task of immigration authorities is to determine whether applicants' claims are valid, or whether they may be misrepresenting their identity in order to gain entry to the country.

To aid in this determination, applicants are interviewed to test their knowledge of the language, culture, and region of the persecuted group they claim to belong to (European Union, 2008). In some cases, their speech is analyzed to determine whether it shows features of the specific language variety of the claimed group. This last procedure is LADO.

In principle, LADO is a reasonable endeavor. It is well known that people's lifelong speech patterns are shaped by their regional and social background, and language analysis is used to provide evidence of origin in other areas of forensic linguistics (e.g., French, Harrison, & Windsor Lewis, 2006). However, there are many cautions to consider when using this kind of evidence (McNamara, 2005). Like any forensic language analysis, it requires not just knowledge of the language in question, but expertise in relevant branches of linguistics (Rodman, 2002).

Though native speakers of any language commonly have a strong sense of confidence in identifying the regional or social origin of other speakers by their speech patterns, numerous studies have shown their ability is far less robust than their confidence warrants (see Fraser, 2009). This is true even for speakers of prototypical varieties of well-defined dialects of long-studied European languages, and the LADO situation is typically far less stable. Asylum seekers frequently come from communities featuring complex multilingualism or diglossia, and many have been displaced from their home region for long periods, often in mixed refugee camps, resulting in significant modification to their speech. Factors like these can make decisions about who counts as a "native speaker" of a particular language variety genuinely problematic.

All this means LADO requires high-level expertise not just in the linguistic and sociolinguistic patterns of the language, but also in methods for collecting and analyzing language data according to appropriate standards, and presenting conclusions objectively, with proper evaluation of their limitations (Eades, 2005).

The problem is that asylum seekers often come from regions which by their nature have provided few opportunities for scholarly study of relevant language varieties, and it can be difficult to find appropriate experts. It has become common for immigration departments

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to use the services of agencies established to broker relationships between governments and analysts.

These agencies operate under pressure to process large numbers of asylum seekers from a wide variety of backgrounds, and, despite their extreme confidentiality, considerable evidence has shown that some hire underqualified "native speakers," not always from appropriate language backgrounds, who provide over-confident judgments of origin on the basis of inadequate data (Eades, Fraser, Siegel, McNamara, & Baker, 2003; Reath, 2004; Singler, 2004).

A set of 12 guidelines, developed by an international group of linguists in 2003–4, and widely endorsed by the scholarly community, aims to help governments choose agencies which conduct LADO according to accepted academic procedures (Language and National Origin Group, 2004). Regrettably, however, the LADO industry is unregulated. While some agencies voluntarily respect the guidelines, there is no requirement to do so, and ongoing evidence shows some still employ underqualified analysts and questionable methods (Patrick, 2009).

Recently, members of one agency have sought recognition for a method whereby "native-speaker analysts," lacking qualifications in linguistics, can nevertheless produce reliable LADO reports if trained and tested by a supervisor who does have linguistics expertise. This method conflicts with Guideline 3, which insists LADO should be carried out only by analysts with expertise in both linguistics and the language in question, but is argued to have the advantage of giving greater weight to native-speaker intuition than analyses conducted by academic experts who are not necessarily native speakers (Cambier-Langeveld, 2007, 2010).

Discussion of this method has raised some theoretical debate as to whether it is, in principle, possible for valid LADO judgments to be made by a team consisting of a native speaker lacking knowledge of linguistics and a linguist lacking knowledge of the language, or whether valid analysis requires expertise in both linguistics and the language in question embodied in one person (de Graaf & Verrips, 2009; Eades, 2009).

Other debates concern whether LADO is best treated as a language test or as forensic evidence, and, more generally, how to integrate methods and principles from phonetics, sociolinguistics, and other relevant disciplines.

There is clearly a need for a great deal more research on these and other issues. More pressing, however, is the practical task of ensuring that all LADO reports are produced according to standards appropriate to both linguistic science and the human rights and national security issues that are at stake. Collaboration between academic linguists, governments, and the more responsible LADO agencies is essential to achieving this aim.

Important steps in this direction have been made by several interdisciplinary workshops, including: "Linguistic Analyses Within the Asylum Procedure" (2008) by the Lingua unit of the Swiss Office for Migration (http://www.bfm.admin.ch/bfm/en/home/themen/migration_analysen/sprachanalysen/lingua.html); a 2010 European Science Foundation Exploratory Workshop, "Language and Origin" (http://www.esf.org/activities/exploratory-workshops/humanities-sch/workshops-detail.html?ew=9418); and, also in 2010, "Challenges and Commonalities in Providing Objective Evidence for Refugee Status Determination" by the independent research center CORI (http://www.cori.org.uk/3.html).

Establishment of an international Language and Asylum Research Group at the University of Essex should enable further significant developments in both research and practice.

SEE ALSO: Assessment and Testing: Overview; Cultural Identity; Forensic Linguistics: Overview; Human Rights; Linguistic Human Rights; Multilingualism; Native Speaker

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Language and Globalization

MATTHEW J. HAMMILL AND EDUARDO H. DINIZ DE FIGUEIREDO

The term *globalization* is used in a wide range of contemporary discussions in academic contexts and as a result has been defined and applied according to the needs of diverse fields such as economics (Bhagwati, 2004), education (Suarez-Orozco & Qin-Hilliard, 2004), and cultural anthropology (Appadurai, 1996). Giddens (1990) defines globalization as "the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa" (p. 64). Based on this definition, language plays a crucial role in the process of globalization, in that it is a vehicle for connections and interactions between people and spaces, while at the same time is itself affected by global forces. Applied linguists have taken up these considerations in areas such as language spread, English as a global language, critical discourse analysis, and language education.

Mufwene (2010, p. 31) states that "neither economic globalization nor language spread is new in the history of mankind." Commercial trade relations and military conquest led to increased language spread, as is clear from the expansion of Latin during Roman imperialism, and of Spanish, Portuguese, and English during European colonialism. Historically, less dominant languages have disappeared in the face of more powerful ones, as in the case of many indigenous languages, and globalization can be seen as increasing the pace of this phenomenon. Nettle and Romaine (2000) make the case that in the last 500 years worldwide language use has become increasingly homogenized, with smaller languages dying out, and more powerful ones consolidating their dominant positions (see also Skutnabb-Kangas, 2000). However, while the processes of globalization are not entirely new, their intensity and scope have increased with the development of mass media, popular culture, and multinational corporations, which has led to a contraction of the temporal and spatial scales of social and economic connections, thus consolidating political, economic, cultural, and linguistic power.

In particular, the spread of English and its increasing role as a global language have been the focus of much research. For example, the field of World Englishes has addressed how English has moved beyond its traditional linguistic bases in places such as the United Kingdom, the United States, and Australia (Inner Circle) to regions where it was nativized due to extended colonization, such as India and Nigeria (Outer Circle), and further to countries where it is used and taught as a foreign language, such as Japan and Brazil (Expanding Circle) (Kachru, 1992). Although English is not the only language of international communication, it is the primary language associated with globalization, not only because of its wide use as a lingua franca, but also due to its prevalence in international media, popular culture, scientific literature, and the institutional discourses of multinational corporations, economic blocks, and non-governmental organizations.

This status of English as *the* dominant language of globalization has been a subject of critical inquiry. Phillipson (1992), most notably, argues that the ascent of English has not been a neutral process, but rather one that has been deliberately developed and maintained at the expense of other languages, a phenomenon which he terms *linguistic imperialism*. For Phillipson, English has been legitimized by the ideological assumption that it brings modernization to social and cultural values, which in turn makes its increasing use seem

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natural and unavoidable. Although Phillipson's theory of linguistic imperialism has been influential on much work in applied linguistics, it has been criticized for being overly deterministic. Pennycook (2001) and Canagarajah (1999), for instance, have pointed out that Phillipson's view does not account for the agency, resistance, and appropriation that are involved in how people encounter and experience the global presence of English. These issues raised by Pennycook and Canagarajah are related to views that the relationship between globalization and language needs to be understood as complex, increasingly deterritorialized, and capable of change based on local conditions (see Blommaert, 2010).

Another issue that has received attention is that of the discourses of globalization themselves. Fairclough (2006) argues that these discourses do not only represent globalization, but also help construct what globalization actually is. In particular, Fairclough focuses on how the dominant discourses of globalization, conveyed through the media and politics, for instance, express neoliberal economic ideologies, such as the assumption that the development of global markets inevitably leads to economic empowerment and fosters democracy.

Finally, globalization has impacted language teaching and learning. One of the issues that has been problematized is the often assumed one-to-one correspondence between target language and target culture in light of the cultural issues that are posed by global flows (Kumaravadivelu, 2008). In the particular case of English, the question of which variety of the language should be taught has been addressed. It is often the case that standard varieties of American and British English are favored, mainly due to the prestige associated with them. Despite the acknowledgment that British and American English are valid models for teaching, it has been emphasized that they should not be uncritically adopted, and that pedagogical choices should be made based on a full understanding of local needs (Matsuda, 2006). One last issue that can be emphasized is the education of language minorities. In particular, immigrant flows in the age of globalization have demanded that schools reassess the ways in which they conceptualize language, culture, and teaching in order to accommodate the needs of diverse students. As with all the issues presented here, the intensification of globalization will demand increased attention to the role of language in shaping the realities experienced by people in diverse contexts.

SEE ALSO: English as Lingua Franca; Language, Politics, and the Nation-State; Linguistic Imperialism

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Language and Identity

JOHN EDWARDS

"Identity" refers to the way we conceive ourselves as individuals or as members of groups—or, indeed, the way others perceive and categorize us. Although "language" requires a more nuanced definition, for present purposes we can understand it to comprise two important facets: the communicative and the symbolic. The former refers to its familiar instrumental uses, while the latter has to do with its emblematic functions as an expression and encapsulation of culture. While the symbolic aspects of language arise from the more mundane instrumental ones, they can outlive "ordinary" language shift for some time: One may no longer know the original or ancestral language of one's group, while yet retaining a psychological attachment to a medium uniquely important for a shared history, poetry, and narrative. The essence, then, of the language–identity linkage may include instrumentality but it also goes well beyond that. People who have been willing throughout history to fight for the preservation and continuation of their linguistic and cultural traditions would hardly have done so had communicative efficiency been the pivotal issue. They are motivated more by what George Steiner (1992, p. 494) so felicitously referred to as the "natural semantics of remembrance."

At the same time, both history and formal scholarship tell us that the maintenance of identity, the perception of a continuing cultural thread that connects us to our forebears, rests more upon the preservation of group boundaries than it does upon any specific cultural content within them. Fredrik Barth (1969) is perhaps the most influential of contemporary scholars who have argued that the essential point here is the boundary between groups. Among other things, this hypothesis illuminates the phenomenon of group maintenance across generations, particularly in immigrant contexts where the cultural "stuff" of people's lives usually changes dramatically in the course of a few generations. Third- and fourth-generation immigrants in the USA, for example, are generally quite unlike their first-generation relatives, yet, to the extent to which they recognize links (and differences from other groups), the concept and utility of group boundary has significance. Of course, the cultural content within boundaries, while mutable, remains important. An examination of traits, practices, and customs that disappear or become less visible, compared with those that show more longevity, can elucidate the ways in which boundaries are maintained in the face of changing circumstances. Language provides a specific instance here: The decline of an original variety clearly represents a cultural change—the abandonment of that language as a regular communicative instrument, and the adoption of another. But, to the extent to which the ancestral medium remains as a valued symbolic feature of group life, it may still contribute to the maintenance of boundaries. A generation ago, Carol Eastman (1984) discussed the notion of what she termed an "associated" language, one that group members no longer use, but that continues to be part of their heritage. This allows language to become a nationalist rallying-point, even for those group members who no longer speak it—or, indeed, who never did. We should bear in mind, too, that language-as-symbol is at least theoretically capable of regaining an instrumental and communicative status. Putting aside the case of Hebrew in Israel, there are many instances in many settings of nonspeakers setting themselves the task of learning an original variety, and this—even in instances where there is little realistic hope of actually *using* that variety on any sort of regular or

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unselfconscious basis—is because of a strengthened or reawakened interest in culture and tradition.

The idea that the preservation of that original language is essential for the continuity of identity is of course central to the conceits of all language nationalists and revivalists. In 1797, Wilhelm von Humboldt wrote that "language is the spiritual exhalation of the nation" (Cowan, 1963, p. 118), and the sentiment remains powerful. Many scholars, too, have subscribed to the idea that, once language shift has occurred, the writing is on the wall for group identity. While language is clearly very important for a continuing sense of "groupness," however—and while, indeed, the maintenance of an original variety may constitute the strongest single pillar here (religion is also a contender, of course)—this does not mean that identity cannot outlive language shift. Groups that have shifted, in communicative terms, from their ancestral variety to another often retain a distinctiveness at the level of accent or dialect, of course. Such "marking"—as in the case, say, of the English-speaking Irish, Welsh, or Scots, of Portuguese-speaking Brazilians, of Spanish-speaking Peruvians, or of German-speaking Austrians—can obviously contribute very substantially to the maintenance of group borders. It is probably fair to say that, in all instances in which two or more groups have come to "share" a common language, distinctions have arisen at the dialectal level. This also applies at regional levels: Irish English is not English English, but neither is it some undivided entity; speakers from Cork, Galway, Dublin, and Donegal are identifiably different. The fact that these distinctions remain marked, in a world made ever smaller by ubiquitous media and by the strong homogenizing pressures of "Westernization," is surely further testimony to the powerful symbolic significance that linguistic markers at all levels can possess for identity.

The language–identity relationship is of particular importance in certain individual and group contexts. Remaining at the level of nationalism, first of all, the need that most languages have felt for standardization has resulted in the creation of official academies or other such institutions, whose duties have included the production of dictionaries and grammars. Their prescriptivist work, however, has very often led to efforts to keep languages "pure," to keep out foreign borrowings—efforts that have gone beyond (or even countered) best instrumental practice, in the name of group-identity protection. Translation is an area in which language and identity concerns have sometimes collided: The person whose abilities allow the straddling of language-group borders may also take sensitive or private matters across those lines. The old Italian proverb that equates translation with treason (*traduttori, traditori*) is blunter. This is of course a variety of what has come to be called "voice appropriation," the alleged cultural theft that occurs when outsiders—in what is often seen as neocolonialism—tell the stories that belong to the group—often to a particular caste within it—and which typically have spiritual significance. Other important settings involve religious language, gendered language, and other intertwinings that further underscore the centrality of language to the formation and maintenance of identity; see also Edwards (2009).

SEE ALSO: Cultural Identity; Ethnicity; Language Endangerment; Multilingualism and Identity

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Language and Identity in Africa

SINFREE MAKONI AND BUSI MAKONI

Introduction

A central theme in discussions about language and identity is homogeneity and dissimilarity based on categories such as language, ethnicity, nationalism, and, to some extent, religion, all of which are highly contestable in their own right. For example, one of the most complex and contested relationships in most polities is that between language and national identity. Language is one potential marker of identity, as it provides individuals with resources to express their identity. Identity, on the other hand, is a "reflection of common history or language" (Calhoun, 1993, p. 211). In fact Cobarrubias (1983, p. 43), referring to the status of different languages, distinguishes between three types of states with reference to language: endoglossic, exoglossic, and mixed. In endoglossic states one of the official languages is an "indigenous" language. Kenya is an example of an exoglossic state in which English, a former colonial language, holds official status; Cameroon, unlike Kenya, has two excolonial languages as official languages (English and French). South Africa is an example of a mixed state because both indigenous and excolonial languages have been granted official status.

Language and National Identity

The relationship between language and national identity can be a site of struggle and contestation. Sudan, for example, has been embroiled in a long drawn-out conflict which, to some extent, is a consequence of a struggle over defining the linguistic makeup of Sudan. The conflict in Sudan can be traced back in part to the period of joint rule by the British and the Egyptians. During the condominium period (ca. 1890 to 1957), Sudan was divided into two: the north and the south (Miller, 2003). The identity of the north was founded on Arabic and its association with Islam, while that of the south rested on a triumvirate (English, African languages, and Christianity). After 1957, when Sudan became independent, the Khartoum government sought to transform the country into an Arabic nation through an Arabization strategy which imposed Arabic as a national language and Islam as the official religion. This was an attempt to create a unified Arabic national identity despite the fact that only 38% of the Sudanese population spoke Arabic.

Consequently, Arabization was challenged by southerners. Efforts to impose a monolithic nation accentuated the identities of the south instead of submerging them into an Arabic identity as the Khartoum government had intended. Even though south and north Sudan have officially become separate countries, it is still too early for the deep-seated identity problems which have evolved over decades to be resolved. The relationship between language and national identity is therefore constantly evolving and negotiated at different levels.

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Identity

The concept of identity is currently used extensively in scholarly discourses, both in African studies and in applied linguistics. Because of the weight of the identity regime it is important to outline some of the characteristics of identity relevant to our analysis and understanding, especially taking into consideration African contexts. In line with Brubacker (2004) and to some degree Stoler (2002), two types of identity tropes are distinguished: "strong identity" and "weak identity." "Strong identity" refers to a consistency in the nature of social and behavioral practices including language performance. The consistency is reflected over historical and geographical spaces. "Weak identity," by contrast, consists in a flexible, fluid, and adaptable usage of identity. Strong identity is essentialist whereas weak identity is founded on "soft" social constructivism in which individuals choose an identity by exercising individual agency. This means an individual is not trapped by their individuality. The capacity and latitude of individuals to express and shape their identity is restricted by the fact that agency and the choices they make are constrained by a combination of linguistic, historical, and social factors. Paradoxically, if identity were completely free, the social and linguistic practices would be uninterruptable; after all, as Brubacker cautions, choice is meaningful only if it is restricted: "If identity is everywhere it is nowhere" (2004, p. 29).

History of Identity

Identity found its way into scholarly discourses through multiple pathways. Identity was popularized by Erikson (1968), who is credited with coining the term "identity crises." Identity also found its way into African studies and applied linguistics when it was separated from Freudian psychoanalytical work and later associated with Allport's (1954) writing on ethnicity. Other scholars working more or less independently in the 1960s invoked the term "identity" to provide an account of their work (e.g., Goffman, 1963; Berger, 1983). In addition, the rise of the Black Power movement as well as a sharpening of consciousness around the concepts of race, ethnicity, and gender increased the widespread use of the term and popularized the notion of identity crises. In African studies as well as in African applied linguistics, "identitarian" thinking has become one of the most prominent intellectual templates. It has been frequently invoked to resist the claim that ethnicity is primordial. In African studies, even when ethnicity is construed as "invented," the stress is on the formation of ethnicity and boundary formation, not on "boundary crossing" (Brubacker, 2004, p. 48). There is, however, an inconsistency in the constructivist treatment of identity. While ethnicity and other categories are said to be "invented," language is by default treated as "natural," thus downplaying the contexts and mechanisms which lead to its social formation (see Joseph, 2006, and Makoni, Brutt-Griffler, & Mashiri, 2007, for a constructivist position).

A Conceptual Shift From a Minority Language to an Indigenous Language

The relationship between language and national identity is complicated not only by the elusive nature of the notion of identity but also by the bidirectional nature of the relationship in question. Language is "imagined" in terms of a nation-state and national identity is imagined through language—a much more complex position than that advocated in "imagined communities" (Anderson, 1983). A further complication about the relationship between language and identity arises when a distinction is drawn between languages, especially when some languages are considered national/indigenous whereas others are

relegated to minority status, thus creating homogeneity and dissimilarity at the same time. For example, the Zimbabwean government has sought to promote minority languages as official national languages. Some minority groups such as the Tonga in northwestern Zimbabwe find the term "minority" objectionable and claim that it situates them at the margins of the political and economic spectrum. Because they feel that they are ideologically central to their own lives, they prefer to be classified as "indigenous" (Makoni, Makoni, & Nyika, 2008). From the perspective of the Tonga, the term "indigenous" creates opportunities for them to claim a legitimate status within Zimbabwe. However, the term is also problematic because it reifies language and identity instead of constructing these as practices, situationally contingent and shaped by ecological discourses (Fabian, 1986; Nettle & Romaine, 2000; Hornberger, 2003). Reification is inevitable, however; it is therefore the degree of reification which is being questioned, as extreme abstraction treats language and ethnicities as natural and stable depositories and not as discourses in context and constantly evolving cultures.

A determination of national identity is an ongoing struggle because of the conflict over who is included in/excluded from the state. For example, some youth feel excluded because of their use of urban amalgams and polylingualism; they cannot imagine themselves on the basis of official languages, and are ambivalent toward their national identity because they feel they are simultaneously part of the 'hood' and part of international social movements (glocal; Higgins, 2009). The global affiliation of some youth is apparent in the extensive usage of polylingualism in popular cultures (Higgins, 2009; Pennycook, 2010). Polylingual speakers are able to cross ethnic and linguistic boundaries (Rampton, 2005) and appropriate new identities, and they are not restricted to a single national identity.

Language and Identity in Precolonial Africa

Colonialism and postcolonial Africa have been used as starting points for all writing on language and identity in Africa. Yet language and identity can be inferred from material artifacts collected in excavations—such as spears, arrows, glass beads, ivory—and from commercial exchanges which are found in archives. It is plausible that material cultures and trade produced a specialized register for use by people from different corporations, ethnicities, and so forth, to facilitate their trade. As such, there must have been professions whose identity was shaped by their expertise in the construction of artifacts such as weapons and by the use of such weapons for both sanctioned and unsanctioned violence. The different types of weapons and variations within each weapon (e.g., in terms of size) suggest that a specialist vocabulary was developed in parallel with the technical specialization even in precolonial Africa. Similarly, the widespread presence of court jesters in kingdoms who could be described as female even when biologically male, and kings who could be described as male even when they were female, implies that in such contexts professional identity superseded gender as shaping language and identity. Gender, although an important aspect of identity, shows the complicated nature of social categories of Western scholarship. Ndau chiefs (Zimbabwe) had assistants who were referred to as wives even though they were men, thus producing identity categories of men/women. The categories of men/women, wife/husband, and male/female have also been reported in other groups, such as the Shona and Yoruba populations in West Africa (Yankah, 1998; MacGonagle, 2001).

Inventing Ethnicity

Different approaches have been used in the analysis of ethnicity (Sollors, 1989) in African scholarship. One of the most well-known approaches to the development of ethnic consciousness has been attributed to "invention," which highlights the general constructedness

of ethnicities resulting from colonialism, as European colonial rulers attempted to impose administrative and political order on their colonies. Brass (1991, p. 8) states that ethnicities

> are creations of elites, who draw upon, distort and sometimes fabricate materials from the cultures of the groups they wish to represent in order to protect their well-being or existence or to gain political and economic advantage for their groups as well as for themselves.

An example of this is the distinction between the Dinka and the Nuer in Sudan. In precolonial Africa the Dinka and the Nuer were not distinct ethnic groups. They both belonged to the Golo ethnic group (Tucker & Myers, 1910), hence the claim that the "Nuer were never Nuer, or Dinka were never Dinka" (Southall, 1976, p. 487). The Dinka story provides an example of invented ethnicities where they did not exist before. It also reflects "the paradoxical sense that ethnicity is something reinvented and reinterpreted in each generation" (Fischer, 1986, p. 218).

The Dinka/Nuer experience lays bare the strategies used in the construction of ethnicities in some parts of Africa. The invention of ethnicities where none existed before colonialism has been repeated in other parts of Africa, for instance the Manyika in Zimbabwe (Ranger, 1989), the Igbo in Nigeria (Wolpe, 1974), and the Ngala of the Congo. In essence, the colonial regime reinscribed a new social and linguistic order, which has manifested itself in contemporary society through ethnic wars or conflict, as most scholars working on Africa have remarked. Colonial differences were accentuated when the colonial rulers chose some ethnicities, which became pillars of their administration. The construction of ethnicity is not limited to colonialism. Its genesis is situated in precolonial Africa as well. The cases of the Acholi in Uganda and Ndau on the borders of Mozambique are excellent examples of a form of ethnic consciousness. Acholi ethnic identity has its sociogenesis in the late 17th century (Atkinson, 1994); it is socially constructed and a product of history and imagination. The development of Acholi ethnicity was further expedited by the presence of Arabic-speaking traders who introduced the term "Shooli," which eventually became "Acholi." The Acholi consciousness and some Acholi ethnic practices were subsequently influenced to some degree by British colonialism, but their origins cannot be traced back exclusively to the British colonial encounter. Even if colonialism played a substantial part in enhancing the ethnic consciousness, ethnic identity is always emerging and does not have an end state. The Acholi are an "unfinished process of coming to be" (Lonsdale in Atkinson, 1989, p. 20).

The Ndau are an important example of an identity whose origins and practices are found in Portuguese archives (MacGonagle, 2007). Ndau ethnicity was only one aspect of that identity. The full range of their identity was reinforced by a wide range of factors including bodily marking (i.e., scarification), a practice which has continued to contemporary times. Some of the social practices which came to define Ndau identity are, however, not unique to the Ndau. For example, monotheistic religious practices and demonstrations of social respect evidenced by clapping of hands are shared with other ethnicities. Ndau ethnicity has also been complicated by intermarriages between the Ndau and Swahili-speaking traders and White travelers. The offspring of these relationships have been incorporated into Ndau ethnicity and the ethnic background of these offspring has therefore become an important feature of ethnicity.

Ethnicity and Nationalism

There is a very thin line between ethnicity and nationalism. For example, Zulu nationalism may be attributed to the emergence and crystallization of Zulu ethnic consciousness. From

this perspective Zulu nationalism and ethnic awareness are different sides of the same coin. Zulu nationalism and ethnicity, like that of the Acholi, clearly predated colonialism but their nature and trajectory were to be shaped and influenced by colonialism.

Ethnicity as Work in Progress

How people categorize themselves seems to differ substantially depending upon where they are situated geographically. For example, the Tumbuka, Cewa, and other ethnic groups in Malawi strongly feel that they belong to different ethnicities in Malawi but accept a common ethnic label when in Zimbabwe. A similar tendency has also been observed among northerners in Ghana who define themselves as Hausa in Accra but not in northern Ghana. Upon returning to the north they do not necessarily realign themselves to their previous ethnicities. The cases of the Hausa, Tumbuka, and Cewa demonstrate that it might be more cogent to think of the relationship between ethnicity and multilingualism as strategic and expedient rather than as fixed, and thus to capture the fluidity of the language and ethnicity relationship which is lost from a monolingual/monoethnicity perspective.

The relationship between language and ethnicity is further complicated because social life is not organized along the lines of ethnicity. Social life may be organized according to professional associations, burial associations, clans, and so on—some of which intersect, while others run in parallel, thus the same individual may belong to multiple associations at the same time or shift from one association to another at different times during their life trajectory. The heterogeneity of language and the complexity of the relationship between language and identity are partially a consequence of an individual's multiple affiliations, and the tendency within each association to develop its own unique vernaculars.

Conclusion

In language and identity, as in other social science categories such as class, gender, national identity, and so on, we have to be skeptical of a tendency which assumes that the notions are unproblematic and fixed, in terms of both time and space. In addition, notions are deterministic in the sense that each category shapes the nature of language practices. Furthermore, notions such as language and identity are constantly evolving in academe, rendering relationships between them harder to establish.

SEE ALSO: Edwards, John; Language and Identity; Multilingualism and Identity

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Language and the Digital Divide

MARK WARSCHAUER

The *digital divide* refers to inequality in access to or use of computers, the Internet, and other information and communication technologies. The term became prominent in the 1980s when US Vice President Al Gore and other members of the Clinton Administration used it in reference to technology and inequality in the United States. It later became used in other contexts, both within countries and across countries, where there were perceived gaps in computer and Internet access. Attention to the digital divide has focused on many demographic and socioeconomic factors, with gaps associated with language a prominent concern. This entry will first examine the digital divide within the United States, and then internationally, in both cases focusing on language issues.

The US Digital Divide

Early access to personal computers and the Internet in the USA was highly stratified by race, ethnicity, gender, socioeconomic status, educational background, and language. Since then, differences in access by gender have largely disappeared, with differences in other areas narrowing but still remaining considerable. In addition to differences in access that are affected by all of these factors, there are also substantial differences in how technology is used, and in the outcomes that are associated with technology access and use.

The most comprehensive account of access to the Internet in the USA is provided by the US Census Bureau, which, in addition to its once-a-decade population count conducts monthly in-person current population surveys of about 50,000 representative households; these monthly surveys occasionally address topics related to technology. Data from these surveys has been analyzed and released in a series of US governmental reports on Internet access published in 1995, 1998, 1999, 2000, 2002, 2004, and 2008. According to the 2008 report, differences in Internet access remain substantial in the USA, whether considered by income, education, or race (see Table 1).

Language is also a prominent factor shaping access to the Internet in the USA. According to the 2003 Current Population Survey data, only 13.1% of Mexican or Mexican-American families in the USA in which all adults spoke only Spanish had home Internet access at that time (compared to an access rate of 40.1% among Mexican or Mexican-American families in the USA in which one or more of the adults spoke English), leading Fairlie (2007) to conclude that the digital divide between White, English-speaking non-Hispanics and Spanish-speaking Hispanics in the USA was "on par with the Digital Divide between the United States and many developing countries" (p. 287).

Moving from the question of home Internet access to Internet use, the language gap is even bigger. A phone survey conducted in 2006 found that only 32% of Spanish-dominant Latinos in the USA went online from any location, compared to 76% of bilingual Latinos and 78% of English-dominant Latinos (Fox & Livingston, 2007).

Also important to consider are the conditions of access and use. Low-income Internet users are less likely than those with high incomes to have broadband access to the Internet (see Table 1), and those without broadband have been shown to use the Internet to access

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Table 1 Percentage of US households with Internet access

	Percentage of households with Internet access			*Broadband as percentage of those with access*
	Total with access	*Broadband*	*Dial-up*	
Total households	61.7	50.8	10.7	82.3
Family income				
Under $5,000	31.9	26.7	5.3	83.6
5,000–9,999	24.6	18.4	6.1	74.5
10,000–14,999	26.1	18.9	7.1	72.2
15,000–19,999	35.5	26.9	8.5	75.9
20,000–24,999	40.7	28.8	11.8	70.9
25,000–34,999	50.9	39.7	11.2	77.9
35,000–49,999	65.7	51.0	14.4	77.7
50,000–74,999	80.1	66.0	13.8	82.3
75,000–99,999	88.6	76.8	11.3	86.8
100,000–149,999	92.1	83.7	8.0	90.9
$150,000+	95.5	90.3	5.0	94.6
Educational attainment of head of household				
Elementary	18.5	13.1	5.4	70.8
Some secondary	28.2	20.5	7.4	72.7
High school graduate	49.1	36.8	12.1	74.9
Some college	68.9	56.5	12.1	82.0
BA+	84.1	74.2	9.7	88.2
Race of head of household				
White	67.0	54.9	11.8	82.0
Black	44.9	36.4	8.4	80.9
Native American	41.5	29.8	11.2	71.9
Asian	75.5	69.1	6.1	91.5
Hispanic	43.4	35.2	8.0	81.1

Source: National Telecommunications and Information Administration (2008)

information or create and produce content much less frequently than broadband users (Horrigan, 2008). In addition, due to large family sizes and fewer computers per household, the number of people who have to share computers is typically large in Latino families, with individual home computer access being much more common in White families (Warschauer & Matuchniak, 2010). All of these factors, combined with differential amount of support from family members and peers, leads to very different outcomes from access to home computers and the Internet for youth, with White and high socioeconomic status (SES) students benefiting academically from such access, but Hispanic, African American, and low-SES students getting little if any benefit (see discussion in Warschauer & Matuchniak, 2010).

The digital divide has been examined within other individual countries as well, such as Canada, China, India, and a number of European countries (for an overview, see Matuchniak and Warschauer, 2010), but these studies have rarely addressed disparities by language background.

Table 2 World Internet usage

Region	*Percentage of population using the Internet*	*Usage growth 2000–9*
Africa	8.7%	1,810%
Asia	20.1%	569%
Europe	53.0%	305%
Middle East	28.8%	1,675%
North America	76.2%	140%
Latin America/Caribbean	31.9%	935%
Oceania/Australia	60.8%	177%
World total	26.6%	399%

Source: www.internetworldstats.com (retrieved July 1, 2010)

The International Digital Divide

Examined from a global context, differences in access to and use of new technologies are much greater. As seen in Table 2, the portion of the population using the Internet ranges from 8.7% in Africa to 76.2% in North America. However, not surprisingly, the regions that have the lowest Internet access are also seen to be experiencing the fastest growth.

A substantial but gradually narrowing gap among countries is confirmed by the International Telecommunication Union (2009), which developed an index to measure and compare access to technology, use of technology, and skill in using technology by people in more than 150 countries. In each of the three areas (access, use, and skill), developing countries experienced more rapid growth than developed countries. At the same time, the faster rate of growth among developing countries was principally due to excellent performance among middle-income countries, such as China, with the poorest countries experiencing comparatively slow growth in Internet access, use, and skills.

Language issues have played a prominent role in the international digital divide in several ways. The Internet was first developed in the United States, and in its early days its content was overwhelmingly in English. One study found that 81% of the Web pages in the world in 1997 were in English (see Warschauer, 2003). The dearth of Web content was especially stark for languages spoken in underdeveloped regions of the world and written in non-Roman scripts. For example, a study conducted in 2001 found that there was only one Web page in Arabic for every 1,584 native speakers of the language, compared to one Web page in English for 1.5 native speakers (Carvin, cited in Warschauer, 2003).

A study by Warschauer, El Said, and Zohry (2002) of online communication in Egypt illustrated the complex relationship between language and technology as the Internet first spread. They found that, in Egypt, many early adopters of the Internet were from the country's elite, who disproportionately go to English-medium schools and who also often work for international corporations, where English is commonly used. Because of these reasons, as well as initial difficulties in using the Arabic script on computers, many early Web sites in Egypt were published in Arabic, and many early adopters of the Internet in Egypt used English in their e-mails and chats. At the same time, chatting in a Romanized version of Egyptian colloquial Arabic was also common among these early adopters, thus helping give rise to a written form of this principally oral dialect. Chatting in Romanized versions of diverse languages appears quite common elsewhere as well, as learners creatively adapt the Internet to express their own identity (see, e.g., Lam, 2005).

Table 3 Top ten Internet languages in 2010

Languages	*Internet users (millions)*	*Percentage of all Internet users*	*Percentage Internet use among speakers of the language*	*Percentage Internet language growth (2000–9)*	*World population for this language (2009 estimate, millions)*
English	499	27.7%	39.5%	252%	1,264
Chinese	408	22.6%	29.7%	1,162%	1,374
Spanish	140	7.8%	34.0%	669%	411
Japanese	96	5.3%	75.5%	104%	127
Portuguese	78	4.3%	31.4%	924%	247
German	72	4.0%	75.0%	161%	96
Arabic	60	3.3%	17.5%	2,298%	344
French	57	3.2%	16.9%	375%	337
Russian	45	2.5%	32.3%	1,360%	140
Korean	37	2.1%	52.7%	97%	71
Others	310	17.2%	13.2%	525%	2,355
World total	1,802	100.0%	26.6%	399%	6,768

Source: www.internetworldstats.com (retrieved July 1, 2010)

As Internet access and online content production extends to more countries throughout the world, and advances in hardware and software make online communication easier in a broader array of scripts, discrepancies in access and use by language are narrowing. According to a rough analysis of Internet users by language group, there are now nearly as many speakers of Chinese online as speakers of English (see Table 3).

The vast size of the Web, its rapidly changing nature, and the difficulties of sampling its content all make measurement of linguistic material online a complex undertaking. Perhaps the most in-depth attempt to do so is presented by Pimienta, Prado, and Blanco (2009). By tracking the number of occurrences of 57 culturally neutral word-concepts of eight European languages on search engines (e.g., ambiguity, causality, cheese, compatibility, contiguity, dangerous, December, density, disparity, divisibility, elasticity, electricity), their research project calculated the presence of these eight languages on the Internet for 13 separate time periods from September 1998 to November 2007. The study found that the global percentage of English on search engines decreased from 75% in 1998 to 45% in 2005 and has since remained at that level. The authors suggest that the English presence on the Web is probably lower than its presence as identified by search engines, since search engines sometimes mischaracterize pages written in other languages as English; they estimate the actual Web presence of English to be "probably below 40%" (p. 33).

Web sites in languages other than English are increasing not only in size, but also in popularity. Seven of the twenty most visited Web sites in the world are now in languages other than English, including five major sites in Chinese: the Baidu search engine, the Tencent Internet portal, the Taobao shopping site, Google's Chinese-language site, and the Sina.com infotainment portal (Alexa, 2010).

The steady growth of linguistic diversity online can also be seen in analysis of wikis, blogs, and tweets. Though the international online encyclopedia Wikipedia was first launched in the USA, as of January 2010 only about 22.5% of its more than 14 million articles were in English, with the rest published in 260 other language versions. Arabic, for example, has some 118,000 articles, though that still represents less than 4% of the articles available in English. As for the blogosphere, one study suggested that in the fourth

quarter of 2006 there were more blog postings in Japanese than in English (Sifry, 2007). A recent study of Twitter found that, between February 8 and February 10, half of tweets posted were in languages other than English, with Japanese (14% of total tweets), Portuguese (9%), Malay languages (5%), and Spanish (4%) constituting the largest language groups other than English on the micro-blogging site (Semiocast, 2010).

The growth of content in diverse languages around the world means that people in many countries no longer need to rely on Internet content created in the USA or a handful of other wealthy countries that may or may not meet local needs. However, this growth has not resolved another inequity—that related to crosslinguistic communication. Simply put, the Internet, by enabling more international communication than any other media at a time when English was already asserting itself as a global language, has served to accelerate and amplify the dominant role of English as a global lingua franca (Crystal, 1997). Though people can increasingly use their own language for conversing online within their language community, when they venture out to broad international forums they must often use English, thus further privileging both the English language and its native speakers.

Finally, though the Internet has exacerbated existing linguistic inequality, it has also been deployed to protect linguistic pluralism. By connecting small numbers of speakers spread at great distance, and allowing the video, audio, and textual archiving of elders' voices and words that may have otherwise been lost, the Internet has been used to help preserve minority and endangered languages in Hawaii, New Zealand, and elsewhere (see, e.g., Warschauer, 1998).

Conclusion

The digital divide is a broad phenomenon, intersecting with issues of, race, class, gender, income, nationality, age, and education. Among the factors strongly correlated with Internet access and use is language background. In the USA, speakers of English are far more likely to have Internet access than non-English speakers, especially among the large Hispanic community. Internationally, though the dominance of English on the Internet has reduced, English still predominates as a lingua franca for cross-national online discourse. However, the Internet can also serve linguistic pluralism, as speakers of endangered languages work to preserve and revive their languages online. As the Internet evolves, how it is accessed and used will undoubtedly continue to be related to issues of language.

SEE ALSO: Language and Globalization; Linguistic Diversity; Multilingualism and the Internet; Multilingualism and Minority Languages; Warschauer, Mark

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Language Assessment in Program Evaluation

LARRY DAVIS

Introduction

Program evaluation techniques are of increasing interest to language programs hoping to address pressures stemming from the current climate of accountability, and also contribute to a variety of other important purposes such as demonstrating program worth or satisfying the mandates of accrediting bodies (Norris, 2009; Watanabe, Norris, & González-Lloret, 2009). A central feature of program evaluation is the systematic collection of information for decision making or other uses, with assessment being one important method for collecting such information. Within program evaluation, assessment may itself serve a variety of purposes and take a variety of forms, from standardized tests used to judge value or compare programs, to local classroom-based assessments used to provide focused information for program improvement. This entry will briefly: (a) define the terms evaluation, assessment, and measurement; (b) describe the uses of assessment within program evaluation contexts; (c) discuss validity issues as they pertain to assessment within evaluation; (d) describe some common types of assessments; (e) provide some examples of assessment in use; and (f) discuss a number of issues to consider when using assessments. Throughout, consideration of assessment usefulness for the evaluation purpose(s) at hand will be used as an organizing theme.

Definitions: Evaluation, Assessment, Measurement

The term evaluation has been used in a variety of ways. Evaluation has traditionally been viewed as an exercise where the purpose is to judge the worth of a program (Lynch, 1996; Rea-Dickins & Germaine, 1998), while more recently, advocates of utilization-focused evaluation (e.g., Patton, 2008) have promoted the view that evaluation is a "multi-purpose, multi-method, contextualized undertaking, rather than a monolithic approach to judging program worth" (Norris, 2008, p. 72). It has also been noted that the term assessment is often equated with standardized tests or other types of objective measurements, which has contributed to misconceived assessment practices (Norris, 2006). Given the diversity of approaches and activities in program evaluation, it is critical that basic terms be clearly defined. For this entry, Norris's (2006) definitions will be used:

1. *Evaluation* is the gathering of information about any of the variety of elements that constitute educational programs, for a variety of purposes that primarily include understanding, demonstrating, improving, and judging program value. Evaluation brings evidence to bear on the problems of programs, but the nature of that evidence is not restricted to one particular methodology.
2. *Assessment* is the systematic gathering of information about student learning in support of teaching and learning. It may be direct or indirect, objective or subjective, formal or informal, standardized or idiosyncratic, but it should always provide locally useful

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information on learners and on learning to those individuals responsible for doing something about it.

3. *Measurement* is the consistent elicitation of quantifiable indicators of well-defined constructs via tests or related observation procedures; it emphasizes efficiency, objectivity, and technical aspects of construct validity (p. 579).

These definitions are used because (a) they explicitly acknowledge that assessment may include a variety of techniques, and (b) they focus on the use of information produced by assessment. To clarify further, as used here assessment refers to the appraisal of language abilities and achievements of individuals while evaluation refers to activities that address program-level issues. It should also be noted that these terms are hierarchical: measurement is one type of assessment, while assessment is one type of evaluation activity (Lynch, 2003).

Uses of Assessment

Assessment provides findings that serve a variety of purposes in program evaluation. Such purposes have been conceptualized in various sorts of ways, but major uses include *judgment*, *quality control*, *demonstrating value*, *improvement*, and *knowledge creation* (adapted from Kiely, 2009). Judgment, or the appraisal of program value, is perhaps the use most often associated with program evaluation and connected assessments. As used here, judgment refers to situations where the issue of interest is the extent to which a program meets certain criteria, with the impetus for evaluation (and criteria for judgment) often being external to the program. Therefore judgment uses include assessment and evaluation mandated by funding entities, and any other situation where accountability in terms of results is the primary concern. Judgment uses are often associated with language measures such as standardized or locally produced tests.

Quality control also addresses accountability concerns, but in this case the focus is to ensure that procedures are in place for collecting and using data on program effectiveness; the results themselves are of less direct interest. Assessment of student learning outcomes (SLOs) to satisfy university accreditation requirements is a common example of this type of use. The impetus for assessment may be internal (such as pressure from administrators) or external (such as accrediting bodies); additionally, the learning outcomes themselves may be externally specified (as in accreditation of US teacher training programs) or defined by the local program (as in US university accreditation). A wide variety of assessments are used for quality control purposes, but within SLO assessment these may include some form of proficiency measure (such as an oral proficiency interview) along with assessments that address other language-related knowledge, skills, or attitudes (such as student portfolios or self-assessments).

Language programs may also use assessment to demonstrate the value of the program to various stakeholders, such as students, administrators, or the public. In this case there is an internal impetus to show that the program does good work, for purposes such as improving the reputation of the program or for attracting students. Again, a wide variety of assessments may be used for this purpose. The need to impress may lead to use of recognized measures of language ability that will be accepted by the target audience (e.g., Bernhardt, 2006), but other assessments that demonstrate program effectiveness, or convey a concern for effectiveness, may also serve this purpose.

Program improvement (or development) is arguably one of the most important uses of language program evaluation and assessment, even when evaluation is initially conducted for accountability reasons (Norris, 2006). Improvement includes any use of assessment findings to develop or modify curriculum, teaching, or other aspects of the program to

increase program effectiveness. Accordingly, assessments used for improvement ideally provide maximal feedback regarding program function; local assessments are therefore well suited to this purpose. In contrast, externally developed tests of broad language constructs, such as standardized oral proficiency interviews, may not by themselves provide the level of detail necessary to suggest specific actions for improving programs (Norris, 2006).

A final use of assessment has been knowledge generation. Knowledge generation focuses on producing generalizable statements about the value of a particular language theory, teaching method, or program approach. This use is often associated with quasi-experimental designs that employ language measures to compare treatment and control groups. Knowledge generation was a common impetus for early language program evaluations but has become rare with the recognition that studies of real programs typically lack the control needed to produce generalizable results (Kiely & Rea-Dickins, 2005).

Assessment Validity in Evaluation Contexts

Validity is a fundamental concern in educational measurement (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999), and accordingly is an important issue in language program evaluation contexts. Validity is commonly defined as the degree to which a test actually measures what it claims to measure; that is, validity is ultimately based on the construct being quantified (Messick, 1989). It is also important to note that validity pertains to the specific use of a measurement, not the measurement itself (Bachman & Palmer, 1996; AERA, APA, & NCME, 1999). This model of validity applies most directly to measurements, which focus on the quantification of construct-related behaviors. Assessment, however, is a superordinate category that also incorporates data collection procedures that are less focused on quantification and have less to do with carefully defined constructs (Kane, 2001; Lynch, 2001). Accordingly, standard approaches to validity may in some cases be of little help in judging whether the use of an assessment is justified.

How then might the use of an assessment be warranted? In keeping with a use-focused approach to evaluation, intended use has been proposed as an organizing framework for evaluating whether an assessment is appropriate for a given situation (Bachman, 2005; Norris, 2008). For measures, the intended use of the measure dictates the information needed to demonstrate the validity of the instrument for the purpose at hand. For other types of assessments, usefulness itself may serve as an important criterion for judging quality. For example, when the assessment focus is on providing feedback to learners (as in educative assessments; Wiggins, 1998) the ability of the assessment to support learning is typically of greater concern than psychometric validity (Moss, 2003). Similarly, within program evaluation, the detail, relevance, interpretability, and general usefulness of an assessment for improving program effectiveness may be of equal or more importance than construct-related accuracy (Patton, 2008). This is not to say that traditional validity concerns are unimportant or that sloppy assessment practices should be tolerated; rather, given the wide variety of purposes and contexts found in language program evaluation, flexibility is required in judging the suitability of an assessment for a particular situation.

Types of Assessment in Language Program Evaluation

The purpose of this section is to very briefly describe a few of the major types of language assessments and how they are used in program evaluation. For more information regarding specific assessments or language assessment in general, the reader is directed to the extensive literature on this subject.

Standardized and Other Published Language Tests

- These tests often focus on the measurement of relatively broad constructs (such as general language proficiency) and may take a variety of forms and measure a variety of language constructs.
- Standardized tests are useful for accountability purposes, demonstrating program value, or when there is otherwise a desire to compare outcomes with other programs (Norris, 2006).
- The interpretation of test results can be challenging; test scores may shed little light on the processes that produced the scores. Additional data are often needed to interpret fully what scores mean within a given program (e.g., Llosa & Slayton, 2009).

Locally Developed (or Modified) Language Tests

- Locally developed tests focus on the measurement of languages or constructs of local interest. They are useful when published tests are unavailable or fail to provide adequate information for local needs.
- These tests are useful for accountability purposes when comparison with other programs is not a concern, and the local focus may increase their usefulness for program improvement. A drawback is that considerable time and expertise may be needed to produce local tests and verify their validity for the intended use.

Portfolios and Other Alternative Assessments

- Alternative assessments are generally defined as assessment procedures that are closely integrated with instruction, feature authentic and contextualized tasks, and are aimed toward providing feedback to learners, teachers, and others (Brown & Hudson, 1998; Wiggins, 1998; Brown, 2004).
- Student portfolios are perhaps the most common example of alternative assessment in language program evaluation, but other alternate assessments include essays/theses (sometimes combined with an oral presentation), work samples, or existing classroom assessments.
- Alternative assessments such as portfolios are often used for quality assurance (such as SLO assessment) and for improvement purposes, given that they provide highly contextualized data on student achievement.

Self-Assessments (Surveys/Questionnaires/Interviews)

- Self-assessments collect self-report data and include well-developed measures of constructs such as cultural attitudes or motivation, as well as locally developed assessments addressing specific aspects of learning.
- Self-assessments are commonly used for quality control and improvement purposes, perhaps partly due to their flexibility and the relative ease of data collection. Self-assessments also provide a method of assessing individuals who have already exited the program (e.g., alumni surveys) and are useful for collecting data on learning outcomes such as valued dispositions (e.g., appreciation of multiculturalism) that might otherwise be difficult to examine using tests or other behavioral assessments.

Observation

- Observations may be employed to collect information on language abilities used in context (Lynch, 2003), although observations are more typically used to collect information regarding the learning context itself, such as the characteristics of instruction within a particular class or program.

Examples of Assessment in Language Program Evaluation

Given the inherently idiosyncratic nature of each evaluation, decontextualized descriptions of assessment inevitably fall short of capturing the actual diversity of assessment use. Therefore, the following examples are provided to illustrate a few ways in which assessments might be used in evaluation contexts. These examples vary in terms of: (a) the impetus for evaluation (external or internal), (b) the characteristics of the program, (c) the types of assessment used, and (d) the purposes for assessment. Additional examples may also be found in Kiely and Rea-Dickins (2005), Norris (2009), Rea-Dickins and Germaine (1998), and several other collections listed in the additional readings.

Example 1: Effectiveness of a Teaching Methodology (Beretta & Davies, 1985; Beretta, 1992)

The evaluation was focused on judging and demonstrating the effectiveness of a new English teaching methodology which had been implemented on a trial basis in Bangalore, India. The methodology was considered to be innovative in terms of its communicative focus and task-based approach. In the last few months of the five-year trial, treatment (modified instruction) and control (regular instruction) groups were given two locally developed achievement tests (a structure-based test and a task-based test) and three local language proficiency tests (dictation, contextualized grammar, and communicative listening/reading). Immediately following program completion, other data were collected regarding the stage of implementation of the methodology (via teacher self-report), the types of concerns mentioned by teachers, and an analysis of error treatment in a small collection of recorded lessons.

Treatment students performed better on the assessments, but problems in implementation of the study seriously complicated the interpretation of assessment findings. First, the treatment teachers were generally better trained, more confident, and more motivated than their colleagues in regular classrooms, which likely influenced student achievement. Second, treatment groups almost certainly received some degree of explicit error correction, violating a central tenet of the new methodology and raising the issue of what method, exactly, had been implemented. A late start for the evaluation also meant that it was impossible to collect systematic classroom data that might have clarified the implementation issue. Third, the specific uses for the resulting data were never defined within the evaluation. Overall, this example demonstrates the inherent difficulty in trying to conduct controlled studies within educational contexts, as well as the problems that can arise when the need for evaluation and assessment are considered late in the game and uses for the resulting data are poorly considered.

Example 2: Curricular Innovation With a Built-In Evaluation Component (Lynch, 1992)

The evaluation targeted a curriculum for developing the ability to read English for science and technology (REST), which was being implemented at the University of Guadalajara in collaboration with the University of California, Los Angeles (UCLA). A primary goal of the evaluation was to incorporate both quantitative and qualitative data to inform program decision making and improvement. Assessments included a norm-referenced ESL placement test used at UCLA, a locally developed fill-in cloze test based on a science magazine article, and a local multiple-choice cloze that was intended to address more closely the vocabulary and reading skills taught in the curriculum. Assessments were administered to program students at the start of instruction (September) and again in February and May; student volunteers from outside the program also took the placement test in September and February and the cloze tests in May for comparison purposes. Large

amounts of supporting qualitative data were obtained via teacher and administrator journals, interviews with teachers and students, classroom observations, and a questionnaire designed to gauge staff understanding of curricular objectives and their opinions of the strengths and weaknesses of the program.

The assessments generally showed modest gains in overall language and reading ability among program students, but questions were raised regarding the appropriateness of the assessments for investigating the effectiveness of an academic reading program. In particular, there was no assessment that directly addressed the specific skills being taught. The qualitative data suggested a number of issues that might be targeted in improvement efforts and illuminated the sources of these issues, but collection and analysis of the data were highly time-intensive. Overall, the quantitative assessments provided data useful for judging and demonstrating the value of the program, while the qualitative results applied more directly to program improvement; together, the two approaches provided a deeper understanding of program effectiveness than either alone. This particular example is also notable in that evaluative assessment was included from the very start of the project.

Example 3: A Large-Scale Evaluation of Educational Effectiveness (Llosa & Slayton, 2009)

The evaluation focused on a computer-based English literacy intervention for at-risk kindergarteners and first graders which had been implemented in a number of schools in a large urban school district (Los Angeles). The primary focus of the evaluation was judgmental but the evaluation also contributed to program improvement. Specifically, the evaluation was intended to determine: (a) the degree to which the program improved reading achievement, and (b) the extent to which the program was being implemented. To examine these questions, a quasi-experimental design was employed where 100 kindergarten and first-grade classrooms (200 in total) were split into matched treatment and comparison groups of 50 classrooms each. A standardized test of reading ability (Woodcock Reading Mastery Test) was administered to random samples of 10 students (treatment group) or 5–10 students (comparison group) from each class. In addition, implementation of the program was evaluated through the use of classroom observations, teacher interviews, and computer use records.

The standardized test results showed that students receiving the intervention tested no better than students from comparison classrooms. The implementation data showed that the program as a whole had been poorly integrated into classrooms and was generally not implemented or used as intended. These supporting data made it possible for evaluators to contextualize the standardized test results and suggest possible actions for improving the usefulness of the program. Ultimately, the school district decided to forego expansion of the program beyond the initial trial schools, and where the program was already in place, made efforts to improve implementation. This example illustrates the importance of multiple approaches to data collection, and the need to contextualize measurement if the resulting data are to be useful for program improvement.

Example 4: Outcomes Assessment in an Undergraduate Foreign-Language Program (Grau Sempere, Mohn, & Pieroni, 2009)

The evaluation took place within an existing US college department of foreign languages program at the University of Evansville, Indiana, where the program was in the process of defining student learning outcomes and developing related assessments. Purposes for the effort included demonstrating program value, quality control, and program improvement. A variety of assessments were used to investigate the achievement of learning outcomes, including a graduation portfolio (to assess a variety of outcomes), a portfolio

presentation in the target language (to assess speaking and listening skills), and student self-assessments of their learning (originally an exit interview, later changed to an online survey). An off-the-shelf reading test was also briefly used to fill a perceived gap in the other assessments; this test was later eliminated because of perceived problems in test design and a search for a replacement was under way.

Initial results suggested that expected learning outcomes were largely being met, but minor adjustments were needed. For example, French students were not using literary theory in their papers, so French literature courses were revised to include greater coverage of literary theory. This evaluation example demonstrates an approach to outcomes assessment that focuses on local assessments, carefully articulated to locally valued outcomes. The report also contains a helpful description of how assessments were adjusted to better suit the intended uses.

Caveats and Conclusion

As a final point, it is worth mentioning a few of the potential pitfalls associated with the uses of assessment in evaluation. One error is the selection of a standardized test or other well-known measure based on the assumption that the test is valid because it has been the subject of extensive validation studies. This has been referred to as the *valid test fallacy* (Norris & Ortega, 2003), with the fallacy being the notion that the test is valid regardless of the context or use. On the contrary, as mentioned earlier it is the specific use of a test that is valid or invalid, not the test itself.

A second error occurs when assessment concerns come to direct or supplant other evaluation activities, something that might be termed *assessment-driven evaluation*. For example, when outcomes assessment is undertaken in response to outside accountability pressures, one tendency is to focus on doing assessment rather than using assessment (Norris, 2006). That is, decision making focuses on the selection of assessments, with little thought given to use of the resulting data. This may result in the use of off-the-shelf global assessments simply to get assessment done, with the resulting scores saying little about issues of real interest for teaching and learning.

A third error is a lack of adequate depth or diversity in data collection and analysis; in most evaluation contexts a variety of assessments and other data will be needed to support decision making. As seen in the Llosa and Slayton (2009) example, carefully considered supporting data can play a crucial role in understanding what test results mean. Triangulation of data, along with thorough analysis, also helps to prevent the unintentional or willful misinterpretation of results (Norris, 2009).

A final error is to fail to include evaluation users in the selection of assessments. Such inclusion is necessary because it is the evaluation users who will ultimately decide if an assessment is adequate; they are the ones who will eventually use, or ignore, the results (Patton, 2008). Rather than making methodological decisions, in Patton's view "the utilization-focused evaluator advises users about options; points out the consequences of various choices; offers creative possibilities; engages with users actively, reactively, and adaptively to consider alternatives; and facilitates *their* methods decisions" (p. 385; italics in the original). A failure to include users in decision making may result in assessments that have little credibility or intelligibility, and when users do not find an assessment believable or understandable then the results may be contested or simply disregarded.

To conclude, this entry has taken the position that the purpose of assessment in program evaluation is to provide information that serves the needs of the evaluation users. Although usefulness is an important feature of any language test (Bachman & Palmer, 1996), within program evaluation intended use is the fundamental factor that drives assessment. That is to say, "assessments are only good insofar as their use does good" (Norris, 2008, p. 241).

SEE ALSO: Assessment and Evaluation: Mixed Methods; Assessment and Evaluation: Quantitative Methods; Assessment and Testing: Overview; Language Assessment Methods; Language Testing and Accountability; Program Evaluation; Self-Assessment; Uses of Language Assessments; Validation of Language Assessments

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Language Assessment Literacy

OFRA INBAR-LOURIE

Introduction

Language assessment literacy forms the knowledge base needed to conduct language assessment procedures, that is, to design, administer, interpret, utilize, and report language assessment data for different purposes. The term is derived from the generic *assessment literacy* concept which refers to the knowledge and skills required for performing assessment-related actions (Stiggins, 1991; Webb, 2002). Language assessment literacy encompasses not only familiarity with tools and procedures for evaluating students' language abilities, but additional components, particularly the ability to render apt feedback so as to effectively direct learners toward setting and reaching future learning targets. Furthermore, assessment literate professionals are also aware of the ethical aspects involved in the assessment process and of the possible ramifications of putting assessment-based decisions into practice, hence consequential validity (Messick, 1989).

Interest in this area can be traced to the powerful trend of test-based accountability systems evident in many educational systems since the 1980s (Barber, 2004; Menken, 2008). Given that accountability is based on reliable information about students' achievements supplied by teachers and schools (Stiggins, 1998; McKay & Brindley, 2007), the assessment community presently incorporates not only trained testing experts but also administrators, policy makers, and most of all, teachers engaged in various aspects of monitoring and reporting students' learning gains according to set standards (Mertler, 2002; Davison & Leung, 2009). The unprecedented number of stakeholders currently involved in practicing assessment has necessitated deliberation of the knowledge and skills which constitute assessment expertise and its attainment. The following review will first delineate the components of assessment literacy as surveyed in the literature then focus on the particular elements of language-related assessment knowledge.

Background

Current perceptions of the knowledge required for conducting assessment activities are shaped by beliefs about the prominent role of assessment in fostering learning, referred to as "*assessment for learning*" (Gipps, 1994; Broadfoot & Black, 2004). The term denotes ongoing student-related and context-embedded evaluation which formulates and advances the learning process. The approach has taken shape over the last two decades, prompted by a number of factors: the recognition of the social role of assessment and the power embedded in assessment decision making (Filer, 2000), the move toward using alternative assessment procedures (Gipps & Stobart, 2003), and recognition of the importance of formative assessment in promoting learning (Black & Wiliam, 1998). It follows the realization that choice of assessment or testing practices reflects profound notions about knowledge and learning, ideologies, social expectations, attitudes, and values which constitute "a culture." The culture can be representative of assessment versus testing assumptions and beliefs, that is, an *assessment culture* versus a *testing culture* (Wolf, Bixby, Glenn, & Gardner, 1991; Shepard, 2000; Lynch, 2001; Inbar-Lourie, 2008a).

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Assessment for learning is contrasted with "*assessment of learning*" which alludes to the use of external measures, usually in the form of standardized tests, to determine language-learning levels for various purposes (Gardner, 2006). The two approaches differ in terms of the philosophical principles which motivate them. While *assessment of learning* is positioned in positivist stands, *assessment for learning* has its roots in constructivist sociocultural beliefs which see the participants as partners in a learning community that aims to empower and improve learning via assessment (Lynch & Shaw, 2005; Stiggins, Arter, Chappuis, & Chappuis, 2006).

However, concurrently, along with the emphasis on formative assessment, seemingly contradictory phenomena are in motion. Institutions and educational systems worldwide have instituted prescribed standards for teaching and assessment as a means for achieving accountability and attaining excellence, often with detrimental consequences (Menken, 2008). Though this implies increased external monitoring, school authorities and especially teachers are also part of the process, expected to align their evaluations and report them to various stakeholders in accordance with set parameters (Davison, 2004). In order to fulfill these responsibilities practitioners at various levels need to be knowledgeable in conducting assessment practices using a variety of suitable tools, and in making decisions based on the collected data. It is this comprehensive understanding which is referred to as *assessment literacy*, a term coined by Stiggins in 1991.

The language assessment profession has embraced the notions of assessment for learning and the principles which underlie it marking a major shift from a language-testing focus toward acknowledgment of the merits of school and class-based assessment (Rea-Dickins, 2004, 2007; Davison, 2007; Davison & Leung, 2009; Hamp-Lyons, 2009). Teachers are consequently currently viewed as central protagonists in the assessment process, expected to augment data from internal and external sources for formative and summative decision-making purposes (Brindley, 2001; Leung, 2004; Black, 2009).

Furthermore, the language assessment field is increasingly positioning assessment as a social activity (McNamara, 2001; McNamara & Roever, 2006), arguing against using (or abusing) test results for political, economic, social, and gate keeping agendas instead of for promoting language access (Shohamy, 2001; Broadfoot, 2005). This has led to the realization that the professional language testing community needs to expand and reach out to other stakeholders who will speak up against assessment misuses and biases by gaining insight into the world of assessment and ethical codes of practice, that is, into assessment literacy (Taylor, 2009).

Assessment Literacy

What precisely is the knowledge base required for performing assessment tasks? The American Federation of Teachers, National Council on Measurement in Education, and National Education Association identified the components of assessment knowledge teachers require for educational assessment in a set of seven standards (AFT, NCME, & NEA, 1990). Though produced two decades ago, these standards still provide a worthwhile framework for assessment literacy for they touch upon the various phases of the assessment process including choice of the appropriate assessment tool, administration, scoring, and analysis of "both externally produced and teacher-based assessment methods," using the results for student advancement, assessment, and curriculum-related purposes, developing valid means for grading, reporting the results to various stakeholders, and "recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information" (pp. 31–2).

Popham (2003) notes the lack of assessment knowledge among stakeholders directly or indirectly involved in assessment practices and assessment decision making, such as

policy makers, legislators, administrators, teachers, students, and the public at large, urging for the establishment of suitable assessment literacy programs. Taylor (2009) notes that applied linguists are often asked to advise on language assessment issues even though they lack the necessary theoretical and practical skills, with graduate programs seldom providing a thorough background in basic assessment principles. In order to ensure quality evaluation McMillan (2000) lists fundamental assessment principles teachers and administrators should be aware of. These include linking assessment and instruction and the need to ensure the fairness and ethicality but also the feasibility and efficiency of assessment practices. In addition, assessment literate professionals need to be aware of the tensions involved in assessment-based decision making, and the infusion of technological advancement as part of any future assessment endeavors.

Of the stakeholders in need of obtaining assessment literacy, attention is focused primarily on teachers. A number of research studies have investigated the scope of teachers' assessment literacy, some using a classroom assessment literacy inventory (CALI) based on the "Standards for Teacher Competence in the Educational Assessment of Students" (AFT, NCME, & NEA, 1990) quoted above (Mertler, 2002; Mertler & Campbell, 2005). The studies have pointed at the need to reinforce assessment skills among teachers at both the pre and in-service levels, and particularly at the need to focus more intensely on assessment issues in teacher education programs (Art & Kelting-Gibson, 2006; Volante, & Fazio, 2007; Koh, 2009; Mertler, 2009). Similarly in the area of language teaching, concern is voiced as to the lack of training particularly vis-à-vis the growing need for teachers' assessment expertise in matching assessment to curriculum standards, and in being familiar with current influential assessment frameworks (Malone, 2008; Cumming, 2009).

Although the significance of assessment literacy has been acknowledged, there are still many uncertainties as to the nature of this concept particularly with regard to the relative weight of the literacy components, that is, which is essential, negligible, both essential and negligible, or even dispensable. Another contentious issue relates to the "one size fits all" dilemma, that is, should everyone dealing in assessment be supplied with an identical or differential assessment literacy menu, and whether teachers, for example, should be familiar with the theoretical underpinnings of assessment practices or just with the hard core of hands-on assessment know-how. This becomes crucial when prioritizing contents for assessment courses or programs intended at enhancing the acquisition of assessment literacy principles (Brindley, 2001; Brown & Bailey, 2008; Inbar-Lourie, 2008b).

The dilemma central to this discussion, however, is whether the attainment of generic assessment literacy concepts provides a sufficiently solid basis for practitioners in specific subject areas, such as language teaching, or whether evaluation in these specialized areas requires in-house expertise. The following section will discuss this predicament focusing on the concept of language assessment literacy (LAL). The discussion rests on three pillars: establishing the need for specific domain-relevant LAL for conducting assessment-related activities, the nature of LAL, and the notion of differential LAL knowledge.

Language Assessment Literacy

It is argued that performance of language assessment functions, such as analyzing and determining the worth of language samples, diagnosing language learning difficulties, determining phases of language learning development, and discerning pragmatic, syntactic, and semantic competencies, requires a specialized knowledge base. This expertise is grounded in the general educational assessment principles represented in assessment literacy frameworks, but includes additional distinctive language learning and hence language assessment components. The merge creates a unique knowledge base shared by language assessment professionals and imparted to various audiences in *language* testing

(or "*language* assessment") modules (Inbar-Lourie, 2008b). An array of textbooks which vary in their contents but share a language assessment orientation (Davies, 2008), can be used to guide novices in acquiring both the general assessment literacy, and the particular idiosyncratic components which pertain to evaluating language abilities. In addition, the unique features of language testing as a professional body are reflected in codes of practice published by the major organizations in the field (Davies, 2008; Taylor, 2009). These have taken a meaningful role in establishing and solidifying the properties language testers need to abide by, particularly in the areas of ethicality and good practice (ALTE Code of Practice, 1994; ILTA Code of Ethics, 2001; ILTA Guidelines for Practice, 2007).

Several recent attempts have been made to allude to the knowledge language testing or assessment professionals require. The definitions vary greatly in terms of the broad or narrow scope they take in endorsing either a technical know-how approach or an in-depth understanding of the domain, including discussion of assessment as a social phenomenon. The definitions also vary in terms of their orientations toward either a testing or an assessment culture, and in their emphasis on language-specific versus general assessment dimensions.

Brown and Bailey (2008) collected data on the components of language testing courses from course instructors, replicating a similar earlier study (Bailey & Brown, 1995). Two implied perceptions of LAL emerge from the research. The first is an emphasis on test construction which is in tune with notions of testing cultures, accentuating the construction, analysis, and interpretation of test items. The second views expert knowledge in assessment as being very much akin to the general educational testing knowledge base with little reference to language related considerations. A similar approach in this latter sense, whereby the emphasis is on general assessment skills, is also apparent in a research by Newfields (2006) on foreign-language teachers in Japan. The questionnaire used for the research refers to using varied assessment tools, the avoidance of bias, the construction, and administration and scoring of tests, evaluating reliability and validity and reporting assessment results, hence lacking in language orientation.

Other definitions are broader in that they encompass variables that focus on test impact, ethics, and professionalism. Davies (2008) presents a survey of language testing textbooks as reflective of the past and present trends in the language testing profession. The analysis shows that while in the past the emphasis was placed on "skills" ("the training in necessary and appropriate methodology"), and on "knowledge" ("relevant background in measurement and language description as well as in context setting."), the present expanded paradigm includes a component referred to as "principles": "the proper use of language tests, their fairness and impact, including questions of ethics and professionalism" (Davies, 2008, p. 335). Thus one may surmise that according to the above survey current required LAL competencies consist of these three components.

Another suggestion which is both broad and language-focused can be found in an outline for programs for professional development in language assessment presented in Brindley (2001). The framework is modular, meaning that some modules are mandatory while others are a matter of choice depending on individual circumstances and the assessment expertise objectives. All the modules are language-based. They include setting the background and rationale for assessment focusing on social, political, and educational aspects, on issues related to language proficiency and the concepts of validity and reliability, a choice between either test construction or "assessment in the language curriculum," and an optional module which looks at more advanced assessment issues (Brindley, 2001, pp. 129–30).

Inbar-Lourie's definition (2008b) perceives LAL as encompassing layers of assessment literacy and language-specific elements. In order to become literate in language assessment one needs to attain knowledge in formative and summative testing and assessment methods,

in interpreting student scores, in understanding the complexities of validity and reliability including current tensions which question the application of traditional psychometric measures to teacher-based assessment (Teasdale & Leung, 2000; Brookhart, 2003; Leung & Lewkowicz, 2006). However, in addition LAL requires familiarity with current approaches in language education and applied linguistics, and with research findings and controversies as they arise in contemporary glocalized societies, for such knowledge is directly related to assessment concerns and practices. (Glocalization refers to the convergence between global trends and local cultural needs central to contemporary societies [Robertson, 1995]. This term is frequently used to characterize the current state of language teaching, in particular English, in various parts of the world [see, for example, Shin, 2007].) For example, current discussions concerning the needs of immigrant learners (Solano-Flores & Trumbul, 2003) necessitate differential assessment formats and test accommodations. Awareness of the consequences of implementing the assessment procedures and of issues of fairness and ethicality (Kunnan, 2000) will provide the language assessor with critical lenses through which to analyze and construct more democratic assessment procedures (Shohamy, 2001). In terms of language pedagogy, familiarity with current teaching approaches for young language learners, for example, is deemed essential for constructing suitable assessment schemes for this vastly growing population (McKay, 2006), and knowledge about local and international assessment standards frameworks (e.g., the CEFR, Council of Europe, 2001) is vital for aligning assessment scores and reporting assessment data. And finally and most importantly, language assessment literate individuals are expected to translate the theory and practice into the construction of robust assessment procedures which will facilitate decision making for both classroom and external purposes (Inbar-Lourie, 2008b).

Though the LAL definitions vary considerably Taylor (2009) positions current perceptions of assessment literacy in the language domain as pertaining not only to various internal and external aspects of assessment practices, but also to the theoretical rationale which inspires them and the adverse results they may have:

> This current trend in thinking seems to be that training for assessment literacy entails an appropriate balance of technical know-how, and understanding of principles, but all firmly contextualized within a sound understanding of the role and function of assessment within education and society. (Taylor, 2009, p. 27)

Having established the justification for LAL and surveyed definitions of its essence, the question which still remains relates to the breadth of LAL requirements in the case of different stakeholders, whether identical or differential. One of the major reasons for delving into the fundamental nature and boundaries of assessment literacy lies in the growing numbers of stakeholders currently practicing assessment in various capacities. Warning voices urge language assessment specialists to refrain from a totally inward look which would bring about isolation rather than reach out in the manner which seems crucial at this point in time (Davies, 2008; Taylor, 2009). The question which therefore arises is what level of knowledge do the various individuals involved in conducting language assessment activities require and in what areas, and how much of this knowledge will in each case pertain to the practical methods or to the trait, to generic versus language-specific assessment literacy.

There are two clashing objectives here. On the one hand there is clear awareness of the need to reach out to wider audiences and enable them to set an initial footing in the language assessment terrain. On the other hand, having acknowledged that language assessment constitutes a body of knowledge comprising both theory and practice, literacy in this area requires a primary understanding of its basic components, of the essence of

which it is comprised. Though agreement can probably be reached as to the variability principle which states that LAL is not a standardized commodity, the difficult task ahead is setting the threshold level, a rudimentary core of literacy in the language assessment domain, followed by the formulation of expansion options according to job descriptions in different settings. More research is clearly needed in this area as to what constitutes basic LAL competencies. Such research will facilitate the introduction of a grounded language assessment inventory which will promote fair assessment for learning practices for language learners in diverse contexts.

SEE ALSO: Assessment in the Classroom; Ethics in Language Assessment; Fairness in Language Assessment

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Language Assessment Methods

JANNA FOX

The first step in an assessment process is a clear definition of the assessment mandate: "the mandate is the constellation of forces that shape design decisions for a test" (Davidson & Lynch, 2002, p. 78). Given the mandate, is a test required? Are there other assessment alternatives? Defining the assessment mandate necessitates clarifying the assessment purpose; and once the purpose has been defined, the focus shifts to precisely what it is we intend to measure—the construct. Construct(s) may be defined *theoretically*, drawing on current understandings of what characterizes the aptitude or ability in the literature; *empirically*, in relation to language use within a specific target domain (e.g., a hospital room or air traffic control tower); or *developmentally*, in relation to specific pedagogical content or learning trajectories (e.g., knowledge of information in a textbook unit, recognition of academic word families, etc.). Only after *why* and *what* have been defined, do we begin to define *how* through our choice of assessment method(s) or response format(s). Language assessment methods determine what test takers are required to know and do, and how their responses will be evaluated. The methods we choose are a critical element in the assessment's overall *usefulness* (Bachman & Palmer, 1996): "individual test qualities cannot be evaluated independently, but must be evaluated in terms of their combined effect on the overall usefulness of the test" (p. 18).

Test Method and Definitions of Language

The choice of a test method depends on the method's potential to elicit the type of response or performance that will allow us to make score-based inferences from the test to the construct. However, as is frequently pointed out in the literature (Bachman, 2007; Spolsky, 2008), the choice of test method has also been directly related to how we define language itself. For example, Shohamy (1996) associates traditional testing with a discrete-point era, which was theoretically informed by structural linguistics, and a view of language as the knowledge of discrete structures and rules. During this era, the tradition of testing language as separate skills (i.e., receptive skills: reading, listening; productive skills: writing, speaking) became entrenched (Cumming, 2008). Multiple-choice and other so-called *objective* test formats (e.g., true–false, matching, ordering, etc.) were dominant in this era. Such items have a correct answer and typically satisfy statistical requirements for independence (i.e., knowing the correct answer for one item does not increase the probability of responding correctly to another). Discrete-point test formats generally ask test takers to recognize the correct answer and have therefore most often been used to measure recognition of grammar points, vocabulary, sound contrasts, and so forth, and in tests of the receptive skills (reading and listening). Such items are amenable to statistical analysis, prompting Spolsky (2008) to refer to this era as "psychometrically driven" (p. 447) and Bachman (2007) to describe it as "the skills and elements approach" and "the first approach in the history of language testing to explicitly draw upon both [then] current linguistic theory and views of language learning and teaching" (p. 47). Speaking and writing were typically measured *indirectly* during this era, through correlations with measures of listening and reading.

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According to Shohamy (1996), the dominance of discrete-point test methods waned somewhat during the subsequent integrative era, as an increasing number of linguists and applied linguists (e.g., Halliday, 1976) argued that language was more than the sum of its parts; that meaning depended on context, including the context provided by extended texts (Oller, 1979). As such, attempting to measure language in discrete and unrelated items, they argued, risked underrepresenting ability. This perspective gave rise to a new wave of test methods of which cloze, C tests, and dictation were arguably the most popular.

In cloze tests, words are selectively omitted from a passage, and test takers are required to fill them in based on their understanding of the passage as a whole. There are three types of cloze procedures, which differ in relation to the rationale applied for omitting words: random deletion, rational deletion, and the cloze elide. In a random deletion cloze, every nth word is deleted (i.e., every sixth word, or seventh word, etc.); in a rational deletion cloze, only certain types of words are deleted (e.g., prepositions, content words, etc.); in a cloze elide, test takers are required to identify incorrect words inserted in a passage. C tests omit parts of words rather than the words themselves, and test takers are required to fill in missing letters. In dictation tests, full passages are read aloud. Test takers are typically required to write out the passage word by word and marks are awarded on the basis of the correct reproduction of the passage. Administration varies in relation to the number of times a passage is read, the speed with which it is delivered, its length and complexity, and whether or not students work alone or in groups to recreate the passage.

Shohamy (1996) notes that the popularity of such methods declined to some extent with the advent of the communicative era in testing and the rise of the *proficiency movement*. Tests based solely on the recognition of language gave way to increased testing of how language is used in interpersonal communication. This era ushered in the widespread direct testing of writing and speaking. Essays became the favored method of testing writing; oral interviews the preferred approach for testing speaking. Thus, *subjective* judgments became an issue in the scoring of test performance, and this gave rise to the need for rating scales to structure and systematize raters' evaluations. It was during this period that the Interagency Language Roundtable (ILR) scale (Clark & Clifford, 1988) was developed as a scale for marking speaking proficiency in the oral proficiency interview (OPI). Luoma (2004) points out that the ILR was "the parent" (p. 62) of the American Council for the Teaching of Foreign Languages (ACTFL) speaking scale (ACTFL, 1999), and that, in effect, the "level descriptions defined the outline of the ACTFL interview itself," because testers "needed evidence about the skills mentioned at each of the levels" (pp. 62, 67). The OPI and its tape-mediated cousin the simulated oral proficiency interview (SOPI) also included role-play components, which required test takers to take on roles and respond in relation to a situation defined in the test.

Huot (1990) traces the dramatic increase in the direct testing of writing to Cooper and Odell's (1977) anthology, *Evaluating Writing*. He notes: "before the improvement of direct testing procedures for writing, the score a paper received could more likely depend on the rater than on the qualities of the paper itself" (p. 237). Cooper and Odell, Diederich (1974), White (1985), and others contributed systematic procedures for rating compositions, which dramatically increased inter- and intra-rater reliability. Tests of writing during this period were largely characterized by timed, impromptu essays that asked test takers to respond in writing to prompts such as "'Life is a game.' Agree or disagree" (from the test preparation booklet for the test of written English [TWE]; ETS, 1999).

Throughout the 1970s and 1980s, considerable effort was invested in the development of rating scales to define what would be valued in a piece of writing. Three different scale approaches received the most attention: primary trait, analytic, and holistic. Primary trait

scoring (Lloyd-Jones, 1977) asks raters to attend to traits of relevance to the rhetorical situation created in a test by the interaction of purpose, audience, and task. If, for example, the task asked the test taker to define the steps in a process, the logic and coherence of the steps would be rated as one of the primary traits of an effective piece of writing. Primary trait scoring was regularly used in large-scale assessments such as the National Assessment of Educational Progress (NAEP). Analytic scoring (e.g., Diederich, 1974) identifies key qualities of effective writing (e.g., content, organization, expression, etc.) and judgments of writing quality are dependent upon how well test takers manage each of the components. In some analytic scales, different components are weighted more heavily to reflect their importance. Holistic scoring is based on a rater's general impression of the overall quality of a piece of writing, which is guided by criteria that define levels of proficiency or competence. It is important to underscore the relationship between scale and task: the scale dictates which features of writing are valued and is therefore an integral part of assessment method.

By the end of the 1980s, the *four skills* division in language testing was being challenged by new models of language ability. Canale and Swain's model (1980) defined communicative competence as "the relationship and interaction between grammatical competence, or knowledge of the rules of grammar, and sociolinguistic competence, or knowledge of the rules of language use" (p. 6). They viewed communicative performance as "the realization of these competencies and their interaction in the actual production and comprehension of utterance" (p. 6). Bachman (1990) extended the Canale and Swain model (introducing organizational and pragmatic competence, and their subcomponents) in his model of communicative language ability (CLA). He argued that performance on language tests was "a function of both an individual's language ability and the characteristics of test method" (Bachman, 2007, p. 54). He proposed two frameworks to account for language elicited on tests: CLA and test method facets, which he defined as "features that determine the nature of language performance that is expected for a given test or test task" (p. 111).

These shifts in the theoretical conceptualization of language were linked to new test methods in what Shohamy (1996) refers to as the performance testing era. Unlike the oral interviews or essays of the communicative era, performance assessment took *context* into account and valued a kind of mirror validity (Shohamy, 1996) of *real* or *authentic* language use. As a result, tests increasingly used tasks, which elicited complex, situated performances. Bachman and Palmer (1996) recast CLA as language ability, and test method facets as task characteristics, arguing that "the characteristics of the assessment tasks needed to correspond to the characteristics of tasks in the test takers' target language use (TLU) domain" (Bachman, 2007, p. 55). Thus, in the performance era, language samples on a test were elicited by tasks that represented language use in a target domain. Although performance assessment might occur "live" in a target domain (i.e., a university classroom, control tower, hospital room, etc.), most performance-based language tasks were designed to *simulate* the context, while eliciting domain-specific language.

McNamara (1996) distinguished between a strong and weak form of second language performance assessment. Strong forms of performance assessment incorporated aspects of successful task performance in the evaluation; weak forms assessed only the language that was elicited—not the task performance itself. Recently, much interest (see, e.g., Cumming, 2008) has been directed at the use of integrated tasks in performance assessment (e.g., in an academic domain, listening to a lecture, reading a text, and then responding in writing by drawing on information from both). With the advent of the TOEFL iBT (Internet-based Test of English as a Foreign Language), more research will no doubt be forthcoming on integrated tasks.

The Assessment Movement

The final era considered by Shohamy (1996) was defined as *alternative*. It was characterized by some as a movement away from testing culture to assessment culture and the increased use of alternative assessment methods, for example, portfolios, self- or peer-assessments, observational checklists, diaries, learning logs, and so forth. Testing culture was associated with *summative* purposes for assessment and the measurement of products or outcomes (i.e., assessment *of learning*). *Formative* assessment, however, is the daily assessment that drives a teacher's agenda in a classroom by providing information on the state of learning and prompting her next pedagogical steps; it is, essentially, assessment *for* learning. This type of assessment has been under-theorized, often occurring in an ad hoc and intuitive manner (Rea-Dickins, 2001). Rea-Dickins proposes systematic methods for formative assessment, as do Colby-Kelly and Turner (2007) in their notion of building assessment bridges from proficiency to learning and achievement. Formative assessment approaches are also being enhanced through developments in *dynamic assessment* (DA) (Lidz, 1991). DA systematically melds assessment with instruction within an activity, by focusing on collaborative interaction between the assessor and the assessed. The assessor's role is to support task completion through mediation and intervention. There are two general approaches to DA: interventionist (fixed mediation, which is standardized and therefore quantifiable); and interactionist (variable mediation, which is tuned to the individual learner or group).

Until recently, *diagnostic* assessment has been largely under-utilized and widely misunderstood (Alderson, 2007). Diagnostic approaches focus on "identifying and isolating components of performance" (p. 29) so that instruction may be tailored or targeted to an individual learner's needs (Fox, 2009). As such, "diagnostic measures need not be integrated or task-based, but might be more usefully discrete in nature" (Alderson, 2007, p. 29). This is the case in large-scale diagnostic assessment like the Diagnostic English Language Needs Assessment (DELNA), which utilizes test methods such as the cloze elide. Approaches to computer adaptive tests, which evaluate a test taker's responses online and automatically shape task or item difficulty in relation to response, may be most useful for diagnostic assessment; they have proved problematic or controversial when used for other assessment purposes.

Method Effect

The method used for assessing language ability may itself affect a test taker's performance. For example, cloze tests and C tests produce complex and unpredictable method effects (see Alderson, Clapham, & Wall, 1995, p. 44). Test-preparation classes, background experience, and "coaching" may inflate scores on multiple-choice tests (Oller, 1979; Alderson et al., 1995). Researchers have begun to link differential group performance on tests to linguistic, educational, and cultural interactions between test takers and test items/tasks and raters (see, e.g., Fox, 2003; Abbott, 2007) and to actively investigate potential sources of bias through differential item functioning (DIF) (see, e.g., Zumbo, 2007). The ongoing introduction of new language assessment methods such as those in computer-administered, computer-adaptive, DA, or paired oral assessments underscores the continuing need for such research.

Although some test methods have enjoyed greater or lesser popularity in relation to changing definitions of language, it is important to stress that the usefulness of a test method depends directly on the specific purpose of the test and the construct(s) it is designed to measure. The choice of an assessment method(s), however, is a critical decision in test design and a fundamental consideration in validity arguments.

SEE ALSO: Assessment of Grammar; Assessment of Listening; Assessment of Reading; Assessment of Speaking; Assessment of Writing; High-Stakes Language Testing; Test Design and Retrofit; Test Specifications

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Language Attitudes in Language Policy and Planning

BERNADETTE O'ROURKE AND GABRIELLE HOGAN-BRUN

A basic premise of modern linguistics is that all languages are functionally equal (Edwards, 1979, 1994). In the same way that anthropologists will not judge the relative worth of cultures, linguists believe that one language is as good and adequate as any other (Grillo, 1989, p. 173; Trudgill, 1983, p. 205). Despite this, languages are often evaluated and judgments are made about their worth as well as that of their speakers, leading to the national distribution and transnational hierarchies of languages that we know today. In applied linguistics such evaluations and judgments are frequently looked at under the generic heading of "language attitudes."

Much of the work on language attitudes has been conducted under the rubric of the social psychology of language. The key tenet advanced was that attitudes exert influence on (language) behavior. Three types of components of attitude are commonly distinguished: cognitive (knowledge-based), connotative (behavioral), and affective (feelings about language). Other disciplines including linguistic anthropology, the sociology of language, and sociolinguistics and education have also shared overlapping concerns and involvement on language attitudes or the social awareness of language. In many of these disciplines the term language attitude is not always explicitly used, with preference given to related concepts such as ideology, opinion, belief, habit, value, evaluation, and perception. As a result a great deal of attitudinal data is often overlooked in many contemporary reviews of language attitude research (Garrett, Coupland, & Williams, 2003).

Language attitude and its related terms frequently appear in the context of language policy and planning. Indeed, it is often an implicit or explicit assumption of much policy and planning that attitudes can or should change (Baker, 1992, p. 97). In some instances such policy and planning are in fact largely, if not principally, concerned with inculcating attitudes either to the language or its speakers (Lewis, 1981, p. 262). Therefore, changing language attitudes, beliefs, or ideologies is often seen as the first step in the process of language revitalization. The quest for (improved) status and solidarity are often regarded as the chief motivating attitudes for language behavior of communities (see Ryan & Giles, 1982). Reversing the low-prestige status and stigmatized identities associated with languages such as Irish, Galician, and Welsh constituted the central language-planning problem facing these minority languages during the 20th century.

The different facets of language-planning measures including status, corpus, and acquisition planning, are often put in place with the intention of changing language attitudes. The role of status planning, for instance, in facilitating the acceptance of a language by members of society, is regarded as particularly important in making attitudes more positive. In modifying the status it affects the (perceived) prestige of a language. Therefore status is a key dimension of meaning within which attitudes toward a language can be measured. During the 20th century reversing the low prestige of languages was often done alongside their legal or constitutional recognition, particularly in countries where regime changes involved language inversion. Perceptions about the relative status of a language are strongly influenced by its value as a form of what Bourdieu (1991) refers to as "linguistic capital."

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It thus follows that status-enhancing initiatives such as the inclusion of the language in key institutional domains including education, public administration, and the media have the potential to alter negative perceptions about the worth of a language. For example, following the demise of the Soviet Union, deliberate efforts were made in the newly independent states to influence the allocation of functions of the reinstated national languages across all domains, which helped reconsolidate their former status.

Corpus and acquisition planning can also be influential in altering language attitudes and beliefs. Cooper (1989, pp. 155–6) for instance points out that corpus planning efforts can strengthen speakers' dignity and self-worth. In minority language contexts, revitalizing the low-prestige variety of a spoken form and developing a standard which could allow for its use in formal domains from which it was previously absent shows that the language is capable of formal and literary expression. Similarly, acquisition planning goals designed to create the opportunity to learn a language, as well as incentives to learn it, can have a positive effect on language attitudes. Especially in the postcolonial context it can serve to answer functional concerns and lead to empowerment through viable literacy development.

Extending a focus on objectives and targets, goals, or "ends" (Cooper, 1989), and going beyond attitudes per se, Ager (2001) considered "motivation" in language policy and planning. He proposed that motivation consists of seven motives (identity, ideology, image, insecurity, inequality, integration, instrumentality) which function as attitudinal prompters of agents in their attempts to achieve specific goals. However, he stresses that motives are socially conditioned, are not always clear, nor openly stated or understandable, and that they also depend on changing attitudes and beliefs as embedded in the fundamental cultural values individuals hold (Ager, 2001, pp. 128–9). Therefore, since attitudes do not necessarily predict the strategies actors will implement, the functioning of both motivation and attitudes in language policy and planning processes is complex.

Naturally, ability of language policy and planning efforts to change language attitudes cannot be automatically assumed. This is not least, as Schiffman (1996, p. 119) notes, because implementation of such initiatives is almost always the weakest link in the policy and planning process, warning that while fiery rhetoric is one thing, carrying out the intention of the law is another. Moreover, seemingly well-intentioned language policy and planning initiatives can, rather than improve attitudes, actually have the opposite effect. Status planning, intending to enhance the symbolic value of a language, can sometimes be seen as antagonistic by members of the population and provoke negative attitudes toward the language as was the case for example under the ideological promotion of Kiswahili in Tanzania (see Blommaert, 2006). This can be salient if planning measures are seen to raise the status of certain groups within society and not others or if status measures are seen to provide advantage to some members of society but not to others.

In terms of corpus planning, Grenoble and Whaley (2006, pp. 154–6) argue that although standardization has undeniable benefits for minority languages in reversing language decline, the process can also facilitate continued language loss. Instead of strengthening speakers' dignity and self-worth, as Cooper (1989) suggests, standardization may in fact further stigmatize and isolate existing minority language speakers. In attempting to rid the minority language of influences from the dominant contact language, standardizers can promote policies which disempower vernacular forms of the language spoken in everyday contexts (Coulmas, 1989; Fishman, 2006; Woolard, 1998), as happened in the case of Galician.

The task of measuring the effects of language policy and planning initiatives on language attitudes is also made difficult by the fact that such initiatives do not exist in a social or cultural vacuum. Instead, they take place in particular sociolinguistic and sociocultural settings, and their nature and scope can only be fully understood in relation to these settings (Ferguson, 1977, p. 9). Language-related policies and planning measures are therefore

not autonomous processes (Ó Riagáin, 1997) but exist in an environment with physical, geographical, political, and socioeconomic components (Ager, 1996, p. 11). As Spolsky (2004, p. 8) notes, language and language policy both exist in highly complex, interacting and dynamic contexts, the modification of any part of which may have correlated effects (and causes) on any other part. It thus follows that a host of nonlinguistic factors (political, demographic, social, religious, cultural, psychological, bureaucratic) regularly account for any attempt by persons or groups to intervene in the language practices and the beliefs of others, and for subsequent changes to occur.

Schiffman (1996) notes that assumptions about languages and perceptions about their value are often deeply rooted in a society's linguistic culture which he defines as "the totality of ideas, values, beliefs, attitudes, prejudices, myths, religious strictures, and all the other cultural 'baggage' that speakers bring to their dealings with language from their culture" (2006, p. 112). Both language ideology and language policy are embedded in linguistic culture and hence fundamentally linked. For Spolsky, language ideology is "language policy with the manager left out," or "what people think should be done [with language]" (2004, p. 14). Hence changing value perceptions of languages do not depend exclusively, or even necessarily, on any official or legal status conferred by a state through its exclusive, legislative, or judicial branches.

Thus, ideologies about language generally and specific languages in particular delimit to a large extent what is and is not possible in the realm of language planning and policy making (Ricento, 2006, p. 9). It follows that, although policy and planning may be used to change attitudes toward a language or its speakers, existing language attitudes, ideologies, and beliefs can also be seen as a basis for policy and planning (Spolsky, 2004), as in the wholesale take-up of Hebrew in Israel. Reflecting the ideological views and orientations of a society, government, institutions, or individuals, a language policy, then, represents the whole political, social, and economic environment.

Blommaert (2006, p. 244) argues that language policy is invariably based on linguistic ideologies, on images of "societally desirable" forms of language usage and of the "ideal" linguistic landscape of society, in turn derived from larger (discursively constructed) socio-political ideologies. It is therefore possible to infer from language policy decisions or statements what the ideological orientation of a society is in relation to assumptions about a specific language or language in general. This relates to the fact, as Spolsky (2004, p. 14) points out, that the members of a speech community share a general set of beliefs about appropriate language practices, sometimes favoring a consensual ideology, assigning values and prestige to various aspects of language varieties used in it. It thus follows that we cannot assess the success of language policies or planning initiatives without reference to culture, belief systems, and attitudes about language which are deeply embedded within a society's structures (see Schiffman, 1996). We can, however, suggest that, as a (short-term) social construct of a given community, a language policy is prone to fail if it is not in consonance with the society's linguistic culture.

SEE ALSO: Language and Identity; Language, Culture, and Context; Language Policy and Planning; Prestige Planning; Standardization in Human Language Technology

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Suggested Readings

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Language Awareness

JOSEP M. COTS

Since the early 1990s, "language awareness" has been a prominent notion in applied linguistics and, more specifically, in the field of language education. The interest in language awareness (LA henceforth) for those who deal with language at a professional level is proved by the fact that one can often find syntheses of what it involves in publications for readers with a general interest in language and applied linguistics, such as journals for language teachers (e.g., Carter, 2003) and comprehensive reference guides to key concepts, ideas or trends (e.g., Garrett, 2006). After the publication of Eric Hawkins' (1984) work *Awareness of Language*, two of the factors that may have contributed to the "visibility" of the concept are the launch of the Association for Language Awareness and the publication of the journal *Language Awareness* in 1992. In this entry, I aim to show that a certain degree of familiarity with the principles and procedures of LA can help both language learners and language users in general to become more efficient and effective communicators. First, I will attempt to clarify the psychological implications underpinning the notion of language awareness by focusing on the characteristics of a mental state of "awareness," as opposed to other possible states, and what this state implies in connection with language knowledge and skills. Next, I will describe how LA has become an issue in applied linguistics, especially in language teaching and learning. Finally, in the third part of this entry, the focus will move to the benefits of an increased and more sophisticated awareness of language.

Being Aware and Being Aware of Language

The notion of "awareness" is considered by applied linguists like Schmidt (1995) and van Lier (1996, 1998) as a level, phase, or facet of "consciousness," a term defined by Chafe (1994, p. 28) as "an active focusing on a small part of the conscious being's self-centered model of the surrounding world." Schmidt (1995) deals with the role of consciousness in foreign-language learning by making a distinction among the processes of intention, attention, noticing, and understanding. He associates the notion of awareness with the last two. It seems that for Schmidt "the conscious registration of the occurrence of some event" (noticing) and the "recognition of a general principle, rule or pattern" (understanding) in which the event can fit imply a degree of "subjective experience" (p. 29), also implicit in Chafe's idea of a "self-centered model of the surrounding world," which is not necessarily present in the processes of intention and attention. This idea of awareness is clearly influenced by Jackendoff's (1987) distinction between a "computational mind," involving basic perceptual mechanisms in an information processing system, and a "phenomenological mind," which is responsible for turning those perceptions into meaningful images for our experience.

Language use (or verbal communication) can be considered as an aspect of Chafe's "self-centered model of the surrounding world" or, in the words of Schmidt, as part of an "event" which develops in accordance with "a general principle, rule or pattern." This is the basis of Halliday's (1978) theory of language, according to which it is one of the systems of signs constituting the social semiotic of a culture. For Halliday, language is a resource

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to transform our experience of the world into meaning, and therefore the symbols and rules that we have consciously or unconsciously learned to apply when using it are the reflection of a particular sociocultural context. This view of language is important in order to fully understand van Lier's (1998) proposal of what may be involved in being aware of language. He proposes a hierarchical organization of levels of consciousness in the sense that each level presupposes the previous ones. The first and most basic level is "global or intransitive consciousness," which refers to the state of being generally alert to the verbal messages that may come from the environment. The second level, which he terms "awareness" (or "transitive consciousness"), refers to the capacity to notice or focus our perceptual activity on the structure, functions, or uses of specific linguistic elements; this is the level at which, for instance, one can notice a certain accent or a particular variation in the organization of a sentence. The third level, "metaconsciousness," includes (a) "practical awareness," the capacity to control, manipulate and be creative with language, and (b) discursive awareness, including the ability to discuss language in precise terms and engage in formal analysis; this is often the level of awareness which is the aim of formal education. Finally, and in line with Halliday's view of language as intrinsically connected to its sociocultural context, van Lier proposes a fourth level of consciousness, "critical awareness," which involves the capacity to consider language use as the result of and, at the same time, a tool for social and ideological practice; this is the level to which we refer when, for example, we want to avoid sexist language or to discover the intention behind a political or commercial message.

Language Awareness as an Issue in Language Learning and Use

The role of awareness (or consciousness) in language learning and use is not clear to everyone, and according to van Lier (1996, pp. 73–4), the debate has mainly focused on two positions which, in his opinion, are erroneous. The first position is based on the assumption that consciousness does not have a relevant role in language learning, either because there is no direct empirical evidence of how it works or because it is considered that language proficiency is the result of the gradual development of an innate capacity, which can only be triggered in specific situations of language use. The opposite position in the debate is that conscious understanding and learning of explicit knowledge about the rules of language is essential for the achievement of full proficiency in a language. For van Lier, these positions ignore the real functions of awareness, which are to organize, control, and evaluate the experience of communicating through language. Furthermore, learning conditions such as receptivity, participation, or investment and processes like focusing attention, comprehending, or memorizing depend on "the involvement of a conscious mind (in interaction with the environment) which is aware of what it is doing and what is going on" (p. 74).

A second issue related to language awareness was first raised by Long (1991) when he made a distinction between a "focus-on-formS" and a "focus-on-form" approach in second language teaching. The first approach involves presenting language as consisting of different structures which are isolated, pre-selected, and brought to the awareness of the learners by teaching them explicitly. In the second approach, linguistic code features are only brought to the attention of the learners when specific problems or needs of the learner surface in the course of a communicative activity. Within the "focus-on-form" approach, Doughty and Williams (1998, pp. 5–6) raise four more questions in the debate: (a) Should focus on form occur before, during, or after learners have developed their communicative ability? (b) Which forms are more likely to be the object of focus? (c) What factors need to be considered when deciding on the degree and nature of focus on form?

(d) Can specific learning tasks provide opportunities for the learner to focus on certain forms?

A third issue that may be mentioned in relation to the role of language awareness is whether it is more effective or influential for mother tongue or second language learning and use. On the one hand, it should be said that the beginning of the British language awareness movement in the late 1960s and early 70s coincided with a growing dissatisfaction with mother tongue teaching and, consequently, school results (Hawkins, 1984; James, 1999). On the other hand, a quick look at the research published in the journal *Language Awareness* shows that language awareness is a more prevalent topic in research on second language learning. However, one could argue that this debate is based on the misconception of considering native speakers as ideal users of their mother tongue, fully competent in the different registers, genres, and varieties. Since, as we all know, this is not true, one possible response to the issue could be to say that as long as both native and non-native speakers never stop learning new aspects of a language, there will always be communicative situations in which language users may benefit from increased language awareness to allow them to better control, organize, and evaluate verbal behavior. James (1999, pp. 102–3) adopts the position that language awareness is necessary for the development of both mother tongue and foreign language, and he makes a distinction between *language awareness* for "knowers and speakers" and *consciousness raising* "for learners, who are not yet in command of certain desirable knowledge, skills and intuitions." Whereas in the first case the aim is "gaining explicit knowledge about and skill in reflecting on and talking about one's own languages," in the second case the aim is "to locate and identify the discrepancies between one's present state of knowledge or control and a goal state of knowledge or control."

The Benefits of Language Awareness

In this section I will reflect on the benefits that heightened language awareness may represent, not only for language learners and teachers, but also for users in general. Van Lier (1995, p. 1), points out the relevance of language as the main feature that makes humans unique in relation to other animals, and he suggests that "there may be important reasons for bringing aspects of language into focal awareness, in order to solve problems, reach higher levels of skills in some particular areas, or to think more critically and independently about important issues" (p. 6). Twelve years after van Lier published his work, Svalberg (2007, p. 288) seems to be of the same opinion about the relevance of language awareness: "The concerns which initially gave rise to the LA [Language Awareness] movement are not only still with us but are perhaps of even greater salience due to social and economic developments such as migration, globalization, international trade and international conflict."

One way of approaching the benefits of an individual's increased language awareness is to consider the "domains of competence and understanding" that, following James and Garrett (1992), may be affected: affective, social, power, cognitive, and performance. From an affective point of view, it seems that a better understanding of how language and communication works contributes to developing greater empathy and curiosity toward language learning. The social domain refers mainly to fostering tolerance in multilingual and multicultural contexts by emphasizing the structural and historical development of different languages as well as the advantages of multilingualism. The emancipation of the individual from oppression and manipulation through language use is the most salient aspect of the power domain; this is achieved by letting people know about the hidden meanings and intentions behind specific choices involving different aspects of language

(e.g., lexical, syntactic, register, dialect, or even language). The main assumption in the cognitive domain is that developing language awareness involves a simultaneous development of general cognitive skills including perception of pattern and contrast, rule derivation, generalization, inference, and form–function relationships. Finally, in the performance domain, the assumption is that noticing features of language and explicit learning contribute to effectively improving language proficiency.

The target learner or user profile which results from heightened language awareness is one in which the individual is cognitively, affectively, and socially engaged with language. These three attributes of engagement are clearly defined by Svalberg (2009). When learners or users are cognitively engaged, they pay focused attention to input and look for rules or principles that can explain the way speakers use the language. Affective engagement basically involves a willful, purposeful, and autonomous disposition to observe and experiment with language. Finally, a socially engaged learner relies on interaction with others as a means for learning and to accomplish the other two types of engagement.

After sketching a target learner or user profile resulting from increased language awareness it seems necessary to explore the kind of teaching profile that might best contribute to reaching the target. A language awareness approach, as Carter (2003) defines it, can be characterized as favoring inductive, collaborative and reflective teaching activities. The learners' participation in these activities starts from their intuition and the teacher only provides the necessary scaffolding for them to focus their attention on certain aspects and acquire for themselves the knowledge and skills required to accomplish a task. This task must be as authentic as possible, in the sense of being close to the needs and interests of the learners. Language awareness can be considered as a link between two areas of professional knowledge for language teachers: (a) subject matter knowledge (i.e., general and descriptive linguistics), to fully understand how the language functions; (b) pedagogical content knowledge, to effectively represent the functioning of the language to learners according to their needs and capacities. Andrews and McNeill (2005) suggest the following characteristics of teacher language-aware behavior: (a) willingness and ability to engage with language-related issues in the classroom, which constitute the centre of their teaching practices, and to reflect about the content of learning in their classes; (b) awareness of the limitation of their own subject matter knowledge together with a desire to improve it; and (c) a classroom practice of input enhancement to make salient the particular features of the language structure they aim to teach.

If one believes that education never stops and that the main goal of education may be for individuals to be able to be critical and emancipate themselves from socially dominant forces that have the power to control all kinds of social practices, then we can say that the development of critical language awareness should be of interest to citizens in general. This is probably the sense in which Svalberg (2007, p. 288) wonders whether one of the possible "advantages" of an increased language awareness is "to improve our relations with other people and/or cultures, and in our ability to see through language that manipulates or discriminates." Most citizens, in the course of their daily lives, are subjected to a myriad of spoken or written messages addressed to them with the aim of influencing their view of the world and, ultimately, their social behavior. The development of critical language awareness skills involves the capacity to read or listen to a text while analyzing it from two points of view: (a) the underlying social goals, attitudes, and roles associated with specific ways of using the language and (b) the processes through which these particular goals, attitudes and assumptions have become naturalized and, therefore, more acceptable than others.

The growing multilingualism and multiculturalism that characterize many of our societies represent another area of social interest that may benefit from a general increase in the

language awareness of individuals. In this sense, the project EVLANG (*Éveil aux langues*, 1998–2001) (Candelier, 2004) is a good example of how primary-school children can be helped toward awareness of the diversity and legitimacy of the languages and cultures of all the pupils, while developing general metalinguistic knowledge and transferable skills that should be useful to them in learning languages. The connection between multilingualism and awareness is made clear by the Language Policy Division of the Council of Europe (Council of Europe, *n.d.*) with the inclusion of the term "awareness" in two of the six goals of multilingual (or plurilingual, as the Council of Europe refers to it) education: (a) an awareness of why and how one learns the languages one has chosen; (b) an awareness of and the ability to use transferable skills in language learning. If multilingualism is the rule rather than the exception and, following authors like Jessner (2007), multilinguals develop metalinguistic skills and capacities that are not found in monolinguals, language-aware citizens and professionals may not only be more tolerant of linguistic and cultural diversity but also more critical toward monolingual models of competence which define multilingualism as the achievement of the same level of proficiency in different languages, instead of as a unique repertoire involving different levels of proficiency in different languages according to the needs of the individual's daily life.

The role of language awareness in intercultural communication is made explicit in Byram's (1997) model of intercultural communicative competence, in which, besides specific sets of knowledge and skills, he includes "an attitude of curiosity and openness" (p. 57) and "an ability to evaluate, critically, and on the basis of explicit criteria" documents and events in one's own and other cultures (p. 63). Terms such as curiosity and critical evaluation have an inevitable resonance with the social and power domains of language awareness proposed by James and Garrett (1992), but also with ideas which have been introduced above in relation to the profile of the language-aware learner or to the development of critical language awareness. Bremer, Roberts, Vasseur, Simonnot, and Broeder (1996) show the relevance of raising awareness of institutional intercultural communication, especially among the members of the majority community, who tend to be the gatekeepers for the social and economic promotion of the members of the minority community.

To conclude, the capacity to observe, organize, monitor, and evaluate one's own and other people's language use, which is defined here as "language awareness," involves cognitive, affective, and social or interactional processes. Research and applications focusing on this capacity can be said to have moved in basically two directions. The dominant direction is that of considering it as the basis for an approach to increase the efficiency and effectiveness of the processes of language teaching and learning. The second, perhaps less researched, direction is to see language awareness as a resource for the improvement of social relations and the emancipation of individuals and social groups. It may well be that in a progressively multilingual and intercultural 21st century there will be a greater need to concentrate more effort on resolving the political and social conflicts that will inevitably arise from a world which becomes smaller every day and requires us to share more of ourselves with "the other."

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Explicit Knowledge and Grammar Explanation in Second Language Instruction; Explicit Learning in Second Language Acquisition; Multilingual Education and Language Awareness; Multilingualism and Metalinguistic Awareness; Pragmatic Awareness in Second Language Learning; Teaching for Language Awareness

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Language Endangerment

SUZANNE ROMAINE

Over the past few decades linguists have become increasingly concerned about the problem of endangered languages (Robins & Uhlenbeck, 1991; Krauss, 1992; Crystal, 2000; Nettle & Romaine, 2000; Gibbs, 2002; Abley, 2003, Dalby, 2003). According to some estimates, as many as 60% to 90% of the world's 6,900 languages may be at risk of extinction within the next 100 years. This does not include dialects because no one knows exactly how many languages and dialects there are and there are no clear criteria for defining the boundaries between languages and dialects (see Wolfram & Schilling-Estes, 1998 for discussion of dialect endangerment). Most assessments rely on the Ethnologue data compiled by the Summer Institute of Linguistics, cataloging all the known languages of the world; in practice, this includes a total of 6,909 languages spoken by 5.9 billion people (Lewis, 2009).

How Languages Become Endangered

More is known about how and why languages become endangered than about preserving and maintaining them. For most of the many millennia of human history, human communities were small and it seems likely that the world was close to linguistic equilibrium, that is to say, the number of languages lost roughly equaled the new ones created. The reason why this balance persisted for so long is that there were no massive, enduring differences between the expansionary potential of different peoples of the kind that might cause the spread of a single, dominant language. Over the past 10,000 years, however, various events have punctured this equilibrium forever. First, the invention and spread of agriculture, the rise of colonialism, later the Industrial Revolution, and today the spread of mass media, globalization of economies, and so on have created the global village phenomenon. These forces have propelled a few languages—all Eurasian in origin—to spread over the last few centuries. Now all but a handful of hunter-gatherer societies live outside their local ecosystems. The spread of large languages in modern times has rendered the global distribution of linguistic diversity strikingly uneven and resulted in marked disparities in the size of populations speaking the world's languages. If all languages were equal in size, they would have around 860,000 speakers. According to the Ethnologue, however, 389 (or nearly 6%) of the world's languages have at least one million speakers and account for 94% of the world's population. The remaining 94% are spoken by only 6% of the world's people (Lewis, 2009). Over 80% of the world's languages are found in just 20 countries, including some of the richest in the world (USA, Canada, and Australia) as well as some of the poorest (Chad, Democratic Republic of the Congo, and Nigeria).

Figure 1 shows that only nine languages have more than 100 million speakers; altogether they are spoken by about 50% of the population. These include Chinese (1.23 billion speakers), Spanish (329 million), English (328 million), Arabic (221 million), Hindi (182 million), Bengali (181 million), Portuguese (178 million), Russian (144 million), and Japanese (122 million). These very large languages are all spoken in more than one country. English, for instance, has large groups of speakers in the UK, USA, New Zealand, Canada, Australia, and South Africa. The spread of these languages would be even more extensive if figures

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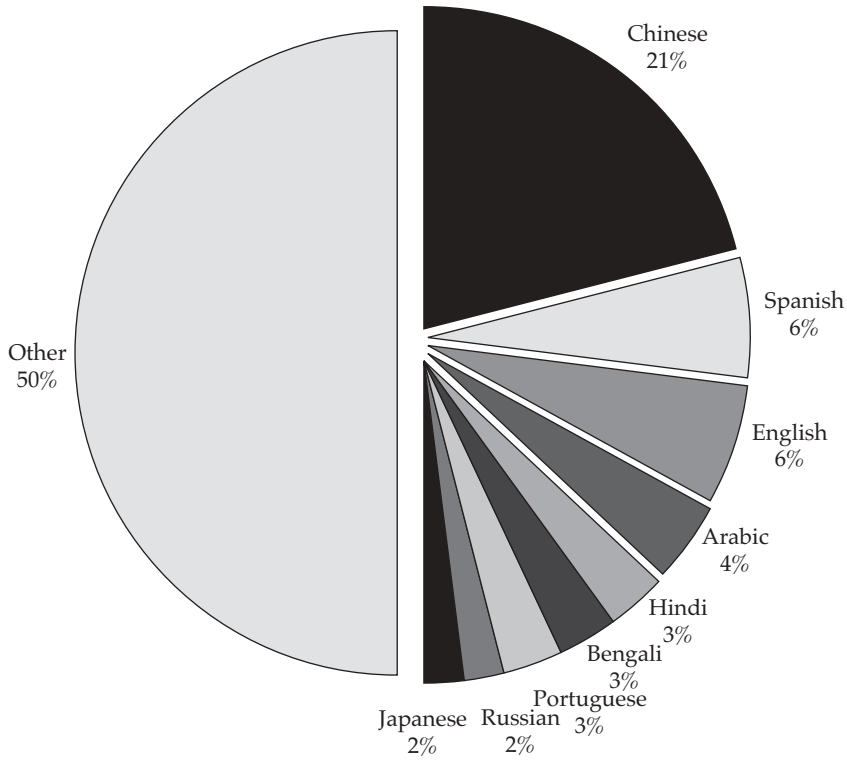

Figure 1 Languages with 100+ million speakers as a percentage of world population (based on data from Lewis, 2009).

for second language speakers are included. Although English is not the largest language in the world, it is one of a small handful of what may be called global languages in terms of geographic spread and number of users worldwide. With estimates of the number of non-native speakers of English ranging from 470 million to more than a billion, non-native users greatly outnumber native speakers.

As large language communities expand, others contract. Over the last 500 years, small languages nearly everywhere have come under intense threat. Language shift and death are responses to pressures of various kinds on communities. People do not normally give up their languages or cultures willingly, but continue to transmit them, albeit in changed form, over time. The disappearance of a language and its related culture almost always forms part of a wider process of social, cultural, and political displacement. Not coincidentally, the vast majority of today's threatened languages and cultures are found among socially and politically marginalized and/or subordinated national and ethnic minority groups. Communities can thrive and transmit their languages only where their members have a decent environment to live in and a sustainable economic system. In a rapidly globalizing world with a handful of very large languages and many thousands of small ones, maintenance of linguistic diversity is inextricably linked to the survival of small communities, whose subsistence lifestyles depend on healthy ecosystems and access to land. Without such resources these groups find it hard to maintain their ways of life and their cultural identities on which the continued transmission and vitality of their languages depend.

Signs of Endangerment

Estimates of the number of languages in danger of extinction vary depending on the criteria used to assess risk. More research is needed in order to understand the role of various factors such as size (i.e., number of speakers), status, function, and so on in supporting or not supporting languages. There is still no system of language ranking in terms of risk (Krauss, 2007). Languages are most obviously at risk when they are no longer transmitted naturally to children in the home by parents or other caretakers. UNESCO (2001) suggests that languages being learned by fewer than 30% of the younger generation may be at risk, yet there is very little information about the number of languages no longer being transmitted. No children are learning any of the nearly 100 native languages in what is now the US state of California. Statistics from several parts of the world, such as Canada (see, e.g., Norris & Jantzen's 2002 work on assessing the continuity of aboriginal languages using census statistics, and the Task Force on Aboriginal Languages and Cultures, 2005) and Australia (McConvell & Thieberger, 2001), as well as reports from fieldworkers on the ground, are quite alarming. In Canada perhaps only three languages out of around 50 (Cree, Atikamek, and Inuktitut) are viable in the long term. The Australian continent is a linguistic graveyard, with 90% of Aboriginal languages near extinction. From 1800 to 1996 there has been a decrease of 90% in the number of indigenous languages spoken fluently and regularly by all age groups as well as a decrease in the percentage of people speaking an Aboriginal language from 100% to 13% (McConvell & Thieberger, 2001). Only some 50 languages are widely spoken today; of these only 18 have at least 500 speakers. These 18 account for roughly 25,000 of the remaining 30,000 speakers of Aboriginal languages today. Most aboriginal languages in Canada, the USA, and Australia cannot draw on official support or rely on institutions such as the school to produce new users.

Another sign of impending shift appears when a language once used throughout a community for everything becomes restricted in use as another language intrudes on its territory. Usage declines in domains where the language was once secure, such as in churches, the workplace, schools, and most importantly the home, as growing numbers of parents fail to transmit the language to their children. Fluency in the language increases with age, as younger generations prefer to speak another (usually the dominant societal) language. In California none of the remaining indigenous languages is spoken natively by anyone under the age of 60 and only five have more than about 10 speakers.

The functions a language is used for may also tell us something about its long-term viability. Fewer than 4% of the world's languages have any kind of official status in the countries where they are spoken. A small minority of dominant languages prevail as languages of government and education. English is the dominant, *de facto*, or official language in more than 90 countries. The fact that most languages are unwritten, not recognized officially, restricted to local community and home functions, and spoken by very small groups of people reflects the balance of power in the global linguistic marketplace. No Aboriginal Australian language is used in all spheres of everyday life by members of a sizeable community. Insofar as status offers a degree of protection against endangerment, the only languages that may be considered safe are the politically dominant languages of modern nation-states (Romaine, 2007).

Many researchers use size as a proxy for degree of endangerment to assess risk, both globally and in specific regions. Krauss (1992), for instance, believes that only the 600 or so languages with the largest numbers of speakers (i.e., more than 100,000) may survive. If this is true, few of the 6,000 or so remaining languages will have a secure future. Even if the viability threshold is set at the lower level of 10,000 speakers, 60% of all languages are already endangered. Although size does not tell the whole story, it may be the best surrogate for vulnerability to the kinds of pressures leading to language loss. Small

languages can disappear much faster than large ones, and forces have been unleashed in the world that small communities find difficult to resist. The developed nations of the world are now rapidly destroying the habitats sustaining much of the world's biological and linguistic diversity. Resource extraction, the spread of mechanized agriculture, and development projects damage the environment at the same time as they displace and marginalize people from places they traditionally relied on for their food, shelter, cultural practices, and spiritual well-being. Since 1900, 90 of Brazil's 270 Indian tribes have completely disappeared. More than two-thirds of the remaining ones have fewer than 1,000 members (Hemming, 1978). Moreover, a high degree of endemism (i.e., native to a particular area and not found elsewhere) amongst languages with small numbers of speakers means that the risk to rare and unique languages is greater than the risk to more common ones. If some horrific catastrophe wiped out all the languages of Western Europe tomorrow, we would lose relatively little of the world's linguistic diversity. Europe has only about 3% of the world's languages, and most of the largest European languages are also widely spoken outside Europe. More importantly, however, most of the languages of Europe are structurally quite similar, because they are related historically. If we were to lose the same number of languages in Papua New Guinea or South America, the loss would be far more significant, because the divergence between languages there runs much deeper (Nettle & Romaine, 2000, pp. 33–9, 62–7). Papua New Guinea alone contains 11.9% of the world's languages, but only 0.1% of the world's population and 0.4% of the world's land area.

What Is Lost When Languages Are Endangered

The crucial role language plays in the acquisition, accumulation, maintenance, and transmission of human knowledge means that the prospect of language extinction on such a large scale raises critical issues about the survival of humanity's rich and diverse intellectual heritage. Most endangered languages are unwritten and undocumented and there is still very little research on most of the world's languages. Linguists have tended to work on the familiar and easily accessible languages spoken by large numbers of people. While thousands of linguists have probably worked on French or English over the last 100 years or so, there are thousands of other languages which have received little attention, and thousands still that have received none at all. *The Ethnologue* singles out more than 3,000 languages in need of surveys. Estimates of the costs of providing adequate documentation range from around $55,000 per language to fund two years of work by a linguist to provide a basic dictionary and grammar to $2 million per language to fund an in-depth study over 15 years, complete with audiovisual archive, and so on. Crystal (2000, Chapter 4) proposes a figure of $585 million ($65,000 per year for three years' work to provide basic documentation for 3,000 languages). Even if sufficient money were available for documentation, there is a shortage of trained people able and willing to do the work. There are considerable political and logistical impediments in getting to areas where the most endangered languages are spoken.

The problem of language endangerment raises critical issues about the survival of knowledge that may be of use in the conservation of the world's ecosystems. The 49 members of the Great Andanamese tribe, the last survivors of the pre-Neolithic population of Southeast Asia, face a serious threat of extinction, but all survived the huge tsunami unscathed after it hit the Indian Ocean and Bay of Bengal in December 2004 because they knew exactly which trees would not be swept away (Abbi, 2006). Folk traditions and other forms of knowledge passed down orally for generations are always only a generation away from extinction. The traditional inhabitants of Marovo Lagoon (Solomon Islands), for instance, have names for at least 500 plants, 70 birds, 350 fish, 100 marine shells, some

50 distinct terms for forest types, land topography, and freshwater systems, and more than 70 terms for reef types and underwater and coastal topography (Hviding, 2006, p. 79). The disappearance of hundreds of species of fish, birds, and other life forms, along with their names and related knowledge of their habitat and behavior, represents an enormous loss to science at precisely the time when we most urgently need to manage local ecosystems more effectively. Loss of linguistic diversity also threatens the scientific study of language by diminishing the range of structures for constructing hypotheses about the nature of the human mind.

What Can Be Done?

The prospect of the loss of linguistic diversity on such a large scale has prompted both communities and scholars to propose programs of intervention to preserve and revitalize languages (see Hinton & Hale, 2001; Grenoble & Whaley, 2006, chap. 3, for examples). Because typically much needs to be done quickly with too few resources, setting realistic priorities is paramount. There is no one-size-fits-all solution for revitalization and preservation. The immediate one is to identify and stabilize languages under threat so that they can be transmitted to the next generation in as many of their functions as possible. This means assessing which functions are crucial to intergenerational transmission and have a reasonable chance of successful revival and continuation. Every group must decide what can best be done realistically with the resources available for a particular language at a particular time.

Communities around the world have increasingly looked to schools and other teaching programs as a way to revitalize their languages. Immersion models of various types are being implemented to promote indigenous and minority languages. Some programs are total immersion, such as the Hawaiian and Blackfeet ones, modeled on the Māori "language nest" called Te Kōhanga Reo, while others may be partial. In Hawaiian immersion schools Hawaiian is used across the curriculum from pre-school onwards, and English is introduced as a subject from the 5th grade (around age 10) for one hour a day. Most of the students attending are English speakers and are learning Hawaiian as a second language. The language nest/immersion model contrasts with more conventional language teaching where the language is taught as a subject for a limited number of hours with fewer opportunities for high levels of academic or informal engagement with the language in use. In immersion there may be little, if any, focus on language learning *per se* in the form of direct teaching of grammar and vocabulary. Language is acquired through the meaningful interaction required to learn academic content in various subjects. Other variants of the model may rely on bilingual immersion combined with a third language taught as a subject. In parts of the Basque country Basque and Spanish are used for instruction during primary education, and English is taught as a subject beginning in kindergarten. The Kahnawake Survival School in Quebec, dedicated to preserving Mohawk language, culture, and history, combines total and partial immersion at various levels.

Successful immersion programs obviously depend on the availability of fluent teachers and teaching materials, and are therefore less easily implemented when a language has only a handful of speakers. In California and elsewhere in the USA, native North America learners have benefited from a Master–Apprentice program, which brings together a fluent elder and a learner, who use the language for everyday activities (Hinton, 2002). A variant of this program brings together elders and learners of various ages in immersion camps for several days or longer, often during the summer, to engage in cultural activities in which native languages are used to varying extents. Where transmission has ceased altogether or been interrupted for a long period, prospects for revitalization rely on documentation, reconstruction, or both to "reclaim" what some have called "sleeping languages."

One example is the Kaurna language once used by Aboriginal people in what is now the area of Adelaide in South Australia. Although it has not been spoken for more than a century, some people are now using the language for limited activities such as greetings, songs, and naming activities (Amery, 2001).

While salvage operations aimed at recording a language for preservation in books are worthwhile endeavors, and may be all that can be accomplished for some severely eroded languages, they do not address the root causes of language decline and without further action they do not contribute substantially to language maintenance efforts in the long term. The preservation of a language in its fullest sense ultimately entails the maintenance of the group of people who speak it, and therefore the arguments in favor of doing something to reverse language death are ultimately about preserving cultures and habitats. Languages can only exist where there is a community to speak and transmit them. A community can exist only where there is a viable environment for them to live in and a means of making a living. Where communities cannot thrive, their languages are in danger. When languages lose their speakers, they die.

SEE ALSO: Ecology and Multilingual Education; Language Policy and Multilingualism; Linguistic Legislation; Mother-Tongue-Medium Education; Multilingualism and Minority Languages

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Language Evolution: Pidgins and Creoles

HUBERT DEVONISH

What Happens When Language Meets Language?

Language evolution is the focus of the field of historical linguistics. It is laden, some might say blighted, with biological metaphor. The same is true for the pidgin and creole linguistics which has followed in the wake of historical linguistics and adopted its metaphors. One particular focus of pidgin and creole linguistics is to understand how pidgin and creole languages came into being. For us to follow the proposals made in this area, we have to follow the chain of metaphor. We do this in the present survey while maintaining a critical awareness of the difference between metaphor and linguistic reality.

The term "language evolution" begins the string of biological metaphors. It suggests that languages, like life on earth, had a single common origin, and then diversified and became more complex through some selection process. These two stages can be termed "language birth" and "language change." In pidgins and creoles, the two processes meet. Several languages already in existence come into contact with each other, and a new language that did not previously exist comes into being.

When people meet who do not have a common language, there is still need for language communication. One option is for speakers in this context to devise a *pidgin*. This is a simplified language used for restricted functions by adults who find themselves needing to communicate regularly with others who do not speak the same language. The lexicon of the pidgin originates, for the most part, in one of the languages of the contact situation, referred to as the superstrate language or more neutrally as the lexifier language. The grammatical structure is posited to come from a range of languages in the contact situation as well as from processes of regularization and simplification under the influence of language universals. The phonological systems, though not playing a prominent role in some of the theories of origin, can be proposed to come from an interaction between the phonological systems of the substrate languages and the superstrate.

There is then the issue of what happens to this pidgin if children are born into communities where it is the main medium of communication. Such a language might become the first language of this new generation. If so, we would be dealing with the process of the creolization of a pidgin language and its emergence as a full and complex native language, a *creole*. What then are the processes involved in the development of a full, complex language from a relatively simple and rudimentary pidgin language?

The etymology of the word "creole" is based on the notion that these languages are original creations. The dictionary entry in Allsopp (1996, p. 176) for "creole" suggests that it is originally from Portuguese *criar* 'to create'. This etymology lies at the heart of the discussion among scholars as to what constitutes creole languages. Is that which is created simply new in the sense that it is a new mix of already existing components and, if so, which components coming from where? Or is this creation something which is totally new? Linked to this is the dispute which exists even in orthodox historical linguistics over what constitute the identifying, that is, "genetic" characteristics of languages. We need to be aware of this lack of unanimity among scholars working in the field in order to understand the differences in the approaches which they adopt.

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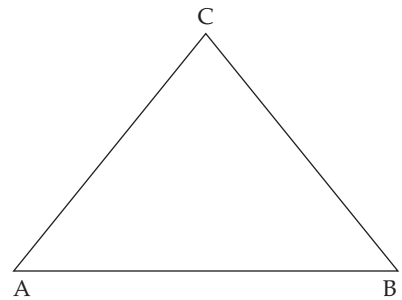

Figure 1 Single-parent model of language evolution

Uninterrupted Superstrate Transmission?

The standard approach to explaining how new languages develop is the comparative method first developed with the reconstruction of the Indo-European language family. This method presumes relationships of the type shown in Figure 1.

This model presumes that language C was a single language in existence at some prior point in history. Its speakers become separated as a result of migration or other such factor, and the two versions of language C develop separately and in different ways. The outcome, after several centuries or millennia, is the emergence of languages A and B. They show some features of similarity, all of which can be traced back to an original C. There are, in addition, however, the features which mark A off from B. These are the features which have developed in A, B, or both as a result of natural language change since the two sets of speakers separated. These new features would be, by definition, features not inherited from C. This is the typical model used to explain the evolution of Latin, language C, into the modern Romance languages such as French, Spanish, Portuguese, Italian, and Romanian (Meillet, 1936). This may be described as the single-parent model.

The single-parent model has been adopted in reconstructions of the origins of creole languages. Mufwene (2001) is one of the more detailed elaborations of this approach. Typically, creole languages emerge in a situation where there is a socially dominant language in contact with one or more socially subordinate languages. The socially dominant language, the *superstrate*, usually contributes the bulk of the vocabulary of the newly emerging language, functioning as the *lexifier*. Mufwene (2001) argues that creole languages are continuations of features of the superstrate languages. This proposal requires an explanation to be provided for the marked differences between the creole language and its superstrate lexifier. Mufwene proposes that the superstrate language manifests itself in the language contact situation in the form of a gene pool. A range of sometimes quite deviant dialects of the superstrate language are in use in the contact situation. The linguistic features associated with these diverse dialects represent a linguistic gene pool from which the emerging creole is derived. What gets selected from this gene pool and what gets rejected are determined by principles which include (a) a preference for those competing genetic characteristics which correspond most closely to that which is favored cross-linguistically, and (b) a favoring of those competing genetic features which correspond most closely to one or more of the subordinate languages in the contact situation (Mufwene, 2001, pp. 54–60).

At the heart of the Mufwene position is the claim that the social context within which creole languages develop involves, in the earliest phases, the speakers of the substrate languages having easy access to language models provided by users of the superstrate

language (Mufwene, 2001, pp. 54–61). Natural adult language learning can and does take place. The creole outcome is the result of a unique combination of features from the pan-dialectal feature pool for the superstrate language present in the contact situation. No pre-existing dialect of the superstrate would have had this particular combination of features. What we have here, in Mufwene's terms, is uninterrupted language transmission. The creole language is genetically related to the superstrate language.

Mufwene's model does seek to account for creole languages which are particularly deviant from their superstrates. He argues that in some situations, after the formation of the creole, there is an influx of large numbers of new arrivals speaking substrate languages. These languages may come to have an influence on the already existing creole language, making it more deviant from the superstrate language than it otherwise might have been (Mufwene, 2001, pp. 50–5). The Mufwene version of the single-parent origin approach might be dubbed the superstrate preservation hypothesis.

Uninterrupted Substrate Transmission?

As would be expected, there is a converse view that sees creole languages as continuations of the socially subordinate substrate languages. According to Alleyne (1980, p. 33), Atlantic English-lexicon creole languages, the subject of his study, represent the continuation of a set of shared features underlying the West African Niger–Congo substrate languages. As he argues, "we are perhaps dealing with several languages (West African Niger-Congo) which had a number of phonological, syntactic and lexical isoglosses in common" (Alleyne, 1980, p. 223). Unlike Mufwene (2001), Alleyne is not dealing here with divergent dialects of a single language such as English or French. He, instead, is referring to languages which are quite disparate, and belonging to distinct subgroups of Niger–Congo languages spoken in West Africa, notably those such as Mande, Kwa, and Bantu. The argument for substrate transmission, has, therefore, by definition, to be more abstract than that for superstrate transmission. Among the underlying substrate features which Alleyne (1980, pp. 136–79) proposes for Atlantic English-lexicon creoles is a preference for open, consonant–vowel (CV) syllable structures; the morphological process of reduplication to produce a distributive meaning; and the use of preverbal markers in the sequence Tense + Aspect.

The substrate preservation approach accommodates the influence of the superstrate by proposing that there is an ongoing process of linguistic acculturation which stretches out over time. It causes the substrate influences to be replaced gradually by those of the superstrate. For Alleyne (1980), unlike Mufwene (2001), this is not a founding influence but one which infiltrates the language over the entire period of its contact with the superstrate language.

There is a solid body of scholarly work arguing for this position. The specific focus has been the influence of the Ewe–Gbe–Fon language cluster, within the Kwa language group, on Atlantic creoles, particularly French-lexicon creoles. This tradition begins with Sylvain (1936), who argues that Haitian Creole is essentially Ewe syntax with French vocabulary. This perspective is adopted and explored in greater depth and with the benefit of more detailed contemporary descriptions of the Gbe–Fon languages/dialects in Lefebvre (1999).

Are Pidgins Born and Do They Grow Up to Be Creoles?

The superstrate and substrate preservation hypotheses were articulated in opposition to the classic position in the field of pidgin and creole studies, that pidgins develop into creoles. According to Hall (1966), when speakers of more than one language come into extended contact and do not have a language in common, a pidgin is produced. If the

contact between the language groups is protracted, this pidgin stabilizes. If children are born into a situation where a pidgin is the language most widely used around them, they acquire it as a native language. In this situation, for the adult users of the pidgin, the language is only a second language with restricted usage and limited communicative functions. For the new generation, this language is the one required for all communicative functions.

In its new role as native language, the resources of the pidgin, lexical as well as syntactic, are expanded by the new generation to allow the language to perform its new extended roles. This marks the genesis of a creole. According to this approach, however, in spite of its elaboration and expansion beyond the pidgin, the creole still carries within it features inherited from the pidgin. Some of these features are inherited, in turn, from the original languages, both superstrate and substrate, that were part of the initial contact situation. Others are a product of the linguistic universals which played a role in the process which created the original pidgin. The pidgin–creole hypothesis does accommodate the prospect of the inheritance of both superstrate and substrate features by the creole language.

Are Creoles Made Up From Scratch?

All of the preceding approaches are contradicted by the Bickerton language bioprogram hypothesis (LBH). The LBH position taken in Bickerton (1981) is that creole languages, though arising in situations where there is a pre-existing pidgin, do not have as an input such a pidgin. For Bickerton (1981, pp. 4–5), the pidgin which develops in language contact situations is basic and elementary, variable and idiosyncratic. As a consequence, it fails to constitute an appropriate language input for children born into a situation where a pidgin is the ambient language. The innate predisposition that all children have to learn the language(s) which are used in the environment fails to regard the input from a pidgin as adequate for language acquisition. Children in such situations resort to their innate, biologically programmed knowledge of linguistic universals to construct a "real" language out of the inadequate input which they receive. The resulting language which they construct corresponds very closely, syntactically, to those features which are prototypical among the languages of the world.

The LBH proposal, that children reinvent human language by resorting to prototype syntactic language features to produce a creole, leaves no room for the inheritance of superstrate or substrate language features. The creole language which emerges, according to the LBH, has syntactic features which have been developed from scratch. Scratch here is the language bioprogram which all children have, which predisposes them to learn language and, according to Bickerton (1981, pp. 132–5), to invent one where none, or at least no full language, exists in the environment. It is worth noting, in all this, however, that the LBH is narrowly about the reinvention of *syntax* in a historically pidgin situation.

All of the Above?

McWhorter (2005) is a proponent of what might be referred to as the eclectic option. This approach accepts that some features of creole languages are a result of transmission from the substrate. Thus, in the case of Atlantic English-lexicon creole languages, serial verbs, a relatively rare phenomenon in the languages of the world, occur in patterns which are clearly linked to their putative substrates among the Kwa languages of West Africa (McWhorter, 1997, pp. 30–5).

McWhorter accepts that superstrate influence is also evident in these languages. Thus, for example, he argues for an Irish English source for a particular widespread feature in

Atlantic English-lexicon creoles. This involves the use of the word *self* to signal the adverbial meaning 'even' (McWhorter, 2005, pp. 220–3).

In addition, internal innovation, McWhorter proposes, can be seen. These creoles have the form *da* as equational copula and as the demonstrative pronoun *that* (McWhorter, 2005, pp. 204–5). Neither the superstrate nor the substrate languages show any such homophony. However, crosslinguistically, it is known in languages for the copula to have the same form as a demonstrative, usually a proximal demonstrative, namely *this*, and that the copula is historically a grammaticalized form of the demonstrative. McWhorter presents evidence from the early attestations of Atlantic English-lexicon creoles to establish that this was indeed an innovation and was not a feature which existed from the very beginning of these creoles.

Most significantly, McWhorter is also willing to accommodate to the notion of influence from language universals or the language bioprogram, triggered by the conditions in which creole languages developed. The simplification associated with the precursor pidgin, or the linguistic universals of the bioprogram resorted to by first generation creole-speaking children, or both, contribute as well to the emerging creole (McWhorter, 2005, p. 100). The simplicity of creole languages, he suggests, is a result of their recent formation. They lack, for him, the complexity of older languages which have an accretion of archaic features which are overspecified when compared with the requirements of universal grammar, the basic grammatical system which underlies all human languages (p. 66). For McWhorter (2005, p. 38), "The world's simplest grammars are creole grammars."

The Two/Multi-Parent Hypothesis: A Conclusion?

The task of reconstructing the origins of pidgin and creole languages falls to historical linguistics as much as it does to pidgin and creole linguistics. The latter subfield has tended to borrow its biological metaphors from the former. Thomason (2008, p. 249), giving a historical linguist's take on creole language genesis, points to the role which adults play in language change and questions the assumption common in pidgin and creole linguistics that the innovations in creoles were necessarily the product of children. She asserts the continued use of the caregivers' native languages in the linguistic environment where first generation creole-speaking children would have first appeared, a fact largely ignored in the LBH approach (Thomason, 2008, p. 251). The use of such native languages by adults, she argues, constitutes an important input into the emerging native language of the new, creole-speaking generation. Inevitably, therefore, for her, there is substrate carryover into the creole language which emerges.

Thomason (2008, pp. 252–3) first comments, from an orthodox position within historical linguistics, on the issue of the two possible types of language change that can occur in contact situations. There is language change induced by contact, involving borrowing, and there is language shift induced by interference from the native language. In borrowing, she argues, the first features which a speaker takes from other languages are lexical items. Only later does the grammatical structure come to be affected. In the case of shift induced by interference, as an adult speaker learns a new language, it is phonology and structure that are carried over from the first or native language rather than lexicon. She suggests that creolization is more consistent with language interference. This directly contradicts Alleyne (1980), for whom the creole which emerges is merely a relexified form of the substrate languages, with the original lexicon of West African Niger–Congo languages replaced by that of the superstrate European language. The difference between Thomason (2008, p. 251) and Alleyne (1980) is that the former defines borrowing narrowly as involving bilinguals or multilinguals. These, according to Thomason, usually borrow features

from one of the non-native languages for incorporation into the native language. This state of affairs is not considered typical of pidgin and creole formation situations.

In reality, the models of borrowing and interference only provide a basis for identifying genetic relations for creole languages if a very narrow definition of borrowing is applied. Borrowing, more broadly defined, or shift induced by interference can produce the same result: a language with the bulk of the lexicon from the superstrate language and a large number of features from the substrate languages. Thomason (2008, pp. 244, 255–7) resolves this dilemma through her proposal that creole languages are mixed languages which have emerged in relatively unusual social conditions. For her, mixed languages by definition defy the single-parent model. They fail to inherit from a single parent language all its main components, that is, lexicon, phonology, and morphosyntactic structure. She notes that pidgins and creoles take the bulk of their lexicon from the superstrate languages and their structures from the substrate languages in the contact situation (p. 257). These languages share the genetic features of two or more parents. In making her proposal, she can accommodate the insights developed from proposals for superstrate preservation (Mufwene, 2001), substrate preservation (Alleyne, 1980), the pidgin–creole hypothesis (Hall, 1966), and the eclectic approach (McWhorter, 2005). Her proposal, however, firmly rejects those coming via the LBH, which is ultimately a "no-parent" hypothesis.

SEE ALSO: Attrition and Multilingualism; Dynamics of Multilingualism; Pacific Creoles; Typology and Second Language Acquisition; Varieties of English in Cameroon; Varieties of English in the Caribbean; Varieties of English in Nigeria

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Language for Specific Purposes in Asia

BUDSABA KANOKSILAPATHAM

Introduction

Asia, the largest of all continents, consists of over forty countries. It is a continent with diverse physical features as well as economic, political, and cultural characteristics. Despite such diversity, five languages are most commonly taught for "specific purposes" because of their political, economic, religious, educational importance, or any combination of these, including English, Japanese, Chinese, Korean, and Arabic. These five languages will be described from the perspectives of their historical development for instruction in the region; the "specific purposes" commonly addressed in language instruction; the scope, methods, and contexts of LSP instruction in Asia; and finally the distinctive features of LSP in Asia.

Historical Development of LSPs for Instruction in Asia

English has long played a dominant role in Asia (Canagarajah, 1996). The widespread use of English is largely attributed to the power of the former British Empire, as reflected in the continued use of the language in the Commonwealth nation members and in other parts of Asia including India, Singapore, Hong Kong, and Malaysia (Evans, 2010). The role of English as an LSP has become well established since the end of World War II, to a large extent because of the growth of technology and commerce dominated by English-speaking countries. As Asian nations have attempted to industrialize and modernize their societies, students have been encouraged to get their education abroad, particularly in English-speaking countries. The result has been an increased demand for ESP and EAP instructions in Asian countries. Returning graduates of educational programs from English-speaking countries have also helped to encourage the demand and interest in English (Tickoo, 1988).

Economically, Asia's major imports are manufactured products from North America, Australia, and Europe. The increasing demand for rapid and massive expansion of international business also contributes to the growth of English as a language for occupational purposes. With new emergent economic powers including India, Malaysia, and United Arab Emirates, there is an increased demand for individuals to have a good command of English for their work. With its pivotal role for academic and occupational purposes, English has become a major factor influencing economic growth, expanding international perspectives, enhancing success in international competition and business operation, and serving as a means to connect with other countries in the region and with the international community (Clayton, 2006).

China has become a powerful economic engine since Deng Xiaoping's economic reformation beginning in the 1970s. In fact, China's economy has in recent years grown at an exponential rate, three times the rate of the United States's and faster than any other economy (Gu, 2005). China's remarkable accomplishments at the beginning of the 21st century have turned the country into a center of economic power in Asia, contributing to the promotion of Chinese language popularity both regionally and internationally. Moreover, with impressive profit potential and the low cost base of the Chinese workforce, global

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organizations are strengthening their operations in China. The success of these attempts lies in part in a good command of Chinese (Fang & Olivier, in press).

Japan is one of the world leaders in exporting manufactured products. Interest in the Japanese language has become more prevalent following Japan's economic growth of the 1980s and the global popularity of Japanese pop culture in the 1990s. Japan is the only Asian country that has reached the industrial level of the major European and North American nations. Thanks to the rapid and extensive economic expansion of Japan as well as its deeply rooted national and cultural system—as manifested in the cultural preference of using Japanese for business transactions—Japanese has become an essential tool for many countries in Asia doing business with Japan (Goldman, 1994).

Arabic is the language of Islam. In the Arab world, religion plays an important part in history and culture. The language has a sacred character not only inside but also outside the Arabic-speaking Middle East. For instance, Arabic has been used in India since its arrival in the eighth century when Arab Muslims settled there, bringing with them their Islamic identity. Almost everyone who adheres to the religion of Islam learns at least some Arabic, regardless of the country they live in (Qutbuddin, 2007). The role of Arabic in Asia is also important economically as a large percentage of the gas and oil resources used in Asia come from Arabic-speaking countries like Saudi Arabia (Salmani-Nodoushan, 2007).

Korean has also emerged as an LSP in Asia in the 21st century. During the 1960s to 1990s, Korea was one of the most prosperous and affluent Asian countries, although the financial crisis of 1997 temporarily halted that prosperity. However, since the turn of the century, Korea has been immensely successful at promoting itself culturally, in what is called the "Korean wave" of cultural industry, becoming one of the world's top ten cultural exporters in 2008. With the growing success of the "Korean wave," the Korean language has received more attention as a tool to promote Korean culture, infotainment, tourism, and business transactions (Robertson, 2005).

Specific Purposes for Language Instruction

The five LSPs in Asia serve different "specific purposes" for language instruction in Asia. Due to a much longer history of English for specific purposes, the purposes of English instruction are quite diverse. Primarily, ESP was introduced to the region for academic purposes, both in literature and the sciences, which would allow Asian scholars in diverse disciplines to follow academic discoveries and participate in the academic world. Its role in this aspect is becoming more prominent because the language is used for this purpose even within the region (Tickoo, 1988).

The role of English in Asia has branched out from being the language of education and academic exchange, especially in science and technology, to being an important language for international travel and business, politics and diplomacy, infotainment, and the Internet. As a result, many Asian universities offer classes such as English for scientists, English for business communication, and English for tourism (Blue & Harun, 2003).

The purposes for teaching Chinese, Japanese, and Korean are somewhat similar. The recent rise of China as an important economic power in the world and an attractive business partner provides an impetus for the Chinese-language boom to develop relationships with China in economy and trade. Therefore, people who can speak Chinese in Asian countries outside of China will be an important force in the 21st century. Chinese language instruction has grown not only in Asia but also internationally, being taught primarily in the fields of business, finance, and communications (Jiajing, 2007).

Similar to Chinese, the Japanese language is studied as an LSP primarily for business purposes. Using Japanese is crucial when doing business with the Japanese and their global economic strength makes Japan economically an important country. The Japanese language

has strong cultural values, traditions, and customs, and a lack of understanding and cultural awareness of the language poses a high possibility for cross-cultural misunderstandings. Knowing Japanese is particularly important in establishing business relationships with Japanese corporations, and enhancing the chance of success in establishing and expanding business in Japan (Goldman, 1994).

Arabic and Islam are united and inseparable because the language is necessary to understand the Koran, the holy book of Islam. Furthermore, oil resources located in the Arab-speaking countries provide the driving force for the growth of Arabic-language instruction. Many Westerners travel to these countries to establish oil-related businesses. Thus, in addition to religious purposes, Arabic is growing in importance as a language for both business and travel (Brosh, 2008).

Finally, the Korean language has recently become more commonly taught in Asia in LSP contexts. The language has gradually gained increasing attention because of Korea's popular culture and travel destinations. Through dramas, movies, TV shows, food, and language, Korean culture has significantly increased in popularity. Moreover, side by side with the policy of using culture as a peace ambassador, the country is a growing economic force regionally, focusing on the car industry, appliances, and computer chips. Korea's rapid expansion in these industries leads to its substantial investment in other countries in the region. In future, the Korean language will become a practical language to master, for the tourism industry and for other business purposes (Thandee, 2008).

Scopes, Methods, and Contexts of LSP Instruction in Asia

The basic tenet for LSP is based on a movement that all language teaching should be tailored to the specific learning needs of identified groups of students. However, needs analysis should be conducted on not only learners but also stakeholders, including institutions and employers, because these stakeholders may perceive needs differently from learners (Hutchinson & Waters, 1987). Given the diversity in the needs of learners, stakeholders, and target situations, LSP instruction has expanded accordingly.

Some examples of LSP courses offered in Asia include language for science and technology, economics, medicine, business communication, tourism, and social studies (see e.g., Zhang, 2007). More subject-oriented courses created by different universities cater for specific learners' needs, taking into consideration the specific skills and target situations. For instance, language for business communication encompasses a wide range of specific courses, including the teaching of general business focusing on related vocabulary to the specific skills essential in business, such as banking (Chew, 2005) and business telephoning (Cowling, 2007). Similarly, language for tourism encompasses specific courses including language for flight attendants (Robertson, 2005) and aviation (Aiguo, 2007). The emergence of these specific courses coincides with the increasing demands arising from the globalization of trade and economy, and the continuing increase of international communication in various fields.

Contexts of Instruction

LSP instruction in Asia, be it academic, vocational, or professional, usually takes place in different higher education institutions in both the government and private sectors. At the tertiary level of education, LSP courses are typically offered to students who have clear and specific goals and high motivation. With the gradual internationalization of LSP and recognition of a growing need for undergraduate students to have a reasonable command of English, LSP programs are offered to advanced students. A range of specific LSP courses

are often incorporated into degree or degree support studies at the university level. More colleges and universities place an emphasis on running different LSP courses for their students, allowing them to become competitive and competent in their future career.

Cooperation and collaboration among units of the government and private sectors are also common. For instance, the Japanese External Trade Organization (JETRO), affiliated with the Japanese government, was established to provide support for Japanese trade development. The activities of the JETRO include running a business Japanese proficiency test to measure the learners' ability to understand Japanese in a business setting, and offering a business Japanese course. Major corporations in Japan frequently arrange special courses for their executives (Karakaya & Kaynak, 1995).

Distinctive Characteristics of LSP in Asia

LSP in Asia, compared with other continents, is developing gradually, as evidenced by the emergence of the first established international online journal dedicated to ESP entitled *The Asian ESP Journal* in 2005. The first international conference on "ESP in Asia" in 2009 in China was jointly sponsored by the *Asian ESP Journal* and Chongqing University, China. The Taiwan International ESP Journal (TIESPJ) was established in 2009. Some Asian nations have their own TESOL conferences, with a special interest group (SIG) on ESP (e.g., in Thailand and Japan). Similarly, academic and professional corpora were compiled to examine key words and phraseologies specific to the field and structural organizations in texts (Kanoksilapatham, 2005; Cho, 2009).

Successful planning and designing of an LSP course that best prepares learners for future professional communication can be quite challenging. The following sections describe distinctive features that challenge the rapid development of LSP in Asia: textbooks or teaching materials, LSP teachers, teaching methodology, and learners.

Textbooks and Teaching Materials

Materials specifically addressing the needs of each professional discipline should be developed and used. The concern is whether the materials being used within LSP are authentic, up to date, and relevant for the students' specialization. Most teaching materials are commercially published textbooks written for general LSP audiences and might not be suitable, relevant, or satisfying to the Asian LSP learners' needs (Jebahi, 2009; Zangani, 2009). Therefore, extra in-house materials are needed to satisfy the regional needs of Asian LSP.

Teachers

In LSP classes, learners typically have mastery of the subject content while teachers often do not. This creates a dilemma as many language teachers do not feel confident to teach language use in professional fields they know little about, while professionals in those fields often lack the methodological and pedagogical knowledge needed to teach a language effectively (Huang, 2010). Therefore, not having adequately trained teachers for particular LSP contexts poses one of the great obstacles in developing LSP programs in many Asian countries (Kelly, 2005; Robertson, 2005). LSP programs in Japan provide a positive example as many have reached the level of professionalism needed by getting experts from different disciplines involved in developing and promoting LSP programs.

Methodology

LSP instruction in Asia—like language instruction in general in Asia—is predominantly characterized by a focus on memorizing a limited series of words and doing a limited

range of grammatical exercises while paying less attention to the communicative aspects of language (see e.g., Nurweni & Read, 1999; Jiajing, 2007). However, attempts made to improve LSP instructions to address student needs include the adoption of more communication-focused workshop activities, learning-by-doing exercises, and student-centered teaching activities (Gu, 2005). With a focus in LSP on genre analysis, more attempts have been made to focus on rhetorical awareness and language functions (e.g., apologizing, negotiating, and enquiring). To this end, there is a growing focus on interdisciplinary and regional cooperation and collaboration, including resource sharing among institutions within the region. There is a growing realization that LSP classes need to focus on not only grammar and lexis but also register, discourse, and genre to increase the chances of Asian learners to enter and successfully thrive in the competitive job market.

Learners

Despite the improvements in and access to ESP teaching materials, teacher training, and teaching methodology, the role of language learners in determining the language-learning outcome cannot be overlooked. In this regard, two relevant and interrelated issues concerning Asian learners are noted: their characteristics and their language proficiency level. Most of the Asian learners, in general, are recognized to be relatively reticent and passive in language learning (Flowerdew & Miller, 1995; Ferris & Tagg, 1996; Turner & Hiraga, 1996). One of the factors claimed to contribute to this characteristic is a lack of the required general English-language proficiency (X. Cheng, 2000). Statistically, based on their TOEFL and TOEIC scores, Asian students did not seem to perform satisfactorily (Bunnag, 2005; A. Cheng, 2006). Hutchinson and Waters (1987) have noted that a solid understanding of basic general English should precede high-level instruction in ESP if the ESP programs are to yield satisfactory results. As shown, many LSP programs in Asia are generally suitable for higher proficiency levels. If Hutchinson and Waters's assumption is valid, and if Asian learners' proficiency in English, for instance, is not improving, developing ESP, or any of the five LSP programs, in Asia remains a significant challenge.

Conclusion

LSPs in Asia are quite distinct in the roles they play in the region. Clearly, English enjoys its status as the language for academic and occupational purposes. Chinese, Japanese, and Korean are also used as languages for occupational purposes because Asia has increasingly become a hub for business and economic development. Arabic is recognized mainly as a language for religious purposes, although it has experienced growing economic importance. Will these Asian languages be promoted to become languages for academic purposes like English? The answer to this question is likely to be negative. Whereas English is the primary international language used in the pursuit and publication of knowledge and the development of technology, it is hard to see these other languages in that light in the near future; one major barrier, in fact, is due to the unique characteristic of their writing systems. The fact that most Western countries have adopted the Roman alphabet puts Asian languages internationally at a disadvantage.

SEE ALSO: Genre and Discourse Analysis in Language for Specific Purposes; Methods for Language for Specific Purposes; Research Articles in English for Specific Purposes

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Language for Specific Purposes in Eastern Europe

ESTELA ENE

Historical Background

Eastern Europe is an area of constant change. Geographically, Europe's eastern border is along the Ural Mountains, which cross western Russia almost north to south. The western edge of Eastern Europe is a dynamic geopolitical concept. After World War II, throughout the Cold War era and until the fall of the Iron Curtain in 1989, Eastern Europe began with East Germany (the German Democratic Republic, since reunited with West Germany). Through the 1990s, Eastern Europe was understood as the space named the Eastern Bloc. The countries in it—East Germany, Poland, Hungary, Bulgaria, Czechoslovakia, Romania, Albania and Yugoslavia—were under communist regimes dictated by the Soviet Union.

Following the fall of the Berlin Wall, states (re)gained their autonomy and the European Union (EU) expanded. In the United Nations' definition, Eastern Europe includes ten countries: Belarus, Bulgaria, the Czech Republic, Hungary, Moldova, Poland, Romania, the Russian Federation, Slovakia, and the Ukraine. Today, especially on the region's western edge, the term "Eastern European" may be perceived as a derogatory allusion to the communist past and the developing economies of the area. Citizens and governments alike insist that the European spirit, more than its political tribulations, defines Eastern Europe.

This entry focuses on 12 countries most commonly categorized as Eastern European. Six are EU members (Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Slovakia); two are candidate states (Croatia and the former Yugoslav republic of Macedonia); four are not (Belarus, the Republic of Moldova, the Russian Federation, and the Ukraine).

Language Policies in the Eastern Bloc

Language policies in the Eastern Bloc (Eastern Europe before 1989) reflected the lack of freedom in the area. The collective experience was strikingly similar across the region. Before World War II, French and German were the languages the cultured elites would learn in order to study abroad, travel, or develop careers in business, politics, or science. After the war, Russian became the mandatory foreign language in school, but negative attitudes toward the imposed language prevented it from becoming a tool of international communication. Travel was restricted to the Eastern Bloc, so the need for other languages was limited. French was the second most commonly taught foreign language, partly due to a shortage of teachers of Russian along with an increased number of educated, well-off individuals dispossessed by the communists and forced to work, and partly due to tradition. Grammar translation and audiolingualism ruled, and the generally accepted philosophy was that one learns a foreign language for intellectual enrichment, without a practical specific purpose. Before the dissolution of the Eastern Bloc, German and English

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were gradually reintroduced in the curricula to appease international criticism and demonstrate competitiveness. This happened earlier in central Eastern Europe: Poland had a "more liberal communist government with more permissive policies toward English-language instruction" as early as 1960 (Reichelt, 2005).

Eastern Europe, the European Union, and LSP

The current EU has 23 official working languages—the official languages of the 27 member states, including some that are shared by two or more countries (German, French, Italian, Dutch, English, Swedish, Greek) and a few regional languages with official status (Basque, Catalan, and Galician). Eleven official EU languages are from central and Eastern Europe. The European Commission conducts its daily business in English, French, and German, its procedural languages. About 60 other indigenous and non-indigenous languages are spoken in the EU, which is now home to more than 500 million people.

The two most important processes with effects on language instruction and use in Europe overall are:

1. The *New Framework Strategy for Multilingualism*, developed by Leonard Orban from Romania and adopted by the European Commission (2005) to achieve "**The three core aims** . . . to encourage language learning, to promote a healthy multilingual economy, and to give all EU citizens access to legislation, procedures and information of the Union in their own language" (European Commission, 2006, p. 4).
2. The Bologna Process, initiated in 1999, whose "overarching aim [is] . . . to create a European Higher Education Area (EHEA) based on international cooperation and academic exchange that is attractive to European students and staff as well as to students and staff from other parts of the world" (European Higher Education Area, 2009).

These have influenced EU member and non-member states. The need and desire to interact with member states or gain EU admission has motivated countries to align policies. Thus, as a result of (1) above, most European countries require that two foreign languages be introduced to schoolchildren at an early age, one in primary school and the other in secondary school. As a response to (2), university curricula are becoming more uniform and instruction in English is increasingly common.

In November 2005, the Eurobarometer study on multilingualism (European Commission, 2006) surveyed 28,694 citizens from the 25 EU countries at the time, Bulgaria and Romania (since admitted), and Croatia and Turkey (currently candidate states). The study found that:

- 56% of EU citizens are able to hold a conversation in a language other than their mother tongue, and 28% in two languages (p. 8).
- The foreign languages spoken in the surveyed countries are "limited to" (p. 12): English (38%), French (14%), German (14%), Spanish (6%), and Russian (6%).
- In Eastern Europe, some of the smallest states have some of the highest percentages of citizens who can hold a conversation in at least one language other than their mother tongue (see Table 1 below). This may be due to the fact that they separated from former multilingual federations (Yugoslavia and Soviet states), and their size forces them to look outside their borders to fulfill their economic needs.
- As can be seen in Table 2 below, English is the most commonly spoken foreign language for specific purposes (LSP). In countries closer to Germany or Austria (the Czech Republic, Hungary, and Slovakia), German has a slight lead over English or ties with

Table 1 Percentages of respondents who can speak more than their mother tongue, by country (adapted from European Commission, 2006, p. 9)

	At least one language	*At least two languages*	*At least three languages*	*None*
Slovakia	97	48	22	3
Latvia	95	51	14	5
Lithuania	92	51	16	8
Malta	92	68	23	8
Slovenia	91	71	40	9
Estonia	89	58	24	11
Cyprus	78	22	6	22
Croatia	71	36	11	29
Czech Rep.	61	29	10	39
Greece	57	19	4	43
Poland	57	32	4	43
Bulgaria	59	31	8	41
Romania	47	27	6	53
Hungary	42	27	20	58
Turkey	33	5	1	67

Table 2 Languages spoken other than the mother tongue, by country (adapted from European Commission, 2006, p. 13)

Czech Rep.	*Estonia*	*Greece*	*Cyprus*	*Latvia*
German 28%	Russian 66%	English 48%	English 76%	Russian 70%
English 24%	English 46%	German 9%	French 12%	English 39%
Russian 20%	German 22%	French 8%	German 5%	Latvian 23%
Lithuania	*Hungary*	*Malta*	*Poland*	*Slovenia*
Russian 80%	German 25%	English 88%	English 29%	Croatian 59%
English 32%	English 23%	Italian 66%	Russian 26%	English 57%
Polish 15%	Other 11%	French 17%	German 19%	German 50%
Slovakia	*Bulgaria*	*Croatia*	*Romania*	*Turkey*
English/German 32%	Russian 35%	English 49%	English 29%	English 17%
Russian 29%	English 23%	German 34%	French 24%	Turkish 7%
Czech 25%	German 12%	Italian 14%	German 6%	German 4%

it. Russian is strong in the former Soviet states (Estonia, Latvia, Lithuania) and in Bulgaria, whose native language and cultural heritage is Slavic.

- 47% of those surveyed who know at least one foreign language indicate that they use it every day, and English occupies the first place among the languages used daily, followed by Spanish and German (p. 17).
- The purposes of a language other than the mother tongue are, from most to least frequent: travel; work; personal satisfaction; a better job in one's own country or another; understanding people from other cultures; study in another country (p. 36). "When **the prospect of working in another** country is at stake, Lithuanians (45%), Estonians (43%), Slovakians (42%) and Romanians (42%) are the most numerous to be motivated. The possibility of **studying abroad is the most motivating factor for** Cypriots (31%) and Estonians (29%)" (p. 36, emphasis in original). Europeans perceive English as the most useful language for one's professional advancement.

Overall, Eastern European countries "look at English as the window to the West and embrace English as a means of communication" (Ustinova, 2005, p. 240). Due to their historic, geopolitical, and economic context, they have also strengthened the status of German, French, Spanish, and Russian.

Documented Uses of English for Specific Purposes (ESP)

The sections below provide a review of the ESP/LSP domains represented in the widely accessible literature. Generally, Eastern Europe is more involved in practicing LSP than theorizing about it. An uneven, limited, and possibly unrepresentative amount of research transpires from the area, with some countries and fields of interest well represented and others not at all, although institutional Web sites suggest intense LSP/ESP activity in language programs.

Throughout the region, many professions cannot be imagined without English: business people and their assistants, computer scientists, academics, diplomats (Dimova, 2005; Ustinova, 2005). Graduate and undergraduate programs in business and legal English are some of the most well-established in further education, even at smaller institutions, though the same is not true for research on business and legal English.

Some research exists on English for commercial purposes. Dimova (2008) studied the effects of English on commercial naming by analyzing over 9,000 business names from the Macedonian Yellow Pages. The analysis was also undertaken in Russia, Slovenia, Bulgaria, and Poland (Griffin, 1997, 2001; Schlick, 2002; Ustinova, 2006). English was the dominant foreign language in commercial naming in large cities and in businesses related to computers and electronics, followed by fashion and hospitality. Bielenia-Grajewska (2009) found universal (Lakoff & Johnson, 1980) and context-specific metaphors in a corpus of investment banking language materials in English, German, Spanish, and Polish.

English for academic purposes (EAP) topics from academic and scientific writing are the most frequent in the literature about ESP in Eastern Europe. Some studies examine instruction, for example, in Poland (Reichelt, 2005) and in Hungary (online and in the classroom; Futász & Timár, 2006); most are genre analyses in the contrastive rhetoric framework (Kaplan, 1987; Connor, 2002). Petrić (2005) from Serbia conducted a case study of Russian students' academic writing in English, and found that at the beginning of a semester the students' writing patterns were "Slavic"—tolerant of digressions, with less subsectioning and a gradually developed thesis (pp. 215–16). Godó (2008) analyzed Hungarian and North American college students' argumentative essays and concluded that in "Hungarian education, similarly to Czech and Polish contexts . . . the focus is on preserving and passing on the intellectual heritage of the community without re-interpreting

or re-evaluating it" (p. 85). Vassileva (2001) examined English, Bulgarian, and Bulgarian English research articles in linguistics, looking at the use of hedges and boosters. Her goal was to "facilitate the teaching of academic writing in English to Bulgarians, but also to appeal for a better understanding and tolerance of culture-specific features with a view to preserving cultural identity when using English as the international language of academic communication" (p. 83).

The field of translation/interpretation contributes to the development of ESP studies and applications substantially. Alongside language teachers, translators and interpreters are considered instrumental in creating a mobile multilingual society, and highlighted as such in EU language policies (European Commission, 2005, p. 10). Some studies focus on issues of teaching English for translation/interpretation. Yankova (2008) sheds light on the sophisticated translation mechanisms of the European Commission and the need for translators/interpreters to master languages for legal purposes. Creangă (2008) recommends process- and task-based approaches to translation training, collaboration with subject matter experts, and authentic projects. Micic (2008) advocates that translation exercises should be used to teach medical professionals to recognize different medical genres in English and Serbian.

Translators/interpreters and editors also transfer insights from their work to applications in the teaching and practice of scientific writing (Mišak, Marušik, & Marušik, 2005). Professional organizations such as the European Association for Research on Learning and Instruction, the European Association of Languages for Specific Purposes, Mediterranean Editors and Translators, and the European Association of Science Editors, well attended by Eastern European scholars, analyze cross-cultural patterns to prepare researchers to publish in English-language scholarly journals from many fields. All of the above publications and activities use ESP as an object of study and a means of communication, thus contributing to the development of ESP on multiple levels.

ESP Instruction

English teachers seem to have the resources and opportunities to enhance their linguistic and pedagogical abilities, some of which would affect the teaching of ESP. All Eastern European countries are TESOL and/or IATEFL affiliates, or have equivalent associations for teachers of English which maintain increasing membership, Web sites, conferences, and/or journals. Many universities publish journals partially or entirely in English. The British Council and US Embassies have been actively developing language teaching services and libraries, and promoting study abroad and exchange programs. English native-speaking lecturers and professors are no longer rare, and English majors are often expected to attain "near-native English speaking standards" (Reichelt, 2005, p. 223). In Macedonia, Peace Corps volunteers provide programs on English-language teaching and business English (Dimova, 2005, p. 195). The more developed a country, the more resources are available.

Instructional experiences vary. Historic overviews of abundant research in language teaching in Poland from 2000 to 2006 note state-of-the-art practices in teaching and research (Siek-Piskozub, Wach, & Raulinajtys, 2008). On the other hand, some Hungarian authors are skeptical about the quality of ESP instruction offered in response to increasing demand: "While the business community is clamoring for better ESP skilled graduates, our higher educational institutions . . . simply provide students with L2 classes towards the students obtaining an *intermediate level state accredited language certificate*" (Tar, Csobán Varga, & Wiwczaroski, 2009, p. 2, emphasis in original). Anecdotal and research accounts acknowledge that teachers may face difficulties mastering communicative techniques, speaking and presentation skills, and lexical and grammatical knowledge. In universities, ESP instruction

is often provided by instructors who are classically trained in English language, literature, and pedagogy, who educate themselves about ESP prior to or while teaching a course, and often have to spend a considerable amount of time on solving the students' basic general language needs first. In Macedonia, universities require that non-English majors take one or two semesters of English (Reichelt, 2005, p. 223); in Russia, three to five (Ustinova, 2005); in Romania, two; and in Serbia, the Belgrade University School of Medicine requires two years of English (Micic, 2008). Officially, courses may be tailored to any specific purpose. To reach the desired competence, many students supplement their studies in private language institutes or with private tutors (Reichelt, 2005, p. 223).

English-medium universities are a growing trend in higher education in Eastern and Western Europe. Such educational environments contribute to the spread and internationalization of ESP by teaching and practicing it. In Macedonia, private colleges and universities with English as a partial or the only language of instruction have existed since 2001 (Dimova, 2005, p. 196). In Romania, the Romanian-American University, with partial English instruction in journalism, economics, management, finance, law, tourism, and other subjects, has been operating since 1991. Hungary's capital, Budapest, has been the home of the English-medium Central European University since 1991. CEU students come from over 100 countries from five continents, and the faculty from 30 countries. Accredited in Europe and the US, CEU offers graduate degrees in social sciences, the humanities, law, and management.

Is English a Threat?

Does the current dominance of English threaten to shut out individuals, countries, or professions that prefer another language? Is it robbing other languages of scientific registers? Bibliometric research has revealed repeatedly that the above concerns exist, and scholars have to pay more to study another language, hire editors, or spend a long time redrafting their work in order to meet academic demands. Kourilova (1998) and Curry and Lillis (2004) express concerns in their studies of Slovak medical researchers' English-language submissions to biomedical journals, and of Hungarian, Slovak, and Spanish psychologists, respectively. However, Ferguson (2007) finds that non-native users of English get published as much as native speakers, and warns of a more worrisome correlation between a society's wealth and its presence in the international publication arena. In Eastern Europe, many economies are yet to become stable.

Other LSPs

German, French, Spanish, and Russian are used primarily for professional and vocational purposes, and only secondarily for international communication. Their use is related to increased international communication, trade, and migration to the West, as well as to the intellectual traditions and geopolitics explained above. These languages are represented—though less strongly than English—in academic programs, professional organizations, cultural centers, and government agencies. From the French perspective, Blin and Péchenart (2007) examine French for professional purposes and advocate a pedagogical shift toward functional and content-based approaches. Eckerth and Tschirner (2009) reflect on the changing status of German in the EU. As for Russian, "While [it] lost the battle for dominance in East European countries, its position is still strong within the Russian Federation" (Ustinova, 2005, p. 240), although within two decades English may replace Russian there, too, as the young are becoming more reluctant to learn Russian (p. 251).

Conclusion

Overall, in Eastern Europe, LSP and especially ESP have progressed spectacularly. LSP's virtual non-existence during the communist era has been replaced by the global trend toward ESP, while the increased popularity of German, French, Spanish, and Russian have enhanced their status. Eastern Europe remains an area of intricate complexities that will be interesting to observe as these countries continue to redefine themselves in response to local and global needs.

SEE ALSO: Common European Framework of Reference; Corpus Analysis of English as a Lingua Franca; Corpus Analysis of English as a World Language

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Language for Tourism

MIGUEL F. RUIZ-GARRIDO AND ANA MARÍA SAORÍN-IBORRA

Language for tourism has developed relatively recently as a field within languages for specific purposes (LSP), joining other more widely known and longer-established specific language disciplines such as business, science and technology, and academic purposes. Owing to the socioeconomic importance of tourism and its business nature, the language for tourism has often been included within the language for business. In fact, in some tourism dictionaries (e.g., Reily-Collins, 1996; Alcaraz Varó, Hughes, Campos Pardillo, Pina Medina & Alesón Carbonell, 2000), apart from the specific semantic fields related to tourism (catering, accommodation, weather, art, or culture), some sections are devoted to more purely business fields (accounting or finance). However, many scholars claim there is distinct specificity within the language of tourism (e.g., Dann, 1996; Gotti, 2006), and thus it warrants separate treatment. Although English seems to be the most widely researched language in the field of tourism, other languages have also been studied, such as Spanish and French, among others (see Dann & Johanson, 2009).

Defining language for tourism is not easy. Nigro (2006, p. 187) notes that language for tourism has been classified in different ways, as for example the language of promotion (Dann, 1996) or the language of consumerism (Moeran, 1983). Thus, the attempts to define language for tourism reveal that it is a multifaceted term reflecting both complexity and heterogeneity; it mirrors both the professional and contextual structure where it is used. According to the World Tourism Organization, tourism comprises

> the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited. (2007, p. 1)

This industry definition substantiates the interdisciplinary character of language for tourism and highlights its diverse features (lexical/semantic, syntactic, etc.). Consequently, in order to describe this specific type of language, it is first necessary to explain the professional context of tourism.

The Complex Domain of the Tourist Industry and the Language for Tourism

The linguistic features of tourism discourse are strongly connected to the diverse services of the tourism industry, which is divided into many independent businesses with different organizations, aims, and types of services offered (e.g., Aguirre Beltrán & Hernández, 1985; Youell, 2000; Calvi, 2001).

The tourism industry covers any activity carried out by people traveling for any reason (leisure, business, and visiting relatives and friends) as well as any services visitors/tourists are offered during their stay. Ruiz-Garrido and Saorín-Iborra (2006, p. 10) summarize some complementary divisions in this field, including

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- services offered and related industries: accommodation (hotels, hostels, campsites, resorts), food (restaurants, pubs, meals, gastronomy), transport, travel agencies, tourist information centers, leisure (guided tours, tourist attractions, tourist development, promotion), tourist operators, etc.;
- stages in a trip, including tourists' needs: initial arrangements and journey (information, buying/booking, transport), customs (document control), and services at destination (transport, accommodation and meals, information, attractions, leisure, buying, public services); and
- jobs: professionals managing and running the different tourist services (hotel managers, market researchers) and professionals with a very specific training (tour guides, flight attendants, hotel concierges, skiing instructors).

In order to understand the complexity of the field of tourism, it is important to consider the roles of the client and the product of the tourist industry. On the one hand, the tourist product is rather a service, something intangible, unlike many business-related products (e.g., Dale & Oliver, 2000; Holloway, 2002). On the other hand, it is the client who determines the success or failure of the tourist businesses/services. Considering some authors' works (Calvi, 2006; Gotti, 2006), specialists in the tourism industry may be involved in three main communicative situations: (a) specialist–specialist communication, (b) specialist–non-specialist communication, and (c) specialist–client communication. The first situation happens when "the expert addresses other specialists to debate issues within his professional field, to discuss a project, report results, explain the use of equipment, etc." (Gotti, 2006, p. 20). The second situation is when specialists prepare informative documents addressed to non-specialists or semi-specialists, such as textbooks or articles in specialized newspapers/magazines. Finally, the third situation, probably the most common one, is when the communication between clients/non-specialists and specialists happens and in which experts need to adapt their discourse to the clients' level of expertise, having to use everyday language together with some specialized expressions (e.g., in travel agencies, guided touring, and popular newspapers/magazines). Personal contact with tourists/travelers stands out as a basic difference between the language for tourism and professional communication in general (Calvi, 2001). Thus, customer care is perhaps the most important task within the tourist industry, since the quality of services the customers receive will determine the future of any tourist business. It is for these reasons that the distinct features of the language of tourism require a special focus and investigation.

Main Features of the Language for Tourism

Dann's (1996) sociolinguistic study is considered by many the seminal work about the language for tourism. He considers this specialized language mainly as a promotional act with a discourse of its own, and is typically limited to the professionals and customers who use it. He emphasizes that this language tries to persuade, attract, and seduce through images, written texts, and audiovisual means (that is, through multimodal discourse), to entice thousands of people to become customers. Research literature on the issue validates this approach as the most common view of the language for tourism (e.g., Cappelli, 2006), although purely informative and objective materials for tourists and professionals also exist within this field.

Dann (1996) describes these promotional and persuasive characteristics of the language for tourism according to four theoretical sociolinguistic perspectives: authenticity, strangerhood, play, and conflict perspectives. Authenticity and the language of authentication refer to the real sociocultural symbols tourists look for when visiting a place (e.g., *Tapas isn't Spain's national dish, but rather Spain's way of life* [www.in-spain.info]). Strangerhood

and the language of differentiation deal with tourists' desires to experience something new, a dissimilar reality from their own (e.g., *There is something unique about Istanbul. It is the only city in the world that straddles two continents – Europe and Asia* [http://www.bloggersbase.com/travel/unique-istanbul/]). The play perspective and the language of recreation focus on tourism as a game and tourists as players looking for pleasure and fun (e.g., *Sun, water and fun: the Spanish coast is the perfect place to enjoy water sports* [http://www.spain.info/en_US/disfruta/)]). Finally, the conflict perspective and the language of appropriation refer to the contrast tourists try to find when traveling (e.g., *Within the borders of a single country, you will find savannahs rich with big game, timeless cultures unchanged by the modern world,* . . . [http://www.magicalkenya.com/]). Those perspectives and the language they represent do not necessarily appear individually but they are often combined through the use of different linguistic techniques. That way, the motivational effect on the tourist is achieved.

As Gotti (2006) notes, disciplinary variation is based on lexical/semantic, morphosyntactic, textual, and pragmatic features. Therefore, the knowledge and proper combination of the different competences involved in a language (linguistic, discourse, functional, etc.) are key matters to develop accurate communicative situations between professionals and tourists/visitors (Ruiz-Garrido & Saorín-Iborra, 2006).

In terms of linguistic competence, vocabulary is probably the linguistic aspect that differs most significantly from other LSP disciplines like business, and thus requires the greatest attention from teachers and students alike. Most words used in tourism are considered semi-technical; that is, the field draws on everyday vocabulary, however these words either appear more frequently or with a more specific meaning than typically used in everyday contexts (e.g., *finger*, a part of the hands or a long thin-shaped area of land, whereas at the airport it's the walkway used to embark to or disembark from the aircraft; *package* used in combination with other daily terms can form specialized expressions, such as *tour package*, *holiday package*, *combined package*). According to some scholars (Dann, 1996; Calvi, 2001; Cappelli, 2006; Gotti, 2006), some characteristic lexical/semantic features of the language of tourism include

- choosing appropriate keywords that draw the customer's attention (e.g., ***perfect*** *seaside holidays*, ***magnificent*** *seafood restaurants*) or other language techniques such as using words in the original language;
- using certain expressions which mean only one thing in specific contexts (monoreferentiality, e.g., *boarding card*, *tour operator*);
- expressing concepts in the shortest possible form (i.e., blending, acronyms, e.g., *campsite* vs. *camping site*, *ID* vs. *identity document*);
- creating specialized new terms derived from general and common language, for example through metaphorization (using similes and metaphors, e.g., *island-hopping*, *package holidays*);
- borrowing terms from the specialized language of closely related fields, such as economics (e.g., *handling agents*, *seasonality*), geography (e.g., *border*, *gorge*), history of art (e.g., *chancel*, *choir*), craftsmanship (e.g., *handmade*, *pottery*), and transport (e.g., *ground staff*, *open-jaw ticket*); and
- using emphatic and evaluative lexis, including emphasizers (e.g., *breathtaking scenery*, *exquisite service*), superlative forms (e.g., *the best option*, *the most peaceful of all the lakes*), or intensifier adverbs (e.g., *totally unspoiled*, *a very good buy*). This is called *hyperbolic language* by Alcaraz Varó et al. (2000).

The syntax of the language for tourism, also within the linguistic competence, is characterized by

- compact syntactic structures by means of affixes, simplifying sentences by omitting unnecessary words or using elliptical forms to express conciseness (e.g., *self-catering accommodation* vs. *accommodation where you can cook your own meals*, *pre-arranged car rental* vs. *car rental which has been arranged previously* [Gotti, 2006, pp. 28–9]);
- temporal contrast (e.g., *The city does not have outstanding attractions, but it has some excellent restaurants and many nice shops* [Cappelli, 2006, p. 62]);
- informal language structures and conversational style (called *ego-targeting* by Dann [1996], e.g., *We'll save you a seat. Call . . . , your very own . . .* [Cappelli, 2006, p. 62]);
- tense switching (e.g., *During . . . times, the* [name] *family turned the mansion into a girls' boarding school, . . . In the main house hangs a Rembrandt . . .*), the historic present (e.g., *George Washington is elected President of and presides over the Federal Convention of 1787* [http://presidentgeorgewashington.wordpress.com]), or old-fashioned accents to construct the typical "magic effect" which is common in tourism promotional material; however, this property can also be created visually or through certain lexical choices (names of hotels, attractions, etc.); and
- imperative mood (e.g., *Don't miss . . . , Come and visit* [country]), rhetorical questions (e.g., *Are you looking for accommodation?*, *Travelling with children?*), or negative interrogatives (e.g., *Why not discover* [country] *through its sea beds?*, *Isn't it time to treat yourself?*) to build the concept of language for tourism as language for social control (Dann, 1996).

Textual features are mainly concerned with text genres and their textual organization. For instance, Cappelli (2006) mentions the *testimony* technique (other tourists' personal opinions about a destination or service from their own experience), which is used in certain written genres to avoid impersonality and the monological features of promotional language. Although several oral communicative situations are of great importance in the tourism sector (customer attention, guided touring), most research has focused on common written genres like tourist guides/guidebooks, articles in specialized journals and general magazines, brochures and other advertising materials, commercial and promotional Web sites, itineraries, professional correspondence, trip reports, reviews, or travelogues. Cappelli (2006, p. 95) arranges these genres according to what she calls the *tourist cycle*, following Dann's (1996, p. 140) stages of a trip (pre-trip, on-trip, post-trip). Apart from verbal techniques, those genres also include visual techniques (color, format, visual cliché, and connotation procedures) or verbal and visual techniques combined (puzzles, temporal contrast, collage, ousting of competition, infraction of taboo, and significant omission) (Dann, 1996); these elements produce similar effects on the tourists just as the above lexical/semantic and syntactical features are designed to do.

Along with the multidisciplinary nature of the language for tourism, Balboni (1989) states that the language for tourism is made up of a set of interrelated microlanguages which can be more or less relevant in each involved professional sector: the microlanguage for hospitality and catering, for international bureaucracy, for transportation, or for the history of art. Likewise, Dann (1996) refers to different registers found in the language for tourism when promoting certain market segments: register of nostalgia, of health, of food and drink, and of ecotourism.

Sociolinguistic and pragmatic competences are also essential because unique situations may require distinct linguistic performances as tourism professionals encounter diverse tourists' needs. Therefore, being aware of linguistic markers of social relationships, politeness conventions, various registers, or even dialectal variations is a necessity. The main attribute of contemporary tourism is its international character, which requires today's professionals to possess a broad knowledge base for all sorts of unpredictable situations

that they may encounter in daily tasks so that they can respond in culturally appropriate ways—often across different cultures and languages.

This international dimension, together with the wide range of professional fields included in the tourism industry, leads to another pertinent feature: the cultural factor (Dimanche, 1994). Although this element is also present in other specialized languages, it is within the language for tourism that the intercultural competence is especially relevant (e.g., Calvi, 2001). Calvi (2001) indicates four components of the intercultural competence tourist professionals need to use: identify and overcome the stereotypes of the foreign culture, cultural awareness, communicative and pragmatic competence, and knowledge of diverse fields and the ability to relate this knowledge to the appropriate linguistic elements.

Overall, the language for tourism has several peculiarities that make it different from other specialized languages. Although it shares some characteristics with other LSPs (such as the language for business), the particular features highlighted above are unique as a result of the intrinsic complexity of the tourist industry.

SEE ALSO: English for Business; English for Occupational Purposes

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Language Ideology and Public Discourse

TOMMASO M. MILANI

Over the past two decades, the notion of language ideology has gained considerable momentum in different strands of scholarship that aim to unpack how language works in society. Language ideology has its roots in North American linguistic anthropology as a concept within which to explore the "mediating links between social forms and forms of talk" (Woolard, 1998, p. 3). Whilst it is axiomatic for linguists that "all languages are equal" in terms of their meaning-making potential and their worth as objects of academic inquiry, a cursory glance at any sociolinguistic environment in the "real world" will reveal a different scenario—one in which linguistic phenomena are unequally ranked according to different meanings and values, so that, say, "language" X is believed to be lexically richer, more logical or beautiful, and thus better suited for wider communication within a polity than "dialect" Y. It is precisely the belief systems underlying such social processes of naming, signifying, and valorizing linguistic practices that the notion of language ideology aims to capture. This entry will begin by clarifying the notion of language ideology, followed by a reflection over the notions of public versus private in relation to language ideology. The entry will conclude with some current developments and directions in language ideology research.

Language Ideology and Public Discourse

According to Silverstein, who is possibly the first scholar who put forward a definition of the term, language ideology consists of "sets of beliefs about language articulated by users as a rationalization or justification of perceived language structure and use" (Silverstein, 1979, p. 193). Focusing less on rationalization, and highlighting instead the sociocultural situatedness of beliefs about language, Irvine claims that language ideology is "the cultural (or subcultural) system of ideas about social and linguistic relationships, together with their loading of moral and political interests" (Irvine, 1989, p. 255). Kroskrity, on the other hand, puts more emphasis on the perspectives of specific individuals and institutions in ideological production, suggesting that language ideology encompasses the "beliefs, feelings, and conceptions about language structure and use that . . . index the political economic interests of individual speakers, ethnic and other interest groups and nation states" (Kroskrity, 2002, p. 1). These indexical linkages between "social" and "linguistic" relationships have been made more precise by Woolard, who states that "ideologies of language are *not about language alone*. Rather, they envision and enact ties of language to identity, to aesthetics, to morality, and to epistemology" (Woolard, 1998, p. 3; emphasis added). In sum, the notion of language ideology aims to grasp the belief systems through which linguistic phenomena are invested with specific meanings and values, through linkages to broader sociocultural categories.

The words "ideas" and "beliefs" might convey that we are dealing with some kind of inner states lodged somewhere in a speaker's mind. Whilst the cognitive dimension of such ideas and beliefs about language should not be dismissed a priori, Cameron reminds

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us that ideologies are ultimately "social constructs: they are ways of understanding the world that emerge from interaction with particular (public) representations of it" (2003, p. 448). Here, the terms "representations" and "public" are key.

If we agree that research on language ideologies aims to understand how linguistic phenomena are imbued with particular meanings and values in discourse, and become over time culturally scripted in conventional ways, representations *about* language—that is, what people overtly say and write about languages or even how they visually represent them—provide the analyst with the most patent and fruitful repository of beliefs about language. In a similar vein, a focus on *public* representations is motivated by the accessibility of these texts (see below, however, for a reservation). Furthermore, a focus on public, rather than private, representations is of political relevance because of the *potential impact* that that such representations might have for a mass audience (though see below for a problematization of the public/private dichotomy).

Against this backdrop, it is perhaps unsurprising that studies of language ideologies have concentrated largely on public debates about language, debates which were often orchestrated by different media providers in different contexts (see Blommaert & Verschueren, 1998; Blommaert, 1999; Blackledge, 2005; Johnson & Ensslin, 2007; Johnson & Milani, 2010; Milani, 2010). This leaves us with the question of the extent to which language ideologies that are circulated in the public arena are reproduced or contested in apparently more mundane, private contexts (see Kroskrity, 2002, for a similar observation).

Language Ideologies: Differences and Commonalities

It is a truism that language ideologies can assume very different guises in different contexts. For example, in 2010, a friend of a friend candidly disclosed at a dinner table in Johannesburg, South Africa, that he firmly believed that isiZulu is a rudimentary and deficient language, unlike his "home language," English, which in his opinion is full-fledged, complex, and refined. Nearly at the same time, but thousands of kilometers northwards, the ultra-right-wing Swedish party Sveridemokraterna (lit. "Swedish Democrats") proposed as part of their electoral manifesto the abolition of mother-tongue instruction in Swedish schools. Rickard Jomshof, the party's chairperson on educational matters, put it clearly in an interview with a Swedish broadcaster, available on YouTube in February 2011: "in Swedish schools one speaks Swedish irrespective of one's origin; . . . if you come from abroad and you have the right to stay in the country, Swedish shall be your mother tongue; it is Swedish that you shall learn". On a very different note, on the Web page of one of the largest media projects about language in the UK, financed by the BBC, one commenter stated that, "It has been suggested that men think logically, whilst women think emotionally. With neither understanding the other. Gordon from Boston, UK" (http://www.bbc.co.uk/voices).

Of course, thirty years of scholarship in applied linguistics have proved these statements to be "myths," in Cameron's (2007) interpretation of the term. They are not just "widespread but false belief[s]" (Cameron, 2007, p. 3). They are also stories that "people tell in order to explain who they are, where they come from, and why they live as they do. Whether or not they are 'true' . . . , such stories have consequences in the real world. They shape our beliefs, and so influence our actions" (Cameron, 2007, p. 4). A quick glance at the linguistic structure of isiZulu will reveal that this language is far from being rudimentary and indeed shows a high degree of grammatical complexity. What is interesting is not that the pronouncement about isiZulu's simplicity is false, but that it is the materialization of the legacy of apartheid South Africa and its devaluing of African languages—ideological baggage that is deeply entrenched in many South Africans irrespective of race. Similarly,

research on bi/multilingualism has convincingly illustrated the benefits of mother-tongue and bilingual education (see Baker, 2006, for an overview). Regardless of this scientific evidence, the statement made by the representative of the Swedish Democrats shows the currency in political contexts of the belief that there should be only one language as the medium of instruction (see Cummins, 2008). Such a view is not innocuous because it is deeply bound up with Romantic ideas about the importance of the homogeneity of the nation for the good functioning of society (see also Blommaert & Verschueren, 1998). This, in turn, leads to the discrediting of minority languages and multilingualism to the advantage of one "national" language. Finally, research on language and gender has demonstrated that there are more similarities than differences in the ways in which men and women speak (see in particular Cameron, 2007). However, the comment posted on the BBC Web site is an example of the reproduction of the belief that "men are from Mars and women are from Venus" (Gray, 1992), and that gender differences lead to an unavoidable incomprehension between the two sexes. Such a conviction about miscommunication is not harmless, but is strategically invoked by men because "[p]retending not to understand what someone [i.e., women] wants you to do is one way to avoid doing it" (Cameron, 2007, p. 89).

Notwithstanding the differences in the ideological underpinnings of the above statements, what is crucial to highlight is that language ideologies share deep-rooted traits. With this in mind, Irvine and Gal (2000) have proposed three semiotic processes that could be taken as "universals" of language ideologies. Through these processes, the authors set out to explain "similarities in the ways ideologies 'recognise' (or misrecognise) linguistic differences, and how they locate, interpret, and rationalize sociolinguistic complexity, identifying linguistic varieties with 'typical' persons and activities and accounting for the differentiation among them" (Irvine & Gal, 2000, p. 37). These processes are *iconization*, *fractal recursivity*, and *erasure*. First, through iconization, "linguistic features come to depict or display a social group's inherent nature or essence" (Irvine & Gal, 2000, p. 37). The second process, fractal recursivity, involves "the projection of an opposition salient at some level of relationship onto some other level" (p. 37). Finally, erasure is simplification by rendering certain voices inaudible—in other words, certain stories are not told (p. 39).

Irvine and Gal exemplify iconization, fractal recursivity, and erasure by looking at a few historical cases from Southern and Western Africa as well as the Balkans. Most notably, more recent studies have testified to the cross-cultural and contemporary relevance of these semiotic processes (see, e.g., Stroud, 2004; Blackledge, 2005; Milani, 2010; Androutsopoulos, 2010). To take but one example, Blackledge (2004, 2005) has analyzed media texts and policy documents about multilingualism in the UK in the wake of the social unrest—the so-called "race riots"—which broke out in 2001. The main point put forward by Blackledge is that a perceived or presumed "lack of English" among migrants is "iconically associated with a predisposition to be *keen* to join in with violent criminal activity" (Blackledge, 2004, p. 79; emphasis in original). Blackledge (2004, pp. 29–30) further shows how an opposition at a linguistic level (proficiency in English vs. lack of English language skills) recurs on other dimensions (e.g., presence vs. lack of social cohesion; social order vs. disorder). What is erased from this picture is the wide social, ethnic, linguistic, and cultural diversity that characterizes migrants.

Public Versus Private?

Public discourse is perhaps one of the fuzziest notions in academic writing (see Wodak & Koller, 2010). It is difficult to dispute that a Web page on an Internet site is an example of public discourse. This is insofar as such a Web page is potentially available to everyone

who has access to a technological device which is connected to the Internet. But does a conversation in a queue at an electoral ballot count as public discourse? What about an exchange between a teacher and their pupils in a state school?

From a structuralist point of view, one could argue that the notion of "public" derives its meaning *ex negativo* from its opposite, "private." However, Fairclough (1995) reminds us that it is a difficult, if not impossible, task to clearly define the boundaries between "public" and "private" in late-modern societies. Not only has there been a progressive "conversationalization" of public discourse in such a way that public texts have become increasingly more reminiscent of private interactions, but both old and new media have also contributed to making private and intimate events available for broader audiences (see, e.g., video clips on YouTube and Xtube). To this, one should add that what counts as "public" versus "private" is often dependent on the role and choice of the researcher vis-à-vis the object of inquiry. For instance, a conversation between a teacher and their pupil in a state school would remain private until a researcher/ethnographer observed it, reported it in a publication or conference presentation, and thereby made it known to a wider academic audience.

These liminal spaces at the intersections between public and intimate constitute one of the most important challenges for language ideology research. Too strong a focus on representations of language in media texts and policy documents may not give a full picture of language ideologies in contemporary societies. In fact, large-scale, societal "macro" discourses may fail to fully capture the social life of language (see Agha, 2007), a life which also involves the voices of those who are often the object of media firestorms but who can only be heard in more "intimate" contexts. And these are contexts which, unlike many media texts, are not easily accessible "with a click of the mouse," but require more time-consuming involvement and negotiations on the part of the researcher.

For example, Jonsson and Milani (2010) have recently analyzed the ways in which a group of adolescents of multiethnic descent in suburban Stockholm employ a range of linguistic resources in school settings, from more standardized language to a variety of different youth styles. Whereas dominant media discourses in Sweden are often built on a dichotomy between "good" "standard Swedish" and "bad" "youth language," some of the school interactions documented by Jonsson and Milani bear witness to a more complex reality, one in which adolescents do not just reproduce dominant beliefs about standard language versus youth styles, but also contest and subvert such dominant ideologies in mundane daily interactions. This might not be particularly new in light of Foucault's (1978, p. 95) observation that where there is power there is resistance. What is more unexpected is that this is a form of agency that does not manifest itself in outright disagreement, but takes more subtle forms of parodic imitation and mimicry (see also Rampton, 1995; Blackledge & Creese, 2010). Interestingly, the young men in Jonsson and Milani's (2010) study indeed employ standard Swedish as an index of being a good student, on the one hand, and youth styles as an index of unruly behavior. However, the usage of standard Swedish is not always serious but may be mocking. This leads the authors to conclude that the adolescents in the study are staging a Bakhtinian carnival that is "both critical of social order and complicit with it" (Wolfreys, 2004, p. 27). In fact, these adolescents skillfully mobilize the dichotomy between standard Swedish and Rinkeby Swedish, together with the associations related to them. The parodic keying of the interaction subtly disturbs this order, however, not least because parody is never sheer imitation of an original but "simultaneously change[s] the original through recontextualization" (Pennycook, 2007, p. 587).

Of course, one might wonder to what extent "local practice [can] challenge the hegemony of national and global policy" (Blackledge & Creese, 2010, p. 6). Whilst it was beyond the remit of Jonsson and Milani's (2010) analysis to answer this question, what their study

clearly illustrates is that local practices not only challenge what Cummins (2008) calls the "two-solitudes assumption," namely a widespread belief that languages should be learned separately and one after the other; these practices also question the very notions of "authenticity" and "linguistic ownership." Analogous to the "drag performances" studied by Judith Butler (1990), the adolescents' parodic usage of standard Swedish artfully unsettles a well-established language ideology according to which only "ethnic Swedes" are "authentic" speakers who own the Swedish language.

Moving Beyond Language: Current Developments in Language Ideology Research

Apart from engaging with the interstices between public and private spaces, research on language ideology and media discourse has recently foregrounded other important issues, one of which is the imperative to go beyond *language* (in the narrow sense of written and spoken codes), thereby incorporating and expanding upon recent theoretical insights into visual communication and critical multimodal discourse analysis (see in particular Johnson, 2007; Blackledge, 2010; Johnson, Milani, & Upton, 2010).

In this respect, it is useful to remind ourselves that "written texts in contemporary society are increasingly becoming more visual . . . , not only in the sense that newspapers, for instance, combine words with photographs . . . , but also because considerations of layout and visual impact are increasingly salient in the design of a written page" (Fairclough, 1995, p. 17). Without denying the importance of the visual in contemporary societies, Machin is of the opinion that it is not so much that communication is becoming more visual as that "the previously segregated role of the different semiotic modes has changed. Formerly, we used the different modes in isolation" (2007, p. 16). Taking an even stronger position, Kress and van Leeuwen proposed that "[l]anguage always has to be realized through, and comes in the company of, other semiotic modes" (1998, p. 186), concluding that "any form of text analysis which ignores this will not be able to account for all the meanings expressed in texts" (p. 186).

Against this backdrop, if we similarly want to account fully for the processes through which language ideologies operate in late modernity, we cannot afford to overlook the growing field of research into multimodality (Kress & van Leeuwen, 2006), that is, the dynamic interplay between the verbal, the visual, and other semiotic modes. Put differently, notwithstanding the particular theoretical and methodological approaches one might want to adopt, research on language ideologies cannot be confined to the "purely linguistic" elements of a text. For example, without accounting for the relationship between the verbal and the visual, it would have been impossible for Johnson et al. (2010) to unpack the different language ideological layers underpinning the home page of a BBC Web site (www.bbc.co.uk/voices) dedicated to celebrating the linguistic and ethnic diversity of the UK. By analyzing the home page of the Voices Web site through a multimodal lens, Johnson et al. (2010) demonstrate that the BBC tried to do justice to the linguistic and cultural *diversity* of the UK. However, while regional and local dialects have been foregrounded, multilingualism is notable by its absence. In fact, standard British English is the nearly exclusive linguistic code chosen for the verbal text—the only exceptions being a hyperlink in Welsh and a few dialectal lexical items. Moreover, despite the acknowledgment of regional variation with regard to the English language, an analysis of the maps on the Web page points to the visual prominence of (southern) England and the dialects spoken therein. Finally, in spite of the recognition of ethnic and racial diversity, there are no pictures of those who are commonly associated with multilingualism in contemporary British political and media discourse, namely members of "Asian"—that is, Pakistani, Indian, or Bangladeshi—minorities (see Blackledge, 2005).

All in all, Johnson et al.'s (2010) study not only illustrates how the BBC has chosen a monolingual voice together with a diverse but nonetheless unthreatening face to represent the UK on the home page of the BBC Voices project. From a theoretical point of view, this study also teaches us that without a serious engagement with the visual and other semiotic modes, it is difficult to tease out the complexity of language ideologies embedded in texts as produced in late-modern contexts. Indeed, this is one of the key challenges for language ideology research in the near future.

SEE ALSO: Language Ideology, Translation/Interpretation, and Courts; Language Ideology in the Discourse of Popular Culture; Language Ideology in a Language Classroom

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Language Ideology in a Language Classroom

JAMES W. TOLLEFSON AND MAI YAMAGAMI

This entry examines ideologies of language in language classrooms. The study of ideology seeks to uncover the hidden world of students and teachers to shed light on the fundamental forces that shape and give meaning to their actions and interactions.

Meanings of *Ideology of Language*

Interest in ideology as a central theoretical concept in the social sciences initially developed within Marxist and neo-Marxist theories of capitalist societies, which emphasized socioeconomic class and sought to explain how the ruling class sustains its system of privilege and exploitation (Fairclough, 2010). Within such theories, *ideology* refers to hidden systems of domination and control that support the interests of the ruling class. Since the 1970s, many new approaches to ideology have emerged (Hodge & Kress, 1993). One area of research is the central role that language plays *in* political and social ideologies; this focus is common among many scholars who have little interest in what happens in language classrooms (e.g., Habermas, 1987).

Of more direct application to language classrooms are the equivalent phrases *language ideology* and *ideology of language*, which have at least two broad meanings. In one, they refer to specific sets of ideas and beliefs that individuals and institutions articulate and promote. An example is the *ideology of assimilation*, which is the belief that newcomers to a community should adopt the language variety and the cultural norms of that community. This meaning of the term is closely linked with language policies in schools, which are often rationalized with reference to beliefs about the importance of social unity (an ideology of assimilation) or the value of cultural diversity (an ideology of pluralism).

The second broad meaning of *ideology of language* is that the term refers to complex, often implicit cultural conceptions of language that are closely linked with social structure, social identity, and beliefs about what is "normal" and "natural" in human societies. Included here are conceptions of language held by sociolinguists and applied linguists, such as the rule-governed nature of nonstandard varieties. Researchers who adopt this second broad meaning of *language ideology* view systems of communicative behavior "as an enactment of a collective order" (Woolard & Schieffelin, 1994, p. 55); thus they seek to uncover hidden but widely shared and "commonsense" cultural notions about the nature of language and communication. An example of this concept of ideology is *standard language ideology*, which is a complex set of usually unconscious and unarticulated assumptions about the nature, status, and social value of different language varieties.

Institutional Approaches

Analyses of ideology differ in their emphasis on institutional or cognitive factors. Institutional approaches to ideology focus on systematic practices within institutions such as schools. A central concern of institutional approaches is how schools reproduce unequal social relations through educational policies and practices that legitimize particular groups and

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their forms of knowledge (e.g., the spoken language of the upper middle class) while subordinating other groups and their knowledge (e.g., immigrants and their languages; Bourdieu, 1991). For example, what classroom use for languages other than the prestigious standard may be permitted? Are students encouraged to develop literacy in multiple varieties or only the prestigious standard? Do assessments consider students' proficiency in their native language(s)? Such questions draw attention to institutional practices that may sustain educational and social inequalities.

Cognitive Approaches

Cognitive approaches to ideology (termed "cognitive-ideational" by Blommaert, 2005, p. 161) are exemplified by the work of van Dijk (1993), whose main concern is *social representation*. Social representations are a form of social knowledge, which includes beliefs, values, norms, and attitudes that are shared by members of cultural groups. In language classrooms, the social representations of teachers, students, languages, and language learning processes (such as *native speaker*, *Asian*, *the English language*, and *teacher*) shape the specific experience of individuals. For example, a white, middle-class, monolingual teacher's experience of hearing students speaking African American Vernacular English (AAVE) in a language arts class may be shaped by the school's dominant social representation of AAVE as, for example, a corrupt and incomplete version of English that is inappropriate in schools.

As this example suggests, an important type of social representation is *stereotypes*, which are inflexible categories that have the important social function of maintaining unequal social relations (Pickering, 2001). Many stereotypes about AAVE and other minority languages reinforce the socially subordinate position of their speakers. Cognitive approaches to ideology make explicit the processes by which these social representations are developed and spread, and the ways that they shape classroom practices; the aim is to investigate how social representations help to maintain unequal social relations, and ultimately how to change those social relations.

Some Ideologies of Language

This section examines several ideologies of language that have been identified in language classrooms, beginning with two approaches that emphasize specific sets of beliefs that are often articulated by teachers, administrators, and policymakers, followed by examples of implicit but commonsense assumptions about the nature of language in society.

Language as a Problem, Right, or Resource

An influential framework for classifying language policies, beliefs, and practices is Ruiz's distinction between three "orientations": language as a problem, language as a right, and language as a resource (1984). Although Ruiz called these *orientations* rather than *ideologies* of language, the framework focuses on both implicit, commonsense beliefs and explicit, articulated policies and practices, and thus it may reasonably be viewed as a distinction between three broad ideologies.

Language as a problem refers to concerns about multilingualism and language variation: cognitive difficulties facing bilinguals; psychological problems for language learners facing "culture shock" and alienation; social problems for groups who are cut off from "mainstream" society; and political problems for multilingual states facing ethnolinguistic conflict and concerns about integration (Baker, 2006). *Language as a right* refers to the view of language as a basic human right deserving legal protection, like race/ethnicity, religion, and national

origin. This ideology of language emphasizes the importance of protecting linguistic minorities from discrimination and ensuring that their right to use their native language(s) for a full range of purposes is legally protected. *Language as a resource* refers to the view of languages as individual and societal resources that must be preserved. This ideology is closely linked to policies that protect threatened languages and that promote second language learning and multilingualism.

Pluralist and Assimilationist Ideologies

Closely connected with the three orientations described by Ruiz are two competing ideologies of language: the ideology of assimilation and the ideology of pluralism. Often rationalized by a language-as-problem orientation, the ideology of assimilation underlies educational policies and classroom practices that promote L2 learning of the dominant language by immigrants and other linguistic minorities. The term covers a broad range of notions of assimilation, including structural (economic) assimilation, cultural assimilation, and political assimilation (Baker, 2006). In contrast, the ideology of pluralism promotes multilingualism, L1 language maintenance, and language rights. This ideology underpins multilingual classroom practices, L1 use in bilingual education, and social and economic rewards for multilingual language use.

These two ideologies are important because they represent the major ideological disagreement in many neoliberal states. Indeed, language policies and classroom practices may be distinguished with reference to whether they contribute to or undermine assimilation and pluralism amongst language learners.

Ideology of Variation

Many language classrooms evidence an *ideology of variation* (Cameron, 1995), which presumes a fixed, unchanging target language, with learners' deviations from the target assumed to be due to linguistic incompetence or carelessness. This belief in a nonvarying target language is an example of the *reification of language*, which refers to the belief that languages (e.g., Standard English) are "real things" (rather than abstract constructs) that exist apart from language in everyday life. This belief presupposes stable social groups and identities, defined, in part, by language. Thus "native English speakers" are presumed to constitute a stable, meaningful, clearly defined social group speaking a distinct, learnable language that can be described apart from the everyday linguistic behavior of its speakers. Similarly, "Standard English" is presumed to be a clearly defined "target language" toward which English-language learners should make progress. Within this ideology, language learning is defined as movement toward that target, and the instructor's authority in the classroom rests on (native-like) expertise in this target model.

Ideology of Monolingualism and Standard Language Ideology

Closely related to the ideology of variation is the *ideology of monolingualism* (Baker, 2006), which refers to the belief that a single language is more efficient than multiple languages for group communication and language learning. This ideology takes two primary forms. The first is what Lippi-Green (1997) calls *standard language ideology*, or "a bias toward an abstract, idealized homogen[e]ous spoken language which is imposed and maintained by dominant institutions and which names as its model the written language, but which is drawn primarily from the spoken language of the upper middle class" (p. 64). In other words, standard language ideology creates the illusion that a standard spoken language is based on a stable written variety, when in fact it is the language spoken by the upper middle class; thereby the ideology helps to maintain the dominant position of the upper

middle class. An example is the commonsense belief that communication is more efficient if everyone speaks a uniform standard language.

Many of the tools of classroom teachers are instruments of standard language ideology, including grammar books, dictionaries, and teaching practices such as error correction. Such classroom tools and practices, along with their associated beliefs, are so powerful that they often blind teachers and learners alike to the essential and ever-present value of variation. As Lippi-Green points out, variability rather than uniformity is normal and universal. Expecting everyone to learn and use the same standard variety is no more realistic than requiring everyone to be the same height: despite the apparently commonsense advantages of uniformity, linguistic variation (like biological variation) is an essential characteristic of all human societies and impossible to eliminate (Cameron, 1995).

A second form of the ideology of monolingualism is the emphasis on the use of the target language as medium of instruction in language classrooms, and the common practice of restricting classroom use of students' home languages, particularly stigmatized, "nonstandard" varieties such as pidgins, creoles, regional dialects, and working-class or "ethnic" varieties such as AAVE. Although a long tradition in language teaching insists that these varieties disrupt learning and delay target-language acquisition, classroom research over the past 20 years clearly demonstrates that using such varieties in class can aid L2 learning (Auerbach, 2000).

The persistent use of monolingual practices in language classes has the ideological function of limiting the status and use of minority languages, restricting educational opportunities for linguistic minorities, and sustaining the social representation of minorities as lacking the ability and motivation to learn standard varieties. Thus, although usually justified on pedagogical grounds, standard language ideology and the ideology of monolingualism in language classrooms help to sustain systems of social inequality.

Language as a Psychological Phenomenon

A core ideology of language that underlies many teaching practices and forms of language assessment is the belief that language is a measurable psychological phenomenon. Since the 1970s, the main focus of second language acquisition (SLA) research has been learner variables, such as age and language transfer, attitudes and motivation, the relationship between input and interlanguage output, and unconscious and conscious learning processes. Economic and structural factors (e.g., class) and discursive analysis are generally excluded from major SLA textbooks (e.g., Ellis, 1997; Gass & Selinker, 2001). Although SLA seeks to describe and explain how people learn a second language, and why learners vary considerably in their learning outcomes, the field largely ignores language status and inequality, as well as their underlying economic and social bases. Remarkably, the vast economic and social differences between, for example, working-class immigrants in elementary schools in Philadelphia and wealthy university students in Busan, South Korea receive little or no attention in SLA. In other words, major SLA theories emphasize individual psychological variables rather than social and economic ones, and thus learners themselves are implicitly responsible for their variable language learning performance. In this sense, the view of language as a psychological phenomenon is ideological.

Pedagogical Consequences

The ideologies of language described here have important pedagogical consequences. Most importantly, learners' output is evaluated by comparison to the standard variety; error correction, formal practice, and other techniques are adopted for reducing variation; and these practices are rationalized with reference to theoretical concepts in SLA, such as "interlanguage" and "fossilization," which also rest on these ideologies. The ideology of

variation also has consequences for language and identity: speakers of particular varieties are presumed to share a common identity as a result of sharing a single variety; and language learning is viewed as essential to sociocultural integration, a belief that underlies language policies requiring immigrants and others to learn dominant languages. The reification of language has implications for the status of code-switching and mixed codes in language classes, as many teachers, administrators, and learners accept the social representation of these phenomena as corrupt or incomplete languages.

While such practices are shaped by ideologies of language, practices also have a reciprocal impact on ideologies. Language testing is a particularly striking example (see Shohamy, 2006). Tests define the status and power of different language varieties: class tests, college entrance exams, and graduation exams that take place only in the standard variety make clear that one variety and its speakers have higher status and power than other varieties and their speakers. Such tests may reduce linguistic diversity, increase concern for correctness, intensify sanctions against speakers who violate rules of correctness, and restrict the social value of the home languages spoken by linguistic minorities. Indeed, language tests have an important ideological function: they are implicit language policies, they articulate linguistic priorities, and they determine the social meaning of language forms. Thus the practices of teachers and other institutional authorities are not only shaped by ideologies of language, they sustain and reinforce those ideologies, and thereby play a direct role in sustaining social inequalities.

Alternative Views: Language as a Discursive Process and Historical Construct

In the past 30 years, an alternative perspective to the ideologies of language described here has emerged: language as a discursive process and historical construct, not an empirical linguistic phenomenon. Indeed, sociolinguistic research reveals that so-called "standard" varieties are characterized by significant variation, and that many language learners acquire not a single standard variety, but multiple varieties including stigmatized and hybrid varieties such as ethnically marked dialects and mixed codes. The commonsense practice of assessing language learners with tests of idealized standard languages and judging learners as "failing" when they produce "nonstandard" forms disguises the reality that many learners produce multiple standard and nonstandard varieties; and some learners may never need to produce a standard variety (Rampton, 2006). In contrast to the belief that code-switching and mixed codes are problematic in language classrooms, a large body of sociolinguistic research describes these phenomena as purposeful, rule-governed, and highly complex characteristics of the language of advanced learners with high levels of linguistic ability (Myers-Scotton, 1997).

In contrast to many SLA theories, a growing body of sociohistorical, historical-structural, and discursive analysis has emphasized the social nature of language (Lin & Martin, 2005; Tsui & Tollefson, 2007). This alternative tradition places ideology at the center of analysis. Indeed, ideologies of language determine the social meaning of language. In Woolard and Schieffelin's terms, language ideologies mediate (or link) "social structures and forms of talk" (1994, p. 55). Thus understanding classroom interaction requires careful analysis of the social meanings ascribed to language forms and to the underlying ideologies which ensure that those meanings reflect social hierarchies. For example, many speakers of AAVE do not produce final /t/ sounds when the preceding sound is /s/. "Test," therefore, is pronounced /tɛs/. This stigmatized form is routinely corrected in many language classes, based on negative social representations of AAVE and common institutional practices that favor exclusive classroom use of the standard (target) variety. When white, upper-middle-class

speakers delete final /t/, as in "East" in the phrase "East side," the t-deletion is neither corrected nor noticed. African Americans are also often corrected when pronouncing "ask" as /æks/, while upper-middle-class whites often pronounce "asked" as /æst/, always without correction. Explaining the different response to these forms requires ideological analysis: teachers' responses are based not on linguistic "facts" or research on pedagogical effectiveness, but on the different social status and social representations of poor and working-class speakers of AAVE compared to white, upper-middle-class speakers of "Standard English." That is, the social status and social meaning of linguistic forms (and teachers' responses to the forms) are determined by the underlying ideologies of language that provide social meaning for the forms in real-life contexts.

Conclusion

Though usually below the surface and not apparent to teachers or students, ideologies of language are always present in language classrooms, providing social meaning to language forms and patterns of communication. Moreover, because ideologies of language are linked to other ideologies, a full analysis of what happens in the classroom requires a broad lens that encompasses ideologies of teaching and learning, of education, of nationalism and national identity, and other powerful determinants of form and meaning.

SEE ALSO: Critical Applied Linguistics; Fairclough, Norman; Heller, Monica; Language Policy and Multilingualism; Minority Languages in Education; Multilingualism and Ideology

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Language Ideology in the Discourse of Popular Culture

ANDREW MOODY

Although there are a number of different ways to define "popular culture," Moody (2010) notes that there are three characteristics that appear to be common to most definitions: popular culture is usually associated with mass media (and especially "free" media like radio or television); popular culture is consumer-oriented in nature and frequently encourages consumers to become "fans" of performers, products, or genres; and popular culture—like most expressions of consumer culture—is increasingly characterized by globalization. Each of these characteristics of pop culture makes it an ideal place to explore language ideologies, which are usually understood to be "any sets of beliefs about language articulated by the users as a rationalization or justification of perceived language structure and use" (Silverstein, 1979, p. 193). According to Blommaert (2005), this notion of ideology developed from an emphasis within discourse studies arguing that "ideology cannot be attributed to one particular actor, not located in one particular site . . . but that it penetrates the whole fabric of societies or communities and results in normalised, naturalised patterns of thought and behaviour" (p. 159). To the degree that popular culture is designed to appeal to broad segments of society through mass media and mass consumption, the languages of popular culture represent and establish the ideologies that justify its use.

Language in popular culture, however, is usually neither spontaneous nor naturally occurring, but instead highly edited for consumer appeal. Nevertheless, Moody (in press) notes that a great deal of effort is spent within popular music—and likely other forms of popular culture—to ensure that language is "authentic." Indeed, the commercial viability of popular culture may depend on the "authenticity" of the product, and this authenticity often includes "linguistic authenticity" (see Seargeant, 2005; Moody, in press). Therefore, to the degree that pop culture is deemed as "linguistically authentic," the validation of language will both depend upon and highlight language ideologies. There are, broadly speaking, two channels through which language ideologies within the various discourses related to popular culture are most easily observed: within the *performative channel*, which examines the influence of language ideologies upon language choice in the production of pop culture artifacts, and the *affiliative channel*, which examines the reception and reactions toward language in pop culture artifacts. These two channels do not represent competing methods to examine language ideologies in popular culture; language ideologies in any particular instance of pop culture discourse can and should be examined simultaneously in both the *performative* and *affiliative channels*.

The *performative channel* focuses on the language ideologies that are incumbent within a specific or general pop culture artifact, or performance. For example, the performance of African American English (AAE) in "hip-hop" genres (i.e., rap, hip-hop music, movies, television shows, etc.) has been noted in a number of popular cultures where AAE is not spoken as a native language (e.g., in Korea see Lee, 2007; in Malaysia see Pennycook, 2003; in Tanzania see Higgins, 2009; and in the United States see Cutler, 1999). Similarly, Trudgill (1983) and Coupland (2001) both examine the influence of American English (AE) pronunciation in British pop songs and in DJ talk on English-language radio in Wales respectively.

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Although these last two studies were both published before much of the theoretical discussion of language ideology developed later in the decade, each of the studies examines the sociolinguistic meanings that are expressed when performers in pop culture use language varieties that are not native to either the performers or the audience. The varieties, however, in each of these cases may be considered "authentic" for the style or genre of the performance —AE in early British rock music, AE in DJ song introductions, and AAE in hip-hop and rap—and the appropriation of the variety is sociolinguistically justifiable. These descriptions of language use in popular culture entail important analyses of language and identity and have been strongly influenced by Rampton's (1995) notions of "language crossing" and "stylization." "Crossing" occurs when a speaker uses an "out-group" language in communication with the "in-group." "Stylization," following early work by Hebdige (1979), involves "putting on" or appropriating another's voice—frequently an ethnic or social dialect—with the effect that "utterances project personas, identities and genres other than those that are presumedly current in the speech event" (Coupland, 2001, p. 350). Because "crossing" and "stylization" are intended to be interpreted as performing alternative personae, they are situated in and reinforce language ideologies of the groups that observe the performances.

The second channel for the examination of language ideologies within popular culture is the *affiliative channel*. Whereas the *performative channel* examines language ideologies that are related to pop culture performances, the *affiliative channel* examines fan reaction to language used in popular culture. Two aspects of popular culture make this channel especially important for the examination of language ideologies: first, popular culture is largely driven by a marketplace that encourages consumers to evaluate performance and become fans; and second, the multimodal nature of popular culture encourages intertextual references between artists and fans. Park (in press) uses the *affiliative channel* to examine fan reactions to a South Korean actress's English performance on an Internet chat site, noting that reactions "engage with English in television commercials within a highly complex field of social relations . . . and cultural practices." Similarly, Moody (in press) examines the fan reaction to a Japanese pop music group's performance and argues that efforts to legitimize the performance as an authentic linguistic representation are ideologically driven. By using both the *performative* and the *affiliative channels* to examine the authenticity of language, therefore, data from popular culture can be increasingly informative of language ideologies.

SEE ALSO: Critical Discourse Analysis of Popular Culture; Language and Globalization; World Englishes and the Role of Media

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Language Ideology, Translation/ Interpretation, and Courts

ALAMIN MAZRUI

A domain that demonstrates a particularly high incidence of the interplay between language ideology and translation/interpretation is no doubt the law court. The linguistically embedded power relations that are integral to the interactional process between various parties in a law suit often become accentuated when meaning has to be mediated between two or more language varieties through the agency of a court interpreter. Contrary to the common belief that court interpreters are unobtrusive parties in the court process, they can make a significant difference in the outcome of cases partly because of the influence of the respective language ideologies they imbibe (Berk-Seligson, 2002).

Various definitions of language ideology have been proposed over the last three decades or so. These are summed up by Wolfram and Schilling-Estes who propose that language ideology is the "ingrained, unquestioned beliefs about the way the world is, the way it should be, and the way it has to be with respect to language" (Wolfram & Schilling-Estes, 2006, p. 35). Language ideologies pervade social life in all its dimensions "insofar as ideas about language rub off onto ideas about people, groups, events and activities" (Haviland, 2003, p. 764).

In any bilingual courtroom there are often several language ideologies that mediate the process of translation/interpretation. Prominent among these is the "verbatim ideology," the belief that meaning can be transferred word for word from one language to another. The interpreter is expected to assume the persona of the litigant whose utterances (s)he is translating, often speaking in the first person, and the judges often have complete faith that what is being conveyed to them through this process is a direct equivalent of the words of the litigant. It is also not unusual for jurors to be expected to base their deliberations and conclusions on the translated text even if some of them are fully proficient in the source language. In his study, Haviland reproduces the following instructions that a court judge directed to jurors in a case he was adjudicating:

> The translation of the Spanish language that you must rely on in the course of this case is that translation that is made by the court interpreter that will be translating the language as it's spoken from the witness stand . . . I don't know whether any of you, as I say, understand Spanish, but we don't want to get into a situation where we have some juror in the room saying, "Well, that's not what the witness really said, you know." (Haviland, 2003, p. 769)

The expectation is that the jurors will exercise complete linguistic amnesia and accede completely to the interpretive authority of the court interpreter appointed by the court.

Another similarly prevalent language ideology that comes into play in the courtroom is the "national language ideology." This is the idea that every "nation" has one language that is somewhat natural to it, one that gives it a distinct identity. In the USA that language is presumed to be English. In France it is French. When a French national is charged in an American court, it is assumed that there might be need for an interpreter and that interpreter should be proficient in French. It would seldom occur to the court official that

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the French national could in fact be Arabic speaking with virtually zero competence in French. The administration of justice then can sometimes be delayed because the court, under the sway of national language ideology, fails to ascertain the linguistic background of the accused and is therefore not sufficiently prepared with an interpreter with the right combination of languages for a particular case. If it is an American who is charged in an American court, and that person happens to speak no English at all, there is always the risk of bias in the judicial process because from the outset the person's Americanness, and therefore his legal entitlements as an American citizen, are considered questionable at best. In the United States of America this ideology has received recurrent reinforcement from the "English Only" movement that has reared its head at different times.

There is then the "standard language/dialect ideology." Lippi-Green defines this as "a bias toward an abstract, idealized homogenous language, which is imposed and maintained by dominant institutions and which has as its model the written language, but which is drawn primarily from the spoken language of the upper middle class" (Lippi-Green, 1997, p. 23). The basic presumption of this ideology is that standard dialects are the proper media of the courts and that nonstandard dialects are not adequately equipped to cope with and convey the nuances of legal language. As a result, nonstandard speech of one language in a court of law is always translated into and recorded in the standard version of what is considered to be the official language of the court. Contrariwise, an interpreter will translate not into the nonstandard dialect, for example, but into the standard version of the language of the accused—even if the accused is not adequately competent in it.

Most courts throughout the world also espouse the mistaken belief that the written word is merely a modal replication of the spoken word. But, in fact, the two are bound by different "discourse cultures." The notion of presupposable truth arising from the kind of abstraction engendered by written communication, for example, is more difficult to attain in oral communication. Truth in the oral tradition is seen to emerge from the ongoing process of creative use of speech and from the ongoing force of rhetoric itself. When written law is rendered in oral form, in the same or a different language, the differences in "discourse cultures" are seldom taken into account.

The study of language ideology and court translation/interpretation has sometimes focused on the way in which the use of language in legal arenas not only restructures the relationship of interacting parties, but also contributes to the (re)construction of legal ideologies. Weissbourd and Mertz (1985), for example, have attempted to demonstrate that the subconscious reflection on language structure by native speakers and the structure of discourse in the courtroom can ultimately affect legal ideologies in a culturally circumscribed way.

In sum, then, prevailing language ideologies in society can impact on the process of court translation/interpretation in many important ways. And because of the ideological embeddedness of language, court translation/interpretation can sometimes contribute significantly to the (re)construction of legal ideology.

SEE ALSO: Language of Courtroom Interaction; Linguistic Disadvantage of Children in Legal Contexts; Nation

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Language Ideology: Overview

PATRICIA FRIEDRICH

Ralph Waldo Emerson once said, "Language is a city to the building of which every human being brought a stone." With each stone we bring, we also carry a bit of our identity, our convictions, and ourselves. So building this city is not always the tidy process one might expect it to be.

That attitudes, worldviews, and sociopolitical phenomena interact in complex and rich ways with language comes as no surprise to applied linguists. Ours, in a way, is the business of exploring language in its messiest and most fascinating form: we dwell on the shape and role it takes when people actually use, modify, create, agree, and disagree over it as each of us carries his or her linguistic stone and attempts to put it in a place of prominence and importance in our proverbial city.

We, the authors and editors of the language ideology area, offer but a glimpse of this enthralling universe of values, beliefs, identities, and political stances that affect and are affected by language, be it through the way language ideology manifests itself in the classroom (LANGUAGE IDEOLOGY IN A LANGUAGE CLASSROOM), in the sphere of public discourse (LANGUAGE IDEOLOGY AND PUBLIC DISCOURSE), in expressions of popular culture (LANGUAGE IDEOLOGY IN THE DISCOURSE OF POPULAR CULTURE), or in translations at the courts (LANGUAGE IDEOLOGY, TRANSLATION/INTERPRETATION, AND COURTS).

We are also aware that the macro linguistic level of the nation-state (LANGUAGE, POLITICS, AND THE NATION-STATE) as well as the micro-level and everywhere in between can be highly influenced by the ideas and beliefs people hold about the place and form language should take. For that reason, we prepared entries about particular contexts of language use and some of the challenges they face. In this section, they are represented by reflections on ENDANGERED LANGUAGES IN CANADA and ENDANGERED LANGUAGES IN AUSTRALIA, the relationship between the idea of NATIONAL LANGUAGES AND ENGLISH IN INDIA, the ENGLISH-ONLY MOVEMENT, and the impact of standard language ideology on African American Vernacular (STANDARD LANGUAGE IDEOLOGY AND AFRICAN AMERICAN VERNACULAR ENGLISH) in the United States. We also discuss SPANISH STANDARDIZATION and ARABIC STANDARDIZATION, and issues of LANGUAGE AND IDENTITY IN AFRICA.

Because we want to give the reader an opportunity to bridge theory and practice in their own contexts—contexts which we understand might not be covered by the entries above—we also worked on texts that provide a roadmap to some of the most important and often discussed aspects of language ideology in our time. For example, we offer considerations on LANGUAGE AND GLOBALIZATION, LANGUAGE AND IDENTITY, NATIVISM, LINGUISTIC IMPERIALISM, LINGUISTIC LEGISLATION, and LANGUAGE ENDANGERMENT.

Language ideology issues also permeate and help shape our views of history and legacy and the place of the languages transmitted to us by previous generations. For that reason, we included two entries on heritage languages, one focusing on HERITAGE AND COMMUNITY LANGUAGES and another on language policy as it pertains to heritage languages (HERITAGE LANGUAGES AND LANGUAGE POLICY). We hope they will cause the reader to stop and ponder and then probe further into the importance of looking back as we look forward.

Finally, we wanted to include a couple of entries that would focus on our own practice as teachers and researchers. They are represented here by writings on the issue of NATIVENESS

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AND LANGUAGE PEDAGOGY and the matter of IDEOLOGY IN RESEARCH METHODOLOGY. That we as professionals, albeit aware of its presence, also bow to our own ideological standpoint, should be a matter for continuous reflection.

We are aware that these are only a few of the many pieces of the linguistic puzzle that we want to assemble. Like our linguistic city, our knowledge base is always in construction. We hope these entries are enlightening and useful and that the readers gain as much from reading them as we did in writing them.

Language of Courtroom Interaction

GREGORY MATOESIAN

Introduction

The language of courtroom interaction provides an exciting context not only to the study of written and verbal language but also to the analysis of language as a form of copresent communicative practice that integrates language, bodily conduct, and other semiotic resources (see Goodwin, 1994; Manzo, 1996; Matoesian, 2010). Studies of courtroom interaction demonstrate how legal realities, sociocultural knowledge, and sociolegal power emerge in the details of situated action (Philips, 1998; Conley & O'Barr, 2005; Richland, 2008). Rather than being a passive vehicle for the imposition of either legal or cultural variables, language interaction constitutes the medium through which evidence, statutes, and identity are forged into legal significance. The following overview examines several main concepts in the study of trial interaction: speech-exchange system, question–answer sequences, and indirectness. It then introduces several prominent themes in current studies of language use in court, such as power, ideology, intertextuality, identity, and affect. The entry closes with a brief discussion of the applied policy implications of trial language.

A Distinct Speech-Exchange System

Courtroom language operates in a distinct speech-exchange system or speech event with differential participation rights based on institutional identity, a system of turn preallocation (Atkinson & Drew, 1979). In contrast to everyday conversation, attorneys ask questions while witnesses answer questions, and this discursive division of labor occurs not only through observable patterns of interaction but in participant orientation to violations or deviant cases, as illustrated in the following example (Matoesian, 2008).

Extract 1 (DA=defense attorney; AM=witness)

001 DA: You knew that you were going to be asked questions
002 only twelve hours ago. It was only twelve hours isn't that right?
003 (1.1)
004 AM: Yes.
005 (7.3)
006 AM: ((*slight head tilt forward and back at 7.0*))
007 AM: ((*lip smack/alveolar click and head movement forward toward microphone with thinking face display at 7.3*))
008 AM: I would like to complete my answer on uh:: the question (.)
009 about (.) saying that Senat[or Kennedy was watching.
010 [((gaze moves to DA))
011 (0.9)
012 AM: ((*raised and sustained eyebrow flash with mouth open-close co-occurring with three micro vertical head nods*))
013 (3.3)

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014 DA: Uh::: (.) which question are you answering now:: miss:://
015 AM: You had asked me uh::: (.) yesterday (0.5) n'you also asked me
016 this morning (0.5) **about** my statement to the police

Notice in the above example how the witness (AM) waits for a lengthy pause in the defense attorney's talk before *requesting* permission to complete a statement from the day before. She does not merely continue the statement but requests permission, maintaining the defense attorney's (DA) institutional authority in the process. After the DA fails to respond (notice the 0.9 second pause), she produces a series of nonverbal actions consisting of a raised eyebrow flash and three micro head nods in an attempt to elicit an answer while still withholding continuation of her statement. When the DA responds, after a lengthy 3.3 second pause, we see two additional delay components prefacing his response: vowel stretching on utterance initial *Uh:::* and a short micro pause. And, finally, he responds not with an answer but with a question that reformulates her request as an answer to some prior question (line 014), thus maintaining the discursive division of labor in which attorneys ask questions while witnesses answer them. In this short exchange, we can see how both participants shape the contributions of one another and how multimodal activities (gaze, facial expression, and head nods) intersect with talk to shape the organization of the turn violation and mark it as a departure from institutional arrangements.

While attorneys and witnesses may manage institutional rules "internally," as in the above case, legal authority may manage it "externally." In everyday conversation simultaneous talk is managed by the participants (Schegloff, 2000). In courtroom interaction, however, there is a legal constraint that *may* serve to minimize simultaneous talk, as in the following instance.

Extract 2 (edited) (PA=prosecuting attorney; WS=witness; CR=court reporter: J=judge)
001 PA: What's the it?
002 WS: Patricia Bowman's account of the events that night
003 is a damnable lie
004 [
005 PA: So you're saying that she's a liar=
006 CR: = I can't- I- I can't- can't report over (( ))
007 (1.2)
008 J: Missuz Lasch (.) there's been no objection from Mr. Black
009 but there is one from Mr. Crane . . . And Mr. Crane speak up
010 if you can't report.

Here we can see how resolving simultaneous talk may function in the institutional demands of the court reporter to capture the proceedings for the record, and violations of that institutional requirement (the simultaneous talk in lines 003–005) may be resolved by judicial authority, a unique institutional signature of language interaction in the courtroom.

Questions and Answers

Although courtroom language operates as a question–answer preallocation system with a highly structured discursive division of labor, we need to treat questioner control as problematic, for, under closer scrutiny, this micro social organization reveals a contingent variation of discursive identities. That is to say, the institution is "talked into being" (Heritage, 1984) on a moment-by-moment basis in the concrete details of situated conduct, a process involving several issues.

First, courtroom interaction functions through distinct activity types (Levinson, 1992; Cotterill, 2003, pp. 91–125; Gibbons, 2003; Heffer, 2005), each with its own organizational dynamics, such as opening and closing statements (Cotterill, 2003; Hobbs, 2003), direct and cross-examination (Tiersma, 1999; Ehrlich, 2001; Hobbs, 2003; Eades, 2008), sidebar conferences, objection sequences (Matoesian, 1993; Hale, 2004), judicial instructions (Heffer, 2005), preliminary motions, jury deliberations (Maynard & Manzo, 1993; Manzo, 1996), plea sentencing (Philips, 1998), sentencing allocutions (Gruber, 2007), each integrating a number of communicative modalities, such as verbal, written, visual, technological, material, and multimodal. Courtroom interaction represents a speech genre that consists of a hybrid constellation of subgenres (Heffer, 2005) integrated into the stream of discursive activity.

Second, and with this point in mind, although courtroom examination may appear as a question–answer system based on institutional identity, when the attorney produces a question, it opens up an objection opportunity space that, once activated, aligns different participants (the judge and the attorneys) differential participation rights (one attorney speaks and then the other) and different speech activities (grounds for the objection, warrant for posing the question, etc.), and the outcome of that process affects the nature and logic of courtroom interaction. On the one hand, when an objection is sustained the relevance of the original answer is terminated and the witness does not respond to it; on the other hand, if the objection is overruled the questioner may transform the question.

As an illustration of *objection-mediated question–answer sequences*, in one 16-minute stretch of cross-examination of the defendant in the William Kennedy Smith rape trial in 1991 an objection was raised to over 60% of the questions and each objection was sustained. In one 3.5 minute segment, the defense objected to 10 consecutive prosecution questions, the judge sustaining all 10. At the end of the 10th ruling, the judge removed the jury to admonish the prosecuting attorney for over 15 minutes. Thus while the attorney produced questions, there were no answers.

Third, the fact that institutional structure organizes attorney-questioner and witness-answerer forms of participation does not necessarily mean that attorneys will only ask questions and witnesses only answer. Consider the following example.

Extract 3 (edited) (PA=prosecuting attorney; WS=witness)

001	PA:	And you don't have any idea how she got those bruises?
002	WS:	If you're asking me how somebody might get bruises
003		who's on a blood thinner I can give you any number of different
004		reasons. She may have gotten them dancing (0.7) She may
005		have gotten them chasing around a child (.) She may have gotten
006		gotten them taking pantyhose off in the car . . .

In Extract 3 (from Matoesian, 2001), the PA produces an inference that the defendant caused the victim's bruises after a sexual assault. Notice how the defendant poses an *if*-conditional attributed to the PA, which he then proceeds to answer in hypothetical detail. However, the PA never asked the recalibrated question in line 002. Here we can see how a witness transforms questioner and answer roles, projecting his own question to which the answer can arguably be heard, creating a subtle shift in topic. Just because attorneys inhabit the structural endowed role of asking questions does not mean that witnesses only answer. While the attorney asks questions, witnesses may (a) provide answers, (b) project "virtual" questions that displace the attorney's question, and (c) produce answers that align with their virtual question—fostering the impression that their *response is a reply to the attorney's question*. Perhaps it would be more profitable for future studies of questioning

in court to focus on the metrapragmatic construction of participation rather than reify the institutional structure of question–answer sequences.

And, fourth, if this is so, another issue looms prominent. If institutional context is being produced on a moment-by-moment basis in the unfolding stream of discursive activity—if the institution is "talked into being" (Heritage, 1984)—then is the concept of speech-exchange system or any similar transcendent structure redundant in an explanatory sense?

Indirectness and Inference

Direct and cross examination of witnesses must be conducted in question–answer format, mirroring the legal-linguistic ideology that only answers from witnesses, not questions from attorneys, constitute evidence (once again, an observation seen not only in the overwhelming occurrence of questions but also deviant cases where the requirement is breached) (Atkinson & Drew, 1979). An implication of this syntactic constraint means that attorneys must mobilize an arsenal of semiotic resources to contextualize meaning, to map or translate illocutionary force and other types of situated activity—accusations, comments, evaluations, assessments, inconsistency, impeachment—onto corresponding locutionary acts. Moreover, since witnesses will rarely agree with direct accusations and other face-threatening acts in cross-examination, attorneys must often organize a series of questions to produce broader inferences that tarnish credibility and impeach testimony. While speakers in everyday conversation can express doubt about the veracity of claims through simple assertions like "Give me a break" or "That's not true," these would be considered argumentative and thus prohibited in court. Consequently, attorneys in the courtroom must impeach credibility and testimony by mobilizing presupposition, repetition, lexical choice, metaphor, voicing, prosody, silence, irony, and indirection.

By the same token, rather than conceptualize courtroom interaction as institutional constraint, researchers may consider how it enables emergent and creative opportunities for constructing blame, assessing moral character, and shaping legal reality. In the Kennedy Smith rape trial, for instance, the defense attorney used lexical strategies (Cotterill, 2003) to create indirect inferences about the victim's moral character and sexual history by referring to her ex-boyfriend as "your daughter's father," even though such history is formally prohibited by legal statutes. Similarly, in the O. J. Simpson trial, the prosecution referred to Simpson as an "abusive husband" whose violent pattern escalated to the murder of his wife while the defense referred to these as "isolated incidents" of ordinary family disputes (Cotterill, 2003). Both the above examples echo Danet's (1980) classic study of the manslaughter trial of a Boston abortion physician, in which the prosecution used the term "baby" while the defense used "fetus" to contextualize salient presuppositions about the main point in issue. In all these cases, lexical strategies function as inferential frames of meaning (Drew, 1992; Eades, 2008).

Detailing to death represents another form of indirectness in which a series of short, factual questions constructs evidence cumulatively over time so that the fact in issue assumes a level of striking importance, as in the following.

Extract 4 (edited) (DA=defense attorney; AM=witness)

```
001  DA:  So you went into the house (0.5) is that correct.
002                    (0.8)
003  AM:  Yes.
004  DA:  Into the hou::se (.) where the rapist is (0.7) right?
005                    (2.0)
006  AM:  I guess you could say that yes.
```

```
007  DA:  It's dark in there?
008                (1.2)
009  AM:  Yes.
010  DA:  You go through the kitchen right?
011                (0.6)
012  AM:  Yes.
013  DA:  Into this little hallway?
014                (.)
015  AM:  Yes.
016  DA:  It's dark in this hallway, isn't it.
017                (.)
018  AM:  Right.
019                (.)
020  DA:  You meet up with this man who your friend says is a
021       rapist isn't that correct.
                   .
                   .
026  DA:  And you ask the rapist to help him- (.) help- (.) you ask
027       the rapist to help you find her shoes (0.6) is that correct?
028  AM:  I was not afraid of him (.) No I was not afraid of him
029  DA:  That's not my question Miss Mercer. You understand my
030       question? . . .
```

In its entirety (not provided here), this segment consists of over 40 question–answer sequences for over four minutes, in which the defense attorney suggests that the witness neither believes her friend was raped nor the defendant is a rapist because a woman (AM) would not go into a "dark house" and "dark hallway" containing a rapist, ask the rapist to help her search for the victim's missing shoes and then look for the shoes with the "rapist" for 10 minutes—indirectness that evokes sociocultural inferences about sexual violence and gender relations. In such instances, each question functions as an integral link in an extended series of questions and derives its meaning not from syntactic form but from gestalt-like relations with other questions.

Power, Ideology, Identity, Intertextuality, and Affect

Power, ideology, identity, intertextuality, and affect represent several of the most important concepts in both social science and the humanities, and courtroom interaction supplies a rich environment for their empirical grounding.

Power

The *language and power school* (Conley & O'Barr, 2005; Travers, 2006) of legal anthropology emphasizes that power—the ability to make one's account count (Giddens, 1976)—must be negotiated in the concrete details of situated conduct. It cannot be "read off" from social structure or correlated with aggregate outcomes of behavior (Komter, 2000).

To illustrate, in Extract 1 above we observed the witness attempt to take over the turn-taking system to develop her topic. And the defense attorney may have gone along to avoid the impression that he was trying to preempt relevant testimony. But while he allows her to clear up the inconsistency from the prior day's testimony—as she appears to wrest control of the turn-taking system—he makes her "pay" a steep price for the transgression under the guise of granting her request. The extract unfolds as follows.

Extract 5 (edited; continuation of Extract 1)

001 AM: *I would like to complete that answer for the jury please.*
002 (0.9)
003 DA: *You mean* this is an answer that I asked you yesterday you
004 now after thinking about it overnight want to complete the
005 ah::: answer//
006 AM: Ah::: No. I didn't have the opportunity to *answer your*
007 *question yesterday ((staccato delivery))*
008 DA: I'm sorry I thought you had uh:: completed your answer.
009 If you want to say something to the jury that you've had
010 time to think about (.) please go ((lower volume))
011 AM: No- it- >***I haven't had time to think about it***.
012 ***I would have said the same thing yesterday when***
013 ***you asked me***.< ((*Sped up with increased volume*))
.
.
022 I had asked her (.) uh few questions (1.7) Uh:::
023 she repeated (2.5) th- that *he was watching, he was watching*

Here we can observe several dimensions of power negotiation in court. First, the DA enacts evidential authority to shape the epistemological criteria for gauging the truth of utterances; utterances that are planned beforehand are evidentially and epistemologically "contaminated" and constitute inferior forms of knowledge (lines 003–005 and 008–010). Second, in the process, he mobilizes a legal-linguistic ideology or folk rationalization about how language works (Silverstein, 1993). In this instance, truth equals spontaneity in the here-and-now questioning, and these are the only utterances that possess epistemological authority. And, third, he produces a strikingly nimble inference that the witness not only spent a good deal of time "planning" her testimony but rehearsed it with her attorney the prior evening.

Erving Goffman's concepts of footing and participation are useful ways of considering power. Goffman (1981) introduced footing to refer to speakers' relationship to their utterances, how they signal who they are and what they are doing in the talk. The animator verbally produces the words, the author composes those words, and the principal authorizes the production of those words. As we saw previously, participation refers to the discursive division of labor among those in copresent interaction, but it may also designate a historical circulation of relevant yet physically absent voices imposed on the pragmatic present (Irvine, 1996). In the fourth example of power dimensions, bearing Goffman's work in mind, the witness, according to the DA, is merely "animating" the words of her author-principal "coach"; her words are not authentic but "contaminated" by her attorney, whose participation role is relevant to assessing the intertextual status of her claim even though he is physically absent. In this case we can see power "in motion" and how negotiation in footing and participation construct a strategic form of contrived impression management rather than authentic and authoritative speech (see Hobbs, 2003).

And, fifth, his *if*-conditional in line 009 provides a metapragmatic frame for interpreting her forthcoming direct quotes in line 023 (*he was watching, he was watching*), shaping their epistemological status, making them appear "rehearsed," along with the negative inferences that permeate such testimony. Just as important, the study of legal discourse and the interactive processes of power embedded in it provide empirical grounding of traditional linguistic concepts. In this case, we can see how quotation is not an autonomous linguistic object in which grammatical structure drives epistemic and evidential value but a thoroughly interactive and power-driven coconstruction.

Ideology

The above points should not discount the role of ideology and domination in courtroom language, for, as many observers have noted, following Giddens (1984), meaning functions as a structured form of domination (Hirsch, 1998; Ehrlich, 2001; Conley, 2006; Eades, 2008). How macro social facts relate to microprocesses of courtroom interaction serves as one of the most contentious dilemmas in the field. Those who study courtroom language, however, find a balanced accommodation to the tension by analyzing how dominational structures infuse interactional processes and how interactional processes simultaneously possess contingent relevance to structural patterns (Dingwall, 2000). A major contribution of studies of language in courtroom interaction to linguistics in particular and social science more generally has been to shift analysis from claims based on aggregate data, statistical patterns, and philosophical arguments (or advocacy claims) to the methods in which participants ground ideology in the concrete details of situated activities.

For example, Ehrlich (2001) and Matoesian (2001) illustrate how questioning practices in rape trials naturalize dominant ideologies that transform sexual assault into consensual sex. Ehrlich (2001, p. 78) shows how defense questioning strategies incorporate an "utmost resistance standard" in which victims fail to resist enough and thus "invite" the sexual assault, such as "you had a number of options here and you chose not to take any of them." In a similar vein, Matoesian (2001, p. 38) demonstrates how rape trials incorporate a "patriarchal logic of sexual rationality" as an interpretive template for assessing inconsistency, not as a generic juxtaposition of incongruous facts but as a dominational ideology in which male standards frame female actions as a reciprocal sexual interest in the man. Defense attorneys frame attraction or interest on the part of the victim as sexual interest, the way that men are interested in women, thus erasing female cultural standards and preferences, as in Extracts 6 and 7 below.

Extract 6 (edited) (DA=defense attorney; V=victim)
001 DA: And you were interested in him as a person?
002 V: He seemed like a nice person.
003 DA: Interested enough to give him a ride home

Extract 7 (edited) (DA=defense attorney; V=victim)
001 DA: And you were attracted to Bruce weren't you?
002 V: I thought he was a nice, clean looking man.
003 DA: He was attractive looking, correct?
004 (.)
005 V: Yes.
006 DA: And basically when you left the parking lot that night all you
007 knew about him was that he was a good looking man, right.

Another methodological point bears discussion here. While there is no a priori stance against quantification, studies of courtroom interaction generally avoid premature coding schemes and analyze instead the empirically grounded semiotic resources participants bring to bear on the contextualization of ideology. If language in courtroom interaction is an interactively emergent coconstruction then methods and data attuned to capturing dominational facts "in motion" are preferred over analytic categorization and a priori theorizing that "erase" the phenomenon.

Identity

Bucholtz and Hall (2005, p. 608) have noted that "the age of identity is upon us" and studies of courtroom interaction have turned this dictum into a vibrant research agenda (Hirsch,

1998; Ehrlich, 2001; Cotterill, 2003; Eades, 2008). Rather than consider identity as a passive attribute of individual personality or social fact, research in courtroom interaction focuses on how it emerges as a sociocultural phenomenon in discursive detail. Hirsch (1998) demonstrated how women in a Swahili Muslim divorce court indexed gender identity through vowel lengthening and emphatic stress. Ehrlich (2001) showed how defendants in rape cases remove their agency from the acts in question through agentless passives ("*our pants were undone*"). And Matoesian (2001) illustrated how a defendant in a rape trial indexed expert identity to provide a medical opinion on the causes of the victim's injuries (seriously undermining the prosecution's case), encoding epistemic stance through modal perfects even though he was not legally tendered as an expert (and only expert witnesses can give opinions; see Extract 3 above).

Intertextuality and Affect

Intertextuality refers to the decontextualization of historical speech and its recontextualization in the current speech situation (Baumann & Briggs, 1990), the evidential infrastructure of the legal order. Affect refers to the use of emotion in discourse (Wilce, 2009) or how, according to Ochs and Schieffelin (1989), "language has a heart." Affect makes evidence "come alive" via prosody, intonation, bodily conduct, text metrical structure, and paralinguistic components like laughter and crying. We have seen intertextuality intersect with power in Extract 5. Below we can see how intertextuality, in the form of a direct quote, interacts with affect to mark a violation of normative expectations. This is a short extract of the defense attorney's opening statement that includes a quote attributed to the victim after a sexual assault: *she calls Ann Mercer (.) and says (.) "I've been raped (.) come and pick me up."* The defense attorney animates the victim's voice in the reported clause without any intonational or paralinguistic marking, suggesting to the jury that this is an oddly stoic way to talk about the unsettling sweep of criminal events that had just transpired at the defendant's home. In so doing, we can observe how intertextuality and affect *construct* evidence, rather than accurately represent it (in fact, Mercer stated that the victim sounded "hysterical" over the phone).

Applied Implications

Although the study of courtroom interaction has provided a number of descriptive studies, it also functions in the application of macro legal change and evaluation of change over time. Language *as courtroom interaction* is *the* crucial variable for implementing and evaluating legal change. For example, research has demonstrated how defense attorneys routinely circumvent rape shield legislation—prohibition on introducing the victim's sexual history in the trial—through mundane use of linguistic devices (recall "your daughter's father"), but these crucial features of linguistic interaction were ignored by feminist activists and legislators when designing rape reform statutes. Recognizing the crucial import of linguistic interaction, Taslitz (1999) and other scholars utilized linguistic research to develop specific proposals for leveling the playing field in rape trials, such as the use of a neutral translator during cross-examination of the victim. Moreover, attempts to evaluate the impact of rape reforms have yielded inaccurate results because criminologists ignored how language organizes and shapes evidence, measuring instead residual outcome variables such as increases in reports, arrests, prosecutions, and conviction as operational indices of the effectiveness of legal changes. This "scientific" preoccupation with operationalization and quantification "loses" the phenomenon (Maynard, 2006) by homing in on the wrong variables for measuring rape shield legislation and for understanding how shield statutes affect the victim on the stand. If the language of courtroom

interaction is the major vehicle for shaping and interpreting legal realities, if "our law is a law of words" (Tiersma 1999, p. 1), then policy applications and evaluation impact studies must incorporate this sociocultural dimension of law.

SEE ALSO: Language of Jury Instructions; Legal Interpreting; Legal Language

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Language of Jury Instructions

BETHANY K. DUMAS

Jury instructions, also called jury charges, jury directions, or simply instructions, charges, or directions, are the legal guidelines provided by judges to jurors at trial, civil and criminal, usually at the conclusion of all evidence. Their function is to instruct juries in how to reach decisions or findings of fact based upon the evidence presented. Jury trials are distinguished from bench trials, in which judges make all decisions. Jurors are the triers of fact in jury trials, and their decisions must be based on the evidence presented at trial by following the law that is provided in the instructions. Thus the communicative effectiveness of the instructions is crucial to a fair trial. Jury trials are not used in all countries today, but they are used, in both civil and criminal cases, in most adversarial or common law jurisdictions: Britain (though not Scotland), Continental Europe, the USA, Canada, Australia, and New Zealand, as well as a few other countries (those influenced by colonialism). Jurors must make decisions by deciding which witnesses are believable, which ones appear to be telling the truth, and how much weight to give to testimony—all in the context of the legal rules that specify exactly how to apply the law to the evidence. Jurors make decisions about blame and guilt, and degrees of blame and guilt, based on the evidence that they have heard and the instructions that they have received. Because the instructions must explain relevant law, they must contain some legal language. Legal language has long been recognized as difficult for nonlawyers (Mellinkoff, 1963; Steele & Thornburg, 1988; Tiersma, 1999), and jury instructions can present special difficulties because of their linguistic complexity and length, sometimes hundreds of pages. They may contain definitions of special legal terms like *mens rea* (criminal intent) and *res ipsa loquitur* ("the thing speaks for itself"). Comprehension difficulties faced by jurors are well documented, particularly in the USA, where as early as 1979 (Charrow & Charrow), empirical research demonstrated that long, complex sentences and certain grammatical structures as well as specialized terms created severe difficulties for jurors. Some reform efforts have succeeded in improving comprehensibility, but there is consensus among linguists and other social scientists, as well as many judges and lawyers, that jury instructions used in most adversarial or common law jurisdictions need further improvement. This entry briefly describes the nature of jury instruction in the courtroom, traces the history of jury instructions and reform efforts, then illustrates comprehension problems and summarizes needed revisions.

Nature of Jury Instruction

Some researchers have suggested that serving as a juror for the first time is like trying to complete a semester-long law school course in two weeks. One highly acclaimed product of such thinking is the somewhat satirical, highly persuasive video *Order in the Classroom*, a 3-minute 28-second production that presents a dramatization of what a college classroom might be like on day one if the professor introduced the course to students as if they were preparing to serve as jurors. The professor tells the students that they cannot take notes or ask questions, that they will not be told what the course is about or how long it will last, and that there is to be no discussion. The purpose of the exercise is to identify problems inherent in the jury trial system, and the looks of confusion and shock on the faces of the

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students as they listen to the prohibitions are evidence that the problems are real.

But the major problem with jury instructions is that they often mirror the language of statutes or appellate court opinions, documents intended to be interpreted and used primarily by individuals trained in law, not individuals who have no legal training but who are expected to follow the law. Jury instructions constitute a different legal genre.

Most people are introduced to written genres early in life, often in literature classes where they learn to recognize differences among such texts as short stories, essays, novels, and sonnets. Eventually most people encounter nonliterary written genres also—contracts, for instance—but they do not necessarily think of nonliterary types of text as belonging to different genres. This is particularly true in law, in the practice of which individuals must follow fairly strict rules about format, organization, and vocabulary—and even sentence structure. Legal theorists have long recognized the close relationship between law and language, but once first-year law students learn enough of the strict rules—the "cant" as Philips (1988, as cited by Mertz 2007) calls it—to put them into practice, they often forget how difficult it was to learn enough of the special language rules to be able to "think like a lawyer," arguably the most important knowledge acquired in law school. Mertz suggests that "some would associate thinking like a lawyer with superior analytic skills . . . ; I would instead characterize the acquisition of lawyerly thinking as an initiation into a particular linguistic and textual tradition found in our society" (2007, p. 3).

In court, the delivery of jury instructions often begins with a comprehensible paragraph or two, perhaps something like this in a criminal trial:

> The evidence in this case has been completed and I will now instruct you on the law as it applies to the specific charges against [name of defendant]. The lawyers will then present their positions on why they think the state has or has not met its burden of proof establishing the guilt of the defendant beyond a reasonable doubt. The lawyers' argument is not evidence. The evidence has come from the witnesses and the exhibits introduced during their testimony. After the lawyers present their closing arguments the court will instruct you on general principles of law and evidence that apply to all criminal cases.

Soon the judge will begin reading statutory language concerning the charges, and many pages of statutory language will be read aloud. Representative sentences will often be something like this (in a civil case):

> "Exercise control over property" is defined as the right to direct how property, real or personal, shall be used or disposed. Generally, one must possess the right of possession in property in order to exercise control over it. Such possession may be actual or constructive, sole or joint. Also, one may have the right to control property without having a possessory interest. In such instances, if the defendant takes some action with the intent to deprive the owner of the property, and the defendant did so knowingly and without the owner's effective consent, the jury would be justified in returning a verdict of guilty. Anyone who is in a position to take some action that deprives the owner of property is in a position to exercise control.

The instructions are often in the form of model or pattern instructions that have been approved by a state bar association or other professional group. Occasionally judges give instructions earlier during trial, also. For a long time, instructions were read aloud by the judge, but jurors did not receive printed copies of them. Increasingly, especially in the USA, jurors do receive printed copies and can follow them as they listen to the judge read them.

Jurors sometimes have questions about terms in the jury instructions. Trial judges decide whether questions can be asked and how they will be answered, and then often respond

to questions by reading the original instructions aloud one more time. This can be quite frustrating for jurors, who are never allowed to use such resources as dictionaries and encyclopedias. But increasingly judges are allowing questions and sometimes answering them substantively.

History of Jury Instructions

Modern juries evolved from early Western world use of tribal groups to investigate crimes, judge the accused, or both. Such procedures were used in Greece and in Germany, for instance, and in Anglo-Saxon England juries investigated crimes. During the reign of Henry II, the use of juries was expanded. Juries of presentment testified under oath to crimes committed in their neighborhood, and eventually such juries were used throughout the country. Such juries did not hear evidence or testimony in court, but relied on first-hand knowledge and less reliable sources. Between then and the present, forms of ordeal—procedures by which suspects were "tested" as to guilt—were sometimes used, though jury service was clearly in use by 1730, when the British Parliament passed the Bill for Better Regulation of Juries, an Act stipulating that a list of all those liable for jury service was to be posted in each parish and that jury panels would be selected by lot from these lists. That practice established the goals of impartiality and neutrality of juries. They have been used in the American judicial system since the 19th century (Schwarzer, 1981).

The pattern or uniform jury instructions used in most US jurisdictions today represent in most cases an attempt on the part of the drafters to state the law accurately so that impartial and neutral juries will be able to assist in ensuring justice in the legal system. Accuracy requires constitutional and statutory adequacy, but it does not necessarily require comprehensibility, and until recently such comprehensibility was not a primary goal of the drafters of jury instructions, pattern or otherwise. The pattern instruction movement became influential in the late 1930s, when the Judges of the Superior Court of Los Angeles published *The Book of Approved Jury Instructions* (*BAJI*). Other jurisdictions (Washington, DC, Florida, Chicago, Nebraska, Colorado, and Utah) developed pattern instructions over the next two decades. Then, in the mid-1950s, the Illinois Judicial Conference recommended the drafting of accurate and impartial instructions in order to correct some perceived abuses, and the recommendation was carried out under the supervision of the Illinois Supreme Court. Following that, the highest courts of a number of US states followed the lead of Illinois and prepared their own pattern instructions. Currently, almost all US states have pattern instructions, though the extent to which their use is mandated varies (Nieland, 1979; Kelley & Wendt, 2002).

Pattern instructions were a step forward with respect to consistency and economy of time and effort; they served as readily available instructions so that individual instructions did not have to be prepared for every legal case. Their weakness is their form: they are written in dense, complex language and are often modeled upon appellate opinion language, language written by judges primarily for other judges to read. In general they are designed to be read, not to be heard by lay people listening to a judge read them aloud. The judicial appeal of mirroring appellate language is that it is unlikely to give rise to a reversal for error. Put simply, jury instructions full of legalese are unlikely to be reversed for error by appellate courts if they use the same language used by those courts.

Pattern instructions can sometimes be modified by agreement of the parties, often as a result of a charge conference (sometimes called a charging conference), during which the judge meets with counsel for all parties and outlines the instructions. Counsel may request changes, though the judge makes all final decisions.

Comprehension Issues and Needed Reform

In recent decades, some jurisdictions have taken a close look at problems in jury systems, particularly that of comprehensibility of instructions, and have initiated reform programs designed to increase comprehensibility and generally improve the lot of lay jurors. Such reform efforts are based on empirical research that began in the 1970s with attempts to identify which parts of instructions caused comprehension problems (Strawn & Buchanan, 1976). Some early studies tested whether and how juror comprehension could be improved by rewriting (Elwork, Sales, & Alfini, 1982), but it was the pioneering work of Charrow and Charrow (1979) that first empirically tested specific linguistic features that caused comprehension problems. Additional research by Steele and Thornburg (1988) and reform efforts since those early studies have often resulted in revised instructions that are far more comprehensible than earlier versions. Some major studies today are those by the National Center for State Courts (Munsterman, Hannaford, & Whitehead, 1997), California (Kelso, 1996, California's Jury Education and Management Forum), the District of Columbia (Council for Court Excellence, District of Columbia Project, 1998), New York (New York Jury Project, 1994), and Arizona (Dann, 1993). The American Bar Association Section of Litigation Jury Innovation Project is very active in general jury innovation, as is the American Bar Association Commission on the American Jury Project. Two jurisdictions, Arizona and California, have made sweeping changes in their jury systems, including revision of instructions. Tennessee has implemented a number of changes based on the recommendations of a Jury Reform Commission (Report of the Tennessee Bar Association Commission on Jury Reform, 1999) and is continuing to consider suggestions (Cohen & Cohen, 2003).

But even where reform efforts have improved comprehensibility, jurors must still often endeavor to understand instructions that are written in lengthy sentences that contain highly specialized vocabulary items and that often contain the kind of broad and abstract language that is often and necessarily appropriate for statutes that can apply to many different scenarios. Jurors, as Tiersma (2006) points out, do not need a list of abstract legal principles; they need to know what steps they should follow in order to reach a verdict. Jurors also need to be given instructions that contain understandable vocabulary items. Interestingly, technical legal terms, terms like *mens rea* and *estoppel*, are less a problem than some other terms, partly because they are seldom used. When they are used, jurors recognize them as specialized terms, and they tend to ask for—and only occasionally receive—definitions of such terms. More troublesome are "sound-alike" phrases such as *proximate cause*, which may be taken to mean *approximate cause*. The phrases are almost opposite in meaning; the former means "legally sufficient to result in liability," while the latter means something like "closely resembling."

Jury instruction text is not the only factor affecting comprehension. Methods of delivery and timing of delivery must be considered (Dumas, 2000a, 2000b), as well as "psychological issues in jurors' understanding and acceptance of instruction" (Lieberman & Sales, 1999). One way to assist jurors is to tell them exactly what they are going to hear before they hear all the details. A roadmap, a list, or diagram telling jurors where they are headed and by what route that can expect to arrive there can provide an outline of jury instructions prior to their being delivered in full.

Explaining abstract legal concepts such as *proximate cause* can be helpful. Explaining such abstract terms adequately is difficult, partly because instructions must not in any way involve facts of the case at issue, but paraphrase and narrative examples can sometimes be useful. One might, for instance, explain *proximate cause* by comparing an accident caused by driving a car that has bad, or slick, tires with one caused by the negligence of a driver behind one:

> It is possible for a person to be negligent without that negligence being a proximate cause of the accident. If the driver of that car with bad tires is stopped for a red light and is struck in the rear by another car, obviously the bad tires had nothing to do with the accident. In other words, the driver's negligence in driving a car with bad tires was not a proximate cause of that accident. (Dumas, 2006, p. 147)

A short list of matters needing attention as jury reform efforts continue includes the need for a clear introduction to the instructions (outlines, roadmaps), revision of complex sentences, adequate definitions of terms, and clear and effective time and delivery of instructions.

Conclusion

Several decades of empirical research tell us that legal jargon is neither the sole nor a major source of incomprehensibility in jury instructions, long known to present problems to jurors, though it can present special problems (*proximate cause*, *stipulate*, *mens rea*, *beyond a reasonable doubt*, etc.). The textual problems are sentence structure and grammatical constructions such as nominalizations, vague or unusual prepositional phrases, doublets, especially of legal terms, and passive constructions, particularly in subordinate clauses. Other problems include presuppositions underlying jury instructions in opposition to the presuppositions underlying attorney strategies, the nature of the task, the highly abstract nature of the instructions, and the mode of delivery of the instructions. Remedies are available: simplify sentence structure; paraphrase difficult concepts; add examples and narratives to the pattern instructions; answer jurors' questions; and give jurors written copies of comprehensible instructions. Reform activity has been highly effective in certain areas and in some jurisdictions. For it to continue effectively it must find a way to balance the jury's role as finder of fact with requirements of legal procedure, particularly those implicating constitutional issues, and also with the judicial perception that the jury must be highly constrained and controlled. In the courtroom, the judge is the domain expert on law and procedure, and the jury serves as trier of fact. To be effective, jurors must be able to have the freedom to seek additional information and explanation occasionally and to be instructed in language that is reasonably clear and complete. As Tiersma (2006) makes clear, success in creating and using comprehensible jury instructions will have at least three positive results: faster deliberation time, hence more efficiency at trial; a greater sense of satisfaction by jurors; and improved jury verdict quality.

SEE ALSO: Grammar in the Law; Language of Courtroom Interaction; Legal Language

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Language of Police Interviews

KATE HAWORTH

Interviews conducted on behalf of institutions have long been recognized by linguistic researchers as important sites of social interaction, and few have such significant consequences as interviews conducted by the police in the course of a criminal investigation. Alongside the high-stakes nature of the interaction on the personal level of the interviewee, they are also a socially significant site of direct contact between the institutions of the police, the legal system, and the state, and the individuals whom they control and protect. This therefore represents a particularly fascinating and important area of linguistic study, which has been analyzed from a wide variety of methodological perspectives. Key aspects of interest are issues of power and dominance, question types and questioning strategies, the creation of records of interview interaction for later use in the judicial process, historical miscarriages of justice connected with the falsification of interview records, interviews with vulnerable groups such as children or speakers of different languages, and the communication of rights.

It is important at the outset to distinguish between interviews with witnesses and with those suspected of committing an offense. Although they share many general features, there are also important differences, especially in procedure. Witness interviews will be mentioned below, but since the majority of linguistic attention has been paid to suspect interviews, they will be the main focus here.

It is also important to appreciate that different legal jurisdictions have different procedures for interviewing suspects, leading to significant interactional differences. For example, unlike the adversarial common law system of the UK, USA, and most Commonwealth countries, the continental European (Roman law) system is inquisitorial, and is based on written documents rather than oral evidence. Thus the police interview with a suspect is intended to produce a written monologic summary drafted by the police interviewer, a process which is discursively managed during the interview and forms a considerable proportion of the interaction (Komter, 2006). This makes such interviews interactionally different to, for example, interviews in England and Wales, which are audio recorded, with the recording itself becoming evidence. Other common law jurisdictions such as the USA do not routinely record interviews, again providing a different discursive dynamic. However, although comparisons across jurisdictional boundaries can therefore be problematic, there are still many similarities across all researched jurisdictions in the features identified as typical of police interview interaction.

Procedure

Interviews with suspects (and witnesses) will be conducted by members of the police force as part of the initial information-gathering phase of a criminal investigation. In the vast majority of jurisdictions, the police may only interview a person before they have been charged with an offense. The interview therefore represents a relatively small window of opportunity for direct interaction between the police and their suspect; hence its procedural and discursive significance to all involved.

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Police interviewing is governed by a strict framework of legislation, rules, and guidance. This complex, but invisible, set of restrictions and requirements is responsible for shaping every police interview. This framework is entirely familiar to police interviewers, and will guide their behavior at all times during the interview as part of their institutional function. But the suspect interviewee is highly unlikely to have any such knowledge. They are thus to some extent unaware of the underlying "ground rules" of the interaction. There is generally an obligation to provide interviewees with certain information about this framework, although whether this can be adequately understood, processed, and acted upon by an interviewee during the interview is another matter.

Interviews therefore generally follow a typical set structure (see Heydon, 2005, which identifies a "tripartite framework" for Australian police-suspect interviews). The opening and closing phases will normally be governed by procedural requirements, such as confirming factual details and providing the interviewee with specified information, including their rights. For the police, effective communication of their rights to any person who comes into official contact with them is a vitally important discursive function, and yet an extremely difficult one to achieve. This is the subject of extensive analysis in Rock (2007). A number of other studies have also identified serious problems with the communication and invocation of rights in the police interview context, including several relating to the England and Wales caution and the US "Miranda" warning. These are warnings which must be given at the opening of every police-suspect interview, and which advise interviewees of the consequences of what they subsequently say (or fail to say). It is incumbent on interviewers to establish that the interviewee has actually understood the meaning of the caution. This is clearly not the easiest of tasks, and, as demonstrated by Cotterill (2000), there is room for considerable doubt as to whether interviewees are sufficiently capable of absorbing the full import of these warnings in the circumstances, and manner, in which they are relayed to them.

Purpose

The ostensible purpose of the police-suspect interview is to obtain, and test, the interviewee's own story. However, the interview's subsequent role in the judicial process is such that "instead of a search for truth, it is much more realistic to see interviews as mechanisms directed towards the 'construction of proof'" (Baldwin, 1993, p. 327). Interview interaction will be recorded in some form (see below), and that record will subsequently be used by several interested parties: by the police in conducting their investigation, by the body responsible for bringing prosecutions in deciding whether or not to bring criminal charges against the interviewee, and then by lawyers for both prosecution and defense in preparing for a court hearing. The interview record will then form part of the package of evidence presented to the court, on the basis of which the court will reach a verdict and/or decide on an appropriate sentence. It is therefore a key part of the interviewer's institutional function to obtain information during the interview which is relevant to the legal framework of the criminal offense(s) involved, in order to meet the requirements of these subsequent users.

Yet at the same time as meeting these future requirements, the interviewer must also maintain the local interaction with the interviewee in the immediate context of the interview room, and this can present particular discursive challenges for participants, who are effectively required to address several different audiences at once (see Haworth, 2010). This gives rise to discursive incongruities such as "silly questions" (Stokoe & Edwards, 2008), which are questions used by interviewers to elicit specific responses which, although apparently superfluous, will provide the evidence required for a criminal prosecution.

Such studies highlight the powerful influence of the interview's later role as evidence over the discourse of the police interviewer. Yet it is also clear that interviewees are considerably less well equipped to manage this aspect of the interaction. Interviewers will be fully aware of the precise elements of the offense which need to be established, and of the interview's future evidential function, whereas interviewees are (generally) not. This is therefore another fundamental aspect of police interview discourse of which interviewees are to some extent unaware.

Power

It can be seen that, as with most interactions between representatives of professional bodies and lay individuals, a key feature of the discourse of police interviews is the relative power of participants. The very nature of interview interaction, where one participant is prescribed the role of questioner and the other that of respondent, means that an interviewer has considerably more control over what is said than an interviewee. This is particularly true of determining factors such as topic and relevance. When combined with the highly unequal power relations between the participants in a police interview, and the factors mentioned above, police interviewees can be seen to be at a potentially serious discursive disadvantage. This is especially true given that if an interviewee fails to mention details relevant to their defense there can be very serious consequences at any later trial, where such absences, and any inconsistencies between the account given at interview and that presented to the court, may well be interpreted as an indication of guilt. (There is, in most jurisdictions, a "right to silence" at interview, but this has been curtailed to some extent in England and Wales by s.34 Criminal Justice and Public Order Act 1994, and in any case it is impossible to legislate against the likely impact on a jury of such absences in a defendant's account.) This raises questions about the fairness of a system which sanctions interviewees for something which is, at least to some extent, out of their control. It also brings into question whether it is realistic to expect members of the police force to act as a neutral conduit in eliciting a criminal suspect's version of events.

The discursive influence of the interviewer over the account elicited from interviewees during police interviews has been illustrated by studies which have demonstrated how apparent confessions were in reality "dialogically constructed" (Shuy, 1998, p. 9), and how the prosecution version of events is privileged over the suspect's story (e.g., Heydon, 2005, pp. 116ff.). However, studies have also shown how an interviewee can achieve some degree of control over the interaction, albeit limited mainly to acts of resistance (e.g., Haworth, 2006; Newbury & Johnson, 2006).

Another key aspect, which is closely linked with issues of power and dominance, is the use of questions by police interviewers. Oxburgh, Myklebust, and Grant (2010) provide an overview of studies of questions in police interviews, and perform the useful function of bridging the gap between linguistic and psychological studies of this topic. While psychological research has tended to focus on quantitative categorization of different question types, especially the relative use of open and closed questions, linguistic research has generally taken a more qualitative (and critical) approach, revealing how different types of questions work to control the discourse (e.g., Gibbons, 2003, pp. 95–112).

Interviews with Vulnerable Groups

If police interviews represent a discursive challenge for the vast majority of interviewees, then this is even more so for those who are at additional disadvantage due to other factors. For example, for suspects whose first language is not that being used for the interview,

the need for the provision of an appropriate interpreter is not always even recognized, and the specific challenges facing interpreters in the police interview context should also not be underestimated (e.g., Russell, 2002). In addition to language differences, cross-cultural miscommunication can also be a serious problem (e.g., Cooke, 1996; Jones, 2008). In some jurisdictions special procedures do now apply to the interviewing of vulnerable groups such as children, or victims of certain crimes such as rape. However, the potential remains for serious disadvantage and injustice for such groups due to the highly challenging communicative circumstances of the police interview, and the potentially very serious consequences of anything said within this context.

Interview Records

A distinguishing feature of police interview discourse, and one which has been the focus of much linguistic interest, is the process undergone by the data subsequent to their production. As already mentioned, alongside the interview's important function as part of the initial investigation, it takes on an equally important subsequent role as a piece of evidence in itself. However, in order to be legitimately used as evidence, it is essential to be able to establish exactly what was said at interview. This is entirely dependent on the adequacy of the official record of the interview. However, the adequacy and accuracy of those records is open to considerable doubt. In fact, in stark contrast to the strict principles of preservation applied to physical evidence, interview interaction goes through significant transformation between its production in the interview room and its presentation in the courtroom. Since control over this process lies solely with the police and prosecution, this can be seen as a further extension of the control and dominance discussed above.

In many jurisdictions, formal written records of police-suspect interviews are produced by the interviewers themselves, in the form of a monologic statement or précis of the spoken interaction, often based on notes and memory alone. Several studies have shown the results to be poor representations of the interaction which actually took place (e.g., Jönsson & Linell, 1991, in Sweden; Gibbons, 1995, in Australia). The similar process used in England and Wales for the taking of witness statements has been found similarly wanting (Rock, 2001).

The inadequacies of official written versions can partly be attributed to fundamental differences between spoken and written language and the consequent difficulties of converting one format to the other. For example, an official police transcript will routinely omit details such as intonation, interruption, and pauses, which can be of immense significance to the interaction. However, the problems identified in the literature go well beyond basic representational considerations, with a disturbing amount of transformation and omission from the interviewees' version of events. It is surely not coincidental that the resulting accounts tend to prioritize the interests and agenda of the police. Some extreme examples of this are several cases in which linguists gave expert linguistic evidence of the falsification of interview records containing disputed confessions, such as the cases of Derek Bentley and the Bridgewater Four in England (Coulthard, 2002), and *R. v. Condren* in Australia (Eades, 1995).

Partly as a consequence of such high-profile miscarriages of justice, the audio recording of police-suspect interviews is now mandatory in England and Wales, and is increasingly being introduced in other jurisdictions. This has largely been taken to have solved problems with the accuracy of interview records, and is certainly a vast improvement, but in fact it raises some new problems of its own (Haworth, 2010). Tapes are often of poor quality, are transcribed by clerks with no training in the challenges of representing spoken language in written format, and are often selectively summarized rather than transcribed in full.

Further, in England and Wales these transcripts are then read out loud in court, providing a further source of transformation and distortion. The problems of accurately presenting police-suspect interview data as evidence are therefore still unresolved.

SEE ALSO: Conversation Analysis and Institutional Interaction; Critical Discourse Analysis; Language of Courtroom Interaction; Linguistic Disadvantage of Children in Legal Contexts

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Language Planning and Multilingualism

RICHARD B. BALDAUF JR. AND CATHERINE SIEW KHENG CHUA

Introduction

Although multilingualism can be said to be the societal norm, and monolingualism the aberrant condition, classical language policy and planning (i.e., macro planning) has focused on the latter with the development of a single national language within each polity as its primary goal, i.e., the so called "one nation, one language" policy. However, despite such efforts very few polities actually exist where over 90% of the population speaks one dominant language. In the mid-1980s, Austria, Bangladesh, Germany, Iceland, Japan, Korea, and Portugal met this criterion (Laponce, 1987), but globalization has made a number of these polities more multilingual. Although languages in nation-states were seen to be territorial (Laponce, 1987) and in competition with one another, they developed to accommodate multilingualism. Even before colonization, globalization, and marketization became major factors in the migration of people, the spread of languages meant that some polities had or were planning for multilingual futures. Even in monolingual-oriented polities like the United States, which is not very supportive of bilingual education, approximately 18% of the population speaks a language other than English at home (Baldauf & Kaplan, 2010).

Macro or classical language planning can be defined as policies (statements of intent) and planning (indications for action) for deliberate, although not always overt, future-oriented change in language code or language behavior (or both) in a particular community. Individuals in any community may be characterized as being monolingual (knowing a single language) or bilingual (having competence in two or more languages). Societies that consist of a substantial number of bilingual individuals can be said to be multilingual. Thus, "language planning and multilingualism" is about plans, policies and activities that deliberately sustain or provide the conditions to develop substantial numbers of bilinguals in a polity resulting in or sustaining a multilingual society.

In recent years the growth of English as a world language has added a further layer of bilingualism to most non-English-speaking societies, although whether this growth has occurred through competition generated by colonialism, linguistic imperialism, or individual and national self-interest in a globalizing world is a matter of much ongoing debate. Thus, the classical definition of language planning for bilingualism resulting in multilingualism has become more complex as there has been a realization that the focus of what constitutes language planning and the reach of multilingualism needs to be expanded to include global and local issues. Global or supranational language planning is required to deal with international communication in a wide range of political, economic, and military organizations (Chua & Baldauf, 2011a). While this has implicated the need for planning for English in particular by various organizations and bodies, other languages like Arabic, Chinese, French, or Spanish are also substantially involved. Micro or local language planning is often what determines the success of macro planning (Chua & Baldauf, 2011b) and in some instances involvement at that level by small groups or individuals may be the only feasible way for planning to take place (Liddicoat & Baldauf, 2008). While both of these

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types of planning for multilingualism are becoming more widespread and their importance is beginning to be recognized, discussion of them is beyond the scope of this entry. In the sections which follow, we examine what language planners know about planning for multilingualism, discuss some examples of multilingual polities, and suggest how language planning could affect multilingualism in the future.

Language Planning for Bilingualism

In classical language planning (see, e.g., Baldauf, 2005b), polity-level decisions about what languages are to be taught to whom for what purposes is a matter of status planning. Most often they are implemented through language-in-education planning (acquisition planning), although corpus planning (i.e., language-related issues) may be required to develop the language materials needed to implement the plan. The principles for conducting good status planning are well known, but they have rarely been put into practice. These principles are based around needs analysis, through the collection of *factual data*, *people's opinions* on present or future language performance and on *actual second language performance* (van Els, 2005b, p. 981). Tools such as sociolinguistic surveys can be used to collect data about language use as well to ascertain the degree of communicative competence required to meet particular individual and societal needs within a given polity. Van Els argues that where needs are communicative or language competence-related, planning for language learning is indicated, while more general cross-cultural social and intellectual skills may be better met through other types of teaching.

Beyond needs, there are a number of historical and current factors that influence choices made for successful planning for bilingualism. The internal (e.g., large minority language groups like Frisian speakers in Amsterdam) and external (e.g., neighboring Malay-speaking countries for Singapore) language situation in a particular polity influence which languages are supported. Educational factors including the availability of teachers, suitability of teaching materials, and adequacy of financial support are also critical if bilingual planning goals are to be realized. The failure of 40 years of bilingual Bangla-English policy implementation in Bangladesh provides an example of trying to do too much with too few resources in a polity where the immediate communicative need for English is not evident to most nonurban learners (Hamid & Baldauf, 2008). Understanding the needs and factors that determine the relationship between language planning and multilingualism can be best accomplished through an examination of specific examples, some of which take us beyond the notion of deliberate language planning to situations where policies are implied but no less real.

The examples that follow examine the introduction, development, and sustainability of bilingualism or multilingualism in selected polities highlighting personal, territorial, polity-wide, and global solutions for doing this. In language-planning terms, the personal is related to micro or local planning (e.g., in Australia); the territorial (e.g., Belgium, Canada, Switzerland) and polity-based (e.g., Singapore, South Africa) solutions are related to classical macro language planning; while broader planning (e.g., the European Union) is related to global language-planning efforts.

Macro Language Planning

Territorial Planning—Belgium, Canada, and Switzerland

Belgium is made up of three regions: Flanders, Wallonia, and the Brussels Capital Region with Dutch (Flemish), French, and German as official languages. In the multilingual Brussels Capital Region, the official languages French and Dutch are augmented by languages

such as Spanish, Italian, and English spoken by other Europeans residing in the city. Here, most of the Belgians are considered bilingual as they have some knowledge of the dominant languages of the capital (Leman, 1990). However, in the other two regions, Wallonia (which uses French) and Flanders (which communicates in Dutch), people are basically monolingual with each region running its own parliament and government. Only 19 Belgian municipalities are officially bilingual, 27 other municipalities are monolingual, and other cities, towns, or villages have one designated official language (O'Donnell & Toebosch, 2008). However, recently, language choice has shifted with English gaining in popularity due to Belgium being the headquarters for the North Atlantic Treaty Organization and the European Union. Although English is neither an official nor co-official language, the Dutch and French speakers in Belgium were found to prefer English to other national languages (O'Donnell & Toebosch, 2008), adding to the polity's territorial-based multilingualism.

Canada is a heterogeneous society that historically has been an immigrant country made up of Francophones, Anglophones, aboriginal groups, and other migrants. This has required bilingual and multicultural policies, and as early as 1867, the use of either English or French was permitted in Parliament and proceedings in the federal courts (Canadian Heritage, 2008). However, official bilingualism, which gives English and French the same status, rights, and privileges, was only implemented in 1969 while the multicultural policy was launched in 1971 (Edwards, 2005). In primary and secondary schools, Canadian children are taught in English or French depending on the province in which they reside (Department of Justice Canada, 2009). Together with the bilingual policy, multiculturalism is also celebrated. In regions with a high number of immigrants such as Ontario, there are over 100,000 students learning more than 60 languages (Edwards, 2005). However, these language policies have also created linguistic polarities. For example, in Quebec a large majority speaks French because the government has implemented the *Charter of the French Language* making French the sole language of the province. In neighboring New Brunswick, a large proportion of people speak English (Edwards, 2005) because English is taught to new Canadians as a second language to integrate them into Canadian society. As Canada has welcomed new migrants as a way to promote economic growth and cultural development, the linguistic structure has continued to evolve with an increasing number of Canadians speaking Mandarin rather than French outside of Quebec (Gallagher, 2002), meaning multiculturalism and not biculturalism increasingly characterizes modern Canada.

Switzerland is another multilingual country that has successfully managed its linguistic diversity territorially, having German, French, Italian, and Romansh as its four official languages. In the German-speaking cantons a classic diglossic society exists. Standard German is used in publications, media, literature, and local Swiss German dialects are used in everyday interactions (Swiss Federal Statistical Office, 2009), while individual preferences govern languages used in schools and churches. Despite this apparent diversity, in reality its people are not multilingual as only six percent of its citizens are able to converse in the four official languages and only a minority is effectively bilingual. As each Swiss canton is responsible for its own official language, monolingual territorial language borders are created that segregate the different speakers (Benini, 1999) while Switzerland operates under the guise of federal multilingualism. In recent years English has become the preferred second language as it is perceived by the Swiss to be a language associated with better economic opportunities (Stotz, 2006), and this is reflected in Swiss government Web sites where English is included together with German, French, and Italian even though there is strong constitutional support for the largest language, German (Swiss Federal Statistical Office, 2009).

These examples illustrate territoriality as a mechanism for sustaining different languages in multilingual societies. However, territoriality need not be as formal as in these polities as language policy support provided for Swedish in Finland or Catalan and Basque in

Spain demonstrates. Globalization has increased economic, cultural, and information exchanges between people, creating the need for greater communication. Facilitated by improvements in technology, speakers are learning dominant languages of intercultural communication, predominantly English, thereby increasing societal multilingualism.

Polity-Based Planning—Singapore and South Africa

One example of an English-speaking dominated multilingual society is Singapore. Language planning in Singapore is designed with the intention of creating a multilingual social structure that meets the political needs of that polity. The government has chosen to manage this pluralistic population through a model of multilingualism that compartmentalizes the population into four distinct categories—Chinese, Malays, Indians, and Others. Each category is assigned an official "mother tongue" language—Mandarin (Chinese), Malay (Malays), Tamil (Indians), and English (Others) (Chua, 2004). The foundation for this multilingual model is the English-knowing bilingual policy, where bilingualism is defined as proficiency in English as the first language and one of the mother tongues as the second language. The objective of the policy is to ensure Singapore's economic advantage, to unify the different ethnic groups by learning English, and to maintain the people's cultures by learning the mother tongue. Language planning has resulted in all Singapore government schools using English as the main medium of instruction and for all examinations, except for mother tongue subjects. In 1980, streaming was introduced to channel school students to different courses based on their linguistic abilities. Furthermore, English has been used as a gatekeeping device for local schools and universities (Chua, 2004). Recently, the multilingual model has further diversified as some secondary students (13-year-olds) are allowed to study an additional mother tongue or foreign language in addition to their mother tongue. To complement planning in the education system, the government has had an ongoing "speak Mandarin campaign" (primarily for the Chinese in Singapore), to encourage the use of Mandarin for cultural knowledge and to meet the increasing economic involvement with China, and have instituted the "speak good English" movement in an attempt to maintain the standard of English (Chua, 2004). Singapore's multilingual model rests on communicative needs related to economic development; it is structured, well-planned, and has successfully improved literacy levels.

In South Africa, state-based language planning has to accommodate a variety of African, Asian and European languages—including Afrikaans, Arabic, Hebrew, and Sanskrit—creating a complex linguistic structure. From this diversity of languages, the government has selected 11 languages—Afrikaans, English, IsiNdebele, IsiXhosa, IsiZulu, Sepedi, Sesotho, Setswana, SiSiwati, Tshivenda, and Xitsonga—as the country's official languages with English as the country's lingua franca (www.southafrica.info/). Language planning and policy in South Africa are closely linked to the country's political history. Its multilingual policy was implemented in 1996 to replace the English and Afrikaans bilingual policy that existed during the colonial and apartheid periods when language was used for ethnic and racial segregation. During this period, the Whites, Indian and Colored children were educated in the two official languages while the Black Africans were taught in an African mother tongue for the first four years of their schooling before progressing to English-medium education (Murray, 2002). The new multilingual policy has been implemented using a top-down approach, similar to the strategy adopted by the Singaporean government, although South Africa is much larger and more diverse. It is filtered through the Ministry of Education to the provincial and regional levels, and is open and flexible, resulting in different interpretations and varied outcomes. However, in some respects a monolingual approach is dominant as English is used in all governmental work and is associated with greater economic opportunities. South Africa has attempted to put in place a more inclusive society in which multiculturalism and multilingualism are celebrated.

But, the association of African languages with apartheid has meant that the preference for an English-language education is pervasive, as for many Africans it is associated with a better chance in life.

Global Language Planning

Broader Planning—The European Union

Language planning in the European Union (EU) involves two opposing models. The first promotes linguistic diversity through its multilingual and pluralistic approach to language planning, reflecting the 27 members and 23 official languages in the EU, with each member state having the right to specify the language(s) that will be used as its official language(s) (Europa, 2008). Multilingualism is seen as the best way to maintain Europe's linguistic heritage and to eliminate discrimination, although there is still discrimination since regional minority groups such as the Catalans in Spain do not share the same linguistic rights (Faingold, 2007). This multilingual policy is supported through conference interpreters to deal with verbal communications and the translation of official documents.

Parallel to the multilingual policy, the EU also adopts a second language-planning model in which only a selected number of languages are used as EU working languages. In most situations, English, French, and occasionally German, Italian, and Spanish are used while the rest of the official languages are excluded (van Els, 2005a). Over time this language model has evolved and has become increasingly one-language focused, with English being nominated as the unifying language and lingua franca for all EU members. Such a move toward one overarching language is deemed to be practical as it facilitates efficient communication and is cost effective in a situation where an increasing number of countries are joining the EU. The EU is therefore caught in a constant struggle between the two models—one that promotes diversity and the other that advocates a convergent approach. This polarity is not unique, as other multilingual bodies such as ASEAN have also adopted English as their language for official communication.

Micro or Local Language Planning

Personal Planning—Australia

Although for a period during the 1980s and early 1990s Australia had a reputation for being a leader in educationally focused language planning for promoting and sustaining multilingualism, since the mid-1990s language policy has entered a period of relative neglect. These early policies were based at least in part on the needs-based approach advocated by van Els as a senate committee held hearings around the country and took written submissions on what the policy should contain. These policies lead to unprecedented Commonwealth support for European and, for the first time, for Asian languages being taught in schools and in community language programs (Baldauf, 2005a). Some support was also given to aboriginal languages by the Commonwealth and particularly by the Northern Territory, resulting in the revival and use of a number of languages, but declines in others (Nicholls, 2005). However, since this burst of support for bilingual activity, interest at the Commonwealth and state level has declined as governments have allowed a more laissez-faire policy to emerge. Although there are some signs that Australia is entering a new phase of activity (Liddicoat & Scarino, 2010), it is still the case that bilingual programs and study remain primarily an individual or language-community-based activity. More generally, the focus has remained firmly on English literacy in a world that many Australians might see as English dominant.

In instances where individuals or communities are given the option to choose, micro language planning provides two opposing choices. For those who focus on one preferred language such as English, the outcome is a more monolingual society evidenced by the large number of Australians who are monolingual English speakers. On the other hand, those who are bilingual, or who want to be so, make their own personal decisions to become involved in bilingual activities or programs. Other polities like the United States have also adopted this laissez-faire attitude, making language study an individual choice. However, as language use is a community-based activity such micro language planning alone, while essential for the health of language maintenance, is not sufficient to sustain multilingualism.

Combining the Solutions

In India, other parts of Asia, or in much of Africa, language planning for multilingualism is based on the "3 +/− 1" formula for language planning and learning. In some senses it combines aspects of the previously discussed multilingual solutions to language planning (Kamwangamalu, 2011). The "three languages solution" refers to the state (regional), national, and international languages that individuals must learn for social and educational purposes within a polity. For example, in the Philippines these languages might be Ilocano (or another local language), Filipino, and English. However, if a person were a Tagalog speaker, then they would only need to learn two languages as Tagalog and Filipino are very similar, while a Waray speaker living in an Ilocano community would need to learn four languages. Polity-based educational planning means education is bilingual in Filipino and English, while local languages are still territorial within the Philippines. Given the language choices available, individual choice is very important in the bilingualisms that develop, and the diaspora of Filipino workers and brides based on their English-language and educational skills has global language-planning implications.

Language Planning and Its Limitations—India

Although language planning consists of organized interventions in language problems, in some cases these attempts fail to materialize because governments are unable to introduce standardized action plans to carry out their policies. For example, the linguistic structure in India makes language planning challenging for the government. The different waves of colonization, interstate migration, political influences, race, culture, religion, and socio-economic status contribute to the complex sociolinguistic make up of India. The availability of newspapers and magazines in more than 90 different languages, over 70 languages being used for radio programs, and 13 different languages being used for movies and television programs illustrate India's functional multilingualism (Annamalai, 2004).

Language planning began during the colonial period; English language schools were established to educate the local peoples with the European knowledge and values and to provide an English-educated workforce for the colonial government. By the 20th century under the leadership of Gandhi, the colonial government introduced the *diarchy* system in which major Indian languages were offered as an alternative medium of instruction in schools (Annamalai, 2004). After independence, language planning was based on the importance of indigenous languages, mother tongues and a national unifying language (Spolsky, 2004). In an attempt to address this complex language-planning situation, in 1963 the Official Languages Act, which follows a three-language approach, was introduced. The first approach is to ensure that English is used in business, official business, and in higher education. The second approach is to position Hindi as the official medium for communication and a language for national unity (Annamalai, 2004; Spolsky, 2004). The third

approach is to have primary school students study in a third language which is the language of the state they live in (Laitin, 1989). Nevertheless, problems arise when different states implement the policy differently. For example, in Nagaland all schools use English as the medium of instruction, whereas in other states they allow more than one language to be used in schools (Annamalai, 2004). While this policy caters for the great linguistic diversity found in India, the translation process of the policy at the state level creates great complexity and disadvantage for some. However, even when a language is used as the medium of instruction, this does not mean that the students will become proficient in it as the cases of English teaching in Malaysia and Hong Kong illustrate.

Conclusions

Macro language planning often has had a monolingual focus, that is, creating a national language to unify a polity in contrast with the dominant historical multilingualism and multidialectalism that naturally occurs in most polities. However, as the examples in this entry illustrate, a number of solutions have been found to sustain multilingualism. Indeed, a new wave of multilingualism has occurred through globalization that has broadened these multilingual tendencies in many parts of the world. While world languages such as English create diversity as they are added to the multilingual mix in a polity, these languages can also become so dominant that they threaten indigenous and smaller languages which exist within these multilingual societies. In Figure 1, language-planning relationships as they relate to the communicative needs found in a polity are displayed diagrammatically. This shows that while macro language planning has been one intended outcome, planned multilingualism has been another. It also recognizes that micro or personal choice is a significant factor in policy acceptance and development, as are global language structures that influence international communication.

The rise in interest in micro and global language planning and their impact on multilingualism is related to technology and the new wave of multilingualism that has seen the emergence of a new breed of speakers who are English-knowing or dominant bilinguals. Electronic communication and the increased use of electronic devices and related activities,

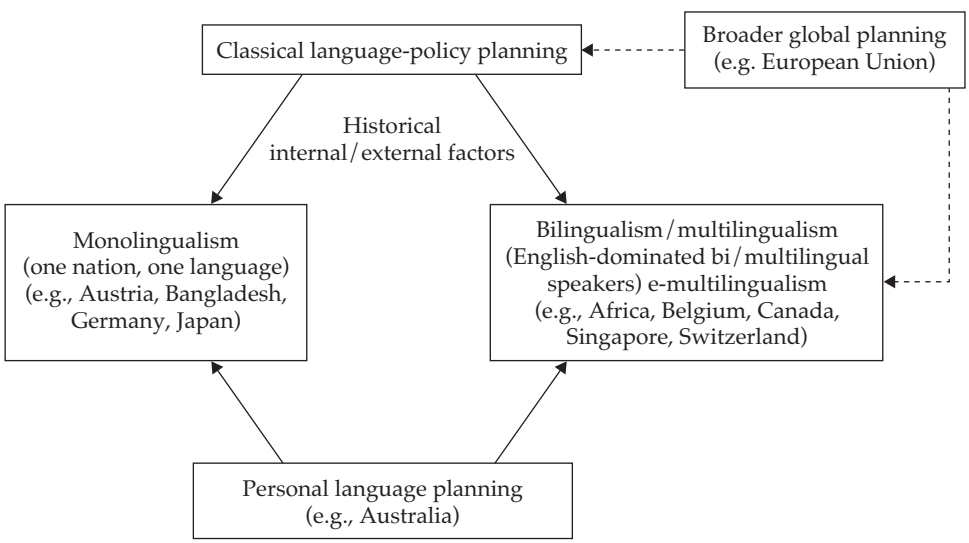

Figure 1 Relationships between language planning and multilingualism

such as e-mailing, e-learning, e-commerce and e-filing, has led to a new breed of users who could be called e-multilinguals, i.e., individuals who learn a world language such as English in addition to their native languages, so as to communicate more effectively in this electronic milieu where the World Wide Web and its search engines are dominated by the English language (Chua & Baldauf, 2011a). While the development of e-multilingualism may be seen as a trend toward English-dominated monolingualism, if added to existing language skills it may promote greater bilingualism, and it has the potential to support other languages for specific purposes. Thus, as individual speakers are empowered as language planners, and as worldwide rather than polity-based communication becomes more dominant, new challenges are posed for language planners in examining how they may help to shape a multilingual future.

SEE ALSO: Acquisition Planning; Language Policy and Multilingualism; Language Policy and Planning: Overview; Language, Politics, and the Nation-State; Multilingualism and English; Multilingualism and Minority Languages; Role of Language and Place in Language Policy; Status Planning

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Language Planning: Qin Shihuangdi's Contribution

WANG XIAOMEI

Qin Shihuangdi (259–210 BC) was the first emperor of unified China. Although he was a controversial figure in Chinese history, he did contribute significantly to the development of China from different perspectives. One of his contributions to Chinese culture was the unification of Chinese writing, which has drawn debate in the academic field (Chen, 1997, pp. 594–6). The *Shutongwen* 書同文 policy, the unification of writing, was the first intentional language-planning activity enforced by Chinese authority. It had a great impact on the further development of Chinese scripts and even Chinese culture (Li, 1985).

The implementation of the Shutongwen policy was triggered by both the political and linguistic situation during the Warring States period (475–221 BC). Before Qin Shihuangdi unified China in 221 BC, the whole country was segmented into seven states, namely Qi, Chu, Yan, Han, Zhao, Wei, and Qin. Each state ran its own administrative system and manifested different cultural characteristics. In terms of language, these states varied in dialects and writing regulations, which was obviously a negative factor for political unification. Among them, as Qiu Xigui (1988, p. 52) explained, the Chinese script in the Qin state was relatively conservative compared to the other six eastern states due to its remote geographical location. To facilitate intercourse between these states and later the transmission of military orders, Qing Shihuangdi promoted the unification of writing in conjunction with his political expansion (Chen, 1997).

Although scholars hold different views about the nature of the Shutongwen policy, due to the fact that no relevant documents have survived the Qin dynasty (Chen, 1997), to some extent they have reached consensus on the following. (1) *Xiaozhuan* 小篆, the Small Seal Script, was the official script for formal usage. (2) *Lishu* 隸書, the Clerical Script, was used more extensively in everyday life. (3) Scripts which were employed in the eastern states and were different from the Qin script were eliminated. During the process of codification, Li Si, the prime minister, was appointed to compile an index of Chinese characters and regulate the way of writing. According to *Shuowen jiezi* 說文解字 (Xu, 1996, p. 315), the first dictionary of Chinese characters in China, which was published in AD 121, Li Si suggested unifying all the Chinese characters when Qin Shihuangdi became the first emperor. However, recent studies (Chen, 2003; Galambos, 2006; Holm, 2010) indicate that the unification of scripts, which was a long process, started before Qin Shihuangdi unified China.

> 秦始皇帝初兼天下，丞相李斯乃奏同之，罷其不與秦文合者。斯作《倉頡篇》。中車府令趙高作《爰歷篇》。大史令胡毋敬作《博學篇》。皆取史籀大篆，或頗省改，所謂小篆者也。(《說文解字・序》)

> When Qin Shihuangdi unified China, the prime minister, Li Si, suggested unifying Chinese characters and abandoning scripts which were different from the writing in the Qin state. Li Si compiled Cangjiepian, Zhao Gao compiled Yuanlipian, and Hu Wujing compiled Boxuepian. All the scripts were Dazhuan, the Great Seal Script from Shizhou. Some scripts were simplified and modified. As a result, Xiaozhuan, the Small Seal Script, came into being. (*Shuowen jiezi*, preface, in Xu, 1996)

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In light of the theory of language planning, codification is a crucial procedure for corpus planning (Haugen, 1966), which focuses on the language itself, such as orthography, compilation of dictionaries, reform of writing systems, and so on (Kloss, 1969). In a society, the prestige code which carries greater importance and enjoys a higher status will be chosen. The Small Seal Script, Xiaozhuan 小篆, which is based on *Dazhuan* 大篆, the Great Seal Script, according to Xu Shen, was used as the official script in the Qin Dynasty. However, Qiu Xigui (1988, p. 65) holds a different opinion. Qiu contends that the characters used in the Qin state from the Spring and Autumn Period had evolved gradually into the Small Seal Script (Qiu, 1988, p. 65). No matter how scholars interpret the term "Xiaozhuan" and its origin, they all agree that the official script promoted by Qin Shihuangdi is Xiaozhuan. As part of corpus planning, Li Si, Zhao Gao, and Hu Wujing compiled three textbooks, which are known as *Sancang* 三倉, containing 55 chapters with 60 characters in each chapter (Bodde, 1967, p. 150). These textbooks are the fundamental teaching materials in which standard Chinese characters in Xiaozhuan are provided.

With strong promotion and strict regulation, Xiaozhuan was introduced all over the country. It was used in all formal domains as the standard form 正體字, such as inscriptions, school textbooks, and so on. In the meantime, Lishu 隸書, the Clerical Script, was extensively used by the populace due to its simplified structure and straight strokes, which gradually developed into the standard script in the succeeding Han Dynasty. As a matter of fact, the use of Lishu is one of the contributions of Qin Shihuangdi (Li, 1985).

To summarize, Qin Shihuangdi was the first person in China who planned the Chinese script consciously to meet the needs of unification and communication among the people. What he did can be analyzed in the framework proposed by Haugen (1966), who divided language planning into four stages, namely norm selection, codification, implementation, and elaboration. Norm selection falls into the category of status planning since it promotes a prestige norm; the other three stages are regarded as corpus planning since they are related to the language itself. By selecting Xiaozhuan as a unifying script for the whole country, Qin Shihuangdi found a way to unite people with diverse dialectal backgrounds. This tradition was passed on dynasty after dynasty. In this sense, Qin Shihuangdi established a tradition of using a unified script which is hyper-dialect and hyper-region. Although Chinese script has evolved several times in the history of China, its function as a bridging form across geographical regions has never changed. The policy of Shutongwen 書同文 by Qin Shihuangdi is indeed a great contribution to Chinese culture (Guo, 1972).

SEE ALSO: Language Planning and Multilingualism; Prestige Planning; Status Planning

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Language Play in Second Language Acquisition

MAGGIE A. BRONER

Historically, researchers have noted language play (LP) as one of the features present in learner language and have wrestled with two main issues: how to define it and recognize it, and what role, if any, it plays in SLA. Early mentions of the role of LP come from the literature in first language acquisition and conclude that LP is not only a feature of the language of young L1 learners but also seems to serve an important role in their socialization. Over the last two decades, research on language play has been receiving increasing attention in the SLA literature. Peck (1980) and Saville-Troike (1988) provide two often-cited early accounts of young children's use of language play, but it was not until the late 1990s and early 2000s that researchers began to study the role of language play in SLA in the language of older children and adults. A key question that current empirical research has aimed to answer is whether LP facilitates language learning. There are two major approaches in current research. The first, represented by Cook (1997, 2000), views language play as "fun," while the second has adopted a sociocultural view of language play as a type of private speech—best represented in the work of Lantolf (1997, 2000).

What Is Language Play?

Huizinga poses the challenge that the human species should be labeled as *Homo ludens* rather than *Homo sapiens* since in his view "play is the origin of civilization and culture" (cited in Cook, 2000, p. 110). Play is unpredictable and usually voluntary, it is rule bound, and has as a primary feature the acknowledgment that it is an activity that is "different" from "ordinary life" (Huizinga, 1966 cited in Tarone, 2000, p. 32). Within the most basic definition of play is the notion of "language play" (e.g., making puns, coining new words, imitating the language of others, constructing and repeating rhymes, and so forth). David Crystal reminds us that "everyone plays with language"; while not everyone engages in language play to the same extent, it is unavoidable (1998, p. 1). Hence, if language play is unavoidable as well as an integral part of the human experience, it seems logical to study it to gain insights from it into the process of learning languages. Yet it is only recently that language play has been taken seriously as a fundamental linguistic behavior that should be accounted for by linguistic theory.

Literature Focused on the Definition of Language Play

One of the challenges when reviewing the literature on language play is pinpointing its definition. In recent SLA literature, LP is mainly viewed from the perspective of two different traditions. The first assigns to LP purposes of amusement and labels it "ludic language play," later referred to simply as "language play" (Cook, 1997, 2000). The second tradition primarily describes language play as one of the functions of "private speech" (Lantolf, 1997, 2000). These two positions share the concern that language play poses a challenge to models of SLA that assume that language must be "natural" and transactional,

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contending that a great deal of language serves purposes beyond the exchange of information. Yet it is important to note that these authors have different perspectives of language play as a phenomenon and in regard to its potential role in SLA.

Ludic Language Play

The line of research that defines language play as "ludic" is best represented by Cook. For Cook, play (including language play) is a natural phenomenon. Influenced by Bakhtin (1981), Cook views play as an activity that allows the creation of a world of fiction and imagination, a reality parallel to daily life but different from it and possessing its own meaning. It is a fundamentally human, creative, and intelligent phenomenon (1997, p. 227).

Extending this view to language learning, Cook asserts that there is a missing dimension in SLA theories based on the premise that language can only be learned when the learner is exposed to "natural" language, focused on meaning—rather than form—and transactional in nature. Furthermore, he proposes that not all language is uttered to produce or take part in meaningful, or even real, linguistic transactions. For Cook, there are two types of language play. The first type is formal, including play with the components of the language (i.e., sounds, grammatical structure, or both) such as puns, rhymes, alliterations, and so forth. This type of play is present in the following example where young children are creating "silly" rhymes with the sounds:

Child 1: Hey.
Child 2: Mother mear (laugh)
mother smear
Child 1: (laugh)
Child 2: I said mother smear
mother near mother tear
mother dear (laugh) . . . (Garvey, 1977, p. 37 cited in Tarone, 2000, p. 36).

The second type, semantic language play, is play with meaning that allows for the creation of fictional worlds:

Teacher: no hay recreo (*there is no recess*)
Leonard: no hay recreo (*there is no recess*)
Girl: no hay recreo ahora (*there's no recess now*)
Leonard: Ahora? Ahora no hay recreo, he, he, he (imitating a "villain's" voice)
(*Now? Now there's no recess, he, he, he*). (Broner & Tarone, 2001, p. 372)

Both types of language play (play with forms and semantic language play) are found in the language of children and adults. There are various similarities and differences in language play depending on the age of the person engaged in it. Differences, for instance, may be found in topics and linguistic sophistication, while similarities—depending on age—include that both groups may use the same types of genres of language play (e.g., puns, rhymes, jokes, creation of world of fiction) as well as overt expressions of laughter. Cook contends that language play should be recognized as an important aspect of what it means to "know a language," one that does not diminish but actually increases with age and that signals "advanced" proficiency (2000, p. 150).

Language Play as Private Speech: A Sociocultural Approach

A second line of research looks at language play as part of "private speech" (Lantolf, 1997, 2000). Early work using a sociocultural approach defines language play following Vygotsky,

who sees *play* as one of the principal factors in a child's development because it creates "a zone of proximal development" (ZPD) where the child acts well beyond his actual age. For Vygotsky (1978), children's play starts as a "form of activity," but as they grow up, imagination is transformed into "play without action" (p. 93). In other words, it becomes "abstract thought" (p. 103). As Lantolf states (2000), "as cognitive development proceeds, private speech becomes subvocal and ultimately evolves into *inner speech*" (2000, p. 13, italics in original).

Lantolf defines LP as self-directed speech, or language that is uttered and addressed to the self and not intended for public performance. He views this type of language play as "functions of private speech" (1997, p. 4). Using self-reported data from adult Spanish-as-a-foreign-language learners, Lantolf analyzed learners' usage of language play and characterized several types, including hearing words in the learner's head, talking to self in Spanish, practicing of language silently in one's head, repeating of sentences to oneself, thinking of ways to say something alone, and then asking for confirmation. An example of this type of language play is present in the next excerpt where adult learners repeat the Spanish participle "devuelto" in a silent voice to the self:

T: Felipe devolverá el regalo (*Felipe will return the gift*)
C: El regalo será *devolvido por Felipe (*The gift will be returned [participle] by Felipe*)
T: Only it's irregular. Devuelto. Devuelto (*participle of "return"*)
S: **Devuelto** [*silently to self*]. (Lantolf & Yáñez, 2003, p. 105; note: translation not in original)

An important characteristic of this type of language play is that it tends to disappear or diminish as learners acquire more language. Hence, this characterization assumes that language play possesses a role quite the opposite from that proposed by Cook. For Lantolf, it is an important social tool to mediate thought but not an end in itself.

Within the sociocultural framework, other notable early work includes that of Ohta (2001), who studied adult acquisition of Japanese as a foreign language. In her data from adult learners, Ohta found instances of language play as: "rehearsal, 'imitation,' and 'vicarious responses'—all part of 'a process by which learners in a classroom setting formulate their own answers to a question the teacher has addressed to another'" (p. 17). Her work also defines LP as one manifestation of private speech, specifically; language that is audible, self-directed; and not uttered to communicate with others. For Ohta, this expanded definition is important since it allows us to distinguish private speech from both inner speech and social speech.

In light of Cook and Lantolf's disparate conceptualizations of LP, Broner and Tarone (2001) assert the need to pinpoint a definition of language play. The authors looked at language play data from a fifth-grade Spanish immersion classroom and identified instances as one of these types: language play for *fun*, language play as *private speech*, and instances which functioned "as both fun and rehearsal" (Broner & Tarone, 2001, p. 364). The authors propose five cues that can help researchers identify the type of a particular language sample:

> presence/absence of laughter; shifts in voice quality and pitch versus shifts in loudness/whispering; use of language forms that are well-known versus forms that are new; presence/absence of a fictional world of reference; and presence/absence of an audience other than the self. (Broner & Tarone, 2001, p. 376)

Broner and Tarone contend that this need to characterize language play in a way that is congruent with both prevalent theoretical traditions arises from the distinction that, for

socioculturalists, language play is a cognitive tool that aids acquisition and diminishes as learners become more proficient. They contrast this with Cook's view, in which language play of the fun/ludic kind requires "language forms that are well mastered and often willfully violate well known language norms," hence becoming a reflection of mastery of the language (Broner & Tarone, 2001, p. 366). Since then, different authors carrying out empirical research on language play have referred to Lantolf's and Cook's definitions of language play to analyze its role further in SLA.

Literature Focused on the Impact of LP on SLA

As instances of language play have been studied, it is pertinent to ask: does LP help language learning and, by extension, does it facilitate SLA? Most authors have been cautious in asserting that language play is a necessary condition in SLA. Nevertheless, Cook and Lantolf make strong cases for its inclusion as part of the variables that are present in SLA. Cook proposes that an ability to play in an L2 is a sign of mastery and acquisition and that we should view language play "both as a means and an end of language learning" and as a "test of proficiency" (2000, p. 204). Lantolf (1997) concludes that "language play, in and of itself, [may not] lead to successful SLA [however] without language play learning is unlikely to occur" (p. 19). More recently, Lantolf (2000), Lantolf and Yáñez (2003), and Lantolf and Thorne (2006) have made strong claims regarding language play as a type of private speech and about its role in *internalization*. Tarone (2000) also weighs in on the matter, noting that prevalent models of SLA have failed to incorporate this phenomenon, and calls for the need for SLA theories to account for the role of LP. However, she takes a more prudent stance on the role of LP in SLA, suggesting that it may be facilitative rather than necessary.

Since then, the conversation on language play has expanded. Pomerantz and Bell (2007) have proposed an *emergentist* view to address the role of play in language learning. The emergentist model assumes that linguistic competence grows out of experience and that play is part of such experience. The authors analyze the language that emerges from what they term "unsanctioned" LP that occurs outside organized, "fun" activities, and "sanctioned" LP that occurs during organized activities set up by the teacher to promote play. In studying an advanced Spanish conversation class, they found that language play was present throughout the range of tasks and that it accounted for language use that was richer in quality in comparison to that produced when students were following set rules. The authors seem to advance current findings in the research, as their data reveals how, through instances of language play during a nonsanctioned activity, students exploited the multifunctionality of words to amuse themselves. In the process, they showed evidence of the acquisition of "symbolic competence" (Kramsch, 2006) or the "ability to understand the meaning of forms in all its manifestations (e.g., linguistic, textual, visual, acoustic, poetic)" (Pomerantz & Bell, 2007, p. 570).

Imitation and Its Role Across Theories

Although not directly acknowledged in the literature, there is potential common ground between both approaches (the first, which treats language play as private speech, and the second, which categorizes LP as "fun"). Both assert that imitation plays a role in language learning. For the sociocultural approach led by Lantolf (2000), imitation is not "mimicking" but rather it is transformative and a way for learners to internalize the L2. In analyzing data from one adult learner of Spanish talking to herself (intrapersonal speech), Lantolf and Yáñez look at how the student appropriated language through imitation from "the linguistic affordances made available by the classroom community" (2003, p. 97):

> The concept of "affordance" was developed by the psychologist James Gibson. Van Lier (2000, p. 252) defines it as "a particular property of the environment that is relevant—for good or for ill—to an active, perceiving organism in that environment." (Lantolf & Thorne, 2006, p. 179)

They examine the role it plays in aiding internalization and suggest that when students imitate, it may be the play function of private speech that is facilitative of L2 learning. The authors conclude that while "production of private speech" does not necessarily guarantee learning, looking at samples of "language-focused private speech" can provide evidence of the linguistic affordances made available to learners and highlight what learners do to internalize them (Lantolf & Yáñez, 2003, p. 107).

For Cook and those those inspired by a Bakhtinian perspective, imitation is also a feature of language play. Particularly relevant in this line of research is the presence of "double-voicing" as a way for learners to appropriate and incorporate new voices thus expanding sociolinguistic and L2 repertoires. Throughout the literature there are numerous examples of children who use double voicing at various stages of acquisition. Cekaite and Aronsson (2004) present playful recyclings (repetition) in the conversations of nine recent refugee and immigrant children attending a Swedish immersion classroom. They show how recyclings helped children with little L2 to take part in playful (joking) interactions. The data revealed that one way in which children with limited L2 proficiency take part in humorous interactions is by repeating a peer's non-native pronunciation and by using "role appropriations" (or double-voicing) such as imitating "teacher-talk" (2004, pp. 375–7). Cekaite and Aronsson conclude that the recyclings that appeared in humorous interactions among peers, "created a meaningful context for the acquisition of linguistic and pragmatic skills" (2004, p. 386). Thus both approaches aim to understand what learners do with the opportunities made available to them as they try to acquire an L2. Language play in its many manifestations is transformative, "fun"—even for socioculturalists (Lantolf & Thorne, 2006)—seems to aid internalization, and helps appropriation of sociolinguistically and pragmatically appropriate L2 voices. Across lines of research, what the literature has in common is the criticism that language play is often dismissed by theory and not treated as a serious phenomenon. Overwhelmingly, the evidence suggests that LP must be part of a comprehensive theory of language acquisition.

SEE ALSO: Agency in Second Language Acquisition; Bakhtin and Second Language Acquisition; Classroom Discourse; Classroom Research in Second Language Acquisition; Inner Speech in Second Language Acquisition; Internalization in Second Language Acquisition: Social Perspectives; Lantolf, James P.; Ohta, Amy Snyder; Private Speech in Second Language Acquisition; Tarone, Elaine; Vygotsky and Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Language Policy and Multilingualism

HAROLD SCHIFFMAN

Language policy as a field of inquiry, rather than as a human activity, dates from the mid-point of the 20th century, when researchers of various sorts began to study the effects of language planning, which had gone on long before scholars turned their attention to it. One example of language planning (i.e., state-supported intervention in language) is the foundation of the language academies of the 17th century in Spain, France, Italy, and some other polities, where attempts to control the corpus (i.e., body) of the language were undertaken; in subsequent centuries attempts to control the status of language also began, for instance during the French Revolution (Brunot, 1905–53/1967).

As for the development of the field of inquiry known as "language policy" or "language planning," we may perhaps date its origin to early- to mid-20th-century sociolinguists, sociologists, and anthropological linguists such as Edward Sapir (Mandelbaum, 1916), Charles Ferguson (Ferguson, 1959), Einar Haugen (Haugen, 1966), Heinz Kloss (Kloss, 1940, 1967), and Joshua Fishman (Fishman, 1966), who began to look at cultural attitudes toward language(s) as important topics of study, in other words beyond the traditional (behavioristic) focus on language structure. It was also a time of "ethnic revival," when a number of situations involving language minorities and minority languages began to challenge previous assumptions about their place in the world—in Canada, it was the "revolt of the cradle" when Francophone Canadians began to demand that their language have equal status with English; in the United States, African Americans began to campaign for equal rights, and Cuban émigrés in Florida asked for the right to retain their mother tongue instead of accepting assimilation. Elsewhere, newly emergent nations in Africa and Asia faced decisions about whether to retain colonial languages or develop their own languages for education and other uses. At about the same time, researchers in other disciplines began to look at language as a source of political or legal conflict, so in the social sciences, the focus broadened, and the disciplinary tools used varied quite considerably from those of traditional linguistics. This disciplinary diversity continues to complicate, if not confound or vex, the study of language policy and planning.

As for the study of multilingualism, it is usually subsumed under the topic of language policy or language planning, but is also seen by nation-states, at least, as a vexed issue—having more than one language to deal with is seen as problematical: Nation-states that have a non-uniform population, where more than one language is spoken, are thought of as economically inefficient and multilingualism is therefore seen as an impediment to economic development (Fierman, 1991). The history of Europe, if not other areas of the world, is one where dominant language groups attempt to remove or marginalize other ethnolinguistic groups, or force them to abandon their mother tongues for the dominant language. Again, the French Revolution stands out as a blatant example of the efforts of the speakers of French to force speakers of other languages, such as Breton, Corsican, German, Catalan, Occitan, Provençal, and other languages spoken on the "margins" of France, to give up their *jargons*, *idiomes*, and *patois* in favor of Standard French, which was seen as the only fit vehicle in which to spread the message of the French Revolution (Schiffman, 1996, pp. 75–147). But one only needs to look across the English Channel to see attempts to suppress languages such as Welsh, Irish, and Scots going on; other European

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nation-states and "empires" such as the Austro-Hungarian Empire and the Russian Empire were also contending with language issues and multilingualism. Nowhere in all of this was multilingualism ever seen as an asset, but always only as a liability and a problem. Thus in the United States the languages of immigrant groups are replaced by English within two generations, and immense amounts of money have to be spent in later years to get monolingual Americans to learn another language. The perception that multilingualism is bad for children stems from faulty research from the 1920s, where children from economically deprived but multilingual backgrounds in the US were found to do less well on intelligence tests (Haugen, 1956). As Haugen points out, this research seemed to have been carried out expressly to justify the "Americanization" agenda in US public schools at the time, bolstered by the isolationism of the post–World War I period.

All these preconditions could not but influence the development of an explicit agenda when "experts" whose focus was language-policy study were asked to make recommendations as to what kinds of language policies best suited the emergent needs of newly independent countries in Africa and Asia. This happened mainly after World War II, when the British Empire finally left South Asia, and in the next decades, when colonial powers found themselves no longer welcome in Southeast Asia, Africa, and other regions where colonialism still survived. The main question being asked was whether the former colonial language should be retained and, if not, which indigenous language might fill its place. In some polities (e.g., Indonesia), it was found that ousting Dutch and enshrining Bahasa Indonesia was an easy task, but in neighboring Malaysia removing English and replacing it with Malay has not been so simple (Mead, 1988). Sri Lanka downgraded English and tried to establish Sinhala in its place, with disastrous results for the minority Tamils, and for Sri Lanka's economy (DeVotta, 2005). India's attempt to make Hindi the "national language" and banish English was not so successful, but a three-language formula seemed to be a satisfactory compromise, though English seems to be making a comeback, especially in the era of outsourcing and call centers (Schiffman, 1996; Morgan & Ramanathan, 2009).

Many of the newly emergent polities, blinded by their zeal to indigenize their language policy and ban the hated colonial tongue, were themselves deluded by the notion that monolingualism was economically more sensible, so they tended to scrap their historic multilingualism and adopt Western "monistic" models of language policy. Only now are some (e.g., Sri Lanka) returning to their historic multilingualism as a language-policy model. Singapore is an exception to this: After having separated from Malaysia where the emphasis was to be on Malay as the national language, Singapore instead adopted bilingualism as a language policy, so Singaporeans are expected to learn their mother tongue (Chinese, Malay, or Tamil) as well as English. But even there, balanced bilingualism is a difficult goal to achieve, since English has symbolic capital that the other languages lack (Gopinathan, 1998).

Language Policy and Theory

As with many academic disciplines, language policy (and planning) lacks an overall theoretical unity. Various emphases can be found, especially given the lack of disciplinary unity (the fact that language policy is studied by people in different disciplines, with different emphases and priorities) and the fact that language-policy study is not centrally important in any one discipline, but exists as a sort of stepchild, forced to exist on the margins of any academic discipline where it receives any attention. Any study of language policy that does not privilege quantifiable data will be automatically suspect in many social-science disciplines, since "hard data" are all there is in those disciplines, and anything else is qualified only as "mentalism." Since language policies often involve emotional issues

such as "love of language" and "linguistic chauvinism," which are hard to quantify, many studies are dismissed as scientifically invalid, or as simply trivial.

Which Came First: Chicken or Egg?

One issue that crops up as soon as one begins to read the literature on language policy is whether language policy necessarily *precedes* language planning, or whether language policy is a *result* of language planning; concurrent with this conundrum is whether language policy can exist without any explicit language planning having been carried out at all. The definitions of language policy that one can find in the literature often refer to *explicit goal setting*, or *definite written* plans, but examples can be adduced to show that polities can have language policies without ever having planned or enacted them—the USA is a good example of this, since English dominates almost all official and unofficial domains, but no explicit policy officializing English has ever been enacted.

Some Commonality Exists

Nevertheless, some theoretical principles are generally accepted. One notion that most researchers find useful in the area of language-policy status is the distinction between *territorial* and *personal* rights to or for a language. Thus, in the Austro-Hungarian Empire, in the Soviet Union, in India, as well as in many parts of Western Europe, languages (or their speakers) are deemed to have rights within certain territories of the realm, while other languages have rights everywhere in the territory—the so-called "personal" right, that is the right to expect the state to respond to the person, wherever in the territory he or she may be. In some polities these kinds of rights are specified in the "official" policy; in others, the rights exist because of "tolerance"—a distinction discussed by Kloss (1940), who raises the issue of whether language policies need to be explicit (de jure, top-down, written, official, and overt) in order for us to say they exist, or whether policies that exist by tradition (i.e., are implicit, tacit, de facto, grassroots, unofficial, unwritten, and covert) can also be said to be as much a part of the "real" policy as the explicit (Schiffman, 1996).

As one researcher reports (Schiffman, 2006), it was the experience of studying a diglossic language, Tamil, and trying to determine what rules existed that would specify in which context or domain the L-variety (spoken language) would be used, and when the H-variety was more appropriate, that led him to conclude that language policy for Tamil involved a bipartite distinction. The H-variety is used for written purposes, and also for public speaking, but there are subtleties that cannot be predicted. Often public speeches begin in H-variety Tamil, then transition into spoken before ending in H-variety again. H is used on television for delivering the news, but other programs, including talk shows, sitcoms, and sports, are typically delivered in the spoken variety. Movies are almost exclusively the domain of the spoken language, except for the so-called "mythological" film. When speakers were asked for explicit "rules" for these usages, they could not easily specify them, and if asked who had formulated these rules and when, they were totally clueless, or declared that it had "always been thus." The researcher had to conclude that the rules for the partition of H- and L-varieties had developed traditionally, and were aspects of an implicit or covert policy that governed these usages, which Tamil speakers learned by osmosis. One very pernicious aspect of this "policy" is that the H-variety is seen as the "real" language, and the spoken variety is only a corrupt, degraded version of it, spoken only by children and illiterates, and not worthy of any serious attention. This, despite the fact that tens of millions of Tamil speakers use it daily for 99% of their communication in Tamil.

These on-the-ground experiences and discoveries forced this researcher then to see that language policy must be viewed as consisting of both the official, explicit, written, codified,

and overt elements, and the unofficial, implicit, unwritten, grassroots, uncodified, and covert elements, and that language policy is therefore rooted in "linguistic culture," defined as the whole complex of behaviors, assumptions, cultural forms, folk-belief systems, attitudes, myths, stereotypes, and prejudices about language, as well as the role of language as the main vehicle for the construction, replication, and transmission of culture itself. In his original postulation of "covert" aspects of policy, Schiffman (1996) proposed that covert policy could be seen as subversive, collusive, or inadvertent. Subversive covert policy was exemplified by the way schooling operated in Russian-occupied Poland before 1918, or in Catalonia in Spain under Franco. In these two polities, an underground system that systematically defied the official policies (Russian in Poland, Castilian in Catalonia) could be seen to operate, and operate very successfully, to keep Polish and Catalan alive under the domination of two repressive regimes. The other proposed aspect of covert policy is one where the entire society colludes to pretend that the language policy is one thing, when in fact something else is happening. An example of this would be language policy in the Indian state of Nagaland, where the "official" language is English, but where the actual language of instruction is Naga Pidgin, also known as Nagamese. This policy is carried out with the collusion of the entire society, mostly because Nagamese, being a "pidgin" language, is not deemed to be a fit vehicle for education, so English is put up as a kind of "window dressing" to hide the fact that the actual language that all Naga children understand is Nagamese; in other words, Nagamese is used as a "language of explanation," though teaching materials may be overtly in English. (And, as it turns out, this use of an L-variety language as a "language of explanation" alongside other "official" languages is more common in the world than one would know from looking only at official statements about language policy.)

A third kind of covert policy, according to Schiffman (1996), would be one that came about inadvertently, in other words if the language-policy makers proposed a particular system, not realizing that it contained covert factors that undermined and subverted the overt and official policy, and in the end rendered the official policy ineffective. An example of this was, Schiffman suggests, German–American language maintenance programs in 19th-century German–American schools, which divided subject matter into practical areas, taught in English, and religious subjects, taught in German. Schiffman concludes that this division led students to see English as practical and useful, and to view German as ethereal and not very practical, leading to the eventual demise of German as the German–American community underwent language shift (Schiffman, 1987). Schiffman's analysis was that German–American policy makers fully intended to maintain the German language in America for all posterity, and never imagined that their policy contained elements that would sabotage this goal. The reason they did this, of course, was to respond to pressure from American society at the time (the late 1880s) when various attempts were made in a number of Midwestern states to shut down German-medium schools. In order to mollify these opponents, the school policy makers hoped that using German for religious purposes could be justified on the grounds of religious freedom (Schiffman, 1996, p. 228).

As the proposed hourly schedule in Figure 1 suggests, religious subjects and German language take up 50% of the day, while secular subjects, taught mostly in the afternoon, are allotted the remaining 50%. German Americans succeeded in fighting off the attempts in Wisconsin (Bennett Act) and Illinois (Edwards Act) in 1889, which would have required that certain subjects be taught in English, and the proposed *Stundenplan* was an attempt to find a solution that would keep German alive while mollifying political opponents. When such a partitioned schedule was adopted, of course, it was a concession that led to *un*balanced bilingualism and, eventually, to language shift.

Recently, other researchers have extended the notion of covert policy to apply to situations where policy makers cynically propose language policies that on the surface seem

Stunden = Plan

Stunden.	Montag.	Dienstag.	Mittwoch.	Donnerstag.	Freitag.
Von 9 Uhr bis ¼10 Uhr	Biblische Geschichte.	Katechismus.	Kirchenlied.	Biblische Geschichte.	Katechismus.
Von ¼10 Uhr bis ¼11 Uhr.	I, II, III Schönschreiben. Lesen.	I Lesen. II Schönschreiben. III Lesen.	I Bibellesen. II Bibl. Gesch. Lesen. III Schreiben.	I, II, III Schönschreiben. Lesen.	I Lesen. II Schönschreiben. III Lesen.
Von 11 Uhr bis 12 Uhr.	I, II, III Arithmetic. Schreiben.	I, II, III Arithmetic. Schreiben.	I, II, III Buchstabieren. Lesen.	I, II, III Arithmetic. Schreiben.	I, II, III Arithmetic. Schreiben.
Von 1 Uhr bis 2 Uhr.	I Reading. II Writing. III Reading.	I, II, III Sprach- Unterricht. Writing.	I, II, III English Grammar. Writing.	I Reading. II Writing. III Reading.	I, II, III Sprach- Unterricht. Writing.
Von 2 Uhr bis 3 Uhr.	I Writing. II Reading. III Writing.	I, II, III Geography. Reading.	I, II, III Drawing. Reading.	I Writing. II Reading. III Writing.	I, II, III Geography. Reading.
Von 3 Uhr bis 4 Uhr.	I, II, III Spelling. Arithmetic.	I, II, III Singen.	I, II, III U.S History. Drawing.	I, II, III Spelling. Arithmetic.	I, II, III Singen.

Figure 1 "Stunden-Plan" (1893) © *Pädagogische Zeitschrift*

to have one goal, but in fact contain surreptitious elements, hidden agendas, or other covert factors that are designed to thwart the overt goals (Shohamy, 2006), or are used to manipulate the populace who do not realize what is happening. Whatever the case may be, language-policy formulation, like other policy formulation, often involves unintended consequences that its planners never imagined would come about; it is therefore obviously more complex than popular conceptions of it may be.

Theoretical Approaches to Multilingualism

When one contemplates the issue of multilingualism, it is difficult to escape the impression that, no matter where in the world it exists, multilingualism is seen as a problem that needs to be solved. In other words, it is not viewed as a natural state of affairs, but as an exceptional kind of situation, and, when states and nations address the issue, it is more typical for them to avoid it, ignore it, or seek to eliminate it, than to accept it as normal. As we have seen with developments during the French Revolution, the revolutionaries saw the persistence of non standard dialects, *patois, idiomes*, and *jargons* (as they referred to other languages spoken on French territory) as a problem that needed to be eliminated, because only Standard French was a fit vehicle to spread the exalted ideals of the Revolution: *liberté, égalité*, and *fraternité*. Similarly, in the USA, English is seen by many, including judges in the citizenship courts, as the only fit vehicle in which one can understand American ideals. Therefore, would-be citizens cannot become naturalized without being able to demonstrate a knowledge of English. This requirement was not enacted by law, but came about by precedent in the immigration courts (Mertz, 1982).

The question of how multilingualism is dealt with in various language policies in the world is problematic. There have been attempts to typologize both multilingualism and the kinds of language policies that we find in the world, and to see how the two typologies might mesh, but these attempts have usually failed (Fasold, 1984). As one researcher put it,

> One of the main problems that arises in the study of language policy, namely the lack of congruence between policy and the sociolinguistic conditions of the group in question, is rarely adequately dealt with in many analyses, despite the best efforts of talented researchers. . . . In fact there is a tendency, especially for lay analysts of language policy, to confuse language policies with societal multilingualism itself, and to map both onto the same symbolic representation. It is perhaps natural for decision-makers to assume that their policy fits the facts of multilingualism, and if it doesn't, to blame the facts rather than the policy. Thus popular accounts of language policy in France praise the monolingual policy, assuming almost that France is monolingual, when this is far from the case. Multilingualism is thus a pesky problem that would go away if people would only see the beauty of the policy. (Schiffman, 1996, pp. 26–7)

Six sociolinguistic factors are then enumerated that are often ignored in the description of multilingualism, and are therefore also ignored in the formulation of policy (Schiffman, 1996, p. 27):

1. religio-confessional aspects of the use of certain languages;
2. existence of strongly diglossic tendencies in the linguistic code of any or all varieties in question;
3. existence in a multilingual state of competing standard varieties of some minority codes in adjacent states;
4. effects of the functional load of register(s) on the policy;
5. implications of linguistic repertoire in the policy (especially focusing on degrees of proficiency in various skill areas, both active and passive, of various codes);
6. implications of linguistic register in the policy (in particular, implications of the existence of a dominant exocentric register for science and technology from an internationally dominant and prestigious language).

As an example of the first factor, the importance of Classical Koranic Arabic in many Muslim nations (and especially in Arabic-speaking ones) will mean that other languages spoken on the territory will be minimized or even ignored; only Arabic will be used for education, and at best other languages will be used as languages of explanation, since it takes years of schooling to become fluent in Classical Arabic. Similarly for the second factor: Arabic is strongly diglossic, such that there is almost no mutual intelligibility between Classical Arabic and its spoken dialects, but the latter are never used for education, except surreptitiously as languages of explanation.

For the third factor, in a multilingual state like Singapore, the standard varieties of Chinese, Malay, and Tamil are determined by China, Malaysia, and Tamilnadu in India, in other words they are all "exonormic" languages. Citizens of Singapore have no say in determining the norms, so they may feel that they have no stake in these languages and that they do not "belong" to them.

For the fourth factor, the functional load of a language like English in India is restricted to higher education and business, but the fact that the best jobs in India require a knowledge of English makes the goal of mastering it much more important than its restricted domains would suggest.

The fifth and sixth factors have to do with the feasibility of creating scientific and technical registers for languages that currently lack them, as a way to help preserve them and make all languages "equal." Some researchers view this as a daunting and perhaps even hopeless task, given the immense resources available to languages of wider communication (LOWCs), especially English. Since other LOWCs seem to be on the same route to abandonment, as illustrated by the decision of the Institut Pasteur to publish its journals only

in English from 1989 onward, one is forced to conclude that, if French cannot compete with English as a language of science and technology, we can hardly expect Tamil, Uzbek, or Zulu to be able to do so.

Other Approaches

As an example of different foci and emphases within the broad field of language-policy study, we may benefit from a look at the contents of a recent book on the subject, edited and compiled by Thomas Ricento, *An Introduction to Language Policy: Theory and Method* (Ricento, 2006). This book is useful because it includes a much broader spectrum of possible approaches than other recent books on the subject have done. The topics dealt with are divided into three areas: "Theoretical Perspectives in Language Policy," "Methodological Perspectives in Language Policy," and "Topical Areas in Language Policy."

Under theoretical perspectives, we have articles that focus on "Frameworks and Models," "Critical Theory," "Postmodernism," "Economic Considerations," "Political Theory," and "Language Policy and Linguistic Culture." Under "Methodological Perspectives," we have "The Lessons of Historical Investigation," "Ethnographic Methods," "Linguistic Analyses," "Geolinguistic Analysis," and "Psycho-Sociological Analysis." Finally, under "Topical Areas," we have articles on "National Identity," "Minority Rights," "Linguistic Human Rights," "The Education of Linguistic Minorities," "Language Shift," "Sign Languages," and "Linguistic Imperialism."

This is indeed a wide range of topics, and it is safe to say that the choice of these topics and the exclusion of other potential ones would not be unanimous among many of these contributors—other potential editors of such a volume might choose a different range of possible topics, such as "language endangerment and how to prevent it" or any number of other possibilities. For example, a recent job announcement posted on a LISTSERV for a position lecturing on multilingualism listed the following interest areas: empirical studies of topics such as language description and documentation, language contact, loanword phonology, machine translation, language maintenance and shift, and multilingual language processing and acquisition. Given the fact that implementation is often seen as the "Achilles' heel" of language policy, the implementation of language policies ought to be scrutinized more thoroughly. It may be seen by some as fine and noble to issue grandiloquent pleas for one priority or another, but without methodical implementation, many goals being advocated are doomed to failure.

To summarize, language policies have always been recognized by serious language planners as being influenced by many social variables, and overlooking or ignoring any of them will lead in the long run to the failure of the policy. Similarly, ignoring any variables in the study of any language policy will result in failure to understand what makes a particular policy effective or not. It is currently fashionable in some disciplines to ignore economic factors, and to tar anyone who advocates the examination of economic factors with the label "economic determinist." But advocating the use of less-commonly taught languages (LCTLs) for science and technology naively ignores economic factors, and this alone may doom these efforts to failure. Language-policy study needs to be made less ideology-driven, and more focused on practical and empirical issues.

SEE ALSO: Bilingual and Multilingual Education: Overview; Colonialism and Language Policy and Planning; Critiques of Language Policy and Planning; Endangered Languages; History of Multilingualism; Language Planning and Multilingualism; Language Policy and Planning: Overview; Language Rights in Language Policy and Planning; Multilingualism and Minority Languages; Status Planning

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Language Policy and Planning: Overview

JOSEPH LO BIANCO

Human intervention to shape and direct both form and use of language must be as old as language itself, while by contrast the academic field analyzing conscious policy making or deliberate planning is very recent. Human societies have always been multilingual and language planning, whether overt and conscious or covert and implicit in other activity, has always existed.

Recent decades have seen an upsurge in the activity of writing and implementing policies on communication issues, especially on language and education, and there has been a related increase in academic description, teaching, and theorizing about language policy and planning. Today language policy and planning is the most applied of the applied language sciences and one with direct and substantial consequences for society, economies, education, and culture.

The entries in this section demonstrate these claims. Divided into field, methods and approaches, problems and critiques, key individuals, historic figures and celebrated cases, current issues and agencies, the overview shows some of the vast scope and importance of language planning and policy, without, however, exhausting the field. These entries supply a rich and refined treatment of a much misunderstood component of applied linguistics, very disparate in aims, methods, and consequences, but all tied to the planned, and sometimes unplanned, change and innovation in language and communication.

The entries under the term "field" account for the classic activities that are identified as constituting language policy and planning and specifically how status hierarchies are established for languages and language varieties; how the internal resources, the corpus, of a language or variety is modified and planned; how learning of languages and literacy occurs; how prestige is established for languages and language varieties and how discourse is shaped and influenced both intentionally and inadvertently.

The entries under methods and approaches canvass a wide, but not exhaustive, range of the activities of how language planning is conducted and how actual language policy and planning is studied and described by professional specialists.

The entries under problems and critiques survey some of the limits and critiques of the field of language planning that it has been subjected to in recent years.

The entries under key individuals and historic figures or celebrated cases are a selection from the very large number that could be included. These exemplify the biographies, interests, achievements, and difficulties faced by the individuals, some currently active, others historically important, who have shown that language change need not depend on public authorities alone. These language activists and strategists and the celebrated cases serve to show the immense variety of types and practices of language policy and planning, and that language change is deeply culturally and historically situated. Since language change, especially planned language change, is situated in specific temporal, spatial, and historic settings, analysis of language change reveals a great deal about processes of wider human cultural, social, ideological, scientific, political, and economic evolution.

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The entries under current issues serve to locate the vast activity of language planning and policy in the here and now, in the ongoing work of human individuals and organizations to fashion and shape language and communication practices to meet current or perceived future needs.

The entries under agencies serve to highlight some of the vast diversity that is encompassed under the term language policy and planning, underscoring the situated and locally determined nature of how people organize to change and innovate in relation to language.

The many roles of language policy and planning make simple descriptions or definitions problematical and because language planning is linked to the interests of various groups in society, it is therefore tied to politics and the play of interests and power in social groupings. It is sufficient to recall that not only literacy, with the consequences for cultural activity, recreation, science, and self-knowledge that literate behavior implies, but also language teaching, citizenship practice and civics education, labor market participation, and national identity are all impacted on by the activities of language planning. To account for such a diverse range of activities would require some mention of all the branches of the applied language sciences and many others. For these reasons language planning is the major activity where language specialists interact with economists, political scientists, teachers, sociologists, public policy officials, politicians, citizen interest groups, social psychologists, anthropologists, and other professional groupings.

While the entries contained here already deal with a forbiddingly complex set of activities they barely discuss some kinds of planned language change. The reference here is to those involving personal choices and social influence that might under certain conditions count as planned language change, such as how the talk of groups or individuals is styled for impression, for religious devotion, for political ideology, for identity construction, and display. Any number of psychological behaviors in which talk (self-talk as much as other-directed talk) shapes consciousness, awareness and feelings could under certain understandings and definitions count as language policy and planning. However, these have not been included here because of the difficulty in determining the degrees of consciousness involved that would render such practices instances of "planned" change in language.

Instead here we only discuss deliberate and conscious language policy making in social and interpersonal settings. The clearest examples are those related to public efforts to find solutions to language problems that utilize language expertise, such as when governments allocate resources in response to an overt language policy to support certain kinds of dialect, orthographic or standard language use, or various education measures.

Leaving aside subjective-personal realms of language planning and focusing here on the assumption that a great deal of future conceptual work is required to forge a comprehensive depiction of how intervention that shapes language, its form and use, operates at all levels and what role explicit knowledge of language has in elucidating these processes.

The majority of actual language planning and language policy making in the world does not make use of the insights and methods of professional language planners, nor of the body of concepts and experiences of past language planning. Instead language policy is treated as a subset of general policy making and seen to follow the rules and patterns for instituting change or improvement in any sphere of public action.

It is important to avoid mechanistic accounts of language planning. In the past these have had the effect of reducing the scope of the field too narrowly, admitting a government enquiry into reviving an old language, for example, but excluding how throughout history individuals, through writing canonical poems or politically persuasive speeches, have influenced language. These ways in which individuals through performative, influential, and persuasive verbal and written language action have shaped language itself, and people's identity, are always embedded in social evolutionary processes. Mechanistic

or reductive accounts of the practice of language planning would therefore discount some of the most powerful historical and current cases of how language change is "modeled" by powerful individuals.

The following section, drawing on past accounts of the scope and activities of language policy and planning (Lo Bianco, 2004, 2010a, 2010b), describes:

1. four main modes through which language policy and planning is manifested,
2. four spheres in which language policy and planning occurs, and
3. six broad activities of language policy and planning.

These are understood to involve discursive iteration within the affected speech communities and hence locally appropriate processes of resistance or embrace, toleration or rejection, compromise or subversion, are essential components of comprehensive and nuanced accounts of language policy and planning.

How Language Policy and Planning Is Manifested

Observing language policy and planning in its broadest sweep suggests that there are four broad modes of participation for members of a speech community or a population affected by language change. These are never totally discrete or complete, but instead constitute an ongoing conversation, usually unequally organized with privileged and less privileged voices. Naming these four forms in which language policy is manifested—public texts, public discourse, performativity, and deliberation—identifies key modes of participation available in language planning and policy. The aim here is to depict the dynamic iterative and dialogical character of the formulation of policy, its enactment, that is, how policy is experienced, and how to respond to it.

Public Texts

This is the most overt and declared mode, and involves laws, regulations, and formal operations of planning and implementation; the procedures for the preparation of public texts usually demand political legitimacy and control of institutional resources. A public text is usually the distillation of a process of debate, whether conducted in restricted and privileged circles or with wider participation.

Public Discourse

This refers to statements, discussion, and public attitudes that accompany, or respond to, or precede public texts; discourse is an essential component of language planning because formal declarations are not always implemented, and sometimes involve political rhetoric, interests, and ideologies that are contested or supported; in the discourse domain these are subjected to critique and analysis, and represent the space for public debate and understanding, appreciation and adoption, dissemination or contest and resistance against promulgated texts of policy, and the formulation of alternative courses of action.

Performativity

This refers to communicative behavior, both conservative role model behavior and subversive behavior, such as when certain language behaviors transgress, disrupt, or undermine accepted and established norms of communication. The communicative practices of powerful and significant individuals, institutions and entities, collectivities, and communities, supply scripts for emulating. Linguistic and cultural emulation suggest loyalties and identity

practices of those who adopt them. Performative action is also a kind of covert language policy making when it transgresses what authoritative individuals model or proclaim or what public texts mandate.

Deliberation

Facilitated deliberation is a way of doing language policy and planning which combines the role of experts and their expertise, affected populations as representatives, and people with jurisdictional authority over a particular domain of language policy. Its general aim is to produce collectively agreed courses of action to solve language problems. It is a conscious and deliberate manifestation of language policy and planning.

Spheres of Activity for Language Policy and Planning

These four manifestations of language-change work occur within one or more spheres. For the most part language planning is undertaken within the sovereign powers of the state or its dependent agencies. However, even actions of resistance against state policy need to be understood within a wider framework of policy as activity and policy as conversation. The following four, modified from a recent discussion of Chinese language planning (Lo Bianco, 2007), represent both the actors/agents, and the domains or spheres of activity in which they act on language policy.

Sovereignty

A state or state authority acts within its exclusive sovereignty, or, increasingly in international action today, in pooled sovereignty across a series of jurisdictions. This is typically authoritative action involving the distribution of resources and the designation of roles and statuses, the modality will usually be various kinds of public texts, such as laws, rules, and sanctionable regulations. The main participants, the principal voices, tend to be elected officials, politicians, but also generals, that is, those with formal power that permits them privileged discourse in this realm.

Jurisdiction

This involves devolution from a sovereign power to an authoritative agency or public institution which has remit over a field or domain. An education department operates with devolved jurisdiction from a sovereign source, and legitimately pursues language planning within that field or domain. Public texts and the surrounding envelope of public discourse are the main modalities for this sphere of language planning. The voices of language professionals are more prominent in devolved jurisdictions because it is assumed these depend more strongly on professional stocks of knowledge and research. Citizen voices and affected populations are often heard via responses to commissioned reports or internal documents, and other public texts such as press releases and public announcements concerning resource allocations.

Influence

Influential individuals (whether by expertise, power, celebrity, or strategic position) or influential agencies convert public credibility or material power and diverse kinds of cultural capital into influence which they exercise over patterns of language use in multilingual settings, or preferred meanings, values, or styles of language use within single languages.

Behavior

A community of language users, singly or in association with supporters and experts, organizes its communicative expression in various ways to retain or recover language use intergenerationally, or to reject or accommodate the intended policy messages from sovereign action, or from institutional or administrative action. Often linguistic behaviors involve resistance or struggle against forces from outside that erode the capacity of the community to pass on its language through processes of intimacy or socialization directly to new generations or to newcomers, or to adopt new norms, expressions, or meanings that respond to its internal ideological or behavioral norms. In these ways what affected groups actually do, in spheres of their autonomy, can powerfully shape or contest what privileged others might seek to impose from outside.

The spheres of sovereignty and jurisdiction frequently involve explicit promulgation of formal policy, laws, or authoritative reports, and so forth; while the spheres of influence and behavior tend to involve policy making as practice, that is, social activity, or behaviors, rather than declarations, laws, or formal statements. The four manifestations of language planning, and the four spheres in which it occurs, typically apply to six actions or six purposes for activity involving planning and policy on aspects of language.

Actions of Language Policy and Planning

Actions That Formalize or Elevate the Status of Language or Varieties

The formal status of a language, dialect or other variety, refers to the legal standing and public functions envisaged by constitutional arrangements in a particular setting. Status is typically ascribed via public texts, such as constitutional provisions, and is undertaken within the realm of exclusive state sovereignty. However, subnational groupings, such as regions or provinces operating under autonomy statutes, can modify or elaborate or even contradict public texts and laws issued by authorities with overlapping sovereignty. Supranational groupings, whether governmental or nongovernmental, such as the European Union, the Association of Southeast Asian Nations, the African Union, the Red Cross, or the World Trade Organization, can also attribute and formalize status to languages that utilize pooled sovereignty to issue language-influencing decisions.

Actions That Modify the Corpus of a Language or Variety

Policy actions to impact on the status of languages are usually undertaken by politicians and policy makers working within the domains of the production of public texts, such as laws, constitutional provisions and authoritative reports, as described above. Actions that modify the corpus of a language are more typically a specialized activity entrusted to professional linguists, for technical innovation, and occasionally for adoption and dissemination, in collaboration with a community of speakers; though often also requiring normal policy processes for approval.

The activity of corpus planning involves modifications to the internal meaning-making resources of a language. This can include devising an orthographic system for a language which lacks a writing system, or modifying an existing orthography. Extensions to the terminological range of languages, including standardizing translation, codifying expression, and disseminating the use and adoption of new norms are part of corpus planning activity. This work of linguists to develop writing systems for indigenous languages or to develop terminology and expressions for both indigenous and national languages is ongoing. Dictionary writing and prestige literature also impact on the corpus of a language, and ideological and social movements can make language an object of their attentions.

Actions That Promote the Learning of Languages or the Acquisition of Literacy

This purpose of language policy and planning occurs within the remit of public education institutions and, consequently, is dependent on jurisdictional authority. Often, action occurs at the level of local curriculum implementation rather than in overarching policies issued to promote language acquisition or the expansion of literacy. A variety of agents undertake action to facilitate learning of additional or extended language skills or literacy, through a process involving interaction between experts, researchers, curriculum writers, assessment agencies, credentialing authorities, and learners and their families.

Literacy is a domain in which there is extensive involvement of nongovernment agencies in developing countries and in which aid and assistance programs of international organizations play a central role.

Actions That Extend the Domains and Use of a Language or Variety

This is a more recently identified purpose for language planning activity. It describes action taken to extend the settings and domains in which a language is spoken. Expanding the use of a language is seen to make that language stronger and longer lasting and is usually enacted on behalf of a previously suppressed language or dialect.

Actions That Elevate the Prestige and Esteem of a Language or Variety

This purpose of language-planning action refers to how writers and others with social prestige try to raise the reputation of a language. Historically, esteem has been conferred on languages in proportion to the quality and extent of their important works of literature.

Dialectal forms of standardized languages have benefited over time by a change in the esteem, regard, or informal status which they enjoyed due to the standing of authoritative poets, novelists, or scientists whose works were first produced in that form and which contributed to its standardization. Official academies support literature in the national language, and aim to bring about a change in the informal status of the language. Literature is far from being the only source or origin of prestige. Styles of speech that are attractive because they disrupt traditional notions of correctness or formal rules of appropriateness are also dependent on esteem within the subjective judgment of groups that desire and value such linguistic transgression.

Actions That Modify the Discourse and Attitudes Toward Languages or Varieties

Discourse planning refers to ways of modifying or reinforcing a worldview by persuasive talk or writing. Discourse planning has a range of meanings which include training people to develop persuasive ways to express themselves, so that they can participate in society and accomplish their goals by effective use of written or oral communication. Discourse planning, in its worst sense, means propaganda or brainwashing, but advertising, political spin, and some corporate promotion strategies fit into this category of language-planning actions.

These actions, the manifestations of language policy, and the spheres in which language policy planning occur, are an abstract account of the field and activity. The entries in this section elaborate these accounts into a depiction closer to the vast array of activity, historically and in contemporary life, in all parts of the globe and for all languages and communication systems that involve language policy and planning.

SEE ALSO: Academies of the Arabic Language and the Standardization of Arabic; Acquisition Planning; African Union; Bangla Academy; Canada's Office of the Commissioner of Official Languages; Central Institute of Indian Languages; Colonialism and Language Policy and Planning; Council of Europe Language Policy and Planning; Critiques of Language Policy and Planning; Economic Analysis of Language Policy and Planning; English Across South Asia; English in Asian and European Higher Education; Indigenous Languages in the 21st Century; International Law in Language Policy and Planning; Invented Languages in Language Policy and Planning; Language Attitudes in Language Policy and Planning; Language Planning: Qin Shihuangdi's Contribution; Language Planning in Religious Observance; Language Policy and Planning: Kemal Ataturk's Contribution; Language Problems as Constructs of Ideology; Language Rights in Language Policy and Planning; Limits of Language Revival; Organisation Internationale de la Francophonie; Phillipson, Robert; Prestige Planning; Quebec Charter of the French Language and Canadian Language Policy; Rational Choice and Cost–Benefit Analyses in Language Planning; Revernacularization and Revitalization of the Hebrew Language; Reviving Irish From Independence to the Good Friday Peace Agreement; Reviving Māori; Role of Deliberation in Language Policy and Planning; Role of Language and Place in Language Policy; Role of Linguistic Human Rights in Language Policy and Planning; Romanization of Vietnamese; Russification in the Soviet Era; Science of Language Policy and Planning; Sejong the Great and the Creation of Hankul; Sociolinguistic Surveys in Language Planning; Status Planning; Terralingua; UNESCO and Language Policy and Planning; Welsh Language Board and Bòrd na Gàidhlig

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Language Policy and Planning: Kemal Atatürk's Contribution

İLKER AYTÜRK

Mustafa Kemal Atatürk (1881–1938) was an Ottoman military officer who led the Turkish war of independence against the entente powers in the aftermath of the Ottoman defeat in World War I. He and his followers, later known as the Kemalists, abolished the sultanate and the caliphate and founded the Republic of Turkey in 1923 on the remains of the Ottoman Empire (Mango, 1999). Atatürk was elected the first president of the new republic and spent much of the 1920s consolidating his power base in Turkey and institutionalizing an authoritarian regime, which was to carry out a broad package of Westernizing and secularizing reforms. As part of that radical reform program, the Turkish government imported the Swiss civil code and the Italian penal code to replace Islamic law, granted full equality to women, and adopted Western garb, clocks, numerals, and calendar. Having entrusted daily politics to a loyal prime minister in 1926, Atatürk focused on identity questions more and more with the ultimate aim of providing a secular identity for the Turks to replace their former Islamic identity. Therefore, it is no surprise that the rewriting of Turkish history and reform of the Turkish language became his pet projects, to the extent that he devoted most of his time to historical and language studies until he died in 1938.

Language and alphabet reform was an important subject on the agenda even before the establishment of the republic. Ottoman intellectuals and statesmen started to complain about the difficulty of writing Turkish with the Arabic alphabet as early as the 1860s (Gülmez, 2006, pp. 64–89) and drew attention to the negative impact of the wide gap between spoken Turkish and its written form, the language of the government and high culture (Heyd, 1954). By 1910 a movement for simplifying the flowery prose of Ottoman Turkish was already afoot, counting among its members some of the most important authors and poets of the day (Öksüz, 1995, pp. 77–165). Ziya Gökalp, arguably the most important ideologue of Turkish nationalism in the 20th century, was at the forefront of this movement and preached a moderate reform of the written language as well as the turkification of the language of prayer. Nevertheless, it was Atatürk who gave the reformers a sense of direction and much-needed government support and funding. Without his crucial backing, language reform in Turkey would have never picked up pace, nor would it have assumed such colossal proportions.

During the first years of the republic, the Turkish government did not have a clear-cut language policy and vacillated between an essentially Gökalpist strategy of moderate reform and radical purism. While everybody agreed on the necessity of some sort of language reform, the Turkish government and intelligentsia were divided with respect to the extent, depth, and limits of reform as well as the role of the state in language planning. Although the majority endorsed the moderate reform plan, radical purists and romanizers enjoyed support from Atatürk, who was the ultimate decision maker in the system. Certainly with his sponsorship, the Language Council (Dil Heyeti) was established by an act of the parliament in 1926 as the first republican institution to be in charge of language policy and planning in Turkey (Aytürk, 2008, pp. 276–9). The Language Council did not function

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as an independent committee or a language academy, but was a branch of the Ministry of Education from an administrative point of view, receiving orders from the top. It achieved its first goal by writing a report on romanization in Turkey, which was successfully implemented in 1928 (Aytürk, 2010, pp. 106–8). The Council was not as successful, however, in its second task of preparing a Turkish dictionary, because of internecine conflict between moderates and radicals, and ceased its activities in 1931.

The following year, in 1932, Atatürk established the Turkish Language Institute (Türk Dil Kurumu or TDK) with lessons learned from the failure of the Language Council. Procedural separation between the state and the TDK was allowed so that the new institutional framework for language reform could resemble a scientific committee or, better, a language academy. While the TDK was designed as a private society, it could not possibly have escaped the orbit of the Turkish government, since its founder was the powerful president of the country. Indeed, Atatürk now threw his full support behind the radical purists, who dominated the TDK, in order to carry out what he called a "language revolution" and to create a new Turkish free especially of Arabic and Persian vocabulary. From 1932 to 1934, this policy was implemented religiously: the TDK launched a massive campaign to collect "authentically" Turkish words from ancient Turkic sources; when an ancient word could not be found to replace the unwanted Arabic or Persian term, new words were coined from ancient roots; all this new material was published by the TDK for use in the newspapers and other media; most of the newspapers agreed to use the new vocabulary despite a fall in their readership; and Atatürk and prominent Kemalist statesmen gave speeches peppered with neologisms in order to provide language reform with political clout (Lewis, 1999, pp. 40–56). Although opposition to the official language policy was possible, it did not go down well with the government and only a few individuals dared to object publicly.

The radical phase of language reform which started with enormous expectations in 1932 ran aground in only two years. By the early months of 1935 it was clear to all, including Atatürk himself, that the desire to create a completely purified Turkish and the unmethodical work of the TDK to achieve that goal produced nothing but chaos. Articles in newspapers, laws, and government directives in officialese were no longer intelligible to all, wreaking havoc in public life. It was at this point that Atatürk came up with the notorious Sun-Language Theory (Laut, 2000, pp. 48–161; Aytürk, 2009, pp. 23–31) as a face-saving formula, which helped him terminate the radical stage of language reform without compromising its revolutionary fervor and his prestige. Essentially, the theory was a bewildering combination of pseudo-philology, psychology, and themes from Freudian and Jungian psychoanalysis. Its practitioners claimed to have discovered layers of prehistoric Turkish influence in all languages of the world, a discovery that made Turkish the *Ursprache* of all humans. According to this logic, if all languages actually branched off from a Turkish mother tongue, then foreign vocabulary in Modern Turkish ceased to be an issue.

After the proclamation of the Sun-Language Theory at the Third Turkish Language Conference in 1936, Atatürk and the TDK returned to the Gökalpist path of reform. The radical phase of reform, however, was to taint the prestige of the TDK from then on and politicize language planning forever, dividing the nation as supporters (Kemalists and leftists) versus opponents (conservatives, Islamists, and liberals).

SEE ALSO: Language, Policy and Planning: Overview; Language , Politics, and the Nation-State Nation

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Language Planning in Religious Observance

ANTHONY J. LIDDICOAT

Introduction

The relationships between language and religion are complex and diverse and the area of religious observance is only one of the issues where language and religion intersect. It is, however, a significant intersection as language is the main vehicle through which communal religious observance is conducted. Although there has been much work done on religious language, the language of religious observance has not been widely considered in the literature on language planning although works in this area commonly mention religious language as an area of interest (e.g., Cooper, 1989; Kaplan & Baldauf, 1997).

One reason for the lack of attention to religious observance in the language-planning literature seems to be related to the agents of such forms of planning. Language-planning research has frequently privileged the work of governmental agencies over other possible agents (Liddicoat & Baldauf, 2008). Agents of language planning for religious observance are rarely governmental agencies. In fact, the agents of religious language planning may vary from large-scale international organizations, such as the Catholic Church, to more or less officially established groups of worshipers, to missionary groups, or to individuals. This means that the agents involved are rarely those of macrolevel language planning, but are more typical of meso- or microlevel planning (Baldauf, 2008).

The study of language planning for religious observance is also complicated by the nature of religious observance itself. Religious observance is both a public and a private matter and the language choices made may be either individual or collective. For example, reading a religious work, especially religious scripture, can be considered a religious observance, but the language decisions made here are personal and private. It is the public dimension of religious observance that is available for language planning, although the decisions made in the public arena may influence private practices. For this reason, the focus in this discussion will be on the use of languages for liturgical purposes—that is, the language used for the rites and rituals of public worship.

Approaches to Selecting a Language for Liturgical Use

Ferguson (1982) has identified the choice of language for religious purposes as a key issue in the relationship between language and religion. In part, this is because religious observance tends to demand highly marked and self-conscious uses of linguistic resources (Keane, 1997). For some religions, the selection of a liturgical language is not a matter for language planning, but rather is set by precedent: the continuation of an ancient usage. Such uses are a kind of indirect language policy or language policy by default—language choices made by collectively retaining the status quo. Notable instances of this are Hebrew in Judaism, Classical Arabic in Islam, Sanskrit in Hinduism and, until the 1970s, Latin in Catholicism. The use of these languages is dictated by the practice of the religion not by

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the languages spoken by the faithful—in the cases listed here, the ancient liturgical language differs from the language varieties normally used by the community for nonreligious functions. These languages may be used primarily or solely for religious purposes and may be little understood by the many of the participants in the liturgy. In other religions, the choice of liturgical language is considered as something which can be legitimately planned by the faithful. For example, Protestant, Orthodox, and modern Catholic Christianity have adopted a language of the faithful as the liturgical language for some, or all, of the liturgy. These two possibilities are associated with two fundamentally different understandings of the nature and purpose of religious languages—sacrality and comprehensibility.

The first is the idea that a liturgical language is sacred (Liddicoat, 1993). Its purpose is the performance of a religious act in a way which is reverent and mystical. The liturgical act is undertaken between the performer of the act and its divine recipient and the faithful are secondary participants, whose role is incidental the liturgy itself. For example, in Orthodox Christianity the part of the faithful is typically performed by a choir acting on their behalf, while in the traditional Catholic liturgy, the role of the faithful was performed either by a server, in spoken services, or by a choir and servers in sung services. Similarly, in Islam, the linguistic parts of the liturgy are performed by the Imam on behalf of the assembled faithful. In such contexts, the relationship of the faithful to the liturgy is primarily one of observer, although the observation itself may be understood as active and prayerful and may be supplemented by significant liturgical actions, such as changes of body posture or by other liturgical acts. In such contexts, understanding of the liturgy by the faithful is not seen as a necessary element of liturgical practice.

The second understanding views liturgical language as communicative; it has a role in communicating with the faithful and the force of the liturgy comes from its being understood. Such a view sees liturgical action either as a collective religious act, as a form of instruction, or as a way of propagating beliefs (Maltby, 1998). In this case, the language needs to be understood by the faithful and this is a criterion for its adoption for religious observance. In such cases, the liturgical language needs to permit participation and allow for access to the liturgical action for the assembled faithful. This was fundamental to the liturgical views of the Protestant reformers. As Article XXIV (Of speaking in the Congregation in such a tongue as the people understandeth) of the 1563 Anglican Articles of Religion state: "It is a thing plainly repugnant to the Word of God, and the custom of the Primitive Church, to have publick Prayer in the Church, or to minister the Sacraments in a tongue not understanded of the people." The Protestant articulation of the selection of religious language couches the idea of comprehensibility within a theological construction of the divine will rather than that of a human objective within the religious context.

Both ways of conceptualizing the nature of a liturgical language orient to the different ways language allows the possibility of an experience of the divine (Ferguson, 1985). The sacral view is located within an experience of the divine as mysterious, numinous, and transcendent and engages with the divine through mediated, symbolic ritual. It orients primarily to the affective domain: engaging the worshipper with the divinity through an emotional communion. Such a communion does not need to be anchored in a literal understanding of the words used to communicate with the divine. The words become a vehicle for an affective response within the context of a liturgical action. Sacral approaches may in fact place a very limited emphasis on the language itself as a constituent part of the liturgy. For example, in the traditional Catholic and Orthodox liturgies some of the language used is not intended to be heard by the worshiper being articled sotto voce or under the cover of chanting by the choir. The comprehensibility view is located within an experience of the divine as immanent and personal and engages more directly with the divine through collective communication. This view emphasizes the cognitive dimension of engagement with the divine: it is an intellectual communion oriented to understanding

the divine person or divine acts. In this form of communion, understanding the language is central to the proper execution of any liturgical act as liturgical acts have an important propositional dimension. Public language is therefore addressed not only to a divine person: the worshippers themselves are also understood as audience, and in some cases may be the primary audience. In reality, both views coexist in understandings of liturgical languages and the views of a community may shift between emphasizing sacrality and emphasizing comprehensibility.

Where sacrality is emphasized, the result is often linguistic conservatism. Within Orthodox Christianity, classical varieties have been maintained as liturgical languages, as in the case of the Greek and Armenian Churches, or a language has been maintained for liturgical use after the community has ceased to use it for other functions, as in the case of the use of Old Church Slavonic in Orthodox churches in Russia, Coptic in Egypt, or Ge'ez in Ethiopia. The origin of specifically liturgical languages such as Hebrew, Classical Arabic, or Latin is an expression of this linguistic conservatism—the maintenance of a language variety which has ceased to be actively used and understood for religious purposes. The conservative impulse can also been seen in religious groups which had initially adopted a comprehensibility view of liturgical language: the language of the vernacular liturgies of the Reformation were sometimes maintained unchanged for centuries creating registers of the language which were uniquely associated with religion (Spolsky, 2003). The 1662 *Book of Common Prayer* remained in regular use in many churches until the 20th century and the liturgical language of Anglicans became an archaic form of English, which in many cases was not easily comprehensible. The emphasis on sacrality may lead to linguistic conservatism in other ways, most notably in the deliberate selection of archaic varieties for liturgical use (Wales, 2001). In many cases, the development of vernacular liturgies begins with a conservative form of the language which is felt to be in some set a fitter variety for the expression of religious ideas. For example, the developers of the 1662 version *Book of Common Prayer* used a more archaic version of English that those developing the 1552 *Anglican Service Book*—that is, they took a deliberately archaizing stance (Nervalainen, 1987).

Where comprehensibility is emphasized, one language-planning outcome is the adoption of the languages of the local community of the faithful for religious purposes. The issue of comprehensibility was fundamental to the Protestant Reformation and for Luther the development of a German language liturgy was as much a part of the process of reform as theology and church government (Tomlin, 2004). The work of Protestant missionaries has subsequently developed many languages as liturgical languages, especially in Africa (see e.g., Djité, 2008) and the Pacific (see e.g., Crowley, 2001). The Catholic Church, since the Second Vatican Council, has moved from a position of emphasizing the sole use of Latin for reasons of sacrality to emphasizing the use of vernaculars for reasons of comprehensibility (Liddicoat, 1993; Chupungco, 1997). This change has meant the development of new translations of liturgical texts, a process that is monitored and controlled by the Church through local conferences of bishops. Diasporic Orthodox Churches have also begun to widen the range of languages used in the liturgy, typically introducing the language of the host country into liturgical practice. Such changes are usually made in response to language shift within the community of the faithful (Wigglesworth, 2008).

Such changes are not without controversy. The inclusion of vernacular languages in the liturgical practice of the Catholic Church was the result of a long period of debate and discussion. The Council of Trent, in Canon 9 of Chapter 9, declared the Protestant insistence on vernacular languages in the liturgy to be anathema and the use of any language other than Latin was understood as detrimental to doctrinal unity (Liddicoat, 1993). Linguistic conservatism is therefore often associated with a desire to fix theological meanings as immutable forms. Religious traditions which emphasize a sacral language may reject

translation of religious texts as undesirable modifications of religious truth. This concern for preserving liturgical texts from error was one of the main arguments made by the post-Tridentine Catholic Church against liturgies in the vernacular (Liddicoat, 1993). The modern movement to vernacular has created groups of adherents to the Tridentine Latin Mass who see in the move to a comprehensible rather than sacral liturgical language a similar threat to church doctrine as that expressed by the Council of Trent (Kocik, 2003). Such resistance reveals a central tension in language planning for liturgical languages between sacrality and comprehensibility in the reception of language decisions. The emphasis on comprehensibility may alternatively lead to teaching the liturgical language widely to newly converted groups. This has been particularly the case in colonial contexts in which administrations favored the teaching and learning of the colonizer's language in mission schools (Pennycook & Makoni, 2005). There are, however, other instances in which a local liturgical language developed for a particular group is extended to new communities coming under the influence of the mission creating a language which is used as a liturgical lingua franca. For example, Dunn (2007) reports that in New Georgia (Solomon Islands) the Methodist mission first developed as Roviana as a liturgical language for a mission located in a Roviana speaking area. When the mission expanded to Touo speaking Ughele Island, Roviana was used as the liturgical language of both communities and in the mission school.

In reality, the use of languages in liturgical contexts is not simply a case of using either a specifically liturgical language or of the use of the vernacular and many practices are in fact much more fluid. In part at least, this hybridity comes from the fact that the sacral and the comprehensible are not mutually independent and liturgical practices that emphasize the sacral often include instances of instruction. For example, in the Latin-rite Catholic Church the homily, which focuses on teaching, was delivered in the vernacular or a mixture of Latin and the vernacular (Constable, 1994). In the ninth century the Carolingian reform synod of 813 required that homilies be delivered "*in rusticam romanam linguam aut theotiscam quo facilius cuncti possint intelligere que dicuntur*" [In the rustic Roman(ce) language or in German so that those present can understand what is said] (Jungmann, 1951/1986, Vol. I, p. 458). In Islam, the Friday sermon is usually delivered in the language of the congregation even though the service is conducted in Classical Arabic (Mattock, 2001). Similarly, religious groups which emphasize the comprehensible may use other languages in their services, as in the case of Latin versions of sung liturgical texts in otherwise vernacular Anglican or Lutheran ceremonies. Such decisions are often made at the local level reflecting the needs and values of particular groups of worshipers.

Conclusion

The choice of a liturgical language is not simply the resolution of a linguistic problem, it is fundamentally connected to ideas of religious conduct and integrated into the symbolic systems of the religion. Decisions about liturgical language reflect understandings of the nature and purpose of liturgy as a collective action. Such understandings may be codified in some way within a religious group or they may be worked through locally by particular groups of worshipers. Regardless of the level at which such decisions are made, language planning for religious observance is a negotiation between views of language as a means of communication and as an expression of religious sentiment, between the immanence of worship as a local linguistic act and the transcendence of worship as a form of collective religious expression. Choices of liturgical language therefore encode aspects of the self-concept of the religious group, not just their assessment of their linguistic needs.

SEE ALSO: Language Attitudes in Language Policy and Planning; Language Planning and Multilingualism; Language Policy and Planning: Overview; Religion

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Language Problems as Constructs of Ideology

ULDIS OZOLINS

This entry details how the field of language policy and planning (henceforth LPP) began as largely a technical endeavor, often linked to development issues in third world countries, but increasingly became subject to and in part reflected significant ideological divisions over language and society. The ideological bases of some salient LPP cases are examined, as well as the often robust critiques of their intended planning goals. At the same time, the entry will give due regard to the *non*-ideological side of LPP, which needs some restoration from the ravages of the fiercest critiques.

In the early 1970s, one of the seminal works on language planning raised the question *Can Language Be Planned?* (Rubin & Jernudd, 1971). The field of language planning arose in relation to issues in third world countries in the 1960s, where decisions were being taken on issues of official and national language in many newly created states, and where very often the languages chosen, particularly if they were indigenous languages, needed to be able to communicate in new technical areas, requiring substantial augmentation. This also came in a context where the national language may not have been the first or even a known language at all to much of the population: Huge literacy and schooling issues resulted from the choice of national languages such as Indonesian, Burmese, or Swahili.

Many of these needs required technical solutions—such as creating written forms of a language, developing an orthography, creating technical vocabulary, most broadly identifying norms—and this has been a substantial part of the bread-and-butter work of language planning in developing countries. A central emphasis of this line of analysis was to see the language needs of new societies as essentially language *problems*, to be seen alongside other problems of development (Jernudd, 1982; Neustupny, 1983).

Yet, despite the seemingly optimistic and progress-oriented nature of this field (with book titles such as *Advances in Language Planning*—Fishman, 1974—and *Progress in Language Planning*—Cobarrubias & Fishman, 1983), there was always a recognition of the limits of technical planning and the salience of sociopolitical factors in any language prescriptions. Rubin and Jernudd's *Can Language Be Planned?* had already posed this as a question, and this political aspect was well captured in the widely accepted distinction between *corpus planning*—the technical operations on lexis and codes—and *status planning*—the clearly social and political promotion of a particular linguistic form or use. Thus, technical language planning relied on the initial setting of norms and goals by sociopolitical processes, and the concentration of many linguists was on the later technical processes, for, as observed by Lo Bianco, "status planning is rarely entrusted to language experts" (2004, p. 742).

And there was a very urgent point to this activity. Newly developing nations *had* to make decisions about language. While a state may in some cases leave matters such as religion up to individual conscience, it must choose a language—for administration and politics, for education, for public information—in these areas one language or a restricted number must be chosen.

However, the development of language planning over the next decades existed side by side with another strand of social and sociolinguistic research that stressed not rational

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goals of language planning but the realities of language conflict. This awareness developed slowly post–World War II. The huge demographic losses, particularly among Jewish and other minority groups, the destruction or deportations of many German-speaking groups in Eastern Europe, and the advent of the Cold War and its frozen boundaries meant that most countries in Europe were much more linguistically and ethnically homogeneous than they had ever been or, as in Eastern Europe, that any comment on minorities or use of minority languages was strictly controlled. In the USA, melting-pot theory held sway. In the third world too, language conflicts came to general awareness only slowly, leaving much room for those concerned with language planning to conduct their research, linguistic modernization, and educational initiatives. Yet language planning became embroiled in growing conflicts; by 1991 Tollefson could produce a book entitled *Planning Language, Planning Inequality*, a critique that stressed the social differentiating role of language choice and (often) language imposition. From the case of India, where states in the federal system were created on the basis of languages, to the arguments over official languages in the Maghreb, to increased ethnic and linguistic tensions in sub-Saharan Africa, language conflicts came to prominence.

Moreover, the first and second worlds were also affected. The massive immigration first into the Americas and from the late 1960s into Europe brought a degree of linguistic diversity hitherto unseeen, or long forgotten. And instances such as the desire of Quebec to promote French as its only official language, or the new salience of minority linguistic groups in Europe, revealed new sites of language conflict. Skipping rapidly to the breakup of the Soviet Union and Yugoslavia at the end of the 1980s and beginning of the 1990s, language issues in this region could scarcely be mentioned without the shadow of conflict.

Sociolinguistics was not slow to relate to these developments, leading to a massive growth in the area of contact linguistics as more and more situations of mixing of people with different languages could be studied. And while many such studies were only academic in nature, tying up language contact to second language acquisition theory or code-switching studies, many took seriously issues of language conflict and communication difficulties, characterized by the oft-quoted injunction that "there is no contact without conflict" (Rindler Schjerve, 2006, p. 111). Consequently, attempts to plan languages, to create a rational language policy for a nation or a region, could not be seen as a technical task, but as one profoundly ideological.

After the turn of the milennium, a number of studies abandoned the term "language planning" altogether, preferring *Language Management*, the title of Spolsky's book (2009) where he asks forebodingly whether we should manage language, even if we can. And Nekvapil in his article "From Language Planning to Language Management" (2006) argues there has been a paradigm shift in this field and a total retreat from the notion of planning, due inter alia to its ideological baggage. As Lo Bianco summarized: "Language problems always arise in concrete historical contexts and these inevitably involve rival interests reflecting 'loaded' relations among ethnic, political, social, bureaucratic, and class groupings, and other kinds of ideological splits and controversies, including personal ones" (2004, p. 738).

Third World Language Policy and Planning

Dua, following Neustupny and Jernudd, focuses on how language problems are defined and what does or does not lead to their solution. In his succinct work *Language Planning in India* (1985), Dua provides a significant typology of aspects of LPP that may determine any particular language outcome, or "who learns whose language, when and how long, to resolve whose language problems" (p. 33). He offers a fivefold typology of language problems:

- language as symbol,
- language structure,
- language use,
- language user, and
- language materials.

In this Dua carefully interweaves ideological and technical aspects of language: "each of these criteria defines a wide range of problems which mutually reinforce each other in complex ways" (1985, p. 24).

Clearly, issues of language as symbol, and issues related to users of language, signal important ideological imperatives where languages are associated with identity, and often with social status or ethnic differentiation, factors that have been central to language conflicts and language settlements, not in India alone. Yet that is not the end of the story. Dua's attention to language use, language structure, and language materials alerts us to the consideration that ideological aims cannot be unbridled, and cannot succeed without a basis in actual language use, capacity, and resources.

Issues of language use and language materials are closely related, determining the limits to enunciation of policy as symbol, and alerting us to material and communication issues in devising particular language policies. Ideological and practical strands are intertwined, rather than separate or sequential strands of decision making. Thus in India, each of the 14 official languages has had intense development of terminology and applicability, particularly in technological fields. And, for the non-Hindi languages, this has also served partly as a bulwark against the hegemony of Hindi—and English. By contrast, many vernacular languages in other countries have suffered precisely through poor materials (particularly literacy materials in education) and poor regard for actual use; consequently, these languages cannot escape from their lowly status in government, administration, or the marketplace.

We should also not regard the *failure* to bring about a certain outcome as always due to ideological reasons, as a triumph of one language regime over an attempted alternative. Dua's typology alerts us to the ever-present variation among languages and their users in terms of size, salience, and resources; languages are highly unequally endowed, often exist in a hierarchical relation to one another, and many smaller languages will need particular resources devoted to them if they are to become more widely supported and diffused.

Turning to African language situations, an example of the interrelationship between ideology and other factors can be seen in the case of Swahili in Tanzania. This language was strongly adopted as a symbol of decolonization by the Nyerere government, but this built on its very strong basis of widespread use as a lingua franca used by many with perhaps other smaller mother tongues, and on its presence as a language constantly available in the Tanzanian environment (Mazrui, 1998; Wright, 2004, pp. 70ff).

Yet even a situation of widespread usage does not necessarily lead to official status: In the case of the widely spoken Wolof in Senegal, for example, French prevails in all official contexts. One aspect here is the often encountered widespread oppositon to vernacularization (particularly vernacularization of education) among Africans, fearing that this will not give their children access to power and wider communication. Kamwangamalu (2010) gives an incisive analysis of this phenomenon, arguing that this assault on vernacularization will prevail unless the promotion of indigeneous languages first has strong political will behind it, and, second, can lead to material rewards and payoffs for its speakers. Taking an economics of language approach, he cites how other situations in Europe have rewarded speakers of vernacular languages through "promotions, raises, job tenure and other perquisites of success in the workplace [and . . .] generated a range of employment prospects for minority language speakers in education, the media and government" (2010,

p. 14), as has happened for example in the Basque Country or Wales (and we could certainly add Catalonia). The contrast between Welsh and the poorer placed Breton, Kamwangamalu argues, is largely in the material incentives to speakers of the language. Without such incentives, promotion of vernacular languages remains emptily symbolic.

Kamwangamalu links issues of vernacularization to issues of globalization (largely seen as linked to English) and to internationalization, seeing the totality of African language needs in a situation where English-speaking parties are by no means the only ones interested in Africa economically, developmentally, or politically. He argues that the poor attention paid to developing materials in indigeneous languages plus the poor understanding of other international language needs besides English or another dominant colonial language, lead to the adoption of colonial languages by default: "Globalization, internationalization and vernacularization can coexist, in a productive way, in post-colonial communities in Africa, much as they seem to do elsewhere. The problem is that they hardly ever do" (2010, p. 15). As a result, vernacularization is under threat, even in what were once its strongholds.

In Tanzania, official enthusiasm for Swahili faded with sucessive changes of government and a push for greater use of English, leading, as Kamwangamalu argues, to a renewed desire to embrace English as the language of technology and information, and leaving Kiswahili, like many other languages, subject to "the Darwinian law of the linguistic jungle" where the stronger colonial language will prevail, without the resources and materials being put in place to support the vernacular language (2010, p. 14).

Yet the move to colonial languages, the overwhelming case in sub-Saharan Africa, has brought its own problems, with often disappointing educational results and languages such as English or French remaining very much the province of a small elite. Ohly gives a solid critique of this approach:

> by following the modernisation theory, governments propagated the belief that there would be a homogenisation and harmonisation of society by introducing English as a "neutral" language. However, instead of a re-classing of society, the effect of introducing this extraglossic language was merely to restratify society. (Ohly, 2004, p. 111)

Some vernaculars, however, can be strong, if they have a literary, economic, or other socially recognized value, and Ohly cites the Nigerian example of Yoruba—which has a vibrant literature—as "a creative strategy that makes art amenable to popular dissemination media like television, radio and newspapers, which now accommodate poems and short stories . . . Yoruba is also taught as a subject from the beginning of primary education" (2004, p. 112). Ohly argues that a triglossic situation has to be recognized as being necessary in Africa—a colonial language of wider communication, a lingua franca (spoken by enough of the elite as well as the mass of people), and a local language. These languages must not be competing, but should form "a complementary environment in a functional multilingual situation" (2004, p. 112).

The significant factor here is the regional lingua franca: The prevalence of lingua francas in so many contexts around the world, not only Africa, almost always without being the object of any language planning, testifies in many cases to the triumph of use over ideology, especially where such lingua francas can achieve the complementary status mentioned by Ohly.

An example of complementary status of different languages is strikingly provided in the work of Stroud (2004). Basing himself on Fishman's theories of functional domains of different languages in contact, and Fishman's emphasis on intergenerational transmission of languages, Stroud points not to situations where languages have different domains, but to the way in which people will, in this "postmodern type of contact situation," use elements

of colonial and local languages in the same discourse to signal multiple alliances and belongings. Stroud uses recorded discourse from street-vendor women in Mozambique to show how the women will intermix elements of colonial languages and local vernaculars, resulting in "more a creative or *novel* generation of functions." He argues that

> languages in these contexts are no longer associated with a fixed set of cultural and/or political meanings; in concrete practices and everyday interactions, languages are used in ways that deconstruct traditionally given identities, and create multiple levels of, at times contradictory, but invariable [*sic*] always ambiguous meanings. (Stroud, 2004, p. 88)

This goes well beyond a standard approach to code mixing, often seen as some kind of debasing of language; rather, the intermixing of local and metropolitan language allows the women to link public and private spheres, gives them leads as to how to socialize their children, and maintains lively use of the local vernacular even when talking of wider national or global issues: "In today's postmodern world, *new important functions* of language are being encoded in multilingual, and syncretic or code-mixed repertoires" (Stroud, 2004, p. 98).

Stroud's other examples show how rural women in Mozambique will adapt the technology of literacy in the vernacular for their own purposes; a program to train in vernacular literacy to improve management of agricultural practices was seized on by rural women for quite another purpose: in order to write to their husbands or relatives, most of whom worked in South Africa, and to do so without the intervention of literacy brokers, gaining greater status and power also in their gendered new practice. Where there is a purpose to vernacular literacy, it will be taken up.

In the African situation, it is at times difficult to understand just how particular LPP can be analyzed ideologically, in the sense of policies adopted to suit particular interested parties, masked in persuasive rationalizations. Several collections of writing have uncovered a litany of LPP, which is confounding, as symbolic statements of policy are not matched by other implementation moves (e.g., Obeng & Hartford, 2002; Bromber & Smieja, 2004; Brenzinger, 2008). This is particularly noticeable in instances where almost all sub-Saharan countries adopted colonial languages as their official languages (Ethiopia, Somalia, and Tanzania being the exceptions), in many cases explicitly to avoid choosing an "ethnic" or "tribal" language. And many of these governments have been willing to live with the poor education outcomes that result from large proportions of their children having only rudimentary access to the colonial language. One recent study (Albaugh, 2009) reports an interest in supporting African languages in Francophone Africa, as a result of close interaction between African and French scholars and educators; however, in Anglophone Africa the situation has been more ambiguous—several governments have adopted policies to introduce more education in the vernacular languages, but almost never with attention to appropriate consultation, material development, teacher training, attitudes of the parents and teachers, or any long-term planning for these vernacular languages (Mtenje, 2004; Simpson, 2008). As Blench observes in his analysis of the West African language situation: "No government these days can be seen to be against minority language, but few governments have the political will to actively support [such] languages" (2008, p. 152).

This leads to the conclusion that, while expressions of support for vernacular languages can be seen to have some symbolic worth, and seem designed to bolster government credentials of looking after all their people, the palpable *lack* of planning in many cases points precisely to a lack of ideological commitment to these languages, often with education ministries not implementing or even opposing vernacular policies. Meanwhile, the actual interests of elites and their ideological purpose is represented in the continued

domination by colonial languages in education, social selection, the publishing industry, and often aid from former colonial powers, resulting in what Myers-Scotton termed "elite closure" (Myers-Scotton, 1993). On the margins, ordinary people in Africa, in the face of globalization and weak states, create their own mix of codes and situated use of both metropolitan and vernacular languages, to establish their own trajectories of language use quite removed from LPP efforts.

Ideological Clashes and Accommodating Practices: The Baltic States

Our final example of LPP concerns a language situation where an ideological stance on language is explicit, from both proponents and opponents of a particular language policy, but where again we will find paradoxes and language-use patterns not always aligned to surrounding political rhetoric.

The Baltic States, since regaining their independence from the Soviet Union in 1991, have adopted language policies that have brought considerable friction and quite diverse interpretation and responses. The Soviet period saw a massive influx of Slavs and others from Soviet republics, so that the titular nation in Estonia was reduced from nearly 90% of the population prewar to 61.5% of the population in Estonia in the 1989 census, while in Latvia the titular nation was reduced from 75% to 52% in the same period. Lithuania maintained its former national profile of around 80% titulars. Soviet-period settlers also rarely learned the local languages (only 15% in Estonia did so, around 22% in Latvia, but 35% in Lithuania; Hogan-Brun, Ozolins, Ramoniene, & Rannut, 2007, p. 505). Russian was the language of most Soviet-period settlers (and many non-Russian settlers were russified during this period). Separate Russian-language schools, publications, and broadcasting systems were instituted, and Russian was used ever more widely in administration and employment, leading to the situation of asymmetrical bilingualism, where local nationals needed to be bilingual in their language and Russian, while Russian speakers received all services in Russian and were self-sufficient in this language (Knowles, 1989; Grenoble, 2003). Skutnabb-Kangas has succinctly defined the Baltic language situation as one where minority/majority relations have been inverted:

> Russian is thus a majorized minority language (a minority language in terms of numbers, but with the power of a majority language), whereas the Baltic languages are minorized majority languages (majority languages, in need of protection usually necessary for the threatened minority languages). (quoted in Hogan-Brun et al., 2007, p. 594)

As a result, on regaining their independence the countries reinstated their national languages as the only official state language, and began a massive drive to have the non-titular inhabitants learn the national languages: All people whose employment brought them into contact with the public, and who did not have a titular school education, needed to sit attestation tests in the national languages, according to their level of employment. Based on their view of an illegal Soviet occupation, the Baltic States did not see themselves as two-language communities, and were determined to break the Soviet pattern of asymmetrical bilingualism and dominance of Russian. When Estonia and Latvia also determined that Soviet-period settlers were not automatic citizens of the renewed independent countries, but needed to pass a language and history test to gain citizenship, another locus of conflict developed. These language and citizenship policies were fiercely opposed by the Soviet Union and later Russia (Alksnis, 1991; Ramishvili, 1998).

The friction also went beyond the Baltic–Russian arena when European organizations expressed views on this situation as part of the Baltic States' accession to the Council of

Europe, the European Union, NATO, and other European bodies (Ozolins, 2003), bringing often protracted negotiations over language rights. While European bodies finally accepted the Baltic credentials with these language policies largely endorsed, with the exception of some compromises, the friction with Russia still exists and Moscow still calls for automatic citizenship and the recognition of Russian as a second official language.

Thus far, the ideological basis of language policy and opposition can hardly be doubted, but its playing out shows some surprising accommodations and practices. First, while Russia has always seen this conflict as one of discrimination of local groups, and an active player in many negotations has been the High Commission for National Minorities of the Organisation for Security and Cooperation in Europe, the Baltic States have defined it largely as a foreign-affairs issue, claiming negligible local mobilization against the language policies and support for their policies even among the non-titular population.

The Baltic stance on language was accompanied by specific LPP initiatives—in education, there has been the steady introduction of the national languages first taught as subjects in Russian schools, then at secondary level teaching a proportion of the curriculum in the national language, and making all higher-education teaching in the national language alone. But equally, outside of education, there was the exclusive use of the national languages in official correspondence from public bodies, in public information areas such as announcements in transport, as well as the decyrillization of streetscapes and public notices—the national languages became the languages of the environment and public space.

From the Baltic side, a basis for policy has always been a perceived threat of the dominance of Russian with its huge market, media, and neighboring population; clearly, the languages are very unequally endowed and this sense of threat has been apparent in Baltic statements on their position (Budryte, 2005; Verschik, 2005; Latvia, State Language Commission, 2008; Rannut, 2009).

Yet a number of language practices has also been picked up in recent surveys that belie language conflict or ideological clash. Taking the example of Latvia, the Baltic Institute of Social Science has run language surveys since 1996, giving a valuable time series of language use and attitudes in Latvia; their 2008 survey identified that a

> series of positive changes which indicate that the status of the Latvian language is firming up among minority populations should be noted: the skills of state language have improved, the public environment in which Latvian is spoken has expanded, and attitudes towards the speaking of Latvian have improved. (Baltic Institute of Social Sciences, 2008, p. 8)

The report found overwhelming approval from both Latvians and Russians of the view that "it is important for each and every resident of Latvia to speak the Latvian language" (2008, p. 15), and found that the proportion of Russians who spoke only Russian at work has declined from 60% to 28% over the past decade. Correspondingly, while schools no longer require compulsory Russian learning, Latvians overwhelmingly support the importance of knowing Russian, and in their daily practice will often respond in Russian to Russian interlocutors—even where such interlocutors also speak Latvian. The report speculates that

> On the one hand, these data indicate competition among languages, because people feel that it is important to speak both languages. On the other hand, data suggest that there are [*sic*] now greater tolerance towards languages, as in both ethno-linguistic groups people are more likely to recognise the importance of the other language. (2008, p. 15)

Nor is the Russian language under threat, as the still extant Russian school system and extensive Russian media testify. The significant outcome has been the unusual situation

of a very large number of speakers of a larger language now also adding a smaller language to their repertoire—the survey claimed that some 93% of Russians now had some knowledge of Latvian, an enormous change in two decades (2008, p. 22). And this has not been a case of language shift, as Russian is well maintained, but of the addition of an L2.

The competition between the very unequally endowed languages in the Baltic space will remain a constant, yet the actual language practices indicate a nonconflictual accommodation of goals and a general agreement of the LPP moves made, whether in education, employment, or public life, eschewing hardline ideological views on either side.

Ideology, State Enterprises, and Social Movements

A final comment on ideology and LPP takes us back to the work already cited of Dua and others who have worked to establish typologies of language action that can show both ideological and non-ideological aspects of LPP.

Nahir's (1984) comprehensive analysis of LPP goals identifies 11 approaches to language problems: purification, revival, reform, standardization, language spread, lexical modernization, terminology unification, stylistic simplification, interlingual communication, language maintenance, and auditory-code standardization. Nahir's approach very economically summarizes the history and ambit of LPP, yet also reveals its inherent bias and limitation. As almost all authors, Nahir sees the work of LPP as largely the work of *agencies*, official agencies in each case, either governmental or at arm's length of government—ministries of education, cultural institutes, academies, official media, and so on. Yet some LPP moves do not come from official agencies, but are actually social movements, which argue for change in aspects of language as being essential to meeting important social goals. The most obvious (and at least partially successful) has been the feminist movement seeking to eradicate sexism in language (Carney, 2003); other movements have also tackled racism in language, or advocated specific changes, such as reference to disability. This clearly links up with the emphasis on actual social practices and language use that have been emphasized in this entry; however, an important aspect of the social movements is that, recognizing the importance of government action, public information, and media, strenuous efforts are always made to influence precisely these agencies, so that new norms will be established for official communication and the wider society.

Any language action—correction, defining of problems, institutional LPP, social movements around language—will always have its ideological aspect, promoting the interests of that sponsoring group, and potentially ideological opposition as well, which is little surprise in dealing with an area of human life of such encompassing importance in defining meaning and interaction; yet ideological stances and intentions will yield little, and may remain emptily symbolic, if language-planning technologies cannot be effectively put in place and help to make new language practices viable, acceptable, and rewarding for those using that language or form.

SEE ALSO: Colonialism and Language Policy and Planning; Language Attitudes in Language Policy and Planning; Language Policy and Planning: Overview; Language Rights in Language Policy and Planning; Nation; Status Planning

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Language Rights in Language Policy and Planning

MARY MCGROARTY AND SHANNON FITZSIMMONS-DOOLAN

In this entry we outline some of the principal questions regarding relationships between ideas about linguistic human rights (LHR), also called language rights, and selected theoretical and practical issues in language policy and planning (LPP). Both LHR and LPP are highly interdisciplinary fields that involve applied linguists along with many other public and professional participants and audiences.

The existence, nature, extent, and practical implications of language rights constitute some of the areas of liveliest concern within LPP. LPP itself has been defined in various ways, from classic modernist, structuralist models that separate the domains of knowledge, power, and action to more contemporary approaches that encompass considerations of the variety of social practices and attitudes surrounding acquisition, learning, and use of languages and language varieties (Lo Bianco, 2010). Drawing further inspiration from constructivist and postmodern theory, recent models emphasize the continued mutual and reciprocal influence of actors and domains on each other. Hornberger's (2006) discussion integrates the major concerns of established LPP models, showing how various typologies have framed the three typical goals of language planning: efforts to influence (a) the allocation or functions of language (status planning), (b) the learning of language (acquisition planning), and (c) the forms of language (corpus planning). (All three areas are more easily distinguished in theory than in many applied contexts.) LHR concerns can inform all three types of goals, although issues of status and acquisition planning have generated most (but not all) of the LPP controversies arising in recent decades. Like other rights, language rights can be usefully formulated from both "negative" and "positive" perspectives, with the negative, or tolerance-oriented, perspective embodying freedom from harms and the positive, or claims-oriented, perspective creating duties or rights to goods or services supplied by others, usually public authorities. Tolerance- and promotion-oriented conceptions of LHR differ in their implications for social action and thus in their connections with explicit LPP.

Understanding the origins of human rights theory generally assists in appreciating the various contemporary manifestations of LHR. Human rights theory arose from the multiple socioeconomic and political transformations of modernity (Donnelly, 2007), including growth of an educated, materially successful bourgeoisie and the gradual establishment and legitimization of governmental (rather than private or religious) actors and agencies charged with vital social responsibilities, such as keeping the peace and gathering and allocating the material resources needed to maintain communities. From the 17th century onward, intellectual attention to the existence of human rights was predicated on growing literacy rates that gave ever larger audiences direct exposure to vigorous political discussion along with popular novels highlighting individual experiences (Hunt, 2007). Thus, the concurrent growth of modern nation-states and the greater empathic capacities of their citizens stimulated the elaboration of doctrines of social and individual rights and responsibilities, providing the ethical foundation for acceptance of human rights.

Immediately after World War II, international alliances associated with the victors led to the formation of the United Nations, which produced an eloquent endorsement of

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commitment to the optimal conditions of human and social life in the 1948 Universal Declaration of Human Rights. This document took further explicit steps toward specifying the rights one had simply by virtue of being human, attesting to the strong postwar drive for universality in defining rights (Mertus, 2005; Donnelly, 2007). In the middle decades of the 20th century, this document's sweeping provisions were most readily applied to support for the most basic physical protections for life, safety from bodily harm, and rights to own individual property.

Beginning in the 1960s and continuing through the 1990s, however, subsequent intellectual, social, and political developments arose indicating that the physical safety of persons and property, while never unimportant, was not the sole dimension of human dignity giving rise to rights. International conventions began to reflect a wider conception of the nature of human identity and dignity coincident with the rise of (a) attention to the legitimacy of claims by nations demanding independence from colonial powers; (b) groups such as women seeking social, political, and economic equality; and (c) growing consensus regarding the need for special protections for groups such as children (Alston & Crawford, 2000). Concurrently, the theoretical dominance of a homogeneous model of the state was gradually replaced, in many polities, by a multicultural model in which the state belonged not to a single historically established national group but equally to all present citizens, who then could make claims for various levels of protection and support on the state (Kymlicka, 2007). Such claims could include the protection of distinctive social and cultural attributes such as ethnic membership, which, in some geopolitical settings, was extended to language too. The social and cultural practices of individuals and groups thus became arenas where identification and protection of related rights emerged as legitimate issues. As such their identification, protection, and promotion then emerged as plausible and, for many constituencies, desirable activities (May, 2003, 2005). A high enough degree of political consensus around identification, protection, and promotion of such attributes would then warrant consideration of whether and how public resources should be devoted to related activities.

In general, three types of institutional actors have been involved in the codification and administration of language rights. International bodies such as the United Nations and the European Union have drafted and endorsed foundational documents articulating language rights, and have then generated sufficient social consensus from participating nations to permit treaties and conventions recognizing such rights (Alston & Crawford, 2000). Nation-states, however, have most often been the entities charged with the enforcement of internationally enumerated rights, including language rights, in part because sovereignty issues take primacy over rights issues (Donnelly, 2007). In addition to the ratification of international documents, individual nations may articulate language rights in their constitutions and other bodies of law (see Faingold, 2004). Finally, and increasingly prominent in the realms of theory and application, non-state actors, such as nongovernmental organizations (NGOs) and more localized groups working for ethnic rights of specific communities, have come to play ever more active roles in the promotion, implementation, and monitoring of language rights (Mertus, 2005). Typically, all these institutional actors draw on the expertise of attorneys, academics in various fields (including but not limited to applied linguists), and community activists, individuals whose training and experience confer the credibility needed to advocate, analyze, and defend policies related to language rights (Spolsky, 2006).

Language rights, like all rights, are social agreements that can guarantee varying levels of state tolerance (negative rights) or active support (positive rights) (Dunbar, 2001; Faingold, 2004) and may require the allocation of some form of public resources (Bruthiaux, 2009). Several scholars characterize rights generally and language rights more specifically as strong requests in a rhetorical sense (Donnelly, 2007; Bruthiaux, 2009). The ultimate success

of these requests rests in part on the persuasiveness of the rhetorical argument in which they are delivered, their fit within existing regional and national modes of governance, and their impact on the allocation/reallocation of the public resources needed to comply with the practices mandated by the request.

Argumentation for specific language rights can be advanced and received in several ways. For example, many human rights-based arguments for language rights are situated primarily on universal moral grounds (Skutnabb-Kangas, 2000), while other arguments rest on empirical support (Francis, 2005). In addition, recent rhetorical trends from the state perspective include the prioritizing of economic development opportunities for individual members of language minority communities over the protection of the cultural rights of such communities (da Silva & Heller, 2009). Along a hypothetical continuum of rights—with negative or tolerance rights at one end and positive or promotion rights on the other—those closer to the positive or promotion rights end generally require more public resource allocation (Bruthiaux, 2009). That is, in general, it would require fewer public resources to allow or require use of a minority language in media outlets (which may be privately supported in whole or in part) and more public resources to provide public education solely or partly through the medium of a minority language (see Tollefson & Tsui, 2004). Given the scarcity of resources in any national system, Grin (2005) argues that, to meet the tests of policy makers' evaluations, successful language rights requests must address resource allocation in specific and realistic terms. He suggests that the net results of cost–benefit analyses, though problematic to calculate, would generally support the promotion of language minority rights and linguistic diversity. The next step in a resource allocation argument would then be examination of the net benefits across societal groups.

In a catch-22 situation for language rights advocates, the increasing trend toward privatizing management of public goods, including linguistic resources, complicates the application of cost–benefit analysis to implementation of language rights policies (and all policies pertinent to public goods). Such trends deceptively shift the costs of language resource management to private hands while retaining the benefits in the public interest (see Fulcher, 2009, on university-level second language instruction in Britain). Thus, as outcome measures for both language rights arguments and economic development rights arguments converge in the form of positive cost–benefit results, the need for explicit language rights articulation could become deprioritized, a victim of the "erasure" or denial of connection between social causes and effects.

Overwhelmingly, explicit language rights are advocated to protect or promote the use of minority as opposed to majority languages (May, 2005; Patten, 2009). Specific arguments for protection of minority language rights (MLR) originate in an understanding of sociolinguistic processes such as language shift and language loss as well as language-related sociopolitical processes affecting social identity and mobility (Kymlicka, 2007). Among the major theoretical and practical gray areas in the application of MLR are questions about to whom such rights apply—individual members of minority language communities or the communities themselves. For example, the right of a parent to use a minority language with his or her child is applied to an individual. In contrast, a right such as the right of minority language users not to have to shift to a dominant language is applied at the group level. A related critique is that systems involving both individual and group rights are so riddled with contradictions that they may be irreconcilable.

Nuanced examinations of rights applications address some of these concerns. Group (or collective) rights applied intra-group may, in fact, sometimes restrict individual rights and thus be less tenable in systems of modern conceptions of liberal democracy. On the other hand, group rights applied only across social groups (rather than at the individual level) may avoid conflict with individual rights (Kymlicka, 2007; Patten, 2009). Furthermore, in

some cases, the existence of, or potential for, conflict rooted at least partially in questions of linguistic diversity may prioritize the need to accommodate group or collective language rights (Kymlicka & Patten, 2003). In such discussions, special attention must be given to the nature of the links between an individual and the language/s attributed to him or her. Claims that essentialize individual identities and ossify the dynamic relationships between individuals and situations of language use are particularly susceptible to criticism (May, 2003). Conflicts between individual and group language rights are possible, and may require adjudication by relevant authorities.

In international and national policies, language-related protections and claims are not consistently accorded independent conceptual space; often, they are embedded in core beliefs related to various other socially salient categories such as ethnicity, goals of education, and the competencies expected of citizens (McGroarty, 2010). In other words, language concerns, including language rights, fit into existing national value profiles differentially, and these social value profiles, too, are dynamic and subject to change over time (McGroarty, 2008). Universalist claims about language rights are attractive in their scope but insufficient for social impact without the leadership and coalition building that underpin policy implementation and success in local and national governance.

In sum, levels of political consensus and attendant LPP actions related to language rights are highly institutionally and contextually specific. Relevant social units differ in size and autonomy, all the way from international organizations and nation-states to smaller geopolitical entities such as provinces, counties, and cities, to administrative units such as school boards or school districts, to the different types of affinity-based units, such as religious and cultural groups, that constitute civil society. Crucially, language rights claims are proposed, interpreted, and supported in different ways for different types of groups, with indigenous groups (such as Native Americans in the USA or Aboriginal groups in Australia), territorially based substate groups (such as the Québécois French in Canada or Catalans in Spain), and recent immigrant groups (notably the post-1960s immigrants to large Western democracies) all demonstrating distinctive requests for official tolerance and accommodation (Kymlicka, 2007). Resulting LHR and MLR claims thus demonstrate tremendous variety in their historical and contemporary rationales, imbrication in local and national political systems, and connections (if any) to effective enforcement mechanisms. Nevertheless, since the early 1980s, such claims have assumed greater ethical and political prominence as nations strive to manage internal diversity and demonstrate concordance with international standards of respect for human rights. Tensions between the universalist and multiple group- and context particular claims remain, but theoretical unanimity is not essential for success in the realm of application. With evidence from more sophisticated argumentation along with exemplars of local and national LHR achievements, LHR proponents can continue to build the political consensus needed to elaborate and sustain language policies that reflect the aspirations toward multilingual social identities now valued within liberal democracies.

SEE ALSO: Critical Applied Linguistics; English-Only Movement; Heritage Languages and Language Policy; Human Rights; Linguistic Human Rights

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Language Study Abroad

CELESTE KINGINGER

Students, parents, educators, and policy makers often assume that study abroad is a prime context for language learning, providing "high quality, contextualized exposure" to language (Isabelli, 2007, p. 333) in abundant interaction with expert speakers. Yet, empirical evidence suggests the need for a more nuanced understanding of the relationship between study abroad and developing language ability. This entry offers an overview of research on second language acquisition (SLA) in study abroad.

In the United States, the origin of this research is commonly traced to Carroll's claim, based upon robust statistical evidence, that "time spent abroad is clearly one of the most potent variables" predicting language proficiency (1967, p. 137). In the interval since the 1960s, scholars have explored and expanded this field of inquiry in a variety of creative ways. Their projects may be divided into two general categories: (a) research based upon holistic constructs such as proficiency or fluency, including studies attempting to correlate qualities of the experience with outcomes; and (b) research focused upon specific domains of communicative competence. Following a review of exemplary studies in each of these categories, this entry summarizes the findings while also noting limitations on the contemporary research base.

Holistic Constructs: Proficiency and Fluency

The research based upon holistic constructs includes studies examining the development of overall proficiency and of the specific qualities of fluency in speech. In the case of proficiency, the operational definition of the construct normally appears in the form of a test purporting to measure general language ability, rather than the achievement related to specific learning contexts or experiences. In the case of fluency, although the term is "deeply embedded in lay linguistic perceptions" (McCarthy, 2006, p. 2), in SLA research its definition has been elusive.

The research on the development of second language proficiency in study abroad is dominated by one model, and its accompanying test, the Oral Proficiency Interview (OPI) developed by the American Council on the Teaching of Foreign Languages (ACTFL). Since the early 1980s the ACTFL Proficiency Guidelines have provided the default understanding of general language ability in the United States. Among the projects in this subfield of applied linguistics, many have been directly or indirectly influenced by these Guidelines. A landmark study of this type is Brecht, Davidson, and Ginsburg (1995), an investigation of predictors of foreign language proficiency gain for 658 American learners of Russian. Findings from the OPI showed that the main predictors of gain included previous study of other languages, grammar and reading skills, and gender, with men more likely than women to attain the "2" (Advanced) level. A more recent study, Magnan and Back (2007), involved 20 American students of French who began their study abroad with Intermediate ("1") proficiency. Six of the students climbed one level, and six two levels, but eight showed no gain in proficiency. The authors attempted to contextualize these findings in terms of housing options, reported French-mediated activities, age, gender, and level of prior coursework. Their analysis yielded few significant results: a negative correlation between *speaking*

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French with American classmates and level of improvement, and a positive correlation between advanced level of study and proficiency growth.

Among the best known studies of fluency development is Freed, Segalowitz, and Dewey's (2004) comparison of outcomes from study abroad, domestic immersion, and "at home" classroom settings for American learners of French. In addition to participating in OPIs, the students completed a Language Contact Profile detailing the amount and type of their activity in French. Extracts from pre- and posttests were scrutinized according to a dual model of fluency: (a) as total words, duration of speaking time, and length of the longest turn; and (b) as speech rate, hesitation, pauses, mean length of speech run without dysfluencies, repetitions, or repairs. Results showed that the "at home" group's performance remained unchanged, the domestic immersion group registered significant gains on most measures, and the study abroad group made only modest gains. The researchers related fluency growth to time-on-task, with the domestic immersion students spending significantly more time in French-mediated activities than the others, and the study abroad group using English more than French outside of class in all activities except listening.

Research based on holistic constructs inevitably brings up questions about the nature of the sojourn abroad. Why do some students make significant gains while others do not? In some cases, it is possible to point out links between students' reported activities and gain scores, while in others this relationship is less clear cut. Meanwhile, efforts to refine the constructs used in research have led some researchers to abandon holistic constructs in favor of specific aspects of communicative competence.

Domains of Communicative Competence

The literature on language learning in study abroad includes numerous studies focusing on particular domains of communicative competence. These domains include: (a) *linguistic competence*, or the ability to manipulate the formal features of language such as vocabulary, syntax, morphology, and phonology; (b) *actional competence*, or the ability to interpret and produce speech acts such as requesting or apologizing; (c) *sociocultural competence*, or knowledge of rules and conventions governing language use, such as norms for politeness, speech styles, and register; (d) *discourse competence*, or the ability to create and interpret cohesive and coherent texts; and (e) *strategic competence*, consisting of knowledge and skill for resolving communication difficulties and for enhancing both learning and communication (Celce-Murcia, Dörnyei, & Thurell, 1995).

In the domain of linguistic competence, study abroad researchers have examined the development of grammatical competence, vocabulary growth, and phonology. Collentine (2004) compared overall grammatical accuracy and acquisition of unique lexical items in the OPIs of study abroad versus classroom learners of Spanish. In this study, the "at home" group outperformed the study abroad participants, demonstrating greater increases in both grammatical abilities and vocabulary growth. Studies pinpointing specific features of second language grammar offer a rosier outlook. Howard (2005) for example, limited his analysis to the realization of past tense and aspect by learners of French. While the veterans of study abroad did not master every subtle detail of the French aspectual system, in comparison to classroom learners they displayed superior control of the imperfect to mark habituality and progressivity. Similarly, Isabelli (2007) showed that study abroad alone does not guarantee acquisition of the subjunctive mood in second language learners of Spanish. However, an experience abroad provides a degree of readiness and "linguistic maturity" (p. 336) required to understand complex syntax.

Researchers interested in the effect of study abroad on vocabulary growth have produced findings dissimilar to those of Collentine (2004), showing that study abroad can expand

the learner's lexicon and render it more native-like. The participants in Milton and Meara's (1995) project, for example, showed an average vocabulary growth rate more than four times as fast as the growth rate at home, although the authors also noted important individual differences. Subsequently, Ife, Vives Boix, and Meara (2000) used a word association test to assess the organization of lexical items within the vocabularies of British learners of Spanish before and after their sojourns in Spain. Significant gains in native-like word associations were registered for all participants, regardless of their initial level of proficiency.

The development of second language phonology is normally framed as the extent to which learners appropriate native-like pronunciation. Results from research on study abroad are mixed, with some studies showing no advantages for learners abroad over their counterparts at home, and others suggesting that study abroad can bring significant enhancement to students' pronunciation. Mora (2008), for example, investigated the ability of Spanish–Catalan bilinguals to discriminate between English contrastive sound units and to produce voiceless oral stop in English. In this study, only instruction at home significantly improved students' perceptual and phonological ability. O'Brien (2004), on the other hand, showed that American students in Germany came to perceive and to pronounce German vowels in a native-like way, and native speaker judges rated their speech samples as possibly native.

The study of actional competence normally focuses on the interpretation or production of speech acts such as requesting, apologizing, or suggesting. Studies of speech act production dominate this subfield, and most involve data collection through the use of discourse completion tasks (DCTs) with comparison of learners' production with baseline native speaker data. Many investigations (e.g., Barron, 2003) suggest that study abroad is a useful, if imperfect environment for the development of actional competence; learners move toward but do not attain native-like abilities. One exemplary study is Shardakova's (2005) examination of American learners' apologies in Russian. Shardakova recruited five groups, including learners of intermediate and advanced proficiency, with and without experience in Russia, along with native speakers. In addition to completing a DCT, these participants were asked to evaluate the fictional situations portrayed in the task. Her findings suggest that *only* a combination of high proficiency and exposure to Russian culture allowed students to "see things from the point of view of a Russian" (p. 445) and thus opt to apologize in a native-like manner.

In the domain of discourse competence, one relatively well-studied phenomenon is the development of the ability to manipulate address forms (i.e., different ways to say "you"). Address forms in European languages are inherently ambiguous, since they simultaneously index both the social context and the identity of speakers. Kinginger (2008) investigated the development of address form competence (*tu* versus *vous*) in American learners of French using two instruments, formal and informal spoken role plays, and a language awareness interview requiring participants to choose an address form for each of six situations, and explain their choice. The role-play task provided a snapshot of the group's significantly enhanced ability to match address forms to contexts after a sojourn abroad. Data from the interviews showed that students had begun to appreciate the complexity underlying address form use, and that some had also understood that address form use can convey a desired social identity.

Research on sociocultural competence has focused on the extent to which students abroad develop awareness and use of register, or levels of formality that are marked linguistically. For Regan (2004), variation in the forms of negation used in French is a barometer of integration into the French-speaking community. Negation can be realized in spoken French with and without the particle "ne," as shown in the example below:

Je ne travaille pas vs. Je travaille pas
I neg work neg vs. I work neg.
"I am not working"

In formal speaking contexts, "ne" is generally retained, whereas in informal settings "ne" may be deleted; its presence or absence serves as a sociolinguistic indicator of formality, power, or solidarity. The advanced-level Irish students of French participating in Regan's study showed dramatic and permanent increases in "ne"-deletion following study abroad. They also demonstrated a tendency to retain "ne" in formal contexts, just as native speakers do, although they also tended to overgeneralize the deletion of "ne" in comparison with native speakers.

Kinginger's (2008) language awareness interview also included a section on speech acts for leave-taking in French, designed to assess the extent to which students would learn to match these speech acts to formal and informal communicative situations. The students were presented with a list of speech acts ranging in formality from "adieu" ("farewell," literally, "I commend you to God") to "gros bisous" ("fat kisses"), and asked to match them to a range of situations (e.g., orator to deceased at a funeral, host mother to student upon retiring for the night, applicant to interviewer at the end of a job interview). Prior to their sojourn in France, the participants made a number of inappropriate choices, such as "ciao" for the funeral orator, "adieu" to the job interviewer, or "à tout à l'heure" ("see you shortly") to the host mother on the way to bed. By the end of their semester abroad, however, most of the students had developed awareness of the relationship between address forms and formal or informal situations, and made corresponding appropriate choices.

As noted above, strategic competence includes both the ability to overcome difficulties in the process of communication and conscious strategies to improve one's own learning. Both of these angles on strategic competence are represented in the study abroad literature. Lafford (2004) investigated "attempts to overcome communication gaps" (p. 212) in OPIs involving US-based students having spent one semester learning Spanish at home and abroad. Her findings show that the study abroad participants employed significantly fewer communication strategies than did the classroom learners. Lafford attributes this difference to the "structures of expectation" (p. 213) developed in prior Spanish-mediated interaction. Whereas the classroom learners were accustomed to interaction with instructors whose mission is to assist them, the study abroad participants had experience of interlocutors more interested in their message than in their struggle to express themselves.

Adams (2006) hypothesized that study abroad would prompt changes in the learning strategies of US-based students in a variety of host countries (France, Austria, Brazil, and the Dominican Republic). Further, she argued that these changes would be influenced by program and individual variables, including self-reported gains in proficiency. Adams administered the Strategy Inventory for Language Learning before and after the students' sojourns. Her findings showed that the effects of strategy training were minimal, although students who claimed proficiency development also increased their strategy use. Of the program variables tested, only one proved significant: Students who traveled with their groups more than 20 days did not increase their use of strategies. One subtext of Adams's report is the author's astonishment in discovering that sojourns abroad of two- to four-month duration did not "challenge students appreciably more than they are challenged in the classroom" (p. 268).

Discussion and Conclusion

The research on SLA in study abroad is limited in scope and scale, with most projects involving small convenience samples of American students and difficulties in establishing true control groups (Rees & Klapper, 2008). By and large, however, and although much depends on the quality of the sojourn, study abroad appears to have a positive impact on language learning. In the case of grammatical competence, where this impact has been difficult to demonstrate, refinement of research questions has gone on to highlight the value of a stay abroad. For vocabulary growth and phonology, results are mixed: some participants present dramatic gains while others' attainment is modest. In the domains related to social interaction, the research suggests that students develop both their ability to perform and their "structures of expectation" (Lafford, 2004, p. 213) for the nature of interaction and its relation to host cultures. Where results are lackluster or mysterious, as in the case of Brecht, Davidson, and Ginsburg's (1995) findings on gender, of the apparent superiority of domestic immersion programs illustrated in Freed, Segalowitz, and Dewey (2004), or of Adams's (2006) work on learning strategies, the results call for more attention to the quality of study abroad programs, what students do with their time, how they envision present and future identities, and how they are received in their host communities.

SEE ALSO: Fluency; Language Socialization in Study Abroad; Second Language Pragmatic Development; Speech Acts Research; Vocabulary Size in a Second Language

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Language Teacher Development

KATHLEEN M. BAILEY

Teachers' *professional development* has been defined as "a process of continual intellectual, experiential, and attitudinal growth of teachers" (Lange, 1990, p. 250). The term refers to teachers' need for "continued growth both before and throughout a career" (p. 250). No matter how well prepared teacher candidates may be at the end of their preservice training, throughout their professional lives they will need to update existing skills and knowledge, and add new skills and knowledge to their repertoires.

Professional development is not remediation undertaken by substandard teachers. Indeed, there is "common agreement that continued professional development is a need felt by all teachers regardless of their level of expertise and experience" (Johnston, Pawan, & Mahan-Taylor, 2005, p. 54). Smith (2005) concurs. She cites Fullan's definition of professional development as "learning how to bring about ongoing improvements" (Fullan, 1995, p. 255), and adds that professional development "needs to be an integral part of teachers' daily lives" (Smith, 2005, p. 200).

Reasons for Engaging in Professional Development

Why should busy language teachers bother with professional development? Bailey, Curtis, and Nunan (2001, pp. 6–8) suggest several reasons. First, there is the point noted above: to acquire new knowledge and skills. Teaching contexts change. People who had been working with children might begin teaching adults. Teachers working in second language contexts might move to foreign-language contexts. Political changes alter the demographics of our language learners (e.g., new waves of immigrants and refugees can create the need for new survival courses in the target language). Likewise, technological innovations and employment conditions trigger the need for professional development.

In some cases, engaging in professional development may "lead to an increase in income and/or prestige" (Bailey et al., 2001, p. 7) in a teacher's current position, or make that person more competitive in seeking a new position. Professional development can help teachers combat burnout and negativity in the workplace, and lead to empowerment—"working our way forward, based on our own understanding" (Edge, 1992, p. 1).

Bailey et al. (2001) discuss several different approaches to professional development which teachers can use, either privately or socially. These include self-observation; reflective teaching; keeping teaching journals; language learning; using video recordings; doing action research projects; creating teaching portfolios; and engaging in peer observation, team teaching, mentoring, or coaching.

Teachers' Attitudes About Professional Development Practices

Springer and Bailey (2006) conducted an online survey of over 1,200 language teachers worldwide about their reflective teaching and professional development practices. The questionnaire asked teachers to rate each activity on two 9-point scales: one about their own experience with each practice, and one about the appeal each practice held for them.

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Table 1 Professional development practices: survey results

Procedure	*Experience*		*Appeal*	
	Mean	*SD*	*Mean*	*SD*
Making notes on our lesson plans	6.11	2.24	6.96	2.14
Getting feedback from our students	6.51	2.37	7.17	2.05
Discussing teaching with colleagues	6.87	1.91	7.69	1.62
Observing other teachers' lessons	5.04	2.38	7.10	2.04
Being observed by colleagues	4.07	2.36	5.97	2.38
Audio recording our lessons	2.35	2.08	4.40	2.71
Video recording our lessons	2.82	2.22	5.07	2.72
Making entries in a teaching journal	3.54	2.51	5.19	2.70
Compiling a teaching portfolio	5.96	2.81	6.82	2.46
Posting materials on a Web site	2.87	2.68	5.11	2.87
Reading cases about teaching	6.08	2.42	6.83	2.20
Writing cases about teaching	2.80	2.40	4.88	2.74
Conducting action research	3.95	2.73	5.97	2.71
Language learning experiences	7.04	2.19	7.86	1.65
Team teaching with a colleague	4.62	2.74	6.31	2.39
Being mentored by other teachers	4.55	2.64	6.92	2.23
Mentoring other teachers	5.39	2.87	7.06	2.10
Reciprocal coaching with other teachers	3.09	2.73	5.82	2.65

The results are shown in Table 1, in which the data are based on a 9-point scale (with nine representing the most experience or the greatest appeal).

In considering these data, readers should note that the higher the mean ratings, the greater the respondents' experience with that particular practice and the greater the appeal of that practice seemed to these teachers. Smaller standard deviations indicate greater consensus in the responses. Thus, for example, there was less variability in the respondents' ratings of the item "discussing teaching with colleagues" and more variability in their ratings of the item "posting materials on a Web site." It is interesting that for every single item on the questionnaire, the average appeal rating is higher than the average experience rating. Springer and Bailey (2006) interpreted this pattern to suggest that respondents found the idea of engaging in these reflective teaching practices to be potentially valuable for professional development, even if those teachers did not have much experience with the individual practice.

Principles for Promoting Professional Development

Seven principles for promoting professional development were discussed by Curtis (2008), who wrote about language program leadership. He used an alphabetical list from A to G as a mnemonic device for principles leaders should follow:

1. Articulate your awareness. This process helps teachers identify gaps in their skills and knowledge on which to focus professional development efforts.
2. Be an example. It is important for those who wish to promote professional development to engage in their own efforts.

3. Count the cost. Professional development endeavors are more likely to be supported by administrators if the results can be documented.
4. Distinguish between training and development. According to Head and Taylor (1997), training focuses on "knowledge of the topic and the methodology for teaching it" (p. 9), while development involves "the learning atmosphere which is created through the effect of the teacher on the learners and their effect on the teacher" (p. 9).
5. Engage everyone. Engaging a group of teachers in professional development involves a "subtle and complex process in which the benefits of taking part in a particular activity become clear to those who are being encouraged to take part" (Curtis, 2008, p. 123).
6. Fund your program properly, positively, and proportionally. There must be adequate proportional funding for professional development. *Proportional funding* is the idea that teachers who make a positive contribution to the organization (e.g., giving a presentation, reporting on the conference to their colleagues) should receive greater support.
7. Get senior-level support. Financial support for professional development may be easier to obtain if it reduces staff turnover, increases job satisfaction, promotes the language program, etc.

Working in the tradition of sociocultural theory, Rueda (1998) articulates five principles to guide professional development efforts:

1. Because teaching and learning are social activities, we should promote learning through "joint productive activity among leaders and participants" (p. 1).
2. Because language is an important tool for mediating interaction between teachers and learners, among learners and among teachers, we should "promote learners' expertise in professionally relevant discourse" (p. 1).
3. Professional development should be based on authentic concerns which are relevant to the teachers involved.
4. Professional development activities should be viewed as opportunities for long-term problem solving rather than quick fixes, so such activities should "challenge participants toward more complex solutions in addressing problems" (p. 1).
5. Finally, to help teachers make connections between experientially based knowledge and formal school-based knowledge, professional development endeavors should "engage participants through dialogue" (p. 1).

These ideas from Curtis (2008) and Rueda (1998) remind us that professional development does not occur in a vacuum: "Each teacher's practice and beliefs develop in complex interaction with experiences in school" (Roberts, 1998, p. 39).

Training and Development

Long before Head and Taylor (1997) published their distinction between training and development, Freeman (1982) provided another perspective. In his view, "training deals with building specific teaching skills," while development, "focuses on the individual teacher—on the process of reflection, examination, and change which can lead to doing a better job and to personal and professional growth" (p. 21). Thus, training focuses on specific "immediate needs," whereas "development assumes that teaching is a constantly evolving process of growth and change" (p. 22).

Freeman (1989) also notes that teacher education is "an interactive process involving two individuals: the teacher (or teacher in preparation) and another person—the teacher educator, mentor, colleague, or peer" (p. 38), and this person he refers to as *the collaborator*. In this context, "training is a strategy for direct intervention by the collaborator to work on specific aspects of the teacher's teaching" (p. 39)—for example, error treatment strategies, techniques for managing group work, giving clear instructions, etc. Such training typically takes place during a given time period (e.g., a semester-long graduate course), and the success of the training is assessed by the collaborator, or by the combined judgment of that person and the teacher. Development, in contrast, involves a relationship between the teacher and the collaborator that is one of more indirect influence. It focuses on attitude and awareness as well as knowledge and skills.

Sources of Professional Development Endeavors

Efforts to promote professionalism among language teachers take many forms and can spring from at least two different starting points. Leung (2009) defines *professionalism* as "practitioners' knowledge, skills, and conduct" (p. 49), and says that there are two broad approaches to developing teacher professionalism: (1) *sponsored professionalism* and (2) *independent professionalism*. The former refers to any "institutionally endorsed" effort, which "is usually proclaimed on behalf of teachers as a collectivity; therefore, it does not necessarily coincide with individual teachers' views on professionalism" (p. 49). Those more individual views constitute the latter concept—*independent professionalism*.

As Leung's (2009) contrast suggests, professional development efforts can be either institutionally or individually organized. Examples of sponsored professionalism include completion of required certification courses and in-service days provided by (and often required by) a school system or language program. Examples of independent professionalism include individual teachers taking the initiative to study a language, learn a new teaching technique, read articles, or listen to podcasts of particular interest. As these efforts are carried out, they can also be either private or social in nature. For instance, making entries in a teaching journal can be a completely private endeavor, whereas collaborating with a colleague in team teaching or action research would be inherently social. Figure 1 shows examples in the four quadrants created by these overlapping continua.

Continuing Collaborative Development

An inherently social model of professional development has been described by Edge (2002). His model of *continuing collaborative development* is a "mixture of awareness raising and disciplined discourse" and "a way of cooperation among equals" (p. 18). In collaborative professional development, learning occurs through articulating one's experiences and concerns to a trusted colleague. That is, one teacher (the "Speaker") articulates his concerns, ideas, and experience, while another (the "Understander") listens. However, Edge notes that the Understander engages in a very particular kind of listening: He "accepts what the Speaker has to say and accepts the Speaker's evaluations, opinions, and intentions without judging them according to the Understander's knowledge or values" (p. 27). This level of acceptance leads to refinements in the articulation process: "As Speaker, I shall be trying to push my own thinking further . . . supported by the knowledge that it is acceptable for me to get things wrong while I try things out, because I have been given an evaluation-free zone to work in" (p. 32). In other words, through the process of articulating his views, the Speaker comes to new ideas which can be put into action. The Understander is also likely to benefit from this interaction.

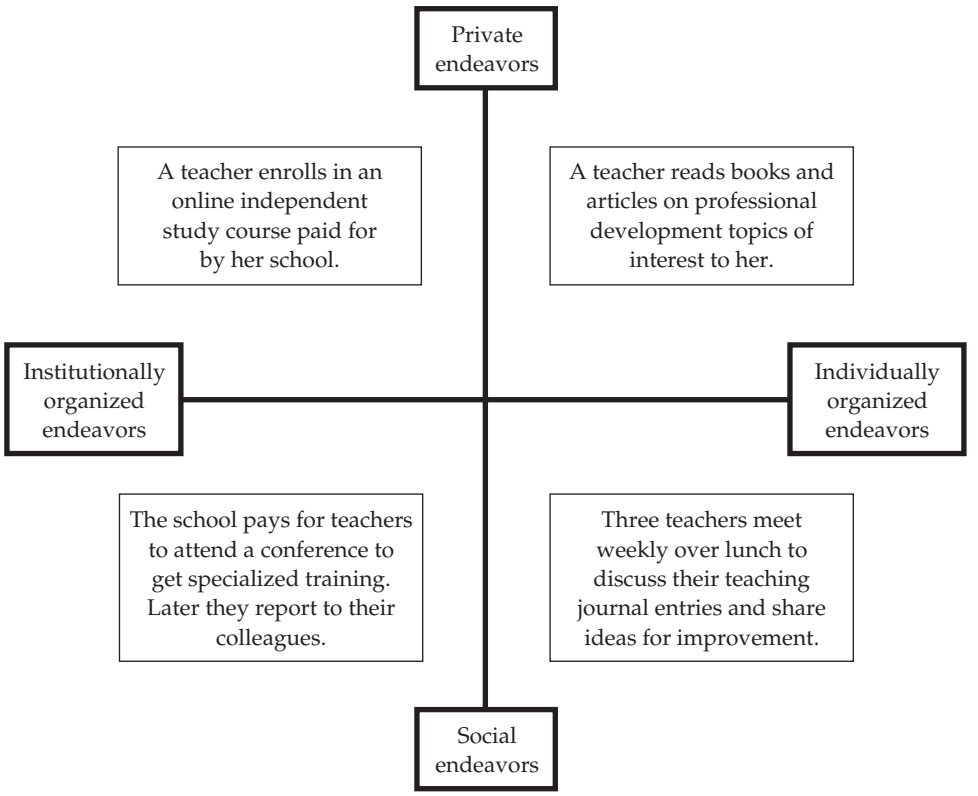

Figure 1 Overlapping continua of professional development endeavors

Conclusion

Language teacher development is a matter of ongoing professionalism—not remediation. Regardless of their experience or initial teacher preparation, all language teachers need professional development opportunities in order to stay current with developments in the field and in the world. These opportunities may be initiated and organized by individuals (promoting independent professionalism) or by school systems (promoting sponsored professionalism), and they may be private or social in nature. Language teacher development opportunities can be greatly influenced by the climate and the leadership of the school or program within which teachers work, and there are several resources (e.g., Rueda, 1998; Richards, 2002; Curtis, 2008) to help administrators think about their roles in promoting language teacher development. For a reference list on professional development for language teachers, please visit www.tirfonline.org.

SEE ALSO: Bilingual/Immersion Teacher Education; Non-Native-Speaker English Teachers; Values in Language Teaching

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Language Trainer Training in Technology

DEBORAH HEALEY

Technology in the form of electronic devices and digital media is an important part of education in most settings today. Despite what many vendors may claim, technology use is not necessarily intuitive, and effective teaching with technology even less so. Teacher training (TT) is widely seen as essential in ensuring and improving the quality of teaching with technology, including second and foreign-language teaching. For currently employed (in-service) teachers, such training is often referred to as professional development. Institutions, school districts, and Ministries of Education may invest in hiring teacher trainers to provide training. Current research indicates that the best results are obtained from long-term, ongoing training that is focused on the specific needs of those being trained (Holland, 2005; Fox, 2008). In order to provide for longer-term professional development and cut costs, investments may be made in professional development that provides training of trainers (TOT). This investment will enable local teachers to become trainers themselves, reducing dependence on outside consultants, who are often more costly, and potentially improving the fit between local needs and training. However, simply learning how to use a technology-enhanced technique or an innovation does not constitute the ability to assess trainee needs, adapt material to fit identified needs, teach others to meet those needs (perhaps with an unpredictable variety of available technology resources), and encourage others to adopt and use a technique or innovation. As a result, TOT takes a somewhat different form from TT.

Teacher education serves a similar function to TOT, but includes a number of differences. Teacher educators work with prospective teachers and generally for a longer period of time. The target for teacher educators is to help teachers better serve students, while the target for trainer trainers is to help teachers better serve other teachers. In both cases, the shift from student to colleague in the case of teacher educators and from fellow teacher to trainer can be difficult, both for master trainers and for prospective trainers (see below).

Several qualities have been noted in effective technology training and in effective training for language teachers:

1. training that meets perceived and actual needs of the language teachers;
2. a focus on language teaching and learning rather than on technology;
3. training settings as similar as possible to the teachers' own classrooms or labs;
4. use of hardware and target language software that teachers have available to them;
5. extensive hands-on practice;
6. activities that teachers can customize to fit their current textbooks and material, but also activities that can be used without customizing by teachers (e.g., material in the target language that does not need to be translated to be used);
7. use of partners ("study buddies"), preferably from the same institution;
8. ongoing training over time;
9. creation of a learning community or community of practice for ongoing support.

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Elements of TOT

In this entry, those creating and presenting TOT will be referred to as master trainers. Those receiving TOT will be referred to as prospective trainers during training and as new trainers after they finish training. Those trained by new trainers will be referred to as trainees, and the students of the trainees will be referred to as students.

Needs Analysis

The first step in designing effective TOT, as in all training, is a needs analysis (Salas & Cannon-Bowers, 2003). The needs analysis will define the knowledge, skills, and attitudes desired as outcomes of the training, based on discussions with stakeholders (administrators, teachers, and possibly students, among others). Those planning the training need to know about the prospective trainers: their background in TT, level of target language proficiency, current level of expertise in teaching, teaching setting, and time available. For those being trained as technology trainers, detailed information about their experience in using technology, the technology currently available to them, and their experience specifically with technology training is also needed. The best use of TOT time is likely to be achieved when prospective trainers are at a relatively high level of skill in the areas in which they will be training others. Prospective trainers who have worked successfully with adult learners will also be at an advantage in TOT.

Those planning TOT need to have information about trainees who will be taught by the new trainers: their teaching background and setting; language proficiency; level of expertise in teaching; technology expertise; and access to hardware, software, and the Internet. Similarly, information is needed about the trainees' students' target language goals and expectations; language proficiency; technology expertise; and access to hardware, software, and the Internet. Hubbard (2007) offers a role-based framework for classroom teachers that may be helpful in defining the skills needed, based on whether the trainees will be computer-assisted language learning (CALL) practitioners, developers, researchers, or trainers. A collaborative approach to needs analysis, where feasible, provides the opportunity to develop prospective trainers' skills while ensuring a better fit for the materials and the training that is created. If the initial analysis is done by outside consultants, a more specific and collaborative needs analysis should take place during the initial TOT. Differences in operating systems and versions of software can be substantial. If trainees have access to Windows Vista, for example, they may be resistant to training on Windows XP, Windows 7, or Mac OS X. Less experienced trainers and trainees may not have the skill to use an operating system and application menus in a language different from that on their own computers, such as in English rather than in Arabic.

Behavioral Objectives

The next step is to establish behavioral objectives (also called performance objectives and learning objectives) based on the needs analysis and that clearly define what prospective trainers, trainees, and their students will be able to do. Behavioral objectives are observable and measurable (Smaldino, Lowther, & Russell, 2007). Objectives and their related assessment methods should be established for the TOT sessions, mentored training, and new trainer sessions, with a focus on how language teaching pedagogy can be enhanced with technology. Training for language teachers about technology can devolve into technical training if a consistent focus on pedagogy is not maintained (Levy & Stockton, 2008). Behavioral objectives and a clear assessment strategy help administrators as well as prospective trainers and trainees understand what the outcomes of the training are expected to be, including what trainers should be able to do as a result of the training. Buy-in from

administrators and prospective trainees helps build momentum and the likelihood of success for the overall training effort.

Training for technology use in language teaching can be informed by using the TESOL *Technology Standards* (Teachers of English to Speakers of Other Languages, 2009) as a reference. Selected performance objectives from the *Technology Standards* can be adapted to serve as the basis for behavioral objectives. For example, Goal 1 Standard 2 is "Language teachers demonstrate an understanding of a wide range of technology supports for language learning and options for using them in a given setting" (p. 29). One of the performance objectives is "Language teachers use online technology as available to deliver instructional or support material" (p. 29). A behavioral objective for prospective trainers based on that standard and performance objective would be, "After creating their own blog with a language class in mind, prospective trainers will create instructions for creating and using a blog for a language class, including graphics, step-by-step instructions, and a rubric for assessing blog posts." A behavioral objective for trainees would be, "After reading about the use of blogs in language teaching, trainees will create a blog for their class and post an initial welcome message that explains the purpose and use of the blog."

Materials Development

With behavioral objectives in mind, materials development is next. Materials used in TOT are designed for prospective trainers and for their trainees. Background readings work well to set the pedagogical stage for discussion and hands-on practice. Again, a collaborative approach to materials development with master trainer and prospective trainers is recommended whenever possible in order to improve the likelihood that the material will be appropriate for the trainees and meet the language learning needs of their students. A collaborative approach is especially helpful with technology training for language teachers, where the target language proficiency of trainers and trainees as well as the resources available to them are considerations. Examples that resemble the trainees' own situations work best (International Trade Centre, 2005; Davis, Preston, & Sahin, 2009). Training situations that present ideal conditions do not reflect trainee realities, leading to frustration when trainees try to implement language learning technologies and tools in their classrooms. As Hubbard and Levy point out, "the best preservice and inservice professional development courses build authentic constraints into the tasks trainee language teachers are required to complete" (2006, p. 8).

TOT material, based on the needs analysis, should be as explicit and as extensive as possible in order to be effective. Screenshots and step-by-step instructions are useful, as are scripts for prospective trainers. Scripts should be in the language most likely to be used in the training setting, also taking into account possible differences in the language that the operating system and menus may appear in. For those using PowerPoint, the Notes function allows the inclusion of a script with each slide. Some versions of PowerPoint will export the notes with a thumbnail of each slide as a Word document, creating an easy handout for new technology trainers to use. Sometimes the expertise of the prospective trainers with materials development is relatively modest, and time is limited. In that case, master trainers should develop TOT materials and be prepared to revise them during initial training. Where trainers and trainees use a mixture of software versions, operating systems, or languages, those planning training have to be prepared with "cheat sheets" that show correspondences and that can be used for reference.

Training topics are based on the needs analysis. Technology training for language teachers typically includes software and online resources for the following:

- language skill building: authentic and adapted material and exercises (reading, writing, listening, speaking, vocabulary, grammar, and pronunciation);

- teacher tools, including lesson plans, gradebooks, and authoring programs;
- specific technologies and tools such as using video, from taking videos to editing the final product; interactive whiteboards; concordancing; online teaching; and so forth;
- language teaching approaches, from basic methodology to specific areas such as critical thinking, differentiated instruction, languages for specific purposes, and so forth;
- community building for language teachers and for language learners;
- research methods, especially classroom-based research.

Training Sessions

Some TOT and TT sessions will make use of peers from the same institution as learning partners ("study buddies") during training. When partners from the same institution are not available, participants in the training courses can be organized into pairs or small groups. The goal in either case is to create a community of practice (Wenger, 1997; see Hanson-Smith, 2006, for technology-related communities of practice for language teachers). A local community of practice that provides ongoing, long-term support for trainers and trainees can help achieve desired educational changes. Where feasible, virtual communities established and used online during the TOT and new trainer sessions can, if managed appropriately, be very effective in providing ongoing, long-term learning even when participants are from different institutions (Kearsley, 2008).

Modeling Best Practices

Effective TOT sessions model the same best practices in teaching the prospective trainers as the new trainers will be expected to use with their own trainees. Implementation of best practices in adult learning (Knowles, 1980) includes:

- tying the learning directly to participants' needs;
- involving learners with interactive presentations and methods of encouraging interaction in large groups;
- providing variety to meet different learning styles;
- formative assessment that provides positive feedback;
- treating learners as individuals (Sullivan, Wircenski, Arnold, & Sarkees, 1990: ID 1–2).

These are all considered elements of good language teaching. Using interactivity, group work, and varied learning styles during training and calling attention to their use builds language pedagogy along with technology skills. In many settings, the target language proficiency level of the prospective trainers and the trainees will be quite varied. Whether the focus of training is language skill building or technology, adding resources and activities that build language skills of prospective trainers and trainees is helpful.

Relatively few participants may be involved in the TOT sessions. However, it is very likely that the new trainers will be working with much larger groups of trainees. Given large class sizes in many parts of the world, the trainees may also need to be equipped with methods for dealing with large language classes. Trainees may be more likely to have access to technology at home than at work and to be working in a one-computer classroom than with a lab. A good needs assessment will make tying the learning to participant needs easier.

Hands-On Practice

As with language learning, practice is a critical part of technology training. Most TOT and TT takes place in computer labs in order to maximize the number trained. If the needs

analysis shows that most of the trainees will have access to a one-computer classroom rather than a lab, it is important to build in time for practice in that setting. A workable option can include setting up a microteaching environment with one computer and a projector where prospective trainers and trainees take turns presenting to each other for 10–15 minutes. Training that takes place in the trainees' own setting, sometimes called situated learning (Egbert, 2006), is most clearly relevant. In-house training can be best customized to meet teachers' needs: suited to the school's basic pedagogical approach, class size, trainees' and students' language proficiency level, technology resources, and the like.

A common failing in technology training is overly helpful trainers and even fellow trainees who will take over the learner's mouse and keyboard to move the learner along. Modeling best practices in technology training includes having those doing the teaching take a "hands-off" attitude toward the mouse. Those being trained need to do, not to watch, when they need additional help. The teacher can model, but then should put the computer or program back into its previous state so that the learner can perform the same operation himself or herself. Trainers and language teachers may also need practice to familiarize themselves with the target language used in specific technology tools of interest. Having menus in the target language is another way of building vocabulary, but it also means learning the target language for a specialized use.

All TOT should include an opportunity not only for hands-on practice during training sessions, but also for mentored practice with trainees. For one example, see Rickart, Blin, and Appel (2006) and the Organizing In-Service Training for Language and Technology in Education (OILTE) TOT project in Ireland (see www.oilte.ie for extensive information about this). Mentored practice is commonly implemented in teacher education programs as part of a practicum. It is also an important element in TOT. The more extensive the change, the more necessary mentored practice will be. In TOT, it is especially important for master trainers to give feedback on the ability of prospective trainers to use the material and techniques appropriately with others. Mentored training also allows master trainers to work collaboratively with new trainers to further refine material, both for future TOT sessions and for use by the new trainers in their TT. Mentored practice that takes place in the new trainers' own settings provides master trainers with the best opportunity for focused feedback on methods and materials.

Assessment

Assessment of TOT material and of training is made with prospective trainers, their trainees, and the trainees' students in mind. A type of assessment commonly used in training is the four-level Kirkpatrick evaluation system (Kirkpatrick, 1996). Prospective trainers can evaluate the TOT sessions from the standpoint of their personal opinion, or a Kirkpatrick Level 1, Reaction level. Mentored training sessions allow assessment at Kirkpatrick Level 2, Learning. The full value of TOT sessions is not visible, however, without observing whether or not there are changes in practice at the trainees' level, in their classroom teaching: Kirkpatrick Level 3, Behavior (Performance). If enough teachers begin using the new techniques or material, the change can become institutionalized: Kirkpatrick Level 4, Results. Assessment at the first two levels can be effective in the short term; for levels 3 and 4, assessment should be long-term.

Challenges

TOT is especially challenging because of the multiple levels of attention required. Master trainers must meet the needs of prospective trainers, new trainers, the trainees of the new

Table 1 Multiple levels of attention

For master trainers
- Viewing prospective trainers as trainees
- Viewing prospective trainers as trainers
- Creating and assessing TOT material, possibly for multiple platforms, versions, languages, and operating systems
- Creating and assessing end-user training material, possibly for multiple platforms, versions, languages, and operating systems
- Assessing the trainees during TOT training
- Mentoring the new trainers
- Assessing the new trainers as they operate independently

For new trainers
- Changing from trainees to mentored trainers
- Changing from mentored trainers to working independently
- Assessing TOT material for fit in their setting
- Assessing and adapting or revising end-user training material to meet the needs of their trainees
- Assessing trainees
- Examining end results with students trained by trainees

trainers, and the students of the trainees. Trainers, especially if participating in co-creating material, need to pay attention to the needs of trainees and the students of the trainees. Technology is a moving target, adding further complexity to the mix (see Table 1).

Classroom teachers are often used as trainers. Those accustomed to working with young children may find it particularly difficult to shift to having adult colleagues as their students. Difficulties may also arise with trainers who are young or from groups that are not typically trainers (e.g., women and members of nondominant groups). In language training, those who do not speak both the target language(s) and the language(s) of the prospective trainers and the trainees may face difficulties. They may be hard-pressed to be accepted as trainers or as master trainers, no matter how proficient they are with the training topics, by those who are older, from dominant groups, or with better language skills. A certificate of training may be useful in many cases to provide the necessary sense of "qualification," especially if the certificate is recognized by the local educational authority.

TOT and TT sessions often have financial and time constraints that limit the amount of training available. The longest-lasting results are found from training that is ongoing rather than "inoculation-style." The TALL Project (Meskill, Anthony, Hilliker-VanStrander, Tseng, & You, 2006) used a combination of doctoral students and experienced classroom teachers trained as mentor teachers. They mentored novice teachers who were implementing technology over a three-year process. This proved to be a successful approach in many ways. TOT sessions with several follow-up sessions, regular TT, and use of a community of practice with regular face-to-face or online interaction require ongoing administrative support.

In sum, TOT requires attention at several levels: master trainer, prospective trainer, new trainer, trainee, and student. Implementation has both immediate and long-term impacts. Training results are seen during TOT work, in mentored training, and then in the work of trainees in their classrooms. Value ultimately lies in the effects on trainees' students: a distinctly long-term view.

SEE ALSO: Assessment and Evaluation: Mixed Methods; Computer-Assisted Language Learning Effectiveness Research; Instructional Computer-Assisted Language Learning; Language Teacher Development; Language Teacher Training in Technology; Large-Sized Language Classes; Materials Development; Multimodality and Technology; Multimodal Teaching and Learning; Needs Analysis; Non-Native-Speaker English Teachers; Online Communities of Practice; Practice in Second Language Instruction; Social Networks in Second Language Acquisition; Technology-Supported Materials for Language Teaching; Technology and Teaching Language for Specific Purposes; Technology and Terminology; Using the World Wide Web for Language Teaching

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Language Learning and Teaching: Overview

LOURDES ORTEGA

A vibrant sector of applied linguistics is concerned with generating systematic knowledge that can support people who formally study an additional language, that is, a language other than the one(s) they learned at home through primary socialization prior to schooling. Research into the formal study of languages, which happens worldwide across multifarious contexts, demands attention to the two ends of language education: *learning*, which means inquiring into processes and influences as language apprentices experience them in formal education settings, and *teaching*, which means focusing on the design and practices of educational delivery systems including instructional approaches, materials, teachers, and programs. Simultaneous consideration of teaching and learning is a must in the investigation of how additional languages are acquired in formal settings. The two perspectives are inseparable, yet distinct, and they interact in a complementary fashion. They are explored in the 83 entries comprising Language Learning and Teaching, the largest area by far in the encyclopedia. The theoretical and disciplinary roots that inform research into the learning and teaching of additional languages originate in the field of second language acquisition (SLA) and other fields in applied linguistics at large, and readers can also consult many relevant entries in other areas of this encyclopedia.

Contexts and Populations

Knowledge about language learning and teaching is shaped by the diverse reasons and the educational goals involved in wishing or needing to study an additional language. Reasons and goals for study, in turn, pattern along contextual constellations associated with sociocultural milieus of specific language-learner populations and the varied affordances and limitations they experience as a result of at least two important macro-level influences: the educational policies under which students, teachers, and programs exist, and the differential power relations that bond and separate the target and societal languages. Applied linguists and language educators agree that a one-size-fits-all approach to instruction and language education cannot serve language learning well. While certainly sharing many characteristics, each context also presents differing needs, affordances, and challenges.

The study of language is part of the official curriculum of most school systems around the world and many, though not all, of these school-age populations learn under a mixture of positive and negative conditions that can be thought of as elective bilingualism: on the one hand, access to the target language is limited and motivation to learn the language for some immediate material or even symbolic reward may be low. On the more positive side, support for the students' first language development continues alongside additional language learning and the target language does not pose an immediate threat to these students' home languages. English enjoys a special status in the official school curriculum as an international language of transnational and intranational communication and as a tool for economic and scientific advancement. Many research insights are therefore available in TEACHING ENGLISH AS A FOREIGN LANGUAGE IN KINDERGARTEN TO 12TH GRADE,

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although unresolved controversies also exist. A much investigated controversy pertains to the ideal age for the onset of formal study of English and other foreign languages. Increasing research consensus suggests that more important than the starting age is ensuring AGE-APPROPRIATE INSTRUCTION AND ASSESSMENT FOR SCHOOL-AGE LEARNERS and supporting sustained levels of motivation throughout the school years. Besides English, many other foreign languages are taught to schoolchildren worldwide, and these contexts offer their own challenges, particularly because goals for learning languages other than English change with global trends such as migration and with key historical events stemming from conflicts among nations and defense interests. US FOREIGN-LANGUAGE TEACHING IN KINDERGARTEN TO 12TH GRADE, for example, has been characterized by great progress in the realm of standards and assessment coupled with unmet needs to develop a high-quality teacher task force in a wide range of foreign languages. These trends and challenges are true of the teaching of traditional foreign languages such as French, German, and Spanish, but they are particularly relevant when TEACHING LESS COMMONLY TAUGHT LANGUAGES (e.g., Arabic, Chinese, Japanese, Korean, and Russian).

Student populations learning language in contexts for elective bilingualism contrast with many diverse populations of children, youth, and adults around the world's geography who are already speakers of languages other than the majority language of their surrounding society. They engage in language learning under conditions of circumstantial bilingualism involving inequalities and differential sociocultural capital and socioeconomic power. The learning needs and goals of these heterogeneous populations, particularly during the formative years of schooling, are the focus of EDUCATIONAL RESEARCH IN LANGUAGE MINORITY STUDENTS, which has revealed instructional imperatives associated with fundamental language and education rights. Among other imperatives, there needs to be formal support for first language development and use so as to ensure that language minority students develop multiple-language capacities, not just competencies in the majority language. A simultaneous goal must be the development of academic registers in the majority language, since language mediates academic achievement. Effective ways to support academic language development have been systematically investigated by SYSTEMIC FUNCTIONAL LINGUISTIC APPROACHES TO TEACHING ENGLISH-LANGUAGE LEARNERS. Research-based best practices and approaches also exist for TEACHING ADOLESCENT AND ADULT LANGUAGE LEARNERS WITH LIMITED OR INTERRUPTED FORMAL SCHOOLING and to address LANGUAGE AND EDUCATION FOR RETURNEES, who are youth and adults in need of effective support for additional language learning upon repatriation, after having spent a significant portion of their lives in a host society.

Because the attainment of competence in multiple languages through formal instruction is valued as an asset for all, applied linguists have also been interested in generating knowledge that improves access to multilingualism for individuals who experience a range of language-specific difficulties when confronted with the formal study of a language. Cognitive, first language, and affective factors appear to contribute to these difficulties, which for some individuals in some educational systems can be formally diagnosed as a disability such as dyslexia. Causes and educational responses have been addressed by applied linguistics research. The interest in supporting foreign-language education in the United States has led to a wealth of insights for FOREIGN-LANGUAGE TEACHING FOR STUDENTS WITH LANGUAGE-LEARNING PROBLEMS, whereas in Europe the special role of English among all foreign languages has given way to research in TEACHING ENGLISH AS A FOREIGN LANGUAGE TO STUDENTS WITH SPECIFIC LEARNING DIFFERENCES.

Optimal learning and teaching approaches for at least three more distinct populations are objects of intense study: HERITAGE LANGUAGE TEACHING, which is provided to learners who seek study of a target language with which they have personal, community-based connections because it is the language of their ancestors and often the home language they

learned and partially lost in the early years of life; TEACHING INDIGENOUS LANGUAGES, which involves students who wish to invest in a language of their heritage which is less commonly taught and under siege, linguistically and culturally, from the surrounding majority language; and TEACHING A SECOND OR ADDITIONAL DIALECT, which addresses the rights of many student populations around the world who engage in formal language learning of varieties of the same language used by different national, regional, or social groups to which the students may wish or need access.

Finally, study of the complex and varied landscapes for additional language learning in formal contexts has given way to the realization, spearheaded by the language-learning-and-teaching research community in Europe, that most language learning during late childhood and adulthood involves becoming functional in not just two, but three or more languages. Accordingly, increasingly more scholars have begun to generate educational and psycholinguistic research on TEACHING A THIRD LANGUAGE.

Theoretical and Disciplinary Foundations

It is important to note that the ROLE OF INSTRUCTION IN SECOND LANGUAGE ACQUISITION THEORIES can vary greatly, with some theories allowing for a quite limited to no role at all for formal teaching, and other theories according instruction an important role for reasons that may differ slightly or greatly from theory to theory. Nevertheless, researchers in INSTRUCTED SECOND LANGUAGE ACQUISITION believe formal instruction can support second language development in a number of theoretically meaningful ways and therefore have devoted themselves to contributing insights about how best to support language learning in formal contexts. Most research efforts have revolved around the appropriate balance between the provision of explicit knowledge through various options for grammar instruction and the facilitation of opportunities for developing implicit knowledge via communicative and meaning-oriented instructional techniques. This body of research has led to the articulation of a proposed psycholinguistic balance called FORM-FOCUSED INSTRUCTION. Many of the findings regarding what to teach and best principles, techniques, and processes in the language classroom presented in the next two sections of this overview are associated with this disciplinary tradition and must be understood in conjunction with the HISTORY OF LANGUAGE TEACHING METHODS, which clearly shows how historically grounded conceptions of what language is have led to different interpretations at different times of not only how to teach but also what dimensions of language to prioritize for teaching. The empirical base for this knowledge also draws on CLASSROOM RESEARCH and rests on research methodologies for MEASURING THE EFFECTIVENESS OF SECOND LANGUAGE INSTRUCTION IN RESEARCH that increasingly consider the need for both rigorous and ecologically valid research practices.

What to Teach

Traditionally, language learning in formal contexts has been designed around the teaching of the nuts and bolts of language. TEACHING GRAMMAR has always been a central focus of study, and the application of CORPUS LINGUISTICS IN LANGUAGE TEACHING has greatly facilitated rapid innovations in this area. The idea that regulation of one's own learning is important and therefore instruction ought to include learning how to learn emerged early in the field and although TEACHING LANGUAGE-LEARNING STRATEGIES is not always contemplated as a formal element in language programs, recommendations and studies exist to guide those interested in this area. By the late 1980s, the advent and expansion of communicative language teaching brought into professional focus the need to investigate

approaches that might support the development of second language skills, and many programs nowadays are skill-based and have spurred ample research on TEACHING READING, TEACHING LISTENING, and TEACHING WRITING. A more holistic perspective is preferred in contemporary skills-based language courses, where TEACHING INTEGRATED SKILLS offers an alternative to teaching each skill in isolation. TEACHING LITERACY and LEARNING TO READ IN NEW WRITING SYSTEMS present knowledge bases for a more educationally oriented and a more psychologically oriented perspective on instructional treatments of reading/writing development, respectively. Even though all teachers and students also recognize the centrality of words in the study of a new language, it was not until the 1990s that research on TEACHING VOCABULARY saw a mobilization toward generating and accumulating systematic insights. It now offers precise insights as to what words should be learned and taught at different stages of the learning process and what learning goals are feasible or desirable depending on the target needs of different language students. An even more recent research development is empirical attention to TEACHING PRAGMATICS, heeding the known fact that language-learning outcomes are satisfactory only if language students learn to recognize and enact social functions appropriate to user intentions and context expectations.

Contemporary professional practices acknowledge that language-learning outcomes must go well beyond acquiring linguistic knowledge (e.g., grammar, vocabulary, pragmatics), abilities for accessing and integrating that knowledge into fluent language use (e.g., reading or listening skills), or tools for the development of self-regulation in learning (i.e., learning strategies). In many programs and for many student populations, TEACHING CULTURE AND INTERCULTURAL COMPETENCE, TEACHING FOR LANGUAGE AWARENESS, TEACHING FOR INTERNATIONALIZATION AND CRITICAL CITIZENSHIP, and even TEACHING LANGUAGE FOR PEACE have found an important place. A particularly important position in this regard is CRITICAL PEDAGOGY IN LANGUAGE TEACHING, which conceives of social justice as one of the learning goals that language teachers and students can achieve together while engaging in the learning of a language.

Principles, Techniques, and Processes in the Language Classroom

Research on language learning and teaching has addressed many of the central questions that language teachers pose themselves as they strive to deliver appropriate language instruction. Among other questions, teachers ask themselves what is the value of drawing on EXPLICIT KNOWLEDGE AND GRAMMAR EXPLANATION IN SECOND LANGUAGE INSTRUCTION, whether and when USING METALANGUAGE IN TEACHING is advisable, and whether USING THE FIRST LANGUAGE AND CODE SWITCHING IN SECOND LANGUAGE CLASSROOMS harms or supports classroom second language development.

In terms of key ingredients for language learning, the evidence offers support for INPUT-BASED INSTRUCTIONAL APPROACHES, since a language must be learned by comprehending and processing large amounts of meaningful linguistic input. There must also be attention to creating opportunities for learners to use language productively in ways that they themselves initiate, and OUTPUT-BASED INSTRUCTIONAL APPROACHES can provide language teachers with guidance for why and how to do this. PRACTICE IN SECOND LANGUAGE INSTRUCTION is also an important ingredient for optimal language learning, although the idea that practice makes perfect has been qualified by psycholinguistic theories and empirical research and it is clear now that meaningful, deliberate, rather than mechanical practice supports language learning. Related to the contributions to learning of input, output, and practice, all language teachers struggle over fruitful ways to address (or, alternatively, ignore) language choices that are infelicitous in certain contexts, for example, an examination or

a high-stakes encounter such as a job interview. Much research addresses ROLES FOR CORRECTIVE FEEDBACK IN SECOND LANGUAGE INSTRUCTION and suggests options that teachers can consider in light of their own philosophies of teaching and their understandings of the importance of linguistic accuracy in their given educational contexts. Finally, research consensus has been reached that not everything that teachers might want to teach will be learned by their students and, conversely, that not everything that students learn comes from what their teachers teach them. Instead, when it comes to grammatical competence at least, LEARNER READINESS to learn developmentally appropriate language must be considered.

The research base in all the areas mentioned thus far in this section should not be thought of as definitive, particularly since the psycholinguistic and socioeducational complexities involved in each question are daunting. Nevertheless, SLA researchers who investigate language instruction from these perspectives have directed energetic efforts at slowly but surely accumulating evidence supporting particular claims about teaching and learning, and much progress has been made toward general principles that attract research consensus, and whose relevance for informing language classroom practice teachers can evaluate contextually and flexibly. More recent pedagogies hold that cognitive development and knowledge development are firmly rooted in the social world, and so is language learning. They focus less on the key instructional ingredients for enabling psycholinguistic processes that may support linguistic development and instead offer empirical reasons for cultivating language classroom communities that are conducive to learning to mean and communicate. Such classroom communities must encourage DIALOGIC INQUIRY AND TEACHER TALK IN SECOND LANGUAGE CLASSROOMS and capitalize on COLLABORATIVE LANGUAGE LEARNING during oral group work and on PEER RESPONSE IN SECOND LANGUAGE WRITING during written work, which need not be seen as a solitary endeavor.

Given the high premium placed on active engagement and learner-initiated behaviors in sociocultural proposals and traditional form-focused instruction alike, it is important to appreciate the multiple and negotiated significance of SILENCE AND PARTICIPATION IN THE LANGUAGE CLASSROOM, and to heed research insights that suggest student silences must be interpreted culturally and contextually and are not always a sign of lack of engagement or, even worse, lack of learning.

Types of Language Programs

There is a wealth of ways to organize and systematize the delivery of language instruction into programs. The thrust of bilingualism as a valued asset for the citizenry in any country has resulted in BILINGUAL EDUCATION, a much misunderstood term that can be used to denote rather heterogeneous programmatic designs, originally created to serve the circumstantial bilingualism needs of minority language students by ensuring the development of the majority language (often English) without sacrificing competence in the minority language spoken in homes. IMMERSION PROGRAMS respond to the same goal of supporting bilingual competence but historically evolved out of a desire to serve the elective bilingualism needs of majority language students. They have grown in scope and educational mission since then.

Both bilingual and immersion proposals hold that a fruitful option for learning an additional language is when language and content are learned simultaneously in a mutually supportive relationship. In recent years, this rationale has led the way to many initiatives for CONTENT-BASED LANGUAGE INSTRUCTION (also known as content and language integrated learning in Europe). The most coherent theoretical rationales in support of the INTEGRATION OF LANGUAGE AND CONTENT LEARNING have been developed by systemic functional

linguists. Another rationale at the heart of bilingual and particularly immersion programs is that the richest opportunities for language learning arise when students can be surrounded by linguistic input that is meaningful and plentiful, that is, afforded by many interlocutors and in many content domains not represented in a traditional classroom and with great and sustained intensity typically not achieved in a traditional program. This rationale has crystallized in popular and well-researched LANGUAGE STUDY ABROAD opportunities that configure themselves into full programs or are offered as add-on experiences to complement language programs at home.

There are many other types of language programs, many of them associated with the learning of English as a foreign language. They may be designed around certain desired learning outcomes, such as the development of textual and discourse competence in GENRE-BASED LANGUAGE TEACHING or the development of academic registers in TEACHING LANGUAGE FOR ACADEMIC PURPOSES. Programs can also be designed around particular outcomes that are relevant for certain professions that make central use of English, such as when TEACHING BUSINESS ENGLISH or TEACHING ENGLISH FOR MEDICAL AND HEALTH PROFESSIONS. A special type of language program designed with professional language outcomes in mind is the case of TEACHING TRANSLATION AND INTERPRETING.

Programmatic Thinking

In light of the daunting array of possible instructional practices and language programs that are found around the world, applied linguists and language educators are in need of research that illuminates programmatic thinking. Programs should originate in NEEDS ANALYSIS, require careful thought on SYLLABUS DESIGN, and demand expertise in PROGRAM EVALUATION. Research on INNOVATION IN LANGUAGE TEACHING AND LEARNING offers important insights about the conditions that hinder or enable the satisfactory functioning of all these elements of a program and provides empirical guidance for promoting positive and needed programmatic changes over time.

A particular concern for the design of effective language programs is LARGE-SIZED LANGUAGE CLASSES, for which the empirical evidence is scant. High levels of professional activity but also limited actual research are available in the important programmatic dimension of MATERIALS DEVELOPMENT. For some languages such as English, language-teaching materials are tremendously profitable and MATERIALS PUBLICATION can be a particularly fulfilling extension in a teacher's career. Recent research insights are available that support the use of GRADED READERS as a good option for reading materials. Applied linguistics scholarship also encourages teachers and materials developers to critically and creatively consider reasons for USING POPULAR CULTURE IN LANGUAGE TEACHING and ways in which AUTHENTICITY IN THE LANGUAGE TEACHING CURRICULUM can support or misguide language pedagogy.

Impact of Technology in Language Teaching

The explosion of technology in contemporary societies has transformed education in almost every corner of the world. Research on INSTRUCTIONAL COMPUTER-ASSISTED LANGUAGE LEARNING provides evidence that language educators as well can harness the rich affordances of technology for language learning and heighten student motivation in the process. Theories of SLA guide the incorporation of new technologies into a myriad TECHNOLOGY-SUPPORTED MATERIALS FOR LANGUAGE TEACHING and teachers can extend instruction inside and outside the language classroom by USING THE WORLD WIDE WEB FOR LANGUAGE TEACHING. A particularly successful approach to doing this has been ONLINE INTERCULTURAL EXCHANGES.

Learner autonomy can be boosted via SELF-ACCESS AND INDEPENDENT LEARNING CENTERS that have been transformed by technological innovations, whereas increasingly more educational contexts have expanded or even replaced face-to-face, traditional language instruction with FOREIGN-LANGUAGE DISTANCE LEARNING PROGRAMS that bring the possibility of multilingualism to students who can form language-learning communities dispensing with the need to be gathered in the same physical classroom.

Language Students and Teachers as Agents

Language learning and teaching can only be illuminated if students are investigated as multidimensional people who negotiate and achieve their educational goals with full intentionality and agency. Research on AFFECT AND LANGUAGE TEACHING shows the importance of not only cognition and social factors, but particularly positive emotions stemming from the ambivalent complex of attitudes, motivation, and anxiety that students experience when learning a language. Successful language learning is fostered when positive affect is negotiated by all members of a classroom community. Affect and other sources of INDIVIDUAL DIFFERENCES IN THE CLASSROOM, such as sense of self, can be difficult to investigate because they are dynamic and interpersonal, that is, contextually and socially produced through lived and reflected-upon language experiences in the classroom. It is for this reason that applied linguists interested in individual differences are increasingly turning to dynamic systems, poststructuralism, and sociocultural anthropology in order to make sense of them. Particularly important has been recent scholarship on IDENTITIES AND LANGUAGE TEACHING IN CLASSROOMS, which shows important ways in which students' self- and other-positioning is dynamically shaped by power struggles that traverse classroom and wider society. Identity stakes mediate the learning that is fostered or hindered in the course of formal language education.

Teachers cannot be forgotten either, as they are main agents in language teaching. Teacher identities and professional knowledge are supported by research on LANGUAGE TEACHER DEVELOPMENT, which offers principles for designing preservice professional development and sources to enable continuing professional growth and renewal. The needs for BILINGUAL/IMMERSION TEACHER EDUCATION, in particular, have been articulated in recent scholarship and await future empirical attention. A neglected yet central part of language teachers' professional need is to develop effective tools for engaging in ADVOCACY IN LANGUAGE TEACHING. Teacher advocacy is needed to address self-empowerment issues. For example, probably the largest body of language teachers comprises NON-NATIVE-SPEAKER ENGLISH TEACHERS, and their struggles against linguistic and professional discrimination have resulted in a number of advocacy initiatives which have prompted remarkable changes in the profession. Increasing teachers' capacity for effective advocacy can also benefit their language students, particularly in cases when teachers can support students and parents in asserting their rights to language education. The chronicle of LEGAL DISPUTES OVER SECOND LANGUAGE INSTRUCTION IN THE UNITED STATES vividly proves this point. Ultimately, good language teaching requires self-awareness of the importance of ideologies and beliefs in education, and recent scholarship on VALUES IN LANGUAGE TEACHING has begun to investigate this under-researched dimension of language learning and teaching.

Biographies of Key Contributors

The Language Learning and Teaching area also includes the biographies of twelve key contributors to scholarship on instruction and language education: Dick ALLWRIGHT, Heidi BYRNES, Donna CHRISTIAN, Zoltán DÖRNYEI, Stephen KRASHEN, Patsy M. LIGHTBOWN, Roy

LYSTER, Sandra MCKAY, David NUNAN, Nina SPADA, G. Richard TUCKER, and Bill VANPATTEN. Biographies for a good number of other scholars who have contributed seminal research in this domain have been included in other areas of the encyclopedia.

SEE ALSO: Assessment and Testing: Overview; Cognitive Second Language Acquisition: Overview; Social, Dynamic, and Complexity Theory Approaches to Second Language Development: Overview

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Language Learning and Teaching: Mixed Methods

MARTIN LAMB

Introduction

Creswell (2009) has pointed out that "mixed method thinking" is ubiquitous in everyday life, with media investigations routinely mixing quantitative and qualitative reports on contemporary events. For example, a natural disaster will be reported both in terms of numbers (e.g., of casualties, cost to the local economy) and in terms of individual stories (e.g., of victims, local politicians' intentions), in the belief that this dual perspective helps viewers better understand the event. In academia, mixed methods research is increasingly accepted as a legitimate approach to addressing issues in the social sciences (e.g., Tashakkori & Teddlie, 2010).

Mixed methods investigations usually take one of two forms: They are either large-scale studies by a team of researchers which includes at least one specialist in each type of research (e.g., Dörnyei, Durow, & Zahran, 2004; Malderez, Hobson, Tracey, & Kerr, 2007), or they are small-scale investigations carried out by single researchers less committed to a particular tradition and mixing methods in creative and, to some traditionalists, not always very principled ways. This entry describes the latter type of mixed method study, carried out by me as a doctoral student. While I would claim that the study was creative *and* principled, I should acknowledge at the start that it shares some of the limitations of many small-scale mixed methods studies in that the quantitative (QUAN) and qualitative (QUAL) strands alone might not have met some of the quality criteria applied within those paradigms. I will argue that by combining the two types of data at various stages, the study as a whole did provide trustworthy results, as reported elsewhere (Lamb, 2004a, 2004b, 2007b, 2009).

The Study

From August 2002 to March 2004 I conducted a longitudinal study tracking the motivation to learn English of a single cohort of students beginning formal study of the language at a junior high school (JHS/SMP) in a provincial Indonesian city. The precise research questions, which remained largely unchanged from beginning to end, were:

RQ1. How motivated are the students to learn English when they enter the JHS?
RQ2. How does this motivation change during the first two years of JHS?
RQ3. What factors are associated with changes in motivation over this period?

At the time I was embarking on the study, major new qualitative studies of L2 motivation were appearing, to complement or challenge the more traditional psychometric approaches. I was therefore receptive to Dörnyei's (2001) call for more mixed method studies, to bolster the strengths and compensate for the weaknesses of both quantitative and qualitative approaches. So although my research questions were posed in a largely

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positivist style and could have been addressed through traditional quantitative methods, I interpreted them more broadly. In asking "how motivated?" I was not referring solely to the students' position on a predetermined scale but genuinely seeking out the nature of their motivation. "Motivational change" did not refer specifically to numerical differences but to possible qualitative changes too. And the "factors" that might have influenced their motivational change were not preset but were to be sought in the data.

Methodology

My research design was QUAL + QUAN, with both elements having roughly equal status and, as a longitudinal project, running concurrently (see Dörnyei, 2007). The learners (n = approximately 220) were surveyed using my own questionnaire at the beginning (August 2002) and end (March 2004) of the research period. Both questionnaires had the same single items with a three-point Likert scale targeting five different aspects of L2 motivation (intrinsic, instrumental, integrative, parental pressure, academic goals), plus satisfaction with progress, expectation of ultimate success, attitude toward the experience of learning English, and perceived importance of English, along with other items relating to English outside school. For some of these items, respondents were asked to explain their reasons for their response in an open box. A group of 12 "focal" learners was selected in September 2002; they were interviewed at three points in time, were observed in class, and were asked to write "learning journals." Interviews were also conducted with the

Table 1 Data collected for the study

Type of data	*Quantity*	*Main method of analysis*
Questionnaires	220 + 250	• Scores calculated to answer RQ1 (see Lamb, 2004a) • Comparison of scores of respondents who completed both questionnaires (see Lamb, 2007b) • Open items coded and quantified, with totals for each category of response compared at beginning and end (see Lamb, 2004a; Lamb, 2007b)
Audio-recorded interviews with learners	12 + 12 + 11 (= ca. 12 hrs)	• Matrix constructed to compare responses to the same prompts by different learners, and by the same learner in each interview • Coded for topics and themes (see Lamb, 2004a, 2007b) • Individual accounts matched with other data to build detailed portraits (see Lamb, 2009)
Audio-recorded interviews with teachers	9 (= ca. 3.5 hrs)	• Coded for factors influencing learner motivation and achievement
Completed observation sheets	14 lessons = ca. 40 written pages	• Descriptions analyzed to produce list of characteristics of school English lessons (Lamb, 2007a) • Notes on individual learner behavior matched against other data on same individual
Learner journals	7 partially completed	• Uses of English counted and matched against interview data • Individual records matched against other data on same individual
Field notes	1 booklet	• Used mainly to provide contextual information

eight English teachers in the school, and field notes were made during the several weeks spent in the school staff room and playground. Table 1 lists the data collected.

As the project was implemented, the different instruments "cross-fertilized" each other (Dörnyei, 2007); that is, information gleaned from one source helped me refine the instruments used in later stages of the research. For example, the questionnaire data enabled me to select my focal learners in a principled way: Eight were identified as "highly motivated" and four as "less motivated" on the basis of their questionnaire responses. Another example of cross-fertilization is the way focal learners' questionnaire responses to particular items could be used as prompts in the first round of interviews (e.g., "I notice you are not at all satisfied with your progress in English so far; why is that?"), while the classroom observations of individual learners also fed into subsequent interviews (e.g. "Why do you choose to sit at the back of the class?"). Information gained during interviews 1 and 2 helped me make modifications to the second questionnaire, such as adding an item about IT-related use of English which had emerged as a theme in discussions.

But the main purpose of blending methods is to gain a deeper understanding of the phenomenon under consideration. In Lamb (2007b, pp. 761–2) I explained my rationale in the following pragmatic terms:

> Using questionnaires with the year cohort allowed testing for specific motivational constructs which I could predict to be relevant on the basis of existing theory and my own prior experience of the context. Open questionnaire items and semi-structured interviews with the "focal learners" enabled me to identify and follow up issues and concepts which I had not anticipated in the survey, but which were clearly salient in this particular context. Meanwhile, meeting learners regularly (including once outside of school) and observing them in class would not only allow me to develop a more trusting relationship with the learners but also ultimately to develop richer and more complex portraits of individuals.

Generating Insights Through Mixing Data Types: Two Examples

In this section I describe two specific ways in which I used different data sources to address aspects of my research questions.

Pupils' Attitudes to Their Experience of Learning English

I had several sources of information on this. There were the responses to the closed questionnaire items at the beginning and end of the research period, as well as the open items asking pupils to give reasons for their response, both recorded in an Excel file. There were also the interviews with the 12 focal learners and my classroom observation notes.

In August 2002, after just a month of formal study in JHS, students' mean response to the item "How do you feel about your school English lessons?" was very high (2.83 on a scale of 1–3); in March 2004, after a further 19 months of study, the mean response was still high but had fallen (to 2.47). In order to find out whether this difference was statistically significant, I imported the Excel data file into the statistics software SPSS and carried out a paired-samples *t* test, as illustrated in Figure 1; it proved to be so ($t = 7.77$; $p = 0.000$). I could have run a *t* test using Excel, but that program only returns the significance level, not the actual *t* value. Cohen's *d* was also calculated and the effect size was found to be on the border of medium/large (−0.74).

I then looked to the qualitative data to find explanations for this fall in satisfaction levels. In general the pupils eagerly took up the opportunity to write reasons for their responses in the open questionnaire items. After each administration of the questionnaire,

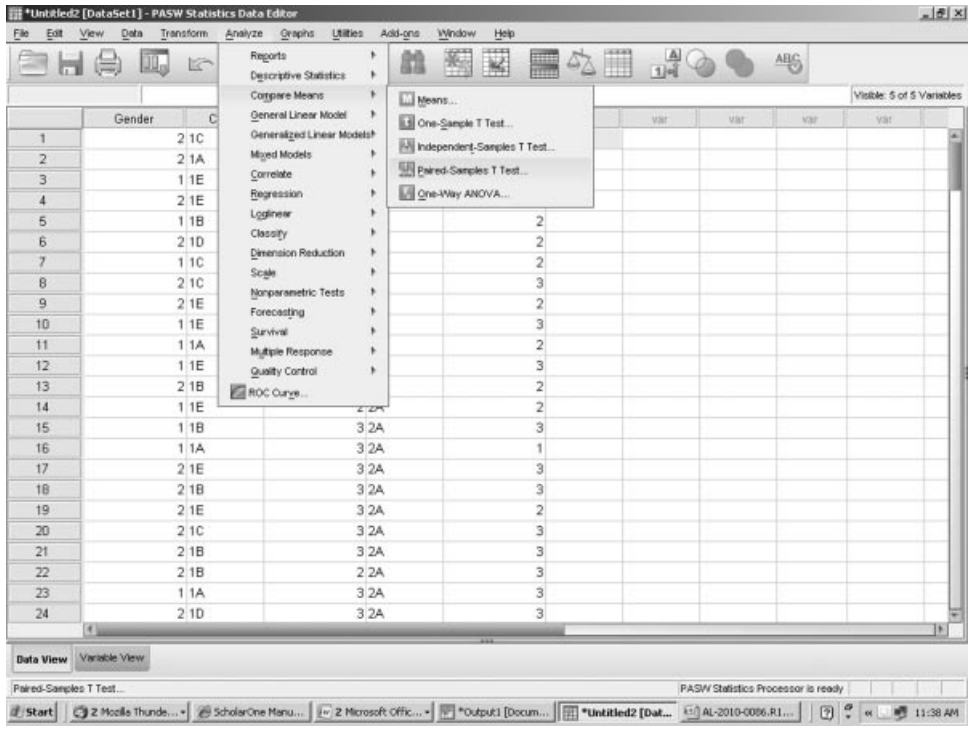

Figure 1 Screenshot of data set used with paired-samples *t* test, in SPSS

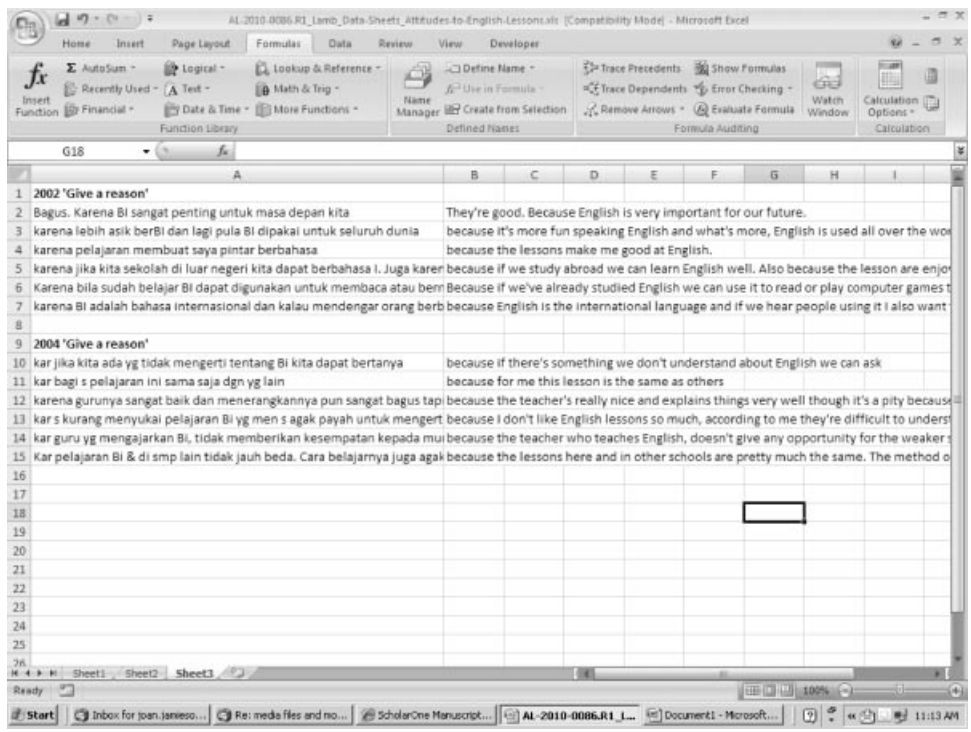

Figure 2 Students' reasons for satisfaction, in Excel file

Table 2 Reasons given for response to the item "How do you feel about your school English lessons?"

	August 02 (n = 211)	*March 04 (n = 190)*
Pupils who like learning English (response = 3)	54% English is valuable or important 23% Satisfaction with process of learning 13% Feeling of gaining mastery 3% Like the teacher 7% Other (226 comments: 82.6%)	30% Lessons are enjoyable 21% Lessons are easy to understand 19% Like the teacher 15% Feeling of gaining mastery 9% English is valuable or important 6% Other (138 comments: 49.7%)
Pupils who think it's OK or dislike it (response = 2 or 1)	25% English is no different from other subjects 25% English is difficult 19% English is just OK 12% English is not important in Indonesia 10% English is not enjoyable 9% Other (32 comments: 17.4%)	29% Lessons are boring or lack variety 18% Lessons are difficult to understand 16% English is no different from other subjects 16% Making little progress 12% I don't like the teacher 9% Other (95 comments: 50.3%)

I entered all the responses into an Excel spreadsheet (in both the students' L1 and English), printed them out, and then identified all the separate comments made (i.e., several pupils gave more than one reason for their numerical response). This is illustrated by a portion of the data set in Figure 2.

These comments were then categorized and re-categorized over repeated readings, and the final categories were calculated as a percentage of the whole and entered into Table 2 (Lamb, 2007a; note that the sample 'n' includes all respondents at each administration who had made a comment, not just those who had completed both questionnaires).

The "quantitizing" of the qualitative data in this way helped me interpret the significant drop in respondents'satisfaction levels with their school English lessons. Comments in August 2002 indicate that the students were still thinking of English in terms of its possible value to their future lives. After nearly two years of study at school, the March 2004 results show that they were thinking predominantly in terms of the learning process—either the pleasures to be obtained therein, or the difficulties that it presented. In other words, it was not simply that their opinion of the lessons had worsened but that the *way* they thought about them had changed. Interview data added further detail to the picture. For example, it was apparent that complaints about school English lessons were not confined to the weaker pupils or those with low motivation; in fact some of my focal learners with the highest motivation to succeed in English had the most damning comments to make about the teaching methods, because they were the ones who suffered the greatest frustration.

The Significance of Pupils' Socioeconomic Background

In August 2002 I interviewed all eight English teachers in the JHS and one from a school on the outskirts of the town, using an interview guide which consisted of prompts related to these main issues:

- background information about teaching experience, in this school and previously;
- views on the general progress of learners in English in this school;
- the characteristics of successful/less successful learners;
- the challenges they faced as a teacher in this school;
- explanation about my planned research of learners, and request for suggestions.

As I listened to the interview recordings I made detailed English-language notes in a Word document, then printed them out and made an initial coding of the main themes emerging in the data, using highlighter pens and manual notes. I then listened again to the recordings, transcribing more fully those sections which represented the main themes and identifying subthemes within them. (This was my preferred way of working at the time; nowadays I would prepare a full transcription and use qualitative data software to assist in the analysis.)

One prominent and unexpected theme was the socioeconomic background of pupils, and its relationship to their chances of success in English; this was discussed by seven of the nine teachers interviewed. Other subthemes included

- variable quality of local school provision,
- financial capacity to take private courses in English,
- support from other family members and friends, and
- availability of IT to access English.

Taking a constructionist stance toward the interview data (Silverman, 2001), I knew that teachers might have their own motives for stressing the importance of pupil background in their conversations with me—for one thing, it might absolve them from responsibility for pupils' low achievement. However, I was able to cross-check the validity of their views by carrying out statistical tests on the biographical data obtained in the questionnaire. For example, independent sample *t* tests showed that pupils from families where some English was spoken were significantly more likely to rate English as very important ($p < 0.005$), to be confident of ultimate success ($p < 0.005$), and to do more activities with English outside school ($p < 0.05$). Taking private English courses outside of school was another variable found to be significantly related to positive aspects of motivation. These findings informed my analysis of the learner interview data—for instance, I deliberately looked through the learner interview transcripts for mentions of family members—and helped me in turn to build portraits of individual learners. Because I was able to triangulate data in this way, I was able to assert the importance of pupil socioeconomic background more confidently and to argue more persuasively for further research into its connection with motivation to learn English.

Conclusion

Using mixed methods in a relatively small-scale single-researcher study such as the one described here inevitably brings special challenges. First, there is the need to become competent in the design of different kinds of research instruments and in the analysis of different kinds of data. Second, such studies are vulnerable to several points of attack on their trustworthiness. Leaving aside (as most researchers now do) the issue of having a consistent philosophical stance, both quantitative and qualitative aspects of small-scale mixed methods studies may struggle to meet quality criteria in themselves. In my study, for example, the survey was necessarily limited in scope, in terms of both sample size and the way constructs were measured by single rather than multiple items. Much of the

warrant for the credibility of such studies therefore must derive from the *combining* of data sources and careful documentation.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Comparing Two Independent Groups; Comparing Two Related Samples; Mixed Methods; Motivation in Second Language Acquisition; Qualitative Methods: Overview

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Suggested Reading

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Language Learning and Teaching: Quantitative Methods

JOSEPH COLLENTINE AND KARINA COLLENTINE

Quantitative methods are frequently used in applied linguistics to assess the comparative quality of different approaches to language instruction. These methods can help researchers to determine objectively the effects of an intervention between different treatment conditions and over time. Task-based instruction fosters second language (L2) acquisition by involving learners in activities where they must accomplish a nonlinguistic goal. Some researchers claim that task complexity is an important predictor of the extent to which learners will make form–meaning connections, such as mapping words to their semantic denotations (e.g., Robinson, 2005). A common criterion for distinguishing simple and complex tasks is the amount and distinctiveness of referential information a task entails (Samuda & Bygate, 2008).

An Example Study

To demonstrate how quantitative methods help to explain the differential effects of task complexity on learning, the following fictitious study examines incidental vocabulary acquisition in two tasks differing in complexity. The research question is as follows: *Does task type determine the amount of incidental vocabulary students learn?* Although the researchers believe that a complex task fosters more incidental vocabulary learning than a simple task, they set up their study to test the following null hypothesis: *The amount of incidental vocabulary learned does not depend on task type.*

Method

In both tasks, beginning-level learners of Spanish first read a cartoon story about the theft of a purse. The cartoon contains the accounts of various witnesses. The complex task differs from the simple task in that its cartoon contains twice as many witnesses (and so twice as many details). Learners see mug shots of potential culprits, among which they must identify the thief without being able to return to the cartoon (for a similar task, see Duran & Ramaut, 2006).

Forty learners are randomly assigned to either the simple or complex version of the task, producing two groups of 20. A predetermined set of 12 words is seeded once into the cartoon's dialogues. The words are unlikely to be known to the learners from their curriculum. Before and after the tasks, the participants take a 20-item vocabulary test with the 12 targeted items and 8 distracters. The students are to identify the words they know and define them in their first language (L1).

Since learners are assigned to one of two groups and their vocabulary knowledge is tested before and after the instructional task, this study employs a mixed-model design. The variable *group* is a between-subjects factor since each participant receives only one type of task, either simple or complex. The variable *test* is a within-subjects, or repeated measures, factor since each participant provides two measurements of the vocabulary test: the pretest and posttest. *Group* is a nominal variable and *test* is an interval-level variable.

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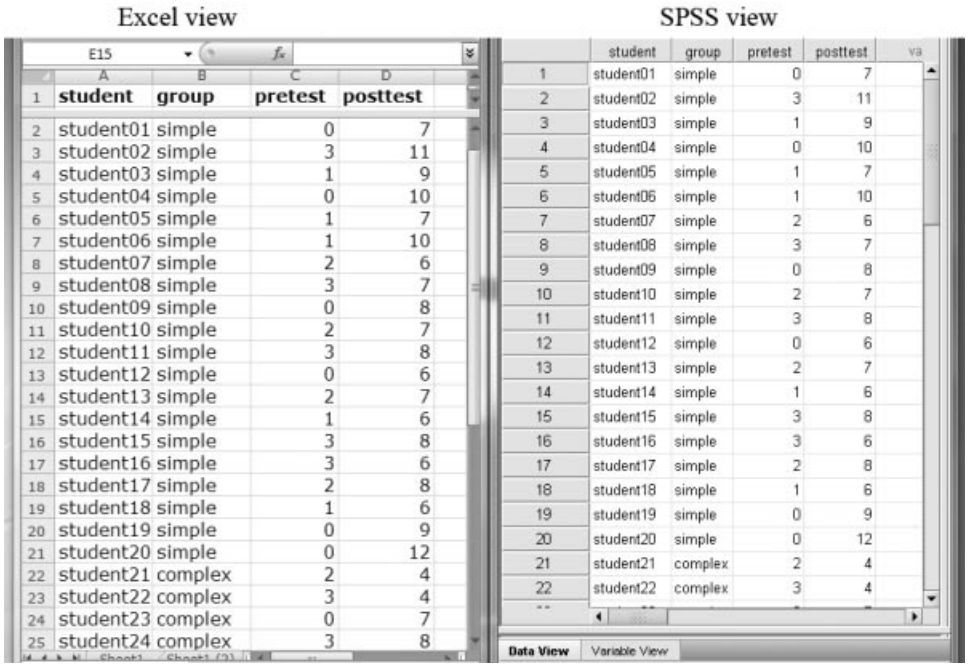

	student	group	pretest	posttest
1	student01	simple	0	7
2	student02	simple	3	11
3	student03	simple	1	9
4	student04	simple	0	10
5	student05	simple	1	7
6	student06	simple	1	10
7	student07	simple	2	6
8	student08	simple	3	7
9	student09	simple	0	8
10	student10	simple	2	7
11	student11	simple	3	8
12	student12	simple	0	6
13	student13	simple	2	7
14	student14	simple	1	6
15	student15	simple	3	8
16	student16	simple	3	6
17	student17	simple	2	8
18	student18	simple	1	6
19	student19	simple	0	9
20	student20	simple	0	12
21	student21	complex	2	4
22	student22	complex	3	4
23	student23	complex	0	7
24	student24	complex	3	8

Figure 1 Data from Microsoft Excel imported into SPSS

In Figure 1, we see screenshots of part of the data set in both Excel and SPSS. (See the appendix for the complete data set.) The first column, headed *student*, uniquely identifies each participant. Although this column is not necessary for a repeated measures analysis, it is useful for verifying that a participant's pretest and posttest scores are correctly matched up. The second column contains a textual reference to each participant's group assignment. The third column contains corresponding pretest scores, and the fourth column posttest scores.

To answer the research question, we use both descriptive and inferential statistics. Descriptive statistics such as mean and standard deviation provide basic quantitative summaries of groups. Inferential statistics extrapolate from a sample the likelihood that its quantitative characteristics can be generalized to whole populations. Theoretically speaking, when two or more groups' quantitative characteristics are determined to be significantly different, an inferential statistic has indicated that the groups represent different populations (see Bryman & Cramer, 2008). In practical terms, inferential statistics indicate whether some measurement is significantly greater than zero or whether two or more means are significantly different.

To set up the statistical test for this data set using SPSS, we select in the application's menus *Analyze* > *General Linear Model* > *Repeated Measure.* As shown in Figure 2, the initial dialogue box requires the user to define the within-subjects factor. We type *test* in the *Within-Subject Factor Name* box and 2 in the *Number of Levels* box, since there were two repeated measures (the pretest and the posttest). We then click the *Add* button followed by the *Define* button.

Next, as Figure 3 shows, in the *Repeated Measures* dialogue box _?_ (1) and _?_ (2) appear under the *Within-Subjects Variables* list. First we select _?_ (1). Now we select *pretest* in the left-hand list, and click the topmost right-pointing arrow to define the #1 within-subjects variable, converting _?_ (1) to *pretest(1)*. We repeat these steps to define the #2 variable,

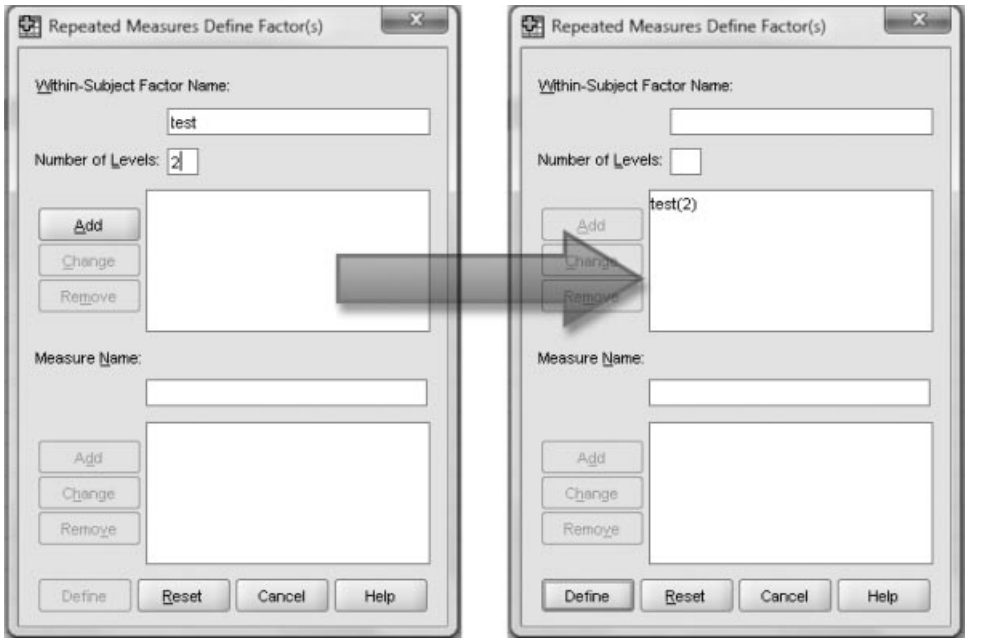

Figure 2 SPSS repeated measures factor definition dialogue box

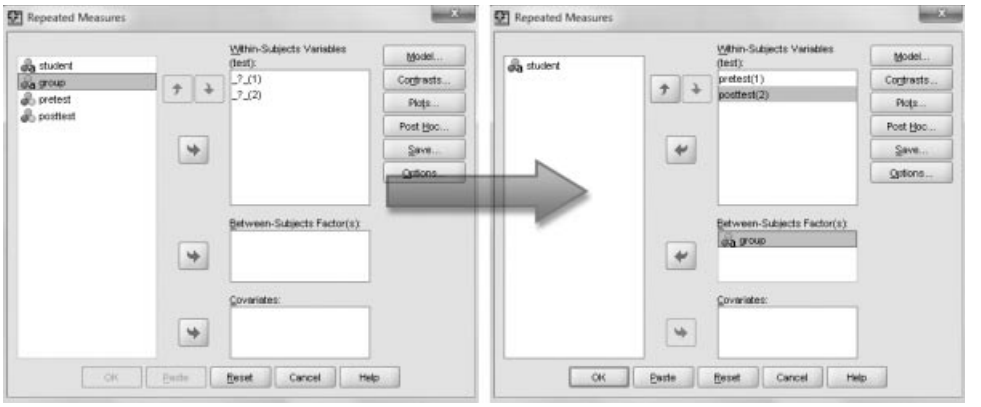

Figure 3 SPSS repeated measures design dialogue box

producing *posttest(2)*. Finally, we select *group* from the left-hand list and click the middle right-pointing arrow to define the between-subjects variable.

To obtain descriptive statistics we click on the *Options* button. Just as we used the arrow and check-box controls to set up Figure 3, we elect to display means for group, test, and group by test, and then check the descriptive statistics box. We click the *Continue* button to return to the *Repeated Measures* dialogue, and the *OK* button to obtain the results.

Results

The left-hand column of the results viewer shown in Figure 4 has an outline of the statistics produced by the analysis. This outline displays various important elements for this analysis, concepts that are generalizable to similar experiments. The meaning of each of these is explained below.

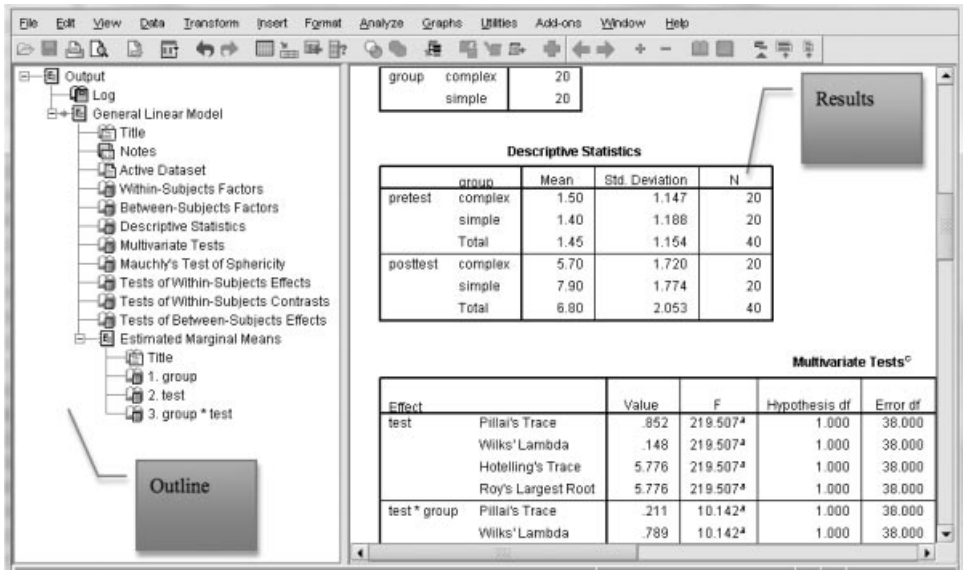

Figure 4 Results viewer

- *Within-Subjects Factors and Between-Subjects Factors*: This simply details the study's variables by type.
- *Descriptive Statistics*: This contains a table of the means, standard deviations, and sample size by group and test.
- *Mauchly's Test of Sphericity; Tests of Within-Subjects Effects*: A test of sphericity is similar to a test of homogeneity of variances, and is relevant only when a study has more than two within-subjects variables (e.g., posttest–pretest and delayed posttest–posttest). After calculating difference scores between each of the ordered within-subjects variables, the test measures the extent to which these *difference* variances are equal. Researchers conducting studies with a pretest–posttest–delayed posttest design must consider whether a comparison of the two difference variances supports the sphericity assumption. If not, then an adjustment to the F calculation's degrees of freedom is necessary, and one of the other tests provided (e.g., Greenhouse-Geisser) must be used to determine the significance of within-subjects main and interaction effects (see Toutenburg, 2002).
- *Tests of Within-Subjects Contrasts*: This table indicates whether there is any main effect for *test* and whether there is an interaction between *test* and *group*. The interaction term is included in this table since it entails at least one within-subject factor.
- *Tests of Between-Subjects Effects*: This table indicates whether there is a main effect for *group*.
- *Estimated Marginal Means*: These tables provide descriptive information along with measures of the standard error and means' confidence intervals. A mean is an estimate of what a group of people will score on a measurement, on average (i.e., a sample mean is an estimate of the population mean). Considering that this is only an estimate, statisticians can calculate the range within which the population mean should fall with a confidence level of 95% (or even higher). A mean of 2.2 with confidence intervals of ±1.2 signifies that the true (i.e., population) mean is 95% likely to be between 1.0 and 3.4. If the confidence intervals for two means overlap, we cannot be confident that they are significantly different (Smithson, 2003).

Table 1 Vocabulary scores by test and group

Test	*Group*	*M*	*n*	*SD*	*95% confidence interval*	
					Lower bound	*Upper bound*
Pretest	Simple	1.40	20	1.19	.87	1.93
	Complex	1.50	20	1.15	.97	2.03
Posttest	Simple	7.90	20	1.77	7.11	8.69
	Complex	5.70	20	1.72	4.91	6.49

In what follows, important results of the SPSS output have been formatted according to APA style. Let us first consider the statistics along with plausible interpretations. Then, we will evaluate our hypothesis. See Table 1.

What do the statistical analyses show? The important descriptive statistics are the means, standard deviations, and confidence intervals. Regarding the pretest, we can state that the two groups scored relatively the same because the simple-task group's mean (M = 1.40; SD = 1.19) is virtually equal to the complex-task group's mean (M = 1.50; SD = 1.15). Additionally, a consideration of the 95% confidence intervals indicates that the scores of the two groups overlap almost completely. Concerning the posttest, both groups appeared to score higher, although the simple-task group appears to have a higher increase than the complex task group. There are two statistics that support this. First, considering that the pretest scores were basically equal, the simple-task group's score increased more because its posttest mean (M = 7.90; SD = 1.77) was higher than that of the complex-task group (M = 5.70; SD = 1.72). Second, posttest confidence intervals of the two groups do not overlap at all.

Regarding the inferential statistics (Table 2), the tests of within-subjects contrasts show that there was a significant interaction between *test* and *group*. The important indicators here are: (1) the F value of 10.14; (2) the degrees of freedom (*df*) of 1,38, which is a reflection and a reminder of the study's design and sample size; (3) the *p*-value of .003; and (4) the partial eta squared (η^2) value of .21, which is an indication of the total amount of variance that this interaction accounts for in the analysis. The results also reveal a significant main effect for *test*: F(1,38) = 219.51; $p = .000$; $\eta^2 = .85$. Finally, the tests of between-subjects effects show a significant main effect for *group*: F(1,38) = 12.20; $p = .001$; $\eta^2 = .24$.

How do we interpret these results? First, when an analysis reveals a significant interaction between variables, the main effects are usually not considered. This is due to the

Table 2 ANOVAs for within-subjects and between-subjects effects

Effect	*Source*	*SS*	df	*MS*	*F*	p	η^2
Within-subjects	Test	572.45	1	572.45	219.51	0.000	0.85
	Test × Group	26.45	1	26.45	10.14	0.003	0.21
	Error	99.10	38	2.61			
Between-subjects	Intercept	1361.25	1	1361.25	752.95	0.000	0.95
	Group	22.05	1	22.05	12.20	0.001	0.24
	Error	68.70	38	1.81			

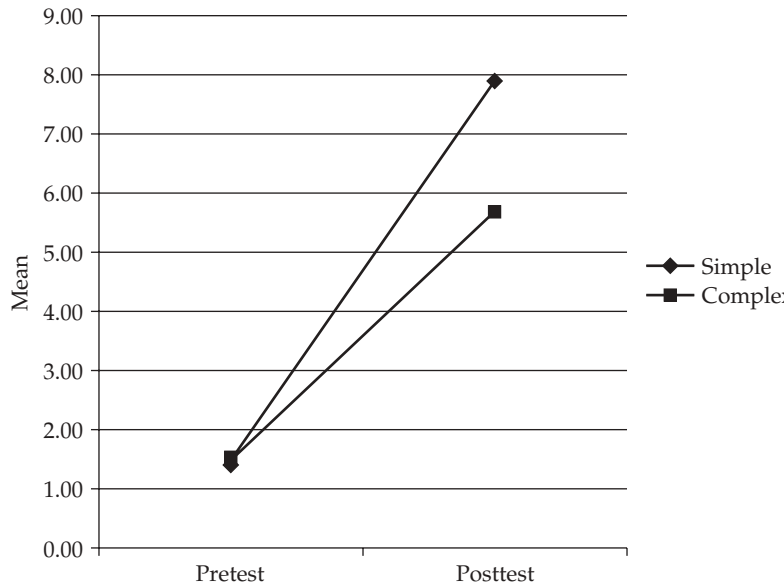

Figure 5 Pretest and posttest vocabulary scores by group

interpretation of the interaction, namely, that a learner's score is dependent on both the type of task he or she participated in and on whether we are considering the pretest or the posttest. Another way of portraying this relationship is to say that the two groups realized different changes in their mean vocabulary test scores.

This finding of a significant interaction seems to be at odds with the descriptive statistics. An additional type of data display is extremely helpful in interpreting the results, giving a clearer picture of the data and helping the researcher to know what to focus on. In Figure 5 the mean scores of the simple and complex groups are plotted in a graph. As a rule of thumb, researchers consider statistically significant interactions to be practically significant if the lines cross. By looking at the plot, we see that the lines do not cross, except for maybe a very little bit at the pretest. We see that the statistically significant interaction was due to the fact that both groups were the same on the pretest, but they differed on the posttest. We see here that unlike the interaction, the main effect of task is meaningful; indeed, it is more meaningful than the statistically significant interaction effect. This is a rather unusual example, but it provides us with the insight that results must be interpreted carefully.

Conclusion

Is the research hypothesis supported? Recall that our null hypothesis was the following: *The amount of incidental vocabulary learned does not depend on task type*. Notice that to make a defensible conclusion about the research hypothesis we have to consider both the descriptive and the inferential statistics, as well as the plot of means. Since the members of the two groups scored about the same on the pretest, but significantly differently from each other on the posttest, we can confidently reject the null hypothesis. Our experiment does not corroborate the hypothesis that a complex task fosters more incidental vocabulary learning than a simple task. We found the opposite to be true.

Given that the hypothesis for this fictitious study was not supported, in our conclusions we would need to consider perspectives from the literature that hint at making claims contrary to the original hypothesis. In this instance, we would do well to consider the

research on processing load, which may suggest that learners who process relatively large amounts of information have fewer resources to dedicate to form–meaning connections when they are primarily focused on a nonlinguistic task.

Additional Considerations

When constructing tables and graphs, we must refer to the required style sheet. In the absence of clear guidelines, we utilize the APA style sheet, to which Tables 1 and 2 above adhere. Also, we should build in Excel a plot of our results by group and test, again following a designated style sheet. We need to follow stipulations relating to the use of black and white colors, keeping plots two-dimensional, and labeling axes. Figure 5 here follows the APA stipulations.

Although we limit ourselves here to the available statistics produced by the SPSS repeated measures output, we could use a variety of techniques to compare between-subjects means. See Smithson (2003) for an intriguing and readable treatment of the usefulness of confidence intervals for comparing means. Still, readers may want to consider a technique such as employing various *t* tests and adjusting the experiment-wise alpha (α) with a Bonferroni adjustment, or construct a series of Tukey or Scheffé tests that use a predetermined α adjustment depending on the number and type of comparisons needed.

Appendix: Data Set

Student	*Group*	*Pretest*	*Posttest*
Student01	Simple	0	7
Student02	Simple	3	11
Student03	Simple	1	9
Student04	Simple	0	10
Student05	Simple	1	7
Student06	Simple	1	10
Student07	Simple	2	6
Student08	Simple	3	7
Student09	Simple	0	8
Student10	Simple	2	7
Student11	Simple	3	8
Student12	Simple	0	6
Student13	Simple	2	7
Student14	Simple	1	6
Student15	Simple	3	8
Student16	Simple	3	6
Student17	Simple	2	8
Student18	Simple	1	6
Student19	Simple	0	9
Student20	Simple	0	12
Student21	Complex	2	4

Student	*Group*	*Pretest*	*Posttest*
Student22	Complex	3	4
Student23	Complex	0	7
Student24	Complex	3	8
Student25	Complex	2	4
Student26	Complex	1	6
Student27	Complex	0	6
Student28	Complex	1	10
Student29	Complex	2	4
Student30	Complex	3	7
Student31	Complex	2	4
Student32	Complex	0	5
Student33	Complex	1	6
Student34	Complex	3	7
Student35	Complex	1	4
Student36	Complex	0	7
Student37	Complex	2	4
Student38	Complex	3	4
Student39	Complex	1	7
Student40	Complex	0	6

SEE ALSO: Describing and Illustrating Quantitative Data; Quantitative Methods; Variables

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Language and Education for Returnees

RYUKO KUBOTA

"Returnees" refers to individuals who return to their homeland after sojourning in another country due to displacement caused by war, conflict, natural disaster, economic migration, overseas business assignment, international marriage, child adoption, or education abroad. The length of time away from the homeland varies from a few years to more than one generation. In the latter case, homecoming can be called ancestral return, ethnic return migration, or post colonial return (Stefansson, 2004). Homecoming has been occurring globally in diverse contexts. In the case of refugee returnees, repatriation has taken place in Balkan nations (e.g., Bosnia and Herzegovina and Croatia), African nations (e.g., Burundi, Sudan, the Democratic Republic of the Congo, Angola), Afghanistan, and Iraq. Economic migrants all over the world might seek homecoming for renewed economic opportunities, to join relatives, or to retire; for other migrants, economic or legal conditions may force their return. Academic returnees are those who return to newly industrialized nations, such as China, which encourage the homecoming of scientists with advanced degrees obtained in developed countries. In other circumstances, international adoptees return to the country of their birth parents, as seen in South Korea. Homecoming does not always imply permanent (re)settlement—individuals may shuttle between countries, complicating the meaning of homeland. Within applied linguistics, returnees raise such issues as language acquisition, maintenance, and attrition; bilingualism; identity; language policies and planning; curriculum and instruction; and broader sociopolitical, ideological, and economic issues.

Homecoming involves populations that are diverse in terms of race, ethnicity, nationality, language, socioeconomic and legal status, age, and occupation as well as the social, economic, linguistic, cultural, and political terrains they traverse. Although such complexities raise many issues, research on returnees within applied linguistics is scant. Of the many countries receiving returnees, Japan provides an interesting example of diverse returnee populations: (a) returnee children of expatriates, (b) repatriates of Japanese war orphans and remaining women in China, and (c) ethnic return migrants from South America. Publications in Japanese or English on this topic belong to various disciplines, such as education, psychology, anthropology, sociology, and intercultural communication. Comparing and contrasting these three groups reveal diversity and complexity.

The Three Groups

Kikokushijo (returnee children) began to attract educational and scholarly attention in the 1960s, when overseas work assignments for Japanese employees grew (Goodman, 2003). Since the mid-1970s, the Ministry of Education has conducted an annual survey of school-aged *kikokushijo* who lived abroad consecutively for one year or longer and returned to Japan. The number peaked in 1992 with 13,777 and has been steady with a slight decline since then. Special programs to support linguistic and cultural readjustment were established in the 1970s and 1980s within designated private and public schools. Academic mobility—passing examinations to enter senior high schools and universities—was another concern. Special quotas and test accommodations have been implemented for entrance

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examinations in many public and private institutions. Middle-class parents of *kikokushijo* and employers have been advocates for these provisions.

Repatriates from China consist of Japanese war orphans (*zanryû koji*) and remaining women (*zanryû fujin*). They were dependents of Japanese agricultural colonists who were recruited from economically depressed communities in Japan from the 1930s to 1945 to work in Manchuria. After the Soviet attack in August 1945, abandoned women and children were taken into Chinese families and many eventually married Chinese citizens. From the 1958 break in Sino-Japanese cooperation until the 1972 diplomatic normalization, *zanryû koji* and *zanryû fujin* were erased from their Japanese family registry and identified as deceased. In 1981 state-funded relative-seeking visits to Japan were introduced and in 1994 the Japanese government's responsibility was legally established, which encouraged repatriation. From 1972 to 2006, more than 6,000 individuals (or more than 26,000 including immediate family members) repatriated (Efird, 2008; Ide, 2008). While these individuals receive government assistance, an estimated 100,000 second- and third-generation family members who came to Japan at their own cost do not.

Japanese-descent (*nikkei*) ethnic return migrants are mainly from Brazil and Peru. Japanese emigration to South American countries as agricultural laborers began around the turn of the 20th century. Many present-day *nikkei* in South America are highly educated and mostly belong to the middle class (Tsuda, 2003; Takenaka, 2009). Japan's booming economy in the 1980s increased demand for unskilled labor. The 1990 enactment of the revised Immigration Control Law allowed *nikkei* and their families down to the third generation to live and work legally in Japan. In 2008, more than 370,000 Brazilians and Peruvians lived in Japan.

Comparison

These three groups of returnees are defined as such because of their shared ethnicity, ancestral blood, or current or past possession of Japanese citizenship, and thus are distinguished from other groups that enter Japan to reside. They are to a varied degree marginalized with shared difficulties of fitting in culturally and linguistically despite some commonalities with the mainstream Japanese. In-betweenness is a typical descriptor of their identity, yet their identity shifts in time and space. Returnees also negotiate their identity with the images of them constructed by mainstream society, accommodating, resisting, or appropriating mainstream images. Despite these shared experiences, there are considerable differences both between and within groups.

Many repatriates and *nikkei* returnees face multigenerational challenges in Japan. Many lack proficiency in Japanese or experience downward social mobility. Repatriates are older and many receive welfare. Conversely, *kikokushijo* are younger and socioeconomically privileged. Despite media images of *kikokushijo* as being fluent in English and having lost their mother tongue, many have received academic instruction in Japanese at either full-time or weekend government-subsidized Japanese schools overseas; they are not as academically or linguistically disadvantaged as they are often thought to be (Fry, 2009). Hence, despite readjustment challenges both academic and cultural (Kanno, 2003), most *kikokushijo* advance their academic and professional goals. A distinctive characteristic of *kikokushijo* is the way in which the political discourse of internationalization influenced a shift in the perception of them as a group to be remediated and rescued to a new international elite capable of logical thinking and creativity (Goodman, 2003).

Repatriate and *nikkei* populations also differ considerably—although the need to learn Japanese is vital for repatriates to seek employment, it is not as important for *nikkei* adults

for several reasons: (a) a portion of the *nikkei* population have maintained Japanese-language skills through attending ethnic schools or speaking Japanese at home, whereas repatriates, whose Japanese identity had been concealed due to hostility, had no such opportunity; (b) many *nikkei* returnees are hired by labor broker firms and dispatched to work in groups with bilingual speakers; and (c) stronger social networks exist for *nikkei*, who tend to live in clusters in industrial towns.

These two groups also receive different amounts of government-supported language training, although the assistance is equally insufficient. Repatriates may receive up to 12 months of Japanese-language training at government-sponsored centers. Such instruction, however, does not cater to multilevel proficiencies and resettlement pressure often diverts repatriates' efforts from language learning. As for *nikkei* returnees, the 2008 global financial crisis finally prompted the government to support language training for unemployed foreign workers. However, the government's decades-long laissez-faire policy—epitomized by the absence of teacher training and heavy reliance on volunteerism—could negatively affect this endeavor (Ortloff & Frey, 2007).

The situation of school-aged children of both groups is similar; they tend to have very little proficiency in Japanese and often need Japanese as a second language (JSL) instruction. These children mostly receive pullout instruction for basic reading and writing (Kanno, 2008), but the quality of instruction is often questionable, mainly because no teacher licensure for JSL exists, restricting teacher training. Without academic language skills that support content area learning, it is difficult to obtain an advanced education. Even though the aforementioned entrance examination quotas and accommodations are available for both *kikokushijo* and foreign children, academic and economic limitations keep the foreign children from obtaining further education. Moreover, because it is not legally required, some non-Japanese children do not attend school at all.

Each of the three groups also displays within-group diversity. For instance, *nikkei* Brazilians and Peruvians differ in that Brazilians tend to be more proficient in Japanese, mainly due to historical factors that facilitated mother-tongue maintenance—emigration to Brazil lasted until the 1970s whereas that to Peru was banned after the 1941 Pearl Harbor attack (Takenaka, 2009). Overall, *nikkei* Brazilians are socially, economically, and linguistically positioned higher than *nikkei* Peruvians in Japan. Such a hierarchy derives from the socioeconomic status of the nation which they returned from (Tsuda, 2003), which is also linked to a linguistic hierarchy in international communication.

Future Directions

The example of Japan demonstrates that, despite their shared ethnic ties, returnee groups encompass diversity: They are hierarchically positioned due to economic, political, cultural, and linguistic relations of power among nations, ethnic groups, and other categories, influencing language learning and identity formation. The impermanent nature of homecoming is observed among *nikkei* migrants who returned to Latin America after the 2008 global financial crisis, which creates further educational challenges for children without proficiency in the language of their new homeland. Increased scholarly attention to issues of homecoming would contribute to the well-being of this diverse and often disenfranchised diasporic population.

SEE ALSO: Bilingual Education and Immigration; Cultural Identity; Literacy and Heritage Language Maintenance

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Language Socialization in Study Abroad

CELESTE KINGINGER

In research on study abroad, findings on the outcomes of student sojourns have revealed significant variation in individual achievement. These findings have also suggested that language learning in study abroad is fundamentally different from learning in classroom or domestic immersion contexts, offering considerable opportunities to learn not only linguistic forms but also their social and pragmatic meanings for expert speakers. Why do some students prosper while others do not? What are the precise qualities of study abroad experiences as they relate to language learning? Meanwhile, the "social turn in second language acquisition" (Block, 2003) brought with it enhanced awareness of the cultural, political, and identity-related aspects of language development. Study abroad researchers have accompanied the profession in its social turn, focusing not only upon the specific qualities of the study abroad experience but also upon broader questions about the socio-cultural, political, and identity-related meaning of study abroad for particular students and groups of students.

The studies reviewed in this entry emerge from a variety of methodological traditions, but all may be interpreted from the perspective of language socialization. Language socialization research examines the transformation by which novice participants learn to use language and, in this process, are socialized through language into the practices of communities as well as the local meaning of these practices (Ochs, 2002). This approach raises questions about how students are received into local communities of practice abroad and what kinds of legitimacy they will claim as participants within these communities. Ideally, students abroad are accepted as "legitimate peripheral participants" (Lave & Wenger, 1991), that is, they are granted access to observation, followed by increasingly active engagement in the everyday activities of the group.

Research on study abroad documents a variety of scenarios in which students are and are not received as legitimate participants, and in which students do and do not claim this status. This research includes a variety of qualitative and ethnographic studies of student sojourners' experiences abroad along with case studies of individual students and in-depth portrayals of specific interactive settings. This entry first reviews studies highlighting communicative settings common to many participants in study abroad programs, the homestay, and the classroom. Subsequently, the entry examines case studies attempting to clarify the general extent to which students abroad learn languages through active engagement in local communities. Finally, the limitations of this research are outlined.

Contexts for Language Learning: The Homestay and the Classroom

Discussions of language learning in study abroad often posit a "homestay advantage" wherein students who opt or are obliged to live with local families enjoy closer ties to their host community along with richer opportunities for language development than do their peers in dormitories or apartments. Yet, the findings of some quantitative research

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show that this advantage may not always be easy to prove. Rivers (1998), for example, compared multiple test scores of US-based students studying in Russia before and after the fall of the Soviet Union, when homestay became a viable option. Rivers's results showed that homestay was a negative predictor for gains in speaking ability, had no effect on listening, and was a positive predictor for reading. Thus, in many cases, the homestay did not foster social interactive abilities. For a candidate explanation, Rivers turned to ethnographic data portraying the homestay as involving banal, quotidian dialogue and television watching, with students spending the majority of their time alone, doing homework.

Wilkinson (2002) studied the recorded interactions of four US-based students with members of their host families in France. The students' prior language socialization had taken place entirely in classroom settings, and they exhibited a marked tendency to employ discourse strategies, such as the infamous IRE (initiation–response–evaluation) structure, in their informal conversations. "Ashley," for example, recruited a host brother, Girard, to help her satisfy the requirements of the project, asking him a series of semantically hollow and unmotivated questions that appeared to be more geared to demonstrating her own competence than to expressing interest in Girard. The unfortunate consequence of these interactions was that the American students tended to interpret their hosts as uncooperative or condescending, and therefore to limit further participation in family encounters.

More fruitful, if still complex, were the interactions between Anglophone students and their Japanese hosts documented in Siegal (1996), Cook (2006), and Iino (2006). In a longitudinal study of Anglophone women in Japan, Siegal (1996) identified the significance of a "gaijin" (foreigner) identity assigned to her participants and limiting their access to Japanese, in particular to the honorific forms required to develop a full expressive repertoire. Iino (2006) and Cook (2006) demonstrated how this identity emerges in the context of the homestay, examining the nature of dinner table conversations between students and their host families. Iino identified a continuum of approaches adopted by families with respect to their guests. On one end of the continuum is the "cultural dependency" approach, wherein the student guests were construed as fundamentally helpless and in need of massive assistance for managing everyday life in Japan. In its extreme form, this approach yielded a situation in which the student guest was treated as an exotic family "pet" (p. 162). On the other end is the "two-way enrichment" ideal where the families saw the homestay arrangement as a learning opportunity for themselves. In these situations, the family dinner hour became a locus for intercultural exchange. Cook's (2006) study further illustrates the "two-way enrichment" process with a focus on the sharing, and challenging, of folk beliefs around the family dinner table.

Two recent studies suggest that the host family dinner table can play a key role in the language socialization process for students abroad. Cook (2008) examined how Japanese host families express their identity through the use of the "addressee honorific" *masu* form and how their guests are socialized through its use. Through both implicit modeling and explicit instruction, the families were shown to guide students toward the ability to shift from plain to honorific styles in ways appropriate for "in-group" talk. Thus, at least in one communicative domain, this study provides evidence that the "gaijin" identity does not necessarily interfere with the learning of diverse styles in Japanese. DuFon's (2006) study of the socialization of taste in Indonesia illustrates the intimate links between learning to eat and learning to talk. The participants in this study were explicitly oriented to their food in formats very like language lessons. As they learned to eat, they also learned about local values and culinary aesthetics.

Taken together, these studies suggest that the homestay can become a crucible for language and culture learning in cases where the dispositions of all concerned parties are aligned for this purpose. The "homestay advantage" is not, however, guaranteed. When

students are not granted the status of "legitimate peripheral participant," or when they do not claim it, no such advantage is in evidence.

The same principle applies to the more limited research on classroom learning in study abroad. Churchill (2006), for example, compared the achievements of Japanese secondary-level students in two US high schools. One group, in an elite private school, was given an organized and warm reception along with clear roles and opportunities to display expertise. The other, in a large suburban public high school, was barely acknowledged, but occasionally viewed as a disruptive inconvenience. The ways in which the participation of these students was interpreted by their respective institutions had a marked effect on their desire and ability to speak English, with the students at the elite school outperforming their counterparts in the public school.

Within other qualitative studies, there are indications that students confronted with unfamiliar norms of classroom interaction or literacy practices may reject those practices, at least at first. For example, Rebeccah, one of the participants in Pellegrino Aveni's (2005) study, reacted in anger to the direct criticism issued by her Russian teacher. Without calling into question whether or not such acts were normative for the Russian classroom, Rebeccah blamed the teacher for her own negative attitude and failure to progress in learning Russian. Patron (2007) followed a group of French students through and beyond their year-long sojourn in Australia. These students were initially unnerved by the low-key, egalitarian nature of teacher–student interactions, and mystified by the concepts of plagiarism and research citation. By the end of the year, however, they had accepted all these features of Australian academic life.

The qualities of the homestay or classroom contexts for language learning are thus somewhat difficult to predict, as they depend upon a complex interplay of student and host stances. When students are granted the status of "legitimate peripheral participant," when they are mindful of this role and willing to expand their participation, opportunities for language learning emerge. It is also possible, however, that hosts may not grant legitimacy to the study abroad participant, or that students themselves may turn away from language learning opportunities following cultural misunderstandings or expectations based on their previous socialization in classrooms.

Case Studies of Groups and Individuals

Another approach to investigating the qualities of study abroad for language learning is the case study. Levin (2001), for example, carried out an ethnographic study of a cohort of American undergraduates in France. Levin found that language learning was explicitly downplayed by the program staff. Most students systematically avoided opportunities for language learning, living together, and shopping for peanut butter and salsa at big box stores rather than facing unfamiliar foods and challenging interactions in the university cafeteria. Three additional, recent case studies of students abroad offer further insight about how students are received and how they orient to their experiences.

Isabelli-García (2006) followed four American undergraduates through their sojourn in Argentina. The results of proficiency tests were evaluated against accounts of attitude and motivation as observed in learner diaries, and the nature and extension of each student's social network. The student with the greatest post-program proficiency gain, "Stan," spoke Spanish at home, overcame ethnocentrism, and developed a broad network of Argentine friends who included him in their social plans. "Jennifer," the only woman among the participants, made no measurable gains in proficiency. Jennifer had difficulty finding and settling in with an acceptable host family, and spent most of her free time with another American woman. Moreover, she quickly became alienated from Argentine society in general as she observed unfamiliar gendered practices such as the "ugly" *piropo* (Twombly,

1995) or catcalling in the street. Isabelli-García's study thus contributes to the argument that gendered identity exerts influence not only on attitude and motivation but also on opportunities to participate in activities related to language socialization.

Kinginger's (2008) study also involved a cohort of American undergraduate students in France. Adopting theoretical framework from sociocultural theory, Kinginger examined the qualities of the experience, its outcome in terms of academic and basic interpersonal language ability (Cummins, 1979), and the ways in which the students interpreted their sojourns through familiar cultural and narrative resources. In both a standard measure of grammatical competence and the language awareness interview designed to assess knowledge and use of sociopragmatic variants, the 23 students in the cohort exhibited considerable variation in achievement outcome. In focusing on the individual cases of six students, Kinginger attempted to trace the origins of these differences in terms of the students' personal dispositions and stances and in terms of the overall nature of the experience.

Students with low achievement profiles in Kinginger's study were all shown to limit their own access to language socialization, but for various reasons. "Beatrice" interpreted interactions with her host family through the lens of American collective memories about France, that is, she was angry that her hosts failed to honor her country's heroic role in World War II, and she heard their questions about American foreign policy as assaults on her patriotism. As a result she became alienated from her only source of informal language learning. "Ailis" appeared to have forgotten some of what she knew of French after a semester devoted to a Grand Tour of monuments and Hard Rock Cafés. "Deirdre" literally screened herself from interaction with local people, spending all of her free time in online interactions with friends and family at home. Deirdre adopted a consumerist interpretation of study abroad and devoted considerable effort to complaints about the service she was receiving.

Kinginger's study also illustrates how students may take productive advantage of the homestay, and may further their language ability through participation in a variety of settings. "Liza," for example, developed a close relationship with her host mother, and was included in numerous social events within the family circle. One of the students who made the most impressive gains in all domains was "Bill," an outgoing young man whose proficiency in French was extremely limited prior to his sojourn abroad. Bill was also received by a family patiently shepherding him through dinner hour conversations; he worked as an intern and joined several campus associations and interest groups with the explicit goal of expanding his linguistic repertoire. "Louis," who presented the highest score ever recorded on the standard test used in the study, excelled in the classroom and became a prized partner for group assignments. He also expanded his social circle, as well as his knowledge and use of informal registers, through volunteer work at a soup kitchen. Thus, Kinginger's case studies suggest that the qualities of study abroad experiences are quite diverse and that language learning in study abroad depends on a complex interplay of student and host dispositions and interpretations of this activity.

In her ethnographic study of students from Hong Kong on a short-term sojourn in Britain, Jackson (2008) artfully combined the community of practice perspective with Ting-Toomey's (2005) poststructuralist identity negotiation theory. On this view, hosts and students share responsibility for successful intercultural communication. In the process of intercultural adjustment and identity change,

> newcomers who find their host environment welcoming and supportive are likely to develop more positive attitudes toward the host culture (and language) and, as a consequence, make more of a concerted effort to become "full-fledged" members. By contrast, those who find the journey too daunting may retreat, reducing opportunities for personal and linguistic expansion. (Ting-Toomey, 2005, p. 52)

Jackson's case studies of individual students again illustrate contrasts in the extent to which students and their hosts may contribute to successful language socialization. "Ada," for example, struggled through the better part of her stay with her own disillusionment, ethnocentrism, and hostility toward British cultural practices. She tended to interpret others' curiosity about her as racism, and to worry excessively about her own well-being. Her interactions with her host family, in particular when they repeatedly mislabeled her as Japanese, only heightened her awareness of her own history and identity. "Niki," on the other hand, actively cultivated an ethnorelative mindset and hoped to acquire an international persona. Although Niki also struggled with perceptions of racism, she found the members of her host family "gracious and respectful" (Jackson, 2008, p. 192) and spent a great deal of time developing a close reciprocal relationship with them. In the end, Niki developed both her social discourse skills and her perception of English as a living language rather than a mere utilitarian tool. In bringing to the fore the process of identity negotiation, Jackson's study offers new insights on the process of language socialization in study abroad contexts.

Interpreted through the lens of language socialization, case studies illustrate a range of ways in which language learners abroad either succeed or fail to negotiate access to learning opportunities. In many cases, students who go abroad are novices within the communities they join, and tend to apply cultural tools and narrative templates derived from their own sociocultural history to the interpretation of local cultural practices. Much depends on the individual's motives for study abroad: Niki's aspirations toward a multicultural identity helped her to bypass obstacles and take full advantage of her homestay, while Ailis's approach to study abroad as tourism severely curtailed her interaction with local members of the host community.

Limitations and Conclusion

The most obvious limitation of the research on study abroad in general is the overrepresentation of students from the United States. In this review, only two studies (Patron, 2007, and Jackson, 2008) involve students from countries other than the United States. As Kinginger (2009) argues, a focus on language learning in study abroad may well reflect the fact that American learners typically do not present high levels of additional language ability when they go abroad. In Europe, by contrast, most participants in programs of residence abroad already have extensive experience of the host country along with functional language ability (Coleman, 1997). Although there may be features that all educational sojourns share, until there is a broader representation of sending and receiving countries, generalizations based on this research will be risky.

A major limitation of the qualitative research is its nearly exclusive emphasis on student perspectives. Students, and particularly the majority of American students populating the research base, are by definition relatively unaware of the cultural practices of their host communities, and rely on home-based cultural resources to interpret these practices. Thus, a common outcome of the research is the impression that the educational and other sociocultural activities of the wider world are bizarre or inexplicable. There is a great need for the findings of this research to be interpreted in intercultural perspective, and for the research itself to include the point of view of host teachers, families, and program administrators who might help to unearth the sources of misunderstanding.

The social turn in study abroad research has yielded significant insight, helping to flesh out the findings of quantitative studies with stories of real people who succeed and who fail to learn languages. Clearly, the study abroad experience is so variable that it cannot be readily reduced to the status of an experimental treatment. Yet, this research is as still

quite limited in scope and sophistication, requiring both broader representation on an international scale, and truly intercultural interpretation of findings.

SEE ALSO: Ethnographic Approaches to Second Language Acquisition Research; Language Study Abroad; Social Networks in Second Language Acquisition

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Language Testing and Accountability

LORENA LLOSA

Language assessments are typically used to make decisions about individuals and programs. These decisions affect a number of stakeholders directly or indirectly. Stakeholders may include students or test takers, teachers, administrators, parents, employers, and schools. Because language tests and their uses affect stakeholders in important ways, language test developers and language test users are accountable to them. According to Bachman and Palmer (2010), "being accountable, or accountability, means being able to demonstrate to stakeholders that the intended uses of our assessment are justified" (p. 92). The need for accountability to stakeholders, test takers in particular, is the driving force for most of the validity research conducted today. Messick's (1989) redefinition of validity as including value implications and social consequences drew attention to the importance of accountability toward the test taker as well as other stakeholders. Norton (1997) viewed "the recognition that language assessment practices should be accountable to test takers" as part of a "broader trend towards democratization of educational assessment in general" (p. 313).

In addition to accountability to test takers, accountability to systems has recently dominated the discussion in language testing and educational assessment. Educational accountability systems typically involve efforts to assess and rate schools and districts based on student performance and, in some cases, to provide rewards and sanctions based on performance or improvement over time. Language tests play an increasingly important role in these systems given that the student population in many countries is composed of large numbers of second language learners. This is certainly the case in many English-speaking countries. In 2005, for example, English-language learners constituted 10% of the school population in the USA; in Canada they accounted for 20–50% of the population in urban school systems (Fairbairn & Fox, 2009), and in England, they constituted 9–11% of the school population (Leung & Lewkowicz, 2008). Educational accountability takes on a different form in different countries and at different times. In the USA, for example, accountability is currently characterized by the use of high-stakes, large-scale standardized tests. In Canada, most provinces have implemented government-mandated testing in core curricular areas, and test scores can account for up to 50% of a student's grade at graduation (Fairbairn & Fox, 2009, p. 12). In the United Kingdom and Australia, teacher assessments are an important part of accountability systems.

The Role of High-Stakes, Standardized Tests in Accountability Systems

Language assessment is a key component of the accountability system in the USA. No Child Left Behind (NCLB, 2001) requires that states, districts, and schools monitor the number and percentage of English-language learners (ELLs) who make adequate yearly progress in their language proficiency. English-language proficiency tests are therefore needed to meet the federal mandate. These tests are used for three main purposes: identifying students as English-language learners, monitoring their English-language development, and reclassifying them as English-language proficient. The law also requires that all

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students, including English-language learners, be tested in the content areas of language arts, math, and science. Each state has developed a set of content standards in these areas as well as assessments intended to measure mastery of these standards. The goal of this standards-based system is for all students to make adequate yearly progress and attain proficiency. Failure to attain these goals can lead to severe sanctions, including school closings.

The Language Assessments

Given the high stakes involved, it is critical that English-language learners' proficiency be accurately assessed. However, the language tests that had been developed prior to NCLB were found lacking for the purpose of accurately measuring students' academic language proficiency. Most of these tests assessed social language proficiency as opposed to proficiency in the types of academic language needed to succeed in school. Furthermore, as Abedi (2007) points out, "pre-NCLB assessments were not based on an operationally defined concept of English proficiency, had limited academic content coverage, were not consistent with states' content standards, and had psychometric flaws" (p. 121). Work had to be carried out to define and operationalize the construct of academic language proficiency by investigating empirically the kinds of English required of K-12 English-language learners (Bailey & Butler, 2003). This investigation called attention to the inadequacy of existing research on the development of the academic English-language skills that all students—both English-language learner and native English speaking—need to be successful in schools (Bailey, 2007).

In response to the NCLB mandate, states, test publishers, and consortia of states engaged in efforts to develop new English-language proficiency tests. These new tests are standards-based, emphasize academic English, are aligned with academic content standards, include assessment of oral language, are designed to be comparable across grades, and allow for more than one proficiency level within a grade span (Abedi, 2007). Examples of these assessments include the *Assessing Comprehension and Communication in English State-to-State for English-Language Learners* (*ACCESS for ELLs)* developed by the World-Class Instructional Design and Assessment (WIDA) Consortium, the *Comprehensive English Language Learning Assessment (CELLA)* developed by five states with Educational Testing Service and Accountability Works, and the *English Language Development Assessment (ELDA)* developed by the Council of Chief State School Officers (CCSSO), along with states in the State Collaborative on Assessment and Standards for Limited English Proficient students (LEP-SCASS). (See Abedi, 2007 for a more detailed description of these assessments.)

Because these assessments are relatively new, little research has been conducted that examines their qualities and assesses whether they accurately measure students' academic language proficiency (e.g., Albers, Kenyon, & Boals, 2009). Future research should investigate the extent to which these assessments provide useful information for the purposes of accountability.

The Content Area Assessments

NCLB requires that English-language learners be tested not only in terms of their language proficiency but also in language arts, math, and science. Abedi (2004) argues that assessments of content knowledge are linguistically and culturally inappropriate. He claims that assessing English-language learners in a language in which they are not yet proficient results in construct-irrelevant variance and that the resulting scores are not meaningful indicators of students' content area knowledge. Accommodations were introduced as a way to provide English-language learners an opportunity to demonstrate what they know and can do. Accommodations are modifications made to the test itself or to the testing

procedure that allow English-language learners to access the test without changing the construct and without giving them an advantage over students who do not receive the accommodation. Examples of accommodations include providing test takers with a translated test, a test written in simplified English, dictionaries or glossaries, and allowing for extended time during test administration. Research on the effectiveness of accommodations so far has yielded mixed results. According to Kopriva, Emick, Hipolito-Delgado, and Cameron (2007), the different findings may be due to a one-size-fits-all approach to administering accommodations that does not take into account the various characteristics of different groups of English-language learners. For example, translated tests are only effective accommodations for English-language learners who are literate in their L1 and who have received content area instruction in their L1. Kieffer, Lesaux, Rivera, and Francis's (2009) meta-analysis on the effectiveness and validity of accommodations for English-language learners found that only one accommodation—providing English dictionaries or glossaries—had a statistically significant effect on English-language learners performance. They concluded that accommodations are not particularly effective in reducing the impact of limited language proficiency on the assessment of content knowledge.

Although more research on the validity and effectiveness of various accommodations for different subgroups of English-language learners is needed, many argue that the more promising solution to meaningfully assessing English-language learners' content knowledge and including them in the accountability system is to consider the English-language learner population at the test development stage (Solano-Flores & Trumbull, 2003; Abedi, 2004; Fairbairn & Fox, 2009). Fairbairn and Fox (2009) propose a number of approaches for test development that take into account the unique linguistic and cultural characteristics of English-language learners. Keiffer et al. (2009), on the other hand, suggest that the solution lies in developing a better understanding of the link between academic language proficiency and content area knowledge, and in providing English-language learners with "targeted, explicit, and intensive instruction in the complex and specialized language that lies at the heart of each content area" (p. 1190).

The Role of Classroom Assessment in Accountability Systems

Unlike the USA, where accountability is driven almost exclusively by large-scale, standardized tests, in England and Australia teacher assessment plays a prominent role. McKay and Brindley (2007) explain that in the 1970s and 1980s ESL (English as a second language) teachers in Australia were provided with extensive professional development opportunities for improving classroom assessment practices due to the belief that "the classroom teacher was the key decision maker in the curriculum" (p. 69). Australia experienced a policy shift in the early 1990s with the adoption of standards-based educational reforms. The National Literacy Benchmarks were developed and external standardized testing was adopted in primary schools across the country. In an effort to raise standards, the federal government used student achievement information to monitor student, school, and state-level performance, to compare the performance of the states and territories, and to award incentives and impose sanctions (McKay & Brindley, 2007). Like NCLB in the USA, this reform involved the assessment of ESL students using external standardized tests based on mother-tongue literacy benchmarks. These reforms have had an impact on classroom assessment practices. A large national study that examined how ESL teachers interpreted and used assessment frameworks revealed that most teachers adopted these frameworks, but also adapted them according to their needs and their personal preferences, which resulted in an inconsistent implementation (Breen et al., 1997). Teachers were often torn between the "managerial and educational purposes of standards" (McKay & Brindley, 2007, p. 77). Also, the external standardized tests, which are linguistically and culturally inappropriate

for ESL students, have resulted in increased pressure and stress for teachers and their students (McKay & Brindley, 2007).

In the late 1990s, England adopted a new policy to address the perceived low levels of achievement in English and English literacy (Leung & Rea-Dickins, 2007). Leung and Rea-Dickins (2007) explain that the policy required that by 2002, 80% of 11-year-olds should reach the standards expected for their age in English (Level 4 or above on the National Curriculum English attainment scales). Student achievement was to be measured using both standardized tests and teacher assessment. Initially, only the standardized test scores were used for public reporting, but recently teacher assessment took on a more prominent role. Teachers of English as an additional language (EAL), who have to assess their students' progress in English as well as their attainment in English and the subject areas, have been uniquely affected by this reform. Leung and Rea-Dickins's (2007) examination of official policy documents on teacher assessment revealed an emphasis on summative assessment of students' performance, and not on the type of formative assessment that has been shown to be effective: classroom assessment embedded within interaction that involves learner agency. The language of these documents also privileges a narrow view of language proficiency that focuses on its morphosyntactic characteristics. This is particularly problematic given that EAL students need to be able to use language across the curriculum. Finally, these documents do not acknowledge the distinctive developmental trajectories of EAL students. Teachers in this system find themselves in the role of "raters," using assessment to certify students' performance against a set of standards, as opposed to using it to support students' language development. Leung and Rea-Dickins (2007) thus argue that despite the prominent role given to teacher assessment in the accountability system, these assessments have become instruments simply to serve the system, not to help students and their teachers.

Assessment and Accountability: Accountability to Whom or What?

As Fairbairn and Fox (2009) point out, despite the problems inherent in the language and content assessments used to assess second language learners, scores obtained from such assessments are rarely scrutinized when they are used for accountability purposes. Leung and Rea Dickins (2007) also found, in the context of the United Kingdom, that policy ignores the technical and educational issues related to the assessments used. Assessment used primarily for accountability purposes can lead to a number of unintended consequences. In the USA, for example, schools that serve large numbers of English-language learners tend to be the most affected by accountability sanctions. This is in part due to English-language learners underperforming on assessments (which as discussed above may not accurately measure their abilities), but also due to other problems with the accountability system. One example is the "moving target" nature of the English-language learner group (Abedi, 2004). As English-language learners become proficient in English and reclassify, they exit the group. At the same time, students that are not proficient enter the group on an ongoing basis. As a result the group as a whole cannot make progress. The law now allows English learners who reclassify to be included in the "adequate yearly progress" calculations for two years after their reclassification, but this does not solve the problem, and schools who serve English-language learners continue to be penalized. A similar problem happens in Canada where information about numbers of English-language learners or the appropriateness of the tests used with this population is not used to explain poor performance on school report card grades (Fairbairn & Fox, 2009).

Other unintended consequences involve the effect that assessments used for accountability have on instruction and on classroom assessment practices. When high stakes are

attached to assessments, teachers tend to "teach to the test," resulting in a narrowing of the curriculum. Also, classroom assessment often is no longer used formatively but instead it is used to summatively measure students' performance or predict student performance on the high-stakes tests. Ironically, accountability systems intended to raise standards and improve the achievement of all students often end up undermining their own goals by not supporting the language and academic development of its ELL/ESL/EAL population.

Language test developers, language test users, and teachers are faced with the challenge of developing and using language assessments that satisfy the demands of system-wide accountability. At the same time, they must keep in mind that they are also accountable to stakeholders. Accountability to test takers, in particular, should continue to be the primary concern.

SEE ALSO: Bias in Language Assessment; Fairness in Language Assessment; Uses of Language Assessments; Validation of Language Assessments; Values in Language Assessment; Washback in Language Assessment

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Language Testing and Immigration

NICK SAVILLE

Introduction

The outcomes of language tests have important consequences for test takers and for society more widely (see Wall, 1997, on impact and washback). This is particularly true when tests are used in the context of immigration. For this reason the decision to use language tests, either to support learning or as instruments of policy, should not be taken lightly.

Changing patterns of migration in the 1990s resulted in a significant increase in uses of language assessment for migration purposes (Van Avermaet, 2009). In response language-testing professionals expanded their test development and research concerns to engage with the social, political, and ethical dimensions of language assessment and raised questions as to whether the tests they develop are used fairly and for ethical purposes.

Increasingly language testers are drawn into public debates about the implementation of immigration and citizenship policies and academic publications directly addressing these issues have increased (e.g., Shohamy & McNamara, 2009).

The Age of Migration

Most people reside in their country of birth, learn one or more languages of their own region, and develop their own cultural identities; taking up residence in another country, voluntarily or out of necessity, is not the rule. Nevertheless the early part of the 21st century has been characterized as "the age of migration" (Castles & Miller, 2003), considered by some to be one of the defining global issues of our time.

The International Organization for Migration (IOM; www.iom.int) estimates that close to three percent of the world's population or nearly 300 million people live outside their place of birth. The Organization for Economic Cooperation and Development (OECD) sees the effective management of migration as a high priority, and many member countries have developed procedures to regulate the flow of newcomers into their countries and to select which are allowed in or have the right to settle.

National governments tend to receive strong public support for policies which require newcomers to demonstrate knowledge of the national language in order to settle or to become citizens. A common response by policy makers has been the introduction of language requirements for those applying for entry visas, seeking long-term settlement, or applying for naturalization. Scores on language tests may be required to demonstrate proficiency at a specified level, although practices differ widely (Extra, Spotti, & Van Avermaet, 2009; Hogan-Brun, Mar-Molinero, & Stevenson, 2009).

Managing Migration

For the IOM, a migrant is understood as anyone entering a country with the intention of staying one year or more, and those who are already living in a destination country with permission to remain. This means that international students, footballers, or managers in

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multinational companies can be considered migrants, as well as refugees from war zones or those seeking political asylum. For bureaucratic purposes, however, all migrants fall into two broad categories: authorized and unauthorized (or illegal) migrants.

Authorized migrants are those who follow the immigration procedures stipulated by the authorities of the destination country. They hold valid travel documents from their country of origin and are granted appropriate visas and other permissions to enter and remain in the country.

Unauthorized migrants arrive in a destination country without valid travel documents, do not go through the official channels and do not obtain the appropriate permissions to remain. These often include vulnerable groups such as refugees, asylum seekers, and victims of human trafficking arriving in their new country under duress.

Historically, war and persecution were responsible for enforced migrations resulting in refugees and asylum seekers arriving in destination countries, often as whole communities or family groups. This was the case at the end of the 19th century and at various times throughout the 20th century when the first instances of language tests for immigration purposes emerged (see below).

Reasons for contemporary migration still include asylum, but increasingly migration takes place for economic reasons: education, employment, and business opportunities provide the motivation to migrate, encouraged by demographic change and modern transportation systems which facilitate mobility in a transnational world. Many migrants no longer leave their place of birth on a one-way ticket but move between homes in different countries. Family groups sometimes arrive at different moments over an extended period and those already settled may acquire the right to bring family members to join them, especially older relatives, or intended spouses (family reunion and family formation).

In the early 20th century passports and visas were introduced to regulate the movement of people; these are now taken for granted and are familiar to all travelers crossing borders or passing through airports. For those wishing to stay longer than a few months, however, these are only one part of a complex immigration process which begins with entry into the country. In many countries, selection procedures and border controls have been significantly tightened through the introduction of advanced technology (such as biometric checks) and the use of tests as instruments of public policy (e.g., Netherlands, Denmark). These tests may be administered before the migrant leaves home. Some countries (e.g., Australia, Canada, UK) have introduced a points-based approach to select which applicants can enter the country, with language proficiency requirements, including formal language tests, being one element for which points are awarded.

With the increase in regulation has come the possibility of tougher sanctions for those who do not comply, thus raising the stakes of the procedures used. Test scores are used for making important decisions and have important consequences for migrants and their families; failure to meet specified requirements may mean that entry is denied or can result in expulsion. For migrants already living in the country, failure to pass a test may incur sanctions which affect their civil rights, such as access to the workplace, social benefits, or democratic processes.

The Role of Language Assessment

Policy makers typically use the metaphor of "the journey to citizenship" in their presentation of immigration processes, but the "stages of the journey" and the appropriate roles that language learning and language assessment can play along the way tend to be poorly understood. This is often reflected in public discourse and reporting in the media (Blackledge, 2005, 2009).

If high-quality tests are to be developed and negative impacts avoided, it is important to understand this "pathway" better. Saville (2009) identifies six stages where bureaucratic procedures are typically encountered by migrants to many countries. He suggests that by focusing on the different factors which are relevant at each of these stages, better procedures for language assessment can be developed. (He also notes, however, that these stages are for analysis purposes only, and are not intended as recommended steps to follow in developing a migration policy.)

Stage 1 pre-entry in the country of origin, including visa applications
Stage 2 arrival and entry in the destination country including border controls
Stage 3 extension of stay—including renewal of visas for specified purposes
Stage 4 long-term settlement—the granting of indefinite leave to remain
Stage 5 application for naturalization (citizenship)
Stage 6 granting of citizenship—issue of a new passport and availability of travel visas

At each stage various forms of language assessment may be deployed as part of the procedure.

Testing at Stages 1 and 2 is typically carried out to grant initial access to a country in keeping with laws and regulations on border control. Testing at Stages 3 to 6 is typically carried out when resident migrants apply for longer-term settlement or citizenship. A discussion of the complex sociopolitical issues which are raised in relation to integration and citizenship is beyond the scope of this entry, but this is dealt with extensively in the literature on migration (e.g., Hogan-Brun et al., 2009).

Each stage may require tests with different technical features (formats, content, level of difficulty, etc.) which enable appropriate decisions to be made using the results. In all cases, tests with weak technical characteristics (e.g., poor reliability) inevitably lead to unfair outcomes for test takers. (See Bachman & Palmer, 1996, on developing useful tests and Kunnan, 2003, on test fairness.)

In order to judge whether a test is fit for its intended purpose at each of the stages, it is important to know how and why the test results will be used, and what the consequences will be for the test takers and other stakeholder groups. It makes a difference whether the test is meant to help migrants to improve their current competence in the target language, to ascertain whether their proficiency is sufficient for participation in well-defined social situations (for study or work), or to support decisions which affect their legal rights (their right to remain in the country or acquire citizenship).

Test takers need to understand the intended purpose so that they can prepare accordingly. Other members of society should also understand this so that the results can be interpreted correctly and used fairly. For example, a settled migrant (at Stage 4) might choose to take a test at the end of a language course as a record of achievement, perhaps to move up to a higher class or as a qualification for use in the workplace. Such a test should fit with educational objectives in keeping with lifelong learning and basic skills development. If a test is not linked directly to a course of study, but is taken in the country of origin (Stage 1) to determine whether a newcomer has the language skills to study for a PhD or to practice medicine, other considerations are likely to be important; the test will need to be widely available outside the destination country and be supported by systems to prevent cheating.

The relationship between language tests and language course provision is an important consideration. In some countries formal tests are not used, but attendance on "integration courses" with a language component may be a formal requirement or an option (see Gysen, Kuijper, & Van Avermaet, 2009).

Stages 1 and 2: Pre-entry and arrival

Demonstrating language proficiency as part of the process of entering a country as a newcomer (Stages 1 and 2) is not new and language assessment of various kinds was used for this purpose throughout the 20th century (Davies, 1997a; McNamara, 2005). In some cases, language tests were used explicitly as instruments of government policy to exclude certain groups and to prevent them from entering the country (e.g., the Australian Dictation Test; Davies, 1997b).

Language assessment has also been used to verify identity claims of refugees and asylum seekers entering a country without travel documents, for instance an interview conducted in a language of their country of origin to verify their provenance and thus eligibility for asylum status (McNamara 2005; Eades, 2009).

When tests are used in these contexts, the validity of such practices has been called into doubt. Spolsky, for example, has pointed out the potential negative effects arising where language tests are used for "gatekeeping" and raised serious ethical concerns (Spolsky, 1981, 1995; see also Hamp-Lyons, 1997).

Language tests are often used to select applicants for entry to academic programs or for recruitment purposes, and a specified score on a recognized test has commonly been requested by universities and employers. Language tests designed for this purpose have existed for many years, but, whereas in the past the required proficiency level was left to the discretion of universities and employers, increasingly the level is being set by government policy as a requirement for obtaining entry visas (e.g., within a points-based system).

For English-speaking countries, tests such as the TOEFL and IELTS were developed for academic purposes with predecessors dating back to the first half of the 20th century (Spolsky, 1995; Davies, 2008). Testing systems of this kind are typically designed to meet high technical standards and are supported by well-articulated validity arguments and research evidence. Concerns are sometimes voiced, however, if the test scores are used for purposes for which the test was not originally designed.

While it is generally accepted that students and skilled workers should show evidence of language proficiency before being granted a study or work visa, until recently family members were not typically tested for family reunion or family formation. However, in many countries the authorities now stipulate language requirements for spouses seeking to join a partner already living in the destination country. The use of language tests for this purpose is particularly controversial, and again ethical concerns have been voiced; critics for instance point to inappropriate uses of language tests to reduce marriages between second- and third-generation migrants and spouses from the "home country."

Stages 3 to 6: From Extension of Stay to Naturalization

Many migrants extend their stay for a number of years before returning home (Stage 3), but some decide to settle permanently. Eligibility for permanent residency is usually dependent on the number or years which the migrant has spent in the country. Additional requirements have been introduced in some cases, including the need to demonstrate a specified level of language proficiency prior to applying for settlement (Stage 4) or naturalization (Stage 5). Some cases have been documented in the language-testing literature (e.g., Cooke, 2009; Kunnan, 2009; McNamara, 2009).

The use of language tests, often combined with knowledge of society or "civics" tests, has become widespread but this has opened heated debates on a wider range of topics: the nature of citizenship, the role that language knowledge should play in being a citizen, language and identity, and the social dimension of assessment in general (Norton, 1995, 2000; Starkey, 2002; McNamara & Roever 2006).

Sociolinguists point out that knowledge of the national language can be used for unfair discrimination, and that language tests can be used as instruments of power to distinguish "insiders" from those who do not belong to the majority population, for instance to judge, to normalize, to quantify, to classify, or to punish (Bourdieu, 1991; Shohamy, 2001).

Some critics of citizenship testing have suggested that test features (e.g., content and level) can be deliberately manipulated to deny certain groups access to citizenship of the country they have lived in for many years or, in some cases, were born in. In such cases it is usually not possible to separate citizenship tests from the historical or sociopolitical context, as in the Baltic states after the fall of communism.

Investigating Impact

Not all commentators agree that language testing inevitably leads to negative impacts; some educationalists and test providers argue that assessment can play a positive role in helping migrants to integrate into society by supporting their learning and by recognizing their achievements. Some also argue that, if test developers and policy makers are encouraged to follow established codes of ethics and professional practice (e.g., ALTE, ILTA), suitable language tests can be chosen, constructed, and used appropriately (Saville & Van Avermaet, 2008). There needs to be informed debate which allows the different views, beliefs, and attitudes about assessment to be exchanged, and careful consideration given to the ways in which testing regimes affect people's lives and have potentially negative consequences.

Organizations such as the Council of Europe have played a leading role in arranging symposia and other events to facilitate this kind of interaction (see www.coe.int/ for thematic papers on language and social cohesion).

Investigating impact and washback needs to be an integral part of establishing the usefulness of tests for migration and citizenship purposes; this should entail collecting relevant data and, whenever necessary, taking action to improve both the tests and the uses to which the results are put. This is a shared responsibility between test providers and test users. Assessment professionals need to collaborate with the diverse stakeholders who use their tests (the test takers, teachers, bureaucrats, politicians, etc.) to collect the relevant information (the evidence). The resulting analysis can be used to evaluate fairness of the assessment regime as a whole and to identify where improvements can be made. In this way, both the technical and the ethical issues can be addressed, allowing stakeholders to be treated more fairly.

SEE ALSO: Citizenship Education; Fairness in Language Assessment; Uses of Language Assessments; Values in Language Assessment

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Suggested Readings

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Language Testing in Second Language Research

EMMA MARSDEN

Researchers investigating second languages (L2) use tests for many purposes and, therefore, use many different ways of defining, eliciting, measuring, and analyzing what it is to know and use a second language (for in-depth discussion see Bachman & Cohen, 1998). One of the most frequent reasons L2 researchers test language is to evaluate the effectiveness of second (including foreign) language teaching, ranging from whole teaching programs to a very brief and tightly focused intervention. Another reason L2 researchers use tests is to document interlanguage (i.e., what learners say or understand, when, and in which contexts) in order to theorize L2 learning and compare it to L1 or child L2 acquisition. Some L2 researchers strive to incorporate evidence about language acquisition into test development, and others investigate the tests themselves, with both educational objectives (e.g., validating test instruments) and theoretical objectives (e.g., defining constructs and models of acquisition).

Tests Used by L2 Researchers

Language tests used in L2 research are, generally, custom-made for the specific research questions or adapted from previous research. Each test is usually designed to measure (in either the written or oral modality) one construct, such as production of, comprehension of, perception of, opinion about, or online reactions to just one aspect of language competence. These aspects might include receptive vocabulary knowledge, one morphosyntactic paradigm or feature (e.g., inversion in *wh*-questions), one phonological process (e.g., word segmentation), one subset of pragmatic functions (e.g., apologizing), or one type of figurative speech (e.g., conceptual metaphors). A few studies, however, test several language features, such as a battery of morphosyntactic features (e.g., Ellis, 2005) or multiple aspects of pragmatic competence (e.g., Roever, 2005).

Alongside these custom-made tests, L2 researchers often also use general proficiency tests (e.g., IELTS, TOEFL) to allocate participants to groups representing stages of development. The purpose of such research is often to compare, either cross-sectionally or longitudinally, the results on the custom-made language tests across these different proficiency groups.

L2 researchers also use tests that tap into constructs such as aptitude, memory functions, and cognitive styles, or use self-report to elicit preferences and behavior data. They measure responses and reaction times in priming (Marsden, 2009; McDonough & Trofimovich, 2009) and eye-tracking experiments, as well as using neurolinguistic techniques. However, the focus of this entry is on instruments that measure direct evidence of language performance that was elicited for the purposes of the research.

Defining Constructs

Like any test designer, L2 researchers are concerned that their tests tap into the intended constructs. Defining these constructs is problematic, and four areas of debate are introduced in this section.

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Some L2 researchers argue that language competence is different from performance, meaning that representations of the L2 in the brain are not necessarily reflected by language performance on constructed response tests. This is one reason why some L2 researchers use selected response tests to elicit evidence about certain language features, that is, tests that are less similar to language use in the "real world," such as grammaticality judgment tests.

L2 researchers are increasingly addressing another, possibly related, dichotomy (or continuum): Tests that elicit offline production or comprehension (i.e., language knowledge and use) can obtain different results from tests which elicit fine-grained perceptual measures of online processing (e.g., Roberts, Gullberg, & Indefrey, 2008).

L2 researchers are also aware of whether tests elicit explicit knowledge that the learner is aware of and is accessible given sufficient time, or implicit knowledge that is not accessible to consciousness and can be accessed under time and communicative pressures (Ellis, 2004, 2005; Hulstijn, 2005; Ellis et al., 2009; Sanz & Leow, 2010; Marsden & Chen, in press). Many consider that implicit knowledge is less prone to corruption over time and space (e.g., different linguistic, social, or task contexts). On the other hand, explicit knowledge appears to be learned faster and more accurately by older learners, and may interface with implicit knowledge, yet may be more prone to variability over time and space, and between individuals. Some tests tend to tap implicit knowledge, for example elicited imitation, discourse-level oral production tasks under time and communicative pressure, and some timed grammaticality judgment tests. Other tests, which tend to tap more explicit knowledge, include those in the written modality, without time constraint, and those of word- or sentence-level knowledge.

Researchers also generally recognize that language behavior varies across different contexts and over time. In general, L2 researchers agree that learners' ability to do certain things can depend systematically, in many cases, on the measure used, and this impacts on research claims made. For example, Norris and Ortega (2000) found that when researchers measured outcomes using constrained response types (e.g., gap-fill), scores were up to three times higher than when outcomes were measured using metalinguistic judgment and free constructed responses (e.g., narratives) (see Tarone, 1998). Data from different linguistic and communicative contexts is therefore usually necessary to provide evidence about the stability (or instability) of a particular language feature, and it is widely accepted that some tests are better at eliciting certain constructs of language knowledge and use than others (Oller, 1983).

Test Design, and Related Methodological and Theoretical Concerns

Many test design decisions are similar to those facing mainstream test designers, such as which mode (production, comprehension, or both) and modality (aural, written, or both) to test as well as how to reduce bias due to test familiarity. As with all language tests, tests used in SLA research are subject to a play-off between internal and external validity. For example, more tightly controlled tasks tend to elicit more exemplars of intended constructs from more participants and to be more objectively scored, while the test is likely to be more artificial than more direct tests. However, high internal validity in terms of the research questions is paramount in L2 theory-building research, resulting in a tension between using ecologically valid measurements that could inform real-world problems (in, for example, education) and using measurements that could inform a learning theory. Many researchers aim to fulfill both these aims, which is another reason why batteries of tests are often considered preferable (Marsden, 2007).

Several challenges face L2 researchers designing tests to evaluate the effectiveness of one intervention type compared to another. For example, when measuring progression longitudinally, test scores may reflect a "learning from test" effect, a "maturational effect" (change over time), "regression to the mean," or all three, rather than the intervening experimental experiences. These problems point to the importance of control (test-only) groups and different versions of the "same" test. Similarly, familiarity between an intervention and test can cause bias in favor of one type of intervention. In addition, as every educational intervention has some kind of beneficial aim (be it motivational or one aspect of language competence), it is important that either all the interventions being evaluated have *identical* aims so that they can be evaluated using the same tests, or the test battery measures the potential benefits of *all* interventions being compared (Marsden, 2007).

One of the most frequent objectives of tests in L2 research is to measure one specific aspect of language, such as use of a phonological feature (e.g., a consonant cluster) or a particular pragmatic function, as noted above. Some of the principal ways in which this is done are now considered (examples of L2 research using them are given by Chaudron, 2003; Norris & Ortega, 2003; Ellis & Barkhuizen, 2005; Mackey & Gass, 2005; Gass & Mackey, 2007).

Oral production is useful as an elicitation type because it is believed to minimally allow for learners' access to monitored knowledge. Some examples include role plays, interviews, and communicative tasks (such as information-gap tasks) with non-native or native interlocutors, sentence and discourse completions, and story (re-)telling, in which participants can be given a visual or aural stimulus before or during the storytelling. One disadvantage of these production tests is that learners can avoid using certain language, making it difficult to distinguish a possible lack of competence from the possibility that the tests simply did not offer opportunity to display the competence. Tasks can be designed to make certain features "task-essential," though there is an inevitable tension between successful elicitation of particular forms and the extent to which the task naturally focuses on meaning.

In order to "trap" as many exemplars of a certain form in as short a space of time as possible, a range of other tests can be used. Elicited imitation tests direct learners to reproduce orally a sentence they have just heard whilst retaining the same meaning (Erlam, 2006). Learners are usually asked to respond to the sentence (e.g., "Do you agree?") before reproducing the sentence. The principle is that when a form is beyond the participants' abilities, it is repeated incorrectly or omitted. Another common technique is grammatical (or acceptability) judgment tests, in which learners have to state whether they find a sentence acceptable/unacceptable, correct/incorrect, possible/impossible, or would/would not be said by a native. Learners sometimes have to indicate the location of any unacceptable language, provide corrections, or indicate degrees of acceptability on a rating scale, or do all of these. Researchers sometimes impose a time constraint, calculated according to native baseline timings, and applied to either the whole test or each individual item. A related test requires learners to express a preference for one of a pair of sentences that differ in some respect, or to decide whether sentences are identical or not. The latter is based on the principle that reactions to matching ungrammatical sentences are slower than to matching grammatical sentences. There is some debate as to the nature of the knowledge elicited by such tests (e.g., explicit and/or implicit) and the effects that different methodological permutations have on this issue.

L2 researchers use a wide range of other prompted-response experimental tests, which provide aural, written, or visual input, or all three, and can be delivered in a controlled environment via a computer, using software such as EPrime (www.pstnet.com), or PsyScope (http://psy.ck.sissa.it) for Macs. For example, decision tasks require participants to choose between options, including pictures, sentences, morphosyntactic variants, referents, semantic or syntactic categories, or possible actors of a sentence. Other input-based techniques,

testing receptive language processing, include moving window reading or self-paced listening tests in which participants press a button to hear or see the next constituent, showing slower reaction times where difficulty increases.

There are also many ways of eliciting performance in which test takers can access explicit knowledge, such as written sentence or discourse completion tests or error correction tests. Gap-fill tests are commonly used, and can vary in terms of whether they are timed, whether the length of the missing feature is indicated, and whether picture or verbal prompts are provided (DeKeyser, 1990). Metalinguistic knowledge and awareness are also elicited via a range of tests, each with its own consequences in terms of validity and reliability (Elder, 2009).

Research into L2 lexical acquisition normally quantifies receptive and productive vocabulary via custom-made tests (e.g., yes/no recognition and word association tests) and analysis procedures, to measure constructs such as vocabulary breadth (size), lexical diversity (the number of different types of words used compared to the total tokens of words), sophistication (use of low-frequency words), density (the ratio of content and function words), and depth of knowledge (Malvern, Richards, Chipere, & Duran, 2004; Daller, Milton, & Treffers-Daller, 2007; Meara, 2009). Selected response tests assessing receptive vocabulary have been shown to have good reliability, perhaps more so than tests of other language domains (e.g., morphosyntax or pragmatics). Tests requiring productive vocabulary knowledge are, however, usually more dependent on the nature of the sample of learner language used to take the measurement (see, e.g., Marsden & David, 2008).

Scoring and Analyzing Tests

The scores from tests used in L2 research rarely have currency in the real world, and individual scores are usually anonymized. High-stakes testing is avoided to reduce factors such as anxiety, misconduct, or teaching to the test, which can threaten the validity of the results.

Nevertheless, as with any test, scoring performance is as central to validity and reliability as the test design itself (Weir, 2005, chap. 9). L2 researchers rarely use holistic, proficiency rating, or analytic scales. Instead, scoring and analysis are tied closely to the research questions (Ellis & Barkhuizen, 2005). Scoring is often discrete-point, with fixed denominators for constrained response tests, or is quantified in other ways. For example, production can be scored as "suppliance in obligatory contexts," in which denominators vary between individuals according to the number of contexts for the target form they produce. "Target-like use" is a variant on this that takes account of oversuppliance of a target form. Such analyses therefore provide information about both intended functions (e.g., expression of subjunctive mood) and use of specific language forms (Bardovi-Harlig, 2000).

L2 researchers are acutely aware of developmental trajectories, including backsliding (where non-target-like production increases over time), U-shaped development (where production begins target-like, then becomes less so and eventually returns to target-like accuracy), and gradual grammaticalization (where development follows documented stages). In light of this, target-like accuracy is not the sole criterion for scoring learning, and criteria depend on the frameworks under investigation. For example, many researchers use "interlanguage scoring," which rewards production of non-target-like language if this is considered to demonstrate development. Learners' performances can be compared to developmental hierarchies (e.g., Pienemann's, 2005, processability framework) in which the first non-formulaic production of a form (emergence) is evidence of acquisition, or performance can be compared to corpora that can be considered as baseline performance

(see www.splloc.soton.ac.uk/; www.flloc.soton.ac.uk/; http://talkbank.org/dataBiling-Bank/). Other measures include accuracy, fluency, and complexity scores, such as counts of errors, pauses, words, or clauses per "unit" (e.g., per T-unit, which is a main clause plus any attached subordinate clauses) (Skehan, 1998; Ellis & Barkhuizen, 2005). In generativist and interactionist frameworks learning is usually evidenced by native-like production and comprehension, and by native-like rejection of ungrammatical language. Most acquisition researchers seek evidence of system learning, that is, the ability to generalize a pattern, be it lexical, grammatical, or pragmatic, across different linguistic contexts or exemplars, thus distinguishing between tokens (raw numbers) and types (different versions) of a feature, rather than the learning of unique items, whilst constructivist perspectives often consider item learning as a key unit of analysis.

Researchers have different criteria for excluding participants from their final data pool. For example, effectiveness-of-intervention studies often exclude scores above a certain threshold before the intervention. However, this can bias the results, as regression to the mean (a statistical phenomenon whereby those achieving below the mean are likely to improve the most, and those achieving above the mean are likely to improve the least) could account for the improvement documented. This measurement error can be compensated for by having control (test-only) groups.

Future Directions

Given the study-specific nature of tests used in L2 research, they are rarely standardized, in contrast to proficiency or achievement tests. Although researchers increasingly report the reliability of their tests, with indices such as Cronbach alpha, inter-rater, and test–retest reliability, there is a need to establish standards for the development, use, and evaluation of instruments for measuring language (Chaudron, 2003; Norris & Ortega, 2003). One current barrier to this is that access to testing instruments used in L2 research is not easy. Also, space-limited journals usually include a brief description or sample of tests, and there is an increasing variety and sophistication of instruments used to elicit data on the same or related constructs. This situation contributes to a paucity of replication L2 research and makes systematic reviews and meta-analyses difficult (Polio & Gass, 1997; Porte, 2008), thus impeding the accumulation of evidence systematically related over time and space and hindering the assessment of the validity and reliability of language tests used in L2 research. However, an international digital repository of instruments used in L2 research (IRIS) is now available at www.iris-database.org, and, once widely integrated into the community's practice, this resource should help to address these concerns.

SEE ALSO: Assessment of Vocabulary; Instructed Second Language Acquisition; Online Psycholinguistic Methods in Second Language Acquisition Research; Rating Oral Language; Reliability in Language Assessment

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Language Testing in the Government and Military

MARGARET E. MALONE AND RACHEL LUNDE BROOKS

Introduction

Language testing in the context of the government and military most often refers to measuring language proficiency: the functional ability of personnel to complete operational tasks in the target language. While many associate government and military testing with proficiency testing, both government and military also rely on performance, aptitude, diagnostic, and achievement tests. Worldwide, government and military organizations face ever-increasing demands for personnel with various levels of language ability, providing a continual need for testing.

This entry addresses language testing in all government settings, including testing of civilian and military personnel. With such a broad, global scope, this entry focuses primarily on specific world areas that have had highly influential testing programs, such as the USA and Europe, and also provides information on international approaches to language testing, such as the North Atlantic Treaty Organization (NATO).

History

This section examines aspects of the history of language testing from post–World War II to the present, with an emphasis on government and military language testing in the USA and through NATO. While the emergence of the language testing field is traditionally associated with Lado's (1961) seminal work, the practical foundations for establishing standardized language testing had already taken root in the US military (Myron, 1944). For as long as language instruction has existed in academic and military contexts, there has been both formal and informal achievement testing. From the 1940s and 1950s, emphasis shifted to formal testing of proficiency, when the lack of aural/oral language skills in both the US military and the State Department helped drive the development of a national scale of proficiency in the 1950s. This development supported future standardization efforts internationally, and specifically in Europe.

Prior to the 1940s, government and military language training in the USA focused on reading rather than other domains. World War II and subsequent international conflicts illuminated the need for a focus on aural and oral language training (Velleman, 2008). American soldiers who had focused on reading skills were not linguistically prepared to meet the operational demands of their posts (Myron, 1944). With the shift of language teaching curricula toward more aural and oral methods came a shift in classroom testing practices. In the early 1940s, Kaulfers (1944) outlined a methodology for evaluating reading, aural, and oral language abilities, including rubrics and rating criteria, thus moving toward formalized military and government language testing.

The standardization of language testing was not only important for testing outcomes of language programs, but also for placing soldiers in language courses and determining

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post-training assignments. By the 1950s, the US government had developed an increased interest in language aptitude testing, focusing on both general language aptitude and aptitude for translation (Petersen & Al-Haik, 1976). In the early 1950s, the Department of Defense produced the Defense Language Aptitude Test (DLAT); soon after, Carroll and Sapon produced the Modern Language Aptitude Test (MLAT) in 1959, and other aptitude tests followed. Although developed for academic contexts, the MLAT was widely used by government agencies in both the USA and Canada. By 1976, the DLAT was replaced by Defense Language Aptitude Battery (DLAB); since then, both the Defense Language Institute Foreign Language Center (DLIFLC) and the Federal Bureau of Investigation (FBI) have used this instrument to determine an individual's suitability for a particular language training course.

While establishing ways to measure aptitude was important, finding ways to test the proficiency of US government employees and soldiers remained an issue. In 1952, the US Civil Service Commission was tasked with inventorying the language abilities of government employees, and thus standardized assessment criteria and procedures were paramount. Important to the project was a way to assess language proficiency regardless of how the language ability was attained. As no such criteria were found in academia, the US government undertook an initiative to develop its own (Herzog, 2008).

The need for this effort was crystallized with the results of a 1955 survey of Foreign Service officers. This survey showed that not even half the officers had sufficient language ability to conduct their work. As a result, an independent testing office at the US Foreign Service Institute (FSI) was established in 1958, which worked to develop criteria in a format that could be implemented reliably, later known as the "FSI test." Although the movement to develop standardized test criteria and administration was initially resisted, the FSI developed a rating scale, with six numeric score levels (0–5). In 1968, other US government agencies joined with FSI to develop parallel sets of criteria to cover not only speaking, but also listening, reading, and writing. These criteria became known as the Interagency Language Roundtable (ILR) Skill Level Descriptions. In 1985, the ILR Skill Level Descriptions were accepted by the US Office of Personnel Management as the official criteria for evaluating the language proficiency of US government personnel.

Around the same time, the need for information sharing on language learning and testing gained international recognition. In 1966, the Bureau for International Language Coordination (BILC), an advisory body for language training matters for NATO, was established through funding from the British Ministry of Defence. Recognizing a similar need as the USA for standard testing criteria, BILC adapted the ILR scale to create a Standardization Agreement for language testing, STANAG 6001 (BILC).

In subsequent years, both the ILR Skill Level Descriptions and the STANAG 6001 have undergone revisions and influenced the development of testing criteria for nongovernment contexts. By 1985, the ILR Skill Level Descriptions had been revised to incorporate "plus" levels, making it an 11-point scale.

As the USA's first nationally recognized scale of language proficiency, the ILR Skill Level Descriptions were popular across government agencies and the scale's influence spread into academia. However, ILR Levels 3–5 were difficult to attain in a purely academic setting, and the functional acquisition nature of the scale needed modification. Therefore, in the early 1980s, the Educational Testing Service and the American Council on the Teaching of Foreign Languages obtained a federal grant from the US Department of Education and developed the ACTFL/ETS Proficiency Guidelines (Savignon, 1985). To accommodate the lower proficiency needs of academia, the lower levels were expanded to include sublevels, and the three highest levels (3–5) were condensed into one level (Superior). The four major levels received names rather than numbers (Novice, Intermediate, Advanced, and Superior), and, by 1999, all major levels except Superior included three sublevels: Low, Mid, and

High. In addition to being used in secondary school and university settings, a number of related rubrics have been developed at the lower-grade levels based on these Guidelines.

As the USA came to rely upon the ILR for government and academic language testing, language professionals in Europe and beyond also created a common scale. The Common European Framework of Reference (CEFR) was developed to be used across Europe, and is also used, in revised form, in countries (e.g., Japan) on other continents. The CEFR is used to provide a common standard for evaluation of language proficiency and for determining objectives for various courses of studies and expectations for outcomes. While the CEFR shares some characteristics with the ACTFL Proficiency Guidelines, it is independent. A few studies have been conducted to determine alignment between the two (Mosher, Slagter, & Surface, 2007), and the self-assessment instrument LinguaFolio adopts aspects of both the CEFR and ACTFL Proficiency Guidelines; however, no definitive studies have found high correlations between the two in operational testing.

While CEFR has been useful in a number of situations, NATO continues to rely on STANAG. For example, the STANAG 6001 scale has been pivotal in several international military initiatives. In 1994, the Partnership for Peace Initiative called for Central/Eastern Europe, Caucasus, and Central Asia representatives to fill NATO positions. Each of these officials had to meet STANAG requirements prior to selection. The mid-1990s gave rise to the Peacekeeping English Project, funded by the British Ministry of Defence and the Foreign and Commonwealth Office, which provided assistance to 20 countries in English-language training and testing according to the STANAG 6001 criteria (Green & Wall, 2005). Language training and testing using STANAG provides common information on the numbers of troops that can participate in multinational efforts; proficiency of such participants must be certified by the STANAG scale. Such a proficiency certificate is a marketable plus on the civilian job market after retirement from the military.

Significance and Contributions

Language testing in the government and military has not only made a significant impact on the language testing and teaching communities, but also has contributed a great deal to the advancement of these fields across the world. This section reflects upon the significance and contributions of government language testing during the 20th century and considers how it has contributed to the development of additional tests.

Significance: Development

Language testing in the military and government has always been driven by operational demands. Historically, government and military agencies have used proficiency measures to evaluate the suitability of employees for language-related positions because these entities needed personnel that could complete a wide range of language tasks. These personnel, often referred to as "linguists," have typically been assessed in foreign language reading, listening, and speaking abilities, with the goal of ILR Level 2 or Level 3 proficiency, depending on the needs of the agency.

In the late 20th century, an interagency organization known as the Center for the Advancement of Language Learning (CALL) was established in the USA. One of the main efforts of CALL was interagency collaboration on language training and testing issues, including ensuring uniformity of testing standards and comparability of language tests given among different agencies. Various proficiency projects were established through CALL funding, including the Speaking Proficiency Test project to examine comparability in oral proficiency testing across government agencies. CALL's funding was discontinued in 1999; consequently, interagency collaboration was affected.

Around the turn of the millennium, the quantity of language assignments in the government and military increased manifold, and the range of languages required to fulfill these assignments not only broadened considerably, but continued to evolve (Nordin, 2001). The constant shift in operational language needs led to a continuing search for linguists who could meet the requisite high level of language proficiency for government positions. In order to meet the challenge of finding qualified linguists that could handle any task, government agencies began to meet their operational obligations by cultivating linguists who were specialists in certain types of language tasks. Initially, speaking proficiency tests became more and more tailored to the functions of a particular position rather than measuring general proficiency. Consequently, language testing evolved from a dependence on proficiency testing to the development of performance tests that were better suited to the needs of particular agencies. This shift was supported by research which indicated that proficiency scores were not reliable indicators of competence for language tasks such as translation (Lunde & Brau, 2005, 2006). At the FBI, exams were developed in listening, summary translation, verbatim translation, interpretation, and English monitoring. As a result, the ILR has produced Skill Level Descriptions for selected performance skills, including translation, interpretation, and audio translation.

Language Testing Today

Current government language testing has come far from the days of only proficiency and aptitude tests. In recent years, diagnostic testing has been used in various programs in an attempt to identify a learner's linguistic strengths and weaknesses so that they may advance their proficiency to the next level. Today, the reasons for language testing are varied, and language testing recurs throughout careers of US government and military personnel. Test scores are used for a variety of reasons, such as determining employment eligibility, job placement or assignment, promotion, incentive pay, and achievement.

Today, both the ILR and STANAG scales are still used, with the STANAG 6001 currently in its third edition, released in early 2009. BILC nations share resources and provide support for emerging military testing and training programs through workshops as well as site visits (J. DuBeau, personal communication, 2010). Similarly, the ILR still meets monthly in Washington, DC, and its testing committee continues to review and develop ancillary materials for the ILR scale (ILR, 2009), such as self-assessment guides and tutorials. Additionally, the ILR has undertaken development of Skill Level Descriptions for performance in translation (2006) and interpretation (2007), with other sets in development.

The beginning of the 21st century has brought about renewed collaborative efforts among agencies not only in the USA, but among government language testing programs around the world. Efforts in North America include regular interagency summits and research projects aimed at reestablishing communication and ensuring concurrent validity between agency tests. Agencies within the USA and among different national governments have shared established tests and testing resources. This collaboration has been particularly beneficial in languages determined to be of critical need, but the resources, both financial and of personnel, remain limited. Language testing is no longer an issue of interest only to the large agencies, such as the Department of State and the Department of Defense; smaller agencies have also been touched by the need for reliable language personnel on their staff. As this need continues to grow, efforts have been made to establish standards for developing and administering government tests by private or commercial organizations. Moreover, research into automation of test administration and scoring has led to a wider availability of testing resources.

Controversies and Issues

The government and military are inevitably political; therefore, as government and military language testing has contributed to the field, it has raised a number of controversies and ongoing issues. This section describes the controversies involved in the very existence of aptitude testing, the validity of the ILR Skill Level Descriptions, and criticisms of that scale and its spin-offs, such as the ACTFL Proficiency Guidelines. The reliability of the CEFR is also discussed, as well as the inherent difficulty in testing proficiency versus performance for government and military uses. The final issue examined is that of language pay.

Language aptitude testing provides an opportunity for government agencies, and particularly the military, to strategically use resources in only providing language training to those who are most likely to attain proficiency quickly (Petersen & Al-Haik, 1976). While cost savings is an important issue, equity is also important. Therefore, the issue of the validity of aptitude testing, and the potential impact for those who are not allowed access to language training based on low aptitude, emerges as a concern.

A second, and thorny, issue is that of the validity of the ILR Skill Level Descriptions and ACTFL Proficiency Guidelines. Although both scales are experientially grounded, the operational demands of the US government have allowed few resources to be devoted to publishing the empirical research that supports their construct. Consequently, the validity and application of the scales has been questioned by a great number of those in the field of language testing (e.g., Lantolf & Frawley, 1985; Bachman & Savignon, 1986; Chalhoub-Deville & Fulcher, 2003). Among other criticisms, researchers have questioned the native speaker ideal as the focus of the scales, as well as the lack of alignment of both scales to any construct of language acquisition. Lowe (1986) and others have defended the scales by stating that much of the criticism arises from misunderstandings of the scales' purposes and implementations. Despite these criticisms, the scales continue to be the most-used reference for measuring language proficiency in both government and academic contexts (Liskin-Gasparro, 2003).

The reliability of the CEFR is also in question. While the CEFR has been developed for widespread use across Europe and the world, the lack of a common test (such as the ACTFL Oral Proficiency Interview) makes common standards for reliability challenging. While North and Jones (2009) have recommended procedures for establishing reliability across different implementations of the CEFR, the lack of centralization and the diversity of users across the world will make reliability and alignment across different CEFR testing instruments challenging.

While language proficiency assessment may demonstrate the extent to which a proficiency level has been attained, it is equally important to ensure that the level being attained is adequate for the job being carried out (Jackson & Malone, 2009). It is not enough to test proficiency level; it is also vital to ensure that those being tested have attained levels that will not jeopardize their own and others' safety, and that responsible standard-setting studies are conducted. For government and military, such efforts are critical; standard-setting studies must be implemented to ensure that government and military testing is appropriate for the jobs for which such language is intended.

One potential result of the proposed studies and the establishment of such levels is incentive pay for language proficiency. A number of US government agencies offer incentive pay for individuals who have attained, as demonstrated through testing, proficiency levels needed for either current or potential tasks required by their employer. While this is laudable and encourages the development and maintenance of language proficiency, it also exerts pressure on language testers, who may feel compelled to give high ratings to ensure their colleagues' language pay. Oversight and inter-rater reliability studies,

including with raters outside of specific agencies, may help to alleviate the appearance of unreliability in ratings.

Future Directions

Language learning—and, therefore, language testing—becomes increasingly important with the growth of international communications in daily life. In order to reliably document and maintain high standards of language abilities, it is critical for language testing in the government and military to be accurate and fair. Comparability of language testing systems and standards must be explored and promoted worldwide. By ensuring the quality of people's language skills, proficiency testing can help to forward the goal of effective government and military communication, promoting international cooperation.

SEE ALSO: Assessment Across Languages; Ethics in Language Assessment; High Stakes Language Testing; Rating Oral Language; Uses of Language Assessments; Values in Language Assessment

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Language Teacher Training in Technology

GREG KESSLER

Teacher training in computer-assisted language learning (CALL) is an emergent area of increasing interest and varied influences. As CALL has evolved in recent decades, it has resulted in a complex and diverse array of instructional opportunities. Teachers are faced with a multitude of choices involving environments, resources, student abilities, mobility, automation, and access. Teachers are often overwhelmed by the technology that is available to them and feel unprepared to make informed decisions about the selection, creation, and use of a particular technology-based tool or resource. They are also generally uninformed about the potential assistance that technology can provide them with in their language-teaching pursuits, even when extensive resources are available to them (Ertmer, 2005; Kessler, 2007). It is clear that teachers are likely to use CALL when they appreciate the value it can add to the classroom, and they are likely to make better decisions about using CALL when they are properly prepared. Consequently, two important goals of training include raising awareness of CALL potential and reflecting on the decision-making process.

A Need for CALL Teacher Training

Research into CALL teacher training is a relatively new phenomenon, yet it has produced some interesting information. Recent research has suggested that teachers may not implement CALL following formal preparation (Egbert, Paulus, & Nakamichi, 2002). Other studies have found that formal CALL teacher training is often not required or available within preservice teacher degree programs, and when it is addressed it may be inappropriate, ineffective, or insufficient (Kessler, 2006; Hubbard, 2008). Other studies have suggested that CALL teacher training does not provide appropriate breadth (Peters, 2006), contextualization (Egbert, 2006), or attention to individual teachers' needs (Kessler, 2010). Perhaps for these reasons, graduates have reported dissatisfaction with the quality and nature of their CALL preparation (Kessler, 2007). Yet graduates of teacher preparation programs have indicated that they value CALL training, particularly preservice training within degree programs. In these contexts preservice teachers have expressed an appreciation for theory as a foundation for building necessary knowledge and skills (Slaouti & Motteram, 2006; Kessler, 2010). Thus, it has become necessary for language-teacher preparation programs to reflect on their CALL training offerings.

Much of the research into the use of CALL among language teachers has indicated an increased need for training. Kessler and Plakans (2008) noted a general lack of technology use in language curricula and practice. The authors also observed that CALL use may simply mimic traditional classroom practice while lacking and neglecting the potential to customize learning for individuals. Bax (2003) suggests that normalization, or the full integration of CALL within language pedagogy, should be the goal of CALL practitioners. Such normalization requires that teachers be as familiar with and conscious of aspects of CALL as they are other instructional tools such as pencils, books, and chalkboards. Chambers and Bax (2006) identified various barriers to normalization along with suggestions for overcoming many of these problems. Integrating technology into curricula and

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scheduling teachers to use technology spaces are foremost among their recommendations. However, some researchers have observed that the goal of normalization may be hampered by a lack of formal preservice teacher preparation for the use of CALL (Kessler, 2006; Peters, 2006; Hubbard, 2008) as well as a lack of contextualized training (Kessler & Plakans, 2008) and limited opportunities to reinforce the skills learned in CALL preparation after training is completed (Egbert et al., 2002; Hegelheimer et al., 2004). Barrette (2001) found that skills not practiced repeatedly were easily forgotten. Kessler and Plakans (2008) suggest that teachers be prepared in contexts relevant to their current teaching environments so that they may develop contextual competence in order to retain skills. Other studies have observed that technology integration among language teachers may rely more on individual teachers' backgrounds and use of technology in personal contexts than on the formal preparation that they receive (Egbert et al., 2002; Kessler, 2007).

Types of CALL Teacher Training

As research has found, both formal and informal approaches can remedy the current shortcomings in CALL teacher training. CALL training should provide insight into how students use technology. While teachers do not need to be familiar with the entire body of CALL-related research, they should have some understanding of the common pedagogical implications. Research investigating the use of computer labs, online environments, and mobile devices in student language learning should be accessible and well known to teachers, who should be familiar with a variety of technology tasks and activities that may be used for teaching individual and integrated language skills. Teachers should be aware of research into the way students interact in groups when using technology; they should also be prepared to perform action research or to reflect meaningfully on the way they integrate technology into their own teaching.

Formal CALL teacher training appears to have taken on numerous forms. Hubbard (2008) identified three primary types of CALL training courses, including breadth-first programs that provide a survey of the field of CALL prior to deeper investigation, depth-first programs in which teachers extensively learn how to use specific software prior to learning about other CALL topics, and online programs which utilize distance learning both as a means of instruction and a CALL-related topic. A variety of specific approaches have been outlined, including training that is programmatically integrated (Hegelheimer, 2006), and situated in specific contexts (Egbert, 2006).

Some have also offered informal alternatives to formal degree programs, including autonomous self-directed learning (Robb, 2006), communities of practice (Hanson-Smith, 2006), and formal mentoring (Meskill, Anthony, Hilliker-VanStrander, Tseng, & You, 2006). Integrated or institutional CALL use throughout language programs is often not available due to the overall lack of CALL teacher training. Often a single faculty member within an institution is familiar with CALL-related practices, thus relegating use to decentralized and individual practice rather than pedagogically integrated practice. Such isolated activity is not likely to be successful and often results in frustration for both faculty and students, as use of technology tools varies so dramatically from one term to the next. In order to encourage institutional expectations for CALL use, in-service, contextualized training can be introduced. There have been suggestions, however, that this short-term training may be inadequate for teachers who require more pedagogical context in training (Kessler, 2007) or those who feel overwhelmed when faced with changing technology needs (Kessler & Plakans, 2008). While much teacher training is done as short-term or in-service professional development, little research exists on the outcomes of this type of CALL teacher training.

What Language Teachers Need to Know About CALL

Hubbard (2008) outlined proposed roles of language-teaching professionals in respect to CALL. While the more advanced of these involve expertise in CALL, the expectation of proficiency with CALL for all language teachers is notable. This expectation is consistent with the teachers of English to speakers of other languages (TESOL) *Technology Standards Framework* (Healey et al., 2008). These standards set goals for teachers to use technology both in and out of the classroom for language teaching as well as for record-keeping and ongoing CALL-related professional development. These standards require an awareness of the usefulness of general desktop software (such as word-processing software, presentation software, and media players and editors), as well as online collaborative environments (such as virtual worlds, blogs, and wikis) and CALL-specific software (such as pronunciation tutorials, grammar tutorials, and writing aids). These expectations also suggest an ongoing need for investigation into effective CALL teacher-training practices. According to Hubbard (2004), students need to be trained to use CALL tools effectively. Such training requires that teachers are comfortable and confident with the CALL tools themselves.

Skills That Teachers Need to Implement CALL

While a foundational level of digital literacy is essential for any professional in our technologically sophisticated world, these skills alone should not be considered adequate. Just as professionals in other disciplines need to master technology tools, practices, and resources specific to their work, language teachers need to develop proficiency with CALL. Language teachers should be able to work with a variety of media that can greatly enhance language instruction, including text, images, audio, and video. Kessler (2007) found that graduates of TESOL MA programs were generally comfortable when working with text but did not feel confident about dealing with images. They were even less comfortable when working with audio and video materials. These forms of media offer great enhancement in the language classroom. Further, teacher comfort with technology may be misleading. Kessler and Plakans (2008) observed that university ESL teachers who were highly proficient with technology were less likely to use technology in innovative and integrated ways. Rather, those teachers who were less confident with technology demonstrated greater consideration and reflection when using technology in the classroom.

CALL teacher training and the development of technology skills, therefore, needs to maintain a focus upon pedagogical practice. Essential skills for the teacher range from the ability to evaluate the quality of Internet resources to the creation of each and every aspect of CALL-based instructional activity for specific groups of students. Within this spectrum there are numerous activities that can address pedagogical goals. Each of these skills can be directly applied to a range of CALL tools, resources, and practices. To illustrate this we can look at a single language classroom resource that may be used in numerous ways with different students in different classrooms for different purposes. In the following example the resource is a brief video (2–5 minutes) in the target language about a cultural event with a series of images and embedded text that is also read by a narrator. Table 1 includes skills that all classroom teachers should be able to demonstrate.

At the basic level a teacher is able to locate, evaluate, select, distribute, and integrate digital materials for instruction. At this level the presumption is that a teacher is not creating any materials but rather relying upon gathering from the wealth of existing materials available on the Internet, through communities of practice or otherwise shared with local and remote colleagues. Table 2 illustrates advanced skills that offer teachers greater control over materials.

Table 1 Basic CALL skills for classroom teachers

Skill	*Teacher action*
Locate	Use Internet search engine to find relevant movie files
Evaluate	Watch videos to determine if the language level is appropriate, if the content is accurate, if the quality of video is acceptable, etc.
Select	Select the file that best meets pedagogical needs
Distribute	Determine the best means for distributing a video file to students, including Web links, CDs, local files, etc.
Integrate	Construct a language lesson around the content of the video file that utilizes the images, audio, and text in meaningful pedagogical ways

Table 2 Advanced CALL skills for classroom teachers

Create	Create a video using a combination of personally created images, text, and voice recordings
Customize	Edit the movie file expanding the narration with a more challenging version for a higher-level class
Convert	Edit the movie file deleting the audio to utilize as a reading activity
Repurpose	Use instructional materials, media, or technology in multiple contexts with relatively minor alterations

As they progress, teachers are able to create, customize, and convert these materials for enhanced instruction. A teacher with these advanced skills has much greater control over the materials. Each step in the process gives increased control over decisions about each aspect of the project including the exact images used, vocabulary, speed of narration, etc. While this example is constructed around a video, the same skills can be applied to other resources and CALL-specific programs as well. Teachers are provided with opportunities to practice these skills in a meaningful context and are therefore more likely to retain what they learn.

Technology access varies dramatically across educational contexts. CALL teacher training needs to acknowledge the realities that teachers are likely to face after graduation. Schools may lack computers, reliable Internet access, or regular computer maintenance. In some cases, teachers are likely to be dealing with donated, obsolete or inoperable equipment. Reliance upon such equipment has a negative influence on teachers who might otherwise attempt to utilize technology in their language classes. It is important to identify a range of possibilities for instructional enhancement from a one-computer classroom to a fully immersive virtual environment. Further, providing teachers with skills and practice at troubleshooting common problems can help to increase confidence and use.

Adapting to New Technologies and New Teaching Contexts

Some have suggested that teacher preparation for CALL should address universal skills that can be used to exploit a variety of software and contexts (Hegelheimer, 2006; Slaouti & Motteram, 2006). This understanding is critical as it also encourages teachers to adapt

their extant knowledge and skill-set to new circumstances. For example, learning to copy and paste text inside a word-processing program can extend to copying and pasting text across applications (such as from a Word document to a Web browser). This same knowledge can be used to copy and paste audio and video in media-editing applications. Learning this one simple skill can allow teachers to create media-rich resources for their students. Not only can teachers learn to transfer their abilities across a spectrum of types of technology, they can also learn to transfer the use of these customized materials across teaching contexts. Audio and video materials that are created for a language-listening exercise may be just as useful in a reading exercise if they are pedagogically sound. Such materials may also be altered for new contexts or language levels. The ability to create, alter, and adapt materials is only limited by a teacher's awareness of the potential of CALL. Further, it is important that teachers develop the understanding that technology is an ordinary resource, not something exotic to be used only on special occasions.

The Future of CALL Teacher Training

We are just beginning to address language teachers' needs regarding CALL. As technology continues to improve, the availability of CALL teacher training is likely to increase. We can also expect that such training will become more common as a required component of language teacher preparation programs as well as in other professional development contexts. As CALL becomes more broadly integrated into language-teaching programs, it should also become integrated into teacher preparation and ongoing workplace professional development plans.

SEE ALSO: Assessment in the Classroom; Computer-Assisted Language Learning Effectiveness Research; Corpora in the Language-Teaching Classroom; Emerging Technologies for Language Learning; Intelligent Computer-Assisted Language Learning; Language Trainer Training in Technology; Online Communities of Practice; Technology and Learning Vocabulary; Technology and Teaching Writing

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Language, Culture, and Context

CLAIRE KRAMSCH

Introduction

Language in its relationship to the culture that it represents and the context in which it is used has been researched in fields as varied as functional linguistics, linguistic anthropology, cognitive linguistics, sociolinguistics, psycholinguistics, and the sociology of language. Each of these fields has its own theoretical underpinnings—some based in linguistics proper, some based in social and cultural theory, others in critical theory—and they are located to various degrees in a structuralist or a post-structuralist tradition (for a review from a pedagogical perspective, see Risager, 2007). The study of language in its social and cultural context is a cross-disciplinary endeavor that has been applied to real-world problems like the teaching of foreign languages and cultures (e.g., Byram, 1989; Kramsch, 1993, 1998; Risager, 2006) or professional encounters between doctors and patients, lawyers and clients, business executives and their customers in the general field of applied linguistics and intercultural communication. As an empirically based domain of research in the social sciences, it explores the relation between the three notions included in the title of this entry.

What Is in a Language?

Several notions are essential to understanding language in relation to culture and context. In the triad "language, culture, and context," language is not a bunch of arbitrary linguistic forms applied to a cultural reality that can be found outside of language, in the real world. Without language and other symbolic systems, the habits, beliefs, institutions, monuments that we call culture would be just observable realities, not cultural phenomena. To become culture, they have to have meaning. It is the meaning that we give to behaviors, foods, and ways of life that constitute culture.

Unlike the linguistic system that is the object of study of theoretical linguists and the grammatical system taught by many language teachers, language-in-context is seen as a coherent symbolic system for the *making of meaning*. To borrow a phrase from M. A. K. Halliday (1978), it is a "social semiotic," in other words a system of signs that are both arbitrary in their form and motivated in their use. For example, the fact that the same person can be referred to in the English language by nine letters "i-n-s-u-r-g-e-n-t" or two times seven letters "f-r-e-e-d-o-m f-i-g-h-t-e-r" shows how arbitrary these signs are in their form, but of course the choice of one sign over the other is not arbitrary at all; indeed, in this case it is politically motivated. It says something about journalists' political perspective and how they position themselves vis-à-vis the events they report on and vis-à-vis their readers.

In its use, the linguistic sign means more than its dictionary definition. M. A. K. Halliday developed a systemic-functional way of describing language as social semiotic. He asked: How does the structure of language reflect, express, and shape the structure of the social group in which it is used? He found that language as symbolic system has a triple relation to social reality: (a) It represents social reality by referring to the outside world, for instance

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a world of wars and insurgencies; (b) it expresses social reality by indexing social and cultural identities, for instance the political leanings of a speaker or writer; (c) it is a metaphor for reality as it stands for, or is iconic of, a world of beliefs and practices that we call *culture*, for instance, in the case at hand, the military culture of a nation at war, or the culture of well-balanced journalism, or a national culture that tends to divide the world into friends and foes.

Representation, indexicality, iconicity are processes of meaning making and of the making of culture. Because the focus is on the active processes of language use, rather than on the formal properties of a linguistic system, applied linguists like to use the term "discourse" instead of "language" when they study the links between language and culture. Pennycook sees verbal discourse as only one of the many modalities in which culture gets constructed:

> [D]iscourse does not refer to language or uses of language, but to ways of organizing meaning that are often, though not exclusively, realized through language. Discourses are about the creation and limitation of possibilities, they are systems of power/knowledge (pouvoir/savoir) within which we take up subject positions. (Pennycook, 1994, p. 128)

James Gee broadens the notion of discourse to encompass all aspects of what we usually call "culture": "A Discourse is composed of ways of talking, listening, reading, writing, acting, interacting, believing, valuing, and using tools and objects, in particular settings and at specific times, so as to display or to recognize a particular social identity" (Gee, Hull, & Lankshear, 1996, p. 10). For him, cultures are not only national entities, but any group linked by common interests or history. For example, law-school teachers and students enact specific social identities or "social positions" in the discourse of law school. This definition brings to the fore the tension between social convention and individual creativity that characterizes both language use and cultural context. Discursive practices have offered a fruitful methodological framework for studying the language, context, and culture nexus (Kramsch, 1993; Hanks, 1996; Risager, 2007; Young, 2009) as well as intercultural communication (Scollon & Scollon, 2001).

What Is in a Context?

How does culture shape and get shaped by discourse? In other words, how is a text related to the context in which it is produced and received? Barbara Johnstone (2008) identifies six aspects of the mutual shaping of texts and contexts.

Referential. Words refer to a social reality. But they also shape our perception of that reality and in turn social reality channels our use and misuse of words. Thus we can say that texts and their interpretation are shaped by the social, cultural, historical realities to which these texts refer and, in turn, texts contribute to shaping the very realities we live by. One prime example is the branding practices of the marketing industry. By carefully studying what words have the most desired emotional impact, marketing strategists like Frank Luntz can literally make people buy and wear Nike sneakers or drink Pepsi-Cola and thus change their way of life. As Pepsi and Nike become global commodities, the discourse used to advertise them shapes a global culture that threatens to supplant local national or regional cultures.

Structural. The spoken or written texts we produce are molded by what the language allows us to say, its grammatical affordances and constraints, its lexical resources. For example, English grammar shapes American newspaper headlines and thus sways American public opinion in ways that are different from German or French newspapers.

In turn, the context molds linguistic structures and even creates new ones, as is shown in the newspeak of Internet communication.

Interpersonal. While traditional grammars describe texts as formed of sentences, a discourse approach to language considers language as formed of utterances, produced by speakers, writers, or bloggers who want to make contact with other speakers and writers. Thus discourse is shaped by interpersonal relations among participants, whose social and cultural ties in turn shape what it is socially appropriate to say or write. For example, the reshuffling of social relations and cultural expectations through the Internet is realigning interpersonal relationships and reshaping the relation between the younger and the older generation in culturally dramatic ways around the globe.

Textual. Our utterances are not only constrained by the expectations of our interlocutors or readers, but by the expectations built over time by prior discourses, stored in memory, recorded on tape, or archived in libraries. These prior texts constitute intertextualities that channel our expectations about what future discourse will be like and how it should be interpreted. For instance, Martin Luther King's famous phrase "the fierce urgency of now," spoken on August 28, 1963, was referred to by Barack Obama in his campaign speech in Milwaukee on February 15, 2008, and is repeated in English and in Spanish by a US military ad to recruit Hispanics into the US army, thus adding an ambiguous surplus of meaning to all the texts involved.

Medial. The new information technologies have made it clearer than ever that texts are dependent on the technological dimensions of the contexts in which they are produced. We make meaning differently in face-to-face interactions, in handwritten or typed letters, on the telephone, via e-mail, in blogs, or on Facebook. Each technology has its generic conventions. The limitations and possibilities of the media influence what we may say (e.g., the small screen size of a Japanese cellphone novel) and, in turn, what we want to say prompts computer scientists to invent new media technologies (e.g., the demand for the speedy exchange of information was both the cause and the effect of the invention of the fax machine).

Silential. This last dimension points to the ultimate paradox of language in context. Language has to leave so many things unsaid in order to say many things. How do we choose among the many things that could be said? The utterances we speak, hear, read, and write are molded by our interests, our beliefs, our needs and desires, in short, our purposes. In turn, our needs and desires are molded by the range of available and possible words. For example, as Ian Hacking brilliantly argued, some mistreatments of children would not even be talked about nowadays if the term "child abuse" had not been coined in 1966 and brought into wide circulation (Hacking, 1999). A phenomenon that has no name has no social existence. The silential dimension of language points to one of the most vexing tensions between social convention and individual creativity; it highlights the symbolic struggles going on in the meaning-making world of culture.

What Is in a Culture?

It is not usual to view culture as a site of struggle. And yet, if we consider culture to be *the meaning that members of a social group give to the discursive practices they share in a given space and time and over the historical life of the group*, it is to be expected that not all members of a social group will agree on which meaning should be given to social phenomena and historical events. Culture is characterized by tensions between a shared dominant discourse (e.g., a national ideology), imposed by powerful institutions, and particular discourse varieties shared by social groups or individuals brought together by family, professional, ethnic, gender, or age-related ties. This tension is characterized by a struggle for the right to make meaning and to have that meaning shared by others. It is a struggle not only to

be listened to, but also to occupy a dignified subject position in space and history, and to have control over social reality and cultural memory.

The growing spread of a global culture of economic mobility, social change, and individual entrepreneurship has brought about a pressure to deinstitutionalize, deterritorialize, dehistoricize, and decontextualize national cultures in favor of a "flat" world of privatized, portable, flexible, and stereotypical cultures that can be reappropriated by the marketing industry in the service of a new fast capitalism. The commodification of culture is of great concern to critical applied linguists like Fairclough (2006) and Block and Cameron (2002). It has prompted some to search for a transnational language pedagogy to teach a more flexible "languaculture" (Risager, 2007). It has prompted others to advocate taking a more ecological perspective, one that views cultural events as embedded in multiple timescales (Lemke, 2000; Fill & Mühlhäusler, 2001; van Lier, 2002; Blommaert, 2005), all coexisting in what Blommaert calls "layered simultaneity" (2005, p. 130). Thus, for example, we find in the same place on the map: the slums in Mumbai (premodern timescale), a jumbo jet flying overhead (modern timescale), and the Internet access afforded by a Western visitor's laptop (late modern timescale)—all sharing the same space, but giving a multilayered meaning to the culture at hand and to the texts that such a culture produces.

Given the resulting fragmentation and homogenization of cultures, it is all the more necessary to be vigilant about how we use language to accelerate or on the contrary to slow down the forces of cultural hegemony. As several applied linguists have pointed out, countertrends are creating new ways of making meaning that are emerging as quickly as traditional cultures are being homogenized. Pennycook (2007) shows how rap culture and other forms of popular culture borrow from and diversify dominant cultures. By underscoring the performative aspect of verbal performance, he points to the potentially transformative impact of verbal art on the global culture of the young. Coupland (2007) and Rampton (1999) show the growing importance of style and stylistic variation in understanding culture. Blommaert (2005) emphasizes the importance of bringing back a historical perspective in the interpretation of cultural events. The current attention given to the symbolic and its impact on human emotions and subjectivity (see below) opens up new ways of being authentic and of defining "truth." We notice a renewed attention paid to the playful and the aesthetic dimensions of culture (Kramsch, 2009).

Language as Thought and as Communicative Practice

Making meaning inevitably raises the question of the relation between the way we speak and the way we think. If culture is the meaning we give to things, persons, and events, how do we explain the relation of mind and culture? Do words in one language make you think of things you could not even think of in another language? While language relativity has been a contentious issue ever since Whorf proposed the Sapir–Whorf hypothesis in the 1940s, it has now become a well-established fact that language shapes our thoughts and that learning a foreign language can give us new and unexpected thoughts (for a survey, see Kramsch, 2004). Cognitive linguists have found that the mind makes meaning through conceptual metaphors or idealized cognitive models of reality (ICMs), which are both mental and linguistic, and reflect and shape the way we view the world (Fauconnier & Turner, 2002). These ICMs can open up new ways of understanding the context in which we live (e.g., the metaphor LIFE IS A JOURNEY can give us the patience necessary to achieve our goals in life), but they can also restrict our understanding by making meaning seem fixed and unitary. These metaphors are not just nice figures of speech, they are mental spaces that shape a group's worldviews, attitudes, and beliefs—its culture—and make them seem natural.

The fixing or naturalization of meaning is of concern to applied linguists who study the relationship of language and ideology (e.g., Cameron, 2000; Fairclough, 1992). They note the increased commodification or instrumentalization of discourse (brands, logos, slogans, euphemisms, and other "hidden persuaders") for political or marketing purposes, exacerbated by the scope and speed of computerized communication. They also note that in a computerized culture, the notion of author has become increasingly problematic. On the one hand, "authors" of e-mails, blogs, tweets, and so on seem empowered in their ability to reach and network with others; on the other hand, the authority and legitimacy of their subject position seems less secure than in a traditional culture with greater institutional safeguards.

Text, context, and culture come together in the communicative practices of everyday life. Hanks (1996) shows how the most mundane language we use in everyday life is saturated with context. A simple exchange between Jack and Natalia at breakfast—"'D'the paper come today, sweetheart?' 'It's right on the table' "—makes meaning for the participants because all the contextualization cues (*the paper*, *the table*, *today*, *sweetheart*, *it*) point to a familiar environment, a familiar routine, a familiar human relationship—a communicative practice enacted by two habitus exquisitely attuned to each other. Their discourse bears traces of historical sedimentation and symbolic reenactments of the discursive practices that constitute their home culture. Communicative context has usually been studied in real life. But what about computer-mediated communication (CmC)? The increasingly multimodal nature of communication requires a sophisticated interpretation of what context and culture mean online and how they can be exploited to teach foreign languages and cultures.

SEE ALSO: Critical Discourse Analysis; Culture and Context: Overview; Gee, James; Halliday, M. A. K.; Intercultural Communication; Intercultural Discourse; Kramsch, Claire; Linguaculture; Multimodal Discourse Analysis; Pennycook, Alastair; Risager, Karen

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Language, Politics, and the Nation-State

JOHN E. JOSEPH

The "nation-state" is the concept of a continuous expanse of territory occupied in the majority by the people that has traditionally inhabited it, and governed autonomously by them. This people is assumed to be ethnically and culturally unified, with the principal cultural manifestations of their unity being shared religion and language.

In mainstream political thought for a period starting in the first decade of the 19th century and continuing to the early years of the 21st, the nation-state was taken to be an entity grounded in natural justice and rights, representing the best path to the peaceful coexistence of peoples. This ideology arose with the German Romantics, in opposition to Napoleon's ambitions within Europe, ambitions connected with the ongoing struggle of the European powers to amass overseas empires greater than one another's (see Joseph, 2006a).

Since then, it has been usual to think of the nation as something natural and organic, while the state, insofar as it is not coterminous with the nation, is artificial and arbitrary. In recent work on the ethics of identity, however, Appiah (2005, p. 244) argues that "if anything is arbitrary, it is not the state but the nation." Nations matter because of how individuals feel about them, based on shared experiences, especially of texts of various kinds. "States, on the other hand, have intrinsic moral value … because they regulate our lives through forms of coercion that will always require moral justification" (p. 245). This is particularly so in the wake of the 20th-century legacy of states undertaking "ethnic cleansing" through genocide, in order to turn the nation-state ideology into a reality on the ground, when the rise of minorities were perceived as a threat to it.

While Appiah's point about nations being arbitrary is well taken, the fact is that states are rescued from total arbitrariness only through texts, myths, and narratives connecting them to national identity. This can be a matter of shared descent; of a shared history of suffering, defeat, and triumph; of shared religious belief, especially if persecuted; and of shared language, which is taken as the proof of a shared national mind and soul. A national language is the ultimate unifying narrative—so it is not surprising that states invest so much effort and resource in fixing a standard form of the language and trying to control the inevitable forces of change and break-up into local varieties, as well as ensuring that the children of immigrants, if not the immigrants themselves, take up the national language, rather than or along with the home language, as their vehicle of identity.

The brief and necessarily incomplete survey which follows illustrates various ways in which nation-states have been imagined, reimagined, or unimagined through the politics of language: in the multistate peninsula of Iberia, the multinational state of India, the stateless Iroquois nation, and the nation-states of Ireland and Israel.

Iberia

The Renaissance saw the transition from a Europe of divine dynasties to one of political nations. The new ideology of nationalism stimulated the creation of national languages—French, Italian, Spanish, German, English, Danish, and so forth, starting from the basis of some existing dialect but remaking it, principally on the model of Latin, so that it would

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have what it took to be perceived as truly a "language," a fit vehicle for divine knowledge (see Joseph, 1987, 2006b).

The great question was which of the patchwork of spoken dialects that characterized each corner of the European landmass would be the basis of the new "national language." In principle any of them could fulfill this function, but in reality some of these dialects were championed by politically or culturally powerful partisans, others not. The *Diálogo de la lengua* (1737/1965, first written 1535–6) by Juan de Valdés is typical of a genre of this period in which arguments are made asserting the advantages of one vernacular dialect over others as the basis for the nascent national language. Valdés ties the presence of linguistic diversity directly to the absence of political unity and autonomy within a state, and to the fact that peripheral areas within a state have at least as much in common with neighboring states as they do with the center and the other peripheral areas of their own state.

> Marcio: Since we take the basis of the Castilian language to be Latin, it remains for us to say how it came about that in Spain are spoken the other four types of languages that are now spoken there, namely Catalan, Valencian, Portuguese, and Basque.
>
> Valdés: Two things are usually the principal cause of diversity of languages in a province: one is that it is not entirely under one prince, king, or lord, whence it proceeds that there are as many differences of language as diversity of lords; the other is that, since something always links provinces bordering on one another, it comes to pass that each part of a province, taking something from the neighboring provinces, gradually becomes different from the others, not only in speech, but also in conversation and customs. Spain, as you know, has been under the rule of many lords . . . This diversity of lordships has I think in some manner caused the difference of languages, although each of them conforms more with the Castilian language than with any other; because, although each one of them has taken from its neighbors, as Catalonia has taken from France and Italy, and Valencia has taken from Catalonia, on the whole you see that principally they draw on Latin, which is, as I have said, the basis of the Castilian language . . . (Valdés, 1737/1965, pp. 47–9, my translation)

The belief that Castilian had undergone less outside influence than Catalan or Valencian made its "Spanishness" seem less diluted, and understandable by more Spaniards than any of the more "eccentric" vernaculars. Valdés goes on to eliminate Basque and Portuguese from the equation by polar opposed strategies: Basque, he says, is simply too far from the rest to be understood, while Portuguese is too close to Castilian (they were much more alike in Valdés' time than today).

Valdés takes the center, protected from outside influences by its geographical position, to define the essence of the national character and its linguistic manifestations. But centers are relative. A Portuguese national language was brought into being after Portugal became a separate kingdom from Galicia in 1139, in large part by focusing on and exaggerating such differences from Castilian as could be found. Galicia itself was taken over by the Castilian monarchy in 1486, yet Galician, closer linguistically to Portuguese than to Castilian, continues to play an important role in Galician identity and movements for the restoration of independence. It has not been quite so dramatically successful as Catalan in this regard, probably because Galicia lacks the economic power of Catalonia and its capital Barcelona. The Catalan language also enjoys the status of official language of an independent state, Andorra, as well as being co-official in Catalonia itself, the Balearics, and Valencia.

The status of the Catalan language and its role as the principal language of education have been crucial to the nation's claims for statehood in recent decades. Meanwhile, however, Valencians have been asserting their own independence from both Spain and Catalonia,

and, not surprisingly, pointing to the differences between Valencian and Catalan as evidence for their separate nationhood. For Basque separatists, the linguistic isolation of the Basque language from all those around it is, of course, of immeasurable importance.

India

The independence of India and Pakistan in 1947 was a watershed in the wrapping-up of the European overseas empires. There was historically little attempt to mythologize India as a nation-state, given its great linguistic, religious, ethnic, and cultural diversity from north to south, with no one people clearly forming a core of "real" Indians. It was Britain that unified the subcontinent, and when India took independent statehood, English was the only language that all educated Indians shared, and that had functioned in the modern administration of the country. As the ex-colonial language, however, it carried with it a symbolic value directly at odds with that of the nationalist ideal, without which the new state appeared doomed to fragment.

The movement to establish Hindi as the nation's official language "aroused the provincial nationalism of the non-Hindi language group; stirred deep regional, communal, and cultural divisions; and forced the reorganization of state boundaries to the accompaniment of vast civil violence running into tens of thousands of deaths" (Passin, 1968, p. 453). The passions that have given rise to this state of affairs are illustrated by the following quotations:

> There is not a day to be lost. The Hindi noose is fast tightening round our necks. We have to act before the last breath is stifled. . . .
> We have to carry on a vigorous, relentless, and countrywide propaganda for English. The message of English should be carried to every nook and corner of this land . . .
> Never give in, Never give in! Never, Never, Never, Never . . .
> The victory will be ours. (John, n.d., pp. 49–52)

The view of Mahatma Gandhi, while more pacific, was no less strongly held:

> To think that English can become our national language is a sign of weakness and betrays ignorance.
> Then which is the language which fulfills all the requirements to be the national standard?
> We shall have to admit that it is Hindi.
> How can any Indian really be averse to Hindustani? . . .
> Only that language which the people of a country will themselves adopt can become national. However virile the English language may be, it can never become the language of the masses of India. (Gandhi, 1956, pp. 4, 146)

The solution arrived at was to make English an "associate official" national language, a status just below that of Hindi, and to allow wide berth for the use of other Indian languages at the state and territorial level. Currently 22 languages have this "scheduled" status. It is a cumbersome solution, but the politics of India have been such that granting recognition to many constituent nations has been the only way of keeping them together within the state.

Ireland

The United Kingdom of Great Britain and Ireland was established on the first day of the 19th century, January 1, 1801. Scotland and England had been joined by an Act of Union

in 1707, while Wales had merged into a single jurisdiction with England in the 16th century, the same period in which the 60-year-long Tudor (re)conquest of Ireland was undertaken. Great Irish estates and plantations were granted to English settlers in much the same way as in the southern American colonies.

Already at the end of the 19th century, Home Rule for Ireland became the great *cause célèbre* for center-left belief in the nation-state throughout the UK and beyond. The lack of concern for the population shown by English landowners during the Irish famine of 1740–41 became a national narrative giving the cause a moral foundation. In terms of national identity, religion was a significant factor, the majority of the Irish—especially the poor—being Roman Catholic. Linguistically, however, English was the dominant language. In order to further the nation-state cause, the Irish middle classes began to cultivate the Irish Gaelic which their ancestors had mostly given up (see Crowley, 2005). A series of Home Rule acts culminating in the partition of North and South in 1921 did not end the political cause, particularly among Irish Catholics in Northern Ireland, which remained part of the UK.

The ideology of Gaelic as the one true language of all Ireland—or rather, Éire—was strong enough for the Republic to introduce the language as a compulsory school subject, despite it having a small secular literature and no tradition of use in scientific or humanistic study. By the 1960s the popularity of Irish as a school subject was on the wane, as the dream of a Gaelic-speaking socialist nation-state went the way of other modern utopias. Still, the use of Gaelic names for key government bodies such as the Oireachtas (parliament), and posts such as the Taoiseach (prime minister), continues to fulfill a powerful identity function.

Iroquois

The Haudenosaunee (Iroquois) is a confederation of six (originally five) American Indian nations whose traditional lands make up most of the present state of New York. The confederation has a constitution, the Gayanashagowa (Great Law of Peace), which is recorded on a wampum (shell bead) belt that is apparently more than four centuries old, with the text itself representing an oral tradition that may go back a further four to six centuries (see Favor, 2003). These carefully preserved sacred belts were produced as evidence to French and British colonial officials, and later to the American government, of the six nations' right to inhabit their lands freely. As a constitution, they are what give the multinational Iroquois confederation the status of a quasi-state.

The document declares that it is only language that makes a nation: "The Great Creator has made us of the one blood and of the same soil he made us and as only different tongues constitute different nations he established different hunting grounds and territories and made boundary lines between them." Yet there seems not to have been an attempt to create an Iroquois language from the related Mohawk, Oneida, Onondaga, Cayuga, Seneca, and (later) Tuscarora dialects spoken by the people who made up the quasi-state. It is striking how much of the Gayanashagowa consists of texts to be recited at particular rituals, including funerals and the start of battles but also ritual meetings of the nations' councils. In the following excerpt from the constitution, nothing is said about the nations' linguistic differences.

> Should two sons of opposite sides of the council fire agree in a desire to hear the reciting of the laws of the Great Peace and so refresh their memories in the way ordained by the founder of the Confederacy, they shall notify Adodarho, [who], in conjunction with his cousin Lords, shall appoint one Lord who shall repeat the laws of the Great Peace . . .

> At the ceremony of the installation of Lords if there is only one expert speaker and singer of the law and the Pacification Hymn to stand at the council fire, then when this speaker and singer has finished addressing one side of the fire he shall go to the opposite side and reply to his own speech and song. He shall thus act for both sides of the fire until the entire ceremony has been completed.

This suggests that, at the time the text was composed, the five nations' languages were mutually comprehensible, even if recognized as different tongues. In later centuries, when linguistic change had widened the gap, the sacred status of the Gayanashagowa may have made it impossible to question whether the languages of the various nations might require reunifying. It would however be naive to suppose that, if a common Iroquois language had been created following processes similar to those which produced the European national languages, it would have made a great difference to the subsequent loss of Iroquois land and autonomy.

Israel

The state of Israel began as a concept long before it became a reality. In Europe in the second half of the 19th century, Zionism was a cultural and political movement, and it was then that the "revival" of the Hebrew language began with regular exchanges and columns in Central European Jewish newspapers. The Sykes–Picot agreement of 1916, which planned for breaking up the Ottoman Empire and putting the Middle East under the control of Britain and France, made the dream seem realizable. But only the revelation of the full scale of Nazi genocide in 1945 brought consensus over the moral imperative for the founding of a Jewish nation-state. Ironically, the ideology behind this was that same belief in the natural right of a nation to occupy its own homeland that had driven the Nazi genocide.

Those who came to settle in Israel were immediately confronted with their vast cultural differences, including the lack of a common language. The project of reviving Modern Hebrew now became a political necessity—but in fact the idea that the modern language is the ancient one revived is part of the narrative establishing the cultural-psychological existence of a Jewish nation and its right to occupy this particular territory. In fact the grammatical structure of Ivrit (modern spoken Hebrew), which linguists take to define the "real" nature of a language, is very different from that of the ancient tongue, reflecting a creolization of the modern language's substrata, including spoken Palestinian Arabic, Yiddish, Judeo-Spanish, and a range of Slavic languages (see Zuckermann, 2003). In addition, the myth grew that the revival was the work of one scholar, Eliezer Ben-Yehuda, making what was a long and rather haphazard process appear rational and controlled. This gave Ivrit a claim to modernity, hence fitness to function in all spheres of life, including science, alongside the claims of its ancient authenticity.

Conclusion

The unanswerable question for now is whether national languages, together with the nations to which they are attached, represent a historical phase that is on a course of decline heading for eventual disappearance, or an invention that has proven too useful for human social organization to be given up. Pace Butler and Spivak (2010), it will be some time before analysts can assess the accuracy of the widespread belief that the restoration of globalization since the early 1990s is responsible for the reduction of loyalties to the state units fixed in the 19th and 20th centuries, in favor of regional or tribal loyalties. Considerable

evidence suggests that what has been happening should in fact be called "glocalization"—a term coined to denote the combination of globalization with the resurgence of local, subnational sites of belonging.

SEE ALSO: Cultural Identity; Language Policy and Planning: Overview; Language Problems as Constructs of Ideology; Language Rights in Language Policy and Planning; Nation; National Language and English in India; Role of Language and Place in Language Policy

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Languaging: Collaborative Dialogue as a Source of Second Language Learning

MERRILL SWAIN AND YUKO WATANABE

A theoretical claim is that languaging is a source of second language (L2) learning (Swain, 2006, 2010). The concept of languaging derives from Vygotsky's work which demonstrated the critical role language plays in mediating cognitive processes. Language and thought are not the same thing; in fact, Vygotsky argued that language "completes thought." In essence, we can think of languaging as an activity, a "process of making meaning and shaping knowledge and experience through language" (Swain, 2006, p. 98), and as such, it is part of the process of learning. The verb languag*ing* forces us to understand language as a process rather than as an object.

When confronted with a complex problem, we may speak with another person about the problem and how to solve it (collaborative dialogue, interpersonal communication), or we may speak aloud or whisper to ourselves (private speech, intrapersonal communication). These are two types of languaging. Talking with (or writing to) others and talking with (or writing to) oneself are connected theoretically and in practice. As with any example of languaging, the goal is to solve a complex cognitive problem using language to mediate problem solution.

In this entry, we first define collaborative dialogue (a type of languaging). Following that, we discuss some of the research which suggests that collaborative dialogue is a source of L2 learning and development, and ways in which collaborative dialogue mediates L2 learning and development. This is followed by a discussion of studies which consider the impact context has on the quality and quantity of collaborative dialogue. We conclude with a statement of why collaborative dialogue is important to both learners and teachers of second or foreign languages. Our focus throughout this entry is on research concerning collaborative dialogue *between peers* in the area of second or foreign language education. We include studies that (a) explicitly use the term collaborative dialogue, or (b) provide data which we consider to be examples of collaborative dialogue although the researchers may label it differently.

Definition

Collaborative dialogue has been defined as dialogue in which speakers are engaged in problem solving and knowledge building (Swain, 2000). Collaborative dialogue may be about anything (e.g., mathematics, physics, language). During collaborative dialogue, one or both speakers may refine their knowledge or come to a new or deeper understanding of a phenomenon. Speakers (or writers) are using language as a cognitive tool to mediate their own thinking and that of others. Speaking produces an utterance, a product (an artifact) that can be questioned, added to, discredited, and so forth. This action of co-constructing meaning is collaborative dialogue, and is a source of language learning and development.

The example below is illustrative. In this example, two grade 8 French immersion students, Doug and Kathy (pseudonyms), are in the process of writing out a story based

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on a set of pictures they have been given (see Swain & Lapkin, 1998, for details of the task). In the part of their dialogue provided below, they are working out how to write in French their intended meaning, "while she combs her hair and brushes her teeth," to complete what they have already written, "*Yvonne se regarde dans le miroir* . . ." ("Yvonne looks at herself in the mirror . . ."). The translation of what Doug and Kathy say is in **bold**.

1 Kathy: Pendant qu'elle brosse les cheveux.
(while she brushes her hair)
2 Doug: Et les dents.
(and her teeth)
3 Kathy: Non, non, pendant qu'elle brosse les dents et . . .
(No, no, while she brushes her teeth and . . .)
4 Doug: Elle se brosse . . . elle SE brosse.
(She brushes . . . she brushes [emphasizes the reflexive pronoun])
5 Kathy: Pendant qu'elle se brosse les dents et peigne les cheveux.
(While she brushes her teeth and combs her hair)
6 Doug: Ya!
7 Kathy: Pendant qu'elle . . . se brosse . . . les cheveux, I mean, no, pendant qu'elle se PEIGNE les cheveux.
(While she . . . brushes . . . her hair, I mean, no, while she COMBS her hair)
8 Doug: Ya.
9 Kathy: Et se brosse . . .
(And brushes . . .)
10 Doug: Les dents.
(Her teeth.)
11 Kathy: Pendant qu'elle SE peigne les cheveux et SE brosse les dents.
(While she combs her hair and brushes her teeth [emphasizes the reflexive pronouns])
(from Swain, 2000)

In this example, we see Kathy and Doug co-constructing the second half of the sentence. They end up with the complex and correct structure "*pendant qu'elle se peigne les cheveux et se brosse les dents*" ("while she combs her hair and brushes her teeth"). To do so, they had to consider which verb goes with which noun, and the reflexive nature of the particular verbs they were using. Kathy started off with "*brosse les cheveux*," a phrase that directly translates the English "brushes" and "hair." Doug's offer of "*et les dents*" ("and her teeth") in turn 2, however, triggered Kathy to reject her verb/noun collocation of "*brosse/cheveux*" and replace it with the more usual collocation of "*brosse/dents*" (turn 3). Doug quickly reacted to Kathy's use of "*brosse*" in turn 3 by pointing out through emphasis in turn 4 that "*brosse*" is a reflexive verb: "*elle SE brosse*." Kathy incorporated this information in turn 5 for "*brosse*" and generalized it (correctly) to "*peigne*" in turn 7 although her focus in turn 7 was on using the verb that best accompanied "*les cheveux*." In turn 9, with Doug's encouragement, she continued with "*et se brosse*," then hesitated. Doug again provided her with the appropriate noun "*les dents*." In turn 11, Kathy shifted her focus to the form of the verbs as reflexives, thus fully incorporating Doug's contributions to this conversation.

The dialogue between Kathy and Doug represents "collective cognitive activity which serves as a transitional mechanism from the social to internal planes of psychological functioning" (Donato, 1988, p. 8). Through it, they regulated each other's mental (and affective) activity, and their own. Their dialogue provided them with opportunities to co-construct a complex linguistic structure by focusing their attention and providing opportunities to revise their own language use.

Collaborative Dialogue as a Source of Learning

A number of studies have suggested that peer–peer collaborative dialogue is *a source* of L2 learning. Donato's (1994) pioneering study examined the collaborative dialogue of three university learners as they jointly constructed a scenario to be performed in French, the foreign language they were studying. The analysis of the collaborative dialogue revealed that the three learners, regardless of their linguistic abilities, provided mutual support to each other in order to solve the linguistic problems that they encountered, much as Kathy and Doug did in the example above. Some of the forms that the students collaboratively constructed were successfully reused after their interaction when they role-played the scenario. Donato's study demonstrated that although the students were individually novices, collectively they were experts who created linguistic forms that none of them could have created on their own.

Swain and her colleagues have shown how peer–peer interaction provides L2 learners with an opportunity to engage in collaborative dialogue as they seek out and provide assistance with language-related problems (e.g., Swain & Lapkin, 2002; Watanabe & Swain, 2007; Brooks & Swain, 2009). These studies used language-related episodes (LREs) as a unit of analysis to operationalize the construct of collaborative dialogue. Swain and Lapkin (1998) defined LREs as "any part of a dialogue where the students talk about the language they are producing, question their language use, or correct themselves or others" (p. 326). In other words, through collaborative dialogues, students form and test hypotheses about appropriate and correct use of language, as well as reflect on their language use. By using posttests tailor-made to the LREs produced by each pair of students, it is possible to trace the L2 learning that occurred during the LRE. Thus an LRE is a useful unit for understanding the process and product of L2 learning. In effect, LREs represent L2 learning in progress.

Other research has explored whether peer–peer collaborative dialogue is more effective in learning vocabulary and grammar than working alone. When the solitary condition involves the use of private speech (versus think-alouds, which do not necessarily serve the same mediating function as private speech), the two conditions appear to produce comparable results. For example, Borer (2007) explored the effect on learning L2 vocabulary of languaging in the form of collaborative dialogue and private speech. She examined eight English for academic purposes (EAP) students who were learning five unknown words when working alone and five different unknown words when working in pairs. Borer found that individual and pair conditions were equally effective. Other research examining whether collaborative dialogue is more effective than private speech in learning vocabulary (Kim, 2008) and L2 grammar in writing (Storch & Wigglesworth, 2007) found the results favored the pair condition

Mediational Means Used During Collaborative Dialogue

Research has examined the use of different mediational means during collaborative dialogue. These mediational tools include scaffolding, the use of the L1, and repetition.

Scaffolding

The concept of scaffolding (Wood, Bruner, & Ross, 1976), the process by which an adult assists a child to complete a task beyond the child's actual developmental level, initially referred to adult–child interaction only. However, researchers who applied the notion of scaffolding to peer interaction demonstrated that peers can simultaneously be experts and novices and thus are able to provide scaffolded assistance to each other (e.g., Donato, 1994; Ohta, 2000). These studies have contributed to the extension of the concept of scaffolding

from the unidirectional help of the expert to the novice to an opportunity for learning and development for all learners.

For example, Villamil and de Guerrero (1998) examined the collaborative dialogue that occurred during two peer writing revision sessions carried out by seven pairs of adult learners of English. The data indicate that a large majority of modifications (74%) discussed during peer revisions were incorporated into the final drafts. The researchers also found evidence of development in the learners' shift from other-regulation to self-regulation while engaging in collaborative dialogue.

Use of L1

Use of the L1 in L2 classrooms is a controversial issue. Sociocultural theorists argue that L1 has a place in the second language classroom because it is a cognitive tool essential to make sense of the L2 learning process. Antón and DiCamilla (1998) investigated the socio-cognitive functions of L1 use in the collaborative dialogue of adults learning Spanish as an L2. Qualitative analysis of five dyads working collaboratively on writing tasks demonstrated how the L1 mediated intersubjectivity and externalization of inner speech (i.e., private speech) during cognitively difficult activities.

In their examination of the collaborative dialogue between university ESL students as they engaged in peer revision of their L2 writing, Villamil and de Guerrero (1996) found that the learners used their L1 to make meaning of text, solve language-related problems, generate ideas, gain control of the task, and maintain dialogue. Villamil and de Guerrero's study underscored the importance of the L1 as an essential cognitive tool for the learners' collaborative problem solving.

Repetition

DiCamilla and Antón (1997) examined the use of repetition to mediate solutions to language-related problems. The participants in their study were adult L2 Spanish learners engaged in collaborative writing tasks. DiCamilla and Antón concluded that in peer–peer collaborative dialogue, repetition functioned to create and maintain learners' shared perspective of the task and mediated the co-construction of linguistic knowledge.

Contexts Implicated in the Quality and Quantity of Collaborative Dialogue

Recent studies on collaborative dialogue have focused on how aspects of the context affect the quality and quantity of collaborative dialogue. The research to date has examined patterns of pair interaction (e.g., Storch, 2002), the level of L2 proficiency (e.g., Leeser, 2004; Kim & McDonough, 2008; Watanabe, 2008), type of tasks (e.g., Swain & Lapkin, 2001; de la Colina & Garcia Mayo, 2007), and computer-mediated communication (CMC) (e.g., McDonough & Sunitham, 2009; Zeng & Takatsuka, 2009).

Patterns of Pair Interaction

Storch (2002), in her study of collaborative tasks in an adult ESL classroom, uncovered four different patterns of pair interaction that influenced the degree of collaboration and opportunities for learning. In the collaborative pattern, both learners work together throughout the task completion process and are willing to share ideas with each other. In dominant/dominant pairs, there is an unwillingness or incapacity to engage with each other's contribution. Dominant/passive pairs involve a dominant participant with an authoritarian stance who takes control of the task, and a passive partner who maintains a subservient

role. In expert/novice pairs, the more knowledgeable learner (expert) actively encourages the less knowledgeable learner (novice) to engage in the task. Storch found that the pairs with a collaborative orientation (collaborative and expert/novice) afforded more opportunities for learning than the pairs with a non-collaborative orientation (dominant/dominant and dominant/passive). Using Storch's (2002) framework, Watanabe and Swain (2007) proposed an additional pattern of interaction (expert/passive), indicating a need for further study in this area.

Proficiency Differences

Kowal and Swain (1997) documented that in a highly heterogeneous grouping (e.g., upper-middle and low), the stronger student tended to carry out most of the work either because the weaker student was too intimidated to say anything, or was willing to let the stronger student do the task, or was not allowed to do any of the task whether their opinion was valid or not. A successful support framework for group members requires respect for one another's perspectives and trust in each other's opinions. This may be difficult to achieve when proficiency differences are too large.

Leeser (2004) focused on the impact of learner proficiency on collaborative dialogue in an adult L2 Spanish class as they engaged in a dictogloss task. Leeser analyzed the frequency, type (i.e., lexical or grammar-based) and outcomes of LREs (i.e., problem solved correctly, not solved, or solved incorrectly) produced by three different groupings of learners: high–high, high–low, and low–low. Leeser found that as the overall proficiency of a pair increased, the learners produced a greater number of LREs, correctly resolved more LREs, and focused more on form than on lexical items.

Watanabe (2008) and Watanabe and Swain (2007) investigated how four adult ESL learners each interacted with both more and less proficient peers and how their interaction affected the nature of collaborative dialogue and L2 learning. The analysis of the collaborative dialogue and patterns of pair interaction as well as pre- and posttest scores suggested that the patterns of pair interaction greatly influenced the frequency of LREs and posttest performance. When the learners engaged in collaborative patterns of interaction, they were more likely to achieve higher posttest scores regardless of their partner's proficiency level. The researchers thus claimed that proficiency differences did not seem to be the decisive factor in affecting the nature of collaborative dialogue. Rather, the pattern of interaction co-constructed by both learners had a greater impact (see also Kim & McDonough, 2008).

Type of Task

Researchers have also explored whether the type of task affects the quality and quantity of collaborative dialogue (e.g., Swain & Lapkin, 2001; de la Colina & García Mayo, 2007). Swain and Lapkin (2001) examined how different task types (jigsaw and dictogloss) encouraged form-focused LREs of grade 8 French immersion students in two different classes. The students in one class engaged in a jigsaw task while the students in the other class completed a dictogloss task. No significant differences were found between form-focused LREs generated by the two different tasks (see also de la Colina & García Mayo, 2007). Both tasks generated a comparable and substantial proportion of form-focused LREs. The most salient difference was that the dictogloss imposed a smaller range in the total number of LREs produced by the students relative to the jigsaw task.

Computer-Mediated Communication (CMC)

CMC is a relatively new interaction context that has begun to be investigated. Studies have explored the role of peer–peer (face-to-face) collaborative dialogue at the computer (e.g.,

McDonough & Sunitham, 2009) and text-based (online) collaborative dialogue (e.g., Zeng & Takatsuka, 2009).

McDonough and Sunitham (2009) investigated whether Thai EFL learners reflect on and remember language forms during computer-mediated collaborative tasks in a self-access environment. The analysis of LREs and tailor-made tests of 48 Thai EFL learners indicate that they successfully resolved the majority of their LREs in collaboration with their peer. However, it was found that learners remembered only one-third of the grammatical forms and less than half of the lexical items that they had discussed. The authors speculated that because the computer activities were not connected or reinforced during class time, the learners might have had little motivation to remember the language items.

Zeng and Takatsuka (2009) examined the collaborative dialogue between Chinese EFL learners as they carried out collaborative tasks in a CMC context using online chat. The researchers found that the learners provided assistance to each other in attending to language forms, which promoted metalinguistic awareness. The analysis of LREs showed that the students produced a high frequency of LREs and successfully resolved most (90%) of the emerging language problems. The results of two tailor-made posttests suggested that collaborative dialogue was a source of L2 learning.

Conclusion

The studies we have discussed indicate how languaging as collaborative dialogue is a source of L2 learning. Analyses of learners' collaborative dialogues have shown how L2 learners use language as a cognitive tool to mediate their thinking, and how talking about the language mediates L2 learning and development. Evidence that collaborative dialogue is a source of L2 learning is based on tracing relationships between collaborative dialogue as process and product, and tailor-made posttests. Still under-researched is whether collaborative dialogue mediates the learning of L2 reading and listening, and L2 pragmatics. Also worthy of exploration is how the presence of specific artifacts such as textbooks affects the quality and quantity of collaborative dialogue. The importance of collaborative dialogue to teachers and learners of second or foreign languages is that by listening to it, insights into the cognitive and affective processes that learners are using in their particular learning/teaching context are inevitable.

SEE ALSO: Inner Speech in Second Language Acquisition; Internalization in Second Language Acquisition: Social Perspectives; Language Play in Second Language Acquisition; Lantolf, James P.; Ohta, Amy Snyder; Private Speech in Second Language Acquisition; Sociocultural Theory Approaches to Second Language Acquisition; Swain, Merrill; Vygotsky and Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Lantolf, James P.

DERYN P. VERITY

James P. Lantolf (1947–) is the scholar whose name is most closely associated with the development of the Vygotskyan, or sociocultural (SCT), paradigm of second language acquisition research. He is currently the Greer Professor in Language Acquisition and Applied Linguistics in the Department of Applied Linguistics at The Pennsylvania State University, director of the Center for Language Acquisition, and codirector of CALPER (Center for Advanced Language Proficiency Education and Research).

Lantolf's work over the past three decades has been to explore the ideas of Lev Vygotsky and other Russian writers such as Luria, Leontiev, Galperin and others, and to apply them to the central questions of SLA. The success of his efforts has resulted in a radical shift in the locus of our attention and understanding: where once learners were assumed to be isolated individuals who "process input," the field now recognizes that learners are socially and culturally situated agents who appropriate language and meanings through mediated activity (i.e., through using language and other sign systems and tools). It is thanks to James Lantolf that students of SLA are now routinely introduced to such concepts as the zone of proximal development (ZPD), mediation, scaffolding, and self-regulation.

Lantolf, who started out as a scholar of Spanish linguistics, was invited to join the new linguistics program at the University of Delaware in 1980. There he was introduced to the ideas of Vygotsky by colleague William J. Frawley. Over the next decade, several iconoclastic articles appeared (e.g., Frawley & Lantolf, 1984; Frawley & Lantolf, 1985; Lantolf & Frawley, 1988) which criticized the information-processing and "conduit" metaphors that informed SLA research at the time. These papers reconceptualized familiar topics such as L2 speaking, proficiency testing, and second language discourse in terms of Vygotskyan theory, that is, as examples of goal-oriented activity with a complex, and not necessarily transparent, internal structure.

During these early years, this new way of looking at language, acquisition, and learners was quite unfamiliar and sparked resistance from researchers committed to what Lantolf considered the overly reductionist focus of mainstream SLA thought. Critics found SCT irrelevant, or criticized it for being relativistic and extreme. Lantolf's commitment to challenging orthodoxy in SLA discourse has remained firm: as he said once in a response to a critic, "It is the responsibility of the field to interrogate its own practices from within" (Lantolf, 2002, p. 77).

To counteract the lack of familiarity that even willing audiences brought to his discussions, Lantolf regularly included introductory remarks on Vygotsky's life and work in every article. To review his writings from the 1980s and early 1990s is to obtain an abbreviated but insightful education in the three basic tenets of the SCT paradigm of SLA: (a) *the social origin of cognition*—thinking has its source in the sociocultural world created by purposeful human activity; (b) *language as primary semiotic system*—all interaction with the world is not direct but mediated, that is, language both shapes, and is shaped by, our social and cultural circumstances; and (c) *the importance of the genetic heuristic*—end results are opaque: to truly understand something, we must lay bare the history, or genesis, of its development.

Nevertheless, SCT remained on the fringes of SLA discourse for some time. Even after a decade of work, Lantolf felt compelled to include a good measure of biographical and

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explanatory information about Vygotsky's life and work in the foreword to his first book of collected research essays on SCT (Lantolf & Appel, 1994). Still, the year 1994 marked an important milestone. Not only was the book published, exploring motivation, collective scaffolding, inner speech, and other topics that could be understood "more fully" by seeing them through a Vygotskyan lens (Lantolf & Appel, 1994, p. 27), but Lantolf also served as guest editor for a special issue of *The Modern Language Journal* entitled "Sociocultural Theory and Second Language Learning" (Lantolf, 1994). These two publications brought a critical mass of SCT scholarship to the attention of a wide readership.

Lantolf moved in 1991 to the Linguistics Department at Cornell University. His tenure there included coeditorship of the journal *Applied Linguistics* for five years, and the establishment in 1993 of the Sociocultural Theory Second Language Learning Working Group, which continues to hold regular annual seminars.

In 1999, Lantolf was invited to The Pennsylvania State University to become the first director of the new Center for Language Acquisition. Familiarity with SCT among mainstream SLA researchers was exponentially greater by the time that Lantolf moved to Penn State than it had been only a few years earlier. This was due not only to Lantolf's own efforts, but also to the growing centrality of SCT ideas in the work of highly regarded scholars such as Merrill Swain, whose research was progressively more shaped by SCT as she moved from the output hypothesis to languaging; Rick Donato, whose studies of collaboration and pedagogy were grounded in SCT; and Steve McCafferty, whose work in gesture and cognition reflected Lantolf's growing sense that activity theory constituted not just a theory of learning, but a theory of mind (Lantolf, 2000, p. 80).

This growing body of work was reflected in a second edited volume that appeared in 2000 (Lantolf, 2000). Core SLA concepts, including internalization, agency, relativity, identity, and interaction are discussed from a SCT perspective. Introductory matter focuses on Vygotsky as theorist rather than on the historical life and times of the man. Lantolf characterizes the volume as current scholarship in activity theory, a "unified account of Vygotsky's original proposals" (2000, p. 8). The book marked a turning point for SCT in the mainstream; it is perhaps the most widely read of all Lantolf's books and has become a standard text in graduate programs worldwide.

At Pennsylvania State Lantolf contributed to establishing a new department in applied linguistics. Besides holding the presidency of the American Association for Applied Linguistics (AAAL) from 2004 to 2005, and convening a well-received Summer Institute in Applied Linguistics which attracts leading applied linguistics scholars as guest faculty, he was instrumental in establishing CALPER, a government-funded National Foreign Language Resource Center which focuses on the development of materials and methodologies for promoting advanced proficiency in languages other than English (http://calper.la.psu.edu).

In recent years, two more collaborative volumes have appeared. Lantolf and Thorne (2006) represents a new stage in the identity of SCT, one in which the authors no longer need to introduce the theory and its constructs, but rather have the relative luxury of situating them within the history of theories of mental development. The authors even see a need to reclaim their sense of the term "sociocultural," because, as they point out, it has become widely used among "multiple research communities" (p. 2). A dense, but engaging, meditation upon the basic concepts of SCT—mediation, internalization, the ZPD—the book profoundly enlarges the scope of Vygotskyan thinking in SLA. The authors, seeking to remove some of the encrustations of casual, inaccurate usage of several SCT terms, name cognitive linguistics as a particularly useful "partner" for SCT because it brings "culturally organized meaning . . . to center stage" (p. 5). Lantolf cites cognitive linguistics and languaculture (Agar, 1994) to enrich his growing belief that metaphor underlies all human semiotic activity (Lantolf, 2002, p. 76).

A coedited volume on SCT and teaching (Lantolf & Poehner, 2008) presents several ideas on how SCT can inform foreign language pedagogy. Reflecting CALPER's commitment to exploring and developing revolutionary pedagogies, the book contains several examples of dynamic assessment, a pedagogical approach in which instruction and evaluation are inextricably enmeshed. Underlying the variety of pedagogical topics is the unifying notion of the *dialectic*, the productive tension caused by the interdependence of opposites, such as teaching and learning, or testing and instruction. Current projects in 2010 include another book, with Poehner, exploring the concept of praxis (the dialectic of theory and practice) in second language teaching.

Lantolf's contribution to our understanding and appreciation of the ideas of Vygotsky and the sociocultural perspective cannot be overstated. His work has deepened our understanding of how human activity is crucially semiotic. As a person, he takes daily joy in the pleasures of family, food, and friendship; as a scholar, he embraces radical originality and collaborative production. His robust and abiding engagement with the professional community in all its parts is perhaps the most persuasive argument we can muster to support the central Vygotskyan claim: without the presence, and help, of others, we do not become ourselves.

SEE ALSO: Sociocultural Theory; Vygotsky and Second Language Acquisition

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Large-Sized Language Classes

RICHARD WATSON TODD

Large-sized language classes are a cause for concern for many language teachers, with most teachers regularly teaching classes of a size larger than what they perceive as ideal (Coleman, 1989a). These perceptions of how many students constitute a large-sized language class can vary greatly from teacher to teacher, but generally language teachers believe that large class sizes can cause many problems in teaching and learning, and so a wide range of suggestions for dealing with the perceived problems have been suggested. However, research into what happens in large classes suggests that the actual problems are less serious than teachers believe.

The research literature into large classes falls into five categories. By far the most common type investigates teachers' perceptions and beliefs about class size and the problems of teaching in a large class, mostly through questionnaire surveys. Far less common are investigations of the perceptions and beliefs of other stakeholders, such as students and administrators. Studies of the classroom discourse and interaction of large classes in comparison to smaller classes are also rare. Another category is reports of interventions aimed at solving the perceived problems of large classes, most of which take the form of descriptions of teaching techniques and activities with anecdotal evidence for their effectiveness. Finally, there are studies of the relationship between class size and actual learning.

Surveys of language teachers concerning the threshold number of students beyond which a class is considered large have produced figures ranging from 30 to 150 (Xu, 2001). These numbers are closely related to the size of classes that teachers typically encounter (Coleman, 1989a), although a number of other factors also influence perceptions of class size. The threshold class size of large classes for teaching complex skills, higher-order thinking, and speaking skills is generally lower than for, say, teaching factual knowledge and reading (LoCastro, 1989; Obanya, Shabini & Okebukola, *n.d.*). Also, thresholds for large classes are usually lower for teachers than for students (Instructional Development USCB, 2008).

Large-sized language classes are an important issue because teachers believe that large class sizes are behind many of the problems they face. Most studies of large-sized language classes report the potential problems perceived by teachers (e.g., LoCastro, 1989; Peachey, 1989), and these fall into five main categories. First, a large number of students in a class can lead to classroom management and discipline problems. Second, if the room is not designed for the size of the class, physical problems may ensue, such as student discomfort, students not being able to see, and excessive noise. Third, large classes may have an impact on affective issues by making it difficult for the teacher to achieve rapport with students and by making the class less personalized as the teacher has trouble remembering student names. Fourth, concerning interaction, with more students in a class each student may have fewer opportunities to contribute and so will receive less attention from the teacher. Fifth, there can be problems of feedback and evaluation as monitoring of individual students is reduced, less personalized feedback is given, and marking loads are a burden for teachers. These last two issues have led teachers' organizations such as the Conference on College Composition and Communication to produce position statements arguing that maximum class sizes for teaching second language writers should be 15 (CCCC, 2009).

The severity of these problems as perceived by teachers has led to numerous suggestions for solving them (e.g., Sarwar, 2001; MacDonald, Thiravithul, Butkulwong, & Kednoi, 2002),

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including using routines to improve discipline, using project work and cooperative learning to provide more opportunities for students to contribute, using name cards to help in learning student names, and using self and peer assessment to reduce marking load.

The emphasis on problems in the large-classes literature may reflect teachers' perceptions more than reality. In a diary study of a teacher teaching a class of 84 students (Boonmoh, 2005), the teacher initially had very negative expectations but ended the course feeling positive about the experience. Furthermore, the research that has compared what happens in large and small classes has shown that actual differences are minimal. For instance, in Watson Todd (2006a) two different-sized classes of similar students following the same course and taught by the same teacher were compared. The findings show no differences between the classes for teacher talking time, use of the first language, types of questions used, types of feedback given, and frequency of disciplinary directives. The points where a clear difference was seen were restricted to use of student names and impersonality of directives.

Whether large-sized language classes are prejudicial to learning is debatable. The long lists of potential problems in large classes suggest that class size may have an impact on learning opportunities, leading some authors to claim that large classes result in less effective learning (Coleman, 1989b; Ur, 1996). From a more theoretical perspective, LoCastro (2001) argues that, based on language learning theories that stress the importance of production, large class sizes should have detrimental effects. However, in contrast to mainstream education where major research projects have shown the benefits of smaller classes (e.g., Finn & Achilles, 1999), there is a lack of research evidence showing that large-sized language classes are prejudicial to learning (Allwright, 1989), perhaps because other factors such as quality of teaching (Obanya et al., *n.d.*) and the kinds of activities used (Kumar, 1992) have a greater influence on learning than class size. Indeed, there may actually be benefits from studying in large-sized language classes (Coleman, 1989a), including increased anonymity, more friends, and, from an administrative perspective, greater efficiency. In spite of these potential benefits and the paucity of evidence for real problems in large classes, the fact that many teachers believe that large class sizes cause problems in language teaching, together with the influence of beliefs on behavior and the prevalence of large-sized classes throughout the world, means that large-sized classes are a major cause for concern in language education.

SEE ALSO: Beliefs in Second Language Acquisition: Teacher; Silence and Participation in the Language Classroom

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Larsen-Freeman, Diane

ELKA TODEVA

Diane Larsen-Freeman is Professor of Education and Linguistics, Research Scientist at the English Language Institute, and Faculty Associate at the Center for the Study of Complex Systems at the University of Michigan, Ann Arbor. She is also a Distinguished Senior Faculty Fellow at the SIT Graduate Institute in Brattleboro, Vermont. In recognition of her achievements as an applied linguist, language educator, and public intellectual, in 1997 Dr. Larsen-Freeman was inducted into the Vermont Academy of Arts and Sciences. She received a lifetime achievement award from Heinle/Cengage Publishers in 2000 and was awarded a Fulbright Distinguished Chair at the University of Innsbruck, Austria in 2009. In 2009, she was made *doctor honoris causa* of the Hellenic American University in Athens, Greece, and in 2011, she received the American Association for Applied Linguistics' Distinguished Scholarship and Service Award.

Diane Larsen-Freeman has been prolific throughout her career. She has authored 10 books and over 120 articles and book chapters, participated in Webcasts and Web dialogues, and delivered over 150 plenary addresses and invited presentations in 70 countries. This biographical entry has tried to capture her growth and professional contributions by using a key concept from her book *Complex Systems and Applied Linguistics* (with Lynne Cameron, 2008): Throughout one's life, a person tends to actively select and influence the contexts in which she functions, whereas contexts in their turn help shape the person's abilities and characteristics (after van Geert & Steenbeek, 2008).

Born in New York City, Larsen-Freeman received a bachelor's degree *cum laude* from the State University of New York at Oswego. There, she majored in psychology, studying theories of learning. Her general interest in human learning became refined to a specific interest in the learning of languages as a result of her work as a Peace Corps volunteer teaching English in Malaysia in the late 1960s. To learn more about language acquisition, she entered graduate school at the University of Michigan, earning both an MA and a PhD in linguistics. Her first professorial appointment was in the English Department (ESL section) at the University of California, Los Angeles (1975–8), where her productive collaboration with Marianne Celce-Murcia began. Later, she and her family moved to Vermont, where between 1978 and 2002 she taught in the Department of Language Teacher Education at the School for International Training, recently renamed the SIT Graduate Institute. Her tenure there was marked by a deepening understanding of the complexities and power of language teaching, achieved through intense exploration of teaching with her students and colleagues. In 2002, she left her SIT position as interim dean, returning to the University of Michigan to direct its English Language Institute.

In the early 1970s, Larsen-Freeman was one of a handful of young scholars who came together around their common interest in second language learning. Her first publications, reporting a correlation between a morpheme's frequency and its rank in the morpheme accuracy order, were based on her dissertation research on the morpheme acquisition order of adult second language learners. These publications, along with the contributions of others, helped expand attention beyond teaching to learning, launching the study of what later came to be called the field of second language acquisition. Her morpheme acquisition research and her work constructing a second language acquisition index of development are regarded by many as seminal for that emergent field.

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Larsen-Freeman has been described as a revolutionary thinker. Along these lines, one of her most recent contributions introduced complexity theory to applied linguistics. In complexity theory fashion, Larsen-Freeman has both shaped and has been shaped by the field of SLA. By building cross-disciplinary bridges, SLA researchers and language practitioners have moved beyond the metaphor of "language acquisition" and have put center stage the metaphor of "participation" and of "becoming- and being-in-language" (Sfard, 1998). Larsen-Freeman has long challenged what she considers to be false dichotomies. A publication which makes this point particularly forcefully is her 2002 article arguing for the interconnectedness between language acquisition and use, part of a groundbreaking volume edited by Claire Kramsch called *Language Acquisition and Language Socialization: Ecological Perspectives* (Kramsch, 2002).

Influenced by Evelyn Hatch, Larsen-Freeman insisted that in order to capture the dynamic nature and social dimensions of language we needed to go beyond the sentential level of language and understand the organization and development of discourse. Her 1977 publication *A Rationale for Discourse Analysis in Second Language Acquisition Research* is one of the earliest works in this area, followed by her edited book *Discourse Analysis in Second Language Research* (1980).

Worth special mention is Larsen-Freeman's reconceptualization of grammar as a key meaning-making and identity negotiation tool that is best viewed three dimensionally using her form/meaning/use framework. She also introduced dynamism into grammar, coining the term "grammaring" to mean the ability to use grammar structures accurately, meaningfully, and appropriately. To this end, she made the case for students not only learning the usual binary of form and meaning, but also the need for them to learn use—when and why a particular structure is used. This notion has many of the characteristics of an ecological approach to language education where grammar and its acquisition are firmly grounded in context and where learners are engaged in explorations that are not only emotionally and cognitively engaging but have social significance and personal meaning for them. She argued that in order to overcome the inert knowledge problem, students must be taught grammar as a fifth skill, using psychologically authentic activities to ensure transfer-appropriate processing.

Larsen-Freeman continued to argue for teaching grammar even when it was unpopular to do so. Ever the teacher, Larsen-Freeman frequently adopts and defends the middle ground between extreme views. Among her major publications that helped the field move away from counterproductive extreme positions regarding grammar are her *Teaching Language: From Grammar to Grammaring* (Larsen-Freeman, 2003), the authoritative *The Grammar Book: An ESL/EFL teacher's course* (with M. Celce-Murcia, 1999, the third edition is in preparation), and her *Grammar Dimensions: Form, Meaning, and Use* series, in its fourth edition (2007).

Having witnessed first-hand their value in the teacher education program at SIT, Larsen-Freeman has also maintained her conviction in the value of introducing teachers to language teaching methods, despite the critiques methods have received. She believes that methods should not be imposed on teachers; rather they are valuable in teacher education because they help teachers bring to conscious awareness the thinking that underlies their actions. Through this awareness, teachers can choose to teach differently from the way they were taught.

Because of the versatility and breadth of her research interests and her ability to see complex patterns and synthesize emerging new ideas, Larsen-Freeman is often invited to write state-of-the-art chapters or articles (e.g., "The What of Second Language Acquisition" [1982], "Second Language Acquisition Research: Staking out the Territory" [1991], "Chaos/Complexity Science and Second Language Acquisition" [1997]) or to present "bigger

picture" views as a panel discussant and commentator at international conferences. Also worth mention here is her 1991 book, *An Introduction to Second Language Acquisition Research*, coauthored with Michael Long, considered a classic synthesis contributing to the intellectual evolution of the then still young field of second language acquisition.

Larsen-Freeman's coauthored book with Lynne Cameron, *Complex Systems and Applied Linguistics*, winner of the Modern Language Association's Kenneth W. Mildenberger book prize for 2009, is triggering a paradigm shift in the field of applied linguistics, inviting an unprecedented multidimensionality of thinking. It fundamentally challenges both our extant theories and the way we go about conducting research as applied linguists. The book's basic premise is that one can understand language use, evolution and change, and language acquisition as resulting from the same dynamic process operating at different timescales. The book also outlines areas of new exploration such as computational modeling of dynamic systems of language. Her recent collaboration with Nick Ellis has advanced these ideas under the guise of emergentism (Ellis & Larsen-Freeman, 2006, 2009).

The ideas presented in *Complex Systems and Applied Linguistics* have been in our discursive space for some time now, in no small part due to Larsen-Freeman's publications and presentations on complex dynamic systems over the last 10 years, beginning with her widely cited 1997 article in the journal *Applied Linguistics*. Her articles, workshops, seminars, and panel discussions have been groundbreaking and continue to shape and influence many careers and research agendas. Larsen-Freeman manages to sustain interest in the new trends and directions in applied linguistics by revealing previously underappreciated or underexplored interconnectivities.

A contagiously passionate teacher, Larsen-Freeman remains fascinated with the intricate complexities of language learning and teaching; this has helped her stay away from simplistic models and reductionist explanations. She has genuine respect for the learner and emphasizes intentionality, agency, and the importance of emic perspectives, that is, the views of the learner on the multitude of cognitive and social factors that shape the development of one's languages. For instance, she has long maintained (Larsen-Freeman, 1983a) that learners are not passive recipients of modified input, but rather active participants in a process of coadaptation. She has an equal respect for language teachers and their locally constructed knowledge. Her belief in the potential of teachers as reflective practitioners triggered her writings on the important distinction between teacher education and teacher training (1983b). It is that same respect and interest in the ideas and growth of others that made her define for herself the role of educator during her tenure as editor of the journal *Language Learning*, where she initiated a number of new practices, among them having authors receive extensive feedback on their manuscripts even when their contributions were not accepted.

As someone who always finds time for a sociable yet intellectually stimulating chat with her students and colleagues, Diane Larsen-Freeman has touched and transformed many people. She would be the first to say that these conversations have transformed and enriched her as well. This two-way enrichment, among other things, can be viewed as linguistics *bien appliquée*.

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; Discourse Analysis and Conversation Analysis; Dynamic Systems Theory Approaches to Second Language Acquisition; Ellis, Rod; Emergentism; Grammar and Discourse; Grammar in Language Teaching and Education; History of Language Teaching Methods; Interlanguage; Language Teacher Development; Pragmatics and Grammar; Prescriptive and Descriptive Grammar; Teaching Grammar; Teaching Grammar and Corpora; Variability in a Dynamic System Theory Approach to Second Language Acquisition

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Learner Corpora

SYLVIANE GRANGER

Learner corpora are electronic collections of language data produced by L2 learners, that is, second or foreign-language learners. This relatively new resource is of great relevance for both second language acquisition (SLA) research and foreign-language teaching (FLT). One of the main characteristics of learner corpus research is that it makes full use of corpus linguistic methods and tools to understand the process of language acquisition, describe L2 learner language varieties, and design pedagogical tools that target learners' attested difficulties. The first learner corpus collections, which date back to the 1980s, only targeted English data. Since then, the field has expanded considerably and now includes learner data in a large number of languages.

Learner Corpus Design Criteria

Learner corpus data have the following distinguishing characteristics: (a) they are in electronic format; (b) they have been compiled on the basis of strict design criteria, pertaining to the learner (age, gender, mother tongue background, etc.) and the task (medium, topic, or timing); (c) they contain continuous discourse rather than decontextualized words, phrases or sentences; (d) they include data of the most open-ended type, which range from fully natural in the case of learners' communications with native speakers or other learners as they "go[ing] about their normal business" (Sinclair, 1996, p. 7), to semi-natural, that is, resulting from pedagogical tasks that allow learners to choose their own wording rather than being requested to produce a particular word or structure. This fourth characteristic is undoubtedly the fuzziest, as there are many degrees of naturalness. This has led Nesselhauf (2004, p. 128) to distinguish between prototypical learner corpora, which display all the defining characteristics of learner corpora (e.g., argumentative essays or informal interviews), from peripheral learner corpora, which only partly fill these criteria (e.g., summaries or picture descriptions). Although elicitation data such as gap-fill or grammaticality judgment tests do not qualify as learner corpus data, recent research has shown that corpus and elicitation data are most usefully considered not as conflicting but as complementary sources, highlighting as they do different facets of language acquisition (see Gilquin, 2007).

Learner language is obviously highly heterogeneous: there are many types of learners and learning situations, and "mixed bag" collections of L2 data present little interest. It is therefore essential to adopt strict design criteria when collecting learner data, a principle which underpinned the compilation of one of the most-used learner corpora of English, the International Corpus of Learner English (ICLE), which contains over 6,000 texts written by learners from 16 different mother tongue backgrounds and records 21 variables for each of the texts it contains. All the variables have been stored in a database and can be used by researchers as queries to compile their own tailor-made subcorpora and perform linguistic searches (Granger, Dagneaux, Meunier, & Paquot, 2009).

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Learner Corpus Typology

Learner corpora can be categorized along several dimensions, among them the following three: the scope of the data collection, the time(s) of the data collection, and the medium of the language data.

Generic Versus Local

Learner corpora can be generic or local. Generic learner corpora aim to be representative of one or several learner populations and therefore tend to be quite large, that is, counted in millions rather than thousands of words. They are usually collected by academics or publishers, rather than teachers. The ICLE for L2 English and the ASK corpus (Tenfjord, Hagen, & Johansen, 2006) for L2 Norwegian are good examples of this type of corpus. Local learner corpora are collected as part of normal teaching activities, often by the teachers themselves, and may therefore be of a much more modest size. For example, the local corpus described by Mukherjee and Rohrbach (2006) has a total size of approximately 30,000 words. The compilation of local learner corpora is still the exception rather than the rule but is one of the most promising avenues in learner corpus research.

Cross-Sectional Versus Longitudinal

Learner corpora can sample language data from different learners at a single point in time, in which case we speak of a cross-sectional corpus, or track the same learners over a particular time period, in which case the term "longitudinal" (or "developmental") is used. As truly longitudinal corpora are very difficult to collect, there are still very few of them and they constitute one of the major desiderata for future learner corpus research. In addition, many learner corpora which claim to be longitudinal in fact sample similar-type learners at different levels of proficiency and should therefore more appropriately be called "quasi-longitudinal."

Spoken Versus Written

For a number of years written corpora dominated the learner corpus scene. This is now changing with oral corpora gaining ground, as evidenced by the release of the *Louvain Database of Spoken English Interlanguage* (Gilquin, De Cock, & Granger, 2010) which samples learners similar to those represented in the ICLE and will therefore allow for very useful speech-writing comparisons. The rapid integration of e-learning tools in language teaching is greatly facilitating data collection and has allowed the collection of language productions that display characteristics of both speech and writing, such as data arising from computer-mediated communication (Belz & Vyatkina, 2008).

Learner Corpus Methodology

Corpus Annotation and Exploration

Learner corpora can be used "as is", that is, in their raw form, without any additional linguistic information inserted into the text files. However, for many types of investigation, it is useful to annotate the corpus linguistically. Part-of-speech (POS) tagging, which assigns to each word in a corpus a tag indicating its word-class membership, can be done fully automatically and with a high degree of accuracy, although the very nature of learner data calls for a degree of caution as errors may lead to tagging errors (Van Rooy & Schäfer, 2003). Another type of annotation that is particularly relevant for learner data is error annotation.

Unlike POS tagging, this process is not automatic, but it can be partially automated using specially designed editing software tools that facilitate the insertion of error tags into the text files. Computer-aided error analysis offers some advantages over traditional error analysis, such as the standardization of error categories employed. Once the error tags have been inserted, researchers can view them in context alongside correct occurrences and draw up comprehensive lists of errors of a particular type (Dagneaux, Denness, & Granger, 1998). Chuang and Nesi (2006) have used this approach to identify, catalog, and analyze formal errors produced by Chinese learners of English and design grammar exercises based on these insights.

As learner corpora are in electronic format, they can be explored automatically with a wide range of text retrieval software tools, which provide frequency information on words, phrases and, if the corpus has been POS-tagged, grammatical categories. SLA and FLT researchers are thereby given access to a wealth of quantitative information on learner language that was hitherto unavailable. Using the lexical software tool VocabProfile, Horst and Collins (2006) traced the lexical development of young ESL learners over time. Contrary to expectations, they did not identify increasing amounts of infrequent vocabulary. Instead, lexical development manifested itself in a greater variation of basic vocabulary and a wider range of inflectional and derived word forms. Other tools, such as WordSmith Tools (Scott, 1996), allow researchers to sort the data and discover the preferred lexical and grammatical company of words used by learners, in particular their use of collocations and recurrent phrases. De Cock's (2004, p. 243) study of recurrent combinations in native and learner speech shows that "learners are lacking in routinized ways of interacting and building rapport with their interlocutors and of toning down and weaving the right amount of imprecision and vagueness."

In keeping with corpus linguistic practices, researchers usually use aggregate data drawn from many learners and analyze them as wholes. This practice is not without problems, however, as learner language is characterized by a high degree of variability, and one or two individuals may use language in highly idiosyncratic ways and thereby skew the overall results. As pointed out by Durrant and Schmitt (2009, pp. 168–9), this problem can be solved by computing both group and individual scores.

Contrastive Methodology

One of the best ways of uncovering the features that are typical of learner language is to compare it to other samples of learner language or to a control corpus of expert production, or both, an approach that is referred to as "contrastive interlanguage analysis" (Granger, 1996).

Comparisons between learner varieties can help distinguish the features that are proper to learners from a specific mother tongue background from those that are found in several learner populations, irrespective of their mother tongue. They are therefore particularly useful when it comes to identifying transfer effects. To strengthen the transfer interpretation, researchers can combine learner corpus data with data from bilingual corpora of the learners' mother tongue and the target language (Gilquin, 2008). For example, Paquot (2010) establishes that French learners' overuse of imperative structures such as *let us turn out attention to, let us take the example of, let us be clear that* in academic writing is transfer-related on the basis of (a) the significantly lower use of these forms in the other nine learner populations investigated, and (b) the frequent use of the imperative as an organizational marker in French academic texts. Although comparisons in terms of learners' mother tongue backgrounds have been the most popular so far, inter-learner comparisons may involve all the variables that have been stored in the database, such as age, medium, timing, task type, or proficiency level. Ädel (2008), for example, compares the use of involvement

markers (use of first person singular pronouns or adverbs like *of course*) in timed versus untimed learner essays and finds that they are much more frequent in timed essays.

Target language comparisons, on the other hand, set learner corpus data against a control corpus of expert production, usually a native speaker corpus. This procedure helps to bring to light the words, phrases, grammatical items, and syntactic structures that are over- or underused by learners and which therefore contribute to the foreign-soundingness of perhaps otherwise error-free advanced interlanguage. As under- and overuse often go together with misuse, this type of comparison gives a different insight into learners' language use.

The use of a native speaker yardstick has been criticized by a number of SLA specialists on the grounds that it fails to recognize learner language as a variety in its own right and thus falls into the "comparative fallacy" trap. However, the method remains very popular among learner corpus researchers, who argue (a) that it is simply a method, which neither assumes nor precludes any theory of interlanguage; (b) that this method is effective in uncovering interlanguage features; and (c) that corpus-based target norms are both transparent and diverse, which contrasts favorably with the intuition-based norms implicit in many SLA studies (see Mukherjee, 2005; Tenfjord et al., 2006).

Learner Corpus Analysis

Unlike previous research which gave priority to the early stages of acquisition, learner corpus research has tended to focus on the later stages and has helped describe advanced interlanguage, a learner variety that had until recently been largely neglected. It has established that, beside grammar, which remains a problem even at an advanced level, the main problem areas are lexis, lexicogrammar, phraseology in the wide sense, discourse, and register. It has also shown that difficulties manifest themselves in patterns of over- and underuse, at times more than actual errors.

Many frequency differences have proved to be shared by learners from different mother tongue backgrounds: underuse of marked structures like the passive, overuse of some words and phrases, in particular those that have direct equivalents in the learner's mother tongue, underuse of academic words and phrases typical of argumentative writing, intrusion of speech-like features in formal writing, and so forth. Logical connectors are a good illustration of words that display these characteristics (see Granger & Tyson, 1996). Research has shown that at the more advanced proficiency levels, misuse has less to do with morphology than the appropriate use of words and structures in context. For example, Xiao's (2007) investigation of the passive shows that underuse is a much more frequent feature of Chinese learner writing than misformation errors. Many studies point to the major role played by transfer. In her study of verb + noun collocations in German learner writing, for example, Nesselhauf (2005) found that transfer from the learner's L1 was a likely factor in over half the erroneous collocations. Influence from the mother tongue is also strongly in evidence in Díez-Bedmar and Papp's (2008) study of article usage by Chinese and Spanish learners.

A highly promising strand of research comes from the field of psycholinguistics (Ellis, Simpson-Vlach, & Maynard, 2008). Combining corpus linguistic and psycholinguistic techniques (such as eye-tracking or dictation) has proved a powerful method for highlighting salience and frequency of the input as key determinants of language reception and production. Using the two types of data, Siyanova and Schmitt (2008), for example, found little difference between native and learner usage of appropriate collocations, but demonstrated learners' poorer intuitions regarding the frequency of collocations compared to native speakers.

Learner-Corpus-Based Applications

A wide range of applications can benefit from learner-corpus-based insights: from materials design and classroom methodology to natural language processing (NLP) applications which make use of advanced computational techniques.

Materials Design and Testing

Learner corpus insights can contribute to three key components of materials design: selection, presentation, and practice. In view of the restrictions in terms of page numbers, it is essential that the most useful language items be selected for inclusion in course materials and reference books. Learner corpus data are invaluable here as they provide ample evidence of learners' difficulties, not only of what learners get wrong, but also of what they fail to produce at any given proficiency level, and it makes a great deal of pedagogical sense to focus on these difficulties. Some of them are shared by a large number of learner populations and can be integrated into generic tools, while others are specific to one learner group and are ideally suited to informing L1-specific monolingual or bilingual materials. Once selected, items need to be described and here too learner corpus data can help, notably by giving adequate weight to the most difficult aspects of language and downplaying those that are already mastered.

Analyzing learner corpus data and integrating the results into pedagogical materials is an intensive process and it is therefore normal that there should not yet be many up-and-running applications. However, the few that do exist bear witness to the potential they hold for materials design. For example, Wible, Kuo, Chien, Liu, & Tsao (2001) describe a powerful Web-based system which allows for the generation, annotation, and pedagogical exploitation of learner corpora. The environment is extremely attractive both for learners, who get immediate feedback on their writing and have access to lists of errors they are prone to produce, and for teachers, who progressively build up a large database of learner data which they can draw on to develop targeted exercises. Chuang and Nesi (2006) have carried out a corpus-based error analysis of academic texts written by Chinese students studying in the medium of English and on that basis designed a remedial online self-study package called GrammarTalk which targets high-frequency errors such as article errors. Cowan's (2008) English grammar contains "Problems that EFL/ESL students have" sections which highlight errors extracted from learner corpora. The latest edition of the *Macmillan English Dictionary for Advanced Learners* contains approximately a hundred error notes based on authentic errors extracted from the ICLE and an extended "Improve your writing" section based on the analysis of both native and learner corpus data (Gilquin, Granger, & Paquot, 2007).

Testing is another field that stands to gain. Carefully analyzed, learner corpora can help practitioners select and rank testing material at a particular proficiency level. Using a learner corpus made up of candidate scripts from three Cambridge ESOL examination levels, Hawkey and Barker (2004) have identified key language features distinguishing performance in writing at four pre-assessed proficiency levels, and suggest how these features might be incorporated in a common scale for writing.

Classroom Methodology

Learner corpus data are a good resource for form-focused instruction and data-driven learning (DDL). As illustrated in Granger and Tribble (1998), exercises making use of native and non-native concordances of problematic words and phrases can help learners notice the gap between their own and target language forms. This method is particularly well suited for fossilized language use and is likely to be especially motivating in the case of

local learner corpora, where learners are at the same time the producers and users of the language, as the forms they focus on are of direct relevance to them. Hegelheimer and Fisher (2006) describe the iWRITE Web interface which allows learners to access error-tagged learner essays. The system is meant to help learners prepare for editing or peer editing and more generally aims to help raise learners' awareness and encourage autonomy. Belz and Vyatkina (2008) show how a developmental learner corpus of computer-mediated communication can be used dynamically to track learner changes over time and produce corpus-driven teaching materials that address specific interlanguage features.

NLP Applications

Combined with NLP techniques, learner corpora—especially those that are annotated for errors—can be used to draw up automatic profiles of learner proficiency (Meurers, 2009). Based on these learner models, automatic error diagnosis and feedback generation modules can be designed and integrated into intelligent CALL (ICALL) programs. One particularly successful example is the E-Tutor (Heift, 2010), an ICALL system for L2 learners of German, which makes use of a learner corpus collected from approximately 5,000 students for feedback generation and language exploration. Another field which can benefit from the combined use of learner corpus data and NLP techniques is the automatic rating of essays (Dikli, 2006). Research shows, however, that the integration of these sophisticated NLP-based systems into reliable pedagogical tools poses a tremendous challenge: correct words or phrases may be diagnosed as incorrect (overflagging) and incorrect instances may be missed (low recall value). For example, while Tetreault and Chodorow's (2008) preposition error detection module achieves excellent precision (about 80%), it has very disappointing recall (about 10%), which restricts its pedagogical integration to highly constrained environments. In spite of these difficulties which reflect the complexity of modeling learner language, concrete achievements like Heift's show that NLP developments are among the promising applications of learner corpus research.

SEE ALSO: Corpora in the Language-Teaching Classroom; Corpus Analysis of Written English for Academic Purposes; Corpus Linguistics in Language Teaching; Corpus Linguistics: Overview; Crosslinguistic Influence in Second Language Acquisition; Formulaic Language and Collocation; Language for Specific Purposes Learner Corpora; Language Testing in Second Language Research; Learner Modeling in Intelligent Computer-Assisted Language Learning; Technology and Teaching Writing

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Language for Specific Purposes Learner Corpora

SYLVIANE GRANGER AND MAGALI PAQUOT

Learner corpora are electronic collections of (near-)natural foreign or second-language-learner (L2) language assembled according to explicit design criteria (Granger, 2008). So far, they have predominantly been collected in the context of foreign/second language courses for general purposes (e.g., the International Corpus of Learner English; http://www.uclouvain.be/en-258641.html). A very promising but as yet less widespread data type is the language for specific purposes (LSP) learner corpus, which contains discipline and genre-specific texts written by learners within the framework of LSP or content courses. These texts are exemplars of the different genres (e.g., papers, lab reports, case studies, project reports, or letters) that are most typical of specific disciplinary communities (e.g., physics, linguistics, history, engineering, medicine, or business). The aim of LSP learner corpus research is to uncover L2 learners' difficulties in these specific domains and to design tailor-made learning and teaching methods and tools. This type of corpus has connections with English as a lingua franca (ELF) corpora but differs from them in that the subjects are language learners of varying degrees of proficiency in educational settings, while the ELF subjects are characterized primarily as users of the language involved in real-life communication events. It also has similarities with corpora of proficient student writing such as the Michigan Corpus of Upper-Level Student Papers (MICUSP; http://micusp.elicorpora.info/) or the British Academic Written English Corpus (BAWE; http://www2.warwick.ac.uk/fac/soc/al/research/collect/bawe/), which contain data from native and international students in mixed naturalistic and instructional environments.

In view of the status of English as the dominant language for knowledge dissemination and international communication, LSP learner corpus research has mainly centred on *English* for specific purposes (ESP), with a large number of ESP learner corpus compilations, especially in Asia. In spite of this vitality, it is not easy to survey the field as research is scattered and tends to be rather confidential, a situation recognized by Alsop and Nesi (2009, p. 75), who state that discipline-specific student writing "has tended to be collected for individual scholarly purposes rather than as part of formal corpus-building projects." They tend to be "small private collections of student assignments" (Alsop & Nesi, 2009) that are not widely available. One of the consequences of the localized nature of LSP learner corpora is that they are usually L1-specific, that is, they contain data from learners sharing a single mother-tongue background (e.g., Chinese for Lee & Chen, 2009). A few ESP learner corpora include texts produced by international students from several mother-tongue backgrounds collected in a specific institution, but as the samples are aggregated it is not possible to search the L1 populations (e.g., Hewings & Hewings, 2002). A notable exception is the Indiana Business Learner Corpus (http://www.liberalarts.iupui.edu/icic/research/indianapolis_business_learner_corpus) which is made up of application letters from native and non-native speakers of English studying in three different undergraduate business classes in Belgium, Finland, and the US (Connor, Pretch, & Upton, 2002).

There is clear scope for the collection and dissemination of multi-L1, multidiscipline, and multigenre corpora of LSP learner language. A step in this direction is the Varieties

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of English for Specific Purposes dAtabase (VESPA; http://www.uclouvain.be/en-cecl-vespa.html) learner corpus which contains ESP texts produced by English-as-a-foreign-language (EFL) writers from various mother-tongue backgrounds in a wide range of disciplines (linguistics, business, engineering, experimental sciences, environmental science, etc.), genres (research papers, project reports, MA dissertations) and degrees of writer expertise in academic settings (from first-year students to PhD students). The database is searchable via a range of variables relating to learner (e.g., age, gender, educational background, country) and task (e.g., genre, type of reference tools used). Two online LSP learner corpora are also worth mentioning here: the Learner Corpus of Essays and Reports (http://langbank.engl.polyu.edu.hk/engine.aspx?Submit=Search&lang=1&corpus=16) and the Learner Corpus of English for Business Communication (http://langbank.engl.polyu.edu.hk/engine.aspx?Submit=Search&lang=1&corpus=15). These two corpora are searchable online via the PolyU Language Bank platform (http://langbank.engl.polyu.edu.hk/indexl.html), but their usefulness for research is somewhat limited by the fact that they do not allow for genre- or discipline-specific searches.

Another type of corpus relevant for LSP research is the translation learner corpus, which contains translations that have been produced by trainee translators. While translation learner corpora such as the Student Translation Archive (Bowker, 2002) and the MeLLANGE Learner Translator Corpus (Castagnoli, Ciobanu, Kunz, Kübler, & Volanschi, in press; http://corpus.leeds.ac.uk/mellange/ltc.html) mainly consist of translations into the first language, the PELCRA learner translation corpus (Uzar & Waliński, 2001; http://pelcra.ia.uni.lodz.pl/) also includes trainee translations from Polish to L2 English.

Unsurprisingly perhaps, there are many more written than spoken LSP learner corpora. The potential of the latter is, however, demonstrated by the International Teaching Assistants corpus (ITAcorp), which contains samples of the language production of international graduate students in ITA language classes as they engage in a number of role-play situations designed to mirror university instructional contexts, such as "office hour" role-plays (practicing receiving students during non-teaching office hours), brief lecture presentations, and leading a discussion (Thorne, Reinhardt, & Golombek, 2008). The ITAcorp was built to identify aspects of teachers' professional discourse that are problematic for ITAs, and to help them negotiate the many spoken genres that are typical of instructional activity. The design of spoken and multimodal LSP corpora is clearly one of the key desiderata for the future.

Many studies of LSP learner corpora rely on quantitative and qualitative comparisons of learner and expert language to uncover the distinctive features of learner language. For example, Flowerdew (1998) compared the use of cause and effect markers in a corpus of 80 student assignments which discussed various environmental problems and an expert corpus of edited papers, *Global Warming: The Greenpeace Report*. Among other things, she found that prepositions were commonly used to mark causality in the expert corpus, but occurred far less frequently in the learner corpus; and that, unlike expert writers, Hong Kong EFL learners rarely used modifiers with causative verbs and complex prepositions to attenuate the proposition. Comparisons of learner and native or expert language constitute one branch of contrastive interlanguage analysis (CIA) (Granger, 2008), a methodology that has been widely used to analyze learner corpora (e.g., Nesselhauf, 2005; Paquot, 2010). The other branch of CIA, which consists in comparing different varieties of interlanguage, has been less popular in LSP learner corpus research and has tended to focus on cross-discipline rather than cross-L1 comparisons (see Upton & Connor, 2001 and Connor, Pretch, & Upton, 2002 for exceptions). Hyland (2004), for example, compared the use of meta-discourse markers in dissertations by L2 postgraduate writers in six academic disciplines (electronic engineering, computer science, business studies, biology, applied linguistics, and public administration) and found substantial variations in the ways L2 writers present

their research and engage with their readers across disciplinary communities. Hyland interpreted these differences in terms of the norms and expectations of particular cultural and professional communities and showed, for example, that the high density of citations found in biology dissertations is also a feature of research articles in biology. Cross-L1 comparisons, however, constitute a major avenue for future research as they make it possible to distinguish the difficulties that are specific to one L1 population from those that are shared across a range of L1 backgrounds.

The linguistic analysis of LSP learner corpora relies on genre analysis and/or discourse analysis, often used in combination with corpus-linguistic techniques. Upton and Connor (2001), for example, have adopted the Swalesian tradition of genre (Swales, 1990) and combined it with a computerized analysis of lexicogrammatical features of texts to analyze politeness strategies in application letters written by Belgian, Finnish, and American students. They carried out a hand-tagged moves analysis, classified segments of text according to their communicative purpose, and examined the linguistic features related to the concept of politeness (e.g., modals and formulaic expressions). Differences in the use of politeness strategies across countries were partly attributed to differences in audience expectations and writer concepts of how politeness is expressed. Other researchers have adopted a more discourse-related or functional perspective. Hewings and Hewings (2002) compared the use of clauses with an anticipatory *it* and extraposed subject in an expert corpus of research articles and a corpus of dissertations written by non-native speakers as the last component of their MBA programmes. Student writers appeared to use more *it*-clause emphatics and attitude markers to persuade readers of the validity of claims. Similarly, Flowerdew (2008) investigated the lexicogrammatical patterning of key words for the problem–solution pattern in a corpus of group project reports written by EFL undergraduate science and engineering students on a technical communication skills course in the language centre at the Hong Kong University of Science and Technology. She found that students used a very narrow range of verbs as well as register-inappropriate verbs (e.g., *get rid of*) and confused cause/effect verbs with result/effect verbs. She attributed these difficulties to "the lack of an appropriate grammar system and vocabulary range which play a role in the co-construction of meaning through the blending of collocational and colligational features of language" (Flowerdew, 2008, p. 133) in academic discourse. The influence of a Sinclairian approach to corpus-driven lexicogrammatical patterns (Sinclair, 2004) is apparent in a large number of studies. Lee and Chen (2009), for example, relied on corpus linguistic tools and techniques to identify keywords in the Chinese Academic Written English (CAWE) corpus, a corpus of dissertations written by Chinese undergraduates majoring in English linguistics or applied linguistics. The keyword analysis made it possible to identify salient features in the Chinese learner corpus—the high frequency of the verb *make* and the function words *can*, *besides*, and *according to*—which were then submitted to a careful lexicogrammatical analysis. The high frequency of the modal *can*, for example, appeared to be largely due to Chinese learners' use of phrases such as *we can see*, *we can observe*, and *we can find* to refer to tables and figures, a pattern that is quite rare in expert and native student writing corpora where phrases such as "*Table 4 displays*," "*are illustrated in Figure 1*," or "*as shown in Table 2*" are preferred. A similar approach, adopted by Gilquin, Granger, and Paquot (2007), helped to uncover a wide variety of lexicogrammatical difficulties in English for academic purposes (EAP) writing, some proper to foreign-language learners, others shared by novice native writers.

Although research in the field is both active and varied, it has not yet resulted in off-the-shelf LSP learner-corpus-informed pedagogical materials. This should not be taken to mean that the research has remained purely theoretical or descriptive. As Thompson (2006, p. 7) aptly reminds us, "A feature of ESP work is that the needs of learners are often highly specific and teachers may have to develop materials and resources for the specific

context." In many cases, the LSP learner corpus analyst is also the corpus compiler, a situation which offers the significant advantage of enabling the teacher to authenticate the data for classroom use to fit the students' reality (Flowerdew, 2008, p. 134). Hewings (2000) illustrates how teachers can use learner texts collected in their ESP courses to identify common areas of difficulty for a particular group of students, and to inform classroom practice. In the same vein, Lee and Swales (2006) report on an experimental corpus-based course for international doctoral students in which they made students compile corpora of their own writing for comparison with expert writing in the discipline. For less localized pedagogical resources, the future clearly lies in electronic resources which can be customized to learners' L1s and disciplines. The Louvain EAP dictionary-cum-writing aid, a Web-based tool, demonstrates how insights gained from the analysis of both learner and expert corpora can help L2 writers from several L1s express key academic functions such as contrasting, introducing a topic, quoting, and so forth, in a range of disciplines (Granger & Paquot, 2010).

SEE ALSO: Applied Corpus Linguistics; Corpora in the Language-Teaching Classroom; Corpus Analysis of Written English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Learner Corpora

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Learner Modeling in Intelligent Computer-Assisted Language Learning

MATHIAS SCHULZE

In computer-assisted language learning (CALL), a student model is a computational data structure that contains information about individual students and thus facilitates individualized instruction through the adaptation of a language learning system to the learner. Intelligent tutoring systems in general are said to consist of three parts: an expert model which contains the knowledge of the domain, a teacher model which determines the system's instructional content and sequence, and a student model which stores information about the learners' behavior and draws inferences about their knowledge and beliefs. Despite the need for individualized learning environments, student modeling has not been a strong focus of CALL because its development and implementation are nontrivial, time-consuming, and labor-intensive (McCalla, 1992) and because the challenging task of representing the domain knowledge of language and language learning is still largely incomplete (Levin & Evans, 1995).

Of course, CALL design considers the (individual) learner, but most systems make use of an implicit student model (McCalla, 1992), which is static, in the sense that the student model is reflected in the design decisions inherent in the system and derived from a designer's point of view. In tutorial CALL in general, assumptions about students' behavior, knowledge, and beliefs are modeled indirectly in the activity design. In intelligent CALL (Heift & Schulze, 2007), for example, implicit student models can consist of (grammatical) parser rules which describe aspects of the students' interlanguage which are not part of the L2 rules, or rules which are part of the learners' L1 system; thus the system's view of the learner cannot and does not change in the learner's interaction with the system. An explicit model, on the other hand, is dynamic in that it is used to drive instructional decisions and is thus not part of the instructional design structure as such (see, e.g., Amaral & Meurers, 2008). Student models can be used in a number of ways (Elsom-Cook, 1993): corrective (providing tailored feedback), elaborative (extending the knowledge of the student), strategic (guiding decisions on teaching interventions), diagnostic (to determine the knowledge state of the student), predictive (anticipating future student behavior) and evaluative (assessing the level of student achievement).

Explicit student models can be open (Mabbott & Bull, 2004), that is, the information recorded and inferred about an individual student is made available to that student. Here it is important to construct student models that can be studied and understood by the learner because this student–model interaction supports reflection, negotiated assessment, and knowledge awareness. Open learner models need to meet the following criteria (Dimitrova, Brna, & Self, 2002):

- Understandability: Dimitrova et al. (2002) argue for a representation using conceptual graphs. These are semantic networks with constraints attached to their nodes and links.
- Effective inspection: This means that the inspection of a learner model should provoke inferential processes and metacognition.
- Reduction of cognitive load: This is important because this load is generally very high during inspections. This supports the need for a graphical representation of the

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information contained in the student model. Dimitrova et al. (2002) showed in their study that after little initial training with conceptual graphs students appreciated the graphical knowledge representation.

- Expressiveness: This means that both the system and the learner need to be able to express their view of the model in a dialogue.
- Effective communication: This criterion builds on expressiveness and stipulates a scenario in which both the system and the learner need to be able to understand expressions constructed by the other party.
- Symmetry: This states that learner and system maintain the student model jointly.

An open student model is either inspectable, and provides some view of the system's information structure to the student, or collaborative, and additionally allows some scope for students to change their individual learner model. The latter approach results in a more accurate model despite the fact that students do not always report their own knowledge states accurately. A collaborative model records, for example, the past and current learning stages by recording the level of rule mastering by a particular student and by indicating "the learner's own assessment of his ability" (Bull, Pain, & Brna, 1993, p. 49).

All student models have in common that they gather and structure information about the student's knowledge. "But we cannot directly observe what a student does and does not *know*; this we must infer, imperfectly, from what a student does and does not *do*" (Mislevy & Gitomer, 1996, p. 253). Simpler models such as the activity logs of most virtual learning environments only maintain some historical data of the user (scores, task completion, utterances produced, etc.). In this case the model is frequently described as a student profile or student (activity) log. Such an obtaining of information about the surface of students' learning processes on the computer is called tracking (e.g., Hwu, 2003). Even the mere compilation of a student profile through tracking has a number of advantages: automatic collection of research data, testing of a teaching methodology, provision of feedback on the quality of the courseware, and facilitation of real-time tailoring of the courseware to the user. The information recorded could range from a simple count of how many incorrect answers have been given to complex data structures which purport to represent a relevant part of the student's knowledge of the subject. For a more complex model, the system needs to infer a more elaborate knowledge state or student beliefs. This data interpretation can be problematic because a student profile may contain contradictory information that first has to be analyzed and interpreted. Thus, we can distinguish a surface-level student model which "represents the scheduled problem solving plans and applied procedural knowledge" from a deeper-level student model which "must infer and model the student's belief by interpreting the surface level student model" (Villano, 1992, p. 469).

Ohlsson (1992) identifies five different approaches to creating and maintaining a student model: the bug library technique, the machine learning approach, the model tracing technique, constraint-based student modeling, and probabilistic modeling. Of these, only the bug library technique, the model tracing technique, and constraint-based modeling have been applied to CALL (Schulze, 2008).

The bug library technique comprises error descriptions of student errors and their explanations. These models are either runnable (student knowledge as a subset of expert system rules plus some buggy rules) or are overlay models (assigning competency or probability to different rules according to inferences the system has made). The error libraries are also restricted in that they are not transferable from one student population to another.

The model tracing technique (e.g., Tasso, Fum, & Giangrandi, 1992) monitors each step the student takes in the problem-solving process instead of attempting to infer knowledge states from final answers. "The student is modeled as the set of rules which matched his

or her steps in the traced performance" (Ohlsson, 1992, p. 433). Accordingly, the actual student performance is compared to the expected student behavior as predicted by the learner model. If the system is intended to model the different steps students take when learning grammatical knowledge items, model tracing appears to be a viable option, whereas if the CALL system is used in communicative language teaching, it is not necessarily possible to establish and trace an ordered sequence of deterministic steps the learner took or will have to take.

The constraint-based approach presupposes that diagnostic information is not attained from the (intractable) learning process the student undergoes. Instead it is obtained from the problem state at which the student arrives—the final result. The constraint-based approach has similarities to the bug library technique described above. Both start with a knowledge base in the expert system. The bug library technique generates possible deviant solutions with meta-rules that transform rules and facts from the expert system. The constraint-based approach relaxes these constraints during the analysis in order to determine the rule(s) that might have been violated. Each constraint consists of a relevance condition that, in turn, determines when to apply the satisfaction condition (Ohlsson, 1992). The constraint-based modeling approach is very efficient because it does not rely on the anticipation of student errors as an intractable problem (Heift, 2008), but it poses different problems because it has to work with an immensely large search space and many (often spurious) parses of one utterance are generated (Vandeventer, 2001). Parsers produce a variety of parse trees for a single sentence, in particular for one that contains errors. As a result, it is still problematic to update the student model with the most appropriate parsing result. One possibility is to augment the parse results with information about typical student behavior and likely acquisition orders. "With this information, we will be able to build links in the inference network that will enable SLALOM [Steps of Language Acquisition in a Layered Organization Model] to provide data on structures previously unseen in user's language production" (Michaud & McCoy, 2004, p. 346). However, acquisition order is only one, not even very reliable filter criterion when it comes to determining the best of many analyses of student input. Other contextual variables (e.g., task, linguistic context) will also have to be considered. When the most appropriate (part of a) parse is selected for feedback provision, multiple errors will have to be reported to the student in an order of linguistic and pedagogic importance.

The different approaches to learner modeling all need to begin with an initialization of the learner model, which can be achieved in four different ways. In the first approach, the system assumes that the student has no prior knowledge about the domain. Alternatively, the student is placed in the middle of the ability range, in particular for the purposes of diagnostic adaptive testing. Both assumptions, however, are arbitrary. In the second approach, the system administers a pretest that is used to determine the current student's knowledge state. Third, it is also possible to take a pattern from models of similar students as a stereotype. In the final approach, the system uses "artificial" students, that is, vague models of students, to produce behavioral patterns that form the data for the learner model. The lack of system knowledge of the new user is often compounded by the fact that beginning users produce less elaborate input and more errors (e.g., Michaud & McCoy, 2004).

Generally, student models are more complex than other user models because misconceptions and inconsistencies in the student's knowledge have to be considered. Most learner models capture the knowledge state(s) of the student relative to the domain of learning. Individual learner differences are incorporated in far fewer models (for an exception see Bull, 1994), but these need to be considered, recorded, and inferred if a student model is to support individualized language instruction. Learner models are always approximations because student behavior is inconsistent, language learning is dynamic, non-monotonic, nonlinear, and complex, and possible explanations for the observed behavior are ambiguous.

Students are often unable to consider all relevant issues simultaneously when solving a problem because nobody has full access to their full body of knowledge at all times, they try out new hypotheses, and they react adversely to external pressures.

Student models need to be evaluated empirically. Chin (2001) proposes the use of available measurement tests in order to obtain data on (personal) covariate variables such as aptitude and learning styles, and lists ethnographic field studies, content analysis, case studies, self-reports, and interviews as possible qualitative approaches. User models, in general, have a strong ethical dimension because they store and rely on personal information on human subjects. Here issues of storing data about users securely and preventing misuse by third parties are highly relevant (Schreck, 2003).

SEE ALSO: Intelligent Computer-Assisted Language Learning

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Learner Readiness

PATSY MARTIN LIGHTBOWN

Readiness is a concept that is relevant to all aspects of learning and development. It may be understood in a general way as openness to learning or *motivation*, along the lines of "you can lead a horse to water but you can't make it drink." From the perspective of biological development and in the context of language acquisition, readiness is tied less to motivation than to *capacity*, along the lines of "you have to crawl before you can walk."

Second language acquisition researchers have observed that learners tend to proceed through "stages" or "developmental sequences" in that certain language behaviors seem to emerge only after other specific behaviors have occurred. This has led to the question of whether the syllabus or teaching materials should target what learners are *ready* to learn. Experimental studies have sought to answer three main questions: Does instruction alter the order of acquisition of language features? Is instruction more effective when it matches a learner's stage of developmental readiness? Does instruction that targets language features or patterns that are beyond the learner's current stage facilitate development? The studies show that the order of acquisition of features is not substantially altered by instruction. Results also suggest that instruction facilitates both the rate of acquisition and progress to more advanced stages, whether or not the instruction specifically focuses on the features learners are "ready" to learn.

Developmental Sequences in Language Acquisition

Research on developmental sequences in second language acquisition grew out of research in child language. In both longitudinal (Brown, 1973) and cross-sectional (de Villiers & de Villiers, 1973) studies, patterns of similarity were observed in the order in which young children began to use certain English morphological features. For example, they reliably used regular plurals (*cats*, *dogs*) before they acquired possessives (*the cat's milk*, *the dog's tail*), and they used progressive -ing endings (*mommy jumping!*) before simple present third person singular (*Daddy likes milk*) endings.

Developmental sequences in the second language acquisition of some of these same features were described by Dulay and Burt (1974) and Krashen (1977) in studies of learners who had different first languages. The developmental sequences that they described were based on the *relative accuracy* with which learners produced different morphemes. Thus, for example, a learner who used plural *-s* in 60% of obligatory contexts and possessive *-'s* in 40% of obligatory contexts was deemed to have acquired plural before possessive. Krashen (1982) based his *natural order hypothesis* on these findings.

In the 1980s, researchers in the ZISA (Zweitspracherwerb italienischer, portugiesischer und spanischer Arbeiter) project found strong similarities in the path that untutored learners took in the acquisition of the complex word order rules of German (Meisel, Clahsen, & Pienemann, 1981). For example, learners first used basic subject–verb–object (SVO) word order, only later exhibiting an ability to use German's "verb second" rule, and still later acquiring the rules for subordination that require the finite verb to move to the end of dependent clauses. However, they noted that *accuracy* in language production did not

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correspond to developmental sequences and that it could be affected by a number of different factors. They argued that, rather than being tied to relative *accuracy* in obligatory contexts, acquisition might better be characterized in terms of the *emergence* of a feature in a learner's language. Taking into account that a single instance of a new feature might simply reflect a memorized chunk of speech rather than a pattern based on a learner's ability to manipulate linguistic elements, the ZISA researchers set a minimum number of occurrences of a feature before it was deemed to have emerged. However, once a small number of novel utterances containing the feature had occurred, the learner was said to have acquired that feature.

Other researchers have described developmental sequences in the second language acquisition of language features including questions, negation, tense and aspect markers, possessive determiners, and relative clauses. For example, in English as a second language (ESL), Pienemann, Johnston, and Brindley (1988) found a pattern in the development of the word order in questions. Like young first language learners, second language learners of English at the earliest developmental stage produce some questions that are grammatically correct because they have been learned as formulas (e.g., "What's that?" "What's your name?"). In forming other questions, however, they use SVO order, adding rising intonation to indicate a yes/no question. Later, they use a "fronting" pattern, placing an all-purpose question marker at the beginning of a sentence (e.g., "Do you can see it?"). Similarly, in information questions, learners place a "wh" word at the beginning, leaving the declarative word order intact (e.g., "Why you don't drink coffee?"). Only later are they able to perform the inversion of subject and auxiliary verb that characterizes English questions. This pattern has been observed even when the learners' first language has inversion in questions (Wode, 1978; Spada & Lightbown, 1999).

Although similarities in developmental sequences have been attested among learners from different first language backgrounds, there is also evidence of first language influence, for example in the extent to which learners seem to linger at a development stage in which a syntactic pattern in their interlanguage is similar to one in the L1 (Wode, 1978; Zobl, 1980).

Readiness and Instruction

Researchers have not found a generally agreed upon explanation for why the developmental sequences are what they are. Input characteristics such as salience and frequency appear to play a role (Goldschneider & DeKeyser, 2001), but instructional sequences have not been shown to alter the developmental sequences in meaningful ways. Decontextualized instruction such as intensive drill or grammatical exercises that isolate language features from communicative interaction can cause learners to give the appearance of having acquired particular features "out of sequence." However, as learners are exposed to more opportunities to hear and use the language in a greater variety of contexts, they have been observed to revert to patterns that are more typical of their developmental stage (Lightbown, 1983). Such findings may reflect the widely attested difference between declarative knowledge that can be called upon intentionally when learners focus on grammatical accuracy and what they do when their focus is primarily on the meaning of their communication.

Experimental studies of the effect of instruction generally confirm that instruction facilitates progress through developmental sequences but does not alter the sequences themselves. In a study with young Italian children and English-speaking adults learning German, Pienemann (1984, 1989) concluded that instruction was most effective if it targeted language patterns that were developmentally "next" in learners' interlanguage. When the instruction targeted features that were too far beyond the patterns learners had already acquired, it

was not useful in helping them make progress. Mackey and Philp (1998) looked at progress made by adult learners whose interlocutor provided corrective feedback in the form of recasts when they made errors in using English questions. They found that learners showed improvement if they were developmentally ready to acquire the language patterns exemplified by the recasts while those who were "unready" did not appear to benefit from this opportunity.

On the other hand, some researchers have shown that instruction targeting a developmental stage that was somewhat beyond learners' current level helped them to move to a higher developmental stage, even if they did not reach the level that was reflected in the instructional input (e.g., Spada & Lightbown, 1999). Furthermore, instruction on relative clauses has resulted in learners making progress toward developmentally more advanced clause types, sometimes acquiring the ability to use some that were even more advanced than those taught (e.g., Hamilton, 1994).

The findings of most studies on learner readiness have provided evidence that instruction can facilitate progress through developmental sequences, but it does not lead learners to skip stages in a sequence. Instruction can also serve to help learners improve accuracy, but it should be noted that progress cannot always be measured in terms of increases in accuracy. For example, asking questions with "fronting" shows that learners have moved beyond using only formulaic questions and have begun to create new sentences by manipulating word order.

The research on readiness and instruction suggests that instruction can have positive effects on language acquisition even if it is not designed to match a particular developmental sequence—a finding of considerable practical importance for at least two reasons. First, the research on developmental sequences covers only a small subset of the many linguistic features that learners must acquire. Second, students in a class will inevitably be at different developmental stages and thus not all "ready" to acquire the same features.

SEE ALSO: Instructed Second Language Acquisition; Measuring the Effectiveness of Second Language Instruction in Research; Role of Instruction in Second Language Acquisition Theories; Teaching Grammar

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Learner Response Systems in Second Language Teaching

WALCIR CARDOSO

A learner response system (LRS) consists of a set of software (e.g., a PowerPoint plug-in) and hardware (a handheld device often referred to as a "clicker" and a receiver that attaches to a computer). LRSs are commonly used in large classrooms to facilitate teaching by providing an easy and immediate way of assessing students' performance, and to create interactivity among the students and between the students and the teacher. Despite its relative absence in foreign or second language (L2) teaching and research (Cutrim Schmid, 2008; Johnson, 2010; Cardoso, in press a), the technology has recently been shown to have a strong potential for L2 acquisition as it can contribute to effective learning (Cardoso, 2010; Johnson, 2010). This entry will provide an overview of LRSs and the research and pedagogy associated with the technology.

Definition, Method of Operation, and Pedagogical Applications

LRSs have been adopted in a variety of disciplines. As a result, the technology and associated hardware appear in the literature under more than 35 different names, some reflecting the pedagogical and philosophical concerns of the respective discipline (e.g., audience-paced feedback system, audience response system, classroom feedback system, classroom response system, clickers, electronic voting machine, interactive response system, peer response system, personal response system, student response technology, wireless classroom communication system, wireless course feedback system, wireless keypad, zappers). Despite the sporadic use of LRSs over the past four decades (e.g., Boardman, 1968; Flagg, 1990), the technology has only recently become popular among teachers as a pedagogical tool, possibly due to recent developments in education (e.g., the concepts of peer instruction and active learning), some evidence that a response system may increase students' performance if used efficiently (e.g., Hake, 1998), the popularization of the personal computer and the consequent cost reduction for both hardware and software, and the adoption of similar voting systems on TV game shows. On these shows, when contestants are unsure about the answer to a given question, they may ask the audience for the correct answer. The audience votes with their clickers and, based on the frequency distribution of the responses projected on a large screen, the contestant may then make an informed decision about the correct answer, most likely the option with the highest percentage of votes.

An LRS operates in a similar manner in the classroom. As noted above, the system consists of a set of presentation software and wireless hardware. The technology is commercialized by several companies (e.g., H-ITT, iClicker and Turning Technologies), and it is also a component of certain interactive whiteboard systems (e.g., Promethean's ACTIVote). A typical LRS-based L2 class consists of the following steps: The teacher creates a question using the appropriate software, as illustrated in Figure 1A. Students are then asked to select an answer by clicking on the corresponding button on the keypad (Figure 1B). During the period in which the polling is open, the students' responses are sent wirelessly (via radio frequency or infrared technology) to a receiver (Figure 1C) connected to a computer

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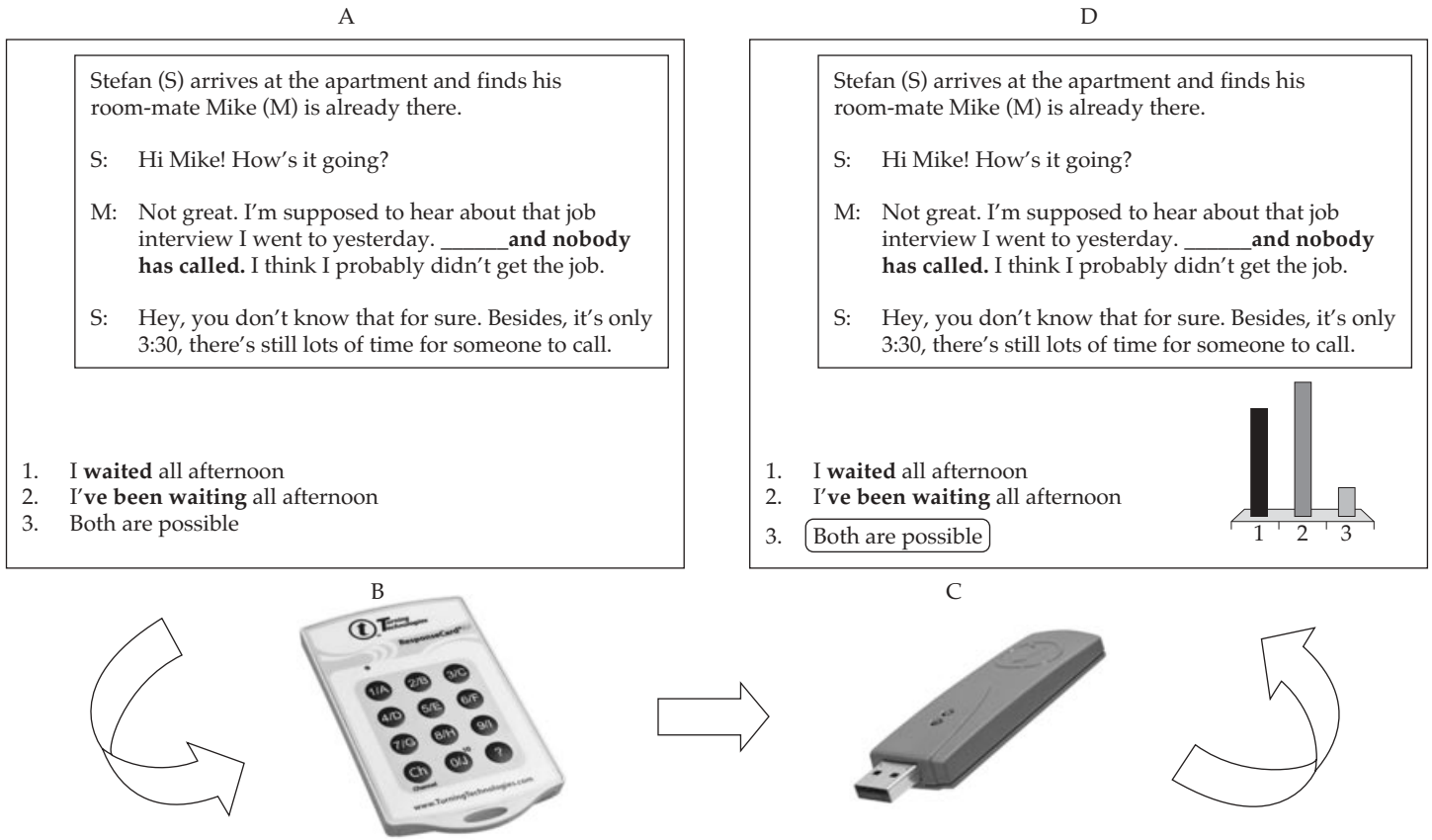

Figure 1 Schematic representation of an LRS and its method of operation. Images of clicker and receiver © Turning Technologies

which, with the assistance of the associated software, conducts some descriptive statistics including percentage distribution, mean, and standard deviation. When the voting period is closed, the results are automatically projected on a screen (Figure 1D), illustrating the correct answer, the percentage distribution of the responses across the choices, and other optional statistical information selected by the teacher. Based on these responses, the instructor may decide on how to proceed with the class: Move forward with the discussion when the majority of the students respond correctly or, if the distribution of the responses is not satisfactory (as exemplified in Figure 1D, where most students selected an incorrect alternative), engage them in discussion and peer instruction activities (e.g., students with diverging views could form small groups to attempt to convince the other members). In the latter situation, discussions and convince-your-neighbor activities can usually be followed by a re-vote process to ensure the effectiveness of the task.

The literature offers many suggestions of pedagogical applications of LRSs in a variety of educational settings and disciplines. Focusing on applications that directly relate to second or foreign-language teaching, LRSs can be used to

- assess understanding of the materials being discussed, including grammar, pronunciation, vocabulary, writing, and reading and listening comprehension (Cardoso, in press b);
- provide immediate (and reliable) feedback to the teachers and students, thus allowing the teacher to customize classes and tailor follow-up discussions based on how well students understood the material (Bruff, 2009; Cardoso, in press b);
- increase interaction in the class (e.g., via "convince-your-neighbor" activities, a survey after a debate; Mazur, 1997; Blodgett, 2006; Caldwell, 2007; Cutrim Schmid, 2008);
- monitor attendance and class participation, which consequently could lead to an increase in attendance and participation (Bruff, 2009);
- encourage the participation of students who are shy, have a speech impediment, or have fear of peer criticism (Kennedy & Cutts, 2005; Bruff, 2009);
- distribute content discussion and activities with periodic clicker-based breaks (Caldwell, 2007; Bruff, 2009);
- structure classes in a more constrained manner, in which relevant topics are preceded and followed by a set of clicker-based questions (e.g., to assess previous and newly acquired knowledge respectively; Bruff, 2009; Cardoso, in press b);
- provide additional modalities for delivering and assessing knowledge, thus catering to different learning styles (Cardoso, in press b);
- frequently test the students' performance (including summative and formative assessments) on a regular basis and over time (Poulis, Massen, Robens, & Gilbert, 1998; Bruff, 2009);
- survey students' opinions about specific topics, their previous experiences (e.g., level of previous exposure to the L2), or obtain general demographic information (Caldwell, 2007);
- create a fun, game-like atmosphere in the classroom (Caldwell, 2007; Bruff, 2009).

The consensus in the LRS literature is that the adoption of a response system and the pedagogical attributes associated with the technology contribute positively to the learning experience (Fies & Marshall, 2006; Caldwell, 2007; Bruff, 2009; Cardoso, 2010, in press a), as will be discussed next.

Why Use Learner Response Systems? What the Research Says

The literature on the use of LRSs is unanimous in asserting that the technology offers many pedagogical benefits, especially when used in large lecture settings. With regard to the attitudes of students and teachers toward the use of LRSs in academic settings (mostly in large undergraduate lecture halls in universities), a common denominator is the "ample converging evidence" that the response system is perceived as a tool that (a) increases students' and teachers' motivation and the general interest in the class (e.g., Blodgett, 2006; Caldwell, 2007), which, consequently, (b) increases involvement and participation inside and outside of the classroom (e.g., Blodgett, 2006; Poulis et al., 1998); (c) allows learners to self-assess (e.g., Barnett, 2006; Blodgett, 2006; Hoekstra, 2008) as well as (d) compare their performance in relation to that of their peers in the same class (e.g., Barnett, 2006; Blodgett, 2006; Bruff, 2009); (e) fosters interactions (e.g., Blodgett, 2006; Mazur, 1997); and, finally, (f) contributes to learning (e.g., Hake, 1998; Blodgett, 2006; Bruff, 2009).

While the vast majority of LRS studies have focused on large undergraduate-level introductory courses (Cutrim Schmid, 2007; Cardoso, in press a, in press b), there are a handful of studies that have investigated the use of LRSs in an L2 teaching environment (see Cutrim Schmid, 2007; Cardoso, 2010, in press a; Johnson, 2010). For example, Cardoso (in press a) investigated the attitudes of Brazilian students toward the use of LRSs in the teaching of English L2 vocabulary. The results of the analyses of surveys and interviews with students were consistent with the six general themes categorized in the discussion above. In the study, L2 learners also perceived LRSs as tools that increase motivation, involvement, and participation in the class, allow self-assessment and peer comparisons, promote interactions, and contribute to learning (see also Cutrim Schmid, 2007, and Johnson, 2010, for similar results in an L2 context). The study also revealed other strengths of the use of the response system, including the students' perception of a more committed teacher (see Knight & Wood, 2005, for similar results in large biology classes), and the belief that both the quality and quantity of content coverage were increased in LRS-based instruction. The latter is a strength that distinguishes the L2 environment from the large undergraduate arts or science lecture halls that are mostly analyzed in the LRS literature: Giving students time to think and discuss their views with peers is believed to jeopardize class planning and the quantity of content coverage (Bruff, 2009). In a follow-up study reported in Cardoso (2010), the students' perception of a potential learning gain (the sixth theme described earlier) in the acquisition of advanced (i.e., highly infrequent) vocabulary was confirmed quantitatively. In the study, the group that received LRS-based instruction outperformed in vocabulary retention the other non-LRS groups in both the posttest and delayed posttest assessments.

It is not clear why LRSs have been neglected by L2 researchers and teachers (see Cardoso, in press b, and Yoder-Kreger, 2009, for examples of pedagogical applications), but a possible explanation might be due to the very nature of standard L2 teaching, where classes are significantly smaller, thus leading to an increase in the level of interaction between the students and the teacher. In addition, most current L2 courses (e.g., the ones analyzed in Cutrim Schmid, 2007; Cardoso, 2010, in press a; Johnson, 2010) follow a communicative approach to language teaching, one that assigns the student an active role in the learning process, and that emphasizes interaction as both the means and the ultimate goal of learning a language.

It is clear from a review of the literature that research on the use of LRSs in L2 settings is still in its infancy. Despite the encouraging results obtained in the few studies available, it remains an empirical question whether they are generalizable to other communities of L2 learners. A serious limitation of many of these studies is that they rely exclusively on qualitative methods of research (e.g., classroom observations, interviews). Another

important question relates to whether LRSs should even have a place in the modern L2 classroom (e.g., to foster interactivity), an environment that is intrinsically communicative and interactive. Furthermore, the literature on LRSs is inconclusive about the extent to which learners' perception of learning gains are transferable to actual increased performance. Even the studies that show evidence of an increase in academic achievement via improved grades or better performance are wary of claiming that the gain was due exclusively to the adoption of the response system (e.g., Cardoso, 2010; Judson & Sawada, 2002). In these studies, learning gains are also attributed to factors such as the natural switch to the more student-centered environment that characterizes clicker-based instruction (Bruff, 2009), the effects of being tested affecting the participants' behavior (Caldwell, 2007), and the mere effects of using a new technology (a novelty effect; Cardoso, 2010, in press a).

Some Limitations

Although the vast majority of the studies indicate that LRSs are typically perceived as positive additions to a class, there are still issues that need to be addressed either in the development of the technology or in the implementation of the response system. A common complaint is the cost of the device (approximately US$40.00), a concern that can be minimized if several courses adopt the technology, or if the institution adopts a "buy back to resell" system in which students are reimbursed 50% or more for the cost of the clickers, as is done with books. Another concern commonly reported in the literature relates to the fact that some users are not always certain that their responses were properly registered by the system due to a lack of feedback for individual responses (e.g., Cardoso, in press a), a problem that may increase anxiety in graded quizzes and monitored participation. In cases in which the anonymity of the responses is preserved (an optional feature in LRSs), another concern involves the confidentiality of the responses and their subsequent repercussions (e.g., some students feel that they could be penalized because they refused to participate in an activity or simply because they are often wrong in their answers). Other issues perceived as limitations include the teacher's lack of experience in using the technology (e.g., questions being asked simply for the sake of using the LRS), the feeling of a constant monitoring of attendance and participation, and the inadequate amount of time that is reserved for some LRS-based activities (e.g., too much time dedicated to a relatively easy and uncontroversial question).

While these are certainly legitimate limitations of the system, based on the available literature on learners' attitudes toward LRSs, it seems that students are prepared to tolerate the use of a not-so-perfect response system in exchange for the possibility that the technology and its associated pedagogical methods may eventually lead to an improvement in learning.

Concluding Remarks

Hand-raising techniques and oral responses are often used in the L2 classroom for assessing students' understanding and for providing the teacher and the students with immediate feedback. However, such responses are not always reliable as they can be affected by peer pressure, avoidance of unwanted exposure (and being perceived as a teacher's pet), and fear of embarrassment if the answer is incorrect. The use of an LRS eliminates this problem by giving students the chance to respond in an independent and anonymous way, thus minimizing the crowd psychology effects in which learners tend to follow the majority or the vocal minority. In addition, unlike paper-based and online quizzing applications, the feedback provided by the system is immediate to both the instructor and the learner, permitting fast and focused pedagogical interventions. Although the technology

was originally implemented to address the lack of interactivity in large classroom settings, this entry has shown that it can be easily adapted to an environment that is typically communicative and interactive in nature: the modern second or foreign language classroom.

SEE ALSO: Assessment in the Classroom; Mobile-Assisted Language Learning; Technology and Language Testing

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Learner Varieties

CHRISTINE DIMROTH

The notion of *learner variety* (LV) refers to a coherent linguistic system produced by a language learner. The term highlights the fact that the standard variety as well as learner languages, dialects, and so forth are but variants of a given language and should not primarily be approached from a perspective of correctness or deviation from the "norm." The term is often used in the plural (*learner varieties*) in order to emphasize the dynamic and unstable nature of developing learner languages. It is mainly employed in second language acquisition (SLA) studies but the concept can in principle also be applied to first language (L1) acquisition.

At each point in development, a learner passing through subsequent stages of acquisition is said to be a speaker of one particular type of LV (e.g., the *Basic Variety*, Klein & Perdue, 1997; see below). LVs do not grow arbitrarily. Despite some variation that is partly dependent on external factors like source and target language, age of the learner, type and amount of exposure, and so forth, they typically share a number of predictable lexical and grammatical properties.

The core idea of the LV approach is to treat the linguistic systems developed by learners as languages in their own right, instead of considering them as incomplete or somehow deficient and erroneous variants of "real" languages. First attempts in a similar vein are reflected in notions such as *interlanguage* (Selinker, 1972) but this term still suggests that learner languages are hybrid systems situated in-between two "real" languages (the source language (SL) and the target language (TL)). Researchers adopting the LV perspective analyze learner languages as if they had encountered them in a hitherto undiscovered population and try to describe their internal structure in positive terms.

Adopting a functionalist approach, according to which the form of learner utterances is shaped to a large extent by their function (Cooreman & Kilborn, 1991), researchers discovered a set of organizing principles on the structural, semantic, and informational level of LVs. These principles are not context independent. Rather, they are typically seen as the result of an interaction between utterance- and discourse-level constraints (Klein & Perdue, 1997).

An LV might initially be quite simple, but even at this stage it can be used for a whole range of communicative purposes. Furthermore, second language (L2) learners are not seen as struggling learners but as versed users of a given variety (Cook, 2002) that might develop further in the direction of the TL or stabilize at some point. Further development is mainly driven by the communicative limitations of the simpler varieties. Even though L2 learners do not always reach the TL competence of native speakers, Klein and Perdue propose a continuum between LVs and fully developed, or native languages, and describe the latter as "a relatively stable state of language acquisition—that state where learners stop learning because there is no difference between their variety and the input—the variety of their social environment" (Klein & Perdue, 1997, p. 308).

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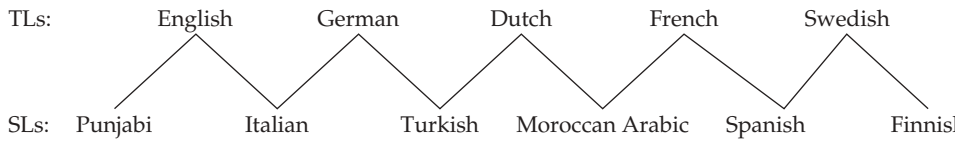

Figure 1 Distribution of source languages (SLs) and target languages (TLs) in the ESF project

The "Second Language Acquisition of Adult Immigrants" Project and Follow-Up Studies

The most comprehensive study adopting the LV perspective was conducted by the members of the "Second Language Acquisition of Adult Immigrants" project, funded by the European Science Foundation (ESF; see Perdue, 1993, for a full account of methods and results). The study had a longitudinal design (data collection over about 30 months) and was based on comparable oral production data in Dutch, English, French, German, and Swedish. All TLs thus belonged to the Indo-European language type and generalizations should be restricted to these. SLs were Finnish, Italian, Moroccan Arabic, Punjabi, Spanish, and Turkish and the combination of source and TLs was organized in a way to facilitate the study of source and TL influences (Figure 1). For each TL there were two learner groups with two different SLs (e.g., Punjabi vs. Italian speakers learning English), and for most SLs the acquisition of two different TLs was studied (e.g., Italian speakers learning English vs. German).

Participants were 40 adult immigrants who had only recently arrived in the TL country. Their SLA was mainly untutored, that is, they learned the language through daily contact with speakers of the TL in their new social environment. Oral production data were collected in free conversations and more controlled discourse elicitation tasks facilitating crosslinguistic comparisons (e.g., film retellings, personal narratives, picture descriptions, and instructions). During three cycles of data collection each task was performed three times by each participant, in order to allow for comparisons over time and proficiency levels. All data were transcribed and computerized and can be accessed via http://corpus1.mpi.nl/ds/imdi_browser.

The study focused on the following topics: the structure of utterances (Klein & Perdue, 1992), the expression of temporality (Dietrich, Klein, & Noyau, 1995), the expression of spatiality (Becker & Carroll, 2005), word formation and lexical development (Perdue, 1993), and misunderstandings and feedback (Allwood & Abelar, 1984). In follow-up studies, researchers have used the database to investigate the acquisition of finiteness and scope-bearing elements like adverbials, negation, and focus particles (Dimroth, 2002; Perdue, Benazzo, & Giuliano, 2002; Benazzo, 2003; Becker, 2005). Other studies have addressed new topics and added new language pairs, such as the acquisition of modality by Polish learners of German (Skiba & Dittmar, 1992), or the acquisition of light verbs by Chinese learners of Italian (Bernini, 2003).

The Developmental Sequence

Advocates of the LV approach emphasize that learner utterances are structured according to certain organizational regularities right from the beginning of the acquisition process. The early varieties are not very efficient communicative systems and learners have to rely on native speaker scaffolding to a large extent. LVs become more complex over time when learners try to overcome early communicative limitations.

During the acquisition process learners develop a series of increasingly complex linguistic systems. Such systems, commonly referred to as "stages of acquisition" (e.g., Clahsen, Meisel, & Pienemann, 1983), are simply called different LVs here (see below for more detail on three particularly characteristic types of LVs that have been distinguished in the literature). Importantly, newly acquired regularities are neither simply replacing earlier ones, nor just added to the ones that already exist. Rather, development during the acquisition process is seen as a stepwise reorganization of a network of form–function mappings in which changes in one part may sometimes have far-reaching repercussions for the interplay between forms and functions in other parts. The form of a particular learner utterance reflects the interaction of the organizational principles, and this interaction can change with progressive input analysis. Newly acquired formal markings (e.g., case morphology) can free other devices (e.g., word order) from their earlier function (e.g., the expression of argument structure) so that these devices can take over or concentrate on other functions (Klein & Perdue, 1997).

The earliest LV distinguished in the literature on untutored adult SLA is the so-called *Prebasic Variety*, which is attested even before the acquisition of verb–argument structure and exhibits a noun-based utterance organization. It is followed by the *Basic Variety*, in which utterance structure centers on the nonfinite verb (infinite utterance organization). While some learners stagnate at this level and only enlarge their lexical repertoire, others develop toward *Postbasic Varieties*, which are distinguished by the acquisition of finiteness and therefore show a finite utterance organization. Each variety is characterized by the interaction of a small number of organizational constraints that are largely independent of SL and TL. The transition from one variety to the next is not abrupt, but slow and gradual, and individual learners typically show phases in which different types of utterance organization coexist.

The Prebasic Variety: Nominal Utterance Organization

The earliest manifestation of untutored adult L2 learners' attempts to communicate in the TL has been labeled the Prebasic Variety. Speakers of the Prebasic Variety are true beginners knowing only around 50 words (Perdue, 1996). These speakers produce very simple utterances that predominantly consist of unconnected nominal elements (mainly nouns, adjectives, and particles) and some adverbs and participles. There is no functional inflectional morphology and this initial LV also lacks the structuring power of verbs (e.g., argument structure, case role assignment, etc.; see Perdue, 1993).

Two types of ordering patterns are mainly used with this kind of nominal utterance organization. The first pattern consists of the juxtaposition of two noun phrases (NPs) (e.g., *meisje honger* 'girl hunger') or, alternatively, an NP and a prepositional phrase (PP) or an adjective (Adj) (e.g., **los* deux à la rue* 'the two-of-them in the street'; examples from Perdue, 1996). Even though there is no formal marking of an assertion, utterances with this word order are typically used with the function of predicating a property that is encoded by the second NP/PP/Adj of a topic that is encoded by the first NP. When the information structure of such simple utterances is analyzed in context, it can be seen that learners obey a so-called "Focus Last Constraint" (Perdue, 1996). The second position of such simple predicating utterances can also be filled by affirmative or negative particles. Reference to the property predicated of the topic is then often maintained from the preceding utterance and left implicit (e.g., Native speaker: *reparieren sie selbst fahrrad oder auto?* 'Do you yourself repair bicycle or car?'; Learner: *auto nein, fahrrad ja* 'car no, bicycle yes'; see Becker, 2005). In addition to word order, learners can use intonation to express the intended information structure by placing a focal pitch accent on the second constituent. A different utterance pattern is used to introduce a new referent into the discourse. The NPs referring

to the new referents are then preceded by optional adverbials (e.g., *aujourd'hui ici quatre familles* 'today here four families').

Research has found that learners use the restricted formal repertoire available at the Prebasic Variety stage (mainly word order and suprasegmental means) in a systematic way when producing simple utterances and marking their information structure in a given discourse context. Perdue (1996, p. 148) maintains that "These learner varieties are highly structured. If one wishes to do justice to the continuity of the acquisition process, one cannot afford to ignore systematicity just because the adopted theory cannot accommodate it. An appeal to 'fragments' and 'non-sentences' amounts to an admission of a failure in analysis."

The Basic Variety: Infinite Utterance Organization

At the subsequent stage, the Basic Variety, learners extend their lexical repertoire and reduce their need to rely on the interlocutor's scaffolding. This is mainly achieved through the integration of verb phrases in the LV (functional elements or inflectional morphology are still not used productively), which has far-reaching consequences for the structure of the learner utterances.

Word order is now no longer exclusively motivated by information structure principles but gains an additional function: It is used to signal the argument structure of verbs. Speakers of the Basic Variety obey the so-called "Agent First Constraint" while the "Focus Last Constraint" known from the preceding stage is still valid. In addition to these semantic and pragmatic constraints, word order at the Basic Variety stage is characterized by a small number of phrasal constraints which define the patterns in which lexemes may occur. There are basically three phrasal patterns (see Klein & Perdue, 1992, for details):

1. NP1–V–(NP2)–(NP2)
2. NP1–Copula–NP2/PP/Adj
3. V–NP2

The noun phrases distinguished here as NP1 and NP2 have the following internal structure:

NP1: Proper name, determiner + noun, pronoun, zero anaphor
NP2: Proper name, determiner + noun

Importantly, learners at the Basic Variety stage do not distinguish between the finite and nonfinite component of the verb. Infinite utterance organization—that is, the dominance of uninflected verbs or infinitival forms—is a defining characteristic of the Basic Variety. The presence of verb–argument structure allows the learners to express inherent lexical aspect (*Aktionsart*), but morphological means for the expression of tense and aspect are still lacking.

Basic Variety speakers typically possess a relatively rich repertoire of temporal adverbials that allow them to specify a time span. In combination with principles of discourse organization (e.g., the principle of natural order, whereby the order of narration follows the order of events), this enables learners to express relatively complex temporal relations, including continuation and iterativity (Starren, 2001). About one third of the participants in the "Second Language Acquisition of Adult Immigrants" project (Perdue, 1993) did not develop beyond the Basic Variety.

The Postbasic Variety: Finite Utterance Organization

Conflicts between the constraints that are valid at the Basic Variety stage are seen as the most prominent driving forces toward further development. There are discourse contexts

in which the semantic and the pragmatic constraints described above cannot be satisfied at the same time, such as when an agent that should be mentioned first (according to the "Agent First Principle") is in focus and should therefore be mentioned last (according to the "Focus Last Principle"). Learners must then either decide to violate one of the principles or develop further disambiguating devices. The same holds for the expression of more complex temporal relations, such as when the inherent temporal properties of a verb are at variance with the aspectual meaning intended by the learner, or when the order of narration is not in accordance with the principle of natural order.

Competition between constraints is the motivation for further morphosyntactic development that is geared to the specificities of the TL. At the Postbasic Variety stage, pronominal forms become productive, focalization devices (e.g., cleft structures) are acquired, and finite morphology on the verb emerges, allowing the learner to mark grammatical agreement, tense, and aspect. The acquisition of morphological finiteness marking goes hand in hand with a reorganization of utterance structure (hence "finite utterance organization") that has consequences for the integration of scope-bearing elements, like negation, scope particles, and adverbials (see Dimroth, 2002; Perdue et al., 2002; Benazzo, 2003), because a more hierarchical structure arises that offers new positions and means to disambiguate the scope. The acquisition of finiteness can therefore be seen as a major turning point. Finiteness is typically first marked on auxiliaries and other light verbs and only later on lexical verbs (Jordens & Dimroth, 2006; Schimke, 2008; Verhagen, 2009).

The Special Status of the Basic Variety

Within this tradition of looking at LVs as coherent linguistic systems, a particular status has been ascribed to the Basic Variety as a highly functional and stable means of communication which many learners use for a long period. Klein and Perdue (1997, p. 303) believe "that the Basic Variety not only plays a particular role in the process of second language acquisition but also . . . represents a particularly natural and transparent interplay between function and form in human language." This conclusion is based on the observation that the structures attested at the Basic Variety stage deviate from SL *and* TL in systematic ways. The untutored adult learners in the "Second Language Acquisition of Adult Immigrants" project consistently developed a communicative system exhibiting a shared body of core organizational principles, despite their different SLs and—even more astonishing—despite the fact that they were exposed to different TLs. With the exception of the lexicon the TL properties were found to become relevant only after the Basic Variety stage (see the results summarized in Perdue, 1993).

Advocates of an LV approach therefore maintain that the "learning choices" made by untutored adult L2 learners cannot be a result of the surface properties of the input language alone, but must also be informed by principles specific to human language and communication. These claims are mainly based on the similarities between LV systems that were developed by learners with different SLs and TLs (Klein & Perdue, 1997).

Because of their independence of SL and TL, the structural constraints operating at the Basic Variety stage have been interpreted as representing the most central aspects of linguistic organization, or, as Klein and Perdue (1997, p. 304) put it, as directly reflecting "the necessary, rather than the more accidental, properties of the human language capacity." The authors also discuss whether the Basic Variety should be seen as an instantiation of universal grammar (UG) and propose that, within Chomsky's minimalist framework, it could be characterized as an I-language in which all (formal) features are weak. This would explain the absence of inflectional morphology and the lack of movement attested at the Basic Variety stage. In the course of further development, particular features would then have to be "strengthened" in accordance with principles identified in the TL input.

Critics of this interpretation deny the special status attributed to the Basic Variety for different reasons. Schwartz (1997) challenges the lack of L1 influence and points to word order variation, among other things, attested in the data from learners with different SLs. Comrie (1997) wonders whether the Basic Variety can be seen as a real language. He points out that native languages serve both a cognitive and a communicative function, and argues that only the latter is true for the Basic Variety.

Bierwisch (1997) and Meisel (1997) discuss the question of whether the Basic Variety can be equated with full-fledged native languages in the sense that both originate from the same human language faculty. Bierwisch (1997) argues that communication systems that are so dramatically reduced in complexity could be built up with the help of domain-general cognitive strategies alone and do not necessitate the language-specific resources that are indispensable for native language acquisition. Meisel (1997) disputes the claim that UG is available to L2 learners in the first place and corroborates this by pointing to developmental differences between L1 and L2 acquisition.

These points, as well as other open questions (e.g., the role of the age factor), need further investigation. What the critical discussion shows is that the study of elementary LVs not only informs us about the process of SLA, but can also help us to gain more insight into the functioning of the human language capacity in more general terms.

SEE ALSO: Case Study; Crosslinguistic Influence in Second Language Acquisition; Fossilization; Grammar and Discourse; Interaction Approach in Second Language Acquisition; Interlanguage; Sentence Production in a Second Language

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Learning to Read in New Writing Systems

KEIKO KODA

The ultimate goal of reading is to construct text meanings based on visually presented information. Integral to this goal is decoding competence—that is, the ability to extract linguistic information from printed words. This entry explains how decoding contributes to text comprehension; how decoding development is facilitated by orthographic knowledge; how the knowledge acquired in one language affects decoding development in another language; and how orthographic knowledge can be promoted in second language (L2) learners through classroom instruction.

Role of Decoding in Reading Comprehension

In this context, "decoding" specifically refers to the process of extracting phonological information from printed words. One may wonder why phonology is involved because reading comprehension does not require overt vocalization. Phonology is necessary for retaining information in working memory, wherein extracted linguistic segments are integrated into larger text units, such as phrases and sentences. Research has shown that phonologically encoded information is more durable than any other form of representation and retained longer in working memory (e.g., Just & Carpenter, 1980). Thus, visually presented words must be converted into their phonological forms.

Successful comprehension, moreover, demands high levels of efficiency in each of its component operations. It is well documented that a principal hurdle in complex cognitive activities, such as reading, is that the number of mental operations that can be simultaneously activated is limited (e.g., Schneider & Shiffrin, 1977). To keep multiple operations concurrently active, some of those operations must be automated (e.g., Perfetti, 1985; Daneman, 1991). Decoding is a good candidate for automaticity because it involves systematic mappings of featural information (e.g., LaBerge & Samuels, 1974; Adams, 2004). Because automated execution requires little attentional capacity, well-developed decoding can leave sufficient room for other, more resource demanding, operations.

Role of Orthographic Knowledge in Decoding Development

Efficient decoding implies effortless access to a word's phonology. Although it may seem that good readers recognize many words instantly and holistically with little attention to their internal components, they engage in substantial analysis and manipulation of sublexical information, such as phonemes and syllables (e.g., Ehri, 1998). Research has demonstrated that skilled readers are more adept at pronouncing individual letters and nonsense letter strings than poor readers (e.g., Wagner, Torgesen, & Rashotte, 1994); and that the absence of even a single letter in a word considerably reduces their decoding efficiency (e.g., McConkie & Zola, 1981). Clearly, seamless decoding is attributable to word segmentation and analysis, rather than to whole-word retrieval. Decoding thus is an analytical and constructive operation and it can be significantly enhanced by orthographic knowledge—that is, by

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understanding how phonological information is encoded graphically in the writing system (e.g., Seidenberg & McClelland, 1989; Ehri, 1998).

Orthographic knowledge, like other facets of linguistic knowledge, emerges from input processing experience, involving the detection and abstraction of structural regularities implicit in input (Ellis, 2002). English orthographic knowledge, for example, is defined as "an elaborate matrix of correlations among letter patterns, phonemes, syllables, and morphemes" (Seidenberg & McClelland, 1989, p. 525). Accordingly, its acquisition is seen as the process of forming interletter associations through cumulative print exposure and experience. That is to say, the more frequently a particular pattern of letter sequences is experienced, the stronger the connections that hold the letters together. Under this view of learning, orthographic knowledge, while boosting decoding, becomes increasingly refined through decoding experience.

As a by-product of print processing experience, orthographic knowledge reflects the grapheme-to-phonology relationship in the language in which reading is learned. As such, the knowledge varies across languages in two dimensions: orthographic representation and systematicity in symbol-to-sound correspondences. *Orthographic representation* refers to the linguistic unit that each graphic symbol represents in each language. In alphabetic systems, for example, each letter stands for a phoneme—either a single consonant or vowel. In logographic systems, in contrast, each symbol represents a morpheme, corresponding holistically to the sound and meaning of the morpheme. O*rthographic systematicity* pertains to the degree of regularity in grapheme-to-phonology relationships. In "systematic" systems (e.g., Spanish and Serbo-Croatian), each symbol encodes only one phoneme, constituting a phonologically regular system with highly transparent grapheme-to-phoneme relationships. In contrast, in phonologically "opaque" systems, such as English and Chinese, the grapheme-to-phonology relationships are far less transparent because they preserve morphological information at the expense of phonological regularity.

The psycholinguistic grain size theory (Ziegler & Goswami, 2006) provides a plausible explanation of how variations in decoding development occur in conjunction with the grapheme-to-phonology relationships in typologically diverse writing systems. In all languages, reading acquisition demands learning to map spoken language elements onto the graphic symbols that encode them. According to the theory, the optimal size for the required mappings is determined by the amount of orthographic information required for decoding. In phonologically transparent, or regular, systems, decoding demands little orthographic information. The grain sizes in these systems are small at the phonemic level. In contrast, in phonologically opaque systems, decoding requires far more orthographic information, thus, necessitating larger grain sizes, such as syllables, rimes, and even morphemes. These variations have significant implications for L2 decoding development.

L2 Decoding Development

It is well documented that decoding skills, once acquired, transfer across languages and are assimilated in reading in another language (Koda, 2005). Through transferred skills, first language (L1) orthographic knowledge contributes directly to the formation of L2 orthographic knowledge, and then, to L2 decoding development indirectly through L2 orthographic knowledge. Such crosslinguistic impacts bring about several distinct characteristics uniquely associated with L2 decoding, including (a) L1-induced variations, (b) L1–L2 orthographic distance effects, and (c) facilitation from universally shared resources.

When transferred, L1 decoding skills, shaped differentially in diverse languages, variably cope with the demands imposed by L2-specific orthographic properties and thus engender systematic variations in L2 decoding behaviors. Experimental studies have shown that adult

L2 learners with alphabetic and logographic L1 backgrounds are differentially sensitive to experimental manipulations designed to alter phonological transparency (Koda, 1989, 1990, 1993; Ryan & Meara, 1991); and more critically, that the observed variations are directly identifiable with the participants' respective L1 orthographic backgrounds (e.g., Brown & Haynes, 1985; Green & Meara, 1987; Koda, 1998, 1999; Akamatsu, 2003). Given that those L1-related variances are systematic and predictable, they indicate that linguistically heterogeneous learners are likely to encounter diverse processing problems in learning to read in a new language involving a typologically different writing system.

Because orthographic properties differ across languages, transferred decoding skills must undergo functional adjustment. The amount of modification however varies across diverse learners groups (e.g., Muljani, Koda, & Moates, 1998). When L1 and L2 are similar, transferred decoding skills are serviceable with little adjustment. However, when the two languages are typologically distant, substantial modification is necessary for L1 skills to be optimally functional in L2 decoding (Koda, 1999; Hamada & Koda, 2008, 2010). Clearly, orthographic distance directly relates to the rate in which L2 decoding skills mature, and thus, explains efficiency differences in L2 decoding among learners with similar and dissimilar L1 backgrounds.

Foundational building in learning to read is impelled by a set of universal principles (Perfetti, 2003). Because the foundational skills are required of all learners in all languages, once developed, they become available as shared resources in learning to read in any additional language. The notion of shared competence is manifest in strong crosslinguistic relationships in decoding skills repeatedly shown in studies involving school-age children learning to read two related (Durgunoglu, Nagy, & Hancin, 1993; Gholamain & Geva, 1999; Wade-Woolley & Geva, 2000; Branum-Martin, et al., 2006), as well as unrelated (Bialystok, McBride-Chang, & Luk, 2005; Wang, Perfetti, & Liu, 2005) languages. The clear implication is that L2 reading development is accelerated, in highly specific and thus restricted ways, by prior reading experience because it allows learners to usefully exploit the resources shared across languages.

Pedagogical Implications

Given that L2 learning to read entails multiple diversities, it is clear that no one method works optimally for all L2 learners. Ideally, teachers should recognize that prior literacy experience has lasting impacts on L2 reading development. For example, they should be aware that the extent that L1 and L2 writing systems share similar properties differs among learners with varying L1 backgrounds; and that orthographic distance explains disparate rates in which L2 decoding skills develop. Although it is not reasonable to expect teachers to know every possible L1-based disparity among their linguistically heterogeneous students, such awareness is crucial for recognizing the diverse needs of their students. If instruction is based solely on the monolingual models developed in L1 reading research, disregarding the impediments stemming from L1-induced variations, discrepancies are likely to occur between the monolingual norms assumed in the instruction and the processing difficulties that L2 learners actually encounter.

Because input experience is the key determinant of what is learned and how well it is learned, decoding development can be promoted by improving the quality and quantity of print input available to learners. One way of increasing input *quality* is to design instructional activities and materials so as to highlight the orthographic unit most reliably representing phonology in the language, such as rhymes in English and phonetic radicals in Chinese characters. Augmenting input *quantity* is critical, but insufficient, because decoding efficiency can be achieved only through cumulative symbol-to-sound mapping experience. Although

simulating print processing experience typically found in L1 reading development is not feasible, it is certainly possible to provide learners with ample opportunities to engage in input analysis and mapping practice.

SEE ALSO: Graded Readers; Teaching Adolescent and Adult Language Learners With Limited or Interrupted Formal Schooling; Teaching Literacy; Teaching Reading

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Leech, Geoffrey

SEBASTIAN HOFFMANN

Geoffrey Neil Leech was born in Gloucester, in the west of England on 16 January 1936. After attending Tewkesbury Grammar School, he studied at University College London (BA honors in English Language and Literature, 1959; MA in Linguistics, 1963), where he also took up his first academic teaching position as an assistant lecturer—later lecturer—in 1962. His first monograph, *English in Advertising: A Linguistic Study of Advertising in Great Britain* (Leech, 1966), grew out of his MA thesis, which was submitted in 1963.

In addition to the study of register, Leech's main research interests during the 1960s were stylistics and semantics. In the former field, he broke new ground in the UK in successfully applying modern linguistic methods to the study of literary language, combining two approaches whose exponents had traditionally been rather reluctant to join forces. His book *A Linguistic Guide to English Poetry* (Leech, 1969a) is testimony to the belief that such a rapprochement is a fruitful exercise, a conviction that was later forcefully reiterated in *Style in Fiction: A Linguistic Introduction to English Fictional Prose* (Leech & Short, 1981) and which has continued to be influential on Leech's research interests up to the present day.

In the area of semantics, Leech was initially influenced by M. A. K. Halliday, the first professor of linguistics at UCL. However, he soon developed his own theory of semantics, which was to form the basis of his PhD thesis entitled *An Approach to the Semantics of Place, Time, and Modality in Modern English*. This was later reworked into a book with the title *Towards a Semantic Description of English* (Leech, 1969b).

Leech's first exposure to corpus linguistics occurred during his time at UCL, where he was closely associated with the Survey of English Usage (SEU), a research center founded by Randolph Quirk in 1959 that was attached to the Department of English Language and Literature. Together with key researchers such as David Crystal, Jan Svartvik, and Sidney Greenbaum, Professor (later Lord) Quirk was at that time in the process of compiling a one-million-word collection of spoken and written data, part of which was later to be distributed in electronic format as the London–Lund Corpus.

Work by the SEU also formed the impetus and basis for *A Grammar of Contemporary English (GCE)*, the first scholarly grammar of English written by a predominantly British authorship in the 20th century (Quirk, Greenbaum, Leech, & Svartvik, 1972). At a time when linguistics was dominated by Noam Chomsky's highly theoretical views of the generative nature of grammar, this work provided a much-needed bridge between academia and the practical needs of the educator in the English classroom. Although not as explicitly corpus-based as the more recent *Longman Grammar of Spoken and Written English* (Biber, Johansson, Leech, Conrad, & Finegan, 1999), *GCE* was a decidedly descriptive work. In particular, the four authors took the position that grammar is inherently indeterminate. This is reflected, for example, in their discussions on gradient boundaries and multiple class membership. In other words, in cases where competing structural analyses could be put forward, the authors argue that lexical items may belong to more than one grammatical category, and that the boundary between these categories is blurred. Thus, for example, a word like *washing* in *washing machine* is arguably a noun or an adjective and no attempt needs to be made to find arguments that eliminate the indeterminacy. Another example is the case of complex prepositions (e.g., *in front of, in common with*), for which a

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gradient scale of "cohesiveness" is proposed (pp. 302–4). Thus, *in spite of* behaves in every way like an indivisible unit (and therefore like a simple preposition) while *on the shelf by* (*the door*) is shown to consist of grammatically separate units and is therefore located at the other extreme of the scale. A considerably revised and updated edition of *GCE* was published as *A Comprehensive Grammar of the English Language* (Quirk, Greenbaum, Leech, & Svartvik, 1985), which quickly established itself as one of the main reference grammars of English.

In 1969, Leech moved to the north-west of England to take up a post at the recently formed University of Lancaster, where he is still based at the time of writing. He was promoted to professor of linguistics in 1974 when he also became the first head of the then newly founded Department of Linguistics and Modern English Language, which was one of the first departments in the UK to offer a BA in Linguistics. As early as 1970, however, Leech took a leading role in defining the future direction of corpus linguistics in general and linguistic research at Lancaster in particular by suggesting the creation of a British analogue of the Brown Corpus, the first computer corpus of (American) English that had recently been completed at Brown University.

Due to the basic computing facilities of that time, as well as limited financial resources, the project proceeded fairly slowly. The biggest obstacle, however, proved to be apparently insurmountable difficulties in obtaining copyright from publishers for the 500 text samples to be used in the corpus. In 1977, Leech met with a number of colleagues (including Jan Svartvik, W. Nelson Francis and Stig Johansson) in Oslo to find a solution to this impasse, which resulted in the creation of the International Computer Archive of Modern English (ICAME); see also Leech and Johansson (2009). The year before, work on the corpus had already been moved to Norway, where Stig Johansson had offered to complete the final stage of the project. Writing as secretary of ICAME, Johansson finally managed to obtain copyright clearance for the texts and the corpus was completed and distributed in 1978 under the name of "Lancaster–Oslo–Bergen Corpus" (now more familiar by its acronym LOB). With its annual conference meetings and a distribution and information center based in Bergen, ICAME (later renamed International Computer Archive of Modern and *Medieval* English) continues to thrive as the longest-established association of corpus linguists. In 2009, a jubilee 30th conference meeting was held in Lancaster, with Leech as one of the co-organizers of the event.

The 1980s and 1990s saw several innovative corpus creation and annotation projects carried out at Lancaster University under the direction of Leech and principal collaborators such as Geoffrey Sampson (Linguistics) and Roger Garside (Computing Department). These include:

- The automated part-of-speech tagging of the LOB corpus (successfully completed in 1983, in cooperation with Stig Johansson, Oslo). This resulted in CLAWS, the first tagger to use statistical algorithms, which radically improved the accuracy of automatic tagging to approximately 96%.
- The creation of a small but richly—prosodically and grammatically—annotated Corpus of Spoken English (52,000 words).
- The automated parsing of corpus data, initially on the basis of the LOB corpus, later on much more substantial text collections (more than 300 million words) in cooperation with IBM (1987–91; see Black, Garside, & Leech, 1993).
- The automated part-of-speech tagging of the British National Corpus (BNC), a 100-million-word corpus of spoken and written British English.

More recently, Leech has been involved in the creation of two further small-scale corpora (each one million words) to add to what is commonly referred to as the "Brown family of

corpora," that is, the original Brown and LOB corpora from the 1960s, and their more recent clones Frown and F-LOB, created by Christian Mair and Marianne Hundt, Freiburg, containing data from the early 1990s. In collaboration with Nick Smith (University of Salford, UK) and Paul Rayson (Lancaster), Leech oversaw the compilation of BLOB-1931 (for "before LOB"), covering British data from around 1931, while work on a 1901 British match of the corpus was started in 2008.

In addition to corpus compilation, Leech's research activities have consistently embraced a variety of fields of linguistic enquiry. Thus, in addition to the already mentioned work in stylistics, his research focus expanded in the 1970s to the border between his earlier research area of semantics and the emerging field of pragmatics. Eventually, this developed into a full-blown theory of pragmatics as laid out in *Principles of Pragmatics* (Leech, 1983). At the time of writing, Leech has resumed work in this field, particularly in the area of politeness theory, and is preparing a monograph with the working title *Politeness in English: In Relation to Other Languages* (Leech, in press).

Another prominent area of interest has been the description of English grammar. Apart from the three reference grammars Leech has coauthored, the publication of the *Communicative Grammar of English* (Leech & Svartvik, 1975, revised 1994 and 2002) deserves special mention in this context. It is his most successful book to date, with over 250,000 copies sold so far. Grammar is also the focus of his latest book, entitled *Change in Contemporary English: A Grammatical Study* (Leech, Hundt, Mair, & Smith, 2009), which represents the culmination of Leech's corpus-based research on recent grammatical changes in English.

While he has remained loyal to Lancaster for over 40 years, Leech has been active on an international scale for all of his working life. Thus, he spent a year as a Harkness Fellow at the Massachusetts Institute of Technology (MIT) (1964–5) and six months as visiting professor at Brown University, USA (1972). He also led a three-month visit of an academic delegation to China in 1977, at a time when China had relatively little contact with the West. Other countries where he held teaching appointments include Australia, France, Japan, New Zealand, and Singapore.

Geoffrey Leech officially retired in December 2001. However, he continues to take an active role as emeritus professor in both research and PhD supervision, and the regular visits to his office in the department at Lancaster University are only interrupted when he is away to give a series of lectures or to attend a conference. Today, Leech lives with his wife Fanny about 20 miles north of Lancaster in Kirkby Lonsdale, in a 300-year-old house full of period furniture and close to the river Lune—hence the (for many readers somewhat opaque) title of a Festschrift in Leech's honor: *Corpus Linguistics by the Lune: A Festschrift for Geoffrey Leech* (Wilson, Rayson, & McEnery, 2003).

This biographical entry is heavily based on Leech (2002). An updated version of this autobiographical entry was kindly provided to the author by Geoffrey Leech.

SEE ALSO: Corpora: English-Language; Francis, Nelson; Generative Grammar; Greenbaum, Sidney; Johansson, Stig; Quirk, Randolph; Svartvik, Jan

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Legal Disputes Over Second Language Instruction in the United States

SANDRA DEL VALLE

Legal disputes over second language instruction in the United States began as far back as the World War I era and have continued into the 21st century. For the most part, litigation has pitted language minority parents seeking second language instruction in the public schools for their children as part of a basic, quality education, against school districts or state actors which seek to negate or limit those rights.

The first significant language rights school case occurred in the World War I era, albeit in the private school context. In 1923 the Supreme Court heard the case of a German language Bible schoolteacher who was prosecuted for violating a Nebraska statue that prohibited the teaching of German, even in private schools (*Meyer v. Nebraska*, 1923). The US Supreme Court decided that the law was unconstitutional because it violated the privacy interest of parents to decide in what language their children would be taught in private schools. Among language rights advocates, the most important feature of the court's decision was that the Constitution protected all, including those who were not born with "English on the tongue" (*Meyer v. Nebraska*, 1923, p. 401).

It would be decades before the Supreme Court took up the issue of second language instruction again. In the meantime, the lower courts were fashioning remedies and determining the legal rights of language minority students. In *US v. Texas Education Agency* (1976), a trial court ordered the Texas Education Agency to implement language programs "that introduce and develop language skills in a secondary language while at the same time reinforcing and developing language skills in the primary language" (p. 26). Essentially, the Texas court ordered a dual-language program for all students. Meanwhile, however, the Supreme Court decided in a different context that there was no federal constitutional right to an education (*San Antonio Ind. School Dist. v. Rodriguez*, 1973). Any hope that the language rights of language minority children could be part of a federal constitutional scheme were dashed. For other similar negative cases, see *Cisneros v. Corpus Christi Ind. School Dist*, (1972) and *US v. Texas Education Agency* (1976).

In 1974 the Supreme Court did revisit the issue of education for language minority students. In *Lau v. Nichols* (1974), the Supreme Court was asked to decide whether the San Francisco Unified School District was violating federal law, including the Constitution, when it provided neither Chinese-language instruction nor English as a second language classes to its Chinese-dominant students. The children sat in English-only classrooms without understanding the instruction—it was an education in form only. The Supreme Court found that the school district did indeed have to take action to educate the children although it did not mandate any specific instructional program. Not surprisingly, the court did not find a constitutional violation but only a violation of Title VI of the Civil Rights Act and of California's education law. The court had relied upon regulations issued by the Department of Health, Education and Welfare (HEW), the agency with authority over Title VI, that equated discrimination based on national origin with the failure to provide English-language learning programs for language minority children. Afterward, HEW's Office of Civil Rights (OCR) interpreted the *Lau* decision as mandating bilingual education. In the years that followed, OCR compelled school districts across the nation to create

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bilingual programs. In New York City, a bilingual program for Spanish-dominant students was mandated by a federal court and was quickly extended to all other language minority groups under an agreement reached with OCR.

In 1974, Congress passed the Equal Educational Opportunities Act (EEOA). Section 1703(f) of the Act warned school districts that they had to "take appropriate action to overcome language barriers that impede equal participation by its students in its instructional programs." Since "appropriate action" was not defined and *Lau* did not mandate any particular instructional design, OCR, an administrative agency, was left to carve out a special legal space for bilingual education. It was a precarious hold and it could not last.

Indeed, the 1980s ushered in a more restricted view of Title VI and of the rights to bilingual education. As the Reagan Administration's new conservatism swept the country, courts grew uncomfortable with the role of the federal government in mandating instructional programs. Courts around the country took up the mantra of "local control": minimal federal oversight as school districts decided for themselves how to run their schools. This attitude was exemplified in the instructional context by *Castaneda v. Pickard* (1981) when a federal appeals court stated unequivocally that bilingual education was not mandated under *Lau*. Relying instead upon the EEOA, the court developed a three-prong test to measure the legality of a district's efforts: (a) the instructional model adopted by the district must be based on a sound educational theory; (b) the theory must be implemented effectively with sufficient resources and personnel; (c) after a trial period, the program must be effective—students must be achieving in English and academically. Although *Castaneda* was a clear refutation of OCR's interpretation of *Lau* and its administrative support for bilingual education, the court still provided a reasoned analysis for evaluating programs and held districts to educating language minority students in a comprehensive way.

The 1990s were even less hospitable to bilingual education. The nation was experiencing its highest immigration rate in decades and many states were responding by introducing English-only legislation and trying to deny basic public services to immigrants. California was swept up in the anti-immigrant furor. In 1994, its voters passed Proposition 187 which sought to deny undocumented immigrants access to public schools, hospitals, and social services. In 1998 voters adopted Proposition 227 which essentially prohibited bilingual education, even providing civil remedies against teachers who violated the law. In its place, intensive English classes were to be provided until students reached a "working knowledge" of English. Although lawsuits were brought against the state and school districts, most of the cases were lost, even under the *Castaneda* standards. For example, in *Valeria G. v. Wilson* (1998), the trial court in California refused to strike down Proposition 227 programs on the grounds that under *Castaneda* school districts could try a variety of methods to teach its language minority students English even if it foreclosed them from choosing bilingual education and even if it privileged learning English over other goals. Likewise, in *California Teachers Association v. Davis* (1999), teachers filed a First Amendment challenge against the school district's Proposition 227 program because the prohibition on speakers speaking or teaching language other than English to their students "chilled" their First Amendment right to speak the language of their choice. The court did not sympathize with the teachers stating that the law applied only to instructional and curriculum matters, areas over which schools can dictate teacher speech. After the success of the language-nativists in California, Arizona and Massachusetts quickly followed suit, also passing anti-bilingual education laws.

The 21st century saw the growth of the standards-based and assessment system for educational reform. In 2000, Congress passed the No Child Left Behind Act (NCLB) which codified a standards and assessment system. The promise of the EEOA and *Castaneda* and the restricted ideology of the NCLB clashed in an Arizona case. In *Flores v. Arizona* (2000), parents of Spanish-dominant children brought a lawsuit against Nogales Unified School

District (NUSD), one of the poorest districts in the state and in desperate need of resources to educate its language minority students. The parents complained that the district was failing their children: neither teaching them English nor assuring that they met academic standards. The *Flores* court found that NUSD was not meeting its obligations under *Castaneda* despite its best efforts. The state's funding system was simply starving Nogales of needed funds.

After years of struggling to establish a more equitable funding structure, NUSD was again in court in 2009. This time, the litigation made it to the Supreme Court in *Horne v. Flores* (2009). Opponents of bilingual education weighed in arguing that the EEOA should be replaced with the requirements of NCLB. In his decision, Justice Alito specifically targeted bilingual education, calling it an unsuccessful methodology. Relying on *amicus* briefs submitted by opponents of bilingual education, he claimed that there was "documented, academic support for the view that [structured English immersion] is significantly more effective than bilingual education" (*Horne v. Flores*, 2009, p. 2601). Ultimately, the court upheld the EEOA but never before had the court sided with one kind of instructional methodology over another.

Although bilingual education has been variously supported and vilified over the past thirty years, it is the quieter standards-based movement, exemplified by the NCLB and more recently by the Obama Administration's Race to the Top education legislation, which provides the most dangerous threat to bilingual education. With state departments of education and school districts in a literal "race" to get federal funds, many are willingly adopting significant testing requirements which are incompatible with the longer-term academic achievement that bilingual education promises. The courts for their part are not willing to extend education rights beyond very limited boundaries: there is no federal constitutional right to an education; and local control is paramount unless a conservative federal educational agenda is being advocated. The battle for educational excellence for language minority students continues to lie in very local, district-based, parent-controlled activism with focused litigation only when necessary.

SEE ALSO: Advocacy in Language Teaching; Bilingual Education

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Legal Interpreting

ERIK HERTOG

A "legal interpreter" is a trained, qualified professional providing interpreting to those involved in whatever capacity—be it as defendant, refugee, victim, witness, etc.—in a legal system whose language they do not speak.

The term "legal interpreter/interpreting" is more inclusive than, for example, "court interpreter," which applies to one specific setting only, or "sworn" interpreter, referring to a procedural qualification; on the other hand, the term is not as broad as "public service" or "community" interpreter, which also covers domains such as health or social services. Legal interpreting (LI) includes interpreting in all legal services settings, from police interviews and lawyer–client meetings, juvenile courts and local prisons, probation services and immigration hearings, to the International Criminal Tribunal for the former Yugoslavia (www.icty.org) or the European Court of Human Rights (www.echr.coe.int).

In all these settings the legal interpreter will need to master every mode and strategy of interpreting, such as short dialogue or "liaison" interpreting in, for example, a police interview or a cross-examination; consecutive—with note taking—for, say, an asylum seeker's narrative or a vulnerable witness; simultaneous (usually whispered—"chuchotage"—though sometimes using portable sets or booths) during running renditions such as the closing arguments or sentencing in court. Legal interpreters are also required to master on-sight translation of all sorts of personal and official documents such as witness or expert testimony documents, and increasingly to do telephone or video-conferencing interpreting. In other words, it is not the modes or the strategies that set the legal interpreter apart from the conference interpreter but it is the settings, usually rigorous, institutional, and antagonistic. First, there often are "clients" whose rights or personal freedom are at stake in often complex and sensitive cases; second, working arrangements in LI are usually bidirectional (i.e., interpreting both in and out of the two languages used); third, the proxemics between the participant parties is completely different, the acoustics and positioning arrangements are often strenuous, and it is on the whole a solitary profession with a very different social aura, professionalization, and remuneration.

History

The "modern" concern for justice, including the right to due process and a fair trial and hence the right to an interpreter, became enshrined in international conventions such as the 1950 European Convention for the Protection of Human Rights and Fundamental Freedoms as well as in national legislation, for example, the 1978 US Federal Courts Interpreters Act (amended in 1988). Antidiscrimination legislation also contributed to the emerging provision of LI—leading to, for example, the establishment of the Registry of Interpreters for the Deaf in the USA in 1965 (www.rid.org)—as did the new (im-)migration needs, such as in Australia, where a Telephone Interpreter Service was set up in 1973 (www.immi.gov.au), or in Sweden, where as early as 1976 standards for LI were set. Many countries, from South Africa to the Netherlands, from Canada to Japan, have since then made serious efforts and taken major strides in providing quality LI in their legal services.

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A more recent, interesting development is taking place in the European Union where, as a result of enlargement, all 27 member states of the EU now see an ever-growing movement of citizens who occasionally find themselves faced with legal problems in the foreign country. While enhancing judicial cooperation and mutual recognition between the member states, an accompanying process has been launched to safeguard procedural rights, which resulted in October 2010 in a legally binding directive on the right to interpretation and translation in criminal proceedings (http://eur-lex.europa.eu).

Role

LI is a particularly demanding form of interpreting, if only because of the conflicting perceptions of the role of the legal interpreter. In legal terms s/he is not an "expert" taking the stand, nor a witness who can be cross-examined or even questioned, for example, on issues of linguistic provenance let alone on the veracity of certain statements. S/he is a "sui generis" officer of the legal service employed and relied on for his or her specific expertise. That s/he is sometimes "sworn" in relates to the issue of accuracy expected from him or her: that is, the statements of the participant parties are to be rendered for the record "exactly" as meant and intended and in that sense, if s/he fails to comply with that overriding requirement s/he can indeed be liable to charges of perjury (Grabau & Gibbons, 1996; Roberts-Smith, 2009).

Moreover, the legal position becomes compounded because of conflicting perceptions and expectations of the role of the interpreter. On the one hand, there are the "clients" who obviously turn to the one person present who understands their language. They will inevitably try to speak to and through the interpreter who, if not careful, may be seduced into a role of facilitator or mediator, or even "advocate" of a disadvantaged party. And there are situations—for example, child abuse cases or asylum application hearings—where the pressure on the interpreter to take a "human," supportive role is tremendous. On the other hand, many legal professionals still see the interpreter as some sort of mechanic "conduit," a "pane of glass" through which the information flows unchanged from one language into another, an unobtrusive, invisible "cipher" (Schweda Nicholson, 1994). The underlying assumption is that language is a monolithic block, that languages are isomorphic and that for the sake of justice one has the right to expect (because the interpreted rendition becomes the official record) that the exchanges between the parties can and will be transferred "verbatim"—with absolute corresponding accuracy—into the other language. The interpreter is indeed required to transfer the full content, meaning, and intent, and tone, level, and form of a statement, including (and thus different from conference interpreting) hedges, hesitations, self-corrections, false starts and so forth, and to leave no omissions, make no additions, edit no slang or insults, elaborate no evasions or colloquialisms. However, this is a far cry from "verbatim" as expected by many legal professionals. "Verbatim" statements from one language into another in number and sequence, in meaning, style, and intent, are a nonsensical absurdity, of course. What the interpreter transfers is not a sequence of "words" but the full linguistic intent of units of meaning, thus arriving at linguistically equivalent and legally correct correspondences in the other language (Gonzalez, Vasquez, & Mikkelson, 1992).

This necessary and inevitable decision making on the part of the interpreter is still often misunderstood and even inspires distrust among legal professionals as to the fundamental role of the interpreter. But the idea that "verbatim" equals accuracy and that neutrality equals invisibility has been replaced in consistent research and fieldwork by a role of the interpreter that goes beyond "mere" translation in the interaction. Any interpreter-mediated

event is now seen as actively constructed by all parties together and, moreover, operating within larger institutional constraints as well as within a cultural, "political," and ideological framework which needs to be understood. Consequently, the interpreter as an active participant in the event has affected the current understanding of his or her complex role and has brought about a shift from earlier predominantly prescriptive, dogmatic codes of conduct to the necessity for qualified interpreters to possess a profound knowledge, great awareness, and full integration of their complex professional role. (See, for example, Wadensjö, 1998; Angelelli, 2004; and www.ncihc.org for a 2005 international comparison of codes; other examples at www.ausit.org, www.najit.org, or the code proposed in the EU Grotius I project at www.eulita.eu.) Any code will at least contain the following fundamental principles: legal interpreters must observe confidentiality and impartiality; disclose professional limitations or conflict of interest; only undertake assignments for which they are competent; always interpret to the best of their ability; decline any reward other than agreed fees and expenses; seek to increase their professional skills and safeguard professional standards.

Training

The conclusions from a survey on the provision of LI in the EU indicate that there are insufficient numbers of trained legal interpreters who meet, if at all, very different quality standards (Hertog & van Gucht, 2008). However, there is a genuine growing awareness these days—and this for a variety of reasons such as efficiency and quality of service, risk management and, of course, safeguarding fundamental rights—that training is the key issue to further development.

Consequently, there is now an interesting range of training programs, from ad hoc "professional" LI courses offered by academic institutions (e.g., in Sweden by www.tolk.su.se) or professional bodies (e.g., the Polish Association of Authorized Legal Translators and Interpreters, www.tepis.org.pl); to "broader" higher education curricula such as the BA "Fachdolmetschen" in Magdeburg (www.hs-magdeburg.de) or the MA in Public Service Interpreting (www.surrey.ac.uk), which both include medical and social interpreting, however; to specific LI programs as offered, for example, by Vancouver Community College (www.vcc.ca), the University of Charleston (www.cofc.edu), or the University of Western Sydney (www.uws.edu.au).

Whatever the format, they all aim to train the core competencies required of the legal interpreter (see the Reflection Forum Report at www.eulita.eu, the professional interpreting standards at www.cilt.org.uk, or the legal interpreting competencies required by the US National Center for State Courts, www.ncsc.org). These would include at least the following components: language proficiency including registers, terminology, legal discourse, and genres; knowledge of the legal system (structures, procedures, professionals, etc.); interpreting skills; the code of conduct and the guidelines to good practice; cultural awareness; interpersonal skills and attitudes; knowledge of professional issues (associations, assignment management, etc.)—all this integrated in practical observation visits, case studies, and role plays. After testing and assessment, a good training program leads to a certification procedure which is reliably accredited by a central authority, as is the case, for example, in the Federal Court Interpreter Certification Examination program in the USA (www.uscourts.gov), the Certified Court Interpreter procedure in four provinces of Canada (www.cttic.org), or the NAATI certification system in Australia (www.naati.com.au). "Training the trainers" courses and continuous professional development opportunities complement the picture.

Research

Susan Berk-Seligson's landmark study (1990) of English–Spanish interpreting in US courts launched a stream of discourse-oriented studies, taken further in Cecilia Wadensjö's study of police and asylum interpreted hearings (1998) and Sandra Hale's *The Discourse of Court Interpreting* (2004); and in sign language research, notably by Melanie Metzger (1999) and Cynthia Roy (2000). Rather than concentrating exclusively on the interpreter as a "translator" ("talk as text"), these exemplary studies show, first, how the interpreter is also actively involved in coordinating the participants' talk ("talk as activity")—the interpreter constantly choosing between representing or reenacting others' talk—and, second, how discourse analysis and pragmatics can shed light on the impact of linguistic strategies in LI. To what extent does turn taking and control of the flow of the speakers, or the interpreter's use of powerless speech markers (hesitations, fillers, hedges, backtracking, etc.), impact on the credibility of, say, the witness, or the convincingness of the interpreter? What are the consequences when the pragmatic force of question types is not understood by the interpreter, or when the level of coerciveness is fundamentally altered (Berk-Seligson, 1999; Hale, 1999)? This has been such a fruitful area of research, illuminating both legal language use and interpreting performance, that the "dialogic discourse-based interaction" paradigm seems to have firmly established itself as the current research paradigm in LI.

The study by Robert Barsky (1994) of interviews of applicants for refugee status in Canada, highlighting the structural and institutional environments in which such interpreting assignments take place, has opened up the path for critical discourse analysis which is currently being combined with, for instance, politeness theory and face-saving or face-threatening strategies. Critical discourse analysis, which underlies the interesting work of Mason (2005) and Pöllabauer (2005), focuses more on the political, social, and institutional structures and contexts of LI and highlights issues such as power, class, gender, and race.

Another area of research concerns nonlinguistic aspects, such as the perceptions and expectations of the role of the interpreter, which are conducted mainly via ethnographic research making use of questionnaires, surveys, in-depth interviews, and focus group discussions (Kadric, 2006). On the whole, most LI research is descriptive and qualitative and, unfortunately, often prone to quick generalizations as there is little opportunity for experimental and quantitative research. This makes it difficult, in the end, to assess in a truly valid way such things as the impact of LI performance strategies on the legal system and its decision-making processes or the efficacy of particular training programs.

And, of course, technology provides its own challenges and opportunities for research. As more courts follow the example of the international courts and turn to the use of portable sets or simultaneous interpreting booths for the proceedings, issues such as team interpreting or maintaining quality in simultaneous interpreting will become more important in the training of LI. The same goes for interpreting over the telephone, introduced in the 1970s in Australia and the 1980s in the USA, which has become more widely used recently, together with its modern counterpart, interpreted video conferencing. This is a result of more cases in far-off locations, the scarcity of specific language combinations, the urgency of the matter, security considerations (e.g., the transportation of inmates between prison and court), or, indeed, for cost-saving reasons, in order to cut down on travel and waiting time of the interpreters and speed up the flow of run-of-the-mill cases. However, more research is definitely needed on when and how to use remote or video interpreting and how this technology impacts on the interpreting performance and quality (www.videoconference-interpreting.net). A final example concerns the greatly increased use of telephone tapping, where it is obvious that a combination of highly advanced oral and written language skills is needed to arrive at reliable forensic transcripts and translations.

LI research thus takes its inspiration from "translatology" theories as well as many other

disciplines such as conversation and discourse analysis, pragmatics, forensic linguistics, ethnographic and cultural studies, but also from legal and social studies. The diversity of methodologies and research strategies and interdisciplinarity are now the bread and butter of LI research and as a result immense gains have been made in our understanding of the theory and practice of LI (Hertog & van der Veer, 2006).

All leading academic journals in interpreting now pay explicit attention to LI (e.g., *Meta*, *Journal of Interpretation*, *Target*, *Interpreting*, *The Translator*, etc.) and many other major linguistics journals such as *Forensic Linguistics* (see for example issue 6, 1), *Applied Linguistics*, or the *Journal of Pragmatics* publish articles and devote special issues to various aspects of LI. Listservs such as the ones monitored by Ausit (www.ausit.org), Najit (www.najit.org), by professor Ruth Morris of Bar-Ilan University, or *Forensic Linguistics* (www.jiscmail.ac.uk/forensic-linguistics) provide another platform for the exchange of information. Both academia and professional associations organize conferences on LI such as the Critical Link conferences (www.criticallink.org), which have greatly contributed to the dissemination of LI research among trainers and practitioners.

Consequently, LI has firmly established itself as a major research area in "Interpreting Studies," one with great contributory power to the discipline as a whole. Moreover, LI research is firmly embedded in the institutional and socioenvironmental contexts of the interpreting events, focused as it is on the study and delivery of the quality of LI to individual clients, legal professionals, and the institutional systems as a whole, thus making it also a highly relevant academic discipline.

Professionalization

In spite of its institutional and human importance, LI remains a complex, sometimes controversial field in many countries, with fluctuating linguistic needs, highly vulnerable to budget pressures and a volatile political climate. There is therefore a need for strong professional LI associations to play a prominent role with regard to at least the following crucial issues.

First, there is the issue of continuous professional development (CPD). The domain of the law and the practices and procedures of the legal services are constantly changing. Therefore, CPD activities on new resources of information, new technologies, on advanced language proficiency, on demanding specializations—whether human trafficking, child abuse, terrorism, telephone tapping, or cross-border video conferencing, and so forth—will all contribute to the improvement of LI practice. Professional LI associations are eminently placed to meet this need.

Second, a profession could be defined as a group of people who not only share a common expertise but also "profess" to a code of ethics (or "conduct") and to guidelines of good practice. Professions come into being where trust is required, primarily because the clients are not in a position to judge for themselves the quality of service being given. Clients, whether defendants or prosecutors, cannot judge for themselves the quality of the work of the legal interpreter because they do not speak either of the languages in question. In order to fulfill what is required of them, professions therefore not only set levels of expertise but also perform their assignments in accordance with a professionally established code of conduct. This is in the public interest as well as in the interest of their clients, colleagues, and themselves. After all, an unqualified interpreter puts all parties involved at risk, which could result in a wrongful conviction or an acquittal. Establishing such a code, including its procedural disciplinary measures, is obviously the remit of professional associations (Corsellis, 2008).

Third, the legal process is multidisciplinary and each professional has to know and respect the other's role. Consequently it is important that the judiciary, the police, and

other legal professionals know or learn how to work with legal interpreters. They should be offered training on working with legal interpreters, so that they are able to recognize when an interpreter is needed, to select and use only qualified interpreters from an approved register, to brief the interpreter and provide him or her with the necessary information to be able to do a good job, to recognize and respect the interpreter's role and code of conduct, to accommodate the necessary interpreting modes (e.g., consecutive or whispered simultaneous), and to take all necessary measures to protect them against invasion of their privacy and provide access to qualified assistance when needed. Such informed awareness among legal professionals will greatly enhance the efficiency of the interpreter-mediated proceedings or encounters.

One cannot therefore underestimate the role of professional associations, be they national, such as the National Association of Judiciary Interpreters and Translators in the USA, or international, such as EULITA, the European Legal Interpreters and Translators Association, which aims amongst other things to support associations of legal interpreters and translators, promote training and research, encourage the recognition of their professional status, and promote cooperation and exchange of best practices in working arrangements with the legal professionals. The growing concern in the legal services with fundamental and human rights issues, with risk management and efficient, cost-effective delivery of service on the one hand, and the bottom-up pressure from professional associations and qualified practitioners on the other, is convincing more and more institutional providers to identify their needs in LI, set the targets, and chart the incremental steps and the timescales to safeguard access to justice across languages and cultures.

SEE ALSO: Community Interpreting; History of Interpreting; Professionalization of Interpreters

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Legal Language

STANISŁAW GOŹDŹ-ROSZKOWSKI

What Is Legal Language?

It is generally acknowledged that law does not exist without language. Legal rules and regulations are coded in language. Legal concepts and legal processes are accessible only through language. If a legal text is criticized for being abstruse and incomprehensible to the general public, the problem most probably lies with the language. The designation "legal language" tends to emphasize the subject matter, the domain in which language is used, that is, law. It might therefore create the spurious impression of legal language being a homogeneous and uniform phenomenon. In fact, the expression "legal language" hides a multitude of specific classes of texts (genres) created and used by various professional groups working in different legal contexts. Legal language spans a continuum from legislation enacted at different levels (e.g., state, federal), judicial decisions (judgments, decrees, or orders), law reports, briefs, various contractual instruments (wills, power of attorney, etc.), academic writing (e.g., journals, textbooks), through oral genres such as, for example, witness examination, jury summation, judge's summing-up, and so forth, to various statements on law reproduced in the media and any fictional representation of the foregoing. Thus, what is routinely referred to as "legal language" represents an extremely complex type of discourse embedded in the highly varied institutional space of different legal systems and cultures. In other words, the designation "legal language" should be viewed as an umbrella term referring to a universe of remarkably diverse texts, both written and spoken. While legal language has always been an interdisciplinary object of research attracting both lawyers and linguists, the focus of this entry is on language-based approaches and methodologies (see Tiersma, 2008, for a useful overview of both legal and linguistic approaches to legal language).

The complexity of legal language can be attributed to its long historical development, which often ran parallel and independently of ordinary language. Legal English was greatly influenced by Anglo-Saxon, Latin, and French. Interested readers should consult Mellinkoff (1963) for one of the most detailed descriptions of legal English including its history (see also Hiltunen, 1990; Tiersma, 1999). The oldest recorded evidence of legal translation is the Egyptian–Hittite peace treaty of 1271 BC (Šarčević, 1997), while, for example, Bible translation dates back to the third century BC. Significantly, the forms and meanings of legal language developed through legal rather than linguistic processes. The meaning of legal terms, phrases, or even longer chunks of discourse is determined by courts, legislatures, and government agencies and consequently it often differs from ordinary usage. Such influence of jurisdiction on the development of legal discourse has often led to problems connected with its interpretation and comprehensibility.

The perception of legal language as opaque and incomprehensible, especially in the case of government forms and consumer documents, resulted in the emergence of the Plain English Movement (see the classic book by Wydick, 1994). This movement is directed at making the law more understandable to the general public, especially in the case of the so-called consumer documents, such as contracts, leases, notices, and so forth.

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The appropriateness of using the designation "legal language" has been the subject of much debate. Klinck (1992) contains a detailed discussion of various perspectives adopted with respect to this issue. Essentially, the opinions range from those who maintain that "there is such an identifiable phenomenon as 'legal language' and that it is meaningful to think in terms of such a category" (Klinck, 1992, p. 133) and use the designation "law language" with reference to a "technical, idiosyncratic sublanguage system," to those like George Mounin (1974) who assert that it is not scientifically correct to speak of the language of law because legal language is only a specialized form of general language rather than an autonomous and independent linguistic phenomenon. Charrow (1982, p. 84) notes that the designation "legal language" spans a continuum "from almost 'normal' formal usage to highly complex varieties that differ substantially from normal formal usage."

No clear consensus exists on which classificatory term should be used. For example, Brenda Danet (1980) considers *dialect*, *diglossia*, and *register* as labels potentially applicable. The concept of dialect has not been generally accepted (e.g., Charrow, 1982, p. 82) because legal English does not tend to meet the basic intelligibility criterion whereby two varieties can be called dialects if they are mutually intelligible. It is by no means certain that legal language is intelligible to ordinary speakers of language. More importantly, dialects usually differ greatly in terms of vocabulary, syntax, and so on, and they are traditionally associated with geography. By contrast, legal language frequently mimics ordinary language considerably and it is not linked to any specific geographical location. Although diglossia has never been taken entirely seriously as a concept applicable to the study of legal language, it is worth recalling because it usefully highlights some important features of legal language. Diglossia is typically associated with bilingualism and it refers to two language varieties coexisting in society. It assumes that one low variety is used more frequently in informal, personal situations while the high variety tends to be employed in formal and official communication contexts. The high variety is perceived as more prestigious and superior to the low variety, which is used largely to deal with interpersonal and domestic issues. Viewed in such terms, legal language could be described as the high variety (H) with general language relegated to the status of a low variety (L). Danet lists several features of diglossia which seem relevant, even if somewhat controversial, to describe the relationship between legal language and general, ordinary language. These could be summarized as including the specialization of function for the high and low varieties; the perception of H as prestigious and superior to L; the fact that H is acquired through formal education; the fact of a simpler grammatical structure for L than for H; and finally, the acceptance that H is not regularly used as a medium of ordinary conversation by any segment of a speech community.

Other concepts often attributed to legal language include *jargon*, *argot*, *style*, and *sublanguage* (see Tiersma, 1999, pp. 141–3). They have not gained wide currency because they tend to be too restrictive to capture the complexities of legal language. The term "jargon" refers primarily to vocabulary, while legal language cannot be characterized solely in lexical terms. Similarly, "argot" can also be used with reference to an informal highly specialized vocabulary from a particular field but it is traditionally associated with secret language employed by various groups, usually linked to illicit activity, to stop outsiders from understanding their communication. It is thus a term with strong negative connotations and hardly appropriate to describe the language of legal communication. The notion of style has also been used in reference to legal English (e.g., Crystal & Davy, 1969). While it is felt that there seems to be a distinct legal style, the concept lacks a sufficiently precise definition to warrant a rigorous and systematic study of legal language. Finally, some scholars (Charrow, Crandall, & Charrow, 1982) suggest that legal language could be studied as a sublanguage, a concept associated with a computational approach to language analysis. It is argued that legal language shares most of the features attributed to sublanguages,

such as limited subject matter; the presence of lexical, syntactic, and semantic restrictions; the occurrence of nonstandard, grammatical rules; and unusually frequent occurrence of certain constructions in comparison with general language such as, for example, nominalization, the modal *shall*, passive forms, and so forth.

It seems that the term "legal language" has been all too often used as a convenient label for a generalized functional variety, or register, of modern English. Unfortunately, such labeling often implied that it was either stationary or homogeneous, ignoring a great degree of variability of legal language and its constant evolution. More recently, some scholars have questioned the relevance of using such general, umbrella terms, suggesting that the complexity and *intertextuality* within legal language should be ideally viewed in terms of domain-specific *disciplinary genres* (Bhatia, 2004; Goźdź-Roszkowski, 2011). Thus, the designation "legal language" in fact seems to refer to the universe of particular systems of genres connected with different professional activities and combined with large primary genres such as legislation or judgments. In the course of professional activity, its participants need to refer to, interpret, and exploit such larger generic constructs in order to achieve their professional objectives. Taken together, all such genres combined form a set of domain-specific disciplinary genres. These can be found in different configurations depending on the nature of a particular professional activity and the extent to which other genres are referred to or relied upon.

Variation in Legal Language

Legal language shows enormous variation in many different respects. The system of common law originating in Great Britain has spread to many other countries around the world, notably to the United States, Canada, Australia, New Zealand, South Africa, and to India and other countries where English was recognized as one of the official languages. Despite sharing certain basic characteristics, the language and legal institutions in the respective countries have come to differ markedly from one another (Williams, 2005). Legal language also differs in terms of the level of formality, mode (spoken or written), and the use of individual genres by different professional groups (e.g., judges, attorneys, paralegals).

This perception of legal language has led to the emergence of different taxonomies and typologies. For example, Danet (1980, p. 471) proposes a well-known classification based on stylistic categories for degree of formality related to different modes of text production. Thus, in terms of mode, Danet distinguishes between written and oral texts, with the latter subdivided into spoken-composed and spoken-spontaneous. The degree of formality is marked by means of four distinct categories (frozen, formal, consultative, and casual). Various legal genres can be thus distinguished and compared according to this set of contextual factors. This important sociolinguistic scheme suggests that legal genres vary depending on the degree of codification, standardization, and predictability of lexicogrammatical structures. For example, genres such as insurance policies, contracts, leases, and wills are subsumed under the "frozen" and "written" categories, reserved for texts with highly formal traits and with features typical of the written mode. According to Danet's scheme, other written genres such as statutes, briefs, and appellate opinions exhibit a lower degree of formality in comparison with that of witness examinations and motions, which belong to the oral mode (Danet, 1980, p. 471). After conceding that legal discourse is expressed in various legal situations, Maley (1994, p. 13) lists several categories such as judicial discourse, courtroom discourse, the language of legal documents (contracts, regulations, deeds, wills, statutes), and the discourse of legal consultation. Maley (1994, p. 16) also provides a classification of legal discourse reflecting the consecutive stages of a "conflict resolution scheme." Another well-known distinction proposed by Trosborg

(1995, p. 32) concerns "language as realized specifically in legal documents, i.e. texts covered by the scope of statute law and common law, namely (i) legislation, and (ii) simple contracts and deed," referred to as "the language of the law," which should be distinguished from other uses of "legal language." Tiersma (1999) provides a tripartite division of legal texts into three major categories: *operative* legal documents (those that create or modify legal relations such petitions, statutes, contracts, wills, etc.); *expository* documents (e.g., judicial opinions which analyze objectively legal points); and *persuasive* documents (e.g., briefs or memoranda). More recently, Gibbons (2003, p. 15) reiterates some fundamental and classic distinctions of legal language. One basic dividing line runs along the written versus spoken mode. Thus, there are written, largely monologic texts of legislation and other legal documents, and the spoken, more interactive and dynamic texts found in a variety of law-related processes, such as, for example, courtroom interaction, police investigations, prisons, and consultations between lawyers and clients.

Register and Genre Perspectives on Legal Language

Despite the absence of a general consensus concerning the use of register, genre, and other related terms such as style, previous linguistic investigations of legal language have relied heavily on the concepts of *register* and *genre* in the construction of their analytical frameworks. Thus, by and large, the term "register" has been used to refer to a general variety of language associated with a domain of use, that is, law. In contrast, the term "genre" has been understood as referring to more specialized varieties within legal register, such as, for example, brief, statute, contract, judgment, textbook, or academic essay.

Even though legal language has been recognized as indeed heterogeneous, there have been very few comprehensive and empirically grounded studies of variation in legal language. Most linguistically oriented studies have either treated legal language as a largely monolithic phenomenon or studied legal language by focusing on a single textual category and a limited range of linguistic features. The former approach has been defined largely in terms of several distinctive lexicogrammatical features—such as, for example, the excessive use of the passive voice, conditionals, archaic adverbs and prepositional phrases, the frequent use of conditionals, the modal *shall*, multiple negation, and so on, which should apparently hold true for all types and categories of legal texts (see Mellinkoff, 1963). Legal language has been considered as a specialized discourse, marked by features such as precision, indeterminacy, specialization, complexity, and conservatism. Recent advances in corpus-based, genre-oriented research have provided a more accurate description of the overall characteristics of legal language, demonstrating that the frequency and distribution of such features varies depending on a particular legal genre (see Williams, 2005; Goźdź-Roszkowski, 2011).

The latter approach has been going through various stages of development. Early research on the language and law interface goes back to the 1960s and 1970s (e.g., Crystal & Davy, 1969; Gustafsson, 1975; Spencer, 1975) and it focuses on statistically significant features of lexicogrammar used in a particular type of legal texts. For example, Gustafsson (1975) focused on binomials and multinomials in legal discourse; Spencer (1975) investigated noun–verb combinations as yet another characteristic feature of legal discourse. Such analyses belong to the early studies of language variation as "register." This trend continued in the 1980s and it was marked by efforts directed at the surface-level features of language combined with the description of functional variation in discourse. For example, Finegan (1982) looked at form and function in testament language; Bhatia and Swales (1983) examined nominalizations in legislative discourse; and, more recently, Williams (2005) focused on verbal constructions used in prescriptive legal texts. In the absence of

advanced computational and corpus procedures, they were severely limited to only a few significant features. In addition, there was very little attention paid to any significant comparisons of different legal genres. It was simply not feasible to provide a comprehensive description of register variation by considering the full range of texts and linguistic characteristics. It was only with the advent of corpora and computational analytical tools that such analyses have become possible.

Thanks to the emergence of genre theory for the analysis of written discourse, the analyses of legal language gradually shifted from the textualization of lexicogrammar toward the investigation of its conventional and institutional discourse, carried out from the perspective of legal institutional and disciplinary practices, procedures, and culture. The extended analytical framework was needed to gain a better idea of how members of the legal profession employ generic and discoursal strategies to achieve their communication goals (see, for example Bhatia, 1993). While genre-oriented research continues to deal with professional and disciplinary aspects of legal discourse, some discourse studies have broadened the scope of analysis by investigating how legal language is used as a powerful instrument of social control. This research trend can be illustrated by the now extensive area of social scientific studies of the courtroom discourse. At the core of these studies is the relationship between factual evidence and the subjective judgments of the witnesses placed in the institutional context of the courtroom (e.g., Berk-Seligson, 2002; Heffer, 2005).

Other Language-Based Approaches to Legal Language

The last three decades have seen an explosion of interest in studying the relationship between language and the law. The complexity of this area is reflected in the multitude of perspectives from which research has been carried out. These range from the already-mentioned genre and discourse analysis (Stygall, 2002), to rhetorics (Goodrich, 1987), semiotics (Kevelson, 1982, 1989; Jackson, 1994), speech act theory (Kurzon, 1986), modality and forensic linguistics (Berk-Seligson, 2002; Gibbons, 2003). The rapidly growing interest in the converging fields of law and linguistics has prompted some scholars to postulate the emergence of a new interdisciplinary field of legal linguistics (see French *jurilingustique* or German *Rechtslinguistik*), covering a range of different, albeit related, areas such as legal terminology and lexicography, legal translation (Šarčević, 1997) and interpreting (Berk-Seligson, 2002), courtroom discourse (Heffer, 2005), linguistic human rights, language policy and planning, and so forth. As a result of the internationalization of legal and linguistic practices, a multicultural and multilingual approach has emerged which examines the use of legal English in non-Anglophone countries and in supranational legislation. Increasing legal globalization has sparked off investigations into legal concepts across different legal systems and legal cultures (see Bhatia, Candlin, & Engberg, 2008). While legal English is the focus of this entry, it should be noted that there is an extensive body of literature on other legal languages and legal systems (see Didier, 1990, for a comparative description of the common law and the civil law systems and the corresponding English and French legal languages; Kniffka, 2007, for a German perspective on legal language).

The relationship between law as a specialist language and general, ordinary language continues to be an important topic, especially in relation to European integration. Legal language has been recognized as one of the cornerstones of the harmonization and unification process of the law in Europe.

SEE ALSO: Corpus Linguistics: Overview; Forensic Linguistics: Overview; Language of Courtroom Interaction; Language of Jury Instructions; Legal Interpreting; Legal Translation; Linguistic Human Rights

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Legal Translation

DEBORAH CAO

Legal translation is a complex and special type of linguistic activity. It involves mediation between different languages and cultures, and above all different legal systems. It requires special skills, knowledge, and experience on the part of the translator. This entry outlines the key concepts and issues involved in legal translation.

Legal Translation Defined

Legal translation is a type of specialist or technical translation, a translational activity that involves special language use—that is language for special purposes (LSP) in the context of law, or language for legal purposes (LLP).

For our purpose, legal language refers to the language of the law and language related to law and legal process, including language used in various legal communicative situations. Legal translation refers to the rendering of legal texts from the source language (SL) into the target language (TL).

Legal translation can be classified according to different criteria. For instance, legal translation has been categorized according to the subject matter of the SL texts into the following categories: (a) translating domestic statutes and international treaties; (b) translating private legal documents; (c) translating legal scholarly works; and (d) translating case law. Legal translation can also be categorized according to the status of the SL texts: (a) translating enforceable law, e.g., statutes; and (b) translating nonenforceable law, e.g., legal scholarly works. Furthermore, legal translation may be classified according to the functions of legal texts in the SL: (a) primarily prescriptive, e.g., laws, regulations, codes, contracts, treaties, and conventions; (b) primarily descriptive and also prescriptive, e.g., judicial decisions and legal instruments that are used to carry out judicial and administrative proceedings such as actions, pleadings, briefs, appeals, requests, petitions, etc.; and (c) purely descriptive, e.g., academic works written by legal scholars, for example legal opinions, law textbooks, and articles, the authority of which varies in different legal systems (Sarcevic, 1997, p. 11).

These aforementioned classifications have their limitations as they do not include certain types of texts such as court documents. In view of this, legal translation can be better classified in light of the purposes of the TL texts (see Cao, 2007): (a) normative purpose, i.e., the production of equally authentic legal texts in bilingual and multilingual jurisdictions of domestic laws and international legal instruments and other laws; (b) informative purpose, e.g., the translation of statutes, court decisions, scholarly works and other types of legal documents where the purpose of the translation is to provide information to the target readers; and (c) general legal or judicial purpose, e.g., documents used in court proceedings, including statements of claims or pleadings, summons, contracts and agreements, and ordinary texts such as business or personal correspondence, records, certificates, witness statements, and expert reports, among others.

In short, legal translation is used as a general term to cover both the translation of law and other communications in legal settings.

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Sources of Difficulty in Legal Translation

It is often said that legal translation is difficult and complex, but why? There are a number of reasons. In essence, the nature of law and legal language contributes to the complexity and difficulty of legal translation. This is compounded by further complications arising from working with two languages and legal systems in translation. Sources of difficulty with legal translation include the systemic differences in law, linguistic differences and cultural differences. All of these are closely related.

Different Legal Systems and Laws

Legal language is a technical language, but, unlike the language used in pure science (such as mathematics or physics), legal language is not a universal technical language. Rather, it is tied to a national legal system (Weisflog, 1987, p. 203). Legal language is system-bound —that is, it reflects the history, evolution, culture and above all the law of a specific legal system.

Law as an abstract concept is universal, as it is reflected in written laws and customary norms of conduct in different countries. However, legal systems are peculiar to the societies in which they have been formulated. Each society has different cultural, social and linguistic structures, which have developed separately. Legal concepts, legal norms and application of laws differ in each individual society, reflecting the differences in that society. Legal translation involves translation from one legal system into another. Unlike pure science, law remains a national phenomenon. Each national law constitutes an independent legal system with its own terminological apparatus, underlying conceptual structure, rules of classification, sources of law, methodological approaches and socioeconomic principles (Sarcevic, 1997, p. 13). This has implications for legal translation when communication is channeled across different languages, cultures, and legal systems.

First, law is culturally and jurisdictionally specific. According to David and Brierley's classification, world legal systems or families can be categorized as Romano-Germanic Law (Continental Civil Law), Common Law, Socialist Law, Hindu Law, Islamic Law, African Law, and Far East Law (David & Brierley, 1985, pp. 20–31). On the other hand, according to Zweigert and Kötz (1992), there are eight major groups: Romanistic Law, Germanic Law, Nordic Law, Common Law, Socialist Law, Far Eastern Law, Islamic Law, and Hindu Law. The two most influential legal families in the world are the Common Law and the Civil Law (Romano-Germanic) families. As David and Brierley (1985, p. 19) state, each legal system or family has its own characteristics: "a vocabulary [is] used to express concepts, its rules are arranged into categories, it has techniques for expressing rules and interpreting them, it is linked to a view of the social order itself which determines the way in which the law is applied and shapes the very function of law in that society." Due to the differences in historical and cultural development, the elements of the source legal system cannot be simply transposed into the target legal system (Sarcevic, 1997, p. 13). Thus, the main challenge to the legal translator is the incongruency of legal systems in the SL and TL.

Linguistic Differences

Linguistic difficulties in translation often arise from the differences found in the different legal cultures and legal systems—for instance, the Common Law as contrasted to the Civil Law which will be used here for illustrative purposes. The root of the problem lies in their varying legal histories, cultures, and systems. Legal language has developed its characteristics to meet the demands of the legal system in which it is expressed. As mentioned, legal translation is distinguished from other types of technical translation

that convey universal information. In this sense, legal translation is *sui generis*. Each legal language is the product of a special history and culture. It follows, for example, that the characteristics of the *la langue de droit* in French do not necessarily apply to legal English. Nor do characteristics of the English language of the law necessarily apply to French.

A basic linguistic difficulty in legal translation is the absence of equivalent terminology across different languages. This requires constant comparison between the legal systems of the SL and TL. As argued, the absence of an exact correspondence between legal concepts and categories in different legal systems is one of the greatest difficulties encountered in comparative legal analysis (David & Brierley, 1985, p. 16).

In terms of legal style, legal language is a highly specialized language, which has its own style. The languages of the Common Law and Civil Law systems are fundamentally different in style. Legal traditions and legal culture have had a lasting impact on the way law is written. Written legal language thus reflects the essential elements of a legal culture and confronts the legal translator with its multifaceted implications (Smith, 1995, pp. 190–1).

In terms of the style of legislative drafting, Civil Law codes and statutes are concise (*le style français*), while Common Law statutes are precise (*le style anglais*) (Tetley, 2000, p. 703). Civil Law statutes generally provide no definitions, and they state principles in broad, general phrases. In contrast, Common Law statutes provide detailed definitions and each specific rule sets out lengthy enumerations of specific applications or exceptions, preceded by a catch-all phrase and followed by qualifications (Tetley, 2000, p. 703).

When we translate legal texts between different legal systems and languages, the degree of difficulty may vary. According to de Groot (1988, pp. 409–10), the following scenarios can be used to classify the affinity of legal systems and languages: (a) when the two legal systems and the languages concerned are closely related, e.g., between Spain and France, or between Denmark and Norway, the task of translation is relatively easy; (b) when the legal systems are closely related, but the languages are not, this will not raise extreme difficulties, e.g., translating between Dutch laws in the Netherlands and French laws; (c) when the legal systems are different but the languages are related, the difficulty is still considerable, and the main difficulty lies in *faux amis*, e.g., translating German legal texts into Dutch, and vice versa; and (d) when the two legal systems and languages are unrelated, the difficulty increases considerably, e.g., translating the Common Law in English into Chinese. In short, the degree of difficulty of legal translation is related to the degree of affinity between the legal systems and languages in question (de Groot, 1988, p. 410). An a priori argument of the disparity in legal systems is that variations exist in the different legal languages of individual societies using language to communicate law (Weisflog, 1987). The "system gap" (Weisflog, 1987) between one national legal system and another results in linguistic differences. Generally speaking, the wider the "system gap," the wider the legal language gap.

In summary, the differences in the various legal systems and the consequent differences in the language used in law in the source and target systems have an impact on legal translation. The diverse range of linguistic differences is one of the most challenging aspects that confront the legal translator, irrespective of which legal language is involved. It is a major source of difficulty in legal translation.

Cultural Differences

Another source of difficulty in legal translation is cultural difference. Language and culture or social contexts are closely integrated and interdependent. A legal culture means those "historically conditioned attitudes about the nature of law and about the proper structure and operation of a legal system that are at large in the society" (Merryman, Clark, & Haley, 1994, p. 51). Law is an expression of the culture, and it is expressed through legal language. As pointed out, "[e]ach country has its own legal language representing the social reality

of its specific legal order" (Sarcevic, 1985, p. 127). A legal translator must overcome cultural barriers between the SL and TL societies when reproducing a TL version of a law originally written for the SL reader. Weston (1983, p. 207) writes that the most important general characteristic of any legal translation is that an unusually large proportion of the text is culture-specific. The existence of different legal cultures and traditions is a major reason why legal languages are different from one another, and will remain so.

Translating Different Types of Legal Texts

Legal translation involves different legal text types. The common legal text types include private legal documents, domestic legislation and international legal instruments. Each of these types of texts has its own linguistic and legal features, and there are also established conventions or practices for such translation that the legal translator needs to be familiar with (see Cao, 2007, 2010). Briefly, private legal documents mainly refer to contracts, agreements, wills and other legal documents. The translation of these documents constitutes the bulk of actual work in real life for many legal translation practitioners. Furthermore, bilingual or monolingual jurisdictions may need to translate their domestic legislation into another language, for example in Canada or the US. Lastly, there is the translation of international legal instruments, for instance at the UN and the EU. There are both legal and linguistic issues involved for these types of translation (see Cao, 2007, 2010).

Legal Translation: Possibility and Impossibility

Given the complexity and difficulty of legal translation, one may wonder whether law is actually translatable and whether true equivalence can be achieved in legal translation. It has been claimed that legal concepts which are alien or nonexistent in the target system are untranslatable.

We can look at the issue of translatability of legal texts from several perspectives. First, it is a fact that we translate law between different legal families and legal traditions, and we have been doing so for the last few centuries. In reality, the laws and legal systems in many countries and continents have been developed on the basis of legal transplant from other legal systems (see Watson, 1974) assisted to a large extent by the process of translation. Legal concepts, practices, and entire systems have been introduced to new political, social, cultural, and legal environments this way. Real-life experience, and successful experience at that, tells us that translating law, irrespective of the systems and families involved, is not only possible but also highly productive. However, this does not mean that there are no problems or that the job is easy.

Second, in terms of translational equivalence, when foreign laws, legal concepts, and practices are translated into a TL which does not have preexisting equivalents, naturally there needs to be a link that establishes a degree of relevant equivalence between the SL and TL for translation to take place. According to Toury (1986, p. 1123), equivalence is a combination of, or compromise between, the two basic types of constraints which draw from the incompatible poles of the target system and the source text and system. It can be argued that, conceptually and pragmatically, translation (including the legal kind) is not solely a matter of crossing languages or simply a question of identity or synonymy, because the validity of a translation is independent of whether an element in one code is synonymous with a correlated element in another code (Frawley, 1984, p. 161). Thus, translating legal texts is a relative affair. It is futile to search for absolute equivalence when translating legal concepts.

Third, the issue of comprehending translated law, after the initial linguistic transfer, is a related consideration. In people's understanding of translated texts originally written for

different audiences in different languages, inevitably sometimes there are confusions and misunderstandings. Such confusion may have something to do with the often invisible crossover in translation. Words may be written and read in the same language but people's interpretations in the SL and TL differ due to the differences in language use. Others' horizons that were encoded in the original language but are now represented in the translated language may not be so readily obvious (Gadamer, 1975), simply because the other horizons are now expressed in a deceptively familiar language—one's own language. Nevertheless, the "fusion of horizons" (using Gadamer's expression) is possible in translation and understanding translated texts.

In translation, including legal translation, one may say that a "fusion of horizons" can be achieved and mediated in the transmission of meaning, creating new interpretive horizons on the part of the reader of a translation. Despite the seemingly insurmountable conceptual and linguistic gulf, alleged and real, between different laws and languages, translating law is possible, and cross-cultural understanding in law can be realized, although such understanding is always subjective and may not be identical in all languages at all times. However, one may say that no exact equivalence or complete identity of understanding can be expected or is really necessary.

SEE ALSO: Legal Interpreting; Legal Language

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Lehiste, Ilse

ZITA MCROBBIE-UTASI

Ilse Lehiste (1922–2010) was professor emeritus in the Department of Linguistics at The Ohio State University. Her wide-ranging scholarly legacy has greatly influenced the way linguists view the science of phonetics and its role in the study of speech communication. Her pioneering research in employing and advancing experimental phonetic methods together with groundbreaking theoretical works on the acoustic properties of speech is a major contribution to the discipline of linguistics.

Ilse Lehiste was born in Tallinn, Estonia. She received a Doctor of Philosophy degree from the University of Hamburg, Germany, in 1949; subsequently she moved to the United States where she earned her PhD in linguistics from the University of Michigan in 1959. Prior to her appointment at The Ohio State University in 1963 she taught at the Kansas Wesleyan University (1950–1) and at the Detroit Institute of Technology (1951–6), and was a research associate at the University of Michigan's prestigious Communication Sciences Laboratory (1958–63). She was chair of the Department of Linguistics at The Ohio State University (1965–71; 1985–7) and director of the Linguistic Institute at The Ohio State University (1970). Dr. Lehiste taught as visiting professor at the University of Cologne, Germany (1965), the University of California in Los Angeles (1966), the University of Vienna, Austria (1974), the University of Tartu, Estonia (1993, 1995, 2006), and the University of Graz, Austria (2004).

Lehiste's remarkable scholarly output is evidenced by a large number of publications in the areas of acoustic phonetics, prosody (suprasegmentals), phonetics and phonology, language contact, and language change. She is author, coauthor, or editor of 20 books (author of nine, coauthor of eight books, first author of six books) and editor or, coeditor of three more. She has 203 published articles and her list of publications also contains 104 reviews.

Lehiste is regarded as one of the foremost authorities in acoustic phonetics. Her acoustic studies have been considered important and extensively referred to by scholars in phonetics and phonology. Among them are the books *Acoustic Characteristics of Selected English Consonants* (Lehiste, 1964) and *Some Acoustic Characteristics of Dysarthric Speech* (Lehiste, 1965). She was the editor of the volume *Readings in Acoustic Phonetics* (Lehiste, 1967), a basic handbook that has been widely used.

Lehiste's classic monograph *Suprasegmentals* (1970) provides a thorough investigation of all prosodic phenomena present in languages. The detailed discussions are appropriately illustrated with numerous crosslinguistic examples. In addition to describing the acoustic characteristics of suprasegmental features—quantity, tonal features, stress—she identifies patterns relevant to their function in the phonology of the language rendering this experimental study on suprasegmentals an important contribution to linguistic theory.

Lehiste's research has influenced theoretical phonetics in several important areas. Her studies on boundary phenomena have resulted in findings utilized by phoneticians examining the prosodic structure of larger linguistic units such as paragraphs and sentences. Lehiste's experiments, designed to discover the relationship between the suprasegmental structure of these units and the phonetic factors relevant to the signaling of boundaries have advanced research on the understanding of such boundary phenomena as preboundary

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lengthening, presence of laryngealization, and length of pause (Lehiste, 1979). She has also studied the effects of morphological and syntactic boundaries relating to the temporal structure of utterances. One of her most significant theoretical studies investigates the much debated concept of isochrony. In a paper "Isochrony Reconsidered" she argues for the existence of isochrony—the organizing of utterances by speakers into more or less equal rhythmic units—as a perceptual phenomenon. The article also provides evidence for the integration of isochrony into the grammar at the level of syntax (Lehiste, 1977).

Lehiste's substantial research aimed at clarifying the complex issues associated with Estonian phonology has significantly contributed to the understanding of the production and perception of linguistic quantity. According to her analysis, quantity alternations can only be described by referring to units larger than the segment: that is, segmental quantity must be described by considering the syllable it occurs in and its position within the word. In addition to the importance of acknowledging the hierarchy of the prosodic levels—segment, syllable, disyllabic foot, and word—in exploring the acoustic properties of quantity her experimental phonetic research has identified the relevance of (a) durational ratios and (b) the presence of another prosodic factor—such as, fundamental frequency—in the realization of distinctive quantity (Lehiste, 1997).

Lehiste's research on the relationship between the prosody of a language and the metrical structure of poetry was based on the hypothesis stated in Lehiste (1985): "the essence of the suprasegmental structure of a language is crystallized in the meter of its traditional poetry." (p. 145) Results of the production and perception studies relating to prosody in language and poetry have been disseminated in several influential studies such as "The Phonetics of Metrics" (Lehiste, 1992), and "Contemporary Finnish and Estonian Realizations of Folksongs in the Kalevala Metre" (Lehiste, 2001). Many of her articles and a book *The Temporal Structure of Estonian Runic Songs: A Study of the Relationship Between Language and Music* (Ross & Lehiste, 2001) represent her research examining the ways in which sung poetry accommodates phonetic constraints in the language.

Lehiste's long-time collaboration with Pavle Ivić, the distinguished scholar of South Slavic, a dialectologist and a phonologist, has significantly contributed to research on Serbo-Croatian accentology. Their findings were published in a number of articles and in two books: *Accent in Serbo-Croatian: An Experimental Study* (Lehiste and Ivić, 1963) and *Word and Sentence Prosody in Serbocroatian* (Lehiste and Ivić, 1986).

In 1979 a coauthored book based on her teaching of historical linguistic courses was published: *Principles and Methods for Historical Linguistics* (Jeffers & Lehiste, 1979). The book presents a thorough discussion of up-to-date methodology for comparative and internal reconstructions; further, the authors present a meticulous survey of language change in all areas of grammar, including a chapter on the effect of language contact on language change.

Lehiste's interest in language contact has resulted in one book and several papers. The book *Lectures on Language Contact* (Lehiste, 1988) is based on her senior and first-year graduate courses over ten years. In addition to presenting sociolinguistic concepts, she incorporated her own research into these lectures, emphasizing the importance of experimental testing of sociolinguistic theories.

Her research on language contact phenomena and historical linguistics has greatly contributed to the understanding of language change in progress. In her studies "Polytonicity in the Area Surrounding the Baltic Sea" (Lehiste, 1978) and "Prosodic Change in Progress: Evidence from Estonian" (Lehiste, 1983), she concluded that in Estonian tonal patterns are formed in place of quantity degree alternations, attesting to a prosodic change in progress.

More recently she has been heavily involved with an international research project aimed at surveying the prosodic structures of lesser-known Finno-Ugric languages: "Erzya

Prosody" (Lehiste et al., 2003), "Meadow Mari Prosody" (Lehiste et al., 2005), and "Livonian Prosody" (Lehiste et al., 2008).

Lehiste's scholarly achievements have earned her prodigious honors. She was a foreign member of two distinguished academic institutions: the Finnish Academy of Science and Letters (since 1998) and the Estonian Academy of Sciences (since 2008). Lehiste was a recipient of honorary doctoral degrees from the University of Essex, Great Britain (1977), the University of Lund, Sweden (1982), the University of Tartu, Estonia (1989), and the Doctor of Humane Letters honorary degree from the Ohio State University (1999). In recognition of the significance of her scholarly work, she has been honored by the Guggenheim Fellowships (1969–70 and 1975–6), Japan Society for the Promotion of Sciences Fellowship (1979–80), Distinguished Research Award, The Ohio State University (1980), International Society of Phonetic Sciences Kay Elemetrics Award (2003), Ferdinand Johann Wiedemann Award, Republic of Estonia (2009), The American Academy of Arts and Sciences Fellowship (1990), Order of the Yugoslav Flag with Golden Wreath (1988), among several other awards and fellowships. She served on the editorial boards of several scholarly periodicals, such as the *Bibliotheca Phonetica*, *Journal of Phonetics*, and the *Journal of Interdisciplinary Music Studies*. Her extensive service to the academic community includes responsibilities associated with 12 academic societies, among them the Association for the Advancement of Baltic Studies (1974–6), the Linguistic Society of America (life member and fellow, member of the executive committee, 1971–3, president, 1980), Permanent Council for the Organization of International Congress of Phonetic Sciences (member since 1989, emeritus member since 1999), Finnish Academy of Sciences Fennistics Evaluation Group (member, 1994–6), Educational Advisory Board, John Simon Guggenheim Memorial Foundation (member, 1991–9).

In one of her best known works, *Suprasegmentals* (Lehiste, 1970), she stated that "A phonologist ignores phonetics at his own peril" (p. vi). Based on the remarkable breadth and depth of her research it may be concluded that she succeeded in defining unifying principles which enable scholars to consider the integration of speech science into the major areas of linguistic investigations; she also succeeded in elevating the discipline of phonetics to a level where it can no longer be separated from any aspects of speech communication research.

SEE ALSO: Phonetics and Phonology: Overview; Suprasegmentals: Intonation; Suprasegmentals: Prosody in Conversation; Suprasegmentals: Rhythm; Suprasegmentals: Stress; Suprasegmentals: Tone

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Lemke, Jay

JOANNE JUNG-WOOK HONG

Jay Lemke, as a social semiotician, has been recognized as a significant and gifted researcher in linguistics, literacy, and science education. He is senior research scientist at the University of California, San Diego, in the Laboratory for Comparative Human Cognition. He was previously professor at the University of Michigan, working in the PhD programs in science education, learning technologies, and literacy language and culture, and professor and founding executive officer of the PhD program in urban education at the City University of New York. Based on his academic background in physics and in science education, he has put his efforts at analyzing communication in science and this has led to his work on both discourse analysis and multimedia social semiotics. He has made major contributions in education, science, literacy, multimedia, analysis of language and visual images, social theory, and ideology. Two of his earliest books *Talking Science* (1990) and *Textual Politics* (1995a) have been devoted to the social semiotic approach in applied linguistics and paved the way for his work in multimodality (e.g., Lemke, 1998, 2002, 2005, 2009). Arguing that meanings are constructed across institutions and media from a critical perspective, Lemke considers language as analytical abstractions from embodied social practices with an inherent institutional role and power relations (see Lemke, 1995a). In Lemke's social semiotic approach to language, all semiosis is multimodal. That is, meaning is constructed through a variety of modalities or communicative channels across institutions and media.

Multimodality

Lemke's study of multimodality began with an investigation how to read scientific media. He explains that meanings in scientific media cannot be understood through only one semiotic modality, such as language, because it is generally constructed by combining a variety of modalities, for example, combining language use with visual expressions. That is, the meanings are understood through a combined "reading" of language with mathematical expressions and various visual-graphical representations (see Lemke, 1998).

In discussing multimodal communication, Lemke (1998, 2002, 2005, 2009) considers not only the meaning in the text but also the act of meaning making from a social semiotic perspective. Focusing on the conventional features of the genres of discourse communities as well as the resources of language, Lemke (1998, 2002) describes that meaning is conventionally construed and co-deployed with multiple semiotic modalities. Hence, meaning is functionally integrated with language, image, and sound in meaning making. In particular, Lemke (1998) argues that co-deployment helps the meanings to multiply the set of possible meanings that can be made and also the specificity of any particular meaning made against the background of this large set of possibilities.

Systemic functional linguistics (SFL) (e.g., Halliday, 1978; Halliday & Matthiessen, 2004; Martin, 1992) demonstrates the ideational, interpersonal, and textual linguistic metafunctions as functional resources for linguistic signs. Corresponding to the three metafunctions, Lemke (1998, 2002) proposes that the meaning in multimodal genres is the product of subtle, conventional, and creative interplay of "presentational," "orientational," and "organizational" aspects of meaning making across modalities. This is a culturally typical combination of

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meanings about things, attitudes toward them and our addressees, and ways of organizing our language.

Presentational meanings represent a "state-of-affairs" that are construed by the ideational content of text to specify a process or relationship, its semiotic participants and circumstances. For language, this defines the sense in which we speak about something, constructing a theme or topic, and making predication and arguments. For image, it defines what is shown or portrayed, whether figural or abstract. In multimodal communication, for instance, this function may allow us to interpret the child's unfamiliar scrawl on paper through his use of the word "cat," or his indecipherable speech through his pantomime of cats. Orientational meanings represent "stance" toward the state-of-affairs against the background of other possible viewpoints, by depicting what is happening in the communicative relationship and what stance its participants may have to each other and to the presentational content. Organizational meanings enable the other two meanings to achieve greater degrees of complexity and precision, by making and telling which other signs go together into larger units.

Multimodality and Genre

In discussing multimodality, Lemke particularly considers the notion of genre.

> A genre is maintained by the convention of a community, and in most cases serves specific functions within the system of practices of particular institutions of that community. The forms which a given genre takes as text are the traces of social signifying practices in some community, in some institutional, or at least recognized and regularly recurring situational context. (Lemke, 2005, pp. 46–7)

Considering genre structures as the meaningful functional organization of social action, he has developed the concept of multimodal communication, ranging from print media to hyper media. Focusing on the media genres in science academic community, Lemke discusses and exemplifies meaning making in the genre of printed academic articles and reports (Lemke, 1998) and in the genre of widespread computer text with image elements (Lemke, 2002). Based on discussion about traversals in hypermedia, Lemke (2009) also introduces the study of transmedia franchises, which proposes that commercial marketing has brought semiotic innovation across a variety of genres and media with intertexts of an original story or images.

For the analysis of multimodal genres, Lemke mainly focuses on how the resources for those three meanings—presentational, orientational, and organizational—are combined across semiotic modalities. However, in meaning making, these three are not by any means totally independent of one another and also not possibly combined with equal probability. These three generalized semiotic functions are the common demonstrators by which multimodal semiosis makes potentially multiplicative hybrid meanings.

Hypermodality

Lemke's (1998) analysis of printed scientific research articles find that meaning integrates typological principles of linguistic semantics with topological modalities of visual semiotics and their extension through the hybrid resources of quantitative mathematics. By this, he suggests that the linguistic meanings are represented through visual semiotics that include all matters of page layout as well as choices of font style and typeface sizes and the use of headings and footers. Accordingly, he focuses on semiotic analysis of the functional

integration of text, tables, graphs, maps, diagrams, drawings, and photographs in formal scientific print communication.

Extending from the analysis of print media, Lemke (2002, 2005) takes a significant step to the analysis of contemporary multimedia genres in which both the print-and-image and the dynamic image-and-sound streams of film, video, and animations are considered. In particular, Lemke (2002) focuses on meaning making in multimedia Web sites and discusses the presentation of scientific information for both technical and lay users. He argues that hypermodality is more than multimodality and goes beyond the conventions of traditional multimodal genres, in that it mainly looks at interactions and interconnections among word-, image-, and sound-based meanings in hypermedia rather than simply looking at juxtaposition of the meanings.

Lemke discusses and examines the resources available for producing syntagmatic relationships across different semiotic resource systems, comparing these with the resources available within more semiotically homogeneous texts. Generally, he discusses the multimodal communication based on two main focuses: the resources for meaning making across semiotic modalities, and the linkages among traversals which include text units, visual elements, and sound units.

Hypertext Semantics: Traversals

Lemke (1998, 2002, 2005, 2009) states that, while the print media genres include images and figures constrained by multimodal genre-specific conventions, the hypertext media genres go beyond the conventions. Hypertext is not just a plain text, but rather a medium and a technology to construct sequences of textual units. The textual units may be a single word, a phrase, a paragraph, or a whole page, to become source and target of a hypertext link. The sequences of textual units are not uniquely determined by authors/designers of a particular hypertext web, but by readers/users to make meanings of their own on the web of related elements provided. While Web surfing, the readers/users generate trajectories within a Web site, generally cumulating the wealth of details and the models of a richly drawn universe over long stretches of ordinary narrative or novelist text. A trajectory, a new kind of multimodal syntagm, becomes a traversal when it crosses between Web sites, across institutional, genre, and even language and culture boundaries. According to Lemke (2002, 2009), traversals are like changing cable TV channels: moving on short timescales from news to talk to comedy to music, from one institutional site to another, one genre to another. In this regard, traversals are not limited within the institutional conventions of each separate genre or Web site, which allows hypermodality to be understood as a phenomenon beyond generic-specific conventions.

For discussion of hypermodality, Lemke (2002) illustrates some principles regarding multimodality and hypertext semantics and exemplifies the domain of the US National Aeronautics and Space Administration (NASA) for the short-range scale of single pages, page-pairs across single links and very short traversals of Web site pages, to draw on the experience of analysis in the context of much longer traversals. He explains that hypertext semantics is very much like intertextual semantics (see Lemke, 1985, 1995b), in that it particularly focuses on construction of meaning relationships along traversals. Meaning relationships construed across a single hypertext link can be compared with those between texts and within texts on longer scales in intertextual study. In particular, Lemke (2002) states, in hypermodality, many verbal relations are conceptualized as visual metaphors, such as chains, narratives scenes, and viewpoints. The meaning relations along traversals are discussed based on semantic connections in the aspects of presentational, orientational, and organizational relations.

Transmedia Franchises

Considering the notion of traversals which represents meaning made across institutional boundaries, media, genres, settings, and context of situations, Lemke (2009) shows another step for the discussion of multimodal communication: transmedia franchises. As a social semiotician, looking at media, closely related to their context of production and circulations as well as those of their use or consumption, Lemke argues that commercial marketing is often the cutting edge of semiotic innovation in media production. Lemke (2009, p. 292) describes that "transmedia franchises place cobranded content, and with it their ideological messages and inducement to consumption, throughout our virtual and spatial environment, where our individual traversals will encounter it again and again." For instance, the *Star Wars* brand crosses both media and genres, appeared as films, books, comics, computer and videogames, music, merchandise, theme park rides/attractions, and advertisements seen in print, television, and online. The meanings constructed in each of all these various media and genres are not entirely independent of the others, but constructed as intertexts of the original film. Hence, for discussion about the meaning effects of transmedia franchises, Lemke (2009, p. 293) emphasizes that

> we need to understand the economic imperatives of mass markets, where there is a careful calculation of the relative advantage of creating media that appeal to the widest possible range of consumers versus those whose appeal to a particular market is based on contrasting its identity and image with those of other markets.

SEE ALSO: Multimodal Discourse Analysis; Multimodality and Systemic Functional Analysis; Multimodality and Technology; Multimodal Text Analysis

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Levinson, Stephen C.

PILAR GARCES-CONEJOS BLITVICH

Stephen C. Levinson is currently the director of the language and cognition group at the Max Planck institute for psycholinguistics in Nijmegen, the Netherlands (see www.mpi.nl/people/levinson-stephen). Professor Levinson received his BA in social anthropology from the University of Cambridge in 1970. He received his MA in linguistic anthropology in 1973, and his doctorate in linguistic anthropology in 1977, both from the University of California, Berkley. Prior to his current appointment, Levinson held, among others, the following positions: lecturer and reader at the University of Cambridge and visiting associate professor at Stanford University.

Levinson's research focuses on linguistic diversity and its implications for theories of human cognition. He argues that this diversity is made possible through an underlying, universal pragmatic base. Fundamentally, the different strands of his research tie back to the belief that the capacity for social interaction holds the key, among others, to human evolution, language evolution, and the building blocks of social systems.

His understanding that language diversity is closely connected to a universal pragmatic base relates clearly to his interest in pragmatics as a field of which he can rightfully be considered one of the founding fathers. He wrote the first monograph on the topic (Levinson, 1983), and has continued to contribute actively to the field in the following three decades. Another monograph on pragmatics (Levinson, 2000) focuses on generalized conversational implicatures. In his analysis, Levinson unveils three universal inference rules or heuristics, inspired by Grice's conversational maxims, of preferred interpretation or language construal.

The major role of social interaction for Levinson takes center stage in the book that he coauthored with Penelope Brown, *Politeness: Some Universals in Language Use* (1987). Initially published in 1978, the work by Brown and Levinson generated enormous interest and triggered what is now considered one of the most well-researched subfields, even a movement, within interactional sociolinguistics and related disciplines. The book has been translated into numerous languages and its tenets have been applied cross-culturally to the study of politeness phenomena. Levinson's interest in social interaction has been the focus of over 20 of his papers and of a long collaboration with Brown on fieldwork among indigenous groups in Mexico and New Guinea.

This interest in social interaction is taken to a new level by Einfield and Levinson (2006). In it, human sociability is presented as a new interdisciplinary field, largely unexplored, whose focus is to ascertain the foundations of human sociability with the aim to produce an emergent system of human sociality and social interaction. The interconnections between language diversity, sociality, and culture are further explored in Levinson and Jaisson (2006) which brings together papers that delve into the interconnections between biology and culture. The creation and transmission of culture is seen as a historical process rooted in natural selection. In line with the centrality that human interaction, based on cooperation and communication, has in Levinson's thought, a central claim is made regarding the possibility that cognitive complexity may have been driven by both the cooperation that underlies culture and the need to protect it.

Levinson's view that inherent diversity is at the core of human language and cognition was explored in Gumperz and Levinson (1996). Despite the exploratory nature of most

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papers and some partial dissent, the book shows sympathy toward the Humboldt–Sapir–Whorf hypothesis and strives to find acceptable formulations for the sense behind the hypothesis. Further explorations of language diversity, also tied to the revival of neo-Whorfian standpoints, can be found in Levinson and Wilkins (2006) which focuses on the linguistic structuring of space, illustrated crosslinguistically and cross-culturally. Its crucial claim is that individual linguistic systems condition the conceptualization of spatial relations, contrary to what was previously thought.

The relationship between language diversity, language categories, and thought was tackled from a developmental perspective by Bowerman and Levinson (2001). Their conclusions, although varied, seem to suggest strongly that the widely held belief that language reflects preexisting categories is erroneous, and that universalist assumptions are not borne out by cross-cultural evidence. On the contrary, many linguistic categories have to be learned from usage. A child acquiring a language learns how to construct macro-concepts that are part of his/her cultural milieu. Thus language invades thinking because it is a good tool to think with.

Professor Levinson's active scholarship continues: he frequently contributes to prestigious journals and remains very active in his leadership of cutting-edge, interdisciplinary research projects. He is currently involved in the organization of the world's largest digital archives of endangered languages. Professor Levinson is also very actively engaged in service to the profession. He serves as the editor and coeditor of two prestigious book series—Cambridge University Press and Mouton de Gruyter—and is a member of the editorial board of prestigious international journals. His stellar academic career has been recognized with diverse honors (fellow of the British Academy; Stirling Prize from the American Anthropology Association; member of the Academia Europea). Professor Levinson's contributions to linguistics and related fields have inspired the work of other scholars in ways matched by very few.

SEE ALSO: Anthropological Linguistics; Conversational Implicature; Linguistic Relativity and Second Language Acquisition; Politeness; Pragmatics: Overview

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Lexical Access in Bilingual Visual Word Recognition

SYBRINE BULTENA AND TON DIJKSTRA

Introduction

When a book is translated, the meaning of the original should be preserved in the words of the target language. These words will usually differ from the original in their spelling (orthography) and pronunciation (phonology), but occasionally translation equivalents are similar in form across languages. For instance, a comparison of the English sentence *The tennis ball hit my leg* to its Dutch translation *De tennisbal raakte mijn been* immediately reveals the lexical similarity between the two languages. *Tennis* is form-identical in both languages, *ball*, *the*, and *my* have a clear orthographic and phonological overlap with *bal*, *de,* and *mijn*, whereas *hit* (Dutch: *raakte*) and *leg* (Dutch: *been*) are totally different in the two languages. Confusingly, the word forms *hit* and *leg* also exist in Dutch, where they mean *pony* (or also *successful song*) and *lay*, respectively.

Some people understand and speak two languages with sufficient skill to engage in a conversation in either one of them. Research on visual word recognition involving these *bilinguals* in their first language (L1) and second language (L2) indicates that word forms and meanings of different languages are stored in one integrated lexicon rather than separately by language. In terms of processing, it has been shown that words from both languages are accessed simultaneously rather than in a language selective manner, implying that words that are similar in form, meaning, or both are co-activated irrespective of their language. In a bilingual sentence context, parallel activation of words from different languages is also apparent, but may be modulated. In this entry, we will elaborate on these issues considering empirical evidence from both behavioral studies (measuring reaction times or RTs and error rates) and neuroimaging studies (involving EEG and fMRI data).

The Bilingual Lexicon Is Integrated

Bilingual studies suggest that words from different languages are stored in a common database. Van Heuven, Dijkstra, and Grainger (1998) showed that the recognition speed for a word in one language was affected by the number of similar words (called "neighbors") in another language. For instance, the recognition of the English word *work* was affected by the number of Dutch words that were similar in spelling, such as *werk* (meaning 'work') and *vork* (meaning 'fork'). EEG data also demonstrated cross-language neighborhood effects in bilingual word recognition. When bilingual participants read words in a blocked L1 or L2 context, a larger N400 effect (which is an EEG marker for ease of semantic integration) is found for words with many neighbors in the other language, suggesting more difficulty in processing (Midgley, Holcomb, Van Heuven, & Grainger, 2008). It is hard to see how word candidates from different languages could affect target processing if these forms were stored separately. An analysis of 30 neuroimaging studies by Indefrey (2006) suggests that the same areas in the brain are recruited for L1 and L2 processing, but there is a difference in strength of activation between L1 and L2. Bilingual speakers with late L2 onset,

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low L2 proficiency, or little L2 exposure tend to show stronger brain activation for processing the L2 than the L1. In all, this evidence points to an integrated bilingual lexicon.

The Bilingual Lexicon Is Accessed Language-Nonselectively

A large majority of bilingual studies involving a variety of experimental techniques indicate that bilingual word recognition involves an early phase in which word candidates from different languages are considered (at least when the same alphabet is involved). Many of these studies included words that are similar across languages, called "cognates" and "false friends." Cognates are translation equivalents that are identical or similar in their orthography across languages, such as *tennis* in the opening example. Word forms like *leg* that share their word form but not their meaning across languages are called "noncognate interlingual homographs" or "false friends." The crosslinguistic form overlap of cognates and interlingual homographs has been used by researchers to explore whether words from different languages are co-activated during the reading, listening, and speaking of bilinguals. The reasoning has been that, if the responses to such "special" items differ from those to one-language control items, this is evidence that both readings of the items have become active and affect each other. In the following paragraphs, we will consider this research involving cognates and false friends.

Cognates are processed more quickly and with fewer errors than words existing in only one language (e.g., Sánchez-Casas, Davis, & García-Albea, 1992; Dijkstra, Van Jaarsveld, & Ten Brinke, 1998). Brain waves for cognates are also different from those for matched control words (e.g., in terms of the N400 component, marking semantic integration; Yudes, Macizo, & Bajo, 2010). The processing advantage for cognates is called the *cognate facilitation effect*. It is usually larger in L2 than in L1, although it also occurs in the mother tongue if the bilingual is sufficiently proficient in the foreign language in question (Van Hell & Dijkstra, 2002). Stronger facilitation effects can arise if the cognates exist in three languages rather than in two, like the word *echo*, which exists in English, German, and Dutch (Lemhöfer, Dijkstra, & Michel, 2004).

The cognate effect must somehow be a consequence of the combination of overlap in meaning (semantics), spelling (orthography), pronunciation (phonology), or all of these across languages. All three characteristics contribute to the effect (Dijkstra, Grainger, & Van Heuven, 1999) and its size depends on the amount of between-language overlap. Dijkstra, Miwa, Brummelhuis, Sappelli, and Baayen (2010) found larger facilitation effects for cognates with a larger form overlap (with constant meaning overlap). For example, when Dutch–English bilinguals performed an English lexical decision task, RTs were faster to *alarm* (*alarm* in Dutch) than to *rain* (*regen* in Dutch), which were, in turn, faster than RTs to *bike* (*fiets* in Dutch).

The cognate facilitation effect suggests that cognates do not have a completely independent representation in the two languages. One proposal for the representation of nonidentical cognates is depicted in Figure 1 (also see Voga & Grainger, 2007). It consists of a separate but overlapping orthographic representation linked to an also overlapping or even shared semantic representation. According to this view, the cognate facilitation effect in many tasks arises because both word forms become active during the presentation of one of them and then converge on the common meaning representation. If a task requires making a distinction between the two cognate representations, a cognate inhibition effect may occur. This is the case, for instance, in language decision, where participants press one of two buttons depending on the target's language (Lavaur & Font, 1998). In other words, form overlap helps if one does not have to distinguish the two readings of the cognate, but it hinders if one must differentiate them.

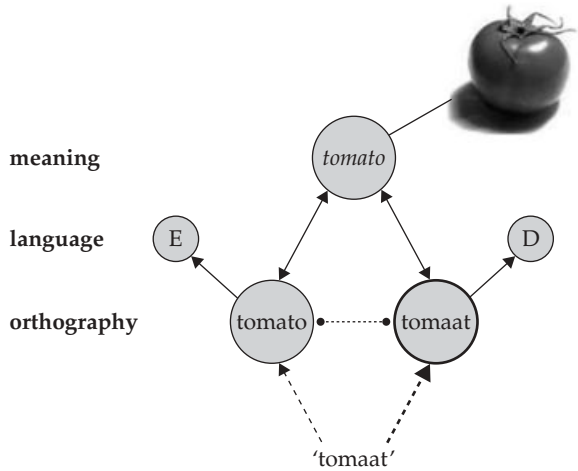

Figure 1 Dutch (D) and English (E) representations of the nonidentical cognate *tomaat*

False friends are alike in their written form, pronunciation, or both for different languages, but have quite a different meaning (e.g., English *coin* means 'corner' in French). When Dutch–English bilinguals read or hear the English (L2) variant of Dutch–English false friends, the words in both languages become active. In many tasks, such as lexical decision and word naming, the RTs for false friends are often longer than for control words (Smits, Martensen, Dijkstra, & Sandra, 2006).

False friends suffer from an interference effect that depends on their relative frequency in the two languages. For instance, a relatively low-frequency English word like *ramp* is most strongly interfered with by a high-frequency Dutch counterpart like *ramp* (meaning 'disaster'). This slowing-down effect can be reduced and even eliminated when pure Dutch words are excluded from the stimulus list. If the task is generalized to answering the question "is the presented item a word in any language?" then the false friends are processed even faster than control words (Dijkstra et al., 1998). Thus, the ultimate response to false friends depends on the list in which they occur and the task that is executed.

In an fMRI study, Van Heuven, Schriefers, Dijkstra, and Hagoort (2008) found that the conflict between the two false friends could also be observed in the brain, in particular in the frontal areas that are associated with the monitoring and resolution of conflicts during task performance (see Kerkhofs, Dijkstra, Chwilla, & De Bruijn, 2006, for analogous effects in EEG data). There also was a clear task effect. Much stronger competition effects arose when the lexical decision task required the participant to respond "yes" only to the L2 reading of the false friend (an L2-specific lexical decision task) than when either reading was correct (a generalized lexical decision task, in which both L1 and L2 words were linked to the response "yes, it is a word").

On the basis of these and other studies, the representation in Figure 2 is proposed for false friends. A Dutch–English word like *rug* (meaning 'back' in Dutch) has two representations, one for English and one for Dutch. Both representations are characterized by their own frequency of usage and may differ in meaning and pronunciation.

Lexical Access to Words in Bilingual Sentence Processing

Empirical research investigating how bilingual word recognition is affected by sentence context has been initiated only recently. Both behavioral and ERP studies indicate that

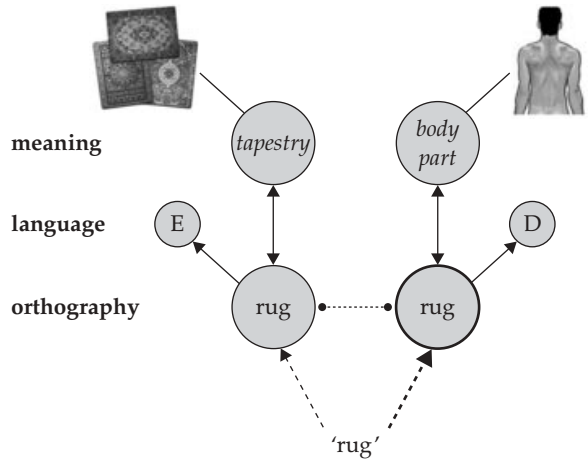

Figure 2 Dutch (D) and English (E) representations of the false friend *rug*

sentence context can affect bilingual word recognition. A regular finding is that semantically constraining sentences can reduce or even eliminate the effects of a nontarget language on cognate and false-friend processing, while such effects remain in low-constraint and neutral sentence contexts (e.g., Altarriba, Kroll, Sholl, & Rayner, 1996).

Processing of *cognates* in sentence context has been studied by Schwartz and Kroll (2006). They asked Spanish–English bilinguals to name cognates and false friends that were inserted in sentences that were highly or less constraining from a semantic perspective. Effects of the nontarget language reading mostly persisted for cognates in sentence context. For example, cognate facilitation was still found in low-constraint sentences. Interestingly, the cross-language effects in high-constraint sentences disappeared for good comprehenders.

Van Hell and De Groot (2008) also found cognate effects in low-constraint sentences in an English lexical decision task performed by Dutch–English bilinguals, and in forward (Dutch-to-English) or backward (English-to-Dutch) word translation tasks. In a high-constraint sentence context, the cognate effects disappeared in English (L2) lexical decision and strongly decreased (but remained significant) in both translation tasks. This suggests that even in high-constraint sentences nonselective activation initially occurs, which is then followed by lexical selection. Nevertheless, semantically rich sentences were apparently able to modulate the bilingual word recognition process in at least three different tasks.

Duyck, Van Assche, Drieghe, and Hartsuiker (2007) had Dutch–English bilinguals perform an English lexical decision task on form-identical and nonidentical cognates that were presented in low-constraint sentences. Facilitation effects were found relative to control words for all cognates. The obtained effects were at least as large as the effects for the same items observed in isolation. Next, an eye-tracking experiment, in which sentences with their cognates and a continuation phrase were represented as wholes on a computer screen, replicated the cognate effect for identical cognates, but not for nonidentical ones.

With respect to *false friends*, initial studies suggested that the sentence context constrains cross-language activation (e.g., Schwartz & Kroll, 2006). The explanation of these null effects differs across researchers (see, e.g., Schwartz & Arêas da Luz Fontes, 2008), but there is recent evidence indicating that cross-language effects of false friends in sentences can occur. Using eye-tracking, Libben and Titone (2009) found longer reading times for French–English homographs in both low- and high-constraint sentences than for controls, while reading times for cognates were significantly faster. Their data suggest that the

cross-language activation of homographs in high-constraint sentences is short-lived, implying that only the contextually relevant meaning remains activated. This conclusion fits with monolingual studies involving ambiguous words, which often report that sentence context kicks in only following an initial co-activation of both readings of an ambiguous word (see Swinney, 1979).

Additional evidence for a homograph effect comes from Elston-Güttler, Gunter, and Kotz (2005). They presented German–English bilinguals with L2 sentences ending in a German–English homograph or an English control word. For instance, the sentence *Joan used scissors to remove the* was followed by the test word *tag* (the German word for 'day') or a control word (*label*). Next, an L2 target word was presented that could be the translation of the L1 reading of the homograph. In the example, the target word *day* (the English translation of *tag*) was presented for an English lexical decision. Both behavioral and EEG data revealed semantic priming effects, but only when participants had watched a German film prior to taking the test did they show a facilitatory effect for the homograph condition. This suggests that the German reading of *tag* was only activated enough to induce semantic priming on *day* following the German film.

Bilingual Word Recognition Models

The empirical findings of an integrated lexicon and nonselective access have been incorporated into several models for bilingual word recognition, such as the implemented Bilingual Interactive Activation models (BIA and BIA+; Dijkstra & Van Heuven, 2002), the Revised Hierarchical Model (RHM; Kroll & Stewart, 1994), and the Inhibitory Control model (IC; Green, 1998). The focus of BIA, RHM, and the IC model is on the processing of single words; only the BIA+ model considers word processing in a bilingual sentence context. It proposes that word recognition in sentence context may be modulated by sentence characteristics such as its semantics. However, neither complete nor implemented models of bilingual sentence processing are currently available.

SEE ALSO: Connectionism; Inhibition and Control in Second Language Acquisition; Organization of the Second Language Lexicon; Second Language Representation in the Brain; Sentence and Discourse Processing in Second Language Comprehension

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Lexical Borrowing

FRANK E. DAULTON

As seen in ancient Coptic codices containing Hebrew loanwords, virtually every language has increased its vocabulary by borrowing from other languages. *Lexical borrowing* typically is the adoption of individual words or even large sets of vocabulary items from another language or dialect. It can also include roots and affixes, sounds, collocations, and grammatical processes. It has profound implications for various aspects of applied linguistics, including sociolinguistics and foreign-language learning.

Sometimes a word is borrowed in a way that preserves its original form and meaning. Other times words are adapted to the borrowing language's phonology and morphology. And another possibility is *loan translation*—or the creation of a calque—where a word or phrase is translated word for word; for example, *loanword* is a calque of the German *Lehnwort* and *loan translation* a calque of *Lehnübersetzung*.

The most borrowed words refer to technology (e.g., *engine*) and names for new artifacts (e.g., *taxi*). By contrast, the basic vocabulary (e.g., *eat*, *moon*, *be*) and function words (e.g., *the* or *and*) are less commonly borrowed (see Haspelmath & Tadmor, 2009). Sometimes words are borrowed despite native equivalents (e.g., *akushon* 'action' in Japanese versus the native *kodou*), usually because new words carry fresh nuances such as sophistication.

Lexical borrowing is one of the first phenomena in *language contact* (Thomason & Kaufman, 1992)—when two or more languages or varieties interact. This can involve immigrants, traders, conquerors, and—in today's world—foreign mass media such as movies and music. The degree and nature of borrowing reflect the contact between languages and cultures.

Sometimes a borrowed word's route is indirect or circuitous. Many English words in Korean (known as *Oi-rae-eo*) have arrived via Japan (where they are known as *gairaigo*) (e.g., Kang, Kenstowicz, & Ito, 2008); similarly English loanwords in Finland are typically borrowed from neighboring Sweden (see Ringbom, 2007). There is also *reborrowing*, where a word travels from one language to another and then back, altered; for example, French *le biftek* is borrowed from English *beefsteak*, where the English *beef* was originally from the Norman *bœuf*.

Lexical items are typically "borrowed" by an individual or group, and may thereafter enter common usage. Factors that encourage dissemination include the mass media and current events. For instance, the loanword *tero* ('terrorism') in Japanese bolted to prominence following the intense and extended media coverage of the 9/11 attack (Daulton, 2008). However, most borrowed words face obscurity and eventual extinction.

Often borrowings are dealt with differently (from native vocabulary) phonologically and morphologically; this is known as *lexical stratification*. In English, Latinate and Germanic morphemes pattern differently (Chomsky & Halle, 1968), and in German, English borrowings take different plural suffixes (-s).

Notable Examples

An exemplar of lexical borrowing is the Roman Empire's borrowing from Greece. Around 272 BC, the Romans began adopting features of Greek culture, including words such as

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sumbolum ('symbol') and *balineum* ('bath') (Holmes & Schultz, 1938). This "Hellenization" led also to the addition of the letters Y and Z to the alphabet to represent Greek sounds (Sacks, 2003). Reflecting Rome's desire for Greek knowledge, many Latin scientific words are actually Greek loanwords (Holmes & Schultz, 1938).

The sources of a language's loanwords can be diverse and, in the case of both Malay and Indonesian, loanwords have come particularly from Sanskrit, Arabic, and European languages (Jones, 2007). When the rulers in Sumatra adopted Old Malay as their official language in the seventh century, they resorted to Sanskrit to express concepts not found in Malay, such as *tata* ('rules'). Around the 14th century, Islamization brought Arabic and Persian words. Then, during the 16th century, Portuguese traders brought names for previously unknown European articles.

Lexical borrowing can befuddle historical linguists. For instance, Armenian borrowed so heavily from Iranian languages that, for many decades, linguists mistook Armenian for a branch of the Indo-Iranian language family (Waterman, 1976).

English and Borrowing

Lexical borrowing has fundamentally influenced English. During the Middle Ages and the Renaissance, English speakers encountered the intellectual centers of the Arab world, leading to a flow of lexical borrowings, notably involving technology and literature. Modern English also displays the borrowing that occurred in the 1500s and 1600s from Latin, French, and Greek.

Invasion and occupation lead to intense language contact and lexical borrowing, and the Norman Conquest of 1066 transformed English (see McCrum, MacNeil, & Cran, 1986). The conquerors added a layer of French vocabulary to the Old English spoken by the natives, and over the next three centuries, the mix spawned Middle English. Even after the decline of Norman, French retained its status as a prestige language, and the tendency for Norman-derived words (e.g., *reception*) to have more formal connotations than Germanic ones (e.g., *welcome*) continues today.

Immigration into English-speaking countries has also enriched English. Many English speakers are familiar with *schmuck*, Yiddish for a foolish person. Also, from Italian immigrants came words such as *paparazzi* and *mafia*, and from Hispanic cowboys and immigrants, *pronto* and *sombrero*.

Given its global status, English has also supplied vocabulary to many languages, including one of the great lexical borrowers—Japanese. Historically speaking, English during the first few centuries following the Norman Conquest (Miller, 1967) or Polish after the fall of the Soviet Union (Arabski, 2006) are among the few languages that have been as hospitable to loanwords as Japanese (see also Haspelmath & Tadmor, 2009). Japanese contact with English began more than 200 years ago, contact with other European languages goes back 500 years, and heavy lexical borrowing from China preceded that. English words have become especially important since World War II, and today some 10% of the Japanese lexicon originates from English, with words such as *mama* and *bai-bai* (bye-bye) among babies' first words (see Daulton, 2008).

Factors That Encourage Lexical Borrowing

Lexical borrowing is very common, arguably natural and unavoidable. For instance, it even occurs in sign language (see Battison & Brentari, 2003). The causes and factors that encourage lexical borrowing are multiple and interwoven. Lexical gaps, particularly involving emerging technology, often induce lexical borrowing. For instance, the word *computer*—describing an object invented in an English-speaking country—is known as *computer* in

Dutch and German, *computadora* in Spanish, *konpyuuta* in Japanese, *komputer* in Indonesian and Malay, and *kompyuta* in Swahili.

Of course, the borrowing society's attitudes toward foreignisms greatly affect lexical borrowing. If a people associate the culture and technology of a foreign country with power, chic, and other attractive characteristics, it is more likely that words will be borrowed from that *prestige language*. And a country may possess a unique feature that greatly facilitates lexical borrowing, such as the *katakana* script in Japan. Not only does *katakana* allow any Western word to be immediately borrowed and universally legible—in contrast to Chinese characters—it distinguishes and psychologically isolates Westernisms, thereby instilling confidence in the integrity of the native lexicon (see Kay, 1995).

Reactions to Lexical Borrowing

Usually, the public welcomes useful, relevant loanwords. This is especially so if loanwords connote sophistication, intelligence, stylishness, and so on. It is often the younger and better educated who are the most disposed toward loanwords (e.g., Loveday, 1996). The youth especially can be active innovators—creating their own *pseudo-loanwords* by innovatively combining foreign elements (e.g., *gorin*, 'goal' + in, Korean for a successful basketball shot). Another possibility is the combining of foreign and native elements (e.g., *paniku-ru*, 'panic' + the verbal inflection -ru, Japanese for 'to panic') to create *hybrids* (or *loanblends*).

Yet there is often resistance. For instance, Japan eliminated words of English origin prior to and during World War II, including many baseball terms yet to return (Daulton, 2008). And even today, both Japanese and Korean newspaper editorials blame English-based loanwords for the destruction of the native language and culture. Opponents may point out that the comprehensibility of loanwords can be particularly low with the elderly (e.g., Loveday, 1996).

The best known case of loanword resistance involves the Académie française, officially charged with the purification and standardization of the French language (in France) since 1635 (see van Gelderen, 2006). As French culture has come under increasing pressure from English media, the Académie has famously tried to prevent its Anglicization. For example, it has recommended that loanwords such as *hotdog*, *software*, and *e-mail* be replaced by the French *chien chaud*, *logiciel*, and *courriel* (or *courier électronique*) respectively. However, around the world, isolated outcries against loanwords or even government action tend to have limited ability to stop lexical borrowing.

The Adaptations of Borrowing

When words are borrowed, their forms and meanings often change.

Formal Changes

If the phonology of the donor language conflicts with the borrower, incoming words must be adapted to meet the structural requirements of the borrowing language (e.g., by the insertion of vowels and the replacement of nonexisting phonemes). An example of English adapted to Hawaiian, which has very few phonemes, is *Mele Kalikimaka* ('Merry Christmas'), where consonants have been replaced and consonant clusters broken up. Especially popular loanwords may be subject to *shortening* (or *truncation*) to facilitate their use, as when *department store* becomes *depaato* in Japanese (Daulton, 2008). Differing scripts (e.g., the Roman alphabet in a country where it is foreign) necessitate the further step of transliteration.

While transliteration is common, distinguishing loanwords by a special script is relatively rare. The use of italics in English is an example. Over time, as use of the borrowed word becomes widespread, italics (along with accent marks) may be less regularly applied or dropped, as with 'deja vu' (*déjà vu*). By contrast, while Japan's use of *katakana* for Western loanwords is a similar aid to literacy, no matter how widely used a Western loanword in Japanese becomes, with rare exceptions, it will always be written in *katakana* (Daulton, 2008).

Semantic Changes

There can also be semantic (i.e., meaning) changes to loanwords, which can occur when they are borrowed or over time. A loanword's meaning—or one of them—can be completely different from the original; this is sometimes referred to as *semantic shift*, and examples are rare but conspicuous (e.g., English *demand* vs. French *demande* 'request'). *Semantic restriction*, also known as *semantic narrowing* or *semantic specialization*, is when only one meaning/usage of a word is adopted (e.g., Korean *miting* 'meeting' = *a blind date*); it is the most common type of semantic change, as loanwords usually fill specific lexical gaps (Hatch & Brown, 1995). *Semantic extension* is when a loanword includes more meanings than its original borrowed word (e.g., Japanese *handoru* 'handle', including bicycle handlebars).

A more subtle semantic change involves connotation or feeling. *Semantic downgrading* (or *pejoration*) is when a more negative connotation is given to a word, as when *aisu* 'ice' means a *usurer* in Japanese (Daulton, 2008). Meanwhile, in *semantic upgrading*, positive connotations are attached, which is common in marketing (see Loveday, 1996). Over time, loanwords can lose one connotation and even come to hold the opposite.

Additionally, a word's part of speech can change when borrowed, and any loanword in Japanese can be verbalized by the use of *suru* 'to do', as in *tenisu suru*—literally meaning *to tennis* (Daulton, 2008).

The Implications of Lexical Borrowing for Foreign/Second Language Study

Lexical borrowing leads to *language transfer* (or *learning transfer*), where L1 features are incorporated into the target L2. Today language transfer is seen as a beneficial phenomenon (see Ringbom, 2007) that affects all aspects of language learning—phonology, syntax, semantics, and pragmatics (Ellis, 1994). While language transfer ultimately facilitates learning, in the short term increased production is accompanied by developmental *transfer errors* (or *interference*), or conversely *avoidance* may occur.

Semantic restriction and semantic extension (see above) lead to a loanword having fewer meanings (*convergence*) or more meanings (*divergence*) than the original borrowed words. *Convergent cognates* are the more common phenomenon, as when *tsuna* in Japanese refers to the meat but not the fish.

In historically unrelated languages, loanwords tend to originate from low-frequency words (see Ringbom, 2007), which have limited value as cognates. An exception may be Japanese, where members from nearly half of the high-frequency word families of English (e.g., *ability* and *access*) have become common loanwords in Japanese (e.g., *akusesu* and *abiriti*) (Daulton, 2008).

Conclusions

Lexical borrowing is often a major influence on the evolution of languages, and shared words link many languages and cultures.

SEE ALSO: Code Switching; Crosslinguistic Influence and Multilingualism; Crosslinguistic Influence in Second Language Acquisition; English and Multilingualism in Singapore; History of World Englishes; Lexical Gaps; Lexical Transfer and First Language Effects; Linguistic Creativity and World Englishes Literatures; Varieties of English in Asia

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Lexical Bundles and Grammar

VIVIANA CORTES

Early studies that identified and analyzed recurrent multiword units were conducted from a rather impressionistic perspective. However, advances in the use of computers and the collection of large language corpora used for linguistic analysis brought about important changes in the research methodologies used in the identification of this type of word combination. The 1990s and the beginning of the new millennium brought about a body of research made up of a considerable number of empirical studies that attempted to define and classify important fixed word combinations (Nattinger & DeCarrico, 1992; Altenberg, 1998; Butler, 1998; Hunston & Francis, 1998; Moon, 1998; Wray, 2002; Schmitt, 2004). Biber, Conrad, and Cortes (2003) explained that these studies present several differences, namely the way in which they identify and describe different types of multiword units (structurally, functionally, or both), the methodologies used to identify these expressions (perceptual importance, frequency, or other), the particular type of fixed expression studied (continuous sequences, collocational frameworks or frames, lexicogrammatical patterns, two-word combinations or longer expressions, pure idioms, etc.), and the corpora used for the analysis, ranging from small corpora of less than 100,000 words to corpora of more than 100 million words sampled among various registers. Among those studies that focused on frequency as a salient quality of these word combinations, several investigations surveyed previous literature in search of a list of expressions that were perceived as fixed and frequent and checked their relative frequency in a corpus of texts from a particular register (Nattinger & DeCarrico, 1992). Other studies used specially designed computer programs to identify the most frequent expressions in a register (Altenberg, 1998). This last methodology is the one that was used by Biber, Johansson, Leech, Conrad, and Finegan (1999) to identify the type of recurrent word combinations they labeled *lexical bundles*.

Lexical bundles are a very particular type of word combination. Biber, et al. (1999) define lexical bundles as "the combinations of words that in fact recur most commonly in a given register" (p. 992). Lexical bundles can be described as extended collocations, groups of three or more words that occur together in a register, regardless of their structure or idiomaticity. Examples of lexical bundles in conversation, for example, are expressions such as *what do you mean, I don't know why,* and *that's a good idea,* while in academic prose frequent bundles are *in addition to the, the point of view of,* and *in the context of*, to mention only a few. Bundles are identified by means of a computer program that looks at all groups of *n* words in a corpus (three, four, five words, etc.). Only those expressions that meet a previously established cut-off point are considered lexical bundles. It is essential to explain that these cut-off points are established by convention and only to ensure that the multiword expressions identified by the computer program are frequent. Biber, et al. (1999) suggested ten times in a million words as the frequency cut-off point for a four-word combination to be considered a lexical bundle, but since then many other studies have been much more conservative raising the frequency point to twenty or forty times in a million words (Biber, Conrad, & Cortes, 2004; Cortes, 2004). In the case of three-word lexical bundles, a much higher cut-off point has to be established, as these three-word expressions are much more common in any register. On the other hand, five- or six-word expressions need to reach a lower cut-off point, as these are much less frequent. In addition, in order to avoid any idiosyncratic use of these expressions by one or few language users, range

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needs to be considered, that is, the expression has to occur in five or more different texts across a corpus. Biber, et al. (1999) presented a comprehensive list of all the four-, five-, and six-word lexical bundles they could identify in the everyday conversation and academic prose sections of the Longman Corpus.

Cortes (2004) explains that recurrent word combinations can be described in terms of three major characteristics: idiomaticity, fixedness, and frequency. These characteristics should be seen as three interacting continua that can be used to describe any combination of words that frequently occur together. Idiomaticity describes the relationship between the meaning of the word combination and the meaning of the independent words that make up that expression. At one end of this continuum we can find obscure expressions such as *kick the bucket*, in which the meaning of the whole phrase (*die*) has no relationship to the meaning of the words that make up the fixed expression. At the opposite end of this continuum, we can find expressions like *as a result of*, which is completely transparent: the meaning of the expression derives from the meaning of each of the words that make the phrase. Fixedness refers to the degree of flexibility that an expression can accept. At one end of this continuum we will find expressions that do not accept changes or that accept only inflectional changes as in the case of *to be in a fix*, which accepts changes in the verb for tense and modality. At the opposite end, we will find expressions that are in complete free variation, frames that can be filled in with certain word classes (e.g., the _____ of _____). Finally, when frequency is under consideration, some fixed expressions tend to be more frequent in certain registers. For example, expressions such as *kick the bucket* are more frequent in fiction and even in this register they only appear 0.5 times in a million words, while expressions like *on the other hand* can occur more than 100 times in a one-million-word corpus of academic prose. If these three characteristics are used to describe lexical bundles, it can be easily noted that lexical bundles are mostly transparent, as they carry very little idiomatic meaning, and they are fixed, because the program that identifies the bundle does so for those forms that are the most frequent. For example, the lexical bundle *the objective of this study* was identified in a corpus of research article introductions while *the objectives of this study* was also used in the corpus but the frequency was not high enough for the expression to be considered a lexical bundle (Cortes, 2009). Finally, lexical bundles are extremely frequent. A cut-off point of twenty times in a million words denotes a considerable frequency but many three- and four-word lexical bundles occur more than 100 times in a million words in a particular register.

With the exception of Salem's study of French frequently occurring expressions (1987), Butler's studies of frequent fixed expressions in Spanish news corpora (1998), a study of lexical bundles in academic registers in Spanish (Tracy-Ventura, Cortes, & Biber, 2007) and an analysis of these expressions in conversation and academic texts in Korean (Kim, 2009), most of the research on recurrent word combinations identified by frequency has been conducted in English. In addition, in spite of the fact that, by definition, lexical bundles are frequent combinations of three or more words, most studies of these expressions have focused on four-word bundles. The main reasons for this length are related to the internal structure of bundles and their frequency: four-word bundles often include three-word bundles in their structure (for example, the bundle *as a result of* contains the three-word bundle *as a result*), and four-word bundles are ten times more frequent than five-word bundles, which results in a larger variety of structures and functions for further analysis.

Structural Analysis and Classification of Lexical Bundles

The way in which lexical bundles are identified makes their structure rather peculiar, in the sense that lexical bundles are usually not complete structural units and they often present fragmented phrases or clauses with new embedded phrase or clause fragments.

They do, however, have strong grammatical correlates, which facilitates their classification into various basic structural groups. These structural groups seem to be strongly connected to the register that originated the bundles. In everyday conversation, for example, lexical bundles are often clausal, made up of a verb phrase followed by fragments of some type of complement. Expressions such as *I don't know how* and *I want you to* are examples of this type of structure. In academic prose, on the other hand, most bundles present phrasal structures, made up of noun phrases or prepositional phrases with some noun or prepositional phrase fragments embedded in the first phrase, in expressions like *as a result of the, the aim of the study*, or *the beginning of the*. Biber, et al. (2004) introduced three major structural types of lexical bundles (p. 381).

Lexical Bundles That Incorporate Verb Phrase Fragments

This group includes "clausal" lexical bundles made up of some verb phrase (VP) or VP fragment with or without personal pronoun subjects, both in statement or question form. Three main subcategories can be distinguished in this group:

1. (connector) + personal pronoun + VP fragment: *you don't have to, well I don't know, It's going to be*;
2. verb phrase (with passive or non-passive verbs): *is going to be, have a lot of, take a look at, is based on the, can be used to*;
3. yes–no/wh-question fragments: *are you going to, do you want to, what do you think, how many of you*.

Lexical Bundles That Incorporate Dependent Clause Fragments

This category also includes "clausal" bundles but this time the bundle is made up of fragments of certain types of clauses, such as complement clauses (mainly to-clauses or that-clauses). Five different subgroups can be distinguished in this category:

1. Personal pronoun + VP + dependent clause fragment: *I want you to, you might want to*;
2. Wh-clause fragments: *what I want to, what's going to happen*;
3. If-clause fragments: *If you want to, if you look at*;
4. (verb/adj.) + to-clause fragment: *to be able to, to come up with*;
5. That-clause fragments: *that there is a, that I want to, that this is a*.

Lexical Bundles That Incorporate Noun Phrase and Prepositional Phrase Fragments

This group comprises "phrasal" bundles, mainly noun phrases with embedded noun or prepositional phrase fragments or prepositional phrases with noun phrase or other prepositional phrase fragments embedded. Three different groups can be found within this category:

1. (connector) + noun phrase with *of* phrase fragment or other post modifiers: *one of the things, the end of the, a little bit about, the way in which, and stuff like that*;
2. prepositional phrase expressions: *of the things that, at the end of, at the same time*;
3. comparative expressions: *greater than or equal, as well as the*.

This structural classification has been successfully used in several studies to group four-word bundles according to their grammatical correlates. In addition, in the study of four-word lexical bundles in Spanish corpora conducted by Tracy-Ventura et al. (2007), a structural type of bundles used as "relativizers" to introduce relative clauses was identified:

a la que se (*to which*), *en el que el/la* (*in which the*). These bundles would have a shorter counterpart in English or in some cases only one word or a two-word collocation would be used instead.

It should be noted that lexical bundles are closely bound to the register in which they originate. The longest bundles found by Biber, et al. (1999), were six-word bundles, expressions such as *if you know what I mean* in conversation and *from the point of view of* in academic prose. Cortes (2009) identified and analyzed lexical bundles in a corpus of research article introductions from twenty academic disciplines. She found several much longer bundles, expressions such as *the purpose of the present study was* (seven-word bundle), or *the rest of the paper is organized as follows* (nine-word bundle), which were extremely frequent (more than ten times per million words) in this specialized corpus.

Functional Analysis of Lexical Bundles

As previously mentioned, lexical bundles are defined by frequency and they are often not complete units, made up of phrase or clause fragments. Perhaps one of the most salient features of lexical bundles is that, in spite of their peculiar incomplete structure, they perform definite discourse functions that need to be analyzed in order to better understand the way in which these expressions are used and their distribution across registers. Hyland (2008) identified and functionally analyzed the most frequent lexical bundles in a corpus of MA theses and doctoral dissertations. His taxonomy grouped bundles in three major foci closely connected to the registers he analyzed in his study: research-oriented, text-oriented, and audience-oriented. Biber, et al. (2004) presented a taxonomy they had been working on for several years to functionally classify lexical bundles. These authors used this taxonomy in several studies with different genres, particularly academic genres (lectures, textbooks, and research articles). Their taxonomy introduces three major categories: stance bundles, discourse organizers, and referential bundles.

Stance Bundles

Stance bundles present a frame that helps interpret the proposition following the bundle. They convey two types of meaning: epistemic and attitude/modality. Epistemic stance bundles present a commentary about the certainty of the information contained in the proposition that follows the bundle. This comment can be certain, uncertain, or probable/possible (in expressions such as *I don't know if*, or *I don't think so*). Attitudinal/modality stance bundles introduce the speaker's attitudes toward the actions or events presented in the proposition that comes after the bundle (e.g., *I want you to, I'm not going to*). These bundles can be used to express attitudes such as desire (*I don't want to*), obligation (*you have to do*), prediction (*is going to be*), or ability (*to be able to*). Stance bundles can be personal or impersonal. Personal stance bundles are overtly related to the speaker or writer (*I*) as in the examples presented above. In the case of impersonal stance bundles these meanings are not explicitly attributed to the speaker or writer (as in *it is possible to, can be used to*).

Discourse Organizing Bundles

This category of bundles performs two major discourse functions: topic introduction or focus, and topic elaboration or clarification. Those bundles performing the topic introduction/focus function are used to introduce a new topic in the discourse. For example, in the case of classroom teaching discourse, the bundles are used to announce the instructors' intention to start a new topic or to consider the topic under discussion together with their students: "before I do that, I *want to talk about* Plato" (Biber, et al., 2004, p. 142).

Those bundles used to express topic elaboration or clarification frequently occur when additional explanation is introduced as well as when a comparison and contrast is introduced. This example has been taken from a corpus of academic prose, specifically from a collection of research articles:

> The symbol of a beautiful girl on an advertisement has many meanings. It shows of course how beautiful a woman is, it sells its product, and many women strive to be that. But *on the other hand* it has dark sides to it: it shows women as animals, it makes women want to be perfect, and it doesn't show how intelligent women can be.

Referential Bundles

The major function performed by these bundles is that of identifying an entity or highlighting some attribute of an entity as salient. Within this category we can find bundles that are used to single out specific attributes such as quantities or amounts (*a little bit of*), some physical characteristic of the entity (*the size of the*), or some abstract characteristics of the entity (*the nature of the*). Another frequent subcategory of referential bundles is those expressions used to refer to a particular place, time, or a location in the text in expressions such as *at the beginning of, at the end of*, or *as shown in figure*.

This functional classification has been used in many studies by different scholars when analyzing registers such as conversation, research articles, university textbooks, classroom teaching, academic interviews, university study groups, office hour conferences, and others (Biber, et al., 2003, 2004; Cortes, 2004; Tracy-Ventura et al., 2007; Kim, 2009). The extensive use of such a taxonomy helps assess its reliability and improves the categories, adapting or adjusting old categories, and creating new categories when new expressions are identified. Some recent studies have been trying to identify bundles in smaller discourse units to understand the functions performed by these expressions better (Cortes & Csomay, 2007; Cortes, 2009).

Pedagogical Implications

Fixed expressions have always been considered an important feature in the language production of native speakers of a language, which makes them a high proficiency target for students of that language to master. Some studies have concentrated on lexical bundles that can be taught to students as signaling devices in discourse, particularly those bundles that indicate a topic introduction or topic elaboration (Nesi & Basturkmen, 2006; Neely & Cortes, 2009). Several attempts have been made to teach lexical bundles to native and non-native speakers of English but students did not seem to obtain high gains in the production of these expressions, which are very frequently used by proficient speakers and expert writers (Jones & Haywood, 2004; Cortes, 2006). More studies are needed to investigate better ways to raise students' awareness of the functional role of these expressions in particular contexts.

SEE ALSO: Collocation; Corpora in the Language-Teaching Classroom; Formulaic Language and Collocation; Lexical Bundles and Technology; Pragmatic Routines; Teaching Grammar and Corpora; Technology and Phrases

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Lexical Bundles and Technology

VIVIANA CORTES

The study of frequently occurring word combinations has been an important focus in the linguistic field for several decades, but it was the appearance of corpus-based methodologies and the advancement of computer technology that prompted the design of new research questions and the empirical rather than intuitive investigation of such linguistic phenomena. For example, concordancing software (i.e., computer programs that are used to search for words or expressions in a text or in a collection of texts or language corpus) makes it easy to identify the collocational tendencies of a particular word—that is, which word or words the particular word prefers to frequently occur with. For many years, the most frequent collocations or recurring word combinations in a language or particular register were identified in a rather intuitive way, producing lists of frequent expressions identified perceptually (see, for example, Pawley & Syder, 1983) or more recently, reviewing the literature for those expressions and checking their frequency in a corpus (Nattinger & DeCarrico, 1992). All in all, the varied research conducted on the study of word combinations has come a long way: from the ethnographic and qualitative studies in first and second language acquisition of formulaic routines of the 1970s (Hakuta, 1974; Gleason & Weintraub, 1976; Krashen and Scarcella, 1978; Wong Fillmore, 1979) to the quantitative corpus-based studies of natural language analysis in the 1990s (Butler, 1998; De Cock, 1998; Granger, 1998; Biber & Conrad, 1999). The study of language corpora by means of computational analysis makes it possible to empirically identify the sequences of words that most commonly occur in any language as a whole or in a group of texts in a particular register. With the use of specially designed software used in a language corpus, the identification of recurrent word combinations, such as lexical bundles, is now conducted in a more empirical way.

Lexical bundles are a special type of word combination. The term *lexical bundle* was coined by Biber, Johansson, Leech, Conrad, and Finegan in their seminal grammatical work, the *Longman Grammar of Spoken and Written English* (1999). Lexical bundles were described as "recurrent expressions, regardless of their idiomaticity, and regardless of their structural status" (p. 990). That is, lexical bundles are sequences of words that commonly go together in natural language. By definition, lexical bundles are combinations of three or more words that frequently occur in a given register. Frequency is the ultimate characteristic that defines a lexical bundle. For Biber et al. (1999), a four-word combination, for example, had to occur 10 times in a collection of texts of a million words to become a lexical bundle. Other studies worked with more conservative cutoff points in order to focus on expressions that are really frequent in a particular register (Cortes, 2002; Biber, Conrad, & Cortes, 2004). In addition, according to the definition of Biber et al., the expression has to be used in five or more texts to avoid idiosyncrasies. The way in which these expressions are identified was first used by Bent Altenberg (1993). His work deserves special mention, as he was the first one to employ innovative methodology for the identification of fixed expressions, the same methodology that was later used by Biber et al. for the identification of the now labeled lexical bundles. Altenberg's earliest work with the London–Lund Corpus of Spoken English (about 500,000 words) reports an inventory of over 68,000 different word combinations (types) representing some 200,000 examples

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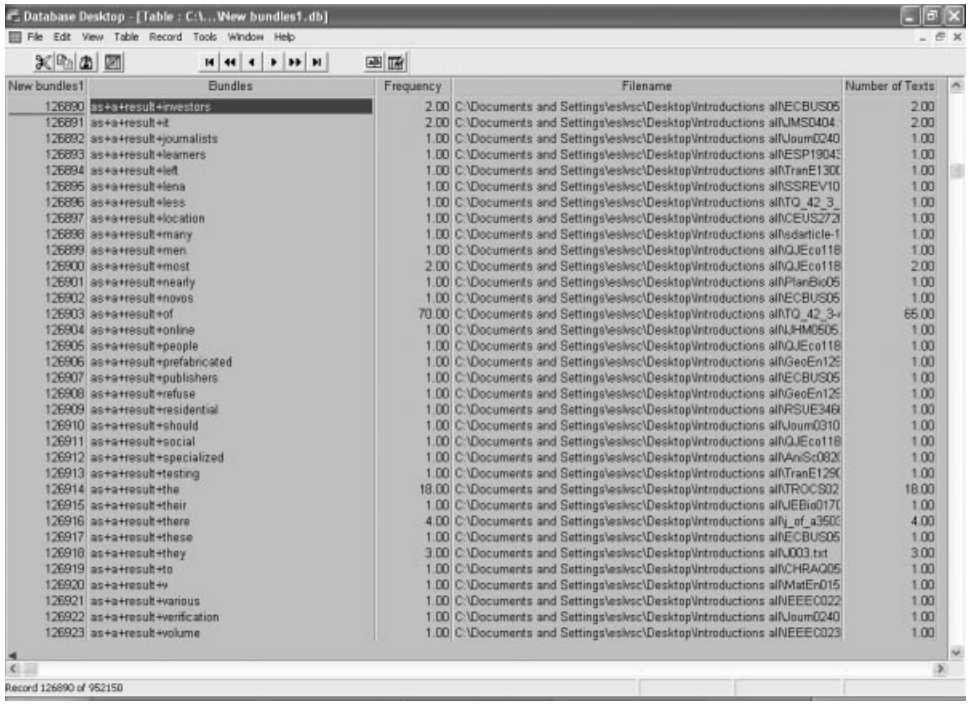
(tokens). The results of his studies (Altenberg, 1990, 1993, 1998; Altenberg & Eeg-Olofsson, 1990) demonstrate the pervasive character of conventionalized language particularly in spoken discourse. Altenberg (1990) stressed the importance of formulaic structures in the creative process of language, as even the spontaneous use of language is planned, encoded, and executed in a very short time span. Altenberg explained that speakers compensate this flaw by using repetition and by recycling expressions that were previously used or stored in order to simplify the production task. Biber and Conrad (1999) built on Altenberg's studies, using the same methodology in the conversation and academic prose sections of the Longman Spoken and Written Corpus. These authors clearly stated that "lexical bundles can be regarded as lexical building blocks that tend to be used frequently by different speakers in different situations" (p. 991). They produced a comprehensive list of four, five, and six-word lexical bundles in everyday conversation and in academic prose, and grouped these expressions according to their grammatical correlates. In general, they found out that conversation makes more use of lexical bundles than academic prose, which is somewhat logical, as conversation has frequently been considered extremely formulaic. Biber et al. (1999) stated that "some scholars have suggested that most conversational utterances are composed of relatively fixed lexical bundles" (p. 996). Some examples of lexical bundles in conversation, for example, are expressions such as *I don't know what, I said to him, don't worry about it, that's what I mean,* while in academic prose, frequent lexical bundles are expressions like *as a result of the, on the other hand,* and *in the context of,* to mention just a few.

Lexical Bundles Identification Process

The reason why the identification of lexical bundles has been regarded as empirical, in contrast to other more intuitive ways of identifying recurrent fixed expressions, derives from the methodology used. When researchers approach corpora in search of lexical bundles, they do so without any intuition or perception. In fact, researchers do not know which expressions are going to turn into lexical bundles until the program finishes processing all the texts in the corpus and yields the results. These results consist of those fixed combinations that meet the previously determined cutoff point, usually calculated as a certain number of times in a million words and a certain number of texts in the corpus (e.g., occurring ten, twenty, or forty times in a million words and appearing in five or more texts in the corpus, that is, used by five or more speakers or writers).

A program designed to identify lexical bundles works on the same basis as one that identifies word n-grams, groups of n-number of words, but they need to compile to the cutoff points for total occurrences and for number of texts. For example, the Lexical Bundle Program or LBP, was first designed using Borland Delphi software and Pascal programming language to look for four-word lexical bundles (Cortes, 2002, 2004). This program starts reading the first word of the first text in a given corpus and, moving one word at a time, takes all the four-word combinations in that corpus and stores them in a database until the last four words of the last text in the corpus have been processed. Thus, for example, if the first sentence of the first text starts with "The study of frequent word combinations . . ." the LBP will take *the+study+of+frequent* and will store this expression in the database. Then, moving one word at a time, it will go on processing *study+of+frequent+word, of+frequent+word+combinations,* and so on, storing in this case each four-word combination in the specially created database. As soon as a word combination is identified, the program surveys the database (which stores the expressions alphabetically) in order to check whether the expression is already there. If this is the case, the program keeps count of the repeated expressions and it flags the texts in which the expression has been used, keeping count of



Database Desktop - [Table : C:\...\New bundles1.db]

File Edit View Table Record Tools Window Help

New bundles1	Bundles	Frequency	Filename	Number of Texts
126890	as+a+result+investors	2.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\ECBUS05	2.00
126891	as+a+result+it	2.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\JMSD404	2.00
126892	as+a+result+journalists	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\Journ0240	1.00
126893	as+a+result+learners	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\ESP19043	1.00
126894	as+a+result+left	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\TranE1300	1.00
126895	as+a+result+lena	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\SSREV10	1.00
126896	as+a+result+less	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\TQ_42_3_	1.00
126897	as+a+result+location	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\CEUS273	1.00
126898	as+a+result+many	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\sdarticle-1	1.00
126899	as+a+result+men	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\QJEco118	1.00
126900	as+a+result+most	2.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\QJEco118	2.00
126901	as+a+result+nearly	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\PlanBio05	1.00
126902	as+a+result+novos	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\ECBUS05	1.00
126903	as+a+result+of	70.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\TQ_42_3-	65.00
126904	as+a+result+online	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\NHM0505	1.00
126905	as+a+result+people	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\QJEco118	1.00
126906	as+a+result+prefabricated	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\GeoEn125	1.00
126907	as+a+result+publishers	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\ECBUS05	1.00
126908	as+a+result+refuse	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\GeoEn125	1.00
126909	as+a+result+residential	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\RSUE346	1.00
126910	as+a+result+should	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\Journ0310	1.00
126911	as+a+result+social	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\QJEco118	1.00
126912	as+a+result+specialized	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\AnnSc082	1.00
126913	as+a+result+testing	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\TranE129	1.00
126914	as+a+result+the	18.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\TROCS02	18.00
126915	as+a+result+their	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\JEBio017	1.00
126916	as+a+result+there	4.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\j_of_a350	4.00
126917	as+a+result+these	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\ECBUS05	1.00
126918	as+a+result+they	3.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\J003.txt	3.00
126919	as+a+result+to	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\CHRAQ05	1.00
126920	as+a+result+v	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\MatEn015	1.00
126921	as+a+result+various	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\NEEEC022	1.00
126922	as+a+result+verification	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\Journ0240	1.00
126923	as+a+result+volume	1.00	C:\Documents and Settings\eslvsc\Desktop\Introductions all\NEEEC023	1.00

Record 126890 of 952150

Figure 1 Screenshot of the Lexical Bundle Program (LBP) database

the number of texts in which the expression occurred. After all the words in the corpus have been processed, the program identifies all those expressions that meet the previously established cutoff point and transfers them to another database or a special file created to store or analyze these data.

When lexical bundles are identified, the units that make up the bundle are orthographic word units, although these units combine separate words, as in the case of contractions, which are extremely frequent in spoken genres. For example, compound words or contractions such as *self-control* or *don't* are considered single words in the analysis of lexical bundles. When the LBP, for example, comes across a punctuation mark, it immediately stops and starts processing the text again after the punctuation mark. Biber, Conrad and Cortes (2003) state that only uninterrupted strings of words are processed as lexical bundles.

Figure 1 shows a snapshot of the LBP database. In this snapshot, we can see the database that holds all the four-word combinations that the LBP yielded from a corpus of research article introductions. The frequency column shows that only one expression met the cutoff point (in this particular case, 20 times per million words and 5 or more texts) to become a lexical bundle: *as a result of*, which occurred 70 times and in 65 texts in this corpus. This expression is then transferred to an output file that contains what have now become lexical bundles (four-word combinations that met the cutoff points for overall frequency and number of texts), arranged in alphabetical order. The advantage of having the output in a text file is that the data can be easily transferred to any database and sorted in any way (ascending/descending total frequency, alphabetically, ascending/descending number of texts, etc.).

Some commercially available computer software such as WordSmith Tools (Scott, 2008) and Collocate (Barlow, 2004) can also identify lexical bundles following a similar procedure and providing complementary statistics on collocational frequencies. The free downloadable software AntConc (Anthony, 2006) or N-gram Phrase Extractor, part of the Compleat Lexical Tutor (Cobb, *n.d.*), can identify n-grams (any combination of n-number of words) but they do not provide a count for the number of texts in which those word combinations occur. Ari (2006) presents a review of three software applications that can be used to identify recurrent word combinations, although some of them cannot be used to identify lexical bundles.

Corpus Size and Lexical Bundles

As previously explained, lexical bundles are defined by frequency, and the original study of lexical bundles presented by Biber et al. (1999) established their cutoff point as ten times in a million words. This is an important consideration to bear in mind when working with small corpora or corpora of different sizes. As lexical bundles' ultimate condition is frequency it is essential to make sure that these expressions are frequent in a given corpus. The normalization formula that is frequently used in corpus-based studies has presented several difficulties to researchers working with small corpora. For example, if by definition a combination of four words has to occur ten times in a corpus of one million words to become a lexical bundle, every four-word combination identified in a corpus of 100,000 would become, after normalization to a million words, a lexical bundle [normalization formula: (number of tokens/number of words in a corpus) * normalized number [one million in this case]: 1/100,000 * 1,000,000 = 10). It is not difficult to discover that the frequency of these four-word combinations identified in small corpora does not increase in such an expected way because not all four-word combinations become bundles. Thus, it is very important to be conservative with the designated cutoff points when working with corpora smaller than one million words to ensure a reliable analysis. Ideally, one-million-word corpora should be the threshold for the identification of these expressions.

Grammatical and Functional Classification of Lexical Bundles

Despite the fact that lexical bundles are frequently not structurally complete units, they do have strong grammatical correlates which help with their structural classification. Biber et al. (1999) provided an exhaustive list of four-, five-, and six-word lexical bundles and classified them according to several basic structural types. In conversation, 90% of the lexical bundles are segments of declarative or interrogative clauses, expressions such as *I don't know why, thank you very much, I know what you mean*, while 60% of the bundles identified in academic prose are fragments of noun phrases or prepositional phrases, for example *the end of the,* or *in the context of the*. Biber and Conrad (1999) discovered that most frequent bundles in conversation were found to mark personal stance, expressing feelings, thoughts, or desires, while the most frequent lexical bundles in academic prose expressed abstract or logical relations. Their first attempt at classifying bundles functionally was further developed by Cortes (2002), who created a taxonomy to classify bundles recurring in conversation and academic prose. This taxonomy was later improved by Biber, Conrad, and Cortes (2003, 2004) and its reliability was tried out in varied corpora (research articles from various disciplines, university textbooks, and university lectures) finding a strong agreement across registers. At the same time, Culpeper and Kytö (2002) produced a functional classification for the three-word lexical bundles that they had identified in their corpus of Early Modern English. Most bundles used in conversation convey stance, that

is they express modality, attitudes, emotions, and value judgments (in expressions such as *I don't think so, I would like to*) or they are used as interaction markers to organize interactions in conversation (e.g., *I tell you what, or something like that*). Lexical bundles used in the academic registers are often referential, making direct reference to the physical, temporal, and textual context (such as *at the end of, at the beginning of,* or *at the time of*) or text organizers, used to identify a logical relationship between a prior discourse segment and the subsequent discourse (as in *in this chapter we, on the one hand,* or *on the other hand*).

Final Remarks

The corpus-based and technology-originated approach facilitates the identification of expressions like lexical bundles, which would have been unidentified otherwise. Researchers interested in lexical bundles suggest that frequent word patterns do not occur by accident and do require further analysis in various textual contexts to determine whether these expressions are undoubtedly building blocks of discourse strongly associated with diverse communicative functions.

SEE ALSO: Formulaic Language and Collocation; Lexical Bundles and Grammar; Lexical Collocations; Plagiarism; Technology and Phrases

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Lexical Collocations

ANDY BARFIELD

In general terms, lexical collocations are multiword units, consisting of two or more words that constitute a whole unit of meaning and which particular discourse communities repeatedly use in spoken and written communication. Their status as conventionalized and recurrent phrases makes lexical collocations a central means by which individual language users create meaning, maintain fluency and produce a quality of appropriate naturalness in their language use. There are, however, markedly different ways of conceptualizing and defining lexical collocations in more specific terms. This entry will limit itself to two in particular, the phraseological and the textual. The phraseological school of thought tends to consider lexical collocations in compositional terms and to focus on the lexical, syntactic, and semantic restrictions that they are subject to. In contrast, the textual school tends to see lexical collocations as two or more words that co-occur in text within a short distance of each other, and this approach uses corpus evidence as the primary criterion by which to identify relevant cases.

The Phraseological View of Lexical Collocations

The phraseological view is used here to cover different pedagogically oriented positions and linguistic typologies from the last 80 years or so. The phraseological school has a very strong pedagogic agenda, and its diverse theorizations are often directed toward how best to explain lexical collocations to second language learners and users so that they may correctly encode them. One particular typology of collocation within the phraseological tradition explicitly distinguishes "grammatical collocations" from "lexical collocations" (Benson, 1985). According to Benson, in a grammatical collocation, a dominant word (noun, adjective, or verb) is combined with a preposition or grammatical structure such as Noun + Preposition, Noun + *to* + Infinitive, Adjective + Preposition. The seven main categories of lexical collocation represent word combinations consisting of nouns, adjectives, verbs, and adverbs only, but without any function words (Verb + Noun, Adj + Noun, Noun + Verb, Adj + Adv and Verb + Adv). This categorization by word class largely determines the design of a major collocations dictionary known as the BBI (Benson, Benson, & Ilson, 1997), although the BBI also uses semantic macro-labels (drawn from Mel'čuk's work on lexical functions; see further below) for classifying particular verb–noun collocations. Other connections can also be made here to the difference between "colligation" and "collocation" (proposed by Firth in the textual view of lexical collocations and later developed by Sinclair, among others; see further below).

The phraseological school is rooted in work carried out in Russia from the late 1940s onwards, but links between a phraseological view of collocation and structuralist linguistics —e.g., Saussure's view that language use creates syntagmatic solidarities between two or more sequential units—informed the pioneering work of Bally and Palmer in the early 20th century. Bally worked on phrase-based French learning materials for foreign students at Geneva University in 1909 (Barfield & Gyllstad, 2009, pp. 17–18), whereas Palmer collaborated with Hornby to categorize and codify the lists of collocations they had created for the development of English language materials in prewar Japan (Cowie, 1999,

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pp. 52–81). Palmer (1933) classified collocations into three types: "abnormal collocations" (where the meaning of the collocation cannot be deduced from its parts); "semi-normal collocations" (collocations which can be immediately understood if the more particular senses of the component words are known); and "normal collocations" (or immediately comprehensible collocations). This tripartite division directly foreshadows later more theoretical classifications of "free combinations," "restricted collocations," and "idioms" in the phraseological school. Other theories to do with the compositionality of multiword units were elaborated by Vinogradov and Amosova in the Soviet Union from the late 1940s to the 1960s and were taken up in the West from the 1970s onwards (Cowie, 1998a, pp. 213–18).

One major classification comes from Mel'čuk's work on lexical functions. Mel'čuk (1998) puts forward a set of conditions by which semantic phrasemes (i.e., collocations) can be categorized and described in terms of their lexical function. According to Mel'čuk, a lexical function (LF) represents a general abstract semantic notion, and particular LFs can be related to different lexical units and are lexically realized in different surface forms. The LF Oper represents the notion of "doing or carrying out," for instance, and can be realized as *launch* in *launch an appeal* and *pay* in *pay a visit*. Both of these collocations have two constituent lexemes, *launch* + *appeal* and *pay* + *visit*, hence they are classified as two-word collocations. In these surface two-word collocations, one freely chosen constituent lexeme retains its literal sense (in these examples, *appeal* and *visit*), whereas the other constituent is restrictedly chosen (*launch* and *pay*) because it is contingent on the first element. Thus, the freely chosen "argument" *appeal* motivates the restricted selection of *launch*. A different influential theorization comes from Cowie who sees lexical collocations as composite units of two lexemes occurring in a specific range of grammatical constructions where at least one of the elements is substitutable and is used in a figurative or specialized sense, as with the verb *explode* in combinations like *explode a myth, explode a belief, explode an idea, explode a notion*, and *explode a theory* (Cowie, 1981). Cowie (1981), Howarth (1998) and Nesselhauf (2003) all present the case for a scalar analysis of word combination categories ranging along a continuum from transparent, freely recombinable combinations at one end to unmotivated and formally invariable idioms at the other. Howarth (1998), for example, refers to "free combinations" (*blow a trumpet*), "restricted collocations" (*blow a fuse*), "figurative idioms" (*blow your own trumpet*), and "pure idioms" (*blow the gaff*), and identifies restricted collocations as the most challenging type for second language learners.

Restricted (lexical) collocations constitute a vast array of composites which are variable to an arbitrary and limited extent in that they are open to a limited number of lexical choices at one or two points, e.g., *have/feel/experience a need [for NP]* and *find/experience trouble/difficulty in DOING NP* (Cowie & Howarth, 1996, p. 83). Part of the difficulty that they pose lies in the fact that sets of nouns and verbs in restricted verb–noun lexical collocations may overlap in their intercollocability, or "collocation ranges," and create similar but not identical "clusters" of combinable verbs and nouns. Compare:

(1) *convey/express/communicate/get across point/argument/view/opinion/message*
(2) *convey/express regrets/condolences*
(3) **communicate/*get across regret/condolences*. (Cowie & Howarth, 1996, p. 84)

Mis-collocations such as **communicate/*get across regret/condolences* are termed "collocation blends." Phraseologically competent users, within this view, know the restrictions in such overlaps; less phraseologically proficient users may not always recognize such arbitrary blockages and, as a result, produce collocation blends.

The Textual View of Lexical Collocations

Concepts central to the textual view of lexical collocations come from Firth, Halliday, and Sinclair, and in particular were elaborated by Sinclair over a 40-year period. The textual view addresses lexical collocations from a functional point of view and considers them in terms of the phrasal choices that the language user has for achieving meaning. Insights are derived from data-driven analysis of language in naturally occurring contexts of use.

Firth employed the term "colligation" for the structural relationships between the formal categories of the words used in particular collocations (such as Adj + N for *dark night*), and one of his major proposals was that words have habitual companies that they keep, through which their meaning is partially shown: part of the meaning of *night* lies in its co-occurrence with *dark*, and part of the meaning of *dark* in its co-occurrence with *night*, too (Firth, 1957, p. 196). Firth's emphasis here is on the individual word rather than the collocation itself as a unit of meaning, but much of the subsequent work of the textual school shifts to a phrase-based view of collocation and examines what this implies for a theory of language use.

As with the phraseological school, a major assumption of the textual approach is that collocation restricts the co-occurrence of particular lexical items. However, to identify such restrictions, the textual school is interested in items that co-occur "with a probability greater than chance" (Halliday, 1966). It was Sinclair who started to identify and test through empirical research the basic operational criteria by which to do this. Sinclair proposed the "node" as the fixed variable (i.e., the lexical item whose collocation environments are under examination) and argued that the "span" of the node (the number of other lexical items co-occurring before and after the node) should be varied until it could be fixed "at the optimum value" (Sinclair, 1966, p. 415). Such an analysis allows a "cluster" to be identified (i.e., a set of typical collocates derived from all the collocates that co-occur with the node), where the "range" of a cluster indicates the probability of items within a cluster inter-collocating with each other. Sinclair also drew an important difference between "casual collocation" (i.e., chance) and "significant collocation" (i.e., typical and repeated) and proposed a basic formula for predicting the probability of two lexical items collocating with each other in a particular text.

An early study led by Sinclair (Sinclair, Jones, & Daley, 1970) showed how the optimum span came to be empirically set at +/− four words right and left of the node. It also revealed how the more frequent a lexical item, the less lexical it will be, and vice versa. Highly frequent lexical items are more grammatical/less lexical and therefore bound to certain positions in collocation patterns, whereas less frequent items have greater positional freedom. A later groundbreaking project, the Collins Birmingham University International Language Database (COBUILD), involved the establishment of a computerized corpus of English and the production of the first learner dictionary based on automated, corpus-based concordance analysis of lexical items and their habitual collocation environments (*Collins COBUILD English Language Dictionary*, 1987). The corpus data yielded a wealth of insights into how common words in English collocate with each other. It was found that the most frequent words of English tend to be collocated in delexical senses rather than in a full lexical sense so that they perform as elements of structure. The project also revealed that the different senses of lexical items have such constrained typical phrasal patternings that few frequent words could be thought "to have a residue of patterning that can be used independently" (Sinclair, 1987b, p. 158). Undoubtedly, the most far-reaching result of the COBUILD project was the overriding sense of "the replacement of words by phrases" (Sinclair, 1987b, p. 150) in the real-world use of English.

More recent work in the textual approach has focused on the concepts of "semantic prosody" and "semantic preference," and their interrelationship with colligation and collocation. Semantic prosody refers to how there is a positive, negative, or neutral connotation between a word and its collocates. The noun *cause* has a negative semantic prosody, with its collocates including *accident*, *concern*, *damage*, and *death*, whereas *provide* has a positive semantic profile and tends to co-occur with *care*, *food*, *help*, and *money* (Stubbs, 1995). Sinclair (2004) shows how *place* (used informally as in *come back to my place*) has a semantic prosody of "informal invitation" (as in *would you like to come back to my place*), and a tendency to co-occur with (or semantic preference for) the possessive adjective "*my*" (*my place*) and other items meaning "local travel." This is achieved by colligations with verbs of movement (such as *come*), adverbs of place (such as *back*, *home*, *over*) and the preposition *to* (*come back to my place*). Other recent analyses are beginning to examine "long-distance collocations" (Siepmann, 2005) and the powerful role that lexical collocations play in producing meaning beyond clause boundaries and across stretches of discourse.

This shift to a holistic phrase-based view of collocation blurs the boundaries between grammar and lexis as separate language systems and leads to the concept of lexicogrammar. It also results in the theoretical position that two different principles of interpretation are needed to explain adequately how multiword units such as lexical collocations work in discourse. The "open choice principle" refers to a paradigmatic mode of text construction that involves a series of open-ended choices about what is to be slotted and filled in between completed units such as a word, collocation, phrase or clause. The "idiom principle," on the other hand, refers to the syntagmatic axis and the contextually constrained set of "semi-preconstructed phrases that constitute single choices" (Sinclair, 1987a, p. 320) that a speaker or writer can draw on to textualize meaning in ongoing text construction. Thus, lexical collocations, in these terms of reference, pervade discourse and are central to the achievement of appropriate naturalness in language use.

SEE ALSO: COBUILD Project; Corpora in Language for Specific Purposes Research; Corpora in the Language-Teaching Classroom; Corpora in the Teaching of Language for Specific Purposes; Corpus Analysis for a Lexical Syllabus; Corpus Analysis of Spoken English for Academic Purposes; Corpus Analysis of Written English for Academic Purposes; Depth of Vocabulary Knowledge; Formulaic Language and Collocation; Lexical Bundles and Grammar; Lexicogrammar; Models of Lexical and Conceptual Representations in Second Language Acquisition; Semantic Prosody; Sinclair, John; Teaching Vocabulary; Vocabulary Acquisition in Second Language Acquisition; Vocabulary and Language for Specific Purposes; Vocabulary Learning Strategies

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Lexical Erosion

NANCY C. DORIAN

Lexical Reduction in Normal Language Change

Lexical erosion refers to reduction and loss in the lexical resources of a language. A certain amount of lexical loss is a normal feature of language change, especially when changes in lifeways or technology result in the abandonment of some traditional occupations, pastimes, or earlier technologies. In English, for example, the terminology of falconry, once widely in use, is known today only to historians and avocational falconers. Equally unfamiliar today are the precise distinctions among the many types of horse-drawn vehicles prominent in English life before the introduction of the automobile. Under particularly negative circumstances, however, lexical loss can be accelerated in a language with a contracting speaker base, to the point where it reduces the full and distinctive range of expression originally offered by the language.

Lexical Reduction in Language Shift

Extensive lexical loss is faced, for example, by minority-language communities in which shift to some other language has begun. Traditional lifeways in such communities are often disrupted by sharp changes in the overall environment brought about by developments such as resource depletion, land takeovers, government-sponsored in-migration, and gradual urbanization. Where these circumstances prevail, livelihoods that were once universal may no longer be viable, or even available, for minority-language speakers. Vocabulary related to traditional subsistence modes and occupations then becomes obsolete and falls out of use. If changes in lifeways are extreme, lexical loss will be correspondingly high.

Lexical Loss Through Incomplete Language Transmission and Disuse

In minority-language communities with a small population base, interruption of normal language transmission processes poses a particularly serious risk to lexical maintenance. There are only some 200 countries in the world, but there are perhaps 6,000 or 7,000 languages in use around the globe. It is clear, therefore, that most languages are not the official language of the countries in which they are spoken. These nonofficial languages are in competition with better-established and more widely spoken languages that enjoy official-language standing. Institutional support (use in government and schooling, for example) confers prestige on official languages while also making their acquisition economically advantageous. As a result, such favored languages expand by acquiring new speakers, while smaller, unofficial languages tend to contract and lose speakers. As the contraction process proceeds, reduced exposure to the traditional language produces a drop in proficiency among younger people. Lexical erosion is one prominent manifestation

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of this development, as new speakers fail to acquire the fuller vocabularies that were in use among their parents and grandparents.

Assessing Lexical Loss

Various techniques have been used to gauge the degree of lexical loss in nonofficial languages with contracting speaker populations. One approach is to ask speakers of various ages to supply the words in their traditional language for "core" vocabulary items, a term applied to words taken to be so universal to human experience that they are present in the lexicon of nearly every language. Larger and smaller sets of such core words were developed in the 1950s and 1960s and used originally in assessing degrees of chronological separation between related languages (e.g., Swadesh, 1952).

Gaelic lexical retention was assessed by Dorian (1981) via core-vocabulary testing. In a shrinking bilingual community speaking an unwritten and obsolescent variety of Scottish Gaelic in addition to English, a 220-word core English vocabulary list was presented for translation into Gaelic. The 14 bilinguals tested were distributed over an age range of 40 years (ages 74 to 34) and were all participants in a broader study of Gaelic proficiency. Their East Sutherland Gaelic-speaking communities had lost the fishing industry that had sustained both livelihood and language, and no one under 30 years of age had acquired Gaelic. Across the bilingual population in general, in ordinary conversation and in elicitation aimed at exploring grammatical control, age correlated with Gaelic proficiency in that the eldest community members showed greater grammatical and lexical knowledge than the younger speakers. In the decontextualized testing of core vocabulary retention in particular, lexical production accorded well with age in one respect but poorly in another. On the one hand, all of the older and fully fluent speakers produced more Gaelic lexical items than any of the imperfect younger speakers at the low end of the age range. On the other hand, some of the very high-proficiency older speakers found it difficult to produce individual lexical items in isolation and were outperformed by fluent speakers of a younger age.

In another approach to the question of lexical retention and loss, Jones (2001) chose 10 semantic fields and tested bilingual speakers' ability to produce lexical items representing each field in Jèrriais, the traditional but receding Norman French variety spoken on the island of Jersey in the English Channel. As in the Gaelic-speaking communities of eastern Sutherland, the local language was obsolescent at the time of the study; it was rare to find a speaker under the age of 40. All of the speakers tested by Jones were fluent in Jèrriais, however, and her interest lay in determining whether some semantic domains were losing lexical ground more swiftly than others. Since earlier records of Jèrriais lexicon were available in the form of a Jersey French/standard French dictionary (Le Maistre, 1966), Jones was able to compare her interview results from the late 1990s with lexical findings from more than a generation earlier. She found lexical retention highest in very familiar spheres of activity (e.g., the weather, the house, the family, the body, animals and insects), but somewhat lower in certain other equally familiar-seeming spheres (e.g., illnesses, flora, birds). There was again some indication of retrieval difficulties due to the decontextualization of the testing procedure.

Immigrants cut off from full access to their original mother tongue face lexical retrieval problems similar to those of indigenous minority-language speakers, since both populations experience reduced exposure to the language of their community of origin. One study of first language lexical retention after emigration tested a sample of American immigrants each of whom had resided in Israel for at least eight years. Each was asked to provide an English-language narrative for a children's picture book with a richly illustrated story

line but without any accompanying text. Their results were compared with those produced in response to the same task by a monolingual English-speaking sample in the USA. The immigrant sample residing in Israel showed signs of reduced access to their first language lexical resources, substituting semantically imprecise or unspecific words for the more precise terms used by native speakers still in the country of origin (Olshtain & Barzilay, 1991).

Lexical Persistence Beyond Language Shift

Despite the vulnerability of lexicon during the language shift process, fragmented but surprisingly strong lexical knowledge may survive beyond regular use of the contracting language. A 15th subject in Dorian's core vocabulary testing for East Sutherland Gaelic was a bilingual in his early thirties whose knowledge of Gaelic was almost entirely passive (Dorian, 1981, p. 146). His receptive knowledge of Gaelic was excellent, but he demonstrated very little productive control of the language. Despite his limited productive skills, he nevertheless produced 150 of the 220 core vocabulary items, demonstrating that considerable lexical knowledge of an obsolescent language can persist beyond active use of the language and that lexical material may be retrievable even after community members have ceased to make active use of the local language. In his very brief report on research among the four Mohican Indians who could still remember a little of their ancestral language in 1938, Swadesh noted the same finding: although none of the four individuals was then able to speak connected Mohican, all were able to provide isolated words and set phrases. Lexical persistence was particularly striking in this case, since the Mohicans had been displaced not once but twice, first from Massachusetts to western New York and then from New York to Wisconsin (Swadesh, 1948). Evidently documentary linguistic fieldwork may still remain worthwhile even when there are no longer any regular speakers.

In communities where language shift and lexical loss are under way, speakers who continue to use the traditional local language for relatively limited purposes resort to various means of stretching their lexical resources to compensate for reductions produced by disuse and incomplete transmission. Borrowing from the expanding official language of the region is the commonest compensatory strategy, but the phenomenon is viewed very differently from one minority-language community to another. On the island of Jersey, for example, Jones reported that the use of borrowings from English was not stigmatized and that some borrowings had become integrated enough into Jèrriais to function as synonyms for indigenous Jèrriais terms (Jones, 2001, p. 121). In East Sutherland, even though borrowing from English was likewise extremely frequent, the use of English words and phrases when their Gaelic counterparts were well known was by contrast a stigmatized behavior (Dorian, 2010, pp. 96–8). In Gaelic conversations among local people, high levels of borrowing passed without comment, but self-consciousness about gratuitous borrowing and disapproval of the practice emerged quickly in the presence of speakers of other forms of Gaelic. Local speakers tried to reduce their use of borrowings under those circumstances.

In some minority-language communities where there has been a centuries-long history of intense contact with another language, borrowing may become so extensive as to incorporate not just such commonly absorbed elements as nouns, verbs, and adjectives but also connective particles, conjunctions, prepositions, and exclamations, as was reported for the Nahuatl (Mexicano) of the Malinche area of Mexico. What passed for speaking Mexicano in that region permitted the incorporation into Mexicano of almost any Spanish form at all (Hill & Hill, 1986, p. 156). The presence of so much Spanish material in the unrelated local indigenous language was the focus of much puristic censure, making the language appear less authentically indigenous to its own potential speakers and so possibly working against its survival in that part of Mexico (Hill & Hill, 1986, pp. 98–9, 140–1).

Alternatively, intense contact over many centuries may produce forms of speech in which identification of distinct lexical and morphological elements from one or the other of the two languages becomes an impossibility. This is reported to have happened in extreme northwest Russia, where several blended forms of Karelian and the local (non-standard) dialect of Russian prevailed in the late Soviet period, showing various degrees of convergence on the phonological, morphological, and syntactic levels in spite of the fact that the two languages are unrelated. Close investigation of this phenomenon persuaded the investigator to recognize three different forms of merged Karelian and Northwest Russian, from least merged "Neo-Karelian" to most merged "Karussian" (Sarhimaa, 1999, pp. 306–8).

Apart from the borrowing of vocabulary from another language in the local environment, several other strategies have been identified among speakers who have not acquired the full lexical resources of their community's traditional language. They include topic avoidance (not talking about subjects that strain the speaker's lexical resources), circumlocution and paraphrasing (finding roundabout ways of expressing a concept for which the speaker lacks the conventional term), and substitution of a word semantically similar to the one that the topic requires but less specific than that term (for example, using a generic term such as "water" for a more specific term such as "pond" or "stream") (Holloway, 1997, pp. 50–4). Lexically limited speakers may also extend the semantic range of one word to cover meanings that were previously expressed by two different words, one of which is now passing out of use.

Limited-lexicon speakers of contracting languages often show considerable ingenuity in compensating for shortfalls in vocabulary, using all of the verbal strategies mentioned and drawing as well on enhanced body language and facial expression. Literate speakers of standard languages may furthermore be inclined to overestimate the importance of a large vocabulary to verbal expressiveness. It does not require a large vocabulary to speak effectively, as experience with gifted speakers of obsolescent low-lexicon languages readily demonstrates, and erudite speakers with large vocabularies are by no means reliably effective verbal performers, as is often inadvertently demonstrated in academic life.

SEE ALSO: Attrition and Multilingualism; Depth of Vocabulary Knowledge; Endangered Languages; Lexical Borrowing; Lexical Gaps; Lexicostatistics and Glottochronology; Measures of Lexical Richness; Multilingualism and Minority Languages; Vocabulary Loss in the First Language; Vocabulary Size in the First Language

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Lexical Frequency Profiles

BATIA LAUFER

How do we know that people use rich and sophisticated vocabulary in their writing? Laufer and Nation (1995) proposed that the vocabulary richness of a text could be measured by a quantitative index called the lexical frequency profile (LFP) which uses the proportion of frequent versus nonfrequent vocabulary in the text. The index can be calculated by a special computer program, Range, available on Paul Nation's homepage (http://www.victoria.ac.nz/lals/staff/paul-nation.aspx) and on Tom Cobb's Web site (http://lextutor.ca). The program matches vocabulary frequency lists with the text you want to analyze. Any piece of writing can be pasted onto the profiler and a profile is generated in seconds. The first "classical" profiler analyzed texts into the first 1,000 most frequent words, the second 1,000, the Academic Word List—570 most frequently occurring words in academic tests (Coxhead, 2000) and "off list" words. Consider, for example, a text which consists of 200 words. Of these, 150 belong to the first 1,000 most frequent words, 20 to the second 1,000 most frequent words, 20 to the Academic Word List, and 10 are not in any list. If we convert these numbers into percentages out of the total of 200 words, the lexical profile of the text is 75%–10%–10%–5%. The output of the Range program shows percentages of word tokens, as in the above example, and also percentages of word types, that is, different words in the composition, and for word families. A word family is defined as the base word, its inflections and its most common derivations, for example, *avoid*, *avoids*, *avoided*, *avoiding*, *avoidance*, *avoidable*, *unavoidable*. The profile above can be condensed into the percentage of basic 2,000 words, that is, the sum of scores in the first two lists and the percentage of the beyond 2,000 words, that is, the sum of scores on the Academic Word List and "off list" (Laufer, 1995). In the above example, the "beyond 2,000" score is 15% (10 + 5). This means that 15% of the text consists of words not included in the 2,000 most frequent vocabulary. The profiler was originally used to check the lexical difficulty of a text L2 learners were assigned to read. The basic assumption was that a large number of infrequent words would make a text more difficult to understand. The profile which shows text difficulty best is the profile expressed in word tokens since repeated occurrences of the same unfamiliar word contribute to comprehension difficulty. However, Laufer and Nation (1995) suggested that the profiler could also measure the quality of lexis in the writing of second language learners. The profile of learners' writing is expressed in types since repeated occurrences of the same word do not show a larger vocabulary than a single use of the same word. They refer to the measure as the LFP. They found that the LFP was stable for compositions written by the same students on different topics, as long as these were of a general nature and did not involve infrequently used jargon words. They also found that the profile discriminated between learners of different language proficiencies. More advanced learners could use a higher percentage of infrequent vocabulary than learners of lower proficiencies.

To perform the LFP analysis, the original compositions written by learners are modified as follows: spelling errors that do not distort the word are corrected in order to make the word recognizable by computer and words that are semantically incorrect (e.g., wrong meaning, wrong collocation) are omitted since they cannot be regarded as known by the learners. Proper nouns that appear in the text are recoded by the program to appear in K1 words. Nowadays, a more detailed lexical profile can be performed using the Range

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program on Nation's site or VocabProfile BNC 20 on Cobb's site. The text is matched against 20 frequency lists which were developed on the basis of the British National Corpus (BNC). The resulting analysis shows the number and the percentage of words at each 1,000 of the 20 lists of 20 thousands words. Cobb added a feature which is of a particular relevance to French speaking learners of English: the percentage of English–French cognates. The site also offers a profiler for French texts.

The LFP is basically a measure of lexical *use* in writing, which can be distinguished from lexical *knowledge*. Knowledge is taken to be the information about a word which is stored and interconnected in the mental lexicon, for example, the spoken and written form, grammatical properties, different meanings, and connections with other words. Use, on the other hand, is the choice of speakers or writers to put their lexical knowledge into practice. In particular, use should be distinguished from active knowledge. Active knowledge is associated with speaking and writing and implies that we can retrieve the appropriate spoken or written word form when prompted to do so. For example, when asked to translate an L1 word into L2, we are asked to demonstrate our active knowledge. Use, however, has to do with producing words at one's free will, as is the case of a composition. It is desirable to distinguish between active knowledge and use since not all learners who produce infrequent vocabulary when forced to do so will also produce it when left to their own selection of words, as in the case of writing letters, reports, compositions, or when giving oral presentations.

Thus, LFP is one of the quantitative measures of lexical proficiency. There are additional quantitative measures that test other aspects of lexical proficiency: passive vocabulary size, for example, Nation and Beglar (2007), active vocabulary size, for example, Laufer and Nation (1999), both passive and active (Laufer & Goldstein, 2004; Laufer, Elder, Hill, & Congdon, 2004), and speed of meaning recognition (Laufer & Nation, 2001). As mentioned earlier, the LFP can be condensed into two scores, the percentage of the most frequent 2,000 words and a "beyond 2,000" score showing the percentage of words that do not belong to the most frequent 2,000 words. The single "beyond 2,000" score can be used in statistical calculations, like correlations with other measures of lexical proficiency. Together, these various measures can provide the researcher with quite a comprehensive picture of the learner's lexis. For example, Laufer (1998) studied the development of passive vocabulary knowledge, active knowledge, and use over one year of study of English as a foreign language in high school. The results showed that the three areas of lexical competence did not develop at the same pace. To put it differently, learners who have increased their passive or active knowledge by 500 or 1,000 words may not necessarily choose to *use* these words in their free writing. Non-use is often related to lack of confidence about certain features of the avoided words. A learner may not be sure whether *launch* in *launch a project* is appropriate, and, therefore, settle for *start*, which is "simpler" since it is less specific than *launch* and fits more contexts. Another reason for non-use may be connected with speed of access. When pressed for time in speech, or in writing, the first word accessed will most probably be *start* which is more frequent in language than *launch*.

Horst and Collins (2006) studied the lexical development of French speaking learners of English. Using the English–French cognate measure of the LFP, they demonstrated that learners of higher proficiency used fewer French cognates. East (2005) used the LFP to investigate the contribution of a bilingual dictionary to writing. He compared two compositions by the same learners. One composition was written with a dictionary, the other without. The lexical profiles of the two sets of composition were significantly different. This showed that the use of a dictionary contributed to the quality of learners' lexis in writing. Some other examples of using LFP in research are: tracing the lexical development of Polish speaking learners (Lenko-Szymanska, 2002), comparing L2 oral French of learners at different proficiency levels (Ovtcharov, Cobb, & Halter, 2006), comparing learners'

lexical richness in English and non-English speaking contexts (Laufer & Paribakht, 1998), predicting the academic performance of TESL trainees (Morris & Cobb, 2004), and measuring improvement in the lexical frequency profile over time (Laufer, 1994).

Another profile of lexis is P_Lex developed by Paul Meara and available for use online (http://www.lognostics.co.uk/tools/index.htm). The profile is similar to the LFP in its underlying assumptions, which are that people with more proficient vocabulary will use a large proportion of infrequent words, and that a valid measure of lexical production, therefore, should examine the quantity of infrequent words in a text. However, it is different from the LFP in several respects. Infrequent vocabulary is considered vocabulary that is not in the first most common 1,000 words. The analysis is performed by dividing a text into segments of 10 words each, calculating the number of beyond 1,000 words for each segment and turning these data into a single figure known as the lambda. A higher lambda indicates a higher proportion of infrequent words (for the mathematics of calculating the lambda, see Meara & Bell, 2001). P_Lex is also claimed to work well with shorter texts than those suggested for the LFP analysis, that is, texts shorter than 200 words. Miralpeix (2007) used both profiles in her analysis of oral and written English as L2 of Catalan/Spanish bilingual students to investigate what effect the age of onset of learning and the amount of exposure had on the lexis of L2 learners. She found that the lexis of early starters and late starters was very similar on both measures.

There are two major shortcomings of lexical profiles. First, they do not distinguish between homonyms (words with unrelated meanings, e.g., "bank," "pupil") and yet different meanings may belong to different frequency bands. Second, the profiles do not "recognize" multi-word units such as "as a matter of fact," "of course," "make up one's mind." Instead of listing them as single units, the profilers decompose them into separate words, for example, "of" and "course." Cobb is currently working on some solutions to the first problem and Laufer on solutions to the second problem.

SEE ALSO: Measures of Lexical Richness; Vocabulary Size in a Second Language

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Lexical Gaps

MAARTEN JANSSEN

Introduction

When talking about words, linguists mostly focus on those words that are an established part of the vocabulary. However, in some cases it is useful to refer to the words that are *not* part of the vocabulary: the nonexisting words. Instead of referring to nonexisting words, it is common to speak about *lexical gaps*, since the nonexisting words are indications of "holes" in the lexicon of the language that could be filled.

Lexical gaps have never been a main topic of research, but the notion of a nonexisting word relates to so many different topics that over the years a significant amount of work has been published on lexical gaps. Since these publications come from a large array of different linguistic fields, the terminology is not always well established. This entry will first present a brief overview of the different types of lexical gaps and then discuss some linguistic issues related to lexical gaps.

A Topology of Lexical Gaps

The study of lexical gaps starts with the work by Chomsky (1965) and Chomsky and Halle (1965). They distinguish between, on the one hand, *accidental gaps*, which are words that do not exist but could be reasonably expected to exist, and, on the other hand, *systematic gaps*, which are words that are not even expected to exist since they violate the rules of what a "good" word is. In much of the subsequent work, however, the term *lexical gap* is reserved only for the accidental gaps.

The accidental gaps in the work of Chomsky and Halle are segments or strings of letters that could possibly form words. Such gaps will here be called *formal gaps*, sometimes also referred to as *morpheme gaps*. A significant part of the more recent work on lexical gaps, however, deals with *semantic gaps*, sometimes also called *functional gaps*, in other words "the lack of a convenient word to express what [the speaker] wants to speak about" (Lehrer, 1974, p. 105), although words that are possible but not (yet) considered convenient are also considered semantic gaps. A semantic gap is a notion for which there is no word, whereas formal gaps are "words" that do not refer (to any notion). As with formal gaps, we can in principle distinguish between semantic gaps that are accidental, and semantic notions for which no word can exist because they violate the rules of what a "good" notion is (for lexicalization).

The class of nonexisting words can hence be divided into four different classes as shown in Table 1, where a *lexical gap* is typically reserved for the left column only: either a formal or a semantic accidental gap. The remainder of this section provides a more detailed description of these two types of lexical gaps.

Formal Gaps

The orthographic rules and the vocabulary of a language can be used to distinguish between lexical (occurring) words, possible words, and impossible words. For instance, in English,

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Table 1 A coarse taxonomy of nonexisting words

	Accidental	*Systematic*
Formal	Formal gap	Impossible lexical entry
Semantic	Semantic gap	Non-lexicalizable notion

apple is a (lexical) word of the language, *drapple* is a possible word that does not exist, and *drrpple* is an impossible word in English. The word *drapple* is possible because it is a sequence of letters that correctly represents a well-formed phonological sequence in the language. Since different words can be pronounced in the same way (homophony) or spelled in the same way (homography), it is useful to distinguish between possible orthographic words, and possible phonological words. Or, in terms of the gaps in the lexicon, we can distinguish between (accidental) orthographic gaps and phonological gaps.

Formal gaps can be counted, by looking at the orthographic gaps for instance: If we consider that words have a finite length and all words consist of combinations of the 26 letters of the alphabet, there is a vast amount of possible sequences of letters, but still a finite number. The possible words form a (very) small subclass of the possible strings, and the lexical words form a small part of the possible words. Formal gaps can be searched for, for instance in the study of neologism: Formal neologisms are words that until recently were lexical gaps (by definition, they did not exist before and they have to be possible words) and have recently been "promoted" to lexical words.

A special type of formal gap is found in those possible words that can be correctly formed out of lexical words by means of morphological rules. Such words are also called *potential words*. Many potential words are not merely potential, but also used, and hence lexical words. Those potential words that are not (yet) used are called *morphological gaps*. For instance, from the verb *derive* we can form the lexical word *derivation*, but also the non-existing word **derival*. Morphological gaps in the derivational morphology are often called *derivational gaps*, whereas gaps in the inflectional morphology are mostly called *paradigm gaps*. The word **derival* is a potential word that is blocked by the existence of *derivation* and is therefore really a lexical gap. However, there is a large group of potential words that are not used, but also not blocked. Take for instance the word ?*stratifiability*, which is not in use (at least it does not occur in any English dictionary), but is nevertheless perfectly acceptable and interpretable (the possibility of being stratified). For search words, it is unclear whether they should be considered lexical words or derivational gaps.

Semantic Gaps

Semantic gaps are those notions for which we have no words to express them. Most instances of semantic lexical gaps are not particularly interesting. To use an example from the Portuguese comedians Gato Fedorente: There is no word for the specific type of irritation you feel when you open the fridge to get some milk, and you find that there is no milk. However, there is also hardly a reason why such a term should exist, and, linguistically, such semantic gaps are hardly of interest.

Semantic gaps typically become interesting when contrasting them with existing words. Semantic gaps under that perspective are called *matrix gaps*, since they can be pointed out by drawing a table or matrix of the existing words, and the matrix gaps are those cells in that matrix for which there is no word. There is a good amount of work on what type of constraints are responsible for such matrix gaps. A good overview of such constraints is given in Proost (2007).

Table 2 An overview of types of lexical gaps

Morpheme gap	A sequence of segments that is permitted by phonological rules but not found. Fillers: *possible words*
Morphological gap	A word that can be generated from an existing word by productive morphological rules. Mostly understood as derivational rules, and therefore also called derivational gaps. Fillers: *potential words*
Paradigm gap	A morphological gap in the inflectional morphology
Semantic/functional gap	A lack of a word to express what a speaker might want to talk about
Taxonomic gap	A gap in the taxonomic structure. Fillers: *pseudo-words*
Translational gap	A word in one language for which no lexical unit exists in another to expresses that same meaning. Corresponding words: *untranslatable words*

A specific type of matrix gap is one that is expected to exist in a hierarchy, either a taxonomic or a meronymic hierarchy, but does not exist (see for instance Cruse, 2004). Such gaps are often called taxonomic gaps, and an example is the word *dedo* (see below). In the construction of a hierarchy, such gaps often get filled by made-up words, which Fellbaum (1996) calls *pseudo-words*. Pseudo-words are not necessarily words, but just tags to refer to the semantic gap. For instance, she postulates the tag "CREATION-FROM-RAW-MATERIAL" as a way to link a group of verbs, including *weave* and *mold*, that are taxonomically related but have no common hyperonym.

Another type of lexical gap of special interest concerns those notions that are lexicalized in one language, but not in another. For instance, there is no good translation for the Portuguese word *saudade* in English: *Saudade* is a deep nostalgic longing for something that one was fond of but no longer has. The Portuguese word *saudade* is therefore an untranslatable word in English, and corresponds to a translational gap. Translational gaps will be discussed in more detail below.

An overview of the different types of lexical gaps distinguished in this entry is given in Table 2, with an indication of how to refer to the non-existing words that "fill" those gaps.

Issues With Lexical Gaps

There are many questions and issues related to lexical gaps, since lexical gaps play a role in so many aspects of linguistics. In this section, two such issues will be discussed.

Unadapted Loanwords

Unadapted loanwords are strange creatures: They are impossible words that are nevertheless lexical words. As already observed by Lehrer (1974, p. 95), the incorporation of loanwords into the lexicon can itself change the orthographic rules of the language, making the unadapted loanwords possible words, which in turn creates new orthographic gaps for similar words that become possible by the modified orthographic rules but are not yet lexicalized.

One could argue that unadapted loanwords do not actually form part of the lexicon of a language, but remain words of the language they belong to; that *blitzkrieg* is a German

word independently of how often it is used in English text. In that case, unadapted loanwords should never be considered neologisms, since neologisms are by definition new lexicalized words. However, there are several problems with that view.

First, foreign words are often not incorporated in another language in their full use: The word *goal* in Dutch can only refer to a goal in football, not to any other use it has in English. Also, some "foreign words" are not even really loanwords but coined in a language where they should not be possible. The word *flexicurity*, for instance, was coined in Denmark but is only a possible word in English. (The word *flexicurity* refers to a political model to enhance both the flexibility and the security of the labor market, and is formed from the words *flexi*[*bility*] and [*se*]*curity*.) Furthermore, although loanwords can be unadapted orthographically, they are always at least partially adapted phonetically. And, finally, unadapted loanwords can form the base of (native) derivations: The English word *windsurf* forms the basis of the agentive noun *windsurfista* ('windsurfer') in Portuguese, which is a possible word neither in Portuguese nor in English. So unadapted loanwords differ in various ways from their original in the source language.

Linking Translational Gaps

When talking about untranslatable words, people typically quote examples like the Dutch *gezellig* or the Portuguese *saudade*, which are relatively rare cases of culturally dependent untranslatable concepts. However, the majority of lexical mismatches between languages are more mundane. To give two typical examples (Janssen, 2002): (a) in Spanish, the same word (*dedo*) is used for the extremities of your hand (fingers) and the extremities of your foot (toes), and (b) French lacks a specific word for a female foal (a filly). These are cases where the translational gap can also be described as a taxonomic gap: Cases where a hyperonym or a hyponym is missing in the target language.

Notice that a word like *finger* is not fundamentally untranslatable in Spanish: There are several strategies for translating such words (see for instance Baker, 1992), and in this particular case, one would use either *dedo* or *dedo del mano* ('*dedo* of the hand') as the translation depending on the context. But it is a translational gap since there is no direct, single word or expression in Spanish for the English word *finger*.

Relations between hyperonyms and hyponyms form the basis of traditional dictionary definitions: The hyponym can be defined in terms of the genus (the hyperonym) and the *differenciae specificiae*, the differentiating features. Therefore, in order to properly relate the Spanish word *dedo* with the English word *finger*, we should not only specify that they are (possible) translations of each other, but also how they differ from each other: that a *finger* is a *dedo*, but specifically one *of the hand*.

Conclusion

A common feature in the issues and concepts surrounding lexical gaps is that they have to do with the words that in a sense *almost* exist: Studying lexical gaps is studying the outer limits of the lexicon. Given the central role of the lexicon in language, it is therefore hardly surprising that lexical gaps pop up in a wide array of different topics.

SEE ALSO: Bilingual Lexicography; Lexical Borrowing

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Suggested Readings

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Lexical Priming

MICHAEL HOEY

Lexical priming is the name given to a linguistic theory developed by Michael Hoey (in particular in Hoey, 2003, 2004a, 2005), which seeks to relate corpus-linguistic concepts such as collocation and colligation to the experimental findings of psycholinguists interested in the retardation and acceleration of word association. Linguistic theories since the mid-1950s have varied in the extent to which they have provided a convincing explanation of fluency or have offered a systematic and comprehensive model of variation. They have varied too in the extent to which they have sought to explain how listeners and readers know what meaning is intended when a word with multiple senses is used; indeed there has been more interest in the syntactic explanations for ambiguity than in the nature of disambiguation. Most importantly, from a corpus-linguistic perspective, they have usually made no attempt to account for collocation (which can be broadly defined as the partly arbitrary tendency of words to frequently occur in each other's environment, e.g., we often read of *growing fears* or *developing conflict*, but not so often of *developing fears* or *growing conflict*). The concept is usually attributed to Firth (1951/1957), but it is in the work of corpus linguists and other linguists concerned with authentic data such as Halliday (1966), Sinclair (1966, 1991), Leech (1974), Stubbs (1995, 1996), and Partington (1998) that the concept reaches its full potential.

A satisfactory theory of language should be able to account for collocation, since it has been found by corpus linguists to be not only present in all the languages they have studied but pervasive. Either collocation is a statistically odd phenomenon arising out of the accident that new linguistic utterances repeatedly make use of the same individual building blocks or it is the product of drawing upon a mental store of lexical combinations. Lexical priming assumes the latter. The explanation for collocation, according to this theory, has therefore to be psycholinguistic (because it assumes lexis is connected in the brain), simple in principle (because recovery of collocations is almost instantaneous) and complicated in effect (because the resultant combinations are often novel and creative).

Two well-studied phenomena in psycholinguistic experimentation are semantic priming and repetition priming. Experiments with semantic priming center around providing informants with a word or image (referred to as a prime) and then with a target word; the speed with which the target word is recognized is measured. Some primes appear to retard recognition and others appear to accelerate recognition (e.g., the prime *wing* might inhibit the recognition of *pig* but facilitate the recognition of *swan*). Pioneering semantic priming work was conducted by Meyer and Schvaneveldt (1971), who demonstrated that priming was scientifically demonstrable, and their work was followed through by Shelton and Martin (1992) (among others), who appear to show that semantic priming only works when the priming word and the target are associated in the informant's mind. According to this work, a relationship of meaning between prime and target is insufficient to produce the priming effect if the related words are not also associated, but McRae and Boisvert (1998) argue that if the words in question have closely related meanings there will be a priming effect even without association.

Repetition priming is rather different from semantic priming, in that the prime and the target are identical. Experiments with repetition priming center around exposing informants

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to word combinations and then, sometimes after a considerable amount of time and after exposure to other material, measuring how quickly or accurately the informants recognize the combination upon reexposure; the evidence suggests that initial exposure has the effect of speeding up and improving the quality of recognition on reexposure. Key papers on these facets of repetition priming are those of Jacoby and Dallas (1981), who observed greater accuracy in the identification of the target, and Scarborough, Cortese, and Scarborough (1977), who noted the faster response time. Forster and Davis (1984) observed that these effects of repetition priming were more noticeable when the words in question were of low frequency in the language. Repetition priming potentially provides an explanation of both semantic priming and collocation, if we assume that the initial exposure is being stored in the informant's mind in such a way that its original form can be readily accessed. If a listener or reader encounters *a* and *b* in combination, and stores them as a combination, then the ability of *a* to accelerate recognition of *b* is explained. If the listener or reader then draws upon this combination in his or her own utterance, then the reproduction of collocation is also explained.

The lexical priming claim makes use of repetition priming and is that whenever listeners or readers encounter a word (or a syllable or a combination of words), they note subconsciously the linguistic context in which it occurs and, as they repeatedly encounter it, they begin to identify the features of the context that are also being repeated (Hoey, 2003, 2004a, 2004b, 2004c, 2005; Hoey, Mahlberg, Stubbs, & Teubert, 2007, chaps. 1 and 2). As these encounters with the word, syllable, or word combination multiply, listeners or readers come to identify the word or words that characteristically accompany it (its collocations), the grammatical patterns with which it is associated (its colligations), the meanings with which it is associated (its semantic associations), and the pragmatics with which it is associated (its pragmatic associations). Thus, if they read a "serious" newspaper, they will note that *according* often co-occurs in the paper with *to a* (a collocation); this combination in turn often co-occurs in such newspapers with RESEARCH SOURCE (e.g., *according to a study*), a semantic association that newspapers manifest to a greater extent than does academic writing; they will note, too, that it is likely to occur in the context of reporting something bad (a pragmatic association not shared with academic writing). If, on the other hand, they are exposed to academic texts, they may subconsciously identify *according to* as being likely to occur with proper nouns (e.g., *according to Smith*), a colligation that academic texts manifest more commonly than newspapers.

The notions of collocation and colligation are familiar in current corpus (and Firthian) linguistics (for colligation, see Firth 1951/1957; Halliday, 1959; Sinclair, 1996, 2004; Hoey, 1997; Hunston, 2001; Partington, 2003) as is semantic association, which is more commonly known as semantic preference (Sinclair, 1999); pragmatic association is closely related to the notion of semantic prosody (Louw, 1993; Sinclair, 1999). However, lexical priming theory does not only make use of well-established corpus-based concepts; it also claims about the words, syllables, and word combinations that we use that they have characteristic discourse and text-linguistic functions that listeners and readers likewise subconsciously identify as they repeatedly hear or see them in context. Specifically, the first of these discourse-oriented claims is that listeners or readers note subconsciously whether a word, syllable, or word combination is cohesive in its context and their repeated encounters with it will bring them to associate it with particular cohesive strategies (or to associate it with the absence of cohesion); these associations are referred to as its textual collocations (Hoey, 2004b, 2005), making use of the term "collocation" in Halliday and Hasan (1976), though the term "textual collocation" covers all types of cohesion, not only the type usually referred to by Halliday and Hasan as collocation.

A second discourse-oriented claim is that the listener or reader also notes subconsciously whether a word, syllable, or word combination tends to occur as part of any particular

textual relations; these are referred to as its textual semantic associations and include the kinds of textual relations identified in Winter (1977), Hoey (1983), Crombie (1985a, 1985b), Mann and Thompson (1986, 1987), and Longacre (1972, 1976, 1983, 1989), without being confined to these linguists' classifications. The final discourse-oriented claim is that the listener or reader also notes subconsciously whether a word, syllable, or word combination is regularly associated with certain positions in the discourse or text (e.g., at the end of a turn in conversation, at the beginning of a paragraph, in text-initial position, in the closing turns of telephone talk).

As examples of each of these claims, readers are likely to note that the combination *according to a* is directly repeated in newspaper stories relatively rarely but is often indirectly repeated by *said* or a related verb; this is therefore a textual collocation of *according to a*. The word combination is also likely to be subconsciously identified by the same newspaper readers as belonging to a claim–evidence relation, this being one of its textual semantic associations. The larger combination *according to a* RESEARCH SOURCE is furthermore likely to be subconsciously identified by such readers with the first sentence of the news story, more specifically with the second half of the first sentence, and often the end of that sentence (a key textual colligation for news stories). The evidence for these additional claims is largely anecdotal, unlike the earlier claims, which are indirectly supported by 20 years of psycholinguistic experimentation, as noted above. The one that has been most thoroughly investigated is that of textual colligation. In an AHRC-funded research project, Hoey, Mahlberg, O'Donnell, and Scott have demonstrated the pervasiveness of textual colligation in newspaper writing, identifying hundreds of words and word combinations which are associated with specific textual positions relatively rarely; it has yet to be shown whether other genres, spoken or written, manifest the same pervasiveness (Hoey & O'Donnell, 2007, 2008a, 2008b, 2009; Mahlberg & O'Donnell, 2008).

Despite the natural fascination with ambiguity that linguists have always shown, ambiguous utterances are rare even though most sentences contain polysemous items. Lexical priming theory claims that most speakers are differently primed for each polysemous sense, such that the primings for each sense are characteristically mutually exclusive, with the rare sense avoiding the usages associated with the common sense but the common sense occasionally occurring with the usages associated primarily with the rare sense. Thus we are primed to expect *reason* meaning "cause" to have the colligation of occurring within nominal groups containing determiners (*the reason*, *this reason*, *that reason*) and *reason* meaning "rational faculty" to have the opposite colligation of occurring in nominal groups without determiners. As the rarer use of *reason*, the latter virtually never occurs with a determiner. On the other hand, this sense is for most of its use primed to colligate with a possessive (*Imprisonment had cost him his reason*), whereas *reason* meaning "cause" occurs with the possessive relatively rarely (though not neglibly, e.g., *She gave as her reason . . .*).

An important feature of lexical priming theory is that, at the same time as the listener or reader comes to recognize through repeated encounters with a word, syllable, or word combination the particular semantic, pragmatic, grammatical, and textual/discoursal contexts associated with it, s/he will also subconsciously identify the genre, style, or social situation it is characteristically used in. Thus *according to a* RESEARCH SOURCE is typically found in newspaper English. Because we are primed to associate a word or word combination with the social/stylistic context it occurs in, we are able to hold within ourselves multiple versions of the language, some of which we will not choose to replicate in our own speech production. This brings us to what is arguably the most important claim about priming and certainly the claim most capable of misinterpretation. This is that all the features we subconsciously attend to have the effect of priming us so that, when we come to use the word (or syllable or word combination) ourselves, we are likely (in speech,

particularly) to use it in one of its characteristic lexical contexts, in one of the grammatical patterns it favors, in one of its typical semantic contexts, as part of one of the genres/styles with which it is most associated, in the same kind of social and physical context, with a similar pragmatics and in similar textual ways.

Despite appearances, this claim is not behavioristic. It might indeed be argued that it is a virtue of the theory that it accounts well for the mechanisms whereby novel utterances may be created at the same time without implying that every syntactic combination has any likelihood of occurring. Linguistic creativity, according to the theory, arises in several ways (Hoey et al., 2007, chaps. 1 and 2). First, as the wording of the claim indicates, our priming is based on data that are rarely uniform and, in uttering or writing, we have to choose which of the patterns in those data we are going to replicate. The permutations of even the most well-established primings of a common word, syllable, or word combination are sufficient to ensure a great variety of potential utterances, some of which will certainly be novel to their audience. Second, a language user may make an unexpected choice from an expected semantic paradigm (e.g., *three nano-seconds ago*, where the choice from a semantic paradigm of TIME SPAN is as expected but the item selected is not a collocate of *ago*). Third, a language user may override one or more (but not all) of his or her primings. So, for example, Dylan Thomas starts one of his poems "A grief ago." In so doing he overrode his (presumed) priming for *ago* associating it with TIME SPAN but retained the semantic association with NUMBER (*a*) and the textual colligation of NUMBER + TIME SPAN + *ago* with text-initial position when in sentence-initial position.

At present, though lexical priming makes use of psycholinguistic research, the psycholinguistic aspects of the theory have been little investigated. The corpus-linguistic evidence that has been adduced has so far been shown to be compatible with the theory's claims, but it is still possible that the distinctive features of the corpus linguistics employed, such as textual colligation, are individually true but that the theory that gave rise to their investigation is unsupported by the psychological evidence.

SEE ALSO: Formulaic Language and Collocation; Lexical Collocations; Pattern Grammar; Priming Research

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Lexical Semantics

CARITA PARADIS

Introduction

Lexical semantics is an academic discipline concerned with the meaning of words. Lexical semanticists are interested in what words mean, why they mean what they mean, how they are represented in speakers' minds and how they are used in text and discourse. Outside linguistics proper, lexical semantics overlaps with disciplines such as philosophy, psychology, anthropology, computer science, and pedagogy. Within linguistics, it crucially overlaps with what is traditionally referred to as lexicology, which is the overall study of the vocabularies of languages, encompassing topics such as morphology and etymology and social, regional, and dialectal aspects of the vocabulary (Cruse, Hundsnurscher, Job, & Lutzeier, 2002; Hanks, 2007; Geeraerts, 2010). Lexical semantics also provides the foundation for various fields of applied research, such as research in language acquisition and learning, that is, how we as native speakers and learners of foreign languages acquire lexical knowledge (e.g., Robinson & Ellis, 2008; Gullberg & Indefrey, 2010; Pütz & Sicola, 2010), with computational linguistics (e.g., Pustejovsky, 1995; Asher & Lascarides, 2003), and with lexicography—the art and science of dictionary making (Béjoint, 2010).

As a point of departure, this entry states the most fundamental research questions that all theories of lexical semantics have to attend to when describing and explaining lexical meaning in language. With reference to the basic assumptions that follow from the research questions, a brief presentation of past and present approaches to lexical semantics is given, in chronological order. The subsequent sections discuss the relation between words and concepts, and different types of lexical semantic relations in language from a cognitive linguistics perspective. Finally, the last section offers a concluding statement of the nature of meanings of words in language in human communication.

Fundamental Issues in Lexical Semantics

This section establishes five questions that are of central importance to any theory of lexical semantics that makes claims to be a coherent framework within which lexical meanings can be described and explained. While all five are key questions, the first two are more basic than the others.

1. What is the nature of meaning in language?
2. What is the relation between words and their meanings?
3. How are meanings of words learned and stored?
4. How are meanings of words communicated and understood by language users?
5. How and why do meanings of words change?

The answers to these five questions make up the fundamental theoretical assumptions and commitments which underlie different theories of lexical semantics, and they form the basis for their various methodological priorities and explanations for word meanings

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in language. Due to limitations of space, only the first two questions are attended to in the following sections; the other questions are only touched upon in passing.

The term "word meaning" is used in this entry as a practical cover term for different-sized form–meaning couplings. Needless to say, the notion of "word" is extremely problematic. When used, words are always in specific contexts and the influence exerted by those contexts is crucial for the meanings of words, irrespective of whether the context is of a linguistic, a discursive, or a social nature. Also, the notion of "word" does not necessarily refer to a unit in writing which is preceded by an empty space and followed by an empty space. A word, as it is used here, may very well be more than one word, such as *in spite of*, *at all*, *computer science*, *all of a sudden*. As a consequence, what this entry concerns itself with are units of form–meaning couplings with a distinct grammatical or semantic role in an utterance.

Once we try to grapple with word meanings in text and discourse, a fascinating world of phenomena is exposed to us, because the interpretations of a word may vary quite a lot from context to context, from clear cases of different senses to subtle reading differences, as in (1)–(6).

(1) The *mouse* ran across the floor.

(2) I always use the touch pad—never the *mouse*.

(3) I like *white* wine.

(4) I don't like *white* coffee.

(5) I *closed* my savings account with the local bank yesterday.

(6) I *closed* the door and went away.

The contextual variants of *mouse*, *white*, and *closed* are interesting in different ways. *Mouse* in (1) and (2) differs with respect to the entities it refers to in the different contexts—an animal and a computer device, respectively. *White* in (3) and (4) is used about beverages, but the colors of the two beverages that are described as *white* are quite different: The color of white wine is yellow, and that of white coffee is light brown. Finally, in (5) and (6) the closing of an account is clearly different from the concrete closing of a door, and an interesting question in relation to this is of course what kind of entities can be closed. Contextual variation of this kind is at the heart of lexical semantics.

Theories of Lexical Semantics

While word meanings have been discussed in Western literature at least since Aristotle's time, lexical semantics as a research discipline in its own right evolved in the 19th century. Unlike linguistic theories of today, lexical semantics in those days was not a coherent approach with a standard name, but rather the work of a number of individual researchers with an interest in historical texts and the roots of human culture along the lines of the philosophical trends of the time. Consequently, lexical semantics in those days had a historical–philological orientation and was mainly concerned with etymology and the classification of how meanings of words change over time. It is important to note that word meanings in the early days of lexical semantics were regarded as mental entities; they were thoughts, and change of meaning over time was the results of psychological processes (Geeraerts, 2010).

As a reaction to the psychological conception of lexical meaning in the historical–philological tradition, new ideas were brought to the fore in the 20th century by advocates of the structuralist movement, associated with Ferdinand de Saussure's work (1959). The structuralist takeover involved not only a fundamental shift in the conception of what meaning in language is, but also a change from a historical–philological, diachronic perspective to a focus on synchronic language. Structuralism came to dominate the scene for the better part of the 20th century. According to the structuralists, language is an autonomous, intralinguistic system of relations between words, organized on the basis of lexical fields (Lehrer, 1974; Cruse, 1986). Word meanings are not treated as psychological units. They are not substantial, but relational, and are defined in terms of what they are not. For instance, *long* gets its meaning from its relation to *short*. *Long* means what it means because it does not mean 'short'. Paradigmatic relations hold between words that can felicitously fill the same slot in an expression or a sentence (Lyons, 1977); for instance, synonyms such as *cold* and *chilly* in *It is cold today*, *It is chilly today*; antonyms such as *short* and *long* in *The cord is short*, *The cord is long*; hyponyms such as *cat* and *animal* in *The cat is in the garden*, *The animal is in the garden*.

The structuralists made a distinction between paradigmatic relations and syntagmatic relations. The latter are linear relations formed between words in a sentences Cruse (1986, p. 16) maintains that

> we can picture the meaning of a word as a pattern of affinities and disaffinities with all the other words in the language with which it is capable of contrasting semantic relations in grammatical contexts. Affinities are of two kinds, syntagmatic and paradigmatic. A syntagmatic affinity is established by the capacity for normal association in an utterance: there is a syntagmatic affinity, for instance between *dog* and *barked*, since *The dog barked* is normal . . . A syntagmatic disaffinity is revealed by a syntagmatic abnormality that does not infringe grammatical constraints, as in? *The lions are chirruping*.

The idea of the syntagmatic approach to meaning with its interest in strings of words, their collocations, and their co-occurrence patterns developed from research within the London School and the Birmingham School (Firth, 1957; Sinclair, 1987). According to the syntagmatic approach, the meaning of a word is defined in terms of the company it keeps in language use, or in terms of the totality of its uses. In this respect, the syntagmatic approach opened the way for new trends in linguistics, namely for usage-based approaches to lexical semantics where contextual factors and real language in use are prime research objectives for the description of meanings, as is the case in cognitive linguistics, dealt with below.

At the end of the 20th century, there was a reaction against the structuralist view of language as a system of relations between words without any recourse to language as a mental and psychological phenomenon, and without any relation to conceptual structure and thinking more generally. Once again, word meanings were considered to be psychological entities located in people's minds, rather than relations between words. This renewed interest in human language and the mind occurred in parallel with improvements in investigative methods aided by technical advancement and computerization in research. Structuralism was superseded by two totally different branches of conceptual approaches to lexical meaning: a generative and a cognitive approach. The breakthrough of the former came with an influential article called "The Structure of Semantic Theory" (Katz & Fodor, 1963), which set out to describe meaning as part of formal grammar in terms of meaning components; for example, "woman {+human, +female, +adult}." The main purpose of most work within generative lexical semantics has been concerned with the development of a logical formalism to be used either for the deconstruction of word meanings along the lines of Katz and Fodor (Jackendoff, 1983, 1990), or for the construction of lexical meaning

as in the generative lexicon (Pustejovsky, 1995). Also, broadly within this framework, work on the formalization of meanings in context as a function of rhetorical organization has been carried out more recently (Lascarides & Asher, 2007). In the latter models, simple feature decompositions have been replaced by models which take into consideration implicit structure and social frames, since language users know so many things that are relevant to linguistic interpretation. The ultimate purpose of these formalizations is that they should be useful for different kinds of computational implementation in the areas of information technology and computer science.

As in the generative framework, the conception of lexical meaning in cognitive linguistics is that meanings of linguistic expressions are mental entities. Apart from this commonality, the two frameworks differ in all essentials: that is, with respect to the foundational assumptions about what meaning in language is, how words relate to meanings, and how meanings are described and explained. For a comparison between the basic assumptions between the two frameworks, see Paradis (2003).

The cognitive approach to meaning emerged in the 1980s as a reaction to the view of grammatical knowledge as separated from other cognitive abilities and processes, held by the generativists. In contrast, the cognitive approach sees linguistic knowledge as in integral part of human cognition. Language cannot be studied without reference to the principles of human cognition. Cognitive linguistics is a maximalist approach in the sense that it aims to account for real language in use in all its complex glory. It is a sociocognitive framework in which lexical meanings are inextricably associated with language users' bodily, perceptual, and cognitive experiences of cultural and historical phenomena. Our use of words is constrained as well as promoted by subjective and intersubjective conditions in the act of social communication. There is no strict dichotomy between linguistic and encyclopedic meanings (Paradis, 2003). Rather, lexical meaning in cognitive linguistics is encyclopedic, taking into account any aspect of contextual meaning modulation that is relevant for a certain research task, integrating semantics, pragmatics, and grammar. In contemporary linguistics, cognitive lexical semantics is the most popular enterprise, in terms of both publications produced and the number of people who are involved in lexical semantic research (Geeraerts, 2010).

In the cognitive linguistics framework, there is a direct mapping of words and expressions to conceptual structure. Language forms an integral part of human cognition in general. The function of words is to evoke conceptual patterns in the cognitive system. There is no algorithmic linguistic level intermediate between linguistic expressions and their meanings. The cognitive approach to meaning is usage-based (Langacker, 1999, pp. 91–145; Cruse, 2002; Tomasello, 2003). Speakers and hearers are intentional creatures. The way we express ourselves is functionally motivated; we wish to get our message through to our interlocutors and to negotiate meanings in communication with other people in an optimally successful way. There are no stable word meanings; rather meanings of words are dynamic, context-sensitive, and construed online. This take on words and their meanings strengthens the link between language and psychology, language and sociology, language and cognitive science, and language and neurology, and opens the way for interdisciplinary research.

Thanks to technical innovation in the form of increased computer capacity and performance, and improvements in experimental equipment, quite a lot of empirical progress has been achieved lately. Contemporary research in lexical semantics is making extensive use of corpus methodologies and language technological tools. The use of large databases and Web-as-corpus has revolutionized the possibilities of investigating usage patterns in real language across genres and cultures, and further developed probabilistic usage-based ideas. However, it is not only textual data and computerized methods that play an important role in research in lexical semantics, but also different kinds of psycho- and neurolingusitic experiments used to describe and explain word meanings and to establish links between language and cognition, language in people's minds and in people's brains.

Words and Concepts

Having thus established that the predominant framework in current research in lexical semantics is that of cognitive linguistics, this section and the next deal with aspects of the relation between words and concepts and with lexical semantic relations from a cognitive perspective, stating that (lexical) knowledge is organized as concepts in people's minds. Concepts form systems of areas of human experience that provide the necessary contextual knowledge for our understanding of the world around us. This knowledge is referred to as *domains* (Langacker, 1987, pp. 147–82) (or "frames"; Fillmore, 1982, p. 111). Some are basic domains, which are inborn and make it possible for us to experience ranges of colors, pitches, tastes, smells, tactile sensations, spatial extensionality, the passage of time, and the experience of emotions. However, domains are not only basic; they may involve conceptualizations of any degree of complexity. For most concepts, in fact, we need to make reference to more than one domain, and linguistic expressions typically invoke multiple domains when they are used.

Not all domains have equal status. A domain may be defined as any knowledge structure that is of relevance to the characterization of a certain meaning. Semantic contrasts in the readings of words are always a result of the actual domains invoked in a particular expression in a particular context and to the ranking of prominence among those domains. Some domains are more central than others in a given situation. Langacker (1987, p. 154) illustrates this using BANANA as an example:

> Most concepts require specifications in more than one domain for their characterization. The concept [BANANA], for example includes in its matrix a specification for shape in the spatial (and/or visual) domain; a color configuration involving the coordination of color space with this domain; a location in the domain of taste/smell sensations; as well as numerous specifications pertaining to abstract domains, e.g. the knowledge that bananas are eaten, that they grow in bunches on trees, that they come from tropical areas, and so on.

We may go on to ask ourselves which of these specifications are necessary. The simple answer is that all of them are necessary for a full knowledge representation as required in an encyclopedic, usage-based conception of meaning. When the word *banana* is used in human communication, one of these aspects may be profiled, while others form the base, or background. As Croft and Cruse (2004, p. 16) point out, "no concept exists autonomously: all are understood to fit into our general knowledge of the world in one way or another."

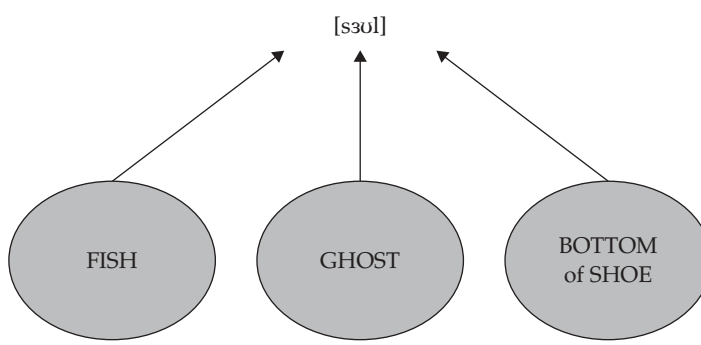

Figure 1 The relation of different meanings of a word

Lexical Semantic Relations

There are essentially three different kinds of relations between word meanings. There are (a) words that share the same form but mean different things, such as homonyms and polysemes; (b) words that evoke similar meanings but have different forms, such as synonyms and hyponyms; and (c) words that have different forms and different meanings and are semantically related through opposition, such as antonyms.

Starting with words that have the same form but different meanings (Figure 1), we may identify two types of contextual variants of words, which we refer to as arbitrary and motivated variants. Arbitrary variants are unrelated and just happen to sound or look the same, or both, in contemporary speech or writing. They are often referred to as hymonyms and can be exemplified by the word [sɜʊl] in different contexts, as in (7)–(9).

(7) I complained to the waiter because the *sole* was burnt.

(8) You are the *soul* of discretion.

(9) The *sole*s are made of rubber.

Motivated variants, on the other hand, evoke meanings which are related through some kind of resemblance, metaphorization, or contingent conceptual associations (metonymization). Form–meaning pairings that are related in that way are called polysemes. Consider examples (10)–(15).

(10) The beam has *gone through the roof*.

(11) Prices have suddenly *gone through the roof*.

(12) Bill *slapped* Sally *in the face*.

(13) The way Bill behaved is *a slap in the face* after all Sally had done for him.

(14) The famine in the area is very threatening. There are too many *mouths* to feed.

(15) Fortunately, the whole *school* was on an outing, when the fire started.

The contextual variants of *go through the roof* in (10) and (11) and *slap in the face* in (12) and (13) are clearly related. The meanings in (10) and (12) refer to concrete undesirable events, while the meaning in (11) refers to the fact that something negative is going out of bounds and in a direction that is undesirable, and (13) there is a resemblance relation between the concrete activity of slapping, which is physically painful, and something that is emotionally painful. In (14) there is a contingent relation between the use of *mouth* for people and *school* for pupils and staff (Lakoff & Johnson, 1980; Paradis, 2004).

The second type of lexical semantic relations concerns words that evoke similar meanings (see Figure 2), which is the case for synonyms such as *father* and *dad*, *nice* and *pleasant*, and for hyponyms such as *animal* and *cat*, *walk* and *stroll.* Synonymy, including hyponymy, is essentially the opposite of homonymy and polysemy in the sense that in the case of synonyms the different word forms map onto "the same" concepts, while in the case of homonymy and polysemy the same word form evokes different concepts.

Note that there are no absolute synonyms in language use. There is a gradient of conceptual and communicative similarity (Cruse, 2010, pp. 142–5; Storjohann, 2010, pp. 69–94).

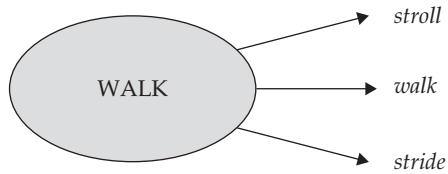

Figure 2 The relation of sameness of meaning (WALK) expressed by different words

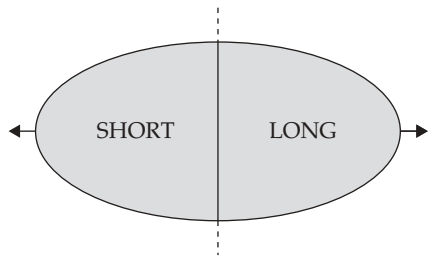

Figure 3 The relation of opposition: different words as poles of the same meaning dimension

There is always something in the profiling of the meaning and the ranking of the domains in the domain matrix that differs. This becomes particularly evident in translation studies and lexicography. With the exception of many technical terms and names of manufactured objects such as dishwashers and vacuum cleaners, it is a well-known fact that words in one language rarely have exact translations in other languages. For instance, if speakers of English seek a translation of *comfortable* in Swedish, they must decide which of the following translations is adequate in the current the context: *bekväm*, *komfortabel*, *behaglig*, *angemäm*, *tillräcklig*, *trygg*; or, if speakers of Spanish seek a translation for the appropriate use of the discourse marker *bueno* in Spanish, they have to decide whether to use *OK*, *all right*, *well*, *never mind*, *right*, *right then*, or *really*.

Finally, antonymy is a binary construal of opposition that holds between two different words in discourse. Antonyms are similar in that they are aligned along the same conceptual dimension, but they are maximally different in expressing the opposite properties of that particular dimension (Paradis & Willners, 2011). For instance, *good* and *bad* may be used as antonyms along the dimension of MERIT, and *long* and *short* along the dimension of LENGTH (see Figure 3).

When antonyms are used in text and discourse, they are restricted to the same meaning domain. For instance, *long* and *short* are antonyms in the context of horizontal extension for ROAD, but not in the context of vertical extension for BUILDING, where *low* and *high* or *tall* would be the preferred pairings. This is a constraint that is true of synonyms too. However, antonymy is different from the other relations mentioned in this section in that new couplings are frequently construed for various different purposes in text and discourse; for instance, *Firefliers prefer tall grass to mowed lawns*, where *tall* and *mowed* are used as antonyms. Antonymy seems to have special status as a lexical semantic relation in language in that antonyms are typically members of one-to-one relations, rather than one-to-many or many-to-many, and they are severely constrained in their relationship and by their alignment along the same meaning dimension within a domain (Paradis, Willners, & Jones, 2009; Paradis & Willners, 2011).

Words in Text and Memory

Language can be described as a conceptually structured inventory of linguistic units and cognitive routines. Word meanings are shaped by the context and the situations where they occur, and conventionalized uses of word meanings are the results of the entrenchment of words as form–meaning pairs in memory. Multiple meanings of words are expected as a natural consequence of a dynamic, usage-based view of language.

SEE ALSO: Bilingual Lexicography; Cognitive Grammar; Dictionary Use; Intercultural Communication; Lexical Collocations; Lexicography Across Languages; Monolingual Lexicography; Traditional Approaches to Monolingual Lexicography

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Lexical Syllabus

PAWEŁ SZUDARSKI

Rapid developments in corpus linguistics in the 1980s and 1990s have had a considerable impact on the study of language. The increasing availability of corpora, large databases of authentic language, created opportunities for the description of both written and spoken language and also led to new proposals in areas such as lexicology and English-language teaching (ELT). One such proposal stemming directly from corpus analysis is a lexical syllabus—an innovative approach to language teaching in which the content is organized around frequent vocabulary. According to Breen (2001), a syllabus is a plan of what is to be achieved through teaching and learning. In the lexical syllabus, this plan is organized around very frequent words. This entry presents the main characteristics of the lexical syllabus and its significance to language teaching practice.

The COBUILD Project and the Lexical Syllabus

The idea of the lexical syllabus originated among linguists working on the COBUILD project directed by John Sinclair, a leading figure in corpus linguistics. The research conducted for this project was seminal for the development of the field and resulted in the publication of the *Collins COBUILD English Language Dictionary* in 1987. Sinclair and Renouf (1988) were the first authors who suggested the lexical syllabus with its emphasis on the most frequent words in English. Their publication was followed by *Collins COBUILD English Course* (Willis & Willis, 1988) based on the lexical syllabus and Willis's (1990) book-length presentation of the main principles of this approach.

Through painstaking extraction of information in their corpus, Sinclair and his colleagues were able to show the interdependence of lexis and grammar. The notion of lexicogrammatical patterns was introduced to highlight co-occurrences of lexical and grammatical elements in language (Hunston & Francis, 2000; O'Keeffe, McCarthy, & Carter, 2007). Additionally, Sinclair (1991) challenged the acceptance of a single word as a basic unit of meaning and advocated paying much more attention to lexical chunks. As relationships between lexical and grammatical items were brought to light, it appeared natural to use such findings to inform the process of language learning and teaching.

Characteristics of the Lexical Syllabus

Sinclair and Renouf (1988, p. 148) state that any learner of English should concentrate on the "commonest word forms, their central patterns of usage and the combinations they typically form." As corpus data show, certain words occur very frequently and form various lexical and grammatical patterns. English makes extensive use of the most frequent vocabulary, and consequently the knowledge of these words is essential to understand most texts. In order to promote such vocabulary in the classroom, Willis and Willis (1988) used corpus findings and established three thresholds for their *Collins COBUILD English Course* corresponding with three consecutive proficiency levels: the elementary course was based on covering the most frequent 700 words, the intermediate course on the next 800

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words (a total of 1,500) and the advanced course on the next 1,000 words (a total of 2,500).

However, within the most frequent vocabulary, some words have straightforward phraseology and will be easy to learn (e.g., bed, office, run), whereas others will be highly complex. Some words are likely to present learners with difficulties since they are polysemous (e.g., "a book" and "to book something"), combine with other words in different types of lexical chunks (e.g., "make a speech" or "make somebody's day") and/or form patterns as syntactic frames (e.g., "she made her do it"). Such patterns have been emphasized by Francis, Hunston and Manning (1996, 1998) and Hunston and Francis (2000) in their *Pattern Grammar*. In this corpus-based approach, lexical items are analyzed with regard to their phraseological behavior since, according to Hunston and Francis (2000, p. 2), "all words can be described in terms of their patterns."

Pattern grammar was not available in the 1980s when the idea of the lexical syllabus was developed. Yet it is clear that patterns should be taken into account when one approaches language teaching from a lexical perspective. Pattern grammar shows how each word is closely related to its grammar in terms of, for example, prepositions and clauses with which it occurs. Consequently, if words with complex phraseology are to be taught effectively, intricate lexicogrammatical relationships should be highlighted as well. However, the question arises if this is feasible given the time constraints that each teacher faces. Perhaps initially, in an elementary course, it would be reasonable to introduce the most frequent 300 words together with their phraseological patterns and then recycle them systematically to consolidate this knowledge. At the same time, keeping in mind that the purported aim is to cover the 700 most frequent words at this level, teachers should make use of every opportunity to present new words and the patterns they form with one another. However, since there are so many lexical items that are worth knowing, how should the teaching process be organized? Willis (1990) suggests using a pedagogic corpus as a guide.

The Lexical Syllabus and a Pedagogic Corpus

A pedagogic corpus contains authentic written and spoken texts that learners will have encountered in the course of their studies (Willis, 1990). As a result, the lexical syllabus can be based on the compilation of texts learners know and from which the most common lexicogrammatical partnerships can be retrieved. In the context of lexicogrammar, Willis (2003) also stresses "the grammar of orientation" which embraces verb tenses, determiners, the passive voice, and other grammatical features. These grammatical devices show how lexical items relate to one another and to the outside world. Therefore, the grammar of orientation helps learners understand what a message means in a given context and what it refers to. Moreover, Sinclair and Renouf (1988) propose that, if the natural language provided by the corpus is analyzed properly, all the relevant grammatical features of the language will resurface as well. Similarly, Willis implies that constructing a syllabus on corpus data should ensure coverage of the grammar of orientation. Thus, if students are exposed to materials based on the pedagogic corpus that highlight phraseology, it is probable they will familiarize themselves not only with lexical elements but also with grammatical features. Moreover, since the pedagogic corpus encompasses the most important meanings and patterns of English, teachers can use it as a source for devising activities that will raise learners' awareness of lexicogrammatical patterns. Willis (2003) notes that the advantage of using authentic material is that one sentence may exemplify several patterns. Even if such sentences might cause difficulty, Willis claims that the language we present to learners does not have to be simple. As long as it conveys true meaning, learners will benefit from such input. Finally, the pedagogic corpus lessens

learners' dependence on their teacher and it allows them to realize what they need to learn to function effectively in everyday communication.

The Lexical Syllabus and Teaching Methodology

In order to fulfill its role, the lexical syllabus should be independent of such elements as course materials, methodology and assessment. According to Sinclair and Renouf (1988), the lexical syllabus is not related to any methodology "by any principles" but it may suggest specific types of teaching practice (p. 155). Willis (1990), on the other hand, explicitly promotes task-based approaches to teaching and learning and claims that they are a proper fit for the meaning-based instruction.

Since task-based approaches see language as a system of meanings, they rely heavily on activities in which language is used for communicative purposes. Learners are faced with tasks where the emphasis is placed on the outcomes rather than on the language itself. Tasks from the lexical syllabus require learners to stretch their linguistic resources but do not exert too much control over their creativity. Willis (1990) contrasts it with a structural syllabus represented by form-focused approaches in which the use of language is controlled and learners have little influence on the creation of meaning. Furthermore, in the task-based methodology, all tasks can be introduced in three stages: task—planning—report. Once learners have completed a task, they plan how to present their work (usually with the teacher's help) and in the last stage they display the outcomes in front of their classmates. Thus, overall, by completing tasks, language learners develop both their fluency and accuracy, for the task-based methodology assumes that "out of fluency comes accuracy" (Sinclair & Renouf, 1988, p. 128).

However, the lexical syllabus does not need to be realized through this methodology. Other methodologies (e.g., communicative language teaching) can be used as well, provided that they are based on authentic materials. Artificially created texts presenting concocted language are unlikely to ensure essential exposure to phraseological patterns. Authentic materials, on the other hand, present opportunities to explore naturally occurring discourse and give learners a chance to become autonomous and discover lexicogrammatical patterns themselves.

The idea of discovering patterns and promoting lexis figures prominently in Lewis's "lexical approach" (Lewis, 1993, 1996) which fulfills many conditions stipulated by Willis. Lewis strongly argues for placing more emphasis on lexis in language teaching. He perceives language as "grammaticalized lexis rather than lexicalized grammar" (Lewis, 1993, p. vi) and consequently rejects the grammar/lexis dichotomy. If teachers highlight the role of chunks in language, learners will become familiar with various multiword lexicogrammatical elements (see Schmitt, 2004) which help language users perform many language functions.

With regard to methodology, Lewis (2002) posits that the traditional presentation—practice—production framework, in which the teacher first presents a given item and then controls students' practice of it, needs to be rejected. In Lewis's opinion, such a framework does not reflect the true nature of language and should be replaced with the observe—hypothesize—experiment paradigm. As far as teachers' involvement is concerned, raising students' awareness of lexical patterns ought to be a central element of lessons. Interestingly, in a recent publication, Boers and Lindstromberg (2009) return to the tenets of the lexical approach and discuss how cognitive linguistics can inform the promotion of chunks in the classroom. This indicates that the lexical understanding of language has an increasingly prominent position in the field and more empirical work on these issues should be expected in the future.

Advantages and Disadvantages of the Lexical Syllabus

The lexical syllabus constituted an alternative to language syllabi that had been used before the advent of corpora. It must be said, however, that it was "less than a runaway success" (Thornbury, 1998, p. 9) and ELT practitioners did not adopt it widely. It appeared that teachers were not ready to accept an "unconventional" syllabus in which the content was not organized around traditional grammatical categories they were used to. Harwood (2002) suggests this could have led to its lack of "face validity." Similarly, Thornbury (1998) posits that factors such as the absence of grammatical labels and the task-based methodology might have "scared off potential converts" (p. 9). Having presented so many tasks, Willis probably overwhelmed both teachers (who found it difficult to structure their teaching) and students (who did not enjoy completing one task after another).

However, despite widespread criticism, it must be acknowledged that the lexical syllabus was a breakthrough in the 1990s in terms of introducing an innovative approach to language teaching. Such changes are always welcome, for they force ELT practitioners to reflect upon their own methods of teaching and assess their effectiveness. What is more, the lexical syllabus and the *Collins COBUILD English Course* demonstrated for the first time how research findings from corpus analysis can inform language classroom practice. Currently, in light of the growing interest in phraseology and formulaic language, the significance of the lexical approach may be even broader. Major ELT publishers have already invested money in compiling language corpora to ensure that their coursebooks and dictionaries are based on authentic data. Yet little is still known about how to best tackle lexicogrammatical patterns in language pedagogy. More research needs to be done to determine how teachers should deal with the ubiquity of chunks in the second language classroom. The lexical syllabus thus may be a good starting point for developing new ideas in the area of vocabulary learning and emphasizing the role of lexis in second language acquisition.

SEE ALSO: COBUILD Project; Corpus Analysis for a Lexical Syllabus; Formulaic Language and Collocation; Formulaic Sequences; Sinclair, John; Syllabus Design; Teaching Vocabulary

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Lexical Transfer and First Language Effects

HILDE VAN ZEELAND

The influence of the first language (L1) in second language (L2) acquisition has long since been acknowledged. Transfer, or crosslinguistic influence, occurs in all linguistic subsystems (Odlin, 2003). Lexical transfer concerns the effect of vocabulary knowledge in one language on the acquisition and use of vocabulary in another language. It can be positive (i.e., a learner's L1 facilitates L2 vocabulary acquisition and use) or negative (i.e., a learner's L1 hinders L2 vocabulary acquisition and use). Traditionally transfer was regarded as mostly negative, and research was carried out primarily by means of analyzing learners' errors. Nowadays, however, it is recognized that transfer can have both positive and negative effects on L2 acquisition, and that it can occur in various forms. Research into lexical transfer increases our understanding of L2 acquisition, use, and processing, and is thereby a great contribution to the field of applied linguistics. This entry provides an overview of the main types of lexical transfer from L1 to L2, and discusses a number of factors that may promote or hinder lexical transfer.

Types of Lexical Transfer

Lexical transfer manifests itself in transfer of form and transfer of meaning (Ringbom, 2007). Formal lexical transfer involves transfer of L1 spoken and written forms onto L2 lexical items (individual words or multiword units) that are being learned. Semantic lexical transfer refers to transfer of meaning or function features of an L1 lexical item onto an L2 one. Researchers may use different terminology to refer to this distinction between formal and semantic transfer. Jarvis (2009), for example, prefers the terms lexemic and lemmatic transfer.

Obvious occurrences of formal transfer are language switches (using L1 words in L2 production) and coinages (creating words by blending the formal properties of L1 and L2 lexical items). A third type of formal transfer involves cognates, or "historically related, formally similar words, whose meanings may be identical, similar, partly different or, occasionally, even wholly different" (Ringbom, 2007, p. 73). As cognate lexical items share formal characteristics and often also a common meaning, they can facilitate L2 use, particularly in comprehension. Cognates are therefore considered the main source of positive lexical transfer (Odlin, 1989). However, although cognates might carry virtually the same meaning (for example *father* in English and *fader* in Swedish), they may also be partially deceptive (*offer* has one meaning in English but two in Swedish) or even totally deceptive (*strand* means *beach* in Swedish but no longer does in English). The latter two cases are often referred to as "false friends." Yet, as Jarvis (2009) emphasizes, cognate relationships can involve different degrees of similarity in both form and meaning. This can make it difficult to predict their effect. Additionally, even if two cognate words carry the same meaning in two languages, differences in factors such as register, collocations, and frequency may still hinder appropriate usage in the L2.

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The two main types of semantic transfer traditionally referred to in the literature are semantic extensions and calques (Ringbom, 2001). Semantic extensions occur when a learner knows that a lexical form exists in the L2, without being aware of its semantic restrictions. The learner assumes that the meaning of a target language word corresponds to the meaning, usually the core meaning, of the L1 lexical equivalent. This may result in, for example, a Finnish learner forming the sentence "he bit himself in the language" (Finnish *kieli* refers to both tongue and language) (Ringbom, 2001, p. 64). L1 semantic meaning is thus activated and transferred to the L2. Calques, the second type of semantic transfer, entail literal translations of L1 multiword units into L2 structures. One oft-cited example is a Swedish speaker's reference to a bachelor as a *youngman* (from the Swedish compound item *ungkarl*) (Ringbom, 2001, p. 64). Calques thus reflect the way multiword lexical items are mapped to meaning in the L1 if translated in a word-by-word manner, rather than as a holistic phrase. Besides semantic extensions and calques, research has revealed several other types of semantic transfer in L2 use (a number of these are discussed by Jarvis, 2009).

An emerging line of inquiry in the research area of lexical transfer is word choice, or lexical reference. Rather than focusing on formal or semantic errors, word choice transfer research involves the L1 effect on "the preferential selection of certain words over others in contexts with multiple alternatives" (Jarvis & Pavlenko, 2010, p. 88). Hohenstein, Eisenberg and Naigles (2006), for example, found that Spanish learners of English used mainly verbs that carried path information (*to go*, *to enter*) whereas native English speakers preferred verbs that carried manner information (*to skip*, *to walk*), indicating the difference in how the two languages express motion. Likewise, Jarvis (2000) compared the word choices of Finnish and Swedish learners of English, and found instances of L1-related word choice which reflected how the two source languages conceptualize and express collisions.

Two other types of behavior may indicate lexical transfer: underuse and overuse in L2 production. These two transfer types do not receive as much research attention as other types of lexical transfer do, since they are relatively difficult to detect in comparison to lexical and semantic errors. Yet research has provided insight into how the L1 can lead learners to use certain lexical items excessively (e.g., speakers of Romance languages tend to overuse Latinate cognates in their L2; Benson, 2002), as well as avoid items (e.g., Hebrew learners of English tend to avoid idioms that are in form only partly similar to their L1 idiomatic equivalents; Laufer, 2000).

The Constraints on Lexical Transfer

A constraint on positive transfer can be defined as "anything that prevents a learner from either noticing a similarity in the first place or from deciding that the similarity is a real and helpful one" (Odlin, 2003, p. 454). Various constraints have been identified in transfer studies. In this section three prominent types of constraints on lexical transfer will be discussed: (a) learners' perceptions regarding the difference and similarity between languages ("psychotypology"), (b) learners' perceptions regarding the extent to which meaning senses of individual lexical items are core or peripheral ("prototypicality"), and (c) L2 proficiency.

Research has shown that similarities between the L1 and L2, which exist more between typologically related languages than unrelated languages, increase learners' willingness to use formal transfer from their L1. For example, among learners of English as an L2 who know both Swedish and Finnish, L1 Swedish learners show more transfer from their L1 to English than L1 Finnish learners do. This can be explained by the fact that Swedish is

related to English whereas Finnish is not (Ringbom, 2007). Moreover, learners have a tendency to avoid L2 structures that do not have counterparts in their L1s. Phrasal verbs have been found to be used considerably more by learners whose L1 has a phrasal verb structure than by learners whose L1 does not (Sjöholm, 1995). Clearly, the more similarity between the L1 and L2, the more lexical transfer occurs. However, it has been emphasized by researchers that this degree of similarity is subjective rather than objective: It concerns how much crosslinguistic similarity individual learners perceive (i.e., what they actually notice) or assume. Kellerman (1983) used the term "psychotypology" to refer to such individual learner perceptions and assumptions of language proximity. In addition, similarities between L1 and L2 are a good predictor of formal transfer, but not of semantic transfer. Semantic transfer is equally likely to occur between two unrelated languages as it is between two closely related ones (Ringbom, 2007).

Nevertheless, not all lexical items that look similar across languages lead to transfer. Kellerman (1983) introduced the concept of "transferability" to refer to "the probability with which a structure will be transferred relative to other structures in the L1" (p. 117). In other words, learners will perceive some L1 lexical items as more or less transferable than others. Kellerman (1979) showed that prototypicality plays an important role in this in his much-cited study on the transferability of the Dutch word *breken* ('to break'). This lexical item is similar in both form and meaning in Dutch and English, and is also used in various idiomatic expressions in both languages. The study revealed that Dutch learners of English were more likely to transfer literal meaning senses of the word (*the cup broke*) than figurative meaning senses (*she broke the world record*). Kellerman therefore concluded that core meanings of lexical items (in this study the more literal senses of *breken*) are more likely to be transferred than non-core meanings (in this study the more figurative senses of *breken*). As Kellerman (1983) explains, a particular L1 item is less transferable if the learner perceives it as "infrequent, irregular, semantically or structurally opaque, or in any other way exceptional, what we could in other words call 'psycholinguistically marked'" (p. 117).

One other variable of significant importance in lexical transfer is L2 proficiency. It has been found that beginning learners focus primarily on formal similarities between their L1 and L2, and that they generally assume that L1–L2 similar lexical items also have the same meaning. This is also referred to as the "semantic equivalence hypothesis" (Ringbom, 2007). Based on this assumed semantic equivalence, learners establish so-called "primary counterparts": simplified one-to-one relations between L1 and L2 words (Arabski, 1979). However, as learners become more proficient, they tend to become more aware of L2 items' true meanings and functions, and primary counterparts are gradually modified according to the semantic restrictions of the L2 (Ringbom, 2007). Although this idea of a gradual change from semantic transfer to internal structuring of the L2 lexicon is generally accepted, Jiang (2000, 2004) challenges it by providing evidence of advanced L2 learners who still transfer preexisting L1 semantic structures onto L2 lexical items. In other words, even though advanced learners are well aware of the formal aspects of L2 items, they continue to maintain mental associations between L2 lexical forms and L1 semantic representations. This finding led Jiang to propose the "semantic transfer hypothesis," which postulates that L2 learners may not get to the point where L1 semantic transfer stops, and that L1 semantic transfer may in fact be the "steady state of lexical performance in advanced learners" (2004, p. 419). Clearly, the issue of lexical transfer (both formal and semantic) in relation to proficiency is complex. Studies on the overall degree of lexical transfer at different L2 proficiency levels have similarly reported conflicting results (see Jarvis, 2000, for a detailed discussion).

Other Lexical Transfer Issues

There are a number of lexical transfer issues that have not been discussed in this entry. For example, whereas this entry has focused on L1 lexical transfer only, lexical transfer is in fact bidirectional (i.e., it occurs not only from L1 to L2 but also from L2 to L1). Bidirectional lexical transfer has received increasing attention in the literature (e.g., Pavlenko & Jarvis, 2002). In addition, the issue of multilingual lexical transfer is also prominent in transfer research (Ringbom, 2001). Another interest of lexical transfer researchers is accessibility and activation. It has been found that L1 words are activated in both L2 reception (Paribakht, 2005) and production (Poulisse, 1999). Together these and other approaches continue to increase our understanding of lexical transfer.

SEE ALSO: Cognates; Crosslinguistic Influence and Multilingualism; Crosslinguistic Influence in Second Language Acquisition; Vocabulary Acquisition in Bilinguals; Vocabulary Acquisition in Second Language Acquisition

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Lexicogrammar

TONY BERBER SARDINHA

Introduction

Lexicogrammar (or lexico-grammar) is a level of linguistic structure where lexis, or vocabulary, and grammar, or syntax, combine into one. At this level, words and grammatical structures are not seen as independent, but rather mutually dependent, with one level interfacing with the other. The idea that lexis and grammar are interrelated has been treated in a number of linguistic theories and approaches, more or less explicitly. This entry will focus on systemic functional linguistics (SFL) and corpus linguistics (CL), because these two theoretical-methodological frameworks have close ties to applied linguistics, and in both of them lexicogrammar plays a central role.

Systemic Functional Linguistics

Lexicogrammar is one of the formal elements of SFL theory. It is credited with "giving language its creative potential" (Eggins, 1994, p. 121), and it is such a key component that the very term grammar is a shorthand for it in SFL (Halliday, 1995/2005, p. 251). Lexicogrammar is the system of wording, representing the linguistic resources for construing meanings through words and structures. Lexicogrammar realizes (makes concrete) the level of semantics, that is, it expresses meanings in words and grammatical structures, and is in turn realized by phonology (sounds) and graphology (orthography). Together with semantics, lexicogrammar forms part of the content plane of language.

The development of the notion of lexicogrammar in SFL is linked to the pursuit of the so-called "grammarian's dream," which entails treating lexis as final selections in grammatical systems: "the grammarian's dream . . . is to turn the whole of linguistic form into grammar, hoping to show that lexis can be defined as 'most delicate grammar'" (Halliday, 1961/2002, p. 54). Lexis is seen as "grammar extended to the point of maximum delicacy" (Halliday & Matthiessen, 2004, p. 46) or that point "where further uniqueness cannot be postulated" (Hasan, 1987/1996, p. 76). But Halliday himself conceded at the time that "for the moment, it seems better to treat lexical relations . . . as on a different level, and to require a different theory to account for them" (Halliday, 1961/2002, p. 54).

Hasan (1987/1996) pursued this dream by analyzing the transitivity system of nine English verbs (see Figure 1, which shows immediately relevant options only). The transitivity system is a set of features of processes (verbs) that stand in contrast with each other, representing choices made speakers during language use; it includes both the participants (i.e., functional roles such as Actor, Goal, Senser, etc.) and the circumstances (e.g., Location, Cause, Manner, etc.) associated with the processes.

A sentence such as "she scattered her clothes all over the place" (p. 90) realizes several choices, including the following, in that network:

- Material: Action: Disposal: Deprivation = a material action of disposal (scattering) involving change in location of that which is disposed of (the clothes);
- Iterative = an inherently repetitive activity (clothes were probably not scattered all at once);

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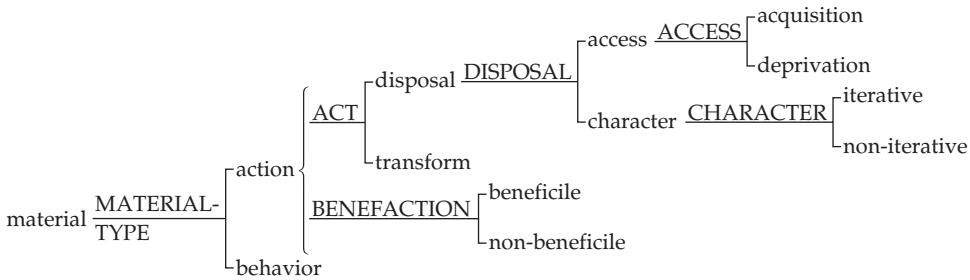

Figure 1 Transitivity system (adapted from Hasan, 1987/1996, p. 79)

- Beneficile: potential = one of the parties involved in the activity (she) benefits from (is at the receiving end of) the action (she is affected by the scattering one way or another).

Representing the whole of the lexicogrammar of a language in this way has remained a dream only; as Halliday and Matthiessen (2004, p. 46) put it, "it would take at least 100 volumes . . . to extend the description of the grammar up to that point for any substantial portion of the vocabulary of English."

In SFL, lexicogrammar is seen as continuum, with grammar on one end and lexis on the other (see Figure 2). Hence, actual descriptions of lexicogrammar vary considerably: some tend toward the grammatical end, whereas others move toward the lexical, and still others strike a balance in between. Accounts that favor the grammatical pole highlight lexicogrammar as a closed structural system, whereas those that move toward the direction of lexis see lexicogrammar in terms of meaning-specific open sets.

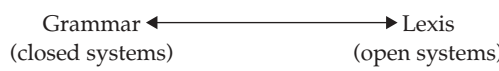

Figure 2 Grammar–lexis continuum (adapted from Halliday & Matthiessen, 2004, p. 43)

Lexicogrammatical analyses vary in terms of two axes: paradigmatic and syntagmatic. Following Saussure, the former refers to "the axis of choice," or "relations between an element and what could have occurred in place of it (but did not)," and the latter to "the axis of chain," or "relations between an element and what goes together with it" (Halliday & Webster, 2009, p. 63).

By crosstabulating the two ends of the lexicogrammatical cline with these two axes, four basic descriptive options are derived: syntagmatic + lexical, syntagmatic + grammatical, paradigmatic + lexical, and paradigmatic + grammatical. These are illustrated below.

Syntagmatic + lexical. This kind of description focuses on collocation, or the tendency for words to attract (and repulse) others in their immediate vicinity. Lexicogrammar is (typically) seen as pairs of words that tend to collocate (frequently occur) together, as attested in a corpus. For instance, in English, "change" collocates with "mood" and "season," "grass" with "flower" and "green," and "flower" with "bloom" (Halliday & Matthiessen, 2004, p. 38).

Syntagmatic + grammatical. This is the most common type of description found in the systemic literature, and it is carried out by assigning words or phrases to the grammatical classes available in systems. Such classes form a structure, which in systemic terms means

Table 1 Theme analysis

You	*feed*	*him*
THEME	RHEME	

"an organic configuration of elements, which we can analyze in functional terms" (Halliday & Matthiessen, 2004, p. 39). For example, the clause "you feed him" can be analyzed in terms of Theme (the point of departure for the message) as in Table 1.

Paradigmatic + lexical. This refers to a description in terms of lexical sets, which are formed by words sharing semantic features and similar collocational patterns. The semantic relations between the words in the set are generally synonymy, antonymy, meronymy, and hyponymy. For instance, "jacaranda," "pine" and "sequoia" form a lexical set of trees (by means of hyponymy), where "tree" is the superordinate and the other words are its hyponyms (types of tree).

Paradigmatic + grammatical. This involves spelling out whole systems and showing what features of those systems were available and among these which were actually realized. This is exemplified by the analysis of transitivity by Hasan, presented above.

One important element of lexicogrammar is how frequent a particular feature is. According to Halliday (2002, p. xv), "a system is made up not simply of 'either m or n' but of 'either m or n with a certain probability attached'." In other words, in systemics language is seen as a probabilistic system, and thus, in analyzing lexicogrammar, the frequency of linguistic units should be taken into account.

A number of studies have looked at the relative frequency of choices in systems. Halliday (Halliday, 1992, p. 65) described a wide range of English systems, such as polarity, based on the 18 million words of the first COBUILD corpus, and found out its probabilities are 90% positive and 10% negative (represented as positive $_{0.9}$ / negative $_{0.1}$). Matthiessen (2006, p. 137) calculated the probabilities of several English systems in corpora. For the system of transitivity, he identified the following probabilities for process types (rounded off): material $_{0.37}$ / relational $_{0.38}$ / mental $_{0.11}$ / verbal $_{0.09}$ / behavioral $_{0.04}$ / existential $_{0.02}$.

Corpus Linguistics

CL is naturally concerned with lexicogrammar, as corpus linguists deal with lexis, grammar, and the relationship between the two as a matter of course in their analyses of corpus data. By contrast to SFL, in CL lexicogrammar is normally approached from the lexis, or to use the systemic terminology, it is usually of the lexical syntagmatic kind. There are many different terms in CL to characterize lexicogrammar, including collocation, colligation, phraseology, lexical pattern, chunk, lexical bundle, formulaic language, and multiword units among others. The field is so diverse that it is difficult to talk about it in terms of key concepts. Rather, it is more appropriate to present a summary of key works that deal with the issue.

John Sinclair, considered by many the founder of modern-day CL, is the main proponent of a lexical approach to lexicogrammar. He does not use the term itself, and is actually very critical of the systemic-functional view of it, because according to him "lexis was assigned the role of picking up the scraps from the tables of syntax." (Sinclair, Jones, & Daley, 1970/2004, p. 15). He prefers the term "lexical grammar" to describe his lexis-driven approach, since lexicogrammar "does not integrate the two types of pattern as its name might suggest—it is fundamentally grammar with a certain amount of attention to lexical

patterns within the grammatical frameworks" (Sinclair, 1990/2004, p. 164). He concludes that "it is not in any sense an attempt to build together a grammar and lexis on an equal basis" (p. 164).

Hunston and Francis (2000, p. 251) also argue against the lexicogrammatical cline proposed by systemicists. According to them, even though it is technically possible to start from lexis in such a view, in practice this is not the case, because the very idea of an underlying system network where lexis is the end point implies directionality, from grammar to lexis. That is, the systemic lexicogrammatical cline always implies the primacy of grammatical systems and the subsequent downgrading of lexis to a secondary role.

In reply, Halliday (2008) referred to the "lexicologist's dream," that is, the desire to extend the "lexicological method to the 'grammar' end" (p. 33), thus reducing "all the 'grammar' to a part of the lexis" (p. 31), as when grammatical words such as "the," "of," and "that" are treated as ordinary dictionary entries.

John Sinclair wrote extensively on the way that corpus evidence blurs the distinction between lexis and grammar and on the need to start linguistic analysis afresh from the word. In his chapter entitled "The meeting of lexis and grammar" (Sinclair, 1991), where he offers an account of the word "of," he challenged the view that this word should be treated as a regular preposition. He noted that it is frequently used in noun groups rather than prepositional phrases, and by looking at evidence from a corpus, he found that most cases of "of" involved noun phrases where, contrary to grammar, the head noun was the second one. He then classified nouns in categories such as focus (e.g., "the middle of a sheet," where the first noun specifies some part of the second) and support (e.g., "the notion of machine intelligence," where N1 offers some kind of support to the meaning of N2). He found it troubling that "the word which is by far the commonest member of its class . . . is not normally used in the structure which is by far the commonest structure for the class" (p. 83), i.e., prepositional phrase or adjunct. He proposed that very frequent words such as "of" "are so unlike the others that they should be considered as unique, one-member word classes" (p. 83), and advocated that "the one-member class is the place where grammar and lexis join" (p. 83). That is, the distinction between lexis and grammar would have become so blurred that it was no longer possible to consider these two levels as independent.

Susan Hunston and Gill Francis (2000) present a corpus-driven approach to grammar whose outcome is a lexical grammar containing a large inventory of lexicogrammatical patterns. They started from the coding that lexicographers working on the COBUILD English dictionary assigned to every entry, then ran concordances for these words, and upon examining the evidence provided by them, categorized the verbs, nouns, and adjectives into patterns. A pattern was defined as "a phraseology frequently associated with (a sense of) a word, particularly in terms of the prepositions, groups, and clauses that follow the word" (p. 3). They saw patterns and lexis as "mutually dependent, in that each pattern occurs with a restricted set of lexical items, and each lexical item occurs with a restricted set of patterns" (p. 3). To illustrate, the previous example sentence "she scattered her clothes all over the place" realizes the pattern "V n *over* n" (Francis & Hunston, 1996, p. 417), a case of a verb followed by an object and adjunct. At the same time, this use of "scatter" falls into the "throw group" of verbs, together with others such as "hurl," "throw," and "toss." The verbs in this group all relate to "making something move away from you, often with force" (p. 315).

Douglas Biber has looked at a wide array of lexicogrammatical units. In Biber, Conrad, and Reppen (1998, p. 84) lexicogrammar was defined as "associations between words and grammatical structures," and it is argued that such patterns can be used to differentiate between apparently synonymous words or grammatical structures. For instance, the authors showed that "begin" and "start" could be differentiated in terms of their valency patterns:

the former is typically used in the transitive pattern "begin + to-clause" in fiction and in intransitive patterns in academic genres, whereas the latter is usually found in intransitive patterns. They also looked at the patterns of use of two nearly equivalent grammatical constructions, namely "that-clauses" and "to-clauses." Their results indicated two different sets of verbs occurring with each one of these complement clauses: for "that-clauses," the most frequent verbs are "think," "say," "know," "see," and "show"; for "to-clauses," they are "want," "like," "seem," "tend," and "appear." Biber has also worked at length on lexical bundles, i.e., "combinations of words that in fact recur most commonly in a given register" (Biber, Johansson, Leech, Conrad, & Finegan, 1999, p. 992), and categorized them in terms of their grammar, such as "personal pronoun + lexical phrase" ("I don't know what"), "*wh*-question fragments" ("where did you get") and "anticipatory it + verb phrase/adjective phrase" ("it is possible to") (pp. 1001–24).

Michael Hoey has investigated the relationship between lexis and grammar from several angles, and proposed the concept of lexical priming to explain why certain words prefer or avoid particular lexical, grammatical, textual, and pragmatic associations (Hoey, 2005). According to him, individual language users build mental profiles of words as they encounter them, consisting of the patterns in which these words were more frequently met. As a result, some patterns become "primed" (ready to be used) by particular individual users in particular situations. Colligation is one of the manifestations of lexical priming, and is redefined as "the grammatical company a word or word sequence keeps (or avoids keeping) . . . , the grammatical functions preferred or avoided by the group in which [it] participates, [or] the place in a sequence that [it] prefers (or avoids)" (p. 43). He analyzed the colligation of each of a group of related nouns. In terms of their predilections, "consequence" and "use" were typically part of adjunct; "preference" and "aversion," part of object; and "question" was attracted to both subjects and objects equally. With respect to their aversion, "consequence" shunned objects; "preference," "aversion," and "use" complement position; and "question" showed no particular avoidance among these categories. He concluded that their patterns could not be deduced from their prior semantics or grammar.

To conclude, the separation between lexis and grammar has been one of the cornerstones of linguistic scholarship, being incarnated in the dictionary and grammar, the two main reference points for language study. However, systemic functional linguistics and corpus linguistics, each in its own way, reunite these two levels, and despite some divergence, advocate the uninterrupted continuity between and/or fusion of lexis and grammar.

SEE ALSO: Lexical Bundles and Grammar; Lexical Priming; Pattern Grammar; Systemic Functional Linguistics

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Lexicography Across Languages

YUKIO TONO

Most lexicographical theory and practice is based on the analysis of a first language (L1), but lexicography can be extended to the realm of "across languages," and is then called bilingual or multilingual lexicography. It is an area of particular relevance for language learners and translators. This entry will focus on a particular aspect of multilingual lexicography: how technology has affected the innovations of dictionary making involving more than one language. (For a more general introduction on bilingual dictionaries, see Svensén, 2009.) I will begin by briefly reviewing some basic concepts and then discuss technological advances and related issues in lexicography across languages. Finally, some recent innovations in bilingual lexicography will be described (with a special emphasis on the use of corpora) in relation to second language (L2) vocabulary learning studies and user needs/skills research.

Basic Concepts of Lexicography Across Languages

Before we can say much about the technology of lexicography across languages, there are a few concepts and terms that we need to clarify. Bilingual dictionaries specify, for words and expressions in the *source* or native language (L1), their equivalents in the *target* language, that is, another language that is not native for the user (L2). As in the case of monolingual dictionaries, these dictionaries can be used in two directionally opposite ways: *encoding* and *decoding*. Encoding is the process of putting a sequence of words into a sentence (or a paragraph or a discourse) in order to convey meanings. Decoding is the opposite process. Therefore, there are two different types of bilingual dictionary:

- an L2–L1 *reception/translation* dictionary (for understanding L2 text), and
- an L1–L2 *production/translation* dictionary (for producing L2 text).

Mono- or *unidirectional* dictionaries usually contain a single text in which the target language is explained in the source language; but some dictionaries have two sets of texts and work both ways (i.e., L2–L1 and L1–L2), and are called *bidirectional* in the sense that both groups of language speakers, whether L1 or L2, can use them in either direction for either purpose (encoding or decoding).

Another important distinction is between *bilingual* and *bilingualized* dictionaries. Bilingual lexicography traditionally involves the translation of monolingual dictionaries (or databases). Thus it is common for major dictionary publishers to have various bilingual versions of their monolingual dictionaries published in foreign countries. In such cases, they usually provide a database or framework for the target language dictionary entries, which contain all the information relevant to the creation of a dictionary in the target language (i.e., monolingual format), and local publishers will only add translations (the process technically called "transfer"; Atkins & Rundell, 2008, p. 465) to the necessary entries. In countries where bilingual lexicography is relatively slow in development, so-called *bilingualized* dictionaries are popular; these are basically monolingual dictionaries in their original

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format with minimum semantic glosses in the native language alongside each definition. In countries where bilingual lexicography is more fully developed, mere translation of monolingual dictionaries is not appreciated, and a complete bilingual framework will be used in order to produce original bilingual dictionaries.

There are some issues specific to bilingual lexicography. For example, the transfer between monolingual and bilingual entries involves problems of mapping lexical items between the two languages. We try to work out a balance between the "reality" as it is perceived in the two cultures and the words in the languages which describe it (Duval, 2008). Total equivalence cannot be achieved in most cases, and lexicographers resort to a near-equivalent or a gloss to fill the semantic gap of direct translations. In other cases, it is also possible to supplement the direct translation by using usage notes. All these devices need careful planning and guidance for lexicographers. This practice of translation "transfers" can also be applied to grammar, labels, and illustrative examples.

While major monolingual learners' dictionaries (e.g., the *Longman Dictionary of Contemporary English*) already draw attention to frequency variation in speech and writing, bilingual dictionaries have a further role: They have to deal with the problem of choosing the right translation equivalents whose frequencies are almost equal to the source language items in the same registers. This is often a difficult task, but would be very important for those who create subtitles for movies or TV dramas, or for translators of speeches made by government ministers and other VIPs. In practice, bilingual lexicographers sometimes deliberately ignore this aspect of variation, especially those who work with learners' dictionaries. Teachers are still conservative and prefer formal translation equivalents to informal, impolite expressions. They often think it is not appropriate to list offensive words in the entries.

Technological Advances and Issues in Lexicography Across Languages

While many bilingual dictionary projects are still based on translation within a monolingual framework, there are some interesting technological advances that are changing the way bilingual/multilingual dictionaries are being made. Three of them will be discussed here; (a) bilingual lexicon acquisition from parallel corpora; (b) the integration of parallel text databases into electronic dictionaries; and (c) multilingual, multimodal dictionary portals.

Semi-Automatic Identification of a Parallel Terminology

The information explosion of the Internet has made bilingual texts increasingly available. It is now possible to use translation pairs found in such texts for the automatic compilation of a bilingual lexicon. Matsumoto and Utsuro (2000) give a basic overview of this process: A pair of bilingual texts, which are translations of each other, is prepared. The texts will be *aligned* in the sense that there is an order-preserving mapping between sentences in parallel texts. Then the texts will go through a series of preprocessing steps, including (a) lemmatization/segmentation (mapping surface word forms to the underlying base forms), (b) part-of-speech (POS) tagging (assigning word class tags to each word), (c) shallow-parsing/noun phrase (NP) recognition (identifying and marking NP chunks), and (d) parsing/bracketing (analyzing syntactic or dependency structures). The processed bilingual texts will then be compared and analyzed by computer, using various heuristics such as machine readable dictionary (MRD), cognate, POS, or positional heuristics, in order to determine translation pairs. For instance, it is more likely that two sentences are translations of each other if they share the same linguistic features, such as lexical items identified as translation equivalents shown in MRD. Translation pairs could be simply single

words, but may also be larger units such as NOs, collocations, and dependency structures (i.e., structures showing dependency relations between the words in a sentence). So far, most of the attempts at bilingual lexicon construction using parallel texts have concentrated on the correspondence between words or NPs, and significant progress has been made in the extraction of word-/NP-level translation lexicons (see Matsumoto & Utsuro, 2000, for further detail). There are already many such bilingual terminological dictionaries semi-automatically created using the technologies described above (e.g., the *Japanese–English Dictionary of Technical Terms*; CJK Dictionary Institute, 2009).

Integration of Parallel Text Databases Into Electronic Dictionaries

Major online dictionaries (e.g., The Free Dictionary.com, www.thefreedictionary.com, or Dictionary.com, http://dictionary.reference.com) are usually based on unabridged monolingual dictionaries such as the *Random House English Dictionary* or the *American Heritage English Dictionary.* If bilingual functions are available, in many cases (e.g., FREELANG Dictionary, www.freelang.net) they provide only bidirectional word lists and little other information. In this respect, Eijiro (for the Web version, see www.alc.co.jp) is unique. It has developed a hybrid resource that combines ordinary electronic dictionaries with parallel text databases. Its entry structure, too, is unique: Instead of having a traditional dictionary entry format, each piece of information, whether it is a word, phrase, or example, has independent entry status, and everything is in parallel in English and Japanese. Thousands of hard-to-translate phrases, proper names, and compounds are collected and put into the database. As the number of entries has reached 1.8 million, Eijiro can serve as both a bilingual dictionary and a bilingual parallel text database, which plugs the gap in collocational information that exists in current bilingual dictionaries.

Multilingual, Multimodal Dictionary Portals

The advent of Internet technologies has improved the design of online dictionaries radically. Lexicool.com (www.lexicool.com), a directory of online bilingual and multilingual dictionaries, has links to over 7,000 dictionaries and glossaries. The English dictionary section has more than 60 languages as target languages and each language page has further links to hundreds of dictionaries (e.g., 1,201 for German, 1,799 for French, and 197 for Japanese, as of February 2010). Recent trends are the crossover of dictionary entries and various other contents related to the search words. For example, WordReference.com (www.wordreference.com) has more than 10 different bilingual dictionaries (English–Spanish/French/Italian/German/Russian/Polish/ Romanian/Turkish/Chinese/Japanese/ Korean/Arabic, etc.), many of which can be searched bidirectionally. If the English word *flower* is searched in English–French dictionaries, the results show several different types of lexicographic information: (a) the entry from the *Concise Oxford-Hachette English–French Dictionary*, (b) the other headwords that contain *flower* in the definitions, (c) example sentences from English–French translation pairs that contain the word *flower*, and (d) compound forms (e.g., *basket flower*, *flower arrangement*, *flower show*, etc.). The site searches information across different dictionary sets and provides summaries of the output.

The very notion of what a dictionary is has been changing since the advent of the Internet. Dictionary portals such as WordReference.com expand their offerings by incorporating various online resources and information related to the search words that users key in. The advantages of the social networking potential of the Internet add even greater extra value to these sites. In addition to general lexicographic information for the search word, WordReference.com provides links to Internet forums among translators, in which people discuss how to translate various expressions related to the search word in both the source and target language. The discussions and comments in these forums can prove very helpful

in solving problems that individual translators may be facing. In addition, WordReference.com links to many other languages, along with Google search results (see also http://translate.google.com), and images related to the search word.

Although bilingual lexicography has benefited from the technological advances described above, several issues remain to be resolved. First, although automatic extraction of bilingual lexicons is relatively easy for fixed technical terms, translation of literary texts or imaginative writings is still extremely difficult. Cultural, stylistic, and rhetorical factors affect the choice of appropriate translation equivalents in these domains, and it is still up to the skills of individual human translators or lexicographers to choose the right equivalents. Second, while online dictionaries such as Eijiro or WordReference.com are extremely useful, there is always a chance of information overload. Users can be overwhelmed by the mass of information returned from the query. Only skilled users can make full sense of the results, and the reference acts of less skilled users tend to be very limited and problematical, because they only look for the information shown at the very top of query results. Third, we should always observe carefully the balance between cost and quality. As Web resources grow rapidly and a growing number of open-ended free dictionary sites (e.g., Wiktionary, http://en.wiktionary.org) become available, there is a genuine concern among professional lexicographers that the quality of the contents of the free dictionaries is not as high as that of commercial ones. While Wikipedia offers "facts" about the world, Wiktionary offers "word meanings" of a word. Writing an encyclopedia entry requires profound knowledge about the subject in question, but any serious enthusiast or hobbyist may have sufficient knowledge to write an acceptable entry. Writing a dictionary entry, however, requires more professional expertise, as it takes years of training and experience in analyzing and creating word meanings to write good definitions. Wiktionary contributors are likely to have varying levels of such expertise.

Recent Innovations in Bilingual Learners' Dictionaries

While all approaches to bilingual lexicography are based on Atkins and Rundell's (2008) three steps (*analysis*, *transfer*, and *synthesis*), various new ideas have been introduced and tried out in an effort to make dictionaries more user-friendly. Here we will discuss three topics: (a) corpus-informed descriptions, (b) integration of vocabulary learning strategies, and (c) user needs/skills research.

Corpus-Informed Descriptions

Since the publication of the *COBUILD English Dictionary* in 1987, the use of corpora has been popular, especially in pedagogical lexicography. Major monolingual learners' dictionaries now provide detailed information about the frequency of the common words in their respective headword lists. Collocations or chunks taken from corpora are often shown as useful expressions. Example sentences are either selected from corpora or rewritten from the corpus evidence (Rundell, 1998). Cobb (2003) even suggested that actual concordance lines could be displayed in corpus-based electronic dictionaries. In Japan, a pocket electronic dictionary manufactured by SEIKO Instruments Inc. (SII) in 2004, for the first time in the world, made the *COBUILD English Dictionary* available with an additional 500-million-word "WordBank," the actual corpus data from the Bank of English.

For specific target learners, the use of learner corpora (corpora of L2 learners' speech or writing) is found to be effective (Tono, 2009). While some monolingual learners' dictionaries (e.g., the *Longman Dictionary of Contemporary English*, *Longman's Essential Activator*, the *Cambridge Advanced Learner's Dictionary*) have used learner corpora for their "common learner error" notes or columns, it has been found that specific learner groups are particularly prone to

specific patterns of error. If the aim of a dictionary is to serve the needs of particular target user groups, it is desirable to incorporate the information on common errors made by learners of specific L1 backgrounds. As the *Cambridge Learner's Dictionary* was once semi-bilingualized in Japan, the editor on the Japanese team investigated the Japanese learners' subcorpora in the Cambridge Learner Corpus and added extra columns on learner errors specific to Japanese learners of English. Such localization is necessary in order to make bilingual versions more useful.

Second, there is a growing awareness that usage notes in pedagogical dictionaries should take into account the developmental aspects of L2 learner proficiency. For this, a corpus of L2 learners' speech or writing, called a learner corpus, is useful. One of the special features of learner corpora is "error tagging," which annotates different types of learner errors (Granger, 2003). By using error-tagged learner corpora, we can extract frequency information on different error types, which will contribute to the analysis of learner language and how to provide pedagogical support for overcoming errors. Most "common learner error" notes in monolingual dictionaries are based on the analysis of the writing of relatively advanced learners. An analysis of a corpus of L2 learners of specific L1 background (Tono, 2009) has shown that there is a relationship between particular error patterns and stages of acquisition. For example, verb morphology errors are more common for beginning and intermediate-stage learners, while lexical choice errors are observed more commonly in advanced learners' writing. Therefore, it is desirable to provide different types of "common error" notes for different levels of users. Findings based on the analysis of target-user L2 learner corpora should be an integral part of usage descriptions in bilingual learner dictionaries.

Another interesting application of corpora in bilingual lexicography is a corpus-based dictionary of synonyms (Tono, 2005). This dictionary contains about 200 Japanese entries, each of which have three to five English translation equivalents. For example, the Japanese word *kashikoi* can be translated as 'clever', 'intelligent', or 'wise'. The problem is that Japanese learners of English often find it difficult to use these English words in a proper way. Typical dictionaries of synonyms list all these and explain the differences in meanings with some illustrative examples. This kind of metalinguistic explanation is not always helpful, often giving learners the extra burden of having to understand the metalanguage. Tono (2005) took a totally opposite approach. By showing the most typical collocations for those three words, the dictionary enables users to compare the usages of similar words and figure out how to use them in different contexts. The following are the lists of five collocates for the three English adjectives, using a measure of strength of association called log-log scores, based on the British National Corpus:

clever + noun	*intelligent* + noun	*wise* + noun
1) girl	1) being	1) precaution
2) boy	2) man	2) man
3) trick	3) network	3) counsel
4) man	4) people	4) decision
5) idea	5) woman	5) woman

A comparison between the synonyms shows that the word *clever* tends to collocate with younger people (e.g., *girl* and *boy*) and that it also has some connotations of being slightly dishonest (e.g., *trick*). The word *intelligent*, on the other hand, can collocate with people in general who have a high level of mental ability and also systems that can work like human beings. The word *wise* typically collocates with actions such as *precaution* or *decision*, implying good, sensible judgments. Some overlaps among the collocates for the three English synonyms above indicate that there are some meanings shared across the

three, whereas different collocations highlight semantic as well as usage differences among them. A list of collocation patterns alongside summary usage notes will greatly enhance learners' understanding of the usage of the synonyms.

Integration of L2 Vocabulary Learning Strategies

As research into L2 vocabulary learning processes and strategies increases, there is a growing awareness that insights from such research fields should enrich dictionary design. The results of corpus studies show that there are some distinct characteristics in the way vocabulary behaves in language use. For example, the most frequent 100 words will cover approximately 65–7% of spoken data, and in most texts around 80% or more of the words are from the most frequent 2,000 word families. In casual conversation, over 90% of the words tend to be from this range of words (Nation, 2008). Therefore, it would be useful for learners to be aware of the relative importance of the words that they encounter in a dictionary.

Editors of bilingual learners' dictionaries have begun integrating information on the degree of relative communicative utility of lexical items into their dictionary designs. In the *Ace Crown English–Japanese Dictionary* (Tono, 2008), for example, two-page special columns called "Focus Pages" are prepared for the most frequent 100 headwords, representing 25 major lexical verbs and function words (auxiliaries, prepositions, conjunctions, and *wh*-words). Each special column focuses on essential information about a headword, such as its core image (usually accompanied by illustrations), meaning maps (semantic relationship among the senses), corpus-based information such as the most salient syntactic patterns, collocation patterns, and some illustrative examples from English textbook corpora as well as native speaker corpora. While this kind of information has been available sporadically in monolingual learners' dictionaries, few highlight the features in a comprehensible manner in order to encourage users to acquire deep vocabulary knowledge for these entries. The *Ace Crown* takes special care to focus on verb patterns, polysemous entries, and collocation knowledge, which are all supplied with corpus frequency ranking information. Learners can visually see how much knowledge has to be acquired to have productive knowledge of the given headword.

The dictionary also shows clear distinctions between the most frequent 2,000 words and the next top 3,000 words, whose entries are marked in asterisks and in red. Additional information useful for productive purposes is supplied for the top 2,000 words, while the entries for the next 3,000 most frequent words show essential information for receptive purposes only. All the rest of the approximately 50,000 entries have Japanese translation equivalents only, which is meant to communicate to users that those are the words that they do not have to memorize or learn in depth, but can look up in a dictionary whenever they are encountered. This kind of distinction between active and passive vocabulary has not been clearly made in learners' dictionaries until recently, because dictionaries serve multiple purposes for multiple groups of users. However, if the target user group is clear, learners' dictionaries should support the vocabulary learning process of users, and specify exactly what vocabulary knowledge users need for that level, and for what purpose.

User Needs/Skills Research

User needs/skills research is also an important area in lexicography. Dictionaries are the primary (and sometimes only) tools that learners turn to to solve almost every language difficulty, and thus should ideally be a comprehensive, one-stop resource. In reality, however, it is impossible to predict all the questions that users will ask of their dictionary, so we need to take a pragmatic view: "A realistic goal is to meet the needs of most users most of the time" (Atkins & Rundell, 2008, p. 32). Recently, lexicography across languages has gone

in two different directions. One is to aim at inclusiveness, providing "everything" that potential users might look for. Online dictionary sites like Eijiro or WordReference.com are such cases. They do not gear their contents toward specific types of users. Instead, they include as much information as possible, not only lexicographical but also encyclopedic and sociolinguistic, and it is up to the users to get what they want. Since there is virtually no space limit, owing to the use of digital technology, this trend will continue until somebody questions the value of such masses of information and restructures the information categories.

Another direction is to make dictionaries more and more specialized. This is again linked to the development of the Internet, and a most striking difference from 10 years ago is that nowadays more and more free terminological dictionary sites are available. The GLOSSARIST portal site (www.glossarist.com) has more than 20,000 glossaries and topical dictionaries (both monolingual and bilingual), many of which are developed by professionals or translators working in that particular field. The problem is that they are mainly compiled for professional reference or research purposes, and are usually neither systematic nor exhaustive. Thus, from a user perspective, there must be some kind of criteria for evaluating and filtering those sites. It might be useful to establish a consortium to recommend a list of evaluation criteria to guide the creation of such sites in order to standardize some of the information contents. Despite their varied nature, such specialized sites are updated constantly, and new terms are added quickly, so they are invaluable resources for those who know what to look for.

Conclusion

Increasing numbers and types of bilingual and multilingual dictionary have become widely available since the development of the Internet. It might be good to exploit the power of Internet social networking tools to allow everyone to get involved in dictionary making (see, for example, an early attempt by Cobb, 1999). However, as is the case with wiki lexicographers, this needs careful quality control. Having said that, in theory, the transfer of information across languages has inherent linguistic and cultural difficulties, which will never be perfectly solved even in the Internet age. It is hoped that multimodal and multimedia presentations of dictionary contents and the combination of several layers of information from different dictionary sources might improve the situation. In particular, an encoding or production dictionary that allows users to start from the source language and end up producing the target language correctly and accurately for the task at hand is still an unrealized goal. This is one of the least researched areas, and awaits further investigation and actual products.

SEE ALSO: Bilingual Lexicography; Corpus Linguistics: Overview; Technology and Terminology; Technology and Translation; Terminology and Data Encoding; Traditional Approaches to Monolingual Lexicography

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Lexicography in Non-European Languages

D. J. PRINSLOO

Introduction

Lexicography in non-European languages presents interesting challenges, some of which are illustrated in this overview of dictionary compilation for the Bantu languages, mainly from a South African perspective but equally applicable to Bantu lexicography on the continent of Africa as a whole. The focus will be on corpora, lexicographic traditions, lemmatization strategies, lemmatization approaches, and the influence of trends and changes in practical and theoretical lexicography on Bantu lexicography. It will be argued that Bantu-language lexicography reflects a complex interplay of factors ranging from finance, infrastructure, skills, and dictionary culture to problematic aspects of lemmatization (the selection of headwords).

The Bantu Languages

The Bantu languages are spoken in the entire southern half of Africa, from Cameroon, Congo, Uganda, and Kenya southward to South Africa. Maho (1999, p. 18), with reference to Hinnebusch (1989), estimates the total number of Bantu languages at between 300 and 600. Bantu languages have a common structure (Guthrie, 1970) and are characterized by a number of salient features, such as a nominal class system according to which nouns are subclassified into different noun classes.

Dictionaries and Dictionary Users

Generally speaking, the availability of dictionaries for Bantu languages varies from none for a specific language to one or more and even several which are unfortunately often outdated or out of print. Furthermore, Gouws (1990, p. 55) points out that the majority of these dictionaries do not reflect a high lexicographic achievement. Gouws (2007, p. 314), however, says that a shift has taken place from externally motivated compilation of dictionaries, for example by missionaries, to an internal drive by mother-tongue speakers of the languages to take responsibility for the compilation of dictionaries. Sincere efforts are made to improve the quality of dictionaries through entrepreneurial efforts and also through governmental initiatives. As far as the latter are concerned, South Africa has 11 government-funded National Lexicography Units, one for each of its 11 official languages, of which 9 are Bantu languages.

For the whole of Africa, it can be argued that the speakers of Bantu languages generally lack a dictionary culture. Atkins (1998, p. 3) remarks: "The speakers of African languages have not in their formative years had access to dictionaries of the richness and complexity of those currently available for European languages. They have not had the chance to internalize the structure and objectives of a good dictionary, monolingual, bilingual or

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Dictionaries				Users		
▶ ▶ ▶ ▶	▶ ▶ ▶ ▶	▶ ▶ ▶ ▶	▼ ▼ ▼	◀ ◀ ◀ ◀	◀ ◀ ◀ ◀	◀ ◀ ◀ ◀
Bad/useless dictionary or no dictionaries available	Dictionary of relatively low lexicographic achievement	Dictionary of relatively high lexicographic achievement	▼ ▼ ▼ **Perfect dictionary and ideal user** ▲ ▲ ▲	Relatively good dictionary using skills	Relatively poor dictionary using skills	Pre-dictionary-culture environment
▶ ▶ ▶ ▶	▶ ▶ ▶ ▶	▶ ▶ ▶ ▶	▲ ▲ ▲	◀ ◀ ◀ ◀	◀ ◀ ◀ ◀	◀ ◀ ◀ ◀

Figure 1 Toward the perfect dictionary and the ideal user (Gouws & Prinsloo, 2005, p. 42)

trilingual." Thus in principle the challenge is on the one hand to improve the dictionaries and on the other to improve the dictionary users. Gouws and Prinsloo (2005) summarize the ultimate goal as the urge to compile ideal dictionaries for ideal users, as schematically illustrated in Figure 1.

Traditional Approach

What is referred to, for lack of a better term, as the traditional approach is a situation in which a dictionary compiler adds words to the dictionary as he or she encounters them. Snyman (1990) honestly admits that words can be absent from a dictionary simply because they did not cross the compiler's path. The traditional approach obviously calls for some kind of selection strategy for inclusion or omission of lemmas (headwords) in dictionaries. De Schryver and Prinsloo (2000a) highlight a number of inconsistencies in Bantu dictionaries resulting from the lack of a proper selection strategy in dictionaries compiled in the traditional way.

Paradigm Approach

Bantu verbs are characterized by numerous verbal derivations resulting from hundreds of possible combinations of the verbal root with one or more suffixes. Dictionaries such as Ziervogel and Mokgokong's (1985) *Comprehensive Northern Sotho Dictionary* are known for their laborious efforts to enter all of these derived forms, which can, in Van Wyk's terms (1995, p. 87), number more than 4,000 for a single verb stem. Compare a selection from the *Comprehensive Northern Sotho Dictionary* for the verb *gorulla* 'lick out completely' in (1). This approach is referred to by critics as the *enter-them-all-syndrome*.

(1) **(–gorullêla, –gorullêtše, –gorullêlwa, –gorullétšwe)** appl.; **kgórúllelo, (n–)/di–(kgorullêllô)** man. dev.; **mogórúlledi, ba– (mogorullêdi)** pers. dev.; ***GÓRÚLLELANA* (–gorullêlana, –gorullêlane, –gorullêlanwa, –gorullêlanwe)** appl. rec.; **bagórúllelani (bagorullêlani)** pers. dev.; **kgórúllelano, (n–/di–(kgorullêlanô)** man. dev.; ***GÓRÚLLI ŠA* (–gorulliša, –gorullišitšê, –gorullišwa, –gorullišitšwê)** caus.; **kgórúllišo, (n–)/di– (kgorullišó)** man. dev.; **mogórúlliši, ba–** pers. dev.

Rule-Oriented Approach

Probably in reaction to the deficiencies in the paradigm approach, dictionary compilers such as Van Wyk in *Pukuntšu* (Kriel & Van Wyk, 1989) followed a so-called *rule-oriented* approach by deliberately limiting lemmatization, especially the treatment (process of giving information such as meaning) of derivations. This was done by lemmatizing stem forms only, and by giving sets of derivation rules which, if applied correctly, should at least guide the user to the stem form from where he or she can start the process of finding the meaning of the derived word. Compare a typical look-up rule for a noun and a verb.

	Begin on:	**Look up under:**	**Example:**	**Under:**
Noun:	*ba-*	*mo-*	*banna*	*monna*
Verb:	*ik-/nk-*	*k-* or vowel after *k-*	*ikagela/nkagela*	*aga*

Corpus-Based Approach

An electronic corpus is a collection of texts, for example millions of words from newspaper texts or a number of books, available in electronic format, that can be manipulated by so-called corpus query programs such as WordSmith Tools (Scott, 1999). The corpus era dawned upon Bantu-language lexicography at a time when dictionary compilation for most Bantu languages was still in its infancy. For the Bantu-language lexicographer this was yet another factor that had to be considered as an aid to creating better dictionaries. De Schryver and Prinsloo (2000a, 2000b) give detailed discussions on how the utilization of electronic corpora can enhance the quality of dictionary compilation. They argue that frequency lists calculated from corpora can prevent the accidental omission of words most likely to be looked for by the user of the dictionary. On the other hand, such lists can help the lexicographer decide on the omission of lemmas that are unlikely to be looked for by the target users, for example in the process of revising an existing dictionary. Corpora are indispensable as an aid to sense distinction, selection of examples, collocations, idioms, proverbs, and so forth, through the study of key words in context, commonly referred to as concordance lines. Table 1 gives concordance lines for the Sepedi verb *gagaba* 'crawl, sail'.

Table 1 Concordance lines for *gagaba* 'crawl, sail'

o bona selo se sesehla se	gagaba	go tšwa ngwakwaneng wa wona, mme se so
alosa ka moka ditaba go tloga mathomong a	**gagaba**	natšo ka lenaneo go fihla go tša lehono.
be di robega mekolo – go sepela e le go	**gagaba**	fase ka dimpa. Hee, go bona motho mmele
Go go kgala ke seo se ntokedego, Go	**gagaba**	ka mpa se makale Ke kotlo
e fetile kgauswi le Kgarebo le Motšhitšhi e	**gagaba**	ka lebelo. Ba e lebeletše go fihlela

Stem Versus Word Tradition

Bantu languages reflect two orthographic traditions: a conjunctive way of writing words and a disjunctive way. The Sotho languages have a very disjunctive way of writing—that is, words and concords are written separately, as in (2a)—while the Nguni languages, such as isiZulu, isiXhosa, and Siswati, have a conjunctive orthography—that is, writing linguistic units as words, as in (2b).

(2) a. **Sepedi**: Ba a di reka
b. **IsiZulu**: Bayazithenga

Ba	a	di	reka
Ba	ya	zi	thenga
Subject concord Class 2	Present tense marker	Object concord Class 10	Verb stem

A word tradition of lemmatization developed for the disjunctively written languages and a stem tradition for the conjunctively written ones. A perception that stem lemmatization is somewhat superior to word lemmatization has resulted in a number of dictionaries of disjunctively written languages also being compiled on a stem principle. Van Wyk (1995) strongly condemns this perception and is supported by Prinsloo and De Schryver (1999) and Gouws and Prinsloo (2005), who point out that the stem approach is not only user-unfriendly but also unnecessarily introduces difficulties regarding stem identification in disjunctively written languages.

Lemmatization Strategies

There is no tension between the stem and word traditions in respect of the lemmatization of verbs. Lexicographers of conjunctively as well as disjunctively written languages agree that stem lemmatization is the best option. Tension, however, does exist between the word and the stem traditions in respect of the lemmatization of nouns.

Lemmatizing Noun Stems

Lemmatizing noun stems requires identification of the stem, which in many cases can be problematic to the user. So, for example, the user who wants to look up the isiZulu word *njengomuntu* 'like a human being' will have to identify the stem *-ntu* before being able to look it up in a stem dictionary.

Lemmatizing Singular Noun Forms

Lemmatizing only singular forms of nouns substantially combats redundancy but is heavily dependent on the application of sets of rules to enable users to look up plural forms of nouns, by first changing them to the singular and then looking up the meaning of the singular forms. This is problematic to inexperienced users because the rules do not always apply straightforwardly.

Lemmatizing Singular and Plural Noun Forms

Lemmatizing singular and plural forms is user-friendly, especially for the inexperienced learners. However, redundancy becomes a factor, especially in dictionaries that offer treatment of both the singular and plural form.

Rulers Designed From Corpora

Prinsloo and De Schryver (2002, 2005, 2007) and Prinsloo (2004) have designed so-called lexicographic rulers from alphabetical lists generated from corpora for the regulation and measurement of alphabetical stretches. These rulers are designed according to the generally accepted fact that the numbers of lemmas in different alphabetical categories are not the same. In English dictionaries many words are treated in the categories A, B, D, M, R, C, and S, while categories, such as J, K, Q, U, V, X, Y, and Z are relatively small, and fill only

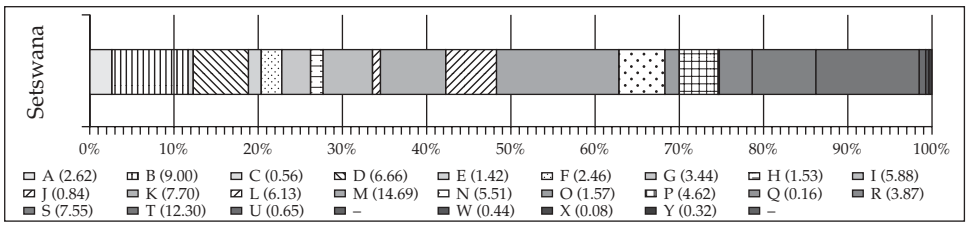

Figure 2 A ruler for Setswana

a few pages in the dictionary. In Setswana roughly 17% of all words fall under the single category M, while categories such as (C), J, (Q), U, V, W, X, Y, and Z are virtually empty. Consider the ruler for Setswana reflecting the balance between alphabetical categories in Figure 2.

Developments in Theoretical Lexicography

Bantu-language dictionary compilation has also been influenced by developments in theoretical lexicography. The emphasis on the user perspective, especially on the compilation of very user-friendly dictionaries, urges the lexicographer not only to include lemmas most likely to be looked for but also to lemmatize them in such a way that the user can easily find them, and finally to present the information in a way that the users can easily understand and use in speech or in creative writing. Modern dictionaries are regarded as good or bad by their users and not as products of linguistic achievement. Three specific eras in the past few decades in respect of lexicographic focus can be distinguished. In the 1970s there was a strong emphasis on the linguistic content of dictionaries, while in the 1980s and 1990s the focus was more on the structure of dictionaries, and currently the focus is on the specific functions that a dictionary has to fulfill.

Dictionary Writing Systems

The computer era enabled dictionary compilers in Africa not only to store data collections electronically but also to use computers for the actual compilation of dictionaries. Word-processing software such as Microsoft Word or open-source word processors is widely used. Dictionary writing systems such as IDM and TLex offer more sophisticated tools for dictionary compilation, and the use of TLex especially is rapidly increasing in Africa.

Affordability of Bantu-Language Dictionaries

Affordability of dictionaries is a major problem in Africa. Dictionaries are caught up in a triangulation of number of lemmas versus exhaustiveness of treatment versus price. The compiler can include either a large number (e.g., 20,000–30,000) of lemmas with limited (e.g., 1–2 lines double column) treatment, or a limited number (e.g., 10,000) of lemmas with more exhaustive (e.g., 5–7 lines) treatment. The suggested price of the dictionary should not exceed R100 (€10 or US$15). This has serious implications for users who want to use their dictionaries to produce speech and texts in Bantu or in English. A dictionary containing only 5,000 lemmas on the English–Sepedi and 5,000 lemmas on the Sepedi–English side is in principle suitable for productive use, but the user is frustrated by not finding words that occur with a lower frequency.

Electronic Dictionaries

As in the case of corpora, it could also be argued that the electronic era dawned upon Bantu-language lexicography at a time when the goal of compiling dictionaries of a high lexicographic standard had not been attained. In many cases, answering the call for electronic dictionaries resulted in "putting paper dictionaries on computer" instead of designing true electronic dictionaries in their own right. Internet searches for online dictionaries of Bantu languages reflect quite a number that vary greatly in terms of scope, size, information provided, exhaustiveness of treatment, lemmatization strategies, access structures, and degrees of the utilization of true electronic features. A major shortcoming in most of the dictionaries is that they are very small and often offer not much more than translated word lists. Not much progress has been made in terms of the utilization of the virtues of the electronic medium, such as the great capacity and speed characteristic of electronic products, combined with enhanced query and data-retrieval technology. And not much is exhibited in terms of innovative features characteristic of online dictionaries for the major languages of the world such as English, German, and French, for example pop-up access, bringing together of related items, new routes to the data, less dependency on alphabetical order, fuzzy spelling, intelligent extrapolation of characters keyed in, audible pronunciation, and so forth.

New Approaches to the Compilation of Bantu Dictionaries

A number of innovative approaches to dictionary compilation for Bantu languages exist, of which two will briefly be discussed.

An Unbalanced, Balanced Design for an English–Setswana Dictionary

A new English and Setswana dictionary design for learners with mother-tongue Setswana who wish to empower themselves in English aims at guidance on text and speech production in English and reception (understanding) of English text and speech. Taken at face value, this dictionary is unbalanced, in the sense that it has 15,000 English lemmas with relatively short treatment of each lemma in the English–Setswana side but only 10,000 Setswana lemmas on the Setswana–English side. The Setswana lemmas are, however, extensively treated. Both sections of the dictionary help the target users to empower themselves in English. Given the high number of English lemmas on the English–Setswana side, the users are likely to find the English words that they do not know the meaning of. As for producing their own texts, they find detailed information in the Setswana–English side on how to speak and write in English. The smaller number of Setswana lemmas, but with more exhaustive treatment, in the first section of the dictionary balances out in terms of number of pages with the second section, where more English lemmas are included but with more limited treatment. Furthermore, 10,000 Setswana lemmas cover more than 90% of the Setswana language and 15,000 lemmas roughly 95% of English—thus near equality of coverage, irrespective of a 33% difference in the number of lemmas, is achieved. So a fairly balanced end product results from an imbalanced design.

Dictionaries With Amalgamated Lemma Lists for Bantu

The concept of a single amalgamated lemma list for a dictionary of Afrikaans and Dutch (Martin & Gouws, 2000) inspired a viability study for amalgamated lemma lists for the three Sotho languages and the four Nguni languages. Prinsloo (2006) performed a viability study for a Sotho dictionary with an amalgamated lemma list for Sepedi, Setswana, and

Sesotho. Consider the following sample entries according to this new design (Prinsloo, 2006, p. 202).

rain *n.* pula
motho *n.* a person, a human being
his *pp.* gagwe [SsL/Set], hae [Ses]
live *v.* phela [Ses/SsL], tshela [Set] ~ **(survive)** phela [Set]

The lemmas *rain* and *motho* as well as their translations are identical and a single entry is therefore sufficient for all three languages. The lemma *his* is translated as *gagwe* in Sepedi and Setswana but as *hae* in Sesotho—thus they are marked as such with the subscripts [SsL/Set] and [Ses] respectively. A similar initiative has been undertaken for a Nguni dictionary.

Future Prospects

Bantu-language lexicography should persevere in the compilation of dictionaries of a high lexicographic standard. Sincere efforts should be made to establish a stronger dictionary culture and training in dictionary-using skills. Compilers should be sensitive to developments in lexicography in the rest of the world, especially in respect of the development of sophisticated lexicographic tools and software such as rulers, Word Sketches (Kilgarriff, Rychlý, Smrz, & Tugwell, 2004), Wordnets, Framenet, GDEX, and so forth. Probably the most exciting recent innovation is the Dante project (Convery et al., 2010), which, in the terms of its self-description, offers "a comprehensive launchpad for bilingual dictionaries with English as the source language." It is "a resource for improved word sense disambiguation, the creation or enhancement of online lexicons, and other uses in software applications such as machine assisted translation, information retrieval systems, etc." (Convery et al., 2010, p. 293).

Bantu lexicography should also maximally utilize the major strengths of the electronic medium, such as speed and data-storage capacity, enabling the design and use of true electronic features and enhanced access structures. These features should be used to solve problems that cannot be solved in paper dictionaries. Most of these problems are rooted in the complicated grammatical structure of the Bantu languages and are related to difficulties in respect of stem identification of words.

It is expected that the future power of corpora for lexicographic purposes will lie in the existence of advanced corpus query programs capable of processing vast quantities of data and of rendering user-friendly outputs. It is believed that the contribution of the corpus of the future depends on the extent to which *comprehensive behavioral patterns of words* can be studied, compiled, and presented to lexicographers in a condensed but user-friendly, machine-readable format.

Conclusion

From the previous discussion it is clear that Bantu lexicography has a long way to go to be on a par with, for example, European or American lexicography in terms of the quality of dictionaries and the sophistication of their users. Bantu-language lexicography not only has to develop from dictionaries of low lexicographic achievement to a high lexicographic standard, it also has to consider all the influencing factors and developments in general lexicography, as well as solving its own unique problems in terms of lexicographic traditions, lack of standardization, and lemmatization. It also has to adapt to the electronic era in a timely way. Best practices have to be combined in the compilation of dictionaries.

SEE ALSO: Bilingual Lexicography; Monolingual Lexicography; Traditional Approaches to Monolingual Lexicography

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Lexicostatistics and Glottochronology

APRIL MCMAHON AND ROBERT MCMAHON

Lexicostatistics and glottochronology are connected methods which use vocabulary to make historical inferences about relationships between languages. Although some authors, for example Campbell (2004, p. 201) and Fox (1995, pp. 279–80), suggest that these terms designate the same method, others, like Millar (2007, p. 459), Embleton (2000, p. 145), Joseph and Janda (2003, p. 173), and McMahon and McMahon (2005, pp. 178–9), argue that it is vital to keep the two separate, for two reasons. First, while lexicostatistics and glottochronology start from the same data, glottochronology makes additional hypotheses about the dating of earlier stages of languages. Second, lexicostatistics has been shown to be reliable and helpful in some circumstances, whereas there are serious challenges to glottochronology, so grouping them together risks rejecting a good method by association with a bad one. We therefore consider lexicostatistics first and independently, and then move on to glottochronology as a possible (and problematic) application of lexicostatistics.

Lexicostatistics as it has normally been practiced is not exactly statistical, but it is based on counting, and provides a numerical estimate of the relative similarity of languages or varieties. Technically, any quantitative method working with words could properly be called lexicostatistics, including methods used to detect relatedness between languages. However, the best-known investigations bearing this name have involved languages which are already known to be related, where linguists are trying to construct or support subgroups within a family tree.

Lexicostatistics is most commonly linked with Morris Swadesh's construction of basic vocabulary lists in the 1950s (Swadesh, 1952, 1955). Swadesh's meaning lists, typically found in 100- and 200-item versions, were intended to include a range of concepts common to all human societies which are learned early in a family setting and used frequently. These factors mean basic vocabulary is relatively resistant to replacement by borrowing, and hence arguably provides a stable and reliable indicator of the family affiliation of a language, even when its speakers have been in extensive contact with other groups. Basic vocabulary is not immune to borrowing—Embleton (1986, p. 141) finds 12 loans from French into English and 19 from Danish into Faroese for the Swadesh 200-meaning list. However, borrowing is likely to occur at a lower rate in these more "protected" areas of the lexicon, involving for instance names for body parts, small numerals, personal pronouns, kinship terms, simple verbs, and core color terms. McMahon and McMahon (2005, pp. 36–9) provide a history and overview of Swadesh lists, and the 100-word list is given here for illustration in Table 1.

Classical lexicostatistical methodology starts by choosing a basic vocabulary list: This means weighing up the relative advantages of more information in the 200-meaning list against the greater chances of borrowing where the list is longer. For example, Kessler (2001, p. 70) suggests that German and English share 74% cognates over the 100-word list but 59% over the 200-word list; for French and Latin, the figures are 66% versus 56%, and for German and Latin, 38% versus 29%. It must be remembered that historical linguists do not always have much choice about their data. If we are working with modern languages, we can go out and ask speakers; if we have plentiful written texts, we can construct corpora and provide convincing evidence that the item we are slotting into a meaning list

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Table 1 The Swadesh 100-item list

all	ashes	bark	belly	big
bird	bite	black	blood	bone
breast	burn	claw	cloud	cold
come	die	dog	drink	dry
ear	earth	eat	egg	eye
fat	feather	fire	fish	fly
foot	full	give	good	green
hair	hand	head	hear	heart
horn	I	kill	knee	know
leaf	lie	liver	long	louse
man	many	meat	moon	mountain
mouth	name	neck	new	night
nose	not	one	person	rain
red	road	root	round	sand
say	see	seed	sit	skin
sleep	small	smoke	stand	star
stone	sun	swim	tail	that
this	thou	tongue	tooth	tree
two	walk	warm	water	we
what	white	who	woman	yellow

is the appropriate one. However, if all we have for a language no longer spoken is a series of short inscriptions, or a few place- and personal names, then our list for comparison will necessarily be short, and selected by circumstances beyond our control.

Once we have provided a normal, everyday equivalent for the meaning at a particular slot in the list (so, *dog* rather than *hound* for the meaning 'dog', even if including *hound* might be ever so tempting given its similarity to German *Hund*), the next step is to determine which of the languages under comparison share cognates, or words descended from a common ancestral root. Thus, for the 'dog' slot, comparing German *hound* and Dutch *hond* will score one point; similarly, French *chien* is cognate with Italian *cane*; but there will be a score of zero for Dutch compared with Italian, or French with German, or English 'dog' with any of the above. The same comparison, assessing where there are cognates, is then conducted for the whole list. For every pair of languages in the analysis a lexicostatistical percentage can then be calculated as the number of slots with shared cognate items relative to the number of filled slots in both lists. Using this method we can identify, or confirm, a Romance branch within Indo-European, containing French and Italian; and a Germanic branch containing German, Dutch, and English, within which German and Dutch are closer to one another than either is to English.

Lexicostatistics, however, is not without its difficulties. First, what historical linguists really need, arguably, is less a way of sorting out relative closeness of relationship, where relatedness itself is already fairly clear, than a method that can evaluate how likely two languages are to be related at all. Any method based on cognates requires a prior assessment of which items actually are cognate; this in turn means lexicostatistics is based on the comparative method (Durie & Ross, 1996; Harrison, 2003; McMahon & McMahon, 2005, 1.2). Any concerns over the validity of that method will in turn apply to lexicostatistics.

Furthermore, there are objections to focusing only on the vocabulary, as lexicostatistics clearly does, rather than taking an overview of data from different levels of the grammar, as this may give only a partial picture of the language. There are also challenges to the

concept of a universal basic vocabulary list—Swadesh himself (1952, p. 457) accepted that "it would be impossible to devise a list which works perfectly for all languages." If only a small number of items in a large list do not work for a particular language, then omitting these will not do substantial damage; but there have been suggestions of broader difficulties. For instance, where there are several translation equivalents, there is no very clear guidance (beyond opting for a normal, everyday word) to help us decide which to choose; and both *little* and *small* in English are quite normal, everyday words and could fill the same slot in the Swadesh list. Lack of universality might also argue for variant lists appropriate for different parts of the linguistic world: amended lists are proposed by Matisoff (1978, 2000) for Southeast Asia, by McMahon, Heggarty, McMahon, & Slaska (2005) for the Andes, and by Alpher and Nash (1999) for Australia. The choice is between having lists which are more reliable for a specific area, and allowing maximum comparability across all the languages of the world.

Finally, we face a difficulty discussed in detail by McMahon and McMahon (2005) and McMahon et al. (2005), namely that languages may appear to share cognates which in fact reflect historical borrowing from one of those languages (or its relative) into the other. This is not in itself a flaw in lexicostatistics, but does require us to work toward reliable methods for detecting borrowings, which can then be removed from consideration without skewing results.

Lexicostatistics has been used fairly widely (though it is by no means universally accepted—see Dixon, 1997, pp. 35–6) and continues to be developed (see Starostin, 2000, and for a historical perspective, Embleton, 2000). However, its derivative, glottochronology, a focus of research during the 1950s and 1960s, has subsequently been substantially discredited. Glottochronology begins where lexicostatistics stops, namely with a calculation of similarity based on a particular cognate list. In lexicostatistics, higher scores for comparisons over the same list argue for grouping languages together into subfamilies, and therefore support particular family trees. However, glottochronology seeks not only to construct such trees, but to put dates on the branching points; not only to provide some evidence for German and Dutch having come from a common ancestor more recently than the one they both share with English, but to date the point when that common ancestor stopped being a single protolanguage, and began being German and Dutch respectively.

There are many problematic assumptions even in this initial description, not least the idea that languages diverge suddenly, rather than slowly drifting apart over what might be centuries of continued contact and intermingling. One can certainly understand the interest in providing dates for family trees, which allows comparison between language data and evidence from other disciplines. Swadesh (1950, 1955, 1971) and Lees (1953) take their cue from the development of carbon-14 dating in archaeology, where the gradual reduction of radioactive carbon 14 relative to normal carbon in organic material can be modeled by a decay equation; this allows a date to be proposed for the time when the organic material (whether plant or animal) was alive. The key, however, is that carbon 14 decays at a constant rate; and this idea only transfers to historical linguistics successfully if we can identify an aspect of language which also does so. Swadesh and Lees assumed that this is true of basic vocabulary, and proposed an equation deriving the time depth in millennia since two languages separated from the percentage of remaining cognates and the "glottochronological constant." This constant, of 81% cognate retention per millennium, was defined by Lees (1953) through a comparison of 13 pairs of control languages (though Swadesh modified this to 86% for the 100-meaning list). Using Swadesh's modified calculation, a pair of languages sharing 70% cognates diverged around 1,180 years ago, while 20% remaining cognates would signal divergence about 5,560 years ago.

Glottochronology has been much discussed (for general overviews see Fox, 1995; Campbell, 2004; McMahon & McMahon, 2005, chap. 7; Millar, 2007), but the main problem

is that, when we compare its results to dates from known historical events, it simply does not work. We calculate dates for the divergence of Italian and French of AD 1586, and of 1575 for German and Dutch, for example. Bergsland and Vogt (1962) demonstrate that Old Norse and Modern Icelandic, with 96% cognates, should have split only 258 years ago, while East Greenlandic Eskimo has a much higher turnover of vocabulary because of taboo, and would be estimated as having a much longer history. These difficulties rest on the assumption that any element of language changes at a constant rate, independent of social factors: In fact, by far the largest role in determining rates of change appears to rest with factors as difficult to measure as speaker attitudes, relative conservativeness of societies, and prevalence of contact.

The idea of developing methods for dating splits in family trees, glottochronology itself aside, remains attractive, though still debated. For example, Gray and Atkinson (2003) tested alternative datings for Proto-Indo-European using the Bayesian Markov chain Monte-Carlo simulation method recently developed in biological phylogenetics. This probability-based approach smoothes out variation in rates down individual language branches in order to generate a family of trees and can provide robust, if approximate, dating for the language family and its sub-branches, although not for individual languages. On the other hand, McMahon and McMahon (2006) raise serious concerns for the prospect of developing general dating mechanisms for language, mainly due to the intrinsically unpredictable balance between internally motivated change and contact. Furthermore, recent work by Atkinson, Meade, Venditti, Greenhill, & Pagel (2008) suggests that language change may well proceed in punctuational mode, with more concentrated periods of change around split points; this would argue against any capacity to date through an assumption of temporal regularity of change. (See http://carlin.lib.ed.ac.uk:2209/cgi/data/319/5863/588/DC1/1 for supplementary material.)

Lexicostatistics, in the meantime, continues to be explored and developed in several ways. One question is whether Swadesh lists can be divided into sublists which might behave somewhat differently, to allow more precise calculation or prediction of patterns of change. For example, McMahon et al. (2005) identify sublists which are more or less susceptible to borrowing, and argue that the effects of contact can therefore be used to improve our understanding of language history, rather than representing an obstacle to comparison. Pagel, Atkinson, and Mead (2007) in turn propose that differential rates of change within a basic vocabulary list reflect the frequency of use of the items in question. There is also a trend toward combining lexical with phonological or morphosyntactic data to test hypotheses of language relatedness, as in recent work on Papuan languages (Dunn, Terrill, Reesink, Foley, & Levinson, 2005; Dunn, Foley, Levinson, Reesink, & Terrill, 2007), though the specific case is problematic (Donohue & Musgrave, 2007). Finally, important innovations relate not only to methodology, but also to constructing databases and making comparable data more readily available, as in the Austronesian Basic Vocabulary Database project (Greenhill, Blust, & Gray 2008; see also http://language.psy.auckland.ac.nz/austronesian), which in June 2010 contained material from 664 languages. Developing protocols for sharing data can only assist in testing and comparing methods, which in turn will bring us closer to agreed ways of evaluating the relatedness of languages.

SEE ALSO: Cognates; Language Evolution: Pidgins, and Creoles; Lexical Borrowing; Quantitative Methods

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Lexis: Overview

BRENT WOLTER

Lexis is a growing field, and one that has clearly found a permanent place in applied linguistics. If there is a common thread that runs through current thinking in lexical research in applied linguistics, it is that vocabulary can never fully be understood through approaches that view it as isolated words with isolated (and isolatable) meanings. Instead most vocabulary researchers view lexis (which is often used interchangeably with the term vocabulary in the research literature) as interacting with other aspects of language (perhaps most notably grammar) in complex, systematic, and meaningful ways. In fact, it has often been observed that when one approaches language description from a lexical perspective, the division between lexis and grammar breaks down to the point where it becomes difficult to tell where one begins and the other ends. Similarly, words almost always have a non-negligible impact on their lexical environment; the selection of a certain word influences, to a considerable extent, what other words are likely to occur nearby in a given text. Finally (and also relatedly), meanings are fluid; they change based on the lexical environment in which they occur.

Like many other foci of investigation in applied linguistics, the study of lexis has been approached from multiple perspectives and for multiple purposes. Nonetheless, studies investigating lexis can be broadly classified into three main areas. These areas were astutely identified by Norbert Schmitt and Michael McCarthy in their edited volume entitled *Vocabulary: Description, Acquisition, and Pedagogy* (Schmitt & McCarthy, 1997). With some minor modifications, these areas can accommodate the entries in this section as well. It is important to bear in mind, however, that classification of a particular entry in a specific area simply indicates the main focus of the research on that topic to date. Most of the entries included in the lexis section of this encyclopedia could be approached from all three perspectives, and current research in many entries already straddles more than one area.

Description

One of the most historical and fundamental objectives in the study of lexis is identifying what, exactly, words are. This has been the goal of lexicographers, lexicologists, and philosophers for generations, and is captured in the entries on TRADITIONAL APPROACHES TO MONOLINGUAL LEXICOGRAPHY and BILINGUAL LEXICOGRAPHY. It is also a main goal of LEXICAL SEMANTICS, though lexical semanticists make much more explicit links between description and the psychological aspects of word knowledge. Two entries describe more recent approaches to lexicography: the COBUILD PROJECT, which explains a corpus-based approach to lexicography, and WORDNET which is an electronic dictionary that groups words according to semantic similarity. The TERM BANKS entry explains the practical application of lexicography in business, industry, and other commercial ventures, while the entry on ONOMASTICS explains the history and origin of proper names. Two entries present brief accounts of highly influential figures in lexicography. These include the entry on JOHNSON, SAMUEL AND LEXICOGRAPHY and the entry on WEBSTER AND AMERICAN LEXICOGRAPHY. In COMPOUND WORDS the author explains the phenomenon of lexical compounding, whereas

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the entry on LEXICAL GAPS explains the phenomenon of nonwords in a language. LEXICAL BORROWING explains the process by which language users borrow vocabulary from other languages.

Other entries in this section are dedicated to explaining how lexis functions above and beyond its traditional classification as semantic meaning to incorporate a variety of aspects. These include the entry on DEPTH OF VOCABULARY KNOWLEDGE, which outlines current work developing from Nation's (1990, 2001) highly influential descriptions of what it means to "know" a word, and the entry on FORMULAIC SEQUENCES, which arguably comprises the most comprehensive account to date of how language systems might emerge primarily from lexically based input. It also includes the entry on LEXICAL COLLOCATIONS which provides accounts for the phenomenon by which conventionalized multiword strings come to take on a single meaning. This, as it turns out, was one of the most important early observations that led to the emergence of lexis as a main area of research in applied linguistics (e.g., Firth, 1957; Halliday, 1966; Sinclair, 1991).

The remaining entries in this section are on lexical erosion, lexicostatistics and glottochronology, and Zipf's law and vocabulary. LEXICAL EROSION explains the mechanisms underlying (and implications of) language loss. LEXICOSTATISTICS AND GLOTTOCHRONOLOGY explains two vocabulary-based methodologies used by historical linguists to make assumptions about the relatedness of languages. Finally, in ZIPF'S LAW AND VOCABULARY the author discusses the observations that were brought to light by George Zipf regarding the dynamics existing between a word's rank in a text and the word's frequency.

Teaching, Learning, and Assessment

The entries in this section are concerned with a wide range of practical aspects regarding the teaching, learning, and assessment of vocabulary. Two in particular, APPROACHES TO SECOND LANGUAGE VOCABULARY TEACHING and MYTHS ABOUT VOCABULARY LEARNING, discuss current and historic pedagogical approaches to vocabulary. The LEXICAL SYLLABUS entry looks specifically at one attempt to develop a comprehensive language-teaching program with vocabulary at its core. Three entries discuss the rationale and procedures used to define a particular subset of vocabulary for instructional purposes. These include the entries on BASIC ENGLISH, CORE VOCABULARY, and SPECIAL PURPOSES VOCABULARY.

The second major grouping of entries in this section concerns vocabulary learning. SECOND LANGUAGE WORD DIFFICULTY explains what aspects of individual words make them more (or less) difficult to learn. The entries on VOCABULARY LEARNING STRATEGIES, DICTIONARY USE, and MNEMONICS all discuss the means by which learners can improve their ability to gain vocabulary knowledge in a second language. Similarly, the entry on WEB-BASED LEXICAL RESOURCES outlines a broad range of current online sources available to learners who wish to enhance their vocabulary skills. The entry on INCIDENTAL VOCABULARY ACQUISITION explains the process by which vocabulary learning occurs despite it not being the primary focus of the activity at hand. This phenomenon is further explained in the entry on VOCABULARY AND READING, along with a detailed account of the complex (often reciprocal) interplay between vocabulary learning and reading ability.

The last major grouping in this section contains entries that are concerned in some way with vocabulary assessment. The entry entitled CONVENTIONAL METHODS FOR ASSESSING VOCABULARY provides a broad overview of the numerous ways in which second language vocabulary knowledge is currently being assessed, both in teaching and research environments. Some of these means of assessment are explained in greater detail in the entries on

LEXICAL FREQUENCY PROFILES and MEASURES OF LEXICAL RICHNESS, both of which discuss analytical tools that can either be used to evaluate learners' productive language use or to evaluate the complexity of existing "real-world" texts. Finally, the entry on MACARTHUR–BATES COMMUNICATIVE DEVELOPMENT INVENTORIES explains vocabulary-based assessment tools for evaluating linguistic development in children.

Acquisition, Access, and Storage

The final grouping consists of entries related to the acquisition, access, and storage of vocabulary knowledge. More briefly, these entries deal with vocabulary at a psychological level. Two entries provide broad overviews: PSYCHOLINGUISTIC APPROACHES TO VOCABULARY discusses the key issues in psycholinguistic research into vocabulary, while BRAIN IMAGING STUDIES AND VOCABULARY summarizes the main findings of the growing body of neurophysiological research into vocabulary. Two complementary entries, FIRST LANGUAGE VOCABULARY ACQUISITION and VOCABULARY ACQUISITION IN BILINGUALS, look at how words are acquired in a first language versus a second language, while the entries on VOCABULARY LOSS IN THE FIRST LANGUAGE and SECOND LANGUAGE VOCABULARY ATTRITION discuss the converse situation.

There are several entries that look in greater detail at finer aspects of acquisition, access, and storage. Two entries discuss how first language vocabulary knowledge influences the acquisition and processing of second language vocabulary: LEXICAL TRANSFER AND FIRST LANGUAGE EFFECTS and COGNATES. From a storage perspective, there are again complementary entries, this time on VOCABULARY SIZE IN THE FIRST LANGUAGE and VOCABULARY SIZE IN A SECOND LANGUAGE. There are also three entries that discuss modeling in psycholinguistic vocabulary research. FORMAL MODELS OF BILINGUAL LEXICONS provides an overview of models of lexical storage and lexical processing, the latter of which is discussed at greater length in the entry on FORMAL MODELS OF BILINGUAL SPEECH PRODUCTION. The third entry that takes modeling as a starting point is on the topic of SPOKEN WORD RECOGNITION.

Finally, there are two entries that deal primarily with methodological aspects of psycholinguistic research into vocabulary. In addition to explaining what word association research can tell us about lexical storage, the entry on WORD ASSOCIATIONS also explains several methodological issues that researchers need to take into account when conducting associational research. The other entry in this grouping describes considerations underlying the creation of IMAGINARY WORDS, which are frequently used in psycholinguistic studies that measure response times to stimuli (such as a lexical decision task).

Conclusion

The entries included in this section represent a broad sampling of the work being done in lexis. In addition to entries dealing with L2 lexical research, efforts were also made to include entries that explain areas of emphasis in L1 research circles. This was done not only in an effort to be comprehensive, but also in an effort to provide an important theoretical backdrop for the current state and scope of L2 lexical research. Though admittedly incomplete, it is hoped that the sampling of entries included in this section will provide researchers and teachers with good entry points into some of the main areas of research in this vast and rapidly expanding field of applied linguistics.

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Liaison Interpreting

MARIACHIARA RUSSO

Interpreting is a complex language transfer skill that enables speakers of different languages and cultural backgrounds to communicate orally during what are generally defined as interpreter-mediated events (Alexieva, 1997). Within the framework of interpreting studies a distinction is made between conference interpreting and liaison interpreting.

While conference interpreting is a fairly recent profession (it developed in the early 20th century to meet the needs for consecutive and simultaneous interpreters during multilingual diplomatic negotiations, assemblies of international organizations, and international meetings of experts), liaison interpreting is as old as humankind's first socializing contacts between individuals or neighboring populations speaking different languages. Indeed, the presence of bilingual/bicultural intermediaries has been amply documented in the history of trade, warfare, and religion (Hermann, 1956/2002; Kurz, 1985; Delisle & Woodsworth, 1995). In many countries, however, liaison interpreting is still struggling to be recognized as a full-fledged profession in its own right and to achieve the social or institutional recognition and financial remuneration it deserves. Efforts to enhance the profession and promote theoretical and field research are ongoing as testified by the Critical Link conferences (www.criticallink.org).

The expression "liaison interpreting" refers

> to a growing area of interpreting throughout the world: in business settings, where executives from different cultures and languages meet each other; in meetings between a society's legal, medical, educational and welfare institutions and its immigrants who speak a different language; in relations between a dominant society and indigenous peoples speaking different languages; in a whole host of less formal situations in tourism, education and cultural contacts. (Gentile, Ozolins, & Vasilakakos, 1996, p. 1)

In all these settings, the liaison interpreter is physically present and usually sits in a position that facilitates eye contact and direct interaction between the two interlocutors; she or he may also take down short notes in order to deliver her or his translation after each speaker's turn in a dialogue (consecutive mode). Where required, the interpreter can also whisper the translation of the source message into the addressee's ear while the addressor is speaking (*chuchotage* mode). The liaison interpreter translates in two language directions, that is, from a source language A (for instance, English) into a target language B (for instance, Hurdu) to convey the speaker's message, and then from the source language B (Hurdu) into the target language A (English) to translate the other speaker's reply. The interpreter must therefore have an excellent passive and active knowledge of her or his working language(s) and the relevant specialized terminology, in addition to other nonlinguistic competences described below (see Sandrelli, 2001 for an innovative teaching approach). To help ensure an interpreter-mediated encounter is successful, it is useful to have a preliminary briefing session between the client and the interpreter to discuss the purpose of the meeting and the desired style of interpretation, and to review any materials and terminology that may be used. During this briefing session and in any case before the start of the meeting, the interpreter's role should be made clear (for instance, she or he will

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specify that she or he will translate everything that the speakers say and so they should refrain from saying anything that they do not wish to be reported—the transparency principle; NCIHC, 2001).

Given the wide-ranging variety of working environments and geographical distribution of this profession, liaison interpreting is given different labels (Roy, 1993/2002; Mack, 2005), even within the English-speaking world (Gentile et al., 1996). While "liaison interpreting" is normally accepted as the general term for this profession, as opposed to "conference interpreting," the other terms used are often associated with specific settings. An "ad hoc interpreter" usually refers to someone without formal training who is called upon to interpret ("such as a family member interpreting for her parents, a bilingual staff member pulled away from other duties to interpret, or a self-declared bilingual in a hospital waiting-room"; NCIHC, 2001), while "face-to-face" interpreting stresses the physical presence of a liaison interpreter as opposed to telephone interpreting. Liaison interpreting requested for informal meetings in activities related to trade and tourism is usually referred to as "escort" or "business" interpreting (see, e.g, Pistillo, 2009). The interpreting provided during trials and legal hearings is usually referred to as "court" or "courtroom interpreting" (for a detailed description of the specific features of this profession and its applications see Berk-Seligson, 1990/2002; Mikkelson, 2000).

"Public service interpreting," "three-cornered interpreting," "dialogue interpreting," "contact interpreting," and "community interpreting" are all synonyms referring to interpreting provided for social, legal, and health institutions, such as hospitals, medical centers, schools, police stations, immigration offices, and so forth. To avoid any ambiguity, the term "community interpreting" will be used for liaison interpreting between a service provider and a client (where the former is institutionally required to meet the health-care, welfare, or legal needs of the latter).

The field of operation of a community interpreter is defined as follows by Mikkelson (1996, pp. 126–7, original emphasis): "community interpreters provide services for *residents of a community*, as opposed to diplomats, conference delegates, or professionals traveling abroad to conduct business." The need for community interpreters, which first arose in countries with long-standing immigration traditions such as Great Britain, Australia, and Canada, is now very great in other countries which have recently become a destination for migrants, such as Italy (Russo & Mack, 2005; Rudvin, 2006; Gavioli, 2009) or Spain (Alonso & Baigorri, 2008; Valero Garcés, 2008; Valero Garcés, Lázaro Gutiérrez, & Pena Díaz, 2008). This increasing demand has spurred the growing professionalization of community interpreters worldwide, with the introduction of training programs (Hale, 2007) and accreditation systems (such as the National Accreditation Authority for Translators and Interpreters [NAATI, www.naati.com.au] in Australia), and the development of professional associations with their own codes of ethics and quality standards (Australian Institute of Interpreters and Translators Incorporated [AUSIT, www.ausit.au], National Register for Public Service Interpreters [NRPSI, www.nrpsi.co.uk], National Association of Judiciary Interpreters and Translators [NAJIT, www.najit.org], Associazione Italiana Traduttori e Interpreti [AITI, www.aiti.org], etc.).

A new professional figure has now emerged in community interpreting: the cultural (and linguistic) mediator or broker, who usually shares the cultural background and immigration experience of the member of the ethnic or linguistic minority she or he is interpreting for (Roy, 2002). According to Wadensjö (1998), the term "mediator" highlights the interpreter's status as an active participant or co-primary interlocutor and not just a "conduit" (for a discussion on this popular metaphor see Roy, 2002) or messenger. In this respect, the communicative role of linguistic-cultural mediators and community interpreters coincides, but not necessarily their backgrounds. Based on field research and conversation analysis, Wadensjö (1993/2002) highlights a double role of the community interpreter (the

author actually uses the term "dialogue interpreter," which is its Swedish equivalent, "dialogtolk" or "kontakttolk"; 2002, p. 354): She or he fulfills a relaying role to ensure smooth communication by enabling the two speakers' messages to be conveyed across different languages, and at the same time plays a coordinating role in the communication flow and promotes the progression of ongoing exchange. Wadensjö uses "dialogue interpreting" to emphasize her focus on "the interpreter-in-interaction," rather than on "the individual interpreter": "It has been demonstrated that interpreters' work is primarily structured by their understanding of the situation, the ongoing activity and its logic, and secondly by the task of translation" (Wadensjö, 2008, p. 184). This holds true for all forms of liaison interpreting. On the one hand, as relayer, she or he produces a whole variety of possible message renditions. On the other hand, the author observed that some dialogue interpreters' contributions are not meant to convey any propositional content, but bring to the fore her or his coordinating role. Her or his contribution may be a response to the prior speaker (rather than translating for the other interlocutor) or may be an initiative to encourage the other speaker to respond next. Wadensjö (2002, pp. 364–5) suggested the following taxonomy: implicitly coordinating or gatekeeping contributions, and explicitly coordinating contributions. Instances of the first category are all the interpreter's renditions as relayer: Their greater or lesser faithfulness to the speakers' original utterances implicitly influences the contents and direction of the communicative exchange. Examples of the second category are: (a) responses to the prior speaker in the form of "requests for clarifications or comments on the substance (or form) of the prior speaker's contribution" (2002, p. 365)—since these exchanges occur in one language, the other party is momentarily excluded from the conversation; (b) initiatives to elicit information that one of the two speakers may need by encouraging the person addressed to continue talking; and (c) contributions in the form of meta-comments which provide "an explanation of what the other primary party seems to mean, what the other primary party does not understand [due to possible major cultural differences] or what the other primary party is doing or going to do in the interaction" (p. 365).

The community interpreter's active participation in the communicative interaction ("communicative *pas de trois*"; Wadensjö, 1998) further distinguishes her or him from the conference interpreter, whose visibility and self-projection have only recently been recognized (Straniero Sergio, 1999, 2007; Diriker, 2004). Among the main features that characterize community versus conference interpreting, Angelelli (2000, pp. 582–3) lists

- dialogic mode [conference interpreters mostly interpret monologues];
- equal amount of work into both languages;
- possibility of controlling the traffic flow;
- parties' participation in the communicative event, which may not be optional (e.g., in the case of a patient [while a member of a conference audience may not necessarily take the floor]);
- maximum potential for different backgrounds between parties;
- maximum potential for linguistic varieties of the same code (in both languages); and
- maximum potential for different registers.

Furthermore, the author provides a thorough sociopragmatic analysis of the differences between their respective communicative situations, based on Hymes's (1974) theory of communication.

Another comparative overview is offered by Hale (2007, pp. 31–3), where the author highlights the main differences in terms of register, language directionality, proxemics, mode of delivery, consequences of inaccurate rendition, level of accuracy required, participants, and number of interpreters. In addition to the features not previously highlighted,

the following are worth mentioning: The community interpreter's register ranges from the very formal to the very informal; her or his language direction is bidirectional; she or he acts in close proximity to the speakers, which favors interactivity; the mode of interpreting is mainly short consecutive (in dialogues), long consecutive, simultaneous whispering, and sight translation; the consequences of inaccurate renditions are great and so is the level of accuracy required (court and medical interpreting are self-explanatory examples); participants in the events mostly differ in status; and, finally, community interpreters work alone and not in teams.

Another important feature of the communicative situation in which community interpreters are called upon to interpret is the power asymmetry between the interlocutors. This condition does not usually occur either in conference interpreting or in other forms of liaison interpreting, such as escort or business interpreting. In these cases, interlocutors normally enjoy similar social status and expertise and the main asymmetries interpreters face concern interactional patterns, rhetorical conventions, or trading cultures.

In community settings, on the other hand, there is usually a cultural, hierarchical, and institutional gap between the public officials belonging to the establishment of the host country (doctors, police officers, magistrates, etc.) and the members of the minority group involved in the interaction (migrant patients, asylum seekers, foreign offenders, etc.). The "ideal" interpreter is expected to be impartial and neutral (Schweda-Nicholson, 1994): she or he will convey exactly the same meaning as the original utterance with the same degree of formality and respect (relaying role; Wadensjö, 2002) and will refrain from taking sides with either of the two parties. Over the years, a considerable amount of research has been carried out to verify these two basic tenets of ethical conduct in the interpreter's daily practice. Results show that either consciously (due to issues of ethnic, social, political, cultural, or even gender nature; Gentile et al., 1996) or unconsciously (as evidenced, for instance, in health care through the use of a detached or affiliative language when interpreting; Merlini & Favaron, 2007), community interpreters often behave like advocates of the party considered at a disadvantage (in many countries they are actually "supposed to be actively involved in looking after the rights of the 'weaker' party"; Niska, 2002, p. 134).

Community interpreters (and liaison interpreters in general), as social agents, carry values, knowledge, experience, beliefs, and emotions that are inevitably channeled through the interpretation of the communicative interaction. Certain job settings (legal, medical, etc.) may cause severe psychological stress and tensions, even trauma (Baistow, 2000, quoted in Rudvin, 2002). Neutrality is therefore a concept that needs re-contextualizing in light of a "more dynamic, interactional approach which looks at the community interpreter as an active agent in the construction of 'meaning'" (Rudvin, 2002, p. 217).

"Liaison interpreting," a hypernymic term encompassing all the above-indicated forms of non-conference interpreting, best conveys the truly social and human dimension of interpreting, because interpreters are confronted on a daily basis with challenging issues such as power, advocacy, agency, neutrality, conflict, stress management, reconciliation of cross-cultural differences, and bridge-building strategies. These challenges demand professionalism combined with personal sensitivity, sociocultural competence, and excellent interactional skills. In today's multicultural societies the need for qualified liaison interpreters is on the rise and so is the demand for high-quality training programs.

SEE ALSO: Analysis of Mediated Interaction; Community Interpreting; Health-Care, Medical, and Mental Health Interpreting; Intercultural Communication; Intercultural Competence

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Lightbown, Patsy M.

NINA SPADA

Patsy M. Lightbown is a pioneer in the field of classroom research (CR) on second language (L2) learning and teaching. Her extensive research and publications have had a considerable impact on second language acquisition (SLA) researchers and L2 teachers throughout the world. Her work has not only contributed substantially to the knowledge base in CR, but has served as a model of how to conduct descriptive and quasi-experimental research on classroom SLA. Indeed the intellectual leadership provided by Lightbown has helped to shape the direction of classroom SLA research and has moved the field forward in important and innovative ways.

Born in North Carolina, Lightbown began to learn French in grade 11 and became enthralled with the idea of speaking another language. She went on to complete a BA in French at the University of North Carolina at Greensboro. She spent two years as a public health worker for the US Peace Corps in Niger, West Africa, where she was able to use her French and also learned Hausa. Upon her return to the USA she completed an MAT in French at Yale University and taught French to high school students. In pursuing an MEd in teaching English to speakers of other languages (TESOL) at Columbia University, Teachers College, she came to a crucial turning point in her professional and academic life. She was attending a lecture in first language (L1) acquisition by Lois Bloom, the internationally renowned L1 researcher, and became deeply aware of and fascinated by the complexities and challenges involved in theoretical and empirical work related to language development. This motivated Lightbown to enroll in the PhD program in psycholinguistics at Columbia and, under Bloom's supervision, to begin an apprenticeship as a researcher and scholar in L1 acquisition. At the same time, her experience as an L2 learner and teacher continued to influence the direction of her academic interests and goals. For her PhD thesis she chose to investigate the acquisition of French by both young L1 learners and Anglophone children learning French as an L2. This took her to Montreal, Canada, in 1974 ostensibly for a short period to collect data. For the next 27 years Lightbown remained in Montreal, where she was a professor of applied linguistics at Concordia University. It was during that time that she established herself as one of the world's leading figures in CR in SLA.

Lightbown has produced scores of publications covering a wide range of topics, including but not limited to the role of instruction in SLA, comprehension-based L2 learning, developmental sequences in instructed L2 learning, L2 vocabulary development, two-way bilingual education, developmental readiness and L2 instruction, the role of corrective feedback in classroom L2 learning, the age factor in L2 learning, and L2 learner noticing and awareness. Among her most influential publications are those that discuss the connections between and the relevance of classroom SLA research for L2/foreign language instruction. Two classic examples are her seminal article "Great Expectations: Second Language Acquisition Research and Classroom Teaching," published in 1985 in *Applied Linguistics*, and the update, "Classroom SLA Research and Second Language Teaching," published 15 years later in a special anniversary issue of *Applied Linguistics.* Another notable aspect of Lightbown's publications record is her collaboration with other scholars, including those not directly involved in classroom SLA research. These contributions have brought new

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perspectives from related disciplines and provide useful connections between instructed SLA and other theoretical frameworks. Two examples are "The Influence of Linguistic Theories on Language Acquisition Research," co-authored with Lydia White and published in *Language Learning* in 1987, and "Psycholinguistic Approaches to SLA" co-authored with Norman Segalowitz and published in the *Annual Review of Applied Linguistics* in 1999.

Lightbown has been invited all over the world to speak to researchers, theorists, and pedagogues about her work. The titles of her talks reflect the links she makes between research and classroom practice. A few examples are "What Does Practice Perfect?" "Fair Trade: Two-Way Bilingual Education," and "Something to Talk About: Content-Based Language Teaching." In addition to her international recognition as an accomplished researcher and scholar, Lightbown has been recognized as a gifted teacher. This was formally acknowledged in 2001 when she received the Award for Excellence in Teaching at Concordia University. Her success as an instructor is not restricted to teaching courses to graduate and undergraduate students. She has also excelled in mentoring young researchers. Lightbown's success in obtaining research grants from the Canadian and Quebec governments to carry out large-scale research in English as a second language (ESL) classrooms enabled her to provide a valuable context in which students could develop their research skills. Indeed, several members of the new generation of productive and accomplished scholars in instructed SLA research apprenticed as researchers under her guidance and supervision.

Lightbown is highly regarded as a scholar who communicates with teachers about research in accessible and meaningful ways. Throughout her career she has regularly presented papers at teachers' conferences—a reflection of her strong commitment to maintaining links between research and practice. For several years she organized an annual "teacher-friendly" research session on classroom L2 learning for Quebec's ESL teachers association, the Société pour la promotion de l'enseignement de l'anglais, langue seconde au Québec (SPEAQ). In 1988 she was presented with the SPEAQ Award for "contributions which have had an impact on the entire English (second language) teaching community in Quebec." In a publication intended to make SLA research accessible to classroom teachers Lightbown co-authored *How Languages Are Learned* with Nina Spada in 1993. An expanded and updated third edition was published in 2006. The book provides an introduction to theory and research in L2 learning and relates them to classroom practice. Described as a "sensible book mercifully free of jargon," *How Languages Are Learned* was awarded the Duke of Edinburgh book prize in applied linguistics in 1994 and continues to be used as the standard text in introductory SLA courses throughout the world.

Lightbown has also made significant contributions to service in the field of applied linguistics. She has been a member on the editorial/advisory boards for the major journals in the field as well as the editor of the *TESL Canada Journal*. She was the president of the American Association for Applied Linguistics in 1999–2000 and has been a consultant to ministries of education, universities, school boards, colleges, and government agencies. As one of the founding researchers in classroom SLA, her work continues to inspire and shape the work of researchers and, in the process, continues to help L2 teachers understand the relationship between that research and their classroom practices.

SEE ALSO: Classroom Research; Form-Focused Instruction; Instructed Second Language Acquisition; Role of Instruction in Second Language Acquisition Theories

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Limits of Language Revival

GHIL'AD ZUCKERMANN

What is language revival? In the narrow sense, which is used in this entry, it means the attempt to reclaim a language that is no longer spoken as a mother tongue, for example, Hebrew and Kaurna, the latter being an Aboriginal language in Adelaide, South Australia. The broader meaning of language revival covers many "re-"terms in a continuum based on the extent to which the language being revived is native prior to the revival, for example: renewal (e.g., Ngarrindjeri), revitalization (e.g., Walmajarri), restoration, resurrection, resuscitation, reinvigoration, reintroduction, regenesis, revernacularization, rebirth, and renaissance.

Why should people revive no longer spoken languages? Here are two reasons:

1. *Deontological* reason: Some clinically dead tongues, for example, Australian Aboriginal languages, deserve to be revived for historical and humanistic justice, inter alia addressing inequality. We hear again and again "native title" but where is the "native tongue title"? Is *land* more important than *langue* and (cultural) *lens*?
2. *Utilitarian* reason: Revival of sleeping languages can result in personal, mental, educational, economic, and national empowerment, a sense of pride and higher self-esteem of people, some of whom have lost their heritage and purpose in life.

But is language revival really possible? In other words, what are the limits of language revival? Let us consider "Modern Hebrew" (henceforth, Israeli—see Zuckermann, 1999), the most quoted example of a successful language revival. The genetic classification of Israeli has preoccupied scholars since its fin-de-siècle genesis. The still regnant traditional thesis suggests that Israeli is Semitic: Hebrew *revived*. The revisionist antithesis defines Israeli as Indo-European: Yiddish *relexified*, that is, Yiddish, the revivalists' mother tongue, is the "substratum," while Hebrew is only a "superstratum" providing the vocabulary (see Horvath & Wexler, 1997). According to Zuckermann's (2006, 2008a, 2008b, 2009) *mosaic* (rather than *Mosaic*) synthesis, Israeli is a Semito-European, or Eurasian, hybrid, that is, both Semitic (Afro-Asiatic) and (Indo-) European. It is based simultaneously on "sleeping beauty"/"walking dead" Hebrew, "*máme lóshn*" (mother tongue) Yiddish, both being *primary contributors*, and a plethora of other languages spoken by revivalists, for example Russian, Polish, Ladino (Judeo-Spanish), Arabic, German, and English.

It is hard to provide an exact quantification for such a multivariable enterprise but a rough estimate would be that on a subjective 1–10 scale, with 10 being a complete success, the Hebrew revival is at 6 or 7. More specifically, the following continuum approximations are proposed here for the extent to which Israeli can be considered Hebrew:

- mindset/spirit/genius: 1 (i.e., European);
- discourse (communicative tools, speech acts):1;
- sounds (phonetics and phonology): 2;
- semantics (meaning, associations, connotations, semantic networkings): 3;
- word order (syntax): 3;
- general vocabulary: 5;

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- word formation: 7;
- verbal conjugations: 9;
- basic vocabulary: 10 (i.e., Hebrew).

Thus, to varying degrees, Israeli differs from Hebrew in almost all components of language. Some elements, however, are more revivable than others. Words and conjugations, for example, are easier to revitalize than intonation, discourse, associations, and connotations.

Was the Hebrew revival then a failure? "Everything is relative!" The Hebrew revival cannot be considered a failure *tout court* because without the zealous, obsessive, enthusiastic efforts of the symbolic father of Israeli, Eliezer Ben-Yehuda (born Perlman) and of teachers, writers, poets, journalists, intellectuals, political figures, linguists, and others—that many other Jews at the time saw as fruitless and pointless—Israelis would have spoken a language (such as English, German, Arabic, and Yiddish) that could hardly be considered Hebrew. To call such a hypothetical language "Hebrew" would have not only been misleading but also wrong. To call today's Israeli "Hebrew" may be misleading but not wrong: Multiparental Israeli is based on Hebrew as much as it is based on Yiddish. So although the revivalists could not avoid the *subconscious* influence of their mother tongue(s), they did manage at the same time to consciously revive some components of Hebrew.

Had Arabic-speaking Moroccan Jews arrived in Israel before Yiddish-speaking Ashkenazim, and provided that they had similar national ideology and motivation to those of Ben-Yehuda and his collaborators, the language resulting from their hypothetical revival would have been much more Semitic than Israeli.

Hybridity and the Congruence Principle

The factors leading to the partial failure of the Hebrew revival had little to do with a lack of motivation or zealousness, or with economic or political variables, or even with the fact that the revivalists, such as Ben-Yehuda, were not as linguistically sophisticated as contemporary modern linguists. It is simply the case that one cannot negate one's most recent roots—be they cultural or linguistic—even if one is keen to deny one's parents' and grandparents' (diasporic Yiddish) heritage in search of (Biblical Hebrew) cultural ancientness. It is thus most unlikely that a no longer spoken language can be revived without cross-fertilization from the revivalists' mother tongue(s). For example, most native Israeli-speakers' intonation is much more similar to that of Yiddish, the mother tongue of most revivalists, than to that of Arabic or any other language belonging to the Semitic branch of the Afro-Asiatic family (see Zuckermann, 2005).

According to the "congruence principle," the more revivalists speak contributing languages with a specific linguistic feature, the more likely this feature is to prevail in the emergent language. Based on feature pool statistics, this principle weakens August Schleicher's famous family tree model in historical linguistics, which often gives the wrong impression that every language has only one parent.

For example, "*má nishmà*," the common Israeli "What's up?" greeting, is a calque—loan translation—of the Yiddish phrase "*vos hért zikh*," usually pronounced *vsértsekh* and literally meaning "What's heard?" but actually functioning as a common greeting. However, a Romanian-speaking immigrant to Israel might have used "*má nishmà*" because of Romanian "*ce se aude*," a Polish-speaking Jew because of Polish "*co słychać*," and a Russian speaker due to Что слышпо "*chto slyshno*," all meaning and functioning the same way.

Similarly, most revivalists spoke languages, mainly Yiddish, that lacked that Semitic pharyngeal gulp *ʿayin* (represented, for instance, by the apostrophe in the Christian—actually Jewish—name Ghilʿad). Naturally, their children—the ones who, in fact, shaped the real

character of Israeli—could not buy the argument "Do as I say, don't do as I do!" The result is that most Israelis do not have this sound in their speech.

Not only were the revivalists European but their revivalist campaign was inspired by European—for example, Bulgarian—nationalism. At the time, although territory and language were at the heart of European nationalism, Jews possessed neither a national territory nor a unifying national language. Zionism could be considered a manifestation of European discourses channeled into the Holy Land—compare George Eliot's *Daniel Deronda* (1876).

In *Reversing Language Shift* (henceforth RLS), Fishman (1991, p. 287) argues that RLS efforts often originate from Europe. In the case of Hebrew, he is even more right than he might have thought, not only sociologically—the mindset behind the motivation to revive the language was a reflection of a European nationalism—but also linguistically: the mindset of the emerging language itself is European. The revivalists' attempts to (a) deny their (more recent) roots in search of biblical ancientness; (b) negate diasporism and disown the "weak, persecuted, feminine," exilic Jew; and (c) avoid hybridity (as reflected in Slavonized, Romance/Semitic-influenced, Germanic Yiddish itself, which they despised) could not fully succeed. Ironically, although they have engaged in a campaign for linguistic purity, the emerging Israeli language often mirrors the very scorned syncretism and despised diasporism the revivalists sought to erase.

Lessons From the Promised Land to the Lucky Country

RLS (Fishman, 1991, 2001; Walsh, 2005; Hagège, 2009; Evans, 2010) is of great social benefit. Unfortunately, one of the main findings of the most recent *National Indigenous Languages Survey Report* (2005) was that the situation of Australia's languages is grave (in both senses). Of an original number of at least 250 known Australian indigenous languages, only about 145 indigenous languages are still spoken, and the vast majority of these, about 110, are critically endangered: They are spoken only by small groups of people, mostly over 40 years old.

Eighteen languages are strong in the sense of being spoken by all age groups, but three or four of these are showing some disturbing signs of moving into endangerment. Many other languages are not fully spoken by anybody, but some of their words and phrases are commonly used, and there is community support in some parts of the country for reclamation and heritage learning programmes for such languages: either in reclamation proper (e.g., extensive courses similar to Israel's *ulpaním*) or only in postvernacular maintenance (teaching Aboriginal people some words and concepts related to the dead language—cf. postvernacular Yiddish among secular Jews in the United States—see Shandler, 2005).

What lessons could be drawn from the famous Hebrew revival in the Promised Land for current attempts to resuscitate—as well as to maintain as postvernacular—no longer spoken Aboriginal languages in the Lucky—or is it unlucky—Country?

The fin-de-siècle Hebrew revivalists had several advantages compared with Australian revivalists, for example:

1. Documentation: Unlike Aboriginal languages, which are oral, Hebrew is the language of the Old Testament and the Mishnah.
2. Accessibility: Jews have been exposed to literary Hebrew throughout the generations, for example, when praying in the synagogue.
3. Prestige: Hebrew was considered a prestigious language (as opposed to Yiddish, for instance).

4. Uniqueness: Jews from all over the globe only had Hebrew in common (Aramaic was not as prominent), whereas there are dozens of "sleeping" Aboriginal languages and it would be hard to choose only one unifying tongue, unless one resorts to Aboriginal English. The revival of a single language is much more manageable than that of numerous tongues in varying states of disrepair.
5. National self-determination: Revived Hebrew was aimed to be the language of an envisioned state.
6. Lack of ownership: Unlike in the case of Aboriginal languages (see Walsh, 2002), anybody has the right to speak Hebrew, without getting permission from the Jews.
7. Easy borrowing: Loanwords and foreign words are not considered theft. In fact, Eliezer Ben-Yehuda loved borrowing from Arabic, Aramaic and other Semitic languages.
8. Lack of place restriction: Hebrew could be and was revived all over the globe—consider Haim Leib Hazan's coinage *mishkafáim* "glasses" in 1890 in Grodno (see Zuckermann, 2003, pp. 1–4).
9. Multilingualism: Jewish revivalists were used to multilingualism; Australia by and large is a "monolingual mindset" country.
10. Number: There are many more Jews than Australian Aboriginal people.

And yet, as we have seen, Hebrew revivalists, who wished to speak pure Hebrew, failed in their imprisoning purism prism, the result being a multifaceted and fascinating fin-de-siècle Israeli language, both multilayered and multi-sourced. Therefore it would seem likely that any attempt to revive an Aboriginal language will result in a hybrid, combining components from Australian English, Aboriginal English, the language(s) of the documenters (e.g., German missionaries), living Aboriginal languages, and—of course—the Aboriginal target language. That is of course not to say that we should not revive dormant languages and cultures. On the contrary! Revival activists should be encouraged to be more realistic—and less puristic—about their goals. For example, they should not be discouraged by English loanwords and pronunciation within the emergent language. Furthermore, establishing revival linguistics, a new subdiscipline of linguistics that complements documentary linguistics, crucial linguistic insights ought to be drawn from one revival attempt to another, for example with regard to which components of language are more revivable than others.

There are scholars, for example, Dalby (2003, p. 250), who scoff at some attempts at reviving the use of an endangered language: "This is no longer a language, any more than musicians are speaking Italian when they say *andante* and *fortissimo*. These are simply loanwords used in a special context." A more balanced view is manifested in Crystal's (2000, p. 162) comments on Kaurna [ga:na], the reclaimed language spoken around Adelaide:

> The revived language is not the same as the original language, of course; most obviously, it lacks the breadth of functions which it originally had, and large amounts of old vocabulary are missing. But, as it continues in present-day use, it will develop new functions and new vocabulary, just as any other living language would, and as long as people value it as a true marker of their identity, and are prepared to keep using it, there is no reason to think of it as anything other than a valid system of communication.

Influence from English (Aboriginal or Australian English) on Kaurna is indeed far-reaching. Consider the following:

- At the level of phonology, there are often spelling pronunciations, especially for sequences of *er* (as in *yerlo* and *yerta* for instance), *ur* (as in *purle* or *purlaitye*). The *r* in

these words belongs with the consonant (it should be retroflex) but many times we hear an *er* vowel as in English *slur* or *sir*. The vowel should be /a/ in *yerlo* and *yerta*, and /u/ in *purle* and *purlaitye*. Stress is often placed wrongly on the second syllable instead of the first (Amery, 2000, pp. 121–2; Amery & Rigney, 2004, pp. 2–3);

- At the level of vocabulary, there are often calques—see Amery, 2000, p. 124, as well as chapter 12 *Wodlingga* "In the Home" (pp. 63–70), chapter 15 *Tidnaparndo* "Football" (pp. 81–4) and chapter 16 *Kuya Pirri-wirkindi* "Fishing" (pp. 85–8) in Amery (2007), where a range of calques have been developed—especially evident in the names of AFL football teams such as *Kuinyunda Meyunna* (lit. "sacred men") for the St Kilda Saints. Knowingly—and jocularly—*cricket* (the sport) was replicated as *yertabiritti* (the term for the insect with the same name in English) (Amery, 2003, p. 86);
- Constituent order is free in Kaurna as in other Aboriginal languages, though it tended to be subject–object–verb (SOV). Naturally, there are children and users of Kaurna tending to produce more subject–verb–object (SVO) sentences, replicating English (Amery & Rigney, 2004, p. 5);
- English semantics tends to carry through to Kaurna words (Amery & Rigney, 2004, pp. 5–7);
- The most pervasive influence from English is at the level of discourse. Almost everything said or written is translated from English. Thus, the turn of phrase and the idiom are from English (Amery, 2001a, pp. 190–4; Amery, 2001b; see also Amery & Rigney, 2006).

Some Aboriginal people distinguish between usership and ownership. Consequently, one could find indigenous Australians who do not find it necessary or important to revive their comatose tongue. However, Australia's very own roadside dictum seems more pertinent here: Stop, revive, survive!

Thanks to Dr Michael Walsh, as well as to Shanghai International Studies University (SISU) and Australian Research Council (ARC). This entry is dedicated to the memory of Professor Michael Clyne.

SEE ALSO: Language Planning in Religious Observance; Language Policy and Planning: Overview; Revernacularization and Revitalization of the Hebrew Language; Role of Language and Place in Language Policy; Status Planning

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Linear Unit Grammar

ANNA MAURANEN

Speaking takes place in time. Our immediate experience of it may be something like this:

> wellthatthatthatreallydoesthatdoesgetgetattheideasouncertaintyssometimesseenasthe extremecaseofadiffusesecondorderprobability

This is one speaker's turn in an academic discussion (see Simpson, Briggs, Ovens, & Swales, 2002). While it may look odd at first glance, it probably comes as close to a hearer's experience as a transcript can. As soon as the string is divided up into orthographic words, it begins to look clearer:

> well|that|that|that|really|does|that|does|get|get|at|the|idea|so|uncertaintys|sometimes|seen|as |the|extreme|case|of|diffuse|second|order|probability

The greater familiarity of this format may or may not increase the faithfulness of the representation to a listener's experience. Even though written text is conventionally divided into words separated by spaces, there is no evidence that this corresponds to the way we normally process speech. On the contrary, it seems that a good deal of the time somewhat larger chunks than words are involved. Chunking is one of the two fundamental properties of language that *Linear Unit Grammar* (Sinclair & Mauranen, 2006) is based on. The other is linearity. Both are radical departures from the models of descriptive grammar that linguists are used to seeing.

Linear unit grammar (LUG) is essentially a theoretical model for conceptualizing grammar. At the same time, it reaches out to the practical world to help understand how language works. Above all, it bridges the gap between the way language is experienced and the way it is depicted in grammars. Rather than presenting yet another grammatical description of English, it takes us from the stream of language as it flows into our experience and shows how it connects to the complexities of grammars based on static, frozen language.

Linearity may be more obvious in speech than writing as speaking is temporal, but the spatial linearity of writing is equally important. Grammars, in contrast, are hierarchical. Thus, if language is seen as horizontal, descriptive grammars stand in a vertical relation to it. Grammars incorporate meaning in a paradigmatic way, as a set of mutually exclusive choices, where meaning supposedly derives from the relation of this choice to those that could have been made but were not. LUG presents meaning as the co-selection of constituents, which highlights syntagmatic over paradigmatic relations, and makes do with a minimum of hierarchy.

A clear exception to the tendency of presenting language structure in hierarchical manner is Brazil's *Grammar of Speech* (1995), a landmark in modeling language on a linear basis. More recent syntactic models, like *Dynamic Syntax* by Kempson, Meyer-Viol, and Gabbay (2001) and *Syntactic Carpentry* by O'Grady (2005, 2008), also develop grammatical descriptions that proceed from left to right, but they utilize far more hierarchy than LUG or Brazil's work.

LUG does not seek to replace but to complement traditional grammars, as a bridge between text and grammar. The final output of its analysis is a synthesis that can feed into

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hierarchical grammars; they can furnish more detail in a number of ways, according to the model chosen. The first stages of LUG, in contrast, work on data that is normally inaccessible to other grammars, notably spontaneous speech; yet it is robust enough to embrace written text as well.

LUG works in stages, and the step-by-step manner of analysis is essential to it. In this it departs radically from most grammars, which perform analysis in a single pass. The first step, chunking, is intuitive; the others follow rigorous principles laid down in the model.

This entry outlines the main features of LUG by illustrating them in light of one example from a spoken transcript from the Cambridge and Nottingham Corpus of Discourse in English (CANCODE) corpus (http://www.cambridge.org/elt/corpus/corpora_cancode.htm).

Chunking

The point of departure is the notion of "chunk." It is a pre-theoretical term, and defining it precisely is not even attempted. The chunking process can nevertheless be described and tested, for instance by asking speakers to do chunking (Sinclair & Mauranen, 2006) or by an analysis of tone units (Cheng, Greaves, & Warren, 2008). Both kinds of evidence have yielded high levels of agreement with LUG analysis.

Humans chunk incoming information as part of normal perceptual processes. In this, linguistic information is no different from any other. How large the chunks are and what exactly contributes to their boundaries are less clear. It looks as though boundary marking is complex, and different factors—grammatical, semantic, or cognitive—probably come together to bring about a sense of a "natural" chunk boundary that we seem intuitively to respond to. Plausible linguistic sources are phonological, tonal, and intonational patterning, pausing, syntactic boundaries from sentence to morpheme, phrases, breathing patterns, punctuation marks, and so forth. A likely cognitive source is the limited capacity of working memory, in Miller's (1956) classic model about seven units, plus or minus two. This comes close to the five to seven words that seem the upper limit before a chunk boundary.

The first step in chunking is assigning boundaries—"provisional unit boundaries" (PUBs). It is important to focus attention on boundaries first, and only after they are in place to look inside them. Here is the excerpt illustrating the analysis, without indicating speaker changes at this stage:

> I've not seen them for about a year now they're both still at home living with their mum aren't they I know bit weird family though aren't they very very strange strange old world I know it's like I see his mum and dad up the street and I'm sure they must recognise me I've been there often enough and they oh yeah never speak I know mm odd strange family. (excerpt from CANCODE)

Assigning PUBs consists in inserting boundaries where they seem "natural"; to capitalize on intuition, they should be put in quickly, spontaneously, without dwelling too long on deciding. At points of uncertainty, boundaries are better inserted than shelved.

It is vital to follow linear progression: Boundary assignment is to be done in view of the discourse up to that point, without looking ahead. The end of a chunk becomes evident at the latest when something comes up that is incompatible with its continuation, which is clear immediately as the new item begins. Linearity separates LUG from other analyses of speaking: while, for example, conversation analysis and interactional linguistics emphasize the temporal progression of speech events (see, e.g., Auer, 2005), they nevertheless perform analyses by looking at whole extracts at once.

The suggested PUBs for the extract are here. While some boundaries may be contested by some readers, usually surprisingly few are controversial.

Provisional Unit Boundaries (PUBs)
I've not seen them | for about a year | now | they're both still at home | living with their mum | aren't they | I know | bit weird family | though | aren't they | very | very strange | strange old world | I know | it's like | I see his mum and dad | up the street | and | I'm sure | they must recognise me | I've been there often enough | and | they | oh yeah | never speak | I know | mm | odd | strange family

Once the boundaries are in place, we can look inside them. The chunks serve as input to the next stages of the analysis.

Types of Chunks

From now on, a set of principles is applied in a cyclical process. Each cycle works on the output of the previous one, applying on it a simple set of distinctions, mostly a dichotomy. To begin with, two basic chunk types are distinguished: those concerned with what is being talked about (*they're both still at home*; *I see his mum and dad*), and those concerned with managing the discourse (*oh yeah*; *mm*; *and*). The distinction is rough and hard to pin down in exact terms, but recognizable.

Elements of the first type deal with what are often referred to as "topical matter," "content," or "message." In LUG terms, they increment shared experience among interlocutors. They take forward the "contents" that individuals contribute to. We call these *message-oriented elements* ("M"). These elements are not always complete, and may sometimes look fragmentary, but they take the "topic" forward. They feature strongly in people's spontaneous informal summaries of what was said.

The second main type is an element that focuses on social interaction and its management: *organization-oriented elements* ("O"). These help participants maintain cooperation and deal with real-time aspects of conversation: managing turn taking, changing topic, shifting footing, maneuvering situations. The fundamental distinction between the O and the M lies in their orientation toward *action* (O) or toward *message* (M). At this stage, the primary structure of text shows as linear alternation of units of discourse organization and units of topic incrementation (Table 1; speaker changes reinstalled).

Again, the assignment of M and O is strictly linear, done in light of the discourse up to that point. Since chunk boundaries are in place before the categories are imposed, it is easier to maintain linearity, and the analysis stays closer to the experience of online speech than a "synoptic" one, which draws on whole extracts at a time.

Types of O Elements

Further distinctions are made within the main element types at stage three. To start with O elements, they are of two kinds: those concerned with interaction (*okay*; *well; oh dear*) and those concerned with text (*for example*, *because*, *then*). The first attend to managing the shifting situations—framing and focusing moves, controlling timing, holding and yielding the floor, and so forth. Elements specializing in this work are "OI," where "I" stands for "interactive."

The other type is concerned with organizing the discourse as text. It brings the M elements into a network of relationships with each other. Their role could be expressed in Firth's (1968) terms as "replacing sequence with order." This order helps establish textual relations

Table 1 Types of chunks: M and O

1	A:	I've not seen them	M
2		for about a year	M
3		now	M
4	B:	they're both still at home	M
5		living with their mum	M
6		aren't they	O
7	A:	I know	O
8		bit weird family	M
9		though	O
10		aren't they	O
11	B:	very	M
12		very strange	M
13	A:	strange old world	M
14	B:	I know	O
15		it's like	O
16		I see his mum and dad	M
17		up the street	M
18		and	O
19		I'm sure	M
20		they must recognise me	M
21		I've been there often enough	M
22		and	O
23		they	M
24	A:	oh yeah	O
25	B:	never speak	M
26	A:	I know	O
27		mm	O
28		odd	M
29		strange family	M

such as exemplification or contrast, handle larger and smaller structures in text so as to set up anticipation, and position sequences in wider contexts. These are "textual", or "OT." In contrast to the OI, which look "outwards" from the unfolding text, relating it to the external world of interaction, the OT look "inwards" to the text, indicating and constructing complex interrelations between the M. From the point of view of the M, the O roles can be characterized as "first-level ordering" (OT) and "second-level ordering" (OI). They are shown in Table 2.

There are more OI than OT in this extract, which reflects the character of casual conversation. In some other genres, like written prose, we would expect the reverse, or even no OI at all. The distribution of element types is sensitive to text type.

As seen in the excerpt, O elements tend to be short, often just two or three words. The only OT are *and* (lines 18, 22) and *though* (line 9).

The OI most repeated here is *I know* (lines 7, 14, 26), followed by *aren't they* (lines 6, 10). All the OI help keep the discourse going, with *mm* and *oh yeah* doing little beyond showing listenership. All instances here are "convergent," in contrast to "divergent" (examples would be *well*; *I don't know*; *but*), which shift direction by, for example, changing the topic or making a new opening (Mauranen, 2009).

The context-bound nature of the analysis shows in *I know* and *aren't they*, which in other contexts might count as M elements, or parts of them; similarly *it's like* could be an OT.

Table 2 Types of organizational elements: OT and OI

1	A:	I've not seen them	
2		for about a year	
3		now	
4	B:	they're both still at home	
5		living with their mum	
6		aren't they	OI
7	A:	I know	OI
8		bit weird family	
9		though	OT
10		aren't they	OI
11	B:	very	
12		very strange	
13	A:	strange old world	
14	B:	I know	OI
15		it's like	OI
16		I see his mum and dad	
17		up the street	
18		and	OT
19		I'm sure	
20		they must recognise me	
21		I've been there often enough	
22		and	OT
23		they	
24	A:	oh yeah	OI
25	B:	never speak	
26	A:	I know	OI
27		mm	OI
28		odd	
29		strange family	

Most of the time items are used conventionally, but speakers can exploit their potential flexibility, which a robust grammar must accommodate.

The organizing roles of OI and OT do not imply that they take the back seat in constructing discourse. Quite the contrary: O elements are vital in constructing the whole that constitutes linguistic activity, and, in essence, meaning. As Firth (1957) suggested, total language activity also incorporates other situational features, which implies that the role of OI in particular is pivotal as mediating between textual and extratextual contexts.

Types of M Elements

The fourth step of analysis involves M or "message-oriented" elements, which increment the evolving topic. They display more diversity than O, partly accounted for by the incompleteness of many M, especially in spontaneous conversation: Not all are successful and some are just fragments; many serve to rephrase speakers' first formulations, to modify, clarify, or expand them.

The basic element is simply called an M. It is a straightforward, mainly grammatical sequence, which does not need anything else to complete it (*I've been there often enough*; *I've not seen them*). An M often shows normal clause structure, but sometimes a single nominal group or an individual word is sufficient as a complete unit (*bit weird family*; *odd*).

Other M types are not equally complete or independent. Some follow an already complete M, and provide an addition or specification to it. These are "message supplements" ("MS") and are characteristically specifying elements, such as adjuncts of time or place (*for about a year*; *up the street*). Another element that follows an independent M but does not make a new departure of its own is "MR," "message revision," which reworks an M by a slight reformulation like a small expansion or rephrasing. To keep track of the many M types, they are illustrated piecemeal by shorter passages at a time. The M, MS, and MR are marked out in Table 3:

Table 3 Types of increments of shared experience: M, MS, and MR

1	A:	I've not seen them	M
2		for about a year	MS
3		now	MS
4	B:	they're both still at home	M
5		living with their mum	MS
6		aren't they	
7	A:	I know	
8		bit weird family	M
9		though	
10		aren't they	
11	B:	very	MR
12		very strange	MR
13	A:	strange old world	MR

As seen in Table 3, the "core" M are self-sufficient. Only one is not a full clause (line 8). MS add specifications of time (lines 2, 3) or other additional information (line 5). In turn, the MRs in this instance (lines 11–13) all rework the same evaluative M (line 8). The interposition of O elements (line 9, *though*, OT; line 10, *I know*, OI) does not interfere with the continuity of the incrementation of shared experience by M.

The passage continues with B's turn (Table 4) and the first two M as above: an M followed by an MS (lines 16–17). In line 19 we have an element of a new kind: an "incomplete M" symbolized by "M-" ("M dash"). Like a core M, this is an M in its own right, yet it raises a strong expectation of another, completing element. An M- is thus not fully independent, but anticipates something else to follow. The anticipation is immediately fulfilled by *they must recognise me* (line 20), a "completion M" ("plus M," "+M"), which supplies appropriate completion material to the M-. These two types normally appear in pairs, as again in lines 23 and 25, although in the fortuities of conversation it is quite possible that an anticipated completion of an M- fails to materialize. The conversation can simply drift to something else. O elements can come between M- and +M, so they need not be adjacent (line 24).

In all, M-type elements are interpreted as attempts, successful or not, to increment shared experience. What have been illustrated here cover most of the types, but not all. M elements tend to be analyzable by other, conventional grammars, and LUG need not break them down further.

Synthesis: Linear Units of Meaning

Following the four distinct steps of analysis, the final stage reverses the direction and makes a synthesis. The fifth step brings together the outcomes of the earlier steps. It bridges LUG and other grammars; it also narrows the gap between descriptions of spoken and written text, although unconventionally starting with speech.

Table 4 Types of increments of shared experience: M- & +M

14	B:	I know	
15		it's like	
16		I see his mum and dad	M
17		up the street	MS
18		and	
19		I'm sure	M-
20		they must recognise me	+M
21		I've been there often enough	M
22		and	
23		they	M-
24	A:	oh yeah	
25	B:	never speak	+M
26	A:	I know	
27		mm	
28		odd	M
29		strange family	MR

The synthesis results in linear units of meaning (LUM), *topic increments* that update the virtual world of shared experience. LUMs come fairly close to units generally recognized in grammars, such as clauses and phrases. They contain the rudiments of hierarchy in recognizing two kinds of relationship, one of which can constitute a component in the other. The *endocentric* relationship forms "textual objects," single entities like noun phrases that must combine with something else to set up a communicative act. The *exocentric* relationship forms "textual incidents" by relating two separate entities such as subjects and predicates. Textual objects are thus typical components of textual incidents. It is the textual incident that updates and changes the virtual world of shared experience.

Step 5 again applies a staged approach: Altogether eight operations are applied one after the other as the synthesis takes shape. Here only a few are illustrated, together with the outcome.

At the outset, all OI are shelved, and kept for later as notes. The focus in this somewhat skeletal synthesis is on structural relevance, and OI lose theirs immediately. In our example the OI are affiliative interactive elements, which contribute to the fluent and consensual achievement of the conversation. In more conflict-driven conversations OI assume more divergent roles.

A number of operations are performed on M elements; M- and +M pairs are joined up (for instance, *I'm sure* with *they must recognise me*, lines 19, 20). MS are added to the nearest preceding M: *for about a year* and *now* (lines 2, 3) to *I've not seen them* (line 1), *living with their mum* (line 5) to *they're both still at home* (line 4), and so on. The third operation merges MR with those they repeat or reformulate: three reformulations of *bit weird family* (line 8) as *very* (line 11), *very strange* (line 12), and *strange old world* (line 13) are joined, and glossed as 'very strange family'. Similarly in lines 28–9 *odd* gets reformulated as *strange family*. We can keep this last formulation, retain the OT, and put the other combinations in place. The example now reads:

I've not seen them for about a year now
they're both still at home living with their mum
—very strange family

though
I see his mum and dad up the street
and
I'm sure they must recognise me
—I've been there often enough
and
they never speak
—strange family

Some added dashes for clarity are all that is needed to make this a readily readable passage that is analyzable by any conventional grammar. An intriguing outcome of the synthesis is the smoothly progressing, coherent text that was collaboratively produced by the interlocutors. This is not likely to be an intended consequence of a spontaneous conversation; we would, at most, expect such an outcome from a formal meeting, or perhaps a session of a task force. But it seems to be at work in ordinary, seemingly wandering, casual conversation. Moreover, speaker changes do not seem to play an essential role in the co-constructed text.

Critical Comments

LUG is a new departure in grammatical analyses, and has not been critiqued in a systematic fashion yet. The case could conceivably be made that if the initial chunking process had made use of sound tracks, or if all data had been transcribed on uniform principles, the outcome might have been different. In the same vein, it could be argued that embodied speech is even more informative than sound alone, since gaze, proximity, and gestures punctuate speaking in an important way, and therefore video material is a minimum requirement. I could go on; the more natural language is studied in its social environments, the more factors can be brought to play in linguistic description.

What is necessary or fruitful for solving a particular problem can only be established by empirical study—which requires its input from a model based on a sufficiently narrow focus for making novel observations. In practice, it is not possible to work on excessively rich material at once, and a vast amount of potential information needs to be abstracted away. The decision to present the material word by word is already a huge abstraction. Yet it enables comparisons across modes and genres, and is neutral enough not to predispose spontaneous intuitions about chunks to particular interpretations.

LUG was developed to highlight the consequences of linearity for grammatical analysis, and the diversity of the data it drew on was a deliberate choice over a more naturalistic set of a single type of material.

Conclusion

LUG bridges the gap between linear text and hierarchical grammar, that is, ongoing discourse and conventional grammatical analysis based on Standard English. Its "bootstrapping" approach to analyzing text enables a broad range of text types to be brought under the same analytical gaze. This opens a new perspective for integrating speech and writing, showing a rigorous analysis of spoken discourse whose outcome is strikingly close to ordinary written prose.

LUG makes a contribution to the analysis of spoken interaction with its strict focus on a linear, temporal perspective on unfolding talk. Although a structural emphasis tends to downplay interactive aspects of communication, LUG recognizes the crucial impact of

interaction and the situational context to grammatical description and to the complexity ensuing from the simultaneously collaborative and competitive nature of interaction. OI, which specialize in managing interaction, are vital in integrating grammar and discourse. Their outward orientation and focus on the situation connect them immediately to interaction.

Bridging the gap between language as experienced in conversation or on the page and the expositions seen in grammatical analyses has much pedagogical potential. Awareness of the mother tongue and the learning of other languages can both benefit from such a bridge, making grammar more accessible to the student. Translator and interpreter education similarly stand to gain from the LUG approach: A linear, chunk-based analysis of speech can be useful in understanding interpreting. Although in essence a theoretical model, LUG can easily fit into a variety of applications.

SEE ALSO: Grammar and Discourse; Lexical Bundles and Grammar; Pragmatic Markers

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Lingua Franca and Language of Wider Communication

MARGIE BERNS

The potential uses of any particular language are manifold. These uses have been variously described in such terms as creative, administrative, instrumental, or interpersonal; as political or ideological; as rhetorical or symbolic. Among other labels for the functions a language can serve are "lingua franca" and "language of wider communication." Although they are two distinct terms, they are often used synonymously. Lingua franca, coined in the High Middle Ages and the older of the two terms, has been defined as "any language used for communication between groups who have no other language in common" (Matthews, 1997, p. 209) and as "a language used habitually by people whose mother tongues are different in order to facilitate communication between them" (Meierkord, 2006, p. 163). Language of wider communication, of more recent coinage, has been glossed as a "language that affords a means of communication beyond the local group to the national and international arenas" (Barotchi, 1994, p. 2211) and as "a language that provides a mutually intelligible medium for speakers in multilingual societies" (Brutt-Griffler, 2006, p. 690). The current synonymous nature of the terms is explained rather neutrally as language of wider communication having become a contemporary replacement term for lingua franca (Clayton, 1998, p. 155). A somewhat sharper comment is that in modern English the term "has become a hackneyed, irrelevantly colorful word to mean a language of wider communication, used to bridge language barriers" (Ostler, 2010, p. 4; see also Ostler, 2010, on different types or degrees of lingua franca). Adding to the terminological mix is the relationship of lingua franca to other concepts called upon to explain or identify the role of a language in the international context or in global interaction. These include "international language," "global language," and "world language," all of which McArthur (2001, p. 1) has attempted to distinguish from one another in a discussion of "the current condition of the English language worldwide."

Rather than attempt the slippery task of disentangling the meanings, referents, and preferences for either of the two terms of focus here, namely, lingua franca and language of wider communication, or other related concepts, the following will be restricted to a discussion of lingua franca. This choice is supported by its wider currency among applied linguists due perhaps in part to its prominence in ongoing discussions and studies of the global spread of English and the role of this language and its varieties in national, regional, and international contexts.

The modern term lingua franca has its basis in the means of communication that developed between Europeans from various language backgrounds and Arabic speakers engaging in commercial and military activity in parts of the eastern Mediterranean basin. Accounts of its substance vary, but it seems generally agreed upon that it was a mixture of lexical items from Arabic, French, Greek, Italian, Spanish, and Turkish. Italian (in the Levant) and Spanish (in Northwest Africa) have been identified respectively as the initial and later base languages. Of particular relevance in understanding current interest in and adoption of the term is its etymology, which scholars do not agree upon. One commonly held view is that the term was originally used to name the Romance-based pidgin that developed in the Middle Ages and the Renaissance (from around 500 to 1600). It was

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apparently a retranslation of some eastern Mediterranean term (into which language is not certain—Latin and Italian are frequent candidates; Ostler, 2010); Schuchardt (1909, cited in Kahane & Kahane, 1976) and other etymologists have suggested that the term itself has a Byzantine base with an Arabic model. The Byzantine Greeks knew it as *phrángika;* the Arabs of the Levant called it *lisān al-faranğ*. In either case, it was translated as "language of the Franks," by which were meant the Europeans in general, but the French and Venetians in particular because of their primacy in maritime commerce (see Kahane and Kahane, 1976, for a detailed analysis of the history of the term). A Western view of the etymology of lingua franca is represented by Trudgill (2001), who claims that lingua franca actually meant "French language," and that it was a form of Provençal used by the French in the period of the crusades. Competing views also determine how the plural is formed. The two more commonly used forms are the Latinate, which dictates "linguae francae," while the English language variant is "lingua francas." A third, and rare, formulation is the Italian "lingue franche."

Whereas lingua franca originated as a contact vernacular with a set of formal features defining a particular pidgin in the Mediterranean, its meaning has become generalized. Today the term is more generically defined as any language used for communication between two or more groups of people who have no other language in common and have not grown up with the language. That is, lingua franca identifies the use or function a language fulfills rather than formal features represented by a specific grammar or linguistic description. Lingua franca as a separate, distinct language is no more.

Languages have been spread and become lingua francas by various means. Three quite common contexts over the centuries have been empire building, as was the case with Arabic (which also served in the 13th century as a language diplomacy and science), English, French, Hindi, Persian, Russian, and Urdu; trade, as with English, Greek, Persian, Portuguese (in coastal Africa, parts of India), Sabir, or Swahili; and religious missions, the case for English and Spanish, which kept their secular status unlike Latin and Pali, which were sacred languages for Roman Catholicism and Buddhism, respectively.

Numerous other languages have served as common means of communication for these purposes as well. And not all of these languages have continued as lingua francas; their fortunes would have depended upon a variety of factors including their continued usefulness, adoption as a second or as an official language in a community, or the withdrawal of occupying powers. Latin is an example of a lingua franca par excellence, having functioned in empire building during the Roman Empire, in the religious missions of the Roman Catholic Church, and as a European language of science and diplomacy. At its peak (AD 96–180), the Roman Empire's territory in Europe and around the Mediterranean covered approximately four million square miles. As the official language in Rome, Latin was by default used to govern widely distributed and linguistically rich populations. At first restricted to the administrative function, it was eventually learned and used by all levels of society for instrumental and interpersonal purposes. Regional and local variation resulting from language contact and linguistic nativization led to the development of dialects that eventually became recognized as the languages known today as Catalan, French, Italian, Occitan, Portuguese, Rhaeto-Romanic, Romanian, and Spanish. The end of the Western Roman Empire in AD 476 initiated Latin's decline as a lingua franca of empire, but its adoption by the Catholic Church in the second century made it the lingua franca of religious control and communication into the 14th century. Latin survived to various degrees in secular use as a language of law, education, and diplomacy into the 18th and 19th centuries. Still used for official purposes by the Roman Catholic Church, its liturgical role in the present century has diminished.

There has long been concern that global communication and cooperation are hampered by the world's multilingualism. The thinking is that a universal language, that is, an

international lingua franca, would foster exchange of ideas and quite possibly end international conflicts and have the potential to bring about world peace. One response to this desideratum has been the construction of artificial languages. Esperanto is the best known of these and enjoys the greatest success and visibility. First formulated in the 19th century by a linguist, L. L. Zamenhof, this European-type language is believed to be a good choice as a common working language for the European Union because it is not associated with any one country or culture and thus it disadvantages no one. However, its European features make it less viable at the United Nations, where languages other than Indo-European languages are used (Ryan, 2009). Interlingua, a mid-20th-century creation, is a product of the International Auxiliary Language Association. Derived from English and Romance languages in both grammar and vocabulary, it therefore suffers the same limitations as Esperanto. A different approach to meeting the need for a language of international communication was C. K. Ogden's (1930) Basic English. Rather than attempt to construct a new language, Ogden designed a simplified form of English to function as an international auxiliary language and to help in the teaching of English as a second language. Consonant with a desire for world peace after World War II, Basic English gained attention as a linguistic instrument toward this end, but has yet to fulfill its promised potential in this role.

A variety of present-day languages are widely used as regional, intranational, and international lingua francas. Of particular interest are the five languages whose lingua franca users outnumber the mother tongue users. These, and their percentages of lingua franca users, in descending, order are: Swahili (98%), Malay (73%), English (71%), Persian (67%), and Urdu (60%) (Ostler, 2010). From this set, only English has become a language of wider communication on a global scale, but not in the simplified and controlled form that Ogden envisioned. Rather, British English and American English have been spread through the mechanisms of colonialism and globalism to become the means of communication in trade, commerce and diplomacy, most notably after World War II. No longer restricted to these domains alone, English is now identified with such fields as science, technology, international travel and tourism, international law, and entertainment. Thus an increasing number of academic and scientific journals publish exclusively in English, the primary language for presentations at international professional conferences is English, universities attracting multilingual students offer courses with English as a medium of instruction, and even contestants in international singing competitions perform in English or a mixture of English and other languages. In addition, English is widely used as a working language of international organizations and commissions, for example, by the United Nations and—the hopes of the Esperantists notwithstanding—by the European Union.

English is, of course, more than the first or primary language of Americans, the British, and other Inner Circle users of an international lingua franca. Although commonly compared with Latin as a lingua franca, English is quite different in large part due to its worldwide reach and its initial status as the colonizers' language in the Outer Circle and the language of "foreigners" for Expanding Circles users, that is, as a language of colonization and of globalization. This distinction is evident in the multiple functions English has come to serve, functions that are differentiated across contexts of use. To relegate English to the role of lingua franca in such contexts as India or Turkmenistan, for example, it is argued, is to ignore their unique histories with English and the sociolinguistic realities of English with which they live (see Kachru, 1996). In India, for example, English, a language with a colonial legacy used throughout the country primarily by the educated elite, was chosen as a national language alongside the indigenous Hindi which had already long served as a lingua franca in Northern India. Today, English is used for administrative, instrumental, and interpersonal functions and is learned as a second language by nonelites

as well as by elites. Literature written in English by Indians has become widely celebrated, which has led to recognition of educated Indian English as a standardized variety in its own right (for more on Indian English, see Kachru, 1983). In contrast, English in Turkmenistan, for example, plays a minor role throughout the country due to government resistance to the language and to the involvement of Western agencies in English language education. Thus, rather than encourage learning and use of English, language policy in this part of Central Asia discourages its learning and use for fear of Westernizing influences on the culture (Sartor, 2010). These two illustrations suggest that English as an international lingua franca is an abstraction that is difficult to concretize because of the realities of its uses, use, and learning across widely diverse cultural, social, and linguistic environments. Given this, the notion of English as a lingua franca can be seen as having lost contemporary significance.

While Ogden may have envisioned an English that could transcend communal and cultural boundaries through simplification and control, the dream of a stable, international form (or variety) of English is unlikely to ever be realized as long as multiple local identities are expressed through the one medium of English (Pakir, 2009). A different point of view on the potential for a stable variety of English known to nonnative speaker elites and serving the function of lingua franca is represented by the English as Lingua Franca Movement (e.g., Seidlhofer, 2001; Jenkins 2006). This movement seeks to identify core features of English as it is used in interactions by nonnative speakers, with an eye not only on description but also on teaching these features to learners of what they label "English as Lingua Franca" (ELF) or sometimes "Lingua Franca English" (LFE). These labels in effect represent a revival of the restricted Medieval and Renaissance use of *lisān al-faranǧ* and signal a considerable departure from recognition of the world's Englishes as markers of identity and dynamic systems of language use, and consequently from the adequacy of lingua franca to capture what English has and is becoming. It is such dynamism and sociolinguistic value, it is claimed (Smith & Nelson, 2006), that demands of those who use different varieties of English in international contexts to negotiate their own common forms and norms of use (grammatical, semantic, and pragmatic). In other words, constant renewal and creation of meanings and forms among users from the world's numerous and diverse language and cultural backgrounds militate against development of a stable variety comparable to the circumstances of the "language of the Franks."

A range of circumstances—for example, new trade markets, expansion of political and military power, spread of religion, or some combination of these—can bring languages into prominence and generate interest in and need for learning the language and subsequently its use by a significant number of people. But circumstances are known to change. New rulers with new languages come along, ties between once strong trading partners break, and secularism threatens religious bonds. Latin, which enjoyed a run of two millennia before it was relegated to the status of "dead" language, was replaced by the vernacular languages that spun off from it and by the other languages of Europe that benefited from the development of Gutenberg's printing press and any number of changed circumstances, including the growth of Christianity and of Islam, financial mismanagement, imperial incompetence, and military unrest. But a lingua franca need not die out. Russian, which has had its role as lingua franca reduced in the former Soviet satellites, is in no danger of dying out. Its future for the moment is being secured in its replacement of older, smaller indigenous languages across Russia. German, once the language of the international scientific community, began to lose its status in the 1930s. The rise of National Socialism and its policies and programs were at the root of its decline. When the balance of political power shifted to the United States after 1945, German's circumstances changed dramatically. English eventually was given the role of lingua franca for the dissemination of developments in science and technology, but German continues as a key language in the European Union.

To date, English has been a lingua franca for 200 years, give or take a few. Now it is no longer restricted to the domains of trade, research, and colonial control, the number of its users is growing, and as already shown, lingua franca users outnumber mother tongue users. Instruction in English is being offered to children at ever younger ages, thus increasing the potential for an even larger percentage of nonnative speakers. The history of its spread and its uptake by users are well documented (see Bolton & Kachru, 2006), its present circumstances are likewise being more comprehensively recorded, and the future of English as a medium of communication among those who do not share a common language is the subject of speculation. Chinese has been named as a possible replacement given China's rapid development as a major player in the world's economic arena and the sheer size of its population, many of whom represent ethnic and linguistic minorities who learn Putonghua to participate in life at the national level (Xu, 2009). It has even been suggested that the future will not see another language serving as the single dominant medium of communication around the world, but that English will be the last global lingua franca. The need for a language to bridge linguistic gaps will be met by technological developments that will do whatever translation and interpretation is required to get things done (Ostler, 2010). A prediction of another sort sees English maintaining a key function; it will become such an essential tool that schoolchildren will be required to learn it along with basic computer literacy and mathematics (Graddol, 2006). And if the fate of a lingua franca is linked with the fate of those who introduced it on the scene, by whatever means, then it also has to be kept in mind that the future of English, too, is connected to the status of the United States as a dominant world power. However, as English has taken on new identities, new forms, and new uses in contexts outside of the US and Britain (regardless of the futures of these nations) its past as a lingua franca has left a legacy of Englishes around the world.

SEE ALSO: Corpus Analysis of English as a Lingua Franca; English as Lingua Franca; Invented Languages in Language Policy and Planning; Language Evolution: Pidgins, and Creoles

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Linguaculture

KAREN RISAGER

Linguaculture (or languaculture) is a term that focuses on culture in language or the cultural dimensions of language. The term was introduced by the American linguistic anthropologist Paul Friedrich in a 1989 article on the relationship between political economy, ideology, and language (Friedrich, 1989). (He also uses the term in a manuscript from 1988.) In the article he writes that "the many sounds and meanings of what we conventionally call 'language' and 'culture' constitute a single universe of its own kind" (1989, p. 306), and he describes the concept of linguaculture with these words:

> a domain of experience that fuses and intermingles the vocabulary, many semantic aspects of grammar, and the verbal aspects of culture; both grammar and culture have underlying structure while they are constantly being used and constructed by actual people on the ground. I will refer to this unitary but, at other levels, internally differentiated domain or whole as *linguaculture*, or, concretely, Greek linguaculture, rural southern Vermont linguaculture, and so on. (1989, pp. 306–7; italics in the original)

Thus the concept of linguaculture does not encompass all of culture, but only "the verbal aspects of culture." Friedrich adds that this terminological innovation can "help to get rid of the decades-long balancing act between 'language *and* culture' ('how much of each?'), 'language *in* culture' ('culture *in* language?')" (1989, p. 307, italics in the original).

The American linguistic anthropologist Michael Agar borrows the concept from Friedrich, but changes it to "languaculture." He justifies his alteration of the term as follows: "I modified it to 'langua' to bring it in line with the more commonly used 'language'" (Agar, 1994, p. 265). In his book *Language Shock: Understanding the Culture of Conversation* (1994), Agar presents the linguistic and anthropological basis for ideas about the interrelation between language and culture, especially in connection with the discussion of linguistic relativity, that is the discussion of the extent to which language determines, or influences, thought (also called the Sapir–Whorf hypothesis). He deals with the misunderstandings and cultural awareness that can arise in connection with conversations, both when "the same language" and when "different languages" are concerned.

Agar introduces the concept of languaculture in order to be able to sum up culture and language in one word:

> Language, in all its varieties, in all the ways it appears in everyday life, builds a world of meanings. When you run into different meanings, when you become aware of your own and work to build a bridge to the others, "culture" is what you're up to. Language fills the spaces between us with sound; culture forges the human connection through them. Culture is in language, and language is loaded with culture. (Agar, 1994, p. 28)

The term "languaculture," then, stresses two relations: "The *langua* in languaculture is about discourse, not just about words and sentences. And the *culture* in languaculture is about meanings that include, but go well beyond, what the dictionary and the grammar offer" (Agar, 1994, p. 96; italics in the original). Agar proposes that what Whorf was really talking about was languaculture.

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Agar also introduces the concept of "rich points," meaning the places in conversation where people misunderstand one another. It is there that there is the opportunity to glimpse "culture," to become conscious of cultural differences. He writes about "the Whorfian Alps" in linguistic communication in the sense that between people who have different languacultures (which ultimately everyone has) a number of cultural differences arise; the issue is to bring these out into the open and try to go beyond them.

Agar develops the concept in several publications, including a 2008 article. In this article he argues that one should think of ethnography as second languaculture learning and translation. He suggests that the usual abbreviation L2 be replaced by LC2 (second languaculture), and similarly that translation should be seen as a relation between LC1 and LC2. He argues that ethnographic work is both a process where the ethnographer learns a second languaculture, including experiences with significant rich points, and a product where the ethnographer struggles with communicating his or her interpretation of LC2 in a translation to an LC1 public.

Whereas Agar focuses on ethnographic studies of languaculture in local settings, the Danish sociolinguist and cultural educationalist Karen Risager introduces a transnational perspective (Risager, 2003, 2006, 2007). (Risager has used the term "languaculture," but in her recent writings she prefers "linguaculture" as a perhaps more straightforward term for linguists.) The transnational perspective refers to and extends the theory of the Swedish social anthropologist Ulf Hannerz on transnational cultural flow and cultural complexity (Hannerz, 1992). In Hannerz's theory the world is characterized by diverse cultural flows, that is flows of meaningful forms like images, music, food, clothing, architecture, and so forth, and Risager (2003, 2006) argues that these flows include linguistic flows: flows of English, Danish, Chinese, and so on, including varieties and mixtures of these. Language is thus seen primarily as language practices flowing (spreading) in social networks across national structures and communities in the world. The linguistic flows are embodied in people moving, and when people move or migrate, they carry their (personal) languacultures with them to new places. In this view, the concept of languaculture is used as a term that on the one hand emphasizes that language always has cultural dimensions, and on the other hand shows that a language and its languaculture can be dissociated from one cultural context and integrated into a new one:

> Language [and its languaculture] and culture [i.e., the rest of culture] are thus both inseparable and separable at one and the same time. Language has considerable elasticity as a tool in all types of context and in connection with all kinds of content. So I have sometimes called language a Velcro fastener: language can easily change context and thematic content, but once it has been introduced into a new place and/or used for a new content, it quickly integrates and "latches on." (Risager, 2006, p. 196)

Risager widens the scope of the languaculture concept by analyzing it in three interconnected dimensions (concerning both oral and written language; 2003, 2006): the semantic–pragmatic dimension, the poetic dimension, and the identity dimension—all representing well-established, but separate, academic fields. The semantic–pragmatic dimension is the one that is primarily associated with the languaculture or linguaculture concept, and it links to linguistic anthropology, including the Whorfian and the German Humboldtian traditions, as well as to cross-cultural semantics and intercultural pragmatics. The poetic dimension has to do with the aesthetic uses of language in play, ritual, and art, and it links to studies of literature. The identity dimension of language has to do with the social and cultural significance of the choice of language or variety of language, and it links to sociolinguistics, especially to studies of social meaning and relations between language and identity.

Risager (2007) discusses the use of the languaculture concept as integrated in a transnational paradigm of language teaching, and Mackerras (2007) includes the linguaculture concept in a discussion of how a sociocultural approach can help students become intercultural learners who can weave together everyday and scholarly concepts.

The word "linguaculture" (or "languaculture") is a lexicalization of the idea that there is culture in language or that language practice is cultural practice in itself. It also has an adjectival form: "linguacultural" (or "languacultural"). Sometimes another expression is used, namely "culture-in-language," for example by Crozet and Liddicoat (2000), who deal with the teaching of culture as an integrated part of language. The expression "culture in language" may be used in opposition to "language in culture," which focuses on the role of language in the wider culture. A third kind of expression is "language and culture" (also with an adjectival form: "language-and-cultural"). This term emphasizes the general inseparability of language and culture, irrespective of the specific part–whole relationship. This term has for example been used by the British cultural educationalist Byram (Byram & Morgan, 1994). In the French context, the expression "langue-culture" is often used, for instance by Galisson (1991), who focuses on cross-cultural lexical semantics with reference to French. In the German context, the most usual (near-)equivalent for linguaculture would be "Kultur in der Sprache" (Risager, 2000), as "Sprachkultur" traditionally means cultivation of the language.

Many other linguists are working with linguaculture without using any of these expressions. Among these the following can be mentioned: Wierzbicka (1997) on cross-cultural semantics; Blum-Kulka, House, and Kasper (1989) on cross-cultural pragmatics; Dovring (1997) on the political consequences of semantic diversity in the English language; Ochs (1988) on language socialization in culture; Lantolf (1999) on second culture acquisition; Kramsch (1993) on the teaching of language and culture as discourse; and Müller-Jacquier (2000) on intercultural teaching.

SEE ALSO: Culture; Interlanguage Pragmatics; Language, Culture, and Context; Teaching Culture and Intercultural Competence

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Linguistic Analysis of Disputed Meanings: Threats

TAMMY GALES

Threats are intentional speech acts that use "language to send a message" and "bring about a desired transfer of information" (Fraser, 1998, p. 160). Like many other speech acts, such as warnings and promises, a threat's pragmatic meaning is dependent on the illocutionary force—the intent—with which it is uttered. For example, a threatener might intend to provide humor, as when a guest threatens to consume all a host's food due to its superior quality; vent anger, as when a customer threatens to sue a store for knowingly selling faulty merchandise; or instill fear, as when the Army of God threatened to bomb an abortion clinic if "the murder of children" did not stop (Academy Group, 2009). As in the authentic final case, when the intent is interpreted to be dangerous and law enforcement becomes involved, the threat undergoes a threat assessment, a process in which investigators examine a variety of context-dependent social, psychological, and linguistic factors associated with the threat to attempt to determine first, whether the threat is real; second, how dangerous the threat is; and third, how likely it is that the threat will be carried out. This entry describes the threat assessment process, discusses current methods of linguistic analysis performed on threats for the purpose of assessing authorial intent and viability, and reviews recent research on linguistic assessments of intent in threats.

When a potentially volatile threat is anonymous, additional related analyses, which are not covered here, may accompany a threat assessment. These include linguistic profiling —the analysis of a text's sociolinguistic markers to help reveal the author's possible region of origin, gender, native language, or educational level; authorship analysis—the analysis of linguistic and stylistic features in a document of questioned authorship in comparison to those in a separate set of documents of known authorship to investigate whether they are consistent with common authorship; and voice comparison—the analysis of the acoustic qualities in a speech sample from an unknown speaker as compared to those from a known speaker to determine whether they are consistent with having been spoken by the same person.

Threat Assessment

When a spoken or written threat is inferred to be dangerous by a hearer or recipient and is reported to a law enforcement agency or threat assessment firm, investigators follow a generic protocol, which includes investigating whether the communication is indeed a threat, how dangerous it may be, and how plausible it is. To answer the first question, analysts examine the threat to determine what negative outcomes, if any, the threat portends, as a threat in need of further investigation is one that is made to the detriment of the hearer and that tilts the scales of power in favor of the speaker (Shuy, 1993; Fraser, 1998).

Second, analysts categorize the threat as either direct, conditional, or indirect, as each designation is said to possess various levels of assessed danger. A direct threat (e.g., Text 1) is thought to be the most imminently serious since the language clearly identifies a target, time, mode (e.g., defamation, murder), and method that will be used to carry out the threat

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(e.g., by planting a bomb or divulging company secrets) (Napier & Mardigian, 2003). In October, 2008, 65 copies of Text 1 were sent with a white powdery substance to Chase Bank and several US government agencies (Federal Bureau of Investigation [FBI], 2008). (NB: All nonpublic identifying information in texts 1–3 has been changed, but all nonstandard language use remains intact.)

> *Text 1*
> STEAL TENS OF THOUSANDS OF PEOPLE'S MONEY AND NOT EXPECT REPRERCUSSIONS. IT'S PAYBACK TIME. WHAT YOU JUST BREATHED IN WILL KILL YOU WITHIN 10 DAYS. THANK JOHN SMITH AND THE FDIC FOR YOUR DEMISE.

A conditional threat (Text 2) is usually "presented as an either/or proposition" that is contingent upon the recipient carrying out a requested action (Napier & Mardigian, 2003, p. 17). Depending on the threat's plausibility, depth of planning, and level of detail, conditional threats are assessed to be more or less serious. This threat, which challenged a proposed change to interstate trucking regulations, was sent to the White House in October, 2003 (FBI, 2004).

> *Text 2*
> If you change the hours of service on
> January 4,2004 I will turn D.C. into a ghost town
> The powder on the letter is RICIN
> have a nice day
> Fallen Angel

An indirect threat (Text 3) is the most difficult type to assess as the language is frequently vague and the threatened action is not dependent on the fulfillment of another action. Indirect threats often take the tone of a warning or complaint with the threatened meaning left for the recipient to interpret (Napier & Mardigian, 2003). Text 3 was posted on a software company's internal blog site in 2008 (Academy Group, 2009).

> *Text 3*
> #27—Update Abacus slashes pay in North Templeton, Springfield
> It looks like it's time to start sprinkling iron filings and carbon dust around the power supplies. A few well placed magnets also add to the fun. Acme should brace itself for a rough ride! . . .

Finally, the third step is to determine the plausibility of the author acting on the threat. Within law enforcement frameworks, there are three designations for threats—high, moderate, and low—which are assigned based on an assessment of seven equally weighted social, psychological, and linguistic factors: degree of anger expressed, level of personalization, level of specificity, evidence of technical knowledge, evidence of commitment, existence of ancillary incidents, and level of escalation if multiple texts or events exist (Rugala & Fitzgerald, 2003). In general, analysts consider low-level threats as those that appear to pose little risk. This can be signified by lexically mitigated or conditional language (e.g., "perhaps I might . . ."), implausible actions (e.g., "I will blow up every building at the same time . . ."), a lack of detail as to the time, place, or person targeted (e.g., "You better watch out or else . . ."), or any combination thereof (Napier & Mardigian, 2003). Moderate-level threats are those that are more believable, but still suggest some doubt in terms of the person or place targeted or the plausibility of fulfillment; these usually demonstrate a certain level of forethought in their description of how the threat will be carried out and

provide more descriptive language about the target of the threat (Napier & Mardigian, 2003). Finally, high-level threats are those that are highly credible and whose stated facts can be readily verified. These typically contain detailed descriptions of how the threat will be carried out, who or what is targeted, how the threatener will reach that target, and the time frame in which the threat will occur (Napier & Mardigian, 2003). According to the FBI's National Center for the Analysis of Violent Crime (NCAVC), "the more direct and detailed a threat is, the more serious the risk of it being carried out" (Rugala & Fitzgerald, 2003, p. 780).

Linguistic Analysis of Threatening Meaning in Practice

In current practice, the *focus* on linguistic (as opposed to social or psychological) features as a basis for analyzing a threat's inferred meaning is a relatively new phenomenon, and while the processes of voice comparison, authorship analysis, and linguistic profiling have received more attention over the past few decades, little has been formally written about the actual practice of linguistically analyzing intent in threats. What has been documented comes via law enforcement, and lists two primary methods of analysis: textual analysis and corpus analysis.

First, textual analysis "is the examination of behavioral and linguistic indicators in a communication to learn more about its purpose and its author," which includes a "detailed examination of the elemental parts of a verbal or written threat in order to assess the genuineness and overall viability of the expression of an intent to do harm" (Fitzgerald, 2009, p. 2). And while the labels attached to this process (i.e., "textual," "stylistic," and "discourse" analysis) have been used somewhat interchangeably within law enforcement settings (McMenamin, 2002), in general, threat assessors color-code a text to highlight different categories of potentially valuable information. For example, green identifies orthographical or grammatical information that is commonly misused (e.g., *they're/their/there*), but has been used correctly—according to a standard variety—by the author, while blue identifies unusual words or phrases that may shed light on the author's hobbies, interests, or community of practice (Fitzgerald, 2009). Additionally, words or phrases that potentially indicate levels of intent, such as "may" and "perhaps" on the low side versus "he will die" and "I will shoot him" on the high side, are documented (Napier & Mardigian, 2003, p. 18). After coding, the identified linguistic patterns are used to support assessments of intent or viability by revealing information about an author's apparent level of knowledge or intelligence (e.g., are words specific to the field of chemistry used that demonstrate enough expertise to make a bomb?), personal—and potentially dangerous—affiliations (e.g., is language used that is affiliated with known terrorist organizations?), or emotional stance (e.g., is anger linguistically exhibited that provides motivation for fulfilling the threatened act?) (Rugala & Fitzgerald, 2003).

Second, law enforcement descriptions of corpus linguistic assessments of intent or levels of commitment are still rather limited in nature. As of 2009, there were two general threat corpora in the USA: the FBI's Communicated Threat Assessment Database (CTAD), containing 3,721 threatening communications with a total of 888,286 words, and the Academy Group's Communicated Threat Assessment Reference Corpus (CTARC), containing 470 threats and 152,078 words (Gales, 2010). The immediate benefits of these corpora as investigatory tools can be seen in the areas of authorship analysis and linguistic profiling (e.g., nonstandard syntactic patterns, lexical choice, or stylistic features from an unknown threat can be compared to thousands of other threats in an attempt to link cases or narrow the suspect pool), while further empirical benefits may be seen as organizations document variables that contribute to successful assessments. However, even though it is stated that an "investigator can complete the assessment and analysis of the level of threat presented

by the document" through a combination of his or her law enforcement experience, an analysis of the communication's metadata (e.g., the date it was received, its mode of submission), and a search to determine whether "there were any similarities between the linguistic features in the current communication and others in the corpus" (Fitzgerald, 2009, pp. 7–8), it is currently unclear how investigators use corpus analyses of linguistic features to arrive at a determination of a threat's possible level of intent or viability.

Linguistic Analysis of Threatening Meaning in Research

Research on linguistic features associated with interpreting meaning in threats has primarily arisen from studies in psychology and sociology focusing on the social role of threats (Milburn & Watman, 1981), personality traits (e.g., Smith, 2006), and workplace violence (e.g., Davis, 1997; Turner & Gelles, 2003). When assessing the likelihood that a threat will be carried out, these studies have reported various linguistic findings. For example, the inclusion of insulting, pejorative language "can be expected to raise the intensity of feeling" and possibly lead, on the part of a normally calm person, to a threat being enacted (Milburn & Watman, 1981, p. 56); "almost all of those persons who do commit acts of violence use profanity and other offensive language—before, during, and after the act—to describe or discuss both the victim and the violence itself" (Davis, 1997, p. xiii); language that mentions suicide, weapons, or the object of desire and includes profanity, themes of hopelessness, violent behaviors, or fantasies can serve as an indication of potential violence (Turner & Gelles, 2003); and the personality trait of decisiveness, as measured by the occurrence of hedging phrases such as "I think" or "kind of," can lead to an assessment of how prepared a threatener is to carry out an act (Smith, 2006). In addition to these claims that more or less mirror the linguistic features used by law enforcement investigators, Turner and Gelles (2003) reported that the more detail included in a threat, the higher its level of dangerousness; conversely, the more general or vague the language is, the lower the level of potential danger.

However, while this work has provided a valuable first step toward interdisciplinary research on assessing intent in threatening language, several critiques can be made regarding the *linguistic* nature of this work. First, the examination of linguistic features has most often been ancillary to that of features of a behavioral nature. For example, Davis's (1997) work on risk management focuses primarily on assessing threatening behaviors, of which the use of profanity is a part. No further mention of lexical or grammatical features was made, so it is unclear how much and what kind of linguistic analysis was actually performed. Second, the methods used to assess these claims are frequently vague or seemingly impressionistic in the way they are reported. In Turner and Gelles's work, for instance, they claim that their risk management approach has been "tested hundreds of times in workplaces throughout the nation and beyond" (2003, p. xix); while this may be true, the empirical support needed to validate and replicate their findings is absent.

Recently, a corpus-based study testing linguistic features that have been associated with threatening language demonstrated no significant correlation between any one lexical or grammatical feature or combination thereof and the fulfillment of a threatened act (Gales, 2010); this supports studies questioning the use of linguistic form as an indicator of behavior (e.g., Lord, Davis, & Mason, 2008). Instead, Gales investigated the function of lexical and grammatical markers of authorial stance (Biber, Johansson, Leech, Conrad, & Finegan, 1999), a rich interpersonal resource used to create attitudinal meaning, position social actors, and demonstrate commitment and intent (Martin & White, 2005). Using both corpus and discourse analytic methods on the authentic threats in CTARC, Gales (2010) found that regardless of a threat's actual outcome, linguistic markers of intent manifest in ways that both adhere to and violate current threat assessment frameworks and expected social

norms. For example, threateners who carried out their threats used language that both strengthened *and* weakened their perceived level of commitment, as in the Zodiac Killer's use of *shall* and *will* as modals of determination and intent in "I *shall* (on top of every thing else) torture all 13 of my slaves" and "I *will* do something nasty" versus the killer's use of the possibility modal *may* in "As some day it *may* hapen that a victom must be found" (Academy Group, 2009). Furthermore, working from the idea that when interpreting intentionality there is a great difference "between actual intentions and clues to such intentions" (Shuy, 2003, p. 444), Gales (2011) found that by applying rigorous forms of discourse analysis such as appraisal (Martin & White, 2005), analysts can move beyond a focus on linguistic forms as a measurement of intent and examine a variety of linguistic manifestations of authorial meaning. For instance, in the analysis of one Army of God threat, despite the highly frequent occurrence of the possibility modal *may*, which provides a lower *perceived* level of commitment, the analytic tools of appraisal revealed a deeper connection to the documented behaviors of religious terrorists, who set aside personal doubts or objections to support a higher cause (Gales, 2011). Thus, these linguistic findings problematize current threat assessment frameworks and stress the need for further interdisciplinary research that utilizes rigorous methods of linguistic analysis.

Conclusions

The process of assessing intent in potentially dangerous threats is a vital part of the threat assessment process. Yet the linguistic features in current assessment frameworks and scholarly literature have been shown to be empirically unreliable as direct indicators of behavior (Gales, 2010), reinforcing the fact that "speakers and writers do not always directly match their words with the meaning that they intend to convey" (McMenamin, 2002, p. 74). Thus, for investigative purposes, discourse and corpus analytic methods that examine inferred meaning in other areas of forensic linguistics (e.g., topic and response analysis; Shuy, 2003) should be applied to authentic threatening language so that collaborative, interdisciplinary research can continue to nuance our understanding of the relationship between the function of linguistic forms and their application to criminal concerns.

SEE ALSO: Corpus Analysis in Forensic Linguistics; Forensic Discourse Analysis; Shuy, Roger

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Linguistic Analysis of Disputed Meanings: Trademarks

RONALD R. BUTTERS

Trademark (legally often shortened to *mark*) is a term used commonly to describe words and images that are intended to distinguish uniquely the commercial source of a product or service from that of competitors. Marks may designate companies (e.g., McDonald's) or noncommercial entities (Duke University); products (McDonald's McNuggets, Big Mac, etc.); or services (Federal Express); and they may be names (such as the foregoing examples), slogans (e.g., McDonald's "I'm Lovin' It"; Federal Express's "The World on Time"), or specific images (such as McDonald's famed "golden arches," Federal Express's signature red-and-blue lettering in their alternative mark, FedEx, or Duke University's blue shield logo and "Blue Devil" mascot; see Figure 1). Governments' granting of exclusive ownership of trademarks to the users confers great value to their owners, who would have little reason to invest in new product design, quality control, and advertising if they had no way to identify and promote their products to the public. The corresponding restriction upon the general public's freedom of expression likewise benefits consumers, who gain the potentially valuable assurance that they can (a) rely on familiar and established appellations as indications of the quality and nature of their purchases; and (b) readily identify and distinguish new products that they may learn about through advertising or word of mouth.

Trademarks are quite distinct from *copyrights*, which are exclusive licenses that governments grant to the creators of works of musical and visual art, and to authors of fiction and nonfiction (Butters, in press). Unlike trademarks, copyrights are granted not for purposes of product or service identification, but rather with the intent of allowing artists to control the sale and distribution of their creations, thereby controlling any profits that may come from commercial use. Trademarks never expire so long as the owners continuously use them. Copyrights, however, are granted for a finite number of years, at the expiration of which the works that they have protected move into what is called the *public domain*, which means that anyone thereafter is free use them for any purpose. Trademarks are also to be distinguished from *patents*, which governments grant to the creators of new inventions (again, for a fixed period of time, and, again, so that the inventors can profit from sale, lease, or licensing). Together, patents, copyrights, and trademarks are called *intellectual property*.

Because governments create linguistic intellectual property—and regulate its use—through systematic legal processes, the study of trademarks is of general interest to general linguists (Shuy, 2002a, 2002b, 2008; Okawara, 2006; Durant, 2008), lexicographers (Landau, 2001; Adams, 2005), onomastics scholars (Slovenko, 1984; Tamony, 1986), and the broad academic field of language and law (Richardson, 2004; Adams & Westerhaus Adams, 2005; Solan & Tiersma, 2005; Hotta, 2007b; Hotta & Fujita, 2007; Dinwoodie, 2008). Moreover, to the extent that the courts in various countries allow linguists to testify in trademark disputes (as they frequently do in the United States and some other countries), forensic trademark linguistics is a prominent strand in applied linguistics, along with other sorts of forensic applications to civil law practice such as product warnings and contract interpretation.

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(a) (b) (c) (d)

Figure 1 Slogans and logos: (a) McDonald's golden arches and slogan; (b) FedEx trademark and slogan; (c) Duke University shield logo; (d) Duke University Blue Devil mascot logo

Trademark disputes arise because trademark owners detect or suspect an invasion or possible invasion of their intellectual property. Through various legal channels, they can prevent competitors from encroaching on their marks in ways that could confuse the public as to origin and therefore (a) damage their reputation through the marketing of inferior or disreputable products (also a feature of *dilution*, a grounds for legal action in its own right; see below); or (b) unfairly divert customers to competitors who could benefit from the owner's advertising and respected name (technically sometimes called *deception*).

Trademark disputes take place typically between the owners of older, established marks (termed the *senior mark*), and newer, allegedly encroaching marks (the *junior mark*). The senior mark will have become the owner's legal intellectual property in one or two ways: (a) simply using a trademark in commerce in itself creates common-law rights; (b) the mark may be registered with a government agency (such as the United States Patent and Trademark Office, or USPTO). Registration affords stronger protection than common-law rights. International registration is also possible, though sometimes complex (registration in one country does not automatically confer worldwide rights).

There are also two different forums in which a junior mark may be challenged. First, when the owner of a new mark proposes the mark to the government for registration, a waiting period ensues in which owners of established marks may contest the registration, usually on the grounds of *likelihood of confusion*. The government conducts an investigation and, if necessary, what is in effect a trial (in the United States, this process is administered by the Trademark Trial and Appeal Board, or TTAB), and decides whether there is enough similarity between the two marks to warrant denial of registration.

Second, it sometimes happens that (a) the owner of the junior mark will simply start using it without having received (and sometimes without having even applied for) USPTO registration; or (b) one of the parties decides to appeal the TTAB decision to a federal court. In case (a), the senior mark owner takes the junior owner to court for trademark infringement, asks the court to order the junior owner to stop using the allegedly infringing mark, and usually demands to recover court costs and damages. Again, the fundamental basis for such a claim is likelihood of confusion.

Among the most important criteria for judgment of likelihood of confusion are (a) evidence of actual confusion, (b) competition in competing channels of trade, and (c) similarity of *sight*, *sound*, and *meaning* of the marks themselves.

Instances of actual confusion do occur; however, cases involving actual confusion do not normally require expert testimony, and actual confusion is not required to prove a case. Similarly, the competitiveness of two firms with respect to channels of trade is

not a question that linguists usually are prepared to deal with. The likelihood that, for example, Delta Airlines and Delta Faucets are not competing for the same customer pool is not a linguistic issue, nor is the relationship between Apple Music and Apple Computers, which coexisted without conflict for years in different channels of trade until Apple Computers began marketing downloadable music on the Internet (at which time a trademark conflict arose).

Linguists are, however, professionally qualified to assess similarities of competing marks to the extent that their scientific training and research interests encompass lexicography, lexicology, orthography, phonology, morphology, dialectology, and semiotics. Lawyers have called upon linguists for at least 40 years to present expert analysis of the similarities and differences between numerous marks. A very brief sampling includes the American snack foods *Frito-Lay* chips and *Jay's* chips (McDavid, 1977); English nappies or diapers *Bambino Mio* and *Bambineo* (Heffer, 2008); Chilean food products *Paltomiel* and *Palto con Miel* (Oyanedel & Samaniego, 2004); American food products *Healthy Choice* and *Healthy Selection* (Shuy, 2002b); domain names (*oracle.com* versus *oraclecontractors.com*) incorporating the trademark *Oracle* (Olsson, 2008); American retail establishments *McSleep*, a mark proposed for a chain of budget hotels, and *McDonald's* (Lentine & Shuy, 1990; Shuy, 2002b); pharmaceutical company names *Aventis* and *Advancis* (Butters, 2008b); commercial slogans *Whisper Quiet* (Butters, 2005) and *Life's Good* (Butters, 2007b); South African pharmaceutical remedies *Allergan* and *Allertac* (Sanderson, 2007); and the marks *Mobil* (Oil) and *Mobile* (for "sporting articles, games, and playthings") in Australia (Eades, 1994).

A second cause for trademark disputes in which linguistic testimony is frequently called for is technically known as *strength of mark*. A typical defense of a junior mark when challenged by a senior mark is that the senior mark is not really strong enough to be a trademark at all. Trademark law sorts trademarks into five different categories (in descending order of "strength"), two of which are considered too weak to be legitimate marks.

Fanciful marks are the strongest of all: they are made-up words (at least with respect to the perceptions of the consumers). For example, *Kodak* is a famous name used by a company and its products—originally in photography, but today also associated with computers. Kodak meant nothing at all in English until it was invented for use as a trademark.

Arbitary marks will ordinarily be perceived by consumers as "real" words that can be found in a dictionary. However, they have no apparent semantic connection with the product or service to which they refer as a mark. Thus for example, *Apple Computer* and *Apple Music* are arbitrary trademarks: computers and music have nothing to do with apples. The two are thus strong marks that are fully protectable.

Suggestive marks are also strong enough to be fully protected, and they are sometimes considered the ideal mark because they have recognizable positive connotations that the owners of the mark would like to have the public associate with the product or service, even though by definition the names do not denote literally and directly an important aspect of the thing being offered to the public. For example, the trademark *Rabbit* applied to a type of Volkswagen automobile presumably was expected to convey positive associations of reliability, cuteness, endurance, and the ability to hop from place to place that the idea of a rabbit conveys.

Descriptive marks are said to be inherently weak, and they can be fully protected as legitimate trademarks if they acquire and maintain in the minds of the relevant public what is technically called *secondary meaning* (see below). *Descriptive* means that the word or words that make up the mark merely depict or refer to some inherent feature of the product or service and/or are laudatory morphemes such as *best*, *king*, *max*, or *super*. For example, *Super Suds*, a trademark used for a kind of laundry soap marketed in the mid-20th century in the United States, was arguably a descriptive mark, since *super* is a laudatory term and *suds* are what laundry soap of the era characteristically did in use.

(As the name for a car-washing service, however, *Super Suds* would arguably be more suggestive than descriptive.)

Descriptive terms cannot be afforded trademark protection unless they are adjudged to have become so famous as to have acquired *secondary meaning*: that is, the association in the minds of potential consumers between the company and the brand name is so strong that, one might say, it has become a widely recognized lexical item in its own right; *Burger King* would seem to be just such a famous mark. However, trademarks that have been registered and uncontested for several years are considered by law to have secondary meaning, regardless of how substantial their accrued fame may in reality be.

Generic terms are the weakest, and they can never be used as trademarks for the type of thing designated, for they are the name not of a brand of product or service but of the thing itself. For example, *detergent* is the generic term for substances used for cleaning purposes. Thus *Detergent* is not a legitimate trademark for detergent (though it might be a protectable suggestive mark for a puppy-training service or even, arguably, a dry-cleaning service, and it could also be a protectable arbitrary mark for a musical group). Similarly, *toothpaste* generically names a product of which there are many brands and cannot therefore ever be a brand name for toothpaste.

Many trademarks appear to have characteristics of more than one strength-of-mark category. Thus, deciding where a mark fits best with respect to the categories "suggestive" and "descriptive," and whether or not a mark is truly generic, frequently leads to occasions for litigation in which one side argues that the other side's mark is too weak to be afforded protection. The issues in such cases are ripe for linguistic analysis, and linguists have frequently opined under oath in expert reports and court testimony about just where particular marks fit into the continuum of trademark strength. For example, Butters (2008b) reports on a case involving semantic analysis of the mark *Zingers*, used by two rival restaurant chains as a menu term for chicken wings served in a hot sauce. The salient question was whether the meaning of *zinger* described the experience of eating the hot-sauce-covered item, or if it merely suggested it (or, indeed, had become generic for this particular product). The difference between a descriptive and suggestive classification in such cases lies significantly in the *degree of imagination or mental leap* needed to connect the mark with its referent.

The allegation of genericness is especially serious because, according to the common law, once a mark has been declared generic for a certain use, it can never become non-generic, no matter how much secondary meaning it may acquire. Furthermore, nongeneric terms may become generic through use (a process sometimes referred to as *genericide*), as was the case in the United States with such words as *aspirin*, *escalator*, *trampoline*, and *Murphy bed* (a bed that folds into a wall when not in use). The fundamental test for genericness is whether the public who are potential users of the product or service think of it as generic, or whether they relate it to some particular source or origin.

Courts allow evidence from direct questioning of the public to be introduced as evidence, but they also allow linguistic analysis based on the use of lexicographical methodology. Linguists who consult on trademark issues thus usually examine actual use of the contested marks in various media, including print documents, television, movies, and all manner of Internet sources. Earmarks of genericness include lack of capitalization (*trampoline* instead of *Trampoline*), use as a verb (*Did you trampoline today?*), use by other competitors (*Super Fun Trampolines* as well as *Nissan Trampolines*, the name of the inventor and original trademark owner), and contexts in which the mark is contextually unquestionably generic (*What brand of trampoline do you wish to buy?*). Presence of the trademark designators ® (indicating that the mark has been registered) and ™ (indicating a common-law trademark or one for which trademark registration has been applied) attached to the trademark itself can also be considered evidence that the user considers the mark to be nongeneric. Even so, the arguments

in such cases can be quite complex, owing in part to the fact that people sometimes use famous marks in a shorthand way, knowing that they are actually trademarks and differentiating if and when it becomes important to do so. Marks that fit this category may be termed *pseudogenerics*, and seem to include in the United States such famous brands as *Kleenex*, *Band-Aid*, *Google*, and *Xerox* (Butters, 2008a: 514; Butters & Westerhaus, 2004; see also Landau, 2001, on *Band-Aid*, and a useful list in Clankie, 2002). One factor that strongly discourages arguments that such marks are generic is the presence in the language of genuine generic terms for the things so designated: *Kleenex tissues*, *Band-Aid bandages*, *Google search engines*. No such ready alternative generics exist for *aspirin*, *escalator*, *trampoline*, and *Murphy bed*.

Numerous cases are reported in the forensic linguistic literature in which linguists have been consulted for reports and testimony involving genericism. Some examples are as follows (the marks written here with upper-case letters were found not to be generic by one or more courts): the airline-industry term *air shuttle* (Bailey, 1984); *kettle chips* and *steakburger* (Butters, 2007a, 2008a, 2009b); *Beany Baby* for soft dolls (Butters, 2001, 2007a); *Opry*, as the performance company *Grand Ol' Opry* (Butters & Nichols, 2009); and even one case involving only a semiotic feature, , of a trademark icon used in the labeling of a brand of cleaning products and a brand of automotive products (Butters, 2004).

There is a third source of litigation about trademarks that linguists sometimes are involved in as experts. Federal trademark law disallows registration of marks that are deemed immoral, deceptive, scandalous, or disparaging. In one such case, a group of Native Americans attempted (unsuccessfully) to cancel the registered and long-established trademark of a sports team, the Washington *Redskins*, on the grounds that it was derogatory (see Butters, 1997, 2007c, 2009a). Baron (1989) reports on a case in which "Glass Wax, a glass cleaner which contains no wax, successfully defended its trademark against a charge that the name was deceptive." He also notes, "in the early 1900s the courts refused to recognize *Madonna* as a trademark for wine because it was ruled scandalous."

One final aspect of trademark law that can call for the expertise of linguists is what is known as *dilution*, which at its simplest means only that the existence and use of one mark lowers the value of another. The damaged trademark need not even be in the same area of trade as the infringing mark, and, where it is, senior trademark owners often add "dilution" to the list of wrongs that they allege to suffer by the use in trade of junior marks.

To sustain a dilution claim, the infringed-upon mark must be "famous." For example, at least in theory, McDonald's restaurants could bring suit against the publisher of a pornographic magazine that called itself *McDonald's*. The restaurant chain also could attempt to prove dilution of their famous mark if, for example, a business even so far removed from the restaurant business as a chain of hair-styling salons began calling themselves *McDonald's*. Dilution has interested some forensic linguists and specialists in language and law, and applications of linguistic expertise to questions of dilution include (a) whatever a linguist might contribute to the discussion of fame; (b) the potential evaluation of likelihood of confusion that might come about through use of semiotic similarities between the putative infringer's use of the mark and that of the infringed-upons, as for example in color and typeface of the mark itself; and (c) whether the use of the mark is really disparaging in the alleged context. For discussion, see Hotta (2007a), Butters (2008a), and Shuy (2008).

SEE ALSO: Determining Language Proficiency in Legal Contexts; Forensic Discourse Analysis; Legal Interpreting; Legal Translation; Linguistic Analysis of Disputed Meanings: Threats; Linguistic Human Rights; Plagiarism

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Linguistic Approaches to Translation

DOROTHY KENNY

Introduction

This entry is concerned with how linguistic theory has been applied in translation studies. In some cases, scholars have sought to explain translation using an existing, more or less complete linguistic theory. In other cases, linguistically informed commentators have drawn on an often eclectic range of sources to elucidate aspects of the relationship between a given source language (SL) and target language (TL), or source and target text, or to highlight features of source texts that may have to be attended to in translation. Linguistic theory has also informed discussions of how translated texts can differ from other texts in the same (target) language, and of how decisions made by translators can impact on relations, including power relations, between addressor and addressee.

The broad uses to which linguistic theory has been put in translation studies are discussed below roughly in chronological order. In the course of our discussion we introduce some of the linguists whose theories have been influential in translation studies and address a number of issues that become particularly acute in translation situations and about which linguistic theory has something to say. These issues include equivalence, translatability, translation shifts, and the unit of translation. We start, however, with an issue that is singularly relevant to most linguistic approaches to translation: their pedagogical import.

Translation Pedagogy

More so than any other (e.g., cultural, sociological, or computational) approach to translation, linguistic approaches have been associated with the training of translators. This may be partly explained by the institutional contexts in which translation was taught in the mid-20th century, namely university departments of language and linguistics (Pym, 2010, p. 49). But linguistic approaches offer benefits to translation teachers regardless of institutional context: linguistics as a discipline attempts to deal systematically with language data, allowing more or less exhaustive analyses of linguistic structure at varying levels (phonological, morphological, syntactic, semantic, textual, discourse). Because of its systematic, hierarchical nature, linguistics lends itself to pedagogical application, allowing teachers to adopt a "building block" approach to the discussion of language and text. Even if such an approach might be ultimately considered "naïve" (Baker, 1992, p. 5), it still allows a clarity of exposition that is welcome in educational contexts. Indeed, it is an approach adopted, wholly or in part, in a number of highly regarded textbooks in translation including Baker (1992), Malmkjær (2005), and Routledge's *Thinking Translation* series.

Linguistics also provides a fairly comprehensive metalanguage with which teachers and students can explain translation phenomena and justify their own translation decisions. Thus, while few people would argue that successful translation practice relies on knowledge of linguistics or any particular theory of translation, such knowledge does enable translators to become more self-reflexive and better able to take responsibility for their actions, thus contributing to their professionalism.

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The close association of linguistic approaches with translation pedagogy has its downside, however. It is perhaps responsible for the labeling of some linguistic approaches as "prescriptive," as the educator's desire to inform and guide practice (Baker, 1992, p. 5) is sometimes supplanted by an impulse to prescribe practice, an impulse that has been identified in the linguistically oriented work of Vinay and Darbelnet (1958, 1995), Nida (1964), Nida and Taber (1969), and Newmark (1988), for example. The irony here is, of course, that linguistics itself endeavors to be descriptive rather than prescriptive and there is no natural link between linguistic approaches to translation and prescriptivism.

Early Linguistic Approaches to Translation

Discussions of translation that draw on linguistic theory generally began to emerge in the late 1950s against the backdrop of structuralist linguistics (Pym, 2010, pp. 9–11). Structuralists argued that each language is unique, that the formal categories with which we analyze two different languages rarely coincide, and that each language reflects its own view of the world. These views suggested that translation between languages would be impossible, yet translation was an empirical fact. To account for this empirical fact, early linguistic approaches to translation shifted the focus away from language *systems*, with all their unactualized meaning potential, to language *use*, in which individual words actually signified something more tractable, even if momentarily. They showed how translations could operate at different linguistic levels, so that if it was impossible to use a feature of English grammar, for example, to translate something that had been said using a feature of Russian grammar, then it might still be possible to use a lexical item in English to get the meaning across (see Catford, 1965). Another way to "defend" translation (Pym, 2010, p. 12) was to catalog the techniques used by translators to overcome difficulties that arise precisely when languages do not match up structurally, or a source-culture item has no obvious counterpart in the target culture. The best known such catalog is that developed by the comparative linguists Vinay and Darbelnet (1958, 1995). Among the most useful techniques they list (Vinay & Darbelnet, 1995, pp. 31–42) are:

> transposition, which involves replacing a word (or words) of one class with a word (or words) of another class. Hence the nominal *son lever* "his rising" in *Dès son lever . . .*, literally "From his rising . . ." becomes a verbal structure in the translation "As soon as he gets up/got up"; and
>
> modulation, which involves a change of point of view. Hence the negative expression "It is not difficult to show . . ." becomes the more positive *Il est facile de démontrer . . .* "It is easy to show . . ."

Other theorists developed detailed taxonomies of translation procedures that attempt to capture systematically the ways in which source and target text fragments can differ, for example, in terms of their structure, or completeness (something might be added or taken away in the translation), or in terms of the elements of a situation that they represent. Fawcett (1997, pp. 27–52) provides a useful overview of the relevant literature and frequent criticisms of the approach. One criticism is that "translation techniques" are more about contrastive differences between languages—which experienced translators have internalized anyway, and hardly need to be reminded of—than actual translation practice.

Catford

The work of J. C. Catford stands out as probably the most exhaustive attempt to date to apply an existing general linguistic theory to translation. His approach is based on an early version of M. A. K. Halliday's systemic functional grammar (SFG), although the influence of J. R. Firth is also acknowledged. Central to Catford's theory of translation is the idea that meaning is language specific. This language specificity arises from the Firthian view of meaning as "the total network of relations entered into by any linguistic form" (Catford, 1965, p. 35), where such relations are either formal or contextual. Formal relations arise between a linguistic form and other linguistic forms in the same language, and are necessarily language specific. Contextual relations arise between grammatical or lexical items and linguistically relevant elements in the situations in which those items are used. What is "linguistically relevant" differs from language to language: French, for example, signals the gender of the speaker/writer in sentences like *Je suis arrivée* (where the final *e* on *arrivée* shows that the speaker/writer is feminine) while English can remain neutral with regard to gender in the "equivalent" *I arrived*.

The language specificity of meaning posited by Catford means that translation cannot be viewed as a "transference of meaning" (Catford, 1965, p. 35) or a "transcoding" of language-independent messages, an idea that had been popularized by the information-theory inspired approach of Warren Weaver (Catford, 1965, p. 41). Catford opts for a seemingly more prosaic definition of translation as "the replacement of textual material in one language (SL) by equivalent textual material in another language (TL)" (p. 20). This is a definition in which the word "equivalent" comes to bear a heavy load, but as Catford later explains (p. 50), as long as SL and TL texts (or other linguistic items) are relatable to at least some of the same features of "situation substance" (a construct akin to an extralinguistic reality), then they can be considered as translation equivalents.

Catford discusses two types of relationships relevant to translation equivalence: formal correspondence and textual equivalence. Formal correspondence is said to exist between categories (e.g., word classes, clausal structures, etc.) which are seen as occupying more or less the "same" place in the "economies" of a given SL and TL. Formal correspondence is always only approximate, and sometimes it makes little sense to seek it at all (p. 82), but the notion allows Catford to develop a further concept, that of translation shifts, to which we return below. Catford's textual equivalence is "an empirical phenomenon, discovered by comparing SL and TL texts." A textual translation equivalent is thus defined as "any TL form (text or portion of text) which is observed to be the equivalent of a given SL form (text or portion of text)" (p. 27). Textual translation equivalents often provide evidence of departures from formal correspondence, and it is these departures that Catford labels "translation shifts" (p. 73). Thus when a subject–predicate–complement sequence in English becomes a predicate–subject–complement–adjunct sequence in Scottish Gaelic, we are dealing with what Catford (p. 77) labels a "clause-structure shift." Catford goes on to develop a typology of translation shifts that occur at or below clause level, and then opens out his analysis to include issues of dialect and register in translation, and linguistic and cultural untranslatability. Linguistic untranslatability occurs where formal features of the source text are functionally relevant but cannot be matched by corresponding formal features in the target text (p. 94). This happens, for example, in the case of some puns. Cultural untranslatability occurs where a situational feature that is completely absent in the target culture is functionally relevant for the source text (p. 99). Translators can overcome this problem by transferring the source text item into the target text—a procedure Vinay and Darbelnet (1958, 1995) call "borrowing"—with or without further explanation (Catford, 1965, p. 100). Catford concludes by claiming that in some cases of apparent cultural untranslatability, translation solutions are possible, although they may produce

abnormal collocations in the target language. Thus cultural untranslatability may be reducible to linguistic untranslatability (p. 101).

Although Catford's theory has come in for some criticism in translation circles (see Fawcett, 1997), his legacy is nonetheless important: the notion of translation equivalence as an empirical phenomenon was to be taken up again, most influentially by Toury (1980, 1995). Translation shifts remained important as descriptive categories in (human) translation studies (Pym, 2010), although they took on greater complexity in subsequent treatments, and they never lost their relevance for rule-based machine translation (MT). Likewise, the relevance to MT of the probabilistic textual translation equivalents that Catford wrote of has grown as statistics-based MT has developed. Finally, Catford blazed a trail in applying Hallidayan grammar to translation analysis.

Nida

While Catford drew predominantly on a single linguistic theory to account for translation, his contemporary, the Bible translator Eugene Nida, was more eclectic in his approach. Among the many sources Nida draws on, Noam Chomsky's early transformational generative grammar is described as "particularly important" (Nida, 1964, p. 9). Chomsky (1957) theorized that the sentences of a particular language could be represented at two levels: a deep structure (or "kernel"), which represented the basic semantic relations of the sentence; and a surface structure, which could be generated from deep structure through a series of "transformations." Chomsky (1965) further proposed that deep structures might reveal properties that were common to all languages, but warned that the existence of such universals did not have any implications for translation. Nevertheless, Nida proposed that when translating complex SL sentences or phrases, translators should first reduce those sentences to simplified kernels, in which objects, events, abstractions, and relations would be represented. Such kernels could then be "transferred" into the TL, and translators could "generate" appropriate surface structures through a series of transformations. Such a procedure appeared attractive to Nida because he held that:

> languages agree far more on the level of the kernels than on the level of the more elaborate structures. This means that if one can reduce grammatical structures to the kernel level, they can be transferred more readily and with a minimum of distortion. (Nida & Taber, 1969, p. 39)

Nida's application of early Chomskyan linguistics has been roundly criticized in the translation studies literature. Fawcett (1997, p. 67) finds Nida's approach to kernel analysis complex, vague and unnecessary in much translation, while Gentzler (1993) argues that it reveals a mindset in which the (Bible) translator has privileged access to the deep meanings of God's truth, and that the use of Chomskyan linguistics thus serves Nida's evangelical mission more than his attempt to put the study of translation on a scientific footing. Indeed, although Chomsky's early work found application in other declaredly "scientific" approaches to translation (e.g., Malone, 1988), Chomsky's influence on translation studies has been short lived.

Nida's work is more notable for its sociolinguistic orientation and its incorporation of reader response, however. Nida (1964) distinguishes between two basic orientations in translating: the first privileges "formal equivalence" by focusing attention on the source message in both its form and content; such a translation might involve literal translations and explanations of source-culture customs in the form of footnotes, for example. The second privileges "dynamic equivalence" (renamed "functional equivalence" in Nida &

Taber, 1969) and aims to reproduce on the TL addressee the effect that was originally produced on the SL addressee. Thus rather than insisting that readers understand source-culture practices in order to understand biblical messages, the translator may opt for a more natural TL rendering that will be understood more readily in the target context. Hence the New Testament translator, J. B. Phillips, translates a phrase that literally means "greet one another with a holy kiss" (Rom. 16:16) as "give one another a hearty handshake all around" (Nida, 1964, p. 161). Criticisms of Nida's dynamic equivalence are many and varied (Fawcett, 1997, pp. 56–60): it is often impossible to check reader responses for equivalent effect, for example, and translations that aim for dynamic equivalence may suppress the "Otherness" of the source text. The general concept of reader response remains an important one in much of translation studies, however.

A final word is said here about Nida's approach to meaning. Like Catford (1965), Nida (1964) appears to be clear that there can be no language-independent meaning. Nevertheless, he does appear to endorse the possibility of universal *messages* (Nida, 1964, pp. 182–3), a position that is no doubt relatable to his activity as a Bible translator.

Textual and Contextual Approaches

While some of the linguistic approaches to translation discussed so far concentrate primarily on lower linguistic ranks, rarely moving above the level of sentence, later linguistic approaches focus on whole texts, integrating insights from text linguistics, genre, and register analysis in particular. A genre is understood here as a conventionalized text form associated with a particular social occasion or communicative event (e.g., a death notice, or a letter to the editor). Register is generally understood in Hallidayan (Halliday, 1985) terms, and denotes features of texts that are related to the context loosely in terms of the subject being addressed (the field), the relationship between addresser and addressee (the tenor), and the medium in use (the mode, e.g., informal spoken vs. formal written). Reiss (1981, 2000), for example, classifies texts using Bühler's (1933) three functions of language (informative, expressive, operative) and claims somewhat prescriptively that it is primary text function that determines the general method of translation, while the genre also influences translation decisions. Text function is also addressed by House (1977/1981, 1997), who draws on Halliday's three metafunctions of language (ideational, interpersonal, and textual), as well as register analysis, to devise a scheme for translation quality assessment. A number of theorists (e.g., Baker, 1992; Fawcett, 1997; Malmkjær, 2005) consider text linguistic concepts such as cohesion, coherence, and thematic structure, in their discussions of how "texture" is created in translation and the same theorists also go beyond the "words on the page" to consider what is implied (conventionally or otherwise) in source texts and their actual or potential translations, thus extending their analyses to the realm of pragmatics. The work of Hatim and Mason (1990, 1997) is particularly focused on higher linguistic levels and integrates insights from pragmatics, rhetoric, sociolinguistics, and ideologically oriented studies of discourse. Their analyses demonstrate, for example, how variables such as politeness and power impact upon strategies used in counter-argumentation in English and Arabic.

Close attention to linguistic choices and their ideological import is a hallmark of approaches to translation based on critical discourse analysis (CDA). Scholars in this area may, for example, analyze how the translator's choice of particular lexical items or transitivity patterns (the ways in which the participants in a process are represented in a clause) can perpetuate or depart from a particular institutionalized discourse. The survey of relevant work in Saldanha (2009) shows that CDA-influenced research has been a growth area in translation studies since the 1990s.

Over much the same period, corpus linguistics has also made its mark. While it is mainly corpus linguistic methodologies that have been incorporated into translation studies, the linguistic theory of the lexicographer John Sinclair (1991), which builds on Firth's (1957) notion of collocation, has also been influential (see Kenny, 2001, 2006; Malmkjær, 2005). Finally, cognitive approaches to translation (see articles in Alves, 2003; Halverson, 2003) share a number of concerns with linguistic approaches. These include the extent of "translation units" (the textual units with which translators work, whether these are individual words, whole clauses, or even whole texts) and "translation universals," understood as recurrent features of translation (such as relatively high levels of explicitness) that can be detected by linguistic or corpus linguistic analysis.

Conclusion

Linguistic approaches to translation have evolved in line with linguistics itself, and nowadays tend to be more critical and contextually aware than they were in the early days. Contemporary linguistically oriented translated scholars are generally alert to how their approach relates to complementary or competing approaches (see Saldanha, 2009), and are unlikely to claim that linguistic theory can account for all translation phenomena, as Catford appeared to do in the 1960s. The enduring strength of linguistic approaches lies in their ability to link facts about texts to elements of the contexts in which those are translated and received, using a rich array of analytical categories.

SEE ALSO: Cognitive Approaches to Translation; Corpus Analysis in Translation Studies; Critical Discourse Analysis: Overview; Functional Approaches to Translation; Systemic Functional Linguistics; Text-Based Approaches to Translation; Translation Theory

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Linguistic Creativity and World Englishes Literatures

YAMUNA KACHRU

Introduction

A three-year-old asks her mother to push her swing higher. The mother pushes the swing a little more vigorously. The child yells, *High, mummy*. The mother asks, *You want it higher?* The child says, *Yes, bi . . . g high*, with a long [iy] sound.

That is one example of linguistic creativity. Another one is: The mother asks, *Do you like your new teacher?* Her six-year-old says, *Yes*. The mother asks, *Just a little or a lot?* The child says, *Super lot*.

The constructions *big high* and *super lot* are novel collocations in place of a comparative, perhaps never before encountered by most speakers of English. But they are readily interpretable in the context. Children as young as three to six are creative in their language use for everyday interaction. In any mode of language use for societal function, creativity is involved. What do we mean by the concept of *creativity*?

Creativity is hard to define: Every discipline has its own definition of the construct. In linguistics, the term has been used in many domains. Creativity has been discussed in the context of syntactic rules that are capable of generating infinite number of novel utterances, for example, in Noam Chomsky's work. It has been used for characterizing idioms, metaphors, and proverbs exemplifying creative use of language in context. It has been employed to describe bilingual people's linguistic behavior of blending two or more languages to create multiple communicative effects. This is evident not only in conversation, but also in advertising, popular culture, fiction, poetry, and other literary genres. Creativity in the area of word formation and derivation of words has been discussed extensively. One can add many more domains to this list.

Linguistic creativity may be defined as the ability to extend the "meaning potential" of language. That is, the speaker/writer exhibits the ability to make new meanings by combining known elements in novel ways or creating new expressions in specific contexts of language use. However, such creativity should make meaning in the given sociocultural context, that is, its expression should be interpretable by participants.

Linguistic Creativity in Everyday Interaction

It is evident that young children demonstrate creativity in language use in everyday interactions with their caregivers. The same is true of all age groups and all human language speakers and writers, including users of other non-oral modes of linguistic communication such as sign language (Joachim, Prillwitz, & Hanke, 1993). The examples below are drawn mostly from Outer and Expanding Circle varieties of World Englishes (Kachru, 1985).

Linguistic creativity in everyday interaction is well illustrated by the following example between colleagues in Malaysia. Two teachers, one Malaysian, one Tamil, are outside a shopping complex in Kuala Lumpur, Malaysia.

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Khadijah: *Eh* Mala, where on earth you went *ah*? I searching, searching all over the place for you—no sign till one o'clock, so I *pun* [also] got hungry, I went for *makan* [to eat; for some food; for a meal].

Mala: You were *makan*ing [eating] where? My sister, she said she saw you near Globes—when we were searching for parking space. So *susah* [difficult] one, you know? Went roun(d) and roun(d) nearly six times *pun* [also], no place. That's why so late *lah* I!

Khadijah: So, you ate or not?

Mala: Not yet *lah*—just nibbled some *kari paps* [curry puffs] at about eleven, so not really hungry. (Baskaran, 1994, p. 28; italics added)

These exchanges may be problematic for speakers/readers of English not familiar with the Singapore-Malaysian variety of colloquial English since some items such as *lah*, *pun*, and *makan* are not familiar to them. However, the context makes the meaning of *makan* clear. It seems reasonable to assume that the other items are particles of various kinds with discourse significance (see Pakir, 1992). Other notable features of this fragment of conversation are the grammatical form of the questions in the text, use of tense forms, repetition, missing subjects, and so forth. None of these features are barriers either to comprehending the fragment in question or interpreting it (see Kachru & Smith, 2008, pp. 59–70 for a discussion of *intelligibility*). These innovations make English a local variety for interpersonal communication in the setting in which it is being used.

Such grammatical, lexical, and discourse strategic features (e.g., use of specific particles) have been characterized as "bilinguals' creativity" in all varieties of World Englishes (Kachru, 1986). The excerpt cited above is different from other varieties of English precisely because the participants in the interaction are bilingual. They are drawing from both the languages in their repertoire, namely, Bahasa Malaysia and English. This is not a 20th- or 21st-century phenomenon. It has occurred repeatedly in the history of the English language. In fact, it is a natural feature of all human languages in contact with other languages.

Contact influences from other languages are no longer so obvious in Inner Circle Englishes (i.e., English spoken in Britain, Ireland, Canada, the United States, Australia, and New Zealand). English speakers in England are no longer necessarily aware of the linguistic impact of the Norman Conquest of the eleventh century. Speakers of General American English are usually no longer conscious of the influence of Spanish, or other European, Native American, and African languages on their English. In Australian and New Zealand Englishes, the process is still ongoing. Therefore, how the resources of Māori and other indigenous languages are being utilized to give these varieties their unique characteristics is a vigorous field of research. The process is no different in African, Asian, Caribbean, European, or Latin American Englishes. English in these regions is in contact with other indigenous languages. The speakers, who are bilingual or even multilingual, blend the languages in their repertoire with English in their own regional settings. Some of these varieties of English have a long history, for example, Indian English has a history at least as long as the American variety, if not longer (Bolton & Kachru, 2007). The modifier "Indian" in this context includes Bangladesh and Pakistan. These countries did not exist in the early 18th century.

Research reports on various aspects of face-to-face interaction in World Englishes are available. They include the concept and strategies of politeness and speech acts, and on structural features such as turn taking, back channeling, and rhetorical organization of discourse (see Kachru & Nelson, 2006; Kachru & Smith, 2008). The influence of language and cultural contact is discernible on all these aspects. The following example from Indian English illustrates how the bilingual participants move between conventions of various codes in their repertoire smoothly:

A phone conversation between a manager and her employee, of which the author could hear only the manager's part:

A: I am here *only.*
B: . . .
A: We can do this *right* now.
B: . . .
A: I should do this again, *na?* (Recorded by the author on December 25, 2010)

The use of *only* in the first turn followed immediately by *right* in the next turn is puzzling unless one realizes that for the speaker, the use of either the Indianized limiter particle or the Inner Circle English one is equally grammatical and acceptable. In this context, *only* is equivalent to the limiter particle *hii* 'only' in Hindi. The use of *na* in the last turn is similarly motivated by the Indian context of interaction: It is equivalent to the confirmation-seeking use of *right?* in Inner Circle Englishes.

The speaker is a young woman who was educated through the medium of English, majored in English at a prestigious college in Delhi, and has had higher education at the University of California at Berkeley. She has also traveled and lived in England, Scotland, and Continental Europe. Thus her competence in English is not an issue; she is following what will be the norms of interaction in her own sociocultural setting no matter which code she uses—English or Hindi.

An example from Chinese English is reproduced here to illustrate what is meant by *rhetorical organization of discourse*. Following a talk given by a Chinese visiting professor of nutrition from Beijing, an American in the audience raised a question. The following exchange took place:

American: How does the Nutritional Institute decide what topics to study? How do you decide what topic to do research on?
Chinese: **Because**, now, period get change. It's different from past time. In past time, we emphasize how to solve practical problems. Nutrition must know how to solve some deficiency diseases. In our country, we have some nutritional diseases, such as x, y, z. **But**, *now it is important that we must do some basic research.* **So**, *we must take into account fundamental problems. We must concentrate our research to study some fundamental research.* (Young, 1982, p. 76)

An Inner Circle listener expects an answer to the question followed by any justification for the point made. However, the Chinese professor is following the rhetorical strategy he is familiar with. In his conception of persuasive interaction, one must first provide the background, which generally consists of the history of the endeavor, and then slowly unfold the main point. The historical facts justify the point being made. The linkers in bold face above (**Because**, **But**, and **So**) are the markers of this organization. The statement in italics constitutes the answer to the question, which comes at the end of the discourse rather than at the beginning.

Linguistic Creativity in Writing

Writing in World Englishes exhibits the same characteristic: hybridization motivated by sociocultural factors. This is not the place to go into the details of text types and their characteristics. All written texts, just as spoken texts, convey sociocultural meaning. These meanings are imparted by the choice of linguistic items as well as the overall structure of

texts. Written texts communicate not only the content of the text, but also the writers' beliefs and attitudes toward the content and the sources from which the material for the content are drawn.

The varieties of World Englishes exploit essentially the same linguistic items to express contextually appropriate cultural meanings in various genres. An example of an identical speech situation calling for various subgenres is a wedding. One subgenre associated with weddings is that of a written invitation to the event. In the American context, the invitation may be from the bride and the groom themselves, sometimes with no mention of their parents. In the Indian context, a wedding invitation printed in English has to be preceded by an oral, face-to-face invitation, or a written apology for extending the invitation through the written medium only. Invitation are sent out to two sets of invitees, that is, to their respective kin and friends, by the bride's and the groom's families. The elders in the family, usually the grandparents of the bride and the groom, are projected as hosts. The parents, and usually all uncles and aunts, are listed as hosts. The invitations are usually very elaborate, with several cards giving details of all social rituals and their dates and timings.

These two differing conventions follow from the goal of invitations in the two sociocultural settings. In the Inner Circle, the extending of invitations is for maintaining solidarity with family and friends, for celebrating the event, and for inviting people to wish the couple well. In the Indian context, the purpose is also to identify the extended family unit and reinforce family solidarity for internal as well as external acknowledgment. Weddings are between families, not between individuals. It is a social event for reaffirming the families' position within their social network. The genre of written invitation, nativized to reflect these values of Indian culture, thus differs from the Inner Circle genre in crucial respects.

In persuasive writing, there is a difference between how the texts are to be structured. In the Inner Circle context, the texts usually have a direct, linear form. In the Asian context, that may not be the preferred way of constructing one's arguments. In academic writing, the emphasis is on objectivity in the Western tradition and arguments are based on facts and logic. In the Asian context, texts frequently carry markers of personal involvement of the writer with the topic as well (Kachru, 1992; Kachru, Kachru, & Nelson, 2006, pp. 347–402).

Literary Creativity in World Englishes

Literatures in World Englishes, such as Indian, Southeast Asian, Caribbean, have given rise to multiple canons in addition to the American, Australian, Canadian, English, Irish, and other Inner Circle ones. That is, again, due to the sociocultural contexts of the Outer and Expanding Circle Englishes. As Kachru (2006) explains, World English literatures share the *medium*, but not the underlying *message*, since the messages of these literatures are in accord with their individual ecosystems (Thumboo, 1985). The following three crucial realities dictate the distinct identities of African, Caribbean, Indian, Philippine, or Singaporean, English literatures:

> *First*, . . . the medium is shared by two distinct types of speech communities: those that perceive themselves as monolingual and those that are *multilingual* and *multicultural.*
> *Second*, . . . there is a long tradition of distinct literary and/or oral traditions and mythologies associated with these communities; and
> *Third*, . . . they represent distinct repertoires of stylistic and literary creativity. (Kachru 2006, p. 456)

One needs to know something about the salience of certain cultural themes (Spradley, 1979) for a people to interpret even the titles of literary works, for example, *The Bone People* by the New Zealand Māori writer Keri Hulme (see Tawake, 1993, for an explanation). The following excerpt from a South Asian novel needs familiarity with Indian sociocultural conventions to interpret the text:

> "This heat has given me a headache," he complained and stood up. "I am going to bed."
> "Yes, you must be tired," agreed his mother. "Champak, *press* his head, he will sleep better."
> "I will," replied Champak, standing up. She bent her head to receive her mother-in-law's blessing. "*Sat Sri Akal*."
> "*Sat Sri Akal*," replied Sabhrai lightly touching Champak's shoulder.
> "*Sat Sri Akal*," said Sher Singh.
> "Live in plenty. Live a long age," replied Sabhrai taking her son's hand and kissing it. "Sleep well." (Singh, 1959, p. 17)

All the words, except *Sat Sri Akal*, are familiar, and so is the context: a son declaring he is going to bed and uttering a greeting (leave-taking) such as "good night," and his mother giving an appropriate response. Other elements of the text, however, may not be as interpretable. For some readers, the mother-in-law's presence in the scene may be puzzling. Other unfamiliar features may be the command that the mother-in-law issues to the daughter-in-law to "press" the son's head. In this Indian context, *press* means 'massage' and is equivalent to the word in an Indian language, for example, *sir dabaanaa* 'to press one's head' in Hindi.

The greeting *Sat Sri Akal* identifies the family as belonging to the Sikh community, and the son's use of this phrase followed by the mother's blessing represent the traditional pattern of such exchanges in South Asia (Kachru, 1995). In traditional Indian joint families, married sons live with their parents, which explains the mother-in-law's presence. The command by the mother-in-law to her daughter-in-law is normal: Daughters-in-law are treated no differently than daughters. They are expected to obey their parents-in-law. What is essential to arrive at a rich interpretation of the text is familiarity with the institution of "family" as it functions in India, and the patterns of interaction that are attested in that context.

Literary creativity in the Outer and Expanding Circle has had a significant and lasting impact on the literary scene of World Englishes. This is confirmed by the fact that in recent years a number of the prestigious literary prizes have been awarded to writers from these circles. The list includes the Nobel Prize in Literature, awarded to Wole Soyinka (Nigeria) in 1986, Derek Walcott (Trinidad) in 1992, V. S. Naipaul (Trinidad) in 2001, J. M. Coetzee (South Africa) in 2003; the Neustadt Award to Raja Rao (India) in 1988; the Booker Prize, awarded to Naipaul in 1971, Salman Rushdie (India) in 1981, Coetzee in 1983 and 1999, Michael Ondaatje (Sri Lanka) in 1992, Ben Okri (Nigeria) in 1991, Arundhati Roy (India) in 1997, Kiran Desai (India) in 2006, Arvind Adiga (India) in 2008.

Conclusion

It is not possible to explore all facets of linguistic creativity in this short entry. For lack of space, the entry has not touched upon the domains of print, audio and video media, commerce, and pop culture (see Kachru et al., 2006, pp. 271–346). However, research in all these areas is continuing and new insights are being gained in linguistic form and language use.

Linguistic creativity in World Englishes is a fascinating topic of study as it has wider implications for investigations in human linguistic competence, sociolinguistics, and language education (see Bolton & Kachru, 2006, 2007; Kachru et al., 2006; Kachru & Smith, 2008).

SEE ALSO: History of World Englishes; Varieties of World Englishes

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Linguistic Disadvantage of Children in Legal Contexts

MICHELLE ALDRIDGE

Talking with anyone in authority is a challenging prospect for most people. This claim is true for all in the legal setting but especially so for those who, for whatever reason, are not competent in language and communication. In this entry, we review the experiences of people who are linguistically disadvantaged within the legal setting. Our focus will be on children, but much of our discussion is also relevant for people with communication disabilities and non-native speakers. We focus on witnesses and victims rather than offenders and consider how they cope in investigative interviews and cross-examination.

We investigate cases of sexual abuse for, in this crime, there is often no corroborative evidence and therefore the case will rest solely on the linguistic accounts given. Our discussion is based on those countries with common law where justice is decided by the adversarial system. Here, a verdict is given by the jury based on the account of the prosecution for the victim/witness and the defense for the accused. A guilty verdict will be given if the jury decides "beyond reasonable doubt" that the prosecution is telling the truth. The adversarial system is thus a war of words where the witness/victim's account has to be persuasive.

Historically, children have not had a fair hearing within the criminal justice system: they were considered the "most dangerous of all witnesses" (Whipple, 1911, p. 308); sexual abuse of them was not recognized, and even in cases where it was, they were thought to be "highly suggestible, unable to differentiate fantasy from reality" and possessing what today we would call very "malleable memories" (Goodman, 1984, p. 2). The situation, however, has improved in many countries; as Bussey (2009, p. 212) noted, "the lack of regard for children's special needs in justice systems was formally acknowledged by the Union Nation's convention on the rights of the child (1989). This charter challenged legal systems throughout the world to focus on the rights of child witnesses without negating the rights of the accused".

Following this charter, in many countries a great deal has been done to improve the rights of all within the criminal justice system, and special attention has been paid to vulnerable witnesses (see *Achieving Best Evidence* [ABE], Home Office/Department of Health, 2007 for a definition and review of the system in England and Wales as an example) with the aim of giving them the opportunity for a fair hearing. There remain, of course, cultural differences: some countries in Asia and China, for example, do not recognize abuse within families; in Australia, cultural sensitivities have largely precluded investigating within the Aboriginal communities (see Eades, 2002, 2003, 2004 for more detail); and in the USA the rights of the accused remain paramount, making many changes made by common law jurisdictions harder to achieve (Bussy, 2009, p. 212).

In any legal case, and certainly within the adversarial system, justice depends on the participants being willing to give an account of events. This first hurdle is especially hard in cases of sexual abuse, where very often the perpetrator has frightened the victim into silence by warning them that something terrible will happen if they "tell anyone their secret" (Alaggia, 2005).

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The next issue is whether the witness is able to talk about the abuse in an interview setting, and much has been written about the cognitive (in)abilities of children and the questioning style of investigative officers. With regard to the role of the witness within an investigative interview, people who are linguistically disadvantaged have been deemed, until recently, to be unreliable because

- they have a short memory,
- they lack sufficient vocabulary,
- they can't construct a full narrative account of events and therefore provide insufficient evidence,
- they are suggestible to questioning.

It is now well established, however (see Bottoms, Najdowski, & Goodman, 2009 for a review), that children as young as four possess the necessary moral and cognitive capacities to be interviewed if done so appropriately (e.g., Lyon & Saywitz, 1999; Burgwyn-Bailes, Baker-Ward, Gordon, & Ornstein, 2001). Until recently, however, interviewing techniques have not been appropriate. Many interviews, for example, have been interrogative rather than investigative in nature; the police officer has dominated the interview with complex, hostile, and leading questions; there have been long delays between the reported crime and the investigative interview; and the witness statement often was not a true reflection of what the victim said but rather was a summary reflecting the police's agenda. Clearly, changes had to be made.

Much scientific research was done in analyzing the linguistic interactions in real-life interviews and through linguistic experiments with children and mock juries to (i) evaluate the developmental perspective of the child (Cronch, Viljoen, & Hansen, 2006; Goodman & Melinder, 2007); and (ii) establish a wide range of techniques and practice in interviewing styles (see Saywitz & Camparo, 2009 for a review). A consensus was reached, and, from these recommendations, many countries now have professional interviewing guidelines and protocols. Some of the best known are:

- the cognitive interview (Geiselman, Fisher, Firstenberg, Hutton, Sullivan, & Avetissian, 1984);
- the step-wise interview (Yuille, 2002);
- ABE (Home Office/Department of Health, 2007);
- NICHD (National Institute of Child Health and Human Development) (Lamb, Orbach, Hershkowitz, Espin, & Horowitz, 2007).

While these protocols vary, they share similar recommendations, with many of them following a phased approach to the interview. We summarize here some of ABE for illustrative purposes. The guidelines within ABE recommend that the interview should take place in a nonhostile, supportive, environment (often a purpose-built interview suite). Time should be made for rapport, where the interviewer empowers the witness to gain some control of the process and content of their disclosure (Shepherd & Milne, 1999, p. 132) by asking nonthreatening neutral questions such as "I don't know you very well yet, so please tell me something about what you do after school"; and giving working guidelines such as it is all right to say "don't know" to a question and to have a break at any time. During this phase the interviewer should be listening to the witness's language skills and establishing that she understands the importance of telling the truth, because in England and Wales children do not take the oath. Care must be taken here to explain the procedure and terms to the witness. For example, a child who believes that "judges

give money away at pet shows" and that "the police put people in prison" (Aldridge, Timmins, & Wood, 1997) is not going to be willing to give an account of events.

Once rapport has been achieved, the interview will move into the free narrative phase, where the aim is to get the witness to tell her story. Initially, the "TED" questions should be asked:

Please tell me what happened? (T)
Please explain what happened? (E)
Please describe what happened? (D)

Davies and Westcott (1999) claim that this phase is crucial to the outcome of the case, since juries find free narratives persuasive because they present the child's rather than the interviewer's account and, in providing a monologue, children are free from any suggestions that adult questions may offer. The interviewer should provide a framework for the child to build his own account around with lines such as "I want you to start at the beginning, take your time and tell me what happened."

This phase, though, is not without difficulty because young children can find account giving difficult. We know, for example (Goodman & Melinder, 2007, p. 12), that "open-ended questions typically elicit the most accurate, albeit often the most skeletal, reports from children." The following is a typical account from a police (IR) interview with a child witness (IE) aged 10 years:

IR: It's ok to tell me.
IE: He said lie down for a minute and I said no and then I lied down and he got it in and he put it in here and he turned me over and licked my bum and that's all of it

An adult witness would be most unlikely to answer in this way; a lot of information is missing and the interviewer will need to ask questions to supplement the very short account given. In brief, the younger the child, the more the interviewer is likely to have to prompt. As shown below, a young child might offer a single piece of information while an older child can link events together:

Police interview with a child witness aged 5
IR: Tell me what happened?
IE: Jimmy put mummy's tights on

Police interview with a child witness aged 9
IR: Tell me what happened
IE: I was sitting on the van and what he done, he touched my bum and then after that he put his hand under my shirt, this shirt.

Problems with vocabulary occur in this phase too, simply because a young child will not have the rich vocabulary necessary to recount what has happened. Compare (a) with (b).

(a) *Police interview with a child witness aged 4*
IE: He touched my leg
IE: Phil put his fingers in my private

(b) *Police interview with a child witness aged 9*
IE: He rubbed my leg
IE: He pushed his fingers into my private parts

Bell and Loftus (1985) report (amongst others) that juries are more influenced by vivid and powerful language than by powerless language (for the concept of powerful vs. powerless language see O'Barr, 1982), so we might anticipate (b) having a greater impact on a listener than (a), even though they are describing similar events. The interviewer will therefore have to work harder to elicit accounts from younger children.

After the TED questions, the interviewer should ask *wh*-questions in the order in which they are acquired by children, namely: what, where, who, when, how. "Why" should be avoided as it tends to attribute blame. Finally, if it is the only means of eliciting missing information the interviewer can use focus questions such as "Was it a red or white car?" and yes/no questions. These questions should be delayed as long as possible as children are more likely to give inaccurate responses to them (Lamb et al., 2007). It is known, for example, that in order to please, young children will typically answer "yes" to yes/no questions and adopt a recency strategy in an option question, offering the last option heard.

Finally, the interviewer must make time for closure so that the child can ask any questions and understand what has happened and what will happen next. The child should also be thanked for his contribution.

It is now recommended that this interview be audio or video recorded. In England and Wales, the norm is for video interviewing. The video evidence will be passed to the Crown Prosecution Service and, if thought appropriate, will be shown in court as the child's evidence-in-chief (the case for the prosecution).

To achieve best practice, it is essential that interviewers receive specialized training on interviewing techniques and child development so that they avoid biasing the child's account. Regular monitoring of the interviewer's performance is also advised.

Just as there have been changes in procedure for the police interview, so there have been changes in legislation for vulnerable witnesses in court in England and Wales. More specifically, in 1999 the Youth Justice and Criminal Evidence Act was passed. Part 2 of this Act embodied the legislative provision of "Speaking Up for Justice" (1998), which included a number of special measures intended to address the problems of vulnerable and intimidated witnesses within the court process (Burton, Evans, & Sanders, 2007, p. 1). *Achieving Best Evidence* (Home Office/Department of Health, 2007) gives a definition of vulnerable and intimidated witnesses, and people who fall into these categories can apply for special measures, which include

- screening the witness from the accused,
- giving evidence by live link,
- the removal of wigs and gowns,
- giving evidence in private,
- video recording of evidence-in-chief,
- video recording of cross-examination and reexamination,
- examination through intermediary, and
- provision of aids to communicate.

Witnesses are also protected from cross-examination by the accused in person and there should be no mention of sexual history in court. Similar "special measures" are found in Australia, Canada, Hong Kong, Ireland, Israel, New Zealand, Scotland, South Africa, and the USA.

When a case goes to court, the police interview is shown in the courtroom as the witness's evidence-in-chief. Unfortunately, however, the witness still has to go to court for cross-examination, although, in many countries, this will typically happen in a link room or behind a screen. It has been suggested that this experience may, in fact, be worse for witnesses than giving their entire evidence live because under this system they "are plunged

directly into hostile cross-examination at trial without the 'warm up' that examination-in-chief arguably provides" (Ellison, 2001, p. 57). In court, the witness is subjected to the well-known linguistic strategies used by defense lawyers, such as coercive questioning and intimidation tactics (Conley & O'Barr, 2005) which distress the witness and potentially distort the evidence by discrediting the prosecution case and diverting the focus of the jurors away from the central issues (Ellison, 2001, p. 111).

The changes in legislation and the introduction of interviewing protocols have no doubt improved opportunities for witnesses. Many surveys in the UK (Hamlyn, Phelps, Turtel, & Sattar, 2004: Plotnikoff & Woolfson, 2004; Aldridge & Williams, 2006) report that witnesses and interviewing officers have benefited from the changes but, as with all progress, there are reported disadvantages such as the following:

- Public awareness. Officers felt that they, the lawyers, the judges, and the public needed awareness-raising exercises to understand how special measures worked and to dispel common myths and prejudices that all children and people with disabilities will be unreliable witnesses. Many felt that calling these witnesses "vulnerable" added to the stereotype of limitations rather than empowering them.
- Impact. Some officers expressed doubts that giving evidence via video or link room was as effective as giving live evidence in the courtroom (Cashmore & Trimboli, 2005; Aldridge & Williams, 2006), though some research in England and Wales and in Australia does not support this concern (Taylor & Joudo, 2005). For this reason, however, child witnesses in America still present live for cross-examination.
- Changing laws does not guarantee their effective implementation. Some officers fear that the quality of video evidence is poor and many cases are being thrown out because of sound quality issues rather than the witness's account.

The overriding problem still seems to be the nature of the adversarial system itself. A quote from one of our officers (Aldridge & Williams, 2006) summarizes the current position:

> The criminal justice system struggles to provide an adequate stage on which vulnerable witnesses can perform. The court doesn't accept [that] the young child or the disabled witness can be reliable. Special measures do not provide an equal footing for such witnesses. The burden of proof is beyond most witnesses.

As Ellison (2001, p. 12) notes, "there is a clear and seemingly irreconcilable conflict between the needs and interests of vulnerable witnesses and the basic assumptions and resultant evidentiary safeguards of the adversarial trial process." Similarly, Aldridge and Luchjenbroers (2008) report that there remains a problem with the dual function of the video interview since it has both to gather evidence for use in criminal proceedings and to act as the prosecution case. These tasks may be incompatible. Combining this with the fact that cross-examination still goes on linguistically unchecked, we wonder whether tinkering with the system can ever work. It seems that the adversarial system cannot easily offer justice for people who are linguistically disadvantaged and that research should turn to examining whether the inquisitorial style of criminal proceedings holds inherent advantages for such populations.

SEE ALSO: Analysis of Dialogue; Child Pragmatic Development; Conversation Analysis and Child Language Acquisition; Conversation Analysis and Interview Studies; Determining Language Proficiency in Legal Contexts; Language of Police Interviews

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Linguistic Diversity

LENORE A. GRENOBLE

Although it is somewhat difficult to count languages and to measure linguistic diversity with exact precision, there are estimated to be between 6,000 and 7,000 languages spoken in the world today. Languages can be classified genetically or typologically. Genetic classification involves the relationships of languages from a common ancestor, how they are related in terms of linguistic families. Typological classification involves how languages are more or less similar in terms of type of linguistic structures. Finally, diversity can also be found within a single language, with differences due to geography or social factors. Even monolingual speech communities are not homogeneous; speakers exhibit differences according to region, age, gender, level of education, and socioeconomic status. Yet the majority of people in the world are bilingual or multilingual, a critical factor to be taken into account in formulating educational and linguistic policies in many parts of the world. Linguistic diversity is an important factor in language planning and policy making, and in educational methods and policies. At present one of the major concerns for many linguists and speakers alike is language endangerment and the potential loss of much of the world's linguistic diversity. Thus language diversity is an issue of utmost importance in applied linguistics.

Genetic Groupings and Diversity

Genetic linguistics classifies languages which can be traced to a common ancestor in terms of family trees. Genetic groupings can be made at many different levels, with smaller groupings of just two or three languages whereas the largest grouping, a language stock, consists of many languages. These languages are typically arranged on a language tree, with more closely related languages grouped together on a single branch; branches are then grouped together on nodes, where a node again represents a common ancestor. The Indo-European family is the most studied. There are no records of the earliest form of the ancestral language, proto-Indo-European, but it has been reconstructed through the comparative method.

In order to establish a genetic relationship between two or more languages, a large number of similarities must be established at different linguistic levels (phonological, morphological, and syntactic). It is important to have sufficient data to rule out similarities from parallel but separate changes, those due to contact and borrowing (such as loanwords but other kinds of contact-induced change as well), and others due to typological similarities. There have been attempts to group language families into larger groupings, sometimes in search of a common ancestor for all human languages. Such groupings are highly controversial because they are reconstructions based on reconstructions, not attested languages, and need to be approached with serious skepticism.

Typological Diversity

Languages can also be classified in terms of type, or structure. This system ignores genetic relatedness and instead looks for correlations between structures. A very common system

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is word order classification, grouping languages together on the basis of the order of the basic constituents of subject (S), object (O) and verb (V). English is an SVO language and Turkic SOV. Certain other characteristics correlate with basic word order. For example, SVO languages have a strong tendency to use prepositions, while SOV languages use postpositions. As this characterization suggests, typology is concerned not only with finding which structures are useful for classification but also how they correlate with one another. Part of this involves the search for linguistic universals—absolute universals are true of all languages, while those that are widespread but not absolute are considered to be tendencies, not universals.

Typology classifies languages according to a variety of structure—phonological, morphological or syntactic—and therefore it is impossible to determine just how many different types of languages there are. That said, some structures or patterns provide more insight into human language than others. For example, it is not particularly useful to classify languages with the vowel /o/, as a great many languages have it, but it can be useful to classify languages in terms of the number of vowel (or consonant) phonemes. The *World Atlas of Linguistic Structures*, or WALS, (Haspelmath, Dryer, Gil, & Comrie, 2005), is one attempt to map a multitude of different structural variables geographically to uncover what, if any, patterns exist through space. The sampling in WALS shows that the most common vowel inventory is five vowels; only four languages have inventories with only two vowel phonemes, and only one (German) hits the high end of 14 vowel phonemes (Maddieson, 2005, p. 14). Within the category of word order types, SOV is somewhat more common than SVO. But if one looks at the position of just the subject relative to the verb, the subject precedes the verb in a much larger percentage of known languages. Moreover, languages in which the object is the first element are very uncommon, both OVS and even more so OSV are quite rare (Dryer, 2005, pp. 330–5).

Structural diversity is extremely difficult to calculate. In contrast to genetic diversity, where languages can be grouped into stocks and compared, there is no comparable measure for structural diversity. Moreover, structural diversity in fact refers to a range of different features which are independent of one another. Languages can be similar according to one parameter (such as phonology) and very different according to another parameter (e.g., morphological marking). Work in linguistic typology is advancing in terms of determining what, if any, correlations exist between these different variables, and the extent to which they pattern with genetic relations emerges. One classic system is according to morphological type. There are four basic categories: *fusional*, *agglutinating*, *isolating* (or *analytic*), and *polysynthetic*. In isolating languages (like Chinese), there is a strong to absolute correlation between the word and a grammatical morpheme. In agglutinating languages (e.g., Turkish), morphemes tend to have a single, identifiable function. Such morphemes are typically suffixes added to a lexical base and can be readily segmented. Fusional languages (such as Latin) combine more than one function in a morpheme, such that the marking of plural and case are found in a single morpheme. In agglutinating languages, in contrast, these would be encoded in two separate morphemes. Polysynthetic languages are less common than the other three types and are characterized by words with a large number of morphemes, lexical and inflectional; the long strings of morphemes often better correspond to sentences than words in other types of languages.

Sociolinguistic Typology

Both typological and genetic classification systems look at linguistic diversity across individual languages and see how they compare to one another. But languages also exhibit diversity, or variation, across dialects and sociolects. Such differences are generally treated

under the rubric of dialect diversity, although they extend beyond regional variation. Dialect diversity and sociolinguistic variation consider how language differs and changes in speech communities with particular emphasis on the interaction of social factors (such as gender, ethnicity, age, and so on) and linguistic structures. Foundational work in sociolinguistic typology argues that the distribution of linguistic features over language is not random or areal but to a certain extent predictable, based on the hypothesis that there is a correlation between social structure and linguistic structure (see Trudgill, 2009, for an overview). There are also differences according to the speech situation itself: language varies across different genres and registers. The teaching of dialect awareness and sensitivity to dialect diversity has attracted greater attention as linguists make the case for the importance of such information in teaching literacy skills and basic education (see Wolfram & Schilling-Estes, 2006, pp. 329–60).

Measuring Language Diversity

Given the vast number of different languages in the world, we can ask how they are geographically situated and whether certain areas of the world show greater language density (and thus diversity) than others. Taking Lewis (2009) as a starting point for identifying languages and numbers of speakers, we see that there is great variation in language density. Papua New Guinea, with only approximately 0.6% of the world's speakers and 0.4% of the world's land, is home to 830 languages, or 13–14% of all languages. In contrast, Haiti has only two languages with a total population of 6,960,000 speakers, so linguistic diversity is very low.

One well-known measure is Greenberg's (1956) diversity index—the probability that any two random members of a given population speak the same language. By this measure, the diversity index for Papua New Guinea is 0.99, the highest in the world, and Haiti is very low, 0.03 (Lewis, 2009). Greenberg himself is quick to point out that this measure fails to take into account the diversity of the languages themselves in a given region. Most would agree that a region where a large number of closely related languages are spoken is somehow less diverse than a region where a smaller number of unrelated languages are spoken.

In order to determine just how much genetic diversity there is, it is important to compare the same levels of trees with one another. The most clearly established comparison is found in Nichols (1992). Nichols examines linguistic diversity at the level of a language stock. She makes a rigorous distinction between these two classifications, family and stock, which in turn enables her to compare similar levels of genetic classification to assess linguistic diversity. A language stock is a group of languages which can be traced to a common ancestor. Using this methodology, one arrives at a figure of 250 different language stocks; their geographic distribution can be computed to provide a picture of language density by determining the number of language stocks per square mile, dividing the world into 10 continental and subcontinental regions (Nichols, 1992, p. 233). Nettle (1999, p. 117) augments this by adding the number of families per stock. They do not pattern exactly, since some stocks have more languages than others. Thus, for example, New Guinea has a language density of 1,197.6/km^2 with 27 stocks and a genetic density of 227.3; Oceania is second highest with a language density of 322.1/km^2 but has only 4 stocks. North America is on the low end with a language density of 12.3/km^2 but 50 stocks.

One clear pattern emerges from these calculations. Genetic density is low for the "Old World" regions (Africa, northern Eurasia, South and Southeast Asia) and higher for the colonized regions of the world, or the "New World" (the Americas, New Guinea, and Australia). Language density can also be correlated with relation to the equator: language

diversity is greatest along the equator and thins out further away. In addition, there are two belts of great linguistic diversity in the Old World. One of these extends from the Ivory Coast along West Africa and into Zaire, while the other stretches from southern India through the Indonesian islands, New Guinea, and into the Western Pacific (Nettle, 1999, p. 61).

The picture is further complicated if we calculate not only genetic relatedness but add the factor of structural diversity, although this is challenging because such diversity can be assessed along so many different parameters. Yet another measure would be to take into account the number of indigenous versus immigrant languages. Two linguistic families dominate in terms of number of speakers worldwide and in terms of geographic range. The Sino-Tibetan family has the most speakers as Mandarin (Chinese) is by far the most widely spoken first language. The Indo-European language family, due to a history of geographic spread, colonization and conquests, is spread throughout the globe.

SEE ALSO: Ecology and Multilingual Education; Grammatical Variation in Adolescent Language; Language Endangerment; Language and Globalization; Standardization in Human Language Technology

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Linguistic Human Rights

TOVE SKUTNABB-KANGAS

Introduction: What Are Linguistic Human Rights?

If the search engine Google had existed some 30 years ago, searching on the term "linguistic human rights" (in English) would probably have given maximally a dozen hits or so, if any. Today (October 2011), there were around 9,260,000 hits. Even Google Scholar returns 579,000 entries. It seems that the concept resounds with many people. Language endangerment, maintenance, and revitalization and general protection of both users of various languages and the languages themselves are central topics, with both Indigenous peoples and various minorities (urban, rural, national, immigrant, refugee, asylum-seekers, etc). Linguistic human rights (LHRs) in education combine many of the interests in this multi- and transdisciplinary area.

Linguistic rights or *language* rights (LRs), terms often used as synomyms, are all rights related to the learning and use of languages. Some researchers regard linguistic rights as a somewhat broader concept than language rights. In this case they are often discussing rights not only to various languages but also to varieties *within* the "language" label, for example regional, gender-based, or class-based varieties. LRs have been discussed for centuries, and the first multilateral treaties about LRs date from the 1880s (see Capotorti, 1979; Skutnabb-Kangas & Phillipson, 1994a; de Varennes, 1996; Thornberry, 1997; Skutnabb-Kangas, 2000; and May, 2001 for overviews). Our present human rights (HRs) date from the period after World War II, but there were many HRs treaties already under the League of Nations after World War I.

But only those language-related rights are linguistic *human* rights (LHRs) that are so basic that every human being is entitled to them because of being human. They are as necessary to satisfying people's basic needs as food and shelter are; they are necessary to live a dignified life. They are so fundamental that no state (or individual or group) is supposed to violate them. LHRs combine some LRs with human rights. The first full book about LHRs was published in the mid-1990s (Skutnabb-Kangas & Phillipson, 1994b), and the scope of LHRs is still discussed. There are many LRs that are not LHRs. It would, for instance, be nice if everybody could, even in civil court cases, have a judge and witnesses who speak (or sign) this person's language, regardless of how few users the language has. Today, it is in criminal cases only that one has any LHRs (see below). In all other court contexts, people may or may not have a *language* right.

Negative and Positive Rights

Some basic rights prohibit discrimination on the basis of language (negative rights); others ensure equal treatment to languages, individuals, or language groups (positive rights). Most LHRs are negative rights. Negative rights have been defined by Max van der Stoel (1999, p. 8) as "the right to non-discrimination in the enjoyment of human rights," whereas positive rights have to do with "the right to the maintenance and development of identity through the freedom to practise or use those special and unique aspects of their minority life—typically culture, religion, and language." Negative rights must

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> ensure that minorities receive all of the other protections without regard to their ethnic, national, or religious status; they thus enjoy a number of linguistic rights that all persons in the state enjoy, such as freedom of expression and the right in criminal proceedings to be informed of the charge against them in a language they understand (i.e. not necessarily the mother tongue), if necessary through an interpreter provided free of charge. (van der Stoel, 1999, p. 8)

Positive rights are those

> encompassing affirmative obligations beyond non-discrimination . . . [They] include a number of rights pertinent to minorities simply by virtue of their minority status, such as the right to use their language. This pillar is necessary because a pure non-discrimination norm could have the effect of forcing people belonging to minorities to adhere to a majority language, effectively denying them their rights to identity. (van der Stoel, 1999, p. 8)

Negative rights (instrumental rights) are not sufficient for an Indigenous people or a minority to reproduce themselves as a people or minority and they may lead to forced assimilation. In some interpretations, only positive rights (which can also be called affective rights) are LHRs proper.

Who or What Can Have LRs? Languages, Individuals, and Collectivities

Languages themselves may have rights to be used, developed, and maintained. The Council of Europe's *European Charter for Regional or Minority Languages* grants rights to languages, not speakers of the languages concerned: they are LRs, not LHRs. The basic human rights instruments can be found at the Web site of the Office of the United Nations High Commissioner for Human Rights (http://www2.ohchr.org/english/law/).

Many HRs instruments, especially those that were the first to emerge after World War II, are concerned with rights of *individuals* (e.g., the United Nations' *Universal Declaration of Human Rights*, or the UN *Convention on the Rights of the Child* (*CRC*) of 1989, http://www2.ohchr.org/english/law/crc.htm). Some of these are LRs, some may be LHRs. An *individual* from a certain group or with specific characteristics in a specific country may, for instance, have the right to use her or his *mother tongue* in various contexts (e.g., in dealing with the authorities, local, regional or state-wide), orally or signing it, in writing, or all of these. However, the authorities do not necessarily need to reply in the same language.

The *mother tongue* is often for legal purposes defined in a strict way, as the first language that a person learned, and still speaks, and with which she identifies. In most cases both a degree of competence and use of the language is demanded, together with identification; in some (few) cases identification with the language is enough. If those Indigenous peoples whose parents or grandparents were forcibly assimilated are to have a chance to reclaim or revitalize their languages, a definition based on identification only, with no demands of competence or use, is necessary. Educational LHRs, especially the right to mother-tongue-based multilingual education, are among the most important LHRs (see Skutnabb-Kangas, 2000; Skutnabb-Kangas, Phillipson, Mohanty, & Panda, 2009; Heugh & Skutnabb-Kangas, 2010).

Individuals may also have rights in relation to *languages other* than their mother tongue/first language. Mostly these rights relate to a dominant, official, or national language in the country. Some people have also started to demand that access to an international language, in most cases English, should be seen as a language right.

Alternatively, *collectivities* of people (individuals, groups, peoples, organizations, or states) may have rights to use, develop, and maintain languages or duties to enable the use, development, or maintenance of them. The Council of Europe's *Framework Convention for the Protection of National Minorities* grants rights to (national) minorities (i.e., groups). Once a state has both signed (promised to start the process which enables ratification) and ratified one of these human rights instruments (changed their laws and regulations and put processes in place that enable them to fulfill the obligations that they have promised to undertake), these are binding for the state. States usually have a duty to report at specified intervals how they have acted to guarantee the rights, and there is also normally some kind of monitoring body that scrutinizes the reports and gives feedback and guidance to the states. The human rights regime of the League of Nations between the two "World" Wars contained many *collective* rights; in principle most minority rights should be collective rights (see Thornberry & Gibbons, 1997). In the United Nations regime after 1945, it was claimed that no collective rights were necessary since every person was protected as an individual, by individual rights. Collectivities like "minorities" were seen by many negotiators (e.g., the US human rights negotiator Eleanor Roosevelt) as "a European problem," in other words, not universal. The Council of Europe's 1950 *Convention for the Protection of Human Rights and Fundamental Freedoms* (see http://conventions.coe.int/treaty/EN/Treaties/html/005.htm) and the corresponding African and American instruments (the *African Charter on Human and Peoples' Rights* of 1981, see www.achpr.org, and the *American Convention on Human Rights* of 1969, see www.wcl.american.edu/pub/humright/digest/index.html) are regional rights. Universal collective rights reemerged later and few of these are language-related. Some new universal instruments include language-related rights, though, such as the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP, 61/295, 2007, see http://www.un.org/esa/socdev/unpfii/en/drip.html) and the UN *Convention on the Rights of Persons with Disabilities* (2007, see http://www.un.org/disabilities/convention/conventionfull.shtml). Language is mentioned in many articles in the latter; this is especially important for the Deaf. In the former, Articles 13 and 14 have several LHR-related formulations—but since it is "only" a Declaration, it is not legally binding on states:

Article 13

1. Indigenous peoples have the right to revitalize, use, develop and transmit to future generations their histories, languages, oral traditions, philosophies, writing systems and literatures, and to designate and retain their own names for communities, places and persons.
2. States shall take effective measures to ensure that this right is protected and also to ensure that indigenous peoples can understand and be understood in political, legal and administrative proceedings, where necessary through the provision of interpretation or by other appropriate means.

Article 14

1. Indigenous peoples have the right to establish and control their educational systems and institutions providing education in their own languages, in a manner appropriate to their cultural methods of teaching and learning.

Some important language-related instruments try to combine individual and collective rights, by using "persons belonging to a minority" or a similar phrase. This is what, for instance, Article 27 of the UN *International Covenant on Civil and Political Rights* (ICCPR, see http://www2.ohchr.org/english/law/ccpr.htm) uses. Article 27 is still the most far-reaching article in (binding) human rights law granting linguistic rights:

> In those states in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language.

Article 30 in the *CRC* (see above) is almost the same except that it has added "or is indigenous," and it uses "he or she"—Indigenous people and females have become subjects in international law.

Many international organizations and most states have a language policy which spells out the official languages of the organization or state and, by implication, the LRs of the people, groups, and states dealing with, and working within, that entity. The United Nations have six official languages, the Council of Europe only two. The European Union has several times increased the number of its official languages, such that after its latest expansion the Union now (2011) has 25 official languages; all official documents have to be made available in all of these. Many organizations also have working languages; their number may be more restricted. A number of states have only one official (or state) language; most have two or more.

In addition, many states specify one or several national, additional, link, or national heritage languages in their constitutions; in most cases, speakers of these have fewer rights than speakers of the official languages have (see de Varennes, 1996). Most states have spelled out some kind of minority protection for linguistic minorities, either with only negative or with both negative and positive rights. Some countries which do have linguistic minorities deny this fact (e.g., Turkey), therefore the definition of a minority is important. There is no legal definition in international law of what a minority is, even if the issue has been discussed extensively (e.g., Capotorti, 1979; Andrýsek, 1989). Most definitions are fairly similar, though, and resemble the definition below (from Skutnabb-Kangas & Phillipson, 1994a, p. 107, note 2):

> A group which is smaller in number than the rest of the population of a State, whose members have ethnic, religious or linguistic features different from those of the rest of the population, and are guided, if only implicitly, by the will to safeguard their culture, traditions, religion or language.
>
> Any group coming within the terms of this definition shall be treated as an ethnic, religious or linguistic minority.
>
> To belong to a minority shall be a matter of individual choice.

If a group claims that they are a national minority and individuals claim that they belong to this national minority, the state may claim that such a national linguistic minority does not exist, resulting in a conflict. The state may refuse to grant the minority person or group rights which it has accorded or might accord to national minorities. In many definitions of minority, minority rights thus become conditional on the acceptance by the state of the existence of a minority in the first place. According to my definition of a minority (see above), minority status does *not* depend on the acceptance of the state, but is either "objectively" ("coming within the terms of this definition") or subjectively ("a matter of individual choice") verifiable, or both. This interpretation was confirmed by the UN Human Rights Committee in 1994. They reinterpreted Article 27 above in General Comment No. 23 of April 6, 1994 (UN Doc. CCPR/C/21/Rev.1/Add.5, see http://www.unhchr.ch/tbs/doc.nsf/0/fb7fb12c2fb8bb21c12563ed004df111?Opendocument). The UN Human Rights Committee saw the Article as (a) protecting all individuals on the state's territory or under its jurisdiction (i.e., also immigrants and refugees), irrespective of whether they belong to the minorities specified in the Article or not; (b) stating that the existence of a minority

does not depend on a decision by the state but requires to be established by objective criteria; (c) recognizing the existence of a "right"; and (d) imposing positive obligations on the states.

For Deaf people this means that various countries minimally have to see the Deaf as a (linguistic) minority, protected by Article 27. Likewise, the reinterpretation means that minorities, including the Deaf, are supposed to have positive language rights, not only the negative right of protection against discrimination.

Numbers also matter. A group has to have a certain size in order to have language-related rights. It often depends on how many individuals there are in the unit under consideration (country, area, region, municipality, etc.) whether individuals (speakers or signers) belonging to that group have any LRs, let alone LHRs. Two of the most important European LRs documents use group size as a criterion, but do not in any way define it. The *European Charter* and the *Framework Convention* (see above) use formulations such as "*in substantial numbers*," or "*pupils who so wish in a number considered sufficient*," or "*if the number of users of a regional or minority language justifies it*." It is obviously necessary to limit the size to adjust to various contexts and also for economic reasons, but it is also possible for reluctant states to use lack of what they claim are "sufficient" numbers as a legitimation for lack of political will.

Linguistic Genocide and Educational LHRs

Many political scientists seem to think that only (large) national minorities should have their languages promoted by the state (i.e., have positive rights), whereas small national minorities, small Indigenous peoples, and, especially, immigrant minorities, cannot expect more than toleration-oriented negative rights. On the other hand, toleration and non-discrimination, understood in liberal terms (a state should not interfere on behalf of a group's special characteristics, such as religion), does not work in relation to language. A state has to choose *some* language(s) as the language(s) of administration, courts, education, possibly the media, and so on, and this necessarily privileges some language(s) (see Rubio-Marín, 2003).

For proper integration of linguistic minorities and Indigenous peoples, positive *promotion-oriented rights* are thus necessary. Negative toleration-oriented rights are not sufficient and often lead to forced assimilation or even linguistic genocide, according to two of the definitions of genocide in UN *International Convention on the Prevention and Punishment of the Crime of Genocide* (E793, 1948; 78 U.N.T.S. 277, entered into force January 12, 1951; for the full text, see http://www1.umn.edu/humanrts/instree/x1cppcg.htm). The *Convention* has five definitions of genocide. Three of them are about physical or biological killing, but the remaining two fit most of today's (and earlier) Indigenous and minority education:

Article II(e): "forcibly transferring children of the group to another group," and
Article II(b): "causing serious bodily *or mental* harm to members of the group" (emphasis added).

Most speakers of numerically large languages in countries that have not been colonized are probably not even aware of the privilege that they are enjoying, when they can have their education through the medium of a language that they know and understand, and teachers with whom both they and their parents can communicate easily. But for almost all the world's Indigenous and tribal peoples and many if not most minorities (ITMs), and for most children in former colonies in Africa and Asia (regardless of their minority

or majority status), this is a dream that they have been and are still fighting for. ITMs are mostly forced to accept education (if they can attend school at all) in an alien dominant language. Their access to education is denied because of the wrong medium of education (see Tomaševski, 2003; Magga, Nicolaisen, Trask, Dunbar, & Skutnabb-Kangas, 2005; Skutnabb-Kangas & Dunbar, 2010). The controversy about the medium of education is, interestingly, not anymore about the research evidence. It is fair to say that all solid research evidence shows that

- teaching ITM children through the medium of an alien dominant language can and in many cases does lead to negative results in terms of linguistic and cognitive competence, school achievement, self-confidence and identity development, and, later, access to the labor market (see, e.g., Skutnabb-Kangas, 2000; Panda & Mohanty, 2009; Skutnabb-Kangas & Dunbar, 2010); and
- teaching ITM children mainly through the medium of their mother tongues minimally for 6–8 years, preferably longer, with good teaching of a dominant language as a second or foreign language, and possibly having one or several other foreign, often "international" languages, as subjects, can lead to high levels of bi/multilingualism and positive results in terms of the issues mentioned above (see, e.g., Cummins, 1989, 2000; Thomas & Collier, 2002; articles in Heugh & Skutnabb-Kangas, 2010). The increasingly fewer counterarguments are political and not research-based.

According to Nobel Prize laureate Amartya Sen (e.g., Sen, 1985), poverty is not only about economic conditions and growth; expansion of human capabilities is a more basic locus of poverty and more basic objective of development. Dominant-language-medium education for Indigenous children often curtails the development of the children's capabilities (Misra & Mohanty, 2000; Mohanty, 2000). Thus it perpetuates poverty, may cause serious mental harm, and transfers children to another linguistic group through enforced language shift (see Magga et al., 2005; Skutnabb-Kangas & Dunbar, 2010, for references and arguments). Indigenous and minority students (and their parents and communities) need LHRs as one of the necessary (but not sufficient) measures to stop linguistic genocide. And for LHRs, both individual and collective positive promotion-oriented (i.e., not negative and toleration-oriented) rights are necessary. One or the other type alone is not sufficient. It is not a question of either/or, but both/and/and. The debates about the scope of LHRs continue.

SEE ALSO: Language Rights in Language Policy and Planning; Multilingualism and Language Rights; Role of Linguistic Human Rights in Language Policy and Planning

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Linguistic Imperialism

ROBERT PHILLIPSON

The study of linguistic imperialism focuses on how and why certain languages dominate internationally, and attempts to account for such dominance in a theoretically informed way. Many issues can be clarified: the role of language policy in empires (British, French, Japanese, etc.); how languages from Europe were established on other continents, generally at the expense of local languages; whether the languages that colonialism took to Africa and Asia now form a useful bond with the international community, and are necessary for national unity internally, or are a bridgehead for Western interests, permitting the continuation of marginalization and exploitation. In a globalizing world, has English shifted from serving Anglo-American interests into a more equitable instrument of communication for diverse users? Or do US corporate and military dominance worldwide and the neo-liberal economy constitute a new form of empire that consolidates a single imperial language? Can the active suppression of languages such as Kurdish in Turkey or of Tibetan and Uyghur in China be seen as linguistic imperialism? With the increasing importance of China globally, will the vigorous promotion of Chinese internationally convert into a novel form of linguistic imperialism?

The evidence for or against linguistic imperialism can be investigated empirically in a given context. Linguistic imperialism entails the following (Phillipson, 1992, 2009):

- Linguistic imperialism interlocks with *a structure of imperialism* in culture, education, the media, communication, the economy, politics, and military activities.
- In essence it is about *exploitation*, injustice, inequality, and hierarchy that privileges those able to use the dominant language.
- It is *structural*: More material resources and infrastructure are accorded to the dominant language than to others.
- It is *ideological*: Beliefs, attitudes, and imagery glorify the dominant language, stigmatize others, and rationalize the linguistic hierarchy.
- The dominance is *hegemonic*: It is internalized and naturalized as being "normal."
- This entails *unequal rights* for speakers of different languages.
- Language use is often *subtractive*, proficiency in the imperial language and in learning it in education involving its consolidation at the expense of other languages.
- It is a form of *linguicism*, a favoring of one language over others in ways that parallel societal structuring through racism, sexism, and class: Linguicism serves to privilege users of the standard forms of the dominant language, which represent convertible linguistic capital.
- Linguistic imperialism is invariably *contested and resisted*.

The term imperialism derives from the Latin *imperium,* covering military and political control by a dominant power over subordinated peoples and territories. A panoramic history of language empires reveals great variety in the role of languages (Ostler, 2005). In the period of global European dominance, a combination of military, commercial, and Christian missionary activities facilitated the transplantation of Western cultural and educational norms and languages (Fanon, 1952, Mühlhäusler, 1996, Rassool, 2007). Using

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terms like imperialism is contentious, because "Defining something as imperial or colonial today almost always implies hostility to it, viewing it as inherently immoral or illegitimate" (Howe, 2002, p. 9), although the dominant tend to have no illusions about the workings of empire. In the Roman empire that covered much of Europe and North Africa, the strategy for co-opting a conquered people was insightfully analyzed by Tacitus 2000 years ago:

> in place of distaste for the Latin language came a passion to command it. In the same way, our national dress came into favour and the toga was everywhere to be seen. And so the Britons were gradually led on to the amenities that make vice agreeable—arcades, baths and sumptuous banquets. They spoke of such novelties as "civilization" when really they were only a feature of enslavement. (Tacitus, trans. 1948, p. 72)

The significance of language for the colonial adventure was appreciated from its inception. In 1492 Queen Isabella of Spain was presented with a plan for establishing Castilian "as a tool for conquest abroad and a weapon to suppress untutored speech at home": for its author, Antonio de Nebrija, "Language has always been the consort of empire, and forever shall remain its mate" (Illich, 1981, pp. 34–5). The language was to be fashioned as a standard in the domestic education system, as a means of social control, and harnessed to the colonial mission elsewhere.

When French became a lingua franca for secular purposes in Europe, there was widespread belief in the intrinsic superiority of the language. The Academy of Berlin held a competition in 1782 on the theme of why French was a "universal language." A winning essay argued that languages which do not follow the syntax of French are illogical and inadequate. Maintenance of a linguistic hierarchy typically involves a pattern of *stigmatization* of dominated languages (mere "dialects," "vernaculars"), *glorification* of the dominant language (its superior clarity, richer vocabulary), and *rationalization* of the relationship between the languages, always to the benefit of the dominant one (access to the superior culture and "progress"). The ancient Greeks stigmatized non-Greek speakers as *barbarian*, meaning speakers of a nonlanguage. The term *Welsh* was used by speakers of English to refer to people who call themselves *Cymry.* "Welsh" in Old English means foreigners or strangers, a stigmatizing categorization from the perspective of the dominant group and in their language. A dominant language is projected as the language of God (Sanskrit, Arabic in the Islamic world, Dutch in South Africa); the language of reason, logic, and human rights (French both before and after the French Revolution); the language of the superior ethnonational group (German in Nazi ideology); the language of progress, modernity, and national unity (English in much postcolonial discourse). Other languages are explicitly or implicitly deprived of such functions and qualities.

Colonial governments implemented linguicist policies that discriminated in favor of European languages. Linguistic hierarchization figured prominently, alongside racism, in the legitimation of the colonial venture (Pennycook, 1998), as it does in arguments that celebrate the current dominance of English globally (Phillipson, 2009). An analysis of the links between linguistics and the furtherance of the French colonial cause documents how French "consumed" other languages by processes of linguistic cannibalism, *glottophagie* (Calvet, 1974). Linguistic genocide, as defined in work on the United Nations genocide convention, is in fact still practiced widely in the modern world when groups are forcibly assimilated to the dominant culture and its language (Skutnabb-Kangas, 2000); such policies can also be seen as a crime against humanity (Skutnabb-Kangas & Dunbar, 2010).

Expansion Through Linguistic Imperialism

The expansion of English from its territorial base in England began with its imposition throughout the British Isles. The 1536 Act of Union with Wales entailed subordination to the "rights, laws, customs and speech of England" (cited in Jenkins, 2007, p. 132). Throughout the British Isles a monolingual ideology was propagated, with devastating effects, even if some Celtic languages have survived and are currently being revitalized. A monolingual ideology was exported to settler colonies in North America and Australasia. President Theodore Roosevelt wrote in 1919: "We have room for but one language here, and that is the English language." More differentiated policies were needed in exploitation colonies (where the climate precluded settlement by Europeans) such as the Indian subcontinent and most African colonies (Rassool, 2007).

The present-day strength of English, French, Spanish, and Portuguese in the Americas, in Africa, in Asia, Australasia, and the Pacific is a direct consequence of successive waves of colonization and of the outcome of military conflict between rival European powers. Between 1815 and 1914 over 21 million British and Irish people emigrated, the greatest number to the USA, and increasing numbers to Canada, Australia, New Zealand, and to a lesser extent South Africa. This demographic movement, also undertaken by the Dutch, French, Portuguese, and Spaniards, assumed a right to occupy territory as though it was unoccupied: the myth of *terra nullius* which assumed that aboriginals had no right of ownership of the land. The aim was to establish replicas of the "home country" in New Amsterdam (later New York), New England, New Zealand, Nova Scotia, Hispania, and so forth.

Native American languages were initially used in missionary work and education, but when competition for territory and resources intensified, conflict between the settlers and indigenous peoples increased. Education was then established on the principle "that the only prospect of success was in taking the children in boarding schools, and making them 'English in language, civilized in manners, Christian in religion'" (Spring, 1996, p. 152). As a direct result of such policies, very few of the languages originally present in the USA, Canada, and Australia have survived. This exemplifies linguistic imperialism vis-à-vis minority languages within a polity. It is comparable to the way the languages of the peoples of the Soviet Union were treated by Stalin: "bilingual education" meant transition to monolingualism in Russian. "Under the pressure of the imperial ideology they were forced to sacrifice linguistic rights for an ideal that was clearly an attempt at linguistic genocide" (Rannut, 1994, p. 179).

Education in US colonies functioned along similar lines. In the Philippines, there was an insistence on an exclusive use of English in education from 1898 to 1940:

> public education, specifically language and literature education during the American colonial period, was designed to directly support American colonialism. The combined power of the canon, curriculum, and pedagogy constituted the ideological strategies resulting in rationalizing, naturalizing, and legitimizing myths about colonial relationships and realities. (Martin, 2002, p. 210)

Despite differences in the articulation of policies in the French and British empires, what they had in common was the low status accorded to dominated languages, whether these were ignored or used in the early years of education; a very small proportion of the population in formal education, especially after the lower grades; local traditions and educational practice being ignored; unsuitable education being provided; an explicit policy of "civilizing the natives," and the master language being attributed civilizing properties (Phillipson, 1992, pp. 127–8). These generalizations are valid, even if policies were in fact

worked out *ad hoc* in a wide variety of situations. In French colonies, the goal of producing a black elite entailed using the educational content and methods of metropolitan France. In the British empire, "English was the official vehicle and the magic formula to colonial élitedom" (Ngũgĩ, 1985, p. 115).

The World Bank has played a decisive role in funding education in "developing" countries. Its policies have continued the linguistic imperialism of the colonial and early postcolonial periods:

> The World Bank's real position . . . encourages the consolidation of the imperial languages in Africa. . . . the World Bank does not seem to regard the linguistic Africanisation of the whole of primary education as an effort that is worth its consideration. Its publication on strategies for stabilising and revitalising universities, for example makes absolutely no mention of the place of language at this tertiary level of African education. (Mazrui, 1997, p. 39)

Fishman, Conrad, and Rubal-Lopez's *Post-Imperial English* (1996) has a wealth of empirical description of the functions of English in many contexts. The 29 contributors to the volume were specifically asked to assess whether linguistic imperialism was in force in the country studies they were responsible for. They all address the issue, one editor challenges the validity of the concept, but no contributors assess whether there might be more powerful or precise ways of coming to grips with theorizing the dominance of English. In his introduction, Fishman speculates on English being

> reconceptualised, from being an imperialist tool to being a multinational tool . . . English may need to be re-examined precisely from the point of view of being post-imperial (. . . in the sense of not directly serving purely Anglo-American territorial, economic, or cultural expansion) without being post-capitalist in any way. (Fishman et al., 1996, p. 8)

Corporate activities and regional economic blocs have made the locus of power more diffuse than in earlier, nation-state imperialism.

Scholars who are skeptical about linguistic imperialism as an explanatory model for the way English has been consolidated worldwide tend to analyze matters as though there is a strict choice between (a) active US–UK promotion of English, supported by linguicist policies that favor it over other languages, and (b) colonized people and others actively wishing to learn English because of the economic, social, political, and cultural doors that it opens. Matters are summed up as though (a) involves imposition, whereas (b) is a "free" choice (e.g., Kirkpatrick, 2007, pp. 35–7). This is a false dichotomy: The two elements do not exclude each other, and neither imposition nor freedom is context-free. Push and pull factors both contribute to linguistic hegemony and hierarchy.

Kirkpatrick (2007) also accepts Fishman's conclusion (1996, p. 640) that the strength of English in former British and American colonies is more due to such countries' engagement in the modern world economy rather than "to any efforts derived from their colonial masters." This analysis seems to ignore the fact that this engagement presupposes a Western-dominated globalization agenda set by the transnational corporations and the IMF, and the US military intervening whenever "vital interests" are at risk. The financial and economic crises of 2008 exposed instability and the increased influence of China and other expanding economies, but hitherto English has served to consolidate the interests of the powerful globally and locally and to maintain an exploitative world order that can disenfranchise speakers of other languages.

The strong position of English in former colonies represents a continuation of the policies of colonial times. It has strengthened an elite class, with the effect that in India "Over

the post-Independence years, English has become the single most important predictor of socio-economic mobility. . . . With the globalized economy, English education widens the discrepancy between the social classes" (Mohanty, 2006, pp. 268–9).

The USA and the UK coordinated efforts to promote English as a "global" language from the 1950s. English language education as propagated by the British and Americans builds on five tenets, each of which is false: English is best taught and examined monolingually (the monolingual fallacy); the ideal teacher of English is a native speaker (the native speaker fallacy); the earlier English is taught, the better the results (the early start fallacy); the more English is taught, the better the results (the maximum exposure fallacy); if other languages are used much, standards of English will drop (the subtractive fallacy) (Phillipson 1992, pp. 183–218). These underpin the profitable global English teaching business.

Ongoing Tensions Between Linguistic Imperialism and Resistance

The conceptual framework elaborated above can serve to explore the questions raised initially in this entry in more depth. Analysis can be supplemented by documentation of educational experience in devising ways of counteracting linguistic imperialism (Canagarajah, 1999). Even if the volume of academic work in the area of macrosociolinguistics and language policy has increased dramatically over the past 20 years, much of it does not engage directly with issues of inequality, social justice, and the way a neoimperial linguistic world order is being reconstituted. Most critiques of a linguistic imperialist approach fall into this category and actually misrepresent it (e.g., Joseph, 2006). Accusations that it ignores agency, is excessively structuralist, and implies that education systems should not produce competent users of English (Pennycook, 2001) are invalid (Phillipson, 2009, pp. 15–18). The study of linguistic imperialism does not argue for or against particular languages. It analyzes how linguistic imperialism functions in specific contexts in order to identify injustice or discrimination so as to provide a basis for remedying them.

It is logical that people in many countries wish to develop competence in English, but in many postcolonial countries this entails subtractive learning. For instance, a consequence of education in Singapore being exclusively through the medium of English is that more than half the population now use English as the home language. English-medium schooling that neglects mother tongues can have this effect.

One development that strengthens global elite formation is the rapid increase in the number of English-medium international schools around the world, from around 1,700 in 2001 to 5,270 in 2009. The sector is "now worth $18bn worldwide and set to double in value by 2020" with expansion mainly in India, the Middle East, and Asia (Hoare, 2009). Presumably many graduates go on to study at universities in "English-speaking" countries. It is likely that their linguistic roots in their cultures of origin will be weaker than their identification with the global economy and international mobility.

By contrast, the governments of the Nordic countries are determined that increased proficiency in English should in no way reduce the role of national languages. This principle is enshrined in a Declaration on a Nordic Language Policy, available in eight Nordic languages and English (www.norden.org). Many universities in Finland and Sweden have thus formulated language policies that aim at ensuring that their graduates and staff are in effect bilingual: Universities have a responsibility as publicly funded institutions to promote national languages, and as participants in an international community of practice they also need to function in English and other international languages. This exemplifies governments being aware of the risk of the negative impact of linguistic imperialism and taking measures to counteract it.

The European Union advocates policies to promote multilingualism and the goal of all schoolchildren becoming trilingual, so as to strengthen all EU languages. However, the management of multilingualism in EU institutions is exceptionally complicated, and market forces are strengthening the position of English nationally as well as in the EU system (Phillipson, 2008). There is therefore a risk of other languages being displaced and dispossessed of their linguistic capital.

The immense volume of scientific publication in English also serves to consolidate a hierarchy of languages. Scholars from the Spanish-speaking world increasingly need to publish in English (Mar-Molinero, 2010).

Linguistic imperialism is a reality in many contexts worldwide. An extreme case is the oppression that linguistic minorities are exposed to in China. A 2010 education plan for the Xinjiang Uyghur Autonomous Region is designed to assimilate Uyghurs to the dominant Han Chinese language totally and rapidly, this policy dovetailing with measures to crush traditional economic, cultural and religious practices of the Uyghurs. There are comparable measures of linguistic imperialism in Tibet.

SEE ALSO: Colonialism and Language Policy and Planning; English-Only Movement; Indigenous Languages in the 21st Century; Language Rights in Language Policy and Planning; Linguistic Legislation

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Linguistic Landscape

DURK GORTER

Introduction

Linguistic landscape research is an emerging field of applied linguistics. In recent years increasing numbers of researchers have analyzed the texts on signs in public spaces in different sociolinguistic contexts around the world. These contexts are predominantly urban and multilingual. Although there were a number of forerunners in the 1970s and 1980s, the study of the linguistic landscape was inspired by the seminal study of Landry and Bourhis (1997), who also provided a definition that has been widely quoted: "The language of public road signs, advertising billboards, street names, place-names, commercial shop signs, and public signs on government buildings combines to form the linguistic landscape of a given territory, region, or urban agglomeration" (p. 25).

Most studies of the linguistic landscape have taken place in contexts that are unmistakably bilingual or multilingual. Other studies took place in a context, such as Tokyo, that at first sight seems to be predominantly monolingual. However, Backhaus (2007, p. 71) came across no fewer than 14 languages in the linguistic landscape of Tokyo. Japanese was clearly the dominant one but he found other languages such as English, Chinese, Korean, and Latin. Backhaus (pp. 12–63) also provided a detailed overview of 26 linguistic landscape studies until 2006. Half of them were carried out after 2000. Since his overview the field has continued to grow and numerous publications have appeared in different journals and in edited books. Only a brief overview of linguistic landscape studies can be given here.

Earlier Studies

Coulmas (2009, p. 13) observes that "linguistic landscaping is as old as writing." The public display of texts is one of the earliest functions of writing, coinciding with the beginnings of urban settlements. Some important examples have been handed down through history, such as the Old Babylonian language in cuneiform script, or the Egyptian hieroglyphs, which were deciphered in modern times through the trilingual Rosetta stone (Coulmas, 2009).

Early studies took place in cities such as Brussels, Quebec, and Dakar. Another example is the city of Jerusalem, where Rosenbaum and his colleagues (Rosenbaum, Nadel, Cooper, & Fishman, 1977) studied the use of English. In Keren Kayemet Street they analyzed the signs and also collected data on spoken language. They focus on the use of Roman script (almost all in English) versus Hebrew script. The signs reflect some differences between official language policy supporting the use of Hebrew-only signs and the more common commercial use of English in signs. A second study in Jerusalem in the 1980s concerned language choice on the signs. A "conditions model" of three rules was proposed: (a) write a sign in a language you know ("sign-writer's skill"); (b) write a sign in the language which can be read by the public ("presumed reader"); (c) write in your own language or the language you want to be identified with ("symbolic value") (Spolsky, 2009, pp. 32–4,

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has an update). More recently other studies in Israel have contributed to reinforce the field (see Shohamy & Gorter, 2009).

Emerging Themes

Linguistic landscapes are studied from a variety of perspectives. Different approaches lead to theorization about multilingualism and analyze the dynamics of multilingual cityscapes. Current research covers a series of innovative empirical and theoretical studies that deal with language policy, the spread of English, minority languages, multimodality, and other issues such as language ecology, tourism, graffiti, or economic analysis.

Language Policy

Official language policies may comprise regulations about the languages used in the public space. Leclerc (1989) analyzed the laws of 181 national and regional states and found no uniform pattern in the legislation. Sometimes there are no rules at all and in other cases the public display of language is regulated in detail. Usually the authorities want to maintain some degree of control over the language(s) visible in the public domain. Language Act 101 in Quebec became notorious for its aim of preferring French over any other language (i.e., English). Regulation of the linguistic landscape can have important consequences for language use, but also for moral or legal aspects or even the physical dimensions (size, color, illumination, etc.). The aim can be to stop the spread of English or it can be to encourage the use of minority languages, for example, in place-names (Hicks, 2002). As Shohamy (2006, p. 129) says "Language in the public space . . . can also serve as mechanism for resisting, protesting against and negotiating de facto language policies."

Regulation of signage is related more generally to the design of the public space. The abundance of signage in the multilingual cityscape may lead to an exaggerated prominence of certain types, such as huge billboards, which could be called "linguistic pollution." In some cities, such as São Paulo, there have been clean-ups of the overabundance of signage.

Spread of English

Processes of globalization influence the use of English as a language used worldwide. English has an increasing presence in the visual scenery of the streets of most urban centers across the globe, in particular for commercial messages and information for tourists. The spread of English has been one of the motivators for the study of linguistic landscape, in the journal *English Today* among others. In many studies the dissemination of English in the linguistic landscape has been taken into consideration. Law 101 in Quebec (see above) tried to ban the use of English from public signage by proscribing a French-only policy. The provisions were later relaxed to permit other languages as long as French is "markedly predominant." English on signage may also influence the local language system. Huebner (2006) demonstrates the influence of English on the Thai language in a study of the linguistic landscape of Bangkok. It concerns lexical borrowing as well as orthography, pronunciation, and syntax.

Minority Languages

Not all language groups have equal access to the linguistic landscape. Dominant national languages are often taken for granted, but minority languages may struggle for recognition and visibility. Specific groups can use the written signs in the public space to make their presence known in a territory. The degree of presence of minority languages in different

locations can be established by systematic research. Multiple interpretations could be given, for instance, by relating this to supportive or discriminatory policies, the degree of literacy, or the vitality of a minority language. Defacing of signs is often a token of language conflict (Hicks, 2002). The presence or absence of certain languages, and thus their speakers, can be meaningful (Shohamy, 2006, p. 110). Linguistic landscape research enriches the study of minority language groups, particularly because issues of power and resistance are central.

Cenoz and Gorter (2006) compared the use of the minority language in two cities in the Basque Country, Spain, and in Friesland, the Netherlands. The researchers found an effect of a stronger and a weaker language policy reflected in the linguistic landscape, because the two regions differed significantly. Barni (2006) studied the manifestation of immigrant communities in the Esquilino neighborhood of Rome. Traces of 24 immigrant languages were found, which showed the different symbolic strength of languages in a complex urban linguistic landscape.

Multimodality

The analysis of signs in the public space includes more than just the written language. Signs use more than one mode to communicate meaning. There are complicated connections between different parts of meaning making: language, color, symbols, placement, relative size, and use of space. These parts interact and affect each other.

In their analysis of multimodal texts, Kress and van Leeuwen (2006, p. 177) point out how principles of composition bring about the meanings of an image by three interrelated systems. First, the information value is in the placement of elements. Second, salience attracts the viewer's attention through size, foregrounding, or contrast. Third, framing of elements comes through dividing lines. Scollon and Scollon (2003) argue that we can interpret the meaning of public texts like road signs, notices, and brand logos only by considering the social and physical world that surrounds them. These researchers call their approach "geosemiotics," the study of the meaning of placing signs in the material world, which concerns the interaction of spatial, individual, social, and cultural contexts. Shohamy and Waksman (2009) also go beyond the written texts of signs and include verbal texts, images, objects, and placement in time and space, as well as human beings. Shohamy and Waksman propose an inclusive view of linguistic landscape as all texts situated in a changing public space, to show how multilingual and multimodal analyses can be applied.

Other Themes

Work on linguistic landscapes also covers a wide range of other themes. Studies have been carried out with different disciplinary backgrounds, such as a historical perspective, the application of sociological theories, or economic models. Other researchers have chosen a sociolinguistic or ecology-of-language approach. The study of the linguistic landscape in an institutional context, such as education (Dagenais, Moore, Sabatier, Lamarre, & Armand, 2009), seems a promising direction and could easily be extended to other institutional contexts such as libraries, prisons, or hospitals. Other researchers have looked at phenomena such as graffiti as transgressive, hybrid forms of text and picture, or at the visibility of languages for tourism, or at mixtures of language forms. The linguistic landscape can influence language attitudes, and speakers have preferences about the way languages are represented. Shohamy and Gorter (2009) contains chapters from different perspectives. The signs in public space can also be related to issues of language acquisition (Cenoz & Gorter, 2008) or to the social distribution of multilingual resources (Stroud & Mpendukana, 2009).

Methodology

Collecting data about the linguistic landscape has become a significant research tool, as well as an important data source for studies of multilingualism. Inexpensive digital cameras have enormously facilitated the data collection of texts on signs in the linguistic landscape. Georeferencing has become much easier in recent years and offers possibilities for detailed mapping of multilingualism in urban spaces. The technology is still young and will be further developed. Not all methodological issues have been solved and there are, for instance, problems in establishing criteria for the unit of analysis or improving comparability of sampling.

Some researchers have applied well-known methods and techniques such as interviews, standard questionnaires, or focus-group discussion to collect data about signage in public space. As an effective research tool, the systematic analysis of written language in the public space can be related to other data sources such as spoken language practices or language legislation.

The linguistic landscape has obtained popularity as an attractive topic among MA and PhD students of applied linguistics because of its easy accessibility. It also has great potential for use in a class on applied linguistics, on multilingualism, or on language policy. It can be used to raise language awareness and provide insight in many language-related issues.

Outlook and Further Expansion

Landscape linguistics is a rapidly emerging field of study, which is used as a research tool and as a source of data to document, to describe, and to theorize about multilingualism. Analytical frameworks are developed to examine and explain the dynamics of multilingual cityscapes, the limitations to managing the development of a linguistic landscape, and related phenomena of identity, policy, and language use in urban areas.

Overall, the various emerging perspectives in landscape linguistics are an additional source of information about multilingual and multimodal processes and can deepen our understanding of multilingualism, urban spaces, and language users.

Though the field of linguistic landscape studies is not without problems, the sort of work done thus far demonstrates its productivity. Linguistic landscape studies will certainly get more attention in the coming years as the results of several ongoing projects become available. Many questions are still open and there is a need for further data, refinement of methodologies, foundation of theories, and useful applications of languages.

SEE ALSO: Language Policy and Multilingualism; Multilingualism; Multilingualism and Language Rights; Multilingualism and Minority Languages; Multimodal Text Analysis

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Linguistic Legislation

JOSEPH-G. TURI

Introduction

In many modern states, the coexistence and contacts of numerous—and different—languages has become a common phenomenon, which often leads to a situation of linguistic conflicts and inequalities. Where these languages coexist in a dominant–dominated relationship which is indicative of a power struggle, a situation of conflict between linguistic majorities and minorities tends to result. Linguistic conflicts were significant during the 20th century. At the beginning of the new millennium, they are still important. *Linguistic neutrality* has been relegated to the past. *Linguistic intervention* has thus become increasingly prevalent. States must tackle these conflicts and their multidimensional ramifications by means of appropriate linguistic planning policies, which currently tend to translate more and more often into language legislation. Although linguistic policies do not always require the implementation of linguistic legislation, they usually do so as a rule.

Linguistic legislation is aimed at protecting or promoting the status and usage of one or more designated or identifiable languages in a state, at different levels, through legal language obligations and language rights which have been instituted to that end.

This kind of legislation falls within the domain of a new legal science, namely comparative linguistic law (or *language law*), which focuses on the law of languages, the language of law, and the relations between law and language. To the extent that language, which is the main tool of the law, becomes both the object and the subject of law, linguistic law becomes *metajuridical law*. To the extent that linguistic law recognizes and enshrines both linguistic rights (or *language rights*) and the fundamental right of all persons to be linguistically different, it becomes *futuristic law*.

The intervention of public authorities at all levels (national, regional, municipal, local, etc.) in the field of language is a relatively recent development, since it stems from two sets of contemporary phenomena: the democratization of education and the globalization of communications (Turi, Jie, & Jinzhi, 2006).

Typology of Linguistic Legislation

Linguistic legislation is divided into two broad categories (with a fair expanse of grey areas in between), in accordance with its field of application: official (or public) legislation and unofficial (or private) legislation. In addition, linguistic legislation may also be divided into four particular categories, according to its functions: official, institutionalizing, standardizing, and liberal.

Official Linguistic Legislation

This is legislation aimed at making one or more designated or identifiable languages legally compulsory—whether explicitly or implicitly, totally or partially, symmetrically or asymmetrically—as official or national languages in the official fields of legislation, justice,

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public administration, and education. From the linguistic point of view, education is considered to be the most important of these fields, comprising the target of the majority of modern language legislation (Turi, Nelde, & Fleiner, 2001). A national language is the historical language, or one of the historical languages, of a country or of a region. An official language is the language, or one of the languages, of a state or of a region. Actually, the difference is not always so clear from a legal perspective. In some countries, the official and national language(s) may coincide. In China, Putonghua is defined as the "common" and "national" language, as well as the written language of the country; it is also described as "official" in some translations. Generally, knowledge of official language or of one of the official languages is a condition to becoming a citizen of a country.

One of two principles is applied to official languages in a given territory: linguistic territoriality (the obligation to use one language) or linguistic personality (the public obligation of a state to use more than one language and the private right of persons to choose between available official languages).

Making one or more languages official does not necessarily entail major legal consequences. The legal definition of officialization depends on the actual legal treatment accorded to languages. In some countries, there are de jure and de facto official languages. In Morocco, the only de jure official language is Arabic, but French is still the important de facto official language, since it is regularly used in official domains. From a constitutional standpoint, many states do not have de jure official languages, for example, Argentina, Japan, Germany, the United Kingdom, and the United States of America (at federal level). In these countries, Spanish, Japanese, German, and English, respectively, are the de facto official languages, coinciding in each case with the language in which the constitution is drafted.

If a state is officially bilingual, only public authorities have the obligation to be bilingual, while citizens may use the official language of their choice. An officially bilingual state may promote bilingualism among its population. In other cases, the contrary may apply in practice, for cultural or political reasons, or if the state is really officially bilingual. However, when one official language is more important than the other, the people who speak the less important language will tend generally to speak also the other official language.

Institutionalizing Linguistic Legislation

This is legislation which seeks to make one or more languages—whether explicitly or implicitly, totally or partially, symmetrically or asymmetrically—the normal, usual, or common language(s) in the unofficial fields of labor, communications, culture, commerce, and business. These fields can be unofficially unilingual or multilingual according to the circumstances. Communication is considered the most important of these fields from the linguistic point of view.

Standardizing Linguistic Legislation

This is legislation aimed at ensuring that one or more languages, considered as objects, conform to certain language standards in some specific official and unofficial fields. In the 20th century, Afrikaans, Hebrew, Hindi, and Indonesian were standardized in certain fields. The majority of modern language legislation does not belong to this category.

Linguistic legal rules are less rigid than grammatical rules. Language, as an individual and collective way of expression and communication, is a cultural phenomenon, difficult to appropriate and define legally (and also culturally, as is the case, for example, in former Yugoslavia). While grammatical rules are based on teacher–pupil relations, legal rules are applied, and applicable, insofar as they are in keeping with local custom and the behavior of reasonable people. Thus, linguistic legal sanctions, like criminal sanctions (fines or

imprisonment) and civil sanctions (damages, partial or total illegality), which are different from linguistic social sanctions (such as low marks at school, loss of social prestige, or loss of clients), are often limited to low or symbolic fines or damages.

Linguistic terms or linguistic concepts (e.g., "mother tongue") are the focus of language legislation only to the extent that they are formally understandable, intelligible, translatable, usable, or identifiable, or have some meaning in a given language. Linguistic legislation is aimed not only, objectively, at the language itself (as a cultural heritage of a nation or of a cultural group), but also, subjectively, at the speakers of a language (as linguistic consumers and users), unless the legislation is clearly a public policy law in some specific official or unofficial fields. A public policy law consists of fundamental norms that are, in general, absolutely imperative or prohibitive; the related legal sanctions can be formidable, such as total illegality. In the *Sutton Case* of 1983, confirmed by the Quebec High Court in 1983, and in the *Miriam Case* of 1984, the Montreal Court of the Sessions of the Peace and the Quebec Court of Appeal declared that, in certain given situations, Quebec's language legislation only applies to Francophones if they explicitly request to be served in French. It was thus concluded that Francophones can renounce their language rights, which suggests that the legislation in question is not deemed to be a public policy law (*Sutton Case*, 1983; *Miriam Case*, 1984).

In the *France Quick Case*, of 1984, the *Cour d'appel de Paris* acquitted a firm accused of using the terms "giant," "big," "coffee-drink," "bigcheese," "fishburger," "hamburger," "cheeseburger," and "milkshake," on the grounds that the terms and expressions were either fanciful, or were understood by the French consumers. True, the French *Cour de cassation* declared, in the *France Quick Case*, of 1986, that the goal of the French language legislation was the protection of the French language rather than Francophones (*France Quick Case*, 1984; *France Quick Case*, 1986). But the *Cour d'appel de Versailles* declared in respect of the same case, in 1987, that terms such as "spaghetti" and "plum-pudding" were legally French terms because they were "known to the general public" (*France Quick Case*, 1987). This legislation therefore protects both the Francophones and the French language. Legally speaking, a Francophone is anyone whose mother tongue or language of use is French.

Thus, any terminology that is linguistically "understandable" or "neutral" in unofficial fields is not generally targeted by language legislation. See Quebec's regulation regarding the language of commerce and business: "Any inscription, any sign or poster, and any commercial advertising may be presented by pictographs, by figures, by any artificial combination of letters, syllables or figures, or by initials" (R.S.Q., c. C-11, r. 9, A. 20).

Liberal Linguistic Legislation

This is legislation designed to enshrine the legal recognition of language rights and language minorities, explicitly or implicitly, totally or partially, symmetrically or asymmetrically. While linguistic rights are subjective in as much as they belong to any person, linguistic law, viewed objectively (as a set of legal norms relating to language), makes a distinction between the right to "the" language and the right to "a" language. The former is the historical right to use one or more designated or identifiable languages which belong to the majorities or to some specific minorities, especially in official fields, while the latter refers to the universal right to use one's mother or native tongue or any language, particularly in unofficial fields. These linguistic rights, which belong to natural persons and also to artificial persons, are similar to the principles of territoriality and personality. They are generally individual rights from a strict legal point of view, especially in relation to members of linguistic minorities, although naturally, they are individual and collective from a cultural point of view. They are also individual rights from a political point of view,

since states tend to be afraid of any possible coincidence between collective linguistic rights and the right to self-determination. That being said, the linguistic rights of aboriginal peoples are generally considered to be collective ones. A peculiar situation prevails in the province of New Brunswick (Canada), where the French and English communities are legally equal and also possess collective linguistic rights.

Linguistic rights are fundamental rights. For this reason, Article 58 of Quebec Bill 101 was declared anticonstitutional, in the *Ford* and *Devine Cases* of 1998, by the Supreme Court of Canada, as far as this article stated that public and commercial signs should be "only" in French (*Ford v. Quebec*, 1988, 2 S.C.R. 712; *Devine v. Quebec*, 1988). The article was repealed after the Human Rights Committee of the United Nations, in 1993, in the *McIntyre Case*, declared it incompatible with freedom of expression (*McIntyre Case*, 1993). In the *Ford Case*, the Supreme Court declared that "language is so intimately related to the form and content of expression that there cannot be true freedom of expression by means of language if one is prohibited from using the language of one's choice." Moreover, the Court declared that the article was also discriminatory because the distinction based on the "language of use" had the effect of "nullifying" the fundamental right to "express [oneself] in the language of one's choice" (*Ford v. Quebec*, 1988, 2 R.S.C. 748). According to the Human Rights Committee, article 58 was not discriminatory. However, with regard to Article 35 of Bill 101, which requires that professionals should have an appropriate knowledge of the French language, the Supreme Court, in the abovementioned *Forget Case*, declared that the provisions of this article were nondiscriminatory (*Forget v. Quebec*, 1988).

In a country or region, there may be only one linguistic majority, yet one or more linguistic minorities. Since the definition of a linguistic minority is difficult to circumscribe, the most practical and acceptable solution is to describe a linguistic minority as a national group or cultural community whose language is spoken by less than 50% of the population of a country or region. Recognized linguistic minorities are generally historical communities, that is, those with deep and lasting roots in a country or in a given territory. In 1999, Italy declared Italian as its official language, while in the same Act, 12 recognized historical linguistic minorities were declared as "protected" in some official and unofficial fields and in some territories (Act No. 482, 1999). In the French province of Quebec (Canada), only Canadian "Anglophones," that is, children of Canadian citizens who have received their tuition in Canada in English, may attend public English schools. In contrast, in Finland, there is freedom of choice between the Finnish and Swedish public schools. The 1992 European Charter for Regional or Minority Languages applies only to historical linguistic minorities. However, the Constitutional Council of France stated that the European Charter was incompatible in France with the principle of equality among citizens and with the French Constitution, which declares that French is the language of the Republic [Decision of June 15, 1999]. The situation is now changed with the new article 75-1 of the French Constitution, amended on July 21, 2008, which states that "The regional languages belong to the Heritage of France."

Does this mean that, ultimately, new linguistic minorities are condemned to linguistic integration or assimilation? Article 27 of the 1966 International Covenant on Civil and Political Rights applies to all individual linguistic minority rights, including those of historical minorities, new minorities, and new immigrants, according to a 1994 General Comment of the UN Human Rights Committee (UN Human Rights Committee, 1994). This article recognizes the right of persons belonging to linguistic minorities to use their own language when communicating with other members of their group. The 1996 unofficial Barcelona Universal Declaration of Linguistic Rights states that linguistic rights, including "community linguistic rights," are historical, and are also both individual and collective. The author of this entry is one of the signatories to the Barcelona Universal Declaration and also a member of the Follow-up Scientific Council.

Some of the modern language legislations in the world are neither liberal nor equitable, as far as some linguistic minorities are concerned—not only in the official fields, but also in the unofficial fields. In Indonesia, only Latin characters are permitted on public signs. This amounts to an implicit prohibition of signs in the Chinese language. On the other hand, in some countries, good examples of linguistic tolerance and freedom can be found, for example, in Finland (which has two official languages, and where genuine protection is afforded to the Swedish minority), in South Africa (with 11 official languages, and where the right to "a" language is specifically recognized), and in Canada and Australia (where a policy of multiculturalism is upheld).

Linguistic Diversity

The linguistic diversity of our world is one of its greatest cultural assets, even though the equation *language = culture* does not always coincides in all situations. We must take care of our linguistic diversity as we take care of the biodiversity of our planet. Therefore we should, legally and explicitly, recognize and enshrine not only the right to "the" language but also the right to "a" language, as well as the protection and promotion of linguistic minorities.

There are more than 6,000 languages (and thousands of dialects) in our world, according to UNESCO, which evolve continuously. But 75% of the world population speak 23 "great" languages; each of these languages is spoken by at least 1% of the population (60 million people). Here they are, in order of quantitative importance: Chinese, Hindi-Urdu, English, Spanish, Arabic, Bengali, Portuguese, Russian, Japanese, German, French, Malay, Javanese, Telugu, Tamil, Korean, Vietnamese, Marathi, Turkish, Italian, Thai, Iranian, and Gujarati. More than 3000 languages are spoken by only 4% of the world population. The Bible has been translated into more than 2,000 languages and dialects. There are international, national, regional, and local languages and dialects. There are, from a historical point of view, *dead* languages (among them, Latin!). All languages and dialects are equally dignified. But they are not all equal. A natural and sometimes artificial hierarchy is set up among languages. This is the linguistic and cultural reality of our world.

The right to "a" language in official fields should be enshrined in one way or another in accordance with higher legal norms, and with mandatory provisions, as is generally the case in respect of the right to "the" language. These legal norms should identify the holders and the beneficiaries of language obligations and language rights, as well as the legal sanctions that accompany these obligations and rights.

It is clear that states (at all levels) must take into account, in an equitable way, the national languages spoken by their citizens and inhabitants. But it is also clear that citizens and inhabitants must take into account, in an equitable way, the official language(s) of their states (at all levels). Equity is the key word for finding acceptable solutions in this field. One good solution, among others, would be to make all the national languages of the country legally official in a state, in an equitable way, in a symmetrical or asymmetrical way, to be determined in a nondiscriminatory way, according to circumstances.

Conclusion

The recent political trend in favor of *linguistic and cultural diversity* is indeed remarkable—provided, of course, that its most extreme expression, resembling a kind of a new religion, does not lead to further warmongering among nations. However, a recent tendency has also developed toward the protection of strong historical languages that are experiencing circumstantial problems, for instance, the officialization of the French language in France.

As a matter of fact, the languages that deserve legal protection more than the others are the vulnerable ones, that is, the lesser-used languages (spoken by fewer than a million, or not more than a few million speakers), the minority languages, and the languages that are faced with a particularly difficult linguistic situation. In order to ensure the maintenance and consolidation of linguistic group rights, positive state intervention is required. A linguistic laissez-faire attitude leaves minority groups vulnerable to linguistic hegemony of one or some languages.

The increasing legal intervention of states in the field of language shows that the globalization of communications has assumed such dramatic proportions that it must be controlled by legally protecting and promoting national, regional, and local languages, that is, the linguistic and cultural diversity of our world. Language law therefore recognizes the *linguistic regionalization* of our world and as such deserves our deep appreciation.

At the beginning of the new millennium, the natural Tower of Babel fortunately seems stronger than the artificial and technical globalization of communications. However, we must remain vigilant and take appropriate action.

This is why, in June 2006, the Galway-AIDL/IALL Tenth International Conference on Language and Law unanimously adopted a call to UNESCO for an International Convention on Linguistic Diversity (2006). This call should circulate, and receive full support, among all concerned persons, organizations, and nations who feel strongly about linguistic diversity issues.

SEE ALSO: Language, Politics, and the Nation-State; Language Ideology, Translation/Interpretation, and Courts; Language Ideology and Public Discourse

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Linguistic Relativity and Second Language Acquisition

PANOS ATHANASOPOULOS

Introduction

The principle of linguistic relativity was formulated by Benjamin Lee Whorf (1940/1956), but it is also often referred to as the Sapir–Whorf hypothesis in reference to Whorf's mentor at Yale University, Edward Sapir. Whorf contended that while we all see the same objective reality, we nonetheless interpret and classify it differently, based on the categories made available in our language. Therefore, according to Whorf, speakers of different languages think and reason about the perceived world differently. For example, speakers of a language that uses one term to refer to the colors blue and green (a so-called grue term) evaluate the perceptual difference between blue and green stimuli as less significant than speakers of a language with distinct terms for blue and green (Kay & Kempton, 1984).

The past fifteen years have witnessed a surge of empirical research on linguistic relativity. Arguably, this surge of interest was kick-started by integrating methods used in experimental psychology with insights from anthropological and cognitive linguistics. Scholars such as John Lucy, Steven Levinson, Debi Roberson, and Dan Slobin have placed the experimental approach at the heart of the language and thought debate, emphasizing the need to measure both linguistic and, crucially, nonlinguistic performance in a range of linguistic and cognitive tasks. An increasing number of studies demonstrate effects of specific lexical and grammatical categories on specific cognitive processes such as remembering, thinking, and reasoning about the perceptual relationships of physical entities like colors, objects, and events (see Gentner & Goldin-Meadow, 2003; Roberson, 2005; Casasanto, 2008; Regier & Kay, 2009, for reviews).

Recently, this investigation has expanded to the field of second language acquisition, and researchers have begun to explore the possible effects of learning a second or foreign language on thinking and reasoning. One reason for this is that evidence from first language acquisition is accumulating, which shows that very early in life cognition is influenced by prelinguistic, possibly universal, predispositions to perceptual attributes of reality. However, later on, after experience with language, cognitive patterns are restructured according to language-specific partitions of reality (Levinson, 2001). Naturally the question arises as to whether cognitive patterns are permanently fixed by the L1, or whether additional language learning may also have an impact on those patterns.

In addition, Whorf considered knowledge of other languages crucial in understanding the thoughts and beliefs of speakers of those languages, and firmly believed "that those who envision a future world speaking only one tongue, whether English, German, Russian, or any other, hold a misguided ideal and would do the evolution of the human mind the greatest disservice" (Whorf, 1941/1956, p. 244). This statement resonates with scholars in the field of multilingualism itself, who emphasize the need to study L2 users in their own right rather than as imperfect versions of a monolingual native speaker ideal. For example, Cook's (1991, 1992, 1999, 2003) multicompetence hypothesis views the person who speaks more than one language as an independent speaker/hearer/thinker, with linguistic and cognitive representations and abilities which are qualitatively distinct from

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those of a monolingual person. Heeding the calls of Cook (2002), Pavlenko (1999), and others, researchers have begun empirically investigating the effects of second language acquisition on cognition in a variety of domains.

Domains of Enquiry

Grammatical Number and Object Classification

A number of studies have focused on categorization of objects and substances in noun class and classifier languages. Noun class languages like English distinguish between count and mass nouns grammatically. Count nouns refer to discrete entities that are marked for number (e.g., apple—apples). In classifier languages like Japanese or Chinese, there is no count/mass distinction. Nouns in these languages refer to substances and are accompanied by numeral classifiers (e.g., three small-piece-of apple [= 3 apples]). Speakers of the two types of languages were shown to perform differently on a similarity judgment task that required participants to match objects based on their common shape or material. Speakers of English favored shape and speakers of Japanese favored material, presumably because noun class languages draw speakers' attention to discreteness of entities and classifier languages to material (Lucy, 1992; Imai & Gentner, 1997). Cook, Bassetti, Kasai, Sasaki, and Takahashi (2006) found that Japanese speakers of L2 English who had stayed in the United Kingdom for more than three years tended to make shape-based similarity judgments significantly more that those L2 speakers who had stayed in the United Kingdom for less than three years. Athanasopoulos (2007), using a similar task with two groups of Japanese and English monolinguals and two groups of Japanese speakers of L2 English, one given task instructions in English, and one given task instructions in Japanese, found that both L2 groups displayed behavior that was "in-between" the two monolingual groups, with language of task instruction playing a nonsignificant role.

Athanasopoulos and Kasai (2008) extended the design of the two previous studies by implementing a similarity judgment task using artificial novel two-dimensional objects. They asked two groups of Japanese and English monolinguals and two groups of Japanese speakers of L2 English (one intermediate and one advanced) to match the objects based on either common shape or common color. Results showed that overall, all participant groups made primarily shape-based classifications. However, the degree to which they did so differed, with Japanese monolinguals favoring shape significantly less than English monolinguals. The intermediate L2 group exhibited primarily L1-based behavior, resembling Japanese monolinguals, while the advanced L2 group exhibited primarily L2-based behavior, displaying similar patterns to the English monolinguals.

Athanasopoulos (2006) adapted a picture-matching task used by Lucy (1992) that requires participants to judge the similarity between pictures based on the number of countable and noncountable entities. The task was given to Japanese and English monolinguals, and two groups of Japanese speakers of L2 English, one with intermediate and one with advanced English proficiency, as measured by the Quick Oxford Placement Test and a grammaticality judgment task. English monolinguals showed increased sensitivity to changes in the number of countable objects than to changes in the amount of noncountable substances, thus reflecting the count/mass distinction in their native language. Japanese monolinguals treated both types of entities equally, reflecting the lack of a grammatical count/mass distinction in their language's quantification system. Intermediate L2 speakers were heavily influenced by their L1 in their similarity judgments, resembling Japanese monolinguals. Advanced L2 speakers on the other hand resembled more English monolingual speakers, tending to differentiate between countable and noncountable entities in their judgments.

Color Categorization

Studies have focused on both semantic representation and cognitive categorization. In studies of the first kind, participants may be asked to name separate color chips or to indicate the best example (prototype) of particular color terms on a color chart. Andrews (1994) and Athanasopoulos (2009), replicating and extending earlier studies by Ervin (1961) and Caskey-Sirmons and Hickerson (1977), gave such tasks to Russian and Greek speakers who were speakers of L2 English. Russian and Greek make an obligatory lexical distinction between light and dark blue (*ghalazio* and *ble* in Greek, *goluboj* and *sinij* in Russian). Results showed that L2 speakers shifted the prototypes of their native blue categories under the influence of English. This effect was more pronounced in L2 speakers who had spent a significant amount of time in an English-speaking country (since childhood and adolescence in the case of Andrews, 1994, and for at least two years in the case of Athanasopoulos, 2009). In a cognitive task, Athanasopoulos (2009) further demonstrated that the longer Greek speakers of L2 English had lived in the UK, the more likely they were to judge light and dark blue color chips as more similar to each other, suggesting a weakening of the distinction between *ble* and *ghalazio* in their cognitive representation of those categories. Japanese also uses different terms to distinguish two shades of blue. Athanasopoulos, Damjanovic, Krajciova, and Sasaki (2011) found that Japanese L2 speakers of English who used the L2 more frequently did not distinguish between light and dark blue color stimuli as much as Japanese L2 speakers of English who used the L1 more frequently (both groups were living in the UK and were of comparable L2 proficiency).

Grammatical Gender

Kurinski and Sera (2011) carried out a longitudinal investigation of whether learning Spanish grammatical gender changes object categorization patterns of English native speakers of beginner level Spanish L2. A group of advanced learners and a group of Spanish native speakers were also tested. The authors present converging evidence from a test specifically measuring acquisition of Spanish grammatical gender, and from a task measuring voice attribution patterns to pictures of objects. In this task, participants are typically shown pictures of objects and asked to assign a male or female voice to them if they were to come to life. Previous studies have shown that speakers of languages that mark grammatical gender on nouns tend to assign voices to objects consistent with the objects' grammatical gender in their native language (Sera, Berge, & del Castillo Pintado, 1994). Results from the Kurinski and Sera (2011) study showed that learning a second language with grammatical gender does make voice attribution patterns more consonant with that language's grammatical gender, and this shift in cognition increases with the level of proficiency in the L2. However, results also showed that patterns of advanced L2 speakers in their study did not become identically similar to the patterns exhibited by native speakers of the L2.

Kousta, Vinson, and Vigliocco (2008) showed that ItalianEnglish bilingual speakers' semantic representation of grammatical gender was similar to that of Italian monolinguals only when the task was performed in Italian, but not in English. Contrary to Sera et al. (1994), Kousta et al. (2008) found no effects of grammatical gender on nonlinguistic cognition.

Time

Boroditsky (2001) conducted a study on the conceptualization of time in Mandarin Chinese and English speakers. In English, reference to time is made using horizontal spatial metaphors (e.g., there are good times ahead of us/let's push the meeting back/forward, etc.).

In Mandarin, reference to time can also be made using vertical spatial language (using "up" to refer to the earlier events and "down" to refer to later events). Boroditsky (2001) asked participants to verify target statements about time (e.g., March comes before April), preceded by prime pictures displaying either horizontal or vertical spatial scenarios (e.g., two fish one on top of the other or two fish one next to each other). Results showed that the extent to which Mandarin users of L2 English think about time vertically was related to how old they were when they first began to learn English. The younger the L2 users were when they started learning English, the less likely they were to follow the Mandarin pattern of thinking about time. In a follow-up experiment, native English speakers were trained to talk about time using vertical spatial terms in a similar way to Mandarin. Upon testing, these English speakers showed a bias to think about time vertically, approximating Mandarin native speakers. Subsequent studies however failed to replicate Boroditsky's (2001) results in similar experiments (Chen, 2007; January & Kako, 2007), casting doubt on the validity of Boroditsky's results as evidence for linguistic relativity.

More recently a study by Miles, Tan, Noble, Lumsden, and Macrae (in press) demonstrated that Mandarin–English bilinguals do indeed employ both horizontal and vertical representations of time, while cultural context seemed to affect the way these time lines were deployed.

Action Events

Boroditsky, Ham, and Ramscar (2002) investigated event perception in English and Indonesian monolingual speakers and Indonesian L2 users of English in a range of similarity judgment and memory tasks. English uses tense markers to distinguish grammatically between past, present, and future. In Indonesian there is no obligatory grammatical distinction of temporality. Instead, speakers of Indonesian use contextual information, coupled with temporal words (e.g., "just now," "soon," etc.) to infer the tense of an action. In one experiment, participants were asked to rate the similarity between pictures that show either two different actors performing the same action in the same tense, or the same actor performing the same action in two different tenses. Results showed that English speakers rated same-tense pictures as more similar than Indonesian speakers did, and different-tense pictures as less similar than Indonesian speakers did. Indonesian users of L2 English rated same-tense pictures more similar when they were given task instructions in English than when the task instructions were given in Indonesian. Conversely, they also rated different-tense pictures less similar when they were tested in English than when tested in Indonesian. The Indonesian L2 English users that were tested in Indonesian showed a pattern that was somewhere in-between the pattern shown by monolingual Indonesian speakers and the pattern shown by English speakers.

In another experiment, Boroditsky et al. (2002) tested Indonesian and English monolinguals' and Indonesian L2 English users' ability to remember action events. Participants were shown pictures of people performing actions (these were the same pictures used in the similarity judgment experiment described earlier). During the learning phase, each participant saw a person performing an action in one of three tenses. During the test phase, subjects were shown pictures of that person performing the action in all three tenses and asked to choose which one they had seen previously. English speakers were better than Indonesian speakers at remembering the tense in which they witnessed an action.

The L2 users were better able to remember the tense of actions when they were given task instructions in English than when they were given task instructions in Indonesian.

Conclusion

Recent research has begun to investigate the question of whether someone who learns a second language may also acquire new concepts and gain a different perspective of the world. The research is still in its very early stages, but some studies do suggest that acquiring a second language may transform the thinking of the individual. This new line of research has focused on specific domains of enquiry and on specific cognitive processes, including sorting, matching, and remembering. The application of the Whorfian hypothesis to second language acquisition has the potential to reveal invaluable information about how the mind of the L2 user views the world as a result of speaking specific languages; yet research is still at a very early stage, and the precise role of specific linguistic and sociocultural factors, as well as the extent of the effects in different perceptual domains, remains elusive for the time being (see Jarvis & Pavlenko, 2008; Athanasopoulos, 2011; and Pavlenko, 2011, for detailed discussions). All information correct at the time of first submission in March 2010.

SEE ALSO: Cook, Vivian; Levinson, Stephen C.; Multicompetence; Pavlenko, Aneta; Sapir, Edward; Thinking for Speaking in Second Language Acquisition

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Literacy and Bidialectalism

CAROL D. LEE

In K-12 education, language acquisition and variation often address bilingualism. However, for native speakers, dialect differences can influence opportunities to learn.

Learning academic language involves processes similar to language acquisition for young children and second language learners (Gee, 1994). For both these groups of language learners, acquisition is never straightforward, characterized by predictable errors, where learners apply rules of regularity to irregular language forms. In a similar vein, novice learners who speak a nonstandard dialect will make mistakes while learning to speak, think, and write in academic language. Academic language refers to specialized vocabulary that characterizes reading and writing in school, as well as the genres, modes of argumentation, and specialized vocabularies of academic disciplines through middle and high school (Lee & Spratley, 2009). Academic language, particularly disciplinary languages, exemplify social registers, ways of talking that characterize participation in specialized communities of practice (e.g., how lawyers speak in making arguments in court), including identification with and membership of such communities. Dialect differences can pose specialized challenges to access in and membership of such academic communities. One can acquire the form (e.g., genres and syntax) of American mainstream academic English and yet be evaluated negatively because of phonological and prosodic dialect differences. Northeastern seaboard dialects continue to have greater mainstream status than southern dialects, particularly those associated with class distinctions (e.g., Appalachian English). Educational mobility often requires that students relinquish home dialects, particularly low-status dialects from mainstream academic perspectives. These issues are challenging because they can bifurcate affiliations between home and school.

Learning particular ways of speaking involves socialization about who can speak, how, and about what (Ochs & Schieffelin, 2001). Such norms are important for communities of practice, from family routines (e.g., talk around dinnertime or telling personal narratives) to classrooms (e.g., where turns of talk are controlled by the teacher and where posing and answering known questions are the norm). Studies have documented the impact of dialect differences on opportunity to learn (Cazden, John, & Hymes, 1972). A classic study is Heath's (1983) longitudinal ethnography in the Piedmont Mountains of the Carolinas, *Ways With Words*. Heath documented differences in who could speak, how, and about what in storytelling, a boundary marker between home and school at the primary level. White low-income families valued strict turn-taking rules and personal stories that did not veer from the literal truth and literal text interpretation, in part because of religious traditions requiring literal biblical interpretation. In contrast, Black low-income families who spoke African American Vernacular English (AAVE) valued turn-taking rules where even young children bid competitively for the floor through complex figurative rhetorical displays, and personal stories that revealed some aspect of a shared experience not easily visible to adult observers. These interactional patterns were valued in different ways in children's schools that did not scaffold linguistic repertoires students developed through family language practices.

Substantive research on dialects of American English includes reviews of dialect variation, literacy, and instruction (Ball & Farr, 2003): African American Vernacular English (Mufwene,

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Rickford, Bailey, & Baugh, 1998), Puerto Rican English (Wolfram, 1974), Appalachian English (Wolfram & Christian, 1976), varieties of American Indian English (Wolfram, Christian, Potter, & Leap, 1979), Vietnamese English (Wolfram & Hatfield, 1984), among others. Dialect differences include: vocabulary (e.g., *soda* on the east coast versus *pop* in the midwest); syntax (e.g., the use of the habitual *be* and the double negative in AAVE; or the a-prefix in Appalachian English, as in "And we's a-gonna chop the coon out if it was in there," Wolfram & Christian, 1976, p. 181); the formality of registers (e.g., the use of *sir* or *ma'am* in southern dialects); or routine kinds of speech genres (e.g., verbal games of ritual insult in AAVE). Some dialects include hybrids of several national languages, such as Tex-Mex or Spanglish (a hybrid of southern English and Spanish), or a mix of several dialects of the same national language or other national languages, such as Puerto Rican English, which includes New York English dialect, African American Vernacular English, and Spanish.

Lee (2005) has identified dialect misconceptions shared broadly in both the public and schooling (pp. 243–4):

1. *Some dialects are linguistically superior*: Linguists have long documented the systematicity and complexity of nonstandard dialects. Most have focused on AAVE. Labov's (1972) *Language in the Inner City* and Smitherman's (1977) *Talkin and Testifyin* are classic studies.
2. *Mainstream and nonmainstream dialects are not related*: Conceptions of mainstream are both social and political constructions. What is presumed mainstream changes often imperceptibly over time. For example, in 2011 even educated English speakers say "It's me" rather than "It is I" or may not maintain consistent alignment between noun and pronoun referents (e.g., "*A* parent should look after *their* child"). Many syntactical structures in Elizabethan English are considered grammatically incorrect today. Also, popular media strategically appropriate vocabulary and syntactical and prosodic forms from so-called nonmainstream dialects. In addition, great literary works appropriate nonstandard dialects in the dialogues, often in contrast to a standard dialect used by the narrators in the same works.
3. *Members of ethnic or regional groups speak the same dialect*: The pragmatics of face-to-face communication and class differences within groups influence variation in dialect usage. For example, code switching within and across dialects certainly occurs. Orlando Taylor has documented vernacular and standard variations in AAVE where vernacular versions involve prototypical syntactical patterns that may not occur in the standard version, but speech genres and prosodic and rhetorical features remain similar across both versions. Also, speakers growing up learning a dialect associated with lower income status who achieve middle-class status may use the social dialects of their childhood with family but Standard English in professional interactions.
4. *Dialects are unchanging*: Some say the only difference between a dialect and a national language is an army. All languages evolve over time, influenced often by interactions among nations (e.g., the Norman language of northern France and the Latin of the Catholic Church in the development of modern English). The English spoken varies between countries such as Great Britain, Nigeria, India, Australia, New Zealand, Jamaica, and Canada. Within each are regional and class dialects. Historical changes within English are often imperceptible within generations. For example, the double negative was acceptable in Old and Middle English, whereas sentences such as "They can't do anything" is a relatively new construction.
5. *The only influence on dialects of English is British English*: Presumptions about British English have impacted literacy instruction in US schools. For example, it was many years before American literature was presumed appropriate for study in US universities. Even today, most US high schools require British literature. Twenty-first century

US English has influences from many immigrant groups. In regions with large Latino populations, vocabulary reflecting Spanish origins is integrated into everyday speech. Vass (1979) has documented influences of West African languages on English, particularly in the south, largely because of the significant representations of peoples of African descent as a consequence of the African Holocaust. In addition, research documents the influence of West African languages on African American English (e.g., syntactic forms, vocabulary, phonology, prosody, even speech genres) (Mufwene, 1993). Thus, in many ways, dialect variation embodies historical interactions and dependencies among different groups of people.

Dialect Variation and Opportunity to Learn

Dialect variation is often associated with class and ethnicity. The status associated with such variation is not a consequence of any inherently superior or inferior linguistic features, but rather of political and institutional power structures. Smitherman (2000b) refers to Standard American English as the English of Wider Communication. Young people gain access to this English of Wider Communication through formal schooling, serving as a form of social capital for entrance to higher education and particular forms of work. Because of our capacity as humans to learn multiple languages, including multiple dialects of a national language, one can think of language learning in formal schooling as expanding repertoires, rather than eliminating students' everyday linguistic repertoires.

However, cultural deficit assumptions have informed and continue to inform efforts to eradicate certain English dialects through schooling, with AAVE as the most common target. In the 1970s, phonological and syntactic differences between AAVE and Standard English were hypothesized to interfere with learning to read (Rickford & Rickford, 1995), for instance distinguishing between words like *told* and *toll*, *mist* and *miss*, *four* and *foe*, or pronouncing words ending in /th/ (e.g., *breadth*, *mouth*, and *bath*) as though they ended in /f/ (Labov, 1995, p. 47). There are also differences with regard to the use of tense markers (e.g., the habitual *be* in AAVE, as in "he be here all the time") or the use of double negatives in AAVE (Smitherman, 1977). However, as indicated earlier, all speakers of a given dialect do not employ all its features all the time, suggesting pragmatic code switching. In addition, Wolfram, Adger, and Christian (1999) say that speakers of vernacular dialects often have greater understanding of their and the mainstream dialect than those who speak only the mainstream dialect.

The dialect interference hypothesis was tested, including developing dialect readers. However, because of negative reactions from teachers and parents, the readers were never implemented. These reactions to any explicit focus on AAVE in the school curriculum are similar to highly charged debates in 1996 over the decision of the school board in Oakland, California, to address AAVE competencies as a springboard for reading and writing instruction (Perry & Delpit, 1998). Linguists and educators in both the 1970s and the 1990s have weighed in on these debates, in both eras affirming the right of students to their home languages and dialects and that one dialect is not inherently superior or linguistically more complex than another.

Experimental studies on dialect interference in reading provide interesting and nuanced results. Rentel and Kennedy (1972) tested dialect interference with Appalachian English speakers and found no improvement in reading achievement by teaching Standard English phonology. Other studies on dialect interference with AAVE speakers did not support the hypothesis. Labov (1972) found that junior high AAVE speakers comprehended past-tense markers half the time, suggesting that lack of understanding tense differences was not universal among AAVE speakers. As Labov (1995) notes, "The conclusion of most sociolinguists was that the semantic and structural differences between AAVE and other dialects

were not great enough to be the primary causes of reading failure. Dialect differences affected education primarily as symbols of social conflict" (p. 49).

Another argument about the impact of dialect variation associated with class goes beyond morphological differences to include hypothesized deficits in vocabulary and experiences with books. Hart and Risley (1995) are most often cited documenting huge differences between the vocabulary and extended language interactions between low-income and middle-income children and their parents. While the study does not directly address the question of dialect, the low-income families observed most likely spoke a nonstandard dialect. Extrapolations from this study to early literacy practices imply a singular pathway for learning to read that does not conceptually lead to considerations of other kinds of linguistic repertoires that children from low-income families who as a consequence speak a low-status dialect may indeed develop from their participation in family and everyday life. Such repertoires can include exposure to hearing and producing different narrative structures, hearing and producing complex rhetorical forms, as well as a range of life experiences relevant to the comprehension of multifaceted scripts and characters in complex story lines in books and films (Lee, 1997). While there are limited curriculum designs to test this hypothesis, there is a sufficient body of related research to warrant testing this premise.

Testing the relevance of experience to vocabulary understanding, Williams and Rivers (1972) found

> when vocabulary on . . . [the] test was changed so that it reflected their experiential network, poor black children in the St. Louis public schools performed at a level comparable to the white middle-class sample on which the test was standardized.

Hall, Reder, and Cole (1975) examined the impact of the pragmatic context on story recall among a sample of 32 Black and White children aged 4 years 6 months. They found "whites performed better than blacks in SE; blacks performed better than whites in VBE; blacks tested in VBE were equivalent to whites tested in SE; and whites performed better in SE than in VBE."

Differences in narrative conventions have also been documented in sociolinguistic studies, particularly with regard to AAVE. These include topic-associative narratives with Black children and topic-centered narratives with White children in kindergarten (Cazden, Michaels, & Tabors, 1985). The teacher hearing the topic-associative narratives was not able to scaffold the children's learning because she could not understand the coherence of the stories. In a secondary analysis of one of the topic-associative narratives from the Cazden, Michaels, and Tabors corpus, Gee (1989) argued these narratives were more literary and complex than the topic-centered narrative valued by the school. Champion (2003) has perhaps done the most extensive research documenting oral narrative patterns among African American English-speaking young children, examining a much larger array of patterns than found in the earlier research. In addition, Champion has documented—similarly to the earlier studies by Williams, Rivers, Hall, Reder, and Cole on vocabulary understanding and story recall—that the contexts under which these linguistic resources are elicited matter for quality and complexity. That is, contexts matter for displays of competence.

While most research on opportunities for literacy learning and dialect variation has addressed young children, Lee (2007) has focused on scaffolding competencies of AAVE-speaking high school students to support the interpretation of complex literary texts. Moving beyond the traditional focus on morphological and syntactic features, Lee's research addresses kinds of knowledge embedded in speech genres. Through a design framework Lee calls "cultural modeling," she examined a genre of ritual insult called "signifying"

(e.g., "yo mama so skinny she can do the hula hoop in a cheerio"). Drawing on earlier sociolinguistic research on the uses of figuration in signifying (Smitherman, 1977), Lee argued that knowledge of signifying is largely tacit; and that the knowledge to recognize and produce metaphor, similes, symbols, irony, satire, and even unreliable narration in this oral genre was akin to both the knowledge and dispositions required to tackle complex literary problems. Through the use of what Lee calls cultural data sets (e.g., everyday texts, such as signifying dialogues, rap lyrics, etc.) underachieving African American high school students were able to make explicit the strategies they used and to activate dispositions valuing figuration, and then to apply them to canonical literary texts. Pre–posttests have shown significant improvement in literary comprehension.

Dialect Variation and Writing Instruction

Again, much of the research on writing instruction and dialect variation focuses on AAVE. However, in contrast to what is largely a deficit orientation in reading, much of the work in writing encompasses linguistic resources among older students. Shaughnessy (1977) studied how typical errors in the writing of community college students reflected oral patterns of dialect differences. Her study had significant impact on the college composition community by helping instructors understand the logic of students' errors, many of which are rooted in dialect variation. Ball (1992) has documented preferences in expository styles among high school AAVE speakers: circumlocution, narrative interspersion (e.g., interspersing a narrative within an expository text), and recursion (restating an idea using different words or images). Ball found these patterns in students' writing without any direction from teachers but also in political and religious oratory within the African American community, yet they were negatively evaluated by writing teachers. Smitherman (2000a) conducted a post hoc examination of writing samples of African American students on the 1984 and 1988/1989 National Assessment of Educational Progress (NAEP). She analyzed the samples to see if there were differences in uses of AAVE syntax and discourse styles between the two testings, whether there were relationships between AAVE syntax and discourse styles, and finally whether the primary trait and holistic scorings were related to the use of AAVE discourse styles. While she found no relationship between AAVE syntax and AAVE discourse styles, she did find that higher ratings on both primary trait and holistic scoring were related to the presence of AAVE discourse styles. Smitherman (1994) has associated AAVE discourse styles in writing to what she calls the African American rhetorical tradition, which includes (a) rhythmic, dramatic, and evocative language; (b) reference to color, race, and ethnicity, even when the topic does not require it; (c) use of proverbs, aphorisms, and biblical verses; (d) sermonic tone associated with the styles of African American largely Baptist preaching; (e) a conversational tone involving direct address; (f) cultural references; (g) ethnolinguistic idioms; (h) verbal inventiveness and unique nomenclature; (i) cultural values and community consciousness; and (j) field dependency. Field dependency involves viewing a phenomenon in its holistic context. Smitherman's analysis is important because it is post hoc (i.e., the evaluations of quality had already taken place).

Related to Smitherman's documentation of uses of AAVE rhetorical styles, Lee, Rosenfeld, Mendenhall, Rivers, and Tynes (2003) extended the work in cultural modeling to focus on narrative composition with primary and middle grade students. Writing prompts included pictures of prototypical scenes from African American life, many by artist Annie Lee. Lee et al. found uses of AAVE rhetorical styles in the samples of African American students across the grades, and again a positive relationship between narrative quality and the AAVE rhetorical style.

Dialect and Instructional Discourse

One final dimension of dialect variation impacting opportunity to learn is its use in instructional discourse. Talk in classrooms provides one primary medium through which negotiations of learning take place. Studies have documented how negative evaluations of nonstandard dialects influence opportunities to participate in instructional discourse (Cazden, 2000; Cazden et al., 1972). Studies document how access to nonstandard dialects can enhance levels and quality of participation in instructional talk (e.g, Foster, 1987; Gutierrez, Baquedano-Lopez, & Tejeda, 1999). Lee (2007) has documented how multiparty overlapping talk involving AAVE discourse styles is associated with greater intensity of participation among high school AAVE speakers. There is limited research in this area. However, logically the proposition of having students' home dialects available as one medium of communication in instructional dialogues is similar to arguments about classrooms involving English as a second language.

Conclusion

Historically, arguments about the use and relevance of nonmainstream English dialects have viewed access to such dialects in school-based learning as either an asset for scaffolding or a deficit to be overcome. Sociolinguists, however, have consistently expounded the logic and complexity of nonstandard English dialects. The challenges of transforming the sociolinguistic research in practice have been twofold: First, broad public folk theories prevail about dialect variation reflecting deficit views; second, substantive linguistic knowledge is required by teachers to comprehend fully and to scaffold the resources of nonstandard dialects to support formal academic learning.

SEE ALSO: Language Problems as Constructs of Ideology; Literacy in Community Settings; Literacy in Multilingual Classrooms; Sociolinguistic Studies of Literacy; Standard Language Ideology and African American Vernacular English; Teaching a Second or Additional Dialect

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Literacy and Heritage Language Maintenance

JIN SOOK LEE

Heritage language (HL) maintenance refers to the preservation of an immigrant (e.g., Japanese, Chinese, Hebrew, Russian), an indigenous (e.g., Cherokee, Zuni, Chumash), or a colonial (e.g., Spanish, French, or German from earlier settlers in North America) language (Fishman, 2001). As one of the primary markers of ethnic and cultural identity, the maintenance of a heritage language has been an important point of concern for most ethnic groups in the United States. Some see it as a symbol of resistance to full assimilation to the host country, while others view it as a connection to their roots and a necessary means of communication within the family. However, when HL maintenance is viewed from an additive perspective (i.e., an HL is maintained alongside the acquisition of English), it yields many benefits. For example, recent studies show that HL maintenance leads to higher self-esteem (Phinney, Romero, Nava, & Huang, 2001), stronger sense of linguistic and cultural identity (Lee, 2002), and stronger family cohesiveness and social relationships (Tannenbaum, 2005). In addition to these personal benefits, HL speakers who develop strong proficiency in both English and their HL can also fill the critical need for multilingual speakers in global business and national-security sectors.

In spite of these benefits, assimilative social and linguistic pressures as well as the lack of educational opportunities to learn and use HLs in the public sphere have made HL maintenance very difficult for linguistic minorities. Most linguistic-minority groups in the United States completely lose proficiency in their HL by the third generation (Veltman, 1983). Many studies suggest a range of variables that may support HL maintenance: political, social, and demographic factors such as number of speakers, proximity to homeland, and strength of ethnic affiliation; cultural factors such as attitudes, ethnic identity, and family ties; and linguistic factors such as linguistic practices and the status of the language (Fishman, 2001). Yet little is known about how these factors interact with one another to support or constrain HL maintenance among different individuals. However, most scholars agree that HL maintenance begins with the will of the individual and family (Fishman, 2001; Valdés, 2001).

The centrality of the home and family context has shaped the kind of linguistic competence that typically develops among HL speakers. For example, speakers in the home context are likely to place more emphasis on oral skills than on literacy skills. This pattern is reflected in the description of HL speakers, who are typically descendants of first-generation immigrant parents that "speak or at least understand the language and are to some degree bilingual in the home language and in English," but rarely have literacy skills in their HL (Valdés, 2001, p. 38). Despite the critical nature of literacy, literacy development among HL speakers has not received much attention in the HL literature. To address this important issue, this entry discusses literacy's important role in HL maintenance and examines the challenges and potential support systems for HL literacy development, raising awareness of the need for more systematic approaches to HL literacy education.

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What Is HL Literacy?

Traditionally, literacy has been viewed as a skill to encode (i.e., write) and decode (i.e., read) text. However, more recently, literacy scholars have begun to see it as a social and culturally determined construct that includes the ability to use language skills in socially appropriate situations with appropriate registers (Street, 2005). In this context, HL literacy encompasses not only knowing how to write and read in the HL, but also understanding the socioculturally relevant and appropriate ways in which literacy is used in the heritage communities. Studies have documented that language-minority families practice HL literacy in different ways: Specifically, they practice with different kinds of HL texts, for different purposes, and with different outcomes (Kenner, 2004). For example, some families use HL literacy to bond, as parents and children partake in reading comic manga (Japanese books) together; in other families, HL literacy is employed as a means for non-English-speaking parents to provide their children with additional assistance in their school work; and, finally, for others, HL literacy enables HL speakers to communicate with people in their home countries through the Internet. Hence, HL literacy serves different functions for different individuals and their families in ways that (re)connect them with elements that, for them, have personal, symbolic, or ethnic relevance.

Successfully developing HL literacy skills generally requires some form of explicit instruction. Inopportunely, for many HL speakers, instruction in their HL is not widely available, particularly if it is one of the less commonly taught languages in the United States (e.g., Tagalog, Korean, Japanese, or Russian). However, depending on the language and location, there are programs that offer HL literacy instruction. For example, instruction can take place in several kinds of venues: HL weekend schools, where students meet for several hours to learn the language as well as to explore cultural traditions; institutions where religious study is offered through the HL; foreign-language classrooms; dual-language immersion schools, whose mission is to promote biliteracy and bilingualism for both language-majority (e.g., English speakers) and language-minority (e.g., Spanish speakers) children; and study-abroad programs (recent research shows that the majority of the participants in college study-abroad programs in Asia, Africa, and Latin America are HL learners; Rubin, 2004).

Certain venues of instruction are more established for some HLs than others. HL weekend schools are common in Korean, Chinese, Japanese, Russian, Armenian, and Greek communities, for example, but rarely found in Spanish- and French-speaking communities. In contrast, HL speakers of Spanish and French, for instance, often have opportunities to enroll in Spanish or French foreign-language classes through school programs, although that instruction is typically geared toward foreign-language learners rather than HL speakers. Despite the availability of such programs, HL literacy development has been largely unsuccessful for most HL speakers. To date, one of the most promising venues for HL literacy instruction is through dual-language immersion programs that instruct academic content through the use of two languages. For HL speakers, the program offers a valid and genuine purpose for HL literacy skills. Although to date most programs only offer instruction in Spanish–English, establishing dual-language immersion programs in diverse languages may improve the developmental patterns of HL literacy.

The Importance of Developing HL Literacy

One obvious goal and benefit of HL literacy development is the promotion of HL maintenance. For communities where the drastic decrease in numbers of speakers endangers the survival of particular languages, literacy may be the only way in which HLs can be

passed down from generation to generation. Text-based literacy can also foster HL maintenance for individuals who live in communities with limited access to other HL speakers. In such cases, immigrants' interactions with print media such as books, newspapers, and Web sites in their HL can provide greater HL exposure apart from home language use. Moreover, HL literacy enables individuals to participate in a wider array of communicative functions, such as writing letters or e-mails to relatives, reading menus in ethnic restaurants, reading literature from the heritage culture, and engaging in religious practices through the use of the HL (e.g., using Arabic to read the Koran or speaking Hebrew in prayer). Thus, having competence in HL literacy skills makes varied forms and registers of the HL accessible.

In addition to these direct advantages, studies have also shown that HL literacy is linked to other desirable outcomes such as higher academic performance (August & Shanahan, 2006), greater educational and occupational aspirations (Stanton-Salazar & Dornbusch, 1995), and stronger cognitive flexibility (Cummins, 1981). Furthermore, Krashen (1998) found that HL literacy has a strong positive effect on HL speakers' ability to learn other foreign languages, whereas HL oral proficiency, combined with the absence of literacy skills, had little effect. Therefore, for ethnic individuals, HL literacy provides access to information that helps them deepen their knowledge of their own ethnic culture and heritage and achieve greater opportunities to participate in an ever-shrinking, highly interdependent global community.

Challenges in HL Literacy Development

While intergenerational transmission of HL oral skills in general is difficult for most language-minority groups (Campbell & Christian, 2003), the transmission of HL literacy is even more challenging. Because HL maintenance begins in the home, children from families where the parents are not literate or are from linguistic backgrounds with strong oral traditions, such as the Hmong or some indigenous cultures, have few or no opportunities to develop literacy skills. Even in homes from cultures that place heavy emphasis on literacy practices, parents who generally do not have training in literacy instruction report they experience limitations in what they can teach their children. In addition, access to HL print materials in homes, as well as in public venues such as libraries, is limited, despite its importance for literacy development. Guardado (2002) found that the physical presence of children's books and wall prints in Spanish, as well as tapes of Spanish songs, in Spanish-heritage learners' homes was critical in developing literacy competence. Hence, resources and policies that can increase the availability of various print materials in different languages are sorely needed.

Another persistent challenge has been to develop effective curricula and instructional strategies for literacy instruction that can meet the needs of HL speakers. The development of appropriate teaching resources has been especially difficult due to the great diversity of characteristics among these speakers. Efforts are under way to develop, implement, and test various pedagogical approaches, including those with a focus on basic literacy skills, topics-based instruction, and skills-based tactics, but these methods have been implemented with differing degrees of success with HL speakers. While the range of unique characteristics that define HL speakers is still under debate, there are some common characteristics shared by most HL speakers that can offer partial guidance for approaching HL literacy instruction.

For example, for most HL speakers who are literate in English, basic literacy skills and concepts are likely to transfer and serve as a resource in developing their HL literacy (Cummins, 1981). However, because HL speakers may have never been exposed to HL

print, instruction may have to begin with basic literacy concepts that are unique to the language, including the directionality of text (e.g., left to right, right to left, top to bottom) or recognition of the writing symbols, particularly for HL speakers of non-alphabetic languages. In addition, it is important that learners understand that stylistic norms may differ between genres in their HL and in English, and thus instruction needs to target development of an awareness of which aspects of language use can be transferred between languages.

HL speakers generally have minimal formal training in their HL: They tend to write the way they speak. In such cases, Chevalier (2004) recommends that HL speakers are likely to benefit from curricula that involve an examination of what distinguishes spoken discourse from written discourse. HL speakers need to receive explicit instruction on written discourse strategies for formulating complex sentences that go beyond simple, conversational discourse, or logically organizing and connecting ideas and expressions in a socioculturally appropriate manner. In order to do so, HL speakers must expand their repertoire of vocabulary and expressions that extend beyond the family to academic and social domains as well as to grammatical and rhetorical devices that connect ideas in a clear manner.

Moreover, many HL speakers tend to share a lack of familiarity with the full range of stylistic registers available to the educated native speaker, because they acquire their parents' dialect rather than the standard dialect prescribed in schools. Instructors need to help students become aware of which HL dialect they speak and how it relates to what is considered standard in their HL culture, since written discourse conventions are mainly based on standard dialects. Furthermore, it is not uncommon that the language of HL speakers conveys features that differ from the language of the native speakers in the homeland, as well as the language of their parents' generation. Most notably, their language contains errors because their proficiency has not fully developed. Another characteristic is that HL speakers often mix their HL and English in the form of code switching (i.e., the use of more than one language, variety, or style by a speaker within a sentence or conversation, or between different speakers or situations) for both linguistic and pragmatic reasons. Continuous contact with English (e.g., the relationship between English and HL proficiency, the influence of English literacy on HL literacy activities, and the differences between students' formal schooling in English and in the HL), natural changes in language use that reflect the changing culture, and intergenerational language shifts all seem to contribute to the uniqueness of the HL and its use. Thus, HL instruction needs to take these factors into consideration and support speakers in recognizing how their ways of using their HL may differ from the prescribed ways of literacy practices for the native speakers of the language.

Opportunities for HL Literacy Development

Opportunities to use HL literacy are critical in supporting the role of literacy in HL maintenance. Advancements in technology and the Internet hold significant promise to raise awareness of the need for HL literacy skills and increase the opportunities to practice using them. HL speakers can view periodicals, navigate through Web sites in their HL, or download TV or radio shows from their homeland. According to Villa (2002, p. 97), however, "computers cannot become a surrogate for one generation of minority language speakers passing that tongue to subsequent generations." Lee (2006) found that electronic literacy practices enabled HL speakers to create social networks with other heritage and native speakers, allowing them to practice and use their HL literacy skills for authentic purposes. The flexibility and creative means of expression (e.g., abbreviations, phonetic spellings,

use of symbols, nonstandard use of grammar) commonly found in electronic literacy practices also lowered their inhibitions about writing in their HL. In other words, the lack of perceived pressure to produce correct spelling and forms of HL online gave HL speakers the confidence and space to experiment with and engage in literacy practices. Thus, taking up opportunities to engage with other native speakers of their HL online not only reinforced their language skills, but also provided them with the motivation to continue using and developing those language skills.

Clearly, increasing opportunities for exposure to literacy activities are critical to HL development, but the realization of why literacy skills are needed is just as important because it results in stronger motivation to develop those skills. Studies have shown that one of the greatest barriers against achieving HL proficiency is students' lack of motivation to see its relevance and need in a US context, where the acquisition of English is sufficient (Lee, 2002; Shin, 2005). For example, enrollments in Chinese HL schools in southern California significantly increased once students could receive foreign-language credit from their local public schools for studying Chinese at HL schools. Similarly, enrollments in Korean classes increased once Korean was established as an elective for the SAT II test. Such changes in educational policies make it possible for students to see their HL as a legitimate and valued entity, and hence motivate them to maintain and develop their HL and literacy skills. Yet another motivating factor for the generation of HL speakers is the appeal of popular cultural activities in their social lives. Engagement with ethnic TV soap operas, karaoke singing practices in ethnic cultures, and social network sites, such as www.hi5.com in Spanish and www.cyworld.com in Korean, offer exposure to HL cultures and customs, in addition to providing genuine opportunities for HL speakers to make use of their literacy skills. Therefore, making appropriate forms of ethnic media more readily available to youth can also provide a supportive mechanism for HL maintenance (Lao & Lee, 2009).

In sum, HL literacy maintenance is a basic right and a prerequisite for global citizenship. It is a tie that not only connects HL speakers to their family, community, and traditional cultural practices, but also bridges them to changing trends, values, practices, and language use within their communities.

SEE ALSO: Literacy and Bidialectalism; Literacy and Bilingualism; Literacy and Language Revitalization; Literacy in Community Settings; Literacy and Transnational Migration

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Literacy and Language Revitalization

TERESA L. MCCARTY

To revitalize a language is to create new contexts for its acquisition and use among a heritage community associated with that language. The goal is to engender new vitality in a language that is in danger of falling silent because natural intergenerational language transmission mechanisms have broken down, causing the language to fall out of everyday use. Endangered languages are described as "at risk" or "moribund," meaning their speakers are beyond childbearing age, or as "sleeping" or "dormant," meaning they have no native speakers but have written and/or audio documentation and a living heritage community. Language regeneration, renewal, and reclamation are overarching terms to describe revitalization processes for endangered languages.

Print literacy is one means of revitalizing a language, although it is not the only or even the principal means and in some cases is not desired by the heritage language community. Among many Indigenous communities, for example, oral tradition is viewed as the prime carrier of the Indigenous culture, and revitalization often focuses on strengthening oral language among younger generations rather than the promotion of print literacy. Moreover, to the extent that print literacy is associated with schooling, it introduces into the revitalization situation a host of additional considerations, including the historic role of schools in the community and biases that favor teaching the dominant tongue (for a discussion, see Grenoble & Whaley, 2006, chap. 5; for cases of school-based language revitalization, see Francis & Reyhner, 2002; Hornberger, 2008). Thus the relationship between literacy and language revitalization is complex and contested, calling into question the forms of literacy present in a given heritage language community, the perceived status and utility of those languages and literacies, the role of schools and their medium-of-instruction policies as language planning agents, issues of dialect difference and standardization, and the community's self-determined language planning goals.

Understanding these complexities requires recognizing the asymmetrical power relations that place languages at risk of losing their speakers in the first place. According to some projections, 90% of the world's 6,900 languages are likely to be displaced by dominating languages by century's end. Most of the "lost" languages will be Indigenous languages, but they are not alone: Irish, Welsh, Frisian, Yiddish, Cornish, and a host of minoritized mother tongues face uncertain futures. Why are these languages losing their speakers? The fate of a language is intimately tied to that of its speakers and therefore to power relations manifest in social practices and policies that diminish the status and utility of some languages while elevating others. Skutnabb-Kangas (2000) refers to this as linguistic genocide or "linguicide." State-sponsored schooling and medium-of-instruction policies have been prime instruments of linguistic genocide, but as this entry describes, schools have also become strategic sites for language revitalization, especially when they are under minority-community control.

It is evident then that the role of literacy in ameliorating language loss is inherently political and ideological. In keeping with research in the new literacy studies (Street, 2008), literacy is understood to be socially and historically situated, fluid, multiple, and power-linked. This orientation does not ignore the psycholinguistic, cognitive, or technical aspects of literacy, but rather embeds them within relevant sociocultural contexts, recognizing that

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literacy learning is both enabled and constrained by power relations within the larger society.

Literacy Practices and Policies for Language Revitalization

With these foundational understandings in place, language revitalization and literacy practices and policies in support of it can be examined as a subset of goals and activities under the larger rubric of language planning and policy (LPP). As a field of study and social practice, LPP includes three key activities:

- status planning—the planned use of particular languages for certain purposes in certain domains (e.g., education, the courts, public services, the media, cultural activities);
- corpus planning—decisions about linguistic norms and forms (e.g., the creation of writing systems, issues of standardization and terminological modernization);
- acquisition planning—decisions about who will acquire the language and how (e.g., the promotion of a language in school, the workplace, etc.). (Kaplan & Baldauf, 1997)

It is important to recognize that these activities are not discrete, nor do they take place in a linear, lock-step fashion. Each LPP activity presupposes, interacts with, and implicates the others. Consider, for example, Welsh-language literacy in Wales. A language with a long and widely heralded literary tradition (Welsh legal treatises date to the 11th century CE and Welsh-language poetry has long enjoyed international prestige), the number of native speakers of Welsh declined sharply over the past century. As with other endangered languages, the causes for the decline are rooted in colonization, urbanization, out-migration, and an influx of speakers of the dominant language—in this case, English. By the late 20th century, only 20% of the population of Wales identified as Welsh-speaking. In response, the Welsh Language Act was passed in 1993, stipulating equal treatment for Welsh and English in all public institutions. According to Welsh-language scholar Colin Baker (2003), this means that "Welsh should be used in all domains" (p. 86). The Act is part of a larger Welsh normalization movement (*nomaleiddio*)—status planning aimed at making bi/multilingualism the rule rather than the exception. Schools are required to offer Welsh as a first or second language from ages 5 to 16 (acquisition planning), and Welsh-language literacy is a core curricular component from preschool to vocational and higher education (Martin-Jones, 2011). Welsh-medium schooling and literacy development are intended to elevate the status of Welsh vis-à-vis English while building the material and human resources to promote its use "in all domains."

The cases of Hawaiian and Māori, both Polynesian languages, offer insights into these processes from two of the most successful Indigenous language revitalization movements in the world. Following the expeditions of Captain James Cook in the late 18th century, Hawaii and Aotearoa/New Zealand were drawn into an international trade and political network. (Aotearoa is the Indigenous Māori term for Māori territory, subsequently named New Zealand by the British.) In Hawaii an Indigenous monarchy emerged, with Hawaiian as the language of government, business, trade, education, religion, print media, and intercultural communication. By 1893, when the USA staged an illegal military takeover of the Hawaiian Kingdom, the Hawaiian literacy rate was higher than in any other language used in the Hawaiian islands (Wilson & Kamanā, 2006). During this same time period, Aotearoa/New Zealand was being colonized by the British, who imposed a harsh assimilationist policy. The years that followed saw both Hawaiians and Māoris dispossessed of

their lands, homes, and treasured possessions by White colonizers. In both cases, by the mid-20th century, language death was imminent (Wilson, 1999; May, 2004).

These events motivated coterminous language and culture revitalization movements. In 1978, Hawaiian was recognized as co-official with English in the state of Hawaii. In 1987, the Māori Language Act was passed, designating Māori as co-official with English. (In 2006, New Zealand Sign Language was also recognized as a co-official language in New Zealand.) Full-immersion Māori and Hawaiian "language nests," called *Te Kōhanga Reo* and *'Aha Pūnana Leo*, respectively, began in the early 1980s. These family-run preschools allow for communicative interaction between children and fluent native speakers entirely in the Indigenous language, with the goal of cultivating knowledge of the Indigenous language and culture as they were formerly learned from parents and extended family members at home.

Educational ethnographers Richard Hill and Stephen May (2011) provide an account of Māori–English biliteracy learning at Te Wharekura o Rakaumangamanga (Rakaumanga) School, one the largest and longest-running Māori-medium schools in New Zealand. Rakaumanga offers Māori-medium schooling for students from year 1 (age 5) to year 13 (age 18). Following Spolsky's (2005) "seven-year Māori immersion principle" (the length of time research shows is necessary to develop full academic proficiency in a second language), entering students must have attended Kōhanga Reo for at least two years, laying the foundation for four years of full Māori immersion, after which English is introduced for three to four hours per week. To ensure integrity of the Māori-language environment, Māori and English instruction are separated by time, place, and teacher. The goal is for students to develop full bilingualism and biliteracy as a means of preparing them for full citizenship in their natal community and to become "citizens of the world" (Hill & May, 2011).

To assess reading in Māori, Rakaumanga uses a Māori-language framework in which each reading level (called a *kete*, a traditional woven flax bag named for a Māori plant) is arranged according to difficulty. Māori writing is also assessed using nonfiction Māori texts. According to Hill and May, these literacy assessments show that by year 8, students have reached or are approaching age-appropriate literacy development in both languages and are "well on their way to achieving the goal of bilingualism and biliteracy, a key aim of Māori-medium education" (2011, p. 178). Research by Māori educator Cath Rau (2005) extends these findings to other Māori-medium schools. The academic benefits, Rau notes, are the result of increased support and resources for Māori curriculum development (corpus planning) and teachers' professional development (acquisition planning). Thus there is strong evidence that Māori-medium schooling—in particular the sustained development of biliteracy—promotes both academic achievement and language revitalization.

Increasingly, information technology plays a central role in these language and literacy planning processes. Coronel-Molina and McCarty (2011) examined the role of digital literacies for Quechua in South America. With 8 to 12 million speakers in six South American countries, Quechua (called Quichua in Ecuador) is nevertheless endangered as a consequence of more than five centuries of linguistic and cultural oppression and the continued marginalization of its speakers. Over the past four decades, a region-wide Indigenous resurgence has led to national policies mandating bilingual-intercultural education and designating Quechua as co-official in Peru and Bolivia and Quichua as co-official in Ecuador. Audiovisual and video resources now provide opportunities for language learning in authentic cultural contexts; multimedia DVD, Internet resources, and interactive textbooks complement hard-copy texts. Online Quechua dictionaries, glossaries, and Native-language interfaces with popular computer programs such as Windows have been developed, and Google has a search engine in Quechua. These new forms of literacy both reflect and construct new language-learning opportunities while enabling "Indigenous languages to take their rightful place in the contemporary world" (Coronel-Molina & McCarty, 2011, p. 367).

Literacy Planning Challenges for Endangered-Language Communities

None of these LPP efforts is without problems and challenges. In the case of information technology, access is a major obstacle, a function of the geographic isolation of many endangered-language communities and of profound social and economic inequities. Corpus planning is often fraught with conflict. Such has been the case for Quechua and Quichua in Peru and Ecuador, where debates surrounding the number of vowel phonemes represented in the language's written form (three) versus those pronounced in speech (five) have hampered language revitalization. As Hornberger and King (1999) point out, these corpus planning debates veil larger issues of Indigenous self-determination and who has the right to control linguistic and cultural futures. In Ecuador, *Quichua Unificado* (unified Quichua) was developed to encourage Quichua literacy and revitalization. As King (2001) explains in the case of Saraguros in southern Ecuador, the difficulty is that Quichua Unificado and *Quichua Auténtico* (authentic Quichua) have been pitted against each other. Educated, economically successful Saraguros tend to speak the Unified Quichua learned as a second language in school, while older, less educated and more rural Sarguros speak the "authentic" variety as a first language. Paradoxically, authentic Quichua is viewed by users of Unified Quichua as "impure" because it includes Spanish loan words. The Quichua situation mirrors one described by Jaffe (2011) for Corsican, where competing demands of formal linguistic authority, including the demand for uniformity and the exclusion of French, challenge the everyday language practices of Corsican speakers, which incorporate French-origin terms.

Native Hawaiian scholars Sam No'eau Warner (1999) and K. Laiana Wong (1999, 2011) analyze similar issues for Hawaiian, arguing that the responsibility (*kuleana*) for Indigenous language revitalization and its representation in written form lies with members of the heritage language community themselves. Addressing these challenges for Welsh, Baker (2003) notes the propensity for language and literacy planning to reflect models established for the dominant tongue. The National Curriculum for Welsh and English literacy, for instance, is "highly functional, about technical skills, decoding symbols, correctness and accuracy," emphasizing "linguistics rather than communication, legitimacy rather than diversity" (Baker, 2003, pp. 79–80). Baker proposes transliteracy as a pedagogical strategy in which students "read and discuss a topic in one language, and then . . . write about it in another" (2003, p. 83). This facilitates conceptual reprocessing (an acquisition planning goal) while valorizing Welsh as an academically empowering medium of instruction (a status planning goal).

These issues of authenticity, authority, legitimacy, and identity are central to language revitalization processes and prospects. Especially contentious are the kinds of literacies valued and cultivated in and out of school. As Jaffe (2011) observes for Corsican-language education policy, teachers' practices are shaped by the school's emphasis on a single legitimate linguistic code. In ethnographic research on bilingual vocational education in Wales, Martin-Jones (2011) further illuminates the differences between young adults' in- and out-of-college literacies, noting that the range of texts and genres used and produced in their college classes is much more narrow than that of their everyday worlds of work. Like Baker, Martin-Jones advocates for meaning-centered biliteracy pedagogies that are "purposeful, interactive, and multimodal, like the students' out-of-college literacy practices" (2011, p. 249). Particularly in settings where revitalization is a goal, "we must surely pay attention to the ways in which new kinds of texts and new genres are employed and assigned value," Martin-Jones cautions (2011, p. 250).

The Multiple Roles of Literacy in Language Revitalization

If the aim of language revitalization is to produce new speakers, then literacy development alone is insufficient to achieve that goal. As Fishman notes in his classic (1991) treatise, *Reversing Language Shift*, oralcy cultivated in the context of family and community is the *sine qua non* of intergenerational language continuity. Literacy can nevertheless play a crucial role in supporting home-based revitalization and opening new language-acquisition pathways. In a study of Indigenous-language literacy among the Hualapai of the southwestern USA, Watahomigie and McCarty (1996) show that literacy in Hualapai, though confined primarily to the school, serves to affirm Indigenous identities, assert local education control, and provide a "pro-Hualapai" bridge to the dominant language and the wider society. Further, by elevating the language's status among a community of users, literacy can foster use of the heritage language in out-of-school domains such as local media and government. This creates new contexts for natural communication in the heritage language between older and younger generations. And, as Salinas Pedraza (1996) observes for Indigenous languages in Mexico, writing an endangered language can help "recapture and nurture the cultural, scientific, and technical traditions" of the people associated with the language (p. 184). The Māori and Hawaiian cases attest to the clear academic benefits of bi/multiliteracy in an endangered language as well.

Finally, it should be noted that historic literacies have been instrumental in bringing "sleeping" languages back to life. In this regard the case of Wôpanâak is instructive. An Algonquian language spoken by peoples Indigenous to what is now the northeastern USA, the last native speaker of Wôpanâak (also called Massachusett or Wampanoag) died in 1908. Fortunately, Wôpanâak has a significant corpus of written texts, including lexicons, letters, diaries written by native speakers, and the 1663 Eliot Bible, the first Bible to be translated into a Native North American language. These resources have enabled the Wampanoag to formulate a dictionary and language curriculum to teach Wôpanâak to community members (Ash, Fermino, & Hale, 2001). Miami linguist Wesley Leonard (2008) describes a similar process for another Algonquian language, Miami-Illinois, whose last fluent speaker died in the 1960s. Although Miami lacks audio documentation, its written documentation is extensive, including a 17th-century dictionary discovered in 1999. This and other historic texts have enabled the Myaamia Project, an initiative of the Miami Nation of Oklahoma and Miami University of Ohio, to produce a corpus of contemporary language-learning and teaching materials. The case of Miami, Leonard (2008) writes, offers "real hope to other communities whose language situations appear bleak" (p. 26).

In sum, literacy can widen the possibilities for revitalizing a language but it can constrain those possibilities as well. Literacy's potential as an agent of language revitalization lies in its activation by the heritage-language community itself. Evidence from research and practice shows that this can best be realized by the cultivation of multiliteracies for multipurposes across multidomains.

SEE ALSO: Endangered Languages; Endangered Languages in Australia; Endangered Languages in Canada; Indigenous Languages in the 21st Century; Indigenous Literacies; Limits of Language Revival; Literacy and Heritage Language Maintenance; Mother-Tongue-Medium Education; Multilingualism and Minority Languages; Reviving Māori

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Literacy and Multicultural Education

ENID M. ROSARIO-RAMOS AND SONIA NIETO

Early Developments

Multicultural education has always been concerned with furthering social justice and providing children with a relevant and rigorous education. This concern involves an understanding and appreciation of diversity, the examination of power structures and relationships, a close look at the ideological underpinnings in the construction of knowledge, and the development of culturally responsive pedagogy. Even though we recognize that multicultural education has addressed a broad range of issues related to social justice and education, in this entry we will focus on the links between literacy and multicultural education.

Literacy and multicultural education have been closely linked since the early 1970s when the multicultural education movement began, first in the United States and shortly thereafter in other nations (Banks, 2009). Even before then, however, the goals of diversity and literacy were evident in late-19th- and early-20th-century African American intellectual thought in the work of such scholars as Du Bois (1935) and Woodson (1933). During slavery, which in the United States did not end until 1865, teaching enslaved Africans to read was a crime punishable by law. Thus, intellectuals such as Du Bois and Woodson, among others, viewed literacy as fundamental to social, political, and economic equality. Their work laid the foundation for the Civil Rights Movement of the 1950s, which considered literacy to be a tool for individual and community empowerment and development. According to Clark, one of the leaders of the Civil Rights Movement who was especially committed to education, "Literacy means liberation" (2004, p. 303), both in the sense of fighting illiteracy and in the broader sense of being educated for citizenship.

Scholars from other racial and ethnic groups were also significant players in linking diversity issues with literacy before the advent of multicultural education. For instance, scholar and educator Sanchez (1940) was a leading voice in the struggle against unequal and segregated schools for Mexican Americans. In New York, Antonia Pantoja and other Puerto Rican leaders advocated equal education beginning in the 1950s and in the 1960s they founded Aspira, an educational organization that provides counseling, college preparation, and other support services for Latino youths. Other groups including Chinese and Japanese Americans, primarily in California but in other states as well, and Native Americans, primarily in the West, waged struggles for equal education (Lomawaima, 2004; Pang, Kiang, & Pak, 2004).

Native-language maintenance has always been part of a progressive view of literacy. This is not surprising given the systematic annihilation of native languages other than English in US history (Spring, 2009). Two examples suffice: Enslaved Africans were stripped of their native languages through policies that enforced an English-only approach as a means of social control. Numerous languages were lost because of this policy. Another brutal attempt to obliterate native languages was the case of Native Americans whose children were forcibly removed from their homes and placed in boarding schools where they were prohibited from speaking their native languages and assimilated to US mainstream ways (Archuleta, Child, & Lomawaima, 2000).

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Major Contributions

As defined in the early years of the development of the field of multicultural education in the 1970s, the primary focus was race and ethnicity, and especially the education of African American students. Given its roots in African American intellectual thought and the Civil Rights Movement, this is not surprising. Nevertheless, although language concerns were not initially a major part of multicultural education, by the 1980s most scholars in the field were acknowledging the importance of language issues and literacy (Nieto, 2001). This is because native languages other than English, bilingualism, bidialectism, and other language issues—in the same way as ethnicity, race, and other differences—have often been perceived as problems rather than as assets, both in school settings and in society at large. In addition, with the dramatically increasing number of immigrant and non-English-speaking students in US schools, it became clear that teachers needed to learn to teach children for whom English was an additional language. Moreover, language-minority and immigrant students frequently live in poverty, joining their African American peers as the most marginalized and underserved students in the public schools. As a result, scholars began to address language differences and literacy as a significant concern in multicultural education (Nieto, 2001).

The concern with language as a key component of multicultural education can best be seen in two areas: bilingual education and critical pedagogy or critical literacy.

Bilingual Education

Even in the early battles for racial desegregation, language-minority communities were adamant that respect for their native language needed to be a primary consideration in the education of their children. By the 1960s, calls for bilingual education became a growing concern in the Civil Rights Movement as defined by Latinos, Native Americans, and other language-minority groups (Crawford, 2000). The first modern successful court case involving language rights and education was filed on behalf of Chinese immigrant children in San Francisco. That lawsuit resulted in the landmark *Lau v. Nichols* (1974) decision by the United States Supreme Court that famously declared,

> There is no equality of treatment merely by providing students with the same facilities, textbooks, teachers, and curriculum; for students who do not understand English are effectively foreclosed from any meaningful education. Basic skills are at the very core of what these public schools teach. Imposition of a requirement that, before a child can effectively participate in the educational program he must already have acquired those basic skills is to make a mockery of public education.

The *Lau v. Nichols* decision laid the groundwork for advances in bilingual education during the 1970s and beyond. In addition, the Equal Educational Opportunities Act (EEOA) of 1974 was also significant in protecting the rights of language-minority students. This law maintained that any educational agency that failed to "take appropriate action to overcome language barriers" was in fact denying students an equal education (EEOA, 1974). As a result of these legal supports, hundreds of school systems throughout the nation began to offer bilingual programs with two major components: native-language instruction and ESL (English as a second language). Sometimes, a cultural component was also an important part of bilingual education.

Although bilingual education has proven to be generally more effective in teaching English than other approaches (ESL alone, immersion, or "sink-or-swim" approaches in which students are placed in regular English-language classrooms to fend for themselves), it has been controversial from its very inception. That bilingual approaches to learning

English have been at least as effective as structured English immersion (SEI) has been validated through many studies (August & Shanahan, 2006). Nevertheless, it continues to be a contentious debate because the use of languages other than English for instruction has sometimes been seen as un-American and unpatriotic. Thus, the argument has often been framed more as a political than as a pedagogical one.

Critical Literacy

Another significant link between language and multicultural education emerged with the field of critical literacy. Too often and for too long, language-minority children have been marginalized in schools and society through the naturalization of epistemological beliefs and instructional practices that privilege white middle-class ways of being (Nieto, 1994). A literacy education that aims at equality requires that the life experiences of minoritized children and their families be integrated into the fabric of classroom practices and that students, who now live in a linguistically diverse and globally interconnected society, become committed citizens who are able to understand the societal structures in which they reside and who are willing to work toward a more just society.

Literacy education can become a space of possibility if young people enter classrooms that represent safe spaces for the discussion of diverse ideas and models of the world. This includes an expansion of the range of texts that are included in the curriculum, a reexamination of our definitions of what content is worthy of study in literacy classrooms, and the development of flexible instructional practices that address the needs of children from different backgrounds.

Recent research has shown how providing students with opportunities to challenge traditional views of what counts as literacy as well as opportunities to delve into the study of texts that are relevant to their communities can lead to an empowering experience. These opportunities support not just a rigorous examination of texts, but also the study of societal structures that privilege some groups over others. This rigorous examination of textual representations of social inequalities is necessary for the children's development as active citizens (Freire, 1970). Examples of these pedagogies are found in the use of popular- and youth-culture texts as academic texts (Morrell, 2002), the inclusion of multicultural literature into the language arts curriculum (Souto-Manning, 2009), the critical examination of everyday texts such as catalogues and government forms (Luke, O'Brien, & Comber, 2001), and the engagement of students in the production of personal and culturally relevant texts (Jocson, 2006). These empowering literacy practices are instrumental to students' academic and intellectual development but also to their development as conscious citizens in a diverse society.

Problems and Difficulties

The value of multicultural education, particularly for the academic success of minoritized children, has not always been clear. Consequently, multicultural education in the United States has mirrored the history of the struggle for equity and social justice in education. As such, it has been controversial and has been subject to criticism from both the left and the right since its beginnings (Sleeter, 2001). A major critique is that multicultural education is not much more than a celebratory and "feel-good" pedagogy that contains little substance in academic terms or in its potential for changing the life chances of marginalized students. These critics show a lack of understanding of the central role that identity plays in the learning process and the importance of culturally relevant pedagogy for students' engagement with schooling. Additionally, most critiques have been from the right, and they have often been made by scholars who know little about the field and who focus not

on recognized scholars in the field but on those on the fringe. Their arguments stress such fears as the disappearance of the American canon, or the threat to the common American culture by a focus on differences rather than on similarities (Bloom, 1989).

Another controversy has centered on who should be included under the umbrella of multicultural education. In the recent past, most scholars in the field have broadened their conception of the field to include not only race and ethnicity, but also language, gender, sexual orientation, ability, and other issues. Nevertheless, other scholars believe that this broad inclusion diminishes the original intent of multicultural education, which was to equalize educational opportunity for students marginalized by their race and ethnicity (Gay, 2003).

A more substantive criticism is that the field has been undertheorized, leading to a utopian and uncritical view of change and a static conception of culture and identity (Dolby, 2000). Given the tremendous hybridization of youth culture, as well as a growing globalization and international immigration, this is an important critique that needs to be heeded. The lack of analysis of institutionalized systems of oppression has been yet another criticism of the field. That is, the foundation of some conceptions of multicultural education has been a psychological one rather than a systemic one, thus seemingly promising change in spite of brutal institutional barriers that get in the way of equal education and more liberatory conceptions of education. However, although it is true that classroom practice has often been superficial, focusing on a "holidays and heroes" approach, most serious scholars in the field have grappled with the issues of institutionalized power and oppression for many years (see Nieto, Bode, Kang, & Raible, 2008).

Given the recent standardization and accountability movements, multicultural education, bilingual education, critical literacy, and other progressive approaches to education have come under even greater scrutiny. The laser-like focus on test preparation and test scores has meant that those subject areas (such as the arts) and approaches (such as multicultural education) that seem to detract from obtaining high scores have been abandoned (Au, 2009). Furthermore, in the United States and other industrialized nations, the tremendous growth in immigration has led to a backlash against such progressive approaches as multicultural education and critical literacy.

Recent Developments

As discussed above, early developments in the multicultural-education scholarship have highlighted the importance of attending to the need for education that works toward social justice. Developments in the area of critical literacy and bilingual education offer compelling examples of efforts to provide students, especially minority students, with a literacy education that is empowering and liberatory.

Immigration processes have created new configurations of communities across the United States (Suárez-Orozco & Suárez-Orozco, 2009). As the increasing cultural and linguistic diversity of the United States' population and communities across the globe becomes ever more evident, multicultural education turns out to be increasingly relevant. These concerns about diversity are paired with a need to develop more equitable educational practices that eliminate current educational disparities between mainstream and minority groups of students. The presence of diverse groups of students in our classrooms requires educators who are committed to rethinking traditional educational canons and to developing new ways to provide quality education for students from multiple backgrounds.

The development and expansion of digital communication technologies have extended the discussions about diversity beyond national boundaries and into a global sphere where people and information are in constant flow, where relationships are built and maintained

across nations, and where the spaces for learning are no longer concentrated within the local space of a classroom. Young people are increasingly becoming participants in a globalized society where texts, images, and relationships are readily available through digitally mediated communication technologies.

Literacy researchers have pointed to the importance of attending to these new ways of literacy engagement and development where multiple cultural productions are constantly accessed and produced by young people beyond local spaces. This expansion of the scope of literacy forces literacy educators and researchers to reevaluate their definitions of literacy and literacy learning as well as their ideas about the role of literacy in modern life. The New London Group (1996) stresses the significance of paying attention to the emergence of new literacy practices that are now multimodal, multilingual, and multicultural.

The children of immigrant families seem to be at the forefront of these new movements. These children often navigate multiple geographical boundaries using digital communication technologies as they access cultural productions from their sending countries at the same time as they develop expertise in the literacy practices of their host countries and beyond (Lam & Rosario-Ramos, 2009).

The impact of digitally mediated communication technologies brings new dimensions to our discussions of diversity and multiculturalism, especially when people around the world are constantly interacting with each other and exchanging material and cultural goods. Furthermore, as young people become increasingly interested and participant in these global spaces, educators need to attend to the cross-boundary learning that happens in these spaces as they might yield interesting insights and ideas about how to best educate this highly diverse global generation.

Future Directions

In the United States in the era of No Child Left Behind, immigration debates, and a new discourse of postracial America, issues of diversity and multiculturalism are at the center of the education debate. A recent article in *The New York Times* (Rich, 2009) discussed new approaches to literacy learning where teachers provide their students with ample freedom in choosing the texts they want to study. This approach has been met with resistance from supporters of the maintenance of traditional literary canons that dictate which texts students should know and be able to discuss. The debate brings to light longstanding beliefs about what counts as literacy and raises questions about who gets to decide what is worthy of academic consideration and which communities are represented in traditional canons. At a time when diversity is difficult to ignore as people move across national borders and the expansion of communication technologies puts us in contact with the world, one has to question whether traditional views on literacy education still make sense. As our students increasingly come from diverse backgrounds and live and grow in a more interconnected and interdependent world, multiculturalism is not only relevant, but also crucial to a more equitable literacy education.

SEE ALSO: Bilingual Education; Critical Literacy; Language and Identity; Literacy and Bilingualism

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Literacy and Transnational Migration

BRAD L. TEAGUE AND ROBERT T. JIMÉNEZ

The relationship of literacy to transnationalism and immigration is not immediately obvious. On one hand, a seemingly endless series of reports informs us of the low academic achievement, especially in terms of English literacy, for students for whom English is an additional or new language (Lee, Grigg, & Donahue, 2007; Pew Hispanic Center, 2008). On the other hand, we know that these students bring lived experiences to the task of schooling that are not well understood; nor are these experiences incorporated into curriculum, instruction, or assessments in ways that validate these young people, acknowledge their linguistic and cultural strengths, or help them to access the mainstream curriculum for purposes of social mobility (Lee, 2007; Working Group on ELL Policy, 2009). As is well known, the numbers of these students, typically referred to as English language learners (ELLs), has increased dramatically over the past few decades. To cite some statistics, recent estimates place the total number of foreign-born individuals in the US at around 33.5 million, or about 12% of the total population (Larsen, 2004). Moreover, the children of immigrants constitute around 20% of the K–12 student population, and this number is projected to more than double within the next 20 years (American Association of Colleges for Teacher Education, 2002).

One intriguing domain of activity that might have implications for English literacy instruction involves the transnational, or cross-border, practices engaged in by many youths from immigrant backgrounds. These practices connect them to their countries of origin as well as many other geographic locations, and they very often involve reading, writing, designing, and other activities that are saturated with the desire to communicate, or semiotic intent. Examples include the sending of remittances, as well as phone, e-mail, texting, and chat conversations with family members and friends, and the sending and receiving of videos. Participation in these practices affects numerous areas of students' lives, including, for our purposes, their learning and use of different forms of language and literacy. In addition, by foregrounding this facet of these students' behavior, we move away from what they do not yet know and what they cannot yet do to a more desirable distinguishing feature, that of transnationalism. This entry describes and illustrates the emergence of "transnational literacies" (Jiménez, Smith, & Teague, 2009) and discusses specific ways in which these literacies can be capitalized on to increase the school success of students from immigrant households. While researchers have drawn on a variety of perspectives to describe the language and literacy learning of immigrant children (see Lam, 2006), this entry draws on an emerging framework that highlights their mobility as well as the multiple identities, languages, and literacies that often result from their transnational affiliations. In particular, engagement in cross-border practices has the potential to extend the multilingual literacy resources available to immigrant youth, and thus the relationship between transnationalism and literacy merits closer examination.

The entry is organized as follows. First, it defines how the terms "transnationalism" and "literacy" are used, and then reviews a number of recent empirical studies that frame literacy learning and use within the context of transnational flows. Next it presents and discusses a vignette that depicts in concrete fashion what transnational literacy looks like within the life experience of a "typical" youth. In this vignette, examples from many different young people are bundled together within a composite case. The final section draws

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on these examples—as well as those mentioned in the literature—to make a case for why the school success of immigrant students (and others) would be greatly enhanced if educators not only recognized these kinds of text but also actively integrated them into their instruction.

Transnationalism, Literacy, and Transnational Literacies

Transnationalism refers to the movement of people, information, language, and goods between nations. Importantly, transnational flows or practices are both bidirectional and sustained over time (Portes, Guarnizo, & Landolt, 1999) and are linked to complex processes of globalization. To give an example, globalization, or the integration of world economies, has resulted in the production and sale of cheap corn in the US. This development, in turn, has eliminated jobs for large numbers of farmers and their families living in Mexico and Central America. Consequently, many of these individuals have immigrated to the US in an attempt to secure employment in the same area. Interestingly to us, these individuals are likely coming into contact with and acquiring new forms of language and literacy that they may then share with friends and family members in their places of origin. Such is especially true for their children, who may grow up in the US but still maintain ties to individuals in Mexico or Central America. As this example illustrates, globalization often creates the conditions under which transnational behaviors and practices flourish. Transnationalism, then, is the social process in which individuals develop and maintain "multiple relations" that link their countries of origin and settlement (Schiller, Basch, & Blanc-Szanton, 1992). Hornberger (2007) distinguishes transnationalism from immigration by pointing out that while immigration typically involves "permanent affiliation with the host country and separation from the home country," transnationalism implies maintaining ties to the country of origin as well as the possibility that one may eventually return (p. 326).

Levitt and Schiller (2004) propose the notion of the "transnational social field" as an elaboration upon the idea of social field. The transnational social field ignores national boundaries in a deliberate attempt to create and link networks for the purpose of making resources, practices, and ideas available to its members. Significantly, it is within these spaces that individuals "take actions, make decisions, and develop subjectivities and identities" (Lam & Rosario-Ramos, 2009, p. 173). Due to the increased availability of technology and digital forms of communication, binational flows of cultural and symbolic materials have rapidly accelerated and such movements play a major role in shaping the daily lives of those who participate in them. In other words, global and transnational processes directly impact the lives of immigrants engaged in cross-border practices. For example, individuals involved in transnational flows may raise and send money to families and home communities, exchange new ideas (Cohen, 2004), engage in religious celebrations and other events organized in the host country, send media and donations across borders (Smith, 2005), and participate in ongoing e-mail communication (Farr, 2006).

By definition, many immigrants develop hybrid or mixed identities that place them in a position of "other" with respect to both their home countries and their host countries (Trueba, 2004). As mentioned previously, this existence allows them to engage in various social fields within both physical and cyberspace that work together to influence their beliefs, values, and actions. This is important because studies of immigrant youth, including their language and literacy practices, must necessarily take into account their participation in multiple worlds. Interestingly, researchers have claimed that individuals who engage in transnational flows often develop "dual frames of reference" that allow them to compare "experiences and opportunities in the two settings" (Suárez-Orozco & Suárez-Orozco, 2001,

p. 114). Vertovec (2004) terms this process "bifocality" and argues that "transnational forms of exchanges, communication, and activities impact upon the cognitive, social, and cultural orientation of migrants" (cited in Lam & Rosario-Ramos, 2009, p. 174). García Canclini (2001) proposes that individuals living on the US–Mexican border develop identities that are "polyglot and cosmopolitan, endowed with a flexible capacity to process new information and understand habits that are different from those of their original symbolic matrices" (p. 144). In other words, these people develop a keen sensitivity concerning national identity, cultural difference, and daily life practices that is more discerning than those of individuals who lack such cross-border experiences. What's more, several scholars have equated these competencies with school success (Suárez-Orozco & Suárez-Orozco, 2001). The possibility that this association might be intentionally leveraged is intriguing and worthy of further consideration.

Following researchers such as Collins and Blot (2003) and Street (1984), literacy is defined broadly in terms not only of the ability to read and write but also of the historical, economic, political, social, and cultural contexts that influence and shape the learning and use of literacy. In other words, literacy is viewed as a social practice (Barton, Hamilton, & Ivanič, 2000), one that is always connected to issues of power and ideology. Given that literacy differs depending on its particular context, it is more appropriate to speak of multiple *literacies* as opposed to a single type of literacy that is context-free and universal. What gets defined as literacy matters because practices that are included in these definitions find their ways into curriculum, assessments, and as a result, instruction. Bourdieu (1989) defined the ability to make distinctions of this type (i.e., what counts as literacy) as "power par excellence" because through it, one can actually "manipulate the objective structure of society" (p. 23). In this case, students who are far too often excluded from meaningful participation could find that their life experiences are recognized and acknowledged if transnational literacies are presented as desirable.

Immigrants' engagement with literacy can create a space where it is possible to maintain, strengthen, and create new ties to co-ethnics as well as reach out to those from other groups (Lam, 2004). The types of literacies involved may include traditional print forms of literacy and digital literacies. Examples of print literacies are the remittances migrants send home (Cohen, 2004; Smith, 2005), which involve substantial amounts of paperwork, as well as the language brokering that occurs when linguistically demanding documents are translated for less-proficient bilinguals (Orellana, Reynolds, Dorner, & Meza, 2003). Digital literacies include text messaging, music and video remixing, fan fiction, social networking (e.g., Facebook, MySpace, YouTube), and online gaming. Significantly, these practices are considered "transnational" if they involve movement between the countries of origin and settlement. Guerra (2004) points out that, as a result of participation in transnational flows, many individuals learn to use literacy to "move back-and-forth with ease and comfort between and among different languages and dialects, different social classes, and different cultural and artistic forms" (p. 8). He calls this ability, which is reminiscent of the idea of dual frames of reference or bifocality, discussed above, "transcultural positioning." The New London Group (2000, p. 14) calls this ability "the most important skill" that students need to learn. Finally, transnational literacy practices function to create and maintain transnational relations and identities (Lam, 2004), as illustrated in the next section.

Research on Transnational Literacies

Researchers are only beginning to examine literacy learning and use through the lens of transnationalism. This section reviews a number of empirical studies that use this framework to document the forms of literacy developed by immigrant youth.

Both Bartlett (2007) and Rubinstein-Ávila (2007) looked at the bilingual literacies and educational trajectories of Dominican youth living in different northeastern US cities. Significantly, Dominican immigrants constitute one of the most transnational populations in the nation (Guarnizo, 1997). Bartlett (2007), following a case-study design, found that her participant, Maria, faced many obstacles in a New York City high school but was ultimately able to reposition herself as a "good student" within this setting given that she completed all her schoolwork, associated with high-achieving students, insisted on taking classes only with teachers who cared about her, and ascribed to a schoolwide "opportunity narrative" that influenced her behavior. Another important finding of this study was that the school placed a high value on bilingual abilities, thus creating more opportunities for immigrant students like Maria to succeed. However, an important finding of this study was that the educators working with Maria had little or no understanding of the ways in which literacy was conceptualized and implemented in the Dominican Republic. These differences drove much of Maria's seemingly incomprehensible behavior, and better understanding could have helped her teachers establish more meaningful links between her previous experiences and the demands of the US classroom.

Rubinstein-Ávila (2007), whose research likewise focused on a case-study participant, Yanira Lara, found that although Yanira's transnational identity resulted in an admirable bilingual repertoire of literacy practices, she encountered many struggles at school. In particular, she was expected to simultaneously learn English, become academically proficient, and develop particular kinds of literacy and knowledge. This experience was especially taxing because the school did not value her prior language abilities or her out-of-school literacies, and her teachers often failed to explicitly teach her the language associated with school success. In these ways, her school experiences contrasted somewhat with those of Maria. In other words, neither of these young people found sufficient opportunities to make connections between their transnational lives and their school literacy experiences, nor did their teachers understand the ways in which one set of experiences might support and enhance the other. Both of these cases support the need for more information concerning transnational literacy practices.

Other scholars have focused on the experiences of Mexican-origin immigrants. Richardson Bruna (2007), for example, studied the informal literacy practices of three newcomers from Mexico in a mid-western high school. She discovered that these students used "tagging," the practice in which they "write the name of their country, region of origin, or themselves . . . in public spaces" (p. 240) to signal their close ties to Mexico. Richardson Bruna interpreted these acts as "calls for help," given that the students were positioned negatively within the classroom. In other words, she saw tagging as a form of "transcultural repositioning" (Guerra, 2004), which the students used to help negotiate complicated movement between two cultures. On a more positive note, Sánchez (2007), whose work focused on the narratives produced by Mexicanas living in the San Francisco Bay Area, found that, in the cocreation of a children's book on the immigrant experience, the girls drew on narratives of family, migration, and a sense of "home" in two countries to produce a text that countered mainstream perspectives on Mexicans living in the US. In particular, the text portrayed immigrants in a positive light. Furthermore, the project allowed the three focal students to make use of their prior linguistic and cultural knowledge, or their funds of knowledge (González, Moll, & Amanti, 2005), to create a sophisticated literacy artifact, one that both validated their identities and served an authentic purpose. It is worth noting that Sánchez (2007) designed a way to capitalize on the unique forms of knowledge the girls possessed as youth participating in transnational practices to enhance their literacy development in an out-of-school context. As implied above, such opportunities are rarely available within mainstream school classrooms but their existence provides at least a hint of the possibilities they afford.

Two final studies reported on the digital literacy practices of immigrant youth residing in major US cities. McGinnis and her colleagues (McGinnis, Goodstein-Stolzenberg, & Saliani, 2007) explored the relationship between transnational identities and the multimodal textual practices of online communication sites. The participants in their study were three high-school-aged students (a Colombian, an American-Bengali, and a Jewish-American) living outside New York City, and all three were found to regularly access online sites (e.g., personal Web pages, blogs). Significantly, their participation in digital literacy practices provided a means of enacting, negotiating, and cultivating transnational identities that spanned national boundaries. For example, the participants used multimodal and multilinguistic forms to express their feelings and opinions about important events in their lives and to maintain contact with individuals in Colombia, India, and Israel. In a similar study, Lam and Rosario-Ramos (2009) set out to identify the Internet-based literacy practices of a group of immigrant students in a high school located outside Chicago. Based on survey data, the researchers found that most of the students used the Internet to communicate across borders (e.g., via instant messaging, e-mail, chat rooms, Web sites, and blogs) and that they relied on their multilinguistic competencies to access resources and to manage social relationships. The students' Internet use also allowed them to maintain and develop their first languages, to improve their English, and to acquire multiple perspectives and points of view on significant events and situations. Together, these two studies suggest that online spaces offer distinctive possibilities for immigrant youth to express and negotiate complex, multinational identities while simultaneously developing and exploiting their multilingual abilities.

Illustrative Composite Vignette

The following text provides an illustrative composite vignette for the purpose of showing what educators can learn about their students' transnational activities. This vignette is grounded in the experiences of various youths that the authors have personally known or worked with in their research, and it makes it possible to highlight potential connections to academic language and literacy development, which are described below.

For the purposes of this discussion, our composite student, Javier, is a 17-year-old high-school student originally from the Mexican state of Puebla. He lives with his mother, father, and seven-year-old sister. His mother works for at least eight hours every day in a dry-cleaning establishment where she irons clothing, while Javier takes care of his younger sister. His father works in construction where he earns somewhat better than minimum wage. Specifically, he uses skills learned in Mexico as a brick mason to repair cracked and failing mortar in US homes. Javier has struggled to learn English since moving to the US three years ago, even though he has been enrolled in supplemental English as a second language classes in his high school. He has grade-level-appropriate literacy abilities in Spanish (although they are rarely acknowledged at school), and has recently begun to actively seek out books and other resources dealing with Mexican history, such as texts about the Mexican Revolution and indigenous cultures. It is of concern that he is receiving low to mediocre grades in his content-area classes of math, science, and history. Yet many days he spends two to three hours engaged in digital literacy activities. These include e-mail, chat, text messaging, downloading music, and online gaming. He also created a Facebook account to keep in touch with family and friends in his hometown of Atlixco, which is about a 30-minute drive from the metropolitan city of Puebla. Javier uses both English and Spanish when he communicates with friends. That said, his writing includes many abbreviations and noticeable dialect features reflective of his working-class background from south-central Mexico.

Instructional Potential and Application for Transnational Literacies

Although fictitious, the experiences of Javier convey those of several young people that the authors have known and worked with. Their review of the literature on transnational literacies has led them to identify a number of potential implications for teachers and others concerned with the academic achievement of students engaged in these types of behaviors. In particular, the authors recommend that teachers use the general topic of transnational activities, such as digital-literacy use, as an opportunity to get to know their students better. Their experience has been that young people welcome interest in their transnational literacy activity and are more than willing to share this facet of their lives with concerned adults. The authors have received interesting responses to questions such as: Can you tell me about your activity online? For example, what games do you play? Where do your friends live that play these games with you? How many different countries do they live in? How often do you spend time online? Which programs and activities do you find most interesting? Educators can learn a great deal about their students' lives, interests, and routine activities through such conversations. They can likewise design classroom activities that draw on and extend this knowledge (see Jiménez, Smith, & Teague, 2009, for a number of specific examples involving transnational literacies).

As noted in the literature review and the vignette above, there is potential for youths who engage in transnational literacy activities to enhance and deepen their reading and writing skills in their first language. In addition, they are also able to enter into social networks with native English speakers through digital literacy activities that might not otherwise be available to them in face-to-face situations. All of these activities can provide information, contacts, and other resources to young people at local, regional, national, and international levels. The resulting potential for language development, whether in the first or the second language, is obvious. Finally, since the literature review revealed that digital and transnational literacy activities could have important ramifications for academic achievement (e.g., using these funds of knowledge to scaffold students' learning of content-area material), it can be argued that teachers' understanding of these activities can only help to enhance this achievement. Significantly, a willingness to acknowledge and refer to these activities during classroom discussions helps establish a point of connection between students and their teachers and makes school learning more meaningful.

SEE ALSO: Bilingual Education and Immigration; Identity and Second Language Acquisition; Language and Identity; Literacy and Bilingualism; Literacy in Multilingual Classrooms

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Literacy in Community Settings

MASTIN PRINSLOO

A rich direction of research in literacy studies in recent decades has been around literacy in community settings. The impetus for such work has been the challenges coming from linguistic anthropologists and literacy ethnographers to the notion of literacy as the same thing across all kinds of settings and under all kinds of conditions. The tendency is often to ask why certain people do not read and write, rather than to ask what forms of reading do happen. A focus on literacy in community settings, on the other hand, shows that reading and writing can be taken up in different ways by different individuals and groups of people. Literacy is seen as embedded in social and cultural practices, not simply as a skill learned through formal schooling and detached from other social practices. This focus suggests that it is not helpful to think in terms of a single literacy when there is a remarkable diversity in the ways that people read and write for the performance of widely varying personal, social, and economic functions.

Varying "Ways With Words"

A strong impetus for an interest in literacy in community settings came from Heath's (1983) classic study of south eastern communities in the USA. Heath questioned why Black students were failing in the recently desegregated schools, and she contrasted their language and literacy socialization in community settings with children of White mill-workers in a neighboring community as well as with middle-class children in the same town. She found that reading and writing happened in all three communities but that local communities had varying histories and different rules for socially interacting and sharing knowledge and opinions. For example, a letter sent from school to a middle-class parent was treated as a private and confidential exchange, whereas in the Black working-class community of Trackton it was a collective event, with one person reading the letter aloud and neighbors and family discussing its meaning and what the response should be. This literacy event was characterized by a particular blend of text, talk, distribution of action and, turn taking in communication that was community-specific and consistent with patterns of mutual child raising which contrasted markedly with the other local communities in the study. Heath argued that the different ways that children learned to use language, including written language, were dependent on the ways in which each community structured its family life, defined the roles that community members could assume and their concepts of childhood that guided child socialization. As regards the relationship between speech and text, she suggested that literacy events have social interactional rules which regulate the type and amount of talk about what is written, and define ways in which oral language reinforces, denies, extends, or even sets aside the written material. These rules, she argued, vary across distinct cultures, local groupings, or speech communities. Heath contrasted these local "ways with words" with expectations and rules for text-linked activities in the formal institutional setting of schools. She argued that the ways of meaning of socially positioned individuals were not the same across communities and that middle-class children were advantaged by the closeness to school ways of their home and community ways with language.

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Heath's findings supported Scribner and Cole's groundbreaking research (1981) of literacy and cognition in the African state of Liberia, which found that cognitive skills associated with literacy varied dramatically in relation to the wider social practices within which literacy was embedded. Scribner and Cole sought to understand literacy as always constituted within socially organized practices which make use of a symbolic system or systems as well as a technology for producing and disseminating it. The nature of these practices, including, of course, their technological aspects (their scripts, languages, and media), would determine the balance of skills and the consequences associated with literacy. Scribner and Cole thus noted that letter writing amongst the Vai in Liberia (perhaps using the Vai script and language) must be considered as a literacy practice different from, for example, the keeping of a personal diary, or a ledger, since each of these required different measures and weightings of technology, knowledge, and skills, as they were part of different social activities or practices.

Street's (1984) study in Iran helped to shape the idea of there being different kinds of literacy, and of there being real differences between what reading and writing were about in various contexts. As he described it, while doing anthropological research in a village he started to notice the variety and complexity of literacy activity at a time when his encounter with people outside of the village suggested the dominant representation was of "illiterate backward villagers." Looking more closely at village life he saw several different sorts of reading and writing going on: in a traditional "Quoranic school," in the new state schools where English was the language of learning, and on the part of traders in their buying and selling of fruit to urban markets. Versions of literacy by outside agencies (e.g., state education, UNESCO, and national literacy campaigns) did not capture these complex variations in literacy happening in one small locale where the people were generally characterized as illiterate.

Reading and Writing as Social Practices

These studies set the basis for later research which focused on literacy as situated social practice (sometimes described as the "New Literacy Studies," as in Gee, 1996). This approach to literacy studies questions the stereotype of the ideal reader as, generally, a book reader who reads for pleasure or for "staying informed"; or a student who successfully carries out reading and writing tasks to the satisfaction of her instructor. In one example, Taylor's (1983) study of family literacy showed that even in the poorest and most marginalized inner city communities, literacy played a part, enabling families to make sense of the world and to interact with it. Literacy researchers study literacy in community settings, in everyday social life, on the understanding that reading and writing practices are always embedded in particular kinds of social activity; that reading and writing are best studied not as basic skills and not as the same things under all circumstances; that they follow different meaning conventions, and require different skills for their successful use, when they function in different social contexts, for different purposes, as part of different human activities. This work thus opposes the position which views literacy as merely a matter of general skills, as a unitary process, one where "readers" and "writers" are generalized subjects without any social location and who are more or less efficient processors of text.

Local and Vernacular in Contrast With Dominant and Institutionalized Literacies

Barton and Hamilton (1998) observed community members in Lancaster, England and asked them to reflect on their literacy practices. They found the notion of community to be useful in examining the "realm of local social relations which mediates between the

private sphere of family and household and the public sphere of impersonal, formal organizations" (Barton & Hamilton, 1998, p. 15). They pointed out, following Heath's (1983) example, that, important as family practices are for children's literacy development, these practices take place in larger community contexts that influence family activities. The researchers drew a distinction between dominant (institutionalized) and vernacular (self-generated) literacies. Vernacular literacies were activities that included reading and writing as voluntary and self-generated:

> The vernacular literacy practices we identified are rooted in action contexts and everyday purposes and networks. They draw upon and contribute to vernacular knowledge, which is often local, procedural, and minutely detailed. Literacy learning and use are integrated in everyday activities and the literacy elements are an implicit part of the activity, which may be mastering a martial art, paying the bills, organizing a musical event, or finding out about local news. Literacy itself is not a focus of attention, but is used to get other things done. Everyday literacies are subservient to the goals of purposeful activities and are defined by people in terms of these activities. Hamilton (2000, p. 5)

Hamilton (2000, p. 5) summarized the range of "vernacular literacies" that the researchers found:

> Often they are humorous, playful, disrespectful, sometimes deliberately oppositional. When questioned about them, people did not always regard them as real reading or real writing. Some vernacular literacies are deliberately hidden: these include those which are personal and private, where reading or writing are ways of being alone and private, ways of creating personal space. There are also secret notes and letters of love, abuse, criticism and subversion, comics, scurrilous jokes, horoscopes, fanzines, pornography—some but not all of which will be revealed to the researcher's gaze.

The "Passing" Quality of Family and Community Literacy Practices

Varenne and McDermott (1998) focused on literacy at a family level that supported the work on literacy in community settings. They described family literacy as not one for which the members are accountable in the same way that children are held to account in school. They pointed out that one does not fail familial or community literacy as it is all but invisible, embedded in other activities, like shopping, writing to a relative, paying an invoice, or applying for something or other. "In reading the label on children's medicine no such activity would end with the comment 'Good! You get an A for being able to read the label. Now let's do some math'" (Varenne & McDermott, 1998, p. 195). This "passing" quality of family and community literacy has been noted by numerous researchers, where reading and writing are so much part of other activities that the literacy bits are hardly noticed. For example, Kell (1996, p. 24) studied the literacy practices of a middle-aged, unschooled woman who was a community-activist in a shack settlement outside Cape Town. This example both reverses the more familiar perspective of parent helping child and also illustrates the routine or "passing" nature of the literacy practices, where reading and writing are:

> a delivery man . . . came around with the vegetables and gas cylinder that she needed. Winnie brought out her invoice book, and the deliveryman wrote down what she had bought . . . She said that her daughter Portia would check what he had written . . . As I left Portia came out of another room, picked up the book without a word between her and her mother and ran through the page very quickly.

Kell's work, along with others (e.g., Volk & de Acosta, 2001), highlights the intergenerational nature of much of the literacy practices that occur in community settings. This intergenerational nature of family- and community-based literacy practices also disrupts traditional notions of expertise or what it means to teach. Children (or others who also do not fit the traditional "teacher/parent/elder" notion of experts) often become the leaders/experts in these literacy practices.

Following a similar ethnographic approach to Barton and Hamilton (1998), Prinsloo and Breier (1996) worked with a team of researchers and collected a range of studies of literacy practices in local communities in South Africa, including case studies of people attending voter education classes and voting in the first democratic national elections that ended apartheid as a system of government; of agricultural laborers on wine-making farms; of workers in an asbestos factory and at a school; on residents of urban and rural townships; of communal goat farmers in the Namaqualand semi-desert; of gangsters and social activists living in a shack settlement outside Cape Town; and of taxi-drivers in Cape Town, with and without schooling who had to deal with a range of kinds of reading and writing in their daily work. Researchers paid particular attention to evidence and accounts of unschooled adults developing literacy-linked capabilities and found that the learning of (often narrow) task-specific literacies in the course of task completion was the most frequent and sustaining form of literacy acquisition on the part of unschooled adults. Following Lave and Wenger (1991), the research described these kinds of learning as "apprenticeship processes," because these literacies were learned from other people, they were context-specific, and their acquisition was analogous to the ways crafts are learned, in that they were learned and used under guidance, in the everyday course of events. The research pointed to the importance of social networks and interpersonal relationships in these practices. People drew on these social networks to help them with particular literacy requirements. Within these networks it is possible to identify people acting as mediators, mentors, brokers, sponsors, and scribes for others. The research also points to the distributed, social, and power-shaped nature of literacy events and practices, where such assistance can be both enabling and constraining. The focus in this research thus shifts from literacy as something people in marginalized communities have not got, to the many different ways that people engage with literacy. The study of community literacies recognizes difference and diversity and challenges how these differences are valued within society.

Blommaert (2007b) brings the interesting idea of "scale" to the study of literacy in community settings. He suggests that language practices, including literacy practices, are subject to social processes of hierarchical ordering. One consequence thereof is that one can be a "good" user of language or literacy in the neighborhood network, but a "bad" one in the labor market or in the school system. He described what he calls "grassroots literacy," which he finds to be a characteristic form of writing across poor, marginal communities in the African settings that he studied. He describes it as a nonelite form, characterized by what he calls "heterography"—the deployment of graphic symbols in ways that defy orthographic norms: words are spelled in different ways, often reflecting the way they are pronounced in spoken vernacular varieties, rather than following conventional orthographic norms or prestige language forms. He also finds an uncertainty about linguistic and stylistic rules, as well as a common use of drawing as well as writing. He says that such texts often have only local value. Examined from beyond the local, they appear as inferior examples of writing, pointing to the low status of these persons on a larger stage (Blommaert, 2007a).

"Funds of Knowledge"

Influential work carried out for a number of years by Moll and his colleagues has focused on studying household and classroom practices within working-class and rural Mexican communities in the southern USA. The research aims to describe the *funds of knowledge* of the home environment. These are "historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being" (Moll, Amanti, Neff, & Gonzalez, 1992, p. 133). They include family know-how in areas such as agriculture, economics, construction, religion, arts, and repair. Families develop social networks that help them deal with their environment and develop and exchange resources. These networks are flexible and active and may involve persons from outside the home. The research is concerned to make such family knowledge and social relationships visible to educators as resources which can be used to enhance school learning. For example, children's involvement in informal buying and selling activities was used by educators in schoolwork that started with various aspects of buying and selling, including the literacy involved, and developed into other curricula activities, in math and other areas. This work is concerned to show how the wider utilization of children's cultural resources could assist the development of biliterate skills and practices in Spanish and English. In similar fashion, Barton and Hamilton identified areas of vernacular knowledge as including home economics and budgeting, repair and maintenance, childcare, sports, gardening, cooking, pets and animal care, and family and local history. Some people had also developed knowledge of legal, political, health, and medical topics (Hamilton, 2000).

Volk and de Acosta's (2001) study of Puerto Rican children living in a poor neighborhood of a large US city examined what counted as literacy in the classroom, homes, and churches of three Spanish dominant children living in the USA. They were concerned to go beyond research that focuses *solely* on parent–child interactions, thereby missing the complexity and richness of literacy practices occurring in the everyday lives of these children in their wider interactions. They argued that the literacy practices of home blended literacy practices valued in schools with practices valued in their churches and in so doing created collaborative literacy practices rooted in their culture.

Community and Schooling

Barton (2009, p. 43) points out that educators and educational policy makers sometimes find it frustrating that researchers studying everyday life in community settings do not immediately provide "solutions" for educational problems. However, he says that there is a set of steps:

> firstly, there is a need to understand what people do, their practices; then it is essential to see how people learn; and only then can we turn to questions of how to teach, or how to support learning. Learning does not just take place in classrooms and is not just concerned with methods. The approach requires educators and researchers to look beyond educational settings to vernacular practices and informal learning, and to the other official settings in which literacies play a key role.

Dyson's numerous studies (e.g., 1993, 2003) show how children from a variety of social, cultural, and linguistic backgrounds, if allowed to by their teachers, draw deeply upon their out-of-school knowledge of nonacademic social worlds to negotiate their entry into school literacy. Their family and peer relationships are social worlds that provide them with agency and meaningful symbols, and shape their decisions about what to write, and

with whom. With the help of a supportive teacher who helps them weave their own stories, interests, and experiences into the school curriculum, they reveal the breadth of their language and sense-making repertoire. Dyson advocates a permeable curriculum where responsive teachers can draw children into understanding and using symbols and resources in school-like ways, while continuing to develop their own agency as regards social relationships and meaning construction. Purcell-Gates (2007) makes a similar argument based on her research of literacy in community settings. If the curriculum does not relate to students' lives outside of school, their education slides right off them, she says. She argues that the more relevant teachers make literacy instruction to students' lives, the more likely they are to learn.

"Community" as a Shifting Signifier

In conclusion, it can be pointed out that the idea of community as indicating a clearly defined physical and social space where members share a number of features has become increasingly displaced in recent decades by a sense of local neighborhoods as complex sites, where members often have diverse backgrounds, speak different languages and have other kinds of divergences. For example, a number of studies of multilingualism in local settings have been carried out (e.g., Martin-Jones & Jones, 2000; Collins & La Santa, 2006; Reese & Goldenberg, 2006; Perry, 2009) which examine the complex and mobile nature of people's interaction in social spaces under global conditions of movement and migration. In addition, children's and adults' engagements with "virtual communities," where they can access literacy activities across space and time, expands in interesting and challenging ways the question of what counts as community literacy in contemporary times (Marsh, 2006).

SEE ALSO: Ethnographic Approaches to Literacy Research; Family Literacy; Qualitative Literacy Research; Sociolinguistic Studies of Literacy

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Literacy in Multilingual Classrooms

OFELIA GARCÍA AND NELSON FLORES

When one hears the word literacy, the first image that usually comes to mind is of a child learning how to read and write. In this commonsense view, literacy is seen as an autonomous skill that is universal and literacy instruction is seen as culturally neutral. The idea is that all children learn to read and write in the same way and literacy instruction is the same for all students. Most schools adhere to this concept of *literacy as an autonomous skill*. This often times results in reading activities devoid of semiotic cues, or texts requiring background knowledge that students do not always have. Students are then expected to answer multiple-choice questions where there is only one correct answer. Similarly, school writing oftentimes consists of writing academic essays to an unknown audience. In short, too often schools treat literacy as a skill that one masters outside of any particular context and focus on developing *functional literacy*, or the skills needed to pass standardized forms of assessments.

While many schools still subscribe to the view of literacy as an autonomous skill, *sociocultural studies of literacy* have demonstrated that literacy practices are actually influenced by social, cultural, political, and economic factors. In this view, literacy is not an autonomous skill that can be separated from this larger societal context. Therefore, rather than being a neutral process, literacy practices emerge in particular social and politics contexts that are inevitably embedded in relations of power that privilege certain types of literacy and subjugate others (Street, 1984, 2005; Martin-Jones & Jones, 2000).

Heath (1983) provides one example of the complicity of schools in these relations of power. She documents the difference in literacy practices between black and white working class communities. She finds that in the white community children are expected to focus on facts and to put events into the correct order when narrating stories, while in the black community children are expected to fictionalize true stories in order gain the attention of their elders. The point Heath makes is that the academic literacy practices of schools reflect a certain cultural orientation that marginalizes children who have been socialized into different literacy practices. It is important, therefore, to learn about the literacy practices of students and use them as a starting point in literacy instruction.

This sociocultural framework has also been applied to the development of *biliteracy* skills. Using a sociocultural framework, biliteracy is about much more than reading and writing in two languages. Lüdi has proposed a broad definition of *biliteracy* as:

> the possession of, or access to, the competences and information required to accomplish literacy practices which an individual wishes to—or is compelled to—engage in everyday situations in two languages, with their corresponding functions and in the corresponding cultural contexts. (Lüdi, 1997, p. 207)

Some scholars prefer the term *multilingual literacies* as a way to emphasize the coexistence of not just two, but multiple languages and literacies (Martin-Jones & Jones, 2000). Multilingual literacies also refers to the multiplicity of individual and group repertories and the multiple ways in which people draw on, and combine codes in their communicative repertoire.

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Nancy Hornberger's (1989, 2003) model of the *continua of biliteracy* framework identifies the major social, linguistic, political, and psychological issues that surround the development of biliteracy, as they relate to each other. The interrelated nature of Hornberger's continua supports the potential for positive transfer across literacies. Hornberger argues that bilingual learning is maximized when students are allowed and enabled to draw from across all their existing language skills, rather than being constrained and inhibited from doing so by monolingual instructional assumptions and practices. The nested nature of Hornberger's continua (2003) also shows how transfer can be promoted or hindered by different contextual factors.

While a sociocultural approach to biliteracy points to the hybrid and complex language and literacy practices of bilingual and multilingual populations, the autonomous view of literacy has had a great effect on the type of literacy instruction received by bilingual and multilingual students. This is because an autonomous view of literacy goes hand in hand with an autonomous view of language that sees language as a culturally neutral skill that one can master outside of any particular context. The result of this ideology has been the creation of many biliteracy models that do not reflect the actual language practices of bilingual and multilingual students. One example of this is the separation of languages in bilingual instruction in ways that do not reflect the hybrid language practices of bilingual students. While the separation of languages for instruction is seen as neutral, this process marginalizes the multiple and hybrid language practices that are increasingly common in the 21st century (Cummins, 2008; García, 2009; Blackledge & Creese, 2010).

There are three models of biliteracy use that reflect the autonomous view of language through the separation of the languages of instruction (García, 2009, chap. 14, 2010). None of these models stress the importance of language and literacy practices in the larger community. For these models, school language and literacy practices can be separated from larger societal processes. The first of these models is the *convergent monoliterate model*. This model is usually used to teach language-minority students who speak languages that either are not written or have very low status in society. In this model, both languages are used for discussion, while the dominant language is used for reading and writing. A variation of this model is the *convergent biliterate model* where two languages are actually used for literacy, but literacy in the minoritized language is used solely as a bridge to that in the dominant language. Both of these models would fall under the category of *subtractive* in that they both seek to replace the minoritized language with the dominant language. Bilingual programs that seek to develop an *additive* "balanced" bilingualism often use a *separation biliterate model*. The languages are kept separate and teachers and children match the language in which they are communicating around writing to the language of the written text. Students are encouraged to speak and think in the language in which they are reading and writing. The literacy theories supporting all these three models do not take into account the hybrid linguistic practices of bilingual and multilingual students.

Until recently, the most popular position for the acquisition of biliteracy was that literacy in a first language had to be developed before literacy in a second language was acquired. This *sequential view of biliteracy* posits that literacy in the second language should not be introduced until a child has competence in speaking, reading, and writing in the first language. The idea is that successful readers in a first language must reach a *threshold* for transferability of literacy skills to occur (Brisbois, 1995).

On the other side of this debate are those who argue for *simultaneous biliteracy*. Proponents of simultaneous biliteracy argue that children can learn to read and write in both languages at once, even as they are still mastering oral language skills in an additional language. The success of immersion bilingual programs in Canada where Anglophone children learn to read in French, a second language, without any adverse effects has challenged the position that literacy in a first language is essential to acquire literacy in a second one (Cummins,

1979). Similar results have been found in studies of community language classes and complementary schools in Great Britain (Kenner, 2000; Li Wei & Wu, 2009; Blackledge & Creese, 2010), as well as heritage language programs in Canada (Beynon & Toohey, 1991). These programs all demonstrate that it is indeed possible to teach students literacy in two languages simultaneously and that it is not necessary to develop the first language to a particular threshold before introducing literacy in the second language (Edwards, 2009).

Notably, in both sequential and simultaneous approaches to biliteracy, children usually acquire different-language literacy in separate educational spaces. In the sequential approach, students are taught exclusively in their native language until they are transitioned to classes where literacy is taught in the additional language. In a simultaneous approach, the teaching of literacy in one language is separated from the teaching of literacy in an additional one by day, teacher, or subject. In short, the view of both of these approaches is that each literacy develops separately, even if simultaneously, and that students must develop two separate monolingual literacies. In fact, most handbooks for teaching biliteracy propose reading and writing approaches that are similar to those that are used to teach literacy in one or the other language. It is more difficult to find studies and texts that describe how biliteracy is simultaneously and integratively acquired because bilingual schools are usually not organized in ways that allow this (García, 2009). Said another way, these biliteracy approaches are premised on autonomous approaches to language and literacy that do not validate the hybrid language and literacy practices of bilingual and multilingual students.

Recent sociocultural approaches to language and literacy have attempted to move beyond these autonomous approaches arguing that it is important to recognize and build on the language and literacy practices with which students come to school (Martin-Jones & Jones, 2000). Therefore, rather than imposing a language separation that may not be reflective of the learning community, many scholars have begun to argue that the hybrid practices of increasingly globalized communities should be the starting point for pedagogical approaches. García, Bartlett, and Kleifgen (2007) propose the concept of *pluriliteracy practices*, as a framework for working toward the affirmation of both the literacy and language practices of these multilingual populations. *Pluriliteracy practices* include four principles:

- an emphasis on *literacy practices in their appropriate sociocultural contexts*, as influenced by different cultural contexts and various social relations;
- the *hybridity* of literacy practices, especially as afforded by new technologies;
- the increasing *interrelationship of semiotic systems*, a product of new technologies;
- *increased valuing of different literacy practices*, including those that have no place in school, and drawing on different literacy practices to develop school-based literacy.

In short, pluriliteracy practices embrace the hybrid literacy and language practices of multilingual students and use these hybrid practices to develop pedagogical strategies.

A model that is informed by a pluriliteracy approach is the *flexible multiple model of biliteracy* (García, 2009). In this model multiple language practices and media are used in literacy practices. Teachers encourage children to translanguage (García, 2009, extending Cen Williams, as cited in Baker, 2001), that is, to use all linguistic practices and modes as sense-making resources in order to engage with texts. The children use all their language practices to build background, to question the text, to think about strategies; and they draw not only from print to make sense of texts, but rely also on images, videos, music, and other technology-enriched signs. This approach is premised on the idea that language and literacy practices are inherently social processes that must be included in schools. It is also premised on the idea that students must be *apprenticed* as members of pluriliterate social practices. Students learn pluriliteracy practices in *embodied action*, that is, by being

able to draw from all their language practices while being immersed in reading and writing practices that include, but are not limited to, two or more standardized academic languages.

Rejecting an autonomous view of language and literacy also requires embracing the struggle that occurs in classrooms as hybrid language practices interact and conflict with one another. Academic literacy is one form of literacy. For example, academic written texts tend to be more linear and non-repetitive than other texts. This type of writing may feel constraining to somebody who comes from a home where literacy practices are more open-ended, circular, elaborated, and repetitive. To assume that this student will be able to say everything that is in his/her heart and mind in academic discourse is to deny power and to treat academic discourse as neutral and autonomous (Lu, 1991). Therefore, because of the different worldviews and sociocultural contexts of the two or more languages and cultures of bilingual schools, pluriliteracy practices and teaching must also read and write different worlds and create spaces to reflect on, explore, and question them (García, 2009).

All learners need extra support or *scaffolding* to develop academic literacy. Scaffolding is a combination of the constraint of structure with its release, as a result of the teacher's innovation, exploration and improvisation (van Lier, 2004). Learners who are developing an additional language need more scaffolding and often for a longer period of time. A pluriliteracy scaffolding strategy adapts the following five scaffolding structures so as to incorporate the *dynamic languaging* of bilingual and multilingual students and teachers (García, 2009):

- *Routines* where the teacher establishes contextual and spatial instructional routines and language patterns. The languages of the routines can be varied and respond to students' interests and motivation, as well as the context of the lesson.
- *Contextualization* through the teacher's use of the students' home language and cultural practices, as well as other paralinguistic strategies such as: body language and gestures, visuals, manipulatives, realia, technologically enriched practices, graphic organizers, charts, diagrams and maps.
- *Modeling* by the teacher of all routines and language use, as well as verbalizing the actions and processes of the lesson through *think-alouds* that can incorporate all the language practices of students.
- *Bridging and schema building* by having teachers build on prior knowledge by previewing the material to be taught. This can be done in a language other than that of the lesson, so as to build on the multilingualism of the classroom.
- *Multiple entry points* with teachers allowing students to demonstrate their understanding in different ways and differentiating instruction for students with diverse characteristics.

Scaffolding strategies must build on the dynamic plurilingualism of the children in interaction with the teacher.

García (2009) provides examples of this type of plurilinguistic scaffolding in learning to read in an additional language:

- Expand the students' background knowledge for improved comprehension, and develop students' abilities to relate the text to prior experiences or learning.
- Activate three types of schemas—*linguistic* schemas, based on prior language development; *content* schemas, based on prior knowledge of content; and *text* schemas, based on knowledge of rhetorical structure of the text.
- Provide students with *explicit instruction* in such literacy strategies as previewing, skimming, adjusting reading rate, recognizing the author's purpose, making inferences, and separating fact from opinion.

- Teach vocabulary and other structural characteristics of the language and the text explicitly.
- Encourage students to *read extensively* to become productive readers.

For writing, Derewianka (1990) has identified four stages of *explicit literacy teaching*. García (2009) has adapted them for bilingual and multilingual students, and we extend them here:

1. *Building the field*. During this stage, teachers and students build background knowledge bilingually. There is much speaking, listening, reading, information-gathering, note-taking, and reading in one language, the other, or both at the same time, in order to build the field.
2. *Modeling the text type*. During this stage, students and teachers make decisions about the ways in which they are going to use written language. Students become familiar with the purpose, overall structure and the linguistic features of the type of text they are going to write through teacher modeling. If hybrid literacy practices are used, students take a more active role in providing the modeling.
3. *Joint construction*. During this stage, the teacher and the students write the text together. The students contribute the ideas, sometimes using hybrid language practices.
4. *Independent writing*. During this stage, students write individually or in pairs. They first write a draft, then self-edit. Next, they discuss the draft with their friends and teachers. Finally, they produce a published text.

While these strategies can be used as a starting point, it is important not to take them as a blueprint for instruction. Instead, all literacy pedagogical approaches must be contextualized and begin with the language and literacy practices of the community of learners that are in any particular classroom.

Cummins (2006) describes the use of *identity texts* as a way of highlighting the important role of negotiation of identities in all students' learning. Cummins builds on the four components of the *multiliteracies pedagogy* proposed by the New London Group (1996)—situated practices, overt instruction, critical framing, and transformed practices—but proposes an "academic expertise framework" which argues that *maximum identity investment* on the part of students is key to optimal academic development (Cummins, 2001, 2006). In the school described by Cummins, young students of diverse linguistic background create stories in English which are then translated with the help of older students, parents, and teachers into their home languages. These multilingual stories are then published on the Web, accompanied by images, spoken, musical, dramatic renderings, or combinations in multimodal form.

Teachers work increasingly in multilingual classrooms where students' language practices include multiple languages. As we have shown here, literacy is much more than the ability to read and write. Literacy practices are enmeshed within and influenced by social, cultural, political, and economic factors, and literacy learning and use entail complex social interactions. Thus, teaching literacy in multilingual classrooms necessarily has to move towards a *flexible multiple model of pluriliteracies* where students are encouraged by the teacher, even when she is monolingual herself, to use all their home and community language practices in making sense of the school text. Only then will students be able to engage texts in an additional language while maximizing their identity investment, and in so doing they will also develop the pluriliteracies that will be increasingly needed in our globalized world in the 21st century.

SEE ALSO: Bilingual Education and Immigration; Bilingualism and Bilinguality; Empowerment and Bilingual Education; Bilingual and Multilingual Education: Overview

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Literacy Practices in Virtual Environments

GLORIA E. JACOBS

Introduction: Virtual Environments

Developing an understanding of literacy in virtual environments is challenging because virtual environments are rapidly emerging and evolving, as are the language and literacy practices associated with those environments. Nonetheless, research is beginning to provide insights into the literacy practices inherent in virtual environments and what those practices mean to people who participate in virtual environments.

Virtual environments, or virtual worlds, are defined as "online spaces where participants usually adopt one or more avatars and interact with both objects and other users" (Davies & Merchant, 2009, p. 79). Virtual worlds can include online game environments such as *World of Warcraft* or simulated multipurpose environments such as *Second Life*. Virtual worlds emerged out of the text-based worlds such as MUDs (MultiUser Dungeon) that arose during the late 1980s (Steinkuehler, 2007). Even though virtual worlds now are filled with visual representations of objects, people, and creatures, and include the capability for voice communication, they continue to include alphabetic text as a form of communication and information-sharing (Steinkuehler, 2007; Merchant, 2009). Given that virtual worlds contain what Steinkuhler (2007) calls a "constellation of literacy practices" (p. 297), this chapter considers people's engagement with chat rooms, texting or instant messaging, and fanfiction, as well as gaming and immersive environments such as *Second Life*. Including such research allows for the identification of patterns of language and literacy use that have emerged across a variety of virtual spaces, rather than being limited to specific virtual sites of practice.

What Is Literacy in a Virtual Environment?

Before proceeding with a discussion of literacy in virtual environments, it is first useful to briefly set forth a definition of literacy, and to consider how the definition of literacy is itself changing in response to the emergence of virtual environments. Literacy has traditionally been defined as the ability to read or write typographic texts; however, in the 1980s a body of research known as New Literacy Studies turned attention away from the psychological and cognitive aspects of coding and encoding text, and toward the socially and culturally situated nature of literacy use (Gee, 2000). New Literacy Studies argues that what counts as a text, and what counts as literate behavior, are determined by the cultural, historical, and political context of the community. Therefore, learning to read or write one type of text, or within one context, does not necessarily mean that a person knows how to read or write another type of text, or do so in another context (Gee, 2000). Because literacy is seen as occurring in social situations rather than only in school-based environments, definitions of text have been expanded to include texts that are used in a multitude of contexts. Therefore, with the increased capabilities provided by digital technologies, literacy now includes online chats, messages, videos, sound files, remixes, hyperlinked

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Web pages, wikis, blogs, image-sharing, social networking sites, gaming environments, and so on (Lankshear & Knobel, 2003).

Such a definition of literacy and texts changes the "semiotic landscape of the text" (Carrington, 2004, p. 218) and complicates what is understood to be the act of encoding and decoding. As Carrington points out, digital texts can consist of a blend and layering of graphics and graphemes (letter forms), sounds, images, and movement, which is further complicated by the synchronous nature of online interactions and the sometimes truncated space in which to communicate (often limited to 140 or 160 characters). However, even though these environments may have still and moving images or sounds as a central feature, typographic text remains a constant even when the typographic is secondary to the visual (Davies & Merchant, 2009). Therefore, as Davies and Merchant suggest, not only do users have to know how to negotiate the graphic nature of the virtual world, they must also employ text-based strategies and skills, and understand the relationship of the typographic to the graphic. A definition of literacy in virtual environments must then include how a person reads online texts, images, and conversations, so that online literacy "requires that students extend their understanding of technology to include understanding how to use it responsibly and how to 'read' authors' intentions by making inferences and comprehending the codes involved in the online world" (Adams, 2009, p. 58). In addition, the texts that shape the virtual world include environmental print, tool tips, hypertext links, and interactive chat (Merchant, 2009). Environmental texts include items such as signs, logos, advertisements, and so on, that make up the texture of the virtual world. Tool tips are typographic texts that guide users in their use of the software. Hypertext links direct participants to another site, and interactive chat allows participants to communicate with one another as they play an online game.

Adams's (2009) definition of literacy in virtual worlds is based on traditional definitions of literacy that focus on decoding, inferencing, and comprehending. McDougall (2007), however, argues that games and virtual environments lead the reader into a different kind of relationship than that experienced with typographic, ink-and-paper texts. He claims that gaming and virtual environments transgress traditional text–reader relationships by offering the participant the chance to both read and write the story. He suggests that as people are engaged in creating a virtual world, they are players, authors, readers, and analysts at the same time (p. 122). The transgressive nature of these texts, he argues, becomes problematic within classroom environments that tend to see texts and assessments through a traditional lens. Teachers reconcile this discontinuity between online texts and school-based texts by viewing the immersive environment as "literacy by stealth" (Merchant, 2009, p. 50), and as a springboard to more traditional literacies, rather than as a legitimate literate form in its own right.

The development of literacy in virtual space remains controversial in the public eye, because these are visible spaces of language change. Specifically, the synchronous and immediate nature of language use in virtual environments is akin to speech, but the typographic representations are built upon the more static forms of writing (Merchant, 2001). What happens then is that conventions of speech are transferred into written forms, which are often construed as examples of poor writing skills (Jacobs, 2008).

Like McDougall (2007), Merchant (2009) suggests that innovative digital literacy practices "call into question deeply held assumptions about literacy, about literacy instruction and even the teacher-pupil relationship that lies at the heart of the educational process" (p. 39). Merchant (2009) points out that there is resistance to valuing literacy in virtual environments because it is suggested that immersive worlds may be distracting and lead to loss of focus. However, according to Merchant immersive environments can be highly engaging, and may result in powerful learning situations (p. 43). The argument as to whether engagement in virtual environments is good or bad is less fruitful than the layered approached to research suggested by Merchant (2009). He demonstrates that

the virtual world involves the architecture of the virtual environment itself, requiring an understanding of how participants make meaning within the virtual world, and of both the social reality that participants live in on a day-to-day basis and the social realities of the virtual world.

Further complicating the phenomenon of literacy in virtual environments is the way digital tools permit the transcendence of space and time, supporting the development of identities that are informed simultaneously by the global and the local (Lam, 2009). Research into literacy in virtual environments therefore has to consider not only how language and literacy is developed and used, but also how language and literacy use contributes to the construction of the users' identities and their membership of affinity groups within virtual environments, and how those identities transcend local and global boundaries.

Transglobal Identity Construction and Affinity Group Membership

Within New Literacy Studies, identity is seen as being performed within social groups rather than as a stable construct (Black, 2006). Drawing on Gee's (1999) concept of Discourse as ways of being and using language and literacy, New Literacy Studies understands that what marks an individual as a member, or not a member, of particular groups is how they use language and literacy. Furthermore, since identity is enacted within groups, it is seen as fluid, changeable, and recursive (Black, 2006). Groups can be built around ethnic and racial categories, but can also be based on affinities or shared interests (Gee, 2003). For example, people engaged in a particular game, virtual world, or immersive environment may form an affinity group around the game or particular task they are working to complete. Youth engaged in fan fiction form affinity groups around the text that forms the basis of their fiction.

A significant body of research is revealing that engaging in online communities such as fanfiction, instant messaging and chat rooms, Web site creation, or immersive environments supports the emergence of new, bilingual or multilingual identities among second language learners. Through the use of virtual literacies, participants are able to transcend the limitations of geographic space, and maintain links to the language of origin while building an identity as bilingual/biliterate (Black, 2006), and creating translocal and transnational networks (Lam, 2009) in which participants perform language and cultural maintenance.

Engagement in virtual environments and online exchanges may also support the development of communicative and intercultural competence: Sykes, Oskoz, and Thorne (2008) suggest that synthetic immersive environments which combine aspects of virtual spaces such as *Second Life* with aspects of goal-directed gaming provide opportunities for interlanguage development. They argue that, within these goal-directed immersive spaces, participants are able to develop an awareness of written language and visual expression as situated within linguistic and cultural conventions. Specifically, participants in virtual environments are able to interact with a wide variety of communicative norms and thus be socialized into appropriate language use across a variety of norms. According to Sykes et al. (2008), the socialization experienced by the participants occurs through simulated roles and identities in which participants are able to experiment with and practice pragmatic functions, experience an emotional connection to virtual action, and engage in authentic and low-risk practice of language skills. The authors warn, however, that these experiences within virtual worlds may not necessarily transfer into the physical world.

Similarly, Diehl and Prins (2008) found that participation in *Second Life* enhanced what they refer to as "intercultural literacy." This includes the use of multiple languages, cross-cultural encounters, increased awareness of cultural perspectives and openness toward new perspectives. Diehl and Prins (2008) also suggest that engagement in environments

such as *Second Life* challenges a homogeneous model of standard English and raises questions as to whether nonstandard English use may become more accepted as individuals encounter variations of English and the multiplicity of World Englishes.

Language Change

Virtual environments and the related fields of texting, instant messaging, and online chatting have been a rich area of inquiry into how language is used and develops. Since online exchanges often occur synchronously or in real time, online text often resembles conversation in structure and is frequently less formal than what the general public considers an acceptable standard of writing (Jacobs, 2008). Merchant (2001) argues that young people, as they engage in digital literacies, are changing the face of literacies and these new skills are important for success in the labor market.

The issue of writing skills in relation to the emergence of digital technologies has been well studied. Baron (1984) first raised the question of whether computer-mediated communication is a force in language change, and since then numerous researchers have worked to identify online language and literacy practices and their relation to writing. Research into instant messaging and texting reveals that despite the persistent belief that the truncated forms associated with online writing are damaging young people's ability to write, few of those practices actually appear in adolescents' and college students' writing (Jacobs, 2008; Drouin & Davis, 2009). Although the debate continues around the possible effects of online literacies on traditional writing skills, the growing body of research indicates that engagement in online literacies supports writing development.

Language Play

Other researchers have come to understand the differences between online literacy practices and traditional literacy forms by using the concept of play as a framework. De Freitas (2006) points out the voluntary nature of playing or gaming online. According to de Freitas, games are "a voluntary activity, separate from the real life, creating an imaginary or immersive world. Games are played out within a specific time and place, according to established rules, and create social groups out of the players" (p. 344). In both gaming and virtual worlds, de Freitas suggests, participants learn through exploratory behavior, and by making connections between what they know from their offline life and what is going on in the virtual world. This extends to literacy practices.

Warner (2004) proposed that a large portion of online language does not fit standard referential definitions of communication, but instead is playful in nature. Play, Warner argues, is a primary focus of language in forms such as poetry, rap, and puns, and language play is also important in the creation of alternative realities. In online exchanges, Warner found that participants played with the form of words, the content or concept under discussion, and the frame or "metalinguistic level." This metalinguistic level, according to Warner, is where the participants use their knowledge of the virtual nature of the setting to create playful exchanges. Understanding literacy in virtual environments through the lens of play also provides insight into the willingness of participants to take risks, which provides increased opportunities for learning (Salen, 2007; Lam, 2009).

Along the same lines, Salen (2007) argues that engagement in game design exposes participants to "flexible rules sets and iterative play" (p. 307), and includes a "stance of playfulness" (Lemke, 2006, as cited in Salen, 2007, p. 307), which is creative, improvisational, subversive, and performative. Salen suggests that these skills are critical for literacy in the 21st century. She also claims that the roles people take up within the world of

gaming are different than those taken up within traditional compositional activities. For example, within a game participants take up the role of producer; players design games, write game reviews, modify game components, and produce knowledge about how to play the games, the rules of the games, and the design of the games they create. Salen suggests that participants become active creators of online environments, whether they are textual or graphic in nature. She warns, however, that production is not a requirement of participation. Participation can include reading, writing, critical thinking, problem-solving, negotiation of complex economies, and programming. She therefore sees production as not just about content creation within a gaming environment, but also about the development of knowledge, relationships, and skills that accompany the game.

Conclusion

Insights into literacy in virtual environments are in the process of being formed, and will continue to shift as the shape of online environments change. Virtual environments encompass a wide range of literacy practices; which practices people engage in and how they engage in those practices depend upon the context of individuals' lives. For second-language learners, literacy in virtual environments supports the learning of new language skills, and also the development of new identities that transcend the local. For adolescents, literacy in virtual environments can be a subversive activity where existing norms of textual engagement are challenged and reshaped. Literacy in virtual environments also reawakens the learner and the teacher to the nature of play in human development. Literacy in virtual environments is a complex interaction of typographic text, audio, video, graphics, and hyperlinks that ultimately changes the relationship between the text on one hand, and the reader and writer on the other.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Media Literacy; Literacy and Bilingualism; Multimodality and Literacy; New Literacies of Online Reading Comprehension

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Literacy: Mixed Methods

ELIZABETH (BETSY) A. BAKER

The purpose of this entry is to briefly describe a study for which mixed methods were best suited. This study examined the growth of two groups of preservice literacy teachers in their abilities to recognize salient features of children's reading development. Quantitative data were used to ascertain growth, while qualitative data were used to situate the learning experiences in which this growth occurred. A purely quantitative study could have revealed growth but little would be known about how that growth occurred. A purely qualitative study could have provided a rich description of two different ways to implement case-based instruction but would not provide information about the growth of the learners. A mixed design helped to account for both growth of the learners and an understanding of the interventions experienced by each group of learners.

Rationale

Experts are those who achieve a high level of skill or knowledge. Experts are valued for their ability to make sense of a situation and make effective decisions. Researchers have explored characteristics shared among experts and consistently found that experts have the ability to "chunk" complex information into salient patterns. For example, expert chess players are able to look at a chessboard and instead of seeing 32 (or fewer) separate chess pieces they see patterns. They are able to make sense of the situation based on the recognition of these patterns and thereby make effective decisions about what chess piece to move next (deGroot, 1965). It is the ability to see these patterns that enables experts to make sense of complex information. Similar abilities have been found with, among others, expert architects, physicians, baseball players, physicists, electronics technicians, and teachers (Berliner, 1986; Bransford, Franks, Vye, & Sherwood, 1989; Chase & Simon, 1973; Egan & Schwartz, 1979).

Expert literacy teachers are able to recognize salient patterns as they listen to elementary children orally read and discuss their readings (Goodman, 1985; Clay, 1993). For example, through observation and discussion, expert teachers can ascertain information regarding students' (a) competencies and confusions, (b) strengths and weaknesses, (c) processes and strategies, and (d) understandings of literacy processes. Expert teachers regularly record and use these observations to determine developmentally appropriate instructional plans that meet the needs of each student (Bruner, 1978).

Teacher educators seek ways to develop expertise among preservice teachers. One such method being used is case-based instruction (Christensen, 1987; Shulman, 1992). Instead of teaching preservice teachers about a range of topics in a linear sequence, preservice teachers study cases of children, situations, and classrooms. They discuss what is salient in each case. They are encouraged to identify patterns. The purpose of this entry is to describe a study for which mixed methods were used to understand the development of pattern recognition among preservice literacy teachers who were enrolled in two sections of the same course. One section (N=26) was given *video-based cases* of children reading while the other group (N=23) was given *multimedia-based cases* of the same children reading the same passages. Multimedia included an interface that gave users access to the same

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video segments as the other group, corresponding copies of the books the children read in the videos, corresponding copies of the compositions the children wrote in the videos, and short scenarios that told the users what was occurring in the video segment. The methodological task was to account for the pattern recognition of each group of preservice teachers before and after they spent a semester designed to help them develop pattern recognition. The guiding research questions were:

- What contexts provide support for novice teachers to develop pattern recognition of children's reading abilities?
- Did the video-based/multimedia-based case users develop pattern recognition of children's reading abilities?
- Did the pretest and posttest measures indicate statistically significant growth in their abilities to recognize patterns?

To address these questions sequential mixed methods were used (Tashakkori & Teddlie, 2003; Creswell, 2009).

Examining Preservice Teachers' Development: Data Collection and Analysis

First, to conduct this sequential mixed-methods study (Tashakkori & Teddlie, 2003; Creswell, 2009) pattern recognition of literacy experts was operationalized. Using research regarding components of the reading process, miscue analysis, and formative assessment (Goodman, 1985; Clay, 1993; Ruddell & Unrau, 2004) it was determined that expert literacy teachers incorporate the following traits to recognize salient patterns. One, they consistently examine students' proficiencies regarding the following seven *components* of reading: graphophonemics, syntax, semantics, pragmatics, affect, automaticity, and metacognition. Two, expert literacy teachers take note of students' struggles and successes. Herein, expert teachers examine the entire *range* of literacy components—not just the components with which a student struggles or just the components with which a student is proficient. Three, experts substantiate the patterns they see. An expert teacher does not simply observe and conclude, for example, that a student proficiently decodes by recognizing prefixes without being able to cite examples. In summary, expert pattern recognition, for the purposes of this study included (a) seven components of reading, (b) the entire range of these components, and (c) the ability to substantiate observations of these components.

Next, pretests and posttests were developed. These tests were designed to measure how well preservice teachers recognized the components of reading, how well they observed the entire range of components, and how well they substantiated their observations. The pretest and posttest involved watching the same 13-minute video of a first-grade child orally reading a story to the teacher. The child looked at all of the illustrations in the book, predicted what the book might be about, and read the book aloud to the teacher. When the child got stuck on words the teacher asked him about his word attack strategies and occasionally told him words he did not know. After viewing the video, the participants responded in writing to the question "What do you notice about the child's reading?" The participants had no time limit for their responses. Herein, qualitative data were collected that consisted of written answers to an open-ended question.

Using qualitative typological analyses (LeCompte & Preissle, 1993; Hatch, 2002), the written answers were broken into discrete data units that were tallied and computed into frequency counts. Typological analysis refers to coding qualitative data according to an a priori scoring guide. For this study, the a priori guide consisted of the seven components of reading. In addition, to assure that discrete data were counted only once, data were

coded as either a statement or substantiation. Statements were defined as global or general statements that indicated recognition of a component of reading. For instance, "He used the letters to sound out words," was categorized as a statement about graphophonemics. Substantiations were defined as references to a specific skill representative of a particular component of reading. For example, "He did not know the short sound of /u/," was categorized as a substantiation of a child's graphophonemic abilities.

Two researchers independently coded the pretests and posttests. Next, the researchers compared their coding. Then, each discrepancy was reviewed until agreement regarding coding consistency was reached. Throughout this review, the researchers refined classification characteristics for each component of reading. When 100% interrater agreement was reached, frequencies and percentages were computed for each group's pretest and posttest for total number of statements made and total number of substantiations made.

In correspondence with the research questions, measures A, B, C, and D were created (see Table 1). Measure A referred to the number of reading components that each preservice teacher cited in a pretest or posttest. Because there were seven components of reading, for measure A, a participant could score between zero and seven. For example, Susan (pseudonyms are used for all participants) made six statements. However, these statements addressed only three of the seven components of reading. Thus, for measure A, Susan scored three. It is possible that the child Susan was watching did not do anything to demonstrate his abilities in the other four components of reading, hence Susan's omissions. In the operationalization of terms, however, expert teachers were defined as having the ability to take note of what a child does and does not demonstrate (Wilde, 1996). Susan only noted what the child did; she neglected to take note of what the child did not do.

Table 1 Research questions, measures analyzed, and examples of scoring

Research questions	*Measures analyzed*	*Cases of scoring*
1. Did the multimedia-users and video-users observe a range of aspects of reading (adapted from Leu & Kinzer, 1999) on pretest and posttest measures?	A: Number of aspects of reading (adapted from Leu & Kinzer, 1999) a participant's statements represented.	Case A: Sally identified 3 aspects of reading (decoding, semantic, and syntactic), Tom identified 4 aspects of reading (decoding, semantic, syntactic, and pragmatic).
2. Did the multimedia-users and video-users substantiate their pretest/posttest observations?	B: Number of examples a participant cited.	Case B: Sally cited 5 examples, Tom cited 17 examples.
3. Did the multimedia-users and video-users describe an "overall" understanding of a child's reading abilities?	C: A + B.	Case C: Sally scored 8 (3 aspects + 5 examples), Tom scored 21 (4 aspects + 17 examples).
4. Did statistically significant differences exist between pretest and posttest measures for multimedia-users? video-users?	D: Total number of statements a participant made + total number of examples a participant cited.	Case D: Sally's score was 11 because she made 6 statements and cited 5 examples. Tom's score was 31 because he made 14 statements and cited 17 examples.

Measure B referred to the number of substantiations, or examples, the participants made to "back up" their observations. The seven components of reading overlap; thus, measure B substantiations were counted once so that statistical assumptions of independence would not be violated. For example, students are expected to develop automaticity of graphophonemics, syntax, semantics, and pragmatics. The same is true of metacognition and affect. To address this methodological quandary, in such cases it was decided to code for only cueing systems (graphophonemics, semantics, syntax, and pragmatics). In this way, substantiations were counted only once.

Measure C referred to the participants' overall pattern recognition and therefore combined measure A (range) and measure B (substantiation). Analysis of this measure was conducted to address whether statistically significant change in pretest and posttest scores occurred in combined scores. While significance may be evident in separate A and B scores, they may not be significant when combined. Conversely, significance may not occur in separate measures but become evident when they are combined. The combined scores were considered because it is preferred that a teacher demonstrate the abilities represented in measure A (range of reading abilities) as well as measure B (cite examples)—rather than one measure or the other. Measure C provided insights into these combined abilities.

Measure D referred to the total number of both statements the participants made as well as the number of examples a participant cited.

To analyze whether the preservice teachers made statistically significant growth, the frequency counts for measures A, B, and C were converted to z scores and then two-tailed t tests were computed to determine whether or not significant differences existed between pretest and posttest performance. The .05 level was adopted as the measure of significance, but it was not adjusted for multiple comparisons. Analyses were done within each group, because in naturally occurring educational settings (students randomly assigned to sections of a university course) creating control groups was not feasible. To display the differences in growth for each group, we computed change scores (posttest—pretest) for each of the four measures.

The results showed that the video-case group demonstrated a statistically significant difference between pretest and posttest for measure A only (see Table 2). The multimedia-case group demonstrated statistically significant growth from their pretest to their posttest

Table 2 Change between pretest and posttest for multimedia and video-users on measures A, B, C, and D

Change measures	*Minimum raw score*	*Maximum*	*Mean*	*Standard deviation*	*p value*
Multimedia-users (n=23)					
A	–1	4	1.09	1.41	3.69*
B	–3	10	2.17	3.23	3.23*
C	–4	9	3.26	3.12	5.10*
D	–4	11	4.13	3.62	5.18*
Video-users (n=26)					
A	–3	3	38	1.55	2.63*
B	–6	5	–.62	2.04	–1.55*
C	–7	5	–.31	2.74	.54
D	–13	7	–.85	4.23	–1.02

* $p < .05$

on all four measures (A, B, C, and D). In other words, while the video-case users demonstrated growth in their ability to recognize all seven components of reading, the multimedia-case users demonstrated growth in their ability to recognize all components of reading as well as substantiate their observations. Thus, the multimedia-case group appeared to grow in their development of expert pattern recognition more so than the video-case group.

The inability to make direct group comparisons highlights the usefulness of a mixed-methods design. Specifically, growth measures combined with contextual data were fundamental to addressing the research questions. One without the other would provide an incomplete understanding of preservice teachers' growth while using either multimedia cases or video-based cases. Still, these quantitative measures were insufficient to address the research questions.

Making Sense of the Findings: Additional Qualitative Data

To make sense of the findings, data collection and analysis also accounted for how case-based instruction was implemented in each section. Naturalistic data collection and analysis methods were used (Lincoln & Guba, 1985; Corbin & Strauss, 2008). Specifically, each class session was video recorded for both sections (N=45 hours/section). Based on observations and revisiting video recordings, a data collection unit (DCU) was defined in terms of when case-based instruction was implemented. The DCU was used to focus analysis such that representative descriptions of each section were generated.

In both sections, students generated artifacts regarding their observations of case materials. These artifacts were collected. In both sections, instructors generated syllabi, lesson plans, and reflections regarding their implementation of case-based instruction. Data collection of observations, video recordings, and artifacts were triangulated. Negative case analyses identified anomalies that were used to refine descriptions with the end result being a description of how case-based instruction was implemented in each section. This description is too extensive to include here but it is available in other reports (see Baker, 2005, 2009; Baker & Wedman, 2007).

Concluding Remarks About Mixed Design

There are many kinds of mixed designs (e.g., Tashakkori & Teddlie, 2003; Creswell, 2009). This study used sequential mixed methods. Specifically, this study examined preservice teachers' growth while also accounting for pedagogical implementation of case-based instruction. In terms of sequence, this study first collected pretest data. Next, this study collected data regarding implementation of case-based instruction. Finally, this study collected posttest data. Qualitative and quantitative data were collected and analyzed to make sense of preservice teachers' growth. Qualitative data were collected to situate the findings by describing the implementation of case-based instruction in each section. For the purposes of this study, qualitative or quantitative data alone were insufficient. Examining preservice teachers' growth without accounting for the intervention was insufficient. Describing implementation of video-based cases and multimedia-based cases was insufficient. The use of both qualitative and quantitative methods provided the data necessary to address the posed research questions.

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Portions of this text are reprinted with permission from an earlier publication of this research study (see Baker & Wedman, 2007).

SEE ALSO: Comparing Two Independent Groups; Language Learning and Teaching: Mixed Methods; Language Teacher Development; Mixed Methods; Qualitative Literacy Research; Teaching Literacy

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Literary Translation

REINE MEYLAERTS

Literary Translation: A Definition

"Time has come for a systematic reconsideration of the entire question of literature and translation," Lambert wrote in 1991 (Lambert, 1991, p. 33). Indeed, "to the extent that literatures . . . are tied to particular languages, they have all developed, at least in part, with the aid of literary exchange via translations" (Lambert, 1998, p. 131). The European national canons are in an important way based on the import, via translation, of Latin and Greek models; Shakespeare conquered the European continent via French translations, serving at their turn as a source for translations in other languages; German Romanticism gave translation a key role in the construction of a national German literature, and so forth.

Whatever these examples may suggest, literary translation is of course not restricted to the Western world. Moreover, any attempt to provide a definition of the phenomenon has to deal with the historical and contextual variability of both concepts, literature and translation. What is seen as literature varies through different cultures (e.g., Western vs. non-Western) as well as through history (medieval English literary culture is fundamentally different from twentieth-century literature in English). Accordingly, the concept of translation is time- and culture-bound and is closely tied with the concept and the status of the so-called original. Almost everything written in the medieval period would be considered as a translation in the modern sense of the word whereas at the time the label was often not used. Today, different labels—"translation," "adaptation," "rewriting," and so on—continue to coexist and overlap partially. In his influential "On Linguistic Aspects of Translation," Roman Jakobson described interlingual translation or "translation proper" as "an interpretation of verbal signs by means of some other language" (1959, p. 139). Literary translation then has traditionally been conceptualized as the complete transposition of an original literary text A—written in a language A—into a literary text B, written in a language B for a new target audience B. This definition also implied a view on translation as transfer between geographically and linguistically distinct literatures with different readerships.

Literature and translation being time- and culture-bound concepts, static, essentialistic definitions are altogether ineffective when it comes to a scholarly approach to literary translation. G. Toury therefore most radically opted for an open and functional definition. He "undefined" translation (Delabastita, 2010) in its historical and contextual variability as "assumed translation": everything which is "presented or regarded as such within the target culture on whatever grounds" (Toury, 1995, p. 32). In principle, literary translation can thus refer to "the translation of texts which are regarded as literary in the *source culture*: in an extreme formulation . . . *any translation* of such texts" and "the translation of a text (in principle at least, *any* text, of any type whatever) in such a way that the product be acceptable as literary to the *recipient culture*" (Toury, 1995, p. 168; emphasis in original). Radically inclusive, this definition has opened up new research interests, for example for pseudo-translations. Texts that are presented as translations and texts that function as translations but without relying on any identifiable source text often had immense influence in literature. Famous examples are Cervantes' *Don Quixote* or Macpherson's Ossian translation (see also Toury, 1995, pp. 4–53).

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Literary Translation: Research Models

Scholarly attention to literary translation only began in the late 1960s and early 1970s. Before, the study of translation was part of linguistics and literary translation had been the object of linguistic analyses or contrastive stylistics (Vinay & Darbelnet, 1958), focusing on word- and sentence level and on issues of linguistic or stylistic equivalence with the source text. The original instead of the translation was the primary focus of attention and the ultimate normative standard.

It was J. S. Holmes, lecturer at the Literary Studies Department in Amsterdam, who at the Third International Congress of Applied Linguistics (Copenhagen, 1972) presented his groundbreaking paper "The Name and Nature of Translation Studies." A talented literary translator himself, Holmes urged for closing the gap between the theory and practice of literary translation and for "meta-reflection on the nature of translation studies" (Holmes, 1988, p. 71). Translation Studies should therefore become an empirical (descriptive and explanatory) science. From its inception the discipline was thus primarily focusing on literary translation but as a prototype of translation generally, without excluding other types of translation.

Holmes was in close contact with scholars from Tel Aviv and Leuven who shared his skepticism toward normative, linguistic models for the study of literary translation. For Even-Zohar's polysystem theory, translated literature is not just a derivative, secondary form of literature but functions as a genuine system within the larger literary system of the target culture. The function and position of translated literature within the receiving system depends on the state and status of the latter. If the target literature is young, peripheral, or in crisis, translated literature is likely to occupy a primary position: "it participates actively in shaping the centre of the polysystem" (Even-Zohar, 1978, p. 120). Translations then tend to closely follow the source texts and introduce new models, new genres, new styles into the target literature. The "normal" position of translated literature is, however, a secondary one according to Even-Zohar: translations tend to adhere to existing target literary models instead of introducing novelties.

Polysystem theory laid the basis for the development by Toury of Descriptive Translation Studies (DTS), a general theory of translation but with strong focus on literary translation. In the late 1970s, DTS caused a Copernican revolution in a field which had been until then mainly source-oriented, application-driven, and linguistically oriented (Toury, 1995, p. 24). Instead, Toury sought a theory that was target-oriented, descriptive-explanatory, and that could account for translation in its various and variable historical and contextual settings. Central in his model is the concept of norms: "the translation of general values or ideas shared by a community—as to what is right or wrong, adequate or inadequate—into performance instructions appropriate for and applicable to particular situations" (Toury, 1995, p. 55). The analysis of translational norms (in translated texts and in translators' prefaces, footnotes, manuals) and the analysis of their historical and contextual variability gives insight into the dynamic position and function of translated literature in the target system. Translational norms operate at every stage of the translation process. The initial norm governs the basic distinction between an adequate versus an acceptable translation: in the former case, the translation follows as closely as possible the source text norms whereas in the latter case the translator adheres to the norms of the target culture. Preliminary norms have to do with translation policy (the selection of texts: specific source literatures, genres, authors, etc.) and with the directness of translation (whether or not intermediate translation is tolerated). Operational norms, governing the translator's decisions during the translation process, shape the matrix of the translated text (matricial norms), that is, "omissions, additions, changes of location and manipulations of segmentation" and the "selection of material to formulate the target text in" (Toury, 1995, p. 59)

(textual linguistic norms). Translational norms govern "the (type and extent of) equivalence manifested by actual translations" (Toury, 1995, p. 61). Equivalence is no longer referring to the closest possible relationship with the source text but to any relation between source and target text as a result of time- and context-bound translational norms. It thus changes "from an ahistorical, largely prescriptive concept to a historical one" (Toury, 1995, p. 61).

From the 1970s onward, Toury, Even-Zohar, and Holmes were also in close contact with S. Bassnett (the only woman in the group, based in the UK), J. Lambert, R. van Gorp, A. Lefevere, T. Hermans, and R. van den Broeck in the Low Countries. Their gathering at the 1976 Leuven Conference "Literature and Translation" (Holmes, Lambert, & van den Broeck, 1978) gave further impetus and international visibility to DTS. About a decade later, the group's key publication *The Manipulation of Literature: Studies in Literary Translation*, devoted to "the place and role of translations both within a given literature and in the interaction between literatures" (Hermans, 1985, p. 11), gave its name to the so-called Manipulation Group. In sum, "the temporary association of Holmes, Lambert, Toury and their fellows in a range of projects (conferences, books) in the 1970s and early 1980s had an electrifying effect which contributed to putting Translation Studies on the academic agenda as a 'new' discipline to be reckoned with" (Delabastita, 2010).

In the late 1980s, Bassnett and Lefevere initiated the so-called "cultural turn." The expression was launched in their introduction to *Translation, History and Culture* (Bassnett & Lefevere, 1990) and had a clear programmatic value. Not language and comparisons between source and target texts but culture and the interaction between translation and culture should become the central focus in Translation Studies. Since the translated text had to be considered in its cultural, historical context, issues of power and ideology came to the fore. Recasting translation as rewriting, Bassnett and Lefevere emphasized how every translation reflects a certain ideology, for example through distortion of the original. Thus, "the study of the manipulation processes of literature as exemplified by translation can help us towards a greater awareness of the world in which we live" (Bassnett & Lefevere, 1992, p. vii). The "cultural turn" has most deeply marked research on literary translation and has had a long-lasting influence on the discipline. Denunciating the binary and implicitly hierarchical distinctions between original and translation, source and target, monolingual and multilingual, it took Translation Studies away from its structuralist roots (see also below; Meylaerts, in press).

Gender as a locus of power between different sexes was one of the categories that characterized Translation Studies' cultural turn. *Gender in Translation: Cultural Identity and the Politics of Transmission* (Simon, 1996) criticizes Translation Studies for its sexist concepts of "dominance" and "faithfulness." For feminist translation theorists the image of translation as a secondary activity and the submissiveness of the translator toward the author mirror the inferior status of women in society. Gender-based studies instead unveil the prominent role of many invisible women translators in history. As for the analysis of translation strategies, they focus "on the minute details of language that may reflect or conceal gendered aspects of language use" (von Flotow, 2010) as a means to give insight in the power mechanisms between men and women, between authors and translators in the target literature and culture.

Next to Gender, the cultural turn took shape through the study of postcolonial literatures. Postcolonial literature, written by people living in formerly colonized countries in the language of these colonizers, is commonly viewed as a form of translation. Postcolonial authors are "translated men" (Rushdie, 1991, p. 17, qtd. in Bandia, 2010), translating their local world in a hegemonic language or writing in a mixture of imported, ex-colonial European languages and local vernacular languages. These hybrid languages create translation effects in the text: disparate vocabulary, unusual syntax, code switching, calques, and so forth. They also raise complex power issues between the hegemonic and subaltern

languages, literatures, and cultures involved. Postcolonial writers feel often caught between identity and alterity, between loyalty and treachery toward the home culture. The reading act of these hybrid, multilingual texts corresponds to an ongoing translation process. For the sake of the monolingual reader, the foreignisms may be followed by in-text translations. Translation being *in* the text, not *in between* texts, and the "original" and its "translation" being present side by side in one and the same text, postcolonial literatures challenge the traditional definition of translation as the substitution of one language and one text by another (see above). They also blur the binary distinctions between original and translation, between monolingual and multilingual.

Research on the *translation* of postcolonial or, more generally, multilingual literary texts has gained ample attention from Translation Studies (Niranjana, 1992; Spivak, 1993; Meylaerts, 2010). For a long time, it remained associated with translation *problems* or even *untranslatability*. Whatever may be the problems of translating multilingual texts (that it is problematic is beyond dispute), this approach fails to do justice to the specificity of the phenomenon (basically *anything* can be a problem in translation and can be approached as such), and is, moreover, founded on the outdated postulate of perfect equivalence between "original" and "translation." Eventually the translatable versus untranslatable dichotomy revives illusions of fidelity, authenticity, and understandability which have been discarded by postmodern philosophies of language. We do not fully understand texts, multilingual or not, translated or not. The analysis of multilingual literary texts in translation has the potential to lay bare some blind spots of Translation Studies' models. Since these texts often embody the *tensions* between languages of different literary value and prestige within a multilingual culture, their translation may highlight multilingual cultures' internal cleavages, their linguistic and identity conflicts. How multilingual can or has a translation to be in a certain context? What are the modalities and identity functions of literary multilingualism in literary translations (Meylaerts, 2006)? As far as these questions remain underrepresented in research, they exemplify Translation Studies' idealizing monolingualism and reductive binarism (monolingual vs. multilingual) and point to future challenges for the discipline (see also below).

During the last decade, the study of literary translators, rather than translations, has led to the development of a sociology of translation (Wolf, 2010). Among other theories, Bourdieu's field theory with its concept of habitus has complemented DTS's textual orientation. In his seminal article "The Pivotal Status of the Translator's Habitus," the late D. Simeoni (1998) was the first to introduce the concept. Habitus refers to the individual's mental and physical structures as shaped by early socialization within structures of family, class, and education. It is of primary importance for developing a sense of what is perceived as appropriate behavior, such as translating, in a certain context. Accordingly, since Simeoni (1998), Translation Studies scholars have investigated the social and biological trajectories of literary translators as a way to understand their translational behavior, perceptions, and beliefs (Gouanvic, 2005; Sela-Sheffy, 2005; Meylaerts, 2008, 2010). Interestingly, these studies have also made clear habitus's monocultural character, too much limited to structures and actors that refer to national, monolingual societies only. By integrating the translators' *intercultural* habitus in its framework, Translation Studies can offer a much-needed correction to Bourdieu's theory, which is still more national than intercultural in nature (Meylaerts, 2005). This may turn habitus into an intercultural construct valid for translators in multilingual literatures and cultures.

Future Developments: Literary Translation Studies and Comparative Literature

Today's literatures are indeed no longer conceptualized as the juxtaposition of monolingual national literary spaces. Rather, multilingual literary productions share—or dispute—a common, multilingual space which is not exclusively bound by national territory. The analysis of the complex international, national, and local relationships between these literatures creates new conceptual and methodological challenges for comparative literature. Among the numerous pleas for a new comparative literature, literary translation studies occupy an important place. Still, the implementation of this new orientation is subject to divergent approaches. For some, the concept of "cultural translation" embodies the ethical ideal of "visibility of the other," of emancipation of minority literatures, characteristic of the inclusive conception of the "new" comparative literature (Spivak, 2004). As far as these ethical concerns find their origin in the dominant cultures and are based on so-called Western concepts, critical reflections concerning their real emancipative power are certainly legitimate. For others, translation is a metaphorical concept of such elasticity that it becomes a void notion: "Cast as an act of love, and as a disruption, translation becomes a means of repositioning the subject in the world and in history" (Apter, 2006, p. 6).

Is Literary Translation Studies ready to become the new comparative literature of the 21st century? If so, it should shed the shadows of its ancient binary dialectics: national versus international, translated versus non-translated, monolingual versus multilingual, author versus translator. Multilingual cultures constitute enormous reservoirs of multiform and multilateral literary relations that question these binary oppositions. As already indicated, they give rise to multilingual, hybrid texts that contain translation in the text and that thus epitomize, on an *intra*-textual level, today's complex literary relations. They thus question the idealizing monolingualism of traditional translational models and clear-cut distinctions between monolingual and multilingual. Moreover, as far as in multilingual cultures the idea of a *geographical transfer* of translations is rather virtual—translated texts and originals share a common space (Meylaerts, 2004)—the distinction between source and target literatures may lose part of its analytical pertinence. Due to the relativity of territory as distinctive cultural feature, translations, both as a process and as a product, may also belong to the source culture. The latter may intervene at the level of the initial norm, the preliminary and operational norms. In short, pointing to zones of overlap between so-called "source" and "target" literatures, translation in multilingual cultures discusses one of the key postulates of Descriptive Translation Studies: "translations are facts of the target culture" (Toury, 1995, p. 29). From the point of view of the actors, finally, in multilingual cultures the roles of translator and writer are increasingly coinciding in the same subject. As a consequence, literary self-translation was recently put on the research agenda (Hokenson & Munson, 2007).

All these developments illustrate the need for new, flexible, and inclusive definitions of literary translation, taking into account the blurred distinctions between "source" and "target," monolingual and multilingual, original and translation, author and translator. It is only on these conditions that Translation Studies may become the new Comp Lit of the 21st century.

SEE ALSO: Descriptive Translation Studies; Linguistic Approaches to Translation; Multilingualism; Norms of Translation; Postcolonial Studies; Sociological Approaches to Translation; Translation Theory

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Long, Michael H.

LOURDES ORTEGA

Michael H. Long, among the most important figures in the field of second language acquisition (SLA), is best known as the originator of the interaction hypothesis in the 1980s and the focus-on-form principle of second language (L2) instruction in the early 1990s. Over 30 years, his ideas have been deeply influential in the development and consolidation of these and other research programs in SLA, including work on task-based language teaching, critical periods and fossilization, and research methods and epistemologies in SLA.

Born in England, Long's first degree was a bachelor of laws from the University of Birmingham. After volunteer work in Peru, he began his training in applied linguistics at the University of London's Institute of Education and at the University of Essex, where he received a postgraduate certificate in education and a master of arts in linguistics with a specialization in applied linguistics. He then spent a few years as a teacher of English as a foreign language (EFL) and teacher trainer in England and Mexico. Through his international experiences he became a highly proficient speaker of Spanish, a competency he has maintained and which enables him to lecture about SLA in Spanish. Dating from those formative professional years are also some EFL textbooks and his first academic publications in the well-known *On TESOL* book series. The themes found in this early work foreshadowed his sustained interest in investigating interfaces between SLA and language teaching.

After a year teaching at Concordia University's TESL Centre in Montreal, Long moved to the United States in 1977, where he has remained ever since, without renouncing his British citizenship. He completed his PhD in applied linguistics under Evelyn Hatch at the University of California, Los Angeles and spent the first two years of his academic career at the University of Pennsylvania. There he was mentor to Teresa Pica, who became another key contributor to research on interaction. He joined the University of Hawai'i in 1982 and became a full professor in 1990. Together with such colleagues as Robert Bley-Vroman, Craig Chaudron, Charlene Sato, and Richard Schmidt, he made the University of Hawai'i a leading center of SLA and classroom research. After 21 years in Hawaii, he moved to the University of Maryland in 2003 to take up the position of director of the newly formed School of Languages, Literatures, and Cultures, where he is currently professor of second language acquisition.

Long's first major contribution to SLA was the interaction hypothesis, which originated in his 1980 doctoral dissertation, published in abridged form in Long (1981, 1983) and updated 15 years later in Long (1996). This was the first systematic study of negotiation of meaning arising during oral interactions by dyads of ESL (English as a second language) students and teachers. The findings led Long to critically modify Krashen's comprehensible input hypothesis, expanding on Evelyn Hatch's insight that conversation is a site for language development. In a nutshell, he posited that language learning is supported in psycholinguistically nontrivial ways by certain conversational adjustments that occur during face-to-face oral interactions with more linguistically mature interlocutors. Whenever anticipated, perceived, or actual breakdowns in communication are negotiated by both parties, interlocutors will use comprehension checks (*do you want me to repeat?*), confirmation checks (*you mean the university closes at 8 pm?*), clarification requests (*pardon me?*), and a variety of other strategies and tactics for avoiding and repairing conversational trouble

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and increasing mutual intelligibility. Long was the first to suggest that these conversational adjustments generate learner-contingent, and thus optimal, comprehensible input (Long, 1983). Furthermore, Long (1996) noted that conversational adjustments resulting from efforts at negotiating meaning make new language form perceptually more salient while offering much positive and negative evidence for what is possible and impossible in a given grammar. All of this in turn stimulates attentional processes, such as detection, noticing (Schmidt, 2001), and hypothesis testing, which are thought to lead to learning benefits. The claims of the interaction hypothesis have been largely supported (Keck, Iberri-Shea, Tracy-Ventura, & Wa-Mbaleka, 2006; Mackey & Goo, 2007). Within interaction, Long also initiated the currently much developed area of research on L2 recasts, first by mentoring the first descriptive studies of this phenomenon by Oliver (1995) and others, and later by publishing the first quasi-experimental laboratory studies of recasts (Long, Inagaki, & Ortega, 1998).

A second major contribution in the early 1990s was Long's proposal of the focus-on-form principle of L2 instruction (Long, 1991; Long & Robinson, 1998). He claimed that attention to new language forms and form-meaning connections is most beneficial if it occurs briefly and incidentally without interrupting meaning-focused language processing. According to Long, therefore, teaching approaches that draw on focus on form are psycholinguistically superior to approaches that maintain an exclusive focus on forms, per se, or on meaning alone. Long's ideas on focus on form, as well as interaction, naturally led him to propose task-based language teaching (TBLT) as a promising curricular approach to language education (e.g., Long & Crookes, 1992). His particular view of TBLT is characterized by: (a) the importance attached to expert analysis of learner needs as the foundation for any task-based curriculum (Long, 2005a); (b) the provision of a curricular framework articulated around the sequencing of pedagogical tasks along cognitive parameters, so as to ease students into managing real-world target tasks in an L2; (c) the design of input- and interaction-rich task-based materials that generate contextually appropriate focus-on-form opportunities; (d) deployment of 10 methodological principles for language teaching (Long, 2009); and (e) the use of task-based, criterion-referenced performance testing (Long & Norris, 2000).

The areas of interaction, focus on form, and TBLT described above cohere around Long's strong interest in producing SLA findings that can support language teaching. His work has been equally invested in examining SLA topics through the lenses of cognitive science (Long & Doughty, 2003). He has been influential in debates about the role of age in learning a second language. An early contribution was the insight that age effects are complex because older learners develop faster in the short term, but younger starters do better in the long run, that is, if evidence is inspected after five or more years of learning (Krashen, Scarcella, & Long, 1979). Consequently, he suggested that the field invest in research programs that focus on the limits of what can be learned, or what is possible in ultimate attainment, as well as on rate or interim attainment (Long, 1990b). Based on a review of the literature and his own longitudinal data, Long (2003) expressed skepticism about the available empirical evidence for fossilization and noted problems with the idea for SLA theory, arguing that stabilization may be a more workable construct. He has also maintained that the data are consistent with the hypothesized existence of sensitive periods for SLA (Long, 2005b). Specifically, he posits that there exist maturational constraints on what can be achieved in three different linguistic domains (phonology; lexis and collocations; and morphology and syntax) when second language learning starts after certain ages (Granena & Long, 2010). In his view, L2 development can wax and wane without learning necessarily ever ceasing if opportunities for input and use are available; however, ultimate attainment is limited by human biology.

Also motivated by Long's vision of SLA as a field within cognitive science are his oft-cited publications discussing research methods and evaluating epistemologies in SLA.

His position in this regard is that of critical realism. Such work includes his discussion of the value of process methodologies when investigating classroom learning (e.g., Long, 1980), the already mentioned methodological critiques of studies of age effects and fossilization (Long, 1990b, 2003, 2005b), and the application of criteria from the history and philosophy of science to assess the relative merit of competing SLA theories (Long, 1990a, 1993; Gregg, Long, Jordan, & Beretta, 1997). Long's writing about methods and epistemologies has fueled debate that has moved the field forward. His vision for SLA as a field appears in a classic SLA textbook (Larsen-Freeman & Long, 1991) and in a book that addresses contemporary issues, including theory construction and evaluation (Long, 2007).

Long's service to the profession has been significant. During the 1980s, with Stephen Krashen and Robin Scarcella, he edited the first book series devoted to SLA, *Issues in Second Language Research*, published by Newbury House. In 1983, he became editor with then Hawai'i colleague Jack Richards of the highly respected *Cambridge Applied Linguistics Series*, a role he served uninterruptedly for 24 years. Long was also an editorial board member of *TESOL Quarterly* for most of the 1980s and of *Language Teaching Research* from the mid-1990s to the mid-2000s. He has been a member of the editorial board of *Studies in Second Language Acquisition* since 1985, and in 2011 also joined the editorial board of the new journal *Linguistic Approaches to Bilingualism*. Long has been a mentor to new generations of SLA researchers who now work in the USA, Australia, Japan, Korea, and Spain, among other countries. During his 21 years in Hawaii, he was instrumental in the establishment in 1988 of one of the earliest doctoral degrees in SLA. Since arriving at the University of Maryland, he has established and provided leadership for another new PhD program in SLA.

Long's extraordinary intellectual achievements have been recognized internationally with innumerable invitations and distinctions. He has been an invited plenary and keynote speaker at over 60 national and international conferences and has held visiting appointments in many countries, with repeated and consistent contributions particularly to the development of SLA research in the USA, Canada, Australia, Catalonia in Spain, Denmark, Japan, and China. Among the most important distinctions he has received are the TESOL/Newbury House International Research Award, a Mellon Fellowship, and a doctorate honoris causa from Stockholm University in 2009. Long's seminal contributions have led the way in theoretical development and innovation in contemporary SLA research.

SEE ALSO: Critical Period; Form-Focused Instruction; Fossilization; Instructed Second Language Acquisition; Interaction Approach in Second Language Acquisition; Task-Based Learning: Cognitive Underpinnings

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Lyster, Roy

LEILA RANTA

Professor Roy Lyster (1956–) is a leading researcher in applied linguistics associated with the topic of corrective feedback, form-focused instruction, and the integration of language and content in content-based language instruction. Roy Lyster was born and raised in the city of Regina, in Saskatchewan, Canada. He completed his BA in 1979, and then his passion for the French language led him to leave the Canadian prairies to study in Paris. There he studied French literature with Julia Kristeva and completed a Master's thesis on the Québécois writer, Hubert Aquin. Returning to Canada in the early 1980s, he completed a teaching degree at the University of Toronto and spent about 10 years working as a French immersion teacher at the upper elementary level. This experience propelled Lyster to undertake graduate studies at the Ontario Institute for Studies in Education in Toronto. He had noticed that his students had difficulty speaking French in age-appropriate ways. His observations resonated with the findings from a large-scale study showing that immersion students differ from native speakers of French in their grammatical and sociolinguistic competence (Harley, Allen, Cummins, & Swain, 1990). His views about the French language errors of immersion students were published in his first article "Speaking Immersion" (Lyster, 1987), which led him to address the pedagogical implications in a subsequent article (Lyster, 1990) that won the Best Paper by a Graduate Student awarded by the *Canadian Modern Language Review*. For his doctoral research, Lyster (1994, 1996) sought to determine whether learners' oral and written production could become more socially appropriate through form-focused instruction. He found that making the rules for using *tu/vous* explicit significantly improved students' ability to perform different speech acts.

After completing his PhD, Roy Lyster was hired as a professor at McGill University in Montreal. There he embarked on a program of research on the topic of corrective feedback. This award-winning research agenda has received extensive support from provincial and national funding agencies. The resulting research reports have been published in all of the top peer-reviewed journals in applied linguistics including *Applied Linguistics*, *Language Learning*, and *Studies in Second Language Acquisition*.

The development of the research program on corrective feedback began in earnest with a seminal article published in *Studies in Second Language Acquisition* (Lyster & Ranta, 1997). The article proposed a conceptual framework for investigating teacher feedback on error in communicative classrooms that has been widely adopted by classroom researchers. The findings from their study of teacher–student interaction in elementary French immersion classes led the authors to question the value of using recasts (i.e., teacher's correct reformulation of the learner's error) since it was not clear that the learners noticed such implicit forms of feedback. This article was awarded the Paul Pimsleur Award for Foreign Language Research in 1998. In hindsight, it appears to have sparked a flurry of activity by other researchers who have sought to investigate the relationship between types of feedback and noticing, how teachers provide feedback in a wide range of instructional contexts, and the degree to which learners are able to benefit from feedback.

From the initial descriptive study of classroom teaching, Lyster (1998a, 1998b) carried out further analyses of the same transcripts used in the 1997 paper, identifying different patterns for different linguistic forms, and similar patterns in how teachers responded to

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errors and non-errors. The ensuing phases in the research program have included both a classroom experiment (Lyster, 2004) and a laboratory study (Lyster & Izquierdo, 2009) focusing on grammatical gender in L2 French, and a meta-analysis of 15 classroom studies (Lyster & Saito, 2010). Although the early studies suggested an advantage for prompting as a feedback technique rather than reformulations, the findings from studies in settings other than French immersion (Panova & Lyster, 2002; Lyster & Mori, 2006; Yang & Lyster, 2010) have led Lyster to view the impact of different feedback moves as being dependent on the context. This contextual dimension has become an important theme in his most recent theorizing (Lyster & Mori, 2006; Lyster, 2007). In *Learning and Teaching Languages Through Content: A Counterbalanced Approach*, his book published in 2007, the program of research on feedback is placed within a broader pedagogical framework, referred to as counterbalanced instruction. This approach involves the systematic integration of both content-based and form-focused instructional options.

Despite a flirtation with postmodernism in his studies of literature, Lyster's research is firmly grounded in the cognitivist paradigm. Yet an important dimension of his work is that it is not only of interest to SLA theoreticians but also to practitioners. In addition to technical articles in scholarly journals, he has been committed to publishing accessible, teacher-friendly syntheses of this research, to collaborate with practitioners, and to disseminate his findings to preservice and in-service language educators locally and internationally. This engagement with the larger community can also be seen in the decision to serve as copresident then president of the *Canadian Association of Applied Linguistics* (known by its French acronym *ACLA*) from 2004 to 2008. Together with Sharon Lapkin, Roy Lyster has done much to raise the profile of ACLA, both nationally and internationally.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Bilingual Education; Classroom Discourse; Classroom Research; Content-Based Language Instruction; Explicit Knowledge and Grammar Explanation in Second Language Instruction; Form-Focused Instruction; Immersion Programs; Interaction Approach in Second Language Acquisition; Roles for Corrective Feedback in Second Language Instruction

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Language for Specific Purposes: Overview

THOMAS A. UPTON AND ULLA CONNOR

Language for specific purposes (LSP) is an area of applied linguistics that focuses on the analysis and teaching of language in order to meet *specific* language needs of non-native speakers of the language. These specific language needs may be academic (e.g., Chinese students preparing to study at a French university), vocational (e.g., Filipino immigrants working in service jobs in Hong Kong hotels), or professional (e.g., Japanese business people opening factories in the United States). LSP as a field of applied linguistics dates to the early 1960s and, according to John Swales (2000), gained traction with the publication of the book *The Linguistic Sciences and Language Teaching* by Halliday, Strevens, and McIntosh (1964).

As quoted by Swales (2000, p. 59), Halliday et al. wrote:

> Only the merest fraction of investigation has yet been carried out into just what parts of a conventional course in English are needed by, let us say, power station engineers in India, or police inspectors in Nigeria; even less is known about precisely what extra specialized material is required.
>
> This is one of the tasks for which linguistics must be called in. Every one of these specialized needs requires, before it can be met by appropriate teaching materials, detailed studies of restricted languages and special registers carried out on the basis of large samples of the language used by the particular persons concerned. (Halliday et al., 1964, pp. 189–90)

It is this passage, Swales argues, that provided the foundation for the field of LSP. From it, the following agenda for LSP analysis and instruction was established: (a) research into language use should be descriptive; (b) focus should be on the real language used by regular people (not famous or literary figures); (c) current, everyday language should be of primary importance; (d) language as it is spoken or written in specific contexts should be the focus of study (not "authorial motives for linguistic choices"); and (e) there should be an analysis of functional grammar along with the contextual factors that influence language use (Swales, 2000, pp. 59–60).

In this entry, we first provide some historical context—including the basis for the dominance of English in the LSP literature, a discussion on how LSP has been defined, and the traditional categories of LSP; we then overview the current key debates in the field of LSP. We conclude by looking at the relationship between research and instruction in LSP and highlight the need for new research approaches to capture better the real and changing language needs of LSP learners in increasingly complex political contexts. Our goal is to provide an overview to the field of LSP in general and introduce the themes for this area that are represented in the encyclopedia.

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Language for Specific Purposes: English at the Forefront

The study of LSP can encompass any language used in the world; nevertheless, the vast majority of the language analysis and instruction that has been done in LSP has focused on English. Consequently, the terms English for specific purposes (ESP) and LSP are often used interchangeably, and much of the research and publications in LSP focus on ESP. This is reflected by the fact that the two leading journals in LSP are titled *English for Specific Purposes: An International Research Journal* and *Journal of English for Academic Purposes*. Swales (2000) acknowledges—and bemoans—this situation in his article reviewing the field of LSP in a section titled "English English Everywhere": "One of the ironies of the emergent field of ESP is that its very success in catering to the needs of nonnative speakers has contributed to the overpowering position of English in today's worlds of sciences, scholarship, and business" (p. 67). In an earlier article, Swales (1997) likened English in the realm of academia to a *Tyrannosaurus rex*, "a powerful carnivore gobbling up the other denizens of the academic linguistic grazing grounds" (p. 374).

This emphasis in LSP on the analysis and teaching of English can be seen in the entries that follow in the encyclopedia, as many of the titles specifically narrow the focus to English; the reason for this, however, is because in many cases English is by far the most prominent language that non-native speakers are wanting or needing to learn in particular contexts, for example, the entry titled MARITIME ENGLISH. The shipping trade, by definition, is global and even one shipment typically involves many countries, languages, and cultures. The entry gives the example of one ship that "was built in Spain, had a Norwegian owner, was registered in Cyprus, was managed from Glasgow, was chartered by a French company, had a Russian crew, was flying a Liberian flag, and carried American cargo." In this international context, English is *the* common language of the high seas.

While French, German (see GERMAN FOR SPECIFIC PURPOSES), and Russian are also international languages that have been important in the field of LSP, Arabic in the eastern hemisphere and Spanish (see SPANISH FOR SPECIFIC PURPOSES) in the western hemisphere are now growing in importance as languages that non-native speakers of English are learning in order to communicate for specific purposes. And China, with its huge population and growth as both an economic and military powerhouse, will no doubt soon propel Chinese as a language of increasing focus of LSP scholarship and instruction, as noted in the entry LANGUAGE FOR SPECIFIC PURPOSES IN ASIA. The role of culture, as reflected in LANGUAGE FOR SPECIFIC PURPOSES IN EASTERN EUROPE and the other area and language-focused entries, is also an important consideration in the field of LSP as it is impossible to separate language from culture.

Toward a Definition of Language for Specific Purposes

Much of the theoretical foundation for LSP grew out of work in ESP. Early in the 1960s, linguists started coming to the realization that the language we use—both spoken and written—varies considerably from one context or purpose to another (Hutchinson & Waters, 1987). As a result, language instruction began to shift from teaching the grammatical structures and rules of English to teaching language as it is actually used in real life. As Hutchinson and Waters (1987) noted, this led to the development, in ESP for example, of courses for specific groups of learners, with courses focusing, for example, on the language of business or the language of science. "The idea was simple: if language varies from one situation of use to another, it should be possible to determine the [language] features of specific situations and then make these features the basis of the learners' course" (Hutchinson & Waters, 1987, p. 7).

Also in the 1960s, educational psychologists began to realize that learners in general, including language learners, have different needs and interests, and that these differences influenced not only students' motivation to learn, but also the effectiveness of their learning (Ormond, 2010). This paradigm shift in the understanding of how learners learn has become a key feature of ESP; not only do we need to teach language as it is actually used in specific contexts, but the focus of the instruction should take into account learners' needs and interests within those specific contexts. In Basturkmen's (2006) words, it is essential that we understand the "conditions needed in order for language learning to take place" (p. 85).

Encompassing this new understanding of the variability of language as well as learners' interests and needs, Hutchinson and Waters (1987)—in one of the first books to provide a comprehensive overview of teaching, course design, syllabuses, materials, teaching methods, and evaluation procedures in ESP instruction—defined ESP as "an approach to language teaching which is directed by specific and apparent reasons for learning" (Hutchinson & Waters, 1987, p. 19). Much discussion ensued as to whether this definition was sufficient. While others (see, for example, Strevens, 1988; Robinson, 1991) offered their own definitions of ESP, it is Dudley-Evans and St. John's (1998) definition that is now the more widely quoted definition of ESP. Their definition, though, is not a simple one, as it is comprised of a set of both "absolute" and "variable" characteristics:

1. Absolute characteristics:
   - ESP is designed to meet specific needs of the learner;
   - ESP makes use of the underlying methodology and activities of the disciplines it serves;
   - ESP is centred on the language (grammar, lexis, register), skills, discourse and genres appropriate to these activities.
2. Variable characteristics:
   - ESP may be related to or designed for specific disciplines;
   - ESP may use, in specific situations, a different methodology from that of general English;
   - ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be used for learners at secondary school level;
   - ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners. (Dudley-Evans & St. John, 1998, pp. 4–5)

At its core, the rationale for ESP, in the words of Belcher (2009), is the "motivation to help those especially disadvantaged by their lack of language needed for the situations they find themselves in, hope to enter, or eventually rise above" (p. 3).

Traditional Categories of LSP/ESP

The complexity of the definition offered by Dudley-Evans and St. John reflects the complexity of LSP in practice. As Belcher (2009, p. 2) notes, "There are, and no doubt will be, as many types of ESP as there are specific learner needs and target communities that learners wish to thrive in."

ESP has long been divided into two broad types: ENGLISH FOR ACADEMIC PURPOSES and ENGLISH FOR OCCUPATIONAL PURPOSES (Hutchinson & Waters, 1987; Johns & Dudley-Evans, 1991; Dudley-Evans & St. John, 1998; Belcher, 2009). English for academic purposes (EAP) is language instruction that focuses on the specific language and learning needs of learners

in instructional settings, usually at the postsecondary level but often at the secondary level as well. The emphasis in EAP courses is on academic language; for example, most EAP programs at the college level focus on the academic language skills needed for writing papers and reading textbooks. English for occupational purposes (EOP), on the other hand, focuses on the language needs of learners in occupational—professional or vocational—contexts. These sorts of purposes are reflected in the following entries in the encyclopedia: ENGLISH FOR BUSINESS, ENGLISH FOR MEDICAL PURPOSES, ENGLISH FOR NURSING, AVIATION ENGLISH, and MARITIME ENGLISH. Of course, there are many instances of ESP instruction that combines the focuses of both EAP and EOP; English for academic business purposes and English for academic legal purposes, which provide language instruction to students studying courses in business and law, respectively, represent two examples.

What all of these types of ESP/LSP courses have in common is the goal of giving "learners access to the language they want and need to accomplish their own academic or occupational goals" (Belcher, 2004, p. 166).

Current Issues in Language for Specific Purposes

The entry HISTORICAL DEVELOPMENT OF LANGUAGE FOR SPECIFIC PURPOSES provides important context for understanding the issues that are central to LSP today. As with any maturing field of inquiry, debates on key issues in LSP speak to the complexity as well as the promise of this area of applied linguistics.

The entry notes that some of the critique of LSP is due to the perception that it has been driven less by the goals of global communication and understanding and more by business and national interests (see also Benesch, 2001). This critique notwithstanding, there are three broad areas of debate regarding best practices in LSP. These focus on (a) the needs assessment process, (b) how specific the materials and teaching methods should be, and (c) what level of subject knowledge instructors must have to be effective (Belcher, 2006). The fact that these three areas of debate directly address core features of the most widely accepted definition of ESP that was given above reflects the importance of these discussions. Indeed, most of the entries in the LSP area of the encyclopedia touch on at least one of these issues.

Needs Assessment

The first "absolute characteristic" of ESP given in the definition provided earlier is that "ESP is designed to meet specific needs of the learner" (Dudley-Evans & St. John, 1998, p. 4). According to Johns (1991, p. 72),

> ESP's greatest contribution to language teaching has been its insistence upon careful and extensive needs and task analyses for curriculum design . . . Instead of guessing at student needs, ESP practitioners contend that we must constantly develop new techniques for examining the tasks students have to perform in English, for understanding the target situations in which they will operate, for analyzing the discourse of the target situations, and for determining student learning strategies.

LSP entries in the encyclopedia focus on some of the more common "specific purposes" for which language instruction has been targeted, including ENGLISH FOR SCIENCE AND TECHNOLOGY, ENGLISH FOR ACADEMIC PURPOSES, and LANGUAGE FOR TOURISM, among several others highlighted elsewhere in this entry. Each of these entries includes a discussion of some of the specific language needs that have been identified for learners in these

contexts. Reflecting this primary importance of needs assessment (or analysis) in LSP, an entry titled NEEDS ANALYSIS AND SYLLABUS DESIGN FOR LANGUAGE FOR SPECIFIC PURPOSES, is included in the encyclopedia. The entry notes some of the sociopolitical, educational, and methodological concerns that have been raised about the needs analysis process in recent years; it is in these areas where there is debate.

The crux of the debate focuses on the issue of "power" (Pennycook, 1997; Benesch, 2001; Belcher, 2006). Neither language nor pedagogy is neutral; they occur in and are influenced by social, cultural, and political contexts. The many players in any LSP situation operate in these contexts where power is unequal—between students and teachers, teachers and administrators, students and the wider social and cultural context. Is it sufficient to simply focus on the language structures and communicative competence required in particular discourse contexts, or do teachers also need to help students recognize the conflicting perspectives of "privileged members" (e.g., supervisors and teachers) and "novices" (e.g., employees and students)—as well as other race, class and gender relationships—and help them navigate, influence and even challenge those power relationships? The entry CRITICAL ENGLISH FOR ACADEMIC PURPOSES explores more broadly these power relationships within EAP; The entries CULTURE AND LANGUAGE FOR SPECIFIC PURPOSES and INTERCULTURAL RHETORIC IN LANGUAGE FOR SPECIFIC PURPOSES also explore the interpersonal and intercultural relationships that impact language instruction and learning, and the role of power, representation, and identity on LSP in general, including the identification of learner needs.

Benesch (2001) has previously argued that needs analysis should be re-visioned as "rights" analysis, enabling

> ESP practitioners and their students to see target communities of practice as not solely defined by those in power, but as places where newcomers have rights too—to be included and accommodated—hence as interactive social systems that can, and should, change as new members join. (Belcher, 2009, p. 7)

This "critical" perspective on needs analysis is not yet the mainstream view, but its influence on LSP is growing; for example, it is now well recognized that student perspectives and even feelings need to be taken into account in the LSP classroom.

Specificity

The level of specificity called for in ESP instruction has been a controversial question that has simmered for a long time. Johns and Dudley-Evans (1991) identified the question of how "specific" the focus of ESP courses should be as an area of controversy 20 years ago, noting this question was first raised more than 10 years before then in the 1970s. Hyland (2002) defines the issue this way:

> Put most simply, this resolves into a single question: are there skills and features of language that are transferable across different disciplines and occupations, or should we focus on the texts, skills and language forms needed by particular learners? This question lies at the heart of what our profession is and what we do in our classrooms. (p. 385)

The two sides to this issue are often framed as "narrow-angle" and "wide-angle." Those favoring the wide-angle perspective—most typically those in language for academic purposes—note that there is a core of language and language learning strategies that is common across broad subject areas, and that students are best served by having exposure to language and language strategies that address wider, though closely related, contexts such as university classes (e.g., see Spack, 1988). Those favoring the narrow-angle perspective see this issue of specificity as the distinguishing trait between LSP, which addresses

clearly articulated language needs in specific contexts, on the one hand, and general language courses, which often focus more on general language structures and vocabulary, on the other hand (Hyland, 2002).

Johns and Dudley-Evans (1991) and more recently Belcher (2006) strike a middle ground on this debate, recognizing the value and realities of both perspectives. Belcher goes so far as to say that for many "the wide versus narrow approach debate is a nonissue" (p. 139), as the teaching approach should really be dictated based on what the learners need. This more flexible perspective on specificity as driven by the instructional context is reflected in several entries in the encyclopedia. The wide-angle perspective can be seen in READING AND LANGUAGE FOR SPECIFIC PURPOSES, which argues that there are broad reading skills and strategies that should be addressed when teaching in LSP contexts, while a more narrow-angle perspective can be seen in ENGLISH FOR NURSING, which focuses on nursing-specific language needs of nurses, both those in training and practicing. Nevertheless, as Master (2005) notes, ESP is all about specificity—"detailed explications of the nature of the language used or required to communicate in specific academic and occupational settings, usually accompanied by specific pedagogical applications for non-native speakers of English" (p. 102); otherwise, it is not language for *specific* purposes.

The question, however, is how "specific" do the course focus, materials and targeted language instruction need to be for a course to be classified as an LSP course. Is it inappropriate to ever focus on general language concepts or use materials that do not immediately or directly address specific language contexts? It is not universally agreed where the dividing line is—on the continuum that stretches from general language instruction on the one end to the most focused and targeted instruction on the other—that differentiates a course as either "language for general purposes" or "language for specific purposes."

The "Subject Knowledge Dilemma"

One of the biggest challenges in LSP contexts is that teachers often find themselves having to deal with specialized areas of knowledge in which they have not been trained. Hutchinson and Waters (1987) early on observed that "ESP teachers are all too often reluctant dwellers in a strange and uncharted land," frequently having to "teach with texts whose content they know little or nothing about" (pp. 158, 160). Simply put, does one have to be an engineer to teach the language of engineering? Wu and Badger (2009) call this the ESP teachers' "subject knowledge dilemma"; they go on to note that "there is surprisingly little written about what subject-matter knowledge an ESP teacher might be expected to have" (pp. 20–1).

Master (2005) notes that this question of how much subject-matter expertise the LSP teacher must have has been an area of controversy from the early days of LSP. While most in the field of LSP hold to a more middle ground, he describes the tension as being between those who on the one side see it as sufficient for teachers to simply be able to use content from the specific area as a tool to teach language—even if they have no training in the subject area—versus those who see LSP as "an entirely content-based curriculum in which linguistic knowledge is subordinated to subject content instruction" (Master, 2005, p. 107).

Dudley-Evans and St. John (1998) make the distinction between carrier content and real content. The example they give is the use of a text related to the life cycle of a plant (the carrier content) to teach the expressions of time sequence used in the description of processes and cycles (the real content); they note: "It is not the aim of the exercise to teach students about the life cycle . . . It is an authentic topic which can be used as a vehicle for the *real content* of the unit, the language of process" (p. 11). The point they are making is that what the ESP teacher is responsible for is teaching the language that scientists use to describe processes and cycles, not the processes and cycles themselves.

While focusing on language notions (like process and cycle description) used in specific contexts is a proven approach when working with low-level language learners and those who are novices in the content area, it is much more challenging when working with more proficient speakers who have expertise in their field, like medical students. Indeed, as Belcher (2009) observes,

> It is not usually a comforting thought, to say the least, for any teachers, novice or experienced, to realize that their students may know more about a crucial subject area (or the "carrier content") of a language course than they, the teachers, do. (p. 11)

Dudley-Evans and St. John (1998) argue that subject-specific language instruction is most effective when subject-area specialists are involved, and this involvement can take place at three different levels: cooperation, collaboration, and team teaching. Cooperation is simply the teacher using subject-area specialists as informants to determine the sorts of language and language use students have to master in specific contexts. Collaboration goes a step further with the subject-area specialist more directly involved in lesson planning and material selection/development. Team teaching is "the actual working together in the classroom of the subject and language specialists" (p. 45). Which level of interaction between the language and subject-area specialist is used is best determined by the needs of the students in the particular context, although team teaching in reality seldom occurs due to cost and logistical challenges.

Several entries address directly or indirectly the role of the instructor's subject knowledge in teaching LSP. Entries such as METHODS FOR LANGUAGE FOR SPECIFIC PURPOSES, MATERIALS FOR LANGUAGE FOR SPECIFIC PURPOSES, and CONTENT-BASED INSTRUCTION IN ENGLISH FOR SPECIFIC PURPOSES tackle this issue most directly. All of the entries that overview LSP instruction in specific contexts—such as ENGLISH FOR MEDICAL PURPOSES and LANGUAGE FOR TOURISM—also touch on the necessity of instructors to understand and use knowledge of the subject area in their instruction.

Along with the three issues highlighted above, assessment is an important concern in LSP instruction, and two entries—ASSESSMENT OF ACADEMIC LANGUAGE FOR SPECIFIC PURPOSES and ASSESSMENT OF BUSINESS AND PROFESSIONAL LANGUAGE FOR SPECIFIC PURPOSES—highlight important considerations. In addition, two entries overview the impact that technology is having on the teaching of LSP; TECHNOLOGY AND TEACHING LANGUAGE FOR SPECIFIC PURPOSES gives a broad overview and CORPORA IN THE TEACHING OF LANGUAGE FOR SPECIFIC PURPOSES highlights a common application of technology in instruction. The entry TEACHER EDUCATION FOR LANGUAGE FOR SPECIFIC PURPOSES reflects on the challenges of and the best practices for preparing LSP teachers in the myriad of areas reflected in this overview.

Research in LSP

As an area of applied linguistics, LSP has from the beginning been grounded in scholarship and research, and like other areas of LSP, ESP has led the way. In keeping with Johns's (1991) challenge to constantly develop new techniques for examining language tasks, contexts, structures and learning strategies, the analysis of the structures and uses of language in the specific contexts that learners want and need to interact in continues to grow as a significant part of what LSP practitioners do. Indeed, Belcher (2006) notes that because LSP is driven by understanding student needs, the dividing lines "between researchers and teachers . . . are frequently blurred" (p. 135). Research—ranging from informal needs analyses to qualitative case studies and ethnographies to statistically analyzed empirical studies—is as important to the field of LSP as teaching, with each informing the other.

The current state of LSP research is well documented in the entries that follow and, as noted by Master (2005), this research focuses primarily on "specificity, that is, detailed explications of the nature of the language used or required to communicate in specific academic and occupational settings" (p. 102). The entry LANGUAGE FOR SPECIFIC PURPOSES RESEARCH METHODS provides the context for a set of entries that describe a variety of perspectives (including intercultural rhetoric and critical EAP pedagogy) and methodologies (e.g., CORPORA IN LANGUAGE FOR SPECIFIC PURPOSES RESEARCH—including LANGUAGE FOR SPECIFIC PURPOSES LEARNER CORPORA, and GENRE AND DISCOURSE ANALYSIS IN LANGUAGE FOR SPECIFIC PURPOSES) that are commonly used in LSP research, as well as highlights closely studied areas of discourse (RESEARCH ARTICLES IN ENGLISH FOR SPECIFIC PURPOSES, and THESES AND DISSERTATIONS IN ENGLISH FOR SPECIFIC PURPOSES). Entries on READING AND LANGUAGE FOR SPECIFIC PURPOSES, WRITING AND LANGUAGE FOR SPECIFIC PURPOSES, and VOCABULARY AND LANGUAGE FOR SPECIFIC PURPOSES, as well as those looking at specific purposes (e.g., ENGLISH FOR SCIENCE AND TECHNOLOGY) also show how research on specific uses of language in specific contexts are applied in the classroom.

Looking to the future as LSP instruction becomes more diverse as well as specialized, the field of LSP must continue developing research perspectives and methods that provide not only a broader but also a more detailed understanding of learner needs within a changing world context. In particular, there needs to be more concern with issues of power and accommodation between native and non-native speakers in contexts where languages are used as a lingua franca—for example, in the case of English as the lingua franca in many professional contexts (e.g., international scholarly publication) and areas of commerce (e.g., aviation and maritime communication). Instead of relying on the analysis of language and texts out of context, researchers need tools to study the complex contextual, social, and ideological aspects of language interactions. These interactions are often multimodal, including text and talk as well as other forms of content and message delivery. Research methods relying only on the study of words and discourses are no longer sufficient. Methods such as observations and ethnographic approaches are also needed, along with detailed analyses of interactions, not only to better understand the complexities of language use but also the pragmatic strategies that are necessary for effective communication in specific contexts and for specific purposes.

Final Thoughts

Both research and practice in language for specific purposes have benefited from the work of variety of leading thinkers from around the world. The following distinguished scholars were chosen to be featured in biographical entries from a much larger set of distinguished members of the profession: Charles BAZERMAN, Diane BELCHER, Vijay BHATIA, Dan DOUGLAS, Tony DUDLEY-EVANS, Liz HAMP-LYONS, Ken HYLAND, Ann JOHNS, Brian PALTRIDGE, Larry SELINKER, John M. SWALES, and Louis TRIMBLE. Their biographies map out the development of LSP as an important area of inquiry in applied linguistics over the past fifty years. New ideas and issues in LSP are often first addressed in the three leading journals in the field: *English for Specific Purposes: An International Research Journal*, *Ibérica* (journal of AELFA, the European Association of Languages for Specific Purposes), and *Journal of English for Academic Purposes*.

The study of LSP is an extremely important area of applied linguistics because of its promise for improving opportunities and promoting expertise in a wide variety of academic and occupational areas around the world. In our globally interconnected world, fewer and fewer areas can be found where no need exists for specific language instruction to facilitate the learning and work of non-native speakers of the target language. From university

campuses to community literacy and citizenship programs, from skilled occupations like aviation to prison education programs, from doctor–patient interactions in inner-city hospitals to health programs in the poorest parts of the world—all of these areas and more require "language to accomplish purposes and engage with others as members of social groups" (Hyland, 2002, p. 391). It is the mission of LSP to understand what these language needs are—including the distinctive features of the language—for the specific contexts in which the language will be used, and then choose or develop the materials and methods that will best facilitate learning. The LSP entries in the encyclopedia not only describe in more detail the field of LSP, but also showcase the innovative and groundbreaking work that is being done by some of the best teachers and scholars in applied linguistics.

SEE ALSO: Corpus Analysis of Spoken English for Academic Purposes; Corpus Analysis of Written English for Academic Purposes; Grammar Teaching and the Workplace; Needs Analysis; Teaching Business English; Teaching English for Medical and Health Professions; Teaching Language for Academic Purposes

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Language for Specific Purposes Research Methods

CHRISTINE M. TARDY

The study of language for specific purposes (LSP) uses a range of research methods, including qualitative and quantitative analysis of texts, contexts, and practices. Research in LSP generally shares the goal of informing LSP teaching. From its early days, LSP research has analyzed target situations, aiming to understand the participants' practices, interactions, and values. One of the most common purposes for LSP research is to analyze the target language in areas such as linguistic form, rhetorical structures, purpose, or even reader response. Some research also examines learners, at times comparing their skills and language use with that of the target language or context. While early research took the form of relatively simple descriptions aiming for direct applications to teaching, contemporary research is characterized by richer investigations into the relationships between texts and contexts. Research has also moved from the study of isolated texts to the study of textual and contextual networks, recognizing the role of participant relationships and issues of power. Although LSP research utilizes several primary methods, researchers often integrate these methods within single studies.

Needs Analysis

As an approach to language teaching, LSP has often been described as needs-driven. That is, the needs of students within the target context, using the target language, are a starting point for course design. Needs analysis research has thus been prominent within LSP. Needs analysis is not a method so much as it is a set of methods used to analyze learner needs, frequently aiming to identify characteristics of the specialized language context that learners will need to build proficiency in. Many of the research methods described below are used to analyze specialized language or contexts. In addition, needs analysis may use interviews or surveys to identify learner needs from the perspectives of experts or learners themselves. In academic settings, needs analysis frequently analyzes target classroom assignments, through content analysis or surveys, to identify the types of tasks that learners will need to perform. Observations of target contexts—whether they be classrooms or workplaces—are also commonly used to identify valued practices and language use within the specialized setting.

Text and Register Analysis

Early LSP research most often took the form of text feature analysis or *register analysis*. In this method, researchers analyze target language in terms of the use of a single or small number of textual features, such as sentence length, passive voice, or personal pronouns. Although some early work of this type used corpora consisting of a single text type, such as research articles, more often the corpora consisted of multiple text types within a single register (that is, a variety of language distinguished according to use, such as scientific

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writing or engineering writing). In early register analysis, the researcher counted occurrences of target features in order to understand the relative usage of such features within a type of text. Because such counts were completed without the aid of computer technology, corpora were relatively small, typically ranging from just a handful of texts to around 30. Such analysis generally focused on written, rather than spoken, language; the goal was to identify patterns of usage that could then be taught to LSP learners.

Corpus-Based Text Analysis

As technology has evolved, researchers have increasingly made use of computerized corpora (systematic collections of digitized searchable texts) and concordancing software. These tools allow the analyst to easily tag the corpus in terms of parts of speech to identify the frequency and function of different occurrences across registers or text types. *Multidimensional analysis* (Biber, 1988) can be used to examine how such features co-occur in sets across registers. These sets of co-occurrence reflect shared functions, or dimensions, which can then be analyzed within and across registers. Concordancing software is also used to identify lexical occurrences and collocations, including "lexical bundles" or common word clusters. Items like hedges (*could, might*), boosters (*will, must*), and metatext (*in contrast, this shows*) can be identified and counted relatively easily, giving more detailed descriptions of the target language. Work by Hyland (2000, 2005), for example, has analyzed such features specifically in academic writing, most often comparing use across disciplinary texts. Other studies have compared particular features, such as lexical bundles, across spoken and written academic registers (e.g., Biber, Conrad, & Cortes, 2004; Biber & Barbieri, 2007).

Today's computerized corpora can basically be divided into two types: general and specialized. General corpora compile a vast number of texts, often categorized by registers like conversation, news, academic writing, or academic speaking. The goal of general corpus analysis is to identify language features that are broadly characteristic of a given register in order to draw generalizations; such insights can inform textbook production and classroom teaching. Although some corpus analysis aims to describe one particular register or text type, this research method can also examine multiple registers for purposes of comparison. Such large-scale studies offer powerful insight into language use, though some have argued that their breadth makes them less useful for the specialized contexts of LSP. Narrow-angle or specialized corpora have developed as alternatives, investigating a more focused body of language, such as research articles published in a specific journal or on a specific topic. Specialized corpora are advantageous because they can feasibly be compiled by students or teachers for direct analysis (Flowerdew, 2004). Corpus analysis can also be used to compare learner and expert language, native and non-native language users, disciplinary texts, languages, or even a single genre or register over time.

Discourse Analysis

While corpus analysis provides strong textual descriptions of LSP, it is difficult to examine broader stretches of text and whole textual units—that is, discourse—and their structural patterns through current corpus methods. *Discourse analysis* has taken on great importance as a research method within LSP as a way to examine texts as entire units of discourse; the focus here is on the structures and patterns that create meaning for the text as whole. Discourse analysis can take a textual or social orientation, or it can integrate the two. One framework for understanding the social or contextual features that influence texts comes from systemic functional linguistics. Halliday's (1978) theory of functional grammar

describes three important contextual variables: *field* (the topic), *tenor* (the participants and their roles), and *mode* (the channel of communication). Contextual features—outlined through this framework or others—are critical in analyzing the reasons for occurrences of particular discursive features such as logic or argumentation, organization, cohesion, turn taking, or politeness strategies. Discourse analysis in LSP has studied both written texts (such as business correspondences or academic papers) and spoken texts (such as professional negotiations or classroom lectures).

Discourse analysis studies of oral language for specific purposes have investigated such contexts as academic lectures, classroom discussions, and medical communication. They have commonly used corpus-based text analysis, conversation analysis (including turn taking, sequencing, initiating discussion, or signaling topic), or move analysis (discussed below). Studies of written discourse have commonly examined discursive features such as coherence, cohesion, theme–rheme or given–new structures, logic or argumentation, or rhetorical devices.

Although discourse analysis has traditionally focused on verbal language—written or oral—it has also taken into account the growing presence of the visual modes of communication used within many academic and professional texts. One common approach to *multimodal discourse analysis* examines the functions taken on by different modes: ideational (to convey meaning about states of affairs), interpersonal (to convey meaning about attitudes and relations among writers and readers), and textual (to convey meaning about the text and its structure) (Halliday, 1994). Such analysis may further investigate how different modes (e.g., visual, written, oral) may be more or less effective at carrying out different functions. LSP multimodal discourse analysis has examined scientific articles, popular scientific texts, and professional conference presentation slides.

Genre Analysis

One form of discourse analysis that is especially prominent within LSP research is known as *move analysis*, sometimes also equated with the broader term of *genre analysis*. In the early 1980s, LSP researchers began to take into account the rhetorical functions of text features, leading to increased attention to the users and communicative purposes. As such, research began to focus on more specific text types and their functions, using the term *genre* to capture the rhetorical dimension of texts (Swales, 1981). Broadly speaking, genre refers to a socially situated use of language intended to carry out a particular action. Swales (1990) developed a method of analyzing how a text carries out its rhetorical functions through patterns of distinct stages, referred to as rhetorical moves. This method has become a common research method in LSP. A similar approach to investigating the structural elements of text-genres identifies genre stages, defined as functional sequences within generic structures (Martin, 1993).

Researchers using move analysis typically identify a target genre, compile a representative corpus, and identify patterns of rhetorical structures. The analyst identifies the most common moves (i.e., parts of the text that carry out distinct rhetorical functions) and sometimes the various "steps" (or submoves) that are possible within each move. Because move analysis is mostly carried out without computers, the corpora are usually fairly modest in size. Move analysis has contributed significantly to the understanding of common academic and professional genres, and it provides a methodology for investigating how users carry out rhetorical functions within a given context. One of the most common genres analyzed through move analysis is the academic research article, with numerous studies comparing differences across disciplines, languages, national culture, and gender. Move analysis has also been applied to investigate a wide range of other professional and academic genres, such as letters of application, legal reports, grant proposals, and theses (Biber, Connor, &

Upton, 2007). LSP pedagogy has made use of move analysis in the classroom, teaching students to analyze moves in target genres, essentially becoming researchers of the writing they are learning.

Although early genre analysis tended to focus on the move structure of single genres, it has expanded to include the analysis of networks of genres, known variously as *genre sets*, *genre systems*, and *genre chains*. Intertextual genre analysis identifies the genres that are used within a community of users to carry out certain tasks. This kind of analysis may further examine how certain spoken and written genres are related, who writes or reads in which genres, and how genres respond to other genres in the system.

Activity Systems Analysis

Analysis of genre sets or systems has frequently adopted the framework of neo-Vygotskyan activity theory, which posits activity as the basic unit of analysis. Activity systems are defined by Russell (1997) as "any ongoing object-directed, historically conditioned, dialectically structured, tool-mediated human interaction" (p. 510). Within any activity system—such as a discipline or classroom—individuals and groups use "tools" (including technology, language, and genres) to accomplish shared motives. Examining contexts of LSP through an activity systems perspective can highlight for researchers the complex relationships between individuals, community goals, tasks, and the tools that are used to carry them out. Activity systems research has analyzed university classrooms, seminars, and tasks within LSP settings. This method shifts attention from the text (evident in the research methods reviewed thus far) to the contexts and the social practices that surround and influence language. This attention to social context has become increasingly common in LSP research. As such, new methods in LSP often draw on methodology from the social and behavioral sciences, in many cases blending and adapting these methods to the study of language.

Case Study

Case study research is often used to carry out naturalistic inquiry into what people do in a particular setting. Case studies can focus on experts, aiming to describe insider knowledge and practices, or on learners, aiming to understand how learning occurs in specific settings, over time, or both. Notable case studies in LSP have examined writing and publication processes, academic mentoring, and individuals writing within and across courses or professional tasks. In LSP, case studies commonly make use of interviews, observations, diaries or journals, and collection and analysis of written texts. While case studies lack the powerful generalizations one can draw from, for example, a large-scale corpus analysis, they provide in-depth insights into the intricacies and complexities of the use or learning of specialized language in context, or both. Case studies have been carried out extensively within academic settings, following the practices and development of undergraduate and graduate students as well as academics writing for publication.

Ethnography and Textography

As early as the late 1980s, *ethnography* was used in LSP to identify needs within a target situation. Adapted from anthropology as well as from sociolinguistic ethnography of communication, LSP ethnographic research analyzes a social community from an emic (insider) perspective. Using observation and interviews, sometimes supplemented by analysis of written texts, the researcher aims to build a "thick description" of the target community,

its practices, and its values. Bringing together multiple sources of data, ethnographers identify interpretive categories that eventually lead to new insights into the community or context. Ethnographic studies have examined workplaces, classrooms, and academic institutions, and they have investigated activities like academic discussions, mentoring, and business negotiations. Although such research was initially intended to inform course design, more recent ethnographies also trace learner development. Some LSP researchers have taken a more text-based approach to ethnography through a methodology known as *textography* (Swales, 1998). Tracing individuals' textual histories and practices within physical and professional communities over time, textography employs interviews, various methods of text analysis, and observation; the goal is to locate relationships between particular and communal dimensions of text and textual practices and between present and prior texts.

Intercultural Rhetoric

The study of what is now termed *intercultural rhetoric* (IR) has grown out of *contrastive rhetoric*, the study of the linguistic and cultural differences in texts. Contrastive rhetoric was first described in Kaplan's (1966) study of paragraph organizational patterns across English-language academic texts written by second language writers. Though this pioneering work has been faulted for its overgeneralizations and privileging of English-language rhetorical styles, research has continued to explore the ways in which cultural communities adopt different rhetorical preferences in written texts. In the 1980s and 1990s, contrastive rhetoric studies often analyzed differences in rhetorical structures or textual features in a single genre carried out in two or more languages. In the early part of the 21st century, IR research has also considered the social contexts within which texts are produced and received—an especially important factor when comparing texts according to their cultural and linguistic properties. With this widening perspective, IR analysis has utilized genre analysis and corpus-based text analysis as well as ethnography, valuing the layers of insight that can be gained from mixing these methods. While IR research has focused most extensively on academic genres, there has been a growing interest in professional genres within this research area.

Interviews

Interviews have become an important technique for supplementing data collected through many of the above methods. In text- and discourse-based analysis, experienced users of the target language are often interviewed to provide insider perspectives. These interviews may take the form of focus groups, structured interviews, unstructured interviews, or discourse-based interviews, in which interviewees discuss particular texts and their choices or preferences as a reader or writer. Interviews are a flexible method in that they can be used to shed light on both language use and LSP contexts of use; in the latter case, members of the target community may be asked to describe common practices or identify privileged forms of communication (e.g., Hyland, 2000). Interviews are also useful in research on LSP learners, providing insight into learners' declarative knowledge, reactions to tasks or instructional approaches, and writing processes (e.g., Tardy, 2009).

Mixed-Method Research

Although primary research methods in LSP have been described separately here, in practice they are very often integrated. For instance, studies of text may blend analysis

of linguistic features, genre moves, and discourse analysis, bringing in interviews and observations for further insight. Studies of learners or target situations similarly draw on a range of research methods to bring together different perspectives (e.g., Angelova & Riazantseva, 1999). Quantitative, qualitative, and textual analysis have all become valued research approaches within LSP; together, they help researchers and practitioners build more detailed descriptions and analyses of target settings, target language, expert practices, and learning processes.

Critical Approaches to LSP Research

LSP research has typically tended toward a descriptive research, leading some to criticize an emphasis on a pragmatism that fails to take into account the role of power in specialized language use. Such a perspective acknowledges the social dynamics that students and others face when using language in specific settings and strives to foreground these dynamics and their implications. A range of critical methods have been adopted in more recent research of LSP.

One of the earliest examples of this orientation within LSP is Benesch's (2001) work on *critical needs analysis*, or rights analysis. Critical needs analysis aims to go beyond the traditional identification of student needs by examining how power is maintained and resisted within the target context. The goal of critical needs analysis is to transform the situation, asking students to participate in discovering and enacting possibilities for change.

A second approach, *critical discourse analysis*, examines how texts themselves reflect and perpetuate social relations and ideologies through analysis of text and context. Corpora in CDA research vary largely, ranging from a single text to a constellation of texts focused on a single topic or event. Texts may be analyzed in terms of ideological discourse structures (van Dijk, 1998), which include, for example, topics, genre or schemas, style, interaction strategies, and rhetorical devices such as metaphors. Within LSP research, CDA has primarily been used to research professional and bureaucratic genres.

The critical study of academic language use has more often been taken up through *critical ethnography*, which aims to understand the complexities and inherent inequities in the contexts in which language is produced, reproduced, and learned. Though this method strives toward the level of description characteristic of traditional ethnography, critical ethnography takes an overtly critical/political stance toward the practices and texts that it analyzes. Within LSP, critical ethnography commonly examines issues of language access, linguistic capital, and the consequences of such dimensions of power (Starfield, 2011).

SEE ALSO: Case Study; Critical Ethnography; Genre and Discourse Analysis in Language for Specific Purposes; Intercultural Rhetoric in Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes

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Martin-Jones, Marilyn

KATHRYN JONES

Marilyn Martin-Jones is an emeritus professor based at the MOSAIC Centre for Research on Multilingualism in Birmingham, England. Over more than three decades, she has been involved in research in multilingual contexts in England and Wales. She is herself multilingual and speaks, reads, and writes Welsh, English, French, and Portuguese. Marilyn Martin-Jones has a particular interest in the ways in which language and literacy practices contribute to the construction of identities in multilingual settings, in local-life worlds, and in institutional contexts, and in the ways in which such practices are bound up with local and global relations of power. These themes have been reflected in her research and publications since the 1980s.

Marilyn Martin-Jones was born in 1944 in Bangor, North Wales, and was educated in the United Kingdom and the USA. On completing her PhD in linguistics at Stanford University, California, she returned to Britain and was appointed to a research post with the Linguistic Minorities Project (1979 to 1983) at the Institute of Education, University of London. By 1983, she had moved to Lancaster University, where she became a member of the newly formed Centre for Language in Social Life. In this center, Marilyn Martin-Jones found herself among colleagues with a strong interest in discourse and in critical approaches to research on language and literacy. Her own commitment to critical discourse analytic approaches to multilingualism was confirmed. A chapter, in a volume entitled *Anthropology and the Politics of Language* (Martin-Jones, 1989), was her first contribution to this new line of thinking within research on multilingualism.

In 1989, she also began a three-year research project (with Mukul Saxena) entitled Bilingual Resources in Primary Classroom Interaction (ESRC grant no: X204252001). The focus was on a new form of primary-education provision for children from linguistic minority backgrounds: that of appointing bilingual classroom assistants to work alongside monolingual class teachers. The aim was to identify the ways in which this educational policy was being translated into practice, within the daily routines of primary classroom life. The participating schools were in the North West of England and the focus was on teaching/learning events where Panjabi, Urdu, and English were used. This project led to several widely cited publications (Martin-Jones & Saxena, 1995, 1996, 2003). Through close and insightful analysis of the bilingual discourse in different kinds of classroom activities, Marilyn Martin-Jones and Mukul Saxena showed how and in what conditions bilingual practitioners were able to create bilingual learning environments for learning, drawing in subtle and nuanced ways on the resources within their communicative repertoire.

In the late 1980s, Marilyn Martin-Jones founded the Lancaster Bilingualism Research Group which brought together a number of doctoral research students who were conducting research in different multilingual settings in Africa, Europe, and South America. At the time, the landscape of language policy research was dominated by macro level studies of language planning and policy. However, the members of the Bilingualism Research Group were primarily interested in the situated nature of language policy implementation processes and were convinced that ethnography and close analysis of bilingual discourse were best suited to research in this area. Gradually, contact was made with other researchers who were working in the same vein, notably Monica Heller (e.g., Heller, 1994) and Nancy

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Hornberger (e.g., Hornberger, 1988). These contacts eventually led to long-lasting research collaborations and to inclusive publications which enabled new and established researchers on either side of the Atlantic to contribute (e.g., Martin-Jones & Heller, 1996; Martin-Jones, 1997, 2007; Heller & Martin-Jones, 2001; Martin-Jones, de Mejía, & Hornberger 2008).

Perhaps Marilyn Martin-Jones is best known for her research on multilingual literacy. She was one of the first researchers in Britain to develop empirical research at the interface between critical approaches to research on multilingualism and the ethnography of literacy. This research was first developed (with Arvind Bhatt) through two consecutive research projects (1993–6), with Gujarati speakers in the city of Leicester, England: Multilingual Literacy Practices: Home, Community and School (ESRC grant no: R000233833) and Literacies at Work in a Multilingual City (ESRC grant no: R000221534). This collaboration with Arvind Bhatt was a fruitful one and gave rise to a number of publications (e.g., Martin-Jones & Bhatt, 1996; Martin-Jones, 2000). In 1996, Marilyn Martin-Jones organized a research seminar at Lancaster on multilingual literacies which brought together researchers across Britain who were working in this field. This collaboration culminated in a co-edited volume entitled *Multilingual Literacies: Reading and Writing Different Worlds* (Martin-Jones & Jones, 2000).

In 1998, Marilyn Martin-Jones took up a chair in bilingualism and education at Aberystwyth University where she turned her attention to bilingualism in Wales. There, she began her third ethnographic research project on literacy, this time in North Wales, entitled Bilingual Literacies for Learning in Further Education (ESRC grant no: RES-139250171). The project focused on the bilingual literacy practices of young Welsh speakers in rural Wales, aged 16–19, in different domains of their lives: at home, at work, and at college, including both print and screen literacies. (For details, see Martin-Jones, 2009, 2011; Martin-Jones, Hughes, & Williams, 2009.)

From 2005–10, Marilyn Martin-Jones was professor of languages in education at the University of Birmingham and she was the first director of the MOSAIC Centre for Research on Multilingualism. Two decades of experience of undertaking ethnographic research in multilingual settings in England and Wales laid the foundations for her current project, with Deirdre Martin and colleagues at the MOSAIC Centre. This is a capacity-building project for new researchers entitled Researching Multilingualism, Multilingualism in Research Practice (2010–13) (ESRC grant no: RES-046-25-004). The aim of this project is to build an international network of researchers who are pursuing fresh lines of inquiry in research on multilingualism, with a view to forging a new sociolinguistics which is attuned to the description and analysis of the profound cultural and societal changes taking place in the late modern era.

SEE ALSO: Bilingual Literacy; Critical Analysis of Discourse in Educational Settings; Critical Ethnography; Critical Literacy; Literacy and Bilingualism; Minority Languages in Education; Multilingual Identities and Multilingual Education; Multilingualism; Multilingualism and Minority Languages

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Models of Lexical and Conceptual Representations in Second Language Acquisition

JANET G. VAN HELL AND GREGORY J. POARCH

Words are the basic building blocks of a language. A simple combination of the letters *d*, *o*, and *g* opens up a world of meaningful images and experiences with this four-legged hairy pet. Over the years, children who learn a language accrue fine-grained knowledge on the various meaning aspects related to a word form like *dog*, and learn that not only grandma's black doggie is a dog but also the white barking creature living next door. How does a learner of a second language (L2), who has already established basic relationships between a word form in the first language (L1) and its meaning, acquire the form and meaning of words in the L2? This is one of the key questions in research on L2 learning, and a question that attracts an increasing amount of attention from researchers interested in the cognitive and neural mechanisms of L2 learning. In this entry, we will review theoretical models on lexical (form) and conceptual/semantic (meaning) representation in L2 learners, and outline empirical studies on how L2 learners at different levels of proficiency access L2 word meanings and fine-tune conceptual representations of L2 words. In this entry, we make no distinction between semantic and conceptual levels (cf. Francis, 2005). We focus on late learners who learned their L2 after the basics of the L1 have already been acquired.

Theoretical Models

Psycholinguistic models on the bilingual mental lexicon typically discern between lexical representations in L1, lexical representations in L2, and conceptual-semantic representations that are shared between the two languages. The term "bilingual" refers to L2 users, regardless of their level of L2 proficiency. Two classes of models have been proposed to describe the lexical and conceptual representation and processing of words in the bilingual mental lexicon. One class of models focuses on the mappings between word forms and their meanings, and how such mappings may change in the course of L2 acquisition. The other class of models describes the activation of lexical information in fluent bilinguals (for a review, see Thomas & Van Heuven, 2005). Given this entry's emphasis on L2 learning and the consequences for lexical and conceptual representations and processing, we will focus on the first class of models.

In one of the first empirical papers on lexical and conceptual representations in L2 learners, Potter, So, Von Eckardt, and Feldman (1984) proposed and tested two models: the word association model and the concept mediation model. Both models distinguish between a lexical level (representing word forms in a separate lexical store for L1 and for L2) and a conceptual level (representing word meanings in one common store). The two models also assume a direct link between the L1 lexical store and the conceptual system. The models differ in their assumptions on the mapping between L2 word forms and their meaning. The concept mediation model postulates a direct link between L2 word forms and the

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conceptual system. According to the word association model, L2 learners access the meaning of L2 words indirectly via the lexical link to the L1 word form, and then follow the link from the L1 word form to the conceptual system. Evidence from early studies that tested these two models in the 1980s and early 1990s indicated that the two models describe bilinguals at different stages of L2 proficiency. Performance of proficient L2 users appeared more congruent with the concept mediation model, whereas performance of beginning L2 learners was more congruent with the word association model.

This developmental shift formed the basis of the revised hierarchical model (RHM), proposed by Kroll and Stewart (1994; for an update, see Kroll, Van Hell, Tokowicz, & Green, 2010). Integrating the word association and concept mediation routes, the RHM states that the strength of the links between the word form representations and the conceptual system differs as a function of L2 proficiency, and the relative dominance of L1 to L2. Specifically, for bilinguals who are more proficient in L1 than in L2, lexical-level word-to-word connections from L2 to L1 are stronger than those from L1 to L2. Word-to-concept connections are stronger for L1 than for L2. According to the model, L2 learners will initially rely on their established L1 word knowledge when they are processing words in their weaker L2. To access L2 word meaning, beginning L2 learners map the L2 word form onto the L1 word form and then retrieve the meaning (i.e., following the word association route). As L2 learners become more proficient in L2, L2 word meanings will gradually be accessed through a direct "concept mediation" route, from L2 word forms to concepts (see Kroll et al., 2010, for a current review of empirical evidence and the RHM).

All models discussed above assume that the meaning of an L2 word and its translation is shared, and that words in each of the bilingual's languages access the same conceptual representation. A study by Van Hell and De Groot (1998), however, questioned the assumption of a shared conceptual representation. They asked Dutch–English bilinguals to perform a word association task twice on the same list of words on different occasions, once in the language of the stimuli (within-language) and once in the other language (between-language). They manipulated the grammatical class (nouns vs. verbs), concreteness (concrete vs. abstract), and cognate status of words (cognates, i.e., translations that share their orthography and phonology, vs. non-cognates). It appeared that the within- and between-language associations for concrete words and for cognates were more often translations of one another than those for abstract words and non-cognates, and nouns evoked more translations than verbs. This suggests that lexical and conceptual representations may be more similar for some types of words (e.g., concrete cognate nouns like 'apple-*appel*') than for others (e.g., abstract non-cognate nouns like 'truth-*waarheid*').

The notion that conceptual representation can be graded is a basic assumption in the distributed feature model developed by De Groot, Van Hell, and colleagues (e.g., De Groot, 1992; see Van Hell & De Groot, 1998, for a model assuming distributed lexical and conceptual representations). This model proposes that lexical and conceptual representations are not necessarily the same across languages, but can vary in terms of the number of lexical and semantic features shared between languages. This assumption ties in with the notion that words are "slippery customers" (Labov, 1973, p. 341), and that word meanings are fuzzy and can vary with the context of use. The distributed feature model's assumption that an L1 word and its L2 translation may access different conceptual representations is also reflected in Finkbeiner, Forster, Nicol, and Nakamura's (2004) proposal that L2 words are associated with fewer semantic senses than L1 words.

Accessing the Meaning of Second Language Words

One of the basic questions in research on lexical and conceptual representations in L2 learning is how bilinguals access the meaning of L2 words. The RHM states that during

the early stages of L2 learning, L2 learners will rely more on word form than on meaning as the L2 form-to-concept mappings are still relatively weak. In later stages of L2 learning, L2 learners will rely more on meaning than on word form. The translation recognition task is often used to examine how bilinguals access the meaning of L2 words. Talamas, Kroll, and Dufour (1999) presented two words to less- and more-proficient bilinguals, who then had to indicate whether the two words were translations or not. The critical stimuli were incorrect translation pairs of which the second word was either related in lexical form to the correct translation (e.g., MAN–HAMBRE 'hunger', instead of MAN–HOMBRE 'man') or in meaning (e.g., MAN–MUJER 'woman'). The less fluent bilinguals suffered more from word form interference than from semantic interference. The more fluent bilinguals, however, suffered more from semantic interference than from word form interference. The findings support the idea of a developmental shift from form to meaning as L2 learners become more proficient, in accordance with the predictions of the RHM. This pattern of findings was also observed in late non-proficient and proficient Catalan–Spanish speakers (Ferré, Sánchez-Casas, & Guasch, 2006).

Sunderman and Kroll (2006) also found that word form interference effects disappeared when learners became more proficient in the L2, although in this study the less proficient L2 learners showed both form and meaning interference. Beginning learners showing meaning interference have also been observed in other studies (Altarriba & Mathis, 1997; Comesaña, Perea, Piñeiro, & Fraga, 2008; Brenders, Van Hell, & Dijkstra, 2011). For example, Brenders et al. (2011) tested Dutch fifth-grade and sixth-grade children who had received one-hour English-language classes at school for about 5 and 16 months, respectively, and proficient adult Dutch-English bilinguals. The behavioral data as well as measures of brain activity (i.e., Event-Related brain Potentials) revealed that both groups of beginning learners showed substantial meaning interference and form interference effects, as did the proficient adult bilinguals. The child L2 learners examined by Brenders et al. learned L2 English in a meaningful and contextually-rich environment, which may have boosted L2 word form-to-concept mappings.

A recent study by Comesaña et al. (2008) corroborates the suggestion that the conditions in which L2 words are learned affect the strength of L2 word form-to-concept mappings. They tested children using the translation recognition task, and presented semantically related or unrelated word pairs as the critical incorrect translation pairs. The children had learned L2 words via either L2–picture association learning or L2–L1 word association learning. In L2–picture association learning, but not in L2–L1 word association learning, a significant semantic interference effect was observed, after just one vocabulary learning session. The observation of semantic effects in an early stage of L2 learning appears to be related to the conditions under which the L2 had been learned, and the use of pictures might have stimulated the development of L2 word-to-concept mappings. A recent neurocognitive L2 learning study showed that L2 word retrieval engaged different cortical structures depending on how these L2 words had been learned (via written L1 translations or in a context-rich real-life situation; Jeong et al., 2010). Variations in learning strategy may thus have a profound influence on the neural underpinnings of lexical and conceptual knowledge in L2 learners.

Freeing and Fine-Tuning the Meaning of Second Language Words

How do L2 learners establish and fine-tune conceptual representations of L2 words? It has been proposed that in the early stage of learning L2 word meanings, L2 learners simply map all semantic features associated with the L1 word form onto the novel L2 word form (e.g., Jiang, 2000). This strategy may be particularly likely when learning the meaning of

L2 cognates (e.g., the Dutch word *kat*) that share their word form with the L1 equivalent (here, 'cat'; e.g., Van Hell & De Groot, 1998). As L2 learners become more experienced in using the L2, and have been exposed to the L2 word in different linguistic and nonlinguistic contexts, they may gradually fine-tune the semantic features associated with the L2 word, by getting rid of the unique L1 meaning parts and by extending the conceptual representation to unique L2 meaning parts (De Groot & Van Hell, 2005). One of the challenges learners face is that words in one language often have more than one translation. Such translation ambiguity impedes learning, more so for words with multiple translations that correspond to the same meaning than for words with multiple translations that correspond to multiple meanings (Degani & Tokowicz, 2010).

Conclusion

To conclude, how late learners of an L2 integrate novel L2 word forms and meanings into an already existing language system is an intriguing question, which also provides a unique window onto the dynamic nature of cognitive development more generally. Lexical and conceptual knowledge of L2 learners is in a continuous flux. One important future question is to capture the time course of L2 lexical and conceptual learning, by studying the timing and degree of neural activation as lexical and conceptual processing unfolds in real time (e.g., Palmer, Van Hooff, & Havelka, 2010), and by examining lexical and conceptual development over an extended period of time using longitudinal designs (e.g., Osterhout et al., 1996).

SEE ALSO: Brain Activity During Second Language Processing (ERP); Lexical Access in Bilingual Visual Word Recognition; Organization of the Second Language Lexicon; Second Language Acquisition of Sign Language; Vocabulary Acquisition in Second Language Acquisition

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MacArthur–Bates Communicative Development Inventories

DONNA JACKSON-MALDONADO

Background

There are multiple means for obtaining information about how children develop language. They can be observed in natural play situations, elicitation techniques may be employed, or parents can report on what they observe in everyday activities. Parental report is a cost-effective means for obtaining quick and efficient information about children's communicative abilities because parents know things about their children's language that can only be observed in the day-to-day activities in the home. As early as Charles Darwin, and later in the 20th century, parents have created diaries of their children's language. Elizabeth Bates and colleagues created a more systematic means of parental report (Bates, Bretherton, & Snyder, 1988) in which parents fill out a questionnaire by recognizing rather than recalling the words and sentences their children use. These forms were developed into what is now the MacArthur–Bates Communicative Development Inventories (MBCDIs or CDIs) in English (Fenson et al., 1993; 2007) and Italian (Caselli & Casadio, 1995) with a grant from the John D. & Catherine T. MacArthur Foundation to Bates. Although this parental report is not unique (see also Rescorla, 1989), it has been extensively used to study typical language development and language disorders. This type of instrument is useful for the field of applied linguistics because it allows a special window into the child's communicative ability at a specific time and the data can be compared crosslinguistically. There are currently MBCDIs in over 60 languages with similar formats, developed with language-specific items (for example, in Spanish; Jackson-Maldonado et al., 2003; and for other languages see the MBCDI Web site, www.sci.edu/cdi).

The MBCDIs

The MBCDIs consist of a list of words, gestures, and sentences that are derived from child language samples from each language for which they were developed. The goal of the MBCDIs is to obtain reliable information about children's early comprehension and production of words and phrases, gesture use, and early grammar.

The MBCDIs do not rely on memory as parents are asked to observe only current and salient behaviors. A recognition rather than recall format is used by means of a checklist that contains a large selection of words across several categories. Early grammar is observed for sentence complexity, different morphosyntactic structures (that are language-specific), and utterance length.

Norming studies are developed from ample samples in which the number of words and grammatical structures are calculated in means and percentiles, and normal variability is illustrated. When parents fill out the forms the scores obtained are then compared to the normalized data to determine their level of communicative ability. Thus, at 18 months in word production a child may fall at the 50th percentile (86 words), 75th percentile (209

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words), or lower limit, the 15th percentile (24 words) and be within normal developmental limits. Tables for all levels are provided in the technical manuals or publications.

As with any assessment instrument, the MBCDI is not intended to be used alone and should accompany a larger assessment battery.

The full MBCDI is available in two formats.

1. *First Words and Gestures*, for children between 8 and 18 months, includes
   a. comprehension of early phrases commonly heard by infants,
   b. word comprehension and production (approximately 460 words) distributed across different semantic categories, and
   c. gesture use.
2. *Words and Sentences*, for children between 15 and 30 months, includes:
   a. word production (approximately 680 words);
   b. several sections of early grammar are different for each language, and may include specific morphological and/or syntactic forms (such as regular/irregular inflections or case markings) and sentence complexity. Mean length of utterance is also studied. Parents are also asked to write down the three longest utterances their child produces.

Shorter versions of the MBCDIs have also been developed in many languages. They cover the same age ranges as the full forms and usually consist of about 100 words derived from the long forms.

There is also a form, the MBCDI-III or CDI-III, that is used with older children, between 2;6 and 3;11, also with same recognition format. This form includes 100 words that are age-appropriate, and sections on language use, concept knowledge, and complex language structures.

Scoring

For the English and Mexican Spanish versions, precise scores can be obtained by using the MBCDI scoring program that is available on the Web site. By using this program, reports can be generated along with letters for parents and professionals that detail the child's communicative level.

For other languages, tables, graphs, or both with means and percentiles are given and scores may be calculated by hand by finding the total number of words or structures and in a percentile level.

Uses

Of great interest for applied linguists is that crosslinguistic studies have shown similar developmental trends. Consistent findings have been exposed: Development is variable as children acquire words at different rates (see above). It has also been shown that word comprehension always begins months earlier and exceeds production. Theoretical findings have shown that early word production and comprehension have similar underlying relations to gesture use at the early stages of development. Relations are also found between incipient grammar and early vocabulary.

Another important impact of the MBCDI is that it can be used to identify or analyze the communicative abilities of children with language delays and disorders in both the clinical settings and research projects across the world. Studies have been carried out with children with Down syndrome, Williams syndrome, autism spectrum disorder, focal lesion, specific language impairment (SLI), late onset of language, cochlear implants, Fragile X, and other disorders (for instance, Yoder, Warren, & Biggar, 1997; Mervis & Robinson, 2000; Thal,

2000; Luyster, Qiu, Lopez, & Lord, 2007; among others).

The forms have also been used as a basis in research designs to define children by language level as well as age; to predict current language behavior, long-term outcomes in longitudinal designs, short-term effects of training, relations to brain activity; and as risk factor indicators and long-term outcomes in clinical studies with different language and cognitive disorders. Further, data from the MBCDIs have been used to develop experimental studies, new assessment instruments, and clinical intervention programs.

Online Programs

Online programs have been developed that allow users to obtain information about the growth of individual words and word categories for the MBCDIs in English and a number of other languages. A first program is available on the Web site, the Lex2005, for English and Spanish. For Danish, Swedish, English, and Spanish, the Cross Linguistic Lexical Norm database (CLEX) is also available at www.cdi-clex.org/ (Jorgensen, Dale, Bleses, & Fenson, 2010). CLEX contains tables, graphs, and language comparisons based on the norms of each language. Frequencies of components in speakers of one language may be compared to another language. For instance, frequencies of adjectives used in Danish and English by monolingual speakers can be established by age. In the future, more languages will be added.

The uses of the MBCDI are extensive and work is continuously in progress on other languages and new forms.

SEE ALSO: Assessment Across Languages; Assessment of Vocabulary; Assessment of Young English-Language Learners; Bias in Language Assessment

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Maritime English

ANA BOCANEGRA-VALLE

Maritime English is an umbrella term which refers to the English language used by seafarers both at sea and in port and by individuals working in the shipping and shipbuilding industry. Maritime English lies in the domain of workplace English. Merchant ships (and auxiliary craft) are used in the name of today's global trade to facilitate the worldwide haulage of freight among distant locations and the movement of passengers where other modes of transport are not appropriate, possible, or even cost-effective. Ships' crews and shipping-industry personnel are necessary to conduct a ship (and passengers aboard) safely to destination and deliver commodities efficiently while, at the same time, protecting the marine environment and safeguarding the financial interests of all relevant parties and stakeholders. The shipping trade is, by its very nature, a global phenomenon that evolves within a globalized economic and political framework and the involvement of many different countries, languages, and cultures in just one operation is common practice. The *Sea Empress*, for instance, a ship that polluted the Welsh coast causing severe environmental damage, was built in Spain, had a Norwegian owner, was registered in Cyprus, was managed from Glasgow, was chartered by a French company, had a Russian crew, was flying a Liberian flag, and carried American cargo. It is this background that has led Maritime English to gain worldwide recognition as the international language of seaborne trade employing internationally oriented individuals who need to be fluent in English for communicating successfully while on board and ashore.

Language Distinctiveness

Maritime English terminology and phraseology pose a real challenge due to their specialization and unfamiliarity: Passengers sleep in *cabins* and meals are cooked in the *galley*; a ship does not have walls but *bulkheads*; smoke comes out of a *funnel* not a chimney; objects are not positioned left or right but on the *port* or *starboard* sides; ships *make headway, sternway*, or *leeway* when they move forwards, backwards, or sideways through the water; and when underway they may be *overhauled*, not overtaken, by faster craft. Orders such as *Single up to a backspring forward, Put engines slow ahead, Rudder hard-a-port, Slack away on the breastline until the stern is clear of the berth* or *Let go fore and aft*, require not only good professionals but competent Maritime English speakers if a ship is to be handled efficiently. Noteworthy is the peculiarity of ships to have feminine grammatical gender for seafarers (an in-service mariner would always call a ship *she*), which remains one of the most distinctive features of the English language as currently used at sea.

The Branches of Maritime English

Maritime English subsumes five different subvarieties according to the specific purpose they serve within the maritime context: English for navigation and maritime communications, English for maritime commerce, English for maritime law, English for marine engineering, and English for shipbuilding.

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English for navigation and maritime communications (also known as Nautical English) is probably the quintessence of Maritime English. Seamanship, maneuvering, cargo work, or meteorology provide the subject-matter content upon which specialized language is developed. The English language used for maritime communications is mostly achieved through speech (face-to-face conversations, VHF radiotelephone, or broadcasting services), and occurs at two different levels:

1. *Internal (intra-ship or on-board) communication*. Master and deck crew must display a good knowledge of English to navigate the ship safely and efficiently, to carry out the ship's normal operations in a timely manner, and, in the particular case of cruise ships or ferry boats, to assist passengers. Likewise, personnel engaged on international voyages must be able to understand written English language signposted throughout the ship and contained in shipboard documents. In this respect, both the International Maritime Organization (IMO) and the International Labour Organization (ILO) require that the records of the ship be accompanied by an English-language translation when a ship's language is not English.
2. *External (inter-ship or ship-to-ship and ship-to-shore/shore-to-ship) communication*. Shipboard and shore-based personnel will be required to communicate with other vessels, traffic services, aircraft in case of search and rescue operations, and shore authorities. Particularly important is the need to display a good command of spoken English when one's vessel is in distress and requires urgent assistance and also to protect the health and safeguard the working conditions of all those aboard.

English for maritime commerce and English for maritime law share most of their linguistic and discursive features with business English and legal English respectively. English for maritime commerce is defined as "the use of English for the contracting, or offering for contract, the use of a ship for the carriage of cargo and/or passengers and all the ancillary services connected therewith" (Buelga & Wilson, 1994, p. 13). It covers the issues dealing with the use of English for all the commercial operations and transactions involved in the transportation of goods by sea, including seaborne trade, methods of payment, insurance and delivery of the cargo, shipping business finance and management, port organization, or export/import documentation. On the other hand, English for maritime law focuses on the legal aspects of such commercial operations and also on the legal aspects of the maritime adventure itself, including ships' contracts, limitation of liability, insurance claims, ships' ownership and registration, towage or salvage events, marine pollution control, and so forth. As a branch of English for occupational purposes, proper knowledge and proficient use of English for maritime commerce and law will make individuals ready to face the legal problems posed by ships, the seaborne business, and the sea itself in a context where "there is an inevitable foreign element in many questions, since ships and cargoes, by nature, travel between countries" (Grime, 1991, p. 1).

English for marine engineering and English for shipbuilding stand out as the most technical of the Maritime English subvarieties because they refer to the language used by marine engineers, ship designers, shipbuilders, ship surveyors, and other technical staff in charge of the design, operation, and maintenance of a ship's engines, equipment, and systems, as well as the construction and inspection of ships. Notwithstanding the relevance of spoken English at the workplace, the written language comes to the fore because marine engineers and ship designers mostly need the English language to write and understand reports, specifications, manuals, and technical documents. Because they deal with the technology of shipping, these subvarieties show the linguistic and discursive features of English for engineering.

Maritime English as a Global Language

At present, there exists undisputed international agreement on English as the required common language of seafaring and port operations. International bodies such as IMO, ILO, the International Association of Lighthouse Authorities (IALA), or the International Telecommunication Union (ITU) have strengthened the position of Maritime English through different regulatory instruments. Particularly important is Resolution A.380(X) adopted by IMO General Assembly in 1977 in virtue of which English was recognized as "a common language for international communications between ships and between ships and shore services." This resolution paved the way to the worldwide use of the Standard Marine Navigational Vocabulary (SMNV), a set of standard phrases developed to cover the most important safety-related messages of potential use at sea (IMO, 1977). SMNV was updated in 2001 into the Standard Marine Communication Phrases (SMCP) to include the latest technological innovations which might lead to communicative events and also the new communicative situations arising from the worldwide increase of multilingual and multicultural crews as well as the demands of mixed-nationality groups on board larger passenger ships. The SMCP was adopted under IMO Resolution A.918(22) after recognizing that English is the *working language* for communications at sea and that the standardization of language and terminology used in the SMCP would enhance the safe navigation and operation of ships around the world (IMO, 2002).

Maritime English as a Human Factor

Probably due to its global nature, the transportation of goods by sea is one of today's most dynamic industries and, as such, a favorable ground for multinational/multicultural/multilingual communities to develop. In fact, it has already been reported that "a ship which would formerly have been manned by a crew of around 40 sharing the same language, could now be run by 17, with 17 different mother tongues" (Johnson, 1995, p. 127), that about 80% of the world's merchant ships operate with multilingual and multicultural crews (European Commission, 1999), and that these include several different nationalities (Kahveci & Sampson, 2001; Horck, 2005). In the particular case of multilingual crews, a proficient command of the English language in general, and of Maritime English in particular, is vitally important to overcome language barriers which can cause accidents. As with the case of English for the aviation industry, poor communication between crew members arising from misunderstandings and lack of confidence in the use of English as a common working language can be a threat to safe operation and, if not the primary cause, certainly a contributory factor to accidents of all kinds (Pyne & Koester, 2005). Significantly enough, it has been estimated that this is the case in approximately 30–40% (Trenkner, 2000) or even 42% (Hetherington, Flin, & Mearns, 2006) of shipping accidents reported, when an insufficient command or an inappropriate use of English as an occupational language in the maritime context, or both of these, have rendered crew communication ineffective and, hence, increased the opportunities of human error and the risk of misunderstanding that put life on board and the safe operation of a ship at risk.

Materials for Syllabus Design and Course Development

In addition to the above-mentioned SMCP, there are four milestones in Maritime English education which currently contribute to the planning and design of Maritime English courses for the training of prospective maritime professionals worldwide:

1. SEASPEAK (Weeks, Glover, Johnson, & Strevens, 1988), the essential English language for international use in radio communications at sea, is a pioneering work in the field of English for specific purposes (ESP) that brings together the work of two subject-matter experts (i.e., Master Mariners) and two educational linguists, namely Edward Johnson and Peter Strevens. It offers a set of intra- and inter-ship communication procedures, conventions, grammatical rules for constructing and organizing messages, standard phrases, and vocabulary in an attempt to (a) minimize communication problems arising from the misuse of English by non-native crew members and shore personnel, and (b) ensure that speech communications principally by VHF radio are "as precise, simple and unambiguous as possible, and that predictable areas of language confusion and error are avoided" (Weeks et al., 1988, p. x).
2. The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) (IMO, 1995) is a regulatory instrument that sets out, among others, the English-language standards and requirements to be met by a number of shipboard crew members. As such, it is the common baseline for Maritime English courses offered worldwide.
3. In the light of the STCW requirements, the IMO Model Course on Maritime English (IMO, 2000) offers a four-skill syllabus with both linguistic (grammar, vocabulary, and pronunciation) and maritime content (issues regarding the tasks that learners are expected to carry out in English when in service) so as to assist in the development of Maritime English learning programs for both prospective and in-service seafarers with an elementary to intermediate level of general English.
4. MarEng (2007) is an innovative Internet-based tool which has contributed to the implementation of information technology in today's Maritime English courses. MarEng presents the voyage on board *MV Marina*, a virtual vessel, as an environment for different ships' events and operations. Thanks to a wide array of practical exercises, learners are exposed and can gain access to the real language of the sea as used by today's maritime professionals worldwide.

SEE ALSO: Aviation English; English for Business; English for Occupational Purposes; English for Science and Technology

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Materials Development for Multilingual Education

ITZIAR ELORZA ALDAY

Introduction

One of the essential elements for the organization of the teaching and learning process in any kind of educational setting is educational materials, that is, a "collection of resources, objects and *artefacts* that are specifically created to facilitate the development of educational processes in schools and classrooms" (Area, 1999, p. 190). This collection includes materials that "can be linguistic, visual, auditory or kinaesthetic, and they can be presented in print, through live performance or display, or on cassette, CD-ROM, DVD or the Internet" (Tomlinson, 2003, p. 2).

How do these educational materials come to be? Following Hutchinson (1987, p. 37), "materials are not simply the everyday tools of the (language) teacher, they are an embodiment of the aims, values and methods of a particular teaching/learning situation." In this light, materials development would need to start from the broad end of the spectrum, always answering to a certain view of education and a theoretical framework regarding the teaching and learning process (in general or of languages). This framework brings to the forefront a choice of methodology and syllabus design that will finally lead to the creation of pedagogical resources, namely the materials themselves, with a related set of pedagogical, epistemological, linguistic, and technical criteria.

This entry concerns materials development in multilingual education. Following Cenoz (2009, p. 55), we will define multilingual education as "teaching more than two languages provided that schools aim at multilingualism and multiliteracy."

This definition focuses on an aim that will demand an integrated treatment of all the languages in the school setting. That is, multilingual education needs a comprehensive approach and a joint perspective as regards the teaching and vehicular usage of all languages in the curriculum (Pascual, 2006). We find that this involves the following: establishing effective language-planning policies that specify the functions and spaces open to each language; integrating the approaches, methodologies, and syllabus used in the teaching/learning of all languages; and ensuring effectiveness in terms of the instrumental use of all languages across the curriculum.

Following on from the above, all educational materials designed for multilingual education need to be subjected to take on an integrated approach, both for the teaching of language(s) and for the teaching of other subjects through the means of language(s).

As for the latter, the development of materials for teaching through second languages (L2s) is a key issue for bilingual schooling and has become an important area of research in the world of content and language integrated learning (CLIL) implementation. General issues concerning the design of CLIL materials as well as specific resources that cater for different subject areas have undergone major developments in recent years (see, for example, Mehisto, Marsh, & Frigols 2008; Ball, Beobide, & Muñoa, 2009; Coyle, Hood & Marsh, 2010).

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Referring to multilingual language teaching, the research and proposals coming from the world of L2 language teaching are all valuable references (see, for example, Bird, 1995; Richards, 2001; Tomlinson, 2003) but they rarely take into account the interlinguistic perspective that is a principal characteristic of multilingual language proficiency.

In this entry we will focus specifically on the characteristics of materials development for integrated multilingual language teaching. We will first present the main features of multilingual language education, then describe the different levels of the integrated design of language teaching materials, and finish with an appropriate conclusion.

Consequences of Multilingualism in Communicative-Linguistic Education

Nowadays, multilingualism is considered to constitute a dynamic process that reflects the communicative needs of speakers: The holistic approach (Grosjean, 1989), the multicompetence theory (Cook, 1995), and the dynamic model of bilingualism (Herdina & Jessner, 2002) all consider multilingual speakers as persons with a distinct communicative competence which allows them to interrelate in various ways the languages that they possess. The language proficiency of multilinguals will develop and change as a reflection of the sociocultural conditions in which they live, and will depend, above all, on the domains of use and the functions of the various languages in their everyday lives.

Following this perspective, multilingual education will need to ensure suitable training in order to meet any language needs that may arise in terms of the current and future situation of the students (personal, academic, and professional). The aim would be to form competent multilingual speakers: persons who are capable of effectively dealing with specific situations in diverse social contexts in the language(s) demanded by the situation, by making use of their knowledge, their skills, and their attitudes in a unified and integrated manner.

Materials developers who try to respond to this perspective will need to design language materials, not in parallel schemes, looking at each language per se, but rather in a speaker-centered joint planning. This involves the integration of the teaching of all the languages involved in a sole syllabus or curriculum, in a way that will make the best of, as well as foster and nurture, the unique interlinguistic skills of the multilingual student. According to Cummins's interdependence principle (Cummins, 1979), languages develop in an interdependent manner, that is, there is general language competence that administers comparison, contrast, and interaction among languages and which allows for the particular transfer of skills and metalinguistic knowledge acquired from one language into additional languages. Encouraging this main competence is essential for the purpose of developing an integrated and balanced multilingual competence.

Levels of Integrated Design of Language Teaching Materials

As stated, materials design which intends to develop multilingual competence needs to bring together the teaching and learning of all the languages which are subject to study in a single proposal, via the design of an integrated curriculum for the language area. This curriculum design will lead to the subsequent planning and sequencing of the teaching and learning processes through the development of teaching materials.

The conception of the integrated language curriculum has undergone a major developmental process in bilingual communities in the Spanish state through the introduction of a third language. This has been incorporated into the official language curricula of the different educational administrations starting from the early 1990s. Nevertheless, there are

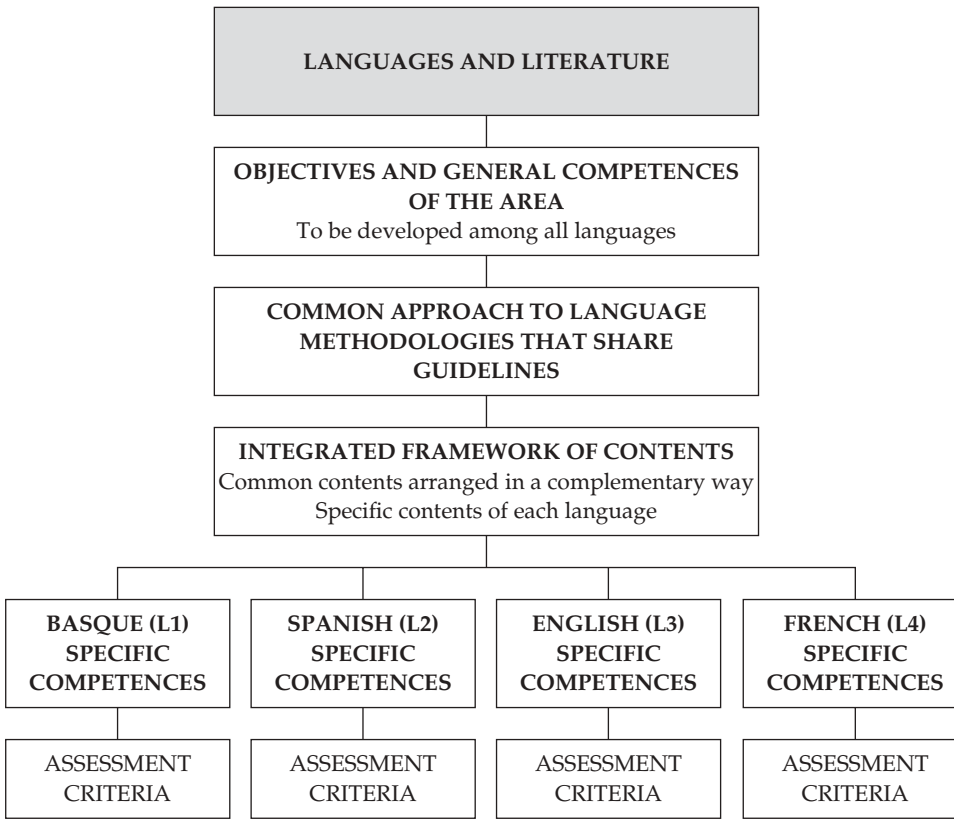

Figure 1 Structure of the integrated language curriculum of the Basque Curriculum for Compulsory Education (© EHIK—Confederation of Ikastolas of the Basque Country (2009))

still few well-developed examples of multilingual language teaching materials that would embrace the different levels and spheres included in such a design. One of the most complete examples is the Basque-medium schools ("Ikastolas") project and its underlying language policy (Elorza & Muñoa, 2008; EHIK, 2009). Its strength lies in its definition of a common integrated language curriculum and its design and production of complementary materials for the four languages present in the school setting.

The Basque Curriculum for Compulsory Education structures a common integrated language curriculum. The main competences in the area and the criteria for selecting the basic contents are the same for all languages included in the curriculum, thus ensuring their complementary development. The level of acquisition of each language is specified when defining the competences attached to them and, above all, defined by means of assessment criteria (EHIK, 2009) (see Figure 1).

Following this scheme, we can see that the process of integrating languages in a sole curriculum and the consequent creation of educational materials takes place at different levels.

1. *Defining common objectives and general competences for the area to be developed among all languages.* The main features of oral and written communication and metalinguistic awareness are common aims for all languages.

2. *Selecting the appropriate approaches and methodologies to be used in common in the teaching/learning of all languages.* The main focus of a speaker-orientated design is the development of language(s) in use. This emphasizes the need to take on new communication and discourse theories, leading onto methodological choices within the areas of communicative language teaching and learning.
3. *Establishing an integrated framework of contents.* This contains, on the one hand, the common contents that are susceptible to language transfer, and, on the other, the contents specific to each language. A variety of similar pedagogical proposals regarding the contents susceptible to transfer and complementary treatment are available from Zayas and Ferrer (1994), Pascual (2006), and Guash (2008). We can categorize these works into the four spheres necessary for complementary programming:
   a. Development of oral and written skills for comprehension and production. General procedures and strategies for listening, speaking, reading, and writing should be shared and taught similarly in the different languages.
   b. Knowledge of discursive situations and text genres. Although certain differences between cultures may exist, there is nevertheless a set of common characteristics relating to structure, organization of content, functions, and rhetorical resources within text genres.
   c. Metalinguistic awareness as interdependent with language usage. Processes of observation, analysis, and conceptualization of the language system, as well as basic linguistic concepts to talk about language, can be learned in one language and then transferred to others.
   d. Language attitudes and intercultural awareness. Representations of the different languages and cultures that bring about attitudes toward them, motivation to use or learn them, and personal choices of usage also need to be considered complementarily.
4. *Taking into account the functions and spaces open to each language in each socio-cultural environment and developing language planning accordingly.*
5. *Decisions* as to the age of introduction of each language, the intensity of exposure and teaching time, the fields of communication and subsequent language uses and text genres that need to be contemplated in the syllabus for each language. These are all essential to integrated materials design.
6. *Planning teaching units or working sequences in such a way that work done in the different languages can be complementary.* The starting point of the integrated planning and sequencing of materials would be the common features of the different languages that should be shared between the different language syllabuses. The identification of these common features would allow the secure introduction of new contents in the stronger languages, share the content load between more balanced languages, and generally avoid unnecessary repetition. To do so, it would be necessary to design a "map of contents" (Ruiz, 2008, p. 55) so as to organize all those procedures and concepts needed to develop multilingual competence and distribute text genres within the complementary planning of the teaching units. An example of the complementary planning of text genres in the Ikastolas' project can be seen in Table 1.

Conclusion

The development of materials that can cater for the specific needs of multilingual education is a complex issue. To a great extent it depends strongly on an integrative perspective on the use and treatment of languages in the whole of the school setting. The approach to materials design for multilingual language teaching and learning needs to be comple-

Table 1 Integrated planning of the text genres and skills specific to the academic field

	Complementary programming of academic language		
	Basque *3rd year of secondary*	*Spanish* *3rd year of secondary*	*English* *3rd year of secondary*
Unit 1	Expository texts: • Concept map • Outlines	Report: oral presentation	Expository texts: • Contrast and comparison
Unit 2	Expository texts: • Outlines • Summary • Oral presentation	Objective description: • Definition	Oral defense of a point of view
Unit 3	Didactic exposition	Didactic exposition Outlines and summary	Expository texts: • Cause–consequence

mented with a similar perspective on the teaching of other subjects through the means of other languages (CLIL). It is only by combining both fields of intervention that multilingual education can fulfill its aims.

SEE ALSO: Bilingual and Multilingual Education: Overview; Content and Language Integrated Learning; Curriculum Development in Multilingual Schools; Dynamics of Multilingualism; Materials Development; Teaching a Third Language

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Materials Development

BRIAN TOMLINSON

Introduction

If you wanted to learn a foreign language how would you do it? Whichever means of learning you chose you would almost certainly need to use materials to help you. These could be artifacts especially designed to facilitate language learning (e.g., textbooks, dictionaries, or computer games) or they could be authentic sources of "information" and experience (e.g., films, manuals, or novels). They could be informative in providing information about the language, they could be instructional in teaching language points, they could be experiential in providing experience of the language in use, they could be elicitative in stimulating use of language, or they could be exploratory in encouraging learners to make discoveries about the language for themselves.

Given how important materials are, it is amazing how little attention they have been given by applied linguists. It was not until the mid-1990s that materials development began to be treated seriously by academics. Before then it tended to be dismissed as something which practitioners did or treated as a subsection of methodology in which "materials were usually introduced as examples of methods in action rather than as a means to explore the principles and procedures of their development" (Tomlinson, 2001, p. 66). There were some books and articles in the 1980s which focused on such issues as materials evaluation and selection (e.g., Cunningsworth, 1984) but it was the books of the mid-1990s onward (e.g., McDonough & Shaw, 1993, 2003; Tomlinson, 1998, 2003a, 2008, 2011; McGrath, 2002) that stimulated universities and teacher training institutions to give more time to considerations of how materials could be developed and exploited to facilitate language acquisition. In that period, for example, the University of Luton in England devoted a master's course to materials development and some universities began to teach materials development as a separate module on their master's courses. At this time Brian Tomlinson founded the Materials Development Association (MATSDA), to run conferences and workshops and to publish the journal *Folio*, and such associations as the Japan Association for Language Teaching (JALT), the Malaysia International Centre for English Language Teaching (MICELT), and Teaching English to Speakers of Other Languages (TESOL) in the United States set up materials development special-interest groups. Nowadays there are a number of dedicated materials development master's programs and most universities run materials development modules. Also there are numerous courses for teachers providing experience of developing materials as a basis for reflection on the principles and procedures which best facilitate language acquisition. In many countries doctoral students and teachers are researching factors which contribute to the successful development and exploitation of materials, and the findings of some of these studies have been published in Tomlinson and Masuhara (2010a).

Nowadays materials development is considered to be both a practical undertaking and a field of academic study. As a practical undertaking it involves the production, evaluation, and adaptation of materials. As a field it studies the principles and procedures of the design, writing, implementation, and evaluation of materials. Ideally these two aspects of materials development are interactive in that the theoretical studies inform and are informed by the actual development and use of learning materials.

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What Materials Do Language Learners Need?

Many teachers argue that language learners need a dictionary and a textbook—the dictionary to help with new words and the textbook to provide systematic and focused instruction. There is no doubt that a dictionary can be very useful if the learners are taught to use it effectively but there has been considerable debate about the value of coursebooks. Proponents argue that coursebooks give learners a sense of system, cohesion, and progress, that they help teachers prepare their lessons, that they help learners revise, and that they provide administrators with a means of ensuring standardization.

> Opponents counter that a coursebook is inevitably superficial and reductionist in its coverage of language points and in its provision of language experience . . . it imposes uniformity of syllabus and approach, and it removes initiative and power from teachers. (Tomlinson, 2001, p. 67)

Experiments are taking place in which the coursebook has been replaced by teacher-developed material, by computer software, by sources from the Internet, and by experience of language in use. But most language learners are still using coursebooks.

Should Materials Be Form or Meaning Focused?

Form-focused materials involve learners in deliberate and explicit learning of discrete target features of the language. Meaning-focused materials involve learners in such language experiences as reading stories, performing plays, and completing tasks in order to help them acquire language from comprehensible input and motivated use. Proponents of the latter (e.g., Tomlinson, 2008) argue that affective and cognitive engagement while experiencing language in use is the key to effective language acquisition. Most coursebooks now provide some meaning-focused tasks but continue to cater mainly to the perceived need for systematic presentation of discrete learning points (Tomlinson & Masuhara, 2010b).

Should Materials Be Contrived or Authentic?

Should materials be specially designed for language learners or should they be typical of those used by proficient speakers of the language? The argument for contrived materials is that by focusing on the target feature in easy-to-understand examples they make the learning task simpler. The argument for authentic materials (i.e., those not specifically produced for language teaching) is that they expose learners to language as it is typically used and that they prepare them for the reality they will encounter as users of the language. Most coursebooks favor the contrived-materials approach (at least at lower levels) as this is what most teachers and learners seem to think is the best way to learn a language. Some applied linguists though consider that exposing learners to language in authentic and comprehensible use can be more motivating and is eventually more likely to help them to become effective communicators outside the classroom.

Should Learners Be Asked to Practice or to Use the Language?

Language practice involves repeated production of a target item in simplified environments which have been controlled to help the learners to get the item right. Use of language

involves producing language in authentic situations which have not been simplified or controlled. In practice the focus is on getting the form and or function of a target item correct. In use the focus is on achieving effective communication. Some applied linguists argue that practice is essential in order to eventually achieve effective communication. Others counter that practice is superficial, that it can present an oversimplified and distorted representation of the language and that it does not help learners when they need to communicate in uncontrolled and unpredictable situations. They argue that materials should focus on providing the learners with opportunities to use the language for communicative purposes. It could be argued that practice helps learners produce correct but limited language quickly whereas use helps them to eventually use language effectively. Most language-learning materials provide some tasks requiring learners to use language but most of their activities (especially at lower levels) only require them to practice it (Tomlinson & Masuhara, 2010b).

How Should Materials Be Written?

There is obviously no right way of developing materials but a number of applied linguists have recently expressed concerns about how materials are typically developed. What little research there is (see Tomlinson & Masuhara, 2010b) suggests that many materials developers write materials intuitively from repertoire (i.e., they adapt activities which have worked for them before) and it is well known that publishers often clone the popular features of successful coursebooks when developing "new" materials. While this seems to make sense in terms of economy and face validity, a more principled approach might be more effective in facilitating language acquisition—especially if it involved the development of frameworks designed to satisfy universal criteria of language acquisition and local criteria of learner needs and wants (Tomlinson, 2003b).

Should Materials Be Based on Theories of Language Acquisition?

While it might seem obvious that language-learning materials should be based on theories of language acquisition, many publishers and materials developers would argue that they need to provide what teachers and learners want and are used to, and that applied linguists have not conclusively proved what best facilitates language acquisition. Consequently many coursebooks still do not apply some of the theoretical principles proposed by applied linguists (Tomlinson, 1998, 2011), especially those relating to learners needing opportunities for

- exposure to language in use,
- affective and cognitive engagement,
- noticing salient features of their input, and
- using language for communication.

Instead many coursebooks still rely on a presentation-practice-production (PPP) approach in which information is provided about a discrete language feature, which is then practiced in easy exercises and "produced" in guided activities. This approach has been popular with teachers for many years because it is systematic and focused and because it provides an impression of progress. It does however ignore the fact that language acquisition is delayed and gradual and requires frequent, motivated, and varied encounters with a language feature.

Should Materials Be Global or Local?

Most commercial language courses are global in that they are developed to be used by any language learner at a specified level anywhere in the world. The advantage is that the potential returns on the investment justify devoting considerable expertise and resources in developing a quality product. The disadvantage is that the materials are inevitably developed for an idealized target learner and cannot be expected to satisfy the needs and wants of any actual learner. Until recently this was a major problem, as in many countries teachers treated their textbook as a script rather than a resource and imposed materials on their learners which did not connect with the learners' experience of life nor with their learning situation. Nowadays though teachers are being encouraged to humanize their global textbooks by, for example, localizing and personalizing the materials for their learners through adaptation and supplementation (Tomlinson, 2003c). Also these days many ministries of education and large institutions are publishing their own materials. These have the disadvantage very often of not looking as professional and appealing as the global coursebooks but the considerable advantage of being able to explicitly relate to the learning environment of their users (Tomlinson, 2003c).

What Role Can Technology Play in Facilitating Language Acquisition?

For many years technology has played an important role in supplementing coursebooks and many language learners these days spend more time working at a computer, watching a television screen, or listening to a CD than working with a book. The advantages of making use of technology are considerable and include

- motivational and experiential benefits of the multimodal representation of the language,
- opportunities for listening to and observing proficient language users communicating,
- opportunities for revisiting language activities and experiences,
- opportunities for interaction with the medium,
- opportunities for personalization of the course by the learners, and
- being able to match the expectations of new generations of language learners.

Many people would also argue though that materials which use new technologies

- are often too expensive to buy and use,
- often simply repeat the activities of textbooks in less effective ways,
- sometimes dehumanize language learning by replacing interaction with teachers and fellow learners, and
- are often driven by the possibilities of the technology rather than by principles of pedagogy.

Most of the above complaints seem to be about the abuse of new technologies rather than their potential and it is likely that in the future more technology-driven materials will be developed which are economical, humanistic, principled, and effective. Chapelle (2001), Derewianka (2003), and Kervin and Derewianka (2011) offer good discussions about the potential benefits of electronic materials.

Conclusion

This entry has outlined some of the issues which make materials development such an interesting field to work in. Many of these issues, and such other issues as those discussed in Tomlinson (2001, 2010), may never be resolved but one thing that is sure is that the demand to learn languages and the use of new technologies in developing language-learning materials will continue to increase. It will be interesting to see if the content of the materials will become more authentic and if their activities will become more engaging and communicative.

SEE ALSO: Authenticity in the Language Teaching Curriculum; Form-Focused Instruction; Learner Readiness; Practice in Second Language Instruction; Technology-Supported Materials for Language Teaching; Using the World Wide Web for Language Teaching

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Materials for Language for Specific Purposes

THOMAS A. UPTON

Introduction to Materials for Language Instruction

Tomlinson (1998) defines language learning materials as "anything which is used by teachers or learners to facilitate the learning of a language" (p. 2). Most people would recognize "materials" as including things like textbooks, workbooks, handouts, and even videos, CDs, and DVDs. Tomlinson's definition of materials, however, also includes things like "newspapers, food packages, photographs, live talks by invited native speakers . . . anything which is deliberately used to increase the learners' knowledge and/or experience of the language" (p. 2).

The role of materials in the language classroom is essential; it is hard to conceive how a language class could be taught without materials. As Hyland (2006) notes, materials provide most of the input that learners, particularly those in foreign language contexts, receive in the classroom.

Effective language teaching materials reflect, and are shaped by, a variety of factors. Probably the most important factors are the beliefs of the material developers and the teachers who use those materials. In particular, these include beliefs about how learners learn in general, how language learners best learn a second language (L2) in particular, and what the appropriate roles of the teacher and materials are in the learning process. Both Graves (2000) and Tomlinson (1998) describe basic principles of L2 acquisition that are directly relevant to the development, selection, and use of language materials and activities; these also reflect beliefs about how people learn in general and what the teacher's role should be in using materials. Some of these principles are presented in Table 1.

There are various other variables that influence the design and use of language learning materials that are related to the teacher, the learners, and the context. According to Richards (2005, p. 1):

> Teacher factors include the teacher's language proficiency, training and experience, cultural background, and preferred teaching style. Learner factors include learners' learning style preferences, their language needs, interests and motivations. Contextual factors include the school culture, classroom conditions, class size, and availability of teaching resources in situations where the materials will be used.

For example, an EFL teacher who learned English as a foreign language, who views language acquisition as primarily the mastery of discrete language skills, who is working in a cultural context that promotes rote learning and with students whose preference is to be as anonymous as possible in the classroom, and who has a class of 75 beginning-level students will develop, select, and use materials differently from a teacher whose characteristics and teaching context are very different. The materials used by teachers inevitably reflect beliefs about the nature of language as well as language use, not to mention beliefs about learning in general. It may be that teachers in some contexts have little control over the language materials they use (e.g., they may be assigned a particular textbook for a

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Table 1 Characteristics of effective language learning materials based on principles of L2 acquisition (adapted from Graves, 2000, pp. 152–5; Tomlinson, 1998, pp. 7–21)

Learner Affect
- Materials should achieve impact.
- Materials should help learners feel at ease.
- Materials should take into account learners differ in affective attitudes.
- Materials should help learners to develop confidence.
- What is being taught should be perceived by learners as relevant and useful.

Learner Engagement
- Materials should require and facilitate learner engagement and self-investment.
- Materials should allow students to problem solve, discover, and analyze.
- The learner's attention should be drawn to linguistic features of the input.
- Materials should provide variety: in roles and groupings, in type and purpose.
- Materials should provide the learners with opportunities to use the target language to achieve meaningful communicative purposes.

Learner Styles and Preferences
- Materials should take into account that learners differ in learning styles.
- Materials should allow students the opportunity to progress at their own rate.
- Materials should not rely too much on controlled practice, but allow for creative use of language and learning through trial and error.

Learner Needs and Development
- Materials should draw on what students know (their experiences).
- Materials should focus on (authentic) language needs outside of the classroom and expose the learners to language in authentic use.
- Learners must be ready to acquire points being presented in the materials.
- Materials should provide opportunities for outcome feedback.
- Materials should take it into account that the positive effects of instruction are usually delayed.
- Materials should help students develop specific skills and strategies.

course), and so the materials would reflect the beliefs of the administrators making those decisions; but teachers do have at least some control over *how* they use the materials they are given, and this *is* very much influenced by their own beliefs.

Language materials, of course, can serve a variety of different purposes both in and outside of the classroom. Hyland (2003, 2006) describes four principal roles that materials play in language instruction. The first role is to provide *language scaffolding* to support learners' understandings of how language is used. Materials with this role are designed to provide learners with the opportunity to discuss, analyze, and manipulate language that they are still learning, and to get constructive feedback on their efforts, in support of their language development. The second role of materials in language instruction is to serve as a *model*. In this role, materials provide representative samples that illustrate particular features, structures, or functions of the language being studied, for example different ways to introduce oneself to strangers. Third, language materials can serve as a *stimulus*. This occurs when materials provide ideas and contexts that stimulate and promote discussion and writing, encouraging students to make connections to their own experiences, articulate their ideas, and interact with others. The fourth possible role is *reference*; as opposed to materials that provide scaffolding and modeling, reference materials (e.g., grammars and dictionaries) are more directed toward information about language than the practice of language. Of course, a particular set of materials can serve any combination

Table 2 Possible forms of language learning materials

Author	*Material feature*	*Example/description*
Tomlinson (2001)	Linguistic	Text-based, like textbooks
	Visual	Videos and realia
	Auditory	CDs, videos, presentations
	Kinesthetic	Manipulatives, role plays
Richards (2001)	Printed material	Books, worksheets
	Nonprint material	Videos, computer software
	Both print and nonprint	Internet material
Graves (2000)	Pedagogically prepared	Textbooks
	Authentic	Written by native speakers for native speakers (e.g., newspapers)

of these roles at the same time. Tomlinson (2003a) provides a similar but slightly different description. He sees the roles of materials as being (a) *instructional*—informing learners about the language and providing classroom practice; (b) *experiential*—providing experiences with the language in use; (c) *elicitive*—stimulating language use; or (d) *exploratory*—helping learners make discoveries about language for themselves.

Regardless of their instructional purposes, language materials can take on a variety of forms. Table 2 lists some of the different ways that language materials have been described by various authors.

With this understanding of the characteristics, purposes, and features of language learning materials in general, the following section will discuss additional characteristics of materials, including their development and use, in language for specific purposes (LSP) contexts.

Materials for Specific Language Learning Purposes

The primary distinctive feature of LSP courses is that the content taught in the course and the teaching approach used are based on the specific needs of the learners for the particular context in which they are learning. These "needs" are determined for each course and program through a needs analysis, and the results of the needs analysis will have a direct influence on the language learning materials used for instruction.

As Tomlinson (2003b) has noted, "different types of learners need different types of materials . . . materials have to follow principles, criteria, and procedures which match the distinctive features of the target learners and the environments they are learning in" (p. 324). Barnard and Zemach (2003) argue that LSP/ESP (English for specific purposes) courses have much in common with courses targeting English for general purposes (EGP). They see EGP and ESP courses as being on two ends of a continuum, with "blurred boundaries" between them, and with ESP courses "more focused in their aims and mak[ing] use of a narrower range of topics" (p. 307). The example they provide is that a business English course is more specific than a general English course, a course on English for the travel industry is more specific than the business course, and courses on English for airline employees and English for airline engineers in turn are even more specific—although all the courses will still have much in common. It is easy to see, however, that a language course for airline engineers is going to have materials that are very different from the materials used for a general business English course because the language needs are more specific.

In addition to the degree of course specialization described above, Barnard and Zemach (2003) highlight seven additional variables that impact the design and use of LSP materials. These are

- type of institution (e.g., company program or university);
- location (e.g., ESL [English as a second language] or EFL [English as a foreign language] context);
- classroom setting (e.g., conference room or classroom);
- technology (e.g., computers, Internet access, blackboards);
- learner qualities (e.g., proficiency level);
- makeup of class (e.g., similar/different proficiency levels);
- teacher qualities (e.g., experience, fluency in students' first language [L1]).

All of these variables should be considered as part of the needs assessment when developing, selecting, and using materials in LSP contexts. Most important, though, are the language structures and purposes that are distinctive of the specific language context.

Identifying Distinct Features of Language Use for Specific Purposes

One of the key features of LSP is the recognition that language used for specific purposes, and in specific situations (Douglas, 2000), has structures and functions that are distinct, regular, and identifiable. Various research methods have been developed to identify these language features. The two most common are corpus-based text analysis and genre/move analysis. Corpus analysis allows for the study of large numbers of texts. When specialized corpora are compiled using the texts (including spoken discourse) common to a particular context (say, legal briefs), this allows a variety of analyses to be made, including the identification of key words and common structures. Genre analysis looks closely at how language in texts is used to serve specific rhetorical functions, as well as the kinds of vocabulary and language structures that are typically used to express those functions. For example, research articles in a variety of academic disciplines have been analyzed to determine the types of rhetorical "moves" that are typically used by proficient writers in these disciplines.

Challenges With LSP Materials

There are many challenges in selecting or developing materials to use for specific language purposes. One "flaw" (among many) noted by Skeldon (2008) that has been common in materials published to support the teaching of English for science and technology (EST) is that the topics covered in EST textbooks often are either "boringly familiar" or "bafflingly new" (pp. 60–1). The challenge is to identify topics that students need, want, and are ready to learn, and which take into account the knowledge and experiences they already have, while recognizing and developing their limited English skills. Similarly, we need to be careful that we do not interpret students' limited English skills as necessarily meaning their knowledge about their field, or their intelligence, is limited; L2 ability does not reflect intelligence or ability in the specific occupational, professional, or educational context. LSP materials need to be at both the appropriate language and intellectual levels for the students.

Another challenge with LSP materials has to do with "authenticity." Some have argued that language materials should be as authentic as possible; for example, students studying legal English should be reading actual law briefs and other legal texts. As Graves (2000) notes, however, "using authentic material is problematic in the L2 classroom because it is not constructed to contain only the aspects of language the learner has encountered or

learned up until that point and so may not be entirely accessible to the learner" (p. 156). Graves goes on to argue that pedagogically prepared material is often necessary to provide the "stepping stones" to understand and use authentic material in real-world contexts—the point of the LSP class, after all. Richards (2005) calls this the "myth of authenticity" (p. 11), in that authentic material is not always necessary or even realistic, and in some instances is a "burden for teachers" (Richards, 2001, p. 253).

One challenge for many LSP teachers is that they often are expected to deal with specialized areas of knowledge in which they have not been trained. For example, most teachers who teach medical or legal English are not themselves trained doctors or lawyers; this adds to the challenge of developing meaningful language materials that are both appropriate for the language level and relevant to the learning context. Good LSP teachers successfully address this challenge with a thorough needs assessment that includes the analysis of the language typically used in these contexts, as well as by involving content specialists (through cooperation, collaboration, or team teaching) in the design of language learning materials for the specific purposes.

Choosing and Developing Materials to Teach Language for Specific Purposes

Barnard and Zemach (2003, p. 316) offer a "recommended sequence" for the preparation of language learning materials for specific purposes, starting with the needs analysis. This sequence is outlined in Table 3.

Typically, having identified the context, student needs, and language expectations for the course, most teachers turn first to published textbooks and other materials (such as things on the Internet) to try to find something that will address the language needs that have been identified. Unfortunately, the more "specific" and targeted the language teaching context is, the less likely that there will be any published materials that are appropriate for the LSP class, especially compiled into one textbook, since textbook authors and publishers have to write material and activities designed for broad, general audiences (Sheldon, 1987; Bell & Gower, 1998). Consequently, as Hyland (2006) notes, "an effective [LSP] teacher needs to be able to evaluate, adapt, and produce suitable and effective materials" (p. 96). Options that teachers have when they want to adapt published materials for their particular teaching contexts include the following (see also Maley, 1998; Richards, 2001; Hyland, 2006):

Table 3 A recommended sequence for identifying and preparing materials

- Determine the needs and preferences of the students and institutions/corporation.
- Determine what sort of language contexts the course will focus on (e.g., lectures, business meetings).
- Decide how to present the language in the course (e.g., topic, function, situation, grammar).
- Determine what language skills and subskills to focus on, based on needs analysis.
- Decide whether the syllabus should have stand-alone lessons/units, or ones that build on each other.
- Based on the needs analysis, determine the types of activities that will be used in the course (e.g., individual, pair, group, whole class).
- Decide on material design.
- Prepare materials.
- Pilot the materials; collect and collate feedback.
- Revise the materials based on classroom experience and feedback.

- *deleting* material that is inappropriate, irrelevant, etc.;
- *adding* material or activities to better target the language expectations of the LSP context;
- *reducing or simplifying* material or activities to make them more appropriate or less difficult or to give them less emphasis;
- *modifying* materials or activities to make them more demanding or accessible to students, which can include
  - *extending* activities to emphasize the lesson focus;
  - *replacing* texts or activities with more suitable material;
  - *branching*—providing options to students for working through existing readings or activities;
  - *reorganizing* material to better fit teaching context or course goals.

Conclusion

Jones (1990) titled an article with the question, "ESP textbooks: Do they really exist?" His point was that materials appropriately targeted at meeting the specific needs of students in LSP contexts would not be marketable to a broader audience. Harwood (2005) more recently lamented that the "unsoundness of most [ESP] textbooks outweighs many, if not all, of the benefits textbooks can confer" (p. 158). Consequently, it is essential that LSP teachers be good material developers and adapters, able to provide materials that meet the specific needs of students. Dudley-Evans and St. John (1998) have expressed concern, however, about the ability of ESP teachers to develop appropriate language materials; they argue that "only a small proportion of good [ESP] teachers are also good designers of course materials" (p. 173). According to Dudley-Evans and St. John, ESP practitioners need to be able to do the following with materials:

1. select appropriately from what is available,
2. be creative with what is available,
3. modify activities to suit learners' needs, and
4. supplement by providing extra activities (and extra input). (1998, p. 173)

In short, while LSP teachers can and should draw on a wide variety of published materials, it is particularly essential that they—more than most other language teachers—know how to identify, develop, and adapt materials to address the specific language needs they have identified for their students, taking into account the principles and best practices that have been outlined in this entry.

SEE ALSO: Corpora in the Teaching of Language for Specific Purposes; Culture in Textbook Analysis and Evaluation; Language for Specific Purposes: Overview; Language for Specific Purposes Research Methods; Materials Development; Materials Development for Multilingual Education; Needs Analysis; Research Articles in English for Specific Purposes; Technology-Supported Materials for Language Teaching

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Materials Publication

H. PATRICIA BYRD AND CYNTHIA M. SCHUEMANN

Developing publication-worthy materials to meet student needs can launch a complementary career path for educators (Byrd, 1995). In many cases, teachers are initially motivated to experiment with materials development by creating handout supplements for published textbooks that guide much of the curricula in language classes. Then teachers often want to share their effective supplements with others. Google searches for almost any aspect of a language lesson result in overwhelming numbers of hits, especially for topics on English. The plethora of web-based resources is one reflection of the drive to share and "get published." Clearly, there is great appeal in having one's work used outside of an individual work setting. This entry explores ways to move beyond personal publication to professional publication. In addition to meeting student needs, another important motivation to publish is the creative pleasure of writing and producing a work for a larger audience. There is a balance between extrinsic and intrinsic motivation to write for publication. Deadlines, collaborators, and the careful eyes of editors, reviewers, and users, all influence the formal process, as well as the desire to share a talent and knowledge base. And, as authors become more seasoned, they realize that a third motivating factor is that they also seek to contribute works that will truly influence the teaching and beliefs of a community of practitioners. Sometimes a sense of legacy can be derived from publishing. Here we will consider how these three motivations—meeting student needs, being creative, and contributing to the field—influence materials writers. We will analyze differences between materials development and materials publication, respond to some common myths, and provide advice for aspiring materials writers.

Writing for Publication Compared to Writing for Individual Classes

Writing materials for use in classes has many features in common with writing materials for publication, as well as important differences. Similarities are tied to the goal of helping students learn a new language effectively, while differences are tied to an expanded audience including fellow teachers, the corporate nature of publication, and inherent project collaboration. The strongest link between classroom-based materials creation and published textbooks is that both are based on knowledge and skills about language instruction and materials development. While writing materials for their own students is the beginning place for most published writers, the two types of materials development are substantially different in motive and practice. Writing a textbook entails much more than collecting sets of activities that have been used successfully. A textbook must be a coherent whole, a set of information and activities that can be understood and used by others without the writer's presence. The creation of this coherent whole is one of the most difficult aspects of textbook writing and often is the result of interactions with the many different people involved in the production.

A major challenge is having a clear sense of the broader audience. Studying other successful textbooks and talking with experienced authors and publishers can help clarify

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what kinds of information and activities are valued. Ansary and Babaii (2002) reviewed a selection of published textbook evaluation checklists and text review articles to compile lists of systematic indicators of good ESL/EFL textbooks. For students, the following characteristics were frequently identified: (a) learning in meaningful pieces (unit by unit), (b) visuals, (c) reviews, (d) companion workbooks, (e) plentiful and varied exercises or activities for the classroom and at home with sample items and clear instructions, (f) periodic tests, and (g) companion media materials. A prospective author needs to consider the whole "package" when envisioning a writing project.

For teachers, Ansary and Babaii (2002) noted additional characteristics as important: (a) clear purpose and objectives for the complete textbook and each unit or chapter, (b) appropriate level and coverage, (c) logical organization and sequencing lending to syllabus development, (d) guidebooks with advice and answer keys, and (f) supplements. In terms of supplements, users will want test packages, handout/presentation templates, and electronic media/internet-based activities. Clearly, teachers and program heads are a primary audience to consider when writing for publication, as they are the ones who evaluate and select textbooks. This is a critical difference from authoring materials for personal classrooms where individual sets of students are the primary audience.

Deepening understanding of the teacher audience is not an easy task, or at least not a task that will be achieved quickly. Preferences can be learned by visiting colleagues' classes and talking about needs for materials, by attending conference sessions and listening to ideas to discover what teachers find helpful from materials, and by participating in activities planned by associations of professional materials writers such as TESOL's Materials Writers Interest Section. Further, thoughtful reading of the most successful textbooks in areas of personal interest can deepen one's professional knowledge base of publications. While prospective authors may think they can do better, they need to be open to learning from successful books since there is something there that other teachers value.

Once a book proposal has evolved to a prospectus and signed contract, the corporate nature of textbook publication often comes as a shock to new writers. Many people have their hands on the product, including various types of editors and reviewers. A sign of this collaborative aspect of materials publication is the ownership of the copyright, in most instances the property of the publisher rather than of the writer. While taking constructive criticism can be an emotional challenge, accepting feedback from editors and reviewers generally leads to stronger materials. Writers learn where their ideas have not been understood and need clarification or expansion.

In the current market, textbooks more often are part of larger series; authors might be asked to write level 1 in a four-level composition series or level 3 in a four-level integrated skills series. The author must understand and accept a larger vision of the published materials, a vision that comes from series editors and/or from the publisher. Careful study of the prospectus and ruthless honesty with oneself about the plans for the series are necessary for a writer to avoid being caught up in a process that becomes difficult if not impossible because of fundamental belief differences about language teaching/learning or the characteristics of materials.

Myths About Materials Publication

A selected group of well-received ESL/EFL textbook writers recently provided information about what they have learned about publication over the years (K. Folse, L. Grant, M. L. McCloskey, J. Reid, personal communication, October 15, 2010). These discussions resulted in a short list of what we call "myths," that cluster around two major topics: (a) what the work really involves, and (b) what can happen in relationships with publishers.

Myths about the work include: it won't take much time, you'll set your own hours, once you've turned in the final copy-edited draft your work is over and the publisher's begins, your work will be richly rewarded. In truth, writing a textbook is a multistage project that requires massive amounts of time, and many different people will expect to have an author's attention (and time) at various points along the way, such as when drafts are due, reviews have to be responded to, and promotional meetings at conferences must be prepared for and attended. While some authors do make quite large amounts of money, many find rewards in the satisfactions that come from publishing teaching materials that they feel proud of, even when sales may not be as strong or enduring as hoped for.

Myths about publishers include: you'll have the same wonderful editor throughout the whole project, the copy editor will focus on really important problems, the publisher does all the work required to promote your book, the royalties department will always calculate your royalties accurately. While there are knowledgeable and effective editors who remain with projects from beginning to end, the publishing world is often rocked by changes in policy and staff, and by the sale of companies resulting in shifting product ownership from one publisher to another. Authors have to be prepared to make new relationships and to re-explain their project to editors who are willing to be helpful but learning new jobs on the fly. Unfortunately, this lack of stability can lead to projects getting lost or withdrawn. A contract does not mean that the publisher must publish a work but only that the publisher has defined both what would happen if the book does get published and also the guidelines that govern refusal to publish a submitted manuscript. While problems can and do occur with publishers, most authors experience working with highly professional and helpful editors whose advice and guidance greatly improves their work. Finally, publishers expect writers to expend time and energy for numerous tasks other than writing and revising the materials. Much of the promotion of textbooks occurs at conferences where authors can help sales by participating in activities organized by publishers.

Advice on Becoming a Published Materials Writer

While writing a whole textbook is often what comes to mind when thinking about writing materials for publication, writing a whole book is not necessarily a good place to begin for new writers. It is important to first build knowledge about materials, publication, and publishers. The following list is based on personal experience and advice from others who have worked with major publishers in the USA. The basic idea behind these suggestions is that learning more about materials and publication through networking can inform one's own work and build a good reputation with potential publishers and colleagues.

Recommendations	Results/Caveats
1. Attend conference sessions on materials, especially publishers' sessions on new textbooks and series.	Meet published writers and learn more about their work.
2. Become active in TESOL's Materials Writers Interest Section or a comparable group.	Join a supportive community with influential ties and advice for novice writers, including listserve discussions of timely issues.

3. Write professional reviews by contacting publishers seeking commentary on proposed new books, new editions, or early drafts of book chapters.	Learn how to give insightful and constructive feedback. Notice what publishers are looking for and how manuscripts evolve. Build a reputation as an authority who can meet deadlines.
4. Present conference sessions based on classroom teaching materials and attend similar sessions by other experienced language teachers.	Keep notes about responses to presentations and areas where fellow teachers might be helped by new materials. Save time for questions and try to meet afterwards with interested teachers who attend.
5. Find out about the rules on using student work in publications.	Plan ahead to have the legal right to use any student samples.
6. Study potential publishers: (a) Analyze conference book displays and talk with representatives. (b) Find out special interests of different companies to discover which ones best match personal strengths. (c) Check publishers' websites for information for potential authors.	Learn what publishers require from potential authors to submit a proposal to the appropriate acquisitions' editor in the format required.
7. Read up on contracts.	A useful resource about contracts is the TESOL Material Writers Interest Section publication on contracts and its addendum (TESOL, 2005, 2010).

Finally, for writers to build knowledge of how teachers actually employ and evaluate textbooks a range of topics should be explored, including these three:

- Advice to teachers on selecting and using textbooks (Grant, 1987; Skierso, 1991; Byrd, 1995, 2001; Byrd & Schuemann, in press);
- Features recommended for language teaching activities (Mishan, 2004; Folse, 2006);
- The place of materials in the context of language teaching methodology and the characteristics of effective materials (McDonough & Shaw, 2003; Richards, 2001, 2006; Tomlinson, 1998, 2003).

We conclude with these last words for prospective authors. Publishing materials for language learners can enhance your role as an educator and broaden your knowledge in a multitude of ways. You learn about what is happening in language classes other than your own as you develop new relationships with colleagues, authors, and publishers. And, if you are lucky, your materials may have substantial impact on the field.

SEE ALSO: Authenticity in the Language Teaching Curriculum; Culture in Textbook Analysis and Evaluation; Assessment and Testing: Overview; Materials Development; Technology-Supported Materials for Language Teaching

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May, Stephen

TERESA L. MCCARTY

The son of a community worker and an Anglican clergyman, Stephen Andrew May grew up in Canterbury, on New Zealand's South Island, in what he describes as "a resolutely monocultural" and "faux colonial" environment (May, 2009). His father's profession granted him discounted tuition at an elite boy's secondary school modeled after the British public school tradition, Christ's College, where there was at that time (1970s) not only an absence of knowledge about Indigenous/Māori peoples, there was no teaching of New Zealand history at all. Importantly, this experience sharpened what would become his well-known critical perspective on language, culture, and education, fueled by the "unquestioned acceptance of the students' and their families' elite social class position and related cultural capital" (May, 2009).

Understanding—and interrupting—conjoined linguistic, social class, and racial inequalities have been the driving forces behind Stephen May's work as an educator and academic. Taking two bachelor's degrees—one in 1983 in English and linguistics from the University of Auckland, and a second with honors in linguistics from Victoria University in 1985—he went on to complete a teacher training degree in 1986 from Christchurch College of Education. One of the first students in his high school to go into the teaching profession, he taught English as a second language in Bangladesh, later taking a teaching position at a multiethnic working-class high school in Wellington, New Zealand. There, under the mentorship of Head of Māori studies John Manuel, May began learning the Māori language, laying the foundation for his career-long dedication to Māori language education and, more generally, to minority and Indigenous language rights. Frustrated by the persistent achievement disparities he observed among his "clearly able" Indigenous students (May, 2009), he enrolled in an MEd at Massey University in Palmerston North, hoping to use his ongoing education to make a difference in his students' life trajectories. There, under the supervision of David Corson, he completed a thesis on the multilingual-multicultural (English-Māori-Samoan) Richmond Road School in Auckland. This work convinced May that multicultural education *can* be a form of emancipatory praxis—an argument he developed in the book that grew out of his original Richmond Road study, *Making Multicultural Education Work* (May, 1994). In this book we see the beginnings of a prominent strand in his scholarly corpus: an insistence that theory be directed toward practice and that practice be theoretically informed. We also see a compelling demonstration of what Charles Frake (2007, p. x) calls "fine description"—ethnography that is "meticulous in construction, but . . . also grand in design." In May's case, the "grandness" comes from the tight coupling of the micro with the macro—the details of curriculum, pedagogy, and individual agency juxtaposed with the larger power regimes of which they are part.

Earning a PhD in sociology from the University of Bristol, May expanded his interdisciplinary expertise and the scope of his sociolinguistic inquiry, completing his doctoral thesis on Welsh language rights and revitalization (May, 1997). It was as a student and lecturer at Bristol that he deepened his focus on the politics of language education: "I learnt early," he states, "that discussions of language education are never just about language, or even education—they are always imbricated with the wider politics of representation, power, and inclusion/exclusion" (May, 2009). Influenced by Pierre Bourdieu's (1977)

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construct of habitus (possibilities and constraints), political theorist Will Kymlicka's (1989, 1999) notion of differential minority rights, Brian Bullivant's (1981) concept of the "pluralist dilemma" (civism versus pluralism), and Corson's (1990, 1999) approach to language policy across the curriculum, May went on to publish his highly acclaimed treatise, *Language and Minority Rights*. A book of breathtaking conceptual and geographical scope—spanning language planning and policy (LPP) cases from Québec to Scandinavia, Catalonia, Wales, Australia, the United States, and New Zealand—*Language and Minority Rights* redefined the scholarly LPP landscape, arguing that while language is a contingent marker of ethnic identity it is nonetheless one of the sharpest instruments of the state for demarcating the boundaries of civic inclusion for people as *groups*. Here, May brings together theoretical insights and empirical data from education, sociology, political science, applied linguistics, and law to "unravel the complex dynamics that link nationalism, language, and identity" as they manifest in individual and group rights (May, 2001, p. 12). In the end, he calls for reimagining the nation-state to build on its inherent cultural and linguistic diversity, acknowledging the sociohistorical positioning of groups in society and according them self-determination in their identity construction and political participation. Education, he adds, is a key public space for realizing these liberatory outcomes. Recently reissued by Routledge (May, 2008), this widely cited book won the 2008 American Library Association Choice Outstanding Academic Title Award. The book is also the basis for several influential papers, including his theoretical treatment of language rights designed to "move the debate forward" (May, 2003, 2005a). A fully revised second edition is to be published in 2012.

As powerful and provocative as his theoretical work has been, May never strays far from the policy-practice interface and the transformational possibilities that drew him to academe in the first place. "I am fascinated by ideas," he reflects, "but not simply for their own sake. Much of my work has specific sociopolitical and strategic policy implications" (personal communication, November 4, 2010). In this regard he has been a clear-eyed advocate for well-implemented bilingual/immersion education programs, particularly for Māori and other Indigenous peoples. He is adamant that such programs be controlled by those they are intended to serve, noting the linked pedagogical and political potential of these programs to "change the rules" that have historically excluded Indigenous knowledges and parent-community participation in schools (May, 1998a, p. 292). In several guest-edited journals, he brings together scholars and practitioners representing multiple disciplines, Indigenous communities, and sites of practice to lay out the parameters of pedagogically sound Indigenous/minority education. In *Indigenous Community-Based Education*, May and his contributors provide comparative examples of grass roots education models in Canada, New Zealand, Norway, Australia, and the Americas (May, 1998b, 1999). In a 2003 theme issue of *Comparative Education*, May and coeditor Sheila Aikman take up "new possibilities and ongoing constraints" in Indigenous education, providing comparative cases from the United States, Amazonia, Sámiland, Central America, New Zealand, Australia, and India (May & Aikman, 2003). And in a 2005 theme issue of the *International Journal of Bilingual Education and Bilingualism*, May focuses squarely on Māori, outlining "key issues and challenges" in Māori-medium education and situating the analysis in the international literature on bilingual, immersion, and heritage language education (May, 2005b; May & Hill, 2005). Building on his influential report with Richard Hill and Sarah-Jane Tiakiwai for the New Zealand Ministry of Education (May, Hill, & Tiakiwai, 2004), this work shows conclusively the educational superiority of immersion programs in which 81 to 100% of instruction is provided in the Indigenous language.

This work lays the foundation for May's more recent research with Richard Hill, Cath Rau, and others on the academic benefits of well-implemented immersion programs. As May and Hill note in a recent ethnographic study, while Māori-medium education is

rightfully recognized as a model of good practice in language revitalization, there has been a dearth of empirical research on the educational effectiveness of these programs (Rau, 2005; May & Hill, 2008; Hill & May, 2011). Taking up the critical but under-researched issue of the transition from Māori to English literacy development, Hill and May show how educators at Rakaumanga, one of the oldest Māori-medium schools, have reshaped the school language policy to promote students' biliteracy development simultaneously with Māori language and culture reclamation.

This research seems to come full circle with May's early ethnography at Richmond Road showing that multicultural-multilingual education *works*, both as sound pedagogy and as a site of praxis. With more than a dozen books and 80 journal articles and book chapters to his credit, including a volume of the field-defining *Encyclopedia of Language and Education* (May & Hornberger, 2008), this theme rings loudly and clearly throughout May's work. In his most recent edited volume, with Christine Sleeter, *Critical Multiculturalism: Theory and Praxis*, this corpus is extended to considerations of critical multiculturalism for teachers in language arts, mathematics, humanities, and the physical and social sciences (May & Sleeter, 2010).

May is currently professor of education in the School of Critical Studies in Education, Faculty of Education, University of Auckland, and senior research fellow at the Centre for the Study of Ethnicity and Citizenship, University of Bristol. The convener of the internationally attended (and praised) Language, Education, and Diversity (LED) Conference series, May is founding editor of *Ethnicities* (Sage), associate editor of *Language Policy* (Springer), and a member of the editorial boards of six international scholarly journals. Having had the opportunity to collaborate with him on several projects, including his 2008 Fulbright Fellowship to Arizona State University, this author asked him where he saw his work and the field of applied linguistics heading in the future. He replied that interdisciplinarity is central to addressing questions of language, rights, and (in)equality, and to conveying the value of additive bilingualism in the wider public debate. "There is still an enormous amount of work to be done," he added, "and I remain committed to addressing these issues in as many academic, policy, and public forums as possible—almost as a public intellectual, if you like" (personal communication, November 4, 2010). Driven by a commitment to social justice, and ever respectful of the peoples with whom he works, May is indeed the rare public intellectual. On that prospect, we can all look forward to his work yet to come.

SEE ALSO: Immersion Education; Indigenous Languages in the 21st Century; Language Rights in Language Policy and Planning; Minority Languages in Education; Multilingualism and Language Rights; Reviving Māori

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McCarty, Teresa L.

BRYAN MCKINLEY JONES BRAYBOY AND ERIN NOLAN

Born and raised in Columbus, Ohio, Teresa McCarty is the daughter of a high school English teacher and a homemaker and office manager, and the great-granddaughter of Irish immigrants. Known internationally for her research on indigenous education, minority language rights, and language planning and policy, she has worked with indigenous and minoritized communities throughout the world. By her own account, this work began shortly after she completed a bachelor's degree in anthropology at The Ohio State University, when, as a graduate student at Arizona State University (ASU), she was hired by the Fort McDowell Yavapai-Apache community to serve as their liaison to the off-reservation public school attended by the community's children. She vividly recalls her first day at the school. It was a cold January morning. Searching for the Native American program office, she found instead a group of native children huddled with their tutors—extended family members—on a stone bench in the breezeway. Although the district was receiving federal monies to support native students' academic development, their tutors lacked basic materials and office space, and instruction was occurring outdoors. These learning conditions induced a visceral reaction; it was, as she noted to us, a moment of significance that brought her face-to-face with the ways in which schools reflect and structure racial and social inequality. Although her work has broadened greatly in its geographical and theoretical scope, it remains solidly anchored in practice, with the goal of "driving a stake through the concrete realities of institutionalized racism and educational inequities" for minoritized children and youth (personal communication, December 30, 2010).

From 1980 to 1983, in the midst of her doctoral training, McCarty joined the staff of the Rough Rock Demonstration School, the first school to be controlled by native Americans. There, she studied the Navajo language and worked with Navajo educators to create a K-8 bilingual-bicultural curriculum. Her dissertation, an ethnographic study of bilingual-bicultural education in this Navajo community, received an outstanding dissertation citation from the National Association for Bilingual Education. Her early publications based on this study wrestle with the seemingly intractable dilemma of a neocolonial federal bureaucracy that both "enables and constrains genuine control over education by Native American communities" (McCarty, 1989, p. 484). This, and her ongoing applied and ethnographic work at Rough Rock, laid the foundation for her (2002) book, *A Place to be Navajo: Rough Rock and the Struggle for Self-Determination in Indigenous Schooling*. Described by reviewers as a masterful and principled model of outsider–insider collaboration, the Rough Rock story illuminates the "two-faces" of indigenous self-determination—the challenges and possibilities in remaking schools into a "place to be indigenous" on indigenous terms.

Earning a PhD in social-cultural anthropology from ASU in 1984, McCarty served with ASU's National Indian Bilingual Center and the Indian Education Unit of the Arizona Department of Education. In both positions, she worked locally and nationally with educators who were striving to use native children's languages and cultures as resources in school. She later joined the faculty of the American Indian Language Development Institute (AILDI), then a small summer program to support native parents and educators in developing teaching materials in their languages. Hired by the University of Arizona (UA) as an assistant professor of language, reading, and culture in 1989, McCarty worked with

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O'odham linguist Ofelia Zepeda to secure a permanent home for AILDI there. For the next 15 years she and Zepeda codirected AILDI, helping to draft the 1990/2 federal Native American Languages Act as part of that work. Now an international program in indigenous linguistics and language pedagogy, AILDI has been recognized by the US Department of Education as one of ten outstanding programs for minority teacher preparation. The AILDI story is told in McCarty's publications with Zepeda and others (e.g., McCarty, Yamamoto, Watahomigie, & Zepeda, 2001), but perhaps most importantly in its impacts: populating indigenous-serving schools with native educators and infusing those schools with linguistically and culturally relevant curricula.

Over the course of her career, McCarty has served as department head, dean, principal investigator on large-scale federal grants, and codirector (with Bryan Brayboy) of the Center for Indian Education, a position she currently holds. She has been president of the Council on Anthropology and Education, editor of *Anthropology and Education Quarterly*, associate editor of *Language Policy* and *American Educational Research Journal*, and coeditor (with Brayboy) of the *Journal of American Indian Education*. She has been honored with awards for outstanding mentoring and research and with fellowships from the W. K. Kellogg Foundation and the Salzburg Seminar, and she has been appointed a Fellow of the American Educational Research Association and the Society for Applied Anthropology. When asked, however, she will say that the supreme joys of her career are her work with students (26 doctoral students completed and 22 in progress as we write) and with indigenous educators and communities. This is a personal philosophy of "paying it forward" that resounds throughout her work.

McCarty has published 13 books and edited volumes (with two forthcoming), 34 refereed journal articles, 49 refereed chapters, and many invited pieces of significance. Her award-winning book with K. Tsianina Lomawaima, *To Remain an Indian* (2006), broke new theoretical ground, offering an explanatory alternative to conventional analyses that liken policy shifts to the swings of a pendulum. As Lomawaima and McCarty point out, the pendulum model "describes, but does not explain, change over time" (2006, p. 6). Instead, they offer a theoretical model of the "safety zone" that links shifts in Indian policy, including language policy, to ongoing contests over cultural difference and its perceived threat or benefit to dominant national interests (2006, p. 6).

Often writing with indigenous colleagues, McCarty's other publications have addressed the multifarious role of indigenous literacies in endangered language contexts (McCarty & Zepeda, 1995; Watahomigie & McCarty, 1996; McCarty & Dick, 2003; McCarty, 2005), curriculum development for endangered languages (Coronel-Molina & McCarty, 2011), indigenous teachers as change agents (Lipka & McCarty, 1994; Begay et al., 1995), the hegemony of high-stakes testing (McCarty, 2008, 2009), indigenous knowledges and social justice pedagogy (Brayboy & McCarty, 2010), and indigenous youth as agents of language policy praxis (McCarty & Wyman, 2009). Much of this work demonstrates the fallacy of either-or, "mother tongue versus other tongue" paradigms and the academic superiority of well-implemented bi-/multilingual and heritage-language immersion programs (e.g., McCarty, 2003). Seeking to engage public policy in ways that foster social justice, she has also written policy briefs for the US Department of Education, Queensland University of Technology's Indigenous Leadership Institute, and ASU's Education Policy Studies Laboratory.

McCarty's most recent work, exemplified in her (2011) edited volume, *Ethnography and Language Policy*, calls into question the very concept of policy itself. As Blommaert (in press) writes in a review essay, McCarty and her contributors are not simply "adding" ethnography to the study of language policy, but rather reconceiving policy from a critical sociocultural and ethnographic perspective. The starting point in this framework is the

notion of language policy "as processual, dynamic, and in motion . . . the complex of practices, ideologies, attitudes, and formal and informal mechanisms that influence people's language choices in profound and pervasive everyday ways" (McCarty, 2011, pp. xiii, 2). This approach interrogates policy as de facto and de jure, covert and overt, bottom-up and top-down. It also illuminates ethnography's emancipatory potential to build "a world culture that is a moral community" (Hymes, 1974, p. 54, cited in McCarty, 2011, p. 16).

Teresa McCarty's numerous books, articles, and policy briefs serve as testimony to her efforts to improve education for indigenous and minoritized youth and to address the need for LPP in those transformations. Equally important from her perspective, she has lived the LPP process, advancing official policies to promote indigenous/minority language rights and engaging in language planning "on the ground" with indigenous communities and schools. Her work shows the ways that minoritized communities might push back against linguicism and institutionalized racism. Her current projects include working closely with the Fort Mojave Tribe of California to save treasured bird songs, a key to their language and culture, and documenting ethnographically the promising practices in a trilingual Navajo-Spanish-English school. While she is a prolific and influential policy scholar, actively contributing to and even redefining the LPP field, she is always guided by the pressing needs of communities who are often forsaken by the larger society. In short, Teresa McCarty is a warrior for language rights and indigenous/minority community self-determination.

In 2004, McCarty returned to the place where her career began—ASU—to accept a professorship in education policy studies endowed by Richard and Alice Wiley Snell. In attempting to address her career over time, it is evident that McCarty initially became interested in the interaction of federal policy with the day-to-day realities of indigenous children in school. As the contexts for this work have evolved, she has increasingly engaged, as a scholar, educator, and activist, in processes of language maintenance and revitalization. In recognition of this corpus of work, McCarty was awarded the 2010 George and Louise Spindler Award for distinguished and inspirational scholarly contributions to the field of educational anthropology. Presented at the annual meeting of the American Anthropological Association by the Council of Anthropology and Education, this is the most prestigious award in the field of educational anthropology. We can think of no one more deserving, and we anticipate much more "distinguished and inspirational" work to come.

SEE ALSO: Empowerment and Bilingual Education; Endangered Languages; Indigenous Languages in the 21st Century; Linguistic Human Rights; Literacy and Language Revitalization; Minority Languages in Education; Mother-Tongue-Medium Education; Multilingual Education and Language Awareness; Multilingual Education in North America; Teaching Indigenous Languages

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McClelland, James L.

MARC F. JOANISSE

James L. McClelland (born on December 1, 1948 in Cambridge, Massachussetts, USA) is best known as a principal developer of the parallel distributed processing (PDP) framework of cognitive science. This paradigm has been highly influential in the development of many current theories of mental processes and representation. PDP emerged in the 1980s as a response to traditional symbolicist approaches to mental representations and processes. This earlier framework explained cognitive processes as the result of discrete symbols and rules that operate on them. PDP or "connectionism" was a major paradigm shift in this respect, providing a framework for understanding mental processes in a brain-inspired way. In conjunction with Geoffrey Hinton and the PDP research group, McClelland proposed a set of tools by which mental representations could be modeled using simple, neuron-like processing units. Mental states are modeled as patterns of activations across large sets of units. These groups of units are themselves arranged into large networks via parallel sets of weighted connections. These networks can then be used to transform patterns of activation in a way that simulates mental processes. Finally, learning occurs through the modification of connection weights, as a result of experience.

In 1986, McClelland, Rumelhart, and the PDP Research Group published the two *Parallel Distributed Processing* volumes, which outlined both the theoretical and computational foundations of the approach, along with a set of models that captured the biological foundations of a wide range of cognitive phenomena in the areas of learning, perception, thinking, memory, and language. The two volumes were a catalyst to the development of a wide range of additional models, and ultimately inspired a radical shift in experimental and theoretical approaches to understanding the relationship between the mind and brain.

McClelland's work has included the application of the PDP approach to a wide range of language phenomena. He attended graduate school at the University of Pennsylvania, where he obtained a PhD in 1975. His early research examined word superiority effect in visual word recognition, specifically the finding that readers can better identify letters in the context of words compared to when they are presented individually or in nonwords (Johnston & McClelland, 1974). This finding led him to develop, with David Rumelhart, a seminal model that specified in a computationally rigorous way how the visual system recognizes words. In the model, basic visual features are used to identify letters, which are in turn used to identify individual words (Rumelhart & McClelland, 1982). The model includes some desirable characteristics including fault-tolerance and the concept of recognition via the activation of discrete processing units.

In 1989, a collaboration with Mark Seidenberg led to the development of a new reading model that applied similar principles to a broader set of phenomena (Seidenberg & McClelland, 1989). The model simulates reading via the activation of units that code a word's orthography, which are in turn used to activate a word's corresponding phonological and semantic representations. It takes the radical view that lexical (word-specific) knowledge is not separate from letters, sound and meaning, but instead is an *emergent property* of how humans encode these three types of knowledge. The model has been highly influential in reading research, and has subsequently been applied to theories of reading development in children as well as for theories of acquired and developmental dyslexia (Plaut, McClelland, Seidenberg, & Patterson, 1996; Harm & Seidenberg, 1999).

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In conjunction with Jeffrey Elman, McClelland also proposed the TRACE model of speech perception (McClelland & Elman, 1986). This model simulates auditory word recognition via the perception of subphonemic features that subsequently activate phoneme- and word-level information. A central feature of this model is the inclusion of top-down activity to capture the influence of prior knowledge in word recognition. This differs from earlier models of speech recognition that proposed a unidirectional process in which auditory information was matched to phoneme- and word-level information in a purely sequential, bottom-up fashion (Marslen-Wilson, 1984). In contrast, TRACE simulates word recognition as a dynamical process in which perceptual knowledge and prior experience are integrated over time. It continues to be an influential model of speech perception in the psycholinguistic literature (Allopenna, Magnuson, & Tanenhaus, 1998).

In the 1980s, McClelland also collaborated with David Rumelhart on a model of English past tense (Rumelhart & McClelland, 1986); this model was to become what is perhaps the most controversial contribution of the PDP framework to language research. The model learns both regular and irregular past tense forms of English verbs, within a single mechanism. This was a radical departure from the approach taken by theoretical linguistics at the time, which sought to capture rule-like processes in language using deterministic rules, but which had much less to say about irregular cases that defy this characterization. The result has been a long-standing debate between the single-mechanism PDP view, and the ongoing rule-based view that proposes two mechanisms: one for rules and one for exceptions (for reviews of both perspectives, see McClelland & Patterson, 2002, and Pinker & Ullman, 2002).

More recently, McClelland's work has focused on developing models of learning and memory that are highly neurally plausible. A major innovation of the original PDP volumes was the development of the backpropagation algorithm that is used to train neural networks (Rumelhart, Hinton, & Williams, 1986). A drawback of this technique is its implausibility with respect to learning in actual neural systems. McClelland, McNaughton, and O'Reilly (1995) have proposed a connectionist model of memory that is neurally plausible and yields behavioral patterns consistent with intact memory formation, and patterns of selective impairment in amnesic patients.

Academic Honors

McClelland is currently the Chair of Psychology at Stanford University, and the founding Director of the Center for Mind, Brain, and Computation. Prior to 2006, he was Professor in Psychology at Carnegie Mellon University where he was also the founding codirector of the Center for the Neural Basis of Cognition.

He is a member of the National Academy of Sciences and the American Philosophical Society, and is also a fellow of the American Association for the Advancement of Science. He is a recipient of the William James Fellow Award from the Association for Psychological Science, the Howard Crosby Warren Medal from the Society of Experimental Psychologists, the Distinguished Scientific Contribution Award from the American Psychological Association, the Barlett lectureship from the Experimental Psychological Society, the Grawemeyer Award from the University of Louisville, the IEEE Neural Networks Pioneer Award, and the University of Turin Mind and Brain Prize.

He has served as associate editor or editor for *Cognitive Science*, *Neural Computation*, *Hippocampus*, *Neurocomputing*, and *Proceedings of the National Academy of Sciences*, as the president of the Cognitive Science Society and the Federation of Associations in Behavioral and Brain Sciences.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Competition Model; Connectionism; Emergentism

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McKay, Sandra Lee

NANCY H. HORNBERGER

Sandra Lee McKay (1945–), professor emeritus at San Francisco State University and currently visiting professor of applied linguistics at Hawai'i Pacific University in Honolulu, has led and mentored in the field of language teaching internationally for more than 40 years. I first encountered Sandy's work in her groundbreaking 1988 volume *Language Diversity: Problem or Resource?* (coedited with Sau-ling Wong) and, at about the same time, in a short comparative, reflective piece she wrote for *TESOL Newsletter* based on her English-language teaching in the Philippines, USA, and South Africa (1989). Both of these bore Sandy's trademark clarity and field-shaping conceptual framing and became lasting resources for me in my own teaching and research. It was some years later that I first met Sandy, when she invited me to coedit *Sociolinguistics and Language Teaching* (1996), and we sat down over lunch at a conference to brainstorm the overall shape of the volume. Shortly after that, as editor of *TESOL Quarterly*, she also invited me to coedit, with Thomas Ricento, a special issue on *Language Planning and Policy and the English Language Teaching Profession* (1996). In both cases, working with Sandy to bring these volumes to fruition was easy, efficient, encouraging, and illuminating, thanks to her mastery of the applied linguistics field, her incisive and critical eye for originality, and, above all, her kind and caring approach to her fellow human beings.

I tell this brief personal story because I know from others that this kind of generous mentoring and support of colleagues is typical of Sandy, and has been throughout her long and prolific career. That career began with her 1967 BS in English and speech education, 1969 MA in American studies, and 1971 PhD in applied linguistics, all from the University of Minnesota, which in turn recognized their distinguished alumna with their Outstanding Achievement Award in 2004. Professor McKay began teaching immediately upon completing her BS degree and has taught ever since—first as a junior high school teacher in Minnesota, then as a remedial English teacher while at the University of Minnesota, after which she spent a year teaching at San Carlos University in Guatemala. Returning to the USA, she taught EFL/ESL at Georgetown University, Northern Virginia Community College, and Stanford University, while simultaneously completing postdoctoral studies in sociolinguistics and linguistics. She assumed her position at San Francisco State University (SFSU) in 1976, where she taught in the department of English for the next three decades. Recipient of a series of research grants at SFSU throughout her career there, she has also participated in research grants in South Africa (1999) and Singapore (2001–4). She is currently project manager on a US State Department English language materials development project and English language educators summer institute in Hawaii.

Indefatigable international lecturer, teacher, and English language specialist, McKay's initial visit to Guatemala in 1972–3 as a Latin American teaching fellow under the Fletcher School of Law and Diplomacy was only the first of several to Latin America, including Fulbright teaching and research fellowships to Uruguay in 1987 and to Chile in 2000. Her international involvements soon multiplied to every part of the world: a Fulbright to Hong Kong in 1985 was followed by USIA (US Information Agency) English teacher-training grants to the Philippines in 1988, Thailand in 1989, Thailand and Laos in 2001, and Malaysia and Singapore in 2008. USIA-sponsored English teacher-training work took

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her also to South Africa both before and after the end of apartheid—in 1987, 1988, and 1997; and to Hungary (1986), Morocco (1990–1), the USSR (1991), and Latvia (1995).

In addition to her long-time teaching at SFSU, Professor McKay has regularly lectured at Temple University in Japan since 1990, offering courses on ELT (English language teaching) methods, sociolinguistics, and research theory and method. She has also served as guest lecturer at the Central Institute of English and Foreign Languages in Hyderabad, India in 1998, and at the Southeast Asian Ministers of Education Organization (SEAMEO) Regional Language Centre in Singapore in 1999, 2000, and 2001; and as consultant and adviser in the English Language and Literature Group at Singapore's National Institute of Education. She has been a frequent invited plenary speaker at international conferences in Japan, Korea, Laos, Thailand, Singapore, and China over the past two decades.

Author/editor of more than 15 volumes and 50 articles and chapters, McKay has made strong and lasting book-length contributions across the several intersecting areas of her research and practice in language teaching, especially in the fields of English as an international language (1992, 2002; with Bokhorst-Heng, 2008); teaching second language writing (1983, 1984, 1986); second language classroom research (2006); and sociolinguistics, multilingualism, and language planning (with Hornberger, 1996, 2010; with Wong 1988b, 2000). *Sociolinguistics and Language Teaching* (1996) has sold over 13,000 copies worldwide and has appeared in Chinese and South Asian editions and in Greek translation. McKay's coauthored 2001 article with Keith Chick in *Southern African Linguistics and Applied Language Studies* received the Thomas Pringle Award for outstanding educational research in South Africa, and her *Teaching English as an International Language* (2002) won the Ben Warren International Book Award.

The reach of McKay's writings is great, in both scope of vision and impact on the field of applied linguistics and especially English language teaching. At the core of her enduring contribution is her unshakable conviction that English language learners, whoever and wherever they may be, embody tremendous resources of their own in language, literacy, culture, and identity, resources that can and must be tapped in their learning and prized by the wider societies of which they are a part. Whether editing a volume on language minorities in the USA (1988, 2000 with Wong) or on sociolinguistics and language teaching (1996, 2010 with Hornberger), authoring a piece on second language learning among Chinese adolescent immigrants in the USA (1996 with Wong) or the positioning of multiethnic learners in post-apartheid South African schools in Durban (2001 with Chick), reflecting on the policy and politics of multilingualism in the USA (1988 with Wong; 1997) or internationally (1990 with Freedman), or writing about L2 composition ideology (1993) or the roles of culture and pragmatics in EIL (English as an international language) teaching (2003, 2005), the message of valuing multilingualism, multiculturalism, multiple discourses, and multiple identities rings through loud and clear in all her writing. This same conviction underlies Sandy McKay's mentoring and collegial interactions around the world. It is difficult to say, and pointless to conjecture, whether McKay's enduring, international influence on the field of applied linguistics comes mainly through her clairvoyant writings or through the hundreds she has personally taught and mentored over the years. Her lasting contribution is through both, and resoundingly so.

SEE ALSO: Classroom Research; Language Policy and Planning: Overview; Teaching Writing; World Englishes and Language Pedagogy

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Measures of Lexical Richness

DAVID MALVERN AND BRIAN RICHARDS

Lexical richness is about the quality of vocabulary in a language sample. For some, this is equated with the variety of lexis, while for others it is a multidimensional concept. For example, Read's (2000) model consists of lexical diversity plus three additional components: the appropriate deployment of low-frequency, more difficult vocabulary (lexical sophistication); the relationship between content words and function words (lexical density); and a low error rate. In practice, however, researchers attempting to measure lexical richness have focused their attention on the first two measures.

Lexical diversity is a complex property that summarizes the range of vocabulary and the avoidance of repetition in the sample. It applies both to written texts and to transcripts of speech. Research and diagnostic applications of lexical diversity can be found in a wide range of linguistic fields, including first and second language acquisition, linguistic input and interaction, demographic influences on language performance, language impairment and delay, aphasia, schizophrenia, stylistics, forensic linguistics, and many more. Valid and reliable measurement of lexical diversity proves to be surprisingly problematic, however. Traditional measures have turned out to be seriously flawed, but more sophisticated recent approaches, based, for example, on mathematically modeling the likelihood of new words being introduced into the language stream, have produced more robust, valid, and reliable measures.

The simplest measurement, frequently used in the study of language impairment, is a count of the number of different words (NDW) in a (timed) language sample, but longer samples tend to produce a greater range of vocabulary and samples of different length cannot be compared fairly. Another more popular, but equally flawed, approach has been the type–token ratio (TTR). TTR is the ratio of different words (types) to the total number of words found in the sample (tokens). This measure is often attributed to Mildred Templin, a pioneer of research into first language development, who collected vocabulary data from 480 children aged 3–8 years. It appears, however, that Templin neither used the term TTR, nor calculated values for individual children. She merely commented that, for pooled data, there was approximately one different word for every two words spoken and that this ratio remained constant over the age range tested (Templin, 1957, p. 115). What gave TTR a spurious credibility and extended its influence was Miller's (1981) interpretation of Templin's finding. Miller claimed, "The consistency of this measure makes it enormously valuable as a clinical tool . . . if a normal hearing child's TTR is significantly below 0.5 we can be reasonably certain that . . . [it] is probably indicative of a language specific deficiency." This is surprising, as it would indicate that in spite of the considerably greater vocabulary known by an 8-year-old than that of a 3-year-old, there is no development in the capacity to deploy that increased vocabulary with greater variation. The anomaly becomes further apparent when it is observed that the TTRs of Shakespeare's plays are all well below 0.5 (varying from 0.142 for *Much Ado about Nothing* to 0.201 for *Macbeth*).

The problem is that taking a ratio simply does not compensate for the effect of larger samples (Richards, 1987), and the plays of Shakespeare are very large samples indeed. As more and more words are added to the sample, it becomes harder to avoid repetition, the type count (V) increases at a slower rate than the token count (N), and the TTR (V/N)

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falls. In practice, the average TTR over a number of extracts of a particular size taken at random from any language sample decreases smoothly with increasing size of extract (see Figure 1), and all language samples do this. TTR is seriously flawed, then, as the larger the sample, the smaller the TTR.

Over a number of years various attempts were made to compensate for this. Some employed what was hoped to be a correcting factor. An example is Guiraud's (1954) Index, or Root TTR (Richness = $V/\sqrt{N}$). Others tried to linearize the TTR vs. N curve using logarithms, such as Somers's (1966) S = LogLogV/LogLogN. Unfortunately none of these fixes worked, and they are all also functions of sample size. It can be shown mathematically that Guiraud's Index, for instance, is a function of N which increases rapidly to a maximum, then begins to fall away toward zero. This calls into question the validity of using such measures to compare any samples of language that vary in length.

An alternative approach has been to find a mathematical model for the TTR, or V, vs. N curves that different language samples produce. An early attempt was made by Thomson and Thompson (1915), but it failed to yield a general equation for the relationship. Caroll (1938) suggested a solution based on Zipf's law: that if types were ranked in order of the most to the least common in a sample, then frequency × rank would equal a constant. The resulting equation failed to fit empirical evidence from language samples, however. Tweedie and Baayen (1998) analyzed these and a number of other similar proposed measures and showed that none was successful.

The key to developing a successful model was identified by Sichel (1986) when he pointed out that the vast majority of the words any one of us knows are hardly used at all. A few, mostly function words, are used with relatively high frequency; the word *the*, for example, is found in English on average seven times for every 100 words used. The distribution of the frequency of occurrence of the active vocabulary of any one person, then, is highly skewed toward the low-frequency end and is very long tailed as the frequency increases. Sichel modeled this probability of occurrence and derived the most successful mathematical relationship between TTR and sample length (N) to date. Building on his work, Malvern and Richards (2000) applied an approximation to this relationship for shorter texts which produces good fits to real texts and transcripts of a few hundred tokens, as typically found in samples used in child language studies or second language. Their formulation of the relationship is

$$\mathrm{TTR} = \frac{\mathrm{D}}{\mathrm{N}}\left[\left(1 + 2\frac{\mathrm{N}}{\mathrm{D}}\right)^{1/2} - 1\right]$$

where D is a parameter characterizing the lexical diversity of each language sample. Others have confirmed a high success rate in testing this formulation against real language samples by measuring how accurately it models the actual TTR curves obtained from the data, and by investigating further indicators of reliability and validity such as internal consistency or relationships with age, amount of instruction, other vocabulary measures, and a variety of linguistic and developmental indices (see, for instance, Jarvis, 2002).

If we take a number of language samples, then, and calculate the average TTR for subsamples of increasing size, the graph for each sample follows a falling curve. Some curves fall more quickly than others, but all are described by the equation above. The difference is that curves which fall rapidly have lower values of D and lie below curves which fall slowly and have higher values of D. This can be seen in Figure 1, and D is a measure of how high the curve for a sample lies. We can attribute meaning to this by considering the curves for language samples which display the extremes of diversity.

The most diverse use of vocabulary imaginable is when a language sample is without repetition at all; that is to say, as an additional token is added to the language stream it

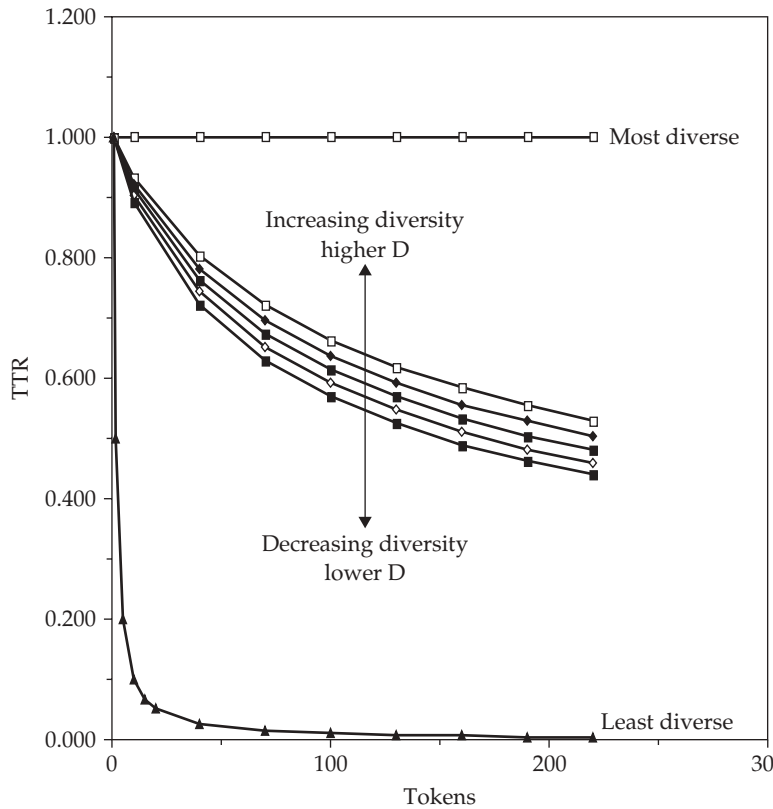

Figure 1 TTR vs. sample size (tokens) for language samples of higher and lower lexical diversity

is always a new type never used before. The curve of such a sample would be the straight line TTR = 1, because at every point the number of types in the sample would always equal the number of tokens. This line is shown in Figure 1. It is at the top of the space where curves are possible and obviously no language sample could produce a graph which lies above it. The other extreme of the least diverse language sample we can think of is when a single type is repeated over and over again. No matter how long the language sample there is only ever one type used and the curve is that of 1/N, which lies at the bottom of the permissible space—it is not possible for the curve of a language sample to be below it.

Curves for real language samples, therefore, lie in the space between these two extremes. The more slowly a curve falls and the higher up in the space it is, the nearer that sample is to the most diverse text possible. The more quickly a curve falls, the lower in the space it lies and the nearer it is to the least diverse text there can be. How high a curve lies depends on its value for D, which can, therefore, be used as a measure of diversity for the language sample that produced the curve. Samples which produce curves with high values of D exhibit high lexical diversity while those with low values of D have low lexical diversity. D does not just depend on the range of vocabulary found in a language sample, but also on the distribution with which the types are deployed. This is another advantage of D over traditional measures, as D distinguishes among the different arrangements in the repetitions found in transcripts which have the same TTR.

Malvern and Richards have operationalized the calculation of D for real language samples in a computer program called VOCD (McKee, Malvern, & Richards, 2000), which is freely available as part of the CLAN programs on the CHILDES Web site (http://childes.psy.cmu.edu); another version, D-Tools, is at www.lognostics.co.uk. These authors have illustrated the application of D to a variety of language sources, including first and second language acquisition, development in essay writing during schooling, and academic writing (Malvern, Richards, Chipere, & Durán, 2004). Others have made use of it in comparing across languages, bilingualism, language testing, diagnosing specific language impairment, and other conditions (see suggested readings for examples).

Measuring lexical sophistication (the deployment of a variety of low-frequency, difficult, or advanced words, as opposed to an overall range of different words) is just as fraught with difficulty as measuring lexical diversity. Simple measures that count the number of rare or difficult words and use these to calculate ratios or proportions are just as much a function of sample size as the lexical diversity measures discussed above (see Malvern et al., 2004). Laufer and Nation's (1995) lexical frequency profile allocates words to four frequency bands and shows the proportion of words in each band. These results are commonly reduced to a single sophistication measure that focuses on the items that fall outside the 2,000 most common words. However, even when researchers using this measure limit the analysis to a standard number of word tokens it has been criticized as lacking robustness (Meara & Bell, 2001). Daller, van Hout, and Treffers-Daller (2003) have developed Advanced Guiraud, an adaptation of Guiraud's Index that divides the number of advanced (i.e., less frequent) word types by the square root of the number of tokens. This has been applied by the authors and other researchers in several studies and has produced consistent results, even though it can be criticized on the same grounds as Guiraud's original. One curve-fitting procedure that both has theoretical integrity and produces a well-validated measure, even for small samples, is Meara and Bell's (2001) P_Lex. This outputs a value for the parameter lambda that serves as an index of word difficulty.

VOCD can also be used to measure lexical sophistication. Usually, there are not enough rare words in a sample to measure their diversity directly. But having calculated D for the whole sample, if the rare words are then removed, VOCD can operate on just the non-rare or basic vocabulary in the transcript and calculate D (basic). The difference, which Malvern and Richards (2009) refer to as RWD (rare word diversity), is an indication of the contribution to overall diversity by the rare words: RWD = D(all) − D(basic).

In summary, measuring lexical richness for whatever purpose is by no means as straightforward as many applied linguists have assumed in the past. Nevertheless, measures are available, including several not mentioned here, that can produce reliable and valid scores for both lexical diversity and lexical sophistication. Of these, it is not always possible to say which is "best." Validity is a property of how a measure is used and of the scores that are produced rather than of the measure itself. Thus, applying TTR or NDW to samples of a standard token size would seem a reasonable thing to do. Similarly, while using Guiraud's Index to compare samples that differ widely in size may not be valid, there may well be a range within which it performs more satisfactorily. Of indices such as D that perform well in validation studies, there may be no single ideal measure: In an investigation that included six indices of lexical diversity, McCarthy and Jarvis (2010) pointed out that different measures could provide complementary, unique information on the deployment of vocabulary in a text.

SEE ALSO: Assessment of Vocabulary; Lexical Frequency Profiles; Second Language Word Difficulty; Zipf's Law and Vocabulary

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Measuring the Effectiveness of Second Language Instruction in Research

CHARLENE POLIO

An evaluation of second language instruction often includes some of type of measurement of its effectiveness. Such measurement is found in studies of classrooms or programs that include quantitative assessment as part of their overall evaluation, or in research studies that experimentally compare different teaching techniques, either in the classroom or in the laboratory. The choice of which measures to use can be particularly vexing as one has to consider not only the reliability and validity of the measure but also the logistics of administering the measure, and, in experimental studies, the possibility of the measure being biased toward one of the groups in the study. Below are five different types of studies that might measure the effects of instructions.

Some studies focus on the implementation of a new program or of a new teaching technique or module in a real classroom setting where there is no control group (e.g., Rodgers, 2006). Such studies often use some type of quantitative assessment of the students' progress such as a general standardized language proficiency test, or a more skill-specific test. In these cases, the quantitative measures are often supplemented (and should be supplemented) with other, sometimes qualitative means of assessment such as classroom observations, student interviews, teacher commentary, or surveys in order to triangulate the data. For example, one may want to evaluate an immersion-type method of teaching foreign language for high school students (i.e., where the students' native language is not used). If a pretest and posttest are given, the test might show an improvement, but without a control group, one could not determine whether the improvement was due to the instruction or to some other factor (e.g., perhaps the students had access to the target language outside of class), or whether another type of instruction would have resulted in greater improvement. Nevertheless, a study without a control group is not useless. In fact, the tests might show, for example, that students' listening skills improved but that their reading did not. If other data are collected, such as teacher interviews, such data could confirm that the instruction improved the students' listening but not their reading. Data such as classroom observations could help explain the test data: Perhaps the teacher spent less time on reading instruction with the implementation of the new program.

Experimental studies (where students are randomly assigned to groups) or quasi-experimental studies (where students are not randomly assigned) that compare different classrooms comprise another type of study. Such studies may compare program-level differences (e.g., the distribution of instructional time; Collins, Halter, Lightbown, & Spada, 1999) or drastically different teaching methods. Early studies of language teaching compared methods such as the audio-lingual approach and total physical response (Asher, 1972). Comparative classroom studies raise several issues. First, if intact classes to which the students were not randomly assigned were used, the groups could be inherently different at the start of the study. A group that is less proficient, for example, will generally show greater gains in test scores (i.e., through regression to the mean). Second, even with random assignment, other factors could affect the outcomes of the instruction including the teacher, the classroom, and the time of day that the class was taught. Finally, even if all factors are controlled for and the groups are equivalent, the measure could be biased

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toward one of the treatments. In the case of the studies comparing teaching methods, a test of listening comprehension would be biased toward the total physical response group whereas a test of grammar might be biased toward the audio-lingual group (Beretta, 1986).

Sometimes researchers study a specific technique in a classroom setting such as a method of error correction. In this case, all students would receive similar instruction but the way errors were dealt with would vary either by class (e.g., Sheen, 2007) or by having students randomly assigned to different treatment groups within each class (e.g., Sachs & Polio, 2007). Generally, if a treatment can be administered individually, such as with written error correction, random assignment is preferred so that the effects of the instructional technique can be attributed to the treatment, as discussed above. With teacher-fronted lessons, for example on classroom oral correction, however, one would need to vary the treatment by class. Choosing a measure to assess the improvement of grammatical accuracy, oral or written, seems simpler than measuring general proficiency, but even if one finds a reliable and valid measure of accuracy, it will not provide a comprehensive view of what is happening. Because error correction might cause students to fear making errors, it may have an additional negative effect. In the case of written error correction, learners' accuracy might improve but the complexity of their language might decrease. Thus, even if instruction focuses on a specific skill, it is important to obtain a full view of students' performance.

Research on specific instructional techniques is sometimes conducted outside of the classroom (e.g., Barcroft, 2009). This is particularly common when computer-assisted techniques are used and students are sitting at individual computers, or when different types of individual oral feedback, such as recasts versus explicit correction, are provided in an interactive pair activity. In these cases, random assignment is logistically easy, but the researcher still has the problem of making sure that the measures are reliable and valid. Another issue, however, and not related to measurement per se, is whether the study has ecological validity. In other words, could the instructional technique studied realistically be implemented in a real class? (See Gass, Mackey, & Ross-Feldman, 2005, for a discussion.)

The last, and least common, type of study is one where the researcher studies a specific instructional technique with an intact class but then creates individual tests for each student. These are often referred to as individualized tests or tailor-made tests. For example, Loewen (2005) studied the effect of incidental feedback on students' errors. The feedback was given by the teachers as errors arose in class. Because each student made different errors and received different feedback, individual tests were created to determine whether the feedback had an effect. Because such tests are administered individually, it is impossible to calculate standard measures of reliability (although one can and should calculate inter-rater reliability if applicable). Validity can also be a problem: In the case of grammatical errors, tests generally examine only explicit knowledge and not the learners' ability to use the structure.

In the various types of studies described above, researchers often include what is called a delayed posttest to determine whether the effects of instruction are temporary or persist over a longer period. For example, a method for teaching vocabulary may result in short-term learning, but those words may not be retained. The posttest may simply be readministered after a period of time or an equivalent version of the test may be administered.

In all five of the contexts above, one needs to determine exactly what construct is being measured and then one needs to find an appropriate measure. Briefly, the measure has to be reliable (i.e., consistent) and valid (i.e., measure what it intends to measure). For studies of programs, for example, the program of instruction may strive to improve students' overall language proficiency or, perhaps, just their ability to communicate orally in a specific workplace setting. For the former, one might be able to find a valid and reliable existing proficiency test. For the latter, one would want a test that targeted specific workplace skills. If no test existed, the researcher would have to develop a series of tasks and

develop a reliable way to score the students' performance. To give another example of a specific skill, one might wish to study the effect of a computer program that teaches vocabulary. A multiple-choice test could be piloted and checked for reliability, but it would be a test of only passive knowledge. The researcher might want to determine the students' ability to use the vocabulary on a speaking or writing task. This latter test would probably be a more valid assessment of the students' ability to use new words, but it might be less reliable because of the difficulty in eliciting the words and scoring the language samples. Finally, if tests were supplemented with surveys as a means of determining the participants' self-assessments or attitudes toward the instruction, the reliability and validity of such surveys would also need to be considered.

SEE ALSO: Instructed Second Language Acquisition; Language Assessment in Program Evaluation; Program Evaluation; Role of Instruction in Second Language Acquisition Theories; Uses of Language Assessments; Validation of Language Assessments

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Media Interpreting

FRANCESCO STRANIERO SERGIO

Media interpreting (MI) falls under the domain of both interpreting studies and audiovisual or screen translation. The term MI mainly refers to television interpreting, although it also includes radio and newer types of electronic media and transmission such as Webcasting and other forms of remote interpreting (O'Hagan & Ashworth, 2002). Little attention has hitherto been paid to sign-language interpreting in media settings. A broad survey of television sign language in 17 European countries has been conducted by Kyle and Allsop (1997), and one on Austrian as well as other German-language broadcasters' services for the deaf and hearing impaired has been undertaken by Kurz and Mikulasek (2004).

MI embraces different kinds of situations and participation frameworks, ranging from face-to-face communication—with the interpreter actually taking part in the TV program as a full-fledged participant in the original interaction—to simultaneous interpreting (SI) of media events. A particular form of MI is simultaneous film interpreting (Russo, 1997), which represents an alternative to the mainstrean modalities of audiovisual translation, that is, subtitling and dubbing.

Early instances of television interpreting include SI of the moon landing in 1969 and the Gulf War in 1991, which contributed to making the interpreting profession visible to the public at large worldwide. The recourse to an interpreter on screen (or only in audio) is just one of the ways in which language mediation is managed. The decision to use one modality rather than another (e.g., voiceover or SI) is made by broadcasters and program controllers according to program strategies, general channel broadcasting policies, TV genre (talk show, live media events, prerecorded interview, etc.), target audience, and the specific goals that the program director wishes to achieve.

Clearly SI is the modality that is best suited to the immediacy required in live broadcasting, and in particular to "breaking news." This process has been dramatically accelerated by transnational satellite news networks, such as CNN and Al Jazeera. Live broadcast SI is used for speeches, soundbite statements, appeals, interviews, press-conferences, military briefings, presidential debates, interrogations, and newscaster reporting, which may be produced during planned events (e.g., political summits, elections, funerals, trials, Academy awards) or unplanned events (e.g., war coverage, natural disasters, terrorist attacks, *coups d'état*).

In the television setting, such a multiplicity of text typologies and discourse genres acquires distinctive features that make MI noticeably different from traditional conference interpreting (Kurz, 1996; Mack, 2001; Viaggio, 2001; Amato, 2002; Katan & Straniero Sergio, 2003). Similarly, talk show interpreting (Straniero Sergio, 1999; Katan & Straniero Sergio, 2001), though sharing many features of what is known as dialogue interpreting (Mason, 1999), can not be fully equated to other interpreter-mediated social and institutional interactions.

A distinguishing characteristic of MI lies in the "double articulation" of broadcast talk, in the sense that "it is a communicative interaction between those participating in the discussion, interview, game show or whatever and, at the same time, is designed to be heard by absent audiences" (Scannell, 1991, p. 1). This implies that the media interpreter

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addresses a double audience: *on-screen* participants (the people in the studio, the newscaster or the host, and the guest on a talk show), on whom interpreting might have a visible impact, and *off-screen* participants (tele-viewers).

It is widely acknowledged that MI requires additional skills and a new professional profile (Laine, 1985; Kurz, 1990), or, as Bros-Brann (1993, p. 1) put it, "an entirely new mind set compared to everyday practice of conference interpretation and to what all of us have learned and taught in various schools of interpretation." Talkshow interpreters, in particular, in order to comply with "the ethics of entertainment" (Katan & Straniero Sergio, 2001) should take on a multivariate mediation role, which includes a certain acting ability to "get into the part," played by the host or the guest.

In terms of situationality and working conditions, live broadcast SI bears some resemblance with remote interpreting, in that the interpreter usually sits in a separate studio (though not always in a soundproof booth) and has no direct view of the speakers, but receives the visual input via a monitor. However, unlike remote interpreting, "interpreters would typically travel to the studio where interpretation takes place, although not always to the location of the speaking parties" (O'Hagan & Ashworth, 2002, p. 95). MI is thus a location-dependent form of interpreting which may (and frequently does) take place in a dislocated situationality, where participants do not share the same unity of place and, sometimes not even of that of time, as is in the case of prerecorded programs. Interpreters have no access to primary speakers who more often than not are not aware that an SI of their speeches is going on somewhere else in the world. The outcome of these speech events is independent of interpreters' performances. Consequently, there is no feedback and hence no "resource enabling interpreters to adjust, remedy or fine-tune their interpretation" (Amato, 2002, p. 271). Outside those situations where a studio audience is present, interpreters can rarely check the effect of what they say on hearers. In a real meeting, participants closely follow the interpreter who is sitting in front of them (or through headphones), so that they can reply, express agreement/disagreement, accept/reject a proposal, vote on a motion, sign an agreement, and so on. Conversely, in MI there is an undifferentiated (invisible) mass with a more passive viewing.

Another constraint concerns speed and delivery. Conference interpreters—in Italy at least—are always given the text of the speeches by heads of state. Therefore they have at the very least a few minutes to prepare. However on TV, where politicians who count are more often seen, things are very different. Barring few exceptions (e.g., the Pope's speeches) interpreters never have the opportunity to see the text. So they have to translate speeches either read or teleprompted at breakneck speed.

Décalage (or ear-voice span) and turn taking are not always strategies that media interpreters can decide autonomously. One of the main requirements of MI is to finish one's interpretation at the same time as the speaker's, or as close to it as possible, and at times even before the speaker (Viaggio, 2001). An interpreter may even be explicitly asked to wait a few more seconds before delivering her translation to let the audience hear the voice of the original speaker (Straniero Sergio, 2003).

The conference interpreter usually translates a number of speakers, one after the other, alternating with a booth-mate. Conversely, during a TV program, when there is more than one foreign speaker (whether physically present or virtual), the norm is "one speaker one interpreter," irrespective of turn length. Moreover, interpreters are usually selected on the basis of the sex of the person/s to be interpreted for the purpose of voice matching. This may result in an unbalanced workload between interpreters.

Discontinuity and brevity are further important factors influencing the interpreter's work. In a war or disaster coverage, SI of foreign TV broadcast news is frequently used intermittently to fill in the idle slots between correspondents' reports and the comments made in the studio. Interpreters translate for a maximum of five minutes, then their voice

is faded out by the newscaster who hands over to a correspondent, leads into a report or sight translates news coming from international press agencies. The interpreter's delivery might also be interspersed by the newscaster who stops it to add some narration or to rephrase the interpreter's words (Katan & Straniero Sergio, 2003).

On television, SI often coexists with other audiovisual translation modalities (narration or free commentary, voice over, subtitling). It is, for example, quite possible for SI during a program to be reedited and subtitled or voiced over by another speaker—and unbeknown to the original interpreter. Sometimes this gives rise to hybrid forms of language mediation which may entail a redefinition of (but also a conflict between) the professional roles and the corresponding norms. This happens when the newscaster/reporter (in a media event) or the host (in a talk show) takes on the role of the interpreter or when the interpreter is assigned a quasi-journalistic role (Katan & Straniero Sergio, 2003).

A distinctive feature of MI concerns quality criteria. In conference interpreting, voice and other related parameters such as intonation, rhythm, fluency, and delivery appear to rank the least important aspects affecting quality. Conversely in MI, where *form* is preferred over *content*, these suprasegmental and paralinguistic elements turn out to be of overriding importance (Kurz, 1990; Kurz & Pöchhacker, 1995; Straniero Sergio, 2003; Katan & Straniero Sergio, 2003). Interpreters are expected to have good diction and a pleasant lively voice so that listening is comfortable for the audience. Moreover, on TV there seems to be less tolerance of foreign accents and other indications of non-native delivery. An exception to this rule is represented by American newscasters who, as Viaggio (2001, p. 30) reports, "will not tolerate an interpreter who does not suffer from the relevant foreign accent."

Admittedly, interpreters have to adapt to current broadcast standards set by professional speakers; and at least two generations of TV audiences have grown up with the standards offered by the voices of excellent film dubbing actors and TV voice-over professionals. It is these norms which drive the expectations for similar voice qualities from the interpreter, "whose voice has to be flexible enough to sound like a presenter, a sports reporter or even a deejay, as well as a politician, economist, scientist as well as a whole host of celebrities" (Katan & Straniero Sergio, 2003, p. 138). According to Viaggio (2001, p. 30), the media interpreter should also have "the cultural sensitivity of the community interpreter, the analytical keenness and background knowledge of the journalist and the rhetorical prowess of the seasoned communicator."

Television, in general, and talk shows in particular, feature a greater visibility and involvement of the interpreter as compared to other institutional contexts. Being literally in the spotlight, interpreters are expected not just to have the relevant cross-cultural communication skills but also exhibit good showmanship. The interpreter is often the object of explicit scrutiny and teasing. Her/his presence (both in the consecutive and the simultaneous modes) is a contextual resource for introducing new topics and vignettes, with ad-libbed sketches often playing on elements of farce, all of which exploit the fact that the interpreted event is "live." Moreover, given the fact that viewers are watching for enjoyment, the interpreter's performance is often part of the show. Off-stage, the interpreter is exposed to criticism by the mass viewing public. These include not only the (literally) millions of accredited armchair viewers, but also a small number of unaccredited eavesdroppers, colleagues, and the other professional interpreters who are likely to assess the quality of the interpreter's performance.

Indeed, a TV interpreter's professionalism may well be judged by the national press, the next day. Thus, for example, in a scathing article published in a respected Italian daily paper, *La Stampa*, the day after the funeral of Lady Diana, the author ungraciously demolished the SI of Earl Spencer's eulogy. The performance, according to the author, resembled that of "heavy breathing on a chatline." On another occasion, another Italian TV critic reproached the interpreter for having translated President Bush's expression "I am a liberal"

with "Sono un liberale," rather than leaving the word in English. Other comments may concern the violation of the voice-matching principle (see above) as in the case of the three-hour long SI of Clinton's deposition before the grand jury in 1998, when the former American president was translated by three women. On the other hand, critics and journalists may also express positive appreciation about interpreters. An emblematic case is that of Olga Fernando (Italy's most popular media interpreter). To quote from the press (*Il Corriere della sera, Giornale di Sicilia*): "Ms Fernando has a good word for everybody," she displays "delicacy," "profound sensitivity," "sympathy," "emotion," and "does not limit herself to a cold translation."

Since MI gives great visibility and accountability to interpreters, it contributes in shaping not only the public image of interpreters, but, most importantly, the underlying norms governing their profession. Indeed, newspaper articles are "extra-textual sources" (Toury, 1995), providing a meta-discursive representation of the interpreter which "does not embody just a neutral description of intrinsic features, but presents a selected and hierarchised set of norms" (Diriker, 2004, p. 25). These norms convert the general values or ideas, shared by a community, into performance instructions which specify what is prescribed and forbidden, as well as what is tolerated and permitted in a certain behavioral dimension (Toury, 1995, p. 55).

SEE ALSO: Community Interpreting; Conference Interpreting; Interpreting Techniques and Modes; Liaison Interpreting

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Medical Discourse

RICK IEDEMA

Introduction

This entry addresses the discourse of contemporary western medicine. Modern western medicine occupies a unique and prominent position among cultures' attempts to defeat illness. Non-western or "shamanic" medicine relies on mystical experience and manipulation of signs or what Lévi-Strauss termed "symbolic efficiency" (Clarac de Briceno, 2006). In contrast, modern medicine is anchored to knowledge and practices whose principal aim is to intervene in the bio-physiological processes and functions of the human body that cause (or are assumed to cause) disease. Critical to remember is that medicine's origin lies in dissection of the corpse, and this origin has defined the philosophy and orientation, and therefore the discourse, which undergird modern western medical science and practice.

> It will no doubt remain a decisive fact about our culture that its first scientific discourse concerning the individual had to pass through this stage of death. Western man [sic] could constitute himself in his own eyes as an object of science . . . only in the opening created by his own elimination: . . . from the integration of death into medical thought is born a medicine that is given as the science of the individual. (Foucault, 1973, p. 197)

Early (18th century) western medicine saw physicians interpreting patients' illness accounts and offering folk remedies and prayer (Porter, 1999). Only in the late 19th century did doctors move on from blood-letting and virulent poisons to opiate pain control, vaccination, anesthesia, antiseptic surgery, bacteriology, and increasingly sophisticated therapeutics. In the words of the William Osler, author of *The Principles and Practice of Medicine* (Osler, 1892), this medical progress

> effected a revolution in our civilisation . . . a revolution which for the first time in the history of poor, suffering humanity brings us appreciably closer to that promised day when the former things should pass away, when there should be no more unnecessary death, when sorrow and crying should be no more, and there should not be anymore pain. (Osler, 1892, cited in Bliss, 2011, p. 53)

This congratulatory tenor gained force as the 20th century progressed. It was fueled by extraordinary medical achievements, such as the invention of insulin and penicillin. During this time, medicine put an end to inevitable death from diabetes, smallpox, and cretinism (Bliss, 2011).

At the same time, medicine and medical research began to attract government investments and public donations. This new capital enabled the medical profession to institutionalize itself into powerful colleges operating through hospitals, research centers and university-accredited courses (Porter, 1999). Each of these sites diversified medical discourse to serve the practicalities of clinical work, the techniques of scientific research, and the knowledge underpinning university teaching. This diversification was buoyed by medicine's progress that involved doctors in reaching more and more deeply into the human body—medically

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(with new drugs), surgically (cf. Harvey Cushing's surgical miracles as reported in Bliss, 2011), and psychiatrically (Freud, 1962). But none of this progress would have been possible without an increasingly specialized medical discourse to track and map medicine's colonization of the body. Indeed, medical progress can be seen as "a reorganization in depth . . . of medical discourse [and] of the very possibility of a discourse about disease" (Foucault, 1973, p. xix).

This entry sets out the domain that is encompassed by western medical discourse. In exploring the depth and breadth of medical discourse, the entry has two aims: to summarize work that has analyzed the discursive and linguistic dimensions of the broad range of modern medical practices, and to make explicit the assumptions that underpin existing approaches to the analysis of medical discourse. In doing so, the entry draws on research published within and outside of the field of applied linguistics. This is to acknowledge that considerable work on medical discourse is published in specialist journals concerned with medical and clinical care.

The Domain of Medical Discourse

Even when focusing on western or modern medicine only, we note that medical discourse encompasses a vast and complex set of domains and fields of knowledge. These are here grouped into four aspects. First, there is the field of public health supported by *epidemiology*. Epidemiology measures the health status of populations, as well as causes of death, and the success of clinical treatments. Epidemiological discourse is best typified by formal statistical information prominent in scientific research reports and health department documents (Little et al., 2002).

Medical scientific discourse has over the years become increasingly reliant on epidemiological or large-sample-size studies. What drives medical science in these domains is "gold standard" research: the "randomized control clinical trial," a method designed to produce large-sample study findings and strengthen the formal evidence base of modern medicine (Chambers & Dopson, 2003). The impact of this scientific and epidemiological discourse on our knowledge of disease and health behavior has been considerable (Potter, Wetherell, & Chitty, 1991). For one thing, this discourse is critical to medical consultation. Epstein even suggests that "the Hippocratic art of passive observation could be replaced by active therapeutics only when diagnoses could include statistical considerations and when clinical correlations could be based on frequency" (Epstein, 1992, p. 26). A critical task facing consulting doctors therefore is to traverse the discursive divide between population-based statistical evidence and the individual patient's illness account (Jordens & Little, 2004).

Equally influential are epidemiological findings producing claims such as "green tea stops stroke," "red wine lowers blood pressure," and "fish makes you live longer" (Smith, 2008). These claims significantly affect people's buying choices and health behaviors (Evans, Rich, Davies, & Allwood 2008). Given the influence of such epidemiological claims, they provide a powerful weapon in the struggle against social problems such as drug use, excessive alcohol consumption, smoking, and HIV/AIDS. However, claims may equally exacerbate social problems if they deploy inaccurate or inappropriate representations (Bunton & Crawshaw, 2006). One dramatic instance is the 1885 smallpox epidemic in Montreal. This epidemic was in no small part the result of the public's response to the publication of views to the effect that smallpox vaccination constituted a health risk (Bliss, 2011).

Second, next to epidemiological discourse, there is the specialization of medicine into domains as varied as respiratory medicine, emergency medicine, neurosurgery, and general practice. Each of these domains harbors unique kinds of knowledge and practice. General practice has been extensively studied and analyzed in so far as the consults between

doctors and patients are concerned (Ainsworth-Vaughn, 2003). Among other things, these analyses have revealed the changing relationship between doctors and patients, manifesting the shift toward "patient-centered care" (Finlay & Sarangi, 2006). On the other hand, specialty or hospital consults have not received the attention they deserve, and neither has communication among clinicians (Iedema, 2006). Chapters in an edited volume titled *The Discourse of Hospital Communication* (Iedema, 2007) redress this imbalance to a degree, homing in on operating room planning of surgery, mental health care, anesthesia, radiology, medical management, and hospital nursing. Also important here is emerging research on hospital team communication and clinical handover, both critical aspects of medical discourse as it structures clinical care (Iedema et al., 2009).

Third, another important and fast-growing facet of medical practice and discourse centers on body tissue sharing and organ donation. The invasiveness and novelty that define what medicine can do to human appearance and capacity require much discursive justification and incur much ethical debate. If biomedicine was charged some time ago with *objectifying* the body (Illich, 1976), tissue manipulation and organ exchange implicate medicine as a prominent actor in a market where body organs and tissues are transacted as a result of a "*commodification* of the body," often annexing discourses from marketing and advertising (Nelkin & Andrews, 1998).

Fourth, a considerable movement has sprung up around alternative or "integrative" approaches to healing. Integrative medicine encompasses approaches that question the *allopathic* worldview of western medicine ("attack that disease!") in favor of seeking to restore the body's internal harmony and balance (Anderson, 1999). The popularity of integrative medicine and its reliance on herbal drugs warrants close analysis of its discourse practices, yet few analyses are as yet available. In his earlier work, Fairclough was led to conclude that doctors within alternative medicine tend to conduct themselves with greater interpersonal attention to patients' experience of care compared to conventional western medical practitioners (Fairclough, 1992).

Of the domains staked out above, an increasing number are being systematically subjected to linguistic and discursive analyses. Initially, analyses privileged the diagnosis, prognosis, and treatment processes found in general practice. They also targeted the scientific-technical aspects of medical knowledge production in academic settings. Analyses further illuminated how medical knowledge and findings tended to be represented in the public media. Only recently has the reach of linguistic and discursive analysis of medical discourse expanded into domains such as genetics counseling, surgery, psychiatry, emergency medicine, cancer care, and palliative care (for some of these see relevant articles in Brown, 2006).

The following section will review studies drawing on analytical orientations including applied linguistics, discourse analysis, conversation analysis, and ethnography. These studies are grouped into the following areas: medical scientific language; doctor–patient consultations, and medicine and the media. Given their importance to contemporary medicine, the entry then overviews other less frequently targeted areas (as far as the study of orientations covered here is concerned): (de)medicalization, medical bioethics, and medical bureaucratization.

Areas Within Medical Discourse

Medical Scientific Language

Analyses of medical scientific language reveal its increasing reliance on formal scientific-technical language since the 16th century (Gotti, 2006). Early medical language consisted of narrative exposés about patients' afflictions and experiences referred to as "consilia"

(Taavitsainen, 2006). Over time, medical accounts became increasingly technical and statistical in nature (Atkinson, 1992). Today, medicine has a disease terminology catalog containing more than 6,000 disease classifications and a somewhat smaller number of medical treatments.

Medical knowledge is negotiated in text books and research journals, but it is only considered to be formalized when adopted by the Cochrane Library. This library brings together a large collection of studies that were done according to strict (gold standard) research-methodological criteria, and their findings are regarded as providing the final answer to medical questions. The studies at issue here warrant close analysis and critique, not least because there is a "need to discuss evidence not just as a static body of truth" (Chambers & Dopson, 2003, p. 180). Salager-Meyer offers probing analyses of aspects of the medical scientific research article in different languages (Salager-Meyer 2000).

Medical knowledge is also negotiated during case presentations (Anspach, 1988). Case presentations, descendants of the "consilia" referred to earlier, are written and spoken accounts about the treatment that specific patients receive and about the effects of that treatment. Montgomery Hunter critiques case presentations for their elision of the medical self by using passive voice. This is significant because the "case presentation is at the centre of medical education and, indeed, at the centre of all medical communication about patients" (Montgomery-Hunter, 1991, p. 51). The passive voice erases the doctor as person from their judgments about and contact with patients. Atkinson (1995) and Erickson (1999) illuminate how junior doctors are shepherded into the passive voice discourse of the case presentation.

Finally, medical knowledge is embedded in the medical record, chart, or notes. Traditionally, the medical record is a written file compiled from what medical, nursing, allied clinicians, and diagnostic services know about and do for the patient. Paper medical charts belonging to patients with chronic conditions can be inches thick and difficult to negotiate: "Mixed media—graphs, test reports, lists, and narrative entries in a strange language and in several unreadable hands—and the combination of brevity, repetition, and its narrative focus on physical phenomena render it [the medical chart] formidably uncommunicative" (Montgomery-Hunter, 1991, p. 89).

The medical chart's functions encompass keeping a running record of services provided; handing over information to incoming teams; instructing other clinicians about what to do, and providing a resource for medical chart coders so they can compile a list of treatments provided. Generally, the medical chart is a legal document and what is written in the chart cannot be erased; this invests chart notations with special authority. Critical analyses and exegeses of the medical chart's contents, design and use are now quite widely available (Hobbs, 2007).

Doctor–Patient Consultations

Historically, the doctor–patient consult plays a central role in medicine and this centrality is reflected in an abundance of analytical attention paid to the consult. Analyses have shown, first, that doctors tend to mobilize a medical regime of thinking and speaking that is quite distinct from that characterizing the patient's lifeworld (Mishler, 1984). The special status of medical discourse allows doctors to display their technical medical knowledge, and thereby risk marginalizing patients' concerns and understandings. This manifests in doctors initiating more new topics and asking more questions than do patients, while ignoring patients' life experiences, including their demonstrations of pain and suffering (Waitzkin, 1989).

More recent analyses have revealed that patients become increasingly involved in co-structuring the dynamics of medical consults (Heritage & Maynard 2006). This work

confirms that medical practitioners are becoming less dogmatic about the authority of medicine, and more "patient-centered" by acknowledging the legitimacy of patients' concerns about particular medical approaches and treatments. The rise in patient-centeredness has been demonstrated on the basis of decreased conversational dominance by the doctor, greater doctor responsiveness to issues pertaining to the patient's own lifeworld, and shifts in gender positioning (Ainsworth-Vaughn, 2003).

For its part, the specialty (or hospital) medical encounter is found to be roughly similar to that in general practice, except that the former is "problem driven in terms of the domain of the specialty" (Barton, 2006, p. 741). What is further evident from analyses done of consults in specialty medicine is that interactions tend to involve a broad array of stakeholders: family, other specialty doctors, nurses, allied health clinicians (social workers, psychologists, nutritionists, etc.), and policy makers acting through guidelines and policies (Iedema, 2006). The delicate negotiations involved in giving these stakeholders a voice require increasing communicative acumen on the part of the doctor. Another important factor that affects the nature of such interactions is the growing reliance on medical technology (i.e., test results and imaging resources, Maseide, 2007) and of information technology (i.e., computerized media, Heath, Luff, & Sanchez Svensson, 2007). The authority that these technologies inject into medical discourse has been argued to lead to tensions for doctors having to engage in "patient-centered communication" and "shared decision-making" (Epstein & Street, 2007).

Finally, the question of whether one or more languages are utilized during these interactions has enormous consequences for the success of medical diagnosis and prognosis, and the safety of subsequent treatment. As there is considerable global migration among the public in general and among medical personnel in particular, doctors may find themselves in situations where their patients favor a language different from theirs, or they work in contexts where they are obliged to use a language other than their mother-tongue (in their role of "overseas doctors"). Roberts provides an overview of linguistic research in multilingual medical settings, showing a dearth of multilingual analysis (Roberts, 2006).

Medicine and the Media

Medical progress became a popular concern thanks to being publicized by radio and television, newspapers, magazines, novels, and movies, all celebrating its amazing achievements and hopeful promises. The celebratory discourse initiated by Osler in the 19th century was uncritically appropriated and amplified by the public media for several decades. As this discourse reached deeply into people's everyday lives, it came to shape who they are, how they see and experience their bodies and life chances, and how they think about personal health, the risk of disease, and death and dying (Armstrong, 2002). Then, around the 1980s, and not in small part due to Illich's thesis that medicine is responsible for many "iatrogenic errors" (errors caused by medical care and harming patients, Illich 1976), concern arose about the nature of the actual outcomes of medical treatment. Karpf documents the transition from predominantly supportive media coverage in the United Kingdom to more critical reporting of medical issues (Karpf, 1988). Karpf's work spawned a surge of critical analyses of medical reporting (e.g., Lupton, 1994).

More recently, with the advent of the Internet, information about what medicine can and cannot do for us and what health risks we face as present or future patients is at our finger tips (Richardson, 2005). Here too, the ways the efficacy of medicine, medical treatment and hospitals are portrayed shape the public's understandings and expectations of medicine's actual and potential achievements. These portrayals are critical to how people understand and approach health and healing, but they are also critical to people's changing identities

as health care "consumers" (Segal, 2009). Indeed, much like representations put out in the broadcast media, those found on the Internet have a variety of different effects, ranging from informing people about functional medical scientific treatments and promising research developments, to fueling unrealistic expectations about what doctors and health services can and should provide in the way of averting disease and death (Lupton, 1994).

(De)medicalization

Ivan Illich, in his book *Medical Nemesis* (Illich, 1976) brought together a range of arguments against modern western medicine. His book starts with the sentence, "The medical establishment has become a major threat to health." This threat, he argued, resulted from "iatrogenic incidents," or medicine-caused harm. Medicine-caused harm occurs when patients receive the wrong treatment: no care, the wrong care, or too much in the form of an "overdose." It is only during the last two decades that medical (and nursing) practitioners have begun to be transparent about the rates of errors and incidents occurring as a result of their actions. The US Institute of Medicine (1999) put the general error rate at 10%, with between 1% and 2% of patients affected by errors dying or suffering permanent disability. These statistics put medical care among the top 10 causes of death. Following a number of high-profile publications announcing medical error rates, the 1990s saw medical discourse appropriate new vocabularies including "quality of care," "(continuous) practice improvement," "evidence-based medicine," and "patient safety." Now, doctors are responsible for not just providing care to individual patients, but for measuring care provided to cohorts of patients, evaluating it, and improving it (Iedema, 2006).

Illich's thesis further charged medicine with "medicalizing" aspects of social life to the extent that citizens were denied ownership over their illness conditions. Emphasizing that people should not lose touch with "the art of suffering," Illich critiqued the trend in western medicine toward "diagnostic imperialism": "To discover a new category of disease is the pride of the medical scientist" (Illich, 1976, p. 92). Through medicalization, medicine turns what were personal and social issues into medical ones. Besides explaining the conversion of young children's lack of attention, male baldness, and persistent fatigue into domains fit for medical treatment, medicalization is also evident in the growing number of drugs, diagnostic technologies, screening opportunities, and medical specialties.

In Illich's view, the problem of diagnostic imperialism compounds with "diagnostic bias." Diagnostic bias is evident in how doctors err on the side of identifying disease rather than attributing an ailment to natural decay, and deploying medical treatment rather than encouraging patients to skill themselves in "the art of suffering." This push to deploy medicine and its discourse to all facets of human ailment inevitably exposes doctors to making more diagnostic and treatment errors. Errors in care and their management have recently become the target of discursive analysis and ethnographic observation of how clinicians deal with clinical problems and bad outcomes, or incidents (Hor et al., 2010). Closely related is another emerging area of discursive analysis: Do clinicians disclose their errors to patients? (Iedema et al., 2008).

Medical Bioethics

It was not medical errors, but violation of research subjects' human rights and dignity that led to stricter regulation of medical research. Medical progress, celebrated for decades by the public media, attracted particular scrutiny when medical researchers turned out to have exploited patients in Tuskegee to benefit medical science, intentionally infecting them with syphilis. Bioethics became integral to medical discourse with the publication of Beauchamp and Childress' *Principles of Bioethics*, first published in 1979 (Beauchamp & Childress 1994). From then on, medical practices and research had their methods and

proposals vetted and monitored by Internal Review Boards (United States), Clinical Ethics Committees (United Kingdom), and Human Research Ethics Committees (Australia).

The discourse of medical ethics is anchored to four basic principles articulated in *Principles of Bioethics*: respect for autonomy, beneficence, non-maleficence, and justice. These principles form the basis of much communication teaching in medical schools (Roberts, 1997). Recent critiques of bioethical discourse target its assumption that patients are self-steering, able, and autonomous choosers, unbothered by their afflictions and suffering (e.g., Mol, 2008). These critiques of patient autonomy are also relevant to how medicine constructs and communicates "patient-centeredness." Mol reveals how the discourse of autonomous choice can run counter to patients' interests and can be alienating for patients who need ongoing care and support (Mol, 2008).

Medical Bureaucratization

The rising costs, expanding services, and growing risks associated with modern medicine have meant that medical practice and discourse have become objects of scrutiny of bureaucracy and management. Iedema has described how the bureaucratization of medicine seeks to limit risk, and how bureaucratization is evident from the growing prominence in medical discourse of perspectives derived from economics and finance, policy regulation, accreditation (of health services), certification (of practitioners), insurance, management, quality assurance, and practice improvement (Iedema, 2006). These new perspectives reconfigure what used to be an autonomous medicine into a (discourse) practice that needs to be more accountable to other specialties' teams, neighboring professions, health departments, and governments.

The overall effect of bureaucratization is that doctors are increasingly held accountable for managing medical processes, controlling budgets, satisfying patients, and monitoring outcomes. Doctors rationalize what they do by designing clinical care pathways and by developing procedural checklists (Lingard et al., 2005). As such resources and activities are designed and enacted by frontline medical practitioners, they are now increasingly in charge of monitoring and reshaping their own practice. Since, rather than being managed, doctors apply *self*-management, medicine is not just being bureaucratized, but "post-bureaucratized" (Iedema, 2006).

Conclusion

Medical practice has evolved a long way from the lone doctor attending at the patient's bedside. The above overview of medical discourse has shown that medical advances, scientific research evidence, and medical accomplishments have played and still play a considerable role in shaping the public's sense of what medicine can provide, and how to understand their own bodies. Only during the last two to three decades has the congratulatory tenor characteristic of medical discourse been problematized by media, ethics, and research references to unsatisfactory clinical processes and outcomes. This critical, regulatory perspective on medicine is reinforced by policy interventions imposed on doctors by bureaucracies and governments.

For reasons of space, this entry has touched on only the most prominent aspects of medical discourse as it operates in contemporary western societies. This approach leaves some aspects of relevant work unaddressed, some of which deserve a closing mention in this overview of discourse-linguistic research in medical settings. One concerns growing research into chronic disease and mental health care, targeting the intensifying debates and expanding discourses that inform these (e.g., Brown & Crawford, 2003).

Finally, medicine is coming to terms with the healing potential of effective and empathetic communication (Street, Makoul, Arora, & Epstein, 2008). It is here that applied linguistic research takes on a critical role: engaging in the analysis of in situ interaction in the search of communication dynamics and indicators to ensure these become more widely known and applied to benefit healing and well-being, both for patients and their clinicians.

SEE ALSO: Discourse Analysis and Conversation Analysis

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Medical Translation

VICENT MONTALT

Translation can be classified in a variety of ways, mainly by type (technical, legal, etc.), mode (written, audiovisual, etc.), method (literal, free, etc.), and the nature of the process (professional, pedagogical, etc.). In the professional arena, medical translation refers to a specific type of translation that focuses on medicine and other fields closely related to health and disease such as nursery, public health, pharmacology, veterinary science, psychiatry, psychology, molecular biology, and genetics. Medical translation shares a considerable number of key concepts, methods, and resources with the different types of medical interpreting.

English is the main source language in medical translation practice because most biomedical research is published originally in English, and then transferred to clinical practice and education, and exported to other languages and cultures. For the same reason, English is an important target language: biomedical researchers from all over the world need to publish their results in English if they want to make them known to the international community.

A Brief Historical Overview

Medical translation has existed since the oldest forms of cuneiform writing on clay tablets in Ancient Mesopotamia. Archeologists have found a dictionary in Sumerian, Ugaritic, Akkadian, and Hurrian dating from around 1300 BCE containing medical information in its prescientific form, together with other kinds of data about mathematics, astrology, agriculture, and city administration.

In fifth-century BCE Greece we find the *Corpus Hippocraticum* (Hippocrates et al.), a body of texts that inspired further study and spread to other languages and cultures in subsequent centuries. Some 400 years later, Galen was one of many medical authors who based their work on the Hippocratic tradition and produced a vast body of medical knowledge which, in its turn, would be further studied and translated, giving rise to new knowledge beyond its original frontiers. Greek medicine was conveyed to Rome by translators, many of them physicians (Fischbach, 1993, p. 96), such as Aulus Cornelius Celsus, who lived in the first century AD.

In the ninth century AD much of Galen's work was translated into Arabic at the House of Wisdom in Baghdad—in particular, Hunayn ibn Ishaq translated from Greek and Syriac into Arabic some 129 works by Galen. According to historian of medicine López-Piñero (2000, pp. 81–2) the Arab world was crucial in the development of medicine in the Middle Ages. Between the eighth and ninth centuries, it assimilated the Greek tradition in combination with some elements of classical Indian medicine, all of which involved a great effort of translation into Arabic. The task of translators went far beyond just translating. As another historian of medicine has put it, "In order to make the Greek tradition more accessible, understandable, and teachable, Islamic scholars ordered and made more systematic the vast and sometimes inconsistent Greco-Roman medical knowledge by writing encyclopedias and summaries" (Savage-Smith, 2001).

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Between the ninth and the 12th centuries, Arab translations were in turn translated into Latin, together with commentaries added by other Arab scholars in the intervening years (Montalt, 2005). The Christian Gerard of Cremona and the Jew Faraj ben Salim are two well-known examples from this period, in which the School of Translation of Toledo became the center of the Western assimilation of the Arab legacy. In the view of Savage-Smith (2001), medieval and early modern scholars in Europe drew upon Islamic traditions and translations as the foundation for their medical studies. It was, then, through Arab translation that the West learned of Hellenic medicine.

In subsequent centuries, medicine gradually turned into a scientific discipline and made huge progress, generating an ever-increasing amount of information as well as compelling needs for knowledge transference, international communication, and translation. In more recent times, health care is increasingly seen as a fundamental right and a basic social concern. In a globalizing world, translators need to respond flexibly to the challenges posed by changing needs in national and international health organizations. Paraphrasing Fischbach (1993, p. 100), we can say that translation has been the great pollinator of medicine throughout the centuries and across many different languages and cultures.

The Scope and Specifics of Medical Translation

Traditionally, medical translation has been viewed mainly in terms of highly specialized texts and the terminological problems posed by them. In current professional practice, however, medical translation is not restricted to highly specialized genres, such as original articles or review articles published in biomedical research journals, but embraces many other communicative events in contexts ranging from clinical practice to education to popularizations of all kinds. Online information for patients, commentary on videos of surgical operations used in medical training at universities, and television documentaries about medical innovations addressed to the general public all fall within the ambit of medical translation, which is no longer limited to the written mode but includes audiovisual and online, digital formats as well.

As far as medical knowledge is concerned, the core of medical translation is formed by the different specialties of internal medicine, obstetrics, gynecology, orthopedics, pediatrics, psychiatry, surgery, and pharmacology; that is, the prevention, diagnosis, and treatment of any disease affecting any part or function of any bodily system, including mental disorders. Medical translation also encompasses complementary and alternative medicine such as homeopathy, naturopathy, or acupuncture.

Some medical translations may involve such specialized topics that they are difficult for a translator without a medical background to understand. According to Montalt and González (2007, p. 20) the medical translator's priority is to deal accurately with factual complexity. Lack of previous knowledge can be a source of misunderstanding, which may result in translation errors that can have serious consequences for the health of patients. But as Wakabayashi points out (1996, p. 357), "lack of formal medical training is not necessarily an insurmountable obstacle to the budding medical translator. What is essential is not a medical degree, but a broad understanding of the fundamentals and knowledge of how to acquire, in the most efficient manner, an understanding of other elements as and when necessary." There are basically two ways of acquiring that knowledge: through documents and other resources and with the help of subject matter specialists. In the era of the Internet, there is an immense wealth of medical information available for the translator—most of it free—from online databases of research abstracts, such as Medline, to virtual communities of professional translators who share their expertise and resources and often work collaboratively.

The value of medical texts lies in the quality and relevance of the factual information they contain. The quality of medical translations, therefore, depends very much on how accurately and coherently the content of the source text is represented in the target text. It is characteristic of medical texts that they are seldom written by professional writers and by people whose mother tongue is English. Consequently, the quality of the source texts is often not as good as one would expect in other types of translation, such as literary or journalistic translation. Thus a critical and responsible attitude is required of the translator, whose main purpose is to write a target text that is reliable and truly functional for the target readership.

The task of the medical translator is also affected by the ethical code of medicine and health care. Making sure that no mistakes in the target text put patients' lives at risk is paramount. Confidentiality is also important, especially when dealing with histories, informed consents, or drug development documentation. Last, but not least, there must be respect, awareness, and sensitivity toward patients, whether this concerns their medical conditions or their linguistic and cultural backgrounds.

Medical Genres

Understanding the content of the source text is necessary but not, of itself, sufficient to produce reliable and adequate translations. Knowledge about how texts work formally, socially, and cognitively in the two languages and cultures involved is also required. For example, it is relevant for medical translators to know how patient information leaflets may vary formally according to different legislation in different countries or regions. The same can be said about highly specialized genres such as biomedical patents or original articles in research journals. Translators who are familiar with their typical structure, tenor, terminological usage, and other conventions can more confidently predict text progression and anticipate possible translation problems. They will have a better appreciation of the overall context and will find it easier to generate appropriate renderings for the target text and select more quickly from among them. Familiarity with genres can also be useful when adapting texts and writing original texts.

Medical genres can be grouped in four general categories: research, professional, educational, and commercial. Research genres are those used by researchers to communicate their findings and arguments: original articles, case reports, doctoral theses, and so forth. Professional genres comprise those used by health professionals in their everyday work: clinical guidelines, summaries of product characteristics, disease classifications, nomenclatures, vade mecums, and all the documents contained in clinical histories, among others. Educational genres are used to teach and learn in a variety of contexts, from university courses to domestic situations: course books, fact sheets for patients, patient information leaflets, popularizing articles, and so on. And finally, commercial genres, used in selling and buying products or services of all kinds in the medical and health-care sectors: drug advertisements, catalogues of medical equipment, press releases for new drugs, and so forth.

Medical Terminology

As far as understanding and translating specialized terms are concerned, knowledge of medical etymology is a crucial element. According to Halliday (1998, p. 199), "The Greek forms provided the model for scientific terminology in Europe; they were translated into Latin (which was fairly close to Greek both in its grammatical structure and its semantic

organisation), and the Latin terms were subsequently borrowed into the modern European languages."

Nowadays the language of medicine is full of terms based on Greek and Latin forms. They can refer to parts of the body, such as Greek *kephalé* (denoting the head, as in "cephalagia"), or Latin *mamma* (denoting the breast, as in "mammography"); to substances, such as Greek *lipós* (denoting fat, as in "lipidosis") or Latin *adeps* (also denoting fat, as in "adiposity"); to position in space and time, such as Greek *epí* (denoting upon, as in "epidermis") or Latin *dexter* (meaning right, as in "dextroduction"); to quantity, such as Greek *hypó* (denoting deficiency or below the normal, as in "hypocalcemia") or Latin *super* (denoting excess or above normal, as in "superacidity"), to mention a few.

From the viewpoint of translation practice, there are two main tendencies in medical terminology: one toward standardization, the other toward variation. On the one hand, besides all Greek and Latin forms and terms, which are highly internationalized and vary only in spelling between modern languages, standardization also refers to all types of international classifications and nomenclatures, such as the International Classification of Diseases or the Nonproprietary Names of Pharmaceutical Substances, both published and promoted by the World Health Organization.

On the other hand, medical terminology is highly dynamic, constantly reflecting discoveries and innovations through neologisms. From the English–Spanish context, Navarro (2007, p. 3) states that "Each year thousands of medical neologisms are coined in English, and they must be rapidly imported into Spanish with a maximum of precision, clarity, rigor and accuracy." New terms giving names to new realities such as immunostain, drunkorexia, cyberchondria, or unpatient are frequent in medical texts and constitute one of the most challenging and time-consuming aspects of medical translation.

Variation can also be seen in synonymy and, to a lesser degree, polysemy. One of the commonest forms of synonymy in languages such as English are the doublets formed by technical names and their popular equivalents, such as "cephalalgia" and "headache," or "hemorrhage" and "bleeding." Such synonyms may be a source of translation problems because languages are not symmetrical in their use: for example, what in Spanish is considered to be low register may be perfectly acceptable in English in the same text genre (this is what Pilegaard calls "register mismatch," 1997, p. 171).

Medical translators are the unseen, unsung but indispensable disseminators of medical knowledge. The challenges they face are great but the benefits they bring to society and humanity at large are immeasurable.

SEE ALSO: Health-Care, Medical, and Mental Health Interpreting; Scientific and Technical Translation

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Mediated Discourse Analysis

JENNIFER L. WELLS AND FADHIL WONG

Mediated discourse analysis (MDA), developed by Ron Scollon (1998, 2001a) is a theory of human action. Scollon, among other scholars, saw an opportunity to gain deeper understanding of human actions through the exploration of the interrelationships of those actions with discourses or texts. Coming from anthropological linguistics and having a keen interest in intercultural communication, Scollon posited that all communication is based on action. Individuals act in the world and as they act, they may use language in order to perform action. In this view, saying an utterance is performing action just as using a saw to saw a piece of wood is performing an action (Scollon, 2001b).

Scollon built his theory by merging theoretical notions from critical discourse analysis (Fairclough, 1995), mediated action (Wertsch, 1991), and situated learning (Lave & Wenger, 1991). It is based on three principles:

1. Social action: Discourse is best conceived as a matter of social actions, not systems of representation or thought or values.
2. Communication: The meaning of the term "social" in the phrase "social action" implies a common or shared system of meaning. To be social an action must be communicated.
3. History: "Social" means "historical" in the sense that shared meaning derives from common history or common past. (Scollon, 2001a, pp. 6–8)

Uniquely in discourse studies, the MDA approach to understanding a particular discourse begins with the *action* that is taking place. This action is investigated within a broad perspective regarding what is relevant. Components that could influence or direct an action range widely, from the macro of the physical environment to the micro of an individual actor's breathing and heartbeat. Time of year; time of day; geographical location; environmental factors such as light, sound, and space; proximity to other individuals; and physiological and metabolic rhythms—among many others—may provide a range of meaningful insights into action. The researcher attempts to review each separately to consider its context regarding and contribution to the discourse being analyzed.

There are five concepts that are fundamental to understanding this approach:

- mediated action,
- mediational means/cultural tools,
- practice,
- site of engagement, and
- agency.

The unit of analysis used in MDA is called the *mediated action*, which has three primary elements: the agent or social actor; the action the social actor is performing; and the objects, texts, or other tools the social actor is using. MDA breaks mediated actions out into two primary types: *lower-level actions* and *higher-level actions*, as detailed in Norris (2004). Lower-level actions are the smallest interactional meaning unit, such as a gesture, posture, or gaze. Higher-level actions have an opening and closing point, such as making a cup of coffee or signaling for a taxi, and consist of multiple lower-level actions happening simultaneously or in sequence, or both.

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To consider an action "mediated" means that the social actor is making use of one or more texts, objects, or utterances (language). Within the context of the analysis of the action, these elements are called the *mediational means* or *cultural tool(s)*. Norris and Jones (2005, p. 49) specifically define mediational means as "psychological 'objects' that mediate between agents and their social worlds." Mediational means take many forms, but according to Wertsch (1991) fall into two primary categories: "technical tools," material objects such as a dish, a computer, or a piece of furniture; and "psychological tools," such as spoken language, iconography, symbol systems, and other forms of abstract communication.

Put another way, mediated actions are the stuff of everyday lives: We are all performing mediated actions all the time. When a person (social actor) speaks aloud, they use the mediational means (or cultural tool) of language; what they say, and how they say it, becomes a text that can be analyzed and understood. When the social actor sits down in a chair, the chair becomes the mediational means; we can observe the chair's position, the actor's posture, and so on, to understand their behavior. When the social actor stands up from the chair and pushes it aside, the chair then transforms into a *frozen action*, a historical action represented by a physical object in space and time.

Many mediated actions are so routine as to become habitual, either within a specific group of social actors or, more widely, commonly performed and understood among populations at large. This is what is called *practice* within MDA, and as technical jargon relates to general language, so practices can vary from something understood by relatively few, such as the correct fingering technique to produce a musical scale on a piano, to something more widely recognizable, such as using a telephone or making a purchase.

The concept of practice was defined by Bourdieu (1977) as action with a history. Scollon (2001a) refined this definition of practice as the same social action that is recognizable by another social actor, representing a historical accumulation within a person's habitus or historical body throughout their life experience. Norris and Jones (2005, p. 97) go further, stating that practice is "real-time mediated actions that have been linked to other actions in ways that are recognizable to a particular group of social actors." Even though the action or actions might be performed under different circumstances and by different social actors, the actors themselves can recognize them as "the same."

Scollon (2001a) uses as an example the act of handing, which is an action with nearly universal comprehensibility; even though it might be a person we have not previously met "handing" us an object we have not previously handled, the action itself is implicitly understood. Just as social actors from widely diverging backgrounds can easily understand the action of handing, so can a social actor from a specialized group such as a pianist understand the contextual meaning of another pianist's movements. A *community of practice* describes a group of social actors bound together by a common understanding of a specific set of practices. Communities of practice are nearly unlimited in scope, and may be formed around broad understandings of practice, such as "handing," as well as around more specific practices, such as "the Suzuki Method" of studying piano or participating in an organized sport.

Mediated actions always take place within a *site of engagement*, "the intersection of social practices and mediational means that enables a mediated action to occur" (Norris & Jones, 2005, p. 139). Quite literally, a site of engagement is a particular moment in time, taking all components of that moment into account: location, participants, environment. It is impossible to repeat a specific mediated action exactly, as the convergence of circumstances can occur only once in that precise way, and the MDA approach considers the social actor's conscious and unconscious use of time and space as crucial to the comprehension of the action. Therefore it is key to the investigation to determine what elements of the site of engagement are most relevant to the understanding of the mediated action being studied.

Agency and free will are part of each social actor's identity, and are exemplified by the

choices that actor makes. Each of us sees and experiences the world differently, as a result of the myriad differences that make us unique individuals. Individual agency is directed by the choices we have made as well as the experiences we have had, which guide us into specific perceptions of the world around us as well as how we act relevant to those perceptions. There is always tension between an individual's agency, their habitus, and their actions; a social actor may discover an affinity for certain activities as a child, leading them to pursue those activities to the exclusion of others as they mature. So the choices a social actor makes as an adult are not only directed by the deliberate historical choices they have made, but also by the activities those choices excluded.

The role of agency in MDA is expanded somewhat from other disciplines, in that the agency behind elements beyond the individual social actor is considered in the investigation. Agency is always distributed among the social actors, as well as contained in each specific mediational means and practice included in the mediated action. For example, social actors will comprehend the editorial perspective in a particular newspaper differently, depending on their own historical experiences.

Scollon's (2001a) continued exploration of MDA led him to investigate increasing complexities at both the macro and the micro levels, investigating multiple social actors in the context of varying timescales, which he termed *nexus analysis*. Nexus analysis looks at mediated actions as part of extended dialogues encompassing many different discourses: sociopolitical, individual, textual, visual, intergenerational, and so on. A nexus analysis can take many forms; it can consist of combinations such as close analysis of texts, semiotic analyses of visuals, interaction order, and ethnographic observations. However, perhaps the most critical element of nexus analysis differentiating it from other approaches is the emphasis on the use of the ongoing research to raise awareness of the issue and effect some form of social change regarding the surrounding social practices.

Due to MDA's flexibility, a number of researchers have recognized the potential of this approach for investigating a wide range of issues and practices across a variety of disciplines. It is now being used as a method to review a diverse selection of social discourses around the world. Regarding the investigation of individual social actors, Shroyer (2004) and Castillo-Ayometzi (2007) are interested in how individuals move beyond their historical bodies and replace old practices with new ones (Scollon, 2001a). Castillo-Ayometzi (2007) investigates the ways in which undocumented immigrants in the United States are influenced by Baptist missionaries while seeking social support. She discusses how these immigrants struggle to maintain their own beliefs and experience while embracing new practices imposed by the missionaries offering aid. Raudaskoski (2009) uses MDA to examine identity construction as demonstrated by a phone conversation between an adoption agency and a couple, pertaining to a potential child placement. Multimodal transcripts provide perspective on this interaction. What on the surface seems to be a simple phone conversation is revealed through closer examination to be far more complex, as it documents the transformation of identity of two adults into expectant adoptive parents.

MDA can also be used to demonstrate the myriad ways individual mediated actions can effect change at the macro level of society. Al Zidjaly (2006) demonstrates one way in which the actions and practices of one social actor have the ability to impact the lives of others. Her study observes a disabled individual in Oman who works with caregivers acting on his behalf to change laws concerning the welfare of disabled citizens.

Jones conducted the first extended study utilizing MDA to investigate the AIDS/HIV issue in public discourse (Jones, 1999, 2007). His key findings identified a distinct disconnect between media presentations of the risks and effects of AIDS/HIV and the social actors' behaviors during sexual encounters, drug usage, or both. The study demonstrated that there was a misconception that "quality" people were immune to the AIDS/HIV virus, creating an impression of imaginary protection. Such misconceptions allowed people to dissociate

their behavior from the real risk of infection. The gap found in this study acknowledged that public health discourses are largely inapplicable when it comes to creating positive changes in behavior.

In another direction, Lou (2010), using MDA as well as visual analysis, looks into billboard advertisements and shop signs to study the ways in which ideology becomes part of an individual's narrative construction. She suggested that discourse analysts must move away from narrative text and consider the editorial perspective and resources used in the creation of the text. As part of an investigation into the transformation of Washington DC's Chinatown, Lou looked at both the visual composition and spatial context of billboard advertisements in that district. She concluded that the gaze of the subject used, and the size of the frame used in the billboard design, serve to represent an editorial perspective, and as such, engage in a direct conversation with the billboard viewers. Her investigation shows how gaze contained in a carefully chosen editorial image is able to deliver a message through visual analysis. Through the juxtaposition of billboard placement with selection and display of words and visuals, Chinatown's new image is demonstrated to the viewer.

Multimodal interactional analysis (MIA), developed by Norris (2004), provides further insights into mediated action. Norris (2004) demonstrates that often a social actor is engaged in various actions simultaneously. For example, if a person speaks and gestures, the utterances may make little sense if gestures are not also included in the interpretation (Norris, 2011). This method explores how different mediational means intersect and combine to communicate the entire message intended by the social actor. The actor may be focusing on few higher-level actions at the same time, but with differing levels of awareness and attention. Even though the social actor may be aware of and giving attention to his or her other higher-level actions, his or her primary focus may be on one specific interaction. Thus, the focus itself communicates the importance of the action.

MDA is, as yet, a relatively new theoretical approach. However, due to the flexibility MDA has to employ research techniques appropriate to the topic at hand, it has already demonstrated a wide range of applications in furthering the understanding of social actions. Researchers around the world are recognizing the potential of using MDA to explore meaning and representation in all its forms, from investigating the identity construction of individuals, to social practices surrounding health discourses, to analyses of the impact of a multinational corporation on the social discourse of a community. As MDA becomes more widely practiced, we may observe a significant shift in the understanding of social actions at all levels.

SEE ALSO: Analysis of Mediated Interaction; Critical Analysis of Multimodal Discourse; Multimodal Interaction Analysis; Scollon, Ron

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Meta-Analysis

JOHN M. NORRIS

Introduction to Meta-Analysis and Research Synthesis

Meta-analysis is a secondary research methodology consisting of techniques for reviewing quantitative primary research studies; extracting, combining, and comparing findings; and interpreting what is known about particular questions, variables, or other foci that have generated substantial empirical attention. First attributed to Glass (1976), though drawing on methods for combining data across studies that date back at least to Pearson (1904), meta-analysis is a specific application of research synthesis. Broadly speaking, research synthesis entails any of the variety of approaches to reviewing and making sense of accumulated knowledge within bodies of empirical literature that focus on specific scientific topics, referred to as research domains (Light & Pillemer, 1984). Research synthesis thus includes narrative reviews, statistical significance vote-counts, qualitative metasyntheses, and other methods for taking stock of research findings, and related efforts have been evident for many years within applied linguistics (e.g., Krashen, Long, & Scarcella, 1979).

Beginning in the 1970s, in response to critical weaknesses (reviewer bias, idiosyncratic study inclusion/exclusion, inaccurate interpretations of statistical significance), rigorous methods for review emerged in the form of systematic research synthesis (Light & Smith, 1971). In systematic syntheses, primary studies are treated as individual data points and the reviewing process itself as an investigation of the literature, in an attempt to present the most accurate and comprehensive, least biased, current understanding of a particular research domain. Methods include exhaustive search and retrieval of all available studies, criteria for including and excluding studies, reliable coding of studies for features of interest to the discipline, epistemologically valid approaches to discerning patterns of findings that have accumulated across studies, and the analysis and critique of study methodologies as well as methodological characteristics of studies that manage to get published in the domain (Norris & Ortega, 2006, 2007).

Although there is a reductionist tendency in many disciplines to equate all research synthesis with meta-analysis, it is important to understand that meta-analyses address only a very specific type of research—primary studies that *quantify* findings, generally in conjunction with experimental, quasi-experimental, or correlational designs—and the techniques that have been developed for meta-analysis are not intended to be used with epistemologically distinct domains (e.g., qualitative research, for which unique synthetic methods exist; see Suri & Clarke, 2009; in applied linguistics, see Téllez & Waxman, 2006). Meta-analysis, then, involves the statistical combination of findings from a group of independent studies that have investigated the same phenomena in quantitative terms. When applied judiciously to quantitative studies, ideally by domain experts, meta-analysis offers many advantages to research communities. In particular, it helps to rectify the widespread misunderstanding of, and dependence on, null hypothesis statistical significance testing, by shifting the focus of researchers away from probability estimation (*p*-values) and toward the actual effects or relationships that have been observed across studies in the form of effect sizes (Rosenthal, Rosnow, & Rubin, 2000). An effect size is a calculation of the magnitude of a finding, such as the amount of learning that accrues through a particular

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instructional intervention, transformed onto a common scale so that findings from similar studies can be combined into an overall estimate of the actual effect. By investigating patterns of effect sizes across studies, meta-analysis also encourages researchers to reject the myth of the single, perfect study, and instead to reconceive of individual studies as contributing to the gradual accumulation of findings by replicating variables under diverse conditions (Norris & Ortega, 2006). Meta-analysis also provides techniques for investigating the influence of important factors on observed effect sizes, such as population characteristics or intervention type and duration, as well as unintended consequences of methodological features, such as the reliability of measures (Lipsey & Wilson, 2001). In the end, the primary contribution of meta-analysis lies in its capacity to uncover trustworthy, replicated answers to questions about what works, how much, and why, and, simultaneously, to lay bare the realities of how well research methodologies adopted by particular domains are able (or not able) to answer these questions.

Meta-analysis was first introduced in applied linguistics at the end of the 1990s, though almost exclusively in research on language instruction and second language acquisition (for examples in other applied linguistics disciplines, see: in language assessment, Ross, 1998; In'nami & Koizumi, 2009; in motivation research, Masgoret & Gardner, 2003). Since then, second language (L2) meta-analyses have experienced a dramatic increase in publication frequency (Norris & Ortega, 2010; Oswald & Plonsky, 2010). Accompanying technological developments, including easy-to-use meta-analytic software, have also made increasingly sophisticated analyses available to quantitative research synthesists, some of which have begun to appear in the L2 literature (e.g., Li, 2010). In the following, I sketch the basic steps and considerations associated with meta-analytic methods, and I refer to additional resources for technical details.

Problem Specification and Literature Search

Meta-analysis begins with the specification of a problem that has been researched substantially and for which reasonable answers are needed and likely available. Ideally, that means that only mature domains should be subjected to meta-analyses, where comprehensive theories frame debates, constructs are carefully operationalized and measures are consistently replicated, experimental or other designs adhere to rigorous validity standards, and conceptual and statistical study features are reported with fidelity (Slavin, 1986; Ellis, 2006). Of course, in young disciplines like applied linguistics, it may be unreasonable to assume that most research will live up to such expectations. Nevertheless, problems exist, research accumulates, and meta-analysis offers a means for making sense of where we have come from and where we need to be going. In practical terms, meta-analyses should embark purposefully from a thorough grounding in the substantive issues of a research domain, providing a clear characterization of the origin and theories associated with a particular problem, and justifying specific research questions that need to be answered (e.g., Norris & Ortega, 2000; Li, 2010). Where that is not possible, meta-analysis is premature.

The next step is the literature search, the objective of which is to produce an exhaustive and replicable identification of all primary studies conducted to date in relation to the specified problem. Literature searches are exhaustive in that they pursue all available means for locating research, including the use of key words in electronic bibliographic databases (see guidelines in In'nami & Koizumi, 2010), forward searches in Web-based citation indexes, and so on. Although Web-based resources are much more comprehensive than in the early days of meta-analysis, it is still advisable to include manual searches of publications, including edited books and journals, as well as extensive footnote chasing and bibliographic cross-checking. Searching the published literature may not be sufficient,

however, given a problematic editorial tendency to publish only those quantitative studies with statistically significant results (publication bias) and the probability that researchers have not submitted studies for publication that did not "achieve" statistical significance (the file-drawer problem; Rosenthal, 1979). As such, it is also recommended to search for and include important if unpublished studies, such as dissertations, and to tap into the so-called "fugitive" literature where possible, such as conference presentations (e.g., Taylor, Stevens, & Asher, 2006; Li, 2010). A key condition for reporting of meta-analyses is the full documentation of procedures by which the literature was searched, enabling the possibility of replication by future synthesists.

Study Eligibility Review and Coding

Naturally, the results of a comprehensive literature search will be the identification of many possibly relevant studies. The next step is to adjudicate which studies are eligible for review and which do not meet criteria stipulated by the meta-analyst (Norris & Ortega, 2006). A first pass at the studies addresses the "apples and oranges" problem by designating the specific topics, questions, designs, variables, or all of these to be investigated, and retaining only those studies that do so. A second pass excludes those studies that have not reported the data necessary for meta-analytic calculations, including in particular descriptive or other statistics, or both, for all relevant variables (though, as in Norris & Ortega, 2000, studies which do not report necessary data may nevertheless be included in synthetic reviews of the domain, if not in quantitative meta-analyses per se). A final pass may address the "garbage in, garbage out" problem by establishing study quality criteria (e.g., true randomized control trial designs, measurement reliability minimums) and excluding studies that do not meet the criteria. However, such a priori criteria for exclusion have a tendency to underestimate the complexities of actual research and to ignore the ecological realities of particular domains. In applied linguistics, as opposed to clinical drug studies for example, it simply may not make sense or be possible to operationalize idealized experimental designs. Study quality matters, to be sure, but it is best left to post hoc investigation in meta-analysis (Glass, McGaw, & Smith, 1981; in applied linguistics, see Plonsky, in press).

Once a body of eligible primary studies has been determined, a next key step involves the coding of features important to answering meta-analytic research questions. In study coding, each research report is treated like a study participant, and data are "elicited" from the reports through careful inspection, ideally by a team of meta-analysts. Categories to be coded may include substantive features (types of variables, population characteristics, etc.), methodological features (experimental design, sample sizes, etc.), and reporting features (publication venue, date, etc.). Coding itself typically ranges from the simple recording of necessary quantitative data to the assignment of ratings according to high-inference categories (e.g., type of intervention). Often, the categories to be coded include novel constructs not necessarily identified by primary researchers, yet having particular salience for answering larger-order meta-analytic questions. For example, Norris and Ortega (2000) coded L2 instructional intervention studies according to their own theoretically derived definitions of explicit versus implicit and focus-on-form versus focus-on-forms treatments. Given the range of features to be coded and the importance of reliability in the coding process, common practices include the use of a coding book that defines all features and corresponding data requirements, the socialization of coders and disagreement resolution, and the estimation of coding reliability overall and by categories (e.g., Li, 2010). The outcome of the coding process should be a reliable data set that represents the important features of the targeted domain, ready to be subjected to further analyses.

Calculating and Combining Effect Sizes

Perhaps the primary objective of meta-analysis is to estimate the average, overall, or "true" finding—and possible reasons for any observed variability—that has emerged across multiple studies within a given research domain. Rather than focusing on the probability that a finding is statistically reliable (the preoccupation of inferential significance testing), the focus here is on the amount, degree, or meaningfulness of what has been found, referred to as an effect size. Hence, meta-analysts synthesize the effects observed for independent variables on dependent variables, or the relationships between predictor and criterion variables, as these have been replicated across numerous primary studies. Sometimes, key variables are operationalized in nearly identical ways from one study to the next, and it is possible to combine and compare effects according to the original measures, referred to as unstandardized effect sizes. The benefit of unstandardized effect sizes is that they convey inherent meaning in terms that are immediately interpretable by a research community. A rare example of synthesizing unstandardized effect sizes in applied linguistics is Ortega's (2003) review of 27 studies that measured L2 syntactic complexity using the three indices of mean length of t-unit, mean length of clause, and clauses per t-unit (i.e., direct measures of syntactic phenomena in L2 written or oral communication). Ortega found patterns of meaningful differences in these indices that were predictive of L2 proficiency levels, for example on the order of 2.0 words for mean length of t-unit. Clearly, a difference of two words in the average length of sentences written by language learners is a unit of analysis immediately interpretable by researchers and teachers alike.

Despite the utility of unstandardized effect sizes, in applied linguistics it is typically the case that researchers operationalize variables in unique ways from one study to the next; for example, researchers investigating L2 proficiency development may measure gains on the Test of English as a Foreign Language (TOEFL) in one study and on a locally devised written C test in another. A standardized effect size (i.e., one that transforms all data onto a single scale) is a calculation of the magnitude of difference, or strength of relationship, observed within any study regardless of how the variables have been measured (for calculation of various effect sizes, see Kirk, 1996). Pearson's product–moment correlation coefficient, r, is a familiar effect size that provides a standardized index of the extent to which measures of two variables for the same population sample are mathematically associated, ranging from perfect disassociation (–1.0) to perfect association (+1.0). Less familiar, but more directly relevant for experimental and quasi-experimental research, is the family of effect sizes used to index the magnitude of difference observed between participant groups, intervention conditions, or other factors as measured on a single dependent variable. Effect sizes of this sort—all of which produce a *standardized mean difference*—include Glass's Δ, Hedges's g, and Cohen's d. The index most commonly used in applied linguistics is Cohen's d (Cohen, 1988), calculated as shown in equation (1), where the mean score of a control group is subtracted from the mean score of an experimental or treatment group and then divided by the pooled standard deviation of the two groups.

$$d = \frac{mean_e - mean_c}{S_w} \tag{1}$$

A basic assumption in this calculation is that the true variability in the population is best estimated by combining the standard deviations of the population samples investigated, hence the use of the pooled standard deviation as calculated in equation (2).

$$S_w = \frac{(n_1 - 1)S_1 + (n_2 - 1)S_2}{(n_1 - 1) + (n_2 - 1)} \tag{2}$$

The result of any standardized mean difference calculation is a representation of the size and direction (positive or negative) of the difference observed between two groups in standard deviation units; there is no mathematical limit to the range of possible effect sizes that might be found. Thus, an effect size of $d = +.50$ indicates that the treatment group outperformed the control group by one-half of a standard deviation on a dependent variable measure, and an effect size of $d = +2.00$ indicates a difference of two standard deviations in favor of the treatment group. An essential step in meta-analysis, then, is to derive an effect size from each study; these effect sizes can be compared with each other or combined into an average overall finding, because they are based on a common scale.

As discussed in Norris and Ortega (2000, 2006) and Oswald and Plonsky (2010), the derivation of effect sizes from most research reports in applied linguistics is complicated by several factors. First, depending on the designs adopted by primary researchers, it may be difficult to identify which groups to contrast for calculating the mean difference (or correlation); not all researchers operationalize true control or even comparison conditions in their studies, thus the meta-analyst must decide whether to calculate and include effect sizes based on direct comparisons of different treatments, or whether to separate out (and either investigate as a subset or exclude) studies that do not include control conditions. Second, most primary researchers report on multiple independent, moderating, and dependent variables, because of the complex nature of the domains under investigation. A challenge for the meta-analyst is to determine which groups or other variables to compare on which dependent variables in calculating an effect size, and then to determine how many of these should be included in the meta-analysis (i.e., should a single study contribute numerous effect sizes or just one?). Third, studies of the same phenomenon may adopt either between-subjects (treatment–control) or within-subjects (repeated-measures) designs, or combinations, leading to the challenge of comparing longitudinal changes with cross-sectional differences. It is preferable to separate these two designs in the calculation of effect sizes, not least because of the statistical tendency of within-subjects designs to produce larger mean differences (Lipsey & Wilson, 2001). Finally, the reporting of basic descriptive statistics (means, standard deviations, *n*-sizes of each group) has been less than consistent in applied linguistics publications, forcing meta-analysts to either track down researchers and their data, estimate effect sizes from other statistics, or exclude studies that do not report the necessary data.

Assuming these challenges can be resolved, a first synthetic pass is typically to average the effects that have been found within the domain, producing an overall mean effect. For example, Lyster and Saito (2010) found an average effect of $d = +.74$ for 15 classroom studies of L2 oral corrective feedback, suggesting an average difference of around three-fourths of a standard deviation in favor of feedback over oral interaction without correction. Similarly, subsets of effect sizes may be averaged according to important factors identified within the coding of studies, such as participant variables (age, proficiency, etc.), dependent variable measures (selected- versus constructed-response tests, etc.), intensity of treatment (hours, weeks, etc.), and so on.

Though combining effect sizes seems straightforward—and indeed, it should proceed on the basis of fundamental concepts and questions that have been identified during study coding—several challenges qualify the apparent ease of averaging effect sizes. A basic statistical assumption is that studies with larger sample sizes will be more likely to identify the "true" effect of a treatment or relationship among variables, whereas small-sample studies are subject to larger amounts of error and idiosyncratic influences of participants. Accordingly, where variability in sample sizes (or possibly other study qualities) exists, effect sizes can be weighted, such that larger-sample studies (or studies with greater homogeneity of findings, higher methodological quality, more reliable measures, etc.) carry greater influence in determining the overall observed effect (Hunter & Schmidt, 2004).

A related challenge has to do with the extent to which it is assumed that all studies are providing an estimate of a single "true" effect (e.g., the effect of a drug), or whether studies are assumed to be tapping into the actual heterogeneity of the phenomena under investigation (i.e., the effect itself varies systematically depending on contextual and other factors). In the former, fixed-effects model, effect sizes are weighted only by a function of sample size, with larger studies having more influence, and then combined into an average overall effect size. In the latter, random-effects model, in order to reflect the likelihood that there is a sampling of multiple "true" effects (highly likely in most L2 research), weighting is based on a combination of variance estimates associated with between-study heterogeneity and within-study sample sizes. In practical terms, the weighting of individual study effect sizes tends to be more balanced in the random-effects model, with less difference between large-sample and small-sample studies. Note that although the weighting of studies increases the mathematical complexity of meta-analysis, it is also the case that contemporary meta-analytic software facilitates considerably the inclusion of these and other techniques (e.g., Borenstein, Hedges, Higgins, & Rothstein, 2005; see also Oswald & Plonksy, 2010, for discussion of reasonable approaches to heterogeneity testing and meta-analytic models in applied linguistics).

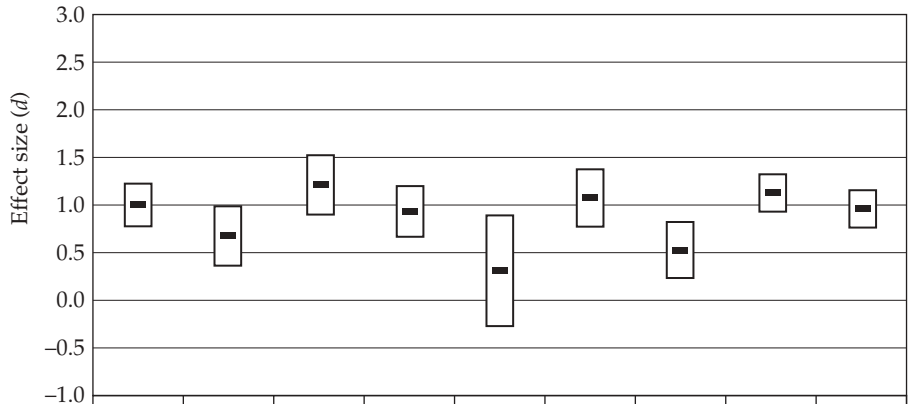
Confidence Intervals and Effect Size Comparisons

A confidence interval (CI) represents the margin of error associated with the average value that emerges from any set of repeated observations. In meta-analysis, the calculation of CIs provides a critical frame of reference, both for interpreting the consistency of average effect sizes and for making comparisons among effect sizes associated with different independent, dependent, or moderating variables, or for individual studies. In more precise terms, a meta-analytic CI estimates the range of possible effect sizes within which an observed effect size can be trusted to occur at a specified probability level; this range is calculated from four sources of information: an effect size, the number of studies (or number of participants for a single study) that have contributed to this average, the variability in effect sizes observed across the studies (or across participants within a study), and a probability level (commonly 95% or 99%) associated with a hypothetical distribution (e.g., t, z). Equation (3) shows one formula (among many possible) for calculating a 95% CI for Cohen's d effect size, where k is the number of studies, sd is the standard deviation associated with the average effect size, and 95%t is the value of the t distribution associated with the stipulated degrees of freedom ($k - 1$).

$$CI = d \pm \left[(95\%t,\ k - 1df)\left(\frac{sd}{\sqrt{k}}\right)\right] \tag{3}$$

While variations exist for calculating CIs according to distinct inferential assumptions (Cumming & Finch, 2001), conceptual treatment of any CI is essentially the same. The CI is reported in terms of a lower and upper boundary, or confidence limits, displayed in whatever unit of analysis is being used for the calculation of the effect size. Thus, in Norris and Ortega (2000), the overall average effect size for studies on the effectiveness of L2 instruction was found to be $d = +.96$, with a lower 95% CI of +.78 and an upper 95% CI of +1.14. That is, the average effect size, and by extension the estimated "true" effect associated with this domain of research, could be trusted to fall somewhere between these limits.

CIs also facilitate the comparison among subsets of effect sizes associated with important factors as well as the contribution of individual studies to the overall meta-analysis. In terms of individual studies, effect sizes and CIs can be calculated and compared for each



	FonF (*k*=43)	FonF implicit (*k*=18)	FonF explicit (*k*=25)	FonFS (*k*=55)	FonFS implicit (*k*=11)	FonFS explicit (*k*=44)	All implicit (*k*=29)	All explicit (*k*=69)	Overall (*k*=98)
CI upper (95%)	1.22	1.00	1.53	1.19	0.89	1.36	0.82	1.33	1.14
Mean	1.00	0.69	1.22	0.93	0.31	1.08	0.54	1.13	0.96
CI lower (95%)	0.78	0.38	0.91	0.67	–0.27	0.80	0.26	0.93	0.78

Figure 1 Example of a graphic display of average effect sizes and confidence intervals (Norris & Ortega, 2000 © Wiley-Blackwell)

study, and these data are increasingly displayed in the form of a forest plot of all studies in the meta-analysis, along with depiction of any weighting attributed to each (see example in Oswald & Plonsky, 2010). Where salient factors have been identified in subsets of studies, average effect sizes and CIs can be calculated and used to draw comparisons (similar, though not identical, to a statistical significance test) about the influence a given factor may have had on the observed effect. For example, Norris and Ortega (2000) drew comparisons among study effect sizes grouped and averaged by overarching instructional intervention types, as shown in Figure 1. The vertical boxes around the effect sizes show the lower and upper confidence limits for each group of studies; where the boxes overlap substantially between groups, the difference between effect sizes cannot be trusted at the 95% probability level (e.g., between FonF and FonFS), and where the boxes do not overlap, the difference generally can be trusted (e.g., between All explicit and All implicit). Again, this kind of graphical comparison is not the same as a mean-differences statistical significance test; rather it provides a useful rule of thumb for quickly understanding the apparent differences that have been found in association with different kinds of salient factors.

Interpreting Meta-Analytic Findings

Relative comparisons among effect sizes and CIs that are associated with conceptually important groupings of studies provide one basis for interpreting meta-analytic findings. In terms of interpreting effect sizes themselves, many meta-analysts have adopted rules of thumb that were proposed very tentatively by Cohen (1988). Thus, for Cohen's *d*, effect sizes between .20 and .50 are considered small, .50 and .80 medium, and above .80 large; similarly, for correlations, an *r* of .10 to .30 is small, .30 to .50 medium, and above .50 large. However, in Cohen's original recommendation, he suggested "The terms 'small,' 'medium,' and 'large' are relative, not only to each other, but to the area of behavioral science or even

more particularly to the specific content and research method being employed in any given investigation" (1988, p. 25). Within applied linguistics, more useful will be the determination of what range of effect sizes translates into what kinds of meaningful differences/relationships in real-world terms, as in the unstandardized effect sizes reported in Ortega (2003), as well as the relative comparison of effect sizes across meta-analyses. Another important frame of reference for interpreting findings is the thorough synthesis of methodological strengths and weaknesses of a domain, offering both important constraints on overinterpretation and advice on areas in need of future investigation and methodological improvement (e.g., Norris & Ortega, 2000).

More generally, as the application of meta-analysis to applied linguistics matures, it will become increasingly important for synthesists to avoid a predilection toward subjecting any and all possible research to "cookie-cutter" meta-analyses (Grant & Grauer, 1999) and "high-tech statistication" (Rosenthal & DiMatteo, 2001). As with any other statistical technique, meta-analysis produces a set of numbers. What those numbers mean, how they can be interpreted, and to what extent they help shed light on important concerns depends on the care with which a meta-analysis has been grounded in the conceptual and methodological foundations of a specific domain of research. In the various branches of applied linguistics, research communities must develop meta-analytic or other synthetic methods that respect the kinds of research we are synthesizing, that help clarify the stories we are trying to tell through research, and that help push our disciplines toward improved practices. Uncritical adoption of meta-analytic practices and principles from other disciplines will not make that happen, but adoption of a mindful synthetic ethos may (Norris & Ortega, 2006).

SEE ALSO: Describing and Illustrating Quantitative Data; Instructed Second Language Acquisition; Language Learning and Teaching: Quantitative Methods; Language Testing in Second Language Research; Measuring the Effectiveness of Second Language Instruction in Research; Probability and Hypothesis Testing

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Metadiscourse

ANNELIE ÄDEL

Background to Metadiscourse

Language enables people to refer to themselves and to their interlocutors explicitly, not only as experiencers in the world (as in examples 1–2 below), but also as communicators (examples 3–4). In addition, they may use language to comment not only on the topic under discussion (examples 5–6), but also on the very situation of communicating (examples 7–8).

(1) *I'm feeling tired*
(2) *You look great*
(3) *Let me give you an example*
(4) *What you're saying is not making sense*
(5) *Twelve degrees is surprisingly cold for May*
(6) *Condors probably never were numerous in North America*
(7) *We will return to this issue in Chapter 6*
(8) *I can't hear you you'll have to speak up I can't hear a word*

The examples in the right-hand column illustrate how we can use language to talk about language itself, which is often called *reflexivity in language*, or the *metalinguistic function*. The term *metalanguage* was popularized by the linguist Roman Jakobson, who contrasted it to *object language*, which is used when we talk about anything that is external to language. Although speakers typically draw on object language to a greater extent than metalanguage, Jakobson (e.g., 1998) posited that the metalinguistic function is one of six basic functions of language, and that it is quite pervasive not only in specialized discourse (e.g., among dictionary makers or grammarians) but also in everyday conversation—to which the examples in the right-hand column above testify.

Metadiscourse can be described as a specific type of reflexivity in language. It is often summarily defined as "discourse about discourse," which means that, in speaking or writing, we show an awareness of the discourse *as* discourse. We do so by adding commentary to the ongoing discourse, such as any or all of the following: pointers as to how the discourse is organized, markers indicating what the main message to be communicated is, statements on the (in)appropriateness of a specific wording, or signals that indicate how we wish the audience to respond to the content. In fact, metadiscourse is crucial for achieving successful communication, as it involves resources for discussing meaning, asking for clarification, checking for understanding, and much more. It also plays an important role in guiding the audience through the discourse and in creating a speaker (or writer) persona.

As a rhetorical strategy, metadiscourse can be characterized as helpful and generally displaying a writer/speaker who is in control. However, abundant metadiscourse can also be interpreted as "didactic, interfering, and patronising" (Mauranen, 1993, p. 189). The effective use of metadiscourse in writing is an important teaching application for metadiscourse. However, what is considered effective has been shown to potentially vary across different language cultures. This is an issue of growing importance as the use of English as the lingua franca of academia increases. Scholars from around the world who must learn to write in English, especially those whose first language has conventions that

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differ from those of Anglo-American academic discourse, may find their communicative competence to be seriously affected by an insufficient understanding of the expected practices.

The idea that there can be an ideal level of metadiscourse in communication goes back at least as far as the original publication of the popular US style guide by Williams (1981/1989), where metadiscourse was given considerable coverage. It was not until after the use of metadiscourse had become incorporated by style guides that it became an active area of research in applied linguistics, even though the term "metadiscourse" was first coined in the 1950s by the linguist Zellig Harris. Since the early 1990s, it has grown to be an active but divided area in applied linguistics, with two main strands subscribing to quite different definitions. This division runs so deeply that one of the strands (the "interactive" strand) would consider as metadiscourse not only the examples in the right-hand column above, but also the ones in the left-hand column.

The two traditions are summarized in the next section. This is followed by a section on methods and materials typically used in studies of metadiscourse. The final section brings up some of the variables that have been found to affect the use of metadiscourse.

Divided Perspectives on Metadiscourse

A fundamental issue in metadiscourse studies is how to define and delimit the concept; see for example, Mauranen (1993, pp. 145–55) and Ädel (2006, pp. 167–79) for further details. The two different approaches that have emerged will be referred to as the *interactive* approach and the *reflexive* approach (based on Ädel, 2010), to avoid the previously used terms *integrative* and *non-integrative* (Mauranen, 1993), where one of the strands is defined in negative terms.

In the interactive approach, a broad definition of metadiscourse is applied, for example including stance markers (which express the writer's attitude to a statement), connectives (which explicitly link, or mark the relation between, sentences or paragraphs), and references not only to the ongoing discourse but also to other discourses (as when another text is quoted). There is a strong emphasis on written discourse; the starting-point is taken to be the interaction between the writer and reader. In this tradition, metadiscourse is broadly conceived of as any linguistic material at all that can be said to guide and direct the reader through the text (cf. Crismore, 1989).

Research into metadiscourse in applied linguistics began with the interactive approach, which was presented by Vande Kopple (1985). It was triggered by the perceived neglect, in studies of text, of anything that was not propositional, or related to the content itself, and by a wish to prove false the notion of academic writing as consisting exclusively of impersonal and factual statements. As a reaction against the strong emphasis on the development of content in text, researchers into metadiscourse focused instead on those linguistic features that could be considered non-content oriented, lumping these together into one category under the label of metadiscourse. This category thus included features as diverse as stance markers (*unfortunately*; *I agree*; *surprisingly*), expressions of certainty (*definitely*; *it is clear that*) and doubt (*might*; *perhaps*; *possible*), connectives (*but*; *thus*; *and*), the use of "I" marking the presence of the writer, engagement markers (*consider*; *note that*; *dear reader*), references to other texts (*according to NAME*; *(NAME, 1990)*), as well as clearly reflexive features such as illocution markers (*to conclude*; *briefly stated*), code glosses (*namely*; *in other words*), sequencers (*firstly*; *secondly*), announcers (*as we shall see in Chapter 5*), and reminders (*as noted above*).

These features correspond more or less to those originally outlined in Vande Kopple (1985). His classification has been widely used in the interactive approach, although it has

been modified by Crismore, Markkanen, & Steffensen (1993) and Hyland (e.g., 1998, 2005). Naturally, most of these features have been studied extensively, not as part of metadiscourse, but as categories in their own right. For example, there is a large body of research, at least for the English language, on expressions of stance and expressions of (un)certainty (under labels such as *modality*, *evaluation*, and *hedging*), on sentence connectives, and on intertextual references (also known as *attribution* or *citation* practices).

Early work in the interactive strand vaguely applied Hallidayan concepts (starting with Vande Kopple, 1985), dividing metadiscourse into two main types: *textual* and *interpersonal*. The textual type refers to linguistic elements that show how the discourse is organized and how different parts are related to each other, while the interpersonal type refers to linguistic elements that display the writer's attitude to what is said in the discourse. If metadiscourse is described as either textual or interpersonal, it is by definition not ideational (or *propositional*, which is the third and final concept in Halliday's model). This division is in line with defining metadiscourse as non-propositional material, which most researchers into metadiscourse do. However, for arguments against viewing metadiscourse simply as non-propositional material, see for example, Mao (1993) and Ädel (2006, pp. 209–12).

The interactive approach has been challenged by the reflexive approach. In this approach, the point of departure is reflexivity in language, or the self-reflective use of discourse, in which speakers or writers show an awareness of discourse *as* discourse. Various criteria for metadiscourse have been suggested (Ädel, 2006, pp. 27ff), but are not followed in all studies adopting the reflexive approach. The *explicitness* criterion refers to the fact that it is the explicit (and intended) commentary on the discourse or language use that is of interest. The *world of discourse* criterion states that the action should take place in the world of discourse rather than in the "real world." The *current text* criterion refers to the fact that metadiscourse makes reference to the ongoing text rather than to other texts; references to other texts fall instead under the category of *intertextuality*. The same principle applies to the current addresser and the current addressee, with the added requirement that they be talked about or referred to in their roles as discourse participants—that is, in the world of discourse.

These criteria have been integrated into a reflexive model of metadiscourse (Ädel, 2006) based on three of Jakobson's six functions of language: the *metalinguistic* (focusing on the discourse or language), the *expressive* (focusing on the writer/speaker), and the *directive* (focusing on the audience). This is seen as a better fit to a functional model of metadiscourse than the Hallidayan concepts.

The first applied linguistics study to take a reflexive approach to metadiscourse was Mauranen (1993), although several studies of similar phenomena had been carried out in general linguistics under various labels (e.g., Schiffrin, 1980 on *metatalk*). Mauranen and others adopting the reflexive approach originally used the terms *text reflexivity* and *metatext* rather than metadiscourse. There has been some debate about the appropriateness of the term metadiscourse (cf. Sinclair, 2005), mainly involving the objection that there is no true "meta" level in language (for counterarguments, see Ädel, 2006, pp. 213–14).

Methodology in Studies of Metadiscourse

Research into metadiscourse represents an area which is predominantly empirical and based on naturally occurring discourse. However, some experimental work has also been carried out, to investigate the actual effect metadiscourse has on an audience. Furthermore, some have taken an ethnographic approach to the study of metadiscourse, involving interviews with practitioners about how (they think) they use metadiscourse and how they perceive various aspects of metadiscourse (see e.g., Hyland, 2005).

The empirical analysis of metadiscourse was originally carried out using fully manual methods, but with the development and spread of databases of language data (corpora) and corpus-assisted methods, researchers have increasingly tried to apply (semi-)automatic methods to metadiscourse studies—see Hyland (2005) and Ädel (2006) for large-scale, systematic examples. As metadiscourse is a fuzzy category which is highly context-dependent, manual checking of automatically retrieved examples is typically necessary.

Experimental work on metadiscourse has primarily been concerned with the comprehension and recall of a spoken or written text under two different conditions: with and without metadiscourse. Researchers have investigated the role of metadiscourse in both reading comprehension (e.g., Vande Kopple, 1988) and listening comprehension (e.g., Chaudron & Richards, 1986), although to date there has been inconclusive support for any positive effect of metadiscourse. While researchers agree that metadiscourse is rhetorically important and a persuasive tool, not enough experimental research has been done to determine what systematic rhetorical effects the presence or absence of metadiscourse actually has on an audience. One example of a small study is Mauranen (1993, p. 188), which found that texts were perceived not only as more logical but also as more authoritative with metadiscourse than without.

In both corpus-based and experimental research, the type of material analyzed in studies of metadiscourse has overwhelmingly been *academic* discourse. One reason for this is that metadiscourse is common in academic genres, where the writer/speaker is typically expected to guide the audience through the discourse, for example by making its structure explicit, as in "In this paper, I explore . . ." (from a written essay) or "Just to give you kind of a map of where we are going . . ." (from a lecture). Another reason is that persuasive and interactive features in supposedly "objective" (information-oriented and expository) discourse have, in the past two decades, generally attracted the attention of researchers in applied linguistics, and thus the attention of researchers with a special interest in metadiscourse.

Variables Affecting the Use of Metadiscourse

Metadiscourse has been shown to be a common feature of academic discourse (and is presumed to be common in other types of discourse as well), although how common it is depends on which definition is applied. Metadiscourse has also been shown to display considerable variation in use. However, in order to fully establish the extent of this variation, the variables that give rise to it, and the ranking of these variables, more research is needed.

One variable that has sparked considerable interest is crosslinguistic differences. The degree to which writers and speakers direct attention to the discourse itself or project their own attitude toward the discourse (expressing, for example, (un)certainty or (un)importance), has been shown to be governed to some extent by language culture. Investigating metadiscourse in research articles by Anglo-American and Finnish academics, Mauranen (1993) found that the Anglo-American writers clearly employed more metadiscourse than the Finnish writers. For example, they showed more interest in helping readers to interpret the text and made their presence felt more explicitly than the Finnish writers did. The Anglo-American writers displayed a more reader-oriented style and used more explicit rhetorical conventions, while the Finnish writers tended to be more writer-oriented and more implicit in their writing. Both strategies can be seen as persuasive in the appropriate cultural context, but either strategy, if directed to a target audience whose stylistic preferences are different, may prove to be rhetorically inefficient.

Several studies of metadiscourse have been undertaken in intercultural rhetoric, in which the basic assumption is that there are culture-specific patterns of writing, and that first-

language patterns may cause interference when writing in a second or foreign language. Crismore et al. (1993) investigated variation in the use of metadiscourse due to cultural differences in essays in English by university students in Finland and the United States. Both populations made use of all subtypes of metadiscourse, but differences were found in frequency distribution. For example, an overall greater density of metadiscourse was used by the Finnish group. Interestingly, these results are contrary to those of Mauranen (1993) mentioned above, which also compared Finns and Anglo-Americans. This suggests one or other, or both, of the following: (a) that it may make a significant difference whether the interactive approach (in Crismore et al.'s case) or the reflexive approach (in Mauranen's case) is used, and (b) that considerably more research is needed before we can really identify all the variables that influence the use of metadiscourse.

Research into academic discourse has grown increasingly attuned to the influence of academic discipline. Academics in different fields engage in different practices and construct knowledge differently, and thus also use discourse for somewhat different purposes. In studies of metadiscourse, considerable variation has been found across disciplines (e.g., Dahl, 2004; Hyland, 2005). Hyland (1998, p. 5) goes as far as to say that "All academic disciplines have conventions of rhetorical personality which influence the ways writers intrude into their texts to organise their arguments and represent themselves, their readers and their attitudes. This is largely accomplished through . . . metadiscourse."

Another variable that has received attention in research into academic discourse is genre. A range of different genres have been investigated from the perspective of metadiscourse; those which have received the most coverage are research articles (e.g., Mauranen, 1993; Hyland, 1998; 2005), textbooks (e.g., Hyland, 2005), and student essays (e.g., Crismore et al., 1993; Ädel, 2006). However, few studies explicitly compare the use of metadiscourse across genres (but see Crismore & Farnsworth, 1990; Bondi, 2001; Hyland, 2005). The use of metadiscourse has also been found to vary with the academic proficiency of the writer, for example in comparisons of university students and professional academics. Of course, proficiency level is related to genre in that groups at different proficiency levels also tend to target different audiences, thereby producing different genres.

We have seen that by far the great majority of metadiscourse studies to date have been concerned with *written* (academic) discourse. This is primarily due to the fact that written material is considerably easier to obtain than spoken material, though there is certainly also a great need for precision and explicitness in written discourse, which means that high levels of metadiscourse are likely. It is only in recent years that studies on spoken material have emerged, based predominantly on lectures and conference talks. There have also been a small number of studies explicitly comparing spoken and written metadiscourse (e.g., Mauranen, 2001; Ädel, 2010), thus taking the variable of mode into account.

As the study of metadiscourse has developed, research has grown increasingly variationist. For example, some studies have suggested that metadiscourse use varies according to position in the text; specifically, it tends to occur particularly often in part-genres such as introductions and conclusions (see e.g., Ädel, 2006, pp. 125–39). It has also been suggested that metadiscourse varies according to the gender of the writer, although the evidence is scant and inconclusive (e.g., Crismore et al., 1993). Other studies have taken a diachronic perspective on metadiscourse, investigating its potential change over time (e.g., Taavitsainen, 2000).

Expanding Perspectives

The focus here, reflecting the current bias in research, has been on English, and especially on academic discourse in English. Studies of metadiscourse involving other languages,

such as Spanish, do exist, however (see e.g., Pérez-Llantada, 2010). Also, studies in the tradition of intercultural rhetoric have, indirectly, considered a range of different first languages. There have also been some studies examining metadiscourse in non-academic genres such as spoken conversation, newspaper discourse, and parliamentary debates. This brief overview cannot do justice to the large number of studies on metadiscourse carried out over the past few decades; the small selection presented here certainly represents only a preview of the wealth of findings, past and future, in this rich area of study.

SEE ALSO: Corpus Linguistics: Overview; Culture and Language for Specific Purposes; English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Grammar and the Influence of Society and Culture; Grammar in Academic Writing; Intercultural Rhetoric in Language for Specific Purposes

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Methodological Foundations of Sociocultural Theory

HOLBROOK MAHN

Over the last three and a half decades sociocultural approaches have broadened the scope of and made significant contributions to second language acquisition (SLA) research. These approaches trace their theoretical and methodological origins to the Russian psychologist Lev Vygotsky (1896–1934), whose objective was to develop a method of analyzing human consciousness. This entry discusses Vygotsky's contributions to the methodological foundations of sociocultural theory.

Working with a team of researchers that he headed, Vygotsky developed an approach to studying consciousness that was shaped by and helped shape his theoretical framework—an approach that was refined through practice. This effort came to an abrupt halt in the mid-1930s with Vygotsky's death in 1934 and the banning of his work by the Soviet bureaucracy in 1936. His work was "rehabilitated" in 1956, and with the publication of *Mind in Society* in 1978 and the six-volume *Collected Works* from 1987 to 1999, the influence of Vygotsky's work has grown in a number of fields including SLA research, as reflected in entries throughout this encyclopedia. There are, however, widely varied interpretations of Vygotsky's work that lead to significant theoretical and methodological divergences, which in turn have led to different influences on sociocultural approaches to research.

A number of issues have contributed to these differences, including: (a) the fact that Vygotsky's methodology is based on Marx and Engels's—a methodology that has also been open to widely different interpretations; (b) the varying perspectives that different disciplines bring to his work; (c) translation issues, especially of key terms and concepts into English that do not capture the essence of Vygotsky's description of the concept in Russian; and (d) the fact that a significant number of his writings became available in English only in the 1990s. Additionally, the most widely read version in English of Vygotsky's major work (Vygotsky, 1986) is a condensed version that neglects essential elements in the original, including his reliance on Marx and Engels. Because of these issues, I rely on Vygotsky's writings to revisit the methodological approach he developed in collaboration with his colleagues in the Soviet Union from 1924 to 1934, an approach that SLA sociocultural researchers use as a foundation for their work.

Vygotsky's Methodological Approach

Vygotsky (1997a, 1997b) uses the term *methodology* on three interconnected levels, which are described in more detail below: (a) to refer to an overarching, philosophical, methodological approach based on Marx and Engels's *dialectical materialist* approach; (b) to describe the development of an *intermediary theory* that would shape and be shaped by research on a particular object of study (for Vygotsky the object is the human psyche—the entity created through the unification of the mind and the brain); and (c) to designate *specific methods or techniques* in his experimental studies, such as the method of double stimulation. While Vygotsky's ultimate goal is to explain the origins and the development of human

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consciousness, the main focus of his research in this pursuit is the study of the relationships among thinking processes and language processes. The study of these relationships is fundamental to research on first and second language acquisition. In the preface to *Thinking and Speech*, Vygotsky (1987) provides an overview of the way in which he and his colleagues examine the complexity of the entity that is created through the unification of thinking and language processes and offers "the hope that our studies constitute a unified whole," stating that "all our work has focused on a single basic problem, on the genetic analysis of the relationship between thought and word" (p. 40), with *word* here denoting *language in general*.

Unlike contemporary researchers, Vygotsky views the relationship of thought and word as a unity. "Attempts to resolve the problem of thinking and speech have always oscillated between two extreme poles, between an *identification* or complete *fusion of thought and word* and an equally metaphysical, absolute, and complete *separation* of the two, a *severing* of their relationship" (1987, p. 44). In the first approach, because thinking and speaking coincide, there can be no examination of the relationship between the two: "One cannot study the relationship of a thing to itself" (p. 44). In the second approach, thinking and speaking are analyzed as separate entities that have only an external relationship, and then in trying to unite them "an attempt is made to reconstruct a connection between the two, to reconstruct an external, mechanical interaction between two different processes" (p. 44). Vygotsky (1987, 1997a, 1997b) argues that a new methodological approach is needed to study human consciousness in general and the unification of thinking and language processes in particular.

In *The History of the Development of Higher Mental Functions*, Vygotsky (1997b) writes that "the method must be adequate to the subject studied" (p. 27) and that "knowing the uniqueness [of the subject] and deliberately beginning the research from this point is the first condition for adequacy of the method and the problem; for this reason, the problem of method is the beginning and foundation, the alpha and omega of the whole history of the cultural development of the child" (p. 27). The object of Vygotsky's study is the *unification* of thinking and language processes and its relationship to the cultural development of the child, a development that entailed "first, the processes of mastering external materials of cultural development and thinking: language, writing, arithmetic, drawing; second the processes of development of special higher mental functions . . . [such as] voluntary attention, logical memory, formation of concepts, etc." (p. 14)—in other words the higher psychical processes that make humans human. In his investigation of these higher processes, Vygotsky focused on the development of the *internal system of meaning* that is created by the unification of the thinking and speaking processes. The method that Vygotsky developed to study this unification "is simultaneously a prerequisite and product, a tool and a result of the research" (p. 27).

The interrelationships between thinking and speaking processes and other mental processes constitute a system, whose nature changes with transformations in the relationships between the processes. Therefore, Vygotsky investigates the human psyche as an integrated system of interrelated mental/psychical, natural, and historical processes, constituted by the unification of the brain and the mind that occurs in interaction with the sociocultural, historical, socioeconomic, and ecological systems in which they are situated and to which they are interconnected. In contrast, other psychologists of Vygotsky's time analyzed mental functions such as perception, attention, and memory by isolating them from each other.

In developing the first level of his approach, its overarching, philosophical aspect, Vygotsky relies on the dialectical approach Marx and Engels created to study phenomena in their process of development, in their interconnectedness, in their essence. Dialectics, the "science of interconnections" (Engels, 1963, p. 14), examines systems in their development and in their relationships.

> Dialectics is the logic of movement, of evolution, of change. Reality is too full of contradictions, too elusive, too manifold, too mutable to be snared in any single form or formula or set of formulas. Each particular phase of reality has its own laws and its own peculiar categories and constellation of categories which are interwoven with those it shares with other phases of reality. These laws and categories have to be discovered by direct investigation of the concrete whole; they cannot be excogitated by mind alone before the material reality is analyzed. (Novack, 1969, p. 66)

When analyzing the material reality of the human psyche in its social situations of development, Vygotsky often referred to a statement of Marx's from the third volume of *Das Kapital* to explain his approach to scientific inquiry: "If the essence of things and the form of their appearance directly coincided, says Marx [1981, p. 825], all science would be superfluous" (Vygotsky, 1997a, p. 325). To discover the "essence of things" an examination of origins and processes of development is needed, that is, studying it historically.

> Historical study simply means applying categories of development to the study of phenomena. To study something historically means to study it in motion. Precisely this is the basic requirement of the dialectical method. To encompass in research the process of development of some thing in all its phases and changes—from the moment of its appearance to its death—means to reveal its nature, to know its essence, for only in movement does the body exhibit what it is. (1997b, pp. 42–3)

The challenge in examining processes from their origins and in their development, known as *genetic analysis,* is "using experimentally elicited and artificially organized processes of behavior to penetrate into how the real, natural process of development occurs" (1997b, p. 94).

The overall dialectical approach of Marx and Engels cannot be applied directly to the matter being studied; an intermediary theory—the second level—has to be developed. "In order to create such intermediate theories—methodologies, general sciences—we must reveal the *essence* of the given area of phenomena, the laws of their change, their qualitative and quantitative characteristics, their causality, we must create categories and concepts appropriate to it" (Vygotsky, 1997a, p. 330). Marx and Engels used this same approach to analyze the essence of human social formations by developing an intermediary theory, *historical materialism*, and creating categories and concepts appropriate to the study of the laws of motion behind human social formations (Marx & Engels, 1976). Vygotsky adopts this approach in his effort to develop an intermediary theory, *psychological materialism*, appropriate for analyzing the human psyche as a system of interrelated processes. He focuses on its origins, path of development, structure, and function and investigates the systemic interdependence, interconnection, and unification of psychological processes, as exemplified specifically in the unification of thinking and language processes.

In developing his analytic approach to study the relationship between thinking and language processes, Vygotsky first critiques the way in which prevailing psychological theories address this relationship, particularly the theories of Piaget and Stern—theories that ignore internal systems developed through social interaction, and focus instead on external language isolated from its communicative function, which results in "the relationships between thought and word [being] understood as constant, eternal relationships between things, not as internal, dynamic, and mobile relationships between processes" (1987, p. 283). Vygotsky also criticizes approaches that do not address social, cultural, and historical contexts, and in which "The child and the development of his higher mental functions are considered *in abstracto*—outside the social environment, outside the cultural environment and the forms of logical thinking, world view, methodological approach, and concepts on causality that govern these functions" (1997b, p. 9).

The unification of thinking and language processes plays an essential role in the development of the *system of consciousness* and of the *system of meaning* for both the human species and the individual. The internal system of meaning created by the unification of thinking and language processes develops because of vital interactions between social, cultural, historical, and natural forces. The interconnections among these forces influence both the development of humanity and the individual person, particularly in the ability to communicate through language. In his analysis of *verbal thinking*, Vygotsky describes the structure or system that is created by the use of language to mediate meaning.

> A central and basic aspect of [mental functions'] structure is the use of the sign as a means of directing and mastering mental processes. In the problem of interest to us, the problem of concept formation, this sign is the word. The word functions as the means for the formation of the concept. Later it becomes its symbol. Only the investigation of the functional use of the word and its development from one age to the next . . . provides the key to the formation of concepts. (1987, p. 126)

To study the functional use and development of language, Vygotsky (1987) uses *analysis into units* to investigate verbal thinking, maintaining it can access the relationships and interconnections between mental processes that traditional approaches used by psychology cannot. In contrast to a "psychology that decomposes verbal thinking into its elements in an attempt to explain its characteristics [and that] will search in vain for the unity that is characteristic of the whole" (p. 45), Vygotsky partitions the whole into a unit. "The term 'unit' designates a product of analysis that possesses *all the basic characteristics of the whole*. The unit is a vital and irreducible part of the whole" (p. 46) that is derived through an analysis that examines the "concrete aspects and characteristics" (p. 244) of the whole. Vygotsky derives the unit *znachenie slova* (meaning "through language use") to investigate verbal thinking. (See Mahn (2008) for a more in-depth description of Vygotsky's analysis of *znachenie slova* and the system of meaning.)

The concept of *unit of analysis* is often used by sociocultural researchers and others without identifying the unity from which their unit is derived or describing the process through which they have derived the unit. There is a tendency to use the unit as a lens through which to view the object of study rather than for the unit itself to serve as the object of investigation, as it does for Vygotsky. The object of study, for which Vygotsky derives the unit, is often misconstrued. He explicitly states that the unit *znachenie slova* is derived to gain an understanding of something very specific, namely *verbal thinking,* the entity created by the unification of thinking and language/speaking processes. However, this central point is obscured when scholars claim that Vygotsky derived this unit to study consciousness as a whole or the mind as a whole (Davydov & Radzikhovskii, 1985, p. 56; Wertsch, 1985, p. 192, 196; Zinchenko, 1985, p. 100; Yaroshevsky, 1989, p. 297; Lantolf & Appel, 1994, p. 22; Leontiev, 1997, p. 24). It is true that Vygotsky uses analysis of verbal thinking as a beginning step in his analysis of human consciousness, but the purpose of the unit *znachenie slova* is to analyze verbal thinking and not consciousness as a whole. The analysis of the unit will not reveal the nature of verbal thinking as a whole, but only that of its fundamental, primary aspects (Vygotsky, 1987, p. 244).

The misrepresentation of this essential aspect of Vygotsky's work pivots attention away from *znachenie slova* and leads to researchers purporting to follow Vygotsky developing alternative units and theories. Such was the case with Leontiev (1981), who was a member of a group of psychologists led by Vygotsky, but who distanced himself from Vygotsky's work and developed a theoretical approach that was more amenable to Stalin's Soviet bureaucracy, which at the time was engaged in a concerted attack on Vygotsky's ideas (Mahn, 2010). Arguments from these attacks are often echoed in contemporary interpretations of Vygotsky's work as well as in those which claim to "go beyond Vygotsky's theory"

but which do not accurately describe the central focus of his work—an analysis of the unit *znachenie slova*.

The third level of Vygotsky's methodology, practical experimental application, is used to analyze *znachenie slova*.

> Experimentation is the only path by which we can delve into the patterns of higher processes in sufficient depth; specifically in an experiment, we can elicit in a single artificially created process the most complex changes separated in time, frequently with years passing latently, which are never accessible to observation in all their real totality in the natural genesis of the child and cannot be comprehended directly in a single glance and correlated with each other. (Vygotsky, 1999, p. 45)

Vygotsky and his colleagues look at mental functions and processes in relationship to the thinking/language unity. Luria said that Vygotsky cautioned that these experiments "should never be limited to sophisticated and laboratory models divorced from the real world. The central problems of human existence as it is experienced in school, at work, or in the clinic all served as the contexts within which Vygotsky struggled to formulate a new kind of psychology" (Cole, Levitan, & Luria, 2006, p. 53).

These empirical studies, as described in *Thinking and Speech,* fall into two broad categories: ones that study the development of *znachenie slova*—meaning through language—and ones that study "the nature and development of scientific and spontaneous concepts in ontogenesis" (Vygotsky, 1987, p. 40). The former investigate the process of the creation of meaning, of the development of concepts, by using meaningless words and connecting them to concepts created by the researcher. Vygotsky also studies the process of concept formation as "causally and dynamically determined" (1987, p. 127) by using an approach he calls the "functional method of dual stimulation." "In using this method, we study the development and activity of the higher mental functions with the aid of two sets of stimuli. . . . One set of stimuli fulfills the function of the object on which the subject's activity is directed. The second functions as signs that facilitate the organization of this activity" (p. 127).

The second group of studies entails a "comparative study of the development of scientific and everyday concepts in school-age children" (p. 167). Vygotsky uses the word *scientific* to designate concepts that are part of systems, such as numerical and alphabetic systems, not solely those concepts derived from the scientific method. Vygotsky's colleague Shozefina Shif primarily conducted this research using a new experimental method.

> Subjects were presented with problems that were structurally isomorphic, but which differed in that they incorporated materials based on either scientific or everyday concepts. Using a series of pictures, the experimenter told a story that ended with a sentence fragment broken off at the word "because" or "although." This procedure was supplemented by clinical discussion in order to establish levels of conscious reflection on cause–effect relationships and relationships of implication with both scientific and real-world material. (Vygotsky, 1987, p. 167)

Vygotsky summarizes his decade-long collaborative research effort in *Thinking and Speech* and concludes by declaring that their work had barely begun, that they had revealed the complexity of the entity created by the unification of thinking and language processes—verbal thinking—but that they had hardly begun to analyze its nature. Events in the Soviet Union curtailed this research enterprise with the banning of Vygotsky's work in 1936. For twenty years, reading his work was forbidden in the Soviet Union and, as mentioned previously, perspectives that varied in significant ways in theory and practice from Vygotsky's heavily influenced its "rehabilitation." These factors have contributed to aspects

of Vygotsky's work being extrapolated from his theoretical framework and analyzed in isolation, diminishing their explanatory power. They are then used in research either as objects of study or as lenses or perspectives through which to examine phenomena. This has occurred with the concept most associated with Vygotsky's name, that of the zone of proximal development (ZPD). When this concept is not situated in Vygotsky's broader theoretical framework, it leads to incomplete and contradictory interpretations and applications. It is "probably one of the most used and least understood constructs to appear in educational literature" (Palisncar, 1998, p. 370 as quoted in Chaiklin, 2003, p. 41).

This concept is generally presented as "*the distance between the actual developmental level as determined by independent problem solving, and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers*" (Vygotsky, 1978, p. 86). This definition does not address the central aspect of Vygotsky's concept of ZPD—the relationship between everyday/spontaneous concepts, the strength of which "lies in spontaneous, situationally meaningful, concrete applications, that is, in the sphere of experience and the empirical" (1987, p. 220), and scientific/academic concepts organized into systems, concepts that are appropriated with conscious awareness and volition. Scientific concepts, concepts in systems, grow "downward into the domain of the concrete, into the domain of personal experience" (p. 220). Everyday and scientific concepts move in opposite directions in their development, with the everyday/spontaneous growing up from the concrete to the abstract and the scientific/academic growing down from the abstract, from systems, into the concrete. "The link between these two lines of development reflects their true nature. This is *the link of the zone of proximal development*" (p. 220).

The oft-quoted definition also does not convey the importance that Vygotsky attributes to imitation in developing the ZPD.

> [A] central feature for the psychological study of instruction [teaching/learning] is the analysis of the child's potential to raise himself to a higher intellectual level of development through collaboration, to move from what he has to what he does not have through imitation. . . . [This] is the content of the concept of the zone of proximal development. (p. 210)

Vygotsky situates the concept of ZPD in his work as a whole: "The theoretical significance of this diagnostic principle consists in that it allows us to penetrate into the internal causal-dynamic and genetic connections that determine the process of development itself of mental development" (1998, p. 203) and to establish the "internal course of the process of development" (p. 204).

Vygotsky developed his methodological approach through experimentation and practice, with practice revealing the applicability, strengths, and weakness of the theory/method. There were dead ends and false starts, but Vygotsky (1987) remarks that even with them a foundation was in place guiding their work from the start: the methodological approach derived from Marx and Engels. This approach provides coherence to Vygotsky's work, a coherence that is often overlooked in the division of his work into different periods. It is important to use a dialectical approach to analyze his work and to understand the nature of the transformations that his theory and method went through. Vygotsky's methodological approach provides a foundation for sociocultural approaches to SLA, but a reexamination and reconceptualization of this methodology can open up new avenues for SLA research.

SEE ALSO: Research Methods and Sociocultural Approaches in Second Language Acquisition; Vygotsky and Second Language Acquisition

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Methods for Language for Specific Purposes

JILL NORTHCOTT

Introduction

This entry begins with a general consideration of whether or not LSP has distinctive teaching methods and it then gives an overview of seven common methodological features of LSP instruction. The entry concludes with developments in LSP which have led to methods now considered as distinctive areas of language teaching in their own right.

First of all, a few words about terminology. The term LSP is used sometimes to refer specifically to English, sometimes to include English, and at other times to exclude English. Another source of confusion is the fact that the same acronym can refer to both *language* and *languages*. Sometimes LSP and ESP are used synonymously. In this entry the term LSP (language/s for specific purposes) is used to refer to both English and other languages unless otherwise specified. The term ESP is used in referring to the work of others. Many methodological developments occurred first in English, simply because of the dominance of English as a global language resulting both from and in increased internationalization. Turning to a definition of *methods*, Richards and Rodgers (2001) discuss the relationship between approaches, methods, and procedures. Both approaches and methods are concerned with language program design. Approaches are related to "theories about the nature of language and language learning that serve as the source of practices and principles in language teaching" (p. 20), methods are the realization of approaches, and procedures occur in the implementation phase, that is, in the classroom. Although the subject matter of this entry is concerned with all three to a greater or lesser extent, the primary focus is on method as the realization of an approach.

A Distinctive Methodology?

Does LSP have its own teaching methodology? The jury is still out on the question (Basturkmen, 2006). The prevailing view is that any methodology appropriate to the teaching and learning context may be used. Some writers such as Hutchinson and Waters (1987) argue that LSP has borrowed from general language teaching methods, and others, including Johns and Dudley-Evans (1991), argue the opposite. Considering languages other than English, Grosse and Voght (1991) maintain, in their review of developments in teaching LSP in the US, that similar methods are used in LSP and non-LSP courses. The difference is in the context in which the language is learned rather than the content: "The context of oral and written discourse and learning activities is drawn from professional content areas such as business, engineering, or medicine" (p. 182).

The growth in LSP, which moved from the teaching of specialized vocabulary, primarily for reading purposes, to a large-scale movement, coincided with the development of communicative language teaching (CLT). The perhaps inevitable consequence is that there are shared methodological concerns. The focus shift from a structural to a functional view

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of language use with the consequent emphasis on new methods for language teaching lends itself naturally to LSP. In distinction from more general approaches to language learning, ESP is, to quote Harding,

> the language for getting things done . . . In ESP the practical application and use of language overrides other aspects of language learning. The vocation can be anything from A to Z, from architects to zoologists, by way of bricklayers, lawyers and tour guides. (2007, p. 6)

In other words, it begins from "a functional account of learner needs" rather than a structural approach to language (Richards & Rodgers, 2001, p. 21). According to Belcher:

> the functions that should be taught were seen as best discovered through analysis of learners' specific needs, hence the impetus for the language, or English, for specific purposes (LSP/ESP) movement. The interest in language learning processes led to teaching methods that facilitated classroom interaction and discovery (inductive) learning, thus socio-cognitive growth. (2009, p. 230)

LSP methods have developed in an eclectic fashion because of this centrality of the needs-focused approach to language education. There is no one clearly defined and universally applicable LSP method. However, the need for LSP educators to find methods best adapted to their learners' needs has resulted in the development of appropriate methods which, in many cases, have subsequently been taken up by mainstream ELT teaching. As Hyland (2006, p. 89) asserts: "principled teaching is not about pre-packaged methodological products, however, but the individual teacher's construction of personal, context-specific frameworks which allow him or her to select and combine compatible procedures and materials in systematic ways for a local context."

Choice of method will not only depend on the characteristics of the LSP learners and the situations of language use but will also consider other variables including course content and teacher background. One key variable in this area will be the level of understanding the teacher has of the learner's academic discipline or professional background. Northcott (2008) shows the interrelatedness of methodology, learner context, and teacher background in one area of ESP, teaching English for law. Swales (2007, p. 279) points to the country and region dimension to priorities in ESP. Differing focuses will also have an impact on selection of methods in the classroom. "South America stresses reading comprehension, Scandinavia specialized translation, Eastern Europe terminology, the US disciplinary teaching by international teaching assistants, France semiotics, and Spain genre analysis."

Different taxonomies of ESP methods have been produced but what writers concur on is that methods are essentially eclectic, and there is no one method for LSP. It is, however, possible to identify methods which occur frequently in many types of LSP teaching. Basturkmen (2006) provides a helpful framework for consideration of LSP methods by dividing them on the basis of whether they are predominantly input or output focused. She makes the distinction between exposing students to authentic texts and comprehension activities in the belief that this input-focused method will be sufficient to develop students' language competence and an input to output method where students then produce their own examples (as in a genre-based approach). Output-focused methods begin with production of the target language as in, for example, medical students conducting a patient consultation. Output to input methods involve post-teaching of the language required by the students to perform the task. For example, business professionals taking a report-writing course might be required to write a report at the beginning of the language program.

This would then be used diagnostically to identify areas of difficulty which then provide the teaching agenda for subsequent sessions in the program.

Common Methodological Features of LSP Instruction

Some areas considered in the literature, such as learner-centeredness and learner autonomy, have not been considered separately as they are, it is maintained, implicit in the methods described below. Indeed, the emphasis in LSP on needs analysis leads naturally to a focus on learner-centeredness. Content-based instruction (CBI), an approach realized in much LSP teaching, receives attention in the next section of the entry.

There are seven areas common to LSP methodology worth examining more closely.

1. *Disciplinary methodology*. LSP "makes use of the underlying methodology and activities of the disciplines it serves" (Dudley-Evans & St John, 1998, p. 4). Grosse and Voght (1991, p. 182) propound a weaker version: "LSP course content and class activities are geared closely to professional goals." The question for the classroom practitioner to consider is how to use the methodology of the discipline in designing a language program geared to the learners' professional goals. This methodological principle in both its weak and strong versions is reflected in the choice of learning activities. For example, EAP students may participate in language classes structured in a similar manner to university seminars; law students can develop their language skills through initial attempts at writing case summaries. Engineering students may describe, either orally or in writing, how something works or report on a process. Business students, particularly at MBA level, and professionals can both use case studies. Using the expertise of the learner in the LSP classroom is advocated for both professionals and high-level students of a particular subject such as MBA students. However, pre-experience students may not yet have sufficient understanding of their subject for this to be a viable alternative. In response to this difficulty the LSP classroom will sometimes use input material at a cognitively simpler level than that required by the target situation. For example, undergraduate law materials may be used as source material for developing legal English skills with postgraduate law students. De Rycker (1997) describes the use of school textbooks as the basis for a syllabus to teach both business and business English to business undergraduates. This, however, may be problematic in the light of (2) below.
2. For Coffey (1984), *authenticity* is the key issue in ESP methodology. However, Jordan's (1997) view that pedagogic purpose is the main consideration when choosing whether or not and at what stage to use authentic texts reflects mainstream opinion. This is linked to authenticity of text and task (Widdowson, 1979) resulting in role-play and simulation activities mirroring real-life professional communication. For example, business learners participate in meetings and negotiations; medical English learners in doctor–patient interactions. The goal of such activities is "not just to serve as vehicles for developing communicative competence but to equip students with language learning and personal problem-solving strategies (e.g, increased metacognitive awareness) that they can carry with them into their target communities" (Belcher, 2009, p. 9). The texts used by the learners will generally be authentic to the discipline or profession, rather than material written for language teaching. Some advocate a strong version of the authenticity principle maintaining that only authentic texts should be used in the LSP classroom.
3. *Genre awareness* has played a central role in LSP methodology. This is perhaps seen at its most explicit in the area of EAP, where rhetorical conscious-raising methods predominate. The target discourse, for example a research paper, is analyzed from a genre

perspective to identify the various moves and the language employed to make those moves identified. The purpose is to both socialize students into the expectations of their particular academic discourse communities and enable them to become more effective readers and writers. Focusing on language is seen not as an end in itself but as the means to become aware of the role of grammatical and lexical choices in creating meaning. In business English work has been done to identify the genre features of specific written and spoken business communication events, such as management reports, sales letters, sales negotiations, and decision-making meetings. The teaching method focuses on developing learners' awareness of these features in order to help them reproduce them in their own written and spoken communication. Since recent research indicates that genres are evolving, and therefore less fixed than previously thought, classroom methods have been developed to ensure that students do not rigidly and inappropriately reproduce sample genres. Johns (2009) advocates getting students to research new academic scenes and then develop their skills to participate in these through role-play, building on the work of Lynch and Anderson (1992).

4. *Task-based learning* has proved a popular method for many LSP situations and learners. Premised on a strong view of CLT, learners engage in the performance of a task (either real-world or pedagogical) where the focus is on meaningful activity and reaching an outcome. The use of language is a tool for the successful completion of the task and the focus is not on the successful production of target forms of the language. This approach lends itself to the construction of relevant language programs and materials. Learners will perform a real-world task such as participating in a lawyer–client interview (English for law). The task may be performed early in the language program, making use of deep-end strategy, so that the learner has to draw upon the language resources he or she has, combined with, in the case of work-experienced learners, his or her knowledge of the demands of the situation. This method involves post-task teaching of the language needed for successful performance of the task and an opportunity to repeat the same or a similar task later in the program, thus demonstrating the learner's improvement in mastery of the communicative demands of the situation. This presupposes that learners will develop their language when pushed by actual use to do so. It is a method which has proved particularly popular for teaching business professionals as it mirrors the pressure of working in the business world. According to Phillips (1981, p. 93), tasks "must reflect the structural characteristics of the learner's special purpose."
5. *Problem-based learning* is in many respects similar to task-based learning. Developed for the purposes of educating medical professionals it is now widely used in doctor and nurse education in many parts of the world. Students are trained by exposure to a particular case which they discuss in small groups in order to reach a diagnosis. On the way they will need to read and consult a variety of sources. This has been adapted to different LSP learning contexts, principally but not exclusively, within English for medical purposes. Barron (2002) for example, used a PBL method to teach science students. Belcher (2009) advocates the use of PBL in nursing education. On a smaller scale, PBL tasks adapted to specific disciplines including business, engineering, and law are a common feature of ESP classroom practice. For example, in an English for Legal Studies program at the University of Edinburgh law students develop their spoken legal English by working in small groups with tort cases, identifying the parties, the legal issues involved, and judging the likelihood of success should the case come before the courts.
6. *Team teaching*. This is a method considered particularly suitable for EAP contexts where language teachers may lack the depth of disciplinary knowledge necessary to be able to analyze the target discourse and situational needs, combining the resources of both

language and subject specialists. There is a relatively rich literature on the theme of liaison between subject specialists and ESP teachers in academic settings. Swales (1988) referred to early accounts of team teaching published in smaller journals as "reports of various types of cooperation, . . . ESP staff 'sitting in' on lectures, of joint preparation of assignments . . . of the ESP tutor acting as 'language assistant' in subject classes and so on" (p. 138). The publication of Johns and Dudley-Evans's (1978) account of team teaching at Birmingham University began to change what was understood by team teaching. Dudley-Evans (2001), drawing on Barron (1992) developed a framework for understanding these "various types of cooperation" with subject specialists, categorizing them under three areas: cooperation, collaboration, and team teaching, depending on the extent of the cooperative relationship. The extent of cooperation ranges from a low level of cooperation where the LSP teacher consults the subject-specialist informant about aspects of the discipline to collaboration with the language teacher and subject teacher working outside the classroom to devise materials together to team teaching which involves both teachers working together in the same classroom. Northcott and Brown (2006) give an account of team teaching adapted to a very specific professional LSP context, training legal translators and interpreters in the Baltic countries.

7. *Use of computer-based resources*. Corpus linguistics research has shown the very different characteristics of discourse in different disciplines and lent support to the call for discipline-specific LSP (e.g., Hyland, 2002). The widespread availability of concordancing programs, corpus resources, and networking tools has made the search for examples of authentic language use much easier with the availability of lectures, interviews with business people, and business training material on the Web. Live blogs and other so-called Web 2.0 features and subject-specific portals make easy access to disciplinary and professional communities of practice a more realistic goal. Many LSP programs, particularly those designed for busy professionals, are organized on a blended-learning basis, combining face-to-face tuition with access to computer-based language resources.

Content-Based Methods and Approaches

As a result of increasing internationalization of English, there is a growing emphasis on teaching subject matter through the medium of English (see, e.g., Fortanet-Gómez & Räisänen, 2008). CBT has developed into an approach to learning in its own right with a growing research base. Content and language integrated learning (CLIL) is content-based language teaching, predominantly for young learners, and appears to be an increasing practice both in Europe and further afield. The primary aim is not to learn the language but to acquire the content of the subject specialty although language and skills of communication play a substantial role within the curriculum (Marsh, Marsland, & Stenberg, 2001). Subject specialists are being required to teach their subjects in English leading to the reverse of the LSP conundrum. For LSP teachers a reoccurring major concern has been lack of subject-specialist knowledge. For CLIL practitioners, the gap can be a lack of understanding in how to use appropriate methods in the classroom to develop students' language competence. The experience of LSP practitioners in using and adapting existing methods and developing new methods for unique LSP contexts can play an important role in filling this gap.

Conclusion

It could be argued that this entry does not, in fact, answer the original question of whether or not LSP has a distinctive methodology. However, the lack of a clear-cut answer is wholly

consistent with the nature of LSP, essentially an eclectic, learner-centered approach to meeting the real language learning needs of both professionals and students in various discourse communities. LSP teachers have the flexibility to adopt and adapt new methods from a variety of disciplines. "Freedom to innovate," in Strevens terms (1980, p. 120), remains central to LSP.

SEE ALSO: Content-Based Instruction in English for Specific Purposes; English for Academic Purposes; English for Business; English for Medical Purposes; English for Nursing; Genre-Based Language Teaching

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Minority Languages in Education

DURK GORTER

Introduction

Minority languages are commonly defined in relationship to the country where they are spoken. Most countries recognize only one official language, a small number of countries are bilingual (e.g., Canada, Finland, Ireland, Paraguay, the Philippines, and Tanzania) and only a handful of countries recognize three or more languages, such as Belgium (3), Luxembourg (3), Singapore (4), Switzerland (4), South Africa (11) and India (23). Since there are about 200 independent countries and an estimated 6,000–7,000 languages in the world (Lewis, 2009), it is easy to understand that by far most languages are minority languages. Various labels are applied to the language varieties used by minority groups. "Minority" language can also be referred to as "heritage," "indigenous," "ethnic," "lesser used," "stateless," "non-dominant," "threatened," "regional," "immigrant," "minorized," "tribal," or "endangered" language. These designations overlap but they are not all synonymous. One label is often preferred over the other because an implicit denigrating meaning of the word is perceived. In the applied linguistics literature "minority language" seems to be used most frequently and here it will be used as the common denominator. The logical contrasting label is of course "majority language." Here also different designations exist: "dominant," "national," "official," or "state" languages among others (see Grenoble & Whaley, 2006, p. 14).

Different criteria can be used to designate a social group as a "minority" or a "language minority" (Capotorti, 1979). However, there is no generally accepted definition of what constitutes a minority language. The definition given in the Charter for Regional or Minority Languages of the Council of Europe seems to have gained wide currency. The charter refers to

> languages that are traditionally used within a given territory of a state by nationals of that state who form a group numerically smaller than the rest of the state's population and [are] different from the official language(s) of that state.

This definition is not undisputed because the charter explicitly excludes "dialects of the official state language(s)" and "the languages of migrants."

In Europe and in some other countries there is an important separation between regional languages and the languages spoken by immigrants (Extra & Gorter, 2008). The first category concerns (mainly) territorial minorities created during state-formation or because of migration of population groups "since time immemorial." The difference with the second type, however, can be gradual. Immigrant minority languages are the consequence of more recent international migration processes, which started in Western Europe primarily in the 1960s. Due to an influx of migrants, expatriates, refugees, and asylum-seekers in many European states today over 100 different languages are spoken at home, in particular in the larger urban areas. This is also the case in many regions where a historical minority language is in use, such as Catalonia, Wales, or Friesland.

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The fact that their existence is not secured is a feature most minority languages have in common. For some language groups this is an urgent issue and they may be labeled "severely endangered" or "moribund" (Moseley, 2009). For other groups the threat is more felt in the long run because of the pressure of other dominant languages.

In this entry the emphasis is on the education of regional minority languages in Europe, although worldwide there are many similar issues involved in the education of minority languages. It will be obvious that minority language education can cover many different situations. The continuum may range from covering only a temporary extracurricular provision for a small group of speakers to extending a minority language provision through all stages of education, from the youngest ages onwards until university and life-long learning facilities for adults.

Education Rights and Minority Languages

Already in 1953, the UNESCO report, "Use of Vernacular Languages in Education" stated "it is axiomatic that the best medium for teaching a child is his mother tongue" (UNESCO, 1953, p. 11). Today the approach is called "mother tongue-based multilingual education" (MLE). Learning the mother tongue first is an important point of departure, but learning the official state language is also encouraged as well as the learning in one or more foreign languages (UNESCO, 2007). Building on the mother tongue as a strategy in bilingual or multilingual education has been supported by research (Benson, 2009). However, UNESCO's work thus far has been largely neglected by policy makers and school authorities. The issue continues to be that children often enter a school where "they are expected to learn a new language at the same time as they are learning in and through the new language. The basic problem is that children cannot understand what the teacher is saying!" (Dutcher, 2004, p. 8).

Many other international documents support the teaching of minority languages, such as The Hague recommendations of the OSCE accepted in 1996, or the Universal Declaration of Linguistic Rights accepted in the same year (Skutnabb-Kangas, 2008). However, because those instruments cannot be legally enforced they are predominantly a moral appeal for linguistic human rights.

In the 1990s the Council of Europe established two important instruments, the Framework Convention for the Protection of National Minorities and the Charter for Regional or Minority Languages. They are rather different instruments because the framework convention protects minorities (thus groups) and the charter concerns languages as cultural assets (Woehrling, 2006, pp. 32–3).

The goals of the Framework Convention are rather broad. For education, the aim is to "foster knowledge of the culture, language and history of the national minorities, also among the majority" (article 12) and "the recognition of the right to learn the minority language" (article 14). The last article confirms the fundamental right to obtain at least some minimal minority language teaching provision.

The Charter for Regional or Minority Languages can be considered more important for language revitalization, in particular for education (Dunbar, Parry, & Klinge, 2008). The charter can be seen as a yardstick on how states ought to deal with the minority languages inside their borders. It offers each state that ratifies it a range of measures to promote the use of regional or minority languages in public life. The measures are presented as an à la carte menu. For each minority language specified at the time of ratification something has to be chosen from each course according to the specific situation of that particular minority language. As far as measures in the field of education are concerned, the minority language should be present "at all appropriate stages" of the education system. Given the

contextual variety the European language minorities find themselves in, the selected measures differ widely between the different states (Grin, 2003).

Most states have chosen a conservative approach, where they sign at the lowest level of an obligation (to favor, encourage, or both). In spite of this, in many cases the charter is a step forward compared to earlier complete disregard by the authorities. A gap frequently continues to exist between the legal arrangements and de facto implementation. States are generally not easily ready to accommodate to the demands of minority language speakers. States have typically built their own educational system over a longer period of time based on an ideology of national homogeneity.

School Practices

Most formal language learning in society takes place in education. For language planning, education is as an essential tool for "producing" new speakers (Nelde, Strubell, & Williams, 1996). When education is successful it strengthens a language group. The majority language often dominates the schools, but it is often not the language of the minority speakers. As a consequence students learn the majority language best and may prefer that language for many other functions as well.

The position of the minority language in the educational system is influenced by a multitude of factors, such as historical events, legal mechanisms, official language policies, socioeconomic development, or media provisions. But language use in society, language attitudes, group identity, and so on can also all have an influence on how a minority language will be taught.

The weight of the minority language in the school curriculum is a major concern. Central is how much the minority language is really taught and what the outcomes are. A small amount of symbolic attention to the minority language, such as teaching it as a subject for a few hours per week, can easily result in transition to the dominant language. Formal bilingual education can thus lead to the usage of the dominant language rather than to the maintenance of the minority language.

In the Euromosaic study it was found that about half of 48 minority language groups in the European Union scored low on a five-point scale for education provisions (Nelde, Strubell, & Williams, 1996, p. 65). In a comparison of 29 cases in the European Union, Gorter (2008) found that the minority language is taught in 14 communities as a subject to 50% or more of all primary school children. Only a small proportion of schools teach more than half of the subjects through the minority language. The quality and the final proficiency may be as important as the number of hours. Yet, only a few minority groups have succeeded to obtain reasonably strong provisions for language education. We can think of Basque and Catalan in Spain, Welsh in the United Kingdom, or, beyond the European Union, of Māori in New Zealand. Today those languages are supported by an education system which could hardly have been anticipated 30–40 years ago. In those exceptional cases a slowing down of language shift and an apparent reversal has been achieved.

Most minority languages lack a tradition as language of instruction in the schools. In many cases their appearance in the education system is of recent date. Minority languages share much, but they also differ in respect to official recognition by the authorities, protection in educational laws, place in the school program, quality of teachers, development of learning material, availability of new technologies, presence of immigrants, and the attraction and prestige of English. There is a paradox that multilingualism is generally seen as an asset when it concerns English as a second language but not in the case of minority languages.

Future Challenges

Almost all minority languages in the world are seriously endangered (Moseley, 2009). Processes of homogenization and globalization have led to a reaction on behalf of minority languages during the last decades. Many efforts at language revitalization are being attempted. Stronger provisions for minority language education are an important contribution to language revitalization. At the end of their school career students have to be competent bi- or multilingual speakers who are literate in two or more languages.

An adequate education system contributes to the maintenance of the language but does not guarantee in itself intergenerational language transmission or the persistence of language use (Fishman, 2001). A robust educational policy for a minority language can lead to success, but it is hard to achieve a sustainable future for a language. To imagine the ideal school where multilingualism is the ruling ideology is possible, but far from reality (Shohamy, 2006, p. 173). Minority language communities have to find ways to teach their language to the next generation. Schools can produce proficient multilinguals, but most minority language groups do not receive such multilingual education. However, even in the strongest cases the challenge remains to turn proficiency into real use of the minority language outside the classroom and in the society (Gruffudd, 2000).

Research Areas

Some interesting research areas on minority language education can be mentioned. First of all, studies of the relationship between multilingual identities, the national state and processes of globalization, and what happens inside the school and during classroom interaction. This is an area that has recently developed. These studies also are important for minority groups (May, 2008). Second, investigations of school achievement when a minority language is the medium of instruction. This approach has characteristics in common with content and language integrated learning (CLIL), an area that has attracted much attention in Europe. This approach analyzes different (linguistic and non-linguistic) elements of the curriculum (Joaristi, Lizasoain, Lukas, & Santiago, 2009). Third, linguistic landscape studies, understood as the language used in texts in the public space, comprises studies involving minority languages which prove relevant to analyze patterns of multilingualism and the effect of language policy (Shohamy & Gorter, 2009). The school context is a relevant field of further research into linguistic landscapes.

SEE ALSO: Bilingual Education and Immigration; Bilingual and Multilingual Education: Overview; Endangered Languages; Multilingual Education in Europe; Multilingualism and Language Rights; Multilingualism and Minority Languages

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Mixed Methods

DAN KIM

Although the dichotomy between quantitative and qualitative methodology traditions still stands with a considerable weight in applied linguistics research, the mixed methods approach has strengthened its position as an alternative to single-method research. The major factors leading to the spread of mixed methods research include the widespread acceptance of qualitative research, the complexity of our research problems today, and the development of the various methods involved in mixed methods research (Creswell, 2008). While the movement has been especially vigorous in educational evaluation, the increasing amount of qualitative research in applied linguistics shows that "methodological eclecticism, rather than adherence to established traditions, is now the dominant characteristic of published qualitative work" (Benson, Chik, Gao, Huang, & Wang, 2009). Applied linguists such as Zoltan Dörnyei even recommend considering "applying a mixed method research design in every situation" (2007, p. 313), as mixing methods may bring out richer information than opting for a single methodology.

The mixed methods research methodology involves a process of collecting, analyzing, and mixing quantitative and qualitative methods to answer a research question. The decision to use different methods in a single study largely depends on what is the most appropriate way to approach the research question at hand and how mixing different methods helps better achieve the purpose of the study than using a single method. The underlying belief of adopting a mixed methods approach is that making use of both qualitative and quantitative methods in combination will provide a better and enhanced understanding of a research problem or issue than choosing either method alone. Tashakkori and Teddlie (2003) go further from the definition that mixed methods is a combination of different methods, and claim that "mixed methods research has evolved to the point where it is a separate methodological orientation with its own worldview, vocabulary, and techniques" (p. x).

Stances on Mixing Paradigms

Mixing methods means more than merely using multiple methods: rather, it also implies mixing different paradigms, or mental models, that are represented in different method epistemologies. The terms "mixed methods" and "multimethods" are sometimes used interchangeably, but, according to Pat Bazeley, multimethod research is when different methods are used in parallel or sequence but not integrated until inferences are being made, whereas mixed methods research involves interaction between and within the methods whose occurrence is not limited at the concluding point (Johnson, Onwuegbuzie, & Turner, 2007, p. 119).

There have been six main stances of viewing mixed method paradigms. The *purist stance* at one extreme claims that important philosophical differences exist between and amongst different paradigms of inquiry, and therefore methods and paradigms cannot be mixed: within each paradigm, assumptions form an interconnected whole that must be respected and preserved (Lincoln & Guba, 1985; Smith & Heshusius, 1986). In the *pragmatic stance*, philosophical differences exist, but they are logically independent of one another; therefore,

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the differences can be mixed and matched because they are descriptions not prescriptions for practice, and inquiry decisions should be driven by the practical demands of the problem (Reichardt & Cook, 1979; Patton, 2002). From the perspective of the *substantive theory stance*, philosophical differences are not as important. Instead, what matters more and what should guide methodical decisions are the substantive issues and conceptual theories relevant to the selected context (Cooksy, Gill, & Kelly, 2001). The *complementary strengths stance* acknowledges the philosophical differences between methods, but takes the view that paradigms are not fundamentally incompatible: paradigm differences are important, and they need to be preserved without being altered or corrupted. Hence, the methods in mixed methods inquiry should be kept separate in order to preserve and maximize the integrity and strengths of each method (Brewer & Hunter, 1989; Morse, 2003). The *dialectic stance* also accepts paradigm differences and their importance, and it especially emphasizes the meaningful engagement and the creative tension between different methods and their mental models in order to achieve dialectical discovery of enhanced or new understandings of the phenomenon (Greene & Caracelli, 1997, 2003). Finally, the *alternative paradigm stance* claims that historical and philosophical differences among paradigms are reconcilable through emergent paradigms such as contemporary pragmatism, new realism, or emancipation; what should guide mixed methods practice is a new paradigm that actively embraces and promotes the mixing of methods (Tashakkori & Teddlie, 1998; House & Howe, 1999).

Purposes of Mixing Methods

Why do researchers choose to mix methods? As the paradigms behind the method choice are diverse, researchers may have different purposes in choosing the mixed methods approach. Greene, Caracelli, and Graham (1989, p. 259) presented five purposes of mixing methods:

1. The *complementarity* purpose seeks elaboration, enhancement, illustration, and clarification of the results from one method with the results from the other method to increase meaningfulness.
2. The *expansion* purpose seeks to extend the breadth and range of inquiry by using different methods for different inquiry components.
3. The *triangulation* purpose seeks convergence, corroboration, and correspondence of results from the different methods to increase validity.
4. The *development* purpose seeks to use the results from one method to help develop or inform the other method, where development is broadly construed to include sampling and implementation as well as measurement decisions.
5. The *initiation* purpose seeks the discovery of paradox and contradiction, new perspectives or frameworks, the recasting of questions or results from one method with questions or results from the other method.

Researchers first need to fully understand the strengths and weaknesses of quantitative and qualitative research methods in order to identify the purpose of mixing methods. The purpose should guide the remaining process such as design and analysis strategies.

Mixed Methods Research Designs

Several typologies for mixed methods research design have been developed based on various dimensions to consider when planning a mixed methods study. Creswell's mixed methods design typology categorizes research designs based on the purpose and process

of using multiple methods. Creswell (2008; Creswell, Plano Clark, Guttman, & Hanson, 2003) claims that the decision to choose which type of mixed methods design to adopt largely depends on the following criteria: Will data be collected concurrently or sequentially? Will you give priority to quantitative or qualitative data? What is your worldview? Who is your audience? Concurrent designs include triangulation, nested, and transformative designs (Table 1). Triangulation design is used when comparing tendencies with multifaceted perspectives, or when attempting to validate findings from quantitative method with qualitative data. In a triangulation design, the researcher often gives the same priority to both quantitative and qualitative data and compares the results from quantitative and qualitative analysis to determine if the two data sources yield similar or dissimilar results. The nested design is used when giving less priority to one type of data than the other and when using quantitative data and qualitative data separately to answer different research questions. In a nested design, the researcher collects both quantitative and qualitative data simultaneously, asking different questions with each data source. Qualitative data may be implemented within quantitative data, or vice versa. Concurrent transformative design is similar to triangulation design in terms of the stage of integration, implementation, and priority of the methods used, but, unlike other concurrent designs where theoretical perspectives behind the method choice may be present, concurrent transformative design explicitly takes a theoretical stance. Sequential designs can either be explanatory or exploratory. The explanatory sequential design is used to explain quantitative findings with qualitative data and to identify cases for qualitative data collection from quantitative findings. In an explanatory sequential design, the researcher places priority on quantitative data collection and analysis and collects quantitative data first in the sequence. Qualitative data are used to enhance or explain the results of the quantitative data. The exploratory sequential design can be used when an instrument has not been decided on yet and the

Table 1 Mixed methods design typology (Creswell, Plano Clark, Guttman, & Hanson, 2003, p. 224)

	Stage of integration	*Implementation*	*Priority/status*	*Explicit theoretical perspective*
Sequential				
• Sequential explanatory	Interpretation	QUAN->qual	Usually QUAN, can be QUAL or equal	May be present
• Sequential exploratory	Interpretation	QUAL->quan	Usually QUAL, can be QUAN or equal	May be present
• Sequential transformative	Interpretation	QUAL->QUAN QUAN->QUAL	Either dominant or both equal	Definitely present
Concurrent				
• Triangulation	Interpretation or analysis	QUAL+QUAN	Equal	May be present
• Nested	Analysis	Qual within QUAN Quan within QUAL	Either dominant	May be present
• Transformative	Usually analysis, can be interpretation	QUAL+QUAN	Either dominant or both equal	Definitely present

researcher wants to explore first in order to identify questions or variables for the instrument. In an exploratory design, the researcher emphasizes qualitative data rather than quantitative data, in order to build upon the initial qualitative findings.

Mixed Methods Data Analysis

When analyzing mixed data, two types of analysis are commonly used: (a) parallel/sequential (nonintegrated) tracks analysis, and (b) integrated analysis. In the parallel/sequential tracks analysis, the analysis process takes place in a sequence. The researcher may either incorporate quantitative data into a qualitative analysis, or incorporate qualitative data into a quantitative analysis. Figure 1 shows an example process of a parallel tracks analysis. Integrated analysis adopts a concurrent analysis of both qualitative and quantitative data. The researcher moves back and forth between different data sets throughout the whole analysis process. Figure 2 shows an example process of an integrated analysis.

As the figures demonstrate, the major activities of data analysis are to reduce, transform, and organize the raw data to an organized form that allows for inferences, for assessing interrelationships and patterns within the data set, and for generating and validating inferences, conclusions, or interpretations. First, in the data cleaning, reduction, and transformation stages, the data sets must be compiled, organized, selected, graded, and finally

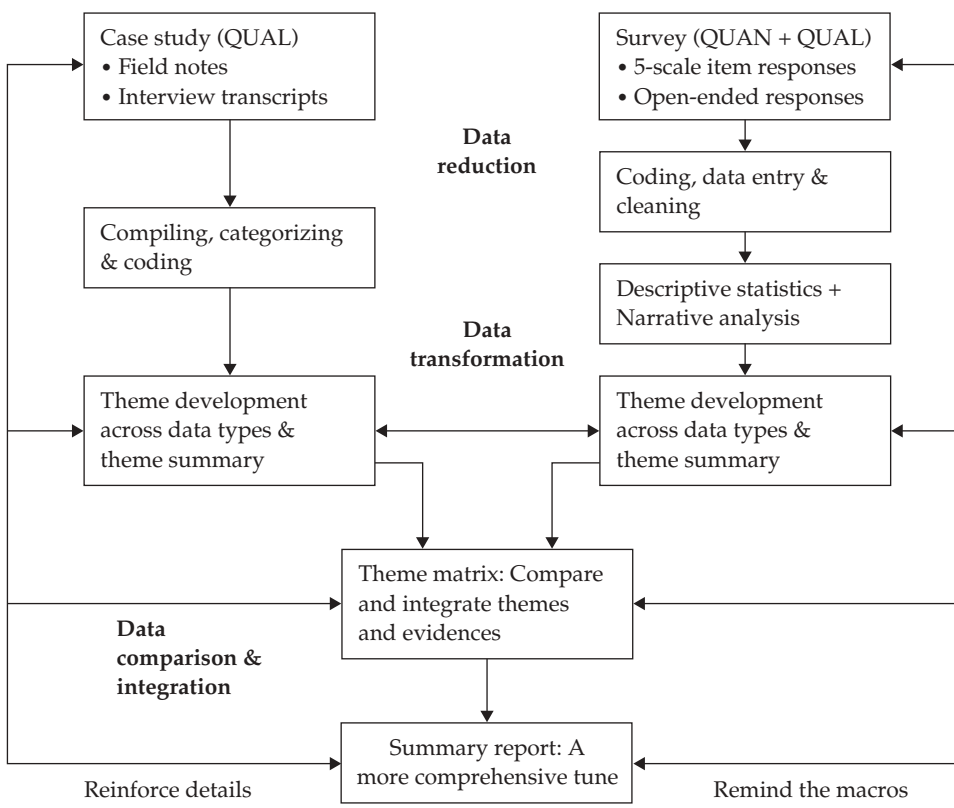

Figure 1 Analytic framework for the parallel tracks analysis (Kim, 2008, p. 67).
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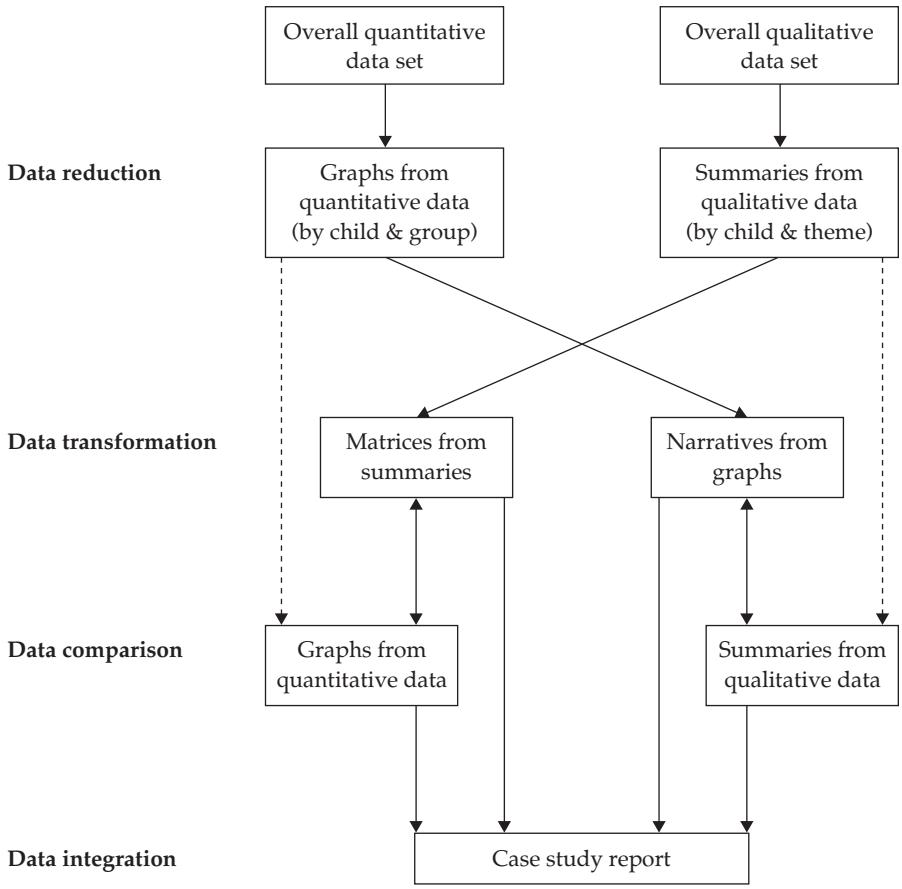

Figure 2 Analytic framework for the integrated analysis (Li, Marquart, & Zercher, 2000, p. 126). © Sage Publications; used by permission of Sage Publications

transformed into manageable pieces through thematic categorization, coding, and discovery of patterns. In a parallel tracks analysis, these stages are done separately between different data types, and developing data analysis mechanisms such as a category system and a theme matrix helps organize raw data in different form and volume into a comparable set of data. Data comparison and consolidation are the unique stages in mixed methods analyses. Data comparison is used for exploring interrelationships among different data sets, and data consolidation is done by combining or merging two data sets into one consolidated data set representing a new or enhanced set of constructs. Finally, data integration is for synthesizing different types of data to achieve a coherent and holistic understanding of the research findings.

Quality Issues in Mixing Methods

The quality criteria for mixed methods research are essentially relevant to warranting the mixing process and the result of inferences. This process is not just about the technical aspect of conducting a mixed methods study, but also involves problematization of ethical or relational criteria in the mixed methods research (Caracelli & Riggins, 1994). Taking

a metaphorical analogy can help conceptualize the quality criteria for a mixed methods study. For instance, the research has to have good foundations and understanding of the method choice, as the conductor of an orchestra must have good knowledge and technical basis for orchestrating different instruments/players and other factors in the course of a performance. The research has to be consistent with the mental models accompanied by the method choice, as orchestrating music also has to relate to the musical theme throughout the whole performance. In using multiple methods, balance and consideration for other instruments is the key leading to a harmony. The main player and supporting player(s) must have an understanding and consensus between and amongst each other as to when to maximize their own techniques and capabilities, and when to allow other players to shine. Finally, the researcher has to take full responsibility in the whole decision-making and execution process of conducting a mixed methods study, and this really is an integral process of building trust with the audience as a mixed methods researcher.

One additional (and crucial) factor to consider is that as different methods and data clash and mesh, researchers may confront unexpected phenomena or issues while engaged in the mixed methods research process. Dealing with the emergent themes and incorporating them into the process of interpretation is another important role of a mixed methods researcher in ensuring the quality of research.

Using Mixed Methods in Applied Linguistics Research

Benson and colleagues (2009) surveyed qualitative data-based articles in 10 major journals in applied linguistics between 1997 and 2006. They found that the number of multimethod studies was quite large but most of them made limited use of mixing methods. For instance, there were a number of survey research studies that included a few open-ended items or some observational data. However, they observed that there were a relatively small number of noticeable studies (that they categorized as qualitative), which employed both quantitative and qualitative data as "a deliberate strategy to weigh the two types of evidence against each other" (2009, p. 87). Beside the categorization of multimethod studies by Benson and colleagues, it seems that detailed investigation of the purposes, design, and analysis of mixed methods research in applied linguistics is yet insufficient.

Lazaraton (2003) observed that the two most common qualitative approaches in applied linguistics research are ethnography and conversation analysis. Some statistical analysis incorporated into ethnographical or conversation analysis research may be the most common form of mixed methods approach in applied linguistics research. Kim (2008) reported on a mixed methods study investigating an English for occupational purposes (EOP) context in Korea and exploring the connection between EOP and general training. The study utilized a case study within an EOP institution consisting of field observations and interviews, and the ethnographical investigation was supplemented by a quantitative measure (i.e., survey) in other equivalent EOP institutions in Korea. The purpose of mixing methods in this study was to complement the qualitative data with quantitative findings by capitalizing on the strengths of each method, and the researcher implemented parallel tracks analysis to compile and integrate the mixed data. The design of the study adopted the concurrent nest design, where the quantitative measure was nested within the dominant qualitative investigation. The integration occurred primarily at the analysis phase, although the researcher observed frequent interaction between the two types of data at prior stages as well (Kim, 2008, p. 66). In addition to answering the research questions by using multiple methods, the study allowed for emergent themes such as the discrepancy between perceived and actual needs for EOP training. Dörnyei, Durow, and Zahran (2004) conducted an interview study to complement the results of a larger survey of 70 students in investigating language learners' acquisition of formulaic sequences. The study utilized a sequential

exploratory design, where the interview data were later accompanied by interpretation of various aptitude and motivation scores of the interviewees. The quantitative findings were used to gain more generalizability of the qualitative findings.

More varied cases of using linguistic data such as conversation analysis data in mixed methods research are needed for establishing a mixed methods tradition in applied linguistics research.

SEE ALSO: Qualitative Methods: Overview; Quantitative and Mixed Methods: Overview; Quantitative Methods; Sampling: Mixed Methods; Validity: Mixed Methods

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Mnemonics

JOE BARCROFT

Definition

Mnemonics (mnemonic devices or techniques) are mental aids that help us to remember different types of items and information, such as new word forms, names, historical dates, numbers, formulas, and various rules and lists. Typically they involve recoding or breaking down formal components of a target (to-be-remembered) item in a manner that makes these components more familiar, abbreviated, or in some way easier to remember. The phrase *every good boy deserves fudge* and the word *FACE*, for example, are mnemonics that are often used to help an individual who is beginning to learn to read music. The first letter of each word of the five-word phrase corresponds to notes on the lines on the treble clef, and each letter of the word *FACE* corresponds to the note for each of the empty spaces between the lines. Other examples of mnemonics are well-known catchphrases such as *i before e except after c*, designed to help recall spelling rules, and rhymes such as *red sky at night, sailors'* (or *travellers'*, *shepherds'*) *delight; red sky in morning, sailors take warning*, designed to help individuals know what to expect with regard to warning signs for different weather conditions (putting aside whether or not the assertion being made is correct).

Characteristics

Mnemonic devices can be classified as "artificial," given the typically *arbitrary* relationship between specific components of a given target item and how they are recoded. The word *FACE* and the musical notes F, A, C, and E are not logically related in the real world, for example. The purpose (and memorial benefit) of using the word *FACE* is purely formal in nature. With some mnemonic techniques, recoding of the target item involves elements related to meaning (conceptual/semantic information), but the real-world relationship between the target information and how it is recoded is still arbitrary. For example, the use of rhyme is in no way needed or inherent when it comes to discussing present and future weather conditions, but the use of rhyme in *red sky at night, sailors' delight . . .* is critical as a component of the mnemonic in question because it facilitates remembering the pertinent information being conveyed. Rhyme is an arbitrary imposition into the area of weather forecasting because it helps us to retain key formal components that are needed to recall the most critical information correctly (*night* > *delight* and *morning* > *warning*). As another example, the phrase *stop, drop, and roll* used in fire-safety education probably would not be as memorable (or as quickly recalled) without the rhyme between *stop* and *drop* and the use of one-syllable words only.

Effectiveness and Durability

Mnemonic techniques are known for their effectiveness and high degree of durability over time. When it comes to memory, the feats enabled by mnemonic devices are often quite astounding. For example, compare the difficulty of remembering the phrase *May I have*

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a large container of coffee? versus the number 3.1415926 (pi to 7 decimal places). Unless one is already familiar with pi to 7 or more decimal places, the phrase *May I have a large container of coffee?* is probably easier to learn than the number, and by learning the phrase alone, one can "remember" (or at least cite) pi to 7 decimal places simply by counting the number of letters in each word in the phrase (*May* = 3, *I* = 1, *have* = 4, *a* = 1, *large* = 5, *container* = 9, and so forth; see http://www.eudesign.com/mnems/_mnframe.htm).

Durability is another one of the defining features of mnemonics, for several reasons. First, mnemonic devices involve (recoded) formal components that are familiar in nature, which facilitates memory from the onset. Second, the familiar formal components are typically repeated as one uses them for recall over time, further imprinting these components in memory. Finally, given that the formal components become well consolidated in memory, one can recall them after extensive periods of time with no intervening recall. This *spaced repetition* and *expanding retrieval* is particularly effective at consolidating target items and information in memory (e.g., Landauer & Bjork, 1978). Therefore, if someone has learned *Every good boy deserves fudge* and *FACE* to remember musical notes, with sufficient spaced retrieval over time, most likely the individual will be able to recall these ordered musical notes for life.

Origins and History

The term *mnemonic* has its origins in the ancient Greek term *mnēmonikós*, meaning "related to or of memory" (Mnemosyne was the goddess of memory in Greek mythology). The ancient Greeks had already distinguished between two distinct types of memory, one that is inborn and "natural" and another that is "artificial" and trained via mnemonic techniques. The art of "artificial" memory became a defining feature of the historical development known as the Art of Memory (see Yates, 1966). One account of the development of the Art of Memory dates back to the ancient Greek poet Simonides of Ceos, who purportedly was able to remember the names and the seating arrangement of guests in a building that collapsed after he delivered a panegyric in the building. According to this account, the poet utilized this experience of "successful memory" to begin prescribing memory techniques to others (see Yates, 1966). Since this time, the Art of Memory has been passed on and advanced for centuries.

Of course the study and development of mnemonics is in no way constrained to Western society. Consider the ingenious *khipu* system of record keeping used in the Incan Empire (*khipu* meaning 'knot' in Quechua), for example. The system involves using cords (typically cotton) with one main cord to which various other subsidiary cords were attached, and additional levels of subsidiary cords could be attached to higher-level subsidiary cords as needed. Each cord had one or many knots, and knots could be of different types, as determined by the numeric values being represented. Details on the *khipu* system and surviving *khipus* today (approximately 600 in collections worldwide) are available on the website of the Harvard-based Khipu Database Project (http://khipukamayuq.fas.harvard.edu/WhatIsAKhipu.html).

Varieties of Mnemonic Techniques

There is a substantial variety of mnemonic techniques available today, and new techniques continue to be developed. The following are just a few examples of the many different mnemonic techniques (or systems) that are known and readily available today. *Acronym mnemonics* (or *first-letter mnemonics*) are used for remembering lists of important words, such as *HOMES* (Huron, Ontario, Michigan, Erie, Superior) for remembering the Great

Lakes; *IPMAT* (Interphase, Prophase, Metaphase, Anaphase, Telophase) for remembering the stages of cell division; and *MET DR THIP* (Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion, Iapetus, Phoebe) for remembering Saturn's moons (see http://www.learninginfo.org/acronyms.htm). The *method of Loci*, which dates back to the ancient Greeks (and accounts of Simonides of Ceos) involves memorizing a physical space, such as stores on a street or rooms in a house, in order to remember a series of items. One imagines walking through the space and "placing" each item in order to create a mental image of the item and a distinguishing aspect of the location (store, room) in question. The mnemonic *peg system* requires one to associate a series of numbers with a series of words. Then, in order to remember a list of items, one creates a series of mental images related to the words in question. For example, take "one is bun" and "two is shoe" as pegwords (see http://www.thememorypage.net/peg2.htm for more details). Using these pegwords, in order to remember to buy milk and eggs at the grocery store, one might imagine "milk poured on a bun" for the first item and "an egg inside of a shoe" for the second item.

Lists of mnemonic techniques also can be organized according to the type of item or information that one is interested in remembering. Web sites are devoted to doing this. The Mnemonics Guide© Web site (see http://www.eudesign.com/mnems/_mnframe.htm), for example, provides quick access to mnemonic devices that can be used to remember items or information from any of the following categories: astronomy, biology and nature, business, chemistry, geography/geology, history, language/literature, mathematics, music, mythology, physics, religion, society, sports and pastimes, time, and various other(s).

The Keyword Method

In the area of language learning, one mnemonic technique that has received attention and that has been the focus of empirical investigation is the *keyword method*. The keyword method is a mnemonic technique for learning new vocabulary. Originally, the technique was proposed and tested by Atkinson and Raugh (1975) for learning second language vocabulary, but it has also been tested with regard to learning vocabulary in one's first language (see, e.g., Pressley, Levin, Kuiper, Bryant, & Michener, 1982). The keyword method involves two steps. First, one recodes a novel word form into one or more known forms (e.g., recoding the Spanish word *ventana* 'window' as the English word *vent*). Second, one creates a mental image in which the recoded "keyword" (*vent*) and the referent of the novel word ('window') are connected (imagine a window with a vent in the middle of it).

Atkinson and Raugh (1975): A Seminal Study on the Keyword Method

To provide additional information about research methodology that has been used to test the keyword method, let us consider the seminal study conducted by Atkinson and Raugh (1975). In their study, 52 native English-speaking university students with no prior study of Russian attempted to learn 120 Russian target words (e.g., *dym* 'smoke'). All participants were provided with instructions on how to use the computer presentation program and practiced remembering keywords for a series of target Russian words that were not part of the main experiment. After this initial practice, each participant was randomly assigned to the experimental (keyword) or control group in a manner that ensured an equal number of female and male participants in each group. Participants in the experimental group continued to view keywords when attempting to learn the target Russian words and were instructed

> to learn the keyword first and the picture and imagery interaction between the keyword and the English translation . . . [and] that if no such image came to mind [to] generate a phrase or sentence incorporating the keyword and translation in some meaningful way. (p. 128)

The control participants, on the other hand, "were told to learn [the Russian words] in whatever manner they wished [and] were not given instructions on the use of keywords or mental imagery" (p. 128). Whereas experimental subjects viewed both keywords and English translations, control participants viewed English translations alone. Whereas Day 0 of the study involved familiarizing and practice alone, on Days 1–3 each participant attempted to learn 40 of the 120 target Russian words. During each study phase, each target word was spoken, and its translation (with or without a keyword as well) was displayed for 10 s. During each test phase each target word was spoken, and participants were allowed a maximum of 10 s to type a response (the target being the appropriate Russian word). No feedback was given after each response. No partial score was given for incomplete or misspelled responses. On Day 4 a comprehensive test on all 120 words (following the same procedures as the daily test) was administered. Participants were also called back between 30 and 60 days later to complete an additional comprehensive test in a final session.

The results of the study indicated that participants in the keyword method had a mean probability of 72% of correct recall of the target words, which was significantly higher than the mean probability of 46% for the control participants, based on means from the daily tests on Days 1–3. The researchers interpreted these results by positing how keyword imagery helps to sustain a direct link between an L2 word and its L1 equivalent, a link that "sustains performance once an item is highly practiced" (p. 132). From a pedagogical standpoint, the researchers note that the keyword method should be evaluated in actual teaching situations, but if the method proves to be effective in these situations as well, then "the keyword method and variants of it deserve a role in language-learning curricula" (p. 133).

Research on the Keyword Method: Findings and Instructional Implications

Overall, studies subsequent to that of Atkinson and Raugh (1975) have demonstrated superior vocabulary learning for the keyword method over other alternative techniques (e.g., Desrochers, Wieland, & Coté, 1991; Ellis & Beaton, 1995). However, some studies have found the keyword method to be less effective than other methods. When compared to the keyword method, rote rehearsal on occasion has resulted in superior vocabulary learning (Van Hell & Candia Mahn, 1997).

Demonstrations of the effectiveness of the keyword method have inspired some researchers to call for implementing the keyword method in L2 classrooms (e.g., Levin, 1981; Hulstijn, 1997, pp. 215–19), but other researchers are more cautious considering potential downfalls of the keyword method, such as how learners might confuse keywords and the meanings of target words (e.g., Pressley et al., 1982). Additional disadvantages of the keyword method with regard to the quality of developing lexical representations are discussed in the next section.

Disadvantages of Using Mnemonic Techniques

Although the advantages of mnemonics can be readily understood by anyone who has used a mnemonic technique to remember some items that otherwise would not have been remembered, several important potential disadvantages of using mnemonic devices need to be kept in mind. In addition to challenges associated with developing appropriate mnemonics for different target items (e.g., consider the challenge of developing keyword phrases for Spanish words such as *resbaladilla* 'slide'; possible perhaps, but not easy), most of these concern the *quality* of the memory representation promoted by mnemonics and the effect that mnemonics have on *retrieval processes* and *speed of retrieval*.

With regard to representation quality, compared to other types of learning, mnemonics promote a *mediated* variety of memory representation that may cause confusion, particularly if overused. Suppose, for example, that someone were to use the keyword method to learn 500 new words in a second language. If even a small percentage of the keyword mediators used overlap with other target words, the potential for confusion is substantial. Moreover, imagine the quality of the developing lexical network, in terms of odd associations, that learning via the keyword method would promote as compared to learning based on more direct form–meaning connections without mnemonics. For example, the act of learning the Spanish word *codo* 'elbow' by creating an image of a secret *code* (the keyword) on someone's elbow promotes the development of odd associations between the concepts "code" and "elbow." These associations would not be developed if the learner made a more direct, unmediated form–meaning connection between *codo* and its referent ('elbow') without using mnemonics.

With regard to retrieval, given that mnemonic techniques involve mediated components that more direct varieties of learning do not, items learned with the use of mnemonics potentially may be retrieved more slowly. The findings of studies by Van Hell and Candia Mahn (1997) and by Wang and Thomas (1999), for example, suggest that learners using the keyword method of vocabulary learning take longer to retrieve target words as compared to learners who have used rote rehearsal. Barcroft, Sommers, and Sunderman (2011) also demonstrated that form priming speeded the retrieval of words learned via rote rehearsal (as one would expect form priming to do) but slowed retrieval of words learned with the keyword method. Such findings demonstrate observable costs of mediation-based learning involved in mnemonics as compared to learning that promotes the development of more direct connections between form and meaning. Additionally, the keyword method is not designed to promote development of word knowledge beyond the ability to retrieve an L2 word form at a basic level and connect it to its L1 counterpart. In other words, it is not designed to promote other important aspects of word knowledge such as connotations, collocations, and idiomatic usage.

Summary and Conclusion

In this entry we have reviewed the definition, characteristics, degree of effectiveness, origins, and different varieties of mnemonics, as well as currently available online sources for the practical application of mnemonic techniques. Whereas the variety of mnemonic techniques currently available is substantial, we highlighted the keyword method, a mnemonic technique designed to facilitate vocabulary learning. Whereas a large number of studies have demonstrated that the keyword method is more effective than other methods of direct vocabulary learning, the keyword method has not always resulted in performance superior to alternative methods, such as rote rehearsal (Van Hell & Candia Mahn, 1997). Furthermore, it is important for instructors and learners to consider

the potential disadvantages of the keyword method and other mnemonic techniques, particularly with regard to how they may negatively affect the quality of developing lexical and other memory-related representations and retrieval processes.

SEE ALSO: Approaches to Second Language Vocabulary Teaching; Teaching Vocabulary; Vocabulary Acquisition in Second Language Acquisition; Vocabulary Learning Strategies; Web-Based Lexical Resources

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Mobile-Assisted Language Learning

AGNES KUKULSKA-HULME

Mobile-assisted language learning (MALL) is the use of mobile technologies in language learning, especially in situations where device portability offers specific advantages. The main advantages are considered to be ready access to relevant help or information; more flexible use of time and space; adaptation to personal habits, motivations and preferences; continuity between learning in different settings; and greater opportunity for sustained language practice while carrying out everyday activities such as walking, waiting, or commuting. Kenning (2007, p. 192) emphasizes the opportunity for "situated learning anchored in a real-world setting" and the value of mobile technology for immediate problem solving.

Nowadays a key attraction of mobile learning is the ubiquity of portable devices. Worldwide, there were five billion mobile phones (cell phones) by mid-2010, which equates to more than three times as many phones as personal computers, and mobile phone market analysts predicted growth to six billion mobile phones by the middle of 2012 (BBC, 2010). Smartphones, and less powerful feature phones, with computing and Internet browsing capabilities, now perform many of the functions previously confined to more expensive and less portable desktop and laptop computers. At the same time, their ubiquitous presence in many areas of life encourages a blurring of boundaries between daily life, entertainment, work and learning (Kukulska-Hulme & Pettit, 2009), and thus presents a difficult challenge to conventional, orderly, formal ways of teaching and learning. While this presents many new opportunities to extend learning, there is also reason to be concerned about the increased stress of constant access.

Portable devices used for language learning include mobile phones, audio and video players (MP3/MP4 players), smartphones, electronic dictionaries, PDAs (personal digital assistants), e-book readers and games consoles. Laptops, netbooks, and tablet/slate computers also fall within the scope of mobile learning, but due to their weight and size may be considered less portable and suited to slightly more sedentary types of activity. Access to Wi-Fi connections and GPS (global positioning system) navigation multiply the possibilities for language learning on the move. Earlier experiences in mobile-assisted language learning, using mobile phones, PDAs, and iPods, are discussed by Chinnery (2006).

MALL in Relation to CALL

At first, it may seem that MALL is just another form of computer-assisted language learning (CALL), except that it involves the use of mobile technologies. However, as mobile devices now provide users with more immediate access to the Internet and to an abundance of "apps" (applications), language learners are faced with daily competition from possibly more attractive alternatives to structured learning, such as listening to foreign-language radio on the go, playing language games while queuing or waiting, or watching foreign movies while traveling. What is more, performing familiar language-learning activities but in different settings (on the bus, in a café, in a queue . . .) arguably changes the activities, as they vie for attention in noisy, changeable, stimulating environments that may be distracting or potentially enriching. Spontaneous photographing, video recording, and audio note taking become possible, thanks to the features of many current models of mobile

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phones and other devices. This captured information can be disposable but it can also be a lasting memory aid and a valuable, tangible link between different learning environments —for example, a captured record of a language issue encountered in a work situation and a language class where the issue is discussed and reflected upon. For all these reasons, Kukulska-Hulme and Shield (2008, p. 273) explain that "MALL differs from computer-assisted language learning in its use of personal, portable devices that enable new ways of learning emphasizing continuity or spontaneity of access and interaction across different contexts of use."

Location-Specific and Location-Independent Language Learning

Alongside support for easier continuation of learning between one place and another, we are beginning to see MALL applications that relate language learning to a person's physical context when mobile, primarily to provide access to location-specific language material (e.g., useful vocabulary and phrases) or to enable learners to capture aspects of language use *in situ* and instantly share and discuss them with others. Applications like these make use of technologies that detect a learner's presence and enable language-learning tasks, which may include media such as photographs, sketches, maps, audio, and video clips, to be associated with a physical space for subsequent retrieval. As technologies and learning practices develop, we are likely to see more context-aware, pervasive learning environments that detect a learner's presence in a location and provide an appropriate learning experience. One such system uses sensors in the environment to provide learners of Japanese with the appropriate polite expressions for their current context (Ogata & Yano, 2004). In a similar vein, Beaudin, Intille, Tapia, Rockinson, and Morris (2007) explored the use of sensors in the home for context-sensitive learning of vocabulary on a mobile device: sensors detected learners' interactions with objects, furniture, and appliances in the home, and this triggered the audio presentation of English and Spanish phrases associated with the use of these objects. Ogata, Yin, El-Bishouty, and Yano (2010) describe a system that detects physical objects around the learner using radio-frequency identification (RFID) tags, and assigns questions related to the detected object, to improve vocabulary knowledge; the environment also allows the learners to share their knowledge. These developments focus on the learner's mobility and interaction in a designated space. Location-specific learning can also integrate identification of local artifacts with visual or textual information about those artifacts and about local language. In this way, cultural knowledge can be brought in more seamlessly into language-learning situations, during a trip abroad or encounters with communities of native speakers. Local experts willing to share their knowledge can make themselves "discoverable" on mobile devices by those who would like to talk to them. Web-publishing tools such as blogs already provide a good way to share cultural knowledge and experience by creating shared spaces that can be constructed and accessed through a mobile device. Applications using GPS (global positioning system) are another area of growth. Smidts, Hordijk, and Huizenga (2008) describe the advent of playful and creative use of GPS in schools, drawing particular attention to the development of learning games.

Learning "out in the world," or "in the wild" (Brown, 2010), is often informal and may even draw new people into a learning experience, for example people who happen to be present in a given place and who decide to participate. Paradoxically, many devices that support location-specific learning are also suited to location-independent learning (or so-called "anytime, anywhere" learning), not constrained by having to be in a specific place at a time determined by someone else. It includes learning that has not been scheduled in advance but becomes possible because of an unexpected event such as a period of free

time due to a train delay or a canceled meeting. This kind of learning depends on being prepared for such eventualities by having previously downloaded suitable learning resources, or being able to access appropriate online resources when needed.

Typical Applications

Different types of MALL application include those that are designed for language study and those that are not explicitly designed for language learners but can be used to support learning, for example, automatic translation tools on mobile devices. In terms of applications designed for language study, initially vocabulary and grammar learning proved to be popular and we can expect to see more innovation in these areas over time. Published studies have often reported on the use of text messaging and e-mail for vocabulary learning, including timed interval learning (e.g., Levy & Kennedy, 2005). Stockwell's (2007) intelligent tutor system created a profile of each learner and then delivered vocabulary activities according to the areas they found most difficult. Grammar practice has also received considerable attention. Samuels (2003) reported on the use of handheld computers for activities such as grammar drills, adding diacritics to Latin texts and participating in synchronous chat; Chuang (2008) explored both computer-based materials and the use of mobile phones in grammar learning.

There is no shortage of language-learning resources that can be accessed on the Web and downloaded to mobile devices, including innumerable podcasts and mobile apps. In this scenario of great abundance, finding one's way to the most appropriate, high-quality materials and resources to suit personal language-learning requirements is difficult. Although resources and applications tend to focus on the individual learner, there are some reports of collaborative language learning supported by mobile devices (e.g., Lan, Sung, & Chang, 2007). Learners may also use their mobile devices to join structured communities of online learners where language skills may be practiced with other members (Niesner, 2010). Joseph (2009) describes a "crowdsourcing" approach which combines mobile content with materials on language and culture produced by learners and shared via a community site.

Reading and Listening

With the increasing adoption of e-book readers (devices for reading electronic books) and e-book software on other portable devices, together with facilities such as integrated dictionaries, parallel texts, and tools for translation, reading in other languages becomes a more attractive possibility, especially for those who have a long daily commute or who spend most of their time away from a fixed computer. The use of mobile devices to access newspapers and other news channels has extended opportunities to read in a second or foreign language on a regular basis. Incidental learning of vocabulary from reading can be supported through e-books with dictionaries or adaptive software for vocabulary learning; however, unless learners are highly self-motivated, the effectiveness of this method of learning will always depend on good pedagogical design (Fisher et al., 2009). Access to podcasts and other audio channels has also extended opportunities to listen to other languages more frequently, on a casual basis or as part of a routine that may include regular travel. Listening activities on a mobile phone or MP3 player can be carried out successfully while sitting in the car, walking around the house and garden, or traveling (Demouy & Kukulska-Hulme, 2010).

Speaking and Writing

Portable devices make it easier for unconfident learners to find private spaces to practice speaking or pronunciation; even within the home, a computer shared with friends or family members may offer less privacy. The ability to practice speaking and pronunciation and receive private feedback from teachers, while also being able to connect and practice with other learners, were positive factors identified in a successful project with young people who were using mobile phones to learn Irish (Keogh & Ní Mhurchú, 2009). Writing practice can be more problematic since it is largely constrained by means of input such as small screens and keyboards, which can present a barrier to extensive writing. On the other hand, optical character recognition can enable learners to practice writing unfamiliar scripts such as Japanese kanji characters on phones equipped with a stylus (Koga et al., 2005). The adoption of tools for collaborative annotation of texts, for example by passing round a portable device in class, means that each learner can add a comment. Motivation may be heightened by the possibility of sharing immediately what has been written, including through mobile blogging. However, Baron (2008, p. 6) warns that myriad opportunities to write by posting messages may be eroding our collective sense that the quality of writing matters.

Support for Informal Learning

Mobile learning is increasingly poised at the intersection of formal and informal learning, with mobile devices forming a bridge between the two. In a formal education scenario, Shao, Crook, and Koleva (2007) proposed an informal mobile group blog to support students spending time at a foreign university; this enabled the students to share observations about local language use and customs. A similar intent may be discerned in the work of Pemberton, Winter, and Fallahkhair (2010), whose collaborative mobile knowledge-sharing system for language learners includes learner-generated content and a social network; this mobile and Web-based system has been designed to help international students further their knowledge and understanding of local language and culture in the country where they are studying. Other researchers have also shown interest in informal learning; for example, Song and Fox (2008) reported how some student learners of English used a mobile device to support and extend their learning in self-directed ways, driven by a goal to take every opportunity to learn new vocabulary in English. Fallahkhair, Pemberton, and Griffiths (2007) used a cross-platform approach, which employed mobile phones and interactive television for informal language learning in the home. Kukulska-Hulme and Bull (2009) related mobile learning to the issue of "noticing" in second language acquisition, arguing that mobile devices can support noticing, and that recording consciously observed features also provides a method of obtaining data on what learners notice, to complement existing experimental approaches to researching second language learner processes.

Control Over Learning

Mobile technology introduces greater flexibility into classroom teaching and it takes learning out of the classroom, often beyond the reach and control of the teacher. This can be perceived as a threat, but it is also clearly an opportunity to revitalize and rethink current approaches to teaching and learning. Some mobile learning platforms come with administration programs that track what the students do and how long they do it, and report back to the teacher. This poses a challenge in terms of the blurring of the boundary between learning and leisure time; learners can become stressed and resentful of the incursion into

their free time. It is important to develop mobile learning designs that clearly identify what is best learned in classrooms (real and virtual), what can or should be learned outside (in scheduled time and beyond), and the ways in which connections between these settings can be made. This is best done in consultation with learners.

Mobile Learners

Mobile learning appeals to a wide range of people, but there are specific groups that have been targeted or have been shown to benefit. One approach has been to give devices to students as support tools when they are embarking on their studies, including language learning; a well-publicized example was Duke University in the USA which issued iPods to all first-year students. This is based on the belief that mobile devices have become everyday tools that should also be used for learning. Some researchers have cautioned against assuming that the younger generation will automatically like using mobile devices for learning, even if they are avid users of mobile phones and music players in their everyday lives; nevertheless there is growing evidence that if the benefits to the learner of using mobile technology are made evident, uptake increases.

Mobile learners are those who benefit from mobile learning either because they are frequently mobile or because this type of learning is the most appropriate and convenient for them. In the first category are those with mobile lifestyles or whose work involves moving around different locations or substantial travel, for example business professionals needing to improve their language skills quickly on their way to a destination and for specific purposes such as interviews and meetings. In the second category are those who would otherwise find it difficult to access learning opportunities at times and locations to suit them. In addition, mobile learning may simply be a preferred way to learn. For example, learners often appreciate the increased social contact and peer support they can draw on when faced with the need to fit language-learning study and assessment deadlines into increasingly complex lives. When both online and mobile access modes are made available, some learners will opt for one of these while others will make use of both, perhaps changing from one to the other according to their needs.

Accessibility and Usability

Several projects have involved mobile populations such as immigrants who have an urgent need to improve their language skills for work and to practice local pronunciation, and the children of travelers; but such groups may not have ready access to the latest devices. Indeed, the work of Danaher, Moriarty, and Danaher (2009) with mobile communities draws attention to the fact that access to suitable technologies is often limited to the scope and duration of particular projects (p. 62).

It has also been argued that mobile device use excludes some learners who have physical difficulties. Older learners are more likely to have more problems with eyesight and manual dexterity, which may affect their ability to participate fully in mobile learning, but these problems are not limited to the older age group. The relatively small size of handheld devices presents a challenge in terms of usability (reading text, on-screen interaction), although in general this is becoming less of an issue as new device and user interface designs are continually improving. Speech recognition is likely to make interaction easier for some users and in situations where speech is a more natural medium than writing or typing. Learners with physical conditions meaning they are unable to sit upright for long periods in front of a computer appreciate being able to access reading materials on a mobile device, since this accommodates a range of reading positions. Also, students with visual

impairments or dyslexia need not be excluded if they are able to listen to digital talking books or podcasts instead of reading (Barton, Penny, & Riordan, 2007). It is advisable to involve a range of target users and a variety of physical settings in the testing and evaluation of all mobile-learning developments.

MALL Within Mobile Learning

Mobile-assisted language learning is part of the rapidly evolving broader field of mobile, ubiquitous, and contextual learning, also known more succinctly as "mobile learning." While, in the past, mobile learning was often defined in terms of its use of mobile technologies, researchers gradually began to emphasize the mobility of the learner. Winters (2006) noted that due to the rapid uptake of mobile learning in many different communities, the concept had become ill-defined and needed to be reconceptualized, finally suggesting that "learning is mediated through mobile technologies, which are in themselves interwoven with other learning tools" (Winters, 2006, p. 11). Indeed, increasingly, mobile-learning scenarios feature portable devices being used as part of a rich repertoire or blend of technologies and media, used as and when required by learners who may extend their studies beyond the traditional or virtual classroom. Learners who are supported in this way may even be better equipped to become lifelong learners, seeking to continually and opportunistically update and improve their language competences over the course of a lifetime.

Conclusion

Mobile-assisted language learning is one of the key application areas of mobile learning. Mobile learning is proving its potential to address authentic learner needs at the point at which they arise, and to deliver more flexible models of language learning. Learner expectations, skills and habits, as well as those of teachers, need to evolve to match the potential of mobile and ubiquitous technologies. This should result in new designs for language learning that relate more closely to emerging patterns of technology ownership, time use, mobility, and access. Colpaert (2004) reflected on why mobile language learning was slow to take off, despite rapid developments in mobile technologies, concluding that teachers and researchers needed to have the tools to develop their own mobile applications. We are rapidly moving to a time when *learners* will also want to develop their own applications and to design mobile learning experiences for themselves and others.

SEE ALSO: Computer-Assisted Language Learning Effectiveness Research; Emerging Technologies for Language Learning; Technology and Learning Vocabulary; Technology and Usage-Based Teaching Applications; Translation Tools

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Modality

KASPER BOYE

The term "modality" is used in linguistics for a variety of distinct but related phenomena. There is consensus that the term basically covers meanings, and most scholars use it of expressions of *necessity* and *possibility*. Many extend it to include all sorts of expressions of *degree of certainty*, and perhaps even expressions of *source of information*. Some use it in an even broader sense to cover all expressions that indicate something about the speaker's attitude or stance toward what s/he describes. The present section will take its point of departure in the narrowest and most uncontroversial use of the term, and subsequently turn to its broader uses and to the relation between modality and mood.

In the narrowest conception, modality is associated with the notions of necessity and possibility familiar from modal logic (e.g., Lyons, 1977, p. 787; Palmer, 1979, p. 8). In English, narrow-sense modality covers expressions like *necessarily*, *possibly*, *maybe*, *perhaps* and the modal verbs. For instance, the modal verb *must* can be described as expressing necessity. In (1), it indicates that it is necessary for the prisoner to leave:

(1) The prisoner must leave.

By contrast, *may* can be described as expressing possibility. In (2), it indicates that it is possible for the prisoner to leave:

(2) The prisoner may leave.

Narrow-sense modal meanings may be seen as organized in three dimensions (it is not necessarily the case that all three dimensions are relevant for all modal meanings).

One dimension has to do with *modal strength*. The modal verbs *must* and *may* differ semantically with respect to strength in the sense that the former indicates a greater impact on an entity than the latter does. While (2) describes a situation where an entity (the prisoner) is simply not (any longer) prevented from leaving, (1) describes a situation in which he or she is actively forced to leave.

Another dimension concerns the location of the *modal source*. It is generally accepted that narrow-sense modal meaning implies the notion of a modal source (see, e.g., Lyons, 1977, p. 843, on the notion of a "deontic source," and Perkins, 1983, pp. 28–9 on what he calls "C"). For instance, the necessity meaning of *must* implies that there is somebody or something from which the necessity originates. The modal source can be either internal or external with respect to the entity affected by the necessity or possibility (see, e.g., van der Auwera & Plungian's, 1998, distinction between "participant-internal" and "participant-external" modality). With *must* and *may* in (1) and (2), it is external. Sentences (1) and (2) can be used to describe situations in which a prisoner is obliged or permitted by someone or something else to leave. With *want*, in contrast, the modal source is internal. Sentence (3) describes a situation in which something inside a prisoner—his desire—urges him to leave:

(3) The prisoner wants to leave.

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The third dimension is *modality type*. Necessity and possibility come in different types. There is a tradition in linguistics of distinguishing three modality types: dynamic, deontic, and epistemic. They pertain to, respectively, physical, social, and rational relations. The modal verb *must* can express all three types of modality. In (4), it expresses dynamic modality: for physical reasons (the fact that the door on the left is locked), the prisoner has to leave through the door on the right:

(4) The prisoner must leave through the door on the right because the door on the left is locked.

In (5), *must* expresses deontic modality: for social reasons (the fact that the judge ordered the prisoner to leave), it is necessary for the prisoner to leave.

(5) The prisoner must leave because the judge ordered him to do so.

In (6), finally, *must* expresses epistemic modality: for rational reasons (knowing that the speaker cannot see the prisoner), the speaker draws the conclusion that the prisoner has left.

(6) The prisoner must have left—I can't see him.

Occasionally, other modality types are distinguished. As one case in point, a distinction is sometimes made between *subjective modality*, which pertains to relations for which the speaker is responsible, and *objective modality*, which pertains to relations for which the speaker is not responsible. This distinction seems to cut across the distinction between dynamic, deontic, and epistemic modality. As another case in point, *alethic modality*, pertaining to purely logical relations, is occasionally distinguished from the three types discussed above. While this may be justified within modal logic, however, alethic modality does not seem to be a linguistically relevant notion (Palmer, 1986, p. 11). By contrast, *psychological* or *intentional modality* might seem a linguistically significant notion. The meaning of *want* in (3) above pertains to psychological or intentional relations rather than to physical, social, or epistemic relations: (3) can be used to describe a situation in which, for psychological or intentional reasons, it is necessary for the prisoner to leave.

More often, the three modality types are collapsed into two. A distinction is typically made between epistemic modality on the one hand and "non-epistemic modality" or "root modality"—covering dynamic and deontic modality—on the other (e.g., Hofmann, 1976; Coates, 1983). This distinction highlights a difference in scope properties (e.g., Lyons, 1977, pp. 842–3; Palmer, 1979, p. 35; Perkins, 1983, pp. 7–8). Root modality is concerned with the realization of *states of affairs* (also called *second-order entities*, *actions*, or *events*)—that is, relations between entities, or rather, linguistically evoked representations of such relations. For instance, the social necessity expressed by deontic *must* in (1) has as its potential outcome the realization of the state of affairs "the prisoner leave." In contrast, epistemic modality is concerned with the evaluation of *propositions* (also called *third-order entities* or (*potential*) *facts*)—that is, meanings that can be said to have a truth value (or, in a cognitively oriented analysis, representations which are stipulated to have a referent and which can thus be evaluated according to whether or not they actually do have a referent; Boye, 2010). For instance, the rational necessity expressed by epistemic *must* in (6) has as its potential outcome the evaluation of the proposition "the prisoner has left" as true. Accordingly, Palmer (2001) talks about "event modality" rather than root modality, and classifies epistemic modality as one kind of "propositional modality."

The third dimension in particular has attracted attention in recent years. Within semantics and pragmatics, it remains an issue whether items like English *must* that can express more than one type of modality are best accounted for in terms of ambiguity, polysemy, or monosemy (see Papafragou, 2000, pp. 22–39 for an overview of the different positions). Historical linguists have focused on the order in which the different types of modality arise diachronically. One of many interesting findings is that root meanings give rise to epistemic meanings, while epistemic meanings do not give rise to root meanings (Traugott, 2006). Child language researchers have been concerned with the order in which children acquire the different types of modality. Here, one of many interesting findings is that in the case of polyfunctional items like English *must*, root meanings are acquired earlier than epistemic meanings (Choi, 2006).

As mentioned, the term "modality" has a number of broader uses as well. "Epistemic modality" is often used to cover expressions of *degree of certainty*. This use of the term is linked to the narrow use discussed above in that expressions of epistemic necessity and possibility are naturally understood as indicating degree of certainty about a proposition. In (6), for instance, epistemic *must* indicates a high degree of certainty on the part of the speaker about the proposition expressed by *the prisoner has left*. In English, the relevant sense of "epistemic modality" covers expressions such as *certainly*, *probably*, *perhaps*, *maybe*, *it is uncertain*, and *I doubt*, in addition to the epistemic meanings of the modal verbs.

Modality is sometimes also taken to include *evidential* expressions, that is, expressions like English *allegedly*, *reportedly*, *evidently*, *apparently*, and *they say*, which can be described as indicating *source of information*. This sense of modality may be seen as linked to the narrow sense discussed above. It is well known that expressions of necessity may develop evidential extensions. For instance, the German modal verb *sollen* ('shall', 'must') can be used to indicate that a proposition is based on hearsay evidence, as in (7) (from van der Auwera & Plungian, 1998, p. 85; cf. Traugott, 1989, pp. 41–2 on Old English *sceolde*(*n*)):

(7) Es soll ein guter Film sein.
it should a good film be
'It is said to be a good film.'

Moreover, there seems to be an intimate relation between expressions of source of information and expressions of degree of certainty (see Aikhenvald, 2004, p. 284 on the development of expressions of degree of certainty into expressions of source, and Aikhenvald, 2004, pp. 186–93 on the opposite development). However, the relation between evidentiality and epistemic modality remains contested (see Nuyts, 2006, pp. 10–12 for an overview).

Even broader uses of the term "modality" figure prominently in the literature. In these uses, modality is associated with notions like *speaker attitude*, *subjectivity*, *stance marking*, *nonfactuality*, or *irreality* (see Narrog, 2005 for an overview). In the broadest use, modality covers all expressions that indicate something about the speaker's attitude or stance toward what s/he describes. For instance, it includes emotive expressions like *regrettably*, *hopefully*, and *I am glad/sad that*, along with epistemic expressions like *certainly*, *probably*, *possibly*, and *perhaps*. However, while broad-sense modality covers some narrow-sense modal meanings—for instance the epistemic necessity meaning of *must* in (6)—it excludes others as nonmodal. As a case in point, consider deontic *must* in (5). With its meaning of "obligation" (or "social necessity"), it is used to describe a situation which is completely beyond the control of the speaker, the reality of which we have no reason to question. The obligation which affects the prisoner relates to the social world rather than the physical world, but the social world is as real as the physical one (just ask the prisoner, who really

wants to stay). Thus, defining modality in terms of speaker attitude, subjectivity, stance marking, irreality, or nonfactuality entails excluding at least some cases of deontic modality (see also Nuyts, 2006, p. 17 on dynamic modality).

Modality is often seen as related to *mood*. Typically, the relation is conceived of as similar to the relation between time and tense. Modality is seen as essentially covering a range of meanings, whereas mood is taken to cover the grammatical coding of those meanings (e.g., Davidsen-Nielsen, 1990, p. 1; cf. Palmer, 1986, p. 7). This view goes with a risk of confusion. Mood is standardly associated with notions like *indicative* and *subjunctive* as well as with illocution-based notions like *declarative*, *imperative*, and *interrogative*. But it is far from obvious that these notions are covered by even remotely narrow conceptions of modality. For instance, there is no reason to doubt that there is a relation between directive speech acts such as commands and the deontic meanings of modal verbs. Deontic modal verbs can be used to issue commands, as in (8):

(8) Mother to child: You must be home by 10!

However, this is fully compatible with maintaining a distinction between directive speech acts and narrow-sense deontic modality: the reason deontic modal verbs may be used to issue commands is that they describe social relations and that, under the right conditions, social relations can be brought about by describing them. In (8), *must* describes an obligation on the part of the hearer, and only because the source of the obligation is the speaker, and the speaker has powers over the hearer, does *must* "performatively" bring about the obligation it describes (see Sweetser, 1990, pp. 65–8).

As will be clear from the discussion above, there is agreement that modality centres around the notions of necessity and possibility—especially epistemic necessity and epistemic possibility. However, scholars differ quite considerably in what they take modality to cover in addition to these notions. Therefore, use of the term "modality" requires a clear definition of what the term is intended to cover.

SEE ALSO: Hedges; Politeness; Pragmatic Markers; Pragmatics of Stance; Speech Acts; Tense and Aspect

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Modeling Language for Assessment

ROBERT J. MISLEVY

A model is a simplified description of a more complex system that helps people reason about particular aspects of the system. A model of language for assessment focuses on selected aspects of people's capabilities to use language, the kinds of situations in which these are revealed, and qualities of performance that provide evidence about them. These models guide the practical work of designing tasks, evaluating performances, and producing test scores. They ground claims about the meaning of scores, and provide a framework for validating those claims.

Model-Based Reasoning

The entities and relationships of a model provide a framework for reasoning about real-world situations. The lower left plane in the box in Figure 1, labeled (D), represents a situation. It is mapped into the semantic plane (C) of the model. The analyst reconceives the real-world situation in terms of the model's concepts and relationships (E). Variables in the model can be used to explain observations and make predictions for new situations (F). Some models have symbol systems (A and B) that further support reasoning in the semantic plane of the model.

In language testing, language users act in task situations (D). The semantic plane (C) is an applied linguistics model. It comprises selected aspects of performances and situations, and some aspect(s) of examinees' capabilities—the *construct*. The relationships among these entities are specified mathematically through measurement models (A). Task response variables x represent aspects of examinees' performances, and person variables θ operationalize constructs. (The symbol θ is used here generically to indicate a proficiency variable in classical test theory, item response theory, factor analysis, or some other measurement model, as discussed below.) The measurement models posit probability distributions for responses given examinees' capabilities as expressed in θ. Estimates of θ are used to predict their behavior in target language use (TLU; Bachman & Palmer, 1996) situations (F).

Not all aspects of a real-world situation are represented in a model. Only certain entities and relationships, at certain timescales and levels of analysis, are addressed. A model's validity concerns the aptness of the relationship among the model, reality, a user, and a purpose (Suárez, 2004). Model-based reasoning requires proposing, instantiating, checking, and revising to arrive at a suitable model for the purpose at hand.

In language testing, the applied linguistics model (C) mediates between a rich but incomplete understanding of language use and a relatively simple measurement model (A). The general structure shown in Figure 1 can be implemented through a number of approaches. They are distinguished by relationships among what is observed (D), what is included in the applied linguistics model (C), and TLU situations (F).

Language Use

A contemporary view of language use centers on the patterns through which people interact with one another in socially constructed situations. Patterns at many levels are

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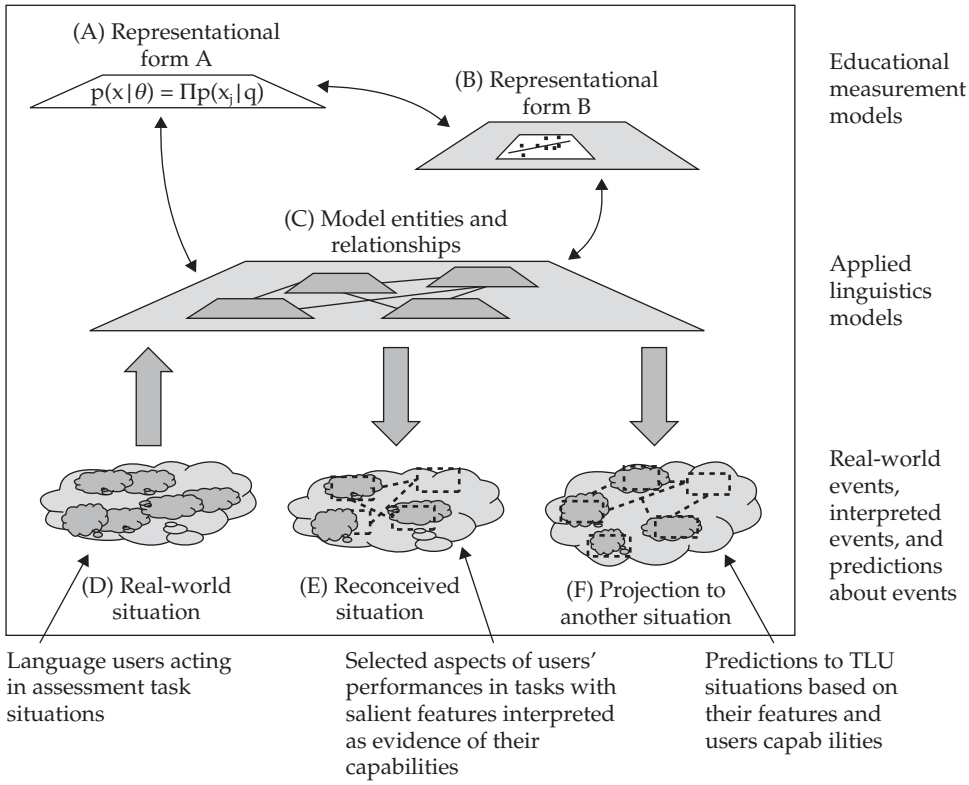

Figure 1 Model-based reasoning in language testing © R. J. Mislevy

involved in every language event. These include the acoustic or graphemic patterns and the lexical, grammatical, semantic, and pragmatic patterns usually associated with language, but also topical knowledge, sociocultural considerations, and the purpose of the activity —all instantiated in the linguistic and situational context in which the event takes place. These can be referred to collectively as linguistic, cultural, and substantive, or L/C/S, patterns (Mislevy & Yin, 2009). Neither static nor rigid, L/C/S patterns are regularities in the varying and ongoing interactions among members of communities (Larsen-Freeman & Cameron, 2008).

The within-person aspect of this view concerns how well and in what kinds of circumstances an individual can perceive situations in the terms of relevant L/C/S patterns, use them to create understandings, and act effectively. Examples include using verb tenses and constructions to form a mental model of "who gave whom what and when," and recognizing that one has committed a faux pas and apologizing. Together, these interacting extrapersonal and intrapersonal aspects ground an interactionist view of language, a special case of a sociocognitive psychological perspective.

People develop resources for understanding and acting in situations by experiencing particular situations and becoming attuned to regularities: observing how others use them, seeing what actions bring results in which kinds of situations, and extending familiar patterns to new uses. An individual's resources change with every use of language, usually slightly, sometimes dramatically. Some L/C/S patterns show more variation than others across situations, and people differ in the stability with which they activate resources in response to various situational patterns.

Table 1 Modeling approaches

Approach	*Construct definition*	*Typical assessment types*	*Example*
Trait definition (competency-based assessment)	Person characteristics specified independent of context	Discrete skills assessment; task-based assessment focusing on underlying competencies	Vocabulary size
Behaviorist definition (Norris, Brown, Hudson, & Yoshioka, 1998)	Context characteristics specified; person characteristics not specified	Task-based assessment focusing on outcomes	Quality of vocabulary use when writing in medical contexts
"Minimalist" interactionist definition (Chapelle, 1998)	Person characteristics specified relative to a particular context	Task-based assessment focusing on underlying competencies as they are applied in a context domain	Vocabulary size for writing in medical contexts
"Moderate" interactionist definition (Chalhoub-Deville, 2003)	Characteristics within a person acting in a situation	Task-based assessment focusing on capabilities in a context domain	Aptness of vocabulary use in varying medical contexts (e.g., explain same condition to physician and to patient)
"Strong" interactionist definition	Changing person characteristics when acting in a task situation	Dynamic assessment (Poehner, 2008)	Improvement of vocabulary use in medical contexts

Modeling Approaches

Both assessment tasks and TLU situations engage L/C/S patterns at many levels. Test developers design tasks in order to obtain information about potential performance in TLU situations. For some assessments the targeted TLU situations are well defined and for others they are vague. A modeling approach comprises a construct, features of tasks, the determination of aspects of performance to evaluate (sometimes specified formally in a test framework), and the matchup between features of task and TLU situations. Table 1 summarizes five approaches to modeling language for assessment, using Bachman's (2007) classification of construct definitions. The vocabulary examples draw on Chapelle (1998).

Trait Definition

Historically the term "construct" has been associated with *traits*, or "relatively stable characteristic[s] of a person—an attribute, enduring process, or disposition—which is consistently manifested to some degree when relevant, despite considerable variation in the range of settings and circumstances" (Messick, 1989, p. 15). Many assessments using a trait-based construct use context-lean tasks (e.g., questions on the gist of recorded

conversations) to predict performance in TLU situations (e.g., a conversation with an instructor, on a particular topic, for a meaningful purpose).

In the terms of Figure 1, the features of task situations (D) are designed to elicit the targeted trait. Performances (also in D) are regarded in the applied linguistics model as depending on examinees' trait values (C). Scores in the measurement model (A) reflect evaluations of performances. Inferred trait values are used to make predictions for TLU situations (F), where the features of situations and the nature of performances can differ substantially from those of tasks.

Discrete points assessment is a familiar example of the trait approach. A vocabulary construct might be defined in terms of the size of a student's store of individual lexical elements, and tested with short definitions of isolated words. Tests labeled as assessments of listening, speaking, reading, or writing reflect a trait approach at a broader level. The approach has been used to test competences such as syntactic competence, cohesion and rhetorical organization, sensitivity to register, and familiarity with figures of speech (Bachman, 1990).

It is an empirical question how well performance in task situations predicts performance in which TLU situations, for which examinee populations, and for what purposes. The outcomes depend on the stabilities and variabilities of examinees' use of resources across the different tasks and TLU situations. The correspondence is lower if important demands in TLU situations are not present in tasks, or if important demands in tasks are not present in TLU situations. These mismatches constitute *construct underrepresentation* and *construct irrelevant sources of variance* (Messick, 1989).

Behaviorist Definition

A *behaviorist* modeling approach defines a construct as an ability to perform certain kinds of tasks (Clark, 1975). Attention focuses on features of tasks and performances (D), which closely reflect valued TLU situations (F). This approach is sometimes called task-based testing, although the construct definitions discussed below can also be used with complex and meaningful tasks. The presumption is that whatever assemblies of resources a student brings to bear in the task situations will be activated in TLU situations.

An example of tasks mirroring TLU situations is preparing written summaries of patients' conditions in medical role play. Performances are evaluated by criteria that constitute or contribute to success in those situations. With regard to vocabulary, does the examinee use terminology that is appropriate for the situation, and use it accurately?

"Minimalist" Interactionist Definition

The sociocognitive perspective sees performance arising from the assembly of resources in the moment, in a context. A *minimalist interactionist* modeling approach maintains the concepts of traits and situations from the two preceding approaches, but attends to the ways that context constrains the linguistic choices a language user can make during performance (Chapelle, 1998). Such constructs are more strongly connected to situations than trait-based constructs, yet more fully explicated in terms of competencies than behaviorally based constructs.

In terms of Figure 1, key features of both situations and performances appear in the model space (C) and are required in both tasks (D) and TLU situations (F). Constructs (also in C) can be phrased in trait terms, but with contextually constrained interpretations. To assess vocabulary, a medical school might present medical passages in the target language and ask for definitions of words in this context. Because the tasks match more L/C/S requirements of the TLU situations than a generic vocabulary test, stronger prediction is anticipated.

"Moderate" Interactionist Definition

A *moderate interactionist* approach embraces the view of language capability as sets of flexible evolving resources and of language performances as highly contextualized events. The capabilities of interest concern adapting resources to situations. Features of situations are examined for their requirements and their matchups with TLUs. Performances are evaluated with respect to successful action. Use of medical terminology in role-playing contexts would now require vocabulary to be tailored to different conversational partners, such as patients and other medical professionals. The construct is not simply "vocabulary knowledge," or even "vocabulary knowledge for medical situations," but the capability to adapt and apply lexical forms in inherently context-dependent ways.

Under this approach to construct definition, the meaning of θs is local and contingent. Strong justification is required to extrapolate beyond task situations. Inference from context-lean, large-scale assessments demands caution. Assessments are preferred that match task and TLU features, contexts, and activities as closely as feasible (Douglas, 2000), and capitalize on examinees' resources with regard to L/C/S patterns that are not the target of inference (Swain's, 1985, admonition to "bias for the best").

"Strong" Interactionist Definition

A *strong interactionist* definition of constructs emphasizes the adaptation of learners' capabilities through specific uses of language. Features of task situations (D) are designed to evoke resources with respect to particular L/C/S demands, anticipating that learners performing suboptimally can be guided to learning situations (F) that develop the targeted resources. Constructs defined here are amenable to change.

This approach is seen in diagnostic testing and dynamic testing. Diagnostic tests separate assessment and learning events, presuming that the targeted capabilities are relatively stable during assessment but that subsequent learning situations can be tailored to develop resources in identified areas. Tasks in dynamic assessment provoke change during assessment (Poehner, 2008). This approach is employed, often informally, in intelligent tutoring systems (ITSs) and in simulation-based and game-based assessments. Dynamic vocabulary assessment in the medical context could seed key terms into the role play, and shape the interaction to extend the student's capabilities with those she or he is less familiar with.

Measurement Models

Measurement models address patterns in responses across examinees and tasks. To the extent that a model fits a given data set, it is because of stabilities and similarities in individuals' use of resources to act in those kinds of task situations. This section highlights aspects of measurement models that are pertinent to the applied linguistics models they are meant to support.

The Probability Framework

A measurement model gives probability distributions for observations as functions of variables for examinees and situations. A measurement model contains unobservable variables θ that characterize aspects of proficiency that correspond to the construct(s), and scores x_j that represent aspects of performance in situations indexed by j, either test scores or item scores, depending on the measurement model being used. Conditional distributions $p(x_j|\theta, \beta_{jj})$ describe the central tendency and typical variability of performance in that situation, given a learner's capabilities as they are characterized in the model and parameters β_{jj} that may further be modeled in terms of task or test features.

The specific forms of θs and xs (e.g., univariate or multivariate, discrete or continuous) and structures of the $p(x_j|\theta, \beta_{jj})$s provide a framework at level (A) in Figure 1 for reasoning quantitatively about the entities in the applied measurement model in level (C). The measurement model grounds inferences about an examinee's θ given her or his responses. The operational meaning of θ is a characterization of performance tendencies in task situations.

Broadly speaking, reliability is the degree to which estimates of θ from observations in task situations (D) predict performance in similar task situations (constrained cases of F). Concurrent and predictive validity correspond to projections to TLU situations (criterion situations as in F).

Commonly Used Models

The most commonly used measurement model is *classical test theory* (CTT), in which θ is an overall proficiency with respect to the kinds of tasks and performances in the test. Total score approximates an examinee's true score θ. A standard error of measurement indicates the strength of evidence for an individual, and reliability gauges evidence for distinguishing members in a population. For tests where data are ratings of performance, generalizability theory (g-theory; Brennan, 2001) extends CTT to issues of variability and bias entailed by raters and rater characteristics, task and rubric designs, and assessment and scoring configurations. The CTT formulation corresponds directly to inferences about capabilities cast in terms of trait and behavioral constructs. CTT can be also used with interactionist definitions of constructs, but the interpretation θ is then conditioned on testing populations, circumstances of observation, and task features.

A shortcoming of CTT is that students can obtain similar scores using different sets of resources in different ways, which may subvert making the same predictions, instructional prescriptions, or interpretations of performance for them. By addressing performance at the level of tasks, *item response theory* (IRT) measurement models can identify tasks and persons whose response patterns differ sufficiently from typical patterns to question the model-based reconception of test performance. This capability can be used to highlight atypical individuals, tasks, and performances, and detect large-scale patterns such as different task difficulties for different first language (L1) examinees (McNamara & Roever, 2006). To the degree that it fits data in a given context, IRT enables inference about likely performance on individual items and estimation of θs from different sets of items, as in computerized adaptive testing (Wainer, 2000).

Structured, multivariate, mixture, and rater-effect measurement models are recent extensions of these ideas. Each extends the space of applied linguistic models that can be supported with a measurement model, and each adds capabilities that accord with an interactionist perspective. *Structured* IRT models (De Boeck & Wilson, 2004) and diagnostic classification models (Lee & Sawaki, 2009) incorporate into the probability framework those features of tasks that are central to the L/C/S patterns of interest. They guide task development and help check that response patterns accord with the simplified applied linguistics model. *Multivariate* versions of these models are particularly useful for complex tasks, where capabilities with different L/C/S models are involved to different extents in different tasks, in ways that can be linked to task features. These models can be applied with any of the approaches, with θs, xs, and task features suitably defined. *Mixtures* of IRT models (Von Davier & Carstensen, 2007) suit situations in which, by virtue of characteristically different approaches or learning histories, response patterns in distinct classes of examinees can be approximated by corresponding IRT models. *Rater-effect* IRT models such as the many-faceted Rasch model (Linacre, Engelhard, Tatum, & Myford, 1994) incorporate rater effects used widely in language testing (McNamara & Roever, 2006).

Factor analysis and *structural equations modeling* (SEM; Kunnan, 1998) are used to study relationships among scores from multiple tests, and as such can be used with scores formed in any of the approaches discussed above. They are employed in construct validation studies and theory development. Patterns of scores from task-centered tests can be analyzed in terms of shared traits, for example (e.g., Sasaki, 1993).

Current Issues and Future Directions

Articulation Between the Sociocognitive and Measurement Perspectives

Measurement models provide the formal machinery (layer A in Figure 1) necessary to make and support claims about score meaning. Because they evolved under trait and behavioral psychology, the terminology in which they are cast articulates poorly with a sociocognitive view of language. Providing a crosswalk between the two paradigms will help in both designing language tests from interactionist perspectives and properly constraining inference from tests cast in trait-defined and behaviorally defined approaches.

Proficiency Frameworks

Assessment frameworks were noted above as specifying the choices about constructs, task features, and performances that operationally define an assessment. The use of frameworks for particular assessments is uncontroversial, but a current issue in modeling language concerns broadly cast frameworks that describe capabilities at increasing levels of proficiency. Two examples are the American Council for the Teaching of Foreign Languages guidelines for reading, writing, speaking, and listening (e.g., Breiner-Sanders, Swender, & Terry, 2001) and the Common European Framework of Reference (CEFR) for Languages (Council of Europe, 2001). Descriptors of what a learner at CEFR level B2 can do include "construct a chain of reasoned argument" and "explain a viewpoint on a topical issue giving the advantages and disadvantages of various options." Operationalizing these descriptors in tasks requires many specific design choices about capabilities, contexts, topics, testing methods, performance modes, and evaluation procedures, all of which affect the difficulty of tasks and the L/C/S demands that are evoked. Simply designing tasks to descriptors or matching pre-existing tasks to the framework does not ensure validity, and a learner performing at, say, level B2 in one assessment can perform markedly higher or lower on another assessment nominally linked to the same framework.

Assessment Engineering

An active line of research is making the assumptions, principles, and argument structures that underlie assessment explicit, so that tools and processes can be developed to make assessment design more efficient and more consistent in quality (e.g., Mislevy, Steinberg, & Almond, 2002; Luecht, 2003). This work coordinates the domains of expertise that must come together in assessment, including cognitive research, measurement models, task design, and performance evaluation (e.g., for automated scoring). Bachman and Palmer (2010) discuss the interplay between modeling language for assessment and assessment design for practical applications in terms of assessment use arguments. Chapelle, Enright, and Jamieson (2008) provide a comprehensive example for the teaching of English as a foreign language (TOEFL) redesign.

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; Dynamic Assessment in Second Language Acquisition; Factor Analysis; Sociocognitive Approaches to Second Language Acquisition; Statistical Analysis of Test Results; Structural Equation Modeling in Language Assessment; Technology and Language Testing; Tests

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Models of Interpreting

ROBIN SETTON

Introduction

Interpreting is a complex and unique activity whose social, cognitive, and linguistic features are not captured in any existing discipline. The models so far proposed have emphasized either its relational aspects, as a social communication service, or its individual performance as a complex cognitive and linguistic operation, and have accordingly drawn on different disciplines in the humanities and cognitive sciences. Such models have been based on a mixture of intuition from personal experience, imported theory, and inference from experiments, performance data, surveys or interviews, and, to some extent, neuroimaging.

Any such model reflects the state of the art in its feeder disciplines and their current paradigms, and the robustness of the available evidence. Interpreting data is complex, elusive, and characterized by wide intersubject variability on all variables; usable authentic samples for observational research are hard to collect; and ecological validity and experimental design issues make such evidence hard to interpret. However, while models of interpreting may be more tentative, as descriptions of reality, than models of simpler phenomena in the background disciplines, they serve as intermediate research tools, and some have been very successful as heuristic pedagogical aids—more so, perhaps, than as explicit computational blueprints for machine interpretation.

Models of interpreting fall into two broad categories. Relational models try to capture the pattern of interactions in interpreted events, from a single interview to an entire conference, while cognitive process models focus on the mental activity of the individual interpreter.

Sources and Components

Models of interpreting have drawn more on sociology, cognitive psychology (psycholinguistics), and information theory than on translation studies or linguistics. Translation studies traditionally focused on product rather than process, and the descriptive linguistics revolution of the 1960s and 1970s has had no visible impact, as if the linguistics of form were not close enough to psychological reality to illuminate interpreting; but some models have drawn on the functionalist tradition, discourse analysis techniques (e.g., Wadensjö, 1998), or pragmatic theory (Setton, 1999).

Cognitive science has been tapped for components to model the internal processes of interpreting, including speech processing, memory, and attention/resource allocation and coordination. How these mental components and functions interact in the specific configuration of interpreting is a central problem in cognitive process models.

"External" or Relational Models

Relational models focus on the social and behavioral determinants of the activity, embedding interpreting within a broader framework, such as human social communication, or

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even a general theory of action. This approach, prominent in German-speaking countries, draws on the functionalist and text-linguistic schools of European translation studies and highlights the sociocultural context of the interaction and the purposeful (or *skopos*-oriented) nature of translation (Kirchhoff, 1976; Pöchhacker, 1994; Salevsky, 1994; Kalina, 1998). Stenzl's "communicative information flow" model (1983, p. 45) contrasts the communicative *intention* of the sender, the communicative *function* for the receiver, and the different contexts in which each formulates his message: the speaker against his own sociocultural and situational background, the interpreter drawing on her own situational and textual knowledge, and both presupposing some knowledge and background in the receiver(s). Pöchhacker's "interactant model" (1994), drawing on *skopos* theory, attempts to link the cognitive and social levels by placing the interpreter within a wider "situated activity system" of concentric circles, and relating each "text" to the "hypertext" (the entire interpreted conference) and the wider social context, including the interpreter–client relationship.

Such relational models also draw attention to the interpreter's role, which is not always straightforward, especially in the less conventionalized and more often face-to-face settings and configurations of community, public-service, legal, or media interpreting (Pöchhacker, 2000; Chiaro, 2002). Alexieva (1997/2002, p. 230) lists parameters on which an interpreter's role can vary in different situations: distance versus proximity (between speakers, addressees, and interpreters), interactants' relative status ("power gradients"), formality of setting and conventions (turn taking, rules of order), cooperativeness or initiative for negotiation, and whether interactants' goals coincide or conflict (as in the adversarial context of legal proceedings). The interpreter will thus interact and behave differently, or be expected to, in a medical or police interview between an uneducated or illiterate person and a doctor, lawyer, or judge; in an adversarial encounter between witnesses, defendants, and counsel in a courtroom; or in an international conference. As Wadensjö (1998) shows in a corpus from public-service interpreting (police interviews), using Goffman's notion of "footing," the interpreter's role may even vary, during a single interaction, between that of *reporter* (expected only to repeat what is said), that of *recapitulator* (expected to give an authorized voice to the speaker), and that of *responder* (when the interpreter is invited to make her own contribution to the discourse).

"Internal" or Cognitive Process Models

Conference interpreting, whether "full" consecutive with notes or simultaneous (SI, sometimes with accompanying text or slides), is performed in more formal settings. The interpreter's role is standardized, with little or no advocacy, explanation, or summary; the emphasis is on speed, accuracy, and formal register. Accordingly, models of conference interpreting, especially SI, tend to focus on cognitive processes.

Any plausible cognitive model of interpreting must take into account both evidence from professional performance (transcripts, recordings, or consecutive notes) and state-of-the-art findings in cognitive science, on memory, attention, bilingual neurolinguistic organization or processing capacity, extrapolated as far as possible to the interpreting task. Interpreters must transfer a discourse between two languages that conceive and express things differently, under severe time constraints. These two facets of the task—reformulation and cognitive management—are highlighted in the two best known models of conference interpreting, one of which focuses on the translation process, the other on cognitive load.

The Interpretive Theory of Translation (ITT)

The interpretive theory of translation (ITT), also known as the "théorie du sens," was developed through the experience of interpreter training at the Ecole supérieure d'interprètes

et de traducteurs (ESIT, Université de Paris XI) as well as analyses of professional performances, and contains an inbuilt prescriptive dimension. In consecutive interpreting, Seleskovitch (1975) found wide individual variation in what interpreters note and how, and a loose and variable correspondence between the words uttered by the speaker, the notes, and the phrasing of the renditions, except for a few identifiable equivalent terms. From this she inferred that most of the speech is processed cognitively, not verbally, the notes serving only as reminders. In good translation and interpreting, this conceptual route must be dominant, with "transcoding" used only as an occasional fallback for frozen items like technical terms, names, numbers, or lists. This is famously illustrated in the "currant bun" analogy: After cooking (i.e., interpretation), only a few items—the currants—are "physically" recognizable, while the dough or bulk of the discourse is "chemically" transformed into a totally new linguistic form. The sense, or speaker's intended meaning, is said to crystallize in the interpreter's mind as the speech is understood in context, and is then formulated, in effect, as the interpreter's own thoughts, the main effort being to resist linguistic interference.

These two processes, interpreting proper versus "transcoding," are ascribed to two different memories: "Sense" forms in cognitive memory, forgetting the original words ("deverbalization"), while the occasional items that cannot or need not be processed cognitively must be literally noted, or quickly translated, before they fade from the much briefer echoic memory. Lederer (1981) models SI as an interplay of eight overlapping, continuous or occasional, operations. The central activity is conceptualization, or "the construction of a cognitive memory by the integration of successive fragments of the speech string with previous knowledge." This overlaps with hearing, linguistic comprehension, and enunciation, with occasional "transcoding" of fixed terms (or of the first few words of a new utterance before the speaker's meaning is clear), and conscious lexical retrieval. Finally, "awareness of the situation," and self-monitoring, must be continuous (Lederer, 1981, p. 50). The alternation between the two kinds of processing—conceptualization and transcoding—is said to explain the restructuring observed in SI and variations in the lag (or "ear–voice span," EVS) as the interpreter either falls behind while analyzing or waiting for more context to understand an idea, or, conversely, must catch up quickly to transcode a more ephemeral item. The theory has been further glossed and developed by various authors (e.g., Laplace, 1994) and is widely used in interpreter and translator training (Seleskovitch & Lederer, 1989/2002).

The Effort Models

The effort models (Gile, 1995/2009, 1997) explain variations in interpreting performance directly in terms of the fluctuating demand on processing capacity. Observing that even experienced professionals make errors for no obvious external reason (such as fast input, lexical difficulty, or poor acoustics), Gile identifies four "non-automatic" processes—listening/analysis (L), memory (M), production (P), and coordination (C)—as sufficiently distinct to postulate a "zero-sum" model of the competitive allocation of effort between them, bearing in mind that capacity requirements vary enormously through the discourse, and that L, M, and P are always working on different segments. Problems can arise when either the overall capacity or the specific capacity needed for one of these efforts is exceeded. According to Gile's "tightrope hypothesis," interpreters—especially in SI—are working near saturation much of the time, so that even slight destabilization may trigger failure and knock-on effects (failure sequences) at some distance downstream from the initial point of overload. "Problem triggers" which may cause overload immediately or downstream include peaks of high information density, fast delivery, enumerations or lists, poor sound, short or non-redundant stimuli like numbers, names, and acronyms, and syntactic asymmetries between source and target languages (1997, pp. 205–8). Conversely,

capacity is relieved when demands on attention are low, for instance at pauses and when sentence endings are predictable (Gile, 1992).

The difference in emphasis between ITT and the effort models is illustrated in their account of the key resources needed to render an item like *surface diamond drilling program* (Lederer, 1990) into French in SI: Gile stresses the scanning, reordering, and retrieval processes this entails, Lederer the external knowledge needed to render it into French with the correct (mandatory) prepositions as *programme de forage au diamant en surface* ('program of drilling with diamond on surface').

Discourse-Oriented Models

Chernov's "probability prediction model" of SI (Chernov, 2004) focuses on the role of information density and "newness" versus redundancy and predictability. Chernov explains the feasibility of SI by the key property of *redundancy*, which makes discourse more predictable as it unfolds, and facilitates anticipation. Citing evolutionary theory, Chernov observes that our perception is attuned to transitions rather than steady states, hence to new information, which in discourse is usually carried in the "rheme," while the more redundant "theme" offers opportunities for compression. In addition to the "objective" redundancy inherent in language at different levels, "subjective" redundancy for a given listener increases with existing knowledge and inferencing during comprehension. The combined effect of redundancy and attunement to new information is to enhance predictability. Chernov's model notably explains why SI does not lend itself to particularly dense communications like poetry, legal documents, or numerical information. His experiments with unexpected sentence endings and continuations (Chernov, 1992) showed that interpreters do make and rely on anticipatory syntheses, corroborating the role of anticipation (and the dangers of "cognitive prejudice").

Information Processing and Human Communication

Shannon and Weaver (1949) modeled communication between cognitive devices as a single-channel, limited-capacity (noise-sensitive) information-processing system. This paradigm remained influential through the 1970s and early 1980s, inspiring flowchart-type models of SI as a speech-processing task, a problem-solving task, or both, with decision points, memory buffers, and feedback loops (e.g., Gerver, 1976; Moser, 1978), while the effort models, as we have seen, highlight capacity limitations. Linguistic aspects are recognized by these modelers (e.g., in Gile's "gravitational model" of lexical availability; Gile, 1995/2009), but do not fit easily into the paradigm, still less the role of relevant knowledge and context, leading some modelers to look for support in recent cognitive science for more pragmatic, top-down processing. It has been suggested in particular that

- memory must use different formats (visual and conceptual as well as verbal) and be highly flexible. Miller (1956) found the capacity of human short-term memory to be "7 plus or minus 2" items, or chunks, but saw that "chunks" could be expanded with additional knowledge;
- parallel processing must be possible;
- attention could be distributed among different, more or less automatized processes with increased expertise. Gerver (1976) recognized that the single-channel hypothesis—"that attention can be paid to only one activity at a time"—must be too rigid; monitoring, for example, would require a secondary channel which is attenuated and analyzed along with primary channel information;
- context, background knowledge, and pragmatics must allow substantial shortcuts in both comprehension and production, as seen in the observed phenomena of prediction or anticipation (Gerver, 1976, pp. 197–8; Lederer, 1981; Setton, 1999; Chernov, 2004);

- a realistic model must allow for individual strategic choices (Gerver, 1976, pp. 191–4; Gile, 2001);
- with increasing expertise, interpreters should find effort trade-offs by using internalized domain-specific procedures and cognitive and linguistic schemas (Shreve & Diamond, 1997; Liu, Schallert, & Carroll, 2004).

In a cognitive-pragmatic model that seeks to reconcile cognitive and communicative aspects, Setton (1999) draws on relevance theory (Sperber & Wilson, 1986/1995) and synchronized transcript analysis to describe interpreting as a process in which linguistic decoding constantly interacts with inference from multiple inputs, including previous knowledge and rich pragmatic clues in the discourse. This generates a continuously updated mental discourse model of the speaker's communicative intent, against which the interpreter must reformulate successive segments to meet target language (TL) constraints, including TL-specific pragmatic packaging. Knowledge schemas and a "bilingual phrasebook," built up with expertise, can relieve working memory, freeing up attention for: (a) monitoring output quality; (b) dealing with more difficult or anomalous input (accents, speed, monotonous delivery); and (c) making strategic or diplomatic judgments (compression, omission, explication, or cultural or face-saving adjustments). In this model, problems arise when the process is forced back onto low-level, "bottom-up" operations with a high cost in attention and coordination, like deciphering, parsing, or effortful lexical retrieval. This may occur in novice performance (insufficient cognitive and linguistic resources), or in difficult conditions (e.g., dense recited speech, or no preparation). Experts working with rich input in good conditions can achieve adequate accuracy and fluency, subject to professional skills, including vigilance against "cognitive prejudice" and linguistic interference from cognates, and, in SI, acquired techniques (like "chunking" or "stalling") to avoid or compensate for the temporary distortions and dilutions that result from having to start formulating in mid-utterance (Setton, 1998, 1999).

Computational and Artificial Intelligence (AI) Approaches

Machine interpretation is an old dream that is still well short of realization, despite successive waves of funding and optimistic prognoses since the 1950s. Ironically, this project has led modelers back from the pre-1980 serial, flowchart-like models to the brain: Models of mental behavior have been implemented in ever more flexible, parallel, distributed—in short, brain-like—architectures.

One example will illustrate the challenges in designing and implementing an operational real-time, real-speech translating system even for a limited, domain-specific application. Kitano's speech-to-speech translation system DMDIALOG (1993) aimed to translate simple telephone dialogues for ordering or inquiry (tourist information) applications. Kitano identifies the main challenges as acoustic variation (the system must recognize and process speech from any speaker of the input language); fast, continuous speech; elliptical reference; ill-formed or truncated grammar (e.g., *Well I . . . oh I think you are right*); indirect speech acts (e.g., *Can you pass the salt?*); and "mixed-initiative discourse"—the interactive construction of dialogue by multiple speakers with progressively less explicit references.

These challenges mandate certain clear options from the design stage. First, the system needs an *interlingua* ("language-independent representation of meaning") rather than a *transfer* approach, though it also uses a large lexical database. Second, to achieve real-time speed, processes must operate in parallel at several levels, for example, word recognition overgenerates possibilities unless constrained by a probabilistic, predictive system. Finally (as seen in real SI), the system must work on current input while producing the previous segment. These specifications require a hybrid of two systems working in "massively

parallel" processing: A symbolic component performing bottom-up and rule-based operations, like sentence parsing, works alongside a connectionist network that is trained to process the discourse top-down and probabilistically against a database of past, similar input sentences and stock phrases (case-based pattern matching). Here again we see the contrast between the "lexical equivalents" and "original formulation" approaches to translation (although here the latter is at best just syntactic generation). The computer's answer is hybrid processing: Translations are produced by generating sentence fragments from parsed cues and inserting equivalent words and phrases retrieved from the database when certain set phrases are recognized.

Strategies and the Expert/Novice Paradigm

Human interpreting must involve a dimension of strategy, or choice, which is not captured in AI or some of the early psycholinguistic models (Gile, 2001), and which complicates the analysis of performance data: In transcripts, predictable language-processing operations may be scrambled and obscured by strategic and expertise effects. Wide individual variability makes such expertise effects well-nigh impossible to model closely, but we have some evidence of the general trend: Experts' output is more "restructured" and shows evidence of processing in larger chunks (Moser-Mercer, Frauenfelder, Casado, & Künzli, 2000). In McWhinney's (1997) connectionist model, skill acquisition is driven both by errors, which prompt interpreters to pay closer attention to minor cues and possible traps, expand their L2 vocabulary, and organize higher-level discourse structures, and by successes, with successful strategies recorded for future use.

Discussion and Evaluation

In spite of the different emphasis of computational information-processing models and more discourse-oriented accounts, existing models have more in common than may appear at first sight. For instance, most authors acknowledge the need for some sort of intermediate alinguistic (or "prelinguistic") stage between comprehension and formulation. There is still plenty of unknown territory, and complex variations on interpreting that involve mixed-modality input, such as sight-translation, SI with text or accompanying slides, or SI through relay, have yet to be modeled (but see Shreve & Diamond, 1997; Shreve, Lacruz, & Angelone, 2010). The roles of nonverbal channels and affect have also been neglected (Poyatos, 1997).

In human cognitive modeling, inference from observation or experimentation is difficult because the enterprise is reflexive: The mind is both the object and the instrument of inquiry. Evidence from psycholinguistics may set bounds on the feasible, in terms of input speed or memory for words or facts, but we cannot extrapolate from performance in artificial laboratory tasks to situated, purposeful interpreting, which allows considerable latitude for strategy and adaptation to a unique context. Some models rely on inference from real interpreting corpora recorded in "ecologically valid" conditions, with appeals to linguistics or other theories of speech communication; some combine corpus analysis and abstract psycholinguistic modeling. So far, however, no global process model has been built *primarily* on findings from controlled experiments. AI models face the more rigorous test of conversion into an operational algorithm and implementation in an artificial system, but have different constraints and flexibilities from the evolved brain.

In summary, a reliable detailed model of the cognitive process of interpreting is not yet within reach. As elsewhere in the humanities, models of interpreting are still not explicit or exact enough to be falsified, even if their source data could be exactly replicated.

Contradictory models will therefore coexist, their relative influence depending on such factors as neatness, persuasiveness, exposure, or, more importantly, their applicability in teaching or research. A teaching model, for example, should show critical or vulnerable points for performance that can be highlighted and targeted by special exercises. Such heuristic models are valuable if they can help trainees learn to use context, weigh up strategic choices against the constraints of time and coordination, or assess the feasibility or difficulty of providing quality in different conditions, or the complexities of the interpreter's role. As research tools, models of interpreting must aim for an account that links the dimensions of cognition, linguistic ability, and task-specific expertise, and the diversity of interpreting environments.

SEE ALSO: Cognitive Models of Interaction; Community Interpreting; Conference Interpreting; Context in the Analysis of Discourse and Interaction; Health-Care, Medical, and Mental Health Interpreting; Interpreting Techniques and Modes; Media Interpreting; Neurolinguistic and Cognitive Aspects of Interpreting; Pragmatic Markers; Pragmatics and Cognition; Quality in Interpreting; Teaching and Learning of Interpreting; Theory of Interpreting

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Modularity in Second Language Acquisition

MICHAEL SHARWOOD SMITH

Modules, in any branch of science and engineering, will be defined as units that have a special function. They are expert subsystems delivering their unique contribution in the service of a larger system. Modularity has to do with efficiency. In the industrial revolution of the 19th century, jobs were created which involved people specializing in one thing alone and hence learning to do it swiftly and skillfully before passing on the product to the next specialist. The classic image of this particular type of cooperative activity involves a line of people working at a conveyor belt, each focused on one small aspect of the manufacture of a car, a procedure introduced by Henry Ford in the early years of the 20th century.

Most people would accept that biology operates along modular principles. The human body is composed of various organs—the liver, the kidney, the heart, etc.—with unique functions, each of which has its own special role in supporting the organism. The physical brain has a modular architecture since we know that specific areas can be related to specific functions, even though this may not necessarily mean that these functions are carried out in one brain area alone. For example, visual stimuli and auditory stimuli are handled differently and each have their specific areas and pathways across various regions of the brain—and so, it seems, does language. However, when in theoretical linguistics or in second language acquisition (SLA) circles one talks about modularity, it is not these basic anatomical and physiological functions that are the main issue but rather cognitive function. It has to do with how the mind deals with sensory input and carries out the higher mental functions associated with language use such as reflecting, planning, constructing, and interpreting messages, and also how this ability develops during the language user's lifetime.

In principle, the mind could organize and coordinate the activity of all the various physical expert systems of the body, including the brain, while itself remaining unitary in character: the mind would then be rather like a composer or conductor determining the activities of the various different sections of an orchestra. There are indeed schools of thought in psychology that see language use and language acquisition as the product of the same generic mechanisms that handle all mental activity. Others make a special case for language and argue not only that the mind is composed, from birth, of various expert systems but also that language ability, or more specifically grammatical ability, is one of those systems. This is often referred to as the language "faculty" or the language "module." In other words, the argument goes that grammatical knowledge cannot be just one example of knowledge in general but must be different in important respects (Chomsky, 1965). The unique human ability to create mental grammars involves the young child developing a kind of knowledge the complexity of which is often greatly underestimated. It is acquired very much earlier than other types of complex knowledge and the process is accompanied by relatively few grammatical errors considering all the logical possibilities that could be entertained given the evidence that children get from the language to which they are exposed. It is also important to note that first language acquisition is accomplished without anyone regularly correcting the grammatical errors that are made (Chomsky, 1965; Hornstein & Lightfoot, 1981). This "logical problem of language acquisition" may be solved,

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so it is claimed, by imputing to the child some inborn ability to create a mental grammar without reflection and without the provision of sufficient evidence to indicate clearly what is permitted in the grammar and what is not. The conclusion is, therefore, that there exists some sort of specialized knowledge base, one that has evolved in human beings and that guides and restricts the way in which a very young child creates complex grammars from the language utterances it is exposed to. This knowledge base, which Chomsky called universal grammar (UG), is not a grammar in itself but more a set of grammar building principles. Only much later, when the children are more mature, know more about the world, and are undergoing education of some sort can they start to acquire other kinds of knowledge; even then, crucially, they need to know whenever they have arrived at an incorrect hypothesis about what they are trying to learn. In other words, they need correction. While this view of the language faculty has a great deal of support, there are, as suggested earlier, those who deny that the evidence points to the existence of an innate capacity for language, and offer other more parsimonious solutions, for example the emergentist proposals of O'Grady (2003) and the more radical views of MacWhinney (1987), Bates and MacWhinney (1988), and Ellis (2003).

In second language acquisition, the big question amongst those who accept the above-mentioned arguments for an innate human language faculty is whether UG, the specialized knowledge base referred to, operates just once. That is to say, is it designed to provide the human child with a language, or, in the case of multilinguals, with more than one language, after which its job is done? Alternatively, is it available in some form for learning new languages later in life? If the former is true, then older language learners would have to fall back on more general learning mechanisms developed at school. This would have a number of important consequences. For example, second-language learners would develop grammars that were not constrained by the principles of UG and might therefore contain rules or principles not instantiated in children's or indeed older native speakers' mother-tongue utterances. For instance, if, according to UG-based research, it turned out that a grammar of any human language must either, like Japanese, require relative clauses to *precede* the head noun (as in "ate small bones dogs") or, alternatively, like English, to *follow* the head noun (as in "dogs who ate small bones") but definitely not both, then second language (L2) learners might indeed violate this UG principle and develop an "unnatural" grammar permitting *both* options. An English learner of Japanese, for example, might acquire the Japanese relative-clauses-first option while not giving up the English alternative and so produce a kind of hybrid form of Japanese that allowed both these two word orders. All the while these two conflicting orders manifested themselves in this learner's performance in Japanese, it could be said that the underlying learner grammar in question was an impossible one, that is, illicit in terms of UG principles and therefore to be labeled as "non-natural." Unlike this hypothetical second language learner, a small child acquiring English or Japanese as a mother tongue (or indeed both English and Japanese at the same time) would never end up with this hybrid solution of allowing relative clause to come either before or after the head noun. If, in the bilingual child, both orders ever manifested themselves in performance, that is, in one or other of the two languages, the expectation would be that this would be a strictly temporary diversion: it would not persist and would speedily give way to the appropriate, native option when speaking either language Furthermore, second language learners, once they have illicitly adopted both word orders, would have to rely on systematic correction of some kind to stop doing this since there is no guarantee that exposure to the target language will provide sufficient and appropriate evidence that will correct all their various incorrect assumptions about the target grammar.

Right from the start, SLA theory reflects the tension between these two opposing points of view on modularity and language. Early on, Selinker (1972) suggested that the evidence that older learners did not learn in the same way as younger ones was overwhelming:

second language learners are almost always non-native to some degree. Put another way, it indicated to him that the language faculty, once it had served its purpose in the creation of a mother-tongue system, ceases to be available. This was the basis for his interlanguage theory, which was based on the assumption that psychological explanations of how L2 "input," that is, the L2 utterances a learner is exposed to, required a special type of psychological explanation. This later came to be known as the incompleteness or fundamental difference hypothesis (Schachter, 1988; Bley-Vroman, 1990). The principles of UG would only manifest themselves where L2 learners (subconsciously) transferred grammatical features of their first language into the developing L2 grammar, that is, any subsequent language they are exposed to. Even then they might end up with the kind of illicit hybrid solution exemplified above. In other words, the modularity hypothesis would hold for first language acquisition but not for second language learning carried out after the first one has been acquired. This therefore implies some version of the critical period hypothesis, which holds that our natural language learning ability, that is, UG-based development, has to take place within a given, early period in life after which it disappears (Selinker, 1972; Birdsong, 1992). That is to say, we do not lose, to use Pinker's term, "the language instinct" (1994) by virtue of acquiring a native language, or more than one native language simultaneously: this instinct is simply no longer available once we have reached a particular age, originally assumed to be around puberty (Lenneberg, 1967). Supporting evidence both for the existence of a language module as also for its failure to deliver native ability in later life may be found in Smith and Tsimpli's work on the remarkable savant Christopher who, though severely brain-damaged and mentally incapacitated, acquired native English in the normal manner. In addition he has displayed a really exceptional gift for picking up a large number of second languages although, significantly, despite his great fluency in a number of these, he has not shown the full grammatical competence that would have been guaranteed if the process had been constrained by the principles of UG (Smith and Tsimpli, 1995).

The opposing school of thought in SLA came to the fore in the proposals of Dulay, Burt, and Krashen, who saw evidence of a fixed order in which functional grammatical morphemes, such as the articles and regular and irregular past tense forms, are acquired by second language learners, as manifested in their own experiments on second language learners from varying language backgrounds, noting that this order was substantially similar to the fixed developmental sequence noted in first language acquisition (Brown, 1973; Dulay, Burt, & Krashen, 1982). This fixed order, and especially the apparent lack of influence on it from learners' mother tongues, indicated to them that the language module was still functioning in adults. This meant that, in principle at least, older language learners had the potential to attain the same level of grammatical knowledge as the young child. The varying success of older learners to reach native levels in a second language would therefore have to be ascribed to other inhibiting factors. Krashen further asserted that the separate type of language knowledge that arose from conscious processes, typically developed during formal instruction, could play no positive, effective role in the development of the subconscious grammar. It was useful only to a limited degree in boosting correctness during actual learner performance since, to use such knowledge, a language user needed extra time, and also a deliberate focus on the formal properties of what they were saying or writing plus the actual inclination to use it (Krashen, 1985).

These two opposing views on the language module in SLA, first voiced in the 1970s, have been reiterated through to the present. In the main, this has been between people who all subscribe to the Chomskian notion of a language module as an abstract set of principles controlling the construction of mental grammars. There are, however, two other conceptualizations of the language module which have played a role in the research literature. One has been around since the 1980s, namely Jerry Fodor's processing-based

view of modularity (Fodor, 1983). The other one, Ray Jackendoff's, entered the debate in the SLA literature only at the close of the 1990s (Jackendoff, 1997; Carroll, 1999).

Fodor's views on the modularity of mind, unlike those of Chomsky who was interested only in abstract principles constraining grammatical knowledge, was cast in processing terms. Fodor makes a distinction between central processes, concerned with belief fixation, and peripheral input systems, which are modular. The input systems, one of which is the language module, process signals originating in the environment. This information is then delivered to the central processes in a form that they can use. The modules are innately specified. The information handled by each module is encapsulated—in other words, the module deals only with very limited information coming to it. Because the information processed by a module is sealed off in this way, it is not affected by any other information and thus works rapidly and efficiently. Also, each module has its own unique encoding system so that its representations cannot be read by other processors. Finally, modular processing is mandatory. Thus, if your eyes and ears are not blocked off in some way, you cannot refuse to see anything presented in your visual field nor can you refuse to process language utterances you are exposed to. Although these two proponents of modularity in language were very different in what they were purporting to explain, Schwartz, recasting Krashen's views within a generative linguistic framework, saw the two approaches, Chomsky's and Fodor's, as largely compatible (Schwartz, 1986; c.f. Carroll, 2000, pp. 260–87). Krashen's conscious learning could be seen as the product of Fodor's central processes, that is, non-modular. As such the resulting knowledge representations would be different in kind from those in the L1 or L2 (subconscious) grammars. The second language learner, in this view, ends up with two different types of grammatical knowledge. One type is processed by, and develops within, an encapsulated Fodorian language module within the constraints imposed by UG: Chomskian principles would dictate the possible shapes the L2 grammar would take. On the other hand, consciously learned grammatical knowledge would be inferred via Fodor's central processes. Albeit under certain very limited conditions, the resulting "extramodular" knowledge could be used, again consciously, to check and patch up output, "faking," as it were, a more advanced mastery of the language. However, it could not affect the shape of the emerging modular grammar. This would show up most transparently in spontaneous language use where the learners were not able to reflect on the grammatical accuracy of what they were saying. For both Krashen and Schwartz, second language learners are capable of developing the same kind of grammatical systems as children are. The availability of this second type of grammar learning, coming later on in life, is a mixed blessing. On the one hand, it can be used to improve performance in certain circumstances, but on the other hand, concentrating on developing conscious knowledge of grammar might be a stumbling block inhibiting subconscious acquisition from proceeding in its own good time. Those who maintain that the language module is operating in later life may have different views on how it works but are all of the opinion that the lack of success experienced by many second language learners should be ascribed to other factors. This is different from the first approach, which sees all L2 learning proceeding without the benefit of the language instinct.

In the more recent SLA literature, there has been a growing interest in Jackendoff's views on human linguistic ability (Carroll, 1999; Towell, 2004; Truscott & Sharwood Smith, 2004). A special attraction of this approach is its concern with specifying how what is strictly linguistic interacts with the rest of cognition. Jackendoff sees the architecture of the language faculty in two closely related perspectives: a knowledge-based one and a processing-based one. In this way, his approach is akin to both Chomsky's and Fodor's at the same time. Like Chomsky, Jackendoff sees abstract grammatical knowledge in modular terms. However, the language module, in Jackendoff's perspective, is itself split up into independent, expert systems so that, rather than talking of a single language "module," "language faculty"

would be the safer of the two descriptions. Whereas syntax lies at the heart of Chomsky's language faculty, Jackendoff's version is not syntactocentric. It includes two equal partners, a syntactic module and a phonological module. Each of these works with its own unique code and set of principles; in addition, a special interface exists to link specific syntactic structures (SS) with specific phonological structures (PS). The syntactic and phonological systems form Jackendoff's version of the language module together with interfaces that extend outside the module, that is, with the perceptual and articulatory systems and with the conceptual system. A word, in this view, is actually an "interface rule" matching a specific PS with a specific SS, and the SS with a specific CS (conceptual structure). These structures themselves reside in one or other of the specialized (phonological, syntactic, or conceptual) lexicons. Hence, the syntactic module, for example, has a set of syntactic formation rules that operate upon the syntactic structures in its syntactic lexicon.

Jackendoff's second, processing perspective, in particular, has appealed to some SLA researchers and is similar to Fodor's in some respects. It meshes neatly with the architecture of abstract knowledge outlined above. Each module has a processor that manipulates structures in its own specialized lexicon, now viewed as a memory store. Whereas Fodor talks mainly in terms of input processing, Jackendoff's system is explicitly bidirectional, handling both comprehension and production. Carroll (2000) used Jackendovian architecture to critique conventional and rather simplistic conceptualizations of second language input. She argues that input can only be used, in the plural, of the internal interfaces between all the various processing modules. Carroll's autonomous induction model (Carroll 2000) posits a separate module that handles cases of parsing failure, using inductive principles to work out solutions. Truscott and Sharwood Smith (2004), on the other hand, argue that Jackendovian processing architecture could be used to account for acquisition without positing special failure-detecting mechanisms. Their MOGUL (modular growth and use of language) model defines acquisition as the lingering effect of processing. As each processing step proceeds in response to input from an adjacent module, each module trying to select the best-fit representation from its own particular memory store, those that finally get selected to form a combined chain of representations gain in strength and become more accessible in future. Structures in each memory store gradually lose accessibility by virtue of repeatedly not being selected by their processor to represent some input. At each step in the processing chain, the innate properties of the current processor and the structures currently residing in its memory store determine what can and cannot be processed. This means that frequent exposure to given grammatical constructions as manifested in the language to which the learner is exposed does not in itself guarantee acquisition.

To sum up, in SLA, the idea of a modular mind, with a language-creating and language-processing system living alongside the systems that deal with sensory input—for example the module that handles vision and the one that handles audition—has been around since the early 1970s. It became more explicitly involved in the 1980s as more and more researchers adopted Chomskian linguistic theory. Fodor's modularity was then appealed to by some researchers as being complementary to Chomsky's. More recently, attention has turned to the possibility of applying Jackendoff's modularity to SLA theory. All these three versions are still in contention, alongside views that hold either that the very idea of a modular mind is fallacious, or that there is simply no language module, or that there is indeed a language module but it only operates in early childhood and is not available for language learning later in life.

SEE ALSO: Competition Model; Connectionism; Emergentism; Input Processing in Second Language Acquisition; Organization of the Second Language Lexicon; Second Language Representation in the Brain; Universal Grammar and Second Language Acquisition; Working Memory in Second Language Acquisition: Phonological Short-Term

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Mohanty, Ajit

GIRISHWAR MISRA

Ajit Mohanty has made significant contributions to research on multilingualism, bilingualism, multilingual education, interventions for cognitive development, poverty issues, language processing, and socialization. He was born in 1946 in Puri, Orissa, India, and he graduated from Utkal University, Bhubaneshwar, in 1969 with a master's degree in psychology. His mentors at Utkal included Professors Radhanath Rath and J. P. Das. Mohanty joined the educational psychology program at the University of Alberta, Edmonton, Canada (1973–7), where he taught courses on human development, and earned the prestigious Killam Scholarhip and a PhD in psycholinguistics (in 1978) with Professor W. H. O. Schmidt as his supervisor.

Mohanty started his academic career as lecturer in psychology in 1969 and was elevated, at the age of 37, to the position of professor in 1983 at the Centre for Advanced Study at Utkal. In 2003, he shifted to the multidisciplinary Zakir Husain Centre for Educational Studies at Jawaharlal Nehru University, New Delhi, and continues there as senior faculty. He was a senior Fulbright Fellow at the University of Wisconsin, Madison, USA (1981–2), a Senior Fellow at the Central Institute of Indian Languages, Mysore (1986–7), and a Fulbright Visiting Professor at Teachers College, Columbia University (2007–8). Mohanty's training at Alberta helped him develop a critical perspective, scientific rigor, and professional sophistication. On his return from Canada in 1978, he started research on the cognitive consequences of bilingualism among the indigenous Kond people in Orissa, with the methodological advantage of drawing monolingual and bilingual samples from the same sociocultural context. He continued to work on Konds and many other indigenous (tribal) linguistic communities in India. Besides his pioneering work on bilingualism, he worked on developmental psycholinguistics, sentence processing, and reading, focusing on grammatical and orthographic features of Indian languages. He developed a tradition of psycholinguistic research in modern India and trained a generation of scholars.

Some of Mohanty's early works were on the processing of ambiguous sentences, culture and Piagetian conservation, the perceptual complexity of linguistic structures, and reading. Extending the linkages of language and cognition, he investigated aspects of prose comprehension, metalinguistic awareness, and context effects on word order in Kui, Oriya, and Hindi languages. His work on bilingualism and its psychological and pedagogical implications has been seminal. Examining the practices of bi- and multilingualism in society in general and education in particular, he has pioneered multilingual education (MLE) in India and is known for his MLE Plus intervention (in collaboration with Minati Panda) in schools for Kui and Saora children. He worked with Tove Skutnabb-Kangas in 2009 to develop Nepal's policy and strategy for MLE. Currently, he is a member of a team to develop Bhutan's new national education framework in which he focuses on the languages-in-education policy.

Mohanty views MLE for indigenous children as a way out of the vicious cycle of language disadvantage. In his more recent works, he has examined the hierarchical "double divide" among the languages in Indian society and its implications for perpetuating inequality and marginalization. He shows how language disadvantage leads to capability deprivation of tribal mother-tongue speakers in India. He has also examined the issues of identity and intergroup relationship in tribal and nontribal contact situations.

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As a leader in the academic world of psychology in India, Mohanty is associated with the movement of indigenous psychology and relevance to the societal context. This has resulted in his analyses of poverty and social disadvantage leading to his concept of the "weaning syndrome" as a possible consequence of gratuitous relief. Language acquisition and socialization have been his other concerns. He has studied the maternal influences on development of speech style in Hindi-speaking children, proposed a stage model of multilingual socialization, and severally analyzed the problems of linguistic minorities in India.

Mohanty is the author of *Bilingualism in a Multilingual Society* (1994). He has co-edited *Psychology of Poverty and Social Disadvantage* (2000, with G. Misra), *Perspectives on Indigenous Psychology* (2002, with G. Misra), *Multilingual Education for Social Justice: Globalising the Local* (2009), and *Social Justice through Multilingual Education* (2009), both with Tove Skutnabb-Kangas, Robert Phillipson, and Minati Panda. Currently he is writing a book on *The Other Side of Multilingualism.*

Mohanty is a fellow of the Association of Psychological Science, USA, and the National Academy of Psychology, India. He is a member of the editorial boards of the *International Journal of Multilingualism*, *Language Policy*, and *Psychological Studies*. He was president of the National Academy of Psychology, India, in 1997. He has undertaken several research projects funded by the Bernard van Leer Foundation of the Netherlands, and by Indian agencies like UGC, ICSSR, and NCERT. He also directs (with Minati Panda) the National Multilingual Education Resource Consortium (www.nmrc-jnu.org) sponsored by UNICEF. Currently he is collaborating with the University of Western Ontario, Canada, in the area of MLE. He has been a guest at the faculty of several universities in India, the USA, Canada, and Switzerland. Recently, he has organized symposia on aspects of multilingualism at the IAAP Congress at Melbourne (July 2010), AASP, Delhi (December 2009), and ICP, Berlin (July 2008). He has been keynote speaker at the 2010 ISSBD, Lusaka (July 2010), the International Conference on Globalization and Languages, Tokyo (August, 2008), the International Conference on Third Language Acquisition and Multilingualism, Stirling (2007), the International Conference on Language and Poverty, Cornell (2005), and IAAP, Madrid (1994).

Mohanty can use at least seven languages and writes newspaper columns, essays, and stories in Oriya.

SEE ALSO: Colonialism and Language Policy and Planning; Linguistic Imperialism; Mother-Tongue-Medium Education; Multilingual Education in India; National Language and English in India; Role of Linguistic Human Rights in Language Policy and Planning

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Monolingual Lexicography

PATRICK HANKS

Introduction: Lexicography in the Age of the Internet

In recent years there has been an increasing focus on the lexicon in applied linguistics, while the technology of dictionary compiling and dictionary publishing has changed beyond recognition, due to the availability of electronic resources such as very large corpora.

If the meaningful use of language is to be understood and applied, it is necessary, in the first place, to "get the words in" (Bolinger, 1970) and, in the second place, to discover how words go together in structures and collocations (Sinclair, 1966, 1987, 1991, 2004). It is now possible to analyze the comparative frequency of each word and to identify its patterns of normal, conventional usage, using a technique called "corpus pattern analysis." Patterns consist not only of constructions and clause roles such as subject, object, and adverbial (called "valencies" in systemic functional grammar) but also, more importantly, of collocations. Collocations disambiguate; for example, "executing young offenders in Texas" activates a different meaning of the verb *execute* from "executing the Governor's orders." So much is obvious. However, the question, "Precisely which collocations of a word activate which of its meanings?" raises some extremely difficult issues at both a theoretical and a practical level. The vocabulary of a language contains hundreds of thousands of lexical items. Discovering which lexical items collocate with which other lexical items more significantly than chance is a task for a computer: Humans manage to do it subconsciously somehow (for this is what enables them to use words idiomatically), but explicit analysis of the statistical significance of collocations is beyond even the most powerful conscious human mind. It can only be done by a computer. The need to analyze collocations computationally was predicted by Sinclair as long ago as 1966, when he commented that the problems of analyzing phraseology were "not likely to yield to anything less imposing than a very large computer." The significance of collocations (word associations) can now be measured in corpora (very large electronic collections of text), using sophisticated statistical computing tools. At the same time, corpus analysis reveals that a small percentage of the uses of each word is deliberately unconventional and creative in various ways. The dividing line between conventional uses of a word and unconventional, creative ones is fuzzy, however, not sharp.

So in monolingual lexicography of the future it will be necessary to study the interfaces between valency and collocations on the one hand and meaning on the other. It is also necessary to study other interfaces: interfaces of words with speakers' memories, beliefs, attitudes, and emotions; with the beliefs, attitudes, and emotions of other users of the same language; with the world "out there"; and with other words in the language system. All these contribute to the elusive entity called "meaning"; they are all grist to the lexicographer's mill.

Central to the role of the lexicon in modern cognitive linguistics is the recognition that analogy (rather than definition) plays a major role in the meaningful use of words. Identifying word meaning is not, as used to be thought, a matter of stating definitions in terms of necessary and sufficient conditions for set membership, but rather of identifying prototypes as a basis for analogical reasoning—specifically, identifying prototypical features of the

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concept or concepts that a word denotes. Meaning in natural language is built around prototypes (Rosch, 1973, 1975) or stereotypes (Putnam, 1970), and, thanks to corpus technology, the insights of Rosch and Putnam can now be applied to identifying the stereotypical phraseology associated with each meaning of a word. To date, lexicography has been slow to respond to this opportunity. Lexicographers and language students are, as a general rule, frightened of statistics. It therefore seems necessary to remind them that they do not have to be sophisticated statisticians to use the output of statistical computer programs for the analysis of language. What they need to be able to do is to decide whether the output of such a program is saying something useful and interesting about the meaning and use of a word: sometimes it is and sometimes it is not. So the lexicographer or learner has to *choose* when and how to use the computer's statistical output, which must be presented in a user-friendly way.

Also relevant here is the notion of Wittgenstein (1953) that the meaning of a word such as *game* is best considered as "a chain of family resemblances": Certain semantic features such as winning and losing are characteristic of many games, but not all: There are no necessary conditions for word meaning.

The need for very large corpora has been dramatically fulfilled since the 1990s, but up until now dictionaries have been slow to respond to the theoretical challenges of Wittgenstein, Rosch, and Putnam and to take advantage of the opportunities offered by large corpora. The challenge that Sinclair recognized so clearly in 1966 has at best been only tentatively met. The accounts of word meaning in monolingual dictionaries are still largely based on 17th-century Leibnizian assumptions, in particular that word meanings are discrete entities, like building blocks in a child's Lego set. The role of collocations as meaning determinants and the 'semi-prefabricated' chunks of language that form a large part of all discourse are not yet adequately treated in any dictionary. In older dictionaries of certain European languages, an attempt was made to indicate phraseology, but, as this was done in the pre-corpus era, it was inevitably based on introspection rather than data.

What Is a Dictionary?

A monolingual dictionary is an inventory of the lexicon of a language. (This entry deals only with monolingual dictionaries. For bilingual dictionaries see the list of cross-references below.) For each word or term entered in the dictionary, information is given about its meaning, spelling, pronunciation, and in some cases its origin or etymology, or about some subset of these facts. In languages that use an alphabetical writing system, the entry words in a dictionary are arranged in alphabetical order, often with subentries or "nested" entries for derivatives and idiomatic expressions. This simple fact of arrangement distinguishes dictionaries proper (sometimes called "semasiological dictionaries") from onomasiological reference works such as Roget's *Thesaurus* (1852) and WordNet (http://www.wordnet-online.com/), in which words are organized according to their conceptual relationships (synonyms, hyponyms, etc.). In Chinese, which uses an ideographic writing system, words are arranged in groups according to their "radicals" (see Li Ming, 2006). Some present-day Chinese dictionaries add a Pinyin romanization of the Chinese headwords, which are then arranged in alphabetical order so as to facilitate look-up.

Recording the Lexical Inventory of a Language

A dictionary cannot include *all* the words in a language. Even a vast national dictionary of record such as the *Oxford English Dictionary* (*OED*, 1884–1928) does not have such an aim. This is because the lexicon of any living language is dynamic: New words are coined

every day (and very often forgotten the next day). From the point of view of applied linguistics, it is, however, reasonable to expect a dictionary to include all the words that are in normal use. This poses problems for the lexicographer, because the borderline that divides the words of a language from nonwords is a vast fuzzy gray area. The three main gray areas are: names, register, and technical terms. A few words may be said about each.

Names

Most large dictionaries record and explain terms such as *Scottish*, *Londoner*, *Chaucerian*, and *Kafkaesque*. These words are defined in relation to terms that denote a single entity, in other words names: *Scotland*, *London*, *Chaucer*, and *Kafka*. Should such names also be in a dictionary? Some lexicographers argue that a dictionary should serve as a collective cultural reference index and that famous names such as these should be included and explained for this reason. However, it would obviously be absurd to try to record all the names in the lexicon of a living language. English speakers know that "John Smith" is a common English name, but it is not a term that belongs in a dictionary.

Register

Most dictionaries include at least some slang words and even a few dialect items, but in both these domains there lie many thousands of terms that are included only in specialist slang dictionaries such as Green (2010) or Wright (1898–1905). Nearly all people from the Bristol and Bath area of England know the term *gert lush* (a general expression of approval, connected etymologically with the standard words *great* + *luscious*), but few would expect to find this expression in a general dictionary. Some dictionaries also include archaic terms and senses, especially those that were used by writers such as Shakespeare or Austen, whose works are still widely read today, but again this is a large gray area.

Technical terms

Strobe lighting is a familiar term denoting a familiar phenomenon, and a reader can expect to find it explained in a dictionary. But what about *strobila* and *strobilation*? *Strobilation* literally (etymologically) denotes the act of twisting, but in English it is found only in a highly specialist domain (it denotes the asexual method of reproduction of tapeworms and jellyfish, in which they twist off polyps from their bodies to create new tapeworms or jellies). This is a classic example of a borderline term that is included in some large one-volume dictionaries but not in others. It is not the sort of term that one would expect to find in a dictionary aimed at language learners.

Different Types of Monolingual Dictionaries

Learners' Dictionaries

From the point of view of applied linguistics, the most important type of monolingual dictionary is one compiled for use by language learners. For English, the most important works in this genre (given with the date of first publication) are the *Macmillan English Dictionary for Advanced Learners* (*MEDAL*, 2002), the *Cambridge International Dictionary of English* (*CIDE*, 1995; now called the *Cambridge Advanced Learner's Dictionary* or *CALD*), *COBUILD* (1987), the *Longman Dictionary of Contemporary English* (*LDOCE*, 1978), and the *Oxford Advanced Learner's Dictionary of Current English* (*OALDCE*), first published in Japan in 1942 by Kaitakusha as the *Idiomatic and Syntactic Dictionary* and reissued by Oxford University Press in 1948, with the text unchanged, as the *Advanced Learner's Dictionary*,

ALD). Changes of title in successive editions of this and other dictionaries have created a bibliographical quagmire. Each of these dictionaries has its admirers and detractors; each has some unique selling points. What they have in common is that they all attempt to record and explain all the words of contemporary language that are in normal use, while ignoring abnormal, rare, and unusual words and senses. Some of them use a restricted defining vocabulary of around 2,000 words, sacrificing fine nuances of definition in return for greater comprehensibility. Most of them nowadays base their lexicographical research on a large corpus of English texts. *COBUILD* claims to be "corpus-driven", while the others are more or less corpus-based (i.e., they use corpus data more selectively). *COBUILD* rejects the traditional style of definition by paraphrase, preferring instead to encode the term being defined in a "full-sentence definition." For example, where a traditional dictionary says "fly: . . . 4. to travel through the air in an aircraft or as an aircraft does" (where the syntax is necessarily somewhat unnatural due to the principle that the definitions must be substitutable in any relevant context), *COBUILD* characterizes the context at the same time as explaining the meaning, thus: "3. If you **fly** somewhere, you travel there in an aircraft." *COBUILD* took "folk definitions" and built them into a logical system (Hanks, 1987). They are intended to give users a modicum of implicit guidance on normal phraseology in conjunction with an explanation of the meaning.

Many but not all of the dictionaries just mentioned have been adapted to create American editions. Mention should also be made of *Merriam Webster's Advanced Learner's English Dictionary* (*MWALED*, 2008), a clear, sensible, and thoroughly practical, though conservative, dictionary aimed primarily at learners of English as a second language.

Historical Principles Versus Synchronic Principles

Dictionaries aimed at language learners seek to give an account of the words and meanings that are in everyday usage in the contemporary language. In other words, they are compiled on "synchronic principles." However, great scholarly dictionaries such as the *OED* do not have this goal. Instead, they are compiled on "historical principles." That is to say, after stating the etymology, such dictionaries give the oldest meaning of the word first, not the current meaning. Since word meaning is very unstable, these different principles affect many entries; such dictionaries should therefore be used with caution in applied linguistics.

In the first and second editions of the *OED*, a dictionary compiled on rigorous historical principles, sense 1a of *camera* was stated as "an arched or vaulted room or chamber." This was followed by "2. a council or legislative chamber; one of the departments of the papal curia; 3a. *Optics*. Short for *camera obscura*; 3b. *esp.* that form used in photography." This entry was completely revised for the 2010 online edition, but still, quite properly in accordance with the dictionary's historical principles, the older senses were placed first, followed eventually by sense 4b: "A device for taking photographs, using an aperture or lens to focus a visual image on to a light-sensitive material or (in later use) a digital sensor."

The great *Dictionary* of Samuel Johnson (1755) aimed at historical principles (tempered by common sense). One reason for this is that, in the eighteenth century, people all over Europe, including Britain, believed (wrongly) that etymology somehow guaranteed meaning. In fact, meaning conventions are arbitrary and change from time to time, as the example of *camera* above shows. *Merriam Webster's third new international dictionary* (*MWIII*, 1961) also follows historical principles. More surprisingly, the Merriam Webster Collegiate series (1898, updated 2006), aimed at the general public rather than linguists and cultural historians, also follows historical principles.

Historical principles were first explicitly challenged by *Funk and Wagnalls Standard Dictionary of the English Language* (*FW*, 1894), which aimed to put the modern meaning of

each word first. Unfortunately, in the mid-20th century the publisher of this fine dictionary did not invest in keeping the dictionary up to date, nor in publicity for it. By the time Rowan and Martin's *Laugh-In* came along in 1968, with its catchphrase "Look that up in your Funk and Wagnalls", it was too late: The dictionary was already dead.

The synchronic principles established by *FW* were not lost, however: They were followed by other dictionaries aimed at the general public, in particular the *American College Dictionary* (*ACD*, 1947) and its successors and the *American Heritage Dictionary* (*AHD*, 1969). These dictionaries are discussed in the next section.

The Technology of Dictionary Compiling

Lexicography is accretive. That is, every new dictionary builds on foundations laid by at least one of its predecessors. The *American College Dictionary* (*ACD*, 1947) in particular forms part of an accretive chain: It was based on the *New Century Dictionary* (1927), which was itself an abbreviated and updated edition of the multivolume *Century Dictionary* (1889–91). It was the basis for the *Random House Dictionary of the English Language, Unabridged* (*RHD*, 1966) and, in Britain, for the Hamlyn *Encyclopedic World Dictionary* (*EWD*, 1971), which in turn was the foundation of the Australian *Macquarie Dictionary* (1981). American dictionaries such as *ACD*, *RHD*, and *AHD* served as a model for the *Collins English Dictionary* (*CED*, 1979). With its clear definitions and inclusion of much technical terminology and entries for names of famous people and places, *CED* mounted a successful challenge to the market leaders in British dictionary publishing of the mid 20th century: the *Concise Oxford Dictionary* (*COD*, 1911, 1976) and *Chambers's Twentieth Century Dictionary* (*TCD*, 1901, with many subsequent updatings). The latter was a magnificent "ragbag" collection of rare and unusual words and senses—including many obscure Scottish dialectisms—as well as more mundane words. Chambers is also noted for its occasional humorous definitions (e.g., *éclair* is defined as "a cake, long in shape but short in duration"; *middle-aged* is defined as "between youth and old age, variously reckoned to suit the reckoner").

COD has enjoyed a long history; at the time of writing it is in its 11th edition. The 6th (1976), 8th (1990), and 10th (1999) editions represented radical departures from their predecessors: In effect, the title has been borne by four very different dictionaries, which have in common only an approximately similar level of coverage of the language. The 10th edition is based not on the preceding edition, but on the *New Oxford Dictionary of English* (*NODE*, 1998), a much larger work on synchronic principles, which used evidence both from the *OED* reading program and from the British National Corpus to create a new description of the vocabulary of contemporary English in a single volume of "desk dictionary" size.

In 1999 the British publisher Bloomsbury and the American software giant Microsoft combined forces to create a dictionary of similar dimensions, under the generic name "Encarta," touted as "the first dictionary for the electronic age." At first, it was published in a so-called "world edition" (*Encarta World English Dictionary*), but it failed to find much favor with the British, American, or any other market. Subsequent editions were published in Britain and America under a variety of titles including the name "Webster," which seems to have been regarded by the publisher as a recipe for encouraging public acceptance. Despite its grand claim, the Encarta dictionary did not take advantage of lexical research in "the electronic age": it is a very traditional dictionary, paying little attention to such matters as corpus evidence for collocations and phraseology, or to the recent advances in cognitive linguistics and the philosophy of language mentioned at the start of this entry.

From the great dictionaries of the Renaissance, which aimed to record the entire vocabulary of Latin (Calepino, 1502; Estienne, 1531) and Greek (Estienne, 1572), to the best-selling dictionaries of today and *Encarta*, lexicography has been driven by the technology of typesetting, printing, and book publishing. The works by Henri and Robert Estienne in particular pushed the technology of typographic design, printing, and bookbinding to its limits. These limits were refined from time to time between the 16th and the 19th century, but the basic principles remained unchanged until the advent of the 20th century. As early as 1966, the *Random House Dictionary* was compiled using a computer to classify and sort the words and definitions. This meant that lexicographers could be freed from the tyranny of alphabetical order: All terms in a domain could be written as a set and then sorted into place by computer, with resulting benefits for clarity and consistency.

Online Dictionaries of the Future

In recent years, sales of dictionaries in book form have dropped dramatically, while all reputable dictionaries (and some less reputable ones) have become available for online consultation, free of charge. Online publication of dictionaries is opening up tremendous possibilities for complex searches in dictionaries and dramatic shortening of the time-lapse between lexical research and publication of results, links to other information sources, and new business models. An instructive example is OED Online (www.oed.com). For this, in partnership with the software company IDM, a new editing and browsing system called PASADENA was developed (Elliott & Williams, 2006). The new system not only had to be flexible and robust for editors and readers alike (being able to process many thousands of simultaneous hits), but also had to offer improvements in functionality such as tracking the 600,000 cross-references; standardizing the processes for bibliographical references (for example, enabling citations to be updated systematically when a new edition of a cited work was published); flagging probable errors; and many others.

Many other dictionary editing and browsing systems have been developed in the past few years. One of the best (robust and user-friendly) is the DEB dictionary editing and browsing system (http://deb.fi.muni.cz/debdict/) created by the NLP group at Masaryk University, Brno, which is now used as a platform by a wide variety of large reference projects in several different European languages.

Lexicography at its best has always been based on careful analysis of the available evidence. With the advent of the Internet, large corpora, and statistical and other tools for corpus analysis, a paradigm shift in the availability of evidence for lexicography has taken place, and this will change the nature and content of future dictionaries. A central feature of lexical research in future will surely be much fuller attention to the contexts in which words are used. Two pioneering projects in this regard, both currently suffering from "funding starvation," are FrameNet (http://framenet.icsi.berkeley.edu) and Corpus Pattern Analysis or CPA (http://nlp.fi.muni.cz/projects/cpa/).

FrameNet

FrameNet is based on the principles of frame semantics (see, e.g., Fillmore, 1982), which argues that words must be grouped and explained in relation to context of utterance—the situation or "frame" in which a word is used; thus, there cannot be buying without a buyer, a seller, an object or a service that is bought, and a price paid. This could be described as "the commerce frame." (FrameNet itself makes more fine-grained distinctions, with at least three relevant frames: Commerce_buy, Commerce_sell, and Commerce_scenario.) The "risk frame" has as its core elements a person who is the risk taker, a valued object that is put at risk, an action or event, a possible bad outcome, and a desired good outcome.

Not all of these frame elements are explicitly realized every time the word *risk* is used, but they are all implicitly present.

At the time of writing, 960 semantic frames have been described in FrameNet, with annotations of over 11,000 lexical units. FrameNet has not set itself a target inventory of frames or frame elements. Frames, their elements, and the lexical units that populate the frames are explored more or less at random. Example sentences are selected from the British National Corpus and annotated to support the relevant sense of each lexical unit in a given frame.

Contrary to the claims of some of its apologists, FrameNet cannot be used—at least for the foreseeable future—for purposes of sense discrimination. This is because it does not make any attempt to investigate contrastively *all* the frames in which any given lexical unit participates. Most of the words analyzed by FrameNet and assigned to one frame or another have at least one other sense that has not yet been analyzed or assigned to any frame.

Corpus Pattern Analysis

The procedure of the Corpus Pattern Analysis project (Hanks, 2004; Hanks & Pustejovsky, 2005) is different. The lexicon is analyzed word by word in a fairly traditional manner. But meanings are associated with patterns of word use, not with words in isolation. The aim is to identify, by corpus analysis, all normal patterns of usage associated with any given word. The first product of CPA is a pattern dictionary of English verbs (PDEV), which currently offers a comprehensive analysis of 700 verbs (out of an eventual total of 5,500—all the verbs in normal use in English). The theme of CPA is that words in isolation (as listed in dictionaries) have only "meaning potential" rather than meaning. Meanings in CPA are associated with phraseological patterns, so the first task is to discover, by comparing huge numbers of actual uses, the normal phraseological patterns of use for any given word. This is not a matter of syntactic alternation: It is a matter of discovering patterns that have contrasting meanings. A "pattern" in CPA typically consists of a verb together with its arguments or valencies: subject, object, and adverbial. The lexical items that populate an argument of a pattern are grouped according to semantic type. Very often, different meanings of a verb are distinguished only by the semantic types of its arguments. Thus, *blowing up a balloon* and *blowing up a building* activate quite different senses of *blow up*, although the syntactic structure in each case is identical. Terms such as [[Building]] (in double square brackets) are used in CPA to denote a semantic type, bringing together a large number of canonical lexical items (e.g., *building*, *house*, *factory*, *university*, *TV station*, *bridge*) and some non-canonical items such as *chimney*. Semantic types are held in a hierarchical "shallow ontology." The population of each semantic type is in principle open-ended: It is always possible that a new term—or a name—denoting a building will be discovered, or used in some future document.

CPA analyzes *all* occurrences in a randomly chosen large corpus sample of each verb. Each use of the verb in the sample is either assigned to a pattern or treated as an "exploitation of a norm." Exploitations include various kinds of dynamic language use, including figurative language, anomalous arguments, and elliptical usage. Thus, CPA is not only creating a new kind of dictionary, but also a new linguistic theory, in which dynamic exploitation of normal usage is distinguished from the more static norms on which successful communication relies.

Conclusion

Lexicography has always been closely associated with and partly dependent on technological innovation. We live in a period of technological transition, as computers play an

increasingly prominent role in the lives of ordinary people. Therefore, as suggested in the last few sections, computer technology is likely to play an increasingly important role in lexicography. It is not possible at the present time to predict what form this will take, mainly because the business model for dictionaries is changing. Sales of dictionaries in book form have plummeted in recent years. The traditional business model of funding a new dictionary by a publisher in the expectation of profit from massive sales has evaporated. The alternative—public funding of lexicography through large research grants—which was normal in Central and Eastern Europe during the communist era, lies well beyond the constraints under which most research funding agencies in the capitalist world operate today. At the same time, users of online dictionaries expect the information to be made available free of charge. So dictionary publishers are reliant on what used to be regarded as "subsidiary income" from advertising and other indirect sources—hardly an incentive for a massive capital investment. It may be that, with the sudden explosion in popularity of electronic book-reading devices such as Kindle, dictionaries of the future will be automatically built into such devices. A reader ploughing through a text on such a device will be able to point at a particular word and get not only a dictionary entry for that word, but an "intelligent" dictionary entry, which responds to the context and presents the definition, paraphrase, or synonym set that is most likely to be relevant (drawing on research such as CPA and FrameNet), rather than just a simple list of dozens of senses. Such a development, however, is still far in the future.

SEE ALSO: Bilingual Lexicography; COBUILD Project; Corpus Linguistics: Overview; Johnson, Samuel and Lexicography; Lexical Bundles and Technology; Lexicography Across Languages; Lexicography in Non-European Languages; Technology and Phrases; Technology and Terminology; Webster and American Lexicography

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Mother-Tongue-Medium Education

TOVE SKUTNABB-KANGAS

Introduction: Mother-Tongue-Medium Education: A Controversial Topic?

Human rights lawyer Fernand de Varennes (see also 1996) writes on the back cover of *Multilingual Education for Social Justice: Globalising the Local* (Mohanty, Panda, Phillipson, & Skutnabb-Kangas, 2009), that the book "addresses directly a still surprisingly controversial topic: the indisputable value of education in one's own language." Mother-tongue-medium education *is* controversial, but "only" politically. Research evidence about it is not controversial. If you, dear reader, live in a country where your own language is a/the official language, it has probably been self-evident for you that you (can) have your first language (L1) or mother tongue (hereafter MT) as your main teaching/learning language in school. Most speakers of numerically large languages in countries that have not been colonized are probably not even aware of the privilege that they are enjoying, when they can have their education through the medium of a language that they know and understand, and teachers with whom both they and their parents can communicate easily.

But for almost all the world's indigenous and tribal peoples and many if not most minorities (hereafter ITMs), and for most children in former colonies in Africa and Asia (regardless of their minority or majority status), this is a dream that they are still fighting for. "About 50 to 70 percent of the world's 101 million children out of school are from minorities or indigenous people," and "Over half of the world's school dropouts are from minorities" (said by Minority Rights Group International when launching their *2009 State of the World's Minorities and Indigenous Peoples* report in July 2009).

If ITMs can attend school at all, they are mostly forced to accept education in an alien dominant language, in submersion programs (see below). These are *subtractive*: they subtract from ITM children's linguistic repertoire; the children learn (some of) a dominant language at the cost of their MTs. They should be *additive*, adding good knowledge of an official or dominant language to a thorough knowledge of the MTs. These children's access to education is denied because of the wrong medium of education (see Tomaševski, 2001; Skutnabb-Kangas & Dunbar, 2010). This is a violation of ITM children's human right to education.

It is fair to say that all solid research evidence shows that

- teaching ITM children through the medium of an alien dominant language can have and often has extremely negative consequences. Sociologically, educationally, and psychologically it can be seen as genocidal (see, e.g., Skutnabb-Kangas, 2000; Skutnabb-Kangas & Dunbar, 2010).
- teaching ITM children mainly through the medium of their mother tongues minimally for six to eight years, preferably longer, with good teaching of a dominant language as a second or foreign language (preferably with bilingual teachers), can lead to high levels of bi/multilingualism, and many other positive consequences. Under well-resourced conditions, with qualified teachers, high-quality materials, and so forth,

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six years might be just enough; under less fortunate conditions, with crowded classrooms, few materials, poorly qualified teachers on low salaries, and so on, eight years seems to be a minimum (see articles in Heugh & Skutnabb-Kangas, 2010b). The longer ITM children have their MTs as the main teaching/learning languages, the better their school achievement and the better they also learn the dominant language.

The few counterarguments against mother-tongue-based multilingual education (hereafter MLE) for ITM children are political and not research-based.

The rest of the entry addresses two issues extremely briefly:

1. It presents desirable educational goals for ITM children, and relates them to non-models and weak models of bilingual and multilingual education, which do not reach the goals, and strong models, which do, summarizing some results from research on MLE.
2. In order to understand why the models which do not reach the goals are still chosen by politicians and school authorities (and also many parents), it presents fallacies (mistaken beliefs, based on false argumentation) that (have) guide(d) much of educational language planning for ITM children, and refutes them briefly.

Educational Goals and Models for Bilingual and Multilingual Education

A good educational program for both ITMs and dominant group children leads to the following goals from a language, identity, and competence point of view:

- high levels of multilingualism;
- a fair chance of achieving academically at school;
- strong, positive multilingual and multicultural identity and positive attitudes toward self and others;
- a fair chance of awareness and competence building as prerequisites for working for a more equitable world, for oneself and one's own group as well as for others, locally and globally (e.g., Skutnabb-Kangas & Dunbar, 2010).

Once the goals have been clarified, the means to reach them need to be discussed, striving toward "ideal" conditions. "Ideal" models (and there are many) have to be adapted to the various contexts and realities on the ground, in different parts of a country, different districts and different schools (see Benson, 2009). No models or programs can be transferred directly to other contexts without localizing them.

However, we know from research and experience worldwide what some of the general principles, ideal characteristics, and prerequisites are for reaching the four goals and for showing respect for ITM's linguistic human rights (LHRs). Colin Baker (e.g., 2001) presents weak and strong models of bilingual education; I have added "non-models." Some are discussed below.

It is clear from both research and practical evidence that *subtractive submersion education* does not reach any of the goals and does not respect children's LHRs. In *submersion/ "sink-or-swim" programs*,

> linguistic minority children with a low-status mother tongue are forced to accept instruction through a foreign majority/official/dominant language, in classes in which the teacher does not understand the minoritised mother tongue, and where the dominant language

> constitutes a threat to the MT, which runs the risk of being replaced; a *subtractive* language learning situation. In another variant, stigmatised majority children (or groups of minority children in a country with no decisive numerical and/or power majorities) are forced to accept instruction through the medium of a foreign (often former colonial) high-status language . . . Submersion often occurs in mixed mother tongue classes, mostly without native speakers of the language of instruction, but also in linguistically homogenous classes . . . The teacher may not understand children's mother tongue(s). The foreign language is not learned at a high level; at the same time as children's mother tongues are displaced and not learned in formal domains (e.g., mother-tongue literacy is not achieved). Often the children are made to feel ashamed of their mother tongues, or at least to believe in the superiority of the language of instruction. (Skutnabb-Kangas & McCarty, 2008, pp. 12–13)

Submersion can (and often does) have several kinds of negative consequences, socially, economically, and politically. It can cause very serious mental harm: social dislocation, psychological, cognitive, linguistic, and educational harm, and, partially as a result of this, also economic, social, and political marginalization. It can also (and often does) cause serious physical harm, partly as a long-term consequence of the educational, economic, and political marginalization. It often curtails the development of the children's capabilities and perpetuates poverty, according to theories by Amartya Sen, economics Nobel laureate (Sen, 1985; see Mohanty & Misra, 2000). It is organized against solid research evidence about how best to reach high levels of bi/multilingualism and how to enable ITM children to achieve academically. Dominant-language-only submersion programs "are widely attested as the least effective educationally for minority language students," write May and Hill (2003, p. 1). There are no examples in research of a high degree of success *at a group level* where ITM children taught in an L2 would have succeeded. Even if some individuals may manage, they do it not because of the way their education has been organized but *despite* it.

"Mainstream" education for dominant group children in their own languages, even when foreign languages are taught as subjects, do not make them high-level multilingual either, unless they have extra exposure to the foreign languages (media, travel, and so forth). Both of these belong to non-models.

In *transitional early-exit and late-exit* programs,

> linguistic minority children with a low-status mother tongue are initially instructed through the medium of their mother tongue for a few years; the mother tongue is used as an instrument for acquisition of the dominant language, and content. In early-exit programmes, children are transferred to a majority-language medium programme as soon as they develop (some) oral communicative competence in the majority language, in most cases after one to three years. In late-exit programmes children may receive some instruction through L1 up to the fifth or sixth grade; sometimes the mother tongue is taught as a subject thereafter. For both program types, the primary goal is proficiency in the dominant language. (Skutnabb-Kangas & McCarty, 2008, p. 13)

Early-exit and even many late-exit transitional programs for ITM children represent *weak models*. Even when children have a year or two of mother-tongue-medium education before being transitioned to education through the medium of a dominant language, the results are disastrous educationally, even if the child may psychologically feel a bit better initially. The children do not reach any of the educational goals listed above. According to Kathleen Heugh (2009), early transition to the international language of wider communication across Africa is accompanied by *poor literacy in L1 and L2*, *poor numeracy/mathematics and science*, *high failure and drop-out rates*, and *high costs/wastage of expenditure* (e.g., Alidou et al., 2006).

Late-exit programs may achieve some of the goals to some extent, but even so, children's capabilities are not developed maximally. The later the exit happens, the better the results.

However, teaching through the medium of an L2 does not necessarily lead to a low degree of success: dominant group members can be taught through the medium of a foreign language, with a high degree of success, in *immersion programs*. These belong to *strong models* of bilingual education. They reach the goals to a large extent. In *immersion programs for dominant language speakers*,

> parents of linguistic majority children with a high-status mother tongue . . . choose voluntarily to enroll their children in a programme in which instruction is conducted through the medium of a foreign/minority language. Most of the children . . . [have] the same mother tongue. Teachers . . . are bilingual so that children can initially use their own language and still be understood . . . [The] children's mother tongue is not in danger of being replaced by the language of instruction. Although children enrolled in French immersion programs in Canada initially represented a largely homogenous Anglophone population, increasingly, children whose mother tongue is neither English nor French are enrolling in these programs. (Skutnabb-Kangas & McCarty, 2008, pp. 6–7)

Another fairly recent type (e.g., Hawai'i, Aotearoa, the Saami) is *revitalization immersion for indigenous peoples or minorities*. Here,

> dominated-group children who have partially or completely lost their ancestral language choose voluntarily, among existing alternatives, to be instructed through the medium of the Indigenous/minority language, in classes with children with the same goal and target language, in which the teacher is bilingual so that children can initially use their dominant language, and in contexts in which that language is not in danger of being replaced by the Indigenous/minority language; an additive language learning context. (Skutnabb-Kangas & McCarty, 2008, p. 7)

A third strong model is *language maintenance or language shelter* programs. Here, ITM

> children (often with a low-status mother tongue) choose voluntarily, among existing alternatives, to be instructed through the medium of their mother tongue, in classes with minority children with the same mother tongue, in which the teacher is bilingual and there is a pedagogically sound instructional programme in the majority language as a second or foreign language, also provided by a bilingual teacher. (Skutnabb-Kangas & McCarty, 2008, p. 8)

All strong models have a good chance of achieving all the educational goals listed. In addition, they respect children's LHRs. Comparison of several types of programs for ITM children have been done (including children in African and Asian countries with many ethnolinguistic groups and no numerical majorities, often with an ex-colonial language as a dominant language):

(a) completely dominant-language-medium *submersion* education from grade 1;
(b) *early-exit transitional* programs, with mother-tongue-medium education for the first one to two years, followed by using a dominant language as the teaching language;
(c) *late-exit transitional* programs where the transition from a mother-tongue-medium program to a dominant-language-medium program is more gradual but is mostly completed by grade 5 or 6; and
(d) *maintenance* programs where the mother tongue is the main medium of education for at least the first eight years, or even longer.

Results on academic achievement show unanimously that the children from program types (a) and (b) are as a group never likely to reach a native-like competence in the dominant language, at the same time as they will not learn their own language properly either (they do not learn to read and write it, for instance, even if a writing system and materials exist) (e.g., Ramirez, 1992; Mohanty, 1995, 2009; Williams, 1998, 2006; Skutnabb-Kangas, 2000; Thomas & Collier, 2002; Alidou et al., 2006; Panda & Mohanty, 2009). Their academic achievement results are mostly very poor at a group level. Children in late-exit transitional programs (c) fare somewhat better, but even their results are much below what they could be.

Solid research shows that the longer ITM children in a low-status position have their own language as the main medium of teaching, the better their general school achievement and the better they also learn the dominant language—provided, of course, that they have good teaching in it, preferably given by bilingual teachers. In addition, they learn their own mother tongues well (in addition to the list above see, e.g., Thomas & Collier, 2002; May & Hill, 2003; Heugh, Benson, Bogale, & Gebre Yohannes, 2007; several articles in García, Skutnabb-Kangas, & Torres-Guzmán, 2006; Skutnabb-Kangas, Phillipson, Mohanty, & Panda, 2009; Heugh & Skutnabb-Kangas, 2010a; and Tollefson & Tsui, 2003; see also Cummins, 2009). If we want to learn from research and experience, mainly mother-tongue-medium education of ITM children should last minimally eight years. Everything else is irrational and costly compromise.

The results also show that the length of mother-tongue-medium (MTM) education is more important than any other factor (including socioeconomic status) in predicting the educational success of ITM students, including their competence in the dominant language.

An example: Ethiopia has an innovative and progressive national education policy, in principle based on eight years of MTM education. Regions have the authority to make their own decentralized implementation plans. Some regions transfer to English medium after only four or six years. The Ministry of Education commissioned a study across all the regions (Heugh et al., 2007; see also Benson, 2009; Heugh, 2009; Heugh & Skutnabb-Kangas, 2010a). Ethiopia's efficient collection of system-wide assessment data shows very clear patterns of learner achievement at grades/years 8, 10, and 12. Those learners who have eight years of MTM education plus English as a subject perform better across the curriculum than those with six years of MTM. These, in turn, do better than those with four years. The learners with eight years of MTM also show similar results in English despite much less school exposure as compared with those who have shifted to English medium much earlier. The only ones exceeding them are children in the capital who hear English daily.

Burkina Faso (e.g., Ilboudo & Nikièma, 2010), Peru (Pérez Jacobsen, 2009; Pérez Jacobsen & Trapnell, 2010), and many other countries are now either implementing or on the verge of implementing minimally late-exit transitional programs. In Orissa, India (Mohanty, Mishra, Reddy, & Ramesh, 2009; Panda & Mohanty, 2009), and in Nepal (Hough, Thapa Magar, & Yonjan-Tamang, 2009; Yonjan-Tamang, Hough, & Nurmela, 2009; Nurmela, Awasthi, & Skutnabb-Kangas, 2010; Taylor, 2010), very promising experiments are also taking place. See, for instance, the new National Multilingual Education Resource Centre in India: www.nmrc-jnu.org/. In the Saami country (e.g., Aikio-Puoskari, 2009; see also the Resource Centre for the Rights of Indigenous Peoples in the Norwegian part of the Saami country: www.galdu.org) and in the Basque country (e.g., Cenoz, 2009) and in many other places mother-tongue-based education (MLE) lasts even longer, with very positive results. There are now many books describing successful mother-tongue-based multilingual education (search in www.tove-skutnabb-kangas.org/en/Tove-Skutnabb-Kangas-Bibliography.html).

Fallacies

In teaching languages, one can often identify a set of guiding principles that teachers and education authorities follow to achieve good results. Phillipson and Skutnabb-Kangas (1986; see also Phillipson, 1992a, chap. 6) presented "the five key tenets" of teaching English as a second or foreign language; we saw all of them as fallacies. Many researchers (such as Cummins, Benson, Heugh) have worked on them more generally, also in relation to other dominant languages. Below is my latest synthesis based on all of us, and more. These tenets, which have guided much of ITM education all over the world, are scientifically false and can rather be (and have been) labeled fallacies. Many have already been refuted implicitly above. Still, many parents, teachers, administrators, and politicians still believe in these fallacies. I will use "English" as an example, but any dominant language can be used instead.

1. **Children have learned their L1 by the time they enter primary school** (*mastery-of-mother-tongue-equals-BICS fallacy*). BICS, basic interpersonal communicative skills, implies speaking fluently, with a native-like accent, about concrete everyday things in contextualized face-to-face interaction (see Jim Cummins's Web page at www.iteachilearn.com/cummins/ for the concepts BICS and CALP). Children master BICS-related aspects of their L1 around 5–7 years of age whereas CALP-related (cognitive academic language proficiency) aspects start approaching maturity only in the late teens. According to this fallacy ITM children need no more MT teaching in school since they already "know" it; what they master is BICS, but many years of MTM teaching is needed to develop their CALP to a high level.
2. **Once children can speak English this means that they can learn through English (use it as a medium of teaching the curriculum)** (*L2-BICS-equals-L2-CALP fallacy*). BICS-related aspects of an L2 can develop in school in a couple of years whereas it takes five to nine years to develop age-appropriate CALP, again depending on the conditions. CALP levels are decisive for school achievement; ITM children should not be taught through the medium of an L2 in decontextualized linguistically and cognitively demanding subjects before their L2 CALP is fully developed, that is, certainly not before grade 7, and under some conditions later.
3. **The earlier English (L2) medium instruction begins, the better the results, also since children learn languages faster than adults** (*early start fallacy*). Several types of program have shown that if teaching a foreign language as a subject or teaching through the medium of a foreign language is *additive*, it *can* start early. Also early foreign language teaching in "mainstream" programs shows it. But a large longitudinal Swedish study (Holmstrand, 1982) showed that the gains of starting a foreign language as a subject early were minimal. In general, adults are better language learners than children. Immersion programs show that *additive* early start with a foreign medium is perfectly possible. On the other hand, if the learning of another language is *subtractive* (as it is in all the non-forms and weak forms of bilingual education), the earlier it starts the worse the result.
4. **The more time the school spends on teaching and using English, the better children will speak English** (*maximum exposure fallacy*). Provided the quality of the instruction in L2 is the same in two models, one with maximum exposure to L2, the other with much less exposure to L2, but high quality MTM instruction instead, two types of result have emerged: Either there is *no relationship between time-on-task and L2 results*, meaning both groups perform equally well in L2, despite the MTM group having had much less exposure to L2. Alternatively, there is a reverse relationship: the less time that is used on instruction through the medium of the dominant language, the better

the results in L2, again provided that the time is instead used on both good MTM teaching and good subject teaching of L2, given by bilingual teachers (Ramirez, 1992; Cummins, 2009).

5. **If other languages (i.e., children's L1s) are used much, standards of English will drop** (*subtractive fallacy*). This is an old fallacy. For instance, the Norwegian School Law of 1880 (the "Magna Carta of Norwegianization"), paragraph 3, said: "Instruction in the school is in the Norwegian language. The Lappish or Finnish languages are used only as a means of helping to explain what is impossible to understand for the children . . . Even if the majority of the children in a group do not understand Norwegian, the teacher must always keep the above regulations in mind and remember that it is imperative that the Lappish and Finnish languages are not used more than absolutely necessary" (quoted in Lind Meløy, 1980, pp. 122–3).

   Compare this with the policy offered to children in Africa and Asia almost 100 years later, in the pedagogical tradition which still dominates English teaching: "The teaching of vocabulary should be mainly through demonstration in situations. When, however, a very brief explanation in the mother tongue is sufficient to ensure that the meaning is fully and accurately understood, such explanation may be given" (Makerere Report, 1961, p. 13, probably the most influential document on policy and methods for teaching English in ex-colonial countries; Phillipson, 1992a, chap. 6). Today, in all parts of the world, the use of the mother tongues of ITM children is still restricted or forbidden, through regulations, or through the educational structure where teachers do not know the MTs of their children.
6. **English is best taught monolingually** (*monolingual fallacy*). This fallacy is closely related to the subtractive fallacy. It prevents contrastive teaching, where the languages are compared and where the teacher can show what in the *common underlying proficiency* for both languages (Cummins) can be used by the children and what they need to learn separately for both languages. The fallacy prevents or delays the development of the metalinguistic awareness (knowing how languages function) that seems to be the main causal factor in most of the cognitive and other benefits accruing from high-level multilingualism (e.g., Mohanty, 1995).
7. **The ideal teacher of English is a native speaker** (*native speaker fallacy*). Quality second/foreign language teaching depends on teacher qualifications, not nativeness. There are few aspects where well-qualified non-native teachers cannot be as good as or better than native speakers (Rampton, 1990; Phillipson, 1992b; Skutnabb-Kangas, 2000). Monolingual teachers are bad role models for children who are to become bilingual. In my view, a monolingual language teacher for ITM children is by definition incompetent.
8. **If ITMs are taught in their own groups/classes/schools, especially through the medium of their own languages, this prevents integration and leads to segregation and ghettoization** (*segregation fallacy*). To counteract the segregation fallacy, distinctions between physical as opposed to psychological segregation/integration, and between segregation as a goal or a means are helpful. For many ITMs, at least initial physical segregation from dominant group members seems to be a necessity in order to enable later integration psychologically and competence-wise. If physical segregation in MTM classes ensures that students have a better chance of acquiring the prerequisites for later integrating themselves linguistically, content-wise, psychologically and physically, then initial physical segregation is used as a positive means toward a later integrationist goal. ITM students are, of course, psychologically integrated in MTM classrooms with other children with whom they share an MT. Here they have a better chance of being appreciated for who they are and what they know, rather than the system defining them as deficient or below the norm, as is often the case when they are physically

"integrated" in the dominant group. Forced initial physical integration into a dominant language and dominant group classroom may prevent dominated group students from acquiring the competencies they need (Skutnabb-Kangas, 1984, 2000).

These beliefs in a monolingual L2-teaching methodology, monolingual teachers, maximum exposure, and the other fallacies, which result in forbidding the minority language or restricting its use, have today developed from the earlier crude forms to their present more sophisticated forms. These are at least equally effective in committing linguistic genocide but without letting children and parents notice that this is what is happening. It is extremely important to recognize that the ideology is still the same.

SEE ALSO: Colonialism and Language Policy and Planning; Linguistic Human Rights; Minority Languages in Education; Multilingualism and Language Rights; Phillipson, Robert; Role of Linguistic Human Rights in Language Policy and Planning; Skutnabb-Kangas, Tove

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Motivation in Second Language Acquisition

EMA USHIODA

The word *motivation* derives from the Latin verb *movere* meaning "to move." What moves a person to make certain choices, to engage in action, to persist in action—such questions lie at the heart of motivation theory and research. Within the field of second language acquisition, motivation research has predominantly focused on these kinds of *what* and *why* questions, such as: What reasons motivate people to learn languages? Why are some people more motivated to learn languages than others? What types of motivation are more effective in language learning and why? Since the turn of the 21st century, however, increasing attention has been paid to *how* questions, such as how motivation develops and emerges in interaction with the social learning environment. Though informed by theories of learning motivation in educational psychology, motivation research in second language acquisition has evolved somewhat independently, shaped by a concern to address the unique social, psychological, behavioral, and cultural complexities that acquiring a new communication code entails.

Motivation research in second language acquisition owes its origins to two Canadian social psychologists, Robert Gardner and Wallace Lambert, who conducted a series of studies investigating language learning attitudes and motivation dating back to 1959, and published a report in 1972 that was to prove seminal in shaping the field for the next two decades. They theorized that motivation was a significant cause of variability in second language acquisition, and that it was independent of cognitive characteristics such as ability or language aptitude. They also speculated that learning a second language had important social and psychological dimensions which distinguished it from other types of learning motivation, since learners are expected not simply to acquire knowledge of the language but to identify with the target language community and adopt their distinctive speech behaviors and styles. Individuals' attitudes toward the target language community, as well as their ethnocentric orientation in general, were hypothesized to exert a directive influence on their language learning behavior. This hypothesis led Gardner and Lambert (1972, p. 132) to propose two kinds of motivational orientation in language learning: an *integrative* orientation reflecting a sincere and personal interest in the people and culture represented by the other group, and in its strong form, a desire to integrate into their community; and an *instrumental* orientation reflecting the practical value and advantages of learning a new language.

Founded in the bilingual social context of Canada, second language motivation research thus originated in a social-psychological framework implicating the social context of second language acquisition and attitudes and relations between different linguistic communities. This social perspective distinguished second language motivation research from the individual-cognitive perspectives then dominating mainstream motivational psychology. Through the 1990s and the turn of the century, however, efforts were made to bring motivation research in second language acquisition more in line with cognitive theories of motivation, leading to a sharper focus on the classroom setting, and on relationships among individual motivational cognitions (e.g., goals, beliefs, perceptions of competence),

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learner behaviors (e.g., effort, task engagement or avoidance), learning process and experience (e.g., success, failure), and features of the learning situation (e.g., materials, teaching methods, interpersonal relations, competitive versus collaborative learning environments).

Nevertheless, despite the increased focus on the classroom setting in the study of language learning motivation, the complex social and cultural implications of acquiring a new communication code have continued to preoccupy motivation researchers in second language acquisition; and Gardner and Lambert's concepts of integrative and instrumental motivational orientation have maintained their enduring influence on theorizing about why people learn languages or choose particular languages to learn. Within the last decade or so, however, there have been growing discussions in applied linguistics about the global spread of English which have provoked a reconsideration of the integrative motivation concept. In the case of English as target language, researchers have begun to question whether the concept of integrative orientation towards English language speakers, their community and culture, makes sense, given the status of English as a global language and lingua franca spoken by a global community of which, by definition, the English language learner is also a member; and given the increasingly common status of English as a basic educational skill in many elementary school curricula, alongside literacy and numeracy. As a consequence, research attention has recently shifted from attitudes to and identification with external reference groups (i.e., target language communities), and it has begun to focus instead on the internal domain of self and identity and to consider language learning motivation as a process of identification within the person's self-concept.

In particular, Zoltán Dörnyei (2009a) has developed a new conceptualization of the "L2 Motivational Self System" centered on people's vision of themselves in the future. Its central concept is the *ideal self*, signifying the attributes that one would ideally like to possess (i.e., a representation of personal hopes, aspirations, or desires). A complementary concept is the *ought-to self*, signifying the attributes that one believes one ought to possess (i.e., a representation of someone else's sense of duty, obligations or responsibilities). A basic tenet is that if proficiency in the target language is integral to one's *ideal* or *ought-to* self, this will serve as a powerful motivator to learn the language because of our psychological desire to reduce the discrepancy between current and future self states.

Whether informed by social-psychological, individual-cognitive, or self-perspectives, motivation in second language acquisition has traditionally been conceptualized as an individual difference variable that is implicated in language learning success, alongside other individual difference variables such as aptitude, personality, or cognitive style. According to this view, motivation is something that is located within the inner psychological life of the person, which may be influenced by a variety of external factors (e.g., teachers, parents, examinations) or experiences (e.g., travel, intercultural encounters), and which affects how the person engages in, persists at, and succeeds in the learning process. In short, motivation has been conceptualized as a component in a cause-and-effect relationship, whereby external factors influence motivation, motivation influences learning behavior and outcomes, and these outcomes (e.g., success or failure) may in turn influence subsequent motivation. A major aim of motivation theory and research is to predict and identify what types of external factors (e.g., teacher behaviors or strategies) may have a positive effect on learner motivation, and what forms of motivation may result in optimal learner behaviors and outcomes.

Since the turn of the century, however, researchers have begun to recognize the limitations of cause-and-effect models of motivation and learning behavior. Such models conceptualize motivation as measurable cause or product of particular variables, but shed little light on how motivation develops and evolves in dynamic interaction with the complex range of learner-internal, social, and contextual processes that characterize learning. Nor do they shed light on why the same classroom setting, learning tasks, teacher behaviors, and

strategies may affect the motivation of its learners in different ways, leading to different kinds of motivated engagement or non-engagement in learning. In short, cause-and-effect models can explain the workings of motivation only in rather general terms of how certain types of learner are likely to feel motivated and behave in certain ways in response to certain kinds of contextual factors. In this sense, in the pursuit of generalizability, such models eliminate much of the messy complexity, unpredictability, and variability of individual motivation.

In recent years, alternative theoretical perspectives have come to the fore to try to address some of these limitations. There has been a growing concern with the dynamic nature of motivation as process (rather than measurable cause or product), and with how motivation evolves in organic interaction with a host of cognitive, affective, experiential, social, and contextual processes. A key issue now emerging is how to integrate the individual and context in the analysis of motivation. This issue mirrors similar theoretical concerns in contemporary mainstream motivational psychology, and also reflects broader debates within applied linguistics concerning social-interactive and complexity theory perspectives.

One approach to integrating the individual and context has been to draw on sociocultural theory as an analytical framework for exploring the socially constructed growth of motivation. Central to Lev Vygotsky's (1978) sociocultural theory of mind is the principle that higher order cognitive functions are internalized from social interaction with more competent others. Martha Bronson (2000) explains how this principle applies also to the socialization of motivation for culturally constructed goals and activities, such as literacy, music, sport, or language learning. Viewed thus, motivation, like knowledge, is not located solely within the individual but is socially distributed, created within cultural systems of activities involving the mediation of others (Rueda & Moll, 1994). Motivation researchers who draw on sociocultural theory thus characterize motivation as a dynamic situated process, emergent through the interactions among participants, context, and sociocultural activity (e.g., Hickey & Granade, 2004; Ushioda, 2007).

Moreover, a key insight that sociocultural theory brings to bear on the analysis of motivation is the need to engage with multiple perspectives in order to explore how different participants construe events and are thus motivated in different ways, given ostensibly the same learning context and conditions. This insight comes specifically from activity theory, where "activity" is understood in its sociocultural theoretic sense to comprise the behavior that is actually produced when a task is performed. While a language task assigned by the teacher may offer a general blueprint for what learners are expected to do, learners bring their own uniquely individual personal histories, agendas, goals, motives, and interpretations to the task, and thus each engages in a uniquely individual "activity." In any classroom setting, the activity system to emerge from the complex of social relations, interactions, and individual histories, agendas, and motives is thus far from stable and unitary, potentially characterized by tensions, dissonances, fluidity, and change (Lantolf & Genung, 2002).

The potential for conflict and constraint is highlighted too in more critical approaches to integrating individual and context in the analysis of motivation. Such approaches focus in particular on unequal power relations in language learners' struggle to participate in interactional settings in desired social, educational, or professional communities of practice. Strongly influenced by feminist and poststructuralist theory, Bonny Norton (2000) has developed a concept of language motivation as *investment*, which she defines as "the socially and historically constructed relationship of learners to the target language, and their often ambivalent desire to learn and practice it" (p. 10). When learners invest in a second language, they do so in the hope that they will acquire a wider range of symbolic and material resources, which will enhance their cultural capital, their conception of themselves, and their desires for the future. A person's investment in a language may be

mediated by other investments that may conflict with the desire to speak, such as fear of being marginalized as an immigrant, or resistance when one's professional status or cultural background is not valued. In short, an investment in a new language is also an investment in one's identity, where identity is a site of struggle, being locally constructed, negotiated, and re-formed each time through a person's interactions with others. In this sense, motivation to learn and use a second language may be socially constrained rather than socially constructed, thus further complicating the issue of how to integrate individual and context in the analysis of motivation.

Yet another complicating issue is the difficulty of isolating "motivation" as an individual difference characteristic from the range of cognitive, affective, and emotional processes that interact with one another (and the social environment) to shape engagement in learning. For example, John Schumann's (1997) work on neurobiology and motivation in second language acquisition highlights the inseparable nature of cognitive, motivational, and emotional processes at the level of neural networks and mechanisms. Addressing these issues, Dörnyei (2009b) has recently argued against an individual difference approach to motivation (and other learner characteristics) in favor of a dynamic systems theory framework. Dynamic systems approaches concern the behavior of complex systems that contain multiple interconnected components, where development is characterized by non linear growth as systems adapt and evolve organically in response to contextual processes, and in ways that contribute to shaping context. As Dörnyei argues, adopting a dynamic systems perspective on second language acquisition processes renders the notion of discrete individual difference variables (such as motivation) rather meaningless, since processes of motivation, cognition, emotion, and their constituent components continuously interact with one another and the developing context, thereby changing and causing change, as the whole system restructures, adapts, and evolves. In a similar vein, in order to capture the mutually constitutive relationship between persons and the contexts in which they act, Ema Ushioda (2009) has put forward a "person-in-context relational view" of motivation as an organic process that is emergent through the interactions between the reflexive intentional agency of the person, and the fluid and complex systems of social relations, activities, experiences, and multiple micro- and macro-contexts in which the person is embedded, moves, and is inherently part of.

From a methodological point of view, the current emphasis on sociocultural, relational, and dynamic systems perspectives on motivation in second language acquisition raises issues and challenges for empirical research. The study of motivation in second language acquisition has been characterized by a solid tradition of empirical investigation. To date, this tradition has been dominated by quantitative methodologies suited to investigating social-psychological and individual-cognitive perspectives on motivation as an individual difference characteristic implicated in language learning success. Since motivation is not directly observable, such methodologies have typically relied on gathering self-report measures of motivation, such as how much learners agree or disagree with or rate the importance of certain statements reflecting particular attitudes, intentions, or behaviors. To minimize the inherent subjectivity of such data, considerable attention has been paid to constructing rigorous measurement instruments with good psychometric properties, as exemplified in the standardized attitude/motivation test battery developed by Gardner (1985) and his associates in Canada. These motivation measures are then entered into statistical analyses of relationships with other independent or dependent variables, such as measures of language aptitude, anxiety, or second language proficiency (e.g., Gardner, Tremblay, & Masgoret, 1997).

However, these quantitative methods of inquiry are ill equipped to investigate more complex, dynamic, and contextual perspectives, since such methods typically rely on superficial snapshot measures at a particular point in time and are not sensitive to the

complex particularities of evolving motivational experiences or individual-contextual interactions. Since the turn of the century, more qualitative methods of inquiry have gradually begun to complement the dominant quantitative paradigm, in an effort to address the dynamic and situated complexity of language learning motivation. In particular, unstructured or semi-structured interview techniques have been used to elicit in-depth self-report data on motivation and motivational experience, with the transcribed data then subjected to thematic analysis (e.g., Ushioda, 2001). While interview studies are inevitably limited in scale and scope, the data elicited can offer very rich insights into the process and experience of motivation, particularly when a longitudinal research design is adopted with multiple interviews with participants. Moreover, limitations in the scope of the dataset can be offset by complementing it with more large-scale quantitative data in a mixed methods research design. In particular, with current moves towards more contextually grounded socio-dynamic perspectives on motivation, the exploration of individual-contextual interactions is likely to entail triangulation of multiple forms of data from diverse perspectives (e.g., interviews with teachers and students, classroom observations, classroom interaction data, focus group discussions, learner reflective writing), in order to capture a rich holistic analysis of motivation-in-context, rather than relying (as traditionally) on a single set of self-report measures.

An interesting concluding observation to make about motivation research in second language acquisition is that it has endured a rather marginalized position within the field, remaining somewhat isolated from the more mainstream linguistic and psycholinguistic traditions of research that have prevailed. This is despite the fact that motivation is widely recognized as a prerequisite for successful second language learning to take place. One explanation for this lack of interaction with mainstream research in the field is that, to date, the analysis of motivation and its role in language learning has largely been at the level of global learning outcomes or measures of proficiency, and research has had rather little to say about how motivational factors and processes relate to the interim processes and intricacies of second language development. However, once motivation becomes viewed as an integral part of the evolving organic and adaptive system of cognitive, affective, and contextual processes shaping language learning, it is clear that the analysis of motivation can no longer be separated from the central concerns of second language acquisition research. Moreover, it seems likely that the analysis of motivation may now play a major role in any complex or dynamic systems perspective on second language acquisition, given the need to consider the processes of human agency, intentionality, and reflexivity that are fundamental to the dynamic interactions between self and context.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Dörnyei, Zoltán; Dynamic Systems Theory Approaches to Second Language Acquisition; Identity and Second Language Acquisition; Individual Differences in the Classroom; Neurobiology and Motivation in Second Language Acquisition; Schumann, John H.; Sociocultural Theory

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Multicompetence

VIVIAN COOK

The term "multicompetence" was originally defined as "the compound state of a mind with two grammars" (Cook, 1991); in the context of that paper, "grammar" was used in the Chomskyan sense of the total knowledge of language in the mind (the I-language) leading some people to infer wrongly that multicompetence was restricted to syntax. The current working definition is "the knowledge of more than one language in the same mind or the same community": everything a single person or a single community knows about all the languages they use. Multicompetence thus presents a view of second language acquisition (SLA) based on the second language (L2) user as a whole person rather than on the monolingual native speaker. It is neither particularly a psychological concept, as some have claimed (Kelly Hall, Cheng, & Carlson, 2006), nor particularly sociological. It is a perspective for viewing both broad approaches to SLA and thus applies both to the individual and to the community. It is perhaps closest to approaches that treat language as a continuously changing system (De Bot, Lowie, & Verspoor, 2005).

Multicompetence therefore involves the whole mind of the speaker, not simply their first language (L1) or their second. It assumes that someone who knows two or more languages is a different person from a monolingual and so needs to be looked at in their own right rather than as a deficient monolingual. Multicompetence is thus neither a model nor a theory so much as an overall perspective or framework: it changes the angle from which second language acquisition is viewed. It constitutes a bilingual "wholistic" interpretation of bilingualism as opposed to a monolingual "fractional" interpretation of bilingualism, in Grosjean's (2008) terms.

In the 1960s the conceptual breakthrough in the linguistic study of language acquisition was the independent grammars assumption that children do not distort the adult language system but invent systems of their own. This insisted that children are not defective speakers of adult language but speakers of a distinct language with its own rules, vocabulary, and phonology, which gradually develop into the adult's linguistic competence. The idea soon crossed over into the nascent field of second language acquisition (SLA) research through such concepts as "interlanguage." It was generally assumed that L2 learners too speak languages that do not correspond to established languages such as Spanish or English but have their own properties, created by L2 learners in a similar way to L1 children. Interlanguage opened the floodgates of SLA research and became an almost unchallenged axiom.

Multicompetence and the Native Speaker

Multicompetence proposed to take the concept of interlanguage seriously. If L2 users are to be treated in their own right, the native speaker has no particular status: it is the users' own language that matters. This remains the key aspect of multicompetence. If a native speaker is someone who still speaks the first language (L1) that they learned in childhood, being a native speaker is "an unalterable historic fact; you cannot change your native language any more than you can change who brought you up" (Cook, 1999); you can try to pass as a native speaker of another language but never become one—by definition.

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Multicompetence thus includes the first language, the interlanguage, and other aspects of the L2 user's mind.

Some arguments in favor of using multicompetence as a basis for research are:

- *the normality of the L2 user.* In many parts of the world like India and the Cameroon, monolinguals form a small minority: everybody has to use more than one language in their everyday lives. Brutt-Griffler (2002) has argued for the multicompetence of the community: rather than a community being defined by a single language, many communities in say India or Central Africa have multiple languages at their core, specialized by function and so on. While it is hard to get exact figures, multicompetence is probably not so much an exception as the norm for 21st-century human beings.
- *the rights of individuals.* Linguistics has progressively refused to classify speakers in terms of groups of which they are not, and never could be, members, first granting independence to primitive languages, then freeing children's language from adults' (the independent grammars assumption), then liberating black English speakers from white, working-class restricted code from middle-class elaborated code and women's language from men's. The only group still to be judged by the standards of another is L2 users. But they too have the right to use language appropriately for their needs, not for those of a native speaker group to which they can never belong.

Despite its acceptance of interlanguage, much SLA research has nevertheless continued to measure L2 users against native speakers; that is to say, it has not treated multicompetence as the default and has not recognized them as a group with rights of their own. Consequently what L2 users do is seen as a mistake whenever it fails to conform to the language of monolingual native speakers and the L2 users' level of language proficiency is seen as deficient rather than different: it's all right if your English accent proclaims you come from Newcastle upon Tyne but not from Paris. This native speaker comparison lurks behind such typical statements as: "The lack of general guaranteed success is the most striking characteristic of adult foreign language learning" (Bley-Vroman, 1989, p. 42). It is possible to measure ducks in terms of swans. But when everything has to satisfy the swan criteria, the unique qualities of ducks will always elude the observer, just as black English, working-class English, and women's language were once seen as pale shadows of a "true" variety. Unique functions of L2 user language like code switching and translation will never show up in a native speaker model; unique grammatical forms of L2 users will appear just as mistakes.

While overt denigration of L2 users for not being native speakers is now less common, the perennial SLA research questions continue to revolve around whether the L2 user is like a native speaker. Whether age affects L2 learning depends on speaking like a native as the ultimate attainment of L2 learners is assessed in terms of "absolute native-like command of an L2" (Hyltenstam & Abrahamsson, 2003); whether L2 learners have access to universal grammar is seen as depending on whether they attain the identical grammar to native speakers (Clahsen & Muysken, 1989). The typical SLA research techniques outlined in Cook (1997) consist of error analysis (i.e., mostly defining errors as things native speakers would not do), obligatory occurrences (omitting elements that native speakers would not leave out), grammaticality judgments (based on the "correct" native speaker grammar), elicited imitation (defined by how the native speaker would repeat), and so on. The commitment to the independent L2 user in SLA research is often a matter of rhetoric rather than the reality reflected in its research questions and techniques.

But what term should be used to describe people who are multicompetent? People who acquire their first language are not regarded as L1 learners for the rest of their lives. Why should people who know more than one language be treated differently? Calling people

L2 learners seemed to confirm their subordinate status. Hence the more neutral term "L2 user" was introduced. "L2 user" refers to people who know and use a second language at any level; multicompetence is not restricted to high-level L2 users but concerns the mind of any user of a second language at any level of achievement. "L2 learner" is reserved for people who have no everyday use of the second language, say children in foreign language classrooms. Of course L2 users may also be L2 learners at different times of life or indeed times of day—an L2 learner of English in London who steps out of the classroom immediately becomes an L2 user of English. More recently, at least five different groups of L2 users have been distinguished (Cook, 2009a): those using an L2 within a larger community, say Arabic residents of Berlin using German; those using it internationally for restricted functions, for example, Muslims using Arabic for religious purposes regardless of their first language and the country in which they live whether Germany or Saudi Arabia; those using it globally for a wide range of functions, primarily nowadays the use of English as a lingua franca (ELF), say for business, tourism, or electronic communication; those using it with spouses, siblings or friends with different first languages; and those historically from a particular community (re-)acquiring its language for cultural use, say British Chinese speakers of Cantonese learning Mandarin. Each of these groups undoubtedly have specific qualities that do not generalize to L2 learning in general. The people usually studied in SLA research are, however, classroom L2 learners, many of whom are not and never will be L2 users, for example Chinese children learning English at school in Shanghai, and immigrants adjusting to a new country (hence the importance of age of arrival rather than age itself in much SLA research).

The multicompetence perspective was first supported by reinterpreting research from various domains to show the effects of learning second languages on the human mind. But it led to research specifically aimed at multicompetence that generated research questions which had previously barely been mentioned.

Effects of the L2 on the L1

A vast amount of SLA research has looked at the effects of the first language on the second, labeled "transfer" or "crosslinguistic influence," still a favorite topic for dissertations exploring yet more first languages or novel aspects of language. By looking at the whole learner's mind, multicompetence opened up reverse transfer from the second language to the first. A new research question was then: Do you still speak your first language like a monolingual native speaker when you know another language? A negative answer to this could reverberate across SLA research, and indeed much linguistics, as it would be unsafe to regard any person who knows another language as having "normal" monolingual linguistic competence; "the judgments about English of Bloomfield, Halliday or Chomsky are not trustworthy, except where they are supported by evidence from 'pure' monolinguals" (Cook, 2002).

In virtually every aspect of language studied, L2 users have turned out to be different from monolinguals. To take some representative studies:

- *phonology.* Much research has shown the changes in voice onset time (the duration of silence that distinguishes voiced and unvoiced plosive consonants) in the L2 user's first language, for example English/Spanish (Zampini & Green, 2001).
- *lexicons.* Many have argued for a single lexicon in the L2 user's mind where words from one language are stored alongside words from the other. An L2 user seems unable to switch off one language entirely while processing another, only to lower the level of activation. Spivey and Marian (1999) for example showed in an eye-tracking task that words from one language were activated even when processing the other.

- *syntax.* The L1 syntax of the L2 user is subtly altered by the second language they know. Using a competition model paradigm, Cook, Iarossi, Stellakis, & Tokumaru (2003) found that the cues to the processing of L1 word order change when another language is known.
- *pragmatics.* Russians who knew English interpret film sequences differently from monolinguals (Pavlenko, 2003). L2 users indeed have a range of functions for language such as code switching and translation unknown to monolinguals.

Indeed more than language has changed in the L2 user's mind. Learning another language helps with learning to read the first language, and with metalinguistic awareness. Knowing another language delays the onset of Alzheimer's disease (Bialystok, Craik, Klein, & Viswanathan, 2004) and develops the areas of the brain responsible for control (Green, 2011). All of these support the proposition that the L2 user is a distinct kind of person from a monolingual.

Bilingual Cognition

The focus in recent research has been on the different ways in which L2 users think. The research looks at well-known areas where cognitive difference has been shown to occur crosslinguistically between a pair of languages and then sees how L2 users of the two languages think. Typical areas include:

- *shape and material.* Cook, Bassetti, Kasai, Sasaki, & Takahashi (2006) found that Japanese L2 users of English living in England for some years had moved some way towards the English preference of classifying objects more by material than by shape.
- *colors.* Many languages recognize two distinct "blue" colors where English has only one. Athanasopoulos (2009) showed that speakers of Greek who had learned English had altered classifications of colors.
- *gender.* Speakers of grammatical "arbitrary" gender languages tend to assign gender to inanimate objects in the natural world; this effect is diminished for those who know two languages with different gender systems (Bassetti, 2007).
- *motion.* Descriptions of motion events from L2 learners are affected by their first language. The division between satellite and verb-framed languages has generated masses of L2 research, showing effects of knowledge of two languages on ideas of motion.

Multicompetence and Language Teaching

The multicompetence idea has important implications for language teaching, which has often seen its task as making students as much as possible like native speakers. Multicompetence is now starting to be utilized in books on SLA and language teaching (www.youtube.com/watch?v=LF7zmsqtIUQ).

- *Goals of language teaching.* Multicompetence takes the goal of language teaching as producing a successful L2 user, not an imitation native speaker. It thus aligns with the English as lingua franca (ELF) movement rather than with the common European framework of reference, which seems to use the native rather than the L2 user as a touchstone.
- *The language-teaching classroom.* The multicompetence perspective does not see any virtue in making the students use only the second language in the classroom since this denies the very existence of the first language in their minds. It advocates principled

use of the second language when classroom goals can be achieved more efficiently by its use (Cook, 1999).

- *Native speaker language teachers.* A non-native speaker teacher (NNST) is an L2 user who has acquired another language; a native speaker teacher (NST) is not. Hence the NNST can present a role model for the students, has learned the language by a similar route to the students, and can code switch to the students' own language when necessary. The NST's only substantive advantage may be a greater facility in the target language, but as a native speaker not as an L2 user.

Overall the development of a multicompetence perspective has been fruitful in suggesting not only new interpretations of existing theories and phenomena but also new research questions to be tackled. It has gone some way to redressing the bias in favor of the native speaker. But its importance extends beyond SLA research to linguistics, psycholinguistics, and psychology in its insistence on the uniqueness of the L2 user. The fundamental questions of linguistic competence and language acquisition are different if most human minds in fact know more than language. In particular it is a "question whether UG theory can achieve its basic task of describing how human minds acquire, store and use language without taking into account the minds that cope with more than one language" (Cook, 2009b). Chomsky's four questions for linguistics (Chomsky, 1988), namely accounting for knowledge of language, its acquisition, use, and physical manifestation in the brain, are transformed when multicompetence—knowledge of languages in the plural—is the normal state of the human mind: rather than the dominant form of language knowledge, monolingualism becomes an aberration due to language deprivation of second language input. "The monolingual native speaker is language-deprived; they would have acquired multicompetence in more than one language if their caretakers had not deprived them of a second language" (Cook, 2009b).

SEE ALSO: Bilingualism and Cognition; Interlanguage; Language Learning and Teaching: Overview; Native Speaker; Universal Grammar and Second Language Acquisition

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Multiculturalism and Second Language Learning

RYUKO KUBOTA

Multiculturalism reflects cultural, ethnic, racial, linguistic, and religious diversity brought about by mobility of people in the processes of colonization, slavery, migration, and other historical causes. The rise of globalization, especially, has made conspicuous the multicultural conditions of many societies. Reactions to multiculturalism shape public policies including education. Multiculturalism conceptualized in education may address not only the aforementioned types of diversity but also other kinds of human difference, such as gender, class, language, sexual identity, and disability. The term "multicultural education" is often used in such countries as Australia and the USA, whereas it is commonly referred to as "antiracist education" in Canada and the UK and "intercultural education" in many Western European nations (Banks, 2009). In other parts of the world as well as these countries mentioned above, increased transnational migration has posed new challenges to the existing educational system (see, e.g., Hong, 2010; Tsuneyoshi, 2004). A typical challenge is how to adjust the traditional monolingual and monocultural orientation in curriculum, instruction, and materials and how to improve educational policies, including teacher education, in order to accommodate the needs of learners and communities (see Banks, 2009).

At a wider societal level, neoconservative politics in the West that promote antagonism toward immigrants, particularly those of color and those from Islamic backgrounds, work against ensuring equity and fair treatment for newcomer populations in the host society. Conversely, many educational institutions celebrate superficial cultural diversity along with a neoliberal emphasis on internationalization, but still expect non-mainstream students to assimilate into the dominant culture and language. Discourses that critique the hegemonic process of assimilation do exist, however, and offer critical explorations of how difference is produced by power and how societies can become more equitable.

Multiculturalism is relevant to various dimensions of applied linguistics, such as language policy, language ideology, and language teaching and learning, including heritage language, bilingual, second language, and foreign language education. Second/foreign language teaching appears to inherently support multiculturalism because learning a new language is supposed to engage learners in explorations of new ways of understanding self and other. Perhaps because of this assumption, the field of applied linguistics has only recently begun to attend explicitly to issues of multiculturalism and multicultural education (Kubota, 2004a; Hoosain & Salili, 2005). An overview of the scholarship produced mainly in the USA reveals different responses to multiculturalism, indicating how multiculturalism is politically charged and how the ideological nature of multiculturalism is linked to some inquiry themes of applied linguistics.

Different Approaches to Multiculturalism

Multiculturalism is conceptualized in different ways in educational discourse. Scholars have offered different categorizations of various conceptual positions. For instance, Sleeter

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and Grant (2007) present the following five approaches to multicultural education that have emerged since the 1960s in the USA: (a) teaching the exceptional and the culturally different approach, which purports a cultural-deficit theory for assimilating racial- and linguistic-minority students; (b) human relations approach, which advocates respecting, understanding, and tolerating difference; (c) single-group studies approach, which aims to enhance the understanding of particular groups; (d) multicultural education approach, which focuses on cultural pluralism and equal opportunities; and (e) multicultural social justice education approach, which advocates structural equality by critically addressing such issues as racism, classism, sexism, and homophobia.

Similarly, Steinberg and Kincheloe (2009) list five positions of diversity and multiculturalism: (a) conservative diversity practice and multiculturalism or monoculturalism, which privileges Eurocentrism as in the first approach described by Sleeter and Grant (2007); (b) liberal diversity practice and multiculturalism, which emphasizes commonality among individuals while overlooking structural inequalities; (c) pluralist diversity practice and multiculturalism, which focuses on differences but tends to exoticize them, constituting the mainstream approach to multiculturalism; (d) left-essentialist diversity practice and multiculturalism, which underscores and romanticizes the authenticity of diverse groups; and (e) critical diversity and multiculturalism, which critiques unequal power relations and envisions egalitarian democracy and social justice.

To conceptualize more generally, approaches to multiculturalism can be divided into conservative, liberal, and critical or racial (Nieto, 1995). The conservative camp or the political right considers the multiplicity of values brought by diverse groups to be a threat to social cohesion and thus insists on preserving the mainstream culture (e.g., White Christian values of the West). It might address diversity in the context of great non-Western civilizations in the past but it expects the contemporary non-mainstream diverse populations to abandon their cultural heritage and assimilate into the core mainstream culture.

Most prevalent is a liberal approach to multiculturalism in education. As suggested by Sleeter and Grant (2007) and Steinberg and Kincheloe (2009), this approach celebrates cultural pluralism and at the same time stresses individual equality. In making a distinction between liberal and critical approaches to multiculturalism, Kubota (2004a) explains that liberal multiculturalism superficially acknowledges multiculturalism as common sense, reinforces color blindness (or difference-blindness) by focusing on commonality, exoticizes and essentializes the other by focusing on difference, and obscures issues of power and privilege. In schools, colleges, and universities, a typical approach is cultural tourism, which merely surveys cultural artifacts and customs, or the so-called "four Fs approach"—food, fashion, festival, and folkdance—which celebrates cultural diversity in a trivialized and decontextualized way.

Liberal multiculturalism harmonizes the logic of difference and sameness. On the one hand, it promotes cultural essentialism by discussing unique characteristics of a certain culture, nation, people, or language, leading to stereotyping (see Kumaravadivelu, 2008). The emphasis on difference is partly based on the vision of cultural relativism that recognizes diverse cultures as different but valid in their own right. On the other hand, liberal multiculturalism emphasizes similarity and rationalizes equal treatment of all based on the idea that diverse people still belong to a single human race. This color-blind view supports individual meritocracy, ignoring how certain groups, due to their skin color or culture, are systematically and often subtly excluded, marginalized, or discriminated against in mainstream society. In this way, liberal multiculturalism tends to avoid confronting racism and, if racism is brought to attention, it is likely to be dismissed or reduced to a personal matter (e.g., prejudice, attitude, slur).

In contrast, a critical approach to multiculturalism explicitly focuses on racism, sexism, homophobia, and other social injustices at the collective level. It problematizes unequal relations of power among groups which privilege some while oppressing others. As such, racism is recognized not so much as a personal issue but rather as a structural or institutional mechanism of perpetuating a power hierarchy. Problematizing power is central to a critical approach to multiculturalism. Power produces and maintains social and linguistic unmarked norms which are made invisible or inaudible. For instance, Western societies often set heterosexual Christian middle-class White culture as the invisible norm in spite of increased local racial and cultural diversity brought about by globalization. Individuals who do not fit in this scheme are often disadvantaged in obtaining education, employment, and social status equal to the people who belong to the normative group. Moreover, male dominance in influential positions continues to be the norm in many societies. Critical multiculturalism attempts to make visible the invisible privilege attached to Whiteness, maleness, and heterosexuality and aims to transform the unequal relations of power.

Critical multiculturalism also problematizes the essentialist understanding of cultural, gender, and linguistic difference. A certain culture, for instance, is never homogeneous, fixed, or monolithically authentic—it is diverse, emergent, and ever shifting. Interrelated notions of cultural hybridity—the Third Space (Bhabha, 1994) or thirdness—index the possibility for cultural reinterpretation and appropriation, locating culture and identity in a fluid heterogeneous space. The essentialist understanding of cultural difference is questioned not only from the perspective of diversity and hybridity but also from the poststructuralist notion of discourse and power (e.g., Kubota, 2004b). Discourse constructs our knowledge, including that of cultural difference, and social practices. This allows multiple meanings of cultural difference; in other words, cultural essentialism can lead to harmful othering but it can also be strategically used to reclaim a subjugated identity. The plural meanings of essentialism also parallel the complex nature of hybridity. While the notion of hybridity is gaining popularity in applied linguistics, it tends to be romanticized and discussed without reflecting on the fact that language and culture have always been evolving through the process of mixing and that postmodern identity politics in many parts of the world are essentialist in nature (May, 2009).

Critically reflecting on the question of power and privilege and based on an anti-essentialist understanding of difference, critical multiculturalism is affiliated with radical and postfoundational inquiry approaches, including critical race theory, critical Whiteness studies, critical race feminism, critical pedagogies, poststructuralism, postmodernism, and postcolonialism.

As an educational practice, critical multiculturalism promotes critically reflective engagement rather than apolitical trivialization of difference. Instead of merely holding a once-a-year international day to celebrate ethnic or national traditions or addressing issues of diversity only with minority students, schools would engage all students in not only appreciation of diversity but also consideration of such critical issues as power, discrimination, subjugated local knowledge, race, gender, and economic inequalities at the local, national, and global level, and historical understanding of various kinds of domination and subordination throughout the curriculum at all times (Nieto & Bode, 2008). As a situated practice, critical multicultural education enables students to become aware of their relative positionality of privilege or oppression within specific contexts and to explore their social responsibility as democratic citizens. It also advocates mutual accommodation, which requires both the institution and the minority groups to share responsibility for constructing an equitable system for all (Nieto & Bode, 2008).

Although applied linguistics research rarely uses multiculturalism as an inquiry framework, the conceptual lenses discussed above are relevant to many issues in our field:

(anti)monolingual ideology, (anti)normatism, (anti)essentialist understanding of culture, and (anti)color blindness.

(Anti)monolingual Ideology

It is often assumed that language learning is an intellectually additive activity and thus it increases individuals' linguistic repertoires. Yet, in reality, this assumption does not apply to all contexts or groups of people. In many countries, proficiency in the dominant local language is a taken-for-granted requirement; in the case of the English-only movement in the USA, English proficiency is viewed as the only legitimate linguistic ability in the public domain. This view imposes acquisition of the language of power onto linguistic-minority groups, with minority children expected to become monolingual speakers of the dominant language. However, this monolingual ideology does not apply to the linguistic-majority population. Specifically, foreign language education for this group is linked to intellectual sophistication and access to higher education. Here we see elitist double standards—while additional language instruction is treated as remedial for one population, it is enrichment for another. In other words, the expectation is for monolingualism among linguistic minority and multilingualism for the linguistic majority (Wiley & Lukas, 1996). Language instruction thereby becomes a mechanism of perpetuating a power hierarchy and maintaining hegemony. Thus, teaching English as a second language (ESL) is often built on a deficit model, echoing one of the approaches discussed by Sleeter and Grant (2007) and Steinberg and Kincheloe (2009).

Monolingualism should be understood not so much as insistence on a single language but instead as logic of exclusion. In this sense, it constitutes language restrictionism. Even in Canada, a country with a national policy of multiculturalism and bilingualism, education for multilingualism beyond bilingualism in the two official languages is not formally promoted in schools because federal policy does not recognize non-official minority languages (Haque, 2010). Although bilingual education in languages other than French does exist in the Province of Alberta, as the school curriculum is determined by each province, Ontario prohibits school instruction to be delivered in languages other than English or French, restricting immersion education in languages other than French. Language restrictionism reinforces assimilation and the erasure of linguistic plurality.

In contrast, efforts have been made to preserve and develop the first language (L1) proficiency of minority groups through mother-tongue education in some parts of the world. These efforts include immersion education exclusively for minorities such as aboriginal students or dual-language education for both linguistic-majority and linguistic-minority students. Nonetheless, these efforts are not necessarily compatible with the vision of critical multiculturalism in that they could reinforce cultural and linguistic essentialism by emphasizing authenticity without recognizing multiple identities (Patrick, 2007) or subtly reinforce the unequal value of bilingualism unevenly afforded to the majority and minority groups, or even corroborate the accountability scheme which prioritizes raising students' test scores.

(Anti)normatism

Closely related to monolingualism is the prevalence of normatism in second language education and research. The standard variety of the target language spoken by native speakers is often set as the instructional goal and the yardstick against which second language (L2) learners' output is measured. These practices privilege mainstream language use and users while marginalizing others. Thus, foreign language instruction, despite its

purported goal of promoting linguistic and cultural diversity, could marginalize nonmainstream varieties of the language and heritage-language learners who are speakers of those varieties (Harklau, 2009).

Linguistic normatism has been problematized from several perspectives. Research on World Englishes has shed light on the unique characteristics of diverse varieties of English used around the world and recent scholarly discussions of lingua franca English have focused on the hybrid and fluid use of English among multilingual speakers. The concept of multicompetence of L2 users (Cook, 2007) has problematized the construction of legitimate L2 users as perpetual L2 learners or imperfect native speakers. Increased scholarly attention to the issues of non-native teachers of English demonstrates academic resistance to normatism. Although these scholarly developments have certainly pluralized the concept of language and legitimated diverse language use and users, they do not necessarily support the tenets of critical multiculturalism in that they may produce yet another norm, in the case of World Englishes (i.e., national standards of English) or may romanticize hybridity without addressing the unequal economic access to acquiring hybrid linguistic and cultural identity in the first place.

(Anti)essentialist Understanding of Culture

Culture is one of the central issues in applied linguistics research. Research in interlanguage or intercultural pragmatics and intercultural or contrastive rhetoric has investigated L2 learners' acquisition of oral or written conventions in the target language. In this inquiry, cultural differences between L1 and L2 are typically viewed as causing negative transfer, resulting in unconventional L2 output in need of remediation. This is where a great amount of cultural essentialism is produced in research. For instance, Western communication is typically described with notions such as individualism, low context, directness, clarity, and logicalness, whereas non-Western communication is characterized by such labels as collectivism, high context, indirectness, ambiguity, and intuitiveness (Kubota, 2004b). Such descriptions essentialize and dichotomize cultures and languages, creating a rigid boundary of the self and the other. This shares the emphasis on cultural difference and cultural relativism seen in liberal multiculturalism. In fact, the focus on cultural specificity in linguistic research may be seen as a progressive humanistic neo-Whorfian thought that challenges the Chomskyan approach to language which focuses on universalism. At the same time, the pedagogical implications drawn from research tend to support normative and assimilationist expectations of acquiring the dominant conventions.

Cultural and linguistic essentialism has been challenged by empirical studies that have a descriptive rather than prescriptive orientation with a focus on variability within cultural and linguistic practices. While these efforts are situated in a positivistic paradigm that seeks objective facts, a poststructuralist critique views cultural and linguistic essentialism as discursively constructed within colonialism, nationalism, and international politics (Pennycook, 1998; Kubota, 1999). Such anti-essentialist approaches to culture and language parallel critical multiculturalism.

(Anti)color Blindness

In teaching L2 learners of color especially in public school settings, teachers and administrators are likely to state that they see no color among students and thus they treat them equally. This echoes liberal multiculturalism in overlooking the racism and structural inequalities that affect different groups of students in divergent ways. Unwillingness to confront racism is manifested in the contemporary discourse of cultural racism or new

racism, in which cultural difference becomes a proxy for racial difference. In addition, the linguistic labeling used to designate ESL students in schools may in fact index racial categorization in the sense that native speakers of nonstandard varieties of English who are children of color tend to be assigned this linguistic label (Motha, 2006). This phenomenon indicates how race often intersects with non-nativeness assigned to learners and teachers. Thus, discrimination against non-native-speaking teachers in the classroom and in the hiring process reflects not only linguistic issues but also racial labeling. Furthermore, race and language intersect in complex ways within institutional politics in a wider society. For instance, a White native speaker of English who is a non-native teacher of a foreign language in an English-dominant society might have more privilege than a native-speaking teacher of color who is a non-native speaker of English.

These subtle lines among race, language, and culture have recently been explicitly discussed in applied linguistics. Critical scholars have revealed explicit or implicit racism in discourses among educators, instructional practices, teaching materials, experiences of students and teachers of color, and language policies through theoretical inquiry and qualitative methodology including critical race theory. Some scholars have conducted research on antiracist interventions for raising students' critical awareness of their racial identity and privilege.

Conclusion

Multicultural conditions as reflected in cultural and linguistic diversity and hybridity are spreading in many societies around the world, while cultural and linguistic assimilation continues to be imposed on minority groups. At the same time, resistance to such hegemonic force has produced strategic essentialism as seen in the reclamation of minority rights and nationalism in diaspora communities. Under these circumstances, cultural difference has many symbolic meanings—an obstacle to national unity, an object of fetishism, an imposed essentialism that creates othering, and strategic essentialism. Applied linguistics research has also responded to linguistic and cultural plurality in various ways—from essentialist relativism to critical problematization. As neoliberal politics increasingly influence language teaching and learning with an emphasis on accountability, communication skills for employability, linguistic instrumentalism, and English as an international language, racial, gender, and socioeconomic gaps in language learning and teaching would be a significant topic of further investigation from a perspective of critical multiculturalism.

SEE ALSO: Critical Pedagogy; Critical Race Theory and Qualitative Research; Culture; Ethnicity; Gender and Second Language Acquisition; Intercultural Communication; Intercultural Rhetoric in Language for Specific Purposes; Interlanguage Pragmatics; Postcolonial Studies; Poststructuralism; Race

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Multilingual Education and Language Awareness

CHRISTINE HÉLOT

The role of languages in education is both a central and a contentious issue faced by most education systems in the world today, because many teachers have to contend with multilingual students being schooled in languages other than their mother tongues. In the face of this growing linguistic heterogeneity, language education needs to be reconceptualized away from a dominant monolingual perspective, and all teachers of all disciplines at all levels are concerned by issues related to multilingualism.

As explained by Cenoz (2009), it is not easy to define multilingual education. Traditionally, many schools have been offering second or foreign-language classes at secondary level (more recently also at primary), and the general perception has been that the more languages are offered in a school the more the school is multilingual. But as Cenoz's comprehensive continua model explains, offering foreign languages as school subjects is a weak form of multilingual education. For education to be truly bi- or multilingual, the second or foreign languages must be fully integrated in the regular syllabus and used as languages of instruction. Truly multilingual schools are

> schools which exert educational effort that takes into account and builds further on the diversity of languages and literacy practices that children and youth bring to school. This means going beyond acceptance or tolerance, to cultivation of children's diverse languages (whether dominant, indigenous or immigrant, or autochtonous minority) as teaching languages. (García, Skutnabb-Kangas, & Torres-Guzmán, 2006, p. 13)

Many researchers have argued convincingly that bi- or multilingual education is the only way to educate children in the 21st century (Cenoz, 2009; García, 2009), yet how many children in the world today actually avail of such education? The paradox is that many children grow up with several languages in their family environment but, once they are at school, they are made to function like monolinguals and their multilingualism is silenced. Why is it so difficult for our schools to adapt to the growing multilingualism of our societies? Why is there so much resistance to transforming our classrooms into multilingual learning spaces?

Several reasons will be briefly outlined. The first one is historical and ideological: Most public school systems were created as part of the nation-state and meant to implement language policies based on the use of one standard, official language seen as essential for the development of national identity and social cohesion. Thus official languages became reified, "regional" or "indigenous" languages were considered as a threat to national unity and banned from schools. Only so-called "foreign" languages found a place in the curricula, as separate school subjects and taught according to the same principles as those applied to classical languages (such as ancient Greek or Latin).

The second reason is that, despite all the research on bilingual education published since the 1960s, there are still a lot of misconceptions about bi- and multilingualism. Many educators believe learning can only take place in a monolingual mode, and speaking a different language at home can be detrimental to the acquisition of the school language.

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In other words, multilingualism is still conceptualized by mainstream teachers as a problem rather than as a resource or a right. This happens more specifically in the case of minority or heritage languages, much less so when dominant European languages are part of bilingual education (Hélot, 2007). Consequently, a dichotomous perception of bilingual education has developed where elite bilingualism is seen as a major advantage and minority bilingualism as a disadvantage or, worse, as a handicap. This is the reason why, in many countries, educational policies regarding speakers of minority languages tend to be envisaged from a deficit perspective, dismissing their linguistic and cultural capital, and leading to compensatory pedagogical approaches which focus mainly on the acquisition of the language of schooling and at best pay lip service to bi- or multilingualism.

The third reason concerns the continuing lack of awareness of linguistic and cultural diversity on the part of most teachers in mainstream classrooms who lack adequate language education and basic knowledge about bi- or multilingual practices. Primary teachers, for example, are required to focus on literacy acquisition in the school language (in the singular) and secondary language teachers tend to be specialists of one foreign language only. Other curriculum subject teachers usually do not think language diversity issues are their concern.

Because a multiplicity of languages can now be found within a single classroom, there are no simple answers to deal with the various challenges explained above. Teachers cannot be expected to know all the languages of their multilingual students, formal approaches to bilingual education for all students is impractical in many contexts worldwide and would require a massive investment in teacher education, and, last but not least, it is a rather complex matter to change the monolingual habitus of our school systems. But, at the same time, we clearly need to question the monolingual ideology which pervades our education systems and which also affects bilingual education (García, 2009). We know how crucial it is for bi- and multilingual students' identity and their language development not only to acknowledge their first languages but also to include these languages in the learning process. We also know that some students (bilingual as well as monolingual) do need support in the acquisition of the school language, and that monolingual students should develop a plurilingual repertoire and be exposed to linguistic and cultural diversity. In other words all pupils should be given the chance to learn more languages and to understand the role of languages in our multilingual societies.

Language awareness (LA) and knowledge about language (KAL), as interdisciplinary and related fields of inquiry in language education, address such issues. The best introduction to this domain is Cenoz and Hornberger (2008). Their volume provides an extensive review of recent research carried out in different parts of the world and shows how LA and KAL differ from foreign-language learning, how they allow educators to expand beyond school languages, to legitimize the use of minority languages at school, and to raise awareness of cultural and linguistic diversity. In the words of James and Garrett (1992, p. 8): "Language awareness is a person's sensitivity to and conscious awareness of the nature of language and its role in human life," whereas Cots (2008, p. 15) refers to KAL as "explicit knowledge in the form of pedagogical contents and more or less sophisticated metalanguage, which is aimed at bringing to the conscious attention of learners particular aspects of how language functions as a system and is used in society."

We shall not focus on the different connotations of the two terms, but stress that both LA and KAL are extremely useful notions to think about language education in a more integrated way, in other words to envisage together the teaching of the school language, of second or foreign languages, mother-tongue education, as well as the inclusion of minority languages in the curriculum. Indeed, Hawkins (1984) developed his "awareness of language" approach with the intent of bridging all aspects of language education, rather than teaching languages in isolation from one another, and 20 years later Edwards (2004,

p. 144) is making the same point: "lack of joined up thinking in language policy has made young people's experiences of language learning less than satisfactory."

LA is often misinterpreted by teachers, so it should be made clear that as a model of language education it does not preclude foreign-language learning but expands on it to include the social (and political) dimension of language use (Hélot, 2007). Its main goal is to support multilingualism both at the institutional level and at the individual level and to develop different attitudes toward minority-language speakers, toward linguistic and cultural diversity, and toward language use in society.

Several examples of pedagogical projects carried out in Europe, Canada, and elsewhere show that it is possible to make space in the curriculum for transdisciplinary activities based on the different languages spoken by students in a class. See for example the Multilingual Resources for Children Project (1995), EVLANG (Candelier, 2003), EOLE (Perregaux, De Goumoëns, Jeannot, & De Pietro, 2003), ELODIL (www.elodil.com), and the many projects developed by the ECML in Graz (http://www.ecml.at/). Other projects involve teachers working closely with parents and building on funds of knowledge to expose learners to a multiplicity of languages and cultures and to empower speakers of minority languages (Hélot & Young, 2006). Others focus on creating multilingual literacy environments for young learners (Kenner, 2004), on the use of dual-language books to help bilingual learners to explore the differences between their languages (Sneddon, 2009), or on educating teachers to use children's literature in different languages so as to create multilingual learning spaces in monolingual and bilingual classrooms (Benert & Hélot, 2010). Some of these projects involve collaborating with mediators such as bilingual teaching assistants who share the pupils' languages, or parents and siblings who act as language brokers and support mainstream teachers to include several languages in the regular classroom activities. It is through such processes that teachers can learn to feel less threatened working with languages they do not know.

One interesting example is Cummins's (2006) "identity texts," where students invest their identity in creating multimodal texts using their different languages (thus legitimizing their home languages in class), in learning to read and write in their first language alongside the school language, and in making it possible for each different language to enter the learning space of the classroom. Another creative project is that of Dagenais, Moore, Lamarre, Sabatier, & Armand (2009), who used the linguistic landscape as a pedagogical framework for LA activities: Young learners were asked to take photographs of various language signs in the environment of their school and to design LA activities based on these signs; this led them to engage with linguistic diversity in a given territory, and to reflect upon linguistic diversity and use of language in everyday life.

What we see at work in such projects is a form of engagement with languages which goes beyond focusing on form and learning a language in a decontextualized fashion; emphasis is instead placed on understanding language use in its social context and on authentic use of language and languages as a basis for LA activities. In other words the ultimate aim of LA activities is to understand the nature and function of language in human life and what language does for us and for others.

One last point should be made in relation to teacher education. As Hawkins (1984) insisted, one of the main challenges for the LA movement was to provide adequate preparation for teachers. Referring to "multilingual language awareness (MLA)," García (2008, p. 393) stresses that it must be at the core of all teacher-education programs, because "it behooves teacher educators to put language difference at the centre of the educational enterprise." MLA should indeed be integrated throughout the entire teacher-education curriculum, but this is proving a real challenge in the face of educational policies that focus on school-based language competence and normative evaluations, and which refuse to acknowledge the impact on schools of growing social inequalities. However, in our

experience even a short introductory course on LA can help teachers to make a difference, to become agents of change in their schools (Hélot, 2010), and to transform their classrooms into spaces where a multiplicity of languages and cultures can strive together. MLA for teachers is crucial if we want multilingual language use to become normalized in our classrooms, and each school to develop its own language policy, taking into consideration the languages of newcomers, those of minority speakers, those of bilingual students, and the language(s) of schooling.

SEE ALSO: Bilingual Education and Immigration; Bilingual and Multilingual Education: Overview; Heritage Languages and Language Policy; Indigenous Languages in the 21st Century; Language and Globalization; Language Policy and Multilingualism; Multilingualism and Minority Languages

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Multilingual Education in Africa

KATHLEEN HEUGH

Introduction

Approximately 2,100 (30% of the world's) languages are spoken in Africa (Lewis, 2009), with multilingualism a defining characteristic of the continent. Multilingual repertoires in Africa are acquired informally and in formal education, within communities and across regions. Multilingual proficiencies develop horizontally across several linguistic systems (continua of languages) and also vertically as multiple languages learnt in parallel, in schools. Although much of the literature portrays Africa as a continent without literacy and education as understood in the West or North, it has overlooked literatures in multiple languages, scripts, and symbolic systems which developed from hieroglyphics from the north and philosophical traditions from the south (e.g., Egyptian, Ethiopian, Bassa, Meriotic, Vai, Mende, Nsibidi, Akan, Adinkra, Wabuti, and Tifinagh) (Bekerie, 1996; Battestini, 1997; Ki-Zerbo, 2003, p. 31). Also overlooked are the multilingual scholarly traditions of the 12th to 19th centuries across the Sahel from Mali to Nigeria.

Historical Continuum of Multilingual Education in Africa

Multilingual education systems span at least six historical phases which include multiple languages and literary texts. Three of these periods preceded the late 19th-century European partition of Africa. The first was in Egypt, found in the bilingual (Greek and Egyptian) text written in three scripts (hieroglyphics, Demotic, and Greek) on the Rosetta Stone (dated about 200 BC). The second period appears in the Horn of Africa with the development and spread of ancient Ethiopic script (Ge'ez) from the 2nd to 14th centuries AD. The third was associated with the spread of Islam across North and West Africa from the 7th to 12th centuries. The rise of Islam and spread of Arabic was accompanied by education, literacy, and literature in several African languages transcribed in Arabic script, known as Ajami. This is evidenced in the estimated 700,000 manuscripts from the university mosques of Timbuktu, which accommodated 25,000 students by the 12th century AD (Timbuktu Education Foundation, 2002), and also in less well-known libraries to the 19th century (e.g., in Kano, Northern Nigeria). The partition of Africa after the Berlin Conference of 1884–5 was accompanied by fundamental changes to existing practices of education and literacy. Earlier systems were discarded and replaced with European models using the Latin script. While education has been predominantly geared toward a single language, usually the (former) colonial language, a further three phases of multilingual education have coexisted with more dominant monolingual European-based systems. The fourth phase of multilingual education coincided with the promotion of African languages in primary schools and the development of orthographies and translations of the Bible by missionaries in "Anglophone" colonies. This approach has been largely discontinued since the 1960s after which time postcolonial governments took control of mainstream education and favored earlier introduction of the English medium in former British colonies. A fifth phase included a mainstreaming of multilingual education in unpopular political regimes

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in South Africa and Namibia (1955–75), and Guinea Conakry (1968–84). This phase also included experimental, usually nonformal, bilingual early primary education in several language combinations, in West African countries. The latest phase, the sixth, has coincided with international educational and political changes since the 1990 UNESCO Conference "Education for All" in Jomtien, and has been taken up explicitly in post-apartheid South Africa, and in Eritrea and Ethiopia (Alidou et al., 2006; Benson, Heugh, Bogale, & Gebre Yohannes, 2010).

Numerous studies, independent of colonial administrations, including the Phelps-Stokes Commissions of the 1920s (Jones, 1922) and *The Report on the Use of Vernacular Languages in Education* (UNESCO, 1953) advocated the use of African languages in primary education. However, for more than a century the imprint of colonization has been so significant that systems that are geared toward a single European language (sub-Sahara) or Arabic (North Africa) have come to dominate education (e.g., Bamgbose, 2000). Late 19th- and early 20th-century colonial administration was either insensitive or antagonistic toward precolonial education. Instead, European educational templates were placed over earlier systems. While British administration displayed insensitivity, "Francophone" administration prohibited literature in scripts other than Latin or in languages other than French (Alidou, 2004). Thus, centuries of scholarly practices and literatures of West Africa were rendered invisible (see Skutnabb-Kangas, 2000). Monolingual education in French was provided only for a small minority of the elite in "Francophone" colonies (approximately half of sub-Saharan Africa). Similar policies were adopted in "Lusophone" and "Hispanophone" colonies. The British, however, allowed Christian missionary organizations to establish primary schools for small elites, using local languages to evangelize communities and for (early) primary education, but followed by English-medium education after four to six years. Prior to the Berlin Conference, indigenous and religious education in Africa and Europe reached similarly limited sectors of the broader society. While in Europe education was extended to the masses from the late 19th century, the colonial powers did not extend education to their "colonies" when they replaced African systems. It was from this point that the gap between literacy and education in Europe and Africa began to widen. Colonial education introduced mainly monolingual education in exogenous languages for limited numbers of students who would find employment in colonial administration (see Heugh, 2009).

Postcolonial Practices

Most countries reclaimed political, but not educational, independence from Europe in the late 1950s and 1960s. Neocolonial practices continued to privilege exogenous models, however, accompanied by a perception that modernity could be delivered only through international languages, and this has characterized most postindependent formal, state education. However, low academic achievement and large-scale attrition through primary school in the "international language of wider communication" (Wolff, 2006) is evident in every country except possibly Zimbabwe prior to 1990. African languages, which include local, regional, and cross-border lingua francas, have been systematically removed from formal education before students have developed adequate proficiency in the international language.

For sound educational reasons, longer use of African languages in education has been encouraged by African scholars, for example through The Language Plan of Action for Africa accepted by the Organization of African Unity (OAU, 1986; Mateene, 1999) and the Asmara Declaration on African Languages and Literature (Asmara Declaration, 2000), and, more recently, via the Academy of African Languages (ACALAN). In some countries,

notably Tanzania, Malawi, and, for a short period, Somalia, a single African language (Kiswahili, Chichewa, and Somali) has been advanced as the dominant language of (early) primary education, followed by a transition to English medium. While this demonstrates the efficacy of dominant African languages in education, it has also disadvantaged other smaller language communities, particularly in Tanzania and Malawi. The prioritization of Arabic in North African countries has similarly resulted in the educational marginalization of many indigenous communities from Morocco to the Sudan (Kabel, 2010).

There have been several attempts to reprioritize African languages in nonformal, bi/multilingual literacy programs in West African countries, for example in Cameroon (Tadadjeu & Chiatoh, 2005), Niger (Alidou et al., 2006), and Burkina Faso (Ilboudo & Nikièma, 2010). The Six Year Primary Project in Nigeria demonstrated successful Yoruba and English bilingual education (Bamgbose, 2000), but the findings were not taken up through the system. In Mali, the use of African languages alongside French was supported by the Minister of Education in the late 1980s with the introduction of experimental bilingual primary education, *pédagogie convergente*, involving home language and French. This has been expanded to include the use of 11 Malian languages in over 2,000 schools (Traoré, 2001).

Multilingual education was mainstreamed across systems in a few cases during the fifth phase: in South Africa and Namibia between 1955 and 1975; and in Guinea Conakry between 1968 and 1984. In each of these, multilingual education was associated with unacceptable divisive political agendas and rejected through civil rebellion (Heugh, 1999; White Oyler, 2001; Alidou et al., 2006). In Southern Africa, early missionary development of orthographies and primary school education in African languages, although discontinued in Zambia, Zimbabwe, Botswana, and Swaziland, was pursued in South Africa and Namibia (under South African administration from 1918 to 1990). The multilingual education system included bilingual education in Afrikaans and English for speakers of these languages, and a trilingual system for speakers of African languages (the mother tongue, Afrikaans, and English). Seven South African and five Namibian languages, in addition to Afrikaans and English, were developed for use as languages of instruction for eight years of primary school. We now know from cognitive neuroscience and psycholinguistics (see Abadzi, 2006) that this system offered optimal opportunities for students to develop high levels of bi/trilingualism and high levels of academic achievement. However, the system was understood to be integral to separate and unequal development. For this reason, despite significant increases in the educational achievement of African students in secondary school exit examinations from 1955 (43.5% pass rate) to 1976 (83.5% pass rate), it was rejected by African students and parents, along with the requirement to study some subjects in Afrikaans, in 1976 (Heugh, 1999, p. 302).

The last hundred years of education have been unsuccessful for most students. Those who have succeeded have either been a socioeconomically privileged minority of students in monolingual (French, English, or Portuguese) programs or those from a wider socioeconomic stratum educated in the comparatively few bi/multilingual education programs. Enrolment in secondary education remains below 50% across the continent, with most primary school children exiting prior to the end of primary school (Bamgbose, 2000).

Recent Developments and Research Findings

UNESCO's concerns for universal primary education, literacy, and good-quality education have been embraced by most countries since the 1990 conference in Jomtien, along with a renewed interest in the educational advantages of African languages in education (e.g., Alidou et al., 2006). Significant political change in several countries coincided with attempted

transformation of education after 1990, particularly in Eritrea, Ethiopia, and South Africa. New education policy has included an explicit focus on multilingual education, but with differing degrees of implementation in each of these contexts. The approaches in Ethiopia and South Africa over the last 15 years are compared below because they offer valuable lessons about effective and ineffective system-wide implementation, costs, and risks.

In South Africa, despite constitutional and policy commitment to additive bi/multilingual education, the practice has reverted to early-exit transitional bilingual education along with an expensive but unsuccessful attempt to implement constructivist, outcomes-based curriculum between 1997 and 2009 (e.g., Heugh, 2009). South African education authorities argue that multilingual education is too costly to implement and that parents prefer English rather than mother-tongue or bilingual education. Neither argument stands up to scrutiny. The additive bi/multilingual policy offers high-level proficiency in two languages, not one or the other. The National Sociolinguistic Survey conducted by the Pan South African Language Board in 2000 shows that 88% of adults over the age of 15 indicate a preference for good provision of mother tongue and English, that is, bilingual education. More than one-third (37%) indicate a preference for mother-tongue education only; and only 12% of people wish for English-only education. Since 9% of people were home language speakers of English in 2000, this suggests that only an additional 3% of people with languages other than English advocated English-only education (PANSALB, 2000, pp. 118–21). The argument over the cost of linguistically diverse systems lacks substance since multilingual education provided for African children under apartheid was resourced with a fraction of the expenditure directed toward bilingual education for English- and Afrikaans-speaking children (Heugh, 2002; Alidou et al., 2006), and this is similarly evident in contemporary Ethiopia (below) (see also Grin, 2005).

System-wide assessment at provincial and national levels in South Africa showed a steady decline in academic achievement from 1976, when eight years of mother-tongue-medium (MTM) education were reduced to four. Despite considerable investment in new policy, curriculum, and teaching materials after 1994, the switch to English medium occurs even earlier (before or by third grade). Student (under)achievement has continued in a negative direction, with fewer students achieving literacy, and low levels of secondary school exit achievement (see below).

The Ethiopian example is different. Education policy in 1994 established a principle of bi/trilingual education for all students. This includes eight years of MTM education, plus the learning of English as a subject from the first year of school, plus Amharic as a second language for the 73% of school pupils from other language communities. Although this has not been implemented evenly across the country, the 11 regional education bureaus have been systematic and it is possible through three sets of systemic assessment (in 2000, 2004, and 2008) to track correlations between the different iterations of multilingual policy implementation and student achievement. The data have relevance for other linguistically diverse educational contexts where authorities have baulked at implementing multilingual systems.

Earlier African studies have shown that under optimal conditions, such as in the well-resourced Six Year Primary Project for Yoruba-speaking children in Nigeria, six years of MTM are sufficient for students to make a successful transition to English-medium education in the seventh year (e.g., Bamgbose, 2000). In less favorable conditions, such as the poorly funded apartheid system of mother-tongue education for African children, eight years of MTM resulted in the highest level of student achievement of African students to date.

The implementation of MTM across Ethiopia, in different iterations (for four, six, or eight years) depending upon the region, accompanied by system-wide assessment, offers an opportunity to evaluate the efficacy of contemporary MTM-bi/trilingual education,

horizontally across a country, and longitudinally. Briefly, the Ethiopian data show a correlation between the number of years of MTM plus Amharic as a second language, plus English as a foreign language (FL). Students with the greatest number of years (eight) of MTM in the trilingual school system achieve the highest scores across the curriculum. Those with the fewest years of MTM (zero) achieve the lowest scores. There is a clear incline of achievement with increasing numbers of years of MTM plus L2 plus English FL. There is also a correlation between students who achieve higher results in mathematics and science and those who have the highest number of years of MTM plus Amharic plus English (Heugh & Skutnabb-Kangas, 2010).

Comparisons between the most recent South African and Ethiopian approaches to multilingual education may be useful for resource-poor contexts. Multilingual education is often considered to be too expensive to implement, and this is a reason advanced by South African authorities for not proceeding with implementation in 11 languages, even though South Africa is comparatively wealthy. Ethiopia is one of the poorest countries in the world, yet a multilingual education system was implemented in at least 23 languages between 1994 and 2006, literally starting from scratch in many languages. Ethiopia succeeded by decentralizing language and materials development to the regional education authorities, and this encouraged local expertise in language development, textbook publishing, and community participation in education. Students are provided with low-cost textbooks and, although there are shortages, most pupils have at least one textbook to take home each day. In contrast, commercial publishing of school books in South Africa produces prohibitively expensive books, even though these are mostly in English rather than in African languages. Because of cost and fear of students damaging or losing them, they are seldom allowed access to these materials.

Multilingual education in Ethiopia has been successful at multiple levels: language (including orthographic) development, teacher education, curriculum, materials production, assessment, and student outcomes. However, it is currently at risk from the unintended consequences of reverse planning and the "washback effect" of a newer implicit policy which prioritizes the role of English. Even though Ethiopia was never colonized and therefore has no historical commitment to English, the country is susceptible to the pressures of globalization and the internationalization of English. The pressure toward English has escalated since 2002. This has resulted in a series of costly initiatives to improve the English-language skills of teachers and provide televised teaching in secondary school through English. The effect has been to erode confidence in Ethiopian languages as conduits of successful education, and to reduce the number of years of MTM in several regions. The most recent systemic assessment in 2008 shows that the increasing emphasis toward English is followed, as it was earlier in South Africa, by lower overall academic achievement of students, particularly in mathematics—and ironically also in English.

Conclusion

The history of education in Africa demonstrates that multilingual indigenous systems have produced successful educational outcomes and literary resources, whereas monolingually driven models introduced from Europe have been largely unsuccessful. This applies as much to the use of European languages as to the use of Arabic in North Africa, as well as to Kiswahili in Tanzania, and Amharic in the Horn of Africa before 1994. After 120 years of monolingual systems which emphasize a single dominant language, more than 50% of children of school-going age remain outside of secondary school, and those who are retained through primary school exhibit low levels of literacy and numeracy (e.g., Mothibeli, 2005; Reddy, 2006). Postcolonial examples of multilingual education—in South Africa from 1955

and in Ethiopia from 1994—demonstrate that it is possible to establish and mainstream multilingual education systems which include contemporary educational curricula with MTM for at least eight years. Such systems include the teaching of an international language during the MTM years so that students have the time to develop sufficient proficiency in this language to use it for secondary or further education. It is possible to resource these even where financial resources are scarce. As is also evident in many other examples of nonformal bi/multilingual initiatives, in Cameroon, Niger, Mali, and Burkina Faso, local expertise can be harnessed to develop learning materials in local languages within a relatively short period of time. For example, 12 languages were developed for educational use in South Africa and Namibia between 1955 and 1965; and 23 languages were similarly developed between 1990 and 2004 in Ethiopia. However, research from these last two contexts shows how the (globalized) pressure toward, and too early introduction of, English-medium education can undo successful policy within a short period of time. The impact of French, Portuguese, and Arabic elsewhere in Africa is no more positive. Education in each of these languages of wider international communication has exacerbated socioeconomic and sociopolitical gaps between small elites which have acquired high-level proficiency in these languages and the vast majority of people who have not.

SEE ALSO: Bilingual Education; Bilingual and Multilingual Education: Overview; Curriculum Development in Multilingual Schools; Educational Research in Language Minority Students; Language Planning and Multilingualism; Language Policy and Multilingualism; Mother-Tongue-Medium Education; Multiliteracies in Education; Teacher Education for Multilingual Education

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Multilingual Education in Australia

BRIGITTE LAMBERT

Simply put, multilingual education refers to the teaching or learning of more than one language. In Australia, the term is widely associated with teaching programs for languages other than English (LOTEs), although English is also an additional language for many residents.

Multilingualism and therefore some form of multilingual education have always been features of life in Australia. Before the arrival of British colonists in 1788 and the establishment of English as the national language, some 260 Aboriginal languages were spoken throughout the country, and intertribal marriage meant that children learnt the languages of both parents in order to communicate with extended kinship groups and neighboring clans (Dixon, 1980). Migrants from all over the world have since added to Australia's language diversity. An analysis of the most recent census in 2006 (Clyne, Hajek, & Kipp, 2008) indicates that more than 350 languages, including Aboriginal and sign languages, now make up the resource base for multilingual education. These languages are taught and learnt in various settings with the intention of serving national, community, or individual interests.

Opportunities for formal multilingual education exist Australia-wide in government and independent schools, vocational colleges and universities, in ethnic community schools and in commercial language courses. Between them, in 2006, these institutions catered to 133 languages, including 50 Aboriginal languages (RUMACCC, 2007), taking in approximately one-third of the total language resource pool, while the rest are maintained informally, in minority communities and family networks.

Within this context arise many issues that determine the status of multilingual education in Australia and the type of language-teaching programs that are provided.

Government Policy and Provision

The development of Australia's official language policies can be divided into historical eras that reflect changing tolerance and support levels for multilingual education. These phases have been described in terms of laissez-faire, restrictive, and welcoming attitudes (Clyne, 1991), and as British, Australian, multicultural, Asian, and economic-interest orientations (Lo Bianco, 2009). Thus, from the colonial years to early in the 19th century, languages other than English were part of the British-based education curriculum and there were no official restrictions on teaching the languages offered in schools that had been established by other immigrant groups. Opposition to multilingual education arose with World War I when English became the marker of British allegiance and led to the closure of community schools, notably those teaching German. Similarly, the assertion of Australian identity following World War II favored a policy of English only and prompted the postwar assimilation drive that discouraged community language maintenance and continued to suppress indigenous languages. Yet Australia's cultural and linguistic diversity remained a reality and eventually fostered a more open mentality that in the 1970s introduced translation services and brought multilingualism to radio and television.

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In 1987, the multicultural orientation produced the National Language Policy (NLP), when "for the first time in Australian history, languages other than English became the object of positive and direct attention" (Lo Bianco, 2009, p. 16). This milestone development was also a first in an English-speaking country. Nine languages were then made available on the national curriculum and in ethnic community schools—Arabic, Chinese, French, German, Modern Greek, Indonesian, Italian, Japanese, and Spanish—and programs for sign and Aboriginal languages were also introduced.

The NLP has since been superseded by other strategies. In 1992, the Australian Language and Literacy Policy (ALLP) added Aboriginal languages, Russian, Thai, and Vietnamese to the list of priority languages. The education departments in each state could then choose eight for their school curriculum. Not long after, in 1994, the National Asian Languages and Studies in Australian Schools (NALSAS) plan promoted Japanese, Mandarin, Korean, and Indonesian in the wake of establishing trade relations with Asia. This focus on Asian languages and the economic rationale for language learning have influenced LOTE planning into the 21st century.

The responsibility for multilingual education in schools falls to state and territorial authorities. LOTEs are listed as a learning strand in the curricula of the education departments in each area, but, as yet, a mandate for set teaching hours exists only in New South Wales. Since LOTE provision proceeds on local recommendations, the programs vary considerably (Lo Bianco, 2009). For example, in Victoria, the present requirement is that students receive LOTE instruction from the preparatory year to Year 10, and in Western Australia, from Years 3 to 10. Although the recommended teaching time is 150 minutes per week, more commonly, LOTE classes run for about one hour, and sometimes less. The issue of program quality is linked to what is envisaged in terms of language-learning outcomes for the students, such as fostering general language awareness or providing knowledge about the look, sound, and grammar of another language that might also have some practical application.

Bilingual or immersion teaching aimed at achieving in-depth understanding and fluency in the target language gives students the opportunity to learn some school subjects in and through both English and another language. Such immersion or content-based teaching takes place in two or more of the compulsory learning domains of Science, Mathematics, and the Arts and Humanities, and students receive a minimum of 7.5 class-time hours per week (DEECD, 2007). Student exchanges to the countries in which the LOTEs are spoken also offer immersion opportunities, but this option is not readily available for all Australian students. Full immersion programs in which all subjects are taught in the LOTE are a very recent development and tend to be parent group initiatives, like the Deutsche Schule in Melbourne.

A small number of bilingual programs are available in government schools for Auslan, European, Asian, and Aboriginal languages. These are located in Victoria, Australian Capital Territory, Queensland, New South Wales, and the Northern Territory. There have been signs that this might be a growing trend, with New South Wales opening four programs in 2010. However, the outlook in the Northern Territory, where bilingual schooling is particularly important to Aboriginal communities, is less than encouraging when existing programs are undermined by the government's repeated attempts to make English the medium of instruction for the first four hours of each day (Simpson, Caffery, & McConvell, 2009).

Complementary language schools funded by the Education Departments in Victoria, New South Wales, South Australia, and the Northern Territory also offer secondary programs for about 40 languages not found in mainstream schools, including a program for distance education. About 70 languages are supported in ethnic schools throughout Australia on a part-time basis and since their aim is to maintain the culture and language

of minority groups, teaching practices from the country of origin may be used (Clyne, 2005). Consequently, the languages taught there might be perceived as belonging to the ethnic communities, that is, Greek schools for Greeks only, yet ethnic schools do have the potential to include students from all backgrounds. An innovation that has particularly served the provision of Italian is the "insertion class," courtesy of community organizations who hire teachers to go to schools and teach the language where it fits into the timetable (Lo Bianco, 2009, p. 40).

Australian universities provide another opportunity for language learning. However, it is also a question of which languages are available and where. The number of languages on offer in 2007 was 31, covering a range from 1 to 12 languages at individual institutions (Nettlebeck et al., 2007). Most enrolments were in beginners' courses although some students would have been able to continue with their school LOTE.

Besides deliberations about which languages to include on the educational curricula, an important consideration for government language planners is how to deliver quality programs that will lead to positive outcomes for the students. Various reports on this topic (e.g., Kleinhenz, Wilkinson, Gearon, Fernandez, & Ingvarson, 2007) point to the issues of qualified teaching staff and curriculum design, particularly in the primary school context. While dedicated teachers tend to produce good results despite adverse conditions, negative attitudes toward LOTEs and language teachers continue to detract from any incentives to enter the profession. Added to this is the belief still held by many school principals that allocating class time for language teaching interferes with the other learning content, which is considered more important. This is where bilingual programs that teach specific subjects in the LOTE offer a solution. Secondary schools and universities share the problems of resources, workload, and morale, but in these sectors the continuation of LOTE programs is also vulnerable to the motivation of students when LOTE is no longer compulsory and enrolment is voluntary. As the demand for specific languages waxes and wanes, so does the support.

Moving into the 21st century, educators have been concerned that languages in Australia are in a state of crisis and called for a rescue plan (Go8, 2007). Here attitude and motivation are important factors in developing implementation strategies. In this light, national language planners might look beyond the perceived trade advantages of language learning to the educational, cultural, and intellectual benefits (Lo Bianco, 2009, p. 64). A review of the situation has since resulted in the drafting of a new national languages curriculum that will hopefully lead to improvements (ACARA, 2011).

Multilingual Education in the Family

One aspect of multilingual education in Australia that has received scant attention in the research field is language planning in the private sphere. For many decades, the role of parents as language teachers has been indirectly addressed in investigations of the linguistic development of the bilingual child (e.g., Ronjat, 1913; Döpke, 1992). The evidence shows that the method and quality of the parents' language input has a significant effect on the bilingual skills attained by the child. This research has filtered to the guides on raising bilingual children, which advocate that such a family undertaking requires an action plan (Baker, 1995). Indeed, before parents adapt to the role of teachers, they are language planners (Lambert, 2008).

Family language planning refers to the decisions that mothers and fathers—and sometimes grandparents—make in regard to language maintenance and language learning for their children. An assumption may be that such language questions arise only for immigrants in relation to English, but they concern families from all backgrounds, including

parents who don't share a given language. Family language planning can also involve a parent's "adopted" language, one that was acquired in the education system or by living outside Australia later in life (Saunders, 1988). Even monolingual parents who enroll their children in preschool language programs can technically qualify as language planners.

Not every parent who is capable of passing on additional languages will do so. Often they are proficient in English and choose this language for their children. Sometimes immigrant parents who need to learn English also adopt a negative stance and plan to phase out use of the minority language in the home as soon as practicable. Such decisions also constitute a language plan.

Family language planning can be divided into three phases:

1. The initial decision: "for" or "against" committing to the language transmission task.
2. Pre-planning: research and consultation about the language transmission task and assessment of the parents' expectations.
3. Implementation planning: assessment and evaluation of resources, materials, and methods to maximize the chances of successful outcomes.

While parents who commit to passing on a language generally engage in some form of planning, the extent to which they do so often depends on the availability of and access to information in the wider community. Thus the pre- and implementation planning activities may vary from a brief conversation between the parents or with friends, to repeated consultations with bilingualism professionals.

The most basic necessity is at least one parent who is fluent in the targeted transmission language. From this starting point, and depending on whether both parents share that language, either the "one person, one language" method will be used (Döpke, 1992), or both parties can join in the language transmission task. Additional support may be provided by family and friends who also use the transmission language—at bilingual playgroups, through literacy development at home, or in community programs and language classes at school—and by immersion visits to the country in which the transmission language is spoken. Not all parents will avail themselves of these resources, whether through choice or lack of accessibility, and their language transmission methods will vary accordingly.

A crucial element in the actions of family language planners is motivation. Such affective issues are first revealed at the point of the initial decision. Clearly, there are demotivational influences at work for parents who don't want to pass on their language. Sometimes their life experiences and social circumstances produce negative language attitudes, insecurities about conflict with monolingual partners, and an unwillingness to change existing language-use habits.

When parents agree on a language transmission plan, they do so with confidence that their children will achieve a certain level of bilingual skills. Their decisions are underpinned by a variety of reasons: from the wish to secure social and material advantages for their children, to maintaining communication in the wider family network, to serving their own needs. These parental "wants" can be translated as child-focused, mutually oriented, and parent-centered motives. Parents must also foresee some personal pleasure or satisfaction from the language transmission task otherwise they will not bother to begin.

Children who grow up in a multilingual household from birth were not, of course, involved in their parents' initial decision, but their attitudes become highly relevant once they realize there is a choice about which language to use. School-aged children in newly arrived migrant families might make more immediate language decisions that conflict with the plans of their parents.

The parents' actions at any stage of language transmission undertaking will be a combination of such factors as attitudes toward language maintenance, language proficiency

issues, socioeconomic background, level of education, personality, and social climate. These will be reflected in the type and effectiveness of the language transmission strategies that are adopted. For instance, a default approach arises when the parents' lack of English requires ongoing use of the minority language for family communication. This situation may be viewed negatively, but in effect it represents an immersion opportunity that can produce bilingual children and saves the parents from the embarrassment of modeling a "bad" variety of English. The laissez-faire strategy encourages rather than forces children to speak the transmission language when interacting with their parents (Porsche, 1983). Although this method has some merit because at the very least it leads to passive bilingual skills in the children, it tends to promote use of English. The issue here is how to motivate children to respond in kind to their parents. Some parents invert this method by permitting use of English at home in order for they themselves to learn it because they have little opportunity to do so elsewhere. The opportunistic approach is characterized by irregular input from parents, grandparents, and other family members. In such cases, parents may have been child migrants who still speak or have an interest in their first language but don't feel confident enough to use it with their children. It is not expected that this method will lead to bilingualism, but parents hope that the children still benefit in terms of language awareness and may be motivated to take up learning the language at school. In contrast, parents who commit themselves to a strategic language input plan want their children to achieve oral fluency and literacy skills in the transmission language. Usually this is because they themselves have had positive experiences with language learning and been able to capitalize on their bilingual skills in travel, study, and the workplace, and want to present their children with the same opportunities.

Parents with high expectations are more likely to plan ahead and seek advice about methods to increase the chances of successful language outcomes. Here, staying motivated becomes paramount, particularly when children don't respond as hoped. If parents are dissatisfied with their children's progress, they will need to revisit the planning steps and make any necessary adjustment to their strategy and expectations, with reference to the children's needs and wishes. Successful language outcomes also hinge on the quality of the parent–child and teacher–pupil relationships.

Family-based language teaching requires planning and application of an appropriate method. However, to be worthwhile, this undertaking should evolve as an enjoyable and rewarding experience for all family members. It is important for the wider community to be well informed about the process and challenges of raising bilingual children, so that parents who chose this language-focused lifestyle do not need to defend their decisions.

Parents in Australia now have better access to resources to help them with their language decisions then ever before. Attendances at university-run information seminars have shown marked increases; each year, there are new generations of parents and carers who seek reassurance about their language transmission plan. Parent initiatives such as bilingualism workshops and bilingual family newsletters also provide advice and moral support.

Family language planning has long contributed to Australia's multilingual profile, but has not received due recognition as an alternative domain for languages education. Today the efforts of parents are becoming more visible because their initiatives increasingly extend beyond the home to benefit the wider community as well. This is evident in bilingual playgroups, Saturday literacy programs, and language immersion schools that are set up alongside the language programs offered in the national education system. In part, this development has been prompted by dissatisfaction with the quality of languages education offered in government schools.

Family language planners support languages not found on the national curriculum. There are valuable insights to be gained from their experiences, which mirror those of "top-down" language planners. Perhaps the voices of parents should also be heard alongside those of

the language educators, community leaders, and other parties with specific policy interests who have hitherto been prominent in shaping the character of multilingual education in Australia.

SEE ALSO: Bilingual and Multilingual Education: Overview; Clyne, Michael; Early Bilingualism; Endangered Languages in Australia; Family Discourse; Family Literacy; Mother-Tongue-Medium Education

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Multilingual Education in China

ANWEI FENG

China has been experiencing a linguistic situation that is far more complex than it used to be a decade ago with regard to both language use and language education for both the majority Han and the 55 officially recognized indigenous minority groups. This complexity is primarily due to China's reform and modernization policies which have in the past three decades dominated the political, social, economic, and educational discourse and which have accelerated the spread of English throughout the country. With the English language being increasingly perceived as the key to modernization by policy makers and thus to life opportunities for individuals, policy documents have frequently emphasized the importance of the language, and schools and universities have robustly promoted it. As a result English, which used to be learned only as a relatively minor subject by students in secondary and tertiary institutions, has been enthusiastically pursued as a key linguistic capital by stakeholders at all levels of education and the general public. Bilingualism and bilingual education traditionally associated only with indigenous minority groups have become everyday vocabulary for the majority Han Chinese since the turn of the century. For the 55 minority groups, on the other hand, there is an increasing literature on trilingualism or multilingualism (Feng, 2007).

Historical Overview

Linguistically, for six decades under the communist government, indigenous minority groups have experienced policy changes with regard to minority language development, language use, and language education swinging between linguistic assimilation and genuine promotion of bilingualism in Mandarin Chinese and minority home languages (Dai & Dong, 1997; Zhou, 2003, 2004). The six decades are often broadly described as comprising three distinct periods. The first period from 1949 to 1957 is often called the initial developmental period when concerted efforts were made by the government and scholars/researchers to develop and promote minority languages and bilingualism. The period from 1958 to 1976, however, is usually seen as a setback era when ultra-left assimilation ideology dominated the policies and approaches in minority education. The period since 1977 is said to be the recovering or "maturing" period when bilingualism and bilingual education have been effectively promoted in the ethnic minority regions. Within the general three-distinct-period framework, many researchers and authors make more detailed analyses by subdividing them from the perspective of sociopolitical dynamics for each minority region in each period and reveal issues with regard to ideology, policy, and practice that are far more complex than the broad representation of the three periods (Zhou, 2003, 2004).

Despite political, economic, and sociocultural changes, the sociolinguistic profile of the Chinese Han majority has remained relatively stable, as ever, during the communist rule for the simple reason that Standard or Mandarin Chinese based on the Beijing dialect is the sole official language of China and its varieties are spoken by the absolute majority of the population in all domains. During the first four decades or so (with the exception of only the first few years in the Cultural Revolution from 1966 to 1976), secondary and

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tertiary students were required to study a foreign language as a minor school subject—roughly Russian in the first decade and English afterwards. There is little doubt that the vast majority of Han Chinese were monolingual—that is, people who speak and write only the high variety of Chinese, called Standard or Mandarin Chinese, or people who speak only a low variety of Chinese, such as the local dialect Cantonese—with only a small percentage of bilingual exceptions, for example, diplomats or those Han Chinese who lived in a region or community dominated by an ethnic minority group. The term bilingualism, therefore, rarely appeared in the literature, policy documents, or school curricula for language education for the majority Han Chinese.

In the past two decades, however, this situation has drastically changed (Feng, 2007; Hu, 2008). Bilingualism in English and Chinese is widely seen as the key to modernization by policy makers and Chinese society as a whole. Catalytic factors, such as China's firm belief in its open-door policy, membership of the WTO (World Trade Organization) obtained in 2001, and the successful bidding and hosting of the 2008 Olympic Games have all fueled the enthusiasm to promote English at all levels and have helped to reshape China's education system. As English is widely perceived as the key to modernity and to life opportunities for individuals, it has become one of the most important school subjects. In major cities such as Shanghai and Xi'an, it is also often used as a medium of instruction or in immersion programmes in schools and universities (Knell et al., 2007; Hu, 2008). Many strong forms of bilingual education, as defined in Baker (2006), have become increasingly popular.

The impact of English–Chinese bilingual education on indigenous minority education is immeasurable. Inevitably, traditional bilingual models aiming to produce minority home language and Chinese bilinguals have become inadequate. Official policies at the state level at least have clearly included minority groups in the English promotion campaign (Feng & Sunuodula, 2009). A number of scholars such as Beckett and MacPherson (2005) have predicted that the national drive for English-language education is inevitably empowering the already powerful majority Han group, leaving indigenous minority peoples even further behind. Inside China, discussions on trilingualism to develop competence in minority home language, Chinese, and English have been on the rise, but serious challenges are posed to policy makers, researchers, and teachers on how the three languages can be appropriately dealt with in schools.

English–Chinese Bilingualism

It is hardly surprising that the literature on teaching and learning English as a Foreign Language (EFL) is huge in China as it has had a long history of English-language education (Adamson, 2004). The notion of English–Chinese bilingualism, however, has made its appearance only recently. Despite its short history, there is extraordinary diversity in terms of models used for bilingual education which are affected by regional differences in economic and sociopolitical power and people's perceptions of the English language. One approach to studying such diversity is to look, first of all, at benchmarks of English-language proficiency policy documents set out for different levels of schooling. With an institution favoring top-down approaches in China, policy documents would without doubt provide a good starting point for analyzing the dynamics between national and local policy agendas and the diversity of practices.

In 2001, three policy documents were disseminated by China's Ministry of Education to promote English-language education throughout the country. The first two specify the New English Curriculum Standards (NECS) (see Figure 1) for primary and secondary schools. The first document (Ministry of Education, 2001a) was issued to primary schools,

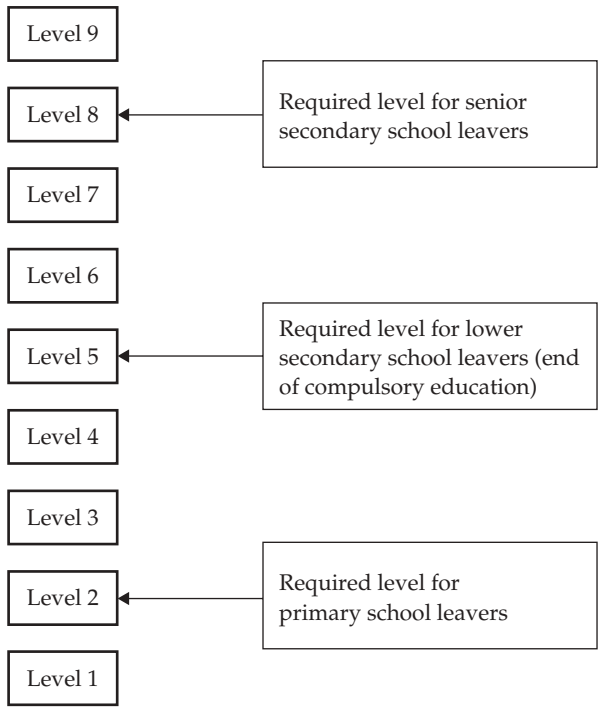

Figure 1 English proficiency levels from primary up to secondary school graduation (Ministry of Education, 2001a, 2001b)

stipulating that English provision was to start from Year 3 in all primary schools by the fall of 2002. On the premise that primary school leavers achieve level 2 in the language, the second (Ministry of Education, 2001b) set up specific English standards for secondary schools, with level 5 being for junior secondary school leavers and level 8 for senior secondary school leavers. Attached to the second as appendixes are specific requirements for pronunciation, vocabulary, phrases, grammar, functional and notional inventories, and even a long list of English expressions to be used in classrooms. Both documents are claimed to be applicable to all schools nationwide. Apparent in the documents is the intention to standardize teaching philosophy and approaches, even though mention is made of the diversity of pupils' backgrounds, resources, and other contextual factors.

These two NECS policy documents prescribe a seemingly elastic but linear model envisaged by policy makers. In terms of exposure to English, a typical pupil starts English learning at Primary 3, has two class hours per week in Primary 3 and Primary 4, and four class hours per week for the rest of his or her primary and secondary education. The pupil has to meet the required level to proceed to the next stage. Flexibility appears only when the pupil enters senior secondary school. However, for tertiary education, level 8 is indicated in the document as a desired level, with level 7 specified as the minimum level.

The NECS documents detailing the rationale, learning outcomes, pedagogy, and inventories of lexical and grammatical items for teaching and learning have not only provided the official benchmark for primary and secondary schools, but have also become the basis for revising the traditional National College English Syllabus which is now called College English Curriculum Requirements (Ministry of Education, 2007) for students at tertiary level. College English Education has been a huge part of tertiary education since 1985 when the first College English Syllabus was promulgated in China. There is a huge literature

about College English teaching and learning both in Chinese and English. As it is essentially a traditional EFL programme, it is not focused on here.

The third document issued in 2001 makes a short but significant "suggestion" for a new approach to English-language education at the tertiary level. Under its general title, *Guidelines for Improving the Quality of Undergraduate Teaching* (Ministry of Education, 2001c), it stipulates that within three years after the issuing of the document 5–10% of the tertiary courses for undergraduate students be conducted in English, or in another foreign language. The paragraph containing this stipulation is short but momentous for it was the first official endorsement of this strong form of bilingual education, that is, using both Chinese and English as the media of instruction. The endorsement was partly due to the long dissatisfaction of the outcome of traditional EFL teaching in the country and partly due to the increasing awareness of the research published internationally that gives evidence of the effectiveness of the content language integrated learning (CLIL) approach and immersion programmes. It was also due to the fact that many schools and universities in metropolitan areas and coastal regions had already been practicing it (Feng, 2005). The past decade has clearly seen a paradigm shift in English-language education in China from traditional EFL teaching and learning to English–Chinese bilingualism.

It is, however, worth noting that some critics argue that the use of a foreign language as a medium of instruction in fact contradicts China's language law (*Decree 37*, 2000) which ordains that all educational institutions in China, with the exception of minority groups, must use Mandarin Chinese as the primary teaching language. This explains why critics have not only been challenging the current drive for English-language education from linguistic and cultural perspectives (Hu, 2008) but also questioning its legal status. According to Chen (2002), linguists, lawyers, and policy makers are aware of the "unlawful" situation bilingual education is in, but they argue that bilingual education is a recent phenomenon and regulations or laws governing it will follow soon.

Even though China is a country that has been traditionally characterized by centralized, top-down institutions, regional variations exist in terms of state policy implementation. The process of policy formulation at the local level in response to state policies can be rather complex and the real-world practices differ tremendously (Cortazzi & Jin, 1996). It is a commonplace observation that in most ordinary schools in cities and towns where the majority Han children attend, English starts from Primary 1, instead of Primary 3, and the allocated time for this school subject often far exceeds the class hours specified in the 2001 policy documents. Furthermore, commonly seen in schools in metropolitan areas such as Guangzhou, Shanghai, and Xi'an, and coastal cities such as Shenzhen, are vigorous experiments and applications of strong forms of bilingual education such as immersion programmes (Knell et al., 2007; Hu, 2008). Private English centers/schools and bilingual kindergartens and schools have mushroomed in economic powerhouses such as the Zhujiang Delta Region and Shanghai.

It is important to note that the popularity of learning English is not confined within the school walls. In society more generally, particularly in the economically developed east, English has quickly become a required skill for desired jobs, including civil service jobs and career advancement (Feng, 2005). This has pushed societal bilingualism in English and Chinese to an unprecedented level. In major cities such as Shanghai, parents use every means to get their children into schools with reputable English provision. Furthermore, they are constantly vigilant in finding extracurricular classes and activities at whatever cost to improve their children's English. As Zou and Zhang (2011) observe, parents of various socioeconomic statuses have all invested heavily in their children's English. In a society with quality English-language schools and other learning opportunities highly commercialized, access to them is no doubt in the hands of the rich. This has increased social divisiveness between the rich and the poor even in the same geographical location.

In contrast to urban cities and towns where English is robustly promoted, in underdeveloped rural areas it is hard to provide even the most basic foreign-language education. Many studies give evidence of the urban–rural divide (Wu, 2008). Lack of resources, lack of textbooks with appropriate content for rural children, lack of pupils' motivation to study foreign languages, and lack of parents' support are common issues reported with regard to English teaching and learning in rural schools. The most acute and telling problem is the shortage of qualified English teachers. It can be argued that the urban–rural divide which is caused by the gap between urban and rural GDP per capita incomes has been widened rather than narrowed in the last few decades (Wang, 2006). The historically intractable and ever-increasing economic and social gap makes the road toward equality extremely rocky in education in general and foreign language education in particular in rural areas.

Bi-/Tri-/Multilingualism for the Minority

Language education for minority groups in any country is inevitably more complex than that for the majority group. China's minority groups numbering more than 100,000,000 are scattered in five autonomous regions and other provinces that cover more than half of the total area of the country and border on a dozen or so neighboring countries. In the last three decades, policies and official publications have placed a high premium on the notion of "*Min-Han Jiantong*," literally mastery of both the home language and standard Chinese, as the ultimate goal of bilingual education for minority groups. For example, "*Zhuang-Han Jiantong*" (mastery of Zhuan language and standard Chinese) is stipulated in the regional policy documents as the aim for Zhuang, the largest minority group in Guangxi Zhuang Autonomous Region in China; *Zang-Han Jiantong* for Tibetans and *Yi-Han Jiantong* for the Yi nationality in southern Sichuang and Yunnan (Dai & Dong, 1997). In regions where *Min-Han Jiantong* is truly promoted, that is, when ethnic minority languages are respected, taught, and used as a medium of instruction in schools, it is common to see in published reports positive outcomes such as reduced illiteracy, increased confidence in maintaining minority languages, cultures, and identity, and improved competence in Mandarin Chinese (Zhou, 2001, 2003).

Huge investments by the government and other organizations in recent years have led to effective programs and models that aim to develop *Min-Han Jiantong* bilinguals (Zhou, 2004). However, not surprisingly, there are many issues which have historically proved difficult to overcome. One main difficulty is usually reported to be lack of both human and material resources for bilingual education because of the fact that most minority dominated regions are rural, remote, desert, mountainous, and economically underdeveloped. To deal with this issue requires genuine efforts by all stakeholders over generations, but these efforts have not been forthcoming, even with official orders such as the *Constitution* (1982) and other state documents that guarantee language and cultural rights for minority groups. This is due to the fact that the issues are not purely geographical and economic. Despite the initial position of "*Min*"—the minority language—in *Min-Han Jiantong*, for example, research reports and analyses of official documents, perception research, and regional practices give sufficient evidence that "Chinese first," "useless minority language," "great Han mentality," and "assimilation" often dominate the official, usually at local level, and academic discourses of language provision for minority groups (Lin, 1997; Zhou, 2004). The result of the assimilation ideology is often the concerted and sometimes forceful promotion of Mandarin Chinese in schools instead of *Min-Han Jiantong* bilingualism.

With the advent of country-wide promotion of English at the turn of the century, the situation for minority bilingual education has become even more complicated. The past

few years have witnessed a growing literature on "*Sanyu Jiantong*" (mastery of three languages or trilingualism: the minority home language, Mandarin Chinese, and English) and "*Sanyu Jiaoyu*" (trilingual education). For some groups such as the Yao nationality in Guangxi and the Ewenki in Inner Mongolia, they learn and speak three languages on a daily basis, their own minority language, the dominant minority language used in the region, and Chinese. When the pupils face English, "*Duoyu Jiantong*" (multilingualism) has logically become the educational aim. "*Duoyu Jiaoyu*" (multilingual education) in the Yanbian Korean Autonomous Prefecture in Jilin, in fact, has drawn much attention in recent years because of reported success in provision of four languages in some schools there—Korean, Chinese, Japanese, and English—which are all strategically important for the region (Zhang, 2008).

Divergence with regard to local policies and practice is most outstanding when it comes to English provision for minority groups. Each minority group or minority dominated region has its own unique strategies, or lack of them, and is worth examination case by case. Take the Liangshan Yi Autonomous Prefecture in southern Sichuan, for example. The Prefecture can be divided into three zones according to language use and models for bilingual education. In the capital city and major towns where Chinese is the dominant language for communication, Chinese is used as the medium of teaching and Yi as a school subject. In isolated and deep mountains, a reverse model is used, that is, Yi as the medium of instruction with Mandarin Chinese a school subject. Schools in mixed communities can adopt either of the two models. English provision was unavailable to most Yi pupils during the nine-year compulsory education. Only those who managed to enter senior secondary school were provided with English education. In a recent survey, however, Xiao (2003) found that in some schools for minority nationalities in cities students started to learn English when they were at the junior secondary level.

Publicly accessible documents and research suggest that, while many local authorities in minority dominated or minority and majority mixed regions and communities have responded to the 2001 policies, some have hardly reacted for geographical or political reasons (Adamson & Feng, 2009). The Yanbian Korean Autonomous Prefecture in Jilin mentioned above is a clear example of the former. In Yunnan Province where 25 minority groups are scattered in different, mostly mountainous regions, efforts have been made by the provincial government to provide English for minority pupils, although resources are very limited at the present stage (Hu, 2007). In these regions, ethnic minority students are made to follow the same system as their majority counterparts, despite the fact that discrepancies exist in terms of quality and quantity of English provision and the issue of maintaining linguistic and cultural identity has become even more acute.

In some regions, however, minority children are apparently kept out of the state system. Unlike their majority counterparts in the same region, according to Olan (2007), most minority students in Xinjiang were not offered English during the nine-year compulsory education. Most of Olan's research subjects—tertiary students—reported that they did not start learning English until they entered university. Sunuodula & Feng (2011) found that a "draft plan" issued by the Education Bureau of the Uyghur Autonomous Region in 1977 is apparently still in effect. The plan states explicitly that while majority Han children start foreign-language learning from Year 3 onward, "no foreign language courses are to be provided for schools for minority students."

Another issue is not caused by deviation of local policies from the state policies, but by default teaching resources and the examination systems based on historical formulations. This is the issue of *Zhongjieyu*, the language used to teach and learn English and to compile textbooks for minority pupils. Traditionally, this language has been mostly Chinese for the simple reason that most teachers of English are Chinese speakers and textbooks are compiled by Chinese writers and use Chinese as *Zhongjieyu*. So, minority students have

to depend on their second language rather than their mother tongue to learn the third language. The first language hardly plays a role in the learning process. With the growth of the trilingual education literature, this issue has gradually drawn attention. Research in recent years, though still rather limited, has shown that the use of the mother tongue as *Zhongjieyu* is more effective in helping minority pupils to acquire a third language (Xiao, 2003). However, Sunuodula and Feng (2011) point out that the use of the mother tongue in English learning is problematic because in high-stakes exams there are test items that require test takers to translate sentences from English to Chinese, or vice versa. Thus, discussions and research with regard to *Zhongjieyu* make little sense unless the exam system is reformed.

Summary

Since the turn of the 21st century, China has been experiencing rapid development on all fronts, including language education. Traditional foreign-language teaching and learning have undergone fundamental changes because of various forces of globalization, the unprecedented spread of English in the wider context and, internally, vigorous official policies to promote it. The paradigm shift from EFL to English–Chinese bilingualism has effectively transformed China's linguistic landscape particularly in economically developed areas and language provision in schools and tertiary institutions. The importance and usefulness of English, in reality or imagined, have made competence in the language a must-have for people who wish to climb up the socioeconomic ladder. Educational institutions at various levels respond actively to the official policies, some more so than others. Elite schools are often seen applying strong forms of English–Chinese bilingual education. In underdeveloped areas, however, schools also strive to respond to the policies in order not to lose out but struggle to provide even a minimal level of English education. Thus, for English–Chinese bilingual education for the majority Han group, how to address social divisiveness and the urban–rural divide caused by unequal access to the linguistic capital has become a more challenging issue than ever before.

Nationwide promotion of English has made the complex situation for minority groups even more intricate. Each minority group or minority dominated region has developed its own strategies, or lack of them, and is worth examination case by case. However, it has become apparent in the debates on language education for minority groups that provision of tri-/multilingual education seems to be the only way forward (Sunuodula & Feng, 2011). Putting the minority groups in a different system of English provision, as some suggest, or keeping them out of the system altogether and ignoring their home language would only deepen the majority and minority divide and lessen the chance for genuine equality in education and integration of China's 56 ethnic groups. Some good practices have been reported in recent years, but to provide real tri-/multilingual education to all minority groups, many issues remain to be addressed.

SEE ALSO: Bilingual Education; Minority Languages in Education; Multilingual Education and Language Awareness; Multilingualism and English; Varieties of English in Asia

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Multilingual Education in Europe

JEROEN DARQUENNES

Inspired by Garcia (2009, p. 9), the term "multilingual education" is used in this entry to refer to education using more than one language as a medium of instruction in whatever combination. Such a broad approach allows for the use of multilingual education as an umbrella term to cover the wide range of existing European language-in-education policies and practices on which this entry focuses. Rather than presenting a theoretical account of multilingual education, this entry intends to provide an outline of forms of multilingual education in present-day Europe. It further highlights some challenges facing multilingual education in Europe. To conclude, it draws attention to the growing importance of the European Commission and the Council of Europe as actors in the European field of multilingual education.

Multilingual Education in Europe: An Outline

The outline of multilingual education in Europe as presented here is structured on the basis of the sociological division of the population of European states as it is commonly used in literature dealing with societal multilingualism from the point of view of the sociology of language, that is a division between the majority population and the minority population. The minority population is itself subdivided into that part of the population belonging to an indigenous minority and that part of the population belonging to an immigrant minority.

Applied to multilingual education in Europe, the three population categories sketched above allow for a distinction between (a) multilingual education aiming primarily at the majority population, (b) multilingual education aiming primarily at an indigenous minority, and (c) multilingual education aiming primarily at the immigrant population within a state. To these three categories of multilingual education a fourth one is added. It pertains to multilingual education aiming primarily at an affluent international audience. This category allows coverage of those schools scattered across Europe that are mainly attended by children of diplomats, officials working for an international organization (EU, UNESCO, NATO, etc.), or expatriates working for multinational companies.

To keep the outline of multilingual education in Europe within limits the focus is solely on multilingual education in compulsory education. No distinction is made between types of authorities (public or private) responsible for education. No systematic attention is paid to the aims or to the existence of strong, weak, monoglossic, or heteroglossic forms of multilingual education (see Baker, 2006, and Garcia, 2009, for details on such distinctions). And most examples are drawn from countries belonging to the European Union because of a lack of systematic data on multilingual education in countries outside the EU.

Multilingual Education Primarily Aiming at the Majority Population

In the majority of European states multilingual education aiming at the majority population takes the form of a type of content and language integrated learning (CLIL) or, in French, *enseignement d'une matière intégrée à une langue étrangère* (EMILE). CLIL/EMILE in Europe shows the following tendencies:

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- Because of its status as a lingua franca, the preferred CLIL language all over Europe is English, followed by French and German. Other languages (Spanish, Italian, Russian, etc.) for the time being only play a marginal role as CLIL languages (see Eurydice, 2006, pp. 18–19 for an overview of the spread of CLIL languages).
- Multilingual education has especially become established at the level of (general more than vocational) secondary education. In France, for instance, the introduction of multilingual education has taken root at the level of secondary school in the form of a so-called SELO (*section de langues européennes ou de langues orientales*). In 2007, approximately 29.5% of the *collèges* (lower secondary schools), 39.5% of the *lycées* (upper secondary schools), and 10% of the vocational schools had a SELO. Typical for a SELO is that 14- to 15-year-olds learn either a European language (German, English, Spanish, Italian, Dutch, Portuguese, Russian) or an oriental language (Arabic, Chinese, or Japanese) with at least two extra hours per week at the level of lower secondary education. Multilingual education is gradually phased in toward the end of this period. In upper secondary (age 16–18) a minimum of one hour per week in a chosen subject is devoted to multilingual education (see Bertaux, 2008, and http://eduscol.education.fr).
- The implementation of multilingual education at the level of primary education is a fairly recent phenomenon that goes hand in hand with the increasing popularity of multilingual education at secondary level. In the Netherlands, for instance, multilingual education started with only one secondary school in 1989. In 2002 the number of secondary schools offering multilingual education amounted to slightly more than 30. In 2010 the number of secondary schools offering multilingual education rose to 133 out of a total of approximately 1,550 schools (see http://www.europeesplatform.nl/sf.mcgi?2629&cat=638). The growing success of multilingual education at secondary level has pushed the government to modify the formerly restrictive legal framework for the use of languages other than Dutch or Frisian (in the province of Fryslân) as a language of instruction.

Despite the increasing popularity of multilingual education, its share in foreign-language teaching still is considerably lower than that of traditional forms of foreign-language teaching (i.e., the teaching of a foreign language as a subject). In a study published by Eurydice, it is estimated that multilingual education is offered to between 3% and 30% of pupils at primary or secondary or both (Eurydice, 2006, p. 14; see also http://eacea.ec.europa.eu/education/eurydice/index_en.php for direct access to Eurydice's Eurybase, a database with information on education systems in 31 European countries). It also needs to be noted that in some countries there is a certain reluctance to introduce multilingual education. In Iceland, for instance, the monolingual character of the country prevents multilingual education from being high on the agenda. The same is true for Portugal where the introduction of multilingual education is limited to a number of pilot projects at primary-school level. In the Flemish Community of Belgium the implementation of multilingual education is mainly hampered by a concern for the impact of CLIL on the vitality and richness of Dutch as the majority language in that part of federal Belgium.

The situation in Belgium (Flemish Community), Portugal, Iceland, and countries like Cyprus and Denmark contrasts rather sharply with countries in which the entire school population is subject to multilingual education, for instance the Grand Duchy of Luxembourg and Malta. In Malta, the national minimum curriculum obliges all schools to adopt the policy of using two languages (Maltese and English) and to develop a linguistic strategy reflecting the particular linguistic needs of its pupils and linking English more to sciences and Maltese to subjects in the field of the humanities. At the end of their entire schooling experience all students should be able to use the two national languages in an effective, precise, and confident way (see www.curriculum.gov.mt). In the Grand Duchy, the system

involves the teaching of three languages. When children enter school at preschool level, they are first taught in Luxembourgish, the home language of the large majority of the Grand Duchy's indigenous population. At primary school they learn to read and write in German. French comes in as a major component of the curriculum by the third year and then gradually becomes the medium of instruction at secondary level. Notwithstanding some shortcomings of the trilingual Luxembourgish system vis-à-vis the immigrant population (see Weber, 2009), it functions as a source of inspiration to policy makers involved in language-in-education policy all over Europe. The Grand Duchy's model, for instance, inspired the Ladin minority, one of the indigenous minorities in Italy, to develop a system in which Ladin, German, and Italian serve as school languages. The Ladin part of Italy is one of the few parts of Europe where trilingual education is offered (see Cenoz & Gorter, 2005, for an overview).

Multilingual Education Primarily Aiming at an Indigenous-Language Minority

The indigenous-language minorities account for a considerable part of Europe's linguistic and cultural diversity. The number of indigenous minority languages is estimated at approximately 60 in the 27 member states of the EU and at approximately 150 in the whole of Europe. The indigenous minorities are characterized by differences concerning their size (next to the 6.5 million Catalans in Spain there are approximately 100 Livonians in Latvia), differences concerning the spread of the minority language (the Welsh use a unique minority language whereas Catalan is used in Catalonia and on the Balearic Islands as well as in Sardinia and France), and differences concerning social organization and power (the well-organized and largely autonomous German minority in South Tyrol contrasts sharply with the situation of the Aromanians in Greece). The forms of social organization and power strongly influence the way in which education for the minority is organized. As a consequence they also have a large impact on the way in which education in the minority language can help to halt or even reverse the process of societal language shift that—albeit to varying degrees—characterizes each of Europe's indigenous minorities.

Looking at the position of the minority language in compulsory education in indigenous minority settings one is confronted with situations in which the minority language is totally absent. Numerous situations exist in which the minority language is taught as a subject. And in other cases the minority language serves as the main language of instruction or as one of the languages of instruction in a form of multilingual education (see the online regional dossiers of the Mercator European Research Centre on Multilingualism and Language Learning for examples at www.mercator-research.eu; see also http://www.mercator-research.eu/publications for downloadable publications on issues related to minority-language education).

Focusing on multilingual education in indigenous minority settings, the following tendencies can be observed:

- In the majority of cases the minority language and the language of the surrounding majority are used as languages of instruction. Other languages are taught as a subject. That is the case, for instance, in Lithuanian–Russian schools in Lithuania (European Commission, 2004, p. 205).
- Multilingual education is mostly offered at the level of kindergarten and primary school and less at the level of secondary education. A case in point is that of the German minority in Hungary. In 1999/2000 a total number of 284 primary schools and only 4 secondary schools offered multilingual education in German and Hungarian (European Commission, 2004, pp. 119–20).

- Systems with a strong share of multilingual education at all levels of compulsory education are mainly to be found in the context of indigenous minorities with a strong political autonomy or large powers in the field of education. In the autonomous Valle d'Aosta region in Italy, for example, Italian–French bilingual education was introduced at kindergarten in 1983, at primary school in 1988 and at middle school (age 10–13) in 1994 (Garcia, 2009, p. 300). In the Basque Autonomous Country, language-schooling model B uses both Basque and Spanish as languages of instruction at primary and secondary level for approximately 50% of school time (Cenoz, 2009, p. 50).

It can further be noted that language-in-education policy makers and researchers active in the field of minority languages in the European context are often at the forefront of developing alternatives to existing forms of multilingual education. They are not only eager to experiment with forms of trilingual education (see recent developments in Fryslân where English is used next to Frisian and Dutch). They also try to adapt the didactics of CLIL to the actual multiple discursive practices of multilingual persons in language-minority surroundings. A good example is the development of a so-called *didactique intégrée* in Valle d'Aosta that intends to capitalize on the natural occurrence of multiple discursive practices in order to transmit linguistic skills (see Cavalli, 2005). And in the Basque Autonomous Country policy makers and researchers in recent years have increasingly focused on the adaptation of the Basque educational system to the increased presence of immigrants in Basque society (Cenoz, 2009, pp. 77–83).

Multilingual Education Primarily Aiming at Immigrant Minorities

As described by Extra (2009), there have always been speakers of immigrant minority languages in Europe. As community languages spoken on a wide scale, however, these languages have only emerged in the second half of the twentieth century. Since especially in the industrialized northern, southern and western European countries the number of immigrants is still growing, the school population is becoming ever more multicultural and multilingual. This phenomenon poses an increasing challenge to policy makers in the field of education.

Large contrasts exist in the way European countries adapt or re-adapt their education policies and especially their language-in-education policies to the increasingly multilingual and multicultural character of the school population. In general, a balance is sought between, on the one hand, an emphasis on learning (in) the language that is the majority language of the country or region in which the immigrants reside, and, on the other hand, the integration of immigrant minority languages in the curriculum. Since the 1970s, the integration of immigrant minority languages in the curriculum is no longer meant to prepare the immigrant children for a return to their (parents') home country. It is rather meant to help the immigrant pupils overcome language-related learning difficulties.

As to the integration of the immigrant language in the school curriculum it sometimes is the case that these languages are not considered in the mainstream curriculum at all. In the UK, for example, immigrant languages are not part of the national curriculum and are taught in so-called complementary education in out-of-school hours (see Extra, 2009, p. 191). In other cases immigrant languages are considered and various forms of multilingual education arise since immigrant pupils receive one part of the curriculum in the language of their host environment and another part in the immigrant language (see, for instance, the Turkish–German bilingual primary schools in Hamburg). Particularities of immigrant language education in Europe are discussed in detail in Extra (2009), Extra and Gorter (2009), and publications related to the Multilingual Cities Project funded by the

European Cultural Foundation (Extra & Yağmur, 2004). One example might, however, help to illustrate the added value of well-wrought models of multilingual education aiming at immigrant populations in Europe: the Foyer project in Brussels.

In Brussels, 10 primary Dutch-language schools that are part of the Foyer project offer multilingual education programs for immigrants residing in Brussels. Three schools offer programs oriented to Turkish immigrant children, three to Italian immigrant children, two to Moroccan immigrant children, one to Spanish immigrant children, and one to Aramean–Turkish immigrant children. The aim of the programs is to gradually integrate the immigrant children in the host-school environment while simultaneously preserving and reinforcing the children's mother tongue and cultural identity in kindergarten and during the first two years of primary school. The number of immigrant children is restricted to 30% of the school population. In kindergarten the immigrant children are taught 30% of the time separately in their first language and 70% of the time in Dutch together with Flemish children. In the first year of primary school they are taught 30% of the time separately in their first language, 25% of the time separately in Dutch as a second language, and 45% of the time in Dutch together with the Flemish children. From the third year of primary education onwards, the immigrant children are taught 90% of the time in Dutch in classes with Flemish children. They spend a few hours per week in their first language in separate classes and also start learning French for a few hours per week. The aim of the Foyer schools is to prepare immigrant children for Dutch-medium secondary education in Brussels (Baetens Beardsmore, 1996, pp. 466–7; Garcia, 2009, p. 231; and www.foyer.be).

The example of the Foyer project in Brussels shows how multilingual education for immigrants can help to reach objectives that are also at the center of multilingual education aiming at the affluent pupils attending European and international schools, that is raising pupils' confidence in their own cultural identity as the backbone for their development as world citizens.

Multilingual Education Primarily Aiming at an Affluent International Audience

Currently there are 14 European schools spread over 7 countries (Belgium, Germany, Italy, Luxembourg, the Netherlands, Spain, and the United Kingdom). They are attended by a total of approximately 22,500 pupils. In the European schools, most pupils at the level of primary education have their first language as a language of instruction. A first foreign language (English, German, or French) is introduced in the first year of primary education and used as a language of instruction toward the end of primary and increasingly so in secondary education. In some cases, a third or even a fourth language of instruction comes into play in secondary education, depending on the optional subjects that are chosen (see www.eursc.eu). Mainly attended by the children of European civil servants, the European schools are considered to be elitist. The same is true for the so-called international schools—schools mainly aiming at children from European and American employees working abroad. Many international schools offer multilingual education in the language of the host country and at least another widely spread European language. The German schools abroad (*deutsche Auslandsschulen*), of which 45 out of a total of 140 were located in Europe in 2011 (see www.auslandsschulwesen.de), are one example. The French also have a large network of international schools, some of which are bilingual (see www.aefe.fr). De Mejía (2002) and Carder (2007) provide more detailed information on international schools. Additional information can also be found on the Web site of the Council of International Schools (www.cois.org).

Challenges Facing Multilingual Education in Europe

As multilingual education in Europe gains momentum, problems are being encountered that need to be properly addressed so as not to endanger its further expansion (Baetens Beardsmore, 2009, pp. 213–16). First of all it is proving difficult to find teachers who are qualified to teach specific subject matter in the target language of multilingual education. Teacher training offering a combination of language and content in most of the European languages is still in its infancy. There is, further, a lack of adequate teaching materials and uncertainty on how to assess the language side of non-linguistic content. The fact that in many cases there is not yet any continuity of multilingual education at all levels of education is especially problematic in such indigenous minority settings where the intergenerational continuity of the minority language largely depends on education. In contexts where a unique indigenous minority language is spoken a lack of standardization in that language also hampers the development of (multilingual) education. Policy makers and language-education professionals active all over Europe are aware of the challenges facing multilingual education in Europe. Supranational institutions such as the European Commission and the Council of Europe encourage them to join forces to meet those challenges.

Multilingual Education and the Supranational European Level

Both the Council of Europe (more specifically its language policy division and the European Centre for Modern Languages in Graz; see www.coe.int/lang and www.ecml.at) and the European Commission (more specifically the Directorate General that covers the thematic areas of Education and Culture) have put considerable efforts in documenting the various forms of multilingual education that have colored Europe's educational landscape since ancient times (see Glyn Lewis, 1979). They promote the exchange of good practices in multilingual education through the funding of projects. And they also give shape to language-in-education policy objectives. The Council of Europe promotes the individual development of a plurilingual repertoire that includes different types of competences and different languages and language varieties at different levels of proficiency (see http://www.coe.int/t/dg4/linguistic/Profils1_EN.asp for information on European-language education policy profiles). The European Commission promotes individual multilingualism in the sense that every citizen should have practical skills in (at least) two languages in addition to his or her mother tongue. Clearly, (multilingual) education is seen as the main road toward individual multilingualism or the acquisition of a plurilingual repertoire. The Council of Europe especially lends its member states a hand in that it has developed a *Guide for the Development of Language Policies in Europe* that was updated in 2007. This guide enables states and regions to analyze both the strengths and the weaknesses of their language-in-education policy. If states (or regions with powers in the field of education) so wish, the Council of Europe transfers the evaluation report to a team of experts that provides noncommittal feedback. In this context it needs to be stressed that the operation procedure of the Council and the Commission is one of consensual persuasion and that neither the Council nor the Commission can exert any direct influence on the member states in the field of education. This means that the member states are—at least theoretically—not obliged to implement proposals emanating from Strasbourg or Brussels. In practice, however, there is a clear tendency among the member states to—slowly, yet in the majority of cases also decisively—adjust national language-in-education policies to the policy initiatives taken at the supranational European level (see Baetens Beardsmore, 2009, for a more thorough discussion). A further spread of multilingual education in Europe therefore seems to be more than likely in the near future.

SEE ALSO: Baetens Beardsmore, Hugo; Baker, Colin; Bilingual Education and Immigration; Bilingual and Multilingual Education: Overview; Materials Development for Multilingual Education; Minority Languages in Education; Teacher Education for Multilingual Education

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Multilingual Education in India

AJIT K. MOHANTY

Introduction

Synthesis of diverse cultural influences and religious traditions and coexistence of many languages complementing different spheres of public activity have remained distinctive features of Indian society. The 2001 Census Survey of India listed over 6,600 mother tongue (MT) declarations, which were rationalized into 3,592 MTs. The Census grouped the MTs into 122 major languages each of which includes several others with distinctive regional identities as well as linguistic features. The MTs in India are linguistically classified into 300–400 languages; India ranks fourth in the world in terms of its linguistic diversity (Skutnabb-Kangas, 2000). Despite the diversity, 196 languages in India are in the endangered category (UNESCO, 2009), the highest for any country. This paradox of diversity and endangerment can be understood in the context of India's weak and somewhat inconsistent language policy in education, and its failure to translate its statutory commitments into practice. This discussion seeks to show that languages-in-education policy in India has succumbed to the dynamics of the hierarchical power relationship between languages and their speakers, privileging some and disadvantaging many. Current language education policy and practices are examined to show that they fail to support its multilingual ethos and to meet the challenges for egalitarian development of minor, minority, and dominated languages. Indian schools generally offer some teaching of multiple languages, but most of the school programs are only nominally multilingual. Some current programs of mother-tongue-based multilingual education (MLE) for tribal children are discussed.

Despite many positive features of its multilingualism, many languages in India, particularly the indigenous, tribal, and minority (ITM) languages, are subjected to social neglect and discrimination leading to their impoverishment and endangerment and loss of linguistic diversity. Such exclusion of languages is a part of the vicious circle of language disadvantage (Mohanty, Mishra, Reddy, & Ramesh, 2009) in which languages are weakened due to their limited use and the resultant weakness is cited as an excuse to justify further neglect. Institutionalized linguistic discrimination in education is particularly important since it has serious implications for language maintenance (Fishman, 1991). Apart from English and 22 official languages, few other languages find a place in school and higher education in India. In 1970, schools in India used 81 languages as medium of instruction (MI) and school subjects. This number declined to 41 in 1998. Currently, 31 languages are used as MI in primary (1 to 5), 21 in secondary (7 and 9) and 18 in higher secondary (11 and 12) grades. English has a dominant presence in all levels of education and is almost exclusively used as MI in university and technical education in India. ITM languages have a negligible presence in education. Only three to four out of over 150 tribal languages are used as MI in primary grades and none at all in higher education.

The position of languages in education reflects the structural inequalities in India's hierarchical multilingualism. In all spheres of language use, English has an exclusive position of power followed by dominant regional languages including Hindi and state majority languages. The state majority languages or vernaculars, in turn, dominate over ITM languages in all domains of social, political, economic, and educational activities.

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Thus there is a double divide (Mohanty, 2010) in the linguistic hierarchy of Indian multilingualism—one between English as the elitist language of power and the dominant regional languages or vernaculars, and the other between the vernaculars and the dominated ITM languages. The two divides can be characterized as the *English–Vernacular Divide* (between the elitist and dominant languages) and the *Vernacular–Other Language Divide* (between the dominant and dominated languages). The nature and implications of the double divide have been discussed elsewhere (Mohanty, 2010; Mohanty, Panda, & Pal, 2010). It should be pointed out that such a double divide has been characteristic of Indian multilingualism at different points in history (Mohanty, 2008a) and has remained central to India's language-in-education policy as it has evolved, particularly since British rule.

Prior to British rule, education in India started with the majority language mother tongues as MI. Formal education had little impact on the indigenous tribal minorities, whose mother tongues had no writing system and no presence in education. Higher levels of education usually involved learning one of the more prestigious languages of the elites such as Sanskrit and Persian, which were also the medium of instruction (MI) in religious texts. Thus, there was no distinction between language as a subject and as MI. The distinction started with the attempt during British rule to bring English into modern education; languages in education were marked as Vernaculars (the regional majority languages), Classical languages (Sanskrit or Persian), and English. These languages were variously used with one language as MI and multiple languages as school subjects at different levels of education. Choice of languages in education was always contested at various levels, voicing the ongoing tension between the dominant and regional languages. The dominance hierarchy of languages in India continues to be treated with ambivalence, simultaneous resistance and accommodation influencing the policy and practice of languages in education in India.

Languages-in-Education Policy and Practice in India

The place of languages in Indian polity and governance became a major issue following independence and it was hotly debated in the constituent assembly. While nationalistic (and anti-imperialistic) sentiments were high, the process of making of the Indian constitution was dominated by English-educated elites. There were many claims for languages such as Sanskrit, Hindustani, Hindi, and Bengali to be recognized as national languages—and, at the same time, English could not be rejected. The Indian constitution, which came into force in 1950, resolved the issue by incorporating a schedule of 14 official languages (which has since been severally amended to include 22 languages) instead of having any one language recognized as a national language, and by keeping English as an associate official language. The constituent assembly also failed to enforce a common school system, paving the way for continuation (and, later, proliferation) of English-medium private schools. The government schools, on the other hand, continued to be regional language (or vernacular) medium schools. Although the constitution of India made no specific provision for tribal MTs in education, the distinction was made between dominant regional languages and mother tongues of the minorities. Article 351A of the constitution called for the state and local authorities to provide "adequate facilities for instruction in the mother tongue at the primary stage of education to children belonging to minority groups." This provision recognizes the presence of linguistic minorities, such as the tribal communities and their mother tongues. However, the constitutional promises for MT education remain to be implemented. The distinction between regional languages and minority MTs continued to be ignored in subsequent attempts to spell out languages in education. The Three Language Formula was a major initiative on this issue.

In 1957, a Three Language Formula (TLF) was announced by the government of India to deal with the uncertainties and heterogeneous practices in respect of languages in

education. It recommended use of regional language or MT as the first teaching language for five years, Hindi (in non-Hindi areas) or any other Indian language (in Hindi areas) as the second language from Grade 6 to 8, and English as the third language from Grade 3. The TLF did not distinguish between the regional language and MT and, thus, the dominant regional language was imposed on the ITM groups in a form of subtractive bilingual/multilingual education. Further, TLF was applicable only for government-sponsored schools; the private English-medium schools were free to impose their own choice and combination of languages. The TLF was modified from time to time to clarify anomalies. A major modification in 1964 mandated three languages as school subjects (regardless of the MI): (a) MT or regional language, (b) Hindi or English, and (c) one modern Indian language (including Sanskrit) or a foreign language. The third language had to be other than the ones covered under (a) and (b). A transitional bilingual/multilingual program, beginning with tribal MT as the language of teaching for the first two years and switching to regional language MI from the third year onwards, was recommended for tribal MT children. This was tried as a *bilingual transfer model* in some experimental programs initiated by the Central Institute of Indian Languages and subsequently discontinued without much evaluation (see Mohanty, 1989, for discussion). The 1964 modification of the TLF sought to deal with resistance to the imposition of Hindi in non-Hindi areas and paved the way for English to replace Hindi as the second language subject. The TLF was modified several times and interpreted variously in different states. Gradually the dominant majority language of each state came to be used as MI in government schools for all children regardless of their MT, and English replaced Hindi as the second language subject.

The TLF was not advanced as a policy framework; it was a formula to balance between pressures for and against the relative dominance of Hindi and English and the role of the state majority languages and MTs. English was treated with ambivalence following the end of British rule and, at the same time, dominance of Hindi could not be accepted in the South Indian states. The dominance of state majority languages was accepted partly because the marginalized tribal and minority MT users remained powerless and voiceless —with some exceptions, as in case of Bodo and Santali, two tribal languages whose speakers asserted their linguistic rights by engaging in prolonged language movements to have the languages recognized as official languages. In general, the TLF with all its modifications and interpretations did not have much impact apart from contributing to widening the English–Vernacular and Vernacular–Other language divides. In this situation of such ambiguities and uncertainties, state-sponsored public education remains chaotic and multilingual only in a nominal sense.

Multilingual Education in India: Nominal and Experimental Programs

The state majority languages remain the language of teaching or MI in the school programs whereas English is widely used as MI for university-level education. English as a language subject has a dominant presence in the school curriculum. In most cases, at least one other language is taught as a school subject. Schools generally reflect the grassroots-level linguistic diversity with children of different language backgrounds in the same classroom. Thus, education in India is multilingual in a weak sense: multiple languages are used as MI in different stages of education, languages form a part of the school curriculum, and within-classroom diversity often necessitates informal use of multiple languages for communication. Thus, one can point to three patterns of education somewhat responsive to India's multilingual diversity: Informal Multilingual Education, Formal Multilingual Education with a Single MI, and Formal Multilingual Education with Multiple MI.

Informal multilingual classrooms seek to support different MT children with inadequate proficiency in the MI. In the *support bilingual classrooms*, teachers use children's MT along with the formal MI to enhance their comprehension. For example, teachers in some English-medium schools, particularly those for the lower economic strata, use a vernacular MT (such as Hindi or Oriya) as a scaffolding device (Mohanty et al., 2010); English texts are read and then explained in the children's MT. In *partial bilingual type of informal multilingual classrooms*, children generally use their MT (such as a tribal language) whereas teachers primarily use the MI, which is the majority state language, often utilizing a simplified register of MI since they do not know the MT of the children.

Formal multilingual education programs with single MI usually have one dominant language as the language of teaching (except for language subjects). These include *majority-language MT programs* in which a regional or state majority language is used as the MI and other languages are taught as school subjects. These are MT-medium programs for the majority children and forced submersion programs in a non-MT medium for ITM children with subtractive effect on their MT. These programs lead to poor educational performance, capability deprivation, and poverty for the ITM communities (Mohanty, 2008b). The private English-medium schools offer *non-MT-medium programs* in a single language, English, which is not the MT for the children.

Formal multilingual education programs in multiple MI mostly use two languages for teaching. *Simultaneous dual-language MI programs*, such as the government Kendriya Vidyalaya or Central Schools, use English and Hindi simultaneously as teaching languages—English for mathematics, science, and English subjects, and Hindi for social studies and Hindi subjects. The two languages are used as MI regardless of children's MT. *Successive dual-language MI programs* combine education in different levels each with a different language as MI. Primary to university-level public education in India taken together can be described as a *successive dual-language MI program*—majority regional-language MI at school levels and English (occasionally Hindi) MI at university level. A third subtype of formal multilingual education with multiple languages as MI is the *transitional bilingual education programs for minority children*, which begin with the use of a minority (tribal) MT as MI for about two to four years, during which oral communicative competence is sought to be developed in the regional majority language. There is a progressive decline in the use of MT as MI and by the fourth year the regional language become the sole MI. One such program, called bilingual transfer model, was discussed earlier. Its objective was smooth transition of ITM children into the mainstream majority-language MI programs, leading to soft assimilation and weakening of the minority MTs (Mohanty, 1989).

Clearly, the above programs in Indian education fail to meet the requirements of multilingual education; there is no systematic use of multiple languages as MI, nor do they target development of high levels of multilingual proficiency. These programs hardly offer any support to the weaker languages. Imposition of the majority language as MI on ITM children and English MI for all children in private English-medium schools have a common subtractive impact on children's MT. Thus, educational programs in India offer only weak and surface forms of multilingual education. The constitutional commitments are not honored and the attempted policy formulations including the TLF have failed to address the basic issues in India's hierarchical multilingualism, characterized by the double divide. The English–Vernacular divide is politically negotiated through simultaneous preference for and rejection of English as well as Hindi (and other regional majority languages), effectively leading to supremacy of English in education and other domains. The Vernacular–Other language divide, on the other hand, has led to progressive marginalization of ITM languages and their exclusion from education. Some recent developments in education, however, have begun to address the issue of marginalization and poor educational achievement of the ITM children, recognizing the need for MT-based multilingual education (MLE).

MT-Based MLE in India

As has been noted, the nominal forms of multilingual education in India hardly meet the requirements of developing proficiency in multiple languages—MT, languages for regional- and national-level communication, and international language for wider communication. This requirement means development of multilingual proficiency in two or three languages in the case of majority-language speakers. Education of ITM children, on the other hand, needs to develop proficiency in tribal/minority MT, state majority language, Hindi (in non-Hindi states), and English. Experimental programs of mother-tongue-based multilingual education (MLE) have started for tribal MT children in two states in India, Andhra Pradesh and Orissa, with effect from 2004 and 2006, respectively. Andhra Pradesh started MLE in 240 schools for eight tribal MTs and Orissa in 195 schools for ten tribal MTs (see Mohanty et al., 2009 for details). These programs involve use of MT as MI as well as for literacy development from Grade 1. The state majority language, Telugu in Andhra Pradesh and Oriya in Orissa, is used from Grade 2 for development of oral communicative proficiency, from Grade 3 for development of reading and writing skills, and from Grade 4 as a partial MI along with the MT. The MLE programs follow the common state curriculum with emphasis on culture-specific content. English language as a subject is introduced in the program as per state practices—from Grade 2 in Andhra Pradesh and Grade 3 in Orissa. The MLE programs envisage tribal children joining the mainstream schools in the state majority-language MI from Grade 6 onwards. The MLE programs in Orissa and Andhra Pradesh are being extended to at least 3,000 schools and some other states such as Jharkhand and Chhattisgarh are planning similar programs for tribal MT children. Besides, a special MLE program, called MLE Plus (MLE+), is in operation in eight of the MLE schools for Saora and Kui languages in Orissa. MLE+ program (Panda & Mohanty, 2009) has a special focus on cultural pedagogy with an emphasis on community participation in literacy activities and children's collaborative learning practices. Several evaluations of the MLE and MLE+ programs in India (Mohanty & Skutnabb-Kangas, 2010) show their positive effects on children's classroom achievement, attendance, and participation as well as community involvement in children's education. Despite such positive consequences, MLE programs in India are affected by "the burden of the linguistic double divide" (Mohanty, 2010). This creates pressure for accommodation of the dominant languages too early in the program instead of allowing sufficient time for adequate development of MT. This also means early transition into the dominant-language MI, ignoring the overwhelming research evidence in support of late-exit type MLE programs (Heugh & Skutnabb-Kangas, 2010).

The Indian constitutional provisions and significant policy pronouncements including the TLF are pluralistic, emphasizing MT-based education and supporting the spirit of MLE. The National Curricular Framework (NCF) (NCERT, 2005) does recommend use of MT as the language of teaching. The recent Right of Children to Free and Compulsory Education Act 2009 (RTE) passed by the Indian parliament lays down quality parameters for education of 6- to 14-year-olds as a right and mentions education in MT. However, there are contradictions and lapses in the policy documents. The NCF fails to push an agenda for MLE. It does not find any problem in continuation of English-medium schools and early teaching of English even if it recognizes the research evidence and theoretical support to the contrary. The RTE does not dispense with the dual system of private English-medium and public regional language/MT-medium schools. Further, RTE fails to guarantee MT education since Article 29(2)(f) has a weak provision that "medium of instruction shall, *as far as practicable*, be in child's mother tongue" (emphasis added). Thus, while policy provisions in respect of languages in education are rhetorical and remain far removed from actual practices, classrooms, as discussed earlier, are superficially multilingual, mostly promoting monolingual proficiency.

The gap between policy and practice in respect of languages in education raises several issues. First, the question of the language of teaching or MI remains unresolved. English MI schools are popular. English as a school subject is gaining in significance and is taught from very early grades. Most of the states in India have now brought English down to Grade 1 despite clear evidence supporting its late introduction founded on a strong development of MT proficiency. Some states like Andhra Pradesh are planning to have English-medium sections in government schools. While there is concern over providing quality education in English and bringing the power of English to the masses, good quality mother-tongue education is the missing link. Further, the dominance of English over other languages in education has subtractive effects on all other MTs.

Education of the ITMs is another pressing issue, linked to mother-tongue-based MLE. The current forms of subtractive education in a dominant language lead to school failure and high "push out" rates. The success of the current experimental programs of MLE raises some hopes. However, as pointed out, the pressure to accommodate the dominant languages early in the MT-based program raises some concerns. Further, the usual models of MLE are challenged by linguistic diversity within the classrooms with children from many MTs. It is necessary to evolve innovative models of MLE for such diverse multiple-language classrooms. More importantly, the policy and practice of multilingual education in India needs to close the gap between imposed homogenization through unregulated school practices and real-life multilingualism, which mandates a system of education that promotes multilingualism for all.

SEE ALSO: Central Institute of Indian Languages; Curriculum Development in Multilingual Schools; Mother-Tongue-Medium Education; Multilingualism and Minority Languages; National Language and English in India

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Multilingual Education in Latin America

RAINER ENRIQUE HAMEL

Bi- or multilingual education is still an exception in Latin America, as it is in many other parts of the world. Most existing models are linked to specific ethnolinguistic communities that have maintained bilingual practices over time, including that of bilingual education: indigenous peoples and immigrant communities. Both groups have preserved their ancestral languages to varying degrees which sustains their claims for bilingual education in otherwise monolingual state territories.

Indigenous and immigrant communities including their schools belong to opposite poles on the scales of extreme inequality in Latin America. Their linguistic spaces and institutions share, however, some psycho- and sociolinguistic features and challenges which allow for comparisons on a certain level of abstraction. From a macro-sociolinguistic perspective, both communities exist as bilingual enclaves in sociohistoric formations of nation-state building processes oriented towards European models of linguistic and cultural homogeneity that seek to assimilate those who are different. Therefore, any stable bilingual community—indigenous or immigrant—faces adverse sociolinguistic conditions and will have to develop specific ideological, cultural, and linguistic justifications for its bilingual domains.

It is this entry's contention that that these two educational spaces share several common problems and possible solutions, and that they could greatly benefit from an exchange of experiences and expertise across the systems. Such collaboration could foster the growth of multilingual spheres and the transition towards pluralistic nation-states where cultural and linguistic diversity would be seen as global enrichment instead of a problem.

Indigenous Education in Latin America

The sum of national census data gives the figure of slightly less than 30 million indigenous people in Latin America. Ninety percent of them live in the macro-areas of the Andes (Bolivia, the north of Chile, Ecuador, Peru, and Colombia) and Mesoamerica (Guatemala and Mexico) (Sichra, 2009).

From the beginning of the Conquest in 1492, colonialist policies materialized in education for indigenous populations through two basic approaches, a dichotomy that is still alive in our days. The first strategy aimed at linguistic and cultural assimilation through direct imposition of the European language (Spanish or Portuguese), leading to submersion or fast transitional programs; the second strategy sought subordinate preservation of indigenous peoples through slow transitional and some rare maintenance programs (Hamel, 2008a; López, 2009).

In view of previous educational failure with submersion and fast transitional programs for the indigenous population, a number of new modalities have emerged since the 1970s. In most countries, bilingual and bicultural programs gave way to the new concept of "*intercultural* bilingual education" (IBE) since the early 1990s. The two languages, content matters and competencies from indigenous funds of knowledge, as well as from national

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programs, should be integrated in a culturally and pedagogically appropriate curriculum. To redress historical imbalance, children are to know and appropriate their own culture in their language first in order to build a solid base of competencies, values, and ethnic identity (intracultural component). Next they should proceed to learn content matters from the national and global societies in order to integrate knowledge and competencies from several sources (intercultural component).

Under the label of "intercultural education for all," mainstream students should develop a relationship of mutual understanding and respect by learning about indigenous cultures; they are expected to develop positive values towards diversity through a process of knowing, recognizing, and valorizing the other cultures. In areas of significant indigenous population density (≥ 30%), they should learn one of the indigenous languages (IL) of the region (in Bolivia, Mexico and some other countries; see Albó & Anaya, 2003).

On the micro-political level of pedagogical and applied linguistics, the question is which curriculum, pedagogical approach and what functional language distribution is appropriate and capable of integrating overall cultural and linguistic aims with academic achievement and empowerment in the context of prevailing asymmetric power relations.

In spite of local resistance, most countries officially adopted an intercultural bilingual model in the 1990s that establishes the right to mother tongue literacy and content teaching plus Spanish or Portuguese as a second language for students whose L1 is the indigenous language (Albó, 2002). However, historical discrimination and a pervasive diglossic ideology deeply rooted both in mainstream and in indigenous teachers' and parents' attitudes, raise high barriers against the implementation of such a curriculum that would be the most appropriate, both from a pedagogical and psycholinguistic perspective, and from the standpoint of the official declared goals of language maintenance and cultural development (López, 1998; López & Sichra, 2008). The most widespread modality still is transitional "Castillanization" which teaches literacy and content areas in Spanish and makes use of indigenous languages as the initial medium of instruction where necessary. The same procedure applies in Brazil with Portuguese. However, an increasing number of teaching materials in indigenous languages are being used alongside national language primers, and experimental school projects have engaged in new ways of improving indigenous education (Hamel, 2008a).

Immigrant and Elite Bilingual Education (EBE): From Immigrant to Global Language Schools

The history of European and, to a lesser extent, Middle East and Asian immigration to Latin America is well documented. Argentina, Brazil, Chile, Paraguay and Uruguay absorbed about 90% of the European immigration to Latin America (Rosenberg, 2001). During the period of massive immigration (1875 to 1930), Spaniards and Italians represented the largest immigrant group in most countries, followed by the British, Germans, Polish, Yugoslavians (mainly Croatians), and French.

Argentina, Brazil, and Chile received three million Italians and 600,000 Germans (see Baily & Miguez, 2003). For 1990, high estimates identify some 500,000 speakers and almost 12 million citizens of German descent for Brazil, 300,000 speakers and 1 million descendants for Argentina, and 20,000 speakers out of 200,000 descendants for Chile (Born & Dickgießer, 1989).

Mainly the British-, French-, and German-speaking settlers founded their own schools and other institutions once they arrived to preserve their languages, religion, traditions and endogamic kinship relations. Most of these schools went through four historical phases. Founded as monolingual community or heritage language schools in the 19th or early 20th

century, they provided the children of the settlers with appropriate education, especially in rural areas where no other schooling was available. Teaching was conducted entirely in the immigrant language in most cases, and no students from outside the community were admitted.

In a second phase, teachers were brought over from heritage countries and the national language was introduced almost as a foreign language to provide the necessary language skills in dealing with the external society. Content matters were usually taught entirely in the immigrant language to foster language maintenance.

In their third phase, immigrant schools gradually weakened their character as enclave and ethnic community schools and joined the group of national elite schools (Mejía, 2002), together with other private institutions, opening their doors to the children of the countries' economic and power elites as bilingual schools. Two convergent processes triggered off significant changes in curriculum and language policy. As the immigrant schools became attractive for the national elites, they had to offer a curriculum that could satisfy the educational needs of their new customers. Today, divergent regulations from the home and the host countries often lead to a dual system of parallel curricula with separate languages, faculty, and management which unnecessarily doubles certain content matters taught in both languages. Many schools established segregated tracks for bilinguals and national monolinguals, combining L1 with immersion education.

In a fourth phase, some of the schools associated with prestigious and internationally powerful language communities have developed into "global language schools" (Banfi & Day, 2004) since the 1970s, offering modern, international technology and curriculum together with class segregation and the promise of molding the future leaders of business and politics. Their bi- or trilingual programs and international certificates add a cutting edge to the competitive value of these institutions.

Elite bilingual schools share a model of enrichment bi- or multilingualism (Mejía, 2008). None of the languages involved is under threat or clearly stigmatized, and students are systematically encouraged, awarded and recognized for the bilingualism they develop in the world's "good" languages. The fact that the schools promote bilingualism as a visible and positive trademark in a domain of social prestige has helped to introduce an enrichment perspective and to mitigate Latin American policies of building homogeneous and monolingual nation states.

Common Challenges in Indigenous and Elite Bilingual Education: Integration and Conflicting Orientations

Certainly, the two systems under review have little in common in socioeconomic terms which locate them at the extreme poles between the rich and the poor. Despite fundamental differences, however, a number of sociolinguistic, pedagogical, and curricular phenomena in each system allow for cautious comparison. This entry will focus on problems of integration on various levels: the *internal* integration of curriculum and school communities, the *external* or *national* integration or indeed segregation from the country's political and cultural context, and the *international* integration into a global community of education.

Elite Bilingual Schools

The internal integration of languages, content matters, and teaching methods into a well-structured curriculum challenges many elite bilingual schools. The implementation of two national curricula and separate teaching faculty who frequently know little about the "other" language and curriculum obstruct integrated multilingual communication and academic development.

Until now, divergent ideological orientations towards the heritage and the host country may create conflicting asymmetric value systems that affect external or national integration. In addition, many EBE schools maintain little communication with national debates on education. They prefer to connect with their "home" countries and receive academic input, teachers, and teacher training from there.

On the other hand, global integration emerges as a decisive force. In fact, EBE schools in Latin America increasingly incorporate their members into the emerging global arena, creating new de-territorialized "third cultures" and international networks of business, science, and technology.

Indigenous Education

Problems and challenges of integration emerge for indigenous education in Latin America too, though in different ways. Most countries in Latin America possess a national curriculum that engages in a conflicting relationship with the curricular needs and practices of IBE for indigenous populations. Education and language planning for such programs poses problems that can be traced to similar levels of internal, external, or national and international integration.

A number of contradictions arise for the internal integration of the intercultural and the bilingual component of IBE since content matters and competencies from indigenous knowledge base as well as from national programs need to be integrated adequately. To design the appropriate curriculum, indigenous funds of knowledge need to be identified, often reconstructed from oblivion and fragmentation, and systematized to serve as the pedagogical input for the curriculum. The successful integration of such an intercultural curriculum that avoids imbalance, unsuitable misrepresentation of indigenous knowledge via Western systematization, and dichotomized juxtaposition, presents a significant challenge for curriculum design (Gustafson, 2009; Hamel, 2009). As we have seen, the role and the functional integration of the two languages and strategies for their teaching as L1, L2, or as two first languages depending on sociolinguistic conditions posit similar unsolved problems.

The external or national integration of IBE faces similar challenges. To attend the specific local needs, an appropriate IBE curriculum requires a significant degree of independence from the national curriculum which is matter of conflict and negotiation. Some countries like Brazil, Colombia, and Guatemala allow advanced autonomy on the basis of a minimal common core, whereas countries like Mexico and Argentina impose the national curriculum with only slight adaptations (López, 2009). In the end, new programs and practices will only work when they gain legitimacy, that is, when indigenous teachers, students and communities acquire power, a significant degree of autonomy, and control over their education.

International integration of IBE becomes crucial in transnational migration. Many indigenous migrants reinforce their ethnic identity and language use in the host countries in Latin America, the United States, or Europe where they develop lively transnational, often trilingual communities. The educational systems both in Latin America and in the target countries of migration (United States, Canada, European Union) have encountered considerable difficulties and resistance to meet the needs of indigenous migration that has so far remained largely invisible. Education will have to include intercultural components, competencies, and content necessary for survival and empowerment in migration.

Integrating Perspectives from Complementary Knowledge and Experience: Desiderata for Research and Action

Strengths and Weaknesses

In sum, a pluralistic orientation of cultural and linguistic enrichment and intercultural learning could improve internal pedagogical, national (horizontal), and global (vertical) integration.

Indigenous education reveals significant strength in the field of culture and language relations, nurtured by anthropology, descriptive linguistics, and sociolinguistics. The system was for a long time strongly influenced and even administrated by anthropologists, since it was anthropological insight that developed an understanding of how indigenous societies existed and survived as subordinate but distinct ethnolinguistic polities in the context of nation states. Anthropological theory developed frameworks to direct the dynamics of these contacts to enhance either mostly acculturation (Aguirre Beltrán, 1973), or exceptionally independent endoculturation and accommodation without assimilation. Descriptive linguistics provided structural analysis and alphabets, and later on sociolinguistics supplied knowledge about the relations between languages and their speakers, language contact or conflict, shift and maintenance. Clearly, the combined contributions of these disciplines helped to sharpen our understanding of how different cultural models and cosmovisions, as well as asymmetric language conflict relations interfere in the micro-cosmos of the classroom.

EBE in turn has regularly enjoyed significant international investment in modern applied linguistics and foreign/second language teaching, L1 development in contexts of diaspora and language through content teaching. One of its most important contributions is the development of additive enrichment bilingualism, the invaluable experience of creating stimulating environments of bilingual learning that help children to develop self-reliance in their languages and cultures.

On the downside, IBE traditionally had weak input from applied linguistics and pedagogy. The field lacks detailed studies about bilingual language acquisition and academic achievement. Over the past twenty years, IBE has attempted to compensate its deficit in pedagogy, psycho- and applied linguistics by drawing on bilingual education experiences in the United States, Canada, and Europe. In EBE, in turn, there seems to be an acute lack of anthropological and sociolinguistic insight to understand intercultural relations.

Areas of Conceptual Cooperation and Mutual Learning

Indigenous IB schools could greatly profit from L1 development and L2 teaching methodology based on an integrated communicative approach including content and language integrated learning and teaching (CLIL) where EBE tends to be successful. Transfer of cognitively demanding academic skills from one language to the other might improve in both types of bilingual education through exchange and mutual learning.

For elite bilingual schools it would certainly be an enriching experience to introduce an anthropological and sociolinguistic perspective into their work, both on the micro level of their internal integration of languages, cultures, and learning communities, and on the macro level of societal integration. A reassessment of their often dichotomized curriculum, possible conflicts between languages, and their teaching practices from an intercultural learning perspective could help them to reach intercultural competence. Given the drive towards intercultural national curricula for mainstream education in many Latin American countries, EBE could no doubt profit from participation in the debates and experiences in their host countries.

Multilingual Education as a Touchstone for Pluricultural States

A broad comprehensive framework of language policy and planning in applied linguistics is called for to interpret the language and education policies in bi- or multilingual education and to connect all language types involved: the national language(s) of each state, as well as indigenous, immigrant, and foreign languages, both on macro and micro levels. Such a framework understands language policies as a historical process of change in social language constellations where state institutions and other social forces intervene. It encompasses not only the transformation of discursive and linguistic structures and uses (e.g., standardization, *Sprachausbau*, diffusion, shift, revitalization, etc.), but also and fundamentally a change in the relationship that the actors involved establish with their own languages and others in a shared territory as part of overall power relations (see Hamel, 1993, 2008b for a discussion).

When we analyze the language policies concerning the two types of bilingual education and their communities in Latin America, we realize that one common factor which allows for an integrated comparative interpretation is their relationship with the state and the dominant society as it developed over time. Conservative and nationalist forces still consider multilingualism as a problem for the state, although they recognize certain minority rights; and assimilation of minorities is often still the overall goal. Many members of ethnolinguistic minorities have internalized this hegemonic ideology and developed defensive attitudes regarding the "illegitimacy" of their languages. Here, a new language policy needs to be developed to transform the relationship that the dominant *and* the subordinate actors maintain vis-à-vis the prevailing language constellation in order to overcome it.

Bilingual communities and their educational institutions at the two poles of societal stratification may contribute significantly to this transformation in their own ways. In particular, they can demonstrate how the funds of knowledge stemming from their heritage languages and cultures—indigenous or immigrant—make significant contributions and enrich the dominant societies. The undeniable educational leadership of elite bilingual schools in developing enrichment multilingualism can help to erode further the unsustainable ideology of monolingualism. And the unquestionable legitimacy of indigenous claims to be recognized as peoples and to have their linguistic and educational rights respected may work towards the same goal from a different societal pole. Language and education policies promoting diversity for majorities and minorities can no longer be dismissed as marginal components of state policy. They have become a touchstone to appraise the quality of democracy, pluricultural, and plurilingual commitment and the construction of modern states in Latin American and in most parts of the world.

SEE ALSO: Bilingual Education and Immigration; Heritage Languages and Language Policy; Indigenous Languages in the Twenty-First Century; Language and Globalization; Language Policy and Multilingualism; Multilingual Education; Multilingualism and Minority Languages

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Multilingual Education in North America

ESTER J. DE JONG

Bilingual and multilingual education is one form of schooling that has developed worldwide in response to the linguistic and cultural diversity that characterizes countries all over the world as a result of continuing migration, transmigration, and globalization. Simply defined, bilingual education is instruction that uses two languages as media of instruction. By extension, multilingual education programs are programs whose goals include proficiency in more than two languages. In the North American context, bilingual programs are more common than multilingual education programs.

Some Definitions

"Bilingual students" and "bilingual education" are not synonymous. Bilingual children know and use two languages to different degrees. They demonstrate varying proficiency in their two languages; for example, they may speak both languages but be literate in only one language. Their bilingual skills and the extent they identify culturally with the two languages may develop and vary over time (Romaine, 1995). Bilingual children may or may not attend a bilingual education program.

In this entry, "native language" (L1) will be used to refer to the language in which the child has been raised. In multilingual environments, this can be more than one language and these languages may differ from the (standard) language variety taught in school. The "dominant," "majority," or "societal language" is the predominant language used for communication in the students' nation (including government, education, media, etc). A "second language" (L2) is a language learned at a later stage than the native language. This often occurs outside the home in school. "Heritage language" is the language used by a particular ethnic group. "Minority" or "dominated" languages are languages used by language groups who are politically and socially placed in a minority situation, though they are not necessarily also in the minority numerically. "Majority language speakers" are those who use the societal language.

A final important distinction is that of additive and subtractive learning environments. The distinction was originally introduced by Wallace Lambert, a Canadian psychologist, to explain the positive attainment of French–English bilingual competence in the Canadian context and the struggle of minority-language speakers to achieve the same outcome in other settings, such as the United States. As the two official languages of Canada, both French and English have high prestige. Lambert (1977) refers to this acquisition context as a case of "additive bilingualism" because it involves languages of social value and respect and "the learning of the second language does not portend the slow replacement of it for the home or the other language" (p. 18). In contrast, for speakers whose native languages are not valued there is differential prestige: One language is the high-status language (the societal language), one language (the minority language) is assigned a low status. For these speakers, learning the second language requires them to "put aside their ethnic language for a national language" and their degree of bilingualism will "reflect some stage in the

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subtraction of the ethnic language and associated culture, and their replacement with another" (p. 19).

Multilingual competence develops more easily (though not necessarily automatically) in additive contexts since both languages receive attention in schools and in society. In subtractive contexts, multilingual competence will require explicit attention (i.e., time and opportunity) to the overlooked language, the minority language. Specific policies to counter the status differences between the two languages may therefore need to be enacted in schools—for example, through an equal distribution of the two languages across the curriculum, the use of both languages for literacy development. The sociopolitical context (additive/subtractive) is therefore an important variable that affects the maintenance of the proficiency in the minority language when speakers are surrounded by or interact with other languages.

Pathways to Bilingualism and Multilingualism

This entry presents a classification of additive approaches to bilingualism or multilingualism at the primary and secondary level in North America (Canada, the United States, and Mexico). It discusses these approaches in terms of generalized program models that aim for bilingualism and biliteracy and use two or more languages as languages of instruction. This focus excludes foreign language programs for majority language speakers, which only teach the language as a subject. Actual implementation practices may vary from school to school in response to specific school characteristics.

Many different classifications and descriptions of such programs exist (Baker, 2006; Brisk, 2006). The programs discussed here have in common that they aim for the development of bilingual repertoires that include oral as well as written communication (biliteracy). In the United States, these additive bilingual programs are increasingly referred to as "dual language" programs. Their goal of high levels of bilingualism and biliteracy distinguishes them from bilingual programs that may use minority languages merely as a temporary bridge to learning the dominant language. Two additional criteria are useful to distinguish among programs, namely target population and the distribution of the languages. In terms of student population, programs can enroll native speakers of the societal language, native speakers of dominated languages (including indigenous and immigrant languages), or a combination of both target groups. The criterion of language distribution considers how the languages are used for instructional purposes. This includes the amount of time allocated to teach language and the subjects to be taught in each language as well as the choice of the language(s) for initial literacy instruction. Table 1 summarizes the main program models to be discussed in more detail below.

Table 1 Bilingual and multilingual program models

Program label	*Language goals*	*Target population*	*Language use and distribution*
Two-way immersion (TWI)	Bilingualism and biliteracy	Minority and majority	Long-term L1 and L2 use
Canadian immersion programs	Bilingualism and biliteracy	Majority or minority	L2 and then L1 (L1 and then L2)
Maintenance bilingual or heritage language education	Bilingualism and biliteracy	Minority	L1 and L2

Two-Way Dual Language Programs

Two-way immersion (TWI) is an integrated model of bilingual education where native English speakers and native speakers of a minority language are educated together for most or all of the day, and receive content and literacy instruction through both English and the minority language. The model takes advantage of the presence of native speakers of both languages, which allows learners to engage in meaningful communication in both target languages with each other as well as with the teacher (Christian, 1996). According to a national database maintained by the Center for Applied Linguistics (2011), there are currently over 300 TWI programs in the United States. The great majority of TWI programs use Spanish and English as instructional languages (93%), although Arabic, French, Korean, Mandarin, and Portuguese are also used. Further, most TWI programs (79%) are implemented at the elementary (Kindergarten through grade 5) level.

Although different models have been developed, all TWI programs share three essential features:

- TWI programs are considered enrichment programs that aim at three interrelated goals: high levels of bilingualism and biliteracy, grade-level academic achievement, and cross-cultural competence.
- TWI programs enroll approximately equal numbers of native speakers of English and of the minority language, and integrate these two groups of students for most or all of the day.
- All TWI students receive content area instruction and literacy instruction through both languages. (Howard, Sugarman, & Christian, 2003; Howard, Sugarman, Christian, Lindholm-Leary, & Rogers, 2007)

TWI programs are often one strand within a school but can also be a whole-school approach where all students are enrolled in TWI. There are different TWI program designs. Two common models are the 90:10 and 50:50 model. In a 90:10 model, native English-speaking and native Spanish-speaking students are integrated for all subject areas. Spanish is the prevailing language in grades K-3 for all students with 10% of English instruction in K-1, 20% of English instruction in grades 2 and 3. Instruction is balanced between the two languages in grades 4 and above. The students develop their literacy skills in Spanish first and formal English reading is introduced in third grade (Lindholm-Leary, 2001). In a 50:50 model, native English speakers and native Spanish speakers are also integrated for all subject areas at all times. From Kindergarten onwards, they receive half of their instruction in English and half of their instruction in Spanish, often on a week-by-week basis (i.e., one week in Spanish, one week in English). Literacy development takes place in both languages simultaneously. One of the oldest TWI programs in the nation, Oyster Elementary in Washington, DC, implements a 50%–50% model, often with two teachers working together in the same classroom (Freeman, 1998). The K-8 Amigos program in Cambridge, MA, also implements this model, with the addition of Chinese as a third language (Cazabon, Nicoladis, & Lambert, 1998). Both the 90:10 and the 50:50 models integrate students throughout the day.

Canadian Immersion Programs

Probably the best-known bilingual enrichment programs for dominant language speakers are the Canadian immersion programs. Following Brisk (2006), the term "Canadian" is added to distinguish these bilingual programs from (monolingual) English immersion programs

for minority students which aim for second language proficiency rather than bilingualism. French immersion programs were developed in the late 1960s in response to demands from middle-class, Anglophone parents living in predominantly French-speaking Montreal, Quebec, to provide their children with the opportunity to develop a functional level of bilingualism. Immersion programs begin instruction with the least accessible language (the L2) and then introduce the student's native language.

Immersion models differ with regard to the introduction of the second language (early versus late immersion) and the amount of time spent in the second language (full or partial immersion). In early, full immersion programs, the target (second) language, French, is introduced before the student's first language during the first two years of elementary school. By third grade, the student's native language (English) is formally introduced in the curriculum and both languages are used for equal amounts of time for the rest of the program. In the case of late immersion, the second language is introduced either at the upper elementary level (middle immersion) or at the secondary level (late immersion). Immersion programs have been extended to the United States in several different languages including Spanish, French, and Japanese. Programs that initially immerse students in two second languages (e.g., French and Hebrew) before introducing the native language have also been documented (Genesee, 2004; Fortune & Tedick, 2008).

Maintenance Dual Language Programs

Maintenance or developmental bilingual programs teach language, literacy, and content in the minority language as well as the societal language. They include programs for immigrant language and indigenous language speakers. One of the largest districts in the United States, Houston Independent School District, operated several developmental bilingual programs for Spanish-speaking students. Spanish is the main medium of instruction in the early grades with the amount of English gradually increasing until it reaches 50% in fourth grade (Thomas & Collier, 2002). In Rough Rock, Arizona, initial literacy development and content teaching is through Navajo with some time set aside for English oral language development. Subjects are taught in both English and Navajo through second grade. As of third grade, English is used as a medium of instruction and Navajo continues to be used as a vehicle for studying Navajo culture and citizenship (McCarty, 2002). Similar models have been described for indigenous languages in Canada, including Inuktitut and English or French (Patrick, 2005), and for Rarámuri and Spanish and P'urhepecha and Spanish in Mexico (Hamel & Francis, 2006; Paciotto, 2010).

The repression and rejection of the use of indigenous languages in schools as part of nation-building processes has been documented throughout the world. In the United States, the 300 native American languages that existed upon European contact have been reduced to only a small number still widely spoken by children today (McCarty & Zepeda, 1999). As a result, fluent speakers of these indigenous languages have been rapidly disappearing. Similar to the Māori "language nests" in New Zealand, an immersion model has been adopted by indigenous language groups in an effort to reverse these historical patterns of language shift and language loss. Students are initially fully immersed in the indigenous language with the majority language only gradually added as a subject and then as a medium of instruction in the upper elementary and secondary schools. Hawaii has developed a pre-K-12 program in Hawaiian and English (Warner, 2001; Wilson & Kamana, 2011).

Another avenue for supporting heritage language development is the community-based language school. Even though these programs take place outside the confines of formal schooling, they provide access to instruction in the students' native languages and cultures as well as content (e.g., math), mostly through Saturday or weekend schools. This kind of

school has long accompanied the settlement of new immigrants in North America (Fishman, 1980) and currently are organized by many different language groups, including Arabic, Chinese, Khmer, and Korean (Peyton, Ranard, & McGinnis, 2001; Cho, Shin, & Krashen, 2004). In addition to teaching the minority language and culture, heritage language schools also play an important role in helping parents and children negotiate English-medium content taught in the "regular" school and unfamiliar formal schooling practices.

After many years of repression, bilingual program development for indigenous populations in Canada and the United States are now formally acknowledged as an integral part of the right to self-determination of the First Nations People. The situation is markedly different for immigrant languages. In the United States about 50% of the states have passed English-only policies and federal accountability guidelines undermine the implementation of dual language programs. As a result, bilingual development is increasingly supported through less comprehensive though important programs, including a growing number of heritage language classes and community-based language programs.

Alternative Pathways and Possibilities

Formal additive bilingual and multilingual program models are not always feasible, sometimes due to ideological stances, sometimes due to a lack of resources. In other cases, the student population is so diverse that it is impossible to cluster a sufficient number of students to establish a dual language program. In these contexts, the question of how educators can support access to and students' development of multilingual repertoires is still, and arguably even more, relevant, particularly for minority language speakers, not only because the lived realities of these students are multilingual and effective instruction takes these linguistic and cultural experiences into consideration, but also because of the documented benefits of bilingualism for cognitive and academic development (Cummins, 2001).

Heritage language classes are an important example of efforts to develop bilingual repertoires for minority students. As they teach the minority languages as a subject, they fall outside our definition of dual language education maintained in this entry. However, they constitute an important and growing trend to provide continuing opportunities for language maintenance for heritage language speakers. By the time they enter secondary schools, this group demonstrates a wide range of abilities in the minority language, ranging from receptive skills, to primarily oral abilities, to formal oracy and literacy skills (Valdés, 2005). Although these students are misplaced in a general foreign language class, heritage language class offerings are still limited as part of the regular secondary school curriculum. It estimated that about 7% of schools offer Spanish for Spanish speaker classes in the United States (Roca & Colombi, 2003; Valdés, Fishman, Chavez, & William, 2006). Some districts have formally linked heritage language classes with college preparatory advance placement (AP) classes or the International Baccalaureate (IB) program in an effort to legitimize these programs and offer more options for bilingual learners.

In multilingual contexts, bilingual programs are generally not feasible due to the presence of multiple languages and too few speakers of each language to be able to establish a bilingual cluster. While it is easily to consider multilingual practices infeasible in such contexts, teachers can still use a wide range of *bilingual teaching strategies* to make instruction more comprehensible, engage students in cognitively challenging materials, and legitimize students' native languages as resources for learning. Jim Cummins and colleagues describe a multilingual literacies project implemented by monolingual English-speaking teachers working in linguistically and culturally diverse English-medium schools in Toronto, Canada (Cummins, Campoy, Ada, Winsler, & Bleiker, 2006). The teachers invite

their students to write about topics that are aligned with the regular content-area instruction, but written in English and their heritage language. Teachers organize students into same language groups (e.g., bilingual Urdu/English speakers in one group, bilingual Bengali/English speakers in another group), and students draw on each others' diverse language and literacy strengths in English and their heritage language to write their books in two languages. Students publish their dual language books in hard copy and on the web, which develops a multilingual library of student-made books for the school, facilitates students' development of computer literacies, and allows the books to reach a wider audience. Students also participate in multilingual language and literacy surveys, and multilingual math activities (Schechter & Cummins, 2003). Other strategies that bilingual and monolingual teachers can use to make multilingualism a norm in the classroom include providing access to multilingual classroom and school libraries and using multilingual signs and labels and bilingual books for instruction (Ernst-Slavit & Mulhern, 2003). These structured multilingual teaching strategies reflect educators' attitude that it is not sufficient to merely tolerate the presence of the students' native languages. They constantly and purposefully seek opportunities to make multilingualism visible in the curriculum and in the school and extend children's multilingual repertoires, even in the absence of a bilingual program.

Concluding Remarks

The approaches discussed in this entry are commonly distinguished models to support bilingual or multilingual development. It is important to keep in mind that these are generalizations. Schools adopt and adapt these models to their local context to meet their specific linguistic, sociocultural, and sociopolitical needs. Further, bilingual and multilingual approaches to education have to respond to increasingly diverse student populations. The linguistic repertoires developed in these programs need to be more versatile in a glocalized world. Expanding our view of bilingual and multilingual education to include opportunities both in and outside regular schooling practices is one way to respond to demographic and social changes. Encouraging schools to examine how they can support multilingualism in multilingual settings is another way. As the pressures of homogenization interact with the need to diversify (McCarty, 2003), allowing different alternative pathways to the development of multilingual repertoires for language minority and language majority speakers will become an important task for language communities.

SEE ALSO: Bilingual Education and Immigration; Ecology and Multilingual Education; Elite/Folk Bilingual Education; Empowerment and Bilingual Education; Language Planning and Multilingualism; Language Policy and Multilingualism; Minority Languages in Education

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Multilingual Education in the Arab World

MOHA ENNAJI

Introduction

This entry deals with aspects of multilingual education in the Arab world in general from the historical and sociolinguistic points of view. The focus will be on the Maghreb, particularly Morocco. The following discussion will showcase the similarities and differences between Morocco and other Arab countries.

The Arab world was colonized by different European powers in the 19th and 20th centuries. More precisely, the Maghreb countries (Algeria, Morocco, Tunisia, and Mauritania), Lebanon, and Syria were colonized by France, whereas Egypt, Iraq, Jordan, Kuwait, Sudan, Yemen, and the United Arab Emirates were colonized by Britain, and Libya by Italy. After achieving independence from these Western powers in the 1950s and the 1960s, various changes occurred on the linguistic and cultural levels, namely the ethnic revival and the revitalization of the Arabic language and Islamic culture.

Linguistic Background

The Arab world is characterized by multilingualism in the sense that many languages and varieties are used in different domains, namely Classical Arabic, Standard Arabic, the regional varieties of spoken Arabic, Kurdish, Berber, Nubian, English, French, Spanish, and Italian. The sociolinguistic situation in the Arab world differs from one country to another depending on (a) the different varieties of spoken Arabic in use, (b) the different colonial languages adopted, and (c) the existing indigenous ethnic groups. The multilingual dimension of the Arab world has a direct impact on ethnicity and cultural life in this region of the world and brings about sociocultural problems that must not be overlooked in language planning and in education.

The most salient sociolinguistic feature of the Arab world is the phenomenon of *diglossia* (Bassiouney, 2009, Chapter 1). It specifies briefly that in the Arab world there are two major varieties of Arabic, a high variety (Classical Arabic) and a low one (colloquial Arabic). Other researchers think that today there are at least three varieties of Arabic (triglossia): Classical and Standard Arabic, which are high and intermediate, respectively, and colloquial Arabic (the low variety) (Ennaji, 1991; Youssi, 1995).

Like Classical Arabic, Standard Arabic is a written Arabic variety which has no native speakers. Classical and Standard Arabic are both learned at school only, as they are not spoken languages. Standard Arabic, which is structurally less rigid than Classical Arabic, is both codified and standardized; the policy of Arabization has led to its modernization and to its use as a vehicle of modern culture. It is widely made use of in education, administration, and the media. The expansion of free education has led to the spread of Standard Arabic and to favorable attitudes toward it (see Ennaji, 2005, Chapter 10).

Colloquial Arabic is a major mother tongue which, unlike Classical and Standard Arabic, is unwritten but spoken. Colloquial Arabic can be divided into several regional varieties

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(Iraqi, Syrian, Egyptian, Sudanese, Algerian, etc.), which are often mutually intelligible unless they are geographically distant from each other. For instance, Moroccan and Iraqi Arabic are hardly mutually intelligible because they are so remote from each other, and in order to ensure communication speakers of both dialects resort to Standard Arabic.

The other major mother tongues spoken in the region are Kurdish in Iraq, Nubian in Egypt and the Sudan, and Berber in the Maghreb. Kurdish is spoken by about 20% of Iraqis and 15% of Syrians; Nubian is spoken by nearly 5% in Egypt and 10% in the Sudan; and Berber is spoken by 50% of Moroccans and by 25% of Algerians. However, these mother tongues are looked upon by many Arabophones as debased essentially because they are non-standardized, have no religious connotations, and no great written literary tradition (Haeri, 2003, pp. xvi, 184).

Concerning the foreign languages in use, it is worth mentioning English, French, Spanish, and Italian. English is made use of as a second language in the Middle Eastern Arab countries that were previously colonized by Britain. It is widespread in education, scientific research, international trade, and diplomacy and is gaining ground in the fields of mass media, tourism, and finance. English is taught as a foreign language in elementary schools, high schools, and universities. Many Arabs learn English for instrumental reasons in order to have access to modern technology, apply for studies abroad, or communicate with English-speaking visitors and business people. It is spoken widely in the tourism industries by tourist guides, and hotel receptionists (Sadiqi, 1991). English serves the national goals for communicating with the English-speaking world, chiefly the United Kingdom, the Commonwealth countries, and the United States.

In the Maghreb, English has the status of a foreign language; it is widely taught in high schools and universities. It is indeed the most popular foreign language in the Maghreb because it has no colonial overtones in the region (Ennaji, 2005).

French, on the other hand, is widely used as a second language in the Maghreb and in Lebanon. Despite it being a colonial language, it is still prestigious particularly in Morocco, Algeria, Tunisia, and Lebanon. Its chief domains of use are education, administration, government, media, and the private sector. It is employed to achieve efficiency, wider communication, and socioeconomic development.

Spanish and Italian are made use of to a lesser extent in Morocco and Libya, respectively. Spanish is popular especially in Northern and Southern Morocco. Both languages are optionally taught as foreign languages in these two countries.

Arabization

The process of Arabization was meant to modernize and standardize the language in order to meet the needs of the modern Arab states. It also aimed to replace English and French in many fields, particularly in education and mass media. Given the connection between Standard Arabic, Islam, and national identity, Arabization may be considered as a revival of the Arabic language and ethnicity in the societies concerned.

Many minority language activists in the region claim that one purpose of the policy of Arabization is the assimilation of minority groups (cf. Boukous, 1997). However, this is debatable, for the loss of minority languages may be an outcome of Arabization but not its main target. The target is rather religious (Arabic as the language of Islam) and political (a way to unite Muslim and Christian Arabs on secular grounds).

The indirect result of this Arabization policy is the decline of colloquial Arabic, Berber, Nubian, and Kurdish which are not given even the status of regional languages. In the Maghreb, policy makers did not take into account the great number of Berbers (45% of the population in Morocco, 25% of the Algerian population, and 1% of the Tunisian population). Because of this unnatural situation, Berber cultural demands have increased

with the aim of doing justice to the Berber language and culture.

Despite four decades of Arabization in the Maghreb, French is still widely used in education, administration, and the private sector. The efforts of Arabizing the educational system have not fully succeeded for three main reasons: (a) the place of French is still very strong in key socioeconomic factors; (b) the ruling elite holds negative attitudes toward Arabization and the way it has been politicized and implemented; and (c) the official language policy has been inconsistent, and as a result there seems to be no plan to Arabize higher education.

Arabization has had negative consequences on the Kurdish and Berber languages because it has led to their marginalization and to the assimilation of the Kurdish and Berber cultures and peoples. However, in 2001 the Moroccan government decided to revitalize Berber and introduce it into the educational system.

Berber in Education

The attempts to revitalize Berber are motivated by the fact that Berber is the native language of about a third of the Maghrebian population. This language has been in regression under the influence of French, Standard Arabic, and dialectal Arabic. To alleviate this threat on Berber, Berber has recently been officially recognized as part and parcel of the national cultural identity in both Algeria and Morocco. As a result of this move, the authorities have introduced Berber into primary schools and have increased the number of hours allotted to it on radio programs. Berber has also been introduced on television particularly for news broadcasting. As a consequence of the revival of Berber, the number of Berber cultural movements and associations has multiplied (more than 40 exist in Morocco and more than 100 the world over). On the one hand, their objective is to codify and standardize the Berber language and revitalize its culture and literature, on the other hand, it is to sensitize people and governments to the cultural value of Berber as part of the national legacy. The creation of the Royal Institute of Amazigh Culture (IRCAM) in 2001 in Morocco and of the Haut Commissariat à l'Amazighité in Algeria in 2000 is reminiscent of the governments' endeavors to revive and promote Berber language and culture and to meet the demands of Berber civil society.

Arab and Maghrebian people are generally proud of their mother tongues and national languages. Although attitudes toward the different mother tongues and languages have changed among the people, these attitudes have to a certain extent been ignored by Arab governments and decision makers. For instance, Arabization has succeeded only partially after five decades of independence and struggle for the restoration of Arabic language and culture. The mother tongues, notably colloquial Arabic, Berber, Nubian, and Kurdish, are neither codified nor standardized. In the Maghreb, Classical and Standard Arabic are venerated by the population as they have religious ramifications and symbolize national unity, Arab nationalism, and solidarity. Berber and dialectal Arabic, which are considered as means of communication in informal contexts and transactions, have become symbols of identity and authenticity nationwide and in intergroup relations.

Changes in Education and Language Use

Before the French colonization in Morocco in 1911, an Islamic traditional system of education was prevalent. Koranic and religious schools, namely *medersas* and *zawiyas* (mausoleums), offered an Islamic traditional style of education. For centuries, they taught mainly the Arabic language and the holy Koran; the University of Al-Karaouine at Fes, built in the eighth century, helped students to pursue and deepen their knowledge of Arabic and Islamic studies (see Grandguillaume, 1983, p. 70). Islamic philosophy and

jurisprudence were taught, and religious counsels and public notaries were trained in these institutions.

After the proclamation of independence in 1944, Classical Arabic was again declared the official language and French reverted to being the second language. Since then, French has been used alongside Classical Arabic. The former has been adopted for purposes of modernization and development. In this respect, Al-jabri (1973, p. 45) remarks that the Moroccan elite is in full favor of keeping the essence of the educational system of the French colonization and developing it on the basis of the French model.

Various reforms were adopted during the 1960s, 1970s, and 1980s and then the 2000s to bring a change in the educational system. The reformers of Moroccan education laid emphasis on the Arabic language in the curriculum. Another aim was to unify the educational system. This was done in order to curb the differences in quality and standards. Two different educational systems in Morocco have coexisted since 1911—the Islamic model of instruction at Koranic schools, which concentrates on Islamic studies and Arabic literature and the modern model, adapted from the French type, to serve the needs of modern Morocco. Although only a small percentage of students follow the Islamic model, the government stresses this model's importance as a means of maintaining a sense of national and regional identity (Wagner & Lotfi, 1980).

Today, primary and high schools have been totally Arabized: Standard Arabic is the language of instruction for both literary and scientific subjects. In high schools, however, technical studies such as economics, mechanics, computing, and accounting are taught in French. At the university level, the basic language of instruction is French, especially for economics, management, science, and technology.

When children are enrolled in secondary schools (grade 10), they must learn one or more foreign languages, including Classical Arabic, in addition to their mother tongue: Berber or Moroccan Arabic. This language barrier causes some children not to attend school. Parents who can afford it usually enroll their children in private schools where Classical Arabic, French, English, and Spanish are taught, with English being particularly popular (Clark, 2006). A high percentage of these private-school graduates are admitted to universities.

As a lingua franca, Moroccan Arabic has become a deep-rooted code in the mentalities of many Berberophones. Through it, the latter sometimes express their beliefs and feelings. Moroccan Arabic is used by both Arabophones and Berberophones as a means of expression of affective and cognitive experiences.

Even though foreign languages are still utilized as means of development and modernization they have become less prestigious than a generation ago, especially French. In Morocco, for example, French has started to slowly give way to English (cf. Sadiqi, 1991). This is due to two main reasons: first, people see French as the language of the colonizer and second, English is the first international language. At any rate, these European languages are not as predominant as in the 1960s in education and administration. Nevertheless, Standard Arabic–French bilingualism is enhanced to achieve efficiency and international communication (see Hargreaves, 1994). Furthermore, most scholars support bilingualism or mastery of foreign languages in addition to Arabic. The eminent Moroccan lexicographer, Lakhdar Ghazal (ex-director of the Institute of Arabization in Rabat, Morocco), argues that if Arabization is a duty, Arabic–French bilingualism is a necessity as far as it serves the enrichment of Standard Arabic.

Language and education in the Arab world must be understood in connection with the broad cultural, economic, and political factors that shape them. The geography and history have largely determined the language planning and education policy in this region. Although Arab countries share common identity formation features—Islam as the main religion and Arabic as a common language—they differ in ethnicity, tradition, history,

and spoken dialects of Arabic. Economic development strategies also vary between the oil-producing states such as Kuwait and United Arab Emirates and the non-oil producing countries such as Morocco, Tunisia, and Jordan.

As a result of government investment in education, the average of educational attainment of the labor force has increased. High literacy rates, regarded as a symbol of national achievement as well as a financial goal, more than doubled in the countries of the Middle East and the Maghreb in the period spanning 1960 to 1995. Morocco is keenly aware of the critical value of education to national socioeconomic development. In 2000, 50% of the Moroccan people were illiterate. According to the 2004 census, this percentage dropped to 40%, but illiteracy is higher among rural women. Despite the improvement of literacy levels in the region, there was a discrepancy between the countries with a significant urban population in which literacy rates had marked a steady increase and the predominantly rural countries where the percentage of illiteracy was remarkably high. Further attempts at raising literacy rates are being processed in the region with a particular emphasis on educating women in rural areas.

Conclusion

To conclude, the multilingual context in the Arab world differs from country to country depending on the Arabic varieties used, the colonial languages adopted, and the existing native groups and minorities. This sociolinguistic situation has important ramifications for ethnicity and politics in the region and gives rise to sociocultural issues that must be taken into consideration in language planning and in education.

Language and education in the Arab world are intimately related. Education, specifically Arabization has led to a change in popular and scholarly thinking. It has brought about the rise of Arabo-Islamic culture and the rejection of a Western lifestyle. This is reflected in the growing emergence of Islamic fundamentalism and thought.

Sociolinguistically, education has affected the use of the mother tongues, Classical and Standard Arabic, and the foreign languages. The mother tongues, namely colloquial Arabic, Berber, Nubian, and Kurdish, are now considered as symbols of ethnic identity, intergroup relations, and cultural authenticity, as they reflect the typical cultural aspects of the region. Attempts are being made by scholars and cultural associations to codify, standardize, and promote these mother tongues to the level of recognized regional languages.

The Arabization policy has contributed to the strengthening of the positions of Classical and Standard Arabic and to the increase of Arab nationalism and ethnic identity. Standard Arabic has been modernized to the extent that it can be used all over the Arab world as a language of wider communication capable of meeting the needs of the modern Arab states and societies.

Language planning in the Arab world ought to be reconsidered taking into account the multilingual context and language attitudes in the region. An adequate policy must seek to further develop and spread Standard Arabic, promote the mother tongues to the level of regional or national languages, and enhance the teaching of foreign languages like English, French, Spanish, and German. This kind of language planning can preserve cultural identity and contribute to establishing efficiency, modernity, and international communication.

SEE ALSO: Academies of the Arabic Language and the Standardization of Arabic; Arabic Standardization; Bilingual Education; Bilingual Education and Immigration; Bilingual and Multilingual Education: Overview; Language and Identity in Africa; Language Planning and Multilingualism

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Multilingual Identities and Multilingual Education

ANGELA CREESE

Introduction

Identity is a topic of considerable interest in the field of applied linguistics. Research on multilingual identities in multilingual educational contexts investigates the various linguistic resources which multilingual pupils, teachers, and parents use to negotiate selves in classrooms and school contexts. It also explores the kinds of relationships between language and identity that are embedded in both discourses and practices. How schools as social institutions and structures impose identity positions on bilingual and multilingual young people, parents, and teachers is of additional interest in the study of multilingual identities. This entry will review research which explicates our understanding of multilingual identities in multilingual education.

We might think of "best practice" multilingual education as consisting of an ideological context in which educators "fill up implementational spaces with multilingual educational practices" which, as Hornberger points out, often happens in the face of restrictive policies (Hornberger, 2005, p. 606). García, Skutnabb-Kangas, and Torres-Guzman (2006, p. 14) refer to multilingual schools which "exert educational effort that takes into account and builds further on the diversity of languages and literacy practices that children and youth bring to school." This means going beyond acceptance or tolerance of children's languages, to "cultivation" of languages through their use for teaching and learning. García (2009, p. 6) argues that what distinguishes bilingual education programs is the goal of using two languages "to educate generally, meaningfully, equitably, and for tolerance and appreciation of diversity." She points out these programs help students to become global and responsible citizens, and teach them to look across cultures and worlds, beyond cultural borders. Furthermore, they "make schooling meaningful and comprehensible for the millions of children whose home languages are different from the dominant language of school and society" (p. 7). García (2009, p. 8) argues that there is a pedagogic need for "practices firmly rooted in the multilingual and multimodal language and literacy practices of children in schools of the twenty-first century." Both Hornberger and García offer us an inspirational and aspirational model of multilingual schools. However, we also know that for many bilingual and multilingual pupils, parents, and practitioners this orientation is not what they experience in practice (Blackledge, 2000, 2005; Menken, 2008).

This entry therefore considers multilingual identities in a range of educational contexts and will cover four areas. The first summarizes research which highlights the role of negotiation in identity performance. The second section summarizes research which shows how institutional and social structures shape identity performance. A third section looks at language education and identity. A fourth section investigates identity, language, and cultural heritage in schooling. A final section makes some concluding remarks.

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Negotiation and Identity Performance in Schools

Holland, Skinner, Lachicotte, and Cain (1998, p. iv) argue that "Identities—if they are alive, if they are being lived—are unfinished and in process." In other words, we are always in the business of becoming. Holland et al. describe agency as the process of performing unfolding and shifting identities through socially constructed discourse. They argue for a focus on the micro contexts and the interactions which occur in them as a way of revealing human agency. They suggest this "may be frail, especially among those with little power, but it happens daily and mundanely, and it deserves our attention" (1998, p. iv). Maybin (2006) has shown the importance of looking at identities of young people in schools. Maybin views identity as "dialectically negotiated between young people's internal definitions of self and other external definitions which are circulated in the social arena through naming and categorizing" (2006, p. 26). Drawing on Jenkins, Maybin shows how young people negotiate and manage their own positioning in relation to their peers and emphasizes the social aspect of identity performance. Indeed, Jenkins argues,

> All human identities are in some sense—and usually in a stronger rather than a weaker sense—*social* identities. It cannot be otherwise, if only because identities are about meaning, and meaning is not an essential property of words and things. Meanings are always the outcome of agreement or disagreement, always a matter of convention and innovation, always to some extent shared, always to some extent *negotiable*. (Jenkins, 1996, p. 3; emphasis added)

An emphasis on the negotiation of identities points to the importance of nonstatic descriptive categories and the importance of fluid identities. Pennycook (2003, p. 513) has noted that sociolinguistics has traditionally operated with "fixed and static categories of class, gender and identity membership as if these were transparent givens onto which language can be mapped." Pennycook points to the need for "far more fluid ways of thinking about language, identity and belonging" (2003, p. 514). Critically, then, any focus on language performance "needs to be understood in ways that do not start with prior social definitions of who we are" (Pennycook, 2003, p. 514). Indeed, it is now well established in contemporary sociolinguistics (Harris, 2006; Rampton, 2006) that one "language" does not straightforwardly index one subject position, and that speakers use linguistic resources in complex ways to perform a range of identity positions, sometimes simultaneously.

Pavlenko and Blackledge (2004) have looked at how identities are negotiated in multilingual contexts. They suggest that five principles must be followed in order to describe multilingual identity. First, that identity options are viewed as constructed, validated, and performed through discourses and that these discourses are available to individuals at particular times and places. Second, that languages and identities are embedded within local and global relations of power which may be challenged, or negotiated, or may be found to be non-negotiable. Third, that identities are constructed at the interface between age, race, class, ethnicity, gender, generation, sexual orientation, location, and social status, and are often fragmented, hybrid, decentered, multiple, and shifting. Fourth, that imagination plays a crucial role in the process of the creation of new identity options. And, fifth, that individual narratives are important in the negotiation and constitution of identities. These principles serve as a useful heuristic in researching multilingual identities in multilingual schools.

Institutional and Social Structure: Shaping Identity Performance

Although the performance of our identities signposts particular subjectivities and shows us as active, creative individuals able to construct social meanings, social structures also

position us in the social world. In other words we are not always at liberty to negotiate identity positions of our choice. Sometimes identity positions are imposed and assigned (Pavlenko & Blackledge, 2004; Wortham, 2006). Identities are also contested.

The study of identity is rich and research in this area documents important studies in a wide variety of different contexts. In a short entry such as this, it is not possible to provide an account of this large literature in any detail. Below, some examples of research are summarized to give the reader a flavor of these studies. One study of how a multilingual educational context imposes stigmatizing identity positions is Talmy's 2004 study of young people learning English in a Hawaiian high school. Talmy demonstrates that hierarchies of English-language learners exist in classrooms and that categories around language learning are culturally produced and reproduced. Talmy refers to the discursive construction of the newly arrived, "fresh-off-the-boat" student, relationally defined against an unmarked, idealized, "native" speaker. Talmy refers to the "linguicism" at work in the social practice of "the public teasing and humbling of lower L2 English proficient students by their more proficient classmates," which "was one of the primary ways that students produced and reproduced the linguicist hierarchy" (2004, p. 164). Talmy (2004) argues that such discourses contribute to the reproduction of a form of linguicism which is officially sanctioned, and institutionally situated. Talmy's work points to how institutionalized labels and categories work against the young people they are expected to support.

Another study in Canada (Denos, Toohey, Neilson, & Waterstone, 2009) describes how "many children in today's classrooms quickly acquire identities that are seen as problematic" by schools (p. 30). According to Denos et al., once a child has been ranked, named, categorized, and assigned an identity, "teacher attitudes towards the child and their assigned identity become factors in the access the child has to his [school] community and the resources within it" (2009, p. 37). In other words identities, once assumed or assigned, are difficult to change. This is especially dangerous for multilingual young people who can be positioned by schools as "deficient" or lacking in some way in terms of the majority language. Bilingual students can also experience imposed identity categories which crudely link their language(s) to cultures and nations resulting in essentialized and "romanticized" notions of bilingualism (Leung, Harris, & Rampton, 1997; Harris, 2006).

Language Learning, Multilingualism, and Schools

Lo Bianco (2009) points to "toxic forms of absolutism" in describing multilingual identities and shows how the four institutions of state, nation, language, and religion continue to align in the minds of many. Particularly long-term, according to Lo Bianco, is the "enduring nature of identity work in language" (p. 121). He shows how identity is often equated to language and to national cultures (also see Atkinson, 1999; Holiday, 1999; Leung et al., 1997). He argues that we need a new form of language education which avoids existing agendas and which captures the new and emergent identity positions available to young people learning languages in our schools. He argues for a curriculum which develops "critical worldmindedness" (p. 127). This would see the teaching of languages not linked to discrete and bounded nation-states but as cultures penetrating each other (Makoni & Pennycook, 2007).

Byram (1998) reminds us to distinguish between different kinds of schools when discussing multilingual identities and language learning. His greatest criticism is for national education systems which aim to develop "national identity" through the implementation of a national curriculum. Byram argues that this model has as its ambition to transmit the national curriculum and often fails to address the language learning and educational needs of different linguistic and ethnic groups. Byram suggests that such schools often deny "recent immigrant children" (p. 103) an opportunity to be part of the nation because the

national curriculum bars the coverage of other languages and histories, resulting in multilingual identities, cultures, and histories being excluded.

The language learning and identity of students is a key area of research best represented in the seminal work of Norton (Norton Pierce, 1995; Norton, 2000). She argues that social identity is not something that belongs to the individual but something that emerges out of the learner's interaction with the learning context. She formulated the concept of "investment" to replace the traditional concept of "motivation" in order to better capture the complex negotiation between the language learner and the learning context. Moreover, she points out that language learners do not live in idealized, homogeneous communities but in complex, heterogeneous ones, and that identity construction must be understood in terms of issues of power from within this heterogeneity. For Norton, an "investment" in the target language is also an investment in a learner's own social identity. Van Lier (2008) describes the need to consider the development of new languages alongside the development of existing languages. He stresses the importance of the interrelationship between teacher and learners in making this connection salient. According to van Lier, the teacher engages the learner in pedagogic actions which should develop "a wide panoramic view of self." From this teacher–learner engagement, new identity positions associated with language-learning processes can emerge with the teacher showing the learner the possibilities of these.

Teacher identity and language learning has been discussed by Conteh (2007a, 2007b). She looked at the identity work which bilingual teachers do in primary schools and found that the bilingual teachers used code switching as an important resource to perform their professional identity. This was important to the bilingual teachers as it allowed them to draw on funds of knowledge which they used as "cultural bridging between life in Bradford and Pakistan" (Conteh, 2007a, p. 196). Conteh draws on Cummins (2001, pp. 1–2) to remind us of the potential transformative power of the conversations between teachers and learners. Specifically she argues that code switching "is a distinctive feature of being bilingual, which very clearly links social, cultural and linguistic factors" (2007b, p. 466), and she suggests that this is a particularly important resource in working with second- and third-generation ethnic-minority children from different heritage backgrounds. Creese and Blackledge (2010) found a similar phenomenon in community-run language schools. They describe how bilingual teachers use translanguaging to move between languages to include different participants—students, parents, and teachers—in the teaching and learning of community languages. They argue that this endorsement of flexible bilingualism by the bilingual teachers offers the students an identity position of code switching as usual, acceptable, and positive.

Multilingual Identity and Heritage

May (2001, 2005, p. 330) argues that "historically associated languages continue often to hold considerable purchase for members of particular cultural or ethnic groups in their identity claims." For example Caldas-Coulthard and Fernandes Alves (2008, p. 124) speak of the perceptions of exiled people (or expatriates, refugees, or émigrés) as very much still being "grounded in the concept of nationalism which depends on 'a discourse which still depends on notions of space, of territory'" (Van der Veer, 1994, in Caldas-Coulthard & Fernandes Alves, 2008, p. 124). She shows how the idea of "belonging" to a nation is highly elaborated through symbols and rituals from the mother country.

Educational provision for regional-minority groups has also addressed the study of identity. Cenoz (2009) speaks of the importance of minority languages in education and describes an effort to protect and develop them. Illustrating through the example of Basque educational research, she shows how bilingual education is necessary for the survival and

revitalization of Basque as a minority language. Cenoz reports on work which shows Basque language and culture as important for Basque identity. One government report gives the most important condition of Basqueness as "living and working in the Basque Country" (p. 175).

In the context of research on "heritage-language" education, it is almost a truism that learning the "heritage" language "plays a critical role in the process of children's identity formation" (Nicholls, 2005, p. 164). Blackledge and Creese (2010) found that a "language" held powerful connotations in terms of a sense of belonging and selfhood in their case study of Bengali complementary schools. Teachers believed that teaching language and heritage was a means of reproducing "Bengali" or "Bangladeshi" identity in the next generation. Classroom interactions became sites where students occupied identity positions which were sometimes at odds with those imposed by the institutions. This research showed young people discursively negotiating paths for themselves which were in some ways contrary to the ideologies of the complementary schools. Whereas teachers and administrators held the view that young people ought to learn Bengali because to do so carried with it knowledge of Bangladeshi history, nationalism, and identity, the young people's attitudes to their languages, and their multilingual practices, constituted a response to their place in the world, as they negotiated identity positions which took them on a path through language ideological worlds constructed by others.

Creese, Bhatt, Bhojani, and Martin (2006) explored institutionally endorsed identity positions in two Gujarati community-language schools. They found several different identity positions encouraged by the schools. One of these linked language to ethnicity and national culture. Here the endeavor of learning Gujarati was used to remind students of cultural heritages. A second identity position encouraged in the school was a more fluid position which saw the school providing a context for young people to question ethnic, cultural, and heritage boundaries, labels, and categories. Related to this flexible identity position was the use of code switching in the performance of identity. This saw schools institutionally sanctioning the movement between languages in the performance of a multilingual identity which did not tie one language to one culture or heritage.

Conclusion

A view of identity as agentive but also reproduced in social structures has been described in this entry. There are dangers in overemphasizing one over the other. An overemphasis on "agency" and the individual's ongoing project of identity negotiation could too easily depoliticize important arguments which have revealed continuing unequal relations of power across certain ethnic groups, gender, and social classes. Similarly, an overemphasis on social structures perpetuates the use of crude categories which trap and essentialize individuals. This threat is particularly prominent for multilingual people who find themselves too easily defined around static definitions of culture, nation, and language.

This entry has reviewed research which shows the dangers of using slots and categories which negatively position the "vibrant and multifaceted" multilingual young people in our schools in ways which have harmful consequences for them (Denos et al., 2009, p. 47). Rather than use the old, established categories, we need to develop new ones. This requires looking at current practices to develop pedagogies which respond to and reflect the life experiences of multilingual people (Hornberger, 2008; Creese & Blackledge, 2010). As Denos et al. (2009, p. 47) suggest, we must continue to "actively challenge and resist the question of *difference* with *problem*."

Through the study of language use in situated practice we are able to understand how people see themselves and perform their social identities. In the study of multilingual identities we are required to look at how the local is embedded in the national. This requires

understanding how local practices engage and connect with diasporic global influences. The concept of "negotiation" of identity emphasizes the agency of the speaker as consisting of many "selves" which shift depending on context. The multilingual individual negotiates with a variety of languages and dialects and these serve as resources in the ongoing business of becoming. At times these linguistic resources are used by the individual to align to larger social categories, such as national, cultural, ethnic, gendered, and class categories. At other times, the multilingual individual resists such alignments and refuses to be essentialized into the social categories being imposed. Multilingual identities are shaped by multiple linguistic and cultural resources, including those associated with heritage languages and those associated with peers, school, neighborhoods, city and rural life as well as with a digital and globalized world.

SEE ALSO: Analysis of Identity in Interaction; Bilingualism and Bilinguality; Bilingual and Multilingual Education: Overview; Multiliteracies in Education

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Multilingualism

JASONE CENOZ

Introduction

One of the earliest references to multilingualism can be found in the book of Genesis, where people who spoke only one language had tried to build a tower "whose top may reach unto heaven" and, in order to prevent this, God made them use different languages: "Go to, let us go down, and there confound their language, that they may not understand one another's speech" (Gen. 11:1–10, King James Version). In this passage, linguistic diversity is seen as a problem that prevents people from achieving their task—the building of the tower. As Lüdi and Py (2009, p. 155) point out, the idea is that "monolingualism represents an original state, intended by God and/or politically legitimised by human beings." This positive vision of monolingualism still has currency today. In fact, speaking the same language is considered by many people as more natural and a better scenario than speaking several languages. An example is the link of the state to only one official language and not to the different languages used by different speakers. According to this "one nation–one language" ideology, the use of one single language gives unity and strength and can be a better ground for achieving different goals. This ideology has been very strong since the 18th century in Europe and has spread to other parts of the world.

On the other hand, multilingual individuals (also called polyglots) have always been admired. One of them was Cardinal Giuseppe Caspar Mezzofanti (1774–1849), who spoke at least 38 languages. Another famous multilingual was John Bowring (1792–1872), an English politician and economist, who was fluent in 100 languages and had a basic understanding in many more. Being able to communicate in other languages has also traditionally been part of the skills of a well-educated person. Being multilingual can provide more opportunities for communication and, in fact, multilingual skills could have avoided the problem of confusion created at the Tower of Babel.

In spite of this, there are still many parents and educators who think that raising children in two or more languages can cause some type of cognitive delay or at least confusion. This deficit view of multilingualism was reinforced by early research into bilingualism, which associated bilingualism with negative cognitive implications. This early research had many methodological problems and nowadays is no longer accepted. More recently, most research studies have associated bilingualism and multilingualism with positive effects in cognition and particularly in some aspects of metalinguistic awareness (see Baker, 2011).

Another issue related to the more or less positive implications of being multilingual is related to the status of the specific languages involved. Some European languages such as English, French, or German have a high status as "foreign languages" and result in so-called "elite multilingualism." Speaking these languages has always been a marker of high status in opposition to folk or nonelite multilingualism, which involves languages that can be used by minorities, immigrants, or powerless people. This second type of multilingualism is more widespread. In many of these situations schoolchildren who speak languages with a low status in a given society are expected to become monolingual in the high-status language and to assimilate to the dominant culture without getting any

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support for their first language. In these contexts negative attitudes toward multilingualism may be found coming not only from monolingual speakers of the high-status language but also from multilingual speakers.

Definition of Multilingualism

The term "multilingualism" is used in different ways. Multilingualism is a complex phenomenon because it is affected by many factors and can take place in a very wide range of situations. One of the first issues to consider is the number of languages involved. Multilingualism clearly refers to more than one language, but the distinction between bilingualism and multilingualism is not clear-cut. The term "bilingualism" means "two languages" (Greek prefix *bi-* = two), but traditionally it has also been applied to more than two languages, which is not etymologically accurate (see, for example, Bloomfield, 1933). The word "multilingualism" means "many languages" (Latin *multus* = many) and is a term applied by some scholars to two languages and by others to three or more languages. For example Kemp (2009, p. 15) considers that "most researchers in language research use the term 'bilingual' for users of two languages and 'multilingual' for three or more, but this is not universal." It is difficult to know the relative number of researchers that make this distinction because "multilingualism" is a term that seems to be gaining currency at the expense of "bilingualism" even when only two languages are involved. If we take the etymological origin into consideration, "two languages" does not seem to be "many" (*multi*), but it is arbitrary to decide that the line has to be drawn between two and three languages and not between three and four, for example. In any case, etymology is only one of the criteria to be taken into account and research on the acquisition and use of third and additional languages will probably establish the similarities and differences between the different processes. In this entry we will use the term "multilingualism" in a broad sense, including bilingualism.

Multilingualism may refer to many aspects of life, but one of the basic distinctions is between its individual and social dimensions. Individual multilingualism (also called plurilingualism) refers to the ability that individuals can have to communicate in two or more languages, while societal multilingualism refers to the languages used in a specific society. Obviously, individual multilingualism is closely related to societal multilingualism because if more languages are spoken in a given community it is more likely that the individuals who live there speak more than one language. However, there are multilingual individuals who live in a relatively monolingual society, particularly in the case of elite multilingualism. At the same time, there are contexts of high linguistic diversity such as many of the big cities in Europe or North America with a large percentage of monolinguals. The European Commission combines individual and societal multilingualism in the following definition: "the ability of societies, institutions, groups and individuals to engage, on a regular basis, with more than one language in their day-to-day lives" (European Commission, 2007, p. 6). This definition also considers multilingualism to include bilingualism.

The Scope of Multilingualism

The study of multilingualism has attracted the interest of scholars in different disciplines. These disciplines look at different aspects of multilingualism on individual or societal levels and their research is based on different theoretical approaches and also uses different methodologies. In this section some of the main approaches are summarized.

A perspective based on linguistics focuses on the characteristics of the languages which are analyzed. One of the issues in the study of multilingualism is the linguistic distance

between the languages involved because of its implications for areas such as crosslinguistic influence, receptive multilingualism, or multilingual education. Another area that has received a lot of attention in recent years is early multilingualism. Studies in this area have focused on the simultaneous acquisition of two or three languages by looking at the development of grammar, phonetics, pragmatics, or lexis from a very early age (see De Houwer, 2009). The findings of these studies, which are typically longitudinal and follow the development of bilingual or trilingual competence for months or years, are based on audio and video recordings of oral interaction recorded while the child uses different languages with other speakers. This type of research has provided interesting insights into the different stages of development and the relationship between the languages being acquired.

The way multiple languages are processed by individuals is also of great interest in the study of multilingualism. There are many methods to find out how the brain functions when processing language. The study of aphasic patients can provide valuable information by analyzing the effect of brain damage on specific aspects of language processing. One of the techniques most widely used, both with aphasic and with nonaphasic individuals, is event-related potentials (ERP), which allows researchers to observe brain activity during specific cognitive processes. There are also new advances in neuroimaging that allow the examination of brain activity with more accuracy by using functional magnetic resonance imaging (fMRI) or positron emission tomography (PET). In the case of multilingualism, one of the main issues is the brain mapping of languages, that is, to find out whether different languages are processed in different parts of the brain, but so far the results have not been consistent. There are some methodological problems because of the great diversity of situations in the way multilinguals acquire and use their languages and the different aims and designs of the research studies. Van den Noort, Bosch, and Hugdahl (2006) review some studies and conclude that there are stronger activation patterns in the brain when bilingual speakers are processing their second language.

Other experiments on language processing have focused on the areas such as the organization of the mental lexicon or the differences between monolinguals and multilinguals in metalinguistic awareness. In the case of the multilingual lexicon, it is common to use techniques such as reaction times, semantic priming, and lexical-decision tasks. There has been a lot of interest in analyzing whether there is separation or integration of the operations of the mental lexicon and the main conclusion seems to be that there is a high degree of interplay between the mental lexicons of the different languages (Singleton, 2003). An interesting perspective is the conceptual representations that multilinguals have of the lexicon as compared to monolinguals (see Pavlenko, 2009). This perspective explores the differences between monolinguals and multilinguals in the categorization of objects, events, and actions. Research studies have also related multilingualism to metalinguistic awareness, that is, the ability to reflect on language and look at it objectively, focusing on its structure and functions. According to Bialystok (2001), bilinguals tend to obtain better results in some dimensions of metalinguistic awareness: tasks aimed at identifying words and tasks that demand high levels of control of attention. Bialystok, Craik, Klein, and Viswanathan (2004) also found that lifelong bilingualism could possibly slow down the process of cognitive decline.

A related aspect of multilingualism that has received a lot of attention in the last years is its dynamic character. In contrast to earlier views, nowadays multilingualism is not seen as static and fixed, but more as changing according to the different processes of acquisition and attrition. Herdina and Jessner's *A Dynamic Model of Multilingualism* (2002) explores the psycholinguistic dynamics of multilingualism and shows how the constant interaction between a speaker's multiple languages creates new structures and emergent properties that are not found in monolingual systems.

Another line of research that links linguistic and psycholinguistic perspectives comes from specific studies on crosslinguistic influence in the acquisition of third or additional languages. These studies suggest that there could be closer links between languages other than the first and also between languages that are typologically close (see, e.g., De Angelis, 2007). Apart from linguistic transfer, crosslinguistic influence at the conceptual level has been analyzed as well as the multidirectionality of crosslinguistic influence, its relationship to proficiency, and the influence of factors such as motivation or personality (Jarvis & Pavlenko, 2008).

The study of some affective variables such as attitude and motivation has a long tradition but other aspects of emotions as related to multilingualism have received more attention in recent years. The study of issues such as the way emotions are expressed in different languages, or the emotional experience of acquiring and using different languages, opens new perspectives in research on multilingualism (see Pavlenko, 2005). One of the methodological techniques to analyze emotions and multilingualism is to look at narratives written by multilingual speakers. For example, the following multilingual speaker highlights the role of emotions: "My experiences and subsequent choices highlight the powerful effect of emotions on the enterprise of learning. At least for some personalities—such as mine—the emotional context of learning a language can be a make-or-break issue" (Freedman, 2009, p. 149).

Multilingualism is also examined in sociolinguistic studies. In this case, research on multilingualism has focused on different areas such as language policy and language planning, attitudes toward languages, or the use of different languages in specific contexts (home, with friends, work, media, internet, etc.). Language policy and language planning studies focus on different aspects related to the status, use, and acquisition of different languages. Research on language planning looks at specific interventions aimed at modifying the corpus of a language, its status, and acquisition. For example, the government of a country, region, or agency can decide to create a standard form of a language to be used at school or in the media. It is also possible to establish norms about the use of languages in different domains such as the school curriculum, or the signs in the linguistic landscape. Schools are crucial agencies in language planning because there are important decisions to be made about which languages are studied as subjects or which languages are used as languages of instruction. In many cases, the language schoolchildren use at home is not taught at school. Schools can also contribute to setting different values and ideologies about languages (see, e.g., Heller, 2007). Some of the studies in this area analyze discourse practices involving different languages in school contexts using an ethnographic methodology based on observation and interviews so as to identify these practices as related to ideologies. For example, Blackledge and Creese (2009) distinguish between the ideology of "separate bilingualism" that tries to keep languages apart in separate containers and the ideology of "flexible bilingualism," when the speaker and not the language is the center and language practices allow for combining different languages.

Even though multilinguals can speak different types of languages, when two languages are spoken in the same community, there are important differences between speakers of majority and minority languages. Speakers of majority languages can usually choose to learn the minority language or not, but speakers of the minority language need to learn the majority language.

According to Harrison (2007), more than 40% of the languages in the world are endangered. Many other languages are not in this situation, but are surrounded by strong languages so their vitality may also be threatened to some degree. Lesser-used languages can provide a sense of identity and, apart from being used for communication, they can have a symbolic value. One of the first measures undertaken to revitalize a minority language is the provision of some form of teaching. This teaching can be extracurricular

or inside the official curriculum, and in some cases a minority language is used as the language of instruction for all levels in education. Research on the acquisition and use of minority languages in contact with other languages can be relevant for areas such as L1 literacy, second language acquisition, bilingualism and multilingualism, language and identity, language policy, and the acquisition of additional languages.

The study of multilingualism in the linguistic landscape offers a different perspective in the study of multilingualism. The linguistic landscape refers to the signs of different types that can be found in different cities. Studies on the linguistic landscape conducted in different settings confirm the spread of multilingualism and are indicators of linguistic diversity in the public space (Shohamy & Gorter, 2009). The multilingual linguistic landscape that can be found in different parts of the world usually includes English as one of its languages. The intensity of the use of English in different domains all over the world is a new phenomenon as compared to other languages of international communication used in the past. Multilingualism with English can be found on the street but also in the school curriculum, at work or on the Internet. English is a very strong language but it is very often used in contact with other languages. For example, English is the most widely used language on the Internet; it is estimated that English was used for 51.3% of the information on the Web in 2000, but only for 27% in 2009 (Graddol, 2006; Internet World Status, 2009). This means that other languages are useful for their speakers in their everyday lives. English is considered a resource which opens doors for better opportunities and it is associated with social and economic mobility. At the same time the spread of English is also felt as a threat.

The study of individual and societal multilingualism focuses on all the topics that have been discussed in this section and many others. In fact multilingualism is related to cognitive and affective dimensions of individuals but also to their social interaction, and has historical, political, social, psychological, economic, and educational dimensions. Multilingualism at the level of the individual and of society has great diversity regarding the structural characteristics, roles, and use of the languages involved, as well as the social or educational contexts, among others. As the number of existing languages is much larger than the number of independent states, individuals and whole communities need to speak more than one language in many cases.

Multilingualism is an umbrella term that covers different processes and situations which are very common in the world. Taking into account its broad scope, a single theory cannot possibly explain its diversity and complexity.

Multilingual Competence

The definition of multilingualism that we have adopted here is that of the European Commission, which refers to the ability "to engage . . . with more than one language." The term "engage" refers to "being able to communicate," but it is obvious that communication can happen at different levels, through different channels, and usually results from a combination of different modalities that include languages but also gestures, visuals, and other semiotic systems. One of the concerns of scholars has been to define the level of proficiency needed in two or three languages to be considered multilingual. The idea of "native control of two languages" suggested by Bloomfield (1933) is not very realistic, particularly if a multilingual uses three or more languages. The idea of the native speaker as a reference for language learning is no longer unanimously accepted. Becoming a native speaker of several languages is very exceptional because multilingual speakers are not the sum of several monolinguals. Even the idea of balanced multilingualism with similar levels of proficiency in the different languages is not realistic. Multilinguals do not use all

the languages in their repertoire in the same way for all functions. They choose different languages according to the context, taking into account factors such as the interlocutors, the action, or the setting. They have preferences for some languages to carry out some actions. The emperor Charles V (1500–58) famously said: "I speak Spanish to God, Italian to women, French to men and German to my horse"—this is an example of the preferences of a multilingual speaker. Nowadays multilingual speakers also have different preferences and domains of language use when they choose different languages as they browse the Web, answer the phone at work, read a novel, or chat to a friend. In fact, multilinguals use languages for different purposes according to their own preferences and the communicative needs of their interlocutors, and very often do not use all the languages they know to the same extent in different communicative situations. Cook (2007) sees the need to adopt a multicompetence view that considers multilinguals as the norm and not the exception. Multicompetence is the knowledge of two or more languages in the mind and it is a reaction against the traditional focus of SLA research that used the native speaker of the target language as a reference. The idea is that a multilingual person's competence cannot be compared to that of native speakers because their minds are different. Knowledge of the L2, L3, or L4 is different, but the process of acquiring these languages has an impact on the first language. Furthermore, multilingual speakers use languages in different ways because they can switch languages; their different languages make them change perceptions and affect their conceptual representation (see also Pavlenko, 2009). Therefore, multilinguals are different from monolinguals and should be seen to possess unique forms of competence, or competencies, in their own right.

Multilingual speakers use languages as a resource in communication. Code switching and code mixing are more common in some contexts than in others. Grosjean (1982) proposed the concept of language mode to refer to the state of activation of the languages spoken by bilinguals depending on the interlocutor, the content of the discourse, the setting, or the function of the interaction. Language mode can be represented as a continuum with two poles. When bilinguals interact with monolinguals, they are toward the monolingual end of the language-mode continuum and only one language is active. When they interact with bilinguals, they are toward the bilingual end of the language-mode continuum and they mix languages more often because both languages are active. Bilinguals can also find themselves in positions between these two poles. Although code switching in real communication is obviously linked to contextual factors, psycholinguistic experiments suggest that the role of the nonlinguistic context is not as important in the activation of the languages in the brain (Dijkstra & Van Hell, 2003). Psycholinguistic experiments show that bilingual speakers activate their languages in parallel and become skilled in negotiating the existing competition among the languages they know so as to use the language (or languages) that is most suitable to the context (Kroll, Bobb, Misra, & Guo, 2008).

Multilingual speakers switch languages to convey their communicative intent and in many cases to achieve a specific communicative effect. Baker (2006) lists 13 possible reasons for code switching that include, among others, when it is difficult to retrieve a word, when the concept does not have an equivalent, or when a special point needs to be emphasized. Code switching is sometimes regarded as a negative practice, particularly in educational contexts, but there is a recent trend called "translanguaging" that uses the alternation of two languages as a pedagogical strategy. Translanguaging can refer to receiving input in one language but producing output in another language (see García, 2008). Another way of switching languages that also distinguishes between productive and receptive skills is "receptive multilingualism." Speakers of related languages use their respective first languages, which are closely related, and try to understand the languages used by their interlocutors (see Ten Thije & Zeevaert, 2007).

Conclusion

Multilingualism is a very common phenomenon in the world and it is often said that being multilingual is the norm and being monolingual the exception. Estimations about the number of multilinguals in the world are not easy to make, but there is no doubt that a large number of people in the world speak two or more languages. Multilingualism is not a new phenomenon but it has some specific characteristics nowadays, such as the spread of English or the use of different languages in education.

Theoretical and empirical work on multilingualism shows that multilingual individuals have some characteristics due to the existence of two or more languages in their minds and the use of those languages in specific social contexts. After many years of rigid monolingual approaches in the study of different aspects of multilingualism, there is a trend toward considering multilinguals as such and not as speakers or imperfect speakers of each of their languages. This approach, based on the multilingual's whole linguistic repertoire, can open new perspectives for the study of both individual and societal multilingualism.

SEE ALSO: Bilingual and Monolingual Language Modes; Bilingual and Multilingual Education: Overview; Bilingualism and Bilinguality; Code Switching; Crosslinguistic Influence and Multilingualism; Dynamics of Multilingualism; Early Bilingualism; Linguistic Landscape; Multicompetence; Multilingualism and English; Multilingualism and Metalinguistic Awareness; Multilingualism and Minority Languages; Receptive Multilingualism

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Multilingualism and Identity

DIEGO PASCUAL Y CABO AND JASON ROTHMAN

Introduction

The term "multilingualism" is most often used to refer to a state of linguistic knowledge, environments, or speakers in relation to which a minimum of three languages are implicated. When we speak of multilingualism in this entry, however, we include the case of bilingualism, following Romaine (1995) and understanding the term "multi" to refer to "more than one." In the Western world, multilingual scenarios are commonly taken to be exceptional, rare if not mystifying, despite the fact that multilingualism as such actually describes the reality of the majority of individuals and environments across the world, including a multitude of people in countries largely considered monolingual, such as the USA. That multilingualism abounds and is a naturally occurring inevitability is simply observable at the societal and individual level. However, the focus of the present discussion seeks to ponder what multilingualism brings to bear on the construction and performance of identity. This is the task we turn to in the remainder of this entry.

Connecting Language to Identity

Being the mode at our disposal to express our thoughts, desires, emotions, and the like, language is omnipresent. Language is unmistakably linguistic in the formal sense of the word, but it is much more at the same time. Language is one of the most reliable constructs of human society; from the time we are born we are surrounded by it and, since all communities have language, it is virtually synonymous with being human. No one has ever claimed that language exists within a vacuum; even though some linguists are uninterested in the sociological side of language, this does not entail that there is an *a priori* rejection on their part to the intuitive notion that language is obviously a social construct. Putting aside questions related to how language is acquired and mentally represented in a cognitive sense, which are best left to formal linguistics, the extent to which one could possibly fully understand language in the absence of conceiving how it comes to bear on society, and society on it, is limited. The notion of linguistic identity acknowledges the role that language plays in the shaping of personal and societal identities, from construction vis-à-vis linguistic negotiation to identity performance via language use. Those who study linguistic identity understand that language leaves its mark on personal identity as much as individuals leave their mark on the languages they speak (e.g., De Fina, Schiffrin, & Bamberg, 2006). Insofar as this is true, it stands to reason that linguistic identity in multilingualism would entail even more dynamic construction and performance processes that would not—in fact could not—be unvarying or consistent precisely because multilingualism itself is a fluid concept and subject to multifarious differences specific to each instance of contact. Of course, this does not mean that there are not commonalities to be appreciated from bringing together similar or even vastly different cases of multilingualism, but is rather a proviso that one must consider the specific variables that are sure to be unique as they relate to the linguistic identity of multilingual individuals, communities, and nations (e.g., Niño-Murcia & Rothman, 2008).

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Research on the concept of identity, as it relates to language and language use, is currently at the forefront of research in the field of sociolinguistics. This type of research has informed and is informed by linguistics, sociology, and anthropology as it contributes to the general knowledge of human behavior. The systematic analysis of social and linguistic data from environments where two or more languages coexist provides us with extremely valuable information regarding its speakers' linguistic behavior (both at the individual and at the collective level). Critical to this form of analysis is the underlying fact that we can better appreciate some of the intricacies that govern multilingual contexts everywhere, that is, we can understand how an individual is self-positioned in such an environment and how she or he constructs social positions among others (e.g., Bucholtz & Hall, 2005).

Questions such as what it means to be Turkish or Swedish are already tricky, if not loaded. Nevertheless, pondering what it might mean to be Turkish–Swedish in Sweden, where your reality might sit between two linguistic codes (Turkish and Swedish) and where you might not feel authentically part of either of the subcultures that contribute to the label, is likely to be more complex. To be a Turkish–Swedish, Japanese–Brazilian, Algerian–Italian, Moroccan–French, or Basque–Spanish individual in no way guarantees that your experiences, linguistic and otherwise, are truly comparable to all members of such groups; however, it might mean that there is in some way a common basis for how your identity comes to be constructed. In this case, living between two cultures, two languages, and the like calls forth separate linguistic identities that are unique from monolingual ones. Novel linguistic codes are born from such experiences most naturally, and often not out of seeming communicative necessity as is the case with typical pidginization and creolization processes. The fact that multilingual speakers can alternate between two or more languages in their speech is a valuable tool to establish in-group and out-group membership. Multilinguals are aware of their linguistic abilities and they know how their speech production differs considerably from monolinguals'. New linguistic codes that reflect the hybridity of identity in multilinguals are abundant and are often indicators of inclusion into and exclusion from multilingual groups. For example, according to Zentella (1997), Spanglish is the code of choice among Nuyoricans (people of Puerto Rican descent in New York) even when they are seemingly equally fluent in Spanish and English. In a way, such individuals are trilingual, employing the languages within their repertoire and combining them in novel yet constrained ways when appropriate, in accord with the social and linguistic prudence that each situation dictates.

In the past, identity was treated as a permanent label and it was therefore assigned to groups of individuals that shared a common set of attributes irrespective of other differences. These individuals were assigned into preexisting and predetermined categories that targeted the collectivity and left aside individual variations. More recently, the concept of identity has been redefined and the focus of attention has shifted from collective and immutable to individual and ever-changing. Therefore, linguistic identity is now seen as a personal trait in constant process of development that is relentlessly being renegotiated according to individual circumstances. In this frame, the focus has shifted from absolute finished values to the value of performativity itself (Austin, 1975; Cameron, 2001, 2005). This concept has consequences for multilingualism too. Relative preferences and affinities for language choice and use at the multilinguals' disposal can and do change, often cyclically, and are related to external and internal influences while at the same time reflecting the fluidity of linguistic identity on a continuum of time.

Construction and Identity in Multilingualism

In a very broad sense, social identity focuses on the contrasts between "I" and "you" and between "us" and "them." It is through the experiences we have with other people that

we derive and develop our own identity and ultimately how we assign societal roles to others and ourselves. In this respect, the general use of language, as it relates to identity, and the specific linguistic choices reproduced in every speech act, are clearly never neutral. Although mostly done subconsciously, individuals continually construct and negotiate their uniqueness to project an image of themselves. While most individuals do so following general social and linguistic patterns, others deviate from them, producing so-called "deviant" identities (Cameron, 1995, p. 16). This is especially true among multilinguals whose linguistic repertoire, as described in the previous sections, allows them to act inventively as a byproduct of different resources they uniquely have. Whether they choose to use only one language, go back and forth indiscriminately between languages, or combine languages in interesting ways, multilinguals make use of their linguistic tools with the motivation, conscious or unconscious, of accomplishing different effects. These effects may range from amiable in-group interactions to hostile rejections toward the out-group. Whatever goal from this continuum is elected, the linguistic act embodies a process of identity (re)negotiation. In this sense, individuals have choices to make that have various consequences. Electing to align with a mainstream society may convey more privileges, while the use of another language, a more stigmatized one in a given society or subpart of a greater society, may be indicative of ethnic pride, or jeopardize social acceptance in some spheres. These kinds of privileges are therefore established, revoked, or maintained via linguistic choices. As such, external stimuli become internal variables that mediate linguistic choices, which are in turn witnessed in identity performances.

Language is, therefore, seen as an essential, distinctive element of a person's identity whether multilingual or not. It is reasonable, then, to hypothesize that the interplay of multiple linguistic codes within the mind of an individual comes to bear in nontrivial ways on the realization and maintenance of multilingual identity. Nonetheless, the amount of linguistic decisions that an individual has to make is drastically reduced by external factors such as our nationality or ethnicity, a point to which we turn in the following section.

National and Ethnic Identity

Today it is not uncommon to find political and social movements all around the world that call upon language as symbolic and inherently related to the concepts of nation, group, and identity. In the USA, for instance, the current English Only Movement has tried to make official the hegemony of the English language for decades. This debate, however, is not a new one. In fact, this association in contemporary times can be traced back to German Romanticists of the late 18th and early 19th centuries, such as Wilhelm von Humboldt, Johann Gottlieb Fichte, or Johann Gottfried Herder. These philosophers raised fundamental questions regarding the relationship between nation and language, indicating that these two elements are inseparable. An essential component of a nation, they hypothesized, is its language. Because we all use language and different ethnicities have different codes, language is an obvious and extremely effective vehicle that can be used to unite and divide masses. In modern history, the early and mid-part of the 20th century knew this game all too well as German, Italian, and Spanish were used in Europe as a means of defining inclusion and exclusion.

What does language's proverbial capital mean in a postmodern era in which the process of globalization surrounds us? Now, more than ever before, people are able to travel great distances in a matter of hours or can communicate effortlessly across the world with the simple touch of a button. In this sense, globalization is forcing the disappearance of our boundaries, physical and linguistic. This globalization comes with a very substantial price tag: homogenization at several levels. At the linguistic level, the one with which we are

concerned here, even if this globalization is favoring the spread of some languages and the disappearance of others, bilingualism (or multilingualism), and not monolingualism, is prevailing all over the world, whether it is officially recognized or not (Romaine, 2010, p. 26). Conversely, although the process of globalization and contact might most commonly meet with linguistic erosion, erosion itself can have the effect of rejuvenating pride in languages and their revitalization, motivating people to unite in an effort to reclaim their linguistic rights (see, e.g., Niño-Murcia, Godenzzi, & Rothman, 2008). This trend is nicely evidenced in the resurgence of regional languages and their co-official status in Spain where they were outlawed during the Franco regime in the mid-20th century.

The concept of ethnicity is seen as a subset of nationalism that gets especially promoted in contexts of intense immigration. In these contexts, the friction that appears between the members of the host community and the newcomers is translated in the creation of the so-called minority groups. At first, linguistic differences promote the boundaries between them. With time, these boundaries tend to disappear due to the partial or total integration of the minority group into the mainstream, a sign that acculturation has taken place. At this moment "ethnicity becomes a symbolic ethnicity" (Gans, 1979). Lack of active participation in linguistic exchanges, therefore, does not completely determine belonging to an in-group. This may have evolved into another type of identity available to an individual: ethnic identity.

Multilingual Education and Identity

It should not be controversial by now to acknowledge the fact that we live in a world in which multilingualism, and not monolingualism, is the norm, yet in many multilingual societies speakers do not always have access to an education that promotes such diversity. In many cases, minority languages are the language of instruction only during the first years of an individual's education, and they are later replaced by other more prominent languages (Cenoz, 2009). In the context of globalization, the external pressure to acquire such prestigious languages, such as English, can hinder the development of languages with less prestige. This is clearly detrimental and prejudicial since it may result in a gradual language loss in the case of minority/heritage languages. Education seems to be the best weapon against this form of linguistic stagnation. In this sense, the positive outcomes of well-developed educative policies on languages are potentially manifold, as long as they become more inclusive and more receptive of multilingual and multicultural individuals. An effective use of educative policies is therefore one that recognizes the importance of language maintenance of the minority language(s) while facilitating the acquisition of other more prestigious languages. While the presence of these policies will not assure language maintenance in any community (Cenoz, 2009, p. 11), in their absence this process will most likely result in language shift toward the majority language.

The case of languages such as Basque and Catalan in Spain is a good example of how educative policies can help recover a weakening linguistic panorama, restoring pride in linguistic identities that include minority languages by officializing their importance from the top down. This nationalist view of "one nation-one language" that dominated the time of the Franco dictatorship resulted in the official barring of the languages. During that time, a strong sense of stigmatization was associated both with these languages and with their speakers. With the turn of the century, social and educative reforms have changed the panorama with the positive effect of revitalizing these languages.

While there are a few agencies that are working to increase awareness on language policies, the number is minimal. Much work is still to be done to foster a larger number of minority languages and encourage the positive view of multilingualism. Multilingual

education not only motivates the acquisition of languages while protecting minority languages, it also legitimizes the existence of minority languages and promotes the sense of pride they should entail in the linguistic identity of its speakers.

Some Concluding Remarks

Whether multilingualism is an individual phenomenon or a societal one has not been clearly defined (Niño-Murcia & Rothman, 2008, p. 21), although we take it to be both. While we are clearly all individuals and function as individuals, we should not forget that we are also social beings and live in a social world. Multilingual communities can be found all around the world in different contexts. Sometimes multiple languages coexist without apparent tension, such as French, German, and Italian in Switzerland or Spanish and Catalan in Andorra. Other times, as is the case in Belgium, one language (Flemish) is relegated to informal in-group activities while another (French) has the public recognition (Myers-Scotton, 2002, p. 35). Other times, more than one language, or varieties of the same language, coexist, but one is predominantly more prestigious than the other; in the case of true diglossia, two languages coexist and are used for different purposes by the same community. Examples of diglossia abound, such as the case of heritage languages in the USA or the case of Arabic in the Middle East (Shiri, 2010). Even though the rewards of multilingualism are well documented (e.g., Coulmas, 1992; Myers-Scotton, 2002), when two or more languages coexist, there is a tendency to shift to the most prestigious language, which may result in language loss. At present, most government agencies are not taking the necessary measures to foster multilingualism. Educative and social reforms are therefore needed across the board in order to address the linguistic needs of the multilingual and multicultural society that we currently live in.

What is clear from this nonexhaustive introduction to the multiple variables inherent in the complex notion of linguistic identity in multilingualism is that the issues at stake are even more polarized, complex, and idiosyncratic in some ways than the same processes in monolingualism. Future research on linguistic identity and multilingualism is welcome and the emerging trend of specific research is sure to be insightful and enlightening on many planes.

SEE ALSO: Bilingual Education and Immigration; Code Switching; Ethnicity; Language and Globalization; Language and Identity; Language Policy and Multilingualism; Linguistic Diversity; Minority Languages in Education; Multilingualism; Multilingualism and Minority Languages

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Multilingualism and Aphasia

YOUNGMI PARK AND LORAINE OBLER

Over half of the world's population speaks more than one language (Garcia, 2002) and everywhere a percentage of individuals will become aphasic as a result of brain damage, losing previously acquired language abilities to a greater or lesser extent in various patterns, linked to which regions of the brain are damaged. Interesting questions have been asked about such individuals concerning how their aphasia manifests itself in each language, what the explanations are for patterns of differential recovery, how multilinguals' aphasia should be treated, and what multilinguals' aphasia phenomena tell us about language organization in the brain more generally.

Patterns of Aphasia in Multilinguals

When bilinguals or multilinguals develop aphasia, their languages are most often affected equally, in proportion to how well they were known before the aphasia-producing incident. Sometimes, however, they are impaired selectively (Paradis, 1977) and, rarely, languages are impaired differently in terms of quality (e.g., one language with fluent aphasia, the other language with non-fluent aphasia) and in terms of quantity (e.g., mild deficits in one language, severe deficits in the other language). According to Paradis (1977), there are six types of recovery patterns from bilingual or multilingual aphasia: parallel, selective, successive, differential, antagonistic, and mixed.

Parallel recovery occurs when two languages recover simultaneously and to the same degree. This recovery pattern is the most commonly found in bilingual aphasics (Albert & Obler, 1978; Karanth, Ahuja, Nagaraj, Pandit, & Shivashankar, 1991; Fabbro, 2001). Selective recovery occurs when one language is preferentially impaired or recovered. Successive recovery is found when a language recovers only after the other recovering language has maximally recovered. Differential recovery occurs when one language recovers better than the others irrespective of premorbid proficiency. Antagonistic recovery, the least common pattern, is found when a language regresses when the other language recovers. Lastly, mixed recovery patterns occur, following more than one of those listed above.

Explanations for Recovery Patterns in Multilingual Aphasia

Since the late nineteenth century, a number of researchers (e.g., Ribot, Freud, Pitres, and Minkowski) have addressed the question of which language would recover first in multilingual or bilingual aphasia. In a general book on memory, Ribot (1881) hypothesized that the first acquired language (mother tongue) would recover first and best and the language acquired right before the brain damage would be impaired the most severely and recover slowly. In his book *On Aphasia* (1953, originally published in 1891), Freud, too, speculated that this pattern would manifest. Pitres (1983, originally published in 1895), by contrast, reported seven cases in which the most used language just before the injury, whether or not it was the mother tongue, recovered first and most completely. Complementing this debate, Minkowski (1983, originally published in 1927) and a few colleagues claimed the

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importance of affective factors, reporting cases where bilingual aphasics would recover the language with the strongest affective ties first and most completely.

To date there appears to be no simple rule to account for recovery patterns in bilingual aphasics (Obler & Mahecha, 1991); among bilinguals, about equal numbers show greater impairment in their first (28%) and second (32%) languages (Fabbro, 2001). In addition to the factors of order of acquisition mentioned above, recent factors that have been nominated to predict performance in bilingual aphasia are premorbid language proficiency, age and contexts of language acquisition, and structural relations among languages (Marrero, Golden, & Espe-Pfeifer, 2002; Gil & Goral, 2004). A language with higher proficiency has a high likelihood to recover better than another language with lower proficiency. When premorbid proficiencies of two languages are comparable, bilingual individuals with aphasia tend to demonstrate parallel recovery. In terms of age of acquisition and contexts, a language acquired earlier tends to recover better than a language acquired later in life. Lastly, although language therapy is provided in one language, improvement in both languages may be expected, particularly if two languages share common underlying linguistic structures.

Cerebral Dominance in Bilinguals and Multilinguals: Data From Aphasia

Initially, researchers had believed that either the second language in bilinguals was superimposed over their first language in the language dominant hemisphere (the extended system hypothesis) or elements of each language were stored separately so that language was subserved by different networks of neural connection (the dual system hypothesis) (Obler, Hyun, Connor, O'Connor, & Anema, 2007; Lorenzen & Murray, 2008). The extended system hypothesis was supported by cases of parallel recovery and the dual system hypothesis was supported by cases of selective recovery in bilingual aphasics. Current neurolinguists suggest that overlapping, but also distinct, neural networks of different languages exist (the tripartite system hypothesis) (Obler et al., 2007; Lorenzen & Murray, 2008). Grammatically identical items and similar lexical items—often transparent cognates—in both languages will be stored together.

An additional candidate to explain differential recovery patterns in multilinguals with aphasia has been that they have more right-hemisphere involvement in language processing than monolinguals, or that they have more left-hemisphere dominance for languages learned better or earlier. In terms of lateralization of languages, of course, for nearly a century and a half it has been known that the left hemisphere is primarily responsible for language generally (e.g., Broca, 1865) in right-handers and even in most left-handers but that the right hemisphere participates as well (e.g., Hecaen and Albert, 1978). The data supporting this understanding come from individuals with aphasia whose status vis-à-vis multilingualism was often not explored or even mentioned. In such individuals, brain damage to the right hemisphere rarely resulted in the frank language problems associated with aphasia, whereas damage to peri-Sylvian regions on the left hemisphere did. The early reports that bilinguals tended to show more aphasia resulting from right-hemisphere damage (e.g., Gloning & Gloning, 1965) prove not to be representative when consecutive cases of multilingual aphasia are studied (e.g., April & Tse, 1977). Thus aphasia in bilinguals supports the standard understanding that, overall, the left hemisphere is dominant for the languages one knows.

Knowledge Acquired From Aphasia Therapy in Multilinguals

Speech-language pathologists evaluate receptive and expressive language skills and provide language therapies focusing on improving functional communication skills in aphasic individuals who know two or more languages. To evaluate the degree of language impairment, the Bilingual Aphasia Test (BAT, available at http://www.mcgill.ca/linguistics/research/bat/), developed by Paradis and Libben (1987), is commonly used. After collecting aphasic individuals' history of learning each of their languages, comprehension, production, reading, and writing skills are assessed in each one. Specific tasks are designed to investigate three different linguistic dimensions: linguistic levels (phonology, morphology, syntax, semantics), linguistic tasks (auditory comprehension, reading comprehension, speech production, writing, translation), and linguistic units (sounds, words, phrases) in each language. Additionally, this test reveals whether the deficit pattern is language-specific or central. Unlike other assessments used for monolingual aphasics, the BAT is assessed by a different speech-language pathologist for each language and assessed on separate days to inhibit other-language activation. Although code switching often occurs among multilinguals, pathological code-switching habits during the assessment are thoroughly described as well (Fabbro, 2001).

The following questions have been posed concerning therapy for multilinguals with aphasia (Paradis, 1993): (1) Which language should be used for language therapy? (a) Is it sufficient to treat only one language? (b) If so, which language should be treated? (c) Is it better to treat all languages? (2) Will therapy benefit transfer across languages, either only among structurally similar languages or else to structurally distant languages as well?

As a rule, one language is chosen by patients or their family depending on their needs or the availability of speech-language pathologists speaking a specific language. The theoretical question remains whether there is crosslinguistic generalization for therapy in one language, and, if so, whether directionality matters (e.g., Lx to Ly vs. Ly to Lx). Some researchers (e.g., Galvez & Hinckley, 2003; Meinzer, Obleser, Flaisch, & Rockstroh, 2007) report no generalization from the trained to the untrained language whereas others (e.g., Gil & Goral, 2004; Kohnert, 2004; Edmonds & Kiran, 2006) find generalization to the untrained language to some degree. For example, in the study of Galvez and Hinckley (2003) a late bilingual (exposed to the second language [L2] after age 18) received several phases of language therapy for aphasia that focused on improving picture naming in Spanish (L1) and English (L2). Although generalization of picture-naming performance to the other language modalities (e.g., verbal expression, auditory and reading comprehension) was observed within each language, no transfer to the other language was found.

Meinzer et al. (2007) also reported no transfer effect in an early-bilingual (exposed to L2 at the age of 3) aphasic speaking French (L1) and German (L2). Here, too, language therapy focused on picture naming in German. As in the results of Galvez and Hinckley (2003), the participant exhibited within-language generalization (in German, the treated language), but did not show generalization to French (the untrained language). Along with the behavioral study, functional MRI was performed to confirm the results of the behavioral study via observing changes of the participant's brain-activation pattern before and after treatment. Before language therapy, German picture naming mainly elicited right-hemispheric activation, but language therapy yielded activation of both hemispheres (suggesting bilateral reorganization). However, activated areas on the right hemisphere during French naming attempts were no different before and after language therapy.

In contrast, Gil and Goral (2004) reported that an individual with aphasia who was a late-bilingual Russian (L1) and Hebrew (L2, from age 35) speaker exhibited parallel recovery when they tested him at age 57, two weeks post-onset of his aphasia. After a

month of language therapy in Hebrew, this participant showed improvement in both languages to the same degree. However, when evaluated at five months post-onset, right after receiving therapy in his L2, his non-treated L1 showed significantly greater improvement than the treated L2. A somewhat different pattern of crosslinguistic generalization is seen in the study of Edmonds and Kiran (2006), where all three bilingual aphasics showed generalization within a trained language. However, although two out of three bilingual aphasics demonstrated crosslinguistic generalization to an untrained language, the third participant did not. More specifically, Kohnert (2004) found crosslinguistic (Spanish–English) generalization when cognates were trained, but this generalization was not found when non-cognates were trained.

Providing bilingual aphasia therapy with two languages would be ideal, but sometimes it is a challenge finding bilingual speech-language pathologists so choosing a language that can yield best results becomes crucial. However, there are not enough studies of bilingual aphasia therapy yet to determine which language should be used to promote transfer effects, although age of language acquisition, premorbid proficiency, language modalities, and shared lexicons are revealed to play a role in crosslinguistic generalization.

What Multilingual Aphasia Tells Us About Brain Organization for Language

While it is not possible to precisely predict the specific recovery pattern for a given multilingual individual with aphasia, a number of factors influencing the outcome have been nominated. Also, converging evidence from lateralization and imaging studies is often available to bolster the understanding that age and manner of acquisition, use patterns and proficiency achieved, and structural similarities among languages play a role in aphasia impairment patterns across individuals' languages and recovery patterns. What one can conclude from the literature on multilingual aphasics is that there is substantial variability in the ways different individuals instantiate the two or more languages they acquire. For the largest group—those with parallel recovery—it appears that the two or more languages are quite similarly organized in the brain, at least at relatively gross levels (at some level of individual cell networks, of course, there must be differences). This is consistent with the imaging work on healthy bilinguals and multilinguals. For others, however—perhaps more so for those who learn or acquire an additional language at an age beyond early childhood—the evidence from differential aphasia patterns suggests somewhat differing language-representation and language-processing networks for the different languages. While the right hemisphere does not seem substantially more involved in bilinguals' language processing before aphasia than in monolinguals, it may play a role in recovery from aphasia. Promising hints of cross-language generalization in therapy suggest relative interdependence of different languages' networks—perhaps particularly for related morphological and syntactic structures and for cognate words—while lack of such generalization in some studies suggests greater independence between the multilingual's language networks. Only when neuroscience evolves to permit testing of the language behaviors associated with specific neural networks will we be able to move our understanding of these patterns to a finer-grained level.

SEE ALSO: Attrition and Multilingualism; Bilingual and Monolingual Language Modes; Bilingualism and Age; Bilingual Literacy; Early Bilingualism; Multilingualism; Multilingualism and Emotions; Multilingualism and English; Multilingualism and Identity

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Multilingualism and Attitudes

PÁDRAIG Ó RIAGÁIN

Introduction

In the definition provided by Sarnoff (1970, p. 279) an attitude is "a disposition to react favourably or unfavourably to a class of objects." In the case of language attitudes, the "class of objects" which give rise to such reactions are, of course, language related. The term can refer to cognitive (beliefs about the languages), affective (feelings toward languages), or behavioral (inclination toward certain language behavior) attitudes (Giles, Hewstone, & Ball, 1983). Thus attitudes, in a language context, can involve issues such as evaluation (how favorably a language is viewed), language preference (e.g., which of two or more languages is preferred for certain purposes or in certain situations), reasons for learning a particular language, evaluation of social groups who use a particular language variety, desirability of multilingualism and multilingual education, and opinions concerning language policies.

The study of language attitudes is part of the wider task of describing and accounting for the pattern and trends of languages in both local and global society. Unfortunately, the concept of "multilingualism," which is frequently invoked in this context, is what the French sociologist Bourdieu (1991, p. 90) would call an "elastic" concept: "everyone can unconsciously manipulate [its] extension in order to adjust [it] to their interests, prejudices and social fantasies." It is thus of little value for the purposes of contextualizing a discussion of language attitudes. A more useful approach is offered by de Swaan (1998, 2001), who views the global constellation of languages as a "system" with a recognizable structure.

The structural dimension of the global system of languages can be described and measured with regard to the number, location, and sociodemographic characteristics of those speaking the several thousand languages that comprise the system. The system is, according to de Swaan (1998, 2001), both a hierarchical and a nested pattern. The great majority of these languages are spoken by groups which are small in number and which, in total, constitute a relatively small percentage (ca. 10%) of the world's population. A further 150 or so are spoken by populations which exceed 1 million. They include most of the official state languages of the world, and thus the majority of the lesser-spoken languages are "nested" within their political and communicative orbit. Among these more widely spoken languages, a dozen or so are spoken outside of their original core areas, and these de Swaan refers to as "continental" or "subcontinental" languages. Finally, one language—English—is deemed to be a "global" language.

The global language system is in a process of constant change. The dynamic dimension of the global language system can be initially measured by reference to patterns of second language acquisition. International surveys (e.g., Eurobarometer) suggest that, of the multiple possibilities on offer, only a relatively small selection of the world's languages are learned as second or foreign languages. Few learn minority languages outside of the locality in which they are spoken and, as a rule, few state languages are acquired by persons outside of that parent state. However, languages placed higher up the hierarchy tend to fare better. These include the languages ranked as (sub)continental and, of course, the one truly global

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language, English. Second (or third) language acquisition does not, in itself, lead to structural changes in the global language system and most mid-ranking languages appear stable in terms of numbers and relative rank. However, in those instances where second language acquisition leads to the displacement of the first, there is simultaneously a process of language attrition or shift and language spread.

The dynamics of language change are closely related to the general process of economic restructuring, currently known as "globalization." Processes of globalization are visible not only in the increased movement of goods and services across political borders, but also the migration of people. It is facilitated by a lowering of government impediments to such movements, and by technological progress in transportation and communications. The activities of states are thus designed to create the conditions necessary to promote economic competitiveness within the international economic order. These concerns impact on language attitudes by prioritizing continental and global languages, with the selection of particular languages reflecting existing and anticipated external trade, communication, and migration flows.

While economic concerns may thus lead to the learning of the more widely spoken languages—to levels where children will not, at the very least, be disadvantaged later in their educational and adult careers—globalization also stimulates counterdemands in many localities for the teaching of minority and regional languages. Many parents and communities argue that, if too much time and energy is devoted to the teaching of second or third languages, the child's first language and his or her general educational progress will suffer. The sense of the value of one's own language is a fundamental dimension of the sense of knowing the place which one occupies in social space. Thus the movement toward a new, more radical, phase of globalization and political integration is proceeding, side by side, with a growing reassertion of local, regional, and ethnic interests.

It is thus not necessarily the case that all dimensions of the attitudinal pattern in a particular situation will point in the same direction. For example, it is not unusual for some groups to both value their language as a marker of their group identity and, at the same time, hold negative views of it in terms of its utility and social prestige. Although this may seem contradictory, it may be perfectly understandable when the social and economic position of the language group is considered. Thus, the prevailing language attitudes in a given situation must be established by empirical research. It is to that question that the discussion now turns.

Theory and Method in Attitudinal Research

The contributions of several different disciplinary perspectives are of relevance. Attitudes in general, and language attitudes in particular, are of considerable interest to social psychologists, sociologists, and political scientists and anthropologists. The sociological and political approach to investigating language attitudes is characterized by survey and interview techniques in which the informants themselves report their attitudes. The first surveys in the developed world looking specifically at language attitude were conducted in Canada in 1965 for the Royal Commission on Bilingualism and Biculturalism (see Pool, 1973, for a detailed account). Two national sample surveys were conducted in 1965 among adults and teenagers. The surveys were primarily designed to collect information about opinions on a wide range of language-policy issues. At about the same time, Fishman and his associates were using similar methods to examine the attitudes of the Spanish-speaking community in New York (Fishman, Cooper, & Ma, 1971).

The Canadian research was followed in 1973 by a national language-attitudes survey conducted in Ireland (see Ó Riagáin, 1997, for details) and, later in the 1970s, by a number

of surveys conducted in Finland. In the 1980s, the Minority Languages Survey Project was undertaken in the UK among immigrant groups. The 1990s saw the geographical spread of language-attitude surveys become yet wider, with surveys in the Basque Country, Ireland, Friesland, Wales, and a number of other regions such as Galicia, Languedoc-Roussillon and Sorbia (see Garrett, Coupland, & Wiliams, 2003, for details of these and other surveys).

Within the social–psychological perspective, the indirect matched-guise procedure has been used most widely (Cargile, 2002). In this procedure, selected samples of listeners are told that they are to hear the voices of different speakers reading some neutral passage of text, and are then asked to form an impression of these speakers using a series of person-perception rating scales (e.g., intelligence, sincerity, etc.). Unknown to the listeners, all of the speech extracts are, in fact, produced by one speaker using realistic guises of different languages or speech characteristics. The first study using this indirect method was that of Lambert, Hodgson, Gardner, and Fillenbaum (1960). English Canadian and French Canadian subjects rated in-group and out-group speakers (i.e., English Canadian and French Canadian speakers respectively). English Canadians were found to view speakers of their own ethnic group as superior to those of the other ethnic group, while the French Canadian subjects seemed to have adopted the inferior position assigned to them by the majority culture around them. This first study precipitated an outpouring of further speaker-evaluation studies, the findings of which have recently been reviewed by Giles and Billings (2004), among others. Attitudinal research based on this work dominates within this disciplinary context. While "certain methodological and substantive assumptions have proven extremely tenacious," "many things have been added to the paradigm in the last quarter century" (Bradac, Cargile, & Hallett, 2001, p. 141).

Perhaps the more striking feature of work involving language attitudes over recent decades has been the emergence of a number of theoretical perspectives which subsume language attitudes within larger frameworks. Among these new developments may be mentioned those perspectives built around anthropological work on language ideology (Schieffelin, Woolard, & Kroskrity, 1998) and linguistic habitus (Bourdieu, 1991).

While language ideology is emerging as an important concept for understanding the politics of language in multilingual situations, the term "ideology" is used in different ways. As Schieffelin et al. note (1998, p. 58), "What most researchers share, what makes the term useful in spite of its problems, is a view of ideology as rooted in or responsive to the experience of a particular social position." Language ideologies are thus about more than individual speakers' attitudes to their languages, or speakers using languages in particular ways. Rather, they include the values, practices, and beliefs associated with language use by speakers, and the discourse which constructs values and beliefs at state, institutional, national, and global levels (Blackledge & Pavlenko, 2002, p. 122).

The complex ways in which language ideologies are produced and reproduced can also be understood in relation to Bourdieu's (1991) concept of habitus, understood as a system of lasting, transposable dispositions and attitudes which, integrating past experiences, functions at every moment as a matrix of perceptions, appreciations, and actions and makes possible the achievement of infinitely diversified tasks (Thompson, 1991, p. 12). These dispositions are formed primarily in childhood, especially in the home and school, by the internalization of the practices of adults which in turn reflect the family's social position. It follows, therefore, that strategies of language "assimilation and dissimilation" (Bourdieu, 1991, p. 64) are inevitably and unavoidably linked to the more general strategies of social reproduction adopted by groups and individuals (i.e., the strategies by which each generation endeavors to transmit to the following generation the social and economic advantages it holds).

Main Findings

The findings of this research have been generally consistent. In the social–psychological research,

> speakers of "high" or "powerful" languages tend to be rated highly on competence and traits related to socio-economic status, while speakers of "low" or "powerless" languages are evaluated less favourably along these dimensions, even by judges who themselves have "subordinate" ethnic speech markers. (Giles et al., 1983)

Attitudes are not one-dimensional, however. Edwards (1999, p. 102) suggests that "two particularly salient evaluational categories account for most of the variance: social status and solidarity." Thus, although lower-class, minority, and "provincial" speech styles often have positive connotations in terms of integrity and attractiveness, their speakers are typically assessed as being less competent, less intelligent, and less ambitious than are those who enjoy some regional, social, or ethnic majority status. More recent matched-guise research has incorporated this finding by using factor analysis to confirm the clustering of personal traits along these two dimensions (Woolard & Gahng, 1990, p. 312).

It might be noted in passing that this general finding, established with the "indirect" approach, is similar to the conclusions of those researchers using more direct methods. For example, the Irish language-attitude surveys report that

> public support for Irish is shown to be very positive when attitudinal questions in surveys tap into the role the Irish language is perceived to have in defining and maintaining national cultural distinctiveness. While there is a weak relationship between this dimension of the attitudinal pattern and actual language use, . . . the general population is willing to accept a considerable commitment of state resources to ensuring its continuance and even to support a considerable imposition of legal requirements to know or use Irish on certain groups within the society, such as teachers and civil servants. [However] for most people, it is within the educational system that they have the most direct contact with Irish language policy. Not surprisingly, given the relationship between educational achievements and the qualifications needed for entry into the largely English-speaking labour market, the public are not prepared to support policies which would discriminate strongly in favour of Irish. (Ó Riagáin, 1997, p. 279)

Finally, it might be noted that there have been numerous studies of the relation between attitudes and achievement in language learning. The basic premise underlying attitudinal research in second language acquisition studies is that language is a major defining attribute of a group of people, and, thus, to learn a language involves some degree of identification with the group that speaks it. That is, language is more than a symbolic system that facilitates communication. Language is a defining behavioral feature of a cultural group, and thus acquiring the language involves taking on patterns of behavior of that group. As a consequence, an individual's attitudes toward that group and toward other cultural groups in general will influence his or her motivation to learn the language, and thus the degree of proficiency attained (see Gardner, 1985, 2002, for a more detailed review of this literature).

Conclusions

According to Bourdieu (1991), it is part of the practical competence of speakers to know when, where, and how to speak one language rather than another in order to derive a "profit" most advantageous to their interests. As Fishman (1977, p. 114) observed,

> Languages that are not being imposed by force, must provide (or promise to provide) entrée to scarce power and resources or there would be little reason for indigenous populations to adopt them for intergroup use . . . Languages are rarely acquired for their own sake.

In a multilingual situation, the distribution of linguistic capital is thus often related to the distribution of other forms of capital which together define the location of speakers and communities of particular languages within the overall social hierarchy. In the early 1980s, in a review of attitudinal research at the time, it was observed that "in every society the differential power of particular social groups is reflected in language variation and in attitudes toward those variations" (Ryan, Giles, & Sebastian, 1982).

Lest it be thought that this theoretical approach points to the ultimate domination of the national "market" language, it should be noted that the market metaphor also allows for the possibility that, in certain circumstances, minority languages can survive and prosper. A language competence can be accorded a value in local or regional contexts that it is denied in the national or international market, in a way analogous to the viability and durability of local markets within national economic markets. And language markets can be influenced by political interventions. (It might be noted here that there are some marked affinities between Bourdieu's notion of the "linguistic market," and de Swaan's notion of a "global language system.") On the other hand, it is also the case that linguistic markets are more and more *inter*national and overlap language borders. Therefore, neighboring and international languages play an increasingly important role in national and local settings.

The structure of the linguistic market or system—local, national, or international—therefore obviously defines the acceptability and desirability of a language. It follows, therefore, that language attitudes and strategies of language learning and use are inevitably and unavoidably linked to more general social strategies of individuals and communities. The very anticipation of such strategies may, in fact, carry implications for language behavior in advance of any actual mobilization, be it social or spatial.

While these theoretical insights are broadly consistent with empirical research, it has also to be acknowledged that there are still a number of major gaps in that research corpus. Research on language attitudes has fractured along the same lines as much of applied linguistics research. That is to say, while there are good studies of attitudes in minority-language contexts, and in national and international contexts as regards attitudes to foreign and global languages, there are not many good examples of studies which look at attitudes across the full hierarchical range of multilingual settings.

Furthermore, as Giles and Billings note (2004, p. 188), while academics from many disciplines agree that language attitudes are an important enterprise, they differ widely with regard to the theories and methods chosen to analyze such attitudes. All research methods have their advantages and their limitations. There is currently an urgent need for research approaches which combine several methods in a single piece of research, on a scale not heretofore attempted, and using each to supplement and check on the others.

Third, there is a need to track changes in language attitudes over time in a more systematic and organized way. One example of changing language attitudes comes from Woolard and Gahng (1990), who collected speaker-evaluation data in Barcelona in 1980 and then again with a matched sample in 1987. But such examples are not yet very common.

Finally, there are few examples in attitudinal research of comparative analyses across a number of states. In the past, comparative research was inhibited by the absence of good-quality data. But there are now a growing number of international surveys which include language-related questions, including some on attitudes. Within Europe these include the Eurobarometer series, the European Social Surveys, and the European Values Surveys.

International surveys with a wider coverage include the International Social Survey Programmes and the World Values Surveys. One looks forward to studies which will exploit the possibilities of these data banks for comparative research in the area of language attitudes.

SEE ALSO: Complexity in Multilingual Systems; Dynamics of Multilingualism; English as Lingua Franca; History of Multilingualism; Language and Globalization; Language Attitudes in Language Policy and Planning; Multilingualism

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Multilingualism and Emotions

JEAN-MARC DEWAELE

Introduction

Wierzbicka (2004) notes that "emotions are central to human life, and bilingualism provides a new perspective on emotions which promises to lead to new insights, as well as to offer crucial evidence for the old debates" (p. 94). One of these debates opposes researchers who defend a more universalist perspective on emotions and researchers who favor a more relativist perspective. Wierzbicka (2004) defends the latter position, arguing that the vocabulary of emotions differs from language to language, which means "that the set of concepts by means of which the speakers of any given language make sense of their own and other people's feelings is specific to a particular language" (p. 94). She points to the different set of conceptual categories for Polish and English emotion concepts which means that Polish and English speakers classify and interpret their own and other people's feelings differently and that their emotional lives are likely to be different, to some extent (p. 95). Reflecting on her language preferences when talking to—and about—her baby granddaughter, she explains that she definitely prefers Polish, her first language (L1), rather than English, her second language (L2), because of the emotional force of the L1 words with multiple diminutives and the fact that the Polish words fit the way she thinks and feels about the baby. The English emotion words leave her cold and do not feel "true" (p. 101). She feels that Polish emotion scripts are much more emotional than English ones. When she speaks in English about her baby granddaughter, she makes a conscious effort not to sound excessively emotional, which restricts her ability "to speak freely as much as the lack of adequate English words does" (p. 101).

Wierzbicka's observations raise a number of crucial questions on the link between multilingualism and emotions, which will be considered in more detail:

1. Are basic emotions universal, or are they shaped by local culture and language?
2. Do multilinguals prefer to express strong emotions in their L1?
3. What is the status and nature of emotion words and emotion-laden words in the bilingual lexicon?

Emotions: Universal or Relative?

Pavlenko (2008) offers a way out of the difficult debate linked to the first question by proposing a definition of emotion concepts that combines both biological and sociocultural elements. For her, emotion concepts are "prototypical scripts that are formed as a result of repeated experiences and involve causal antecedents, appraisals, physiological reactions, consequences, and means of regulation and display" (p. 150).

She argues that these concepts are embedded within larger systems of beliefs about psychological and social processes (p. 150). The fact that concepts may be different in two languages does not imply that speakers of these languages have distinct physiological experiences: "Rather, it means that they may have somewhat different vantage points from which to evaluate and interpret their own and others' emotional experiences" (Pavlenko,

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2008, p. 150). Her own work on Russian–English bilinguals has shown that some emotion concepts vary across these two languages in terms of function, encoding, and salience (Pavlenko, 2002). She found that in English emotions are viewed as states and expressed by means of adjectives while in Russian emotions are viewed as processes and expressed with verbs. A study on American learners of Russian showed that, despite their awareness of the core meaning of the language-specific Russian emotion verb *perezhivat* 'to experience things keenly', they did not use this verb in the narrative tasks (Pavlenko & Driagina, 2007). This suggests that they had not yet internalized the new conceptual category and needed to acquire new lexicosyntactic frames. They had to learn to use verbs and adverbial constructions, presenting emotions as processes, while the Russian learners of English needed to use adjectival constructions, presenting emotions as states (Pavlenko & Driagina, 2007, p. 228).

The Language of the Heart

Much of the early work in the field has pointed to the more limited emotional resonance of the L2 compared to the L1. Marcos (1976) named the emotional detachment that bilinguals often have in their L2 as the "detachment effect." According to him, the L2 fulfills an intellectual function and is relatively devoid of emotion; whereas the L1 clearly expresses emotions.

Bond and Lai (1986) examined language choices of female Chinese students in a Hong Kong university who had been asked to interview each other in L1 Cantonese or L2 English on two neutral and two potentially embarrassing topics. The first topic was economic, the second was political, the third was sociological (differences in sexual attitudes between Chinese and Westerners), and the fourth was potentially more emotional, namely a personal story about a recent embarrassing episode. The study showed that more English was used in the discussion of the latter two topics. The authors interpret this as an indication that the use of the L2 allowed participants to distance themselves more from the embarrassing topic. In a similar vein, Javier and Marcos (1989) reported that code switching to an L2 allowed participants to distance themselves from what they were saying, hence reducing their anxiety. Both studies have been widely cited as evidence of the existence of a "detachment effect" of the L2.

There is abundant evidence from the autobiographical works of bilingual writers that the L1 typically has the strongest emotional connotations. Rosario Ferré, for example, a Puerto Rican writer, describes Spanish (her L1) as her language of the heart:

> Spanish still makes me suck faster at life's breast . . . I can roll on the ground and frolic in Spanish because I don't have to worry about anything; words always mean what they say. I love to make love in Spanish; I've never been able to make love in English. In English, I get puritanical. (Quoted in Kellman, 2003, pp. 137–8).

Schrauf (2000) noted that memories from childhood and adolescence that were experienced in the L1 are typically richer in terms of emotional significance when recalled in that specific language. When immigrants recall L1 memories from childhood in an L2, some emotional intensity is lost (Schrauf & Rubin, 1998). Schrauf and Durazo-Arvizu (2006) have argued that bilinguals recalling a particular memory engage unconsciously in the mental reconstruction of an event that was originally encoded into memory in a determined sociocultural and linguistic environment. The emotional tone of the event and perhaps some explicitly remembered words or phrases in the L1 or L2 are encoded as well.

Pavlenko (2005) argues that different languages can have different affective meanings depending on the interlocutors and the situation. In other words, the L1 is not always the

language of intimacy and the L2 the language of detachment: "Speakers may use these languages to index a variety of affective stances, and they may also mix two or more languages to convey emotional meanings" (p. 131).

Her own study on language choice in emotional exchanges between multilingual parents and their children (Pavlenko, 2004) showed that language dominance is the key factor affecting language choices, overall and in emotional expression. Parents who were dominant in the L1 reported a preference for L1 in communication with the children, but those dominant in an LX (any language which is not the L1) were less likely to use the L1. She found a strong emotional tie of many parents to their L1 and hence their preference to use that language with their children. However, some parents reported feeling perfectly comfortable communicating in their L2 with their children, though they reported switching occasionally to their L1 when feeling very emotional. Other parents reported the opposite pattern, using their L1 with their children, but switching to the L3 (the partner's L1) to scold the children because they would react faster. Positive and negative emotions were linked to different language choices.

In a series of studies based on a corpus of data collected through the Bilingualism and Emotions Questionnaire (BEQ; Dewaele & Pavlenko, 2001–3) from more than 1,500 multilinguals on their different languages and a corpus of interviews with 20 multilinguals (Dewaele, 2011), a number of interesting patterns emerged concerning language choices and perceptions (Dewaele, 2004a, 2004b, 2006, 2008, 2010, 2011).

Dewaele (2008) looked specifically at the perceived emotional weight of the phrase *I love you* in the multilinguals' different languages. A majority of speakers reported that *I love you* was strongest in their L1, a third reported that the phrase was equally strong in their L1 and an LX, and the remaining quarter of participants said that the phrase was stronger in an LX. This is an indication that the language of the heart can shift. Statistical analyses revealed that the perception of emotional weight of the phrase *I love you* was associated with self-perceived language dominance, context of acquisition of the L2, age of onset of learning the L2, degree of socialization in the L2, nature of the network of interlocutors in the L2, and self-perceived oral proficiency in the L2.

Dewaele (2010) presented a systematic analysis of the effect of three clusters of independent variables (participants' linguistic history, present language use, sociobiographical and psychological variables) on language perception and language choice for the communication of feelings in general, for anger and swearing, as well as self-perceived proficiency and foreign-language anxiety. Later starters reported lower levels of self-perceived competence in oral and written skills. They also tended to use the LX less frequently to communicate emotions; they rated the positive characteristics of the LX lower and reported higher levels of foreign-language anxiety in different situations. LXs that had been acquired only through formal classroom instruction were used less frequently to communicate emotions than LXs that had been learned naturalistically or which had also been used in authentic interactions outside the classroom (mixed context). The same pattern emerged for self-perceived competence and FLA in different situations: Instructed learners felt less competent and more anxious than mixed and naturalistic learners. It thus seems that context of acquisition resonates for years after the end of the active "learning phase" of the LX.

Frequency of use of the LX was the independent variable with the strongest effect on self-perceived proficiency, language choice to express emotions, perception, and foreign-language anxiety. Data from the interviews suggested that frequent users of an LX gained confidence and stopped worrying about their accent or possible errors.

LX socialization was linked to increased use of the LX to express emotions. The highly socialized LX user can express emotions in the LX competently and confidently, but it takes years before the positive language characteristics and emotional strength of swear-words in the LX equal those of the L1. Some Asian participants reported that it took them

many years living in an LX environment before they dared to use some of the swearwords in that LX, and typically only mild swearwords. There was also considerable variation between individuals, with cultural background playing an important role in perception and use of emotional language. Participants with larger networks of interlocutors in an LX were also more likely to use that LX for the communication of emotions, and their perceptions and foreign-language anxiety evolved toward that of their native-speaker interlocutors.

The knowledge of more languages was linked to lower levels of foreign-language anxiety and higher self-perceived proficiency in the different languages. Language knowledge also had a positive effect on the communication of emotion and the perception of characteristics of the LX.

Participants who scored high on trait emotional intelligence reported lower levels of foreign-language anxiety across situations which could be linked to a stronger belief in the ability to communicate in different languages and a stronger ability to judge the emotional state of their interlocutor and to adapt their linguistic behavior if necessary (Dewaele, Petrides, & Furnham, 2008). An analysis of participants' comments suggested that many speech acts are culture-specific (Dewaele, 2010). Raising the voice in anger may be considered acceptable in southern Europe, but it is taboo in Asia. Bicultural multilinguals have a unique capacity to navigate between the taboos and sometimes conflicting socio-pragmatic norms. They reported strategic use of code switching with other multilinguals, especially when talking about more emotional topics with familiar interlocutors. However, multilinguals also reported uncontrolled code switching in cases of strong emotional arousal. It seems that multilinguals can exploit their multicompetence to develop multilingual speech acts and emotion scripts that are quite unique to them, or shared by their partner, family, or ethnic group. A striking finding was also the dynamic aspect of language choice to express emotion (Dewaele, 2010). A growing awareness of sociocultural and socio-pragmatic norms in the LX is linked to an evolution in users' repertoire for expressing emotions in the LX.

Because multilinguals tend to feel most proficient in their L1 (Dewaele, 2010), it is difficult to distinguish proficiency effects in language preference from other possible effects. In order to control the proficiency variable, Dewaele (2011) focused on a subsample of bi- and multilingual adults from the BEQ who declared to be maximally proficient in their L1 and L2, and used both languages constantly. The analysis revealed that, despite their maximal proficiency in the L1 and L2, participants preferred the L1 for communicating feelings or anger, swearing, addressing their children, performing mental calculations, and using inner speech. The L1 was also perceived to be emotionally stronger than the L2 and participants reported lower levels of communicative anxiety in their L1. Interview data from 20 multilinguals confirmed the finding that the L1 is usually felt to be more powerful than the LX, but this did not automatically translate into a preference for the L1. Longer immersion in the LX culture was linked to a gradual shift in linguistic practices and perceptions where the LX started to match the L1 in their hearts and minds.

The Nature and Status of Emotion Words in the Bilingual Lexicon

Pavlenko (1999) argued against the conflation of semantic and conceptual levels of representation in contemporary models of the bilingual lexicon and proposed to distinguish between lexical, semantic, and conceptual levels of representation. Referring to her research on the English emotion concept of privacy that is absent in the Russian of monolinguals but starts appearing in Russian–English bilinguals, she emphasized the dynamic nature

of the bilingual conceptual store and called for more attention to crosslinguistic and cross-cultural differences in conceptualization of different phenomena (p. 225). Pavlenko's call was answered by Caldwell-Harris and associates who started investigating the link between emotion words in the two languages of bilinguals and their physiological responses. Harris, Ayçiçeği, and Gleason (2003) found that different types of words elicit different galvanic skin responses in both monolingual and Turkish–English bilingual speakers, with taboo words and reprimands eliciting the strongest responses. Several bilinguals commented in the debriefing session that they could hear, in their mind, family members addressing reprimands to them. A comparison of the adult offspring of Latin American immigrants in the USA, for whom English was considered L2 but was the dominant language, and more recently arrived immigrants from Latin America to the USA showed that only the latter group reacted more strongly to reprimands in Spanish. The early learners of English had similar patterns of electrodermal responding in their two languages (Harris, 2004).

A follow-up study with Turkish–English bilinguals residing in Istanbul showed that emotional phrases presented in an L1 elicited higher skin conductance responses than emotional phrases in an L2 (Caldwell-Harris & Ayçiçeği-Dinn, 2009). The researchers also looked more specifically at emotion memory effects (i.e., the fact that emotion words are more frequently recalled than neutral words) among Turkish–English students from Istanbul University (Ayçiçeği-Dinn & Caldwell-Harris, 2009). They found that overall emotion-memory effects were similar in the two languages, with reprimands having the highest recall, followed by taboo words, positive words, negative words, and finally neutral words. The authors have advanced the "emotional contexts of learning hypothesis," arguing that language emotionality is independent of age of onset of acquisition, but linked to the emotional context in which the language was acquired and used (Harris, Gleason, & Ayçiçeği, 2006, pp. 276–7).

Altarriba and Canary (2004) used the word-priming paradigm to investigate the effect of word arousal on the priming effect in bilinguals. The authors found evidence of affective priming in both English monolinguals and Spanish–English bilinguals. However, bilinguals had longer reaction times and a reduced priming effect in some conditions when compared to monolinguals. The authors suggest that this difference might be linked to the fact that the bilinguals had learned and used English in educational and work-oriented environments and that their English emotion words had fewer emotional connotations and reduced affective priming (Altarriba & Canary, 2004).

The emotional Stroop task has also been used to investigate bilinguals for differences in processing emotion words. The emotional Stroop task is similar to the traditional Stroop task but the printed words are emotionally charged and do not label specific colors. Participants are asked to report the color of each word instead of the actual words. Emotions typically have an interference effect resulting in an increase in reaction times on the color-naming task. Sutton, Altarriba, Gianico, and Basnight-Brown (2007) used this method with highly proficient Spanish–English bilinguals. The researchers found evidence of interference in emotion words on the emotional Stroop task: Participants had shorter reaction times with neutral words as compared to emotion words in Spanish and English, illustrating that emotion words captured attention regardless of the language in which they appeared.

Conclusion

The picture that emerges from research on multilingualism and emotions is a complex and highly dynamic one. It suggests that multilinguals' language choices to communicate emotions and their perceptions of their various languages are partly linked to their past experience with these languages, partly linked to their current use of various languages,

and partly linked to a range of sociobiographical and psychological factors. All these factors interact and may cause conceptual shift reflected in different linguistic behavior. Moreover, emotion words and emotion-laden words can gain or lose their power over time. Finally, it seems that, while the L1 is the language of the heart for many multilinguals, it is not necessarily a permanent one.

SEE ALSO: Affect and Language Teaching; Code Mixing; Code Switching; Cultural Hybridity; Multicompetence; Multilingualism and Attitudes; Multilingualism and Identity; Pavlenko, Aneta; Pragmatic Socialization; Second Language Pragmatic Development

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Multilingualism and English

EVA ALCÓN AND MARIA PILAR SAFONT JORDÀ

The overwhelming spread of the English language around the world has given rise to various phenomena, such as the recognition of New Englishes varieties, multilingualism, and multilingual education. In this last case, existing educational models have been modified to account for multilingualism with English. This entry will deal with multilingualism with English from an educational perspective. In so doing, we will describe the presence of English in education on the basis of Cenoz's (2009) continua of multilingual education.

Education has always played a role in society, but it is also influenced by social trends. In the area of languages, the worldwide spread of a neoliberal market economy and the movement toward a globalizing world has influenced the spread of English. English is now well established in business, scientific conferences, and international cultural and political events, among many other areas. The increasing expansion of English has been visualized in terms of three concentric circles (Kachru, 1992). The inner circle includes countries such as Australia, Canada, the UK, Ireland, the USA, and New Zealand, where English is the first language for the majority of the population. The second circle includes countries where English is used at an institutional level as a result of colonization, such as Nigeria, the Philippines, and India. Finally, the so-called expanding circle includes many countries such as those in Continental Europe where English does not enjoy official status and is taught as a foreign language. From a quantitative point of view, Crystal (1997) claims that there are roughly between 320 and 380 million speakers of English in the inner-circle countries. In outer-circle countries there are between 150 and 300 million second language speakers of English, and 100 to 1,000 million learners of English in the expanding circle. Besides, the degree of contact between languages in the three circles can also explain why the number of English non-native speakers is substantially larger than its native speakers (the relationship is about four to one). English is also the language used in information and communication technologies and it is perceived as the most important language to be learned. For instance, the Eurobarometer report (European Commission, 2006) shows that, although the recognition of the benefits of competences in languages is increasing in Europe, English is perceived to be the most useful language to know: 68% of Europeans choose English as the most useful language, followed by French (25%) and German (22%). The position of English is even more apparent when respondents were asked which languages they thought children should learn. In this case, 77% of Europeans consider English to be the language that children should learn as a foreign language, 33% of respondents mention French, and 28% German. As a result of the global expansion of English, being proficient in English has become an important goal in education.

From an educational perspective, we can claim that, until the 1980s, English, together with other languages such as French, was introduced as a foreign language, and linguistic and cultural aspects of the English language were included on the curriculum of secondary education. At that time, English was viewed as the language of a few powerful countries and identification with British or American culture was assumed. From this perspective, proficiency in English was understood as a sign of greater economic and social power, and in countries such as Italy or Spain, children whose families had a higher economic status were sent to private classes of English and to summer schools in England or North

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America. In addition, a monolingual approach toward language learning was the norm, the native speaker was seen as the model to follow, and criticisms regarding the expansion of English at the cost of other languages started to appear at scientific events.

Since the 1990s learning foreign languages, and particularly English, has been a priority in education. However, we can claim that there has been a shift in emphasis from linguistic uniformity and learning English as a foreign language from a monolingual perspective toward multilingual education with English. The debate on whether the use of English is a threat to other languages or not is still present in the field of applied linguistics. Thus, while Phillipson (1992) and Mühlhäusler (1996), among others, are pessimistic about the effect of the massive use of English on linguistic diversity, Alcón (2007), among others, supports the use of English as a world language, an international language, or a lingua franca. The level of resistance to English-language use and learning can be understood from a monolingual perspective of "one nation/one language, plus English as a foreign language," but not from a perspective of multilingualism with English. This perspective is in line with the aim of the European Commission to promote multilingualism, and different measures have been developed to promote it. Among them, the Commission document promoting language learning and linguistic diversity entitled *An Action Plan 2004–2006* (European Commission, 2003) was designed to indicate that English alone is not enough and encourages European citizens to have practical skills in three languages: their mother tongue plus two others. One can observe that in Continental Europe multilingualism is the norm and English is the second or the third language in the curriculum, either as a subject or as a medium of instruction. Similarly, English is now introduced in bilingual education together with the national language in countries such as China, Chile, Colombia, or Mongolia.

Multilingual education with English is an approach to linguistic education that can be explained within the continua of multilingual education suggested by Cenoz (2009). According to Cenoz (2009, p. 32), "multilingual education implies teaching more than two languages provided the schools aim at multilingualism and multiliteracy." On the one hand, this definition of multilingual education allows us to consider whether English becomes a second, third, or additional language on the curriculum, as well as the time and resources devoted to it. On the other hand, the author claims that at least four variables need to be considered in the continua of multilingual education: subject, language of instruction, teacher, and school context. Using these variables to analyze the introduction of English into education from a multilingual perspective, we can claim that English is nowadays a compulsory school subject, although differences may be found in the integration of English with the national, regional, and other foreign languages. In this sense, the early introduction of English, the number of hours devoted to English, coordination between language teachers, and negotiation of the syllabus in the school subjects are some of the issues that play a role in fostering multilingualism with English.

Another important variable for evaluating multilingual education with English is the implementation of content and language integrated learning (CLIL), which has been gaining importance since the 1990s. Despite the language policies of the European Commission, the implementation of CLIL may be explained by the results taken from SLA studies conducted in immersion and bilingual educational contexts in the USA and Canada. According to Dalton-Puffer and Smit (2007), the primacy of meaning over form, the conditions for naturalistic language learning, the amount of target-language exposure, saving time, and the positive affective consequences have been some of the arguments given for the implementation of CLIL. However, care should be taken in generalizing results from CLIL research to different educational contexts. In our opinion, the arguments for implementing CLIL lack the backing of context-based research. For instance, in immersion contexts, Krashen's (1985) input hypothesis and Long's (1996) interaction hypothesis were

validated by reporting the benefits of comprehensible input. In addition, Swain's (1995) output hypothesis was examined and the importance of form–meaning connections was found. In the future, the CLIL context as a social setting where language learning takes place requires further analysis. In this line, Coyle (2007) calls for a reconceptualization of the role of language, suggesting an approach which combines learning to use language and using language to learn. Although these remain the tenets of communicative language teaching and its implementation by means of a task-based approach, it might be useful as a framework to analyze language learning in CLIL classrooms. In addition, research conducted to date explores whether the CLIL context provides the conditions for English-language learning. As a result of this research, we are likely to gain an awareness of the specific conditions for language learning in CLIL contexts as well as information about what aspects of language can and cannot be practiced in this learning environment. For instance, García Mayo (2009) and Muñoz (2007) report that, although opportunities for real communication are provided, focus on form seems to be a need for language learning in CLIL contexts (see also Llinares García & Dafouz, 2010, for an overview of the main CLIL and bilingual projects that are being officially implemented in the Madrid Autonomous Community). Similarly, studies dealing with the development of pragmatic competence indicate that the language that learners are exposed to and are required to use in CLIL contexts is pragmatically removed from language use in natural settings. In this line, Dalton-Puffer (2005) explores how interpersonal aspects of communication are realized in the performance of directives and the way in which contextual factors such as the object of directives (information or action) or classroom register (instructional or regulative) affect speakers' directness choices. The results of this study show that these contextual factors interact systematically with the use of directives. In the same vein, Nikula (2008) presents a discourse-pragmatic analysis of classroom interaction. Nikula (2007) focuses on the IRF (initiate response feedback) structure in CLIL settings versus its use in EFL classrooms. Results showed that the IRF pattern is common in both classroom settings but, while the IRF sequences follow one another in EFL contexts, IRF sequences tend to be more loosely structured in a CLIL environment, in terms of turn length, teacher evaluation, and students' follow-ups (Nikula, 2007). These differences seem to suggest that discourse practices in CLIL environments offer students more opportunities for active participation (take the floor, initiate, interrupt) than those in EFL classrooms.

Taking into account the above-mentioned research findings as well as findings reporting the positive attitudes toward language learning triggered by CLIL programs (Lasagabaster & Sierra, 2009), it seems that a range of teaching practices need to be further implemented in different educational contexts (see also Ruiz de Zarobe & Jiménez Catalán, 2009; Lasagabaster & Ruiz de Zarobe, 2010). Yet, to achieve this, it must be mentioned that most of the time learners will face the learning of English by borrowing communication and learning strategies from the experience of acquiring other languages. Thus, they may benefit if the school includes a multilingual approach with English within its educational project. This leads to considering the third variable in the "continua of multilingual education": the teacher. Without any doubt, the language proficiency of teachers is a requirement both to teach English as a subject and to use it as a language of instruction. However, teachers' attitudes toward English need to be considered within the framework of a multilingual approach with English. The globalization and internalization processes have also changed the way in which teachers look upon English. English as a second or foreign language is being replaced by English as a language for global communication, or English as a lingua franca (ELF). Describing distinctive features of ELF at a phonological (Jenkins, 2000; Pickering, 2009), lexico-grammatical (Seidlhofer, 2009), and pragmatic (House, 2009) level has helped to move English-language analysis from the native speakers' perspective to that of the intercultural speaker. All of these studies report that ELF users are

successful in accomplishing understanding, and thus they cannot be described as "deficient communicators" (Firth, 2009). From this point of view, there are also some implications for the practice of English-language teaching and learning (see McKay, 2008, for a re-examination of English-language teaching assumptions). It seems that the main concern in teaching ELF is to provide learners with knowledge and opportunities to use English, the goal being to prepare citizens to make use of English when other communicative means are absent. In other words, emphasis is placed on the use of English as a direct mediator between participants in a discourse that would otherwise have to rely on translation (House, 2002).

Additionally, teacher training in multilingualism and multilingual teaching should be considered when analyzing this third variable of the continua. Truly multilingual teaching approaches would allow for the development of multiliteracy (Edwards, 2009). The concept of literacy as the ability to read and write in one language is now challenged by more sophisticated views that regard literacy as social and cultural in nature (Rosowsky, 2008). According to the "new literacy studies" movement (Pahl & Rowsell, 2006), there is a need to shift from a focus on only one dominant language to a broader view that includes cultural and linguistic diversity. In this sense, Edwards (2009) argues for the use of the term multiliteracies, which should also consider knowledge of the use of new technologies for communication. Following this view, the parts-to-whole or whole-to-parts dichotomy in literacy training would be replaced by multiparts-to-multi-wholes or multi-wholes-to-multiparts. In these cases, children may be taught to read and write in more than two languages at the same time and under the same instructional context. The notion of multiliteracies is in line with the view that languages are not kept separately in the child's mind; rather, they could all be part of a common underlying proficiency.

Bearing this idea in mind, some authors have argued for a multilingual approach to language instruction, namely that of translanguaging (García, 2007; Creese & Blackledge, 2010). This approach involves the use of more than one language in what is termed flexible bilingual pedagogy. The use of two languages in assemblies or classroom discourse would illustrate a bilingual reality that goes beyond the school. Some instances of these innovative teaching practices are provided by Creese and Martin (2008), who point to the use of bilingual pedagogical resources. Nevertheless, in these cases, English is the language of the speech community in which schools are located. In cases where English is the third language, translanguaging may imply the use of three languages along with the instructional process. It would be interesting to adapt such teaching approaches to the instruction of English in combination with the other two languages in a bilingual speech community, such as one of the bilingual regions in Europe.

Finally, there will be differences among schools when looking at the presence of English. The fourth variable in the continua of multilingual education, the school context, may also help to foster multilingualism with English. As reported by Cenoz (2009), this variable refers to the languages employed inside the school by teachers, staff, students, and even parents. Here, not only institutional discourse but also informal conversations, meetings, or written information may be analyzed to identify the degree of multilingualism of a given educational center. As argued by the author, if more than two languages are used for the above-mentioned purposes then the school may be considered as "more multilingual." One aspect that is taken into account is the linguistic landscape of classrooms. In fact, the linguistic landscape may be considered a source of input, as acknowledged by Cenoz and Gorter (2008). According to these authors, the role of the linguistic landscape in the acquisition of the English language cannot be ignored. Despite the fact that the extent to which learners benefit from it may be difficult to control, the linguistic landscape presents authentic and contextualized input, and should thus be considered in fostering multilingualism with English.

SEE ALSO: Bilingual and Multilingual Education: Overview; Content and Language Integrated Learning; Materials Development for Multilingual Education; Pragmatics of Lingua Franca Interaction

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Multilingualism and Higher Education

WALDEMAR MARTYNIUK

Introduction: Monolingualism—Plurilingualism—Multilingualism

Monolingualism is a term that refers to an individual person's ability to use one language only or to a community or society or nation or state where only one language is used as a means of communication. In reality however, these two situations are rather rare. In practice, most—if really not all—people grow plurilingual, that is, they notice the need for and build up their natural ability to handle several communication codes or at least several—regional or social—variants of one code bearing the name of this or that language. In practice then, most—if not really all—communities, societies, nations or states are—to a different extent—multilingual in the sense that their members use more than one language or language variant for communication purposes. Multilingualism then, refers to the coexistence of different languages in a given society. Plurilingualism "refers to the repertoire . . . of language which many individuals use, and is therefore the opposite of monolingualism . . . Thus in some multilingual areas some individuals may be monolingual and some may be plurilingual" (Beacco & Byram, 2007, p. 7).

The oldest and biggest European intergovernmental organization—the Council of Europe whose work in the area of languages and language education encompasses currently 47 European states as permanent members and several other states, including the USA, Canada, Japan, and Mexico as observers—is promoting strongly the notion of plurilingualism as an important human value indicating the need to protect the individual language ability and considering the right of every person to receive adequate support within the state educational systems in order to develop this ability to the most appropriate level to ensure personal success and proper contribution to the society.

The other intergovernmental organization in Europe—the European Union with its 27 member states—promotes multilingualism using the term in both its above mentioned meanings: as individual ability (plurilingualism above) and social phenomenon.

In this entry we give a brief account of European policies related to plurilingualism/multilingualism in higher education (HE).

Multilingualism in Higher Education: Promoting Civilization and Competitiveness

The aim of higher education is to promote both civilization and competitiveness—in the sense that it involves knowledge, skills, and attitudes of students as individual human beings and as contributors to society. While preparing students for employment, shaping them as active participants in the life of their societies and supporting them in their personal development and the development and maintenance of a broad knowledge base are equally important (Bergan, 2005). There seems to be a broad agreement that these two aspects need to be kept in balance and complement each other.

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The efficiency of educational systems, most specifically in higher education, relates to the degree they are able to identify and develop further the qualities and abilities "brought in" by the students and—based upon those—to offer access to new areas by presentation of new exploration tools. Language competences play an important role in of both of these processes.

Multilingualism in higher education may be viewed both as a state of affairs and a policy. In both aspects it is related to processes of globalization and internationalization of HE.

Globalization and Internationalization of HE

Globalization of HE implies the widening, deepening and speeding up of worldwide interconnectedness—subject to and result of free market development (OECD, 2009, p. 18).

Internationalization of HE indicates relationships across borders between nations, or between single institutions situated within different national systems—subject to national culture and government, while it is also an instrument of the "competition state" in the global setting. Trends to internationalization and to globalization continually reinforce each other (OECD, 2009, pp. 21–3).

Higher education enhances and is driven by globalization. It trains the highly skilled workers and contributes to the research base and capacity for innovation that determine competitiveness in the knowledge-based economy. It facilitates international collaboration and cross-cultural exchange. Even if not all universities are (particularly) international, all are subjects to the same processes of globalization—"partly as objects, victims even, of these processes, but partly as subjects, or key agents, of globalisation" (OECD, 2009, p. 18).

The OECD reports the following trends in higher education to 2030:

- cross-border higher education, implying mobility of students, faculty, and institutions, will grow;
- academic research will become increasingly international and will continue to be affected by both collaborative and competitive forces;
- higher education systems in Asia and Europe will gradually increase their global influence, although North America will continue to hold a clear advantage especially with regard to research (OECD, 2009).

Multilingualism in HE: European Language Policy and Planning

Multilingualism in HE—the Council of Europe Perspective: Intercultural Dialogue, Democratic Citizenship, Multiperspectivity, and the Role of English

The work of the Council of Europe in the field of higher education and research focuses on issues related to the recognition of qualifications, public responsibility for higher education and research, higher education governance, citizenship and culture, and the social dimension of higher education (for more details go to www.coe.int/t/dg4/highereducation/).

The Council of Europe and the European Union share the aims of preserving linguistic and cultural diversity in Europe and promoting learning and use of languages as a means to support intercultural dialogue, social cohesion, and democratic citizenship, and as an important economic asset in a modern knowledge-based society. The Council of Europe's efforts in this respect are best illustrated by the development of such policy instruments as the Common European framework of reference for languages (Council of Europe, 2001a)

and the recent recommendation on the use of the CEFR and the promotion of plurilingualism (Council of Europe, 2008), and such accompanying tools as the European Language Portfolio (ELP).

It is the Council of Europe's position that in a world in which international contacts, cooperation, and competition are the norm rather than exception, an understanding of other cultures and a sensitivity to their concerns and values are essential. The internationalization of higher education should help raise awareness among graduates of the fact that the impact of a statement is determined not only by what is said or written but also by the way in which it is conveyed. Intercultural dialogue and democratic citizenship require both a set of competences to communicate with others, to listen as well as to speak, to accept that other points of view may be as valid as one's own, and the ability to analyze issues from different points of view—multi-perspectivity (Council of Europe, 2001b). Higher education must educate the whole person and this cannot be done without opening the horizon of each individual to the world that lies beyond our immediate neighborhood.

> Intercultural dialogue must be founded on a firm and well reflected set of values as well as on a willingness to consider the values of others and to reassess one's own convictions in the light of new and convincing evidence. Dialogue presupposes openness of mind in all partners, including the capacity to look at their own values and frame of reference with critical distance. These are also essential values and characteristics of higher education. (CDESR, 2006)

Higher education cannot fulfill its role unless it internationalizes and unless it opts for internationalization based on coherent values and policies (Council of Europe, 2009). Higher education graduates will require what the Council of Europe, in cooperation with the US Steering Committee of the International Consortium for Higher Education, Civic Responsibility, and Democracy, has termed "converging competences" (for details and forthcoming publications see www.coe.int/t/dg4/highereducation/Forum7_Converging_competences/).

Multi-perspectivity is conditioned by knowledge of languages. It is obvious that we cannot all learn all languages and English now has a strong position as an international lingua franca. Offering higher education courses only in English has a number of practical advantages, including the fact that it is the language of instruction most likely to be understood both by local and foreign students, and there is an increasing trend toward the use of English at the expense of almost all other foreign languages and sometimes also at the expense of local languages. The development toward broad use of English as not only *a* but *the* lingua franca does, however, also raise some problematic issues. They may perhaps best be described by the saying that whoever knows only his mother's tongue is limited to his mother's world. Without in any way wanting to diminish the importance of translations, knowing a number of foreign languages opens multiple perspectives that no translation can do. So the debate is not so much about whether to use English as a lingua franca or not but rather to what extent it should be used and what the place of local and national languages should be as languages of instruction and what place there should be for foreign languages other than English (for a discussion see Bergan, 2002).

Multilingualism Policies of the European Union: Promoting Language Learning and Linguistic Diversity

Today's European societies are facing rapid change due to globalization, internationalization, and technological advances. The increasing mobility of Europeans—currently 10 million people in the EU work in other member states—is an important sign of this change. The

EU has now 500 million citizens, 27 member states, 3 alphabets, and 23 EU official languages, some of them with a worldwide coverage. Some 60 other languages are also part of the EU heritage and are spoken in specific regions or by specific groups. Immigrants have brought a wide range of languages with them: it is estimated that at least 175 nationalities are now living within the EU's borders (EC, 2008b).

In its initial action plan on promoting language learning and linguistic diversity (EC, 2003) the European Commission stated that language skills play a key role in ensuring the social, cultural, and economic integration of Europe. Publishing the strategy for multilingualism (EC, 2005) the Commission reaffirmed the value of linguistic diversity and revealed the need for a broader policy to promote multilingualism. Among the proposals put forward by a group of intellectuals for intercultural dialogue set up at the initiative of the EC a suggestion was made that, beside mother tongue, citizens can choose a language of communication and a "personal adoptive language" depending on their needs, interests, and family background (EC, 2007). The role played by languages in business was the subject of another expert paper (EC, 2008c). In the Council of the European Union Resolution on a European strategy for multilingualism (EU, 2008) the member states have been requested to:

- promote multilingualism with a view to strengthening social cohesion, intercultural dialogue, and European construction;
- strengthen lifelong language learning;
- better promote multilingualism as a factor in the European economy's competitiveness and people's mobility and employability;
- promote the linguistic diversity and intercultural dialogue by stepping up assistance for translation;
- promote EU languages across the world.

In another document published in 2008 multilingualism is called an asset for Europe and a shared commitment (EC, 2008a). In a "Green Paper" presented that year migration and mobility are discussed as challenges and opportunities for EU education systems (EC, 2008c).

Multilingualism and the Bologna Process

In 1999, the Ministers in charge of higher education from 29 European countries agreed to introduce a set of reforms in their national higher education systems with a view to setting up a European higher education area (EHEA). This Bologna declaration set in motion a series of actions to make European higher education more compatible and comparable, more competitive, and more attractive for Europe's citizens and for students and scholars from other continents. The Bologna process is driven by the 46 countries participating in it in cooperation with a number of international organizations, including the Council of Europe. It aims at reorganizing higher education systems in European countries in such a way that:

- it is easy to move from one country to the other (within the EHEA)—for the purpose of further study or employment;
- the attractiveness of European higher education is increased so many people from non-European countries also come to study, work, or both in Europe;
- the EHEA provides Europe with a broad, high quality, and advanced knowledge base, and ensures the further development of Europe as a stable, peaceful, and tolerant community.

Student and staff mobility constitutes an overarching goal of the Bologna Process with a target set at the level of 20% of graduates that should have experienced a study or training period abroad by 2020. The Erasmus mobility program, launched in 1987, has grown from 3,000 students in 1987 to over 182,000 in 2007. Over 2 million students have studied abroad since 1987 and the objective is to achieve a cumulative total of 3 million by 2012. Erasmus supported staff mobility has grown from 7,800 in 1997 to over 33,000 in 2007 (EU, 2010, p. 12). These brief stays abroad of one or two weeks allow academics and other university staff to do short-term teaching assignments and maintain personal contact with colleagues at partner institutions (for more details go to http://ec.europa.eu/education/higher-education/doc1290_en.htm).

The issue of languages is of direct relevance to a number of core objectives of the Bologna Process. These include the promotion of mobility, of the European dimension of higher education, and of graduates' employability on the European labor market, as well as enhancing the attractiveness of European higher education. These objectives can only be achieved if all students irrespective of their specialization, especially students at undergraduate level, are given the opportunity to learn languages, and if mobile students receive adequate linguistic support.

Multilingualism in HE Programs: An Overview

The pattern of university language teaching is changing in an increasingly globalized higher education market. The recognition that language skills as an addition to a professional degree bring real employability advantages should ensure the continuing success of language centers in delivering language skills to both specialists and nonspecialists. According to Coleman (2004), the employment advantages of "a good degree from a good university" will ensure the survival of a few specialist modern language departments, where top researchers continue to focus on literature while their students are taught a different and less demanding curriculum by teaching fellows and postgraduate students.

Until fairly recently, language study in higher education was essentially the domain of language specialists, either in terms of philological, literary studies, or with respect to more practical tasks such as translation and interpretation. In recent years, a growing number of HE institutions have adopted policies designed to promote language learning. It is thus possible to speak of the emergence of the concept of HE education policy as asset of strategic decisions to equip students, researchers, and both academic and administrative staff with communicative skills in one or more foreign languages (see Tudor, 2008, for a sample of language policy models).

The rationale for integrating language learning fully into HE programs is based on three pillars:

1. Employability: knowledge of languages plays an important role in the employability of graduates in the increasingly mobile and multilingual global workplace.
2. Mobility: language competences are needed to take advantage of the possibilities for mobility.
3. The demands of the knowledge-based economy: graduates preparing themselves for the global workplace need to develop multilingual communication skills in parallel with their mainstream academic and professional training.

Globalization is placing greater linguistic demands on higher education worldwide. In Europe today, there is a desire to improve language-learning opportunities for all people to enhance European cohesion and competitiveness. In Asia, interest in improving lingua

franca languages such as Mandarin Chinese and English is on the rise. Globalization has made the world interconnected in ways not seen before. In an integrated world, integrated learning is increasingly viewed as a modern form of educational delivery. Promising solutions offer the content and language integrated (CLIL) approaches that involve using a language that is not a student's native language as a medium of instruction and learning for academic subjects. This also calls on content teachers to support the learning of those parts of language competences that students need to master the content (see Mehisto, Marsh, & Frigols, 2008, for an overview).

Teachers play a central role in the implementation of the new concept of plurilingual education. It is therefore crucially important that those who teach languages receive education and training that will equip them to carry out this task (for innovative proposals see Kelly & Grenfell, 2007; Newby et al., 2007).

The issue of professionalization in relation to the development of institutional multilingualism and individual plurilingualism requires a change of perspective. The Multilingual Universities Network of about 30 bi- or multilingual institutions of higher education worldwide recommends replacing the figure of a non-native speaker or learner, trying to bridge the gap to the native speaker, by the more complete figure of the learner as a social actor. Under this concept, the plurilingual social actor is not only learning languages in the classroom but also by using languages and different knowledge repertoires at his/her disposal in a variety of contexts (scientific, technical, administrative, and so on) in which s/he is acting (for details go to http://multilingualuniversities.net/).

The Bilingual University

In view of the accelerated processes related to globalization and internationalization, the idea of the bilingual university gains a new dimension. In 2000, the European Centre for Higher Education of UNESCO initiated a project directed at the analysis of the origins, mission, and functioning of the bilingual and multicultural university. Seven such institutions were analyzed—University of Ottawa, Canada; Åbo Akademi University, Finland; European University Viadrina, Germany; Free University of Bozen/Bolzano, Italy; University of Puerto Rico, Puerto Rico; University of Friburg, Switzerland; Babes-Bolyai University of Cluj-Napoca, Romania—and five key factors identified for their mission:

1. promoting the participation of a given linguistic minority group in the life of the country, region, or city;
2. promoting the coherence of a city, region or country, often in situations where few other institutions bridge the linguistic and sometimes cultural gaps between different populations;
3. promoting a wider outlook for the university and its graduates;
4. promoting bilingualism as an objective, not a condition;
5. encouraging students to stay in the region (Purser, 2000).

Research on Multilingualism in HE in Europe

Multilingual approaches in university education are subject of an extensive research work covering aspects reaching from institutional language policies, through learning and teaching in a multilingual environment, to assessment of the learning outcomes and socio- and psycholinguistic issues related to communication inside and outside the multilingual classroom. (For an overview see, for example, Wilkinson, 2004; Wilkinson, Zegers, & Leeuwen, 2006; Leeuwen & Wilkinson, 2007; Wilkinson & Zegers, 2007; Fortanet-Gómez & Räisänen, 2008; Wilkinson & Zegers, 2008; Veronesi & Nickenig, 2009.)

SEE ALSO: Bilingual Education; Common European Framework of Reference; Content and Language Integrated Learning; Content-Based Language Instruction; Council of Europe Language Policy and Planning; Language Policy and Multilingualism; Multilingualism

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Multilingualism and Ideology

ADRIAN BLACKLEDGE

Language ideologies include the values, practices, and beliefs associated with language use by speakers, and the discourse which constructs values and beliefs at state, institutional, national, and global levels. Recently, studies of multilingualism in societies have drawn attention to the social positioning, partiality, contestability, instability, and mutability of the ways in which language uses and beliefs are linked to relations of power and political arrangements in societies (Gal & Woolard, 1995; Heller, 1995, 1999; Gal, 1998; Kroskrity, 1998; Woolard, 1998; Blommaert, 1999; Blackledge, 2005). Attitudes to, and beliefs about, language, are often not only about language. Gal and Woolard (1995) persuasively argue that ideologies that appear to be about language are often about political systems, while ideologies that seem to be about political theory are often implicitly about linguistic practices and beliefs. Debates about language are therefore not about language alone (Woolard, 1998), but are socially situated and tied to questions of identity and power in societies.

Language ideologies are positioned in, and subject to, their social, political, and historical contexts. Nor are language ideologies always fixed, stable, or immutable. They may be multiple, and influenced by changes at local, national, state, and global levels. Moreover, language ideologies are often contested, and become symbolic battlegrounds on which broader debates over race, state, and nation are played out. However, to say that language ideologies are contested and changeable over time is not to assert that they are necessarily always negotiable. There is often a dynamic tension between identities asserted and chosen by the self, and identities asserted and chosen for the individual by state, nation, or institution.

In public discourse language often becomes inseparably associated with a territorially bounded identity in a relationship that takes language, territory, and identity to be isomorphic (Freeland & Patrick, 2004). One implication of this is that ideally the nation should be monolingual, with adherence to another language often (mis)read as a lack of loyalty to the national identity. Claims to minority-language rights effectively challenge the very basis on which states are founded, in demanding the institutionalization of diversity. Nation-states are not founded on "objective" criteria, such as the possession of a single language. Rather, they have to be "imagined" as communities (Anderson, 1983; Billig, 1995). Billig (1995, p. 29) argues that the creation of a national hegemony often involves a hegemony of language. However, it is not sufficient to say that speakers of the same language belong to the same nation-state. This commonsense understanding of the relationship between language and nation ignores the diversity and variety of the language(s) spoken within many states. As Rampton's (1995) work has made clear, even the notion of a single "English" language is an oversimplification, as new varieties emerge from different cultural and social contexts.

While national identities can be negotiated in a variety of ways, current research privileges language and literacy policies as increasingly important means of social control which allow nation-states to define who is "in" and who is "out." Bourdieu argues that the official language is bound up with the state, both in its genesis and in its social uses: "It is in the process of state formation that the conditions are created for constitution of a unified linguistic market, dominated by the official language" (1991, p. 45). In order for one language to impose itself as the only legitimate one, the linguistic market has to be unified

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and the different languages (and dialects) of the people measured practically against the legitimate language:

> Integration into a single "linguistic community", which is a product of the political domination that is endlessly reproduced by institutions capable of imposing universal recognition of the dominant language, is the condition for the establishment of relations of linguistic domination. (Bourdieu, 1991, p. 46)

This linking of language, literacy, and national identity happens in a number of sites which include language planning, standardization, educational policy, citizenship testing, and language instruction for immigrants (Blackledge, 2005; Stevenson, 2006). Recent work on language testing for citizenship has demonstrated that in a broad range of national contexts particular languages and language varieties become gatekeeping devices to determine who is permitted to become a member of the community of citizens (Blackledge, 2005; Mar-Molinero, 2006; Maryns & Blommaert, 2006; Stevenson, 2006).

Another, related way to impose national identities is through educational policies that decide which languages are to be employed—and thus legitimized—in the public school system. Recent research has clearly documented the interpenetration of the ideological with the local, in institutional, nationalist, and political dimensions. When a language is symbolically linked to national identity, the bureaucratic nation-state faced with a multilingual population may exhibit "monolingualising tendencies" (Heller, 1995, p. 374).

May (2004, 2005) acknowledges poststructuralist research which proposes that for some individuals and groups language may not be a defining feature of identity, but argues that for others it may indeed be a salient feature. If identities are now theorized as multiple, hybrid, and contingent, languages nevertheless are clearly important features of identity claims for some individuals and groups. If the loss of a particular language is not necessarily the end of the world for a particular ethnic identity, for some individuals and groups language certainly *is* a key ideological battleground in the assertion of identities. May (2005, p. 330) points out that "particular languages clearly *are* for many people an important and constitutive factor of their individual, and at times, collective identities," and argues elsewhere (2004, p. 43) that, while theoretically language may be just one of many markers of identity, in practice it is much more than that, as "the link between language and identity encompasses both significant cultural and political dimensions." Identities are inevitably mediated in and through languages, which (whether we like it or not) come to be associated with particular ethnic or national characteristics. Of course some languages and language varieties are important for speakers' identities without national or ethnic associations.

This entry has argued that in many Western countries a dominant ideology is constantly produced and reproduced which positions the majority language (usually English) as the only language of communication in institutional and other public contexts. Minority languages associated with immigrant groups are, as Bourdieu put it, rejected into indignity (1998, p. 46). Minority languages which have historically been associated with particular ethnic identities often continue to be important for particular groups (May, 2004), but have little capital in majority-language markets. Very often, multilingual societies which apparently tolerate or promote heterogeneity in fact undervalue or appear to ignore the linguistic diversity of their populace. An apparently liberal orientation to equality of opportunity for all may mask an ideological drive toward homogeneity, a drive which potentially marginalizes or excludes those who either refuse, or are unwilling, to conform.

Gal (2006, p. 15) argues that in powerful discourse monolingualism is often taken to be the natural state of human life. Furthermore, named languages are taken to be homogeneous, and to be expressions of the distinct spirit of a particular group. In this sense, where

linguistic practices conform to certain norms and standards, they are effective in legitimating political arrangements. However, Gal also points out that in Europe a new elite of multilingual speakers (of, e.g., French, German, and English) sustains a breadth of linguistic repertoires which transcends national boundaries. For such groups ethnolinguistic identity may be only an occasional issue. For multilingual speakers of languages with lower status, however, language issues may still be salient as people attempt to negotiate identities, often from relatively powerless positions.

As suggested earlier, however, language ideologies are neither simple nor monolithic. Notwithstanding the argument that minority-language speakers are subject to the symbolic violence of the dominant language ideology, some speakers who (or whose families) may traditionally have been associated with minority "ethnic" languages are using language and languages in new ways (Rampton, 1995, 1999). While some speakers are either unable to negotiate their identities from inextricably powerless positions, and others in powerful positions have no need to do so, some speakers in modern nation-states are using their sophisticated linguistic skills to negotiate new subject positions. In what Gal (2006, p. 27) describes as "self-conscious, anti-standardizing moves," such negotiations may include linguistic practices which reframe previous standard varieties, incorporating, *inter alia*, urban popular cultural forms, minority linguistic forms, hybridities, and inventions. Here language practices associated with immigrant groups no longer represent backward-looking traditions, but may be linked to global youth culture and urban sophistication. Languages and language practices are not necessarily equated to national identity (but may be so), and are not necessarily dominated by the standardized variety. Despite powerful ideologies of homogeneity, populations in many countries—especially countries with a history of recent immigration—continue to be heterogeneous in their practices. May (2005) proposes that linguistic identities need not be oppositional, and asks "what exactly is wrong with linguistic complementarity?" (p. 337). May calls for further ethnographic studies which articulate and exemplify the broad linguistic principles of language-ideological research in complex multilingual contexts. An example of such work is the recent and ongoing research (Blackledge & Creese, 2010) which provides illustrative accounts of the complementarity of languages in "complementary schools" in urban Britain.

Stevenson and Mar-Molinero (2006) call for more critical examination of language policies which emerge from and contribute to the contradictions between monolingual ideologies and multilingual practices. In discussing language ideologies in contexts of modernity which include transnationalism and mass immigration, there is certainly a need for such rigor. At the same time, further studies are required which critically analyze the complexity and diversity of the multilingual practices of children, young people, and teachers in and out of educational settings, and of their attitudes, values, and beliefs about language. Through such studies we can come to a more comprehensive understanding of the complex relationship of languages to each other, to the speakers of those languages, and to the social structures in the society in which the languages are spoken.

SEE ALSO: Bilingual Literacy; Bilingual and Multilingual Education: Overview; Multilingual Identities and Multilingual Education; Multilingualism and Language Rights

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Multilingualism and Language Rights

STEPHEN MAY

The growing presence of language rights (LR) in the disciplines of applied linguistics and sociolinguistics can be attributed to four distinct, albeit closely interrelated, academic movements. The first of these is the language ecology (LE) movement, charting the links between linguistics and ecology and situating the current exponential loss of many of the world's languages within a wider ecological framework. A second is the linguistic human rights (LHR) movement that argues, often on the basis of LE premises, for the greater institutional protection and support of minority languages within both national and supranational contexts. These arguments are also echoed in a third domain of academic legal discourse that has developed with respect to minority group rights generally, but with an increasing focus on the specific implementation of minority language rights (MLR) in national and international law. A fourth, increasingly influential, position has seen a deliberate move away from the biological/ecological analysis of LE, and some LHR arguments, to a more overtly critical sociohistorical/sociopolitical analysis of language rights.

While these various positions are by no means uniform, they do share broadly five key concerns. The first concern has to do with the exponential decline and loss of many of the world's languages. Indeed, of the estimated 6,900 languages spoken in the world today, it is predicted on present trends that the vast majority (up to 90%) may die by the end of the 21st century (Krauss, 1992). Language decline and loss occur most often in bilingual or multilingual contexts in which a majority language—that is, a language with greater political power, privilege, and social prestige—comes to replace the range and functions of a minority language. The inevitable result is that speakers of the minority language "shift" over time to speaking the majority language.

Of course, such language loss and language shift have always occurred—but never to this extent and never before at such an exponential rate. The potential scale and rapidity of language loss predicted here also highlights the inevitable social, economic, and political *consequences* for minority language speakers of such shift and loss. We can see this clearly if we consider which groups are most affected by language loss—almost always minority groups which are (already) socially and politically either marginalized or subordinated. Moreover, linguistic dislocation for a particular community of speakers seldom, if ever, occurs in isolation from sociocultural and socioeconomic dislocation as well.

The second principal concern has to do with the reasons why certain languages, and their speakers, come to be "minoritized" in the first place. Advocates of LR argue that the establishment of majority/minority language hierarchies is neither a natural process nor primarily even a linguistic one. Rather, it is a historically, socially, and politically *constructed* process (May, 2012), and one that is deeply imbued in wider (unequal) power relations. Following from this, if languages, and the status attached to them, are the product of wider historical, social, and political forces, there is, in turn, nothing "natural" about the status and prestige attributed to particular majority languages and, conversely, the stigma that is often attached to minority languages, or to dialects.

In short, languages are "created" out of the politics of state-making, not—as we often assume—the other way around. This is, in turn, a result of the pervasive influence of political nationalism over the last three centuries and the linguistically homogeneous state that is its product. In short, nationalism has promoted the idea that a single, common

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"national" language (sometimes, albeit rarely, a number of national languages) is the only valid basis of modern social and political organization. The process of selecting and establishing a common national language has usually involved two key aspects: *legitimation* and *institutionalization* (Nelde, Strubell, & Williams, 1996; May, 2012). Legitimation is understood to mean here the formal recognition accorded to the language by the nation-state—usually, via "official" language status. Institutionalization, perhaps the more important dimension, refers to the process by which the language comes to be accepted, or "taken for granted" in a wide range of social, cultural, and linguistic domains or contexts, both formal and informal. Both elements, in combination, achieved not only the central requirement of nation-states—cultural and linguistic homogeneity—but also the allied and, seemingly, necessary banishment of "minority" languages and dialects to the private domain.

Proponents of language rights for minority groups argue that the emphasis on cultural and linguistic homogeneity within nation-states, and the attendant hierarchizing of languages, are thus neither inevitable nor inviolate—particularly in light of the historical recency of nation-states, and the related, often arbitrary and contrived, processes by which particular languages have been accorded "national" or "minority" status respectively. These arguments about the historical and geopolitical situatedness of national languages also apply at the supranational level. As with the construction of national languages, the ascendancy of English as the current world language is also invariably linked with modernity and modernization and the associated benefits that accrue to those who speak it. The usual corollary to this position is that the social mobility of the minority language speaker will be further enhanced if they *dispense* with any other (minority) languages.

A third principal concern of language rights' proponents is to critique the principle of "language replacement" that centrally underlies the social and political processes just outlined—that one should/must learn these languages *at the expense of* one's first language(s). Consequently, the promotion of cultural and linguistic homogeneity at the collective/public level has come to be associated with, and expressed by, individual monolingualism. This, in turn, has led to educational approaches that specifically exclude first languages from the teaching and learning process and, more broadly, construct student bi-/multilingualism in "subtractive" rather than "additive" terms (May, 2003). Central to these language replacement arguments is the idea that the individual social mobility of minority language speakers will be enhanced as a result. Relatedly, LR advocates are consistently criticized for consigning, or ghettoizing minority language communities within the confines of a language that does not have a wider use, thus actively constraining their social mobility (see, e.g., Barry, 2001).

These arguments appear to be highly persuasive, at least at first glance. In response, however, LR proponents argue that the presumptions and assumptions that equate linguistic mobility *solely* with majority languages are themselves extremely problematic. For a start, this position separates the instrumental and identity aspects of language. On this view, minority languages may be important for identity but have no instrumental value, while majority languages are construed as primarily instrumental with little or no identity value. However, it is clear that *all* languages embody and accomplish both identity and instrumental functions for those who speak them. Where particular languages—especially majority/minority languages—differ is in the *degree* to which they can accomplish each of these functions, and this in turn is dependent on the social and political (not linguistic) constraints in which they operate (May, 2003, 2005a). Thus, in the case of minority languages, their instrumental value is often constrained by wider social and political processes that have resulted in the privileging of other language varieties in the public realm. Meanwhile, for majority languages, the identity characteristics of the language *are* clearly important for their speakers, but often become subsumed within and normalized by the instrumental functions that these languages fulfill.

On this basis, LR advocates argue that the limited instrumentality of particular minority languages at any given time need not always remain so. Indeed, if the minority position of a language is the specific product of wider historical and contemporary social and political relationships, changing these wider relationships positively with respect to a minority language should bring about both enhanced instrumentality for the language in question, and increased mobility for its speakers. We can see this occurring currently, for example, in Wales and Catalonia, with the emergence of these formerly subjugated languages into the public domain—particularly via, but by no means limited to education. Likewise, when majority language speakers are made to realize that their own languages fulfill important identity functions for them, both as individuals and as a group, they may be slightly more reluctant to require minority language speakers to dispense with theirs.

And this brings us to the fourth principal concern of language rights' proponents—the legal protections that can potentially be developed in order to enhance the mobility of minority language speakers while at the same time protecting their right to continue to speak a minority language, *if they so choose*. It is here that the influence of the linguistic human rights (LHR) movement, championed by Tove Skutnabb-Kangas, is most prominent. The LHR research paradigm argues that minority languages, and their speakers, should be accorded at least some of the protections and institutional support that majority languages already enjoy (see, e.g., Kontra, Skutnabb-Kangas, Phillipson, & Várady, 1999; Skutnabb-Kangas, 2000). The key position here is that minority languages should not just enjoy what Kloss (1977) terms "tolerance oriented rights"—that is, the right to use one's language unmolested in the private domain—a right attributable to all groups. Rather, certain minority languages should also be afforded "promotion-oriented rights"—that is, the right to use a minority language in the public domain—either where these languages are associated historically with a particular area, or where sufficient numbers warrant.

Comparable arguments in international law provide an additional basis on which these judgments can be made in any given context (see, e.g., de Varennes, 1996; Henrard, 2000). A central distinction in both discourses is one made between national minority groups and indigenous peoples on the one hand and ethnic minority groups on the other. The former may be regarded as groups that are historically associated with a particular territory but because of conquest, confederation, or colonization are now regarded as minorities within that territory. The latter may be regarded as voluntary migrants and (involuntary) refugees living in a new national context (see Kymlicka, 1995 for further discussion).

Three key tenets of international law can be applied to the further development of language rights in relation to these two broad minority groupings. The first principle, which is widely accepted, is that it is not unreasonable to expect from national members some knowledge of the common public language(s) of the state. This is, of course, the central tenet underpinning the current public linguistic homogeneity of modern nation-states. However, LR advocates assert that it is also possible to argue, on this basis, for the legitimation and institutionalization of the languages of national minorities within nation-states, according to them at least some of the benefits that national languages currently enjoy. LR proponents qualify this by making it clear that the advocacy of such minority language rights is *not* the language replacement ideology in reverse—of replacing a majority language with a minority one. Rather, it is about questioning and contesting why the promotion of a majority (national) language should necessarily be *at the expense* of all others.

A second principle is that in order to avoid language discrimination, it is important that where there is a sufficient number of other language speakers, these speakers should be allowed to use that language as part of the exercise of their individual rights as citizens. That is, they should have the *opportunity* to use their first language if they so choose. Again, this principle can clearly be applied to minority language speakers within particular nation-states. The third principle arises directly from the previous one—how to determine exactly

what is "appropriate and reasonable" with regard to individual language preferences. Following the prominent political theorist, Will Kymlicka (1995), May (2012) has argued, for example, that only national minorities can demand *as of right* formal inclusion of their languages and cultures in the civic realm. However, this need not and should not preclude other ethnic minorities from being allowed *at the very least* to cultivate and pursue unhindered their own historic cultural and linguistic practices in the private domain. In other words, distinguishing between the rights of national and ethnic minorities still affords the latter far greater linguistic protection than many such groups currently enjoy.

The final concern of the language rights paradigm—most prominent in more recent work in the area (see the collections by Patrick & Freeland, 2004, and May, 2005b)—addresses directly the question of how to recognize language rights, while at the same time avoid essentializing the languages, and their speakers, to which these rights might apply. This difficult balancing act necessarily involves rejecting the "essentialist tendency," closely allied with an often-deterministic account of the links between language, identity, and the wider ecological system, that is most evident in arguments for LE, as well as in those LHR arguments that are predicated on LE principles (e.g., in the work of Skutnabb-Kangas, 2000). Such arguments assume—in their less sophisticated manifestations, explicitly, and even in their most sophisticated forms, at least implicitly—an almost ineluctable connection between language and (ethnic) identity. And yet, this position stands in marked contrast to the widespread consensus in social and political theory, and increasingly in sociolinguistics and critical applied linguistics, that language is at most only a contingent factor of one's identity. In other words, language does not define us, and may not be an important feature, or indeed even a necessary one, in the construction of our identities, whether at the individual or collective levels (see, e.g., Edwards, 1994; Brutt-Griffler, 2002). This critique on the detachability of language is complemented by a wider constructivist consensus within social theory of the merits of hybridity—that our social, political, and linguistic identities are inevitably plural, complex, and contingent (see, e.g., Makoni & Pennycook, 2007).

Clearly then, an acceptance of the contingent nature of the language-identity link, and the wider principle of hybridity, is a necessary prerequisite before work in language rights can continue to develop further theoretically. But there is also a key weakness in constructivist accounts of language—their failure to address adequately the central question of why, *despite* the clear presence of hybrid linguistic identities, historically associated languages continue often to hold considerable purchase for members of particular cultural or ethnic groups in their identity claims. To say that language is not an inevitable feature of identity is thus *not* the same as saying it is unimportant. Yet many constructivist commentators in (rightly) assuming the former position have also (wrongly) assumed the latter. In other words, they assume that because language is merely a contingent factor of identity it cannot therefore (ever) be a *significant* or *constitutive* factor of identity.

This position is extremely problematic, not least because of the considerable evidence that suggests that, while language may not be a *determining* feature of ethnic identity in many geo- and sociopolitical contexts in the world today, it remains nonetheless a *significant* one in many instances, particularly in many historical and contemporary political conflicts (see, e.g., Blommaert, 1999; Blackledge, 2008; May, 2012). As Adrian Blackledge observes

> We can hardly argue theoretically that for students who died protesting the right to establish Bengali as the national language of East Pakistan in 1952, language was not a key feature of identity. There are of course many other examples in present-day Europe. (2008, p. 33)

In these conflicts, particular languages clearly *are* for many people an important and constitutive factor of their individual, and at times, collective identities. This is so, *even* when holding onto such languages has specific negative social and political consequences for their speakers, most often via either active discrimination, or oppression.

In theory then, language may well be just one of many markers of identity. In practice, it is often much more than that. Indeed, this should not surprise us since the link between language and identity encompasses both significant cultural and political dimensions. The cultural dimension is demonstrated by the fact that one's individual and social identities, and their complex interconnections, are inevitably mediated in and through particular languages. The political dimension is significant to the extent that those languages come to be formally (and informally) associated with particular ethnic and national identities. These interconnections also help to explain why, as Fishman (1997) argues, a "detached" scientific view of the link between language and identity may fail to capture the degree to which language is *experienced* as vital by those who speak it. It may also significantly understate the role that language plays in social organization and mobilization.

As for the ongoing concern over essentialism, this too can be addressed directly. Advocacy of LR does not *necessarily* entail an essentialized, static view of the language–identity link, or a homogenous conception of the wider linguistic group. As Will Kymlicka has argued in relation to minority rights more generally, advocates of such rights are rarely seeking to preserve their "authentic" culture if that means returning to cultural practices long past. If it were, it would soon meet widespread opposition from individual members. Rather, it is the right "to maintain one's membership in a distinct culture, and to continue developing that culture in the same (impure) way that the members of majority cultures are able to develop theirs" (1995, p. 105). Cultural change, adaptation, and interaction are entirely consistent with such a position. The crucial difference, however, is that members of the minority are themselves able to retain a significant degree of control over the process—something which until now has largely been the preserve of majority group members. The key issue for minority language speakers thus becomes one of cultural and linguistic *autonomy* rather than one of retrenchment, isolationism, or stasis.

Adopting this view actually allows for the promotion of a far more pluralistic, open-ended interpretation of language and identity, recognizing the opportunity or potential for holding multiple, complementary cultural and linguistic identities at both individual and collective levels. Maintaining one's minority ethnically affiliated language—or a dominant language, for that matter—avoids "freezing" the development of particular languages in the roles they have historically occupied. Equally importantly, it questions and discards the requirement of either a singular, or replacement, approach to the issue of other linguistic identities, which has been the major historical legacy of nationalism and the nation-state system. And finally, such a view, of course, accords far more closely with the often-complex linguistic repertoires of individual multilingual speakers themselves. This multilingualism has tended until now to be sanctioned (only) in the private, familial, or community realm but, as LR proponents argue, there is no reason why such multilingualism could not be extended to the public, or civic, realm as well.

SEE ALSO: Bilingual Education and Immigration; Ecology and Multilingual Education; Endangered Languages; History of Multilingualism; Language Planning and Multilingualism; Language Policy and Multilingualism; Linguistic Diversity; Minority Languages in Education; Mother-Tongue-Medium Education; Multilingualism and Attitudes; Multilingualism and Identity; Multilingualism and Ideology

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Multilingualism in Legal Contexts

XABIER ARZOZ

Law is the most linguistic of social institutions. It cannot exist outside language: It is drafted, approved, proclaimed, administered, interpreted, and repealed through acts of language. In a number of countries law is proclaimed or administered in more than one language. The bilingual or multilingual nature of law as a social institution raises specific issues and difficulties, as well as general issues flowing from applied linguistics (Gibbons, 2004; Mattila, 2006). This entry will discuss various issues arising from *national* legal contexts when there is more than one official language, or when more than one language is recognized to some extent. Apart from states, *supranational* and *international* institutions also have to deal with the challenges posed by multilingualism (Tabory, 1980; Paqué, 1997). In particular, multilingualism is posing serious challenges to the European Union, a supranational organization that operates in more than 20 languages (Schübel-Pfister, 2004; Müller & Burr, 2004; Pozzo & Jacometti, 2006; Arzoz, 2008; Derlén, 2009).

Multilingualism and the Constitution

The constitutions of 173 states of the world include some language-related provisions. Most of them, however, give recognized rights or status to one language only. Some constitutions do recognize multilingualism existing within state borders but approaches in this regard may differ considerably.

First, constitutions may proclaim a number of languages as state, official, or national languages (e.g., Belgium, Canada, Finland, South Africa, Switzerland, India). There is no commonly accepted definition of the notion of official status. The notion always implies a symbolic recognition, and normally also involves in practice access to education in the relevant language and the use of it within the framework of certain authorities. Beyond that, a variety of legal arrangements from state to state can be connected to an official status. Therefore, official multilingualism can be very comprehensive in scope or limited to certain functional areas (e.g., education) or territorial areas (e.g., at the local or substate level). In federal or quasi-federal states, the power to regulate the official status and the protection of a language at the regional level may be devolved to substate authorities.

Official bilingualism or multilingualism does not mean that all languages are treated equally. The number of official languages is both a political and a distributive decision. The Canadian and Finnish Constitutions give equal status to English and French and to Finnish and Swedish, respectively, but they provide a much weaker status to languages spoken by indigenous peoples. Even South Africa, whose Constitution appears to be specially generous in this regard, had to limit the recognition of official status to 11 languages (Afrikaans, English, plus nine indigenous languages).

A second legal approach that is widely used is the recognition of specific rights to the members of linguistic minorities. A significant number of modern East and Central European Constitutions recognize some positive language rights on behalf of autochthonous linguistic minorities (also called "national minorities").

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In general terms, the proclamation of official status itself does not lead to immediate legal effects, although it can be the basis for recognition of language rights through legislation. On the basis of constitutional principles and international law, the most complete realization of the protection of linguistic minorities should imply the development and implementation of a full set of language rights in different public domains, as long as the number of users of those rights justify them. According to their discretion, states can choose the form, timing, and methods in order to achieve this constitutional objective, both taking account of the existing social conditions and of the availability of organizational and financial resources for its implementation.

A third, more modest, legal approach consists of the acknowledgement of linguistic diversity or of the contribution of various languages to the cultural and linguistic richness or to the cultural heritage of society as a whole. Even these constitutional provisions are not legally irrelevant: They proclaim values that should unite the state's community and direct legislative action.

Multilingualism and Legislation

When the equal status of official languages is constitutionally entrenched, two (or more) language versions of the same statutory text are signed by the relevant authority and published in the corresponding official statute book and all those versions are equally authentic.

There are several legal techniques for drafting bilingual or multilingual legislation. The classical one is to present in Parliament a draft in one language and, when the text is definitively passed, translate it, either before or after enactment. In theory, equality of status should also imply that all official languages are equally considered and used through the legislative process. Specially in Canada, different possibilities in this regard have been either theoretically explored or practically tested (Revell, 1998). Basically, legal drafters and translators from all official languages should be involved at all stages of the drafting process.

The most ambitious technique of drafting bilingual legislation is codrafting, since it accords each language and culture parity of esteem: The text is simultaneously drafted and coordinated by two (or more) people, provision by provision, in the two (or more) official languages at all stages of the drafting process. Finally, the two (or more) legal versions of the same legal text should be read and passed by Parliament.

However, even in officially bilingual countries the codrafting principle is not fully observed and much more asymmetrical schemes are adopted in reality. For instance, according to the Finnish constitution, law proposals and their explanatory reports must be presented by the Government to Parliament in both Finnish and Swedish. But there is no constitutional provision imposing the reading of the Swedish text, and only the Finnish language texts of proposed laws are read in committees and plenary sessions of Parliament. Therefore, the Swedish text of a Finnish law is never subject to any discussion during the legislative work of Parliament but it is formulated by officials only. Although it is a translation, it is equally authentic once the law is enacted and comes into force. These are more or less the circumstances prevailing in most bilingual or multilingual countries or substate entities.

The translation of statutes, either imposed by constitutional order or by international obligations (such as the European Charter for Regional or Minority Languages, Article 9[3]), or provided by authorities for convenience or information, is a typical institutional practice of multilingual legal contexts. Procedures of translation and revision must be organized conveniently: Legal experts as well as translators need to be involved.

In some countries, much care is taken not only with regard to the quality of the translation itself, but also to the preservation of terminology of the nondominant language. In

Finland Swedish legal language has to be preserved as close as possible to the Swedish legal terminology of Sweden (Koivu & Mattila, 2006, p. 29). In the Italian autonomous province of South Tyrol an official committee establishes legal terminology and ensures that the German legal language in South Tyrol does not vary from the German legal terminology of Austria (Palermo & Pföstl, 1997).

Legal translation is easier when it is made within one and the same legal system, as is the case in most national contexts. In Canada, however, the two official languages express two different legal traditions, common and civil law. Legal drafters, translators, and interpreters in that country must not only master two languages but also the intricacies of two different legal cultures (Sullivan, 2004).

Even if one text is the original and the other a translation of it, equality of status implies generally that both are to be considered equally authentic statutory texts. When the content of a statute seems to be unclear, it should be read in both authentic texts. Sometimes, one language will make clear what the other leaves ambiguous. This is one of the recognized advantages of official multilingual legislation (Morris, 1999, p. 79; Koivu & Mattila, 2006, p. 33). When, however, the wording of the two (or more) language versions clearly point in different directions, the principle of equal status prevents giving prevalence to one language. Differences in meaning have to be eliminated by ordinary methods of legal interpretation: This, in practice, can lead to adopting the meaning expressed by one of the language versions, very likely the one read in Parliament.

In some jurisdictions there are explicit rules which bestow constitutional or legislative precedence upon one of its languages, usually for political reasons: For instance, the Irish (Gaelic) version of the Constitution in Ireland and the Chinese version of statutes in Hong Kong are given precedence over the English version. This seemingly expedient way to solve contradictions is not without difficulties: A court should *prima facie* be bound to determine whether, as regards the versions of the relevant law, conflict exists between the predominant language and the other(s). By contrast, when there is no legislative precedence, no criterion such as conflict has to be satisfied before one looks to the other language text for interpretative assistance (Morris, 1999, p. 79).

A specific legal source tends to be multilingual, regardless of the monolingual or multilingual character of the state: International treaties can be ratified by contracting parties in more than one linguistic version. According to Article 33 of the Vienna Convention of the Law of Treaties, when a treaty has been authenticated in two or more languages, the text is equally authoritative in each language, unless the treaty provides or the parties agree, that in case of divergence, a particular text shall prevail. The terms of a treaty that has been authenticated in two or more languages are presumed to have the same meaning in each authentic text, and differences of meaning must be removed by looking for the meaning which best reconciles the texts, having regard to the object and purpose of the treaty.

Multilingualism and the Courts

Access to justice in a recognized language (either an official or minority language) is one of the most relevant but also delicate of language rights. This right not only concerns individuals, but the entire justice system. Often, the right is proclaimed on paper but there is no accessibility to justice in a real and meaningful way for the speakers of nondominant official languages.

There are significant consequences that emanate from the constitutional or legal right of access to justice in more than one official language (Bloom, 2006, p. 434). The first consequence, obviously, deals with members of the public. The judicial process starts with an understanding of one's rights and recourses through the availability of all statutory legislation and accompanying regulations in the recognized languages, and continues with the

availability of counsel who can communicate easily in the relevant languages. Added to this is the freedom to have proceedings drafted in those languages; the ability to present one's case before the courts, both orally and in writing, in those languages; and the right to receive judgment or a translation in the preferred language. Second, members of the judiciary and other judicial staff (prosecutors, registrars, etc.) should be bilingual. In some countries (Finland, Switzerland, Belgium), there is a legal obligation for judges and other personnel to be bilingual, irrespective of whatever this means in practice.

It is uncommon for judicial systems to function bilingually outside the federal level, with perhaps the most striking exception being the courts of the Judicial District of Montréal in Canada (Bloom, 2006, p. 435), of the few bilingual or trilingual cantons of Switzerland (Papaux, 1999, p. 33) and, as of 1991, of South Tyrol in Italy (Palermo & Woelk, 2001). By contrast, regional courts of the officially bilingual region of Brussels in Belgium follow the dual justice system (i.e., separate courtrooms operating in either French or Flemish but not both).

As a consequence, in many bilingual or multilingual jurisdictions language services are offered basically in form of an interpreter. This policy is opposed by those that see it as a second-class treatment and a violation of equality, since speakers of the official non-dominant language must cope with longer delays and must often waive their right to use their preferred language.

SEE ALSO: Canada's Office of the Commissioner of Official Languages; International Law in Language Policy and Planning; Language Planning and Multilingualism; Language Policy and Multilingualism; Legal Translation; Linguistic Human Rights; Multilingualism and Language Rights; Multilingualism and Minority Languages; Quebec Charter of the French Language and Canadian Language Policy

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Multilingualism and Media

HELEN KELLY-HOLMES AND SARI PIETIKÄINEN

Introduction

Multilingualism is a crucial part of media. Today's media environment is inevitably multilingual. Media are a site of multilingual practices, a place where we get information about multilingual communities and other languages, and about our own sociolinguistic environment; they are a site where we can see our own views and norms about multilingualism reflected or challenged; they are also a site for language learning and for multilingual innovations.

These various roles and processes mean that the relationship between multilingualism and media is a complex one. It is also one worthy of attention and research, as it opens up a window to examine and discuss several important processes, including language norms and ideologies, language policies, identity, and linguistic markets (see Spitulnik, 1998; Kelly-Holmes, Moriarty & Pietikäinen, 2009). In this entry, we first examine how mediation impacts on multilingualism; we then go on to look at how media can both limit and enhance multilingualism; and, finally, we briefly survey multilingual media practices.

Mediation and Multilingualism

There are of course myriad types of media, but what they all have in common is the aspect of mediation: They involve non-direct, non-face-to-face communication taking place through a technological and regulated system. In order for media communication to happen, some intervention or support (technical, financial, editorial, etc.) is needed. This mediation inevitably involves selection and decision-making processes about language(s): the decision to use one language rather than another; the decision to opt for a formal register or type of language; the decision to use a speaker who has a particular accent, and so on. This means that all media give shape to our experience of multilingualism, and they do so in part through this selectivity. Language relations and our understanding of multilingualism, understood not just as different languages (e.g., French, Arabic), but also as different dialects, accents, and ways of speaking, are transformed by the use of media and mediation technologies, which amplify or reduce multilingualism in various ways. Mediation necessitates organizing, selecting, and focusing our multilingual environment.

The selection and decision-making process in any media environment is complex. In the mass media in particular (newspapers, radio, television), it is often someone other than the direct language users who makes the decision. Such decisions may be made at an institutional level, and can be considered policy decisions (e.g., news policy, language policy). At the most basic level, the state "decides" which language its major national media should be in. In media environments which are more controlled from the top down, these decisions are made by a relatively small group of disproportionately powerful people, such as editors and owners of the media. Behind these decisions, however conscious or subconscious they may be, lie individual, group, and national language ideologies in relation to different languages, varieties, standards, multilingualism, and so on. Sometimes

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language choices are also made to brand a media product for example as more local (e.g., through use of local dialect or regional accent), more mobile (e.g., through tokenistic use of English), or more authentic (e.g., through emblematic use of rap jargon or minoritized languages). This manifests in media texts, for example, as loanwords or shifts in style or genre. It is important to remember that each media space has its own internal hierarchy for linguistic resources and its own internal normative system for organizing the use of them.

In the contexts of globalization and technological innovations, media have been "democratized" (Zhao & Hackett, 2005): They have become cheaper to produce, more fragmented and more "bottom-up." As a consequence, mediation of multilingualism is less subject to the gatekeeping mentioned above and has the potential to become closer to everyday language use. We can find numerous examples in computer-mediated communication of practices which seem much closer to everyday conversations and language use, even though they are mediated, for example instant messaging, chatting, blogs, and social-networking sites. However, these novel mediations still involve decisions about language(s), even if only made by one individual about how to mediate him/herself, and which form this should take. It seems clear that language policy and ideology are involved when the state is attempting to mediate itself and makes language choices on this basis. However, even where there are massive differences in terms of reach, scale, economics, or authority involved—for example in the difference between a national daily newspaper and a personal blog read by a handful of people—they still share the common phenomenon of mediation and decision making in terms of language(s).

Encouraging Monolingualism, Reducing Multilingualism

The reduction of multilingualism in media environments has its origins in the parallel development of national media and of the modern nation-state. A key project of the nation-state was to find a unifying, homogeneous culture and language, and national media played a major role in this development. Anderson (1991) argues that it was the widespread availability of media that led to national consciousness and, simultaneously, the establishment of national languages, tied with the ideology of a monolingual nation. Along with ideologies, there were also practical reasons for reducing multilingualism in media. In their early days, print and broadcast media were extremely costly and labor-intensive. For this reason, decisions had to be made about which language to use, as producing media in multiple languages was seen as simply not feasible. Particular national media had a firm territorial base, either because of their broadcasting range, or because of their hard-copy distribution (in pre-digital days), and this reinforced the idea of one language being linked to one group of people (a nation) who lived in a particular territory. Interestingly, the European Broadcasting Union still defines national broadcasters on the basis of territory—even in a digital age—and links language explicitly to territory. A newspaper or a common media product is still seen as a key way to mark, draw attention to, or rally individuals around a group, regional, linguistic, or ethnolinguistic identity (Busch, 2004).

Related to their role in the creation—imagined or otherwise—of modern nation-states, at least in the European context, media came to be seen as detrimental to multilingualism (see for instance Wright, 2000; Jaffe, 2006). As highlighted above, language ideological and political motivations were—and still are—facilitated by technological issues and limited resources. Decisions about language in the media have as much to do with other factors as they have to do with language. More often than not they have also to do with speakers, resources, ideologies, and power. And this in turn has everything to do with the perceived value and function of a particular language and its speakers.

The practices of European nation-states in relation to the creation of monolingual national media as part of the project of creating a unified and monolingual nation-state were largely copied by many newly independent, postcolonial countries, as pointed out by Ricento (2006) and others. For example in parts of Africa and Asia the decision was often made in favor of English as a "neutral" language in complex multilingual situations. Of course the choice of English is not neutral, and even the idea of describing it or rationalizing it as a "neutral" choice is a classic example of a language ideological process. The reasoning often used to justify this choice, apart from the "neutrality," is the cost-effectiveness and accessibility. However, the use of English rather than other widespread lingua francas (e.g., Kiswahili) or multilingual combinations of local and regional languages has language ideological implications: It conveys an idea that these languages are somehow not fit for modern practices such as media (and education, etc.), and that multilingualism is divisive and incompatible with the national project that succeeds colonialism and which national media are intended to promote.

Another solution for the reduction and regulation of multilingualism was the development of parallel monolingualism in the media. For example, in Belgium and Switzerland, media are available equally (or more or less equally) in the various national or co-official languages. This, too, conveys a particular language ideological position: Languages are separate systems that should be treated equally but not mixed, even though people's everyday practices in multilingual contexts are often mixed (see Androutsopoulos, 2006a). The homogenization of language use in national media went beyond multilingualism. The didactical aim of the national media materialized also in a construction of the "proper" way of speaking. This normative view resulted in the portrayal of a "media" speaker, with a "neutral" or "standard" way of speaking that is rare to find in real language communities. The notion of a "standard" or "media" speaker is best exemplified perhaps in the concept of "BBC English," which would have been considered a standard to aspire to, even beyond media contexts, in its freedom from regional or class-based variation. While the situation has changed considerably, it is still worth looking at which resources are valued in media contexts (and which are not), and whose voices are present in contemporary media (and whose are not).

Facilitating and Expanding Multilingualism

As pointed out above, media play a central role in normalizing language use and imposing monolingual norms in many societies. For this reason, they have been seen as powerful institutions in reducing multilingualism. However, this perceived power to change people's language behaviors, impose norms, and also alter language attitudes and ideologies has encouraged those who want to promote multilingualism, particularly in the form of promoting minoritized languages, to see mass media as a key focus of their objectives. Fishman (1991) developed a staged plan for reversing language shift (i.e., for moving from non-use or only limited and declining use of a language in certain domains, registers, or areas of life to full use of the particular language in all domains, registers, or areas). Of particular significance was the attainment of media in the relevant language, for a number of reasons. First of all, mass media can be seen as a high-status domain (along with education and the political sphere). They are also a key site of modern life. The dominant-language ideological logic is reversed here: If mass media in a dominant or majority language have caused people to shift or switch language, because they want to participate in this key site of modern life, then mass media in the minoritized language might cause them to change or shift back. Another argument is parity of esteem. Media represent a status area in that significant amounts of money are invested in them. At the time when Fishman was writing,

and at the time when television (and radio) began, nation-states were the main investors in broadcast media. Thus, the language choice by the state as reflected in national media sends a powerful message about the importance of particular languages. National media are costly. In technical terms, prior to the development of digital technology, they represented massive infrastructural investment. They still do today because, even though technical costs have reduced, quality programming still costs. Therefore the appearance of a minority language in a prestigious, high-cost domain of media should send a very powerful message about the status and importance of that language to its speakers and learners and to others as well. If the "imagined community" (Anderson, 1991) can be created by national television in a majority language, then perhaps the minority imagined community can also be created by minority-language media.

As well as trying to send messages about status, minority-language media are seen as a key way in which to maintain and develop a language. Media are a ubiquitous part of people's everyday lives and a lot of language is experienced and also acquired through media. Therefore, if minority languages are left out of media, their linguistic resources, values, and functions are not "updated," and they can be seen to stall in their development and change. Similarly, minority speakers will not have the vocabulary or a mediated forum to discuss what they have been experiencing, perhaps encouraging a further move to a majority language. Using media is seen as an important way of maintaining a language (reading, hearing, speaking, writing, etc.). For example, when TG4, the Irish-language television channel, began to broadcast the Wimbledon tennis tournament with Irish-language commentary, this was the first time that a sport like tennis had been covered in Irish in the media, and the channel had to develop a range of vocabulary in order to describe accurately what was going on (Moriarty, 2011). New media genres also often facilitate language innovations in minority-language contexts, such as hybridity and mixing (Pietikäinen, 2008). In terms of maintenance and development, minority-language media can therefore be seen to add substantially to the corpus development of a particular language, through development of new vocabulary, styles, registers, and genres that will keep the language "up-to-date" and thus, so the thinking goes, enable speakers to use it in a wider range of areas of their lives, thereby encouraging maintenance rather than shift or code switching in these areas.

Media can also function as informal language-learning contexts; they can help to normalize "messy" multilingual practices and appropriation of diverse linguistic resources and their use in the public arena. Particularly where there are limited opportunities to use a minority or immigrant language in everyday life, and perhaps even fewer to acquire it beyond formal learning opportunities, media are seen to provide a valuable forum where language learning and appropriation can happen. The American children's television program *Sesame Street* is a good example here, enabling the learning of English and Spanish by preschool children. Again, following the national model, minority-language movements have sought to encourage learning and acquisition through media. Children's television has been seen as a particular priority here because of the need to provide a forum for language learning and language use, and also in order to provide attractive offerings that can compete with programs in the majority language. For example a Sámi children's television program, *Unna Junna*, uses several Sámi languages as spoken languages and the national languages of Swedish and Finnish in its subtitles.

The development of media in minority languages, together with globalization of media and fragmentation of production and consumption, has created new mediated linguistic spaces, which are often considered beneficial for multilingualism. These processes have led to niche markets for media products both in a particular language and in multilingual versions (e.g., gaming, advertising, blogging). This in turn has led to a new, albeit still limited, market for language-related media jobs, for example in Wales and Ireland. Creating

a job market for speakers of minority languages is another way in which media promote and encourage multilingualism.

Multilingual Practices in the Media

The context within which media are produced and consumed is always more or less multilingual. On the production side, the ways in which multilingualism is managed in media vary from "forced" monolingualism to unregulated, creative use of diverse linguistic resources. One typical type of multilingualism we see in media production is "parallel monolingualism" (Heller, 2006), which involves the provision of parallel texts in different languages. For example, the Catalan newspaper *El Periodico* is first written in Castilian/Spanish, before being completely machine-translated into Catalan. The two versions are sold side by side (in parallel with each other) and are identical in terms of content. Similarly, many corporate and commercial Web sites are now offered in parallel-language versions, particularly in situations where (some) languages are clearly delineated (officially) by territory (e.g., Belgium, Canada). Global media products in English have added to multilingualism in the form of bringing English into new domains and areas via media. Particularly in countries where subtitling has been preferred to dubbing (e.g., the Nordic European countries and Romania), the English language is an inevitable part of an evening in front of the television or a cinema visit. Another key domain of multilingual practices in media production is that of advertising and, as Androutsopoulos (2006) points out, this is an area that has received quite a lot of attention from multilingualism researchers.

Originally, it was feared that the Internet would become a monolingual English-language environment, but developments both top-down and bottom-up continue to question this assumption. Technical improvements, many of them driven by countries wishing to push the role of their national language (e.g., Chinese), have meant that non-ASCII-based characters and non-Roman alphabets can now be supported and have in fact become a normal feature of the World Wide Web (Wong, Beaumont, & Konečný, 2006). Multilingualism in the form of parallel monolingualism, with a high degree of English in connection with many languages (e.g., for housekeeping, legal notices), has in fact flourished with the growth of the Internet; as well as this, search engines (e.g., Google), social-networking sites (e.g., Facebook) and online-shopping and corporate Web sites are available in multiple language versions. Many traditionally minoritized languages are enjoying a strong presence, even if in limited registers, on the Web. While this type of parallel monolingualism does serve speakers of different languages and fulfills official language-policy objectives, it can sometimes ignore hybrid and mixed everyday linguistic practices. It also tends to ignore unofficial or everyday multilingualism, and minority languages of allochthonous groups (e.g., Arabic or Turkish speakers in Belgium) in particular can be left out or rendered invisible in this type of approach, even where they constitute a sizable minority within a country. However, bottom-up individual practices on social-networking sites create content on such sites that reflects multilingual, innovative, and hybrid practices, even where the sites themselves are framed in a parallel monolingual way.

The World Wide Web, as one of the most influential and used media environments, serves as an example of the contemporary multiple, even contradictory, language practices and ideologies present in media. Some Web-based multilingual practices such as parallel monolingualism can in fact encourage the idea of monolingualism as the norm, by linking countries and flags to particular languages (Kelly-Holmes, 2005). At the same time, however, some new media, in particular developments in computer-mediated communication, allow for the creation of media texts in a bottom-up way by individuals who are not part of media institutions, and who may be working on their own or simply collaborating with

a small group of individuals (Androutsopoulos, 2006; see also Danet & Herring, 2007, for a range of cases). These types of environment can encourage heteroglossic and mixed practices which reflect language mixing more than traditional media practices (Busch, 2006; Pietikäinen & Piirainen-Marsh, 2009). Linguistic, discourse, and multimodal creativity are involved, supported by, and in some cases practically demanded by the virtual environment, and this provides unregulated spaces where mixed multilingual practices can thrive. For example some of the social spaces on the Internet, especially those which are organized around a particular activity, topic, or game, are heteroglossic: In order for individuals to participate in a meaningful way, they need to have and display a rich repertoire of communicative resources, not just languages but also genres, styles, registers, and discourses.

Virtual media generally tolerate or accommodate a greater degree of non-standard language, some even deriving site-specific norms, which can diverge substantially from top-down norms. For example, languages with no written form or agreed standard are used for communicating on the Web (e.g., in blogs, chat rooms, and discussion forums) by people using their own individual norms and interpreting other people's norms (Wright, 2006). A further dimension that encourages heteroglossic and mixed multilingualism is the fact that users of new media often draw on the features of speech rather than writing, and this makes them very different to old media, the print media having been dominated (and still to a large degree being dominated) by standards of written language, and the broadcast media involving a high degree of scripting, which again links to written rather than spoken language. In addition, unscripted broadcast media have tended to aspire toward spreading a certain norm of language, considered a standard or "higher" form than ordinary everyday speech. However, in the spaces of many new-media environments, the speaker's own everyday language practices can instead be reproduced, and these can easily involve mixed multilingualism. This in turn creates new normative systems for using linguistic and other resources.

Conclusion

As this short contribution highlights, mediation can be seen as both a source of and a block to multilingualism: On the one hand, media can be seen to have contributed (and to still be contributing) to the privileged status of monolingualism in many modern nation-states. On the other hand, media can be seen to be a key way of facilitating and promoting multilingualism, particularly in the context of global, digital media. Contemporary multilingual practices in media reflect the tension between these tendencies. However, it is important to note that these two general points never tell the whole story, and the relationship needs to be looked at on a case-by-case basis. For example, when thinking about national media and the promotion of monolingualism, it is important to remember that the whole idea of strict linguistic borders between countries is more imaginary than real. State borders run through languages rather than contain them. Likewise, it is hard for media not to leak across borders into other states with different official languages and different media-language policies. For those living in border areas, hermetically sealed media borders have never existed, as media products in different languages leak across from other states. For example, Finnish media were part of everyday practices for many neighboring Estonians until the fall of the Soviet Union and the consequent liberalization of media markets. Eurosport, an attempt by the European Broadcasting Union to create a pan-European channel, initially broadcast in only one language (English) but soon had to become multilingual in response to consumers of the channel in different countries—so the pressure to produce nationally specific and monolingual versions (as opposed to a global version)

came from below (from the speaker as consumer), not from the nation-state. These two examples illustrate the complex and constantly changing relationship between media and multilingualism, which makes it a key site for understanding multilingualism in contemporary society.

SEE ALSO: Language Policy and Multilingualism; Language Rights in Language Policy and Planning; Multilingualism; Multilingualism and Ideology; Multilingualism and the Internet; Multilingualism and Minority Languages

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Multilingualism and Metalinguistic Awareness

CRISTINA SANZ

Introduction

Metalinguistic awareness or explicit, conscious knowledge of form/meaning relationships in a language, usually manifested as the ability to verbalize thoughts about language, is one of the best documented differences between bilinguals and monolinguals. General findings suggest that speakers of multiple languages have greater metalinguistic awareness and develop this awareness at an earlier age than those who speak only one language (Ianco-Worrall, 1972; Ben-Zeev, 1977; Diaz, 1985; Galambos & Hakuta, 1988; Thomas, 1988; Galambos & Goldin-Meadow, 1990; Bialystok, 1991; Ricciardelli, 1992; Yelland, Pollard, & Mercuri, 1993). There are different types of metalinguistic awareness, namely word (Ben-Zeev, 1977; Bialystok, 1988; Ricciardelli, 1992), syntactic (Bialystok, 1986; Galambos & Goldin-Meadow, 1990; Gathercole, 1997), phonological (Yelland et al., 1993; Bialystok, Majumder, & Martin 2003), and semantic awareness (Ianco-Worrall, 1972). Metalinguistic awareness is only one of the cognitive advantages resulting from living with two languages. Although, in comparison, the results for positive effects of multilingualism on the development of metalinguistic awareness are quite robust, a number of variables, including age, level of proficiency (Cummins, 1976, 1981), biliteracy (Sanz, 2007), language typology of the bilingual (Al-Dossari, 2004), and the nature of the task used to measure the effects (Bialystok, 1999, 2001) are believed to interact and explain some of the contradictory findings regarding positive effects of multilingualism on different aspects of cognition. Differences in metalinguistic awareness between monolinguals and bilinguals have been found for adults too (Thomas, 1992). Metalinguistic awareness is posited as a key factor in explaining the bilingual edge; that is, multilinguals' enhanced capacity to learn further languages (Swain, Lapkin, Rowen, & Hart, 1990; Cenoz & Valencia, 1994; Sanz, 2000) and to achieve literacy (Bialystok, 2007a).

Research on multilingualism and metalinguistic awareness is varied in approach. Some of the research comprises case studies (Moreno-Zazo, 1998; Maneva, 2004) and comparisons of mono, bi- and multilinguals in laboratory settings (Nation & McLaughlin, 1986) or classroom/school settings (Sanz, 2007). Naturally, the procedures implemented in this research are as varied as the research itself, varying from participant observation to language proficiency tests and language tasks that elicit superordinate, communicatively adequate definitions, rich/poor object descriptions, word/object associations, grammaticality and semantic congruence judgments, error correction, sound substitution, and word length, to name just a few.

Multilingualism and General Cognitive Advantages

Metalinguistic awareness is only one of the cognitive advantages resulting from living with two languages. The study of the effects of bilingualism on cognition has also implemented non-verbal tasks, such as mathematical and numerical (Bialystok & Codd, 1997),

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creativity (Kessler & Quinn, 1980), and problem-solving tasks (Bialystok & Majumder, 1998; Bialystok, 1999; Bialystok & Martin, 2004), with findings supporting those from verbal tasks (Kessler & Quinn, 1980, 1987) showing that language experience may play an important role in the development of abstract thought (Rosenblum & Pinker, 1983) and semantic creativity. All these studies compared monolinguals and bilinguals completing tasks that varied in their degree of difficulty, with the most demanding tasks requiring that participants ignore irrelevant information that would interfere with the actual task if given attention. These results support previous research (Bialystok, 1988) showing that bilinguals are better than monolinguals at solving problems that are based on conflict and attention.

Although the majority of studies have looked at the cognitive effects that child bilingualism has on cognition, research has also indicated that some of the results found in children can be replicated with adults, and that, in fact, bilingualism attenuates the effect of aging on cognitive control (Bialystok, Craik, Klein, & Viswanathan, 2004; Kefi et al., 2004). Moreover, some studies showed that the positive effects associated with bilingualism may decrease in young adults, who are at the peak of their attentional abilities, when compared to children or older adults (Bialystok, Martin, & Viswanathan, 2005; Bialystok, Craik, & Ruocco, 2006; Bialystok, Craik, & Ryan, 2006).

More accurate descriptions of how bilingualism affects cognitive performance, according to Bialystok (2007b), have led to the interpretation that bilingualism must be considered in terms of both advantages and disadvantages. This has been investigated in studies of cognitive and linguistic processing in adults and in children (see the section below on metalinguistic awareness and reading). For adult bilinguals, recent research has shown that they are at a disadvantage on tasks measuring lexical retrieval and fluency (Michael & Gollan, 2005) but that they are better at controlling attention when performing a challenging task (Bialystok et al., 2004). However, the lack of conclusive results in some of the areas investigated suggests that further research is still needed to understand the complex nature of the relationship between bilingualism and cognition, including metalinguistic awareness. Given that the majority of the research has been carried out with bilingual children as subjects, research must further expand on the recent findings that have examined the consequences of adult bilingualism, especially in young adults, an age group where the bilingual advantage seems to be less obvious.

The language teaching profession considers that the body of empirical studies showing that second language learning fosters cognitive development and contributes to stronger native language skills, especially in writing, is significant enough that they can use it as a convincing argument in favor of the strengthening of foreign languages in school and college curricula (Kecskes & Papp, 2000). Foreign-language learning, even at an intermediate level, improves critical thinking and context-dependent processing of language material, enhances the development of interpersonal relations, and teaches self-reflection on language behavior (Sanders, 2006).

Types of Metalinguistic Awareness

Research investigating cognitive advantages for bilingual children has revealed that bilingualism helps develop higher levels of mental flexibility and metalinguistic awareness at an earlier age. Children exhibit bilingual awareness after their second birthday through self-repair, other-repair, translation, and labeling of languages (Mishina-Mori, 2004). Two year olds can make corrections, criticisms, or initiate language games (Moreno-Zazo, 1998). Bialystok (2001) summarizes several studies that investigated the effects of bilingualism on word awareness, syntactic awareness, and phonological awareness. In word awareness,

a number of studies agree on the advantage of bilinguals over monolinguals in their ability to separate word and meaning (Ben-Zeev, 1977; Bialystok, 1988; Ricciardelli, 1992). However, counterevidence also exists, as shown in a study by Rosenblum and Pinker (1983), a group of monolingual and bilingual preschoolers were equally capable of associating objects with new arbitrary names. Nevertheless, monolinguals and bilinguals varied in the way they referred to the properties of an object. Whereas monolinguals were more likely to talk about the physical attributes, bilinguals emphasized the social context in which objects could be used, thus revealing bilinguals as more capable of extrapolating the meaning of a word and connecting it to the real world.

In the field of syntactic awareness, research has observed an advantage for bilingual children over monolinguals when performing tasks that require noting and correcting errors (Galambos & Goldin-Meadow, 1990) or avoiding misleading information (Bialystok, 1986, 1988). Galambos and Goldin-Meadow argue that bilingual children have a greater awareness of linguistic forms than monolingual children, and that metalinguistic awareness improves with intellectual development. However, studies dealing with morphosyntactic structures have also shown that there are areas in which bilinguals do not outperform monolinguals, such as the acquisition of the mass/count distinction in English (Gathercole, 1997). This study examined whether bilingual children differ from monolingual in the way they draw inferences about the referents of new nouns based on mass/count structures such as *an* X and *some* X. The results showed that young monolinguals (seven years old) outperformed bilinguals of the same age. However, at nine years old, bilinguals seemed to have achieved the same levels of performance as their monolingual counterparts. Gathercole (1997) provided a number of possible explanations for these results; the one that seemed more plausible is that bilinguals may just need more time to acquire this specific feature. The differences in results between this and other studies in the area may also lie in the nature of the task. In this case, either an elicitation task (Gathercole, 1997) or a grammaticality judgment task that requires the inhibition of misleading information (Bialystok, 1986, 1988; Galambos & Goldin-Meadow, 1990) were used. In addition, this study suggests that the difficulty of the task proposed may play an important role on the effects of bilingualism on cognition depending upon the age and developmental stage of the participants.

In phonological awareness, positive findings for bilingual children are revealed in aspects such as the ability to judge whether objects in pictures had long or short names (Yelland et al., 1993). However, Bialystok et al. (2003) did not find any difference in performance between bilingual and monolingual children who were requested to substitute a sound in the target word with another sound from another word.

According to Ianco-Worrall, bilingual children appear to develop semantic understanding before monolingual children, although this difference diminishes over time. Ben-Zeev concludes that bilingual children are better prepared to reorganize their perceptions than their monolingual counterparts, and that bilingual children are prepared to treat words as units separate from their semantic content within a greater syntactic system.

Conditions Affecting the Development or Use of Metalinguistic Awareness

Proficiency Thresholds in Two Languages

To resolve some of the contradictory findings from studies investigating the relationship between child bilingualism and cognition and specifically to explain some of the negative findings that had been obtained in research with minority and migrant bilingual children in subtractive contexts (i.e., where two languages are competing), Cummins developed a

new framework (1976), the Threshold Hypothesis. Cummins related cognitive development in children, internal in nature, to the attainment of proficiency thresholds in their L1 and L2, and this to a combination of external (i.e., social, attitudinal, educational) factors. Under the model, bilinguals are expected to develop cognitive advantages, including metalinguistic awareness, when compared to monolinguals, only after a certain threshold is reached in their L2 (second threshold in Cummins's terms).

Bialystok pointed out to the importance of the factor "level of bilingualism" proposed by Cummins in determining different levels of metalinguistic awareness, and proposed the inclusion of a more fine-grained distinction that incorporates different degrees of proficiency (not just balanced or unbalanced). This proposal is supported by the findings on the effects of a range of levels of proficiency, which included not only benefits for partial bilingualism (Bialystok, 1988; Yelland et al., 1993), but also advantages only for fully balanced bilinguals (Ricciardelli, 1992), a greater advantage for fully balanced bilinguals (Bialystok, 1988; Cromdal, 1999), or disadvantages for partial bilingualism (Gathercole, 1997). Consequently, an explanation of the bilingual advantage requires the inclusion of more complex factors that should interact with the "level" explanation.

Research has in fact provided evidence that higher levels of bilingualism are associated with cognitive advantages when compared to lower levels of bilingualism not only in children (Bialystok, 1988; Ricciardelli, 1992; Bialystok & Majumder, 1998) but also in adults (Thomas, 1988; Kefi et al., 2004). For children, studies such as Yelland et al. (1993) found that children who had received partial instruction in Italian (i.e., they were not totally biliterate) as second language were better than monolinguals at judging whether a number of pictures contained long or short names. Other studies also suggest that being partially proficient in a second language confer participants with a cognitive advantage when compared to monolinguals in tasks that involved metalinguistic awareness. Bialystok (1988) compared three groups of children: 20 English monolinguals, 20 partially French-English bilinguals, and 17 fluent French-English bilinguals. Participants were exposed to two tasks: *arbitrariness of language* and *concept of word.* Whereas the first one assessed the child's understanding of the arbitrary connection between linguistic form and reference in the world, the *concept of word* task assessed the child's knowledge of the abstract concept of a word. The results revealed that the two bilingual groups outperformed the monolingual group on the *arbitrariness of language* task, and that the fully bilingual group performed significantly better than the other two groups on the *concept of word* task. Similarly, Demont (2001) shows an advantage for children who attended German/French bilingual classes since kindergarten at grammatical judgment and correction tasks and word recognition, while Dillon's comparison (2009) of children in both early total immersion schools (Gaelscoileanna), where Irish is the language of instruction, and English-medium schools, where Irish is taught as L2, concluded that more balanced bilinguals are more likely to independently display higher levels of metalinguistic awareness and evidence of cross-linguistic transfer. Parallel conclusions were drawn by Kenner, Gregory, Ruby, and Al-Azami (2008) for second and third generation Bengali heritage language learners in the UK. In conclusion then, evidence suggests that the higher the level of bilingualism, the more cognitive advantages, but when a partial level of bilingualism is reached benefits also appear when compared to monolinguals.

Studies with adult participants, like that of Thomas (1988), show comparable results in that with more linguistic experience comes greater metalinguistic awareness. Thomas maintains that bilinguals who have learned a second language in the classroom show a greater ability to learn a third language than bilinguals who have not received formal instruction in their second language, and therefore have not been exposed to grammar

explanations. According to Thomas, instruction aids in the development of sensitivity to grammar. More recent research by Ransdell, Barbier, & Niit (2006) compares working memory capacity and metalinguistic awareness as it applies to reading in monolingual, bilingual, and multilingual university students within three cultural contexts, America, Estonia, and France. Their results show that bilingual and multilingual students have better metalinguistic awareness of their language skills in reading and greater working memory capacity than do students who are monolingual, but who have comparable native language skills. Gibson and Hufeisen (2006) also concluded that multilingual learners of English are highly metalinguistically aware and adept at sifting formal grammatical information from semantic information both in listening and written task. In conclusion, more research is needed to determine where, on a scale from low to balanced adult bilingualism, Cummins's second threshold can be placed. In addition, another relevant issue should be addressed: whether there is more than one adult threshold and whether these thresholds are held constant for different cognitive abilities and external conditions.

Within the discussion on levels of proficiency, some scholars attribute the cognitive benefits of bilingualism to literacy in two languages (Cummins, 1981; Swain et al., 1990; Cook, 1997; Bialystok, 2001). For example, Swain and colleagues investigated the effect of L1 literacy on L3 learning among 319 eighth graders in Toronto. Results of this study suggest that the crucial factor in successful L3 acquisition is the development of heritage language literacy skills, rather than exclusively oral skills as well as language typology of the bilinguals. Likewise, Sanz (2007) establishes a relationship between literacy development in two languages and enhanced ability to learn an L3. As expected, no effects were found for balance in oral skills, but regressions show level of biliteracy is a predictor, and ANOVAs show that there is a specific level of development of literacy in both languages that needs to be reached before we can observe enhanced ability to learn the L3, possible in socio-educational situations that promote additive bilingualism. In considering these arguments, the reader should bear in mind the typological relationship between the languages involved. Both Catalan and Spanish are Romance languages, therefore, further research is necessary that incorporates the same variables in a comparable socio-educational context that involves typologically different languages, as it is possible that biliteracy in two distant languages further enhances metalinguistic awareness.

Nature of Task

A second explanation to account for contradicting behavior elicited by metalinguistic tasks was proposed by Bialystok (1999, 2001). Her framework describes to what degree task characteristics determine a bilingual's performance depending on the involvement of two processing components: analysis and control. Whereas analysis is defined as the ability to represent explicit and abstract rules, control is described as the ability to attend to specific aspects of the input, especially in situations that include ambiguous information. In order to test how bilingualism interacts with these external conditions, the task is manipulated such that demands of analysis and control are increased. Reexamining the results in this way reveals that bilingual advantages occur reliably on tasks that make high demands on control but are not evident in tasks that make high demands on analysis.

Bilinguals' greater attention to language form to determine constantly which language to use and how to switch between languages develops the component of control which serves as a guide during this linguistic process. Also, reading decontextualized language in comparison to oral exercises demand a greater understanding of the grammatical structure, making easier the development of the analysis component. Biliteracy is key in developing the analysis component.

What is the Use for Metalinguistic Awareness? Learning to Read, Learning Other Languages

Metalinguistic Awareness Enhances Acquisition of Non-Native Languages

A number of factors involved in language acquisition may be enhanced as a result of the language-learning experience of bilinguals, including cognitive flexibility, automatization of skills, and metalinguistic awareness (Cummins, 1976; Cromdal, 1999; Bialystok, 2001; Gibson & Hufeisen, 2006).

Such factors have been posited to explain the advantage shown by bilinguals over monolinguals in the acquisition of a third language (L3) both in classroom (Swain et al., 1990; Cenoz & Valencia, 1994; Sanz, 2000) and in laboratory studies (Nation & McLaughlin, 1986; McLaughlin & Nayak, 1989; McLaughlin, 1990; Nayak, Hansen, Krueger, & McLaughlin, 1990). Classroom studies conclude that instruction in the minority language is associated with improved competence in an L3 at no cost either to competence in the majority language or to academic development. In Sanz (2000) Spanish-Catalan biliterates were shown to have an advantage over Spanish monolinguals as learners of English as an L3. She concludes that, in general, bilinguals are more efficient language learners because they are faster and consequently achieve a higher level of attainment in the L3. But what gives multilinguals the edge? From a cognitive psychology perspective, bilinguals are experienced language learners and users and experience allows them to approach the task of learning a new language in a different, more efficient way. From a second language research perspective, metalinguistic awareness works as advanced organizer for incoming linguistic stimuli.

In second language acquisition research, whether conscious knowledge of a language (metalinguistic knowledge) can be transformed into implicit, unconscious knowledge (considered true competence) is a matter of discussion, but most agree that it can help in the acquisition process by acting as an advanced organizer, focusing learners' attention on the relevant features of the language. That is, bilinguals' heightened metalinguistic awareness, which results from exposure to more than one language and especially to literacy in two languages, gives them the capacity to focus on form and to pay attention to the relevant features in the language input, thereby increasing the amount of intake (processed input) that feeds into their interlanguage system (internal grammar).

In cognitive psychology, a pattern of evidence has emerged in studies that compare experienced and inexperienced learners. Experienced learners tend to restructure the elements of a task into schemata that are seemingly unavailable to inexperienced learners. During restructuring, isolated subelements of a task are consolidated into related units and this consolidation allows for further abstract processing at lower cost than processing of disconnected and isolated subelements. This general cognitive explanation is exemplified by Klein (1995), whose multilinguals showed heightened ability to identify and retain key verbs necessary to trigger the parameter resetting for preposition stranding, the key form to be acquired. Similarly, Sanz (2000) concluded that language experience may influence input processing in bilinguals, who may spontaneously display what classroom pedagogical techniques try to induce: focused attention to key features in the input (Doughty & Williams, 1998).

In a series of studies on bilingualism and cognition (McLeod & McLaughlin, 1986; Nation & McLaughlin, 1986; McLaughlin & Nayak, 1989; Nayak et al., 1990), McLaughlin's research team attempted to demonstrate that both bilingual and multilingual individuals have an advantage over monolinguals in automation and restructuring processes. Nation and McLaughlin (1986) compared the performance of "novice" (monolingual English) and "expert" (bilingual and multilingual) learners as they were exposed to a miniature linguistic

system under implicit (read and memorize) and explicit (read and search for grammar rules) learning conditions. They found that the experts outperformed novices in the implicit but not the explicit condition. The results of this study give evidence to the relationship between previous linguistic experience, memory, and language learning: multilingual subjects are better equipped to process a constant stream of information, keeping in working memory only that which is relevant to further processing. In the explicit condition, where these processes are unnecessary, the multilingual group did not show any advantage.

In the light of these results, it will be important to determine if bilinguals at different stages of L2 development make different use of explicit information (grammar explanation, feedback) during the acquisition of a third language. Within the Latin Project (a long-term study led by Sanz, Stafford, and Bowden), Lado's dissertation compares performance by 151 basic, intermediate, advanced, and native-like speakers of L2 Spanish during the initial stages of development of an L3 under two computerized treatments which differ in the type of feedback (+/– explicit). Accuracy and latency in four different tests show that level of bilingualism is closely related to L3 proficiency level (e.g., Cenoz, 2003) and that even partial bilingualism enhances subsequent language learning (e.g., Thomas, 1988), although these benefits appeared under less challenging conditions, that is, when the rules were provided or when the tasks were less demanding. Importantly, as hypothesized, the study identifies the presence of one or two thresholds for the positive effects on cognition of adult bilingualism, with positions changing depending on external conditions. Under more demanding conditions (i.e., –EF [less explicit feedback] and more cognitively demanding tasks), only one threshold emerges and is delimited by near-native proficiency. The appearance of these thresholds is explained with aptitude—as measured by the modern language aptitude test (MLAT)—and working memory (WM) capacity (as measured by a sentence span test), which suggests that for adults learning an L2 in formal contexts, achieving a high level of proficiency results in a cognitive edge.

To sum up, experience with more than one language—multilingualism—promotes the automation of the basic necessary abilities in the processing of information and language. As they become automatic, these basic necessary abilities depend less on working memory and allow room for other processes. Also, the development of input restructuring strategies is a result of metalinguistic analysis. Language learners restructure input in categories that allow for quicker access and more transparent relationships with other units of information, making the processing of new input definitively easier. In this way, multilingualism, metalinguistic awareness, and attentional control are interconnected and explain multilinguals' advantage in the acquisition of new languages.

Multilinguals and Metalinguistic Awareness as a Facilitator of Literacy

The research on literacy agrees there are three prerequisite skills for the acquisition of literacy: establishment of metalinguistic awareness, competence with the oral language, and understanding of symbolic concepts of print (Bialystok, 2007a). Research on bilingualism and literacy explores the extent to which these skills differ for monolingual and bilingual children. Its findings suggest that bilingualism is clearly a factor in children's development of literacy, but the effect of that factor is neither simple nor unitary. Sometimes bilinguals are at an advantage (concepts of print), sometimes at a disadvantage (oral language competence). Likewise, Francis (1999) concludes that metalinguistic awareness is related to difficult aspects of literacy development in different ways, the key variables being the degree of decontextualization and expressive versus receptive language tasks.

SEE ALSO: Bilingual Education and Immigration; Bilingualism and Cognition; Bilingual Literacy; Curriculum Development in Multilingual Schools; Early Bilingual Education;

Inhibition and Control in Second Language Acquisition; Input Processing in Second Language Acquisition; Language Awareness; Minority Languages in Education; Multilingual Education and Language Awareness

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Multilingualism and Minority Languages

COLIN H. WILLIAMS

The interaction between hegemonic state languages and autochthonous or allochthonous minority languages is a fascinating, sometimes tragic, relationship, interpreted here from a sociopolitical and policy-related perspective. As one of the chief components of group identity and the means by which the ideas and techniques of social development are diffused, language is one of the most sensitive issues of the contemporary world. Language issues are often an overarching mobilizing factor within which other goals are pursued. It follows that a sovereign state's approach to language management can be a key determinant of the degree to which political unity and the rate of economic "development" are achieved. If a language policy is harmonious and effective, it releases collective energies into other more profitable avenues. If it is authoritarian, divisive, and dysfunctional, it can lead to alienation, pressures for regional separatism, and ultimately to civil war or disintegration.

Political integration is central to state stability as the incorporation of ethnically differentiated territories has been a necessary precursor to the creation of the territorial-bureaucratic state. Incorporation strengthens central rather than local interests, and serves to threaten the material and spiritual sustenance which incorporated groups derive from their immediate locale. Patterns of state integration and development are often overcentralized without a corresponding attention to the needs of the "periphery," except the need to integrate it politically and strategically. This has led to charges of core discrimination, peripheral marginalization, and the denial of group rights and cultural reproduction. For some these features are a necessary product of global development; others query whether or not the denial of distinctiveness is too high a price to pay for their economic and bureaucratic incorporation into the mainstream.

For many peoples, state integration has resulted in the conquest of ethnic territory, the denial of popular rights, and the external development of their homeland. Many ethnolinguistic minority groups perceive their territory as having been under threat in modern history, whether through forced out-migration as a result of land enclosure, such as Scotland in the 18th-century clearances or apartheid South Africa after 1948; of famine, such as Ireland in the 1840s, Sudan in 1980–94, and Ethiopia in 1984–94; of resource exploitation, as happened to the Māori or Canada's First Nations and Inuit; or rapid externally derived industrialization, as in Euskadi in the late 19th century. Another factor is internal migration, such as the huge migration of English workers into 19th-century Wales or the successive waves of migration from Andalucia to Catalonia which reached its height in the 1960s (Solsona, Ajenjo, Treviño, & Jiménez, 1995; Hernàndez, 2007; Querol Puig & Strubell i Trueta, 2009).

Consequently, one of the most malleable and durable resources which a minority can employ in their struggle for recognition and participation is language. Because institutional means of dissent were often denied them, subject peoples invariably focused on cultural diacritical markers as a means of asserting their own separateness and demonstrating their resistance to external state and commercial incursions into their territory. Questions of language, culture, and identity can constitute the very essence of a subordinated group's

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relationship with the state in whose name the dominant group exercises power and control. As group identity and power differentials are rooted in their environment and expressed through material acts of construction or change, it is not surprising that any threat to the immediate territory of a subordinated group is interpreted as a challenge to their culture and group survival. Place, boundaries, and territory are critical in the process of control and development and their appropriation by external agencies has a long history related to the extension of state hegemony and strategic, capital projects of "state building" and "nation formation," which are essentially contestations over space.

Historically, we can identify four types of language policy which structure the relationship between multilingualism and minority languages, and each has a different trajectory in the processes of state formation. The first and most common—as found in France—reinforced political and cultural autonomy by giving primacy to one indigenous language as the language of government, administration, law, education, and commerce. A number of goals were achieved simultaneously, such as the search for national integrity, the legitimization of the new regime and its state apparatus, the reestablishment of indigenous social organization, the reduction of dependence upon external organizations and influences, and the incorporation of all the citizenry into a wide range of para-public social domains. Foreign languages were reserved for the specialized functions of higher education, international diplomacy, and commerce. In the past 40 years a historically similar policy, as applied in the United Kingdom and Spain, has been subjected to quite radical reforms including regional autonomy and devolution, resulting in the increased salience of Catalan, Basque, Galician, Welsh, and Gaelic as official languages of education, public administration, IT, and broadcasting in their respective territories.

A second type of language management characterizes those situations in which the "national" goal has been to maintain cultural pluralism, so that the state might survive through containing its inherent tensions. Under this system, language was used to define regional associations rather than state or national citizenship. Thus of Switzerland's 26 cantons three are bilingual, one (Graubünden) is trilingual, and the remainder incorporate cantonal unilingualism within a multilingual federal system. A less consensual solution has been the rigidly enforced division of Belgium between its Walloon- and Flemish-speaking populations.

The third alternative applies when a recognized minority is granted some degree of geographical distinction, based upon the territoriality principle of language rights, but without gaining full regional autonomy. In Finland, shared historical context, high levels of language contact along the west coast, marked religious uniformity, a strong tradition of centralized government, and the unifying effects of long-term external threats led to a recognition that the minority Swedish-speaking population should be accorded official status. Following the 1922 Language Law, all communes were classified as unilingual Finnish, unilingual Swedish, or bilingual if they contained a linguistic minority of either group of 10% or more; these classifications were revised after each decennial census to take account of changing linguistic geography (McRae, 1997).

A fourth option—the modernization or revitalization of an indigenous language—characterizes societies disengaging from colonial relationships and the cultural hegemony of a dominant state. Language mobilization was a key goal of the 19th-century nationalist intelligentsia in Hungary, Ireland, Finland, and Norway prior to independence, and remains a consideration in those states which have not succeeded in fully instituting the indigenous language as a popular medium of governance and civil affairs—as in Ireland, which in December 2010 announced its 20-year strategy for the Irish language (Government of Ireland, 2010). Another aspect of modernization can also involve the introduction of a new language or linguistic variety in order to replace a defunct variety. There has been a long-standing discussion in Friaul (Friuli in northeastern Italy) as to which variety of

German should be taught in schools in the Germanophone linguistic islands (Tischelwang, Lusern, Pladen). Similarly in Schleswig-Holstein the standard Danish variety "Rigsdansk," introduced by the Danish authorities, has replaced the local dialect of Juttish. Thus an indigenous variety is being replaced by an allochthonous one, but it remains a salient identity marker for the local populace.

How do these macrolevel policies and strategies transform into microlevel action which informs public services, education, and legal affairs? Language policy and planning in any multilingual society are a public good and are as capable of being manipulated as any other aspect of state policy. Nevertheless, it is an essential feature of the economic and political restructuring of many states. The key issues are:

- Who decides—and on what basis—such bilingualism or multilingualism is to be constructed?
- Which languages are chosen?
- Who benefits by acts of state-sponsored social and identity formation?
- How is language-related conflict managed and reduced?
- How is language planning to be related to all other forms of social intervention?
- How do citizens respond to reformed language regimes?
- How do such reforms relate to international trends in education, human rights, freedom of mobility of labor and skills acquisition?

The recognition of the need to honor rights and plan language services normally involves the use of a previously disallowed language within public administration and the legal system, a religious-based education provision, or differentiated access to the media. Such reforms may be predicated on the basis of a personality (i.e., related to the status of the individual) or a territoriality principle (related to the legal status of the district or region) or some expedient admixture of both, but they are not in themselves sufficient to avoid conflicts. Some conflicts can be partially neutralized if the following conditions are observed:

- The territoriality principle should be limited to a few key areas like administration and education.
- The institutional multilingualism that emerges should lead to the creation of independent unilingual networks, which grant equal opportunity of communication to minority and majority speakers. These networks should also exclude linguistic discrimination connected with speakers of the prestige language.
- Measures of linguistic planning should not be based exclusively on linguistic censuses carried out by the respective governments. Rather, they must genuinely take account of the situational and contextual characteristics of the linguistic groups.
- Minority linguistic groups in a multilingual country should not be judged primarily on quantitative grounds. On the contrary, they should be awarded more rights and possibilities of development than would be due to them based on their numbers and their proportion to the majority. (Nelde, Labrie, & Williams, 1992)

Nelde and colleagues argue that according such equality to minorities by assuring them of more rights could result in fewer people adopting an intransigent ideological position. This may also lessen the incidence of civil war, ethnic conflict, and separatism; however, it does not offer an absolute guarantee, for the target community is often deeply divided and many conflagrations are intensified as a result of external pressures and geopolitical hostilities.

It is debatable whether territorial principles of language protection offer adequate protection to bolster language loss and whether strong language legislation, as in Catalonia

or Quebec, has enabled successive governments sufficient control to regulate language choice and behavior (Generalitat de Catalunya, 2000). The federal government's containment approach is related to the grand narrative which official agencies construct from their distinctive approach to the collection and presentation of official language data as reflected in the Annual Reports of the Commissioner of Official Languages (Commissioner of Official Languages, 2007). Critics of the Canadian approach argue that "Statistics Canada" has chosen to define and interpret official language data in a certain manner which allows successive federal governments to place a more positive gloss on official language policy than is warranted by reality. Castonguay (1997, 1999) argues that trends such as the demographic advantage of English, the collapse of Canada's French-speaking population, the impact of allophone language shift, and the increasing anglicization of Francophones outside of Quebec all demonstrate that the "personality principle" approach to official bilingualism is inherently assimilationist, thus subversive. Cardinal (1999, 2007) offers a cautionary rider to such trends, arguing that the federal language regime has placed Francophone minorities outside Quebec in an unhealthy state of dependency on government and the courts. The acute political point is that they thereby become part of the Trojan Horse federal strategy vis-à-vis Quebec. Thus many critics, such as Chevrier (2003), endorse Dion's (1992) position that the personality solution should be adopted throughout Canada, except in Quebec, where territorialism should be acknowledged as a political fact.

A major difficulty in the general interpretation of the relationship between multilingual polities and minority languages relates to how official data are collected and used as a basis for policy development and periodic reporting. In general there is a lack of adequate time-series data by which to analyze demo-linguistic trends. Various attempts to describe the range of language diversity in the EU (European Union) include the Euromosaic (www.uoc.edu/euromosaic/web/homean/index1.html) and ADUM projects. The EBLUL/ECMI report (2002) combines the Euromosaic and graded intergenerational disruption scale (GIDS) scores in order to create a continuum which ranges from the strongest, "unique" language communities of Catalan in Catalonia, Luxembourgish, Welsh, Basque in the BAC (Autonomous Community of the Basque Country), through a mid-point (GIDS score 4) representing Friulian, Sorbian, Ladin, Asturian, Basque, and Catalan in France, to the weakest represented by East Frisian, Aroumanian, and Cornish. GIDS scores for Regional Minority Language (RML) communities within "kin states" demonstrated that Swedish in Finland and German in Italy were the strongest, with Slovenian in Austria at a mid-point (GIDS score 4), while Dutch in France, Portuguese in Spain, Albanian in Greece, and Greek in Italy were in the weakest position. Regular reports commissioned by the European Commission, together with Committee of Experts Reports regarding the European Charter for Regional or Minority Languages and those pertaining to the European Convention on Human Rights are replete with good insights and sound recommendations, but are too often rendered ineffective because they have little purchase and binding force on the actions of member states.

A second issue relates to the inconsistency by which minority languages are identified and categorized. Extra and Gorter (2001, pp. 7–16) have raised the issue of the criteria used for identification of population groups in multilingual Europe. They argue that while data on Regional Minorities (RM) is recorded on the basis of (home) language, ethnicity, or both, that on Immigrant Minorities (IM) is recorded on the basis of nationality, country of birth, or both. Due to the decreasing significance of nationality and country of birth criteria in the EU it is probable that the combined criterion of self-categorization and home language will characterize future language planning policy. The case studies represented in Barni and Extra (2008) offer a rich illustration of how these various trends are impacting within different European contexts. However, one should be alert to the political implications of choosing certain criteria by which residents in specific programs

are included or excluded and to the attempts by government agencies to put a positive gloss on official language trends. A more worrying issue is the refusal of several states to gather language-related data at all, either because it is politically too sensitive or because it is too expensive.

The emancipation of long-discriminated-against minorities (either through the renaissance of minority languages or through constitutional reform) has also to be set within the context of an enabling infrastructure which allows them to use their new-found rights. Modernized indigenous languages, such as Irish or Catalan, are capable of expansion but are unlikely to displace hegemonic languages, especially within the civil service, or technological and commercial sectors. Other languages such as Welsh, Frisian, or Basque have penetrated new domains, such as local administration, education, and the media, but some of this activity is tokenistic or reaches only the superficial structures of society. In contrast, threatened minority languages such as Romany or Skolt Lapp will be further marginalized. The fact that speakers of lesser-used languages have become highly politicized in the last 20 years should not divert attention away from their fears of cultural attrition. Thus deciding between the promotion of one or many languages in public services or in the educational domain is becoming less of a "free choice." The increasing burdens of economic, social, and cultural development crowd in on the limited resources available for language planning and its implementation. This was demonstrated by the 2004 EU enlargement, when an additional 60 languages fell within the remit of European governments and nongovernmental organizations. These comprise border minority languages, autochthonous languages (Kashubian in Poland, Carpatho-Rusyns in Slovakia), partially migrant languages (Russian in the Baltic States), official languages (Maltese in Malta), and linguistic islands (the Tartars).

Some 50 million EU citizens, 10% of the population, speak a regional or minority language. Some of them are served by language boards or departments established by government to promote linguistic policies. Several ethnolinguistic minorities are engaged in European-wide projects in broadcasting, information networking, education, and public administration, establishing their own networks and entering into new alliances to influence decision-making bodies. They believe that by appealing to the superstructural organizations of the EU for legitimacy and equality of group rights, they will force individual states and the Community to recognize their claims for political/social autonomy within clearly identifiable territorial/social domains and influence patterns of governance as discussed, for example in the European Commission's White Paper of 2001 (European Commission, 2001). The best illustration is the Network to Promote Linguistic Diversity (NPLD), established in 2007 (www.npld.eu), part-funded by the Commission's Lifelong Learning Programme, which encompasses regional, minority, indigenous, cross-border, and smaller national languages. The Network's aim is to facilitate the sharing of best practice and the development of innovative ideas, especially within the priority areas of intergenerational language transmission and preschool learning, motivation and increasing usage of target languages, and the wider deployment of RMLs in health-care services.

At the heart of the debate on European identity lies a consideration of the role of hegemonic languages as both symbol and instrument of integration. A burning question for many is whether English should be encouraged as the official language enabling most Europeans to communicate with each other. Or is it desirable (or even possible) to attempt to slow down its inevitable global spread?

The growth and displacement of languages often defies conventional explanation, let alone accurate planning, because while access to information and power demands fluency, it also requires investment in institutional structures, the deployment of technical facilities, and the improvement of skills and capacity so as to access the "opportunities" afforded by the new digital age.

There is also the pedagogical issue as to how many languages a school student can reasonably be expected to learn, for in many instances parents are reluctant to expose their children to more than two "foreign" languages, and as English is so pervasive this may have severe consequences for the transmission of selected minority languages within the school system.

Logically, if globalization and interdependence can enhance the productive capacity of majority, "nation-state" interests, they can also be harnessed to develop the interests of lesser-used language groups. Looked at historically, the recognition of linguistic minority demands is a very recent phenomenon. In accordance with the resolutions of the European Parliament (Arfé, 1981; Kuijpers, 1987; Killilea, 1994), the European Community since the early 1980s has occasionally supported action to protect and promote its constituent regional and minority languages and cultures (European Commission, 2010). There has also been the development of legislation and declarations upholding the rights of minorities to use their languages in several domains, most notably those overseen by the Council of Europe whose various resolutions have resulted in the emergence of basic standards for language rights (de Varennes, 2009). However, these applications are inconsistent and do not have the same force in law as do appeals to the European Court of Human Rights; thus linguistic minorities still face many structural barriers to their full participation within the EU system.

One place where there has been an attempt to restore a sense of balance and to manage complex multilingual trends is Catalonia. In the 1960s and 1970s Catalonia experienced a net inflow of relatively unskilled migrants from poorer, rural regions such as Andalucía and Extra Madura. A second migratory flow, whose origins are in North Africa, Latin America, and parts of Asia, is more recent and ongoing. The language of social integration of these migrants faced with housing, employment, and health access issues is Spanish, even if the desired long-term policy goal is to transform these immigrants into functional Catalan speakers. The fear, of course, is that the cumulative numerical influence of such migrants will serve to weaken Catalan as a default language of social interaction, especially within urban areas. The other related fear is that calls for the primacy of Catalan, in contexts where even a modicum of Spanish would be a major achievement for many migrants, can be interpreted as a cover for social exclusion and incipient racism. This is why the related question of immigration and multilingualism is so sensitive. Issues of class, race, deep culture, and religion are heavily intertwined with the broader patterns of social cohesion as respective speakers of Catalan and Spanish both seek to "normalize" their preferred language as the language of social interaction.

Given such tendencies, repeated within most large metropolitan nodes in Europe, there is growing pressure for a pan-European educational policy that stresses statutory and professional instruction for multilingual communication. Specialists stress education's potential in promoting cultural awareness (Baker, 1996). The outstanding questions produce periodic partial solutions in relation to what role the mother tongue should have in formal education for minority group members, whether students should be required to learn the national language of one of their neighboring states, whether there should be consistency in providing a range of minority language opportunities from the kindergarten up to university level, and on what grounds certain non-European languages should be privileged within the education system at the expense of other languages, whether European or not. All of these questions and their detailed implementation remain the subject of public contestation and political debate.

Whether or not one accepts the legitimacy of these questions, the underlying tenets of liberal multiculturalism depend to a large extent on the relative vibrancy of the target groups within a European policy of multilingual education. What started as an attempt to preserve a common Western heritage now has to adjust to the reality of managing divergence in a multiracial society. France, Sweden, and the Netherlands have enacted

protective measures which seek to combat the pervasiveness of English. How vibrant are Europe's constituent cultures? How dependent are they on official patronage? Are they self-sustaining or are many perpetuating a generation-specific conception of a subculture, subsidized by public coffers? Clearly such questions draw attention to the dualistic relationship of culture and the modern state. Most minority languages are increasingly dependent upon the state for legitimizing their access to the media, for granting them permission to establish bilingual or religious-based schools, for upholding in law several of their key fundamental values and principles. However, when language and the culture it represents become institutionalized in new domains via new agencies, such reforms change the relationship between the individual and the state. Power for enfranchisement is the key to how successful such a relationship will be in serving the needs and expectations of a multicultural society.

Key questions inform the formulation of multilingual strategies; thus we may ask:

1. What are the strategic needs for language development in Europe?
2. Whose interests are served by pluralism in language development?
3. To what extent is democracy undermined by the unsatisfied aspirations of threatened language groups?
4. Are OLS/IML (Other Language Speakers/Immigrant Minority Languages) necessarily to be conceived as competitors to autochthonous RML (Regional Minority Language) groups in the field of language policy and basic rights?
5. Are the nonterritorial claims of OLS/IML groups sufficiently well developed to have a sociospatial impact on the provision of local services within public administration?
6. What is the role of language in education for the adequate rendering of social and health services and how does one avoid creating a demand for particular languages at the expense of others?
7. What are the different critical masses required for particular services?
8. How do the central agencies of social reproduction, such as the law, education, and health, relate to the increased demands of pluralism and strive to satisfy such demands within a multicultural system? (Williams, 2008)

EU harmonization policies which strengthen majority language regimes pose a threat to the vitality of some regional and immigrant minorities. Sympathetic states, such as Ireland and Finland, together with regional parliaments in Catalonia and Wales, have moved from a preoccupation with the promotion of minority languages to a more legislative and regulatory basis for language management, initially within the public sector, but increasingly within a wider range of socioeconomic activities. Thus the operation and sociolinguistic impact of agencies such as An Coimisinéir Teanga (2009), the Catalan Language Guarantees Office, and the Welsh Language Commissioner will prove an important regulatory filter by which one may measure the degree to which strident minority languages navigate a path through an increasingly multilingual world order. As for the less strident languages, their fate depends less on the political control and resource allocation of the regional state, and more on their ability as supplicants to appeal to a modicum of decency and equality of treatment within international law and conventional representative democracy. The key actors in any multilingual state are the members of the majority society and it is to their interests as fellow citizens that minority language tactics are increasingly directed, so that issues of language become less and less concerned with division and conflict and more and more with treating the multilingual heritage as a public good. Such sentiments are hard to gainsay in relatively affluent times, but will be sorely tested in times of periodic economic recession and social tension.

SEE ALSO: Council of Europe Language Policy and Planning; Language Policy and Multilingualism; Language Policy and Planning: Overview; Language Rights in Language Policy and Planning; Limits of Language Revival; Minority Languages in Education; Multilingualism; Quebec Charter of the French Language and Canadian Language Policy; Role of Linguistic Human Rights in Language Policy and Planning; Status Planning

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Multilingualism and Philosophy

LARISSA ARONIN AND DAVID SINGLETON

It might have been imagined that a philosophy of multilingualism could draw copiously on the long-established concepts and procedures of the philosophy of language. However, much of the work undertaken by philosophers of language is of minimal relevance to current multilingualism—a phenomenon sometimes labeled a *new world order* (Fishman, 1998). Among the new realities one can cite the changed *role* of multilingualism in our present world, where so much now depends on multilingual arrangements and individuals. *Complexity* is also a salient feature of contemporary multilingualism—a concomitant of the dramatic rise in the number and significance of multilingual migrants and multilingual communities, which has enormously extended the *scope* of current multilingualism. Finally, at both individual and community levels, *constellations of languages* often fulfill the communicative, cognitive, and identificational requirements once met by single languages.

Some Previous Avenues of Philosophical Interest in Language

Philosophical interest in language has been largely oriented toward questions regarding the connections between language, mind, and the world, as well as toward language-related methodological issues in philosophy. It has often impregnated the philosophy of science, because of the crucial importance of precision of language and meaning in scientific discussion. Frege (e.g., 1972 [trans. Bynum]), the progenitor of analytic philosophy, and widely regarded as a founding father of the philosophy of language, interested himself in language out of a desire "to free thinking from the fetters of language by pointing up the logical imperfections of language" (cited Beaney, 2006, p. 61), a direction that dominated 20th-century Anglo-American philosophy, in which language was seen as the primary locus for philosophy. This approach was encapsulated in Wittgenstein's claim that all philosophy is "critique of language," "a battle against the bewitchment of our intelligence by means of language" (Wittgenstein, 1953, §109) by uncovering the rules of logic *underlying* our language-games.

The preoccupation with language launched a variety of philosophical schools and styles—logical atomism, logical positivism, ordinary language philosophy, formal analysis, and linguistic phenomenology. In all such approaches language was seen as important because of its interposition between reality and our apperception thereof—distorting, concealing, symbolizing, communicating, or constructing, depending on the particular stance taken. The relationship between linguistic expressions, sense, and truth was discussed in Russell's (1905) theory of descriptions, as well as by logical empiricists, most of whom were "philosophically engaged scientists" (Baldwin, 2006, p. 72) whose primary concern was to construct a language which would serve the needs of science. Quine (1970) for his part developed the notion of "indeterminacy of translation." Some philosophers of language, on the other hand, turned their attention to the positive role of "ordinary language" in our understanding of concepts (e.g., Austin, 1975).

A broader approach is a perspective peculiar to Russia (Bezlepkin, 2002). It significantly broadened the context of language issues and moved beyond the confines of the logico-gnoseological framework. Russian thinkers tended to construct their view of language on

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a national and spiritual foundation, so that language was often considered primarily in the light of its general value as the carrier and expression of spirituality and nationality.

More recently Chomskyans have revitalized the idea that an innate language capacity is what distinguishes human from animal cognition—a capacity which "determines what counts as linguistic experience and what knowledge of language arises on the basis of this experience" (Chomsky, 2006, p. 24). This nativist claim arose in opposition to the behaviorist view that the child starts life as a *tabula rasa* and "acquires verbal behavior when . . . vocalizations, selectively reinforced, gradually assume forms which produce appropriate consequences" (Skinner, 1957, p. 31). The debate between Skinner and Chomsky is a version of the millennia-old nature–nurture debate. Nativists differ among themselves regarding the evolutionary origins of the language faculty. Whereas Chomsky sees it as a by-product of the evolution of other traits, others (e.g., Pinker, 1994) claim that language evolved by the same kinds of natural selection processes as, for example, the visual capacity in order to meet specific needs of the human species.

Also falling into the category of a broader conception of the philosophy of language is the discussion about the degree to which the mind is modular. The modularity hypothesis states that the mind is not seamless but rather contains, perhaps alongside some general-purpose structures, a number of distinct, separate, domain-specific modules. According to Fodor (e.g., 1989) and others, one of the modules of the mind is dedicated to language, and its operations are insulated from the processes of cognitive domains lying outside the language module. A different approach to language processing is taken by connectionism, which embodies some of the principles of neural information processing. Connectionist models envisage states of knowledge as being constituted of degrees of connection strength between units rather than of rules or patterns, so that what is stored is not a set of patterns but rather "the connection strengths between units that allow these patterns to be recreated" (McClelland, Rumelhart, and Hinton, 1986, p. 31). Because of its incorporation of the notions of interconnectivity, parallel distribution, and spreading activation in processing, connectionism has been generally interpreted as antipathetic to the Fodorian conception of the language faculty.

Probably the two most salient trends in current linguistic philosophy are contextualism (see e.g., Travis, 2008) and semantic minimalism (see e.g., Bach, 2006). The contextualist perspective states that the mere literal meaning of a sentence does not correspond to a complete proposition with truth conditions, so that an appropriate linguistic understanding of an uttered sentence relies on the invocation of contextual and background knowledge. Semantic minimalism claims that, on the contrary, utterances of a given sentence share a minimal semantic content: the proposition semantically expressed.

None of the foregoing specifically addresses multilingualism, still less the multilingualism of the present era. For philosophers such as Spengler every philosophy gives expression to its own time alone, and each dispensation requires its own philosophical framework—a perspective which clearly implies that the new realities of current multilingualism pose a philosophical challenge. The remainder of this entry sketches a characterization of a philosophy of multilingualism which might begin to respond to this challenge.

Defining the Aims and Subject Matter of a Philosophy of Multilingualism

A large number of academic subjects have developed a philosophy around them; one thinks, for example, of the philosophy of science, the philosophy of mathematics, and the philosophy of history. It is clear that multilingualism studies, as an academic subject which embraces all fields connected with language and which focuses on a dominant, almost

defining, trait of the current human condition, ought to be a prime candidate for attracting a philosophical monitoring operation.

Whereas linguistic philosophers have traditionally asked questions about the nature of language and its relationship to meaning, concepts, and reality, a philosophy of multilingualism would address not only language itself but also the acquisition and use of two or more languages, the environments of such acquisition and use, and the associated patterns and imperatives.

Some relevant questions already being posed within multilingualism studies include the following.

- What does it mean for a particular code (a) to be called a language or (b) to be treated as a subcategory of a more widely used language? Thus, is Bayerisch, the language variety (or rather the spectrum of language varieties) in use in Bavaria, a language or is it a "dialect" of German? Are people who use Standard German, Bayerisch, and English bilingual or trilingual? What arguments are to be used in answering the above questions and what is the significance of particular responses to them?
- Is there a substantive and qualitative (rather than simply quantitative) difference between bilingualism and multilingualism? If so, what is it? Is the relationship between bilingualism and multilingualism a generic–specific connection? If so, is bilingualism superordinate to multilingualism or vice versa? What might the impact of different answers to such questions be in theoretical and practical terms?
- What philosophical consequences flow from the fact that most inhabitants of our planet are not monoglots? How does it relate, for instance, to proposals from Humboldt, Sapir, Whorf and others regarding the construction of an individual's or a community's *Weltbild*?

The Future

A basis of interaction between philosophy and multilingualism studies is indicated by the fact that the latter already make use of concepts long familiar to philosophers: *inherent qualities*, *relativism*, *determinism*, and so on. Likewise, *cognitive notions* which figure in the purview of philosophy, such as *belief*, *understanding*, *reason*, *sensation*, *perception*, *intuition*, etc. also figure in multilingualism research.

With regard to different branches of philosophy, *epistemological* discussion could, for example, fruitfully focus on the complex nature of multilingualism and the feasibility of encompassing this complexity, and *metaphysics*, in its role of explicating objects of interest, could turn its attention to entities and data associated with multilingualism and multilingualism studies—multilingual minds, multilingual persons, multilingual universals, etc. The insights of *ethics* could be brought, furthermore, to bear on decisions regarding language policy, language planning, and language education under multilingual circumstances, which relate, for instance, to the allocation of official status to languages, standardization and the specification of norms of usage, the distribution of resources for different languages, and the selection of curricular and vehicular languages in education. There are also ethical issues generated by the global spread of English and connected issues associated with the maintenance and revival of endangered languages. Challenges that arise in this context include the balancing of individuals' rights against the rights of languages, and the assessment of political and moral value judgments relative to languages and cultures.

With regard to the possible input of multilingualism studies to philosophy, a multilingual perspective could, for example, substantially change the nature of discussion of recent contributions to the philosophy of language deriving from nativist, modularist, connectionist,

contextualist, and minimalist proposals. One thinks in this context, for instance, of the manner in which the empirically based notion of multi-competence (see e.g., Cook, 1992) has transformed earlier quasi-philosophical conceptions of language competence.

In short, the realities of multilingualism, both as experienced in daily life and as illuminated by research, need urgently to be put in touch with higher-order thinking.

SEE ALSO: Complexity in Multilingual Systems; Fishman, Joshua

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Multilingualism and the Internet

SIRPA LEPPÄNEN AND SAIJA PEURONEN

Introduction

Why multilingualism and the Internet should be an interesting and important topic at the present time (2011) has a great deal to do with globalization. The Internet is a mass medium enabling the global dissemination of information and communication between geographically distant individuals and groups. At the same time, for many people—migrants, diasporic, and (sub)cultural groups, for example—it functions as a niche medium, providing them with a shared space for transnational or translocal activities (Block, 2004; Leppänen, Pitkänen-Huhta, Piirainen-Marsh, Nikula, & Peuronen, 2009; Leppänen, in press) in which processes of globalization contribute to language choice and the use of multilingual repertoires which can combine a variety of linguistic and semiotic resources (Blommaert, 2010, p. 7). At the same time, such globalization processes of the Internet as these have also heightened concerns that the future of the Internet is not, in fact, multilingual, but monolingual, with English as the dominant vehicular language of communication (see e.g., Crystal, 2001).

Multilingualism on the Internet refers to two interrelated phenomena (see also Androutsopoulos, 2006). First, it can mean the choice and diversity of languages as means of communication and analyses of their visibility, accessibility, and status on the Internet (Wright, 2004; Danet & Herring, 2007). In focus here are such language political questions as how much and for what purposes different languages are actually used online, whether or not their distribution reflects linguistic diversity in the world in adequate ways, and whether globally or regionally powerful languages are threatening to replace other (smaller or minority) languages in online settings. Thus, investigations of this type of multilingualism are often concerned with the protection and revitalization of lesser-used languages on the Internet. In this conceptualization of multilingualism, the Internet is seen as reflecting the language situation of the world offline, as well as a language political agent which has a great deal of power to influence the linguistic preferences and uses of individuals, groups, institutions, and societies. In other words, what happens to languages online is taken to have repercussions on the language situation offline, and vice versa.

Second, multilingualism on the Internet can refer to Internet users' ways of selecting, drawing on, and using of more than one language in particular modes and environments of computer-mediated communication (CMC) whereby they can seek to achieve their situated or sociocultural goals in contextually and communally appropriate and meaningful ways. Importantly, often such uses are not simply an outcome of the Internet users' bi/multilingualism. Rather, they may be a manifestation of their orientation to using all the semiotic resources available to them, including those provided by more than one language—of their *metrolingualism* (Otsuji & Pennycook, 2010) or *polylingualism* (Jørgensen, 2008). In many Internet settings this poly-/metrolingual orientation is also accompanied by intralingual and discursive *heteroglossia* (Leppänen, in press), whereby Internet users make use of not only more than one language, but also diverse resources provided by intralingual registers, varieties, styles, genres, and intertextuality.

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Defining the Internet

Before launching on a more detailed discussion of these key issues, it is first, however, necessary to define what we mean by the Internet itself. This is because the Internet is, in fact, "an ambiguous term referencing or encompassing innumerable technologies, uses and social spaces" (Markham, 2008, p. 454). It not only refers to the World Wide Web, but also to other information and communication systems outside the Web, such as e-mail, forum discussions, newsgroups, bulletin boards, instant messaging, chat, and Web (phone) call systems.

These different formats of the Internet have made possible a range of synchronous and asynchronous communication modes, some of which are interactive (e.g., discussion forums, different types of chat) while others are more text based (e.g., blogs, fan fiction). Furthermore, in many of them (e.g., YouTube, Myspace, Flickr), not only text, but also multimodality—visual effects, pictures, moving images, and sound—serve as means for sharing information and for engaging in cultural production and social interaction. The different formats and technologies establish, in fact, a complex web of media which have become increasingly interconnected and convergent so that one device can, for instance, combine characteristics of several media, for example the computer, television, and telephone. Within this networked mediated space individuals and groups have a great deal of choice as to the kind of communicative space, mode, and style in which they operate.

Different Internet settings and communicative modes thus constitute quite different environments for language use and require from users the mobilization of sometimes quite distinct register and genre features. Bearing the complexity of the notion of the Internet in mind, it is important that researchers specify what kind of communicative environment they are working on and contextualize their findings in relation to the technical, discursive social and cultural parameters of these environments.

Different Ways of Using the Internet as a Source of Multilingual Data

As a source of multilingual data, the Internet has meant a range of things to scholars, depending on their respective fields. As in linguistic research on the Internet in general, in the study of multilingualism online a few basic orientations can be identified. First, in some studies the Internet itself is treated as a massive pool of data representative of the language(s) used in it. In such studies, the aim typically is to discover and describe language facts, for example for the purpose of monitoring language variation, innovation, and change (see e.g. Crystal, 2001). Second, there are studies which have used the Internet as a basis for the compilation of a large and balanced corpus of either of particular Internet genres (such as e-mail, or blogs) or of the whole of the Internet (Kehoe & Gee, 2007) for the purpose of exploring general and quantifiable patterns of language(s). Third, the Internet has also been used as a source of discourse data. In this type of research the data collected is seen to represent particular situated language uses shaped by a number of contextual parameters (such as the participants and goals of the discourse practice). Such studies typically aim for close qualitative analyses ranging from, for example, ethnographic investigations of Internet users' multilingual practices, to analyses of patterns of language use (e.g., code switching), to analyses of the ways in which more than one language is mobilized in the construction of some pragmatic, sociolinguistic or real world issue (e.g., identity or power), and to studies focusing on the ways in which the Internet itself creates affordances for and constrains particular kinds of language uses (for an overview, see Leppänen & Peuronen, in press).

Paradigms of Research on Multilingualism on the Internet

The fact that the Internet is a central and meaningful forum for language use and communication for a growing number of individuals globally poses an important challenge for language studies. More studies are needed to understand and explain the ways in which Internet users select their language of communication, and make use of multilingual resources in their activities, and to discuss the implications of language uses with respect to, for example language policies and language education. Despite the fact that the study of multilingualism on the Internet is still to a large extent emergent, it is already possible to identify some paradigmatic research orientations within it—these will be briefly discussed next.

Macro-Sociolinguistic Studies of Language Choice and Diversity in the Context of the Internet

Studies with a macro-sociolinguistic orientation to multilingualism have sought to find out what languages, language varieties, and writing systems are being used online. In this type of research a fundamental premise has been that the quantity, visibility, and accessibility of a language on the Internet are important safeguards of its vitality and importance.

Research of this kind is illustrated by studies which aim to assess the amount and types of linguistic diversity online. For example, a set of studies commissioned by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Wright, 2004) surveyed attitudes of students of English in 10 countries to find out their language repertoires and which languages they used when engaging in different activities on the Internet (Kelly-Holmes, 2004, p. 66). In these studies, the role of lesser-used languages on the Internet was discussed along with considering the possibilities for language revitalization by means of the Internet. In addition, the studies addressed the question whether and in what ways English may pose a threat to other languages used online. The survey indicated that there is a digital and linguistic divide between Internet users in richer and poorer countries, manifesting not only in the different degrees of Internet accessibility (see e.g., Mafu, 2004), but also in the amount of resources available to provide services in local languages. For example, in poorer countries Internet users rely on English-medium sources whereas users in richer countries are able to access information in their own language (Kelly-Holmes, 2004).

In another set of studies commissioned by UNESCO, an attempt was made to develop reliable methods for measuring the linguistic diversity on the Internet and, in particular, the actual proportion of the use of English in relation to other languages (Pimienta, 2005, p. 33). On the basis of these studies, it was argued that the linguistic diversity of the world is not adequately represented on the Internet and that the Internet favors large languages (particularly English) and the technical standards associated with these (Paolillo, 2005, pp. 54–5, 79). However, it was also argued (Paolillo, 2005, p. 55) that in reality it is difficult to predict the effect of the Internet on small and minority languages: it may lead to their weakening—as the status of larger languages is consolidated online—or to their strengthening via the visibility, accessibility, and appreciation they may gain when they are used on the Internet.

Evidence provided by measurements of the linguistic situation on the Internet have often led to attempts to document and advocate the use of the Internet to archive, promote, and teach small, minority and endangered languages (Warschauer, 1998). Such initiatives can be very important in raising awareness and increasing the appreciation of small or endangered languages, but their success often critically depends on whether or not speakers of the lesser-used languages themselves have access to the Internet and, if they do, whether

they are committed to actually using its resources to maintain and revitalize their language (Mafu, 2004; Sperlich, 2005; Androutsopoulos, 2006, p. 429).

Describing and Explaining Language Choice and Multilingual Language Uses on the Internet

For many people the Internet has become a translocal linguistic contact zone in which multilingual resources and repertoires can turn out to be crucial capital for successful communication, action, and interaction (Leppänen, in press). For researchers, the rise of such a conceptualization of Internet multilingualism in the early 2000s has meant a shift from measuring the online presence of global and other languages to the investigation of the Internet as a space for language practices (Androutsopoulos, 2008) which are simultaneously rooted in and voicing the local, as well as responding to and appropriating the global (Leppänen et al., 2009). For example, in many international and local social media environments which focus on topics or interests relating to some aspect of popular culture as a globally shared frame of reference (e.g., football, pop music, films, and TV series) such a translocal orientation is very evident. In this area of research the focus is on the specific multilingual practices, preferences, and policies of Internet users, the motivations behind their language choices, and the functions and meanings their language choices and uses have for them in the specific Internet contexts in which they operate. What such language practices call for is research which can help us understand and explain them as situated and socioculturally meaningful action; research that stems from, for example, the discourse analytic, ethnographic, pragmatic, and micro-sociolinguistic traditions.

In such investigations of computer-mediated discourse, identity and sociocultural practice have often proved to be important explanatory perspectives. Multilingual resources have been shown to be part of the indexical means through which identities and a sense of shared social world can be constructed and negotiated, contested and policed (Leppänen, 2009; Kytölä, in press). For instance, it has been shown (Androutsopoulos, in press-a) how participants can signal their interpersonal relations and alignments through code switching and style shifting between social varieties.

The ways in which Internet users' language practices contribute to the establishment and negotiation of affinity spaces or communities of practice with shared cultural and social conventions have also been investigated in ethnographic studies. They have analyzed online activities either alone or complemented by fieldwork in offline settings in which also the participants' Internet uses are examined with the help of, for example, surveys, interviews, and observations (Androutsopoulos, 2008). Such multidimensional ethnographic investigations can prove particularly useful in helping to explain the ways in which Internet users themselves make sense of and account for their engagement with the Internet and the affordances it offers them for meaningful social and cultural action (e.g., Nikula & Pitkänen-Huhta, 2008).

Multilingual Language Settings on the Internet

When analyzing multilingualism on the Internet, it is important to bear in mind that there is not just one, but several possible language settings in which more than one language may be used. One particular language setting is the kind in which participants have *no shared language*. Consequently, they need to choose a vehicular language which they can relatively safely assume that the other participants also know and are able to use in communication. For this purpose, English is often a self-evident choice. For example, it has been shown (e.g., Wodak & Wright, 2006) how in multilingual Internet networks the

participants favor English as their shared language because it ensures the widest possible understanding among the participants.

Another typical language setting in which participants in CMC often operate multilingually is one in which they choose *some other language than their L1 as either the primary communicative code* or *as an additional resource alternating and mixing with their primary language.* However, in such a setting, the motivations for their choice of language can vary a great deal. Sometimes the language choice online is an extension of the participants' offline language preferences and uses, but it may also be the outcome of an official language policy or grassroots, group-specific language policing online (Leppänen & Piirainen-Marsh, 2009). Such language policing is often evident in not only the participants' particular language choice but also in the ways in which they orient to and monitor choices by others. For example, there is evidence from different countries (see e.g., Warschauer, Said, & Zohry, 2002; Androutsopoulos, 2006; Siebenhaar, 2006) that in more spoken-like and dialogic Internet environments, in discussion forums and different types of chat applications, for example, when participants choose to use a language other than their L1 language, vernacular varieties tend to be preferred over standard or formal varieties. In addition, such a language choice can be a sociocultural index; for instance, in Web discussion by Finnish football fans (Kytölä, in press) their choice of Finnish, English, or Swedish at different points of their discussion can effectively cue their varied stances toward the topic under discussion and their co-conversationalists.

Sometimes participants in CMC can draw on resources provided by several languages to such an extent that the outcome is thoroughly heterogeneous discourse. For example, it has been shown how interactional computer-mediated discourse (e.g., forum discussions) can be eclectic, creative, and dynamic in the way they adopt, adapt, and appropriate available forms and patterns from more than one language to serve particular communicative purposes and contextualize meanings in their interactional context (Androutsopoulos, in press-a; Peuronen, in press). In a similar vein, studies of writing in Internet genres such as blogs or fan fiction have shown how drawing on resources from several languages is part of a more general heteroglossic repertoire of stylistic, intertextual, and narrative resources which can be used by writers to craft contextually meaningful and socially appropriate texts (Leppänen, in press).

Multilingual Internet Discourse as Heteroglossia

In the investigation of many informal multilingual Internet genres which often are not only linguistically but also discursively heterogeneous, the concept of heteroglossia can serve as a heuristically useful tool with which to unravel and explain their complexity (Leppänen et al., 2009; Leppänen, in press). As originally defined by Bakhtin (1981, p. 291; see also Bailey, 2007; Androutsopoulos, in press-b), heteroglossia refers to discourse which combines and mixes forms and content that represent "the co-existence of socio-ideological contradictions between the present and the past, between differing epochs of the past, between different socio-ideological groups in the present, between tendencies, schools, circles and so forth." In focus in heteroglossia are thus not only the co-occurrence of and shifts between languages or language varieties, but also how language uses index ideological points of view, including links and tensions between these, and engage with larger social, historical, and ideological processes.

More specifically, the notion of heteroglossia makes it possible to identify different aspects of linguistic heterogeneity. First, it helps to identify and distinguish between the selection and combination of resources from more than one language and *intralingualism*, the selection and combination of features from more than one variety, register, or style of

a language. Second, heteroglossia allows the identification of two types of multilingual heterogeneity. One of these is *a mixed in-group style* in which Internet users orient to and make use of the linguistic resources available to them, no matter which language they may technically be associated with (see also Jørgensen, 2008; Otsuji & Pennycook, 2010). Another aspect of multilingual heterogeneity is *code switching*—one of the semiotic resources available to Internet users to contextualize, highlight, or to make relevant possibilities for the interpretation of discourse and reality within a discourse entity. Finally, heteroglossia can also entail a *discursive dimension*: the selection, combination, and juxtaposition of discursive resources, for example, aspects of genres, modalities, and intertextuality (Leppänen, 2009; Leppänen & Piirainen-Marsh, 2009) within a discourse entity. For example, in blogging or fan fiction discursive heteroglossia can play a key role in writers' efforts to create the kind of generically and intertextually complex and multi-layered discourse that is prized by their respective communities of practice.

Multilingualism on the Internet and Language Learning

Despite the doubts that many parents and educators have about the usefulness and value of young people's online activities, the fact that many of them operate on the Internet multilingually can have a great deal of potential in terms of first-, second-, and foreign-language learning. One reason for this is that for many young people Internet-based peer-focused communication can provide stimulating opportunities for informal learning—possibilities for the recognition, application, and practice of patterns of language and discourse, aspects of new literacy, and forms of interaction for purposes of authentic communication, social life, and cultural production (e.g., Leppänen & Piirainen-Marsh, 2009). In addition, in many Internet activities which involve planning and design—such as fan fiction writing—participants have developed resources and services which are in principle instructional, teaching novice participants, through feedback, commentary, and explicit sets of instructional materials, appropriate ways of language use in the particular Internet genres their writing inhabits (Leppänen, 2009).

In recent years, a great deal of research interest has shown in the pedagogic potential of young people's Internet-based activities (see e.g., Lam & Rosario-Ramos, 2009) and pedagogic experimentation relating to the uses of technology in second- and foreign-language classrooms (for an overview see, e.g., Thorne, Black, & Sykes, 2009). These studies have argued strongly for the necessity of a renewed vision of educational practice that would harness the potential of communicative technologies in language instruction and suggested ways in which language learning can be enhanced by, for example, the use of digital vernacular texts in education (Thorne & Black, 2007).

However, while the Internet, or more generally, digital information and communication technologies, can offer new incentives, opportunities and activities for language learning, it may be that for many young people the integration of their out-of-school Internet activities within school-based language instruction can be problematic. One reason for this is that their Internet activities are part of their own lifeworld, and a forum of social life outside the control and agendas of the adult world, parents, and teachers. As a result, teachers wishing to make use of young people's online interests and activities in language teaching may sometimes face the resentment and reluctance on the part of their students. On the other hand, the recognition of the linguistic and discursive expertise that students may have and its sensitive use as a means to scaffold opportunities for further language learning in a way that does not intrude too much into young people's own cultures on the Internet, can be an effective strategy to empower students and enhance their language learning.

Conclusion

This entry aimed at outlining how multilingualism on the Internet can mean a variety of things, depending on how the notion of the Internet is conceptualized, which genres and modes of communication (e.g., edited webpage contents vs. interactive CMC modes) or language settings are focused on, and the disciplinary perspective from which their analysis is approached. It also aimed at illustrating the emergent paradigms of current research on multilingualism on the Internet. One of these was labeled the macro-sociolinguistic approach, and it was shown to be concerned with assessing the degree of linguistic diversity online, evaluating the threat posed by English as a popular vehicular language to other (smaller, minority) languages in the world, and using the Internet as an instrument and forum in language maintenance and revitalization. Another central research paradigm was shown to focus on the study of the multilingual discourse practices of Internet users in different modes of communication, drawing on concepts and microanalytic methods provided by, for example, discourse studies, pragmatics, interactional sociolinguistics, linguistic anthropology and ethnography. The entry also described some of the crucial features of multilingual Internet discourse, and suggested that often it can usefully be anatomized with the help of the notion of heteroglossia which allows the identification of not only of different types of linguistic heterogeneity, but also of discursive heterogeneity.

The present overview of this emergent and multifaceted field of the study of multilingualism on the Internet is necessarily cursory, and many crucial issues could only be touched upon here. However, it needs to be emphasized that the multidimensionality of Internet multilingualism, which is only now beginning to be recognized in research, profits from investigations which approach it from a variety of perspectives and methodologies. These can help shed light on not only the specificities of but also the interconnections between language uses on- and offline, and on the functions and meanings of these language uses in the varied, but increasingly convergent linguistic, communicative, and discursive spaces of the Internet. Understanding the complex ways in which multilingualism works on the Internet, how and why Internet users make use of more than one language, is particularly important for applied language study. Research on Internet users' language practices can help us understand how language choice and linguistic (and discursive) heterogeneity are drawn on as semiotic and sociocultural resources. Understanding such motivations, goals, forms, and meanings of multilingualism on the Internet can thus help us define and formulate, for example, language policies when such policies are needed to protect and revitalize languages under threat and educational visions that can profitably build on and develop people's multilingual practices and that in turn can lead to learning, empowerment, and agency.

SEE ALSO: Critical Discourse Analysis of Multilingual Interactions in the New Media; Language and the Digital Divide; Multilingualism and Media; Online Communities of Practice; Pragmatics of Second Language Computer-Mediated Communication

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Multilingualism at Work

BRITT-LOUISE GUNNARSSON

The conditions for workplace discourse have been influenced by a series of changes taking place in recent decades. Throughout the world, we find transnational companies which use English, or another global language, as their corporate language and employ multilingual people who can move between jobs, between branches, and between countries. The workforce mobility and workplace diversity which characterize a globalized economy raise issues of multilingualism and multiculturalism to the surface, in relation both to the organization as a whole and to workplace practices. Technological advances have facilitated a globalization of working life and also changed linguistic practices at work. In today's economy it is not only managers and elite staff who need to be linguistically flexible; factory-floor workers also come in contact with different languages and different varieties of a language. They have to be prepared to interact with group leaders and fellow workers with a linguistic background different from their own. This entry focuses on multilingualism at work and will discuss a number of studies which explore discourse-related problems facing managers and employees in the globalized economy.

Workplace Discourse and Its Contextual Frames

The model presented in Figure 1 aims to grasp the complex and dynamic interplay between workplace discourse and its various contextual frames (for a more detailed presentation, see Gunnarsson, 2009, pp. 20–7).

Text and talk at work can be described as related to different situated communicative events. An in-depth analysis, however, must also include the macro level, that is the environmental framework in which the communicative events, or chain of events, occur. Text and talk in a small, close-knit working group with its particular social and communicative order therefore form part of traditions that evolve within an environmental structure: The small working group is included in a larger unit such as a workplace, which in turn belongs to a local branch of a large organization. In many cases, we further find additional organizational levels, for instance when the organization belongs to a corporation.

What also characterizes professional discourse is its dependence on various societal framework systems, such as a technical–economical framework, a legal–political framework, a socio-cultural framework, or a linguistic framework. We know that technology and technological advances are important for the dynamism within organizations of various kinds, as are the economy and economically driven changes. It is also self-evident that professional discourse is constrained by politics, laws, and regulations at local, national, and supranational levels. Professional discourse is also constrained by a socio-cultural framework system; ethical codes adopted in a particular professional environment thus reflect, to a large extent, ideologies and ethics in this framework.

In addition, professional discourse is dependent on the linguistic framework. The local language community, the national language community, and the supranational or global language community establish and follow language laws and policies which directly or indirectly influence text and talk in the professions. Language choice and language practice in professional environments follow, to a large extent, the practice in the relevant

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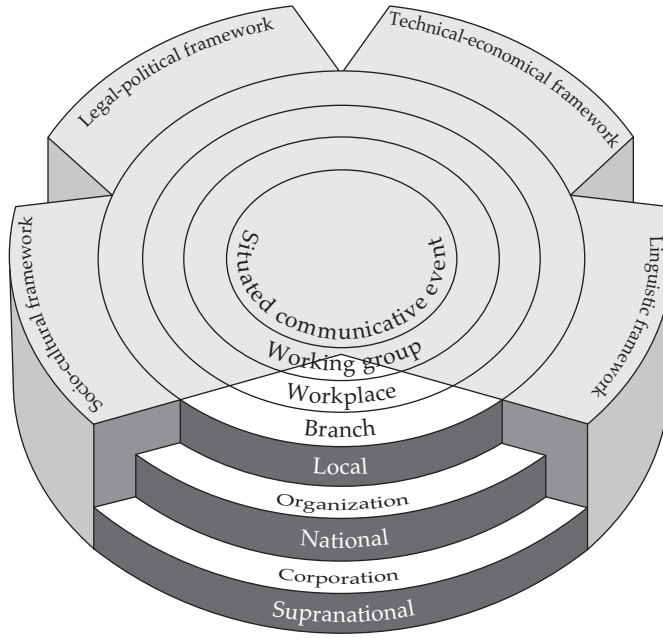

Figure 1 Model of workplace discourse and its contextual frames. From Gunnarsson (2009) © Continuum. Reprinted with permission.

discourse communities. Policies and practice on language-dominance issues (local language vs. global language; majority language vs. minority language), functional language stratification (diglossia), and social language stratification (elite and nonelite languages) formed within the various levels of the linguistic framework influence communicative events for professional purposes in terms of language choice and practice. The language knowledge and language use of the participants in a professional encounter, whether professionals or nonprofessionals, reflect language politics and laws.

Organizational Policy and Workplace Discourse

In order to understand multilingualism at work, it is relevant to make a distinction between organizational policy and workplace practice. Although bilingual and multilingual individuals have been and still are found in companies and organizations all over the world, many large organizations uphold an idea of linguistic unity. For practical and ideological reasons, large organizations often choose one official, corporate language. This language is used as a lingua franca (see Meierkord, 2007) in meetings and written communication; it also functions as a symbolic expression of an organizational unity. In many cases, the official or corporate language penetrates the whole organization, which means that all employees are assumed to master this language. The individual employee can thus be both bilingual and multilingual, as long as he or she masters the official language of the organization. In other cases, the official language is an elite language used at top-level meetings and for external, international contacts. The whole organization is then bilingual or multilingual, even though the majority of employees might be monolingual.

The organizational policy can mean that one language is declared to be the official language. This policy is then, for instance, seen in the language of major documents, such as annual reports, major contracts, company presentations, and messages to top-level staff. Other texts which reveal the language policy of a company are job advertisements. The company has to choose a language for their job advertisements but also make explicit which languages they require for staff in different positions.

Gunnarsson (2009, pp. 227–30) presents a study of the explicitly stated language requirements in advertisements for jobs in Sweden. A total of 100 job advertisements posted on the career-oriented pages of five transnational companies, which all operate in Sweden, were studied, namely AstraZeneca, ABB, Electrolux, Ericsson, and Scania. Swedish is the main official language in Sweden, and not surprisingly 63 of the 100 advertisements were written in Swedish. However, 32 were in English and 5 were in both Swedish and English (in fact mixing the two languages). If we look at which languages were stated as qualifications for the jobs, English was mentioned in all of Ericsson's and Electrolux's advertisements, while the proportion for ABB was 80% (21 out of 27), for AstraZeneca 60% (13 out of 23), and for Scania 40% (9 out of 23). Swedish is also stipulated as a qualification for employment in many of the advertisements, namely in 34 of the total 100. As all Scania's advertisements were written in Swedish, it was maybe less surprising that only 2 of their 23 advertisements mentioned Swedish as a requirement. More surprising, however, is that only 1 of the 13 advertisements written in English for jobs in Sweden at AstraZeneca mentions Swedish.

Swedish and English are thus frequently required languages for these jobs in Sweden. An interesting question to ask is of course if other languages were also mentioned in the advertisements. On the whole the answer to this question is that languages other than English and Swedish are required to a very limited extent. Of the 100 analyzed advertisements, only 10 required other languages. It should also be noted that these other languages are mentioned together with English and Swedish: The company seems to wish to hire Swedes with language skills in English and one other foreign language. The other languages in question were Russian, German, and Spanish.

The Multilingual Workplace

In today's global and virtual economy, we do indeed find bilingual and multilingual professionals in top positions: as engineers, managers, technicians, doctors, university professors, or sportspeople. As many studies of intercultural communication have shown, we also find businesspeople throughout the world who are able to strategically use a language that suits their needs and their business partners (Firth, 1995; Poncini, 2003; Breckle, 2005). In multilingual areas, such as Luxembourg, Switzerland, and Brussels, we further find staff in many service-oriented enterprises—banks, assurance companies, travel agencies, railway ticket offices—who are able to flexibly shift to a language that works for their customers (Bothorel & Choremi, 2009; Kingsley, 2009; Lüdi, Barth, Höchle, & Yanaprasart, 2009; Mettewie & Van Mensel, 2009).

Studies of Workplaces Using English as a Lingua Franca

In recent decades, several applied-linguistics studies have analyzed new mergers and transnational companies which have chosen English as a lingua franca (e.g., Nickerson, 2000). Among these are found a series of studies exploring two Scandinavian mergers. For people in the Scandinavian countries, English is the first choice of language at an international level: Swedish, Danish, Norwegian, and Finnish are not understood outside Scandinavia, which creates a need for a global language in external communication. In the

last decade, English has also come to be used as an internal common language in Nordic mergers, for instance in the Finnish–Swedish company Stora Enso and in the Finnish–Swedish–Danish bank Nordea. Kankaanranta (2005, p. 42) describes the new type of communicative practice in the following way:

> In practice, this language choice means that corporate-level documentation and all reporting is done in English, and communication between different units is mostly in English. This type of communication can be characterized as internal communication as it is taking place "in-house" in contrast to communication between buyers and sellers in which foreign languages have been traditionally needed in international business. For an individual writer of an email message, the choice is a pragmatic one: anytime there are recipients whose mother tongue is not that of the writer's, the message is in English. This means that a Swede (or a Finn) will receive an English message from another Swede (or a Finn) if the list of recipients includes non-Swedish speakers.

In her analysis of e-mails written in English by Swedish and Finnish employees of Stora Enso, Kankaanranta examined what the messages share, how they differ from native speakers' messages, and how the messages written by Finnish writers differ from those written by Swedish writers (2007, p. 480). E-mail messages written by both Finns and Swedes differ from native English speakers' messages in the frequent use of salutations and complimentary closes together with first names. By using these phrases, which reflect ordinary letters, the employees create and maintain personal relationships within the company, at least according to Scandinavian conventions (p. 461). As regards differences between the Swedish and Finnish writers, the analysis revealed how Finns seem to favor direct requests in their writing, while Swedes use more indirect alternatives.

Similar cultural differences were also found in studies of spoken interaction (Charles & Louhiala-Salminen, 2007). Kangasharju (2007) compared results from interviews with video-recorded internal meetings. The meetings were either national meetings held in Finland or Sweden, or cross-border meetings where Finns and Swedes met, using English as a lingua franca. A difference stressed in the interviews concerned the amount of time allowed for discussion and the chair's efficiency (i.e. his or her orientation toward decision making). Swedish meetings were said to involve long discussions loosely steered by the chair, while Finnish meetings were said to be shorter and focused on the decisions to be taken. The analysis of the meetings both confirmed and questioned what had been said in the interviews. At the national meetings, there was a clear difference between Swedes and Finns. At the cross-border meetings, however, the cultural differences seemed to be of minor importance. As the language at these meetings was a second language for both Swedes and Finns, new practice had developed, for instance a new way to control that everyone had understood what was decided (Kangasharju, 2007, p. 372).

Nikko (2007) also analyzed Finnish–Swedish interaction in the mergers. Although the main language of the internal meetings recorded was English, code switches were common in all meetings, which meant that, besides English, Finnish and Swedish were also used. As all participants were either Finns or Swedes, code switching seemed to be a natural tool to use to overcome language shortages (p. 409). On the whole, the creation of meaning in the meeting interaction appeared to be highly successful, a fact which Nikko attributes to "the participants' strong commitment to common goals," "the informal and relaxed nature of the communication," and "the vast amount of shared background information and shared experiences of the participants" (p. 478).

Following these studies on workplace settings where all participants turn to English as a lingua franca, studies which explore interaction involving native English speakers will also be discussed. Jämtelid (2002) reports on interviews with people involved in writing

at different levels of the Swedish Electrolux group. Electrolux had chosen English as its corporate, official language. A widespread belief among managers and staff at the time this study was made was that native speakers of English found their corporate English poor. The point to be stressed here, however, is what the director of corporate communications said about interaction with native English speakers. He elaborated on the difficulty facing English lingua franca speakers in contexts where some participants are English native speakers, as well as on the necessity for Scandinavians to speak up even if their English is bad (Jämtelid, 2002, p. 44):

> Then of course the corporate language is quite clearly "bad English". Otherwise, you easily end up with only Americans, Brits and well-educated Swedes talking at meetings, while Germans and Italians remain silent. What happens, rather, is that we deliberately avoid difficult words, and that people shouldn't feel ashamed at all if they use bad grammar in an internal memo in English. (my translation)

When Franklin (2007) interviewed German and British managers who worked together in a newly established German–British company, he found that the German managers mentioned the native English speakers' lack of lingua franca skills as a perceived difficulty:

> The German managers reported that their British colleagues were unable or unwilling to take account of the fact that they (the German managers) did not have a native-speaker competence in English and did not adjust their use of their mother tongue to the lower level of competence in English of their German colleagues. For example, one German manager noted of his British colleagues: "The English aren't always sympathetic to Germans when they speak English. To begin with, the English speak slowly, but then fall back into speaking the same speed and slang as if the listener is a native." (p. 273)

Studies of Workplaces with Workforce Diversity

Looking at multilingualism at work from a work-floor perspective, we do, of course, find second, third, and fourth language users in many low-status jobs. As Roberts (2007a, p. 405) writes, the settings where migrant workers have found jobs are shop-floor and service-industry settings, including the health service. This means that their status and work identity have been constructed not by their educational and background qualifications but by gaps in the labor market; a teacher may be a postal worker, a farmer may be a factory worker, a doctor may be a care assistant.

All over the world, there are workplaces where some employees, mostly minorities, migrants, or unskilled guest workers, have to use their second, third, or fourth language at work. In a questionnaire given to people in Europe in 2000, 15% of respondents reported active use of a second or third language in their workplace (Day & Wagner, 2007, p. 395). This percentage, which relates to the European job market, might be low for other parts of the world. It might also be outdated, as the professional world is constantly undergoing change. Nevertheless, it is a fact that knowledge of the dominant local language is necessary not only for advancement and a career within most organizations, but also for social integration into the working group. In one way or the other, migrants have to adapt their linguistic behavior to that of the dominant group. Most often, they have to use the local majority language in their daily communication at work. In order to become a full member of the working group, the migrant also needs to find a way of participating in social communicative events. Humor, jokes, stories, and anecdotes form part of the workplace discourse and contribute to the establishment of friendship and collegiality at work and also to the avoidance of unnecessary conflicts. Social workplace patterns related to friendship, power, and dominance often reflect linguistic and communicative skills.

There is indeed a difference between regions where the majority language is a global language and those where the majority speak a less widespread language. We know that individuals who migrate to English-speaking countries have often learned English at school in their countries of origin. When they migrate to Australia, New Zealand, the UK, or the USA, they already have a basic knowledge of the majority language. Studies of workplace practice in English-speaking regions (e.g., Clyne, 1994; Holmes & Stubbe, 2004; Marra & Holmes, 2007) thus reflect a different linguistic framework from studies of workplaces where the majority language is a third or fourth language for the immigrants. In parts of the world, where less widespread languages are spoken, immigrants meet both a new country and a new language. For them, learning the majority language becomes a part of their adjustment to a new country and culture (Gunnarsson, 2005).

With this as a background, some of the results of a research project entitled "The communicative situation of immigrants at Swedish workplaces" will now be discussed. Using a similar design based in interactional sociolinguistics, Andersson (2009) studied a large hospital, and Nelson (2010) a major Swedish company. The first phase involved interviews with a fairly large number of immigrants: 18 at each workplace. The immigrants came from different parts of the world and had migrated to Sweden as adults. They had permanent jobs, although in different positions: at the hospital, the study included doctors, nurses, midwives, and cleaners, and at the company, office staff and factory-floor workers. All participants were second language users at work—both Swedish and English were foreign languages for them. The second phase involved case studies, five at each workplace. The employees were shadowed during a week, and data related to their workplace communication were collected.

In this section, a few results related to the language situation at the two working environments will be examined. At the hospital, communication with lay people—patients and relatives—forms an important part of the daily work of the medically trained staff (i.e., doctors, nurses, and midwives). This means that the majority language of the local community—Swedish—is the dominant language in their work. The doctors who were interviewed report that English is used in their research and in writing articles for publication. Some of the nurses also say that they use their mother tongue every now and then, which is neither Swedish nor English, since many patients come from their countries of origin. They then find themselves in the role of interpreter between patient and doctor.

The communicative situation for the cleaners at the hospital is very different from that of the medically skilled staff. When interviewed the cleaners say that Swedish is used when they speak to their managers, to hospital staff they meet when cleaning their areas, and to other cleaners when they do not have a common mother tongue. Many of the cleaners have very poor skills in Swedish, and since they mainly interact with others from the same countries, they do not get much practice in Swedish so their proficiency hardly improves, according to the managers who were interviewed.

In the company, communication is mainly directed to professionals—to colleagues linked to the same workplace or within the same organization or to other professionals. As the workplace studied belongs to a large, transnational company for which English is the corporate language, the language practices are of a diglossic nature. English is used as a lingua franca for external purposes, for instance in written correspondence with colleagues in other countries and in meetings with external professionals, while the local majority language, Swedish, is used for internal purposes and in the daily spoken interaction with colleagues.

From the point of view of language, a clear divide exists between office staff and factory-floor workers. When the office staff were asked about the languages they used at work, three out of nine said that they mainly use Swedish, three that they mainly use English, and three that they use English and Swedish to an equal extent. All claim that they write

English more often than they speak it. Two thirds of the office staff also say that they have used their mother tongues at work.

All factory-floor workers interviewed say that Swedish is the language they use at work. Although they say that they come into contact with English texts, they do not claim to read them. Only one third of the factory workers say that they have used their mother tongues in the workplace, whereas two thirds of the office staff have used their mother tongues at work. The office workers thus seem to use languages other than Swedish and English to a greater extent than factory-floor workers. They are more involved, for example, in guiding or taking care of groups and representatives from foreign countries than factory employees.

The communicative situations for the employees interviewed are thus different at the hospital and at the company, and also within each environment. As mentioned above, all informants have permanent jobs and they also seem to be able to perform the tasks they are assigned. Their position at work and the tasks they are given correspond to their linguistic competence and communicative skills. Lack of language skills therefore hinders promotion in both environments: At the hospital good Swedish is necessary for a career and at the company both English and Swedish are required. In the company good writing skills are also important for promotion. We thus find that language knowledge creates a divide between those who master the corporate language and those who do not, and also between those who master the majority language and those who do not.

Problem Areas for Future Applied Research

The conditions for professional discourse have been influenced by a series of changes taking place in recent decades. New technology, workforce mobility, and a globalized market with transnational companies have transformed many workplaces to multilingual settings. A goal for future applied research is to analyze the various "new" problem areas and try to sketch how difficulties could be overcome.

In the global economy, organizations have to strike a balance between local and global concerns as well as between economic concerns and social and societal values in order to be competitive and trustworthy (Gunnarsson, 2009, pp. 222–35). The challenge for large organizations is to find a balance in policy and practice between these various considerations. Important topics for future research would be to analyze how language and discourse in organizations and workplaces reflect this balance. How is linguistic and cultural diversity constructed in workplace discourse? Who is marginalized and who is made central through workplace discourse? What societal values are expressed in official documents and more informal discourse within organizations?

Another topic which would be worth looking into relates to the role of discourse for bottom-up influence. The physical distance between one workplace and another is a reality in large, global organizations, which indeed means that both top-down and bottom-up communication have to be less direct. A research question is whether this physical distance hinders bottom-up influence on the organization. By what type of discourse is democracy established—and hindered—in the "new work order"? How does the new worker get his or her voice through to the top management level? How does top management try to steer the shop-floor workers? What role does language difference play for patterns of influence?

SEE ALSO: Bilingual Literacy; Conversation Analysis and Lingua Franca; Conversation Analysis and Meetings; English as Lingua Franca; Intercultural Communication; Intercultural Competence; Intercultural Discourse; Multilingualism and English

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Multilingualism in Economic Activity

FRANÇOIS GRIN AND FRANÇOIS VAILLANCOURT

Language in Economic Analysis

The interest in the links between multilingualism and economic activity is relatively recent. Up until the early 1970s, the use of different languages or variants of one language was generally seen as raising (in addition to linguistic questions) mainly sociological, and occasionally political or legal, issues. Along with the notion that linguistic processes are deeply embedded in social ones came the realization that economic activity could be seen as a "domain" in the sociolinguistic sense of the term, and that taking this domain into account is important to the understanding of the dynamics of language learning and language use. In addition, economic activity is a highly relevant locus in which to observe multilingual interaction.

However, the interconnections between these two spheres (the linguistic and the economic) are numerous and complex, making it necessary to open this discussion with a general overview. A convenient starting point is the concept of *language economics* (or *economics of language*), which

> refers to the paradigm of mainstream economics and uses the concepts and tools of economics in the study of relationships featuring linguistic variables. It focuses principally, but not exclusively, on those relationships in which economic variables also play a part. (Grin, 2003, p. 16)

Language economics is mainly a way of looking at human experience through the prism of economic analysis. The latter is structured around the notion of scarcity (of material *and* symbolic resources), hence the need for choices to be made. Thus, the mere fact that languages are used in the context of economic activity does not per se give rise to language economics questions: Such questions arise if scarce resources need to be allocated as part of a process in which language also intervenes. For example, given a limited amount of time for language study, what should lead some speakers of language X to learn language Y rather than language Z? Or given a certain advertising budget and the freedom to use any language, in what language(s) should a company market its products in order to maximize profits?

The analytical paradigm of economics opens up a broad field of inquiry that is not limited to conventional "economic" variables, and this also holds in the economics of language (Grin, 1996, 2010), which branches out into issues such as language acquisition (e.g., Selten & Pool, 1991), language dynamics (e.g., Church & King, 1993), and the structure of language (e.g., Rubinstein, 2000). However, most of the questions it investigates arise from the presence of many languages, which is why much of the language economics literature turns to issues of interest in language policy, particularly status planning (Grin, 2003). The issue of "multilingualism in economic activity" (sometimes under the label of "language and economy"), therefore constitutes but a part of language economics.

Before proceeding further, let us mention the existence of other perspectives on the interconnections between the linguistic and the economic, such as linguists' explorations

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on how economic concepts may lead them to reexamine their own concepts (Coulmas, 1992; Keller, 1994), or their analyses of economists' discourse (Henderson, Dudley-Evans, & Backhouse, 1993).

Language economics in general may fall prey to an inadequate understanding of the epistemological principles of economics as a discipline. We shall only highlight two points here. First, because of its focus on human choices, language economics, while retaining the ambition of producing statements with general validity (rather than idiosyncratic, case-specific accounts) presupposes a duly *situated* vision of social actors who learn and use languages. Second, the goal of an economic perspective on multilingualism is not necessarily to "put a price" on languages or to "reify" them. Economists treat language in different, nonmutually exclusive ways, usually as a skill used for communication; or as a carrier of identity which may be the object of discrimination; or as a tool used and manipulated to acquire or retain power; etc. However, language itself is practically never treated as an "economic good," but rather as a factor used in the consumption or production of market or nonmarket, material or symbolic, commodities. In economic analysis, language is always positioned with respect to the goals pursued by social actors and the constraints under which they operate. It is then, in these different roles, fitted into economic analysis. The latter is usually, though not necessarily, expressed through mathematical or econometric modeling.

Defining Economic Activity

Most of the work of economists (in which "language" is hardly ever mentioned as an issue) is devoted to the study from a microeconomic or macroeconomic standpoint (see below) of consumption, production, and exchange, which together give rise to what is often called "economic activity"—as distinct from "economics," whose scope is, as we have seen, considerably broader.

Microeconomics is structured around three core themes. The first is the behavior of the individual who buys goods and services and supplies labor to firms. The second is the behavior of the firm, which produces goods and services using labor, coalescing into a theory of production expressed through production functions that link what is produced with the resources used for this purpose. The third is the study of market exchange, which unfolds differently depending on whether the markets considered are competitive, oligopolistic, or monopolistic. Microeconomics is therefore used to study the activity of specific agents or the behavior of specific markets.

Macroeconomics focuses on the relationships between economic "aggregates," such as "consumption" (of all goods and services), "production" (likewise), or investment (acquisition of capital goods across all economic sectors). The total value of production in a national economy in a given year generates a very widely known concept, gross domestic product (GDP). Some standard topics in economics (for example international trade, monetary economics, public finance, development) cut across the micro–macro divide and can be studied at either level.

The important point, however, is that across the near-entirety of the economics literature, "language" simply never appears in analytical models. The implicit assumption is that the economic forces at hand are so fundamental that they transcend language, with the twin implications that: (a) no matter in what language it takes place, economic activity will operate according to the same principles, with similar causes generating similar effects; and (b) linguistic diversity can, most of the time, be understood as a mere form of transaction cost, and that, as such, it poses no crucial analytical problem. Language economics, however, questions these two assumptions. In what follows, we review some of the most

important ways in which the diversity of languages influences economic activity.

Language Skills and Labor Income

The first empirical work by economists on the relationship between the language skills of individuals and their earnings appeared in the mid-1960s, when Canadian economists were asked to explain differences in economic status between Anglophones and Francophones. A similar approach has been used to explain earnings differentials between Blacks and Whites in the USA.

In this work, no difference was made between language and ethnic identity, which neglected the role of language as a communication tool. In the 1970s, attention was paid to this dimension of language with researchers treating language as human capital, defined as a stock of skills in the development of which agents can invest, and from which they can expect a rate of return in the form of higher earnings. Linguistic attributes, particularly second-language skills, could then be viewed as assets comparable to education in general or to specific skills like computer literacy. Since the early 1980s, linguistic attributes have been viewed as comprising both people's ethnic identity (usually represented by their mother tongue) and their linguistic human capital (usually, their competence in additional languages). Equations with earnings as the explained variables, and various control variables such as work experience or education level along with language skills, are computed using econometric tools to estimate returns to language skills wherever the availability of individual statistical data allows.

This empirical work addresses two types of issues. On one side, some research (for the USA, Australia, or Israel) investigates the role of competence in the locally dominant language in the determination of the respective socioeconomic status of immigrants and native-born workers (Chiswick & Miller, 2007). Unsurprisingly, English-language skills are found to be statistically significant determinants of labor income for immigrants to the USA. On the other side, a well-established Canadian tradition studies earnings differentials between Anglophones and Francophones and their evolution over time, taking account of people's skills in a language *other* than the locally dominant one. In the province of Quebec, where some 80% of residents have French as a first language, earnings differentials were significant (and in favor of Anglophones) well into the 1980s. Since then, the reverse is observed as well as a general premium to multilingualism (Vaillancourt, Lemay, & Vaillancourt, 2007). For example, by comparison with "unilingual Francophones," "bilingual Francophones" (that is, native speakers of French who are also fluent in English) reaped a wage premium of 12.2% (men) and 17% (women) in 2000. The focus of recent research, particularly in Europe, has increasingly been on the returns on the investment in foreign-language skills, including other official languages in multilingual countries such as Luxembourg or Switzerland. For example, the returns on competence in German and French as "foreign" languages, in the French- and German-speaking parts of Switzerland respectively, consistently fell in the 10–20% range across the country, while the returns to English range from 10% to 25% in 1995; higher percentages result from higher competence.

Language Preferences in Consumption

The relationship between earnings and language is not the only one that has been studied empirically by economists. Another issue is the choice of one or another language in consumption activities. This work focuses on bilinguals, who can choose between two languages. Generally, they will use one or the other depending on their preferences, values, and needs, and on the material and symbolic costs of performing various activities in one

or the other language. Early econometric work (Vaillancourt, 1985) found that for consumption activities among bilingual Francophones in Quebec, better knowledge of English was associated with a weaker preference for French. This result is obtained controlling for age, income, sex, and schooling.

The effects of the variables listed above are far from simple, and it can be shown that an increase in the income of bilinguals (such as native speakers of Welsh who also speak English) may have a positive or a negative effect on the use of either language. The outcome will depend on the interplay of a number of factors, including people's preferences for doing things in one language or the other (for example, spending leisure time with their children), the price of the goods needed to carry out these activities through one language or the other (for example, the relative price of children's books in English and Welsh), and the degree to which people can substitute goods for time when performing such activities. Theoretical modeling allows us to examine more precisely how these various factors interact (Grin, 1990).

Language and Macroeconomic Activity

The work examined above is of a microeconomic nature, focusing on individual outcomes or choices. But what happens in the aggregate, that is, in the language of economists, at the macroeconomic level? What share of output or value added stems from multilingualism in a given economy? This question has been addressed in recent work using data from Switzerland and Quebec (Grin, Sfreddo, & Vaillancourt, 2010). It requires identifying where multilingualism appears in the process through which value is created, or added to what existed before.

Value creation, as captured by a production function, is examined for the year 1995 for nine industries in Switzerland and, for the year 2000, for three industrial groups in Quebec. The contribution to output of various types of labor according to their language skills is estimated, and the results obtained used to calculate the effects of changes in the level of linguistic variables. The economic effects of "linguistic amnesia" can be simulated, showing what would happen to aggregate output in a sector or a country if the workers suddenly lost all of their second language skills (that is, if bilingual workers suddenly woke up unilingual). In the case of Switzerland, if Francophones forgot all their German and Germanophones all their French, then total output (GDP) would drop by 5.2%, while drops in sectoral output would range between 3.3% and 9.5%. If, instead, English-language skills vanished, then the overall drop in output can be estimated at 5.6%, ranging from 0.4% to 10.4% depending on the economic sector. In that case, the two largest drops are found in the hotel/restaurant and in the financial and business services sectors, sectors which are driven by demand from foreigners. In the case of Quebec, we find an overall drop of output of 3–4% if second language skills disappear, ranging from 2% for sectors with low use of language skills to 9% for sectors with high use of language skills.

Multilingualism and the Process of Value Creation

The existence of the statistically significant language-based earnings differentials discussed above calls for an explanation. When these differentials are linked to people's first language and hold even after controlling for their second language skills, they suggest the existence of language-based discrimination. But what explains differentials related to people's *second* or *foreign* language skills is not well known. The mere fact that such differentials emerge implies that they contribute to the productivity of labor; despite recent advances, the precise processes at hand, however, remain little understood.

This value-creation process can be analyzed in terms of language use as opposed to mere competence. One reason why economists working on language have so far referred to competence rather than use in empirical work is that the structural relationships between competence and use are still not very well known. Another reason for economists' focus on competence is the lack of hard data on language use, particularly of data sets that could serve to connect language use to earnings. However, there is evidence for Quebec that an increase in the share of Francophone ownership of a sector increases the use of French at work in that sector, and an increase in the importance of external markets for a sector reduces the use of French at work in that sector. Additional evidence for Quebec shows that ownership, and thus (because the former co-determines the latter) language used at work, matters to economic outcomes at the firm level. Anglophone Canadian and foreign-owned (American, and thus Anglophone in practice) manufacturing establishments operating in Quebec are more productive and more export-oriented than Francophone-owned establishments (Raynauld & Vaillancourt, 1984).

One set of results for Switzerland shows that a mainly international orientation, for a business, has a strong positive effect (in both language regions) on the likelihood of its employees using English. Another shows that the use of English at work increases when sales or purchases in that language represent a higher share of sales or purchases overall (Grin, Sfreddo, & Vaillancourt, 2010).

Future Avenues and Related Topics

The study of multilingualism in economic activity covers only a part of the economics of language and multilingualism, which also includes the reciprocal influence of economic variables on linguistic ones, thus contributing to the understanding of language dynamics and the selection, design, and evaluation of language policy and planning (LPP).

However, even within the confines of the issue of multilingualism in economic activity, many questions remain open. While it is obvious, for example, that a broader range of language skills facilitates access to foreign suppliers, as well as to clients who prefer to speak a language different from that of the producer, it remains difficult to move beyond case-specific observations and to generalize about the importance of multilingualism in economic activity.

One relatively under-researched topic is the economic weight of intrinsically language-related activities, particularly in publishing and translation, largely because it is not evident that this raises questions analytically different from those that arise in the context of *any* productive activity. However, these sectors could be included in broader approaches that attempt to do justice to the importance of language across all economic activities. At the time of writing, two avenues appear to be particularly promising.

First, recent work by Spanish economists (Martín Municio, 2003; García Delgado, Alonso, & Jiménez, 2007) proposes to identify the linguistic intensity embedded in products in order to estimate linguistic intensity coefficients by groups of products or economic sectors, thereby adding a fascinating linguistic dimension to national macroeconomic accounts. This approach, whose initial aim was to assess the relative weight of "communication" (even in a first language) to value added at each successive stage of a production process, could be adapted to assess the role of second or foreign languages.

Second, the question arises of whether multilingualism is economically profitable only because it allows for more cost-effective purchasing or more robust sales *in a multilingual world*, or because it is a good thing *in the absolute*—the implication being that the loss of linguistic diversity would be intrinsically costly from an economic standpoint. In order to assess this point, it is necessary to check if multilingualism, whether in individuals or

organizations, contributes to value creation, for example by making individuals more creative, or teams more responsive to market needs. This could be linked up to investigations in both management research about the performance of teams in multilingual settings (Marschan-Piekkari, Welch, & Welch, 1999) and functional pragmatics (Behr, Hentschel, Kauffmann, & Hern, 2007). Further linkups with the economics of information and communication (Crémer, Garicano, & Prat, 2007) could also be envisaged. At this time, there is no conclusive research on such effects, but recently collected circumstantial evidence suggests that linguistic diversity does generate positive effects of this kind, making a multilingual world more prosperous than one operating through the medium of one language only (Simonton, 2008).

To sum up, the study of the role multilingualism in economic activity has already delivered an important array of results confirming that the use of skills in several languages has major economic implications, but many aspects of the underlying links have, at this time, only been glimpsed at and deserve further research.

SEE ALSO: Assessment of Business and Professional Language for Specific Purposes; Bilingualism and Multilingualism: Quantitative Methods; Economic Analysis of Language Policy and Planning; English for Business; Language and Globalization; Language for Tourism; Language Policy and Planning: Overview; Linguistic Imperialism; Linguistic Legislation; Quebec Charter of the French Language and Canadian Language Policy; Sociolinguistics: Quantitative Methods

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Multiliteracies in Education

MARY KALANTZIS AND BILL COPE

Definition

The term *multiliteracies* refers to two major aspects of communication and representation today. The first is the variability of conventions of meaning in different cultural, social or domain-specific situations. These differences are becoming ever more significant to the ways in which people interact in a variety of social contexts. As a consequence, it is no longer sufficient for literacy teaching to focus, as it did in the past, primarily on the formal rules and literary canon of a single, standard form of the national language. Rather, the sociolinguistic conditions of our everyday lives increasingly require that we develop a capacity to move between one social setting and another where the conventions of communication may be very different. Such differences are the consequence of any number of factors, including, for instance, culture, gender, life experience, subject matter, discipline domain, area of employment, or specialist expertise. For this reason, a multiliteracies approach to literacy suggests we needed to move toward a discipline grounding for literacy learning that takes its cue from contrastive linguistics. Such an approach is based in an account of discursive differences and how one learns to move between different representational settings.

The second aspect of language use highlighted by the idea of multiliteracies is multimodality. Multimodality arises as a significant issue today in part as a result of the characteristics of the new information and communications media. The asynchronous meanings across distance that were once the main preserve of the written word are now made in conditions where written linguistic modes of meaning interface with recordings and transmissions of oral, visual, audio, gestural, tactile, and spatial patterns of meaning. For these reasons, the multiliteracies case is that we need to extend the range of literacy pedagogy so that it does not exclusively privilege alphabetical representations. In today's learning environments, we need to supplement traditional reading and writing with these multimodal representations, and particularly those typical of the new, digital media.

Background

The term "multiliteracies" was coined in 1994 by the New London Group, a group of scholars who came together to consider the current state and possible future of literacy pedagogy. The group consisted of Courtney Cazden, Bill Cope, Norman Fairclough, Jim Gee, Mary Kalantzis, Gunther Kress, Allan Luke, Carmen Luke, Sarah Michaels, and Martin Nakata. The group's initial deliberations produced an article-long manifesto (New London Group, 1996) and then an edited book (Cope & Kalantzis, 2000) which includes the original article. In 2009, in consultation with other members of the group, Cope and Kalantzis published a paper reflecting on subsequent developments (Cope & Kalantzis, 2009).

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Sociolinguistic Context

The "pedagogy of multiliteracies" as presented in these key texts, took the form of a programmatic manifesto, grounded in a reading of the changing sociolinguistic context. The world was changing in dramatic ways, these interventions argued, and with it our communications environment. For some quite fundamental reasons, literacy teaching and learning would have to change too. The analysis presented by the New London Group was based in an interpretation of changes in the worlds of work, citizenship, and personal life.

In terms of the first of the two dimensions of multiplicity, we were and still are witnessing a burgeoning variety of what Gee calls "social languages" in national, ethnic, subcultural, workplace, interest, or affinity group contexts (Gee, 1996). For all the signs that English is becoming a world language, it is also diverging into multiple Englishes at the levels of dialect and register. Whereas traditional literacy curriculum was taught to a singular standard (grammar, the literary canon, standard national forms of the language), the everyday experience of meaning making is increasingly one of negotiating discourse differences.

In terms of the second of these two dimensions, the new, digital media accelerates a trend away from a world which privileged the written word as the preeminent site of cultural and epistemic power, to one in which the visual and other modes are becoming considerably more important (Kress, 2009). We have also seen the rise of new and pervasive forms of writing which are in some respects more like speaking than traditional writing: emails, synchronous instant messaging, asynchronous text messaging, and social media posts. These are just a few of the changes which have pervasively changed the communicative spaces of work, public life, and personal identity formation. They are practical reasons that suggest the importance of moving in the direction of a multimodal conception of "literacies" in the plural (Jewitt, 2008). As a consequence, the multiliteracies case is that we need to extend the range of literacy pedagogies so that they do not excessively privilege alphabetical representations, supplementing them in the classroom with multimodal representations, and particularly those typical of the new, digital media.

Design and Multimodality

In a pedagogy of multiliteracies, all forms of representation, including language, are regarded as dynamic processes of transformation rather than processes of reproduction. That is, meaning makers are not simply replicators of representational conventions. Their meaning-making resources are to be found in available representational artefacts (written texts, images, multimodal texts, etc.), patterned in familiar, conventional, and thus recognizable ways. However, meaning makers always rework these objects. They do not simply use what they have been given: they are fully remakers of signs and transformers of meaning. The meanings they make are never quite the same as the resources for meaning from which they draw.

The pedagogical implications of this shift in the underlying conception of meaning making or semiosis are significant. In the old literacy, learners were passive recipients of systems of representation, expected to reproduce received, sanctioned, and authoritative forms of language. The logic of literacy pedagogy made it an instrument of social design which buttressed a regime of apparent stability and uniformity (Kress, 2003).

A pedagogy of multiliteracies, in contrast, requires that the enormous role of agency in the meaning-making process be recognized. Through this recognition, it seeks to create a more productive, relevant, innovative, creative, and even life-transforming pedagogy. Literacy teaching is not about skills and competence: it is aimed at creating a kind of

person who is an active designer of meaning, with a sensibility open to differences, change, and innovation. The logic of multiliteracies recognizes that meaning making is an active, transformative process, and a pedagogy based on that recognition is more likely to open up viable life courses for a world of change and diversity.

The multiliteracies theory replaces static conceptions of representation such as "grammar" and "the literary canon" with a dynamic conception of representation as "design." The word "design" has a fortuitous double meaning, simultaneously describing intrinsic structure or morphology, and the act of construction. Design in the sense of construction, is something that you do in the process of representing meanings, to oneself in sense-making processes such as reading, listening or viewing, or to the world in communicative processes such as writing, speaking, or making pictures. The multiliteracies view of design has three aspects: *(available) designs* (found representational forms); the *designing* one does (the work you do when you make meaning, how you appropriate and revoice and transform available designs); and the *(re-)designed* (how, through the act of designing, the world and the person making meanings are transformed). No two acts of design simply reproduce the world as found. They re-represent the word, adding inflections of identity and voice, sometimes subtly, other times significantly, but always importantly.

In its more recent iterations, multiliteracies theory suggests there are seven modes of meaning: written, oral, audio, visual, spatial, tactile, and gestural modes (Kalantzis & Cope, in press). Written meaning is significantly different in its characteristic forms from oral meaning, even though it is closely linked through language. There are also in today's new media some increasingly important, hybrid forms. Written and visual meanings are closely juxtaposed in today's communications environment. Meanwhile, oral and audio modes are closely related, not only in everyday speech, but in audio and visual recordings. Written meanings are framed by place and tangible objects (spatial and tactile meanings). Gestural meanings are not only integral to speech: they are also communicated synchronously and asynchronously in video. Most things that can be expressed in one mode can be expressed in another, to the extent even that linguistic meanings in their entirety can be carried in writing, speech, touch (Braille), and gesture (sign languages).

In a pedagogy of multiliteracies, the grammar of writing is replaced by a more broad-ranging "design analysis," in which capacities to mean the same kinds of thing can be found across all modes. However, each mode also offers characteristic affordances. We can picture a scene visually in a painting or a photograph for someone who is not present. We can also describe the same scene in writing. These are both modes of representation at a distance. However the semantic effects can never be the same. And the mode of interpretation of the represented meaning by the viewer or reader is always and essentially different. In Kress's explanation, image favors simultaneity (seeing the picture all at once); writing favors temporal and causal sequences (working one's way consecutively across interlinked clauses) (Kress, 2003).

Not only are more of our contemporary texts multimodal, in which modes are inextricably juxtaposed, but multiliteracies theory also suggests that our human meaning capacities are always intrinsically synaesthetic. We naturally and continuously move between one mode and another. The metaphors which drive our meaning systems confirm this contention. Consider, for instance, the pervasiveness in our oral and written language of words for seeing, feeling, and being in space.

Traditional schooling artificially attempts to isolate the meaning system of language, privileging in particular conventional alphabetical literacy. Doing this is to neglect the power of mode shifting as a learning strategy, representing a learnable meaning in one mode then another, or in parallel in two or more modes.

A considerable amount of work has been done in recent years to analyze the use of multimodal texts in everyday life and classrooms. Kress and colleagues have conducted

seminal theoretical and empirical work, "parsing" everyday multimodal and classroom texts (Kress & van Leeuwen, 1996; Kress, 1999; Kress, Jewitt, Ogborn, & Tsatsarelis, 2001). Unsworth has undertaken comprehensive analyses of a range of multimodal classroom texts (Unsworth, 2001; Unsworth, 2009). Many other outstanding analyses have been made of the uses of multimodal texts in the classroom (Stein, 2001; Chandler-Olcott & Mahar, 2003; Hull & Nelson, 2005).

Pedagogy

In the original formulations of the New London Group, four major dimensions of pedagogy were identified: *situated practice*, *overt instruction*, *critical framing*, and *transformed practice*. In applying these ideas to curriculum practices over the past decade, Kalantzis and Cope have reframed these ideas somewhat and translated them into the more immediately recognizable "knowledge processes": *experiencing*, *conceptualizing*, *analyzing*, and *applying* (Kalantzis & Cope, 2010).

Whichever terminology is used to categorize learning activity types, the essential idea in the multiliteracies approach is that learning is a process of "weaving" backwards and forwards across and between different pedagogical moves (Luke, Cazden, Lin, & Freebody, 2004):

Situated practice/experiencing: Human cognition is situated. It is contextual. Meanings are grounded in real-world patterns of experience, action and subjective interest (Gee, 2004). One key pedagogical weaving is between school learning and the practical out-of-school experiences of learners. Another is between familiar and unfamiliar texts and experiences. These kinds of cross-connections between school and the rest of life Cazden calls "cultural weavings" (Cazden, 2006).

Overt instruction/conceptualizing: Specialized, disciplinary knowledges are based on finely tuned distinctions of concept and theory, typical of those developed by expert communities of practice. Conceptualizing is not merely a matter of teacherly or textbook telling based on legacy academic disciplines, but a knowledge process in which the learners become active conceptualizers, making the tacit explicit and generalizing from the particular. In the case of multiliteracies teaching and learning, overt instruction/conceptualizing involves the development of a metalanguage to describe "Design Elements."

Critical framing/analyzing: Powerful learning also entails a certain kind of critical capacity. "Critical" can mean two things in a pedagogical context—to analyze functions or to be evaluative with respect to relationships of power (Cazden, 2006). In the case of a pedagogy of multiliteracies, this involves analyzing text functions and critically interrogating the interests of participants in the communication process.

Transformed practice/applying: This entails the application of knowledge and understandings to the complex diversity of real-world situations. In the case of multiliteracies, this means making texts and putting them to use in communicative action.

These dimensions are pedagogical orientations or knowledge processes. They are not a pedagogy in the singular or a sequence to be followed. Rather, they are a map of the range of pedagogical moves from which to choose. They also have their roots in well-known pedagogical traditions, extending these traditions by supplementing them in order to offer students a more balanced range of activity types. Didactic teaching tends to emphasize the overt instruction of conceptual, disciplinary schemas at the expense of experiential and critical activities. Progressivisms tend to focus on grounded learner experiences, sometimes

neglecting deep conceptual work. Critical pedagogy adds analysis and application to the mix, but sometimes leaving little time for harder edge conceptual learning processes and for moving students into new and unfamiliar experiential domains. Multiliteracies pedagogy connects with all major pedagogical strategies, suggesting however that teachers supplement their existing practices by expanding the range of their pedagogical repertoires.

In contemporary classrooms where extraordinary diversity is typically highly visible, the capacity of a pedagogy of multiliteracies to address learner differences has now been well documented (Healy, 2007; Cummins, 2009). The multiliteracies approach suggests alternative starting points for learning in the varied experiential worlds of learners. It allows for alternative forms of engagement, or divergent learning orientations in the form of a variety of knowledge processes. It allows for different modalities in meaning making, embracing alternative expressive potentials for different learners and promoting synaesthesia as a learning strategy. It also recognizes the active nature of "design" and the learning potentials that arise from expressing identity in the learning process (Kalantzis & Cope, 2008; Mills, 2010).

There is now substantial literature documenting multiliteracies pedagogies in practice (Anstey & Bull, 2006; Cole & Pullen, 2009). Kalantzis and Cope have adapted and extended the original multiliteracies pedagogy in their "learning by design" approach and Web-learning design and delivery platform, which a number of researchers have tested and reported upon (Mills, 2006; Neville, 2008; Cloonan, 2010; Cloonan, Kalantzis, & Cope, 2010; Pandian & Balraj, 2010; van Haren, 2010). An exciting body of work has also emerged from South Africa, centered around the research of Denise Newfield and Pippa Stein (Newfield et al., 2001; Stein & Newfield, 2002).

SEE ALSO: Code Mixing; Conceptualizing and Researching "New Literacies"; Genre-Based Language Teaching; Identities and Language Teaching in Classrooms; Linguistic Diversity; Multimodality and Literacy; Multimodal Teaching and Learning; Multimodal Text Analysis; Teaching Writing; Using Metalanguage in Teaching

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Multimodal Communication: Overview

SIGRID NORRIS

Introduction

> There is an increasing interest among academics, professionals and students in the role of image, gesture, gaze and posture, and the use of space in representation and communication—in other words, multimodality. (Jewitt, 2009, p. 1)

The study of multimodal communication is relatively young as it developed with the development of digital media technologies from video recorders to computers. The developing area of study is vast and cuts across many fields from MULTIMODAL DISCOURSE ANALYSIS and MULTIMODAL TEACHING AND LEARNING to MULTIMODAL LITERACY, MULTIMODAL TEXT ANALYSIS, and MULTIMODALITY AND SYSTEMIC FUNCTIONAL ANALYSIS.

Multimodal communication looks at language within and as part of a larger whole. When investigating an interaction for example, multimodal researchers investigate not only the language that is spoken, but also the gestures that are performed by the speakers and the proxemics that the speakers take up to one another (Norris, 2004, 2011). When investigating a text, multimodal researchers not only investigate the written language, but also the images that are present on a page and the layout of the text itself (Kress & van Leeuwen, 1996; Djonov & van Leeuwen, 2011; Al Zidjaly, 2011).

By looking at communication in its vast complexity, multimodal communication researchers investigate how the multimodal complexity is produced, how it is perceived, or both. Essentially, all areas of applied linguistics can be studied through a multimodal lens.

What Are the Primary Directions of Multimodal Methods?

Multimodal research methods primarily come from three more or less distinct directions: (a) systemic functional linguistics (O'HALLORAN, KAY L.), (b) social semiotics (KRESS, GUNTHER and VAN LEEUWEN, THEO), and (c) mediated discourse analysis (SCOLLON, RON, JONES RODNEY H., and NORRIS, SIGRID). While the areas of inquiry are somewhat distinct, there are also overlaps among them; and there are greater overlaps between systemic functional linguistics and social semiotics, and between social semiotics and mediated discourse analysis.

What Is Investigated in Multimodal Communication?

Multimodal communication researchers, like all applied linguists, are highly interested in the role that language plays in social life; however, rather than paying exclusive attention to language, multimodal communication researchers pay as much attention to other modes such as images or gestures, gaze, or posture. Digital media development suddenly allowed for easy (and inexpensive) video recording, the possibility of TRANSCRIBING MULTIMODAL INTERACTION and with it the analysis of interactions, leading to studies in MULTIMODALITY

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AND IDENTITY CONSTRUCTION, MULTIMODALITY IN WORKPLACES, and MULTIMODALITY AND RITUAL.

Just as researchers became interested in the multimodality of interaction, they investigated more ephemeral concepts such as MULTIMODALITY AND TIME or tried to examine MULTIMODALITY AND RHYTHM, but they also paid closer attention to MULTIMODALITY AND THE SENSES and broached broader questions of culture and globalization and social causes as can be found in MULTIMODALITY AND CULTURE, MULTIMODALITY AND GLOBALIZATION, and MULTIMODALITY AND DISABILITY.

Most clearly and explicitly, we find a link to developing technologies in areas such as MULTIMODALITY AND TECHNOLOGY, MULTIMODALITY AND SOFTWARE, and MULTIMODALITY AND HYPERMEDIA. However, while the area of multimodal communication did develop because of developments in digital media, researchers are also interested in other forms of media from a multimodal perspective. Some of these are MULTIMODAL TEXT and MULTIMODALITY AND COMIC BOOKS, or MULTIMODALITY AND DISPLAYED ART and MULTIMODALITY AND FILM, MULTIMODALITY AND METAPHORS, and MULTIMODALITY IN CORPORATE COMMUNICATION.

SEE ALSO ON MULTIMODAL COMMUNICATION: Bateman, John; Iedema, Rick; Lemke, Jay; Multimodal Corpus-Based Approaches; O'Toole, Michael; Thibault, Paul

SEE ALSO: Multimodal Interaction Analysis; Conversation Analysis: Overview

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Multimodal Computer-Mediated Communication and Distance Language Learning

REGINE HAMPEL

With the development of digital technologies over the past decades, distance language learning has changed dramatically. While earlier courses depended on tailor-made printed materials and used one-way communication tools to foster students' acquisition of listening skills and to a limited extent their speaking skills, new multimodal tools allow for interaction via text, audio, graphics, and video. In line with this, the pedagogical focus has shifted from learner independence to interaction between students to promote learning. In this way, distance language learning is also becoming a less specialized field, with campus-based institutions introducing courses that include distance learning, and distance institutions relying more on interaction and less on custom-made materials.

At the beginning, distance *language* learning was informed by the traditional approach of distance education, which took the form of correspondence courses. In this model learners were dispersed and isolated from their institution, their teacher, and their peers. To ensure that students were able to cope with the subject in question, the Open University in the UK developed its own approach to distance learning in the 1960s when course writers decided not to rely on existing textbooks but to produce their own tailor-made materials—an approach that has been taken up by other distance education institutions around the world. Thus courses were designed as "tutorials-in-print" (Rowntree, *n.d.*), containing the voice of the teacher and helping learners to study on their own and develop independent study skills in terms of navigation of materials, self-motivation, and self-reflection. In addition, learners tended to be supported through regular written feedback by a teacher. Research that accompanied this "first generation" approach (Wang & Sun, 2001) focused on learner independence, autonomy, and motivation (Hurd, Beaven, & Ortega, 2001).

If one perceives learning as social practice, the main limitation of this approach consists in the lack of interaction with others. Learning that is characterized by limited scaffolding by the teacher, lack of feedback from peers, and little joint construction of knowledge not only has an impact in terms of cognitive development but also has social and affective implications, captured in the expression "the loneliness of the distance learner." In distance language education, where oral and aural skills are crucial, these shortcomings are exacerbated. As a result, technology started to be used in the second and third generations of distance courses, and audiovisual resources were introduced to complement the traditional print media in the form of films, cassettes, CDs, TV, followed by CD-ROMs, DVDs, and Web-based CALL material. However, while these one-way communication media have the potential to develop learners' aural skills and some oral skills (e.g., pronunciation), they do not contribute to fostering interactive oral skills. Telephone tutorials were a first step toward giving learners access to synchronous two-way communication in distance language learning.

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With this, a model of distance education was achieved that is characterized by the following features (Garrison & Shale, 1987, p. 11) and that still holds today.

- Distance education implies that the majority of educational communication between (among) teacher and student(s) occurs non-contiguously.
- Distance education must involve two-way communication between (among) teacher and student(s) for the purpose of facilitating and supporting the educational process.
- Distance education uses technology to mediate the necessary two-way communication.

More recently, the development of new technologies in the form of computer-mediated communication (CMC) has had a major impact on distance language learning, thus creating a fourth generation of courses. Here the idea of learner independence has been replaced with one of "collaborative control, based on a belief that learners can best achieve autonomy and control within their learning experiences when they can collaborate with others in ways which support their learning. It places emphasis on the exchange of ideas and the development of abilities within collaborative learning experiences" (White, 2004, p. 4).

Initially, CMC was limited to asynchronous written tools such as forums, which allowed for writing and spatial organization of messages. Synchronous written chat followed, and the 21st century has seen the advent of an array of multimodal environments, including audio and video conferencing, virtual worlds, and social networking tools. Educational institutions increasingly make use of complex virtual learning environments (VLEs such as Moodle or Blackboard, also known in American contexts as learning management systems [LMSs] or content management systems [CMSs]) which deliver content as well as integrate a range of communication tools. Besides using such purpose-built tools, educators are also turning to publicly available environments such as Second Life. With online tools providing language teachers and learners access to two-way communication that is independent of place and—in the case of asynchronous environments—time, interaction at a distance between learners has become easier, both in written and in spoken formats. In the distance language education context, access to online tools that allow for spoken interaction is particularly crucial, thus "addressing, at least to some degree, the lack of in situ speaking practice, one of the apparent shortcomings of learning language at a distance" (Blake & Delforge, 2006, p. 129). As a result, the number of institutions teaching languages at a distance has increased (Blake, 2007).

At the same time, interaction itself as well as the understanding of interaction has become more complex: In these new digital environments meaning is made multimodally and communication is seen as mediated. As Kress and van Leeuwen (2001, p. 20) explain, multimodality is "the use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined—they may for instance reinforce each other . . . , fulfil complementary roles . . . or be hierarchically ordered." In online environments, the written linguistic mode (in the form of text) can be combined with the spoken linguistic mode (audio) as well as spatial-visual (architecture and other structural functions) and gestural modes (body movement) to "orchestrate meaning" (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001, p. 25). In one way, the new environments where users can see and speak with others, work jointly on texts, or collate information thus seem to replicate more traditional communication in a face-to-face classroom. However, the mediational means, which in the case of CMC consist of the computer and the tools used, together with their modes and affordances, shape the action in essential ways (Wertsch, 1991, p. 12). When using a video-conferencing environment, for example, rather than a face-to-face meeting to hold a discussion, the following factors have an effect on how meaning is made via the video conference and how social relationships are negotiated:

- availability of tools, such as text chat, whiteboard, application sharing, Web tour;
- availability of modes, such as linguistic written, linguistic spoken, gestural, spatial;
- functionalities of the application, such as presentation of webcam image, system for turn taking, levels of permissions, recording facility; and
- technical matters, such as transmission rate.

Such technological developments and their increased implementation in language learning are posing new challenges for distance teachers and institutions, and the focus of interest in pedagogy and research has shifted to issues that are related to concepts such as interaction, collaboration, participation, social presence, community, and learner networks (White, 2004, p. 4). This includes research in the following areas:

- learner- and teacher-related aspects, including interaction and negotiation of meaning, collaboration, community building, identity, power relations, learning strategies, motivation, group autonomy, role of the teacher, task design, and assessment;
- more general aspects of online communication and language learning, such as intercultural learning, multiliteracies, online discourse, mediation and affordances, or access to digital resources;
- methods of online learning and teaching, such as telecollaboration, tandem learning, task-based language learning, and collaborative learning; and
- use of specific online tools, such as mobile devices, virtual worlds, blogs, and wikis.

Many institutions now follow a blended model of language education by combining traditional modes of delivery (e.g., printed books and DVDs with audio and visual materials) and e-learning (e.g., through the use of a VLE or of a mix of individual tools). In this way, written course materials and student–computer-based activities can be used to deliver content to individual learners; to teach reading, writing, and listening skills; to give students the chance to rehearse speaking skills (e.g., through recordings); and to promote focus on form and improving accuracy.

On the other hand, online activities offer the opportunity for interaction with other people, with multimodal CMC tools increasing the range of activities available to learners and teachers engaged in distance education and widening the objectives that can be attained. These include cognitive benefits in terms of second language acquisition, as well as socio-affective benefits. Activities include spoken and written discussions between learners or between learners and their teacher, which can foster fluency (in the case of synchronous communication) or accuracy (when using asynchronous tools such as forums or sharing audio files). Wiki activities can promote joint knowledge building, and personal blogs can be used to foster social interaction. Tandem-style tasks with students of other languages give learners the opportunity to meet native speakers and encourage intercultural learning, and activities in virtual worlds or online games can promote communication with "real" users of the technology. In this way, online interaction can create a sense of community for the erstwhile lonely distance learner: Blake (2005) calls synchronous CMC the "glue" between students engaged in distance learning. Last but not least, by making written records of use available, CMC also offers the possibility of focusing on the process of learning rather than just the product—thus fitting in with current theories of learning—and allowing learners to reflect on their learning.

However, this new approach to distance learning through the use of CMC also poses a number of challenges. Not all learners possess the new literacy skills that are necessary for learning a language at a distance today, and they may be cognitively overloaded when required to engage with a new language, unfamiliar content, unknown peers, and novel technologies (Lankshear & Knobel, 2003). Motivation can cause problems too; some distance

students do not see the value of CMC activities—in particular those activities that involve peers rather than the teacher—and prefer more traditional tasks. Also, clashes in cultures-of-use have been observed (Thorne, 2003), with students' use of technologies for social purposes conflicting, for example, with what they are expected to do in an educational setting. And linking students with native speakers in tandem set-ups or through virtual worlds can cause friction or lead to failed communication (O'Dowd, 2006).

Teaching online and at a distance requires particular skills (Hampel & Stickler, 2005). Not only do teachers and course developers have to be familiar with the technology but they also have to be aware of the implications that the use of CMC has in the context of language teaching. They have to find a balance between learner support and learner autonomy while also developing group autonomy (Mangenot & Nissen, 2006). They have to ensure that the task design is appropriate to the tool (Hampel, 2006). Assessment of online activities is another issue as assessing the process of learning is more complex than focusing on the product, and institutions are often not willing to engage in assessing collaborative work (Lamy & Hampel, 2007).

Finally, at institutional level, there is the need for an informed choice of tools. Institutions can select between tailor-made technology, off-the-shelf tools for specific (educational) purposes, open-source educational tools (e.g., Moodle), and publicly available social networking tools. Crucially, this choice has to be informed by appropriate pedagogies that focus on promoting interaction as well as supporting learners. In addition, teachers have to be supported to develop the requisite skills for teaching online and at a distance. As White (2006, p. 261) points out, "providing high-quality distance language learning opportunities for all learners is still a key challenge for the field."

SEE ALSO: Computer-Mediated Communication and Second Language Development; Distance Language Learning; Emerging Technologies for Language Learning; Mobile-Assisted Language Learning; Multimodality and Technology

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Multimodal Corpus-Based Approaches

JOHN A. BATEMAN

Nowadays there is a considerable awareness of the necessity of studying language and language use *in association with* accompanying modes of communication. For example, whereas in the early 2000s one might have found studies of "the language of advertising" focusing solely on the linguistic component, corresponding studies now also consider visual contributions and attempt to describe and explain the interplay of the verbal and the visual in an integrated meaning-making artifact. This broadening of the targeted scope of analysis is echoed across the board in applied studies and has given rise to the consideration of multimodal corpora.

Corpus-based approaches in linguistics in general are based on appropriately *selected* and appropriately *preprepared* data in sufficient *quantity* to allow empirical, data-driven research. These areas have been investigated substantially for text-based data and there are powerful tools and mechanisms available for supporting investigation. The key to using corpora for research lies, however, in the "prepreparation" of their data. To support the search for patterns, relevant properties of the data must be rendered machine-accessible so that large-scale searches and collations of results may follow. For traditional written-text data, simply having the text in electronic form already allows useful access. Patterns can be sought by using straightforward string searches and statistical overviews, key-word-in-context lists, concordances, frequency data, n-grams, and many more.

The greater the extent of "enrichment" of the basic text data available, the more valuable the corpus becomes. Most corpora nowadays consequently include part-of-speech tagging, so that it is possible to ensure that the desired form of otherwise ambiguous words is found (e.g., *works* as noun rather than as verb). Corpora also commonly include basic text-type and contextual information, so that it becomes possible to see if there are statistically reliable differences between, for example, narrative and scientific texts, or between learner and non-learner data, or across gender and so on.

An increasing number of corpora include information going beyond part-of-speech tags and allow access to more or less complex syntactic and semantic categories and structures. Such corpora are of considerable utility, supporting applications ranging from basic linguistic research, to finding balanced and natural teaching materials for language teaching, to providing seed data for sophisticated machine-learning algorithms for inducing linguistically relevant information, and much more. Given the success of such methods, it is natural that an extension beyond written-text data be considered. This is the direction of development broadly categorized as *multimodal* corpus analysis because the data at issue involve information beyond or alongside any written language deployed. Written text is then seen as a particular "mode" of linguistic presentation and information beyond this brings in other modes.

Multimodal corpus approaches will certainly play just as important a role in research as text-based corpora already enjoy. But there are nevertheless some basic problems to be solved. Some areas included within the broader category of multimodal corpora are considerably more developed than others—the clearest example is offered by speech corpora, that is, corpora that include in addition to their representation of the words said information about intonation, timing, hesitation, and so on; most other areas can still only be considered experimental.

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This entry accordingly characterizes the distinct kinds of multimodal corpora currently envisaged and describes to what extent the prerequisites of selection, prepreparation, and quantity are met. Different kinds of data raise different kinds of problems. This is important both for designing tools and for considering combinations of types of data—always a central concern when considering *multi*modal data. Explorations in developing multimodal corpus work often fail to leverage appropriately off already existing techniques. In future, this will need to be addressed more effectively since the natural complexity of multimodal data can easily overwhelm individual efforts.

The broadest distinction is between *linear* and *nonlinear* data. This is an essential distinction since many discussions of "multimodal" corpora are situated entirely within one area (typically the first) rather than the other. Many discussions of multimodal corpora and tools accordingly *only* consider linear data and provide no support for, or even mention of, nonlinear data.

Linear data include material which is essentially organized to unfold along a single dimension of actualization. This dimension may either be in space, as in traditional written-text data, or in time, as in recordings of spoken language. In both cases the single dimension of organization allows relatively straightforward access to any part of the data: In the case of written data we have the explicit ordering information about the words and characters represented—for example, word number 13,219 of *War and Peace*—while in the case of spoken language data, we have the time at which some phonetic event occurs. For this reason, speech corpora generally work with *time-stamped* data. This continues to apply when that further information is itself complex, as in video data; even here, the basic temporal organization remains of considerable benefit when designing corpora and corpus tools.

Nonlinear data include material where there is no single organizing dimension that can be used for providing access. This generally involves spatially *distributed* information, such as that found on pages of documents, printed advertisements, paintings, and so on. As we shall see, corpora for this area are in a far less developed state. Tools built for linear data are generally unusable for nonlinear data, although some developments are being attempted.

Further dimensions that we will combine with the above are usually seen in terms of *sensory channels*. For example, the data may be essentially graphically visual, as in video data or paintings, or acoustic, as in speech corpora, or linguistically visual, as in typography and text layout. The sensory channel view alone is insufficient for effective corpus design, however, since each sensory channel can in fact carry very different kinds of information that need to be distinguished when prepreparing data for inclusion in corpora. Moreover, a strong interdependence exists between the kinds of corpora that are attempted and the technological support available for storing and manipulating the required data. There is also the question of just what kinds of data are considered as sensible targets for investigation at all. Both areas have changed considerably in recent years.

Linear Data

In this section we briefly run through some of the types of data and corresponding corpora that can be considered to be organized as a one-dimensional unfolding of information. We will see that that information can then itself come to include substantial multimodal contributions that are no longer one-dimensional; nevertheless their embedding within a single dimension of unfolding provides a critical foundation for applying corpus methods effectively.

The Emergence of Multimodal Corpora: Spoken Language Corpora

The entire field of multimodal corpora began with the rather obvious wish to include not only textual "transcriptions" of spoken language but the spoken language itself, that is, the raw recorded speech events themselves. From the perspective of empirical research, this was clearly a useful goal: Just as the collection of corpora of written data had opened up access to language as it is actually used in written texts, so the provision of spoken language corpora was similarly seen as allowing more empirically well-founded studies of intonation, speech quality, corrections and hesitations, and so on. Such speech data are now also commonly employed for purposes such as training speech recognition systems to improve robustness in the face of real-life variation. The move, from the generally assumed *monomodality* of instances of written language to the evident *multimodality* of spoken language data, marked the beginning of the field of multimodal corpus construction.

Just as text corpora could draw on the long history of linguistic description for morphology, grammar, semantics, and so on for designing *linguistic annotations* of the data stored, spoken language corpora could similarly include theories of intonational phrasing and phonetics as motivations for additional information, easing access to the data stored. Even more than is the case for text descriptions, however, the "mixing" of information of fundamentally distinct kinds—digitized acoustic data and textual transcriptions and annotations—demanded a strongly *layered* approach to corpus construction. This is the issue of how best to facilitate access to data once collected. It is not sensible, for example, to put such additional information directly into the middle of sound data. The usual approach is then to employ *standoff annotation* (Thompson & McKelvie, 1997), whereby annotations are stored separately and provide "indexes" into the stored sound data.

Layers, often called *tiers* in work on multimodal corpus tools, provide a powerful mechanism for maintaining the results of different kinds of processing and linking these together with respect to the source data: For example, the original speech data might be kept in a single "layer" and a transcript of that data in another. The transcript might in turn be subject to lexical stemming or grammatical analyses and the results of these processes (necessarily automatic when large amounts of data are considered) may be added into further layers. The speech data themselves might then also be processed in various ways—for example, to produce analyses of fundamental frequency, formants, or a segmental phonetic description—and each of these can be included in distinct additional annotation layers. The combined result of such processing is then a complex, interlinked set of information that provides multiple perspectives on the data in order to support a considerable range of linguistic investigation.

As effective corpus work requires that sufficient *quantity* of data be available, it is also important to consider the kinds of tools that may be applied in order to turn "raw data," such as sound recordings, into accessible, appropriate, preprepared data amenable to automatic searches and pattern matching. For speech corpora, clearly the most important advance that has made this possible is the broad availability of speech processing software. It is now straightforward to turn large quantities of recorded speech data into time-dependent tracks of data relevant for linguistic research. This is dealt with at length elsewhere; important here, however, is the support that layering provides for the *combination* of modalities as we go further into multimodality.

Annotations and Markup Languages

Being able to store large quantities of such data is necessarily accompanied by the problem of *ac*cessing that data in ways useful for conducting research: Even searching for text within text files, although relatively simple, is not itself optimal for linguistic research. Typically one is searching for more abstract patterns than are present in the bare text. As noted

above, textual corpora are accordingly "annotated" with additional information, such as part-of-speech information, grammatical categories, semantic labeling, and so forth, that increases their value for linguistic research. When other kinds of data are considered—for example, searching speech data for acoustic events—the problem grows considerably. There are many open questions concerning the kinds of annotations and processing techniques that will make multimodal corpora most useful. In short, the further we move away from corpora consisting of plain written text, the more difficulties and open questions we are confronted with.

Most corpora nowadays draw on a particular technology for storing and organizing their data in a form that makes them both accessible and capable of being arbitrarily enriched with further annotations: This technology is that provided by *Extensible Markup Language* (XML). XML provides a straightforward, machine-readable format that allows information to be annotated, or marked up, as desired; it is an outgrowth of a long history of research on document markup and is the current recommendation for structured data of the World-Wide Consortium W3C (http://www.w3.org/TR/xml).

An example of a simple XML markup for part of speech is the following, slightly amended from the British National Corpus (www.natcorp.ox.ac.uk):

```
<w id="w345" c5="CJC" hw="but" pos="CONJ">But</w>
```

Here we can see that an XML expression consists of some data enclosed by a labeled opening tag and a matching labeled closing tag: in this case <w . . .>, indicating a word, and </w> respectively. The raw data are what is between these opening and closing tags: in this case the characters "but." Central to the utility of the framework is the fact that each opening tag can contain predefined attributes and values, giving further information about the tagged item. In the present case, the opening tag specifies that the tagged material belongs to the particular word class "CJC," has the "headword" "but," and the part-of-speech information "CONJ," and has been given the (unique to the current document) identifier "w345." In addition, tags can be nested hierarchically, making it possible to construct arbitrarily complex (but well-formed) structures.

This is an example of "in-line" markup, where the information about the data is contained in the same file as the data themselves—the occurrence of the word "but" in some text, in the present case. In contrast to this, standoff annotation as introduced above works by putting the information about the data in a separate file and referring to the original data with a *cross-reference* to some identifying feature of the data. That identifying feature can either be something like the explicit identifier given in the example with the "id" attribute or draw instead on some logical property of the file, such as the *n*th character in the file. The advantages of such standoff annotation are that structures can be defined that do not need to nest properly, which is useful in many cases of linguistic information because the levels of abstraction are orthogonal and do not necessarily nest one within the other (e.g., syntactic structure, intonational phrasing, and typography), and arbitrary kinds of information can be added in a modular and still processible fashion. This becomes increasingly important as we move to corpora that cover multimodal information.

Finally, the real win of applying the XML standard to corpora annotation is that it provides access to powerful search and data manipulation tools often developed quite independently of linguistic concerns. Since XML is used as the format of choice for almost all online data these days, the need to manipulate such data is widespread. As a consequence, search and processing mechanisms that can work with XML are increasingly provided as standard functionality even for normal Web browsers. This trend will certainly continue and provides a strong foundation for increasingly powerful corpus manipulation tools capable of working with any combination of data appropriately organized according

to defined XML schemes. This is also an important prerequisite for getting corpus tools out of proprietary formats and tools into more open, and hence freely available and adaptable, resources of use to the community.

Spoken Language Corpora

The view of a corpus as a multilayered set of linked descriptions naturally creates the possibility that other kinds of information be included. Since the architecture itself is essentially open-ended, one can always consider the addition of extra layers. It is here that the essential linearity of the time-based semiotic mode brings considerable dividends for corpus-based investigation.

Moving beyond speech follows almost as a necessary consequence of considering speech data. Speech rarely occurs alone and so, in real contexts of interaction, communication is carried not only by the speech signal but by other modalities as well. The modalities next considered appropriate for representation within multimodal corpora were therefore those evidently important for face-to-face communication, namely gesture and facial expressions. Both of these are now extensively researched in the area of human–computer interaction. Gesture is clearly closely correlated with deictic communicative acts, which play a role in situated shared-task problem solving with artificial agents, and facial expressions are necessary for constructing appropriately behaved human-like avatars. In both cases, it has been recognized that empirical corpus-based research is an essential methodology: We need to see how people manage these modalities and for what purposes in real communicative situations.

Sophisticated models for the linguistically relevant abstractions to be considered in broader collections of data for situated spoken interaction are explored by, for example, Norris (2002, 2004). Additional information concerned with proxemics, spatial position with respect to the environment, and other performance-based variables are also considered. There are as a consequence a range of corpus-based approaches including diverse aspects of the interactive situation as additional tracks of information. And for each of these, there are developing proposals for appropriate annotation schemes that provide the level of abstraction necessary for searching for qualitative patterns (see Kranstedt, Kopp, & Wachsmuth, 2002). These annotation schemes are typically defined in terms of XML schemas, which explicitly set out vocabularies and structures for data annotation within each layer addressed. This explicit definition makes it possible to check large bodies of annotated data for their formal correctness, an important feature since maintaining large corpora is a difficult undertaking.

An overview of recent discussions and results for general annotations that can span several tools for linear-data corpora can be found in the online reports and materials from the 2007 Multimodal Annotation Tools Workshops at http://multimodal-annotation.org. An excellent description of tools and their treatment of multimodal data is given in Schmidt et al. (2009).

Transcription

Approaches to corpus preparation that are designed by linguists generally draw on the central linguistic operation of *transcription*. Transcription is the process of enriching basic language data so as to already include qualitative classifications considered appropriate for further theory building. The simplest kind of transcription for spoken data might involve writing peaks of intonational prominence in capital letters; nowadays this would be replaced by a complete annotation scheme reflecting some model of intonation. The relation between transcription and theory building is an intimate one; fundamental discussion is offered by Ochs (1979).

For use in multimodal corpora, it is necessary to transform more informal, descriptive transcription schemes to properly specified annotation frameworks. Here naturally there is a lag, since there are considerably more proposals for transcription schemes than there are implemented annotation schemes; but some of the more developed transcription schemes have been, or are being, reconsidered for driving actual corpus construction. Accordingly, in addition to transcription/annotation frameworks for intonation, there are now also proposals for transcription/annotation schemes for gesture (Kipp, Neff, & Albrecht, 2007), facial expressions, proxemics, gaze, and many more (see Allwood Kopp, Grammer, Oberzaucher, & Koppensteiner, 2007).

Media Analysis

Given that the starting point for many of the natural interaction data described above is provided by video recordings of situations, there is a further natural extension both of techniques and of interest to include not only natural interactions "in the wild" but audiovisual media representations. Here there is an overlap with research performed in media and communication studies, which also have a long tradition of investigating video data for socially significant variations and patterns (see Ludes & Herzog, 2004). From the linguistic perspective, research is pursued that focuses more either on the interactions of individuals presented in the media, as in political interviews or news reporting, or on the communicative possibilities of the medium itself. This latter is a further extension of the domain of multimodality to take in the technical resources employed for constructing audiovisual representations in general, involving such features as camera angles, shots and transitions between shots, camera distances, framing, color balance, perspective, and much more. Early approaches to this from a multimodal corpus perspective can be seen in Thibault (2000), Baldry and Thibault (2005), and Tan (2009). For more general media representations there is also the international standard MPEG-7 (ISO/IEC 15938: *Multimedia content description interface*) for media content: this shows considerable overlaps in aims but has not so far been considered together with the needs of multimodal corpus design. For a thorough consideration of film as a multimodal artifact at the document level, however, see Bateman and Schmidt (2011).

Nonlinear Artifacts: Multimodal Extensions

All of the approaches discussed so far depend upon the linearity property of the semiotic modes involved. Particularly, the *time-based* modes make it possible to combine as many layers or annotation tracks as required by anchoring them against time stamps; some current attempts at standardization even require the existence of time stamps as a precondition for interoperability and translatability of annotations. But semiotic modes relying on the visual channel are not organized around time; they are organized around *space* and spatial relationships (see Kress, 2003).

This presents substantial problems for devising usable markup schemes. A simple geometric representation rarely provides an appropriate level of abstraction for much of what is happening visually, and the range and scope of the semiotic modes carried by the visual channel are still only poorly understood. There are extensive categories of the kinds of information representations that are employed—for example, 2D graphs, animations, films, written text, photographs, drawings, diagrams, flowcharts, maps, and many more—but still little theoretically sound organization for their combination. Written text may play decisive roles for the interpretability of graphics, diagrams may be animated, maps may be annotated with diagrammatic representations (e.g., contour lines), and so on. Moreover, there are additional modes of semiotic organization that are essentially "higher-order" in

that their purpose is precisely to *combine* information offerings from other modes. This, for example, is the function of *layout* as described in detail in Bateman (2008). Whenever language occurs together with such kinds of information, the interrelation of linguistic and nonlinguistic presentations raises important theoretical considerations that can only benefit from corpus-based approaches.

In some domains there are already proposals of a nonlinguistic nature for possible forms of markup and corpus design; for example, the automatic document recognition community has large collections of annotated layouts that are used as *ground truths* for testing recognition algorithms (Antonacopoulos, Karatzas, & Bridson, 2006). Moreover, geographic information science has richly layered representations of spatial data underlying maps; art history has classifications for the content and organization of pictures; and information designers have characterizations for many kinds of diagrams and graphics. When moving into the collection of corpus data involving such artifacts, it will therefore be advisable to be aware of treatments of this kind before defining transcription schemes motivated from within single disciplinary perspectives. Although at present most linguistically informed approaches to such artifacts have not moved beyond proposals for transcription, first moves toward full corpus annotation schemes are described in the *GeM* framework for static multimodal nonlinear documents in Bateman (2008, 2009).

Combinations of Time and Space

It is already evident that there will be an increasing need for *combinations* of all the developments described so far. Many current projects are concerned with the analysis of artifacts such as Web sites, and these can be characterized most effectively as dynamic layouted composite documents. Since Web sites include all of the resources of nonlinear, that is, spatially organized, layout plus the ability to include video and other dynamically displayed data, all of the kinds of annotations/transcriptions mentioned so far may find application there.

The move to include such artifacts within corpus-based research will again demand that tools are able to bring together both linear and nonlinear data types. Moreover, within each data type there will be many distinct kinds of annotation required. In the long run, it may be necessary to have distinct corpus levels, or tiers, for each kind of semiotic mode operative within the data to be analyzed. This then goes considerably beyond distinguishing sensory channels, as argued in detail in Bateman (2010). Some tools, such as ANVIL (Kipp, in press), are now allowing spatial annotations within video data, but this is still exploratory and subordinated to the temporal organization. Further development is required.

Conclusions

Following on the general acceptance within linguistics of the value of performing linguistic research with respect to increasingly large collections of naturally occurring texts, that is, corpora, it has been natural to ask whether these methods and techniques can also be applied to data including those other modes of communication accompanying the linguistic acts. This combination of concerns has led to the design, construction, and use of *multimodal corpora* for informing research that seeks to place language use in richer, multimodally constituted contexts. More abstractly, this represents a gradual change in the boundaries drawn between the "linguistic" and the "paralinguistic": Ever more phenomena that would previously have been termed paralinguistic, in the sense of accompanying but only weakly influencing linguistic form and expression, are now being moved into the center of concern and so demand methods and approaches by which they can be addressed empirically.

There are also further combinations of modes that have so far received very little study but which are beginning now to be approached using corpus-based methods; for example, the combination/interaction of language and music, as occurs in narrative film, or the combination of eye-tracking behavior and language. As corpus-based empirical approaches move to include such modes of communication, it is crucial that insights from traditions other than the narrowly linguistic are given due consideration.

Corpus-based approaches need therefore to enter into dialogue with such work and not assume that straightforward extensions of the linguistic, or simple "outsider's" views of the material will be sufficient. The advances to be made here are nevertheless considerable, not only for our understanding of how language works within such multimodal contexts but also for how other communicative modes function. Linguistic, corpus-based methods promise much for placing studies of a broad variety of modalities on a firmer empirical footing—but this can only be done in cooperation and dialogue with those disciplines where those modalities have already been the principal focus of attention.

SEE ALSO: Analyzing Spoken Corpora; Corpora: Multimodal; Corpora: Specialized; Corpus Linguistics: Overview; Corpus Linguistics: Quantitative Methods; Multimodal Text Analysis; Speech Analysis Software; Transcribing Multimodal Interaction

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Multimodal Discourse Analysis

RODNEY H. JONES

Multimodal discourse analysis is an approach to discourse which focuses on how meaning is made through the use of multiple modes of communication as opposed to just language. Although there is a long tradition in semiotics, anthropology, sociology, and cultural studies of engaging analytically with visual texts and other modes, it is only recently that this challenge has been taken up by applied linguists, who, not surprisingly, have traditionally privileged the modes of speech and writing. One reason for the recent surge of interest in multimodality in applied linguistics is the increasing importance of multimodal representation in everyday life with the rise of digital technologies. Multimodal texts, however, are far from new. In fact, before the development of the printing press, most texts were "illuminated" in some way, with considerable attention paid to things like illustrations and calligraphy. Another reason for the development of multimodal discourse analysis is the concurrent development of the technologies—specifically digital video cameras and computer editing and analysis software—which have made this kind of analysis possible.

It should be stressed at the outset that multimodal discourse analysis is not the study of a special kind of discourse, that is, "multimodal" discourse. Rather, it is the engagement in the multimodal dimension of all discourse. As Scollon and Levine (2004, pp. 1–2) point out,

> language in use, whether this is in the form of spoken language or text, is always and inevitably constructed across multiple modes of communication, including speech and gesture not just in spoken language but through such "contextual" phenomena as the use of the physical spaces in which we carry out our discursive actions or the design, paper, and typography of the documents within which our texts are presented.

In other words, multimodal discourse analysts, for the most part, occupy a position which actually puts them at odds with most of their colleagues in applied linguistics: the position that simply analyzing language (i.e., speech or writing) as it is used in a particular situation results in a fundamentally distorted picture of what is actually going on in the situation. While language might play a role in what is going on, it might not be the most significant mode, and there may indeed be situations or texts of interest to discourse analysts that may not involve the use of language at all.

The concept of "mode" in multimodal discourse analysis should not be confused with the concept of "modality" in grammar (which refers to the expression of possibility and obligation in statements), or with the concept of "mode" in Halliday's tripartite model of *context* (consisting of field, tenor, and mode), in which mode refers to the "channel" of *linguistic* communication (i.e., speech or writing). When multimodal discourse analysts speak of mode they usually mean a conventionally recognized "semiotic system with an internal grammaticality, such as speech, color, taste, or the design of images" (Scollon & Levine, 2004, p. 2). *Modes* are also clearly distinguished from *media*, which are the physical or material carriers of modes (e.g., paper, telephones, television, computer screens, and the like). For example, while dress would be considered a mode (a system governing the combination of various semiotic elements involving color, shape, texture, and their placement on a human body), clothing is a medium, the physical means thorough which this

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system is expressed. At the same time, there is an intimate and complex relationship between modes and media: the functions and significance of various modes evolving in relation to the development of technologies and the social practices governing their use in particular sociohistorical contexts (Kress & van Leeuwen, 1996).

The notion of mode, however, especially if it is seen as a reified, bounded semiotic system with stable characteristics, is not unproblematic, especially in situations where the development of new media results in the blending of modes (as computer technology has done in the case of speech and writing; see Goddard, 2004). It is more useful to regard modes as a heuristics rather than as stable categories or systems. As Norris (2004, p. 11) points out, while modes are unavoidably construed as distinct entities, they are in reality "not bounded units. A mode is a loose concept of a grouping of signs that have acquired meaning in our historical development."

Since its inception as a widely recognized approach to discourse in the late 1990s, multimodal discourse analysis has focused on two broad areas of research—the study of multimodality in *texts* like magazines, comic books, films, works of art, and Internet Web pages, and the study of multimodality in *interaction*—each drawing on rather different traditions in linguistic and social science research. These two lines of research, however, sometimes interact, especially as "texts" like Web pages become more interactive (see, e.g., Kress, 2003), and in situations like classroom interaction in which the manipulation of multimodal textual objects plays an important role in interaction (see, e.g., O'Halloran, 2005).

Work on the analysis of multimodality in texts has its roots in the systemic functional linguistics of Michael Halliday, especially as it was applied in the late 1970s to the development of *social semiotics* by the critical linguistics group at the University of East Anglia. Perhaps the most influential proponents of this approach to multimodal discourse analysis are Gunther Kress and Theo van Leeuwen, who, in their 1996 classic *Reading Images: The Grammar of Visual Design*, propose that images can be analyzed according to their ideational, interpersonal, and textual functions by applying conceptual tools from functional grammar such as transitivity and modality. This project was later taken up by others and applied to a range of other modes across a wide range of media and social situations (see, e.g., O'Halloran, 2004; Royce & Bowcher, 2006). Of particular note are O'Toole's (1994) examinations of paintings, sculpture, and architecture, and O'Halloran's (2005) application of this model to the analysis of mathematical discourse. Later work within this framework has moved from considering how meaning is expressed in specific modes to more of a focus on how modes relate to one another intersemiotically. This approach has also evolved in Kress and van Leeuwen's work, especially in their inclusion of the practices of production and consumption of multimodal texts as fundamental issues for analysis.

The sometimes uncritical application of principles developed in systemic functional linguistics to the analysis of nonlinguistic modes that has characterized a portion of this work, however, has attracted some skepticism. Bateman and his colleagues (Bateman, Delin, & Henschel, 2002), for example, point out that analytical principles like "given and new" have been adopted from the analysis of temporally organized modes like writing to the analysis of visual layout without sufficient empirical evidence that this is indeed an accurate account of the way people process visual information.

The second broad area of research in multimodal discourse analysis focuses on the analysis of socially situated interaction. The perspectives, methods, and agenda of this strand of research have grown out of a very different academic tradition than the one described above. Rather than systemic functional linguistics, this approach has been more influenced by work in linguistic ethnography, anthropology, and psychiatry, especially the "ecological perspective" on communication developed by Scheflen, Birdwhistle, Bateson, and others working in the Palto Alto research group in the 1950s (see, e.g., Ruesch &

Bateson 1951/1968; Birdwhistle, 1970; Scheflen, 1974). It has also drawn heavily on work in conversation analysis and interactional sociolinguistics (see, e.g., Goodwin, 2000), "non-verbal communication" (see, e.g., Kendon, 1990; McNeill, 1992), and mediated discourse analysis as developed by Scollon and his colleagues.

Perhaps the best exemplar of this approach is Sigrid Norris, whose book *Analyzing Multimodal Interaction* (2004) lays out a systematic framework for analyzing the multimodal nature of face-to-face interaction. Among the important concepts included in this framework are the notions of *modal density*—the relative salience of a mode in relation to other modes—and of a *foreground and background continuum* along which participants' simultaneous engagement with multiple modes can be mapped. Another significant contribution of Norris's work is her examination of the relationship between multimodal communication and the negotiation of identity in interaction.

There has been other work that combines an interest in multimodal texts with a concern with how those texts are shaped and reshaped in the context of ongoing interaction. Of particular note is the work of Rick Iedema (2001), who takes the position that multimodal analysis must be complemented by a more dynamic perspective on semiosis which examines how social interaction helps to shape the ongoing emergence of multimodal meaning. Iedema's main contribution to the field of multimodal discourse analysis is his concept of *resemiotization*, which he defines as the dynamic process through which meaning changes as it becomes instantiated in various configurations of modes and media along the trajectories of various social practices. One example Iedema gives is the way meanings associated with the building of a new wing of a hospital change as they are expressed orally in planning meetings, in the written language of reports, in the graphic language of architectural drawings, and in the material instantiation of bricks and mortar.

Within both of these broad approaches, and in work which attempts to combine them, is the potential to contribute to the understanding not just of texts and interactions but also of social practices, ideologies, and the social structures and psychological constructs that underpin them. Thibault (2004), for example, draws on systemic functional linguistics to formulate a cognitive model of multimodality which explores how biological and social factors interact to affect meaning, and Scollon (2007), drawing on mediated and critical discourse analysis, considers ways in which judgments about the truth, reality, and reliability of messages are affected by the modes and media in which they are physically produced as objects in the world. Multimodal discourse analysis has also made particularly important contributions to education and literacy studies, especially regarding the ways digital multimodal texts are affecting educational practices and the way students learn (Kress, 2003; Jewitt, 2006).

Multimodal discourse analysis continues to advance both theoretically and methodologically with the development of new ways of collecting and transcribing data and of compiling and analyzing large corpora of multimodal texts and interactions (Norris, 2004; O'Halloran, 2004; Baldry & Thibault, 2005; Baldry, 2007).

SEE ALSO: Multimodal Interaction Analysis; Multimodality and Literacy; Multimodality and Systemic Functional Analysis

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Multimodal Interaction Analysis

SIGRID NORRIS

Multimodal interaction analysis (Norris, 2004) is a holistic methodological framework that allows the analyst to integrate the verbal with the nonverbal, and to integrate these with material objects and the environment as they are being used by individuals acting and interacting in the world. In short, multimodal interaction analysis allows a researcher to study real people interacting with others, with technology, and with the environment. Multimodal interaction analysis, to give a few and diverse examples, has been utilized to study topics such as ethnic and personal identity (Norris, 2007, 2011b), power and male domination (Norris, 2007), interactions in public relations offices (Sissons, 2011), rhythm in everyday interactions (Norris, 2009), traditional Indian painting practices (Frommherz, 2011), advertising billboards (White, 2010, 2011), and computer-mediated communication (Örnberg Berglund, 2005).

The point of view taken in multimodal interaction analysis is that all actions in fact are interactions and that all of these (inter)actions are linked to people (referred to as social actors in multimodal interaction analysis)—no matter whether you are investigating the real or the virtual world, someone buying ice cream, or a software program. When thinking about buying ice cream it is obvious that a social actor is buying and another social actor is selling the ice cream. It is also obvious that a social actor (or more likely a whole number of social actors) made the ice cream using ingredients, tools, and machines. When looking at a software program, we look at it in the same way: a social actor is using it; but a social actor (or rather, again, a number of social actors) produced the software, embedded fonts, color schemes, and the like. Social actors are the key element in multimodal interaction analysis. Multimodal interaction analysis emphasizes that all social actors act by using cultural tools—from language and gestures to coffee makers and computers. On the one hand multimodal interaction analysis (following mediated discourse analysis) argues that social actors cannot act without using some cultural tools; and on the other hand multimodal interaction analysis claims that cultural tools do not exist without social actors producing, using, and re-producing them. Because of these two interlinked claims, there is a constant tension in (inter)action between social actors and the cultural tools that they are using.

Background: Multimodal Interaction Analysis

The framework primarily grew out of mediated discourse analysis (Scollon, 1998, 2001) in connection with interactional sociolinguistics (Goffman, 1959, 1963, 1974; Gumperz, 1982; Tannen, 1984) and multimodal analysis (Van Leeuwen, 1999; Kress & Van Leeuwen, 2001). Multimodal interaction analysis allows the integration of all communicative modes, where communicative modes are defined as systems of representation with rules and regularities attached to them (Kress & Van Leeuwen, 2001) as they are being used (Norris, 2009). The last part of the definition, "as they are being used," is of particular interest to multimodal interaction analysis, emphasizing a focus on social actors acting. In other words, multimodal interaction analysis is interested in systems of representation in action, as part of action, or as a result of action; multimodal interaction analysis is not, however, interested in

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systems of representation as entities. This focus on action is in line with mediated discourse analysis.

Unit of Analysis

In multimodal interaction analysis, as in mediated discourse analysis, the action is the unit of analysis. An action is defined as a social actor acting with or through mediational means (Wertsch, 1998). Within the action we find the constant tension alluded to above between social actor and cultural tool. Certainly, not all actions are of the same kind; the three general demarcations are as follows.

First are the lower-level actions, which are the smallest pragmatic meaning units of communicative modes, such as an utterance for spoken language, a gesture unit for the mode of gesture, or a postural shift for the mode of posture. These lower-level meaning units are of interest to multimodal interaction analysis as they allow for micro-analyses.

Second, we investigate higher-level actions, which are made up of an abundance of chains of lower-level actions; for example, a conversation is made up of chains of utterances, chains of gestures, chains of postural shifts, and so on. While a higher-level action such as a conversation is on the one hand produced through these chains of lower-level actions of utterances, gestures, or postural shifts, the lower-level actions on the other hand only come about because the higher-level action is being produced. Thus lower-level and higher-level actions co-create each other. While there is a bottom-up and simultaneously a top-down development in (inter)action between the various levels of action, it is, however, usually the higher-level action (such as a conversation) that social actors are actively focusing upon.

Third, we investigate frozen actions, which are actions entailed in objects and the environment. For example, the action of building is frozen in a house, or the action of making coffee is entailed in the cup of coffee itself, just as the action of producing a software program is embedded in the actual software program.

While there are three units of action, and any or all of them can be taken as the starting point of an analysis, there are, of course, many different levels of action. Some are smaller than the lower-level actions and some are larger than the higher-level actions discussed above. A lowest-level action might be an in-breath, and a higher-order, higher-level action might be a marriage. What is important is the fact that each action, no matter how small or how large, has a beginning and an ending point. However, neither the beginning nor the ending points of the higher-order, higher-level actions may in fact be part of the data collected for an individual study. Thus, we know theoretically that there is a beginning and an end when investigating higher-order, higher-level actions, while the actual starting and ending points may be unclear. Certainly, the lower the levels of action under investigation are, the clearer the beginning and ending points become. For example, an in-breath begins at some point and ends at another, a gesture begins at some point and ends at another, and a dinner begins at some point and ends at another.

Modal Density Foreground–Background Continuum of Attention/Awareness

Actions are phenomenological and visible or audible. But, rather than dismissing psychology, multimodal interaction analysis embeds the notion of attention/awareness into the framework. Attention and awareness are viewed as two sides of (almost) the same thing: When a social actor pays attention to an action, the social actor is also aware of it. However, attention and awareness are not always perceivable in the same way. Just think of a social

actor cutting a Christmas ham for the first time. The social actor necessarily has to pay close attention and is also highly aware of the action. But now think of a social actor (we will call her Petra) sitting in a café, holding a sleeping baby, and chatting with a friend about a problem. Petra pays close attention to the friend and the problem that they discuss, and, at the same time, she is holding the sleeping baby in her arms. She pays no attention to the baby (or so it appears), but when you think about it more, you will find that she has to be (and necessarily is) aware of the sleeping child and has to (and does)—in turn—pay some attention to it, even if only a little. Thus, paying attention to and being aware of an action constitute one state, even though sometimes we will be able to perceive this state by investigating the paying of attention, while at other times we are able to perceive it by investigating the state of awareness necessary to perform the action.

Horizontal Simultaneity of Actions

When looking at interaction in this way, we discover that a social actor is often involved in more than one higher-level action at a time: The social actor in the example above is interacting with her friend and at the very same time is interacting with the baby. She thus (co-)constructs two higher-level actions with two different social actors simultaneously, but on different levels of attention/awareness. This notion of social actors (co-)constructing simultaneous actions was groundbreaking and only possible (a) because of the multimodal lens that multimodal interaction analysis utilizes, and (b) because multimodal interaction analysis is interested in how actions are constructed in social actors' attention/awareness levels. While a social actor can always only focus on one higher-level action at a time, social actors can pay decreasing attention/awareness to many more higher-level actions. The modal density foreground–background continuum in Figure 1 is used as a heuristic tool to illustrate such simultaneous (co-)construction of higher-level actions by one social actor.

While the simultaneity of the (co-)construction of higher-level actions and the attention/awareness levels appears plausible by itself, multimodal interaction analysis uses a scientific notion, called modal density, to delineate the higher-level actions and to place them relationally on a heuristic social actor's foreground–background continuum of attention/awareness. Modal density is the complexity or the intensity that the social actor utilizes to produce a higher-level action. Modal density in simultaneous higher-level actions can be high, medium, or low, or anything in between. When thinking once more of Petra sitting with her friend and the baby in the café, we can see that she is utilizing many

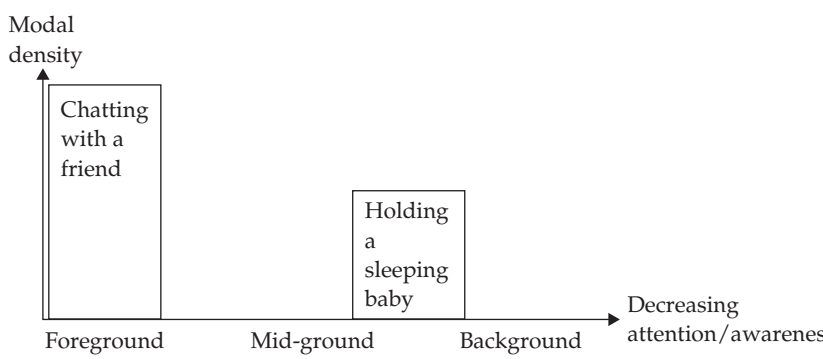

Figure 1 Petra's attention/awareness levels: She pays close attention to the higher-level action of chatting with her friend and simultaneously pays some attention to the higher-level action of holding a sleeping baby

modes highly intertwined when speaking with her friend: She uses the modes of spoken language (talking about the problem), gesture (moving her hands/arms every so often), gaze (looking at her friend and looking away at certain intervals), posture (sitting in such a way that she can easily talk with and understand her friend), proxemics (sitting close to her friend), and objects and object handling (sitting in a chair, in front of a table in a café, and drinking coffee out of a cup). There are many modes at play in this interaction which indicate to the onlooker and to the social actors themselves that Petra pays close attention and is highly aware of the higher-level action that she (co-)constructs with her friend.

When we now think about the modal density in her interaction with the baby, an interaction that she appears to pay no attention to at first sight, we find that she uses the modes of proxemics (holding the baby close to her), posture (sitting in such a way as to easily hold the baby), and touch (holding the baby close to her torso and in her arm) in this interaction. While these modes are closely interwoven, they do not build the same modal density as the many interwoven modes used in the conversation. This example is straightforward and easy to analyze, but there are many more complex simultaneous interactions which can only be analyzed through this very notion of modal density.

Multimodal interaction analysis also investigates the psychological levels of attention/awareness besides the phenomenological ones (Norris, 2007). The idea behind this is the following: A social actor has feelings when performing an action in their everyday life, and, while (co-)constructing one action with other social actors or the environment, the social actor has not forgotten what they did before, and what is even more important, the feelings often linger. Because of this lingering of feelings, prior higher-level actions often have an impact upon current ones. It is the lingering of feelings that indeed becomes phenomenological when social actors are studied over time, and it is this phenomenological appearance of the psychological states that is of interest to multimodal interaction analysis (Norris, 2007).

Vertical Simultaneity of Actions

Just as social actors are involved in more than one action at a time horizontally, so social actors' actions are embedded in more than one layer of discourse at a time vertically. Generally, we distinguish between three layers of discourse: the central, the intermediary, and the outer (Norris, 2011b).

When taking a closer look at Petra in the example above, we find Petra's lower-level actions and with them the higher-level action of speaking to her friend as well as the higher-level action of holding the sleeping baby, producing the central layer of discourse. This is the immediate layer of discourse, in which Petra as well as her friend and the sleeping baby are involved. These are the immediate, one-time actions performed.

At the very same time, Petra's action of speaking with her friend and also the action of holding the sleeping baby produce an intermediary layer of discourse. This is formed by Petra in connection with and through her networks, enacting certain long-term actions. In other words, perhaps Petra speaks with this friend much in the same way she speaks with other friends (illustrating certain knowledge in Petra's network on how she acts), or perhaps Petra speaks with this friend in a café as she never has before (thus negating the network expectation with regard to Petra's usual actions). However, only close research on Petra within her network can give a researcher the intermediary layer of discourse that Petra produces with this action. Similarly, of course, we can see that the action of holding the baby is also embedded in an intermediary layer of discourse. Maybe Petra is a babysitter and takes the babies she watches to meet her friends; or maybe she is a mother, who takes her baby everywhere. In either case, Petra enacts this action of holding the sleeping baby on an intermediary layer of discourse as well as on the central layer explained above.

Thus, on the intermediary layer of discourse, these one-time actions performed locate Petra in her network as a social actor who performs these kinds of action on a regular basis (or not).

Besides the central and the intermediary layers of discourse, Petra also enacts her action of speaking with her friend and the action of holding the sleeping baby producing and reproducing an outer layer of discourse. This is formed by the larger society, and is enforced by the extended networks that a social actor is part of and by institutions that the social actor engages with. Let us assume that Petra is in fact the mother of the baby and frequently meets this and other friends at cafés, taking her baby along. Petra thus may act in accordance with the institution called family. Similarly, when thinking of institutionalized layers of discourse, we may find that Petra speaks and acts in accordance with society's expectation of how a woman of her age is supposed to speak and act. An examination of the outer layer of discourse (institutionalization of actions and societal forces upon the actions performed) in connection with the intermediary (network forces upon the actions performed) and the central layers (micro-interactional forces upon the actions performed) may shed light upon Petra's possibly diverse higher-level actions that she is combining at this and other times.

Using Multimodal Interaction Analysis as a Method

Multimodal interaction analysis is used to analyze varied interactions in everyday life, from individuals having conversations to doctor–patient interactions and people using technological tools such as cell phones or computers in the workplace (Norris, 2004). It is used to investigate teacher–student interactions from first-grade classrooms (Norris, 2003) to individual music lessons (Norris, 2004) and stable and horseback riding lessons (Norris, 2009, 2011a).

Multimodal interaction analysis is also used for the analysis of identity in everyday life, and several methodological concepts have been established, particularly for research into identity production, relating directly to the methodological concepts discussed above. As an example, we can speak of the production of identity elements when investigating the construction of higher-level actions. Or we can speak of immediate, continuous, and general identity element production when investigating central, intermediary, and outer layers of discourse.

Multimodal interaction analysis thus allows the analysis of human (inter)action, shedding new light upon old questions such as: How do social actors accomplish successful communication? How are certain actions performed by social actors? How is personal or national identity produced by social actors acting in today's complex world? What are the roles that objects and the environment play in particular (inter)actions? Or: How many higher-level actions can a social actor perform simultaneously? Knowing that social actors' feelings from one (inter)action impact following (even unrelated) actions, what kind of an impact do lingering feelings have on other actions? But the most important question that multimodal interaction analysis asks, no matter what topic is being investigated, is: How can we use the knowledge that we gain through our multimodal investigation to alleviate some of the miscommunication and the difficulties that social actors encounter in their everyday lives? In any case, multimodal interaction analysts attempt to better the lives of those that we study.

SEE ALSO: Mediated Discourse Analysis; Multimodality and Identity Construction; Transcribing Multimodal Interaction

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Multimodal Literacy

LESLEY LANCASTER

Introduction

The terms "multimodality" and "literacy" have been associated as part of a critique of conventional accounts of literacy, reviewing traditional associations between spoken language and writing. "Multimodal literacy" is a term that has evolved from this association, and focuses on the diversity of modes and materials involved in the production and interpretation of texts. It is informed by a semiotic perspective where literacy is viewed as the design and construction of signs, using available material, bodily, and technological resources to combine forms and meanings (Jewitt, 2008a, p. 1). This takes place in social and cultural contexts, with the situation of sign-makers informing the textual choices made. It is a relatively new and developing field of study: Harste, Woodward, and Burke identified writing as a multimodal process in 1984 (p. 208), and *Multimodal Literacy*, edited by Jewitt and Kress and published in 2003, forged a new direction in literacy research. The papers in that book described literacy as a process of sign-making across curricular disciplines, with literate meanings being made, distributed, and interpreted in different representational and communicative modes. Theory and practice developed during the 1990s and beyond (Kress, 1997; Pahl, 1999; Kress & van Leeuwen, 2001), establishing multimodal literacy as a significant area of research, with considerable implications for policy and pedagogy in educational settings. A special issue of the *Journal of Early Childhood Literacy* on multimodal literacy reflected the growing acceptance of research into multimodality and literacy and its influence on educational practice (Lancaster & Rowe, 2009). Recent changes to ways in which we communicate and represent meaning wrought by new technologies, and the increasing centrality of the Internet to social and economic life, have given considerable impetus to a shift of emphasis from research into literacy as language-based practice, to research into literacy as process, practice, and representation in a number of different modes (Kress, 2003).

Relationships Between Language and Literacy

Conventional approaches to literacy view writing as a linguistic mode, concerned with the transcription of speech, and suggest that it evolved from the outset to represent language (Havelock, 1976). Many pedagogical programs for literacy teaching continue to reinforce this view by prioritizing the early teaching of sound–letter correspondences as an essential starting point for literacy learning. However, other scholars suggest that writing developed originally to communicate information (Harris, 2000), and that writing systems evolved from early counting devices and auditing systems (Schmandt-Besserat, 2002). Objects and transactions were visually represented, and Schmandt-Besserat suggests that many of the conventions of early forms of writing, such as its linear organization, and its semantic use of the form, size, order, and placement of graphic signs evolved from this. Hence visual and material forms of writing provided a conceptual model for understanding the structures of language and the representation of speech, rather than the other way round.

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In this regard, writing can be seen as essentially multimodal, in that it is able to visually represent a temporal sequence of events in a spatial form. Writing has always shown what needs to be told; Kress distinguishes between *telling the world* and *showing the world* (2003, p. 140), pointing to the increasing importance and dominance of visual images in domains of public and private communication (p. 1). This extends the relationship between multimodality and writing to include the multimodality of texts, where writing is variously combined with visual images and, increasingly on computer screens and Web pages, with visual and moving texts, and with sound and music. Meaning is distributed across modes, with each mode making a partial contribution to the total meaning of the text (Jewitt, 2008b, p. 247). Different modes have different "affordances," offering different representational features and qualities to text producers, and different meaning-making opportunities appropriate to the textual environment.

Multimodal Texts

The acknowledgment that texts represent and communicate meaning in multiple modes is to some extent a recognition of a state of affairs that has always existed. People have always mixed modes depending on the purpose and requirements of the text: for example, combining words with diagrams, drawings, and other images, and using various forms of graphic emphasis such as variations in font and layout to communicate and represent meaning (Bearne & Wolstencroft, 2007, pp. 1–3). Digital technology has vastly extended the potential for combining modes and for creating new kinds of literate texts. Screens, for example, are now ubiquitous in many public places, with news coverage that involves talk, still and moving images, and writing continuously streamed along the bottom of the screen; cell phones transmit images, sound, color, music, digital images, and writing in multiple combinations. These new communicational environments have forged new textual relationships between modes (Jewitt, 2008b, p. 257), and have unsettled traditional ones. Texting and many kinds of e-mail writing, for example, have more in common with the informality conventionally associated with talk than they do with many other kinds of writing.

Multimodality reconceptualizes commonsense understandings of literate texts, suggesting that they cannot be regarded as synonymous with written texts, and may involve writing only partially. However, this reconceptualization does not extend to metaphorical uses of the term "literacy," whereby competence and skill in any field of activity is regarded as a kind of literacy, as in the case of "emotional literacy." Multimodal literacy also redefines literacy within schools, and reconceptualizes what can be considered a literate text within a pedagogical context. Lemke (2000) considers the literacy demands of chemistry and physics in post-compulsory classrooms, and the impossibility of coding ideas solely in linguistic and written modes. Stein (2003) examined a body of stories produced by young children in South Africa, showing how their combined use of drawing, writing, spoken dialogue, and production of three-dimensional figures extended textual boundaries in a manner that was significant for the ways in which they learned. Wohlwend (2007) shows how kindergarten children pretend new technology into being in "print-centric" classrooms where new ways of communicating meaning are not welcomed. Some of the exemplars discussed by these scholars would not traditionally have been accepted as literate texts, but are examples of ensembles of signs, where the meaning of the whole is distributed across a number of modes and media.

Changing Relationships Between Producers and Texts

The association between multimodality and literacy has led to a reconsideration of the relationship between producers, readers, and texts, and between the processes of production and dissemination (Jewitt, 2008b, p. 243). This challenges the view that literacy has settled genres and fixed forms over which readers and producers have no control, and shows that literacy learning requires complex understandings of the interrelationship between bodily, material, and graphic modes of making meaning in social situations. The New London Group (Cope & Kalantzis, 2000) describes this process as a matter of design, whereby learners and producers use available material and discursive resources in order to continuously shape and transform literate forms and meanings. Kress's work on early literate practices produced groundbreaking evidence showing that children have a high level of control over the process, enabling them to "make meaning in an absolute plethora of ways, with an absolute plethora of means" (1997, p. xvii), and that in their production of signs they employ the strategy of choosing and "using the best, most apt available form for the expression of a particular meaning" (p. 17).

Multimodal literacy has also influenced thinking about relationships between mind and body in the process of the teaching and learning of literacy, recognizing it as an embodied process. Flewitt (2005) and Lancaster (2007) have highlighted the significance of different bodily modes of interaction, such as gesture and gaze, in young children's early production of texts. These are used as resources to communicate meanings interpersonally to adults and other children copresent, and might also be incorporated into the structure of the sign, for example by enacting part of a meaning by bodily or vocal means. Bodily modes are also central to classroom interactions. Studies of multimodal practices in teaching in high school classrooms in the United Kingdom (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001) reveal the complex ways in which gesture, gaze, action, interaction with objects, body posture, speech, and writing interact during the production of school subject knowledge.

Theoretical Influences

Social Semiotics

Michael Halliday's formulation of language as social semiotic (1978) had a foundational role in developing a practical and theoretical association between multimodality and literacy. Halliday defines mode as a channel of communication, with language and writing as distinct communicative modes. Children grow up in diverse social and semiotic environments, encountering networks of meanings in different modes that constitute their culture or cultures as they "learn how to mean" (p. 100). Hodge and Kress (1988) developed this concept, emphasizing the need to take account of the social place and history of children as sign makers, and of the social environments in which their signs are made. Becoming literate is a semiotic process, these authors argue, involving the production of signs, and it is also a key point in the formation of children as ideological individuals within society. There is a strong emphasis on visual meaning in the children's texts they present and discuss, which incorporate diagrams, images, and attention to layout, anticipating future developments in the field.

New Literacy Studies

New literacy studies calls into question the singular notion of literacy, preferring to use the term "literacies," thereby reflecting the diversity of situated literacy practice and distinguishing it from "autonomous" models of literacy, detached from the social environments

in which they are produced. Drawing extensively on ethnographic theory and practice, situated literacy is concerned with literacy events and practices that are situated in people's everyday lives and with their variation across cultural space and time. Like social semiotics, new literacy studies regards literacy as ideological activity, involving a diversity of practices within different communities. The field has produced some classic studies, including Heath's of the literacy practices of working- and middle-class residents in the rural Carolinas (1983). More recently the field has looked at literacy practices in online environments and digital spaces. Both new literacy studies and multimodal literacy take the view that it is impossible to isolate literacy practices from situated semiotic activity taking place in homes and communities. While these approaches have a great deal in common, multimodal literacy tends to focus more strongly on the production and use of texts, and new literacy studies on how texts in are used in different environments (Street, Pahl, & Rowsell, 2009, p. 194).

New London Group

The New London Group was established in 1994 to consider the future of literacy teaching in the context of rapidly changing economic and semiotic circumstances engendered by global capitalism, and the new demands made on people as makers of meaning. This group too eschew an autonomous approach to literacy, using the term "multiliteracies" to reflect the multiple modes and media of communication that they are concerned with, and the pedagogical significance of cultural and linguistic diversity. The group maintain that literacy and literacy pedagogy need rethinking in light of this increasing diversity and global connectedness (Cope & Kalantzis, 2000). The work of the group is also informed by an agenda of social justice: They argue that it is only through such changes to literacy practices and pedagogy that students can obtain the kinds of skills and knowledge required to achieve their aspirations in a changing world. This includes acknowledgment of the essential relationship between literacy and multimodality, and the need to take account of the rapidly changing digital landscape that informs the production of texts.

Future Directions

The association between multimodality and literacy is one that is likely to become increasingly salient as writing is progressively used as one resource of many in the production of 21st-century texts. This circumstance is driven by the development of increasingly sophisticated and versatile digital media for the communication and representation of meaning. New models of literacy will be needed that can accommodate the changing roles of writing, the diversity of tools and media used in its production, and the implications of these for literacy pedagogy and practice in all educational settings.

SEE ALSO: Multimodality and Literacy; Multimodality and Technology; Multimodal Text; Writing and Genre Studies

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Multimodal Teaching and Learning

CAREY JEWITT

Multimodality

Multimodal perspectives on teaching and learning build on the basic assumption that meanings are made (as well as distributed, interpreted, and remade) through many forms and resources of which language is but one—image, gesture, gaze, body posture, sound, writing, music, speech, and so on (Kress & van Leeuwen, 2001; Jewitt, 2009). That communication is multimodal is not, however, *new*—people have always used image and non-verbal forms to communicate. The multimodal character of communication, teaching, and learning are increasingly commonplace across a range of disciplines (e.g., anthropology, education, design, linguistics, media and culture studies, musicology, sociology). Educational studies have been undertaken within anthropology and sociology on the role of gesture and gaze in the organization and conduct of face to face interaction and social interaction in learning environments (Goodwin, 1995; Erickson, 2004), as well as research on gesture, inscriptions, and material arrangements in the science classroom (Roth, 2001). This work shares the focus of the multimodal research on naturally occurring teaching and learning practices although it retains a primary interest in the role of talk within the multimodal ensemble, and in the case of Roth an interest in cognition. My focus here is on multimodal teaching and learning from a social semiotic perspective, which is informed by linguistic theories, in particular the work of Halliday's (1978) social semiotic theory of communication and developments of that theory by Hodge and Kress (1988).

Detailed studies on specific modes have helped begin to describe non-linguistic semiotic resources, their material affordances and organizing principles, such as Kress and van Leeuwen's seminal work on images (1996), and other key works that contribute to an evolving "inventory" of semiotic modal resources. The concept of *modal affordance* refers to what it is possible to express and represent easily. How a mode has been used, what it has been repeatedly used to mean and do, and the social conventions that inform its use in context, shape its affordance. Multimodal research shows that people draw upon their available modal resources to make meaning in specific contexts. Further, these resources come to display regularities through everyday patterns of use. The more a set of resources has been used in the social life of a particular community, the more fully and finely articulated its regularities and patterns become. Consequently, any given mode is contingent upon fluid and dynamic resources of meaning, rather than static skill replication and use.

Alongside the assumption that all modes in a communicative event or text contribute to meaning, models of multimodality assert that all modes are partial. That is, all modes, including the linguistic modes of writing and speech, contribute to the construction of meaning in different ways. Therefore no one mode stands alone in the process of making meaning, rather each plays a discrete role in the whole. This has significant implications in terms of epistemology and research methodology: Multimodal understandings of teaching and learning require the investigation of the full multimodal ensemble used in any communicative event. The imperative, then, is to incorporate nonlinguistic representation into understandings of what teachers and students say and write in the contemporary

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classroom. This has implications for contemporary theorizations of literacy, pedagogy, curriculum, and learning in the school classroom.

Given emergent local foci of multimodal practices, research in teaching and learning is generally small-scale, ethnographic, and case-based—with limited analysis of the impact on teaching and learning. Much of this work is descriptive, offers detailed inventories of the resources used by students and teachers, shows how these are developed into multimodal ensembles, and draws out the implications for teaching, the construction of curriculum knowledge, literacy, and learning.

Teaching

Multimodality has been taken up to explore teaching practices in a variety of contexts and to inform models of teaching (New London Group, 1996; Cope & Kalantzis, 2000). Multimodal research has examined the ways in which teachers orchestrate a range of modal resources, gesture, gaze, position, posture, action with books and boards, and talk in the classroom. It has examined the ways in which language policy, student identities, official curriculum, and examination and school knowledge are mediated through multimodal communication in the classroom (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001; Bourne & Jewitt, 2003; Kenner & Kress, 2003; Kress et al., 2005). Comparative multimodal analysis has also examined how these patterns vary across systems and cultural contexts (Battacharly et al., 2007). Such work has shown that significant aspects of teaching work is realized through a range of modes.

Studies of multimodal practices of science and English classrooms in the UK has shown that this holds true even in a curriculum context such as English where talk and writing dominate the classroom (Kress et al., 2005). The Multimodal Production of School English project involved detailed video recording and observation of nine English teachers in three inner-London schools, as well as interviews with teachers and students and the collation of texts made and used in the classroom. The project shows the complex ways in which image, gesture, gaze, interaction with objects, body posture and writing, and speech interact in the classroom production of school subject knowledge. The School English project highlighted how students and teachers coproduce notions of ability, resistance, and identity in the classroom through their non-verbal interaction. The way in which classroom displays, space, furniture, and artefacts were designed to realize versions of English as a school subject was also documented. This research showed that the work of interpreting school English is beyond language, and requires the ability to make sense of a range of modes and the relationships between them. It also highlighted the complex multimodal identity work that students engage with in the classroom.

Significant research has been conducted on the "technologization" of teaching which explores and theorizes the nature of image and text relations across the curriculum, and relationships between books and computer-based versions of texts, as well as the interpretation and generation of new forms of multimodal and digital narratives and literacies. This work often describes new forms of literacy in an attempt to remap the terrain of the multimodal landscape, and identify the kind of practices that help teachers and students move across it. This has led to efforts to augment the technical language of linguistics (e.g., genre, grammar, and discourse), in order to describe and explain the semiotic contribution of each mode to multimodal texts. Substantial theoretical descriptions of the dynamics of interaction between image and language have been offered, for example, by the early work of Kress and van Leeuwen (1996) and Lemke's work on science textbooks (1998), and more recent work by Kress and Bezemer (2008) on contemporary curriculum materials that investigates the learning gains and losses of different multimodal ensembles. Multimodal

work raises important issues about how image, word, and design of modes are understood as available resources for meaning-making in the classroom.

Curriculum Knowledge

Knowledge is, from a multimodal perspective, understood as shaped through the choice of one mode over another, as each mode introduces consequent constraints and possibilities for the representation of curriculum knowledge. The teacher's choice of mode is therefore viewed as a process of pedagogic multimodal design, matching the target knowledge with the particular modal affordance in a given situation. Image and other non-linguistic modes come to take on specific situated roles in the construction of curriculum knowledge. For example, representation of a cell in the science classroom as an image or through writing, in colour or black and white, as a three-dimensional model or an animated sequence on a CD-Rom or webpage, makes available and foregrounds different aspects of the concept of cell. Each of these representational forms makes different demands on the learner (Kress & van Leeuwen, 2001). Different modes have differential potential effects for learning, the shaping of learner identities, and how learners find pathways through texts. The choice of mode, then, is central to the epistemological shaping of knowledge and ideological design. What can be done and thought through images, writing, or action differs in ways that are significant for learning. In this regard, the longstanding focus on language as the principal, if not sole, medium of instruction can at best offer a very partial view of the work of communicating in the classroom. Further to this, the technology of production, dissemination, and communication that is chosen is key to the shaping of curriculum knowledge.

Multimodal research enables the investigation of the role that different semiotic modes or sign systems have in classroom communication. Across both print and digital media the relationship between image and writing in educational materials (e.g., textbooks, websites, etc.) appears to be in historical transition (Jewitt, 2008; Kress & Bezemer, 2008). This change relates both to quantity and, perhaps more importantly, to the quality and function of images in a text (Jewitt, 2002). Images are no longer illustrative of writing on the page or screen; rather, a phenomenon may now be introduced and established visually. Onscreen resources frequently place image, action, sound, and other modes (including the body) in new intertextual relationships that redefine and foreground space and time (Leander & Wells Rowe, 2006). The relationship between modes in learning materials raises important questions for learning, which require a better understanding of the gains and losses realized through the representation of curriculum concepts in one mode rather than another (Kress & Bezemer, 2008). This raises serious issues about teachers' access to materials (e.g., websites, CD-ROMs, games and simulations, textbooks, and worksheets) and technologies, and how these are used in the classroom.

Learning

Understanding the communication landscape of the classroom through a multimodal lens has significant implications for learning. Thinking about learning as a process of design and choice (of representational modes) gives a new focus to the role of the learner. Design, diversity, and multiplicity emphasize the meaning-making practices and interpretative work of students. From this perspective the multimodal texts and artefacts that students make can be viewed as one kind of sign of learning, a material trace of the process of making-meaning. The interpretative work of students is reshaped through their engagement with a range of modes: image, animation, hypertext, and layered multimodal texts.

In such a view, students need to learn how to recognize what is salient in a complex multimodal text, how to read across the modal elements in a textbook or interactive whiteboard, how to move from the representation of a phenomenon in an animation to a static image or written paragraph, and how to navigate through the multiple paths of a text. These complex tasks—as against traditional taxonomies of print skills—are central to multimodal learning and development. Learning increasingly involves students in working across different sites of expression, negotiating and creating new flexible spaces for planning, thinking, hypothesizing, testing, designing, and realizing ideas (Jewitt, 2008).

New skills for reading, and for finding, authenticating, manipulating, linking, and recontextualizing information, are demanded in this multimodal symbol-saturated environment (Kress, 2003; Leander and Wells Rowe, 2006). Along with the choice of what mode to read, the structure of many digital texts opens up options about where to start reading a text—what reading path to take. This is a question that is intrinsically linked to how the relationship between mode and layout (itself an emergent mode) mediates the practices of reading and writing. The multimodal design of texts in the contemporary digital landscape often offers students different points of entry into a text and alternative possible paths through a text, highlighting the potential for readers to *remake* a text via their reading of it. The reader is involved in the task of finding and creating reading paths through the multimodal, multidirectional texts on the screen—an openness and fluidity of structure that seeps onto the page of printed books (Kress, 2003; Moss, 2003). Writing, image, and other modes combine to convey multiple meanings and encourage the reader to reject a single interpretation and to hold multiple possible readings of a text (Coles & Hall, 2001). In addition, new technologies make different kinds of cultural forms available, such as computer games and Web sites. This changes some aspects of the work of interpretation: New technologies offer the possibility of new spaces for publication and dissemination, and this has the potential to build new relationships between readers and writers in a manner that challenges and breaks down some of the traditional distinctions between them. These changes offer new possibilities for identity work and processes of reflection which are important for the future of teaching and learning.

SEE ALSO: Critical Analysis of Multimodal Discourse; Gesture Analysis in Second Language Acquisition; Multimodal Discourse Analysis; Multimodal Interaction Analysis; Multimodality and Literacy; Multimodality and Technology; Multimodal Text Analysis

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Multimodal Text

WOLF-ANDREAS LIEBERT AND THOMAS METTEN

Multimodality has become one of the basic categories used in the analysis of texts. The development of digitalized print technologies, in particular, has led to the mass duplication of text designs. Multimodal texts can thus no longer be analyzed merely according to their linguistic considerations, that is, using monomodal methods, since a multimodal understanding of a text also includes an understanding of images, text design, typography, and the materiality of the text. This entry will attempt to give an overall view of the scope of such a multimodal text concept. The definition of text on which this entry is based excludes verbal utterances or discussions as well as cultural artifacts or occurrences such as film, theater, or hypermedia. This, however, does not apply to the concept of multimodality, which has become relevant in particular in the areas of interaction and speech research. Thus, Sigrid Norris (2004) developed a methodological framework for the purpose of analyzing multimodal interaction which has contributed to raising not only phenomena such as gaze, mimicry, and gesture but also corporality to the ranks of communication-relevant categories. The long-held view that such aspects were of little value in the field of linguistics has therefore now been discarded. This also has to be viewed as a decisive innovation in the multimodal approach: "then 'language' has to be seen in a new light: no longer as central and dominant, fully capable of expressing all meanings, but as one means among others for making meaning, each of them specific" (Kress, 2009, p. 79).

Texts as Semiotic Landscapes

Kress and Van Leeuwen's studies of visual communication were at the forefront of the development of a multimodal definition of text. These authors put forward the fundamental hypothesis: "We believe that visual communication is coming to be less the domain of specialists, and more and more crucial in the domains of public communication" (Kress & Van Leeuwen, 1996, pp. 2–3) Multimodality therefore denotes, with regard to texts, the synthesis of various visual sign modalities. The *social semiotic* constitutes the basic theory of a multimodal understanding of text and works on the basis that signs have no set meaning in communicative processes, but merely create potential meaning that may be activated in different ways according to the context. Such a concept opens the way from the mere static concept of code to the dynamics of understanding. This is supported by the observations of Kress and Van Leeuwen, who wrote, "In our underpinning theory of social semiosis the idea of semiosis as work, as action, is central" (2001, p. 34).

The notion of mode is central to this multimodal approach. "Modes are semiotic resources which allow the simultaneous realization of discourse and types of (inter)action. Design then uses these resources, combining semiotic modes" (Kress & Van Leeuwen, 2001, p. 21). Here the notion of mode also serves as a means of creating a distinction between a multimodal approach and a static concept of code. However, what can be regarded as a mode within any given discourse is not always clearly definable.

Thus, Kress (2009, p. 79), for instance, classifies "writing, layout, music, gesture, speech, moving image, soundtrack and 3D objects" as modes. Similarly, color, smell, and taste—that is, the elements of sensory perception—are included (Kress & Van Leeuwen, 2001,

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p. 28). Norris (2004) suggests that modes are always and only heuristic and that they have to be defined and redefined by the researcher depending upon the focus or depth of study, or both. Thus, for Norris, modes are not pre-existent. They are heuristic units that are useful for analytical purposes. This view differs from that of Kress and Van Leeuwen and does not lend itself to a development of grammars; but it also overlaps with Kress and Van Leeuwen's view, as the concept of "mode" allows the researcher to define the communicative functions (of actions).

The appropriateness of such different aspects as modes depends upon whether these aspects possess a communicative function. It is ultimately the aim of multimodal text analyses to develop grammars for the relevant modes as well as to define the relevant communicative function. When using such an approach in the development of mode-specific grammars a differentiation must be made between the perceptions of the participants. In terms of articulation and interpretation the modes act primarily in synthesis in the formation of meaning; that is, all the modes jointly construct the meaning of a text. Kress and Van Leeuwen have introduced the term "semiotic landscapes" in order to further illustrate the fact that communication only arises through an interaction of modes (e.g., 1996, pp. 33–40). A multimodal approach therefore defines texts as semiotic landscapes: "This is a multimodal text; the modes in use are *writing, image, number, color* (and *facial expression*). Social semiotics is able to say something about the *function* of each of the *modes* in this multimodal text; about the *relation* of these *modes* to each other; and about the main entities in this text" (Kress, 2009, p. 59). According to Stöckl (2006), a multimodal approach thus increases the status of the field of semiotics, since this is the only field extensive enough to provide an analysis of various nonverbal modes over and above the narrow scope of the area of text linguistics. Academic discussion in this area has also led to the extension of the field of text linguistics into text semiotics (see Eckkrammer & Held, 2006).

The Increasing Importance of Images

A crucial factor in the development of a multimodal approach to text analysis was the phenomenon of multimodality becoming more important than a monomodal, purely verbal configuration of texts (Kress & Van Leeuwen, 2001, pp. 3–4). Western cultures have been influenced by monomodal texts for a long time now: "In books of this kind [i.e., monomodal texts] it seems that the page has ceased to be a significant textual unit" (Kress & Van Leeuwen, 1996, p. 185). The increasing importance that has been attached to images in texts during the last few decades has therefore significantly contributed to the development of a multimodal perspective, and this also clearly shows the proximity of multimodal discourse to academic exchange in the field of visual studies. The discourse on the importance of images led to the so-called "iconic turn," whose chief exponents, William J. T. Mitchell (1992) and Gottfried Boehm (1994), almost simultaneously asserted the paradigmatic shift from language to images. The various traditions of multimodal research and research into visual studies are linked insofar as they are related to the phenomenon of the "image"; however, they are distinctly different with regard to how they interpret that image. While Kress and Van Leeuwen understand images as representations and fundamentally base their assumptions on a representational concept of characters, the "iconic turn" is more closely related to the "crisis of representation" that came up with poststructuralist concepts.

The understanding of visual communication and the relationship between text and images has thus received a great deal of attention in the field of multimodal text research. The classification of the interaction of verbal and visual modes seems to be something which is fundamental in literate societies. "Written texts and images have existed together

in many registers since the emergence of writing, and inscriptions are an integral feature of many sculpted objects and architectural artifacts" (Matthiessen, 2007, p. 29). Research into multimodality also often involves studies of the bimodality of texts, if these explore the question of how photographs, drawings, maps, graphs, or diagrams on the page of a book, newspaper, or magazine are coordinated with the written language. Therefore, from a semiotic perspective an "intersemiotic semantic relationship *between* the visual and verbal modes" emerges (Royce, 2007, p. 63).

Academic discussions about these relationships, however, are frequently marked by reservations which reveal an implicit devaluation of the image. This lack of recognition for the value of the image has been embedded in tradition since ancient times and can be seen as early as the 10th book of Plato's *Republic*. Thus Eckkrammer and Held (2006), for example, conceive forms of visual rhetoric as a reaction to purely emotional needs, and in so doing, devalue images in comparison to the more cognitive resource of language. The concept put forward by Eckkrammer and Held is often accompanied by the preconception that the meaning of images is indefinite, thereby necessitating the verbal definition of the content of those images. The concept of multimodality is directed against such a hierarchical classification of the relationship between texts and images, since this classification primarily results from the expression of cultural preferences (see Kress & Van Leeuwen, 1996, pp. 16–17). Images are thus not merely illustrations of a written text and can therefore not be regarded as redundant. In fact, the possible functions of images and the resulting relationships to text are far more complex. Thus text and images can, for instance, define each other reciprocally, extend each other's meaning, and function in or be integrated into a sequential relationship, as in a narration.

Research into such relationships in text now appears to be an established field. The prominence of the relationship between text and image has, however, led to the ignoring of transitions between the verbal and visual modes. Scripture can, however, be perceived in the form of language or images. Visibility implies iconicity. This is made clear in the phenomenon of text design.

Text Design and Composition

A multimodal understanding of texts has elevated the field of text design to one of the central categories within the analysis of texts, although for a long time monomodal artifacts even denied the existence of such an understanding. Kress and Van Leeuwen observed "that the layout of the densely printed page is still visual" (1996, p. 185). In this respect the irony of the "iconic turn" is the fact that texts have always been designed with visualization in mind, although it wasn't until after the "turn" that this concept was commonly realized within academic studies of texts. The ever-increasing possibilities in the area of digital design of printed matter in the last few years have led to the increased recognition of the visual dimension in printed texts. Thus, an upgrading of the significance of the iconicity of text took place from its former classification of being merely one element in the language system. Kress and Van Leeuwen focus in their analyses on the composition of meaning: "the visual component of a text is an independently organized and structured message—connected with the verbal text, but in no way dependent on it: and similarly the other way round" (1996, p. 17).

Bucher in particular has repeatedly introduced the expression "text design" into discussion of multimodal text understanding since the 1990s, in order to create a category for the purpose of describing design strategies in texts. While Kress and Van Leeuwen formulated the term "text design" as abstract and with reference to the combination of modes, Bucher in contrast placed greater emphasis on the communicative purpose of text design, thereby dissociating himself from a semiotic concept in a narrower sense (see

Bucher, 2007, p. 66; 1998). Text design includes aspects such as placement of an article, extent, and positioning on the page, as well as the setting of priorities and the use of images. These are, however, concrete aspects which Kress and Van Leeuwen also defined. In the transition from image to text design there are additional elements such as colored backgrounds, graphic design elements, tables, and the possibilities of diagrammatic text arrangement.

The communicative benefit of design becomes evident if one considers the example of a recipe in Figure 1. Recipes constitute a profoundly standardized text type, which as a rule consists of a list of ingredients for the relevant dish and a description of its preparation. Figure 1 displays a text which, with regard to its content, is designed as a script to instruct how to prepare a dish. However, by means of text design an artistic transition takes place, resulting in the exclusion of the separate list of ingredients. This is achieved by means of a rearrangement of the text on the page, so that the ingredients are displayed in the left-hand columns at the points at which they are needed for the preparation instructions in the right-hand column, as well as by typographical means—the use of italics for the ingredients. The design of the text in this case makes it possible to maintain the specific functions of a recipe, namely "display of the ingredients" and "instructions on preparation," without having to designate these separately.

With the aid of this example a further dimension appears which is relevant to the multimodal approach to texts. The cooking recipe is not read in a linear fashion, but may be, according to necessity, viewed as a list of ingredients or instructions. Nonlinearity is thus shown to be a central feature of multimodal texts, and as such has been associated with the structure of hypertexts. In line with the multimodal perspective on texts it is evident that the assumption that the process of reception is linear is now outdated. (see Bucher, 1998).

Typographic Design and Typeface

Although composition and text design are a central feature in discourse in the area of multimodality, within this the area of typography has hitherto been barely broached. Sue Walker made the following observation in this regard: "The study of graphic language, concerned with the visual representation of thoughts and ideas, has largely been ignored by linguists, though there is growing interest in this area" (2001, p. xi). Stöckl also recognized the need for the establishment of such an approach, thus: "A multimodal perception of text and one emphasizing materiality demands graphic representation" (2004b, p. 7). Therefore it wasn't until the last few years that the development of a perspective on the design of texts led to typographical aspects receiving increased attention from linguists. A multimodal perception of text opens up the possibility of comprehending the aesthetic value of typeface and relating this to aspects such as the thematic structure and function of any given text.

The choice of typographical style and aspects such as size and color then fall into the micro-realm of multimodal studies. In the meso-realm characters, words, and spacing are of importance, and in the macro-realm it is the arrangement of script blocks in relation to bodies of text. Text design in the macro-realm is therefore already an integral part of overall text design. In this regard, Figure 1 can also exemplify how "Using space and graphic marks to make it clear visually which bits of text relate to which is an important aspect of text articulation" (Walker, 2001, p. 11). Stöckl assigns several functions to the field of typographic design such as readability of the text, focus of the materiality, emphasis of specific statements, or the awakening of emotions (2004b, p. 40). The accentuation of these functions, however, continues to display an implicit degradation of typographical factors.

Marinierter Rehrücken
4 Portionen

	Backofen auf 200 °C vorheizen.
1 kg Rehrücken	waschen, trocken tupfen und entlang dem Rückgrat an beiden Seiten so einschneiden, dass sich die Filets aufklappen lassen, aber noch an den Rippenenden mit den Rippen verbunden sind.
1 Bund Petersilie	und
6 Zweige Thymian	waschen, Blättchen von den Stielen zupfen, mit
1 TL Rosmarin	und
4 Wacholderbeeren	hacken. Kräuter und Gewürze mit
4 EL THOMY Sonne & Olive	mischen. Die Filets aufklappen, innen mit der Marinade einpinseln, zuklappen und von außen einpinseln. In Folie wickeln und mehrere Stunden marinieren.
MAGGI Würzmischung 1	Fleisch auspacken, mit würzen und mit
Küchengarn	umwickeln. Durch das Rückgrat einen Metallstab schieben, damit es sich beim Braten nicht verbiegt. Im Backofen ca. 55 Min. garen. Fleisch warm stellen.
1/4 l Wasser	Bratenfond mit vom Blech lösen, in einen Topf gießen, zum Kochen bringen und
1 Päckchen MAGGI Delikatess Soße zum Braten	einrühren, unter Rühren aufkochen und 1 Min. kochen. Mit
1 EL Aceto Balsamico	und
1 EL Rotwein	würzen und abschmecken. Rehrücken ablösen und in Stücke schneiden.
1 Dose (425 ml) LIBBY'S Natursüß Birnen, halbe Frucht	abtropfen lassen. Den Rehrücken mit der Soße, den Birnen und
4 TL Preiselbeeren	auf Tellern anrichten.
Brennwert je Portion:	2075 kJ (496 kcal)
Nährwerte je Portion ca.:	E: 57 g; KH: 15 g; F: 23 g

Badische Rehkeule
8 Portionen

	Backofen auf 200 °C vorheizen.
2 kg Rehkeule	häuten, waschen, trocken tupfen und den unteren Knochen auslösen.
75 g Speck, fett	in Streifen schneiden, die Rehkeule damit spicken und mit
MAGGI Würzmischung 1	würzen.
75 g Speck, fett	in Würfel schneiden, in die Fettpfanne geben und die Rehkeule darauflegen.
1 Lorbeerblatt	und
5 Wacholderbeeren	zufügen. Ca. 90 Min. braten. Zwischendurch mit
1/4 l Rotwein	und der Bratflüssigkeit begießen. Fleisch herausnehmen und warm stellen.
	Für die Soße: Bratflüssigkeit mit
Wasser	auf 1/2 l ergänzen.
1 Doppelpackung MAGGI Delikatess Rahmsoße zu Braten	einrühren. Unter Rühren aufkochen.
2 EL Johannisbeergelee	unterrühren.
	Für die Pilze:
1 Zwiebel	schälen, in kleine Würfel schneiden.
20 g Butter oder Margarine	In einem Topf heiß werden lassen und die Zwiebel darin andünsten.
1 Dose (190 g) Pfifferlinge	abtropfen lassen, zugeben und ca. 5 Min. mitdünsten.
2 EL Crème fraîche	unterrühren. Mit
Fondor	und
Pfeffer aus der Mühle	würzen und abschmecken. Mit
Petersilie, gebackt	bestreut servieren.
	Rehkeule mit Pilzen und Soße auf Tellern anrichten.
Brennwert je Portion:	2131 kJ (509 kcal)
Nährwerte je Portion ca.:	E: 56 g; KH: 7 g; F: 27 g

Figure 1 Example of a recipe (© "MAGGI Kochstudio—Das Kochbuch," Mosaik Verlag)

The study of typographic design as a relevant dimension in the area of multimodal texts must, however, also take into consideration that such a view is subject to a perspective relative to culture. As an opposing model to typography one might cite the paradigm of calligraphy, which generally includes aspects of artistic writing. Therefore, not excluding

aesthetic aspects such as could be seen in calligraphy lends itself to the use of more general terms such as typographic design Since the design and appeal of typeface are always dependent on varying materials, a multimodal perception or notion of texts understands these as tangible artifacts. Various materials such as paper, leather, stone, cloth, wax, wood, or clay, which are marked using colors or ink, may be used as a background. One can fundamentally differentiate according to whether this marking is done by hand or by machine. Pencil, fountain pen, stylus, or brush may be used as well as print technology and printing machines. In addition, the surface can be carved and/or printed by using a variety of methods. Kress and Van Leeuwen (1996, p. 231) observed, however, in this regard, "For the linguist, we think, surfaces and substances tend to be non-material until the very last, when an utterance is spoken or written, so that this last link in the chain of inscription . . . may seem less or even least significant." The theoretical basis for the examination of typographic design has hitherto not been greatly elaborated on and will require a greater level of research in the future.

The Disappearance of the Text Surface

The previous section demonstrated that on the basis of a multimodal notion, the surface of a text itself could in fact be deemed as relevant; however, it is still often subject to a degradation of its importance. It has hitherto not been possible for visual text phenomena to achieve a comprehensive upgrade of their importance. Text design and typography are still partially portrayed as a secondary semiotic system and as such are still regarded as subordinate to the language system's right of primacy (see Wehde, 2000; Stöckl, 2004a; Spitzmüller, 2006). Thus the discussion about their status has not yet reached its conclusion. However, if one looks back over the history of text design and typeface, one can recognize why such aspects were for the most part hitherto excluded.

The invention of the printing press with movable letters by Gutenberg is usually considered a turning point. If, however, one observes how the visual appearance of texts changes historically, one can see that the decisive development had begun 300 years before Gutenberg, during the 12th century. During this period the manuscript received a new character with the page image, chapter introduction, table of contents, and synopses. Gutenberg's invention didn't lead to a successive change in the appearance of text; rather he manufactured his letters based on the handwriting in the manuscripts. In total he used 299 different letters which resulted in typeface that was in no way inferior to that of a skillful scribe and was improved by hand if required (see Braun, 2006, pp. 230–2). Illich (1991, pp. 105–10) described the printing plate as the reification of a unified system of text design. Economic developments and the reduction of the printing devices to print just the letters of the alphabet led in the long term to a further simplification of the design of texts. Text, previously based on pen, ink, and paper, was thus changing to an abstract which was starting to detach itself from the physical reality of the page and could be regarded as independent from its tangible appearance.

During the course of the centuries the establishment of a unified and reduced print layout has led to the loss of the illustrativity of the written or printed page. The aesthetic expressive quality of a text was brought down to an absolute minimum (see Stetter, 2005a, p. 128). The principles of such a typographical culture are homogeneity, uniformity, and reproducibility (see McLuhan, 2003). This is the only way that the transition could be made from the visualization of a text to a mere language system and semantics which have dominated the monomodal perspective for a long time. If one considers that the constellation of language, script, and image harbors two interfaces, it becomes evident that linguistic research has paid most attention to the written language, while disregarding typeface.

Criticisms of Multimodal Perspectives on Text

Based on the historical developments that have taken place, the question has now arisen in current research of to what extent the development of a semiotic approach—as put forward by Kress and Van Leeuwen in their concept of multimodality—itself emerged in the face of the monomodal domination of linguistic understanding. Although much has been drawn from the field of semiotics in the context of multimodal research in order to enrich its orientation to language, a semiotic conception nevertheless reaches its limits ultimately, since the emergence of semiotics in a culture focused totally on written script is basically flawed. Thus a multimodal concept always acts on the assumption of the existence of varying modes, although these may themselves be the product of analysis. The fact that certain modes are considered to be significant and verbal modes are still a central focus, depending on their position, therefore demonstrates just how strongly Western cultures are influenced by the perception of written language.

The contribution of the concept of multimodality is, however, easier to understand if one considers it as distinct from the neighboring concepts of multisensuality and multimediality (see Table 1). The concept of multisensuality stems from the research conducted into linguistic cultures in the Middle Ages. In a culture which is oriented toward oral expression the communicative processes are tied to people and their senses. Perceptions in such cultures are differentiated according to whether they are visual, acoustic, or tactile. Textual artifacts thus have qualities such as colorfulness or a specific weight. The perception of text is multisensual insofar as the various aspects of a text interact in their reception.

This differs from a semiotic perspective which follows the concept of multimodality. Such a perspective classifies the various aspects in terms of the level of their differentiation and describes modes like text and images as grammaticalized phenomena. The formulation of such grammars forms the basis of the aim of multimodal research (see Kress & Van Leeuwen, 1996, p. 3). This issue is analytical and as such to be differentiated from the synthetic perception of the recipients. Multimodal research thus does well to isolate its own analytical interest from synthetic perception within the communicative process and not apply these equally to people. If with regard to aspects such as color a differentiated use can be identified, then this may be also described as a mode. This, however, does not assume any awareness of a mode on the part of the producer, since comprehension often simply proceeds casually. Thus a multimodal analysis must not presuppose the existence of modes, but may understand these as results or the product of the analysis.

The third perspective is oriented toward technologies and designated by the term multimediality, a differentiation which is also made within the area of multimodal discourse. "It follows that multimodality and multimedia are not quite the same thing. Radio . . . is multimodal in its affordances, because it involves speech, music and other sounds; but it is monomedial" (Kress & Van Leeuwen, 2001, p. 67). Media such as television and radio are therefore technical apparatuses which "outsource" the human senses: The camera "outsources" sight, the radio the sense of hearing, and so forth. Technologies can thus be

Table 1 Areas of reference

Area of reference	*Theoretical conception*	*Dimensions*
Perception/Senses	Multisensuality	Visual, acoustic, haptic, olfactory, tactile
Symbols/Modes	Multimodality	Script, image, gesture, facial expression
Technology/Media	Multimediality	Television, cinema, radio, newspaper, journal, book

conceptualized under the term of the 'dispositive' in the sense of Foucault (1978, p. 119). They create the conditions for the formation of meaning; that is, they form a framework or set a stage in which signs or symbols can be perceived, and they are also relevant for the production and distribution of meaning. In this respect they correspond to the level of perception. Such a classification thus enables the findings of multimodal research to be understood independently from the communicative process, while still using that communicative process as a basis.

Multimodality and Media Theory

In the course of the examination of nonverbal issues during the last few years, there has been repeated mention of the relevance of making communicative processes perceptible (see Fix, 2008), as a dimension of communication above all from a media theoretical perspective. Media theoretical positions, however, have hitherto played almost no role within the area of multimodal discourse, although there are future possibilities to expand the development of media theory, such as reflection on the role of script in the cultural development of Western societies. Script has been the subject of discussion in various schools of theory since the 1950s. In particular, the Toronto School of Communication in Canada and its main protagonists, namely Harald A. Innis, Marshall McLuhan, Eric A. Havelok, Ian Watt, and Jack Goody, examined the importance of script and its influence on the history of the Occident. McLuhan developed ideas on the design of magazines and advertisements as early as the 1930s. His *The Mechanical Bride* (1951) drew attention to aesthetics in advertisements and commented on these in order to encourage a detached view of and also to gain a real perspective on front pages and advertisements. The design of magazine titles, advertisements, and newspaper pages brought as early as 80 years ago the need for a different approach to texts. This was an issue which is today linked to a multimodal perspective on texts. Thus the works of McLuhan appear even now to be extremely current from a multimodal perspective. In addition, McLuhan (1962) also dealt with the development of text design and printing and termed these processes "the Gutenberg galaxy." The expression doesn't merely designate an era in the age of printing—which means being able to reproduce texts by means of specific print technologies.—but rather signifies a system of text design which resulted in a system of culture, and at the same time had an influence on the development of that culture. This is exactly the point Norris (e.g., 2004) makes.

In France it was above all poststructuralism that opened up a field of discussion in which script became relevant. Kress and Van Leeuwen refer to the French text theorist Roland Barthes and draw on his work for the concept of multimodality. The link between the concept of multimodality and the increasing dynamic of concepts of sign theory, however, may also be further developed from the philosophy of Jacques Derrida. Derrida's work has to date not been acknowledged in the field of linguistics although he concerned himself intensively in his main early work *Grammatology* (1967) with Saussure's linguistic conception. The conception of media philosophy put forward by Derrida emphasizes the relevance of materiality for the communicative process and is based on a notion of script in terms of labels. The approaches displayed here possibly open an expanded perspective for a multimodal comprehension of text, although as yet in media theory no substantiated notion of text exists. These theoretical traditions have thus far hardly been considered in discussions in the area of multimodal concepts because of the prominent position of semiotic concepts. It is quite possible, however, that these traditions could open up a new dimension and might even form the basis of a linguistic aesthetic sense, as demanded by Stetter (2005b).

SEE ALSO: Multimodality and Hypermedia; Multimodal Text Analysis

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Multimodal Text Analysis

KAY L. O'HALLORAN AND BRADLEY A. SMITH

Multimodal text analysis has become a crucial part of research, teaching, and practice for a wide range of academic and practical disciplines. A variety of techniques, theoretical frameworks, and methodologies have therefore evolved for such analysis. For linguists, in particular, concerned with accounting for the communication of meaning within texts, issues arising from the consideration of semiotic resources other than language, in interaction with each other and with language—such as gesture, gaze, proxemics, dress, visual and aural art, image–text relation and page layout, cinematographic and sound design, production resources, and so forth—have emerged in recent decades as important challenges. Meanwhile, the emergence of multimodal studies as a distinct area of study in linguistics has also revealed a range of issues specifically relevant to the multimodal text analyst.

Multimodal analysis includes the analysis of communication in all its forms, but is particularly concerned with texts which contain the interaction and integration of two or more semiotic resources—or "modes" of communication—in order to achieve the communicative functions of the text. Such resources include aspects of speech such as intonation and other vocal characteristics, the semiotic action of other bodily resources such as gesture (face, hand, and body), and proximics, as well as products of human technology such as carving, painting, writing, architecture, image and sound recording, and, in more contemporary times, interactive computing resources (digital media hardwares and softwares). Different semiotic resources bring with them their own affordances and constraints, both individually and in combination, as well as analytical challenges in terms of the natures of the media, the detail and scope of analysis, and the complexities arising from the integration of semiotic resources across media.

While it has long been understood that human meaning in the round involves more than simply the (written) language studied by the early linguists (see Saussure's observations on the need for a semiological science [1916/1974, p. 16] "that studies the life of signs within society"), practical and theoretical challenges have meant that it is only in recent decades that a distinct field of multimodal studies has begun to emerge, and many issues remain unresolved within this field, particularly with respect to text analysis. Halliday (1985) has observed that it was not until the wide availability of sound-recording technology (in particular, tape) that widespread empirical study of authentic natural spoken discourse began, with profound consequences during the 1960s and 1970s for linguistic theory and methodology. Yet studies of speech, as well as other modalities, have long remained tied to the analysis of transcriptions rather than a direct, ongoing engagement with the source text, bringing issues of transcription to the fore that are relevant to multimodal text analysis (see Ochs, 1979, for a discussion). The reasons for this constraint are clear: in the first instance, the difficulties of accessing and annotating dynamic audiovisual media such as sound and film are manifest, and modern interactive hypermedia have added further difficulties (e.g., Lemke, 2002). Second, and as a result, without such access and annotation capabilities a close, repeated, analytical attention to the source text has been difficult, meaning either that theoretical development has tended to occur without extensive grounding in empirical analysis, or that when such grounding is present—where multimodal analysts derive general principles from the close, sustained study of multimodal

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phenomena within actual text—the texts tend to be static (visual) media or such as can readily be examined and reproduced on the printed page. If the texts analyzed are dynamic, the issues of transcription, multimodal analysis, and reproduction for publication are palpable, particularly in print-based approaches which offer limited resources for multimodal text analysis (e.g., Baldry & Thibault, 2006; O'Halloran, Tan, Smith, & Podlasov, 2010; O'Halloran, 2011a).

Two major strategies have thus emerged for dealing with these challenges, constituting two of the major approaches by which multimodal text analyses can be characterized: one is to explore theory, using text analysis as both test and illustration of the discussion of general principles; and the other is to explore actual texts, working from such analyses toward generalizations. The first approach does not assume and indeed problematizes theory, and much of the work is involved with comparing and integrating knowledge and practice from often disparate theoretical traditions. Multimodal studies suits such an approach, when one considers the wide range of disciplinary and theoretical traditions to which multimodality is relevant. In this approach, theoretical generalization is often applied to analyses across several different texts and text types, in order to derive, test, and illustrate general principles. The second approach is to pay very close attention to and work from actual specific texts, where the focus is upon the text, building up detailed description, often as a form of running annotation (particularly if the text is dynamic), and usually adapting and applying an established theoretical and descriptive framework, but deriving descriptive generalizations out of such text analysis and modifying theory as a result. In this approach, analytical detail is paramount, and again, the challenges of access, transcription, analysis, and reproduction in publication are all too apparent.

It is interesting to note that two pioneering works in multimodal text analysis, roughly contemporaneous, can be characterized with respect to these generalizations. The first derives from, among other influences, a synthesis of social semiotics, European semiotics, and critical discourse analysis traditions. The exemplar work is Kress and van Leeuwen (1996), where powerful theoretical generalizations from these different schools of thought are applied, calibrated, and synthesized via consideration of a diverse range of texts. The multimodal text analysis appears as both a reference and an illustration for the discussion at hand; but it is the theoretical discussion which drives the analysis and text description: generalizations are paramount, while the analysis is usually conducted and presented discursively. Thus, Kress and van Leeuwen (1996) begin a general discussion about the title of the book, highlighting the difference between a "grammatical" and a "lexical" approach to the semiotics of visual design from the perspective of social semiotic theory; stressing the importance of the distinction between formal and functional theories; and highlighting the relation of specific multimodal features, structures, and systems to more general social (particularly power) structures and (ideological) forces:

> The dominant visual language is now controlled by the global cultural/technological empires of the mass media, which disseminate the examples set by exemplary designers, and through the spread of image banks and computer imaging technology, exert a "normalizing" rather than explicitly "normative" influence on visual communication across the world. Much as it is the primary aim of this book to describe the current state of the "grammar of visual design," we will also discuss the broad historical, social and cultural conditions that make and remake the visual "language." (Kress & van Leeuwen, 1996, pp. 4–5)

The second approach was pioneered and is best represented by the work of Michael O'Toole (2010 [1994]). O'Toole (1995, p. 159) provides an "adaptation of Systemic-Functional grammar" as "at least some shared (or sharable) terminology and assumptions," stating: "My

thesis is quite simple: Michael Halliday's Systemic-Functional linguistics offers a powerful and flexible model for the study of other semiotic modes besides natural language, and its universality may be of particular value in evolving new discourses about art." Here, as in later studies O'Toole's work has a characteristically close analytical orientation to specific texts, explicitly working, in the first instance, analytically from the text itself rather than from perspectives outside of the text, such as historical, biographical, or mythological interpretations. O'Toole (1995, p. 159) prophetically argues that "a proper semiotics will only grow out of a large body of analysis, description, interpretation and theory by people with a range of orientations."

Thus O'Toole advocates an approach that provides tools, adapted from linguistic theory and description, for working from specific texts—(and the title is significant in this regard), while Kress and van Leeuwen (1996) develop an approach that explores generalizations out of the study of different types of theory and text, and from the integration of theories to apply to texts in general, including, importantly, extratextual perspectives (e.g., related to the analysis of ideology, historical power structures, and so forth). However, O'Toole (1994) also later works toward social semiotic generalizations, drawing upon a wider range of theoretical traditions; and Kress and van Leeuwen include a wealth of useful analysis derived from the application of a coherent theoretical framework: The difference, that is, is one of approach and aim.

In both these foundation works in multimodal studies, although reference is made to the study of dynamic audiovisual text, there is a preponderance of static visual art as data. Earlier multimodal text analysts also either tend toward an analytical focus on static visual text (e.g. Barthes' famous 1957/1972 *Paris Match* analysis) or, when confronting dynamic (audio, visual) texts, are compelled to rely on discursive description or generalization rather than on the presentation of detailed empirical analysis as the foundation for discussion. In practical terms the analysis of static art is relatively feasible even within the constraints of the printed page, while the multimodal analysis of other media, as discussed earlier, points clearly to the difficulties of representing on the printed page the mass and complexity of detail involved in multimodal analysis, and of capturing the dynamism and dimensionality of audiovisual film, hypermedial navigation, and so forth (e.g., Lemke, 2002; Baldry & Thibault, 2006).

Thus, while the difficulties of multimodal text analysis are apparent in most works which explore this field, there has nevertheless been built up over time a corpus of detailed multimodal analysis which has provided the means for testing, exploring, and illustrating ideas about how multimodal communication works. It is important to recognize in this respect that while it is only in recent decades that extensive multimodal text analysis has heralded the emergence of a distinct field of multimodal studies, in fact the study of multimodal communication and artifacts can of course be found in the long lineage of works within anthropology, archaeology, art criticism and history (painting, sculpture, music, theatre, opera, film, and so forth), computer science, engineering, psychology, and all fields of research engaged with human or nonhuman communication. The related practical disciplines, such as the various forms of art, also provide ample material for multimodal text analysts to draw upon. In addition, in recent decades the rapid increase in sophistication and availability of technological (particularly computational) resources and techniques for analysis of multimodal text has no doubt driven the rapid increase in multimodal analyses appearing within a range of disciplines, vastly improving, as technology did for the study of speech earlier, our access to and understanding of multimodal text using, for example, multimodal annotation software (e.g., Praat, ELAN, MacVissta; see Rohlfing et al., 2006). The ongoing development of interactive digital techniques, along with the increasingly collaborative nature of research in the 21st century, points to a period of further growth in coming years within this field.

It is clear that both the empiricism of detailed, exhaustive text analysis (coping with the challenges this raises) and the ongoing problematization and exploration of theoretical generalization and abstraction are needed for the development of resources for and practice of multimodal text analysis. In addition, multimodal text analysis requires the integration of both low- and high-level analyses: As with early studies of intonation, the study of multimodality has been centrally concerned with the material plane, the organization of the physical (including technologically driven) phenomena by which meaning is created, in their relation to higher-level grammatical and semantic organizations such as abstract, semiotic systems and structures. How to relate what Hjelmslev (1961) called the content and expression planes has been a central challenge for multimodal analysts, and this challenge has become more acute as sophisticated instrumental analysis—particularly computational automated techniques for feature extraction—make possible the analysis of primarily low-level features within large corpora of multimodal text. The availability of such techniques is both a great opportunity and a difficulty for scholars of multimodal communication: One major challenge is to trace and make explicit the path from such automatically detected features to the sociocultural patterns significant to multimodal analysis of text, in ways that draw upon the respective riches of computational and semiotic sciences, as well as the knowledge and practices of other disciplines such as mathematics, physics, psychology, ethnography, and so on. The immediate demands of multimodal text analysis in fact become the site for the exploration of synergies between disciplinary and theoretical traditions, as we seek to understand actual texts through the kaleidoscope of the multitude of relevant perspectives.

The variety of work and approaches within this range of somewhat disparate fields of science and humanities research constitutes both a rich resource and a challenge for the multimodal analyst. One must sort through the complementarities, inconsistencies, and redundancies of the different approaches and perspectives, working out which types of analysis suit which research project—some approaches being more appropriate to certain tasks than others. This has been a key issue with respect, in particular, to the adaptation and application of linguistic theory and description, which has been an important influence upon multimodal studies. Multimodal analysis must of course include analysis of language where relevant; but in the analysis of semiotic resources other than language, whether involved in intersemiotic relations with language or not within a particular text, the question of how much of linguistics can be adapted for the analysis is still an open one (Machin, 2009). It is important to note in this respect the difference between the application of general theoretical principles and the adaptation of a specific description (of, for example, language or languages): As O'Toole has shown, it is the former (social semiotic theory) that drives the development of descriptions of semiotic resources other than language, while the latter (linguistic descriptions) can nevertheless provide useful materials, if appropriately adapted, for such descriptions. But the same question can be applied to work within all relevant disciplines: Determining the affordances and constraints of theories, descriptions, and methodology adapted and applied from existing disciplines and traditions is a crucial challenge for multimodal text analysts.

Other issues remain for the multimodal text analyst. For example, the issue of corpus constraint continues to challenge multimodal text analysts: Gathering multimodal corpora has become increasingly difficult, not least because of ethical concerns which become acute when audiovisual recording of naturally occurring discourse is available. There are also difficulties in terms of data collection (such as the recording process itself, often involving technical expertise not always at hand for multimodal analysts), and the dynamism and hypertextuality of contemporary interactive digital media have compounded this issue. The issues of detail, scope, and complexity also continue to bedevil multimodal analysts, an issue raised as early as the 1960 study of the psychiatric interview *The First Five Minute*s

(Pittenger, Hockett, & Danehy, 1960), but becoming increasingly evident with the availability of sophisticated interactive digital software applications which provide platforms for an ever-more minute analysis of multimodal phenomena. As Halliday and Greaves (2008) point out, the human analyst can never be replaced by computer-based or other technology-based approaches, but such resources increase the power of our analytical reach (for example, via low-level feature extraction, mathematical processing, visualization techniques), presenting richer but more complex and detailed phenomena to analyze. A key issue for 21st-century multimodal text analysis is to find principled ways of sorting through and making sense of such complexity and detail.

The applications and value of multimodal text analysis are immense. Multimodal communication is central to human existence, and yet such is the nature of multimodality—the joining of abstraction and material in semiosis—that this is an area of the natural world that still remains relatively underexplored, and not well understood, compared with the material plane. Jewitt (2006) and others (e.g. Lemke, 1998; Unsworth, 2008; O'Halloran, 2011b) have shown how important an understanding of multimodality is to the study of classroom discourse and education; the integration of knowledge and techniques from multimodal semiotics science promises new approaches to the development and study of computational science; and multimodal text analysis has been shown to be crucial to a consideration of a wide range of fields (e.g., Jewitt 2009). The proliferation in forms of contemporary interactive digital media and the ubiquity of their use puts demands upon scholars of human communication to keep up with wider sociocultural developments. What is required at this stage in the development of multimodal studies as a field is the sort of empiricism of extensive text analysis that revolutionized the study of language during the 1960s and 1970s. To do this will inevitably require that analysts of multimodality learn to use (particularly contemporary digital) multimodal resources and techniques in order to appropriately deal with the natures of such media: to paraphrase Firth (1957), to turn multimodal language back on itself.

SEE ALSO: Kress, Gunther; Multimodality and Technology; O'Toole, Michael; van Leeuwen, Theo

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Multimodality and Comic Books

MARÍA JESÚS PINAR SANZ

In recent decades there has been an increasing interest in the way several semiotic modes relate to each other and how their combination within a sociocultural domain results in a semiotic product or event (Kress & van Leeuwen, 2006; Kress, 2010). Text and images are increasingly coming together, creating multimodal texts. The relation between the verbal and the visual has been amply studied in different fields such as picture books (Nikolajeva & Scott, 2001; Moya & Pinar, 2008, 2009), mathematical discourse (O'Halloran, 1999), scientific texts (Lemke, 1998), political cartoons and billboards (El Refaie, 2003, 2009; Pinar, 2008), or simply signs (Kress, 2010), among others. Most of these studies follow a systemic-functional and/or social semiotics theoretical framework (Halliday, 1994; Kress 2010). Increasingly, multimodality is also studied and theorized within the cognitive linguistics paradigm. This entry offers an overview of the interplay of multiple modes of meaning-making in comics, focusing mainly on linguistics-inspired work. Unfortunately, it has to forgo much relevant work originating in other fields, such as the comics scholarship.

Work in the field of comic books—including graphic novels, web comics (Zanfei, 2008; Goggin & Hassler-Forest, 2010), and autobiographical comics (El Refaie, 2011)—is becoming increasingly popular. They can be considered as a genuine multimodal genre whose meaning is constructed out of combinations of different modes, and where each mode has a specific task and function. Kress (2010, p. 79) states that a mode "is a socially shaped and culturally given semiotic resource for making meaning." He includes a number of modes used in representation and communication: image, writing, layout, music, gesture, speech, moving image, soundtrack, and three-dimensional objects. Forceville (2009, p. 23) also includes smells, tastes, and touch. According to Kress (2010) these modes form modal ensembles "based on designs or selections and arrangements of resources for making a specific message about a particular issue for a particular audience" (Kress, 2010, p. 28). In comics, most of these modes are used for meaning-making, either in monomodal or multimodal combination, in order to convey a sequential narrative and to produce an aesthetic response in the viewer (Eisner, 1985; McCloud, 1993, p. 9).

Multimodality in comic books has been the focus of interest of several researchers, mainly from an interdisciplinary approach. McCloud (1993) is a pioneer in this field. He introduced several terms to explain the relationship between the verbal and the visual in comic books, ranging from "word-specific" or "image-specific" (one mode carries the meaning and the other adds nonessential detail) to "interdependent," where both modes together produce meanings that neither could convey alone (McCloud, 1993: 153–63; El Refaie, 2009). This seems to be the most popular word/image combination in comics.

Other authors within the field of multimodality and comic books are Baldry and Thibault (2006), who include a multimodal transcription of a comic strip and an analysis of two single panel cartoons; Forceville (2005) and Eerden (2009), who study the visual representations of anger in Asterix; Shinohara and Matsunaka (2009), who focus their attention on pictorial metaphors of emotion in Japanese comics; Kaindl (2004), who analyzes multimodal aspects in the translation of humor in comics; Yannicopoulou (2004), who researches visual literacy in preschoolers' reading comics, and Forceville (2011, p. 875), who presents a model to research pictorial runes "by inventorying and categorizing all specimens occurring in

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a single Tintin album"; and Cohn (2007), who studies the varying levels of representation in visual language in comparison to the structural makeup of verbal language in order to define visual lexical items in comics. Cohn (2010) also studies metonymy, conceptual metaphors, and blending in an advertising campaign. All these authors agree with the fact that a model of analysis for comic books construed on the basis of language alone "may ignore or downplay information that is more prominent or more readily available in other sign systems" (Forceville, 2005: 71).

The above text has introduced the term multimodality and most specifically multimodality in comic books, the modes used, and the different approaches to comics from different experts in the area; the main techniques and conventions will now be described. Comics avoid the use of extended texts. This allows comics to be extremely inventive in developing techniques to denote emotional status or changes, or emotions in general, such as surprise, disappointment, despair, anger, or happiness. These techniques become conventions used in order to convey narration and speech and evoke emotional or sensuous responses. In most cases, the conventions are visual or pictorial devices which may be realistic or nonrealistic, or, using McCloud's words (1993, pp. 128–9), represent the visible or the invisible. The conventions used to convey narration and speech include panels, motion lines, and gutters. Panels are the images usually laid out within borders. These borders or edges are called frames and are normally rectangular in shape. This shape, though, can be altered to convey information to the reader and it becomes a pictorial rune. A cloud-shaped panel, for example, can indicate a flashback or a dream sequence, while one with a jagged edge can be used to convey anger or shock, as in balloons. Panels constitute the macrostructure of comics. Motion lines, on the contrary, represent, among other elements, the microstructural level within the panels (Kaindl, 2004, p. 183) and are the abstract lines that appear behind a moving object or person to make them look as if they are moving quickly. Line length may be said to vary proportionately to the rate of speed of the object moving (McCloud, 1993, pp. 110–11). Finally, the gutter is the space between borders and is identified by McCloud as one of the most important narrative tools in comics, as it encompasses everything that happens *between* what happens in the panels. In gutters, "human imagination takes two separate images and transforms them into a single idea" (McCloud, 1993, p. 66).

Kennedy (1982) introduced the term "runes" for nonrealistic visual or pictorial metaphors: "the kind of non-iconic signs used profusely in comics and cartoons to indicate speed, pain, surprise, happiness, anger and many other phenomena by means of straight or squiggly lines, stars, bubbles, etc. surrounding characters or moving objects" (Forceville, 2009, p. 23). Related to pictorial runes is onomatopoeia, a convention central in (mainstream) comics which represents sounds. One example of onomatopoeia is the single letter "z" as the sound of a snore or of a person or animal sleeping, "bzzz" for the sound of a flying insect or "aaagh" to express pain. The multimodal nature of comic books is also shown in balloons, "one of the most defining visual conventions of the comics medium" (Forceville, Veale, & Feyaerts, 2010, p. 56), which are a visual means of conveying words and emotions in comic books and comic strips. Visual variations in balloons are many. Forceville et al. present a "provisional blueprint of the visual variables governing balloonic information" (2010, p. 56). Speech and thought balloons are probably the most widely used. The first typically have pointed tails directed to the speaking character while the latter are generally cloud-shaped or circular with an increasingly smaller chain of circles directed at the character in thought. Another type is broadcast balloons, which may have a jagged tail like the conventional drawing of a lightning flash and either a squared-off or jagged outline. Letters are sometimes italicized without necessarily being bold. Broadcast balloons indicate that the speaker is communicating through an electronic device, such as radio or television or is robotic (McCloud, 1993).

Speech balloons indicate spoken words, while thought balloons indicate a character's thoughts. They also contain symbols which are constantly being used to cover the non-verbal (McCloud, 1993, p. 134) and also to depict character's emotions much more efficiently than any possible sentences. This is the case of the use of a single punctuation mark to depict a character's emotion. A speech balloon with a single big question mark (?) denotes confusion or ignorance. An exclamation mark (!) indicates surprise or terror. Singing characters usually have musical notes drawn into their word balloons. A stormy cloud with a rough lightning flash sticking out of it, either in a balloon or just floating above the character's head as a modified "cloudy" thought balloon, depicts anger, not always verbally expressed, and little daggers are physically present when someone is looking daggers at somebody else (Zanfei, 2007). Light bulbs are sometimes used when the character comes up with an idea or solution to a problem and, following Zanfei (2007, p. 398), a shrugging of the shoulders can be considered as a relevant answer. Profanity is normally replaced with a string of nonsense symbols (&%$@*€#), sometimes called grawlixes. According to Yannicopoulou (2004, p. 172), these visual metaphors of disguised anger have proved so popular that they have gained the status of a frozen metaphor.

There are different types and shapes of speech balloons used to help convey the tone of the dialogue to the reader in conjunction with differences in size or depth of color of the printed words (Forceville et al., 2010, p. 63), which correspond to differences in volume of the reader's inner voice (Yannicopoulou, 2004). Writing uses graphic means—bold type, size, spacing—to achieve semiotic effects which are only in some respects similar to those produced by sound in speech (Kress, 2010, p. 80; Zanfei, 2007, p. 398). If specific words in a passage are written in bigger, bolder, or capital letters, it calls for a louder voice; if the letters are smaller, readers have to lower their voices. For example, angry speech or shouting may be indicated by text inside jagged-edged speech bubbles. Their lettering is usually larger or bolder than usual. Normal conversation is usually indicated by text inside simple circular or square-shaped speech balloons. Whispers tend to be represented by balloons made up of broken lines, smaller font, or gray lettering, which indicates the tone is softer, as most speech is printed in black. There are other devices to visually suggest an increase in volume. Following Yannicopoulou (2004), when words break the borders of the speech balloons and penetrate their adjacent frames, the reader-viewer can "see" yelling, shouting, and uproar. The result is a multimodal metaphor: "the eye can hear" (Martinidis, 1991). In addition, other shapes are used to convey feelings, such as icicle balloons, which have jagged "icicles" on the lower edge and indicate that the speaker is "ice cold" towards someone or something. Similarly, the speech balloons for monsters may have an outline that suggests dripping blood or slime. Colored balloons may convey the emotion that goes with the speech, such as red for anger or green for envy.

Finally, captions are other devices generally reserved for narration rather than dialogue and take the form of squares of text attached above or below the panel. Captions can be used in place of thought balloons, can be in the first, second, or third person, and can either be assigned to an independent narrator or one of the comic's characters. Like word balloons they need not be of uniform shape, size, design, or color (indeed, some modern comics use different colors to assign different textual captions to different characters).

The ideas expressed in the previous paragraphs confirm the initial claim that comics are genuine and complex multimodal texts. The repertoire of means of expression in comics include verbal, pictorial, and typographic signs which combine in a monosensory medium (the comic, which relies on only one of the senses—the eyes—to convey a world of experience) in order to transmit multimodal meanings. Following Norris (2004), these sign systems or modes should be considered as "embodied modes," implying that they may have a superordinate or equal value with respect to language. In fact, as Zanfei (2008, p. 60) points out, language and images are independently organized and structured messages

whose codeployment and interplay make the whole meaning of the composition of the page.

One of the general principles of multimodality in comics drawn from the data above is that visual elements, for example, can convey aural stimuli and readers/viewers are forced to "hear" with their eyes. As mentioned above, the form of writing suggests how to read the text. Bold type in writing and loudness in speech are both signifiers of intensity (Kress, 2010, p. 80) and are one means of realizing meanings of "emphasis." Therefore, differences in size or depth of color of the printed words correspond to differences in volume, and differences in shapes may express a variety of emotions in combination with the verbal part. The implications of multimodality and comic books in applied linguistics are daunting. Visual elements contribute to the construction of meaning and it implies that just by looking at the text the reader-viewer gets a large amount of information, such as the emotional state of the main character if he or she is whispering or shouting (Forceville, 2005) or if the text is a dialogue or first person narration (Yannicopoulou, 2004).

SEE ALSO: Multimodal Discourse Analysis; Multimodal Interaction Analysis; Multimodality and Literacy; Multimodality and Metaphors; Multimodality and Systemic Functional Analysis

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Multimodality and Culture

PIA LANE

The world we live in and our research have become increasingly multimodal and culturally complex. Multimodality as an object of research and as a research methodology is relatively new in applied linguistics, whereas culture has been a central concept for a long period. This entry provides a brief overview of the term "culture" as it has been understood within the field of cultural and social anthropology by highlighting the parallel developments within linguistic and anthropological research during the past decades. Many researchers now see concepts such as "culture" and "language" not as static entities, but rather as fluid and dynamic, created and shaped through human action. These processes have been spurred by technological developments, offering both new modes of communication and new tools of analysis.

What Is Culture?

Academic disciplines have concepts which are essential to their theory and method, and as a consequence such terms become constitutive for the discipline. Culture is such a key concept, and it has been central particularly to the field of anthropology, much as linguistics has claimed ownership of "language."

The term "culture" has been discussed for decades, which is not surprising since the object of study for anthropological research is cultural variation. The way culture has been understood has varied across time and research traditions. The etymological root is Latin *colere*, "cultivate" (Hylland Eriksen, 2010). Within cultural anthropology "culture" is used to refer to "knowledge about those aspects of humanity which are not natural, but which are related to that which are acquired" (Hylland Eriksen, 2010, p. 3). There is a tension between the universal and the particular: all human beings are similar in the sense that we have culture, but this is also what makes us differ from one another. The investigation of this double nature of culture has been central to anthropology ever since its inception, and culture has been a key concept, both defining and dividing the field of anthropology. When it comes to the tension between the universal and the particular, there is a striking resemblance to discussions about language within various disciplines of linguistics: is language primarily an individual or a social object?

Our concern here is how the understanding of culture may shed light on applied linguistics in general and multimodality in particular. Linguists take for granted that culture is important, and the term is frequently used but rarely defined. In spite of not defining culture, literature within anthropology, applied linguistics, and sociolinguistics frequently uses and builds analyses on this term. Therefore, a brief outline of how culture has been understood within social and cultural anthropology is a useful starting point.

Culture: A Defining Concept for Anthropology

During the 19th century several academic disciplines, influenced by Darwin's theories, were characterized by a focus on evolution. The primary aim of linguistics was to reconstruct former versions of languages in order to postulate a common source. During the

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same period anthropology also underscored that human culture underwent qualitative change and evolutionism offered tools for analyzing and describing this change. Barnard and Spencer (1996) point out that this period was characterized by a focus on culture as an entity that evolved and could be possessed and acquired by societies to varying degrees. A different viewpoint was offered by the American anthropologist Boas, who, inspired by Herder and the German tradition and by his fieldwork among Native Americans, used the plural form of culture: "cultures." This can be seen as the inception of modern anthropology, situating culture in the tension between the individual and the particular referred.

Other similarities in the theoretical underpinnings of anthropology and linguistics can be identified, such as the striking similarity in the focus on underlying structure brought forward by Lévi-Strauss (1971) and Chomsky (1965), respectively. The idea is that the human drive to classify and create structure is driven by the underlying binary nature of the human mind and a search for universal patterns (Keesing, 1974). Chomsky's postulate that all children were born with the same abstract grammatical structure had a profound impact not only on linguistics, but also on psychology and other disciplines. Language came to be seen as innate, biologically grounded, and separate from other cognitive processes.

Academic fields often undergo similar theoretical paradigms. Today, both linguistics and anthropology have been shaped by poststructuralist theories, emphasizing pluralism and hybridity, human agents as co-constructors of language and culture, and a shift of focus from the study of Others to investigating relationships and transnational flows. The term "culture" still is frequently used, but contemporary introductory books to anthropology typically discuss the history of the term, rather than providing definitions. However, when definitions are given, they tend to highlight the interactional, inclusive, relativistic aspects of culture. Bodley (1997, p. 10) emphasizes culture as learned social behavior and offers the following definition:

> Culture involves at least three components: what people think, what they do, and the material products they produce. Thus, mental processes, beliefs, knowledge, and values are parts of culture.—The shared aspect of culture means that it is a social phenomenon; idiosyncratic behavior is not cultural. Culture is learned, not biologically inherited, and involves arbitrarily assigned, symbolic meanings.

This definition emphasizes culture as something acquired and contextualized, in line with the definition provided by Hylland Eriksen: "a sensible concept of culture must depict culture both as an aspect of concrete, ongoing interaction and as the meaning-context for the very same interaction" (1991, p. 127).

Contemporary anthropology's discussions of culture clearly are situated in a poststructuralist context, which also is the case for the following definition from applied linguistics: "Culture is located then not in accumulated bodies of static knowledge, but in the daily interactions occurring between individuals in particular sociocultural contexts at particular moments of time" (Hall, 2008, p. 50). To summarize: currently culture is understood, similar to the way language is perceived by many linguists, as a combination of stable and co-constructed, fluid and contextualized patterns of behavior; both as something humans have and something we do.

Culture, Language, and Multimodality

Anthropological research has always been concerned with multimodality, though the term "multimodal" has not been used until recently. This concern has been manifested both by its object of study (social behavior, traditions, material culture, language, etc.) and by the

choice of methods (participant observation, written field notes, photography, ethnographic film, etc.). The history of linguistics, however, differs. The object of study for linguistics is language and before the advent of recording possibilities, linguists relied on written transcripts of spoken language. Linguistics discussed whether language is best understood as a sociocultural object or a biological object. This, combined with smaller range of research tools than was the case for anthropology, led to linguistic research in general being monomodal. Though the emphasis was placed on spoken language, linguists worked with written elicited forms or written transcripts. During the structuralist period and, later, from the Chomskyan revolution, culture was not allocated room in the investigation of language because language was seen as a self-contained system.

The 1970s brought about a profound change, both in the view of language as an object of study, and also in language as a source of data. Sociolinguists and applied linguists turned to contextualized analyses of language, and new recording technologies made it possible to analyze audio recordings of spoken language as well as transcripts of these recordings, facilitated by sophisticated transcription systems developed within ethnomethodology and conversation analysis, research areas originating in sociology. In combination with these new technological means, focus shifted to the contextualized use of language, seeing language as shaped by societal and cultural factors. Though not necessarily using the term "multimodality," a wide range of linguists began analyzing more than language in the traditional sense. Within variationist sociolinguistics Eckert (1989) shifted the focus from dialect to style, analyzing not only phonological variation in youth language, but the interrelation between language and other semiotic resources as means for identity construction and group membership. Schiffrin (2006) also investigated the relationship between language and context, focusing on how language is part of (and contributes to) text and context. Interactional sociolinguistics has, since Gumperz's (1992) groundbreaking work, had a focus on how meaning is contextually created and how we use different linguistic resources like choice of lexemes, intonation, stress, and information structure to convey meaning, pointing to different frames of reference. Depending on our cultural baggage we use language in systematically different ways, but the relationship between language and culture is not static. Duranti and Goodwin (1992) draw our attention to the mutually reflexive relationship between talk and context, seeing language as a contextualized phenomenon, both shaping and being shaped by context. Likewise, applied linguistics underwent a similar process, moving away from a mentalist view of language seen as an object in the mind to the 1990s, when "advances in cognitive linguistics, linguistic anthropology, and the growing importance given to culture in language education brought a renewed interest in the relation of language, thought, and culture in applied linguistics" (Kramsch, 2004, p. 235).

These intellectual developments from the 1970s onward challenged the notion of language as an autonomous entity, and, fueled by technological advances both in text production and in tools for data analysis, language came to be seen as a part of a larger social system. Thus, the links between language and culture that had been severed during the preceding century were reunited. As a consequence, researchers turned to analyzing different modes of language and their cultural context.

Technology and Culture

Communication has always been multimodal because we never have relied on oral aspects of language only. Language, gesture, pose, and so forth have all contributed to the production and understanding of a message. Likewise, text production is shaped by its cultural context. Medieval texts were ornamental, and the materiality of texts contributed to their

meaning (Caie, 2008). The advent of the printing press, and later the typewriter, standardized text production, and the written text came to be, at least implicitly, understood as language per se. Technologies always entail some degree of standardization, involving codification, abstraction, and changing the conditions and scope for human agency. These technological developments, intertwined with the notion of language as a monomodal abstract entity, underpinned linguistic research to a large degree until the 1970s. The paradigm shift described in the previous section was facilitated by technological developments for data gathering and analysis. These processes have been furthered by recent technological developments as the production of all forms of written, spoken, and visual texts has become more complex through the use of different modes; all types of texts are more widely disseminated due to technological means, and we have developed more sophisticated tools and theories for the analyses of multimodal data. Therefore, it is not surprising that a wealth of multimodal research has emerged. For much of this research, "culture" is a central term, though, as is the case for most writings within linguistics and anthropology, the term is frequently used but not always defined. Often, other terms and concepts are used in tandem or interchangeably with "culture," such as "context," "social practice," "semiotic systems," as in the following definitions: "The semiotic landscape consists of objects and events which together constitute the phenomenon we call culture" (O'Halloran, 2009, p. 98); or Jones's (2005, p. 143) rejection of essentialist notions of culture, "preferring instead to speak of the nexus or intersection of practices (Scollon, 2001) upon which people build individual and group identity."

Multimodality, Interaction, and Identity

Jewitt (2009) outlines three intersecting approaches within multimodality: social semiotic multimodality (associated with Kress, van Leuwen, Halliday), multimodal discourse analysis (O'Halloran, O'Tool), and multimodal interactional analysis (Scollon and Scollon, Norris, Jones). For all three strands culture is important, though its role not necessarily made explicit. The researches mentioned cannot be assigned to one strand only; however, to simplify the matter one might say that research within the two first approaches focuses on the semiotic means and the discourse system as a set of organizing principles guiding our social meaning making, whereas the main concern of the latter approach is the contextualized and culturally embedded nature of human action.

As our tools for data gathering and analysis get more and more sophisticated, combined with the turn to qualitative and ethnographic studies, it is not surprising that applied linguistics has become more concerned both with multimodality and culture. Multimodal interactional analysis is an illustrative example of this. One of the key theoretical developments within this field is mediated discourse analysis or MDA (Scollon & Scollon, 2002, 2003). Scollon and Scollon (2002, p. 1) describe MDA as a form of sociocultural analysis, focusing on social action. Within MDA all actions are understood to be mediated by cultural tools (or mediational means). Cultural tools are semiotic tools ranging from language to material objects; social action is seen as any action performed by a social actor through the use of cultural tools. Within this approach language in a traditional sense has no primacy above other cultural tools. Scollon and Scollon (2003) show how the use of computer technology in Alaska changed social practices. Originally, this technology was designated to the administrative culture of education, but it proved to be well suited for creating new learning environments for students who were not comfortable with the panopticon classroom interaction order (the teacher-centered class where the teacher controls the interaction). Students who had no voice in the classroom setting because the interactional patterns were so different from the cultural codes of their everyday lives used technology

as a means for academic discussions on their own terms. Hornberger (2006) describes similar processes of alienation in school settings, telling the story of a Quechua girl who hardly ever spoke at school, but who, when Hornberger visited her in her home, talked non-stop, telling stories in Quechua, showing Hornberger objects in her home while performing other actions such as looking after her younger brother. Hornberger (without using the term "multimodal") carried out a multimodal analysis of this girl's actions in different cultural contexts, where language and interactional patterns differed. The girl's languages and practices can be understood as cultural tools for interaction and identity construction, and the degree of access to these tools enables or limits her actions. Cope and Kalantzis (2000, p. 204) echo Hornberger's observation when they write: "Individuals have at their disposal a complex range of representational resources, never simply of one culture but of the many cultures in their lived experience." The authors are part of the New London Group (with, among others, Norman Fairclough, James Gee, and Gunther Kress) who coined the term "multiliteracies" to address the increasing salience of linguistic and cultural diversity and the increasingly multimodal nature of communication.

The interrelationship between cultural tools, social action, and agency is also analyzed by researchers working within the MDA framework. Norris (2004) presents a framework of multimodal interactional analysis based on the study of how two women employ different communicative modes for identity construction, such as pose, gesture, intonation, material objects, and so forth, stressing that communication always is multimodal and pointing out that the social meanings of particular modes are derived from cultures and subcultures. Jones (2009) investigates how computer-mediated technology displays the body as a cultural tool (through texts, visualities, and interaction) on Web chat sites. The online space is reflexive as the participants can view themselves and assess what kind of identity they portray. Thus, the technology itself becomes a cultural tool. The use of semiotic and material cultural tools for identity construction is also addressed by Lane (2009), showing that when language shift occurs, there are still other means than language available for the construction and negotiation of identities. A common denominator for all these researchers is the focus on how human interaction and meaning making are carried out through different cultural tools, hence their use of multimodal approaches.

Conclusions

Multimodal analysis, both as a research field and as a methodological approach, is a result of the processes resulting in single central objects of analysis such as culture and language losing primacy. Simultaneously, multimodal analysis contributes to these processes. Both culture and language are multifaceted, intricate, variable, and multimodal, and interdisciplinary approaches are essential for addressing such complex issues. This gets brought to the fore as a result of the global flow of information, resources, people, languages, and visualities, but it is worth keeping in mind that multimodal research in itself is a cultural product, born out of and shaped by technological developments.

SEE ALSO: Analysis of Mediated Interaction; Anthropological Linguistics; Bilingual Literacy; Context in the Analysis of Discourse and Interaction; Culture; Language, Culture, and Context; Multiliteracies in Education; Technology and Culture

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Multimodality and Disability

NAJMA AL ZIDJALY

Introduction

Multimodality is an analytical framework created to examine complex discourses that draw upon or consist of various visual and textual modes; the framework, according to Iedema (2003), gained ground recently due to the salience of multimodal texts brought about mainly by the advent of new media technologies and a recent turn in linguistics toward viewing communication as multimodal. Disability studies, a subdivision of medical anthropology, is a field that emerged in the 1960s and the 1970s in response to traditional conceptions and treatments of the notion of disability. Given the importance of artistic expression to healing; the role that technology can play in creating access; and the fact that people, especially those with certain disabilities, draw upon various modes other than just language to communicate, multimodality and disability have naturally been brought together in the social sciences.

Disability Studies

Disability studies as a field emerged in the second half of the 20th century to combat erroneous conceptualizations of disability as a biomedical problem instead of as a social construct, thus shifting the focus from viewing those with disabilities as the setback to constructing the disabling society as the group at fault. Though the field is of an interdisciplinary nature, the focus is a social one with an inherent activist approach. Because disability is a social construct that prevails across race, gender, and geographic boundaries, the general consensus among disability researchers is that it must thus be scrutinized in its social, cultural, and historical contexts (Barnes, Oliver, & Barton, 2002).

The shift from defining "disability" as "inability to do something" to defining it as "social oppression" was originally inspired by the functionalist sociologist Talcott Parsons (1951), whose seminal construction of sickness as a social construct with rights and responsibilities instead of simply as a medical conundrum altered the manner in which deviance was conceived. Other landmarks in the development of the social view of disability are the notable study of stigma and identity management by the sociologist Erving Goffman (1963), Michel Foucault's (1975) studies of the birth of the clinic, and Gillian Fulcher's (1989) "discourses of disability." These discourses, which can be divided into four types—the medical discourse, the charity discourse, the lay discourse, and the rights discourse—lead Fulcher to argue that creating social change starts with changing how we linguistically construct disability.

The central theme that disability research collectively addresses is social exclusion—the major predicament faced by people with disabilities. This form of social abandonment or invisibility is usually precipitated by distorted ideas on the part of others of the capabilities of those with disabilities. Earlier existing sociological research that addresses this experience of isolation (Goffman, 1963; Murphy, 1990; Robillard, 1999) perpetuates a passive image of individuals with disabilities in managing such an experience; isolation is erroneously

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constructed as an inevitable outcome of disability. This misrepresentation was later corrected when a group of researchers started examining the construction of the social reality of disability from a multimodal perspective. These multimodal disability studies can be divided into three areas: disability and artistic expression, disability and multimodal discourse analysis, and disability and technology.

Disability Studies and Art

Art can be a means for healing one's damaged self (Ainsworth-Vaughn, 1998). It is in fact well documented in the literature on disability and artistic expression that any form of expression, whether writing prose or poetry, or painting, self-empowers through allowing those with disabilities a means to express and deal with their pent-up emotions (Corbett, 1999). Art can also change the traditional misconceptions of disability as a simply medical problem. This was the underlying theme behind the Disability Arts movement, which started in the 1980s and is considered one of the major art movements of the late 20th century. A major example of such radical artistic work, which can play and has played a role in changing the way art and disability are conceptualized in society, appears in the seminal work by Lewis (2000). What is remarkable about the various dramaturgical strategies that Lewis analyzes in works of art by people with disabilities is that not only do they arise from a social view of disability, but also—in so doing—they challenge the dominant narrative of disability that equates disability with uselessness and stigma, and that has long held sway in theater and the social world at large.

While critics of the Disability Arts movement abound, the role that art can play in alleviating the experience of disability is unquestionable. Thus, disability research continues to dedicate itself to examining visual and nonvisual art as tools for self-expression (e.g., Diem-Wille, 2001) or representation (e.g., Crutchfield & Epstein, 2000; Halifax, 2009). Some of the more recent research that deals with the interplay between art and disability from a multimodal perspective moves beyond conceptualizing multimodal texts as simply tools for representation, or for expressing visually what one is inhibited from expressing verbally, to seeing them as communicative tools for self-empowerment especially in educational settings (e.g., Wexler & Cardinal, 2009). This is in line with current dynamic multimodal research that—in contrast to earlier research on multimodality that has focused on decontextualized texts as their unit of analysis—centralizes the interplay between images and texts (Jones, 2005), the integration of visual texts in real life practices (Al Zidjaly, 2005, in press-a, in press-b) or the transformation of meaning from one semiotic mode into another as social processes unfold (Iedema, 2003).

Disability Studies and Discourse Analysis

Discourse analysis as a field prides itself on addressing linguistic, social, and cultural discrimination. However, the role that language plays in the experience of disability has been only minimally studied. As for the part that semiotics other than language can play in the construction of the social reality of disability, until very recently it has been almost completely ignored. An exception in drawing upon multimodal frameworks to address the experience of disability—particularly cognitive and motor disability—is Goodwin (1995, 2001, 2011). Building on conversation analysis and ethnomethodology, Goodwin's seminal examination of the interplay of the semiotics of gesture, gaze, pointing, and other bodily movements, in interactions involving an aphasic man with limited vocabulary and his caregivers, demonstrates not only the co-construction of meaning but also how dynamic social practices unfold in interaction where nonverbal communication plays a role. Thus, Goodwin's work has played a major role in developing the current dynamic approach to multimodality that advocates examining multimodal texts and interactions in their situated use.

Other notable studies that have successfully combined textual representation with social construction, leading to critical and socially driven multi-semiotic discourse analysis, are Everts (2004) in the area of visual disability and Keating (2003) in the area of hearing disability. In order to find the origin of communicative difficulties in blind–sighted communication, Everts (2004) applies a multimodal framework to interactions involving a blind person and her sighted friends. Everts's analysis demonstrates that the root of the social exclusion of blind people is the lack of access to the visual semiotics of face-to-face interaction, such as gaze, turn taking, and gesture, that blindness causes. Her analysis thus demonstrates, first, that—contrary to widely held beliefs—speech and hearing are insufficient to guarantee equal access to conversational participation and, second, that by identifying discursive practices that can cause linguistic marginalization, one can begin to address and in turn rectify communicative problems across ability status. Similarly, Keating (2003) demonstrates through analyzing gaze, gestures, and turn taking across ability status that unshared sociolinguistic practices and hearing-oriented participation frameworks are crucial aspects of communicative failure between hearing and deaf children in mainstream elementary school settings. Both of these multimodal studies point to the necessity for hearing and sighted people to develop communicative skills that accommodate the deaf and the blind for proper inclusion to take place.

Disability Studies and Technology

Research that addresses the relationship of new media technology to disability falls into two camps. Many believe that new media technology alleviates disability through masking disability, equalizing power, and creating independence (e.g., Sproull & Kiesler, 1986; Grimaldi & Goette, 1999; Ford, 2001). Others, however, take a more skeptical stance, arguing in some cases that technology can even create disability (e.g., Kaye, 2000; Goggin & Newell, 2003; Seymour & Lupton, 2004). Al Zidjaly (2005) notes that most of this research, however, merely speculates about the beneficial or ineffectual role that technology plays in the lives of those with disabilities. To understand the exact relationship between technology and disability, she argues, it is critical to identify specific technology-related actions that people with disabilities recognize as being of use to them personally, using the frameworks of mediated discourse analysis (Scollon, 2001) and nexus analysis (Scollon & Scollon, 2004), which focus on the action that people take at a specific moment. Al Zidjaly (2005, 2007) does exactly that as she examines music videos, created by a quadriplegic man from Oman using Microsoft PowerPoint software, as tools of agency via self-expression and defiance of oppressive societal beliefs surrounding disability. In Al Zidjaly (2011, in press-a, in press-b), she goes one step further by conceptualizing visual texts as mediated actions that are strategically used to arrive at intended outcomes, not just as self-expression tools. This multimodal analysis, from a mediated discourse perspective, reveals the complexity of the relationship between technology and disability, highlights the agency of those with disabilities, demonstrates how people with disabilities create inclusion through technology, and develops the current dynamic approach to multimodality.

The relationship between technology and disability has also been addressed from a discourse perspective. Bowker and Tuffin (2002), for instance, examine through online questionnaires how people with disabilities psychologically manage their disabilities online. Their analysis highlights the value that people with disabilities place on being able to leave their impairment out of the dynamics of social interaction, which constructs disability as an aspect of identity to be hidden or revealed. Jones (2011) compares the academic and popular discourses surrounding the nature of the relationship between disability and technology with how people with disabilities themselves talk about their experiences online. His analysis reveals that the reality of disability in cyberspace is more complicated than the discourses of social leveling, accessibility, and empowerment used to talk about

them. As a result, he suggests analyzing what people with disabilities actually do, using the framework of mediated discourse analysis to get at a better understanding of the connection between technology and disability (see Al Zidjaly, 2005, 2011, in press-a, in press-b) to analyze. Al Zidjaly (2010) further draws upon sociolinguistic perspectives to conduct a case study to see both the precise effect the Internet is having on Muslim identity and how a person with a disability is able, through the Internet, to manage a religious identity that showcases the fact that there is more to him than just being a man with a disability. All this research points to the necessity of including people with disabilities in the discourse of technology and disability.

Concluding Remarks

Since its inception, disability studies has faced numerous criticisms (Lester, 2002). It has been suggested that it has outgrown the social model of disability, which desperately needs updating to keep up with the politics of the 21st century. The social model's failure to recognize physical impairment has had counter-effects by neglecting many types of disabilities, such as illness and cognitive disability. The field has additionally been criticized for failing to engage successfully with other social movements such as those against racism and homophobia. Finally, research connecting multimodality and disability is still limited despite the fact that using multimodal discourse analysis highlights personal agency, which is especially important in the context of disability, where personal agency is often underestimated or denied. Future research on multimodality should emphasize the necessity of going beyond single modes and artistic accomplishments into how these resources are used in real life. This applies to all kinds of texts, co-constructed by all kinds of individuals. Analyzing visual texts as mediated actions instead of mere means of self-expression, healing, or representation, for example (as suggested by Al Zidjaly, 2011, in press-a, in press-b) also shows how disability is indeed a social construct. This adds to the current dynamic approach to multimodality, which uncovers a detailed understanding of visual texts but also has applied elements, while achieving too a more fine-grained understanding of the interconnections between multimodality and disability.

SEE ALSO: Mediated Discourse Analysis; Multimodal Discourse Analysis

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Multimodality and Displayed Art

MICHAEL O'TOOLE

In the 1970s and 1980s M. A. K. Halliday's systemic functional (SF) grammar was being used extensively for discourse analysis, critical discourse analysis (CDA), and stylistics of both literary and nonliterary texts. These all involved a commitment to the close lexico-grammatical analysis of the selected text itself and understanding it in its sociopolitical or literary context, or both.

By the mid-1980s the proliferation and rapid dissemination of texts combining language and visual or aural modes and the relevance of this for education led to the emergence of a new branch discipline known as multimodality. As the name implies, it involves a focus on nonverbal texts (works of art, diagrams, buildings, cityscapes, orchestral music, ritual processions) or mixtures of the verbal and nonverbal (adverts, news articles, Web sites, film and TV sequences, museum displays).

From his earliest writings, Michael Halliday makes clear with examples from musical scores and menu layouts that he regards his SF model of language as a general semiotic model (e.g., Halliday, 1985, pp. 1–18). After using SF for two decades for the analysis of literary style (O'Toole, 1975, 1976, 1982) and for CDA (O'Toole, 1985), O'Toole became convinced by the mid-1980s that the model could be used for the analysis and sociopolitical —indeed, personal—interpretation of paintings, sculptures, and architecture. His analyses of Russian and English narrative fiction in the 1970s and 1980s had been strongly influenced by Russian formalist and Prague School theory and practice between 1920 and 1940. The Russian and Czech scholars had insisted that literary study should no longer be dominated, as it had been in Russia and the West, by social history, writers' biographies, or the comparison of periods and genres, but should focus on the mechanics of the individual literary text (*priyomy*, or literary devices, as they called them). Every structural, narrative, or rhetorical device had a function within the whole work and the accumulation of functional tendencies would point to a dominant of the work. O'Toole saw the relevance of this approach for the study of multimodal art. Moreover, the formalists did not limit their studies to verbal works of art, but engaged in the analysis of film and stagecraft (Eikhenbaum, 1982).

Despite the important theory of functions in language of Roman Jakobson (1960, pp. 350–77)—himself a founder and key figure among the Russian formalists and Prague structuralists—there was, however, no fully realized grammar that could account for the linguistic details of style in literary texts until Halliday's groundbreaking work of the 1960s, most fully articulated in Halliday (1971; 1985); and little in the way of frameworks for the study of visual art.

Another important influence on the development of an approach for multimodal analysis was O'Toole's early engagement with multimodality in the 1960s, when he was one of the pioneers of audiovisual methods in language teaching, designed flash cards, and composed and performed songs for a BBC radio Russian language course, *First Year Russian*, subsequently *Passport to Moscow* (O'Toole & Culhane, 1972).

What started in February 1986 as a tentative seminar with SF and art theory colleagues at Sydney University outlining a theory for analyzing a modern Australian painting became, via many conference papers and articles, O'Toole's book *The Language of Displayed Art*

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(1994) and the CD-ROM *Engaging With Art* (1999) (second edition of both, 2010). The core of O'Toole's argument was that Halliday's (1971) chart of functions and systems for language could be adapted, with changes appropriate for different modalities, as a basis for the analysis of visual texts. As with language texts, it is not the labeling of particular components of the visual text as such, but the recognition of areas of semantic/semiotic convergence and divergence between the realizations of the functions that provides a focus for interpretation.

As with many shifts in theory, much of the motivation for this move came from outside:

1. The author felt that art history, with its obsession with archives, iconography, biography of the artist, details of commissioning and ownership, "movements" and chains of "influence," had distracted people from "thinking with their own eyes" and attending to what was actually on the canvas—rather as the Russian formalists had criticized the approach to text of the literary critical conventions of their day.
2. Panofsky's (1939/1972) much acclaimed dream of getting beyond iconography to iconology was not being realized because adequate tools were not available.
3. Attempts at a "semiotics of art" based on Peirce's (1994) distinction between icon, index, and symbol were equally primitive and inflexible.

The Language of Displayed Art explores the "grammar" of the visual arts of painting, sculpture, and architecture, proposing that as viewers we simultaneously read three different kinds of meaning in them:

- what is represented (representational meaning),
- how it engages us (modal meaning), and
- how it is composed (compositional meaning).

Artists are able to communicate with us because each of these types of meaning is realized through particular systems of choice in a visual language shared by artist and viewer. Thus, representation may involve portrayal, scene, or action; modally we may be drawn into the depicted world through devices of framing, light, focus, color, or perspective; compositionally the work is integrated, or "makes sense," through geometries of scale, juxtaposition, parallelism, and the relations of figure to frame (see Figure 1).

It is clear from Figure 1 that the names of the functions and systems in a grammar of displayed art must be quite different from those that systemic linguists deploy for studying texts of verbal language. Indeed, the rank scale of units in the left-hand "Units" column assumes that they are defined more "fuzzily" than the structurally defined units of natural language, at least in its written forms.

The Language of Displayed Art sustains a continuous argument with the dominant paradigm of art history. On the one hand, facts about the commissioning of and social or literary inspiration for artworks, contemporary schools and styles of art, and even the biography of the artist may provide essential background to our understanding of a painting, sculpture, or building. On the other hand, in the dominant discourses of art—catalogs, monographs, histories, journalism, visual media, gallery tour guides, and education—this background tends to dominate and distract from our personal, individual reading of the particular work to such a degree that we feel helpless without it. A coherent, consistent, and well-articulated semiotic approach gives power back to the viewer: We must learn to trust our own eyes. What is more, the SF model provides a coherent and well-defined terminology for articulating our personal readings.

Outside the actual verbal text, Halliday argues that what we talk and write about and the language and discourse genres we tend to use in a given period configure the map of

Unit \ Function	REPRESENTATIONAL	MODAL	COMPOSITIONAL
WORK	Narrative themes Scenes Portrayals Interplay of episodes	Rhythm Modality Gaze Frame Light Perspective	Gestalt: Proportion Framing Geometry Horizontals Line Verticals Rhythm Diagonals Colour
EPISODE	Actions, events Agents–patients–goals Focal/side sequence Interplay of actions	Relative Prominence Scale Centrality Interplay of Modalities	Relative position in work Alignment Interplay } of forms Coherence
FIGURE	Character Object Act/Stance/Gesture Clothing Components	Gaze Contrast: Scale Stance Line Characterization Light Colour	Relative position in episode Parallelism/Opposition Subframing
MEMBER	Part of body/object Natural form	Stylization	Cohesion: Reference (Parallel/Contrast/Rhythm)

Figure 1 Systems and functions in painting © O'Toole 2010

the current "social semiotic." If we extend this notion to the subject matter and dominant stylistic features (through systems of representation, modality, and composition) in paintings, sculptures, and buildings, we can extend the social semiotic to include its visual modes. This, of course, brings us back to art history, but an art history that is constructed from a period's artworks, not one imposed on them from the historical or biographical archive.

The first four chapters of *The Language of Displayed Art*, subtitled "Perceptions," show visual semiotics at work in painting, sculpture, and architecture. Despite the popularity of Botticelli's *Primavera* (1478) and, perhaps, because of the vast literature that it has generated, individuals find it difficult to "read" the work in a coherent and satisfying way: Historical knowledge about Florence under the Medici competes with the little we know about Botticelli's life, or with philosophical trends in fifteenth-century Florence, or with myths from Ovid's *Metamorphoses* which the artist was using to construct a story line, or with the arrangement of human figures and geometric relations within the frame of the painting. Chapter 1 helps the reader–viewer to "think with their own eyes," noting and combining the ways the artist draws us into the world of the work (the modal function), what that world consists of (the representational function), and the way these are constructed into an aesthetic unity (the compositional function). O'Toole argues that, used consistently, this semiotic framework of analysis makes possible both satisfying individual interpretations and dialogue between viewers, who will have properly articulated grounds for their disagreements.

Turning to sculpture, the second chapter, "Bodily Perceptions," applies a similar framework—though with a terminology appropriate to the distinctive substance, forms, and relationship to the spatial context and the position of the viewer of the art of sculpture (see Figure 2). As with the *Primavera*, the analysis of the four chosen works (by Bondarenko, Barbara Hepworth, Rodin, and Nigel Helyer) is much more detailed and takes interpretation much further than any earlier critical literature.

Unit \ Function	REPRESENTATIONAL	MODAL	COMPOSITIONAL
WORK	Process (action/event/ existence/relation) Theme (religious/ magic/civic/political) Peripeteia (narrative turning-point)	Scale (to human) Mass Equilibrium Modality Palpability 'Address' Message	Volume (relation to space) Proportion (relation to setting) Independence Openness/Closure Fixed/Mobile Cohesion Material
FIGURE	Participants (agents/ patients/existents) Body (anthropomorphic/ zoo-morphic/ biomorphic/ inorganic) Act Movement/Stasis Position	Scale Characterization Mass Equilibrium Expressiveness Address Vitality Line Solidity Relation to Light	Relative position in Gestalt Parallelism Static/Dynamic Fixed/Mobile Rhythm Material
MEMBER	Basic Physical Forms (parts of the body/ objects natural forms/ machine parts/ geometric forms) Drapery	Fullness of Realization (detailed/stylized/ attenuated/abstract) Raw/Polished Stress Factors	Texture Rhythmic Relations Material Qualities

Figure 2 Systems and functions in sculpture © O'Toole 2010

In the case of architecture, buildings function much more like texts of language than the purely "displayed arts" of painting and sculpture (see Figure 3). They function

- as use, that is, experientially;
- as self-expression, that is, interpersonally; and
- as harmony, that is, textually.

It therefore seems reasonable to use the same labels for the semiotic functions as Halliday does for the semantic functions in language, even though the actual systems of choices which realize these functions are radically different from those of lexicogrammar.

The architecture model is tested in an analysis of a designer home (1990) in Perth, Western Australia; Alvar Aalto's Enzo-Gutzeit office block (1960–2) in central Helsinki; and Le Corbusier's chapel to Notre-Dame du Haut (1950–5) at Ronchamp in eastern France. These buildings are sufficiently different in their use, the facades they present to the world, and their structure and finish to test and extend the analytical model being proposed. The theory and the description are dialectic. Once again, we start with a theory, but the specifics of the description of a particular building, as of particular paintings and sculptures, force adjustments to the theoretical framework.

In the process of mapping the systems at work in various functional areas of a building, it is not necessary to account for every single detail, as though the chart was a kind of checklist. We find rather that the most interesting features, visually or socially or politically, tend to cluster in particular areas of the chart, crossing boundaries of rank and function. These are sometimes referred to as "hotspots" of meaning. They relate to the formalist literary concept of "dominant functions."

Units \ Functions	EXPERIENTIAL	INTERPERSONAL	TEXTUAL
BUILDING	Practical function: Public/Private; Industrial/Commercial/Agricultural/ Governmental/Educational/Medical/ Cultural/Religious/Residential; Domestic/Utility Orientation to light Orientation to wind Orientation to earth Orientation to service (water/sewage/power)	Size Verticality Chthonicity Facade Cladding Colour Modernity Exoticism Orientation to neighbours Orientation to road Orientation to entrant Intertextuality: reference mimicry contrast	Relation to city Relation to road Relation to adjacent buildings Proportions Rhythms: contrasting shapes, angles Textures: rough/smooth Roof/wall relation Opacity Reflectivity
FLOOR	Sub-functions: Access Working Selling Administration Storing Waking Sleeping Parking	Height Spaciousness Accessibility Openness of vista View Hard/soft texture Colour Sites of power Separation of groups	Relation to other floors Relation to outer world Relation to connectors; stairs/lift escalator (external cohesion) Relation of landing/corridor/foyer/room (internal cohesion) Degree of partition Permanence of partition
ROOM	Specific functions: Access, Entry, Living room, Family room, Kitchen, Bathroom, Bedroom Study, Toilet, Laundry, Gamesroom, Retreat Foyer, Restaurant, Kitchen, Bar, Bedroom, Ensuite, Servery	Comfort Modernity Opulence Style: rustic, pioneer, colonial, suburban 'Dallas', working class, tenement, slum Foregrounding of function Lighting Sound Welcome	Scale Lighting Sound Relation to outside Relation to other rooms Connectors: doors/windows/hatches/intercom Focus (e.g. hearth, dais, altar, desk)
ELEMERT	Light: window, lamp, curtains, blinds Air: window, fan, conditioner Heating: central, fire, stove Sound: carpet, rugs, partitions acoustic, treatment Seating {function, comfort} Table {dining, coffee, occasional, desk, computer, drawing board}	Relevance Functionality: convention/surprise Texture: rough/smooth Newness Decorativeness 'Stance' Stylistic coherence Projection (e.g. TV)	Texture Positioning: to light/heat/other elements Finish

Figure 3 Systems and functions in architecture © O'Toole 2010

The final chapter of "Perceptions" attempts something quite different. Rather than analyze a single form of displayed art, it attempts to compare two radically different art forms, a poem and a painting, which share a single subject: the myth of the fall of Icarus. This makes it possible to engage with the challenge of comparing a Hallidayan lexicogrammatical analysis with the semiotic model for the analysis of painting proposed in chapter 1. W. H. Auden based a major section of his poem *Musée des Beaux-Arts* (1939) on the painting *Landscape with the Fall of Icarus* by Pieter Brueghel the Elder (ca. 1558). As the analysis reveals, the framing and marginalization of the moment of tragedy, the disappearance of Icarus into the waves of the Aegean sea, and the play with vocabulary and painting styles reveal considerable isomorphism, but the different mental processes involved in following a linear text and scanning a painting affect the reader–viewer quite differently. The availability of congruent SF models for the analysis of verbal and visual texts, however, makes the comparison meaningful.

The second half of the book ("Conceptions") engages with a number of theoretical issues raised by the application of SF semiotic analysis of displayed art, while continuing to analyze and interpret a further eight paintings. O'Toole considers the relationship between a close focus on the individual art text and the established paradigms of art history, criticism, and teaching. It argues that, despite their divergent aims, the semiotic analysis of paintings has to be enriched by what we know of the artist and the social and philosophical history of his period. On the other hand, most of the dominant discourses of art—whether in the media, the schoolroom, the gallery, the academy, the archive, or the auction house—prioritize their own practices and minimize the close scrutiny of the text to such a degree that even the self-motivated viewer feels disempowered by all that expertise. A semiotics of art, as practiced in *The Language of Displayed Art*, aims to be theoretically explicit in its approach to the individual work or a comparable group of works, and recognizes that it is itself a cultural practice alongside the dominant cultural practices of art history, criticism, and records of provenance and ownership.

A great deal of art history compares works with works within one artist's oeuvre, or artists with one another, or one period with another. The chapter entitled "Modes of Comparison" assesses to what extent meaningful comparison of paintings with a particular central theme is possible despite distances between the periods and cultures within which they have been conceived. The anti-chronological bias of the book and its method is underlined by the dates and sources of the three paintings chosen: the Australian Russell Drysdale's *The Gatekeeper's Wife* (1965); a Russian suprematist poster, *Arrange a "Red Gift Week" Everywhere and All Over* (1920–1); and Giotto's panel in the Arena Chapel in Padua, *Noli me tangere* (1304–6). All three depict two human (or quasi-human) figures engaging with each other. This engagement engages us, the viewers, in particular ways which relate to both their subject matter and their composition, and, ultimately, to the ideological soil from which they have sprung.

O'Toole then considers how Halliday's concept of the "social semiotic," which is itself reconstructed from the systems chosen for making pictorial meanings in a given era, relates to Marxist and Freudian constructions of the "viewing subject" which are imported, as it were, from outside the art forms as such. Analysis is not abandoned at this point, however, since the author attempts to define the main parameters of the social semiotic for each of the paintings analyzed up to this point in the book.

The final chapter confronts the important question raised by a "functional" approach as to whether certain paintings display "monofunctional tendencies." Is Canaletto's focus on representing real-life events in *A Regatta on the Grand Canal* (ca. 1735) comparable to Andy Warhol's *Campbell's Soup Cans* (1962) in its dominance of the systems of the representational function? Does J. M. W. Turner's *Snow Storm* (1842) engage us in the same way—that is, with the same systemic choices in the modal function—as Bridget Riley's *Cataract III* (1967)? And does the dominance of the compositional function in Piet Mondrian's *Composition with Yellow, Blue and Red* (1937–42) work in the same way as that of Jackson Pollock in *Phosphorescence* (1947)? Or is "functional dominance" just a matter of degree—as the Russian formalists would have insisted—since all of these six paintings require the other two functions for us to interpret them and for them to count as works of art?

The advantages of using a CD-ROM (O'Toole, 1999; 2010) for exploring and teaching about the arts are the high quality of digital images and the flexibility of the hypertext. A book requires a linear argument, whereas a CD-ROM allows—indeed, encourages—the user to move backward and forward between the logical argument and the whole painting or its details, other charts and illustrations, and, in the case of *Engaging with Art*, a "virtual gallery" of 28 paintings, for which the users can try out the analytical skills they are learning from the program. Thus, the hypertext shares with an SF chart and with a painting the possibility of moving both across the whole model and in or out between the whole and the details.

Since the publication of *The Language of Displayed Art* O'Toole has published analyses and reinterpretations of:

1. paintings—Rembrandt's *The Night Watch*; Chinese landscape painting; Julie Dowling and other recent Aboriginal painting; John Longstaff's *Breaking the News;* the logic of Magritte;
2. sculptures—*The Bronze Horseman* (St. Petersburg); institutional sculpture (Perth); English Gothic misericords;
3. architecture—Sydney Opera House; a Japanese *ryokan* (guest house); Noyori Conference Hall (Nagoya); the language and architecture of *Fawlty Towers*; and
4. the significance of computer-generated images in the television comedy series *South Park*.

Many postgraduate students and colleagues have produced dissertations and papers applying O'Toole's model to various forms of displayed art, including painting from several cultures, cemetery sculpture, domestic architecture and design, civic design, drawing, museum design, advertisements, children's book illustrations, and so forth. So far no full-length books have followed—or argued with—*The Language of Displayed Art.*

The rapid development in the 1990s of new and cheaper modes of display, retrieval, and reproduction of visual images, including film and TV, led to groundbreaking work by Anthony Baldry and Paul Thibault (2006), Jay Lemke (1990), and Kay O'Halloran (2004) on film, television advertising, and Web site design.

Since the late 1980s, the texts studied for "English" in schools and universities have included advertisements, diagrams, songs, political speeches and manifestos, film clips, and so forth. *Reading Images* by Gunther Kress and Theo van Leeuwen, originally published in 1990 but expanded into *Reading Images: The Grammar of Visual Design* (1996), and their *Multimodal Discourse: The Modes and Media of Contemporary Communication* (2001) concentrated on these areas of multimodal discourse. Working within the SF framework, but without Halliday's and O'Toole's charts of systems and functions for each mode of discourse, their work has been highly influential. Whereas O'Toole's work has primarily involved a search for open interpretation of art forms, theirs has involved a search for the ideological underpinnings of the multimodal text.

A crisis in the theory and management of museum display in the 1990s led to an important stream of multimodal work in this area by Louise Ravelli, Mari Stenglen, and others (Ravelli, 2006). Peter White and a group of colleagues and graduates in Sydney and Adelaide were advancing the framework for newspaper articles with photos.

Apart from the intrinsic value of analyzing nonverbal and multimodal texts with the SF framework, an outstanding advantage revealed by its application in undergraduate and graduate programs at Sydney and Macquarie Universities, the University of Technology Sydney, the University of New South Wales, Murdoch, Singapore, Helsinki, Swansea, and Pavia has been the way it illuminates the theories, methods, and terminology of *verbal* textual analysis for students who are not always at home with the complexity and subtlety of linguistics. Sometimes it is a revelation to see how one element in a painting may be simultaneously representing something, engaging us modally, and contributing to the overall composition—just as often happens in language.

SEE ALSO: Halliday, M. A. K.; Hasan, Ruqaiya; Multimodal Communication: Overview

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Multimodality and Film

JOHN A. BATEMAN

Film is an obvious candidate for consideration as a multimodal artifact. Even from the earliest "silent" films at the turn of the 20th century, musical accompaniment was common and this, combined with the subsequent use of intertitles as the form developed, already constituted a rich multimodal scenario. The current state of film—with its increased visual scale and resolution, multichannel sound, and now the rise of 3-D—pushes this multimodality still further and offers one of the most complex and tightly structured meaning-making practices developed so far. Both as a challenging object of multimodal study and as an example *par excellence* of multimodal meaning-making at work, film makes considerable demands on any theory and practice of multimodality and raises a wealth of open issues and questions concerning how best the functioning of multimodality can be explored and characterized.

Film also directly raises specific problems concerning just what "multimodality" is. Although many traditional approaches to multimodality have tended to conflate modalities with *sensorial* modalities, that is, distinguishing visual, acoustic, tactile, and so on, providing accounts of film quickly forces us to move beyond this. For example, within the acoustic channel, film theory already commonly distinguishes between ambient sounds of the events being recorded and the nondiegetic (i.e., not present in the world of the film) accompaniment of the musical soundtrack. Moreover, among the ambient sounds it is generally useful to distinguish between sound effects and the spoken natural language constituting the dialogue of the film. Such spoken language can then also be nondiegetic, for example, when a film is employing a voice-over or similar. All of these potentially distinct semiotic modes are carried by the sound channel but nevertheless enter into differing relationships with the information being carried by other modes and channels copresent in the film. The visual channel may also be decomposed in various ways. If written language is employed within the visual channel, then it is most appropriate to treat this with the tools and methods from linguistics. If the film is set in 17th century Europe, then it may be beneficial to employ information about the modes of dress from that time, and so on. As a result of this diversity of contributions, any simple characterization in terms of the senses is not only unhelpful, it may even be misleading in that it disguises commonalities in information presented across superficially quite different sensorial channels.

Another indication that film is a truly multimodal artifact is that specific *combinations* of these distinct modalities are commonly employed for creating further, second-order effects—for example, the ambient sounds may be presented "iconically," in that nearer objects make louder noises than objects far away, but it is equally possible within film to reverse this relationship for cinematic effect; or the sounds may not be presented synchronized with their visual correlates; or the sounds may even be used to create structural unities in counterpoint to the visual structures presented, as when a line of dialogue links across distinct shots or portrayed locales. All of these contribute to the complexity and power of the multimodal artifact that is film and establish good grounds for seeing film as a genuine semiotic hybrid, with new meaning possibilities arising out of the combination of modes available. Multimodal meaning-making has been described by Lemke (1998) as a process of "multiplying meaning"—but how precisely such a multiplication should

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operate is still very unclear at this time. Few frameworks for discussing multimodality are sufficiently developed to address this range of phenomena, although the sociofunctional semiotic tradition and its development of more refined notions of semiotic modes has begun to make some inroads here (van Leeuwen, 1985, 1991, 1996; Bateman, 2010). Film provides a wealth of locations where an elaborated notion of multiplying meanings is necessary and so stands as a critical test bed for any theory of multimodality that may be proposed.

From the perspective of film theory, issues of multimodality have also been long addressed in film study's own terms and it is particularly important for newer proposals within theories of multimodality to draw on this foundational work.

Early in the development of film theory, there were attempts to draw out the specific contribution of the filmic medium in a way that would allow its artistic credentials to be demonstrated, that is, to show clearly how film was more than just a photographic record (Pudovkin, 1926). Much of this work fell foul of the precepts of "medium essentialism," whereby individual arts were meant to have specific properties due to their material substrates, which then made them suitable for certain kinds of expression rather than others: For example, it was proposed that painting "should" concern itself with space and not with time, whereas poetry "should" concern itself with time and not space. In the case of film, this led to proposals of realism as being the "natural" highest form conceivable and so, to be "art," films should be realistic (Bazin, 1967; Kracauer, 1997). A useful deconstruction of this prescriptivism is given by Carroll (1988). In terms of multimodality, this kind of approach can also be criticized as combining, inappropriately tightly, more abstract patterns of signification with the less abstract material substrate used for realizing those patterns (Bateman, 2010).

A quite different angle on exploring multimodality in film was taken within film semiotics. Here work particularly by Christian Metz in the 1960s and 1970s sought again to isolate just what the specific contribution of film in contrast to other semiotic artifacts was—although this time not for the purposes of medium essentialism but simply to provide an accurate characterization of film as such. Metz's approach was to consider film as a combination of distinct semiotic modes, which could then be ordered along a scale of "specificity" according to the range of distinct semiotic artifacts they could be applied to (Metz, 1974). Some modes span a broad range of diverse artifacts, including many artifacts other than film; others were more specific and apply to a narrower range of artifacts. Film "as such" was then defined in terms of a specific combination of semiotic contributions rather than being considered a unique code in its own right.

With respect to the visual track, for example, Metz isolated five distinct classes of semiotic artifacts in this way. The most general, Metz's group 1, covered all artifacts relying on *visual iconicity*; this involves all depictions that are intended to bear some relationship of "resemblance" to what is being portrayed and includes photographs, painting, drawings, television, comics and, of course, film. Two more specific restrictions of this are then group 2, *mechanical duplication* and, within this, group 3, *multiplicity*. To the former belong all artifacts that use photographic or other "automatic" technologies for the creation of their images; to the latter belong artifacts that rely on the possibilities offered by employing *sequences* of images rather than single images, thereby distinguishing between, for example, single photographs and the photonovel. Within this latter group, Metz proposed a further subtype: *movement* (group 4), where the image itself includes movement, that is, actually moves. This then served to distinguish between comics and films—both include multiple images, but only the latter involves the moving images. Film and television were then the specific result of combining group 3 and group 4 into group 5.

Although this early account moves very much in the direction of some more recent decompositions of the notion of semiotic modes, some changes to improve its generality

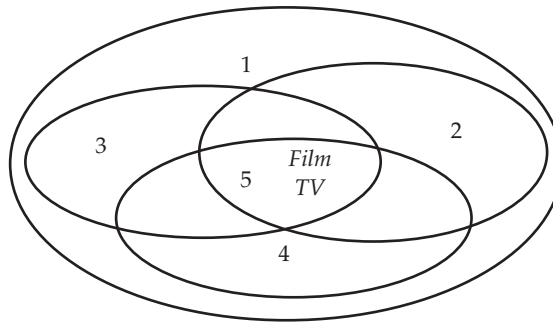

Figure 1 Revised version of Metz's (1974) characterization of more or less specific semiotic modes contribution to film

also need to be considered. For example, Metz's inclusion of group 3 within group 2 appears to have been simply a generalization motivated by restricting attention to the majority of narrative films: There is actually no need to insist on multiple sequences since it is quite possible to produce "single take" films—a possibility made simpler these days by the use of digital recording devices. Metz was also not considering animations, which allowed him to assume mechanical duplication; with today's computer graphic capabilities where there is no "duplication" involved and even with earlier animated cartoons, this feature fails to apply and so cannot be considered an essential component of film. Thus, following Buckland's proposal of a graphical representation of the modalities involved rather than Metz's somewhat verbose textual description (Buckland, 2000), a characterization of film might be set out as in Figure 1.

In addition to these features come the separate contributions of the sound track and combinations of the visual and aural channels. And, amongst these areas of semiotic contribution, several already make close contact with linguistic descriptions in general, not necessarily related to film. For example, linguistic studies of dialogue and interaction are equally relevant for the analysis of the spoken linguistic component of films. Interesting, however, is the way in which the use of this medium in film then *deviates* from natural interaction—often quite deliberately for aesthetic or other effects (Kozloff, 2000). Similar modifications occur with music—film music is employed in its own particular way in order to add meanings to the scenes it accompanies, involving emotional, structural, and cohesive functions (Davis, 1999; Gorbman, 1980). This applies to a considerable range of phenomena, even for micro-organizational aspects of interaction, such as the rate of blinking (Bordwell, 2007) and, most famously from the perspective of film and, in particular, feminist film theory, "gaze" (Mulvey, 1975).

Finally, there are now investigations of film that directly employ more results from linguistics, particularly from the areas of cohesion and discourse representation theory (Tseng & Bateman, 2010). All of these can now be expected to lead to an intensification of research into film from the perspective of linguistically inflected multimodality going far beyond the considerations of dialogue and interaction and with both theoretical and practical implications, for example in the expanding area of multimodal literacy.

SEE ALSO: Analysis of Dialogue; Critical Media Literacy; Multimodal Discourse Analysis; Multimodality and Literacy; Multimodality and Systemic Functional Analysis

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Multimodality and Globalization

ULRICH SCHMITZ

Introduction

Human communication is typically multimodal. Verbal communication goes along with mimic and gesture; written text always shows a typeface more or less visually designed (Krämer, Cancik-Kirschbaum, & Totzke, 2011). Nowadays, however, multimodality often is technically produced and conveyed; thus, it becomes more complex. Moreover, socio-economic conditions and technical developments have allowed the world to coalesce more and more. Therefore, communication is becoming more global—not only for the elite. Natural languages, however, put up regional barriers against internationalization. Other sign systems (sound, music, pictures, imagery, etc.) are not as efficient as natural languages, but they are not (or are incomparably less) bound to rules, which apply only regionally. Due to digital communication techniques (as in multimodal computers and smartphones) new, variedly mixed forms of communication occur. These techniques make the multimodal nature of human communication (Norris, 2004) available and transportable via technical means—independent of space and time. Research investigating multimodality and globalization takes into account factors such as unequally weighted economical power interests, the desire for worldwide comprehension, and the claim for cultural diversity and regional identity result in partly conflictual tensions.

Multimodal Communication: Terminology and History

Whenever individuals meet in person they use all their sensory organs to communicate. Eyes understand optical (i.e., visual) signs (e.g., mimics and gestures), ears acoustic ones (e.g., sounds and spoken language), the skin understands haptic signs (e.g., a handshake or stroking), the nose olfactory ones (e.g., body odor or perfume), and the tongue understands gustatory signs (e.g., in the sexual act). Since they are particularly flexible and differentiable, visual and acoustic means have turned out to be dominant mediums of communication in the course of evolution. Beyond personal face-to-face interaction—with growing communication distance due to advancing technical devices—channels other than visual and acoustic are not used because they cannot be easily engineered.

Multimodal communication researchers discriminate among mode, medium, and sign systems. The mode describes the physical basis (e.g., optic, acoustic), the medium the technical instrument (e.g., telephone, television), and the sign system describes the chosen repertoire of signs including the conventions of their usage (e.g., the lexis and grammar of spoken language). Mode, medium, and sign systems are reciprocally dependent on each other: the better they match, the more efficient communication is. As all of them have different advantages and disadvantages, the history of communication can be described as a creative-experimental development of different mixtures, whose compositions evolved from social necessities (e.g., acceleration, intensification, and differentiation of social traffic, extension of the radius of communication in space and time), and technical inventions

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(script, letterpress printing, telephone, radio, computer, etc.) (Leroi-Gourhan, 1964–5; Ong, 1982).

During this productive competition countless forms of communication (from dance and theatre to flyers and encyclopedias to posters and family music) emerged, which make variable use of the different modes and sign systems. Because large quantities of written text could be reproduced moderately cheaply due to the invention of movable type (resulting in an alphabetization of a large part of the population) it was mostly written pieces of communication (letters, documents, books, etc.) which—concerning quantity, status, and reputation—gained an almost monopolistic position within the whole communication system beyond face-to-face in the Western world in the second half of the 20th century.

This fact promoted the naive belief that communication typically takes place monomodally or at least depends on written (or alternatively spoken) texts. Within this tradition philology and applied linguistics concentrated on written or spoken language and suppressed other sign systems completely, although they are always involved in some way, in extreme examples only in a very reduced form (e.g., monotonous typography, spare layout or hardly modulated voice, uniform speech rate, etc.).

From the middle of the 19th century until today (with increasing acceleration), advances in printing technology, the invention and advancement of photography and film, telephone, radio, and television, as well as of many other audio-visual media including the semiotic general-purpose machines of computer and smartphone, made nonwritten elements of human communication amenable to production, reproduction, and worldwide distribution, however, only in an acoustic and visual form. As a result, the multimodal character of human communication is highlighted by researchers in communication science and applied linguistics (e.g., Ventola, Charles, & Kaltenbacher, 2004; Roth & Spitzmüller, 2007; Deppermann & Linke, 2010). "Multimedia," in contrast, is a buzzword of everyday speech, which does not distinguish between the various modes of communication and different technical devices. Not all new forms of communication are predominantly multimodal, though; consider SMS, chat, and e-mail, even if symbols, pictures, videos, and audio files may be included as the case arises.

Multimodality and Globalization

New media, available worldwide as far as the digital divide allows it, promote the international expansion of the dealings of individuals, goods, finances, and services amongst the privileged. This globalization creates new conditions and requirements for worldwide communication (Coupland, 2010).

Verbal messages fail to meet the needs for the new conditions; instead, they usually succeed in communicating only regionally, because verbal texts, whether spoken or written, depend on complex grammars. In order to function reliably across time, they change very slowly and are usually bound to historically developed and regionally more or less localized communication communities. Thus they hinder economic and cultural tendencies of globalization, which accelerate constantly. Indeed, the ambit of languages could be extended, but in doing so ecological diversity disappears. Furthermore, foreign languages can be learned, but this usually affects expressiveness and communicative differentiation. A worldwide lingua franca could be established but artificial languages did not succeed and natural languages (currently English) tend to entail pidginization while different varieties evolve (global Englishes) simultaneously. In all cases the grammar and lexis of single languages impede worldwide communication (Fairclough, 2006).

Iconic signs (e.g., prototypical pictures) do not require distinct conventions in a community because they structurally resemble their denotation. Photographs, for example (in the press and in advertising), are understood all over the world, although they—because of cultural patterns and previous knowledge—are filtered and interpreted in various ways. Even (iconic or abstract) painting, music, and other nonverbal messages, mono- or multimodally composed, do not require any knowledge of rules learned in advance in order to be understood; yet culturally different styles and habits play an important role concerning the quality of understanding. Nonverbal messages can be (verbally) interpreted and explained, but they cannot and need not be translated.

However, nonverbal sign systems have disadvantages for communication. Since they do not possess the typical double structure of phonemes and morphemes (or their written replication), they can only be cross-referenced to the world in a limited way. Either only a few nonambiguous signs are available (e.g., arrows, pictograms), which do not require or qualify for grammatical organization, or the ability to act as a reference is not intended by the developer (e.g., music, architecture).

On the other hand multimodal communication utilizes synergetic effects. Wherever languages alone are inefficient or intelligible only regionally, and wherever one cannot sufficiently distinguish semiotically by other visual or acoustic means, further coalitions and metamorphoses of variable modes can be employed—especially those of text, image, sound, or all combined (cf., LeVine & Scollon, 2004; Kress & van Leeuwen, 2006; Machin & van Leeuwen, 2007). Our ancestors knew this already. Take the "Cave-Canem" mosaic in Pompeii, Gregorian chants, or balladeers, for example. Even at the zenith of letterpress printing multimodal constellations beyond face-to-face communication played an important role in social intercourse. Maps connecting highly schematized illustrations of geographical structures to pictograms, proper names, and explanatory texts are examples of older multimodal communication, whose sign systems and techniques have been developed further up until the present (e.g., Google Earth).

However, modern and electronic mediums together with increasingly global communication made multimodal communication, in all its variations, the dominant instrument of public communication (Elleström, 2010; Kress, 2010). Monomodal (merely written or visual) forms of communication, in contrast, are limited in use to exclusive niches; even in libraries, museums, or churches one will have to search for them.

Multimodal Mass Communication in a Globalizing World

The more international the audience for communication is, the more multilingual the communication and also the more multimodal. Inscriptions, symbols, pictograms, emblems, guideposts, and other orientation systems, graffiti, pictures, audible warning signals, ring tones, background music, and all kinds of signs of different, often international, origins, especially at airports, train stations, traffic routes, and other public spaces, constitute an utmost dense and flexible semiotic landscape in which every pedestrian has to find their way (Backhaus, 2007; Shohamy & Gorter, 2009). This multimodal structure in particular facilitates their necessary selective orientation within the nontransparent glut of signs. Multimodal communication employs conventions, too; otherwise it could not function. But they are more flexible, more transparent, and less strict than grammatical rules. As the rules, habits and conventions of multimodal communication are protean and partly depend on the relevant situation, individuals get to know and handle them from case to case in situated communication and in specific contexts. Thus, they do not need any particular ability in advance in order to understand and produce multimodal communication (as is supposed for language acquisition).

Individuals not only participate in international environments as travellers, they also encounter globalization in their homes. Almost all goods come with multimodal character sets, be it as printing on the product itself, be it on the packaging or in additional material (labels, tags, documents, CDs, etc.) of all kinds. All mass media work multimodally. The newer the newspaper or the magazine the more complex is the interplay of text and picture, typography, and layout. Multimodal forms of communication facilitate the orientation and selection for users within huge and heterogeneous offers of information in two-dimensional communication spaces, similar to public spaces. Although there are culture-specific variants, the ergonomically best variants, which follow the rules of perception psychology rather than arbitrary rules or coincidences, establish themselves (Farkas & Farkas, 2002).

The younger a form of communication is, the more diverse and denser are the multimodal techniques (e.g., in the World Wide Web). Radio, television, and film also integrate language almost permanently into other modes. This creates new, internationally and partly globally recognizable formats. On television, the same pictures and films are often used worldwide by international agencies. On the basis of supplied storyline texts these are provided with language specific to regional needs (similar to the country-specification of identical software). In that way parts of the TV program become more alike globally. Often advertising is the most obvious pioneer of a global homogenization. It makes all modes of communication coalesce more and more, and simultaneously appearances, formats, and contents of public communication tend to be standardized intensely worldwide, even though regional marketing conditions and cultural specifics have to be taken into account in many cases. The amount of text constantly decreases in this course; major parts of the message are redeployed to other modes. The monomodalization enforced by early communication techniques tends to be reversed. Therefore medial communication, even if it is planned institutionally, is able to adjust to the habits of everyday face-to-face communication and, as a result, blends into it. Internationally identical devices and globally similar multimodal compositions permeate local everyday culture in this way—from California to big Indian cities, from South Africa to the last Yemeni village (but not vice versa).

Grammar and Design

Multimodalization by technical means results in design that has changed from an ornament to an autonomous carrier of meaning (Roth & Spitzmüller, 2007). When meaning is distributed across several modes, the different sign carriers interact and infect each other. In text-picture combinations, readers decode prototypical monomodal (i.e., nondesigned purely written) texts linearly (in the West from left to right and top to bottom) and reconstruct the fractions of the full sense bit by bit. This takes time and requires sound knowledge of written language. Viewers of pictures, however, gain a rough overall impression in the first tenth of a second, which is distinguished top-down afterwards. In text-picture combinations (e.g., in advertising posters, traffic signs or hyper-medial Web sites) both modes are interconnected by sight leading visual means (the architecture of surfaces or screen layout, typography, coloring), that is, by design. In practice this makes pictures adopt certain characteristics of texts (left–right orientation, concentration of the content on few elements, plain design of figure and ground) and texts adopt those of pictures (text design, more extensive than linear compositions, appearance, form, and content divided into small sections, modular instead of hierarchical organization, reduction, or abandonment of grammar). The extent of these metamorphoses depends on the respective type of text and picture; very often they merge into homogenous text-picture shapes (e.g., logos, banners, hyperlink signs).

International and partially globally similar conventions evolve here too. There are four reasons for this. First, pictures are not bound to languages with regional validity. Second, if there is an uneven distribution of power economically, politically, and culturally, a *pictura franca*, which appears universal but which actually conveys an aura of international —that is, West influenced—culture, can easily be propagated. Depending on the author, situation, and purpose multimodal messages attempt to find a balance between optimal global communicability and utmost local cultural identity. Third, multimodal design supports ergonomic purposes whose effects are subject to logical, pragmatic, and anthropological constants rather than to culture-specific traditions. And fourth, particular multimodal products can and should be easily communicated and intelligible: the more global their use actually is, the more homogenous the common conventions are. Thus a European is able to recognize the structure of a Chinese Web site immediately—sometimes they are able to surmise the content and even partly understand it. Provided the verbal parts are small, automatic translations, as they are offered for free on the Internet, suffice for a first approach.

Research

The connection between multimodality and globalization has been studied only rudimentarily until now. Within some sciences with very broad work areas (philosophy, semiotics, communication, and media science) this topic seems to be at the fringe. Many cultural sciences (linguistics, musicology, art history, and educational sciences) thoroughly investigate one mode, but not several in combination. Others (psychology, sociology) are typically not concerned about the means of communication. It can be a challenge to organize interdisciplinary cooperation in research as is necessary to study multimodality. Nevertheless, the number of relevant publications is rising; very often in the form of articles about individual questions concerning multimodality. Subsequent to groundbreaking older works about the history of multimodal communication (Leroi-Gourhan, 1964–5; Ong, 1982) general research results emerge from linguistic globalization research (Fairclough, 2006; Coupland, 2010) and from sociolinguistically orientated discourse analysis (Machin & van Leeuwen, 2007). Media aesthetics (Elleström, 2010) and particularly social semiotics (Kress & van Leeuwen, 2006; Kress, 2008; Kress, 2010) and works about linguistic landscapes (Backhaus, 2007; Shohamy & Gorter, 2009) usually dwell on multimodal compositions, their functions, and effects more concretely and comprehensively (also under conditions of globalization). Furthermore, an increasing number of linguists dedicate themselves to the interplay between language and other modes of communication—not only in personal interaction (Norris, 2004), in local and regional areas, but also in worldwide communication (Ventola et al., 2004; Roth & Spitzmüller, 2007; Forceville & Urios-Aparisi, 2009; Deppermann & Linke, 2010).

All these approaches should be pursued and expanded and should also learn from each other. Under the conditions of accelerating globalization human communication is becoming more complex. Therefore, the demands of communication communities as well as of individuals for communicative competence are growing. Within this process multimodality has played a limited role until now. The better we know and understand the special conditions, tendencies, and opportunities of multimodal communication within the expanding global reality of communication, the better and more consciously we can design them. Applied linguistics should bring diverse fields of research together to make them fruitful for production (e.g., text and Web design) and reception (e.g., in school and education). In doing so it will have to, like all linguistic disciplines, give up the common academic attention to spoken and written language in favor of the investigation of multimodal communication in the reality of life.

SEE ALSO: Critical Analysis of Multimodal Discourse; Linguistic Landscape; Multimodal Discourse Analysis

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Multimodality and Hypermedia

EMILIA DJONOV

No longer reserved for hypertext that includes sound or video, nowadays the term "hypermedia" refers to any hypertext featuring both typographic and non-typographic elements and has become interchangeable with the term "hypertext." Hypertext consists of nodes and hyperlinks. Nodes present information through verbal, visual, and increasingly also aural and kinetic resources; in other words, nodes are multimodal as they incorporate different communicative modes. On the World Wide Web, the world's largest and most complex hypermedia environment, nodes are HTML documents, opened with a Web browser (e.g., Mozilla Firefox) and called "Web pages," and a group of Web pages that displays cohesion and coherence (i.e., functions as a text) is termed a "Web site." A hyperlink is activated by selecting an anchor (a visible, clickable area) on a source node, which transfers users to a target node. Nodes thus serve as an interface for navigating through hypertext.

As hypermedia permeates professional, educational, and recreational contexts, it has attracted the attention of various research fields—computer and information science; literary, cultural, and media studies; education; and linguistics—which have considered it from three perspectives: (a) as digital technology for implementing hypertext; (b) as (meta)medium, or platform for multiple media/channels of communication (e.g., aural, visual, haptic); and (c) as content/text, that is, in terms of its meaning-making potential (Lemke, 2002). Although the third perspective has received most attention in applied linguistics, the meaning-making potential of hypermedia cannot be explored in isolation from the technology and media that materialize it.

Hypermedia texts make meaning through the interplay of hyperlinks with various semiotic resources (e.g., language, typography, layout, color, sound, movement). The presence of hyperlinks, or hypertextuality, is the defining feature of hypertext, and allows designers to establish multiple potential sequences and users to forge actual paths through hypertext. A hyperlink may connect nodes that belong to the same or different texts, activate an application other than the user's Web browser, or link existing to newly designed nodes. A user's traversal through a hypertext environment typically includes only a selection of nodes, usually explored one at a time, from one or more texts, and may involve three commonly recognized modes of use: searching/information retrieval; browsing (that is, navigation aimed at fulfilling a specific task); and free navigation/surfing. Increasingly, through the advance of Web 2.0 formats, users can also redesign and contribute content to a hypermedia text. These aspects of hypermedia render hypermedia texts multi-sequential and fragmented, and—especially those on the Web—open-ended and transient, and challenge traditional notions of text as a linear unit confined in space or time and with strict divisions between author and audience.

While hyperlinks make explicit the presence of semantic relations within and between hypermedia texts, it is the interplay of different semiotic resources within and across nodes that can signal their meanings (e.g., similarity, generality, cause). In fact, such relations may obtain within as well as between (groups of) nodes that may or may not be hyperlinked with each other or visited in a user's traversal through a hypertext (Djonov, 2005). For example, on a Web site's home page, resources such as layout, color-coding, and typography may present as similar the labels and icons of selected Web site sections

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(elements that usually serve as anchors to a section's main page) in order to signal that these sections serve a common function (e.g., to present Web site content or to provide information about the Web site and its producers) and to inform a user's decision to visit some, all, or none of the sections. Understanding the meaning-making potential of the interaction between hypertextuality and multimodality, which Lemke (2002) terms "hypermodality," thus requires a multimodal perspective.

Another quality shared by many hypermedia texts is their generic complexity. For example, many Web sites for children are generically hybrid: They can be described as "edutainment" or "infotainment" because they aim to both educate/inform and entertain their overt audience (i.e., children), as well as to gain the approval of a covert audience of educators and caregivers (cf. Djonov, 2008). Alongside the relative instability of hypermedia design conventions, the ease of manipulating and combining different modes and media afforded by digital technology also contributes to the emergence of new genres alongside genres adopted from traditional media (cf. Baldry & Thibault, 2006).

Within applied linguistics, most studies of hypermedia take a corpus-based or social semiotic approach, or both. Advances in computational and corpus linguistics have inspired many quantitative studies that classify Web genres according to user perceptions of both their purpose and structure and those of their counterparts in traditional media (cf. Crowston & Williams, 2000; Dillon & Gushrowski, 2000), or index them automatically using corpus linguistic tools, formal features retrievable from the logical structure of HTML documents (e.g., number and types of hyperlinks or fonts, layout elements), or both (Mehler, Sharoff, & Santini, 2010). Among these studies, earlier ones focus on how communication on the Web, especially in organizational contexts, adopts, adapts, or departs from genres in traditional media, whereas recent ones aim to develop tools for the automatic annotation, retrieval, and computational modeling of genres that can cope with the vast amounts of information available on the Web and have wider (though mostly commercial as opposed to educational) applications. Although valuable for large-scale content analyses of Web texts, the informal genre categories and easily computable structural features employed in all these studies do not reveal how multimodal relations contribute to enabling a genre to fulfill its purpose or purposes.

A model for describing Web and other multimodal genres systematically without relying on informal genre categories is proposed by Bateman, Delin, and Henschel (2007). It involves constructing an annotated corpus of page-based documents (including Web pages) according to detailed, multilayered descriptions of the ways semiotic resources are co-deployed, and then using these descriptions to identify the genres these documents represent. Informed by advances in corpus linguistics and document design, this approach adopts the social semiotic view that "[g]enres show a collection of semiotic resources pattern together in order to fulfill recurrent, recognizable social goals" (p. 158). Albeit labor-intensive, it also allows Bateman et al. (2007) to demonstrate that the front pages of several online newspapers in 2003–4 shared less with their print counterparts than with other types of Web pages, where information is organized thematically and in terms of relevance rather than newsworthiness, and where—in line with Web technology demands—considerable space is allocated to presenting navigation options.

Halliday's (1978) theory of language as a social semiotic (systemic functional linguistics), as well as frameworks for analyzing visual design and multimodal interaction based on it (especially Kress & van Leeuwen, 2001, 2006), provide the foundation for a wide range of discourse analytic and educational research on hypermedia. Social semiotic research on hypermedia discourse includes studies that (a) explore hypermedia's meaning-making potential in general; (b) focus on specific problems and contexts of hypermedia design and/or use; or (c) present critical analyses of hypermedia texts. The first group is exemplified by Lemke's (2002) scheme for analyzing hypermedia texts. It applies to hypermedia

social semiotic theory's model of the dynamic relation between text and context. In this model, every act of communication, or text, is viewed as a configuration of three broad types of meaning: ideational—representations of experience (subject matter) and the logical relations among them; interpersonal—construals of social relations and attitudes; and textual/compositional—the interweaving of ideational and interpersonal meaning that makes a text hang together as a unit of meaning. Analyzing single Web pages, pairs of Web pages hyperlinked with each other, and short traversals of Web pages within NASA's Web site, Lemke (2002) demonstrates that social semiotic theory, due to its focus on meaning, can account for the multimodality, open-endedness, and generic complexity of hypermedia texts and explain how meaning is constructed both prospectively and retrospectively in hypertext traversals. A focus on hypermedia in general characterizes also Baldry and Thibault's (2006) method for transcribing Web pages; Martinec and van Leeuwen's (2008) framework for designing nonlinear texts by "translating" (combinations of) basic types of semantic relations into products with different interfaces and navigation structures; and Zhao's (2010) time-based model for exploring the formation of semantic relations in the unfolding of a hypermedia text.

Other social semiotic studies of hypermedia discourse are concerned with specific challenges of hypermedia design and use or with particular contexts. Using as case studies six Web sites for children and children's navigation paths through one of them, Djonov (2005, 2007, 2008) develops two tools for studying how Web site design can support or hinder user orientation: a system for describing the potential of hyperlink traversals to reveal, obscure, or transcend a Web site's textual organization; and a framework for analyzing the ideational relations that hold together information presented on and across Web pages. Stenglin and Djonov (2010) consider interpersonal aspects of user orientation in their analysis of the multimodal and hypertextual distribution of narrative elements in an educational online game for children. Focusing on interpersonal meaning in a Web-based advertising campaign, Tan (2010) theorizes the potential of hypermedia discourse to present and align users with more or less dialogic ideological positions. Through a diachronic investigation of the home pages of online newspapers, Knox (cf. 2007, 2009) demonstrates that the affordances of Web technology interact with the institutional practices of news media and give rise to new genres, such as "newsbites" (news stories consisting only of a headline, lead, and hyperlink anchor), and semiotic practices, such as the widespread use of thumbnails (small images, usually of cropped human faces, which have restricted subject matter and composition but fulfill significant interpersonal functions in individual news stories, collectively on the home page, and over time in the relationship between an online newspaper and its audience).

A social semiotic perspective characterizes also critical discourse analyses revealing how the design of hypermedia texts such as the home pages of university Web sites and other educational institutions supports certain ideological positions (cf. Lemke, 1999; Zhang & O'Halloran, in press).

Social semiotic research on hypermedia in education, too, has explored a wide range of issues, such as the interplay of multimodality, gender, and age in young children's interaction with e-games (Roberts, Djonov, & Torr, 2008); the incorporation of e-literature and science hypermedia in school-based teaching and learning (Jewitt, 2006; Unsworth, 2006); the use of semiotic resources, technicality, and generic stages in print-based versus electronic science texts for school and university students (Unsworth, 2004; Jones, 2007); the potential of story genres (e.g., narrative, biographical, and historical recounts) to interact with each other (Zhao, 2008) as well as with other genres (e.g., procedure, information report) (Stenglin & Djonov, 2010) in order to present engaging lessons in history and art in children's Web sites; and the value of lessons about meaning making on online newspaper homepages to TESOL classrooms (Knox, 2008).

The research overviewed here evidences the value of an applied linguistics orientation to studying hypermedia communication. It has contributed to understanding how multimodality, hypertextuality, and genre, independently and in collaboration, create meaning in hypermedia; to developing solutions to key problems in hypermedia design and use, such as user orientation, engagement, and knowledge construction; and to explaining hypermedia's role in different contexts, such as mass media and education. This research provides a solid foundation for future investigations into unexplored questions, including the interaction between searching, browsing, surfing, and generating content in hypermedia environments; the role software (e.g., HTML, Web browsers, Flash) plays in the production and use of hypermedia texts; the relations between different generations of hypermedia technologies, such as Web 1.0 and Web 2.0; actual users' traversals across hypermedia and other texts on different timescales; and how such traversals mediate the formation of identities and broader discourse practices (along the lines suggested in Norris & Jones, 2005; Lemke, 2009).

SEE ALSO: Critical Analysis of Multimodal Discourse; Mediated Discourse Analysis; Multimodality and Literacy; Multimodality and Technology

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Multimodality and Identity Construction

JARRET GEENEN

Multimodality refers to a field of social science research interested in describing the ways in which multiple modes of communication or semiotic systems are used to construct recognizable meanings. Initial research endeavors sought to develop a system which would enable the analysis of visual meaning making in a fashion similar to linguistic analysis. Seminal works including O'Toole's (1994) *The Language of Displayed Art* as well as Kress and van Leeuwen's (1996) *Reading Images: The Grammar of Visual Design*, made significant contributions to our knowledge about how and in what ways visual meaning making is accomplished. Investigating visual meaning making as a social semiotic system, much of this work sought to establish a grammar with which to describe the semiotic system. Initial descriptions of visual stimuli as constructing three simultaneous, socially situated, metafunctional meanings provided incredibly important insights into the practice of social meaning making and gave impetus to what is now collectively known as the field of multimodality.

New directions in social semiotic research have emerged with particular interests invested in the analysis of moving images and real-time video-ethnographic data. At the forefront of the endeavor, Norris (2004) has developed a methodology called multimodal interaction analysis which enables the researcher to analyze real-time video data, describing the types of actions undertaken by participants using verbal and nonverbal modes of communication. Of paramount importance in Norris's research is the analysis of identity construction using multimodal interaction analysis. MIA enables the researcher to analyze video data to describe the ways in which social actors (co)produce identity though higher and lower-level actions in a particular social-time-place. Norris's research represents the most comprehensive multimodal investigation of identity construction; therefore, her methodology and particular insights will inform the bulk of discussion.

The term identity has been used in different disciplines to refer to a multiplicity of things, but for the purposes of multimodal interaction analysis, the concept of identity "includes all fully or partially (co)produced identifications, be they identifications with roles, nations or social groups" (Norris, 2011, p. 46). It has been suggested that identity is (co)produced at specific moments in time (Scollon, 1997), a process (Hall, 1996), and also a part of group practices (Wertsch, 1998). Extending these notions, identity as conceived within the framework of MIA is understood as socially (co)produced and (co-)constructed through action within an actor's specific social-time-place.

Identity is (co)produced through the performance of social actions in real time. The focus here is on the *production* of identity as instantiated in real time by social actors rather than some abstract conception of a subjective and concrete sense of self. As Norris (2011) describes,

> identity is embedded and (co)produced in . . . the social-time-place of a particular social actor together with other social actors, together with and within the historical time, and together with cultural tools, and together with and within the environment. (p. 41)

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Identity is produced in real time by social actors acting within their social networks. Through the orchestration of multiple communicative modes, social actors produce their identities through various forms of social action. Identity is perceivable through action and all action is telling of one's identity. Since identity is continuously produced and instantiated in real time, the concept of identity element is used in reference to the specific identifications that are produced.

The term *identity element* is used to describe particular identifications instantiated in social action because, within the framework of MIA, identity is understood as a process rather than a being and it is constantly developing as well as changing (Norris, 2011, p. 40). In other words, identity elements range on a continuum of permanence because some identity elements, such as a national identity element, are relatively stable and persistent, whereas, a work identity element may be less stable and persistent. In everyday interaction, participants (co)produce particular identity elements through various higher, lower, and frozen actions. These identity elements are of heuristic value and are not distinct categories. They range on a scale of permanence and can also be generally classified as role linked, nation linked and group linked.

Social actors (co)produce identity elements through higher, lower, and frozen actions, with other social actors, in a specific social-time-place. These identity elements, which are realized through identity-telling actions (e.g., cooking of a meal for one's children may tell of a parental identity element), range on a continuum of stability and culminate to influence the perception of one's person identity (outlined below). Thus, identity (co)production is a continual process wherein particular identifications may be newly instantiated and others may be discarded depending on the social-time-place including historical and contextual affordances. Another important component of identity construction is the phenomena wherein a social actor can and often does produce more than one identity element at a time. It is typical for a social actor to "produce several identity elements on different levels of attention/awareness" (Norris, 2011, p. 114) through multiple communicative modes.

The notion of foreground-background continuum has been used to describe the ways in which awareness and attention are employed at differing levels by a social actor within a site of engagement. The site of engagement can best be described as:

> the real-time window opened through the intersection of social practice(s) and meditational means that makes that lower (or higher) level action the focal point of attention of the relevant participants, and radiates from there encompassing the intersection of practices and meditational means that make those lower or higher-level actions the less focused or un-focused points of attention of the relevant participants. (Norris, 2011, p. 59)

Any particular site of engagement encompasses the primary focal point of the interaction which is described as the foreground, the background which comprises activity less attended to by the actors and all varying degrees in the middle. Using the notions of foreground-background continuum and site of engagement, we are able to see how different levels of attention and awareness situate actions on the continuum, making possible the production of multiple identity elements at the same time. In other words, social actors may engage in multiple actions at different levels of the foreground-background continuum, and these actions may produce different identity elements simultaneously. An example might be a case of an actor playing a musical instrument while also minding their child who is occupied with toys nearby. The actor may be simultaneously producing a musician identity element and a parent identity element at different levels of the continuum instantiated by varying levels of attention and awareness.

Discussion about the phenomenological production of identity must include an explication about the perception of identity elements by other social actors through the concept

of modal density. Identity elements, which may be produced inadvertently through higher-level actions by a social actor, are acutely perceivable by other interlocutors and this may be attributed to high modal density. Here, modal density refers to "the perceivably produced higher-level action and with it the perceivably produced identity element" (Norris, 2011, p. 116). Modal density can range on a scale from high to low and negatively correlates with the level of attention/awareness given to a particular action. In other words, actions constructed in the mid-ground or background of one's attention/awareness, are typically constructed with less modal density than those in the foreground.

High modal density can come about through three primary ways: through the intensity of mode, through the complexity of modes and through simultaneous intensity and complexity of modes. Intensity of mode refers to the strength with which a particular mode takes on primacy or is dominant in a particular action. Modal complexity is a term used to describe the utilization of multiple modes in the execution of a higher-level action. And, the third way modal density is realized is through the combination of both wherein multiple modes are complexly interlinked and foregrounded in one's attention/awareness. Thus, identity elements can be produced with high, medium, or low modal density depending on the utilization of communicative modes and are produced along a continuum of attention/awareness; both affect the strength with which an identity element is perceived. Social actors can not only produce multiple identity elements simultaneously; individual identity elements can be emphasized through instantiation in multiple layers of discourse. This is called vertical identity production.

While identity elements are produced through manual actions undertaken by an individual, identity can also be produced through layers of discourse. Within the framework of MIA, there are three particular layers of discourse which function in the production of identity: *outer layers of discourse*, *intermediary levels of discourse* and *central layers of discourse*. As Norris (2011) points out,

> these three layers of discourse are viewed in multimodal interaction analysis as building three vertical layers of an identity element; and vertical identity element production is apparent in the levels of discourse that a social actor refers to and/or enacts simultaneously. (p. 220)

Outer layers of discourse, which refer to those discourses that are formed by society and enforced by the extended networks and institutions a social actor engages with, produce a *general* identity element. Intermediary layers of discourse formed with and through social networks, both immediate and extended, produce *continuous* identity elements. Central layers of discourse formed through the engagement in immediate actions produce *immediate* identity elements. The vertical (co)production of a particular identity element through three difference layers of discourse functions to emphasize that particular element. In other words, the instantiation of a particular identification in multiple layers of discourse strengthens the phenomenological nature of the identity element. The strengthening and multiple (co)production of a particular identity element may contribute to stabilization in identity production and thereby, person identity production.

It is important to distinguish between the micro identity elements that individuals (co)produce moment to moment and the idea of person identity which refers to one's overall way of being and acting in a social world. The concept of person identity relates to the more stabilized traits, characteristics, and identifications of a particular social actor as they are regularly and consistently (co)produced within their various social networks. Essentially,

> person identity production encompasses the notion of national identity as it is produced by social actors in their life world, and the notion of role when social actors identify with the roles they enact . . . [it] entails all identity elements . . . person identity is a social actor's overall perceivable identity. (Norris, 2011, p. 319)

Paramount is the fact that person identity, while referring in a more holistic fashion to a social actor's overall psychological and sociological makeup, is instantiated in the micro identity-telling moment to moment unstable actions that occur in a specific social-time-place. As Lemke (2008) points out, "the longer term aspects of our identity are not determined by a single performance. They constitute patterns across time, across situations, even across clusters of situation types" (p. 24). Thus, one's more stabilized person identity is perceivable as a result of recurrent and continually produced identity-telling actions across situations and time.

As explained, current developments in multimodality and identity construction take identity to be perceivable through socially situated actions within a particular actor's social-time-space. Identity is (co)produced and (co)constructed in the form of identity elements, moment to moment in real-time interaction. Social actors are capable of (co)producing multiple identity elements simultaneously in and through their social networks and specific identity elements can be emphasized through instantiation in multiple discourse layers. The recurrent and continuous (co)production of particular identity elements over time can contribute to the production of a more stabilized person identity. However, identity is continuously and fluidly changing all the time, which is why we are particularly concerned with the production of identity through interaction, moment to moment, in its vast complexity.

SEE ALSO: Analysis of Identity in Interaction; Discourse and Identity; Multimodal Interaction Analysis

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Multimodality and Literacy

MARK EVAN NELSON

"Multimodality"—literally, the quality of integrating multiple forms or means—is a term that has been taken up by a number of fields over the past few decades (e.g., in medicine) to describe the co-application of a diversity of diagnostic imaging strategies, and in research into artificial intelligence, virtual reality, and augmented reality to talk about coordinated aspects of multisensory experience within digital environments. In the field of language and literacy studies, however, "multimodal" has come particularly to describe communication that features the simultaneous, sequential, or comparative presentation of two or more means by which meanings may be conveyed. These discrete communicational means, or "semiotic modes," are typically diverse in form and may include, for example, spoken language(s), written script(s), static imagery, moving (e.g., filmic or animated) imagery, and music. In further defining terms, there is an important distinction to be made between the concepts of semiotic mode and medium, which are often confused and conflated. Jewitt helpfully explains the difference:

> Medium refers to technologies of dissemination, such as printed book, CD Rom, or computer application. Mode refers to any organized, regular means of representation and communication, such as still image, gesture, posture, speech, music, writing, or new configurations of the elements of these. (2004, p. 184)

Multimodality and a Social Semiotic View of Meaning

According to the formal distinctiveness of semiotic modes, it is also generally understood that each semiotic mode is inherently disposed to offering particular kinds of opportunities and parameters (most often discussed as "affordances" and "constraints," respectively; see Kress & van Leeuwen, 1996/2006; Kress, 2000, 2003) for the construction, the *making*, of meaning. Simply put, each mode seems naturally better suited for conveying certain kinds of meanings over others. Illustrating this notion, linguist and educationalist Gunther Kress (2003, 2010), perhaps the most influential and earliest promulgator of the construct of multimodality in the language and literacy field, offers the example of the representation of a plant cell in a science classroom. Kress relates a scenario in which students are asked to "explain" a plant cell and its nucleus through the use of both linguistic and visual (pictorial) representations. In each case, Kress argues, the students are required to make different kinds of representational decisions. In the case of the linguistic explanation, Kress writes, students are most likely to opt for something like "the plant cell has a nucleus," which semantically establishes "a relation of possession" through the sequential ordering of "cell" and "nucleus" and the use of a form of the verb "to have," which syntactically links possessor and possession, typically. In drawing, by contrast, the students must make other kinds of decisions, such as to the placement, shape, or size, of the nucleus within the cell (2010, pp. 16–17). These differences make manifest particular aspects of the semiotic organizing "logic" that characterizes each mode: a dominant sequential organization in language and a spatial one in the image.

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Figure 1 Midday traffic in Hanoi's Old City © Mark Evan Nelson

Here it is important to stress, as Kress also does, that the meaning-making dispositions that attend different modes do not absolutely determine the kinds of meanings that a mode in communicative use might convey. For example, with regard to the photograph of "Midday Traffic in Hanoi's Old City," shown in Figure 1, a brief written description of this image, a sentence or two, could not convey to the reader the specificity and richness of detail (the tones, forms, facial expressions, etc.) that she would get from viewing the photo itself. However, a more comprehensive and carefully worded description would likely do a better job of getting the particularities across, of *evoking the image* so to say, than would the sparer caption. In this way a designful approach is taken, ingenuity is brought to bear, in the service of further activating the semiotic potentials of written language.

Still, the affordances and constraints of different modes when considered in the abstract can only partly account for multimodal meaning-making. In real, socially embedded instances of communicative practice, all "resources" for representation and communication, all modes included, have histories of use and fulfill particular, conventional expressive functions. These material and conceptual resources (e.g., languages, paintbrushes, knowledge of genres and other stylistic structures) are employed in the ways that they are based on the kinds of communication they are perceived as able to support, and these perceptions are largely attributable to social experience. Thus, communication, in both receptive and productive instantiations, which Kress and van Leeuwen (2001, p. 8) call "articulation" and "interpretation," respectively, is fundamentally a social project, involving the coordination and co-deployment of multiple meaning-making resources, which may be expressed in a range of semiotic modes.

The picture of communication sketched so far evinces a distinctly "social semiotic" bent, grounded in the work of linguist M. A. K. Halliday and elaborated by his followers (e.g., Halliday, 1985; Hodge & Kress, 1988; van Leeuwen, 2005). The terms "functional grammar"

and "systemic-functional linguistics" (SFL) categorically denote this body of theoretical and empirical work. In his groundbreaking volume *Language as Social Semiotic* (1978), Halliday proposes that language can only be understood "in the total context of the interaction between an individual and his human environment" (p. 9), that is, in socially embedded contexts of functional use. According to a social semiotic view, then, meaning is effectively bifurcated into potential and actual states, where potential meaning describes the range of possible meanings that can be made in a given text or other instance of communication and actual meaning is the particular significance that is "actualized" against the field of all other possibilities within a specific social context and in light of the purposes of the meaning maker. This stands in contrast to also highly influential notions of the universal, innate nature of meaning in language, most notably associated with linguist Noam Chomsky (1965) and the theoretical program originally called "transformational-generative grammar" (TGG), which Chomsky and colleagues formulated and have developed over the past half-century. While TGG and succeeding theories take form as their starting point in understanding language, social semiotics begins with meaning, which in each case "if carried through consistently . . . ends up with a strikingly different kind of description of language" (Thompson, 2004, p. 2).

This primary concern for meaning and function within social semiotics brings with it the vital recognition that language is not part and parcel of communication itself; though it is undeniable that language is a critically important resource for communication, it cannot be considered the only resource, perhaps not even the principal one. Rather, the meaning maker always selects from among the available range of resources for communication—language being one, but also including images, gestures, sounds, and even silence (Stein, 2007)—based on individual and conventional perceptions of what Kress (2003) calls "fitness for purpose" or "aptness" for realizing an expressive intention, which follows on the discussion above. This is the crux of what is described as multimodal literacy: the adaptive capacity to recognize, imagine, and effectively exploit the meaning-making potentials of a diverse array of resources in view of one's own purposes for communication.

Multimodality, Literacy, and Literacies

Having established a theoretical basis for a multimodal view of communication and literacy, it is appropriate next to address the crucial question of what importance or relevance this view may hold for learning, and life, in the 21st century. What justification could there be for complicating tidier definitions of literacy-as-reading-and-writing with the notion of multimodality? Why and how is it that this view should influence the ways in which communication is approached, learned, and taught?

First, to rehearse what may be obvious to some, while language is not part and parcel of communication itself, multimodality certainly seems to be. In even the most casual, workaday instances of face-to-face communication, for instance, we draw upon gesture, gaze, proxemics, touch, and smell, among others in the panoply of sensory, experiential, and conventional resources that are marshaled for meaning-making purposes. Moreover, as anthropologist Ruth Finnegan (2002, p. 225) writes, though "this multiplicity is something we draw on every day . . . taking it for granted, we seldom notice it consciously." To this extent, communication always has been and cannot but be multimodal.

This does not mean, however, that communication has not changed or is not changing; radical changes in the landscape of literacy have occurred and are still afoot. An unmistakable, fundamental transformation has taken place in the quantity, variety, and complexity of texts that constantly confront so many of us, owing principally to the existence and use of computers and the Internet. More to the present point, the kinds of texts so many of us

now typically encounter and increasingly have occasion to create are, as a matter of comparative degree, definitively multimodal, for example, so-called "social media," like the wildly popular Facebook, which may integrate images, written text, graphics, sound, etc., in a variety of arrangements on a single "page." So, much interest in multimodal literacy is focused especially on the preponderant and increasing diversity of modes and media that comprise everyday texts—digitally constituted texts in particular—and the social and educational implications of this diversity.

The best known and most influential scholarly effort to come to terms with these new demands placed on literacy and literacy pedagogy arose out of a meeting in 1994 in New London, New Hampshire of ten prominent scholars from Australia, the United Kingdom, and North America and representing a variety of social science fields, but with a common concern for problems of education. These scholars were especially concerned with what they perceived to be grave disparities in educational outcomes and future opportunities among the world's people. The group included Professors Courtney Cazden, Bill Cope, Norman Fairclough, James Gee, Mary Kalantzis, Gunther Kress, Alan Luke, Carmen Luke, Sarah Michaels, and Martin Nakata, who collectively became known as the "New London Group." The New London Group first published a unified presentation of their ideas in 1996 in the *Harvard Educational Review*, in the form of an article-length manifesto entitled "A Pedagogy of Multi-Literacies: Designing Social Futures." In this paper, the authors take the position that the essential purpose of education "is to ensure that all students benefit from learning in ways that allow them to participate fully in public, community, and economic life" and that "[l]iteracy pedagogy is expected to play a particularly important role in fulfilling this mission" (New London Group, 1996, p. 60). The New London Group go on to argue that a literacy pedagogy appropriate for and facilitative of the achievement of "full and equitable social participation" needs critically to accommodate the literacy needs brought about by two principal trends toward increased plurality and diversity in the global community:

> First, we want to extend the idea and scope of literacy pedagogy to account for the context of our culturally and linguistically diverse and increasingly globalized societies, for the multifarious cultures that interrelate and the plurality of texts that circulate. Second, we argue that literacy pedagogy now must account for the burgeoning variety of text forms associated with information and multimedia technologies. This includes understanding and competent control of representational forms that are becoming increasingly significant in the overall communications environment, such as visual images and their relationship to the written word—for instance, visual design in desktop publishing or the interface of visual and linguistic meaning in multimedia. (New London Group, 1996, p. 61)

This second point speaks directly to the presence and importance of multimodality in the texts and literacy practices of the present and the presumable future. Still, these aspects of multiplicity within texts and without them, that is, in sociocultural contexts of literacy, are fundamentally and inextricably interrelated, as, in the New London Group's phrase, "the proliferation of communications channels and media supports and extends cultural and subcultural diversity" (p. 61). The pedagogical program devised by the New London Group to address the interaction of these trends and their implications has been termed "multiliteracies."

The operative principle and central practical process of multiliteracies is "design." Design is the name given to the adaptive meaning-making capacity described above and is, in a limited sense, a replacement term for both "reading" and "writing" and the roles these play within the traditional discourse of literacy. Whereas reading and writing may invoke notions of the decoding and encoding of assumedly fixed meanings on the sole basis of

linguistic scripts, "design asks what is needed now, in this one situation, with this configuration of purposes, aims, audience, *and with these resources*, and given *my* interests in this situation" (Kress, 2003, p. 49, emphasis in original). Design is expressly meaning-oriented, not language-oriented, entailing the selection and coordination of the whole range of semiotic modes as befits specific communication needs. The notion of *designing meaning*, then, necessarily reforms and refocuses conceptions of literacy and learning in a number of highly significant ways; and multimodality is deeply implicated in these changes.

A core presupposition of multimodal literacies (or multimodal meaning design) within the broader framework of multiliteracies is that meaning is constructed both in and in between different semiotic modes. In traditional conceptions of literacy, there is a tendency to regard meaning as residing within written or printed text, notwithstanding the interpretive work that must be done to access this meaning. A literacy that mobilizes a diversity of resources toward building meaning *in the moment*, however, is an essentially relational one. This is to say, the meaning potential resides as much in the interstices between the pictures, elements of language, spatial arrangements of features, etc., in a given text as within these—maybe more so. (Again, too, these potentials are founded in personal and social experience.) When we "read" a page on the World Wide Web, for instance, we attend not only to titles, banners, and other written-language texts, but also to color choices, graphics, photos, spatial arrangements, sounds, etc., as the case may be. And though we may actualize different, even dissonant meanings in the various "design elements," we interpret these dissimilar elements as both text and co-text, forming integrative impressions of meaning relationships among the parts and of the whole. Reflexively, too, these multimodal juxtapositions help us to see and understand the meaning potentials of the individual component resources in new ways. Herein, according to Kress, lies the capacity for learning and creativity within multimodal literacy practices, a process he calls "synaesthesia."

Synaesthesia, as it is understood here, entails the psychological cooperation of "transduction," which is the shifting of "semiotic material," the stuff of meaning, across boundaries of mode and medium, and "transformation," the qualitative reshaping of the meanings made in individual modes that results from transduction (Kress, 2003, p. 36). The *psychological redesigns* can and do bring about the redesigning of material resources too as the potential significances and uses of these are synaesthetically reimagined. This notion also resonates, perhaps, with Lemke's (2005) theory of "transmedia traversals," which aims to account for the "ecosocial" meaning-making implications of crossing boundaries of genre, media, and context.

Such theoretical frameworks have very helpfully pointed the way for others whose work aims for tangible, practical understandings of multimodal literacies and learning; but there are many important questions still to be answered. What does multimodal creativity and learning look like *on the ground* and how does it happen when it does? When it doesn't come about, what is the explanation for that? What particular kinds of capacities and knowledge characterize the multimodally literate, and how can these be learned, developed, and taught? What roles do culture and social life play in these learning processes and practices? These questions have been addressed by Nelson (2006, 2008), for instance, in qualitative studies of the multimodal literacy practice of digital storytelling in Japan and the USA. On the basis of documentation and analysis of the creative decision-making processes of adult English-language learners involved in composing personal narratives in multimedia form, Nelson specifically identifies and illustrates a number of cases of multimodal design (as articulation) in which the expressive intention of the multimedia author was obscured, altered, or amplified in different ways, as a function of the semiotic affordances and constraints of different modes and the degree of the authors' understanding of and control over these. More, Stein (2007), in the context of an examination of "multimodal pedagogies" in a township of Johannesburg, South Africa, presents a highly

nuanced analysis of a narrative produced by a young Zulu-speaking girl in three distinct forms: a spoken performance, a written story, and a drawing. Stein shows how meaning-making orientations, such as toward the body and the audience, change as the story is "transduced" from speech to writing to pictures, clearly and concretely demonstrating the aforementioned creative capacity of synaesthesia and the pedagogical potential afforded by a multiliteracies approach. Still, too, other research into multiliteracies and accordant multimodal pedagogies has highlighted serious social and ideological constraints, such as in the marginalization of non-traditional literacy practices in mainstream educational settings in Australia, reported by Tan and McWilliam (2009). These researchers found that in each of two quite different settings—a well-resourced, high-performing senior school and a "reception" school for at-risk migrant English-language learners—meaningful digital literacies work was sidelined and subordinated to traditional print literacy-based activities, which were deemed more fundamental, substantial, and consequential.

Understandings of multimodal literacies continue to take shape and their significance is ever clearer. As billions of people depend more and more on multimedia technologies in the performance of seemingly all aspects of personal, social, and professional life, and, as Kress (2003) notes, the texture of our world shifts toward the image and the screen and away from printed word and book, multimodality and literacy beg urgently to be reconciled.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Functional Grammar; Multiliteracies in Education; Multimodality and Culture; Multimodality and Technology; Multimodal Text

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Multimodality and Metaphors

MICHELLE M. LAZAR

Introduction

Metaphors are commonly viewed as a figurative literary device that adds eloquence to a speech or text. The assumptions underlying this popular understanding of metaphors are that they are a property of words; they are used to achieve some artistic or rhetorical effect; they are based on a relationship of similarity between two entities; they are a conscious and skilled use of language; and they are a figure of speech whose function is merely decorative (Kovecses, 2002, p. vii). Challenging the above understanding is the *cognitive linguistic view of metaphors*, first developed in the work of George Lakoff and Mark Johnson (2003/1980). According to this view, metaphors are a property not of words but of concepts; are not just used for aesthetic purpose but enable the understanding of particular concepts and ideas; are often not based on the resemblance between entities; are used effortlessly and often unconsciously by everyone; and are an inevitable process of human thought and everyday human communication (Kovecses, 2002, p. viii).

The view adopted in this entry is based on the cognitive linguistic approach that maintains the conceptual nature of metaphors; hence the term "conceptual metaphors." In what follows, the theory of conceptual metaphors is first outlined. Two successive sections will then deal with the expression of metaphors in language (verbal) and in other signifying systems (nonverbal), distinguishing between monomodal and multimodal expressions of metaphor, as well as showing the operation of multimodal metaphors, respectively. The penultimate section considers some challenges posed to the conceptual metaphor theory (CMT) by scholars working on nonverbal and multimodal metaphors. The entry concludes with some suggestions for further research on multimodal metaphors.

Conceptual Metaphor Theory

In the cognitive linguistic approach, metaphors are conceptual in nature, in that we understand one conceptual domain in terms of another conceptual domain. (A "conceptual domain" refers to "any coherent organization of experience"; Kovecses, 2002, p. 4). Let us take the example LIFE IS A JOURNEY. Here, the conceptual domain of life is understood in relation to another conceptual domain—that of a journey. LIFE is what is called the "target domain," which is the conceptual domain that we need to understand, whereas A JOURNEY is referred to as the "source domain," that is, the conceptual domain we draw upon to make sense of the former. Typically, in CMT, the target is a more abstract concept that is comprehended via the source, which is a more concrete concept, and the qualities of abstract and concrete for target and source, respectively, are usually not reversible. The rationale for this is based on the assumption that "our experiences with the physical world serve as a natural and logical foundation" for making sense of more abstract domains (Kovecses, 2002, p. 6). Abstract conceptual domains such as life, arguments, theories, and ideas figure as target domains, whereas perceptually more physical/concrete conceptual domains such as journeys, wars, buildings, and food figure as their source domain counterparts, respectively (Lakoff & Johnson 2003/1980).

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The process by which metaphoric comprehension is achieved is called "mapping," whereby elements of the source domain are mapped or transferred onto the target domain, usually systematically and unconsciously. In the case of the LIFE IS A JOURNEY metaphor, identifiable features of a journey (such as beginnings, ends, detours, and so forth) get mapped onto the domain of life, so that the latter comes to resemble the former. A conceptual metaphor not only enables the understanding of a more abstract domain but also, importantly, mediates and structures it (Kovecses, 2002; Knowles & Moon, 2006). In other words, the domain of life assumes the quality of a journey (or "becomes" a journey) through the mapping process.

Further, Fauconnier and Turner (2002) have identified another process, termed "blending," in which two or more (instead of singular) input spaces are involved in metaphoric comprehension. For example, in a print advertisement for a music radio station, the caption that reads "Make space for today's hottest hits" is visually accompanied by a picture of two DJs dressed as doctors in white lab coats (*Straits Times*, January 12, 2011). One holds up a medical instrument to a listener's ear to check on wax buildup, while another holds up a hand-held vacuum cleaner with its nozzle in the listener's ear. "Making space" is here understood in terms of a blend of two conceptual domains—one from a medical domain of checking ear-blockage and another from a "lifeworld" domain of cleaning.

In CMT, a conceptual metaphor is worded in the form of a statement X IS Y (thus, LIFE IS A JOURNEY), rendered in small capital letters. The use of small capitals indicates that the statement does not refer to the actual wording found in the discourse; instead, it is the underlying conceptualization identified from, as well as made manifest in, such metaphoric linguistic expressions as "Mary is at the crossroads of her life," "Death signals the end of the road," and "Jim lost his way during his youth, but got back on track in his later years." A conceptual metaphor may be manifested in bits of discourse (as in the sentences above), or structure texts in entirety. Knowles and Moon (2006, p. 42) have noted that LIFE IS A JOURNEY, in fact, has framed whole texts, from song lyrics (e.g. the Beatles' "Long and Winding Road," Lynyrd Skynyrd's "Freebird," and Joni Mitchell's "Woodstock") to books and plays (e.g. Cervantes's *Don Quixote*, Tolkien's *Lord of the Rings*, and Beckett's *Waiting for Godot*).

Verbal and Nonverbal, Monomodal and Multimodal Metaphors

The linguistic, or the verbal, is the most familiar mode of metaphoric expression. However, if metaphors are a conceptual phenomenon, it then follows that metaphors can be expressed through nonverbal modes as well. As Lakoff and Johnson (2003/1980, p. 3) noted, "metaphor is pervasive in everyday life, not just in language but in thought and action."

Over the years, the pictorial or visual mode has been the most popularly researched nonverbal metaphor. Kovecses (2002, p. 58) provides an example of a visual metaphor from the Walt Disney film *The Hunchback of Notre Dame*. The cruel judge of Paris has an uncontrollable sexual desire for Esmeralda, the beautiful gypsy girl, and in one scene, the entire room and palace are consumed in flames. Kovecses explains that the metaphor that is given visual expression here is SEXUAL DESIRE IS FIRE, where the flames correspond to the judge's intense sexual desire.

More recently, studies have begun to investigate other nonverbal modes of metaphoric expression. For instance, Knowles and Moon (2006, p. 142) offer an example from the field of electro-acoustic music, where sounds are used to realize concepts. Knowles and Moon cite a composer's (Jonty Harrison's) description of one of the principal source sounds derived from children's balloons for his piece *Hot Air* as follows:

> [The balloons] "give rise to a train of thought which, after linking 'toy' balloons to 'hot air' balloons, went on to draw in other concepts of air (breath, utterance, and natural phenomena) and heat (energy, action, danger)" (Harrison 2002). These concepts are realized by "a shift of focus away from instrumental generalizations" to compositions where "the musical forms are no longer abstract, but abstracted from . . . recognizable sounds. The sounds of our every day experience" (Harrison 1996: 16). The result of the synthesized sonic composition *Hot Air* was . . . to reveal "another, altogether more worrying image: that of the inflated balloon as a metaphor of the very environment of the Earth itself" (Harrison 2002).

Regardless of whether it is verbal or nonverbal, if one mode is solely used for metaphoric expression (as in the examples above), then that is called a monomodal metaphor. Unlike monomodal metaphors, multimodal metaphors, as defined by Forceville (2009a), are those whose target and source domains are predominantly or entirely presented in different modes, which may include visuals, written language, spoken language, gestures, nonverbal sound, and music. According to this definition, verbo-pictorial metaphors count as multimodal metaphors, but so do verbal metaphors whose target and source are presented in, say, written and spoken modes, respectively (Forceville, 2009b, p. 383).

Multimodal Expressions of Metaphor

In this section, three examples of multimodal metaphors are presented that show various combinations of modes in operation: written language/visuals; spoken language/gestures; and visual/music.

An example of a metaphor expressed through the co-deployment of language and image comes from a set of print advertisements on female beautification (Lazar, 2009). One of the metaphors identified in the study is WOMEN'S BODIES ARE BATTLEGROUNDS, which is realized through language (for example, "To fight the signs of time from appearing on her face," and "targeting on localized fat and cellulite areas"), and visual representations of cross-hairs superimposed on parts of women's bodies. Lazar notes that the circular outlines of cross-hairs are metonymic both for the weapon directed at the particular sites and for the invisible sniper whose gaze is fixed upon the targeted zones. Through this metaphor, women's bodies are treated as a territory of surveillance and militarized action.

Muller and Cienki (2009) have studied verbo-gestural metaphors in face-to-face communication. For example, in one case, a young German woman describes how her teenage love became increasingly "clingy," which gets expressed through the collaboration of a hand gesture and language:

```
(1)  [Muller & Cienki (2009, p. 307); G1; transcript partly reproduced]
        open palms touching each other repeatedly
     also da hab ich schon gemerkt naja'
     So there I had already realized, well,
     des is ganz schon  klebrig.
     this is pretty     clingy.
```

Muller and Cienki note that the source domain of "clingyness" to describe the relationship is here expressed verbally and gesturally. They observe that the speaker's open palms repeatedly touch each other, move apart, and then "stick" back together, as though the palms were sticky and hard to separate. "Clingyness" is here enacted by the hand gesture even before the verbal part of the metaphor is expressed.

In multimodal expressions of metaphor, the verbal is usually one of the modes involved (as in the examples above); however, this is not always or necessarily the case. In the next example, from a television commercial (Forceville, 2009b), visuals and nonverbal sounds combine to realize a metaphor. The commercial is for an Iglo instant meal, in which a mini-corncob and a French bean are visually personified as walking toward an Iglo package. The conceptual metaphor in operation, identified by Forceville, more specifically is CORNCOB AND FRENCH BEAN ARE BRIDE AND GROOM, based on the tune of the Wedding March accompanying the personified image, which metaphorizes the two vegetables as bride and groom. Forceville notes that if the sound were turned off, most viewers would not be able to access the source domain on the basis of the visual cues alone.

Some Challenges to CMT

While drawing upon classic CMT, nonverbal and multimodal metaphor research has raised some cautionary points about it. For one, although CMT maintains that metaphors rely on the conceptualization of the abstract vis-à-vis the concrete, in the case of nonverbal and multimodal metaphors, the target and source may both be concrete. This is quite common in consumer advertising, where the target domain is typically the product, which is depicted, and so is necessarily concrete; however, it can be found elsewhere, too, such as in political cartoons and in characterizations in films (Forceville & Urios-Aparisi, 2009).

Another challenge is posed by the need to verbalize the underlying metaphorical conceptualization in the X IS Y format. While it has been noted that the naming of conceptual metaphors in this way can never be a neutral undertaking—rather, it relies on the analyst's interpretation of the observed metaphoric expressions—the subjective element involved is exacerbated in the case of multimodal metaphors, where the source domain is expressed nonverbally. For example, in the branding of a company, Koller (2009, p. 48) notes that a company's business principles might feature pictures of a boat race with no possible literal interpretation. Such an image opens up a number of different ways of wording the metaphor, such as COMPANY X IS A RACING TEAM, or in more general terms, BUSINESS IS A RACE. In view of this complexity, she suggests that the traditional X IS Y format is limiting; instead, inferred metaphors ought to be seen as part of what Musolff (2006) has termed a "metaphor scenario," which can accommodate different levels of abstraction. This would work especially for multimodal metaphors, which tend to be less explicit than purely verbal ones (Forceville, 2009b).

Conclusion

In concluding, we shall consider areas for further research. In terms of genre, with the extension of research into nonverbal and multimodal metaphors, many genres other than purely written ones have opened up for study, including advertisements (Forceville, 1998), cartoons (El Refaie, 2003; Shinohara & Matsunaka, 2009), spoken interaction (Cienki, 1998), film (Carroll, 1996; Kovecses, 2002), music (Forceville, 2009b), and design (Caballero, 2003). It becomes worthwhile to investigate how genre may affect the production and interpretation of metaphors. Forceville (2009a) has noted that advertisements, for instance, quite neatly fit the TARGET IS SOURCE format, where the target typically coincides with the promoted product or brand, and that the features mapped from the source to the target are predictably positive. However, metaphors in more artistic contexts may be less straightforward, and could allow for greater freedom of interpretation.

Cross-cultural production and interpretation of metaphors is another area in need of greater research. Pictorial and multimodal metaphors, according to Forceville (2008), have

greater cross-cultural access as they are more easily recognized transnationally than those linguistically expressed. Yet we cannot assume that nonverbal and multimodal metaphors will be interpreted in the same way across cultures. It is worth investigating what areas in the conceptualization and expression of metaphors remain constant and what varies across cultures (Kovecses, 2005).

Finally, although in recent years metaphor scholars have begun to focus on multimodal expression of metaphors, few studies have been truly multimodal. Much existing research on multimodal metaphors tends toward bimodality (involving two modes) rather than multimodality (involving more than two modes). As the multimodal "turn" in metaphor studies establishes itself, we can expect more research on conceptual mappings and blends that involve the interplay of a plurality of modes.

SEE ALSO: Conversation Analysis and Multimodality

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Multimodality and Rhythm

THEO VAN LEEUWEN

The Importance of Rhythm

Rhythm plays a crucial role in creating cohesion and meaningful structure in multimodal texts and communicative events that unfold over time. Edward Hall (1983) has vividly described just how finely people attune their speech and body rhythms in everyday interaction, and the close analysis of extracts from films (Van Leeuwen, 1985; Martinec, 2000) has uncovered the subtle interaction of the rhythms of actors' movements, dialogue, and music with the rhythms of camera movements and editing.

The rhythmic structure of multimodal texts has its basis in the rhythms of our body—the heartbeat and the breathing cycle. Poststructuralists, in a psychoanalytic vein, have at times described linguistic and semiotic codes as harnessing and taming the pleasures of the body, but in fact the two are closely intertwined. Understanding body rhythm and the physicalities of motor behavior is fundamental to understanding semiotic structuring and multimodal communication. In semiosis, as Kristeva has put it (1980, p. 173), "instinctual rhythm becomes logical rhythm."

It is regrettable that rhythm, so far, has not yet achieved a more central place in multimodal text analysis and multimodal conversation analysis, because rhythm is the one thing all time-based semiotic modes have in common, and rhythmic structure is therefore the single most important factor in integrating different time-based modes into a multimodal whole, and therefore in understanding multimodality. As Couper-Kühlen (1993, p. 112) has said, in a linguistic account of rhythm: "The principles of organization of [speech, verse and music] are surprisingly similar, and allow for the same play off between abstract construct or underlying structure and actual realization."

As is appropriate in multimodal analysis, multimodal theories of rhythm draw on a multidisciplinary range of references, including linguistics (e.g., Halliday, 1967, 1970; Couper-Kuhlen, 1993), nonverbal communication (e.g., Hall, 1983), literary theory (e.g., Leech, 1969), and musicology (e.g., Cooper & Meyer, 1960). The two main approaches to rhythm in the multimodality literature are those of Van Leeuwen (1985, 1999, 2005) and Martinec (1996, 2000, 2002). The theory of rhythm is also taken up in Baldry and Thibault's (2006) compendium of multimodal transcription and analysis. The account below integrates these fundamentally compatible accounts, pointing out differences where appropriate.

Rhythmic Feet in Speech, Music, and Action

The essence of rhythm is regular alternation—alternation between an up and a down, a tense and a lax, a long and a short, a loud and a soft, and so on. Such alternation is so essential to human perception that we perceive it even when "objectively" it is not there. Experimental phonetics has shown that, when listening to a series of absolutely identical, evenly spaced click noises, people will, at regular intervals, hear one of the clicks as accented, as more salient than the others (Allen, 1975), and the intervals between accents will be heard as equally long, as "isochronous," even when in reality they are not quite

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equal (Lehiste, 1970). These accents then demarcate "rhythmic feet," units consisting of an accented syllable plus or minus one or more unaccented syllables, with the accented syllable higher in pitch, louder, or longer, or some combination of these. The principle can also be applied to music or sound effects, or to movements, where an accented gesture or other movement may be more salient because of its greater force or extent, its "vividness," as cognitive psychologists say (cf, Martinec, 2000, p. 291).

Tempo then results from the duration of these rhythmic feet. Musical tempo, judging by the metronome, ranges from 40 to 208 pulses per minute—the human heartbeat ranges from about 50 to 200 pulses. Ninety pulses per minute is not only a medium tempo for music, but also the average rate of easily paced walking in adults (the musical term *andante* means "walking," and jazz musicians speak of a "walking bass").

Rhythmic accents play a key role in articulating meaning because they foreground the sounds or movements that carry the key information of each rhythmic foot (in the example below, the rhythmic feet are separated by oblique strokes and the accents are underlined):

/<u>Why</u> do you/ <u>think</u> I am/ <u>wor</u>king like/ <u>this</u>/

It is clear that the meaning of this line might still come across if we just heard *Why think work this?* but not if we only heard *do you I am king like*. The same analysis can be applied to musical accenting, or to accenting movements. Figure 1 shows the opening motif of Tchaikovsky's fifth symphony. The accented notes are crucial in getting the musical message across. The first accent falls on a "minor third," the note that causes the melody to be in a minor key, hence "sad." The second accent rises up from this, but only a little, as if some kind of musical gravity is holding it back. The third accent then lapses back again, so that the melody, literally and figuratively does not "soar." In the opening line of "Joy Spring," a jazz composition by Clifford Brown (see Figure 2), it is quite different. The tune starts by joyfully rising in pitch, in big leaps.

The example below, which represents somebody repeatedly and insistently knocking on a door, contains two "silent beats" (Couper-Kühlen, 1993): The timing of the wait between the door knocks continues the regular beat (ONE/two/three/ONE/two three) set up by the pattern of the knocking, and the pulses in these rhythmic feet are felt rather than heard:

/<u>knock</u> knock knock/ (silent pulse) - - / (silent pulse) - - / <u>knock</u> knock knock

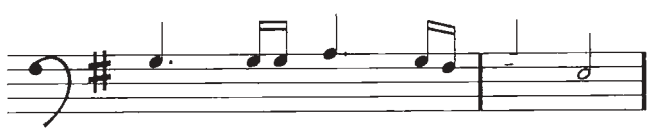


Figure 1 First two bars of Tchaikovsky's 5th Symphony

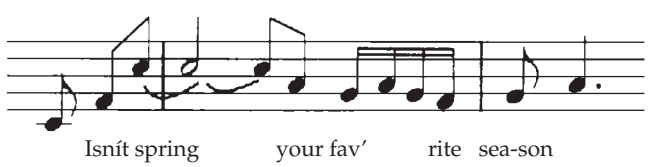


Figure 2 Opening of "Joy Spring" (Clifford Brown)

Rhythmic Phrases in Speech, Music, and Movement

Rhythm organizes rhythmic feet (up to seven) into "rhythmic phrases," also referred to as "breath groups," as their duration is similar to that of the breathing cycle. Between the phrases there is some kind of break—a short pause, a drawing out of the final sound or movement, or a change of tempo or other discontinuity. In music, where the beat usually has to continue uninterrupted, one or two silent beats may substitute for the pause at the end of the phrase. Sometimes phrases start off with a short, incomplete, and accent-less foot, known as the "anacrusis" (or, in music, the "upbeat"), and one of the accents in the phrase, the "nuclear accent," will be more salient than the others, carrying the most important information of the phrase.

Rhythmic phrases plays a key role in the meaningful structuring of time-based texts. They "frame" the moves in the ongoing communicative act, as demonstrated in this example, which is an extract from a research interview with a radio announcer (the phrases end with a double oblique stroke and are enclosed in square brackets, and the nuclear accents are capitalized):

> [I've read/ news at all/ SORTS of/ places and the the//] [blokes that/ write the news/ HERE//] [EM//] [CERtainly//] [far/ EASier to/ read//] [and that's/ not just because I'm/ working here/ NOW//] [than/Any news I've/ read anywhere/ else//]

Three things can be noticed. First of all, each rhythmic phrase propels the announcer's train of thought a step further (or buys him some time to do so, in the case of *em*). Second, the phrases do not correspond to syntactic units, something which becomes even more clear if the phrases are written as separate lines:

> I've read news at all sorts of places and the the
> Blokes that write the news here
> Em
> Certainly
> Far easier to read
> And that's not just because I'm working here now
> Than any news I've read anywhere else

Finally, the whole of the extract forms a larger scale rhythmical unit, the "rhythmic move," followed by a longer pause, and functioning as a stage in the unfolding of the generic structure of the interaction (in this case a "response turn" in the interview). Such moves tend to be up to seven or eight phrases long, and experimental phoneticians have found that it is at the junctures between phrases and moves that the information in the previous phrase or move is "processed" and stored into memory (Abrams & Bever, 1969; Wingfield, 1975).

Martinec's (2000) hierarchical approach to rhythm analysis includes even further levels, beyond the "foot," the "phrase," and the "move" (he speaks of "waves"—"first order waves," "second order waves," "third order waves," and so on), and he convincingly demonstrates that there is isochrony at all these levels. In other words, the time interval between the nuclear accents of the rhythmic phrases in a move (e.g., between *sorts*, *here*, *em*, *certain*, *easier*, and *any* in the example above) is also perceptually equal, and the same applies to the time interval between the most salient accents in rhythmic moves.

Regularization

The rhythmic structure of the research interview extract above differs in three ways from that of verse or music. First, the number of syllables per rhythmic foot varies, from one (e.g., in *here*) to five (in *not just because I'm*). Second, the number of rhythmic feet per phrase also varies, from one (in *em*) to four (*I've read/news at all/sorts of/ places and the the*). And finally, the tempo varies: In the "parenthetic clause" (*and that's not just because I'm, working here now*) he speeds up, shortening the duration of the rhythmic feet (there is of course also variation within the rhythmic feet, because the rate of utterance of *not just because I'm* has to speed up to make it isochronous with *working here*).

When the same speaker reads the news, his speech becomes more regular. Now almost all his rhythmic feet have three syllables, except for the phrase-final ones. The number of rhythmic feet per phrase also becomes more regular, and the tempo more even.

> [the con/tainership/Asian RE/NOWN//] [is/due to leave/BRISbane to/day//] [with a con/signment of u/ranium/ YELlowcake//]

In metric poetry, regularization goes even further, and the traditional names for different kinds of meter and line structure are based on this. Rhythmic feet of two syllables are either "iambs" (short–long) or "trochees" (long–short), and rhythmic feet of three syllables are either "anapaests" (short–short–long) or dactyls (long–short–short). Lines may have two rhythmic feet ("dimeter"), three rhythmic feet ("trimeter"), four ("tetrameter"), five ("pentameter"), or six ("hexameter"), and so on. The following line from a Gershwin song, for instance, is a dactylic pentameter:

> It's/ very/ clear our/ love is/ here to/ stay

The interpretation of meter goes back to Aristotle's fourth-century BC *Rhetoric and Poetics* (1954). According to Aristotle some meters were "high" and "noble," others "common" and "ignoble." The dactylic hexameter was the "heroic metre," the "gravest and weightiest of metres," while the iambic and the trochaic were "metres of movement" suitable for dance ("the trochee is too much akin to wild dancing: we can see this in tetrameter verse, which is one of the trochaic rhythms," he wrote in the *Rhetoric* [1954, p. 181]). Today's poetic rhythms may be iconic, as Fonagy has shown in his analysis of a poem about a hunting expedition (1976, p. 15): "The rhythmical structure conjures up the picture of a merry chase. The anacrusis, the levelness of the tone, the repression of stress, and the relatively fast tempo symbolize the first part of the chase." But they may also carry interactive meaning, stemming, for instance, from the basic function of accents to make some syllables more important than others. In didactic speech, but also, for instance, in highly excited speech, every syllable will be made important, and it is this which, in the given context, makes the speech "didactic" or "excited":

> [/that/is/sim/ply/fan/TAS/tic//]

Musical rhythm is typically regularized in three ways, first by the time signature, which stipulates, for instance, two, three, or four "beats" per rhythmic foot ("bar"), with the first (or, in the case of 4/4 time, the first and the third) beat accented (unless there is syncopation). But just as speakers may squash many syllables into a single rhythmic foot, so composers and performers may squash many notes into a single bar, often in stylized ways, for instance by replacing single notes with "dotted" eights, in a long–short rhythm (DAA de DAA de DAA). Second, the number of rhythmic bars per phrase tends to be

regularized, usually to four per phrase, or some multiple of it. And third, the tempo tends to remain constant throughout the whole of a song, or sonata movement, or other piece, so that the pauses between rhythmic phrases have to be replaced by "rests," silent beats.

Rhythmic Integration of Different Time-Based Modes in Film

Films and television programs integrate different rhythms—the rhythms reproduced on film or video (those of the actors' movements, those of the dialogue or narration, and those of the music or other sounds or both), and the rhythms stemming from the process of filming itself (the rhythms of camera movements and edits). In a given scene, one of these, usually either the action, the speech, or the music, provides the basic "beat" of the scene. The others are then synchronized to this rhythm during the editing and sound track laying process. In a dialogue scene, for instance, there is synchrony, not just between the actors' movements and the dialogue, but also between these and the edits, which will coincide exactly with accented syllables (or sometimes unaccented syllables, in a kind of syncopation). In action sequences, the cuts will coincide with the accents of actors' movements. In a typical scene, an actor may enter a room, step toward a table in medium tempo, and look at a letter that is left there. That is the first "phrase":

[Step step/ step step/ step step/ STOP AND LOOK//]

Then he may slowly lift the letter and bend his head to read (a second phrase), after which the audience will get a glance at the letter, during two "silent beats":

[lift letter/ bend head to look/ (silent beat) - - / (silent beat) - -//]

Finally, in a suddenly accelerated tempo, the actor may throw the letter on the table and hurry out of the room, slamming the door behind him:

[Throws letter down/ step step/ step step/ step step/ SLAM door/ (silent beat) //]

The editing will take its cues from the rhythmic structure of the acting. There may, for instance, be a cut to a close shot exactly as the actor stops, in the first phrase. There may then be a cut to a close-up of the letter exactly on the first silent beat, and again, a cut to a medium shot of the actor exactly as he throws the letter on the table. Finally there will be a dissolve at the end of the scene, over the silent beat. But editing may also be cued by music. The extract in Figure 3, from an anonymous travel film called *Latin American Rhapsody*, shows Van Leeuwen's method of rhythm transcription (cf, Van Leeuwen, 1985, 2005). The scene is marked off from the preceding and following "moves" by a break in the music and a drum roll, and contains three rhythmic phrases, played on a flute. There are four shots, each beginning on the first accent of a rhythmic phrase, except for the last one, which begins on a silent beat that comes where a fourth phrase might have been expected, but does not eventuate, because the end of the third phrase has to be lengthened to signal the end of the scene. Note that the onset of the actors' movements is synchronized to the musical accents through the editing process. The transition to the next move is signaled by a change in loudness and a change in tempo and instrumentation.

Figure 4 shows Martinec's approach to multimodal rhythm transcription in the analysis of a 19-second segment from Sergio Leone's *Once Upon a Time in the West*. In the excerpt, Jason Robards washes his face in a basin and answers Claudia Cardinale's question about what Charles Bronson is doing outside. The different waves (rhythmic feet, phrases and

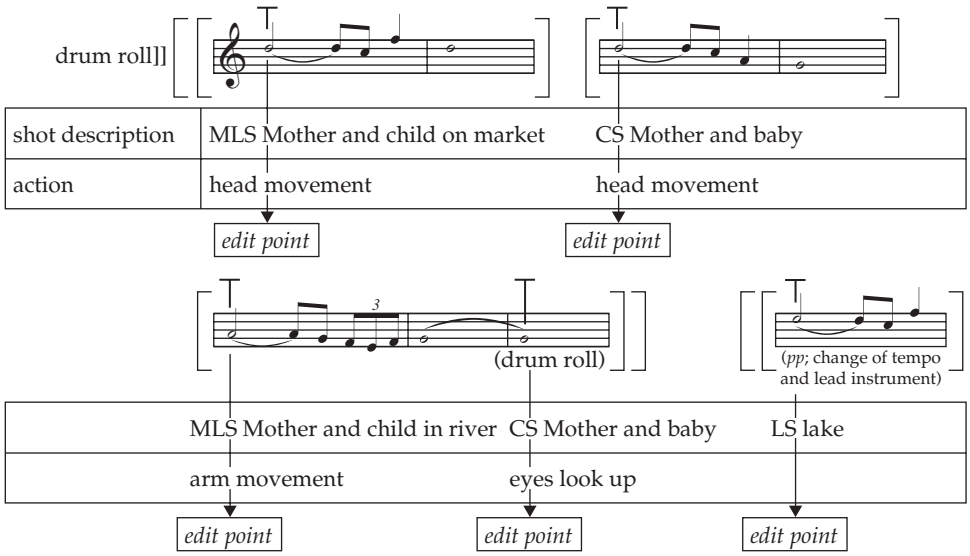
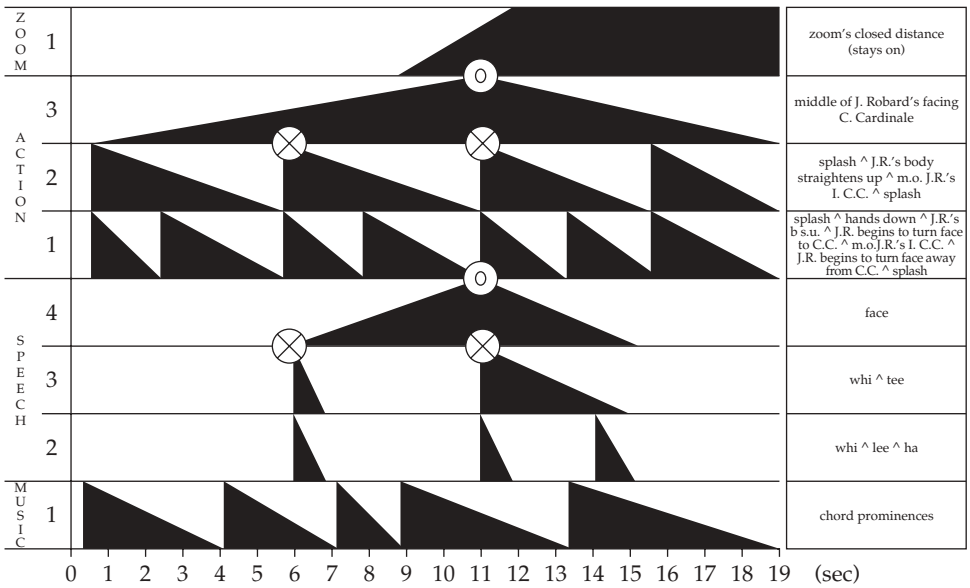


Figure 3 Rhythmic analysis of a scene cut to music (Van Leeuwen, 2005, p. 188, © Routledge)

moves) in each mode (action, speech and music) have their own rhythms, with peaks at the relevant accents. While speech and action are synchronized, the music has its own timing, and the zoom in on Robards's face does not begins until after he has turned his head. In contrast to the extract in Figure 3, which, in Martinec's terms, was "monochronic," this segment is "polychronic."

Rhythmic Integration in Everyday Interaction

In the 1960s and 1970s a number of American researchers began to engage in the highly detailed analysis of rhythm in everyday interaction. The medium of 16 mm film, recorded at high speed (94 frames per second), made it easy to slow down, speed up, and stop-frame body movement, and was therefore ideal for bringing out the subtleties of interactive rhythm and the rhythmic integration of behavior in interaction. Films were made, for instance, of people engaged in conversation (William Condon reportedly spent a year and a half studying four and a half seconds from Gregory Bateson's film of a family eating dinner); classrooms ("a class that is going well develops its own rhythm"; Hall, 1983, p. 166); and children in a playground, where the rhythms of children playing in different parts of the playground were in sync, not only with each other, but also with those of a girl whose "skipping and dancing and twirling" from group to group appeared to "orchestrate the movements of the entire playground" (Hall, 1983, p. 169). The conclusion was that "individuals are dominated in their behaviour by complex hierarchies of interlocking rhythm, comparable to fundamental themes in a symphonic score (Hall, 1983, p. 153), "locked together in a dance which functions almost totally outside awareness" (p. 154), and that rhythm provides the basic building blocks of behavior. Erickson (1982) similarly studied rhythmic integration in a dinner conversation, using musical notation with a stave for each participant, and concluding that "rhythm seems to be the fundamental glue by which cohesive discourse is maintained in conversation" (p. 65).



Wave Graph D. *Once upon a Time in the West*

Figure 4 Rhythmic analysis of a scene from *Once Upon a Time in the West* (Martinec, 2000, p. 297) © 2000 the International Society for the Arts, Sciences and Technology (ISAST)

Although there has been some take up of nonverbal communication (and hence multimodality) in conversation analysis (e.g., Ochs, 1979; Erickson, 1982; Goodwin, 2001), the study of rhythm has not been given the attention it deserves, and the pioneering work of scholars like Hall, Condon (e.g., 1978) and others (e.g., Erickson, 1982; Scollon, 1982) has only rarely been followed up. This is regrettable. Rhythm clearly plays a fundamental role in the phenomena that have preoccupied conversation analysts, such as turn taking, repairing disturbances in the flow of communication, and so on. Perhaps the reason is that rhythmic analysis is complex and requires a great deal of patience. It is nevertheless to be hoped that the study of rhythm will, in future multimodality research, regain the central place it so clearly deserves.

SEE ALSO: Multimodality and Film; Multimodality and Time; Rhythm and Timing in Interaction; Rhythm in Discourse; Suprasegmentals: Rhythm; Transcribing Multimodal Interaction

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Multimodality and Ritual

GUDRUN FROMMHERZ

The systematic use of multimodal methodology to investigate human ritual behavior is relatively new. Informed by multimodal theory, methods and practice evolving from work by Scollon and Scollon (2003), Norris (2004), and Norris and Jones (2005), Frommherz (2009a, 2009b, 2010) presented a first account of multimodality in ritual by emphasizing the analysis of the mediated action (Wertsch, 1991) in ritual engagement over an often philosophically informed discourse of ritual in the historically difficult terrain of ritual studies. Specifically, Frommherz attended to ordinary real-time actions as they were performed during the ritual making of the Indian Aipan art, such as grinding rice, pouring water, dissolving ocher soil for producing the traditional dyes for the religious paintings, and to the intricate processes of commencing a new painting.

As an academic discipline, ritual studies has evolved from questions originally arising in the history of religion, philosophy, and evolution theory, as well as in cultural anthropology, sociology, and psychology. Bell (1997, p. xi) delivers a broad definition of ritual "as a complex sociocultural medium variously constructed of tradition, exigency, and self-expression" that integrates several, more exclusive, interpretations of ritual as either primarily archetypical conduct (Eliade, 1959), anthropological evolution (Tylor, 1958), communal order (Smith, 1969), sociological construction (Durkheim, 1915), psychological mode (Freud, 1946), or neurobiological imperative (d'Aquili & Laughlin Jr., 1996). Because of the cross-disciplinary character of ritual and the transient typologies of ritual forms that blur boundaries between ordinary and ritual actions, faithful disciplinary inquiry remains problematic. Notwithstanding varying and at times conflicting definitions of what exactly constitutes "ritual" or "ritual-like behavior," ritual routinely arises at the nexus of ceremonial practices, sanctified objects, sacred meaning, and controlled temporal rhythms, with configurations of any one of these elements and their combinations varying greatly. While these and other elements contribute to what ritual may mean at any one instance of application, it was only since the late 19th century, notably through the work of the French sociologist Émile Durkheim (1858–1917), that a functionalist approach to ritual challenged existing notions of ritual as a deterministic, largely involuntary human condition. Durkheim (1915) emphasized the social functions of ritual and proposed ritual as constructed socio-communal behavior rather than as a psychological, and often universal, human quest.

The interest in the social purposes of ritual spawned new methodological requirements that were mostly answered with ethnographic fieldwork aimed at supplementing the predominantly theoretical-philosophical discourse in religious studies with real-world data. Much of the research into ritual still relies on a combination of scholarly discourse, involving theories in any one or several of the academic disciplines that inform ritual, with ethnographic inquiry that explores the social application of cultural resources in a given community of practice. As with other theory-informed research, the relationship between reflective analysis and data remains complex and ambiguous (e.g., Bell, 1997; Dusek, 2006). Aside from an essentially problematic relationship between disciplinary theory and research methodology, established ethnographic research into ritual behavior is often constrained by questions of researcher perspective and participant involvement, inconsistencies between

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instruments of data collection and methods of data analysis, or the challenge to adapt static research tools to dynamic research questions.

Multimodal methodology as proposed by Kress and van Leeuwen (2001), Scollon and Scollon (2003), Norris (2004), Norris and Jones (2005), and Jewitt (2009) mitigates several such methodological constraints by offering a meticulously data-driven research approach optimized for the microanalysis of "discourse in action" (Norris & Jones, 2005, pp. 3–14). Multimodal methodology is a theoretically grounded and rigorous research method. Because of its interdisciplinary nature, multimodal methodology delivers a flexible approach to the study of changeable, momentary, and often ambiguous human endeavors such as ritual actions. In particular, multimodal interaction analysis (MIA) (Norris, 2004), which has for the most part outgrown the linguistic origin of multimodal discourse analysis, delivers an inclusive methodological framework with both tools for data collection and transcription, and methods for data analysis of the mediated action. As a tool for data collection, MIA encourages, for example, the use of digital audiovisual data—ideally in multi-camera settings—in preference to single-mode data collections such as written field notes, or audio records alone. While an audiovisual approach to data collection is not unique to multimodal research, multimodal analysis strongly emphasizes multimode transcription and multimode interpretation. Aided by digital technology, time-coded multimodal data can be slowed down, zoomed in on, and almost infinitely enlarged in order to reveal otherwise hidden temporal and spatial relationships in ritual actions (see Dicks, Soyinka, & Coffey, 2006, and Murphy, 2008, for case studies in digital ethnography).

The acknowledgment of dynamic relationships between various communicative modes such as speech, gesture, gaze, body position and movements that together construct complex communicative meaning holds a prime position in multimodal research. Most ritual forms rely on the concurrent use of a number of modes, often in ways untypical for non-ritual actions, for the construction, reenactment, and delivery of ritual meaning. Multimodal microanalysis not only recognizes the existence of modal variations across different uses of ritual, and between ritual and other forms of social interaction, but also, and more importantly, records how such modal shifts occur in real time. MIA's process-oriented perspective on the mediated action, and its recognition of the practices of ritual performance, ritual construction, and ritual change, enables a focused investigation of real-time processes in ritual behavior. The microanalysis of the dynamic relationships of multiple communicative modes, and their real-time application in the actual sociocultural environment at a given moment, distinguishes multimodal inquiry from established ethnographic research.

Drawing on Norris's (2004, 2009) concepts of modal configuration and modal density, Frommherz (2010) produced a first comparative study of modal transformations in ritual behavior using multimodal methodology. With her fieldwork on religious-folklorist Aipan art, Frommherz investigated the various ritual uses of decorative patterns by the Kumaoni people of the Indian Himalayas in order to celebrate religious and seasonal festivals and to honor their gods (see Shah, 2006, for an introduction to the art forms of Aipan). Frommherz (2010) presented evidence of a significant level of personalization in the way communicative modes were used during the ritualized processes of creating the art form. For example, Frommherz demonstrated that the artists, traditionally the women of the house, recurrently shifted modal attention away from the prescribed temporal flow of a ritual to personal, inner time. In such instances, the artists delayed or accelerated key moments in ritual performance in order to synchronize personal, spiritual needs with the flow of the concurrent ceremony. As a result, the original temporal rhythm of the ceremonial act was effectively altered. In other instances, modal attention was notably directed toward mundane proceedings in a ritual performance, for example the handling of tools and vessels, rather than, as would appear natural, on the sacred objective of the ritual.

Following her observations of modal transformations in ritual actions, Frommherz (2009b, 2010) proposes a dialogic relationship between dutiful ritual performance and creative ritual construction. This dialogic perspective departs from the view of ritual as imperative reenactment (Eliade, 1959) of largely invariable ritual forms and meaning (Rappaport, 1999), and indicates a dynamic interchange in which ritual form shapes personal experience while personal experience, conversely, constructs ritual form (see Bruner, 1986, for a discussion of the dynamic relationship between semiotic expression and personal experience). Frommherz (2010) argues that it is routinely the social actor who constructs his or her personal ritual experience in real time by deliberately and purposefully guiding modal attention and balancing modal configuration. The finding of personalized transformations in modal application indicates that, in addition to Durkheim's social constructive approach to ritual with a primarily communal, and therefore public, purpose, ritual concurrently engages a personal, private space for the individual performing the ritual. With such insights, ritual behavior arises as a means of personal identity construction (Frommherz, 2009a) far extending Durkheim's communal view of ritual.

Norris's (2004, 2009) hierarchical action model provided another conceptual key to Frommherz's investigation of modal transformations in ritual actions. The hierarchical action model proposes social actions to be comprised of numerous lower-level actions which themselves are made up of further lower-level actions, thus enabling an almost indefinitely fine graining of actions on a sliding scale of scrutiny. The significance of concomitant multi-level actions, however, is not limited to the tasks of analyzing social actions. Frommherz observes that the hierarchical action model also serves as an approach to conceptualizing ritual processes in the social actor. According to Frommherz (2010), the social actor during ritual performance regularly concentrates on the performance of lower-level actions such as repetitive, ordinary movements or gestures, and even on lowest-level actions such as deep, regular breathing, in order to create the spiritual momentum of a ritual action that distinguishes ritual actions from inattentive, habitual, everyday actions. These investigations led to the recognition that modal attention on micro and macro levels of ritual engagement are essentially asynchronous: while the macro focus remains on the sacred, modal micro focus attends to the profane (see Durkheim, 1915, and Eliade, 1959, for different discussions of the aspects of "sacred" and "profane"). More specifically, Frommherz (2010, p. 220) proposes that it is exactly by means of modal concentration on the "small, simple and mundane" that sacred meaning arises on a much higher level. While much of the earlier discourse on ritual assumed the ritual performer's attention to be fully dedicated to the sacra, that is the sacred core and purpose of the ritual (eventually leading to a trance-like state or what Durkheim, 1915, calls "collective effervescence"), the micro-analysis of ritual actions suggests the contrary: the performer's attention is essentially away from the larger meaning of the ritual and close to the profanity of mundane handling of ritual activities.

The significance of Norris's (2004) framework of multimodal interaction analysis on ritual behavior has not yet been fully explored. However, it can already be seen that MIA will continue to provide a robust methodology to scrutinize areas of ritual that were traditionally inaccessible; ritual resemiotization is such an area. This subject is largely untouched by premultimodal research. Resemiotization (Iedema, 2001, 2003) refers to the materialization of language resources or discourse into social practices, but also entails the transformation of semiotic meaning between different sociocultural contexts and communicative systems (what Bernstein, 1990, calls "recontextualization"). With her work on the temporal rhythms in ritual actions, Frommherz (2011) presents a principal analysis of temporal resemiotization between sacred and profane activities. Her findings indicate that the integrity of ritual meaning depends on temporal rhythms above other semiotic resources such as material cultural tools or mediational means (Wertsch, 1998). The discussion of

temporal density in ritual, a concept appropriated by Frommherz (2011) from Norris's (2004) idea of modal density, suggests a sliding scale between everyday and ritual actions. The degree of ritualization in actions is, according to Frommherz, determined by the type, level, and complexity of temporal synchronization in social actions. Temporal synchronization refers to a purposeful and deliberate alignment of the inherent duration of a ritual activity (e.g., taking a ritual bath) with its associated organizational time cycle (e.g., the circadian or 24-hour time cycle). Subject to their wider application in ritual research, the notions of temporal density and temporal synchronization in ritual engagement may deliver reliable tools to delineate ritual from ritual-like actions, and to distinguish these from everyday actions.

Multimodal methodology—with its close scrutiny of precisely how ritual actions are performed; how modal attention is shifted; how semiotic systems are appropriated; and how temporal rhythms are orchestrated—is opening new avenues for microanalysis of ritual, which likely will clarify and further define the purposes, functions, and meanings of human ritual behavior.

SEE ALSO: Analysis of Mediated Interaction; Ethnomethodology in the Analysis of Discourse and Interaction; Iedema, Rick; Jones, Rodney H.; Kress, Gunther; Mediated Discourse Analysis; Multimodal Discourse Analysis; Multimodal Interaction Analysis; Multimodality and Culture; Multimodality and Identity Construction; Multimodality and Rhythm; Multimodality and Time; Norris, Sigrid; Rhythm and Timing in Interaction; Scollon, Ron; Transcribing Multimodal Interaction; van Leeuwen, Theo

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Multimodality and Software

THEO VAN LEEUWEN AND EMILIA DJONOV

In its broadest sense, the term "software" contrasts to "hardware" and applies to any computer features that cannot be physically manipulated. This includes features invisible to the average computer user such as algorithms, text files written by programmers in source code, and their translations into computer-executable, binary, code. In a narrower sense, software refers to programs that operate computer systems (systems software such as Windows, Linux, or Mac OS) and programs that allow users to achieve certain tasks (applications software), for example to write a letter (MS Word), send an e-mail (Eudora), edit an image (Adobe Photoshop), or compose a tune (ProTools). Though common in both everyday and professional contexts, such distinctions do not offer a way of understanding how and why "software structures and makes possible much of the contemporary world" (Fuller, 2008a, p. 1), the questions that motivate the recently established field of software studies, first proposed by Lev Manovich (2001).

Rejecting the widespread view of software as a neutral tool, software studies seeks to open computer science to critical perspectives from the arts, media, and cultural studies, and to highlight the creative opportunities which the "technicity" of software affords. So far contributions to the field have focused on a range of diverse aspects of computing—for example, weird or obfuscated programming languages, elements of graphical user interface design such as the button, system event sounds such as the Windows startup tone, and preferences palettes—as well as on their potential to reflect power relations, reveal aspects of the design process, and offer insights into the identities of computer users. (Many of these contributions are compiled in Fuller, 2008b.) However, these aspects tend to be discussed in isolation from each other and without reference to analyses of actual computer use, perhaps because software studies, so far, lacks a unifying social theory of meaning-making, one that can explain how different semiotic resources interact to create meaning in relation to the sociocultural contexts in which they are co-deployed.

Formal, cognitive, and social-functional aspects of software have all been explored in studies in computer semiotics (Andersen, 1997), human–computer interaction (de Souza, 2005), and the semiotics of programming (Tanaka-Ishii, 2010). These studies propose abstract classifications of different signs in computing and recognize that software incorporates verbal, visual, tactile, and aural resources but offer no model for analyzing their multimodal interaction in software design or use.

In principle, applied linguistics has the capacity to develop a stronger understanding of software as a powerful technology for making meaning. Given recent advances in the study of multimodality, it is well placed to investigate how software enables and constrains communication; how it recontextualizes preexisting, nondigital, meaning-making practices; and how it enriches or restricts our understanding of the semiotic potential of different resources (verbal, visual, audio, and kinetic) and their coarticulation. To date, however, applied linguists have studied software predominantly indirectly—as a tool for learning or a tool for linguistic analysis, rather than as an object of analysis itself—and rarely from a multimodal semiotic perspective.

In the field of language teaching and learning, software has been studied as a tool for language learning (see Chapelle, 2003), and for analyzing and evaluating the language use

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of learners (see Marsden, Myles, Rule, & Mitchell, 2003). Applied linguistics research has also informed the actual development of software for language learning and the design and choice of materials and activities for computer-assisted language learning. Scholars have analyzed learning materials from a multimodal perspective (see, e.g., Kaltenbacher (2004) on language-teaching CD-ROMs and Knox (2008) on TESOL and online news genres), though usually without considering the software employed in either their design (e.g., Web design software like Dreamweaver) or use (e.g., Web browsers such as Mozilla Firefox and plug-in applications such as Flash).

Applied linguists also use software as an analytical tool in corpus linguistics, where the affordances and limitations of various applications for building and annotating corpora and comparing frequency patterns of words and collocations across large numbers of texts are of fundamental importance (see McEnery, Tono, & Xiao, 2006). Here, too, software is viewed as a tool for, rather than an object of, analysis. Recent research has also proposed models for building, annotating, and transcribing multimodal corpora, including software to support these models (Baldry, 2004; O'Halloran, Tan, Smith, & Podlasov, in press). Such models have the potential to increase the empirical basis of multimodal discourse analysis by strengthening the replicability of multimodal analyses and allowing large numbers of multimodal texts to be compared in order to identify the similarities and differences between various genres (Baldry & Thibault, 2006; Bateman, 2008). Software is also the most powerful means for visualizing patterns in the use and aggregation of primitive features such as color and lines in large datasets, and for tracing changes in these patterns over time (Manovich, 2007). Yet, multimodal corpus analysis faces many challenges. As few nonverbal resources can be automatically coded (see Carter & Adolphs, 2008), labor-intensive manual annotation remains necessary. Verbal labels are incompatible with the nondiscrete nature of nonverbal choices which vary by degree (topologically) rather than type (typologically). Coding may also background the fact that, like words, nonverbal units may simultaneously fulfill different functions (convey an idea, construe an interpersonal position, and contribute to cohesion), and participate, in full or in part, in various larger units. Finally, even software-supported multimodal transcription has difficulty showing the spatiotemporal unfolding of meaning and the interaction of different semiotic choices in dynamic media such as film (O'Halloran, 2004).

A different perspective characterizes Jewitt's (2004, 2006) research on the relationship between technology, literacy, and learning. Her analysis of the use of computer games in the science classroom reveals four main aspects of the relationship between software design and use:

1. Applications differ in the degree of design and customization freedom they afford. A software may allow its users to apply only pregiven resources (e.g., game rules), or to modify resources, or import or design new resources, and these modifications and additions may or may not become part of the application.
2. Applications vary in the degree and type of specialized knowledge and associated genres built into them. In one of the applications studied by Jewitt (2004), for instance, programming an object to move required composing an equation consisting of lexical instructions and mathematical symbols; in another it only required pressing a button. Such variation is not restricted to the applications studied by Jewitt. Paint, an application within Windows, for example, is more accessible to the average user than Photoshop, which has many more (and more sophisticated) options for creating and editing image files, and presupposes a higher awareness of visual art and graphic design practices and principles.
3. A software may support different uses, with more or less clear boundaries between them. In one of the game-building applications studied by Jewitt, students had to

alternate between programming and playing, while in another they could modify the rules of the game while playing it.

4. A software's user interface plays a key role in determining how an application is used, enabling some and constraining other possibilities for meaning-making and learning.

Yet, to understand how software enables some and constrains other possibilities, semiotic studies of software need to look both behind and beyond the user interface. This is not to deny the value of analyzing software as a meaningful spatiotemporal arrangement of various units. Such analysis, for example, can help identify whether a software's design favors certain options over others by making them easier to find and use. Applying preset paragraph styles in Word takes less time and effort than creating new ones, for instance. Also, software may be biased toward certain modes and media (e.g., Word offers rather limited options for manipulating images compared to Photoshop) and toward certain configurations of modes and media (e.g., built-in design themes in PowerPoint have associated font and color schemes as well as graphical elements such as frame decorations or bullets), and interfaces may "recommend" or impose particular sequences of steps within applications. PowerPoint 4.0, for instance, opens by asking users to select whether they want to open an existing presentation or create a new one. If a new one is chosen, they must then select one of four options: AutoContent Wizard, Pick a Look Wizard, Template, or Blank Presentation. The labels of options, too, may expose tacit norms. Custom animation effects in PowerPoint, for example, are categorized into "basic," "subtle," "moderate," and "exciting."

Existing understanding of how user interfaces privilege certain options for making meaning, and the effects this has on software use, can be further advanced by considering what lies behind the interface and modeling software as system (paradigmatically), in addition to analyzing it as text (syntagm). This entails cataloguing and classifying all meaning-making choices available within a software—choices of expression resources such as color, line, typography, and animation effects; choices of semantic relations (e.g., different degrees of generality, which may be signaled through indentation); and affordances for creating different genres (e.g., equation, cartoon, music video). Such modeling would allow a software's uses to be analyzed as instances of the software as a system, just as a business letter instantiates only some of the meaning-making potential of the language in which it is written. A software system can also be viewed as a reservoir of meanings from which its users develop their individual repertoires for different contexts of use. (On instantiation and individuation in social semiotics, see Martin, 2010.) While PowerPoint offers sound effects, for example, these are unlikely to feature in an inaugural professorial presentation. In addition, modeling a software as a system may reveal that it offers more choice for some semiotic resources than others (e.g., sound compared to typography in music software such as ProTools), and such discrepancies may be linked to the purpose(s) an application is designed to serve and the semiotic practice(s) it recontextualizes. Photoshop, for example, offers extensive choices for creating and manipulating images, and for recontextualizing visual arts, photography, and graphic design practices.

Finally, to understand the interaction between software design and use, multimodal software studies should look beyond software and consider how the meaning-making resources available within a software relate to those available in the culture in general. This would allow analysts to demonstrate how software may expand as well as contract the meaning potential of a semiotic resource such as texture or movement by presenting more or fewer options for manipulating this resource. It would prevent the risk of attributing changes in the semiotic landscape solely to software technology. Van Leeuwen (2008) thus argues that the use of PowerPoint and Excel in bureaucratic settings promotes a new form of writing, where language presents entities packaged as nominal groups,

leaving visual resources to connect these entities; and Yates and Orlikowski (2007), in an ethnographic study of the use of PowerPoint in corporate settings, define PowerPoint-supported presentations as a development of the business-presentation genre.

Clearly an applied linguistics approach to software studies has an important perspective to offer to contemporary language studies. It can reveal the "grammars" or resources for making meaning that are designed into software; investigate their uses, and the discourses and practices that regulate them; and consider the semiotic changes that result from the introduction of these important and powerful new resources in a wide range of settings.

SEE ALSO: Critical Analysis of Multimodal Discourse; Multimodal Corpus-Based Approaches; Multimodality and Literacy; Multimodality and Technology

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Multimodality and Systemic Functional Analysis

JOHN S. KNOX

Introduction

Multimodality is the study of how multiple communication modes combine to make meaning (e.g., language, gesture, and proxemics; language, image, and layout). But multimodality is not a discipline or a theory; it is "a field of application" (Jewitt, 2009, p. 2) which transcends and draws on different disciplines and theories. The recognition that all communication is multimodal has profound implications for applied linguistics, and questions long-standing assumptions about the nature of language, and how it should be learned, taught, researched, and theorized.

Systemic functional multimodal discourse analysis (SF-MDA) draws on the principles of systemic functional (SF) theory, and it is this which distinguishes SF-MDA from other approaches to multimodality.

What Is SF Theory?

SF theory has a number of defining characteristics which are derived from systemic functional linguistics (SFL). SFL is a theory of language as a resource for making meaning in social contexts. The theory is generated through the study of written and spoken texts, and the contexts in which these texts make meaning. SFL is a functional theory; that is, its focus is not on the forms of language per se (though these, too, are important), but on the function of linguistic forms in context. SFL is also a systemic theory; that is, it accounts for meaning by positing meaningful systems of choices available for language users. To illustrate, if we study English texts, two of the choices that can be identified in clauses are declarative clauses and polar interrogative clauses. Such clauses differ in their structure. Consider:

Clause A: You must complete the form.
Clause B: Must I complete the form?

Clause A is a declarative clause, in which the subject (*you*) precedes the finite (*must*). Clause B is a polar interrogative clause, in which the finite (*must*) precedes the subject (*I*). There is a functional difference between the structure of these two clauses, and in SF theory, this difference in structure realizes a systemic opposition: a declarative clause as opposed to a polar interrogative clause, as illustrated in Figure 1.

This relationship between system and structure (called the system–structure axis) is the basis of SF theory, and is applied to different levels of meaning (e.g., phonology, grammar, and discourse semantics in SFL). It forms the basis of explanations and hypotheses about the relations between the levels, about the relations between text and context, and about other "dimensions" of analysis in the theory (see Martin, 2010).

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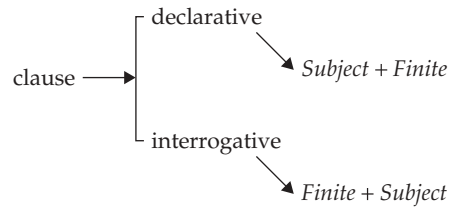

Figure 1 Simplified system

One key aspect of SF theory, which has been widely applied in studies of multimodality, is the observation that there are three broad kinds of meaning (called metafunctions) in language. These three kinds of meaning (which are derived theoretically from systemic oppositions) are labeled in Kress and van Leeuwen's (1990, 1996) seminal "grammar of visual design" as

- representational meanings—construing our experience of the world (which maps onto the ideational metafunction in SFL);
- interactional meanings—construing relationships between the producer and receiver of a text, and the text (which maps onto the interpersonal metafunction in SFL); and
- compositional meanings—construing coherence between the elements in a text and the context (which maps onto the textual metafunction in SFL).

The terminology used to label the metafunctions in SF-MDA varies across studies and approaches (cf. O'Toole, 1994; Lemke, 2002), but the theoretical debt to the metafunctions of SFL is clear in each approach.

Another key element of SF theory which is important in SF-MDA is the identification of genres: consistent patterns of structure in groups of texts sharing similar social purposes (see Bateman, 2008).

SF-MDA

SFL focuses on meaning in context, and has long understood language as one semiotic resource among many (e.g., Halliday, 1978). Thus, SF theory has always been amenable to the study of semiotic systems other than language, and of the interaction between such systems in texts (i.e., SF-MDA).

An important early step in the progression of SF theory from language to other semiotic systems is Kress and van Leeuwen's (1990) *Reading Images*, motivated in part by "the need for a better understanding of all the things that go *with* the verbal: facial expressions, gestures, images, music and so on" (Kress & van Leeuwen, 1990, p. 1). This work was soon followed by the introduction of the journal *Social Semiotics* (in 1991), O'Toole's (1994) study of displayed art and architecture, and the extended version of Kress & van Leeuwen's earlier work (Kress & van Leeuwen, 1996). These last two works (by O'Toole and by Kress & van Leeuwen), in particular, have informed much of the subsequent work in SF-MDA.

SF-MDA began with the application of SF theory to the description of semiotic systems other than language. Kress and van Leeuwen's (1996) "visual grammar" illustrates this, with explicit systems, and the structures realizing them, developed and described for visual communication.

Other semiotic systems, such as music (e.g., van Leeuwen, 1999) and three-dimensional space (e.g., O'Toole, 1994; Stenglin, 2009), have also been described, as discussed below. SF-MDA has been concerned also with how different semiotic systems are integrated in

acts of meaning: One notable example of this is O'Halloran's (e.g., 2005) description of mathematical discourse as a combination of language, image, and mathematical symbolism. These descriptions of semiotic systems and investigations of multimodality "in action" vary in the extent to which they draw on the system–structure axis developed in SFL, or on other aspects of SF theory which have derived from the system–structure axis, or on both. The descriptions also vary in the extent to which they problematize the "theoretical borrowing" from one semiotic system (i.e., language) to others.

As a relatively young area of investigation, SF-MDA continues to explore a range of fundamental questions. These include, but are not limited to, whether (the same) three metafunctions operate across semiotic systems (e.g., van Leeuwen, 1999; MacDonald's discussion of music in Martinec, 2005); the nature of relations between semiotic systems (in particular image and language) in texts (e.g., Royce, 1998; Matthiessen, 2006; Bateman, 2008; Martin, 2010); and whether "levels" of meaning proposed for different semiotic systems have the same theoretical basis (e.g., Martinec, 2005; Baldry & Thibault, 2006; Matthiessen, 2006; Zhao, 2010).

In the subsections that follow, work that explores these and other questions is grouped according to the kinds of texts explored: two-dimensional, three-dimensional, and studies which explore the fourth dimension of time.

SF-MDA in Two Dimensions: Page and Computer Screen

Multimodal SF studies of (primarily) static, two-dimensional texts have looked at a wide range of text types produced in print and hypertext, including instructional materials and textbooks, illustrated books and picture books, print advertisements, and newspapers. The majority of this work has focused on educational and mass media texts.

Print instructional materials for the general public have been examined from an SF perspective. Software manuals in English and Japanese are analyzed by Martinec (2003), who found the Japanese manuals more explicit in their staging and their visual coding of instructions. English-language instructions for setting up a computer are analyzed by Stenglin and Iedema (2001), who found image, language, and their relations crucial to understanding the text.

In textbooks and teaching materials, the visual design of information has been shown to have an important role in the construction and reproduction of knowledge (e.g., Bateman, 2008). A study of the use of visuals in print, CD-ROM, and Web materials in three science disciplines in English (Jones, 2007) found differences according to discipline and medium, but overall observed "a relatively strong trend of covariation" (p. 117). Studies have examined the use of diagrams in discipline areas such as mathematics (O'Halloran, 2005), history (Derewianka & Coffin's chapter in Unsworth, 2008a), biology (Guo's chapter in O'Halloran, 2004), and economics (Royce, 2006). Chen's (2010) study of interpersonal meanings in English-language teaching materials in China found that the communication of the expected attitudinal stance toward the materials and classroom activities shifts from image to language over the progression from primary to secondary school, as "a personal way of expressing individual emotions gradually shifts to a more institutionalized way of evaluating people's behaviours and abstract concepts" (p. 72).

Text–image relations in children's picture books have attracted attention from SF-MDA researchers (see Martin's and Painter's chapters in Unsworth, 2008b; Tian's chapter in Bednarek & Martin, 2010), as has the growing use of CD-ROM and online materials in educational contexts (e.g., Unsworth, 2001; Jewitt, 2006; Djonov in Unsworth, 2008a; Zhao, 2008).

The visual design of newspaper stories has also been studied by Caple (see Bednarek & Martin, 2010), who describes the genre of the "image-nuclear" news story, which

uses a large photograph, a playful heading, and a caption to tell news stories and build the community of readers of the newspaper. Similar kinds of "play" between images and headlines can be found in the Greek and English news features analyzed by Economou (e.g., 2008). Economou draws on SFL to describe the different "evaluative keys" of photographs—from "objective" and "factual" images which "record" events, to more overtly "authored" images which provide more obviously subjective evaluation. Knox (2009) studies thumbnail images in online newspapers, and problematizes the boundary between image and language as separate systems.

The multimodal design of newspaper pages has also been studied from an SF perspective. Kress and van Leeuwen (1996, 1998) employ their visual grammar to describe print home pages, employing the compositional metafunction of their "visual grammar" to account for the top–bottom (ideal–real), left–-right (given–new), and centre–periphery (centre–margin) organization of information on the page; Knox, Patpong, and Piriyasilpa (see Bednarek & Martin, 2010) found a different pattern of visual design on Thai print newspaper front pages. Other aspects of Kress and van Leeuwen's (1996) visual grammar are employed by Knox (2007) to describe the home pages of online newspapers, which present news in short "bites" of information as a result of historical developments in news reporting, institutional factors, and the constraints and affordances of the Web medium. An alternative account of the design of online newspaper home pages by Bateman (2008) argues that online newspaper pages have less in common with print newspapers than they do with other Web pages which list information.

SF-MDA in Three Dimensions: Space and Embodied Meaning

The best-known early work on developing a "grammar of space" is that of O'Toole (1994), who poses four ranks for analyzing architecture (building, floor, room, element). O'Toole's approach to analyzing multimodality maps levels (or *ranks* in SF terms) horizontally, against the three metafunctions vertically. The resulting grid is then populated with functions and systems at each point. This approach to SF-MDA has been applied across a range of semiotic systems and multimodal contexts by O'Toole and others (see O'Halloran, 2004; cf. Zhao, 2010), and specifically to three-dimensional space in museums.

Ravelli's (2006) study of museum texts builds on an analysis of language in museums to describe exhibitions and the institutions that house them. Her conceptualization of the ranks of institution, exhibition/gallery, and exhibit/display is shared theoretically by Pang, who identifies the ranks of museum, gallery, area, surface/item (see O'Halloran, 2004). Stenglin (e.g., 2009) also theorizes the construction of space in museums, and three-dimensional space more broadly, metafunctionally, but does not employ O'Toole's framework. Ideational meanings are construed in orbital (spaces designed around a central element) or serial (spaces designed to be experienced one after another, relatively independently) designs. Interpersonal meanings are construed by binding (the degree of "openness" in a space, which may leave a user feeling too exposed, comfortable, or too confined), and bonding (the construction of museum visitors' attitudes toward exhibition content). Textually, the concern is with the prominence of different aspects of museums, as well as the possible paths through the museum and exhibition.

In addition to theorizing the meaningful organization of space, scholars working in an SF-MDA framework have described the use of space in human interaction, as language and gesture interact with the material environment in which they occur. Zappavigna, Cléirigh, Dwyer, and Martin (see Bednarek & Martin, 2010), describe a youth justice conference where young offenders are brought together with a range of people from the community. In the conference described in these authors' paper, one of the participants changes the seating pattern mid-conference so that the young offender can look at his

mother. It is not only the arrangement of the room (in this case) but how it is made use of that is meaningful. Teachers' use of visuals (including displayed verbal texts) and furniture layout is described and analyzed by Kress et al. (2005), who illustrate how English classrooms can be "read" (and "written") as multimodal signs which reflect the teachers' philosophies of teaching and learning, and their institutional practices (see also Jones's chapter in Unsworth, 2008a).

A relatively small number of SF-MDA studies have explored the relationship between gesture and language. The co-patterning in conference presentations of gesture with interpersonal meanings in language is described by Hood and Forey (2005). They found that, despite high levels of variation in gestures between individual speakers, gesture is an important resource for establishing alignment between speaker and audience. Similarly, Jewitt (2006) describes the role of gesture and embodied meanings in expressing the interpersonal relations between teacher and students, and also their attitude toward the reading of a poem. More detailed and systematic consistencies between experiential meanings in language and the gestures that co-occur with speech are identified by Martinec (2004). In the study by Zappavigna et al. mentioned above, gestures are mapped onto the phonological unit of tone group, and the study finds that gesture works with various semantic systems as the text unfolds (see Bednarek & Martin, 2010). Most SF studies of gesture indicate that their work is exploratory, and that much research remains to be done in this area from an SF perspective.

SF-MDA and Time: Movement and Trajectories

Some multimodal texts, such as music, sound tracks, film, and television programs, are "time-based": The unfolding of the text and its speed are a property of the text, rather than of the reader's ability to process it.

Music has been studied from an SF perspective most notably by van Leeuwen (e.g., 1999). SF-informed studies have also examined film and television texts, or filmic texts. A key issue in the analysis of such texts is their transcription, and different analysts use different transcription models in order to illustrate different textual features: Van Leeuwen (2005) illustrates rhythm and links between the information provided in/with shots; Pun explores the use of sound and silence in films; Tseng describes coherence across semiotic resources and modes in filmic texts (see Unsworth, 2008a). Baldry and Thibault (2006) make the point that some analytical purposes require a *macro-transcription* "concerned with the interplay between the texts' phases," while others require a *micro-transcription* to enable "a detailed description of the semiotic resources used in the meaning making process" (p. 166).

In addition to time-based texts, some online texts have been studied from the perspective of readers' trajectories through them. Knox (2007) argues that, with the development of shorter texts on online newspaper home pages, the ideological goals of news institutions play out across multiple editions of a newspaper, as readers interact with the "newspaper-as-dialogue" over much longer timescales than a reading of a single news story, or a single edition of a newspaper. Djonov's (2005) study of children's Web sites documents different readers' paths through the same site, demonstrating that different paths through a Web site, and even different amounts of time spent on the same page, can change the meaning of the text experienced by the reader. Such differences are related to readers' purposes. Zhao incorporates the dimension of time into her modeling of readers' paths through "educational interactives" ("enclosed" Web sites which function as educational games), theorizing the *critical path* or *traversal* as the unit of analysis (see Bednarek & Martin, 2010). The notion of *resemiotization* is developed by Iedema (2003), who traces the process of one text being "resemiotized" into another as part of institutional processes,

with meetings eventually resemiotized into building plans, which are eventually resemiotized into a building. These studies illustrate some of the ways in which multimodality has challenged traditional notions of what constitutes a text, and how we approach text analysis.

Conclusion

SF-MDA is still in the early stages of its development, and questions such as the number and nature of levels in nonlinguistic semiotic systems, whether all semiotic systems share the metafunctions of language, and how to most effectively theorize interaction between semiotic systems are still to be definitively answered (Martinec, 2005). Yet SF-MDA offers a consistent theoretical basis for describing multimodal texts, studying semiotic systems, and understanding linguistic texts not as isolated entities, but as instances of a system of meaning that is always in interaction with other complementary, related systems.

SEE ALSO: Multimodal Interaction Analysis; Multimodality and Hypermedia; Multimodality and Literacy; Multimodal Text Analysis; Systemic Functional Linguistics

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Multimodality and Technology

KAY L. O'HALLORAN AND BRADLEY A. SMITH

There is a close historical association between multimodality and technology, in two senses. First, technologies have enabled a significant expansion of the range of media by which humans communicate, especially in terms of recording, replaying, and transmitting across time and space (that is, mediating) multimodal discourse. This has in turn greatly increased the human capacity for multimodal communication and thus sociocultural development: for example, the printing press contributed to the evolution of science (Eisenstein, 1979) as well as art, through the capacity for individual (rather than societal, institutional) expression (Lotman, 1991); and digital technology has led to a significant expansion of the repertoires of human cultural exchange (e.g., scientific, artistic, political, economic, and so forth), rapidly altering social organizations globally as a result (for example, in terms of the speed of global information exchange). In the second sense, technologies have enabled researchers to study much more closely and effectively multimodal texts, again in particular because of the capacity to record, replay, and analyze multimodal discourse, but also in terms of technical means for analysis (e.g., instrumental, computational) which extend the human sensory capacities for perception: see, for example, the software Praat (Boersma & Weenink, 2010) and ELAN (Wittenburg, Brugman, Russel, Klassmann, & Sloetjes, 2006).

Technology can be viewed as the application of scientific knowledge in the creation of tools: the physical embodiment of abstract scientific knowledge. The discipline of engineering, for example, is specifically concerned with the development of tools to solve particular problems, based on scientific, mathematical, and other forms of knowledge, including linguistic knowledge. However the term—derived from the Greek *technología* (τεχνολογία): *téchnē* (τέχνη) 'craft', 'art' and *-logía* (-λογία) 'systematic study'—can refer variously to tools themselves, the study of tools, and the abstract scientific bodies of knowledge which are applied in the development and use of tools. Li-Hua (2009) gives a discussion, which begins with the observation that "the attempt to define technology seems quite challenging," depending upon viewpoints from various positions; and this may reflect the importance and ubiquity of technology within contemporary societies.

Multimodality, for linguists and semioticians, refers to the integration of two or more semiotic resources (including language) in the communication of meaning. Semiotic resources (e.g., language, image, gesture, architecture, and music) are "system[s] of meanings that constitute the 'reality' of the culture" (Halliday 1978, p. 123). The objects of multimodal studies include the systems and structures of semiotic resources; the intersemiotic processes through which semiotic choices integrate to create meaning in multimodal texts (e.g., documents, videos, websites, 3D objects, and daily interactions and events); the multimodal artifacts and events themselves which constitute instances of discourse; and the media through which semiosis takes place (e.g., stone, wood, fabric, paper, paint and ink, heliograph and photograph, phonograph cylinder, magnetic tape and microphone, and digital computer software and hardware). The term "multimodality," however, has other specific uses: for example, for computer scientists and engineers multimodality refers to forms of input and output devices whereby humans interact with computers through sensory modalities (visual, aural, and somatic).

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Within the human sciences, multimodality thus implicates both abstract and physical phenomena in its study: the semiotic (e.g., abstract systems and structures of semiotic resources and intersemiotic processes through which semiotic choices combine to create meaning, as well as the actual multimodal artifacts and events); and the physical media through which semiosis takes place. From this perspective, technologies are implicated in the study of multimodality both as semiotic (multimodal) artifacts in their own right and as media which impact on multimodal semiosis (as the means of multimodal communication). In technology, as in signs in general, we see both the material and the abstract drawn into a significant relation, because both semiosis and "technics" are dependent on a fundamental materiality (see Innis, 2009). These two interrelated aspects of technology—technology as multimodal semiotic phenomenon and technology as physical means of semiotic mediation—are now discussed, before the impact of technology on multimodal semiosis (i.e., media as "semiotic technology") and on the study of multimodality is reviewed.

Since Descartes and the severing of science- and humanities-based knowledge, studies of the physical (material) and abstract (semiotic) planes have been separated, with technology and culture likewise being treated as separate domains of study and practice; the former as an application of science, the latter the preserve of the arts and humanities disciplines. This separation has led to a general perception of technology as physical rather than cultural (semiotic) artifact. Van Leeuwen (in press) discusses the cultural separation of the semiotic and the physical in the distinction between modes and media of communication: for example, between the composition of a musical work (as abstraction, semiotic mode) and its performance (as materiality, expressive medium). Yet, he observes, while the medium has typically and traditionally been seen as "a physical condition of communication that provides specific affordances and imposes specific restraints" (its function to provide a faithful reproduction of higher-level meanings), it is in fact "also intricately connected to the ways we use language and other modes of expression, and to the ways genres of discourse and technological media evolve alongside of, and in connection to, each other."

The technologies that enable and mediate human cultural exchange (that is, multimodal communication) can thus be seen as the embodiment of cultural knowledge in general, as part and product of that culture (e.g., Foucault 1977). Technologies, that is, are semiotic, cultural resources, shaped by and shaping sociocultural practice: Our tools are part of the meanings we create as semiotic beings, part of our cultural repertoire, as much as the ideas and abstract systems and structures we create in language and other semiotic resources. Technology can thus be studied as (multimodal) semiotic phenomenon, as suggested by Innis (2009) and others within the semiotics tradition, including Andersen, Holmqvist, and Jensen (1993), who present early studies of computational technologies, including the semiotics of programming languages, interface design, and so forth, from the perspectives afforded by semiotics. Anthropologists and archaeologists have of course long studied implements and other cultural artifacts as multimodal bearers of meaning: that is, as semiotic artifacts. In fact, from the social semiotic perspective spoken (as much as written) language can be seen as a very early, perhaps definitive human "technology": a tool for adaptive engagement with our changing (material, social, semiotic) environment, with the body (vocal tract, arms, hands, face, and so forth) as medium.

Lotman (1991) discusses the profound influences of technological development on and as a part of wider human culture, and the relations with society. Citing written language as an example of a profoundly influential technology, Lotman (1991, pp. 782–3) observes: "There is a repeated pattern to the immediate consequences of a technological change: having acquired new powerful means, society first attempts to use them for old ends, increasing its possibilities only quantitatively": to take the example of writing, in expanding the capacities for large-scale building projects and "expanding the volume of social memory," primarily through bureaucratic record-keeping. However, there was "another,

more profound consequence of the advent of writing technology, drastically changing the very matrix of culture" (p. 783): the expression of individual and personal creativity which resulted from the ability of individuals to record independently of established authorities and institutions. Lotman (1991, p. 784) goes on to point out that a "somewhat similar process followed the invention of printing and the whole scientific and technological shift of the Renaissance" (see also Eisenstein, 1979).

These observations also apply to more contemporary developments. The capacity to record sound and moving image has greatly increased the power to mediate, and thus record and replay, multimodal discourses of social life that were formerly transient and ephemeral. The televised Kennedy–Nixon election debates of 1960 showed the social power of such mediation, as did the UK elections of 2010. The advent of contemporary interactive digital technologies such as the Internet and mobile communication devices are having similarly profound consequences, particularly via the media storehouse that is the Internet and its capacity to record and disseminate human discourse across a wide range of multimodal forms. The consequences of such developments for science and human cultural development in general are still unfolding; but historical perspectives point to the possibility of fundamental changes as a result.

For example, the current generation is undoubtedly the most literate in history—in spite of prescriptive concerns by educators about the immense variation in written orthographies and discourse styles now developing worldwide through SMS and other e-chat media—in the specific sense that a vast proportion of the world's population now use writing, via mobile phone and Internet chat, on a daily and habitual basis, a large proportion of whom would formerly have written only little, and in general only while in the classroom (that is, within restricted social contexts). Literacy—the use of writing to communicate—is now no longer the privileged preserve of the well-educated, while writing is now used for a large variety of types of discourse (spontaneous, dialogic, informal, and so forth).

However, mediation through written and other forms of communication brings its own constraints as well as new affordances, and the social consequences of mediating (and recording) such interactions through the constraints of writing are yet to fully emerge. Halliday (1985) makes the point that the invention of writing appeared as a result of the demands of new social functions, those associated with the move from nomadic hunter-gatherer to settled agricultural social organization and associated needs for record-keeping. As a result, writing does not include intonation, crucial to the sort of interactions and negotiations characteristic of the spontaneous dialogues (Halliday, 1985) found in electronic chat. Traditional technologies such as writing are clearly changing as a result, as they become incorporated, remediated, and recontextualized within the new media, the most dramatic being the written language as used for spontaneous, real-time dialogic interaction (e.g., the use of emoticons, intersemiotic integration with image and sound, and so forth). The consequences for the written language, if not for culture as a whole, may prove as dramatic as the invention of the printing press did for Renaissance culture.

The idea that the development and use of semiotic technology is motivated by and motivates the evolution of culture (as adaptation to social needs) is basic to social semiotic theory. Van Leeuwen (in press) discusses the ways in which new technologies have expanded the semiotic potential of cultures in direct relation to more general social needs. Rejecting the notion of technological determinism, van Leeuwen cites the example of radio broadcasting, a phenomenon which came about not with the invention of radio itself—which Marconi had projected as having limited, mainly pragmatic purposes, as a medium for ship-to-shore communication and the like—but much later as a result of new social geographies and demands, in particular the development of new city "garden suburbs." Comparison of the dates of the invention and later widespread use of the Internet also neatly illustrates the symbiotic relations of technology and sociocultural development.

The ongoing development and utilization of recording media for everyday multimodal discourse in general (as in sound recording, film, mobile phone, and Internet technologies) may in fact be said to have their origins in the cultural need for the capacity to mediate more than just that which is found in textbooks and novels. Writing, as language, has been and continues to be very important for human social life; but mediating the full range of human communication types enables for multimodal discourse events the same transcendence of time and space as writing has done for a very restricted range of social discourses for thousands of years. Yet there is a sense in which the verisimilitude of state-of-the-art media (including the latest sensation, at the time of writing, 3D cinema) obscures the fact of these being "virtual" rather than actual. Just as writing is an impoverished record of speech and of everyday multimodal discourse, what we experience in cinemas, through sound recording, and on the Internet are but representations of events rather than the events themselves, while the intended interpersonal flourishes of e-mail and SMS dialogue may not communicate, as many are discovering, the same subtleties of expression as are common in face-to-face multimodal discourse, with often dire social consequences. Meanwhile, it is possible to imagine now a world where the instantaneous transmission of even mundane multimodal discursive interaction can be effected via a diversity of media and yet still remain "on the record" potentially, in effect, in perpetuity; such records may easily be taken out of their original discourse contexts, again with often negative social consequences. We are yet to fully realize the implications of the limitations and affordances of contemporary media, while the very rate of increase in sophistication and power renders us complacent in doing so: We remain "bedazzled" by our technologies.

The same close relations of general culture and technology can be found between the development of technology and its use within academia (for research and teaching). However, here the relationship has clearly been a strongly causative one, with technological development driving the development of studies of multimodal discourse. For example, until the invention of sound recording, the study of linguistics was in effect the study of written language, a constraint that meant that most grammars were orientated toward the language found in writing, not that of the wide range of spoken discourses found across the landscape of everyday human social life. The invention of early recording technologies first led to the study of speech within phonetics and phonology in the early 20th century; but it was the wide availability of tape-recording technology that ushered in the widespread study of naturally occurring spoken discourse in the 1960s, revolutionizing linguistic theory and description.

The availability of film and then video recording has likewise undoubtedly been a key factor in the rise in scholarly interest in multimodal forms of communication, particularly dynamic audiovisual forms of discourse. Multimodal annotation software (e.g., Rohlfing et al., 2006) has provided similarly useful tools for accessing and annotating audiovisual text; and it is perhaps not surprising that with these technologies, a distinct field of multimodal studies has emerged and flourished in recent decades, dealing with an increasing range of media types, including hypermedia such as Web sites, with their complex array and integration of different semiotic resources, texts, and subtexts, as well as with a variety of discourse types, including the mundane and the spontaneous.

Such technologies, however, can never be autonomous agents in the study of semiosis but rather are tools in the hands of discourse analysts (whatever their disciplinary persuasion). As Halliday and Greaves (2008, p. 19) observe, "modern computer-based techniques of analysis and representation . . . provide a much richer and more elaborate treasury of information than was available a generation or even a decade ago . . . they do not replace the human investigator; they do make the human investigator's work more complex—but also more thorough and more revealing." Today, computational technologies, particularly interactive digital media but also automated techniques of analysis, continue to offer an

increasingly sophisticated set of tools for accessing, analyzing, sharing, and otherwise processing multimodal data. They are particularly appropriate and perhaps essential for the analysis of those data created by computational media, and for the emergent complexity and detail that result from their application. The challenge for applied multimodal studies is to adapt and utilize such resources for the work of multimodal analysis.

The gulf that exists between oral and literate cultures is just one example of the intimate and profound relations between technology and multimodal culture. A similar gulf has been created in the past two hundred years between the cultures of successive generations by the ever-increasing range and sophistication of media technologies. To say we move in a new world, the digital information age, is already a cliché. Our challenge appears to be the navigation through and adaptation to not so much an actual, material environment as the virtual semiotic, informational environment—an environment of our own making, incorporating the discourses of many millions of multiliterate social agents; and yet an evolved rather than designed environment. Understanding the relations of technological culture and multimodal culture in general is crucial. Such an understanding must ultimately depend upon knowledge of the relations of the material and the abstract planes, and of the links and discontinuities between the cultures of the present and the past as carried through innumerable recorded and unrecorded acts of multimodal communication.

SEE ALSO: Multimodality and Software; Multimodal Text Analysis

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Multimodality and the Senses

JENS LOENHOFF

The ordinary or commonplace conception of the "senses" treats them as physical capabilities associated with specific organs, that is, the sense organs. It is believed that one can grasp the world of things, events, and existence by means of them. Insofar as reality is a correlate of sense perception, the senses act as generators of the phenomenal world. To have seen something with one's own eyes, heard it with one's own ears, or touched it with one's own hands is deemed the most comprehensive source of evidence. Research into sensory perception is focused strongly on the modality of the senses, that is, on their specific and distinctive qualities, and the associated differences in performance of sight, hearing, touch, taste, and smell. Sensory multimodality can only exist where there is modality. This applies to the connection between sensory perception and the attribution of meaning essential to all processes of communication. Thus there are cultural ideas and practices which are only made possible by means of specific sensory modes: for instance, music is only possible through the medium of sound and geometry only through the medium of sight.

The isolation of the senses from one another, which, at first sight, seems to be confirmed by the separation of the individual sensory organs, led to a distorted comprehension of a complex interaction. This distortion not only affected how exteroceptive perception, which is focused on the external world, was understood, but also neglected the importance of proprioceptive and kinesthetic perception, which provide information about the position and location of the body as well as the type and manner of its movement. Whereas the multimodal unity which exists in practical performance of actions is dissolved and separated into its individual parts, theories of perception are confronted by the hitherto irreconcilable problem of having to provide an explanation for their interaction. Despite the occasional accessory assumptions, amplifications, and attempts at differentiation, over the course of the history of philosophy and science the model of the five senses has more or less remained an unquestioned certainty in definitions of human sensation. As a "proto-idea," however, it becomes problematic as soon as a description of the function of human perception in the process of communication, which was always multisensory, is necessitated. If not before, it now becomes apparent just how inadequate an individuating description of human perception, focused on specific organs, actually is (Loenhoff, 2001). The corresponding aporia only dissolves when sensory perception is no longer divorced from action, and this action is itself comprehended as a senso-motory performance. Here, the senses do not act as individual organs independent of one another, but rather continue to be oriented toward each other, in order to interact as part of an integrated human orientational behavior (Gibson, 1983).

All processes of communication are dependent on sensory perceptions. It is possible to perceive without participating in communication, but not to communicate verbally or nonverbally without specific sensory perceptions. For this reason there is an asymmetric foundational relationship between sensory perception and communication. Perception and movement are always unified in the form of a senso-motory cyclical process (Lewkowicz & Lickliter, 1994; Gehlen, 1997, pp. 131–326). Not only do they make possible the practical orientation of the organism within its environment, but they also control communicative behavior. The production of acoustic or visual instances of communication would not be

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possible without a feedback loop of this kind in the form of self-perception. The comprehension and production of symbolic utterances and the generation of communicative resources by the individual consequently take place within the medium of this corporeal organization (Merleau-Ponty, 1945). The senses do not act passively or as mere receivers of information in the processes of co-orientation, interaction, coordination of action, or within the context of modern technologies of communication. Instead, perception consists of an active social practice, entirely dependent on its context and the intentions and motives behind the act of perception in question. For this reason participation in communication and the appropriate and proportionate employment of the senses must first of all be learnt. The ability to draw attention to something collectively, the ability to allow others to observe specific occurrences through the agency of one's own body and to make it available to the perception of potential communication partners is an important basis for this learning process. Whereas perceptions take place within a social or communicative context, perception is reciprocally observed. The participants become conscious that this perception is perceptible for other people. Face-to-face communication is very much dependent on the reflexivity of perception (Ruesch & Bateson, 1951; Goffman, 1971). Thus the employment of the senses is also always shaped by socially and culturally specific rules relating to the proportionality of the perceptual behavior (Classen, 1993; Howes, 2009). This sharing process concerns mutually shared expectations, for instance, where one's gaze may be fixed, which parts of one's own body or that of another person may be touched, how movements are performed, or which verbal utterances are considered appropriate or otherwise. Communicative performances are directly dependent on whether they are available to the senso-motory organization of the human being. This means that they have to be tailored to (a) the perceptual readiness of potential communication partners, (b) their perceptual capabilities and standpoint, and finally (c) the material perceptual conditions of the communicative situation.

(a) Even when perceptions often seem to happen to, impress, or even force themselves upon us, they are nonetheless a consequence of the willingness to pay attention to objects and events (Tomasello, 2008). The appellative inducement of the willingness to perceive, on the one hand, and the communication of this willingness on the part of a communication partner, on the other, form a unity within the process of communication, because they are reciprocally dependent on one another and can only be understood and explained from within the communicative context.

(b) Communicative messages of a verbal or nonverbal kind must always be tailored to the perceptual possibilities of the interactive partner. They have to take into consideration what can be seen, heard, or touched from the perspective and spatial position of the communication partner and his/her sensory capabilities. Verbal utterances only occur where one can be heard, and gestural motions can only take place where both participants share the same visual space and have sufficient room within which to make the gesture. Even simple, indicative gestures demonstrate the degree to which communicative partners reciprocally assume shared or mutual perceptions and, where necessary, produce, correct, or modify them by means of a shift in their own position in order facilitate communication.

(c) Processes of communication have to take into consideration the social situation, the associated rules of perception, and seek permission for perception to happen, but they also have to adapt to the material conditions of communication. These conditions are not random. On the one hand, these conditions have to do with the basic biological structure of the senso-motory systems and their orientation toward specific physical spectrums. On the other hand, they have to do with the situational conditions to which the communication has to adjust itself, such as background noise, diminished vision, a lack of freedom of movement, and so on. These material conditions present the perceptual faculties of the

communicating agents with particular challenges, which they must bear in mind in the production of their symbolic utterances, since these utterances are required to adapt their specific form to the material conditions of perception and the sensory capabilities.

All processes of communication are associated with a permanent evaluation of their perceptual conditions of enactment (Loenhoff, 2001). If these conditions change, the participants are obliged to seek other possibilities for mutual perception by use of their creative faculties in order that communication may continue. Perceptual processes thus have a significance which should not be underestimated for the monitoring of the success and efficacy of the communication. Alongside the above-mentioned factors, the perceptual conditions of enactment include knowledge acquired in the socialization process about dealing with that senso-motory bodily potential involved in the production and reception of communicative utterances. Without this knowledge about the use of one's own senses and the corresponding practical faculty, an important basis for strategic interactive behavior is lacking. This lack or absence is evident, for instance, when young children close their eyes and believe that in doing so they cannot be seen, because they themselves cannot see.

Focusing on exteroceptive perception, the isolated consideration of individual sensory modalities and attribution of perceptual performance to particular organs had a lasting impact and distorted our view of the interconnections of central importance to interactional analysis. Contrary to widespread preconceptions and naive theory, communication has always been a multisensory process. Symbolic expressions emerge from a communicative act or event in which gestures, facial expressions, as well as the verbal and nonverbal dimensions, co-constitute and interact with each other. From the perspective of the communicating agents, facial expressions, gesture, and language always form a unity in the production of meaningful utterances (Streeck, 1993; Kita, 2003). It is only when analyzed or viewed from the perspective of the external observer that they split into the elements occupying different levels and can be examined separately. Only the production of sound within the context of verbal communication demonstrates the interweaving or conjunction of varying feedback loops, because when speaking the movements in the area of the mouth are experienced by means of tactile and kinesthetic perceptions, while the auditory perceptual faculty oversees the production of sound. When this feedback is distorted, considerable problems involving articulation are the result (Howell, Powell, & Kahn, 1983). In the very same way, the movements of one's own body are experienced and controlled via kinesthetic and visual perceptions. Without these various feedback loops the production of indicative movements and other gestures would not be possible. All sensory processes involving proprioceptive perceptions, or which are associated with proprioception, facilitate this experiencing of oneself. All related occurrences of movement, experiencing of oneself, estimations of range, probabilities for success, as well as conditions for the realization of communicative processes by the senso-motory systems are only comprehensible from within the multisensory interconnection and uniformity of the bodily organization. In the process of communication, one's own acts of perception and movement are always focused on the communication partner via this inner feedback process, which is also constitutive for noncommunicative acts, and are additionally adapted to the partner's capability for perception and movement. Thus the recipient design of communicative utterances not only concerns the linguistic characteristics but also takes into consideration the perceptual perspective of one's communication partner, since this is of central importance for the purposes of comprehension.

Against this background, the notion that specific sensory perceptions can be ascribed to their respective communication channels is inappropriate to the reality of communicative process and leads to false heuristics. Due to its close ties to the transport model of communication, the model of sensory channels cannot properly address the function of

perceptual activities and sensory modes in the constitution and structuring of systems of communication. The entire metaphorics of switching on and off as well as conduits, lines, and transport routes implies—and therein lies the ambiguity of the terminologically unsuccessful designation "channel"—a coincidence of reciprocal perceptual possibilities with the "opening" of entrances to communication in which appropriate conditions, not only for the constitution of informational processes, but for their success, can be seen.

The development of modern recording technologies and the attendant changes in analytical methods employed in empirical research on interactive processes have meant that greater attention is being paid to the multimodal nature of communicative processes (Van Leeuwen, 2005). The complexity of the coordination and co-production of verbal utterances can be recorded in a superior manner by means of new notational and transcriptional procedures. All forms of sensory perception and all semiotic resources available as a result of these perceptions can be included in descriptive and analytical works. Empirical investigations demonstrate how participants in communication exploit the possibilities for perception and motion available to them in order to start, continue, or end communication (Gullberg, 2003; Norris, 2004, 2009; Stievers & Sidnell, 2005; Goodwin, 2006). This empirical research demonstrates to what degree swapping speakers, so-called "turn taking," is, in fact, a multimodal process characterized by a complex interconnection of verbal utterances, eye movements, indicative gestures, and other semiotic resources (Bolden, 2003; Mondada, 2007).

Recent research on modality and multimodality attempts to overcome the previous fixation on speech and writing as the single and most important means of communication (Kress & Van Leeuwen, 2001; Scollon & Wong Scollon, 2009). In the process, not only the particularities of singular modes of communication (speech, writing, image, music, gesture, glance, and so forth), but above all their interplay within communication have received attention. Numerous forms of communication are instantiated as a multimodal ensemble in which different semiotic resources are exploited simultaneously in order to achieve certain communicational aims (Kress, 2009). Semiotic resources are hence a correlate of sensory perception insofar as senso-motory systems, their specific efficacy and their cooperation, supply the enabling conditions for the constitution of modes of communication. A controlled hand movement, out of which the form of a gesture develops, must be proprioceptively received back by the producer of the gesture and simultaneously visually perceived by both communication partners. The same holds true for the glance, which, as a mode of communication, presupposes not only visual perception but also that the body is able to assume a certain position. Different communicative modes can emerge in the mediums of both auditory and visual perception, for the use of the senses enables the realization not only of a single but of several communicative modes. Interpersonal communication is above all characterized by the entanglement of multiple senso-motory functional circuits and the interaction of multiple communicative modes. The complex interplay of speech, eye glance behavior, gesture, facial expression, and the utilization of additional semiotic resources shows that communicative multimodality always presupposes multisensory processes of perception.

In multimodal communication, differences and performance variations in several senso-motory functional circuits are productively implemented in the coordination of actions. The analysis of the praxis of multimodal sensory perception demonstrates how the use of the body's senso-motory capacity can heighten the probability of coordination as well as initiate and direct the communication process. For this reason, interactive technologies of communication attempt to reproduce multimodality artificially in order to optimize the semiotic resources available to communication. This can only be done, however, within the framework of those possibilities which the senso-motory organization of human beings actually recognizes.

SEE ALSO: Conversation Analysis and Multimodality; Multimodal Discourse Analysis; Multimodal Interaction Analysis; Multimodality and Technology; Transcribing Multimodal Interaction

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Multimodality and Time

GUDRUN FROMMHERZ

Temporality in language and in human interaction is a complex phenomenon. This, in part, results from a relative obscurity of time itself. As an observable phenomenon, time is relative to varying viewpoints that shift the very notion of time; physical, historic, economic, sociocultural, personal, and cosmic time each produce a different awareness of time. Further, some conceptions of time lie outside direct human experience and rather present intangible, abstract models: the instant, negative time, and space-time are such models. Notwithstanding the principal elusiveness of an inclusive epistemology of time, temporality is deeply embedded in human experience—in human beings collectively as a species, communally as social actors, and individually as subjective beings.

Traditionally, the scholarly disciplines of the humanities and of social sciences investigate temporality as a human capacity and often use time as an ordering scale of experienced events; most obviously so in the domain of history. However, it is possibly the field of philology that best summarizes human consciousness of time. Meyerhoff (1960) provides a comprehensive introduction to time both as a theme in literary arts and as an organizing narrative structure. The language philosopher Mikhail Mikhailovich Bakhtin (1895–1975) addresses the temporal dimension of the narrative act when he analyzes the *chronotope* or "time-space" in the novel (Bakhtin, 1981). The chronotope refers to the construction of time and space in and through texts, which would always already mediate the existing ideological meanings of a specific place at a certain historic point in time. With the chronotope, Bakhtin elevates the temporal-spatial dimension in texts to a unit of analysis in its own right. Bakhtin sees time and space as a single linguistic entity, highly interrelated and practically inseparable. Bakhtin's idea of chronotopicity, first investigated in literature and then, increasingly, in a wider range of cultural artifacts, has influenced a large number of thinkers, critics, and researchers in the fields of literary studies (e.g., Howard, 1994; Brooker, 1995), linguistics and semiotics (e.g., Scollon, 1982, 2005; Scollon & Scollon, 2003; Schultz, 1990), social research (e.g., Fairclough, 1989, 1992; Wertsch, 1998), visual studies (e.g., Haynes, 1995), film studies (e.g., Stam, 1989; Sobchack, 1998), and feminism criticism (e.g., Hohne & Wussow, 1994), to name just a very few. It is possibly the clarity and precision with which Bakhtin outlined an inherently dynamic structure in mediated communication that left a lasting mark on the study of human interactions and the artifacts that arise from them.

Grown out of linguistics, multimodal methodology borrows from an integrated understanding of temporality that it applies to social actions at the core of its interests. Also here, a rooting in Bakhtinian thought is evident; Bakhtin understood the "event" (and all actions embedded within) as actualized instances of *polyphonic interactions* (Bakhtin, 1984) by social actors at the moment of active participation. An event, according to Bakhtin, is never monolithic, or single-voiced. Rather, the event is polyphonic with multiple voices (and other communicative modes) that create a communicative moment larger, or more complex, than the sum of its components. Also, the event could never be meaningfully described from the point of view of an objective, uninvolved, observer; events would necessarily be participatory and emerge at each instant of their temporal flow. Similarly, multimodal analysis does not so much recognize time as linearly progressing, and objective, events but as a multidimensional, and potentially subjective, phenomenon.

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In analyzing the temporality of events, Jay Lemke (2000, 2005, 2009) notes a *heterochrony* in human artifacts and in social actions. Heterochrony, a concept taken by Lemke from theoretical physics, refers to an exchange of information across distant scales in time, this way rendering linear, continuous time spontaneously discontinuous and nonlinear. Lemke demonstrates how actions instantaneously communicate across time, be it through material expressions (Lemke, 2000) or reflexive intentionality (Lemke, 2009). Ron Scollon (1939–2009) utilizes the ancient concept of time cycles to describe how humans habitually organize social actions (Scollon, 2005) along temporal scales (e.g., a day, a lunar cycle, or a season), a temporal entrainment that he calls *pacemakers*. These pacemakers identify social actions to be anchored in actuality, yet, at the same instant, embedded in a larger temporal dynamic. Building on Scollon (2005), Gudrun Frommherz (2010, 2011) observes a distinction between time cycles and *action cycles*—between the temporal organization of actions and the inherent timescale itself of an action. Analyzing relationships between the duration of a process and its intervals of occurrence, Frommherz (2011) notes instances of *temporal synchronization*, the purposeful alignment of social actions along their associated time cycles, and these with further action and time cycles. According to this proposition, a same action executed at different intervals along its respective time cycles would alter the *temporal density*, and with it the significance, purpose, and subjective experience of the action. Temporal density, a concept developed by Frommherz (2011) borrowing from Norris's (2009) notion of *modal density*, refers to a dynamic interplay between temporal complexity (i.e., quantitative temporal synchronization) and temporal intensity (qualitative temporal synchronization) in real-time occurring actions. The scales of temporal density in an action would then influence the subjective experience of time as fleeting, dragging, intense, or subtle.

Sigrid Norris (2004) proposes that all social actions are multimodal. This argument could be expanded by suggesting that multimodality arises not only from ever-interacting *systems of representation* (Kress & van Leeuwen, 2001) but, more so, from the tendency of actions to temporal complexity. Along these lines, Norris (Norris & Jones, 2005; Norris, 2009) conceptualizes the idea of *frozen actions*, which collapse linear real time of actions into a historified (Bourdieu, 1972/1977) expression or an artifact, thus capturing past and present in a single, objectified moment. With this concept, Norris acknowledges the presence of past actions in present cultural tools, which themselves afford and constrain present and future actions—but also allow for reflexive recontextualization of past events. Thus, the frozen action of carving wood, for example, which becomes objectified in a hand-made table or chair, may resemiotize woodcarving as a form of artistic creation of a piece of lifestyle furniture rather than a utilitarian production of an everyday object. Accordingly, the semiotic meaning of the action of carving wood not only defines the object it creates but, reversely, is just as defined by these objects.

Such observations about temporality in social actions—Bakhtin's chronotopes, Lemke's heterochrony, Scollon's pacemakers, Norris's frozen actions and Frommherz's temporal density—are significant to multimodal analysis as they suggest actions to be inherently dynamic and polytemporal, and equally show a capacity for an anachronistic embedding of actions and processes in their subsequent material expressions. The multimodal perspective on time in actions acknowledges how past events, present actions, and forward-directed intentions intersect at any one moment in the flow of a social practice.

Recognition of the multidimensionality of time in social actions can also be found in earlier investigations of primary human behavior. The cultural theorist Johan Huizinga (1872–1945) suggests that experience of time in play is inherently multimodal—a lived moment with all senses of the player immersed in present activities while transcending time and space. When in play, Huizinga (1938/1955) argues, the senses are fully engaged and focused, time is suspended and space dissolved. While Huizinga maintains that play is principally distinct from ordinary activities, he nevertheless suggests that play is central

to human social behavior: Play would be a fundamental feature of life and primary to culture. If so, play may be considered the "mother of all social actions," and human activity might enact a faculty for transforming space and time whenever a purposeful and focused action is performed. The psychologist Mihaly Csikszentmihalyi (1992) draws on Huizinga when he discusses *flow* in human engagement. Flow, according to Csikszentmihalyi, synchronizes actions and awareness, and focuses attention on all elements of the present activity while suspending irrelevant outside stimuli. Flow involves temporal synchronization of multiple communicative modes, causing the mind to focus and to fully immerse into the activity. It might be this single-mindedness during flow activity that alters the actor's sense of time, often rendering time faster while in action and longer, or richer, in memory thereafter.

Equipped with an increasing understanding of time as a phenomenon of enactment, multimodality provides a key tool to analyzing qualitative temporality not only in social actions but also in cultural artifacts. Temporality in music, for instance, arises from a synchronization of the metric cycles of beat, tempo, and rhythm in order to achieve an aesthetic experience of sound. Without such temporal synchronization, sounds would be perceived as little more than noise. Much contemporary music increasingly considers multimodal aspects in both composition and "consumption" of music. Stage performances today sometimes place musicians elsewhere than on the stage, and such spatially dispersed positioning of audio sources influences not only compositional thinking but also the aesthetic experience in the listener. The emerging field of psychoacoustics concerns itself with the space, movement, and directionality of sound, which involve not just the human sense of hearing but also those of proxemics, spatial perception, kinesthesism and proprioception (see Jeffress, 1948; Blauert, 1983; de Gotzen, 2004). Especially by means of electroacoustic technologies that allow real-time processing of sounds, new listening dimensions in multimodal environments can be explored. In a more populist application, modern karaoke systems deploy multimodal channels to extract lyrics from the original audio, visually segment them into singing phrases, and display these in real-time coloring on the karaoke video screen (see Zhu, Chen, & Sun, 2005). The auditory experience of the performer is thus visually enhanced and supported in real time.

In multimedia and cinema, temporal synchronization also occurs between audio and visuals. Michel Chion (1994) highlights the importance of an immediate relationship between sound and image achieved through *synchresis*, a neologism that merges "synchronize" and "synthesis." The term "synchresis" emphasizes that temporal synchronization does not simply afford cultural tools or communicative modes to concomitantly overlap but rather achieves a full amalgamation, a merging into an instance of unity. Traditional cinema, considered a time-based medium ever since it began, routinely manipulates its narratives via a great repertoire of stylistic techniques, and does so very successfully despite the strictly linear layout of sequenced images. Paul Ricœur (1984) calls upon a *configuration of time* that creates a story beyond mere sequencing of events. The story takes a temporal shape, creates a pattern, a narrative sense, out of successive moments. Artistically created temporality in film is a key feature of the medium to the extent that entire film genres are dedicated to their temporal particularities: The developmental film, action movies, and the epic are just some examples. In newer audiovisual formats, such as the music video, the classic position of audio as *added value* to the image (Chion, 1994) submits to a new role of audio as a temporal baseline (or counterpoint) along which a play of imagery unfolds (see Vernallis, 2004). In this sense, music video can be understood as *multimodal music* rather than an audiovisual format. In the music video, sound takes the lead role and determines the overall aesthetic experience of the piece, often achieved through particular camera moves and editing techniques. Visuals may be discursive to the audio but they do not intend to tell a cohesive story. Narrative flow yields a multimodal rhythmicity, a

multisensory experience of aesthetically congruent, harmonized time. A narrative, if there is one at all, is neither explicitly nor implicitly extant in the music video but emerges—it is created by the viewer at the moment of multimodally engaging with the artifact (see Bakhtin's understanding of the "event" above). This way, the narrative in music video, at least in significant parts, moves into the realm of personalized experience that is often based on subjective interpretation, personal preferences, and individual appreciation of the artifact and its intertextuality.

These and other studies suggest that time, be it continuous or discrete, linear or cyclic, finite or eternal, symmetric or asymmetric, provides a multimodal experience in the social action and the cultural tools that it employs. With an increasing number of studies into the temporality of multimodal communication, the epistemology of time may have just started to consider human actions as a point of reference to an understanding of time apart from the historic, and rather impenetrable, concepts of eternity and death.

SEE ALSO: Bakhtin, Mikhail M.; Discourse in Action; Lemke, Jay; Multimodal Interaction Analysis; Multimodality and Film; Multimodality and Rhythm; Norris, Sigrid; Rhythm and Timing in Interaction; Scollon, Ron

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Multimodality in Corporate Communication

CARMEN DANIELA MAIER

Multimodal texts making meaning in multiple semiotic articulations and multimedia contexts are central in contemporary corporate communication. Iedema acknowledges that "the extent to which formal bureaucratic and corporate organizations have adopted multimodal ways of (self-) representation is remarkable" (Iedema, 2003, p. 38). Any single corporate communication employs many semiotic modes in complex combinations, beyond, for example image-text or moving image with text.

Among the most important factors that have contributed to this development in contemporary corporate communication strategies are the greater fragmentation and identity renewal of consumer groups and the development of technology. It should be acknowledged from the very beginning that these two factors cannot be separated from each other because they are in a continuous interdependent relationship. Cornelissen discusses the environment in which corporations have to communicate today and he recognizes that consumer groups are "more fragmented and less homogenous than before" and therefore corporations "have to use more channels and different media to reach them" (Cornelissen, 2008, p. 24). Furthermore, these contemporary consumer groups are characterized not only by less homogeneity; they are also multiliterate consumers who have acquired and continue to develop multimedial and multimodal communicative expertise, needs, and behavior. In order to meet the expectations of existing and prospective multiliterate consumers, corporate communicative strategies have to keep pace with the development of the newest digital technologies that give unlimited and immediate access to dynamic and borderless groups of multiliterate consumers. Therefore, the advance of technology and especially the globalization of (multi)media have also tremendously affected multimodal communication in corporate contexts.

It would thus be of interest to see the consequences of these relentless communicative challenges from corporate contexts upon the choice of topics in multimodal research. From print and television advertisements, product manuals, Web sites to multimedia resource kits and multimedia franchises, the various corporate communication materials and phenomena have attracted the attention of multimodal researchers during the past two decades. Both the exploration of their complex semiotic structures, communicative purposes and contexts, and the development of adequate theoretical frameworks and concepts have been in focus. Multimodal research has addressed the effects of (global) technology on the renewal of well-known corporate communication materials like advertisements and the emergence of new corporate communication phenomena like multimedia franchises. It has also addressed the impact of multimodal and multimedial communicative strategies upon the identity of consumers and the processes of specialized knowledge communication. The relationship between multimodality as technology of representation and multimediality as technology of dissemination has also caught the attention of researchers analyzing corporate materials and phenomena. Of particular interest is also the research work focused on methodological models for multimodal transcription of complex corporate texts and multimodal concordancing.

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Advertisements are among the multimodal corporate texts that have generated the widest interest in multimodal research. Kress and van Leeuwen (1996), Thibault (2000), Machin (2007), Machin and van Leeuwen (2007), and Stöckl (2004) are among those who have approached the analysis of advertisements giving detailed accounts on both changing semiotic landscapes and the intersemiotic links that are specific to these corporate texts. Changes in the contemporary semiotic landscape are addressed by Kress and van Leeuwen who employ the concept of "design" in order to explain how various modes and media are selected in different communicative practices and how communicative acts are "signified in these various modes" (Kress & van Leeuwen, 2001, p. 120) in advertisements and product catalogs. They analyze the communicative practices and especially the use of modes linked to these types of corporate materials and find that "advertising often seeks to address its audiences as unique individuals, rather than as groups of people with conforming consumption patterns which they really are" (Kress and van Leeuwen, 2001, p. 122). Stöckl concentrates also on the use of semiotic modes in his multimodal analyses and he derives a system network of modes showing that each mode can be categorized according to its semantic potential, semiotic properties, and cognitive orientation. He points out that "creators of ads exploit the whole range of semantic, formal and pragmatic relations, which can be anything from simple to complex" (Stöckl, 2004, pp. 21–2) when they link modes like language and images. The concept of "resemiotization" offers Iedema the possibility to expand the multimodal approach and to explain how and why certain modes are employed for certain communicative purposes at certain times. In his multimodal analysis, he shows how the new user-oriented ethos in Apple computer manuals motivates a shift in their communication from linguistic to visual representation. This shift also facilitates a closer semiotic resemblance of the computer manuals with the brochures that present a range of Apple products for sale. Iedema also mentions annual reports, newsletters, and brochures among the multimodal corporate texts in which "the renegotiation of what different semiotics are made to do" (Iedema, 2003, p. 38) takes place due to new (multi)media designs.

Significant research in the field of multimodality has been devoted to the investigation of multimodal texts and "intertexts" (Lemke, 2009, p. 140) in corporate (multi)media contexts. Researchers concentrate their multimodal investigations in these contexts on issues related both to the global aspects of (multi)media and to consumers' identities. Van Leeuwen (2005) and Machin and van Leeuwen (2007) use methodological tools belonging to genre, layout, and modality analysis in order to explore the multimodal communicative strategies in advertisements of global corporate media. Analyzing versions of *Cosmopolitan* magazine which have appeared in several countries, they demonstrate that, in order to persuade consumers, global corporate media exploit general and flexible genres and formats deliberately transcending cultural differences while pretending to address local environments. In spite of the use of local languages and specific multimodal constructions, the ideology, values, and identities of the magazine pervade the multimodal discourse of all the advertisements and the other texts in the magazine's localized versions because "corporate media are driven by advertising revenue and must present a world that is in harmony with the message of advertising" (Machin & van Leeuwen, 2007, p. 170). In their work, Machin and van Leeuwen arrive at the conclusion that global media formats are crucial in aligning practices and values with the consumption of goods and services, and in fostering "new lifestyle identities" (Machin & van Leeuwen, 2007, p. 171).

Lemke transcends the analysis of print advertisements and he investigates the phenomenon of transmedia franchises by exploiting the complementarity of semiotic and phenomenological approaches. Meant to advertise a fictional world, "books, and films, and websites, and games, and a wide variety of merchandise" (Lemke, 2009, p. 145) are linked in transmedia franchises. Lemke explores transmedia franchises like those of *Harry Potter*, *Lord of the*

Rings, *Star Wars*, and others, and he shows how the designs of the franchise producers are complemented and extended by the consumers' interpretations and expressions which appear in fan-produced and fan-maintained discussion forums, videos, Web sites, and other multimodal texts. Underlining the importance that should be given to the analysis of all these texts, he also highlights the idea that contemporary global corporations market specific identities:

> It has long been a commonplace of critical media analysis (Williamson, 1978) that advertising media sell not just products and services but lifestyles and ideologies. Today we can say that they sell identities: identities which imply dispositions to buy some kinds of products and services rather than others. (Lemke, 2009, p. 150)

Aspects of changes in consumers' identities and roles are also discussed by Maier (2008a, 2008b) in the analysis of complex corporate materials that are distributed to professionals, educators and students in order to communicate specialized knowledge while advertising specific products and services. Analyzing Kodak's multimedia resource kits, Maier explains how a "packaged resource kit" (Kress, 2001, p. 65) like a DVD inserted in a booklet with links to a company's Web site makes specialized knowledge available through more than one medium at a time and it also transforms the consumers' identities and roles. They are given active roles as they are not supposed to merely read the booklet and see the DVD, but to use the kit in different ways in class or on location according to their needs and expertise. Furthermore, the consumers are implicitly made aware of the fact that their identity as the next generation of film and video experts depends on buying and using the advertised products. In order to succeed to communicate these identities and roles, Kodak's multimedia materials are characterized by a multimodal mixture of argumentative and instructive discourses. This combination of instruction and argumentation also influences the communication of specialized knowledge: "In the case of corporate interactive materials, the boundaries between types of knowledge like *know-what* and *know-why* types might be blurred due to the fact that the instructive purposes are continually combined with the persuasive ones" (Maier, 2008b, p. 114). For example, one of Kodak's multimedia resource kits conveys specialized knowledge about film and video through a series of testimonials. Renowned figures in the film business present their perspectives upon the advantages and disadvantages of film and video technologies, while their opinions are visually exemplified through excerpts from their works. Through a multilevel analysis, Maier demonstrates how both the instructive and the argumentative discourses are coded in the generic frame of the multimodal testimonials. Simultaneously,

> the shots and stills from different films, documentaries or sitcoms not only display visually the exemplary achievements of the experts in a persuasive way, but they also complement the detailed instructive discourse carried by the verbal mode. At the same time, the instructive effect of those shots and stills that witness highly professional expertise is complemented by verbal arguments. (Maier, 2008a, p. 94)

It would seem that buying the advertised Kodak product(s) is a prerequisite for fully benefiting from the amount of specialized knowledge persuasively communicated in the testimonials.

Due to the complexity of all these texts, intertexts, and multimedia resource kits, multimodal research has also been focused on methodological and theoretical aspects of multimodal transcription and concordancing practices. Thibault proposes a static transcription model that distinguishes in detail the wide range of meaning making resources deployed in television advertisements, and establishes the criteria for explaining how and

why these resources co-contextualize each other (Thibault, 2000, p. 312). According to Thibault, capturing all the semiotic resources and their interplay in detailed transcriptions allows multimodal researchers to reconstruct the advertising message at several levels as the text flows in time. Applying the model to the transcription of a television advertisement offers Thibault the possibility to show how the television advertisement of a banking corporation constructs a corporate national identity founded on national myths and archetypes.

In parallel, multimodal research also devotes considerable attention to the development of online computer-assisted tools for storage, retrieval, and comparative analyses of multimodal corporate texts in order to account for recurrent patterns of meaning and generic structures (Bauldry, 2005).

Lemke acknowledges the theoretical and methodological challenges that face future multimodal research when he addresses the phenomenon of complex media franchises:

> Our encounter with these media is not simply a trajectory through a single coherent work. It is a traversal across the boundaries between works, media, genres, sites, institutional contexts, activities, etc. (Lemke, 2005). And along such a traversal we are constructing and cumulating across timescales *transmedia meaning effects* which do not occur within single works, or between intertexts in the same medium, or indeed within the scope of any theory of meaning-making or multimodal analysis that exists today. (Lemke, 2009, p. 145)

Without downplaying these challenges, it should be recognized that corporate communication with its multimodal complexity offers incomparable research opportunities. Unlimited and immediate access of corporations and consumers to new multimedia, the renewal of consumers' identities, corporate media globalization, and the continuous changes in semiotic landscapes and specialized knowledge communication are among the latest multimodal research topics. As shown, multimodal research has continuously stretched the theoretical and methodological frontiers of its concerns when confronted with these dynamics of corporate communication phenomena. It is obvious that it will continue to do so, keeping pace with the continually renewed corporate communicative strategies employed to inform, persuade, and entertain the new generations of multiliterate consumers.

SEE ALSO: Iedema, Rick; Kress, Gunther; Lemke, Jay; Multimodality and Literacy; Multimodality and Technology; Thibault, Paul; van Leeuwen, Theo

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Multimodality in Workplaces

RICK IEDEMA

In recent times, applied linguistics has broadened its analysis from language to include meaning-making phenomena other than language. This broader perspective has been labeled "multimodality" (Kress & van Leeuwen, 2001). Multimodality acknowledges that discourses and practices frequently mobilize, besides language, embodied gestures and actions (Martinec, 2000), visual resources (Kress & van Leeuwen, 1996), music and speech sound (van Leeuwen, 1999), and spatial constructions and building-internal designs (O'Toole, 1994). An important advance in making sense of our increasingly complex social world, multimodal analysis enables us to account for how people negotiate the growing array of media and technologies that they draw on in their interaction and communication.

In the case of the workplace, applying a multimodal lens is important to understand the constantly changing practices and discourses at work. It is clear that human work is not as repetitive and mechanical as it used to be in the past. Repetitive activities tend to be relegated to machines. Besides monitoring and maintaining the work done by such machines, human activity focuses more now on dealing with rapidly changing social, organizational, and industrial circumstances. In doing so, human activity in the workplace is increasingly adaptive, exploratory, and inventive, either to realize or to achieve innovations. This is talked about using specialized labels such as "knowledge development," "practice improvement," and "productivity enhancement."

The innovations employees are expected to produce and enact in the workplace manifest in two ways. First, innovation comes into play with the process of translating aspects of here-and-now activity into, for example, guidelines, protocols, or technological (machine) replacements of humans (Iedema, 2001). In capturing and technologizing "what works," innovation helps turn here-and-now activity into durable and standardized forms and formats. Strikingly, this conversion into durable, standard forms and formats mirrors a conversion that takes place at the level of organizational language itself (Iedema, 1997). There, we find many formulaic descriptions of work, typified as manuals, standards, protocols, and so forth. Formulaic descriptions are particularly prominent in bureaucratic, administrative, and managerial discourses. Linguistically, such discourses come about by recasting how we describe organizational activity from "doing" forms such as "employees are resigning due to burnout," into "thing-like" forms such as "attrition" (Martin, 1993). Similarly, "To whom it may concern" exemplifies the formulaic, standardized, and object-like character of discourses whose purpose is to regularize and regulate employee conduct. This "thing-ification" or standardization of discourses and practices is at the heart of workplace organization. Without it, industrial and service productivity would not have reached the levels of intensity and efficiency it has.

However, in the 21st century a new workplace characteristic is coming to the fore. Contemporary organizations are shifting into flexible production in the search for product uniqueness. This search is reflected in much restructuring, retraining of employees, and redesigning of positions, relationships, and roles. Such changes have now become the norm. Not changing is no longer a viable business option, not even for public service organizations. Indeed, change has become a resource in and for itself, a way of identifying the organization, its achievements and its commitment to improvement (Thrift, 2005). The

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pursuit of change is now deeply embedded in workplace practices such as project employment, practice improvement, and flexible production (Castells, 2000).

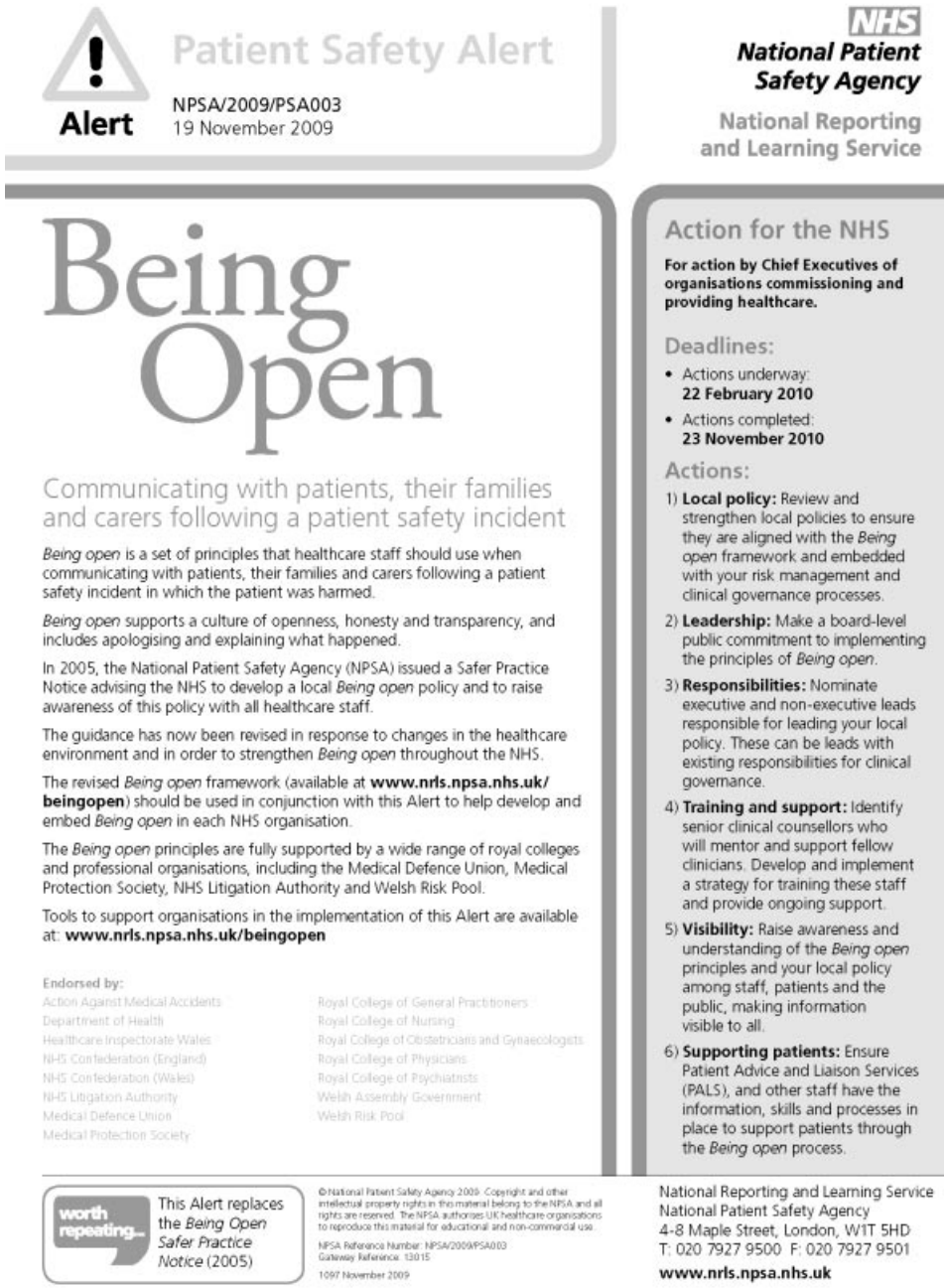
Since work is now both about change and subject to change, many workplace discourses and practices are temporary (Iedema & Scheeres, 2009). The impact of this temporary nature of workplace practices and discourses on employees is that people have to spend extra effort and time on rethinking and redesigning work processes and tasks, as well as occupational and professional relationships. Employees are granted a growing range of resources and media to do this. Many of these resources and media are available in the digital, web-based environment, of course, offering everything from graphic document design to public presentation software that accommodates moving visual components, sound, and video. Concomitantly, employees' literacy skills have shifted in recent times from being largely paper-based to becoming overwhelmingly digital media-based.

These developments have in turn created considerable boundary blurring between what used to be identifiable roles and ranks: "even factory workers are said to require interpersonal and decision-making skills previously reserved for managers" (Barley & Kunda, 2001, p. 77). This skill expansion is critical for employees to participate in the contemporary workplace. It enables them to demonstrate current knowledge of and commitment to the changes and innovations that permeate work. Indeed, the ability of employees to display up-to-the-minute knowledge and renewed commitment is critical to being and remaining a "contemporary" employee. Ongoing skill expansion enables employees to show that they have a willingness to learn. It shows they are not only sufficiently flexible to fit in with organizational change deemed to add to productivity and practice improvement, but that they will contribute to initiating and promoting change.

These evolving characteristics of workplace practices and discourses are of special interest to the applied linguist. A critical concept here is "knowledge work" (Drucker, 1993). Knowledge work is evident in the increasingly wide-ranging and probing reporting and monitoring functions of employee practice. Examples are work plans, project reports, and process evaluations. From an applied linguistics perspective, knowledge work operates at the interstice between existing standardized workplace discourse such as regular reporting and information filing, and forward-looking, innovative discourse such as plans, designs, and proposals.

The second characteristic of analytical interest is the intensification of "emotional labor" in the workplace (Hochschild, 1983). Emotional labor refers to the interpersonal energy that employees put in play at work. This energy defines contemporary forms of work. It comes into play with processes, roles, and tasks that are no longer linear and predetermined, but exploratory, change-oriented, and subject to testing and redesign due to organizational arrangements generally being too temporary to offer people lasting positions and well-defined career trajectories (Castells, 2004). As people's tasks, positions, and careers lose structure, homogeneity, and predictability, the emotional energy they expend on forging and maintaining a feasible workplace identity—or even identities—becomes more intense.

Employees' work affiliations and team configurations may be short-lived. Workplace relationships require ongoing adjustment and regeneration, leading in some cases to mental distress and burn-out for those unable to "keep up" (Zapf, Seifert, Schmutte, Mertini, & Holz, 2001). Apart from typifying service–consumer relationships, emotional labor also is manifested in workplace meetings. There, in spaces away from the machine, the service counter, and the work desk, employees perform their knowledge and commitment in discourses that enhance practice, raise productivity, strengthen the service profile, learn from incidents and complaints, and propose new collaborations and processes to resolve remaining problems and capitalize on new opportunities.



Alert

Patient Safety Alert

NPSA/2009/PSA003
19 November 2009

NHS
National Patient Safety Agency

National Reporting and Learning Service

Being Open

Communicating with patients, their families and carers following a patient safety incident

Being open is a set of principles that healthcare staff should use when communicating with patients, their families and carers following a patient safety incident in which the patient was harmed.

Being open supports a culture of openness, honesty and transparency, and includes apologising and explaining what happened.

In 2005, the National Patient Safety Agency (NPSA) issued a Safer Practice Notice advising the NHS to develop a local *Being open* policy and to raise awareness of this policy with all healthcare staff.

The guidance has now been revised in response to changes in the healthcare environment and in order to strengthen *Being open* throughout the NHS.

The revised *Being open* framework (available at **www.nrls.npsa.nhs.uk/beingopen**) should be used in conjunction with this Alert to help develop and embed *Being open* in each NHS organisation.

The *Being open* principles are fully supported by a wide range of royal colleges and professional organisations, including the Medical Defence Union, Medical Protection Society, NHS Litigation Authority and Welsh Risk Pool.

Tools to support organisations in the implementation of this Alert are available at: **www.nrls.npsa.nhs.uk/beingopen**

Endorsed by:
Action Against Medical Accidents
Department of Health
Healthcare Inspectorate Wales
NHS Confederation (England)
NHS Confederation (Wales)
NHS Litigation Authority
Medical Defence Union
Medical Protection Society
Royal College of General Practitioners
Royal College of Nursing
Royal College of Obstetricians and Gynaecologists
Royal College of Physicians
Royal College of Psychiatrists
Welsh Assembly Government
Welsh Risk Pool

Action for the NHS

For action by Chief Executives of organisations commissioning and providing healthcare.

Deadlines:

- Actions underway: **22 February 2010**
- Actions completed: **23 November 2010**

Actions:

1) **Local policy:** Review and strengthen local policies to ensure they are aligned with the *Being open* framework and embedded with your risk management and clinical governance processes.
2) **Leadership:** Make a board-level public commitment to implementing the principles of *Being open*.
3) **Responsibilities:** Nominate executive and non-executive leads responsible for leading your local policy. These can be leads with existing responsibilities for clinical governance.
4) **Training and support:** Identify senior clinical counsellors who will mentor and support fellow clinicians. Develop and implement a strategy for training these staff and provide ongoing support.
5) **Visibility:** Raise awareness and understanding of the *Being open* principles and your local policy among staff, patients and the public, making information visible to all.
6) **Supporting patients:** Ensure Patient Advice and Liaison Services (PALS), and other staff have the information, skills and processes in place to support patients through the *Being open* process.

worth repeating...

This Alert replaces the *Being Open Safer Practice Notice* (2005)

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NPSA Reference Number: NPSA/2009/PSA003
Gateway Reference: 13015

1097 November 2009

National Reporting and Learning Service
National Patient Safety Agency
4-8 Maple Street, London, W1T 5HD
T: 020 7927 9500 F: 020 7927 9501
www.nrls.npsa.nhs.uk

Figure 1 "Being Open" Patient Safety Alert © National Patient Safety Agency 2009. Copyright and other intellectual property rights in this material belong to the NPSA and all rights are reserved. The NPSA authorizes UK health-care organizations to reproduce this material for educational and noncommercial use.

The above helps explain why the analysis of workplace discourses and practices has changed focus. In the past, applied linguistic analysis of workplace practices and discourses could safely separate linguistic phenomena from other, multimodal dimensions of meaning making. Discourses and practices were relatively stable. Ways of writing texts such as memos, policies, and annual reports were largely prearranged. There were in-house etiquettes governing the semantics and syntax of such documents, and they tended to make little use of visuals and other nonlinguistic resources. Today, workers draw on a much wider range of meaning-making resources and practices for doing their work, many of which are digitally mediated (Iedema, 2003). The analysis of workplace discourses and practices therefore requires a multimodal perspective.

Consider the "Patient Safety Alert" shown as an example (see Figure 1) of how the contemporary workplace requires employees to communicate more intensely in face-to-face situations, and to produce more written documentation, from form filling to report writing. The alert is an example of a contemporary organizational memo that makes use of various meaning-making resources. Unlike its predecessors, the alert presents a sophisticated design arrangement, reminiscent of an advertisement. It divides the page into five discrete spaces, each doing very different discursive work. Its title, "Being Open," is in over-size font; it comes across as a title one might find on the front cover of a novel, and it has a distinct color.

These and other features show the "Being Open" alert to exemplify the trends discussed above. The speed of practice change is apparent from the "Deadlines" statement, alerting NHS staff ("NHS" is the acronym for the National Health Service, the UK's public healthcare system) to the dates that govern what they are expected to do, and from the statement that this alert replaces a previous alert, bottom left. The knowledge work is evident from employees being expected to write the "Being Open" principles into their organization's policies, role definitions, and responsibility statements. Emotional labor is inscribed into the very conduct that the "Being Open" policy advocates. Rather than portraying clinical errors as "inevitable clinical complications," as has been common practice to date, clinicians must now openly and honestly disclose and apologize for unexpected outcomes and errors in patients' care. These organizationally mandated conducts embody and incur considerable emotional work.

Applied to the "Being Open" alert, multimodal analysis provides a twofold lens. First, it enables analysis of regular and standardized workplace forms and formats. The alert provides a prime example of how a modern-day government service organization expresses its directives—that is, ways of telling others what to do. It frames imperatives as "actions," and it arranges these "actions" spatially, on the far right of the document, a visually prominent position. It also deploys up-to-date document design, combining symbols denoting urgency (the red and the road sign used top left), acceptability (the green and the pleasant arrangement used for "Being Open," in addition to its newsy font), and efficiency (the column spacing, the numbering of actions).

Second, multimodality sheds light on the constancy with which employees renegotiate and redesign workplace practices and discourses. That is, multimodality enables us to capture how and how often employees translate and transform what they do, say, and write (Iedema, 2001). Thus, with reference to "Being Open," a multimodal perspective highlights differences with more conventional "to/from/date" memos and the ways they used to frame directives and visualize their importance and urgency. Multimodality draws attention to how linguistic meanings are increasingly recast as visual meanings. The alert shown above no longer uses the conventional memo language and headings, drawing instead on a new generation of policy discourses and policy implementation practices (Jorm, Banks, & Twohill, 2008). Multimodal analysis shows how some conventional meanings drop away to make room for new ones, transferring traditional forms of delegation ("to/from/date") into new ones (e.g., "Action for the NHS").

In sum, multimodal analysis complements linguistic analysis in our effort to map how workers invent new roles, designs, and tasks. Linguistic analysis captures how workers shunt back and forth between situated, here-and-now talk and formalized there-and-then representations. The analysis of work interaction targets how employees mediate and negotiate their personal, practical, and ideological differences into local agreements and time-limited plans. It shows how employees move toward different formal, durable, and standardized kinds of meaning making that background disagreements and embed new personal alignments and viewpoints. It provides a lens on how new authoritative meanings come about and are shaped and reshaped as rules and truths, visually, spatially, or linguistically.

By targeting the rapidly shifting trends in workplace practices and discourses, multimodality does not limit itself to a particular type of representation (e.g., language), or mix of representations. Its interest lies in analyzing the interface between the persistent features and the changeable dimensions of organizational knowledge and relationships, enabling multimodality to shed important light on how employees manage the ongoing production and reproduction of workplace discourses and practices.

SEE ALSO: Computer-Mediated Communication and Second Language Development; Gesture Analysis in Second Language Acquisition; Multilingualism and Emotions

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Multiple Regression

YONG-WON LEE

Introduction

Multiple regression is a statistical technique used to examine which among independent variables are related to a dependent variable, and to explore the forms of the relationships between these variables. Multiple regression can also be used to predict scores of a dependent variable based on the scores of a set of independent variables. An applied linguistic researcher may have some theoretical relationships hypothesized a priori between a dependent variable and a set of independent variables (e.g., between English as a second language [ESL] students' reading proficiency and a set of predictor variables, such as years of English-language study, aptitude, motivation, gender, etc.). In such a case, multiple regression analysis can be used not only to test or confirm such theoretical relationships among the variables but also to predict someone's ESL reading score given his or her scores on a set of independent variables.

Generally speaking, regression is a method of explanation and prediction in scientific research. Unlike in simple regression involving only one independent variable, there are two or more independent variables involved in multiple regression. One primary goal of multiple regression, in addition to score prediction, is to find the *best-fitting, most parsimonious* statistical model that describes a relationship between the dependent variable and a set of independent variables of interest. This usually requires the comparison of multiple, competing models in terms of their explanatory power and the evaluation of the unique contribution made by each independent variable to the models.

As in the case of ESL students' reading proficiency represented by an Internet-based Test of English as a Foreign Language (TOEFL iBT) reading scale score, the dependent variable will mostly be a continuous variable. However, applied linguistic researchers often have to deal with dependent variables that are not necessarily continuous or normally distributed, such as students' pass/fail outcomes on an English teacher certification test (binary), students' speaking scores based on a 5-point scoring rubric (categorical), and frequencies of a particular lexical item or word combination in an English learner corpus (count). Each of these different research contexts requires a different type of multiple regression.

Multiple regression analysis can also be classified into three different types based on the nature of the dependent variable being examined: linear regression, logistic regression, and Poisson regression. In linear regression, the dependent variable is assumed to be continuous, whereas it is categorical (or discrete) in logistic regression. Logistic regression is used when the dependent variable is categorical while the independent (explanatory) variables are categorical, continuous, or a mixture of both. Logistic regression can further be subdivided into logistic regression for a dichotomous dependent variable and logistic regression for a polytomous dependent variable. The dependent variable is binary (or dichotomously scored) in the dichotomous model, whereas it is polytomously coded (with more than two response categories) in the polytomous model. Poisson regression is the most appropriate method when the dependent variable is count data with a Poisson

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distribution. When the Poisson regression is applied to contingency tables, it is often called a log linear model.

Recently, a family of regression models, including linear regression, logistic regression, Poisson regression, analysis of variance (ANOVA), and other related models, have been unified into a single statistical framework of generalized linear models (GLMs). GLM generalizes linear regression by allowing the linear model to be related to the dependent variable via a so-called "link function" and use the maximum likelihood method in the model fitting process (Agresti, 2002, 2007). This has made it possible to recast logistic regression and Poisson regression models in the framework of linear regression.

In this entry, our discussion will be focused on simple linear regression, multiple linear regression, multiple logistic regression for a dichotomous dependent variable, and multiple logistic regression for a polytomous dependent variable, not only in their unique form but also in their GLM equivalents.

Linear Regression

A linear regression model describes a relationship between the value of an independent variable (simple regression), or the values of a set of independent variables (multiple regression) and the expected value of the dependent variable, or the corresponding conditional mean of the dependent variable.

Assumptions

In linear regression, the dependent variable is basically continuous and assumed to have a normal distribution. Linear regression is based on several other important assumptions (Henning, 1987; Reinard, 2006). First, it is assumed that both the independent and dependent variables are linearly related among themselves. Second, the prediction error (or residual) is assumed to be a random variable, with a mean of 0 and conditional on the independent variables. This also means that the errors should be uncorrelated. Third, the variance of the error is assumed to be constant across observations, which is often called the assumption of *homoscedasticity* in the literature. Fourth, in the case of multiple regression, the independent variables must not be linearly dependent or highly correlated, which also means the absence of *multicolinearity* among the independent variables.

When these assumptions are violated, the estimated parameters will become meaningless and thus it would be very difficult to generalize the findings to the population. When there is a minor violation, then many of the estimated parameters and inferential statistics associated with them can still be considered to be robust. There also are ways to fix some of these problems. When multicolinearity exists between two independent variables, for instance, the independent variables that are highly correlated can be collapsed into a single variable or one of the two variables can be dropped from the regression.

Correlation and Simple Regression

Although simple linear regression is not much used in applied linguistic research, it is important to grasp the basic structure of, and the related concepts associated with, the simple regression model and its relationship with correlations in understanding multiple regression. *Correlation* is a measure of association between two variables, which allows us to investigate the strength of their association. One limitation of correlation, however, is that the variables are not designated as dependent or independent, and thus it is not possible to make a prediction of one variable based on another. However, linear regression allows us to make such a prediction by estimating the best straight line (or a regression line) summarizing the association between the variables on a scatterplot.

A regression model attempts to describe the relationship between the values of two variables in the form of a mathematical equation. The regression line is a plot of the expected value of the dependent variable for all values of the independent variable. The regression line is the one that best fits the data on a scatterplot or, technically, the line that minimizes the sums of squared residuals (the difference between expected and observed scores) on the dependent variable.

In simple linear regression, we predict scores on a dependent variable based on the scores of a single independent variable. A simple linear regression model (with the error component included) can be presented in the following equation (Judd & McClelland, 2001):

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \tag{1}$$

where Y_i represents a dependent variable
X_i represents an independent variable
β_0 is an intercept parameter
β_1 is a slope parameter associated with the dependent variable X_i
ε_i represents an error.

In this case, the right side of the equation consists of two main components, which include a regression model ($\beta_0 + \beta_1 X_i$) and the error (ε_i). There are two parameter values to be estimated for the model: the intercept parameter (β_0) and the slope parameter (β_1). The intercept is also called the constant. The intercept is the point on the *y*-axis at which the regression line crosses. In other words, the intercept parameter tells us the value of Y_i when X_i equals zero. The slope of the regression line indicates the steepness of a line. The slope parameter (β_1) tells us about how much change there will be in the dependent variable when there is a one-unit change in the independent variable X_i. Because the regression model is not usually a perfect predictor of score on the dependent variable, there is also an error term in the equation (ε_i). The error (ε_i) is defined to be the difference between the observed (Y_i) and predicted values of the dependent variable ($\hat{Y}_i$), which is often called a *residual*.

There is an important link between the correlation coefficient and the slope parameter. The correlation coefficient is the slope of the regression line in simple regression, if both the independent and dependent variables are measured in standardized *z* scores (Henning, 1987; Reinard, 2006). Because of such a link between the two, the coefficient of determination (or R^2) can prove very useful in regression. The coefficient of determination is the squared value of the correlation between the independent variable and the dependent variable. Its value may vary from zero to one. The R^2 value can also be interpreted as the proportion of variance in the dependent variable that is explained by an independent variable (or the regression model). The interpretation of the R^2 value becomes a bit more complex in multiple regression, which will be discussed later.

Multiple Linear Regression

In multiple regression, we expand the basis of our prediction by using more than one independent variable in our regression model. In multiple regression, we consider not only a full regression model with all possible independent models included in it but also the reduced models with smaller sets of independent variables. For our final model, we can select a model that is most parsimonious and also best fitting through a process of model comparison. The magnitude and sign of the estimated slope parameter value for each of the independent variables, along with the intercept variable, will help us to examine whether or not a certain independent variable has a unique explanatory (or predictive) power for the dependent variable and, if so, how strong the predictive power is.

In multiple linear regression, the relationship between the variables is assumed to be linear. A multiple (linear) regression model can be presented in the following equation:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \beta_m X_{mi} + \varepsilon_i \tag{2}$$

where Y_i represents a dependent variable
X_{1i} represents the first independent variable
X_{2i} represents the second independent variable
X_{mi} represents the *m*th independent variable
β_0 is an intercept parameter
β_1 is a slope parameter associated with the dependent variable X_{1i}
β_2 is a slope parameter associated with the dependent variable X_{2i}
β_m is a slope parameter associated with the dependent variable X_{mi}
ε_i represents an error.

In multiple regression, the slope parameter associated with β_1 tells us about how much change there would be in the dependent variable when there is a one-unit change in the independent variable X_1 given the fixed values of other independent variables. The statistical significance of the intercept and the slope parameter for each of the independent variables can be tested through *t* statistics (Reinard, 2006). The *t* statistic for the significance of the slope is designed to test whether the slope parameter is significantly different from zero. If the slope parameter is zero or not significantly different from zero, knowing the value of the independent variable will not improve our ability to predict the dependent variable. Some researchers prefer to report the *F* ratio, which is equal to the *t* statistic squared, instead of the *t* statistic.

In multiple regression, as in other statistical prediction models, there are two important goals that are inherently in tension: (a) reducing prediction error as much as possible and (b) keeping the model as simple (or parsimonious) as possible (Judd & McClelland, 2001). The first goal has to do with finding an optimal set of independent variables that makes the best prediction of the values on the dependent variable. This means that we should minimize the errors of prediction or maximize the amount of variance explained in the dependent variable. This can usually be achieved by adding more explanatory (or independent) variables to a regression model.

An equally important goal of regression analysis is to find a statistical model that describes a relationship between a dependent variable and a set of independent variables in the *most parsimonious* way. This means that, whenever a more complex (or augmented) model is created by adding more independent variables to a simpler (or compact) model, each of the newly added variables should be evaluated in terms of its unique contribution to the predictive power of the regression model. A comparison between a compact model and an augmented model is made to evaluate the significance of the increased explanatory (or predictive) power of the model due to the newly added variables.

R^2 is basically a measure of the goodness of fit of the linear regression model. This can also be used as a useful measure of effect size for a newly added variable in multiple regression. Since the prediction model includes more than one independent variable in multiple regression, the interpretation of R^2 in multiple regression, particularly for the additional independent variables, should be analogous to that of partial correlations. Partial correlation is a correlation between two variables, while controlling for the effect of additional variables. By the same token, the increase in R^2 due to a newly added, independent variable in multiple regression represents the proportion of the variance in the dependent variable which is additionally explained by the newly added variable. Adjusted R^2, which is often reported in literature, is a modified version of R^2. One advantage of adjusted R^2

is that it increases only if the newly added term improves the regression model more than would be expected by chance.

Another important thing to be mentioned in regression modeling has to do with model selection strategies. There are two major ways to select a final set of independent variables: forward and backward selection. Forward selection involves starting with no variable in the model and then adding the variables one by one, using a variable that has the highest correlation with the dependent variable as a starting point. Whenever a new variable is added, a test can be conducted to check whether a newly added variable can significantly increase various criterion indices, including the R^2 and adjusted R^2 values. On the other hand, backward selection involves starting with all candidate variables included in the model (the maximum or full model), dropping any variable that is not significant. Nowadays, there is an automatic variable selection algorithm in place which is called stepwise regression. Stepwise regression employs a special kind of forward selection in which all variables are tested if their contribution is significant after a new variable is added. For this reason, an already selected variable can be eliminated in stepwise regression.

Logistic Regression

Logistic regression is usually used to predict the probability of occurrence of a *binominal* or *multinomial* event by fitting the data to a logit function logistic curve. In logistic regression, the dependent variable is a discrete variable representing a choice from either binary (0/1) or polytomous score categories (i.e., 1, 2, . . . k). In the binary logistic regression situation, the dependent variable is assumed to have a binomial distribution. This is the probability distribution of the number of successes in a sequence of n independent success/failure experiments, often called Bernoulli trials (Ross, 1994). Flipping a coin multiple times is a good example of a Bernoulli trial which has two possible outcomes: a head (0) and a tail (1).

In the polytomous logistic regression situation, the dependent variable has more than two response categories and is assumed to have a multinomial distribution. In this, each experiment results in exactly one of the fixed finite number k of possible outcomes, with probabilities $P_1, P_2, \ldots, P_k$ (Ross, 1994). Tossing a dice a given number of times is a good example of a multinomial experiment which has six possible outcomes (i.e., 1, 2, 3, 4, 5, and 6). A binomial experiment can be seen as a special case of a multinomial experiment where each trial of the experiment can have only two possible outcomes.

One thing to note in logistic regression is that what is being predicted in simple logistic regression is the probability of the dependent variable (Y_i) being a certain outcome category (k), given the value of the independent variable (X_i), not the actual value (Y_i) of the dependent variable itself. Such a conditional probability is often denoted $P(Y_i = k|X_i)$. More precisely speaking, it is the *logit* (or log odds ratio) of the success probability for the dependent variable that is being predicted in binary logistic regression. In the case of the multi-category logistic regression, it will be a set of logits of the success (or failure) probabilities for dichotomized responses for the dependent variable. Then the success probability or score category probabilities are usually obtained from the estimated parameters and logit values obtained from the regression model.

Assumptions

In logistic regression, the dependent variable is categorical and assumed to have a binomial or multinomial distribution. Logistic regression assumes a linear relationship between the independent variables and the log odds (logit) of the dependent, although it does not require linear relationships between the dependent and independent variables. In addition, lack of multicolinearity is assumed among the independent variables, given the linear relationship between the independent variables and the logit for the dependent variable.

Logistic Regression for a Dichotomous Dependent Variable

In logistic regression, the base model is used to predict the success probability. One disadvantage of the probability prediction model, when viewed from the GLM framework, is that it does not have a mathematical form equivalent to linear regression. For this reason, the probability model is converted to a logit model so that it can have a mathematical form resembling linear regression.

First of all, in the probability model, what we are trying to predict is the probability of the dependent variable being 1, given the value of an independent variable or given the values of independent variables. Such a probability is often denoted $P(Y_i = 1|x_i)$ in simple regression, and $P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})$ in multiple regression. When the binomial distribution is used to model a binary dependent variable, the success probability given the values for a set of independent variables $(x_{1i}, x_{2i}, \ldots, x_{mi})$ can be expressed in the following manner:

$$P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi}) = \frac{e^{\beta_0+\beta_1 x_{1i}+\beta_2 x_{1i} \cdots +\beta_m x_{mi}}}{1 + e^{\beta_0+\beta_1 x_{1i}+\beta_2 x_{1i} \cdots +\beta_m x_{mi}}} \tag{3}$$

Here, e is the base of the natural logarithms (2.71828182846). The relation between the success probability $P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})$ and a continuous independent variable can be nonlinear. The nonlinear relationship between the variables can usually be depicted in the form of an S-shaped curve. Nevertheless, the right side of the equation does not have a mathematical form equivalent to a linear regression. Thus, the probability model is converted in two steps: (a) conversion first to an odds model and then (b) conversion to a log odds (logit) model. One thing to note is that there is no error term in logistic regression. In logistic regression, we deal with probabilities. Probabilities themselves are methods of taking care of randomness and inaccuracy of prediction.

In the first step, the equation for the success probability is manipulated in such a way that we have the odds $[P/1 - P]$ rather than the success probability on the left side of the equation, as shown below:

$$\frac{P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})}{1 - P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})} = e^{\beta_0+\beta_1 x_{1i}+\beta_2 x_{1i} \ldots +\beta_m x_{mi}} \tag{4}$$

The second step of this conversion involves transforming the equation further to a log odds (or logit) model. To go from the odds to the logit model, we should add the natural log to both sides of the equation. When this two-step conversion is completed, the right side of the equation for logistic regression finally takes a mathematical form similar to linear regression, as follows:

$$\ln\left(\frac{P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})}{1 - P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})}\right) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi} \tag{5}$$

The log odds or logit $[\ln(P/1 - P)]$ have many of the useful properties of an ordinary linear regression (Hosmer & Lemeshow, 1989). The logit is assumed to be linearly related to the independent variables. It is continuous and can change from negative infinity to positive infinity.

$$\text{Logit}[P(Y_i = 1|x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi} \tag{6}$$

In binomial logistic regression, the slope parameter associated with β_1 tells us about how much change there would be in the logit for a dependent variable when there is a one-unit

change in the independent variable X_i, given the fixed values of other independent variables. The Wald tests for the significance of the parameters are available to test whether the intercept and slope parameter are significantly different from zero. In logistic regression, the odds ratio for the compact and augmented models is often used as a measure of effect size. There are also R^2-like (pseudo-R^2) indices that can be used as a measure of effect size for a newly added variable in multiple regression.

There are two major types of R^2-like values used in logistic regression: (a) unadjusted and (b) adjusted values (max-rescaled). The unadjusted R^2 refers to the so-called Cox and Snell's (1989) index, whereas the adjusted one is Nagelkerke's (1991) index. One problem of unadjusted R^2 values is that the maximum can be less than 1.0. In contrast, adjusted R^2 values, which are more widely used, are obtained by dividing the unadjusted R^2 by its maximum value so that it varies from 0 to 1. At the moment, however, no absolute standards for interpreting the sizes of these values exist, except the recommendation that they can be compared across models on the same data in a relative way.

Logistic Regression for a Polytomous, Dependent Variable

Logistic regression for a binary dependent variable can be directly extended to a dependent variable with more than two outcome categories (Agresti, 2002; French & Miller, 1996; Zumbo, 1999). Logistic regression for a polytomous, ordinal dependent variable usually involves splitting the dependent variable with k response categories into $k - 1$ dichotomized response categories (or variables) and then applying binary logistic regression to these dichotomized responses simultaneously.

There are three different kinds of dichotomization schemes used in logistic regression for an ordinal variable: (a) cumulative logits, (b) adjacent categories logits, and (c) continuation ratio logits (Agresti, 2007). The *cumulative* logit scheme estimates the probability that the dependent variable falls at or below a particular score point (k) relative to the probability that the variable falls above k. On the other hand, the *adjacent categories* logit scheme estimates the logit for the probability that a higher category relative to the adjacent lower one is modeled; it is precisely this paired comparison that recognizes the ordering of the categories. In the *cumulative continuation ratio* logit scheme, each score category is contrasted with a grouping of score categories from a lower (or higher) level of the ordinal response scale.

Table 1 illustrates these three dichotomization schemes in each of the three logit models for a hypothetical, ordinal dependent variable. When the dependent variable has 5 response categories, there will be a total of 4 non-redundant, dichotomized responses possible for the dependent variable. The logit for each of the dichotomized responses can be formed. This also means that the parameters associated with each independent variable should be estimated along with the intercept parameter.

Table 1 Three dichotomization schemes for polytomous logistic regression

Dichotomization schemes		*Dichotomized responses*			
		1	*2*	*3*	*4*
Cumulative		1 vs. 2, 3, 4, 5	1, 2, vs. 3, 4, 5	1, 2, 3 vs. 4, 5	1, 2, 3, 4 vs. 5
Adjacent categories		2 vs. 1	3 vs. 2	4 vs. 3	5 vs. 4
Continuation ratio	A	1 vs. 2	1, 2 vs. 3	1, 2, 3 vs. 4	1, 2, 3, 4, vs. 5
	B	1 vs. 2, 3, 5	2 vs. 3, 4, 5	3 vs. 4, 5	4 vs. 5

One particular kind of dichotomization scheme that is most frequently used is a cumulative logit scheme called a proportional odds ratio model (McCullagh, 1980). In the cumulative logit model, the proportional log odds (logit) for each dichotomized response can be expressed as:

$$\text{Logit}[P(Y_i \leq k | x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi} \tag{7}$$

Equation 7 suggests that, when the dependent variable has five response categories ranging from 1 to 5, there could be a set of four related logit models possible for the dependent variable (shown in the equations below). One interesting feature of the models is that the slope parameter associated with a particular independent variable is assumed to be the same across all of the dichotomized responses, but the intercept parameter can be different for each dichotomized response. The estimation of these model parameters is done for all of the dichotomized logit models simultaneously.

$$\text{Logit}[P(Y_i \leq 1 | x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_{01} + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi}$$

$$\text{Logit}[P(Y_i \leq 2 | x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_{02} + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi}$$

$$\text{Logit}[P(Y_i \leq 3 | x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_{03} + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi}$$

$$\text{Logit}[P(Y_i \leq 4 | x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_{04} + \beta_1 x_{1i} + \beta_2 x_{1i} \ldots + \beta_m x_{mi}$$

Once the regression parameters are estimated, the probabilities for $Y_i \leq k$ for each dichotomized response can be computed from the estimated parameters and the logit values obtained for each of the logit models. Then these probabilities are used to compute the probabilities for each of the score categories (or the probability of the dependent variable being k), as follows:

$$P(Y_i = k) = P(Y_i \leq k) - P(Y_i \leq k - 1) \tag{8}$$

The estimated intercept and slope parameters and effect sizes in multinomial logistic regression can be interpreted in a way similar to those of the binomial logistic regression. One interesting difference is that the expected score for the dependent variable can be computed by aggregating the estimated probabilities for all of the dichotomized responses. One recent area of applied linguistics in which logistic regression is increasingly used is item bias studies in language testing, often called differential item functioning (DIF) studies (Lee, Breland, & Muraki, 2005; Ross & Okabe, 2006; Breland & Lee, 2007) Logistic regression is implemented in major statistical packages, such as SPSS (Logistic Regression), SAS (Proc Logistic), and R (GLM).

Poisson Regression Models

Poisson regression is a form of regression used to model frequency data and contingency tables. Poisson regression is appropriate when the dependent variable is count data that are assumed to have a Poisson distribution. In Poisson regression, the logarithm of the expected count (frequency) can be modeled as a linear function of the effects of categorical variables and their interactions. When the Poisson regression is applied to contingency tables of count data, it is sometimes called a *log linear* model. In such a case, it will be the logarithm of the expected cell frequencies in a contingency table that is modeled in the regression. The Poisson regression can also be seen as a GLM that uses the logarithm as

a link function.

In both Poisson and logistic regression, the dependent variable is transformed by using a log function in the exponential framework. One difference, however, is that it is the expected counts that are transformed through the log function for the dependent variable in Poisson regression, while it is the odds that are transformed in logistic regression. In a Poisson regression model, the natural logarithm of the count is modeled by a linear combination of the intercept parameter and the slope parameters associated with independent variables, as shown below:

$$\text{Log}(Y_i|x_{1i}, x_{2i}, \ldots, x_{mi})] = \beta_0 + \beta_1 x_1 + \beta_2 x_2 \ldots + \beta_m x_m \quad (9)$$

Poisson regression assumes that the mean equals the variance. If the variance is greater than the mean, the frequency data are said to be *over-dispersed.* Over-dispersed data have standard errors and *p*-values that are too small. Some statistical software (such as SAS) has an adjustment called the Pearson adjustment that corrects the standard errors and gives more accurate *p*-values. As in logistic regression, the tests of statistical significance for the estimated intercept and slope parameters are available, as well as pseudo-R^2 effect size values, in Poisson regression. Poisson regression can be implemented in major statistical packages, such as SPSS (GENLIN), SAS (GENMOD), R (GLM), Stata (Poisson), and Microsoft Excel (Xpost).

SEE ALSO: Probability and Hypothesis Testing; Variables

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Myths About Second Language Vocabulary Learning

KEITH S. FOLSE

In gaining proficiency in any second language (L2), learners have to grapple with new pronunciation, syntax, pragmatics, spelling, composition, and vocabulary. Though many language courses or programs still tend to focus on grammar (Folse, 2004), for our English-language learners (ELLs), the most important of these areas is arguably vocabulary. Learners can, for example, get by with weak or even incorrect syntax, but a lexical gap can immediately bring any conversation to a complete halt.

Prior to 1990, relatively little L2 research on second language vocabulary learning existed. In the early 1990s, L2 studies tended to reflect that period's affinity for works on learner strategies, as evidenced by Sanaoui's excellent 1995 study of adult students' vocabulary learning strategies. From this initial research on strategies, lexical research quickly burgeoned to other aspects of vocabulary learning and teaching, with hundreds of quantitative and qualitative works in various categories, including methods of vocabulary instruction, the effect of different practice activities, and the words learners need. Laufer, widely recognized as a leading pioneer in research into classroom vocabulary teaching and learning techniques, compiled a detailed time line of influential L2 vocabulary studies, demonstrating how L2 lexical research has progressed (Laufer, 2009).

Vocabulary Myths

In *Vocabulary Myths* (2004), I wrote about eight myths that were pervasive in our field—three of which are still widely accepted as fact despite clear empirical evidence to the contrary. The eight myths debunked in *Vocabulary Myths* are: (myth 1) grammar is more important than vocabulary in learning a foreign language; (myth 2) word lists are ineffective in learning vocabulary; (myth 3) vocabulary should be presented in semantic sets; (myth 4) the use of translations is a poor way to learn new vocabulary; (myth 5) guessing words from context is a useful way to learn a lot of vocabulary quickly; (myth 6) the best vocabulary learners make use of one or two really good specific vocabulary learning strategies; (myth 7) a monolingual dictionary is better than a bilingual one for learning new vocabulary; (myth 8) vocabulary is covered enough in our curricula and courses.

The research debunking these myths is clear: all eight of these myths are indeed myths. The good news for our learners is that since 2004 our field has evolved to the point that five of these myths are no longer as pervasive among teachers as before. A perusal of any L2 journal or TESOL conference program will now reveal significantly more attention to vocabulary, so it is fair to say that most educators now recognize that vocabulary is indeed extremely important (myth 1). Likewise, there is certainly a strong and growing increase in the amount of attention that vocabulary receives in our curricula and courses (myth 8), though many ESL (English as a second language) programs for adults still do not include a systematic vocabulary component (Folse, 2010). As a textbook author who works with several different publishers, I know that vocabulary lists in textbooks have made a comeback, so teachers no longer automatically shun vocabulary lists (myth 2). As we move

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away from the once indefatigable role of comprehensible input to a return to emphasis on explicit teaching, our field seems to have abandoned interest and therefore research on learning strategies (myth 6). In fact, more is written now on the teaching of vocabulary than on learner strategies (Folse, 2009). Finally, the dictionary debate (myth 7) seems to have transitioned from monolingual versus bilingual to traditional versus corpus-informed learner dictionaries (Folse, 2011) as more research and student-learning materials are produced from huge computer-driven corpora.

If we believe these five myths are espoused by fewer professionals today, we end up with three remaining myths revolving around teaching words in semantic sets (myth 3), using translations to learn new vocabulary (myth 4), and promoting the use of context clues as a good method to learn new vocabulary (myth 5).

Myth 3: Vocabulary Should Be Presented in Semantic Sets

There are two common ways to introduce vocabulary: in semantic sets or in thematic units. A coursebook using semantic sets would have three distinct lessons on days of the week, clothing, and sports, and each lesson would include a semantic set, or list, of those items. In a thematic coursebook, these same words would be distributed across all of the lessons in the whole book. In this course, one lesson called "Luke's Saturday Game" might include a dialogue or passage about a person who bought some *sneakers* to play *basketball* in a very important game last *Saturday*, thus including an item—but not all—of clothing, sports, and days of the week.

Learners have more difficulty learning new words presented in semantic clusters than they do learning semantically unrelated words. Waring (1997) found that Japanese learners needed about 50% more time to learn related word pairs than unrelated pairs. Similarly, Tinkham (1997) concluded that semantic grouping actually has a negative effect on vocabulary learning while thematic clustering facilitates learning.

Research has consistently shown that the use of semantic sets can confuse learners and hinder vocabulary retention, but organization by semantic sets continues because it is easier to present vocabulary in semantic sets than design creative passages that include all of the words in a vocabulary list. The bottom line, though, is that learners remember vocabulary more easily when the vocabulary is presented in thematic sets such "Luke's Saturday Game." Using thematic sets may also be superior because the items first presented are higher frequency than other semantic set members (e.g., Saturday and Sunday are more frequent than Wednesday and Thursday) and because they are presented in frequent collocations such as *Saturday and Sunday* or *Saturday night*. Therefore, learners' attention is focused not only on the target words but also on collocations that increase learners' formulaic language.

Myth 4: The Use of Translations Is a Poor Way to Learn New Vocabulary

Without a doubt, teachers need to encourage the use of the target language in the classroom for all the obvious reasons. However, when learners first encounter a new word, it is normal for learners to translate the word in their head or in their notebooks.

The myth that translations are not useful assumes that establishing a mental link with the first language (L1) translation is somehow harmful or does not actually happen in the real world. When given a choice, learners prefer translations; in addition, translations have proven more effective than English glosses in vocabulary learning (Hulstijn, 1992; Knight, 1994; Prince, 1995; Laufer & Shmueli, 1997; Grace, 1998).

Noted vocabulary expert Paul Nation (1982) concludes that learning of vocabulary is faster for many learners if the meaning of the word is given through an L1 translation first, a conclusion reached in many prominent vocabulary studies. For example, Hulstijn,

Hollander, and Greidanus (1996) found that translations of the French vocabulary provided as glosses in the margin resulted in better vocabulary learning. Further empirical proof comes from a study of Dutch university students of Italian (Lotto & de Groot, 1998), where word retention scores were significantly higher for the students working with translations than for those who had pictures. In addition, Grace (1998) noted that translation is a viable if not preferable option for many English learners of French at the beginning level. Her results showed that students who had access to a glossary in L1 were more successful at retaining new vocabulary, probably because they had the opportunity to confirm the correct meanings. Laufer and Shmueli (1997) discovered that words glossed in L1 were always retained better than words glossed in English. Finally, Prince (1995) compared words presented in context with words presented with a translation and found that less proficient students were able to recall more items when they had learned the words in the translation condition rather than in the context condition.

In sum, translations are not bad; they can in fact be a helpful tool in learning new foreign-language vocabulary. As a result, future research should move to more pertinent questions such as whether translations work better with certain kinds of vocabulary (e.g., verbs or idioms) or whether translations might work better at the initial presentation stage or subsequent review stages.

Myth 5: Guessing Words from Context Is a Useful Way to Learn a Lot of Vocabulary Quickly

Guessing the meaning of unknown vocabulary from context is certainly a good reading strategy to compensate for not knowing a word, but it is not an efficient or practical way to overcome the huge lexical deficit that our ELLs face. The myth that guessing from context is a good way to learn vocabulary is based on the false assumption that learning a second language is a very similar process to learning our first language. In our L1, we did not explicitly learn most of our vocabulary; we acquired our vocabulary through seeing and hearing the words numerous times in many contexts.

In contrast, an L2 learner does not have the luxury of encountering a word numerous times. Most adult learners have a very short time to achieve a certain degree of fluency in the second language. They do not have the time needed for the extensive reading necessary to meet academic vocabulary multiple times in natural language. Our students are *learning* a second language and are under very different constraints than when they *acquired* their first language through comprehensible input over 18+ years. Cobb (1999, p. 345) aptly sums up this dilemma with, "Students typically need to know words measured in thousands, not hundreds, but receive language instruction measured in months, not years."

In the heyday of communicative language teaching with its emphasis on communication and "natural approach" techniques, instruction of grammar, spelling, and vocabulary as well as teacher actions such as explicit error correction were greatly frowned upon. Vocabulary was not taught; it was assumed that students would automatically acquire whatever material—including vocabulary—was made available by the comprehensible input. Learners (and teachers in training) were encouraged not to focus on unknown words but rather to focus on understanding the gist.

Ironically, a learner must have a large vocabulary to be able to guess the meaning of unknown words from surrounding context clues successfully. This lexical limitation puts lower-proficiency students or students with less vocabulary at a distinct disadvantage. In research on the effect of type of written practice exercise (Folse, 2006), I found that learners who know more words are able to use those known words to learn even more words from context; thus, limited lexical knowledge adversely affects a learner's ability to correctly guess a word's meaning from context, let alone actually learn that word. (Successful guessing does not guarantee successful learning.)

How different is this scenario for native and non-native speakers? In a passage, a native speaker may find only one unknown word, so all of the other words provide the native speaker with a huge context of known words. In sharp contrast, the L2 learner with the same reading passage most likely faces *multiple* unknown words that serve as non-clues or misleading clues. In spite of their lexical knowledge, native English speakers are not very successful at guessing word meanings from real contexts because helpful context clues are surprisingly rare in real language excerpts (Schatz & Baldwin, 1986). Therefore, it is unclear why we expect L2 learners, who lack the depth and breadth of lexical knowledge possessed by native speakers, to be successful at this when native speakers are in fact not so successful.

Hulstijn (1992) found that using natural context to guess word meanings is a very complex and error-prone process for L2 learners. In his study, learners were more likely to remember the form and meaning of a word when they inferred its meaning by themselves than when the meaning has been given to them; however, these same learners were more likely to infer an *incorrect* meaning of an unknown L2 word in an L2 text when no cue has been given to its meaning. In other words, left on their own, L2 learners are not good guessers when dealing with real texts (as opposed to their language textbooks which have been written specifically for their proficiency level in the L2).

In a study of adult intermediate ESL university students, Wesche and Paribakht (1994) compared a reading-only group with a reading-plus-treatment (i.e, with follow-up written practice exercises) group. While the reading-only group did have gains in word knowledge, the gains were significantly larger in the reading-plus-treatment group and exhibited a greater depth of knowledge of the target words. What ESL students need is not just exposure to reading materials; they need reading with explicit, planned vocabulary work.

Everyone can attempt to guess the meaning of unknown words from context, but L2 learners are ill equipped to do so. Lexical learning from context clues can take place, but explicit instruction has been shown to be more efficient for L2 learners whose goal is to learn a large number of lexical items quickly.

SEE ALSO: Critical English for Academic Purposes; Functional Grammar; Genre-Based Language Teaching; Swales, John M.; Vocabulary Acquisition in Second Language Acquisition; Vocabulary Learning Strategies; Writing and Genre Studies

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Multimedia Digital Engagements by Readers and Learners

ROBERT J. TIERNEY

Various researchers, theorists, and applied scholars are reinvigorating, expanding, and shifting our view of reading comprehension as they explore the nature of the meaning making within digital environments. These scholars include: social anthropologists interested in digital literacies as literacy practices and events; cultural and critical theorists intent on studying the politics of individuals and group identities; linguists including socio-semioticians interested in the advent of language systems especially the shifts in signs via new media; cognitive psychologists interested in learning in the context of the new knowledge economies and literary theorists intrigued by discussions of author–reader–text relationships provoked by new forms of text and educators interested in the nature and role of learning.

Their interests and their pursuits stem from: shifts in the ever increasing magnitude of information, how it is generated, shared and enlisted; how ideas spread and mutate globally and locally; the changing nature of modes for the representation of ideas and exchanges especially with the integration of text, image, and sound in multilayered and dynamic fashion via networks; shifts in the observed social practices at the hands of the advent of new digital tools; the momentum and ubiquitous nature of digital engagements in all aspects of our lives especially with the advent of global access via cellular, wireless, and broadband possibilities.

Changing Nature of Information Access and Knowledge Demands

Julie Coiro, Michele Knobel, Colin Lankshear, and Donald J. Leu (2008, pp. 2–3) have suggested that digital literacies have been

> adopted by so many, in so many different places, in such a short period, and with such profound consequences. No previous technology for literacy permits the immediate dissemination of even newer technologies of literacy to every person on the Internet . . . [or provides] access to so much information that is so useful, to so many people.

The Berkeley School of Information and Management Systems (Lyman & Varian, 2003) suggest that information exchange is growing across all mediums and that overall the rate is approximately 30% per year. They estimated in 2002, that approximately 800 megabytes were being produced on average per person per year or the equivalent of 30 feet of books. Their data indicate that the amount of print is not diminishing, but magazines, periodicals and, in terms of sheer amount, office documents seem to be displacing books. Telephone exchanges aside, the dominant method of exchange has become digital (Internet, instant messaging, etc.). And, at the same time, as the migration of information seems less restrained by national borders or international agreements as global networks emerge and shift with global interests and demand, as wikis, blogs, and the Internet offer open invitations to all

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of us to author submissions, exercise forms of authority, artistic expression, or contribute news or views.

These developments are significant for reading comprehension as they shape the knowledge demands and developments globally and locally for individuals and groups. They represent different forms of exchange and new forms of representation, which may involve concomitant shifts in how comprehension proceeds. Indeed, questions have arisen as to the impact on meaning making, especially upon the nature of the engagements including processes and outcomes. Some early studies, which focused on the use of the Web, confirmed what many feared—namely, many individuals lacked the skills to successfully access and assess knowledge that might be available on the Web. For example, Eagleton (2005) found middle school students without experience with Internet inquiry often made "hasty, random choices with little thought and evaluation" (p. 3). She coined the approach as a form of "snatch and grab." However, more recent studies suggest that students may vary significantly as they become more Web-savvy with experience. For example, in a study in selected urban and regional schools in Australia (Singh, Mallan, & Giardina, 2008), it was found that most students were enlisting the Web as the primary source for information and were using a range of strategies to both access and assess that knowledge. When accessing the Web, approaches often involved visits to multiple sites, including sites deemed as likely to be more credible. At times forms of knowledge aggregation and averaging were enlisted to verify the factual nature of ideas as well as the use of Google and Wikipedia as the first "port of call" or as a backup to searches.

Meaning Making With Changing Nature of Modes for the Representation of Ideas and Exchanges

With the proliferation of Web sites or multilayered, multimodal, and multi-nodal hubs, a number of scholars have been engaged in a consideration of the nature of reading comprehension processes and outcomes that are propelled by the multilayered intertextuality afforded across layers of text and images. On the positive side, it has been suggested that this layering and linkages may expedite both the multiplier effects of meaning making across a library of images, words, and sounds interwoven in ways that call for the integration of multiple sources and making of intertextual connections across textual spaces including the multimedia elements that are mixed together in ways that create complex compounds of meanings and active agents for transmediation, or what Forman (1998) has described as "the type of constructive conflict we deem to be the power of this multisymbolic approach to education" (p. 187). In both digital and non-digital environments Spiro (2006a, 2006b) and his colleagues (Spiro, Collins, Thota, & Feltovich, 2003) have suggested and shown that such multilayering can facilitate more complex learning. They have demonstrated the power of crisscrossing multilayered renditions of ideas in the education of medical practitioners and teachers in ways that afford understandings that are more generative and flexible especially when they are fashioned as case-based knowledge.

On the negative side, as researchers have predicted and found such meaning making is not always trouble-free as one moves from one site to another and across layers. Indeed, with hypertext, depending upon the experiences of the meaning makers, learning may be constrained by a kind of labyrinth (Snyder, 1996) and movement proceeding from one text to the next and one link to the next might be constrained and be overly text-centric—meaning makers may become lost, at a dead end, or miss what they perceive to be a key item. Sometimes, the ambitions of the author of this mulitlayered text may not match the learner's interests, background, sophistication, and prowess (Burbules & Callister, 1996). At times, the meaning making within the labyrinth of some hypertexts may be overly

text-driven as a result of the forms in which ideas are represented or the meaning makers' comprehension strategies or agility. In conjunction with their exploration of overly text-driven responses to hypertext novels, Teresa Dobson and Rebecca Luce-Kapler (2005) suggest there may be a need to prompt more consciousness by the reader of his or her approach to enrich the meaning makers' engagement in hypermedia.

How meaning makers position themselves (including purpose setting, navigating sites, rapidly discerning relevance, and integrating ideas) has been the subject of a number of studies of online meaning making. For example, Alexander, Jetton, Kulikowich, and Woehler (1994), based upon their observations of comprehension on the Internet, suggest that the multilayered nature of these digital environments can demand of meaning makers a high degree of self-regulated navigation, an ability to retain and revisit focus, as well as skill weaving together or managing multiple inputs. More recently, Coiro and Dobler (2007), examining the online comprehension strategies of successful sixth grade learners given an assignment with a preset Internet site (i.e., on tigers) found that one of the key distinctions of successful online comprehension is tied to the more frequent use of forward inferencing (versus backward inferencing) which is aroused at the point of a hypertext link. They suggested

> internet reading seems to demand more attempts to infer, predict and evaluate reading choices . . . to require readers to orient themselves in a new and dynamic three-dimensional space . . . to figure out how to get back to where they were.

They suggested that the self-regulation of online comprehension seems tied to a similar set of recursive strategies (planning, aligning, drafting, revising) of past models of composing (e.g., Tierney & Pearson, 1983). Coiro and Dobler (2007) posit that online comprehension involves planning within and across Web sites, predicting and following leads, monitoring how and where to proceed, and evaluating relevance and judging merits. They noted that there are physical dimensions associated with these activities (e.g., scrolling, clicking) and speculated that the online environment might be more demanding and complex than offline. The online demands of meaning making appear to require more use of forward inferencing or predicting as meaning makers attempt to navigate the layers of text or information—to search, select, and integrate across sources. Forward inferencing seems to arise in conjunction with an interest in determining where links might lead and in assessing the possible saliency of what may be uncovered. When using search engines they found that users often relied on annotations offered with hyperlinks yielded from the search as a means of assessing the degree of relevance or the likelihood that an identified site would yield more or less relevant results. Coiro and Dobler (2007) stressed that knowledge of informational Web site structures as well as skill in using search engines appeared to influence both the navigation and weaving together toward the integration of ideas. Their characterization parallels Spiro's (Spiro, et al., 2003; Spiro, 2006a, 2006b) observations of the kind of crisscrossing of the terrain ideas that learners might navigate as they are engaged in complex knowledge acquisition akin to Stephen's (1998) notion of quick cutting across dense images.

The importance of forward inferencing predates research of online reading comprehension. The importance of planning, predicting, and composing has been highlighted in previous notions of reading comprehension including schema-based views of reading as articulated in the progressive refinement model of comprehension offered by Collins, Brown, and Larkin (1980). It is also consistent with the findings from formative studies of teaching reading comprehension. For example, forward inferencing and predicting emerged as the cornerstone for improving reading comprehension in studies under the direction of Russell Stauffer (1969) of the Directed Reading Thinking Approach and studies on structured

overviews and other learning adjuncts for content area reading studied and advocated by Herber (1970) as well as Manzo's work on reciprocal questioning (Manzo, 1969), Likewise studies of reading and writing across multiple texts afforded similar insights. For example, McGinley (1992), who researched college students using multiple sources to develop essays, observed that the more successful students were more focused (versus haphazard) and in turn this focus helped guide the shifts, search of, selection, and use of different sources. McGinley (1992) stressed that successful meaning making involved a kind of internal collaboration or dialectic as the meaning maker pursued agency as "a reader of the source articles, an essay writer, an essay reader, a note writer, and a note reader" (p. 241) and a reader of themselves.

Developmental Considerations: Matters of Agency and Identity

How readers position themselves emerges as key to how successful readers proceed across a range of situations. Dyson (1995) has suggested that children's major developmental challenge is not simply to create a unified text world but to move among multiple worlds and coordinate multiple space/time structures toward defining the self, including how one is placed in the company of others. As Dyson (1995) stated: "Children are not first and foremost learners; they are first and foremost people living the complexities of their day-to-day lives" (p. 36). Children seek to "imagine" relationships and situate themselves socioculturally and ideologically. With older learners in the field of sociology, Mathison (1996) surmised that success as a sociologist (insofar as critiques revealed) comes with exploring identity in a fashion that involves engagements with fellow sociologists.

Not surprisingly with the advent of the Internet and social networking as well as rich socially oriented descriptions of non-digital meaning making, agency and positionality have emerged as important elements in reading comprehension. Rather consistently, the agency of the meaning maker (especially how the meaning maker positions himself or herself or approaches or navigates the text[s] or digital space) is being seen as key to their engagement with the ideas that were explored, the strategies that were employed, as well as how the meaning maker wishes to position himself or herself in the company of others.

These multiple engagements befit the view of meaning makers as a kind of multivocal and multi-perspectival pursuer of understandings akin to what was suggested by Barthes, or other views of the social construction of multiple meanings. That is, the meaning maker is engaged in constructing selves or multiple personas in the company of others or a form of embodiment—a secondary engagement with or participation in the worlds constructed across, or within, or by layers of text and other media. At the same time, a meaning maker adopts one or more personae that are then positioned with others and their worlds in a fashion growing out of their subjectivities, alliances, choices, etc. In various digital spaces, the multiple embodiments of the meaning makers has been observed across a variety of literacy events as integral to participation as well as successful meaning making or engagement in the media. For example, Rogers and Winters (2006), Alvermann, Hagood, and Williams (2001), and Hull and Nelson (2006) have argued that students are afforded the possibility of having their literacy practices travel across spaces, in and out of schools, blurring traditional boundaries and forms of literate practices. These spaces also allow students to "juxtapose and transform genre practices for critical purposes, engage in the playful instability of genres, selves, and messages, and re-narrate their stories and identities in the process" (Rogers & Winters, 2006, p. 29).

Similarly, in the research on hypertext and gaming, Squire (2006) and Gee (2003) suggest knowing may go beyond moving from print to image to virtual or real environments interfaced with tools which simulate opportunities to perform in situations and try on identities

as one experiences and enters such worlds. As meaning makers interact with one another around games and music and other exchanges, Sefton-Green (2006) and Rampton (2006) have observed youth in pursuit of similar agency. In particular, they have found that youth use the "snatches" of music, phrases, and so on to rework, remix, adapt as they position themselves based upon interactions with others and in so doing assert their agency and explore possible identities for themselves.

Observations of students engaged in the use of instant messaging suggest that the digital medium supports a fluid form of identity construction. In particular, Lewis and Fabos (2005) found that when adolescents instant message with one another they can shift identity almost simultaneously as they interact with one another in the context of others. As Lewis and Fabos (2005) stated, "they enact identities that depend upon a running analysis of the on-line and off-line contexts" (p. 494). They describe adolescents who shift their interactions to fit their relationship and stance with respect to one another as they instant message each other in the company of groups (e.g., taking the role of confidant[e] or advisor or cynic or empathetic supporter with the different participants) and they do so in a fashion which is consistent with her or his overall sense of identity and understanding of the dynamics of the relationships.

Collective Meaning Making: Shifts in the Observed Social Practices at the Hands of the Advent of New Digital Tools

Notions of one's identity and position exist within a social fabric of others at the same time as they contribute to a form of group meaning making. As such, meaning making is transferred from individualistic or reader-generated notions to notions of a wider collective. Indeed, building upon the work of Dyson (1995), Jenkins and his colleagues (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2008) have introduced the notion of participatory culture prompted in part to befit the advent of social meaning making emerging across digital environments. As Jenkins et al. (2008) emphasize, "participatory culture shifts the focus of literacy from one of individual expression to community involvement. The new literacies almost all involve social skills developed through collaboration and networking." Regardless of the mode, meaning making involves an interaction with oneself or groups in the context of how one networks with others, or the platforms with which one is composing or communicating, or both. The pursuit of expression, information exchange, or other forms of communication entail compositions from or for a widening network which the meaning maker(s) may have just expanded by entering the network and expanded further by linking with others. One would hypothesize that the nature of the meaning making may vary depending upon how the individual or group position themselves in relationship to such spaces which are likely to be changing over time in terms of who is interacting with whom, how, why, when, and where. Indeed, the complex nature of these spaces and how individuals and groups are located and displaced by them is apparent in studies of how historically marginalized groups form or find community or not via blogs, chatrooms, listservs, or a combination of online or offline spaces. For example, studies of the sense of community achieved for lesbians via e-mail listservs, blogs, and other spaces, also may dislodge or serve to marginalize individuals depending upon their performance as members of these groups and the norms that are applied or develop across time (e.g., Bryson, MacIntosh, Jordan, & Lin, 2006). Bryson et al. (2006) challenge the simple-minded almost utopian view that these digital environments serve as the foundation for a range of diverse spaces for all. As they suggest one might find a haven or prison or have a sense of belonging or dislodgement in such spaces.

Closing Comments

Comprehension exists amidst a world of ideas and people whether they are online, face to face, or engaged in transactions through written text. As meaning makers navigate the world of ideas there appear to be certain core meaning-making processes regardless of the environment (e.g., goal setting, questioning, refinement of meaning, predicting, and connecting ideas), at the same time as there is the view that there may be some differences that arise in conjunction with working within these new digital environments. Consider the search function within an online digital environment. With access to the Internet together with their own files, a meaning maker can quickly do a search of a range of documents and compile a listing of all references to a certain topic. In essence, a person can compile a stack of materials, which that person can examine historically or in a host of different ways. If the reader chooses to venture more widely and use a search engine (Yahoo! or Google, etc.), that person will likely generate large numbers of connections depending upon how they define the searches. And, these connections (or worlds of other texts and images that link and may inform one's meaning making) are at one's fingertips. The nature of these connections shifts with the searches that are employed, the libraries that are accessed or the questions and strategies used, or both, including the forward inferencing and organizing/compiling that may be enlisted. Again, the multilayered nature of such meaning making needs to be stressed. Ideas are linked into complex patterns that may range from stacks of texts and images sectioned off and posted within Web templates with links, or linear or temporally sequenced, or in a host of other patterns that may be varied during compilation and use or search and presentation. Just as form and function have an interplay in any architectured space, so does the form, patterning, or management of ideas (in digital and traditional print) have an impact on the meaning making that occurs. When one designs a text from multiple sources—when one links or traverses multiple layers—one creates meanings that may be patterned or formed or architectured in different ways. Meaning makers may be more or less successful with online engagements with ideas. They may vary in the degree to which they explore and mix ideas, create and critique, savor, digest and use them whether as fuel for reflection, discovery, expression, or verification. Simultaneously, meaning makers are engaged in conversations with themselves in the company of others—imagined or real. And, at a more macrolevel, this success is tied to how meaning makers are networked and positioned with others in the context of exchanges locally and globally. It is likely that online meaning making may be different in terms of the participants, venues or spaces, as well as the interplay between local and global, image and text, layer upon layer, node upon node. One of the values of contemplating meaning making online may be the shift to a fuller inclusion or consideration of collective meaning making versus more traditional models of reading comprehension, which have focused upon the individual over the group.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Media Literacy; Literacy Practices in Virtual Environments; Multimodality and Literacy; New Literacies of Online Reading Comprehension; Reading and Content Area Learning; Reading and Intertextuality

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Narrative Approaches to Second Language Acquisition

ANNE POMERANTZ

Theoretical Premises

Narrative approaches to second language acquisition (SLA) research begin from the premise that human beings are storytellers (Polkinghorn, 1988). People make sense of their lived experiences and even themselves by constructing, continually revising, and sharing narratives. Indeed, psychologists like Bruner (1987, 1990) have posited that narrative is a specific mode of thinking common to all human beings. It serves, at least in part, as a way to manage novel or troubling situations by configuring disparate, contradictory, or unexpected events into a coherent, logical whole. Moreover, storytelling allows narrators to take a certain evaluative stance relative to the events chronicled in the tale, thus functioning to express and perpetuate particular moral understandings (Ochs & Capps, 2001). It is both within stories and through the act of storytelling that distinctions between what is right and wrong, what is expected and unexpected are articulated, questioned, and reworked. Yet narratives, in both their telling and their form, do not exist in isolation. They are always told in response to and in anticipation of other stories. As Bakhtin (1986) argued, narratives are fundamentally dialogic in two senses. They are always addressed to someone and populated by the voices of others.

This emphasis on human beings as creators and interpreters of meaning sets narrative approaches to SLA off from other, more positivist research traditions within the field that see meaning as located in an objective or readily perceptible reality (Pavlenko & Lantolf, 2000). It is precisely this acknowledgment of narrative as a shared sense-making process that attracts some SLA researchers to its study and analysis. These researchers seek an emic or insider's account of the cognitive, social, and emotional dimensions of SLA, one that is not necessarily open to etic or outside observation. A focus on narrative allows for rigorous examination of learners' perspectives, stances, moral frameworks, and social positions or relationships as situated in particular sociocultural contexts.

Insider Accounts of SLA: Narrative as a Sense-Making Process

In keeping with this viewpoint, the majority of narrative research in SLA has focused on issues of representation and interpretation in learners' autobiographical stories. That is, it has attended to narratives as evidence of the learner's sense-making process, examining how the language-learning events within them are ordered, explained, and evaluated. As Casanave (2005) explains, "narrative connects and configures parts of human experience into meaningful larger chunks, weaving them together in a storylike way such that episodes are seen as related to each other in time" (p. 18). As these chains of experience are formed, narrators work to rationalize and justify emergent relationships. Narrative thus imposes cohesion among otherwise disparate events, resulting in a particular interpretation of what happened.

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Studies of language learners' diaries, for example, have yielded important insights with regard to how people engaged in domestic language courses or short sojourns abroad understand and interpret their motivations, emotions, and activities. Such work has shed light on psychological and social dimensions of language learning that are often invisible. Moreover, it has offered detailed descriptions of why learners choose to pursue particular courses of action or language-learning strategies. In one of the earliest diary studies in the field of SLA, F. Schumann depicted the physical discomfort she felt during her stay in Morocco and how this negatively affected her desire to study Arabic (Schumann & Schumann, 1977). Likewise, Campbell's (1996) introspective account of how she, as an experienced second-language learner enrolled in a short-term immersion program, set out to befriend her teachers and become part of their social group, described not only the manner in which she pursued this goal, but why she felt it was essential to her linguistic development. Taken together, these studies exemplify many common threads across early diary studies in SLA, in that they offer a first-person account of a short-term, formal, language-learning experience, written in the diarist's native tongue. The experiences are recorded as they happen and then subjected to further reflection and analysis by the author. Key themes and patterns are identified, resulting in a detailed account of the factors the diarist highlights as central to the language-learning experience.

Reconceptualizing the Learner in SLA: Narrative as a Site for Identity Construction

In recent years, small-scale diary studies have given way to larger, more theoretically motivated studies of language-learner narratives. For example, in an effort to understand the relationship between the language learner and the language-learning context, Norton (2000) analyzed the diaries of five female learners. She found that both the women's desires to use English outside the classroom and their opportunities to interact with other speakers of the target language were shaped by the ways in which they positioned themselves and were positioned by others in particular social encounters. Whereas previous accounts of SLA had cast factors such as motivation and anxiety as stable traits residing within individual learners, Norton argued for more attention to how one's desire to learn and use a particular language changes over space and time and is tied to specific, and generally inequitable, relations of power. Drawing heavily on feminist, poststructuralist theories of identity to understand the women's stories, but not on narrative theory itself, Norton grounded her examination of the focal texts in the idea that learners' identities are multiple, dynamic, negotiated, and often, but not always, negotiable. That is, as learners participate in and reflect upon various activities, their sense of who they are, or subjectivity, undergoes continuous, though not unlimited, change. Thus for Norton, narrative, in the form of autobiographical texts, became an important resource for illuminating how learners conceptualized their various identities and how these identities related to both their motivations to learn and their opportunities to use the target language in specific situations. In recognizing the relationship between the "complex social history and multiple desires" of language learners (Norton, 2000, p. 10) and their patterns of language use, Norton paved the way for more focused examinations of the role of identity in SLA.

Although narrative theory did not figure prominently in Norton's analysis of her participants' stories, much subsequent work in this vein has begun from the premise that autobiographical narrative is both reflective and constitutive of identity. As Ricœur put it, "To answer the question 'Who?' . . . is to tell a story of a life" (1988, p. 246, as cited in Pavlenko & Blackledge, 2004, p. 19). Indeed, Bruner has argued that we eventually "become the autobiographical narratives by which we 'tell about' our lives" (1987, p. 15). Many

contemporary studies of identity within SLA, therefore, consider how people's understanding of who they are changes as they acquire and use new linguistic resources. Such work asks (a) how access to a new language shapes the ways in which people understand themselves narratively, and (b) how these narrative self-understandings shape the ways in which people come to use language.

Pavlenko and Lantolf (2000), for example, examined the memoirs of 10 bilingual writers, noting how the authors engaged in a process of "self-translation" as they moved through a series of stages that included the loss and subsequent (re)construction of their identities. According to Pavlenko and Lantolf, the focal narratives spoke of both material and subjective border crossings, as the writers moved not only from one physical space to another, but from one sense of being to a new, and in some cases radically different, set of possibilities for selfhood. The writers had no choice but to renegotiate their identities as they struggled to make sense of themselves and to be recognized as certain kinds of people in their new linguistic environments. Like Norton, Pavlenko and Lantolf called for an approach to SLA research that would extend to include more emphasis on identity and learners' participation in new linguistic communities, but with an eye toward what narrative theory could contribute to this endeavor.

Theorizing Narrative Within SLA: Multidisciplinary Insights

As narrative research within SLA has matured, researchers have increasingly turned to insights from a multidisciplinary array of narrative theorists to guide their work. For example, psychologists, anthropologists, philosophers, and literary critics have long argued that, although the human propensity to apprehend experience within and through narrative is universal, the organization and structure of specific narratives varies historically and cross-culturally. Autobiographical narratives too, they contend, are shaped by the discourses and ideologies circulating in particular contexts. That is, the stories people tell about their lives are not original creations; rather, they inform and are informed by more widely held notions about what specific constellations of events could mean. In an extension of her collaboration with Lantolf, Pavlenko (2002) examined the published autobiographies of language learners in the United States at the turn of the 20th century. She found that the focal stories were infused with widely circulating and largely unchallenged ideas about the intellectual/moral superiority of English and the importance of using English to construct and defend one's identity as an American. Her analysis of these texts traced how these ideas came into being and eventually eclipsed other competing perspectives. Likewise, it revealed the extent to which individuals from the late 1880s until World War I drew on particular language ideologies to make sense of and craft their own language-learning experiences and achievements. Consequently, Pavlenko concluded that people's language-learning trajectories are constrained, to a certain extent, by the identity options available to them in particular contexts.

Taking a more social-psychological perspective, Coryell, Clark, and Pomerantz (2010) explored how heritage learners of Spanish enrolled in an online language course on the USA–Mexico border made sense of their linguistic histories as both individuals and members of a bilingual community. Drawing on insights from symbolic convergence theory, the researchers considered the dual role that shared "cultural fantasy narratives" played in terms of how the learners came to represent and interpret their linguistic trajectories. In particular, they connected specific common subthemes in the participants' stories to their perceptions, actions, and responses as heritage learners of Spanish within their community. On the one hand, the authors argued that these common subthemes coalesced to form a master cultural fantasy narrative which the participants then drew on to understand their

individual experiences with Spanish. On the other, the authors maintained that, as the participants told their stories, they reproduced the cultural fantasy narrative, thus contributing to its vitality and perseverance. Thus, Coryell et al. provided an additional lens through which to consider the relationship between individual stories and larger, shared narratives.

Language learners, however, are not without agency in crafting their autobiographical stories. The act of storytelling itself is an intentional form of identity construction. Ochs and Capps (2001) note that narrators often take a particular stance relative to the events and characters in their stories, presenting themselves and the activities in which they engage in a certain light. "Everyday narratives of personal experience," they argue, "elaborately encode and perpetuate moral worldviews" (pp. 45–6). Thus, autobiographical stories are neither decontextualized nor disinterested. Narrators appropriate, resist, and at times even transform various ideologies in making sense of their language-learning histories and trajectories. For example, Menard-Warwick (2004) examined how particular ideologies of gender, education, and migration shaped and were shaped by the stories immigrant language learners to the USA told about learning English in and out of school. Through close examination of the focal learners' autobiographical stories, she identified and analyzed the ways in which these narrators represented and responded to the opportunities, challenges, and contradictions they faced in their day-to-day lives. Although the learners often positioned themselves as constrained by various ideologies and economic circumstances, she also observed moments of great creativity and resilience within these texts. Thus, Menard-Warwick highlighted the importance of considering how individual language-learning trajectories are grounded in and interact with the larger social, historical, and economic context, while simultaneously emphasizing their idiosyncrasies. Her work, like that of other SLA researchers interested in the relationship between identity and additional language learning, views autobiographical narrative as the place where learners reconcile and enact their multiple, and at times even competing, subjectivities, as they make sense of who they are as complex, socially situated, emergent bilinguals or multilinguals. It is this emphasis on learner narratives as both constitutive of identity and embedded within particular social, historical, and ideological contexts that distinguishes such work from earlier examinations of individual learner diaries in SLA research.

Although most narratively oriented work in SLA has focused on identifying themes within and across learners' stories, a nascent body of research looks specifically at the focal narratives themselves as texts. Echoing an earlier call for a more literary approach to the analysis of diary data (Bailey & Ochsner, 1983), Pavlenko (2001) argued that language learners' autobiographies constitute a particular genre and should be examined as such. In keeping with this perspective, Vitanova (2005) drew on Bakhtin's concepts of consciousness, voice, and answerability to understand the autobiographical stories of highly educated Eastern European immigrants to the United States. She looked closely at the ways in which the narrator's voice in the story interacted with the voices of the other characters to appropriate, resist, or transform the subordinate social locations to which they were often assigned in the unfolding tale. Likewise, Ros i Solé (2007) referenced the notion of positioning to examine the roles indexical pronouns, reported speech, sequential ordering, and plot development played in situating the narrator textually in stories about interactions with members of the target-language community. As SLA researchers continue to adopt narrative approaches, such fine-grained textual analyses hold considerable promise, particularly when they are combined with attention to the sociohistorical contexts in which the focal stories are embedded.

Exploring the Intersection of Identity and Language Learning: A Focus on Narrative

In an effort to understand how identity formation accords with linguistic development, SLA researchers have begun to meld detailed examinations of learners' autobiographical narratives with focused observations and assessments of particular linguistic performances and trajectories. Kinginger (2008) reported a case study of six US college students enrolled in a study-abroad program in France. Specifically, she drew on narratives told during the process of life-history interviews, anecdotes related in journal entries, and periodic quantitative measurements of linguistic competence (e.g., appropriate use of academic language, forms of address, colloquial expressions, and speech acts) to understand the relationship between the focal participants' interpretive accounts of their sojourns in France and their linguistic development. Kinginger found that, while the participants varied with respect to their overall linguistic gains, a focus on the specifics of their experiences could not fully account for these differences. She then argued, like Norton, that the participants' life histories, linguistic aspirations, and imagined identities played a strong role in shaping their learning trajectories. Moreover, she added that "in the contemporary globalized world of study abroad in which linguistic immersion is increasingly a matter of choice and even of struggle" (p. 108), learners often require support in articulating and achieving particular language-learning goals, as just being physically present in a particular linguistic community is not enough to foster bilingualism. Kinginger's mixed-method approach offers a fruitful avenue for future inquiry, as it links a qualitative understanding of learners' experiences in the form of narrative analysis with a quantitative assessment of their linguistic competencies. In so doing, Kinginger forms a bridge between interpretative and positivist research, thus highlighting the strengths of each. Such approaches promise a more robust understanding of the ways in which learners' multiple identities and changing linguistic capabilities inform and interact with one another in specific instances and over long periods of time.

Charting New Directions in Narrative Research: Current Tensions and Limitations

As narrative research gains credence within the field, SLA researchers must nevertheless remain mindful of "whose language learning stories are being told" and "whose stories are still not represented in the genre" (Pavlenko, 2001, p. 233). Indeed, Pavlenko's reference to genre raises the additional question of what themes, characters, events, story lines, rhetorical devices, and so forth must be included in a story for it to "count" as a language-learning autobiography. Moreover, as Ochs and Capps (2001) have cautioned, not all stories are deemed worthy of telling. For a story to be told, it must be relevant and of value to both the narrator and the actual (or even potential) audience. For SLA researchers interested in narrative, this has resulted in an emphasis on stories of monolingual individuals becoming bilinguals or multilinguals. This preference often serves to obscure the stories of multilinguals who acquire additional languages. Furthermore, it contributes to the dominance of discourses within the field that cast monolingualism as the normal state of affairs and multilingualism as deviant and not worthy of study. Thus, it is important for SLA researchers not only to consider a wide variety of learner stories, but to recognize which stories remain unacknowledged or silenced. Moreover, they must attend in their analyses to the nuances of both the macro-level sociohistorical context in which the focal stories are told and the micro-level interactional context of the specific telling.

Despite increasing acknowledgment of narrative research as a valid mode of inquiry in SLA studies, it is important to remember that it still remains largely marginal within the field. Early on, Bailey and Ochsner (1983) observed that this marginality stems, at least in part, from the fact that a focus on narrative data necessitates a shift in epistemology and a different set of analytic tools, akin to those found in literary studies. To this end, narrative theory now boasts a daunting array of discourse analytic approaches born out of different scholarly traditions. Yet, despite these advances in the field of narrative inquiry itself, Pavlenko and Lantolf (2000) contend that narrative, as a form of data in SLA, is still frequently scorned because of the preference in the natural and social sciences for third-person, empirical observations over first-person accounts of experience. Although the "social turn" in academia has begun to exert its influence within SLA, narrative research nevertheless remains an underutilized approach and language-learner narratives are still looked upon with suspicion by some in the field.

SEE ALSO: Analysis of Narrative in Interaction; Bakhtin and Second Language Acquisition; Kramsch, Claire; Narrative Development in Second Language Acquisition: Oral and Written; Narrative Discourse; Pavlenko, Aneta

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Narrative Development in Second Language Acquisition: Oral and Written

M. SAGRARIO SALABERRI

Narrative can be defined as the representation of a series of episodes or events that form the basis of a story; in Labov's words (1972, p. 359), it is "one method of recapitulating past experience by matching a verbal sequence of clauses to the sequence of events which (it is inferred) actually occurred." Narrative development can be understood as a joint process of event comprehension and language production (Berman & Slobin, 1994). Narratives can be either in oral or written form; they can be personal, third person, or fictional and constitute "the main means by which we interpret, represent and communicate life experience and its personal significance" (Trabasso & Özyürek, 1997, p. 269). The turn to narrative in social science research emerged from the works of Bruner (1986) and Polkinghorne (1988), among others, and this theorizing model was rapidly followed by empirical research in varied fields such as psychology, cultural studies, and sociology. Over the last decades, studies of narrative development in monolingual and bilingual speakers have made great contributions to the field, and narrative methods have been widely used in studies of second language acquisition (SLA) as a means of analyzing individual and social development.

Components of L2 Narrative Development

As a form of communicative development, narratives involve opportunities to communicate orally or in writing, and also for the conceptual understanding of the L2. The definition of components of narrative development can provide insights into L2 development as a conceptual process and can also help to establish L2 teaching goals which are not just aimed at communicative competence but communicative development, to be understood as "the process of constructing meaning for others and the self" (Negueruela, 2008, p. 197).

An interesting proposal to describe components of L2 narrative development comes from Pavlenko (2007), who identifies the following components of narrative competence: structure, evaluation and elaboration, and cohesion. These refer to oral narratives but if we consider that "writing systems create the categories in terms of which we become conscious of speech" (Olson, 1995, p. 119), then oral narratives can be taken as a reference to define components of narratives in general.

The first component is the knowledge of narrative structures that are conventional in the target language, and the ability to use them appropriately in a context. In the field of SLA, studies of L2 learners' narratives have revealed that when L1 and L2 share similar narrative structures, learners use appropriate narrative structure in the target language stories (e.g., Verhoeven & Strömqvist, 2001).

The second component is evaluation and elaboration. Elaboration involves the appropriate and rich use of lexis, figurative language (not easy to achieve in an L2), reported speech, imagery, and description. The function of evaluation is to make the point of the story clear and to make explicit why it is told. It includes the use of intensifiers, modal verbs, negatives, repetition, evaluative commentary, embedded speech, and comparisons with unrealized

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events (Labov, 1972). Narrative styles in different speech communities may call for different strategies of elaboration and evaluation.

The third component is narrative cohesion, a semantic notion that refers to relations of meaning within the text (Halliday & Hasan, 1976). Cohesion is normally described with regard to two broad categories: grammatical cohesion and lexical cohesion, although cohesion can also be seen as created by intertwining lexicogrammatical patterns. The types of grammatical cohesion are reference, substitution, ellipsis, and conjunction. Lexical cohesive devices are divided into two main categories: reiteration and collocation. Cross-linguistic and cultural differences can be observed in the use of cohesive devices such as reference or conjunction.

Oral and Written Narratives in L2

The acquisition of a second language affords opportunities to participate in a new culture, in a new society, and this involves acting according to the new norms and sharing them in a new "textual community," defined by Stock (1983, p. 294) as "a group of people who have common understanding of a text, spoken or read, and who organise aspects of their lives as the playing of a script." In that respect, narrative texts constitute symbolic systems that can be expressed through oral or written codes, and through which members of a community can construct meanings.

Traditionally, an ideal written system has been understood to be a complete representation of an oral system and this view has affected the processes and methods of teaching literacy. An opposite view can be taken if we look at writing as a model for speech, considering that writing systems provide the concepts and categories for thinking about the structure of spoken language (Olson, 1995). In this perspective, writing has an influence on cognition and consciousness, providing a model for speech and a frame for thinking about what is said, although certain cultures have the tradition of narrating stories orally without relying on a writing system. It is through writing and reading that people become able to understand the logic of general and abstract concepts termed as "scientific concepts," part of which are both linguistic and metalinguistic concepts (Brockmeier, Wang, & Olson, 2002).

The suggestion that writing not only allows new things to be done, but also turns speech and language into objects of reflection and analysis forms part of the Vygotskyan view. In fact, language becomes more visible to children or adults when they encounter literacy, developing the capacity to produce and read written texts and increasing their awareness and control (Lantolf, 2008). Written narrative thus changes the consciousness of writers, as historically happened with the development of writing systems (Olson, 1995).

Most L2 narrative studies have been limited to oral narrative discourse, with less attention being paid to written narrative discourse. Considering that narrative discourse is language specific (Berman & Slobin, 1994) and that there are important differences in the cultural conventions used when constructing stories, an area of inquiry has been how L2 learners' native language and culture affect narrative production in L2 and which areas of difficulty L2 learners face in producing extended discourse. Cross-cultural and L2 studies on oral narratives such as the one by Nakahama (2009) have shown the influence of L1 patterns on narrative discourse production in a L2. In fact, learners seem to use patterns derived from their first language to signal temporality, space, and direction.

In the field of written narratives, the study by Kang (2009), for example, has provided evidence that foreign-language learners of English do not use reference forms in extended L2 narrative discourse, which is attributed to the L1 specific reference conventions. L2 learners also show limitations in the production of cohesive written narrative discourse,

since it requires the use of specific linguistic properties that mark textual cohesion and written register. In narrative, order and coherence are applied not only to linguistic discourse, but also to visual and iconic forms such as pictures, paintings, and graphic devices that symbolize a sequence of events that are told and not just named.

Research Methodology on L2 Narrative Development

Two basic types of elicitation procedures for research on narrative development can be identified: one is based on the use of vicarious narratives and the other is based on the use of autobiographical or personal narratives.

Vicarious narratives are fantasy stories which do not refer to the personal experiences of the teller and can be elicited through verbal and nonverbal prompts. These narratives are described by Berman (2004, p. 262) as "the verbalization of graphic representations of non-veridical, fictive sequences of events" and differ from the reconstruction of real-life events. Perhaps the best-known story used in this type of research is "Frog, where are you?" (Mayer, 1969), popularized by Berman and Slobin (1994), but other tools include fictive stories based on short picture series or films. Using these prompts provides advantages like uniformity of content across the narrators that participate in the study, and low cognitive load imposed by the task, which makes it ideal for the elicitation of narrative talk. Studies that analyze narratives elicited with these procedures, such as those reported by Verhoeven and Strömqvist (2001), normally use quantitative analysis.

Personal narratives are stories of personal experience. They can be spontaneous or elicited through verbal prompts and can be used not just to answer questions about narrative development but also to study the construction of the self. SLA is a process through which we become members of a particular community and this involves the attempt to adapt the self into a new context, a new world, and the development of "the ability to communicate in the language of this community and act according to its particular norms" (Sfard, 1998, p. 6). In that respect, narratives are not just individual productions, but are shaped by cultural, social, and historical conventions.

Research Results about the Development of L2 Narrative Skills

Languages differ across speech communities in structure, rhetorical styles, storytelling conventions, and devices and, as a result, narrative development is language specific. In this section, for the purpose of illustrating research and findings on L2 narrative development, English and Spanish as a second language have been taken as a reference.

Because narration is normally in past time, most of the research on second language narrative is concerned with the acquisition of past tense morphology, although scholars have started to investigate other aspects like the expression of emotion in narrative or storytelling skills. Some studies have worked on the hypothesis that narrative structure plays an important role in the acquisition of L2 past tense morphology. Liskin-Gasparro (2000, p. 831), for example, has found that past time morphology seems to appear in the foreground first and much later in the descriptive background. Taking narrative structure as an environment for the acquisition of tense/aspect, Bardovi-Harlig (1995) suggests a developmental pattern in the distribution of tense/aspect morphology with respect to narrative structure and argues that much of the variation stems from the level of proficiency of the learners.

As regards language proficiency and its relation to narrative competence, the study carried out by Montanari (2004) with English–Spanish bilingual children at different levels of proficiency shows that children fail to produce coherent and cohesive narratives in

L2 because of their lack of linguistic resources. In fact, limited proficiency in L2 has an influence on the lack of temporal and structural organization in L2 narratives. On the other hand, evaluation seems to be proficiency independent and learners were capable of evaluating their narratives. Aspects like lack of vocabulary and lack of basic fluency can also hinder the transfer from L1 to L2, which has been an object of study in narrative development. Taking into consideration that narrative development is based on the progression from use of the language at sentence level to use at discourse level, one of the challenges for L2 learners in developing their ability to tell stories is to provide background information, which seems to be the result of advanced proficiency in the target language.

An important component of narrative evaluation and elaboration is the use of lexis and figurative language, including metaphorical competence. Some studies have been carried out to analyze the use of lexical concepts such as privacy and emotional language in L2, providing evidence that new lexical concepts can be used in situations of cultural immersion, and that the new concepts not only influence L2 but can also have an impact on L1 performance. The appropriation of concepts from a new culture on the part of individuals, and how this is reflected in narratives, has been the focus of attention in several studies (e.g., Pavlenko & Lantolf, 2000).

An area of increasing interest is gesture and its relation with language in general and narrative in particular. Speech and gesture are integrated and express two aspects of thought: that is, visual and verbal components of communication form a unity and contribute to the expression and formation of meaning. In the framework provided by Slobin (1996), speakers of a particular language have a peculiar form of "thinking for speaking" (TFS) and, as a consequence, the acquisition of a second language involves a different TFS. Recent contributions in the field of SLA have focused on how motion, path, and manner are encoded in narratives in L1 and L2, and whether L2 learners shift from L1 to L2 patterns of TFS (e.g., Stam, 2006). In particular, data regarding gestures depicting motion have been provided on the construction of narratives by L2 speakers of English and Korean (Choi & Lantolf, 2008), or between English and other languages, and show how their narratives were constructed differently. Embodiment is considered to be fundamental to cognitive development as gestures and their corresponding language patterns index ways of conceptualizing reality. The interface between gestures and other elements of narrative, such as expressing time, place, space, scene setting, etc., constitute aspects that will require further research.

The Narrative Mediated Mind

Mediation is a core concept in sociocultural theory (SCT): the relationship people have with the world is not direct but mediated by artifacts, concepts, and activities. Cultural means have been developed throughout history to mediate between people and objects, be they physical or mental, and the most powerful means is language. Narrative texts as a form of language are cultural artifacts which constitute a means to regulate our own world, the external world, and each other's social and mental activity. There are essential concepts in SCT such as the zone of proximal development (ZPD), mediation, and internalization that are closely linked to L2 development and also to L2 narrative development. The language-mediated mind, or more precisely the narrative-mediated mind, is not understood as information processing but as mediation through symbolization.

The first contribution of SCT in the field of SLA, and with a focus on oral narratives, which are both a form of language and a tool to foster development, comes from Frawley and Lantolf (1985) who showed that language not only relates a story but also functions as a means of regulating the thinking process as the narrative unfolds in real time. Narratives

have also been used in some studies to analyze inner speech, private speech, and gesture (Frawley & Lantolf, 1985; McCafferty, 1994; among others). Some findings have shown that lower-proficiency L2 students produce private speech utterances more frequently, which is interpreted as a signal of a lack of self-regulation. Also, L2 speakers use the progressive form in narratives to signal object regulation and describe events of the story as immediate, while they use the simple past to narrate the events of the story from a distal perspective (McCafferty, 1994).

When participating in new textual communities, the narrative plot that imparts coherence and cohesion to our narrative texts changes to make sense of our own and others' actions. In a general sense, literacy, which involves narratives, can be understood as the progressive participation in new textual communities. An example of the need to construct a new narrative plot when participating in a new culture is the case of Eva Hoffman, interpreted by Pavlenko and Lantolf (2000) together with other autobiographical texts. They look at the reconstruction of identities and how their life stories are retold, identifying stages in the process of moving from one culture into a different one. These views on narrative development illustrate the importance of new concepts in the transformation of inner organization.

Recent studies have focused on dynamic assessment incorporating narratives as a tool to capture development in action. In the framework of SCT two indicators of development can be identified: changes in the quantity and quality of mediation needed to help learners perform appropriately, and a learner's ability to transfer what has been appropriated through mediated interaction to new circumstances (Poehner, 2007).

Challenges and Directions

As Bruner (1991) argues, the mind structures its sense of reality using mediation through "cultural products" like language and other symbolic systems, and narrative is one of these cultural products. SLA provides opportunities to take part in a new reality and culture, and to reconstruct ourselves. In this view, narrative texts are cultural tools that act as windows to the way people reenact their identity and their world, so that the description of narratives as participation in culturally organized practices is a field of interest for the future—and also the relationship between narrative and imagination, since minds are tools to create new worlds.

At the same time, narratives are not simple data that can be analyzed in isolation, and future approaches to narrative development need to take into account the co-constructed nature of narrative and the dependency relationship between narrator and audience in the act of narrating. Our narrations vary enormously depending on the nature of the listener or reader (ourselves, a friend, a researcher, etc.).

Approaches to narrative development need to consider that even though learning and development are related because both processes originate in socially mediated activity, and although development occurs as part of learning activity, not all learning activity leads to development. Developmental processes must be seen as the formation of new semiotic tools that involve changes, are transformative and unpredictable, and vary according to the nature of interaction among all the elements of a system (Larsen-Freeman, 2008; Negueruela, 2008).

Finally, other areas of interest might include cooperation between mediators and learners to identify individuals' potential narrative abilities for the future—that is, processes that are developing and will have an impact on future literacy or future narrative success in contrast with what an individual can do alone in the zone of actual development.

Conclusions

Different views can be taken on narrative development, from the most formalist ones with a focus on the formal structure of narratives to other views that look at the symbolic content of narratives and how people use narrative for diverse modes of symbolic action. Some studies rely more on recall of preselected stories and judgment tasks rather than spontaneous stories that can avoid the precise specification of concrete elements. The understanding that the human mind is mediated and that, as happens with other types of cognition, narrative as individual cognition emerges through activity that is sociocultural-ly mediated provides a different way of ordering experience and constructing reality through stories.

SEE ALSO: Analysis of Narrative in Interaction; Lantolf, James P.; Narrative Approaches to Second Language Acquisition; Narrative Discourse; Praxis and Second Language Acquisition; Writing Development in Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Narrative Discourse

MICHAEL BAMBERG

This entry brings two lenses into fusion and, by use of a few brief illustrations, documents what narrative discourse is able to contribute to the general field of applied linguistics. On the one hand, we are modifying discourse by looking at discourse through the lens of a special type or genre of discourse—the generic form of narrative and the functions it serves. On the other, we bring a discursive perspective to narrative, that is, we view narrative as a discourse mode—in contrast to viewing it as a text type or a literary genre (see Fludernik, 2000), or as a general formula for "experience" or "life." We will begin with some clarifications of narrative—first along formal and structural lines, followed by considerations how narratives are contextually and functionally put to use, feeding into a brief illustration within two practical fields (retardation and Alzheimer's) in which narrative discourse has been analytically explored and applied.

Narrative in Discourse—Forms, Structures, Contexts, and Purposes

Narratives, as discourse modes, come in different types and formats and are put to use in different contexts, and often for quite different purposes. What falls under the header of narrative ranges from folk or fairy tales and oral histories to eulogies at funerals or sharing time recounts in preschool about what happened yesterday, to personal stories shared in institutional or more private conversational settings such as accounts in the courtroom, in therapy sessions or in research interviews, to bedtime stories, and to potentially more personal stories around the dinner table or in private (though sometimes also public) disclosures. Varying quite drastically in content, these storied discursive genres nevertheless share certain family resemblances in terms of conventionalized discursive histories that set them aside and constrain the kinds of functions for where and how they can be put to use. In addition, speakers may choose to center their story exclusively on others (as in fairy tales, certain bedtime stories, eye-witness reports in court, or in gossiping about neighbors), include themselves to a degree (as in eulogies, roastings or wedding speeches), or make the self the almost exclusive topic (as in self disclosures in therapy or in research interviews, or as in confessions).

With regard to what is special about narratives, it is commonly held that narratives serve the purpose of passing along and handing down culturally shared values of what is considered good and aesthetically valued, so that individuals learn to position their own values and actions in relationship to established and shared categories and thereby engage in their own formation process as persons. It seemed to have been the recognition of this function that inspired a good deal of the *Narrative Turn* in the social sciences and humanities, where narratives have gained a special status as a privileged access mode in the investigation of personal experience (see however Atkinson, 1997). In the wake of working with narratives over the last decades, narratives have proven to highlight and bring to the fore the relevance of differentiating and integrating a sense of self in the identity formation processes of institutional and personal continuities (Bamberg, 2011a). However, at the same time, it is through those narratives that counter established norms and conventions that

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people can identify discontinuities and define "new" positions, thereby contributing to change and transformation—first of all locally and contextually, but also potentially more generally in terms of larger societal transformations that even may take on global dimensions. The question whether narratives represent and simply mirror continuity and change or whether they are viewed as facilitating and maybe even instigating change and transformation is one that will be picked up again further below.

Building on its function to position a sense of self vis-à-vis culturally shared values and existing normative discourses, narrative discourse claims a special status in the business of identity construction. In narratives, speakers typically make claims about characters and make these claims (that are said to have held for a there-and-then) relevant to the here-and-now of the speaking moment. In other words, whenever narrators in their discourse rely on narrative resources, they connect some spatio-temporal coordinates relevant for a character in the past (or an imagined future) with a different time-space zone (usually one that is relevant to the participants in the here-and-now of the interactive situation). And mapping out this space and navigating it in terms of what has changed and what remained the same is what makes narratives one of the cornerstones for the construction of identities; irrespective whether these are the identities of institutions, groups and communities (real or imagined), or individuals (again: real or imagined) (see Bamberg, 2011a; Bamberg, De Fina, & Schiffrin, 2011).

Summarizing thus far, it seems that the attempt to fuse a narrative with a discursive lens (and vice versa) has the potential to bring issues of constancy and change into sharper focus and at the same time highlight particular positions that are taken as more personal or individual stances vis-à-vis commonly shared and circulating positions that are floating within communal discourse practices. Proceeding with sharpening these two lenses, two types of analytic work with narratives should be distinguished: (a) approaches in which discourse is underdetermined and narratives are analyzed as monologues in terms of what they are about and as units of structural form; and (b) approaches in which narratives are overdetermined and equated with experience and life, whereby discourse becomes the mere expression of *narrative thinking* or *narrative being*. A combination of these two ways of working with narrative analytically would provide an alternative that makes use of the resources and analytic procedures that both approaches have to offer.

Caveats: Underdetermining Discourse—Overdetermining Narrative

Typically, the first kind of approach builds on a notion of narrative discourse as representing and referring to events or happenings of the past and as minimally connecting two propositions that represent two temporally bounded events (see Labov & Waletzky, 1967/1997, and Bamberg, 1997, for specifics). For lack of a better term, and in contrast to the next section where language is taken as derived from and working *on top of* conceptual structures, the terms *language-on-the-ground* or *bottom-up approach* are chosen here. The events depicted accordingly have typically taken place in the past, but can be ongoing in the present (as in a coverage of an ongoing event), or fictitiously take place in some future. Discourse here is defined, following the original definition of Zellig Harris (1952), as larger than the clause; and its analysis is concerned typically with the cohesive ties between the clauses, that is, how events are connected in speech, forming a (back)ground against which something else can begin to stand out as new, as relevant or foregrounded. These approaches start from the clause as the basic unit of analysis and analyze how connections bring about what a story is considered to be about: its content—its theme. Analysis focuses typically on what is *old* (already shared) and *new* information, what is the *topic* and what is being *comment*ed on, what is the *background* and what is *foreground*ed, the *theme* versus the *rheme*,

and how *agency* constellations emerge at the content-level of stories that are interpretable as protagonists and antagonists, as villains and heroes, as perpetrators and victims. What is deemed to be relevant (to the speaker—personally, or to the context in which the story is embedded) is part of a *speaker stance* that is signaled in how the information is presented at the clause-level and tied into the thematic whole of the discourse unit.

A similar approach, also starting off from the referential and representative functions of discourse, focuses on speakers and hearers bringing to narrative discourse a particular kind of cognitive repertoire (in the form of a *story grammar*) (see Mandler & Johnson, 1977; Stein & Glenn, 1979). This enables them to work from a prototypically mentally represented structure of storied discourse units (often called *plots*) down into their components—their beginning, middle, and end. These component parts are said to consist of an (optional) *abstract*, followed by an *orientation* (or *setting* or *exposition*), followed by a *complication* (also called *problem* or *crisis*), maybe an action or action orientation toward a resolution, that—if acted upon—results in the *resolution* (or occasionally *failure*), which then is ultimately followed by a *coda* (or *closure*). The *orientation* takes the story recipient to the there-and-then where the action takes place—and where characters emerge as protagonists and antagonists—while the *coda* leads the audience back into the here-and-now of the telling situation. Engaging in narrative discourse by starting from conceptual units that are fleshed-out linguistically in a second step that has been visualized in the form of a top-down analytic procedure, where language is conceptually driven.

To summarize these two approaches, while the *language-on-the-ground* approach views the textual whole in a bottom-up configuration, emerging from the use of linguistic devices that form clauses and index how they are to be understood as text, the cognitive approach works the other way around: It starts from the textual whole that is assumed to be conceptually available—working down to the bottom parts to be filled in (*fleshed-out*) in terms of discursive devices. Both language-based and cognitive approaches deal with discourse primarily as representations of contents—and from here have an option to venture into the audience-designs of these texts, but only as a second, subsequent step. Both approaches also work with the notion of a speaker as positioned vis-à-vis an audience and fashioning the text from a point of view that is—at least to a degree—colored by affect and value orientations. However, in spite of laying bare some important microlevel components as the building blocks of narratives, the interactional function of narratives in discourse settings (i.e., why they are shared and surface here-and-now) is not fully exploited and leaves the exploration of narrative discourse as textual units underdetermined, as if speakers have narratives in their heads—which can best be tapped into in their purest form when speakers speak (monologically) to themselves.

In contrast to underdetermining discourse and its value for shedding light onto narrative as a discourse mode, approaches that equate narrative with life have gone the other way and resulted in an overdetermination of narrative. Starting with original claims of theoreticians who pointed toward the potential of narratives for the interpretation of lives (particularly life stories and life-event stories—e.g., *The Narrative Study of Lives*, see Josselson & Lieblich, 2009), a research branch has emerged that separates (told) narratives from discourse and posits narrative as an abstract and principled way of making sense of the world (as *world-making*—see Bruner, 2001, 2003) and more strongly, as the designing and generating force for (meaningful) experience and living a meaningful life (see McAdams, 1993; Randall, 1995; Xu & Connelly, 2010). A number of critics have termed this tendency to overdetermine narrative a form of "narrative imperialism" (see Sartwell, 2000; Strawson, 2004; Phelan, 2005), while others have engaged in a campaign to reformulate this thesis in a way to preserve the contributions of narrative in analyzing identity and experience and merging it with *language-on-the-ground* approaches under a constructionist flag (see Bamberg, 2011b; Bamberg et al., 2011).

Naturally, and this is where both approaches can be transformed into one converging lens, narratives don't just empower or constrain their users with identity generating potential, just as narrative discourse does not take place in disembodied minds. Narratives typically are shared and performed between people and for (interactive) purposes—in situ and in vivo. Consequently, from a discursive perspective, particular attention needs to be placed on how and where identities and conventions from the past are confirmed and where and how they are contested (see Bamberg, 2004, 2011a). This space within the social dimension of discourse, that is, narratives-in-interaction as bodily performed, is the site to be explored with an eye on where and how the boundaries of traditional categories are conventionally handed down and tested out over time. In interaction, narratives form the location to try out, contest, subvert, and draw up new boundaries that, if reiterated and practiced over time, may result in constructions of alternative and new boundaries for new identity categories.

Summarizing thus far, and underscoring the contributions of narrative discourse as a research domain for applied language studies, it is the close link between narrative discourse and the construction of identity that opens up fields for exploration that go beyond traditional linguistic studies. If people make sense of themselves in their narrative practices (see Gubrium & Holstein, 2009; Bamberg, 2011c), then questions of *who-I-am* as a female, who was born in Switzerland, grew up in the Italian-speaking part of Switzerland (with a Swiss passport), living and working in New England (USA) for the last 30 years—as a therapist—as a Green-Card-holder, and as a mother of two girls who play soccer, practices a conservative form of Judaism, married to her lesbian partner who is a Catholic, and driving a Volvo station wagon open up as categories to be explored further; not only in terms of how these identities are expressed in isolation or combined; but in addition as exemplars of what it means to be Jewish *and* lesbian, or to be a Swiss Italian native speaker who lives in the USA, or to be a Volvo-driving soccer mom. As interesting (or uninteresting) as these identity constructions may be as research projects, and while it may be doubtful whether any of these categories may be tied into spatio-temporal coordinates of presenting a past that is made relevant for the present (if at all), it is narrative par excellence—as a discourse mode that offers insight into how these identities may be put to work in terms of a construction of a spatio-temporal past—that bears on the present here-and-now of its telling.

Narrative Discourse—Use-Inspired and Use-Inspiring

Since narrative discourse cuts through almost all dimensions of practical lives, it may come as no surprise that the fields to which narrative analysis has found entrance are manifold. Not only has it become a multidisciplinary endeavor, spanning across the humanities and social sciences into the realms of education, medicine and law, it is increasingly being used to do inquiry into interesting knowledge domains—such as the body, emotions, sex and sexualities, aesthetics, art, education and institutional organization, to name just a few. Particular kinds of experience have been opened up to closer inspection by way of analyzing the narrative discourse that is used to make sense of phenomena such as: marriage, weddings and divorce; emigration, immigration, nationality and globalism; menarche and menopause; loss of and relationships with loved ones—for example, parents, siblings, friends; life transforming (traumatic) incidents—such as illness, retardation, war, and rape; professional careers and trajectories, especially those of care providers and teachers; and last but not least, of course, the restoration of identity in (narrative) therapy.

Bringing a narrative dimension to discursive practices—and a discursive dimension to shed light onto narrative practices—does not automatically result in new or critical dimensions

of knowledge production, and neither does the merging of these two lenses directly (and positively) feed into new real-life practices or policy making. Rather, the impact of narrative research remains often unnoticed and hidden. For this reason, one domain of narrative-inspired discursive research is picked to illustrate which kinds of use-inspired dimensions may open up to be further explored. The domain chosen here is one where narrative discourse, particularly in its identity-building function, is threatened by mental retardation and memory loss.

In one of their examples of practical fields of doing narrative discourse research, Gubrium and Holstein (2009) take their readers into the narrative practices of a family with a daughter who has been diagnosed as severely mentally retarded. And although the transcripts read to the outsider as if the daughter is communicatively inapt and not reciprocating, Gubrium and Holstein can document how stories unfold collaboratively between the participants who construct Mary as an "accountable subject who has sensible judgment and distinct preferences" (p. 157). A very similar point is documented in Goodwin's (2007) analysis of storytelling practices in multiparty interactions with a participant who, because of a severe stroke, has a verbal repertoire of only three words: *yes*, *no*, and *and*. The contribution of studies that explore retardation not solely as a problem of individual consciousness but as one that is situated in narrative interactive practices has led to rethinking issues around "quality of life" and how to train care personnel and advise family members in their care work with patients.

Turning to threatened identities due to memory loss, Hamilton (2008) uses the narrative lens to understand better the "narrative traces" in Alzheimer's patients' discourse; and how such "traces" can be used in vivo and in situ interactions to give patients "a chance to hold onto a robust and varied sense of self narratives . . . that serve as the stuff of enduring personal experience narratives" (p. 77). Similarly, Hydén (2010) can be seen as building on Hamilton by stressing that narrative meaning and narrative identity are the product of interactive work.

While the use-inspiring orientation of these types of narrative research may often not directly translate into interventions or immediate practical applications, they certainly contribute to the debunking of accepted wisdoms, here assumptions of retardation and Alzheimer's as purely individual deficits that have to be encountered and treated as such. However, the four studies presented here in short form entail implicit recommendations for change as well as a potential empowerment of those involved in daily interactions with those who live diagnosed and stigmatized (see Hamilton, 2008, p. 79).

SEE ALSO: Analysis of Identity in Interaction; Analysis of Narrative in Interaction; Conversation Analysis and Identity in Interaction; Discourse and Identity; Identity and Second Language Acquisition; Interviews; Language and Identity; Multimodality and Identity Construction; Positioning in the Analysis of Discourse and Interaction; Qualitative Methods: Overview; Qualitative Sociolinguistic Research; Qualitative Teacher Research; Subjectivity

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Nation

JOHN E. JOSEPH

Languages and Nations

The term "nation," as opposed to "state" or "federation" or "territory" or other related terms, implies the existence of a people united either by common ancestry or some other deep cultural bond. Although the different natures of the bonds mean that nations themselves are never identical in makeup—indeed, in everyday discourse "nation" can be interchangeable with "state"—they are spoken of and imagined as if all still fit the historical concept of nation that underpinned their formation from the early modern period onward.

The concept of the nation, and the particular features that mark one nation off from another, have always led back to language as the most fundamental of all cultural differences. The analysis and teaching of languages has inevitably been bound up with projects to create and spread belief in some version of a nation—though 20th-century modernism, a movement defined by its "deliberate break with classical and traditional forms or methods" (*OED*), allowed linguists and language practitioners to go temporarily into denial about the fact.

National language policies have proven effective in proportion as they take account of the beliefs, desires, and aspirations of the people affected (see Wright, 2004; Joseph, 2006). In determining where the boundaries of a nation lie in terms of both population and territory, and whether a given individual belongs to a particular nation or not, the matter of what language is spoken has long seemed to offer the surest and most objective criterion. Yet no nation has ever been linguistically homogeneous—bilingualism and multilingualism have always been the norm for most societies—and the way in which languages spread is a cultural matter disconnected from genetic ethnicity.

There is, then, a gap between the reliance on language to define the nation, and the heterogeneous nature of language itself. The gap is filled by ideology and myth, and it is here above all that is located the importance of language (or rather, of what people believe about language) for nationalism. Renaissance Europe knew this both through its religious and its philosophical heritage. The Bible taught in Genesis 10:5 that, after the Flood, the grandsons of Noah spread across the earth, each forming his own nation, with its own language. The ancient pedigree for empiricism in the early modern period led back to Epicurus, who believed that different languages reflected the different physical makeup of the nations who spoke them.

Revolutions and imperial expansion over what historians call the "long 19th century" (the 1780s through World War I) brought about a second phase in the conceptualization of nations, with language taking even more of a central role in order to legitimize the creation of states which combined a number of nations in the traditional sense, often nations which had long been hostile to one another. Particularly in German lands that were being taken over by Napoleon, writers such as Fichte, drawing on earlier work by Herder, strove to locate resistance in the belief that people who share a language share a national spirit or soul, and have a natural right to occupy a state with boundaries corresponding to that of their linguistic nation.

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This ideology, which in recent years has been referred to as "language nationalism," would still be the guiding principle when the map of Europe was redrawn at the end of World War I. It would reach its culmination in Nazi Germany, with its project to restore the Aryan nation to primal purity by eliminating foreign elements such as Jews, whose racial difference was established principally on linguistic grounds, according to the research of Hutton (1999).

Language nationalism is a double-edged sword. It gives meaning to people's lives by marking and manifesting their identity and allowing them to bond with those who share that identity. But it does so at the price of making it impossible to ignore differences vis-à-vis other groups, thus helping to keep opposition and hostility alive. The "one nation, one language" doctrine, Romantic and oversimplified as it was, allowed many oppressed peoples to gain their independence in 1919, in some cases after centuries of foreign domination. Yet it was linked to the doctrines that fed into "scientific racism" and were ultimately used to justify genocide.

Language, Knowledge, Religion, and Nation

In Europe, for over 1,000 years, "language" referred in the West almost exclusively to Latin, and in the East to Greek. The vernaculars which ordinary people used with one another in everyday discourse were recognized to exist, but not to have the status of "a language." The fact that they differed from village to village made them appear unsuited to functions involving the transmission (through space or time) of real, permanent *knowledge*. Even after this way of seeing things began to change in the late medieval period, the basic one-language model remained in place: one dialect came to be a standardized form of the national vernacular. This process took a long time to transpire—indeed it is still transpiring—and may never reach completion, as certain symbolic functions in law, religion, and education continue to be reserved for the classical languages.

Initially, the main obstacle to seeing vernacular ways of speaking as languages was that Latin and Greek had "grammar," as witnessed by treatises on the subject, and the variation in them was controlled by the fact that they were "dead," since even Greek did not have native speakers of its classical form. This fulfilled (or perhaps determined) the expectations of what a language had to be, given the exigencies of maintaining and transmitting knowledge as noted above. When a person's enlightenment was revealed by one's control of the Latin terminology for the highest philosophical concepts, it was difficult to imagine such knowledge being held and safely transmitted in a vernacular that was itself "irregular" in two senses, exhibiting great variation from locale to locale (and even in the usage of a single individual), and lacking the formalized rules of a grammar book.

This is why, when Dante set out to imagine (or in his word, "discover") an "Italian language" at the start of the 14th century, the term he used for it was *volgare illustre*—*volgare* because it belonged to the ordinary people as well as to the learned, *illustre* because it could be the vehicle of enlightenment, of the highest knowledge. This, he realized, would take some work. *De vulgari eloquentia* laid out the work plan, and the *Divina commedia* then performed the result. Italian became the model that was followed in the creation of other "illuminated vernaculars." Once Dante had demonstrated that a vernacular could be not only a language, but a language of enlightenment, and could form the basis of a specifically *national* literary culture (even where the political nation did not exist, as, again, Italy would not for centuries to come), a new era opened in the politics of language in Europe. The first effect was simply that writing in the vernacular became semi-respectable, and more people—though still a small minority—began doing it. With movable type and print capitalism in the 16th century, it emerged that the potential market for books in the

vernacular was more sizeable (though less prestigious) than for books in Latin. Profitability accelerated if large print runs were sold, which could happen only if a large audience could read the language.

This brought a new twist to the old language–power–resources nexus. While scholars and clergymen concerned themselves with enlightenment in the language, which the borrowing of words from Latin and Greek gave the impression of increasing, publishers knew that a certain economy between learned and popular language was necessary if the readership was to be wide enough to make a book profitable. Without profits, funds could not be raised to publish any more books, since those with the funds would invest them elsewhere. But something else was happening in the 16th century: the "emergence" of the concept of the nation. I put the word emergence in quotation marks because it suggests a nondeliberate process, but in fact it is clear from the documentary record that vast efforts were undertaken by governments to get the populace to buy into the idea of the nation. The "national language" was an obvious concept to seize upon to promote belief in the internal unity of the nation and its difference from its neighbors and rivals—at the most fundamental level, that of knowledge itself. Even if these ideas were not clearly articulated until the early 19th century (see for example Joseph, 2004, pp. 109–15 on Fichte), they are implicit in much of the writing and cultural activity surrounding language from Dante through to the end of the 18th century—and nowhere more so than in those mostly northern European countries which took the nationalist route of breaking from Rome to form their own national church.

Myhill (2006, p. 13) has put forward the thesis that "If a pre-modern national church had been established (in practice all such churches to be discussed here were established by 1600), then even in modern times national identity based upon religious affiliation has proven to be more important than identity based upon spoken language." This is either because "the group was secure in terms of its political and military sovereignty but wanted to emphasize its religious sovereignty as well," or because "the group was in a tenuous position, politically and militarily, in terms of maintaining its independence or autonomy, and wished to emphasize its distinctiveness by making its separateness organizationally explicit." This thesis holds potential for future research, though at this stage Myhill's presentation of facts may be too selective, and an account which allows the same result either because a group is secure or because it is weak is explanatorily unsatisfying.

Writing the Nation

The beginnings of modern political nationalism in early modern Europe faced a fundamental problem: on the ground, nothing corresponded to the "national languages" that nations ought to possess, according to the Bible and the Epicureans. The spoken vernaculars were a patchwork of local dialects so diverse that one did not have to travel more than a day or two from home before ceasing to understand or be understood, particularly if a mountain or major river had to be crossed. The business of church and state, and anything that required a written record, was with few exceptions done in Latin, which, being pan-European, did not qualify as anyone's national language. And yet, all that "language" proper was taken to mean was defined by Latin, with its grammars, its rhetorical tradition, its literary heritage, and its status as the official scriptural language of Western Christianity.

Linguistically equipping nascent nations required creating for their vernacular speech all those cultural embodiments that Latin possessed. The first obstacle was the formal diversity. Latin itself was pronounced differently in different parts of Europe, yet by cultivating a high literary and rhetorical style, modeled on classical authors, its written form

was kept aloof and its diversity limited. For this to be achieved with a national language, a primarily written form would need to be fixed, and there was no lack of educated men eager to put the dialect of their own region forward as the basis of that written language. It would, after all, mean that the nation would look to their region as its spiritual center, and to them personally as its cultural authorities.

The ideology of language nationalism holds not only that a people and its language are coterminous, but that the language embodies the soul of the people, whose cultural responsibility it is to keep the language pure, probe its history, and ensure that its "correct" form is spread throughout the population as much as possible. In fact a little historical evidence could be stretched a long way; Smith (1998) has emphasized how much of the effort of nationalism construction is aimed at reaching back to the past in the interest of "ethnosymbolism." As Hobsbawm has pointed out, the national standard language is, like the nation itself, a discursive construction:

> National languages . . . are the opposite of what nationalist mythology supposes them to be, namely the primordial foundations of national culture and the matrices of the national mind. They are usually attempts to devise a standardized idiom out of a multiplicity of actually spoken idioms, which are downgraded to dialects . . . (Hobsbawm, 1990, p. 51)

Hobsbawm defines the standard language as "a sort of platonic idea of the language, existing behind and above all its variants and imperfect versions" (p. 57). A "mystical identification of nationality" then occurs with this idea of the language, an identification Hobsbawm considers "much more characteristic of the ideological construction of nationalist intellectuals, of whom Herder is the prophet, than of the actual grassroots users of the idiom. It is a literary and not an existential concept" (Hobsbawm, 1990, p. 57). It should be noted, however, that while it may be *historically* true that the national/standard language is the property of nationalist intellectuals rather than of ordinary users during the period when it is initially being constructed, this ceases to be the case once it enters the educational sphere, and once education is widespread. The linguistic ideology then becomes common national property, as least as likely to find firm belief among the working classes who do not control it as among the upper classes who do.

Nations and Languages as Imagined Communities

The nation as reconceived since this period has been defined by Benedict Anderson as an "imagined political community."

> It is *imagined* because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion . . . Nationalism is not the awakening of nations to self-consciousness: it *invents* nations where they do not exist. (Anderson, 1991, p. 6)

As with the "discovery" of a national language, a crucial part of this inventing or imagining of a nation is the creation of a belief that the nation has *not* been invented. Its invention must, in other words, be forgotten. For if invented, the nation might be perceived as merely artificial, arbitrary, contingent in character, thus making its validity seem very shallow indeed. Instead the myth must be made that the nation is a *natural* entity, with a deep-rooted authenticity that is being rediscovered. If the nation in question has not existed as a nation during the whole of recorded history, then its legitimizing myth will be extended back into prehistory as far as needed to establish its claim to authenticity. Anderson goes on to explain that the nation

> is imagined as a *community*, because, regardless of the actual inequality and exploitation that may prevail in each, the nation is always conceived as a deep, horizontal comradeship. Ultimately it is this fraternity that makes it possible, over the past two centuries, for so many millions of people, not so much to kill, as willingly to die for such limited imaginings. (p. 7)

Both of the primary organizational structures which preceded the modern conception of the nation, the religious community and the dynastic realm, were vertical rather than "horizontal" in arrangement. Authority flowed downward from God to the supreme human authority, whether religious or secular, and thence outward to the rest of the community. A hallmark of modern thought was that these vertical hierarchies came to be seen as overtly mythical, serving the interests of those at the top and oppressing those at the bottom. And so they came to be replaced, in part, by the "horizontal" nation of which every citizen is, in a sense, an equal member. The fact of their inhabiting a contiguous territory becomes essential, overriding differences of religion, culture, class, and so on. Yet how then to motivate people to fight, to the death if necessary, on behalf of the nation—often against other members of their own religion, for example? This is why the new mythologies were required.

It has not been unusual for linguistic difference to be increased, particularly through writing, in order to create two distinctive national languages where, from the modern linguist's point of view, there is actually one single language, though the speech communities involved insist that they differ. A classic case is that of Serbian and Croatian, which are mutually comprehensible, differing on a level comparable with dialects of English. But they have undergone literary development in a way designed to maximize the appearance of difference between them. Serbian, the language of a majority Orthodox Christian nation, is written in the Cyrillic alphabet, as Russian is. Croatian, the language of a majority Roman Catholic nation, is written in the Latin alphabet, as English is. Linguists often prefer to speak of "Serbo-Croatian" as a single language, on the grounds of the lack of linguistic distance, but this is not a concept one often encounters among Serbians or Croatians, for whom the religious and attendant cultural differences have remained strong enough to provoke war and "ethnic cleansing" as recently as the 1990s.

An earlier example is that of Irish and Scots Gaelic, universally recognized as two distinct languages, with the Ethnologue database listing as well "Hiberno-Scottish Gaelic," identifying it as an "Archaic literary language based on 12th century Irish, formerly used by professional classes in Ireland until the 17th century and Scotland until the 18th century." But people in the Gaelic-speaking areas of Scotland up until well into the 17th century recognized just one language, which they called Erse (Irish). Only around that time did the desire arise to have *their own* authentic Gaelic, and some of those who shared the desire brought it into existence by deliberately writing Gaelic in ways that broke with the norms of what today, in retrospect, is called "Hiberno-Scottish Gaelic." Ever since, the separateness of Irish and Scottish Gaelic has been more immediately apparent on the page than to the ear.

Literary development always extends distance and sometimes creates it, not just from other related dialects, but even from the dialect base of the very language that is undergoing the building-out process. In the end, though, so long as people *believe* that their way of speaking constitutes a language in its own right, there is a real sense in which it *is* a distinct language. They will probably find ways to "perform" their distinctive linguistic identity for the benefit of others, but ultimately what matters is the imagined community of their language and their nation.

In the second half of the 19th century, those Eastern European and Scandinavian nations that had lacked a well-defined standard language of their own acquired one—or two, in the case of Norway's *Nynorsk* and *Bokmål* (the first based more on rural and the second

more on literary dialects), and Greece's demotic and *katharevousa* (puristic). Meanwhile, the older European standard languages, formed during the Renaissance, were subjected to a new wave of nationalistically motivated attempts at eliminating variation by establishing a single "correct" usage, based on scientific study of the language's history. This was the age of the great modern dictionaries such as the *Oxford English Dictionary*, the French Larousse, and their counterparts in every other major language. These same years witnessed the rise of the "history of the language" as a genre, following the plot of national histories, where the modern standard language is treated as the perfect expression of the national soul and its rise as an inevitable historical good. Those who contributed to its rise are portrayed as heroes, while anyone who tried to hold it back, either by sticking conservatively to Latin or by promoting a rival dialect as the vernacular standard, is shown up as a knave or a fool.

However, this new wave of standardization also saw attempts to promote other regional dialects that had lost out in the initial race to emerge as the national tongue. The Félibrige movement in the south of France was a particularly successful example. A new, standardized form of Provençal was promoted through the production of grammars and creative literature, notably by the poet Frédéric Mistral. Many others followed this example, in the Celtic-speaking areas of the British Isles and France, the Basque and Catalan areas of France and Spain, and in other regions throughout Western Europe. This new linguistic separatism would continue to flourish through the 20th century, though states would differ in the extent to which they would tolerate regional vernaculars or try to restrict them to private contexts. This was also the period in which the revival of Hebrew was being discussed and planned by European Zionists—though by no means were all of them agreed that Hebrew should be the national language of the eventual Jewish homeland. Attempts at standardizing Yiddish, Judeo-Spanish, and Jewish dialects of Slavic and other Semitic languages were also underway.

Outside Europe, in the Americas, Oceania, and South Africa, the period saw growing recognition of national varieties of Dutch, English, French, Portuguese, and Spanish, that could legitimately follow norms of their own independent of those of the European homeland. National language academies sprang up throughout South America in the last two decades of the 19th century. In most cases, what appear objectively to be very minor differences took on great significance as markers of national identity within the standard written language, which continued to be 99% identical with its European counterpart, even when, as in the case of Quebec French or Brazilian Portuguese, the spoken form of the language (except as used by the educated middle and upper classes) had become largely incomprehensible to people in France or Portugal.

In Asia, calls were heard for the traditional written languages, with their centuries or even millennia of venerable tradition, to be replaced with an alphabetic system, as modernizers looked generally to Western technological methods. These calls would meet with success in Indonesia and Malaysia, though not in all countries. For Chinese there was a particular obstacle to alphabetization. The system of characters transcended differences among the Chinese dialects, which are linguistically as distant from one another as are English, German, and Swedish. Alphabetization would have required the choice of one dialect as standard—a political and practical impossibility in China until the Cultural Revolution of the 1960s.

Modeling Language Nationalism

Various models have been put forward for understanding how language embodies national identity (see Joseph, 2004). During the decades of Marxist intellectual dominance, it was

inevitably seen as a manifestation of power. Starting in the 1970s, the social identity theory developed by Henri Tajfel moved away from such analysis, toward a quasi-structuralist identification of social identity as "that *part* of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1978, p. 63). It focused on the relative hierarchizations that people seem instinctively to impose on ourselves, most particularly in our status as members of "in-groups" and "out-groups."

Tajfel's sometime collaborator Michael Billig went on to analyze the particular power of the half-unnoticed signs of identity that are spread and reinforced daily through the symbols on coins and flags and, indeed, in forms of language. He defines this "banal nationalism" as

> the ideological habits which enable the established nations of the West to be reproduced. It is argued that these habits are not removed from everyday life, as some observers have supposed. Daily, the nation is indicated, or "flagged," in the lives of its citizenry. Nationalism, far from being an intermittent mood in established nations, is the endemic condition. (Billig, 1995, p. 6)

Billig criticizes studies of nationalism for focusing too much on the strongly asserted nationalism that is typical only of a small minority of people, ignoring the banal nationalism that is part of everyone's everyday life (strong nationalists included).

The idea is often encountered that in present-day "late modernity" we are experiencing serious challenges to the modern concept of nation, due to globalization, by which is meant the movement of people, capital, and ideas across national boundaries to an unprecedented degree. Serious historians of the subject maintain, however, that this is something of an illusion, brought on by the fact that the 20th century was a time of unusually high restrictions on trade and migration, and that what has happened over recent decades is a return to historically more normal conditions. The fact that nations have been able to reground themselves in new national languages after having given up their traditional one testifies not to the weakening of the nation as a concept, but rather to its resilience and robustness.

SEE ALSO: Cultural Identity; Language, Politics, and the Nation-State; Language Attitudes in Language Policy and Planning; Language Rights in Language Policy and Planning; Multilingualism and Language Rights; Role of Language and Place in Language Policy

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National Language and English in India

VAIDEHI RAMANATHAN

This short entry focuses on a small cluster of issues relating to English instruction in India. While Hindi and English are recognized as India's national languages, this multilingual space has 20 other officially acknowledged languages (Assamese, Bengali, Bodo, Dogri, Gujarati, Kannada, Kashmiri, Konkani, Maithili, Malyalam, Manipuri, Marathi, Oriya, Punjabi, Sanskrit, Santali, Sindhi, Tamil, Telegu, Urdu), and it offers K–12 instruction as well as college instruction in the liberal arts in some of these "vernacular" languages. However, as with most educational systems, glaring inequities exist, most especially around opportunities available to students graduating from these divergent mediums of instruction. While ideologies around sustaining multilingualism and offering instruction in home languages are strong (being partially justified on the basis of leveling out the playing field for all learners), these separate tracks dovetail with larger sociopolitical divisions of class and caste in the culture. Globalizing surges, though, are changing some of these language policies, and in so doing are also contesting societal divisions. The following discussion partially sketches some inequities relating to the separate tracks of education, as well as what ideas around English and globalization are enabling in that area.

English Instruction in Vernacular vs. English-Medium School (and College) Settings

Most K–12 students in India get slotted into what are called "vernacular-medium" (VM) or "English-medium" (EM) tracks of schooling (see Ramanathan 2005 for a detailed discussion of inequities perpetuated by such tracking). Constitutionally, the Indian government promises the availability of an education in the mother tongue (in the 22 official languages) as well as an education in English. In the western Indian state of Gujarat the system for the most part works like this: English is introduced as a foreign language in Grade 5 in the Gujarati-medium classes, and Gujarati is introduced at the same grade level in English-medium classes. Hindi is introduced in Grade 4 and Sanskrit in Grade 7 in both mediums and all EM and VM students have to learn these until grade 12 (southern states in the country do not offer instruction in Hindi; neither is Hindi recognized as a "national" language, since it is not Dravidian and the south has long sought a "national" recognition for a Dravidian language). If policies existed in vacuums, this scene might be regarded as reasonably egalitarian; after all, students in both streams are becoming literate in several languages. But, as we know, educational policies and enactments of and around them, have rings of divisiveness and exclusionism around them (Shohamy 2006). Equity in this context—as indeed in many parts of the world—is directly tied to which kind of student is ready for college. Very many colleges in India (except for a few liberal arts colleges) are, for the most part, in the English medium, which means that students with vernacular-medium backgrounds (where they have had access to a few hours of English instruction a week) have to compete with their EM counterparts (for whom English is pretty much a first language) in colleges and beyond. Table 1 provides a very brief example of the very different "minimal levels of learning" (MLLs, or basic literacy skills) that VM and EM

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Table 1 Divergent MLLs for GM and EM Students (from Purani, Salat, Soni, & Joshi, 1998, pp. 1–3; Purani, Nityanandan, & Patel, 1999, p. 2)

	Excerpts from MLL from English textbooks used in the Gujarati medium	*Excerpts from MLL from English textbooks used in the English medium*
Grade 5	*Writing*: Gains control of the basic mechanics of writing in English like capital letters, small letters, punctuation, writing neatly on a line with proper spacing	*Reading and writing*: Reading textual material and writing answers to questions based on and related to the text
	Transcribes words, phrases and sentences in English	Reading and interpreting and offering comments on maps and charts
	Writes cardinals up to 50, telephone numbers, road signs	Reading children's literature and talking about it
	Produces words and spells them correctly	Writing paragraphs on given topics
	Writes numbers up to 50, telephone numbers, road signs	Reading and writing simple recipes
		Reading and interpreting labels on wrappers
Grade 7	*Reading*: Reads aloud simple sentences	*Reading and writing*: Reading textual material and writing answers based on the text
	Finds key words and phrases from a text	Writing essays based on the text
	Writing: Writes words and sentences and paragraphs dictated with correct spellings, proper punctuation marks	Reading literary stories and prose lessons
	Learns to write words and sentences neatly on a line with proper spacing and punctuation	Reading simple passages of reflective prose
	Writes answers to questions based on the text	Reading and interpreting common instructions such as railway timetables
	Writes simple guided compositions	Reading and interpreting maps, labels
	Writes informal chits [notes], thank-you notes and invitations	Reading short plays/passages/writing summaries

students are expected to demonstrate in the fifth and seventh grades respectively, and the generally low levels of English literacy skills expected from VM students.

Given our globalizing world, inequities relating to who has access to English and how access to it opens other communal doors—such as jobs and interviews—this plays itself out in differentiated ways. Larger cultural stratifications of caste and class seem to fall directly into this VM–EM chasm.

Shifts in Language Policies to Accommodate Globalizing Surges

There has, though, in recent years been increasing debate about changing English language policies in the VM towards preparing students from this medium to be more competitive in the global market. Certainly, the hiring of VM students in call center jobs has enhanced debate about spoken English skills. Would the standards of "good English" be held up by the local EM teachers? Or would they be set by native speakers? When do VM students seeking to acquire English set their own language proficiency standards?

These questions are hard to address but crucial for us all to consider for a number of reasons. For one, they contest our current disciplinary fears and discourses about hegemonic

cultural globalization, and nudge us into realms where we see Englishes used and contested, understood and not, amid diverse experiences. Be they in call centers, or Japanese hip-hop, they are a part of a cacophony of voices, bouncing off a range of spatial practices in all kinds of businesses, labor, leisure, politics, and cultural events. For another, they make us realize that we are at a crossroads in the discipline now where our current standards for judging language proficiency may be becoming defunct and where Englishes and their utter heterogeneity is openly acknowledged and celebrated.

SEE ALSO: Heritage and Community Languages; Heritage Languages and Language Policy; Language Ideology in a Language Classroom; Linguistic Imperialism; Qualitative Research on Bilingualism and Multilingualism

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Native Speaker

ALAN DAVIES

When we say:

I am a native speaker, or
s/he is a native speaker, or
you'll have to ask a native speaker, or
don't ask me, I'm not a native speaker,

what is it we are appealing to? What is it that human native speakers know? What sort of knowledge does the native speaker have? The answer is ambiguous: on the one hand there is the knowledge that an individual has of his/her own linguistic system. In the author's case that is the knowledge the author has of his own grammar, which we may call Grammar 1, the underlying rules employed in performance (Davies, 2003). Now if this author has his own grammar, so does everyone else: each one of us appeals to different rules, slightly different, of course, among members of a family, larger for English, when we consider the English of England, of Scotland, of the USA, and so on. This we may call Grammar 2: this is what Saussure termed *langue*. It is what enables members of a speech community to understand one another. But there is a third grammar, Grammar 3: this is the grammar of the human faculty of language, which is what all speakers share whether or not they share the same language. Grammar 3 underlies all language use, it is competence at its most abstract level; it is what has been called universal grammar or UG.

The problem with the Grammar 2 pursuit is that individual speakers of English (and of all other languages) disagree with one another as to what the grammar is. That has to be so if, as suggested, everyone has his/her own Grammar 1. The question for Grammar 2 is the boundary question: where does Grammar 2 of English end and Grammar 2 of, say, German begin? The boundary is, it seems, partly sociolinguistic and partly linguistic. There must be some connection between Grammar 1 and Grammar 2 which involves a level of abstraction linking an individual to other individuals who share membership with him/her in a speech community.

To be a native speaker linguistically, then, means operating a Grammar 2, an operation which allows for access to and intelligibility with other operators of the same Grammar 2. In his construct of language, Saussure similarly links the social to the linguistic, thereby providing an explanation for the existence of Grammar 2. Grammar 2 linguistics thus seems predicated on some kind of sociolinguistic interpretation of social life; while Grammar 1 and even more Grammar 3 are predicated on a psycholinguistic view.

Grammar 2 is of little interest in linguistics. Indeed, Chomsky and Peregrin Otero (2004) take the Grammar 1 position, arguing that there are no homogeneous speech communities and that the native speaker is an idealization while Ferguson (1983, p. vii) advised linguists to abandon the whole mystique of native speaker and mother tongue.

But there are challenges to the native speaker. One of the strongest is that of Thomas Paikeday (1985) who insisted that the native speaker is dead. Three such challenges are now considered.

The first challenge to the native speaker as the universal model comes from postcolonial World Englishes. Whatever else they are about, native speaker questions are about identity. Who is a native speaker? What is it one is a native speaker of? These are not far from the

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"who am I?" question. In the 1940s and 1950s, Aimé Césaire and his fellow Francophone negritude writers were anguished at the loss of what they saw as their Black identity. Paradoxically, their anger was directed not at the French language but at their loss of something more profound—themselves. They were all *evolués*, *civilisés*, they had become French. But coexisting with their acceptance of Frenchness there was a profound regret at losing their negritude.

The early Anglophone African writers were skeptical. Identity was not at risk by writing in English because the English they spoke was a new variety, something not available in French to Francophone writers. Later, losing seems to have become more poignant, more salient, as we see in the progress of James Ngugi (Ngugi w'a Thiongo) who decided in mid-career to switch from writing in English to writing in Gikuyu, his mother tongue.

Graddol (1999, p. 68) writes of the "decline of the native speaker" and asks the "tantalising question . . . large numbers of people will learn English as a Foreign language in the 21st century . . . But will they continue to look towards the native speaker for authoritative norms of usage?" We might ask ourselves just how far such a question is peculiar to English. Would the same question be asked about, say, Welsh, Basque, Menonimi, Gikuyu? It does seem that English is something of a special case, a special postcolonial case.

Just as the Australian native speaker of English no longer takes account of the norms in British English, similarly the new variety of English native user (say of Singapore English) no longer takes account of these norms. How far the norms differ is an empirical question but it seems likely that as far as the written language is concerned, the differences are minimal. We may, therefore, aver that on linguistic grounds Singapore English does not exist but nor of course does British English. What does exist is the individual speaker. If a speaker identifies him/herself as a native speaker of Singapore English, then that is a sociolinguistic decision, which means that it is a decision about identity.

The second challenge to the native speaker comes from English as a lingua franca (ELF), the variety used by non-native speakers of English to interact with one another in business, professionally and so on (Seidlhofer, 2004). Although the term native user does not appear in the ELF literature, it seems reasonable to use it to refer to those proficient in ELF.

The ELF assertion is that English is increasingly being used as a vehicular language among interlocutors who do not speak one another's language. In fact such speakers vastly outnumber native-speaker (NS) users (Graddol, 1999). What is claimed for ELF is that it is not metropolitan English (British, American, Australian, etc.). The claim, supported by corpora such as the Vienna–Oxford International Corpus of English, is that this ELF is a new international variety.

In general what these studies appear to show is a greater tolerance among ELF speakers—they are less focused on form, more concerned with reaching for the message. Seidlhofer argues that what matters is intelligibility rather than correctness. Thus, misunderstandings are resolved by communication strategies, interference from L1 interactional norms is rare. Overall, ELF talk seems to be "overtly consensus-oriented, cooperative and mutually supportive, and thus fairly robust" (Seidlhofer, 2004, p. 6).

The cognitive basis of much second language acquisition research distinguishes it from applied linguistics on concepts such as the native speaker. The applied linguistics view concerns the attainable performance of native speakers in contrast to non-native speakers while for second language acquisition research (SLAR) there is a fundamental difference between the native and the non-native speaker, marked by their different knowledge representations. Preston is clear about the centrality of the native speaker concept to SLAR: "From a psycholinguistic point of view, nativeness is almost the entire question of SLA." Central though the concept may be, SLAR has been slow to take a critical view, to problematize the concept: "it is one of the least investigated (and for that matter, least understood) concepts in the field" (Han, 2004, p. 166). The long critical review by Han

2004 of the two volumes by Davies (1991, 2003) is therefore to be welcomed. As Han points out, SLAR has typically taken the native speaker for granted, ignoring the wild variation among native speakers. The goal of L2 teaching, argues Han, should "not be to create native speakers but rather L2 users" (Han, 2004, p. 184). But, she continues, "how do we define successful L2 users?"

The third challenge is ideological. In international language proficiency tests there are two important questions:

1. Whose norms are to be imposed in the test materials?
2. What are the consequences for test takers if the norm imposed by the test is not the "normal" variety accepted in their own society?

Concerned about these issues, Lowenberg (1993) carried out an analysis of the Test of English for International Communication, concluding that some items were biased against non-native speakers of English, particularly those in postcolonial settings.

One way of using the global norms to which Jenkins (2007) and Lowenberg (1993) object is to investigate to what extent local norms are appropriate both locally and beyond the local and to use this information in test development. Such an investigation is reported by Brown and Lumley (1998) referring to the development of an English proficiency test for Indonesian teachers of English. In spite of successful completion and fulfilling of the project's aims, there was no take-up in Indonesia; it seemed that a local model was unacceptable to Indonesian teachers of English.

Further research on related lines (Hamp-Lyons & Davies, 2008; Zhang & Elder, 2011) compared the judgments by native and non-native speaking raters of speaking and writing performances by advanced learners of English. In all cases, the null hypothesis of there being no significant difference was upheld. There was no gulf between educated native and non-native speaking raters: they made similar judgments.

Escudero and Sharwood-Smith (2001) have argued that second language acquisition research should take a more critical view of the native speaker concept and have proposed the use of prototype theory which was developed by Eleanor Rosch. By using prototype theory, the native speaker becomes a gradient term, offering researchers greater precision in their investigations.

In her use of magnitude estimation, Sorace (2003) takes a different approach, describing non-native speakers in terms of their judgments of grammatical acceptability. Her results, confirmed across a number of languages, confirm that even native-like learners are categorically distinct from native speakers (but see Birdsong, 2004). What Sorace does not acknowledge is the range of linguistic ability among native speakers, of whom her educated native speaker informants may not be representative.

The differing positions of the psycholinguistic and the sociolinguistic appear to be irreconcilable. For the psycholinguist, no test is ever sufficient to demonstrate conclusively that native speakers (NSs) and non-native speakers (NNSs) are distinct: once NNSs have been shown to perform as well as NSs on a test the cry goes up for yet another test (Hyltenstam & Abrahamsson, 2000). For the sociolinguist there is always another (more) exceptional learner who will, when found, demonstrate that (exceptional) NNSs can be equated to NSs in terms of language knowledge and performance. The problem is that we cannot distinguish NNSs from NSs except by biography. So Cook (1999) is right to make a strong case for the NS–NNS distinction being one above all of biography. However, making the cut by biography solves only some problems and hides away the exceptions, the bilinguals, the movers away, the disabled intellectually, the exceptional learners. The fact is that mother tongue is not gender, it is not a given from the womb. It is, classically, social, just as culture is.

It may be that we cannot distinguish native speakers and non-native speakers because our premises are inherently flawed, as Hyltenstam and Abrahamsson (2000) point out, since there are different views of what being a native speaker means. They include:

1. native speaker by birth (that is by early childhood exposure),
2. native speaker by virtue of being a native user,
3. native speaker (or native speaker-like) by being an exceptional learner,
4. native speaker through education in the target language medium,
5. native speaker through long residence in the adopted country.

What is at issue is whether claiming to be a native speaker, to "own" the language, requires early childhood exposure. This argument focuses on the critical-period hypothesis, which remains hugely contentious. Most SLA researchers appear to agree that there is a critical period (CP) but disagree on (a) how absolute it is and (b) whether there are critical periods rather than just one critical period. Consensus seems to be for critical periods (Singleton, 2005). Stowe and Sabourin (2005) report that there is no support from brain imaging for changes in the child to adult brain, which puts a question mark against the CP itself. Birdsong, who seems fairly relaxed about the CP hypothesis, takes a more lateral position, querying not whether the non- or near-native can be or become a native speaker but just what it is the native speaker is capable of. That challenges the confident assertions of Hyltenstam and Abrahamsson about native-like levels. Just what are these native-like levels—are we talking all natives, some natives, or an ideal native?

The native speaker can be characterized in (at least) these six ways:

0. The native speaker acquires the L1 of which s/he is a native speaker in early childhood.
1. The native speaker has intuitions (in terms of acceptability and productiveness) about his/her idiolectal grammar.
2. The native speaker has intuitions about those features of the standard language grammar which are distinct from his/her own idiolectal grammar.
3. The native speaker has a unique capacity to produce fluent spontaneous discourse, which exhibits pauses mainly at clause boundaries (the "one clause at a time" facility) and which is facilitated by a large memory stock of complete lexical items.
4. The native speaker has a unique capacity to write creatively (and this includes literature at all levels from jokes to epics, metaphor to novels).
5. The native speaker has a unique capacity to interpret and translate into the L1 of which s/he is a native speaker (Davies, 2003).

All except (1) are contingent issues. In that way, the question "can a second language learner become a native speaker of a target language?" reduces to: "is it necessary to acquire a code in early childhood in order to become a native speaker of that code?" The answer to that question is a further question: what is it that the child acquires in acquiring his/her L1? The answer is items 2–5 above. The native user, then, can do everything a native speaker can do. However, given the lack of background culture and the amount of practice required, the task is so great that it is not likely that many second language learners become native speakers of their target language.

Brutt-Griffler (2002) agrees that the idealization of the NS is really a stand-in for the idealization of the standard language, itself the goal of education for both L1 and L2. And so the standard language is not the taken-for-granted production of the NS but the target language of the NS. What this recognizes is that the NS, just like the NNS, has the same target, the standard language.

Real native speakers and real native users are multidialectal and often multilingual, they live and breathe hybridity. The model for our norms and for our experiments is an idealized native speaker, what Brutt-Griffler calls the stand-in for the idealization of the standard language.

Not all languages enjoy their own standard variety. Not all have the variety of native speakers that world languages such as English and French have. Minority languages may have no standard language, they may have few native speakers. There may be more native users than native speakers—which seems the case of Irish Gaelic. Doerr and Kumagai (2009) propose encouraging learners "how to meaningfully and successfully communicate not only with 'native speakers' but also with various groups of 'non-native speakers' through being active participants in particular 'communities of practice'" (Doerr & Kumagai, 2009, p. 315). This is not very far from the position of Jenkins (2007) on English as a lingua franca. Learners do indeed need goals, and the more modest one of the non-native speaker may be helpful; but they also need a model and it is uncertain what that might be unless it is the (idealized) native speaker.

There are native speakers and there is "the native speaker." The first is all of us, the second an idealization. We are all native speakers of one or other code, language, idiolect. Some of us are educated, some not, some literate, some not, some creative orators, some not, and so on. The idea that all these native speakers are at C2, the highest level on the Council of Europe's framework for reference scale makes no sense. Some perhaps are, but they are unusual. C2 is the level of "the native speaker," an idealization (isomorphic with the standard language, itself an idealization). Models, scales, examinations which use as criterion the native speaker do not mean any or all native speakers. What they mean is "the (idealized) native speaker." It is not surprising therefore when a group of educated non-native speakers out-performs a group of native speakers on a proficiency test. What their education has done for the non-native speakers is to imbue them with the knowledge of "the (idealized) native speaker," that is of the standard language. Proficiency tests are all about knowledge of the standard language, which is exactly what non-native speakers have been trained in.

SEE ALSO: Assessment and Evaluation: Mixed Methods; Bilingualism and Bilinguality; Critical Period; English as Lingua Franca; Fossilization; Multicompetence; Nativeness and Language Pedagogy; Nativism; World Englishes: Overview

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Nativism

ALAN DAVIES

Definitions

Webster (1913) defines nativism, from Latin *nativus* = inborn, natural, with two senses:

1. the disposition to favor the native inhabitants of a country in preference to immigrants from foreign countries
2. the doctrine of innate ideas, or that the mind possesses forms of thought independent of sensation.

Political Nativism

The first sense has seen long service in the USA (Michaels, 1995; Higham, 1988) as frequent waves of immigrants were made to feel unwelcome by those (often themselves recent immigrants) who regarded only themselves as truly native. This rejectionist attitude has, often enough, sought formal establishment in legal measures which, perhaps not openly, discriminate against new arrivals, who are blamed for society's ills. The sense of ownership by the oldcomers has obvious links with the term "native speaker" (Davies, 2003), which lays claim to a unique position in relation to a language. And although the two definitions from Webster quoted above seem distinct, there is a relationship, since both refer to ownership—ownership in the first case of land and culture and in the second of innate capacities. Both are possessed, as it were, of right; they are given by birth, by belonging to a group (in the first sense) and to humanity (in the second). Favoring the native inhabitants, that is those there earlier, has found expression in secret societies opposed to the Other (for example the Ku Klux Klan), in incarceration of "enemy aliens" such as Japanese Americans in the early years of World War II and in a long history of restrictive immigration measures such as the infamous "dictation test" of the White Australia policy (Davies, 1997; McNamara & Roever, 2006), to current legal barriers including language tests in Western Europe, Australia and New Zealand, and the USA.

Rationalism and Empiricism

It is the second sense of nativism that is the main topic of this entry: "the doctrine of innate ideas, or that the mind possesses forms of thought independent of sensation" (Webster, 1913).

This is a philosophical and psychological theory: it states that certain abilities (or capacities or mechanisms) are present in the child at birth. This is in contrast to empiricism, the blank slate (or tabula rasa) position of, for example, John Locke (1690) who wrote: "How comes (the mind) to be furnished? . . . Whence has it all the materials of reason and knowledge? To this I answer, in one word, from *experience*." Empiricism acknowledges that the child is born with certain capacities which allow it to learn from its environment, but those capacities have no content and are not specific to any kind of learning.

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The philosophical debate between nativism (also known as rationalism) and empiricism —between nature and nurture—is old. Famous nativists include Socrates, Plato, Kant, Descartes, and Pascal from Port Royal, while well-known empiricists include Aristotle, Hume, Berkeley, J. S. Mill, and C. S. Peirce. The extension of the nativist theory from psychology to linguistics is not surprising, given that language can be regarded as a psychological ability: those most influential on linguistic nativism, such as Chomsky (1980), Fodor (1998) and Pinker (1994), are themselves as much interested in cognition as in language. The argument here is that children are born with certain psychological capacities that enable them to learn and acquire skills such as language. For the empiricist, nothing is passed on at birth: all is there in the context to be discovered and built on. For the nativist this cannot be since what the young child has to do is to learn a very complicated grammar, so complicated, according to Chomsky (1965) that the child must have an innate language-learning model, a language acquisition device (LAD). How is it, asks Chomsky, that children are fully capable of uttering and responding to sentences they have never heard? This is the "poverty of the stimulus" argument: children acquiring their first language (L1) are exposed to a finite set of linguistic stimuli but are expected to cope with an infinite set, that is with new sentences they have never heard before. They must, so the argument goes, get help from somewhere, help which has not been available during their acquisition period. Hence the fall-back of nativism.

But this approach has been challenged on the grounds that children do have available to them such features as generalization and statistical learning. Complexity theory and game theory have recognized that complicated systems can be deciphered by apparently naïve agents (McDonald & Ramscar, 2001; Yarlett, 2008).

Attempts to reconcile strict nativism and some version of empiricism can be found in the discussion by Cowie (1999) of enlightened empiricism and by Karmiloff-Smith (1996). Karmiloff-Smith has put forward what she labels representational re-description, which moderates strict nativism through the brain becoming modular in certain domains rather than the nativist position of modules being innate.

Universal Grammar

Nativism presupposes universals. Linguistic nativism took as its bedrock universal grammar (UG), a theory of linguistics which assumes principles of grammar common to all languages. Language acquisition both for L1 and L2 is a main source of data, descriptive rather than experimental, but the explanations have to be at a highly abstract level of linguistic universals, since they need to be common to all languages in order to demonstrate their universality. Thus "If X holds true, then Y occurs", for example: If a language is head neutral (for example English) it will have prepositional phrases; if and only if it is head final (for example Japanese) will it have postpositional phrases.

The idea is not new and can be found in the work of the 13th-century scholar Roger Bacon, who maintained that there is a common grammar to all languages. For Chomsky (1965, 1980) the clincher is that children learn in spite of negative evidence, since by definition speakers do not use expressions which violate restrictions on the language. Here again, the child acquires the language on partial evidence. UG offers a solution by making certain restrictions universal characteristics of human language. These characteristics are accessed by means of an innate language faculty module (the language acquisition device). Creole languages (Bickerton, 1981) are said to support UG, for example by their common default point of reference to past time, while questions are expressed only by intonation. But Hudson-Kam and Newport (2009) argue that acquisition can take place by means of children's facility in systematizing the language they hear, based on probability and frequency of forms.

UG is not without its critics: Sampson, Roediger, Elman, and Hurford comment on its basic premises, even suggesting that the concept is "fundamentally confused" (Griffiths, 2002). Such criticisms point to what one might call the enlightened empiricism approach by offering agency to the acquirer who is creative and perceptive and not a dummy. And Chomsky himself has backtracked somewhat to a so-called minimalist program, which seems to assert nativism without the need for UG (Chomsky, 1993).

Other features of nativism include the appeal to linguistic universals (properties possessed by all possible natural languages) although it is disputed that such universals—which are not themselves disputed—necessitate nativism (Tomasello, 2003). There is also the sensitive or critical period argument—that language learning (like other developmental learning) diminishes after the onset of puberty: again, this is disputed because of the dearth of evidence for acquisition of an L1. It is surprising that little evidence is presented for the sensitive period with regard to the learning of a second language: there are exceptions, for example Lydia White who has worked on UG with regard to second language acquisition (White, 2003).

The linguistic nativist follows the rationalist position, which regards reason as the main source of knowledge. This is taken to mean that there are innate principles, in logic, in math, in ethics, and perhaps too in aesthetics, which all are born with. These are high-level principles which need to be embodied by encounters with the substance of logic, math, and so on. The linguistic nativist would add the language principle, which is universally implanted, realizing itself in the experience the child normally has with the language of caretakers and peers.

As with physical development, the language faculty lies dormant until the appropriate conditions trigger it into action. The argument with empiricism is in part about the role of perception. For empiricists, knowledge (and in our case language) must be tested by sense experience, that is by perception. For rationalists, reason alone provides for the acquisition of knowledge. And there lies the dilemma and the source of the disagreement between Chomsky and Piaget. Piaget's theory is neo-behaviorist: the child's incremental learning is based on probability judgments derived from previous experience of similar situations. For the rationalist, this is anathema.

Chomsky and Piaget disagree over the issue of hypothesis testing: for Chomsky, this is crucial and it assumes both a language acquisition device and the presence of UG. For Piaget (1985), hypothesis testing is not necessary: instead, he favors the process of disequilibrium. This allows him to describe both learning and development, while nativists, he maintains, can describe only learning.

The rationalist takes as axiomatic the innateness of certain capacities. Chomsky's argument is that otherwise a language would be just too difficult to learn so expertly.

> Language learning is not really something that the child does; it is something that happens to the child placed in an appropriate environment, much as the child's body grows and matures in a predetermined way when provided with appropriate nutrition and environmental stimulation. (Chomsky, 1993, p. 519)

And so, the nativist typically makes the following assumptions about language acquisition.

1. Language acquisition is rapid.
2. Language acquisition is instantaneous.
3. Language acquisition happens without direct instruction.
4. Language acquisition happens in spite of inadequate output.

Each of these assumptions can be challenged.

1. Acquisition is not rapid: it takes children five years to become intelligible to strangers.
2. Acquisition is not instantaneous (if it were, why do we need five years to reach intelligibility?) Children constantly make errors along the way.
3. (Direct) instruction does take place: rather than replying to a child's error by saying "Don't say that!" parents and other caregivers constantly reformulate and model correct forms.
4. Is input inadequate? This is a moot point—the poverty of the stimulus position has its weaknesses since it is not clear just what the child really does lack in terms of linguistic stimuli (Chouniard & Clark, 2003).

These are strong challenges, supporting the view that what is innate is not a language faculty, but mechanisms which provide the capacity for language acquisition and learning.

Linguistic Nativism or General Nativism?

So far I have assumed that there is just one view of linguistic nativism. As Scholz and Pullum point out, that is just not so: "Different versions of linguistic nativism will have different forms of general nativism as plausible competitors" (2002, p. 222). And by general nativism what they mean is that there is innateness, but none of it is specifically linguistic.

There appear, then, to be three possible positions with regard to linguistic innateness:

1. the strong linguistic nativism position (plus UG),
2. the weak linguistic nativism position (with specific language acquisition capacities but with no UG), and
3. general nativism (with general learning mechanisms which apply to language as well as to other domains).

Chomsky is, or perhaps was—he appears to have backtracked somewhat in recent years—a leading exponent of position (1). Position (2) is well supported by O'Grady (2003), who argues that position (1) requires the inclusion within linguistic nativeness of UG. He prefers the non-UG alternative, that is position (2). But O'Grady seems also to lean toward the third position, the position of general nativism, which he associates with connectionism:

> Recent work in connectionism denies the existence of conventional syntactic representation of UG and of an inborn acquisition device specifically for language. Language acquisition, it is claimed, is not fundamentally different from any other type of learning and can be accounted for by the same mechanisms as are required for interaction with the environment in general. (O'Grady, 2003, p. 57)

O'Grady himself is not an advocate of the connectionist position, He favors "general (or cognitive) nativism," which posits "the existence of hierarchically structured symbolic representations" (2003, pp. 57–8), very much the general nativist position.

Unusually for nativism researchers, O'Grady is prepared to extend the field for investigation to second language acquisition. He writes:

> There is surely a place for the study of second language acquisition in all of this. At the very least, research on second language learning provides opportunities to observe the acquisition device functioning under conditions of duress—either because of extreme limitations on the available input (as in the case of classroom language) or because one or more of its component modules has been compromised. (O'Grady, 2003, p. 58)

Geoffrey Sampson (2005) is a fierce exponent of the empiricist position, insisting that his data of modern spoken English show "how unrealistic the nativists' beliefs about language behaviors are."

His more sober criticism is that UG theories are not falsifiable—the rules that nativists put forward are just observations about existing languages and not predictions about what might be (Sampson, 2005). This is precisely the point. Nativists have to fall back on what amounts to a belief, while empiricists cannot sensibly be content with the extreme tabula rasa position. If children had no tendencies, capacities, mechanisms they would surely never learn anything—they would not develop.

It does seem that some coming together of general nativism and an enlightened empiricism is the sensible compromise. Innateness (or nativism) is not a coherent theory. Bateson (2000) and Griffiths (2002) have suggested that it is "fundamentally flawed." Attempts to save a pure nativism through the proposal of canalization (Waddington, 1990) or psychological primitiveness (Cowie, 1999; Sampson, 2002) are not obviously helpful: for language acquisition, the first seems to trivialize the debate and the second to give up explanation in despair. Common sense indicates that humans are born with certain capacities, mental as well as physical. Those capacities enable them to respond to their environment. Whether those capacities indicate a specifically linguistic device is unclear and may not be important.

Nativism and nativeness both preserve the idea of passivity: nativism's innate ideas and the defining of nativeness on the grounds of birth or origin. Both terms derive through Old French from "native," the cognate of which is naïf, meaning natural with the sense of not being able to help one's birth or one's origins.

Nativeness is defined as the quality of belonging to or being connected with a certain place or region by virtue of birth or origin. Hence "native speaker," one who has a special relation to a language through birth or origin and so may lay claim to ownership of that language. Nativism is defined as the doctrine of innate ideas or that the mind possesses forms of thought independent of sensation. The term nativism derives from nature, meaning inborn or natural, hence the claim that one is born with innate ideas (specifically for language with a language faculty) which are there by nature.

As this entry has suggested, a strong form of nativism is difficult to uphold. In the same way, nativeness's basic premise of birth or origin can be queried: nativeness for people (if not for plants) can be multiple (in mixed communities) or subtractive (by moving to another origin). And the rise of the near-native speaker or native user challenges the claim of language ownership by the native speaker.

SEE ALSO: Language and Globalization; Language and Identity; Language Testing and Immigration; Nativeness and Language Pedagogy; Native Speaker

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Clark, A., & Lappin, S. (2011). *Linguistic nativism and the poverty of the stimulus.* Boston, MA: Wiley-Blackwell.

This study by Clark & Lappin (2011) provides evidence for the poverty of the stimulus theory in its examination of several different theoretical approaches to the formal learnability of the class of natural languages.

Nativeness and Language Pedagogy

VIVIAN COOK

A native speaker is typically defined as "a person who has spoken a certain language since early childhood" (McArthur, 1992, p. 682). Extended lists of specific attributes of nativeness are discussed by Davies (1996), Johnson and Johnson (1998), and Stern (1983) and include subconscious knowledge of rules, identification with a language community, and ability to produce fluent discourse, most of which seem a matter of degree rather than defining characteristics (Cook, 1999)—some native speakers are as dysfluent as any non-native, for instance.

One difficulty with the concept of native speaker is finding one. Most languages have regional, class, and gender varieties spoken within one country, let alone those spoken in different countries. Should the target native speaker of English, say, hail from London or Glasgow, Boston or Chicago, Toronto or Brisbane? Normally a native speaker is taken to be someone speaking a standard "educated" form of the language. This brings in a strong element of idealization as the representative native speaker is chosen largely for reasons of social status; the Received Pronunciation (RP) form of English taken to be native British English is in fact spoken by a small minority. Using the native speaker as a model for second language acquisition (SLA) research and second language (L2) teaching is not unproblematic.

Most L2 learners and language teachers would nevertheless probably say that the goal of learning another language is to speak it like a native speaker. Yet many would admit that this goal is unattainable for all but a highly select few. Why then have SLA research and language teaching concentrated on a goal that is out of reach, indeed logically unachievable under the definition given above?

One explanation for the insistence on the native speaker is that it enables the in-group of native speakers to exert power over out-groups of non-natives. Linguists and the general public have become more sensitive to questions of linguistic power, whether gender, class, or race, but not to those of nativeness. In the 1990s a group of applied linguists including R. Phillipson (1992), A. Holliday (1994), and A. Pennycook (1994) drew attention to the political and economic issues of this. The native speakers and the nation they come from claim the privilege of being the only rightful owners of their language and so maintain their power and influence over all the rest.

SLA research for forty years has ostensibly been working within the interlanguage paradigm that learners have an independent language system of their own, related to the target L2 but not identical with it, and constructed by many processes. Yet time and again research measures the L2 learner against the native speaker: Their peak of achievement is seen as "absolute native-like command of an L2" (Hyltenstam & Abrahamsson, 2003, p. 575). SLA research methodology too has depended heavily on measuring L2 users against native speakers (Cook, 1997), L2 grammaticality judgments being assessed against those of native speakers, obligatory occurrences of grammatical items being defined as those that natives would use in that context, and L2 access to universal grammar (UG) being seen as a matter of whether L2 users can have the same grammars as native speakers. The native speaker has been the omnipresent ghost in the machine.

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Language teaching has taken a similar path. Most specifications of the target for the student learner embodied in syllabuses and examinations implicitly accept the native-speaker goal. The Common European Framework (Council of Europe, 2001, p. 6), for instance, talks inter alia about L2 learners having "regular interaction with native speakers," encountering language "delivered at fast native speed," and being able to "sustain relationships with native speakers without unintentionally amusing or irritating them," with little mention of their dealings with non-natives. One question for language teaching is then whether the monolingual native speaker is the proper target for students to aim at. Partly this is a question of fairness. Given the variety of native speakers, why should it be acceptable for your speech to show you come from Detroit or Newcastle upon Tyne but not from Paris or Tokyo? Why should only a native speaker have the privilege of proclaiming their identity as a person from a particular place? Some national syllabuses do now have targets other than the emulation of native speaker, such as the Japanese goal of "Japanese with English Abilities."

There is also the practical issue for English and other hypercentral and supercentral languages that most L2 communication is between fellow non-native speakers and does not involve native speakers, whether, say, Japanese businessmen talking to Arabic businessmen in English, or pilots using English everywhere in the world for talking to ground control; 74% of tourist encounters in English do not involve native speakers. Incidentally, native speakers are actually worse than non-native speakers in some specialized areas such as aviation English (Alderson, 2009). The primary target for much language teaching may be using the L2 effectively to other L2 users, and communicating with native speakers is a secondary target. Hence researchers have been gathering information about L2 user speech under the banner of "English as lingua franca" (Jenkins, 2000; Seidlhofer, 2004).

A corollary of the native-speaker target is the belief that native speakers make the best language teachers; if native speakers are the only true speakers of a language, clearly a non-native-speaker teacher is a second-rate substitute. UK universities, for example, tend to employ native speakers as language teachers, whether the language is Spanish, Japanese, or Russian; advertisements for language schools emphasize that the teachers are natives everywhere in the world. But if the target is to be a successful L2 user rather than an imitation native speaker, the non-native-speaker teacher is clearly a better model and is someone who has acquired the L2 by the same route as the students.

SEE ALSO: Bilingualism and Bilinguality; English as Lingua Franca; Instructed Second Language Acquisition; Multicompetence; Non-Native-Speaker English Teachers; Syllabus Design

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Natural Language Processing and Language Learning

DETMAR MEURERS

As a relatively young field of research and development that began with work on cryptanalysis and machine translation around 50 years ago, natural language processing (NLP) is concerned with the automated processing of human language. It addresses the analysis and generation of written and spoken language, though speech processing is often regarded as a separate subfield. NLP emphasizes processing and applications, and as such can be seen as the applied side of computational linguistics, the interdisciplinary field of research concerned with formal analysis and modeling of language and its applications at the intersection of linguistics, computer science, and psychology. In terms of the language aspects dealt with in NLP, traditionally lexical, morphological and syntactic aspects of language were at the center of attention, but aspects of meaning, discourse, and the relation to the extralinguistic context have become increasingly prominent in the last decade. A good introduction and overview of the field is provided in Jurafsky and Martin (2009).

This entry explores the relevance and uses of NLP in the context of language learning, focusing on written language. As a concise characterization of this emergent subfield, the discussion will focus on motivating the relevance, characterizing the techniques, and delineating the uses of NLP; more historical background and discussion can be found in Nerbonne (2003) and Heift and Schulze (2007).

One can distinguish two broad uses of NLP in this context: on the one hand, NLP can be used to analyze *learner language*, i.e., words, sentences, or texts produced by language learners. This includes the development of NLP techniques for the analysis of learner language by tutoring systems in intelligent computer-assisted language learning (ICALL), automated scoring in language testing, as well as the analysis and annotation of learner corpora.

On the other hand, NLP for the analysis of *native language* can also play an important role in the language-learning context. Applications in this second domain support the search for and the enhanced presentation of native-language reading material for language learners, provide targeted access to relevant examples from native-language corpora, or support the generation of exercises, games, and tests based on native-language materials.

NLP and the Analysis of Learner Language

Intelligent language tutoring systems (ILTS) use NLP to provide individualized feedback to learners working on activities, usually in the form of workbook-style exercises as in e-Tutor (Heift, 2010), Robo-Sensei (Nagata, 2009), and TAGARELA (Amaral & Meurers, 2011). The NLP analysis may also be used to individually adjust the sequencing of the material and to update the learner model. Typically, the focus of the analysis is on form errors made by the learner, even though, in principle, feedback can also highlight correctly used forms or target aspects of meaning or the appropriateness of a learner response given the prompt and input provided by an exercise.

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What Motivates the Use of NLP in a Tutoring System?

To be able to provide feedback and keep track of abilities in a learner model, an ILTS must obtain information about the student's abilities. How this is done depends directly on the nature of the activity and the type of learner responses the program supports, i.e., the ways in which it requires the learner to produce language or interact with the system. The interaction between the input given to a learner to carry out a task and the learner response is an important topic in language assessment (see Bachman & Palmer, 1996) and arguably this is equally crucial for determining the system-analysis requirements for different activity types in the ILTS context.

For exercises which explicitly or implicitly require the learner to provide responses using forms from a small, predefined set, it is often possible to anticipate all potential well-formed and ill-formed learner responses, or at least the most common ones given a particular learner population. The intended system feedback for each case can then be explicitly specified for each potential response. In such a setup, knowledge about language and learners is exclusively expressed in this extensional mapping provided offline when the exercise is created. Sometimes, targets are allowed to include regular expressions (http://en.wikipedia.org/wiki/Regular_expression) to support a more compact specification. The online process of comparing an actual learner response to the anticipated targets is a simple string comparison requiring no linguistic knowledge and thus no NLP. Correspondingly, the quiz options of general course management systems (Moodle, ILIAS, etc.) can support such language exercises just as they support quizzes for math, geography, or other subjects. The same is true of the general tools underlying the many quiz pages on the Web (e.g., http://www.eslcafe.com/quiz/). Tools such as Hot Potatoes (http://hotpot.uvic.ca/) make it easier to specify some exercise forms commonly used in language teaching, but also use the same general processing setup without NLP.

For many types of language-learning activities, however, extensionally specifying a direct and complete mapping between potential learner input and intended feedback is not feasible. Nagata (2009, pp. 563–4) provides a clear illustration of this with an exercise taken from her Japanese tutor Robo-Sensei, in which the learner reads a short communicative context and is asked to produce a sentence in Japanese that is provided in English by the system. The learner response in this exercise is directly dependent on the input provided by the exercise (a direct response in the terminology of Bachman & Palmer, 1996), so that a short, seven-word sentence can be defined as the target answer. Yet after considering possible well-formed lexical, orthographical, and word-order variants, one already obtains 6048 correct sentences which could be entered by the learner. Considering incorrect options, even if one restricts ill-formed patterns to incorrect particle and conjugation choices, one obtains almost a million sentences. Explicitly specifying a mapping between a million anticipated responses and their corresponding feedback clearly is infeasible. Note that the explosion of possible learner answers illustrated by Nagata already is a problem for the direct response in a constrained activity, where the meaning to be expressed is fixed and only form variation is anticipated. A further dimension of potential variation in responses arises when going beyond the analysis of language as a system (parallel to *system-referenced tests* in language assessment, see Baker, 1989) to an analysis of the ability to use language to appropriately complete a given task (*performance-referenced*).

In conclusion, for the wide range of language activities supporting significant well-formed or ill-formed variation of form, meaning, or task-appropriateness of learner responses, it is necessary to abstract away from the specific string entered by the learner to more general classes of properties by automatically analyzing the learner input using NLP algorithms and resources. Generation of feedback, learner-model updating, and instructional sequencing can then be based on the small number of language properties and categories derived through NLP analysis, instead of on the large number of string instances they denote.

What Is the Nature of the Learner Language Properties to Be Identified?

Research on intelligent language tutors has traditionally focused on learner errors, identifying and providing feedback on them. Automatic analysis can also be used in an ILTS to identify well-formed language properties in order to provide positive feedback or record in a learner model that a given response provided evidence for the correct realization of a particular construction, lexical usage, or syntactic relation. All approaches to detecting and diagnosing learner errors must explicitly or implicitly model the space of well-formed and ill-formed variation that is possible given a particular activity and a given learner. Insights into activity design and the language development of learners thus are crucial for effective NLP analysis of learner errors.

Errors are also present in native-language texts and the need to develop robust NLP which also works in suboptimal conditions (due to unknown or unexpected forms and patterns, noise) has been a driving force behind the shift from theory-driven, rule-based NLP of the 80s and 90s to the now-dominant data-driven, statistical, and machine-learning approaches. However, there is an important difference in the goal of the NLP use in an ILTS compared to that in other NLP domains. NLP is made robust to gloss over errors and unexpected aspects of the system input with the goal of producing some result, such as a syntactic analysis returned by a parser or a translation provided by a machine-translation system. The traditional goal of the NLP in an ILTS, on the other hand, is to identify the characteristics of learner language and the ways in which learner responses diverge from the expected targets in order to provide feedback to the learner. So errors here are the goal of the abstraction performed by the NLP, not something to be glossed over by robustness of processing.

Writers' aids such as the standard spell and grammar checkers (Dickinson, 2006) share the ILTS focus on identifying errors, but they rely on assumptions about typical errors made by native speakers which do not carry over to language learners. For example, Rimrott and Heift (2008, p. 73) observe that "in contrast to most misspellings by native writers, many L2 misspellings are multiple-edit errors and are thus not corrected by a spell checker designed for native writers." Tschichold (1999) also points out that traditional writers' aids are not necessarily helpful for language learners since learners need more scaffolding than a list of alternatives from which to choose. Writers' aids tools that target language learners, such as the ESL Assistant (Gamon et al., 2009), therefore provide more feedback and, for example, concordance views of alternatives to support the language learner in understanding the alternatives and choosing the right option. The goal of writers' aids is to support the second language user in writing a functional, well-formed text, not to support them in acquiring the language, as is the goal of an ILTS.

NLP methods for the diagnosis of learner errors fall into two general classes. On the one hand, most of the traditional development has gone into *language-licensing approaches*, which analyze the entire learner response; on the other hand, there is a growing number of *pattern-matching approaches*, which target specific error patterns and types (e.g., preposition or determiner errors), ignoring any learner response or part thereof that does not fit the pattern.

Language-Licensing Approaches

Language-licensing approaches are based on formal grammars of the language to be licensed, which can be expressed in one of two general ways (see Johnson, 1994). In a *validity-based* system, a grammar is a set of rules, and recognizing a string amounts to finding valid derivations. Simply put, the more rules are added to the grammar, the more types of strings can be licensed; if there are no rules, nothing can be licensed. In a *satisfiability-based* setup, a grammar is a set of constraints and a string is licensed if its

model satisfies all constraints in the grammar. Thus, the more constraints are added, the fewer types of strings are licensed; if there are no constraints in the grammar, any string is licensed.

Corresponding to these two types of formal grammars, there are essentially two types of approaches to analyzing a string with the goal of diagnosing learner errors. The *mal-rule approach* follows the validity-based perspective and uses standard parsing algorithms. Starting with a standard native-language grammar, rules are added to license strings which are used by language learners but not in the native language, i.e., so-called mal-rules used to license learner errors (see., e.g., Sleeman, 1982; Matthews, 1992, and references therein). Given that a specific error type can manifest itself in a large number of rules—for example, an error in subject–verb agreement can appear in all rules realizing subjects together with a finite verb—*meta-rules* can be used to capture generalizations over rules (Weischedel & Sondheimer, 1983). The mal-rule approach can work well when errors correspond to the local tree licensed by a single grammar rule. Otherwise, the interaction of multiple rules must be taken into account, which makes it significantly more difficult to identify an error and to control the interaction of mal-rules with regular rules. To reduce the search space resulting from rule interaction, the use of mal-rules can be limited. In the simple case, the mal-rules are only added after an analysis using the regular grammar fails. Yet this only reduces the search space for parsing well-formed strings; if parsing fails, the question of which mal-rules need to be added remains. The ICICLE system (Michaud & McCoy, 2004) presents an interesting solution by selecting the groups of rules to be used based on *learner modeling*. It parses using the native rule set for all structures of which the learner has shown mastery. For structures assumed to currently be acquired by the learner, both the native and the mal-rules are used. And for structures beyond the developmental level of the learner, neither regular nor mal-rules are included. When moving from traditional parsing to parsing with probabilistic grammars, one obtains a further option for distinguishing native from learner structures by inspecting the probabilities associated with the rules (see Wagner & Foster, 2009, and references therein).

The second group of language-licensing approaches is typically referred to as *constraint relaxation* (Kwasny & Sondheimer, 1981), which is an option in a satisfiability-based grammar setup or when using rule-based grammars with complex categories related through unification or other constraints which can be relaxed. The idea of constraint relaxation is to eliminate certain constraints from the grammar, for example, specifications ensuring agreement, thereby allowing the grammar to license more strings than before. This assumes that an error can be mapped to a particular constraint to be relaxed, i.e., the domain of the learner error and that of the constraint in the grammar must correspond closely. Instead of eliminating constraints outright, constraints can also be associated with weights controlling the likelihood of an analysis (Foth, Menzel, & Schröder, 2005), which raises the interesting issue of how such flexible control can be informed by the ranking of errors likely to occur for a particular learner given a particular task. Finally, some proposals combine constraint relaxation with aspects of mal-rules. Reuer (2003) combines a constraint relaxation technique with a standard parsing algorithm modified to license strings in which words have been inserted or omitted, an idea which essentially moves generalizations over rules in the spirit of meta-rules into the parsing algorithm.

Pattern Matching

For pattern matching, the most common approach is to match a typical *error pattern*, such as the pattern looking for "of cause" in place of "of course". By performing the pattern matching on the part-of-speech tagged, chunked, and sentence-delimited learner string, one can also specify error patterns such as that of a singular noun immediately preceding

a plural finite verb (e.g., in *The baseball team are established*). This approach is commonly used in standard grammar checkers and, for example, realized in the open-source LanguageTool (Naber, 2003; http://www.languagetool.org), which was not developed with language learners in mind, but readily supports the specification of error patterns that are typical for particular learner populations.

Alternatively, pattern-matching can also be used to identify *context patterns* which are likely to include errors. For example, determiners are a well-known problem area for certain learners of English. Using a pattern which identifies all nouns (or all noun chunks) in the learner response, one can then make a prediction about the correct determiner to use for this noun in its context, and compare this prediction to the determiner use (or lack thereof) in the learner response. Given that determiners and preposition errors are among the most common English learner errors found, and that the task lends itself well to the current machine-learning approaches in computational linguistics and raises the interesting general question how much context and which linguistic generalizations are needed for predicting such functional elements, it is currently one of the most active areas of NLP research in the context of learner language (see, e.g., De Felice, 2008, and references therein).

Complementing the analysis of form, for an ILTS to offer meaning-based, contextualized activities it is important to provide an *automatic analysis of meaning aspects*, for example, to determine whether the answer given by the learner for a reading comprehension question makes sense given the reading. While most NLP work in ILTS has addressed form issues, some work has addressed the analysis of meaning in the context of ILTS (Delmonte, 2003; Ramsay & Mirzaiean, 2005; Bailey & Meurers, 2008) and the issue is directly related to work in computer-assisted assessment systems outside language learning, for example, for evaluating the answers of short-answer questions (see Pérez Marin, 2007, and references therein) or in essay scoring (see Attali & Burstein, 2006, and references therein). In terms of NLP methods, it also directly connects to the growing body of research on recognizing textual entailment and paraphrase recognition (Androutsopoulos & Malakasiotis, 2010).

Shifting the focus from the analysis techniques to the interpretation of the analysis, just as the activity type and the learner play an important role in defining the space of variation to be dealt with by the NLP, the interpretation and feedback provided to the learner needs to be informed by activity and learner modeling (Amaral & Meurers, 2008). While feedback in human–computer interaction cannot simply be equated with that in human–human interaction, the results presented by Petersen (2010) for a dialogue-based ILTS indicate that results from the significant body of research on the effectiveness of different types of feedback in instructed second language acquisition (SLA) can transfer across modes, providing fresh momentum for research on feedback in the CALL domain (e.g., Pujolà, 2001).

A final important issue arising from the use of NLP in ILTS concerns the resulting lack of teacher autonomy. Quixal, Preuß, Boullosa, & García-Narbona (2010) explore putting the teacher back in charge of designing their activities with the help of an *ICALL authoring system*—a complex undertaking since in contrast to regular CALL authoring software, NLP analysis of learner language needs to be integrated without presupposing any understanding of the capabilities and limits of the NLP.

Learner Corpora

While there seems to have been little interaction between ILTS and learner-corpus research, perhaps because ILTS research traditionally has focused on exercises whereas most learner corpora consist of essays, the analysis of learner language in the annotation of learner corpora (see Granger, 1998) can be seen as an offline version of the online analysis performed by an ILTS (Meurers, 2009).

What Motivates the Use of NLP for Learner Corpora?

In contrast to the automatic analysis of learner language in an ILTS providing feedback to the learner, the annotation of learner corpora essentially provides an index to learner language properties in support of the goal of advancing our understanding of acquisition in SLA research and to develop instructional methods and materials in foreign-language teaching (FLT). Corpus annotation can support a more direct mapping from theoretical research questions to corpus instances (Meurers, 2005), yet for a reliable mapping it is crucial for corpus annotation to provide only reliable distinctions which are replicably based on the evidence found in the corpus and its meta-information, for which clear measures are available (Artstein & Poesio, 2009).

What Is the Nature of the Learner Language Properties to Be Identified?

Just as for ILTS, much of the work on annotating learner corpora has traditionally focused on learner errors, for which a number *of error-annotation schemes* have been developed (see Díaz Negrillo & Fernández Domínguez, 2006, and references therein). There is so far no consensus, though, on the external and internal criteria, that is, which error distinctions are needed for which purpose and which distinctions can reliably be annotated based on the evidence in the corpus and any meta-information available about the learner and the activity which the language was produced for. An explicit and reliable error-annotation scheme and a gold-standard reference corpus exemplifying it is an important next step for the development of automatic error-annotation approaches, which need an agreed-upon gold standard for development as well as for testing and comparison of approaches. Automating the currently manual error-annotation process using NLP would support the annotation of significantly larger learner corpora and thus increase their usefulness for SLA research and FLT.

Since error-annotation results from the annotator's comparison of a learner response to hypotheses about what the learner was trying to say, Lüdeling, Walter, Kroymann, and Adolphs (2005) argue for making the target hypotheses explicit in the annotation. This also makes it possible to specify alternative error annotations for the same sentence based on different *target hypotheses* in multilevel corpus annotation. However, Fitzpatrick and Seegmiller (2004) report unsatisfactory levels of interannotator agreement in determining such target hypotheses. It is an open research issue to determine for which type of learner responses written by which type of learners for which type of tasks such target hypotheses can reliably be determined. Target hypotheses arguably should be limited to encoding only the minimal commitments necessary for error identification (or any other type of robust annotation, i.e., any annotation supporting variation in the realization of its classes); and in place of target hypothesis strings, they might have to be formulated at more abstract levels, for example, lemmas in topological fields, or sets of concepts the learner was trying to express. In either case, if the target hypotheses are made explicit, the second step from target hypothesis to error identification can be studied separately and is assumed to be realizable with high reliability.

Returning to the general question about the nature of the learner-language properties which are relevant, SLA research essentially observes correlations of linguistic properties, whether erroneous or not. And even research focusing on learner errors needs to identify correlations with linguistic properties, for example, to identify overuse/underuse of certain patterns, or measures of language development. While the use of NLP tools trained on native-language corpora is a useful starting point for providing a range of linguistic annotations, an important next step is to explore the creation of annotation schemes and methods capturing the *linguistic properties of learner language* (see Meunier, 1998; Dickinson & Ragheb, 2009; Díaz Negrillo, Meurers, Valera, & Wunsch, 2010, and references therein).

In terms of using NLP for providing *general measures of language development*, Laufer and Nation (1995) propose the use of lexical frequency profiles (LFPs) to measure the active vocabulary of learners, and a machine-learning approach for predicting the levels of essays written by second language learners based on a variety of word lists can be found in Pendar and Chapelle (2008). Beyond the lexical level, Lu (2009) shows how the revised D-Level Scale (Covington, He, Brown, Naçi, & Brown, 2006) encoding the order in which children acquire sentences of increasing complexity can be measured automatically. Related measures are used in the automated analysis of the complexity in second language writing (Lu, 2010). Finally, some learner-language-specific aspects can only be identified once other levels of linguistic analysis have been annotated. For example, Hawkins and Buttery (2009) identify so-called criterial features distinguishing different proficiency levels on the basis of part-of-speech tagged and parsed portions of the Cambridge Learner Corpus.

NLP and the Analysis of Native Language for Learners

The second domain in which NLP connects to language learning derives from the need to expose learners to authentic native language and its properties, and to give them opportunity to interact with it. This includes work on searching for and enhancing authentic texts to be read by learners as well as the automatic generation of activities and tests from such texts. In contrast to the ILTS side of ICALL research covered in the first part of this entry, the NLP in the applications under discussion here is used to process native language in authentic texts, hence it is referred to as ATICALL.

Most NLP research is developed and optimized for native-language material, and it is easier to obtain enough annotated language material to train the statistical models and machine-learning approaches used in current research and development, so that in principle a wide range of NLP tools with high-quality analysis is available—even though this does not preempt the question of which language properties are relevant for ATICALL applications and whether those properties can be derived from the ones targeted by standard NLP.

What Motivates the Use of NLP in ATICALL?

Compared to using prefabricated materials such as those presented in textbooks, NLP-enhanced searching for materials in resources such as large corpora or the Web makes it possible to provide on-demand, individualized access to up-to-date materials. It supports selecting and enhancing the presentation of texts depending on the background of a given learner, the specific contents of interest to them, and the language properties and forms of particular relevance given the sequencing of language materials appropriate for the learner's stage (see, e.g., Pienemann, 1998).

What Is the Nature of the Learner Language Properties to Be Identified?

Traditionally, the most prominent property used for selecting texts has been a general notion of readability, for which a number of readability measures have been developed (DuBay, 2004). While the traditional readability measures were computed by hand, the computation of most has since been automated. Most of the measures involve only simple surface properties such as counts of average word and sentence lengths, but sometimes also sophisticated NLP such as morphological analysis is needed (see Ott & Meurers, 2010, section 3.2). Work in the Coh-Metrix project emphasizes the importance of analyzing text cohesion and coherence and of taking a reader's cognitive aptitudes into account for making predictions about reading comprehension (McNamara, Louwerse, & Graesser, 2002).

Other recent approaches replace the readability formulas with more complex statistical classification methods for predicting the reading level of texts (see, e.g., Schwarm & Ostendorf, 2005; Collins-Thompson & Callan, 2005). Some of the most advanced readability-based text-retrieval methods stem from the REAP project, which supports learners in searching for texts that are well-suited for providing *vocabulary and reading practice* (Heilman, Zhao, Pino, & Eskenazi, 2008). Indeed, the search for reading materials in support of vocabulary acquisition (see Cobb, 2008, and references therein) is one of the most prominent areas in this domain.

Going beyond readability, based on the insight from SLA research that awareness of language categories and forms is an important ingredient for successful second language acquisition (see Lightbown & Spada, 1999), a wide range of linguistic properties have been identified as relevant for language awareness, including morphological, syntactic, semantic, and pragmatic information (see Schmidt, 1995, p. 30). In response to this need, Ott and Meurers (2010) discuss the design of a *language-aware search engine* which supports access to Web pages based on a variety of language properties.

Complementing the question of how to obtain material for language learners, there are several strands of ATICALL applications which focus on the enhanced presentation of, and learner interaction with, such materials. One group of NLP-based tools such as COMPASS (Breidt & Feldweg, 1997), Glosser (Nerbonne, Dokter, & Smit, 1998) and Grim (Knutsson, Pargman, Eklundh, & Westlund, 2007) provides a *reading environment* in which texts in a foreign language can be read with quick access to dictionaries, morphological information, and concordances. The Alpheios project (http://alpheios.net) focuses on literature in Latin and ancient Greek, providing links between words and translations, access to online grammar reference, and a quiz mode asking the learner to identify which word corresponds to which translation.

Another strand of ATICALL research focuses on supporting language awareness by *automating input enhancement* (Sharwood Smith, 1993), i.e., by realizing strategies which highlight the salience of particular language categories and forms. For instance, WERTi (Meurers et al., 2010) visually enhances Web pages and automatically generates activities for language patterns which are known to be difficult for learners of English, such as determiners and prepositions, phrasal verbs, the distinction between gerunds and to-infinitives, and *wh*-question formation. One can view such automatic visual-input enhancement as an enrichment of data-driven learning (DDL). Where DDL has been characterized as an "attempt to cut out the middleman [the teacher] as far as possible and to give the learner direct access to the data" (Boulton 2009, p. 82, citing Tim Johns, 1994), in visual input enhancement the learner stays in control, but the NLP uses "teacher knowledge" about relevant and difficult language properties to make those more prominent and noticeable for the learner.

A final, prominent strand of NLP research in this domain addresses the *generation of exercises and tests*. Most of the work has targeted the automatic generation of multiple-choice cloze tests for language assessment and vocabulary drill (see, e.g., Liu, Wang, Gao, & Huang, 2005; Sumita, Sugaya, & Yamamoto, 2005, and references therein). Issues involving NLP in this domain include the selection of seed sentences, the determination of appropriate blank positions, and the generation of good distractor items. The VISL project (Bick, 2005) also includes a tool supporting the generation of automatic cloze exercises, which is part of an extensive NLP-based environment of games and corpus tools aimed at fostering linguistic awareness for dozens of languages (http://beta.visl.sdu.dk). Finally, the Task Generator for ESL (Toole & Heift, 2001) supports the creation of gap-filling and build-a-sentence exercises such as the ones found in an ILTS. The instructor provides a text, chooses from a list of learning objectives (e.g., plural, passive), and selects the exercise type to be generated. The Task Generator supports complex language patterns and provides

formative feedback based on NLP analysis of learner responses, bringing us full circle to the research on ILTS we started with.

Conclusion

In conclusion, the use of NLP in the context of learning language offers rich opportunities, both in terms of developing applications in support of language teaching and learning and in terms of supporting SLA research—even though NLP so far has only had limited impact on real-life language teaching and SLA. More interdisciplinary collaboration between SLA and NLP will be crucial for developing reliable annotation schemes and analysis techniques which identify the properties that are relevant and important for analyzing learner language and analyzing language for learners.

SEE ALSO: Automatic Speech Recognition; Emerging Technologies for Language Learning; Information Retrieval for Reading Tutors; Intelligent Computer-Assisted Language Learning; Learner Corpora; Learner Modeling in Intelligent Computer-Assisted Language Learning; Technology and Language Testing; Text-to-Speech Synthesis in Computer-Assisted Language Learning

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Naturalistic Data

MINNA KIRJAVAINEN AND ANNA THEAKSTON

Introduction

Data collection is an important part of language research. *Naturalistic data* refers to data sampled in as natural as possible situations, in which the interlocutors, topics, or contexts (or any or all of them) are the same or similar to the participants' everyday life. These types of data sets are particularly useful when one wants to diminish potential experimenter effects and study language use in contexts in which participants are less acutely aware that their behavior is being observed. Hence, several sociolinguists have collected speech samples in everyday situations, in which the participants' language closely resembles their language in situations when the researcher is not present (Labov, e.g., 1972a, 1972b; Cheshire, 1982). However, naturalistic data are also valuable in a variety of other (quantitative or qualitative) research contexts. For instance, in monolingual, bilingual, and atypical language acquisition research naturalistic data shed light onto the nature of children's language at different stages of development, as well as forming the basis for hypotheses for experimental investigation. In second language (L2) acquisition research, naturalistic settings can provide a fruitful arena in which to establish a speaker's proficiency under conditions where the anxiety associated with more formal assessments is diminished. For researchers interested in understanding more about how topics, ideas, and views are constructed and elaborated in discourse, naturalistic data provide the raw materials to which discourse or conversational analysis can be applied.

There are two main ways to acquire naturalistic speech data: going out and collecting a new data set or using data that have already been collected. This entry will first give an overview of naturalistic data collection techniques and issues related to that, and then point the reader toward some sources of existing naturalistic corpora.

Naturalistic Data Collection Techniques

If researchers wish to study a language, a target population, or a linguistic phenomenon for which there is no collected corpus available they might want to embark on collecting their own naturalistic data. The most common ways to collect naturalistic data are: (a) to audio or video record interaction onto a tape, disc, or computer hard drive; and (b) to take notes whether in the form of a diary where the participant is observed longitudinally over a period of time or by the investigator taking notes during a single session. Both of these methods have their pros and cons and may be best used by complementing each other. Each will be discussed in turn below.

Recordings

Recordings give a comprehensive account of the participants' language during the recording session(s) because all the interaction is collected. This is essential for some forms of analysis (e.g., discourse analysis). There are also other advantages to having a complete record of an interaction. First, recorded data allow for thorough reliability checks to ensure

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that the transcription is accurate. Second, provided that the researcher codes the data so that they can be used for a range of analyses (see Coding Recordings/Notes below), recordings allow the researcher to use the same data set to ask a range of different questions by selecting from the data the utterances most relevant to each topic of interest. However, it is useful to bear in mind that the preparation of recorded data for analysis can be time consuming, and consequently rather costly. Thus, recording is best suited for researchers who intend to use the data as the basis for a programme of research.

The transcription and coding of a single hour of recording usually takes around 20 hours, depending on the level of detail included, for example, whether or not the transcript indicates each pause or false start produced, overlap between speakers, and phonetic transcription, and this is in addition to the time needed to collect the data in the first place. A number of factors affect transcription time, including (a) the number of interlocutors in the recording situation, (b) background noise, (c) distance of the microphone from the speakers, (d) the age of the participants (i.e., child vs. adult), and (e) the level of proficiency in the target language. Because getting recorded data ready for analysis is extremely time consuming, it is worth giving serious consideration to how many participants should be included in the study and how frequently recordings should be made. Naturalistic corpus studies, due to the laborious transcription and coding, usually sample only a small number of participants, and there is a trade-off in terms of the amount of data collected from each participant (reliability of the sample) and the number of participants included (generalizability of the results). In the case of children's language development, it is relatively common that one child's speech is collected periodically over several months/years. On the other hand, if the investigator wants to look at a second language speaker's L2 proficiency in terms of native-like pronunciation at a specific point during language learning only one relatively short (e.g., 10 minutes) session might be needed. If the aim is to observe how language develops over time, the researcher must collect samples of speech at appropriate intervals and gather enough data to allow meaningful analysis. But how much data is sufficient? If the aim is to investigate the use of frequent linguistic phenomenon at a fairly general level, then relatively short, infrequent recordings may be adequate. However, if the focus is on low frequency linguistic items, such as passives, which are unlikely to appear in small samples, then short and infrequent recordings (e.g., a 15 minute recording once a month) are unlikely to provide sufficient data. Hence, relatively long recordings collected at regular intervals (e.g., 5–10 hours a week) may be needed (Tomasello & Stahl, 2004).

When recording data, researchers need to decide whether to collect audio or video recordings. The advantages of video recordings are: (a) one can analyze the interaction in terms of gestures and eye-gaze; (b) the speech of non-proficient language users (e.g., children, L2 speakers) can be easier to transcribe when the transcriber can see what the speaker is attending to or doing; and (c) if there are several people interacting during a recording, it is easier to distinguish speakers. However, recruiting participants may be more problematic for video than audio recording, as it may be perceived as less anonymous. Also, the fact that the researcher may need to reposition the video equipment during recordings can increase participant awareness of the process and reduce the naturalness of the interaction in comparison with audio recording. Moreover, video recordings can take longer to transcribe than audio recordings (if coded for non-linguistic interaction).

Note Taking

Note taking can be useful when a specific aspect of language (e.g., passives) is the focus of investigation. A majority of the data collected during a recording is likely to be irrelevant for a focused analysis of this type and the researcher might have to search through

hundreds of hours of data to find a large enough sample of utterances for a meaningful analysis. By taking notes the researcher can selectively write down only relevant utterances making this an efficient data collection method (it is virtually impossible, however, to take notes of an entire interaction accurately due to the speed and volume of speech data).

A potential advantage of note taking is that it can generate data that are more immediately available for analysis. First, it might not be imperative to type handwritten notes into electronic form because the utterances of interest have been preselected and the problem of finding the relevant utterances in the data is removed, although many studies will benefit from having handwritten data coded in electronic form. Second, transcription time is reduced because the data are transcribed during data gathering so no time is spent on listening to/watching the recordings. However, a disadvantage of note-taking methods is that they do not allow for reliability checks to be conducted on the transcription of utterances and thus allow for a greater margin of error. For this reason, a systematic note taking protocol needs to be constructed to define the kinds of utterances that are relevant to the investigation and to address how to record any potential ambiguities in the speech of an informant (e.g., see Naigles, Hoff, & Vear, 2009, for detailed information regarding the training of note-takers in a longitudinal diary study of children's early verb use).

When it comes to the sampling, as with recordings, both longitudinal and cross-sectional note-taking studies are possible. Because all of the data collected by note taking can be directly relevant to the research question (e.g., data can focus on a specific linguistic feature) and because transferring the notes into an electronic form is relatively quick, note taking gives more scope for frequent and long data-collection sessions than recordings (e.g., 3 hours of observation a day), and the inclusion of several participants.

Coding Recordings/Notes

When transcribing data into electronic form one can use existing transcription systems such as CHAT (Codes for Human Analysis of Transcripts) (http://childes.psy.cmu.edu/), ELAN (http://www.lat-mpi.eu/tools/elan/), or PRAAT (doing phonetics by computer) (http://www.fon.hum.uva.nl/praat/) that allow the use of computerized coding systems to prepare the data for analysis (see http://talkbank.org/software/ for descriptions of other operating systems suitable for quantitative and qualitative data analysis and for links to further information). Researchers will need to consider whether an existing transcription system meets their requirements. For example, CHAT is excellent for the transcription of spoken language, whereas ELAN is more useful when transcribing audio and video data if the researcher wishes to code a range of complex phenomena such as gesture/speech overlap, or inputs from multiple video recordings of the same scene. A key benefit of using an established transcription system is that the data are more readily utilized by other researchers, promoting data sharing.

Once the data have been transcribed, or during transcription, researchers typically want to code it for specific linguistic features. The detail one needs to include in the coding depends on the intended level of analysis and the particular focus of the study. The coding for an analysis of pragmatic aspects of the interaction would be very different from those required for a phonetic analysis or an analysis of grammatical structure. General information about the recording, such as age of participant(s), language(s) spoken, and a way of identifying the informants (e.g., Child, Mother, or possibly a first name) can be easily coded in the beginning of each file, allowing researchers at a later date to select which transcriptions are relevant for a given analysis. Example 1 gives a slightly truncated illustration of what general detail might be included in transcripts. For more information about coding for specific details in CHAT see MacWhinney (2011).

(1) @Begin
@Languages: en
@Participants: CHI Anne Target_Child, MOT Mother, INV Caroline Investigator
@ID: en|manchester|CHI|1;10.07|female|normal|middle-class|Target_Child||
@ID: en|manchester|MOT|||||Mother||
@ID: en|manchester|INV|||||Investigator||
@Location: West Bridgford, Nott, UK
@Time Duration: 14:45-15:15
@Activities: playing with a box of doll's house accessories

Existing Databases

If a researcher wants to study naturalistic corpora but does not have the time/resources to collect their own data, several databases already exist which can be purchased online, for example, British National Corpus (BNC) (www.natcorp.ox.ac.uk/) and SWITCHBOARD (http://www.ldc.upenn.edu/Catalog/), or are available to download free of charge, for example, CHILDES (Child Language Data Exchange System) (http://childes.psy.cmu.edu/). This means that anyone can access large datasets without having to collect their own data. However, it is imperative that researchers fully familiarize themselves with any given corpus before embarking on data analysis as certain aspects of spelling and coding may differ between corpora and ongoing developments including automated coding practices may mean that search commands need revising in accordance with global changes to any database. When it comes to ethical issues, the use of existing naturalistic corpora is convenient as the relevant consents were obtained by the original researchers.

CHILDES (MacWhinney, 2000) is a database set up by Catherine Snow and Brian MacWhinney in the 1980s. The aim was to unify the different transcription and coding procedures used in child language research and bring together a range of datasets donated by different researchers, making them available for use by researchers worldwide. CHILDES has naturalistic corpora on a number of different languages, on both mono- and bilingual children. It also has clinical data, for instance, from autistic children and children with specific language impairment.

The BNC contains naturalistic data (in addition to written language) in the form of informal conversations, as well as more formal language samples. The informal conversations predominantly include British-English speakers using a number of geographical and socioeconomic language varieties. Both adult and child data are available.

SWITCHBOARD consists of over 2,400 spontaneous telephone conversations of on average six minutes duration between unacquainted American-English speakers ranging largely between the ages of 20 and 60 years. The conversations cover a range of topics (e.g., football, public education) and represent all major dialects of American-English.

Analysis of Data

Programming languages such as CLAN (Computerized Language Analysis) (http://childes.psy.cmu.edu/) and PERL (www.perl.org/) can be used for data analyses. CLAN is compatible with CHAT (see above) and extracts, for instance, frequencies of words and structures, co-occurrence of particular words, mean length of utterances, and interactional and morphosyntactic analyses. Its use is relatively straightforward and one does not need to be a computer scientist to be able to write the search commands. Example 2 shows a basic command which extracts the frequency (freq) of all word-types in the child's speech (+t*chi) from selected transcription(s) (@ represents selected input file[s]). One could modify this

command in various ways, for example to limit the search to a particular word(s) or grammatical class, to sum frequencies across a range of files, or to include additional speakers. One can also modify the output of the command, for example, to order the output either alphabetically or by frequency, or to sum frequencies across a range of input files. PERL is somewhat more versatile but requires slightly more advanced programming skills. The BNC has its own search tool.

(2) freq +t*chi @

Programming languages allow one to search for instances of particular linguistic features in large (or small) data sets with relatively little effort. Although the researcher will need to check their search commands carefully to ensure that they operate as expected, and might subsequently manually search the output (i.e., the utterances matching the search criteria) to eliminate nontarget structures, nevertheless, this is still considerably more efficient than a manual search.

Conclusion

When embarking on a naturalistic data analysis, especially if large datasets are needed or infrequent linguistic phenomena are to be investigated, the best place to start is to search online to establish whether relevant naturalistic corpora already exist (e.g., check the Web sources provided above). In the case of collecting one's own naturalistic data, the specific research question(s) and focus of the analysis will need to determine the method and frequency of data collection and coding, and the number of participants included in the study.

SEE ALSO: Analyzing Spoken Corpora; Corpus Analysis of Child Language; Corpus Analysis of Sign Languages; Corpus Linguistics: Historical Development; Corpus Linguistics: Overview; Corpus Linguistics: Quantitative Methods; Ethics in Research

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Needs Analysis

MICHAEL H. LONG

A Rationale for Needs Analysis

Learner goals and needs can differ widely, both within and across groups. Some students may require advanced proficiency in the language spoken in a country to which they have immigrated, or to which they plan to emigrate. Another group may only need to be able to read the professional or scientific literature in their field. Other learners may require proficiency in three or all four skills to gain access to higher education programs overseas, for occupational purposes, or for vocational training. These and many other language-learning goals will require different levels of proficiency, different strengths in receptive and productive skills, knowledge of different genres, registers, vocabulary, and collocations, and different pragmatic abilities. A needs analysis (NA) will identify learner goals and communicative language needs, and thereby make appropriate program design and delivery possible.

Units of Analysis in NA

The first decision to be made concerns the optimal unit of analysis. Reflecting the traditional synthetic approach to language teaching, one approach is to examine sample spoken or written texts students have to negotiate, to identify the frequencies of linguistic features and structures. This process can provide useful information, but tends to result in checklists similar to the table of contents of pedagogic grammars, and, crucially, with the connections between form, function, and task lost. It is little use knowing that a particular group of learners needs to master certain forms because they occur frequently in a given domain without knowing how they are used there, especially since domain-specific uses often differ from those modeled in generic (no purpose) language teaching materials. Cathcart (1989), for example, found that present simple verb forms in doctor–patient encounters tended to occur not in describing habitual action sequences, but in conditionals and other complex structures ("If she gets another one, we'll put her on . . ."). Modals occurred mostly as hedges ("It should fade away," "She may not be able to eat") and to express possibility ("We may not need to . . ."), not, for example, for giving advice ("You should drink a lot of water"), as modeled in some ESL materials.

In an attempt to deal with the form–function issue, as part of the work of the Council of Europe applied linguistics team for the unit credit system project, Richterich (e.g., Richterich & Chancerel, 1977/1980) took as his starting point the target situations in which a particular type of worker would be involved, subsequently broken down by the participants, or agents, communicative functions, objects and means, as well as many subcategories of each. The work was mostly based on intuition, as was a more formal version of target situation analysis, Munby's Communication Needs Processor (CNP) (Munby, 1978), a model influenced by Halliday's writings on language and meaning potential and Hymes's work on communicative competence.

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While an improvement over purely linguistic analyses, there were problems with this approach. First, it is not clear that language use can be predicted from situation or communicative event, or that it needs to be. Second, even if target linguistic forms could be specified reliably and validly using the CNP, their use as syllabus content is of doubtful validity from an acquisition standpoint, since the result is a *synthetic* linguistic syllabus. Forty years of SLA (second language acquisition) research findings show that learners cannot learn a language one structural or functional linguistic unit at a time, on demand, in an externally dictated sequence. Third, textbook writers' intuitions about language use have routinely been found to be inaccurate (see, e.g., Williams, 1988; Cathcart, 1989; Bartlett, 2005). To be useful, an NA must be based on empirical observation of one or more kinds.

The obvious solution is to adopt *task* as the unit of analysis (Long & Crookes, 1993). Reliable information about tasks is available from task-based occupation analyses and other ready-made sources, and from domain experts, who are usually very knowledgeable about the frequency and criticality of tasks performed in their work. Second, tasks constitute natural units around which to organize communicative classroom lessons, with transfer of task-related "scripts" to target situations outside the classroom more likely than transfer of decontextualized linguistic forms. Third, the target tasks indentified as frequent, critical, or both, will provide input to a task-based syllabus, as part of an *analytic* approach to language teaching, with a *focus on form*, which, unlike use of synthetic syllabuses and methodology, is broadly consistent with SLA research findings on how adults learn languages (Long & Robinson, 1998; Long, 2009).

Stage 1 of a Task-Based NA: Identifying Target Tasks

Task-based needs analyses are becoming more common (see, e.g., Chaudron et al., 2005; Gilabert, 2005; Jasso-Aguilar, 2005). The first step is to identify the *target tasks* for a learner or group of learners. As in virtually any area of scientific inquiry, the reliability and validity of an NA are likely to be improved if the analyst utilizes multiple sources of information and multiple methods of obtaining it, preferably triangulating among methods and sources.

Sources include published and unpublished literature—everything from journal articles reporting findings of previous NAs in the same or similar domains to the one currently of interest, to primary sources, such as course syllabuses and reading lists, government publications describing the work performed in numerous occupations (e.g., the US *Dictionary of Occupational Titles*), job descriptions, training manuals, trade certification tests, professional examinations, and union contracts. Especially crucial sources are domain experts, who are insiders. In an NA for airline flight attendants (FAs), for example, they would include experienced FAs, and trainers and evaluators of FAs. In an NA for engineering students preparing for a graduate program overseas, they would include engineering faculty members, lab technicians, and academic advisors in the program concerned.

Methods range from unobtrusive, open-ended procedures, such as logs and participant and nonparticipant observation, through unstructured, semi-structured, and structured interviews, to surveys and questionnaires. It is important that methods be sequenced appropriately, with open-ended methods used first. They provide depth to a study and will not preclude analysts discovering things they are unaware they do not know. Such procedures tend to be more labor-intensive, so they can typically be used only with representative (ideally, stratified random) samples of the target population. More closed procedures, such as questionnaires, provide an analysis with breadth, or coverage, and serve to ascertain the extent to which needs tentatively identified hold across larger samples, or, in some cases, an entire target population. For detailed descriptions of these and many other sources and methods available, sample studies utilizing them, and discussion of their relative strengths and weaknesses, see Brown (2009) and Long (2005).

Stage 2 of a Task-Based NA: Target Discourse Analysis

Having identified the target tasks for a learner or group of learners, the second step is to secure representative samples of *target discourse*, or language use, surrounding accomplishment of those tasks (see Chaudron et al., 2005). Recordings may be made of spoken texts, such as talk between doctors and patients, doctors and family members, doctors and nurses, nurses and patients, and among doctors. Even when concerning the same tasks, such as a medical diagnosis or prognosis, the texts will vary in register, discourse structure, form–function mappings, lexical frequency, density and range, and collocations. Task-related discourse can also vary cross-culturally, and in the degree of presupposed knowledge, information density, ellipsis, and intertextuality (Ventola, 1983; Medway & Andrews, 1992). Analyses may also need to be conducted of written texts—perhaps the forms to be filled out to open a bank account, obtain a library card, or apply for a job vacancy; e-mail messages and faxes in the workplace; the readings and term papers required to complete a school or university course; or the written professional examinations required for certification of competence in many occupations and for entry into most professions.

From NA to Syllabus

Both the target tasks and target discourse samples will usually have to be modified for pedagogic purposes. Less complex versions of target tasks, that is, *pedagogic tasks*, will be required in the early stages of most courses where students are pre-experience, or at elementary levels of language proficiency. Sequences of pedagogic tasks, gradually increasing in (task) complexity, will constitute the core of a task syllabus (Robinson, 2001). *Elaborated (not simplified) versions of target discourse* will be the other major component (see, e.g., Bartlett, 2005; Chaudron et al., 2005). Unlike linguistic simplification, elaboration can increase comprehensibility without bleeding input of the new target language forms learners need to acquire, and provide them with more psycholinguistically defensible target language exposure than genuine, so-called "authentic," texts (Long & Ross, 1993; Long, 2007).

SEE ALSO: Genre and Discourse Analysis in Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes; Qualitative Language for Specific Purposes Research

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Needs Analysis and Syllabus Design for Language for Specific Purposes

HELEN BASTURKMEN

Introduction

Language for specific purposes (LSP) courses are designed to meet the specific needs of learners (Dudley-Evans & St John, 1998, p. 4). The courses are designed to help learners function linguistically within a particular academic, professional, or workplace environment, and generally the syllabus is derived from an analysis of the needs of the learners in relation to their target environment. The analysis of learners' needs is thus a key process in the design and ongoing revision of the LSP syllabus. This entry discusses the importance of needs analysis in LSP, identifies trends in the practices and methodologies used, and examines how the results of needs analysis can be used to inform the design of the LSP syllabus. Although needs analysis is often viewed as essentially procedural, it is not without theory, nor is it devoid of controversy and debate. The final section discusses the role of theory in needs analysis and examines social-political, educational, and methodological concerns.

The Role and Importance of Needs Analysis

Needs analysis is widely seen as a defining characteristic of LSP and as a key process in the development and revision of LSP courses (Dudley-Evans & St John, 1998; Basturkmen & Elder, 2004; Kim, 2008). In this process, course developers investigate what learners need to know or be able to do in the target language in order for them to function effectively in their chosen profession, work, or study area. This is referred to as *target situation analysis*. In devising an LSP course for a group of students of accounting, for example, the teacher or course developer will typically carry out a target situation analysis to identify the tasks and functions the learners will need to perform and, in relation to these, the language competencies they will require, such as areas of language knowledge (for example, particular semantic fields and genres) and linguistic skills. A needs analysis for students of accounting may indicate that the learners need to be familiar with vocabulary on topical areas (such as *loans* and *asset management*) and written genres (such as *financial statements* and *market reports*), and will need to draw on linguistic skills (such as *making notes while listening to lectures*) in order to make the most of their accountancy studies. In addition to target situation analysis, the teacher or course developer may conduct a *present situation analysis* to identify the learners' current ability to perform functions and tasks in the target situation. This involves assessing the learners' current level of competence with the level required for successful participation in their profession, work or study area. The information obtained from the analyses is used in designing the course, for example, by organizing the syllabus wholly or partly around the areas of need identified.

Although needs may be analyzed in the design of syllabuses in general language teaching (Feez, 1998; Graves, 2001), needs analysis is considered critical in the design of LSP

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syllabuses (Nunan, 2001, p. 57). There are a number of reasons for this. One reason relates to the purposes of LSP. LSP courses are established not so much for the general value that knowing the target language may have for the learners as for the specific value that knowledge of the language will have in helping learners gain entry to, or advance in, their chosen area (discipline, profession, or workplace). Thus, teaching in LSP is focused on needs related to that area. Another reason needs analysis is critical is related to the duration of LSP courses. Unlike general language teaching courses, which may be long-term, LSP courses are often relatively short-term. Given the usual time constraints, it is essential that time is used effectively in teaching LSP and thus instruction is focused only on the areas of language and skills of direct relevance. A further reason is the nature of learners' needs in LSP. It is feasible to organize LSP instruction around needs because the learners have shared needs, since they are all currently studying or working in, or hoping to gain entry to, a particular field or discipline. It is thus possible to identify a set of common needs to a greater extent in an LSP situation than it would be in a general language teaching situation.

Some writers see needs analysis as the defining characteristic of LSP, the characteristic that sets LSP apart from general language teaching. Dudley-Evans and St John (1998, p. 1) argue that a theory of ESP "could be outlined based on either the specific nature of the texts that learners require knowledge of, or on the basis of the needs-related nature of teaching." The key role of needs analysis (in English for specific purposes, ESP) is described by Belcher (2006) as follows:

> Like other educational endeavours, ESP assumes there are problems, or lacks, that education can ameliorate, but unlike many other educational practices, ESP assumes that the problems are unique to specific learners in specific contexts and thus must be carefully delineated and addressed with tailored-to-fit instruction. ESP specialists are often needs assessors first and foremost, then designers and implementers of specialised curricula in response to identified needs. (p. 135)

Conducting needs analyses and designing the kinds of "carefully delineated" and "tailored-to-fit instruction" described by Belcher place considerable demands on the skills and time of the teacher or course designer.

Trends in Practices and Methods

Over the years, the practice of needs analysis in LSP has been subject to change and development. The scope has become broader and what was once seen as a relatively simple pre-course procedure to analyze language and communication in the target situation (target situation analysis), has become increasingly sophisticated over time (Tajino, James, & Kijima, 2005).

Early needs analyses tended to focus on the language requirements of the target situation to establish priorities in terms of the situations, functions, tasks, or skills needed (West, 1997, p. 71). Over time, the scope has widened to include present situation analysis (assessment of the learners' current ability to perform the skills, tasks, or functions) and investigation of learners' *subjective needs* (what learners would like to learn), in addition to investigation of *objective needs* (needs identified through target situation analysis), investigation of *learning needs* (learners' preferred learning styles and strategies, and preferred instructional methods), and *means analysis* (assessment of the teaching context, including how the course will be run and the LSP background of the teachers). At present, needs analyses in LSP generally include target situation analysis and some or all of the other types of analysis shown in Table 1.

Table 1 Types of analysis

Type of analysis	*Aims to identify*
1 Target situation analysis	Language-related tasks, activities, and skills that the learners should ideally be able to perform in the profession, work, or study situation they wish to enter or advance in
2 Present situation analysis	The level of the learners' ability to perform the language-related tasks, activities, and skills activities in relation to the demands of the target situation
3 Learner factor analysis	Learner factors, such as their motivation, how they learn, and their perceptions of needs and wants in relation to the LSP course
4 Teaching context analysis	Factors related to the environment in which the LSP course will run and what the course and teacher can realistically offer

Conventional methods of inquiry include the use of questionnaires and interviews to elicit the perceptions of learner needs as seen by the various stakeholders (learners, teachers, institutional representatives, and employers) and concomitant use of linguistic analysis of communication in the target discipline, profession, or workplace. The latter may take the form of a functional or speech-act analysis in the case of spoken communication and text-based analysis in the case of written communication. Although these methods remain popular, others have also emerged. One trend is the investigation of real-world tasks in the target situation. Tasks, units not defined by linguistic criteria, have been the unit of analysis in a number of studies (Long, 2005; Cowling, 2007; Thomas, 2009). A second trend is the use of multiple sources and methods in the collection and triangulation in the analysis of data (Jasso-Aguilar, 1999; Gilabert, 2005; Long, 2005). Increasingly, learner perspectives are the focus of investigation in addition to the perspectives of institutional representatives or employers. The needs analyst may, for example, seek current LSP course members' views of their needs or difficulties, or contact former LSP course members now working or studying in the target environment.

Recent years have seen the emergence of ethnographic approaches (see, for example, Giminez, 2001; Northcott, 2001; Molle & Prior, 2008). Ethnographic needs analyses aim to reach an in-depth understanding of communication in the target community, in order to gauge insider perspectives on the role of communicative practices, and community expectations and values for these practices. In line with ethnographic inquiry generally, analysts using this approach draw on methods such as observations of communicative events in the target environment and in-depth interviewing in their investigations. Inquiry into such values and expectations is often pursued alongside linguistic analyses of texts, including genre analysis and corpus linguistics. For example, Ding (2007) investigated the personal statement and the letter accompanying applications for graduate study to medical and dental schools. Ding had found that applicants usually had little knowledge and understanding of the forms and functions of this genre and expectations held for it by selection committees at the graduate dental and medical schools. To investigate these values and expectations, Ding interviewed professors in charge of admissions at medical schools and found inter alia that the professors expected the letters to include evidence of commitment to medicine or dentistry and to discuss the applicants' specific, first-hand experiences of helping people. In conjunction with this thrust of the inquiry, Ding conducted a genre- and corpus-based analysis of samples of personal statements.

Although a number of recent needs analyses can be characterized as having a narrow focus on needs in particular discourse communities, a needs analysis may also have a broad focus on the requirements of learners across contexts (Taillefer, 2007) or across disciplines (Kim, 2006). In such cases, surveys are often used. For example, in a study investigating the listening and speaking needs of East Asian graduate students in the USA, Kim (2006) used a Web-based questionnaire to survey 280 students in a US university context. The questionnaire included items asking the students for their perceptions of their listening and speaking needs for university study, their difficulties in meeting these needs, and the specific listening and speaking skills they considered important for academic success.

From Needs Analysis to Specification of Syllabus Content

An important consideration in the design of syllabuses in general concerns the issue of what content is to be covered in the course and the sequence in which it is to be covered. In general language teaching, determining content may be related to a number of considerations, one possible consideration being disciplinary, professional, or workplace needs. In LSP, however, such needs are generally of primary importance in determining course content.

The results of needs analysis are generally used to determine the objectives for the LSP course and to specify the sequence of instruction or content (language, tasks, activities, and skills) to be covered in the course. In LSP, writers distinguish between two types of content: *real content* and *carrier content* (Dudley-Evans & St John, 1998; Belcher, 2006). Real content refers to the aim of instruction, what we want our students to learn, and carrier content refers to the means of delivering the real content. Returning to the example of the students of accounting introduced earlier, our aim might be to familiarize our learners with vocabulary related to market reporting, and we could select a market report-type text from a newspaper to "carry" the content. In the remainder of this discussion, the word "content" is used to refer to "real content." The course developer might opt for a multi-strand syllabus combining different elements including grammar, lexis, functions, and tasks related to the needs identified in the needs analysis. For example, the vocabulary strand in the first module of the course might focus on *assets* and in the second on *loan management.*

How the course developer determines course content often depends not just on areas of need identified in the needs analysis but also on views about language and language learning. The course developer may structure the syllabus around one particular feature of language that is seen as primary. For example, Feez (1998) describes the development of a text-based syllabus reflecting the view that "language occurs as whole texts which are embedded in the social contexts in which they occur and people learn language through working with whole texts" (p. 3). In this view, texts are the units by which the syllabus is organized. The content of the syllabus is based on texts selected in relation to learner needs and the social contexts the learners aim to access. Taking this view, the developer of the course for students of accountancy could devise a syllabus around text types with module one as *financial statements* and module two as *market reports*, with language and skills content related to the texts at hand and to vocabulary and skills involved in reading financial statements.

Views of learning may influence not only how the results of needs analysis are translated into content but also the teaching approach delineated in the syllabus. Parkinson, Jackson, Kirkwood, and Padayachee (2007) report the development of a reading and writing course for foundation year (that is, preparation for first year) university students. This course was organized around four genres (text types) including the laboratory report. In developing

the course, the writers report being guided partly by findings from a needs analysis but also by perspectives on learning. Specifically, they were guided by the view that it is only when students read with comprehension that they can write effectively, and by the notion of scaffolding learning from sociocultural theory (p. 446). This view led the writers to partially rewrite some texts for use in instruction, such as research articles, so that the texts were not too difficult for their students in terms of vocabulary and concepts (p. 447).

The Role of Theory

Often it is the procedural aspects or results of a needs analysis that are highlighted in the literature, and this may give the impression that needs analysis is not a theoretical topic. However, this is not the case (Robinson, 1991; West 1994; Hyland, 2008). Hyland (2008) argues that needs analysis is "like any other classroom practice in that it involves decisions based on teachers' interest, values, and beliefs about teaching, learning and language" (p. 113). As seen above, teachers' or course developers' views of learning may be used alongside results of needs analysis in determining the syllabus. Their views may be used in the selection of units for the organization of the syllabus, determining the way content is combined and the choice of approach. Such views also play a role in determining what is investigated in a needs analysis. It has been argued that "any system of needs analysis is related to the theory of the nature of language" (West, 1994, p. 2). One needs analyst may view language as primarily a set of speech acts (functions) and will seek to identify the language functions used in a particular environment. Another analyst may view language primarily in terms of a set of semantic resources and aim to identify high-frequency lexical items in the same environment.

Not only can language theories inform needs analysis (for example, by influencing the selection of the unit) the analyst chooses to investigate) but it is possible that needs analysis may be able to contribute to theory. Molle and Prior (2008), conducting a genre-based needs analysis of student writing in university settings, found a number of complexities in the written texts in their setting that challenged the notion of genre on which the study had been based. This finding led the researchers to reconceptualize their understanding of genre and offer a perspective of genre in university settings as a multimodal set of systems merged within academic activities (p. 563).

Views of language learning may also influence the analyst in decisions about what to investigate. Räsänen (2008) describes a transition in her teaching context from a view of learning as acquiring knowledge of language systems to a view of learning as the development of competencies in language-related skills, and in line with this reorientation, a subsequent investigation of core language-related skills as part of the process of LSP course development. As argued by Robinson (1991),

> The needs that are established for a particular group of students will be an outcome of a needs analysis project and will be influenced by ideological preconceptions of the analysts. A different group of analysts working with the same group of students, but with different views on teaching and learning, would be highly likely to produce a different set of needs. (p. 7)

Issues in Needs Analysis

Most needs analysts limit themselves to reporting findings and few discuss issues in needs analysis (Gilabert, 2005). Although limited, there has been some discussion of issues associated with needs analysis in the literature, however. This section examines some of the

sociopolitical, educational, and methodological concerns that have been raised in relation to needs analysis and needs-based course design.

A number of sociopolitical concerns have been raised. One argument is that needs analysis may serve institutional rather than learner interests, and in effect marginalize learners. Needs analysts might over-rely on information from institutional representatives who have definite expectations about what the learners should be able to do (Auerbach, 1995). By developing courses around needs, designers are in effect training learners to fit into the communicative practices of linguistically privileged in-groups. Needs analysis may at first sight seem to be a neutral endeavor, but in fact, it is a means by which institutions can try to get others to conform to their own established communicative practices (Benesch, 2001). Workplace needs-based LSP courses may serve as a covert means of channeling immigrants into marginal occupations. By ensuring the learners only have sufficient English to perform specific low-wage jobs, such courses in effect deprive learners of the opportunity to develop the general language competence that might enable them to move beyond these jobs (Tollefson, 1991).

To avoid an overemphasis on institutional interests, many needs analysts do not limit their investigation to the perspectives of the institutions, but investigate the views of various stakeholders. See, for example, studies by Jasso-Aguilar (1999) and Bacha and Bahous (2008). Analysts may find, however, that perceptions of needs vary, and in these cases the course developer has to decide whose perceptions to take into account in designing LSP instruction or otherwise try to synthesize divergent perspectives (Jasso-Aguilar, 1999). In such circumstances, institutional expectations might exert more pressure on the course designer than those of the learners or workers.

Basing courses on the language requirements of the target environment raises educational concerns. Language needs are not learning needs, and although learners may need to use certain language structures or features in their target environments, this does not mean that they are ready to acquire these structures or features (Hutchinson & Waters, 1987). By developing needs-based instruction, it is generally assumed that the learners will find the course content relevant and thus motivating. But this may not be the case. For example, engineering students may need to work with texts concerned with technical matter. The texts LSP teachers (other than those who have an engineering background or understanding of engineering beyond that of the layperson) might select to use in the classroom may be technically low-level and not prove interesting to the learners. It is difficult to justify needs-based courses except with reference to relevance and motivation. A further argument is that needs-based LSP courses can lead to language training rather than language education. Learners are trained to perform a restricted repertoire of the language rather than develop underlying linguistic competence of the language because they are deprived of its generative basis (Widdowson, 1983).

The methods used in needs analysis have been subjected to scrutiny. Although needs analysts often seek to gauge the learners' perceptions of their needs, the learners may not be reliable sources of information about their needs, particularly if they are relatively unfamiliar with the job they are to perform or subject they are to study (Long, 2005). Analysts also try to gauge the perceptions of other stakeholders such as employers and institutional representatives, but they, like learners, may not have a sophisticated knowledge about the language and metalanguage needed to describe target situation language use and the nature of linguistic difficulties in a meaningful way.

The methods used in a needs analysis may affect the results. Long (2005), in a study to identify the needs of airline cabin crews, compared different methods of data elicitation in an attempt to see how the choice of method impacted on the data obtained and ultimately on the results of the needs analysis. Following Long (2005), Thomas (2009), in a study to

identify language-based tasks of engineers within a particular civil engineering company, compared two methods of data elicitation: oral interviews and written introspection. Thomas found that the written introspections elicited a greater range of tasks than the interviews but the interviews elicited more detail and complexity of task descriptions than the introspections. Such results support calls for the use of multiple methods and triangulation in needs analysis (Jasso-Aguilar, 1999; Gilabert, 2005; Long, 2005).

Conclusion

To conclude, needs analysis is seen as a defining, if not the defining, characteristic of LSP. Although long recognized as a fundamental characteristic, the practice of needs analysis in this field has changed over time: the scope of investigation has widened and the methods used have become ever more varied. The focus of needs analysis has been expanded from a relatively narrow investigation of the linguistic requirements of the target situation to a wider investigation that also includes investigation of needs related to learner factors and teaching context.

The importance of needs analysis lies in the potential of its findings to inform the development of the syllabus of the LSP course in question. As Long (2005) argues, findings from any particular needs analysis are restricted to the setting of the study and cannot be generalized to a wider audience. What may, however, be of interest to the wider audience is the choice of methods, and as we have seen, methods in this area have become increasingly sophisticated over time.

SEE ALSO: Critical English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Needs Analysis; Speech Acts; Syllabus Design; Teacher Education for Language for Specific Purposes

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Neurobiological Foundations for Second Language Acquisition

NAMHEE LEE

Introduction

The distinction between declarative knowledge and procedural knowledge has played an important role in second language acquisition (SLA) theory and research. The former is memory for facts about the second language (L2) (formal rules, lexical items, and formulaic speech). The latter involves memory for skills and automatized cognitive and motor programs. Both forms of knowledge are important in natural and instructed SLA. At the very least, declarative knowledge is necessary for the acquisition of vocabulary, and procedural knowledge is necessary for learning grammatical sequences and discourse processes. Most of the discussion of these two types of memory in the SLA literature has been at the linguistic and psychological levels (O'Malley & Chamot, 1990; Schumann, 1990; de Bot, 1992; Ellis, 1994; Towell & Hawkins, 1994; Dekeyser, 1997, 2001).

Paradis (1994) presents an excellent neuropsychological account of declarative and procedural learning, indicating that the hippocampus subserves the former, and the basal ganglia underlies the latter. Ullman et al. (1997; Ullman, 2001) have proposed the declarative/procedural model, which supports the roles of the hippocampus and the basal ganglia in language processing. Ellis (2001) provides a detailed account of working memory and chunking for language acquisition and use. The purpose of this entry is to examine the neurobiological foundation of these memories and their implications for SLA.

Semantic Memory and Its Neural Structure

Declarative memory (DM) is divided into semantic memory and episodic memory. Episodic memory concerns autobiographical events that have taken place during an individual's lifetime, and semantic memory encompasses factual knowledge about things, places, time, concepts, odors, and so forth. The neural mechanism of semantic memory is well known (Parent, 1996; Squire and Kandel, 1999) and is illustrated schematically in Figure 1. When human beings perceive the outer world, sensory input is relayed to the primary sensory areas in the neocortex. Since multiple sensory modes are employed in perceiving the world, the perception is likely to be related to multiple sensory areas. For example, when we see a dog, we process visual, auditory, olfactory, and tactile information regarding the dog, and this information is in turn passed on to the association areas in the neocortex. From the association areas, the information then travels through diverse structures of the medial temporal lobe. First, it passes through either the parahippocampal cortex or the perirhinal cortex and arrives at the entorhinal cortex. The entorhinal cortex relays the information to the hippocampus. After the information arrives at the hippocampus, it makes a return trip back to the neocortex through all the structures of the medial temporal lobe it passed through on the incoming trip. While information travels through this loop, the synapses between participating neurons are strengthened by the mechanism called long-term potentiation and protein synthesis (Schumann et al., 2004).

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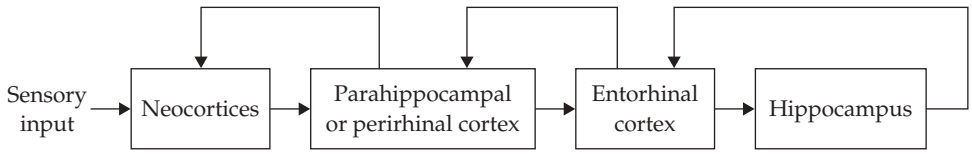

Figure 1 The neural mechanism of semantic memory

Evidence of the Hippocampus's Involvement in Semantic Memory

The first study that demonstrated the hippocampus' involvement in all DM, including semantic memory, was performed by Brenda Milner and William Scoville in 1957. In an attempt to cure a patient, H.M., who suffered from a severe case of epilepsy, Scoville removed a part of the medial temporal region of both hemispheres, which included the hippocampus and surrounding structures. After the surgery, H.M.'s epilepsy was cured, but he could not form new DMs. He forgot everything associated with the event just several seconds after its occurrence. For example, he could not remember his doctor even though they met every day, and the doctor had to introduce himself anew every time. H.M. was living with just a several-second time span in terms of his memory. Strangely enough, however, Milner and Scoville discovered that H.M.'s memories for events that had happened in the distant past remained intact. H.M. was also able to learn how to play a new tune on the piano even though he couldn't remember learning it. When he was asked how he knew the tune, he answered that he didn't remember but that he just did. In summary, H.M. lost his ability to form new DMs, but retained both the ability to form procedural memory (PM) and DMs established before the surgery. Since H.M.'s case was reported, numerous cases of patients with lesions in the hippocampus who show similar symptoms have appeared in the literature (e.g., Squire & Alvarez, 1995). All these studies confirm that the hippocampus is involved in forming new DMs (Milner, 1999).

Consolidation of Semantic Memory and Its Implications for SLA

No clear agreement exists among researchers on the issue of how an item of semantic memory is consolidated and finally stabilized. The most prominent theory, however, is multiple trace theory. Nadel and Moscovich (1997) suggest that when a sensory input is relayed from the cortex to the hippocampus, a trace is established between a group of neurons of the hippocampus and those of multiple cortical areas that together store a representation of the item. The group of neurons in the hippocampus functions as a pointer that indexes the cortical neurons. This pointer also works to connect the cortical neurons together gradually. The establishment of the trace is actualized through molecular changes such as long-term potentiation and protein synthesis in the participating neurons and their synapses.

This initial memory can be strengthened over time when it is rehearsed and retrieved. Each time the memory is reactivated, a new trace is formed between new cortical areas and the original hippocampal area, since the content of the memory can be slightly different each time it is activated. When a memory is retrieved a number of times, the memory can be stabilized, and be available to the individual throughout his or her life. When a memory is stabilized to this extent, the connection between the cortex and the hippocampus may be lost, but the transcortical connections between participating cortical neurons remain strong enough to support storage and retrieval of the memory without the help of the hippocampus. In short, a memory is formed initially through the cortico-hippocampal connections, then consolidated through multiple traces within the cortex.

Semantic memory applies to our learning of vocabulary and explicitly learning grammar and phonological rules. Explicitly learning a grammar rule and being able to use it correctly and automatically do not necessarily mean the same thing. Some non-native English speakers correctly execute a grammar rule without consciously knowing it. Others may have learned the grammar rule in an English as a second language (ESL) class and know that such a rule exists but still make errors implementing it when they speak. The former group has no semantic memory of the particular grammar rule, but has PM. The latter, on the other hand, has semantic memory but no PM for the rule that has been taught to them.

Knowledge of the neurobiological system underlying DM is helpful in explaining a number of aspects of individual differences in L2 learning. The bilingual lexicon has been shown to be distributed throughout the cortex (Ojemann & Whitaker, 1978). Since the features of the lexicons are different and learners use different strategies, the indexing of information would be distributed differently for the two languages and across subjects. Such differences could be contributed to by differences in the semantic features associated with the lexical items in the two languages. The differences could also result from different learner strategies. Finally, the differential experience of language learners may also lead to the dispersed distribution of the bilingual lexicon. Classroom teaching strategies may promote a dependency on contextual, visual, or movement cues to help with learning (Littlewood, 1994; Krashen, 1995). This would result in a neurobiological representation in which the visual, spatial, or contextual traces are strongly associated with the cortical regions.

Understanding the neuroanatomical system underlying DM can also help explain the individual differences in levels of proficiency among adult language learners. Here, spatial, visual, auditory, and contextual cues play a key role, as does rehearsal. For example, the contextual cues mentioned above are not only significant in the extent of the neurobiological representation. If the contextual cues are activated each time the word is activated, new traces for the contextual cues will be made each time, thus building not only an extensive network, but a strongly activated representation. So these cues, which augment the meaning of the word, will be activated each time, perhaps helping the learner use the word. This could contribute to an ability to learn the word more easily or to remember the word better.

These principles can affect proficiency beyond lexical learning. Fossilization, a lack of complete proficiency, and the role of anxiety in adult language learning are well-studied phenomena (e.g., Ellis, 1994). How fear and anxiety can affect learning could be explained in the context of the neural system for DM. The strength of a memory can be affected by state of a memory; that is, by whether it is activated or not (e.g., Miller & Matzel, 2000; Millin, Moody, & Riccio, 2001). It is possible that disruptions that exist in the learning situation, such as anxiety or stress or even competing information, could also disrupt the consolidation of lexical items or grammatical rules.

Procedural Memory

PM is concerned with learning motor and cognitive procedures. We acquire this type of memory through the repeated execution of a task. This memory is what we use, for example, when we learn how to play a musical instrument, how to dance, how to play a sport, how to speak our language, and so forth (Fabbro, 1999). Numerous activities in our daily lives are learned and performed procedurally, that is, automatically and unconsciously. When we talk in our mother tongue, we don't consciously assume the positions of our oral articulatory organs. We don't construct sentences by consciously applying the rules of grammar that we learned in elementary school. We are not aware of the phonological

rules that govern the stream of phonemes. We just talk. These are automatic behaviors, proceduralized motor and cognitive activities.

Neural Structures for Procedural Memory

The neural structures for the formation of PM are very complex, and only a simplified version will be presented below. The first characteristic of the PM system to be explained is called "chunking." Simply speaking, chunking means that diverse, functionally related cortical neurons are connected and form a "chunk" while they pass through the basal ganglia structures and return to the cortical areas from which they originated. About 10,000 cortical neurons converge on a single striatal neuron, indicating that massive convergence of cortical information takes place through the striatum (Graybiel, 1998).

Second, there are two pathways in the system: the direct pathway and the indirect pathway. The neural connections of PM start from wide areas of the cortex. All areas of the cortex project to the striatum, which is the main structure of the basal ganglia. Striatal neurons relay the cortical input either to the internal or to the external segments of the globus pallidus. The signals relayed to the internal segment of the globus pallidus are sent directly to the thalamus and then to the cortex where the signal initially originated. On the other hand, the signals sent to the external segment of the globus pallidus go to the subthalamic nucleus, and then proceed to the internal segment of the globus pallidus. These signals travel from there to the thalamus and finally back to the cortex where they originated. The first pathway is called the direct, and the latter the indirect (Parent, 1996). These loops are presented in Figure 2.

Finally, the basal ganglia participate in three anatomically and functionally distinct circuits. These are the associative circuit, the motor circuit, and the limbic circuit. These originate from distinct parts of the cortex, travel through distinct parts of the striatum and the globus pallidus, project to segregated areas of the thalamus, and finally return to the distinct parts of the cortex from which they originated. Each of the circuits has its own direct and indirect pathways. However, they are interconnected by way of intrinsic circuits of the basal ganglia through which each distinct circuit can affect the others (Joel & Weiner, 1998). These circuits are schematically presented in Figure 3.

Evidence of the Basal Ganglia's Involvement in Procedural Memory

Since the basal ganglia are located deep in the brain, conventional brain-scanning technologies such as PET (positron emission tomography) and fMRI (functional magnetic resonance imaging) cannot easily measure their activity. However, there is ample evidence regarding the question of the basal ganglia's involvement in PM. When they are removed from animal brains, the animals lose the ability to perform motor routines such as walking or grooming. Parkinson's disease stems from the degeneration of the direct pathway, and

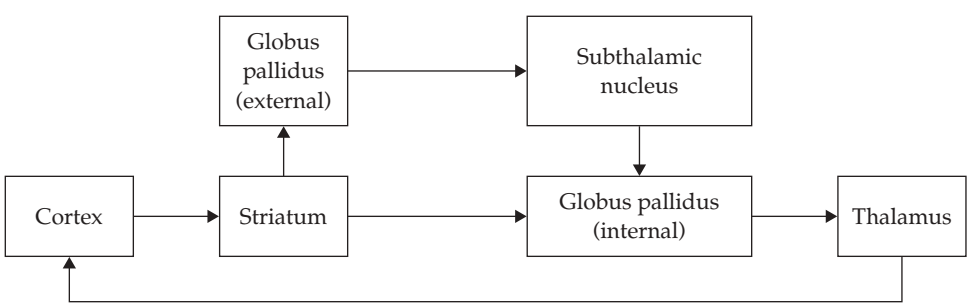

Figure 2 The direct pathway and the indirect pathway

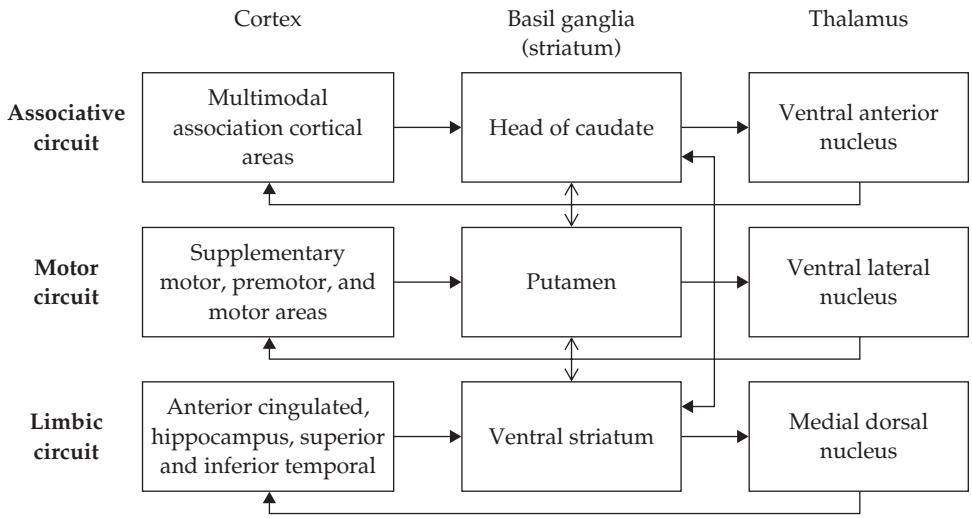

Figure 3 Split circuits

the patients cannot execute motor or cognitive routines. Linguistically speaking, they show agrammatism (omission of grammatical morphemes) and foreign accent syndrome (loss of phonological rules) (Carlson, 2001). Huntington's disease stems from the degeneration of the indirect pathway. As a result, the patients show perseveration, or overexecution of motor or cognitive behavior such as repeating the same words, phrases, or sentences (Purves, 1997; Fabbro, 1999).

Another body of data showing the basal ganglia's involvement in language arises from studies of basal ganglia lesions. If a monolingual person suffers a basal ganglia lesion, he or she develops the syndrome of voice disorders, foreign accent syndrome, perseveration, and agrammatism. Polyglots with basal ganglia lesions show damage in all of the languages they speak, but, generally, an L2 or foreign language tends to be less impaired than their mother tongue (Aglioti, Beltramello, Girardi, & Fabbro, 1996). The reason that the L2 is less damaged than the first language (L1) is probably that the L2 is less proceduralized than the L1.

Formation of Procedural Memory and Its Implication for SLA

Some researchers working in the area of SLA have claimed that L2 learners frequently learn co-occurring words as delexicalized chunks (Tannen, 1989; Sinclair, 1991). This may occur through the chunking mechanism of the basal ganglia. It is reasonable to hypothesize that routine expressions of the target language such as idioms (*by and large*), ritualized expressions such as greetings (*how are you?*), and other fixed expressions, clichés, or collocations may exploit the basal ganglia chunking mechanism.

Furthermore, the formation of the direct and indirect pathways may explain how we form and execute the rules of the grammar and phonology of the L2. When an L2 speaker tries to speak in the target language, she or he has to try to arrange words in grammatically and phonologically correct forms. Through numerous and repetitive target language inputs and the production of sentences, an L2 speaker slowly builds up stronger synapses among participating neurons in the cortex and basal ganglia which represent the rules of the target language through the direct pathway. The direct pathway is used to execute the acquired forms, and the indirect pathway is used to inhibit alternative forms. As the

speaker's proficiency in the L2 progresses, the direct pathway and indirect pathway may become efficient enough to select the correct program and inhibit incorrect programs.

Finally, the three circuits of the basal ganglia may have an important implication for L2 or foreign-language learning. Figure 3 shows that each circuit can function independently. The associative circuit is involved in cognitive processes, the motor circuit is involved in somato-sensory and somatic motor control and control of orientation and gaze, and the limbic loop is involved in emotional and visceral functions. However, each circuit is interconnected, and can affect the others. For example, considering the associative circuit's involvement with cognitive processes, it may play a role in deciding which items will be formed as motor routines in the motor circuit. This is even more likely considering the cortical areas from which this circuit originates, the dorso-lateral prefrontal cortex and orbito-frontal cortex. The latter is known to be involved in our social reasoning and cognition.

On the other hand, the limbic circuit may affect the formation of rules and routines in the other circuits in a different way. The limbic circuit originates from the anterior cingulate area, hippocampal cortex, entorhinal cortex, and superior and inferior temporal gyri. The hippocampus and entorhinal cortex have already been discussed above. These structures are involved in the formation of DM. This circuit may be the way by which our DM system affects the formation of PM. It is probably the case that almost all L2 learners have had the experience of making an error and realizing that they are making an error at the same time. The system that made the error is PM, while the DM system realizes that the error is being made. Through this self-monitoring, a kind of debugging may be taking place. Inaccurately formed PM is executed through the motor circuit, but the limbic circuit may debug the erroneous procedure by facilitating the transfer of information from the hippocampal system to the basal ganglia. The limbic circuit also passes through the ventral tegmental area instead of the globus pallidus. The ventral tegmental area is a source of a neurotransmitter, dopamine. Dopamine is involved in our emotional and motivational systems. Because of the involvement of the dopaminergic system, the limbic circuit may also affect the other circuits by giving motivational and emotional significance to each motor and cognitive routine and process. For example, if an L2 speaker successfully executes a sentence, the rules governing the sentence may be formed more strongly because the limbic circuit will give a positive response to the rule and the sentence. From this discussion, our stance on what is meant by "rules" should be evident. Rules, as instantiated in the brain, are created through repeated patterns and the building of circuits.

Summary and Conclusions

The above discussion can be summarized in Figure 4. Learning an L2 or foreign language consists of forming memories. We remember vocabulary, grammar rules, and phonological rules through DM, especially the semantic memory system that is subserved by the cortico-hippocampal loops. We automatize the rules of grammar and phonology by way of the PM system, subserved by the cortico-basal ganglia circuits. These two types of memories are modulated by the dopamine system.

This entry has outlined a perspective on adult SLA in which two neural learning mechanisms (the hippocampal declarative system and basal ganglia procedural system as modulated by the dopaminergic motivational system) are invoked to account for the development of the declarative knowledge and procedural knowledge that are necessary to speak an L2. The association of declarative and procedural learning with two systems in the brain may facilitate theorizing about how these processes function in SLA. Additionally, a neural view of these two types of knowledge provides detailed accounts of the actual physical (i.e., biological) mechanisms that subserve them. This detail will help generate

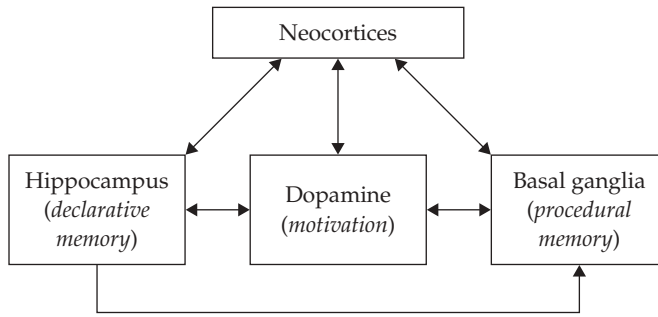

Figure 4 Neurobiological system of SLA

more articulated psychological and functional accounts. However, connections between the neural biology and SLA are, at this point, necessarily superficial. This is because, unlike strictly psychological/cognitive approaches where processes and mechanisms are inferred from behavior, in neuroscience, the mechanisms are physically instantiated. Thus, the explanations here are constrained by those biological instantiations. In this way, the biological constraints discipline theorizing about SLA processes.

SEE ALSO: Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Bilingualism and Age; Brain Activity During Second Language Processing (ERP); Brain Imaging Studies and Vocabulary; Crosslinguistic Influence in Second Language Acquisition; Explicit Learning in Second Language Acquisition; Fossilization; Implicit Learning in Second Language Acquisition; Inhibition and Control in Second Language Acquisition; Multilingualism and Aphasia; Research Techniques and the Bilingual Brain; Schumann, John H.; Second Language Representation in the Brain

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Neurobiology and Motivation in Second Language Acquisition

ANDREA W. MATES

Motivation has long been seen as a critical variable in second language acquisition (SLA) in that it keeps a learner working on the long and difficult task of mastering a second language. Research in SLA has sought to better characterize the nature and impact of motivation on learning using a number of different methods. One more recent approach has been to take findings from neuroscience research and apply them to issues in SLA. Neuroscience concerns itself with understanding the organization and function of the nervous system which provides the biological basis for processing one's experiences of the world and directing one's actions within it. This entry will present an overview of this approach and discuss a proposed neurobiology of motivation in SLA.

One Neurobiological Approach to Studying Constructs in Applied Linguistics Research

Seeing discoveries in the biological sciences in relation to their import to questions in linguistics was popularized in Terrence Deacon's *Symbolic Species* (1998), which postulated a coevolution of language and the brain. In SLA research, this approach was presented in John Schumann's (1997) work *The Neurobiology of Affect in Language*. Subsequently, Schumann's research group produced a collaborative volume, *The Neurobiology of Learning: Perspectives from Second Language Acquisition* (Schumann et al., 2004). In that volume, the contributors propose neurobiological systems that could be involved in important SLA constructs such as aptitude, motivation, procedural and declarative memory, memory consolidation, and attention.

Nancy Jones examines the neurobiological research on memory consolidation in that volume (Schumann et al., 2004) and links it to SLA topics such as the bilingual lexicon—how words from more than one language are stored; individual differences—dimensions along which individuals may vary such as aptitude or motivation; and fossilization—a stage of second language use where fluency is developed and improvement is rare even in a target language immersion environment. Instead, grammatical errors and non-native phonology persist and are "fossilized." With regard to the bilingual lexicon, Jones reviews the Hebbian model of language (HML) proposed by Friedemann Pulvermüller (1999). Pulvermüller presented research suggesting that lexical items are not stored in specific neurons (cells in the brain) or in a network of neurons in a particular part of the brain. Instead, taking Hebb's theory that neurons which are activated at the same time begin to develop an association that over time can functionally become a single unit or cell assembly (Hebb, 1949), Pulvermüller suggested that lexical items are stored across networks of cells widely distributed across brain regions. Implied is the idea that different lexical items with similar properties—form, meaning, usage—may have that part of their network in common. Using different brain recording methods, Pulvermüller's research demonstrated how words with a predominant movement component appear to be connected to motor regions of the brain while words with a greater visual component showed involvement with vision

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processing regions. Jones's discussion of the HML is but one part of a much larger hypothesis she forms about the neurobiology of memory consolidation and its role in managing a bilingual lexicon; however, this short description provides a taste of how neuroscience studies are being applied to questions in SLA.

Schuchert takes the construct of attention in learning and examines the neurobiological processes that may support it (Schumann et al., 2004). In doing so, she raises a challenge frequently encountered while trying to link neurobiology and SLA processes—a mismatch between the psychological construct and the underlying neurobiology. A single psychological construct frequently does not have a corresponding brain module as its biological basis.

Schuchert thus begins by describing how attention has been historically understood. It has been frequently treated as a unitary concept, something like "voluntary control over automatic brain processes (Schumann et al., 2004, citing Posner & Petersen, 1990, p. 144). However, the research community actually tested it using different overlapping definitions and subcategories. As a result, she concludes that attention is likely to be a cultural construct without a single, dedicated underlying neurobiological substrate. In order to give a neurobiological account of attention, she must describe a number of systems that are engaged in the process of perceiving the environment, acting on self-directed goals and responding to external stimuli. These include a number of different brain regions and functions including the dorsolateral prefrontal cortex, the parietal cortex, frontal-parietal connections, the anterior cingulate, and the intrinsic tuning of neurons to particular stimuli. Schuchert then argues that this neurobiological account of attention accounts for noticing as a strategy for correcting fossilization in adult SLA.

The strength of a synthetic approach to tying neuroscience research to problems in SLA is that it forces just such a reexamination of psychological terms which are often in a state of redefinition or subcategorization. It also allows for a complex, nonlinear discussion of mechanism and causality. Experimental design calls for controlling variables so that something meaningful can be said about the relationship between the independent and dependent variable. This is an important part of the scientific method. However, as one probes deeper into the questions concerning SLA and the brain, one must acknowledge that the brain itself does not work linearly (Lee, Mikesell, Joaquin, Mates, & Schumann, 2009). Instead, we frequently find that different regions of the brain share information back and forth in a feedback loop. The neurobiological approach presented here is one in which the researchers step back from the results of rigorous experimentation in both neuroscience and SLA and hypothesize about connections between the two.

A Neurochemical Approach to Affiliation and Motivation

The previously described approach has been most frequently applied to motivation in SLA. Schumann took it up in his 1997 book on affect in language, and then elaborated on both the neurobiology and its applications in subsequent publications, either on his own or with his students (Lee et al., 2009; Schumann, 2001; Schumann et al., 2004).

One thought on a neurobiological substrate for motivation sees adult motivational systems as reuses of some systems that support infant–caregiver bonding, also known as affiliation. Infants are born with what has been described as an "interactional instinct" (Lee et al., 2009) in the sense that they have and devote much of their resources to interacting with the people around them, particularly their mothers. While infants are limited in their cognitive and motor abilities, they can track eye gaze, head position, vocalizations, and facial expressions, which allows them to establish or maintain the attention of a caregiver. Lee et al. (2009) argue that this phenomenon is supported by the biochemical rewards infants receive when they pursue and achieve affiliative goals.

In their earliest experiences, when infants are fed or gently held, their nervous systems quiet down in a process facilitated by so called consummatory rewards (Lee et al., 2009 citing Depue & Morrone-Strupinsky, 2005). Consummatory rewards are experienced as opiates released in the hypothalamus reach a number of different regions including the amygdala, which is part of the emotional response system. In addition to experiencing good feelings from being fed or held, infants can remember the contexts in which those feelings were achieved. Four regions of the brain encode the context and feed that information to medium spiny neurons in the nucleus accumbens shell, a region which will be discussed further below. The four regions are the hippocampus, which encodes the spatial, contextual features of the enviornment; the basolateral amygdala and the extended amygdala, which encode the conditions for reward; and the medial orbital frontal cortex, which encodes the reward expectancy through a high-level synthesis of all these lower levels of information. Memories of rewarding situations develop through long-term potentiation (LTP) on the dendrites of the medium spiny neurons where these connections end.

Having these memories of comforting or sated experiences using the limited motor control they do have, infants are able to pursue courses of action that will likely produce similar results. For example, a hungry infant can remember being full after her mother comes and nurses her and that crying draws maternal attention. Or a distressed infant can remember that being held or played with is enjoyable and that cooing or sustaining mutual eye gaze may draw an adult into that kind of interaction. In the pursuit of their goals, infants receive "rewards along the way" called appetitive rewards as they encounter cues that the desired goal is closer (Lee et al., 2009, citing Depue & Morrone-Strupinsky, 2005). Distressed infants may begin experiencing appetitive rewards when they observe a caregiver turning toward them, smiling, and extending arms to pick them up. Appetitive rewards are mediated by dopamine produced in the ventral tegmental area (VTA) of the brain stem. Dopamine released by the VTA travels to the same previously mentioned medium spiny neurons in the nucleus accumbens shell. The nucleus accumbens shell is a subcortical structure that has been frequently the focus of research in the areas of reward, pleasure and addiction.

In adults, these same structures and processes are at work even though there are fewer dopamine and opiate receptors (Lee et al., 2009). While it may take a greater stimulus to provide the same amount of reward, adults with mature nervous systems can find many more stimuli to be rewarding. Food and physical touch may still be rewarding, but with more developed cognitive and motor abilities the array and complexity of goals that can be sought and achieved are manyfold greater. Seeking employment, for example, is a multistep process with many opportunities for action and occasions for set backs. Revising a resume, submitting a resume to a particular employer, securing an interview—these are all parts of the process. As each milestone is passed a person may experience consummatory rewards from achieving the milestone, while also receiving appetitive rewards from the feedback that the ultimate goal, securing employment, is one step closer. These rewards are mediated by the neurochemical processes described above and propel goal-seeking behavior.

Stimulus Appraisal as the Underlying Mechanism for Motivation in SLA

In addition to neurochemical rewards which influence goal-oriented behavior, other parts of the nervous system play an important role in determining how to proceed. Here, stimulus appraisal will be discussed as the underlying mechanism for motivation, and a neurobiology of stimulus appraisal will be presented and integrated with the previous section.

In attempting to connect the impact of emotion on SLA research concerns, Schumann (1997) turned to a body of work from the 1980s on the topic of stimulus appraisals and drew heavily from Scherer's model (1984). In this model, individuals conduct checks across five categories as they encounter stimuli, and these checks in turn inform emotional responses. The five categories on which a stimulus is appraised are (a) novelty; (b) pleasantness; (c) the extent to which it may contribute to one's goals or needs; (d) how the stimulus corresponds with one's coping potential—both in the sense of the ability to actively respond and also to manage any consequences beyond one's control; and (e) how the stimulus may affect our self- and social image (Schumann, 1997, citing Scherer, 1984). Different kinds of appraisals appeared to lead to different emotional responses such as joy, sadness, fear, anger, disgust, and so forth. But generally, positive appraisals allow for approach while negative appraisals are likely to induce retreat. Schumann saw the link between stimulus appraisal and language learning in Scherer's claim that positive stimulus appraisals are the basis for sustained deep learning, the kind of learning that isn't inevitable due to biology or intense social pressure but which must be actively pursued over an extended length of time.

The neural basis for stimulus appraisal initially proposed in Schumann (1997) focused on the contributions of the amygdala, orbital frontal cortex, and the body proper. The amygdala is located in the medial temporal lobes behind the ears and is part of the limbic system. It has been the subject of intense scrutiny, initially for its role in fear responses (LeDoux, Cicchetti, Xagoraris, & Romanski, 1990; Davis, 1992) and now for its broader roles in emotional and social responses (Amaral, 2003). One characteristic of the amygdala is that it receives two copies of sensory information: one directly from the thalamus and one indirectly from thalamic projections that pass through the regions of the cortex which process that kind of sensation—vision, audition, taste, touch, and so forth. The direct copy of sensory information from the thalamus allows the amygdala to make a very quick and crude initial assessment of the potential danger a stimulus might pose. The indirect copy has been first processed by the brain and provides a more nuanced assessment that may or may not agree with the initial assessment. That shadow of a coiled thing in the bushes may first appear to be a snake ready to strike warranting a quick fear response. However, the slightly delayed assessment from the cortex may show that the coil is merely a pile of discarded rope warranting little attention. With the indirect copy, the amygdala can attach a fine-tuned emotional value to stimuli and send that back to the cortex, thalamus, and other regions of the brain such as the previously mentioned nucleus accumbens shell and hypothalamus.

The frontal cortex is a late-developing part of the brain and has been called the executive for its role in planning and control of impulses from other parts of the brain. The orbital frontal cortex, a region just above the eyes, has been connected with many different functions, many of which are related to social and emotional responses. In patients with damage to the orbital frontal cortex, a deficit in emotional processing results in socially inappropriate behavior and an inability to follow through with plans. As mentioned in the previous section, the medial orbital frontal cortex on the surface between the two hemispheres of the brain acts as a high-level synthesizer of the contexts for reward by taking information from both the amygdala and the hippocampus.

The body proper refers to the peripheral nervous system outside of the brain and spinal cord. These include the nerves that control the musculoskeletal system for movement as well as the autonomic nervous system that controls arousal. The autonomic nervous system controls pupil dilation, heart rate, and perspiration in response to stimuli requiring fight, flight, freeze or engagement responses (Lee et al., 2009; Mates & Joaquin, in press). The autonomic nervous system in particular has connections with the orbital frontal cortex and amygdala via the brain stem. This interaction between the body and the brain is the

biological basis for "gut feelings" and thus acts as another piece of the stimulus appraisal system.

In SLA, an appraisal made through the interaction between these three systems may lead a learner to seek a conversation partner to practice with. However, during the first meeting, the learner may not achieve the goals they had for that encounter and experience both a lack of consummatory and appetitive rewards. After several disappointing meetings, they may reappraise the situation and decide to withdraw from that activity. Schumann characterized this appraising and reappraising as "learning as foraging" (2001).

Criticism

Two criticisms of this approach to questions in SLA are that the work is fundamentally speculative and that it does not produce or leave in its wake a particular research agenda or methodology. The two criticisms are related and epistemological in nature, the question being how we can know whether the proposed neurobiological mechanisms really play those particular roles in SLA. The simple answer is that at this point there is no substantive proof, but some of the connections drawn could be tested with modern experimental methods, and various contributors in Schumann et al. (2004) have proposed brain-imaging research studies. Additionally, while speculative in regards to brain mechanisms for SLA, the neuroscientific research reviewed is real. And this biological reality, while complex and nonlinear, can help one to get around the sticky problem of constantly defining and redefining psychological terms.

Conclusion

Motivation in the course of SLA is supported by systems of neurochemical reward and the neurobiology of stimulus appraisal. Dopamine provides appetitive rewards helping learners feel that they are closer to achieving their goals. Opiates provide consummatory rewards allowing learners to "rest on their laurels" for a while when they achieve particular milestones. The amygdala, orbital frontal cortex, and the body proper work together to appraise and reappraise the environment so that learners can decide whether and how to continue the language-learning process. All told, stimulus appraisal forms the antecedent to motivation.

SEE ALSO: Attitudes and Motivation in Bilingual Education; Motivation in Second Language Acquisition; Neurobiological Foundations for Second Language Acquisition; Schumann, John H.

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Neurolinguistic and Cognitive Aspects of Interpreting

ROBIN SETTON

Introduction

Interpreting looks at first sight like rapid language transfer, a kind of instant translation relying on exceptional linguistic proficiency, but there is direct and indirect evidence of abundant supporting cognitive activity. Consecutive interpreters do not use shorthand but spare, personalized notes that cannot be read by others without explanation (Seleskovitch, 1975); not all bilinguals or expert translators can be trained in simultaneous interpreting (SI), as early recruiters discovered at the Nuremberg trials (Gaiba, 1998); transcript analysis shows extensive use of extralinguistic knowledge and context (Setton, 1999); and neuroimaging has shown increasing involvement of both brain hemispheres with expertise (Gran, 1990).

SI, in particular, soon aroused the curiosity of psychologists, and some skepticism among linguists and translators, since it seemed to challenge both existing models of speech processing and assumptions about the translation process. How do interpreters—apparently to the daily satisfaction of thousands of users—divide their attention between listening and speaking, or convert a self-contained coherent discourse from one language into another, through asymmetric syntax and semantics, with a delay of only a few seconds?

Since then, interpreting has been studied at three levels: social and relational, as mediated communication; cognitive, as a specific configuration of mental operations; and neural, in search of the specific correlates of this expert activity in the brain.

With new and more flexible models of the mind's potential from cognitive science, and recent advances in brain research, a plausible cognitive and neurolinguistic picture is gradually taking shape. Interpreting is a live, situated, real-time activity. While this poses major methodological challenges for research, it also provides a clue to its feasibility: Given certain minimal working conditions, the situated, contextualized nature of the task provides cognitive opportunities that can be leveraged in support of the apparent linguistic feat. Neurolinguistic research has already provided some evidence of the gradual configuration of the bilingual brain for this task with increasing expertise.

New Cognitive Models

The birth of modern conference interpreting coincided with the beginnings of cognitive science, which has since fueled interpreting research with models and findings about memory, attention, communication, and the bilingual brain. The "black box" has been probed through both experiment and observation, from retrospective interviews through transcript analysis to neuroimaging. Early work by psycholinguists and interpreters studied constraints like noise or delivery speed (Gerver, 1969, 1974), patterns of linguistic restructuring (Goldman-Eisler, 1972), or variations in the lag or "ear–voice span" (from 2 seconds to 11 seconds; Lederer, 1981), and proposed process models.

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Through the 1960s and 1970s, early models of interpreting took their cue from code-based, computational, usually serial, information-processing models of communication (Shannon & Weaver, 1949), with yes/no decision points, feedback loops, box-like memory buffers, phrase-structure constrained sentence processing (Goldman-Eisler, 1972), and switching between competing attention channels. It was suggested, for example, that simultaneous interpreters must speak during pauses in the input, until recordings showed that the two speech streams overlap about 70% of the time (Čeňková, 1985; Chernov, 1992).

Today, more flexible models of memory, attention, and discourse processing, and a new understanding of the role of context and inference in verbal communication, are helping to show how interpreting expertise might be configured in the brain. Descriptive linguistics —the study of *langue*—has played a minor role, despite ongoing discussion about the effect of typological differences between source and target languages.

Discourse Processing and Memory

SI does not seem feasible as a purely linguistic operation in which successive chunks of speech would be retained in verbal form long enough for translation and comparison. First, this would entail two parallel processes of parsing and word retrieval, plus translation, coordination, and monitoring output. Second, in the current model of working memory (Baddeley, 1986), *verbal* traces of recent speech in the "phonological loop" can only be maintained by subvocal articulation, and would therefore be suppressed by concurrent vocalization, that is, talking while listening.

Since early seminal psycholinguistic studies confirmed that listeners quickly process speech into a conceptual format (Sachs, 1967), it has become clear that speech comprehension cannot rely entirely on decoding and parsing, but must be a parallel and incremental process in which words and other clues activate knowledge that helps to resolve ambiguities, restore or reconstruct elliptical or ungrammatical forms, and make constructive predictions, all as the utterance unfolds (Altman & Steedman, 1988; Carston, 2002). Indeed these three tricks of human speech processing turn out to be key challenges for machine interpretation (Kitano, 1993).

This model of verbal communication, in which inference supplements and interacts with decoded language, followed the exposure of the indeterminacy of language by the "ordinary language philosophers" (such as Austin, Searle, and the later Wittgenstein), and has been developed, after Grice, in the pragmatic turn in linguistics, notably relevance theory (Sperber & Wilson, 1986/1995). The massive use of context is made more plausible by "spreading activation" models of the brain as a network that can be trained with expertise to deliver the most relevant input for a specific task like interpreting (Shreve & Diamond, 1997). Discourse processing improves with increased availability of relevant knowledge schemas, and of procedures like analogy or pattern matching. There is evidence that expert interpreters rely more on context than do novices, less on linguistic transfer (Ilic, 1989), and show superior domain-specific (but not general) working memory (Liu, Schallert, & Carroll, 2004). "Memory" is a distributed function that uses multiple formats—analogic, visual, and episodic, as well as linguistic—allowing processing economies through task-specific cognitive expertise. "Long-term working memory" (Ericsson & Kintsch, 1995) or "embedded-process" models (Cowan, 1999) now offer more flexible accounts of the management of memory and attention.

Attentional Resources and Cognitive Load

Without training, speaking while listening will naturally result in attentional conflict. Novices who have not yet learned to coordinate the two streams (Pinter, 1969), or gained sufficient cognitive control to merge input and output in a single cognitive representation,

will experience SI as "multitasking," a difficult balance between listening and analysis, production, and self-monitoring, and thus divided attention and higher cognitive load, and will have trouble seamlessly combining the hearing, analyzing, and noting that are needed for full professional consecutive interpreting. "Effort models" of interpreting (Gile, 1997) highlight this cognitive management problem. Experts may learn to mask these conflicts, but may also learn to allocate attention to multiple processes under different degrees of focus, relieved by partial automation of some procedures, and by more easily mobilized, "overlearned" language resources for production.

Coordination and control in the use of two languages must also take energy. According to Paradis (1994, p. 321), "a more complex regulation system is needed [for interpreting] than for regular speech": The languages can be independently activated, but SI must be particularly taxing since first and second language (L1 and L2) must be activated at the same time but not to the same extent, comprehension and production requiring different activation levels. Resisting linguistic interference—the partial suppression of the interpreter's other language(s)—takes a significant effort, especially between cognate languages. Production takes more energy than comprehension, since it involves the voluntary self-activation of memory traces, and is especially demanding when interpreting into an acquired ("B") language, as neurological evidence seems to confirm (Rinne et al., 2000; Tommola, Laine, Sunnari, & Rinne, 2000).

"Free" versus "Literal" Translation: Two Routes?

Translation theorists traditionally contrast two kinds of translation: "literal" (or "sign-oriented"), showing a recognizable item-by-item surface correspondence between words, expressions, and syntactic structures in the source and target texts, and "free" (or "meaning-based," "sense-oriented"), with correspondences apparent more at the conceptual than at the linguistic level. In speech comprehension theory, this is reflected in the contrast between bottom-up and top-down processing, and in machine translation, between "transfer" and "interlingua" approaches. Interpreter trainers and researchers have long debated the respective role (and desirability) of reformulation and "transcoding." Two distinct translation "routes" are hard to distinguish reliably in the product, but intuitions about them have persisted in theories of interpreting. Gran speaks of a widespread feeling among interpreters of a contrast between "pleasant (sense-based) vs. forced (literal-based) interpreting, both of which are necessary" (1990, pp. 97–9). The interpretive theory of translation (ITT), developed at the ESIT training school in Paris, famously insists on conceptual understanding and "deverbalization"—reformulation independently of the source words and structure—as the preferred method for good translation or interpreting, with "transcoding" only an occasional and inevitable local complement. However, direct linguistic conversion is also necessary, even with the cognitive support from schemas and procedures that comes with expertise, since each new speech contains some new material, and stock equivalents are needed for formulas, set expressions, technical terms, and, sometimes, words that cannot yet be integrated into conceptual processing (Lederer, 1981). Professional interpreters demand contextual background for their assignments, but usually also prepare glossaries, even if only for self-priming (Setton, 2003).

The relationship between these two kinds of processing has been directly addressed in a neuroscience perspective. Paradis' hypothesis (1994, 2000) is that "context-independent sentence grammar is neuro-functionally separate from pragmatics," and that interpreters "rely on one or the other depending on the syntactic or pragmatic characteristics of the utterance" (1994, pp. 328–9), in a kind of cooperative alternation, according to circumstances, between linguistic work in the left hemisphere and "pragmatic" processing in the right. Interpreting should thus engage both brain hemispheres, but to different degrees

at different times: the left (in right-handed individuals) for primary linguistic decoding (phonological, morphological, syntactic, lexical), the right for the interpretation of implicit meaning (inference from knowledge, situation, affective prosody, and other paralinguistic features).

This dichotomy seems essentially human. Machine interpretation implements two much more basic routes: syntactic spadework versus lexical retrieval (of "canned phrases"). Indeed, even with knowledge banks and contextual input it is still difficult to see how artificial systems could achieve the higher, holistic processing needed to negotiate pragmatic values like relevance and appropriateness.

Neurolinguistic Research

Since the 1990s, neurologists and interpreters have teamed up to explore the neural correlates of interpreting, building on spectacular advances in neuroimaging and the cerebral localization (or distribution) of linguistic and cognitive functions, particularly in the bilingual brain.

In that time neuroscientists have identified regions of the brain specialized in most of the component functions assumed to be most involved in interpreting, such as the phonological loop in working memory (Broca's area), episodic and semantic memory (laid down in the hippocampus, encoded throughout the cortex), procedural memory (putamen), attention, and "executive functions" (frontal lobes), and even finer distinctions such as centers for stimulus integration, planning, and decision making, or "bestowing meaning on perceptions" (Carter, 1998). However, neuroscientists agree that "there is no simple one-to-one mapping between brain areas and cognitive functions" and that "different parts of the brain probably are specialized for different functions, but most of those functions are likely to be shared *sub-components* for computation, not complete systems for single-handedly solving complex cognitive tasks" (Marcus, 2004, pp. 129, 133; original italics).

Memory and language are two examples. It now seems that "there is no rigid dividing line between memory and thought" (Carter, 1988, p. 188). "Neural substrates for memory are found not just in one location in the brain, but spread throughout . . . in the hippocampus . . . but also the cortex, amygdala and in a variety of visual and motor areas" (Marcus, 2004, p. 102). Similarly, while language processing is centered on Broca's and Wernicke's regions, our knowledge about words, "rather than being confined to a single box . . . may be scattered across different regions of the brain [visual, motor, auditory]" (2004, p. 129). Scans show that activities traditionally lumped together as "linguistic"—hearing a word versus considering what other words it relates to, or counting its syllables versus thinking about what it means—activate quite different areas. "When you see a word, you may see it as a word—that is, as a component of language—or it may act as a trigger for the concepts it represents. In each case a different part of the brain comes into play" (Carter, 1998, p. 148).

Complex cognitive-linguistic processes, such as "predicting, juggling concepts, selecting thoughts for attention and ignoring others, binding perceptual units into a unified whole, and most important, endowing those perceptions with meaning" (Carter, 1998, pp. 182–3), have been associated notably with the supplementary motor area (SMA, or "pre-motor cortex"), which seems to be involved in *pre-production/formulation*. The insula is believed to integrate stimuli from several different sources, perhaps including different languages (1998, pp. 182–3), while control and choice of language in bilinguals have been associated with the left caudate nucleus (Crinion et al., 2006). *Automatization* of tasks is seen in scans of a subject alternating between choosing new words and repeating practiced, learned sequences (Crinion et al., 2006, p. 196). *Attention* turns out to be highly complex, involving

arousal, orientation, and focus, all associated with different brain areas. Neurological evidence seems to vindicate interpreter trainers' insistence on the difference between mere hearing and active listening.

Even the ability to "meta-represent" others' beliefs and intentions ("theory of mind," impaired notably in autism), which is key to empathy and speaker (or listener) identification, has been associated with a neural substrate (in the left premedial prefrontal cortex; Frith, 1997; Crinion et al., 2006), while the recently discovered "mirror neurons" promise future insights.

While it appears increasingly difficult to isolate "memory," "attention," or "language processing," evidence of increased hemispheric lateralization in interpreters suggests activity which systematically integrates functions well beyond the domain of language per se.

The Bilingual Brain

Inferences about linguistic-functional organization in bi- and multilinguals have come mostly from evidence of selective impairment in aphasic patients. However, as the interaction between language and other cognitive functions begins to look more complex, the classic models inferring language configuration from performance on certain simple tests and the circumstances of L1 and L2 acquisition (e.g., the "compound" vs. "coordinate" bilingual distinction; Weinreich, 1953, pp. 9–11; Ervin & Osgood, 1954) are being reassessed in a lively debate that is beyond the scope of this entry. Such accounts may indeed turn out to be too static and unable to account for some reconfiguration and enhancement of language activation patterns that might be acquired with task-specific expertise. Paradis (2000) postulates four systems, one each for comprehension and production in each language, which for translation must be in a specific state of activation or inhibition to minimize interference, with two possible "routes": via conceptual mediation or direct linguistic correspondence.

Neural Correlates of Interpreting

Neurological research on interpreting has focused on hemispheric lateralization, or has attempted to map task-specific activation patterns. The left brain (in particular Broca's area) is believed to be responsible for key language functions (decoding, verbal memory, articulation) and most analytical and propositional information processing, while the right brain is more specialized for analogical and holistic processing, orientation (space memory, form recognition), face recognition, emotion, and diffuse attention, but also some acoustic, phonetic, and prosodic dimensions of speech such as pitch (Fabbro, 1991). Language processing is already known to be more lateralized (symmetrical) in women, and in (especially early) bilinguals (Vaid & Lambert, 1979; Sussman, Franklin, & Simon, 1982), while late-acquired (post-puberty) L2 use seems to rely more on right-brain processing.

Acquisition of new cognitive skills is known to reconfigure brain functions (Raichle, 1998; Cabeza & Nyberg, 2000), and task type and ability have been shown to influence the level and locus of cerebral activation (Haier et al., 1988). In particular, ideational activity (conscious manipulation of continuous deliberative thought, as in interpreting) shows different lateralization patterns from nondirected vocalized tasks (like shadowing).

Against this background of knowledge about the bilingual brain and the effects of skill acquisition, the next step—an experimental design challenge—is to isolate and capture the task-specific conditions of interpreting. This is still beset by many obstacles. Cumbersome equipment and procedures still prevent imaging of the task in real conditions, and studies have been criticized for poor ecological validity, task choice, experimental design, or statistical limitations (Green, 1986, p. 332; Pöchhacker, 2004, p. 114). Electroencephalography (EEG), positron emission tomography (PET), and functional magnetic resonance

imaging (fMRI) studies have contrasted interpreting by image "subtraction" with less demanding tasks like shadowing or speaking while listening. On some issues, such as ear (or hemisphere) preference for L1 or L2, the evidence is still inconclusive or contradictory, but other findings show some consistent patterns.

1. Novices detected syntactic errors in translated sentences better than professionals, but professionals detected semantic errors better (Ilic, 1989; Fabbro & Gran, 1994).
2. More hemispheric lateralization was seen in interpreting than in shadowing (Green, Schweda-Nicholson, Vaid, White, & Steiner, 1994).
3. More lateralization was found during interpreting with increasing expertise, specifically "a gradual shift in cerebral lateralization during interpreter training, from left-hemisphere dominance in Y1 [year 1] students through to balanced cerebral representation in advanced students and significant lateralization to the right hemisphere in experienced interpreters" (Gran, 1990, p. 12).
4. Left supplementary motor area (SMA; pre-motor cortex) activation was seen in SI, but not in shadowing (Rinne et al., 2000).
5. Significantly increased gray matter density in Brodmann area (BA) 46, specialized in selective language activation or suppression, has been measured in professional interpreters (Krick, Reith, Behrent, & Franceschini, 2005).

Bridging the Levels of Analysis

Clearer findings might be expected with more realistic simulation of the task variable, but the challenge remains of bridging the different levels of analysis that see interpreting as neural activity, as a configuration of cognitive functions, as linguistic performance data, or as purposeful mediation in social communication. It will no doubt be some time before we can match neural maps to behaviors and productions; to other forms of data, such as subjects' reported peaks of effort or difficulty; or to theoretical functional configurations. One promising research strategy is "triangulation," mixing and matching such different methods as transcript analysis and subjects' retrospective think-aloud protocols (TAPs). Shreve and Diamond (1997) suggest that peaks of effortful processing might be reported in TAPs, but that neuroimaging would be more effective in spotting psycho-physiological changes reflecting, for example, responses to novel stimuli (new vs. old information) which could be inserted or identified in experimental texts.

Conclusion

Cognitive scientists and practicing interpreters have both contributed their perspectives to the study of interpreting, the former providing models and research methodology, the latter drawing attention to aspects that help in an understanding of interpreting as a holistic cognitive and communicative task, such as the peculiar features of situated oral communication, and the crucial role of the live context. Cognitive modeling and neuroscience made great strides in the 1990s—the "decade of the brain"—in which matching neural accounts were proposed for models of memory (Baddeley, 2004) or discourse processing (Kintsch, 1998). Memory and attention, once conceived of as boxes and channels, are now seen as complex and distributed, while other functions, though locally specialized, have been increasingly seen to work together and in parallel. Connectionist, brain-like, trainable models now seem better able to express both the process of acquiring expertise and the combination of top-down and bottom-up processing needed to deal with the speed and variability of conference speech.

The key to modeling the cognitive processes of interpreting now seems to lie in recognizing a highly task-specific acquired expertise, based on building and selectively activating relevant knowledge schemas and language resources, and partial automation of some processes to free up capacity for the most immediate, unpredictable aspects of the discourse. Cognitive load would vary with the efforts needed for selective language activation and inhibition (to resist interference), and to access relevant contexts. Experts should gradually develop relevant and easily activated cognitive-linguistic representations, and procedures in implicit memory, to supplement bottom-up processing and thus save effort for polishing the product. Experts thus get more from the signal, use more cues, and activate more, so that the activation input returned to working memory is richer and more complex (Shreve & Diamond, 1997). Increased hemispheric lateralization with expertise may reflect more holistic processing, making more use of extralinguistic information, of analogies with patterns and schemas from experience, and of paralinguistic, prosodic, and visual cues.

In summary, it seems reasonable to assume significant cognitive specificity of the interpreting task, as distinct from the automatic linguistic transfer of short and decontextualized items in controlled conditions that may have informed some generic models of language processing. This specificity applies not only to SI, which has attracted the most attention, but also to consecutive interpreting, in which the speed and density of the material translated, if accurate and idiomatic, imply significant task-directed conceptualization and knowledge mobilization.

SEE ALSO: Bilingualism and Cognition; Brain Activity During Second Language Processing (ERP); Cognitive Approaches to Communication Strategies; Cognitive Models of Interaction; Conference Interpreting; Context in the Analysis of Discourse and Interaction; Interlanguage; Interpreting Techniques and Modes; Lexical Priming; Models of Interpreting; Pragmatics and Cognition; Pragmatics in the Analysis of Discourse and Interaction; Quality in Interpreting; Research Techniques and the Bilingual Brain; Teaching and Learning of Interpreting; Theory of Interpreting; Translation and Interpreting and Bilingualism

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New Literacies of Online Reading Comprehension

DONALD J. LEU, HEIDI EVERETT-CACOPARDO,
LISA ZAWILINSKI, J. GREG MCVERRY, AND W. IAN O'BYRNE

Literacy as Deixis

Literacy has become deictic (Leu, 2000); the meaning of literacy is rapidly changing as new technologies for literacy continually appear and new social practices of literacy quickly emerge. Historically, literacy has always changed. Today, however, new technologies and new social practices rapidly and repeatedly redefine what it once meant, in a simpler world, to be able to read, write, and communicate effectively.

To be literate today often means being able to use some combination of texting, Facebook, Google, foursquare, Google docs, Skype, Chrome, iMovie, Contribute, or any of thousands of mobile "apps." To be literate tomorrow will be defined by even newer technologies that have yet to appear and even newer social practices that we will create to meet unanticipated needs. Literacy has become deictic, indeed.

An important source of this change is the Internet. The Internet is the most efficient system in the history of civilization for delivering new technologies to read, write, and communicate (Lankshear & Knobel, 2006). It is also an amazingly efficient system for rapidly disseminating new social practices for the use of these technologies. The growth rate of Internet connectivity has been exponential. Nearly 30% of the world's population (in 2011, 1.9 billion individuals) use the Internet (*Internet World Stats: Usage and Population Statistics*, 2011). At the current pace, more than half of the world's population will be online by 2017, and most of the world will be online by 2025. Never in the history of civilization have we seen a new technology adopted by so many, in so many different places, in such a short period of time.

As a result, the deictic nature of literacy will quickly accelerate as even more individuals come online, creating even more technologies for literacy and evolving even more social practices, rapidly disseminating both over the Internet. The changing nature of literacy will be limited only by the capacity of humans to adapt to even newer literacies.

A Central Question: How Do We Conceptualize Literacy When It Has Become a Deictic Construct?

How should we conceptualize literacy when it is seemingly ephemeral? The answer is central to the study of literacy and, since literacy defines us, is central to our understanding of who we are. How we conceptualize literacy is also important to preparing each new generation for the literacies that will define their future. Thus, literacy defines both who we are and who we shall become. This is the central challenge to literacy in a deictic world generated by the Internet. As a result, it becomes essential to develop a precise definition for this construct, especially if we hope to study it systematically and improve both equity and access to literacy.

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That literacy is changing can be seen in the fact that many scholars have recently sought to describe these changes (e.g., New London Group, 1996; Kress, 2003; Street, 2003; Lankshear & Knobel, 2006; Gee, 2007). Each attempted to describe an important aspect of the changing nature of literacy in a world in which many new social practices and new technologies are altering the traditional terrain of literacy, expanding it in important ways.

Some use the term *new literacies* to capture the new social practices of literacy that are emerging (Street, 2003). Rather than seeing new social practices emerging from new technologies, they tend to see new technologies emerging from new social practices. Others use the term to describe important new strategies and dispositions that are essential for online reading comprehension, learning, and communication (Henry, 2006; International Reading Association, 2009). Still others see new literacies as new discourses (Gee, 2007) or new semiotic contexts (Kress, 2003). Still others see literacy as differentiating into multiliteracies (New London Group, 1996) or multimodal contexts (Hull & Schultz, 2002), and some see a construct that juxtaposes several of these orientations (Lankshear & Knobel, 2006). When one includes terms such as *ICT literacy* (International ICT Literacy Panel, 2002) or *informational literacy* (Kuiper & Volman, 2008), the construct of new literacies becomes even broader. Indeed, just what new literacies means today is confusing; it depends on who uses it.

There is an opportunity to benefit from the richness of these different perspectives. Recognizing that changes are taking place at many levels and dissatisfied with these isolated attempts to capture those changes, some are beginning a collaborative approach to theory building (see Coiro, Knobel, Lankshear, & Leu, 2008), one that takes advantage of the power of multiple perspectives (Labbo & Reinking, 1999). This approach assumes that the best solutions result from collaborative groups who bring diverse, multiple perspectives to problems (Page, 2007). The approach is based on *New Literacies* theory (Coiro et al., 2008; International Reading Association, 2009). New Literacies theory takes an open-source approach, inviting everyone who studies the Internet's impact to contribute to theory development and to benefit from others' contributions.

A Dual-Level Theory of New Literacies

New Literacies theory (Leu, O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009) works on two levels: uppercase (New Literacies) and lowercase (new literacies). *New Literacies*, as the broader concept, benefits from work taking place in the multiple, lowercase dimensions of *new literacies*. Lowercase theories carefully explore either a specific area of new literacies, such as the social communicative transactions occurring with text messaging (e.g., Lewis & Fabos, 2005), or a focused disciplinary base, such as the semiotics of multimodality in online media (e.g., Kress, 2003). Common findings across multiple perspectives are then included in the broader New Literacies theory.

This approach permits everyone to fully explore their unique, lowercase perspective of new literacies, while everyone also benefits from expanding their understanding of other, lowercase, new literacies perspectives. By assuming change in the model, everyone is open to a continuously changing definition of literacy, based on the most recent data that emerge consistently, across multiple perspectives, disciplines, and research traditions. Moreover, areas in which alternative findings emerge are identified, enabling each to be studied, again from multiple perspectives. From this process, common patterns emerge and are included in a larger, common, New Literacies theory.

What currently defines this larger theory of New Literacies? A recent review (Coiro et al., 2008) concludes that most lowercase new literacies perspectives share four elements:

1. New Literacies include the new skills, strategies, dispositions, and social practices that are required by new technologies for information and communication;

2. New Literacies are central to full participation in a global community;
3. New Literacies regularly change as their defining technologies and social practices change; and
4. New Literacies are multifaceted and our understanding of them benefits from multiple points of view.

Additional, common, elements will emerge as more work is completed at lowercase levels, informing all scholars who seek to understand the changes taking place to literacy.

The New Literacies of Online Reading Comprehension

The new literacies of online reading comprehension (Leu et al., 2009) is one example of a lowercase theory. This perspective frames online reading comprehension as a process of problem-based inquiry involving the new skills, strategies, dispositions, and social practices that take place as we use the Internet to solve problems and answer questions. At least five processing practices occur during online reading comprehension:

1. reading to identify important questions,
2. reading to locate information,
3. reading to critically evaluate information,
4. reading to synthesize online information, and
5. reading and writing to communicate online information.

Within these five areas reside the skills, strategies, and dispositions that are distinctive to online reading comprehension as well as others that are also important for offline reading comprehension.

Reading to Identify Important Questions

We read on the Internet to solve problems and answer questions. How a problem is framed or how a question is understood is a central aspect of online reading comprehension. Recent work by Taboada and Guthrie (2006) within traditional texts suggests that reading initiated by a question differs in important ways from reading that does not.

Reading to Locate Information

A second component of successful Internet reading is the ability to read and locate information that meets one's needs (International ICT Literacy Panel, 2002; Guinee, Eagleton, & Hall, 2003). The reading ability required to locate information on the Internet may very well serve as a gate-keeping skill; if one cannot locate information, one will be unable to solve any problem. New online reading skills and strategies may be required, for example, to generate effective keyword search strategies (Kuiper & Volman, 2008); to read and infer which link may be most useful within a set of search engine results (Henry, 2006); and to efficiently scan for relevant information within websites (Rouet, 2006).

Reading to Critically Evaluate Information

A third component is the ability to critically evaluate information encountered on the Internet. Critically evaluating online information includes the ability to read and evaluate the level of accuracy, reliability, and bias of information (Burbules & Callister, 2000). This presents challenges that are quite different from traditional print and media sources. The content of online information is even more diverse and commercially biased and new sources of information about authors appear, requiring new strategies for their effective use.

Reading to Synthesize Online Information

Successful Internet use also requires the ability to read and synthesize information from multiple online sources (Jenkins, 2006). Synthesis requires the reader to bring together an awareness of the reading processes and an underlying understanding of the text. The Internet introduces additional challenges to coordinate and synthesize vast amounts of information presented in multiple media formats, from a nearly unlimited and disparate set of sources (Jenkins, 2006; Rouet, 2006).

Reading and Writing to Communicate Online Information

A fifth component of successful Internet use is the ability to communicate via the Internet to seek information or share what you have learned. Emerging research suggests that the interactive processes of reading and writing have become so intertwined on the Internet that they often happen simultaneously during communication (Coiro & Dobler, 2007). Moreover, each specific communication tool on the Internet is constituted differently and presents a range of new skills, strategies, and social practices to use them effectively (Coiro et al., 2008). New types of strategic knowledge are required, for example, to effectively participate and communicate in social networking environments such as e-mail, blogs, wikis, and instant messaging (Leu et al., 2005; Lewis & Fabos, 2005).

What Do We Know About the New Literacies of Online Reading Comprehension?

Work is just emerging on the new literacies of online reading comprehension. As a result, we are merely discovering the outlines of what happens when we read online. What do we know? First, online reading comprehension appears not to be isomorphic with offline reading comprehension; additional reading comprehension skills seem to be required (Leu et al., 2005; Coiro & Dobler, 2007). One study, among sixth grade students proficient at using the Internet (Coiro & Dobler, 2007), found that online reading comprehension shared a number of similarities with offline reading comprehension, but online reading comprehension was also more complex and included notable differences. A second study found no statistically significant correlation between scores on a state reading comprehension assessment and an assessment of online reading comprehension with good psychometric properties (Leu et al., 2005). These data also suggest that additional skills are required for online and offline reading comprehension. A third study (Coiro, 2007) found that offline reading comprehension and prior knowledge contributed a statistically significant amount of variance to the prediction of online reading comprehension, but an additional 16% of independent variance was contributed by knowing students' online reading comprehension ability. Finally, case studies and videos of online reading show that students who perform low on state reading assessments, sometimes perform at unexpectedly high levels on tasks of online reading comprehension (Leu, Zawilinski, et al., 2007). Together, these results support the claim that additional skills and strategies may be required during online reading.

It is surprising to find that some struggling readers read well online (Castek, Zawilinski, McVerry, O'Byrne, & Leu, 2011). This suggests that the Internet may be a potentially supportive context for some struggling readers. Why might this be the case? Units of text are typically shorter online as readers follow informational links from one location to another seeking help in order to solve their informational problem. Shorter units of text are easier for struggling readers to process. In addition, online readers construct their own texts to read, as they choose different paths to follow. This increases engagement and makes it more likely that readers encounter text appropriate for their abilities. Also, online

texts contain multimedia, a traditionally supportive context for struggling readers. Finally, each Web page is really a graphic image and struggling readers are often quite skilled readers of information presented graphically.

There is also a third finding—that although adolescent "digital natives" may be skilled with social networking, texting, video downloads, MP3 downloads, or mash ups, they are not always as skilled with online reading comprehension, including locating and critically evaluating information (Bennett, Maton, & Kervin, 2008). We may overgeneralize adolescents' ability to read online information effectively, from their ability to engage successfully with online social networking, texting, and video games.

What Do We Need to Know About the New Literacies of Online Reading Comprehension?

The answer to this question is simple: There is much we do not know so the need is great. We do not fully understand, for example, the reason that online and offline reading comprehension are not isomorphic. Several explanations are possible. Current results, showing a lack of correlation between the two may be due to the fact that online reading is a problem-based task while offline reading includes a wider range of comprehension tasks (see Taboada & Guthrie, 2006). Or, it may be that the reading skills required to locate information online are such bottleneck skills that students who lack this ability perform poorly online, even though they may be high performing offline readers. Or, greater levels of critical evaluation, typically required online, may be the source of the difference.

It is also likely that we can increase or decrease statistical relationships between online and offline reading comprehension by simply varying the nature of the online reading comprehension task. Online assessments that require richer, more complex use of online tools (search engines, e-mail attachments, blogs, wikis), or more complex information spaces, may generate less of a relationship with offline reading comprehension compared to online assessments that simply require the reader to read information at a single Web site. So, it is still too early to claim that the lack of isomorphism between online and offline reading is either strong or weak. That it can be demonstrated appears to be the case, but we require much more work to be able to fully understand the conditions under which the two contexts for reading require different skills and strategies.

We also do not know very much about the relative contribution of various elements of online reading comprehension to successful online reading outcomes. It is likely that skill areas often required earlier in the process (locating and evaluating information) may be more determinative of successful performance than other areas, but we have not yet evaluated this claim.

In addition, we need research on the phenomenon reported above, that some struggling readers find the Internet to be a very supportive context for reading. Prevailing wisdom in schools is that these students are not "ready" for reading on the Internet. That may be precisely opposite of what should be done for these students.

Also, we need to develop new instructional models. It is likely that these models may require one-to-one computing contexts to facilitate rapid exchange of online reading comprehension skills and strategies among students, something that initial research (Leu et al., 2005) has discovered.

Finally, we require better assessments of online reading comprehension, ones that are not only reliable and valid but also practical, easy to administer and score, and provide immediately useful information to teachers. The ones we currently have appear to be valid and reliable but they were designed for research and, as a result, require extensive time to reliably score. Currently work is taking place that seeks this broader objective (Leu, Kulikowich, Sedransk, & Coiro, 2009).

The Internet Is a Literacy Issue, Not a Technology Issue

As we consider new definitions of literacy in a deictic world, it is essential to recognize that the Internet is a literacy issue not a technology issue. Most educational systems fail to recognize this point. As a result, they create unnecessary challenges and make it more difficult to prepare a new generation skilled in the use of online information. There are two ways in which this happens.

First, public policies and assessments in literacy currently help the rich get richer and the poor get poorer in developing the ability to read and use online information effectively. How does this happen? The poorest students in any nation have the least access to the Internet at home (see Cooper, 2004). Unfortunately, it is often the case that the poorest schools are also under the greatest pressure to raise scores on tests that have nothing to do with online reading comprehension (see Henry, 2007). No state assessment of reading in the USA, for example, contains any item that measures the ability to read search engine results or evaluate the source of information appearing online for bias. In poorer schools, there is often little incentive to teach the new literacies of online reading comprehension because they simply are not tested. Thus students in the poorest schools become doubly disadvantaged: They have less access to the Internet at home, and schools do not always prepare them for the new literacies of online reading comprehension at school.

Now, consider students in the most privileged schools. Many children from advantaged communities have broadband Internet connections at home. As a result, teachers feel greater freedom to integrate the Internet into their curricula (Henry, 2007). Thus students in richer districts become doubly privileged: They have greater access to the Internet at home and they use it more often at school.

It is a cruel irony that students who most need to be prepared at school for an online age of information are precisely those who are being prepared the least. The problem stems from the fact that policy makers and educators do not yet see the Internet as a literacy issue; they see it as a technology issue.

Consider, also, a second problem, the lack of Internet integration with content curriculum. Typically, schools frame the Internet as a technology issue. This often leads to the following types of outcomes:

1. technology standards become separated from subject area standards,
2. instruction in Internet use is not taught in content classes but in a separate technology or media class,
3. someone other than the classroom teacher teaches online information use, and
4. online information and communication skills are assessed separately from subject area skills.

Greater segregation of the Internet from the content curriculum typically results; online information use is taught down the hall by someone other than the classroom teacher, often in a computer lab.

Now, consider the likely outcomes when the Internet is framed as a literacy issue:

1. technology standards become integrated within subject area standards,
2. instruction in Internet use is integrated into each subject area,
3. every classroom teacher is responsible for teaching online information and communication use, and
4. online information and communication skills are included in subject area assessments.

Clearly Internet integration with content instruction will happen faster when the Internet is defined as a literacy issue.

Literacy Is the Internet—the Internet Is Literacy

This entry began by pointing out the importance of defining literacy correctly, suggesting that literacy had become a deictic construct, largely because it increasingly takes place on the Internet. We outlined a collaborative approach to defining literacy as a deictic construct; a dual-level theory of New Literacies.

It concludes by noting that not only is literacy the Internet, but that the Internet is literacy. These two aspects of our lives are, and will be, inseparable. Recognizing the tight link between literacy and the Internet is important if we hope to understand the nature of the literacies of today while we prepare students for the literacies of tomorrow.

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SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Media Literacy; Literacy Practices in Virtual Environments; Reading and Intertextuality; Teaching Reading

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News Discourse

ALLAN BELL AND PHILIPPA SMITH

Applied linguists have long been intrigued by the language and discourse of news media. They recognize that media are significant producers of discourse, that media use language in linguistically interesting ways, and that media institutions and their discourses play an important role in shaping culture, politics, and social life. This entry discusses the main issues and frameworks that have arisen in the analysis of news discourse. It then exemplifies such work by way of a case-study analysis of an online newspaper story, and compares that with a hard copy version.

The Significance of News Discourse

We are surrounded by media, their products, discourses, and modalities. News is central to much media. It is the staple content of the newspaper, whether that be in traditional hard copy or the increasingly utilized online version. News bulks large as a flagship genre in radio and television broadcasting. On the Internet some of the most visited sites are news sites. Reading, hearing, or viewing news is an important social activity, which reconfigures but does not seem to diminish as news technologies change. Looking for news is by far the most prevalent information-seeking activity on the Internet in Western countries: In New Zealand, a third of the population look for news on the Internet daily (Smith et al., 2010).

News is a process that takes raw materials, reworks them, and transforms them into "a recognizable product which we accept as familiar" (Hartley, 1982, p. 7). Not only do news texts "draw upon and recirculate discourses," they may magnify and privilege some discourses. News discourse is shaped by technology, deadlines and time restraints, restrictions on page space or air time, journalistic practices, gatekeeping by editors and copy editors, media ownership, and a myriad of other influences to which most consumers are oblivious. Without overlooking the role of other modalities such as visuals, language is central to news. The codes, conventions, and structures of news discourse in large part define the nature of news.

Discourse analysis requires close examination of the news text, both the linguistic form and other modalities such as its visual aspect. It focuses on the form of the text and how it is used in a social context—its construction, distribution, and reception. It aims to understand what are the meanings and social significance of the text (Smith & Bell, 2008).

History, Technology, and Discourse

The spread of the long-distance telegraph from the middle of the 19th century was the first crucial step in the development of modern news practices and forms. It sped up the delivery of news and required brevity. The use of the telegraph, together with related developments such as the creation of international news agencies, helped establish modern patterns of news and its discourses. The quest to get the story first before one's competitors, and the advent of a nonchronological order for writing stories, became central to the production of news and to the craft of the journalist.

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These changes involved shifts in modes of news presentation and discourse. Until the late 19th century, news was buried in the middle of the newspaper while the front page carried classified advertisements. There were often multiple headlines which told much of the story (Smith & Bell, 2008). Across the last hundred years there has been a continuing move to greater linguistic compression, most noticeably in headlines, where short, sharp lexical items are chosen and function words are dropped.

The 20th century saw radio, and then television, adopt and adapt news forms inherited from the press. The latest technological change to affect the shape of news discourse is the advent of the Internet. What began as a transfer of hard copy newspaper content and form on to the Internet is now increasingly utilizing the affordances which the new technology enables (Knox, 2009). Clickable headlines, pictures, and key words allow readers to access more detail and background. Video footage can be viewed, not just still photographs. Space restrictions on stories change—even tighter on home pages, but longer in the full stories. And there is a convergence of media forms: online newspaper sites carry video and audio as well as pictures and quotes, while television sites carry print and still photographs as well as video footage.

Frameworks for Analysis

Several frameworks for analyzing news discourse have been developed, of which the most established are those of van Dijk, Bell, and Fairclough. Van Dijk's pioneering work on newspaper stories (1988) found there were few significant differences in news discourse structure across different languages. He proposed an analytical framework bringing together production and interpretation of discourse as well as its textual analysis. Thematic analysis goes beyond microanalysis of language and concentrates on the arrangement of themes in news reports, such as narrative patterns which create dramatic tension in a story, or the nonchronological description of events, influenced by news value or relevance. Van Dijk parallels this broad semantic structure with a syntactic structure termed "schemata": the conventions and rules that organize content and the complexity of news themes.

Bell (1991) stresses the centrality of the notion of the story to news discourse, and the fact that journalists are language and discourse professionals whose job focuses on the production of text. He offers a step-by-step guide to analysis (1998), which is used to determine the event structure in a news story and establish what a story actually says happened. Analysis of events, actors, times, and places in a story "shows up inconsistencies, incoherence, gaps and ambiguities within the story, conflicting forces during the story's production by journalist and copy editor, and implications for readers' comprehension" (Garrett & Bell, 1998, p. 9). Bell stresses the importance of news values such as negativity and recency which underlie many journalistic and editorial decisions. Below we illustrate this kind of approach on a single example.

Fairclough's (1995) framework for critical discourse analysis of communicative events involves the three overlapping dimensions of text, discourse practice, and sociocultural practice. Analyzing text involves areas such as structure, vocabulary, or representation of actors through image, language, or sound. Discourse practice covers processes of text consumption, and especially production, which Fairclough divides into two threads—institutional routines such as systems of news selection, and discourse practices where texts pass through a series of transformations, for example at the hands of a copy editor. Sociocultural practice requires consideration of outside influences that affect the construction and production of a text, for example politics, the economy, or societal attitudes. Fairclough has emphasized trends towards change in contemporary media discourses, including a shift toward greater informality.

A Case Study

The best way to approach the discourse analysis of news is through a hands-on example, here by examining one article. Presenting a full close analysis of the macro and micro levels of language and discourse in this story, together with its sociocultural embedding, is impossible in the space available. We therefore concentrate on five specific areas which reveal some characteristics of news discourse: the visual design, headline and lead sentence, discourse structure, the story's sources, and unclarities in the story.

Choosing a story from a newspaper's website enables us to look at the discourse nature of the ever-increasingly important genre of online news (Boczkowski, 2004), briefly compare it with traditional hard copy treatment, and comment on both production and reader practices. A screenshot of the story is shown as Figure 1, reproduced from the website (March 4, 2010) of the *New Zealand Herald*, the country's largest circulation daily. It concerns the damage and death caused by large waves which hit a cruise ship in the Mediterranean in March 2010.

Visual Design

Our story had been placed as the third lead on the online *Herald's* home page. News home pages are routinely crammed with brief stories and advertisements competing for readers' attention. The full lead sentence in the story (that is, Paragraph 1 in Figure 1) is reproduced below, and the "newsbite" on the home page carried the same headline, picture, and opening text as in Figure 1. However, on the home page the lead sentence ends abruptly where the space runs out at the end of the fourth line of text:

```
A freak 8-metre-high wave has
smashed into a cruise ship
carrying nearly 2,000 people in
the Mediterranean early . . . More /
```

The truncation of the home page sentence in midsyntactic structure leaves what appears there blatantly incomplete, but reflects the assumption that interested readers will perform the one-movement click that takes them direct to the full story. This is much easier than the effort required to go from a hard copy newspaper's front page to locate a continuing story inside.

The appearance of the full story in Figure 1 is similar to that of a hard copy story, with three exceptions:

- All the text is left ranged (a magazine style) rather than fully justified, as it would be in standard hard copy press.
- Several lines of white space appear under the photograph caption. Compared to the hard copy press, online space is unrestricted, overturning the centuries-long squeeze on publishable story length.
- The next column to the right alongside the photo contains several hyperlinks, most notably a link to the cruise company's website. This site carries the same picture of the ship, and a detailed listing of its luxurious amenities. The ability to provide detailed further background at a click contrasts strongly with hard copy news. There more detail has to be written up by journalists and printed somewhere—compare the last paragraph of this story, which details the ship's size and amenities. The Internet enables the news organization to offer access to information which the reader is free to follow or not. Not only does this give more information, but it is information which the news organization does not have to create or rework or take responsibility for.

Figure 1 Screenshot of online news story from the *New Zealand Herald* online, March 4, 2010 (reproduced by kind permission of APN Holdings NZ Limited; copyright restrictions prevent the text being reproduced).

Later accounts on television will show actual footage, filmed by a passenger, of the wave smashing through windows into a restaurant on the ship. But it is too soon for video to be available, so this online story offers little more by way of multimodal coverage than would hard copy, except for the hyperlinks. We see here readers cast as active participants in constructing the story, with the online affordance of more background. They can email the story to friends, or put a comment on Facebook or Twitter. This implies a news discourse which is moving away from the traditional one-way communication of the hard copy newspaper, to something which can be augmented and manipulated in a variety of ways by its readers. Note nevertheless that the traditional text still remains at the core of the story.

How does the hard copy story compare with this online version, and what can this tell us about these two different modalities of press news? The story was published in print on March 5, nearly 24 hours after the online version. It had been demoted to a three-sentence item in a column of news briefs tucked away on page A15 of the hard-copy *New Zealand Herald*:

Two die as wave hits ship
An 8-m wave has smashed into a cruise ship carrying nearly 2000 people in the Mediterranean yesterday, smashing glass windshields and killing two passengers, according to officials and news reports. Another six people suffered light injuries, the Greek coast guard said. The victims were identified as a German and an Italian man.

The reason for the demotion is the time elapsed and the thorough coverage in the interim by television, which has shown the live footage. The online story itself updated the still photograph of the ship with clickable video footage at 8.16 a.m. that morning. The hard copy newspaper, then, has been left well behind in the timing of its coverage compared to both online and broadcast news.

Headline and Lead

The headline and lead sentence form the abstract of a news story. The headline in the online story "Freak wave kills two on cruise ship" is typically styled for "spot" news of accidents and disasters. It uses the lexicon of negativity—that most gripping of news values (Bell, 1991)—focused in the words "freak" and "kills." These items stand incongruously next to "cruise ship," with its connotations of secure luxury—reinforced by the picture and the detail given about the ship in para. 10: 10 decks with 732 "staterooms," together with bars, pools, restaurants, and shops. This sets up a counterpoint with the disaster and death which has intruded into the passengers' leisure.

Lead sentences are the pearls of the journalist's craft. Deciding what to lead with is the journalist's main task in evaluating a story, and shaping that lead takes up much of the journalist's time. Once the lead is settled, the rest of the story falls into place below it. Leads therefore merit particular focus from analysts. There is a myth that news writing is syntactically simple, especially lead sentences. However, both van Dijk (1988) and Bell (1991) have shown this is not the case. At 36 words, this sentence (Para. 1) would be long in any genre, and its syntax is very complex. The text of the lead paragraph of the online story is as follows, showing the lines as displayed in Figure 1:

```
A freak 8-metre-high wave has
smashed into a cruise ship carrying
nearly 2,000 people in the
Mediterranean early today (NZ time),
smashing glass windshields and
killing two passengers, according
to officials and news reports.
```

The sentence contains a reduced relative clause modifying the noun that is object of the sentence: "a cruise ship [which was] carrying. . . ." This is followed by an absolute clause "smashing glass windshields," which is itself coordinated to a second such clause "and killing two passengers." The whole is topped off by an unusual dual source attribution, "according to officials and news reports."

The reason leads may be complex is that the journalist (or the copy editor who does a rewrite) is trying to tell as much of the story as possible in just one sentence. This particular lead sentence contains the "5 Ws and one H" of journalistic practice—who, what, where, when, why, and how—except for the "why": the story nowhere addresses the cause of the giant waves.

The print story reproduced earlier offers a headline that is both shorter and softer than the online story: "Two die as wave hits ship." The high-value "freak" and "kills" are gone, perhaps because the story is no longer new high-impact news.

Discourse Structure

Unlike other kinds of stories, the traditional news story is not told in chronological order (Bell, 1995). It begins with the central news event—in this case, the wave and the damage it caused—and then moves backwards and forwards in time. This is known as the "inverted pyramid" structure, by which prior and subsequent events and commentary are presented after the central news event.

Follow-up, commentary, and background are the three major structural categories which occur after the main event itself. Prior events usually bulk large, but in the present example they scarcely figure, except for the description (in the second half of para. 3) of the ship's route at the time of the wave, from Barcelona (in Spain) to Genoa (Italy). In this story, the later paragraphs contain:

- attempts to fill out the detail of what happened: who the victims were (one German and one Italian, para. 2), location of the incident (paras. 3–4), and detail on the waves (three up to 8 meters high, para. 9);
- commentary from the French maritime authority on weather and sea conditions at the time (winds over 100 km per hour, paras. 5–6);
- consequences of the accident for the ship's routing (returning to Barcelona), and expectations of what will happen next (paras. 4, 7, 8);
- background information about the ship (para. 10).

All these are standard categories in the discourse structure of news (Bell, 1998). The notable absence here is background on the antecedents of the central incident, that is, the causes of the extreme waves, except for a general mention of windy conditions (para. 6). The absence of explanation is typical of the immediate reporting of spot news such as an accident. Investigation of causes takes more time—and will often not get into publication.

The print story is limited to the first three sentences of the online version, which are slightly edited. The print story is shorter, not directly because of lack of space, but rather because the story has lost the news values of recency and priority (getting the story first) and so no longer merits a longer item.

Significantly, the tense of the print lead sentence shifts from the present perfect of the online story—"has smashed into"—to simple past, "smashed." The apparently minor tense difference is emblematic of a major difference in orientation. Traditional press stories are always told in the past tense, and this contrasts with broadcast news' use of present perfect, which gives the account more immediacy. We see online news deliberately adopting in its lead sentence the broadcast convention, which accords with its status as a more immediate medium. All the later sentences of the online story revert to simple past.

Sources and Intertextuality

Sources are a necessity of news practice: Journalists need sources in order to gain publishable information. Different sources routinely produce different discourses (Smith & Bell, 2007), and such intertextuality is evident here. This story has eight sources, a high number for such a short piece. They include:

- a news agency (identified underneath para. 10);
- maritime sources in Greece (paras. 2, 3), France (5, 6), and Barcelona (7, 8);
- cruise line spokesman (4, 9) and website (10);
- a French newspaper (4).

The text of the story as a whole is attributed to a news agency: the overall attribution of a story is an important component of its macrostructure. The high number of sources here reflects the media's difficulty in accessing accurate basic facts about these events.

Unclarities

Presenting a clear, unambiguous account of events is a primary goal of journalists and their organizations, yet research on news discourse shows that stories often contain significant gaps, inconsistencies, and even contradictions (Bell, 1998). Here confusion surrounds the basic "facts" of this incident, reflecting the recency of the story. Unusually, the story itself presents explicitly unresolved contradictory accounts of where the incident occurred. Locations some 300 km apart are sourced to different authorities:

Para. 3 It was unclear exactly where the incident took place. The Greek coast guard said the accident occurred near the French Mediterranean port of Marseille . . .

Para. 4 But the French newspaper *Le Figaro* said the accident happened off Capo de Begur, off the coast of Spain about 110 km northeast of Barcelona . . .

The Greek coastguard (para. 3) seems an odd source in this context, since Greece is over 2000 km away in the eastern Mediterranean. In the print story, the cuts mean that all the uncertainty over place and the range of sources is eliminated, along with the background. A second contradiction, unacknowledged within the online story, is that while the lead and headline speak of a single wave, in para. 9 the cruise company spokesman says there were three waves up to 8 meters high.

Conclusion

As this case study shows, news is a complex communicative event (Eilders, 2008). It merits ever closer scrutiny by researchers, giving attention to the pace at which news can be gathered and the locations to which it is sent. The impact of new media is increasing, with television, radio, and press available across national boundaries and the Internet offering podcasts, blogs, tweets, and other genres ancillary to online news.

The social and political practices surrounding the production and consumption of news discourse are changing. Audiences increasingly show the ability to navigate "immersive and interactive multimedia news reports" (Pavlik, 2000, p. 232), and to themselves become reporters of the news. Coverage of events often involves eye-witness accounts from "on-the-spot" civilians, as was the case with the Indian Ocean tsunami in 2004—and the participant video of the wave hitting the cruise ship in our case study.

New modes of news discourse analysis are constantly developing to address these complexities. The challenge for researchers is to provide the evidence which supports their interpretation of a text. In the words of Stuart Hall, it is necessary to "try to justify one's reading in detail in relation to the actual practices and forms of signification used, and what meanings they seem to you to be producing" (1997, p. 9). Linguistic analytical skills applied to news discourse can serve to unpack the layers of meaning and signification which interweave both offline and online worlds.

SEE ALSO: Bell, Allan; Critical Analysis of Political Discourse; Critical Discourse Analysis; Critical Media Literacy; Fairclough, Norman; Multimodal Discourse Analysis; van Dijk, Teun A.; Wodak, Ruth

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Nolan, Francis

JONAS LINDH

Francis Nolan (1952–) is professor of phonetics in the Department of Linguistics at the University of Cambridge. According to his Web page and from a personal interview he takes "a broad, 'expansionist' view of phonetics, considering its scope to include all the things we can tell when a person speaks" (Nolan, 2011).

In 1980 Professor Nolan presented his thesis on speaker characteristics, which to a large extent became the basis for his book that came out in 1983 (Nolan, 1983). Through his interest in speaker characteristics it was natural that he became involved in the application of phonetics in forensics. Many, including perhaps Nolan himself, have thought of him as a skeptic, especially in the early 1980s when potential miscarriages of justice were committed due to the lack of knowledge concerning the interpretation of spectrograms, but also due to overstated conclusions (Nolan, 1990). His research covers many areas within phonetics, including intonation (Nolan & Grabe, 1997; Nolan, 2003) and connected speech processes (Nolan, 1992; Kühnert & Nolan, 1999), but this brief entry focuses on his contribution to the forensic application of phonetics.

In 1988, a solicitor contacted Professor Nolan concerning a fraud case where there were extensive speech samples recorded over the telephone from the suspect and the perpetrator. Two other analysts had reached the conclusion that there was a match while Professor Nolan intuitively doubted it. After applying acoustic formant analysis (which the other analysts had not used) a different conclusion was reached. This led him naturally to take a rather critical stance on speaker identification. The invitation from Peter French to attend the first forensic phonetic conference in York opened the way to a closer engagement with forensic phonetic practitioners. Peter French was by this time very involved in casework and interested in bringing the subject to the surface and inviting all academics with an interest in the area and with desirable knowledge that could contribute to an expansion of the subject. These conferences later led to the creation of the IAFP (International Association of Forensic Phonetics, later becoming IAFPA by adding Acoustics to the end). Professor Nolan continued publishing widely on the subject, first on methodological questions in expert speaker identification (Nolan, 1993, 1997), but also on how to prepare voice line-ups (Nolan & Grabe, 1996) and emphasizing the limitations of forensic speaker identification (Nolan, 2001). He has made a substantial contribution by bringing linguistic and phonetic models, dialectology and acoustics together to develop the area of forensic phonetics. In recent years it has become obvious that there is a crucial lack of data on phonetic and acoustic features. A Cambridge project (with Professor Nolan as principal investigator) called DyViS (Dynamic Variability in Speech, October 2005–December 2009, funded by ESRC grant RES-000-23-1248) has mitigated the problem and the speech of a very homogeneous group of young males have been recorded in a controlled environment both direct and (in the case of one speaking style) over a landline simultaneously (Nolan, McDougall, de Jong, & Hudson, 2009). Collecting and distributing such valuable data make research and descriptive statistics on features possible in a new way. Simultaneous recordings on two different channels make new experiments possible (e.g., Lawrence, Nolan, & McDougall, 2008), building on earlier research into telephone effects (Künzel, 2001, 2002; Nolan, 2002).

Professor Nolan has also contributed to the acceptance of how to express the outcome in a logical coherent framework for expert witness conclusions (French & Harrison, 2007).

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He recognizes that population statistics and the merging of automatic techniques and auditory–acoustic methods are the most important areas in the near future, but in the meantime Professor Nolan has contributed greatly to data, knowledge, and the merging of many experimental techniques in formant measurements.

SEE ALSO: Forensic Linguistics: Overview; French, Peter; History of Forensic Linguistics; Phonetics and Phonology: Overview; Voice Quality

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Non-Native-Speaker English Teachers

GEORGE BRAINE

Teachers of English to Speakers of Other Languages, Inc. (TESOL) is the largest international organization in the world for teachers of English as an additional language. At the time of writing, TESOL has about 12,000 members from over 140 countries. TESOL is affiliated with about 100 independent teachers' organizations in the United States and similar organizations in other countries. As a result of these affiliations, the influence of TESOL extends to over 40,000 members worldwide (see www.tesol.org).

TESOL Quarterly, the research-oriented journal published by TESOL, is probably the best-known academic journal in applied linguistics. From its inception in 1967 to the appointment of the first non-native-speaker (NNS) editor in 2005, the editor of *TESOL Quarterly* had been a native speaker (NS) of English. Another dramatic change occurred in the leadership of TESOL the following year. Since its incorporation in 1966, the president of TESOL, too, had been an NS of English. But, in 2006, the first non-native English speaker president was elected by the organization's general membership.

These two unprecedented events indicate the recognition that NNS English teachers have received from the mainstream and the empowerment that the NNS English teachers have themselves achieved in recent years. Such recognition and empowerment could be attributed to the NNS movement that has arisen since 2000. This movement, which saw its origins in the United States, has since drawn the attention of English teachers and scholars worldwide. No discussion of World Englishes or the spread of English internationally is now complete without reference to the NNS movement.

Background

Historical evidence suggests that English was being taught as a second or foreign language as far back as the 15th century. Gabriel Meurier, a Frenchman who lived in Antwerp, may have been the first NNS teacher of English we know by name. *A Treatise for to Learn to Speak French and English*, authored by Meurier, was published in 1553 (Howatt, 1984). Nowadays, the British Council (www.britishcouncil.org) estimates that English is spoken as the second language by about 375 million speakers and as a foreign language by about 750 million speakers. There is little doubt that the majority of English teachers are NNSs because these vast numbers of second and foreign language speakers would be taught mainly by indigenous NNS English teachers. For instance, China recently made English a compulsory subject from Grade 3 onward. According to recent statistics, about 230 million students were enrolled in primary, secondary, and tertiary level in China (http://www.edu.cn/jiao_yu_fa_zhan_498/20080901/t20080901_321919.shtml). Undoubtedly, the majority of these students are taught English by indigenous Chinese teachers.

Despite the strong presence of NNS English teachers worldwide, issues relating to them were not openly discussed or studied until a decade ago. This may have been because the topic is unusually sensitive and is often considered politically incorrect. The commonly accepted view in language pedagogy has been that NNS English teachers are second in knowledge and performance to NS English teachers (Phillipson, 1992, has discussed the

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origins of this issue). While the authority of the NS was accepted as the norm in English-speaking countries, there appeared to be power struggles between the expatriate NS English teachers and the indigenous NNS English teachers in EFL contexts (see, e.g., Canagarajah, 1999).

The roots of the US-based NNS English teacher movement probably lie with the concept of World Englishes, first proposed by Braj Kachru and Larry Smith in the 1970s and since accepted widely by linguists. Kachru's classification of the spread of English into three concentric circles was groundbreaking because, for the first time, it showed that the NNSs in the Outer and Expanding Circles far outnumbered the NSs of English in the Inner Circle. Kachru (1992) later argued that the dichotomy between NSs and NNSs of English is functionally uninsightful and linguistically questionable, especially in the context of the functions of English in multilingual societies.

If NNS English teachers needed consciousness-raising, it came with the publication of Robert Phillipson's *Linguistic Imperialism* in 1992. One topic that Phillipson dealt with was what he termed the "native speaker fallacy"—the belief that "the ideal teacher of English is a native speaker," resulting in the widely held assumption that NS English teachers are better than NNS. Phillipson (1992) challenged the fallacy by stating that NS abilities could be instilled in NNSs through teacher training, that NNSs of a language have undergone the process of learning a (second) language and are therefore better qualified to teach the language, and that language teaching is no longer synonymous with the teaching of culture and could therefore be taught by teachers who did not share the culture of NSs of the language they taught.

One of the first to explore NNS English teacher issues was Peter Medgyes, himself an NNS from Hungary, who advanced three hypotheses based on his assumption that NS and NNS English teachers are "two different species" (1994): NS and NNS English teachers differ in terms of language proficiency and teaching practice (behavior), most of the differences in teaching practice could be attributed to the discrepancy in language proficiency, and both NS and NNS English teachers could be equally good teachers on their own terms. However, Medgyes's publications were based in Britain and were largely unknown in the United States, where the NNS movement had its origins.

Birth of the Non-Native Speaker Movement

The beginning of the NNS movement was the colloquium titled "In Their Own Voices: Non-Native Speaker Professionals in TESOL" conducted at the 30th Annual TESOL Convention, held in Chicago in 1996. Well-known NNS scholars in applied linguistics as well as novices to the profession—Ulla Connor, George Braine, Suresh Canagarajah, Kamal Sridhar, Jacinta Thomas, and Devi Chitrapu—addressed issues that were of concern to them. Their highly charged, mainly personal narratives generated much enthusiasm among the audience, and the idea for a TESOL Caucus for NNSs was first proposed at the discussion that followed.

In an invited article in *TESOL Matters*, Braine (1998) pointed out that for many NNS English teachers, qualifications, ability, and experience were of little help in a job market where the invisible rule appeared to be "No NNS need apply" and where many English language teaching (ELT) administrators simply did not hire NNS teachers. The main reason appeared to be the subtle opposition to the increasing presence of foreigners in Western academia as teachers, researchers, and scholars. Braine also pointed out that this was especially ironic in ELT, considering the profession's strident championing of multiculturalism, diversity, and other sociopolitical causes on behalf of English as a second language

(ESL) students and immigrants. He further noted that NNS English teachers who return to their countries after obtaining higher degrees and teacher qualifications in the West are not always able to find work. Some language program administrators appeared to prefer unqualified NSs of English to qualified local teachers. Such local teachers were in the bewildering and frustrating position of being denied what they had been trained to do.

In 1998, the Non-Native English Speakers in TESOL (NNEST) Caucus was established, and the first formal meeting of the Caucus was held at the TESOL Convention in 1999, which coincided with the publication of Braine's *Non-Native Educators in English Language Teaching* (1999). The overall aim of the Caucus was to strengthen effective teaching and learning of English around the world while respecting individuals' language rights. Specifically, the major goals were to

- create a nondiscriminatory professional environment for all TESOL members regardless of native language and place of birth,
- encourage the formal and informal gatherings of NNSs at TESOL and affiliate conferences,
- encourage research and publications on the role of NNS teachers in ESL and EFL contexts, and
- promote the role of NNS members in TESOL and affiliate leadership positions. (See http://nnest.asu.edu.)

The Caucus used a biannual newsletter, an active listserv, and a Web site to publicize its activities and disseminate information among the membership. The Web site also listed a bibliography of publications that have appeared on the topic. The Caucus was fortunate in the leaders it elected and the enthusiasm and dedication of its members. It appeared to have released a flood of pent-up energy in the empowerment of NNS English teachers. Through outreach activities, well-attended meetings, an actively subscribed listserv, conference presentations, and publications, the Caucus created a vibrant TESOL community that had attracted 1,700 members by 2008.

In 2008, by consensus of its members, the Caucus transformed itself into an Interest Section of the TESOL organizations. Caucuses are mainly for advocacy whereas Interest Sections are more concerned with professional issues. This transition marked another milestone of the movement with its emergence as a full-fledged area of research.

Reflecting on Achievements

More than ten years after the formation of the Caucus, it is time to reflect on the achievements of the NNS movement. What began as an attempt by a small group of TESOL members has now become a worldwide movement. Three of the original objectives—to encourage the formal and informal gatherings of NNSs at TESOL and affiliate conferences, to encourage research and publications on the role of NNS teachers in ESL and English as a foreign language (EFL) contexts, and to promote the role of NNS members in TESOL and affiliate leadership positions—have been achieved beyond expectations. The first objective, to create a nondiscriminatory professional environment for all TESOL members regardless of native language and place of birth, is more an ideal than a pragmatic reality, and the NNS movement will continue to work toward these ends. More specifically, the major achievements are the rise in self-esteem, a surge in academic research and publications on NNS issues, and leadership in TESOL. I will close this entry by commenting on each of these achievements.

Rise in Self-Esteem

When a suitable name for the Caucus was contemplated in 1997–8, some colleagues did not support the inclusion of the term "non-native speaker" in the name and suggested alternatives such as "second language-speaking professionals", "second language-teaching professionals", and "English teachers speaking other languages." Their reticence came as no surprise. As stated earlier, NNS English teachers had long been considered second rate, which in turn may have caused a certain lack of self-confidence among them.

In sharp contrast, the period since 1998 has seen a surge in the use of the term "non-native speaker" in scholarly presentations and publications as well as in informal discussions, both face-to-face and online. Now, it is politically correct to use the term and NS scholars and teachers no longer hesitate to use it. But among NNS English teachers, particularly, the change has been dramatic. No longer afraid to call themselves NNSs, they have transformed the landscape of academic presentations and publications. For instance, since the formation of the Caucus, the annual TESOL Conventions have included about 15–20 presentations on NNS issues, with the term "non-native-speaker" in the title. Many of these presentations have been by NNSs themselves.

Surge in Academic Research and Publications on Non-Native-Speaker Issues

The NNS bibliography, available on the Interest Section Web site, lists more than 200 publications. Most of them of them have appeared since the formation of the Caucus, and many have been authored by NNSs.

Since the appearance of Braine (1999), three major anthologies have appeared: Kamhi-Stein (2004), Llurda (2005), and Braine (2005). Braine (2010) has recently brought out a volume that sums up the achievements of the NNS movement, and describes the challenges faced by NNS English teachers.

Language Teaching publishes state-of-the-art articles on topics and areas related to second language teaching and learning. In volume 41, the state-of-the-art article was "Non-native English-speaking English language teachers: History and research," authored by Lucie Moussu and Enric Llurda (2008). This publication could be seen as a milestone in, and the coming of age of, the NNS movement. The article had 165 items in the list of references, a rich source of information for future researchers and scholars.

Leadership in TESOL

As mentioned earlier, an NNS, Suresh Canagarajah, became editor of *TESOL Quarterly* in 2005, and another, Jun Liu, was elected president of TESOL for 2006–7. Canagarajah was a presenter at the historic TESOL colloquium of 1996, and Liu is a founding member of the NNEST Caucus and was its second chair. The third chair of the Caucus, Lia Kamhi-Stein, has served as a board member of TESOL. Another active member of the Caucus, Brock Brady, has also been a TESOL board member and president of TESOL. In addition, more and more NNSs are taking leadership roles in applied linguistics and English language teaching.

SEE ALSO: Advocacy in Language Teaching; Language Teacher Development; Linguistic Imperialism; Nativeness and Language Pedagogy; Native Speaker

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Norms of Translation

THEO HERMANS

If we assume that translation serves a communicative purpose, some degree of coordination between the participants in the process—sender and receiver, *ego* and *alter*—will be necessary. The concept of norms has been deployed in the study of translation in an attempt to gain a better understanding of the factors governing the communicative behavior of translators and the interaction between translators and their audiences. There has been a good deal of theoretical reflection on the role of norms in the context of translation and translation studies (Toury, 1980, 1995; Frank & Schultze, 1988; Hermans, 1991, 1996, 1999; Nord, 1991: Chesterman, 1993, 1997; Schäffner, 1997) and the issue has gained renewed attention with the recent interest in the sociology of translation (Wolf & Fukari, 2007; Pym, Shlesinger, & Simeoni, 2008). In what follows I will first set out the concept of norms in general terms before explaining how it has been used in the study of translation. I will then consider some of the applications and implications of the norms concept in translation studies.

The Concept of Norms

The concept of norms has proved useful in a range of social sciences, from law and ethics to social psychology and international relations (Hjort, 1992), but there is no unanimity as regards terminology or the exact distinctions between norms, conventions, rules, constraints, and other similar terms.

The term "norm" may refer both to a regularity in behavior and to the mechanism which accounts for this regularity. The mechanism has a socially regulatory function and comprises a psychological as well as a social dimension. It mediates between the individual and the collective, between the individual's intentions, choices, and expectations, and collectively held beliefs, values, and preferences. Norms bear on the interaction between people, more especially on the degree of coordination required for the continued, more or less harmonious coexistence with others in a group. Norms contribute to the stability of interpersonal relations by reducing uncertainty about how others will act. By generalizing from past experience and allowing projections concerning similar types of situation in the future, norms help to make behavior more predictable.

Translation in a social environment involves transactions between several parties who have an interest in these transactions taking place. The translator, as one of the decision-making parties in the transaction, is an agent whose actions are neither wholly free nor predetermined, especially as the entire process is played out in the context of existing social structures. The more the parties can coordinate their actions, the greater the likelihood that they will consider their interaction successful.

To appreciate the role of norms and conventions in solving interpersonal coordination problems, we may start from the definition of convention provided by the American philosopher David Lewis (1969). Lewis describes conventions as regularities in behavior which emerge as contingent solutions to recurrent problems of interpersonal coordination. The solutions are contingent in that they are neither necessary nor impossible: they could

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have been different. If they prove effective, these solutions become the preferred course of action for individuals in a given type of situation. Conventions grow from precedent into social habit. They do not have to be explicitly agreed, but they presuppose a degree of common knowledge and acceptance. They imply reciprocal expectations and the expectation of expectations: the expectation of others that, in a given situation, I will adopt a certain course of action, and my expectation that others expect me to adopt that course of action.

Conventions are not norms, although the distinction is not always made and conventions are sometimes regarded as implicit norms or "quasi-norms" (Lewis, 1969, p. 97; Hjort, 1990, p. 43). They can, however, become norms by falling victim to their own success. If a convention has served its purpose sufficiently well for long enough, the mutually shared expectation about what course of action to adopt in certain types of situation may grow beyond a mere preference and acquire a binding character. At that point the modality of the expectation changes from cognitive to normative (Galtung, 1959). Cognitive expectations are willing to adjust to changing events; when something unexpected happens, the expectation accommodates the new information and changes accordingly. Normative expectations, by contrast, are unwilling to learn or adjust; when things happen which do not accord with the expectation, the latter is kept intact and "correct" behavior continues to be expected at the next occurrence. Niklas Luhmann speaks of norms as "counterfactually stabilised behavioral expectations" (1995, p. 321; 2008, p. 39). Whereas cognitive expectations respond to what "is," normative expectations stipulate what "ought" to be the case.

Norms can be understood as stronger, prescriptive versions of conventions. Like conventions, norms derive their legitimacy from shared knowledge and mutual expectations; on the individual level, they are largely internalized. Unlike conventions, norms have a directive character: They tell individuals not just how others expect them to behave but how others prefer them to behave. Norms imply that there is a course of action which is more or less strongly preferred because it is accepted as proper or correct or appropriate.

The directive force of a norm is a matter of social pressure, backed up with inducements and rewards or the threat of sanctions. Hence norms may act as constraints on the individuals' decision making by foreclosing certain options, even though these remain available in principle. At the same time norms suggest, more or less emphatically, a particular selection from among the range of possibilities, working as a problem-solving device by offering ready-made templates for action. They cover the entire range of preferences and permissions, stretching as far as prescriptions at one end and proscriptions at the other. In all these manifestations they help to increase predictability by reducing the risk of communication misfiring.

Norms may be strong or weak, more or less durable, and narrow or broad in scope. They can and will be breached, but they are able to cope with a relatively large amount of discrepant behavior. In this sense norms do not preclude conscious agency or erratic conduct. To the extent, however, that norms are inculcated as part of an individual's socialization, they become internalized as dispositions, propensities to act in certain ways. Because they form part of the fabric of social expectations, norms provide relative stability and hence security; while they change in response to changing values and persistent or conspicuous transgressions, they do so more slowly than individual behavior. In this respect the relation between behavior and norms is similar to that between *parole* and *langue*, or event and structure.

As the prescriptive force of norms increases from the permissive to the mandatory, they move away from conventions toward rules, which may be understood as institutionalized, usually explicit obligations and prohibitions issued by an identifiable authority with the power to impose specific sanctions for transgressions.

Norms in Translation Studies

With respect to translation, norms are relevant only to the extent that translators or other participants in the transaction make decisions. In an influential essay from 1967, the Czech theorist Jiří Levý invoked game theory to describe translating as a decision-making process: Between the two extremes of total predictability (decisions necessitated, for example, by grammatical categories) and total unpredictability (wholly idiosyncratic one-off choices), each move represents a choice from among a given set of alternatives and in turn conditions the next move. Elsewhere Levý, and shortly afterwards Anton Popovič, saw two norms governing the translator's decision making: one that was reproductive and concerned with how to represent the original, and one that was productive and concerned with the well-formedness of the new text. Different historical periods, they suggested, put the emphasis now on one and then on the other norm and valued translations accordingly. The norms in each case were those factors that constrained the translator's freedom of choice (Levý, 1969; Popovič, 1976). Both Levý and Popovič drew on the Czech structuralist Jan Mukařovský, who in the 1930s and 1940s had described the individual work of art as "a complex tangle of norms" and a "confrontation of heterogeneous norms" (1978, p. 52), adding that audiences might well project different norms on a work of art than those initially observed by its creator.

Much the same approach was taken by Gideon Toury (1995), who made the norms concept a central plank in his descriptivist program for the study of translation. Toury saw norms as performance instructions for translators and distinguished different kinds of norms operating at different stages of the translation process. Preliminary norms govern the choice of what to translate in the first place; the initial norm steers the translator either toward preserving as much as possible of the original or toward producing a well-formed new text. Various operational norms guide decision making during the actual business of translating, with matricial norms regulating the macrostructure of the text and textual-linguistic norms affecting microstructures. The relevance of norms in this outlook is that the sum of the choices made by the translator determines the shape of the end product and hence not just the nature of the relation between the translation and its proto-text but also the way the translation is likely to be perceived by the audience for which it is intended.

Whereas Toury approached norms very much from the point of view of the translator's decision making, Andrew Chesterman took the interaction between translators, audiences, and fellow translators into account, and drew on theoretical discussions in other disciplines. Apart from the social and ethical norms which govern communication in general, Chesterman (1997, pp. 175–86) distinguished translation-specific "technical" norms, which he subdivided into product or expectancy norms on the one hand, and process or production norms on the other. Product or expectancy norms reflect the expectation of what a translation should look like. They largely determine what will be accepted as proper or legitimate translation by a particular community and thus stake out the perimeter of the concept of translation for that community. They correspond to what Christiane Nord (1991) had previously called the constitutive conventions of translation, which distinguish between translation and other kinds of rewriting such as parody or adaptation.

Chesterman's process or production norms are broken up into three kinds: an accountability norm, which is ethical in nature and regulates personal relations between translators and other stakeholders such as authors, commissioners, clients, readers, and fellow translators; a communication norm, which stipulates that translators should optimize communication in accordance with Gricean maxims; and finally, and most importantly, a relation norm, which ensures that "an appropriate relation of relevant similarity is established and maintained between the source text and the target text" (1997, p. 69). What constitutes

relevant similarity, what type of similarity is considered appropriate, and how it is to be achieved will depend on the circumstances; these may include the translation brief or a particular translation tradition, the supposed needs of a prospective audience, or the type of original to be translated. All the process or production norms operate at a level below that of product or expectancy norms. Christiane Nord speaks here of regulative conventions, in that they regulate the kind of translation that will result.

Only the third of Chesterman's process or production norms is properly a translation norm; the others are not exclusive to translation. In other words, translation seems to be affected by a multiplicity of norms, but many of these apply to all manner of communication and indeed all manner of behavior. Nevertheless the importance of the norms concept for translation is that it allows a revision of the traditional notion of what constitutes a correct translation. Considered from a norm-theoretical point of view, correctness in translation cannot be predetermined but is a matter of compliance with prevailing norms of translation. Toury argued that norms give substance to equivalence. In his view, if a text is accepted as a translation, it follows axiomatically that the relation of equivalence between the translation and its original obtains; norms determine the concrete shape of that equivalence relation in specific instances. Adherents of functionalist approaches to translation, such as *skopos* theorists Hans Vermeer and Christiane Nord (see Nord, 1997), have suggested that equivalence is an inappropriate term in this context and that translations can be measured in terms of their "adequacy" to the context in which they are deployed; this adequacy involves respect for or violation of norms.

Applications and Implications

The introduction of the concept of norms into translation studies enabled the contextualization of translation and offered a tool for historical research at a time when cultural rather than linguistic factors came to be seen as relevant to understanding translation in its social manifestations. Whereas early theorists like Levý and Toury treated norms primarily as constraints which simplified the translator's decision making by foreclosing undesirable options, subsequent approaches stressed the interaction between various stakeholders as well as the importance of ideological values underpinning social norms. Others shifted the emphasis from observance, stability, and the confirmation of the status quo to norm breaking and its potential to challenge the social order.

Whatever the emphasis, researchers have faced the problem of identifying translation norms. Many decisions translators make can be ascribed to norms governing the acceptability of texts as such, without necessarily involving translation-specific norms. Separating out the demands stemming from the kinds of texts for which translation caters from normative expectations specific to translation is problematic because translations are never just translations. They are translated novels or contracts or speeches or recipes, and they are likely to defer to the rules governing textual well-formedness in these genres. In this sense, but taking a broader view, Tejaswini Niranjana suggests that translation is overdetermined by religious, racial, sexual, and economic discourses (1992, p. 21). An additional difficulty is that norms are not directly observable. They must be inferred, either from statements about them or from behavior. In neither case is the inference without risk. Statements about norms may reflect individual intentions or attitudes rather than shared expectations, and behavior, even recurrent behavior or patterns of behavior, may be explained in multiple ways. From a methodological point of view it seems obvious that studying translation through the prism of norm theory requires a substantial number of translations, so that repeated recourse to certain options can gain relief against the backdrop

of available alternatives. Even then the choices made need to be further contextualized with reference to such things as commercial success or failure, critical approval or rebuke, prevailing models and explicit normative statements. Certainty as to the impact of norms on the translator's choices is not to be had, and in any case the lines separating individual preferences, conventions, norms, and rules remain blurred. Retranslations as well as translations which have caused controversy tend to be particularly rewarding objects for study, as revisions and critical debate bring the players' assumptions and expectations to the surface.

The idea that translation is overdetermined by other discourses has implications for translator training. Learning to translate means acquiring the knowledge and skill necessary to produce adequate translations, which in turn means the ability to negotiate the demands of the relevant discourses. The process amounts, in Pierre Bourdieu's terminology, to the acquisition of an appropriate habitus enabling the novice translator to become a player in the field. Training, however, does more than merely inculcate routines. Through examples of good practice and analysis of errors it fosters conscious awareness of the rules of the game. The competent translator should therefore be able not just to translate in accordance with relevant expectations but to decide when it is right or appropriate either to follow suit or to transgress—together with a realistic assessment of the consequences of these decisions.

Viewed in a broader cultural and historical context, translation norms in their totality can be said to inform the translation poetics of particular periods and cultures. A poetics may be understood as made up of a body of mostly normative textual expectations together with a set of canonical models and practices. A translation poetics in this broad sense largely determines what a culture, or a relevant subsection of it, selects for translation from outside its own sphere, how it will process the data, and how the resulting translations are likely to be received. The inclusions and exclusions, the modes of translation that are chosen or rejected, and the public response to the end products are indicative of how that culture sees itself. Cultures may adopt welcoming or defensive stances, they may translate out of a sense of need or curiosity, or because the choice whether or not to translate is denied them. Whatever the configuration in particular instances, a translation poetics provides an index of cultural self-perception and self-definition, since such definitions involve positioning oneself in relation to otherness.

The study of norms is not itself a normative activity. But if we study norm complexes in their historical setting, we need to find a way to translate them into our contemporary disciplinary idiom and, more often than not, across natural languages. The study of translation and translations must translate, in one way or another. If translation is a norm-governed activity, it follows that the scholarly translation of translation which takes place in translation studies cannot entirely avoid being contaminated by its object. This calls into doubt the neat separation between object-level and meta-level. It is a predicament students of translation share with ethnographers and historians, and there is no easy solution to it. Like ethnography and historiography, translation studies have devised ways of living with the paradox. They have done so primarily, in the last decade or so, by becoming increasingly self-reflexive and by drawing on the ethical norms regulating professional translating as well as those governing academic scholarship and research. The concept of norms has thus gained an unexpected relevance, not just as a tool to unlock translation but as an instrument of disciplinary reflection.

SEE ALSO: Cultural Identity; Pragmatics and Culture; Sociological Approaches to Translation; Strategies of Translation

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Norris, Sigrid

IRMENGARD WOHLFART

Associate Professor Sigrid Norris (b. 1961) is Director of the Multimodal Research Centre (MRC, at www.multimodalresearch.org/) at Auckland University of Technology (AUT), New Zealand. Sigrid Norris dynamically supports MRC research, supervises PhD and master's degree students, and lectures at postgraduate level in the School of Communication Studies, while also networking worldwide (e.g., Norris, 2011a). Before she joined AUT, she taught in the Department of Communication, Culture, and Technology at Georgetown University, Washington, DC and in the Department of English, Linguistics, and Speech at the University of Mary Washington, Fredericksburg, Virginia. Her work background includes language teaching and translation, librarian work, and engagements in public relations.

Sigrid Norris is one of the leading academics in the areas of mediated discourse analysis and multimodal interaction analysis. She is most widely known for the theoretical and methodological framework that she established for this interdisciplinary area of inquiry. She is a prolific writer of academic texts that explore and develop various aspects of her theory and method and their applications. These have been published in numerous books, edited volumes, and journals. She also has published poetry that deals with perceptions during fieldwork (Norris, 2008).

Born and raised in North Rhine-Westphalia in Germany, Sigrid Norris acquired her background in inorganic chemistry at the University of Bayreuth in Germany. She then studied at George Washington University in Washington, DC, where she turned her interest to the study of language and creative writing, completing a BA in Russian Language and Literature. Later, at Georgetown University, she turned toward linguistics, communication, and identity construction. In 1997 she received her MS in Linguistics under Deborah Tannen's supervision, and in 2002 achieved her PhD in Linguistics with distinction under the guidance of Ron Scollon.

Norris's research interests span a range of fields. For instance, she uses video ethnography and sociolinguistic interviews to investigate identity construction in everyday life (Norris, 2006) as well as long-term (Norris, 2010); she investigates workplace practices; the politics of national and ethnicity identity (Norris, 2007); the embodied/disembodied interface in modes; the interconnected nature of senses and communication modes of teacher, learner, and horse in riding lessons; and she instigated a project in geosemiotics and the use of signage in place across the world. But above all she focuses on the theoretical and methodological bases of multimodal interaction analysis, analysis of multiparty interactions, multimodal transcription, and the analysis of multimodal personal identity construction. Her work is strongly influenced by the late Ron Scollon's work on mediated discourse analysis; Erving Goffman's work; Gumperz and Tannen's interactional sociolinguistics; and Kress and Van Leeuwen's approach to multimodality.

In her PhD project, Norris (2002a) introduced a theoretical framework for multimodal discourse analysis, applying these theoretical notions to exploring phenomena of identity construction in an extended ethnographic study. Building on and developing mediated discourse analysis, Norris's framework pushes the boundaries of conventional linguistics through analytical inclusion of simultaneous actions and settings, which were traditionally

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seen as context. Her theory, introduced in her thesis, consists of the concepts of a foreground–background continuum and modal density, and Norris demonstrated that these two notions allow insight into a social actor's levels of attention/awareness given to simultaneous actions and into the dimensions of a social actor's identity construction.

In her book *Analyzing Multimodal Interaction: A Methodological Framework*, Norris (2004) details the functions and wide applicability of her methodological framework for analysis for researchers and students, asserting and exemplifying the multimodality of interactions. In *Discourse in Action: Introducing Mediated Discourse Analysis*, Sigrid Norris and Rodney H. Jones (2005) brought together influential academics to present an edited volume, which the London academic Gunther Kress (2005, p. 208) describes as part of "a paradigm-shift," as "a new domain [. . .] being staked out, the domain of human action as meaning." No longer is language necessarily highest in the hierarchy of communicative modes, no longer necessarily the focus of attention. Rather, the question of discourse as social action is approached through first raising the question of what kind of action is taken; and only after this is dealt with, the role of discourse in this action is explored.

In *Identity in Interaction*, Norris (2010) reviews and illustrates the development from discourse analysis to multimodal interaction analysis, from the analysis of spoken language to a holistic analysis of identity construction displayed in a range of observable communicative modes during interactions. While analysis starts with the focal point of interaction, as is common in discourse analysis, Norris incorporates less focused and unfocused mediated actions as well as frozen actions entailed in material objects, reinforcing her concept of a foreground–background continuum and redefining the concept of site of engagement. Another fresh concept is that of three discourse layers, namely outer layers, which refer to the wider societal/institutional forces a social actor has to deal with and respond to; intermediary layers, which refer to the forces of the actor's social network; and central layers of discourse, in which the social actor truly is the agent and enforces actions on others. Another of Norris's innovative concepts is that in simultaneous interactions these layers of discourse interweave with and generate vertical layers of a social actor's identity element construction, with outer layers of discourse creating general identity elements; intermediary layers of discourse producing continuous identity elements; and central layers of discourse producing immediate identity elements. Norris also emphasizes that any social-time-place of a social actor in interaction always involves layered discourses. This social-time-place refers to the unique and irreproducible situation of a social interaction.

Sigrid Norris's website (www.sigridnorris.com) also allows a glance into her work and interests, and publications are referred to below.

SEE ALSO: Analysis of Identity in Interaction; Discourse in Action; Mediated Discourse Analysis; Multimodal Interaction Analysis; Multimodality and Identity Construction; Transcribing Multimodal Interaction

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Norton, Bonny

CHRISTINA HIGGINS

Bonny Norton is Professor and Distinguished University Scholar in the Department of Language and Literacy Education at the University of British Columbia (UBC), Canada, where she has received both the Killam Teaching Award (2003) and the Killam Research Prize (2007) for her exemplary contributions to the field of applied linguistics. In 2011, Norton became the inaugural recipient of the "Second Language Leadership Through Research" Award from the American Educational Research Association.

Norton's research addresses identity and language learning, applied linguistics and international development, and critical literacy. In addition to her scholarship, which includes her widely cited monograph, *Identity and Language Learning: Gender, Ethnicity and Educational Change* (2000), three edited books, and numerous research articles and book chapters, she has pursued her dedication to these areas as founding coeditor of the *Critical Language and Literacy Studies* book series, published by Multilingual Matters (with Alastair Pennycook and Vaidehi Ramanathan), and through her service to the field. She was teaching issues editor of the *TESOL Quarterly* from 1994 to 2007, and she is cofounder, with Sinfree Makoni and Pippa Stein, of the AILA Research Network on Applied Linguistics and Literacy in Africa and the Diaspora (www.renafrica.org).

Born and raised in South Africa, Norton has long had an interest in critical approaches to language and literacy practices in multilingual contexts, and her first publication in *TESOL Quarterly* (Norton Peirce, 1989) was a cowinner of the 1990 Malkemes Prize for "opening a new era in the profession" for integrating linguistics, politics, and pedagogy at a fundamental level. After earning degrees in education and applied linguistics at the University of Witwatersrand (Wits), and teaching at high school in Johannesburg, Norton earned her MA in theoretical linguistics at Reading University in England. She then joined the Educational Testing Service in Princeton, New Jersey, where she worked as a TOEFL test developer from 1984 to 1987. Her interest in language assessment and social change arose from this work, with an early key publication in the *Harvard Educational Review* (Norton Peirce & Stein, 1995). Another publication on "Demystifying the TOEFL Reading Test" won the 1994 International Language Testing Association Award for the best article on language testing (Norton Peirce, 1992). After completing her PhD in language education at the Ontario Institute for Studies in Education (OISE), at the University of Toronto, Norton was a visiting scholar at Wits University, a SSHRC postdoctoral fellow at OISE, and a USA Spencer postdoctoral fellow at McMaster University. She joined the faculty in the Department of Language and Literacy Education at UBC in 1996.

Norton is best known for her work on second language learning and identity, and for developing the sociological construct of *investment* to complement the psychological construct of *motivation* (Norton Peirce, 1995; Norton, 1997, 2000). After researching immigrant second language learners in Canada, Norton found that learners could not be unproblematically defined as either motivated or unmotivated. Instead, she recognized that learners construct their identities as second language speakers in response to social and historical relations with their target language communities, and with reference to their cultural past and hopes for the future. Learners invest in a target language with the understanding that they will acquire a wider range of symbolic and material resources, which will increase the

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value of their social and cultural power. Access and privilege shape learners' investments since they must navigate frequently inequitable social structures as well as their own human agency. In this view, while a learner may be highly motivated, he or she might not be invested in the language practices of a given classroom or community, which may, for example, be racist, sexist, elitist, or homophobic. In Norton's research, some ESL learners were able to claim legitimacy over time by negotiating "the right to speak," but others did not experience such access, and hence, chose not to invest in the identity of the ESL learner/speaker. Such findings led Norton to more closely examine how gender plays a role in identity formation in language learning (Norton & Pavlenko, 2004), and to explore how critical pedagogies can open up new spaces for learners (Norton & Toohey, 2004). Since Norton's seminal publications, the concept of investment has been taken up by many applied linguists in contexts ranging from academic language socialization (McKay & Wong, 1996) to heritage language learning (Potowski, 2004; Wong & Xiao, 2010) and the learning of English as an international language (Gu, 2008).

Other constructs related to investment that Norton has brought to the center of debates in applied linguistics are *imagined communities* and *imagined identities*. Second language learners can claim identities as legitimate speakers if they can forge connections with particular communities of language users. These communities are often imagined communities since they may be far removed from the learners, or they may simply be out of reach due to structural constraints. As an illustration, Norton (2000) shows how two adult immigrant language learners who were highly invested in imagined communities outside their adult ESL class eventually dropped out since their imagined identities were not validated by their ESL teachers. These topics are further explored in a thematic volume that Norton coedited with Yasuko Kanno in the *Journal of Language, Identity and Education* (Kanno & Norton, 2003).

While she continues to write about identity and English-language learning around the world, Norton has turned her attention more squarely back to sub-Saharan Africa in recent years, where she has combined her long-standing interest in identity with the role of critical literacies in international development (Mutonyi & Norton, 2007; Tembe & Norton, 2008). After serving as a plenary speaker at the third Pan-African Conference on Reading in Kampala, Uganda, in 2003, Norton began working closely with both Ugandan and UBC colleagues on major grant-funded projects on literacy and development. As much of this work has explored how learners' literacy experiences relate to their social worlds, Norton has often focused on young people's health literacies in the context of HIV/AIDS education and prevention. Her research has examined how peer education offers opportunities for critical responses to the threat of HIV (Norton & Mutonyi, 2007), and how the larger discourses in HIV/AIDS research govern official responses to the pandemic (Norton & Mutonyi, 2010). Her passion for working to promote deeper understandings of the links between literacy, education, and public health are clearly reflected in her latest edited volume, *Language and HIV/AIDS*, which she co-edited with Christina Higgins (Higgins & Norton, 2010). As one reviewer wrote, "Applied linguistics doesn't get any better than this" (Fonken, 2011, p. 126).

Bonny Norton's dedication to applied linguistics as a vehicle for social change and empowerment is inspiring, and her enthusiasm is tireless. Still, despite a long list of commitments and constant travel for research and invited talks, one of Norton's best qualities is that she always finds time to give encouraging feedback to others, particularly emerging scholars who are finding their way in a complex and exciting field.

SEE ALSO: Critical Applied Linguistics; Critical Ethnography; Language and Identity; Subjectivity

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Nunan, David

KATHLEEN M. BAILEY

David Charles Nunan was born in Broken Hill, New South Wales, Australia in 1949. He describes himself as the child of working-class parents and says he might have been destined to a life in the mines, had he not been passionate about surfing and writing.

Education

Nunan's education included a bachelor of arts in English (1971) and a diploma in education (1972) from the University of New South Wales. He then completed a diploma in education with a specialty in English language teaching at the University of Exeter (1977), followed by a master's of education there (1978). He later did his PhD in educational psycholinguistics at Flinders University in Australia in 1984.

Nunan's educational experiences were interspersed with a variety of early work experiences that took him to three different continents. He served as an instructor in the Institute of Languages of the University of New South Wales from 1973 to 1976. Then, while he was working on his degree at the University of Exeter in the UK, he was a lecturer for the Bell Educational Trust in Norwich from 1976 to 1978. From 1978 to 1980 he served as a lecturer and curriculum developer in TESOL (teaching English to speakers of other languages) at Chulalongkorn University in Bangkok. From there he moved to Adelaide, where he was the ESL (English as a second language) methodologist at the College of Advanced Education. His next move was to be the Founding Director of the National Curriculum Resource Centre, a position funded by the Australian Department of Immigration and Ethnic Affairs. This work was to play a seminal role in both Australian applied linguistics and in Nunan's own professional development. In his "academic autobiography" (Nunan, 2010), Nunan wrote, "The DIEA officials did not seem to have much idea of exactly what they wanted other than the Centre was intended to give the Adult Migrant Education Program a great sense of professional coherence and direction, so I would have pretty much a free hand." This organization was later moved to MacQuarie University in Sydney, where it was called the National Center for English Language Teaching and Research (NCELTR). There, with several colleagues (notably Geoff Brindley, Anne Burns, Jill Burton, Jenny Hammond, Sue Hood, Gurd Stabler, Gillian Wigglesworth, and Ken Willing), Nunan would influence Australian teacher education, curriculum design, and language assessment. And through his publications and those of NCELTR in general, the NCELTR team would have an impact on these same topical areas around the world.

Nunan calls himself a generalist (see Nunan, 2010), but he has surprising depth in a number of key areas in language teaching pedagogy, research methodology, second language acquisition, and teacher education. This biography will briefly summarize his work in four of these topical areas: (a) in pedagogy, innovations in curriculum design and methodology; (b) in research methodology, action research; (c) in second language acquisition, strategy research; and (d) in teacher education, where his focus has been largely on professionalism and professional development.

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Innovations in Curriculum Design and Methodology

Nunan has written a great deal about language syllabus design and curriculum development. The late 1980s were a particularly productive time for him in terms of these topics, with three classic books appearing in two years: *Syllabus Design* (1988a), *The Learner-centred Curriculum* (1988b)—a volume that later was published in a Chinese edition—and *Designing Tasks for the Communicative Classroom* (1989).

This last book of the three mentioned above (Nunan, 1989) represents one of Nunan's particular areas of interest: task-based learning and teaching. In fact, along with Ellis (2003) and others, Nunan helped to define and promote this movement, which was fueled in part by second language acquisition research. When his publisher asked him to produce a second edition of the original book on designing tasks, Nunan found that the field had changed so drastically, and that there had been so much work on this topic, that an entirely new book was needed. As a result, he produced another volume, *Task-based Language Teaching*, which appeared in 2004.

Influence on Action Research in Applied Linguistics and Language Teaching

One of Nunan's main intellectual contributions to language teaching and applied linguistics worldwide is his work on language classroom research in general (Nunan & Bailey, 2009) and action research in particular (see, e.g., Nunan, 1990). Action research is a method of addressing issues through a cycle of observing, planning, acting, and reflecting on the outcomes of the procedure, which is repeated as the research questions and research focus evolve (van Lier, 1994). Although the method was begun in the United States by the sociologist Kurt Lewin, it was overshadowed in US academic circles by "large N" quantitative research. Nevertheless, action research survived in the UK and then later thrived in Australia, largely through the influence of the Deakin University group (see publications by Carr, Henry, Kemmis, and McTaggart, in various combinations of coauthorship) in first language education and of Nunan and his colleagues in the NCELTR in second language education.

Through the publications and workshops offered by Nunan and his NCELTR colleagues, action research gradually began to influence language education as a viable research method throughout the world—but perhaps particularly in Australia (see, e.g., the "Teachers' Voices" series edited by Burns, de Silva Joyce, & Hood, 2000); Hong Kong (e.g., Mok, 1997); Italy (see volume 29 of *Perspectives, A Journal of TESOL Italy*); and the United States (see, e.g., Snow, Hyland, Kamhi-Stein, & Harclerode Yu, 1996).

Second Language Acquisition (SLA) Strategy Research

Nunan has also been involved in second language acquisition research—both in providing syntheses for teachers (see, e.g., Nunan, 1996a) and in conducting and editing original research. His own contributions in this area focus largely on language learning strategies (Nunan, 1996b, 2002; Nunan, Lai, & Keobke, 1999). Many of the grants he received during his academic career were focused on this topic.

Teacher Education, Professionalism, and Professional Development

Nunan's substantial influence on language teacher education derives from his publications, his university teaching posts, and the lectures and workshops he has given around the

world. With Jack Richards, he produced the first edited volume on *Second Language Teacher Education* (Richards & Nunan, 1990). This book was later produced in a Chinese edition. He edited a book on collaborative language learning and teaching and coedited a volume on change in language education (see "Suggested Readings" at the end of this entry). He coauthored a book entitled *The Self-Directed Teacher: Managing the Learning Process* (Nunan & Lamb, 1996), as well as one on professional development for language teachers (Bailey, Curtis, & Nunan, 2001), which was also later published in a Chinese edition.

A great deal of Nunan's influence as a teacher educator is not embodied in his publications, however. Throughout his career he has been very active in teaching courses, giving workshops and plenary presentations, and running teacher education programs. As of this writing, he has given courses, seminars, workshops, and other presentations in at least 38 countries: Argentina, Australia, Brazil, Cambodia, Canada, Chile, China, Colombia, Costa Rica, the Dominican Republic, El Salvador, France, Germany, Guatemala, Indonesia, Italy, Japan, Korea, Malaysia, Mexico, Oman, Papua New Guinea, Peru, the Philippines, Singapore, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the UAE, the UK, Uruguay, the USA, Venezuela, and Vietnam.

Work as an Editor, Administrator, and Textbook Author

Nunan's authorial record is all the more surprising, given that he has held so many administrative posts and has worked broadly as an editor and textbook writer.

Nunan's administrative work started in Australia, where he first served as the founding director, National Curriculum Resource Centre for the Adult Migrant Education Program from 1984 to 1988. In 1986, he added to those responsibilities the role of the director of the Australian National Language Curriculum Project. When he moved to Sydney he took up the post of associate director, National Centre for English Language Teaching and Research, which was housed at Macquarie University, a position he held from 1989 to 1994. He was also the director of the Macquarie University ELICOS (English language intensive courses for overseas students) program from 1989 to 1994. In 1994 he moved to Hong Kong, where he worked as the director and chair professor of Applied Linguistics, The English Centre, University of Hong Kong until 2007.

In 1996, Nunan undertook a new venture when he became the dean of the Graduate School of Education, Anaheim University—a completely online university which offers a master's degree in TESOL, among other areas of study. For a time he was acting president of Anaheim University before becoming its academic vice president in 2008.

Nunan also has substantial editorial experience, having served as an editor of several volumes and as a member of the editorial boards of several scholarly journals. In addition to those titles mentioned above, his edited books include a volume on teacher research, one on qualitative research in language education, one on teaching listening, a volume on language awareness, a collection of language learners' autobiographies, a volume on identity and language learning, *The Cambridge Guide to TESOL*, and *Practical English Language Teaching* (Nunan, 2003), which became the parent volume to a series of books. (See "Suggested Readings.")

At the time of this writing, Nunan's editorial board service includes the *TESOL Quarterly*, *Australian Association of Applied Linguistics Journal*, *Prospect: The Australian Journal of TESOL*, *JALT Journal*, *Language Teaching Research*, *Korea TESOL Journal*, and *The Asian Research Journal.*

In many parts of the world, Nunan is best known to teachers and English language learners as the author of EFL and ESL textbooks. As of 2008, over 800 million copies of his textbooks had been sold. These include *Foundations of Reading I and II* and *EAP Writing Course*, both published by Chulalongkorn University Press in Bangkok; *What Do You*

Think? Communicative Learning Tasks (published by the Language Press in Adelaide); and *The Australian English Course* series (with Jane Lockwood and Sue Hood), published by Cambridge University Press. The series entitled *Atlas: Learning-Centered Communication* and the *Expressions* series were published by Heinle and Heinle in 1995 and 2001, respectively. The *Listen In* series and the *Speak Out* series were published by International Thomson. The *Speak Out* books later appeared in Thai editions and the *Go For It* series appeared in a Chinese edition. The *Expression* series was released in both Thai and Chinese editions, and *Go For It* was also published in a Taiwanese version.

Honors and Awards

David Nunan has received many awards. Some are from individual universities and others are from organizations.

His university honors include the Distinguished Scholar Award at the University of the Pacific in California (1986), the Lansdowne Scholar at the University of Victoria in Canada (1997–8), being named a distinguished scholar at Temple University, Japan (1989), and honorary professor of education, University of New South Wales (2009–14). He won the 40th Anniversary Convocation Medal for Outstanding Alumni Achievement, Flinders University, Adelaide, Australia (2006). He serves as a distinguished visiting professor at both the University of Stockholm and at Chulalongkorn University in Bangkok. In 2007, Nunan was named to the former students' Hall of Fame, St. Stanislaus' College, Bathurst, Australia.

Other honors include a Citation for Services to English Language Teaching awarded by the United States Congress in 2001. Heinle and Heinle publishers honored him with the TESOL Lifetime Achievement Award in 2003. He was listed in *Who's Who for Australia* in 2006, the same year he was a delegate at the Australian Prime Minister's Invitational Conference for 100 Prominent International Australians.

Nunan served from 1991 to 1995 as Australia's representative on the governing board of the Regional English Language Centre in Singapore. He was a member of the Board of Directors, and subsequently served as the President, of the international TESOL association (www.tesol.org). He is also an elected member of the Board of Trustees of the International Research Foundation for English Language Education (www.tirfonline.org). Further information about his life and interests can be found on his personal website (www.davidnunan.com).

SEE ALSO: Classroom Research; Materials Publication; Teaching English as a Foreign Language in Kindergarten to 12th Grade; Teaching Language-Learning Strategies

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Organisation Internationale de la Francophonie

GEORGES DANIEL VÉRONIQUE

In 1946, the French Fourth Republic (1946–58) replaced the defunct French Empire, and the Union Française (French Union) granted French citizenship and political representation to its colonies in an effort to maintain them under its control. The French Fifth Republic (1958), created in the turmoil of the decolonization process, in an attempt to forestall the move toward independence of its colonies, replaced the French Union with the Communauté Française (French Community). Eventually, the Organisation Internationale de la Francophonie (henceforth OIF; www.francophonie.org) emerged in the 1960s, in the wake of the decolonization process that had led to the dismantling of the French Community. The impetus for the founding of the organization came from former colonies wanting to retain their association with France. This entry provides some information on the historical background of the OIF, explains its gradual growth and the development of its policies, and assesses its present contribution.

The term "francophonie" was first used by geographer O. Reclus in 1880 when he attempted to calculate the number of inhabitants of the then expanding French colonial empire (Reclus, 1886). After the failure of the French Community at the end of the 1950s due to most of the participant countries claiming independence from France, major political figures of the newly independent countries who had served in the French Parliament, albeit as French ministers under the French Fourth Republic, such as Léopold Sédar Senghor (Senegal), Habib Bourguiba (Tunisia), or Hamani Diori (Niger) propounded a new form of multilateral relation between France and its former colonies. This new relationship was premised on a shared language, a community of culture and on cultural cooperation, which they named "francophonie," adopting Reclus' neologism.

The initiative taken in 1962 by Senghor and his colleagues followed the creation of the Association Internationale des Journalistes de Langue Française in 1952, and of the Conference of Ministers of Education of countries sharing French (CONFEMEN) in 1960 (Léger, 1987). This proposal did not meet with immediate approval from the French authorities. During the same period, the French government responded in its own way to the supposed decline of the French language in the world with the creation of the Haut Comité pour la Défense et l'Expansion de la Langue Française (High Committee for the Defense and Expansion of the French Language) in 1966, a government language-planning body. The growth of *francophonie* as an institution was gradual during the 1970s. In 1961, the Association des Universités Partiellement ou Entièrement de Langue Française (AUPELF) was founded, known since 1998 as the Agence Universitaire de la Francophonie (AUF; www.auf.org), which groups some 750 French-speaking universities around the world. In 1967, the Association of French-Speaking Members of Parliament (Association Internationale des Parlementaires de Langue Française) was created. The general agreement signed in Niamey in March 1970 by 21 French-speaking states (Convention de Niamey), leading to the establishment of the Agence de la Coopération Culturelle et Technique (ACCT), was the first major step in the institutionalization process of *francophonie*.

In 1984, the French government created the Haut Conseil de la Francophonie, its first chairman being the then president of the French Republic, F. Mitterand, and the vice chair,

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the president of Senegal, L. Sédar Senghor. However, *francophonie* as a political institution only emerged in 1986, when the first summit of Francophone heads of state, attended by 41 French-speaking states and governments, met in Versailles, France, more than 20 years after Senghor's seminal statement. Since that time, summits of Francophone heads of state have been held every two or three years in various parts of *francophonie* around the world (Mauritius in 1993, Cotonou in 1995, Hanoi in 1997, etc.). In 1997, a secretary general of the OIF was elected and a constitution (Charte de la Francophonie) was voted. This brought a final dimension to the institutionalization process of this transnational body.

The slow development of the OIF over a 40-year period bears testimony to the fact that this institution has evolved from an association of countries related to France by old colonial ties to a postcolonial structure in search of a new policy, striking a balance between the needs and claims for support of third world countries such as Haiti or the Republic of Niger on the one hand and the demands and constraints of rich and influential members such as France and Quebec on the other. The OIF has developed from a cultural and linguistic association mainly aimed at the maintenance of the position of French in the world to a political entity active in promoting the defense of language and cultural diversity in a global world. This evolution is visible both in the constitution of the OIF (the Charte de la Francophonie), modified in 2005 in Antanarivo, Madagascar, and in the role it has played in the adoption of UNESCO's Universal Declaration on Cultural Diversity in 2001 (http://portal.unesco.org/culture/).

The OIF is composed today of 56 member states, 14 observers, and 3 associate members. Most of the early members of the OIF belonged at one time or another to the French Empire. However, some well-known Francophone countries, such as Algeria, have remained outside the OIF and recently Rwanda left the organization to join the Commonwealth. Not all Francophone states are de facto members of the OIF, and this organization includes member states which are not historically related to French and France, such as the Cape Verde Islands, Romania, and the Czech Republic. This latter characteristic is an interesting feature of the organization which now plays a role of its own, especially in the domains of sustainable development, of the defense of the diversity of cultural practices, and of endangered languages in Francophone countries.

The language policy of the OIF, in a context of worldwide demographic language competition, is to foster linguistic partnership between French and less commonly taught languages, and to promote alongside the diffusion of French and of vernacular languages, especially in the school systems of Francophone countries. The OIF has developed a language policy that differs in key respects from that of France in the type of programs that receive support and the style of implementation, although of course France retains a strong association with the worldwide promotion of French, because of its policies and practices especially in the cultural and educational domains. However, both the OIF and the French government share the same policy in favor of the plurality of languages and cultures.

The OIF provides an excellent illustration of the institutionalization of a global linguistic space. Although the thrust of its activity is still the promotion of French and vernacular languages, it has moved to be an international forum for democracy and sustainable development in emergent countries.

SEE ALSO: Colonialism and Neocolonialism and Language Policy and Planning; Language and Globalization; Linguistic Imperialism

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Ochs, Elinor

INMACULADA M. GARCÍA-SÁNCHEZ

Elinor Ruth Ochs (1944–) is a linguistic anthropologist who has devoted her career to the study of discourse structures and grammar in their larger cultural contexts. Always an avid researcher, theoretically innovative, and committed to cross-cultural ethnography, Ochs has conducted extensive fieldwork on interaction and communicative practices in Madagascar, Italy, Samoa, and the USA. In the USA alone, Ochs has carried out research on topics as diverse as the social construction of scientific knowledge in a physics laboratory, language and social identity, the sociality of autism, language and affect, and the construction of morality as a family discourse practice, among many others. Having accumulated a substantial number of research findings throughout her career, Ochs has made significant contributions to the field of applied linguistics, being perhaps better known for her work on language socialization, narrative, and the analysis of family discourse. A driving impetus in Ochs's work has been her emphasis on the importance of quotidian practices and everyday language use as a rightful locus of inquiry to ground larger concerns about the role of linguistic and cultural practices central to human learning and development throughout the life span.

Ochs's pioneer study of baby talk in the early 1980s among middle-class, white American families was an original breakthrough at a time in which the study of child language was still dominated by experimental procedures. Examining both language *directed to* children and language *produced by* children in its larger social and discourse context, Ochs and fellow linguistic anthropologist B. B. Schieffelin, with whom at that time Ochs initiated a long professional partnership, strongly advocated a pragmatic approach to the study of children's acquisition of communicative competence that entailed the investigation of children's language development not only as grammatical but also as socioculturally appropriate. Ochs and Schieffelin (1979) first established the field of *developmental pragmatics*, which examined, among other things, children's acquisition of conversational competence in context. Realizing, however, that the process of language acquisition is not only affected by the most immediate social and discourse context, but also by larger cultural factors, such as social organization and local belief systems, Ochs and Schieffelin rethought their original formulation of child pragmatic development in favor of a more anthropological and cross-cultural approach to the study of child language. If, before Ochs and Schieffelin, processes of language acquisition were seen as relatively unaffected by cultural factors, and, conversely, processes of socialization (or the transmission of sociocultural knowledge) were thought to proceed as if language (spoken to and by children) mattered little, with the publication of their seminal article, "Language Acquisition and Socialization: Three Developmental Stories and Their Implications" (1984), Ochs and Schieffelin productively brought together these two fields of inquiry to establish a new research paradigm: Language socialization, which documents how novices become competent members of communities of practice *through* and *to use* language. Beyond language socialization, the importance of Ochs's theorizing and analyses of narrative in interaction cannot be underestimated. As one of the most pervasive discourse genres in human social interaction, storytelling has also figured prominently among her interests. In Ochs's model of narrative analysis, most persuasively articulated in the chapter "Narrative Lessons" (2004), everyday narrative

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encapsulates all of the central concerns in her scholarly pursuits: narrative as a culture-specific discourse practice by which novices are apprenticed into sociocultural worldviews; narrative as a social activity by which families co-construct identities, social roles, and relationships among its members through situationally organized social interactions; and narrative as a mode of cognition by which people imbue their lived experiences with meaning and coherence. In her theoretical paradigm for the analysis of narrative in interaction, Ochs has advocated a multidimensional approach to narrative, distinguishing two basic types of practice underlying all narrative activity. These two basic practices fall along a continuum in five different dimensions, which include tellership, tellability, embeddedness, linearity, and moral stance.

Ochs's contributions to our understandings of the multiple uses of language in everyday life go beyond specific scholarly findings and the development of research paradigms. With a vigorous commitment to interdisciplinary research endeavors, Ochs has championed throughout her career a more collaborative model for knowledge production in the social sciences. Pooling together resources and scholars from a variety of academic traditions has always been a trademark of her way of working. In addition to her long-time collaboration with B. B. Schieffelin, Ochs has fruitfully joined forces with a number of other scholars, including linguists, conversation analysts, and psychologists, to produce several influential books and edited volumes on language development, discourse, grammar, and interaction, such as *Language Socialization Across Cultures* (with B. B. Schieffelin, 1986), *Interaction and Grammar* (with E. Schegloff and S. Thompson, 1996), and *Constructing Panic: The Discourse of Agoraphobia* (with L. Capps, 1995). The culmination of her long engagement in interdisciplinary research has been the UCLA Center for the Everyday Lives of Families that, with funding from the Sloan Foundation, Ochs established and directed from 2001 to 2010 (www.celf.ucla.edu/). Over these years, the Center compiled one of the richest databases on everyday living among dual-earning, multiple-child, middle-class American families, bringing together linguistic and medical anthropologists, applied linguists, psychologists, archeologists, and scholars of education to examine, from a variety of integrated disciplinary perspectives, daily family interactions and routines.

Ochs is currently a distinguished professor of anthropology and applied linguistics at the University of California, Los Angeles (www.sscnet.ucla.edu/anthro/faculty/ochs/). She also serves in this institution as the director of the Center for Language, Interaction, and Culture (CLIC), a think-tank devoted to training scholars in interdisciplinary methodologies and theories for the study of everyday language use in multiple sociocultural contexts (www.sscnet.ucla.edu/clic/). Earlier in her career, Ochs held academic positions in linguistics at the University of Southern California and at the University of Cambridge. Throughout her professional life, Elinor Ochs has received many prestigious appointments and honors in recognition of her important contributions to the fields of applied linguistics and linguistic anthropology. She served as vice-president and president of the American Association of Applied Linguistics (1995–6), and as president of the Society for Linguistic Anthropology (2001–3). Ochs is a Guggenheim fellow (1984), a MacArthur fellow (1998–2003), and a fellow of the American Academy of Arts and Sciences since 1998. She has also held a number of research and visiting positions internationally, including the Australian National University, Linköping University in Sweden, the Universita di Roma, and the Istituto di Psicologia (Consiglio Nazionale delle Ricerche) in Rome, Italy.

With her rigorous analyses of discourse and interaction, Elinor Ochs's scholarly publications are quintessential linguistic anthropology. She has published over 100 monographs, articles, and edited volumes on wide-ranging aspects of the relation between language, culture, and context. In addition to those mentioned above, her books include *Acquisition of Conversational Competence* (1983, with Schieffelin), *Culture and Language Development* (1988),

and *Living Narrative* (2001, with Capps). As a professor of applied linguistics and anthropology, she has mentored and influenced a large number of graduate students who have taken up her original formulations of child language socialization among Samoan and middle-class American families, and helped expand this research paradigm beyond monolingual and relatively homogeneous communities. Language socialization is now a rapidly growing field of inquiry addressing issues of language use, learning, and development across the life span and in a variety of social and cultural settings, including postcolonial and multilingual societies; immigrant communities; educational, religious, and other institutional venues; second language and heritage language socialization; and peer language socialization (Garrett & Baquedano-López, 2002; Duff & Hornberger, 2008). Ochs has left a deep imprint in how many applied linguists currently approach the role of culture in the study of novices' pragmatic socialization, as well as in the analysis of discourse and interaction more generally. Beyond applied linguistics, she has also had a decisive influence in other related fields, including anthropology, education, and cultural psychology.

SEE ALSO: Analysis of Narrative in Interaction; Anthropological Linguistics; Child Pragmatic Development; Family Discourse; Grammar and Discourse; Language, Culture, and Context; Narrative Discourse; Pragmatics and Culture; Pragmatic Socialization

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O'Connor, J. D.

JOHN WELLS

Professor Joseph Desmond O'Connor (1919–98) was one of the leading British phoneticians in the second half of the 20th century. A friendly and informal man, he was known by everyone, students as well as colleagues, as Doc.

Doc was born and grew up in the spa town of Harrogate in the north of England. His paternal forebears had originated in Ireland, and his father had worked as postmaster in Newcastle upon Tyne before moving to Harrogate. His mother was from Yorkshire, and her father had at one time been mayor of Harrogate.

The young O'Connor acquired his secondary education at St Michael's College in Leeds, traveling there daily from Harrogate.

He proceeded to University College London in 1937, where he was awarded a first-class honors degree in French. On graduation, he was drafted into the Royal Armoured Corps of the British Army and by the end of World War II had risen to the rank of Major. In 1945 Daniel Jones, the founder and head of the Department of Phonetics at UCL, whose colleague Hélène Coustenoble had been greatly impressed with O'Connor's ability in French phonetics, was able to arrange an early demobilization for him and to appoint him to the teaching staff of his department.

Doc was not only an excellent phonetician, but also an excellent teacher. Like the other London phoneticians, he was routinely able to recognize and reproduce all the sounds represented in the International Phonetic Alphabet and to teach them to students. As well as French, he also specialized in Danish, a language whose phonetics is notoriously difficult for non-natives. He found, though, that his ability to pronounce it convincingly tended to lead Danes to suppose that he had a much better knowledge of the language as a whole than he really did.

While Jones was something of an austere and private man, whom students could find forbidding, O'Connor and his contemporaries (of whom the most notable was A. C. Gimson) formed a group of colleagues very much at ease with one another and with their students. They set the tone for much of British phonetics in the period 1950–80, building on the foundations laid by Jones but also incorporating the work of American scholars such as Pike on the one hand and Bloomfield and Trager on the other.

Phonetics is a subject that if poorly taught can seem austere and difficult. Doc's lectures were witty and effortlessly informative. His teaching style was friendly and encouraging. His writing was elegant and readable. Particularly influential were his textbooks—*Phonetics* (1973) and, for students and teachers of English as a second or foreign language, his *Better English Pronunciation* (1967; revised edition 1980). *The Times* Educational Supplement called the latter title "a book which can quite safely be said to be the most effective one ever written to help the ordinary learner to improve his pronunciation." English as a foreign language (EFL) specialists also appreciated his *Advanced Phonetic Reader* (1971). After retirement Doc collaborated with his daughter Clare Fletcher to produce an influential English pronunciation practice book, *Sounds English* (1989).

Doc's lasting scholarly contribution is most likely to be his work on the description and teaching of English intonation. Many EFL teachers find this a difficult subject to get to grips with, which is why they tend to neglect it. Nevertheless, it appears that the description of

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English intonation differs in important ways from other languages, and that its connection to linguistic meaning is also greater than in many other languages. As a consequence, non-native speakers of English tend not to perceive that part of the meaning which native speakers convey by the use of intonation. It was Doc, with his UCL colleague Gordon Arnold, who succeeded in finding a way to describe English intonation that was also teachable to learners. This included devising a notation system that was elegant and iconic. Their *Intonation of Colloquial English* was published by Longman in 1961, with a second edition, substantially revised, in 1973.

Although he refused to accept invitations to travel abroad to give EFL lectures in other countries, Doc did for many years run the University of London Summer School of English. Here, two or three hundred students from around the world would study English for a few weeks under his genial guidance.

Doc remained on the phonetics staff at UCL throughout his career, being promoted to a personal Chair of Phonetics in 1976. However he declined an invitation to become head of the department, instead accepting early retirement in 1980. For the rest of his life he devoted himself principally to his local cricket club in Ickenham.

A festschrift in his honor, *Studies in General and English Phonetics*, edited by Jack Windsor Lewis, was published by Routledge in 1995.

Doc died of pneumonia at the age of 78.

SEE ALSO: Gimson, A. C.; International Phonetic Alphabet; Jones, Daniel; Phonetics and Phonology: Overview; Pike, Kenneth Lee

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Odlin, Terence

SCOTT JARVIS

Terence Odlin, PhD, is a well-known and respected American linguist who holds emeritus status in the Department of English at the Ohio State University in Columbus, Ohio. He is also affiliated with the Department of Linguistics at the same university. He is best known for his work on language transfer—or crosslinguistic influence—in both second language acquisition and language contact situations. His best known work is his 1989 book titled *Language Transfer: Cross-Linguistic Influence in Language Learning*, which has long been regarded as the most comprehensive and authoritative book-length synthesis of research in this area. Since the publication of this book, Professor Odlin has also gained a reputation for dispelling erroneous beliefs about types of transfer that have been claimed not to occur (see Odlin, 2006, for an overview of such claims), such as transfer involving syntax (Odlin, 1990) and morphology (Jarvis & Odlin, 2000). He is also known by his colleagues as being uncommonly well read and as having an unusually strong ability to synthesize detailed information and retain it in memory. The result is what many colleagues have referred to as an encyclopedic knowledge not only of transfer research, but also of linguistics and applied linguistics more generally.

Professor Odlin's interest in both theoretical and practical issues in linguistics originally developed through his experience with languages. Beyond his native English, the first languages he studied were Latin and French, but since his years as an undergraduate student, he has also engaged in formal or informal study of several other languages including Spanish, Persian, German, Irish and Scottish Gaelic, Finnish, Swedish, and Polish. His study of languages has, in many cases, coincided with his travels to other countries. He has spent varying and often extensive amounts of time in several countries, including India, Algeria, Iran, Afghanistan, France, Finland, Britain, Ireland, Spain, China, Japan, and Russia. These experiences have deepened his awareness of the multifaceted interrelationships between language and culture. He describes his passion for languages by emphasizing Bernard Comrie's aphorism that "linguistics is about languages, and languages are about people" (T. Odlin, personal communication, February 15, 2010). Indeed, Professor Odlin's professional interest in linguistics and his personal interest in languages are closely tied together, as his efforts in acquiring a solid understanding of these languages has led him to gain important insights into and intuitions about second language acquisition, which have informed his own research.

Regarding his origins and education, Terence Odlin was born in 1949 in Washington, DC, and he lived in that area throughout his early years, receiving his primary and secondary education in Catholic schools. After graduating high school, he remained in Washington, DC to attend Georgetown University, where he majored in English literature and also took courses in linguistics and the philosophy of language. He graduated from Georgetown University in 1971, and later pursued graduate-level work in linguistics, earning his MA at the University of Texas, El Paso in 1978 and his PhD at the University of Texas, Austin in 1983.

While still a graduate student, he published articles in two major journals—*TESOL Quarterly* (Odlin, 1978) and *Modern Language Journal* (Odlin & Natalicio, 1982)—and within just a few months after completing his PhD, he also published a paper in *Language Learning*

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(Birdsong & Odlin, 1983). The first two articles dealt with the second language acquisition of contractions and word classification, and the third article was a review paper dealing with linguistic relativity and the relationship between language and thought. During graduate school, he also developed an enduring interest in contrastive analysis and transfer, but it was not until after completing his PhD that his own research projects began focusing on crosslinguistic influence. During the mid-1980s, he decided to conduct a comprehensive survey of the general state of research on crosslinguistic influence, which culminated in his 1989 book. During that same period of time, he began focusing on specific transfer-related issues, starting with work on word-order transfer in second language acquisition (Odlin, 1990), and then moving to work on crosslinguistic influence in language contact situations—particularly those involving Celtic English (e.g., Odlin, 1991).

In more recent years, Professor Odlin has focused mainly on issues related to the psycholinguistic dimensions of language transfer. Those issues include crosslinguistic influence involving lexical representations (Odlin, 1994a), bound morphology (Jarvis & Odlin, 2000), focus constructions (Odlin, 2008b), and other structural and functional areas of language (e.g., Odlin, 2009b). His work on the psycholinguistic dimensions of transfer has also examined the affective and cognitive (Odlin, 1998), conceptual (Odlin, 2005, 2008a, 2010), and memory-related bases of transfer (Odlin, 2009a), and has considered the relationship between transfer and code switching (Odlin, 2009c), as well as the relationship between transfer and fossilization (e.g., Han & Odlin, 2006).

Over the years, hundreds of researchers have contributed to what we know about language transfer, but Professor Odlin is one of the very few scholars whose concentrated work throughout their careers defines them first and foremost as transfer researchers. He has distinguished himself as an authority and gatekeeper of this area of research, always remaining vigilant of false claims and extreme pendulum swings, and continuously shaping current and future research trends. A good example of the former can be found in Odlin's (2006) reexamination of contrastive analysis, which he argues was too hastily discredited years ago as an ineffective means for predicting transfer outcomes. One of the important points he makes is that, even though it is difficult to predict when transfer will occur, it is just as difficult to predict when it will not occur, as can be seen in the fact that prior claims about the nontransferability of bound morphemes, basic word order, idioms, and functional projections have all been shown to be wrong. Another important point he makes is that predictions about the occurrence of transfer require a fully adequate contrastive analysis based on a wider range of linguistic and cognitive variables than has previously been taken into account. Even though transfer patterns will vary across individuals, Odlin argues that the findings of empirical research in second language acquisition (e.g., on learners' use of articles) can be used to construct relatively accurate predictions concerning the rates of success that groups of learners will experience in acquiring features of the target language—based on the formal and functional similarities that those features share with the learners' native languages.

Good examples of Professor Odlin's contributions to current and future trends in transfer research can be seen in his work on conceptual transfer (e.g., Odlin, 2005, 2008a, 2010) and the relationship between transfer and memory (Odlin, 2009a). His long-term interest in and extensive knowledge of both the historical and current literature on the relationship between language and thought have allowed him to shape the scholarly conversation about conceptual transfer, describing its relationship to the notion of linguistic relativity, clarifying the differences between conceptual transfer and other types of meaning transfer, explaining the types of phenomena that provide the most compelling evidence for it, and calling for moderation in relation both to extreme skepticism toward linguistic relativity as well as to overly strong claims about its effects in second language acquisition, bilingualism, and multilingualism.

Concerning his recent work on the relationship between transfer and memory (Odlin, 2009a), this may represent the beginning of a new trend in transfer research. Even though memory is probably directly or indirectly involved in all cases of transfer, very few researchers have examined this relationship explicitly, and Odlin may be the first to touch on the crucial questions of whether the similarity between a learner's native language and target language affects how much of the target language input the learner can retain in short-term memory, for how long, and how accurately. His results with L2 learners of English whose native languages were Swedish (a language very similar to English) and Finnish (a language very different from English) show that Swedish speakers use more of the available input and use it more accurately than Finnish speakers in a task requiring the learners to produce written narrative descriptions of a film that is silent but nevertheless contains occasional written dialog frames (or titles). One might anticipate that this study will lead to a new robust line of inquiry—including experimental research—on the effects of language distance on learners' ability to retain information in both working memory and long-term memory.

Besides transfer, Professor Odlin has also carried out research in areas of language assessment (e.g., Odlin, 1986) and language pedagogy (e.g., Odlin, 1994b). Additionally, throughout his career, he has also shown a strong interest in issues of general theoretical import to linguistics, such as the nature of universals and their implications for relativism, as well as the implications that both universals and relativism have for second language acquisition. He has a depth of knowledge in several theoretical frameworks, including Universal Grammar, but has remained skeptical of many of the assumptions of Universal Grammar and of the claims that some researchers working within this framework have made about transfer. The theories with which he feels most closely aligned are part of the cognitive linguistics paradigm.

On a personal level, Terence Odlin is known by his friends and colleagues as Terry. He owns a home near the Ohio State University, and enjoys walking to and from work throughout the year. In addition to his passion for language learning and international travel, he also enjoys reading for pleasure and for information on current events, listening to traditional music from various cultures, and dining in cafes and locally owned ethnic restaurants. One of his hobbies and talents also includes photography, as can been seen in his online gallery at http://people.cohums.ohio-state.edu/Odlin1/graphics/gallery3.htm. A full list of his publications can be accessed at http://people.cohums.ohio-state.edu/Odlin1/publist.htm.

SEE ALSO: Crosslinguistic Influence and Multilingualism; Fossilization; Lexical Transfer and First Language Effects; Pragmatic Transfer

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Official Translation

ESTHER MONZÓ

Official translation can be understood both as a translation activity and as a translated document. As an activity, official translation aims to resolve the need for communicating law between different legal systems or different cultural and linguistic systems so that communication is compliant with any needs and standards set out by the public system. As a document, an official translation may be defined as any document which was issued in a language that is not official in the receiving legal system and that has to be translated according to specific requirements, in order to ensure the appropriateness of the translation in the receiving legal system so as to fulfill legal effects.

Legal systems exist throughout the world. They largely rely on words to tell people what they should and should not do and what would happen to them if they did not act accordingly (criminal law). Legal systems also serve as a trustee of the people to ensure, for instance, that citizens are marrying the person they think they are (civil law). To do so, legal systems register people's particulars and offer documents as evidence of what has been registered. In general, legal systems manage an enormous number of document transactions. When communication must take place (as it often does) among systems which use different languages, we may say that the legal systems involved have a case for translation. A legal system cannot stop functioning just because its agents cannot understand a document because of the language in which it was issued. The solution commonly provided is to entrust a selected group of professionals with the responsibility of translating documents according to the principles enshrined by the legal system. These principles may vary from country to country, but "fidelity" and "integrity" are terms commonly found in appointing and certifying formulas for those translation agents.

Who May Become an Official Translator?

Official translators (also referred to as sworn, certified, public, authorized, and court expert translators; see Mayoral, 2003, for a wider range of possibilities) are in charge of translating any document which is meant to have an official effect from any nonofficial language to an official language. To ensure that the work of these translators will satisfy the legal system's requirements, the professionals must overcome some kind of access barrier before working in official settings. Usually a licensing mechanism (such as a public examination) is established by the authorities, but in some cases a university degree (and sometimes subsequent membership in a chartered institution) or an ad hoc appointment by a legal agent who trusts the translator's personal declaration of linguistic knowledge will suffice. In some countries, a professional body rather than a government agency is responsible for either licensing or registering official translators; this then allows the translators to work for official bodies and agencies, such as the courts. Once a translator becomes "official," there is usually an authority (again, either public or professional) that is responsible for ensuring best practice and for punishing noncompliance with legal or professional standards. This means that, in most cases, appointments may be revoked, or renewal, when necessary, may be denied.

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International institutions represent a special case. They usually have a translation unit and they hire full-time translators on a temporary or permanent basis. They also outsource translations and hire freelancers, whose continuity will depend on their quality and productivity. In any case, to work for these institutions either as an in-house or as an external translator, one must pass an examination. Prior to 2010, passing an examination for the post of permanent translator and receiving an appointment in these institutions granted the translator the status of international civil servant. However, this is no longer the case, and an "appointment" as a translator of official documents is therefore revocable.

Why Are Official Translators Necessary?

Official translators are necessary for the simple reason that all legal agents cannot understand all languages and so need help when working with documents written in languages they do not know. However, the situation is rather more complicated than that. Traditionally, legal systems are divided into two kinds: common law and civil law (we will not refer here to religion-based and communist law). Civil law systems tend to favor prevention over litigation in court, and so there are special agents whose function is to prevent misunderstanding and limit recourse to the courts. This is typically the case with civil law, or Latin, notaries. Their function, usually described as a "precautionary and preventive security" function, is to ensure that parties reach agreement through common understanding and consensus. Thus, the cases where parties need a judge to mediate between them will be reduced and simplified to the terms of the agreement. In civil law systems, sworn translators have a similar function.

Authorities in civil law systems favor these *corps intermédiaires*, representative bodies (Durkheim, 1893), and ask citizens to have documents translated by an official translator in every instance of communication with the authorities (birth, marriage, and death certificates, wills, agreements, etc., to be presented to courts or other government agencies and public institutions). In these systems, both public notaries and official translators are portrayed as neutral parties with interpersonal duties and a heavy responsibility in ensuring communicative success. They are thus, in a way, acting *per procurationem*, that is, on behalf of the state, when executing their certifying powers. However, any biased or in any other way undue performance must be remedied personally, which means that certified translators may be sued or even prosecuted for any professional action harmful to their clients' interests.

In this way, the legal system outsources the work and the liability by providing a special agent who will have the responsibility of rendering a translation according to the principles privileged in the legal system. Thus, the document needed, although at first unintelligible to the authorities, will be safely available in a language which is understandable to the other legal agents (it is, however, common practice to attach the original to the translation).

On the other hand, common law legal systems rely mainly on the courts to solve disputes once they arise, and have therefore a strong jurisdictional system. In these countries, the role of official translators is much more prominent before the courts, to ensure that the parties are in equitable conditions before magistrates and judges. And this raises the issue of "mode" in official translation.

What May Be an Official Translation?

When talking about official translation, the expression may be understood restrictively as the translation of written documents or in a broader sense as any interlinguistic mediation

that performs official effects. The latter would include sight translation (documentary evidence in court hearings, documents being read and signed in civil law notary offices), consecutive (court hearings), simultaneous (special court hearings), or liaison interpreting (police interviews, attorney–client communication, court confrontations, or agreement negotiations).

Also, unlike legal translation, official translation is not restricted to any particular subject matter or text type. What defines official translation is the effect the translated document is bound to fulfill. So, if a love letter is to be translated in order to be produced as evidence before the court, an official translation will be needed. Also, any agreements, articles of association, rogatory letters, bills of lading, commercial documents, academic transcripts and university degrees, birth, marriage, or death certificates, among many other text types, typically fulfill official effects in national legal systems and therefore need official translations.

In international organizations, the translations commissioned to translation units may be legislation and other resolutions or standards, letters, reports, notifications, meeting proceedings, complaints from particulars, and also draft documents or even resumés for committees. Therefore, we can say that it is not the subject matter, the text type, or the mode but the translation commission and the setting where the translated document will have an effect that define official translation.

Who May Need an Official Translation?

Any citizen who needs to communicate with the authorities may need an official translation. If a person needs to file or present a document previously issued in another country, it is likely the document will have been issued in a foreign language and will have to be translated by an agent who is trusted by the receiving system (any person authorized as official translator). Members of the general public, but also lawyers representing them, or translation agencies as intermediaries, may therefore seek the services of an official translator.

As said above, it is typically government bodies, agencies and institutions (justice administration agencies and courts, defense agencies, foreign and home affairs departments, etc.) which enact and enforce legitimating mechanisms for translations lodged by citizens. However, those agencies and institutions also require translations for official purposes. In countries with more than one official language, it is common practice to hire staff translators in parliaments, government departments, courts, and town halls who will translate legislation, written questions to bilingual or multilingual parliaments, resolutions and notifications which are to be published in official gazettes, letters, memos, reports, meeting minutes, and so forth, and any document that has to be registered in a public registry or made available to the public; that is, any document which will perform an official effect.

International law enshrines the right of the individuals to use their languages, especially when faced with charges (notably, article 6 of the European Convention for the Protection of Human Rights and Fundamental Freedoms and article 14.3 of the International Covenant on Civil and Political Rights; Council of Europe, 1950; United Nations, 1966), and governments are obligated to establish mechanisms to ensure compliance with this right.

International institutions usually provide translations of public documents in the languages having official status in the institution (for instance, within the United Nations, 6 languages are considered official, and in the European Union, 23). However, committee documents are not always translated into all the official languages, but only into the "procedural" languages. (These depend on particular needs, but as an example the EU employs three languages as procedural languages: English, French, and German.)

Who May Perform Official Translations?

Although we may think translations should ideally be performed by translators (people who work full time in translation), official translations are rather frequently performed by lawyers or nonspecialists. The issue has been the subject of many debates within the professional community and also in the media and among law specialists. A survey was conducted among EU countries regarding translation and interpreting in criminal proceedings. As a result, some requirements are being enforced in such proceedings for both interpretation (article 2) and translation (article 3; European Parliament, 2010). Although similar legislation had already been passed in EU and other countries, some features of the new directive deserve to be highlighted.

The directive obligates member states to ensure that the interpretation and translation provided meet quality requirements ("sufficient to safeguard the fairness of the proceedings"; articles 2.8 and 3.9), especially by providing a register "of independent translators and interpreters who are appropriately qualified" (article 5.2), and the training of legal agents involved in criminal proceedings "to pay special attention to the particularities of communicating with the assistance of an interpreter" (article 6). However, as the regulation has been published as a directive, EU countries will still have to pass national legislation in order for these rules to become enforceable. Also, each country will decide on the particulars of the law, so we will have to wait in order to see how the situation will evolve.

In the meantime, there is legislation in the EU and other countries which covers either ex jure or de facto other producers (to use Bourdieu's, 1971, term) in the field of official translation; namely, lawyers and nonspecialists, who may be translators, linguists, or others. According to their needs and budget, courts and notaries in some countries may still appoint ad hoc official translators and interpreters, and lawyers may invest themselves with the power of certifying translations at will (see Monzó, 2009, for the case of Spain).

The Future of Official Translation

It is likely that the future of official translation will be one in which more and more institutions recognize the importance of translation in communicating the law effectively and safeguarding people's rights. Official translation has already entered the domain of academic research (as proven by its inclusion as an entry in this encyclopedia), and training programs increasingly provide specific knowledge and skills for translation and interpreting in official settings. The responsibility which falls on the shoulders of official translators will be increasingly supported by training institutions, professional bodies, and, finally, the user of official translations.

SEE ALSO: Legal Translation

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O'Halloran, Kay L.

MICHAEL O'TOOLE

Associate professor Kay O'Halloran (1958–) is the founding director of the Multimodal Analysis Laboratory of the Interactive and Digital Media Institute (IDMI) at the National University of Singapore (NUS), where she has been a member of the Department of English Language and Literature since 1998.

O'Halloran is one of a small but distinguished group of physical scientists and mathematicians who discovered early in their teaching career the need for a sophisticated model of discourse analysis for their discipline, and turned to the theories of M. A. K. Halliday and his colleagues in systemic functional linguistics (SFL) to meet that need. She has repaid her debt to SFL with interest.

After graduating from the University of Western Australia (UWA) with a BSc in mathematics, she taught the subject for some years in high schools in the city and country towns of her home state before achieving first class honors in a BEdn in the Graduate School of Education at UWA.

Early in her life she developed a strong social conscience and became aware of the inequities of the secondary education system—even in a "value-neutral" field like mathematics—in Australia and the Western world in general. One way of assessing, and perhaps curing, those inequities was to analyze what happens in the mathematics classrooms of high schools serving different socioeconomic groups. She therefore undertook a PhD study at Murdoch University, also in Perth, Western Australia, where there was a strong program in SFL and critical discourse analysis (CDA). Not content, however, to observe classrooms, teacher and student behavior, and their interactions, she made video recordings of teachers' speech, blackboard work, gestures, and speech rhythms in the classrooms of both private and state schools in contrasting suburbs. She then subjected these to a rigorous linguistic and multimodal analysis, which proved her hypothesis that private schools enjoy a rich curriculum, a degree of teacher competence and student motivation, and a shared discourse that gives them a major advantage both in learning the subject and in passing examinations.

A major problem in establishing patterns in CDA has been the richness, complexity, and sheer amount of language being analyzed. O'Halloran realized early in her graduate studies that computer programming could speed the process of analysis and reveal patterns of meaning making across the three meta-functions of language that were unavailable to those restricted to manual transcription and analysis. She therefore developed with a colleague, Dr Kevin Judd from the School of Mathematics and Statistics at UWA, one of the first software programs for SFL analysis and published it on CD (O'Halloran & Judd, 2002). This has been regularly updated and is highly valued and widely used by SFL specialists.

After completing her PhD, O'Halloran tutored for one year at Murdoch University before spending a period as a postdoctoral fellow at Martin Luther University in Halle, Germany. In 1998 she moved to the Department of English Language and Literature at the National University of Singapore. She was one of the main teachers in SFL in that department, but also raised the institutional support and funds for a multimedia laboratory, the Laboratory for Research in Semiotics, which quickly became a focus for the fast-developing international field of multimodality. The Multimodal Analysis Lab, which is a university-level

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research lab in the IDMI, was established on her initiative and under her direction in 2007. It hosted a major international conference on multimodality in 2008 and has active links with university departments and institutes worldwide. O'Halloran's own research work and that of the team of linguists, computer scientists, and IT specialists she has assembled have produced a rich flow of publications and a keen school of MA and PhD students. She has also attracted major research grants from funding bodies at NUS, the Singapore National Research Foundation, and the US Air Force Office of Scientific Research to contribute to the digital humanities, whereby social scientists use interactive digital media technologies and scientific visualization techniques to develop new paradigms for social science research.

O'Halloran's publications include books on mathematical discourse (2005) and a multimodal approach to classroom discourse (in press), and collections of papers by herself and colleagues on multimodal discourse analysis (O'Halloran, 2004; O'Halloran & Smith, 2011). She has demonstrated that mathematical discourse, whether an equation, a string of symbols, a graph, a proof, a diagram, or a textbook page, should be—and is—treated like a picture as well as like a piece of linear text, that is, with the right as well as the left hemisphere. It can therefore be analyzed both with the tools of SFL and with the related tools of multimodal researchers (O'Toole, 1994; Kress & van Leeuwen, 1996). She has also developed the important concept of "inter-semiosis" in mathematics and science, whereby grammatical metaphor is matched by semiotic metaphor in nonverbal modes such as diagrams, formulas, and gestures (O'Halloran, 2005, in press). O'Halloran is a member of the editorial board for the online *SemiotiX* bulletin, which provides information about state-of-the-art semiotics research.

It would be doing O'Halloran an injustice not to mention her teaching skills. She inspires her students and colleagues with fresh ideas, always has time for their contributions and problems, and networks enthusiastically within NUS and internationally on behalf of her peers as well as herself. Over the period when she was teaching in the Department of English Language and Literature at NUS she consistently scored top ratings in student feedback surveys. The dynamics of classroom discourse is not just a subject for academic study: It is her practice.

SEE ALSO: Halliday, M. A. K.; Multimodal Discourse Analysis; Multimodality and Systemic Functional Analysis; Multimodality and Technology; Multimodal Text Analysis

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Ohta, Amy Snyder

YUMIKO TATEYAMA

Amy Snyder Ohta (1962–) is best known for her application of Vygotsky's sociocultural theory to second language learning and development. She is also widely recognized as one of the first scholars who conducted extensive research on the development of interactional competence of adult learners of Japanese through microanalysis of classroom interactions.

Ohta was born in Ohio, but grew up in California. She got a BA in Psychology from Wheaton College (Illinois). Her MA in teaching English as a second language and PhD in Applied Linguistics are from the University of California at Los Angeles (UCLA), where John Schumann and Elinor Ochs served as advisors. Ohta is currently associate professor in the Department of Asian Languages and Literature at the University of Washington (UW), Seattle. Prior to her 1995 appointment at UW, she taught at California State University, Los Angeles (1993–5) and was a visiting assistant professor at Columbia University (Summer, 1998, 2001). Ohta became interested in second language acquisition through her own learning of Japanese while working under Japan's Ministry of Education as a Monbusho English Fellow (1984–6) and her subsequent study at International Christian University in Tokyo (1986–7).

While much of Ohta's work considers second language (L2) learning and development through a Vygotskyan framework, language socialization theory and her graduate training in discourse and conversation analysis under Emmanuel Schegloff have had strong influences on her research. Ohta's dissertation examined teacher talk and learners' pragmatic development in L2 classrooms from a language socialization perspective (see Ohta, 1994). In Bräuer (2004), Ohta notes that in her dissertation data students' voices were not recorded well when they engaged in pair or group work because only two microphones were used—one for the teacher and one for the class. This led her to use clip-on microphones for students in subsequent studies (e.g., Ohta, 1995, 1997, 1999, 2001a, 2001b, 2005a, 2008) to capture interactions between students. Using interactional data, Ohta (1997, 1999) examined the pragmatics of learner classroom language. Ohta (1999) investigated the role of interactional routines in the socialization of L2 interactional competence in adult learners of Japanese. Her study revealed that both active and peripheral participation in the IRF routines contributed to an increase of learner use of follow-up expressions, including assessment. That is, while the third turn (feedback) in the IRF structure is usually taken by the teacher in the teacher-fronted instruction, learners use the third turn successfully when they engage in pair work. At a time when the IRF was generally regarded as problematic, Ohta demonstrated how this routine provided a scaffold allowing learners to develop interactional competence.

Examining learner–learner interactions closely drew Ohta more toward the zone of proximal development (ZPD) and sociocultural theory. While Vygotsky was concerned with the cognitive growth of children, Ohta applied the ZPD to the process of learning a second language through social interaction. Supporting Ohta further in this endeavor was her involvement in a research group (Sociocultural Theory and Second Language Learning Research Working Group) led by James Lantolf whose members were interested in using a Vygotskyan framework to understand L2 development and cognition (see Lantolf &

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Thorne, 2006). Ohta presented her work at the second gathering in 1995 and participated annually through 2000.

Ohta (1995, 2001a) rephrased Vygotsky's (1978) definition of the ZPD in order to suit the L2 learning context better:

> For the L2 learner, the ZPD is the distance between the actual developmental level as determined by individual linguistic production, and the level of potential development as determined through language produced collaboratively with a teacher or peer. (Ohta, 2001a, p. 9)

Language is the mediational tool relevant to thinking, learning, and other cognitive processes, and the ZPD describes how learning may occur through socially mediated processes such as peer interaction.

Ohta (2001a) is significant in a number of ways. It is the first single-author volume using a Vygotskyan sociocultural framework in analyzing classroom L2 data. In particular, her analyses of private speech reveal that learners use private speech for various purposes such as problem solving and hypothesis testing, and that even when students may seem, to a casual observer, to be passive, they may be actively engaged in learning processes. Further, the analyses of peer interactions show that both stronger and weaker students benefit from collaborative activities. With regard to pragmatics, Ohta proposes a developmental sequence of listener responses (i.e., from acknowledgment to alignment) based on her analyses of learner data (see also Ohta, 2001b).

Ohta continues to examine learner language development from a sociocultural perspective, expanding to other topics that she did not touch upon earlier. In her coedited book (Mori & Ohta, 2008), Ohta (2008) focuses on laughter in classroom interaction and its function in discourse. She shows that laughter reveals not only affect but second language comprehension, providing insight into L2 developmental processes. Ohta (2006, 2010) considers the ZPD from a broader perspective, examining learner interviews to see how the ZPD applies to language learning experiences. While Ohta (2006) shows that adult learners develop the ability to manage ZPDs to optimize their language development, Ohta (2010) focuses on limitations of social interaction for language learning and how learners overcame such difficulties. Further, using cognitive and sociocultural perspectives, Foster and Ohta (2005) investigate negotiation of meaning during classroom interactive tasks.

Lastly, in terms of pragmatics, Ohta (2005b) considers applicability of the ZPD to interlanguage pragmatics research and instruction by examining three published interventional studies on pragmatics learning, including Takahashi (2001). Ohta discusses the possibility of explicit instruction functioning as a mode of assistance in Takahashi's study. As Ohta notes, what learners can do with or without assistance and how assistance can be provided to help learners notice the gap and maximize their learning are all relevant issues in designing pragmatics instruction and research. Both researchers and practitioners alike will benefit from her pedagogical suggestions for designing and implementing tasks for collaborative work (Ohta, 2001a).

SEE ALSO: Lantolf, James P.; Ochs, Elinor; Schumann, John H.; Vygotsky and Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Oller, John W., Jr.

APRIL GINTHER

The work of John Oller (1943–) in the 1970s and 1980s contributed greatly to the emergence and recognition of language testing as a discipline within the field of applied linguistics. A prolific writer, author of six books, more than 230 published articles, and coauthor/editor of 10 collections, his work includes examination of a wide range of topics related to language testing, intelligence testing, communication disorders, and other subjects. Characteristic of his work is a theoretical orientation emphasizing semiotics, the study of signs and symbols, and the pragmatics of knowledge, beliefs, and expectations of language users in the contexts of ordinary experience. In addition to his contributions to theoretical discussions of testing methods and the nature of language proficiency, Oller is recognized as a proponent of innovative teaching methods. *Methods That Work: A Smorgasbord of Ideas for Language Teachers*, edited with Richard-Amato in 1983, remains a classic attesting to the advantages of distinctly pragmatic approaches, followed by the 1993 version generalizing the application of pragmatic approaches to first language acquisition and the teaching of literacy.

Oller's explication of *pragmatic naturalness criteria* addresses the quality of the instruments and methods used to measure language proficiency, defining a *pragmatic test* as "any procedure or task that causes the learner to process sequences of elements in a language that conform to the normal contextual constraints of that language and which requires the learner to relate sequences of linguistic elements via pragmatic mappings to extralinguistic contexts" (1979, p. 38). Based on the pragmatic naturalness criteria, a good test, or any valid testing, assessment, or teaching method, invokes the learner's *pragmatic expectancy grammar*, described as the psychologically real system that links, relates, or maps the characteristics of language to knowledge about the context in which an utterance occurs. The idea of *expectancy*, a critical notion in Oller's arguments, is related to the gestalt notion of *closure* through which human beings solve problems by supplying missing elements. As Oller points out, whether completing a pattern, solving an equation, or communicating with another person, it is always possible to predict partially what will come next in any given sequence of elements: the more accurate the expectations, the more efficient the problem solving.

Oller's work contributed to the shift away from discrete-point language testing to assessment methods he identified as integrative. Drawing on and developing Carroll's (1961) original distinction, Oller described discrete-point and integrative language tests as opposite ends of a continuum. He explained, "The concept of an integrative test was born in contrast with the definition of a discrete point test. If discrete items take language skill apart, integrative tests put it back together" (1979, p. 37). While discrete-point tests purport to focus attention on one isolated element of grammar at a time, integrative tests require access to meaning through deeper linguistic resources. By focusing the examinee's or learner's attention on surface elements of grammar, discrete-point items were less effective in engaging the deeper grammatical system and thereby failed to assess how the learner would use language in ordinary contexts of experience.

While discourse-based testing procedures Oller identified as integrative included cloze procedures, dictation, oral interviews, and composition, it is important to keep in mind

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that the distinction that Oller was making was not one that relied on the surface characteristics of any item format. He recognized that in practice, the most discrete items require some integrative skills and the most integrative procedures always demand use of surface forms that can be scored as if they were more or less discrete items. He also noted that multiple-choice items do not necessarily constitute discrete-point tests. For example, the abilities required to identify the best alternative answer on a reading comprehension test nearly always lean toward the integrative rather than the discrete end of the continuum. Nor is it necessarily the case that an integrative test requires that sources of information be integrated across different modalities or skills (e.g., listening and reading), although particular integrative tasks may do so. The desire for clarification of these points lead to one of the more interesting and protracted debates that has taken place in language testing to date.

Oller's argument that discourse-based cloze tests (Oller & Conrad, 1971; Oller, 1972; Chihara, Oller, Weaver, & Chavez-Oller, 1977; Oller, 1979) assess abilities for examinees to use deep grammatical constraints was challenged by researchers (Alderson, 1979) who argued that the selection of the words needed to fill deletions could be successful based solely on information available within five to seven words on either side of a deletion. If cloze tests measured only such short-range grammatical constraints, the method was flawed as a measure of deep and general proficiency. Bachman (1982) also argued that cloze tasks based on random deletions may not systematically target long-range discourse constraints, and others rejected the method on the basis of their acceptance of null results comparing sequential versus scrambled cloze passages (Shanahan, Kamil, & Tobin, 1982). Given that null results are never a satisfactory basis for the rejection of any empirically testable hypothesis, the perceived importance of these findings was challenged (Cziko, 1983) and many ensuing studies investigated deletion procedures and scoring procedures, with respect to short- and long-range discourse constraints, as well as individual and group effects using a variety of statistical methods and fundamentally different experimental designs.

Studies showing the impact of long-range constraints on random-deletion discourse-based cloze tasks were actually replicated in all cases where appropriately sensitive (powerful) designs were used. Reported null contrasts, on the other hand, comparing scrambled versus sequential texts across different texts and groups of examinees, failed to incorporate the necessary counterbalancing of within- and between-subjects variance, order effects, and differences across the selected texts themselves. All those variables and interactions between them can be controlled in an appropriately counterbalanced repeated-measures design, but where such counterbalancing was omitted, the contrasts of interest between sequential versus scrambled texts were commonly (almost always) swamped, rendering the effects of long-range discourse constraints on specific items statistically insignificant. However, with more subtle repeated-measures designs, it was demonstrated that both short-range and long-range discourse constraints (certainly ones ranging beyond 50 words) are tapped by standard, random-deletion approaches to cloze test construction (Oller & Jonz, 1994; Jonz, 1987). Later, it would be shown on a strictly logical basis, confirmed by many empirical studies, that a substantial number of random deletions could not fail to tap long-range constraints (Oller, Chen, Oller, & Pan, 2005; Oller & Chen, 2007).

Statistical investigations of integrative tests, following a principal components analysis suggested by Nunnally (1967), the long-standing argument for a general factor of intelligence first noted by Spearman (1904), and the growing evidence for the profound connectedness of syntax, semantics, and pragmatics within grammatical systems (Oller, 1970, 1975), led to the simple but ultimately incorrect hypothesis that language abilities might best be represented by a single underlying trait (Oller, 1976). That *unitary trait hypothesis* was challenged and rejected with more sophisticated factor analytic procedures (Bachman

& Palmer, 1981, 1982; Oller, 1983; Carroll, 1993; Bachman, Davidson, Ryan, & Choi, 1995; Kunnan, 1995). The whole controversy that ensued, however, as Stansfield (2008) has noted, focused attention on more sophisticated statistical procedures. Bachman (1990) wrote, "Oller's work, as well as the research it stimulated, firmly established construct validation as a central concern of language testing research and generated renewed interest in factor analytic procedure" (p. 7).

The unitary trait hypothesis was wrong, but an abstracted general factor accounting for the lion's share of the variance in language tests, intelligence measures, achievement tests, and even personality inventories would remain as noted by Oller, Scott, and Chesarek (1991) and Carroll (1993). As with the debate surrounding cloze procedure, even within the present decade, the research and discussions generated by the unitary trait hypothesis still resonate. Current large-scale factor analytic studies seldom fail to carry out model comparisons to include (or exclude) a higher-order general factor (e.g., Sawaki, Stricker, & Oranje, 2009). The models that include a higher-order factor typically provide better fits to the data (just as Carroll, 1993, predicted).

Over the last two decades, Oller has continued to study "language acquisition and its relation to intelligence, cognition, social development and their interactions" (Oller, personal communication). His most recent work with the general theory of signs (GTS), elaborated in Oller (2005), Oller et al. (2005), Oller, Oller, and Badon (2006, 2010), and Oller (2010), have led into a more general investigation of sign systems not only in linguistics, but also in genetics, biochemistry, and especially, the amazingly complex and layered immune systems (Oller, 2010).

Oller (2005) explains:

> Building on the foundational trichotomy of icons, indexes, and symbols, GTS addresses three interrelated questions in its three component theories: (a) *The theory of TNRs* [true narrative representations] is about how any signs can attain any meaning, (b) *the theory of abstraction* concerns the unpacking and deciphering of signs by infants, and (c) *the theory of systems grammar* examines the properties of the sign systems generated by the prior theories. (p. 119)

Central to GTS is the idea that "in linguistic and genetic terms, successful discovery of language conventions, i.e., language acquisition, and ordinary successful communications in all domains of experience and biochemistry—depend ultimately (and unsurprisingly) on valid representations that are faithfully mapped onto whatever facts they may purport to be about" (Oller, personal communication).

Pragmatic mapping remains central and affords a compelling alternative to strictly semantic and formal (autonomous syntactic) theories of language acquisition, grammar, and language testing. In language testing, the shift Oller encouraged continues away from discrete-point approaches toward integrated performances in contexts broader than those circumscribed by the surface forms or component domains of any particular language-processing task. However, Oller's emphases on processing, episodic organization (discursive constraints), and cognition have been less fully elaborated in current language testing research and theory. It may be the case that in the next decade, processing, cognition, and pragmatics will receive greater attention. In any case, Oller's legacy will remain one that will continue to be influential while providing rich opportunities for further development.

SEE ALSO: Assessment of Pragmatics; Language Assessment Methods; Validation of Language Assessments

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Online Communities of Practice

ELIZABETH HANSON-SMITH

Communities of practice (CoP), a term coined by Lave and Wenger (1990), describes the kinds of informal knowledge building and sharing that occur in workplaces characterized by apprenticeships. CoPs are characterized by a common *domain*, a relatively narrow area of expertise or purpose; a *community* where newcomers and experts alike can build and share expertise in social interactions, both those that further the work at hand and those that develop as humans socialize with each other on a relatively frequent basis; and finally, a *practice* (*praxis* as opposed to theory), that is, the more or less conscious effort to build a repertoire of knowledge over time by developing skills in the field hands-on (Wenger, 2004). Lave and Wenger found significant evidence that interactions not directly related to this matter furthered the cooperativeness and efficacy of group endeavor. Thus *situated learning* in a CoP can be both unconscious and deliberate, but usually it is directed by the individual within a social context. This type of learning contrasts with the classrooms and curricula of educational systems, which involve knowledge that is abstract, out of context, and other-directed. Lave and Wenger's (1990) concept of situated learning is usually seen as harking back to Vygotsky's theory of *social cognition* (1978), social and cognitive development within a zone of proximal development; that is, children achieve their highest cognitive development by engaging in social behaviors, with adult guidance and in peer collaboration, or both.

Over the late 1990s and first decade of the 2000s, Wenger's further thinking about CoPs (1998, 2004) extended the meaning of the term to include online communities and interactions at a distance, rather than just in a physically confined workplace. The concept of *online CoPs* included the types of interactive environments fostered by then new technologies, such as electronic lists, online bulletin boards, or forums; and has since expanded to the social networking applications, such as blogs, wikis, Facebook, Twitter, and so forth. Wenger (2004, p. 2) was quick to point out that the type of casual socialization most usually found in these Web 2.0 applications does not really pertain to CoPs, which require a search for knowledge in a particular field and the application of what is learned over a period of time. However, the capabilities of such applications for social networking are of importance in developing online CoPs, for they enable groups to socialize casually in ways similar to those of local, land-bound communities and when used to share knowledge, to develop a personal learning network (see, e.g., http://twitter.com/grahamstanley). Of particular interest to the field of applied linguistics, CoPs for distance education allow the extension of learning around the globe.

By analogy to the CoPs of workplaces of business and industry (see Brown & Duguid, 1991), schools are seen to provide a potential locus for CoPs in which Wenger's criteria of domain, interaction, and practice are met. The concept of educational CoPs has converged with the ideas of Dewey (1916) and is often linked to Seymor Papert's version of *constructionism* (Papert & Harel, 1991), a pedagogical theory that suggests that students learn best through hands-on activities, particularly when students can mix their abilities in collaborative projects; and to *cognitive constructivism*, Piaget's theory that knowledge is developed by accommodating new experiences to one's internal representation of the world (see Piaget, 1951). Teachers adhering to these pedagogical principles are encouraged to form

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student working groups and to allow their learners to interact more freely than in a traditional classroom while engaging in, for example, extended content-based projects. In common parlance, then, classrooms and student groups are often referred to as "learning communities" (see Smith, MacGregor, Matthews, & Gabelnick, 2004). Recently, interfaces such as Facebook and Twitter (and other micro-blogging tools accessible from both mobile phones and computers) have been used as a means to facilitate informal communications among students (see articles cited in Newgarden's 2009 annotated bibliography).

Hanson-Smith (2006) has pointed out that classrooms and student groupings have little time or opportunity to grow into the kind of long-term social arrangements that CoPs in the workplace offer. Students in the United States, for example, may be from differing cultural groups and may perceive their grouping as an artificial contrivance for the purposes of the teacher and not for their own productive efforts. Elsewhere, in countries where English is taught as a foreign language, grouping students may be counter to cultural expectations of classroom authority and "normal" teaching procedures. In any case, classroom "communities" rarely endure beyond the immediate project or academic semester. Human social bonds develop slowly, and the school environment is not generally conducive to the "peripheral participation" (where newcomers can lurk or observe experts until they feel ready to contribute) that is expected in an apprenticing situation (see Lave & Wenger, 1990). However, in the online environment, students may be more willing to explore social relations with peers from exotic locations and learn to work in a virtual community, as in, for example, the GLOBE science projects (www.globe.gov/) and iEARN creative collaborations (http://iearn.org/). For educators, the Internet proffers extended contact in a professional interest group that may be more congenial to their needs than teachers in their own school or district. This fact is of particular importance for teachers who are interested in using technology in their classrooms (blended learning) or for distance learning, a growing field of education in the early 21st century, but one where only a few teachers in a given school may seek to expand their knowledge (see Hanson-Smith, 2006; Stevens, 2009). Faced with anxiety in their colleagues about using technology, Internet- and computer-savvy teachers often find themselves shut out of any meaningful informal expansion or exploration of their technology skills and potential. An online CoP can provide instant help, expertise, long-term apprenticeship in a safe social setting, and perhaps most importantly, emotional support for teachers isolated from their technological peers.

Long-standing professional electronic lists might be considered a rudimentary type of online CoP; however, they often lack the social networking that ensures longevity and collaboration. A certain level of trust must be attained before newcomers will ask seemingly "dumb" questions. More recently, many CoPs seem to thrive by using online venues, such as Yahoo Groups or Google Groups; in Yahoo's category "Schools & Education," there are over 4,700 groups for homeschoolers alone. Other groups include English teachers living in Japan, science teachers in Sri Lanka, Waldorf and Montessori educators, and even a group specifically for discussing communities of practice (http://groups.yahoo.com/group/com-prac). The capabilities of such groups for archiving documents and photos, bookmarking, e-mail search and threading, instant messaging, and so forth, make them ideal venues for building and supporting online CoPs. Mobile and social networking technologies are important for group dynamics, but a CoP must also allow time for thought and reflection on praxis, hence the importance of Internet archiving.

The Webheads in Action offer a concrete model of a successful online CoP. Their domain is educational technology for language teaching and learning. An e-mail list (http://groups.yahoo.com/group/evonline2002_webheads) is their fundamental form of communication, but individuals exploring the praxis of educational tools have also set up many other venues for communication: individual blogs and wikis to reflect on their own practice, a social bookmarking group, numerous webpages recording collaborations with each other's

classes, a Twitter homepage, a Google Wave, group tagging, and so on. An index page (http://www.digibridge.net/teresadeca/webheads/wia-index.htm [2002–10] and http://wiaindex2010.pbworks.com/w/page/10642872/FrontPage [2010 onwards]) collects links to the varied Webhead experiments, personal homepages, presentations, and papers. An exemplary feature of this CoP is the building of community through synchronous communications during a regular weekly drop-in meeting at Tapped In (www.tappedin.org/), a text chat venue specifically for teachers and home to a number of other professional educator communities. Live chatting allows members to socialize in a more personal way than through the e-mail list. The group will sometimes proceed to other meeting spaces with Internet telephony or voice and video conferencing capabilities.

As far as praxis, Webheads share rich online lives. When a member of the group discovers a new online tool, others are quick to experiment with it. When someone asks a pedagogical or technological question, others respond with answers and citations. Generally, group members collect all answers or experimental results online, for example, in a blog or wiki, and report back to the group so that the information can be archived. Frequently, Webheads will call upon each other to participate in a class-to-class collaboration, or to serve as an audience when students or peers present projects online. Over the last several years, Webheads have been offering their own free biennial online conference (see www.WebheadsinAction.org/) so that members have a chance to show their recent work to each other and a global audience. Webheads also regularly offer a session in the Electronic Village Online, a project of TESOL's computer-assisted language learning interest section (http://evosessions.pbworks.com/), to allow newcomers to technology an apprenticeship with the educational tools most frequently used by Webheads. Thus the furthering of specific knowledge about their domain takes place in a socially situated learning space created through Internet and mobile technologies.

The formation of online CoPs has some degree of application to the distance learning of languages, where short-term collaborative groups can be successfully instituted. However, community building holds a more significant place in the training and further professional development of educators. Teacher communities have been suggested for the school workplace (Martin-Kniep, 2004; Lieberman & Miller, 2008), and as online support for novice language educators as they leave their teacher training institution and scatter to new job sites (Dahlman & Tahtinen, 2006). Of even greater benefit, perhaps, is to provide experienced teachers with the rewards of contact with their peers in other parts of the world, particularly those in the rapidly changing domain of online distance education. Internet and mobile technologies offer multiple opportunities to continue to learn from other professionals worldwide in collaborative communities. Increasingly, institutions of teacher training and professional associations around the globe are taking advantage of these useful resources to foster online CoPs.

SEE ALSO: Innovation in Language Teaching and Learning; Language Teacher Development; Language Teacher Training in Technology; Language Trainer Training in Technology

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Online Intercultural Exchanges

ROBERT O'DOWD

Introduction

Online intercultural exchange (henceforth OICE) refers to the application since the early 1990s of online communication tools to bring together classes of language learners in geographically distant locations with the aim to develop their foreign language skills and intercultural competence through collaborative tasks and project work. The two best known models for OICE are e-tandem learning and telecollaboration (O'Dowd, 2007). Early reports of OICE projects such as the Orillas Network (http://www.orillas.org/acte.html), as well as in-depth research studies, demonstrated the potential of this activity for supporting collaborative learning and developing intercultural awareness. Since then, OICE has come to be considered as one of the main pillars of online foreign language education.

Models of Online Intercultural Exchange

OICE traditionally took one of two forms or models—each one reflecting the principal learning aims prevalent in foreign language education at the time. The first well-known model was e-tandem, which focused on fostering learner autonomy and learners' ability to continue their language learning outside of the language classroom. The second model is usually referred to as the "telecollaborative model" and reflected the emphasis in the late 1990s and early 2000s on intercultural and sociocultural aspects of foreign language education.

In the e-tandem model (O'Rourke, 2007), two native speakers of different languages communicate together with the aim of learning the other's language and messages are written 50% in the target language and 50% in the mother tongue, thereby providing each partner with an opportunity to practice their target language and, at the same time, to provide their partner with authentic input in his or her target language. These exchanges are based on the principles of autonomy and reciprocity and the responsibility for a successful exchange rests mainly with the learners, who are expected to provide feedback on their partners' content and on their foreign language performance. In this sense, tandem partners take on the role of peer tutors who correct their partners' errors and propose alternative formulations in the target language. The role of the class teacher in the e-tandem model is usually minimal. For example, learners are encouraged to take on responsibility for finding their own themes for discussion, correcting their partners' errors, and keeping a learner diary or portfolio to reflect on their own learning progress.

The second model differs from e-tandem in the greater importance it attributes to classroom activity and in the shift of focus from language learning to culture-and-language learning. The telecollaborative model goes to much greater lengths to integrate the online interaction completely into the students' language programs and involves international class-to-class partnerships in which projects and tasks are developed by the partner teachers in the collaborating institutions. For example, students' contact classes are where online interaction and publications are prepared, analyzed, and reflected upon with the guidance

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of the teacher. Telecollaboration also places the emphasis of the exchanges on developing cultural awareness and other aspects of intercultural communicative competence, in addition to developing linguistic competence. For this reason, common activities include collaborative research projects comparing both cultures and the analysis of "parallel cultural texts." For example, Furstenberg, Levet, English, and Maillet (2001) had French and American students engage in comparative studies of the film *Three Men and a Baby* with the French original, while O'Dowd (2006) had students carry out ethnographic interviews with their partners in the USA via videoconference and then write reflective essays on the cultural differences that had emerged during the interviews.

Third-Generation OICE: Telecollaboration 2.0

Recent years have seen a third "generation" or model of OICE emerging which reflects in many ways a more flexible and adaptable interpretation of how online intercultural interaction and exchange can take place in foreign language learning contexts. Described by Guth and Helm (2010) as "Telecollaboration 2.0," this model focuses not only on the development of learners' linguistic and intercultural competence but also on the online literacies necessary to learn and to work in today's information society. Telecollaboration 2.0 allows for a much greater spectrum of possible partners, language set-ups, and forms of interaction. For example, learners are engaged in collaboration not only with other classes of foreign language learners, but also with trainee teachers, students of culture studies, or indeed with native speakers who are not involved in education at all. Projects now commonly comprise complex multilateral rather than bilateral group set-ups and language use is not necessarily bilingual, but can involve the use of a lingua franca or can be multilingual (e.g., language mixing of Romance languages). Finally, as these exchanges now exploit Web 2.0 tools, online interaction is more multimodal in nature, involving communication through combinations of text, voice, photographs, videos, and other formats.

Conclusion

Despite receiving a considerable amount of attention in the literature, it would appear that OICE has yet to achieve a high degree of integration or "normalization" in the area of foreign language education. There are various reasons for this. First, practitioners who organize exchanges often encounter practical barriers such as difficulty in finding partners, misalignment of academic calendars between institutions, differing institutional approaches to assessment and to the use of new technologies in the classroom (Belz, 2002). Other problems which hinder integration include the lack of pedagogical training available for educators, educators' fear of the extra workload, and, finally, the lack of long-term stability of partnerships with other educational institutions (O'Dowd, 2010).

However, these drawbacks should not deter potential practitioners from an activity which has been found to make valuable contributions to different areas of foreign language education. Research studies have highlighted, for example, its contribution to the development of learner autonomy, linguistic competence, intercultural communicative competence, and more recently, to learners' online literacy skills. Studies have also focused on the reasons for intercultural misunderstanding and conflict in online interaction (e.g., O'Dowd, 2003). Despite the practical barriers mentioned earlier, the future for OICE is undoubtedly bright. The overall image in recent times is that of a flexible activity which is less tied to a text-based interaction, which no longer reifies the native speaker model as the goal of foreign language learning, and which gives learners greater freedom in their choice of potential partners and communicative tools. Thorne (2010) describes this form of OICE as

"intercultural communication in the wild" (p. 6) and speculates that while this may be less controllable from the teachers' point of view, the opportunities which it offers for intercultural language learning are compelling.

SEE ALSO: Collaborative Language Learning; Instructional Computer-Assisted Language Learning; Teaching Culture and Intercultural Competence; Using the World Wide Web for Language Teaching

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Online Psycholinguistic Methods in Second Language Acquisition Research

THEODOROS MARINIS

Introduction

Second language acquisition (SLA) research has traditionally used paper-and-pencil tasks, such as grammaticality judgment and completion tasks. In such tasks, participants usually have time to read the whole sentence, they can think and reflect about its form and meaning, and then make a conscious judgment about its grammaticality or how to complete it. This is why these tasks are called offline; that is, the information we get is after the participant has read the whole sentence and has had time to think about it. This is in contrast to online methods that measure how participants process sentences as they unfold word by word or phrase by phrase; that is, these methods measure how participants process sentences in real time.

This entry focuses on widely used behavioral online methods, and will provide a short introduction to four such methods recently used in SLA research to address how second language (L2) learners process sentences in real time. These methods are: (a) word monitoring, (b) self-paced reading/listening, (c) cross-modal priming, and (d) self-paced listening and picture verification. Each method is described with examples from key L2 studies. The final section compares offline with online tasks and discusses the advantages and disadvantages of each of these methods.

Word Monitoring

The word-monitoring task is a dual task. At the beginning of each trial, participants hear a word, such as *cakes*, or they see a picture representing a word, such as a picture of cakes. Then the participants listen to two sentences: a leading sentence that creates a context (Marslen-Wilson & Tyler, 1980) and an experimental sentence. The experimental one most of the time contains the word they heard or saw at the beginning of the trial, as in (1) (Chondrogianni & Marinis, in press).

(1) Mary really likes to bake. Every day she *bakes* <u>cakes</u> and sometimes cookies and muffins.

Participants are asked to listen to the sentences for comprehension. In addition, they have to press a button in a button box or a key on a keyboard as fast as they can if they hear in the experimental sentence the word that was presented at the beginning of the trial. A computer records whether or not the participant pressed the button and also the reaction time (RT) of the button press.

The word-monitoring task can be used to investigate whether participants can process a syntactic anomaly, as shown in (2) (Montgomery & Leonard, 2006; Chondrogianni & Marinis, in press); a semantic anomaly, as shown in (3); or any other type of anomaly (Tyler & Marslen-Wilson, 1981; Komisarjevsky Tyler, 1992).

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(2) Mary really likes to bake. Every day she *bake* cakes and sometimes cookies and muffins.

(3) Mary really likes to bake. Every day she *drinks* cakes and sometimes cookies and muffins.

The rationale for this task is that participants should unconsciously slow down when they are faced with an ungrammaticality or anomaly. Therefore, if participants process the ungrammaticality, they should show longer RTs in the sentences with an anomaly than in the grammatical sentences. Importantly, the word they are monitoring is not the word that causes the ungrammaticality or anomaly, but the word after the ungrammaticality. Participants do not focus on the grammaticality of the sentence, and therefore their RTs reflect an unconscious rather than a controlled process.

Word-monitoring tasks include also sentences that do not involve the word to be monitored. These are called "catch trials." In catch trials, participants should not press the button. These trials are required to make sure that the participants do not press the button mechanically and to keep them alert and attending to the task.

Word-monitoring tasks, like other online tasks discussed below, should also include filler sentences. These are sentences of different types that do not follow the same pattern as the experimental sentences. The inclusion of filler sentences aims to avoid participants becoming familiarized with the types of sentences used and becoming aware of the aim of the study.

In addition to filler sentences, online tasks often include comprehension questions. This is to ensure that participants read or listen to sentences for meaning. These questions also provide information about how accurate participants are in comprehending the sentences.

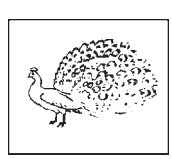
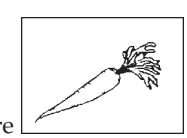
Cross-Modal Priming

The cross-modal priming task is another dual task. Participants have to perform two different tasks that involve two modalities: auditory and visual (Love & Swinney, 1996). Participants listen to a sentence for comprehension, as shown in (4), and at a relevant point in the sentence they see a word (cross-modal lexical priming) or a picture (cross-modal picture priming) on the computer screen. This word or picture is called the target. Then participants have to do a secondary task, which could be naming, lexical decision, or picture classification (e.g., an animacy task), by pressing a button as fast as possible.

Half of the targets are related to a word in the sentence (semantic associates or identical repetitions) (Clahsen & Featherston, 1999) and the other half are unrelated. The targets are presented at a syntactically relevant position, and also at a control position that usually precedes the syntactically relevant one. For example, in (4), used in Felser and Roberts (2007) and in Roberts, Marinis, Felser, and Clahsen (2007), there is a syntactic (filler–gap) dependency between *peacock* in the main clause and the trace/gap (t_i) in the relative clause. Participants have seen a related target (picture of a *peacock*) or an unrelated target (picture of a *carrot*) at the position of the trace/gap (offset of *present*) or at a control position (500 milliseconds earlier).

(4) John saw the peacock$_i$ [to which the penguin gave the nice birthday present t_i in the garden]

500 ms

Related picture  Unrelated picture 

The rationale here is that the word *peacock* is stored temporarily in short-term memory and when the parser identifies a potential position for integration (the gap), it retrieves the filler from short-term memory and sets up a filler–gap dependency by reconstructing the grammatical and semantic features of the filler at the position of the gap. Therefore, if the participants set up a *wh*-dependency between the filler and the gap, RTs for the related target will be shorter than for the unrelated target at the gap, which is a syntactically relevant position, but not at the control position.

Self-Paced Reading/Listening

In self-paced reading/listening tasks, participants read or listen to sentences that are segmented word by word or phrase by phrase by pressing a button (Marinis, Roberts, Felser, & Clahsen, 2005). Participants, thus, have control over how fast they will read or listen to each sentence. Each button-press records the RT for the participant to read or listen to the word or phrase. Therefore, this task provides insight into how fast participants process each word or phrase. Longer RTs at particular positions in a sentence are thought to reflect processing difficulties (Just, Carpenter, & Wooley, 1982).

There are three types of presentation of the self-paced reading task: (a) cumulative, (b) linear noncumulative, and (c) center noncumulative. In the first two, participants first see dashes on the computer screen corresponding to the letters of the words. As the sentence progresses, the dashes are replaced by words. In the cumulative presentation, previous words or phrases remain on the screen and participants are able to go back and read them, as shown in (5) for the sentence *The doctor examined / the nurse of the pupils / who / was / feeling very tired* (Felser, Roberts, Gross, & Marinis, 2003).

(5) Cumulative self-paced reading presentation
The doctor examined --- ----- -- --- ------ --- --- ------- ---- -----.
The doctor examined the nurse of the pupils --- --- ------- ---- -----.

In the linear noncumulative presentation, previous words or phrases are turned into dashes each time new words or phrases appear, and participants cannot read previous words or phrases, as shown in (6). In the center noncumulative presentation words or phrases appear in the center of the computer screen.

(6) Linear noncumulative self-paced reading presentation
The doctor examined --- ----- -- --- ------ --- --- ------- ---- -----.
--- ------ -------- the nurse of the pupils --- --- ------- ---- -----.

The self-paced listening task has only one presentation mode, in which sentences are presented word by word or phrase by phrase (Ferreira, Anes, & Horine, 1996; Ferreira, Henderson, Anes, Weeks, & McFarlane, 1996). Participants listen to each word or phrase one at a time without being able to go back and listen again to any of the words or phrases they have already heard. Therefore, the mode of presentation in the self-paced listening task is similar to the center noncumulative presentation of the self-paced reading task.

Self-Paced Listening With Picture Verification

This is also a dual task and consists of self-paced listening to a sentence and verification of whether or not the picture matches the sentence. Participants see a picture on the computer screen and listen to a sentence in a word-by-word or phrase-by-phrase fashion, as

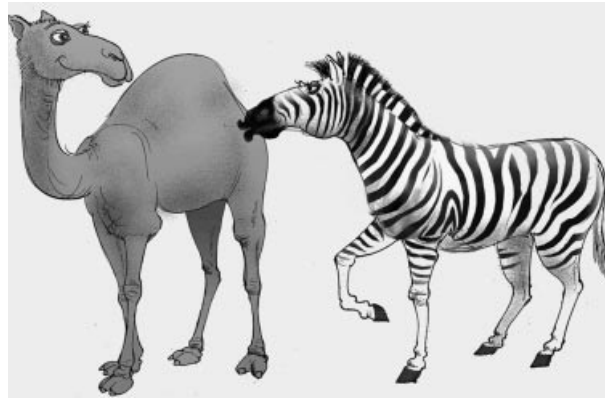


Figure 1 Picture verification for self-paced listening task (reprinted from Marinis, 2007; © Cascadilla Proceedings Project)

in a self-paced listening task (Marinis, 2007, 2008). The sentence either matches the picture or not. An example from Marinis (2007) is provided in Figure 1, with a matching sentence in (7) and a mismatching sentence in (8).

(7) I think / that / the zebra / was kissing / the camel / . . . (Active, Match)

(8) I think / that / the zebra / was kissed / by the camel / . . . (Passive, Mismatch)

The two sentences in (7) and (8) provide a minimal pair. Until the phrases *was kissing* and *was kissed*, it is unclear whether or not there is a match between the picture and the sentence. The disambiguation is provided in the inflectional suffixes *-ing* and *-ed*. RTs on the mismatch condition are predicted to be longer than in the matching condition.

In this task, the picture can be presented prior to the sentence or simultaneously with it, and can either remain on the computer screen throughout the sentence or can disappear when the sentence starts. Presentation of the picture before the sentence allows participants to make predictions about the sentence that will be proved or disproved when they listen to it. If the picture disappears when the sentence starts, this adds a memory component because participants will have to remember the picture when they verify at the end of the sentence whether or not the picture matches it.

As in self-paced reading/listening, in this task RTs are recorded for each word or phrase, and this allows the researcher to make inferences about how participants process the sentence as it progresses. This is in contrast to the word-monitoring and the cross-modal priming tasks, which record RTs only at one particular position in a sentence, and therefore do not allow us to evaluate the whole sentence. Another difference between the self-paced listening with verification and the word-monitoring and cross-modal priming tasks is that although all three are dual tasks, and therefore require more processing resources than single tasks, the self-paced listening with verification task allows participants to listen to the sentence at their own pace. This makes it easier than the first two tasks.

Comparison Between the Tasks: Advantages and Disadvantages

Offline tasks are easy to set up; they do not require special equipment for data collection; and the data analysis is fast and easy. However, they measure how participants interpret

a sentence after they have read or heard the complete sentence. If the task is auditory (e.g., auditory sentence–picture matching), these tasks place demands on working memory because participants have to process the sentence online as they hear it, keep it in working memory, and then choose a picture that matches the sentence. Offline reading tasks, such as grammaticality judgment or completion tasks, have a different type of limitation. In these tasks, participants usually can take time to think about the meaning of the sentence before they make a decision about the grammaticality or before they decide how to complete it. This allows them to use their explicit knowledge about language and their metalinguistic abilities to make a conscious and controlled decision. The results can overestimate or underestimate their language abilities depending on whether or not they have good metalinguistic abilities.

Online tasks measure the participants' unconscious and automatic response to language stimuli. Therefore, they are largely immune to metalinguistic abilities, at least when the specific task used does not require acceptability judgment of sentences. Participants cannot use their explicit knowledge about language because they do not have the time to think about the meaning or grammaticality of the sentences they read or listen to. In addition, online comprehension tasks measure how they process sentences as they unfold and do not measure the outcome of the processing at the end of the sentence. Therefore, they pose fewer demands on working memory.

Online methods, however, also have some disadvantages. They require a substantially larger amount of time to prepare than offline experiments. This is because the experimental items have to be controlled for many factors, such as frequency, age of acquisition, length, and imageability, and they require more experimental and filler items. Online experiments also tend to last longer than offline ones; data analyses are more complex; and running the tasks is more costly because they require a desktop or laptop, a button box, and special software to present the material and record the participants' responses.

The rest of this section will discuss specific advantages and disadvantages for each of the online tasks presented above.

Word-Monitoring Task

The main advantage of the word-monitoring task is that it measures the participants' unconscious reaction to violations by directing their attention to a word that follows the violation and not to the word that causes the violation, thus tapping their implicit knowledge. A disadvantage is that it implicates working memory, since participants have to keep a word in working memory and press a button when they hear the word again. A second disadvantage is that the word that is being monitored has to appear immediately after the violation. This can be difficult to do depending on the word order of the language and the violation. A third disadvantage is that it measures RTs only at one point in a sentence. Finally, it can test only the processing of violations, and therefore it is limited to phenomena that involve violations.

Cross-Modal Priming

The cross-modal priming task has an advantage compared to the word-monitoring and the self-paced reading/listening tasks in that it involves two modalities, visual and auditory, and therefore the findings are minimally affected by form overlap. An advantage over the self-paced reading/listening and the self-paced listening with picture verification tasks is that sentences are presented unsegmented and therefore at normal speed, which is closer to natural listening. The main disadvantage of the cross-modal priming task is that it is a dual task. Thus it is not as easy to learn and perform as the word-monitoring and the self-paced reading/listening tasks, and requires higher levels of processing capacity and

working memory. Another disadvantage is that, like the word-monitoring task, the cross-modal priming task measures RTs only at one point in the sentence.

Self-Paced Reading/Listening

The self-paced reading/listening tasks have an advantage over the word-monitoring and the cross-modal priming tasks in that they measure RTs for each word or phrase, and therefore provide more data points. This can reveal processing difficulties at any point within the sentence and can provide a better understanding of how participants process sentences word by word or phrase by phrase. A disadvantage of self-paced reading/listening is that the speed of presentation and the presentation itself are somewhat unnatural. In self-paced listening, the presentation is slower than in normal speech; this may create unnatural speech because it breaks the intonation pattern of the sentences. In self-paced reading, the word-by-word or phrase-by-phrase presentations do not reflect the way we read. The most natural way of getting at online reading behavior is by using eye-tracking. However, eye-tracking has not been widely used in L2 research (but see Dussias, 2010), and for this reason a discussion of eye-tracking is beyond the scope of this entry. Despite the shortcomings of self-paced reading/listening, several L2 researchers have successfully used word-by-word presentation methods which, although they might seem somewhat unnatural, do tap very effectively into online processing.

Self-Paced Listening With Picture Verification

This task has an advantage in that it makes fewer memory demands of the participant than all other tasks, because the picture remains on the computer screen throughout the presentation of the sentence. The most important disadvantage is that the match/mismatch judgment between picture and sentence may make the participants develop expectations which can lead them to develop response strategies. This can be avoided by using a large number of filler sentences.

SEE ALSO: Sentence and Discourse Processing in Second Language Comprehension

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Online Resources

Commercial Software

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Simple to use, ideal for small-scale experiments. Versatile (includes a facility for segment-by-segment reading).

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Onomastics

RICHARD COATES

Onomastics is the branch of linguistics which studies proper names. Proper names and naming are central to human life. We all have personal proper names and may acquire or inherit others, and we live in streets and towns with their own proper names. Our pets, bands, institutions, and businesses may have proper names, and so may any spiritual beings we believe in. We may change our names at important moments in our lives, and acquire variants of those we already have for social reasons. We may spend a great deal of time deciding what proper name, or how many, to give our babies, and even our commercial brands. Such names can be of huge cultural and political importance. It makes a real difference, in a range of ways, to you and to others, whether you are called *Alfred*, *Alf*, or *Alfie*, and whether you live in *Derry* or *Londonderry*.

Orientations

Lexicologists (people who study vocabulary professionally) distinguish two orientations to their subject matter: the *onomasiological* and the *semasiological*. The former begins with a concept and explores how it is expressed using a range of linguistic means (including multilingually), as for example in a thesaurus or a linguistic atlas. The latter begins with expressions in a language and explores their meanings, in the manner of a dictionary. Onomasticians also take part in both kinds of activity. Onomasiological work results in, for example, maps showing the distribution of (near-)synonymous onomastic terms, such as words used in names for hills (e.g., English *hill, dod, down, head, knoll, law, pike, mount, tor*), or semantically comparable name elements in different languages like *tūn* in Old English, *tre(f)* in Cornish (both meaning 'farming estate; village'), or in studies of how, for example, gender is expressed in personal names. Semasiological work results in explanations of individual names and terms (e.g., what exactly is or was a *dod*?) and the production of *onomastica* or name dictionaries.

Subject Matter of General Onomastics: Characteristics of Proper Names

At its simplest, onomastics is the discipline which seeks to answer the *semasiological* question "Why is X called *X*?" This fundamental question may be understood in two ways: as a linguistic and historical one, "Why and how did X come to be called *X*?", and as essentially a historical or cultural one, "What does it mean for X to be called *X*?" The first indicates that onomastics is a specialized branch of etymology, with which it shares its methods, but the second locks it into wider concerns about human history and conventions. The answers to these questions typically intertwine, since knowledge of a proper name's origin may be part of its present cultural meaning. For instance, it may be important for cultural reasons to know whether (or to believe that) the name of some city was first formulated in one language or a different one (e.g., whether *Cairo* is viewed as Arabic, or as an alteration of an earlier Ancient Egyptian name), or that it may or may not be

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relevant to its origin that *Roma* 'Rome' is Latin *amor* 'love' spelt backwards. (It isn't.) The business of onomastics is therefore closely associated with a range of other disciplines which study "human meanings," such as the histories of individual languages, social and local history, genealogy, geography (including all of geology, ecology, human and political geography, exploration, and astronomy), anthropology, law, sociology and demography, individual and social psychology, philosophy (philosophy of language, epistemology, ontology, and logic), and literary and cultural history, to name but a few. The discipline of taxonomy (classification, systematics) may appear to do something similar, but its subject matter is the relation between systematically related objects and concepts (e.g., plants, chemical elements, or the hierarchy of angels) and the common names, that is ordinary meaningful nouns or noun phrases, which express them; and its disciplinary question is rather this *onomasiological* one: "How do we, or should we, express terminologically the elements in system Y (and the relations among them)?"

Proper names differ from other expressions which may in everyday language be called "*names*," such as plant and bird names, and the names of currencies, minerals and the chemical elements. *Polly* is a proper name; *parrot* is not, unless you have chosen to call your parrot *Parrot*. The meaning of the "common name" *parrot* includes whatever it takes to identify any parrot as a parrot and not some other bird, and that information is accessed whenever the word is used; the meaning of *Polly* is simply the set of individuals called *Polly*, irrespective of whether they are female humans, parrots, or whatever, and users generally pick out an individual Polly when using the name. Proper names have no lexical content or *sense*, though their *etymology* may be apparent (Coates, 2006).

Proper names (hereafter simply *names*) are therefore clearly different from other linguistic objects, but a totally satisfactory and universally accepted definition has eluded linguists and philosophers. Their essential semantic, or better pragmatic, properties include

- attachment to individuals as a more or less permanent identifying label, that is, a rigid designator (attached to its bearer "in all possible worlds"; Kripke, 1980), whether that label is bestowed on a particular occasion (*Pennsylvania*) or whether it evolves into a name through usage from common expressions (*The Western Isles*);
- the capacity to attract the attention of individuals (*Hey, Jude!*) and to cement interpersonal relations by their use in a context, somewhat like grooming among other primates (*I agree with what you're saying, Richard, but I think we should . . .*);
- the capacity to refer to individuals (people, places, things) in a context with a high chance of success, but without recourse to the meaning of any words or morphemes from which they appear to be structured, that is, they are referring expressions with an extensional denotation but no sense, though their etymological source (and therefore their original sense) can in some cases be easily accessed even by nonspecialist users of the language (as with the surname *Butcher*, the given name, *Dawn, Castletown, The University of the West of England*).

These three functions might be called the *identifying*, the *vocative*, and the *referential*, respectively. But names differ from other linguistic expressions which might perform the same functions. Common expressions, as we have noted, are those which are able to refer by virtue of the senses of the words, morphemes, and structures which constitute them. The most important thing about a proper name is that when speakers or writers use it, they pick out a single entity but, in doing so, do not make direct use of the senses of any words which appear to make it up. Many names are obscure in any case—they do not consist of words that we can interpret as they stand (like *Warsaw* or *Neptune*). So proper names are, or have become, meaningless, or at least they do not "mean" in the way that ordinary words mean. If a name appears to consist of ordinary words, there may be a problem in

equating what it apparently means with what it can refer to. There is a location name *County Oak* in southern England. It was the name of an oak tree which stood on a county boundary. The oak is dead and gone; the boundary has been moved. But the name is still alive as the name of a community that has grown up near where the original tree was. So when the name *County Oak* is used, speakers do not directly use the meanings of either of the two words, which are still ordinary words of English, and nor do they refer to the thing that the name originally denoted. By contrast, in normal usage, you cannot use the phrase *the old oak tree* without relying on the lexical meanings of *the, old, oak*, and *tree*, and without respecting the rules of grammar which combine them. Such normal phrases can be used to refer to each and any entity which satisfies the description made by the words, not to just one single entity. But another oak on a boundary would not necessarily be named *County Oak*.

In addition to these properties, names have identifiable general grammatical properties (see Anderson, 2007, pp. 211–92), for example they function like determined noun phrases, and generally resist restrictive modification except for special semantic effects, as in **Diana who has no books only buys magazines*; but they have no known universal phonological or orthographic properties. Names may have particular grammatical, phonological, and orthographical characteristics in individual languages, for instance the special onomastic "article" *o* in Fijian, special case-forms found only in names (e.g., a vocative case-form suffix *-ai* for nouns of the *-as* declension in Lithuanian), and the widespread initial capitalization in the world's languages which use the Roman alphabet.

Branches of Onomastics

The most frequently recognized branches of onomastics are

- *anthroponymy*: the study of the names of human beings (surnames and other inherited names, given names, pseudonyms), which can be a useful tool in the study of family history;
- *astronymy*: the study of the names of stars (or more loosely of constellations and other heavenly bodies);
- *chrematonymy*: the study of the names of politico-economic, commercial, or cultural institutions; also a catch-all category for the study of the names of other "things";
- *ethnonymy*: the study of the names of peoples or tribes;
- *hodonymy*: the study of the names of streets or roads;
- *hydronymy*: the study of the names of rivers, lakes, or other bodies of water;
- *literary onomastics*: the study of the names of literary and other fictitious characters;
- *oikonymy* or (latinized) *oeconymy*: the study of the names of houses and other buildings;
- *oronymy*: the study of the names of hills, mountains, or mountain ranges;
- *theonymy*: the study of the names of gods and other supernatural beings, or, in monotheistic religions, of God;
- *toponymy*: the study of the names of places, sometimes in a broad sense including *hodonymy*, *hydronymy*, and *oronymy*, but sometimes (and generally in Europe) used with restricted application to names of inhabited places; and
- *zoonymy*: the study of the (proper) names of animal(s) (e.g., as pets or as economic entities such as racehorses), with subbranches like *hipponymy* (for horses).

In some cases, the local equivalents of these terms are more widely used in non-English European usage than in English. Each of these terms is also used of the set of names or the naming systems in use in particular places (e.g., *Yoruba anthroponymy, Slavic hydronymy,*

modern British hipponymy). Strictly speaking, the terms ending in *-onymy* denote the naming systems themselves, whilst their study is called, for example, *anthroponomastics*, but this distinction is not universally observed in the English-speaking world.

Other categories of nameables might be established in different cultures, and their names studied. Such less frequently studied material includes the proper names of epochs and of political events, natural phenomena such as hurricanes, and works of artistic creation.

Methodologies of Onomastics

We started with the simplistic notion that onomastics is a discipline which seeks to answer a fundamental question "Why and how did X come to be called *X*?" This suggests that the most important methodology is *etymological*. The premise of this approach is that all names were once meaningful (at their creation), even if that meaning is not always readily accessible now, and that the original meaning can be recovered by the methods of historical linguistics and philology, tempered by the influence of source criticism when assessing the reliability of the textual evidence. Probably most British onomastics is of this kind, and most major studies, handbooks, and projects dealing with names have a historical component which may constitute their entire rationale (McKinley, 1990; Gelling, 1997; Gelling & Cole, 2000; Watts, 2004) or at least a central major theme (Coates & Hanks, in preparation). An offshoot of this historical approach is the attempt to use ancient name-material to determine the former spread and distribution of (perhaps defunct) languages (e.g., Sims-Williams, 2006).

But since names are linguistic objects, they can also be studied from the perspective of other linguistic subdisciplines, including some whose methodologies may be interdisciplinary. Let us focus on personal names. They are subject to morphological variation, for instance by suffixation, and that variation can in principle be studied using *quantitative* sociolinguistic methods. Patterns in their bestowal can be classified by phonological (Cutler, McQueen, & Robinson, 1990; Hough 2000), morphological, or semantic criteria. They also appear richly in language use. Their textual functions (identification, vocation, and reference) can be studied as a subject matter of (socio)pragmatics, and their differential appearance in different text types (e.g., literary narrative, reporting, personal announcements in the press) can be studied using the techniques of text linguistics. They also carry social and cultural meanings (connotations, associations); accordingly, they can be studied from anthropological and sociological (specifically demographic) perspectives, and patterns in attitudes to them and effects on their bearers can be studied from social and individual psychological perspectives, all using quantitative methodologies.

An entirely different methodology is involved in the *qualitative*, lit crit, approaches seen in the most usual variety of literary onomastics. This seeks to explain the names of characters in relation to the fictive text in which they appear and the circumstances of the creation of that text. It deals with the relation of cultural and linguistic aspects of names to characters and, overlappingly, with intertextual cultural allusions. This methodology could more narrowly be classed as *hermeneutic* or dealing with interpretation in context.

The Practice and Applications of Onomastics

Accordingly, onomasticians analyze proper names, and treat them professionally, in various ways, some of which are theoretical and/or historical, and others are applied. They may study

- what proper names in general are and what they do (how they are used), in order to refine our understanding of their nature (philosophy of language, logic, grammar, pragmatics, text linguistics);
- the history of individual names or of the names found in particular social groups or areas, to discover their original forms and meanings and establish the history of their social or geographical distributional patterns (etymology, demography, and history);
- the linguistic devices that are used to create names and keep them in circulation, in association with the language or languages of the community that uses them (linguistics of individual languages);
- how ordinary words and phrases may become proper names, and vice versa, and/or how they may be used metaphorically or become associated with entities which are not the original thing named (historical linguistics, lexicology, pragmatics, and rhetoric);
- systems of naming, for example the culturally varying customs, norms, or laws attending the giving or inheriting of personal names or the creation of company names (akin to but not the same as the onomasiological question of the creation and development of taxonomies; anthropology, law);
- current patterns and processes of naming, to establish the distribution and popularity of particular names or name types (anthropology, sociology, demography, social psychology);
- the connotations of names, for example how, or whether, personal names relate to personality or are subject to changes in fashion (individual and social psychology);
- the semasiological question of how different names may apply to the same entity, even in the same culture, for example in pet-naming or nicknaming (variationist linguistics, social psychology);
- the practical problems created by the fact that names are used across linguistic boundaries and that different names may apply to the same entity; for place names, for example, onomasticians may suggest international and standard usages, and resolve disputes about them, or suggest transliterations where different writing systems are involved (human and political geography, cultural history);
- legal aspects of naming, for example the restrictions placed in some cultures on human naming, or brand name protection (anthropology, law); or
- the naming of persons, places, and so forth in second-order worlds such as myth, literature, and film, and in supernatural worlds (poetics, mythology in anthropology).

Onomasticians are also in the business of creating dictionaries of names (*onomastica*, singular *onomasticon*), which typically contain explanatory material of linguistic, cultural, and historical significance. Many people are in the business of creating data sets and databases of name material (e.g., indexers, social statisticians, electoral authorities, credit-rating agencies) which would not qualify as onomastica unless they contained explanatory material of a linguistic kind.

The leading general journals in onomastics published wholly or partly in English are *Names* (USA-based), *Nomina* (UK & Ireland), and *Onoma* (international, but often with a European focus). More specialized journals include the *Journal of the English Place-Name Society* and *Journal of Scottish Name Studies*, and there are many regional journals.

SEE ALSO: Anthropological Linguistics; Core Vocabulary; Language Ideology and Public Discourse; Linguistic Landscape; Traditional Approaches to Monolingual Lexicography

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Suggested Readings

Brendler, A., & Brendler, S. (Eds.). (2004). *Namenarten und ihre Erforschung: ein Lehrbuch für das Studium der Onomastik*. Hamburg, Germany: Baar. This is the only systematic introduction to onomastics in a Western European language.

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Organization of the Second Language Lexicon

JUDITH F. KROLL AND CARI A. BOGULSKI

Overview

Learning and using new words are typically the first steps in acquiring proficiency in a second language (L2). Over the past 20 years, there has been extensive research on the question of how adult L2 learners learn and organize new vocabulary and how the emerging L2 lexicon functions alongside existing lexical knowledge in the first language (L1). This topic has provided a context for evaluating hypotheses about language learning, for testing claims about the architecture of the lexicon, and for examining the interactions across the bilingual's two languages more generally (e.g., Kroll & Tokowicz, 2005).

Three observations frame research on the L2 lexicon. First, the L1 is active when L2 learners process words in the L2 (e.g., Kroll & Stewart, 1994; Marian & Spivey, 2003). Second, L1 activity persists even when individuals become highly proficient in the L2 (e.g., Dijkstra, 2005). Initial research on L2 learning assumed that this activity was restricted to the earliest stages of acquisition; once some degree of proficiency was achieved, learners were thought to be able to understand the meanings of words in the L2 independently of the L1. Subsequent studies have shown that the nature of this activity differs for learners and for proficient bilinguals, but that for all L2 users, the L1 is engaged while processing words in the L2. Third, the parallel activation of words in the bilingual's two languages has the consequence that the native or dominant L1 changes so that the L2 comes to affect the L1. Once a learner becomes sufficiently proficient in the L2, there is activity of the L2 when words in the L1 are processed. These changes occur at the lexical level but they also occur at others levels of language processing, supporting the claim that the bilingual is not two monolinguals in one (Grosjean, 1989).

In the brief entry that follows we first describe models of the L2 lexicon that characterize the representations and processes available to L2 learners and highly skilled bilinguals. We then review the evidence for the parallel activity of the bilingual's two languages that has been observed in studies of visual and spoken word recognition. Finally, we consider the learning process itself, both from the perspective of acquiring a new language as an adult, and also for the consequences that bilingualism may hold for lexical processing.

Models of the L2 Lexicon

Two classes of models have been proposed to account for the way in which words in the L2 are represented and processed. One focuses on the mappings between word forms and meaning (e.g., Kroll & Stewart, 1994). The other characterizes the nature of the lexical and sublexical information that is activated during word recognition (e.g., Dijkstra, 2005). Here we discuss each type of model with illustrations drawn from the two models that have generated the most research on the L2 lexicon, the revised hierarchical model (Kroll & Stewart, 1994) and the bilingual interactive activation model (Dijkstra & Van Heuven, 2002). For further information on lexical models see Thomas and Van Heuven (2005).

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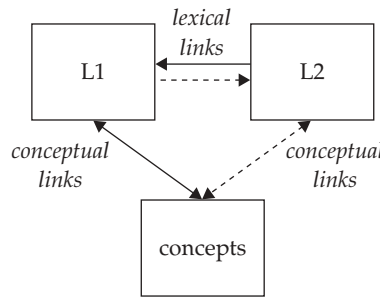

Figure 1 The revised hierarchical model (adapted from Kroll & Stewart, 1994)

The revised hierarchical model (RHM) is shown in Figure 1. The model attempts to capture the way in which words in the L2 are mapped to their meanings and to their L1 translations and how those connections are likely to change as learners acquire increasing proficiency in the L2. The RHM assumes that, initially, the L2 learner will have to rely on L1 translations to access word meaning. As skill increases, the L2 learner is hypothesized to become increasingly able to access meaning directly, without mediation via the L1. The solid arrows in the model are intended to depict strong connections whereas the dashed arrows depict weaker connections. The differential strength of these connections is assumed to create an asymmetry between the two languages that is predicted to influence lexical performance.

Kroll and Stewart (1994) tested the RHM by having relatively proficient but L1-dominant Dutch–English bilinguals translate words in each direction: from L1 to L2 and from L2 to L1. The model predicts that translation from L1 to L2 will be conceptually mediated because of the strong existing linkage between L1 words and concepts. However, the model predicts that translation from L2 to L1 will be more likely to be lexically mediated because the word-to-word associations from L2 to its translation equivalent in L1 will make it possible to exploit lexical connections alone and bypass conceptual processing. Kroll and Stewart reported support for this prediction when Dutch–English bilinguals translated words in each direction in the context of word lists that were semantically blocked (e.g., all animals or all vegetables) or randomly mixed. Semantic blocking is a factor that reflects conceptual processing. They found that only translation in the L1 to L2 direction was influenced by the blocked/mixed variable, suggesting that, as the RHM predicts, only that direction of translation is conceptually mediated. Translation from L2 to L1 was unaffected by the presence of semantically blocked information.

In the time since the RHM was proposed, there has been a debate about the role of the translation equivalent in lexical access in the L2. Some studies have reported developmental data that show that there is reliance on the L1 translation when L2 learners are relatively unskilled in the L2 (e.g., Sunderman & Kroll, 2006); other studies have shown that there may be implicit activation of the translation for even highly proficient bilinguals (e.g., Thierry & Wu, 2007). A number of other studies, however, claim that there is no evidence at all for mediation via the L1 translation (e.g., Duyck & Brysbaert, 2004). The apparently discrepant findings in the literature may only be reflecting the observation that whether the translation equivalent is activated when processing the L2 is likely to depend on more than proficiency alone. The task and particularly the time course of processing induced by the task may be critical in determining the conditions under which the L1 translation is engaged.

Models of the L2 lexicon for highly proficient bilinguals also propose that, when words in the L2 are processed, there will be evidence of L1 activity. However, in contrast to

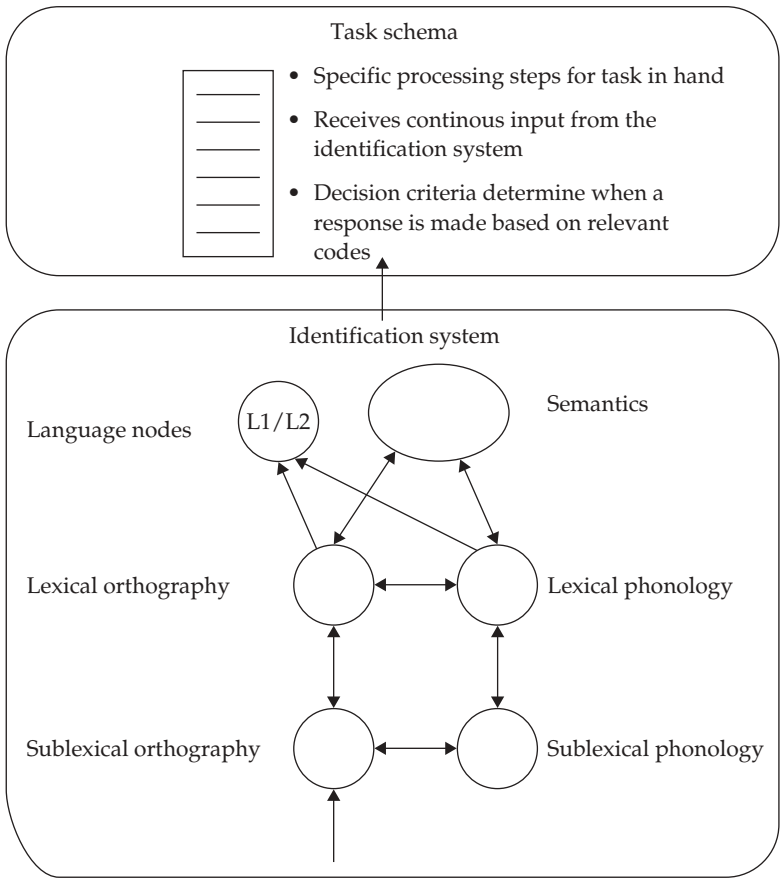

Figure 2 The BIA+ model (adapted from Dijkstra & Van Heuven, 2002)

the notion that it is the translation in the L1 that is active, these models assume that word form relatives in the L1 are momentarily available. The BIA+ model (Dijkstra & Van Heuven, 2002) is shown in Figure 2. The model and its earlier version (BIA) extend the assumptions of the interactive activation model (McClelland & Rumelhart, 1981) for visual word recognition to the bilingual case. When a word is presented, there will be parallel activation of other words that share similar orthography and phonology. In languages that share the same alphabet, like Dutch and English, there will be words that are ambiguous in that they could belong to either or both languages. For example, cognates are translation equivalents that have similar orthography, phonology, or both in two languages (e.g., the word *hotel* in English and Dutch). Interlingual homographs, or false friends, also have similar orthography, phonology, or both, but do not have the same meaning in each language (e.g., the word *room* in Dutch means cream). According to BIA+, at early stages of word recognition all of the activated alternatives in both languages will be available. Only at a relatively late stage of processing will the intended language be selected and the target word identified.

The logic of the empirical studies that have tested the BIA+ model is to compare performance on visual word recognition tasks for bilinguals and monolinguals when words are presented that are either language-ambiguous or language-specific. If bilinguals are able to function as monolinguals when performing a word recognition task in one language

alone, then their performance should resemble that of monolinguals and should not vary across otherwise matched language-ambiguous and language-specific words. However, if both language alternatives are activated even in single language contexts, then bilingual performance would be expected to differ from monolingual performance and to differ for words that are likely to engage the other language. This is precisely the result that has been reported in a large number of bilingual word recognition experiments (see Dijkstra, 2005), supporting the predictions of the BIA+ model. In the next section we consider the nature and scope of the evidence for the parallel activity of the two languages in word recognition.

The Scope of Cross-Language Lexical Activation

Finding evidence for the activation of both languages when Dutch–English bilinguals recognize words in either of their two languages may not seem surprising because of the ambiguities that are possible in similar languages. A critical question is whether the parallel activation of candidates in the two languages is restricted to bilinguals whose languages have this property. Recent studies suggest not. Even when the two languages differ in script, without the possibility of orthographic similarity (e.g., English and Chinese), or differ in modality, as is the case for bilinguals who use one written language and another signed language (e.g., English and American Sign Language), there is still evidence for cross-language activation when only one of the two languages is required (see Kroll & Hermans, 2011, for a review of the recent research on bimodal bilingualism). The persistence of cross-language interactions even in the face of structurally distinct languages suggests that the lexicon is fundamentally an open system at a relatively abstract level. In the language of contemporary connectionist models (e.g., Thomas & Van Heuven, 2005), there is resonance across all of the lexical codes that are engaged during word recognition so that even in the absence of overlap across codes, the remaining codes are activated. The basic findings are similar for both visual and spoken word recognition, although there is some evidence that spoken word recognition may be more open to modulation in the presence of cues to the language in use than visual word recognition (e.g., Ju & Luce, 2004).

The lexicon is engaged not only during reading or listening but also when bilinguals plan speech in each language. Unlike the bottom-up process that characterizes word recognition (see Figure 2), speech production is a top-down process that is initiated by the intention to express an idea, name a picture, or translate a word. The component stages that make up speech planning are complex, even within a single language (e.g., Levelt, 1989). For a bilingual, there is the added requirement to select the language to be spoken. The conceptually driven nature of speech planning should, in theory, allow bilinguals to select the intended language in advance. Despite the potential for early selection and control in speech production, the available evidence suggests that, even when bilinguals intend to speak one of their two languages, information about lexical candidates in the other language is activated (e.g., Costa, 2005; Kroll, Bobb, & Wodniecka, 2006). Quite counterintuively, bilinguals do not appear to be able to restrict activation to words in the language they intend to speak. For example, bilinguals are faster to name pictures whose names are cognates, sharing phonology across the two languages, than pictures whose names are distinct translations across languages (e.g., Costa, Caramazza, & Sebastian-Galles, 2000). Similar to the evidence on bilingual word recognition, the research on production suggests that the presence of cross-language interaction affects both of the bilingual's languages, not only production in the L2, which is slower and potentially more open to intrusion from the more dominant language. In addition, like the findings for word recognition, there is evidence that the activity of the unintended language is not modulated by structural differences across languages (e.g., Kroll & Hermans, 2011).

The late control that bilinguals exercise in selecting the words to be spoken has been a topic of great interest in and of itself because it appears to be related to the observed demands on executive function during L2 processing (e.g., Abutalebi & Green, 2007) and to the hypothesized consequence of those demands in conferring enhanced abilities to proficient bilinguals in resolving cognitive conflict (e.g., Bialystok & Feng, 2009).

A very reasonable question that can be raised about the research we have reviewed is whether the apparently pervasive nonselectivity of lexical access is a reflection of the way in which word recognition and word production have been investigated out of context. Bilinguals do not ordinarily read, listen, or speak unrelated words one word at a time in the absence of sentential or discourse context. A critical question is whether the decontextualized nature of research on lexical processes effectively enhanced the level of ambiguity present and thereby induced the observed activation of information in both languages. A series of recent experiments has investigated this issue by examining lexical access within sentence context. To illustrate, Schwartz and Kroll (2006) asked Spanish–English bilinguals to name a cued word that appeared in the context of a sentence presented one word at a time. The cued word was either a cognate or an unambiguous control word and the sentence was either highly constrained semantically or not. They found that, in the highly constrained sentence context, there was no effect of cognate status; the bilinguals performed similarly to monolingual speakers. However, in the absence of a highly constrained sentence context, there was an effect of cognate status that was similar to the one observed in out-of-context word recognition experiments. Other studies have reported the same result using a variety of experimental methods (e.g., lexical decision rather than word naming and recordings of eye movements during reading). The important finding is that reading a sentence in one language alone, even in a block of trials in which all of the sentences are read in the same language, is not sufficient to restrict lexical activation to that language unless the sentence is also highly constrained semantically.

Taken together, the body of recent research on bilingual lexical processing suggests that lexical access is language-nonselective across a wide range of contexts and conditions. Contrary to the view that lexical candidates become active in both languages only in the presence of ambiguity, past research demonstrates that, even when bilinguals have an intention to speak one language alone and even when rich sentence context is present to signal the intended language, there is activation of the language not in use. Given that these cross-language interactions appear to characterize both the learner lexicon and the lexicon of highly skilled bilinguals, we can ask by what process L2 vocabulary is acquired to achieve this transformation from monolingual to bilingual representation. We consider the answer to this question in the next and final section.

Learning and Using L2 Vocabulary

What is perhaps most striking in considering the way in which new words are acquired in L2 is that the processes that characterize learning resemble those that we have described when relatively proficient bilinguals access lexical knowledge. Given the degree of cross-language lexical activation that occurs, it is perhaps unsurprising that L2 learning exploits strategies that make use of such interaction. For instance, reliable similarities in phonology and orthography (e.g., cognates) affect the ease with which new vocabulary is learned. Cognates are both easier to acquire and less likely to be forgotten by L2 learners (e.g., De Groot & Keijzer, 2000). Other word characteristics that are known to play a role in language processing also influence the speed and likelihood of acquisition in L2. Concrete words and high-frequency words, both of which are processed more quickly than abstract and low-frequency words, respectively, are learned more easily and are less likely to be forgotten by L2 learners (e.g., De Groot & Keijzer, 2000). Such results further support the implication of L1 to L2 transfer influencing mature cross-language interaction.

One of the most enduring observations about L2 learning is that it becomes more difficult and is ultimately less native-like the later the age of acquisition (Johnson & Newport, 1989). Curiously, the claims about the consequences of late acquisition that are so robust for L2 grammar and phonology do not appear to apply to vocabulary learning. If learning new words is not constrained by the same factors that determine sensitivity to other aspects of the L2, then what variables can reliably influence this general trajectory of vocabulary learning? As was previously discussed, the role of L1 and L2 similarity, as well as the frequency and concreteness of a word, will impact on vocabulary learning. But, in addition to properties of the words in the developing L2 lexicon, properties of the learners and the learning strategies can also influence L2 vocabulary development. Learning methods (such as keyword, rote rehearsal, paired associate, picture associate, and in-context) all demonstrate some advantages and disadvantages (e.g., De Groot & Van Hell, 2005). Although learners may initially have an easier time acquiring vocabulary out of context and under conditions that are somewhat impoverished, the evidence suggests that this rapid learning does not generalize more broadly to richer contexts (e.g., Prince, 1996). Additionally, some methods may not prove adequate for attainment of a native-like vocabulary, as they are particular to concrete and highly imageable words (e.g., Van Hell & Mahn, 1997). Some recent evidence suggests that alternative learning methods recruit different neural networks during the retrieval process, indicating that variations in learning strategy may have profound consequences for the developing (and ultimately mature) system (Jeong et al., 2010).

Individual learner differences may not only influence ultimate L2 vocabulary acquisition, but may also determine the learning strategy that is adopted. Two learner characteristics that have been the focus of recent studies are general cognitive resources and foreign-language experience. Aspects of cognitive performance that have been demonstrated to affect L2 vocabulary learning include phonological working memory/short-term memory and phonological awareness (Meschyan & Hernandez, 2002), as well as motivation (Sparks, Patton, Ganschow, & Humbach, 2009). Specifically, a higher phonological memory capacity, greater phonological awareness, and increased motivation facilitate attainment of L2 vocabulary. However, there is great difficulty in disentangling all possible variables at play during L2 learning, as these factors tend to be correlated with one another. For instance, an L2 learner with a large L1 vocabulary is likely to exhibit a large L2 vocabulary, but increased L1 and L2 vocabulary are both known to correlate with phonological short-term memory (Meschyan & Hernandez, 2002). Another individual difference known to influence L2 vocabulary learning is foreign-language experience. Several studies testing different types of bilingual participants have demonstrated that previous foreign-language experience leads to better recall of newly learned words (Van Hell & Mahn, 1997; Kaushanskaya & Marian, 2009). Hence, not only do elements of L1 transfer in the learning of L2, but the learning experience of L2 may transfer in the learning of another novel language (L3).

Perhaps one of the most exciting developments in research on L2 vocabulary acquisition is the use of event-related potentials (ERPs), a non-invasive measurement of electrical activity of the brain time-locked to the onset of a stimulus. The methodology has been utilized to study L2 learning of grammatical structures as well as vocabulary, and shows promise as a possible technique for measuring L2 attainment before behavioral evidence suggests that any learning has taken place (e.g., McLaughlin, Osterhout, & Kim, 2004). What these studies suggest is that, despite the extreme difficulty of native-like attainment for adult L2 learners, there are changes in the processing in the brain that can be detected very early in the learning process (i.e., with as little as 14 hours of instruction). Typically, learners at this stage of initial acquisition reveal little evidence of learning when tested by behavioral measures only. These results are very encouraging, both for adult L2 learners and for L2 learning researchers who aim for a finer-grained and more temporally sensitive instrument with which to measure learning.

Summary

In this brief review we have highlighted the dynamic nature of the second language lexicon. Acquired lexical knowledge in the L2 appears to interact with existing lexical knowledge at the earliest stages of learning and in language processing by proficient bilinguals during reading, listening, and speaking. These interactions reflect not only reliance on the more dominant L1 during the acquisition of L2 but the fundamental permeability of the lexicon as L2 comes to influence the use of L1. As such, they hold important implications for the way in which bilingualism and second language learning reveal the constraints and plasticity within the language system more generally.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Inhibition and Control in Second Language Acquisition; Lexical Access in Bilingual Visual Word Recognition; Spoken Word Production in Second Language Acquisition; Working Memory in Second Language Acquisition: Phonological Short-Term

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Orthography

KEITH L. SNIDER

Introduction

The term *orthography* refers to the set of symbols *and the conventions governing their use* that members of a language community employ when they communicate in their language through the medium of writing. Derived from Greek *ὀρθόσ* (orthos) 'straight, correct' and *γράφειν* (graphein) 'to write', the term literally means 'correct writing'. As such, it is often used synonymously with *writing system*, although the latter also has a more specific meaning. *Writing system* also refers to the relationship between the symbols of an orthography and the particular type of linguistic units that they represent: words versus syllables versus phonemes (Coulmas, 1989, p. 37). Phonemes are the contrastive sounds in a language that minimally distinguish words (e.g., /b/ vs. /d/ in *big* and *dig*). Within the present work, use of the term *writing system* is limited to this second, more restricted meaning, and it is not synonymous with *orthography*, but is rather one facet of an orthography.

Broadly speaking, writing systems fall into two groups: meaning-based and sound-based. Meaning-based systems are *logographic* and link individual symbols to semantic concepts (usually morphemes, or syllables if morphemes are monosyllabic). On the other hand, *sound-based systems* link individual symbols to phonological units: syllables, in the case of *syllabic* writing systems; moras, in the case of *moraic* systems; and phonemes, in the case of *alphabetic* systems. Even though the German and Spanish orthographies are very different, they have the same writing system because both are alphabetic. In this way, they contrast with languages like Chinese and Amharic, where each has different writing systems because they employ logographic and moraic systems, respectively.

Perhaps the best known example of a logographic writing system is the traditional Chinese one, in which there is primarily a one-to-one correspondence between symbols and morphemes. Developed over 4,000 years ago, the Chinese characters were originally pictographic. Today, most characters consist of ten or fewer strokes that are only partly reminiscent of their original pictographic status. One major advantage of logographic systems over alphabetic ones is that because the symbols are linked to concepts instead of sounds, they are better able to serve language communities with multiple dialects. This may be seen in the following examples of the word for 'fish' in different Chinese dialects (data courtesy of Jamin Pelkey). Although 'fish' is pronounced differently in each dialect (some of the differences are tonal), speakers of all dialects are nevertheless able to use the same character to represent it orthographically because they employ a logographic writing system.

魚

'fish'

Beijing (Mandarin)	/jy/ (high rising tone)
Cantonese (Yue)	/jy/ (low falling tone)
Kunming (SW Mandarin)	/ʑy/ (low falling tone)
Taiwanese (Min Nan)	/hiʔ/ (mid falling tone)

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Hakka (Kejia)	/ŋ/ (low-level tone)
Shanghai (Wu)	/ŋ/ (high rising tone)
Jiangxi (Gan)	/ȵiɛ/ (low falling tone)
Middle Chinese	*ŋjo
Old Chinese	*ŋja

* Reconstructed proto-forms

Despite the obvious advantages of logographic systems for languages with multiple dialects, it is much more difficult to learn to read with such a system because there are so many symbols to memorize. Rogers (2005, p. 44) claims that beginner readers of the traditional Chinese system need to master at least 1,500 characters for just basic literacy and 2,500–3,000 for functional literacy. All told, there are some 50,000 characters in existence. Also, because logographic systems have so many characters, the shapes of many characters end up being fairly complex in order to maintain individual contrasts. This only adds to the difficulty in learning to read and write them and helps to explain why not very many languages today have writing systems of this kind.

With respect to syllabic writing systems, Poser (1992) claims that most of these are actually moraic (e.g., Amharic), however, he acknowledges that true syllabic writing systems do exist, and he describes the system of Yi, a Tibeto-Burman language spoken in China, as being one of them. Moras are units of syllable weight and consist of either a simple nucleus, a coda, or one-half of a long vowel or diphthong syllable. Unlike coda consonants, which do contribute to syllable weight, onset consonants, regardless of their complexity, do not contribute to syllable weight. Light syllables therefore consist of a single mora (e.g., V or CV), while heavy syllables consist of two or more moras (e.g., CVV or CVC). A true syllabic system would therefore represent a syllable like *fit* with one symbol; a moraic system would represent it with two, one for each mora (nucleus and coda); and an alphabetic system would represent it with three, one for each phoneme. The main advantage of sound-based writing systems over meaning-based systems is that sound-based systems have fewer symbols to memorize, and this makes learning to read much easier. By the same token, alphabetic systems, which are employed by most orthographies today, are easier to learn than syllabic and moraic ones because, again, they have fewer symbols to memorize.

Returning to issues of terminology, the term *orthography* should not be confused with the term *alphabet*, which refers only to the set of symbols, or letters, that represent the phonemes of a particular language. Accordingly, the English alphabet has 26 letters, the Swedish one has 29, and the traditional Spanish one has 30, even though all three languages have the same type of writing system (viz., alphabetic), and all three share the same Roman script. The term *orthography* should also not be confused with the term *script*. A script is a large set of symbols from which the symbols that constitute the alphabet of a particular language are drawn. Scripts, like writing systems, are therefore not language specific, but may be shared by other languages. For example, English, German, and Spanish all share the Roman script, while Russian, Ukrainian, and Bulgarian all share the Cyrillic script. The following table shows some correspondences between the Roman, Cyrillic, and Greek scripts in order to demonstrate how the same phonemes are represented differently by these scripts.

Phonemic	/n/	/l/	/b/	/g/	/r/
Roman	n	l	b	g	r
Cyrillic	н	л	Б	г	р
Greek	ν	λ	β	γ	ρ

Alphabetic orthography symbols and the conventions that govern their use fall into three main groups: graphemes (symbols that represent phonemes), diacritics, and punctuation marks. Conventions that govern the use of graphemes are virtually unlimited, but here are a few that are commonly employed.

1. Use of one grapheme to represent one phoneme. In English, symbols such as *m*, *k*, and *r* each represent one phoneme, namely /m/, /k/, and /r/, respectively. This is the ideal situation.
2. Use of one grapheme to represent multiple sounds. In English, *c* is usually pronounced as [s] before the front vowels [i] and [e] (e.g., *cistern*, *cement*), but sometimes also as [ʃ] (e.g., *social*, *ocean*), and as [k] elsewhere (e.g., *cavity*, *corrupt*).
3. Use of two graphemes (digraph) to represent a single sound. In English, *ph* is pronounced [f] (e.g., *photograph*, *phrase*) and *ch* is pronounced [t͡ʃ] (e.g., *chip*, *much*).
4. Some conventions simply dictate how to pronounce words when their pronunciation would not otherwise be obvious. In English, beginner readers are often taught the ditty, "When two vowels go walking, the first one does the talking," so that when they come upon a vocalic digraph (i.e., two vowels), they pronounce only the first vowel (e.g., *boat*, *leave*).

Diacritics are often added to graphemes in order to modify their sounds in a consistent manner. In French, for example, a *cedilla* is placed below a *c* when it is necessary to indicate that it is pronounced [s] instead of [k] (cf. *façon* 'way, manner' with *faconde* 'fluency'). Many African languages also use accent marks to modify sounds by indicating tonal distinctions. In this Bafut proverb from Cameroon (Ntumngia & Mfonyam, 2004), the different accent marks represent different tones, *ŋgɨ̀ ŋgyâ àfɔ́ agha'a à wo a ataa nɨ̀ àtû* 'A stranger antelope in a far off field falls headlong in the pit' (translation: 'Look before you leap'). Diacritics, however, are not always associated with consistent sound modifications; they can also convey added meaning regardless of what sounds are associated with that meaning. In French, for example, a grave accent is placed above the *a* in *là* 'there' to distinguish it from *la* 'the', even though both are pronounced identically.

Punctuation marks (e.g., commas, colons, and hyphens, etc.) are the third type of orthographic symbol and typically convey information that is represented suprasegmentally in spoken speech by means of pauses, vowel length, intonation, and so forth. Grammatically, they can demarcate the boundaries of syntactic constituents like phrases and sentences, distinguish questions from statements, and indicate morphological processes such as compounding and reduplication.

Since alphabetic systems are the most common systems in use today and are arguably the most practical, the remainder of this entry explores some of the more important issues that relate to developing alphabetic orthographies for preliterate societies.

Factors in Orthography Development

There are a number of different factors to consider when developing an orthography, and many of these are sociolinguistic in nature. Sometimes governments impose restrictions on orthographies, particularly with regard to what writing systems, scripts, or both, are used. While a particular script might work well for some languages, it often does not work as well for other languages if it doesn't have enough characters to encode all of the phonological contrasts that need to be distinguished. Decisions therefore need to be reached regarding how best to adapt imposed systems for minority languages like these. Often, people want their orthographies to resemble those of majority/national languages so that people can more easily transfer their literacy skills to the majority languages. Other times,

however, people want the orthographies of their minority languages to be different from the majority languages in order to enhance their ethnic identities. Difficult decisions also often have to be reached regarding which dialect will be chosen as the "standard" dialect. And finally, whatever technical limitations might exist for a society, they need to be taken into consideration in order to ensure that all orthographic symbols can be printed locally.

Linguistic considerations are also very important; all other things being equal, an orthography that is closely aligned with the phonological and grammatical structures of a language will serve the language community better than one that is not so closely aligned. We look now at two of the most difficult challenges for developers of linguistically based orthographies, orthographic depth and tone.

Orthographic Depth

The term "orthographic depth" refers to the degree to which the relationship between a language's orthography and its phonology is unequivocal or transparent. "An orthography that represents its phonology in an unequivocal manner is considered shallow, while in a deep orthography the relation of orthography to phonology is more opaque" (Frost, 1992, p. 258). Depending on the number and nature of a language's morphophonemic alternations, some languages (those with fewer and more transparent alternations) lend themselves better to shallow orthographies, while others lend themselves better to deeper orthographies. Shallow orthographies, like those of Spanish, Italian, and Finnish, have mostly one-to-one correspondences between graphemes and phonemes. This makes learning to read easier because when readers see a particular grapheme, they immediately know how to pronounce it. Deep orthographies, on the other hand, like those of French, Danish, and English, have fewer one-to-one correspondences and are generally more difficult to learn to read because the correspondences between the graphemes and their pronunciations are more opaque. That being said, for any given language, mature readers can often read faster with a deep orthography, since they focus more on associating meanings with word shapes than they do on sounding out words.

There are many factors that can contribute to orthographic depth, however, due to space limitations we will focus only on the one that is arguably most problematic for orthography developers, that attributable to morphophonemic alternations. Morphophonemic alternations occur when any given morpheme has different phonetic realizations in different phonological environments. In English, for example, the present tense morpheme has three phonetic realizations: [s], [z], and [ɨz], with [s] occurring after voiceless consonants (e.g., [klæp–s] 'claps'), [z] occurring after voiced consonants and vowels (e.g., [rɔb–z] 'robs', [go:–z] 'goes'), and [ɨz] occurring after consonants whose places of articulation are identical or similar to that of [z] (e.g., [bʌz–ɨz] 'buzzes'). Despite the fact that native English speakers are very aware of the difference between [s] and [z] in words like *sip* versus *zip*, they are relatively unaware of the differences between the present-tense forms for *claps*, *robs*, and *buzzes*, and they have no problem recognizing these as reflexes of the same morpheme.

In cases like these, a deeper orthography that allows multiple mappings between phonemes and graphemes is preferable to one that does not. Accordingly, the English orthography represents both the [s] and the [z] of the present tense realizations with the grapheme |s|. Orthographic depth attributable to multiple mappings like these is therefore good because native speakers are not very aware of the morphophonemic alternations. Examples like these have led a number of researchers (e.g., Chomsky & Halle, 1968) to conclude that the phonological underlying form is the ideal candidate for orthographic representation since it results in a consistent realization for each morpheme. And indeed, if native speakers were generally unaware of all morphophonemic alternations, this would no doubt be the case. However, not all morphophonemic alternations necessarily occur below the level of native awareness.

In Chumburung, a Kwa language spoken in Ghana (personal field notes), vowel harmony exists between the vowels of stems and prefixes, the latter always harmonizing with the former with respect to the feature advanced tongue root (ATR). In addition, the *kI-* noun class singular prefix harmonizes with the round specification of the stem. The following examples are illustrative.

(1) Vowel harmony between stems and *kI-* prefix in Chumburung

	–ATR		+ATR	
–Rd	kì–sìbɔ́	ear	kí–jíʔ	tree
	kí–kɛ́ʔ	head pad	kì–téʔ	story
	kì–pá	hat	kì–jéʔ	meat
+Rd	kʊ̀–kʊ̀tɔ̀	claw	kù–ŋú	head
	kʊ̀–kɔ́	debt	kú–d͡ʒɔ́	yam

Unlike voicing assimilation in English, native speakers of Chumburung are very aware of the phonemic differences between the vowels of the *kI-* prefix, and much less aware of the fact that the different surface forms are reflexes of the same morpheme. At one point a linguistically naïve Chumburung speaker was asked if it wouldn't be better to have just one form for the *kI-* prefix, and to spell words like *kù–kùtí* 'orange' as |kìkùtí|. He was aghast, and the subsequent conversation very quickly revealed that he was totally unaware of any connection between the four surface realizations of the prefix and that any deviation from a phonemic representation on this point would be totally unacceptable. Further testing of this with other native speakers resulted in the same conclusion.

From the foregoing, it should be clear that a strictly phonemic orthography is not always the best solution (e.g., English) and that a strictly morphophonemic one is not always either (e.g., Chumburung). For any given morphophonemic alternation, it is therefore necessary to discern to what extent native speakers are aware of the different pronunciations. If they are aware of them, then a phonemic spelling (i.e., shallow) is preferred for that situation. But if they are not aware of them, then a morphophonemic spelling (i.e., deep), which provides a single representation for the morpheme in question, is preferred.

Establishing which sounds native speakers are aware of is not particularly easy. However phonological theories such as lexical phonology and stratal optimality theory (Kiparsky, 1982, 1985, 2000) that employ a serial approach to phonological processes offer a promising solution to this problem. Mohanan (1982, 1986) claims that native speakers are psychologically more aware of the output of the lexical level of these models than they are of any other phonological level (e.g., underlying form, postlexical form, etc.). To the extent that Mohanan's claims are true, these theories provide an objective means for non-native speakers of a language to help develop orthographies that represent words as native speakers perceive them to sound. With regard to the English present tense voicing assimilation examples above, Kiparsky (1985) argues that the processes responsible for these alternations occur postlexically. Since the claim is that native speakers are not particularly aware of the output of postlexical processes, there is a principled reason why native speakers of English prefer not to write the output of voicing assimilation, preferring instead to write a single representation for this morpheme. With regard to the Chumburung vowel harmony examples above, Snider (2011) argues that these forms are the output of *lexical* processes, which again provides a principled reason why native speakers prefer to write these words the way they do.

Tone

Given that some 60–70% of the world's languages are tonal (Yip, 2002, p. 1), another serious challenge for developers of orthographies for preliterate societies is how best

to represent tonal distinctions orthographically. Developers of orthographies for tone languages often find it helpful to distinguish between "lexical tone" and "grammatical tone." In the case of the former, tonal contrasts help to distinguish lexical items, while in the latter, they distinguish grammatical categories like tense or aspect. Often, individual languages employ both types. Here are some examples from Acatlán Mixtec, an Oto-Manguean language spoken in Mexico (data from Pike & Wistrand, 1974, p. 84) and Kenyang, a Wide Bantu language spoken in Cameroon (personal field notes). In these examples, the different accent marks represent the following: acute (dó) = high tone, grave (dò) = low tone, macron (ʔō) = mid tone, circumflex (kô) = falling tone, and a down arrow (↓pá) = downstepped (lowered) high tone.

(2) Lexical tone contrasts in Acatlán Mixtec

dòʔò	basket	ʔìì̀	salt
dòʔō	mud brick	ʔīì̄	skin
dóʔò	tail	ʔìì̀́	hail

(3) Grammatical tone contrasts in Kenyang

Perfective		Imperfective	
bá–pá	they spat	bá–↓pá	they are spitting
bá–kô	they walked	bá–kò	they are walking

Orthographically, tone has been handled in a variety of ways, some of which have worked well, and some not so well (see also Bird, 1999 and Snider, 2001). Not marking tone at all is probably the most common strategy employed. In this case, orthography developers assume, whether naïvely or otherwise, that the functional loads of lexical and grammatical tone in the language are light enough not to warrant representing tone. To the extent that these assumptions are justified, this can be the preferred solution, since it definitely makes writing easier. On the other hand, if the functional load of tone is too heavy, not marking tone can cause serious difficulties in reading comprehension. In this case, it is better to determine which tonal contrasts native speakers are aware of, and to represent them accordingly.

Conclusion

Orthographies do not have to be linguistically perfect in order to be successful. This becomes especially clear when one considers those of English and especially ancient Chinese. Although less than ideal for many reasons, they have nevertheless proven very successful because the societies that own them place an extremely high value on literacy. That being said, the majority of societies where new orthographies are being developed today are not as highly motivated for mother-tongue literacy as are English and Chinese speakers, nor do they normally have the same resources available for language development. Those responsible for orthography development in preliterate societies, therefore, need to ensure that orthography decisions taken are based on solid linguistic research and are made only after carefully considering all of the factors involved. We conclude by summarizing these factors.

First, governments sometimes impose restrictions on orthographies, so careful consideration must be given to developing an orthography in a manner that takes these into account. Second, language communities sometimes have conflicting desires with respect to the extent to which their orthography should resemble a national language, and these must be determined and a course of action agreed upon. Third, the dialect situation must be

determined and a decision taken regarding which dialect will be chosen as the "standard" dialect. Fourth, whatever technical limitations might exist for a society need to be taken into consideration in order to ensure that all orthographic symbols can be printed locally. And finally, an orthography should be aligned as closely as possible with the phonological and grammatical structures of the language in question.

SEE ALSO: Learning to Read in New Writing Systems; Phonetics and Phonology: Overview; Phonological Analysis; Reading–Writing Connection; Suprasegmentals: Tone; Teaching Literacy

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O'Toole, Michael

KAY L. O'HALLORAN

Michael O'Toole, also known as Lawrence M. O'Toole (1934–), Emeritus Professor of communication studies at Murdoch University, Western Australia, has a long and distinguished career in applied linguistics, including the development of pioneering approaches to language studies and multimodal semiotic analysis, culminating in his highly influential systemic functional (SF) approach to displayed art, which has provided a foundation for contemporary multimodal research.

Professor O'Toole studied Russian in the Royal Navy during 1951–3. He was highly critical of the "grammar-translation" approach which prevailed in language teaching at that time, whereby students learnt the structures of the target language but were unable to converse in social situations due to lack of knowledge about the relations between text and context.

In his first teaching post in the Department of Russian at Liverpool University, O'Toole experimented with the audiovisual methods developed in *Voix et Images de France* (CREDIF, 1961) by applying Russian dialogue to professional French filmstrips. He moved to the new University of Essex in 1964, where he was in charge of Russian language teaching in the Language Centre. He worked on a research project recording and analyzing contemporary texts of spoken and written Russian and here learned the basic theory and methods of M. A. K. Halliday's scale and category grammar, later called systemic functional linguistics (SFL). Advances in tape-recording technology and techniques in the early 1960s, together with the new stress on learning language in realistic social contexts, made audiovisual methods and language laboratory learning the standard approach at Essex and other forward-looking universities.

O'Toole was commissioned by the BBC to produce a new radio course for Russian learners in 1965. *First Year Russian*, written jointly by O'Toole and Terry Culhane, was the third such BBC course, but it was groundbreaking in that it avoided the traditional set-piece social situational structure and instead built a continuous story line around the encounters and adventures of Boris Petrovich, a Kievan visitor to Moscow. This allowed for the development of interpersonal aspects of language use (e.g., character, relationships, and mood) which were rarely found in more prosaic "situational" courses. The dialogues were constructed around knowledge about grammar and vocabulary emerging from O'Toole's earlier work, and each broadcast finished with a song in Russian written and performed by O'Toole, providing a valuable multimodal memory aid to Russian phrasing, vocabulary, and intonation. Accompanying printed materials were developed to supplement the dialogues which radio listeners were hearing twice a week through 1966 and 1967. A follow-up course, comprising the same elements and principles, was written and broadcast by O'Toole in 1968 and 1969. Both radio courses and supplementary materials were published by Oxford University Press under the titles *Passport to Moscow* (O'Toole & Culthane, 1972) and *Passport to Odessa* (O'Toole, 1976).

O'Toole was involved in an ambitious and popular MA in applied linguistics in the Department of Language and Linguistics at Essex University (which M. A. K. Halliday and Ruqaiya Hasan joined in the early 1970s). O'Toole taught units in SFL, stylistics, and semiotics as a counterweight to the prevailing transformational-generative grammar courses.

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O'Toole was also interested in Russian and English literary stylistics. Most of the literary studies he had encountered had a heavy bias toward social and cultural history, authors' biographies, and a rather unsubtle search for Freudian or Jungian archetypes. His discovery of the Russian Formalist writers, initially through Victor Erlich's (1969) magisterial *Russian Formalism: History—Doctrine*, guided O'Toole toward a structural and stylistic study of Russian and English short stories. A number of other Russian literature specialists joined him in establishing the Neo-Formalist Circle, an offshoot of the British Universities Association of Slavists, to explore and apply the principles of Formalist criticism which focuses primarily on the text of the work itself, in terms of language and structure. Dr Ann Shukman and O'Toole founded an occasional journal, *Russian Poetics in Translation* (twice yearly, 1975–82), which permitted works by Russian scholars to become accessible to a Western audience.

Much of O'Toole's work at this time was produced as conference papers and journal articles, but in 1982 he published a major study bringing together his own (neo-Formalist) theory of narrative structure and the close (SF) analysis of prose style in *Structure, Style and Interpretation in the Russian Short Story.* In 1988 he edited, with David Birch, a collection of papers on style by SF linguists, including themselves, entitled *Functions of Style.*

When O'Toole moved to Western Australia as professor of communication studies in 1981, his main teaching and research was in SFL, narrative theory, and general semiotics. As a lover of the visual arts, he was dissatisfied with the degree to which the discussion of paintings, sculptures, and buildings was dominated by considerations from outside the artwork itself, mirroring the problem with literature studies before the Formalists. By 1985, O'Toole foresaw that a natural extension of SFL would be a visual semiotics based on SF principles and methods of analysis. He presented the new theory to M. A. K. Halliday and other leading systemic linguists at the University of Sydney in February 1986, and over the next few years he continued to analyze paintings and famous buildings and sculptures. In 1994 he published the seminal *The Language of Displayed Art*, where he tested the range and flexibility of the SF semiotic model, explored the theoretical issues which it brought to light, and seriously questioned the hegemony of art-historical discourses, while allowing —indeed, insisting—that with art the interpretation is always open. The book was republished in revised and extended form by Routledge in 2011. Closely linked with the book is a CD-ROM, *Engaging With Art* (O'Toole, 1999), an expanded version of which is packaged in Routledge's republication.

O'Toole's theoretical categories and methods have been applied successfully to individual artworks and buildings by colleagues and graduate students in several cultures, and the model has also clearly influenced the fast-growing area of museum studies. O'Toole's most recent work for conference presentations and publications has focused on animated film and TV comedy, extending his long-standing interest in static visual art.

SEE ALSO: Halliday, M. A. K.; Hasan, Ruqaiya; Multimodality and Displayed Art; Multimodal Text Analysis; Systemic Functional Linguistics

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Otto, Frank

MICHAEL D. BUSH

Introduction

The creation in 1981 of CALICO (Computer-Aided Language Instruction Consortium) represented a significant chapter in the history of computer-aided language learning, and Dr. Frank Otto played a preeminent role in that development. As a professor at Brigham Young University (BYU) in Provo, Utah, and working with and through CALICO as well as through his own private efforts, Otto has had significant impact on what was initially known as computer-assisted instruction (CAI) for language learning. He later referred to his work in "interactive multimedia," but the field is perhaps most widely known today as computer-assisted language learning (CALL).

Background and Education

As brief background to his life and career, Otto was born October 7, 1936, in Cleveland, Ohio. He joined the National Guard in 1952 at the age of 16 while in high school and a few months later began two years of playing baseball with the Cleveland Indians organization. Unfortunately, after deciding to go to college, he learned that he was not eligible for a sports scholarship because he had played professionally. Luckily for Otto, Baldwin-Wallace College in Berea, Ohio, recognized that his potential extended to areas other than sports and offered him an academic scholarship. He also supported his education by working as a professional musician all through college, a "keyboard jazz-man," playing in jazz combos in various settings such as supper clubs (F. Otto, personal communication, October 22, 2010).

After graduating from Baldwin-Wallace College, he pursued a Master's degree in Spanish language and literature from the University of Wisconsin at Madison graduating in 1960 and also receiving his state certification as a teacher in Spanish, History, and English. He went on to earn his PhD in 1966 in educational administration and curriculum development, also from Wisconsin. He says that he chose this area because it gave him the most flexibility in choosing minors, which enabled him to "do materials development," which had already captured his interest (F. Otto, personal communication, October 22, 2010). In addition to pursuing this concentration during the PhD program at Wisconsin, Otto worked a great deal in teacher education, something that he had always known that he wanted to do.

He ultimately completed his dissertation in the area of foreign languages in the elementary school, working with *Parlons Français*, a program from Heath de Rochemont, a division of D. C. Heath. The company supported Otto's dissertation research to investigate alternative approaches to staffing foreign language programs, which also provided him opportunities to travel (F. Otto, personal communication, October 22, 2010).

Just as did most other language educators of the day, Otto became quite interested in audio-lingual methodology. That interest as well as the work with D. C. Heath prompted his involvement in what was known at the time as "programmed instruction," which he pursued with funding from the National Defense Education Act (NDEA). He maintains even today that the motivation was correct to move away from linear instruction in order

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to address the needs of the individual better, the goal of programmed instruction. "These textbooks just could not quite do what we had in mind," he says however, "but we kept trying."

The "high technology" of the era, which Otto investigated in his dissertation research, involved broadcasting the *Parlons Français* program to over two million schoolchildren, at times from a DC-3 airplane flying over the Midwest. The costs for these programs ran to over $3 million for development as well as costs for trials and subsequent revision (Otto, 1968a). To put those numbers into perspective, the Consumer Price Index Calculator of the United States Department of Labor, Bureau of Labor Statistics indicates that such an effort would total over $21 million today, after taking inflation into account (CPI Inflation Calculator, *n.d.*).

Following his PhD program at Wisconsin, Otto began his career in 1966 as a university professor at The Ohio State University in Columbus. Also that same year, he became a founding member of Teaching of English to Speakers of Other Languages (TESOL) and the National Association of Bilingual Education (NABE).

Otto later joined Dr. Edward D. Allen in what was the first PhD program in foreign language education in the USA, which had been founded only a few years earlier. His early research involved investigations into ways to individualize instruction through methods involving team teaching (Otto, 1968b). At Ohio State he also served as coordinator of the efforts in Spanish in that program and often played handball with Dr. Paul Pimsleur, the creator of the "Pimsleur language learning system" that is still widely known today. Pimsleur was on the language faculty and directed the language laboratory, the "Listening Center" (http://en.wikipedia.org/wiki/Paul_Pimsleur). Otto remembers conversations with Pimsleur regarding where language learning was going with respect to technology. For example, Dr. Pimsleur stated at one point, "Frank, I think you've got it there. It is going to wind up on the computer!" (F. Otto, personal communication, October 22, 2010).

He left Ohio State in 1972 to serve as director of the Language Institute, University of the Americas in Mexico and Puebla, Mexico. During his time there, he worked as a language program consultant to the US embassies in Mexico, Guatemala, Honduras, Ecuador, Panama, Costa Rica, El Salvador, Columbia, language centers throughout Latin America as well as Asia, mainly in the Philippines. He also served on the advisory committee on learning technologies for the developing world that was organized by the Institute for International Research of the US Agency for International Development.

Service at Brigham Young University

Otto went to Brigham Young University (BYU) in 1975, primarily because people there wanted to develop a program in English as a second language. After arrival at BYU, he was instrumental in founding the English Language Institute. He was also able to return to his interest in CAI after connecting to the TICCIT Project (time-shared, interactive, computer-controlled information television), which was first developed by the MITRE Corporation in 1968. After TICCIT was expanded in a project at the University of Texas at Austin and at Brigham Young University, Otto created that same year what appears to be the first interactive multimedia program for teaching Spanish online. A large measure of this work had its genesis in a connection he developed with the Montevidisco project that was underway in the McKay Institute in BYU's College of Education. That seminal project culminated in the development of an interactive videodisc for teaching Spanish through the simulation of a visit to a Mexican village (Gale, 1983). This led to phone calls from various commercial entities as well as from the federal government as to how to apply the computer to language learning.

The next phase of Otto's career had a significant turning point when he met Mrs. Minnie Kenny, the deputy commandant in charge of training at the National Cryptologic School (NCS) in the National Security Agency (NSA). The agency had been exploring the possibility of working with the McKay Institute in BYU's College of Education to develop and use interactive videodisc technology to train operators on some of the very expensive equipment used at NSA. Those discussions quickly turned to language training requirements, which prompted the McKay Institute team to establish connections with the College of Humanities, which included Otto as well as Dr. Randall Jones (L. Gale, personal communication, May 10, 2011).

Otto first met Mrs. Kenny in 1982 at the Defense Language Institute (DLI) in Monterey at what he calls a "benchmark event." This would have been the third FLINT (Foreign Language Instructional Technology) conference conducted by DLI and the Goethe Institute of San Francisco (Mace, 1982), itself also a gathering of key individuals who pioneered developments in CALL.

Otto quotes Mrs. Kenny as saying during their initial contacts, "I am a person interested in making teaching and learning more enjoyable" or as he recalls her saying, "less boring" (F. Otto, personal communication, October 22, 2010). Their connection led to his involvement in the expansion of the needs assessment that the McKay Institute was conducting with the NCS, the organization within NSA that was also charged with language training. Otto found this initial work fascinating and something that he still sees "today as if it happened yesterday."

The contact with Mrs. Kenny blossomed into a far-reaching association that led to meetings with the director of NSA at the time (P. Aoki, personal communication, October 18, 2010). Guided by what colleagues described as the charismatic efforts of Mrs. Minnie Kenny, Otto embarked on various noteworthy endeavors. The first was the implementation of technology in language learning, specifically an interactive videodisc, during which he was able to combine work across multiple organizations. The initial work with NSA led to projects with the Defense Language Institute (DLI), with Otto becoming the point of the spear that was the team from BYU and Utah State University (A. Rowe, personal communication, May 2, 2011).

The project with DLI led to a series of videodiscs for German (VELVET: video enhanced learning/video enhanced testing), which involved repurposing video from various sources, as well as original materials (Rowe, 1985) videotaped on location in Germany. Otto's team also produced videodiscs in six other languages (Spanish, Arabic, Hebrew, Korean, French, and Russian) in their project with the National Cryptologic School. The more lasting influence of that period, however, was the founding of an international organization as well as a scholarly journal.

More importantly, however, he played a key role in creating an infrastructure that would live beyond those early efforts and the initial federal funding. Dr. Randall Jones, former dean of the College of Humanities at BYU summarizes what he says was Otto's "contribution in a nutshell." "Frank had vision, found funding, and put together an organizational structure to promote CALL" (R. Jones, personal communication, October 18, 2010).

Early Organization of CALICO

Running parallel to those early development efforts was the founding of CALICO, which was organized at BYU with seed money made possible through the efforts of Mrs. Kenny. Building on the early development efforts at BYU, CALICO rapidly became an organization with an international membership. The organization has brought people together from industry, government, and educational institutions to explore the development and

application of new technologies for teaching and learning languages. A significant part of that work was also the creation in June 1983 of the *CALICO Journal*, which is still today a major research journal in the field.

As an interesting historical note, the masthead of the *CALICO Journal* today refers to the name of the sponsoring organization as the "Computer-Aided Language Instruction Consortium." The masthead of early issues of the journal, however, referred to the "Computer-Aided Language Learning and Instruction Consortium." As late as 1986 in an interview with M. Uchida from the Japanese language newsletter, *Future*, Otto (personal communication) identified the organization using the earlier version of the name, but at some point between 1990 and 1991, the date of the first issue journal to list the shortened name, the name was changed and the word "learning" was dropped. It seems that the name change might have been connected to CALICO's move from Brigham Young University to Duke University. This could well remain only speculation at this point, given the passing in 2007 of the second executive director, Frank Borchardt (Duke University, 2007). More importantly, however, is the crucial role that Otto played in the founding of the organization.

ELLIS, Inc.

After leaving BYU, Otto continued his efforts in the use of technology for teaching language, which culminated in an interactive model for English learning and teaching. He was able to achieve a level of commercial success through ELLIS, Inc., a company founded from the outset to foster the creation and sale of programs to promote English competency to "millions of children and adults worldwide" (Spoke, 2011). Pearson Learning acquired ELLIS in 2006 and continues to improve and sell the software (see www.pearsonschool.com/ellis).

SEE ALSO: Chapelle, Carol A.; Computer-Assisted Language Learning Effectiveness Research; Emerging Technologies for Language Learning; Instructional Computer-Assisted Language Learning; Intelligent Computer-Assisted Language Learning; Warschauer, Mark

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Output-Based Instructional Approaches

PAUL D. TOTH

Introduction

The ability to express oneself in a second language (L2), or make spoken or written *output*, is among the most desired outcomes for L2 instruction. However, while most would agree that uninhibited output is an essential objective, views vary on its role in L2 acquisition and the optimal format for output-based instructional techniques. For example, cognitive theory generally sees output as the indirect manifestation of an internal linguistic system whose development principally occurs by processing, or attending to and comprehending, L2 *input*. Within this paradigm, output does not so much cause acquisition as simply reflect it, although many also believe that output builds fluency by "proceduralizing" L2 communicative routines. Meanwhile, sociocultural theories see L2 learning more as building participation in L2 communities than as acquiring an abstract system. Hence, output is an essential catalyst for development as learners become socialized into L2 communicative practices and are more able to regulate themselves and their environment through language. Despite these differences, however, both cognitive and sociocultural theories generally advocate a communicative approach to instruction, where efforts to ensure use of specific L2 structures are closely linked to meaningful, purposeful language activity, as in current proposals for "task-based" instruction.

In addition to these current perspectives, traditional views of output and acquisition continue to influence L2 instructional practices, despite their abandonment by current theory. These include (a) the mid-20th-century behaviorist view that L2 "speech habits" can be trained through error correction, dialogue repetition, and the mechanical manipulation of grammatical structures; (b) the belief of early 20th-century philologists in L2 learning via literary translation and grammatical rule recitation; and (c) the perspective of 19th- and 20th-century educators that first and second language learning are identical processes, such that L2 output emerges naturally and effortlessly among adults. Respectively, these views derived the (a) audio-lingual, (b) grammar-translation, and (c) "direct" methods, whose remnants are still found in many classrooms. Output-based instructional approaches thus vary wherever L2s are taught, as divergent beliefs about the nature of language and acquisition influence the motivation and design of L2 production activities.

The Nature of Language Production

L2 output, particularly in spoken form, is a complex activity that involves the highly synchronized and nearly simultaneous coordination of mental and physical processes at different levels. Following Levelt's (1989) widely cited model of speech production in Figure 1, an essential step involves assessing one's goals and motives for interaction, as well as those of interlocutors, and "conceptualizing" a message within the discourse context (box, top left). The complexity of this single step, and the sociopolitical and emotional factors that impinge on it, is the focus of much sociocultural research on L2 output. Once an intended meaning has been determined, speakers must "formulate" an utterance

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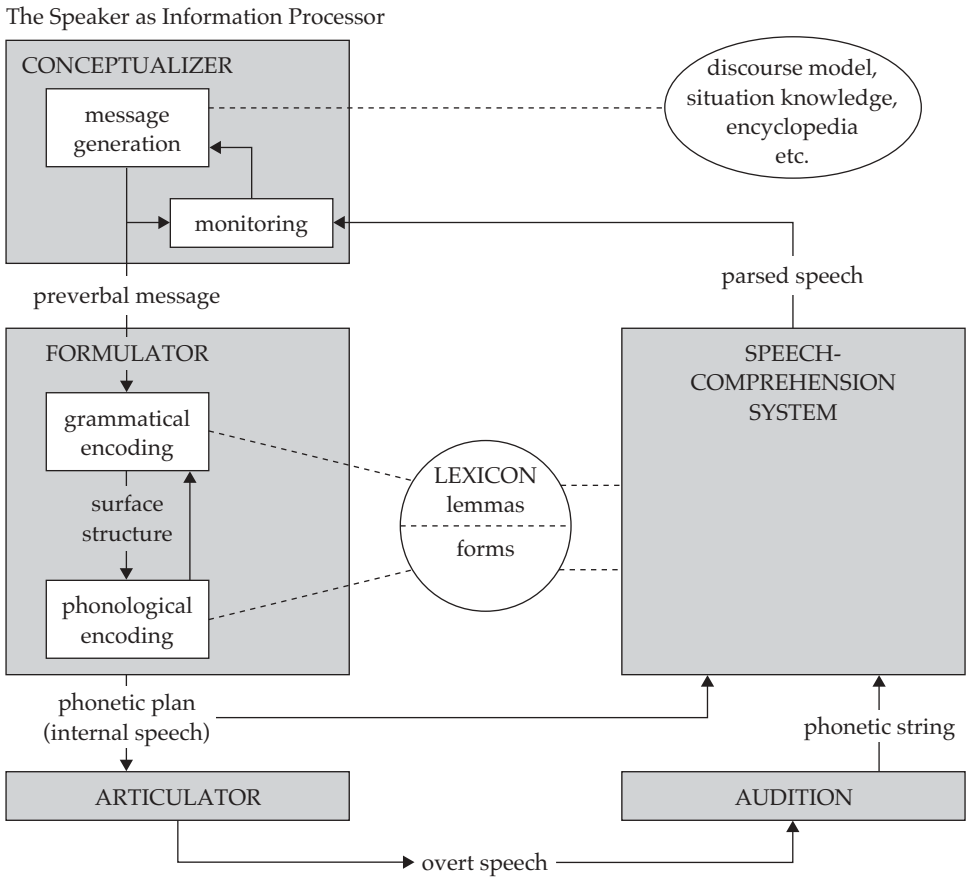

Figure 1 A blueprint for the speaker. Levelt, William J. M. *Speaking: From Intention to Articulation*, Figure 1.1, p. 9 © 1989, Massachusetts Institute of Technology, by permission of the MIT Press

(middle left), selecting lexical and grammatical morphemes that accurately represent the intended meaning and sequencing them in a syntactically acceptable manner. This must further be accompanied by matching corresponding phonetic speech sounds as well as facial and manual gestures to the morphosyntactic string and physically "articulating" the coordinated sequence (bottom left). Such mustering of linguistic resources and the underlying knowledge it represents is the focus of much cognitive research into L2 output. Taking only seconds in real time, the various social, cognitive, and linguistic variables involved in making L2 output entail many opportunities for instructional support, given an adequate understanding of the process.

Output From Audio-Lingualism to Communicative Language Teaching

The predominance of audio-lingualism in the mid-20th century meant that L2 instruction sought output that would reinforce linguistic habits via decontextualized production of L2 structural paradigms. These included dialogue recitations and grammar drills that, within Levelt's terminology, offered little opportunity for learners to "conceptualize"

meaning themselves and link it to "formulation" and "articulatory" processes. The inadequacy of this approach became evident as learners often proved unable to apply mechanically drilled structures and dialogues to effective communication in other contexts. Furthermore, research on L2 English acquisition found that learners appeared to develop accuracy with particular forms in a common sequential order, regardless of their first language (L1) or the amount or type of instruction they received (e.g., Bailey, Madden, & Krashen, 1974). As a result, Stephen Krashen's (1985) "Input Hypothesis," and the "Natural Approach" to instruction that it inspired, proposed that instead of forcing mechanical output, instruction should simply provide meaningful, comprehensible L2 input, as when children learn their L1. Natural acquisition sequences would then run their course and meaningful output emerge when learners were ready. This thinking dovetailed with the nascent communicative language teaching (CLT) movement, which, drawing inspiration from linguistic anthropology and sociolinguistics, held that L2 output should reflect a broadly conceived communicative competence embracing both linguistic and sociocultural aspects of L2 speech communities.

Krashen's idea that comprehensible input exclusively drives L2 development built on linguist Noam Chomsky's belief that the mind is endowed with an innate "language acquisition device" uniquely specialized to process linguistic data and "encapsulated" from all other cognition, including the conscious, explicit knowledge of L2 structure that might derive from instruction and affect utterance planning, or conceptualization in Levelt's model. Thus, although one might improve short-term accuracy by "monitoring" output, the underlying linguistic system used for formulation and articulation would remain unchanged. Consequently, cutting-edge instruction in the 1980s sought to subordinate L2 grammar as an organizing feature and elicit meaningful L2 output based on input models rather than linguistic explanations. Some CLT proponents proposed "task-based" syllabi built on "communicative functions" such as greetings, requests, descriptions, and narrations, and "notional categories" including time, sequence, quantity, and location (e.g., Wilkins, 1976). Within the Natural Approach and CLT, L2 output ideally followed extensive listening and required learners to adapt and personalize input models to facilitate linguistic development. Many advocated work in dyads or small groups (e.g., Long & Porter, 1985), and contemporaneous research justified such output practice as a means of either securing or providing comprehensible input via discourse modifications to clarify interlocutors' meaning (e.g., Pica, Holliday, Lewis, & Morgenthaler, 1989). Indeed, Teresa Pica and her colleagues demonstrated that such "negotiation" was greatest during two-way information exchanges targeting specific communication goals, as opposed to collaborative decision making toward open-ended goals (Pica, Kanagy, & Falodun, 1993). These "jigsaw" or "information-gap" tasks are still considered essential tools for eliciting output in current L2 pedagogy.

Output and Attention to L2 Form

Challenges to the assumption that input alone drives L2 acquisition began appearing in the mid-1980s, as researchers following Krashen's argument to its logical conclusion compared output from untutored, "naturalistic" L2 learners, who should have reached high levels of attainment after living among native speakers for years, to non-immersion classroom learners, who should not have developed as much after years of grammar-oriented instruction without such exposure. Consistently the findings demonstrated the opposite, however: Although exhibiting similar acquisitional sequences, naturalistic learners often plateaued at pidginized versions of their L2s, undersupplying required morphology while communicating basic meaning, whereas classroom learners more often reached higher

levels of complexity and accuracy, often oversupplying grammatical morphemes that had been instructional targets (e.g., Pica, 1983). This evidence that classrooms might facilitate L2 development better than naturalistic contexts through attention to L2 form soon led some to consider how output itself might also shape the process.

Merrill Swain (1985) formulated her "Output Hypothesis" after observing persistent grammatical errors among Canadian middle schoolers in L2 French immersion programs, where they had received years of input during instruction on many academic subjects, but little focus on French itself, and few requirements for spoken accuracy or elaboration. Swain reasoned that the L2 output missing from instruction must uniquely facilitate acquisition by "pushing" learners to syntactically process language beyond the semantically oriented comprehension of input (p. 249). Later, Swain (1995) proposed three specific functions of output in acquisition: (a) helping learners "notice the gap" between their intended meaning and their linguistic repertoire; (b) allowing "hypothesis testing" of L2 utterances; and (c) encouraging explicit, metalinguistic understanding of the L2 to guide utterance formulation. Building on Levelt and Swain, de Bot (1996) argued that L2 output aids acquisition by focusing attention within the conceptualizer on available support for formulation and articulation, and by "proceduralizing" coordination among the modules. Such support could include sources within or outside the learner, such as memory of grammatical rules, interlocutor assistance, or ambient L2 speech and texts. Thus, within Levelt's terminology, the intentional act of carrying meaning from conceptualization to formulation and articulation was itself deemed an act of acquisition, and one often guided by explicit L2 knowledge.

Recent Cognitive and Sociocultural Proposals

Within CLT, proposals to better integrate the cognitive and social aspects of output emerged as views of its role in L2 acquisition evolved. One cognitively oriented strategy for directing attention to L2 form–meaning relationships involved carefully linking communicative functions and notions to target structures that would be "useful" or "essential" to a task (Loschky & Bley-Vroman, 1993). Such "focused tasks" might begin with "pre-task" warm-ups to prime necessary language and conclude with "post-task" follow-ups to provide feedback and utilize the exchanged information (Skehan, 1996). Such opportunities to use explicit knowledge for planning, monitoring, and editing L2 output were intended to engage the conceptualizer in improving the fluency, accuracy, and complexity of learner speech. Indeed, research on output modifications in response to prompts and feedback during focused tasks has demonstrated learning gains often exceeding those of exclusively comprehension-oriented practice (McDonough, 2005; Toth, 2006).

As sociocultural perspectives gained prominence in the 1990s, many theorists drew on CLT's socio-anthropological roots, arguing that learner output be considered not only for how it might lead to greater accuracy vis-à-vis native-speaker norms, but also for how it may reflect participant goals, motivations, and discursive strategies. Many built on psychologist Lev Vygotsky's view of language as a culturally mediated tool for thinking, and of collaboration as a catalyst for growth within one's cognitive "zone of proximal development" (ZPD). Some documented how learners used L2 output for cooperative problem solving (Donato, 1994), while others focused on the relationship between output and learners' sense of identity in L2 communities within and beyond the classroom, including immersion and Internet chat contexts (Duff, Wong, & Early, 2000; Darhower, 2006). Recent instructional proposals have likewise advocated L2 development via "languaging," where learners explicitly talk through the application of grammatical rules to communicative tasks, in order to better "internalize" such culturally mediated concepts (Swain, 2006).

Meanwhile, a proposal for "dynamic assessment" of learners has combined the developmental potential of output with Vygotsky's ZPD, recommending dialogic interaction during communicative tasks as a tool not only to determine a learner's current proficiency, but also to create conditions for further communicative growth (Poehner, 2007).

Conclusion

Despite divergent emphases on internal versus external sources of development, both cognitive and sociocultural instructional proposals envision L2 learner output as purposeful communication supported by both learners' explicit knowledge and interactions with others. Although the progression of ideas over recent decades reveals continued debate over the precise means by which L2 productive abilities develop, conceptualizing output holistically within Levelt's model—as integrated processes of conceptualization, formulation, and articulation—means that instruction optimally facilitates L2 development not by isolating any one step, as in the mechanical practice of audio-lingualism, but rather by providing learners opportunities to plan, monitor, and edit productive language within meaning-making discourse. Indeed, after shifting from structure-driven audio-lingualism to the grammar-free Natural Approach, the developing consensus within CLT holds that instruction will be most facilitative if it brings explicit L2 knowledge, rich and developmentally appropriate input, and purposeful activity to bear on L2 self-expression, so that the complex act of coordinating language production may work in concert just as much in the classroom as it surely does beyond it.

SEE ALSO: Explicit Knowledge and Grammar Explanation in Second Language Instruction; Interaction Approach in Second Language Acquisition

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Pacific Creoles

MIRIAM MEYERHOFF

A creole language emerges when speakers of mutually incomprehensible languages need to somehow bridge their communication gap. These lingua francas are commonly assumed to take shape first as a pidgin, which can be defined as a vehicular language used in a restricted set of social domains, typically characterized by speakers' (perhaps conscious) efforts at structural simplification. Often, linguists differentiate creoles from pidgins by whether or not there are at least some native speakers of the language—the existence of native speakers provides the context for the structural and social elaboration of a language that functionally and linguistically differentiates creoles from pidgins.

In the Pacific, the native speaker criterion for defining a language as a creole is less strictly adhered to. This is because some of the more widely spoken lingua francas of the region, such as Bislama (spoken in Vanuatu), achieve social and structural elaboration without necessarily acquiring a large proportion of native speakers. In much of Melanesia, continued multilingualism is quite common, though among the urban middle class this may be disappearing (Jourdan, 2008).

The Pacific is the largest body of water on Earth. It covers approximately one-third of the surface of the globe. People from more land-bound parts of the world often think of large bodies of water as separating peoples from each other. This is not necessarily true in the Pacific, where people often see themselves as being linked by the water. Long voyages and perhaps also contact between peoples have been part of the history of the Pacific since it was first settled by Austronesians moving out of their homeland in Taiwan around 5,500 years ago (Blust, 2009). The dispersal of Austronesian peoples was accompanied by extensive linguistic diversification. There are 900–1,200 Austronesian languages outside of Taiwan, and in the Oceanic subgroup alone there are approximately 450 languages (Blust, 2009).

Given this high degree of linguistic diversity and a propensity for contact facilitated by (rather than impeded by) the connecting ocean, we must assume that contact between speakers of mutually unintelligible languages has had a long history in the Pacific. Did this result in the formation of many pidgins and creoles? We do not know. Our records of the sociolinguistic situation in the Pacific before European contact (and in current environments outside the influence of the colonial languages) are limited (but see Williams, 2000). Most linguists working in the region would agree that widespread multilingualism may have been the norm (Crowley, 1990); certainly, the sociolinguistic context in which creole languages began to flourish was following European expansion in the Pacific from the 16th century onward.

Early contact between Europeans and Pacific Islanders often involved the negotiation of simplified forms of the indigenous languages. For example, Clark (1990) discusses pidgin forms of Māori attested in early European contact with New Zealand's native Polynesian communities, and similar reduced forms of Hawaiian used in the early period of the Hawaii plantations are recorded. Drechsel (1999) discusses evidence for a single maritime Polynesian pidgin that might have been used by sailors throughout the Pacific.

As European economic and colonial influence in the Pacific consolidated, there was a shift toward vehicular languages or lingua francas, in which the vocabulary draws primarily on European languages. This seems to reflect a clear change in the relative prestige and

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power of the different ethnolinguistic groups in the Pacific. From this point we can talk of, for example, English-based or English-lexified creoles (*lexified* means the bulk of the lexicon/vocabulary is taken from English), which are more or less clearly influenced by substrate languages in a given region. (*Substrate* means the language(s) spoken as a language of the community; this tends to have a clear effect on the way the pidgin/creole is used, e.g., word order, the expression of thematic relations in the verb phrase, or semantic scope for a lexical item.) English-lexified creoles are the most numerous in the Pacific. In Vanuatu, Bislama is the national language; and in the Solomons and Papua New Guinea, Pijin and Tok Pisin are the de facto national lingua francas. Many people perceive these creoles as "bad English," but they are better seen as examples of the English lexicon mapped (more or less) onto systematic substrate grammars. They are all, for example, characterized by argument deletion, serial verb constructions, pronoun systems that distinguish inclusive and exclusive plural, and transitive verb morphology.

From the 19th century, we find:

- Spanish-based creoles in the Philippines (Lipski, 1996). These are often known collectively as Chabacano (though this name is not favored by all speakers of the different dialects).
- Tayo, a French-based creole in New Caledonia (Ehrhart, 1993).
- Hiri Motu, a creole based on Motu with influence from English and other languages spoken in Papua New Guinea (Dutton & Brown, 1977).
- Many English-based creoles, such as Kriol in northern Australia (Harris, 1991; see also Shnukal, 1988); Tok Pisin in Papua New Guinea (Mühlhäusler, Dutton, & Romaine, 2003); Solomon Islands Pijin (Jourdan, 2007); Bislama in Vanuatu (Crowley, 1990; Meyerhoff, 2011); the language known locally as Pidgin (and by linguists as Hawaii Creole English) in Hawaii (Roberts, 1999); as well as some lesser-known varieties such as Ngatik Men's Language (a Pohnapeian and English creole, Tryon & Charpentier, 2004, pp. 14–15). The southern hemisphere English creoles all trace back to a 19th-century lingua franca in eastern Australia (Baker, 1993).

This is not a comprehensive list of all the pidgin/creole languages that have been recorded in the Pacific. Reinecke (1975) and Meyerhoff (2008) provide other surveys of Pacific creoles.

The current vitality of the creoles in the Pacific differs considerably from place to place. Some are afforded national language status (e.g., Vanuatu, Papua New Guinea), but none are recognized as an official language of education, despite often being spoken by large proportions of the urban population (and sometimes being used informally by teachers in classroom interaction, e.g., Higgins 2010). Likewise, vernacular writing and creative expression in Pacific creoles differs by locality: in Hawaii, there are creative writing, theatre, and essays written in pidgin; in Vanuatu, some newspaper reporting, creative writing, and theatre are done in Bislama. For the most part, the Pacific creoles have withstood pressure from the standard lexifier or from other national and official languages because of their continued functionality as a medium of cross-linguistic communication, and also as expressions of local identity.

SEE ALSO: Interlanguage; Language Evolution: Pidgins and Creoles; Lingua Franca and Language of Wider Communication

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Online Resource

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Paired and Group Oral Assessment

ALISTAIR VAN MOERE

The paired and group oral assessment formats involve candidates interacting together to perform a task while one or more examiners observe their performances and rate their language proficiency. Communicative language teaching led to the popularity of pair work and group work in the language classroom, and so too has pair and group work become more widespread in communicative approaches to assessment. The five examinations of the Cambridge Main Suite are particularly well known for incorporating paired tasks (Taylor, 2003). Examples of tasks utilized in these exams include candidates discussing color photographs, constructing a story together when each speaker knows half of it, or making a joint decision on an issue presented in the task material. The College English Test-Spoken English Test (CET-SET) in China is perhaps the most large-scale use of group tasks (He & Dai, 2006). Here, the task is for a group of three or four candidates to discuss a topic among themselves. Paired and group oral assessments are also used in schools and universities for placement testing, progress monitoring, and exit testing or matriculation, and are the subject of much validation research (e.g., Csépes, 2009; Ockey, 2009).

Testing candidates in groups can be advantageous in numerous ways: It is more practical than one-to-one interviews in terms of time and cost; it is less burdensome to examiners, who can focus on rating without also having to act as interlocutor; it is positively viewed by candidates and for some is less intimidating than interaction with an examiner; and it is linked closely to classroom practice, possibly providing a positive relation between teaching and testing. Group tests are appropriate for the assessment of various dimensions of oral proficiency, such as pronunciation, fluency, and grammatical and lexical range and accuracy. But the test format is particularly valued by language testers because it additionally allows examiners to observe candidates interacting together and demonstrating their communication strategies; strategies which may be suppressed or simply not elicited in traditional test formats such as the oral proficiency interview (Johnson, 2001).

Investigating the paired and group format, researchers have attempted to answer questions such as the following: How does the discourse in paired interaction differ from that of interviews or other oral tasks? What kind of conversational strategies and language functions are elicited? What effects do the participants have on each other's performance, especially when participants possess different proficiency levels, personality types, genders, acquaintanceships, task familiarity, or social skills? Do these variables affect discourse only, or do they also impact rating outcomes? Over the last 15 years or so these research questions have been studied using various methodologies, such as the analysis of discourse (particularly using conversation analysis [CA]), and the statistical analysis of ratings data (i.e., the scores assigned by the raters or examiners). The research has enabled language testers to characterize the discourse elicited in pair and group test tasks and to link discourse to the ratings that candidates receive (e.g., May, 2007). When testers know what kind of language and strategies candidates use in tests, they can make claims about which aspects of oral proficiency are assessed and represented in the test scores of these assessments. These themes are elaborated in the paragraphs that follow.

In interview tests, the interaction between candidate and examiner is asymmetric. Examiner-interlocutors guide the talk, decide who talks and when, control the topic and timing of the interaction, and ultimately skew the discourse so that it lacks the spontaneity

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of normal conversation (Young, 1995). For example, it is common for an examiner to interrupt a candidate, but very rare for a candidate to interrupt an examiner. The advantage of paired tests, however, is that candidates have a more equal status. This means that the interaction is likely to be more conversation-like; participants have the same *rights* when it comes to initiating, ratifying topics, and taking and holding the floor, and the same *duties* for maintaining smooth interaction, developing the topic, and ensuring mutual comprehension (van Lier, 1989). Further, peer interaction among candidates seems to involve strategic processes which are likely to be practiced in natural, non-test conversation. Examples of these strategic processes include *negotiation of meaning* by means of clarifications, confirmations, and rephrasing, and *scaffolding* by providing contextual support (Ikeda, 1998). These communication strategies help the participants achieve better mutual understanding.

In addition to strategies associated with discourse management, test designers often would like to know whether the *functions* that they wish to assess are present in their tests. Interactional functions include activities such as comparing, describing, suggesting, and elaborating. This was demonstrated by ffrench (2003), who applied a checklist of 30 expected functions to oral performances on the Cambridge Main Suite Examinations and observed 26 functions in the paired format, compared with 14 in the interview format.

However, the potential of paired and group oral formats for eliciting richer language samples and more varied interactions is not always fully achieved. For example, although peer interactants supposedly have equal status, this does not automatically introduce collaborative interactions. Sometimes participants may choose not to ratify their partner's topics, or may produce a series of monologues without actually extending one another's topics, or one speaker may be more dominant than the other (Van Moere, 2007, p. 342; Galaczi, 2008). Furthermore, peer interaction does not itself engender purposeful or functional talk. He and Dai (2006) examined group oral test performance in the CET-SET in China and found that less than a third of their 144 candidates produced any of the expected functions of *challenging*, *supporting*, *modifying*, *persuading*, and *developing*. Moreover, only a handful *negotiated meaning* in the discussion. Thus, peer test tasks must be properly framed in order to maximize the strategies or functions to be assessed; conversation that is not motivated by any clear pragmatic purpose may be unsuitable for second language (L2) assessment. Paired and group talk may be considered as valid not because of similarity to ordinary conversation, but because, if properly set up, it enables language testers to observe a wider variety of cognitive and strategic processes than might be gained from other oral assessment formats alone.

In terms of fairness, it is of concern that paired tests might expose candidates to interlocutors who may affect or portray them unfavorably. In interview tests, it is known that examiner-interlocutors can affect candidate performance by making the candidate appear either more or less proficient than they might otherwise seem (Brown, 2003) by, for example, adopting either a floor-supporting role or a harder line of questioning. Some of this variation can be controlled by means of examiner training and the use of an interlocutor frame, or a script that constrains the examiner in order to standardize test conditions (Taylor, 2003). But in group tests interlocutor variables are less easily controlled. Numerous interlocutor characteristics which might affect candidates' performance have been researched, including: gender (O'Loughlin, 2002), mismatch of proficiency level of interlocutor (Csépes, 2009), personality (Nakatsuhara, 2009; Ockey, 2009), first language (L1) and talkativeness (Young & Halleck, 1998), task familiarity (Plough & Gass, 1993), and acquaintanceship among interlocutors (Katona, 1998). The results of these investigations have been mixed. Findings appear to be context-dependent: Depending on the test, setting, rating procedure, candidate population, and even on individual differences among candidates within these paradigms, the characteristics of an interlocutor may or may not impact a candidate's performance and score outcome. This was exemplified by O'Sullivan (2000). In paired tests

involving Japanese subjects, O'Sullivan found that females accommodated male strangers, this being deleterious to their own performance but beneficial to the strangers. But a comparable experiment involving Turkish learners of English was diametrically at odds with the findings from Japan: Candidates performed better when their partner was male and exhibited significantly superior linguistic behavior and ratings when they were partnered with strangers.

Assuming that paired tests are desirable for their rich interactions, how should test designers account for the possible impact of interlocutor characteristics upon the test scores of their partner? Traditionally, interlocutor factors are considered as sources of *construct-irrelevant variance*, that is, sources of measurement error introduced into the assessment but which are not relevant to the ability that we wish to assess. Interlocutor factors are a threat to test reliability, standardization, and fairness. It is therefore incumbent upon test developers to be aware of, and preferably eliminate or reduce, the factors which might affect the performance of each individual test taker. This might be accomplished by: designing the test tasks so as to reduce unwanted effects; scheduling candidate groupings or pairings in advance, where possible, to ensure that candidates are not tested together if they might advantage or disadvantage one another unfairly; or by conducting research to show that perceived sources of unwanted variance do not negatively impact performance in the testing context.

Although paired and group tests are useful vehicles for the elicitation and assessment of interactional skills, these test formats and resulting test scores are not always used as the sole basis for decision making. For higher-stakes decision making in particular, group tasks are generally used as one element in an oral test that also consists of additional tasks.

SEE ALSO: Conversation Analysis: Overview; Fairness in Language Assessment; High-Stakes Language Testing; Task-Based Assessment

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Paltridge, Brian

WEI WANG

Brian Paltridge's contributions to applied linguistics research are in the area of genre analysis and its application in language teaching and learning, and research in the area of academic writing, especially thesis and dissertation writing. He has contributed to the field both as an innovative and influential scholar, and as an educator whose teaching and mentoring have made an important mark on his students and on the field.

Academic Background

Paltridge graduated with a BA in Language from Victoria University of Wellington in New Zealand, later receiving an Associate Diploma in Interpreting and Translation from the University of Western Sydney, the Royal Society of Arts Diploma in TEFLA, and a Graduate Diploma in TESOL from the University of Technology, Sydney. His MA in Applied Linguistics is from the University of Sydney. With a thesis named "Writing up Research: An Examination of the Current Concept of Genre," he obtained his PhD from the University of Waikato in New Zealand. His PhD was supervised by Winifred Crombie, Suzanne Eggins, David Butt, and Ruqaiya Hasan.

Academic Appointments

Starting his career as a teacher of adult ESL learners, he has taught in a wide range of educational institutions and organizations in Australia, New Zealand, and Italy. In 1992, he took up his first academic appointment as a senior lecturer in Applied Linguistics at the University of Waikato in New Zealand. In 1995, he joined the Department of Linguistics and Applied Linguistics at the University of Melbourne, where he contributed widely in both undergraduate and postgraduate teaching and further developed his interests in discourse analysis, genre studies, second language teaching and learning, and research methods in applied linguistics. His administrative responsibilities at the University of Melbourne included associate dean (academic programs) in the Faculty of Arts, chair of the Faculty of Arts Academic Programs Committee, and deputy head of the Department of Linguistics and Applied Linguistics.

In 2002, Paltridge joined the University of Sydney where he established a leading research program in the area of TESOL. As Professor of TESOL, he works broadly in teaching, research, and academic management at the University of Sydney. He has undertaken positions such as associate dean for Graduate Studies and for International Studies and is a member of various university and faculty committees. He is director of the TESOL Research Network and associate dean (Doctoral Studies) in his faculty. His teaching includes postgraduate courses in research methods, discourse analysis, and English for specific purposes. At the same time, supervision of MEd, MPhil, EdD, and PhD research students' theses and dissertations forms a major part of his work.

In 2007 he was a visiting professor to the Faculty of Education at the University of Hong Kong and in 2005/2006 a visiting professor to the Linguistic Institute for International Communication at Sophia University in Japan. In these two universities, he delivered lectures and conducted workshops on thesis supervision and academic writing.

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Journal Articles and Book Chapters

Paltridge has published widely in the fields of applied linguistics and TESOL. His research articles appear in journals such as *ELT Journal*, the *Journal of Pragmatics*, *Applied Linguistics*, *World Englishes*, *System*, *Cross Currents*, *The Teacher Trainer*, *English Teaching Forum*, *English for Specific Purposes*, *EA Journal*, *Language Teaching*, the *Hong Kong Journal of Applied Linguistics*, *TESOL Matters*, *TESOL in Context*, *Iberica*, *Melbourne Papers in Applied Linguistics*, *IEEE Transactions on Professional Communication*, *The New Zealand Language Teacher*, *The TESOLANZ Journal*, *Prospect*, and the *University of Sydney Papers in TESOL*. He has also published book chapters with Cambridge University Press, Continuum, Erlbaum, TESOL, the University of Michigan Press, Springer, and Fitzroy Dearborn.

With Sue Starfield, he is editor of the journal *English for Specific Purposes*. He is also general editor of the *University of Sydney Papers in TESOL* and is a member of the editorial board for the *Journal of English for Academic Purposes*, the *Australian Review of Applied Linguistics* and the *English Australia Journal*.

Books

Paltridge has authored a number of influential books in applied linguistics, such as *Genre, Frames and Writing in Research Settings* (1997a), *Genre and the Language Learning Classroom* (2001), and *Discourse Analysis* (2006). An important work in genre studies, *Genre, Frames and Writing in Research Settings* aims to uncover what it is that enables language users to recognize a text as an instance of a particular genre. The framework it presents for the description of genre is drawn from frame semantics and work in discourse analysis, pragmatics, rhetoric, language and cognition, natural language processing, artificial intelligence, and critical theory. As an introductory book for researchers and postgraduate students who are new to the field of discourse analysis, *Discourse Analysis* covers key issues in the area of discourse analysis and gives a thorough account of each of them. A key theme throughout this book is the notion of language as social practice; that is, what the use of spoken and written discourse tells us about people's social worlds.

With Sue Starfield, he authored *Thesis and Dissertation Writing in a Second Language* (2007). This is a timely and welcome handbook for supervisors working with students from a language and culture background other than English. Paltridge and Starfield unpack tacit understandings that supervisors often have of the thesis and dissertation writing process that are often not shared by their students.

With his TESOL colleagues at the University of Sydney, he wrote *Teaching Academic Writing* (Paltridge et al., 2009). He edited, with Aek Phakiti, a volume titled the *Continuum Companion to Research Methods in Applied Linguistics* (2010). With Diane Belcher and Ann Johns, he edited *New Directions for ESP Research* (2011) and with Ken Hyland the *Continuum Companion to Discourse Analysis* (2011).

Research Contributions

Throughout his academic career, Paltridge has engaged in many research projects, especially in the areas of genre studies and academic discourse. He is currently involved in an Australian Research Council funded project with Sue Starfield and Louise Ravelli titled "Writing in the Academy: The Practice-Based Thesis as an Evolving Genre." This project aims to examine the particular nature and character of practice-based doctoral theses and, via this examination, to make both practical and theoretical contributions to the field of research, higher degree supervision, and training and advanced academic literacies research.

Other important research projects that he has worked on include "Academic Literacies and Changing University Communities" (Paltridge, 2002a) in which he examines the changing nature of academic communities and what this means for students writing in English. In "The Exegesis as a Genre: An Ethnographic Examination" (Paltridge, 2004a) he explores the context of production and interpretation of exegeses in the area of art and design as an instance of the thesis genre and what this means for students writing these texts. "Thesis and Dissertation Writing: An Examination of Published Advice and Actual Practice" (Paltridge, 2002b) is an examination of the extent to which advice given in published handbooks on the rhetorical structuring of theses and dissertations concurs with what happens in actual practice.

A further important contribution is in his drawing together of different perspectives on genre analysis. From his early academic research (e.g., Paltridge, 1995, 1997a) he has focused on theoretical considerations in relation to the notion of genre. His John Benjamins book (1997a) explores the significance of interactional and cognitive/conceptual frames in the writing of scientific discourse. With an aim to broaden approaches to genre analysis, Paltridge has drawn on ethnographic research techniques and, especially, the notion of textographies (Swales, 1998) to examine academic writing, considering how an ethnography of writing can add an understanding of the production, and interpretation of written academic texts (see, e.g., Paltridge, 2004a, 2008).

Paltridge's (1996) article "Genre, Text Type and the Language Learning Classroom" represents another important contribution to the area of genre studies. This article discusses the notions of genre and text type within the context of language learning classrooms. The distinction between genre and text type, he argues, is an important and useful one for language teaching and learning. Further applications of genre in language learning classrooms are illustrated in his book *Genre and the Language Learning Classroom* (Paltridge, 2001). While acknowledging that a range of theoretical perspectives on genre exists, this book shows that this diversity is a powerful and useful resource for teaching genres, and it illustrates how genre can serve as an organizing principle for language-learning programs. It also examines how various aspects of genre knowledge—such as context, discourse, and language—can be explored in language-learning classrooms.

A further important contribution is in his work on thesis and dissertation writing and the teaching of academic writing more generally (e.g., Paltridge, 1997b, 2002b, 2004b, 2008; Paltridge & Starfield, 2007; Paltridge et al., 2009). His major concerns in this area are how to prepare ESL students for research writing, the complex challenges that ESL students face in an English medium education, and how supervisors could help students respond to these challenges. His state-of-the-art article in *Language Teaching* (Paltridge, 2004b) reviews research and developments that are relevant to second language students writing in academic settings. With over 300 references, this article presents a wide view of developments in research and teaching practices in academic writing.

His most recent books with colleagues (Paltridge & Starfield, 2007; Paltridge et al., 2009) reflect his rich experience in the teaching and research of academic writing, especially in working with students from linguistically diverse cultural backgrounds. *Teaching Academic Writing* (Paltridge et al., 2009) combines research and practice to explore questions such as how academic writing varies between educational settings, disciplines, and cultures and how different approaches to knowledge affect academic writing. This book provides both an accessible and detailed survey of issues that shape the teaching of writing to ESL students in academic institutions. This includes the context and process of academic writing, needs analysis, teaching approaches, the interrelationship between writing and vocabulary, intercultural perspectives, feedback, and assessment. This book also includes suggestions for practical resources that can be used in academic writing classrooms.

Paltridge's research students have carried out work in a wide range of areas. This includes research in the area of discourse analysis, genre analysis, English for specific purposes, language and identity, and cross-cultural pragmatics. In each of these projects he encourages his students to go "beyond the text" in order to explore not just what people "do" with language, but also why they do what they do.

SEE ALSO: English for Academic Purposes; Genre-Based Language Teaching; Genre and Discourse Analysis in Language for Specific Purposes; Teaching Language for Academic Purposes; Theses and Dissertations in English for Specific Purposes; Writing and Genre Studies; Writing and Language for Specific Purposes

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Participation Frameworks and Production Formats in the Analysis of Discourse and Interaction

CAROL C. THOMPSON

Introduction

When people talk they do so in organized ways. Even conversations that appear spontaneous exhibit patterns (both speech and physical patterns) in which speakers and hearers arrange themselves. For example, in discussions about the weather we may quote a forecast to a friend who is planning to travel; a bystander not originally part of the conversation may feel free to step in and produce a competing forecast. In classrooms teachers often use the initiation/response/evaluation (IRE) format for conducting conversations; students quickly learn that they must answer only the question under discussion and not change the subject. On the other hand participants in online discussion forums or other social media may broadcast messages to the group without expecting replies from anyone in particular. For example, one may ask if one's peers have a recipe and hope that someone will respond; responders may contribute, ignore, or change the subject. Although these situations may appear unrelated, the intentions of speakers and the way in which hearers receive their speech follow certain predictable patterns. Erving Goffman's concept of *production formats* can help us to understand the roles that speakers assume in interaction, and his concept of *participation frameworks* can help us to understand the positions participants take relative to one another.

Rather than seeing discourse as simple turn taking or as a transaction of information, Goffman and several linguistic anthropologists who have built on his work view discourse as an emergent process. Some researchers have examined gestures and other embodied signals that participants use in addition to the speech itself. Others have investigated the influence of settings and cultural expectations on participant engagement in various kinds of conversations. Still others have looked at disembodied and often asynchronous communicative participation in screen-based social networks. These studies have often examined how the social identities of participants both guide communicative encounters and are developed within them. Understanding production formats and participant frameworks helps researchers to understand the roles and identities that participants adopt.

Production Formats

Goffman theorized that understanding talk as a social practice requires a deep analysis of how speakers and hearers structure their participation. The roles that participants play, and the positions they take with respect to these roles, are described as *production formats* and *participant frameworks*. Speakers enact their participation within a production format through the roles of *principal, author*, and *animator*. The principal is the person ultimately responsible for and committed to the talk; the author constructs the speech itself, and the animator is the voice box. To understand the distinction, it is helpful to use Goodwin and

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Goodwin's (2004) example in which the principal is the head of state, the author is his speechwriter, and the animator is the press secretary who actually delivers the speech. These three roles are often separate in such institutional interactions. They are habitually enacted in ways that are circumscribed: the press secretary does not add his personal views of the speech or policy of the head of state. In this example the roles are distinct and visible; however, institutionalized practices can also act to obscure one or more roles. Scollon (2004), for example, has noted that in many television commercials, characters speak on behalf of a product without the sponsor appearing to participate.

In other situations there may be considerable fluidity in roles, and speakers may take on more than one role in a production format. These changes are often indicated by code switching, in which speakers vary their tone of voice or bodily gestures to indicate alignment (or lack of it) with the words they are saying. Code switching allows speakers to change roles within a single encounter such as a meeting by "changing hats" (Goffman, 1981, p. 145); speakers may shift from the role of animator to author and principal using embodied and speech cues to signal their new social role to hearers. Performers can use this role fluidity to comic advantage: the television comedian Jon Stewart is an excellent example of a performer who makes the shift from voice box to principal to author quickly, often within a single phrase; it is the shift within the production format that audiences find humorous.

These institutional examples are somewhat different from the more casual conversations in which we usually assume that an "individual who animates is formulating his own text and staking out his own position through it: animator, author, and principal are one" (Goffman, 1981, p. 145). This can be an erroneous assumption, however, as Goffman points out. In apparently extemporaneous "fresh talk" (p. 146), we may in fact use the positions and words of others. And when we quote conversations of others we embed several layers of speech in an encounter; production formats can thus become quite complex amalgams of speaker roles.

Participation Frameworks

Goffman's notion of the participation framework is a way of understanding the positions participants take toward their own talk. Hearers in encounters can play a variety of roles in the same way that speakers do. Hearers or audiences may, for example, be directly addressed "official participant[s]" (Goffman, 1981, p. 131) who are "ratified," or they may be "bystanders" and thus "unratified"; their status can be discerned through the visual cues of the speaker, who may address them directly if they are ratified or ignore them if they are not. Speakers adjust both the content of what they say and the form of their talk in accordance with the perceived needs of their addressees, but they also adjust to the presence of bystanders; they may edit what they say, or they may pretend to talk to a ratified participant but intend their words for a bystander.

Hearers may adopt a number of postures toward the conversation. They may listen intently, even if unratified. If there are several hearers, they may ignore the speaker and engage in conversation that is not a part of the main encounter (by-play), thus changing their participation. Such conversations may act as a Greek chorus, commenting on the main conversation. Goffman called the positions that participants take up with regard to utterances *participation statuses*; and he called the statuses of all present participants at a given time the *participation framework*. (Though participant frameworks are commonly understood to apply to all participants, Kress and van Leeuwen, 2001, and Levinson, 1988, apply the concept only to hearers.)

Taken together, participation frameworks and the production formats powerfully reveal the large and small changes in *footing* (our relation to ourselves and others in a conversation). These changes are usually manifested in the way we produce or receive an utterance. Goffman's system of examining conversational structure has been central to understanding participant roles in conversations, and researchers have continued to build upon these insights.

Goodwin and Goodwin

Goffman's concepts of *participation framework* and *production format* have been expanded upon by a number of other linguistic anthropologists. Goodwin and Goodwin (2004), for example, have noted the absence in Goffman's writing of a methodology for understanding the "dynamic" ways in which speakers and hearers account for and build upon each other's words. Nor, they argue, is there a framework for understanding the role of hearer, who is positioned as an interactive foil for the speaker but is not truly a participant in the conversation. Participation must be understood as emergent, as activity, and as embodied. For example, they consider how one participant, unable to use speech effectively because of a stroke, instead used voice, tone, and bodily gesture to participate actively in a family activity, responding to and assessing the objects of conversation.

Goodwin and Goodwin further argue that participation frameworks must account for the ways in which speakers and hearers attend to both the activity in which they are engaged and to each other. Hearers who can participate with cognitive depth will be able to figure out both what is happening within the conversation and how they should contribute. Goodwin and Goodwin thus link this kind of participation framework both to the activity of the ongoing conversation itself and to activity outside it.

Conversation Within Activity

Linguistic anthropologists have used insights about participant structures in conversation to examine conversation in work situations. If a conversation emerges within activity, then clearly certain activities will enable or constrain what speakers can say and how hearers are likely to receive utterances. For example, participants in courtroom trials, in classrooms, or in job interviews are expected to perform in socially sanctioned ways. The social sanctions, however, may vary remarkably across communities of practice, even when an essential activity such as writing for an audience is held constant. For example, Scollon (2004) has found that production formats will vary significantly across advertising, journalism, and academic writing, with participants adopting quite different stances with regard to the texts that they use and their audiences. This is because each community of practice is signaling a different position with regard to its audience. Academic discourse is a marker of membership in a larger community of scholarly practice; journalists signal their outsider status; and advertisers engineer encounters between their clients (principals) and their audiences without seeming to engage in their roles as animators.

Work situations in which participants address each other directly may or may not offer opportunities for fluidity in participation frameworks. In one youth organization in which youth were designing a Web site together they used the words of their adult mentor and boss Jon, even as he sat next to them in the room. (The principal, the client for the Web site, was absent; Thompson & Bouillion, in press).

MARIA: I like the colors but I think that they're, if you change them up, like where they're at and stuff, it'll be good, and I think that the red is—
RAQUEL: —I have to fix it—
MARIA: —and there's too much space.
RAQUEL: I gotta move the [image of the] books over. I was axing Jon if I should [unintelligible] and he said maybe you should, maybe you should, and that's not an answer
JON: ooohhhh—
ALL: hahahaha
AJUA: he says you have to think on your own
RAQUEL: ok I'll fix 'em

In this conversation the youth reanimate the words of their boss twice, adding a comment that his guidance wasn't helpful. Jon's "ooohhh" and the laughter that follows indicates the ways that the youth habitually reanimate the words of the adults in the organization as reference points but also feel free to contribute their own unscripted responses.

Although this workspace is quite informal, others have quite different structures; the relative status of participants usually guides production formats and participant frameworks in work environments. For example, as Drew and Heritage (1992) indicate, institutional settings such as schools and doctors' offices often have characteristic IRE production formats. These formats help reveal how settings are structured. One needs to look at who speaks, when, with what kinds of lexical terminology, and how this is affected by the professional status of participants. IRE formats are also powerful structures in many job interviews (Button, 1992). Button describes how candidates for a senior teaching position misunderstood the speaker's interview questions, thus leaving the interviewer an opportunity to build cases against them. However, candidates, or any recipients for that matter, are themselves assessing the evaluation of their answers, and they may revise and clarify previous answers, thus changing their own footing toward their previous statements.

Gumperz (1992) also examined the difficulties in speaker/hearer interactions in data from a job-training program in Britain, where applicants were asked a series of questions in order to determine whether they were appropriate candidates. He describes the "context-bound, interactive processes through which certain individuals are stereotyped as members of stigmatized minorities" (p. 302). By looking at turn taking, sequential organization, and conversational negotiation, Gumperz was able to trace the ways in which participants are able to make inferences about their talk and collaboratively continue to produce it. An interview with a bricklayer, for example, became a collaborative effort between the interviewer and interviewee when the interviewer actually began to supply some answers on the bricklayer's behalf. In this participation framework, speakers actually author and animate the speech that they as principals wish to hear, and then take up a position toward it. However, knowing how to reconfigure one's role in a participation framework requires experience and training that young people may not have, especially if they are outsiders to the community that offers jobs. Social inequality coupled with age differences can make searching for openings in conversations very difficult for youth who may not understand the expectations of speakers. For urban youth, for example, it also requires that they understand how they are likely to be perceived by their interlocutors. They are frequently positioned as deserving poor, inept, pitiable, or frightening—and thus unworthy candidates (Thompson, 2011).

Social Networking

One further application of Goffman's participation framework and production format is in screen-based social media. Kress and van Leeuwen (2001) have used and expanded

upon Goffman's notions of participation frameworks and production formats, roughly aligning their "'discourse,' 'design,' and 'production,'" (p. 86) with his production format. They argue that animators/producers are implicated in the construction of meaning because they necessarily interpret scripts or recipes by tone of voice and characteristic speech phrasing. For example, newsreaders may use particular vocabularies and tones of voice as a signal of impartiality.

Building on Goffman's notion that animators may also become "loudspeakers," they add the notion of transmitter/distributor to the production format. By participating in distribution they use technology to both reproduce and change one prior semiotic form into another. These new semiotic forms create the opportunity for new production formats. They also open up the possibilities for participation frameworks, which were not available with older technological tools. Web site producers, for example, can prescribe and narrow the choices that recipients can exercise, but other social media such as discussion forums and Facebook can expand the interactional possibilities for speakers and hearers. Facebook users can appeal simultaneously to all of their friends for information, advertise a forthcoming book or performance, alert friends to their position, exchange photographs and other multimedia artifacts, and animate the material of others. Some friends/recipients will often be bystanders to conversations; others habitually respond, but they are disembodied, and until they assume the role of speaker are less visible and therefore somewhat less subject to analysis. The use of *like* as a response, with its monotonal indication of unspecified interest, agreement, or acknowledgment, narrows the role of recipient. On the other hand, the distribution networks substantially increase both the kinds of production and their reach.

Discussion forums have a somewhat more limited reach as they are centered on shared interests, but they, too, allow both speakers and hearers to play multiple roles. On one such academic forum with hundreds of threads, participants can choose to ask for advice (how to effectively prepare for an interview for a position or how to address home repairs), use the forum as an opportunity to express displeasure with something occurring outside the forum, bring books to the attention of peers, or discuss technology use. Some participants with thousands of posts have alternated between the roles of principal, author, and animator, passing on knowledge gained elsewhere, authoring their own posts, or acting as principals. Within the back-and-forth of the forums, participants often exchange roles and take up new positions toward beliefs they have previously espoused. In these technologically constructed interactions, distribution becomes a significant factor that contributes to their dynamism.

SEE ALSO: Context in the Analysis of Discourse and Interaction; Frame Analysis; Interactional Sociolinguistics as a Research Perspective

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Pattern Grammar

SUSAN HUNSTON

Introduction

Pattern grammar is based on corpus investigation, which encourages the observation of items that regularly occur together. When those items are identified on purely formal grounds (that is, relating to form only, not to meaning or function), they are described as the elements of a pattern. This leads to a sentence analysis that picks out the relevant formal elements and links lexis and grammar. For example, the invented sentence "*It is important to remember that resistance to some diseases is hereditary*" might be analyzed as follows:

- *important* is followed by a to-infinitive clause and preceded by a "dummy" subject *it* with a link verb such as *BE* or *BECOME*;
- *remember* is followed by a that-clause;
- *resistance* is followed by the preposition *to* and a noun phrase.

In each case, the word involved (*important, remember, resistance*) is important to the pattern; only a selection of words in English are followed by to-infinitive clauses or that-clauses or by the preposition *to*. For example, in current British English, *important* could be replaced by *possible* or *difficult* or *gratifying* or *remarkable* but not by, say, *likely* or *suggested*.

This entry describes the origins of the concept of pattern grammar, followed by an account of pattern grammar in some detail. The applications of the grammar are then discussed, and its relations to similar ideas are considered.

Origins

In practical terms the origins of what is now known as "pattern grammar" lie in advice given to language learners, for example by Hornby (1954) and more recently in the *Collins COBUILD English Dictionary* (1995), as described below. The theoretical basis for the concept is outlined by Stubbs (1996, pp. 22–50), who traces a distinct tradition of linguistics from Firth (e.g., 1957) to Halliday and, more particularly, Sinclair (e.g., 1991). This tradition rejects a sharp distinction between "meaning" and "form" (a distinction which would suggest that choosing a meaning might be a separate activity from choosing a language form) and equally questions the distinction between "lexis" and "grammar" (a distinction which implies that the grammar of a language exists as a system that is independent of the words of that language). Instead, Sinclair (1991) suggests that language is made up of semifixed phrases, or "units of meaning," each consisting of a mixture of what are usually seen as lexical and grammatical items, and each unambiguous in terms of meaning. He notes that these phrases are most easily observed by looking at large quantities of naturally occurring discourse. Corpus study corroborated his view that the unit of meaning in discourse was not the individual word but the sequence or phrase. He therefore saw it as crucial that dictionary entries described these extended units rather than words in isolation.

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One aspect of the unit of meaning is "colligation:" the co-occurrence of the target word with grammatical features. In particular, a word might be observed to co-occur with a particular kind of clause or with one or more specific prepositions. An example cited by Francis (1994) is the verb *RESOLVE*. A reasonably comprehensive corpus of English will show examples such as these: first, "a person resolves a situation" or "a problem is resolved;" second, "a person resolves to take a course of action"; and finally, "a mixture resolves into its component parts" or "something resolves a mixture into its component parts." There is a clear meaning distinction between each of these three. The co-occurrence or colligation of *RESOLVE* with a noun phrase, with a to-infinitive clause, or with the preposition *into*, is part of the units of meaning that may be identified with *RESOLVE* as the node. In terms of the practical aspects of writing a dictionary, it is feasible to focus on these co-occurrences alone and in doing so to describe the "grammar" of each word or word-sense. For example, *RESOLVE* may be described as occurring with a noun phrase, or in the passive, with the meaning of "solving a problem," as occurring with a to-infinitive clause with the meaning of "take a decision," and as occurring with *into* with the meaning of "divide into parts."

It is true that describing the grammar of the word in this way somewhat diminishes Sinclair's view of the integrity of the unit of meaning. This view of pattern isolates the connection between the lexis, the node word, and the grammar, the co-occurring phrase or clause. Sinclair's unit of meaning is more holistic than this suggests, and cannot be reduced to lexis + grammar. Francis (1993, 1994) clearly relates the pattern to the more comprehensive unit by discussing not only the formal features of the pattern but also the semantic restrictions on the component parts. On the other hand, a dictionary needs to meet some expectations, and describing the grammar of each word-sense is a way of incorporating some of the insights relating to units of meaning while maintaining the familiar information that a user expects to encounter in a dictionary.

The COBUILD Publications

The practicalities of dictionary design pose a problem for representing patterns. The representation needs to be transparent to learners, avoiding technical terminology where possible. It needs to be flexible, so that detail that might be important to only one sense of one word can be captured, as well as the more generalizable patterns. In addition, as space is at a premium in a printed dictionary, the representation needs to take up very little physical space. To meet these criteria, Francis and her colleagues devised a pattern of representation that showed the sequence of pattern elements in a sequence of abbreviated notations. For example, the sequence "something resolves a mixture into its component parts" is reduced to "noun-phrase verb noun-phrase into noun-phrase." This is further reduced to "n v n into n." Because on the whole all verbs are preceded by a noun phrase, and so this information is redundant, the first noun phrase of the pattern is omitted from the representation, leaving "v n into n." A further refinement is to put the element standing for the word under investigation, *RESOLVE* in this case, in capitals, and to italicize any elements that represent an actual word (a "type" in corpus linguistics terminology) rather than a class or phrase: the word *into* in this case. The final version of the pattern, then, is "V n *into* n." It is worth remembering at this point what is missing from this notation. It tells us only that *RESOLVE* is associated with *into*; it does not tell us that the noun phrase following *RESOLVE* indicates a mixture of things, or that the noun phrase following *into* indicates the components of that mixture. In short, the pattern notation captures only a small part of the information present in the unit of meaning, and that information is what might be called the grammar of the word.

In the COBUILD dictionary of 1995, every word is annotated in terms of the patterns it is associated with. The result is consistent, if sometimes rather dull. For example, the word *them* is annotated with the patterns "v PRON" (the pronoun follows a verb, as in *tell them*) and "prep PRON" (the pronoun follows a preposition, as in *listen to them*). Patterns associated with verbs, nouns, and adjectives are more interesting. Some patterns contain several elements. The verb *TRANSFORM*, for example, is annotated with the pattern "V n *from* n *into* n," as in *she / had transformed / him / from / a hard-drinking womanizer / into / a devoted husband and father*. An adjective such as *difficult* occurs in the pattern "*it* v-link ADJ *for* n to-inf," as in *it / was / difficult / for / her / to forgive him* (though this annotation is not in the dictionary). These verb, noun, and adjective patterns are also probably the most useful for learners of English. For example, someone wishing to express the ideas of "complete the project" and "not likely" may find it helpful to know that *unlikely* occurs with the pattern "ADJ to-inf," as in *I am unlikely to complete the project* and with the pattern "*it* v-link ADJ that," as in *it is unlikely that I will complete the project*, but not with the pattern "*it* v-link ADJ to-inf," as in **it is unlikely to complete the project* (where *it* is a dummy subject and does not refer to a previously-named object).

It is not surprising, then, that the two further reference books published under the COBUILD imprint and focusing on patterns highlighted verbs (Francis, Hunston, & Manning, 1996) and nouns and adjectives (Francis et al., 1998). These books basically list all or most of the words to be found with each given pattern, as far as can be done given that language is constantly changing. They also expand the repertoire of recorded patterns somewhat (including, for example, the additional pattern found with *difficult*, noted above, that is not in the dictionary). In Francis et al. (1996), each pattern is further annotated with one or more structural analyses. For example, the pattern "V n" (verb followed by noun phrase) is described as having three distinct structural analyses: verb and complement (as in *He was my friend*), verb and object (as in *The thieves broke a window*), and verb and adjunct (as *Children don't talk that way*). The pattern "V n n" is also described as having three structures: verb with two objects (as *He gave her a present*), verb with object and object complement (as in *They appointed him chairman*), and verb with object and adjunct (as in *They won the game 4–2*). Whereas some of these analyses are standard traditional ones, others are less so. The terms "direct object" and "indirect object" are avoided, for example, and both objects in *He gave her a present* are labelled simply "object." In patterns with prepositions, terms such as "prepositional object" are used to describe relationships that are analogous with a traditional object, but with a preposition, as in *The tax people are inquiring into his affairs*, where the phrase *into his affairs* is analyzed as a prepositional object. Francis (1993), however, takes an energetic stand against structural analysis, arguing that it fails to recognize lexical restrictions and that whereas most patterns can be expressed in structural terms, many cannot. Hunston and Francis (1999) also express dissatisfaction with the structural analyses and suggest that patterns should be allowed to stand by themselves. As a result, the patterns of nouns and adjectives in Francis et al. (1998) have no such analyses. This has led to criticism, for example by Teubert (2007), who argues that much useful information distinguishing between formally similar but functionally different examples is thereby lost.

The main feature of Francis et al. (1996) and Francis et al. (1998) is the listing of verbs, nouns, and adjectives that are found with each pattern, with those lists divided into broadly defined "meaning groups." An individual word may occur in a number of different lists, in each case with a different pattern and/or with a different set of similar words. For example, the noun *struggle* occurs with the patterns "N *among* pl-n," "N *between* pl-n," "N *over* n" and "N *with* n"; in these patterns it indicates a fight, dispute or contest and is placed along with words such as *competition, conflict, dispute, fight/fighting, quarrel,* and

rivalry. *Struggle* also occurs with the pattern "N to-inf"; in this pattern it indicates an attempt to do something and is placed alongside words such as *attempt, battle, bid, campaign, mission*, and *rush*. Another pattern it occurs with is "*it* v-link det N to-inf" (as in *it was a struggle to . . .*), and here it is placed alongside other indications of difficulty, such as *battle, challenge, effort, nightmare, problem*, and *task*. It can be argued that each pattern makes salient a different aspect of the concept of "struggle:" conflict, attempt, and difficulty respectively.

In a sense, these collections of word-pattern combinations are similar to a thesaurus, because isolating a pattern will bring together groups of words with semantic similarities. For example, verbs occurring with the pattern "V *into* n" are divided into thirteen groups in Francis et al. (1996). One consists of a set of verbs indicating "breaking or dividing:" *break, crumble, divide, fragment, polarize, resolve, separate, shatter, smash, splinter*, and *split*; another is a set indicating "collisions:" *bang, barge, bump, cannon, crash, plough, run, slam*, and *smash*; and another group indicates "exerting pressure or making a dent or hole:" *bite, bore, crunch, dig, drill, eat*, and *sink*. There is an intuitive convenience here, but also some problems even at the level of practicality. The words associated with most patterns fall into a large number of meaning groups, some of which are very small. The pattern "N *for* n," for example, is divided in Francis et al. (1998) into 31 groups, of which 24 contain fewer than 10 nouns and 15 contain 5 nouns or fewer. Even where the grouping is more successful, listing words in this way implies that the words themselves have independent meaning, rather than that the words are the centers of units of meaning. For example, *bite into, eat into*, and *sink into* will each occur in very different meaning units, in spite of their apparent similarity.

Francis et al. (1996, 1998) depend on a perceived relationship between pattern and meaning, although the nature of this relationship is left inexplicit. Hunston (2008) suggests that patterns, and in particular prepositions, act as classifiers, prioritizing one aspect of an entity or activity by aligning it with other entities or activities that occur with the same preposition. This argument was used in the discussion of *struggle* above. A more extreme example is the verb *BREAK*. *BREAK into (pieces)* highlights a particular feature of the "breaking" action, whereas *BREAK with (an organization)* aligns the action with other forms of interpersonal interaction such as *finish, quarrel*, or *battle*. Using *BREAK* in the pattern "V n *to* n," as in *broke the news to his family*, aligns the verb with verbs of communication such as *TELL*.

Applications of Pattern Grammar

Pattern grammar is essentially an application of corpus observation. It began as a tool for lexicographers, giving them a simple way of noting how a word is used for the benefit of learners of English. The other main application of pattern grammar is in language teaching, especially the teaching of English. It lends itself to a view of teaching grammar that focuses on "consciousness-raising" rather than explicit instruction (e.g., Willis, 2003). In other words, it is not envisaged that a teacher would give learners information about each pattern in turn, as is often done with verb tenses, for example; instead learners would be encouraged to notice which words occur with which patterns and so build up a repertoire of, on the one hand, correct usage, and on the other hand, ways of saying things. Willis (2003) has suggested that patterns comprise a grammar of class, which exists alongside orientation (or deixis) and structure as those aspects of English that make up its pedagogic grammar. The grammar of class treats the words occurring with a given pattern as constituting a "class" of words; learners becoming familiar with an item of vocabulary will learn which class the item belongs to, or how it is correctly used.

Patterns can play a part also in the corpus-based analysis of discourse, drawing on the range of meanings associated with patterns. Charles (2003, 2006a, 2006b), for example, uses patterns associated with stance, notably those involving that-clauses (including that-clauses following specific nouns and verbs), to draw comparisons between writing in materials science and political science. The patterns, among other features, act as a search mechanism to highlight similarities and differences between the disciplines.

An application of pattern grammar that is still in its infancy is the development of local grammars to find information in large amounts of text. In the *RESOLVE* example above, for example, it is possible to specify that if the verb *RESOLVE* is found followed by a to-infinitive form, the noun phrase preceding the verb will indicate the person taking the decision while the decision itself will appear in the to-infinitive clause. The result is a very partial "local grammar" of reporting decision making. Of the local grammars based on patterns, perhaps the most useful to date is the local grammar of affect in Bednarek (2008, pp. 65–99), which utilizes patterns to give lexical specificity to the concept of affect discussed by Martin and White (2005).

Pattern Grammar and Related Concepts

Pattern grammar belongs to a corpus-based tradition that includes work on units of meaning (Sinclair 1991, 2004), semantic prosody (Louw, 1993), and lexical priming (Hoey, 2004). It is not, however, unique in taking an approach to grammar that prioritizes pattern over system. For example, it has a great deal in common with approaches such as construction grammar (e.g., Goldberg, 2006) and collostructions (e.g., Stefanowitsch and Gries, 2003). Among other similarities between pattern and construction grammar (see Hunston, 2008) is the focus on the detail of word and pattern or construction co-occurrence and the link between the pattern or construction and meaning. However, patterns constitute only a subset of constructions, as construction grammar includes forms which are not lexically restricted, such as question forms, in its remit. Those researchers working with collostructions also assume an integration of lexis and grammar and propose statistically validated associations between constructions (including, but not restricted to, those suggested as patterns) and words. They are therefore in a position to add rich lexical detail to a pattern-based description and to flesh out the bones of pattern grammar.

SEE ALSO: COBUILD Project; Lexical Bundles and Grammar; Lexical Priming; Sinclair, John; Teaching Grammar and Corpora

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Paulston, Christina Bratt

G. RICHARD TUCKER

Christina Bratt Paulston has been a prolific contributor to the applied linguistics literature for more than 40 years with contributions ranging from her early work on teaching English as an additional language (e.g., Paulston & Bruder, 1975) to her subsequent work in the general area of sociolinguistics with a special focus on diverse aspects of language education policy and planning (e.g., Paulston, 1988, 1992, 1994, 2003; Kiesling & Paulston, 2004).

Paulston was born in Stockholm, Sweden in 1932 where she grew up and completed her primary and secondary education. After graduation from the *gymnasium*, she relocated to Minnesota where she attended Carleton College (BA, English Literature, 1953), followed by the University of Minnesota (MA, English and Comparative Literature, 1955). She then taught for a number of years in high schools in Minnesota, Morocco, and Sweden, before enrolling in the doctoral program in Applied Linguistics at Teachers College Columbia University from which she received her doctorate in 1966.

After working overseas once again, in India and in Peru, Paulston accepted a position in the Department of (then General) Linguistics at the University of Pittsburgh where she began her distinguished career in 1969. She also served as Director of the English Language Institute (ELI) (1969–98) and as Chair of the Department (1975–89).

Her early professional contributions to the development of materials and methods texts for the teaching of English as an additional language were shaped by her personal bilingual experiences as well as by her international teaching assignments. Through her scholarship and strong leadership, the ELI at the University of Pittsburgh became one of the strongest centers in the United States for preparing international students to enter English-medium university classes. During the 1970s, Paulston authored or co-authored some of the decade's most popular articles and texts designed for diverse learner and teacher audiences at home and abroad (e.g., Paulston, 1974, 1982; Paulston & Bruder, 1975). She also served as a frequent presenter at local, regional, national, and international conferences where she actively shared ideas, conducted in-service workshops, and influenced the emerging international TESOL (Teachers of English to Speakers of Other Languages) organization and movement.

During the latter part of the 1970s and throughout the 1980s, Paulston became increasingly interested in issues related to the "rights" of individuals who were studying, working, or living in settings where their own first language was not the dominant or official language (e.g., Paulston, 1988; Paulston & Peckham, 1998). She published broadly on the topic and also lectured extensively at universities or in other forums throughout North America, Western Europe, Southern and Eastern Africa, and East Asia.

During the 1980s, as the national discussion about language use and language rights intensified in the USA, Paulston wrote extensively on the topic and frequently participated in discussions on the continuing debate over *English Only* versus *English Plus*. A strong proponent of *English Plus* (i.e., the right of individuals residing in the USA to have the opportunity to develop proficiency in English *plus* a language in addition to English), she noted in one of her widely disseminated and quoted articles (1997, p. 85) that "Our responsibility as academics is the careful exploration of the nature of language rights and their consequences."

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The breadth and the depth of her personal contacts with the pioneers in the field of sociolinguistics (e.g., Charles Ferguson, Joshua Fishman, John Gumperz, Dell Hymes) became abundantly clear during the editing of *The Early Days of Sociolinguistics: Memories and Reflections* (Paulston & Tucker, 1997) when virtually all of the contributors were long-time personal friends or colleagues of hers.

Paulston's service contributions to the broader academic community have also been noteworthy, as evidenced through her diligent work as Board member and President of international TESOL, member of the Board of Trustees of CAL (the Center for Applied Linguistics), and active participant in the Committee on Intensive English Programs as well as member of associations such as ACTFL (the American Council on the Teaching of Foreign Languages), LSA (the Linguistic Society of America), and MLA (the Modern Language Association). Through each of these organizations, by her participation in their annual meetings and through contributions to their journals and newsletters, Paulston has eloquently documented and told a compelling story of the importance of individuals' linguistic rights.

Paulston continues her work as Professor Emerita at the university, where she regularly offers courses such as "Language Policies and the Education of Linguistic Minorities," advises students, and remains in active electronic contact with colleagues and professional associates throughout the world.

SEE ALSO: English-Only Movement; Intercultural Discourse; Language Policy and Planning: Overview; Minority Languages in Education; Multilingualism and Language Rights; World Englishes and Teaching English to Speakers of Other Languages

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Pavlenko, Aneta

JEAN-MARC DEWAELE

Aneta Pavlenko rose to prominence in the late 1990s with a number of highly original contributions in various areas of applied linguistics and bilingualism research. She grew up in Kiev, Ukraine, when it was still part of the USSR. Her father was a filmmaker and her mother a teacher of English. She is probably one of the few applied linguists who knows how to handle a Kalashnikov, a skill she learned in her high-school military-education classes. Because of her Jewish origins, she was turned down by Kiev Pedagogical Institute of Foreign Languages, and eventually obtained her BA and MA in French and linguistics by correspondence, while working full time. On April 26, 1986, she was getting ready for her birthday party when Chernobyl exploded 30 kilometers north of Kiev. In 1989, the combined effects of anti-Semitism and the fear of the effects of Chernobyl on her newborn baby forced her to emigrate. Together with other Soviet immigrants, she spent several months in a refugee settlement in Italy, where she taught English to immigrant children and helped other refugees in dealing with Italian authorities. Eventually, with the help of a Jewish organization, she settled with her mother and son in the USA. For two years she worked as a part-time language instructor in several Pennsylvanian colleges. In 1992 she began her doctoral studies in linguistics at Cornell University; she produced her dissertation under the supervision of Jim Lantolf, with whom she coauthored two influential papers (Lantolf & Pavlenko, 1995; Pavlenko & Lantolf, 2000). She graduated in 1997 and was hired as an assistant professor at Temple University in Philadelphia where she obtained tenure in 2003 and was promoted to full professor in 2008. She is currently professor in, and coordinator of, the TESOL program in the Department of Curriculum, Instruction, and Technology in Education.

Her interests range from multilingualism, gender studies, identities in multilingual contexts, and language ideologies (Pavlenko, Blackledge, Piller, & Teutsch-Dwyer, 2004) to autobiographies of multilinguals (Pavlenko, 2007), the experience of immigration (Pavlenko, 2003), bilingualism and cognition (Jarvis & Pavlenko, 2008), the bilingual lexicon (Pavlenko, 2009), emotion words and second language acquisition (Dewaele & Pavlenko, 2002), and language and education policies in post-Soviet countries (Pavlenko, 2008a). She has published highly original papers in all these areas, and guest-edited several special issues for international journals.

Her first major paper (Pavlenko, 1999) appeared in *Bilingualism: Language and Cognition* when François Grosjean was principal editor. In this paper she argued against the conflation of semantic and conceptual levels of representation in contemporary models of the bilingual lexicon and proposed to distinguish between lexical, semantic, and conceptual levels of representation. Her research on emotion concepts in Russian and English of monolinguals and bilinguals illustrated the dynamic nature of the bilingual conceptual store. She called for more attention to crosslinguistic and cross-cultural differences in conceptualization of different phenomena. She revisited these issues in Pavlenko (2008b) in the same journal. She argued that emotion words are a separate class of words in the mental lexicon, represented and processed differently from abstract and concrete words. She also demonstrated that emotion concepts vary across languages and that bilinguals' concepts are often distinct from those of monolingual speakers. She finally pointed out

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that words in different languages display different levels of emotionality which affects code switching and language choice in multilinguals.

While a lot of her work is dedicated to psycholinguistic issues (Pavlenko, 1999), she also pays attention to sociolinguistic aspects of the second language acquisition process and reflects on epistemological and methodological choices in research. In Pavlenko (2007) she argued that autobiographies describing the acculturation process of second language learners and users constitute valid "evidence" for the field of SLA if treated as narratives and not as facts.

Aneta Pavlenko has published in most of the top journals in the field, including *The International Journal of Bilingualism*, *Journal of Multilingual and Multicultural Development*, *Multilingua*, *Applied Linguistics*, *Pragmatics and Cognition*, *TESOL Quarterly*, *Bilingualism: Language and Cognition*, *Issues in Applied Linguistics*, *Annual Review of Applied Linguistics*, *Mental Lexicon*, *The Modern Language Journal*, and *Language Learning*. Pavlenko's (2008c) study on non-native speakers of English and the Miranda warnings won the 2009 TESOL Award for Distinguished Research.

She has edited or coedited six books and produced a monograph, Pavlenko (2005), which won the Book Prize of the British Association of Applied Linguistics in 2006. She also coauthored a book with Scott Jarvis on crosslinguistic influence in language and cognition (Jarvis & Pavlenko, 2008).

She has organized panels and presented papers at international conferences on bilingualism, applied linguistics, sociolinguistics, pragmatics, TESOL, and second language acquisition. Having become a major figure in the field, Aneta Pavlenko was invited in 2009 as plenary speaker to EUROSLA 19 in Cork and the Sixth International Conference on Third Language Acquisition and Multilingualism in Bolzano. She serves as reviewer for numerous journals and publishers, was reviews editor of the *International Journal of Bilingual Education and Bilingualism* from 2001 to 2010 and is currently associate editor for *The International Journal of Bilingualism.*

Aneta Pavlenko has established a wide international network of scholars and friends from different disciplines and theoretical backgrounds. She can be credited for bringing the work of Russian-speaking applied linguists to the attention of the rest of the world by inviting them to join the AILA Research Network "Multilingualism in Post-Soviet Countries" and contribute to panels at international conferences and to special issues in English about the language situation in countries formerly belonging to the USSR. She has established her reputation as a tough, insightful, and perfectionist reviewer and editor, and an inspiration to all those who have collaborated with her.

SEE ALSO: Bilingualism and Cognition; Cultural Identity; Language Policy and Planning: Overview; Multilingualism; Subjectivity

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Peer Response in Second Language Writing

JUN LIU

'Peer response' refers to

> the use of learners as sources of information and interactants for each other in such a way that learners assume role and responsibilities normally taken on by a formally trained teacher, tutor, or editor in commenting on and critiquing each other's drafts in both written and oral formats in the process of writing. (Liu & Hansen, 2002, p. 1)

In the field of second language writing, the term is sometimes synonymous with "peer review," "peer editing," or "peer feedback."

Grounded in both cognitive and psycholinguistic theories, and supported by process writing theory, peer response enables writers to get feedback on their drafts from several students and helps build audience awareness, reading–writing connections, and linguistic, rhetorical, and content schemas through multiple exposures to a text. Lying at the heart of peer response is collaborative learning theory that states that socially constructed knowledge occurs through communication among peers. Likewise, psycholinguistics provides a number of rationales for using group work that supports peer response as a means for students to negotiate meaning as they help each other revise their papers. It has also been found that learning in writing groups is reciprocal and improves students' work (Mangelsdorf & Schlumberger, 1992; Hu, 2005) while giving them additional practice in the target language. Students individually may not have all the knowledge or resources available to complete a task successfully, but "pooling the resources that a group of peers brings with them to the task" may be more beneficial to them (Bruffee, 1984, p. 64). Research results also indicate that collective scaffolding that occurs as a result of peer response allows individual novice second language writers to become collective experts navigating complex problem solving through negotiation and collaboration (de Guerrero & Villamil, 2000).

As Liu and Hansen (2002) note, peer response in second language writing has revealed both strengths and weaknesses in four major areas. Cognitively speaking, peer response activities help students take charge of their own learning, build critical thinking skills, and consolidate their knowledge of writing, although sometimes peer comments are questionable and thus difficult to incorporate in revision. With regard to the social effects, peer response activities can enhance students' communication, build their social skills, and provide them with a supportive social network, even though they can sometimes be anxiety provoking and lead to communication breakdown. Linguistically, peer response activities are considered good opportunities for students to build their linguistic knowledge and improve both oral and written discourse, despite the fact that students tend to overemphasize local structure and comments on grammar. From a pedagogical perspective, peer response activities can be conducted with students who are at different proficiency levels and different stages of writing, although it is sometimes more time-consuming and less efficient.

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Peer response in second language writing generally takes two different formats: (a) the traditional format that includes both written response through pen and paper and face-to-face communication and (b) the innovative format that relies on computer-mediated communication (CMC) in both synchronous (real time) and asynchronous (delayed time) modes. Each format has both benefits and constraints that the teacher will need to weigh, taking into consideration factors such as learners' learning styles, language proficiency levels, facilities, and the nature of the tasks in writing. In the traditional format, students usually read peers' drafts with a number of guided questions that help make the review more focused and engaging. This format makes it easy for students to make marginal notes and comments. However, in some instances, poor handwriting, limited space for comments, and lack of consistency can cause problems. One commonly used follow-up procedure with the traditional format is oral, face-to-face group commenting, or pair commenting which provide opportunities for clarification, confirmation, probing, and in-depth discussion and meaning negotiation so that everyone in the group can benefit from the process. Nevertheless, the effectiveness of this approach depends highly on individual students' communication styles and skills. For instance, the silence of some students due to different cultural traditions can sometimes discourage open communication and result in the more outspoken students dominating the discussion. Sometimes the lack of familiarity among peers or the limited time can cause the nature of interaction to be too brief or superficial. On the other hand, the CMC format extends the interaction possibilities beyond the classroom and hence "beyond its time constraints and the usual limited circle of interlocutors of classroom pair and group work" (Belcher, 1999, p. 255). Research indicates that synchronous peer response (e.g., using closed chat rooms) can provide a platform for discussion that is highly engaging and stimulating without students being together. It also encourages a playful atmosphere that enhances improvisation, motivation, and group cohesion. However, it is dependent on individual students' speed in typing as students are unable to offer detailed comments under time pressure. Moreover, turn taking could be problematic and create uncertainties and frustration when a student receives contradictory comments all at the same time (Liu & Sadler, 2003). Alternatively, peer response that happens asynchronously (e.g., using emails or bulletin boards) allows sufficient time for each student to write his or her comments without the constraints of time and space. However, it can be time-consuming and sometimes lacks the spontaneity of group commenting and interaction. In situations where students are not equipped with computers at home, this task is not practical.

The roles of participants in peer response activities are numerous. In any group work, there will be a leader who serves in the role of a facilitator to set the pace and get the ball rolling. This role should be rotated among group members in order to enable everyone in a group an equal opportunity to be group leader. Being a good listener and taking an active role in discussion and collaboration with peers is essential for the success of peer response. When the paper of a team member is being critiqued, the author of that paper should be open-minded, willing to listen to both positive and negative comments, and take the opportunity to probe and seek clarification in order to understand why certain comments are made. The teacher, on the other hand, should play different roles in the process of peer response activities—that of facilitator, monitor, timekeeper, and occasionally participant-observer contributing to discussion as a member of the team and confirming uncertainties and answering questions whenever appropriate.

What should students focus on when they comment on their peers' papers? Should they focus on content, rhetoric, grammar, or a combination of all three? This has been a concern for many second language writers and their teachers (Hyland & Hyland, 2006). Many second language writing teachers concur that the most helpful comments are those that address global issues such as content and rhetoric as specifically as possible (Liu and

Hansen, 2002). For example, a helpful comment on a draft might focus on audience and organization. However, students have the tendency to follow their teacher's lead in commenting on their peers' papers. If the teacher typically comments on grammatical issues on the students' papers, the students will likely follow suit when they make comments. Therefore, if the teacher wants her students to focus on a particular aspect in writing, then she should provide them with examples of the kind of comments she expects them to make and make explicit the specific requirements for peer response activities.

It is clear that the success of peer response in second language writing depends largely on the training and modeling the teacher provides in the process of peer response activities including prior training, ongoing supervision, and post-reflection. Second language writing teachers should be aware of their students' diverse needs, writing skills, prior peer response experiences, and motivation in order to engage them in peer response activities through clear instruction and guidelines for commenting. Teachers should show students how to do a good job by: (a) using task-specific peer response examples from previous students' drafts, completed peer response sheets, and revisions based on the comments; (b) giving their own teacher responses on the same task-specific peer response sheets; and (c) suggesting some useful expressions for responding to their peers' papers. The effectiveness of peer response largely depends on the extent to which students have developed appropriate attitudes and behaviors for giving and receiving peer feedback, for example, open-mindedness, politeness, turn-taking strategies, and communicative competence. Finally, in order to help students make informed decisions about their writing, it is necessary to follow up on peer review with guidance on how to incorporate peer comments judiciously in making revisions.

Like much of the process in second language writing, peer response activities have become a common practice in second language writing classrooms. Nevertheless, there are still a few areas that cause concern and criticism. For instance, teachers and researchers are puzzled about the extent to which peer comments help improve the drafts when teacher feedback is present (Xu & Liu, 2007). They also question when is the right time for peer response to take place in the writing process, in between the first and second drafts, the second and final draft, or after each draft. This will determine the foci of peer response as well as the intervention of the teacher feedback (Hyland & Hyland, 2006). Furthermore, they question whether it is more effective to conduct peer review with advanced learners grouped by discipline or beginner and intermediate students in general second language writing classes (Hansen & Liu, 2005). These and other unresolved questions make peer response a promising area for further research in second language writing.

SEE ALSO: Collaborative Language Learning; Roles for Corrective Feedback in Second Language Instruction; Teaching Writing

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Pennycook, Alastair

BONNY NORTON

When I welcome new graduate students to our department at the University of British Columbia, I always remind them that their fellow students may well constitute their most supportive professional network over the course of their careers. Alastair Pennycook was one of the many outstanding graduate students I met at Ontario Institute for Studies in Education (OISE), University of Toronto in the late 1980s, and it gives me great pleasure to reflect on the ways in which the qualities Alastair exhibited as a doctoral student, including a formidable intelligence and a generosity of spirit, have had such a profound effect on applied linguistics and language education over the past two decades.

Alastair's sojourn in Canada was only one stop on a professional journey that began in the UK, and has included extended periods in France, Germany, Japan, China, Hong Kong, and, most recently, Australia, where he is now Professor at the University of Technology, Sydney. While sailing in Sydney's spectacular harbor is one of Alastair's favorite pastimes, a review of his extensive publications suggests that he must struggle to find time at the helm. A highly productive scholar, Alastair's research is always cutting-edge, remarkable in breadth, and compelling in depth. Given the limited scope of this biography, I will focus on the highly cited books that he has written, as these provide insight into the trajectory of his ideas over time and his engagement in diverse sites of practice. These books extend and enrich many of the key insights published in his numerous journal articles, some of the most influential being Pennycook (1989, 1994b, 1996, 2003).

While still a doctoral student at OISE, Alastair worked tirelessly on the first of his groundbreaking books, *The Cultural Politics of English as an International Language* (Pennycook, 1994a), which won the 1995 BAAL (British Association of Applied Linguistics) Book Award. By drawing on a range of scholarly sources, including postcolonial literature, critical pedagogy, and language policy, this important work raised timely questions about the impact of the global spread of English and remains highly relevant almost two decades later. His focus on what he called the "worldliness" of English struck a chord in the field of applied linguistics and reminded us that English can never be removed from the social, cultural, economic, and political contexts in which it is used.

Many of the ideas Alastair developed in his 1994 book receive fuller treatment in a later text, *English and the Discourses of Colonialism* (Pennycook, 1998) in which he explores in greater depth the relationship between the English language and its colonial legacy. Through detailed analysis of travel writing, newspaper articles, and popular books on English, Alastair examines how colonial practice impacted both the colonizers and the colonized, across both time and space. With reference to such key authors as Chinua Achebe and Njabulo Ndebele, Alastair concludes that postcolonial writing could serve as a counter-discourse to the dominance of English internationally.

While few scholars took issue with Alastair's work on the globalization of English, his book *Critical Applied Linguistics: A Critical Introduction* (Pennycook, 2001) created a little discomfort amongst some applied linguistics scholars in the new millennium. Examining different notions of what it means to be "critical," Alastair made a convincing case for defining critical applied linguistics as an attempt to understand the relationship between language, power, and possibility in the field. Central themes identified for closer examination

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addressed the politics (respectively) of knowledge, language, texts, pedagogy, and difference, all of which remain important sites of struggle in contemporary applied linguistics.

As Alastair's reputation grew, his numerous plenary invitations took him to every region of the world, where he often escaped banquet halls and crowded lobbies for the back streets of urban life. On street corners and in tenement buildings, he took the opportunity to continue his investigation of transgressive responses to the dominance of English. What emerged was an exciting line of research on international hip-hop culture, brilliantly examined in *Global Englishes and Transcultural Flows* (Pennycook, 2007), yet another BAAL award-winning book. Framing his analysis with reference to performative theory, Alastair brought a new lens to an important topic, insisting that we rethink the relationship between language, culture, and pedagogy in a unique manifestation of the "worldliness" of English.

Alastair's most recent monograph, *Language as a Local Practice* (Pennycook, 2010), takes up his interest in urban language use, extends earlier work on theories of language, and enriches our understanding of multilingualism. Drawing on a variety of contexts of language use, from bank machines and postcards to urban graffiti and mission statements, he suggests that we need to extend our understanding of language use in context by considering how language, locality, and practice are not only related but mutually constitutive.

While Alastair's monographs have served to consolidate a compelling trajectory of ideas across time, he has also worked collaboratively with like-minded scholars Sinfree Makoni, Samy Alim, and Awad Ibrahim to edit two collections of work that provide greater visibility to applied linguistics scholars in different regions of the world. In *Disinventing and Reconstituting Languages* (Makoni & Pennycook, 2007) Sinfree, Alastair, and a wide range of scholars challenge the very foundations of much thinking on "language," making the case that language remains an invention, and that linguistic metalanguage constructs the world in particular ways. In the second edited book, *Global Linguistic Flows: Hip Hop Cultures, Youth Identities, and the Politics of Language* (Alim, Ibrahim, & Pennycook, 2009), Alastair and contributors take the opportunity to extend many ideas published in *Global Englishes and Transcultural Flows*, while offering new insights on the ethnographic study of language, popular culture, and hip-hop at the intriguing intersection between global and local cultural practices.

Alastair and I no longer have spirited conversations in the always crowded pub, "The Duke," around the corner from OISE. However, we are still regularly connecting online with yet another OISE graduate, Brian Morgan, in our Multilingual Matters book series, *Critical Language and Literacy Studies*, initiated by Vaidehi Ramanathan. The mentoring of new and emerging scholars will no doubt enrich the legacy of the distinguished scholar, Alastair Pennycook.

SEE ALSO: Critical Applied Linguistics; Critical Discourse Analysis and Critical Applied Linguistics; Critical Pedagogy; Language, Culture, and Context; Language and Globalization; Postcolonial Studies

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Personality in Second Language Acquisition

JEAN-MARC DEWAELE

Personality Traits

The intuition that certain stable and distinctive personality traits may be linked to success in second language acquisition (SLA) has proved irresistible among many foreign-language teachers and applied linguists over recent decades. The fact that so few significant relationships between personality traits and linguistic measures in the second language (L2) have been identified has puzzled researchers.

This search for the psychological sources of individual differences in SLA has been compared to the search for the Holy Grail where researchers, "like Arthur's knights, stumbling through the night, are guided by a stubborn belief that something must be there, glimpsing tantalizing flashes of light from a distance, only to discover that their discoveries looked rather pale in the daylight" (Dewaele, 2009, p. 625). The fact that findings have been relatively meager may be linked to the intrinsic interdisciplinary nature of SLA and the need to combine considerable theoretical knowledge and methodological skill in personality psychology and social psychology, as well as in applied linguistics, educational psychology, sociolinguistics, and psycholinguistics (p. 625). Moreover, the personality variables of language learners interact with a complex and dynamic socioeducational context, which means that it becomes very difficult to disentangle the effect of personality among a multitude of cognitive, social, and situational factors that contribute to SLA and L2 production. Indeed, the effect of some personality traits can remain invisible in some situations or tasks, but may surface in other circumstances. It is thus not surprising that personality variables are typically linked to small effect sizes on L2 variables. This entry briefly presents the background of research into personality traits before offering a short overview of the link between specific dimensions and SLA.

Personality inventories are based on factor analyses of scores on personality-describing adjectives. The resulting dimensions are universal, in other words the same dimensions appear in questionnaires in various languages across the world. Personality inventories rely on self-report from participants who have to indicate whether, or to what extent, they agree that a particular statement applies to them. Typical items are "Are you a worrier?" or "Can you get a party going?" There are typically 10 items or more per dimension, which allows researchers to calculate individual scores on the various dimensions. Traits are thus continuous dimensions of variability and scores are normally distributed. In other words, there are more people situated in the middle of a personality dimension than at the extremes. This means, for example, that there are more "ambiverts" than either extraverts or introverts (Furnham & Heaven, 1999).

The two dominant taxonomies are H. J. and M. W. Eysenck's "Giant Three" (Eysenck & Eysenck, 1985) and the so-called "Big-Five construct." Costa and McCrae (1992) used questionnaire statements to construct the NEO Personality Inventory based on the Big-Five framework, with over 180 items designed to assess how respondents typically think, act, and feel. Goldberg subsequently developed a shorter, 50-item personality inventory, which

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is available free of charge online from the International Personality Item Pool (2001), a public-domain personality resource.

Eysenck's Giant Three are Extraversion versus Introversion; Neuroticism versus Emotional Stability; and Psychoticism versus Tender-Mindedness. The Big-Five construct retains Eysenck's first two dimensions but replaces the third one with three separate dimensions: Conscientiousness, Agreeableness, and Openness-to-Experience. The Big-Five personality traits are situated at the summit of the hierarchy. There are many more "lower-order" personality traits that are often correlated with Big-Five traits but also explain unique variance. A number of such traits have been considered in SLA, namely creativity, emotional intelligence, foreign-language anxiety, and perfectionism.

While there is abundant evidence that "super-traits" and "lower-order" traits determine behavior in general, it is less clear to what extent they affect SLA and L2 production. A short overview of some of the SLA research linked to personality traits will be presented.

Extraversion

According to Eysenck and Eysenck (1985), variation on this dimension is linked to the amount of cortical arousal, which leads to different behaviors. Extraverts are under-aroused and compensate for this by tending toward activities that involve greater sensory stimulation. Introverts are over-aroused and therefore try to avoid over-arousing situations. Extraverts have been found to be more stress resistant because of their lower levels of the neurotransmitter dopamine (Lieberman & Rosenthal, 2001). Introverts, who have naturally higher levels of dopamine, suffer more from the extra dopamine released in stressful situations, which disturbs optimal innervation in the dorsolateral prefrontal cortex and impairs attentional and working-memory processes (Lieberman & Rosenthal, 2001). The combination of the extraverts' speed of retrieval of information from memory and their higher degree of physiological stress resistance could explain their better performance in high-stimulation environments (Dewaele, 2002a). Extraversion has been linked to quantity and intensity of interpersonal interaction, activity level, need for stimulation, and capacity for joy. The typical extravert is sociable, active, talkative, person-oriented, optimistic, fun-loving, and affectionate. The typical introvert is reserved, sober, aloof, unexuberant, task-oriented, retiring, and quiet (Costa & McCrae, 1992).

Applied linguists have focused their attention on the possible effect of extraversion on success in L2 learning, the expectation being that the more talkative, extravert learners would have a natural advantage in the acquisition of the L2 compared to their more introverted peers. However, studies where extraversion scores are correlated with language-test scores have revealed inconsistent results. For instance, Naiman, Fröhlich, Stern, and Todesco (1978) examined whether "good language learners" (i.e., Canadian high-school students learning French as an L2 who scored highest on a French listening test and an imitation test) had any distinctive psychological profile. They expected a positive correlation between extraversion and test scores. When this did not appear, they questioned the construct validity of the Eysenck Personality Inventory or EPI (Naiman et al., 1978, p. 67), rather than asking whether their choice of dependent variables might have affected the results. The ensuing negative publicity for extraversion was so strong that applied linguists have generally shunned it. Dewaele and Furnham (1999) have suggested that a wider variety of more sophisticated linguistic variables, covering not only written language but also natural communicative oral language, might have revealed that the construct validity of the EPI was not to blame for the lack of expected relationships. Indeed, studies that have correlated extraversion scores with oral fluency measures do report significant effects (Dewaele & Furnham, 1999).

Results on the effect of extraversion on success in L2 learning (as measured by grades) have been inconclusive (Dewaele, 2007). Ehrman (2008) analyzed the psychological profile (using the Myers-Briggs Type Indicator) of a sample of the top two percent best language learners out of 3,145 learners. Only one type was significantly overrepresented, namely introverted-intuitive-thinking-judging (INTJ) types (p. 64). Ehrman concludes that

> the best language learners tend to have introverted personalities, a finding which runs contrary to much of the literature, and, even, to pedagogical intuition. The best learners are intuitive and they are logical and precise thinkers who are able to exercise judgment. (p. 70)

Introverts typically perform slightly better on written tests compared to extraverts, who tend to perform better in oral tasks (Robinson, Gabriel, & Katchan, 1994). Research linking extraversion with functional practice strategies in real communicative L2 situations has shown that extraverts tend to prefer social strategies, like cooperation with others or asking for clarification, and also use more functional practice strategies like seeking opportunities to use a foreign language outside the class environment (Wakamoto, 2009). The extraverts' inclination to take risks seems to extend to their linguistic behavior, including the use of more stigmatized language and a willingness to engage in potentially more "dangerous" emotion-laden topics (Dewaele & Pavlenko, 2002).

Introverts have been found to do slightly better on L2 vocabulary tests (Carrell, Prince, & Astika, 1996; van Daele, Housen, Pierrard, & Debruyn, 2006). MacIntyre, Clément, and Noels (2007) also showed that the learning situation interacts with learners' degree of extraversion in vocabulary learning. Introverts were found to perform best after having studied in a very familiar situation, while the extraverts performed best in conditions involving a moderate degree of novelty.

Research has also probed individual differences in the extent to which L2 learners feel different while operating in an L2. English students of L2 French showed a negative link between extraversion and feeling different (Wilson, 2008). Wilson argues that the more reflective introverts may observe objective differences in their voice and manner when using the L2 but also feel liberated from the inhibitions linked to their L1 behavior. Polish L2 users in the UK and Ireland have shown the opposite pattern (Ożańska-Ponikwia, 2011), with extraversion positively linked to the feeling of difference in the L2 as well as to the amount of L2 usage.

Neuroticism

People who score high on Neuroticism (N) are prone to psychological distress, unrealistic ideas, excessive cravings or urges, and maladaptive coping responses. High-N individuals agree with the following descriptors: worried, nervous, emotional, insecure, inadequate, hypochondriacal. Low-N individuals are calm, relaxed, unemotional, hardy, secure, self-satisfied (Costa & McCrae, 1992).

Little research has examined the effect of Neuroticism in SLA. Neuroticism was found to be unrelated to foreign-language attitudes and foreign-language grades of Flemish students (Dewaele, 2007), although a tendency toward a positive relationship was found in the English L3 of Flemish learners (Dewaele, 2002a).

High-N foreign-language students seem to perform better in oral examination tasks and written tests (Robinson et al., 1994). There also appears to be a negative correlation between Neuroticism and difficulties in expressing emotions in both the L1 and the L2 (Ożańska-Ponikwia, 2011).

Psychoticism

Psychoticism (P) measures tough-mindedness (Furnham & Heaven, 1999, p. 230). It is seen as being composed of Agreeableness and Conscientiousness in the Big-Five Model. People scoring high on Psychoticism "tend to be hostile, cold, aggressive, and have poor interpersonal relations" (p. 327). Dewaele (2002b) found that high-P Flemish learners of English L3 suffered less from foreign-language anxiety in English than low-P participants. The effect of psychoticism on language grades was limited: High-P scorers tended to have lower grades in French L2, but not in L1, L3, or L4 (Dewaele, 2007).

Conscientiousness

Conscientiousness refers to the degree of organization, persistence, and motivation in goal-directed behavior. Individuals who score high on Conscientiousness tend to be organized, reliable, hard-working, self-disciplined, punctual, scrupulous, neat, ambitious, and persevering, while those who score low tend to be aimless, unreliable, lazy, careless, lax, negligent, weak-willed, and hedonistic (Costa & McCrae, 1992).

Highly conscientious L2 learners would be expected to be harder-working language learners, but this should not affect their L2 production. Wilson (2008) reported that British students studying French L2 who scored higher on Conscientiousness were more likely to complete the course successfully.

Ehrman's (2008) description of participants who combine intuition and thinking fit the profile of high Conscientiousness. She describes them as being merciless with themselves, always trying to improve their competence and mastery of the target language. They are also more likely to be strategic thinkers, using metacognitive strategies such as goal-setting, self-assessment, and self-monitoring. They have a penchant for analysis, love relatively fine distinctions, and strive to be precise in their use of words, expressions, and grammar.

Openness-to-Experience

Openness-to-Experience reflects proactive seeking and appreciation of experience for its own sake, toleration for and exploration of the unfamiliar. Individuals with high scores on Openness-to-Experience are curious, creative, original, imaginative, and untraditional, and have broad interests. Those with low scores are conventional, down to earth, inartistic, and unanalytical, and have narrow interests (Costa & McCrae, 1992). Openness-to-Experience is significantly related to intelligence (Costa & McCrae, 1992). This dimension is similar to "Open-Mindedness," which refers to an open and unprejudiced attitude toward out-group members and toward different cultural norms and values. It seems to be a good predictor of foreign-language learning achievement. Verhoeven and Vermeer (2002) found that Openness-to-Experience and, to a lesser extent, Conscientiousness and Extraversion were linked to the development of basic organizational skills involving lexical, syntactic, discourse, and functional abilities, the acquisition of pragmatic skills, and the development of monitoring strategies among young L2 learners in the Netherlands.

Ehrman (2008) reported that Openness is correlated with intuition in the Myers-Briggs Type Indicator. Learners who score high on this dimension "concentrate on meaning, possibilities, and usually accept constant change" (p. 66). They are typically seeking hidden patterns, are high-ability readers, and can pick up native-like ways of self-expression (p. 66).

Polish L2 users in the UK and Ireland who scored high on Openness were also significantly more likely to feel different when using their L2, and to use their L2 more frequently (Ożańska-Ponikwia, 2011).

Agreeableness

Agreeableness assesses the quality of one's interpersonal orientation along a continuum from compassion to antagonism in thoughts, feelings, and actions. Individuals who score high on this dimension are soft-hearted, good-natured, trusting, helpful, forgiving, gullible, and straightforward, while those who score low are cynical, rude, suspicious, uncooperative, vengeful, ruthless, irritable, and manipulative.

Polish L2 users in the UK and Ireland who scored high on Agreeableness were also significantly more likely to feel different when using their L2, possibly because they noticed changes in their own facial and other nonverbal expressions while speaking in the L2 (Ożańska-Ponikwia, 2011).

Creativity

Creativity reflects the complex interplay of cognitive, psychological, motivational, and social factors. Intellect is an important component of creativity, which also correlates with Openness-to-Experience. Albert and Kormos (2004) found that creativity, originality, flexibility, and creative fluency had weak but significant links to performance in oral narrative tasks among Hungarian learners of English. Creative fluency was positively correlated with the quantity of talk but originality was negatively correlated with the quantity of talk, and positive correlations were found between originality and the complexity of narratives.

Self-Efficacy

Self-efficacy is a psychological construct that could influence motivation. Hsieh and Kang (2010) investigated the link between Korean learners' self-efficacy, attribution, and test grades in English L2. The authors found that learners with higher levels of self-efficacy attributed their test results to more internal and personal control factors than those who reported lower self-efficacy levels. Unsuccessful learners with higher self-efficacy made stronger personal control attributions than learners with lower self-efficacy.

Foreign-Language (Classroom) Anxiety and Trait Emotional Intelligence

Foreign-language anxiety (FLA) is defined as "the feeling of tension and apprehension specifically associated with second language (L2) contexts, including speaking, listening, and learning" (MacIntyre and Gardner, 1994, p. 284). More specifically, foreign-language classroom anxiety (FLCA) can be defined as "a distinct complex of self-perceptions, beliefs, feelings and behaviors related to classroom learning arising from the uniqueness of the language learning process" (Horwitz, Horwitz, & Cope, 1986, p. 128). FLCA is linked to any activity in the foreign language, but is typically highest for speaking. It affects foreign-language learners at all levels and even non-native foreign-language teachers.

Research on FLA/FLCA has strong pedagogical implications, as it has been reported to interfere negatively with learning and performance (Horwitz, 2001). High levels of FLCA in the classroom have been linked to students discontinuing their study of foreign languages (Dewaele & Thirtle, 2009). Variation in FLA and FLCA has been linked to various socio-biographical variables, quality and quantity of affordances through the knowledge of typologically related or other languages, age, gender, academic achievement, prior history

of visiting foreign countries, prior high-school experience with foreign languages, expected overall average for current language course, perceived scholastic competence, and perceived self-worth (Onwuegbuzie, Bailey, & Daley, 1999; Dewaele, Petrides, & Furnham, 2008; Dewaele, 2010).

Trait emotional intelligence (EI)—also called trait emotional self-efficacy—is based on the idea that individuals differ in the extent to which they attend to, process, and utilize affect-laden information of an intrapersonal or interpersonal nature (Dewaele et al., 2008). Trait EI is measured via self-report questionnaires and is located at the lower levels of personality hierarchies. It includes the following subscales: adaptability, assertiveness, emotion perception, emotion expression, emotion management, emotion regulation, impulsiveness, relationships, self-esteem, self-motivation, social competence, stress management. Trait EI has been found to correlate negatively with Neuroticism, but positively with Extraversion, Openness, and Conscientiousness.

Trait EI has been positively linked to L2 usage (Ożańska-Ponikwia, 2011) and negatively linked to communicative anxiety in the L1, L2, L3, and L4 of adult multilinguals (Dewaele et al., 2008). Emotionally intelligent individuals were less anxious, probably because of their better ability to gauge the emotional state of their interlocutor. A range of other sociobiographical variables were linked to communicative anxiety.

Foreign-Language (Classroom) Anxiety and Perfectionism

Perfectionism has been defined as a less exaggerated form of obsessive-compulsive disorder. Perfectionist L2 learners tend to make slower progress because the fear of making mistakes hinders their learning. They are inhibited about classroom participation, unwilling to volunteer a response to a question unless they are absolutely sure of the correct answer, and react badly to minor failures (Gregersen & Horwitz, 2002). The authors found that anxious learners were more perfectionist, setting themselves higher personal performance standards, procrastinated more, were more fearful of evaluation, and were more concerned about errors.

Conclusion

Does personality have an effect on SLA and L2 production? The tentative answer is "yes," but no single psychological variable can be identified as having more than a small effect in explaining variance in L2 dependent variables. The main reason is that psychological variables interact with each other and with sociobiographical and educational variables in a potentially infinite and unpredictable way across contexts. L2 learners with similar personality profiles may differ enormously in their progress and ultimate attainment because of variation in the broad context. No single personality trait therefore predetermines success in SLA. At best some combinations of traits create a potential for success, which the learner can decide to boost through hard work and practice.

SEE ALSO: Aptitude in Second Language Acquisition; Attitudes and Motivation in Bilingual Education; Working Memory in Second Language Acquisition: Phonological Short-Term

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Phenomenology and Hermeneutics

LAURENT CAMMARATA

Phenomenology is an umbrella term encompassing hermeneutics, a distinct branch that emerged from a schism within the phenomenological school of thought. Since its origin, phenomenology has been defined in various ways such as the *science of phenomena* (Heidegger, 1927/1996), the *science of appearances* (when the word is taken literally as explained by Ricoeur, 1967), or the *study of essences* (Merleau-Ponty, 1945). This may explain why it has been labeled and operationalized in so many different ways: *lifeworld* or *reflective lifeworld research* (e.g., Husserl, 1936/1970; Merleau-Ponty, 1945; Dahlberg, Dahlberg, & Nyström, 2008), *descriptive empirical phenomenology* (e.g., Giorgi, 1985), *hermeneutics or hermeneutic phenomenology* (e.g., Heidegger, 1927/1996; van Manen, 1997; Gadamer, 2002), and *phenomenography* (Marton, 1981), to name only a few. Regardless of the labels adopted to describe phenomenology and its offspring hermeneutics, and regardless of the differences that distinguish the two research methodologies, they are both rigorous scientific approaches aiming at unveiling the meaning of human lived experiences as they are lived by those who experience them.

Origin

Phenomenology originated as a philosophical movement, which is now considered one of the 20th century's most influential currents of European thought (Moran, 2000). Phenomenology is, originally, a philosophical project at the heart of a scientific revolution initiated more than a hundred years ago by Edmund Husserl (1859–1938), one which has been credited with the redrafting of the architecture of conventional inquiry to include alternative paradigms better suited to making human behaviors and experiences intelligible. In fact, the nature of the phenomenological revolution can be succinctly defined as an attempt at reinstating subjectivity and historicity as the core elements of scientific inquiry. In order to understand why this was a revolutionary move at the time and the impact of the phenomenological school of thought on the scientific world, it is important to place it within its own historical context.

As originally conceived, phenomenology can be understood as a reaction against what is known as the *objectivist turn* corresponding to Galileo's introduction of the scientific method more than four hundred years ago (Polkinghorne, 2003). The scientific method defined its aim as the objectification of experience by the removal of all historical elements (Gadamer, 2002), leading science to focus exclusively on the object pole of experience (Hut, 2003a; 2003b). Such a definition had the pervasive effect of obliterating the subject from the research frame. As a result, it left out "two-thirds of the fiber of every experiential situation we normally find ourselves in" (Hut, 2003b, p. 10). Having removed from the analysis anything about subjects' lived experience, the scientific method, Husserl and later phenomenologists would argue, was incapable of revealing how human beings come to know the world (an epistemological agenda at the heart of Husserlian phenomenology) and how they come to be in the world (an ontological agenda at the heart of Heideggerian hermeneutic phenomenology).

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The attempt to completely remove the human subject's role in science led Husserl and many others after him to criticize and oppose the positivist (also commonly referred to as the objectivist) approach to scientific inquiry. In the field of psychology, building on Brentano's work (Moran, 2000; Dahlberg et al., 2008), Husserl was the first to challenge the status quo by criticizing the traditional distinction between the concepts of subject and object and underscoring the need to focus the scientific exploratory lens on understanding human experience itself. Focusing exploration on the meaning of human lived experiences is a goal central to phenomenological inquiry, and it is considered a prerequisite to any scientific agenda endeavoring to study the natural world: "Because the descriptions of natural objects are derived from experience, experience itself must be clearly understood before a firm foundation can be established for the sciences studying the natural world" (Polkinghorne, 1989, p. 41).

Phenomenology as Empirical Human Science

Phenomenology is a research approach that, much like those in natural sciences, aims at generating knowledge claims which describe as closely as possible the reality they are trying to explain, depict, or unveil. Unlike natural science studies, though, phenomenology aims to study and reveal human experiences. More specifically, the focus is on the meaning of human lived experiences for those who live them because human lived experiences are considered to be "the fundamental locus of knowledge" (Polkinghorne, 1989, p. 43). Phenomenological questions are oriented toward meaning and ask *What does this experience mean for those who have lived it?* In the field of applied linguistics, an appropriate phenomenological question might focus on a particular phenomenon such as language learning or teaching. It would ask about the meaning experiences have for those who live them—the meaning they attribute to the experiences. It could be either broad in scope, such as *What does teaching or learning mean to those who teach and learn?* (van Manen, 1997), or narrower and pointed, such as *What does it mean to genuinely learn?* (Colaizzi, 1978). Phenomenologists assert that these objects of study cannot be researched using the means of observation and statistical analysis commonly found in mainstream empirical science since they are deeply hidden in human consciousness.

The elaboration of very complex theories regarding the nature of knowledge and human consciousness led Husserl and other phenomenologists after him to develop particular methodological tools (e.g., the epoché/bracketing, phenomenological and eidetic reduction) to guide the research process and reveal to us what is most hidden: the meaning of our taken-for-granted, everyday, lived experiences. Phenomenology's strong philosophical and theoretical foundation translates into meticulous attempts at generating knowledge claims about the realm of human experiences. It has often been labeled as empirical human science. In fact, Husserl (1917/1981) argued that phenomenology "is inferior in methodological rigor to none of the modern sciences" (§4).

Phenomenology: Clarifying the Nature and Goals of This Mode of Inquiry

The scientific mission of phenomenological inquiry is to reveal the structures that produce meaning in consciousness. It is the exclusive focus on the subject's experienced meaning that distinguishes phenomenological research from other approaches that focus instead on descriptions of subjects' actions or behaviors (Polkinghorne, 1989). The type of knowledge phenomenological inquiry generates can shed light on key aspects of the teaching and learning realms, such as clarifying the nature of individual learning experiences (e.g.,

Colaizzi, 1978) as well as teaching experiences (e.g., van Manen, 1997). Thus, it can give us unique insights into why educational projects may succeed or fail (Fullan, 2001) and, therefore, is a research approach particularly well suited to answering questions that interrogate the nature of the experience lived by the main actors involved in the educational experience: the learners' and teachers' own lived experience of learning and teaching.

Phenomenology is a *descriptive* science as opposed to an *interpretive* one. This distinction is important as it differentiates phenomenology from other forms of interpretive human science research. Description, Giorgi (1992) explains, "is the clarification of the meaning of the objects of experience precisely as experienced" (p. 122). As it was originally intended, phenomenology attempts to answer the epistemological question *How do we come to know the world?* In simple terms, it is the study of what appears or is given to consciousness through our experience of the world. Phenomenology can, thus, be succinctly defined as "the method for the description and analysis of consciousness and what is given to consciousness" (Velarde-Mayol, 2000, p. 12), that is, it aims to study and describe "how things and events are for the consciousness that beholds them and not how they are in themselves" (Giorgi, 1986, p. 6).

In order to accomplish this aim, Husserl developed various procedures to examine the structure of *intentionality*, which is to be understood as the structure of human experience itself. Husserl's theory of *intentionality* posits that consciousness is always transitive, that is, it is always directed toward an object. This is one of the key assumptions of the phenomenological research method (Giorgi, 1984). The theory of intentionality is at the heart of the phenomenological agenda to understand what experiences are like for the persons living them in everyday existence (van Manen, 1997).

Phenomenology as a research approach favors what Gadamer calls *authentic/genuine questioning*, which occurs when one remains open and can acknowledge that the answer has not yet been determined (Palmer, 1969). Phenomenology guides the researcher to seek, prior to any research endeavor, a presuppositionless state in which the examination of a phenomenon can be initiated. Husserl defined the phenomenological aim as *returning to the things themselves*; that is, returning to the pre-scientific and pre-reflective realm that we inhabit when we are immersed in the natural attitude, which he called the naive approach to the world (Dahlberg et al., 2008). To this end, at the core of any phenomenological endeavor is the initial attempt to neutralize all assumptions we have about the world so that they will not clutter our understanding. Such a move is meant to allow the phenomenon under study to shine through as it really is; in essence, the move is an attempt at taming our taken-for-granted existence in order to evoke in us genuine curiosity.

The Control of Pre-Understanding, Tradition, and Prejudice

For a phenomenological project to be considered successful, it must first and foremost be based on freedom from presuppositions or prejudices. In phenomenology, the researcher's freedom from presupposition is achieved through *phenomenological reduction*, a technical term designating "the principal methodological rule of phenomenology" (Taminiaux, 2004, p. 7). Husserl described the *phenomenological reduction* as the suspension of all preexisting knowledge, "a radical suspension of Nature" (Husserl, 1917/1981, § 37) that needs to be systematically applied. The reduction's principal aim, van Manen (2003) explains, is to re-achieve a direct and primitive contact with the world as we experience it or as it shows itself (the world we experience pre-reflectively) rather than how we conceptualize it (the world as we interpret it). As such, it is an essential component of a science that has as its primary aim to make intelligible all objectivity by "bracketing all positing of being and investigating the subjective modes of givenness" (Gadamer, 2002, p. 244).

Most contemporary phenomenologists agree with the claim that it is impossible to practice phenomenology without understanding the full significance of the reduction and the importance of bracketing.

Phenomenology sets the researcher in a place where she or he is ideally free from the boundaries of already-made ideas and preset categories (assumptions) in which knowledge is naturally organized and which, if not accounted for, can prevent the phenomenon from disclosing itself as it really is. It is the capacity of the researcher to bracket previous knowledge and become self-aware—that is, the continuous seeking of a state of *openness*, an act that Husserl believed possible when transcendence was set as an overarching goal in the research process—that has been the source of important debates and critiques, particularly among those involved in developing this approach. It is principally this debate that led Heidegger, once Husserl's apprentice, to redefine phenomenology and its agenda. Heidegger's opposition to the transcendental turn proposed by Husserl is at the origin of a schism within phenomenology that led to the elaboration of the hermeneutics school of thought. Additionally, in contrast with Husserlian phenomenology, Heideggerian hermeneutics attempts to answer an ontological question rather than an epistemological one—that is, it attempts to answer the question of how humans come to exist, how they come to be in the world, rather than how they come to know the world. This shift of focus in phenomenology is often referred to as the *ontological turn* (Palmer, 1969, pp. 136–7).

Hermeneutics: Main Differences and Commonalities

Phenomenology evolved into two major schools of thought over the 20th century: one that is best characterized as descriptive phenomenology and which is associated with Husserl's transcendental phenomenology, and hermeneutics, an interpretive form generally associated with Heidegger and his followers. Van Manen (1997) helps us better understand what distinguishes both approaches by stating that "it is possible to make a distinction in human science research between phenomenology (as pure description of lived experience) and hermeneutics (as interpretation of experience via some 'text' or via some symbolic form)" (p. 25).

Descriptive phenomenology is generally associated with the work of Husserl (his transcendental phenomenology) and his collaborators Eugen Fink, Tymieniecka, and Van Breda, among others (van Manen, 2000). The principal aim of descriptive phenomenology, also referred to as Husserlian phenomenology, is to try to generate *pure* descriptions in order to answer an epistemological question: What is the nature of human consciousness and human knowledge? In other words, how do humans come to know?

Hermeneutics, which could simply be defined as the philosophy of understanding gained through interpretation, was originally principally applied to the practice of interpretation of biblical texts (exegesis) and later was also applied to the translation and study of non-biblical literature, also known as philology (Dahlberg, Drew, & Nyström, 2001). Thus, Gadamer (2002) explains, it "developed into a system and made the basis of all human sciences" (p. 165).

The meaning of hermeneutics has evolved over time to become a method for interpretation, as well as a "theory of how to understand the act of understanding itself" (Dahlberg et al., 2001, p. 71). Heidegger's redefinition of phenomenology was a reaction against Husserl's call for transcendental (or pure) consciousness as the key to phenomenological analysis. The transcendental turn in Husserlian phenomenology was intended to increase *validity* regarding the knowledge claims generated about the essence of the phenomenon under scrutiny, by requiring phenomenologists to "step outside their viewpoint in order to see a phenomenon apart from the encumbrances of one's experience of it" (Dahlberg et al., 2001, p. 93). As Dahlberg and her colleagues explain, Husserl believed that, with proper training,

one could clearly step outside and free oneself momentarily from all prejudices and theoretical knowledge by bracketing one's own previous theories (performing the epoché, a form of methodological reduction). The bracketing of belief was intended "to reveal the life-world, which would in turn, he thought, open up the way to pure phenomenology" (Ashworth, 1996, p. 7). According to Husserl, this was a crucial step to undertake since the lifeworld is not directly accessible to individuals because their perception and interpretation of the world are naturally dominated by scientific knowledge. It is the reason why Husserl (1936/1970) believed that the epoché of objective science, that is, "[the suspension] of any critical position-taking which is interested in their truth or falsity, even any position on their guiding idea of an objective knowledge of the world" (p. 135), was a necessary step to go through before attempting any phenomenological work.

Heidegger came to oppose the idea that one could ever perform such a feat and rejected Husserl's pursuit of the transcendental ideal, considering it a mistake (Ashworth, 1996). With Heidegger, hermeneutics was to become more than a simple variation on the theme of Husserlian phenomenology. It ultimately evolved in a distinct school of thought as Heidegger "rethought the concept of phenomenology itself, so that the phenomenology and phenomenological method take on radically different character" (Palmer, 1969, p. 126).

As mentioned earlier, the focus of Heideggerian hermeneutics is different from that of Husserlian phenomenology as it attempts to answer a different type of questions regarding the nature of human lived experiences. In hermeneutics, questions focus on how humans come to exist, how they come to be in the world (an ontological agenda). Furthermore, in contrast with phenomenologists, hermeneutists do not believe that pure objectivity can be achieved, or that one should attempt to achieve a state of complete neutrality, since *pre-understanding* is a necessary precondition for acquiring knowledge. For Heidegger, in fact, pre-understanding is not something that one can do without; rather, it represents a condition for new knowledge, since "our understanding of the everyday world is derived from our interpretation of it" (Dahlberg et al., 2001, p. 78). Instead of attempting to neutralize or *bracket* all forms of pre-understanding (what Gadamer refers to as our prejudices) via the use of the epoché, as Husserl's phenomenological analysis would prescribe, hermeneutic phenomenologists favor a continuous focus on trying to bring to light those assumptions so that they can become known to us and, therefore, be accounted for. Gadamer (2002) explains this different process very clearly: the important thing for an individual trying to understand a text is "to be aware of one's own bias, so that the text can present itself in all its otherness and thus assert its own truth against one's own fore-meaning" (p. 269).

Even though these two schools of thought approach the study of human lived experience in a somewhat dissimilar manner, both research approaches share the same overarching goal: to insure that the phenomenon under scrutiny is allowed to shine through in its authenticity so that life can be captured and described as it is lived. In that regard, when applied to both phenomenology and hermeneutics, concerns of *rigor*, which refer to issues of *validity* within the context of human science inquiry, can be considered alike, as rigor is reflected in both research approaches in the continuous struggle of the researcher to remain self-aware: a continuous attempt to achieve what can be thought as a scientific openness and ethical authenticity in trying to stick with the evidence disclosed in the text.

Differentiating both approaches remains, nevertheless, an important matter since the two aim at answering different questions and also involve following some distinct steps in the process of generating knowledge claims. In an attempt to distinguish the two approaches, Giorgi (1992) explains that associating all human science research with interpretive science is excluding other alternative research approaches such as phenomenology, a descriptive science. Giorgi goes on to argue "that the descriptive and interpretive attitudes are not reducible to each other but rather are aptitudes based on strategies tied to situation" (p. 121). An understanding of the rules that govern the elaboration of such projects is,

therefore, crucial and implies a clarification of two key terms: *description* (associated with phenomenological work) versus *interpretation* (associated with hermeneutical work). An examination of the process as well as the product of phenomenological and hermeneutical research as distinct approaches involving distinct steps to follow is, therefore, important when considering the value of the research claims they generate.

Potential Application to the Field of Applied Linguistics

Although both phenomenology and hermeneutics have been recognized as valuable research approaches commonly utilized today in varied fields such as psychology (e.g., Colaizzi, 1978; Giorgi, 1985; Polkinghorne, 1989), caring science (e.g., Johnson, 1998; Carlsson, Dahlberg, & Drew, 2000), teaching and teacher education (e.g., Bollnow, 1989; van Manen, 1991, 1997, 2011), and curriculum (see Pinar, Reynolds, Slattery, & Taubman, 2000, pp. 404–46), they remain unexploited in the field of applied linguistics. Among the many reasons that might explain the absence of phenomenology within the field is the fact that it is difficult to become familiar with phenomenology as a research approach suitable for scientific explorations within the context of applied linguistics. The principal challenge lies in the fact that phenomenology, at its origin a philosophical approach to the inquiry into everyday lived experiences, is far from being a unified philosophy and, thus, has led to the development of varied research approaches whose origin must be well understood if they are to be appropriately utilized.

The potential of phenomenological and hermeneutical inquiry for applied linguistics has not yet been tapped, although there is a growing interest in exploring the experience of the principal actors engaged in learning and teaching languages. Phenomenology and hermeneutics are approaches to inquiry particularly relevant to explorations that focus on trying to understand and describe the experience lived by language learners and teachers. In the context of language learning, much of the experience of language learners remains to be understood when it comes to their actual experience of taming an unfamiliar linguistic framework as well as their experience of wielding it. In regard to language learners' lived experiences, many important if not primordial questions of an epistemological as well as ontological nature remain to be posed that phenomenology and hermeneutics could help address, such as:

- What does it mean to learn an additional language from the perspective of those engaged in the learning process? What distinguishes this learning experience from others?
- What is it really like to learn an additional language while immersed in a community where the target language of study is spoken? In contrast, what is it like to learn a foreign language in an environment where the language is not or only partially spoken (e.g., one's own community)?
- What is it really like to learn a foreign language that is highly valued in one's social context? What is it like to learn the language of the *enemy*?
- What is it really like to communicate in a language we do not yet possess?
- What is it really like to be evaluated while taking a traditional test in the second/foreign-language classroom? What is it like to be assessed on language performance in front of others in a language that is not one's own?
- What is the experience of being comfortable, that is, unafraid to share with others in the classroom, like for those who are beginning to learn an additional language?
- What is it like to experience flow in the second/foreign-language classroom?

When it comes to teaching, much of language teachers' actual experience of being immersed in the classroom world remains to be explored and understood. Such knowledge is essential if we are able to understand challenges at play as language teachers develop professionally, the experience of praxis itself, and barriers to change that often define the success or failure of many school reforms. To date, only a very few studies in the field have investigated language teachers' experiences using a phenomenological or hermeneutical research lens. Two studies recently published (Cammarata, 2009, 2010), for instance, explore language teachers' experience of attempting to transition from conventional models of instruction now prevalent in US K-12 schools to alternative models more in harmony with contemporary understandings of how languages are best learned and taught. An additional study by Cammarata and Tedick (in press) explores the lived experiences of immersion teachers as they attempt to balance language in the context of content instruction. These studies address important gaps in the field of foreign-language education and teacher education more broadly by redirecting the research lens onto examination of the nature of teachers' lived experiences, their impact on thinking, and their relationship to practice and innovation. Although still very rare in the field of applied linguistics, studies employing a phenomenological or hermeneutical approach to inquiry have demonstrated that these research approaches are relevant research tools when it comes to filling important gaps in second language acquisition research.

Conclusion

It is important to keep in mind that the focus of phenomenological and hermeneutical research is on the experience itself rather than on the individuals who experience it. As a consequence, phenomenological as well as hermeneutical inquiry do not formally give a voice to specific individuals and cannot, therefore, be used for that purpose. Nevertheless, both phenomenology and hermeneutics can help challenge the most dominant notions that are in place by unveiling the nature of some experiences that might either not be well understood or have been misrepresented. By so doing, phenomenological and hermeneutical research can help highlight some crucial issues that need to be addressed today, issues that are not necessarily well addressed when using conventional means of inquiry. Perhaps the strongest rationale for considering phenomenology as an appropriate research framework for research exploring language teaching and learning is the fact that such research models, as van Manen (1997) pertinently points out, can be a source of change, as they can bring back the human factor to the center of any educational debate and facilitate the identification of issues which are rarely addressed. Even if phenomenology or hermeneutics do not directly problem solve, as van Manen is the first to admit, they are *a critical philosophy of action* which can be an engine of change and allow for necessary modifications to occur, oppressive situations to be revealed, and revolutionary decisions to be examined (van Manen, 1997). Thus, the use of the phenomenological and hermeneutical research approaches, with their principal aim of uncovering the meaning of human lived experiences, can help expand the current understanding of teaching and learning within this context by exploring these phenomena from a different perspective or lens, that is, exploring experiences of teaching and learning from the perspective of those who live them.

SEE ALSO: Qualitative Methods: Overview; Qualitative Teacher Research; Validity in Qualitative Research

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Phillipson, Robert

TOVE SKUTNABB-KANGAS

Robert Phillipson was born in the United Kingdom in 1942. He was a chorister at St. Paul's Cathedral Choir School in London from 1950 to 1956 (the choir toured the United States for two months in 1953), after which he was a scholar at Cranbrook School in Kent. In 1961 he spent six months in Austria, Germany, and France before studying at the University of Cambridge. He completed a BA in Modern Languages and Law in 1964, and was employed by the British Council from 1964 to 1973.

Robert Phillipson trained as a teacher of English as a Foreign Language at the British Institute in Madrid, Spain, and from 1965 to 1968 was attached to the British Institute in Algiers and various Algerian higher education institutions. This involvement in a country that had recently achieved independence kindled a lifelong interest in colonialism, language policy, and efforts to achieve a more just world order.

Phillipson studied for an MA in Linguistics and English Language Teaching at the University of Leeds in 1968–9. His thesis was on intonation in court cross-examination, using recordings from the Survey of English Usage at University College, London. This was an early effort at studying language in context before discourse analysis and forensic linguistics became established. He also took an elective course in African Literature in English.

From 1969 to 1972 Phillipson was attached to the British Council in Yugoslavia, with responsibility for organizing and teaching on in-service training courses for teachers of English, in partnership with the Yugoslav authorities in each republic, and a colleague at the US embassy. From August 1972 he was employed for a year in London at the English-Teaching Information Centre as head of a unit collecting and disseminating information on English teaching in Europe. This work was funded by the British government as a result of the UK joining the European Union (then the European Economic Community) as a member state in 1973.

Phillipson emigrated to Denmark in 1973. He was briefly employed at the University of Copenhagen, where he collaborated with Danish scholars on a large empirical study of the learning of English in Danish education. This led to the book *Learner Language and Language Learning* (Færch, Haastrup, & Phillipson, 1984), which was published in both the UK and Denmark. Phillipson was employed at the University of Roskilde from 1973 to 2000. The university was a revolutionary educational experiment, with multidisciplinary student group projects as the main system of learning, and a requirement that fundamental academic disciplines should be integrated into problem-oriented, methodologically explicit reports. Phillipson was deeply involved in university administration with lengthy periods as head of the Department of Languages and Culture, dean of Humanities, and chair of PhD studies for the whole university. He was appointed as research professor at Copenhagen Business School in 2000, where he is now professor emeritus.

Phillipson has published extensively on a wide range of language policy topics but is probably still best known for his path-breaking book *Linguistic Imperialism*, published by Oxford University Press in 1992. This had its origins in a doctoral thesis that was awarded a distinction at the University of Amsterdam in 1990. The book has also been published in China and India, and in translation into Arabic. Many factors led to the elaboration of a

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work that sees English teaching in wider political and economic contexts, past and present: first-hand experience of British and American promotion of English worldwide, including access to the British Council's confidential files; a realization, largely triggered by scholars from "third world" countries, that dependence on Western "aid" was perpetuating inequality locally and globally, with educational language policy playing a decisive role; experiencing that Scandinavian donors were providing refugees from apartheid with English learning materials from the UK that were inappropriate culturally and linguistically; and inspiration from the work of his wife, Tove Skutnabb-Kangas, in theorizing how inequality by means of language, linguicism, could lead to the analysis of how structures and ideologies of English linguistic imperialism could be approached. She and Phillipson have edited several books and written scores of articles together.

Linguistic Imperialism was controversial because it challenged the dominant paradigm of English teaching as a technocratic, apolitical task. The book reveals that the Anglo-American English teaching business is essentially determined by geopolitical and commercial interests. In language teaching a key set of tenets (monolingualism, the native speaker as the ideal teacher, the earlier the better, etc.) is shown by scholarship on language learning and multilingualism to be fundamentally false. The book has maintained its relevance because these ideas are still influential, especially in Asian countries—where importing native speakers has not significantly improved the learning of English—and in other parts of the world.

Many developments have continued the global dominance of English into the neoimperial world of the early 21st century. Central among them are the place of English at the top of a hierarchy of languages in most international fora, the prevalence of education solely through the medium of English in many postcolonial contexts (against solid research evidence), the mushrooming of English-medium universities worldwide, and the myth of English as a "lingua franca" serving all equally well. The book *Linguistic Imperialism Continued* (Phillipson, 2009) brings together articles and book reviews written by Phillipson since 2000 that explore such issues and also develop a theoretical framework for analyzing contemporary patterns of linguistic imperialism. The linguistic capital that English represents, and which accounts for its popularity, can be converted into other types of capital, economic and political. But linguistic capital accumulation, like other types of capital accumulation, typically involves processes of dispossession of the capital of speakers of other languages. Hence the importance of language policy formation, nationally and internationally, in order to maintain linguistic diversity along with other types of diversity, in ecolinguistic balance.

One means of counteracting linguistic imperialism is through ensuring observance of principles of linguistic human rights. Elaboration of this as a field of scholarly activity, in tandem with political struggles for more respect for human rights, has required looking in depth at the evolution of relevant national and international laws, and making a case for language rights as fundamental human rights. This is now increasingly accepted, though the struggle for the implementation of such rights is uphill in most parts of the world, as can be seen from the many contributions to two coedited anthologies, *Linguistic Human Rights: Overcoming Linguistic Discrimination* (Skutnabb-Kangas & Phillipson, 1994), and *Language: A Right and a Resource. Approaching Linguistic Human Rights* (Kontra, Phillipson, Skutnabb-Kangas, & Várady, 1999). The edited volume *Rights to Language: Equity, Power and Education* (Phillipson, 2000) has 50 contributors, from anthropology, applied linguistics, communication, discourse analysis, economics, education, law, linguistics, media studies, policy analysis, political science, psychology, social theory, and sociolinguistics, as well as creative writers. Phillipson has always seen multi- and transdisciplinary work as necessary.

The expanding role of English in Continental Europe has been a major interest since the 1990s. Phillipson spent half a year studying language policy in Australia, India, and

Singapore as a stepping-stone towards the analysis of how an increased use of English interlocks with the intensive integration of the European Union, both in EU institutions and in member states. The EU has expanded from a small set of six countries in the 1950s to 27 member states in 2010, with 23 official and working languages. The management of multilingualism, nationally and internationally, in speech (assisted by interpretation) and writing (through translation) is therefore complex. Market forces risk strengthening English at the expense of all other languages, hence the need for explicit language policy formation so as to maintain linguistic diversity as well as ensuring effective international collaboration. *English-Only Europe? Challenging Language Policy* (Phillipson, 2003) covers the history of (some) languages in Europe, global trends impacting on European language policy, language use in EU institutions, criteria for equitable communication, and recommendations for action on language policies.

Phillipson has been attached to universities in Cambridge, UK, Hungary, Australia, and India. He continues to collaborate with Indian scholars (see Skutnabb-Kangas, Phillipson, Mohanty, & Panda, 2009). He has been invited to guest lecture and advise on language policy in most parts of the world. He has functioned as an expert for the Commission of the European Union, evaluating projects concerned with promoting multilingualism, as well as applications for research funding on language policy topics. Phillipson has contributed dozens of entries to various encyclopedias, handbooks, and so forth, and written some 200 book chapters and journal articles, in addition to authored and edited books (for a list of publications, see http://www.cbs.dk/Forskning/Institutter-centre/Institutter/ISV/Menu/Medarbejdere/Menu/Videnskabelige/Videnskabelige/Professor-Emeritus/Phillipson). He was awarded the UNESCO *Linguapax* prize in 2010.

Phillipson is married, with three children and seven grandchildren. He lives on an ecological smallholding.

SEE ALSO: Colonialism and Language Policy and Planning; Language Ideology and Public Discourse; Language, Politics, and the Nation-State; Linguistic Imperialism; Multilingualism and Language Rights

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Phonetics and Phonology: Overview

JOHN LEVIS AND MURRAY MUNRO

Although *phonetics* and *phonology* both concern the study of speech, linguists have traditionally considered these as different areas of study. *Phonetics* subsumes the physical aspects of speech production and their relation to speech perception, while *phonology* addresses the functional and systemic nature of the sounds of particular languages. In the analysis of spoken language, however, the two areas are not clearly demarcated, and therefore applied linguists do not always observe the distinction. Among second language (L2) specialists, for example, *phonology* is sometimes used as a cover term for a wide range of aspects of second language learning relating to pronunciation. Thus, L2 *phonology* often refers in a general way to the acquisition of the sounds of a new language. Textbooks covering *applied phonology* such as Pennington (1996) address a diverse array of issues in speech production and perception, including topics that might more properly be regarded as phonetics. At the same time, *applied phonetics* texts, such as Edwards (1997), cover some of the same material as phonology texts.

A historical overview (see PHONETICS AND PHONOLOGY: HISTORICAL OVERVIEW) of pronunciation teaching reveals a heavy influence of *articulatory* phonetics, which refers to the ways in which the vocal apparatus—including the lips, teeth, tongue, and vocal folds—is used to produce speech. Concepts from this subfield may be applied in the teaching of L2 pronunciation, as when a teacher describes the articulatory postures and dynamics required for a particular consonant production or explains the relationship between stress and its components of pitch, loudness, and length. Research in articulatory phonetics is sometimes concerned with describing patterns of production that distinguish first language (L1) from L2 speech. Early analyses of articulatory phenomena relied on observations of the readily visible parts of the vocal tract and on phoneticians' conscious reflection on their own speech production. In recent decades, such work has been aided by vocal tract imaging techniques including ultrasound, magnetic resonance imaging (MRI), and a variety of other technologies that permit unobtrusive monitoring of structures within the vocal tract and their movements. To date, however, the role of these approaches in L2 teaching and research has been limited (Gick, Bernhardt, Bacsfalvi, & Wilson, 2008).

A critical question in phonetics and phonology concerns the ways in which languages are encoded in their orthographies because systematically representing the sounds of language on paper is important in the study of speech. It would be convenient if an ORTHOGRAPHY, or spelling system, had one and only one sound or syllable associated with each symbol. Although some orthographies—like that of Spanish—approach this ideal, perfect correspondence occurs only in phonetic transcription, as in the INTERNATIONAL PHONETIC ALPHABET, in which each sound is represented by a single symbol or cluster of symbols. Orthographies are at best phonemic systems, with allophonic variation not directly represented in spelling. This fact has implications for learning to read, since L1 readers learn with a sound system already in place. Further implications arise in the development of orthographies for unwritten languages. Another issue concerns the ways in which orthography can be used to facilitate pronunciation teaching. Most second language learners are literate and learn pronunciation partly or mainly through reading. In doing so, they must learn to decode unfamiliar words successfully (Dickerson, 1992). Even when

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the connection between SOUND AND SPELLING is relatively transparent, the influences of L1 orthography and of unfamiliar orthographic conventions add complexity to the decoding process and may require more explicit attention to prediction (see PREDICTION IN TEACHING PRONUNCIATION) using rules.

Acoustic phonetics concerns the analysis of speech in terms of its measurable physical properties. Until the late 20th century such analysis was restricted to phonetics research laboratories with specialized equipment. Today, however, technological innovations and freely available SPEECH ANALYSIS SOFTWARE such as Praat (Boersma & Weenink, 2010) have made sophisticated analyses possible for anyone with the appropriate expertise. The acoustic phonetic approach has been applied extensively in L2 speech research. For example, numerous studies have examined voice onset time (VOT) differences between first and second language speakers, variation in formant frequencies, and differences in the durations of SEGMENTS. However, much less work has been carried out on suprasegmental phenomena and VOICE QUALITY in L2 production. An understanding of acoustic phonetic analyses requires specialized knowledge not typical of learners and teachers; therefore, direct applications in language teaching are limited. Nonetheless, automated acoustic analyses can provide useful feedback to students on some aspects of their oral productions. Hardison (2004), for instance, observed improvements in L2 prosody when learners saw representations of their speech on a real-time pitch display.

Because of the overlap between phonetics and phonology, many of the concepts discussed above cannot be regarded as falling exclusively within one domain or the other. Phenomena usually seen as more pertinent to *phonology* include processes such as segmental substitution, epenthesis, and deletion and their consequences on the structure of SYLLABLES. L2 structuralist phonology exploited the contrastive analysis framework, which was concerned with transfer and interference from the L1 at the level of the allophone. That unit of analysis is still common in research and teaching, and much recent work continues the tradition of COMPARATIVE PHONETICS AND PHONOLOGY that emphasizes the effect of differences in L1 and L2 phonological inventories on L2 learners' areas of ease and difficulty. However, GENERATIVE SECOND LANGUAGE PHONOLOGY, which appeared in the mid-20th century, approached the PHONOLOGICAL ANALYSIS of L2 learning in terms of binary distinctive features. Later innovations have included applications of markedness and phonological universals to account for aspects of L2 learning that appear to be inexplicable in terms of L1 influences, and therefore fall out of the purview of contrastive analysis. Although these recent frameworks have played a noteworthy role in L2 research, their impact on language teaching is limited.

L2 SPEECH PERCEPTION research describes and accounts for the ways that language users distinguish and categorize speech phenomena. Language experience exerts a powerful influence on speech perception. By the end of the first year of life, infants become closely attuned to native-language contrasts and lose their sensitivity to sound distinctions in other languages (Werker & Tees, 1984). Although it facilitates first language acquisition, this process may underlie many difficulties in L2 PHONOLOGICAL ACQUISITION. Because language learners tend to assimilate L2 phones to their native-language representations (Best & Tyler, 2007), they may fail to perceive critical phonological distinctions in L2. Theory and research (Flege, 1995) link perception to difficulties in L2 production in that aspects of speech that are incorrectly perceived are unlikely to be correctly produced. A relatively new but promising line of work on this issue concerns SECOND LANGUAGE SPEECH PERCEPTION AND THE BRAIN. A potential pedagogical application of L2 perception research is perceptual training. Many studies have indicated that L2 perception can be improved with laboratory procedures, and that production may automatically improve as a result (Bradlow, Pisoni, Yamada, & Tohkura, 1997). Although much perceptual research has examined L2 learners of English, more work is now being carried out on learners of other

languages, and attention is being directed to phonetic phenomena that are not relevant in English, including tone (see SUPRASEGMENTALS: TONE). While this line of work seems very promising, the classroom benefits of perceptual training remain largely untested.

The study of *sociophonetics* focuses on social evaluations of pronunciation differences from speaker to speaker, from region to region, and according to situation. Phonetic variation first of all marks differences in register. Formal speech differs from informal speech, and speakers mark their awareness of social situations with varying degrees of care in their enunciation. Pronunciation variations also mark dialect differences, especially in vowel sounds, and to a lesser extent, consonants. Listeners use accent to impute social status, according to how others fit into social groupings and how they themselves fit or would like to fit. This means that accent can stand in for other factors in discrimination (Wolfram & Schilling-Estes, 2006) in areas such as housing and employment (Purnell, Idsard, & Baugh, 1999). Pronunciation shibboleths such as the pronunciation of *ask* as *aks* or *wash* as *warsh* in US English, or the non-pronunciation of [h] in British English (Mugglestone, 1995) may provide a basis for stereotyping and discrimination. Finally, pronunciation is used in positive ways as a marker of group identity, such that otherwise socially disfavored pronunciations can enhance group acceptance (Gatbonton, Trofimovich, & Magid, 2005). All these considerations come into play in the SOCIAL EVALUATION OF SECOND LANGUAGE SPEECH.

Although the study of L2 phonological acquisition mirrors some other themes in second language acquisition, much less research has been carried out on this topic than on pragmatics, grammar, and vocabulary. The research has, however, indicated that phonological acquisition is unique because L2 speech is commonly characterized by a FOREIGN ACCENT, in contrast to potential attainment of other aspects of language. Because L2 accents are so common and so salient to listeners, they have fundamental social consequences and even play a major role in LANGUAGE ANALYSIS FOR THE DETERMINATION OF ORIGIN (LADO). Many fundamental questions about acquisition remain only partially answered. We know that L2 learners commonly acquire at least some aspects of the L2 sound system, but we understand little of how L2 pronunciation develops and whether it follows the same route as L1 phonological learning. Nor have we established the degree to which foreign accents arise because of maturational constraints (e.g., a critical period), input and experience, muscular patterns, and desires to reflect identity. It is also unclear which L2 phonological features require PRONUNCIATION INSTRUCTION and which features develop with exposure alone, as well as which PRONUNCIATION TEACHING METHODS AND TECHNIQUES are most effective. Nor are the contributions of individual variation in motivation and aptitude well understood. These matters, along with SOCIAL INFLUENCES ON SECOND LANGUAGE SPEECH ACQUISITION are likely to receive much greater attention in acquisition research in the years to come.

An important application of phonetics and phonology is the teaching of pronunciation to L2 learners. Pronunciation played a central role in several influential teaching methodologies in the early and mid-20th century, though later it was de-emphasized because adult learners rarely achieved native accents (Pica, 1994). Over the past three decades, the study of pronunciation has regained its importance because of a new emphasis on research and teaching of INTELLIGIBILITY and FLUENCY (Munro & Derwing, 1995; Derwing, Munro & Thomson, 2008). This orientation on L2 speech recognizes that ACCENT REDUCTION in itself is not necessarily of communicative value. This refocusing of concern is tied to a greater interest in suprasegmentals. Although teaching stress (see SUPRASEGMENTALS: STRESS) and intonation (see SUPRASEGMENTALS: INTONATION) had strong advocates during the middle decades of the 20th century (O'Connor & Arnold, 1973) it was not until the 1980s that there was a shift away from an instructional focus on segmentals (vowels and consonants) toward suprasegmentals and voice quality (Esling & Wong, 1983; Gilbert, 1984).

Targets for pronunciation teaching are usually chosen based on teachers' informed intuition and knowledge of students' L1 sound systems. More recent research has examined which pronunciation features have the greatest impact on intelligibility. Here, specialists are increasingly concerned with the problem of identifying appropriate PRONUNCIATION MODELS, particularly given the growing attention to PRONUNCIATION IN WORLD ENGLISHES. A closely related issue is how PRONUNCIATION ASSESSMENT is best carried out. Although the need for pronunciation teaching is now generally accepted, many important issues remain unresolved, including what goals teachers should emphasize, when pronunciation teaching is effective, how pronunciation fits with other areas such as listening and vocabulary, and what relative importance should be given to segmentals and suprasegmentals. Further work on such matters as rhythm (see SUPRASEGMENTALS: RHYTHM), discourse intonation (see SUPRASEGMENTALS: DISCOURSE INTONATION), and prosody in conversation (see SUPRASEGMENTALS: PROSODY IN CONVERSATION) will shed more light on that important issue.

Technology provides many tools for the study of phonetics and phonology. These make it possible to measure accurately temporal phenomena such as vowel duration, fundamental frequency for evaluating intonation, and spectral properties for visualizing various aspects of utterances. Applied linguists use many of these tools, including computer visualization of the speech signal when developing COMPUTER-ASSISTED PRONUNCIATION TEACHING for L2 learners, and audio and video recording to describe, analyze, and illustrate speech patterns accurately. One widespread pedagogical application employs visualization techniques such as pitch tracings and spectrograms. The former has been the more successful technique, likely because its iconicity (e.g., traces go up as pitch goes up) is easier for learners and teachers to interpret. Another widespread application is ASR (automatic speech recognition), known for its role in dictation software. It has also been used to provide feedback to L2 learners, develop phone-answering programs, and provide voice recognition security. Notably, ASR is far superior in applications for L1 speakers than in L2 applications.

SEE ALSO ON PHONETICS AND PHONOLOGY: Abercrombie, David; Bowen, J. Donald; Brazil, David; Catford, J. C.; Flege, James; Gimson, A. C.; Halliday, M. A. K.; Jones, Daniel; Ladefoged, Peter; Lehiste, Ilse; O'Connor, J. D.; Pike, Kenneth Lee; Prator, Clifford

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Phonological Acquisition

NICLAS ABRAHAMSSON

Introduction

Within only a few years, children master the grammatical and phonological elements, rules and structures of their first language (L1). That is, barring any history of speech pathology, language impairment, or severe isolation from language exposure, children eventually become as proficient in their L1 as their models are and will speak the language with the same native accent as adult speakers of their immediate language community do. On the other hand, most people who acquire or learn a second language (L2) end up speaking that language in ways that differ from the native-speaker norm, both grammatically and phonologically; except in cases of very early acquisition, L2 speech is characterized by a foreign accent that often reveals the speaker's L1 background. Depending on a number of learner-internal and -external factors, a non-native accent can range from heavy and difficult to understand to very subtle and hardly noticeable.

The child acquiring an L1 is faced with the enormous task of learning how to accurately perceive and articulate all the speech sounds of the target language. An important phase in this process is the babbling stage, during which the child explores numerous attested and unattested combinations of vowels and consonants. Moreover, the child must acquire all the phonemic distinctions at the segmental level, the feature distinctions at the subsegmental level (e.g., [±voice] of consonants), and all their allophonic manifestations and distributions (e.g., aspirated [p^h] in *pit* but unaspirated [p] after /s/, as in *spit*). In addition, the child needs to acquire suprasegmentals, that is, the *syllable structure*, *phonotactic constraints*, and the *prosodic system*, which comprises *dynamic* aspects (i.e., stress and rhythm), *tonal* aspects (i.e., intonation), and *temporal* aspects (i.e., duration).

For the L2 learner, on the other hand, an established phonological system is already in place. Therefore, rather than learning a whole new phonological system, the task often consists only of *adjusting* perception and articulation of familiar speech sounds, phoneme and feature distinctions, and allophonic distributions. For example, the English learner of L2 Swedish must make /ɪ/ and /u/ slightly more closed and change the place of articulation of /t/ and /d/ from alveolar to dental. However, this does not mean there is nothing to learn or to add to the existing phonology. For example, an English speaker learning Zulu needs to introduce clicks—a whole new class of speech sounds—into the phonological system. Additionally, the English learner of Swedish who wants to pronounce a word such as *pytt* [pʏt] accurately needs to use an already familiar subsegmental feature, lip rounding, on a class of vowels to which this feature does not apply in English: front vowels (i.e., [ɪ] + rounding → [ʏ]). This process creates a novel phonemic distinction, in which the new, rounded vowel [ʏ] takes up some of the acoustic space previously occupied partly by the unrounded [ɪ]. Similarly, the L2 learner needs to acquire the syllable structure and prosodic aspects of the target language, sometimes in relation to what is already known through the L1 (e.g., phonotactic constraints that may be stricter, looser, or simply different) and sometimes from scratch (e.g., an L1 speaker of a nontone language like English, learning a tone language, such as Chinese).

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To provide an overview of the central issues in L2 phonological acquisition, the current entry focuses on (a) the characteristics of variation and development of interlanguage phonology; (b) crosslinguistic influences and universal constraints in phonological acquisition; and (c) the relation between age of acquisition and ultimate attainment of L2 pronunciation. The emphasis will thus be on adult acquisition of a *second* language phonology, although comparisons with L1 phonological acquisition will also be addressed when relevant.

Phonological Variation and Development

In L2 acquisition research, the developing grammar is usually referred to as the learner's interlanguage (IL) (Selinker, 1972). Accordingly, the developing phonological system is the IL phonology, or simply *inter-phonology*. It consists of (a) phonological rules, sounds, and features that are identical to those of the L1 and L2, and (b) rules, elements, and features that are entirely different and independent from those of the L1 and L2. IL systems differ from natural languages in certain ways; for example, by exhibiting relatively high synchronic variability and diachronic instability (which simply means that they undergo changes over time as a function of learning). Nevertheless, ILs are natural systems, containing only rules, elements, and features that also exist in primary languages. Furthermore, the variability that characterizes ILs is highly systematic.

A much-documented characteristic of L2 phonological acquisition is the high degree of variability of the forms produced by individual learners at a single point in time. Native languages, too, contain variability; for example, the alternate use of the variants [θ] and [t] for American English /θ/ (Labov, 1969). However, ILs contain nontarget-like variants (e.g., [s] in addition to [θ] and [t] in German–English IL), and exhibit variation where the target system does not (e.g., the variants [z] and [s] for English /z/ in Swedish–English inter-phonology).

Although "erroneous" from a target-language perspective, however, these variable learner systems are not random; rather, contextual factors influence the systematicity of such variation. First, the *sociolinguistic setting* in terms of the formality of the speech situation (Beebe, 1980) or the nature of the language task (Dickerson, 1975) is one determinant. As a function of *style shifting* (Tarone, 1983), L2 speakers use different speech patterns depending on the social situation. The L2 learner's vernacular style mirrors the most systematic and most consistent and, therefore, "true" version of the IL, which actually makes the vernacular the more interesting variety to study. At the other end, formal styles appear least systematic, because of greater temporary intrusion of rules from the L1 and L2. This means that formal styles may be (temporarily) more "correct" in terms of a greater number of target-language forms, but, at the same time, (temporarily) more susceptible to L1 transfer (Beebe, 1980). It seems that formal styles reflect the learner's conscious, irregular, and insecure use of explicit phonological L1 and L2 competence, while vernacular styles reflect the unconscious and automatic workings of the most stable and implicit version of the IL system.

Another central factor governing IL variability is the linguistic context. Dickerson (1975) found that Japanese learners of English pronounced /z/ more accurately before vowels than before certain consonants or silence. Production was also more target-like word-initially than word-finally. Furthermore, Spanish learners of English or Swedish insert an epenthetic vowel before initial /s/-clusters (e.g., *spoon* → [ɛspu:n]) less often if the preceding word is vowel-final (e.g., *two spoons*) rather than consonant-final (e.g., *ten spoons*) (Carlisle, 1991; Abrahamsson, 1999). Similarly, Chinese learners of English or Swedish tend to either delete word-final consonants or add an epenthetic vowel (e.g., *dog* → [dɔ] or [dɔgə]) less often if the following word is vowel-initial (e.g., *dog is*) rather than consonant-initial

(e.g., *dog drinks*) (Abrahamsson, 2003a). The variable use of target versus nontarget forms in both these cases is governed by the possibility of resyllabifying individual members of consonant sequences by associating them with adjacent vowels. If the immediate context consists of other consonants, a new syllable is created by adding a vowel, or a consonant is simply deleted.

Unfortunately, longitudinal studies of inter-phonological development are rare. However, the few that exist on the ratio between errors and correct forms suggest that, rather than being linear, the developmental curve is U-shaped (Abrahamsson, 1999, 2003b). This means that the error rates may be quite low in the initial stages, and that they increase rather than decrease during the following phases of acquisition. Thereafter, a stable plateau phase with relatively high error rates may follow, after which error rates may decrease again. The initial increasing error versus target ratio can be explained as a function of increased speech rate, fluency, and the learner's emerging ability to focus on content rather than linguistic form, while the decreasing ratio at later stages can be interpreted as "real" acquisition, that is, the successive replacement of IL forms with target-language forms.

During periods of high error rates, however, the changing *internal* ratio between different nontarget-like forms indicates that the IL system is undergoing qualitative changes in the direction of target-language norms. These changes, where nontarget IL forms are replaced by other nontarget forms, or a (quantitatively defined) *preference* for one nontarget form is replaced by a higher preference for another nontarget form, should be viewed as "real" acquisition, too, as they can be described as sequential approximations to the target forms. In other words, target forms are approximated over time through universal developmental sequences. One such sequence is seen in the acquisition of final consonants. The three strategies (or processes) *consonant deletion*, *vowel epenthesis*, and *feature change* mentioned earlier always appear in that particular order before final consonants are pronounced in a target-like manner (Hammarberg, 1988; Hansen, 2001; Abrahamsson, 2003b); that is:

/dɔg/ *dog* → [dɔ] > [dɔgə] > [dɔk] > [dɔg]

This does not mean that every learner will stop at every stage, nor does it mean that the stages are discrete—some learners may pass through the sequence quickly with no or few overt manifestations of, for example, epenthesis, while others will use all IL forms (as well as the target form) simultaneously. In the latter case, only a frequency analysis over time will show that the preferences for different IL forms slowly shift in accordance with this developmental sequence (see, e.g., Abrahamsson, 2003b; see also Dickerson, 1975, for similar longitudinal effects in the acquisition of English /z/). Different learners may also spend different amounts of time at different stages—for example, a German learner of English may pass through the deletion and epenthesis stages rather quickly but get stuck at the feature-change stage because final devoicing is a phonetic process in German. The same sequence has been observed in L1 children, even though epenthesis seems quite rare in their development; however, *if* an epenthesis stage can be observed in a child's L1 development, it is always preceded by a deletion stage (Weinberger, 1994).

L1 Transfer and Crosslinguistic Influence

One crucial way in which L1 and L2 acquisition differ is that the latter is inevitably affected by one or several previously acquired languages. The degree and nature of this influence vary between linguistic levels: While morphosyntax is relatively unaffected by transfer from the L1, the developing L2 phonological system is heavily colored by the already established L1 phonology (which is why different foreign accents can be identified quite easily). According to the behaviorist view prevalent in the 1940s, 1950s, and 1960s, L1

structures, elements, and forms were automatically transferred into the L2, or, put differently, old habits interfered with the formation of new habits. According to the *contrastive analysis hypothesis* (CAH) (Lado, 1957), a comparison of a learner's L1 with the L2 would reveal the differences between the systems, and one would thus be able to predict the areas of difficulty: In areas where the two systems were identical or similar, any transferred forms would work (positive transfer, facilitation), while in areas where the two systems differed, the transferred forms would result in errors (negative transfer, interference). Furthermore, the greater the difference between the L1 and L2 systems, the greater the learning difficulty would be. Although intuitively and logically appealing, the CAH made many faulty predictions when tested against learner-language data, and it was eventually abandoned when it was discovered that IL development was governed primarily by factors other than interference from the L1 (see next section).

Moreover, current knowledge about transfer suggests that it operates to different degrees under different conditions. In contrast to what was implied by the CAH, interference seems to be most likely when, for example, an L2 phoneme and an L1 phoneme fulfill a similarity condition. Flege (1987) showed that English learners of L2 French had greater difficulties with French /u/ than with /y/ because English has a similar /u/ sound but no /y/ phoneme. In other words, it seems that *novel* sounds are easier to acquire than sounds with a *similar* (but not identical) equivalent in the L1.

Another condition on transfer is the degree of *speech formality* or *speech style*. While generally a classroom situation where the focus is on form generates fewer errors—including transfer errors—than a situation outside the school does, a formal situation may, in fact, generate specific L1 forms that would not surface under less formal conditions. Beebe (1980) observed that Thai learners of English used a high-prestige L1 variant of /ɹ/ in their English if the speech style was formal, but used more target-like variants when speaking in a less formal style.

Still another condition on transfer is the learner's current developmental level. Corder (1978) described the learner's system as a "restructuring continuum"; that is, the learner's point of departure is the L1 system, which is stepwise replaced by the L2 system. According to this view, one would expect transfer errors to be quite frequent at the initial stages but less frequent at more advanced stages in development, where developmental errors would instead dominate. In fact, this hypothesis is captured by Major's (1987) *ontogeny model* (Figure 1), according to which phonological transfer errors dominate at the beginning of

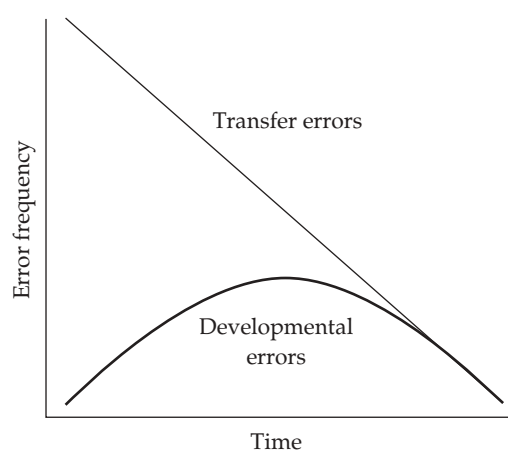

Figure 1 The ontogeny model (adapted from Major, 1987)

L2 acquisition but steadily decrease with time, while developmental errors are practically nonexistent at the early stages, but increase and then decrease with time.

Language Universals and Typological Markedness

As with L2 acquisition generally, L2 phonological acquisition shares many universal features and processes with L1 acquisition. L1 children, as well as adults learning an L2, delete consonants, insert epenthetic vowels, and devoice final voiced obstruents. Furthermore, both child and adult learners substitute certain sounds for others, for example /r/ → [l] or [j], and they unround front vowels, for example /y/ → [i]. On the other hand, some typical child language processes, such as reduplication of syllables (e.g., when *shoe* → [tutu] or *ball* → [bʌbʌ]), do not occur in adult L2 acquisition, while transfer processes, which characterize adult phonological learning, do not occur in monolingual L1 acquisition.

IL development in many ways mirrors the typological distributions, occurrences, and preferences of features in the world's languages. For example, one typological universal is that if a language has a voicing distinction for obstruents in word-final position, then that language also has this distinction in word-medial and word-initial position—there are no languages that make this distinction only word-finally. In other words, the existence of voiced obstruents word-finally *implies* voiced obstruents in all other positions, while the opposite is not true: There are many languages with a voicing distinction word-initially and word-medially that lack voicing in final position (e.g., German and Russian). Another implicational universal concerns syllable structure: A language that allows three-consonant (CCC) sequences word-finally also allows two-consonant (CC) clusters and single consonants (C) in that position. Thus, the existence of CCC implies the existence of CC, which in turn implies C, but the opposite implicational order is not true: There are many languages that allow only one final consonant but no clusters (e.g., Chinese and Spanish). These implicational relations can also be expressed in terms of *typological markedness* (Eckman, 1977), where voiced obstruents and three-consonant clusters in word-final position are relatively infrequent among the world's languages, and therefore are marked structures, while voiceless and singleton consonants word-finally are quite common and therefore unmarked. Markedness relations are reflected in both L1 and L2 acquisition: The voicing distinction is acquired first in word-initial (least marked) and last in word-final (most marked) positions (Eckman, 1977), and final singleton consonants (least marked) are mastered before two-consonant clusters (more marked), which are acquired before three-consonant clusters (most marked) (Hansen, 2001; Abrahamsson, 2003a).

One very specific phonological universal has to do with the degree of *sonority* of consonants. Acoustically, sonority can be defined as the degree of resonance of a speech sound, which in turn can be traced to its openness in terms of articulation. The *sonority hierarchy* (Figure 2a) refers to sound classes. Vowels are the most sonorous, since they are produced without obstruction of the airstream. Consonants, on the other hand, vary as to type and degree of obstruction, and therefore in sonority. *Semivowels* (such as the initial sounds of *well* and *yell*) are the most sonorous consonants, followed by *liquids* (e.g., /r, l/), *nasals* (e.g., /m, n, ŋ/), *fricatives* (e.g., /s, z, v, f, ʃ, ʒ, θ, ð/ and *stops* (e.g., /p, b, t, d, k, g, ʔ/).

Universally, syllables are organized according to the *sonority sequencing principle* (Figure 2b), which states that optimal syllables have onsets with consonants rising in sonority the closer their proximity to the nucleus (the vowel), and codas with consonants descending in sonority the greater their distance from the nucleus (Clements, 1990). This principle, producing syllables conforming to the *universal canonical syllable structure*, sanctions words like *print*, *snails*, and *blown* but prevents forms like **rpitn*, **nsaisl*, and **lbonw* from occurring. However, languages vary in faithfulness to principles of sonority. For example, English, Swedish,

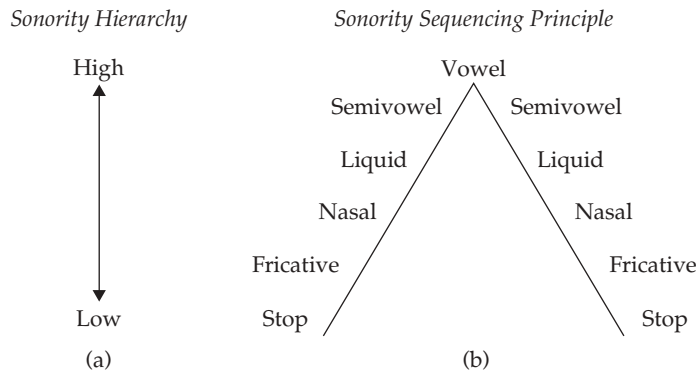

Figure 2 (a) The sonority hierarchy; (b) the sonority sequencing principle or the universal canonical syllable structure

and many other European languages have onsets with /s/ + stop (*spit* and *street*), codas with stop + /s/ (*six* and *lips*), and onsets and codas with consonants of equal sonority (e.g., the Swedish nouns *svar* 'answer', *namn* 'name', *rufs* 'tousle', and *takt* 'beat'). Language acquisition, too, is constrained by sonority: Onsets or codas going against principles of sonority are more difficult to pronounce and to acquire than those obeying them (e.g., Carlisle, 1991: Abrahamsson, 2003a). However, just as primary languages sometimes ignore principles of sonority, so do ILs (see Abrahamsson, 1999, 2003a; Hancin-Bhatt, 2000).

Age of Acquisition and Ultimate Attainment of L2 Phonology

Young infants can discriminate a wide range of speech sounds representing contrasts in their native language and non-native contrasts. For instance, Werker, Gilbert, Humphrey, and Tees (1981) showed that 6- to 8-month-old infants from English-speaking environments perceived a Hindi consonant contrast in a native-like manner. However, the ability to discriminate phonemic contrasts not belonging to the native language declines after 6 months and disappears by 12 months. That is, after one year, infants have already tuned in to the phonetic distinctions in their L1, and are insensitive to contrasts not present in their immediate linguistic environment (e.g., Werker & Lalonde, 1988).

Most children who acquire an L2 in a naturalistic context do so relatively quickly and easily. Typically, at adulthood, their ultimate attainment—especially in terms of phonology and pronunciation—is indistinguishable from that of native speakers. The majority of adult L2 learners, on the other hand, progress relatively slowly (except in absolute initial stages), and they often need formal teaching in order to develop to any significant extent. Most importantly, their ultimate attainment is far from that of L2 children or native speakers, not least in the area of pronunciation; in fact, all adult learners will retain *some* degree of foreign accent.

A strong correlation between *age of onset* of L2 acquisition (often operationalized as the age of immigration) and *ultimate attainment* has been observed in all studies of age effects in pronunciation (e.g., Asher & García, 1969; Flege, 1999; Munro & Mann, 2005). The robustness of these results has led some researchers to assume the existence of maturational constraints on language acquisition, usually in the form of a *critical period* (CP) during which language acquisition must take place in order for native-like pronunciation to develop. Some have even suggested that, because of the physical basis for speech, a CP should exist only for pronunciation but not for higher-order language components such

as grammar or lexis (e.g., Scovel, 1988). Others have proposed multiple CPs with different time schedules, of which one (or several) would be relevant for (different parts of) phonology, while others would be associated with (different aspects of) morphology, syntax, and the lexicon. Still other researchers point to the existence of a few extraordinary learners who, despite having begun acquisition after the closure of the proposed CP (i.e., even as adults), have attained a seemingly native-like command of the L2, including their pronunciation. These researchers conclude *either* that there is no CP for language acquisition *or* that there are individual factors (extensive exposure or training, extraordinary motivation or talent, etc.) that may compensate for the biological disadvantage of a late start (for an overview, see Bongaerts, 1999).

Final Remarks

The acquisition of phonology is very much like a miniature version of language acquisition in general, and when telling the story of (inter-)phonological development, one will naturally cover the most typical and most important factors of (inter)language development. As shown here, many central issues of general (second) language acquisition research, such as variability, systematicity, developmental sequences, crosslinguistic influence, typological markedness, age of onset, and the critical period, can be illustrated easily with phonological examples, and the list could be extended to cover social circumstances, cognitive processing and other individual differences (e.g., language aptitude). However, an entry of this kind cannot be exhaustive; the focus here was therefore on issues shared by other L2 acquisition areas and—for the most part—by L1 acquisition. As a result, many important questions concerning the acquisition of *second* language phonology have not been addressed. For example, the influence of (L1 and L2) orthography on L2 phonological development has been excluded (see Bassetti, 2008), as has the entire area of intelligibility and comprehensibility of foreign accents (see, e.g., Munro, 2008). Similarly, any pedagogical implications or discussions on teaching pronunciation must be found elsewhere (see, e.g., Bradlow, 2008; Derwing, 2008).

SEE ALSO: Critical Period; Crosslinguistic Influence in Second Language Acquisition; Foreign Accent; Interlanguage; Learner Varieties; Phonetics and Phonology: Overview; Phonological Analysis; Prediction in Teaching Pronunciation; Social Influences on Second Language Speech Acquisition; Speech Perception

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Phonological Analysis

ROY C. MAJOR

Phonology is the study of how speech sounds function as a system, and phonological analysis involves analyzing the sound systems of languages. A variety of approaches to the study of phonology have been developed, but one matter on which linguists agree is that phonological analysis requires a way of representing speech sounds on the page—a set of phonetic symbols that are always used in the same way. To distinguish these from standard spelling, square brackets [ ] are used around a *phonetic transcription*, that is, the symbols representing speech sounds. Spelling and other orthographic representations of words are often irrelevant to phonology. For example, *laugh* and *calf* end with the sound [f], even though the last parts of the words are spelled differently. Likewise, *won* and *one* are pronounced identically but are spelled differently, and both words begin with [w]. Different languages have different inventories of sounds. Furthermore, some of the same sounds function differently in different languages. English *day* and *they* contrast in the initial consonant sounds [d] and [ð], and a native speaker (NS) of English thinks of them as different sounds. Mandarin, however, has [d] but no [ð]. Spanish has both sounds, but they function differently from English. The *d* in *día* 'day' is pronounced [d] when it begins an utterance, but when *d* follows a vowel it is pronounced [ð] as in *nada* 'nothing' and *cinco días* 'five days'. In contrast to an English NS, an NS of Spanish thinks of them as the same sound because they function as one unit called a phoneme.

A *phoneme* is the minimal unit of sound that can be used to distinguish meaning. *Allophones* are the various ways a phoneme is pronounced, the subunits of a phoneme. Phonemes are represented in slashes / / and allophones in square brackets [ ]. Phonemes themselves are not sounds; rather they are abstract units. Allophones, however, are the phonetic realizations of the phoneme. In other words, phonemes are in the mind and allophones are what we actually hear. The phonetic symbol for the phoneme is always also the phonetic symbol for one of its allophones. For example, English /d/ has [d] as one of its allophones. In the English and Spanish examples above, English has two separate phonemes /d/ and /ð/ with the allophones [d] and [ð] respectively, while Spanish has one phoneme /d/ with two allophones [d] and [ð].

Three Ways to Find Phonemes and Allophones of a Language

Phonological analysis involves describing the rules governing pronunciation in a language. This includes finding the phonemes and distinguishing between phonemes and allophones. The first step is to look for a *minimal pair*: two words with different meanings that are identical phonetically except for one sound and with the sounds in the same order. For example, English *cap* and *cab* form a minimal pair. The existence of a minimal pair indicates that the two sounds in question, [p] and [b], are separate phonemes /p/ and /b/ because interchanging [p] and [b] changes the meaning of the word.

A second way to evaluate relationships among sounds is to look for instances of free variation. If two or more sounds freely vary and never contrast (i.e., there is no minimal pair) they are allophones of one phoneme, not separate phonemes. Variation occurs within

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every language. An English speaker pronouncing the word *sit* may choose not to emphasize the final /t/ and simply produce it as [t]. However, the same speaker, when giving a forceful command to a dog to 'sit', may release the /t/, giving it a puff of air called aspiration, [t^h]. These two sounds [t] and [t^h] are in free variation—they never contrast, and the substitution of one for the other never makes a difference in the basic meaning of the verb *sit*. Of course there may be stylistic and emotional differences between these two versions, but the verb still has the same meaning. In this example, /t/ is the phoneme with allophones [t] and [t^h]. Free variation is distinguished from a minimal pair because with minimal pairs a change from one sound to another can potentially make a meaning difference: Switching the final [t] or [t^h] to [d] would change the meaning of *sit* into *Sid*, and, because of this, /t/ and /d/ are separate phonemes. Because different languages have different sound systems, in one language two sounds may be in free variation and allophones of one phoneme, while in another language the same two sounds may be separate phonemes because of the existence of a minimal pair. In English [t] and [t^h] are allophones of the same phoneme /t/, but in Hindi they are separate phonemes /t/ and /t^h/ because they contrast: [sat] means 'seven' and [sat^h] means 'company'.

The third way to determine phonological relationships is by looking for instances of *complementary distribution*, which occurs when two or more similar sounds are never found in the same phonetic environment and never contrast (i.e., there is no minimal pair). The existence of complementary distribution indicates that these sounds are allophones of one phoneme, not separate phonemes. To demonstrate such a relationship, place the palm of your hand in front of your mouth and then pronounce *pill* and then *spill*. If you are an NS of English you will feel much more air expelled with *pill* than with *spill*. The /p/ in *spill* is [p], while the /p/ in *pill* is aspirated [p^h]. Now try to make *pill* with an unaspirated [p] and *spill* with an aspirated [p^h]. If you are able to do so, the words will sound odd or at least non-native. In English, [p] and [p^h] are in complementary distribution and therefore allophones of the same phoneme /p/ (additionally there are no minimal pairs for these two sounds). Specifically, [p] and [p^h] are never found in the same phonetic environment: [p^h] always occurs at the beginning of a stressed syllable (including a one-syllable word) and [p] never occurs there; [p] occurs after [s] in the same syllable. Contrast *this pill* with *this spill*. Although in both pairs /p/ occurs after [s], in *this pill* the [s] is part of the previous syllable; therefore, the /p/ is aspirated [p^h].

One can conceptualize complementary distribution as an always/never situation: [x] always occurs in a specific environment and [y] never occurs there. To make an analogy, a chameleon changes color. On a brown leaf it turns brown but on a green leaf it turns green. It is still the same chameleon, even though it changes color. We can think of the neutral chameleon as the phoneme and the brown and green versions as its allophones.

Although an NS may not be able to identify all the phonemes of his or her language, linguists have long known that phonemes have psychological reality (Sapir, 1949). For example, an English speaker is very aware that /p/ and /b/ are different sounds, as well as /r/ and /l/. On the other hand, NSs are usually completely unaware of the allophones (be they in free variation or complementary distribution). In the NS's mind, all of the allophones of a given phoneme are conceptualized as a single sound. For instance, some speakers of Japanese and Korean cannot hear the difference between English /r/ and /l/ because their languages have one phoneme for these two sounds and do not distinguish between the two—they are allophones of the same phoneme and to some speakers *fry* and *fly* sound the same. To an NS of English the *p*s in *pill* and *spill* are the same sound (see example above) and the *n*s in *pin* and *pinch* are the same. In the latter example, the two *n*s are actually different phonetically. To demonstrate this, first pronounce *pin* and elongate the *n* sound. Next pronounce *pinch* and also prolong the *n* before you pronounce

the *ch*. When pronouncing *pin* you can feel the tongue tip touching behind the teeth but with *pinch* the blade of the tongue touches the hard palate. These two different sounds ([n] and [ɲ] respectively) are in complementary distribution and are therefore allophones of one phoneme /n/: [ɲ] occurs before a *ch* sound or *j* sound (as in *grinch* and *cringe*) and [n] elsewhere.

Phonological Rules

Another way of conceptualizing the relationship between phonemes and allophones is in terms of *phonological rules* (also called phonological processes), which is a more economical way of stating complementary distribution and free variation. Instead of stating allophonic distribution in terms of "occurs," an arrow → replaces "occurs," the arrow signifying "becomes" or "is realized as." In the case of *pinch* described earlier, /n/ becomes [ɲ] before a *ch* sound or *j* sound. To capture this process, we can write the phonological rule as follows:

/n/ → [ɲ] before [tʃ] and [dʒ]

Using shorthand notion this rule can be further abbreviated as:

/n/ → [ɲ]/___[tʃ dʒ]

To take another example from English: When a nasal consonant occurs in coda position (after a vowel in the same syllable) the vowel is nasalized, as in *loom*, *own*, *king*: [lũm], [õn], [kĩŋ]. When the nasal begins a syllable (called an *onset* consonant) the vowel is not nasalized, as in *no* [no], not *[nõ]. Contrast *see no* with *scene O*: [sino] [sĩno]. This English rule can be stated as follows:

$$\text{Vowel} \rightarrow [+\text{nas}]/\_\_\_\text{C}\begin{Bmatrix}[\text{coda}]\\[+\text{nas}]\end{Bmatrix}$$

Distinctive Features

Different languages differ in terms of what features function to contrast meaning. A common feature in many languages is [voice]. The vocal chords vibrate in a *voiced* sound but they do not in a *voiceless* sound. To feel this difference make an *s* sound [s] while placing your hand on your Adam's apple (voice box or larynx) and then do the same for a *z* sound [z]. You should feel the vibration for the voiced [z], but not for the voiceless [s]. In English the pairs *cap/cab*, *ice/eyes*, *hit/hid* all contrast in the last sounds; [p s t] are *voiceless* sounds and [b z d] are *voiced* sounds. Thus, in English the feature [voice] is a *distinctive feature*. For the pair *hit/hiss*, the relevant distinctive feature is [continuant]. (The air flow continues when pronouncing the [s] in *hiss* but it stops when making the [t] in *hit*.)

Larger Units: Prosody

Prosody, also called suprasegmentals, includes units larger than the segment, such as *stress*, *intonation*, *tone*, and *rhythm and timing*. These aspects of speech occur simultaneously with vowels and consonants and may stretch across syllables, words, and larger units.

Stress is contrastive in many languages, such as English, meaning that changing the stress from one syllable to another can change meaning. For example, *differ* and *defer* contrast in stress placement. In *differ* stress falls on the first syllable, while in *defer*, it occurs on the second. French, however, has no contrastive stress. Yet, when hearing French, speakers of languages having contrastive stress often hear stress on the last syllable, even though it is not contrastive in native French.

Intonation is the change in pitch over an utterance or phrase, which can signal differences in meaning. In English a rising intonation at the end of an utterance usually indicates a yes/no question (*do you like coffee?* or *you like coffee?*) and a rising/falling intonation typically represents a simple declarative statement (*I like coffee*). In a language such as English that employs intonation to convey meaning, changes in pitch patterns usually manifest themselves over several syllables; yet, as long as the basic pattern holds, any slight changes in pitch on different syllables will not change the meaning. For example, in *you like coffee?* a rising intonation signals a question regardless of whether the pitch rise is on the first or second syllable of *coffee*.

A quite different use of pitch occurs in many languages, where a change in pitch on one syllable can make a difference in meaning. These are called *tone languages*, and they include all Chinese dialects, Thai, Vietnamese, and most African languages, including the Bantu languages. In Mandarin Chinese (standard Chinese), the syllable /ma/ has four meanings depending on its tone:

[ma]	high level	'mother'
[ma]	high rising	'hemp'
[ma]	low falling-rising	'horse'
[ma]	high-falling	'scold'

Norwegian distinguishes tone over two syllables:

[bønɪɾ]	step up tone	'peasants'
[bønɪɾ]	step down tone	'beans'

Analyzing prosodic characteristics is similar to looking for minimal pairs (or in the case of Mandarin, minimal quadruplets), where one minimal difference makes a difference in meaning.

The rhythm of languages also differs. In a *syllable-timed* language, such as Spanish, syllables are perceived as relatively equal in length regardless of stress, whereas in a *stress-timed* language, such as English, the stressed syllables are perceived as much longer than the unstressed syllables. Compare for example, an NS of Spanish's pronunciation of *la casa es bonita* 'The house is beautiful' with an NS of English's *the house is beautiful* and to an NS of Brazilian Portuguese's *a casa é bonita* (Portuguese is a stress-timed language; Major, 1981). In native English and Portuguese the stressed syllables sound much longer than in native Spanish. Furthermore in a stress-timed language the unstressed syllables tend to be shortened and even deleted. For example, *comfortable* and *temperature* are normally reduced from four syllables to three.

Phonological Analysis of Foreign Accent

Analyzing the phonology of a non-native speaker (NNS) is very similar to analyzing the phonology of an NS in both its objectives and procedures. Before discussing procedures for analyzing foreign accent, some preliminaries are in order concerning the source of

non-native productions of speech sounds. For an NNS there are two main linguistic sources of non-native substitutions: *first language transfer* (interference) and *universals* (Major, 2001). First language (L1) transfer occurs when the phonology of the L1 operates when speaking the second or foreign language. ("Foreign language" and "second language" [L2] will be used synonymously, regardless of whether the language is the second, third, fourth, or *n*th language.) For example, NSs of English may use English [r] when trying to pronounce French and German *r*s (which are very different) and an aspirated [t^h] when pronouncing French *t*, (which is unaspirated).

In contrast, sometimes the sounds the NNS produces are not due to his or her native language, although still different from an NS's pronunciation. These types of substitutions are called *universal substitutions*—they do not occur in adult NSs of either language. They are called universal because they are common substitutions children make when acquiring that language as an L1; furthermore, they occur in adult L2 learners, regardless of their L1s. Universals in L2 acquisition were documented as early as 1971 when Nemser found Hungarian learners pronouncing the English *th* ([θ]) as the sequence *sth* ([sθ]), which does not occur in either Hungarian or English. Altenberg and Vago (1983) also described substitutions due to universals in Hungarian learners of English. Major (1986) found that, when speaking Spanish, NSs of American English used an *r* that was neither native Spanish nor English but similar to a French or German *r*, even though none of the speakers had studied French or German.

Let us now consider several examples of specific features of foreign accents and how they can be analyzed. German does not distinguish between the vowel sounds in English *bet* and *bat*, the German vowel sound being closer to the sound in *bet*. A German speaker might pronounce English *bat* as *bet*, a simple case of transfer: substituting the German phoneme that is nearest to the English phoneme. Another example of transfer from German concerns syllables ending in /b/, /d/, or /g/, which in native German are pronounced as [p], [t], and [k] (*Hund* /hund/: [hunt] 'dog' but *Hunde* /hunde/: [hundə] 'dogs'). When this rule is transferred to a speaker's English the words *Bob*, *bed*, and *tog* may sound like *bop*, *bet*, and *tock*.

In contrast, now consider an NS of Japanese pronouncing these same words. In Japanese, all words end with vowels, the only exception being /n/ (e.g., *Nippon* 'Japan'). When pronouncing these English words above, Japanese speakers often insert vowels, resulting in *Bob*[u], *bed*[o], and *tog*[u], also a case of L1 transfer (e.g., the loanword *Big Mac* in Japanese is [bigumaku]). More advanced learners may overcome this tendency to insert vowels, but instead of pronouncing these words with final [b d g], they may pronounce them with final [p t k] as a German speaker would, even though Japanese has both /b d g/ and /p t k/. In the case of the German speaker the substitutions are due to transfer, but for the Japanese speaker, transfer cannot explain the substitutions because in native Japanese there is no rule changing [b d g] → [p t k] in final position, and in fact, none of these sounds occurs in this position. The Japanese substitutions are due to universals—substitutions that are not due to L1 transfer. They are truly universal because the same substitutions occur in other L2 learners of English with different L1s and are legion in children learning English as an L1. Furthermore, this rule, called *terminal obstruent devoicing*, is common in many languages of the world (e.g., Armenian, German, Maltese, Russian, and Turkish).

All L2 substitutions can be stated in terms of rules, regardless of whether the substitutions are caused by transfer or universals. As seen in the following examples, the rules are stated in the same manner we have employed for NSs regarding phonemes and allophones:

1. A Spanish speaker uses a *ch* sound ([tʃ]) for both English *sh* and *ch* sounds (/ʃ/ and /tʃ/): *chew* and *shoe*: [tʃu]

/tʃ ʃ/ → [tʃ]

2. An Arabic speaker pronounces *luck*, *lock*, and *lack* identically: [lak]
   /æ a ʌ/ → [a]
3. Italian, Japanese, and Russian speakers of English produce [p t k] for final [b d g]: *Bob*, *hid*, *pig* → [bap] [hɪt] [pɪk]
   /b d g/ → [–voice]/___#
4. A Brazilian Portuguese speaker of English inserts the vowel [i] after certain coda (syllable-final) consonants: *picnic* → [pikiniki]:
   Ø → [i]/C___ (Ø → [i] = [i] is inserted).
   [coda]

Implications for Teaching Pronunciation of a Second Language

Teaching pronunciation involves anticipating and analyzing language learners' problems and designing materials and methodologies accordingly. An important step in competent teaching is to identify not only the phenomena causing difficulties but more importantly the details of each problem, that is, the specific phonetic environments where the problems occur. It may be quite easy to spot students who are having difficulty with /r/ and /l/ but more difficult to identify the environments causing problems. In such a case, the following questions should be asked: Is there equal difficulty with both sounds? Is there equal difficulty when words begin and end with /r/ and/or /l/? What about their occurrence in consonant clusters versus in isolation (*fry/fly* vs. *rye/lie*)? Are the sounds preceding and following the /r/ different from the sounds preceding and following the /l/? (In some languages of Africa and Asia [r] and [l] are in complementary distribution: In Ganda [l] occurs after /u o a/ and [r] occurs after /i e/.)

When we hear a foreign accent, we notice patterns that are different from those of an NS but usually we do not notice things that are the same. This is analogous to hearing another NS speaking a different dialect. New York English is often called an r-less dialect. Speakers with an r-full dialect often notice the lack of /r/ in *park the car* but they do not notice the presence of /r/s at all in the utterance *car is red* because /r/ is pronounced before a vowel in all dialects of English. Suppose that a pronunciation teacher notices some difficulties with /r/ and /l/ but fails to notice that students have no difficulty in initial position (e.g., *lay*, *ray*), even though they do have difficulty pronouncing /r/ and /l/ after consonants (e.g. *play*, *pray*). It would then be a complete waste of time practicing /r/ and /l/ in initial position. Thus, doing a phonological analysis of the speakers' L2 phonology is absolutely essential in teaching pronunciation.

Conclusion

There is no single agreed-upon approach in doing phonological analysis. Although rules to describe patterns in languages (in syntax, morphology, and phonology) have been employed for more than 2,000 years (in the fourth century BC Panini postulated nearly 4,000 rules for Sanskrit), optimality theory (Prince & Smolensky, 1993; 1997) does away with rules and replaces them with the *universal constraints*. Thus, a rule that deletes final consonants could be stated as a constraint: No final consonants are allowed in this language (Hawaiian is a classic example). However, regardless of the approach, probably all phonologists would agree that the goal of phonological analysis is to describe the sound patterns of the languages of the world and to discover universals of language.

SEE ALSO: Accent Reduction; Comparative Phonetics and Phonology; Crosslinguistic Influence in Second Language Acquisition; Foreign Accent; International Phonetic Alphabet; Phonetics and Phonology: Overview; Phonological Acquisition; Sound and Spelling

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Phonetics and Phonology: Historical Overview

ADAM BROWN

Terminology

At the outset, it is necessary to clarify the terms *phonetics* and *phonology*, and to distinguish them from two other confusable terms: *pronunciation* and *phonics*.

Phonetics is the scientific study of all aspects of the spoken form of language. Phonetics is thus scientific (objective, data-based, unbiased, dispassionate) and not subjective or biased. It describes the spoken form, in contrast to the written form, although many people's reactions to features of speech are heavily influenced by spelling. It covers all aspects of the spoken form: articulatory (the way sounds are formed by the lungs, mouth, and nose), acoustic (the properties of the sound waves created), and auditory phonetics (how the sound waves are interpreted by the listener's brain). Notice also that the definition uses the word *language* rather than *languages* or *a language*. By *language*, we mean the human ability to communicate, which underlies all human languages. Although much of phonetics has historically been concerned with English, the study of the sounds of an "exotic" language, spoken by only a few speakers, or one that has no writing system, is equally valid. So, a phonetic statement would say, for example, that an [l] sound involves the tip of the tongue touching the alveolar ridge (behind the upper teeth) in the centre of the mouth, and air escaping over the sides of the tongue, while the vocal cords vibrate.

Phonology is the scientific study of how sounds occur, function, and combine in particular languages. For instance, the [l] sound occurs in English and Thai, but not in Māori. While both English and Thai have the [l] sound, they function differently: English [l] can occur at both the beginning and end of syllables, for example *loop*, *pool*, but in Thai [l] can only occur syllable-initially, for example [lom] 'air', and not syllable-finally. One pattern for two-consonant syllable-initial consonant clusters in English is [p, b, t, d, k, g] followed by [l, r, w, j]; however, while [pl, bl, kl, gl] all occur, for example *play*, *blow*, *clap*, *glue*, [tl] and [dl] do not occur. Phonology is thus language-specific, and describes how sounds pattern in particular languages.

Pronunciation is the more practical activity of teaching the sounds of a new language. *Phonics* is the system of using sound–spelling correspondences to help learners read and write a language.

Pre-19th-Century Phonetics

Although this article outlines the development of phonetics and phonology in the 19th and 20th centuries, it is important to point out briefly that phonetic and phonological study predates this, in languages that have a much longer history than English (Moses, 1964). Two examples of early phoneticians are enough to make the point. While these two are the most famous, it is clear from their writings that they were building on the work of previous, lesser-known analysts.

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Panini (probably fifth century BC) analyzed the grammar of Sanskrit, the classical literary language of India, and distinguished the language of sacred texts from that of everyday communication. His analysis used about 1,700 elements (including grammatical categories such as noun and verb, and phonetic categories such as vowel and consonant) and about 4,000 rules for explaining the phonological, grammatical, and morphological structure of Sanskrit (Deshpande, 1997).

Al-Khalil Abu 'Amr Al-Farahidi wrote an Arabic dictionary in the seventh century. While dictionaries had been compiled before him, they had been arranged by content. Al-Khalil's dictionary was arranged in phonological order of initial sounds, from the larynx to the lips. In its introduction, he discussed the phonetic and phonological system of Arabic. Over the next four centuries, study of Arabic phonetics, phonology, and grammar continued, some carried out by students of Al-Khalil, and often driven by the desire to pronounce the Quran correctly (Rosenhouse, 2007).

Phonetics and Phonology in the 19th Century

Two major figures in 19th-century phonetics and phonology were coincidentally born in the same year: Jan Baudouin de Courtenay (1845–1929) and Henry Sweet (1845–1912). As was common at the time, both came from a scholarly background in historical linguistics (philology).

De Courtenay was Polish and received his doctorate with a thesis on pre-14th-century Old Polish. However, he is best known for his work on the concept of the phoneme (Moses, 1964). The modern position is that the phoneme is an abstract unit of a language (e.g., English phonemic /s/) that consists of sounds that (a) are phonetically similar (i.e., are produced in similar ways) and (b) function in predictable, non-overlapping environments. For example, the [s] sounds at the beginning of the English words *see*, *sue*, and *saw* are slightly different, but this difference can be predicted from the environment (in this case, the nature of the following vowel sound). These three [s] sounds, or allophones, belong to the same /s/ unit, or phoneme.

Henry Sweet was born in London and studied at Oxford University. He excelled at Old English and Old Norse, the language of the Vikings. In his books *A Handbook of Phonetics* (1877) and *A Primer of Spoken English* (1890), he described educated London speech and produced a notation system for English sounds. His emphasis on spoken language established his place in the field of language teaching.

Phonetics and Phonology in the 20th Century

The same two factors were influential through the following century: the analysis of sounds into units, especially the phoneme, and the transcription of sounds.

The term *phoneme* was coined in 1873 by the French linguist A. Dufriche-Desgenettes (1804–78). The concept was analyzed and expanded by many linguists, including de Courtenay and his student Mikołaj Kruszewski (1851–87) in the Kazan school (Albrow, 1981), Henry Sweet, and Ferdinand de Saussure (1857–1913). However, it is Daniel Jones (1881–1967) who did most to establish the interpretation of the phoneme widely accepted today (Jones, 1950). Jones studied for one year (1905–6) under Paul Passy (see below), and married Passy's niece. He also briefly took private lessons from Henry Sweet. His association with University College London (UCL) lasted from 1907 until his retirement in 1949. His students included A. C. Gimson, who succeeded him as Professor of Phonetics at UCL in 1966 and wrote the standard textbook on British English phonetics, *Introduction*

to the Pronunciation of English (first edition 1962; current edition entitled *Gimson's Pronunciation of English*, Cruttenden, 2008), and David Abercrombie (1909–92), who established the Department of Phonetics at the University of Edinburgh. Among Gimson's students was John (J. C.) Wells (b. 1939), author of the *Longman Pronunciation Dictionary* (2008), who succeeded him as Professor of Phonetics at UCL. Among Abercrombie's students was Peter Ladefoged (1925–2006), author of *A Course in Phonetics* (2006) and Professor of Phonetics at the University of California, Los Angeles.

Jones is also famous for the system of cardinal vowels, that is, reference vowel sounds that can be produced by all humans with normal physiology. These language-independent vowel sounds can be used as articulatory points by reference to which actual vowel sounds in languages can be described.

Among Jones's contemporaries at UCL was J. R. Firth (1890–1960), whose prosodic analysis (Hill, 1966) emphasized that certain sound features are not associated with individual vowel and consonant segments, but are properties of larger units such as syllables, words, and intonation groups. This was already acknowledged for features such as tone, intonation, and stress (often nowadays called suprasegmental), but Firth extended this to *coarticulation* (the fact that the phonetic properties of particular segments affect surrounding sounds, so that no moment in an utterance only represents the properties of the segment being pronounced at that moment). This point of view derives partly from the development of instrumental techniques, which clearly show such coarticulatory phenomena.

An even larger-scale perspective was investigated by John Laver (b. 1938), another student of Abercrombie. In his 1980 book *The Phonetic Description of Voice Quality*, he analyzed the longer-term articulatory settings of the vocal organs, which affect all susceptible vowel and consonant segments, and give rise to qualities characteristic of different languages, individual speakers, their geographical or social accents, or shorter-term attitudinal states.

Instrumental Phonetics

Ohala (1991) distinguishes between taxonomic phonetics and scientific phonetics. The first deals with naming and classifying speech sounds, and transcribing them. The latter "seeks to understand how speech works at all levels from the brain of the speaker to the brain of the hearer. . . . This is where theories are formulated, statistical analysis of results performed as well as controlled observations, calibrations and all the other characteristics of traditional scientific procedures. This is what one finds presented at phonetics conferences and congresses and in the phonetics journals; it is where most of the 'action' is" (pp. 133–4). Four principal methods of instrumental phonetics (Ladefoged, 2003) will be briefly described.

Palatography has a long history (Moses, 1964). In its most common form the roof of the mouth is sprayed with a dark powder, which is removed by contact with the tongue, the resultant pattern being photographed. A more modern method is to insert an artificial palate inlaid with electrodes to record tongue contact continuously.

An electroaerometer records the airflow from the mouth and nose, using a mask with separate sensing devices worn by the speaker. The results can be printed as line traces on an ink printer (mingograph).

A spectrogram is a three-dimensional printout of the acoustic properties of the speech signal: time (horizontal), frequency (vertical), and intensity (darkness of the trace). Spectrographs were originally invented by Bell Laboratories in the USA, and early models were dedicated machines burning the trace on special paper. Nowadays, many analysts use the freely downloadable Praat computer program (Praat, *n.d.*).

While spectrography analyzes speech into its acoustic properties, speech synthesis does the opposite by using the acoustic properties of sounds to create speech electronically. Earlier mechanical spectrographs date back to Wolfgang von Kempelen (1723–95).

The International Phonetic Association and Alphabet

The use of symbols to transcribe sounds has preoccupied phoneticians for decades, and many of the personalities cited above (Sweet, Jones, Gimson, Abercrombie, Ladefoged) have contributed significantly to the field of phonetic transcription.

An early attempt to represent speech in symbols was made by Alexander Melville Bell (1819–1905), who taught phonetics at UCL assisted by his son Alexander Graham Bell, a student at the college and future inventor of the telephone. However, toward the end of the 19th century, a small group of teachers of various European languages gathered, under the leadership of the Frenchman Paul Passy (1859–1940) and the Dane Otto Jespersen (1860–1943). Its purpose was to devise a system of phonetic symbols to help schoolchildren acquire the pronunciation of foreign languages, primarily English, French, and German, and also to help in the teaching of reading. Originally called Dhi Fonètik Ticerz' Asóciécon (The Phonetic Teachers' Association), itself a development of L'Association Phonétique des Professeurs d'Anglais (The Phonetic Association of English Teachers), in 1897 it became the International Phonetic Association (IPA) (McMahon, 1986). With an initial membership of just 11 in France, it grew within one year to 58 in 12 countries. By 1914, this had grown to 1,751 in 40 countries.

It was Jespersen who first suggested that there should be an International Phonetic Alphabet (also IPA) which was not language-specific, rather than transcription systems specific to particular languages. The IPA was based on the Romic (Roman alphabet-based) system of Henry Sweet. The principles underlying the IPA were stated in 1888 (also see *Handbook of the International Phonetic Association*, 1999, Appendix 1):

1. Each sign should have its own distinctive sound.
2. The same sign should be used for the same sound across all languages.
3. As many ordinary roman letters as possible should be used, and the usage of new letters should be minimal.
4. International usage should decide the sound of each sign.
5. The look of the new letters should suggest the sound that they represent.
6. Diacritics should be avoided when possible, as they are difficult to write and hard to see.

The most recent major revision of the IPA took place in Kiel, Germany in 1989, although there have been subsequent minor changes.

It should be pointed out that the IPA is a *phonetic* alphabet, that is, a set of symbols for transcribing humanly possible sounds regardless of the languages they occur in. A set of symbols to represent the phonemes of English is necessitated by the poor sound–spelling correspondence of English spelling. Attempts to regularize English spelling have been made for centuries. A famous proponent of spelling reform was George Bernard Shaw (1856–1950), author of the play *Pygmalion*, later made into the musical *My Fair Lady*; it is not certain whether the character of Professor Henry Higgins was based on Henry Sweet or Daniel Jones (Collins & Mees, 1998).

The most widely used phonemic alphabet for British English (as used, for instance, in dictionaries) is that proposed by Gimson in the 14th edition (1977) of the *English Pronouncing Dictionary* (sometimes referred to as Gimson transcription or EPD14 transcription).

While the IPA is the most widely used system of phonetic symbols, other systems exist. Some Americans use the American Phonetic Alphabet (APA) which was originally developed for the transcription of Native American languages. Its main difference from the IPA lies in the use of diacritics. For example, while the IPA uses [ʃ] for the initial sound of *ship*, the APA uses [š]. The APA was thus easier than the IPA to produce on a typewriter, for instance when carrying out fieldwork.

Computer-readable alphabets include ARPABET (Advanced Research Projects Agency alphabet) for American English, and SAMPA (Speech Assessment Methods Phonetic Alphabet) and Kirshenbaum for the whole IPA.

SIL International

SIL International (formerly called the Summer Institute of Linguistics) is a US-based organization that has carried out important research, analyzing and documenting minority languages of the Americas, many of which had no previous writing system. As a partner organization of Wycliffe Bible Translators, SIL is a Protestant missionary organization whose purpose is to translate the Bible into minority languages.

Since many of these minority languages had no writing system, SIL needed to devise writing systems for the languages in order to be able to translate the Bible. It therefore ran courses that trained participants in the principles of analyzing languages with a view to producing essentially phoneme-based writing systems for them. The first of these was conducted in 1934 by SIL's founder, William Cameron Townsend (1896–1982). A student on the second course, in the following year, was Kenneth Lee Pike (1912–2000), who went on to become the president of SIL (1942–79), and taught at the University of Michigan (1942–77), eventually becoming Professor of Linguistics (Pike, 1981). To illustrate the principle of analyzing an unknown language, Pike became famous for his practical demonstrations. Using objects and gestures, he elicited spoken examples from a native speaker of an unknown language and, within a short space of time, derived the main features of the language's sound and grammar systems, and vocabulary items.

Because its researchers have worked on many languages around the world, SIL has published *Ethnologue* (Lewis, 2009), a catalogue of the world's languages. The current 16th edition lists 6,909 languages, of which SIL claims to have studied more than 2,550 over the last 75 years.

Phonology

The most influential work on phonology in the last half century was *The Sound Pattern of English* (SPE; Chomsky & Halle, 1968). Vowel and consonant segments were no longer thought of as indivisible segments, but as combinations of binary distinctive features such as [± voice] (plus or minus voice), that is, voiced or voiceless (with or without vocal cord vibration). Similar features had been proposed by Jakobson, Fant, & Halle (1952). At least two levels of representation were proposed. The underlying representation was an abstract level, which was transformed by ordered rules that worked on these features to give the surface representation, the actual pronunciation. This transformation from the synchronic (point in time) perspective often mirrored the diachronic (through time, historical) change that gave rise to it.

SPE has spawned various other phonological theories, with different degrees of abstractness. Some of these can be seen as relating to Chomsky's later views on grammar. Natural phonology (Stampe, 1979) proposes that, while phonological processes are universal, whether particular processes apply is language-specific. Autosegmental phonology (Goldsmith,

1990) posits that phonological phenomena involve sequences of features on multiple tiers. In optimality theory (OT; Prince & Smolensky, 2004), different languages select surface representations that best satisfy ordered constraints; as one writer put it, the production-line metaphor of SPE (producing surface forms from underlying representations) has given way to the metaphor of a job interview panel for OT (selecting from a range of surface forms). A succinct description of a number of post-SPE developments is given by Householder (1979).

Phonologists have proposed theories in order to model different phenomena: the historical developments from former pronunciations; the connection with spelling; child language acquisition of sounds; where phonological representations are stored in the brain; and phonological disorders. Many of these theories have been quite abstract and, as a result, have been criticized as being of little practical value to applied linguistics and in particular to the classroom activities of language teachers. In short, most applied linguists go little beyond the taxonomic phonemic analysis of Jones, Gimson, and others when discussing sound systems. As Abercrombie (1985, p. 23) explained:

> Jones always said that there was no such thing as phonology as a subject separate from phonetics (he never used the word phonetics). His phoneme concept was unpretentious and unadventurous. Its purpose was to be of service to applied phonetics, especially the making of transcriptions for language teaching.

SEE ALSO: International Phonetic Alphabet; Phonetics and Phonology: Overview; Phonological Analysis; Segments; Technology and Phonetics

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Phonology: Mixed Methods

TALIA ISAACS

Background

A growing number of researchers in the area of second language phonology have employed a mixed methods approach to better understand the research problem and to strengthen the quality of their inferences or interpretations (e.g., Zielinski, 2008; Derwing & Munro, 2009). However, not all published mixed methods phonological studies are explicitly labeled as "mixed methods," which may make them difficult to locate in tables of contents or online searches. Furthermore, the authors may not emphasize their reasons for using more than one method or describe the research design in much detail. The following is an example of a mixed methods study situated within the subdiscipline of second language (L2) phonological research. The focus is to address the rationale for integrating quantitative and qualitative methods, to discuss the nature of the mixing that occurred in the data collection and analyses, and to emphasize how quantitative and qualitative data were converged to yield rich empirical outcomes relevant to the research purpose.

The study arose from the widely held view among pronunciation experts that intelligibility should be the foremost goal of L2 pronunciation instruction (Morley, 1991; Munro & Derwing, 1999). However, it remained to be explored whether intelligibility is an appropriate criterion for assessing the pronunciation of non-native-speaking graduate students in academic settings. Many international teaching assistants (ITAs), for example, are expected to carry out instructional duties in their L2 in addition to their academic tasks. While several factors are clearly important for any instructor's pedagogical success, pronunciation is often identified as the culprit for poor ITA performance from the perspective of language experts, students, and ITAs themselves (Hoekje & Williams, 1992; Cheng, Myles, & Curtis, 2004). Situated at a North American university where ITA screening does not currently take place, the present study sought to examine whether the criterion of intelligibility is "enough" (i.e., a sufficient goal) for assessing pronunciation proficiency in non-native English-speaking graduate students. A secondary goal was to explore which aspects of pronunciation most interfere with intelligibility from the perspective of both undergraduate students, who have a stake in understanding ITAs in real-world contexts, and a pronunciation expert (the researcher).

Ultimately, it was the need to adequately address the research questions that dictated the decision to mix methods. The reasoning was that drawing on a single method or source of evidence would have been too restrictive in shedding light on the complex phenomenon of intelligibility, which encompasses both speech production and perception (Morley, 1991), and for evaluating its suitability as an assessment criterion for non-native graduate students. This philosophical orientation of doing "what works" in order to answer the research questions, often referred to as pragmatism in the mixed methods literature, was embraced in this study (Greene, 2007, pp. 83–5; Teddlie & Tashakkori, 2009).

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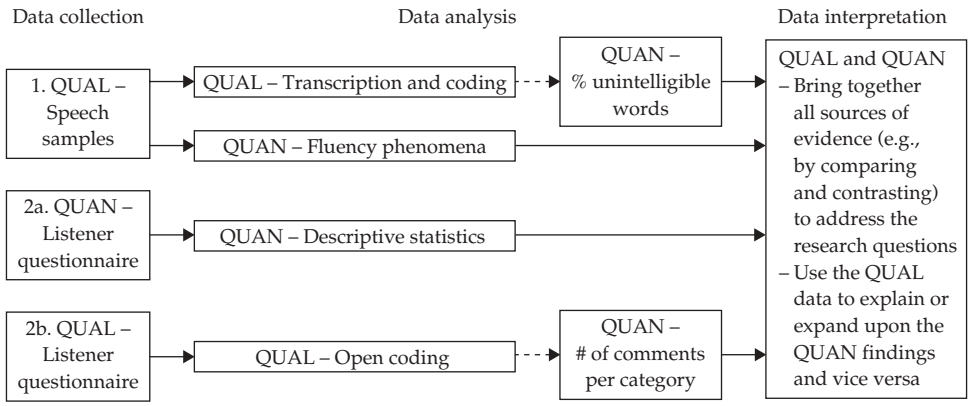

Figure 1 Mixed methods research design © Talia Isaacs
Note. The speech data were collected prior to the listener data. Qualitative and quantitative data for the listener questionnaire were collected simultaneously.

Data Collection Procedure

For the purpose of this investigation, intelligibility was defined as the percentage of a non-native speaker's words that listeners indicate being able to understand. Speech samples of eight non-native English-speaking graduate students telling a story and expressing an opinion were audio recorded, randomized, and burned onto CD. Eighteen native English-speaking undergraduate students then listened to and assessed each speaker's intelligibility on a 0–100% rating scale. After a second listening, the listeners consulted a list of potential pronunciation problem areas (e.g., individual sounds, word stress, sentence rhythm, rate of speech, pitch, and speech clarity) and rank ordered the top three features, if any, that had most hindered their understanding of the speaker's words. Within each ranked category, they were then asked to identify the source of the problem by selecting one of two options. For example, if they had selected "speech clarity," they were asked to identify whether the most prominent problem was that the speaker "overpronounces" or "mumbles" (see Isaacs, 2008b, for more on procedures and instruments). Finally, the listeners indicated whether they felt that the speaker's pronunciation was sufficient for him or her to instruct an undergraduate course as a teaching assistant (TA).

The listeners' responses described above, which were a quantitative source of evidence, were obtained through closed-ended questionnaire items. In fact, the same listener questionnaire was used to collect qualitative data simultaneously through open-ended questions. The listeners were invited to provide written comments on their impressions of the speech at any time during the rating session. Figure 1 illustrates the research design of this study, which is classified as a mixed methods triangulation design in Creswell and Plano Clark's typology (2007, pp. 62–7). The interplay between quantitative and qualitative methods, where one method is used to clarify or expand upon findings from the other, is considered an advantage of this design.

Data Analysis

The qualitative speech analysis was a data-driven process that involved the transcription of the speech data into phonetic symbols, the development of a transcription system for suprasegmentals, and the use of color coding to identify unintelligible words. The researcher

color coded the data twice during separate listenings to check for consistency. Then the qualitative data were "quantitized" (Teddlie & Tashakkori, 2009, p. 343), or transformed into quantitative data, by counting the total number of coded instances of unintelligibility, so that the ratio of unintelligible words over the total number of words could be calculated for each speaker. The speech samples were additionally analyzed quantitatively for speaking rate, or the number of syllables uttered per second, and articulation rate, or the number of syllables uttered per second excluding pauses that exceeded .5 seconds (Munro & Derwing, 1998, pp. 166–7).

The quantitative listener data were analyzed using descriptive statistics and frequencies in SPSS 17.0. Cronbach's alpha was computed preliminarily as a measure of inter-rater reliability by treating the 18 sets of intelligibility ratings as item scores. In preparation for analysis, the spreadsheet was organized by listing the eight L2 speakers in separate rows and the 18 raters in separate columns. An alpha coefficient of .883 revealed that raters were overall consistent in their judgments.

The qualitative listener comments were analyzed iteratively using an adaptation of Strauss and Corbin's (1990) open-coding, with the overall goal of generating categories from the data. First, the data were transcribed in a word processor using speaker and listener identification codes. Next, the comments were grouped together according to a perceived common theme or idea, and meaning-laden words were bolded (e.g., "trails off on sentences. Doesn't finish her thoughts" was grouped with "thoughts seem separated and disconnected"). The listeners' own language was then used to label the categories and subcategories. Finally, the researcher's language was imposed on the category labels where necessary to clarify meaning (e.g., the subcategory previously labeled, "Pronunciation is irritating but does not affect clarity of what is said" was more precisely designated, "A feature of the speaker's pronunciation, while noticeable or irritating, does not affect overall intelligibility"). In order to check the consistency of the categorizations, the researcher randomized and recoded the data a few weeks later. Similar categories emerged both times, which revealed a high level of intra-coder reliability (Johnson & Christensen, 2008).

The quantitative and qualitative strands from the analysis of the speech and listener data were merged in an attempt to effectively answer the research questions. Specific cases of a few speakers will be illuminated in the presentation of the results in the manner of a case study (see Yin, 2003).

Table 1 Mean intelligibility ratings grouped by speaker

	Intelligibility ratings		
Speaker	*Mean (%)*	*SD*	*Ranking*
C	46.9	18.5	8
E	75.2	15.1	6
F	86.3	13.7	2
G	76.6	14.0	5
K	95.2	8.5	1
M	67.7	18.2	7
N	79.1	18.2	4
R	85.8	12.6	3
Group	76.6	20.2	

Note. Mean percentages are based on 18 ratings for each speaker and 144 ratings for the whole group.

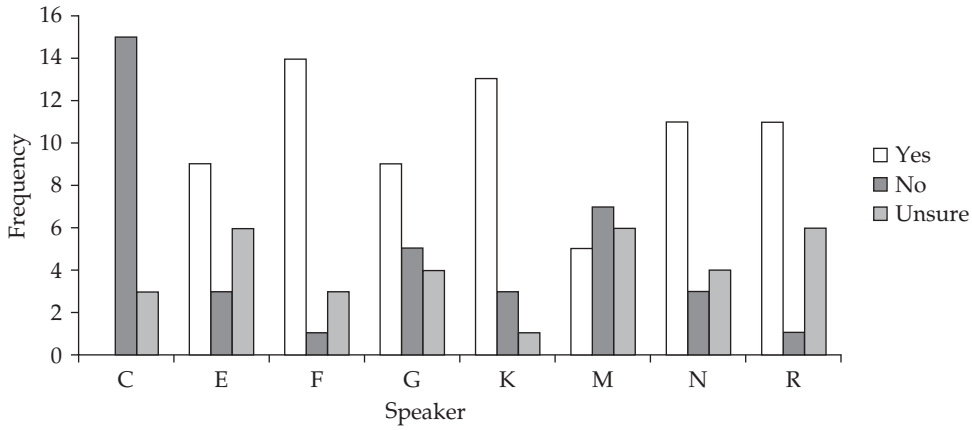

Figure 2 Frequency of listeners' responses to the "TA question" © Talia Isaacs

Results

The first research question examined whether intelligibility is a sufficient criterion for assessing the pronunciation of non-native English-speaking graduate students. Table 1 shows that Speaker K emerged as the most intelligible speaker overall. The percentage of his words that the listeners indicated being able to understand was about 9% higher than that of Speaker F, the second highest performing speaker. In addition, Speaker K's low standard deviation relative to all other speakers indicated that the listeners reached the greatest consensus about his degree of intelligibility. At the other extreme, Speaker C was regarded as the least intelligible speaker. Her mean intelligibility rating was over 20% lower than that of the second least intelligible speaker (Speaker M) and was nearly 30% below the group mean.

Figure 2 shows that no listeners felt that Speaker C's pronunciation was adequate for her to instruct an undergraduate course as a TA (hereafter referred to as the "TA question"), although 1 in 6 were uncertain. Speaker M, the speaker with the second lowest intelligibility rating, was the only other speaker who received more negative than positive responses to the TA question, although her outcome was better than Speaker C's. At the other end of the spectrum, Speaker K's top ranking for intelligibility was not maintained on the TA question. Clearly, a majority of listeners endorsed Speaker K as a TA. However, Speaker F surpassed him as the top ranked speaker by receiving slightly more positive responses and fewer negatives. Although this difference between Speaker K's and Speaker F's scores may seem negligible, it was key to understanding whether intelligibility is "enough" for ITAs from the perspective of undergraduate students. In fact, two listeners who had rated Speaker K's words as 100% intelligible responded "no" to the TA question. One elaborated, "only a few problematic words, but would be quite annoying as a TA," and the other commented, "far too slow, as a TA, he would be quite boring" (Isaacs, 2008a, p. 52). Additional evidence was needed to probe why Speaker K's nearly fully intelligible pronunciation did not translate into the same degree of consensus among undergraduate listeners about the adequacy of his pronunciation to serve as a TA with instructional duties.

The researcher's quantitative analysis of Speaker K's fluency showed that his speaking rate was the slowest overall (see Figure 3). In contrast, his mean articulation rate was over 1 syllable/second faster than that of the second fastest speaker (Speaker N). The suprasegmental transcriptions, which included the use of textual symbols for pauses and tempo, indicated that Speaker K consistently paused at the end of thought groups. So while Speaker

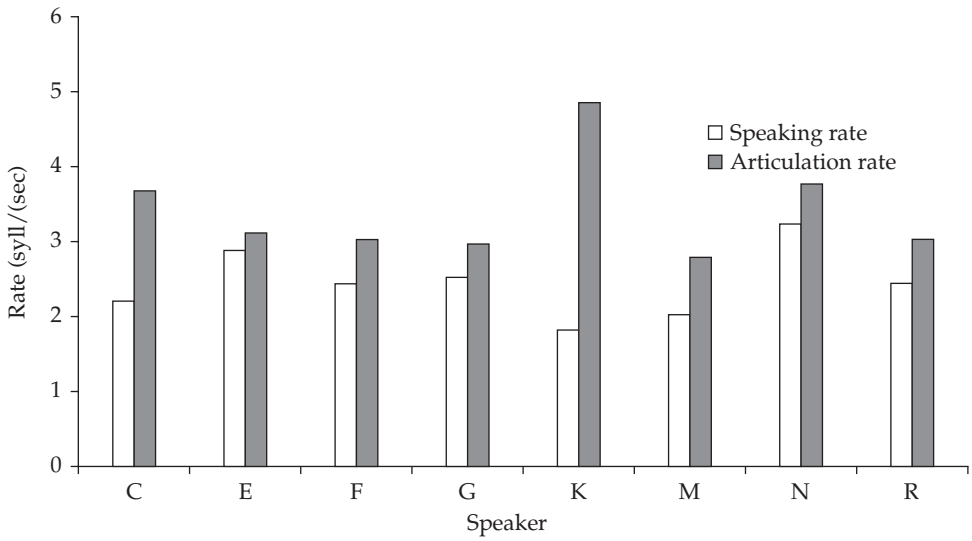

Figure 3 Speaking rates and articulation rates, from Isaacs, T. (2008). Towards defining a valid assessment criterion of pronunciation proficiency in non-native English speaking graduate students, *Canadian Modern Language Review, 64*(4), figure 3, p. 570. Adapted and used by permission of University of Toronto Press Incorporated (www.utpjournals.com)

K spoke relatively quickly during his phonation time (articulation rate) and paused at logical junctures, his pauses accounted for a substantial portion (62%) of his recorded speech. This can at least partially account for the following listener comments:

> I feel frustrated waiting for him to get on with what he is trying to say.
> Though slow, the choice of words is excellent and the effect is soothing.
> Would be very good if he sped up to create better flow.
> Hard to link parts of sentence together.

Some listeners additionally remarked on Speaker K's monotone speech. The overall effect of Speaker K's speech and the presiding negative sentiment about his long pauses are perhaps best summarized by the following listener comment: "I understood all he said, but he spoke slowly and had no intonation in his voice which made it quite obnoxious." This implies that while Speaker K's words were largely intelligible, intelligibility was, at least in some listeners' views, an insufficient condition for him to instruct an undergraduate course as a TA. Nonetheless, intelligibility appeared to be a prerequisite for serving as a TA from the listeners' (undergraduate students') perspective. There was absolute consensus, for example, that Speaker C, who was judged to be the least intelligible speaker overall, should not be charged with a TA position on the basis of her pronunciation. It may be that there is a threshold level of intelligibility that is necessary to carry out instructional responsibilities as a TA for an undergraduate course. In this study, it appears that Speaker C is decidedly below that threshold. Her *z*-score (standard score) for intelligibility was the only one in the data set that exceeded one standard deviation below the mean ($z = -2.03$), although a precise cut-off was not defined.

Table 2 shows the pronunciation features that the listeners identified as being the most problematic. The caveat is that listeners did not appear to be able to distinguish the features that rendered a speaker unintelligible from those that, while noticeable or irritating, did

Table 2 Percentage of raters who identified the pronunciation feature as being the "most prominent problem" (raw frequency) grouped by speaker

Speech category	*Problem cited by listeners*	*Speakers*							
		C	*E*	*F*	*G*	*K*	*M*	*N*	*R*
Segmentals	Substitute sounds	72% (10)	31% (5)	22% (4)	41% (7)	–	41% (7)	–	50% (9)
	Delete/add sounds	35% (6)	53% (9)	–	35% (6)	–	47% (8)	28% (5)	–
Word stress	Wrong stress syll.	38% (7)	–	44% (8)	56% (10)	–	50% (9)	–	33% (6)
	Distinguish syllables	–	–	–	–	–	28% (5)	–	–
Sentence rhythm	Distinguish words	33% (6)	39% (7)	44% (8)	33% (6)	–	28% (5)	–	28% (5)
	Linking	–	22% (4)	–	–	–	–	–	–
Rate of speech	Too fast	–	–	–	–	–	–	50% (9)	–
	Too slow	–	–	–	22% (4)	67% (12)	–	–	–
Pitch	Pitch change	–	–	22% (4)	–	–	–	–	–
	Monotone	–	–	–	–	44% (8)	–	–	–
Speech clarity	Overpronounces	–	–	28% (5)	–	–	24% (4)	–	–
	Mumbles	72% (13)	22% (4)	–	28% (5)	–	41% (7)	67% (12)	29% (6)

Note. Only pronunciation features identified by 20% or more of raters are shown. Missing data are excluded from the percentage calculations.

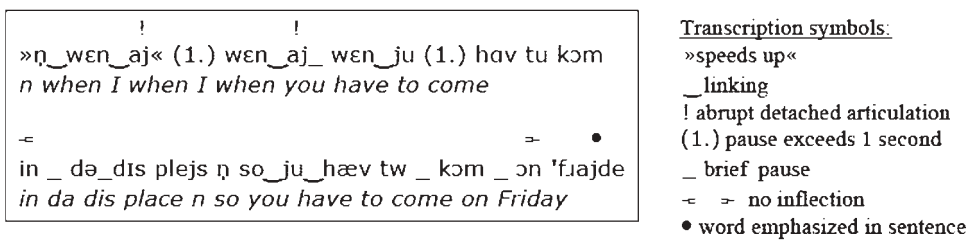

Figure 4 Example of an instance of unintelligibility in Speaker C's speech © Talia Isaacs

impede intelligibility. The problem areas with the highest listener response frequencies were associated with Speaker C. From the standpoint of intelligibility based on the researcher's coding, what was most problematic about Speaker C's speech was, in the listeners' words, that "she sort of stopped & started," "rhythm very broken," "stutters, hesitates," "lots of unsure pauses," and "words are slurred incomprehensibly" (Isaacs, 2008a, p. 60).

Speaker C's abrupt utterance [»ṇ wɛn aj« (1.) wɛn aj] shown in Figure 4 remained unintelligible to the researcher even after multiple listenings at a reduced speed. In contrast to Speaker K, Speaker C's pauses did not appear at the end of thought groups, which may have led some listeners to perceive them as sounding "awkward." The jarring "slow to fast to stop to start" of her "erratic speech," as some undergraduate listeners described it, was analogized as sounding like the sputtering engine of a stalled car by the researcher in a research memo.

Concluding Remarks

Taken together, the listeners' and researcher's analysis of the speech did not provide conclusive evidence as to which pronunciation features most impede intelligibility. However, the different sources of evidence appeared to reveal that the problem areas identified under the categories "individual sounds," "word stress," and "speech clarity" played the most important role in the researcher's and undergraduate listeners' perceptions of unintelligibility. Conversely, "sentence rhythm," "rate of speech," and "pitch" tended to impede perceptions of intelligibility only when they acted in conjunction with another problematic pronunciation feature. More research is needed to isolate pronunciation features and examine impacts on intelligibility (e.g., Hahn, 2004). Such research is likely to be enriched by the different perspectives offered by multiple methods, where the strengths of one method compensate for the weaknesses of the other.

SEE ALSO: Intelligibility; Mixed Methods; Phonetics and Phonology: Overview; Pronunciation Assessment; Rating Oral Language; Speech Perception; Transcription

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Pike, Kenneth Lee

THOMAS N. HEADLAND

Kenneth L. Pike (1912–2000) was born in East Woodstock, Connecticut. He received his Bachelor's degree in 1933 from Gordon College (then in Boston). In 1935 he joined the then-budding Summer Institute of Linguistics (now SIL International) and served in Mexico studying Amerindian languages. He received his PhD in linguistics at the University of Michigan in 1942 under Charles Fries. Leonard Bloomfield was also on his dissertation committee. Pike was the recipient of 10 honorary doctorates or professorships from universities around the world, including the University of Chicago, Université René Descartes, the University of Lima, and Albert-Ludwigs University in Freiburg, Germany. His leadership roles included serving as president of the Linguistic Society of America, president of the Linguistic Association of Canada and the United States, and from 1942 to 1979 president of SIL. He was chair of the University of Michigan Linguistics Department from 1975 to 1977 and director of the English Language Institute at the University of Michigan at the same time. For almost forty years he divided his time between the University of Michigan (where he taught for thirty years) and SIL, as director of the SIL school at the University of Oklahoma and helping to establish other SIL schools around the world. He lectured in 42 countries and studied well over a hundred indigenous languages in the field, including endangered languages in Australia, Bolivia, Cameroon, Côte d'Ivoire, Ecuador, Ghana, India, Indonesia, Mexico, Nepal, New Guinea, Nigeria, Peru, the Philippines, Sudan, and Togo. His last trip overseas was to Indonesia in 1995, where he was the plenary speaker at the International Conference on New Guinea Languages at Cenderawasih University. He was actively lecturing and writing until 1997, when his health required him to slow down.

Pike's contributions to the field of linguistics combined with his dedication to the minority peoples of the world brought him numerous honors. He was recipient of the Presidential Medal of Merit from the Philippines and the Dean's Medal at Georgetown University. He was nominated for the Nobel Peace Prize for fifteen years in a row and for the Templeton Prize three times. At the time of his death he was professor emeritus of the University of Michigan; president emeritus of SIL; and a member of the National Academy of Sciences, the American Philosophical Association, and the American Anthropological Association (AAA). Pike published 30 books, 200 scholarly articles, 90 articles for popular magazines, and over a thousand poems (Spanne & Wise, 2003). His last book publication was in 1997—a five-volume set of poems (Pike, 1997). He published three articles in 1998 and two in 1999 (Pike 1998a, 1998b, 1998c, 1999a, 1999b). He had just completed a historical essay on "Early American Anthropological Linguistics" the month before his death (Pike, 2003).

Pike's Contribution to Linguistics

Pike's major academic contributions to linguistics were his textbooks on *Phonetics* (1943), which was called "The most thorough survey up to that time of the phonetic possibilities of the human vocal tract" (Beddor & Catford, 1999), *The Intonation of American English* (1945), *Phonemics* (1947), and *Tone Languages* (1948), all published by the University of Michigan. All four of these texts are recognized as seminal contributions today.

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His major theoretical contribution in linguistics was his development of tagmemics, an important theory in American linguistics until the paradigm shift toward Noam Chomsky's transformational grammar theory in the 1960s (Chomsky, 1957). Pike's magnum opus, *Language*, on tagmemic theory was first published in three volumes in 1954, 1955, and 1960, and then in a second edition in 1967 (Pike, 1967). Several years later he published a much shorter book, *Linguistic Concepts*, describing his tagmemic theory to undergraduate students (1982).

Pike's practical contribution in linguistics was in his amazing ability to train students to learn, analyze, and publish data on then-unknown minority languages. One of his major goals was to help his graduate students and his SIL colleagues with their linguistic challenges. To that end, he established linguistic workshops around the world, where he and his major protégés helped hundreds of field researchers and Bible translators with difficult analytical challenges in aboriginal languages. Long before the concept of "endangered languages" came into vogue in the 1990s, Pike was instilling in his students the importance of recording, preserving, and working to keep alive the many unwritten, unknown languages spoken throughout the world. Who would have guessed in the 1940s that there were some five thousand such languages that were unidentified even to linguists?

Pike's holistic approach to language learning became his trademark. He eventually taught thousands of students and missionaries how to learn and document such languages, many of them by using the method that he demonstrated countless times in his famous "monolingual demonstrations." (See Makkai, 1986/1998.) Pike was at his pedagogical best when he did his monolingual demonstrations. When he first went to live with the Mixtec people in southern Mexico in 1935, he knew no Spanish, and nor did the San Miguel Mixtecs. So he began learning their language monolingually, since they shared no common language. Later, he began to demonstrate his method to students. As Beddor and Catford (1999) point out, "Pike is legendary for his demonstrations of the monolingual field technique in which he shows, through a 40-minute exchange with a native speaker of a language unknown to Pike, that language can be learned without an interpreter." His sister Eunice Pike explained it this way:

> Watching [Ken's demonstration] is something like watching a high diver in Acapulco, Mexico, as he dives from the cliffs there into the ocean below. It's beautiful, and you know he's an expert, so you don't expect trouble, but there is always the chance that he might end up on the rocks instead of in the ocean. That possibility makes you watch all the more intently. (E. Pike, 1981, p. 130)

Today Pike's students have produced thousands of linguistic documents on some 2,700 languages in fifty countries (SIL, 2010) and we now know there are some 6,900 languages in the world (Lewis, 2009). Most of these are spoken by only a few hundred to a few thousand people and almost all are what is called today "endangered languages."

Pike's Contribution to Anthropology

Pike's major contribution in anthropology was his development of the emic/etic concept. He published this conceptual contrast in 1954 in his first edition of *Language*, and the two terms are found in common usage in the vocabularies of most anthropologists today. The emic/etic distinction underlies a basic contribution of modern anthropology, a uniquely anthropological tool for understanding different perceptions of reality between cultures.

The high point of Pike's role in the AAA came in 1988. During that year's annual meeting of the AAA, Pike and cultural materialist Marvin Harris had a historic public debate on their differing uses of the emic/etic concept. That exchange resulted in a book titled

Emics and Etics: The Insider/Outsider Debate (Headland, Pike, & Harris, 1990).

Pike also had a low point in anthropology. He was a controversial figure among anthropologists because he was a missionary. This low point in the AAA came in 1975 when anthropologists brought a formal charge of ethnocide against SIL to the AAA's Committee on Ethics. The charge is named in the SIL archives as "COE's Case 75-2" (Pike Special Collection, n.d.). In May of that year, the AAA wrote a letter to SIL describing the complaint and inviting SIL to formally respond. Pike replied to the AAA in a 15-page letter dated May 21. After a one-year investigation the COE's report to the AAA Executive Board declared unanimously in favor of SIL. In a letter to Pike dated September 20, 1976, AAA executive director Edward Lehman stated, "At its 85th meeting in May [1976], the [AAA] Executive Board accepted that [COE] recommendation, also by a unanimous vote." This was hardly the only time that Pike defended SIL against its critics. The last time he did this was when another group of anthropologists accused SIL of genocide in the AAA's *Anthropology Newsletter* (Edelman, 1997). Pike replied to that, and the AAA published it in a later issue of the *Newsletter* (Headland & Pike, 1997).

Concluding Remarks

We cannot close this review of Pike's life without mentioning his Christian philosophy, and how this was such a driving force in his life and leadership of SIL, and in his contribution to applied linguistics. He was keenly interested in the religious dimension of his career, as seen in his relationship with Wycliffe Bible Translators, the sister organization of SIL. He and Angel Merecías completed the translation of the New Testament into the San Miguel Mixtec language in 1951. Pike was above all a convinced Christian theist who influenced thousands of people toward religion. He wrote numerous religious articles and books. His *With Heart and Mind* (Pike, 1996) defended scholarly and intellectual approaches to Christianity, maintaining that Christian faith and academic scholarship can be intimately integrated.

Today the huge volume of Pike's personal and work-related papers is archived in the Pike Special Collection as part of the SIL Language and Culture Archives in Dallas, Texas. These materials include unpublished academic papers, lecture notes, teaching resource materials, personal and SIL corporation correspondence, diaries, awards and honorary recognitions, and many photos and work-related artifacts. Researchers desiring access to the collection must complete and submit the SIL Language and Culture Archives Access Policies and Registration before making an appointment with the curator. For details see www.sil.org/klp/klp-special.htm. Many other details on Pike are found at this same URL address.

SEE ALSO: Bible Translation; Emic and Etic in Qualitative Research; Endangered Languages; Phonetics and Phonology: Overview

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Plagiarism

DIANE PECORARI

Plagiarism Defined

Plagiarism can be defined broadly as an illegitimate and deceptive intertextual relationship. Such a broad definition is necessary in order to encompass the wide variety of acts which have been labeled plagiarism; the word has been used to apply to works as diverse as poems and paintings, recipes and novels, the findings of scientific research articles and textbooks.

The definition of plagiarism offered by the *Oxford Dictionary of English* is "the practice of taking someone else's work or ideas and passing them off as one's own" (Soanes & Stevenson, 2003, p. 1344). This definition is typical in that it includes, directly or by implication, three elements. First, some sort of textual material is involved. While it is true that plagiarized content may be an idea, rather than the form in which it is expressed, in order for plagiarism to occur the idea must have been articulated, and it must be repeated by someone else. There are, therefore, always at least two texts (in the broadest sense, to include written and spoken, as well as graphic, material) involved in plagiarism: an original source, and the text which reuses it. The second element in plagiarism is a direct relationship between the two texts. Similarities of propositional content, expression, or both, may arise in texts on related topics simply by coincidence, and by virtue of the fact that a limited number of forms are available for articulating a given idea. However, for plagiarism to be said to have occurred, more than coincidental similarity is required; the similarities must be due to the fact that the later text was based on the earlier one.

The third criterion for plagiarism is that this direct intertextual relationship must be illegitimate. This can be illustrated by contrasting plagiarism with other sorts of direct, but legitimate intertextuality, such as quotation or parody. In the case of quotation, language which is repeated from its source is visibly identified, most often with quotation marks, and the source is ordinarily named. In the case of parody, the source often goes unnamed, but an expectation exists that the reader or listener will be able to identify it. Indeed, the point of parody is lost if that identification is not made. Thus the illegitimacy of plagiarism derives from the fact that it is deceptive in nature, an attempt to "pass off" the plagiarized material "as one's own" when it is in fact not.

Detecting Plagiarism

A great deal of plagiarism detection has traditionally happened casually, when a reader notices similarities between two texts. In an essay on plagiarism Stearns (1999) recounts the experience of editing a work of history. Consulting another book on the same topic to verify certain facts, she recognized paragraphs in the published volume which she had also read in the manuscript. In the classroom, teachers often grow adept at spotting changes in register or proficiency in writing as a sign that plagiarism may be present in a text.

More recently, electronic text-comparison tools have also become available and have been marketed as "plagiarism detection" tools. Text-comparison services are widely used

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by educational institutions, at both tertiary and secondary levels. Teachers or students at subscribing institutions send student writing to the service. The student's electronic file is compared to sources on the Internet, or to other student-written texts, or both. The text-comparison tool then generates a report stating whether the student work has language in common with other texts, and if so, which texts. The report also provides a numerical expression of the degree of similarity, typically expressed as the percentage of the text under scrutiny that is shared with other texts.

Text-comparison software has been greeted with enthusiasm by teachers, for a number of reasons: there is a widespread perception that the incidence of plagiarism is increasing, in part due to the availability of electronic sources. Automatized plagiarism-detection systems seem to offer the opportunity to screen all student work in an efficient way, thus permitting more consistent treatment of all students and a better detection rate for plagiarism.

However, there are also several problems associated with the use of text-comparison software. Because their objective is fundamentally to match language which co-occurs in two or more texts, such products can identify quotation or other sorts of legitimate language reuse as potentially problematic. Resolving whether the texts thus flagged actually constitute plagiarism requires a close examination by the teacher. Text-comparison software can also yield false negative results. One reason for this is that comparisons can only be made with electronic sources which are available to the tool. A text which is copied from a paper source, or an electronic source from a password-protected database, may not be detected. The consequences of false negative results cut two ways: if a writer who intended to plagiarize is not detected, a lack of consistency in handling plagiarism may be the result. On the other hand, a writer who was genuinely under the impression that his or her illegitimate source use strategies were appropriate will have that (mistaken) impression confirmed by a "clean" report. Other concerns with these products include the possibility that by extracting the question of repeated language from the wider writing context, "legitimate attempts to conform with the expectations of the community of practice often become identified as plagiarism and illegitimate attempts at cheating often become obscured from view" (Hayes & Introna, 2005, p. 55).

Establishing Plagiarism

When potentially problematic source use is detected, a further difficulty can arise in determining whether it constitutes plagiarism; for this reason, cases of alleged plagiarism which receive public exposure are often the subject of heated debate. The difficulty often lies in determining whether the disputed text is characterized by the three elements of plagiarism described above. There may, for example, be room for disagreement about whether similarities between the suspected text and its purported source are coincidental or not.

Similarly, even when an intertextual relationship is acknowledged, there may be a question about whether or not it is appropriate. Uncertainty in this area may be due in part to the fact that the numerous contexts in which plagiarism can arise have distinctly different conventions; sources are formally attributed in journalism (for example) in a different way than in academic texts. The existence of different conventions leaves room for varying views about what crosses the line and should be seen as unconventional. A case which illustrates this point arose in the mid-1990s, when a medical researcher in Hong Kong accused a colleague of plagiarizing a questionnaire she had developed for her research. A key element in the legal action which ensued was expert witness testimony to the effect that the sharing of questionnaires was common practice in the field (Dyer, 1995). Although parts of the questionnaire may have been reused, the witness thus argued that such reuse was not unconventional by the standards of the discipline.

Finally, even when source use is acknowledged to be less than fully appropriate, it may be debated whether it constitutes plagiarism. When a professor at Stockholm University was accused of plagiarism, a university official criticized her source use as less than best practice, but defended the university's decision not to investigate the accusations as possible misconduct (Gunnarsson, 2005). The question of intention may become relevant in this context. Accusations of plagiarism involving the popular historian Stephen Ambrose received wide public attention, but at least one fellow historian defended him, in part on the grounds that his sources were cited, suggesting that he did not intend to deceive the reader (Jensen, 2002).

Plagiarism in the Legal System

Plagiarism is a breach of convention rather than law and is thus a matter of interest for forensic linguistics when it is implicated in some other matter. One such context is copyright violation, though, as Stearns points out, the overlap between plagiarism and copyright violation is not complete. Copyright law is intended to protect only certain texts (not those over a certain age, for example) and is concerned exclusively with the expression of ideas, rather than the ideas themselves. In addition, plagiarism may not be substantial enough in scope to constitute copyright infringement, or may not be found to have caused the copyright holder a financial loss which can be remedied. Thus, "while plagiarism is a failure of the creative process as manifested in unattributed copying from any source, copyright law examines the harm that results from copying" (1999, p. 10).

The gap between plagiarism and copyright violation was clearly illustrated in the legal action brought against Dan Brown, author of *The Da Vinci Code*, by the authors of an earlier book on a similar theme, *The Holy Blood and the Holy Grail*. Although the original judge in the case found that portions of *Holy Blood* had been copied in *The Da Vinci Code*, the nature of the copied material and extent of the copying was not substantial enough to constitute copyright infringement, and this judgment was subsequently upheld on appeal (Baigent & Anor vs. Random House, 2007).

Legal action may also result from the consequences of an accusation of plagiarism. Plagiarism is an extremely stigmatizing act, and allegations not infrequently result in individuals in fields such as journalism and academia being dismissed, or forced to resign, from their positions. In adjudicating cases of unfair dismissal (or related questions) courts may be in the position of having to decide whether plagiarism occurred. This was the case in an episode in Hong Kong in which a journalist was dismissed from his job after his newspaper claimed that he had copied parts of an article from another publication, and said that that act constituted professional misconduct. Whether or not the journalist had plagiarized became a key factor in the suit for wrongful dismissal he brought against the paper (Thomas Vincent vs. South China Morning Post, 2004).

Universities commonly sanction students who have committed plagiarism by withholding academic rewards, and in 2004 a student at a British university threatened that he would take legal action against his university for doing so unfairly. Shortly before the student was due to take his degree, plagiarism in a piece of his assessed coursework had been found. The discovery of that plagiarism triggered an investigation of the student's earlier assignments, and further plagiarism was uncovered. On the basis of these discoveries, the university expelled the student. The student's threat of legal action was based on what he perceived as negligence on the part of his university, because they had not warned him earlier in the course of his education that his writing practices were unacceptable (Baty, 2004).

In a twist on the relationship between copyright violation and plagiarism, secondary school students in the USA sued Turnitin, a company providing a text-comparison ("plagiarism-detection") service, for copyright violation. Like other, similar services, Turnitin archives student work sent in for examination. The texts then form part of the database against which future student work is compared. The students who brought the suit believed that the archiving of their texts violated fair use principles (Glod, 2007).

Research on Plagiarism

Existing and ongoing research on plagiarism spans a number of subject areas. Within educational research plagiarism has been investigated as a form of cheating or a violation of ethical standards (e.g., Ashworth, Bannister, & Thorne, 1997). Such research often works from an assumption that there is a common understanding of what types of source use are allowed, or forbidden (though exceptions exist; see, for example, Roig, 1997).

Within linguistics, research on plagiarism has been conducted primarily within the areas of forensic linguistics and language for academic purposes. In the former area, the question of plagiarism overlaps closely with authorship attribution. An important question in this context is the degree of similarity between texts that is, and is not, likely to arise coincidentally. In other words, is there a threshold above which linguistic similarity should give rise to suspicions of plagiarism? This question has been investigated with respect to student writing (Johnson, 1997; Pecorari & Shaw, in press), literary translation (Turrell, 2004), and published research writing (Pecorari, 2008).

Within the branch of applied linguistics concerned with the teaching of language for academic purposes (and the closely related field of composition studies), the concept of plagiarism has been problematized and shown to be highly contextually bound. Questions of research interest in this area include how writers learn to produce academic discourse (Howard, 1995) and to meet the expectations of their disciplinary discourse communities (Pecorari, 2006). Ample evidence has been produced to show that much writing which appears to be plagiarism—in that it is based on unconventional intertextual relationships—is the result of factors other than deceptive intent (e.g., Abasi, Akbari, & Graves, 2006). Much current research on the topic thus is aimed at identifying the causes and remedies for unconventional source use (e.g., Keck, 2006).

SEE ALSO: Technology and Teaching Writing

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Policy Analysis and Document-Based Literacy Research

LISA PATEL STEVENS AND MATTHEW LALIBERTE

In Lisa Patel Stevens's undergraduate training as a print journalist, a professor handed her the journalistic charge succinctly: A newspaper should convey what it was like to be alive on that day in that place. Fairly straightforward, right? However, even a cursory scratch of the surface of that statement agitates and enlivens the complexity that spills over the capacity of texts to capture lived realities neutrally. For example, depending upon the news source, the flooding of New Orleans during Hurricane Katrina was a natural disaster of climate patterns or a human-made disaster of civil engineering. Also depending upon your lived experiences, the reporting of these events may be, in and of themselves, textual acts that perpetuate racial inequities in the United States. It is within this complexity of texts as representative and agentive that policy analyses and document-based literacy research finds itself.

Literacy research has been informed by various approaches and methodologies. With sociocultural views of literacy strengthening in the late 20th century, these perspectives also influenced the ways in which literacy practices were researched, the ways in which researchers examined, and the ways in which they conveyed findings of these examinations. As observation of literacy practices and interviews about these practices took strong hold as methods of literacy research in authentic settings, so did analysis of policies and documents that shaped and addressed literacy practices.

At the heart of archival and policy analysis is a positioning of text and language as key sources of containers and shapers of material and figurative worlds. Texts are in constant dialogical relationships with participants and contexts, both enacted by and enacting meanings. A focus upon language as a source of meaning both thickened and was complicated by the advent of explorations of the structure of language (Saussure, 2006) and then the poststructural ellipse between language and meaning (e.g., Foucault, 1972). Increasingly, the role of language in the interplay of individuals, institutions, and society has solidified as one of the most frequently researched sources of knowledge. Situated within the field of applied linguistics and the larger transdisciplinary theories of semiotics, policy, and archival analyses are methodological approaches to investigating the ways in which literacy beliefs, practices, and competencies are in dialectical conversation with texts.

Textually Based Research: The Elision of Text and Meaning

Archival and policy texts, like any other texts, are representations, and by that definition, are partial and incomplete. As partial and incomplete representations, they are always contested, and at many levels. It is thus critical to consider the perspectival act of conveying and constructing meaning. Take, for instance, the following definitions of policy, which is one type of text:

> [Policy is] the expressed intentions of government actors relative to a public problem and the activities related to those intentions. (Dubnick & Bardes, 1983, p. 8)

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> [Policy represents] the temporary settlements between diverse, competing and unequal forces within civil society, within the state itself and between associated discursive regimes. (Kenway, 1990, p. 59)

> [Policy is] substantive decisions, commitments, and actions made by those who hold or affect government positions of authority, as they are interpreted by various stakeholders. (Bryson & Crosby, 1992, p. 63)

> Policy is the rational attempt to attain objectives. (Stone, 1997, p. 37)

> [Public policy] includes both official enactments of government and something as informal as "practices." Also, policy may be viewed as the inactions of government, not simply what the government does. (Cibulka, 1995, p.106)

> Policy is clearly a matter of "the authoritative allocation of values"; policies are the operational statements of values . . . policies project an ideal society. (Ball, 1990, p. 3)

> Public policy is the dynamic and value-laden process through which a political system handles a public problem. It includes a government's expressed intentions and official enactments as well as its consistent patterns of activity and inactivity. (Fowler, 2000, p. 9)

These are but a few of the many definitions of policy, and yet, without a clear understanding of what policy is and is not, the analysis of a policy and its outcomes becomes more narrowly construed. Without due attention to the ideologies and discourses underpinning and strewn throughout policies, analyses are cauterized in their insights and utility. It is essential, then, that attention is paid to the way in which a policy is positioned in order to offer an informed analysis.

Taking up this charge to be explicit about the definitions of what counts as a text, particularly a policy text, Taylor, Rizvi, Lingard, and Henry (1997, pp. 15–17) articulate a series of general observations relative to the constituent parts of all policies, which they perceive to be both processes and products. These observations are adapted here to situate the nature of archival and policy texts better.

1. Texts are more than words, sentences, and paragraphs: Texts are dynamic, interactive, and interpreted reflections of society that are situated temporally, culturally, socially, and geographically.
2. Texts are multidimensional: Texts are conceived of, written, and interpreted differently by different individual and institutional actors.
3. Texts are value-laden: Values permeate all aspects of texts, from conceptualization to drafting, binding to illustration, and revision to completion. Who decides is thus of central importance to each constituent element of the process.
4. Texts exist in context: No text exists in isolation; rather, the historical location, socioeconomic milieu, and overriding ideological and political climate all influence the shape and tenor of a particular text.
5. Texts interact with other texts: Texts are both discrete and interrelated, whereby they influence, are influenced by, and interact with other texts, creating new spaces for discourse, conflict, debate, and understanding.
6. The analysis of texts is never straightforward: texts are necessarily interpreted and mediated by the complex social, economic, political, and ideological dynamics of the lived realities of individual and institutional actors.
7. Texts convey intended as well as unintended messages: As a function of the myriad perspectives a reader brings to bear on a text, and the writer's own overt and covert intent, the interaction effect of context, and a multitude of perspectives working in parallel to one another yield variable interpretations.

Taken in their entirety, these observations tell us that texts of all kinds are both products and processes caught in a state of ongoing interpretation and transformation. Texts thus serve to not only state values purposefully and covertly, but they also serve to reify and operationalize those values, highlighting their intensely political character. The subsequent process of meaning making within a text rests in large part on the epistemological stance brought to the text by the reader that functionally influences how the text is perceived, read, analyzed, and reflected upon. From a research stance, the epistemological approach of the researcher will be inscribed into the methodological choices of text, analysis, and implications.

Approaches to Archival and Policy Analysis

Increasingly, archival and policy analyses have striven to both situate the production of texts within the sociopolitical contexts and to consider the choices and effects of what is contained within texts and what is excluded. Using methodologies such as discourse analysis, frame analysis, and content analysis, literacy researchers have explored the ways in which texts construct, structure, and reflect lived realities.

One of the most common approaches to policy analysis in educational research is critical discourse analysis. Falling in theoretical concert with critical approaches such as critical race theory, queer theory, feminist theory, and postcolonial theory, critical discourse analysis is imminently concerned with power, but geographically locates the work with the dialectics of language and text (Fairclough, 1995). Literacy research that employs critical discourse analysis (CDA) does so to explore the ways in which power inequities are inscribed into texts and practices with texts (e.g., Woodside-Jiron, 2003). Particularly abundant have been the uses of critical discourse analysis to explore the ways in which federal policies, beginning in the Clinton presidency and continuing through subsequent administrations, have delineated the role of teachers, students, and schools in contemporary times of increasing privatization, increasing achievement debts (Ladson-Billings, 2006), and technicist approaches to pedagogy and curriculum (Luke, 2004). Inherent in these studies and the knowledge mined from them are the ideologies at play in the policies. These studies, coming largely from a critical theoretical stance, have critiqued these ideologies as figurative assaults on public education and social justice. However, critical discourse analysis itself has been critiqued as being inordinately leftist in its ideology and hence in the knowledge yielded from studies using critical discourse analysis.

Frame analysis, used more in communication studies and sociology than education, presents a compelling counterpart to critical discourse analysis. Similar to CDA's interest in how texts both reflect and shape lived realities, frame analysis is also used by researchers who take for granted that texts are always partial. However, frame analysis is particularly interested in how ideologies are leveraged to frame texts for particular purposes. Frames are used to shape meanings and to convey and promote messages as well as policy. Bateson (1972) offers a useful metaphor for clarifying the concept of frames saying, "The frame around a picture, if we consider this frame as a message intended to order or organize the perception of the viewer, says, 'Attend to what is within and do not attend to what is outside'" (p. 187). All message makers (or framers) use cultural resources like beliefs, ideologies, values, and myths in order to frame a message that legitimates, motivates, and persuades an intended audience by deliberately choosing what is contained within the frame and what is not.

Therefore, frame analysis looks at frames as methods of conveying and reading beliefs, ideologies, values, and myths by both noting which of these resources are drawn on to create the frame as well as which of these cultural resources are not utilized and to what

effects (Davies, 2002). However, different than content or critical discourse analysis, frame analysis focuses upon the ideologies used to frame texts as a reflection both of the authors' intents and the likely perspective of the reader and user. In this sense, frame analysis first posits texts as communicative, dialectic, and as relays for ideological synchrony, with implications for discussing the social contexts in which texts reside. From this stance, then, the research inquiry is to shed light on which ideologies are used to frame the text, to whom, and why.

Textual Analysis as a Research Method

However, within all textual analysis, the same bind exists that marks all textual processes: textual productions, whether a policy analysis or a media text, are all perspectival accounts. On the other side of the same coin, all interpretations of texts are similarly perspectival. Heretofore, literacy research using textual analysis has described this perspective as a limitation of the knowledge to be gained from archival analysis; however, this limitation can only be seen as such when beginning from a desired stance of knowledge as neutral. It is a limitation to have a perspective only if not having a perspective is preferred. From that stance, archival analyses can never truly achieve the most traditional definition of reliability, that of replicability. However, due to the nature of texts, of meaning making, and of knowledge gained from analytic research of texts, striving for neutrality is a false condition; it cannot be achieved. Rather, archival analysis should be presented more explicitly as a process, one that provides a set of rigorous analyses and interpretations of a text as a contribution to larger conversations about literacy, research, and education.

SEE ALSO: Critical Literacy; Critical Theory and Literacy; Sociolinguistic Studies of Literacy

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Politeness

MIRIAM A. LOCHER

Language is not just a means to pass factual content from one person to another, it is also a tool to shape relationships and thus to negotiate interpersonal meaning. When we use language, we therefore also reveal something about ourselves and our relationships with others. For example, when requesting, asking, or apologizing, people adapt their language use depending on the nature of their relationship with their addressee (e.g., father–child; employer–employee; friends) and the matter or topic in question. The choice of terms of address is another typical example to show the relational aspect of language. Not only will one and the same person be addressed differently throughout the day (as wife, mother, professional, etc.), she will reciprocate depending on factors such as power, affect, distance or closeness, the roles of the interactants, and the norms of appropriate conduct in the particular context. For decades, linguistic research has been interested in this relational aspect of language, the factors which influence it, and the ways people shape and exploit the social norms that guide their social practices. The term "politeness" is closely linked to this research field and the notion has now been a popular topic in linguistics for over 30 years (for overviews see Suggested Readings). However, it defies easy definition both as a subject in research and as a lay term in a particular culture. In what follows, a selection of early approaches to politeness phenomena will be introduced. Then more recent developments in the field will be mentioned with respect to methodological and theoretical issues and the scope of language data investigated.

Several researchers in the 1970s and 1980s argued that "politeness" was a particular driving force in how people determine language choice and negotiate relational meaning. We can count the approaches by Lakoff (1973), Brown and Levinson (1978, 1987), and Leech (1983) among the early and influential contributions to the study of politeness. Working within a framework of pragmatics in the broad sense—the study of language in use—these researchers argued that there are not only syntactic rules in establishing grammaticality of sentences but also pragmatic rules that determine the appropriateness of language use. They thereby all endeavored to complement the cooperative principle (CP; Grice, 1975). In brief, the CP postulates that interactants, in their process of interpretation, work on the assumption that people adhere to four maxims: the maxims of quantity (be informative), quality (no falsehoods; no utterances that lack evidence), relation (be relevant), and manner (avoid obscurity or ambiguity, be brief and orderly; Grice, 1975, pp. 45–6). If interlocutors do not follow these maxims in the production of an utterance (and they frequently do not), their non-adherence results in additional meaning when the interpreter tries to work out why it took place. Politeness is then argued to be a motivation for non-adherence (Leech, 1983, p. 80). For example, people may speak in a less direct way (non-adherence to the maxim of manner) because politeness considerations overrule the Gricean maxims. Lakoff (1973, p. 298) proposes "rules of politeness" that affect language in use: (a) "Don't impose," (b) "Give options," and (c) "Make [alter] feel good—be friendly." She thus highlights that speakers orient toward their addressees and take their point of view into account. The rules as such express certain values attached to cultural norms, as it is considered negative to impose on others (first rule), to leave people without any choice (second rule), or to make them feel uncomfortable (third rule). Depending on the cultures, different rules will gain precedence (Lakoff, 1973, p. 303). In a similar vein, Leech (1983)

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introduces the so-called "politeness principle," which consists of six politeness maxims: the tact, generosity, approbation, modesty, agreement, and sympathy maxims. When confronted with having to work out an implicature caused by the non-adherence to one of the maxims of the cooperative principle, the addressees will then look for the motivation in one of the politeness maxims. For example, when a person answers "The children were in your room this morning" to the question "Where's my box of chocolates" (Leech, 1983, p. 94), we can argue that the motivation to answer in this indirect manner lies with the wish to be tactful in not directly accusing the children of having taken the chocolates. In fact, Leech (1983, p. 108) associates indirectness with politeness by saying that "indirect illocutions tend to be more polite (a) because they increase the degree of optionality, and (b) because the more indirect an illocution is, the more diminished and tentative its force tends to be."

This link between indirectness and politeness is also notable in the most influential work on politeness by Brown and Levinson (1978, 1987). They gave currency to the notions of "face" and "face-threatening act" in the research community. Face, originally taken from Goffman (1955), is defined as "the public self-image that every member wants to claim for himself [*sic*]" (Brown & Levinson, 1987, p. 61), and it is split into a positive (involvement) and negative (distance) aspect. Negative face is thus "the want of every 'competent adult member' that his actions be unimpeded by others," while positive face is "the want of every member that his wants be desirable to at least some others" (Brown & Levinson, 1987, p. 62). Interlocutors are argued to be rational agents who take their own and the addressees' face wants into account when producing language. However, the need to serve the two sides of face and the face interests of both speaker and addressee can be in conflict with each other. Face-threatening acts (FTAs) are "acts that by their nature run contrary to the face wants of the addressee and/or of the speaker" (Brown & Levinson, 1987, p. 65). When committing an FTA "x" is unavoidable, speakers will assess the risk of face loss, in other words the "weightiness" of the FTA (W_x), by taking power (P) and distance (D) factors between the interlocutors (S,H) into account, as well as the relative ranking of the imposition (R_x) of the specific FTA "x" in a cultural context (Brown & Levinson, 1987, p. 76). This results in the following equation: $W_x = D\ (S,H) + P\ (H,S) + R_x$. Depending on how strong the estimation of risk of face loss is, the speakers will determine linguistic strategies of mitigation or non-mitigation: (a) "Do the FTA on record," "without redressive action"; (b) do the FTA "with redressive action" attending to positive face needs; (c) do the FTA "with redressive action" attending to negative face needs; (d) do the FTA "off record," in other words the strategy is so indirect that the speaker can claim not to have intended the force of the utterance; or (e) choose not to do the FTA at all (Brown & Levinson, 1987, p. 60). In the case of strategy (a) the risk of face loss is estimated to be least strong; in the case of strategy (e) it is the strongest. Ultimately, Brown and Levinson equate politeness with the display of face consideration in the form of mitigation.

Brown and Levinson's (1978, 1987) theory can easily be called the most influential contribution to this field of research. All the subsequent studies contributed to the plethora of publications on politeness either by reproducing their study design (e.g., in an attempt to establish cultural differences with respect to the orientation to positive or negative face needs), or by criticizing and challenging their work. The debates have raised several important issues; only two will be mentioned here. First, despite the fact that Brown and Levinson aimed at a universal framework derived from the study of Tamil, English, and Tzeltal, it was exactly this claim for universality that was challenged with respect to their key notion of "face." Especially researchers on Asian languages and cultures argued early on that the notion of face captured predominantly Western values (involvement and distance) and was not applicable to their cultures to the same extent. This criticism has resulted in a very active research tradition on politeness in Asian languages, and especially on

forms of respect and deference in the form of honorifics (for overviews, see Haugh, 2010; Okamoto, 2010). The notion of face is still being debated in the research community at large. Second, the ranking of strategies according to risk of face loss has been challenged as well. Often attention to positive and negative face may co-occur in the same utterance, or the more indirect rendition of an FTA is not necessarily the more polite version. As Lakoff (1973, p. 303) has already pointed out, "what is polite for me may be rude for you." Members of a particular discursive practice might therefore object to an indirect form of a request, for instance, since their usual rules of conduct would deem indirectness to be inappropriate. Yet, despite such criticism of Brown and Levinson's work, their detailed description of linguistic strategies for interpersonal effect is unprecedented and explains its usefulness to this day.

The 1990s and early 2000s especially saw a rise in critical reassessments of the early work of politeness researchers, which resulted in two main trends: (a) discussing methodological and theoretical issues, and (b) broadening the scope of data and interest. Both trends will be briefly introduced here.

One of the questions discussed with respect to theory and methodology is concerned with whether one should take an etic (first-order) or an emic (second-order) approach to the study of politeness (see Eelen, 2001; Locher & Bousfield, 2008). Brown and Levinson's work represents a classic second-order approach in that they use the term "politeness" as a technical term to describe face-threat mitigation (irrespective of the addressee's assessment of the utterance). This approach was replicated in the early works on impoliteness, which mirrored the Brown and Levinson politeness strategies and their ranking (Lachenicht, 1980; Culpeper, 1996; Kienpointner, 1997). More recently, researchers such as Bousfield and Culpeper (2008), or Terkourafi (2005), while still firmly arguing for the benefits of a second-order approach to studying politeness and impoliteness phenomena, also develop Brown and Levinson's or their own frameworks further. Bousfield (2010), for example, argues for the use of technical terms, which are, however, informed by lay people's understandings of these very concepts. Ultimately, he is aiming for a predictive theory of politeness and impoliteness. In the same vein, Terkourafi (2005) explores a frame-based approach to politeness phenomena in that she investigates practices that come with expectations about appropriate behavior. She argues that a quantitative approach will help in capturing politeness phenomena and will allow for a certain level of prediction.

Researchers calling for a first-order approach (e.g., Mills, 2003; Locher & Watts, 2005) argue that the term "politeness" refers to a judgment of facework or relational work with respect to norms of conduct in a given context made by a member of a community of practice (see also the work by Watts, 1989, and Fraser, 1990, who pointed early on to the importance of judgments). This means that different groups of people may have different opinions about what counts as "polite." The recognition of a certain variability of judgments of "polite" expression, as mentioned by Lakoff above, is thus at the core of the first-order approach to politeness phenomena, combined with the aim to understand better how interlocutors negotiate the relational aspect of language use in general.

In addition, the term "politeness" is only one of many possible labels in English to describe "relational work," where the latter "refers to all aspects of the work invested by individuals in the construction, maintenance, reproduction and transformation of interpersonal relationships among those engaged in social practice" (Locher & Watts, 2008, p. 96). Other English labels for face-maintaining and face-enhancing relational work might be 'refined,' or 'polished,' while face-aggravating behavior might be referred to as 'impolite,' 'rude,' 'uncouth,' and so on. (Note that in this description "face-maintaining," etc., is used as a technical concept, while the lexemes in single quotes are emic terms.)

A further point for consideration is that terms such as "politeness," "impoliteness," or "rudeness" are hard to translate into other languages, precisely because they index cultural

values. For this reason, it is also problematic to raise a first-order evaluative lexeme of a particular language to a second-order (some would argue "universal") theoretical concept. However, what seems to be a human (universal) trait is the fact that people negotiate relationships by means of appropriate language use, while the labels they give such behavior and the norms that govern the behavior are variable.

When considering "politeness" as an evaluative concept embedded in a particular cultural context, it is self-evident that the term as such holds no entirely stable meaning. "Politeness," just like any other lexeme, can and does undergo semantic change over time. For example, in the eighteenth century in England the term "politeness" was linked to the court and evoked slightly different connotations than it does today (Stein, 1994). Further evidence for such changes are the numerous lay books on proper (linguistic and behavioral) conduct that have a long tradition in many cultures. Even within our own lifetimes, we can witness that these books describe slightly changing norms and expectations of proper conduct. All the mentioned changes and differences are interesting to explore from a synchronic as well as from a diachronic and cross-cultural perspective.

It should be stressed that norms are shared by groups of people, who acquire them by being socialized into practices. Social beings exploit knowledge of these norms to achieve their relational aims. For example, they might want to create a "polite" interpersonal effect, or they might wish to challenge relationships by creating "rude" interpersonal effects. In order for this to happen, there must be a certain overlap and shared understanding of norms of behavior. From a methodological point of view, first-order researchers have been caricatured to overemphasize variability and second-order researchers to overdo leveling. However, there is a certain consensus nowadays to look at politeness as a situated, cultural phenomenon, and to work on fruitful combinations of first- and second-order terminology and methodology (Locher & Bousfield, 2008).

Further methodological and theoretical discussions that have been raised center on how cognitive processes can be linked to the creation of relational and social meaning, the role of the recognition of intentions in the process of working out interpersonal meaning, the status of universality within the theoretical politeness frameworks, and the notion of face. The launching of the *Journal of Politeness Research* in 2005 (De Gruyter) bears witness to these new interests in methodological and theoretical issues in the field of politeness studies.

The second important trend in the last years of research is that both first-order and second-order researchers have broadened the scope of interest with respect to the nature of the investigated data. While many studies inspired by Brown and Levinson focused on linguistic speech acts such as requests, apologies, or criticism, which are traditionally associated with face-threatening situations that are conventionally mitigated, more recent studies also focus on explicitly face-damaging or face-aggravating behavior, and the notions of impoliteness and rudeness (see, e.g., Bousfield & Culpeper, 2008; Bousfield & Locher, 2008). Already in 1990, Tracy highlighted that facework does not consist only of face-maintaining behavior, but also of face-enhancing, face-damaging, and face-challenging behavior. This goes hand in hand with Scollon and Scollon's claim (2001, p. 48) that there is no faceless communication, a point that is mirrored in the definition of relational work given above in that the entire spectrum of communication is of interest for research. This field, which is still rather young, witnesses and contributes to the same methodological discussions as "politeness research" in general.

Finally, in many cases we can note that the opening up of the type of data also shows a certain shift in interest—away from a focus on "politeness" or "impoliteness"—to a discussion of the interplay of relational issues and "identity construction." Researchers working with concepts such as "relational work" (Locher & Watts, 2008), "rapport management" (Spencer-Oatey, 2005), and "face constituting theory" (Arundale, 2010), and also

scholars interested in identity construction more generally (e.g., Davies & Harré, 1990; Bucholtz & Hall, 2005; Locher, 2008), are ultimately concerned with the interpersonal or relational aspect of language and how it affects language choices. In order to study these choices, not only contextual factors are considered; cognitive and social-psychological insights also enter the discussion of how people negotiate interpersonal meaning in particular communities of practice. The field of "politeness" research is thus as vibrant as ever and has broadened in scope and interest.

SEE ALSO: Analysis of Identity in Interaction; Conversational Implicature; Conversation Analysis and Identity in Interaction; Politeness in Computer-Mediated Communication; Politeness and Face Research; Positioning in the Analysis of Discourse and Interaction; Pragmatic Socialization

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Politeness and Face Research

STEPHEN BREMNER

Most of us have a sense of what constitutes polite behavior, and can generally recognize instances when rules of politeness are being transgressed. Indeed, politeness is a central component of social interaction, and its successful functioning is dependent on the parties involved understanding and respecting the conventions of being polite. These conventions are for the most part tacitly understood, yet are realized in the language we select as we participate in social interaction. This relationship between politeness and language has become a focus of considerable interest for linguists. As Held puts it, "the fact that politeness represents a social norm that can be observed empirically in language and reliably analyzed by means of language has long made it an important object of study in linguistics" (1992, p. 133). Eelen (2001) suggests that the study of politeness helps us to understand the relationship between language and social reality, while Lakoff and Ide talk of the possibility of politeness "as a unifying force bringing together a theory of language and theories of human motivation, behavior and culture" (2005, p. 3).

Definitions of Politeness

A number of definitions have emerged from the wealth of studies that have examined politeness phenomena, and these reveal subtly different emphases. For some researchers the key idea is that politeness serves as a means of reducing the possibility of conflict: Lakoff, for example, contends that "politeness is developed by societies in order to reduce friction in personal interaction" (1975, p. 64), while Brown and Levinson (1987) view politeness as a means of softening acts which threaten the face of interactants. Kasper, in an overview of research into linguistic politeness, explains that these perspectives on politeness see communication "as a fundamentally dangerous and antagonistic endeavor" (1990, p. 194), thus politeness would require strategies that can be used by participants in an interaction to reduce the danger and possibility of antagonism.

A slightly different point of view centers around the idea of politeness as a form of consideration for others: Sifianou sees it "*as the set of social values which instructs interactants to consider each other by satisfying shared expectations*" (1992, p. 86, original emphasis), while Watts defines it as "mutual cooperation in verbal interaction and as displaying consideration for other participants" (2003, p. 17). A further perspective considers the role of politeness in ensuring successful interaction, evidenced in Ide's definition of politeness as "language usage associated with smooth communication" (1989, p. 225).

An important aspect of politeness, intimated in Sifianou's (1992) definition, is the notion that conventions of politeness and their linguistic realizations are mutually understood by the parties involved, and that it is anticipated that each party will observe these. Essentially, then, politeness is about participants in an interaction following the rules and expecting that they will be followed.

It should be noted that the term "politeness" has a largely positive connotation in everyday language; witness the Oxford English Dictionary definition, for example: "courtesy, good manners, behaviour that is respectful or considerate of others." In linguistic studies,

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however, the term is used in a more neutral manner: Ide (1989) captures this difference very deftly, explaining that, "Just as 'height' does not refer to the state of being 'high,' 'politeness' is not the state of being 'polite,' rather it is a continuum stretching from polite to non-polite" (p. 225).

The Notion of Face

In the same way that politeness has status as a commonsense notion in our everyday existence, the idea of face appears in our everyday language, in phrases such as "face-saving" or "to lose face." It is commonly accepted that the notion of face is of considerable importance in certain Asian societies, but it is not a purely Asian preserve: indeed, according to Janney and Arndt, "a fundamental preoccupation of people around the earth is maintaining or protecting face" (1992, p. 27).

The concept of face was introduced into discussions of sociolinguistics and pragmatics by Goffman (1967), who defines it "as the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact" (p. 5). "(O)ne's face," he goes on to say, "is a sacred thing, and the expressive order required to sustain it is therefore a ritual one" (p. 19). He expects that participants in any encounter will try and behave in such a way as to maintain both their own face and that of the other participants. Similarly, Brown and Levinson, who derive their notion of "face" from Goffman, say that face needs constant attention during interaction and that cooperation is expected of all parties because of "the mutual vulnerability of face" (Brown & Levinson, 1987, p. 61).

Janney and Arndt contend that threats to face—whether intended, accidental, or even imagined—are the basis of most interpersonal conflicts (1992, p. 28). Goffman asserts that "When a face has been threatened, face-work must be done" (1967, p. 27). Facework is the set of practices that people call upon to save face, and these can have a defensive orientation, aimed at saving your own face, or a protective orientation, aimed at saving the others' face. Face is a central concept in the consideration of politeness, in that whatever perspective is taken with regard to politeness, whether it is seen as a form of conflict avoidance, or of cooperation, or as a lubricant that ensures the smooth functioning of interaction, polite behavior requires participants to attend to each other's face.

Politeness Research

There is a substantial body of empirical research into the nature of politeness and how it is realized in linguistic terms. This has been conducted in a range of cultural contexts and with a wide variety of languages, including Chinese, Japanese, Greek, Russian, Hebrew and English to name but a few. According to Watts (2003), the study of linguistic politeness phenomena in Chinese and Japanese has a long history, while in Western Europe and North America, the discipline has its genesis in the late 1960s/early 1970s. He contends that this is because linguists who were interested in the area "had little or no theoretical basis to fall back on until speech act theory appeared in the 1960s" (2003, p. 53), referring to the work of Austin (1962) and Searle (1970). In addition to speech act theory, research into politeness draws quite heavily on the work of Goffman (1967) and his notions of face and facework, explained above, and the work of Grice (1975), in particular his cooperative principle.

Grice's cooperative principle (CP) serves as a launch pad for a number of important theories and studies relating to linguistic politeness. The CP is predicated on the idea that listeners and speakers need to cooperate in order for interactions to be successful. Four

conversational maxims are proposed as part of this principle: the maxims of *quantity*, *quality*, *relation*, and *manner*. These suggest respectively that a speaker's contribution should only be as informative as is required for the purposes of the conversation, that people should say only what they believe to be true, that they should be relevant, and finally that they should be brief, orderly, and avoid ambiguity. The maxims should not be taken as prescriptive, rather they should be seen as assumptions that a listener might make about the behavior of a speaker. This echoes the point made above in relation to politeness: that participants in an interaction are involved in a cooperative process that is based on certain expectations.

Interestingly, Grice also suggested that a maxim of politeness could be added, and this, according to Watts (2003), prompted researchers like Lakoff (1973) and Leech (1983) "to formulate the missing maxim" (p. 58). Lakoff's theory proposes overarching rules of *pragmatic competence*, which consist of two elements: "Be clear" and "Be polite." "Be clear" (the "rules of conversation") is similar to Grice's CP, while "Be polite" (the "rules of politeness") has three subrules: "R1. Don't impose; R2. Give options; R3. Make addressee feel good."

Leech (1983) also builds on Grice's work; he articulates a *politeness principle*, which consists of six maxims: tact, generosity, approbation, modesty, agreement, and sympathy. According to this principle, politeness involves minimizing the cost and maximizing the benefit to the hearer or speaker, depending on the situation. The *maxim of tact*, for example, states that you should minimize the expression of beliefs which imply cost to other participants, and that you should maximize the expression of beliefs which imply benefit to them. The main purpose of this politeness principle, Leech says, is to establish and maintain feelings of comity within the group.

Brown and Levinson's Research

Eelen suggests that Lakoff, Leech, Brown, and Levinson "can be considered the founding fathers of modern politeness research" (2001, p. 23). Certainly it would be difficult, some would say impossible, to discuss politeness and theories of politeness without considering the work of Brown and Levinson, in particular their 1987 book, *Politeness: Some Universals in Language Usage*, originally published as a paper in 1978. Brown and Levinson, like Lakoff and Leech, build on Grice's CP. What they were hoping to develop, they said, was "a tool for describing . . . the quality of social relationships" (Brown & Levinson, 1987, p. 55); an important element of this aim was to build—controversially—a single universal theory that addresses politeness phenomena in different cultures: "We want to account for the observed cross-cultural similarities in the abstract principles which underlie polite usage" (1987, p. 57). The issue of the claimed universality of their theory is discussed later.

It is worth explaining in some detail the principles of their theory, given that it has become a point of reference for almost any research in the field of politeness. The theory is predicated on the notion of the model person (MP), explained as "a wilful fluent speaker of a natural language, further endowed with two special properties—rationality and face" (Brown & Levinson, 1987, p. 58). A person's face is defined as

> the public self-image that every member wants to claim for himself, consisting in two related aspects:
>
> 1. negative face: the basic claim to territories, personal preserves, rights to non-distraction—i.e., freedom of action and freedom from imposition;
> 2. positive face: the positive consistent self-image or 'personality' (crucially including the desire that this self-image be appreciated and approved of) claimed by interactants. (p. 61)

Face wants, they say, can only be satisfied by the actions of others, which means that "it will in general be to the mutual interest of two MPs to maintain each other's face" (p. 60). Such a position, then, in common with Grice's CP, assumes that participants will adopt a cooperative approach to interacting, and will expect the same from other participants. As mentioned earlier, their work is predicated around the idea that communication is a threatening business; acts which intrinsically threaten face are known as "face-threatening acts," or FTAs. The task of the interactant is to choose an appropriate strategy for doing an FTA, and Brown and Levinson propose a set of strategies that range from "bald on-record" performance of an FTA to more redressive strategies that "give(s) face" to the addressee and "attempt(s) to counteract the potential face damage of the FTA" (p. 69). Positive politeness strategies, oriented towards the positive face of the hearer, might involve complimenting or expressing solidarity with the hearer, while negative politeness strategies, oriented towards partially satisfying the hearer's negative face, would be "essentially avoidance-based," and characterized by "self-effacement, formality and restraint" (p. 70), and might include apologies, hedges, and other softening mechanisms.

A further dimension to the model comes in the form of a set of sociological variables which are considered when assessing the seriousness of an FTA. These are the social distance between the speaker and hearer, the relative power relations between them, and the degree to which the act potentially imposes on the hearer. Consider, for example, the degree of imposition involved in asking to borrow someone's pen compared to asking to borrow their car for the weekend.

A Universal Theory of Politeness?

Brown and Levinson's work has attracted a considerable amount of comment and criticism, much of this surrounding the claims of universality that they make for their theory. A major issue relates to their contention that the choices that speakers make are individually motivated: according to some researchers their theory does not take sufficient account of the social exigencies inherent in certain cultures, particularly Asian ones. In other words the model is situated in an individualistic (for which read Western) view of culture rather than a collectivist perspective. Arundale (2006) talks in this regard of the "Western preoccupation with the individual as the central factor in explaining human activity" (p. 195).

This issue is addressed by Kasper (1990), who distinguishes between politeness as strategic conflict avoidance (referred to above) and politeness as social indexing, which is explained as the linguistic expression of "social warrants" that accrue from attributes such as age, sex, and family position on the one hand, and rank, title, and social position on the other; as such, she says, social indexing "operates independently of the current goal a speaker intends to achieve," and so speakers are often obliged to "conform to socioculturally prescribed or permitted choices" (1990, p. 196) during interactions rather than make individually motivated choices.

Social indexing and the obligation to observe it varies considerably across cultures; in the case of Japan, for example, Ide (1989) explains "*wakimae*," a Japanese term used to describe a system of politeness determined by social norms such as being polite to older people or to people in higher social positions. Her research is based on the Japanese honorifics system, in which the speaker has to choose between honorific and non-honorific forms, thereby giving information about the speaker–hearer relationship. It is not a question of free will, she says, as with the choices enumerated in Brown and Levinson's model, but of observing what is socially prescribed. The politeness where the speaker has the choice, she calls "volition," which she contrasts with "discernment," which does not involve free will. Similarly Gu (1990) explains that the Chinese concept of politeness is linked to moral societal norms, rather than the psychological wants of individuals, saying that "Politeness is a phenomenon belonging to the level of society" (p. 242).

Thus one of the chief objections to the universality claimed by Brown and Levinson for their theory is the contention that politeness is culturally bound in some ways. However, while increasing numbers of studies make the case that the conventions and rules of politeness vary from culture to culture, the search for a universal theory goes on: Leech (2007), for example, has proposed a *grand strategy of politeness*, which he claims can explain communicative politeness phenomena in both Eastern and Western languages.

Recent research has raised further questions about the possibility of a universally applicable theory, and this relates to the interactional nature of conversation and the fact that it is located in specific contexts. Arundale argues for an interactional view of face, saying that it is "an emergent property of relationships, and therefore a relational phenomenon, as opposed to a social psychological one" (2006, p. 201). Watts (2003), who talks of the need to break with Brown and Levinson's paradigm, sets out arguments to refute the idea of a universal, scientific concept of politeness, saying that polite behavior cannot be evaluated out of context, and that any theory has to take into consideration the perspectives of speakers and hearers, whose behavior during any interaction is open to modification as it progresses; on the basis of this he contends that it is not possible to develop a predictive model of linguistic politeness. Meanwhile Eelen, who provides an extensive review and critique of politeness theories, sees his revision of the notion of politeness as representing "a turn towards a firmer embedding of politeness within the dynamics of social reality" (2001, p. 257). It can be seen, then, that the field is still developing in theoretical terms, particularly as researchers investigate politeness in an increasingly broad variety of cultural settings and take into account the features of specific contexts.

Other Areas of Politeness Research

Over the last 20 or 30 years a vast amount of research into politeness has been produced, particularly comparing politeness across cultures. It has been observed that there is little discussion of impoliteness (Eelen, 2001), a notable exception being the work of Culpeper (1996). There is a considerable body of research that focuses on the relationship between power and politeness; another important area that has been examined is the issue of politeness and gender, Lakoff's (1975) work being one of the better known studies. Finally, although the bulk of politeness-based research is based on spoken data, there is a growing number of studies that use written data, particularly from workplace settings.

The examination of politeness and face presented here has attempted to describe how this area of research has developed, taking in the major studies and theoretical issues along the way. However, it can only scratch the surface of what is a huge body of discussion and research, which has grown rapidly and, given the centrality of politeness in our daily interaction, has rightly assumed considerable importance in applied linguistics.

SEE ALSO: Brown, Penelope; Leech, Geoffrey; Levinson, Stephen C.; Politeness

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Politeness in Computer-Mediated Communication

CARMEN TALEGHANI-NIKAZM

Computer-mediated communication or CMC refers to a rapidly growing means of online communication through which people interact with each other by language, usually typed on a keyboard and read on a computer screen. CMC includes chat, computer messages, e-mail, computer conferencing, forums, and online bulletin boards. Some communication modes, such as chat, computer conferencing, and computer messages, allow people to interact in real time (i.e., instant messaging), while others are rather fixed in terms of the response time. CMC has become an important part of our daily lives and participants increasingly use this medium to establish and maintain social relationships. In comparison with face-to-face conversation, CMC represents a modified speech exchange system where physical bodies, and paralinguistic cues such as intonation, facial expression, and gesture are not available. In the past 20 years, researchers and educators have become particularly interested in this new medium and how it influences language use. While focusing on the similarities and differences between features of ordinary conversation and online communication, these studies have analyzed and described the ways technological constraint limits the interactional resources, the linguistic choices participants make when communicating via CMC, and the ways they adapt their language to the new medium (Jones, 1995; Herring, 1996, 2002; Harrison, 2000; Schönfeldt & Golato, 2003). Some studies focused on sociological or sociolinguistic aspects such as gender, community, and identity (Jones, S. 1995; Jones, Q., 1997; Baym, 1999) in e-mail communication (e.g., Herring, 1996), Web discussion boards, and Web chats (Baym, 1999; Herring, 1996), whereas other studies examined mainly linguistic elements of CMC and comparing the language used in CMC with oral and written forms of communication (Jones, 1997; Herring, 2001). Other groups of studies explored how CMC might be used effectively for pedagogical or business purposes (e.g., Al-Shalawi, 2001).

Politeness Theory and CMC

Interest in language use in CMC and strategies participants use in establishing and maintaining social relationships led scholars to a particular area of investigation, namely politeness. The concept of *politeness* refers to rule-governed strategies through which interpersonal relationship and harmony can be achieved and maintained (Lakoff, 1973; Brown & Levinson, 1987). It is face-work that underlies the interpersonal function of language use. The concept of face, as in *losing* or *saving face*, can be seen as positive social value that one can claim during a particular social interaction (Goffman, 1967). One of the most influential and productive studies on politeness and its variations is Brown and Levinson's politeness theory (1987). According to this theory, speech acts such as disagreement, requests, refusals (for example) pose a threat to face—that is, public self-image—which is unavoidable in everyday social interaction. In order to avoid threatening each other's face, and to maintain and enhance a harmonious social relationship, speech participants employ verbal and nonverbal politeness expressions and practices when interacting with

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one another in face-to-face settings. Utilizing the notion of face (Goffman, 1967), Brown and Levinson (1987) propose a dual nature for *politeness*: *positive politeness* and *negative politeness*. Positive politeness is expressed by satisfying *positive face* by indicating similarities amongst interactants or by expressing an appreciation of the interlocutor's self-image. Negative politeness, on the other hand, involves saving the interlocutor's face by mitigating face-threatening acts (FTAs), or by satisfying *negative face*, which indicates respect for the addressee's right not to be imposed. In their view, participants in an interaction select from a set of politeness strategies that enable them to either avoid or minimize face-threatening activities. Brown and Levinson (1987) suggest that the more threatening an act is the more polite and indirect are the means used to accomplish it. In addition to positive and negative politeness theory, Brown and Levinson (1987) propose three social and interpersonal variables that affect realization of politeness during interpersonal relationships among interactants, namely *power*, *distance*, and *imposition.* Hence maintaining and promoting face depends on the speaker's cognitive assessment of these social variables. When the speaker perceives an asymmetrical power difference and greater sociopsychological distance from the hearer and a greater imposition, they tend to be more polite.

Employing Brown and Levinson's (1987) politeness theory, some researchers have conducted studies on politeness in CMC in Western and non-Western language, examining interaction in everyday settings (Dorta, 2008), institutional settings (Harrison, 2000; Westbrook, 2007), and in pedagogical contexts (Chen, 2001; Al-Shalawi, 2001; Biesenbach-Lucas, 2007; Park, 2008). Overall, research has shown that politeness plays a major role in participants' construction of their discourse. Speakers utilize linguistic strategies used in face-to-face conversations and when necessary design their own innovative nonlinguistic politeness to avoid and reduce social friction and to enhance each other's face during online communication. Furthermore, these studies have demonstrated that, depending on participants' cognitive assessment of interpersonal variables such as social *distance* and *power* difference between the participants and the *weight* of imposition, participants employ verbal and nonverbal devices to manage online face-work.

As noted, overall studies on online communication and politeness behavior in CMC (e-mail, synchronous chat, Web discussion board) found some differences and similarities in linguistic and nonlinguistic politeness features that are utilized by interactants in both media. For example, it has been suggested that unlike in face-to-face conversation, depending on the topic and setting participants in CMC may frequently employ direct forms of speech acts (e.g., *What's the topic?*) and that this speech style (i.e., short and concise) can be contributed to the participants' need to follow the stream and speed of the real-time conversation in synchronous mode of communication (Dorta, 2008; Park, 2008). However, this research has also shown that, similar to face-to-face conversation, participants regularly employ positive and negative politeness strategies in online communication. For instance, studies have demonstrated that participants frequently use positive politeness strategies such as seeking common ground by expressing shared background knowledge, interest, or experiences which may enhance positive interpersonal relationships and increase social proximity and solidarity among participants (Westbrook, 2007; Dorta, 2008; Park, 2008). Examples of negative politeness strategies similar to face-to-face interaction that were found in online communication include apology, conventional indirectness (*could you . . .*), politeness discourse markers such as *please*, and hedges, that is, words that modify or mitigate the force of a speech act (Lakoff, 1973) (e.g., *I think*, *sort of*, *like*, *well*, *you know*). These are all devices that contribute to softening and mitigating the force of face-threatening acts, such as disagreement and request (Harrison, 2000; Al-Shalawi, 2001; Westbrook, 2007; Dorta, 2008; Park, 2008).

As stated earlier, in CMC physical bodies and paralinguistic cues (such as intonation, facial expression, and gesture) are not available as they are in face-to-face conversation.

It is well known that in face-to-face conversations interactants employ various nonverbal devices such as nodding, eye contact, intonation, and facial expressions to indicate interest, understanding, or confusion. These nonverbal communication cues work to align and modify speech participants' verbal exchanges. Consequently, nonverbal communication devices function to enhance and promote communication flow and progress. They also help participants to convey different sociocognitive and emotional meanings. Studies of online communication and politeness have shown that nonverbal communication is quite common among online language users. It has been noted that participants have developed creative devices to bring nonverbal communication commonly used in face-to-face conversation into online communication and thereby to overcome the constraints that the CMC channel imposes on online users (Carter, 2003; Golato & Taleghani-Nikazm, 2006; Park, 2008). More specifically, it has been shown that participants employ a variety of novel linguistic and paralinguistic devices to express interpersonal and affective stances in online communication. These devices include contractions of linguistic forms, abbreviations (*lol*: laughing out loud, or *OMG*: Oh my god), typographical conventions such as capital letters (to signify intense attention to the recipient), shorthand or informal abbreviations (*me2*, *ic*), and emoticons (for example, the so-called *smiley face*, *sad face*, or *a flower*) to simulate gesture and facial expressions.

In terms of *positive politeness*, it has been noted that because of the simplified syntactic structures, colloquialisms, and spelling changes reflecting spoken language, chat logs, in particular, often read almost like a transcript of spoken language (Herring, 1996; Reed & Ashmore, 2000). Researchers attribute this informal speech style in CMC (particularly in chat exchanges) to speakers' *positive face* desire—in other words, to be liked and appreciated. More specifically, it has been suggested that informality increases the use of solidarity-oriented linguistic forms and thereby decreases social distance and promotes a positive atmosphere for interpersonal relationships (Harrison, 2000; Park, 2008).

Politeness Strategies and Social Variables in CMC

In addition to analyzing the ways politeness is realized linguistically and nonlinguistically in online communication, some researchers have examined the ways that politeness strategies are systematically related to variables of interest in CMC research, such as status, impersonality, friendship, and communicative efficiency. Herring, Johnson, and DiBenedetto (1995) examined online discussion groups with respect to politeness and gender and investigated whether women and men exhibit different patterns of online participation in terms of amount, frequency, and manner of posting. In addition, Herring et al. supplemented their study by an anonymous survey on Net etiquette: what constitutes appropriate and inappropriate behavior on the Internet. Herring et al.'s (1995) results of investigation revealed that women and men access appropriateness differently. While women value politeness and generally behave politely on the Internet, men operate in accordance with other values, namely agonistic debate and freedom from censorship, which supersede politeness and result in violations of conventional politeness norms. Herring et al. (1995) based their study on Brown and Levinson's politeness theory (1987) and demonstrated that men commonly post longer and more frequent messages than women do. They also post more messages that are contentious or adversarial in tone, or overtly hostile, and make greater use of sarcasm. In contrast, women post short messages, contribute more overt expressions of agreement, appreciation, and support, and apologize more often.

Investigations of politeness in non-native speakers' (learners of English) e-mail interaction with faculty (native speakers) revealed that the difference between native speakers' and non-native speakers' e-mail interaction is in the presence of multiple *phatic* expressions

in the non-native speakers' messages (Bloch, 2002; Biesenbach-Lucas, 2007). Phatic communication refers to messages that do not carry real information, but are predominantly used to maintain social relationships (Malinowski, 1923). On the other hand, a comparison of native and non-native speakers' requests (for appointments and recommendation) produced in e-mail exchanges with their professor revealed that both groups of students preferred formulations such as *can you* . . . and want statements such as *I want/would like to* in order to realize their requests. The study also showed that the two groups differed in types of politeness devices they utilized when making requests via e-mail exchanges. For example, the comparison revealed that the lexicosyntactic politeness features (e.g., use of past tense) made the native speakers' requests indirect (e.g., *could you/would you*) and more polite (Chen, 2001; Biesenbach-Lucas, 2007). It is worth mentioning that Biesenbach-Lucas's (2007) investigation showed that native speakers' requests were not overly mitigated with politeness strategies, suggesting that in the e-mail medium, a minimum amount of modification may be considered sufficient for realizing students' requests of faculty. This may be understood as an attempt at message economy and clarity (Biesenbach-Lucas, 2007). Overall, it has been suggested that politeness conventions in e-mail, a text-only medium with little guidance in the academic institutional hierarchy, appear to be a work in progress, and native speakers demonstrate greater resources in creating e-polite messages to their professors than non-native speakers (Baron, 1984; Herring, 2002; Biesenbach-Lucas, 2007).

Conclusion

In general, studies on politeness and CMC have found evidence for different ways participants adjust their verbal and nonverbal practices when dealing with face management issues to suit the particular condition of the medium. The studies mentioned in this entry focus on modified discursive exchanges and politeness behavior in CMC where nonverbal and paralinguistic features are not available to the participants. These studies and their results have made an important contribution to our understanding of interpersonal communication that is critical to the fostering of successful interaction and collaboration. There have also been other more recent forms of CMC such as ICQ and Messenger Video that provide a video chat feature to the online communication. These multi-user synchronous video chat programs are becoming popular not only for everyday usage but also for educational purposes. Educators have become particularly interested in using chat video programs as a way to encourage and extend educational dialogue between students and instructors. Recent research has mainly focused on the suitability of this new form of CMC for teaching purposes rather than on linguistic and politeness related issues (Sadler, 2007). More research is required to explore the linguistic and paralinguistic politeness features utilized by participants when interacting via synchronous video chat programs.

SEE ALSO: Brown, Penelope; Conversation Analysis and Affiliation and Alignment; Levinson, Stephen C.; Politeness; Politeness and Face Research; Pragmatics of Chat; Pragmatics and Culture

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Positioning in the Analysis of Discourse and Interaction

RODNEY H. JONES

Introduction

Positioning theory is a framework for analyzing the negotiation of identity in interaction chiefly associated with the psychologist Rom Harré, and his colleagues (Davies & Harré, 1990; Van Langenhove & Harré, 1999). The idea of positioning originally grew out of problems arising from the inadequacy of the concept of "role" in social scientific discussions of identity.

Whereas "roles" are usually conceived of as static and unitary, the notion of positioning is better able to capture the dynamic and contingent nature of identity in social encounters. "Who one is," according to Davies and Harré (1990, p. 46), is not static. It is "always an open question with a shifting answer depending upon the positions made available within one's own and others' discursive practices and within those practices, the stories through which we make sense of our own and others' lives."

The interactional notion of positioning advanced by Harré and his colleagues also contrasts with the more rigid view of positioning advanced by Marxist-inspired media critics like Althusser (1971), for whom media texts are seen to have the power to "position" subjects in a way that advances the ideological agenda of particular groups. While ideology is also an important fact of Harré's approach, it is seen more as a tool for social action than as a determinant of it. While social actors are constantly being positioned by discourse, they also have the ability to resist or contest these positionings.

Positioning, then, is essentially a discursive process through which people negotiate their own and others' identities in interaction by portraying themselves as "characters" in jointly produced narratives. In this approach to positioning, there are basically two kinds of positioning: interactive positioning, in which people position each other, and reflexive positioning, in which people position themselves.

Positioning theory has become an important analytical tool in interactional sociolinguistics (see for example De Fina, Schiffrin, & Bamberg, 2006), where, along with "framing" (Goffman, 1974), "footing" (Goffman, 1981), and "stance," it is used to explore ways in which participants in conversation strategically manage their identities and their jointly produced definition of "what's going on." However, the more general concept of positioning, apart from the specifics of the theory developed by Harré and his colleagues, is central to other schools of discourse analysis as well, particularly feminist poststructuralism (Weedon, 1997; Baxter, 2003) and discursive psychology (Potter & Wetherall, 1988), which are similarly concerned with the ways in which, when they engage in social interaction, individuals become the "*site* and *subjects* of discursive struggle for their identity" (Weedon, 1997, p. 93) in which subject positions are variously assumed, imputed, negotiated, contested, and rejected.

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The Positioning Triad

For Harré and his colleagues, positioning is seen as the consequence of the mutually constitutive relationship of three elements—positions, story lines, and speech acts—which together constitute what they call the "positioning triad." The primary unit of analysis in Harré's positioning theory is the *speech act*. However, whereas in the classic formulation of speech act theory the illocutionary force of a speech act is determined chiefly by the intention of the person who issues the speech act, in positioning theory participants in interaction are seen to *act jointly* to produce speech acts, and the force of these speech acts depends upon the *positions* participants have assumed within cooperatively constructed narratives of what is going on (*story lines*). At the same time, these *story lines* and the *positions* made available to participants within them are constructed and maintained through the *force* of the various speech acts participants produce. This relationship between *story lines*, *positions*, and the *force* of speech acts is what constitutes the *positioning triad*.

Story Lines

The notion of the story line is perhaps positioning theory's most unique contribution to the analysis of social interaction. It gives the analyst a way to link the micromanagement of ongoing interaction with the personal histories of participants and the master narratives of their cultures. The basic idea is this: Whenever we interact, the meaning and the "force" of what we say are interpreted within the context of the various "stories" and "histories" that we bring to the interaction or that we "make up" together with other participants as we go along. Some of these stories have to do with our past experiences with the particular people with whom we are interacting. Others are attached to our personal histories apart from those people—our own biographies. Finally, there are stories that are generated by our culture, mutually shared "master narratives" about what sorts of things are supposed to happen in different situations and what kinds of behavior certain kinds of people are expected to display. These "cultural story lines" are usually associated with different "discourses" (such as the "discourse of romantic love" or the "discourse of medicine"). "Cultural story lines" can have a particularly powerful effect on interaction, though participants themselves are often unaware that they are drawing upon them to formulate their actions and interpret the actions of others.

Every conversation, then, is essentially a process through which participants jointly tell stories. These stories are almost always multiple, and interact with one another as they develop. They serve both as resources that participants draw upon to organize and make sense of their interaction and the key mechanisms that individuals use to construct themselves as "observably and subjectively coherent" individuals (Davies & Harré, 1999, p. 37).

Positions

The various story lines that people draw upon and co-construct in interaction make available different "parts" or characters which people can take up for themselves and compel others to assume. These characters are different from "roles" in several important ways. First, they are often predicated on assumptions not just about the kinds of actions that a person is supposed to take up within a particular activity, but also about that person's relative power and standing in relation to other participants, their abilities, their personalities, and their moral characters. Second, the positioning of the self and others as characters in shared story lines is seen as more dynamic and ephemeral than the assumption of "roles," involving the constant potential for shifts in power and status and for the negotiation of character and personality traits.

Participants in interaction, by drawing upon or invoking a particular story line and taking up for themselves the position of one particular character in it, inevitably make available to other participants specific subject positions or characters, which, because of the cooperative nature of conversation, they are usually compelled to take up. It is, however, possible for one to resist or challenge the position that another person has made available to him or her by, for example, attempting to claim the position of a different character in the same story, offering an alternative version of the story, or contesting the legitimacy of the story altogether. In most cases, however, when people fail to conform to the positions that others have made available to them it constitutes some sort of disruption in the interaction which requires comment or repair.

By claiming positions in particular story lines and imputing positions onto others, participants in conversations do not just cooperatively construct frameworks in which conversational contributions can be interpreted; they also set up "moral orders" (Davies & Harré, 1990) within interactions in which participants are seen in various ways as responsible for their own or others' actions and the consequences of these actions.

Force

The final component in the positioning triad is the force of a particular speech act. In traditional speech act theory, the force of a speech act depends upon it meeting certain "felicity conditions" regarding the person who issues it, the person to whom it is issued, and the circumstances in which it is issued. In positioning theory, the force of a speech act depends upon the position that the person who issues it has taken up in a particular story line. What might be taken as a "suggestion" in a story line involving colleagues collaborating on a project, for example, might be seen as an "order" in a story line involving a boss directing his or her subordinates.

At the same time, the force of speech acts themselves constructs and reinforces story lines. By responding to a "complaint" with a "suggestion," for instance, the second speaker positions the first as "asking for advice," and, by treating an utterance as a "condolence," the second speaker positions him- or herself as a victim of some misfortune.

To further complicate things, since conversations almost always involve multiple story lines, the same utterance can be used to perform different speech acts within these different story lines. Anybody who socializes with their superiors from work, for example, is aware of the potentially multiple ways a "friendly suggestion" from the boss might be taken.

Positioning and Strategic Interaction

The analytical power of positioning theory lies in its ability to explain not just how participants in conversations discursively construct themselves and others as characters in story lines, but also how they can use these positions and stories as resources for strategic interaction. Because interaction typically involves multiple story lines, participants usually have available to them multiple positions that they can sometimes strategically adopt, contest, and play off one another. A mother, for example, might shift between the positions of her child's "friend," "teacher," and "parent" when attempting to cajole the child into doing something. This potential for strategic action is particularly relevant in interactions in which individuals with relatively less power attempt to resist, subvert, or adapt to a relatively powerless positioning in one story line by adopting a more powerful one in another (Baxter, 2003; Preece, 2009).

Positioning can also be used strategically in order to assume or deny responsibility for various actions and happenings. All positions have built into them various levels of

intentionality and responsibility. The position of a "victim," for example, constructs a person as having less agency than the position of a "perpetrator."

Of course, since people are not always consciously aware of the story lines that govern their interaction and the positions they adopt and compel others to adopt in those stories, positioning can also be a major cause of misunderstanding in interaction. In some cases, for example, participants can be drawing upon very different narratives without realizing it, or people can be swept up in the power of particular story lines and their associated positions in a way that they find difficult to resist.

Positioning, Frames, Footing, and Stance

Because of its association with strategic interaction and its adoption in interactional sociolinguistics, positioning theory is often used in conjunction with other concepts such as "framing," "footing," and "stance." It is, therefore, necessary to clearly distinguish positioning and its conceptual components from these other analytical tools.

"Framing," as it is used in interactional sociolinguistics and discourse analysis, refers primarily to the use of interpretive frameworks to make sense of situations. According to Goffman (1974), we adopt various "frames" in interaction in order to interpret and to signal to others "what's going on"; for example, an exchange might be "framed" as "playing," or as "arguing," or as "flirting." While positioning may involve framing, they are very different kinds of processes. Whereas frames tend to signal unitary activities, story lines refer to ongoing strips of action that might involve multiple activities. Thus, positioning theory provides the means to consider not just "what's going on" in a particular interaction but also where the interaction seems to be heading and what kinds of choices participants might have as it unfolds. Furthermore, while frames tend to be more socially determined based on a finite set of activities and occasions recognized by a particular culture, positions and the story lines within which they are situated are more variable and contingent. While they might be based on culturally recognized archetypes, they also crucially depend on personal histories, relationships, and experiences.

"Footing" is related to framing in that it refers to the positions that we take up in relation to the frames which we have activated or "keyed" in an interaction. As Goffman (1981, p. 128) puts it, "A change of footing implies a change in the alignment we take up to ourselves and to the others present as expressed in the way we manage the production and reception of an utterance." In one respect, "footing" can be thought of as having a similar relationship to "frames" as "positions" have to "story lines." Like positioning, "footing" is seen as dynamic and negotiated. At the same time, the concept of "footing," insofar as it refers to the positions that speakers take up in relationship to their utterances (*principal*, *author*, or *animator*), has the potential to contribute an important tool to positioning theory: the means by which to consider the relative responsibility people take for the story lines that they contribute to producing.

The concept of "stance" is in some ways similar to "footing" in that its focus is on participants' relationship to what is said. "Stance," however, is very different from "position" in that stance generally has to do with a person's attitude toward, feelings about, level of commitment to, or degree of belief or trust in what is being said or what is going on, whereas one's position is more focused on one's relationship with other participants and the range of behavioral choices that are available to one. Thus, a particular "stance" can be seen as part of or associated with particular positions, and it is even conceivable that, by displaying a particular stance, a participant might be cueing a particular story line and taking up a particular position within it. Similarly, positioning can also be used as a resource for signaling a particular stance (Haddington, 2007).

Applications

Given the analytical power and flexibility of positioning theory, it is not surprising that it has been productively applied to the analysis of all sorts of private and public interactions from quarrels within relationships to news interviews (Haddington, 2007). With its focus on story lines, it particularly lends itself to studies of narrative in interaction, as can be seen in Bamberg's (2004) study of how teenagers negotiate identity through the telling of "small stories" and Wortham and Gadsden's (2006) exploration of how fathers use narrative to position themselves within and outside the family unit.

Positioning theory has also been applied productively to the study of contexts in which the strategic negotiation of power and status is seen to be important. It has been used extensively, for example, in studies of language and gender (see for example Georgakopoulou, 2007). In addition, Preece (2009) has used positioning to examine how so-called "remedial" students in universities strategically counter institutional positionings by adopting powerful positions within alternate story lines associated with peer groups, their families, or their communities.

Positioning theory also has the potential to improve our understanding of how people negotiate health and risk. Jones (2010), for example, uses it to analyze the ways participants in an online forum for gay men position themselves in relation to personal stories of unsafe sex and larger cultural story lines about AIDS, sexual risk, and romantic love.

Finally, as Talamo and Ligorio (2001) have pointed out, positioning theory is uniquely suited to the analysis of online interaction and the construction of "cyber-identities," which are often, even more than identities in face-to-face interaction, highly contingent, negotiated, and context-dependent.

SEE ALSO: Analysis of Identity in Interaction; Discourse and Identity; Frame Analysis; Pragmatics of Stance

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Positivism and Postpositivism

ALBERT WEIDEMAN

Positivist and postpositivist influences in applied linguistics are discernible both directly and obliquely, as has been the case in other fields. Those influences provide evidence of how closely applied linguistic concept formation relates to developments in scientific thinking in general, as well as to specific discussions in the philosophy of science.

Positivist influences derive from the ideas of Comte and his 19th-century contemporaries, who sought to bring the methods of the natural sciences, and specifically the "positive" method of mathematical analysis, to bear on the examination of social life. The expectation that natural scientific methods would give the ultimate answers continues to provide the justification for all modernist approaches to applied linguistics that will be discussed below. The notion of "logical" positivism, in turn, was made prominent by a later, 20th-century variant, sometimes referred to as neopositivism, and associated with the Wiener Kreis, an academic circle that included Carnap. The term refers to the logical empiricism they practiced, which entailed a commitment to the experimental method, based on sensory perception.

A counter-trend to positivism was already evident in the work of Popper and others. Popper proposed a critical rationalism that acknowledges that the belief in rationality is itself not rational (Strauss, 2004, p. 5), but, as Stegmüller has pointed out, it fell to Kuhn's (1962) groundbreaking analysis to challenge truly the falseness of the positivist belief in the cumulative increase in knowledge (Strauss, 2004, p. 6). This paved the way for Feyerabend's (1975) theoretical anarchism, which allowed a methodology of mutually incompatible alternatives (p. 30). Its postpositivist critique of Western science underlies the postmodernist reliance in applied linguistics on a plurality of perspectives and on a recognition of the paradigmatically and ideologically inspired differences (Feyerabend, 1975, p. 274) in the designs it produces.

Positivism/postpositivism is one of several kinds of categorization that can be used to characterize applied linguistic designs. It serves, in addition, as a kind of shorthand for a more wide-ranging characterization in all of the humanities: the contrast between quantitative and qualitative approaches (cf. Richards, 2009). In the first, the emphasis is on empirical facts, particularly as these are expressed in numbers. In the second, it is the idea that our observations need not only interpretation, but also sometimes political analysis and action. It overlaps substantially with the categorization "modernist" and "postmodernist," which reflects the traditional extremes within applied linguistics, as well as the various competing paradigms utilized in its short modern history. Kumaravadivelu (2006, p. 11) uses the terms interchangeably, describing as postmodern a framework that runs counter to the "positivist, prescriptive research paradigm" that is characteristic of modernist approaches. There is really no way to clarify and reconceptualize these closely synonymous ideas in a way that will "set us straight" for now or for the future. Applied linguists are likely to continue to use them interchangeably, while heeding the necessity of paying deliberate attention to the philosophical roots of their own training.

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A Discipline of Design

Applied linguistics is best characterized as a discipline of design (Corder, 1972, p. 6; Cope & Kalantzis, 2000, p. 7). For both modernist and postmodernist interpretations of the field, it is an endeavor that allows professionals to conceive, plan, and develop designs that address language-related problems. The designs applied linguists bring to bear on the initializing language-related problem usually come in the form of a language *policy*, a language *test*, or a language *course*. This in itself does not make them applied linguistic artifacts: They also need to be justified with reference to some adequate theoretical approach.

The different styles of working professionally within the discipline derive their uniqueness from the theories that underlie various paradigms of applied linguistics. So the expectation, especially in early, modernist approaches to applied linguistics, is not surprising: that "scientific" grounding will deliver the ultimate plan. The main difference between positivist and postpositivist approaches to applied linguistics lies in the expectations they create. Postmodern approaches not only call the certainty of being able to obtain a scientific solution to a language problem into question, but actively oppose it (Pennycook, 2004).

Historically Variable Modes of Applied Linguistics

Such distinctions (positivist or postpositivist; modernist vs. postmodernist) as conceptualizations of the field refer in the first instance to historically variable and sequential paradigms or styles of doing applied linguistics. Applied linguistics harbors seven such traditions or modes of work (Weideman, 2009, p. 62) (see Table 1).

Linguistic Conceptions of Applied Linguistics

The first two modes of doing applied linguistics in Table 1 constitute *linguistic conceptualizations* of the field. Initially, applied linguistics was considered as nothing more than an extension of linguistics. The underlying premise was that of a simple continuity between linguistics and applied linguistics. In terms of the modernist and positivist starting points of this historically first style of doing applied linguistics, that continuity was necessary to

Table 1 Seven successive traditions within applied linguistics

Paradigm or tradition	*Characterized by*
1. Linguistic or behaviorist	"Scientific" approach
2. Linguistic "extended paradigm model"	Language as a social phenomenon
3. Multidisciplinary model	Attention not only to language, but also to learning theory and pedagogy
4. Second language acquisition research	Experimental research into how languages are learned
5. Constructivism	Knowledge of a new language as interactively constructed
6. Postmodernism	Political relations in teaching; multiplicity of perspectives
7. Complexity theory	Language emergence as organic and nonlinear, through dynamic adaptation

provide scientific credibility to applied linguistic solutions. The conception by linguists of the audio-lingual method as a scientific method of language teaching is one example of the modernist undertow associated with this tradition. Another example is to be found in the contrastive analyses of target language and first language. Such essentially linguistic analyses would focus intervention designs on the problems, the differences between target and first language. In the positivist perception of science and technology, science leads to the most authoritative solution. A good illustration of such expectations can be found in the claim by Wilkins (1975, p. 208) that by "studying language in as scientific a manner as possible we should be able to make change in language teaching a matter of cumulative improvement."

Second generation applied linguistics extended the linguistic basis of the discipline, leading to a consideration of larger, socially relevant units of language, such as text, discourse, and register, and the mastery of these by language learners to achieve communicative competence in a target language. Yet this conception of applied linguistics remained closely allied with the modernist roots of the field.

The Grip of Linguistics Is Loosened

In the third tradition of doing applied linguistics, the *multidisciplinary* model, the realization began to dawn that the complexity of language problems called for more than linguistic attention. So, in addition to taking into account the broadened perspective on language, as suggested by second generation applied linguistic work, this tradition drew attention to two other potentially useful source disciplines: psychology and pedagogy (cf. Van Els, Bongaerts, Extra, Van Os, & Janssen-van Dieten, 1984). From psychology, applied linguistic designs for language teaching could potentially gain knowledge of how languages are learned. From pedagogy, it could possibly find out which teaching styles are most effective.

The importance of this tradition to the history of applied linguistics lies first in the insight that designs should consider more than linguistic issues (Johnson, 1969), thus loosening the monopoly that linguistics had on their justification. Second, it created awareness of multiple perspectives.

Third generation applied linguistics may have loosened the hold of linguistics on the discipline, but it did not escape the grip that positivism had. At best, it aimed at doing design work for solving language problems more efficiently and effectively, still firmly in the modernist idiom.

A Fourth and Fifth Tradition of Doing Applied Linguistics

Multidisciplinarity did not, however, come fully into its own in the mid-1980s, since for many there was more exciting work to be done in *second language acquisition research*. Stimulated initially by Chomsky's positing of a language acquisition device, and subsequently by communicative language teaching becoming the mainstream design rationale for language teaching, the field saw increasingly sophisticated work on how languages are learned—and, importantly, how they are learned in the classroom. One enduring line of research that began in the mid-1980s has specifically investigated language learning gains when information gap techniques, characteristic of communicative language teaching and its offshoots, are used. Furthermore, frequent surveys began to appear that summarized findings that might be useful for the design of interventions, but always with a cautionary note not to expect too much (Tarone, Swain, & Fathman, 1976; Lightbown, 2000). The instructional design of a variant of communicative language teaching, called task-based language teaching, has prompted the continuation of these studies, often with the additional

complication of whether and how to do corrective feedback (e.g., Russell & Spada, 2006). The kinds of analyses surveyed show a clear bias toward quantitative data and, therefore, modernist starting points.

A fifth tradition of investigating and analyzing language learning in the classroom, *constructivism*, has developed alongside of fourth generation work. Finding its origins in Vygotskyan perspectives on how language learning takes place when meaning is co-constructed by participants, constructivist explanations provided a belated theoretical justification for communicative language teaching. In South Africa, constructivism also provided applied linguists with the basis for a critical examination of language policies in education (Macdonald & Burroughs, 1991). Constructivism continues to exert some influence in the theoretical justification of course designs. Its analyses of learner talk show how learners and teachers use cognitive strategies to accomplish language learning. Fifth generation applied linguistics also began to show a possible alternative to positivist modes of thought and design. By the early 1990s the time was ripe for an important shift in applied linguistics.

Political and Social Considerations Come Into Play

The adoption of *postmodernist* styles of doing applied linguistics constitutes an important turning point. Postmodernism took the field beyond positivism for the first time. At the same time, the emphasis in third generation applied linguistics on multidisciplinary work did much to pave the way for a postmodern perspective. The postmodern tradition does not rely on a single view of academic endeavor and research—especially not on a positivist one—but acknowledges that there is a multiplicity of possible perspectives in the investigation, for example, of language teaching problems. The first challenge in the postmodern perspective is to identify the conflicting and consensual aspects of such investigations.

Its further challenge lies in identifying the political dimensions of possible sites of contestation, such as language education. In the face of rigorously prescriptive syllabuses and textbooks, applied linguists began to ask: Are learners and teachers not left powerless, especially when those language teaching designs are supposedly backed by scientific research and powerful publishing interests? Whose authority can be invoked to legitimate the introduction of new language teaching arrangements (curricula and textbooks) on a national scale, especially in poor, donor-dependent countries? What does the predominance of English as an international language do to the teaching of the languages of the politically powerless?

Such questions paved the way for accountability being required for applied linguistic designs (cf. Pennycook, 2004; Kumaravadivelu, 2006). Postmodernism placed potentially and actually abusive, exploitative practices on the agenda.

In addition to this forthright political emphasis, postmodern applied linguistics also harbors a milder strain, as is evidenced in ethnographic analyses of problematic language contexts. Through "thick" description of these contexts, and by identifying the congruent moments from a diversity of perspectives, the ethnographic investigation attempts to build as rich a picture as possible, so that generalizations that are helpful in interpreting the learning can emerge. This interpretive dimension is a defining characteristic of ethnographic research (Nunan, 1992, p. 57).

Both the milder and the politically more radical strains of postmodernist applied linguistics are thoroughly anti-positivist. Yet this does not mean that positivism has been conquered for all time.

Beyond Postmodernism: An Emergent New Paradigm

A *complex systems approach* has emerged as a seventh paradigm of doing applied linguistics (De Bot, Lowie, & Verspoor, 2007; Larsen-Freeman & Cameron, 2008). In proposing alternative explanations for language growth and development as the outcome of complex interactions among a multiplicity of systems, this approach presents a serious challenge to earlier, generativist accounts of language learning.

It sees change—interpreted as dynamic, ongoing, organically inspired and emergent growth—as the essence of what we observe in language. Similarly, language development is neither linear nor predictable, explaining why, in some language learners, we have retrogression instead of progress. In its preparedness to adopt mathematical or computational modeling as a valuable analytical tool (Beckner et al., 2009, p. 12), some will see a clearly technocratic style at work. In addition, a complex systems perspective has links with the natural sciences, as is evident from its emergentist and biotic starting points.

This seventh style of applied linguistics is, nevertheless, clearly not a revival of old-style positivism, though some working in the previous tradition will be fearful that the political agenda that they have been pursuing is ominously absent from its discussions at present. It has, however, taken us beyond postmodernism.

The Coherence of the Field

There are at least two problems associated with describing applied linguistics in terms of a series of successive traditions or styles of work. The first is that it emphasizes discontinuities more than continuity, and this can never be entirely accurate, historically. Indeed, there are uniquely different traditions of doing applied linguistics, and they have successively entered upon the historical stage. At the same time, however, they undeniably exhibit historical continuities. Thus second generation work broadens the basis of first generation work, by opening up perspectives on language that go beyond structure, form, and sound. Likewise, the multidisciplinary work in the third tradition of applied linguistics clearly foreshadows the multiplicity of perspectives so important to sixth generation work in postmodernist applied linguistics, as well as in the transdisciplinarity of a complex systems approach.

The second difficulty is that, in the actual work of designing their artifacts, applied linguists sometimes continue to adhere to the styles in which they were trained, and even mix different traditions. We cannot in reality enforce a strict separation of, for example, positivist and postpositivist traditions in applied linguistics. In short: Many styles of applied linguistics exist simultaneously and side by side. Some older styles endure because they are entrenched within institutions or in influential publishing interests.

So the actual picture is messier than the one presented above. But there has been and will be succession in dominant paradigms, and the recent arrival of seventh generation work is another reminder that domination by a single paradigm remains unlikely.

SEE ALSO: Cognitive Constructivism; English and the Vernaculars From a Postcolonial Perspective; Epistemology and Ontology; Phenomenology and Hermeneutics; Poststructuralism; Qualitative Methods: Overview; Realism; Validity in Qualitative Research

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Postcolonial Studies

ISMAIL S. TALIB

Terminological Issues

There is a certain unexplained aura that is associated with the word "postcolonial," and trying to explain what it means results in the acknowledgment either that it has a growing open-ended collection of meanings, or that what it means in specific contexts is banal and less complicated than what seems to be the case on the surface, and another term might do just as well. Arguably, the fashionable term is used either in a vague but fascinating sense, or in a specific but perfunctory sense. The former, captivating as it is, is prone to controversy, while the latter, humdrum as it may be, is less contentious, even if it is lacking in theoretical sophistication. Much of this entry will deal with the former, which is clearly more predominant. The latter is easy to define, at least superficially, as it is a simple historical specification of the postcolonial as the period after colonization.

The difference between the two postcolonial senses is reflected in the question of whether the word should be hyphenated. Should it be "post-colonial" or "postcolonial"? This variation is not merely a reflection of a historical trend in English orthography—of a tendency of hyphenated words in English to lose their hyphens—as it is likely that the hyphenated usage will continue and will exist side-by-side with the non-hyphenated usage. The survival of both has largely to do with the different emphases that the orthographic variance generates. The hyphenated word looks at the historical period after the colonial. The non-hyphenated usage includes this historical disjuncture as a starting point, but going beyond this is the belief, made implicit by the missing hyphen, that the disjuncture is not and cannot be definite. In this regard, one of the critiques of the hyphenated term, which the use of the "post" prefix itself underscores, is the assumption that the colonial is over. But this is arguably not the case. If the term "colonial" (which is not within the full purview of this entry) is treated in a non-historical or semi-historical sense—very much like the non-hyphenated term "postcolonial"—then the colonial can occur at the same time as the postcolonial, and the postcolonial can occur during the colonial period. The recognition, in applied linguistics, of the practical coexistence of the two concepts is found, for example, in the notions of "the colonial in the postcolonial" or "the postcolonial in the colonial" (Brutt-Griffler, 2002, pp. viii, 64, 73, 108, 161).

Edward Said

It is generally acknowledged that the first seminal text in what eventually became known as "postcolonial studies" is Edward Said's 1978 book *Orientalism*. There were earlier postcolonial texts, such as Frantz Fanon's *Black Skin, White Masks* (1952) and Albert Memmi's *The Colonizer and the Colonized* (1957), but Said's book provided the impetus for the field to establish itself. In spite of the general recognition of the book's importance, the term "orientalism" and the nature and actual extent of Said's impact on postcolonial studies are the subject of debate (for a critical survey, see Varisco, 2007).

One of the major problems of Said's approach to orientalism is that the terms "orientalism" and "orientalist" have existed for a long time as neutral terms that are neither meant to

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praise nor to blame the person or object associated with them. Whatever Said's strictures against orientalism are, orientalist research has certainly made major contributions to philology and comparative linguistics (McGetchin, Park, & SarDesai, 2004). Furthermore, modern linguistics as we know it today is indebted to orientalist scholars such as Sir William Jones, and to the orientalist discovery of Sanskrit as an Indo-European language (Newmeyer, 1988).

However, what Said has done is to cast aside orientalism's many positive achievements and to view the entire field in a largely negative light. This blanket assessment is both unfair and understandable. It is unfair because it leaves orientalism's achievements in the cold, and highlights its more unsavory aspects. It is understandable because the achievements had been well discussed before the publication of Said's book, and what he wanted to do was to achieve a sense of balance. He did not need to dwell further on the positive aspects of orientalist scholarship, as this had been comprehensively done by other scholars.

In portraying orientalism in a negative light, Said widens the meaning of the word by using it as a disparaging term that could be deployed whenever the East, the South, or the developing world in general are unjustifiably viewed. Thus one need not be an orientalist scholar to be disapprovingly described as an "orientalist," a term that generally acquired negative connotations after the publication of Said's book. What Said has brought about here is the broadening of the term from its more restricted original usage, or what is called "manifest orientalism," to its extended usage, or what is called "latent orientalism" (Kennedy, 2000). Latent orientalism goes way beyond traditional orientalist scholarship and can be found in numerous places. In applied linguistics, for example, the term "orientalism" has been used to describe research on English second language and foreign language teaching in Japan (Susser, 1998), even though the scholars described as, or rather accused of, being orientalist, are not orientalist in the original sense of the word.

One of the main ideas of Said's *Orientalism*—that scholarship on the East is done by colonial Westerners who present biased perspectives—is only partially corrected today. Scholarship is still dominated by the West. If, in the past, it was dominated by Westerners who were associated with one of the imperial powers, it is now associated with Western institutions of higher learning, which dominate postcolonial studies in the way that Westerners dominate orientalist research in the past (Dirlik, 1994). The main trends in postcolonial studies are still set by scholars in the major metropolitan centers of learning in the West, and views from the developing world have a tendency to feebly echo the views from these centers or, if they display some originality, they need to be filtered through postcolonial scholars from these institutions before they can gain a reasonable amount of circulation. In this regard, the only difference from more traditional orientalism is the significant number of postcolonial scholars who are not Westerners. However, as Dirlik (1994) has forthrightly reminded us, these scholars from non-Western countries become influential postcolonial intellectuals only when they arrive in, or are associated with, the main centers of learning in the first world.

Culture and Imperialism (1993) is another influential book by Said. The ideas in the book were not new when the book appeared, even within applied linguistics; Robert Phillipson's *Linguistic Imperialism*, for example—which has a similar thrust as Said's book, but concentrating on the cultural and political dominance of the English language and its teaching—appeared in 1992. Nevertheless, *Culture and Imperialism* is an important development for Said as a postcolonial thinker: It consolidated many of his major ideas in *Orientalism*, and explored some new paths. However, much of the biting criticism of the West found in *Orientalism* has been moderated here; Said is more of an establishment figure, approvingly analyzing some literary works with imperialist sympathies, such as Rudyard Kipling's *Kim*.

Homi Bhabha

Among major postcolonial theorists who have made an impact in applied linguistics, another figure should be mentioned here: Homi Bhabha. Unlike Said, Bhabha writes in an abstruse way, which often leads to ambiguous or vague conclusions that seem to favor rather than criticize the excesses of Western capitalism. In this light, he has been described as "a master of political mystification and theoretical obfuscation" (Dirlik, 1994, p. 333) and it has been similarly asserted that postcolonial scholars like him "mystify and obfuscate global inequalities and racism through incredibly dense and convoluted prose" (Krishna, 2008, p. 111). He has also been charged

> with being elitist and obscurantist, engaging in word games, privileging the discursive over the economic, relying too heavily on Western psychoanalytical and poststructuralist theory, and—perhaps the most damaging criticism of all—being a privileged spokesperson for the Third World position. (Poddar, 2001, p. 64)

His influence on applied linguistics, which assumes that research must be presented clearly, is thus surprising.

Naturally, introducing the metaphors that Bhabha uses in his works or emulating his style of writing is fraught with risks. The following is an example from a book on language and culture (Hall, 2002, p. 19) that has clearly been influenced by Bhabha:

> To locate culture one must look not in individual mind, as an accumulated body of unchanging knowledge, but in the dialogue, the embodied actions, discursively rearticulated (Bhabha, 1994, p. 177) between individuals in particular sociocultural contexts at particular moments in time. This perspective of culture as a dynamic, vital and emergent process located in the discursive spaces between individuals links it inextricably to language. That is to say, language is at the same time a repository of culture and a tool by which culture is created.

The above has been criticized by Steve Farrow as "a passage which reads like an eyewitness account of an explosion in a metaphor factory" (2004, p. 271).

Among Bhabha's ideas that have been influential in applied linguistics is his notion of *hybridity*. But, like most of his ideas, the lack of clarity in definition and the unsystematic presentation of arguments often lead to the holding of apparently contradictory positions, and thus, again, pose risks for applied linguistics scholars who would like to adopt his views. The word "hybridity" as it is used by Bhabha aims to destroy the binarism in our thinking about culture. But one wonders if his playful attempt to erase the binarism of the colonized and colonialists, for example, is a useful exercise, as it allows him "to circumvent entirely the dense history of the material conflict between Europeans and natives and to focus on colonial discourse as if it existed in a vacuum" (JanMohamed, 1985, p. 60). In this regard, it has been pointed out that "Bhabha's verbosity scarcely conceals the underpinnings of his position" where "his reading of the 'colonial plot' in *The Location of Culture* . . . is trapped by the cultural binarism that he wishes to critique" (Marrouchi, 2002, p. 145). In order to advance and conclude his slippery line of thought, Bhabha has to turn to and even strengthen the very divisions that he wishes to obliterate. As Patrick Colm Hogan (2004, p. 5) has correctly pointed out, "for Bhabha, there are precisely two alternatives—bad binarism and good hybridity. But that makes his own view a form of binarism." Bhabha is certainly more conservative and pro-Western in his approach to postcoloniality when compared to Said in his *Orientalism*, which may explain the otherwise inexplicable popularity of his ideas—nebulous as they are—in Western academia.

If one were to apply Bhabha's notion of hybridity to language, there is nothing new or original in the two ideas that underlie it: that human languages have elements that can be found in, or are derived from, other languages, and that the idea of linguistic purity is not viable. These are long-held ideas whose history clearly precede Bakhtin's well-known discussion of hybridity in his *Problems of Dostoevsky's Poetics* (1984; first published in Russian in 1929). These ideas have been around in linguistic and philological research for well over a century and a half (see, for example, White, 1876, pp. 20, 149–50, 234, 279). However, although linguists may be critical of linguistic purism if it is looked at from a strictly linguistic perspective, they may be empathetic to it if it helps in the broader sociolinguistic understanding of the quest for identity by members of a language group, or their sense of social cohesion as reflected in their ability to preserve their language (Henningsen, 1989). When the existence of a language is under threat, the idea of linguistic purity may be promoted by defenders of the language, in the hope that the defining characteristics of the language, and hence the language itself, will survive (Unruh, 1994). Ultimately, unless reference is made to its historical usage in linguistics without the unnecessary homage to Bhabha, hybridity is a fashionable but overgeneralized and vague term, and a more specific term in applied linguistics, such as code mixing, interference, or borrowing, might very well do a better job in describing the linguistic situation in its appropriate contexts.

Other Approaches

This brief entry is not able to do justice to the various influential ideas in postcolonial studies and their usefulness or otherwise when used in applied linguistics. Among ideas that have some influence in applied linguistics and should be briefly mentioned is the distinction between the center and the periphery or between the central and the marginal, where the central is associated with the colonial or colonizer, while the marginal or peripheral is associated with the colonized and suppressed. However, this model may be too simplistic when applied to current linguistic situations, where what is central from one perspective, such as the notion of what Standard English should be, may be regarded as marginal from another perspective. What is needed here is what Alastair Pennycook (2000) has called "postcolonial performativity," which takes into account the contextual factors that give rise to notions such as centrality and marginality.

SEE ALSO: Critical Applied Linguistics; Critical Literacy; Cultural Hybridity; Linguistic Imperialism; Race

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Post-Editing of Machine Translation

GEOFFREY S. KOBY

Post-editing of machine translation is an activity in which a translator compares a source text with a translation produced by an automated process (machine translation or MT) and edits it to make it acceptable for its intended purpose. Post-editing (PE) is a standard feature of any serious commercial MT system, and is similar to revision of human translation (HT). With the rise of computer-assisted translation (CAT) tools in the 1990s and 2000s, human translators now receive translation memories (TMs) from external sources containing translation units originating from humans or machines, and edit these translations using software. At the same time, automated translation is being integrated into CAT tools. Thus the line between post-editing MT and editing HT is becoming blurred.

Twentieth-century MT systems were developed using a set of grammatical rules and a lexicon, which created "raw" output considered incompletely finished text (see Allen 2003, p. 298). In the late 2000s, a new paradigm, "statistical machine translation," became prominent; because the text produced is based on statistical analysis and machine learning from an immense corpus of human translations, its output, though still flawed, much more closely resembles HT and is thus more usable. Two major statistical MT engines are Google Translate and SDL Language Weaver; a mature version of Google Translate was released in late 2009 (Google Research Blog, 2006; Official Google Translate Blog, 2009). SDL Language Weaver is integrated into SDL Trados products and sold as a solution to industry (SDL, 2010). Guzmán notes, however, that "post-editing has become by now one of the most disliked tasks by translators. . . . translators still find it easier retranslating than post-editing MT" (2007).

When post-editing, translators and revisers are confronted with a very different type of text than HT, which is certain to contain errors that a human would not make. In 2010, the *New York Times* published an MT example (see Table 1), which shows the kinds of challenges faced by post-editors (*New York Times*, 2010):

Statistics-based Google Translate has rendered the vocabulary correctly, while Yahoo!'s older rule-based software has rendered some words incorrectly, due to dictionary limitations. No MT engine translates completely accurately and parts of the sentence need to be rearranged or edited. Although understandable, the sentence is not clear as to exactly what happened to whom.

Yet MT is used due to the increasing need for translation in a global economy, where the slow turnaround times and high cost of HT cannot keep pace. Recently, there has also been a vast expansion in computer software tools for translators, which blur the line between MT PE and CAT. As Garcia reports, "Integrating machine translation with translation memory is a very recent development in translation technologies. The prominent translation technology provider, SDL, allowed SDL Trados 2007 users direct access to its in-house MT in October 2008, and Multicorpora announced its Systran plug-in in January 2009. Wordfast and Swordfish provide inside access to Google Translate or any other Web based MT engine" (Garcia, 2010, p. 8).

Historically, the need for PE became apparent when researchers working on early MT systems observed that the output was quite defective. As early as 1980, Martin Kay noted: "Passages of innocent prose on which it was desired to effect this delicate and complex operation were subjected to a process of vivisection at the hands of an uncomprehending

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Table 1 Comparing human and machine translations of Kafka's "The Metamorphosis" (*New York Times*, 2010)

Source	*The original text*	*Human translation*	*Google Translate*	*Yahoo! Babel Fish via Systran*	*Microsoft Bing Translator*
German "Die Verwandlung" ("The Metamorphosis") by Franz Kafka	Als Gregor Samsa eines Morgens aus unruhigen Träumen erwachte, fand er sich in seinem Bett zu einem ungeheuren Ungeziefer verwandelt.	One morning, as Gregor Samsa was waking up from anxious dreams, he discovered that in bed he had been changed into a monstrous verminous bug. —*Kessinger Publishing, 2004*	As Gregor Samsa awoke one morning from uneasy dreams he found is transformed in his bed into a monstrous vermin.	As Gregor Samsa of one morning from jerky dreams awaked, he was changed in its bed to tremendous vermin.	As Gregor Samsa of one morning from troubled dreams awakened, he was transformed in his bed to a tremendous vermin.

electronic monster that transformed them into stammering streams of verbal wreckage" (Kay, 1997, p. 5).

Significant cost savings have also been reported with PE. Bernhard states that the normal cost of post-editing MT output lies in the range of 20 to 30% of the cost of HT (Bernhard, 1994, p. 51, see also Vasconcellos & Bostad, 1992). A commercial Web site, Applied Language Solutions, promotes "a cheap translation service, post-editing of Machine Translation, which costs around 50% less than human translation" (Applied Language Solutions, *n.d.*).

Post-editors must be translators (see, e.g., Arnold, Balkan, Humphreys, Meijer, & Sadler, 1994, p. 12) because only a translator can judge translation accuracy, and only with access to the source text (Kay, Gawron, & Norvig, 1994, p. 43). McElhaney & Vasconcellos state "The translator is the one best able to pick up errors in the machine translation (e.g., misparsed or unparsable ambiguities), he has a fund of knowledge about the cross-language transfer of concepts, and he has technical resources at his disposal which he knows how to use in the event of doubts" (1988, pp. 142–3). Whatever the defects found in the raw output, the translator will be expected to find and remedy them, while spending (significantly) less time than HT would take. Vasconcellos and Bostad agree: "For the product that has a public and undergoes scrutiny, a translator post-editor must be enlisted to eliminate all problems from the output, interpret connotations appropriately and make certain that the reader will understand precisely what the author intended to say" (1992, p. 58). However, Lange notes that a post-editor with a very negative attitude caused total MT plus PE time to exceed that of HT, stating, "It is even possible to roughly predict the amount of time a translator needs for post-editing a text from their attitude towards machine translation" (Lange, 1998, p. 36).

In recent years, controlled language (CL, that is, source texts created using restricted rules for vocabulary, syntax, etc.) has been used to improve MT quality. O'Brien points out that "A subdomain within CL research is the assessment of a text's 'machine translatability' by assigning numeric penalties to linguistic features that are known to be

problematic for MT—termed 'negative translatability indicators' (NTIs)—and by then calculating the 'machine translatability index' of that text" (O'Brien, 2007, p. 84). Her work showed "that segments with minimal occurrence of NTIs can be processed faster by post-editors than those containing NTIs. This finding provides empirical evidence to support the assertion that controlling the input to MT leads to faster post-editing" (O'Brien, 2007, p. 115).

User needs ultimately determine the quality level to which raw MT output should be edited. The final purpose of the translation—somewhere between "information only" and "publication"—determines the level of final quality (McElhaney & Vasconcellos, 1988, p. 145). Vasconcellos points out that "Extensive changes make the process too costly and negate the advantage of MT" (1987b, p. 414). Meanwhile, some end users may accept inferior output that can be had cheaply or quickly—or for free. If MT is free, as on the Internet for general text and Web pages, casual users may be happy with the output, even though no PE is available. Nonlinguist users of post-edited MT sometimes cannot tell the difference between MT and HT. For professional linguists, on the other hand, as noted above (Garcia, 2010), computer-assisted translation tools are capable of incorporating automated translations into the regular working environment of any translator. Grunwald (2010) describes a method for including automated translations in TMs that are sent to freelance translators and advises project managers to "Insist that they thoroughly review each TU and rewrite it if necessary." These translations are then returned to the central TM and enter into future MT output, which is then improved. Thus the working life of translators can be expected to include PE as a matter of course.

To avoid excessive cost, it is necessary to preserve MT output and edit only those points in the text that are necessary to make the sentence function properly. However, Vasconcellos and Bostad acknowledge that a balance must be struck between such minimal editing and quality standards (1992, pp. 68–9). The primary linguistic skill needed is revision skill—the ability to decide what to change and how much to change. One part of this skill involves information flow. Vasconcellos argues that the flow from given to new information (or from theme to rheme) in any one sentence is actually a crosslinguistic phenomenon that should be maintained by changing the word class of a given item, say from noun to verb, instead of reordering the sentence (1987a, p. 140). This is an approach that has significant implications for saving keystrokes in on-screen PE, and can work very well for language pairs such as Spanish and English, where word order is either similar or can be modified in predictable ways. The principle is not entirely universal, however, and is likely to be overshadowed by other linguistic considerations when the two languages are more linguistically distant.

Somers points out, "As obvious as it may seem, efficiency in cursor positioning, use of search-and-replace and, in particular, developing an ability to see the best combination of word-processor 'moves' to bring about a change, are all as important as linguistic skills in the relevant languages. . . . A typical and intuitive way to revise a translation is to start at line 1 and work through the text. But to do so is to ignore many of the capabilities of the typical word-processor, some of which will be particularly useful when post-editing machine translation output. It is better to take a more structured approach to post-editing, in particular with respect to recurring errors, which can be fixed by using global search-and-replace (S&R)" (Somers, 1997, p. 202). In the Pan American Health Organization, post-editors in the 1980s were able to create macro functions to speed up their work by automating repetitive correction tasks (Santangelo, 1988, p. 134). This implies that translators would have to have a reasonably extensive knowledge of the capabilities of their word processor or CAT tool in order to write these macros.

It is also necessary to make the working conditions as helpful as possible for the translator. Newton summarizes the efforts in this regard: "Most MT systems have a synchronized

split-screen editing mode which enables the post-editor to view and scroll the raw translation in tandem with the corresponding section of source text. Quality control rests with the post-editor and must be assumed to be as rigorous as that applied to human translation produced for similar purposes" (1992, p. 8). This parallel scroll function is also a feature of modern CAT tools. Povlsen and Bech describe an intelligent post-editing facility called Ape: "an innovative approach to easing the burden of post-editing, going beyond providing an environment with pre-implemented short-cut key operations for the repetitive types of corrections to be made by the post-editor. The basic idea of the Ape strategy is to exploit the linguistic information present in the text to 'repair' different kinds of flaws which are tedious to deal with manually in post-editing" (Povlsen & Bech, 2001, p. 4).

The quality of the MT output is the most important factor in the speed of PE output. PE speed also varies widely depending on the editor's familiarity with the subject matter, word-processing skills, experience with PE and the specific PE system. Vasconcellos states that "Some of the SPANAM and ENGSPAN post-editors have produced as many as 10,000 words of polished, camera-ready copy in eight hours" (1987a, p. 145). This implies that this is not the average rate, as is confirmed by Vasconcellos and León: "Specially trained translators, working at the word-processing screen, produce polished output of standard professional quality at a rate between two and three times as fast as traditional translation (4,000–10,000 words a day for PE . . .)" (1988, p. 187). At the very least, in order to be cost-effective, MT throughput cannot be less than HT production. Vasconcellos and León confirm this (1988, p. 223; see also Vasconcellos & Bostad, 1992, p. 67). In 2007, O'Brien conducted an experiment that showed "when taken as a first-pass exercise with no revision or proof-reading and with the specified goal of producing publishable quality output, post-editing is, on average, faster than human translation" (O'Brien, 2007, p. 115). Although no more recent studies exist, it seems likely that the improved quality of recent statistical MT will make post-editing of such output even faster.

SEE ALSO: Commercial Translation; Computer-Assisted Language Learning and Machine Translation; Computer-Assisted Translation; Translation Tools

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Poststructuralism

BONNY NORTON AND BRIAN MORGAN

Our interest in poststructuralism in applied linguistics arises from our work as language teachers and researchers, and our mutual desire to promote a productive relationship between social theory and classroom practice. In support, we find three characteristics of poststructural theory of particular relevance for our work. First, poststructuralism constitutes a set of theoretical stances that serve to critique prevailing assumptions regarding the sources and nature of identity, and the rational, humanist subject of the Enlightenment (see Weedon, 1997; Norton, 2000; Kramsch, 2009; Morgan & Clarke, 2011). Second, poststructuralism critiques the conditions and foundations of knowledge, particularly with reference to its apparent objectivity and universal applicability (see Foucault, 1980). Third, poststructuralism critiques the representational capacities of language and texts, foregrounding their intertextuality, multivocality, and at times, indeterminacy (see Derrida, 1978; Sarup, 1993). Characteristic of the "linguistic turn" in contemporary thought, poststructuralist theories assign conceptual and analytic prominence to language—and indeed all forms of meaning making (cf. multimodality; Kress, 2009). In poststructuralist theory, language is seen as central to the circulation of discourses—systems of *power/knowledge* that define and regulate our social institutions, disciplines, and practices. In poststructural terms, discourses normalize the personal and collective possibilities we are capable of imagining in place and time. No longer neutral in this discursive framework, language becomes a key site for the ongoing creation and contestation of identity and its *performativity* (see Butler, 1990), even at the level of the unconscious, where the acquisition of language, following Lacan (1977), serves as a social template that structures and displaces the psychic unity of a prelinguistic self.

To explore the relevance of poststructuralism for applied linguistics, and given our interest in the relationship between social theory and language teaching, we revisit two critical incidents in classroom settings, reported in the literature, which serve to highlight how meaning is constructed across time and space, how identities are implicated in meaning making, and how knowledge and power are inextricably linked.

Two Critical Incidents

The first critical incident, reported in the *TESOL Quarterly* (Norton Peirce, 1990, p. 105), describes a discussion in Norton's language classroom following what has been called "the Montreal massacre" in Canada. Norton describes the incident as follows:

> In the wake of the December 1989 killing of 14 female engineering students by a young male in Montreal, Canada, my students were struggling to make sense of the shocking event. It soon became apparent that the ways in which different students attempted to interpret, and more importantly *name* the event, created conflict in the class. Some students understood the event as an act of hatred against women, and named it an anti-feminist massacre; others understood the event as symptomatic of generic militance in our society, and named it an act of violence; still others understood the event as the isolated act of an insane individual, and named it an act of madness . . . Why was the act of naming such an important one for my students?

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The second critical incident, drawn from Norton (2000, p. 143), describes the experience of a young adult immigrant language learner called Mai in Toronto, Canada, who grew increasingly dissatisfied with her English-language class, and eventually withdrew from the course:

> I was hoping that the course would help me the same as we learnt [in the 6-month English as a second language course], but some night we only spend time on one man. He came from Europe. He talked about his country: what's happening and what was happening. And all the time we didn't learn at all. And tomorrow the other Indian man speak something for there. Maybe all week I didn't write any more on my book.

While each of these critical incidents took place at different times and in different places, what they have in common are struggles over meaning, identity, and power, themes of central interest to poststructuralism. In order to better understand and address the challenges represented in each of these classroom contexts, we will examine poststructuralist theories of language, identity, and investment, respectively, and then turn to their relevance for classroom teaching.

Poststructuralist Theories of Language, Identity, and Investment

Poststructuralist theories of language, which achieved prominence in the late 20th century, have been influenced by such scholars as Bakhtin (1981), Bourdieu (1977), Derrida (1978), Weedon (1997), and Foucault (1980). These theories build on, but are distinct from, structuralist theories of language, associated predominantly with the work of Saussure. Saussure's (1966) distinction between speech (*parole*) and language (*langue*) was an attempt to provide a way of recognizing that, despite geographical, interpersonal, and social variations, languages have shared patterns and structure. For structuralists, the building blocks of language structure are signs that comprise the signifier (or sound image) and the signified (the concept or meaning). Saussure notes that it is the interrelationship *between* signs within a specific linguistic system that guarantees their meaning, and that each linguistic community has its own set of signifying practices that give value to the signs in a language.

Poststructuralists both build on and critique Saussure's linguistic insights. One of the criticisms leveled at his notion of language is that structuralism cannot account for *struggles* over the social meanings that can be attributed to signs within a given language. The signs /research/, /SLA/, and /identity/, for example, can have different meanings for different people within the same linguistic community. Witness, for example, debates over the meaning of "SLA theory" in the field of applied linguistics (Zuengler & Miller, 2006; Block, 2007a; Swain & Deters, 2007). Thus while structuralists conceive of signs as having arbitrary meanings and linguistic communities as being relatively homogeneous and consensual, poststructuralists take the position that the signifying practices of societies are sites of struggle, and that linguistic communities are heterogeneous arenas characterized by conflicting claims to truth and power.

With reference to poststructuralist theories of identity, Weedon (1997) is centrally concerned with the conditions under which people speak, within both institutional and community contexts. Like other poststructuralist theorists who inform her work, Weedon foregrounds the role of language in her analysis of the relationship between the individual and the social, arguing that language not only defines institutional practices, but serves to construct our identity, or what Weedon calls our subjectivity. Weedon notes that a person's subjectivity, which is defined as diverse, contradictory, and dynamic, signifies a different conception of the individual than that associated with humanist philosophy, which presupposes that every person has an essential, fixed, and coherent core. Poststructuralist

approaches to theorizing identity have also been influential in the work of cultural theorist Hall (1997) and postcolonial theorist Bhabha (2004), who de-essentialize and deconstruct identity categories such as race and gender. Poststructuralist theories of identity have struck a chord in applied linguistics, with a range of monographs making a significant impact on the field (e.g., Norton, 2000; Toohey, 2000; Block, 2007b; Heller, 2007; Blommaert, 2008; Kramsch, 2009).

Extending poststructuralist theories of identity, Norton (Norton Peirce, 1995; Norton, 2000) has developed the construct of "investment," in contrast to "motivation," to better understand the relationship between language-learner identity and language-learning commitment. Inspired by the work of Bourdieu (1977, 1991), Norton argues that if learners "invest" in the target language, they do so with the understanding that they will acquire a wider range of symbolic and material resources, which will in turn increase the value of their cultural capital and social power. Unlike the construct of motivation, which often conceives of the language learner as having a unified, fixed, and ahistorical "personality," the construct of investment conceives of the language learner as having a complex identity, changing across time and space, and reproduced in social interaction. Further, while motivation can be seen as a primarily psychological construct (Dornyei, 2001), investment must be seen within a sociological, poststructuralist framework, and seeks to make a meaningful connection between a learner's desire and commitment to learn a language, and the learner's changing identity.

Poststructuralist Theory and Classroom Practice

To what extent can poststructuralist theories of language, identity, and investment help us to make sense of the two critical incidents described above? With regard to the first critical incident, we need to address why the *naming* of the Montreal massacre created conflict in the class. A structuralist conception of language would enable students to understand the subtle difference between the naming of a "massacre" as opposed to the naming of a "murder" or "genocide." Significantly, however, it would not account for the *conflicting struggle* over the meaning that could be attributed to the sign /massacre/ with reference to the particular space/time location of the Montreal killings. It was a struggle by different groups to situate the event within a discursive framework that would legitimate some views and invalidate others. The contrasting meanings of the massacre arose partly as a result of the different investments the students had in the event. Students with investments in discourses of gender would seek to legitimate the view that the massacre was an antifeminist act; students with investments in discourses of social violence would legitimate the view that the massacre was an act of militancy; and students with investments in mental health would legitimate the view that the massacre was an act of insanity. Each discursive framework would evoke and authorize different ways of knowing and, crucially, responding to the event. In other words, the meaning of the massacre was not only a product of a linguistic system that differentiates signs in relation to one another, albeit in a social context, but was located in the intersection between the event, the sign, and the students' investments in the event and the sign. By extension, the students' contrasting investments are best understood with reference to their complex identities as constructed within particular discourses, with conflicting claims to truth and power.

With reference to the second critical incident, how can poststructuralist theories help us understand why Mai felt she was learning little in the class, appeared unmotivated, and ultimately dropped out of the class? The construct of investment, as opposed to the construct of motivation, provides for a different set of questions associated with a learner's commitment to language learning. In addition to asking, "To what extent was Mai motivated to learn English?" we would ask, "What was Mai's investment in the language

practices of her English classroom?" Although we knew that Mai was a highly motivated language learner, it was clear that she had little *investment* in the language practices of her classroom. This lack of investment arose from resistance to the pedagogical practices of the teacher, whose lesson plans appeared to reproduce identity along homogeneous ethnic lines (European, Indian, etc.). While it could be argued that the teacher was attempting to validate the ethnic identities of the students by inviting them to make public presentations about their native countries, the teacher paid little attention to other identity categories (e.g., gender, class, sexual orientation) across different sites (e.g., home, workplace, school). In other words, the teacher had an essentialized conception of the individual as unified, stable, and unchanging, rather than a poststructuralist conception of identity as multiple, changing, and a site of struggle. Further, the teacher appeared to focus primarily on the students' histories, rather than addressing the pressing demands of the present and the future. An emerging body of research on language learning, imagined identities, and imagined communities (e.g., Kanno & Norton, 2003; Pavlenko & Norton, 2007) suggests that learners' hopes and desires for the future have a significant impact on their investment in language practices in classrooms and communities.

Points of Contention and Sites of Innovation

Poststructuralist theory continues to inspire both critique and innovation within applied linguistics. One key challenge remains a coherent definition for a notion of *agency* (Ahearn, 2001; Menard-Warwick, 2006). How should we understand and encourage the capacity to question dominant meanings and resist essentialized identities—as demonstrated in the incidents above? To what extent is *agency* a quality that pre-exists discourse? To what extent do we reject this humanistic assumption, and claim that we are determined, "spoken," by the language we use and by the subject positions we occupy? Drawing on Bakhtin, Vitanova (2005) suggests a promising middle ground located in dialogue and based on the subtle ways in which the sociohistorical "voices" we appropriate include and become our own. In the move from theory to practice, however, the expectations of agency can be exaggerated, placing unrealistic pressures on language teachers and applied linguists, many of whom are relatively powerless to transform their sites of practice or the social conditions of those with whom they work (e.g., Morgan, 2009).

Another key tension can be illustrated by referring again to the struggle over naming the Montreal killings and the specific discourses (e.g., gender relations, social violence, or mental health) and interventions they incite. In short, on what basis do we ultimately determine the "truth" of what happened and the best way to proceed? Arguably, when truth, reality, and meaning become pluralized and destabilized—as the work of Derrida and Foucault would indicate—we can become politically paralyzed. We become "prisoners of discourse," as Sarup (1993, p. 97) suggests, both afraid to act and interpretively desensitized to the physical realities of poverty and violence, a critique also made by Luke (2009) in respect of discourses on race and racialization. Ramanathan's (2009) study of language and bodies raises similar concerns. Though she uses poststructuralism to illuminate the shame and powerlessness that people with disabilities experience as subjects of medical discourses, she also sees the need to "*bring the body back* in humanizing terms" (p. 64, italics in original).

Still, some find the poststructural destabilization of knowledge and meaning liberating—a principled politics whose aim is not to supplant one orthodoxy with another but to provide conceptual tools that expose the partiality of all truth claims, thus weakening their commonsense power over subjects-in-discourse. Many innovative examples can be cited. The project of language disinvention (Makoni & Pennycook, 2007) examines the historical

and contemporary collusion of linguistic systems of description with colonial and nationalist ideologies. Such counter-discourses support locally responsive policies and pedagogies (Canagarajah, 2005; Ramanathan & Morgan, 2007). As Crookes (2009) notes, "aware[ness] of the existence of a range of 'theories of truth'" (p. 123) encourages teachers to become researchers and curricular decision makers. Such awareness, as well, has shifted the profession from preoccupations with "best" methods and their efficient delivery to questions of ethics and values based on postpositivistic epistemologies (e.g., Johnston, 2003; Reagan, 2004; Clarke, 2009; Crookes, 2009). Butler's theory of performativity re-situates identity's salience within acts and processes of meaning, becoming, and identification—a conceptual approach that has inspired Pennycook's (2007) research on global Englishes through rap and hip-hop, Nelson's (2009) innovative work on queer theory and pedagogies in English-language teaching, and Morgan's (2004) study of teacher identity as pedagogy. Certainly, one of the more enduring meanings to be destabilized via poststructuralism—and through the construct of "investment"—is that there is an identity, a definable, universal essence shared by all humanity.

SEE ALSO: Feminist Research; Positivism and Postpositivism

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Practice in Second Language Instruction

ROBERT DEKEYSER AND RAQUEL CRIADO

The Meaning of Practice

The belief that practice is needed in order to achieve mastery in different skills (driving a car, playing the piano, sewing, cooking, etc.) is shared by laypeople and specialists alike. Language learning is not an exception to such a belief. Practice has been at the basis of language learning throughout history. The nature of practice varies depending on the setting and circumstances in which language is learned and taught, however. While practice in informal contexts implies exposure to and usage of (in this order) the language as it is naturally used by native speakers, the educational environment guides and controls what is to be learned and taught and how the learner should internalize this knowledge. Accordingly, many different varieties of practice exist in language pedagogy.

The basic key feature traditionally underlying the concept of practice is *repetition*. Even a loose understanding of practice as language use or contact with the language being learned implies some sort of repetition of linguistic items. DeKeyser (2007a) defines practice as follows: "Specific activities in the second language, engaged in systematically, deliberately, with the goal of developing knowledge of and skills in the second language" (p. 1). This definition also implies repetition; however, it allows for more variety, since practice is embedded in a variety of activities.

Practice remains a controversial topic in second language instruction. For example, Ellis (1993, p. 109) considers that (production) practice is important for pronunciation and formulaic knowledge, while he challenges the value of traditional practice in grammar; VanPatten (2003) favors input practice at the expense of output practice; DeKeyser (2007b) claims the need for both input and output practice to develop grammar proficiency in reception and production modes respectively.

The Praxis of Practice

Practice in second language instruction has been often identified with drills (DeKeyser, 2007a). In particular, drills were the hallmark of the audio-lingual method (ALM) in the mid 20th century as a pedagogical technique for the mastery of structures, which was accomplished through constant repetition as the response to a stimulus in the shape of a cue. Most of the times such repetition was *mechanical*: it did not involve any form-meaning connections as there was only a correct answer which could be inferred through mere analogy. As DeKeyser (2007a, p. 11) states, "mechanical drills can only serve a very limited purpose, because they do not make the learner engage in what is the essence of language processing, i.e., establishing form-meaning connections." This accounts for the negative connotation attached to drills nowadays.

Drills have sometimes been equated with mechanical drills. However, Paulston (1972) distinguished three different types of drills: mechanical, meaningful, and communicative drills. In mechanical drills, exclusive attention to form is achieved by means of the students'

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repeating or manipulating the cue supplied by the teacher, for example, using the pronoun "she" (the cue) in the correct way after the given model sentence, "*I have a book*." Meaningful drills allow deviation towards some sort of attention to meaning. The speakers communicate, but the content of this interaction is already known to them. Communicative drills permit exchanges in which the transmission of content is the primary goal while emphasizing form as well. Therefore, in so far as *drilling* is *meaningful*, it can be considered useful "repetitive practice."

Since the 1970s, communicative language teaching (CLT) has brought new ways of practicing to the classroom. Repetition per se may be efficient and necessary in the learning process, but it may also be boring and demotivating. Emphasis on the communicative process has brought the richness and variety of actions that speakers engage in while communicating into the classroom. Real communicative events offer a wide range of possibilities for promoting language use in different contexts, aiming at different communicative functions; this requires the application of a variety of strategies. Authentic communicative events may, therefore, be pedagogically adapted to become models in the design of activities for instructed second language acquisition (Criado, 2010). This is the source of inspiration for techniques through which practice is implemented in most contemporary textbooks. Blank filling, matching, information and opinion gaps, controlled role plays, summarizing or finishing aural or written texts, jigsaw reading and listening, discussions, debates, extended role plays and simulations, problem-solving, essays, and so forth, contribute to enrich practice by enlarging its scope and helping to avoid the negative effects of mechanical repetitive strategies. Such variety of activity types allows a richer and more comprehensive approach to the praxis of practice.

Research on Practice

Early research on practice in language learning tended to be very much embedded in broader research on the relative value of different language teaching "methods." By comparison, contemporary research tends to focus on much more specific aspects of practice, including: the effect of comprehension (reading and listening) versus production (speaking and writing) activities on the development of these different skills (e.g., DeKeyser, Salaberry, Robinson, & Harrington, 2002; VanPatten, 2002); the effect of different kinds of corrective feedback such as prompts, recasts, explicit correction (e.g., Leeman, 2007); and the differential effect of various activities and their sequencing on the three outcomes of accuracy versus fluency versus complexity of expression (e.g., Housen & Kuiken, 2009).

Besides ongoing research in the area of language teaching and learning itself, research in cognitive and educational psychology is also relevant to the issue of practice in language learning. Decades of work in skill acquisition theory in psychology have led researchers such as DeKeyser (1997) and Robinson (1997) to empirical work on language learning, showing, respectively, that Anderson's ACT three-stage model of skill acquisition (e.g., Anderson et al., 2004) is applicable to learning the grammar of a second language under controlled conditions, and that Logan's item retrieval model (e.g., Logan, 2002) does not seem to be. Serrano (2011) put to the test the widely accepted belief that distributed practice is better than massed practice, and found that this may not apply to the distribution of a second language curriculum over years versus months.

Choices in Practice and Pending Questions

In spite of the progress made over the last half century, learners and teachers still face a bewildering array of questions about practice to which there is no clear answer. Most

applied linguists would agree by now that form-meaning connections should be the core content of practice; that both input (comprehension) and output (production) are important; that a certain amount of systematic, deliberate practice is useful; that corrective feedback has its place; and that, within a limited range, different emphases can be put on accuracy, fluency, and complexity. Other issues remain more controversial from a theoretical point of view, problematic from a practical point of view, or both.

On the input side, questions remain about the ideal balance of authenticity versus systematicity (pedagogical arrangement) of input and on the best strategies for teaching learners listening and reading skills. On the output side, questions remain about the need for systematic practice of form versus practicing forms as they come up in real-life tasks. When it comes to communicative interaction, some of the biggest questions surround the issue of corrective feedback: How much should be given, when, by whom, and how?

On top of the complexity of these questions by themselves, both from a psycholinguistic and from a pedagogical perspective, there is the issue of age and individual differences. Few would doubt that the need for (explicit) form-focused practice is bigger for adults than for children, that the desirability of explicitness in teaching, practice, and feedback depends not only on the complexity of the structure but also on the aptitude of the learner, and that the nature of students' motivation needs to be taken into account if the choice of practice activities is to be a help rather than a hindrance.

In spite of the various debates surrounding the nature of practice and its different facets, contemporary authors from different teaching perspectives agree that good praxis implies that activities should make students process form-meaning relationships and involve real-life operating conditions (DeKeyser, 2007b). Communicative practice is a must, but focus on form and deliberate practice have their place among "best practices" too.

SEE ALSO: Automatization, Skill Acquisition, and Practice in Second Language Acquisition; History of Language Teaching Methods; Input-Based Instructional Approaches; Output-Based Instructional Approaches; Roles for Corrective Feedback in Second Language Instruction

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Pragmatic Awareness in Second Language Learning

SATOMI TAKAHASHI

Pragmatic awareness is the recognition or knowledge of the way in which language is used to encode social meaning through conscious reflection of relationships among factors involved in pragmatic comprehension and production. There are two types of pragmatic awareness: pragmalinguistic awareness and sociopragmatic awareness. Pragmalinguistic awareness is explicit knowledge of the form–function relationships relevant for particular sociocultural contexts. For instance, if a person knows that the interrogative form used when addressing his or her interlocutor's ability functions as a request (e.g., "Can you open the window?"), he/she manifests pragmalinguistic awareness of the formulation of one type of request. Sociopragmatic awareness is explicit knowledge of relationships between communicative action and contextual factors such as social status, social distance, and imposition arising from the communicative action. For instance, if a person knows that a given culture favors a more indirect way of correcting arguments made by a higher-status person than by a status-equal or status-low person, this reflects their sociopragmatic awareness. In short, sociopragmatic awareness is recognition of what constitutes appropriate linguistic behavior in a particular speech community. The two types of pragmatic awareness have been independently and jointly investigated, providing us with significant insights into the role of pragmatic awareness in second language (L2) learning.

From a theoretical perspective, pragmatic awareness is a construct essential for explicating every aspect of the learning of pragmatic features, and Schmidt's (1995, 2001) noticing hypothesis supports this view. The noticing hypothesis claims that learners have to *notice* L2 features in the input for the subsequent development to occur in the L2. The term "notice" is broadly defined here as detection with *conscious awareness*, and it is contended that learning requires conscious awareness at the time of the learning of the target features. The noticing hypothesis further postulates two levels of awareness—awareness at the level of noticing (i.e., identification of the targets without mentioning any rules) and that at the level of understanding (i.e., recognition of the targets with the explicit formulation of rules). The majority of the studies on pragmatic awareness in L2 learning has been undertaken to examine the validity of the noticing hypothesis within the framework of either of the two levels of awareness.

More specifically, past research on L2 pragmatic awareness can be categorized into two strands. One focuses on learners' sensitivity to or judgment on pragmatic appropriateness (Bardovi-Harlig & Dörnyei, 1998; Schauer, 2006); the studies in this category fundamentally explore awareness at the level of *noticing*. The other research strand emerged in response to Kasper and Schmidt's (1996) call for further investigation of the developmental aspects of L2 pragmatics. It compels us to investigate the role of pragmatic awareness in developing learners' pragmatic competence and the ways of raising their pragmatic awareness in order to advance their pragmatic competence in L2. The studies in this category essentially address the issue of awareness at the level of *understanding*. This research tradition has primarily been implemented in the framework of instructional effects (Billmyer, 1990; Alcón-Soler, 2007).

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This paper will attempt to provide a brief overview of the empirical findings of past research on pragmatic awareness by following the above-mentioned research strands. Emphasis will be placed on explicating the conditions under which pragmalinguistic and sociopragmatic awareness can be raised significantly, thereby contributing to L2 pragmatic development.

Pragmatic Awareness as Sensitivity to Appropriateness

A seminal paper in the first research strand is Bardovi-Harlig and Dörnyei (1998), which directly addressed the issue of awareness at the level of *noticing* by investigating learners' perception of error gravity. Bardovi-Harlig and Dörnyei compared learners' judgments of pragmatic deviation with those of grammatical errors and examined the effect of learning context on their deviation perception. The participants included EFL (English as a foreign language) learners in Hungary, ESL (English as a second language) learners residing in the United States, and English teachers in Hungary and the United States. The participants performed a video elicitation task for speech acts of request, apology, suggestion, and refusal. The video task consisted of 20 scenarios, and the final sentence of a short dialogue in each scenario was used as a test item. These items were categorized into the following three types of sentences: (a) sentences that were pragmatically appropriate but ungrammatical; (b) sentences that were grammatical but pragmatically inappropriate; and (c) sentences that were both grammatical and pragmatically appropriate. The participants were asked to evaluate the appropriateness or correctness of the target items; if their evaluation was negative, they were instructed to rate the severity of the deviation on a six-part scale. The results indicated that EFL learners and their teachers consistently identified and ranked grammatical errors as more serious than pragmatic infelicities. However, ESL learners and their teachers exhibited exactly the opposite tendency. Bardovi-Harlig and Dörnyei then argued for the significant effect of learning context on learners' awareness at the level of noticing.

Niezgoda and Röver (2001) and Schauer (2006) replicated the study of Bardovi-Harlig and Dörnyei (1998) by employing their video task. Niezgoda and Röver examined grammatical and pragmatic awareness for EFL learners in the Czech Republic versus ESL learners in Hawaii, while Schauer compared EFL learners in Germany with ESL learners in England. Contrary to the original findings, Niezgoda and Röver found that their EFL learners were more aware of pragmatic infelicities than their ESL counterparts. They attributed this discrepancy to the fact that their ESL learners were "average" learners, whereas their EFL learners comprised a highly select sample with higher proficiency in L2, who intended to teach English. Thus, it appears that proficiency and possibly learning motivation might override the effect of learning context. On the other hand, Schauer's data revealed results similar to those of Bardovi-Harlig and Dörnyei; her German EFL learners were less aware of pragmatic infelicities than the ESL group. Further, Schauer found that the ESL learners increased their pragmatic sensitivity substantially during their stay in England, validating the strong effect of learning context on awareness at the level of noticing.

Pragmatic Awareness Raising Through Instruction

Studies on pragmatic awareness raising through instruction essentially explore the nature of awareness at the level of *understanding*. The need for pragmatic instruction was triggered by the claim that learners may not be able to develop their L2 pragmatic competence sufficiently without relying on some forms of instruction (intervention) or awareness raising on "rules" for comprehending and producing target pragmatic features. In other words,

simple exposure to the target language (TL) input may not contribute to rapid and adequate development of learners' pragmatic abilities. This is notably verified in a series of studies conducted by Lawrence Bouton with regard to ESL learners' development of their implicature abilities, namely, abilities to identify the contextually implied meaning of utterances. For instance, the response utterance "Does the sun come up in the east?" is interpreted as "Yes." Bouton (1999) compared the following groups of ESL learners: (a) an immersion group that consisted of learners who had been on an American university campus for 17 months, 33 months, and 4–7 years without receiving any type of instruction on implicature; and (b) an intervention group that comprised ESL learners who had just started their college lives in the United States and received instruction on different types of implicature. The results revealed that the intervention group was able to acquire implicature abilities to the same extent as the immersion group, which still exhibited inadequacy in its implicature abilities. This suggests that the acquisition of pragmatic competence progresses slowly and incompletely when learners are simply exposed to TL input. However, learners who have newly arrived in the TL community are able to achieve the same level of pragmatic competence as those in the immersion group as a result of receiving some forms of awareness-raising intervention.

In view of the effectiveness of pragmatic instruction in the second language (SL) context as evidenced in Bouton (1999), classroom instruction incorporating various pragmatic awareness-raising tasks is desperately needed in foreign language (FL) contexts, where learners have limited opportunities to expose themselves to TL input and to utilize newly learnt L2 pragmatic strategies outside the classroom. In light of this necessity, an increasing number of studies on instruction that raise pragmatic awareness have been conducted in FL contexts (Alcón-Soler & Martínez-Flor, 2008).

Takahashi (2010) reviewed 49 pragmatic intervention studies with the pretest–posttest design and identified three major points. First, metapragmatic information provided through explicit intervention (as opposed to implicit intervention that does not provide such information) plays a significant role in enhancing learners' pragmatic awareness (Billmyer, 1990; Alcón-Soler, 2007). In particular, maximum increase in sociopragmatic awareness can be achieved under explicit intervention (Liddicoat & Crozet, 2001; Rose & Ng Kwai-fun, 2001). Second, explicit intervention does not always yield significant learning outcomes. Learners receiving such intervention simultaneously show a lower degree of confidence in implementing pragmatic strategies (Takahashi, 2001). Moreover, mixed results were obtained within and across the studies on explicit intervention (Tateyama, 2001). Third, some forms of implicit intervention effectively raised pragmatic awareness (Martínez-Flor, 2006; Takimoto, 2007).

On the basis of the above overview, Takahashi (2010) concluded that awareness at the level of understanding is a must but should be considered as the *minimal* condition for substantial pragmatic development, emphasizing the necessity of heightening the level of this awareness to the extent that learners can successfully and satisfactorily engage in communication in the L2 with greater confidence. According to Takahashi, such a substantially higher degree of awareness at the level of understanding is attained only when interventions—irrespective of their explicitness—ensure parts or all of the following four conditions: (a) learners' analysis of their own pragmatic deficiencies; (b) learners' active engagement in the cognitive comparison of their own performance with the normative performance that appears in natural interactions; (c) learners' own discovery of the target pragmatic conventions; and (d) learners' experiences of immediate communicative needs in relation to the intervention tasks. Three studies that satisfy one or more of these four conditions are discussed below.

Billmyer (1990) meets almost all of the four conditions. In the framework of explicit intervention, Billmyer explored the effect of instruction on compliments and compliment responses in the ESL context using Japanese learners of English as her participants. Before

receiving metapragmatic information on the target speech acts, the learners analyzed various natural data, including those they had collected themselves outside the classroom, and identified the social rules for the target speech acts on their own. In the pretest and posttest activities, the learners engaged in compliment-inducing tasks that required them to audiotape their conversations with the native speakers (NSs). It is noteworthy that the posttest actually consisted of seven post-instructional tasks for an extended period, and these activities provided the learners with ample opportunities to perform the target speech acts in relatively natural communication settings based on their own communicative needs as well as to compare their own performance with the NS performance. Billmyer's research design, therefore, was successful in substantially raising learners' awareness at the level of understanding; in fact, the study led to significant learning outcomes.

Unlike Billmyer (1990), Alcón-Soler's (2007) research was undertaken in the EFL context and within the framework of "explicit intervention versus implicit intervention." Alcón-Soler investigated the instructional effects on Spanish EFL learners' learning of English requests by employing the excerpts of a television series as instructional materials. The delayed posttest indicated that the learners in the explicit group were more likely to maintain high pragmatic awareness, and this may be attributable to the learners' own discovery of the target pragmatic conventions, that is, their finding request examples in the scripted version of the excerpts on their own, and justification of their choice. On the other hand, the implicit group performed awareness-raising tasks that involved typographical enhancement (requests and related sociopragmatic factors were in bold type or capitalized). The participants were simply required to find the requests designated by the researcher. This clearly indicates that other-initiated enhancement is ineffective in substantially heightening learners' awareness at the level of understanding as compared to self-initiated activities as experienced by the learners under explicit intervention.

Takimoto (2007) also compared the effectiveness of explicit and implicit interventions in teaching Japanese EFL learners how to make requests in L2. Takimoto examined the effects of the following three types of input-based interventions: (a) structured input tasks with metapragmatic information (explicit intervention); (b) problem-solving tasks (implicit intervention); and (c) structured input tasks without metapragmatic information (implicit intervention). Structured input tasks force learners to selectively attend to target request expressions through appropriateness judgment and self-confirmation of their judgment while listening to dialogues containing the appropriate expressions. Thus, structured input tasks themselves are implicit in nature and rely on learners' own discovery of pragmalinguistic and sociopragmatic conventions of English requests. The problem-solving tasks involved learners' comparison of appropriate and inappropriate request forms and their analysis of the ways of making inappropriate requests more polite. The results revealed that structured input tasks with metapragmatic information had a lesser degree of effectiveness at the delayed posttest phase, thereby verifying the overall effectiveness of implicit intervention. More importantly, Takimoto's study suggests that maximum increase in both pragmalinguistic and sociopragmatic awareness can be achieved through learner-initiated cognitive activities.

Future Directions

The effect of learner characteristics on pragmatic awareness is one of the promising research topics involving pragmatic awareness. Takahashi (2005) is the only recent study that has directly addressed this issue. Takahashi explored the effects of Japanese EFL learners' motivation and proficiency on their attentional allocation while processing pragmatic input in L2. Awareness was considered to be inherently graded and operationally defined as conscious detection accompanied by different levels of interest in the target features.

Takahashi found that intrinsic motivation—inherent interest in the learning activities—significantly affected learners' awareness of the target bi-clausal English request forms (e.g., "I was wondering if you could VP"); however, this was not the case for proficiency. With regard to proficiency, Matsumura (2003) similarly demonstrated that amount of exposure had greater potential to explicate the development of pragmatic awareness than proficiency. On the other hand, in the area of pragmatic intervention, Codina-Espurz (2008) reported that Spanish EFL learners with higher proficiency were able to attain a more balanced use of various mitigation devices in requests than learners with lower proficiency under a particular intervention, thereby evidencing the direct effect of proficiency. Similar approaches need to be adopted in future research. Needless to say, other learner-attributable variables such as aptitude and learning strategies should also be examined as part of our continuing efforts to grasp a more accurate picture of the role of pragmatic awareness in developing L2 pragmatic competence.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Classroom Research on Pragmatics; Conversational Implicature; Interlanguage Pragmatics; Second Language Pragmatic Development; Speech Acts Research

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Pragmatic Competence in Multilingual Contexts

MARIA PILAR SAFONT JORDÀ

Pragmatic competence is considered a main component of the global construct of communicative competence and it has been defined as "the competence in conveying and understanding communicative intent" (Celce-Murcia, Dörnyei, & Thurrell, 1995, p. 17) and as "knowledge on how to perform common speech acts and speech act sets" (Celce-Murcia, 2007, p. 48). Due to the fact that communicative competence is the most relevant outcome in teaching and learning languages, special attention has been paid to the development of language learners' pragmatic competence in the last 20 years. Such a focus has given rise to the discipline of interlanguage (IL) pragmatics. However, despite the vast amount of studies analyzing IL pragmatic development (see Alcón, 2008, for an overview), only a few have considered the multilingual background of language learners. This entry will focus on the need to analyze pragmatic competence of multilingual speakers by presenting an overview of the studies conducted so far on this topic.

Pragmatic Competence in Multilingual Contexts: A Focus on Learners

Interlanguage pragmatics has adopted and adapted the main tenets of L1 pragmatics and L2 acquisition research. In this way, Brown and Levinson's (1987) politeness theory or Leech's (1983) account of the use speech acts serve as the basis for the analysis of L2 learners. Following SLA tradition, L2 learners are all considered within the same learner group, the only subdivision may refer to the learning context, that is, whether they are learning the language in the target speech community or not. The former case would include immigrants or second language learners, whereas the latter case refers to foreign-language learners. Despite this distinction, the knowledge of more than one language, that is, the multilingual background of these learners, has been ignored or scarcely dealt with.

Paradoxically, there seems to be general consensus around the idea that multilingualism is now the norm rather than the exception (Cenoz, Jessner, & Hufeisen, 2001), and that, even though second and third language acquisition are somehow similar, they also present important differences in terms of those processing mechanisms implied (Herdina & Jessner, 2002). Third language acquisition and use is more complex than second language acquisition. As argued by outstanding figures in the field (Jessner, 2006; Dewaele, 2007; Hufeisen & Marx, 2007; Cenoz, 2009), it is not a quantitative but rather a qualitative difference. Furthermore, the peculiarities of third language acquisition and use have been examined from a psycholinguistic (Cenoz, Jessner, & Hufeisen, 2001), educational (Cenoz, 2009), developmental (Quay, 2008), and sociolinguistic (Hoffmann & Ystma, 2004; Shohamy & Gorter, 2009) perspective. They are thus grounded on new theoretical paradigms and empirical findings. The growing body of research on third language acquisition and use includes some studies on the pragmatic development of third language learners and users. These studies have focused on the acquisition and use of speech acts (Cenoz, 2003; Safont, 2005a; Safont, 2005b), learning context (Dewaele, 2007), or use of honorifics (Fouser, 1997).

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Cenoz (2003) analyzed the use of requests by advanced university learners of English in the Basque Country. The author focused on ascertaining the intercultural style of learners by focusing on their requesting behavior. Results from the study not only point to the development of a particular intercultural style that relates to the similarity between Spanish and English requests, but also refer to the distance between requests made by English learners in Spanish and those produced by other Spanish speakers.

Another analysis on request behavior is presented by Safont (2005a), who examined the role of bilingualism in English learners' pragmatic production and awareness. Results from this study showed that bilingual students produced more request strategies and identified appropriate and inappropriate request behavior more often than their monolingual counterparts, confirming that (at least in this study) third language learners outperformed monolingual students of English in terms of both pragmatic production and awareness. In line with these results, Safont (2005b) also found differences between bilinguals' and monolinguals' use of peripheral modification devices. More specifically the study showed that third language learners of English employed request modifiers more frequently and appropriately than L2 English learners, supporting Jessner's (2006) assumptions of a highly developed interactional competence in third language learners. Furthermore, according to Herdina and Jessner (2002), new language-learning techniques and skills involved in language use may arise as a result of the qualitative change in third language learners. According to the author, findings in Safont's (2005b) study are in line with Herdina and Jessner's (2002) dynamic view of multilingualism, as skills involved in making use of appropriate request behavior (including mitigation devices) appeared more developed in learners of English as a third than as a second (foreign) language.

Nevertheless, we should bear in mind the fact that only one speech act (requests) has been examined in the third language learning setting (Cenoz, 2003; Safont, 2005a, 2005b). In order to present a thorough analysis of pragmatic behavior in multilingual learners, other speech acts and pragmatic aspects need to be studied, addressing the complex nature of multilingualism. See for example the study of the learning context and role of situational factors in communication by Dewaele (2007), and the use of honorifics by third language learners by Fouser (1997).

In all the above-mentioned cases an SLA research-based design was adopted. The former group of studies used questionnaires that elicited the target pragmatic or pragmatic-related item. However, other research designs may fully account for the multilingual nature of language use and thus best serve the purpose of examining the pragmatic behavior of multilingual speakers. An example of other research designs leads to the methodology employed in studies conducted on early pragmatic development in multilingual children. In these studies the multilingual nature of communication is taken into account.

Early Pragmatic Development in Multilinguals

Children's pragmatic development has been examined from a cross-sectional and a longitudinal perspective. Cross-sectional studies focus on the analysis of classroom discourse (Gumperz & Cook-Gumperz, 2005; Cots & Nussbaum, 2008) and pay attention to issues like identity construction and multilingual communicative competence. Longitudinal studies analyze multilingual children's pragmatic development by focusing on the use and comprehension of their languages at very early stages (Montanari, 2009; Quay, 2008).

Gumperz and Cook-Gumperz (2005) analyzed bilingual children's code-switching behavior in the classroom by adopting an ethnographic approach. The authors contrasted monolingual and bilingual communication to demonstrate that bilingualism may be seen as a resource for achieving communicative goals. In their opinion, code switching should not be treated

as an independent phenomenon, but rather as a constituent of classroom-generated discourse in the case of bilingual children. As suggested by Gumperz and Cook-Gumperz (2005, p. 21), bilingual practices can be best examined through their communicative effects. An example of this area of research that deals with bilingual practice in schools is provided by Cots and Nussbaum's (2008) analysis of multilingual discourse in the English classroom. The authors describe the interactional profile of two young immigrant students in Catalonia by focusing on their institutionally affiliated communicative competence. Through an interactionist approach to the data collection and analysis, the authors examine their participation in the institutional context. Gumperz and Cook-Gumperz concluded that, while their subjects' level of communicative competence in English could be considered very low (according to traditional standards that are strictly based on competence in one language), their institutionally communicative competence was acceptable.

A change in the research paradigm adopted in the analysis of language learners' pragmatic competence was also suggested by Kasper (2007). The author advocated for a conversation-analytic perspective in examining pragmatic transfer, including that of multilingual speakers. In line with Kasper's proposal, recent analysis of early pragmatic development in multilinguals has adopted a more ethnographic and interactionist methodology. This research method differs from the traditional paradigm in interlanguage pragmatic development to account for multilingual pragmatic development. In other words, the focus in those studies dealing with early pragmatic development is not on the appropriate use of one of the participants' known languages, but on all of them. More specifically, studies like those of Quay (2008) and Montanari (2009) focused on whether multilingual children could differentiate their languages pragmatically. These two studies suggested that, even before the age of 2, multilingual children are aware of the linguistic background of their interlocutor and may adapt their production accordingly.

Proposals for Analyzing Pragmatic Competence in Multilingual Contexts

As mentioned in the previous sections, existing studies on the pragmatic competence of multilingual users provide us with insights on the peculiar characteristics of third or additional language acquisition, as follows. First, bilingual speakers learning English as a third language present their own intercultural style (Cenoz, 2003) and their skill in identifying appropriate requestive behavior is further more developed than in the case of monolingual learners (Safont, 2005a). Second, it has been demonstrated that the learning context and situational factors influence the perceived oral competence in the additional language (Dewaele, 2007). Third, there exists some evidence that language distance affects pragmatic transfer as far as the use of honorifics is concerned (Fouser, 1997). In addition, the adoption of interactionist research methods in the analysis of multilingual behavior shows that bilingualism may be regarded as a resource for achieving target communicative goals (Gumperz & Cook-Gumperz, 2005) and. thus, identity construction may be further examined in the language classroom (Cots & Nussbaum, 2008) even with beginner language learners. Finally, it has been demonstrated that early trilingual users may differentiate their languages pragmatically even before the age of 2 (Quay, 2008; Montanari, 2009).

The above findings open new research goals in interlanguage pragmatics by considering a well-known fact: The world is multilingual. Therefore, the adoption of a monolingual and monocultural perspective in analyzing pragmatic development may provide us with only a partial account of the linguistic phenomenon under study. Such a monolingual view is considered when multilingual language learners' performance is contrasted with that of native speakers of one of the languages. As argued by House (2007), the aim of these

learners is not to become a native speaker, rather an expert user of the language. In the same vein, Dewaele (2008) argues for a focus on multicompetent users of an additional language and on their own subjectivity, which may be reflected in their pragmatic use. In line with these views, the notion of communicative competence has been challenged as it takes monolingual competence in the target language as the desired outcome of any language course. There is then a need to revise the underlying assumptions of actual pedagogical models, considering the learner as an intercultural mediator (Alcón, in press).

Particular characteristics of these language learners have been considered in multilingualism studies (Todeva & Cenoz, 2009). Yet, as raised by Aronin and Hufeisen (2009), new research paradigms should be adopted to move toward the second threshold in multilingual studies. These authors argue for the need to adopt new methodological perspectives in the analysis of multilingualism. According to these authors, the complexity of multilingualism may be best described and identified by conducting a thorough analysis of reality. Methods considering speakers' symbolic competence may well serve this purpose (see complexity theory or dynamic systems theory). Therefore, the analysis of multilingual learners' pragmatic competence could and should follow this new perspective. In fact, Kramsch and Whiteside affirm that "multilingual environments can elicit complex relationships between speech acts and their perlocutionary effects" (2008, p. 662). They link such complexity to studies which allow for the analysis of symbolic competence. Such competence could be defined as "the ability to shape the multilingual game in which one invests and to reframe human thought and action" (2008, p. 664). In other words, symbolic competence refers to the particular ability that multilinguals show to play with various linguistic codes and with various temporal and spatial backgrounds related to these codes.

Symbolic competence thus allows for the adoption of a multilingual perspective in the analysis of multilinguals' behavior. This perspective may then enable us to provide further insights into the pragmatic development of third language learners and users. Issues like identity construction in the language classroom or pragmatic differentiation in early third language learners may also benefit from a more comprehensive analysis following this new research approach.

Conclusion

The inherent complexity of multilingual discourse (Aronin & Hufeisen, 2009) and existing findings on the particular characteristics of pragmatic development in multilinguals calls for new research paradigms as acknowledged by researchers in the field of second language acquisition (Kramsch & Whiteside, 2008), interlanguage pragmatics (Kasper, 2007), and multilingualism (Aronin & Hufeisen, 2009; Todeva & Cenoz, 2009). On the basis of these authors' proposals, the analysis of learners' symbolic competence and, thus, the adoption of a multilingual and ethnographic approach has been proposed. Nevertheless, empirical studies are needed that corroborate this idea. As a suggestion more studies on early third language pragmatic development would be useful since they would create the need to examine the learning and use of additional languages in instructed contexts, analyze institutional discourse and identity construction, and further study early pragmatic development and differentiation in multilinguals. A more ethnographic and interactionist approach is needed in the analysis of language learners' pragmatic development (Bardovi-Harlig & Hartford, 2005; Kasper, 2007). However, such an approach should also adopt a multilingual perspective (Aronin & Hufeisen, 2009), as may be provided by considering learners' symbolic competence. Results from this investigation would contribute to broadening the scope of research on pragmatic competence in multilingual contexts.

SEE ALSO: Bilingual Education; Bilingualism and Multilingualism: Quantitative Methods; Child Pragmatic Development; Pragmatics of Lingua Franca Interaction; Third Language Acquisition

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Pragmatic Development in Study-Abroad Contexts

TIMOTHY HASSALL

Study abroad, in which students spend a term or longer in the target culture while taking formal classes in language or content (or both), is the keystone of many academic programs. Folk wisdom is that study abroad enables learners to acquire a second language (L2) with great success. Research over several decades does in fact bear out that belief to a large extent (see Freed, 1995). It shows that study-abroad learners by and large do improve a good deal in some areas of language, particularly in overall fluency of their speech. Only during the last fifteen years or so, however, have researchers begun to look specifically at their acquisition of pragmatics. Pragmatics intuitively seems an aspect of language learning which would benefit particularly well from study abroad. After all, living in the target culture can offer the opportunity to participate in and observe a wide range of informal interactions in authentic contexts, which is seldom true of the L2 classroom back at home. How well, then, do L2 learners acquire pragmatics during study abroad? How also do they acquire it?

What Learners Acquire

Learners certainly do acquire some pragmatics during their study abroad. This is shown by studies of diverse learners of various target languages (e.g., US English-speaking learners of Spanish in Felix-Brasdefer, 2004, and Japanese learners of English in Matsumura, 2003). Furthermore, when such studies explicitly compare their pragmatic development with that of a control group of at-home L2 learners they consistently find the study-abroad learners to make greater gains.

Routines

The most marked success is in acquiring pragmatic routines. This means formulaic expressions used in performing various speech acts (e.g., in this writer's variety of English: "Hi," "Can I have . . . ?" "Sorry about that," "Would you like a . . . ?" "No thanks," or "See you later"). Many studies show a rapid development in this respect. Low-level Australian adolescent learners developed a wide variety of Japanese routines for opening and closing requests and interviews (Marriott, 1995). Similarly, low-level American learners of Spanish acquired much ability to use routine formulas for a range of functions, including opening and closing encounters (Lafford, 1995). Beginning and intermediate learners of Indonesian also acquired a wider range of greeting routines during a short sojourn (DuFon, 2000). Advanced Irish learners acquired some appropriate German routines for making requests and offers and for refusing offers (Barron, 2003), and advanced American learners of French developed a range of routines for taking leave (Hoffman-Hicks, 2000).

Informal Style

Another noticeable gain by study-abroad learners is that they develop some command of informal speech style. Marriott's (1995) Australian learners of Japanese learned to use plain

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speech style as opposed to polite honorific style, which had been the only style they knew before their sojourn. US learners of French improved their understanding of colloquial French words and phrases (Kinginger, 2008). American adolescent learners of French also reported considerably more confidence in their ability to converse in an appropriate style with French teenagers at the end of the sojourn than they did at the beginning (Lapkin, Hart, & Swain, 1995).

Sociopragmatics

Some groups of study-abroad learners also show development at the social "end" of pragmatics. This refers not to command of the language forms themselves but rather to the ability to assess the social context in an L2-like way in order to decide what forms are appropriate to choose (e.g., gauging the relative status of speaker and hearer before deciding how to word a request). This type of L2 pragmatic knowledge is generally thought to be hard to acquire, especially outside the target culture (see Kasper & Rose, 2002; Barron, 2003). There is evidence that study abroad can enable learners to acquire a certain amount of it. For instance, Japanese learners of English developed more L2-like perceptions of how much weight to lend to relative social status of speaker and hearer in deciding how to give advice to certain interlocutors (Matsumura, 2003). American learners of Spanish developed more L2-like perceptions of how an interlocutor's higher status affected the way to express refusals to that person (Felix-Brasdefer, 2004). Some American learners of French also developed a more L2-like understanding of the social norms underlying the choice between the personal pronouns *tu/vous* (Kinginger, 2008).

Modifiers

Study-abroad learners show development in other aspects of pragmatics as well, although less obviously. Take for instance the feature of "modifiers": elements added to a speech act to soften or intensify its force. One might insert appropriate words and phrases as modifiers (e.g., asking in English "Could you *possibly* give me a lift?" or saying "I *really* liked your talk"). Or one might add extra moves to modify the force of the speech act that way (e.g., by apologizing when you knock someone over with "Oh, I'm sorry! *Are you all right?*"). Several studies show learners' use of modifiers to become more L2-like in some respects at least. Irish learners of German stopped using *bitte* 'please' so much to modify their requests and started softening them with other words instead, such as *vielleicht* 'perhaps', for example, to ask whether the addressee could *perhaps* give them a lift home (Barron, 2003). American learners of Spanish and French began to use conditional verb forms more often to soften their requests, for example, to ask "*Would* it be possible to . . . ?" (Cohen & Shively, 2007). Some German learners of English added a wider range of moves to support their requests, such as the expression of consideration "I hope you don't mind" in asking to postpone a meeting with a friend who has taken trouble to schedule it (Schauer, 2009), and Austrian learners of French stopped adding justifications for their own behavior so often when performing apologies (Warga & Schölmberger, 2007).

Global Sensitivity

As for general sensitivity to pragmatics, there is evidence that study abroad helps to raise it. German learners of English in one study became a good deal more skilled at detecting various pragmatic errors by the end of their study-abroad sojourn, and also came to regard errors of pragmatics as more serious than they formerly did (Schauer, 2006). This type of raised awareness of pragmatics has also been found among L2 learners who spend prolonged periods in the target culture outside study abroad (Bardovi-Harlig & Dörnyei,

1998).

Factors Affecting Acquisition

Study-abroad learners definitely do acquire some pragmatics, then, and often have impressive success. At the same time, their gains tend to be perhaps more modest than one might expect. For example, at the end of a sojourn their use of pragmatic routines still tends to be markedly non-L2-like. The advanced learners of German in Barron (2003), for instance, continued to use some inappropriate pragmatic routines when making offers, and in fact used some inappropriate ones more frequently as the sojourn went on. Similarly, the author of one large study of American learners of French finds their overall pragmatic progress during the 10-month sojourn to be fairly limited in scope (Hoffman-Hicks, 2000). Let us now consider what factors most affect learners' acquisition of pragmatics. This will shed some incidental light on why pragmatic gains during study abroad are not uniformly dramatic, as well as on the much-remarked fact (see Kinginger, 2008) that study-abroad learners vary greatly in their individual progress in acquiring L2 pragmatics (and in acquiring L2 more broadly).

Input

A crucial factor in acquiring pragmatics during study abroad is the amount and quality of pragmatic "input." This means information about pragmatics which the learner is exposed to during the sojourn. If one notices a piece of pragmatic information, and notices how it differs from one's own L2 pragmatic behavior, one can then potentially modify one's behavior in line with that input (see Schmidt, 1993). The main source of input about pragmatics during study abroad is participating in and observing informal interaction with L2 natives. Researchers regularly point to such input as crucial in enabling the pragmatic developments which learners make. For example, Marriott (1995) largely attributes the impressive pragmatic gains made by a group of adolescent learners of Japanese to the "massive amount of exposure to Japanese" (p. 220) which they received in their L2 environment, including "large amounts of comprehensible input and interaction" (p. 220). Matsumura (2003) finds that the amount of exposure his learners had to English during their stay in Canada (as well as before they arrived) directly affected the size of the pragmatic gains they made. Similarly, the detailed studies by Barron (2003), DuFon (2000), and Hoffman-Hicks (2000) all conclude after close analysis that the frequency and salience of the input received by their learners was crucial to how well they acquired a range of pragmatic features. (Input is crucial for acquisition of the L2 more broadly as well, and so is "output," which means use of the L2. This concomitant need for output is also acknowledged by L2 pragmatists, as by Marriott (1995) above when she asserts the value of "interaction." Interaction provides learners with both input and output.)

The target culture can sometimes be a poorer source of pragmatic input than one might think. Studies such as those cited above often identify some inadequacy in the input as a key limitation on their learners' progress. First, certain types of input are likely to be scarce for technical reasons. Learners typically lack input in those features which they are expected to use but which interlocutors do not use back to them. Examples of such features are address terms in languages such as Indonesian (see DuFon, 2000) or address honorifics in Japanese (see Marriott, 1995). Because these features are not used in talk which is addressed to the learner, the learner does not have a chance to notice them. Also, because L2 natives often talk to learners differently from how they would talk to each other, learners may receive input from their interlocutors which does not reflect actual L2 pragmatic norms, for example, US English-speaking learners of Japanese in Iino (2006). Learners also tend

to receive little corrective input or overt correction of their socially sensitive pragmatic errors (see DuFon, 2000). L2 natives might well notice socially sensitive errors the learner makes but tend to be reluctant to draw the learner's attention to them, so learners are not helped to notice them.

A second and more far-reaching cause for lack of input is the fact that some study-abroad learners end up having little interaction with L2 natives outside the classroom—often a good deal less than they had planned before departing. Take, for example, the common study-abroad practice of living in a "homestay." Some L2 learners find this living arrangement an invaluable source of social interaction, but many others end up talking little with their host family, for a range of reasons (see e.g., Wilkinson, 1998). More generally, the learners may make little or no effort to seek out interactions with natives and may reject opportunities to interact when they do arise (see Pellegrino, 1998). Learners may behave like this for a wide variety of cultural, social, and psychological reasons. See, for example, accounts of individual learners observed by Wilkinson (2000) and by Kinginger (2008). They respond to the experience of the target culture in very different ways, some of which curtail the amount and range of input about L2 pragmatics they can obtain.

Motivation

This matter of input is closely tied to another important factor—that of motivation. While it is unhelpful and will often be untrue to brand those study-abroad learners who avoid interactions with L2 natives as "lazy," it is fair to say they lack motivation to learn the language. They lack that degree of motivation which would lead them to desire and to seek out L2 interactions purely for their language learning value, regardless of whether they actually "felt like it" at the time. Their limited motivation to acquire the language prevents them from obtaining as much and as varied pragmatic input as they otherwise would. Conversely, study-abroad learners with very high motivation to learn the L2 are likely to seize opportunities to interact intensively with L2 natives and thereby gain access to very rich pragmatic input, even overcoming structural disadvantages such as an input-poor home environment (see Kinginger, 2008, for a case study of such a learner of French). The two factors of motivation and input interact in another way as well, to affect acquisition of pragmatics. Learners who are more highly motivated to learn pragmatic aspects of the language as opposed to purely formal aspects are more able to notice the pragmatic input which they are exposed to during their sojourn (see DuFon, 2000).

Identity

Something else that affects how learners acquire pragmatics during study abroad is how they perceive their identity within the target culture. Do the learners feel comfortable with the social roles and language practices expected of them by L2 natives? Conversely, do they wish to position themselves within the target culture in a way that conflicts with those expectations? To the extent that the second thing is true, learners may not acquire ways of speaking which L2 natives would consider appropriate. They might pay little attention to pragmatic input which reflects cultural values they do not wish to adopt, and so learn little about the relevant pragmatic features—for example, an American learner of Indonesian who cared little about the hierarchical complexities of the L2 address term system (DuFon, 2000). Even if they do learn how to use the pragmatic feature in an L2-like way, they might deliberately not do so in order to follow their chosen way of presenting themselves within the target culture—for example, a US learner of French who opted for a non-L2-like choice of pronoun to address French equal-aged peers (Kinginger, 2008).

Length of Stay

A final factor to mention is length of sojourn. How long do learners need to stay abroad to acquire pragmatics? We must qualify any answer with caveats. First, study-abroad learners do not acquire pragmatic features in a neat linear way. Instead of simply moving ever closer to the L2 norm for a given feature, they may even move further away from that norm (see e.g., Barron, 2003). Moreover, as mentioned, learners do not always *aim* for L2 native pragmatics. They sometimes resist certain L2 pragmatic practices and choose to perform in a non-native-like way instead (e.g., in Barron, 2003; Kinginger, 2008). Finally, as we know, learners are still not L2-like in their competence by the end. Those things said, learners seem to start acquiring pragmatics early in their sojourn. Within two or three months they can become a good deal more competent in using a range of routine formulas especially (e.g., Hoffman-Hicks, 2000). Other isolated pragmatic gains have been noted to occur equally rapidly, such as acquiring a more L2-like structure to some speech act exchanges in German by learning not to re-offer when an initial offer is declined (e.g., Barron, 2003). Similarly, one group of Japanese learners needed only around two months in England to gain some knowledge of the social factors underlying appropriate choice of advice forms (Matsumura, 2003). Moreover, pragmatic development appears to be sustained after the early months. For example, learners of German were observed to have made various pragmatic gains at the end of their 10-month sojourn which they had not yet made at earlier points (Barron, 2003). In short, learners seem to start acquiring pragmatics early and to keep making progress for as long as their sojourn lasts.

Conclusion

Study abroad seems to promise a great deal for learners of L2 pragmatics but to deliver slightly less. It seems that simply "being there" is not enough. One way to maximize the learning of pragmatics during study abroad is to combine it with classroom support. As Kasper and Rose (2002) say, the language classroom has some advantages over the informal L2 target culture environment as a place to learn L2 pragmatics, as teachers can, for example, explicitly model pragmatic features and raise learners' awareness of features through systematic activities. Kasper and Rose (2002) argue that learners would benefit from explicit teaching of pragmatics before departure, combined with formal courses in the host setting which encourage them "to discuss and reflect on their experiences with L2 interactional practices" (pp. 233–4). This can prepare students for the differences they will find and help them to make sense of their encounters with the target culture. Without this kind of preparation and support, as Kasper and Rose (2002) observe, development of L2 pragmatics can be "slow and partially unsuccessful" (p. 234).

SEE ALSO: Interlanguage Pragmatics; Language Study Abroad; Politeness; Pragmatic Awareness in Second Language Learning; Pragmatic Routines; Second Language Pragmatic Development; Teaching Pragmatics

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Pragmatic Markers

JESÚS ROMERO-TRILLO

Pragmatic Markers

Pragmatic markers can be described as those constructions, such as *you know*, *I mean*, *you see*, *well*, *yeah*, that are present in speech to support interaction but do not generally add any specific semantic meaning to the message. They can be defined as those elements of language that have modified their original propositional meaning and have adopted a communicative status that weaves the net of discourse between the addressor, the addressee, and the context of a given message. Obviously, this definition is inextricably linked to the approach selected here for the understanding of pragmatics as a linguistic discipline. In general terms, two main traditions in the study of pragmatics can be found: the first describes what pragmatics does, for instance Mey (1993, p. 4), "Pragmatics tells us it's all right to use language in various, unconventional ways, as long as we know, as language users, what we're doing"; the second tradition describes the essence of pragmatics with analogous categories to other fields of linguistics, as in Leech (1983, p. 6), "the study of meaning in relation to speech situations." For the study of pragmatic markers, the former definition seems more appropriate than the latter—more scholastic—as it places the emphasis on what I consider to be the three essential components in the study of pragmatic markers: appropriateness, the status of the language user, and the description of language in context. In this sense, pragmatics can be characterized as a discipline whose span is beyond other branches of linguistics (phonology, grammar, or semantics), but functions in coalition with them. In other words, there cannot be a pragmatic meaning without an original linguistic meaning that has suffered some transformation as a result of its contact with reality.

In recent years, the description of pragmatic markers has been in conflict with the characterization of discourse markers. One of the most influential contributions in this respect can be found in Fraser (1999) who described discourse markers as:

> A class of lexical expressions drawn primarily from the syntactic classes of conjunctions, adverbs and prepositional phrases. With certain exceptions, they signal a relationship between the interpretation of the segment they introduce, S2, and the prior segment, S1. They have a core meaning which is procedural, not conceptual, and their more specific interpretation is "negotiated" in the context, both linguistic and conceptual. (Fraser, 1999, p. 931)

This definition contrasted with Schiffrin's description of these elements published in her seminal volume (1987, p. 31): "Markers are sequentially dependent elements that bracket units of talk." As observed, these definitions depart from divergent positions, while Fraser is more concerned with the intra-textual relationship of the markers Schiffrin is primarily interested in their extra/contextual and interactional relationships.

These conflicting views were also represented in the names assigned to discourse markers by different scholars: cue phrases, discourse connectives, discourse operators, discourse particles, discourse signaling devices, phatic connectives, pragmatic connectives, pragmatic

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expressions, pragmatic formatives, pragmatic markers, pragmatic operators, pragmatic particles, semantic conjuncts, sentence connectives, or continuative elements. After much scholarly discussion on the identification of the best term to describe this linguistic phenomenon, the course of history has practically reduced all these labels to the duet *pragmatic markers* and *discourse markers*. What seems important from a retrospective perspective is that this myriad of names evoked the different angles of study that discourse markers have inspired and, consequently, the multiplicity of functions they can realize in speech from a communicative and structural stance.

For many linguists nowadays, the term pragmatic markers has been widely accepted as the superordinate category for those elements that are present in discourse and whose meaning resists truth-conditional interpretation (see Levinson, 1983), although other approaches would make a clear distinction between both categories. In this sense, discourse markers are the elements that typically establish the link between a clause and its preceding or forthcoming one from a textual perspective. In other words, discourse markers connect adjacent units of information to signal, for example, contrast (*but*), consequence (*so*), or time/logical transition (*then*). For this reason, discourse markers need to appear in first position, and their primary aim would be to structure information in discourse dynamically. Pragmatic markers, on the other hand, are considered to be the elements that remain outside the propositional content of a sentence and serve to establish the relationship between the speaker and the message as, for instance, in the case of interjections, "damn . . . boy . . . gosh . . . jeez" (Norrick, 2009), or in the expression of appraisal or evaluation, "amazingly . . . sadly . . . fortunately" (Aijmer, 2008). As mentioned above, some linguists will opt for the inclusion of discourse markers as a category of pragmatic markers, while others prefer to distinguish both categories to differentiate discourse meaning from pragmatic meaning.

The Structure of Pragmatic Markers

In the description of pragmatic markers, three primary features can be identified. First, they have a distinct prosodic entity when they appear in first position, that is, they are not pronounced inside the same tone group as the message they accompany. However, they usually appear embedded in the same tone group if they are used at the end. Second, they do not have a specific semantic meaning, that is, their original propositional meaning has been blurred through a process of grammaticalization; for example, the use of *you know* as a marker does not involve any cognitive appraisal as its canonical use would imply. Third, pragmatic markers contribute to scaffolding the pragmatic coherence of the discourse through a triangulation strategy that takes into account the addressor, the addressee, and the message through positive feedback. From these three necessary conditions I think that the first, prosodic autonomy, is the most important from a communicative perspective as the tone group, by definition, realizes a unit of information through the tonic—the most salient stress (Halliday, 1967). This explains why some undefined elements, that is, *ahm*, *er*, *mm*, and others, although initially void of semantic meaning, have pragmatic implications in the interaction. In other words, prosodic autonomy shows that these markers acquire a meaning—pragmatic not semantic—and become essential elements in the transmission of information from a communicative perspective, with a distinct cognitive role in the structuring of information (Romero-Trillo, 1994).

The second condition of pragmatic markers, blurred semantic meaning, is directly related to the notion of grammaticalization that I would like to complement with the notion of "discourse grammaticalization" (Romero-Trillo, 2001), that is, when an element assumes

a pragmatic dimension for interactional purposes that differs from its original semantic meaning and grammatical behavior. In other words, a discourse-grammaticalized marker becomes a homonym—that is, a word that has the same form but differs in meaning—in a particular synchronic system that, when appearing with a pragmatic function, constrains the relevance of the proposition it introduces and loses its original meaning (Hopper & Traugott, 1993).

As regards the identification of the linguistic elements that can pertain to the category of pragmatic markers, we must aver that it is difficult to apply classical linguistic categories, that is, verbs, adjectives, nouns, or adverbs, for their classification. In fact, the study of pragmatic markers shows that even the prototypical examples used by linguists to exemplify their status belong to different language categories: adverbs (*well*), verbs (*look*), interjections (*oh*), nouns (*man*), and then the numerous combinations of unfinished clauses (*you know*, *I mean*), and complex clauses (*if you see what I mean*).

To clarify this point, Romero-Trillo (2001, p. 532) proposed the following classification of pragmatic markers:

- Acategorial items: *yeah*, *yep*, *m*, *mhm*, etc.
- Lexical items: *listen*, *well*, *good*, *fine*, etc.
- Lexical composites: *I mean*, *you know*, *the thing is*, *oh my God*, *if you see what I mean*, etc.

This classification illustrates the enormous diversity of origins and forms that pragmatic markers adopt and also hints at the variety of functions that they can realize as will be explained below. Furthermore, the multiplicity of elements that can appear in the same position would lead to the conclusion that there is no theoretical limit to the array of expressions that could function as a pragmatic marker: any element and its combinations. In fact, this hypothesis poses a serious theoretical problem: Can the new linguistic category of pragmatic markers be so alien to any traditional linguistic description?

The proposal presented here is to classify pragmatic markers as a definite category, that is, regardless of their original word-class (nouns, phrases, interjections, etc.). In our model pragmatic markers function in a dynamic system that we shall term "triangulation," in which the addressor, addressee, and the message are in continuous feedback. For this purpose we need to use a cognitive model—in which the addressor's and addressee's mental states are considered (Romero-Trillo, 2001)—because, if pragmatic markers have a different grammatical nature from classical word-classes, this will necessarily affect their linguistic behavior. In this cognitive model, pragmatic markers are elements that fill the discourse slots that (spoken) language needs to scaffold the cognitive net of interaction. The term "spoken" appears in brackets because these markers are characteristic of speech, although some might also appear in writing. In fact, of the three defining features mentioned above, two—independent prosody and triangulation—typically appear in spoken language. Therefore, this cognitive approach is geared to the description of the markers as cognitive components of language understanding, and of adaptive management in conversation. This cognitive approach is by definition dynamic in as far as its aim is not the classification of markers in a closed-class repertoire or the description of their local behavior. On the contrary, the aim of this model is to define the cognitive constraints or features that will allow the appearance of a pragmatic marker in a certain position, bearing in mind that the markers can be manifold for one single cognitive slot, that is, *you know*, *you see*, or even *mhm* can appear in the same position and with the same function as *yeah*, *yep*, or *well*. In fact, the plurality of elements for the same slot makes it very difficult to identify the nuances of the pragmatic differences of these markers, which, incidentally, may lie on extra-linguistic reasons such as age, social class, context, and so on.

The Meaning of Pragmatic Markers

The indefiniteness of this situation compels linguists to account for the two main difficulties in the description of pragmatic markers: first, is there a "prototypical meaning" for each marker, in other words, is it possible to define the use of *well*, *you see*, or *mhm* as we would do with other linguistic items such as *house*, *cat*, or *river*? Moreover, can we give a definition for a pragmatic marker, for example, *my God*, that is different from its use as a noun phrase in a subject/object position? The second point at stake can be formulated as follows: Is there an "accepted" repertoire of discourse markers for each language? In other words, what are the necessary conditions for including an element in the open-class category of pragmatic markers?

The question of a prototypical meaning poses many problems, as many pragmatic markers appear in a multiplicity of functional contexts and with different meanings. As a result, it is difficult to assign a core meaning for each marker, especially in the case of acategorial elements such as pause markers and interjections. Second, with regard to the elaboration of an accepted repertoire, what we find in discourse is not just a series of pragmatic markers but a series of cognitive slots filled by elements that function as a pragmatic markers, as long as they fulfill the three conditions mentioned above: prosodic autonomy, pragmatic meaning through discourse grammaticalization, and triangulation process during the interaction. In other words, the phenomenon of pragmatic markers shows that spoken interaction needs to have a pragmatic skeleton with cognitive slots that holds the communicative force of the interaction together. These slots are filled by elements that may vary according to regional, idiolectal, or sociolinguistic features of the language. This perspective accounts for the diversity of the markers, but at the same time links their appearance to the existence of the cognitive slots in the web of communication and, based on this premise, the system allows participants to innovate their interaction with the coinage of new markers. As it is frequent in all language processes, the more a pragmatic marker is used—and becomes discourse-grammaticalized—the less its original meaning can be traced. This is the reason why speakers need to find new expressions that contribute to the novelty of language to avoid clichés.

The difficulty, then, is how to account for the alternative options that speakers have, for example, for showing feedback in a certain situation, for self-correction, for drawing someone's attention, for expressing surprise, and so forth. In other words, how can we prove that the use of one expression as a pragmatic marker for a certain function is appropriate? This is a complex issue because, as mentioned above, in some cases a cognitive slot can be realized by several markers. To account for this issue we can use the notion of "discourse appropriateness" (Romero-Trillo, 2001, p. 531), defined as "the possibility to choose the most adequate element in the realization of a certain function in a specific context." In other words, a certain function, like feedback, can be realized through several markers but not all of them are equally appropriate depending on issues dealing with context, age of the speakers, accompanying elements, or the presence or absence of emphasis, amongst other features. Therefore, the choice of pragmatic marker is not automatic and the more a function is present in interaction, the greater the variety of markers at the speaker's disposal. To elucidate the appropriateness of a marker we can use the notion of specificity indexes: the relation between the realization of a function or element divided by the total number of occurrences. This measure determines with mathematical adequacy the specificity of a marker in the realization of a function, and the repertoire of elements that can realize a certain function through the "specificity index of elements" and the "specificity index of functions." By using the notion of appropriateness, we assume that the use of a particular form in discourse cannot be ascertained from any kind of grammatical/semantic assessment, in fact many markers do not belong to any particular grammatical category,

or their original meaning has been blurred. Appropriateness is based on the idea that pragmatic markers can be assigned to a specific function on the basis of their relative frequency in that position, thus creating a positive feedback relationship between function and marker, only altered when a new element enters a category for language creativity purposes.

Pragmatic Markers Across Languages and in Language Acquisition

How universal are pragmatic markers? In other words, do all languages have some elements that fulfill this function? Many scholars have pondered on this issue and have described the presence of these elements in various languages that seem to organize their appearance and distribution differently. For instance, in the case of the use of markers that derive from verbs to draw the attention of the addressee, it can be stated that speakers prefer the use of elements that derive from processes of visual perception, *look* (English) or *mira* (Spanish), instead of the use of verbs that deal with the hearing capacity, *listen* (English) or *escucha/oye* (Spanish), due to a metaphorical strategy aimed at not being too face-threatening. In the same vein, another finding is that Spanish is more prolific than English in the overall use of these attention-getting elements for various cognitive reasons (Romero-Trillo, 1997). Through this kind of studies linguists can determine the cognitive mapping of the interpersonal relation between speakers and hearers in the communicative act across languages, as also shown—for instance—in Aijmer and Simon-Vandenbergen (2006).

A closely related field of interest in the description of pragmatic markers is their role and evolution in the acquisition of a second or foreign language. If languages show a different patterning in the use and distribution of these elements, how can a learner adopt these patterns in the target language? This issue is of special importance as pragmatic markers have the function of elaborating the message from a cognitive stance (operative function) and of texturing the contextual and interpersonal relationships (involvement function) (Romero-Trillo, 2004). The development of pragmatic markers, as opposed to other areas of language, occurs basically in real interaction, as Kyratzis and Ervin-Tripp (1999) have shown, and native and non-native speakers of a language have divergent use of these elements (Müller, 2005). In fact, one of the problems that can appear in the linguistic evolution of L2 learners is the dissociation between the grammatical, lexical, and syntactic competence and their pragmatic competence, especially if the learning process occurs in non-natural contexts. This phenomenon, that has clear repercussions in real communication, has been defined as "pragmatic fossilization" (Romero-Trillo, 2002). The teaching of pragmatic phenomena is a difficult task in classroom settings as the students are embedded in an unnatural context and, as a consequence, the interaction might follow the grammatical and lexical guidelines of the target language and the pragmatic skeleton of the interlocution may often retain the features of the first language especially in the distribution of pragmatic markers. This phenomenon does not only affect language learners but also teachers with a deficient experience in the pragmatics of the target language (Llinares-García & Romero-Trillo, 2008), or with little or no experience of learning a language in the L1 classroom context. One of the risks of the use of the pragmatic markers in the L2 is their overabundance in quantity but their reduced diversity, which entails a reduction in the cognitive extension and richness of the message. In practical terms, this results in a deficit of pragmatic competence that might provoke miscommunication, as the resulting pragmatic "consense" (Kecskes, 2008) does not match the expectations of the native speaker who finds a disparity between the message and the markers used to scaffold it.

By way of conclusion, pragmatic markers are linguistic essential elements in the communicative process because of their dual role in the architecture of cognition and interaction. Their complex and, at the same time, synergic essence can only be ascertained in relation to different disciplines: discourse analysis and contrastive, developmental, or cognitive linguistics. This is the reason why pragmatic markers are a fundamental topic for research and description in applied linguistics as they portray many of the features that underlie the communicative process.

SEE ALSO: Discourse Markers; Pragmatics and Cognition; Second Language Pragmatic Development; Suprasegmentals: Discourse Intonation; Suprasegmentals: Intonation; Suprasegmentals: Prosody in Conversation; Suprasegmentals: Rhythm; Suprasegmentals: Stress; Suprasegmentals: Tone

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Pragmatic Routines

KATHLEEN BARDOVI-HARLIG

Have you ever noticed that there are certain times in certain situations where almost everyone says the same thing? Listen to people leaving a party and you may hear them saying to the host, "Thanks for inviting me" or "Thanks for having me." When people are introduced to each other you might hear "Nice to meet you." Similarly, when you hear people saying "No problem" or "That'd be great," you know exactly what they mean, and you probably know just where you would use the same expressions. These expressions are called *pragmatic routines*.

Pragmatic routines are social conventions like shaking hands, waving, or kissing when greeting. Unlike these examples, pragmatic routines are verbal. They are known by many names including *conventional expressions*, a term which focuses on their social value. Coulmas (1981) emphasizes the social aspect of pragmatic routines describing them as "tacit agreements, which the members of a community presume to be shared by every reasonable co-member. In embodying societal knowledge they are essential in the handling of day-to-day situations" (p. 4). Knowledge of conventional expressions forms part of a speaker's pragmalinguistic competence, and knowledge of their use and the contexts in which they occur is part of sociopragmatic competence.

In this entry, pragmatic routines are considered primarily for their importance as social conventions, hence the alternative label *conventional expressions*. The literature on routines, even in pragmatics, is characterized by many terms for the same concept, and many concepts encoded by the same term (Wray, 2000). One major distinction is between the social characterization of routines (discussed here) and the psycholinguistic characterization. Within the psycholinguistic characterization, terms such as *formulas* and *chunks* emphasize how such expressions are stored and retrieved in the mental lexicon. Following Wray, a formula is

> a sequence, continuous or discontinuous, of words or other meaning elements, which is, or appears to be, prefabricated, that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar. (Wray, 2000, p. 465)

A second psycholinguistic use of *routine* and *formula* which is closely related to the first refers to routines which arise in the course of second language acquisition: "Routines are whole utterances that are unusually error-free and show no transitional stages of development or systematic order of acquisition. They are learned as unanalyzed wholes, much as one learns a single word" (Krashen, Dulay, & Burt, 1982, pp. 232–3). The use of these unanalyzed routines in pragmatics is often thought to decline as interlanguage develops (Barron, 2003). In contrast, use of conventional expressions, often reflecting interlanguage grammatical development, typically increases as learners become more advanced (see "Pragmatic Routines in Second Language Acquisition" below). The psycholinguistic aspects of formulas and routines are treated elsewhere; in general, issues of storage and retrieval are beyond the scope of pragmatic inquiry.

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The terms *formula* and *conventional expression* may describe the same string of words, but the term *conventional expression* emphasizes a speech community's preference for a particular string and avoids the psycholinguistic claim regarding storage and retrieval. Even the collection entitled "Conversational Routine" (Coulmas, 1981) uses three terms: *routine* (in chapters by Coulmas, Versuschueren, and Laver), and *formula* and *formulaic expressions* (in chapters by Manes & Wolfson, and Tannen & Öztek). An already full set of terms is somewhat further complicated in pragmatics by the concept of *semantic formulas* (also known as *pragmatic strategies*). Semantic formulas are components of a speech act set and are part of sociopragmatic knowledge. In an apology, for example, semantic formulas include a statement of responsibility ("It's all my fault") and a promise of forbearance ("It won't happen again"), and they need not be expressed conventionally.

Pragmatic routines can be written as well as oral (the conversational routines are discussed here); they can be regional or age-related; and, they can change as the world changes. In many parts of the United States, for example, a speaker who is willing to comply with a request might say "I don't mind" whereas in parts of southern Indiana and Kentucky one might say "I don't care to" with the same effect. There are many examples of different expressions across generations. Consider, for example, that in an elicited oral task in which a friend came to the door the morning after a party, native English-speaking teachers in a university ESL program all referred to "the mess" before inviting the friend in, whereas native English-speaking undergraduate students at the same university did not, inviting the friend in without acknowledging the "untidy" apartment. Finally, the use of conventional expressions changes. Roever (2005) included the expression "Can I leave a message?" which was not elicited from native speakers or learners four years later using the same item involving leaving a message with a friend's roommate (Bardovi-Harlig, 2009), presumably because with the advent of cell phones and voicemail messages are rarely left with a third party. Such examples emphasize the importance of the social contract in conventional expressions.

Identification of Pragmatic Routines

Authors often cite pragmatics as an area in which formulas are frequent. Granger (1998) attributes the growing research in pragmatics as one impetus to study formulas. It is, however, an empirical question as to how formulaic the talk studied in the field of pragmatics really is, and whether all speech acts are equally formulaic. The most immediate issue that falls out from this question is how pragmatic routines should be identified. To this end, characteristics employed by Myles, Hooper, and Mitchell (1998, p. 325) to identify formulas in the study of second language development are relevant (in keeping with the social focus of pragmatic routines the psycholinguistic criteria are not listed, see Myles et al. 1998, for the remaining three criteria). Pragmatic routines are generally:

1. at least two morphemes in length;
2. phonologically coherent, that is, fluently articulated, nonhesitant;
3. used repeatedly and always in the same form;
4. situationally dependent; and
5. community-wide in use.

Whereas it is possible for an analyst to determine whether a string meets the first four criteria (two or more morphemes, phonological coherence, same form, and situational dependence), establishing community-wide use poses a challenge. In the pragmatics literature, there have been three main ways of identifying routines: intuition (e.g., Scarcella,

1979; Nattinger & DeCarrico, 1992), observation of spontaneous conversation, and elicited production. Corpus searches, which are used for investigating formulaic sequences more generally, would be a fourth source for identifying pragmatic routines. The use of intuition is not consistent with the empirical orientation of current pragmatics research.

One of the first studies to investigate the use of pragmatic routines in spontaneous conversation was Manes and Wolfson's (1981) "The Compliment Formula" in which the highly conventional nature of compliment expression was documented. One form—NP {is/looks} (really) ADJ—accounted for 53.6% of the compliments, and with two additional forms—I (really) {like/love} NP and PRO is (really) (a) ADJ NP—accounted for 85% of the 686 compliments collected for the study. Moreover, the positive adjectives (represented by ADJ in the formulas) were dominated by five adjectives which occurred in two-thirds of all the compliments.

Another approach to establishing community-wide use was used by Bardovi-Harlig (2009; Bardovi-Harlig et al., in press) employing a cycle of observation followed by iterations of scenario construction, elicitation, and refinement of scenario contexts. They established a cut-off for "community-wide use" at 50% of native-speaker responses. It is worth noting that not all speech acts are as conventional as compliments. Setting a cut-off level is arbitrary, but setting it too low risks diluting the notion of conventionality or community-wide use, and setting it too high does the opposite, reducing the role that convention appears to play in pragmatics.

A source for future research, although it has not yet been used in pragmatics, would be to identify pragmatic routines in corpora. Working with multi-word units (of which pragmatic routines are a part), Biber, Johansson, Leech, Conrad, and Finegan (1999, p. 990) used 10 occurrences per one million words to define "occurs frequently in a register." Biber, Conrad, and Cortes (2004, p. 376) set a higher frequency level with 40 occurrences per million words. In addition, Biber and colleagues required that the multi-word units occur in multiple texts, which is consistent with pragmatic research. Specific contexts would have to be compared to satisfy conditions on situation-dependency.

Establishing a measure of community-wide use is one challenge to the empirical investigation of pragmatic routines and determining what it means to "say the same thing" is another. In contrast to pragmatic strategies which can be compared on the basis of content, pragmatic routines must be compared on the basis of *form*. Some variation exists across learner and native-speaker samples; one such example is contractions as in "I'm sorry/I am sorry" or "You're welcome/You are welcome" with full forms more prevalent in learner data. However, other variations, such as change of tense occur predominantly in learner data such as "Sorry I'm late/I was late" or "Sorry I forgot/I forget". Pauses might also be considered when establishing equivalents (recall that routines are nonhesistant). Whereas native speakers may say "No thanks I'm just looking" in one breath group, learners may exhibit pauses "No thanks [0.5] I'm just looking." From another perspective, using an interlanguage analysis, it is clear that elements of some routines emerge at lower levels of proficiency; for example "I just look" appears in the same context as "I'm just looking." The inclusion of interlanguage forms would depend on whether a study focused on the well-formedness of the pragmatic routines or indications that learners associate a lexical core with a specific context. Such issues will need to be addressed as research on pragmatic routines develops.

The identification of pragmatic routines serves many goals in pragmatics research: to describe production of a range of populations, to determine targets in second language acquisition, and to provide needs assessments for second and foreign language pedagogy and for related materials development.

Pragmatic Routines in Second Language Acquisition

Research in both L2 development in general (Yorio, 1989; Nesselhauf, 2004) and L2 pragmatics in particular (Scarcella, 1979; Blum-Kulka & Olshtain, 1986; Edmondson & House, 1991; Kasper & Blum-Kulka, 1993; House, 1996; Kecskes, 2000; Roever, 2005) has reported that learners underuse conventional expressions. In L2 pragmatics, Edmondson and House (1991) suggested that learners cannot necessarily handle social situations in the same way as native speakers "because they do not have ready access to, and therefore do not make use of, standardized routines for meeting the social imposition . . . as native speakers do" (p. 284). Kasper and Blum-Kulka (1993, p. 9) have observed, "one area where insufficient control of pragmalinguistic knowledge is particularly obvious is that of pragmatic routines. Coulmas's (1981) contention that routine formulas are a serious stumbling block for nonnative speakers has been supported by nearly every ILP study" (at the time of publication). This is not surprising given that in other areas of applied linguistics researchers describe such conventional expressions as late learned whose mastery may characterize highly advanced learners (Yorio, 1989; House, 1996; Granger, 1998; De Cock, 2000; Foster, 2001; Nesselhauf, 2004).

One way to investigate pragmatic routines in learner language is through production studies. This, in fact, is where most of the evidence comes from, in keeping with most research in interlanguage pragmatics more generally. It is important that language samples be oral, whether elicited or spontaneous, because oral production is where conversational routines occur naturally.

The earliest study to focus explicitly on conventional expressions in pragmatics was Scarcella (1979), which used a written dialogue completion task to elicit 15 conventional expressions from 30 L1 Spanish-speaking second language learners of English. The target items included, among others, "Watch out," "Happy birthday," "Come in," and "I'm sorry." For each context, the target expression was the head act. The results, which included many circumlocutions, led Scarcella to conclude that adult second language learners have difficulty acquiring very common expressions.

Targetlike production of the conventional expressions generally increases with proficiency level or length of stay, but this too depends on the expression. Some pragmatic routines are learned early. For example, in a cross-sectional study designed to elicit conventional expressions orally (Bardovi-Harlig, 2009), "Nice to meet you" in an introduction was used robustly by low intermediate learners; "You too" in response to "Have a nice day!" was also used at high rates by the same learners. Other pragmatic routines show increased use as proficiency increased: These included "No thanks I'm just looking" in response to "Can I help you?" and "Watch out!" in a warning context. In contrast, "That'd be great" when accepting an offer or "Thanks for having me" when taking leave from a party were not used even by advanced learners.

If production studies show good evidence of use (or nonuse) of pragmatic routines, they are not suited to investigate *why* learners do not produce routines or why routines are the stumbling blocks that Coulmas suggested. To that end, interpretation, judgment, and recognition tasks are informative. Kecskes (2000) investigated whether learners know what conventional expressions mean, employing a dialogue interpretation task which included idioms that had both literal and figurative readings (e.g., "OK, shoot" [go ahead], "Get out of here" [don't fool me], and "Piece of cake" [easy]). Learners more readily recognized literal meanings than idiomatic ones.

Roever (2005) designed 12 multiple-choice questions in a DCT-type format called a routines task which included a brief description of a situation followed by a question such as "What would Jack probably say?" The respondents then selected from among four choices: the target expression and three distracters (the distracters were either relevant but

nonidiomatic, or idiomatic but irrelevant). Learners in the host environment were better able to identify the pragmatic routines even after short exposure (three months) than learners without such exposure.

Like production tasks, interpretation and multiple-choice tasks draw on both pragmalinguistic and sociopragmatic knowledge. Thus, when learners reject a target-language conventional expression in a judgment task it is not possible to determine whether they do not know the expression or they find the expression to be inappropriate for the context. Decontextualized recognition tasks can help tease apart these situations.

Using a listening task Bardovi-Harlig (in press) presented learners with conventional expressions from the university community in which they lived and studied (e.g., "Be quiet" and "No problem") and corresponding modified expressions (e.g., "Be silent" and "No problems"). Learners rated the expressions using three alternatives (I often/sometimes/never hear this). As learners increased in level of proficiency, their acceptance of modified expressions decreased whereas their acceptance of authentic expressions increased. Like native speakers, learners seem to be on their way to what Pawley and Syder (1983) call "nativelike selection," the ability to identify conventional expressions from among a range of grammaticality correct paraphrases. The results suggest that learners may increasingly notice pragmatic input which could drive changes in production during the acquisition of L2 pragmatics.

Comparing learner familiarity with conventional expressions to their production reveals interesting patterns (Bardovi-Harlig, 2009). Some conventional expressions were recognized by all learners and were used at equally high rates; some were also not familiar and not used. Others gained in familiarity and production as learners became more proficient. The most interesting cases acquisitionally are the pragmatic routines that learners reported recognizing but did not use. Expressions such as "That'd be great" and "No problem" fall into this last category. Examination of the contexts in which native speakers use these expressions show that learners used alternative expressions in the first case (for example, thanking expressions) and expressions of accepting rather than deflecting thanks in the second (saying "You are welcome"). This emphasizes the fact that knowledge of the string of words that makes up a particular pragmatic routine is but one part of knowing of a pragmatic routine; knowing the contexts in which it occurs is equally important. The balance between expression and context, between pragmalinguistics and sociopragmatics, in the knowledge and use of pragmatic routines reflects the balance that exists in all areas of pragmatics.

SEE ALSO: Formulaic Language and Collocation; Formulaic Sequences; Second Language Pragmatic Development; Speech Acts Research; Teaching Pragmatics; Testing in Pragmatics Research

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Pragmatic Socialization

DUANDUAN LI

Introduction

Pragmatic socialization is defined by Blum-Kulka (1997) as "the ways in which children are socialized to use language in context in socially and culturally appropriate ways" (p. 3). A powerful contribution that *language socialization* research makes to an understanding of language development is its close attention to the linguistic forms that are used to socialize children and other novices into expected roles and behaviors in particular cultural contexts (Ochs, 1996). Kasper (2001) identified language socialization research as "eminently capable of" examining the acquisition or development of second language (L2) pragmatic competence, and not just L1 competence. Research done within the framework of pragmatic socialization reveals the acquisition of language and sociocultural competence as developmentally intertwined processes within daily routine activities in which children (or novices) learn to interpret, negotiate, and index meaning while (co-)constructing different types of social/cultural identities. It reflects a more sociocultural orientation than the cognitive/psychological orientation of earlier pragmatics studies.

Pragmatic Socialization in First Language (L1) Contexts

The majority of early pragmatic socialization research was carried out by L1 researchers who built upon the work of child developmental pragmatics in the late 1970s and early 1980s and extended the traditional microanalysis of interactions between children and their parents/caregivers by linking these processes to more general ethnographic accounts of cultural values, beliefs, and practices. The pragmatic behaviors of children, their peers, and caregivers were compared with interactional patterns within the wider community.

For instance, Samoan children's speech act of clarification was tied to comparable routines in legal, school, and work settings in adult society (Ochs, 1988). Rhetorical questions by and to Kaluli (Papua New Guinea) children were compared with cultural preferences for indirect speech style or "turned over" language (Schieffelin, 1985). The speech act performance of teasing and assertions by white American working-class children was linked to the value of such language competence in the community (Miller, 1986). The structure of Kwara'ae (Soloman Islands) children's disagreement and conflict resolution was, similarly, guided by norms governing these activities in Kwara'ae adults' communication (Watson-Gegeo & Gegeo, 1986).

Pragmatic socialization processes may be either explicit or implicit. Explicit socialization is the process used when caregivers clearly teach social norms shared by members of society. In Ochs's (1990) terms, this is "socialization to *use* language" (p. 291). Eliciting politeness routines (e.g., "Say 'Thanks!'" or "What's the magic word?"), offering conversational rules (e.g., "It's your brother's turn!") or assertions regarding social norms (e.g., "Boys don't cry!") are all examples of how language is used explicitly as a medium of socialization. However, even though explicit socialization is the most salient to observe, "the greatest part of socio-cultural information is keyed implicitly," a case of socialization

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through the use of language (Ochs, 1990, p. 291). By observing and interacting with more expert members in language practices, novices develop an understanding of sociocultural phenomena and become competent members of a community. For example, Gleason, Perlman, & Greif (1984) found that young children learn how boys and girls (like men and women) are supposed to speak and behave by hearing gender-differentiated language at home or in other contexts.

Particular attention was given to the socializing role of *indexicals*, that is, linguistic resources that derive their meaning from conventional associations with the sociocultural dimensions of context. Ochs (1996) states that

> a basic tenet of language socialization research is that *socialization is in part a process of assigning situational, i.e., indexical meanings* (e.g., temporal, spatial, social identity, social act, social activity, affective or epistemic meaning) to particular forms (e.g., interrogative forms, diminutive affixes, raised pitch and the like. (p. 411, italics in original)

Indexical knowledge is seen as "the core of linguistic and cultural competence and is the locus where language acquisition and socialization interface" (Ochs, 1996, p. 414).

One domain that has received considerable attention in pragmatic studies is the notion of politeness. According to Blum-Kulka (1997), "politeness is embedded in all aspects of human social interaction and as such is central to pragmatic socialization" (p. 142). Researchers in North America have described how middle-class mothers devote great efforts to socializing children into expected, polite behavior, such as the routines and expressions *please*, *excuse me*, *thank you*, and turn-taking rules, in various contexts, including "trick or treat" visits on Halloween, dinner table conversations, and other daily occurring interactions (Gleason et al., 1984).

Observations of children growing up in Japan also offer rich data about how children are shaped in particular, culturally appropriate ways through the language of their caregivers (e.g., Clancy, 1986; Cook, 2008). Clancy (1986) investigated how Japanese mothers teach their children to "read the minds" of other people so as to be sensitive to their needs because people may not express themselves directly. For example, children are taught to offer food again after a refusal, or to stop making requests of the visitor even if the requests are complied with willingly. In comparison to the dyadic participation structure which is often seen in schools in the United States, Cook (2008) investigated the specific multi-party interactional routines in Japanese elementary school classrooms in which students are required to provide initial reaction and comments to their classmates' discourse. Cook proposes that such a participation structure helps socialize Japanese children to the culturally important skill of *attentive listening* and contributes to shaping children to be other-oriented, in a group-oriented society such as Japan.

Pragmatic Socialization in Bilingual and Multilingual Settings

The dramatic increase in the global communication among individuals of different cultural backgrounds in recent decades has directed researchers' attention to the pragmatic socialization processes within sociolinguistically and culturally heterogeneous settings characterized by bilingualism and multilingualism (Duff, 2008). It is argued that people experience their primary pragmatic socialization during childhood, but that they also continue to experience pragmatic socialization throughout their lives as they enter new sociocultural contexts and take up new roles (Li, 2000; Duff, 2008). The language socialization paradigm, with its strong ethnographic orientation and its close attention to contextual dynamics of language behavior and human dilemmas and agency, has provided researchers of L2 pragmatics a rigorous approach that is very different from and complementary to

traditional L2 pragmatics research (also called "interlanguage pragmatics"). The contexts of research have been extended from originally family and native-language schools to second/heritage/foreign-language classrooms, immersion schools, overseas language study programs, job training programs, workplaces, and even cyberspace.

Blum-Kulka (1997) was a forerunner in adopting a pragmatic socialization approach in cross-cultural pragmatic research of dinner table conversations recorded in Jewish American, American Israeli, and Israeli families. During family dinner conversations, parents' metapragmatic comments played a significant role in the process of language acquisition and the development of pragmatic skills, such as the choice of topics and language, rules of turn taking, modes of storytelling, and rules of politeness. There were marked cross-cultural differences which reflected specific styles of the three (ethnically related) cultural groups. For example, Jewish American mothers at the dinner table paid considerably more attention to following conversational norms and turn-taking than did mothers from Israel, which indicates that "Fair turn allocation and the censure of untimely interruptions seem to represent the discourse corollary of American ideals of individual rights and equal opportunity for all" (Blum-Kulka, 1997, p. 184).

De Geer, Tulviste, Mizera, & Tryggvason (2002), following Blum-Kulka (1997), conducted a large-scale cross-cultural study on mealtime conversation in 100 families, including Estonian, Finnish, Swedish, as well as Estonian and Finnish immigrant families living in Sweden. The results showed considerable variations in the content, the amount, and the way that metapragmatic comments were used by these closely related cultures, which illustrated "how much the peculiarities of language and culture affect verbal socialization" (De Geer et al., 2002, p. 1759).

Second/heritage/foreign-language classrooms can also operate as a socializing space. The nature of discourse in the classroom, despite its special characteristics, reflects broader and deeper cultural norms, values and beliefs of the target language (Falsgraf & Majors, 1995; DuFon, 1999; Ohta, 1999; He, 2000; Lo, 2004). For example, "attentive listening," identified in L1 socialization context (Cook, 2008) was observed by Ohta (1999) with adult L2 learners of Japanese through modeling by the teacher, peripheral, and guided participation, direct instruction, and peer interaction. Falsgraf and Majors (1995) reported different directive styles and politeness features in Japanese and American teachers' interaction with students. Teacher directives in Japanese (L2) immersion classes were found to be significantly more direct, which accentuate status differences between the teacher and students, whereas in English-medium classes teachers tended to minimize status markers in their speech to downplay the status differential between students and teacher. Poole (1992) also reported that teachers in post secondary English as a second language (ESL) classes try to avoid overt displays of asymmetry of power and downplay the status differential between the teacher and learners, reflecting the white middle-class American caregivers' perspective of egalitarianism which is implicitly conveyed to these learners.

Pragmatic socialization related to particular cultural values and speech roles has also been documented by researchers examining heritage language (HL) classrooms. He's (2000) research in weekend Chinese-American HL schools demonstrates that classroom discourse processes (e.g., teachers' directives) socialized Chinese HL learners to values of respect for authority and group conformity in the Chinese culture. Similarly, Lo (2004) described a Korean HL teacher's use of indexical "evidential marking" in her narratives as attempts to socialize Korean American children to a particular theory of affective display appropriate in Korean classrooms where affective restraint and suppression of private thoughts are seen as tokens of respect.

The study-abroad context has been investigated by researchers to explore the advantage of authentic sociocultural environments for L2 pragmatic socialization. DuFon (1999) investigated the pragmatic socialization of linguistic politeness for adult learners of Indonesian.

Ethnographic data focusing on address terms, greetings, and experience questions during the learners' interaction with native speakers illustrated both explicit socialization (e.g., metapragmatic instruction on how to *pamit*, or ask for permission, every time the learners wanted to leave their host family's house) and implicit socialization, through learners' participation in activities with members of the target community.

The workplace is attracting researchers' attention as a significant sociocultural context where novices, like immigrants, are socialized into new discourse systems and cultures. Li's (2000) ethnographic research examines the pragmatic socialization of Chinese immigrant women in an inner-city job training center and later their workplaces. Linking the microanalysis of their L2 requesting behavior to a more macroscopic understanding of the social structures, ideologies, and conventions, the study illustrates how these novices developed communicative competence by interacting with their peers and other more competent members in North American work places and society.

The worldwide use of computer technology has created a new contact zone in language learning and practice. Belz and Kinginger (2002) demonstrate how the "telecollaborative" language learning using global computer networks helps foreign-language learners develop pragmatic proficiency, specifically, sociolinguistic distinctions in pronouns of address (*tu* vs. *vous* in French and *du* vs. *Sie* in German, indexing status and formality). They believe that cyberspace can provide learners with easy access to communication with native speakers, enabling them to be socialized into more target-like pragmatic competence.

Issues Related to Pragmatic Socialization Research

Learner Agency/Subjectivity

While earlier pragmatic socialization researchers acknowledged the agency of novices, L1 research studies have generally viewed the child-caregiver (novice-expert) relationship as essentially unidirectional, from expert to novice. The extension of pragmatic socialization research to bilingual and multilingual contexts has helped researchers to reconceptualize pragmatic socialization: from seemingly more static social roles and identities to a more dynamic process—unpredictable, nonlinear, and affected by the agency, and multiple community memberships of participants (Ochs, 1996; Duff, 2008). The bidirectionality always implicit in the expert–novice relationship has been explored to a greater extent, to emphasize shifting expertise during interactions, and a recognition of learner subjectivity and agency, especially with adult learners who have had deep-rooted primary socialization in their first language(s) and culture(s).

However, research has also shown that not all language learners wish to behave pragmatically just like native speakers of the target language (e.g., Siegal, 1996; Li, 2000). Chinese immigrant women in Li's study sometimes resisted more "expert" peers' pragmatic socialization based on their personal values and cultural beliefs (e.g., when the native-speakers' peers' behavior was considered rude). They also counter-socialized the (rude) native speakers' pragmatic behavior in the workplace to render it more polite and collegial (Li, 2000). In Siegal (1996), the white female Japanese language learner constantly exercised agency during interactions with her male Japanese language instructor. The learner controlled the topic initiation and management, used status-incongruent linguistic choices in interaction, seemingly not because of her linguistic deficiency but due to a desire to position herself as a peer in the academic world. Some implications of these studies include a reconsideration and sensitivity toward issues of learner agency among second/foreign-language educators and socialization researchers. Learners can be informed of the various options offered by the pragmatic system of the target language without being coerced into making particular choices that they find incompatible with their values.

Criteria for Pragmatic (Language) Socialization Research

A language socialization perspective has been employed by more and more researchers in an attempt to bring sociocultural factors into the field of L2 pragmatics. However, the term *language socialization* is sometimes used too broadly as a "catch-all" term for any research that deals with language in relation to society or identity. Kulick and Schieffelin (2004) listed three criteria for standard language socialization studies: that they should be ethnographic in design, longitudinal in perspective, and deal with linguistic and cultural practices over time and across contexts. They make the strong claim that "any study of socialization that does not document the role of language in the acquisition of cultural practices is not only incomplete, it is fundamentally flawed" (p. 12). This presents practical problems when conducting pragmatic socialization research. As noted above, this research normally takes a longitudinal approach, documenting natural communicative processes over the course of developmental time and relates these processes to the larger sociocultural contexts. The conflict between the desire to observe and collect natural data and the impossibility of collecting truly natural data because of observers' sometimes intrusive presence can be problematic. There are other serious methodological problems such as privacy issues, ethical issues, and the asymmetry of the researcher's perceived power in relation to research participants.

Conclusion

Kasper (2001) suggests that

> language socialization theory has a particularly rich potential for [second language acquisition] because it is inherently developmental and requires (rather than just allows) establishing links between culture, cognition, and language, between the macro-levels of socio-cultural and institutional contexts and the micro-level of discourse. (p. 311)

A pragmatic socialization approach can offer researchers opportunities to look at the *interactive* nature and the social *function* of pragmatic behavior that is deeply embedded within particular social and cultural *contexts*. By examining pragmatic behaviors in authentic contexts of use—with their own historical antecedents, interpersonal negotiations, and personal and societal significance, researchers can contextualize the study of pragmatics in a changing, multilingual world in illuminating new ways.

SEE ALSO: Ochs, Elinor; Pragmatics: Overview; Schiffrin, Deborah; Second Language Pragmatic Development; Sociocultural Theory

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Pragmatic Transfer

PATRICIA BOU-FRANCH

As resourceful human beings, when we embark on a task for the first time, we resort, consciously or unconsciously, to our previous knowledge and experience in order to accomplish the task as efficiently as possible. This also applies to second (or third or other) language acquisition/learning scenarios: When we learn a new language, we already know, at least, a first language and have a wealth of world experience and information that will necessarily play a role in the acquisition and use of the new language. The interaction between the old information—our first language—and the new information—any subsequent language we may learn—is at the heart of the phenomenon of transfer. When we transfer pragmatic knowledge in learning or using a new language we talk of pragmatic transfer. The term "pragmatics" is used in this entry to refer to language use in specific situations and for specific purposes and this, in turn, involves the cognitive processes that make use of social and cultural information. A case of pragmatic transfer may involve, for example, employing certain linguistic forms to express a particular meaning due to the belief that this linguistic choice is socioculturally appropriate in the second language (L2) context because it would be appropriate in a context that the L2 user perceives as similar in his or her first language (L1).

During the 1940s and 1950s, researchers in bilingualism and second language acquisition (SLA) research noticed how phonological, syntactic, and lexical aspects of the L1 interfere with learning and using an L2. The foreign accents of L2 users make this interference particularly noticeable at the level of pronunciation. Within the framework of contrastive analysis in SLA research, Lado (1957) saw a connection between behaviorist views of language learning as habit formation and structural linguistics and suggested the contrastive analysis hypothesis, according to which, where two languages are different there will be negative transfer or L1 interference. Language distance and differences between languages are thought to lead to increased learning difficulty and the production of errors. In contrast, language similarity predicts positive transfer in the sense that learning will be facilitated and no errors will result. With these basic premises in mind, an individual's L1 is considered to play a crucial role in L2 acquisition, and teaching is directed at eliminating the negative, interfering habits of the L1.

However, empirical research soon exposed the untenability of this hypothesis: Errors occurred where they were not expected, and errors that were predicted did not materialize. In the 1970s, another area of research in SLA emerged, interlanguage pragmatics, whose premise is that learning proceeds on the basis of hypothesis formation and testing, and concerns itself with how L1 transfer and other acquisition processes interact as a learner's interlanguage moves toward the L2 norm. Work on learners' interlanguage led to a consideration of transfer as both a learning process and a strategy for language use (Selinker, 1972). Since then, the study of language transfer has developed and today it seems uncontestable that the L1 is an influential factor in L2 acquisition and use (Kellerman & Sharwood-Smith, 1986).

However, it was not until Hymes's (1971) formulation of a socially situated communicative competence that SLA researchers became interested in pragmatics. Hymes's realization that L2 learners need not only linguistic information but also knowledge of social and

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cultural conventions if they are to communicate adequately in real-life situations brought about the gradual incorporation of a pragmatic component during the late 1970s and early 1980s into mainstream language transfer studies and influenced models of communicative competence for language teaching, thus drawing the attention of SLA scholars toward language use and pragmatics.

Two different perspectives on pragmatic transfer are described here. One is represented by the work of Kasper (1992) and draws from interlanguage studies, and the other by the work of Kecskes and Papp (2000), inspired by Cook's (1992) notion of multicompetence. Interlanguage pragmatics emerged as a branch of SLA research that studies learners' awareness and comprehension of speech acts as well as the development of L2 pragmatic competence (Kasper, 1992; Kasper & Rose, 2002). It brings the study of pragmatic transfer to the forefront of SLA research in order to explain learners' divergence/convergence with a native pragmatic norm which is seen as the ideal target for learners. In her work on pragmatic transfer, Kasper (1992, p. 207) defines this notion as "the influence exerted by learners' pragmatic knowledge of languages and cultures other than L2 on the comprehension, production and learning of L2 pragmatic information." Particularly useful and widely used is Kasper's (1992) reformulation of two types of pragmatic transfer (Thomas, 1983). On the one hand, pragmalinguistic transfer refers to those cases in which the functional and social meanings of certain linguistic forms in the L1 affect the comprehension and production of "form-function mappings in L2" (Kasper, 1992, p. 209). On the other hand, sociopragmatic transfer occurs when "the social perceptions underlying language users' interpretation and performance of linguistic action in L2 are influenced by their assessment of subjectively equivalent L1 contexts" (Kasper, 1992, p. 209).

Researchers in the field of interlanguage pragmatics have provided evidence of the existence of a largely universal pragmatic base at both the pragmalinguistic and sociopragmatic levels available to learners in using an L2; this means that learners can access information regarding different linguistic forms and sociocultural aspects in order to perform particular functions. However, learners do not always use this knowledge, even though it is universal and therefore freely available to them. As a result, the teaching of pragmatics specially directed at making learners aware of what they already know and of encouraging transfer of these universals is considered to play a crucial role in the acquisition of pragmatic competence. Learners' L2 performance that is different from native-like communicative behavior is seen in terms of communicative or pragmatic failure, a situation that may have important consequences for the learners' self-presentation in the sense that the failure to communicate as expected in the target language, especially among L2 users of a higher level of proficiency, may be attributed to a personal intention to cause offense or hurt others' feelings instead of to a lack of pragmatic knowledge (Thomas, 1983; Kasper, 1992).

Today a large body of research on interlanguage pragmatics focuses on pragmatic transfer in relation to the development and use of L2 pragmatic ability, the teaching of L2 pragmatics, and pragmatics in the classroom context (Kasper & Rose, 2002; Barron, 2007; Matsumura, 2007).

Drawing on the idea that much SLA research exhibits a monolingual bias as it assumes a native speaker's competence to be the (largely unachievable) target that learners should aim at, Cook (1992) claims that the L2 user must be recognized as an independent individual with multicompetence—two or more languages in one mind—who is unique and distinct from a monocompetent native speaker. From the point of view of the multicompetence framework, the L2 user is not characterized as a deficient monolingual speaker, nor is learning seen in terms of lack of success or failure for not achieving full L2 competence. Since most human beings know two or more languages, Cook (1992) underlines the interaction of all languages known to an L2 user and draws special attention to the

influence of the L2 on the L1. Cook further views transfer as part of multicompetence in diachronic and synchronic terms; transfer plays a role both during the course of acquisition and as part of an L2 user's state of knowledge at a given time. Cook's model has been applied and further developed in various ways. Of special relevance to this overview is the work of Kecskes and Papp (2000) on pragmatic transfer from a multicompetence perspective.

These authors adopt a cognitive-pragmatic perspective and argue that multilingual individuals have two or more language systems which are in constant interaction as well as a common underlying conceptual base; it is thanks to the latter that multicompetent speakers can transfer concepts, pragmatic knowledge, and skills obtained through one language to the other language channel.

Currently, pragmatic transfer is considered to be bidirectional, that is, from the L1 to the L2 and vice-versa, and the L1 is further seen as influencing avoidance or overuse of certain aspects of language use (Kellerman & Sharwood-Smith, 1986; Kecskes & Papp, 2000).

One of the main objectives of research into pragmatic transfer is to discover the factors that promote or inhibit its occurrence. A certain degree of L2 proficiency or established multicompetence has been found to be a general condition for pragmatic transfer to take place. Takahashi and Beebe (1987) proposed the "positive correlation hypothesis," by which more proficient learners are seen as more likely to transfer L1 sociocultural norms than less proficient users because the former's greater linguistic knowledge allows them to do so. However, this hypothesis was not supported by further empirical research and the influence of proficiency on pragmatic transfer remains a controversial issue (Robinson, 1992; Maeshiba, Yoshimaga, Kasper, & Ross, 1996; Wannaruk, 2008). In fact, some empirical research demonstrates that learners of all proficiency levels rely on their L1, albeit to different degrees, and underlines the complex relationship between proficiency, transfer, and other acquisition processes (Sabaté i Dalmau & Curell i Gotor, 2007). The contradicting evidence in this area suggests that it needs to be addressed further (Chang, 2009).

Other factors that affect the process of pragmatic transfer include perceived linguistic and cultural distance and the willingness and motivation of the learner to assume L2 sociocultural values and thus make them functional in the L2 users' underlying conceptual base (Kellerman & Sharwood-Smith, 1986; Kecskes & Papp, 2000). This means that L2 users may choose not to accommodate to the new sociocultural context. Perceptions of status differences and adherence to cultural values like modesty are a case in point (Beebe, Takahashi, & Uliss-Weltz, 1990; Matsumura, 2007; Wannaruk, 2008). In this respect, researchers claim that learners need not completely assimilate to the new language/culture; however, they must be aware of the effects that their pragmatic choices may have on intercultural communication (Thomas, 1983; Wannaruk, 2008; Chang, 2009).

Finally, length of stay in the L2 community and exposure to the target language constitute factors that may favor positive transfer and L2-like pragmatic behavior. Recent research into acquisition during and after study-abroad programs has confirmed this move toward less negative pragmatic transfer (Barron, 2007; Matsumura, 2007). Additionally, research shows that pragmatic competence continues to develop one year after learners' return from their stay abroad and that L2 users have more pragmatic options at their disposal and may choose to transfer their sociocultural norms in particular situations (Matsumura, 2007). This could be treated as evidence of the intercultural style that proficient, multicompetent L2 users attain and that is claimed to be distinct from the native styles of both the L1 and the L2 (Kecskes & Papp, 2000).

Future research in pragmatic transfer should examine more varied data (conversational, written, and computer-mediated), and broaden the focus of inquiry beyond the limits of the turn and traditional speech-act theory. Recent work that employs conversation-analytic

methods to examine pragmatic transfer and takes into account the sequential and collaborative nature of conversation represents a step in this direction (Taleghani-Nikazm & Huth, 2010).

Another area that is receiving increasing attention is pragmatic transfer in the context of multilingualism. Here the study of transfer is highly complex due to the additional languages it entails. Proficiency level not only affects pragmatic transfer but is instrumental in determining what language to transfer from. Other factors influencing transfer in L3 acquisition include age, closeness between all the languages known to the individual, and "recency" or resorting to the language more often and more actively used by the multilingual individual (Cenoz, 2001).

Communication today is becoming increasingly intercultural and often takes place between individuals of different languages and cultures using a common L2. This global, intercultural setting makes the study of pragmatic transfer in the development and use of new languages even more stimulating and necessary.

SEE ALSO: Cross-Cultural Pragmatics; Crosslinguistic Influence and Multilingualism; Crosslinguistic Influence in Second Language Acquisition; Interlanguage Pragmatics; Multicompetence; Pragmatics of Lingua Franca Interaction

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Pragmatics and Cognition

VICTORIA ESCANDELL-VIDAL

When in the mid-1980s pragmatics (roughly, the study of the use of language in human communication) met cognitive science (the study of human mental abilities and processes, particularly those related to the management of information), a new and fruitful field was created, dealing with the mental skills and subsystems underlying our ability to communicate. Cognitive science was born as an interdisciplinary research area, at the crossroads of psychology, neuroscience, artificial intelligence, anthropology, linguistics, and philosophy. The idea that the architecture, skills, and processing devices of the human mind/brain determine our behavior was so appealing to pragmatists that a program of research based on the insights of cognitive science was soon established to bring a new light on a variety of pragmatic phenomena. Since then, few areas have undergone such significant changes. In fact, the various aspects of cognition that successively entered the pragmatic scene contributed to definitively shaping the development and the future of the whole field.

The Antecedents: Rationality Principles and Intentionality in Philosophical Pragmatics

At the very heart of the pragmatic endeavor lies the need to explain how human communication works. As is well known, the origins of modern pragmatics are deeply rooted in the philosophy of language. Philosophical approaches noted that there can be a significant gap between the meaning encoded in a linguistic form and the interpretation intended by the speaker, but nevertheless, addressees are usually able to fill this gap in a (seemingly) effortless way. This suggests that, beyond the rules of grammar, there must be some sort of systematic principles that govern linguistic interaction. Austin (1962), Searle (1969), and Grice (1975) emphasized the fact that language acquires new dimensions when it is used in interaction.

Austin noticed that utterances do not merely describe existing states of affairs, but also perform various kinds of actions, such as to request, apologize, and promise; these will be felicitous only if certain conditions are met, so specifying those general conditions is a way to contribute to a general understanding of how human communication works.

Searle put emphasis on the conventional side of communication and tried to define the rules that must be followed for the successful performance of different speech acts; among these rules he included sincerity conditions, that is, specific requirements on the mental states that the speaker is assumed to adopt when performing each kind of speech act. This brings to the foreground the idea that some cognitive processes play a role in utterance interpretation.

Grice, in turn, focused on the nonconventional side of meaning. The meaning of linguistic expressions is highly sensitive to both the speaker's intentions and the context, so the addressee's task in assigning an interpretation to an utterance includes identifying such intentions and computing the effects of the nonlinguistic factors that surround the linguistic exchange. The extra meaning obtained (i.e., the assumptions that fill the gap between the encoded meaning and the interpretation arrived at by the addressee) is what Grice terms

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an *implicature*. As an explanation of this, Grice suggested the cooperative principle, which reads: "Make your contribution such as it is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice, 1975, p. 45). Speakers are supposed to tacitly conform with this when producing their utterances and hearers can assume that speakers are being cooperative when interpreting them. This principle is, in some sense, a generalization about how the human mind is expected to work when engaging in a joint activity, be it linguistic or not.

A similar picture can be obtained when looking at so-called neo-Gricean approaches. The proposals in Horn (1984, 2004) and Levinson (2000) depart from Grice's in many respects (particularly in the fact that they focus on the linguistic side of utterances, rather than on the particularized, once-off interpretation based on intention and context). Nevertheless, both authors further explore the idea that some general principles must govern linguistic communication. These principles are heuristic reasoning patterns based on standards of quantity, informativeness, and manner (stemming from the Gricean maxims), internal to each individual and common to all the members of our species.

All these approaches, though very different from each other in many respects, had nevertheless a similar aim. The search for underlying principles invoked certain principles of rationality (particularly in the work by Grice, Horn, and Levinson), thus directing the explanation toward universal laws and cognitive properties of the human mind. In addition, the connection between utterance meaning and intention—a key notion in some of these founding insights—was opening the door to explaining linguistic behavior in terms of the mental states of the participants, thus assigning a crucial role to the ability to attribute and recognize mental states in others. Thus, to a greater or lesser extent, these philosophical accounts tried to discover how human cognition determines linguistic behavior. They cannot be called *cognitive* in the sense we currently tend to attribute to this word, but they were in some way anticipating a line of research that would dominate the later scene in pragmatics.

The Foundations of Cognitive Pragmatics: Relevance Theory

Whereas the previous approaches can be seen as implicitly touching on cognition, relevance theory (Sperber & Wilson, 1986/1995) was the first model of human communication to overtly embrace the cognitive program. From a relevance-theoretic perspective, pragmatics is "the study of the general cognitive principles and abilities involved in utterance interpretation, and of their cognitive effects" (Wilson & Sperber, 1990, p. 35). Mental capacities, processing devices, and representations are thus basic notions in this model.

The cognitive approach advocated by relevance theory implies broadening the domain of pragmatics in two directions. First, pragmatics is not merely a discipline, but rather a processing system specialized in the interpretation of intentional communication. As Carston (2002, pp. 128–9) puts it: "'pragmatics' is a capacity of the mind, a kind of information-processing system, a system for interpreting a particular phenomenon in the world, namely human communicative behavior." A favorite topic of relevance theorists is precisely the discussion on the status of the pragmatic system—whether it is an autonomous, dedicated module or not (see Sperber & Wilson, 2002)—and the way in which it interacts with the rest of the cognitive subsystems, such as the language faculty and the theory-of-mind module, among others.

Second, it is not the use of linguistic means, but intentionality, that defines human communication. This move implies a new view on the role of linguistic encoding—human communication is no longer seen as a matter of encoding and decoding messages, with pragmatics as a subsidiary processing device accounting for the gap between encoded meaning and the addressee's interpretation; rather, human communication is primarily a

matter of inferring the communicator's intentions on the basis of the evidence provided by the communicator. The pragmatic system is a dedicated inferential device working for any sort of intentional communication, whether linguistic or nonlinguistic. The construction and evaluation of hypotheses about the communicator's intentions involves a very specific ability, namely, that of attributing mental states (which can be radically different from one's own) to other individuals: "Pragmatic interpretation is ultimately an exercise in mindreading, involving the inferential attribution of intentions" (Sperber & Wilson, 2002, p. 3). Of course, utterances are a privileged way of communicating, but they are used primarily as providing evidence of what the speaker wants to communicate rather than directly encoding the message.

If verbal communication is just a particular, though central, case of a more general process, it is then no surprise that the principles governing utterance interpretation should be of a general nature as well. Relevance theory stands on two principles. The first one, called the cognitive principle, is a generalization on the way human cognition works: "Human cognition tends to be geared to the maximisation of relevance" (Sperber & Wilson, 1986/1995, p. 260). This principle states that cognitive resources, which are limited, are preferably allocated to processing the most relevant input available. This is the result of an evolutionary transformation toward cognitive efficiency. The second principle, called the communicative principle, reads: "Every act of ostensive communication communicates a presumption of its own optimal relevance" (Sperber & Wilson, 1986/1995, p. 260). Though the particular details of the interpretation of this principle are far too complex to be discussed here, it should suffice to say that it does not establish that it would be sensible, or desirable, for a communicator to be relevant; rather, it states that an expectation of optimal relevance is created in the addressee's mind that guides him or her through a specific path of interpretation—that of taking relevance for granted and examining hypotheses about the communicator's intentions in order of accessibility until the expectations of relevance are fulfilled. Thus the functional architecture of the human mind and the participants' mental states (intentions, desires, and beliefs) are given a central role in the organization of the theory.

The cognitive perspective has also produced substantial changes in the way pragmatic explanation is pursued. Relevance theory is the first model to advocate for an approach to pragmatics rooted in the findings of empirical sciences. The way was opened to a multidisciplinary research program, where the contributions by psychologists, evolutionary anthropologists, and neuroscientists became central references in the literature on pragmatics (Leslie, 1994).

Relevance theory is also the first model that has committed itself to experimental testing. Experimental pragmatics has experienced remarkable growth thanks to relevance-theoretic proposals (Noveck & Reboul, 2008). The predictions of the theory and its explanatory power have given rise to a wealth of experimental research, providing insightful solutions to various problems (Noveck & Sperber, 2004).

Possibly one of the most interesting discussions that relevance theory introduced in the pragmatic arena has to do with the level of explanation. Elaborating on Dennett's (1969) distinction between the personal and the subpersonal level, relevance theorists have argued for a model aiming at subpersonal explanations. An explanation at the personal level involves considering people as rational agents with rational intentions and accounting for their behavior in terms of what would be reasonable to assume they would do. However, when the explanation moves to the subpersonal level, causation is accounted for in mechanical terms, that is, in terms of the brain and the events occurring in the nervous system. Utterance interpretation (including the attribution of certain mental states to the speaker) is not a long, rational, and conscious process; rather, it takes place below the level of consciousness. Only in this way can we explain why the pragmatic system "is fast and

automatic, and, more crucial to the position, it is domain-specific, in that it is activated exclusively by ostensive stimuli and employs its own proprietary concepts and processing strategies and routines" (Carston, 2002, p. 132). Moving to the subpersonal level is a way to avoid the problems of accounting for agency by invoking individual sensations and activities, so as to obtain a more general level of explanation for mental processes.

Social Cognition

If this entry had been written some 15 years ago, it would have finished at this point. Relevance theory was the only research program to overtly adopt a cognitive perspective and represented a new orientation with respect to the two prevailing ways of doing pragmatics, the philosophical and the social approach.

In fact, at that time, a considerable wealth of pragmatic research was devoted to studying aspects of communication from a sociological perspective. Following the idea that communication involves social conventions and routines, social pragmatics put the emphasis on the external factors (situation, power relationships among the participants, etc.) that determine linguistic use (Brown & Levinson, 1978). Research was conducted with statistical tools on a significant sample of data, so as to obtain general trends in linguistic behavior. Interlinguistic and cross-cultural differences were soon found and the role of culture in shaping conversational styles became a favorite topic of research.

The situation has radically changed in recent years with the birth of the field of research that we currently know as social cognition. Social cognition encompasses "any cognitive process that involves conspecifics, either at a group level or on a one-to-one basis" (Blakemore, Winston, & Frith, 2004, p. 216). More specifically, it involves "the individual's cognitive relationship to the social corpora (family, friends, institutions, etc.) and the ambient postulates that inform a culture, its technology and the complex manifold of artefactual and environmental considerations that are transpersonal" (Marsh & Onof, 2008, p. 1).

Thus, social cognition is a new area of inquiry shared by many disciplines. Sociologists place emphasis on the problem of how and to what extent the social setting determines an individual's cognitive state; psychologists attempt to discover what processes take place in the mind as the basis of social cognition; for linguists, the fundamental question is how the mechanisms governing social cognition and language use interact with each other. By considering the cognitive capacities underlying social actions, pragmatic studies recuperate the abstract, general dimension somewhat overlooked by previous sociologically oriented approaches. This is decisive for constructing an explanatory theoretical model of human interaction (Escandell-Vidal, 2004).

Social cognition is not just the name of a discipline, but also of a specialized cognitive subsystem, responsible for the processing of information related to other human beings, including the ability to perceive, interpret, and explain their behavior. From a cognitive perspective, the human mind can be described as a network of processing mechanisms, each with a proprietary domain and autonomous principles. In this sense, the connections between the social capacity and the inferential system envisaged by relevance theorists soon became clear and paved the way for an approach to social aspects of communication from within relevance theory (Jucker, 1988; Escandell-Vidal, 1996; Sperber & Wilson, 1997).

Several research lines can be identified in studies on social cognition. The first one is represented by the neuroanatomical approach, which gives priority to investigating the location in the brain of the capacities on which actions in the social setting are based and the mental capacities that are prerequisites for full social interaction (Escandell-Vidal, 2009). Empirical research has identified the brain areas responsible for social behavior by discovering meaningful correlations between certain kinds of brain damages and deficits in social interaction (Adolphs, 2003, 2006). The emergence of a specific cognitive subsystem

for managing social interaction (*cultural intelligence*) is an evolutionary adaptation to deal with very complex interpersonal relationships. The existence of a neural basis for social cognition opens a new explanatory dimension for pragmatic research at the subpersonal level.

The second main line of research in social cognition moves into the domain of anthropological and cultural studies. The members of any social group show common trends in their social behavior. This is usually seen as the result of sharing a set of representations, which we call *culture*. Socially acquired behavior tends to stabilize not only in the form of recurrent interaction patterns that are perceived as cultural norms, but also as structures of knowledge (scripts or schemata; Schank & Abelson, 1977) and as part of word meaning (Kecskes, 2004), generating precise expectations about social and verbal behavior. A major concern for social inquiry is to understand how each particular set is formed, stabilized, and distributed among the members of a social group. Several approaches have been suggested (Tomasello, 1999; Sperber & Hirschfeld, 2004), some of them with close relations with relevance theory (Sperber & Wilson, 1986/1995).

Social cognition has triggered a revision of some basic notions. Among them, an area of particular interest is that of the boundaries between the individual and the social. The status of intention in pragmatic theory can represent a case in point. Intention was initially seen as a private mental experience, at the root of goal-directed activity; later, intention was considered as an epiphenomenon of subpersonal brain activity, frequently out of the reach of an individual's consciousness; finally, in recent years, intention has been considered as an "emergent product of social interactions" (Gibbs, 2001), in a more dynamic and interactive view of human behavior. If human communication is, after all, a form of joint activity, shared intentions must play a role—individual intentions are reshaped and negotiated through the interaction and so collective behavior is not the simple sum of individual intentions.

A similar line of thinking is present in the approach known as *distributed cognition*, an approach based on the idea that not all cognitive events have to be "encompassed by the skin or skull of an individual" (Hutchins 2000, p. 1). Many aspects of social organization crucially depend on skills and expertise distributed among various members of the group. In a similar way, the knowledge of the norms of a given culture is not necessarily a property of each and every member of a community—only the group as a whole has the full version of that knowledge. Thus groups happen to have properties of their own that can be different from the properties of individual members. If human cognition is unique it is precisely because it is a cultural phenomenon.

The advent of social cognition has thus blurred and dissolved the previously prevailing dichotomies between social and cognitive pragmatics, between the individual and the social. Nowadays, most research on pragmatic aspects calls itself sociocognitive, thus showing the need to consider both sides of human communication from an integrated perspective (Kecskes & Horn, 2007; van Dijk, 2008; Kecskes, 2010).

SEE ALSO: Cross-Cultural Pragmatics; Politeness; Pragmatics and Culture; Speech Acts Research; Testing in Pragmatics Research

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Pragmatics and Culture

THORSTEN HUTH

While phonology (sound system), morphology and lexis (word formation and the inventory of words), syntax (sentence formation), and semantics (meaning) describe the discrete combinatorial system underlying language, pragmatics situates that very system in social context. The following is concerned with how pragmatics provides insight into culture, defined here as the shared conventions of speaking and interaction in a given language community.

At its most general, pragmatics highlights the social context in which members of a given community put language to use for specific communicative ends. For example, what may prompt the use of a subjunctive to make a request polite? How and with what linguistic resources do speakers order a coffee at a restaurant? Under what circumstances may speakers issue an invitation to a friend or perhaps a work colleague? In what linguistic form may one relevantly extend compliments and to whom? And in what form does one apologize effectively for a potential impropriety? Such questions aim at identifying the merging of particular social and cultural contexts with particular linguistic resources. Speakers are bound to coordinate both relevantly in their communication efforts if they are to be effective.

It is widely agreed that language and culture share a reflexive relationship. This interest has increasingly been channeled into the field of pragmatics. By now, a growing body of research is devoted to illuminating what speakers "do" with words, what actions they achieve through language use, and how those achievements reflect the culture of speaking in a language community. This interest may not be surprising given the increasing ease, range, and speed of travel worldwide, and the tangible impact of the Internet for communication on a global scale. However, while human contact and communication across linguistic and cultural lines has increased in quantity through the opportunities afforded by new technologies, mutual understanding across these fault lines is by no means guaranteed.

In fact, communication across language communities and cultures remains as challenging as ever, even if those involved in interaction speak each other's language well in terms of "grammar." The recreational traveler abroad, business people engaged in multinational contract negotiations, or politicians striving to resolve international matters across linguistic boundaries all face the same task: pursuing their personal or professional goals through communication. However, communication requires not only the production of a discrete combinatorial system of sounds (which form words, which form sentences, which have meaning), but also requires the relevant knowledge and actual ability to put this very system to effective use. "Effective" in the context of pragmatics would be defined as consistent with the cultural conventions of speaking in a given language community.

Pragmatics as a cultural system of linguistic practices is deeply rooted in first language acquisition. Pragmatics emerges in children as a result of language socialization (Schieffelin & Ochs, 1986). Children develop an awareness of social (hence cultural) context for certain (language) behaviors even before first words are uttered. It means for them to become aware that speakers may normatively orient to certain patterns of (language) behavior; it means to identify social contexts and situations in which such patterns may occur; and

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finally, as language eventually emerges, it means to put particular linguistic and extra-linguistic resources to effective communicative use in the specific contexts and situations previously identified.

This is significant to the systematic study of pragmatics as a window to culture on several counts. First, since learning pragmatics is the result of a socialization process, the basic assumption that both concepts are indeed connected is validated. If a particular culture of speaking has to be learned through observation and participation, it can be firmly concluded that pragmatics provides a matrix in which particular aspects of language and culture relevantly meet. Second, as a result of socialization from early childhood on, pragmatics is in large part a matter of implicit, tacit, or unconscious knowledge. Adults are in fact rarely aware of their own pragmatics, or only so in parts. Golato (2003) provides an instructive study on what German speakers know about their own pragmatics and measures this against their real-life pragmatic behavior. Speakers were first audio-recorded in real life and subsequently provided with questionnaires in which the exact situations that were found on the tapes were replicated in written format. Interestingly, the recordings and what participants reported in the questionnaires turned out to be quite different because informants were in fact *doing* different things pragmatically in real life compared to what they *report* they are doing pragmatically if asked.

For language learners, this has tangible consequences in terms of learning to communicate effectively as well as making sense of different pragmatics across cultures. Since pragmatics are so deeply ingrained in speakers' interactional behavior, they are regularly transferred by speakers from their native language when they are using the second language for their social and interactional needs. In other words, while speaking a second language, a language learner will predictably put the newly learned words and structures to use in terms of the pragmatics of his or her native language. Empirical research has amply documented such pragmatic transfer, and it regularly leads to miscommunication across linguistic and cultural lines (Kasper, 1992). This is why culture shock remains a predictable phenomenon for expatriates or travelers, since it is in part mediated by different pragmatic conventions in different language communities. Thus we note that, while there is culture in pragmatics, this set of cultural practices underlying a second language is not an automatic by-product of words and grammar. On the contrary, the pragmatics of a non-primary language have to be learned separately—through observation, participation, or classroom instruction (Rose, 2005).

Furthermore, if learners are indeed aware of pragmatics, this awareness can shape how they view their own language community or others. To reiterate, the common perception of pragmatics is often inaccurate, be it self-perception by native speakers or other-perception by foreign language learners. At the same time, personal opinions and beliefs concerning pragmatics loom large and provide ample opportunity for controversial debate. Common cultural clichés and stereotypes are often the result of how different pragmatics are perceived across cultural lines (e.g., culture X is rude, culture Y is welcoming, culture Z is shallow). Such cultural imaginations and myths may then perpetuate themselves as they are imposed on a particular language community from the outside. They may also develop from within since native speakers may build their self-image based on their own perceived language behavior. As already mentioned, the mere perception of pragmatics is not infallible and may not necessarily reflect what actually happens.

The notion of pragmatic variation and its cultural implications complicates matters further. Pragmatic variation may exist along particular demographic, hence culturally significant, lines such as age, status, gender, power differential, etc. (Gumperz, 1983). As speakers negotiate their own cultural identity through pragmatics, individual choice affords them the opportunity to position themselves socially according to their own preferences. For example, while a majority of Germans may well shake hands in certain situations (body

language), so might Hans, but Gabi might not. Just as the lexicon or the grammar of a language may change over time as it is continuously molded by its speakers, pragmatics is also an arena in which speakers may affect the rules of the game as they are playing it. Pragmatists face the dilemma of potential and often consequential variation in the very cultural construct they strive to describe systematically. Hence, describing pragmatic conventions in terms of monolithic or prescriptive rules is problematic. If potential for pragmatic (hence cultural) variation is ignored, pragmatics can be a notorious arena for promoting cultural essentialism. "*All* speakers of language X *always* do Y in social situation Z" would be a finding that is likely not to hold up in light of variational concerns. Hence, caution is required on the one hand for how to study pragmatics, and on the other hand for connecting the results of pragmatic research to whatever notion of culture one may operationalize in a given academic context.

And indeed, many such definitions exist. Pragmatics and culture as special terms are in the purview of various epistemological and methodological perspectives. The array of academic disciplines concerned with human communication and its relation to cultural context is wide: philosophy, linguistics, sociology, anthropology, or language acquisition (first, second, or other) are only some prominent areas interested in both. Major frameworks connecting pragmatics and culture include politeness theory (Brown & Levinson, 1987) or the notion of "face" across cultures (Scollon & Scollon, 2001), maxims of cooperation and politeness (Grice, 1975), communication as a culture of social interaction (Habermas, 2001), or sociocultural theory in the context of language learning (Lantolf, 2000). Further theories of culture across disciplines include culture as socially distributed knowledge, communication, or as related systems of mediation, practices, and participation (Duranti, 1997).

Irrespective of the specific notion of pragmatics or culture one may utilize, connecting both in a viable manner requires that scholars offer a solid cultural analysis linked to a thorough linguistic/pragmatic analysis. Since different research areas have different stakes, goals, and methods for studying how language and cultural context may interconnect, each strives to illuminate their respective focus of inquiry within particular conceptual frameworks. Not all approaches to pragmatics or to culture relate to one another, not all are commensurable, and some follow agendas that can be communicated across disciplinary lines only with difficulty. Let us illustrate this with two prominent examples.

Speech act theory in the tradition of Austin (1962) and Searle (1969) has been a widely applied framework for studying pragmatics. Emerging from philosophy, the linguistic unit studied in this line of research is what is considered a well-formed and fully grammatical sentence, considered here as an "utterance." In turn, the relation of a given grammatical sentence to particular social contexts (i.e., its pragmatics) is approached as a tripartite endeavor: the study of its locutionary, illocutionary, and perlocutionary force. The first describes the act of making an utterance in the first place, the second describes that which is being achieved by the act of uttering, and the last describes the actual effect or the consequences of the previous two. A central concern in this framework is measuring the possible intentions of a given utterance against its possible effects. Thus, the pragmatic force of a possible, grammatical sentence is triangulated, and different kinds of meanings may emerge according to its overall purpose and function. For example, the utterance "There is a draft in this room" may, depending on context, be considered to be an observation in response to the task of finding an explanation to the vexing question why the candle on the table is presently flickering. In a different context, it may also well mean that the speaker who utters it is making an implicit request or command to some other copresent person, prompting the closing of an open vent, window, or door.

Speech act theory thus focuses on the linguistic unit "sentence" by asking what possible meanings a sentence as utterance may harbor, particularly insofar as that which is achieved by an utterance, the "speech act" itself, is concerned. Such possible actions include what

can often be well described with performative verbs such as observing, explaining, commanding, requesting, apologizing, inviting, reprimanding, and countless others. The notion of culture emerging from this understanding of pragmatics rests on a consideration of the possible meanings of particular utterances according to social context, intentionality, and effect of the utterance. Since these may be culturally specific, cultural significance would lie in the possible meanings of—that is, the possible actions achieved by—a given grammatical sentence across language communities. In other words, we ask what a given sentence can mean in language community X, and how that range of possible cultural meaning may differ in language community Y.

In contrast, consider a strand of research emerging from sociology. Conversation analysis (CA) was spearheaded by Sacks, Schegloff, and Jefferson in the late 1960s and focuses on how speakers manage to produce orderly, interpretable conduct in real-life interaction (Atkinson & Heritage, 1984; Schegloff, 2007). Based on video and audio recordings of actual talk, CA investigates what kind of mechanisms allow speakers to anticipate, interpret, and produce a relevant "next" action in the back and forth of turns at talk. A major discovery of CA research is that turns are not taken at random, but that they are organized in a highly orderly fashion. Certain combinations of turns are typed, forming pairs that generally occur together (question–answer, compliment–response, greeting–greeting). Some first parts of pairs project a range of possible second parts, forming orderly sequences. Some second pair parts are preferred over others: for instance, a preferred response to an assertion is typically agreement, a preferred second part to an invitation is typically an acceptance, not a rejection, and the preferred second pair part to an offer is typically an acceptance. Hence, social context and, by extension, cultural specificity, is not primarily situated in the circumstances surrounding the properties of the speakers involved such as age, social status, power relations, gender, socioeconomic status, etc. Rather, social context is located in the unfolding and management of turns and sequences of turns themselves, subsumed with the notions of paired action and preference structure. Both have been shown to be both culturally variant and universal (Moerman, 1988).

As we compare speech act theory and CA as distinct research paradigms illuminating different aspects of pragmatics (Streeck, 1980), we see sharp differences: different kinds of data (elicited or invented examples vs. examples from actual recordings), different units of analysis (one utterance vs. turns and sequences of turns), different goals (studying possible intentions and effects vs. studying speakers' orientation in sequential context), and different conceptual tools (locution, illocution, perlocution vs. turns, pairs, preference structure). Such different conceptualizations of pragmatics thus shape the respective understanding of culture and how we describe it. For an applied linguist, this means to be specific in delineating quite clearly what kind of linguistic analysis is meant to shed light on which notion of pragmatics or culture. After all, the available units of analysis range from lexical semantics to discourse particles, from the managing of silence between speakers to speech acts, from vocabulary register to gestures and other aspects of body language, from intonation and prosody to turns and sequences of talk. Irrespective of the particular focus of a study, in each instance the respective units of analysis provide a different kind of access to any given notion of culture.

If pragmatic variation is indeed viewed as reflecting cultural difference, then the question remains how one might make sense of the observed variation. Unfortunately, it is tremendously difficult to "explain" pragmatic phenomena in light of other cultural concepts, be it in correlational or causative terms. This endeavor is prone to cultural evaluation and bias. For example, one intriguing empirical finding on one aspect of German pragmatics is that Germans apparently do not frequently say *Danke* as a compliment response, while in American English, *thank you* is a frequent compliment response (Golato, 2005). For American students of German, learning about and making sense of this cross-cultural

difference can result in the conclusion and concurrent judgment that Germans must not be a particularly appreciative people (Huth, 2006). By evaluating the observed difference from within the L1 cultural vantage point, the following and rather precarious line of reasoning is all too easily established: "all speakers of language community X always do Y in situation Z *because that's what their culture is all about*." As we can see, it is a long way from establishing empirically what speakers do pragmatically in particular sociocultural contexts to coming to an informed understanding of the possible cultural implications of such findings.

Hence, making sense of pragmatic variation across cultures often leads into precarious territory as we observe pragmatic phenomena in real life and, sometimes without inherent relevance, proceed to connect such perceived language behaviors to larger cultural issues such as the mentality or the particular worldview of the culture in question. Curiously, making sense of intercultural differences as reflected in pragmatics is often done on the implicit assumption that *all* culturally grounded domains of a language community (from food to housing to worldviews to linguistic behavior) constitute coherent, systematic, and neatly interlocking constructs bereft of possible contradictions or inconsistencies. In such a view, the sum of the cultural experience in a language community must be *fully* explainable and tightly interdependent. However, cultures viewed as language communities are by no means monolithic. They are heterogeneous, organic constructs that defy such simplistic explanation by correlation, causation, or a confusion of both. Hence, it cannot be emphasized enough that the "why" behind observable pragmatic patterns is a notoriously contentious issue; we simply often do not know in terms of cause and effect why culture A may do X pragmatically in particular contexts whereas culture B may rather do Y or Z in similar contexts.

To conclude, since pragmatics is largely a matter of often inaccurate perception, empirical study is required. Viewed as cultural practice, pragmatics provides an instructive window into the culture of speaking of a language community and can illuminate how miscommunication across linguistic and cultural boundaries occurs, often in astonishing detail. However, extrapolating from pragmatics to various notions of culture is a path leading through many a conceptual quicksand. Both concepts are wide in scope, and, for both, scholars continue to strive for a viable metalanguage in the pursuit of adequate description. It is to be expected that in a world with increasing affordances for communication, pragmatics as a window into cultural practices of speaking will continue to be a hotbed of research built on inquiry from different academic fields.

SEE ALSO: Assessment of Pragmatics; Child Pragmatic Development; Conversation Analysis and Affiliation and Alignment; Cross-Cultural Pragmatics; Intercultural Communication; Language, Culture, and Context; Politeness and Face Research; Speech Acts Research; Teaching Pragmatics

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Pragmatics and Grammar

GILA A. SCHAUER

Background

In his seminal publication on pragmatics, Leech argued that "grammar (the abstract formal system of language) and pragmatics (the principles of language use) are complementary domains within linguistics" (1983, p. 4). Native speakers and language learners need a certain level of both, grammatical and pragmatic competence, to communicate effectively in their everyday life. If a person's grammatical competence in a language is low, they may find it difficult to produce and comprehend speech, as to do this they need to have a certain level of competence in the morphology, phonology, syntax, semantics, and lexicon of that language. If a person's pragmatic competence is low, they may be able to produce an utterance that is formally correct, but may not realize that in a specific context and with a specific interlocutor their utterance is inappropriate, impolite, or both and may be misunderstood. Two sentences, both directed at a stranger in the street, illustrate the difference between grammatical errors and pragmatic infelicities:

(1) Hello, can you me please tell where the station is?
(2) Hello, tell me where the station is.

Upon hearing sentence (1), our stranger may think that their interlocutor is a learner of English and that the learner is still struggling with the correct word order in English, possibly as a result of transfer from their native language in which the equivalent sentence may be correct. Upon hearing sentence (2), however, our stranger may assume that their interlocutor is simply impolite, as in these particular circumstances, a more indirect request is generally used and expected in English. As Thomas argues, "grammatical error may reveal a speaker to be a less than proficient language-user, pragmatic failure reflects badly on him/her as a *person*" (1983, p. 97, original emphasis). This quote and the example sentences given above refer to adults speaking a second or foreign language (L2) and this will also be the focus of this entry (for a detailed discussion of children's pragmatic and grammatical competence in their first language [L1] see Ninio & Snow, 1996; Ochs, 1996; Ninio, 2001).

Perhaps surprisingly given the body of literature in the fields of interlanguage grammar and interlanguage pragmatics (i.e., the grammar and pragmatics of L2 learners), the number of studies that investigate the relationship between grammar and pragmatics is relatively small. Reviewing research focusing on both pragmatics and grammar published before 1999, Bardovi-Harlig noted that "we find that, with very few exceptions, mention of grammatical competence is very brief and appears only in the discussion section as a possible interpretation of results" (1999, p. 687). Her view was shared by Kasper and Rose, who commented three years later that "most interlanguage pragmatics studies have singled out pragmatics as their sole focal object, commenting on grammar as one factor that might influence pragmatic development" (2002, p. 160). In recent years the number of studies examining the relationship between pragmatics and grammar has increased somewhat,

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but compared to research conducted and published in other subfields of pragmatics, investigations that address interlanguage pragmatics and interlanguage grammar equally are unfortunately still few and far between. The main issue that has been addressed by researchers interested in learners' pragmatic and grammatical competence is in which order learners' competence in these two areas develops. In the following, findings will be presented for the claims that (a) pragmatics precedes grammar, (b) grammar precedes pragmatics, and (c) the acquisitional sequence of pragmatics and grammar depends on the learning context.

Development of Pragmatics and Grammar

"Pragmatic Competence Precedes Grammatical Competence"

One of the earliest studies that examined a learner's pragmatic and grammatical competence and concluded that pragmatics precedes grammar was conducted by Schmidt (1983), who observed one beginner-level learner of English in the second language context of Hawaii over a three-year period. In his investigation Schmidt focused on his learner's use of grammatical morphemes and pragmatic speech acts. At the beginning of the observational period the learner used a limited set of request strategies, such as asking for permission and hints, could accurately use the copula *be* in most instances, employed the irregular past and the plural correctly in some instances, but displayed some difficulty with the correct use of the progressive *-ing* and the auxiliary *be*. Toward the end of the three years, Schmidt noted no change to the copula, possessive, and auxiliary, although the correct use of the irregular past had increased. While the learner's grammatical development had been limited, his pragmatic development had shown greater progress, as his requests had become more elaborate and he had begun to use more direct strategies in situations where this was appropriate.

Also focusing on beginner-level learners, Koike (1989) and Pearson (2006) investigated requests produced by American university students learning Spanish. Koike found that while her learners seemed to be aware of the pragmatic norms regarding requests in their L1 and L2, their beginner-level knowledge of grammar made it difficult for them to produce appropriate requests. From her findings she concluded, "since the grammatical competence cannot develop as quickly as the already present pragmatic concepts require, the pragmatic concepts are expressed in ways conforming to the level of grammatical complexity acquired" (1989, p. 286). Pearson's findings support Koike's results.

A possible reason why L2 learners' pragmatic competence may precede their grammatical competence could be the transfer of pragmatic norms from the learners' L1. If L2 learners are competent members of their own L1 speech community, they are aware of what is considered appropriate and not appropriate in their L1 and may therefore be able to transfer certain norms and strategies to their L2. As Kasper (1997) put it so aptly, "adult NNS [non-native speakers] do get a considerable amount of L2 pragmatic knowledge for free." Utilizing one's L1 pragmatic competence in the L2 may be only successful, however, if the pragmatic norms of the L1 and L2 are similar in many respects.

"Grammatical Competence Precedes Pragmatic Competence"

If we accept the argument that all fully socialized members of an L1 speech community have pragmatic knowledge that could be easily transferred to the L2 and modified if necessary, then the notion that grammatical competence in the L2 precedes pragmatic competence may seem surprising. Considering the findings of the studies investigating beginner-level learners in the section above, which found that pragmatics precedes grammar,

it may be even more puzzling that studies (e.g., Bardovi-Harlig & Hartford, 1990, 1993; House, 1996) have shown that even advanced L2 learners, such as university students majoring in the foreign language, often do not demonstrate a level of pragmatic competence that is congruent with their level of grammatical competence in their L2.

Bardovi-Harlig and Hartford (1990, 1993) found that compared to their native-speaker peers, highly advanced L2 learners studying for graduate degrees at an American university used fewer appropriate requests and suggestions in advising sessions with academic members of staff. Because of the learners' limited pragmatic competence in this context, they were less successful than the native-speaker students in negotiating an academic schedule that was in line with their own preferences during advising sessions that took place at the beginning of the academic year. Investigating the pragmatic fluency of German university students in English (i.e., the ability to produce speech in conversation that is effective, polite, and relates to the interlocutor's previous turn), House (1996) showed that even advanced L2 learners may not be able to formulate appropriate requests and may therefore not be able to obtain goods and services that they need. Not surprisingly, those of her learners that had spent a long period of time in an English-speaking country displayed a considerably higher level of pragmatic competence in their L2 than those learners who had not previously lived in the L2 context. A possible explanation for this is that those learners had more opportunities to observe and notice pragmatic norms in the second language context (see Schmidt's noticing hypothesis, 1993) than their peers who did not spend time in the target environment.

How can these seemingly contradictory findings be explained? It could be argued that the pragmatic competence of beginner-level L2 learners may be higher than their grammatical competence, because they may be able to transfer norms and rules from their L1, whereas it may not be as easy to transfer the lexicon, morphology, and syntax of their L1 to their L2. In addition, the studies examining beginner-level learners by Schmidt (1986), Koike (1989), and Pearson (2006) tended to examine speech acts in less complex and demanding conditions than the studies focusing on advanced learners by Bardovi-Harlig and Hartford (1990, 1993) and House (1996). With the exception of Schmidt (1983), all studies discussed so far have also not explicitly focused on the relationship of pragmatics and grammar and instead concentrated more on specific pragmatic phenomena, referring only briefly to L2 learners' grammatical competence.

Focusing more explicitly on the relationship between pragmatics and grammar, Salsbury and Bardovi-Harlig (2000, 2001) examined the development of modality in beginner-level learners of English in the United States over a one-year period. The researchers found that although there seemed to be a developmental sequence for modal expressions that emerged in interviews with the learners, with "maybe" and "think" preceding "can," "will," "would," and "could," the presence of the modal expressions in the learners' grammar did not necessarily result in the learners employing these expressions to mitigate their language when engaged in disagreements. Moving from modality to morphosyntax, Håkanson and Norrby (2005) examined the pragmatic and grammatical competence of intermediate and advanced Australian learners of Swedish. They focused on their learners' morphosyntactic and pragmatic turn-taking competence. Although the researchers did not observe large differences in their learners' pragmatic and grammatical scores, they noted that "overall the [learners'] level of grammar is slightly higher than the[ir] level of pragmatics" (2005, p. 155).

The findings of studies that investigate intermediate and advanced learners' pragmatic competence in their L2 tend to show that a certain level of grammatical competence does not automatically translate into an equivalent level of pragmatic competence. It is important to note though that, with the exception of Salsbury and Bardovi-Harlig (2000, 2001),

studies suggesting that L2 learners' grammatical competence develops earlier than their pragmatic competence tend to fall into two categories: (a) studies investigating learners in a foreign-language context and (b) studies that investigate learners in the second language context that have not lived in the target environment for very long. This suggests that the learning context may play an important role in the development of learners' pragmatic and grammatical competence, which will be explored in the following section.

"Acquisitional Sequence of Pragmatics and Grammar Depends on the Learning Context"

In recent years, a small number of studies have been published, all using the same data collection instrument, comparing L2 learners' pragmatic and grammatical awareness in two learning contexts: the second language context and the foreign language context. Bardovi-Harlig and Dörnyei (1998) focused on intermediate learners in the English as a foreign-language (EFL) contexts of Hungary and Italy, and the English as a second language (ESL) context of the United States, while Niezgoda and Röver (2001) compared advanced EFL learners in the Czech Republic with ESL learners in Hawaii. Using the same instrument, Schauer (2006, 2009) examined advanced EFL learners in Germany and advanced German learners of English in the ESL context of Great Britain. The data collection instrument developed by Bardovi-Harlig and Dörnyei was a video-and-questionnaire task containing scenarios with either pragmatic infelicities, grammatical errors, or no errors (controls). The instrument examined infelicities in four speech acts: apologies, refusals, requests, and suggestions. Typical pragmatic infelicities were asking for directions with an imperative and not offering an apology for not having prepared a presentation. Grammatical infelicities examined in the task included, for example, "a zero object (*yes I would like*), a double marking of the past (*I didn't brought it*), the use of the infinitive with *let's* (*let's to go to the snack bar*)" (Bardovi-Harlig & Dörnyei, 1998, p. 240).

The results of Bardovi-Harlig and Dörnyei's (1998) and Schauer's (2006, 2009) studies suggest that the learning context plays an important role in the development of learners' pragmatic and grammatical awareness. L2 learners in the ESL contexts of the United States and Great Britain recognized significantly more pragmatic infelicities than the EFL learners in Hungary, Italy, and Germany, whereas the EFL learners identified more grammatical than pragmatic infelicities. These findings indicate that the EFL context primes L2 learners' grammatical awareness, while the ESL context helps prime learners' pragmatic awareness. In the ESL environment, learners are exposed to the target language on a daily basis and they need to use their L2 in their everyday life for a wide variety of purposes (e.g., participating in seminars, opening a bank account, purchasing goods or services) and with a wide variety of interlocutors (e.g., professors, shop assistants, friends). To achieve their aims, L2 learners in the second language context need to be or become aware of the pragmatic norms of the target language quickly, as violating pragmatic norms can lead to their not achieving their aims (e.g., not receiving goods or services, not being granted permission to take certain university courses; see Bardovi-Harlig & Hartford, 1990, 1993). In contrast, making grammatical errors generally tends to have fewer negative consequences (Thomas, 1983) and native speakers do not regard it so negatively as committing a pragmatic infelicity (Schauer, 2009). In the foreign-language context, however, learners' exposure to the target language is frequently restricted to the classroom and to textbooks which tend to provide only limited pragmatic input (Bardovi-Harlig, 2001; Schauer & Adolphs, 2006). Learners' main aim in the EFL context is often to pass language exams that focus on learners' grammatical competence in their L2. It is therefore not surprising that EFL learners in Bardovi-Harlig and Dörnyei's (1998) and Schauer's (2006, 2009) studies displayed a higher grammatical than pragmatic awareness.

In contrast, Niezgoda and Röver's (2001) learners in the foreign-language context of the Czech Republic recognized significantly more pragmatic and grammatical errors than their learners in the second language context of the United States. A possible reason for these findings, which differ from those of Bardovi-Harlig and Dörnyei (1998) and Schauer (2006, 2009), may be the higher proficiency level of the Czech learners. Niezgoda and Röver's learners in the foreign-language context "differed radically from Bardovi-Harlig and Dörnyei's population in that they represented a highly select sample . . . [who had] pass[ed] rigorous written and oral entry examinations" (Niezgoda & Röver, 2001, p. 70). Their ESL learners in Hawaii also differed from the ESL learner groups in Bardovi-Harlig and Dörnyei's and Schauer's studies, as Niezgoda and Röver's ESL learners attended classes in a private language school in Hawaii, whereas the ESL learners in Bardovi-Harlig and Dörnyei's and Schauer's studies were enrolled at universities in the United States and Great Britain. Differences between their and Bardovi-Harlig and Dörnyei's learner populations were also noted by Niezgoda and Röver.

In addition to examining whether learners in a particular learning environment are better at identifying pragmatic or grammatical errors, the three studies also investigated whether learners in different learning contexts rated pragmatic and grammatical infelicities similarly or differently. The severity ratings Bardovi-Harlig and Dörnyei's (1998) and Schauer's (2006, 2009) learners assigned to the pragmatic and grammatical errors indicated a difference in their participants' perceptions across the two learning environments: The learners in the ESL contexts considered pragmatic infelicities to be more serious, whereas the learners in the EFL context considered the grammatical errors to be more serious. Interestingly, the severity scores given by the learners in the second language and foreign-language context were almost exactly the inverse of each other. The English native speakers that participated in Schauer's (2006, 2009) studies also rated pragmatic infelicities as significantly more serious than grammatical errors. In contrast to Bardovi-Harlig and Dörnyei and Schauer, Niezgoda and Röver's EFL learners did not perceive either pragmatic or grammatical errors to be significantly more serious than the other. Their ESL learners, however, considered pragmatic errors to be significantly more serious than grammatical errors. This finding is in agreement with Bardovi-Harlig and Dörnyei's and Schauer's studies.

Conclusion

To date only a limited number of studies on pragmatics and grammar have been published that focus on both areas equally. The results of studies examining the pragmatic and grammatical competence of language learners indicate that in many cases, learners' competence in pragmatics and grammar does not seem to develop to the same extent or possibly at the same time. In instructed foreign-language contexts, learners seem to be more competent in grammar than in pragmatics (e.g., Bardovi-Harlig & Dörnyei, 1998; Håkanson & Norrby, 2005; Schauer, 2006, 2009), whereas uninstructed second language contexts seem to facilitate learners' pragmatic competence more (e.g., Schmidt, 1983; Bardovi-Harlig & Dörnyei, 1998; Schauer, 2006). However, the effect of the second language context may not be immediate, especially in situations that learners may not be familiar with and may not be able to easily observe (Bardovi-Harlig & Hartford, 1990, 1993). It also needs to be noted, that these trends may not apply to all learner populations, as the results of Niezgoda and Röver's (2001) investigation have shown. More research is needed that provides more detailed insights into the relationship between L2 learners' pragmatic and grammatical competence and compares learners' level of pragmatic and grammatical competence across proficiency levels (i.e., beginner to advanced). As the number of studies that examine

pragmatics and grammar is still rather small, research is needed on many aspects of pragmatics and grammar, such as in-depth studies on phonetics and pragmatics, pragmatics and syntax, and pragmatics and the lexicon, to name but a few.

SEE ALSO: Bardovi-Harlig, Kathleen; Child Pragmatic Development; Dörnyei, Zoltán; Interlanguage Pragmatics; Kasper, Gabriele; Pragmatic Awareness in Second Language Learning; Pragmatic Development in Study-Abroad Contexts; Schmidt, Richard; Second Language Pragmatic Development

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Pragmatics in Learner Corpora

NINA VYATKINA

Pragmatics has been broadly defined as the study of how people behave as social actors using language to accomplish specific communicative goals. Learner corpora are large electronic collections of written or spoken texts produced by learners of a second language (L2) in that language. Thus researchers of pragmatics in learner corpora explore how people learn to achieve communicative goals using an L2 by analyzing a body of texts produced by these learners in their target language.

Both pragmatics and learner corpus analysis are very young subdisciplines of second language studies. Interlanguage pragmatics, or L2 pragmatics, which investigates how L2 learners develop the ability to understand and perform action in a target language, arose as a separate field in the 1990s, whereas learner corpus analysis emerged as a method of research into learner language at the turn of the new millennium. Pragmatics and corpus analysis came together because both disciplines focus on actual language *use* as opposed to abstract qualities of language as a system. The main appeal of corpora for researchers into L2 pragmatics lies in the availability of large amounts of naturally occurring data, which gives them a much wider empirical grounding and supplements data elicited by traditionally used instruments such as questionnaires. Furthermore, corpus analysis methods allow automatic search for recurring patterns which can be analyzed using both quantitative and qualitative methods. These methods allow researchers to elicit information about the distribution and frequency of focal pragmatic elements in the target corpus, as well as about their cooccurrence with other elements. This latter technique, also called analysis of collocations, is especially valuable for pragmaticians, who are less concerned with grammatical accuracy of utterances than with their contextual appropriateness.

Initially, pragmaticians became interested in using native speaker (NS) corpora for both research and L2 instruction purposes. Many of these studies contained pedagogical suggestions for using NS corpora as rich repositories of authentic examples for creation of L2 teaching materials or for direct perusal by learners under the teacher's guidance. Around the turn of the century, this data-driven learning methodology was developed to include not only NS corpus data but also learner corpus data. The most important criterion of suitability of a learner corpus for research in pragmatics is the presence of explicit design criteria. As Granger (2002, p. 9) points out, "the usefulness of a learner corpus is directly proportional to the care that has been exerted in controlling and encoding the variables." Most important variables, according to Granger, are learner variables (e.g., learner context, mother tongue, level of proficiency) and task variables (e.g., time limit, use of reference tools, audience/interlocutor). Given the core position of the user and context in pragmatics, careful documentation of these corpus variables is of vital importance, which makes heterogeneous unspecified corpora unsuitable for L2 pragmatics research.

Beyond such metadata mark-up, corpora may be raw or annotated at different levels including part-of-speech tagging, syntactic parsing, discourse-pragmatic annotation, and error annotation of learner texts. Because such annotation is extremely time- and effort-consuming, the majority of available corpora to date remain raw, with a number of notable exceptions. Corpus annotation for pragmatic categories has been especially rare due to the inherent fuzziness and lack of distinct dividing lines between pragmatic categories such as speech acts. For example, an apology may partly overlap with a request rather than be

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strictly separated from one another in speech. Therefore, an overwhelming majority of studies have been "word-based" rather than "category-based" (Hunston, 2002). For example, Gilquin (2008) explored how EFL learners used discourse markers in their speech. To extract linguistic data for her research, she specified the list of the target features to include such words and phrases as *you know*, *well*, *actually*, *sort of*, and ran an automatic search for these words on her learner corpus. In this bottom-up approach, researchers explore contextual use of specific linguistic features and then make inferences about pragmatic functions expressed by these words in learner texts. By contrast, researchers who are interested in finding out what sets of linguistic features are used by learners to express specific communicative functions apply a top-down approach and perform needs-based tagging of the focal corpora according to their specific research questions prior to the study. Connor, Precht, and Upton (2002) explored rhetorical devices used in an integrated learner/NS corpus of simulated job applications. First, the researchers defined what meaning units termed rhetorical moves (e.g., "identify the source of information," "state desire for consideration," "provide supporting arguments") constituted the genre of application letters and compiled them into a rubric. Next, they manually tagged all corpus texts according to this rubric, and finally performed an automatic search on the focal tags. This analysis allowed the authors to identify similarities and differences in the discourse structure of application letters written by L2 English learners from different cultural backgrounds.

According to the medium, corpora are subdivided into written, spoken, and hybrid or multimedia corpora. Written learner corpora have been primarily explored using contrastive interlanguage analysis, or CIA (see Granger, 2002). This method enables comparison of learners' L2 performance from the learner corpus with the first language (L1) performance of NSs from an NS corpus to discover differences and similarities in the language use of these two populations. Alternatively, researchers can compare different varieties of learner language (e.g., L2 use by more and less proficient learners). Pragmatic phenomena that have been best explored in written learner language include discourse markers, expressions of modality, and the use of formulaic language. The International Corpus of Learner English, or ICLE (http://cecl.fltr.ucl.ac.be/Cecl-Projects/Icle/icle.htm/), has provided material for numerous comparisons of pragmatic feature use by NSs and by advanced learners of English coming from a variety of L1 backgrounds. Aijmer (2002) showed that learners used significantly more modal verbs in their writing than NSs, which contributed to an overuse of spoken patterns inappropriate in a written academic genre. This result has also been corroborated on the material of a different learner corpus with the reversed configuration of languages: advanced L1 English learners overused modal expressions in their L2 German (Maden-Weinberger, 2008). Nesselhauf's (2004) publication, based on the L1 German subcorpus of ICLE, focused on learner use of verb–noun phrases such as "to have a look" or "to make a mistake." She found that even advanced learners frequently used inappropriate verbs in such phrases (e.g., "to do a mistake"). Gilquin, Granger, and Paquot (2007) investigated phraseological patterns used by learners in argumentative essays to express such typical rhetorical functions of English for academic purposes (EAP) as introducing, comparing, contrasting, and summarizing information. The researchers found that, without making grammatical mistakes, learners used some of these patterns inappropriately: for example, they overused intensifiers (e.g., *absolutely*, *of course*) and underused hedges (e.g., *possibly*, *presumably*) in comparison to an NS college writers' group. This research resulted in a pedagogical application: the new corpus-based edition of the Macmillan English dictionary for advanced learners (Rundell, 2007) is interspersed with paragraph-long tips titled "Be careful!" and "Get it right" following the words and phrases habitually misused by ICLE participants. Rhetorical devices typical of EAP were also explored in expert and learner writing on the material of specialized corpora (e.g., Hyland, 2004).

Compilation of a spoken learner corpus presents an additional challenge because audio-recorded data need to be transcribed prior to analysis. In addition, even when transcribed in accordance with uniform conventions, the spoken language is more difficult to analyze with automatic methods because of significant variation in pronunciation of the same words. Despite this fact, spoken corpora have been attracting increasing attention because of the centrality of human interaction in pragmatics. One research direction is represented by Hasselgren (2002) and Gilquin (2008), who focus on Norwegian and French EFL learners, respectively. Both studies explored the use of discourse markers in speech and came to a converging result that increased speech fluency goes along with the use of more discourse markers such as *like*, *I mean*, *you know*, but fewer hesitation markers such as pauses. An example of research based on speech acts is Reinhardt (2007) who compiled and explored a corpus of oral data produced by international teaching assistants (ITAs) in advising and lecturing role plays. He compared the ITA use of directives with the NS comparison baseline elicited from MICASE (the Michigan Corpus of Academic Spoken English; http://quod.lib.umich.edu/m/micase/). He showed that ITAs underused mitigators and pragmatic features expressing interpersonal involvement in comparison to NSs. Reinhardt's study concludes with a pedagogical suggestion for corpus-based teaching. As opposed to word-based studies addressed above, Pavlenko and Driagina's (2007) took a concept-based angle in a comparative study of the use of emotion vocabulary in speech and showed that conceptual differences between English and Russian present difficulties even for advanced learners of these languages. Yet another direction in spoken corpus research is exploration of intonation patterns. Ramirez-Verdugo and Romero-Trillo (2005), for instance, found tone and pitch differences in realization of some speech acts by L1 and L2 speakers of English.

Diachronic corpora that contain data elicited from the same learners over longer periods of time are especially valuable for studying pragmatic development of L2 learners. However, these are rare because collecting longitudinal data is especially difficult. Nevertheless, a number of longitudinal learner corpora have been collected and have triggered innovative studies into L2 pragmatics. Researchers at Georgetown University have collected and investigated a longitudinal corpus of written productions of learners of German, tracking them over the course of three curricular levels. Among other focal features, Byrnes (2009) investigated the development of the grammatical metaphor (primarily expressed in increasing nominalization) in learner writing. The longitudinal approach to data analysis allowed the researcher to demonstrate the nonlinearity and variability of developmental paths taken by individual learners. Another example is a unique longitudinal multimedia corpus that includes audio and video recorded classroom interaction data that have been collected over several years at Portland State University. Using the conversation analysis methodology, Hellermann conducted several case studies using this corpus to track the development of individual learners from beginning to intermediate levels of ESL proficiency. Focusing on specific pragmatic phenomena such as saying "no" in refusals, Hellermann (2009) conducts microanalyses of the talk-in-interaction at multiple points in time and shows how the learner is gradually socialized in the classroom community of practice.

Another invaluable resource that can be accessed on the internet is the French Learner Language Oral Corpora (FLLOC) database that compiles a number of spoken L2 French corpora (http://www.flloc.soton.ac.uk/). Myles, Mitchell, and Hooper (1999) explored formulaic language and creative constructions in learner language with one of these corpora and showed both common developmental trends and dynamic interaction between these features. Finally, a number of longitudinal corpora collected in untutored L2 acquisition settings from adult immigrants have served as the basis for multiple studies of L2 pragmatics (see Skiba, Dittmar, & Bressem, 2008). These are currently being systematized in

accordance with recognized computational standards and published on the internet by the Max Planck Institute in Nijmegen (http://corpus1.mpi.nl/ds/imdi_browser/).

Most recently, learner corpora containing texts produced in so-called hybrid media such as computer-mediated communication (CMC) have proven rich in pragmatic phenomena. Such corpora have an advantage of containing interactive exchanges typical of spoken conversations yet do not require tedious transcription since the data are produced in a written medium. Classroom-based CMC between learners and NSs can be especially conducive to study of L2 pragmatic development as shown by Belz and Vyatkina (2008). In this study, the synchronous (electronic chat) and asynchronous (e-mail) interactions between learners and NSs revolved around a semester-long class project where the American and German participants discussed intercultural topics and wrote collaborative essays that triggered involvement in a variety of speech acts such as invitation, refusal, and apology. Electronic data produced by learners in CMC interactions with their NS interlocutors were automatically saved and then organized into an electronic corpus. Importantly for CIA research, this corpus also included a built-in NS corpus that served as a valid comparison baseline for learner productions since the NS data came as part of the very same interactions, not from an unspecified external corpus. Moreover, the corpus data were used for a concurrent pedagogical intervention in which learners engaged in corpus-based learning comparing their own and NS use of the focal pragmatic features (German modal particles and pronominal adverbs). The study showed that this approach facilitated L2 pragmatic development because students significantly increased their focal feature use and even approximated the NS norm with respect to frequency and appropriateness. However, the study also highlighted persistent differences in collocational patterns used by learners and NSs.

To advance corpus-based research into L2 pragmatics, there is a need for many more studies on publicly available corpora. New corpora also need to be collected, especially oral and multimedia corpora based on a variety of languages collected from learners at different proficiency levels, as well as developmental corpora tracking the same learners over longer periods of time. Given the resources and time that go into pragmatic annotation, sharing annotated corpora is especially desirable. An excellent example is an undertaking by Maynard and Leicher (2007), who set out to manually annotate MICASE. They plan to annotate this corpus for 25 pragmatic features including discourse style and interactivity (e.g., disagreement, request, humor, sarcasm) that will be computer-searchable. This project is especially valuable because MICASE is freely available and comprises both NS and learner speech samples, thus providing a valid NS comparison baseline for performing CIA. When completed, the annotation of this corpus will facilitate investigations that are lacking to date: ones that will go beyond words and phrases and extend into speech acts and communicative functions which may have multiple linguistic realizations.

SEE ALSO: Corpora in the Language-Teaching Classroom; Interlanguage Pragmatics; Learner Corpora; Pragmatics of Second Language Computer-Mediated Communication; Teaching Pragmatics

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Pragmatics in the Analysis of Discourse and Interaction

MARTIN WEISSER

What Is Pragmatics?

Pragmatics, as a linguistic discipline, broadly deals with the analysis and recognition of *meaning* in texts. However, in which way this type of meaning is distinct from that investigated by its neighboring discipline, semantics, is still a matter of debate among at least some linguists. One thing is clear in this respect, though, which is that, in pragmatic meaning, *contextual* influences play a far larger role than in its semantic counterpart. To begin our identification and discussion of the issues that may be involved in the *generation* of pragmatic meaning (see Verschueren, 1999) in and through context, it is perhaps best to start by looking at the contrasting 'attitudes' expressed by different researchers in the field toward what exactly belongs to the field of pragmatics.

'Schools' of Pragmatics

As already hinted at above, there are in fact two different traditions in pragmatics, sometimes referred to as the "Anglo-American" and the "European Continental" schools (Horn & Ward, 2004, p. x). The first subscribes to the "**component** view" (p. x), a view that sees pragmatics as a separate level of linguistics—such as those of phonetics/phonology, syntax, and semantics—and the second adopts the '**perspective** view' (p. x), which sees pragmatics as a function of language that influences the other levels and incorporates a larger situational context that also includes sociolinguistic factors. Following Leech (1983, pp. 10–11), the former can also be referred to as "PRAGMALINGUISTICS" and the latter as "SOCIOPRAGMATICS."

Although both approaches are strongly influenced by concepts originating in the analysis of dialogue in *conversation analysis* (CA), proponents of pragmalinguistics still tend to focus more on issues that relate to the 'sentence' or *micro-level* (see Mey, 1993, p. 182), often also employing more hypothetical, constructed examples, whereas sociopragmaticists prefer to concentrate more on real-life examples and larger contexts, that is, the *macro-level* (p. 182). A further trait of pragmalinguistics is a strong philosophical background that frequently expresses itself in the use of analyses that employ the same type of traditional formal logic we also encounter in formal semantics.

General 'Theoretical' Issues in Pragmatics

Amongst the more theoretically oriented topics investigated by both schools, mainly on the micro-level, are *implicature*, *presupposition*, *reference*, *deixis*, *definiteness*, and *indefiniteness*, as well as *speech acts*. As implicature is explained in detail elsewhere in this volume, only some brief examples of some of the other concepts are provided here, but speech acts will be discussed in more detail later.

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Presupposition

Presupposition refers to the fact that, in any conversation or text, certain elements of a discussion can be assumed to be known or understood without first having been explicitly introduced. Thus, if I ask you *When did you stop smoking?*, the underlying assumption is that, prior to this moment, there was actually a period where you were in the habit of smoking. Often, presuppositions like the above are linked to certain grammatical constructions that involve:

1. a change of state, as in the above example;
2. so-called *factive* verbs, such as *regret*, as in *I regret the decision I made yesterday*, where the assumption is that I did indeed make a decision at the said time;
3. *implicative* verbs, such as *manage* or *succeed*, as in *They managed to finish and hand in their essays on time*, which presupposes that the agents (*they*) had to make an effort to achieve this outcome;
4. some form of iteration, as in *I had to go to the office again*., which expresses the fact that I had already been there at least once before (presumably today);
5. and so forth.

A similar thing happens when I tell you that *My brother is older than me*, when you did not even know that I had a brother in the first place. However, rather than complaining about the fact that I had not mentioned my having a brother before, you will simply assume this as being true, unless, of course, you have any reason to doubt my sincerity.

Reference, Deixis, and (In-)Definiteness

As already pointed out above, when we talk about 'things,' we always do this in a certain context, and within this context, it is important to identify the participants in a verbal exchange, as well as locating this exchange and its participants in space and time. Identifying who or what exactly we are talking about is generally a question of assigning an explicit reference to a particular person or entity. Linguistically, this can be achieved by using a deictic or 'pointing' expression, such as a pronoun (*I*, *you*, *they*, etc.), demonstrative (*this*, *that*, etc.), a (definite) noun phrase (*the woman on the other side of the road*, *the Queen of England*, etc.), or a proper noun/name (*John*, *Mary*, etc.).

If a person is the target of the reference—and especially if there is a personal pronoun involved, we speak of *person deixis*, as in *Can I ask you something?*, where *I* and *you* both identify speaker roles in the verbal interaction. If the reference takes the form of a temporal adverbial (construction), such as in *We'll be there* ***tomorrow***, this is referred to as *temporal* or *time deixis*, which serves to 'locate' the utterance relative to the current time; if it (literally) locates something in space, relative to the speaker and hearer, this is known as *spatial deixis*.

One thing that is particularly interesting about many of the shorter expressions used in these types of deixis is that they only take on an exact meaning in a particular context, but are otherwise semantically rather vague, something that led the philosopher Frege to draw a distinction between the *sense* of an expression, that is, the basic, decontextualized meaning, and its actual *reference* (see Carlson, 2004). This distinction can easily be made clear by looking at the meaning of the local adverb *there* in the last example because we can only really be sure about its exact meaning if we are aware of where the place referred to is located relative to the speaker and hearer, either because it is physically pointed at or the location is definitely already known to all parties involved.

Two special types of deixis are *social* and *discourse deixis*. The former is basically a type of person deixis, but with the additional feature of indicating the social 'status' of the

interlocutors. This may take the form of *honorifics*—such as the use of *Sir* or *Madam*—in English, indications of the degree of familiarity, such as in the use of different second personal pronouns in French (*tu* vs. *vous*) or German (*du* vs. *Sie*), or even different speech styles (or levels) that may involve changes in vocabulary and morphosyntax (as in, for example, Korean) at the same time. These are also closely linked to issues of *politeness*, which is another topic that figures prominently in some types of pragmatics.

Discourse deixis, on the other hand, can be seen as a special type of local or temporal deixis because it locates utterances not in the 'physical' space or event structure the interlocutors find themselves in, as we saw in our earlier examples, but actually creates references to prior *co-text*, as in expressions like *As I mentioned earlier* . . . , or *On page 22*. . . .

The issue of definiteness versus indefiniteness basically revolves around the degree of 'familiarity' or 'unique identifiability' that is expressed through a reference. Thus, for example, definite articles and pronouns that occur in or as a noun phrase are generally assumed to produce the most specific references that easily help us to identify a referent unambiguously, while indefinite articles or general quantifiers, such as *some* or *any*, supposedly work less well for uniquely identifying a referent (see Abbott, 2004). However, there are some problems with these assumptions, as you can easily see if you look at sentences like *I just saw a man standing across the street and looking into our window* or the frequently cited *The king of France is bald*, where in the first example, clearly a very specific man, performing a specific action, is referred to using an indefinite article, while in the second example, a nonexistent personality is referred to via a so-called *definite description*, that is, a noun phrase with a definite article.

Speech Acts and Cooperative Behavior

The notion of speech as a kind of action was originally expressed by the 'ordinary language philosopher' Austin in his book *How to Do Things with Words* (Austin, 1962). There, he contradicted the traditional assumption, dating back to the days of Aristotle, that *sentences* are only used to express *propositions*, that is, facts that are either **true** or **false**:

> It was too long the assumption of philosophers that the business of a 'statement' can only be to 'describe' some state of affairs, or to 'state some fact', which it must do either truly or falsely. (Austin, 1962, p. 1)

To prove this point, he developed the theory of *performative verbs* (pp. 14–24), that is, verbs whose use actually constitutes an action, such as *promise*, *christen*, *name*, *declare*, and so forth, which are generally also used in conjunction with a first person pronoun and can also be reinforced by the adverb *hereby*, as in, for example, *I hereby declare this meeting closed*. He later extended this theory into a more general theory of verbal action that distinguished between three different types of function of an utterance:

1. *locution(ary act)*
2. *illocution(ary act)*
3. *perlocution(ary effect)*. (pp. 98–101)

Function (1) essentially comprises the (physical or syntactic) form of the utterance, (2) the basic intention of the speaker in producing it, and (3) the effect it produces in the hearer. Let's try to clarify this using an example: if I say something like *Can you reach the top shelf?* to you, then the locutionary act would simply consist in me uttering these words with the appropriate rising intonation, the illocutionary part would most likely be me indirectly asking you for help in getting something off this top shelf (that I myself cannot

reach), and the perlocutionary effect would hopefully be for you to recognize my indirect question and ask me in turn what I'd like you to fetch for me from there. However, according to Austin, these functions can only be successfully performed if a number of felicity conditions ("Conditions for Happy Performatives") (Austin, 1962, pp. 12–13) are fulfilled, for instance that the hearer understand and accept the intentions of the speaker or that certain conventions or conventional procedures are followed, such as, for example, in a marriage procedure.

John Searle later developed Austin's ideas further and even claimed that speech acts play *the* most central role in communication:

> The unit of linguistic communication is not, as has generally been supposed, the symbol, the word or sentence, but rather the production or issuance of the symbol or word or sentence in the performance of the speech act . . . More precisely, the production or issuance of a sentence token under certain conditions is a speech act, and speech acts . . . are the basic and minimal unit of linguistic communication. (Searle, 1969, p. 16)

To differentiate between the 'locutionary elements' of a sentence, he draws a distinction between "propositional" and "illocutionary force indicator[s]" (p. 30). The force of an utterance, according to him, is indicated through "illocutionary force indicating devices" (or IFIDs, for short) which include "word order, stress, intonation contour, punctuation, the mood of the verb, and the so-called performative verbs" (p. 30).

He identifies five main classes of speech acts, *assertives* (e.g., stating, claiming, reporting), *directives* (e.g., ordering, requesting, demanding), *commissives* (e.g., promising, offering), *expressives* (e.g., thanking, apologizing, congratulating), and *declarations* (e.g., resigning, dismissing, sentencing, christening).

In an attempt to explain how meaning can be expressed and understood in such an 'indirect way,' another ordinary language philosopher, H. P. Grice, formulated the *cooperative principle* (often abbreviated CP). In this, he basically claims that participants in a verbal interaction behave largely cooperatively, both in the construction and interpretation of what they say. The CP embodies a set of *categories*, generally these days referred to as *maxims*, although Grice himself in fact used this term to refer to the subparts of each category. A brief summary of these categories is given below:

1. Quantity: 'say just as much, but no more, than required.'
2. Quality: 'only say what you think is true and you can prove.'
3. Relation: 'only say what is relevant.'
4. Manner: 'be clear, unambiguous, and brief.'

The CP has often been criticized a series of strict rules that are generally untenable, but what most of its critics seem to have overlooked is that they are just guidelines for best case behavior, as well as expressing certain expectations most interlocutors would bring into a verbal exchange, anyway. However, there are certainly accidental or deliberate cases—referred to as *flouting*, *violating*, *infringing*, *opting out of*, or *suspending* one or more of the categories (see Thomas, 1995, for some examples)—where the CP is not adhered to in almost all conversations.

As there seems to be a certain degree of overlap between the different categories of the CP, frequent attempts were made to reduce and 'streamline' the categories involved in explaining the mechanisms involved in the cooperative construction of meaning, most notably by Sperber and Wilson, Horn, and Levinson. The simplest of these is Sperber and Wilson's, who make do with only a single principle, that of *relevance*, claiming that "the expectations of relevance raised by an utterance are precise and predictable enough to guide the hearer toward the speaker's meaning." (Wilson & Sperber, 2006, p. 608)

At the next level, we find Horn's dual distinction between the **Q**(uantity) and the **R**(elation) principle (Horn, 1984, p. 13), where the former incorporates the 'sub-maxims' "MAKE YOUR CONTRIBUTION SUFFICIENT" and "SAY AS MUCH AS YOU CAN" (p. 13) and the latter "MAKE YOUR CONTRIBUTION NECESSARY" and "SAY NO MORE THAN YOU MUST" (p. 13).

In contrast to Horn, Levinson posits the three principles of Q(uantity), I(nformativeness), and M(anner), where the latter may be better classified as *markedness*, though. One further important distinction to both Grice and Horn is that each of Levinson's principles involves cooperative efforts on both the part of the speaker and the hearer.

Technically speaking, though, one could argue that both Horn's and Levinson's principles do not really represent full reductions of the Gricean system, in particular also because they both still do not seem to fully reject the role of *Quality* (Horn, 1984; Levinson, 2000), but which simply does not form part of their systems, as they are primarily concerned with implicatures and inferencing.

Pragmatics Applied

Having discussed all the relevant theoretical issues in pragmatics, we can now turn to the practical aspects of how and where these theories have been and may be applied in the analysis of discourse and interaction. Issues like reference, deixis, and (in)definiteness, which are more grammatical in nature, can relatively easily be incorporated into the regular investigation and teaching of grammar, usually in the context of analyzing written language. Here, we would mainly be dealing with issues such as *cohesion* or *coherence*. Research into the former can improve our understanding of how texts 'hang together' through the use of conjunctions, ellipses, pro-forms, and so forth, and which strategies allow authors to link up the different parts of a text to improve its flow, as well as to make it more 'compact' by eliminating redundancies. Investigating coherence, although it may formally involve some of the same features, is more concerned with identifying the logic behind the sequencing of utterances, whether reference is assigned unambiguously, and deixis successfully employed to reflect spatial and temporal order or meaning.

Those issues like presupposition, implicature and speech acts that embody even more context-dependent cooperative or cultural/conventional mechanisms, as well as maybe a certain degree of indirectness, and tend to involve more lexicogrammatical or semantic aspects, are much more difficult to handle because they follow less clearly defined or researched patterns. Due to this fact, research into them has often been focusing on speech acts in relation to exchange structures in spoken interaction, as in the Birmingham tradition of *discourse analysis* (see Coulthard, 1992), which initially concentrated on classroom interaction, or on identifying certain social norms and sequencing of speech events, two of the major foci in *conversational analysis* (see Seedhouse, 2005). More recent approaches to discourse analysis, as well as sociopragmatics, also tend to focus more strongly on the sequencing and social aspects of linguistic utterances, investigating issues such as *adjacency pairs* or *preferred responses*, which has also had an influence on communicative approaches to language teaching. Different other strategies of verbal interaction, such as the use of *discourse markers* (Jucker & Ziv, 1998; Fischer, 2006), *backchannels*, or the use of (meaningful) *filled pauses*, have more recently also become more of a focus of attention. Issues of politeness and its relationship to (in)directness have been investigated in studies on cross-cultural and interlanguage pragmatics (see Rose & Kasper, 2001, or Bardovi-Harlig, 2002, for some general background).

As pointed out earlier, though, a fair degree of the 'research' in the Anglo-American tradition is still carried out using constructed examples, so the adoption of a more data/corpus-oriented approach in general would certainly be preferable. Research in *corpus*

linguistics and attempts in computational linguistics to improve *dialogue systems* (Leech & Weisser, 2003) have already led to the development of extended *speech act taxonomies* or other aspects (Allen & Core, 1997) of identifying the different levels of meaning involved in constructing meaning in dialogues. Identifying these different levels then also makes it possible to annotate large bodies of data (semi-)automatically, for which both statistical (Stolcke et al., 2000) and symbolic (Weisser, 2004) means have been developed.

Although it is of course still possible to conduct non-computer-based pragmatic analyses in the traditions referred to above, a more widespread dissemination and adoption of pragmatically annotated corpora for research would probably make it considerably easier to investigate all the diverse topics in spoken and written interaction.

SEE ALSO: Analysis of Dialogue; Analysis of Discourse and Interaction: Overview; Corpus Linguistics: Overview; Inference and Implicature; Pragmatics: Overview; Speech Acts; Speech Acts Research

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Pragmatics of Asynchronous Computer-Mediated Communication

KEIKO KITADE

Computer-mediated communication (CMC) refers to any communication that occurs when human beings interact with one another through messages exchanged via networked computers. Asynchronous CMC (ACMC) occurs when users are not online simultaneously while the messages are exchanged; messages are stored until the user appears online. The distinction between synchronous and asynchronous CMC is controversial because some devices are used for both communications, and the chat feature is not fully synchronous in terms of the process of message transmission (e.g., Garcia & Jacobs, 1999). There are various modes of ACMC, including text-based one-to-one (e.g., e-mail), multiple participants (e.g., Listserv, discussion forum, Twitter, or Wikipedia), or feedback-oriented (e.g., blogs and Web pages). In addition, some audio- or audiovisual-based ACMC media (e.g., Wimba, voice mail) are also available, and many sites that enable multimodal forms of communication combining various types of CMC (e.g., social networking) have become popular.

Over the last 20 years, as CMC use has increased exponentially, it has been increasingly recognized as a genuine mode of communication, and an increasing number of studies have focused on language use in ACMC (also known as asynchronous computer-mediated discourse or ACMD). During the early development of ACMC, most studies focused on the specific characteristics of ACMC compared to traditional modes of communication (e.g., face-to-face) and synchronous CMC. However, more recent studies in ACMC pay attention to the new context that emerges with ACMC and attempt to identify its contextually specific interactional features. This shift in focus is found in studies of both general and L2 (second or foreign language) contexts; however, the new contexts that ACMC offers to L2 education contribute significantly to the pedagogy and methodology of L2 pragmatics in particular. Therefore, this area is discussed separately.

Medium-Specific Features of ACMC

The interactional and discourse features of CMC are more distinct and reflect a more complex evolution than merely the aggregation of spoken and written modes. CMC is often referred to as "Netspeak" (Crystal, 2001), a definition that clearly identifies it as a style of communication that is distinct from traditional modes of communication. Indeed, most studies in the early development of CMC compared ACMC with face-to-face communication by focusing on the negative or restrictive features that are specific to ACMC (e.g., reduced social cues, less interactive, less coherent); this focus encouraged the development of innovative discourse features to overcome or utilize such features.

Most CMC media that emerged during the early development of CMC were text-based; therefore, one of the salient features of ACMC that was recognized early on was "reduced social contextual cues" (i.e., prosodic cues such as intonation, tone of voice, gesture, and facial expressions). The effect of "reduced social cues" has been analyzed from different approaches. "Reduced social context cues theory" (Sproull & Kiesler, 1991) compares

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the participation patterns of social factors in a face-to-face meeting with a computer-conferencing system and finds that a lack of social contextual cues inhibits the influence of social factors such as gender, age, ethnicity, and social status. This inhibition results in more equal participation and increases the level of aggression among participants. The "social identification/deindividuation effect" (SIDE) model (e.g., Lea & Spears, 1991) suggests that the participants in CMC heavily rely on remaining social cues (e.g., gender, status, categorical membership, word choice), and that certain stereotypical expectations influence user attitudes and behavior. Furthermore, the hyperpersonal model (Walther, 1996) reveals that online participants take advantage of the communicative limitations of CMC and select intentionally to present positive and desirable cues to their partners. Participants with more exposure to CMC tend to utilize such features and create more thoughtful and carefully edited messages.

The availability of editing time may enhance such features in ACMC and may affect the level of formality and politeness that participants use. While some researchers have claimed that ACMC is often less formal or polite than traditional forms of written interaction, other researchers have suggested that the limited time that is available for constructing and editing messages in ACMC may increase the writers' focus on the contextual appropriateness, which may result in the use of more formal and polite language (Herring, 2002). Bisenbach-Lucas (2006, 2007) examined e-mail requests written by graduate students to their professors; he found that e-mail communication is also sensitive to situational factors (i.e., status differences, level of imposition, and the role and obligation of participants) in the same way as traditional modes of communication (i.e., more direct strategies are used for lower-imposition requests). Another important study, which compares e-mail and voice mail (Duthler, 2006), suggests that e-mail often offers the opportunity for increased politeness, owing to the practical opportunity to edit the document. However, some studies of ACMC found that the types of conventions used in ACMC, and the frequency with which they were used, varied considerably according to user exposure to the usage of specific ACMC (e.g., Gains, 1999).

In addition, the time intervals that exist between the types of exchanges encourage a distinct discourse structure in comparison to synchronous communication. ACMC users are more constrained in turn taking and topic management in comparison to users of synchronous communication, due to the lack of immediate feedback and multiple topics in a message (Herring, 1999). Sotillo (2000) compares synchronous and asynchronous online discussions by ESL students and suggests that, with their question-response-evaluation format, the former offer an interaction that is closest to that of traditional classroom interaction. The reduced interactivity that is an unavoidable characteristic of asynchronous and text-based communication encourages ACMC to enable multiple functional moves at once (e.g., initiation and responsive actions). In addition, related moves are often located apart, which can make them appear incoherent. Because of this apparent incoherence, initiation moves in ACMC (such as questions and requests) are frequently ignored or more overtly expressed. Those who are involved in asynchronous discussions utilize their editing time by applying innovative strategies to control the quality of the necessary and limited information that is exchanged (e.g., by providing optional information in parentheses as a secondary resource) and to maintain semantic coherency (i.e., topic thread) over multiple, sometimes disordered, moves (e.g., by explicitly referring to the topics in previous messages in the response, quoting previous messages, and naming addressees).

While ACMC has its own unique interactional features, it varies significantly according to medium and situational factors. Herring (2007) suggests that some technological features in CMC (i.e., synchronicity, message transmission, persistence of transcript, size of message buffer, channels of communication, anonymous messaging, etc.) should be considered for CMC analysis.

The Variation of Pragmatic Features in ACMC Contexts

Apart from medium factors, Herring (2007) incorporates Hymes's classification in spoken discourse and describes some social and situational factors that may influence CMC (i.e., participation structure, participant characteristics, purpose, topic or theme, tone, activity, norms, and code). Some earlier studies (e.g., Herring, 2000) suggest that such interactional patterns in ACMC vary according to the static social attributes of the users (e.g., age, gender, or nationality), while more recent studies emphasize the contextually sensitive aspects of ACMC and further consider each ACMC context as a "speech community" where members actively construct community-specific language.

In addition to the characteristics of the participants, other situational factors of each community also shape its ACMC. For example, the choice of formal or casual linguistic style or politeness levels may vary according to the norms of each discussion forum (e.g., Nishimura, 2008). Moreover, while advising in general is considered as a threatening act, a study of peer advice in a public blog community (Kouper, 2010) suggests that advising in the community frequently promotes personal information sharing and thereby contributes to community building. Some more recent studies, particularly those that adopted a constructivist approach, find that interactional features are community-specific and constructed through the development of the online community. The development of a community is indicated with the change of language use in the work of Cassell and Tversky (2005). In their study, at an online intercultural discussion held over a three-month period, participants' use of the first-person singular pronoun decreased as their regional differences receded and they gradually became part of the community. In sum, contextual factors as well as technological factors influence the types of ACMC, and certain types of linguistic behavior may also promote community building. The growing number of social networking sites promotes various types of virtual contexts where members not only exchange information but also engage in community-specific activities.

Pragmatic Features of ACMC in L2 and L2 Learning Contexts

Studies examining the role of ACMC in L2 contexts no longer focus solely on investigating specific advantageous features that ACMC can offer in an L2 learning context; instead, most now explore the new contexts that ACMC allows L2 learners to access. These studies emphasize the media-specific features of ACMC in the L2 context, and suggest that CMC encourages discourse that is more student-oriented and encourages student initiative and equal participation. Asynchronicity itself allows students to plan their discourse, which encourages them to use language that is more syntactically complex (Sotillo, 2000) and appropriate to the context.

An e-mail from a student to a professor is one of the most common modes of ACMC. However, Asian non-native speakers (NNSs) tend to use a style that is distinct from that of NSs (native speakers), in terms of their use of mitigation, emphasis on personal needs, use of more direct requests, and use of lexical rather than syntactic politeness (e.g., Bisenbach-Lucas, 2007). How NNSs express politeness is dependent on the linguistic context, and can vary according to the effect of the pragmatic transfer from L1 or the learner's lack of L2 linguistic knowledge. Most studies find that the time offered to L2 learners by ACMC is usually insufficient for them to overcome such differences and that pedagogical intervention is necessary for L2 learners who often communicate with e-mail in their learning context. These comparative e-mail studies have also highlighted the methodological limitations of applying the Cross-Cultural Speech Act Realization Project (CCSARP) framework developed by Bulm-Kulka, House, and Kasper (1989) to this context. Bisenbach-Lucas (2006) suggests that the analysis of speech acts and e-mail is naturalistic data, and that the

coding category of CCSARP, which was developed as a discourse completion test, needs to be revised to ensure that it can be applied to new media.

One of the most significant advantages of CMC in the L2 classroom is the opportunity for students to engage in meaningful interaction with native-speaking keypals over an extended period. Computer-mediated partnerships function without geographical and temporal restraints (e.g., Belz & Thorne, 2006) and can thereby connect culturally divergent participants through a virtual community. Some studies in computer-mediated partnerships emphasize the availability of an authentic target language (TL) model, particularly in terms of the pragmatic aspects that native-speaking keypals can help to clarify. Other studies have focused on raising awareness of intercultural aspects by encouraging the establishment of personal relationships in the intercultural community.

Utilizing the exposure of TL input in a computer-mediated partnership, Vyatkina and Belz (2006) carry out a corpus-driven study to examine the development of L2 pragmatics. As CMC enables storage and documentation of interactions, both NSs and learner corpora are valuable elements in the instruction of pragmatics. The NS corpus is used as a TL model, against which the NNS corpus is compared, to indicate the learners' difficulties. This innovative corpus-driven approach can enhance the methodological and pedagogical dimensions of L2 pragmatics. It offers the methodological advantage of documenting the learners' pragmatic development alongside longitudinal data. By tracking how learners' interpragmatic production develops, the factors that determine this may be identified. Vyatkina and Belz (2006) examine the use of the German modal particle (MP) in learner corpus (e-mail and chat) to reveal learner development patterns; they suggest that the formulaic use of MP and the particular function of MP that is presented in the pedagogical intervention are more likely to be replicated in subsequent messages. CMC also leads to the availability of authentic materials that can be useful for L2 pragmatic instruction. Not only are documented NS corpora genuine, but they also allow learners to build an interpersonal relationship through interaction. Vyatkina and Belz (2006) conduct a contrastive learner corpus analysis to examine the effect of different types of pedagogical interventions in CMC contexts; they find that learners have increased metapragmatic awareness and that explicit overenhanced instructions are more effective than other types of interventions.

A growing number of studies in computer-mediated collaborative learning highlight the role of intercultural relationship-building encouraged by CMC, particularly where L2 learners become increasingly aware of pragmatic aspects (Kramsch & Thorne, 2002). L2 learners frequently face conflict in their expectations and communication styles when engaging in online intercultural communication (such as text formality or frequency of postings). Thus, pedagogical intervention is necessary if learners are to have the opportunity to reflect on their interaction and the significance of such conflicts. This reflection raises learners' pragmatic and cultural awareness, deepens their understanding of other cultures, and encourages a de-centered perspective, all of which are crucial for intercultural communication. As CMC enables multicultural communication for L2 learners, both in institutional and noninstitutional contexts, it is clear that L2 language education can benefit from the focus on interpersonal relationship-building, where pragmatic aspects play a significant role.

Conclusion

In recent years, the significance of ACMC has changed drastically, as has the focus of studies into the pragmatic aspects of ACMC. The focus is no longer on the media-specific features of ACMC, but rather on the new contexts that ACMC provides, particularly on the contextually sensitive and dynamic interactional features of ACMC. Studies of how ACMC functions in L2 contexts no longer only emphasize the effect and utilization of

ACMC; instead, most studies now investigate actual ACMC contexts encountered by L2 learners and examine how this intercultural communication improves learners' pragmatic and cultural awareness. These shifts in focus suggest that the pragmatic features of a particular ACMC are not simply a result of the media or device itself; rather, they are shaped by the particular ACMC context, which is defined by learner negotiations of communication styles. As technology and ACMC continue to progress, the accessibility and usage of ACMC (e.g., using multiple and hybrid channels of communication, the growing use of social networks and mobile devices) and learners' exposure to varied online contexts will continue to influence the future development of ACMC.

SEE ALSO: Intercultural Communication; Online Communities of Practice; Politeness in Computer-Mediated Communication; Pragmatics in Learner Corpora; Pragmatics of Second Language Computer-Mediated Communication

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Pragmatics of Chat

CARL S. BLYTH

Introduction

The term "chat," when used in association with computer-mediated communication, refers to synchronous computer-mediated discourse (SCMD) that takes the form of either private interaction (e.g., one-on-one communication via instant messaging) or public interaction (e.g., group communication in a chatroom). Pragmatic research on SCMD focuses on how linguistic signs are employed in chat contexts and how different meanings and intentions are negotiated among social participants through online interaction. The pragmatic analysis of online chat entails the examination of heterogeneous linguistic phenomena and comprises different approaches and subfields—speech act theory, conversation analysis, ethnomethodology, interactional sociolinguistics, and critical discourse analysis—to name but a few.

In the first section of this entry, the fundamental properties of messaging systems that affect the pragmatics of chat discourse are described. In subsequent sections, pragmatic features typically associated with chat discourse are categorized and discussed in terms of computer-mediated discourse analysis (CMDA). CMDA is a synthetic approach that emphasizes the centrality of discourse for understanding online behavior (Herring, 2004). CMDA organizes research methods and issues around four domains of language: structure (typography, orthography, morphology, and syntax), meaning (speaker intention and illocutionary force), interaction (turn taking and discourse coherence), and social behavior (power, gender, and identity). Thus, following CMDA, this entry organizes pragmatic chat phenomena according to the three above domains relevant to the study of pragmatics: meaning, interaction, and social behavior. The phenomena are not intended to be exhaustive, but rather to represent the different types of pragmatic chat research conducted within these domains. In the final section, promising lines of future research are discussed.

Fundamental Properties of Chat Messaging Systems

Herring (2001) stresses that different properties of computer messaging systems, such as synchronicity, transmission type, and modes of communication, have a profound impact on the pragmatics of online discourse. *Asynchronous* forms of computer-mediated discourse (ACMD), such as e-mail or threaded discussion groups, do not require users to be logged on at the same time in order to communicate. In contrast, chat environments, private or public, are *synchronous*, meaning that they require users to be logged onto the same program at the same time in order to exchange messages. The synchronous nature of chat discourse results in ephemeral and dynamic messages; one message quickly follows another message, thereby creating a flow of discourse in the chat program's interface. As a consequence, users must periodically scroll down in the chat interface to keep up with incoming discourse (Werry, 1996).

Text-based chat has been the focus of the majority of published research due to its historical precedence, although spoken chat communication via Skype and other forms of Voice-over-Internet-Protocol (VoIP) transmission are gaining in popularity. Herring (2001)

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contends that most users view text-based chat as inherently conversation-like. The most obvious evidence for this claim is the common term itself—*chat*. In general, the term refers to any unplanned conversational discourse of an informal nature. As such, the term typically indexes genres that exhibit features of informal orality. (See the 2011 special issue of the online journal *Language@Internet* for a complete analysis of "computer-mediated conversation.")

Another important property of chat messaging systems is their facilitation of either one-way or two-way transmission. One-way transmission means that a recipient cannot view a sender's message while it is being composed. In one-way transmission, the recipient must wait for the sender to submit or send the message before it appears on the recipient's screen. Two-way transmission allows a recipient to see a sender's message as it is being composed. Most first-generation chat programs are one-way transmission only. However, "highly simultaneous," two-way transmitted chat is becoming popular (Anderson, Beard, & Walther, 2010). In addition to the features of synchronicity and transmission type, chat can also be classified in terms of modes—text only or text plus video, audio, and graphics. First-generation chat is largely text-based, whereas second-generation chat is increasingly "bimodal" or "multimodal," that is, textual messages accompanied by audio, video, or both. Finally, bimodal or multimodal chat is typically conducted by means of two-way transmission, that is, the recipient can hear the sender's audio or see the sender's video in real time.

Meaning

Pragmatic meaning refers to contextualized meanings of words and utterances (e.g., speech acts) and larger functional units (e.g., "macrosegments," Herring, 1996). Studies investigating the intended meaning of online participants' linguistic production typically invoke the well-known pragmatic constructs of speech acts, illocutionary force, face, and politeness. This line of research is exemplified by studies conducted on the pragmatic meaning of emoticons (short for "emotion icons") that proliferate in chat, as well as e-mail, blogs, and bulletin boards (Merchant, 2001; Baron, 2004; Provine, Spencer, & Mandell, 2007). These graphic signs are usually characterized as either iconic indicators of emotion that map directly onto facial expressions (e.g., :-(to indicate unhappiness), or as indicators of non-emotional meanings mapped conventionally onto facial expression (e.g., ;-) to indicate joking or :-0 to indicate shouting). Dresner and Herring (2010) contend that, in addition to facially associated meanings, emoticons may function as indicators of illocutionary force, that is, as an index of the relevant speech act being performed by the utterance. As an example of this pragmatic function, Dresner and Herring (2010, p. 258) cite the following exchange posted to a help chatroom on the Internet service provider AmericaOnline (AOL):

> JKingsbury : GUIDE>have you ever made a home page on aol?
> Guide ASH : JK, yes and I can't get rid of the stupid thing! ☺

The smiley face emoticon changes the interpretation of the guide's utterance from an unhelpful and selfish gripe into a "humorous complaint that demonstrates a friendly attitude towards the user" (Dresner & Herring, 2010, p. 258). The characterization of emoticons as "shorthand substitutes for longer textual expressions of intention" is corroborated by the comparatively higher rates of emoticon usage in synchronous chat where efficiency considerations play an important role in communication (Dresner & Herring, 2010, p. 261).

Emoticons have also been analyzed in terms of the pragmatic notions of face and politeness. Brown and Levinson (1987, p. 61) conceptualize face as "the public self-image that every

member wants to claim for himself, consisting in . . . negative face [and] . . . positive face" (p. 61). Reframing face and politeness in conversation analytic terms, Golato and Taleghani-Nikazm (2006) claim that adherence to the preference organization of talk-in-interaction is generally interpreted as polite behavior, whereas deviation from preference organization is interpreted as impolite behavior. More specifically, Golato and Taleghani-Nikazm (2006) demonstrate that face-threatening acts in chat discourse, such as requests, are typically marked by emoticons along with other graphic features of dispreferred structures (e.g., smiley faces to mitigate the impact of a request and a series of dots or dashes to display hesitation or delay). They suggest that these chat features are "graphic representations of affiliative nonverbal behaviors in ordinary conversation such as facial expressions, intonation contours, and interactional delays, all of which are missing from online communication" (p. 318).

Interaction

Research on chat interaction has primarily focused on turn taking, discourse management, and the creation of communicative coherence. Following the influential model of Sacks, Schegloff, and Jefferson (1974), turn taking is conventionally viewed as a system comprising turn construction and turn allocation. Turn construction refers to the form of a turn-at-talk, that is, whether it is constructed of a word, a phrase, a clause, or a complete sentence. Turn allocation refers to the techniques used by participants to select speakers. In addition to these concepts for understanding patterns of interaction, Schegloff and Sacks (1973) emphasize the importance of the *adjacency pair*, that is, the notion that communication is fundamentally based on a sequence of paired actions (e.g., question/answer, first assessment/second assessment).

Several researchers have challenged the applicability of face-to-face turn taking as an explanatory model for CMC interaction (Cherny, 1999; Herring, 1999; McKinlay, Procter, Masting, Woodburn, & Arnott, 1993). Herring (1999) identified two major obstacles to smooth turn taking in CMC environments: the lack of simultaneous feedback and the disruption of turn adjacencies. Because chat messages are displayed in terms of when they are received by the server, the turn-taking system is often disrupted and therefore not always helpful for interpreting a message's contextual relevance. In other words, chat discourse appears to be more fragmented and potentially incoherent than face-to-face discourse (Herring, 1999). To overcome this problem, participants in public chats often employ the compensatory strategy of *addressivity*, the practice of explicitly naming the recipient of a message in the body of the message itself (Werry, 1996).

Recent studies have problematized the binary distinctions of earlier studies such as oral versus written and face-to-face versus online. Anderson et al. (2010) studied the effects of highly simultaneous chat systems to determine whether participants would adopt face-to-face techniques for turn allocation. The data showed that chat participants did not adopt the *no gap, no overlap* ideal of spoken conversation, but rather creatively employed the use of overlapping intermittent messages followed by strategic pauses. Similarly, Condon and Čech (2010) studied the discourse management strategies adopted by dyads engaged in decision-making interaction in three modalities: face-to-face, synchronous chat, and asynchronous e-mail. Their findings show that many features commonly associated with writing may be better understood as characteristic of asynchronous communication. Baron (2010) tested the common assumption that instant messaging (IM) mirrors informal spoken-language turn construction by analyzing IM conversations among American college students in terms of the intonational unit as operationalized by Chafe (1994, 2001). Her data demonstrated an interaction between gender and spoken versus written norms. Male

dyads tended to break their messages into smaller units resembling spoken discourse norms, whereas female dyads produced messages that demonstrated more similarity with written syntax.

Social Behavior and Identity Construction

Another line of SCMD pragmatic research has focused on the correlations of macro-sociological categories (e.g., gender, age, ethnicity) with identifiable social behaviors and styles. The goal of this research is to understand how identities are constructed using the linguistic and extralinguistic resources afforded by different online environments. Of all the social identities analyzed in these studies, gender has been the most frequently examined. In the early 1990s, Herring (1992, 1993, 1994) conducted a series of studies that focused on male and female stylistic patterns in academic discussion forums. Herring's data showed that men were less polite and more adversarial than women, who used more hedges and politeness markers. However, studies of chat environments gave mixed results. Cherny (1994) noted stereotypical gendered behavior in interaction in MOOs, a type of multiparticipant virtual reality game ("MOO" stands for "MUD object-oriented"). Similarly, in a study of Internet relay chat, Herring (2003) noted that females used more positive emoticons while males were more aggressive and overtly sexual. In contrast to these findings, Rodino (1997) reported that Internet relay chat promoted play with traditional gender identities. And Danet (1998) found that traditional gender binaries tended to break down in MUDs (multiplayer real-time virtual words) due to the greater anonymity afforded by these environments. ("MUD" stands for "multiuser dungeon," "multiuser dimension," or "multiuser domain.") Finally, several studies have suggested that traditional gender distinctions may be giving way to a more gender-neutral style favored by teenagers in CMC environments (Gross, 2004; Subrahamanyam, Greenfield, & Tynes, 2004).

Future Research

Herring (2002) argues that future CMC research must address several biases: a text bias, a group bias, and a synchronic bias. To date, most of the studies have focused on text-based interaction, and yet audio and video chat technologies are rapidly replacing text-only chat. Future research will need to explore the challenges of multimodality in all its forms. What are the advantages and limitations of different modalities—audio, text, video—for different communicative purposes? What kinds of information do these different modalities carry? How do they interact to create meaning? Current research has also privileged the study of public chatroom discourse over the study of private forms of chat such as instant messaging. Herring (2002) contends that researchers should not assume that findings for group communication scale to small groups or one-on-one communication. And finally, after nearly two decades of data collection, researchers have amassed CMC corpora that would allow for larger-scale, longitudinal studies to explore the evolution of online communicative practices. In light of this wealth of data, Baron (2010) calls for future studies that compare a wider range of data, for example, comparisons of chat practices of different age cohorts (middle schoolers vs. college students vs. adults) as well as comparisons of different nationalities. Do users change their chat practices as they grow older? Do teenagers today employ more gender-neutral discourse styles than an earlier generation of chatters? Do findings for American chat differ from cultures where mobile phone texting is more deeply entrenched, for example in Europe and Asia? Despite these new research questions, one thing is clear: New modes of communication such as online chat are changing the pragmatics of how people interact; and the study of these

new practices and conventions for L1 (and increasingly L2 speakers) will continue to grow in the coming years.

SEE ALSO: Computer-Mediated Communication and Second Language Development; Distance Language Learning; Language Teacher Training in Technology; Mobile-Assisted Language Learning; Online Communities of Practice; Pragmatics of Asynchronous Computer-Mediated Communication; Pragmatics of Second Language Computer-Mediated Communication

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Pragmatics of Lingua Franca Interaction

JULIANE HOUSE

This entry looks at the pragmatics of today's most important lingua franca: global English. In the first part, the concept of "lingua franca," the nature of English as a lingua franca (ELF), and the role ELF has come to play in a globalized world are described. Second follows a review of several empirical studies on the pragmatics of ELF, and finally some conclusions are drawn.

What Is a Lingua Franca?

In its original meaning, a lingua franca—the term comes from Arabic *lisan al farang*—was simply an intermediary or contact language used, for instance, by speakers of Arabic with travelers from Western Europe. Its meaning was later extended to describe a language of commerce, a rather stable variety with little room for individual variation. This meaning is not applicable to today's foremost lingua franca: global English, whose major feature is its enormous functional flexibility and spread across many different linguistic, geographical, and cultural areas, as well as its openness to foreign forms. In both its international and intra-national use, ELF can best be regarded as a special type of intercultural communication where each combination of interactants, each discourse community, negotiates its own lingua franca use in terms of code-switching, discourse strategies, negotiation of forms, and meanings.

In its role as an auxiliary language, English can be compared to Latin at the time of the late Roman Empire, or French in the 17th and 18th centuries. When the so-called Western world in the second half of the 20th century came to depend on border-crossing communication; political, economic, and scientific cooperation; and supranational organization, it so happened that English was in the right place at the right time (Crystal, 1997). By then English had spread into so many ethnically diverse societies, and had already acquired some cultural distance from its original British culture. It therefore offered itself as a convenient language for communication. Another, more linguistic factor that helped propel English into a position of first choice for an auxiliary language is the fact that English has long been, especially in its lexical repertoire, a rich mixture of Romance and Germanic languages, languages of supra-regional importance in their own right.

ELF is not in any sense a restricted language, but a means of communication showing full linguistic and functional range. Users of ELF are not "learners," but rather multilingual individuals possessing "multicompetence" (Cook, 1992), which is to be taken as a yardstick for describing and explaining ELF communication. Relevant is here the rich literature on bilingualism, where the notion of a "simultaneous activation" of speakers' native tongue and ELF in the cognitive structures of bilingual subjects is widely accepted today (Grosjean, 2001).

A major characteristic of ELF is its multiplicity of voices. ELF is a language for communication, a medium that can be given substance with different national, regional, local, and individual cultural identities. When English is used in interactions between, say, German, Spanish, and French native speakers, the differences in native interactional norms,

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standards of politeness, and feelings of cultural and historical tradition may remain intact. These norms are not shared, nor need they be. Localized or regionalized ELF varieties—whose linguistic surface is English, but whose speakers creatively perform pragmatic shifts in using ELF—are now taking over the linguistic landscape. Non-native speakers of English anywhere in the world are developing their own discourse strategies, speech act modifications, and communicative styles in their use of ELF.

ELF is no more and no less than "a contact language between persons who share neither a common native tongue nor a common national culture, and for whom English is the chosen foreign language of communication" (Firth, 1996, p. 20). How do people manage to make this type of communication work? In what follows, a number of studies that have examined ELF speakers' interactional behavior will be discussed.

Pragmatics and Discourse-Related Studies of ELF: Some Research Findings

An important early work on ELF pragmatics is Meierkord's (1996) analysis of audiotaped English dinner table conversations elicited in a British student residence from subjects of many different L1 backgrounds. She examined opening and closing phases, gambits, topic management, politeness, turn-taking, overlaps, and hesitation phenomena, and found surprisingly few misunderstandings. Trouble spots were usually not overcome by negotiations but by often-abrupt topic changes. Further results include a reduced variety of tokens, shorter turns than in native English talk, frequent use of nonverbal supportive back-channeling, especially laughter, and little interference from L1 discourse norms.

Some of Meierkord's findings were confirmed by Firth (1996) and Wagner and Firth (1997) who analyzed telephone conversations between employees of Danish companies and their foreign partners, supplementing their analyses with ethnographic information. The authors stress the "fleeting" nature of ELF talk, the fluidity of norms and participants' attempts at conversational attuning resulting in overtly consensus-oriented interactional behavior and in interactants' attempts to "normalize" potential trouble sources in a preventive way, rather than attend to them explicitly, via repair initiation, reformulation, or other negotiating behaviors.

As long as a threshold of understanding is achieved, ELF participants adopt a "let-it-pass" principle, an interpretive procedure which makes the interactional style "robust," "normal," and consensual. This ordinariness is a joint achievement of interactants, who manage to sustain the appearance of normality despite being exposed to relatively "abnormal" linguistic behavior. Achieving ordinariness is the direct outcome of the "let-it-pass" procedure, to which interactants resort whenever understanding threatens to become difficult. The "ordinariness" of ELF discourse is also achieved via a "make-it-normal" orientation: when ELF speakers are faced with interlocutors' marked lexical and phonological selections, unidiomatic phrasings, morphological vagaries, and idiosyncratic syntactic structuring, they deliberately divert attention from these infelicitous forms. This behavior is also evident in the surprising absence of "other repairs" and requests for information or confirmation, as these might expose interlocutors' linguistic "deficits" and threaten their face. They appear to be competent enough to be able to monitor each other's moves at a high level of awareness preventing breakdown through helping each other in collaborative action and joint discourse production.

An important general characteristic of ELF talk is its inherent variability (Firth, 2009). This variability is not to be equated with ELF speakers' failure to fulfill native norms, and their widely varying levels of competence in English. Rather it lies at the core of ELF

discourse, where speakers creatively exploit, intentionally appropriate, locally adapt, and communicatively align the potential inherent in the forms and functions, items, and collocations of the virtual English language they use in their performance as the need arises (Seidlhofer & Widdowson, 2007).

If ELF interactants do not seek to adjust to some real or imaginary native speaker norm, they do not conceive of themselves as learners of English as a foreign language either but rather as individual ELF users united in different "communities of practice" (Wenger, 1989; House, 2003, for application of the concept to ELF research). The notion "community of practice" is most appropriate for ELF in that the constitution of a community of practice is governed by a joint purpose, that is, to communicate efficiently in English as the chosen and agreed means of communication without, however, heeding or being constrained by English native norms.

A project specifically concerned with discourse pragmatics is the Hamburg ELF project (House, 2002, 2008, 2009; Baumgarten & House, 2007, 2010a, 2010b; House & Lévy-Tödter, 2009, 2010). Here we have collected conversational everyday ELF interactions between international students of many different L1s, institutional ELF discourse between students and faculty as well as post-hoc interviews. (This is a special domain corpus. The biggest available source of ELF data to date is VOICE, the Vienna–Oxford International Corpus of English.) The analyses of this data essentially confirm previous findings. However, several other characteristics of ELF interactions have also emerged. They will be discussed in what follows.

Recourse to L1: Pragmatic Transfer and Code-Switching

Pragmatic transfer from L1 occurs frequently in ELF discourse. Thus, Asian speakers often employ cyclical topic management, which results in non-sequitur turns-at-talk that are, however, consistently ignored by other participants, such that the talk remains "robust," "normal," and never breaks down (House, 2002). Another example of pragmatic transfer is the use of L1-specific conventions of directness. For instance, speakers of L1 German use speech acts with the high directness level conventionalized in German (Blum-Kulka, House, & Kasper, 1989), but not in English or ELF (for details see House, 2002). In the post-hoc interviews, interactants themselves ascribed such an interactional style to native discourse norms. Further, the frequent use of repetitions in ELF talk by Asian speakers not only serves to support speakers' working memory and ease processing, but can also be interpreted as pragmatic transfer from Asian languages as a sign of politeness, because explicitly verbalized acknowledgement of alter's message is considered face-supporting and consensus-building.

The second L1 related strategy is code-switching used in ELF talk mostly to overcome speakers' linguistic limitations (House & Lévy-Tödter, 2009, 2010). A case in point is the use of L1 discourse markers (such as the German gambit *ja*), in particular "uptakers" and "go-ons" (Edmondson & House, 1981). Uptakers usually occur as second-pair parts of exchanges, and go-ons are used as back-channel devices, both expressed with reduced self-monitoring, that is, automatically, "off-guard." That switching into one's mother tongue should occur in this particular interactive slot is thus easily explained. Similar findings of the frequent use of code-switching in ELF talk are reported in Pölzl and Seidlhofer (2006) with reference to the use of Arabic gambits and other L1 derived discourse phenomena, and by Jenkins (2009) who found many instances of code-switching by ELF speakers of Asian L1s. Cogo (2009) also documents code-switching in ELF discourse. Interestingly, she also found that interactants sometimes switch not to their respective L1s but to a third shared language.

Accommodation: Re-Presenting Information

In ELF talk (parts of) previous speakers' moves are frequently "represented" (House, 2002). "Represents" (Edmondson, 1981) are multifunctional gambits used to support speakers' working memory; to create coherence via the construction of lexical-paradigmatic clusters; to signal receipt and confirm comprehension. All of these uses can be interpreted as a deliberate accommodative strategy to ELF speakers' particular needs. Represents are also known in the literature as "echo-," "mirror-," or "shadow"-elements that typically occur in psycho therapeutic interviews, instructional discourse and aircraft control discourse—genres in which information is deliberately and routinely restated to ensure understanding. The fact that ELF speakers exploit this convention for their own benefit shows that their strategic communicative competence is well developed. Cogo and Dewey (2006) and Cogo (2009) also document many instances of accommodation and strategic repetition in their analyses of ELF talk.

Solidarity and Consensus via Co-Construction of Utterances

ELF speakers consistently demonstrate solidarity and consensus in the face of marked linguistic and cultural differences. For instance, speakers often help one another in cases of formulation problems, joining forces to build up gradually and jointly the discourse in a series of scaffolding moves (House, 2003, 2008). Participants' attempts to negotiate what it is that each one of them wants to convey lead to a feeling of community, solidarity, and group identity.

Re-Interpretation of Discourse Markers *You Know, I Think, I Don't Think, I Mean, Yes, So*

The pragmatic behavior of the discourse markers *you know, I think, I don't think, I mean, yes*, and *so* in ELF discourse differs from English native discourse.

You know is often described as an interpersonally oriented marker used as a hedge and signaling politeness. House (2009) reports that ELF speakers tend to re-interpret *you know* as a more self-referenced way of highlighting formulation difficulties and providing coherence in speakers' own turns. *You know* frequently co-occurs with the conjunctions *but*, *and*, *because*, even taking over their functions in stand-alone position. It is also used when speakers reveal planning difficulties by fumbling for an appropriate formulation. In such cases, *you know* is used in mid-utterance, often inside nominal, verbal, and adverbial groups to help speakers process and plan their own output, and to link stretches of discourse.

The discourse markers *I think*, *I don't know*, and *I mean* also tend to be re-interpreted in ELF talk (Baumgarten & House, 2007, 2010a). In contrast to native English use, ELF speakers often employ these markers in their prototypical meanings, preferring formal structures (main clause complement structures) over the more grammaticalized structures and pragmaticalized meanings expressed in the verbal routine forms used in native English speech. For instance, *I think* is often used in ELF talk to express speakers' subjective opinion, and *I don't know* functions as a signal of speakers' insufficient knowledge about the discourse topic. *I mean* is often used in ELF talk with a strong evaluative element over and above its main function of reformulation/clarification. It then acts as a focalizing device in a speaker's contributions, and serves as a point of departure for an explicit expression of subjective evaluation, expressing affective involvement in the topic and the discourse (Baumgarten & House, 2007).

The gambit *yeah/yes* is used in ELF talk with a variety of different functions (Spielmann, 2007; Baumgarten & House, 2010b) such as uptaking, back-channeling, agreeing, and

discourse structuring. All of these uses are potent tools for making the discourse (appear) "normal." The inherent face-saving feature of *yeah/yes* and its overall inoffensive accommodating undertone make it particularly suitable for ELF talk, where interactants are well aware of the precarious nature of their intercultural interaction. ELF speakers therefore often exploit the positive import of *yeah/yes* to downtone objections. Like *you know*, *yeah* can also serve as a self-supporting strategy. But the frequent use of *yeah/yes* in ELF discourse is probably best explained with its polyfunctionality, which renders it "communicatively effective" because a lot of pragmatic content is packed into minimal verbal form. Findings in Baumgarten and House (2010b) and House and Lévy-Tödter (2010) also point to an interesting systematic variation in the use of the tokens *yes*, *yeah*, and German *ja*: *yes* is primarily used as an agreement marker, *ja* as a back-channeling device, and *yeah* as an uptaking and structuring signal supporting speakers' own moves and turns.

The marker *so* also functions as a speaker-supportive element in ELF discourse. *So* is here used as a deictic element to both support the planning of their upcoming moves and help them summing up previous discourse stretches. *So* functions as a complex double-bind element, a (mental) hinge between what has come before and what will occur next. It certainly does not index other-attentiveness, and is not used with a strong interpersonal function. Rather *so* takes on a text-structuring, self-attentive, and self-monitoring function, acting for instance as a stop-gap "fumble" (Edmondson, 1981) to help speakers bridge formulation problems. In the majority of occurrences, *so* follows hesitation markers such as "erm" or "hmm," or pauses, and it also often collocates with the connector *and*. All these co-occurrences show that *so* in ELF talk acts as a self-prompting strategy to monitor own output and mark the resumption of speech after being "bogged down" both turn-initially and in mid-turn.

Conclusion

Given the linguistic potential of the English language available for creative appropriation and local re-interpretation, ELF speakers competently engage in self-help interactional behavior both for their own and their interlocutors' benefit, supporting each other's speech production, tolerantly letting others' oddities and infelicities pass, and generally managing to make interactions robust and normal. ELF users are bilingual or multilingual speakers who have more than one language at their disposal, and they show this in the way they mark identity, attitudes, and alliances, signal discourse functions, convey politeness, create aesthetic and humorous effects, or pragmatic ambiguity and so on. In ELF research, we have seen a radical rethinking of the norm against which speakers' pragmatic discourse behavior is matched. This norm is never the monolingual native speaker, but rather the expert multilingual user. ELF users' pragmatic fluency (House, 1996) and their strategic competence enables them to engage in meaningful effective communication, and to alternatively adhere to their L1 discourse pragmatic norms as a strategy of identity maintenance or construct new ELF norms to foster a sense of group identity in their local communities of practice. Both strategies are effective and contribute, in their different ways, to ELF users' increasing independence from English native speaker usage.

SEE ALSO: Connectives; Discourse Markers; English as Lingua Franca; Language and Globalization; Lingua Franca and Language of Wider Communication; Pragmatic Competence in Multilingual Contexts

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Pragmatics of Second Language Computer-Mediated Communication

LAWRENCE WILLIAMS

This entry provides an overview of issues related to the pragmatics of second language (L2) computer-mediated communication (CMC) with a focus on synchronous CMC (SCMC), which involves real-time exchanges between or among participants. Although the creation of the Internet and widespread access to the World Wide Web are relatively recent developments, there is an ever-growing body of research on CMC as a tool for communication and language learning, which has been fostered by the creation of academic journals that report such research (e.g., *CALICO Journal* and *Language Learning and Technology*). However, not all subfields of second language acquisition (SLA) and CMC have received the same amount or type of attention. Such is the case of pragmatics, which is much younger as a subfield of linguistics than syntax, morphology, and phonology.

As pragmatics is a more recently recognized area of inquiry in its own right, many researchers and teachers are still attempting to define and shape its aim(s) and scope. Nonetheless, Belz (2008, p. 45), for example, notes that "There is a general consensus among scholars that *pragmatics* involves the study of communicative language use in sociocultural context." The primary goal of pragmatics research is to investigate not only how language is used, but also how language is perceived and interpreted by others within a given context, which may itself be difficult to delimit and define given the fluidity of participants' relationships with one another and the ever-changing nature of communicative environments.

Fundamental Issues

In text-based SCMC, such as chat, it is important to recognize that the contextual factors and cues available to participants are often quite different from those available in face-to-face or *viva voce* (e.g., telephone) exchanges. This does not, however, mean that chat participants necessarily experience uneasiness or difficulty communicating with each other. They simply rely on the text-based discourse being produced in a real-time setting to develop a sense of the linguistic and social patterns that are used and anticipated by members of any given online community.

Interactional Competence

The important issue here, then, is to realize that SCMC poses different challenges for learners. In much of the (SLA) literature, for example, SCMC has often been—and still is—compared to traditional discourse as being deficient or lacking with regard to various types of information about participants and visual cues (although for other perspectives see Chun, 1994; Kroonenberg, 1994; Warschauer, Turbee, & Roberts, 1996); while this may indeed be the case—when compared to spoken discourse in many communication environments—such comparisons serve only to reinforce the false assumption that SCMC should or should not be different from or similar to either traditional spoken or written discourse. In order for learners to understand how to communicate in linguistically and

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socially appropriate ways in any SCMC setting, they will need to understand both medium-related aspects of SCMC and how a variety of linguistic and pragmatic devices are deployed in L2 online communities.

The Structure of CMC Interaction

The structure of interaction is another fundamental issue that creates both pragmatic stumbling blocks and learning opportunities for L2 SCMC participants. However, as is the case for the issues discussed in the previous paragraphs, this affects both native speakers (NSs) and non-native speakers (NNSs) to varying degrees and in different ways. No two SCMC environments are alike with regard to the number of participants present and the number of messages being typed (i.e., participants' level of activity), which means that turn taking and the adjacency of turns exist on a continuum: At one end, turn taking is quite orderly and easy to follow (in audio and video CMC, for example), yet at the other end, turns are taken in a seemingly random way, since so many pairs that are normally adjacent are dislocated or disrupted, as in text-based CMC (see Herring, 1999; Williams, 2004). Successful communication will depend, at least partially, on participants' ability to match or rejoin disrupted segments of adjacency pairs so that, for example, a seemingly malevolent statement can be interpreted appropriately as either an attempt at humor or an insult. Likewise, it will be necessary to understand that many statements and questions will simply receive no uptake—for whatever reason—especially in contexts where increased activity makes it impossible to maintain and link a multitude of conversational strands at the same time among dozens of participants. According to some of the existing research, L2 learners are capable of maintaining successful interactions (especially when few participants are involved) much in the same way that first language (L1) speakers are able to do (González-Lloret, 2009). L2 learners are able not only to maintain interaction but also to orient to the task they are performing and the language they use (Williams, 2003; González-Lloret, 2009), negotiating their interactions much as NSs do (Tudini, 2007). Recent studies have also explored how the medium of communication affects the interaction itself by exploring, for example, interruptions in the CMC composition process (Smith & Sauro, 2009), and turn taking and overlaps in voice CMC (Jenks, 2009). More studies are needed to understand exactly how and to what extent the medium affects the structure of L2 CMC and what pragmatic effect it has on the interaction.

Addressivity and Social Indexicality

The majority of L2 SCMC research has focused on learners interacting with other members of the same class or level; however, more recently, there has been an increasing number of studies involving telecollaboration (i.e., learners paired with L2 NSs, usually learners of the L1 of the other class), often involving both SCMC and asynchronous CMC (ACMC) (i.e., communication taking place at different times). For example, a series of SCMC and ACMC studies by Kinginger and Belz (Kinginger, 2000; Belz & Kinginger, 2002, 2003; Kinginger & Belz, 2005) exploring L2 second-person pronoun use as an important component of pragmatic competence clearly demonstrates that knowing forms (e.g., *tu/du* 'you' or *vous/Sie* 'you') is not sufficient for understanding the social consequences associated with using these forms in socially (in)appropriate ways. The research program by Belz and Kinginger (2003) has revealed that "developmental pathways toward address form use are idiosyncratic," and "historically constituted, through participation, by and for each individual language user" (pp. 641–2). In addition, other variables may also play a role in the acquisition of addressivity in CMC such as learners' characteristics, amount of communication, and participant engagement (González-Lloret, 2008a).

The social consequences of using and interpreting pragmatic dimensions of language (e.g., second-person pronouns that serve as markers of grammatical number and social indexicality) therefore emerge as a central concern of L2 SCMC pragmatics, since participation structures involving NSs tend to have characteristics that are different from those involving NNSs interacting with each other. Williams (2003) and McCourt (2008, 2009), for example, both studied (text-based) SCMC among NNSs (i.e., L1 English learners of French) at different levels of development grouped together, specifically students enrolled in the first three semesters of French at two public US universities, with one learner from each level per triad. Contrary to the findings of Belz and Kinginger (2002, 2003), Kinginger and Belz (2005), and González-Lloret (2008a, 2008b)—whose students were involved in telecollaborative work with NSs—the studies by Williams and McCourt found the learners who interacted with other learners in an *intra muros* setting commented on or noticed inappropriate *tu* (T) ('you' singular, informal) and *vous* (V) ('you' singular, formal, or plural, informal/formal) use fewer than a handful of times. Moreover, even when the (possibly inappropriate) use of T or V was raised by another learner as an issue to be resolved, it was summarily ignored by the participants, all of whom were other learners who understood that it meant *you* as a form of address, even in the case of a translation task where only either T or V would have been appropriate in specific items. The studies by Williams and McCourt, which were designed as diagnostic tools to evaluate specific morphosyntactic and sociopragmatic dimensions of the discourse of learners, demonstrated that learners engaging in NNS–NNS (i.e., learner–learner) interaction will likely require supplemental training (see Williams, 2004) or expanded opportunities for participation in a variety of social situations in order to develop (increased) pragmatic awareness.

Other Pragmatic Research in CMC

Some other studies in the area of pragmatics have explored L2 speech act acquisition (refusal and invitations) through written and oral chat (Sykes, 2005), but the other main area of research has been on the development of intercultural competence via CMC.

Schneider and von der Emde (2006) provided a glimpse into L2 pragmatics in SCMC within the wider scope of the development of intercultural competence. Their study focused on the analysis and management of conflict in telecollaborative environments, and they concluded that "fostering intercultural 'intellectual relations' should also be an important component to any (online) intercultural exchange at the university level" (p. 200). Similarly, Tudini (2007) examined the extent to which "NS chat rooms provide opportunities for learners to practice intercultural (content and pragmatic) negotiation strategies" (p. 585). Her results suggest that chat interaction can serve as a learning tool that includes the potential to foster intercultural communicative competence through negotiation, which can be "triggered by pragmatic and culture-specific content, with learners demonstrating initiative and questioning techniques as intercultural speakers" (p. 596).

Directions for Future Research

Although possibilities for future studies on the pragmatics of L2 SCMC are seemingly limitless, teachers and learners could benefit from at least three specific lines of inquiry: (a) analysis of learners' participation in non-educational CMC environments, (b) complementary quantitative and qualitative research methods and analyses, and (c) integration of human-mediated and computer-mediated communication into the same task or series of related tasks as a way of providing a more authentic or realistic communicative environment for L2 learning.

In addition to these specific lines of inquiry, it seems quite likely that video chat (see Eröz-Tuğa & Sadler, 2009) might emerge as a preferred type of SCMC (for learners and non-learners alike), since real-time audio and video will allow participants to regain some of the contextual cues and pragmatic dimensions of language that have been missing from some instantiations of text-based SCMC. In the past, although real-time video conferencing (e.g., Kinginger, 1998) has been an option for telecollaborative learning, cost seems to have constrained its use. However, due to the current availability of increasingly large amounts of relatively inexpensive bandwidth in a growing number of countries, it should soon be possible for video chat to be used widely as a tool for language learning and communication (e.g., Yanguas, 2010).

SEE ALSO: Computer-Mediated Communication and Second Language Development; Cross-Cultural Pragmatics; Pragmatics and Culture

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Pragmatics of Short Message Service

ANNA SPAGNOLLI

Definition

Technically speaking, the short message service (henceforth "SMS") is a system that allows the exchange of textual messages from one mobile phone to another. These messages (also called "texts" or, simply, "SMSs") are composed by typing on the keyboard of the phone; they are immediately delivered with an "alert" signal, and read/replied to by the receiver at his or her convenience. Although the purpose of a text can also be to send commercial information (medical, financial, and so forth), the research on the pragmatics of SMS has focused so far on SMS exchanges for personal communication. Also, although the technology allows one to send a message to many receivers, the vast majority of the studies consider one-to-one exchanges as the prototypical kind of relation supported by this service.

Before going into the details of the practices of personal SMS communication, it is necessary to understand where SMS communication can be positioned with respect to other communication modes, and the main implications of such a positioning in terms of finding the origin of a certain communication practice.

The broad category in which SMS communication falls is mediated communication, because a technology provides the venue on which the communication encounter can take place. This venue is not metaphorical or virtual, as one might think: it is supported by physical technologies; it has spatial and temporal coordinates; and is characterized by inhabiting practices including access regulation. It does not consist of the mere resources of the technical medium; rather, it depends on the ways in which these resources are singled out by the user, enriched with symbols, made sense of with usage practices. The communication environment is thus a hybrid of technical and symbolic resources, a compound that is captured in the literature by the concept of "socio-technical package" (Kling, 1980). The principle for understanding mediated communication is that communication practices and language use on the one side need to be connected with technical affordances on the other. The ensuing communication environment has been called communication "mode" (Herring, 2001), to distinguish it from communication "medium," which is characterized instead by the technology used.

Positioning a medium along the synchronous–asynchronous dimension is a common way to capture some of its technical affordances for communication. In the case of SMS, the medium allows an asynchronous exchange, since the communicants are not expected to be copresent at the same time on the mediated environment. However, confirming that the medium does not determine the usage but only affords it, SMS can also be used in quasi-synchronous exchanges, with a very short or negligible delay between a message and its reply. Other dimensions that capture the affordances of a medium refer to the communication modality: the orality–writing dichotomy is one of them; SMSs have the immediacy and informality of oral communication, most of the time, even though they are less ephemeral than an oral exchange because they are stored in the cell phone and can be retrieved at ease. But the adoption of an informal register varies according to gender and age (Ling, 2004), as will be discussed in the next section, as well as to the contingencies of each specific exchange. More specific kinds of affordance will be considered

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in the following sections, while addressing three aspects of SMS usage: its language, its functions, and its structure.

The Language of SMS

Not only popular discourse, but also scientific studies of SMSs are concerned with the lexicon and the composition of these short messages. Regarding lexicon, attention has been paid to simplifications such as abbreviations (i.e., "Fri" for "Friday"), acronyms, contractions (i.e., "Gd" for "good"), clippings (i.e., "hav" for "have"), initialism (i.e., "t" for "the") (Thurlow, 2003) and to emoticons, namely special configurations of characters that are typed sequentially in order to create a symbol or a figure (called "emoticons" since they express the emotional connotation of a message). In addition, emphasis has been put on the length and complexity of the words used; to the specific topics indexed by the words used; and to informal spelling (unconventional spelling such as "nite" for "night" or "afta" for "after"; g-clippings such as "goin"; letter/number homophones such as "2" for "to"). Regarding composition, attention was paid to message complexity (number of sentences); the usage of punctuation and capitalization; the use of openings and closings.

Both lexicon and composition are connected to sociodemographic categories, since they can vary with age, gender, or nationality. Thus, women are found to send longer messages than men in contexts as different as exchanges between friends in Norway (Ling, 2004) or TV shows in Italy (Herring & Zelenkauskaite, 2009). Younger users are more likely to use abbreviations, while capitalization at the beginning of a sentence or with names and punctuation is mostly used by young adults (Ling, 2004). This variation testifies that the medium per se cannot determine the kind of language used. The medium offers some affordance/constraints (Hard af Segerstad, 2002), which are exploited by the specific communication practices developed by the community of usage.

In the case of lexicon and composition, the practices observed adapt to technical constraints. One main technical constraint is that each message has a size limit, although this limit has extended over the years since the original 160 characters, and varies with the phone model. Another constraint is the inputting system, which is awkward since it requires pressing each letter, one by one, on the small phone keyboard (attempts at overcoming this limit have been made through predictive software that guesses the complete word out of the initial characters inputted, but still the writing of long messages is not encouraged). The use of abbreviations, then, reflects these constraints, and allows one to avoid some of the paraphernalia of the oral encounter (Rettie, 2007).

In order to have a realistic idea of the nature of SMS language, however, some commonplace assumptions need to be dispensed with. The representation of this language seems to dwell more on its unconventionality and discontinuity with respect to nonmediated discourse than is actually the case. First, studies on SMS tend to insist on users' recourse to emoticons. The peculiarity of emoticons notwithstanding, it seems that the resort to them—as well as to shortenings—is overestimated with respect to the actual usage in SMS and is not an exclusivity of SMS but can be found in other communication modes (Thurlow, 2003; Ling, 2004; Spagnolli & Gamberini, 2007). Second, teenagers are overrepresented in the studies of SMS language, possibly leading to an overemphasis of certain communication practices that adults may not like to adopt (see above for some instances of linguistic variation connected to age). Third, complaints are frequently made that the abbreviations and informalities used in SMS are likely to compromise the development of proper linguistic skills in young users and to impoverish language in general if they are regularly adopted in a linguistic community. However, there is scientific evidence that mastering SMS language contributes to defining and improving overall literacy skills (Plester & Wood,

2009); also, a message can be designed with accuracy, even if it contains shortenings, since the words are carefully chosen and "strategies of self-presentation and linguistic play" are implemented (Ling, 2004, p. 151).

In addition, there is a latent criticism of the quality of SMS communication, reflecting a theoretical position according to which—in brief—media vary in their "bandwidth," namely in the number of cues that support the communication process and the social identification of the communicants (reduced social cues theory, by Sproull & Kiesler, 1986; and media richness theory, by Daft & Lengel, 1984). Textual communication is extremely limited and poor from this perspective, especially in providing expressive connotations and social cues. The success of SMS in friendship maintenance (see next section), however, contradicts this prediction. In fact, several predictions of the bandwidth hypothesis have failed to be confirmed (Whittaker, 2002), probably because they take face-to-face as the ideal medium for any communication needs, and root the richness of a certain medium only on its technical properties.

To sum up, people use a plethora of different media to communicate (Licoppe & Smoreda, 2006), and consider each of them appropriate to specific circumstances. SMSs are attributed some pragmatic functions that also motivate the particular language used. The next section deals with these functions.

Types of SMS Usage

The types of SMS usage described here also represent the main reasons why people would turn to this medium to communicate. Given the focus on the pragmatics of SMS communication, and then the interest in discussing the usage of this communication mode, the present description will rely on studies that are based on the analysis of SMS; it will not consider theoretical essays, anecdotal reflections, or studies based on participants' self-reported communication behavior through focus groups, surveys, or journals.

A rough idea of the reasons for preferring SMSs over other modes of personal communication emerges from the list of the topics that are most often found in SMS exchanges. Researchers have repeatedly found that SMSs are used to chat, arrange meetings, share experiences or events, and—to a lesser degree—make jokes and participate in message chains (Grinter & Eldridge, 2003; Thurlow, 2003; Ling, 2004). These topics show when it is considered appropriate to communicate with somebody via an SMS. More specifically:

- SMSs are used as notes to inform the receiver about something that allows him/her to pursue a certain course of action or fix a course of action that was not properly completed. These SMS are usually single messages, that is, they do not expect a response (Grinter & Eldridge, 2003) but serve as reminders or explanations for actions such as being late or not answering the phone. This is possible because SMSs are "easy to send, always received, and regularly checked" (Grinter & Eldridge, 2003, p. 444), which is not the case for other communication modes that require the simultaneous availability of the communicants and are not connected to a personal medium that users always carry with them.
- SMS allows friendship maintenance thanks to "high transportability (more so than email), reasonable affordability (more so than email), good adaptability (e.g. also voice-phone) (. . .) and general suitability (e.g. it is quiet, discrete)" (Thurlow, 2003, p. 15). Friendship maintenance means that people can share their experiences, and be present in a friend's life sometimes as soon as an event happens, regardless of physical distance between communicants; this contributes to a sense of intimacy even where participants have no visual or acoustic access to each other. A peculiar way of using SMS socially

is the co-reading of SMSs observed in teenagers (Taylor & Harper, 2002; Ling, 2004 p. 153); if this usage happens frequently, then it can be assumed that this possibility also affects the message composition.

- SMSs are used to fine-tune arrangements (Thurlow, 2003; Ling, 2004); they are used not only to plan meetings, but also to give last-minute updates, since the other person is reachable wherever she or he is thanks to the mobile phone.

In most of these usages, SMSs are exchanged with a restricted circle of known people (Grinter & Eldridge, 2003; Cui, 2007; Spagnolli & Gamberini, 2007): reaching somebody wherever they are, with a short text requiring mutual knowledge to be appreciated without sounding impolite, and getting straight to be point without greetings and closures would hardly be appropriate with strangers or acquaintances. The exception is represented by greetings exchanged via SMS: they are longer, include a signature, and are not sent to the same restricted "circle" of people with which SMSs are exchanged daily (Cui, 2007). They are more convenient than greetings cards if the sender resorts to templates to compose them and sends them to a group managed through the contact list of the mobile phone. Finally, SMS is used for romantic or sexual communication (Ling, 2004), although this is less well documented because of the sensitivity of the topic.

The next section will look more closely at SMS usage by considering specific communication practices characterizing this mode.

Structural Practices

Characteristics such as intimacy, individualization, or informality, which are attributed to the communication mode mediated by SMS, are achieved not just through semantic and syntactic choices in the message composition, but also through specific practices building single messages and message sequences.

Ethnographic case studies have highlighted the existence of social norms affecting the way in which an SMS exchange is produced (Taylor & Harper, 2002; Grinter & Eldridge, 2003; Tamminen, Oulasvirta, Toiskallio, & Kankainen, 2004). For instance, resorting to SMS is encouraged in circumstances that would make other communication modes unviable, such as in class or at night; participation management and context maintenance are required to handle the intersection with other activities with which communicants are engaged during an SMS exchange; and negotiations allow the user to switch from SMS to other media.

When it comes to the detailed practices through which an SMS exchange is built and relevant social norms are implemented, a systematic analysis of collections of complete SMS exchanges is needed. So far, published works carrying out this kind of analysis have highlighted that SMSs are most often part of a sequence of messages rather than single messages (Grinter & Eldrige, 2003; Spagnolli & Gamberini, 2007). Receiving a reply to an SMS depends partly on the recipient's willingness to do so, but partly also on some features that make the reply more or less relevant, such as the kind of action produced through the message—for example, greetings (Cui, 2007) or "sticky notes" (Grinter & Eldridge, 2003) are often single messages.

Probably the most frequently reported practice is the absence of utterances through which the message (Ling, 2005) or, more properly, an SMS exchange (Spagnolli & Gamberini, 2007) is opened and closed. Therefore when openings and closings are present, they represent a marked way of starting or ending the encounter, for example emphasizing the mutual presence on the venue after a long period without communicating.

Finally, another structural characteristic of an SMS exchange is its length, which seems connected to the actions performed in the messages. From this point of view, SMS sequences are pragmatically coherent, since actions started in one message (e.g., questions, information) are usually replied to in a message sent by the receiver (e.g., answer) in what constitutes an "adjacency pair" according to conversation analysis (Schegloff, 2007). Even when actions seem not to get a reply prima facie, "this is because they are actions topically or pragmatically connected to actions that receive a reply; actions replied via one 'ring' or actions replied implicitly" (Spagnolli & Gamberini, 2007, p. 352). The length of an SMS sequence is also dependent on the total number of messages exchanged, which is usually symmetric between communicants (Spagnolli & Gamberini, 2007); this can be read as a social norm favoring reciprocity in the exchanges (Taylor & Harper, 2002).

Conclusions

According to the studies published so far, SMS represents a communication mode that is selected among the repertoires of media available when the exchange needs to be private, informal, convenient, short, and intimate. In addition, some detailed observations of the structure of SMS exchanges have shown their pragmatic coherence and their compliance with a social norm of reciprocity. The pragmatics of SMS communication can be understood by paying attention to the practices through which the whole SMS exchange is built, as well as to the way in which these practices adapt to the possibilities of the medium (e.g., asynchronicity, one-to-one relations with people on a contact list, textuality, limited size, constant availability, individualization of the tool) and the contingency of the situation.

SEE ALSO: Conversation Analysis and Turn Taking; Pragmatics of Asynchronous Computer-Mediated Communication; Pragmatics of Chat

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Pragmatics of Stance

PENTTI HADDINGTON

Introduction

"Pragmatics" is here understood broadly as the study of how language and talk are used in discourse and how their use is influenced by nonlinguistic factors. "Stance" refers to the ways in which speakers talk and use language to express different kinds of positions, attitudes, and feelings. Taking a stance in speech or in writing is a predominant and multifaceted feature of language use and it has been studied broadly.

Pragmatic research on the expressions of stance can be placed on a "subjective–intersubjective" continuum. At the subjective end of the continuum, the act of taking a stance can be understood as the way in which speakers or writers express their position toward an entity or a proposition. At the more intersubjective end of the continuum, taking or adopting a position is seen as an intersubjective achievement. Individual studies on this "subjective–intersubjective" continuum should not be seen as being mutually exclusive or contradicting each other. Rather, they both provide a rich view of how speakers use language to express their attitudes and to adopt positions in discourse. Still, "stance" is not an unproblematic notion.

Subjective Stance

A large body of research in pragmatics has shown that speakers and writers use various linguistic forms (units, phrases, and words) to express their stance either toward a subsequent proposition in an utterance or toward some entity or referent (see Thompson & Hunston, 2000). In general, this body of research understands stance as a subjective attitude which rises from the speaker's internal mental positions, aims, and beliefs. Linguistic forms are then seen to represent the language user's *subjective* (also *internal*, *individual*) stance.

Research has especially focused on linguistic forms that express a speaker's or writer's evidential, evaluative, epistemic, or emotional stance. Linguistic *evidentials* (e.g., adverbs, modals, and verbs) can be used for evaluating the degree of reliability of knowledge or for specifying the mode of knowledge (see Chafe, 1986, and below). Speakers and writers also frequently *evaluate* other people, objects, or events by using, for example, adjectives ("That is *nice*.") (see Channel, 2000). *Epistemic* expressions are used to display the speaker's degree of knowledge or belief (e.g., "*I think* she was here," "*I know* she was here," "*I don't know* if she was here.") Finally, *emotional* expressions refer to linguistic elements by which speakers express their feelings and emotions, such as joy, sadness, and anger (e.g., "I'm *sad* and *angry*.") (Martin, 2000).

There are several linguistic frameworks which have approached stance from this perspective. Influential and extensive research in the *appraisal framework* within systemic functional linguistics has explained how attitudinal and evaluative meanings are expressed in discourse, especially through evaluative words (Martin, 2000). *Corpus linguistic* research has shown that a large number of linguistic forms that are very frequent in discourse are used for expressing a personal attitude or feeling. Using the Longman Spoken and Written

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English Corpus (LSWE), Biber, Johansson, Leech, Conrad, and Finegan (1999) have studied the occurrences and frequencies of adverbs, verbs, adverbials, and modal markers and shown that they frequently function as ways to express stance in discourse. Channel (2000) uses corpus linguistics as a method for studying how words and phrases receive negative evaluative meanings as a result of their frequent use in particular collocational contexts.

Discourse-functional linguistics, which usually relies on recorded data (audio or video) of spoken discourse, has focused for example on the expressions of evidential stance in discourse. In one study, Chafe (1986) has shown how speakers express different degrees of evidentiality (reliability, belief, induction, sensory evidence, hearsay evidence, deduction, and expectation) linguistically with adverbs, modals, and verbs. Downing (2001), by using the British National Corpus, focuses specifically on the adverb *surely* and shows how it displays the speaker's confidence toward the truthfulness and reliability of the subsequent claim. There is also recent research in discourse-functional linguistics which shows how particular frequently occurring and grammaticized linguistic markers are used to display speaker stance toward a proposition encoded in the following utterance. These studies have focused, for example, on such epistemic, evidential, and evaluative stance markers as *I think* (Kärkkäinen, 2003), *I don't know* (Scheibman, 2000), and *I guess* (Kärkkäinen, 2007). (See also Thompson, 2002.)

The two main arguments in the above studies have been that first, speakers and writers have a wide array of linguistic resources available to them for expressing their attitudes and opinions, and second, that these resources express the *speaker's subjective stance*. Nevertheless, many of these studies acknowledge that the studied linguistic forms do not only express a subjective position or an attitude toward a subsequent clause, sentence, or utterance, but that they emerge in the situated social context and can also be used for constructing agreement and affiliation, for displaying disagreement and conflict with prior discourse or between speakers (e.g., Chafe, 1986; Kärkkäinen, 2006), or for constructing and maintaining relationships between speakers and hearers (Hunston, 2007). In other words, these linguistic resources can be used for the intersubjective and dialogical expression of stance.

Intersubjective Stance

How do people use language to communicate their stances to each other in spoken discourse? What are the linguistic and interactional mechanisms that they rely upon in order to agree or disagree with a position taken by a coconversationalist? This question has been asked in a broad, more interactionally oriented line of pragmatic research. Within this framework, it is possible to identify three different approaches to talk and language. First, there is *discourse-functional* (see above) research that focuses more on how morphosyntactic, prosodic and lexical practices are used for taking a stance in dialogic interaction (Du Bois, 2007). Second, in *conversation analysis* there is research that focuses on how speakers through the production of situated social actions adopt and understand positions in sequentially unfolding interaction. Third, *interactional linguistics*, which is informed by the conversation analytic method, specifically focuses on how linguistic forms feature in the design of social actions.

What is common to these approaches is that they rely on audio or audio-video recordings of naturally occurring spoken discourse and microdetailed transcriptions made of them. As regards "stance" specifically, they also build upon the idea that speakers use language to negotiate their positions in spoken discourse with and relative to other participants in the conversation and what they have said. They argue that speakers use different linguistic forms and practices—not only to display their stance toward a subsequent utterance or

proposition, but also to agree and disagree, to affiliate and disaffiliate with other speakers; to adopt positions with respect to topics and themes, events, objects and themselves in spoken discourse; to modify their stances; and to design them with respect to immediately prior talk.

These studies show how linguistic structures and practices are used for the intersubjective construction of stance in two ways: (a) stances can be taken and designed on the basis of and as responses to previous talk, and (b) stances can be constructed for particular recipients. Thus, the general objective is to study how particular linguistic constructions and interactional practices are used for collaborative and intersubjective stance taking. That is, whatever positions we take, the positions are not left hanging in the air; they are not produced in a vacuum. Rather, they are made socially available for coconversationalists; they can be agreed upon, contested, disagreed with, left uncommented, and so forth.

There are a few studies that have taken this broad theoretical starting point. One of these is Du Bois's (2007) *discourse-functional* work on stance taking. Du Bois outlines "stance" as follows: "Stance can be approached as a linguistically articulated form of social action whose meaning is to be construed within the broader scope of language, interaction and sociocultural value" (Du Bois, 2007, p. 140). Furthermore, Du Bois sees stance taking as a tri-act in which speakers take stances about (and position themselves with respect to) an object of talk; at the same time, speakers negotiate their positions and attitudes relative to one another (and align themselves with respect to one another). The use of particular linguistic structures can also invoke and index different sociocultural values, which further position the speaker with respect to objects and other speakers. For discourse-functional linguistics, and perhaps for traditional linguistics more broadly as well, Du Bois' (2007) contribution has been to show that linguistic stance taking is an intersubjective social act and that language form and its indexical properties within the sequential, sociocognitive, and cultural context are important resources for constructing and understanding stances in spoken discourse. By building on the framework outlined by Du Bois (2007), Haddington (2006a) shows how in a news interview an ethnic identity comes to be presented in a dubious light, not through individual utterances or linguistic forms but gradually in and through sequentially unfolding discussion. With the same background, Kärkkäinen (2006) studies story completions and shows how the tellers, by using for example assessments, encourage story recipients to partake in the evaluation of the story. Consequently, she shows how a stance toward a just-prior story is jointly accomplished in a story-reception sequence (see also Kärkkäinen, 2007).

Prominent research in *interactional linguistics* has also explored how interlocutors use linguistic structures as part of social action to adopt positions with respect to their coconversationalists. Keisanen (2006) studies tag questions and negative yes/no interrogatives and how they are used in American English conversations in such actions as requests for confirmation, challenges, disagreements, and assessments for negotiating evaluative, affective and epistemic positions. Haddington (2007) describes a linguistic practice called the NEG + POS pattern by which interviewees in televised news interviews deny the relevance of the question or a presupposition in it and then respond to the question in their own terms. Halonen and Sorjonen (2008) show how interrogatives in Finnish are used for calling into question a prior action. Steensig and Larsen (2008) study the affiliative and disaffiliative uses of questions in Danish. Rauniomaa (2007) studies Finnish stance markers *minusta* (i.e., I think) and *minun mielestä* (i.e., in my opinion, to my mind, it seems to me) as they are used in assessments. In another study, Rauniomaa (2008) focuses on repetition and shows that by repeating a linguistic form, a speaker takes a stance—not to a person, object, or subsequent utterance, but toward the ongoing activity or another speaker's (lack of) contribution in just-prior talk.

In addition to linguistic pragmatic research on stance, there are plenty of studies that take social action, sequence, or turn construction—rather than a linguistic form or practice—as their starting point and study how social actions in their sequential contexts are designed and used for adopting and negotiating positions. This work in *conversation analysis* has studied, for example, agreements and disagreements (Heritage & Raymond, 2005), questions (Koshik, 2002), challenges (Keisanen, 2007), and responses (Gardner, 2001). A classic paper among these is Pomerantz's (1984) study on assessments. She shows that the production of assessments in talk is a highly routinized, constrained, and organized sequential activity. She continues by claiming that by producing an assessment, participants partake in a social activity in which they first introduce a referent of which they have direct knowledge and then produce an assessment of it. Furthermore, assessments tend to be sequentially organized into first assessments and second assessments. A first assessment often prefaces and is followed by a coparticipant's second assessment, in which she reports either an agreeing or a disagreeing stance about the referent introduced by the first speaker. It is noteworthy that the way in which the first assessment is designed invites either a preferred or a dispreferred second assessment. More recently, conversation analytic research has also started to study how nonverbal practices (e.g., gestures and gaze) are used as resources for taking a stance (e.g., Haddington, 2006b; Stivers, 2008).

Finally, there are also conversation analytic studies that focus specifically on the use of prosody for expressing stance. Niemelä (2005), who studies direct-reported speech (DRS) in storytelling sequences, shows how prosodically voiced DRS in stories is often followed by matching voiced direct reported speech produced by story recipients (either in responses to stories or in second stories). According to Niemelä, such matching voiced DRS functions as a display of an affiliative stance. In two important papers, Ogden (2006) and Local and Walker (2008) show that particular phonetic features cannot be connected to specific displays of affect, emotions, or stance (e.g., sadness, joy, anger). In the first one, Ogden (2006) shows that agreements and disagreements do not have any unique phonetic properties. Rather, the phonetic devices which speakers use are related to the action that the turn produces in its sequential context. Ogden (2006) continues by describing a phonetic pattern in which a preferred second assessment is phonetically "upgraded," whereas a dispreferred second assessment is "downgraded." In line with Ogden's work, Local and Walker (2008) show how expressions of stance and affect cannot unproblematically be connected to particular phonetic features of talk; they argue that stance and affect are understood as part of the turn and sequence in which they occur.

Discussion

"Stance" is not an unproblematic analytic notion for pragmatics, and there are at least two reasons for this. First, as has been outlined above, "stance" is used broadly to refer to very different kinds of linguistic, cognitive, and social phenomena. It has been used as a near-synonym or even an umbrella term for such notions as "affect," "emotion," "evidentiality," "epistemicity," and "evaluation." It has also been used as an analytic notion to cover such acts as evaluating people, objects, and events, and negotiating social positions and attitudes in discourse. Consequently, rather than being a clearly conceptualized notion that refers to a specific phenomenon, its broadness can be confusing. Second, in linguistics "stance" is an analyst's category that continues to be connected to different linguistic practices but which does not explain how or for what purposes a linguistic practice is used in discourse. An analyst should be able to say more than simply that a linguistic practice "expresses a stance."

While these points remain partly unanswered, it should be noted that pragmatic research on stance and stance taking has been valuable and helpful—especially for linguists in

that it has supplemented existing linguistic research by foregrounding the idea and by providing evidence that linguistic forms have social functions in discourse. Furthermore, some of the above studies have helped linguists to recognize the importance of studying how humans use language in real everyday conversations. Thus, they can be helpful in highlighting the importance of understanding the intersubjectivity, reflexivity, and dialogicality of language use, and thereby supplementing existing knowledge of language and linguistic form.

In the future, it would be valuable to combine different linguistic methods, for example interactional linguistics, cognitive linguistics, and corpus linguistics, in order to obtain a comprehensive view of how speakers and writers use linguistic forms to adopt positions in discourse. Such a study would enhance our knowledge by exploring the degree to which expressing one's position and attitude, or taking a stance, is a multifaceted linguistic-interactional phenomenon.

SEE ALSO: Conversation Analysis and Affiliation and Alignment; Conversation Analysis and Interactional Linguistics; Grammar and Discourse; Quantitative Methods; Systemic Functional Linguistics

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Pragmatics Research Methods

ANDREA GOLATO AND PETER GOLATO

As the entries in this encyclopedia demonstrate, there are a number of theoretical approaches to the study of pragmatics, or language use. And similarly, there are a number of different research methods, that is, data collection techniques and subsequent data analysis procedures. Given that various theoretical approaches employ similar data collection and data analysis procedures, this entry is not organized by theoretical approach but by research methods. The reader should note that there is no intrinsically "best" or "ideal" research method per se for the study of pragmatics. Instead, different research questions within the field of pragmatics call for different research methods; that is, if one is interested in speaker intuitions, one will need to employ different data collection and data analysis procedures than if one is interested in actual language use.

The research methods described here are used not only in native speaker pragmatics research, but also in cross-cultural pragmatics (i.e., research comparing speech events across languages) and in research on the acquisition of pragmatics (or developmental pragmatics, that is, research on the development of pragmatic comprehension by children, as well as on speech events produced, understood, or both produced and understood by adult learners of a second language).

The entry is structured as follows. We first discuss data collection procedures, categorizing them into observational, elicited, and experimental collection procedures. For each procedure, we briefly explain how researchers proceed in order to collect the data and mention some of the advantages and disadvantages of each method. We then describe the types of analyses that can be done on the different types of data collected. These types of analyses fall into either qualitative or quantitative analysis paradigms.

Before embarking on a research project, the researcher needs to comply with their country's and their institution's rules and regulations concerning research with human subjects. In many countries, data collection without the participants' knowledge and informed consent is illegal.

Observational Data Collection Procedures

Observational data collection procedures are those in which the researcher simply records interactions in real-life settings without influencing what is to be recorded, for instance, without setting up the encounter, without asking participants to behave in any particular way, and so forth. Such data are also called naturally occurring data. As a clarification of what counts as naturally occurring data, Potter (2002; 2004) suggests what he terms the

> (conceptual) dead social scientist's test—would the data be the same, or be there at all, if the researcher got run over on the way to work? An interview would not take place without the researcher there to ask the questions; a counselling session would take place whether the researcher turns up to collect the recording or not. (Potter, 2002, p. 541)

Such data can be captured in a variety of different ways. Researchers can either audio record or video record naturally occurring data; they simply set up and turn on the recording

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equipment, and then leave the recording site in order to have minimalistic impact on the interactants. Typically, telephone interactions are audio recorded. When the participants in the interaction have visual contact with each other, video recording can be chosen in order for the researchers to have the same access to the interaction as the participants. However, depending on the recording site, it might not be feasible to record a video and hence audio recording might be the only possible way to capture any data at all. This can happen if one is recording in a factory/company setting where industry secrets might be at stake, when subjects do not consent to being video recorded, and so forth. With this form of data collection, researchers collect not only specific target phenomena, for example, compliments or requests, but the entire interaction. On the one hand, this is a disadvantage as potentially large amounts of data need to be collected in order to have enough instances of a given phenomenon for analysis. On the other hand, the data collected for one specific project might be reused when investigating a different phenomenon (provided that subjects have given their consent for reuse of the data).

Field observations are another observational data collection procedure. Here, researchers are at the research site either as observers or as observing participants. Whenever the speech event under investigation is uttered, the researcher writes it down immediately while also taking notes on the contextual features of the utterance, such as who uttered it, when it occurred in the interaction, how it was uttered, and so forth. At times, a researcher interested in a particular phenomenon trains various data collection assistants and sends them out into the field, which results in quicker collection of greater quantities of data. In contrast to audio- or video-recorded interaction, the researcher only has direct access to the interaction once, and afterward has to rely on the field notes. With field observations, the data cannot be replayed or re-examined.

Researchers interested in pragmatic features of online communication or written communication in general can use as their data sources written, electronic, or both written and electronic corpora which they either compile themselves (by accessing Web chats or other computer-mediated communications, blogs, Google, newspaper archives, etc.) or which have been compiled by various organizations or institutions (for a list of existing corpora, see http://linguistlist.org/sp/Texts.html).

Elicited Data Collection Procedures

As the name suggests, in elicited data collection procedures the researcher exerts varying amounts of control over the data to be gathered. That is, typically, the interactions are happening for the sole purpose of the research project and subjects are performing speech events under conditions predetermined by the researcher.

A number of researchers also use interviews in which they either elicit personal narratives or commonly known stories from subjects, have subjects describe various pictures, or have them tell a picture story. Topics are selected such that the telling will include the speech event, variable, or grammatical feature under investigation. In a strict sense, personal narratives could also have been described under observational data as the researcher is typically only providing the topic and asking follow-up content questions. Some researchers, particularly those conducting ethnographic work, play back interviews (specifically personal narratives) to other subjects asking them to comment on various features of the interaction or narrative. The researcher can then use these third-party testimonies as support for his or her analysis of the narrative or narrative pattern (e.g., Koven, 2007). Interviews can also take the form of recall protocols in which the interviewer asks the subjects to remember the last time they participated in a particular speech event (for example, a complaint or a compliment) and to describe in detail the context of the interaction, including what was

said and what the response was. This method allows for the rapid collection of very specific speech events from a variety of interactants and contexts; however, the researcher has to rely on the account by the informant and has no independent way of checking the accuracy of the account.

Role plays are very frequently used in research on cross-cultural and developmental pragmatics as they allow the researcher to control for a number of variables (e.g., the number and gender of speakers, contextual features, etc.) such that the main variable under investigation is exclusively the realization of the same speech event in two different languages or with adults and children. In role plays, researchers put subjects into pairs or small groups, in which each speaker is given a role card which describes in detail the interaction they are supposed to perform with the other subjects. In order to increase the authenticity of the interaction, it is generally recommended that subjects perform roles with which they are familiar in real life. However, research has shown that imagined roles and real-life roles still interfere (Wildner-Bassett, 1989; Kasper & Dahl, 1991). Role plays have an advantage in that they closely represent oral production, for instance, they contain turn-taking features, hesitations, silences, and negotiation of meaning just as nonelicited data do (Kasper & Dahl, 1991); however, they are still driven by the interests of the researcher and thus do not always allow for the same free topic or action development (Kasper, 2000). In order to prevent stilted interactions, it is typically recommended that researchers pair up role players who know each other. In some role-play scenarios, the cards contain instructions to perform the specific speech event under investigation (e.g., "when appropriate in the interaction, pay your partner a compliment"). In order not to unduly influence the role players, researchers have recently begun to include specific instructions on only one of the role cards such that the other participants are unaware of the purpose of the role play. At times, it is possible to create role-play scenarios in which it is not obvious to the role players which speech event is under study.

Discourse completion tasks and production questionnaires are yet another very frequently used form of data elicitation, particularly in cross-cultural and developmental pragmatics research. Here, subjects are presented with a situation to which they have to respond. The situation is designed such that the speech event under investigation is believed to be the next action (e.g., "Your friend has offered you a piece of gum, and you say: _____."). Discourse completion tasks vary in terms of the amount of contextual information they provide, whether responses are written down or audio recorded, and whether the next line of talk of the prior speaker is included in the scenario. In general, subjects are presented with 4–10 similar scenarios all targeting the same or similar speech event. Again, discourse completion tasks afford administrative advantages and do not require time-consuming transcriptions (Billmyer & Varghese, 2000). They seem, however, to primarily tap speaker intuitions as they are metapragmatic in nature (i.e., they do not require subjects to actually interact, but do require subjects to reflect upon interaction), and research suggests that these forms of elicitation yield data which differ from observational data and actual language use (Golato, 2003).

Experimental Collection Procedures

These are procedures in which subjects perform tasks in the context of experiments which yield data primarily in the form of reaction times, usually measured to the millisecond. In contrast to observational and elicited data collection procedures, experimental collection procedures typically do not involve subjects producing or understanding either naturally occurring or elicited speech events. Instead, they involve subjects performing a task which requires them to make a response, classically a decision or a judgment about a visually or

auditorily presented language-oriented item, though many such studies feature timed reading tasks (e.g., self-paced reading) and other less consciously controlled measures (e.g., eye tracking). The items themselves bear linguistic characteristics which by design are of interest to the experimenter. Items are usually presented under carefully controlled conditions and include test, control, and distracter items. Thus, the data from such collection procedures consist of subjects' responses to language-oriented items presented under contrasting experimental conditions. Considered together with subject-related biographical (e.g., age, sex) and experiential variables (e.g., native language, additional language(s), time spent on study abroad, etc.), the data are used to make inferences about how the subjects processed the items in real time.

To take one example, a researcher might design an experiment in which adult subjects were asked to decide whether a test sentence containing a scalar or quantity implicature such as "some dogs are canines" was true or false. Depending on their reading, such sentences are held to be both true (i.e., some, and possibly all dogs are canines) and false (i.e., some, but not all dogs are canines). Control sentences in the experiment might include "some canines are dogs," "all dogs are canines," and "all canines are dogs." The time subjects take to answer "true" or "false" is recorded for each sentence. One recent study (Bott & Noveck, 2004) found that among other things, subjects take significantly longer to respond to test sentences when told to interpret *some* as meaning *some but not all* than when they are told to interpret *some* as meaning *some and possibly all*.

Generally, in experiments such as these, faster response times will occur when subjects are responding to structures which are thought to be less ambiguous, which they have previously encountered with some measure of frequency (e.g., lexical frequency as determined through large corpora), which are by some measure hypothesized to be expected (e.g., they involve co-occurrence, are grammatical, etc.), or all of the aforementioned. Slower responses occur when subjects are presented with structures which are ambiguous, occur less frequently, or which are by some measure hypothesized to be unexpected, or all of these. Thus, experiments of this kind can allow researchers to infer when learning has occurred. In addition, they can be used to investigate empirically the relative efficacy of different theoretical accounts of pragmatics (e.g., Bott & Noveck, 2004).

The features of experimental collection procedures which make them ideal for examining real-time language processing are the same ones which make them less than ideal for examining real-time interaction. To date, the constructs typically under study in work on experimental pragmatics have been very different than those under study in other areas of research on pragmatics.

Data Analysis

Once the data have been gathered, researchers typically transcribe their audio or video recordings. The different approaches to discourse have different transcription conventions that vary in terms of the detail with which the spoken language is rendered in writing. For instance, in some approaches only actual words are noted; in others, silences are marked with a symbol; in yet others, silences are timed. Which transcription convention one chooses ought to depend on the nature of the research question and the theoretical framework in which one works. Regardless of the transcription convention, most researchers consider the actual recording as their primary data and any transcript as a supportive tool for the analysis. In terms of the actual analysis of the recorded data, different theoretical approaches have varying foci. In conversation analysis and interactional linguistics, for instance, researchers investigate actions as they are accomplished through linguistic practices; here, analytic claims are made based on the interactants' (not the researcher's)

orientations to prior and upcoming turns. In certain discourse analytic approaches, the coparticipants' orientations take a subordinate role to the analyst's interpretation of the action. In some areas of discourse analysis (such as text analysis, or functionalist linguistics) grammatical features and devices are analyzed for their function in discourse. And researchers working in sociolinguistics, in certain approaches within discourse analysis, and in ethnography, all use the data both in terms of its content and its formal features to analyze various variables such as age, gender, language background, power, race, and so forth. Depending on the nature of the research questions, the analyses are either primarily descriptive in nature, or they employ descriptive statistics and correlations. Yet others make arguments based on both descriptive and inferential statistics.

Researchers interested in cross-cultural pragmatic analyses or developmental pragmatics often use data gathered through observational or elicited collection procedures from two groups or at two different points in time, and then compare these two sets of data. For instance, a researcher interested in describing cultural differences in apology design might compare how apologies are done by native speakers of English and by native speakers of Spanish; alternatively, researchers might compare how Chinese-speaking learners of English realize requests in English before and after having been taught English request patterns. Depending on the research question, the researcher may simply provide a descriptive account or else employ statistical procedures to compare the data sets. Data gathered through real-time processing experiments are always analyzed using both descriptive and inferential statistics.

This entry has provided an overview of the manifold data collection and data analysis procedures used in the field of pragmatics. To reiterate, there is no single best or optimal methodology for conducting research in pragmatics. The research question under investigation should guide the researcher's decision concerning the choice of data collection and analysis procedures. Not surprisingly, advances in newer forms of communication (e.g., cell phones, discussion boards, text messaging, and other forms of synchronous or asynchronous forms of communication) continue to lead to new and exciting developments in the way pragmatics research is conducted and the questions that it investigates.

SEE ALSO: Conversation Analysis and Ethnomethodology; Conversation Analysis and Interactional Linguistics; Conversation Analysis and Language Acquisition; Conversation Analysis and Second Language Acquisition: CA-SLA; Cross-Cultural Pragmatics; Discourse Analysis and Conversation Analysis; Pragmatics in the Analysis of Discourse and Interaction

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Pragmatics: Overview

MARTA GONZÁLEZ-LLORET

Pragmatics may be defined as "the study of language use" (Levinson, 1983, p. 5); however, such a simple definition hardly reveals what the field really encompasses and it may be more productive to describe the range of phenomena studied within the domain of pragmatics (Levinson, 1983). Such a description would have been easier to develop 30 years ago than it is now, since the boundaries of the area of pragmatics have grown to intersect with disciplines such as linguistics, sociology, discourse analysis, conversation analysis, philosophy of language, anthropology, cognitive psychology, human–computer communication, computer-mediated communication, bilingual/multilingualism, ethnography of communication, and first and second language acquisition.

In general, pragmatics is concerned with the study of meaning as communicated (verbally, nonverbally, and with silence) by the speaker and interpreted by the listener. Research is undertaken by considering how the message is organized, what the context of the message is, who the speakers are, and what their relationship is. As defined by David Crystal, pragmatics is

> The study of language from the point of view of users, especially of the choices they make, the constraints they encounter in using language in social interaction and the effects their use of language has on other participants in the act of communication. (Crystal, 1997, p. 301)

The definition of pragmatics, and the area itself, has evolved through the years, with shifting research emphases. The following historical overview, far from being exhaustive, attempts to provide the reader with an idea of the main topics and trends that shaped pragmatics into what it is today.

Historical Overview

The term "pragmatics" surfaced in the United States in the late 1930s. In 1938, Charles W. Morris, a philosophy professor at the University of Chicago, proposed pragmatics as part of a semiotic theory (theory of signs) which studied signs in terms of their relations to (a) objects (semantics), (b) each other (syntactics), and (c) people (pragmatics). This idea was further explored by the German philosopher Rudolf Carnap who stated that pragmatics encompassed studies in which reference is made to the speaker, to the user of the language (1955); from this perspective communication was not viewed as an abstract language system, but rather as a system that considered the users engaged in the communication. At the same time in Europe a movement towards a linguistic philosophy that promoted the study of ordinary language in its own right (ordinary language philosophy) was gaining interest. Its main exponent, Ludwig Wittgenstein (1953) proposed speaking as a changing activity (a "form of life") dependent on history, culture, and context.

In the late 1960s, as a break from Chomsky's transformational grammar, generative semantics (e.g., Ross, 1970) emerged as a branch of linguistics with a special interest in including pragmatic phenomena as part of semantics within a grammatical theory. Generative

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semantics was largely influenced by philosophers of language such as J. L. AUSTIN (1962), John SEARLE (1969), and H. Paul Grice (1975), who put forward some of the most basic principles of pragmatics, which have been adopted, investigated, revised, and challenged up to this day. Among these were three important ideas: first, the idea that language is not just an abstract system to describe a world that can be reduced and captured by truth-conditions; second, the idea that language is a complex system in which the speaker, the hearer, and the context of the message are situational variables that determine meaning (Austin, 1962); and third, the idea that language is used not only to *say* things, but actively to *do* things, that is, the speech act theory (see SPEECH ACTS RESEARCH) initiated by Austin (1962) and later advanced by Searle (1969). Although not without criticism (e.g., Thomas, 1995), speech act theory is one of the most studied topics in pragmatics today.

To Austin's and Searle's ideas, we need to add the very influential notion by Grice that communication is a cooperative action as well as the concept of implicature (see CONVERSATIONAL IMPLICATURE) (Grice, 1975). According to Grice, the meaning of a sentence is different from the speaker's meaning (i.e., not only what is said, but also what is implicated). When inferring the speaker's meaning, the hearer has some expectations that the conversation is a rational and cooperative activity (cooperative principle) and would follow some rules, or rather, conditions for communicating successfully, called maxims, which specify the amount of talk (quantity maxims), the truthiness of the talk (quality maxims), the relevance of what is said (maxim of relation), as well as the clarity of the talk (manner maxims).

These ideas provided a starting point for neo-Griceans such as Atlas (2005) and Levinson (1983) who expanded Grice's idea of rules and principles in communication, as well as for relevance theorists Sperber and Wilson (1986). Based on Grice's idea of implicature, but rejecting the idea of speakers following a group of maxims or behavioral rules, relevance theory emerged as a better foundation for theoretical pragmatics. Dan Sperber and Deirdre Wilson (Wilson & Sperber, 1981; Sperber & Wilson, 1986) proposed that all communication is a process guided by efforts and rewards in which we try to minimize the effort and maximize the rewards. According to Sperber and Wilson, everything we say is relevant or otherwise we would not say it, and the expectation of relevance among speakers is enough to clarify and maintain meaning. Relevance theory is one of the most influential proposals of cognitive pragmatics in the last decades.

Current Research

A large part of pragmatics research today has to do with social and cultural aspects of language including social cognitive research (see PRAGMATICS AND COGNITION), linked to those cognitive views of pragmatics described above. As Verschueren points out pragmatics is an approach to language which "takes into account the full complexity of *its cognitive, social, and cultural (i.e., 'meaningful') functioning* in the lives of human beings" (Verschueren, 1999, p. 870, italics in original). These social and cultural studies in the area of pragmatics were largely influenced by work in sociology (Goffman, 1955; Brown & Gilman, 1989) and ethnography of communication (Hymes, 1972).

One of the most productive areas of research in pragmatics has been based on the concept of POLITENESS (and face-threatening acts). The work by Lakoff (1973), Leech (1983), BROWN and LEVINSON (1987), and Thomas (1995) has motivated investigations of politeness from multiple perspectives, from purely theoretical to studies of intercultural and CROSS-CULTURAL PRAGMATICS, as well as acquisition of politeness rules by both children and speakers of other languages. This interest in social interaction (see PRAGMATIC SOCIALIZATION), how people use language to communicate their positions and feelings (stance) (see PRAGMATICS OF STANCE), and how speech communities interact (see PRAGMATICS AND

CULTURE), is largely responsible for pragmatic research in languages other than English. The interest in cross-cultural communication (see CROSS-CULTURAL PRAGMATICS) as well as for the well-established study of speech acts, gave birth to the renowned Cross-Cultural Speech Act Realization Project (CCSARP) where researchers such as Shoshana BLUM-KULKA, Claus Faerch, Juliane HOUSE, Gabriele KASPER, Elite Olshtain, Ellen Rintell, Jenny Thomas, Eija Ventola, Helmut Vollmer, and Nessa Wolfson studied two speech acts (requests and apologies) in six languages: Canadian French, Danish, German, Hebrew, Russian, and Australian, American, and British English (Blum-Kulka & Olshtain, 1984). Their studies became the foundation of one of the most fruitful areas of pragmatics today which has extended to languages on all continents (see CARLA for an extended bibliography at www.carla.umn.edu/speechacts/index.html).

Another large subarea in pragmatics has developed parallel to the growth of applied linguistics, second language acquisition, and second language studies. Second language pragmatics examines how speakers of a language other than their own communicate with others either by using a lingua franca (see PRAGMATICS OF LINGUA FRANCA INTERACTION) or another language in a variety of contexts (see PRAGMATIC COMPETENCE IN MULTILINGUAL CONTEXTS). How their cultural and social background (see SOCIETAL PRAGMATICS) as well as their first language (see PRAGMATIC TRANSFER) affects the way they interact, how their pragmatic abilities develop (see INTERLANGUAGE PRAGMATICS and SOCIOCULTURAL THEORY AND INTERLANGUAGE PRAGMATICS), and how this process is affected by instruction either inside (see CLASSROOM RESEARCH ON PRAGMATICS) or outside the classroom (see PRAGMATIC DEVELOPMENT IN STUDY-ABROAD CONTEXTS) through, for example, pragmatic awareness (see PRAGMATIC AWARENESS IN SECOND LANGUAGE LEARNING). As Kasper, Nguyen, and Yoshimi (2010) point out in the introduction to a recent volume of *Pragmatics and Language Learning*, this area has developed in the last 20 years towards a view of pragmatics as "the study of language-mediated social action" (p. 3), moving toward a conceptualization and analysis of pragmatic competence as interactional competence and as the ability to perform social actions in their natural setting.

This move towards an interactional view of pragmatics has its origins at the end of the 20th century. At this time, a movement emerged in favor of a view of pragmatics which focused not only on language as *action*, but as *interaction* (Thomas, 1995; Verschueren, 1999). Most recently, in this same line, Kasper has argued for a *discursive* approach to pragmatics in which meaning and action are constituted not only *in* but *through* social interaction (Kasper, 2006, p. 282). Traditional studies in politeness, identity, speech acts, and so forth, are being explored from an interactionist perspective in which categories are not discourse-external or predetermined but rather achieved locally by the members of the interaction during the interaction (e.g., Locher, 2004).

As part of this interactionist movement and with an important antecedent in Levinson's chapter on conversation analysis in his influential *Pragmatics* (Levinson, 1983), a growing number of researchers in the field are paying attention to the organization of conversation and how interaction is structurally and systematically organized by participants to accomplish everyday social activities. From this empirical approach, researchers are reconceptualizing classic topics in pragmatics such as politeness (e.g., Cook, 2006), speech acts/speech act sequences (see González-Lloret, 2010, for an overview), cross-cultural communication (e.g., Márquez Reiter, 2008), INTERLANGUAGE PRAGMATICS (e.g., Ishida, 2006), and instructed second language pragmatics (e.g., Huth & Taleghani-Nikazm, 2006), in regular conversation as well as institutional interactions (see INSTITUTIONAL PRAGMATICS). In addition to this thrust for the study of naturally occurring data, there is still a strong and fruitful tradition of experimental pragmatics (see SECOND LANGUAGE EXPERIMENTAL PRAGMATICS) that investigates different aspects of pragmatics such as the use and acquisition of routines (see PRAGMATIC ROUTINES), pragmatic strategies (see COHEN, ANDREW D.), the use of corpus

linguistics in pragmatics (see PRAGMATICS IN LEARNER CORPORA), its intersection with grammatical knowledge (see PRAGMATICS AND GRAMMAR), and best testing practices (see TESTING IN PRAGMATICS RESEARCH), all of these from a variety of approaches and research methods (see PRAGMATICS RESEARCH METHODS).

Finally, the integration of technology into everyday communication has opened new lines of pragmatics investigation into how people engage in interaction that is mediated by technology (see CYBERPRAGMATICS), from email (see PRAGMATICS OF ASYNCHRONOUS COMPUTER-MEDIATED COMMUNICATION) and other mobile devices (see PRAGMATICS OF SHORT MESSAGE SERVICE) to online environments (see SYNTHETIC IMMERSIVE ENVIRONMENTS AND SECOND LANGUAGE PRAGMATIC DEVELOPMENT), from expert speakers to language learners (see PRAGMATICS OF SECOND LANGUAGE COMPUTER-MEDIATED COMMUNICATION). Studies in this recent area range from the description of the basic pragmatics of computer-mediated communication (see PRAGMATICS OF CHAT) to studies of speech acts (e.g., Baym, 1996), illocutionary force (e.g., Dresner & Herring, 2010), identity (e.g., Nguyen & Kellogg, 2005), cross-cultural/intercultural communication (e.g., Belz & Thorne, 2006), interlanguage pragmatics (e.g., González-Lloret, 2008), or politeness (see POLITENESS IN COMPUTER-MEDIATED COMMUNICATION).

Associations, Journals, and Publications

Today's diverse and important developments in pragmatics research are disseminated through a growing number of pragmatics-specific venues in addition to those for applied linguistics in general. The first journal dedicated to pragmatics, *Journal of Pragmatics* (Elsevier), appeared in 1977. In the first editorial, Haberland and Mey (1977) proposed a shift of perspective for the study of language that would look not just at what an utterance means but to why an utterance is produced. Today, with 12 issues per year, the journal provides a forum for pragmatic studies in sociolinguistics, general linguistics, conversation analysis, discourse analysis, cognitive linguistics, computational linguistics, and applied linguistics among other areas of linguistic research (www.elsevier.com/wps/find/journaldescription.cws_home/505593/description#description).

In 1986 in Antwerp, the International Pragmatic Association (IPrA) was established "to represent the field of pragmatics in its widest interdisciplinary sense as a functional (i.e., cognitive, social, and cultural) perspective on language and communication" (Ipra Web site). The association's quarterly publication, *Pragmatics*, started in 1991. As of 2009 it is published online, with open access to all articles 12 months after publication (http://ipra.ua.ac.be/main.aspx?c=*HOME&n=1267). In Asia, the Pragmatics Society of Japan was established in 1998 and its journal has been published since 1999 (wwwsoc.nii.ac.jp/). And, since 2003, there also exists a China Pragmatics Association (www.cpra.com.cn/).

Currently, a plethora of journals and book series focus on different areas of pragmatics. Among journals: *Chinese Language and Discourse*, *Cross-Cultural Communication*, *Discourse & Society*, *Discourse Studies*, *Functions of Language*, *Intercultural Pragmatics*, *Journal of Historical Pragmatics*, *Journal of Politeness Research*, *Journal of Sociolinguistics*, *Language and Dialogue*, *Language in Society*, *Multilingua*, *Pragmatics and Cognition*, *Pragmatics and Society*, *Research on Language and Social Interaction*, *Semantics & Pragmatics*, *Spanish in Context*, *Studies in Language*, *Text & Talk*, *Speech Communication*. Among books: the *Pragmatics & Beyond* series (John Benjamins), *Interactional Sociolinguistics* (Cambridge), *Language in Society* (Oxford), and *Pragmatics and Language Learning*, and a monograph series connected to the International Pragmatics and Language Learning Conference (www.nflrc.hawaii.edu/searchsite_pub.cfm?keyword=PragmaticsLL&display_order=alphabetic).

This diversity of work falling under the pragmatics umbrella demonstrates the difficulty encountered in attempting a concise definition. Rather than a component of linguistics, pragmatics might best be seen as a perspective on language (e.g., Mey, 2001), a perspective which is interdisciplinary. Pragmatics as we know it today is informed by a variety of epistemologies, research methodologies, and philosophies of language. The investigations fuelling the field are conducted in a large variety of linguistic, social, and geographical contexts. The entries in this volume aim at reflecting the contextual richness and scope of the field, including contributing authors from Finland, Germany, United Kingdom, Spain, Sweden, Switzerland, Israel, United States, Canada, Japan, Korea, and Australia. They can be grouped within four large subareas of research: (a) language acquisition, both first (see CHILD PRAGMATIC DEVELOPMENT) and second language (see SECOND LANGUAGE PRAGMATIC DEVELOPMENT); (b) linguistics; (c) social/communication research; and (d) computer-mediated communications. Within each subarea, the entries address topics that outline what pragmatics is today, reflecting a variety of approaches, methods, epistemologies, and views of the world.

SEE ALSO ON PRAGMATICS: Bardovi-Harlig, Kathleen; Ohta, Amy Snyder

SEE ALSO: Conversation Analysis: Overview

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Pragmatics: Quantitative Methods

FRANCESCO ARCIDIACONO

Quantitative Methods and Pragmatics

Quantitative research has the goal to conceptualize the reality in terms of variables, to measure these variables, and to study the relationships between them (Punch, 2009). In the case of pragmatics (Ochs & Schieffelin, 1979; Green, 1989), the variables may be on categorical, ordinal, or interval scales, such as categorical variables that correspond to conversational or discursive strategies (Ochs & Schieffelin, 1983; Freedle, 1990). In pragmatics, different analyses can be applied to verify the inferential relations among variables, but in cases where there are three or more categorical variables multipath frequency analysis is especially useful.

The aim of this entry is to describe how to apply log-linear analysis as one type of multipath frequency analysis in order to explore pragmatic phenomena, using as an example data from a study on verbal conflicts in family conversations.

Overview of Verbal Conflicts and Log-Linear Analysis

Based on the belief that verbal conflicts among adults and children are educational tools of interaction and means of cultural socialization, this entry illustrates a quantitative method used to analyze these conversations (Arcidiacono & Pontecorvo, 2009). Parents–children's adversarial conversations (video-recorded during everyday interactions at dinnertime, and then transcribed turn by turn) were categorized in terms of the following variables which were seen as relevant dimensions of conflict (Labov & Fanshel, 1977; Vuchinich, 1990; Garvey & Shantz, 1992):

1. the orientation (with two dimensions: serious, non-serious),
2. the modality (with two dimensions: mitigated, aggravated), and
3. the closing (with three dimensions: withdrawal, submission, compromise).

Traditionally, the quantitative technique used to measure the relationships between two categorical variables was to compare observed frequencies to the frequencies expected by either chance or a hypothesis, and then to compute the difference with a Pearson chi-square statistic (χ^2) in which a large value indicated that there is a relationship between the variables. For more than two variables, several chi-squares could be computed to measure the relationships between variables 1 and 2, variables 1 and 3, and variables 2 and 3, for example. While perhaps providing insight into the main effects of one variable on another, no insights would be gained on possible interactions among the three variables. In order to test for the statistical significance of the main and interaction effects between variables, a multivariate extension to chi-square tests called hierarchical log-linear analysis is used in which models are applied to represent the logarithm of the expected cell frequency as a linear combination of the variables' effects.

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In our example, the following research question was addressed: What are the discourse patterns when parents activate the conflict with their children? We hypothesized an association between (a) serious and aggravated dimensions of the conflict with withdrawal as the closing strategy and (b) non-serious orientations and mitigated modalities with final compromises as the closing strategy.

An Example Study

Conducting the Analysis

A $2 \times 2 \times 3$ design was used in order to test three variables of verbal conflict and to explore the association among these factors and their levels. The data were analyzed using the statistical program BMDP Dynamic 7.0 (Brown, 1983). For this program, as the first step the researcher needed to type in syntax and to paste the control language (Table 1) at

Table 1 Control language

Syntax		*Description of codes and functions*
/ INPUT	TITLE IS "CONFLICT". VARIABLES = 4. FORMAT IS FREE.	Name of the file data Number of variables (including frequencies)
/ VARIABLE	NAMES = O, M, C, FREQ.	O = orientation; M = modality; C = closing
/ CATEGORY	CODES (O) = 1, 2.	Codes or cutpoints are required if there are more than 10 values for any categorical variable
	NAMES (O) = S, N.	S = serious; N = non-serious
	CODES (M) = 1, 2.	
	NAMES (M) = MI, A.	MI = mitigated; A = aggravated
	CODES (C) = 1, 2, 3.	
	NAMES (C) = D, SO, CO.	D = withdrawal; SO = submission; CO = compromise
/ TABLE	INDICES = O, M, C.	Variables defining indices for tables
	COUNT = FREQ.	Variables containing frequencies when input is a cell indices and frequencies
	DELTA = 0.5	Value to be added to each cell before the analysis
/ FIT	MODEL = OMC.	Describes the log-linear models to be fit to data in a multiway table: the hierarchical model to be fitted
	ASSOCIATION = 3.	Estimates partial and marginal association for all effects of order
/ PRINT	LAMB.	Specifies types of tables to be printed: the table of estimated log-linear parameters and their standard errors
/ END		End of the input of control language

Table 2 Data set

Closing	*Modality*	*Orientation*		*Total*
		S	*N*	
D	MI	2	7	9
	A	20	5	25
	Total	22	12	34
SO	MI	0	0	0
	A	22	0	22
	Total	22	0	22
CO	MI	12	3	15
	A	11	0	11
	Total	23	3	26

a command prompt in order to code variables and dimensions. Using a "free" format, variables are separated by one or more blanks, a single comma, or both. The file is then saved as a command file (format.DAT) that in our case was named Conflict.DAT.

Then the researcher enters the data as text (or using a pre-existing file in the computer system). Table 2 reports the data set for our study (including frequencies of each variable under examination). At the end, this input file is saved as Conflict.INP. The program is thus ready to run and to analyze the data.

As mentioned before, the use of log-linear models aims at understanding the relationships between factors through a screening for an appropriate model, testing, comparing, understanding models under consideration, and examining cells with large disparities between observed and expected values under a chosen model. According to Marascuilo and Busk (1987) "multidimensional contingency tables can be examined in a unified way by using log-linear models in either a hypothesis testing mode or model-building approach" (p. 443). In the first case, the researcher sets up a number of null hypotheses to be rejected.

Table 3 Hierarchical models of interaction

Models	*Description*
[OMC]	Multivariate dependence: model of saturation
[OM][OC][MC]	Multivariate independence: dependence of three couples of variables
[OM][MC] [OM][OC] [OC][MC]	Marginal multivariate independence: dependence of two couple of variables
[OM][C] [OC][M] [MC][O]	Marginal multivariate independence: independence of one variable from the other two
[O] [M] [C]	H_0—Multivariate independence: same probability for each category

Table 4 Decisional models

K-FACTOR	*D.F.*	*LR CHISQ (G^2)*	*PROB*	*PEARSON CHISQ (χ^2)*	*PROB*	*ITER*
0-MEAN	11	92.15	0.00	92.14	0.00	0
1	7	43.33	0.00	41.71	0.00	2
2	2	0.43	0.80	0.47	0.79	11
3	0	0.00	1.00	0.00	1.00	1

In the second case, specific main effects and interactions are supposed to exist and interrelations among variables are tested for goodness of fit.

In our case, the strategy was to compare sets of models and then to define models based on hypothesis tests for individual parameters within a specific set. Table 3 shows seven possible hierarchical models of interaction computed in the study: from the more complex [OMC], named the dependent model of saturation, to the simple model [O][M][C] that postulates the independence between variables. In log-linear analysis "the idea is to find the least complex model that nonetheless generates expected values not too discrepant from the observed ones, as determined by a goodness-of-fit-test" (Bakeman & Gottman, 1986, p. 194); so, three steps in the model-building approach include (a) a backward analysis that begins with the saturated model, (b) a consideration of more parsimonious models, and (c) an examination of each bi-dimensional interaction and main effects.

Results of the Study

After running the statistical program with the control language and the input data, we obtain the file Conflict.OUT containing different records. First, we consider the decisional table models (Table 4).

At this stage, the likelihood ratio chi-square G^2 (Marascuilo & Busk, 1987; Rojewski & Bakeman, 1997a, 1997b) is used as the associated statistical test in order to explore the decisional models and to test for goodness of fit. Starting from each specified model, the program deletes in turns each simple or multiple effect. Through backwards elimination the probability associated to the difference between the saturated model and the model that fits better is considered. By this procedure, the program automatically screens all possible models in a generating class hierarchy for the most parsimonious one. Starting with the saturation model is not required: whatever model the researcher starts with, the backward elimination algorithm drops the least useful term one step at a time, stopping when the deleted effect is significant. In a design with K variables, the K-factor interaction parameter ensures that the hierarchical structure of the model is preserved. The goodness of fit of a log-linear model is tested using the likelihood ratio statistic G^2 (instead of the Pearson chi-square statistic χ^2) because G^2 can be partitioned into unique components that have the additive property similar to the sum of squares of the analysis of variance. In other words, G^2 is additive under positioning for nested models and its p value has to be > 0.05 for a well-fitting model. At this stage, the expected frequencies need to be tabulated. For a three variables model, we use an iterative proportional fitting algorithm. This procedure permits adjustments to fit each of the marginal sub-tables specified in the model. In Table 4, the algorithm indicates the highest significance level for the K-factor = 2. Having dropped the three-way term, the remaining generating models are two-way interactions and main effects.

We now consider Table 5, in which marginal and partial association are simultaneously used to screen various interactions, and to determine whether they are necessary, not necessary, or questionable. Different G^2 statistics are assessed for each combination of the

Table 5 Association options

Effect	*Partial association*				*Marginal association*			
	D.F.	*CHISQ(G^2)*	*Prob*	*Iter*	*D.F.*	*CHISQ(G^2)*	*Prob*	*Iter*
O	1	32.83	0.00					
M	1	13.48	0.00					
C	2	2.51	0.29					
OM	1	12.69	0.00	2	1	10.94	0.00	2
OC	2	12.54	0.00	2	2	10.80	0.00	2
MC	2	21.16	0.00	2	2	19.41	0.00	2
OMC	2	0.43	0.80					

Table 6 Ratio of the log-linear parameter estimate to its standard error

			Orientation	
	Modality		S	N
Closing		MI	–2.66	2.66
	MI	A	2.66	–2.66
D	–0.53	0.53	–2.29	2.29
SO	–1.50	1.50	0.57	–0.57
CO	2.37	–2.37	1.18	–1.18

variables. As both tests lead to the same association options about the effects to be considered, no problem exists in choosing partial or marginal association (if either the partial or marginal test is not significant, judgments can be made according to the researcher's knowledge about the variables).

In our case, significant G^2 values concern the two-way interaction models.

Once estimates of expected frequencies are obtained, the effect parameter estimates are produced and related to odd and odd ratios. The models of two-way interactions [OM][OC][MC] are then examined (Table 6). The estimates of the effects are similar to the calculation of main and interaction effects in a factorial analysis of variance. In our case we only consider the interaction effects because they override main effects. Odds are described as the ratio between the frequency of being in one category and the frequency of not being in that category. In order to investigate the quality of fit of the mode further, we evaluate the individual cell residuals that show why a model fits or display a lack of fit. This process involves standardized residuals for each cell. The cells with the largest residuals show where the model is least appropriate.

Generally, odd ratios above 1 indicate positive association among variables, while odd ratios smaller than 1 indicate negative association. If the value is 1, the variables are not associated. In our case, significant associations concern a confidence interval of z-scores ≥ 1.96 and $p < 0.05$. In particular, the interaction between orientation and modality (i.e., the four cells at the top right side in Table 6) reveals an association between the serious orientation and the aggravated modality, while the mitigated modality is associated with the non-serious orientation ($z = 2.66$); the interaction between orientation and closing

(i.e., the six cells at the bottom right side in Table 6) confirms the association between the non-serious orientation and the withdrawal (recall that withdrawal was coded as "D" in the dataset) in closing conflicts ($z = 2.29$); the interaction between modality and closing (i.e., the six cells on the left side in Table 6) shows a significant association between the compromise and the mitigated modality to close a conflict ($z = 2.37$).

Results indicated that one discourse pattern used when parents activate verbal conflicts with their children was explained by a model associating the serious orientation to the aggravated modality (i.e., first hypothesis), but not necessarily followed by a withdrawal. When parents engage in a non-serious way, conflicts develop through a mitigated modality, in turn associated to a compromise as closing (i.e., second hypothesis). Another pattern indicates the interaction between the non-serious orientation and the withdrawal as closing.

Conclusion

As this analysis highlighted some discursive patterns generated by specific models, other possible lines of investigation (Arcidiacono, in press) have been devoted to specifically explore the cases in which children activate verbal conflicts with parents.

The use of log-linear models is useful to investigate association structures between a set of categorical variables, because "one of the advantages in using the log-linear models and the associated G^2 statistics is that there are many ways that one can partition the likelihood ratio statistic" (Marascuilo & Busk, 1987, p. 454). In applying the log-linear analysis, the use of the statistical program BMDP Dynamic 7.0 is based on a simple control language and a clear output. However, there are alternative options, such as ILOG, R, SAS, and SPSS software programs that offer practical solutions to combine different variables' effects available to be interpreted by the researcher. In the case of quantitative methods in pragmatics, we also encourage an awareness of other different models for analyzing contingency tables that are based on the binomial or multinomial nature of a response variable (see also Goodman, 1964; Marascuilo, 1966; Marascuilo & McSweeney, 1977).

SEE ALSO: Child Pragmatic Development; Comparing Groups With Multiple Independent Variables; Multiple Regression

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Prator, Clifford

MARIANNE CELCE-MURCIA

Clifford H. Prator (1911–93) was an exceptional administrator, a sociolinguist, a practical phonetician, and a language methodologist. Born in Fort Valley, Georgia in 1911, he completed his K-12 education there; while in high school, he developed a love for Latin and the Romance languages. He received his BA in French from Asbury College in Wilmore, Kentucky and pursued graduate work at the University of Michigan, where he received his PhD in Romance Philology in 1939. He then worked as an instructor of French and Spanish (1939–42) at the University of Michigan and became familiar with the work in English language teaching being done by the linguists Charles Fries and Albert Marckwardt.

After administering educational projects in Latin America (1943–6), Prator came to the University of California, Los Angeles (UCLA) in 1947 as an assistant professor of French. In 1949 he was transferred to the English department, having been asked to develop the first English as a second language (ESL) program for UCLA's burgeoning foreign student population. He also served as associate foreign student advisor for several years. Prator was promoted to associate professor in 1951 and to professor in 1960.

As vice chair of the English department and head of the ESL section, which he directed from its inception until 1974, Prator was the moving force behind development of both the postgraduate certificate in TESL (teaching English as a second language) and later the Master's degree in TESL. He also made important contributions to, and served as one of the early administrators (1977–9) of, UCLA's Interdepartmental PhD program in applied linguistics.

Some of Prator's most important yet least known work was as a sociolinguist doing language survey work, which then informed educational planning. This began with his groundbreaking report on language teaching in the Philippines (Prator, 1950), and included, among others, his coauthored report on language teaching in Kenyan primary schools (Hutasoit & Prator, 1965), a summary of research on language use and language teaching in East Africa (Prator, 1975a), work done at the Bourguiba Institute in Tunis and the American University of Cairo, and a comparative summary of Ford Foundation projects in North Africa and the Middle East in which he had been involved in the mid-1970s (see Fox, 1975, for more detail).

Prator's best known work relating more generally to the teaching of English as a second or foreign language is his *Manual of American English Pronunciation* (1957). This textbook went through four editions between 1957 and 1985, the last two editions having been coauthored with B. W. Robinett. The fourth edition (Prator & Robinett, 1985) is still being used as a textbook and reference. One related journal publication (Prator, 1971) deals with the question of when it is important to teach allophonic accuracy rather than just phonemes in English pronunciation instruction.

Among Prator's better known articles dealing with language methodology is "In Search of a Method" (Prator, 1980), which critiqued the orthodox audio-lingual approach to language teaching and offered instead an eclectic and pragmatic approach based on ten guiding principles, which included: no method provides the whole answer, practical experimentation trumps doctrinaire allegiance, the needs and motivations of your students are the primary concern, and what is new is not necessarily better. As one of Prator's

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former students and colleagues, this author's personal favorite among his methodology articles is "Development of a Manipulation-Communication Scale" (Prator, 1975b), in which he criticizes audio-lingualism and calls for greater attention to meaning and communication, arguing that language teaching needs to move from manipulation to communication, which is the ultimate aim of instruction. Although only a published version of this short paper could be found in a source from 1975, this author remembers learning the content in a class she took with Prator in the fall semester of 1962. Prator's (1991a) paper "The Cornerstones of Method" also reflects his eclectic approach to methodology in that the three cornerstones he discusses are: (a) linguistics (what we know about language), (b) psychology (what we know about learners), and (c) education (what we know about the aims of instruction).

Prator's most controversial publication, which has been published (Prator, 1968) and republished many times (most recently perhaps in Prator, 1991b) is "The British Heresy in TESL." In this article Prator is polemic rather than eclectic, which was quite atypical if one judges his publications collectively. He attacks the British inclination to allow local non-native varieties of English to develop and establish themselves as standards in former colonies, especially with respect to pronunciation. Prator argues that such a policy can only lead to increasingly divergent varieties of English that will ultimately have no international intelligibility. Prator contrasts this "heretical" position with that of language educators in France and in the USA, who favor teaching the native speaker standard in pronunciation lessons. Over the years, Prator's fiercely polemic view in this article has been presented alongside more progressive and pragmatic positions on the emergence of "World Englishes." Unfortunately, those who know Prator only through this article have a skewed and incomplete notion of his accomplishments.

After his retirement in 1979, Prator continued for many years to teach his remarkable graduate seminar on language policy, based on his extensive work overseas. By his own oral history account in the UCLA Special Collections, Prator worked in Latin America in Colombia, Brazil, Chile, Peru, Argentina, Mexico, and Ecuador. In addition, Melvin J. Fox (Fox, 1980) of the Ford Foundation has reported first-hand knowledge of teaching, surveys, or projects that Prator did in Algeria, Egypt, Ethiopia, Ghana, Jordan, Kenya, Morocco, the Philippines, Tanzania, Tunisia, Uganda, and Zambia. There are undoubtedly other countries where he did research or consulting.

The relationship between Prator's overseas projects and the development of the TESL and applied linguistics programs at UCLA was symbiotic and truly extraordinary: the projects brought hundreds of foreign professionals to UCLA for graduate study or as visiting scholars, and they created opportunities for US graduate students and faculty to work overseas, thereby contributing to the growth and excellence of the UCLA graduate programs he had created.

Prator was also active in several professional organizations. He was a member of the board of directors of NAFSA (the National Association of Foreign Student Advisors) for six years and served its English language section for one year as vice chair and two years as chair. He also served TESOL (teachers of English to speakers of other languages) both as a member of the executive board and as vice president. In addition, he was on the advisory committee of CAL (the Center for Applied Linguistics) in Washington, DC.

Those who knew Clifford Prator remember him as an intellectually discerning academic, a supportive yet demanding mentor, a gifted administrator (who always seemed to get his way), and a genuine internationalist.

SEE ALSO: Prediction in Teaching Pronunciation

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Praxis and Second Language Acquisition

JAMES P. LANTOLF

The focus of the present entry is on *educational praxis* in second language development. Praxis, in this case, is defined as the necessary integration of theoretical knowledge of features of a language and concrete goal-directed communicative activity. The integration is understood from the perspective of dialectics, as will become clear throughout the remainder of this entry.

According to Vygotsky (1997a, p. 88) education is defined as "the artificial development of the child. Education is the artificial mastery of natural processes of development. Education not only influences certain processes of development, but restructures all functions of behavior in a most essential manner." Education is not just an undertaking whereby knowledge is obtained, but it is an intentionally organized, and therefore artificial, activity that restructures mental behavior. This position is diametrically opposed to classic Piagetian psychology, a perspective that is reflected in many SLA theories whereby instruction is only seen as effective if students are developmentally ready to learn. On this view, instruction becomes a matter of timing and if, as Ellis (2007, p. 91) suggests, it is "ill-timed and out of synchrony with development . . . it can be confusing; it can be easily forgotten; it can be dissociated from usage, lacking in transfer-appropriateness" and "it can be unmotivating." Vygotsky (1987) reverses the Piagetian process and argues that effective instruction must precede and indeed lay down the path for development to follow. This of course is the basis of Vygotsky's most popular, though often misunderstood concept of the *zone of proximal development* (ZPD).

A sociocultural-theoretic approach to L2 teaching and learning challenges one of the foundational assumptions of most SLA research, which makes a distinction between basic research and theory, on the one hand, and classroom practice, on the other. Gass and Mackey (2007, p. 190), for example, reflect this perspective as follows: "Like most SLA researchers, however, [Rod] Ellis is cautious about making direct connections between theory, research, and teaching practice." With regard to their own interactionist approach to SLA, the same authors go on to state that because their primary concern is with "how languages are learned . . . direct application may be premature." Consequently, researchers have frequently voiced concern over how to bridge the gap between theory or research, on the one hand, and practice, on the other (see Erlam, 2008).

In an early book-length manuscript written around 1926 but not published until 1982 entitled *The Historical Meaning of the Crisis in Psychology: A Methodological Investigation*, Vygotsky (2004) lays the foundation for his theory of human psychology—a foundation clearly linked to Marxist philosophy and in particular the 11th thesis on Feuerbach: "Marx has said that it was enough for philosophers to have interpreted the world, now it is time to change it" (Vygotsky, 1997b, p. 9). For Vygotsky this means that psychology must reconceptualize the relationship between theory/research and practice. Rather than two separate undertakings, he argued that they are in fact two necessary components of a single dialectically unified activity—*praxis*. In the following quote from *The Crisis in Psychology* Vygotsky describes the relationship:

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> Previously theory was not dependent on practice; instead practice was the conclusion, the application, an excursion beyond the boundaries of science, an operation which lay outside science and came after science, which began after the scientific concept operation was considered completed. Success or failure had practically no effect on the fate of the theory. . . . Now the situation is the opposite. Practice pervades the deepest foundations of the scientific operation and reforms it from beginning to end. Practice sets the tasks and serves as the supreme judge of theory, as its truth criterion. It dictates how to construct the concepts and how to formulate the laws. (Vygotsky, 2004, p. 304)

For Vygotsky, the previous distinction between general and applied psychology no longer holds and, in effect, applied psychology *is* psychology. The new psychology must be anchored in *praxis*: the approach to scientific research where theoretical statements are put to the test in concrete practical activity. To paraphrase Sanchez Vazquez (1977, p. 99), praxis is the dialectical unity of the ideal (i.e., theory) and objective material activity (i.e., practice). With regard to the topic at hand, this requires a two-way relationship between theoretical knowledge of a language and the use of this knowledge to carry out specific communicative (oral and written) activities in all spheres of human social interaction. The next section considers the implications of a praxis-based orientation for L2 education.

Praxis in L2 Education

It is fair to say that most SLA researchers assume that cognitively the process of acquiring a second language is universal; that is, no matter where acquisition occurs, in the everyday world or in a formal educational setting and everywhere in between, the psychological mechanisms that guide the acquisition process are the same (see Long, 2007). From the perspective of sociocultural theory (henceforth, SCT), however, because the social environment plays a central role in psychological development and because the environment varies, L2 development is not necessarily a universal process. In other words, learning a new language in the everyday world entails different mechanisms from learning the same language in a formal educational setting. To appreciate the significance of this argument, it is necessary to discuss briefly the important distinction Vygotsky makes between *scientific* and *spontaneous* concepts.

Scientific and Spontaneous Concepts

Although the ZPD is arguably the most well known and widely adopted feature of Vygotsky's theory, his proposal that the basic unit of formal education is conceptual (some use the term "theoretical") knowledge of a given domain as formulated through scientific research is in many ways more important. Scientific concepts "represent the generalizations of the experience of humankind that is fixed in science, understood in the broadest sense of the term to include both natural and social science as well as the humanities" (Karpov, 2003, p. 66). These concepts are explicit, and therefore accessible to conscious inspection, domain specific, and "aimed at selecting the essential characteristics of objects or events of a certain class and presenting these characteristics in the form of symbolic and graphic models" (Karpov, 2003, p. 71).

Scientific knowledge contrasts sharply with what Vygotsky calls *spontaneous* knowledge formed during concrete practical experience largely on the basis of "an immediate observable property of an object" (Kozulin, 1995, p. 123). Spontaneous knowledge is empirically based, usually, though not exclusively, inaccessible to conscious inspection, and requires lengthy periods of practical experience to develop. This type of knowledge, as Karpov

(2003, pp. 69–71) points out, "may work if the common salient characteristics of objects or events reflect their significant, essential characteristics" but it runs into problems on several counts, such as when the observable common features of a set of objects are not the essential features of the entire class of objects under consideration. As Vygotsky (2004) noted, the goal of science is to discover through rigorous analysis the usually hidden essence of the object of inquiry. If things were the way they appeared under the direct scrutiny of our senses, science (and concomitantly education) would be unnecessary. To illustrate the distinction between spontaneous and scientific knowledge, consider how the concept *circle* is understood in the two domains. Our everyday knowledge of circle is a generalization usually arrived at by extracting the common geometric shape of objects such as wheels, pancakes, bracelets, coins, etc. It is often the way teachers introduce the concept in school. The scientific concept of circle, on the other hand, is "a figure that appears as the result of a movement of a line with one free and one fixed end" (Kozulin, 1995, p. 124). The scientific definition, according to Kozulin, encompasses all possible circles and "requires no previous knowledge of round objects to understand" (p. 124).

An especially relevant type of spontaneous knowledge, Vygotsky (1987, pp. 202–5) suggested, is the unconscious knowledge that children develop of their native language. Children's appropriation of their first language is by and large implicit and not open to conscious inspection. As Wertsch (2007, p. 185) notes, we acquire our first language in childhood not as something to be intentionally appropriated but as a means of mediating our participation in specific cultural activities (e.g., meals, play, scoldings from parents, etc.). When children come to school, however, and enter into activities mediated by written texts, what had been previously invisible becomes visible and available for conscious inspection and analysis. At this point, education places systematic focus onto language as a legitimate object of study with the purpose of helping children gain intentional control over the most important symbolic artifact developed by human culture. The quality of intentional instruction, however, is crucial in determining the level of control achieved (Vygotsky, 1987).

Vygotsky (1987, p. 218) argued that scientific and spontaneous knowledge each have their strengths and weaknesses. The strength of the latter is that it is saturated with personal experience and its use is spontaneous, or automatic. Its weakness consists in the fact that it is tied to concrete empirical situations and is therefore not sufficiently flexible so as to be easily extended to a wide array of circumstances. Its automatic quality, which is part of its strength, is at the same time a weakness. The fact that spontaneous knowledge is not easily accessible to conscious inspection means that we have less intentional control over it in order to make it serve our needs.

By the same token, the strength of scientific knowledge resides in its visibility and rigor, which imparts greater flexibility and control to the individual. However, its weakness is that it does indeed lack rich personal experience and it also requires a fair amount of time to gain the necessary automatic control (i.e., proceduralization) over it. Thus, for scientific knowledge to be of value it must be connected to practical activity—the domain where spontaneous knowledge dominates, otherwise the result is what Vygotsky, among others, describes as "verbalism"; that is, knowledge "detached from reality" (Vygotsky, 1987, p. 217). As Ilyenkov (1974) warns, verbalism is "that chronic disease of school education" that leaves people with the inability to connect systematic scientific knowledge to practical concrete activity. Indeed, unless the connection is made we do not develop knowledge as such but only "an illusion" or "surrogate" for knowledge (Ilyenkov, 2007, p. 71). The needed connection is what praxis is all about. The following section focuses on praxis in L2 instruction.

Systemic-Theoretical Instruction and L2 Praxis

Two of the most important scholars to propose pedagogical approaches grounded in Vygotsky's praxis-based psychology are Gal'perin (1979) and Davydov (2004). Each scholar developed a slightly different model of educational praxis. Because my intent is to provide the reader with a general understanding of L2 praxis rather than with information on the subtleties between the two models, and because, with the exception of Ferreira (2005), most of the L2 praxis research draws on Gal'perin's model, I will focus exclusively on his approach, referred to as systemic-theoretical instruction (STI)—an approach to education which centers on learner understanding and internalization of scientific concepts.

Gal'perin proposed a multiple-phase procedure, which begins with presentation of the concept and terminates with its automatization (i.e., internalization) in practice. These phases are bridged by two additional procedures: materialization and verbalization. Verbalization, in turn, comprises two subcomponents: verbalization of the concept as such and verbalization of the concept as it accounts for and guides one's performance of practical activity. Verbalization requires learners not to memorize the verbal definition of the concept but to use a SCOBA, or schema for the orienting basis of action (see Figure 1) as a guide to self-explanation of the concept through private speech. This forces learners to listen to themselves and determine whether or not they feel they indeed understand the concept. It also compels them to externalize their reasons for deploying the concept as they do. Externalization is an essential aspect of psychological development that further deepens understanding of, and control over, concepts. Materialization requires the conversion of the verbal representation of the concept into an imagistic depiction, or SCOBA, on the theoretical assumption that a concrete image is more coherent, more easily comprehended and thus serves as a more flexible guide of activity than does a verbal definition alone.

While some L2 researchers such as Rod Ellis acknowledge a role for explicit (i.e., conscious) knowledge in L2 instruction, most do not pay sufficient attention to the impact of the quality of such knowledge on learning (however, see DeKeyser, 1998). Hammerly (1982, p. 421), for example, supports rule-of-thumb knowledge, which he describes as "*simple, nontechnical, close to popular/traditional notions*" (italics in original), and recommends that grammar explanations be "short and to the point" because if they are complex and extensive "it is too much for the students to absorb" (p. 421). The problem with this approach to explicit knowledge is that rules-of-thumb are not always complete, coherent, or accurate. They generally describe what is typical in a specific context rather than an abstract principle that promotes a deep understanding of the concept allowing learners to use the language flexibly across an array of contexts.

Whitley (1986) offers a good example of a typical rule-of-thumb presented in textbooks for teaching Spanish to L1 English speakers. The rule describes use of verbal aspect (preterit/imperfect): preterit "reports, records, narrates, and in the case of certain verbs (e.g., *saber*, *querer*, *poder*) causes a change of meaning" and imperfect "tells what was happening, recalls what used to happen, describes a physical or mental emotion, tells time in the past, describes the background and sets the stage upon which another action occurred" (Whitley, 1986, p. 108). The problem with the rule, as with most empirically based rules, is that it is not fully accurate, because while one can find evidence of use of verbal aspect that accords with the rule, it is also the case that one easily finds exceptions to the rule, as for instance use of preterit to describe emotions. The problem is that most textbooks provide examples of language designed specifically to illustrate and therefore support the function of the rule. Ilyenkov (1974) calls this circumstance application of the "notorious principle of visual learning." The result is that the real object of study "remains outside the classroom door, beyond the boundaries of the academic subject" (Ilyenkov, 1974). The rule-of-thumb

approach along with the principle of visual learning gives the impression that language study is about learning to produce correct forms while avoiding incorrect forms rather than understanding language as a cultural artifact for meaning creation in social and psychological activity.

L2 Studies

Two early studies on L2 instruction within Gal'perin's framework were both successful but very short-term projects, each lasting only a few hours. The first by Carpay (1974) was concerned with Russian verbal aspect and the second by van Parreren (1975) dealt with attributive adjectives in German. Oboukhova, Porshnev, Porshneva, and Gaponova (2002) conducted a more extensive study lasting several weeks on teaching verbal aspect in L2 French to L1 Russian speakers. In the study the concept of aspect was materialized as a cartoon and presented via computer. The students then completed a series of activities based on the cartoon in which they were asked various questions about the formation and use of French verbs. While this was happening, the conceptual explanation of how to form and use aspect in French was displayed in a corner of the computer screen. When completing the activities the students were required to verbalize their reasons for inflecting verbs for either of the two aspects of French. As they moved through the activities, the explanation displayed on the computer screen became increasingly abbreviated. Over time the students' verbalizations also were increasingly abbreviated until they became subvocal private speech. However, whenever the students made a mistake, they were cued to externalize their explanation. This process was continued until the students were able to complete a sequence of activities without recourse to externalization. The learners' performance on a posttest narrative was significantly better than a control group that had not received the computerized instruction. In interviews conducted with the learners, one of them commented that concept-based instruction made things easier and that "the learned knowledge has remained in my head" (Oboukhova, et al. 2002, p. 112).

Negueruela (2003) and Yáñez-Prieto (2008) reported on long-term studies in which Gal'perin's model was implemented in normal 16-week university Spanish L2 classes. It is important to recognize that in both studies the classes were not conducted as experimental or quasi-experimental activities. Students enrolled as they would in any language course and the syllabus followed was the same as in other sections of the course. The only difference was that the pedagogical principles followed for instruction in specific features of the L2 were rooted in SCT and Gal'perin's model of developmental education. In Negueruela's study the features designated for STI were verbal aspect, mood, and article use, and in Yáñez-Prieto's project verbal aspect as well as figurative language was the object of special instruction. These two studies have been reported on in a number of different publications, including Lantolf (2007, 2008). Swain, Lapkin, Knouzi, Suzuki, and Brooks (2009) traced the development of learner understanding and use of active, passive, and middle voice in L2 French. The findings of the study reveal that learners were able to develop a deeper understanding of the concept of voice as a result of instruction provided through a SCOBA integrated with the activity of *languaging*, Swain's (2006) terminology for use of language (spoken or written) with a psychological rather than social function.

A more recent study by Lee (2010) integrates scientific principles from cognitive linguistics with pedagogical principles from Gal'perin's pedagogical model to provide instruction on the notoriously difficult English phrasal verb constructions for university ESL learners in a North American setting. Lee's SCOBA for phrasal verbs that integrate the particle "out" is given in Figure 1.

Frame 1 visualizes the basic concept imparted by "out" in English whereby the particle indicates a position external to a container. Frame 2 depicts movement of an individual

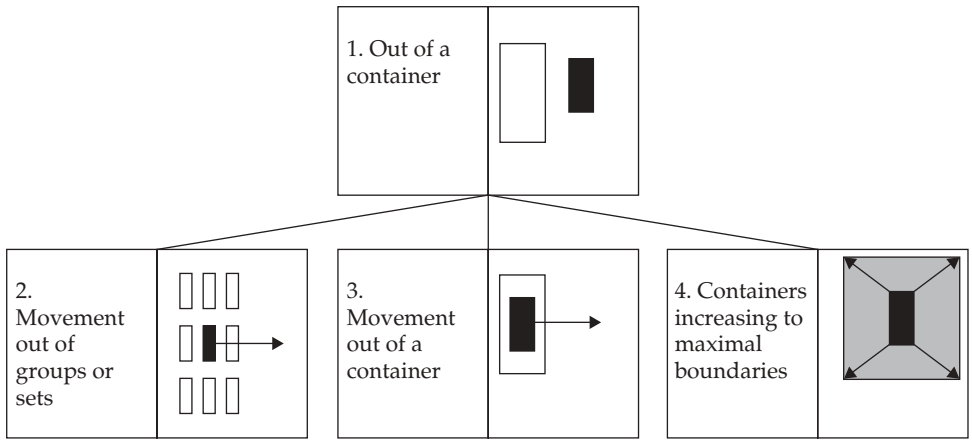

Figure 1 SCOBA for particle "out" (Lee, 2010). © H. Lee

entity out of a collection or set of other individuals, as in "The teacher gives out the activities work sheets." Frame 3 shows movement out of a container, as in "Mary ran out of the house," and frame 4 illustrates the increase in the boundaries of a container, as in "Fred spread out the map on the table."

A difficult feature of phrasal verbs for learners to master is their metaphorical use. Using the SCOBAs such as given in Figure 1, Lee was successfully able to explain to learners the relationship between literal and figurative meanings of phrasal verbs formed with "out" (Lee also provided instruction on two additional particles, "up" and "over"). Metaphorical uses of "out" include the following: "It turned out that Nancy had written the letter," "Bad storms always bring out people's anxiety," and "At some point fossil fuels will run out." Through a series of pre- and posttests, Lee reports considerable improvement in the learners' ability to correctly interpret both the literal and metaphorical uses of phrasal verbs. In the case of "out" mean performance improved from nearly 56% accuracy on the pretest to 74% accuracy on the posttest among a total of 23 students who participated in the course. The improvement for "up" and "over" was approximately the same in percentage increase from pre- to posttest scores. Through communicative practice guided by SCOBAs, learners eventually internalize the relevant concept and are able to use it to mediate their performance in the L2.

On the other hand, a study carried out by Ferreira, and discussed in Ferreira and Lantolf (2008), yielded mixed findings. The study was based on a semester-long university course on ESL writing in which genre as defined in Halliday's system-functional linguistics was the scientific concept around which the course was organized. Although some of the students improved in their writing, as assessed by independent judges, and in their understanding of the concept of genre, as determined by self-explanations of their performance and by comparisons of genre features in their own culture and Anglo culture, others were resistant to STI. They complained that they found the approach too "theoretical," and that they failed to perceive the relevance of conceptual knowledge for writing performance. Similar resistance was reported by Negueruela (2003) and Yáñez-Prieto (2008) at the outset of their courses but this faded as the learners eventually developed an appreciation for the significance of conceptual knowledge for their own learning. The source of the resistance in all three studies was the students' previous educational experiences. In Negueruela (2003) and Yáñez-Prieto (2008) the students had to confront the fact that they had internalized

rules-of-thumb that were not useful. The confrontation took place in self-talk as they attempted to explain new concepts and their own performance to themselves—an important component of concept-based instruction as formulated by Gal'perin. In Ferreira and Lantolf (2008) it was hypothesized that the resistance emanated from previous writing courses where instruction was heavily reliant on specific empirical guidelines that, if followed, would result in the production of acceptable English texts and where discussion of the abstract conceptual basis of quality texts was avoided.

An important aspect of language instruction grounded in praxis is as follows: because of the dialectic of conceptual knowledge and concrete practice, development is expected to take place in both domains. That is, educators and researchers have generally been interested in the effects of particular instructional behaviors on learner performance. While this is of course paramount, according to Negueruela (2003), development in the conceptual domain is no less important. This is because both components of a dialectical process require growth. In other words, improvement in performance is connected to improvement in conceptual knowledge. It is possible for one component to grow without concomitant growth in the other. With regard to performance, given sufficient time and exposure, learners are able to increase their proficiency in a language. However, this can take a great deal of time and effort on the part of learners, and many learners often give up before attaining reasonably high levels of proficiency. Moreover, because performance in the absence of understanding as Vygotsky (1987) argued, as in the case of L1 learning, is often closely tied to specific contexts of language use, it is not so easy for learners to transfer improvements in one context to another context. On the other hand, development of conceptual knowledge decoupled from concrete practical experience is essentially nugatory. Dialectical development based on praxis requires interaction between both components. Each feeds the other and as a result learners are empowered to effectively engage in communicative activity in a wide array of contexts. Not too surprisingly, development of the conceptual component often precedes development of the practice component; on the other hand, the practice component, as Vygotsky argued, provides the test of the effectiveness of conceptual knowledge. This developmental profile was quite apparent in the studies surveyed in this article, and it was especially clear in Ferreira's (2005) project where learners showed progress in their understanding of the concept of genre but, for the most part, improvement in writing performance lagged behind.

Conclusion

Praxis—the dialectical unity of theory/research and practice—is the foundation on which Vygotsky's psychology of human development is built. It has particularly important implications for education, which is a specific type of cultural activity organized around scientific knowledge as the basic unit of instruction. However, scientific knowledge by itself is dormant and of little value in promoting genuine development. It must be married to concrete goal-oriented activity. The manifestation of L2 educational praxis described in this entry is systemic-theoretical instruction, which provides students with coherent, sophisticated, but at the same time comprehensible concepts of relevant features of the target language. This is achieved through SCOBAs, which are imagistic representations of the concepts that mediate and promote improved understanding of and performance in the L2. The goal is not for learners to behave like native users of the language but to intentionally create their own meanings that may or may not reflect what native users do. In this way, L2 instruction empowers learners to use the new language to fulfill their particular needs rather than some predetermined expectations of how the new language should be deployed.

SEE ALSO: Dynamic Assessment in Second Language Acquisition; Inner Speech in Second Language Acquisition; Languaging: Collaborative Dialogue as a Source of Second Language Learning; Private Speech in Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Prediction in Teaching Pronunciation

WAYNE B. DICKERSON

Learners and teachers of English as a second or foreign language (ESL/EFL) take for granted that learning grammar means learning rules. They do not often think of learning rules for pronunciation. Instead, images of listening and speaking come to mind.

Prediction as an Aid to Instruction

Despite these dominant images, rules have been part of pronunciation textbooks for more than a half-century, guiding learners on how to pronounce the {Z} and {D} morphemes, place discourse stress, and use intonation (Prator, 1951). Listening and speaking come to mind because pronunciation learning was conceptualized as forming new oral-aural habits through abundant, if not always meaningful, drill work. In this context, prediction was an *aid* to learning, not an *aim* of instruction.

Prediction as an Aim of Instruction

With the advent of transformational-generative grammar and cognitive psychology in the 1960s, the case for language being rule-governed rested largely on rules of syntax (Chomsky, 1959). However, in 1968, with the publication of *The Sound Pattern of English*, Chomsky and Halle demonstrated the broadly rule-governed nature of phonology.

The cognitive revolution in linguistics invited a reevaluation of pronunciation teaching, starting with its goals. Seen through the lens of the competence/performance dichotomy (Chomsky, 1964), the emphasis of pronunciation on listening and speaking was all about performance. By contrast, the new linguistic model suggested that pronunciation teaching should be about developing learners' competence in the new sound system. While fundamental, a knowledge of rules is insufficient for second language learners; they still need good listening skills (perception) and articulatory control (production) to communicate. From this reevaluation came the conviction that pronunciation instruction should add a third goal: developing prediction skills. This trilogy of goals (prediction, production, perception), called the 3Ps (Dickerson, 2004), elevates prediction to the same status as production and perception and highlights the value to learners of making good judgments about the sounds to use even before (*pre-*) speaking (*-diction*).

Preparing to Teach for Prediction

If prediction was to become a beneficial third goal for pronunciation teaching and learning, then three challenges had to be addressed. First, no repository of learner-friendly rules covering English pronunciation existed. Second, even if such rules were available, no understanding of how formal rule learning might affect one's spontaneous speech had yet surfaced. Third, no pedagogical materials built around the 3P model had been developed to show how to present the rules, offer the right kinds of practice, and test prediction skills.

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The story of prediction in teaching pronunciation is the story of how language teachers have tried, and continue to try, to meet these three challenges.

Learner Rules for Pronunciation

Applied linguists have contributed learner rules to pronunciation teaching for many years. In the areas of phrase and discourse phonology—discourse stress (also called *accent*, *nucleus*, *prominence*), intonation, and rhythm—rule use was the earliest to develop.

While rules for contrastive stress were well known (Prator, 1951), learners had to await the descriptive work of Halliday (1967) before rules for non-contrastive discourse stress began to appear in pronunciation textbooks (Gilbert, 1984; Dickerson, 2004). Communicative language teaching in the 1980s spurred on the development of rules for discourse stress (Hahn & Dickerson, 1999).

Croft (1961) popularized the Trager–Smith (1951) analysis of English intonation (based on Pike, 1945). O'Connor (1967) synthesized British work on intonation for learners of English. Brazil's work on intonation patterns for learners (1994) goes back to his analytical work in the late 1970s and early 1980s and is still influencing pedagogical texts (Gorsuch, Meyers, Pickering, & Griffee, 2010). Using various notational devices, pronunciation texts associate intonation patterns with sentence types or pragmatic functions, such as a rising contour for a tag question indicating uncertainty but a falling contour for a tag question seeking confirmation (Lane, 2005).

Pike (1945) described English-style rhythm as stress-timed. Prator (1951) and Lado and Fries (1954) integrated his description into their pedagogical texts. Since then, that description of English rhythm, with its beat controlled by the prominent stresses of content words, has echoed across the decades to current texts like Lane (2005).

While predicting vowel reduction in function words has been a staple in pronunciation materials for more than a half-century, the prediction of other rhythm-facilitating features, like linking, trimming, and palatalization, became popular only in the early 1980s as another by-product of communicative language teaching. Now nearly all pronunciation texts guide learners to predict natural speech phenomena (Weinstein, 1982).

By contrast, a particularly challenging area of rule writing has been word-level phonology, covering the consonants, vowels, and position of stress in polysyllabic words. Early efforts to use standard orthography as a guide to segmental phonology (e.g., Prator, 1951) made progress with consonant prediction. But, with vowel prediction, they oversimplified patterns in the two ways that phonics had, namely, by offering non-distinctive patterns and by ignoring the defining role of word stress in vowel quality. Stressless vowel patterns (e.g., Gilbert, 2001) can sometimes narrow the range of pronunciation options, but they cannot truly predict vowel sounds; for nearly every spelling pattern predicting a stressed vowel, its unstressed counterpart predicts a reduced vowel. To be more helpful, Dickerson (2004) reanalyzed English vowel spelling for learners, making use of predictable word stress. He also went beyond major stressed vowels to provide accessible rules for all vowels in a word, stressed and unstressed.

Acknowledging the importance of word stress, textbook authors over the years have tried to help learners with the stress of words. O'Connor (1967) and Bowen (1975) say that you have to memorize the stress of a word because it is unpredictable. In a similar vein, Prator (1951) directs the student to a dictionary for the stress of a polysyllabic word. Trager and Henderson (1957) suggest that learners will get the feel for word stress by practicing each pattern (e.g. ´ ˘ ˘) using illustrative words. From such practice learners learn the patterns but not which word uses each pattern. Prator and Robinett (1972) offer statistical guidelines for the stress of two-syllable words. However, there is no way to

know if a particular word is among the 75% that follow the rule or the remaining 25%. For the stress of words longer than two syllables, a popular approach has been to use word endings as a guide (Dauer, 1993). But not all polysyllabic words have endings. Another approach suggests that the stress of a root form can guide you to the stress of a derived form; for example, from *agrée*, predict *agréement* (Lane, 2005). Unfortunately, learners frequently do not know the stress of the root form, and not all polysyllabic words have a root form. For many derivatives, the stress also changes, e.g. *presíde*, *président*, *presidéntial*. These nonsystemic approaches can help learners, which is why they continue to appear in current textbooks (Dauer, 1993). But they do not offer comprehensive guidance, especially for words that learners have never before encountered.

Unique among ESL texts are those that attempt a system-level solution to word-stress prediction that can provide a solid basis for vowel prediction. In the 1970s, before word stress was generally acknowledged to be rule-governed, Guierre documented some 30 word-stress patterns for learners, showing that English word stress is overwhelmingly predictable. He later showed how stressed vowels could also be predicted (Guierre, 1984). Dickerson (2004), whose work began in the mid-1970s, reduced learner word-stress rules to four, drawing on his own research and on Chomsky and Halle (1968). He associated vowel prediction with each stress rule so that learners who predict the stress of a word would also know how to pronounce its stressed and unstressed vowels (see examples below).

The main difficulty with many learner rules is their inconsistent adherence to principles of good pedagogical rule writing. The most important principle to respect is the No-Prior-Knowledge Assumption (NPKA) (Dickerson, 1983): A learner rule must not require the learner to already know the target language (e.g., the meaning or pronunciation of words) or to have specialist knowledge about the target language (e.g., word etymology). It must be fully accessible to literate learners with minimal prerequisites for its use. Stated this way, the NPKA is obvious. It is nevertheless often violated (Dickerson, 1990).

According to Dickerson, a good learner rule must do the following:

1. Adhere to the No-Prior-Knowledge Assumption.
2. Apply unambiguously; the trigger implicating it is well defined.
3. Operate mechanically; its output must not rely on guessing.
4. Yield a single, unitary output, except where acceptable variation exists.
5. Generate a pronounceable output in one pass; cyclic rules are too burdensome.
6. be productive; a rule for a handful of words is not worth the bother.
7. Be accurate; the larger the word group, the higher the predictive accuracy should be because of the exceptions to be learned. Common exceptions must be listed.
8. Be memorable; it must be brief, simple, template-like for segmentals, and in a form that can be practiced easily.

Word-Level Rules Exemplified

Learner rules for phrase- and discourse-level phonology, as noted above, are common in pronunciation textbooks. By contrast, word-level rules are much less so. Therefore, we illustrate two system-level word-stress rules found in Dickerson (2004) and Hahn and Dickerson (1999) and a sample of their associated vowel patterns to show how they satisfy the NPKA and other pedagogical rule-writing principles.

While conventional wisdom disparages standard orthography, Chomsky and Halle (1968, pp. 48–9, 96, 184n.) commend it repeatedly as remarkably close to the ideal representation of English words. For learners, this contrarian endorsement means that the common spelling of words provides superb input if rules are written to use such input.

As background, two powerful, simplifying insights derived from Chomsky and Halle (1968) guided Dickerson's pedagogical work on word stress and vowel prediction. First, polysyllabic English words have major stress *on only one of two possible syllables*—in Dickerson's terminology, the *Key Syllable* (the *Key*) and the *Left Syllable*, immediately to the left of the Key. The Key Syllable is the starting point for each word-stress rule which tells the learner whether the major stress falls on the Key or the Left Syllable. Second, no vowel in English can be predicted without first knowing its stress.

The Key Stress Rule (KSR) applies to words having -iV endings, defined as the letter *i* followed immediately by the letter *a*, *o*, *u*, or by *enC*, words like *Virgin(ia*, *rad(io*, *convolut(ion*, *gymnas(ium*, *conven(ient*. In this set of more than 10,000 words, the Key Syllable is immediately to the left of the -iV ending, as underlined above. The pedagogical rule states simply: For KSR words, place major stress on the Key, as in *gymnásium*, *convénient*.

To predict the stressed vowel left of the KSR ending (K), note that the letter *i* followed by one consonant letter (C) predicts a lax vowel (íC + K = lax), as in *Virgínia*, while all other vowel letters followed by one consonant letter predict tense vowels (ÝC + K = tense), as in *convénient* (Dickerson, 1980).

We illustrate the Left Stress Rule (LSR) as it applies to long *-y* nouns, namely, to nouns that end in a *-y* and have at least two syllables to the left of the *-y*, like *immunit(y*, *majest(y*, *melod(y*, *agilit(y*, *tyrann(y*, *colon(y*. The Key Syllable is immediately to the left of the *-y* ending, as underlined. The Left Syllable is immediately to the left of the Key. The rule states: For LSR words, place major stress on the Left Syllable, as in *týranny*, *cólony*.

To predict stressed vowels in the Left Syllable (←), note that the letter *u* followed by one consonant letter predicts a tense vowel (úC← = tense), as in *immúnity*, while all other vowel letters followed by one consonant letter predict lax vowels (ÝC← = lax), as in *májesty* (Dickerson, 1980). By stressing left, the Key is predictably unstressed.

Only four vowel quality patterns (VQPs) are illustrated here. They are still enough to show that, while good patterns can be simple, they are not sufficient. Learners also need a mechanical way to convert the predicted lax and tense vowel qualities into the correct vowel sounds or symbols. Several approaches are available. Gilbert (2001) offers one for her special vowel symbols. The one found in Dickerson's work can be used for traditional vowel symbols. It is called the Name-Shape Translator.

The translator works like this: If the VQP predicts a tense vowel for a vowel letter, then the learner uses the English *name* of that vowel letter as the sound of the target vowel. If the VQP predicts a lax vowel for a vowel letter, the learner uses the *shape* of the vowel letter as a cue to the lax vowel symbol for that target vowel. The shape of the vowel letter and the shape of the vowel symbol are easy to associate. For both tense and lax vowels, the letter *y* has the same value as the letter *i*.

Tense is in the name of the letter.			Lax is in the shape of the letter.		
a	=	/ey/	a	=	/æ/
e	=	/iy/	e	=	/ɛ/
i	=	/ay/	i	=	/ɪ/
y	=	/ay/	y	=	/ɪ/
o	=	/ow/	o	=	/ɑ~ɔ/
u	=	/uw/	u	=	/ʌ/

If a pattern predicts a reduced vowel (not illustrated here), the translator converts it directly to /ə/ if the vowel spelling is *a*, *o*, *u*, to either /ə/ or /ɪ/ if the vowel spelling is *e*, *i*, *y*, or to /ər/ if *r* follows the vowel.

These stress and vowel quality rules conform to standards for good rule writing: Each stress rule applies to other unambiguously defined word groups. For each word, locating

its Key and Left Syllables is a mechanical process. The learner need not know the meaning, morphological derivation, or pronunciation of a word in order to judge which stress rule applies. The rules predict the major stress and the quality of the major stressed vowel in these word sets with an accuracy greater than 95%. VQPs make use of the stressing information, namely, the Key and Left Syllables—a valuable redundancy. Furthermore, each is stated in a template-like form that is easy to use and to practice. Finally, the Name-Shape Translator uses mnemonically transparent associations.

Rule Learning and Spontaneous Speech

For any new pedagogical goal to flourish, it must have the support of an accepted learning model. For prediction, that model comes from learning strategy research (Cohen & Macaro, 2007). One implementation is called *covert rehearsal* (Dickerson, 1984, 2000).

Since our brain cannot easily attend to the flow of our conversation and also analyze our performance as we converse, covert rehearsal is done in private, where we can speak aloud without self-consciousness and engage in rule use without distraction. Covert rehearsal is a recursive sequence consisting of the following steps (Dickerson, 2000). Although the first is not a strategy, the remaining steps are based on learning strategies (Sardegna, 2009).

1. Find privacy.
2. Perform aloud.
3. Monitor performance.
4. Compare performance with models.
5. Change performance to match models.
6. Practice changed performance aloud until fluent.

There is nothing novel in the claim that practice results in learning. The novelty of covert rehearsal is that the practice is not public and is initiated by the learner. Furthermore, the learner is the monitor and the source of correction. As in any other strategy training, learners can be taught these steps and encouraged to incorporate them into their learning.

Teaching and Testing the 3Ps

When pronunciation teaching expands to accommodate the goal of prediction, it has a major impact on instruction. It affects the following.

- Our learning objectives. Production now requires mastery and use of rules for private practice.
- Our understanding of the teachers' and learners' roles. It is the teacher's job to prepare learners to be self-teachers, because they are responsible for their own improvement.
- Our use of in-class and out-of-class time. To safeguard class time for oral work and feedback, rule learning can be moved to out-of-class time, where well-designed materials can help learners master each new rule and integrate it with old rules.
- Our teaching practices aimed at modeling covert rehearsal and encouraging rule use. For example, in class, before calling on learners to speak, teachers can direct them to practice utterances aloud in their own space, examining them for accuracy, repairing them, and practicing their repairs. When they make mistakes, instead of correcting them, teachers can guide learners to inspect their utterances and self-correct. Out of class, learners can be encouraged to link prediction and production by immediately reading

aloud the words or phrases for which they have made predictions. Teachers can also require students to make audio recordings of their exercise materials and to rehearse aloud before they record. These techniques build up learners' skill at using rules in covert rehearsal.

- Our testing. While perception and production tests remain unchanged, the testing of prediction is different in that we want to know the rule resources learners can marshal consciously for the tasks of monitoring and correcting their speech. For this, pencil-and-paper tests on novel words, phrases, dialogues, and passages allow learners to demonstrate their knowledge of rules.

Choices

The prerequisites for incorporating the goal of prediction into a pronunciation class or into the pronunciation part of a lesson are in place—a well-tested set of learner rules, an understanding of how to convert learned rules into acquired rules, and pedagogical materials and practices for teaching the rules and teaching learners how to use the rules in self-instruction. Teachers now have a choice of continuing with 2P instruction, trying 3P instruction, or fashioning a hybrid of the two because any amount of rule use gives learners a distinct advantage.

SEE ALSO: Pronunciation Instruction; Pronunciation Teaching Methods and Techniques; Suprasegmentals: Intonation; Suprasegmentals: Stress

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Prescriptive and Descriptive Grammar

SÖLVE OHLANDER

Introduction

The terms *prescriptive* and *descriptive* grammar contrast two approaches to grammatical phenomena. A prescriptive (or *normative*) attitude, *prescriptivism*, implies that "one variety of language has an inherently higher value than others, and that this ought to be imposed on the whole of the speech community" (Crystal, 1992, p. 312). This view, then, is that of a guardian or legislator of what is assumed to be correct grammar, typically formulated in terms of "dos" (*pre*scriptive rules) and "don'ts" (*pro*scriptive rules), in the name of good usage. Well-known English examples of prescriptive grammar are the rules "Don't split infinitives!" (as in *to boldly go*) and "Don't end a sentence with a preposition!" (as in *Who did you speak to?*). The prescriptive traditions of other languages may differ in content, although not in attitude.

A different approach was advocated by, for example, Jespersen (1933, pp. 19–20), that is, "a purely *descriptive* grammar which, instead of serving as a guide to what should be said or written, aims at finding out what is actually said and written . . ." This means that the linguist's job is to record and describe language as it is, without trying to improve it according to some preconceived standard of correctness (e.g., "Don't split infinitives!"). The emergence of descriptive grammar is closely related to that of modern descriptive linguistics in the first few decades of the 20th century, in which the Swiss linguist Ferdinand de Saussure and the American Franz Boas played pioneering roles. Descriptive linguistics, however, is a considerably wider notion (see Gleason, 1961).

Descriptive grammar deals with the grammatical system at large, prescriptive grammar with a narrow subset of phenomena, especially those displaying divided usage. Descriptivism has long provided the norm for scholarly grammars, such as Quirk, Greenbaum, Leech, and Svartvik (1985), and Huddleston and Pullum (2002), where the notion of rule—in the sense of "generalization"—differs from prescriptive rules. Sweet (1891, p. 5) insists that "the rules of grammar have no value except as statements of facts: whatever is in general use in a language is for that very reason grammatically correct." For example, the descriptive grammarian should account for the fact that *It was me* (rather than *It was I*) is in general use and thus grammatically correct, whereas a prescriptive rule might condemn this usage. The focus of prescriptive grammar is on right versus wrong in more or less absolute, static terms, usually based on the written language in a fairly formal register, often with a literary bias. Descriptive grammar, by contrast, is sensitive to language variation and change, and considers appropriateness in relation to different social settings, registers and styles.

Historical Outline

The descriptive–prescriptive dichotomy can hardly boast a very long history, certainly not in comparison with linguistics or language teaching (Kelly, 1969; Robins, 1979). The term "prescriptive" applied to English grammar has been in use only since the 1930s (Crystal, 2006, p. 94); the normative approach itself dates back to the 18th century. In an international

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historical context, despite the fact that the modern distinction was not explicitly formulated, the prescriptive tradition can be traced back to the Greek and Latin grammarians of classical antiquity, who also provided a descriptive framework for Renaissance grammarians; outside Europe, the early Indian grammatical tradition was essentially descriptive (Lyons, 1968, pp. 10–20).

In 17th- and 18th-century England, the Latin-inspired tradition was adopted by many grammarians, often having foreign learners of English as their intended readership. The degree of dependence on the Latin model varied: the dramatist Ben Jonson's posthumously published grammar (1640) conformed closely to it, whereas John Wallis's grammar (1653), although written in Latin, deviated substantially.

Among the numerous works on English grammar published in the latter half of the 18th century, Robert Lowth's *A Short Introduction to English Grammar* (1762) stands out as the starting-point of what, in retrospect, might be called the prescriptive movement. There had been earlier signs of prescriptive attitudes, particularly in connection with the lively debate, in the 17th and early 18th century, on the need to "fix" the language, (see Howatt, 1984, p. 109) protecting it from change and corruption. In this debate, in which writers like Daniel Defoe and Jonathan Swift participated, the notion of "correctness" loomed especially large.

While Lowth may be considered the instigator of the prescriptive approach to English, the American-born Lindley Murray, whose grammar (1795) was heavily dependent on Lowth's, was his prophet. Together—not sparing even great writers like Shakespeare, Milton, and Swift from rebukes for "false syntax"—they set the pattern for the traditional school grammars of the 19th century, defining a core of usage controversies and codifying the rules of correct grammar. This prescriptive canon lives on in many of today's usage handbooks, as well as on the Internet; "the same issues that bug people now were bugging them 250 years ago" (Crystal, 2006, p. viii).

However, dissenting voices were heard from early on, arguing for a more descriptive approach, based on "custom"; one of them was the scientist Joseph Priestley in his grammar of 1761. Interestingly, even Lowth, having first defined grammar as "the Art of rightly expressing our thoughts by Words," stresses that a grammar of English should be based on "the established usage and custom of it" (Lowth, 1762, p. 1). Apparently, his use of the phrase "established usage" has little in common with Sweet's descriptive view of "general use" (see above).

In the closing decades of the 19th century, methods of teaching languages, including prescriptive grammar, came under increasing fire from linguists (Sweet, Jespersen, and others) within the so-called Reform Movement with its emphasis on pronunciation and spoken language, whole texts rather than separate sentences, and inductive grammar teaching, starting from examples rather than rules (Howatt, 1984, pp. 171–91). Practical language skills rather than knowledge of grammar rules were gradually taking center stage. However, prescriptivist attitudes among pedagogical grammarians as well as the educated public were not easily abandoned, as shown by the success of H. W. Fowler's *Modern English Usage* (1st ed. 1926). This "epoch-making book . . . made the name of Fowler a household word in all English-speaking countries" (Gowers, 1965, p. iii). Despite objections from linguists, Fowler's reputation in the 20th century as *the* authority on English usage says a great deal about the enduring appeal of prescriptivist attitudes to grammar and usage.

Prescriptivist Principles

Underlying descriptivism is the scientific idea of observing and describing reality as accurately as possible. Prescriptive grammar, by contrast, derives its authority from what are

ultimately social and moral considerations. The grammars by Lindley Murray (1795) and William Cobbett (1819) can be seen as connecting the social and linguistic dimensions of English society, emphasizing the importance of high linguistic standards as a mark of high social status, as well as the role of such standards in promoting upward social mobility (Robins, 1979, p. 123). Thus, prescriptive grammar had—and still has—a social agenda: "Prescriptive rules are often social rules that are believed to mark out a speaker or writer as educated or as belonging to a particular social class" (Carter & McCarthy, 2006, p. 6). Further, for Jonathan Swift (and many other people), "the correct use of language was a moral issue," it being "a moral duty to stem the tide of corruption and degeneration in order to restore the old values" (Howatt, 1984, p. 109). The rationale behind such views is a conception of language change as decay (see Aitchison, 1991).

A closely related idea is that of a Golden Age of language "purity." Purist concerns have, from the start, played a central role in prescriptive argumentation, not only concerning English. This is clear from the following statement by Palmer (1939, p. xxxiv): "One of the most widely diffused of the many linguistic illusions current in the world is the belief that each language possesses a 'pure' or 'grammatical' form, a form which is intrinsically 'correct,' which is independent of usage, which exists, which has always existed, but which is now in danger of losing its existence" (cf. Aitchison, 1991, pp. 7–13).

Apart from subscribing to purist "illusions," prescriptive grammarians have often been accused of indulging in rules of a subjective and arbitrary nature, especially where normative pronouncements simply reflect what Huddleston and Pullum (2002, p. 7) call "taste tyranny" or "aesthetic authoritarianism." A different, sociolinguistic kind of bias resides in the view that formal written language should constitute the norm for standard English, thus "confusing informal style with ungrammaticality" (Huddleston & Pullum, 2002, p. 8).

Some of the arguments used by prescriptivists may be seen as attempts to ground rules in external principles, intended to enhance their authority. One type of criterion consists of appeals to Latin grammar. The prescriptivist aversion to sentence-final prepositions (*Who did you speak to?*), impossible in Latin, is a case in point, deriving from the notion that Latin and English should adhere to the same syntactic rules; conformity to the Latin model also underlies the rejection of *It was me* in favor of *It was I*. Another well-known criterion is formal logic, exploited to condemn cases like *She didn't say nothing*, featuring the (non-standard) double negative construction. Lowth's formulation to the effect that two negatives cancel each other out, being equal to an affirmative, was passed on, via Murray, to generations of English speakers. The underlying assumption is that logic and grammar are governed by the same rules. A third type of argument, with—prima facie—more linguistic credibility, builds on analogy. For example, the sentence *It's clear who/whom they had in mind* may be compared to *They had me in mind*, where the accusative form *me* (versus the incorrect **I*) is supposed to prove the correctness of the accusative form *whom* as well (and, accordingly, the incorrectness of *who*)—on the grounds that there should be no difference in case marking between personal and interrogative pronouns (Huddleston & Pullum, 2002, p. 10).

Much of prescriptive grammar can be said to be fueled by a drive for clarity, simplicity, and consistency, supported by various arguments. In practice, this striving for a more orderly language often translates into an abhorrence of grammatical variation and change.

Relationship Between Descriptive and Prescriptive Grammar

At first sight, the difference between descriptive and prescriptive approaches may seem obvious. In reality, the relationship between them is rather less clear-cut. For one thing,

no prescriptive grammar, from Lowth onwards, is devoid of description. Also, as noted by Stern (1983, p. 123), "The native speaker's judgement . . . constitutes the norm which must guide (and is therefore prescriptive for) the second language teacher and the second language learner."

Today's pedagogical grammars usually draw on descriptions provided by scholarly grammars; in this way, these descriptions will gradually filter down to language learners. Thus, even a purely descriptive, scholarly grammar will, by virtue of its authority, have *prescriptive implications*, via pedagogical grammars. It is difficult to envisage how things could be otherwise: pedagogical grammars are "inherently prescriptive, since their purpose is to tell students what to say and write" (Greenbaum, 1988, p. 34). The important thing, rather, is that the norms conveyed to the language learner should have a solid descriptive basis. The basic fault of traditional school grammars may not be their prescriptive orientation per se but their inadequate descriptive foundations (cf. Gleason, 1961, p. 209).

In other words, the relationship between descriptive and prescriptive grammar can be viewed in different ways: the *linguistic* relationship between language data and a grammar should be *descriptive*; the *pedagogical* relationship between a grammar and a language learner is necessarily *prescriptive.* Further, the prescriptive effect of descriptive scholarly grammars is strengthened by the fact that such grammars tend to describe the standard, most prestigious, variety.

Remnants—or reminders—of prescriptive rules are also to be found in scholarly grammars. For example, Quirk, Greenbaum, Leech, and Svartvik (1985, p. 14) "occasionally refer to the prescriptive tradition . . . because it may affect attitudes towards particular uses that may in turn influence the preferences of some native speakers"; the social dimension of prescriptive rules may impact on usage choices. From a pedagogical perspective, Carter and McCarthy (2006, p. 6) argue that it is "important that learners are aware of the social importance which attaches to certain prescriptive rules while at the same time being aware of the way in which English is used by real speakers and writers of the language."

Some Further Perspectives

For linguists, usage determines grammatical correctness. For most other people, "correctness is not to be determined by majority usage . . . It is assumed to be somehow immanent in language and known by those who speak with authority on the language" (Greenbaum, 1988, p. 33). Linguists are often accused of being too permissive, while ordinary language users' feelings of linguistic insecurity or inferiority—"I can't speak proper English"—are exploited by usage manuals. In many cases, however, the judges of usage are "self-appointed authorities who . . . often disagree" (Quirk, Greenbaum, Leech, & Svartvik, 1985, p. 14). It may well be asked, therefore, why usage issues should be left to amateurs rather than to professional, linguistically trained grammarians (Greenbaum, 1988, p. 35). Recent years have seen some signs that this situation may be changing.

Despite its lingering shadows, the prospects of old-style prescriptive grammar are looking dim. Among linguists, the Lowth/Murray/Fowler kind of approach was never an option. In British schools, prescriptive grammar started losing ground in the mid-20th century (Crystal, 2006, pp. 196–203). Further, any large-scale comeback of prescriptive grammar is extremely unlikely in view of all the "new Englishes" in various parts of the world, as well as the present status of English as the world's lingua franca. In short, the odds are heavily against the imposition of a unified norm of the kind that emerged under completely different circumstances in the 18th century; even a notion like standard English is no longer beyond question. On the other hand, prescriptivism may turn up in new areas of language use, in different guises.

With regard to norms of appropriateness, rather than correctness, a softer kind of prescriptivism may be seen, especially within the field of language for specific purposes (LSP), where descriptions of different registers, styles, and genres form the basis for recommendations on how to produce contextually appropriate language; academic language is a case in point (see Carter & McCarthy, 2006, pp. 140–54). Usage variation, as opposed to classical prescriptive grammar, is no longer a question of right or wrong. At the same time, a more rigid attitude, insensitive to context, is discernible in the crude grammar checkers supplied in computer programs, telling writers, among other things, to avoid passive constructions.

Another area where prescriptive attitudes are in evidence is that of language maintenance and planning, where the main intention is the preservation or establishment of desirable usage norms; in fact, much of the prescriptive tradition could be called a misguided kind of language planning. Prescriptive attitudes are perhaps most noticeable in vocabulary, where the idea of political correctness has had lexical repercussions in relation to, especially, gender, race, and ethnicity. In a few cases, however, grammar has also been involved, for example concerning the choice of personal pronoun in sentences like *If anyone calls, tell <u>them/him or her</u> I'll be home by ten*, to be contrasted with . . . *tell <u>him</u>* . . . , now advised against on grounds of linguistic sexism. Political rather than grammatical correctness has here become the basis of new prescriptive rules: certainly food for thought in a prescriptive context.

SEE ALSO: Descriptive Linguistics; Grammar in Language Teaching and Education; Teaching Grammar

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Prestige Planning

ULRICH AMMON

Prestige planning has received little attention from language planners and, to the extent that it has, it has been impeded by lack of clarity, even on basic concepts. In sociology, "prestige" and "stigma" are often opposite concepts in the rough sense of "attributed positive value" (or "esteem") and "attributed negative value" (or "disdain"), with neutral evaluation in between. The term "low prestige" can be ambiguous in that it can mean either "low positive evaluation" (above the range of stigma) or "negative evaluation" (within the range of stigma). The scale stretching from "(high) prestige" down to "(strong) stigma" can be used for imprecise verbal comparisons (x carries higher prestige or stronger stigma than y) or can—in principle, though with remaining caveats—be metricized (Wegener, 1992, pp. 269–71; see the entire text also for different concepts and different theoretical foundations of "prestige" in sociology). One could then specify by how many degrees x's prestige is higher or x's stigma is stronger than y's. The following entry, however, will not deal with details of measuring prestige, and will use the term "prestige" to refer to the entire scale of "prestige–stigma."

Prestige is attributed to human beings—individuals or groups—or to things or features owned by human beings, such as certain professions, social roles, skills, behaviors, habits (here language comes in), or other possessions. Human beings or their possessions are therefore the *carriers of prestige*. It even seems that the possessions are the *direct* carriers of prestige and bestow prestige on human beings who own them, who would then be only *indirect* carriers of prestige. The process can be transitional, however: Once human beings have acquired prestige (through their possessions), they can bestow it on certain features or things they possess—as long as these remain somewhat exclusive. Prestige has its base in the attitudes of those individuals who attribute it, and can therefore be assessed by methods of attitude measurement (Garrett, 2005).

In language planning, the most important carriers of prestige are (a) the linguistic and sociolinguistic features selected or constructed in the planning process, in other words the *contents of language planning*, and (b) the *language planners* themselves. But prestige is also an aspect to be heeded with respect to (c) the individuals or groups for whom the planning is designed, in other words the targeted *subjects of language planning*. (The term "subject," from norm theory [see von Wright, 1963, p. 77], captures the intended meaning better than terms more common in language planning like "people," for instance [as in Kaplan & Baldauf, 1997, p. 56, who follow Cooper, 1989].) The prestige of the contents of planning and of the planners themselves can be decisive for the acceptance of the contents of planning by the subjects of planning. But the order of acceptance among the subjects of planning can also be crucial. It seems particularly important that the most prestigious individuals or groups among the subjects of planning adopt the contents of planning, that is, not only support it rhetorically, but take possession of it and use it regularly. They usually function as role models whose choices and behaviors the other subjects of planning follow. Cases in point are some postcolonial countries where the national elites propagated the—often newly standardized or modernized—indigenous language, yet did not adopt it themselves, but continued to use the colonial language. This was certainly one of the reasons why the new language could not be established for the functions for which it was

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planned. An example is India, where Hindi could not replace English as the sole national official language, though the Constitution of 1950 decreed this should be achieved by 1965. One reason among others was probably that the Indian elites, notably long-term president Jawaharlal Nehru, remained somewhat indecisive and continued to use English for the most prestigious functions (King, 1997, pp. 125–36), which might well have been better for the country. By contrast, the full adoption and use of Swahili by the governing elite of Tanzania, notably long-term president Julius Nyerere, most likely contributed to its firm establishment as an official language of the country together with English (Coulmas, 1985, pp. 135–6). It should be added that gauging the weight of the prestige factor is often close to impossible, as is the precise evaluation of the outcome as ultimately for the good or for the bad of the country. (For other aspects of the importance of elites in language planning, see Kaplan & Baldauf, 1997, pp. 199–201.)

What constitutes the prestige of the language planners? It seems most important that the subjects of planning believe them to be competent in their field (i.e. in matters of language) and to have authority. These features mostly coincide, but not always, as planners can appear to be authorized (by a higher authority) but not fully competent, or, inversely, not to be authorized but to be fully competent. Thus in the case of the German spelling reform of the 1990s, the competence of the planners, mostly linguists, who had been publicly authorized by the German government, was challenged by renowned literary authors, who for example denigrated them publicly as "sogenannte Fachleute" ("so-called experts") in the influential magazine *Der Spiegel* ("Schwachsinn Rechtschreibreform," 1996, p. 262). This undermined the planners' prestige, which exacerbated problems with acceptance of the reform. Therefore, language planning should seek to combine, as perfectly as possible, authority with competence in the choice of planners. Both features contribute to the prestige of planners, as do perhaps other attributes like the planners' social standing, for instance as members of "prestigious" professional groups, or their prominence in public life. In the case of language academies, these conditions were often met to a considerable extent when renowned scholars or writers were authorized as the planning staff by the highest authority of the state: the sovereign (see Cooper, 1989, pp. 3–11 on the Académie française).

As these explications suggest, "acceptance planning" might be a possible alternative term for "prestige planning," but would highlight somewhat different aspects. Ager proposed the further distinction between "prestige planning" and "image planning," and related the latter to identity: "The identity, of the speakers of a language, is how they see themselves [. . .] The term *image* reflects this identity, in the same way that prestige reflects status." Ager is of the opinion that both image and prestige are more attitudinal and therefore "less tangible" than identity and status, but that the former are often not clearly distinguished from the latter. Being "attitudes," they "can be affected by propaganda," which, he believes, is one way of improving a language's image, since promoting a language can improve the self-image of speakers. Planners should also be aware of the possibility that the image of a language, as well as its prestige, can be perceived differently from inside and from outside the respective group (Ager, 2005a, pp. 1041–3; see also Ager, 2005b).

In spite of all the potential specificity of image planning, prestige is of particular importance for language-planning content. It relates to practically all the potential goals of language planning (on goals, see e.g., Nahir, 1984) or its major components, which have come to be classified as the planning of *corpus*, *status*, and *acquisition* (Kloss, 1969, distinguished *corpus planning* from *status planning*, which Haugen, e.g., 1987, elaborated on, and to which Cooper, 1989, pp. 33, 157–63, added *acquisition planning*). Corpus planning focuses on linguistic structures in the wide sense (selection or construction of writing system, orthography, grammar, syntax, forms of texts, and speech acts), status planning on use

and legal foundation of use in domains (i.e., types of situation), and acquisition planning on institutions, curricula, and methods of teaching and learning.

But how exactly should prestige planning interact with these three well-established components of language planning? Haarmann, who introduced the term (first in German: *Prestigeplanung*, 1984), seems to view prestige planning as an additional component equivalent to, and of the same rank as, corpus and status planning, not yet taking into account Cooper's acquisition planning, whose book he does not mention in his references (Haarmann, 1990, especially p. 105). Kaplan and Baldauf (1997, pp. 50–1) seemingly endorse this view. It indeed appears plausible in the face of the truism that corpus and status planning have to be neatly adjusted to each other to make a plan work. Similarly, questions of prestige have to be considered for each detail of corpus and status planning, and probably also of acquisition planning, which would warrant viewing prestige planning as an equivalent third or, respectively, fourth component. Yet its relevance extends, as shown above, even further, namely to the choice of planners, and it may also relate to the other three components differently than they do to each other.

This could, however, depend on how prestige planning is conceived. Haarmann (1990) and Kaplan and Baldauf (1997) seem to align it with promotional activities for the content of planning (similar to Ager's "propaganda" above), though they are not entirely explicit about the relationship. They also suggest a hierarchical order of such efforts according to the social rank of agents (i.e., planners or authorities of planning)—from (a) government (highest order) via (b) agencies or organizations, (c) groups, down to (d) individuals (lowest order)—and seem to assume that the rank of agents conveys the analogous rank of prestige to the content of planning (Kaplan & Baldauf, 1997, p. 50). Thus they give the following examples of such ranking with respect to corpus planning, for instance:

1. government: "the elaboration of writing systems [. . .] for new standard languages in the Soviet Union since the 1920s";
2. agencies: "the efforts to provide norms for the terminological modernization of national languages in Nordic countries [in recent years!]";
3. groups: "the attempts to elaborate a written standard for modern Occitan, made by [. . .] the movement of the Félibre since its foundation in 1854 [in France!]";
4. individuals: "the efforts made by J. H. Campe [. . .] and others in connection with language purism [. . .] in Germany [in the 18th and 19th centuries!]" (Kaplan & Baldauf, 1997, p. 51).

This, however, provides only a rough frame of orientation, because prestige can vary widely between individuals, between groups, and so on, based on the assumption that the prestige of planners or authorities of planning gets, at least to some extent, transferred to the content of planning, which makes it more or less desirable for acquisition and use by the subjects of planning. Another rough frame of orientation can be deduced from the distinction between high domains (government, parliament, law courts, educational institutions) and low domains (family, peers), which transfer higher or lower prestige to the languages or varieties commonly used there. Yet sociolinguistics has at its disposal more subtle distinctions and explanations of the sources of prestige. Even the doyens of the discipline supply promising hints, like Weinreich (1974, p. 79) who writes: "The value of a language in social advance might be designated *prestige*," from which it would follow that it is not so much the prestige of planners nor even the domains of use which bestow prestige on linguistic features, but their instrumentality for social advance or rather the assumption of such instrumentality by the subjects of planning. However, Weinreich (1974, p. 79, n. 36) cautions that there is the possibility of "multiple prestige rating," that is "a hierarchical order [of prestige!] derived from several mutually irreducible sources." Kloss

(1969, pp. 143–4) refers to four potential sources of prestige of a language or variety: "rich literary heritage, high degree of language modernization, considerable international standing, or the prestige of its speakers." From this it would follow that, for example, winning over prestigious writers for a language or language variety would be an effective means to boost its prestige and, therefore, a valid goal of prestige planning.

Weinreich's instrumentality for social advance would be an additional source, not necessarily identical to any of the four named by Kloss. It is easy to see that these sources can occur in different combinations and be further diversified, and can thus bestow different levels and kinds of prestige on linguistic features. Thus, a modern language of international standing may be preferred for business while a classical language is preferred for religious purposes, the two languages consequently symbolizing wealth and theological erudition respectively. Just think of Standard English versus Classical Arabic, a pairing which will in some societies be associated with economic privileges versus Muslim priesthood.

A typology of languages and varieties according to status and function can therefore serve as a framework for indicating prestige differences and is, in fact, implicit in most actual prestige planning (see, e.g., Hult, 2005, for Sweden's attempt at propping up Swedish vis-à-vis English in Sweden). Kaplan and Baldauf (1997, pp. 14–27, overview p. 15) offer such a typology conceived from different viewpoints, such as political (language of wider communication, pan-regional, national languages, official, literary, regional, and religious languages), social (educational, majority, first, second, creole/pidgin, foreign, vernacular, and classical languages), educational (foreign, second languages, mother tongue, non-standard varieties, community and heritage languages), and popular; although the latter hardly provides a sound basis for planning, it can be important for communication with the subjects of planning and for implementation. For more precise definitions and possible operationalizations of such status types of languages and varieties, see Ammon (1989).

Prestige planning needs close attunement to status planning. The two components are not always easily kept apart, as prestige planners are inclined toward intertwining them for a language, for instance "increasing its status and hence its prestige" (Sallabank, 2008, p. 128). It seems clear however, that prestige planning has to take into consideration the status that linguistic features already have at the outset of planning and which has a bearing on their prestige, as well as their planned status. Thus, a variety which is planned for use in science, for example in an attempt to nationalize scientific education, needs a different kind of prestige from a variety to be introduced in the family domain or even only for token usage in endeavors of language maintenance or revival (on the latter see, e.g., Sallabank, 2008). Language planners should also be aware of the possibility of the same variety having divergent prestige for different groups within the same society, for example for women as compared to men (see, e.g., Gordon, 1997) or for lower-class versus upper-class males. The lack of awareness of such differences especially in mainstream society has been highlighted terminologically by distinguishing "covert" from "overt" prestige (Trudgill, 1972).

SEE ALSO: Acquisition Planning; Language Attitudes in Language Policy and Planning; Language Policy and Planning: Overview; Science of Language Policy and Planning; Status Planning

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Priming Research

PAVEL TROFIMOVICH AND KIM MCDONOUGH

What Is Priming?

Priming methods are one of the predominant experimental paradigms employed to study cognitive aspects of language learning and use. Priming methods originated in psycholinguistics, but have become increasingly common in applied linguistics over the past two decades. For example, a search in the *PsychInfo* abstract database for the period 2001 to 2010 yields 125 citations for studies investigating priming in second language (L2) learners or bilinguals, a nearly 150% increase from the number of studies (53) published on the same topic between 1991 and 2000. The term "priming" refers to the phenomenon in which prior exposure to specific language forms or meanings either facilitates or interferes with a speaker's subsequent language comprehension or production. Priming is believed to be an implicit process that occurs with little awareness, and this implicit nature makes priming one manifestation of a larger system of human memory—implicit memory. Briefly, implicit memory involves memory for cognitive operations or procedures which are learned through repeated use, and includes memory for skills and habits, as well as priming. As an implicit cognitive phenomenon, priming suggests that language users' prior experience with language shapes their subsequent language use, which is often interpreted as a form of implicit learning.

Although the term "priming" describes all situations in which prior language exposure influences subsequent language processing, different types of priming have been defined in the literature (McDonough & Trofimovich, 2008). For example, language users will access the meaning of the word *cat* more quickly if they recently read the word *dog* as opposed to an unrelated word, such as *shoe*. By activating the meaning of *dog* in comprehension or production, speakers more quickly activate the meaning of *cat* due to the shared meaning between the two. This kind of priming is called "semantic priming," and it describes the tendency for speakers to process a word more quickly and/or more accurately when they have been previously exposed to a word related in meaning. In an example of a different kind of priming, if a speaker uses a prepositional dative, such as *my husband gave our lawnmower to the neighbor*, later in the conversation her interlocutor is likely to produce another prepositional dative (*my daughter sent a birthday card to her grandmother*) rather than a double-object dative (*my daughter sent her grandmother a birthday card*). This type of priming is called "syntactic priming" because it refers to the tendency for speakers to produce a syntactic structure that appeared in the recent discourse, as opposed to an equally acceptable alternative.

Historical Discussion

One of the first observations of priming as a phenomenon is attributed to James Cattell (1860–1944), an American psychologist who between 1883 and 1886 worked in Wilhelm Wundt's psychological laboratory in Leipzig, Germany. Cattell's time in Germany coincided with what has been called the golden age of the chronometric approach to the study of

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the human mind (Meyer, Osman, Irwin, & Yantis, 1988). The chronometric approach relies on the use of reaction times (response latencies) to study various mental processes, including language comprehension and production. While in Leipzig, Cattell conducted numerous experiments of this kind, examining the speed with which people reacted to letters, words, and sentences in their first language (L1) and their L2. In one experiment, Cattell (1885/1947) discovered that it takes people about twice as long to read words that are semantically unrelated as to read words in a sentence. This demonstration suggested that a meaningful context has a facilitatory effect on the processing of individual words.

It appears that the term "priming" was first used by Feldman and Weld (1939), who defined it as a state of attentional preparedness for perception (e.g., the decision to wake up early increases the likelihood that the alarm will be heard), and later by Lashley (1951), who used it to describe internal activation or readiness of linguistic elements in speech production (i.e., preparing a structural configuration of an utterance before producing it). However, in the sense we use it now, the term "priming" did not become mainstream until the early 1960s, when Segal and Cofer (1960) published a study which replicated and extended an earlier experiment by Storms (1958). Segal and Cofer demonstrated that when language users are exposed to a list of words, they are more likely to reuse these words to perform a subsequent task. Segal and Cofer referred to this phenomenon as priming. Since then, priming has been used as an experimental technique to address many interesting questions about how languages are organized in the human mind, and how people learn them. Examples of such questions could be found in seminal early investigations by Meyer and Schvaneveldt (1971) on semantic priming and by Bock (1986) on syntactic priming, and in recent reviews of priming literature by McNamara (2005), McDonough and Trofimovich (2008), and Pickering and Ferreira (2008). Beyond the study of language, examples of priming research in the wider context of cognitive psychology can be found in edited volumes by Bowers and Marsolek (2003), and Kinoshita and Lupker (2003).

The history of priming research is closely tied to the development of instruments that have allowed researchers to present different kinds of language materials to participants and to measure their responses to these materials. For example, Cattell used a gravity chronometer to present language materials (e.g., letters or words) to participants. The gravity chronometer was an early version of a tachistoscope, an instrument which was used for over 100 years in psycholinguistic research to present visual stimuli to participants rapidly, for a given amount of time (Benschop, 1998). The Cattell version of the gravity chronometer featured an electromagnet controlling a screen; when the electric current flowing through the spiral of the electromagnet was broken, the screen would fall and would reveal an object to be seen by the participant (for example, a card with a word written on it). To record participants' reaction times, Cattell used another sophisticated device of the day—a Hipp chronoscope (depicted in Cattell, 1886). The chronoscope was an electromechanically controlled timer which allowed researchers to record reaction times with millisecond accuracy when participants pressed a telegraphic key or even when they simply spoke in response to a stimulus (Benschop & Draaisma, 2000; Schmidgen, 2005).

Yet another early technological invention used in psycholinguistic research was a memory drum. This device consisted of a rotating kymograph drum which showed lists of words or sentences, or series of pictures for fixed intervals of time so that participants could view them and respond to them individually (Haupt, 2001). According to Haupt, the memory drum was the standard way of presenting language materials in research on memory and language for almost 100 years, from about the 1890s to approximately the mid-1970s, when affordable computers and monitors became available (Bailey & Polson, 1975). Over the past several decades, nearly all psycholinguistic research, including priming research, has been carried out by using powerful personal computers running multifunctional psychological software which allows researchers to present various kinds of stimuli

to participants (e.g., images, texts, audio, video) and to measure participants' reactions to these stimuli (e.g., in terms of accuracy, speed, duration). Examples of common psychological presentation software are E-prime (Schneider, Eschman, & Zuccolotto, 2002), DMDX (Forster & Forster, 2003), PsyScope (Cohen, MacWhinney, Flatt, & Provost, 1993), and SuperLab (Cedrus Corporation, 2008).

Main Findings

Although a comprehensive review of the priming literature would not be possible due to space limitations, we briefly outline several main strands of semantic and syntactic priming research, with a particular emphasis on L2 processing and learning. As was discussed earlier, semantic priming is defined as the tendency for language users to process a word more quickly and/or more accurately when they have been previously exposed to a word related in meaning. For example, the word *table* will be responded to faster if the word *chair* has been heard or seen recently. This suggests that semantically related words (like *table* and *chair*) are "stored" together or are somehow linked in the mind of a language user, and that both get activated by virtue of having such links.

In the last three decades, researchers have relied on semantic priming to explore the nature of semantic networks in the mental lexicons of L1 and L2 speakers. Some researchers have investigated whether L1 and L2 speakers differ in their patterns of semantic priming in a language (e.g., Frenck-Mestre & Prince, 1997; Devitto & Burgess, 2004; for review, see McDonough & Trofimovich, 2008). For example, if L2 speakers do not show priming for word pairs like *table* and *chair*, while L1 speakers do, then this would indicate that L2 speakers store and access these words differently from L1 speakers. The findings from this strand of research indicate that L2 speakers, at least those who have reached a high level of proficiency, can access and use the semantic information as L1 speakers do. To give an example, Frenck-Mestre and Prince (1997) found that the native English speakers and the more proficient French learners of English in their study showed semantic priming for semantically related words in English (e.g., *wet–dry*). In contrast, the less proficient learners did not.

Other researchers have used semantic priming to understand how bilinguals organize words in their two languages (e.g., Basnight-Brown & Altarriba, 2007; for review, see Altarriba & Basnight-Brown, 2007). For instance, if English–French bilinguals show semantic priming for word translations (e.g., *chien–dog* in French and English), then this would indicate that they organize the meanings of words in their two languages in a shared, interdependent manner. Results from this line of research are complex; they suggest that the manner in which bilinguals organize and access the meanings of words in their two languages depends on many factors, including the specific nature of words being examined (de Groot & Nas, 1991), bilinguals' proficiency in the two languages (Grainger & Beauvillain, 1988), and the age at which they start learning their L2 (Silverberg & Samuel, 2004). To illustrate, Silverberg and Samuel (2004) showed that only early, but not late, Spanish learners of English showed semantic priming for English–Spanish word pairs such as *nail* and *tornillo* ("screw" in Spanish). Because L2 words (like *nail*) facilitated the processing of L1 words (like *tornillo*) for the early learners, these learners appear to store the meanings of semantically related words across the two languages in a shared manner. In contrast, late learners appear to store such meanings separately.

As its name suggests, syntactic priming refers to the tendency for speakers to produce a syntactic structure that appeared in the recent discourse, as opposed to an equally acceptable alternative. For instance, speakers are more likely to produce a passive sentence if they recently heard a passive sentence or if they themselves produced one earlier in the

discourse. In fact, speakers tend to produce the recently encountered syntactic structure even if the initial and subsequent utterances do not have any of the same lexical items, phonological or prosodic properties, or shared semantic information. This implies that it is easier for speakers to access a syntactic structure that has been recently activated than to access a completely new structure, and that speakers tend to implicitly "fine tune" their use of syntactic structures in response to recent experience with language.

Similar to the semantic priming studies that explore how bilinguals organize their L1 and L2 lexicons, bilingual syntactic priming research has investigated how syntactic information is represented. One possibility is that bilinguals store L1 and L2 syntactic information separately, while another possibility is that at least some syntactic information used in both languages is shared. The separate-syntax account predicts that cross-language priming would not occur since activation of linguistic information in one language would not affect the linguistic information of the other language. However, the shared-syntax account predicts that cross-language priming would occur as activation of the syntactic structure in one language would facilitate production of the related structure in the other language. Cross-language syntactic priming research has demonstrated that syntactic priming occurs cross-linguistically, which supports the shared-syntax account (e.g., Hartsuiker, Pickering, & Veltkamp, 2004; Bernolet, Hartsuiker, & Pickering, 2007; Salamoura & Williams, 2007; Schoonbaert, Hartsuiker, & Pickering, 2007). Current research is exploring how L2 proficiency impacts the development and strength of shared syntactic representations.

Other researchers have explored the occurrence of syntactic priming in L2 speech production, which is within-language priming. The initial question asked in within-language L2 syntactic priming research was simply whether it occurred, as the previous research had been carried out with L1 speakers. Researchers initially focused on demonstrating that priming occurred in L2 speech production for a variety of structures, such as dative constructions (Gries, 2005; McDonough, 2006; Schoonbaert, Hartsuiker, & Pickering, 2007, Experiment 1), passives (Kim & McDonough, 2008), and alternation between adjective + noun phrases and relative clauses (Bernolet, Hartsuiker, & Pickering, 2007, Experiment 2). Subsequent studies have explored whether syntactic priming occurs with alternation between a developmentally advanced structure and an interlanguage form (McDonough & Mackey, 2008; McDonough & Kim, 2009). In this line of research, syntactic priming is being used to encourage L2 learners to produce the developmentally-advanced structures as opposed to the less advanced or non-targetlike forms.

Future Directions

There are several possible avenues of research which have yet to be explored using priming methods. With respect to semantic priming, it is important to investigate how L2 speakers access and use semantic information not only in comprehending and speaking individual words, but also in processing phrases, sentences, or longer units of discourse. Indeed, when listening or speaking, L1 speakers activate semantic information for several words simultaneously or near-simultaneously, and use this information in real time. Would L2 speakers also activate multiple sources of semantic information simultaneously when comprehending and producing sentences? How does the activation of semantic information unfold as L2 speakers comprehend or produce sentences in their two languages? (See Elston-Güttler & Friederici, 2005, for some preliminary answers.) It is also important to study how individual differences in L2 speakers' cognitive abilities infuence their use of semantic information. It is possible that individual difference factors, including the size of working memory or ability to efficiently allocate attention between processing tasks, might influence the particular kind of processing involved in semantic priming. Understanding

the influence of individual differences on semantic priming may clarify why some L2 speakers do not process and use semantic information efficiently, and may explain what kinds of experiences may be beneficial to help them do so.

With respect to syntactic priming, it would also be interesting to explore whether individual differences in working memory capacity and temporal auditory processing abilities might predispose L2 speakers to benefit, or not, from the implicit learning processes associated with syntactic priming. In particular, it would be useful to determine whether priming activities that provide different types of exposure and practice positively impact L2 speakers with specific aptitude profiles. Since the majority of syntactic priming research has targeted individual speakers or interaction between L2 speakers and scripted interlocutors, future syntactic priming research might explore whether it occurs in less-controlled interactions, such as when learners carry out pair and small-group activities in classroom contexts. Future research might also increase the methodological diversity of syntactic priming research by incorporating additional technological tools, such as eye-tracking systems (Arai, van Gompel, & Scheepers, 2007) and event-related potentials (Ledoux, Traxler, & Swaab, 2007), as a way to gain further insight into the impact of priming on speakers' mental representations.

Although some priming methods can be carried out with minimal use of technology, technological advances in neuropsychology may shape future priming research, just as Cattell pioneered technology to capture reaction times. For example, studies employing technologies such as positron-emission tomography (PET) and functional magnetic-resonance imaging (fMRI) have revealed that priming is associated with decreases in brain activity in parts of the visual cortex (involved in perceptual processing) and in some areas of the frontal lobe (involved in semantic and conceptual processing). Neuropsychological investigations of L2 priming may help answer questions about priming as an implicit learning phenomenon, and generate research that explores the pedagogical applications of priming.

SEE ALSO: Bilingualism and Cognition; Implicit Learning in Second Language Acquisition; Interaction Approach in Second Language Acquisition; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Online Psycholinguistic Methods in Second Language Acquisition Research

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Prison Language

ANDREA MAYR

The specific demands on language by a subgroup in society are often expressed through slang, and the use of slang by minority or deviant groups is well known. According to Maurer (1974), slang "emanates from conflicts in values, sometimes superficial, often fundamental. It expresses the attitudes . . . of one group or class toward the values of another" (p. 850). Prison slang illustrates this point very well. It reflects not only the values and attitudes of prisoners but also the conflicts and tensions inherent in the institutional setting. As Boroff (1951) has aptly put it, "it is the language of the dispossessed, tinged with bitterness and marked by a self-lacerating humour" (p. 190).

Mencken (1923/1947), who devotes an entire chapter to slang in *The American Language*, informs us that prison slang is drawn in part from underworld and general street slang, and bears the traces of an international criminal slang, often containing German, Hebrew, Italian, and Romany words. It has also been enriched by escaped convicts from Australia. Although slang was originally transported from England to the USA by professional criminals who were driven out of London by the Metropolitan Police in the early 19th century, by the beginning of the Civil War the American underworld had begun to create its own slang.

When the word "slang," whose origin is uncertain, first appeared in the English language in the 18th century, it was used interchangeably with "cant" (from Latin *cantare* 'to sing') and later on "argot" (from French *argoter* 'to quarrel'), both designating the sometimes secret special vocabulary of the low and disreputable classes of London. Cant and argot are differentiated from slang by the fact that they are spoken by relatively small and cohesive groups, and cant is separated from both argot and slang by the fact that one of its purposes is to deceive or mystify the outsider, although there is at the same time a constant movement of words and phrases from one category to another (Mencken, 1923/1947).

What constitutes "slang" is difficult to define and there is no consistency in dictionary definitions, although the following description in the *American Heritage Dictionary* is a useful starting point: The term slang indicates "a style of language," whose main characteristic is to "produce rhetorical effect, such as incongruity, irreverance, or exaggeration" and which has "strong connotations in addition to its denotation," which is "intentionally, often aggressively, informal" (Morris, 1969, p. xlvi).

While nonspecialists often use the term for language they feel is not "good" formal English, the following criteria for "true" slang offered by Dumas and Lighter (1978, pp. 14–15) may be more helpful. Slang can be used to

1. signal that the user is "deliberately undignified" with the audience for rhetorical effect;
2. demonstrate "special familiarity" with a term and the "less statusful" class of people who use it;
3. express a form of linguistic defiance to persons of authority.

These criteria also apply to prison slang, as will be shown below.

Prison slang has long been a subject of particular interest. Lexicographers have compiled it in dictionaries (e.g., Grose, 1785; Partridge, 1937, 1949; Lighter, 1994; Green, 2011), as have prisoners (e.g., Bentley & Corbett, 1992; Kearse, 2006); sociologists and criminologists

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have used it as a "map of the inmate social system" (Sykes, 1958, p. 84; see also Wieder, 1974; Bondeson, 1989; Einat & Einat, 2000); and anthropologists and linguists have explored its communicative, social, and cultural functions (e.g., Fleisher, 1972; Halliday, 1978; Little, 1982; Encinas, 2001; Looser, 2004). Although mainly verbal, prison slang also exists in written form as "kites" (secret prison notes), graffiti, and tattoos (see Awofeso, 2002).

Some Characteristics of Prison Slang

Prison slang (which in the USA is more often known as "prison argot") is a form of what Halliday (1978, p. 165) calls an "antilanguage," a way of communicating developed by an "antisociety." An antisociety is a society which is "set up within another society as a conscious alternative to it" and which is a form of resistance. The inmate subculture appears to represent precisely such an antisociety. Its social system together with its moral code provides its members with informal means to gain support, power, and status, thereby lessening "the pains of imprisonment" (Sykes, 1958). In the words of criminologists McCorkle and Korn (1954, p. 88),

> the inmate social system may be viewed as providing a way of life which enables the inmate to avoid the devastating psychological effects of internalizing and converting social rejection into self-rejection. In effect, it permits the inmate to reject the rejectors rather than himself.

Halliday (1978, pp. 181–2) makes the following point about the language of prisoners:

> The antilanguages of prison and criminal countercultures are the most clearly defined because they have specific reference to alternative social structures, as well as the additional attributes of secret languages and professional jargons; and hence they are full of overt markers of their antilanguage status.

Prison slang then can be said to enable prisoners to identify with each other and an alternative reality, and at the same time to reject the dominant reality and the values it stands for.

Antilanguages such as prison slang are characterized by "*over*lexicalization" (Halliday, 1978, p. 165), that is, the proliferation of concepts and expressions in areas of interest to the prison antisociety. For example, Devlin's (1996) English prison-slang dictionary (compiled with the help of prisoners) lists 25 words for the police (e.g., *bluebottles*, *filth*, *bogey*); 32 for prison officers (e.g., *key*, *kanga*(*roo*)/*Scoobie-doo*—both rhyming slang for "screw"); 22 for informers (e.g., *midnight mass*—rhyming slang for "grass"; *bubble*—rhyming slang for "bubble and squeak," i.e., "speak"; *grasshopper*—rhyming slang for "shopper"); 30 for sex offenders (e.g., *wolf*, *beast*, *bacon bonce*—rhyming slang for "nonce"); and 36 words for homosexuals (e.g., *bum bandit*, *bent*, *pillow biter*). Drug terms also feature prominently. Devlin lists 39 expressions for LSD (e.g., *Bart Simpsons*; *Lucy*—from the Beatles' song *L*ucy in the *S*ky with *D*iamonds; *funky yellows*); 47 for ecstasy (e.g., *mints*, *Adam and Eves*, *love doves*); 21 for heroin (e.g., *Henry*, *fleapowder*, *gold dust*); and 28 for marijuana (e.g., *wacky backy*, *Thailand grass*, *Kate Bush*—"bush" being a common word for marijuana). Similarly, Bentley and Corbett (1992), two former prisoners at Arizona State Prison, record 25 words for prison officers (e.g., *boss*, *badge*, *bull*); 37 for serving time (e.g., *behind the iron door*, *dead time*, *hit the pit*); 37 for homosexuals (e.g., *butt slut*, *Cup Cakes*, *wolf*); 64 relating to violence (e.g., *scuff up*, i.e., fight; *scrag*, i.e., kill; *sell wolf tickets*, i.e., threaten another inmate); and 78 for drugs and alcohol (e.g., *chocolate stuff*, i.e., Mexican heroin; *wacky backy*, i.e., marijuana; *scrap iron*, i.e., an intoxicating drink made from alcohol, mothballs and chlorine). The number of slang terms in each category can be assumed to reflect their

importance in prisoners' lives. For example, the high number of terms for informers reflects the strong negative sanctions applied for violation of one tenet of the code—never to inform on a fellow inmate. A more recent study of Israeli prison slang by Einat and Einat (2000) identifies roughly the same categories of importance, with many derogatory slang terms drawn from Arabic (e.g., *madroob*—crazy, i.e., a violent prisoner; *sharshuchot*—prostitutes, i.e., police/prison staff; *wiseh*—dirty, i.e., informer). The significance of some of these categories has changed over time. The first detailed sociological study from America to deal with prison slang, by Clemmer (1940), contains very few terms for drugs and alcohol, but shows that terms for homosexuality, prison experience, and crime were abundant even in those days.

As some of the above examples demonstrate, prison slang is also a *re*lexicalized version of the mainstream language, that is, it is characterized by the creation of a rich vocabulary which often gives new meanings to already established words in the mainstream language rather than creating completely new words (e.g., *Scoobie-doo*, the name of a well-known American children's cartoon character—a dog—for "prison officer"). According to Maurer (1981), this is true of criminal subcultures in general.

Two complementary criminological models have been put forward to explain the prison subculture and its language. The *prisonization* or *indigenous model* (Clemmer, 1940; Sykes, 1958) postulates that both emerge as a result of prison conditions; the *importation model* (Irwin & Cressey, 1962), on the other hand, contends that prisoners bring a more general criminal code and slang into the prison. Studies have shown that prison slang is a mixture of indigenous creation and importation (e.g., Giallombardo, 1966; Einat & Einat, 2000; Kaminski, 2003).

Although prison slang, like any other slang, is ephemeral, some is also quite archaic. In Mayr's (1995) sociolinguistic study in a Glasgow prison, the inmates attest to their use of slang terms that have been employed for 100 years or more. *To cart* (to transfer to another prison for disciplinary reasons), for instance, dates back to 1733 and originally meant to hang after being transported in a cart to the place of execution; its synonym, *to shanghai*, goes back to 1855 and was originally US nautical slang for kidnapping sailors for compulsory service aboard ships sailing to Shanghai; *flowery dell* (rhyming slang for "prison cell") dates back to the late 19th century and is of Cockney origin; *lag* (prisoner) dates back to 1811 and is Australian and British slang, originally meaning either a transported convict or a three-year prison sentence; *chokey* (solitary confinement) goes back to 1873, from Hindi *chauki* (a shed or police station in India); *stiff(y)* (a secret letter/note passed from one prisoner to another) used to mean a document or bill of exchange and acquired its present meaning in the late 19th century; *chib* (a home-made knife, often a toothbrush with a razor blade in it) has been in use in Glasgow since 1930 and is said to be derived from Romany *chiv* 'a knife'. Among other things, this also confirms Mencken's findings about prison slang being partly international.

The Social Functions of Prison Slang

Prison commentators, including prisoners themselves, have attributed to prison slang such functions as expression of solidarity, identification of in-group members, exclusion of non-members, veiled expressions of hostility, and secrecy (Stephenson & Scarpitti, 1968). The theme of secrecy is prominent in many prisoners' accounts of slang. Kaminski (2003), a former political prisoner in a Polish prison, describes *grypsing* (from Polish *gryps* 'a secret prison letter'), a sophisticated secret behavioral and linguistic code, passed on by "gryps-men," the highest caste of prisoners, to selected "rookies." The secret or "little" languages named by prisoners in Cardozo-Freeman and Delorme's (1984) study include *Tut*, *Ceazarney*

or *Carney* (invented by carnival workers), *Agini, Bong-Song*, *Alfalfa*, and *Elephant*. These languages, which prisoners often bring in from the outside, are usually formed from known words by adding specific sounds or letters before or after a syllable or a whole word. For example in Tut, *mum-a-nun on the tut-ie-rak* means 'man on the tier', in other words 'a prison officer on the landing'. Prisoners in Mayr's (1995) study mention the use of back slang, Romany, and *egg language*, which functions according to the same principle of insertion (e.g., *Heggow eggare yeggou?* 'How are you?'). But, although secrecy may be "a necessary strategic property" (Halliday, 1978, p. 166) of prison slang, it is unlikely to be the main cause for its existence. One reason for this is that prison officers often get to know the meaning of slang terms and also use them to a degree (see Devlin, 1996; it should be noted that prison officers also have their own slang, sometimes referred to as *pig Latin* by prisoners—see Cardozo-Freeman & Delorme, 1984—although it so far has remained largely undocumented in the literature). Another reason is that many prison-slang terms eventually seep into the dominant language, and thereby turn into general urban slang. Therefore a more critical function of prison slang would be its importance for classifying inmates' experiences in terms which deal specifically with the major problems of prison life. It has even been called "reverse crying," a (male) prisoner-approved form of lament (Cardozo-Freeman & Delorme, 1984, p. 27). Sykes's (1958) study in an Illinois maximum-security prison identified certain behavioral patterns among the inmates which he named "argot roles," slang labels invented by inmates for social roles they played in response to their imprisonment. These were the *rat* or *squealer* (the prison informer), the *center man* (prisoner who sides with staff), the *gorilla* (prisoner who abuses weaker inmates), the *merchant* (prisoner who exploits inmates for financial gain), the *wolf* (the aggressive homosexual), the *punk* (the passive homosexual), the *fag* (the "born" homosexual), the *ball buster* (prisoner who is aggressive with prison officers), the *tough* (prisoner who is prone to violent outbursts), the *hipste*r (the "wanna-be" tough gangster), and the *real man* (prisoner who endures his sentence with dignity and is therefore held in high esteem by his fellow inmates).

Most studies of prison slang have been conducted in adult male prisons, and prison slang is considered an essentially male antilanguage. One of the major early studies into female prison subcultures (Giallombardo, 1966) identified some similar but also some different argot roles for women. These were the *snitcher* (the female equivalent of the 'rat'), the *booster* (the female equivalent of the 'merchant'), the *chippie* (the prison prostitute), the *jive bitch* (troublemaker who breaks up relationships), the *stud broad* (female who adopts a male role), and the *femme* (female who adopts a traditonally female role), among others. The equivalents of the 'wolf', 'tough', 'hipster', 'ball buster' as well as the 'real man' were absent, which suggests a diminished importance of adherence to the convict code. The main difference Giallombardo found was that, whereas the men's conflicts centered on the struggle for power, the women's conflicts centered more on maintaining relationships. Also, the female inmate social system was not just a functional response to imprisonment as Sykes had suggested with male prisoners, but was shaped by the women's experiences in free society.

Many studies of prison slang have been concerned with *managing* prisoners (e.g., Stephenson & Scarpitti, 1968; Nielsen & Scarpitti, 1995) rather than *understanding* them. Prison-slang glossaries have therefore often been written for those in authority (see Coleman, 2004). More qualitatively based studies in the ethnomethodological tradition (some of which have been cited in this entry) are therefore an important corrective to these, starting with Clemmer's (1940) pioneering study, *The Prison Community*, which was based on over 30,000 conversations and interviews with prisoners and analyses of their written notes (*kites*), and which resulted in the collection of over 1,000 slang terms. A more recent, comparative semantic study of American prison slang in four states by Beckner (1995) found

evidence of both "regional" and interstate slang terms, offering an insight into American prison terms at the end of the 20th century. Another important study, Cardozo-Freeman and Delorme's (1984) "folk-ethnography" in a Washington maximum-security prison, was based on Whorf's hypothesis that language not only contains the worldview of a speech community, but also tends to *structure* its experience and behavior. The research, which was conducted mainly by the prisoners of the institution (one of whom was Delorme), aimed at bridging "the vast abyss of misunderstanding and lack of communication that exists between those who are imprisoned and those who imprison" (p. 19). Similarly, Einat and Einat's (2000) investigation of prison slang in an Israeli long-term male prison concludes that it is mainly through an in-depth understanding of prisoners, their moral code, and their language that prison administrators can assess their distress and needs, and seek out coping strategies.

Conclusion

Prison-slang studies are both significant and valuable. Not only do they demonstrate the importance of language in helping prisoners to cope with their conditions of existence, they also help us to understand the social functions of language in general. What research has shown above all is that the inmate culture and its language have a strong influence on inmate behavior. A better understanding of prisoners' acts might come about if prison staff and the criminal justice sector carefully analyze their language, as this information could be a first step in the prevention of violence in prisons. Those concerned with running prisons should therefore listen to what prisoners have to say about their situation. Prison reform also has to come from below.

SEE ALSO: Ethnomethodology in the Analysis of Discourse and Interaction; Language and Identity; Lexicography Across Languages; Sociolinguistics: Mixed Methods

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Private Speech in Second Language Acquisition

MARÍA C. M. DE GUERRERO

Traditionally, the study of second language (L2) acquisition has focused on learners' use of speech for social or public purposes (as in writing for an audience or engaging in conversation). Lately, however, an increasing number of researchers have started to recognize the importance of speech that L2 learners quietly address to themselves, rather than to others. Speech that is self-directed and aimed at regulating oneself is known as private speech.

Research into private speech has been greatly influenced by Vygotsky's (1986) theories of mental development. Particularly appealing has been his well-known proposal that children develop speech through a process of internalization that involves a progression from *social speech* to *inner speech*, with a transitional stage he called *egocentric speech*. At this stage, speech ceases to be exclusively social and takes on a psychological dimension. Speech begins to serve the intellect and help the child in problem-solving, imaginary play, controlling behavior, and other mental operations. A preschool child, working alone and trying to solve an animal–home matching task, for example, mutters these words to guide his actions through the task: "put a bear inside the cage . . . no, no, put a kitty inside a cage and . . . put a bear . . . in the nest" (Patrick & Abravanel, 2000, p. 57). Egocentric speech is vocalized and can be heard by others (or captured by a tape recorder), but in orientation it is self-directed. Egocentric speech does not remain external, however. At some point, Vygotsky hypothesized, it goes inward as silent inner speech. Because of its importance in mental and linguistic development, the phase of egocentric speech—more commonly referred to as "private speech" in current literature—has generated great interest as an important window into language learning and use, both from a first language (L1) and an L2 perspective.

In L2 acquisition, private speech has been studied mainly from two perspectives: (1) as evidence of language learning in process, and (2) as a self-regulatory means of gaining control over mental tasks. Both perspectives have unveiled widespread use of private speech among L2 learners of all ages, language backgrounds, and proficiency levels. Some studies have been deliberately set up to elicit private speech (see, for instance, McCafferty, 1992); other studies have documented incidental private speech among L2 learners (see, for example, Smith, 2007). A large number of studies have observed vocalized (oral) private speech as it occurs in solitary or multiparty discourse; some research has looked into private speech as it manifests in writing and gesture. Roebuck (2000), for example, found private speech features—such as lexical word searches scribbled on the margins—in the written protocols of college learners of Spanish, whereas Negueruela, Lantolf, Jordan, and Gelabert (2004) detected semantic features associated with L1 thinking in some of the gestures of advanced English as a second language (ESL) learners. Private speech among L2 learners has been reported in the literature as taking place both spontaneously in natural classroom contexts (e.g., Ohta, 2001) and in experimental conditions deliberately created for research purposes (e.g., Centeno-Cortés & Jiménez, 2004).

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Private speech among L2 learners has been shown to have a significant role in language learning. In Vygotskyan sociocultural theory, this is known as the internalizing function of private speech; that is, private speech is seen as a useful mechanism for turning inwards L2 resources in the environment, and as a precursor of inner speech. A study by Saville-Troike (1988) conducted in the US has exposed the private speech activity in the L2 that typically goes on in L2 classrooms without teachers noticing. While outwardly "silent," several preschool children of Chinese, Korean, and Japanese origin were found in this study to be highly active in talking to themselves in English, their L2. Microphones attached to their collars revealed the children engaged in L2 private speech for various purposes: to repeat utterances produced by the teacher or other classmates, to recall language heard before, to generate novel utterances with words they had acquired, to practice sentence patterns, and to rehearse speech before saying it aloud.

In these uses, private speech emerges as an important context for imitation, a process which—in Vygotskyan theory—involves creative and intentional appropriation and reconstruction of models and is instrumental for internalization. As Lantolf and Thorne (2006) define it, imitation is "a potentially transformative process that entails selective attention resulting in reduction, expansion, and repetition of social models" (p. 179). In Saville-Troike's study, children sometimes repeated to themselves phrases that were probably beyond their comprehension (for example, "Are you awesome?" p. 583), yet these instances of apparent "repetition for its own sake" (p. 583) denote capacity to focus selectively on language resources in the environment, an essential requirement for intelligent imitation. More complex processes of imitation were also evident in the children's private speech as they engaged in playful manipulation of language forms and creative reproductions of the L2:

Child 1: Up. Go.
Go up, go down.
Go down, go up.
Go up, go down. (p. 584)
Child 2: Mine is let's go. (i.e., "I will leave")
My it's go house in. (i.e., "I am going into the house") (p. 585)

Private speech among preschoolers has been documented not only in ESL contexts (as in the above situation) but also in classrooms where English is taught as a foreign language (FL). The following excerpt comes from a study (Wang & Hyun, 2009) carried out in a school in Taiwan where the students are fluent in Mandarin and learn English as an FL:

Teacher [Spreads out three picture cards] What are you making, Addie?
Addie [Silence] . . .
Shawn = **I am making sandwiches with . . . cabbages, . . . carrots, and . . . potatoes**. (spoken very softly)
James = **I am making sandwiches with . . . cabbages, . . . carrots, and . . . potatoes**. (spoken very softly)
Teacher What are you making, Shawn?
Shawn I am making sandwiches with . . . cabbages, . . . carrots, and . . . potatoes.
James = **I am making sandwiches with . . . cabbages, . . . carrots, and . . . potatoes**. (spoken very softly) (pp. 13–14)

Note: = means discourse is overlapped; **bold** indicates private speech
(The transcription conventions adopted throughout this entry have been slightly modified from the original.)

In this case, both Shawn and James are observed using private speech to create English sentences in fixed patterns in response to a teacher question posed to another student. This practice, known as "vicarious response" (Ohta, 2001), is typical of private speech in the L2 classroom. Through covert responses the learners keep actively engaged in L2 interaction and at the same time rehearse in preparation for future overt production (as it occurred in Shawn's second turn). It should be noted, too, that private speech does not always occur in the L2. In the same study, a child is recorded softly translating a teacher's English utterance into his L1:

Teacher: (reading a story to the class) You are not big enough.
Child: 你還不夠大 (in Mandarin-Chinese) (***You are not big enough***.)
(Wang & Hyun, 2009, p. 15)

Note: **bold** indicates private speech

Whereas in L1 acquisition the internalizing function of private speech is characteristic of preschool children, in L2 acquisition this private speech function has also been observed among older children (Broner & Tarone, 2001; de Courcy, 1995) and adults (Ohta, 2001; Centeno-Cortés, 2003; Lantolf & Yáñez, 2003; Yoshida, 2008). A review of these studies reveals five main private speech behaviors that may contribute to internalization of the L2: immediate or delayed repetition and imitation of language models, the already mentioned vicarious response, experimentation with language forms (sometimes just for fun), rehearsal before speaking aloud, and metalinguistic comments (using explicit linguistic jargon) to refer to the L2. Not all these behaviors occur with equal frequency. Yoshida (2008) found that repetition was the most common of 11 different types of private speech used by learners of Japanese in an Australian university. Yoshida's finding is supported by Guerrero's (2004) study of the early stages of inner speech development, where subvocal or silent repetition of language being heard or read was also the most frequent behavior reported by the participants. The following excerpt from Yoshida (2008) demonstrates the use of private speech for repetition and transformative imitation (as defined above by Lantolf & Thorne, 2006). In this segment, the teacher starts by providing an example sentence for 'dake' (*only*):

Teacher: (writes the sentence on the board) Chokoreito = dake o kaimashita (*I bought only chocolate*)
Learner: = **Chokoreito, chokoreito keeki, tabetai n desu yo, chokoreito keeki o tabetai n desu yo** (***Chocolate, chocolate cake, I would like to eat, I would like to eat chocolate cake***) (Yoshida, 2008, p. 299)

Note: = means discourse is overlapped; **bold** indicates private speech

In her private speech, the learner not only repeats the teacher's word "chokoreito" (chocolate) but also extends the teacher's sample to make an utterance of her own creation.

As a self-regulatory mechanism, private speech has also received considerable attention among L2 researchers (see review of studies in Lantolf & Thorne, 2006; and McCafferty, 1994). Within this area of research, externalized private speech is thought to be instrumental in regulating one's own behavior and gaining control over tasks. By the principle of "continuous access" (Frawley & Lantolf, 1985, p. 22), people who are capable of carrying out mental operations through inner speech can revert to private speech, a developmentally earlier mode of thinking, to gain self-regulation in moments of cognitive difficulty. A possible explanation for reversion to private speech may be that the explicit, unfolded nature

Table 1 Functions of self-regulatory private speech of L2 learners

Metacognitive	Bueno, ¿qué se yo? ¡Voy a adivinar! (*Well, what do I know? I'm going to guess!*) (Centeno-Cortés & Jiménez, 2004, p. 21)
Cognitive	Now the second picture is different from the first one (McCafferty, 1994, p. 429)
Affective	¡bueno! puff [laughs] yeahh!!!¡Ha sido un desastre! *(well! . . . puff [laughs] yeahhh!!! It's been a disaster!* (Centeno-Cortés & Jiménez, 2004, p. 21)
Social	(as two learners are writing collaboratively, one learner comments after another's suggestion) Que estu-di, **That's not right** estudiaremos . . . (*that we s-tud,* ***That's not right*** *we will study*) (**bold** indicates whispered private speech; DiCamilla & Antón, 2004, p. 51)

of vocalized private speech—as opposed to the elusive, condensed quality of inner speech—helps stabilize rational thought by keeping attention focused. Studies involving L2 and FL learners do show that they sometimes externalize their thinking processes through the medium of private speech when solving challenging intellectual tasks that demand use of the L2. According to McCafferty (1994), the self-regulatory private speech of L2 learners has four distinct functions: *metacognitive* (to monitor or denote awareness of one's own cognitive processes), *cognitive* (to guide mental operations), *affective* (to release emotional tension), and *social* (to speak for the self and others in collaborative discourse). Table 1 shows examples of private speech for each of these functions.

These four functions are not mutually exclusive; rather, private speech utterances may be multifunctional. In the last example above, the segment "That's not right" may be seen as having a metacognitive role as well as a social one.

A study conducted by Centeno-Cortés and Jiménez (2004) highlights the role of the L1 in the self-regulatory private speech of L2 learners. In this study, the researchers' purpose was to determine the nature of private speech that L2 students employ when solving challenging problems stated in the L2. The participants included intermediate and advanced Spanish-L2 English-L1 learners and native speakers of Spanish. Via a Web page, the researchers presented the participants with various problems involving mathematical, logical, visual-spatial, and other types of cognitive tasks. Although more than half of the participants made little or no use of private speech in trying to solve the problems, when private speech was produced, there were three important findings: Firstly, use of Spanish, the L2, increased with proficiency; that is, the advanced learners (and the native speakers) were able to perform most of their reasoning in Spanish. Secondly, the advanced learners tended to switch to English, their L1, when the task became too difficult. Thirdly, private speech in the L2 among the intermediate learners was restricted to using it when reading the problem, repeating parts of it, producing formulaic expressions, and making comments about the task. To actually solve the problem, the learners resorted to their L1. The study confirms the power and persistence of the L1 as a private thinking tool even in cases of advanced L2 proficiency.

In brief, the study of private speech among L2 learners appears to be one of the most fruitful and promising avenues of research in L2 acquisition. Private speech provides teachers and researchers with important clues into aspects of L2 language learning and use that may not be readily perceived but are nonetheless essential.

SEE ALSO: Inner Speech in Second Language Acquisition; Internalization in Second Language Acquisition: Social Perspectives; Language Play in Second Language Acquisition;

Languaging: Collaborative Dialogue as a Source of Second Language Learning; Sociocognitive Approaches to Second Language Acquisition; Sociocultural Theory; Vygotsky and Second Language Acquisition

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Probability and Hypothesis Testing

STEVEN J. ROSS

Hypothesis testing is a fundamental tool for the evaluation of any explanatory theory. The classical paradigm for hypothesis testing requires a statement about what consequences will be observable when variables are hypothesized to be related to each other, or are hypothesized to exist in a cause–effect relationship. The conventional inferential criterion for examining the results of experimental manipulations is the probability that what has been observed experimentally could actually be a consequence of randomness. The inferential tool researchers have for decades used is a comparison of the observed outcomes against a competing model that could occur by chance alone. The sections which follow contrast the classical approach to hypothesis testing with an increasingly common alternative, the Bayesian approach. Interested readers should see Hacking (1990) for the history and evolution of probability as an alternative to determinism and positivism.

From Determinism to Probability

Modern social science methods of hypothesis testing using statistical criteria date from the mid-1930s, when Ronald Fisher's analysis of variance first appeared in the psychological literature. Fisher's innovation merged experimental design with probability theory to provide a cogent methodology to test hypotheses made prior to data collection and analysis. Hypothesis formation prior to data analysis made it possible to conduct confirmatory data analysis. After the publication of Fisher's *The Design of Experiments* (1935), which appeared the same year as Popper's *The Logic of Scientific Discovery*, use of hypothesis testing spread rapidly in empirical psychology to the extent that publication in research journals became almost contingent on finding "significant" results (Gigerenzer et al., 1989; Thompson, 1997). By the 1950s, courses in Fisherian statistical analysis became a virtual requirement for graduate students in most social sciences.

Fisher essentially formulated a statistical tool to apply *modus tollens* as a general method of falsification of hypotheses about data collected under experimental conditions (Henkel, 1976). *Modus tollens* specifies that a premise (A) be considered false if an outcome (B) conditional on that premise is found not to be supported by observable evidence.

$$\begin{array}{l} A \rightarrow B \\ \neg B \\ \hline \neg A \end{array}$$

Fisher's approach established an empirical method by which an observed outcome (B) could be evaluated as a product of random chance instead of deterministic confirming evidence of the hypothesis (A). The original Fisherian approach to hypothesis testing was grounded on the notion of the null hypothesis. Evidence in support of the null hypothesis, that (B) could be the product of random chance, was eventually recognized as quasifalsification at best, since failure to reject the null hypothesis only provides a test of whether the premise (A → B) is improbable, though not conclusively and forever false (Howson

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& Urbach, 1989). Tests of the null hypothesis require that observed statistical evidence be compared to results that could plausibly occur by chance arising from the generation of outcomes through a random process. The caveat Fisher eventually invoked was that experiments needed to be repeated many times before a stable pattern of support or refutation could be identified. The frequency of finding an outcome that is systematic and not a matter of randomness established the criterion for Fisherian (frequentist) statistical inference.

Even from the early days of frequentist statistical inference, rejection of the null hypothesis as the sole criterion for significance testing was found wanting. Rejection of the hypothesis that observed results were the likely result of randomness was considered by many akin to a "straw man" type of argument (Mohr, 1990). Neyman and Pearson (1933) argued that inductive inference required a decision to accept either the null hypothesis (H_o) or an alternative hypothesis (H_a) and that both needed to be considered in each interpretation of evidence. Their hypothesis testing innovations over time hybridized (Gigerenzer, et al., 1989) with Fisher's into the frequentist approach to significance testing, and remain to this day the primary tool for statistical inference in many fields.

Neyman and Pearson also introduced the idea that hypothesis testing and statistical inference in general was dependent on statistical power. Statistical power holds that sample size could affect the capacity of a statistical test to correctly reject a false null hypothesis, leading to inferential error (Cohen, 1988). Neyman and Pearson postulated two types of inferential error. A type I error occurs when a true null hypothesis is incorrectly rejected, while a type II error occurs when a false null hypothesis is accepted. Type I error has traditionally been considered the riskier of the two because decision-making may be the consequence of research that is unlikely to be replicable or generalizable to a population. Type II errors, in contrast, are less likely to result in policy actions, and might, with repeated experimentation, lead to results that refute the earlier erroneous inference that the null hypothesis is in fact true in general. Modern approaches to meta-analysis aim to summarize the frequency of research outcomes using this hypothesis testing approach.

Interpreting Significance

All modern statistical tests are comparisons of observed statistics against tabulated or computed probabilities that the observed outcomes of such tests occur through random processes. When an observed statistic passes a threshold which could occur through a random process, conventionally set in many social sciences to one chance in twenty observations ($p < .05$), it is assumed to be systematic and taken as evidence to reject the null hypothesis.

A simple example would be a hypothesis about the relation between two variables such as metalinguistic knowledge and language proficiency. A researcher might hypothesize that these two are linearly related to each other, such that as metalinguistic knowledge increases, proficiency increases proportionally. The researcher collects about 300 cases for whom both variables are available, and measured reliably. A test of the correlation between the two variables yields a product-moment correlation of .020. For a sample size larger than 100, a correlation smaller than .194 could occur randomly. The inference the researcher would make in this case is that metalinguistic knowledge and proficiency are not significantly related at the $p < .05$ criterion. The no-relation or null hypothesis would not be rejected in favor of the alternative.

Thresholds for "significance" are, however, subjective, and depend on researchers' estimations of risk resulting from faulty inference. When the cost of making the wrong decision about a statistical test is potentially very high, a more conservative criterion (α) for considering the results of the test nonrandom may be set to a more stringent level, such

as one chance in 1,000 ($p < .001$). Statistical decision-making is also subject to variability in the criterion for inferring significance. For instance, the more multiple statistical tests are performed on data, the more likely that some of the tests can appear falsely significant (Toothaker, 1991). There is an increasing error rate (type I error) as the number of comparisons increases such that

$$P(\text{probability of one type I error}) = 1 - (1 - \alpha)^C$$

For example, if a researcher aimed to compare the means of two independent groups on five variables (C), the probability of rejecting a true null hypothesis becomes $1 - .95^5$, or .22 instead of the intended .05. When multiple tests are conducted, researchers are cautioned to control for type I error rates through adoption of stringent criteria for deeming statistical tests as significant. This can be accomplished with omnibus multivariate tests of effects, or by dividing the chosen threshold for significance (α) by the number of comparisons to be performed, and making the more stringent criterion the basis for inference.

Sample Size and Power

The Fisherian and Neyman-Pearson approaches to significance rely on the comparison of an observed statistic with a criterion threshold determined a priori. The classical Fisherian approach provided a criterion to assess a statistical outcome such as a correlation or difference between group means, compared to what would be observed through random chance. The frequentist approach is also more likely to reject the null hypothesis and find support for the postulated alternatives as sample size grows. This point in particular has proven to be problematic for frequentist approaches to statistical inference. As sample size grows, it is possible for test statistics to become "significant," but only trivially so and not substantively (Cohen, 1994). This tendency has led to calls for reform in many academic journals: for authors to report the magnitude of observed differences in addition to the conventional tests of significance (Thompson, 1996).

Effect sizes provide a metric to describe the magnitude of the observed test statistic. Different types of effect size metrics are possible (Grissom & Kim, 2005), but all conceptually provide the basis for the substantive interpretation of observed outcomes in terms of their magnitude, and not their probability exclusively. Effect size estimations thus augment significance tests as they provide substantive as opposed to probabilistic indices, which can be interpreted by consumers of research. Journals in many applied fields now normally require authors to report effect sizes in addition to the conventional tests of significance. The spread of effect size reporting has been slow, but is becoming the new norm for frequentist research reporting.

The Bayesian Alternative

Although reporting of effect sizes along with conventional significance tests is an improvement over the earlier convention of significance testing alone, in some fields the reform is not seen as sufficient. Howson and Urback (1989), for instance, assert that the entire frequentist paradigm is without sufficient merit for it to deserve further endorsement. They claim that a more realistic and valid approach is one that eschews significance testing completely. Their endorsement of the Bayesian approach (Iverson, 1984) is predicated on their belief that all hypotheses are inherently subjective. The Bayesian approach postulates that in real-world scientific research an authentic null hypothesis is rarely ever entertained, and that all hypotheses begin with a non-null subjective belief in the likelihood

of particular outcomes (Press & Tanur, 2001). The Bayesian approach thus requires a prior probability that a hypothesis will be confirmed through corroborating evidence. The researcher's prior experience, knowledge of the phenomenon researched, and intuition all inform the a priori formulation of the subjective probability that the hypothesis is likely to be confirmed through evidence. As more data become available, the probability of the a priori hypothesis increases or decreases. The subjective hypotheses can be amended pending the empirical evidence available to support or refute them. In the Bayesian framework, the goal is thus no longer rejecting the null in favor of an alternative, but continual revision of the original subjective belief as confirmatory evidence becomes available.

The Bayesian approach to inference has steadily grown in influence. In some fields such as biostatistics and epidemiology (Spiegelhalter, Abrams, & Myles, 2004) the Bayesian approach to inference is rapidly becoming as common as the frequentist approach, and is projected, its proponents claim, to some day supplant the frequentist paradigm completely.

Familiar inferential statistics such as the *F*-ratio, the *t*-ratio, *z*-distribution, and the chi-square can be generated in the Bayesian approach, with the added advantage that their robustness can be assessed when there are possible violations of the assumptions associated with these inferential statistics (Albert, 2007). The Bayesian approach also provides "credible intervals" which provide the most likely posterior estimates of the statistical parameters of interest. While the credible intervals are conceptually similar to the frequentist confidence interval, they are said to be more precisely estimated in most cases using the Bayesian approach, assuming that the initial prior probabilities are not completely uninformed. When prior probabilities are unknown, the parameter estimates generated through the Bayesian approach closely approximate those estimated with frequentist methods.

A Comparison of Frequentist and Bayesian Analyses

As an example of the comparability of the frequentist and Bayesian approaches to inference, a sample applied linguistics research project is illustrated here. The study concerns the phenomenon of language attrition, or loss of language proficiency, over time. A sample of 847 English language learners were reinterviewed with an OPI after varying lengths of time separating their original and repeated interview. Before each interview, all participants took a 200-item listening and reading test. The dependent variable was a dichotomous code denoting that the second interview outcome was rated lower than the original, suggesting attrition of speaking proficiency over time. The variables used to predict language loss were time between interviews, gender of the learner, and the pretest and the posttest scores on the listening and reading proficiency indicators (Table 1). The outcome was the code for attrition. A logistic regression was conducted first with a frequentist approach testing the null hypothesis for each predictor, all of which were entered simultaneously.

Table 1 Frequentist logistic regression results

Parameter	*Estimate*	*S.E.*	*t-ratio*	*p-value*
1 Constant	–2.650	1.052	–2.519	0.012
2 Pretest	0.003	0.002	1.611	0.107
3 Posttest	–0.001	0.002	–0.745	0.456
4 Time	0.190	0.039	4.931	0.000
5 Gender	0.104	0.156	0.669	0.504

Table 2 Bayesian logistic regression results

Node	*Mean*	*SD*	*MC error*	*2.5.%*	*Median*	*97.5%*	*Start*	*Sample*
Constant	−2.602	0.981	0.06384	−4.312	−2.67	−0.6249	10001	20000
Pretest	0.002	0.001	0.00013	−0.001	0.002	0.006	10001	20000
Posttest	−0.0006	0.001	0.00014	−0.003	0.0007	0.003	10001	20000
Time	0.182	0.038	0.0010	0.111	0.186	0.262	10001	20000
Gender	0.099	0.156	0.0021	−0.2054	0.098	0.409	10001	20000
Odds-pre	1.002	0.0019	0.00013	0.9982	1.002	1.006	10001	20000
Odds-post	0.9993	0.0017	0.00014	0.9962	0.999	1.003	10001	20000
Odds-time	1.206	0.0465	0.0008	1.118	1.205	1.300	10001	20000
Odds-gen	1.118	0.176	0.0024	0.814	1.104	1.505	10001	20000

The frequentist logistic regression employs an estimate of the effect of each predictor and its associated standard error. The hypothesis that each predictor's effect on the attrition outcome is larger than random chance is tested against the *t*-distribution (estimate/standard error), with an exact probability for each *t*-ratio. The result of the frequentist analysis shows that *time* is the only predictor that accounts for the attrition phenomenon. As more time separates the repeated interview from the original interview, the greater the likelihood that the outcome of the repeated interview will be a lower proficiency rating.

The same logistic regression can be conducted using a Bayesian approach (Table 2). Here, WinBUGS 1.4 (Lunn, Thomas, Best, & Speigelhalter, 2000) was used to provide a Bayesian analysis of the same model and data set. The main difference between the frequentist and the Bayesian approaches is the need to stipulate a prior probability for each of the predictors in the model. In most cases, a researcher would have some familiarity with the research literature on the phenomenon of interest, and would be guided to some degree about which variables would be more likely than others to influence the dependent variable. Probabilities that the predictors would have a non-zero effect on the outcome would thus have to be specified prior to the analysis and then, through simulation, "burned in" before the final model was tested. In the present case, since there is no specific hypothesis to guide an estimation of the relative or absolute magnitude of the regression coefficients or odds ratios, a "flat" or uninformed prior is used. The flat prior is most similar to the null hypothesis in the frequentist approach, and in the present case can serve to provide a basis for comparison of the two approaches to inference.

After a burn-in of 10,000 iterations in WinBUGS, the regression coefficients and odds ratios were sampled with 10,000 more iterations. The resulting statistics provide the basis for comparison with the model, the conventional logistic regression testing the null hypothesis.

No test of the null hypothesis is available in the output. Instead, a 95% credible interval range is provided for each coefficient. In the present example, the dependent variable is binary, so the odds ratio estimate is a useful guide to interpretation in lieu of the test of the null hypothesis. For all predictors of attrition except for time, the median odds ratio estimates are close to 1.0, which falls within the 2.5% and 97.5% credible interval. Since an odds ratio of 1 implies a coefficient mean of zero, ($\ln(1) = 0$; $e^0 = 1$), the inference is that the coefficients for pretest, posttest, and gender are all inclusive of zero, and therefore have no effect on the attrition phenomenon. In the frequentist interpretation in Table 1,

these variables are all $p > .05$, or not significantly greater than random chance. The odds ratio of time, with a median of 1.205, is within a credibility interval whose lower bound is larger than 1.0. The coefficient for time is thus credible, and matches the frequentist inference that it is not likely to be a matter of random chance: $t = 4.93$, $p < .00001$. The example demonstrates that without prior probabilities that are larger than zero, that is, with uninformed prior hypotheses, the results of the frequentist and Bayesian approaches can be expected to yield similar inferences. This is generally the case for large data sets, suggesting that the Bayesian advantage is likely to be most salient in studies with small samples sizes and low power.

Researchers employing the Bayesian approach would presumably be motivated to do so because they have specific informative hypotheses to test. Recent innovations in Bayesian analysis have made it possible to address the kinds of experimental research most common in applied linguistics without the sole use of the null hypothesis approach. One recent innovation is that of Klugkist, Laudy, and Hoijtink (2005), which involves specification of "informative" hypotheses. As a case in point, a language learning study involving feedback on written error might involve three intervention types and a control group. The four writing accuracy group means would be compared, controlling for prior proficiency differences as a covariate. The difference between the usual null hypothesis approach and the informative hypothesis approach is that the researchers must specify a priori which ordering of mean differences they hypothesize to be observed before the data analysis begins.

$G3 > G2 > G4 > G1$ H_a : The most probable outcome
$G3 = G2 > G4 = G1$ H_b : Possible, but less probable than H_a
$G1 = G2 = G3 = G4$ H_c : The possible null hypothesis, but less probable than H_a or H_b
$G1, G2, G3, G4$ H_2 : An unordered set of outcomes used to initiate the estimation process

No post hoc comparisons would be needed in this approach because the ordering $H_a > H_b > H_c = H_2$ has been predicted. The Bayesian analysis would update the informative hypotheses against the observed experimental data and provide a set of posterior probabilities indicating which of the four hypotheses is most consonant with the experimental outcomes. This approach necessitates ordered hypotheses and requires researchers to make specific prior claims about expected outcomes.

Hypothesis Testing in the Future

Efforts in recent decades to improve frequentist statistical inference through reforms in reporting effects sizes, power, and significance tests have perhaps extended the life span of this form of statistical inference. A quick survey of papers published in academic journals in the applied linguistics domain suggests that the Bayesian approach has not yet arrived. Perhaps the main reason the Bayesian approach to statistical inference is likely to arrive on the applied linguistics scene later than in other fields is the comparative lack of software and training. With the exception of a few item-response theory analysis packages, Bayesian analysis is conducted with open-source code packages such as R or with public domain software such as WinBUGS, which for other than experienced data analysts may present a formidable learning curve. This situation can be expected to change as more texts introducing applied Bayesian analysis (e.g., Hoijtink, Klugkist, & Boelen, 2008; Ntzouflas, 2009) and accessible software become available and are integrated into graduate instruction. If applied linguistics researchers are willing to invest time and effort in learning alternatives to the null hypothesis approach, their time and effort may be well spent.

SEE ALSO: Meta-Analysis; Multiple Regression; Reliability in Language Assessment; Testing Independent Relationships

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Processability Theory and Teachability

MANFRED PIENEMANN

A Brief Sketch of PT

The basic idea underlying processability theory (PT) (Pienemann, 1998a; 2005) is the following: at any stage of development the learner can produce and comprehend only those second language (L2) linguistic forms which the current state of the language processor can handle. It is therefore crucial to understand the architecture of the language processor and the way in which it handles a second language. This enables one to predict the course of development of L2 linguistic forms in language production and comprehension across languages.

The core of PT is formed by a universal processability hierarchy that is based on Levelt's (1989) approach to language production. PT is formally modeled using lexical functional grammar (LFG) (Bresnan, 2001). In other words, PT is a universal framework that has the capacity to predict developmental trajectories for any second language. The notion "developmental trajectory" implies a developmental dimension known as "staged development" as well as a variational dimension accounting for individual differences between developmental trajectories as illustrated in Figure 1.

Figure 1 shows two different developmental trajectories, T1 and T2, which are based on the same set of developmental stages (indicated by the dotted horizontal lines). The two developmental trajectories differ with respect to the varieties of learner language that are developed at each stage (indicated by vertical lines).

In this paradigm, each stage represents a set of grammatical rules that share certain processing routines, and each variety of learner language represents a specific variant of the grammatical rules. For instance, in English as a second language (ESL) question formation the developmental sequence shown in Figure 2 has been found (e.g., Pienemann, 1998a, 1998b).

Differences in developmental trajectories are based on the manner in which learners utilize the leeway they have in solving developmental problems. For instance, learners attempting to produce "auxiliary-subject inversion" before they are ready for this structure

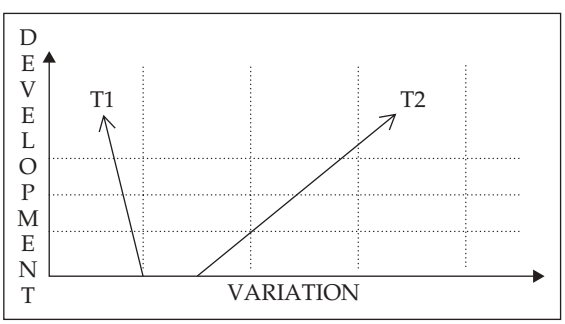

Figure 1 Different developmental trajectories

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Structure	Example
4. Auxiliary-subject inversion	Where has he been?
3. Copula	Where is he?
2. WH+SVO	Where he is?
1. SVO question	He live here?

Figure 2 Developmental patterns in ESL question formation

(i.e., at level 3 shown in Figure 2) have been found to produce the following learner language variants:

A Where he been?
B Where has been?
C Where he has been?
D He has been where?

Variants A to D have in common that they get around placing the auxiliary before the subject in WH-questions. In other words, they constitute different solutions to the same learning problem. In Figure 1 each of the different solutions is represented by a vertical line. It is important to bear in mind that for each structural learning process there is a limited set of solutions. In the course of L2 development, the learner accumulates grammatical rules and their variants, allowing learners to develop an individual developmental trajectory while adhering to the overall developmental schedule.

The Processability Hierarchy

The processability hierarchy represents a universal set of processing resources that is modeled using LFG (Bresnan, 2001). A simplified account of the processability hierarchy with a focus on one of the PT mechanisms (i.e., the transfer of grammatical information) is given in Figure 3 where three example constituent structures are listed in the left-hand column. The second column specifies the type of information transfer possible at each stage. ESL morphological structures are given in the next column to exemplify the types

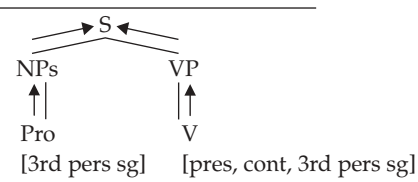
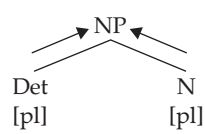
	Information exchange		
	Locus of exchange	Example	Illustration
sentence	within sentence	he talk-s	
phrase	within phrase only	two kids	
category	no exchange	talk-ed	

Figure 3 A simplified account of the processability hierarchy

of structures possible at each stage, and the information transfer involved in the generation of these structures is illustrated in the column on the right-hand side.

The structures that are processable at any given stage are constrained by the available processing resources. As can be seen in Figure 3, at the stage "phrase" grammatical information can be exchanged only within phrases, not beyond the phrasal boundary. Subject–verb agreement (i.e., "third-person-s") cannot be processed at the stage "phrase" because this structure requires grammatical information to be exchanged beyond the phrasal boundary—as illustrated in Figure 3. In other words, processing resources define and constrain the range of possible production grammars for every level.

At the same time, these constraints leave sufficient leeway for learners to find different solutions to structural learning problems. This was illustrated above with the inversion of auxiliary and subject in English WH-questions. Inversion requires processing procedures at the sentence level in the hierarchy. L2 learners can nevertheless produce WH-questions before the procedures for inversion are in place. When they attempt to do this, learners have four structural options that avoid auxiliary-subject inversion. The options available are all processable using the resources available at the previous stage, and the number of options is limited because of the limited resources that are available.

PT Mechanisms

PT is based on two psycholinguistic mechanisms which will be summarized below: (a) transfer of grammatical information and (b) lexical mapping.

The initial version of PT (Pienemann, 1998a) focused on constituent structure and the *transfer of grammatical information* within it, using feature unification. The modeling of feature unification, as envisaged in this approach, is illustrated in Figure 3. In the sentence "Peter sees a dog" subject–verb agreement relies on information contained in the subject–noun phrase, namely the feature values PERS=3 and NUM=SG. These feature values are unified (or "compared and found to match") after the verb has been produced. In other words, grammatical information on PERS and NUM that is created in the subject needs to be placed in a temporary store during sentence generation in order to produce subject–verb agreement. Figure 4 shows that subject–verb agreement utilizes the top of the constituent structure ("S") to match the information attached to the subject and the verb.

In the design of PT, the point of unification is related to a hierarchy of processability that reflects the time course of real time processing as detailed in Levelt (1989). In this way a range of morphological and syntactic processes can be aligned with a universal hierarchy of processability yielding developmental trajectories for the given target languages. The hierarchy that results from a comparison of the points of feature unification can be

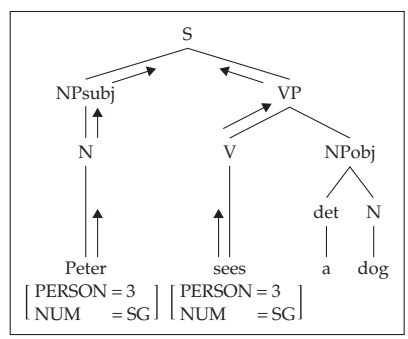


Figure 4 Feature unification in the S-procedure

illustrated on the basis of Figure 3 which shows that the example structures illustrated in Figure 3 can be ordered as follows:

1. No exchange of grammatical information (= no feature unification),
2. Exchange within the phrase,
3. Exchange within the sentence.

Once one applies this hierarchy to morphology in English second language acquisition (SLA), the following developmental trajectory can be predicted:

1. past -ed
2. plural -s
3. third person -s.

In order to appreciate the universal nature of PT it is crucial to consider that the hierarchy illustrated in Figure 3 is not language-specific and that, in principle, it applies to the transfer of grammatical information in any language. In contrast, the examples that were given for ESL morphology utilize this hierarchy and apply it to one specific target language. The application of the full processability hierarchy to the syntax and morphology of specific languages will, of course, involve more detail of the LFG formalism.

The second mechanism which was added to PT by Pienemann, Di Biase, and Kawaguchi (2005) is *lexical mapping*. This mechanism is based on a component of LFG that deals with the way in which the semantic roles (e.g., "agent," "patient") of the intended message are expressed in grammar. All languages have a wide range of alternatives in expressing the intended semantic roles. For instance, the agent of an action can be expressed as a grammatical subject (in active sentences—"Peter eats a banana") or as an adjunct (e.g., in passive sentences "The banana was eaten by Peter"). In other words, *lexical mapping* accounts for the mapping of semantic roles onto grammatical functions.

In PT the default mapping principle is *unmarked alignment* which is based on the one-to-one mapping of semantic roles onto grammatical functions. Naturally, mature languages allow for a much wider range of relationships between semantic roles and grammatical functions, and these develop stepwise in SLA. Principles of lexical mapping can account for these developmental processes.

In other words, *unmarked alignment* is the initial state of L2 development. It is based on the one-to-one mapping of semantic roles onto grammatical functions. At the initial state learners lack the grammatical means to express information that is structured in a nonlinear way. Therefore they have no choice other than to produce sentences using canonical word order (SVO for ESL) and they are therefore initially unable to express passives or other structures which are based on a nonlinear relationship between semantic roles and grammatical functions. These constraints are relaxed as the acquisition process proceeds.

Key Hypotheses

PT entails the following key claims:

I The processability hierarchy applies to typologically different languages. This point was demonstrated in a number of studies on L2 development including Japanese, Chinese, and Arabic (cf., Di Biase & Kawaguchi, 2002; Pienemann, 2005; Zhang, 2005; Kawaguchi, 2005; Mansouri, 2005).

II First language (L1) transfer is constrained by processability. This implies that L1 forms can be transferred to the L2 only when they can be processed in the developing L2 system. In other words, this implies an operationalized "partial transfer" position (Pienemann, Di Biase, Kawaguchi, & Håkansson, 2007).
III Both first and second language acquisition is constrained by the PT. Nevertheless, both types of acquisition may be associated with fundamentally different developmental trajectories (Pienemann, 1998a, 1998b).
IV Bilingual language development can be compared across different languages on a universal scale based on PT (Pienemann, Keßler, & Itani-Adams, 2011).
V The impact of formal teaching intervention on the course of SLA is constrained by processability (Pienemann, 1984, 1989).

Pienemann and Keßler (2011) give a basic introduction to the above and most other aspects of PT.

The Teachability Hypothesis

The last claim in the above list has become known as the teachability hypothesis (TH) (Pienemann, 1984, 1989) which was created long before PT. The TH was originally based on the observation that learners follow universal stages of development in natural *and* in classroom contexts (Pienemann, 1998a, 252–64). In a number of experiments Pienemann (1984, 1989) tested if the natural order of acquisition "can be beaten" by formal instruction. This test was operationalized by selecting L2 learners on the basis of their current level of L2 acquisition. Two groups were formed (a) with learners at level x and (b) with learners at level x + 1. Both groups were exposed to the same classroom input which focused on level x + 2. It was found that learners at level x + 1 progressed to level x + 2 and that learners at level x did not progress at all. These findings were supported in several replication studies (e.g., Ellis, 1989).

These results were interpreted in terms of psycholinguistic constraints on formal instruction. The psycholinguistic framework that was used was that of processing strategies which were shown to form an implicational hierarchy, with each step being the prerequisite for the next. Skipping a step in such an implicational hierarchy is impossible because the higher-level processing strategy (x + 2) requires the strategy of the previous level (x + 1) to have developed before the x + 2-strategy can be functional. The strategies framework can now be translated into PT (Pienemann, 1998a) because the processability hierarchy is also implicational. Embedding the TH in PT has a number of advantages. PT applies to a wider range of L2 phenomena. It is typologically plausible, and it links up with a theory of grammar thus opening up the study of epistemological issues.

At a practical level, the TH represents a set of constraints on teachability which describe necessary conditions for formal instruction to promote acquisition. However, it does not describe sufficient conditions for formal instruction to be successful. Therefore the success of "timed instruction" depends on factors inherent in the process of formal intervention—bearing in mind that formal intervention cannot "beat" acquisition. The practical implementation of the TH in classrooms is supported by a computer-based linguistic screening procedure (rapid profile) (Pienemann, Johnston, & Brindley, 1988; Mackey, Pienemann, & Thornton, 1991; Pienemann & Keßler, 2008; Keßler & Keatinge, 2008) that yields rapid snapshots of each learner's interlanguage system.

SEE ALSO: Assessment of Speaking; Cognitive Linguistics of Second Language Acquisition; Cognitive Second Language Acquisition: Quantitative Methods; Explicit Learning in Second

Language Acquisition; First Language Development of Grammar; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Language Testing in Second Language Research; Learner Varieties; Online Psycholinguistic Methods in Second Language Acquisition Research; Rating Oral Language; Sentence Production in a Second Language; Typology and Second Language Acquisition

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Professionalization of Interpreters

OLGIERDA FURMANEK

In the last decades of the twentieth century and the first years of the twenty-first century, the different fields of interpreting have experienced various degrees of evolution in their professional status depending on the type of interpreting and on the country, and in many cases even on the region of a particular country. In 1996 Viaggio, reflecting on the development of conference interpreting, stated that "in 50 years, we have gone a long way towards accomplishing what took medicine, for instance, some 25 centuries to achieve: turning into a recognized profession based on a recognized discipline taught at recognized academic institutions." In the same year Mikkelson (1996) acknowledged the need for discipline and professional structure in the field of community interpreting, which until then was still considered a volunteer activity in many countries. She presented a comparative analysis of community interpreting and other professions, and recommended a course of action to promote the profession over the medium and long terms. Nine years later Corsellis (2005) continued to call for consistent, accountable, and transparent structures that would allow linguists working in public services to become regulated professionals, adding that "the debate on the detail of the long-term professional structures is still under way" (p. 154). In 2011 the situation continues to evolve in all fields of interpreting but, based on major trends, it can be noted that interpreting activity has gradually been becoming a profession and continues to strengthen its position as a full-fledged career.

Based on the professionalization continuum comparison shown in Table 1 (Curnow & McGonigel, 2006), which compiles attribute, process, and power and market models, the activity of interpreters is moving into the final stages of professional development. These final stages toward the professionalization of interpreters, which in several areas of the world are yet to be attained, are defined as

- academization—education, a body of research, and academic journals;
- identity—service in relation to social values, and professional associations and trade unions; and
- standardization—terminology, a system of norms, accreditation, and legislation.

Academization

Education

The modern historical record of the interpreting profession begins after World War II, when a sudden demand for training interpreters arose. Interpreters were generally needed by heads of state, and conference interpreting grew as the most popular area. At that time interpreters evolved from those people who had learned two languages from birth and practiced simultaneous interpreting to those who had studied multiple source languages in order to be interpreters (not "naturally," like the previous generation) but had not attended interpreting schools. In 1952 the first students trained in simultaneous interpreting graduated from the School for Interpreters and Translators in Geneva, Switzerland.

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Table 1 Comparison of the characteristics of three models of professionalization by stages of professionalization (Curnow & McGonigle, 2006)

Type of model	*Professionalization continuum*		
	Initial stages	*Middle stages*	*Final stages*
Attribute models (based on Flexner, 1915; Pavalko, 1988)	Use of skills based on theoretical knowledge	Education and training related to skills and knowledge	Performance of service that is for the public good
	Unique knowledge base justifying the claim to special expertise	Long training period requiring specialized knowledge and indoctrination into the occupations subculture	Code of conduct to ensure professional integrity
			Service versus profit motivation
			Relevance of work to social values
			Competence of professionals ensured by examinations
			Code of ethics and system of norms that are parts of the subculture, reinforcing motivation, autonomy, and commitment
			Self-regulating and self-controlling; only members of the profession judge and certify who is competent to practice
Process models	Full-time occupation identified	Training or educational programs provided	Code of ethics established
		Professional association established	Support of law provided
Power and market models	Development of specific knowledge	Systemized/ standardized training of practitioners	Standardized body of accredited knowledge
	Special knowledge and skills	Restricted supply of services	Monopoly of services

Conference interpreters were professionalized with the founding of the International Association of Conference Interpreters (AIIC) in Paris in 1953. With the historical scene changing in the cold war, the decolonization of Africa, the formation of the European Union, the collapse of communism, the opening of Asian countries to globalization, and migration movements increasing in all parts of the world, the need for interpreting services grew significantly in the second half of the twentieth century. In its last decade, interpreting programs grew proportionally to the numbers of countries admitted to the European Union. In the USA and Canada the need for training responded to the waves of migration

resulting from the political changes in Asia, Africa, South America, and Eastern Europe.

Today educational programs at first- and second-cycle levels in higher education, workshops, and seminars for training both conference and non-conference interpreters are offered on a regular or irregular basis in almost every country. In 2010 over 300 schools offering degrees, with a wide range of quality, in translation and interpreting (both programs are still combined at many educational institutions) were identified worldwide. An online survey of interpreting schools is being carried out and the results will be posted on the AIIC Web site (http://www.aiic.net) upon completion. In 2010, two PhD programs in interpreting studies were in existence (whereas in 1990 there were none), at the University of Geneva, Switzerland, and at the University of Manchester, England, not to mention several doctoral degrees that are offered worldwide in conjunction with or as part of translation studies programs.

As interpreting studies programs at both the first-, second-, and even third-cycle levels are on the rise in academia, the first years of the twenty-first century have also brought a stream of pedagogy-related materials (e.g., Sawyer, 2004; Tennent, 2005). Additionally, voices advocating professionalization and professional training of not only interpreters but also teachers of interpreters have been raised in various parts of the Western world (Austria, the United Kingdom, Spain, Italy, the United States), as well as in regions with less of a tradition of interpreting services and teaching of interpreting due to their former sociopolitical situation, such as Central European countries, Malaysia, and China. An undergraduate program training interpreters' educators was offered at Stockholm University in 2001. A Master of Arts in Teaching Conference Interpreting was offered for several years at the University of Geneva, but has been discontinued. While Furmanek (2010) defined a need for solid education in interpreting didactics and proposed a comprehensive curriculum for educators of interpreting at the graduate level, graduate-level programs in the methodology of teaching interpreting came into existence at Wake Forest University, USA, in 2009, and Macquarie University, Australia, in 2010.

Research and Academic Journals

Interpreting studies began at the crossroads of various disciplines drawing scholars from a variety of fields—from applied linguistics, pragmatics, sociolinguistics, and translation theory, through cultural studies, social studies, and communication, to anthropology and philosophy, and it still continues to be an interdisciplinary domain (Cynthia Roy, Cecilia Wadensjő, Helen Tebble). However, in the last thirty years of the twentieth century a group of scholars focusing solely on interpreting arose. Next to such prominent pioneers as Danica Seleskovitch and Marianne Lederer have appeared Daniel Gile and Barbara Moser-Mercer, whose studies focus primarily on conference interpreting. Claudia Angelelli, Ann Corsellis, Franz Pöchhacker, María Isabel Abríl Martí, Uldis Ozolins, Sandra Hale, Elaine Hsieh, Robin Setton, and Miriam Shlesinger are among the most active interpreting scholars since 2000. Interpreting researchers continue to publish in traditional linguistics- and translation-related venues (*Meta*, *Babel*, *Mutlilingua*, *Journal of Specialized Translation*, *Intercultural Pragmatics*, *Discourse Studies*, *MultiLingual*) as they have done since the 1950s. More frequently, however, the name of the field, "interpreting," is acknowledged in the title of new journals that combine both written and oral translation scholarship: *Interpreting*, *Translation and Interpreting Studies*, *Interpreter and Translator Trainer*.

As of 2005 a continuous increase in the number of interpreting publications appearing in nonlinguistic journals has been observed, thus documenting a recognition of interpreting-related issues by other disciplines, particularly in the fields of public health. Examples are *American Journal of Public Health*, *Communication and Medicine*, *Health Affairs*, *Healthcare Risk Management*, *International Journal for Quality in Health Care*, *Journal of Clinical Ethics*, *Journal*

of Epidemiology and Community Health, *Journal of Health and Social Behavior*, *Journal of Multicultural Counseling and Development*, *Journal of Occupational Medicine*, *Pediatrics*, *Social Science and Medicine*, and *Transcultural Psychiatry*.

Identity

Service in Relation to Social Values

Interpreting as a profession has now become more self-reflective, and a greater number of research publications and community-based surveys across the world examine the value base of linguists as professionals and of language services as a career field. Interpreters are more aware of their own value base and their relationship to the profession, as well as their power.

Surveys, questionnaires, and surveys of surveys proliferate across the world. Regional examples range from China and Malaysia to the Netherlands, Poland, and Spain, but many are Web-based and thus are conducted worldwide (e.g., Ibrahim, 2007; Tryuk, 2007; Salaets & van Gucht, 2008; Katan, 2009; Martin & Ortega Herraáez, 2009; Setton & Liangliang, 2009; Zwischenberger, 2009). In addition to these scholarly efforts, many non-conference interpreting associations have recently been conducting surveys on self-perception among interpreters, hoping to define and also promote the image of an interpreter who is conscious of his or her responsibilities and rights, and of his or her place in the interpreting situation as a professional contributor rather than a helper.

Like those in other emerging fields in search of their own professional identity, such as social work, emergency medicine, or humanitarian health work, interpreters have begun to ask questions about the extralinguistic and extracultural factors that play an important role in their job: compassion, decision making, trustworthiness, integrity, and conscientiousness. These question draw on developments in related disciplines such as psychotherapy, social policy, and cultural mediation, as well as from sociopolitical issues including court trials of unreliable interpreters, the life-and-death responsibilities of military interpreters, interpreters' ethical dilemmas as related to deportation and torture, the liability of health-care interpreters regarding medical errors, and so on. As Sela-Sheffy and Shlesinger put it in their introduction to the two-part special issue of *Translation and Interpreting Studies*, the identity and status of language professionals are "about the experience of the people who create and shape the translating professions, and the way they understand their occupational world and make sense of their job, so as to locate themselves as professionals and maintain a special identity and dignity" (2009, p. 124).

Professional Associations and Trade Unions

As in the titles of academic journals, the term "interpreting" is second to "translation" in the names of many professional associations. Both fields are intended to promote linguistic careers, but there are increasingly more groups of language professionals made up solely of interpreters. Regional or national associations include the Japan Association of Interpreting Studies, founded in 1999; the National Register of Public Service Interpreters (United Kingdom), founded in 2006; and on a more global level the International Association of Medical Interpreters (United States) or the European Union Legal Interpreting and Translation Association (ELITA), in whose title "interpreting" is placed first. Other recently founded associations specifically distinguish between translators and interpreters and, in spite of the length of the title, the term "interpreting" or "interpreter" is present in the name of the association, for example the International Association of Professional Translators and Interpreters (founded in Argentina, 2010) or the American Translation and Interpreting

Studies Association (founded in the USA, 2002). Following the general trend of the late decades of the twentieth century, professional organizations of interpreters tend to replace trade unions as the former find themselves becoming strongly unionate and lobbying-oriented, in addition to practicing traditional professional job-entry control and promoting the profession's ethics. As the discipline of interpreting becomes academicized, the number of academic associations that include interpreting studies as a discipline on its own is also on the rise.

Interpreting conferences are organized on a yearly basis on different continents. Even though it is not associated with any particular organization, the tri-annual Critical Link conference, organized by Critical Link International: International Council for the Development of Community Interpreting (founded in 1992 in Canada), prevails as the most prestigious congress in the interpreting field.

Standardization

Terminology

The general public (including interpreting services users and researchers in other academic areas) continue to need education on how the profession of interpreter differs from that of translator. The term "interpretation" is widely used incorrectly as a synonym for or instead of "interpreting." In his revised edition (2009) of *Basic Concepts and Models for Interpreter and Translator Training*, Gile corrected the first edition of the book by using the term "interpreting" instead of "interpretation," an important milestone in the standardization and clarification of interpreting terminology. Denominations of interpreting in relation to its settings, types, and modes vary depending on the country, and have not yet been made uniform or stabilized. For example, the term "public service interpreting" (PSI), which is the most widely accepted and is often interchanged with the second most used, "community interpreting," is only one of the seven terms that refer to public service interpreting—bilateral, community, dialogue, discourse, liaison, public service, triad—depending on the region of the world or on personal preference.

System of Norms

AIIC has published its own code of ethics and professional standards that apply to conference interpreting; however, there is no clear definition or distinction between codes of ethics, codes of conduct, standards of practice, and career guidelines regarding non-conference interpreting services. As a result, requirements or recommendations under various names in other fields of interpreting developed throughout the second half of the twentieth century at different speeds. In general, they address confidentiality, ethical issues, impartiality, transparency, the role of the interpreter, cultural competency, intervention boundaries, and sometimes specific procedures in relation to the particular interpreting context such as medical, legal, educational, or military.

Canada, Australia, and Sweden are recognized as pioneers in advancing non-conference interpreting services and introducing standards and state regulations for working language professions in the field and those served by them in the 1960s and 1970s. The United Kingdom, Spain, and South Africa began to develop and introduce standards in the 1980s. Many interpreters in the field of non-conference interpreting still follow AIIC standards due to profession fragmentation and the absence of a regulative body in most countries in Asia, Africa, and Central and South America. In 2005 Bancroft reported that standards of practice for interpreters in various fields were beginning to appear around the world, and that evidence of professionalization is now noted particularly in standards dedicated

to a specific field of interpreting. She identified medical interpreting, next to educational and legal interpreting, as the field in which standards of practice show "more depth of reflection, concern for the client and respect for the complex roles of the interpreter" (Bancroft, 2005, p. 29).

Accreditation and Legislation

Due to the variety of interpreting settings and its particular specifications, accreditation is one of the most challenging and complex issues in the interpreting field. Discussions are ongoing in regard to certifying bodies, requirements, levels of certification, and legislative regulations for those who perform interpreting as an income-producing activity and for those who hire interpreters' services.

In the vast majority of countries there is no requirement to register and anyone can practice as an interpreter. In some countries state agencies offer exams that allow one to receive a license as a certified or sworn court interpreter (e.g., Poland, Sweden, the USA), but in other fields certification efforts are still underway and vary greatly depending on the country. For example, certification exams may be offered by independent associations (e.g., as in Canada and the United Kingdom) and are recognized by government administrations and state institutions. The National Accreditation Authority for Translators and Interpreters Ltd (trading as NAATI) in Australia stands out as an agency that regulates national standards and serves as an accreditation body for translators and interpreters. In January 2005 an official document released by the Chinese General Office of the National Ministry of Personnel stated that starting in that year the China Aptitude Test for Translators and Interpreters (CATTI) would be the only test that determines the qualification and ability of translators and interpreters in China.

Since 2000, academic and professional associations have joined forces to advance efforts on standardization and regulative programs in both Europe and the Americas. For example, ELITA's goal in 2008 was to collate and disseminate best practices in training and teaching materials, national certification and registration systems, and best professional practices pertaining to legal interpreting. In the same year, the US Certification Commission for Healthcare Interpreters brought together the necessary stakeholders through a nonprofit organization whose main mission is to develop and administer a national and valid certification program for health-care interpreters.

One of the obstacles to standardization is that no one generally accepted profile for the job of interpreter exists. There are many research sources that list characteristics related to the job and to the people who hold it (research reports, hiring protocols from health agencies, government documents, and occupational Web sites), but these resources are not well integrated. Work is in progress to establish globally accepted ISO 9001 standards (to be finalized and published in 2012) for non-conference interpreting that, along with the validated job profiles that are beginning to be commissioned or researched (United States, Spain), are intended to become the foundation and reference for accreditation and hiring regulations worldwide.

Along with the positive side of professionalization, its negative effect should be taken into consideration. In spite of educational programs and official regulations, in some countries clients still tend to use untrained interpreters, especially in medical, educational, or sports interpreting. The accelerated and unbalanced professionalization of interpreters may affect teachers' qualifications in interpreter training programs.

The multiplication of associations, competing or redundant standards, lack of coordinated efforts to increase public awareness about the work of the interpreter, and short-term research funding aiming at providing temporary solutions in countries with high migration indexes add to the continual delay in the professionalization of the interpreting profession.

On the other hand, new, solid research is emerging, interpreters' self-awareness as professionals is higher than ever, and professional organizations are attempting to improve their communication in order to join their efforts to ensure legislative support worldwide. Interpreters' desire for professional autonomy and proper remuneration, as a result of the predicted growth for the language industry in the years to 2040, may be the best stimulus for the conclusive period in the professionalization process of interpreters. It is very likely that 2020s and 2030s may bring to fruition the missing elements from the final stage of the professionalization continuum, particularly in non-conference settings, and the discipline of interpreting will thus be fully transformed into a profession.

SEE ALSO: Community Interpreting; Conference Interpreting; History of Interpreting; Liaison Interpreting; Media Interpreting; Teaching and Learning of Interpreting

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Program Evaluation

JOHN M. NORRIS AND YUKIKO WATANABE

Introduction to Program Evaluation

According to Patton (2008), "*Program evaluation* is the systematic collection of information about the activities, characteristics, and results of programs to make judgments about the program, improve or further develop program effectiveness, inform decisions about future programming, and/or increase understanding" (p. 39, emphasis in original). Evaluation is systematic in that it involves the collection of data to answer questions about social, educational, and other kinds of programs. In focus are any of the elements that constitute programs, including: (a) the needs of individuals to which programs respond, (b) the theories that underlie program design, (c) the human and other resources that are invested in program development and delivery, (d) the activities and materials via which programs are implemented, (e) the effectiveness of programs at helping participants learn or achieve other goals, and (f) the benefits or drawbacks that accrue for individuals and society as a result of programs. The combination of these diverse elements into a deliberate set of practices provides the logic by which a program seeks to contribute value, typically to overcome perceived social problems, to enhance the quality of life for particular segments of society, or to facilitate the daily human business of getting by.

Evaluation focuses an empirical lens on the elements of programs and the roles that programs play in society. In this sense, evaluation is akin to research, as it involves asking questions, designing investigations to answer those questions, and collecting pertinent data. However, evaluation differs from research in several important ways. While research is generally theory-driven (i.e., either generating or testing theories), evaluation is typically decision- or action-driven. The questions that motivate evaluation are asked and answered with particular, practical purposes in mind, such as improving program quality, providing funding to support innovation, developing the capacities of participants, holding programs accountable to ethical or achievement standards, and disseminating understandings about "best practices." Evaluation also generally treats holistic programs as the unit of analysis, complicating the investigation of numerous variables that interact as programs are realized, from practitioners and participants, to physical settings, to resource constraints, and beyond. Clearly, in order to answer the variety of questions that might be asked about programs, in all their complexity, and to meet particular decision-making purposes, the methodologies for evaluation also range across the entire "qualitative" to "quantitative" spectrum. For this reason, Cronbach et al. (1980) argued "The evaluator will be wise not to declare allegiance to either a quantitative-scientific-summative methodology or a qualitative-naturalistic-descriptive methodology" (p. 7). Epistemologically, then, evaluation is best described as a pragmatic undertaking, with "utility" as the primary criterion, and thus accepting of the widest possible variety of data-collection methods in accordance with the diversity of questions and foci for inquiry (Patton, 2008). Ultimately, the intent of evaluation is to produce evidence that can be used by actual decision makers and other stakeholders to understand programs and take needed actions.

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As a discipline within the social sciences, program evaluation has a relatively recent history (Rossi, Lipsey, & Freeman, 2003). Emerging in conjunction with large-scale federal investment in social programs during the post-World War era, largely in the United States, evaluation initially adopted a primarily summative (product-oriented) and accountability-driven focus on the measurement of outcomes and the comparison of programs through experimental methodologies. During the 1960s and 1970s, evaluation practice evolved in response to demands for formative (process-oriented) insights that could be applied to the improvement of programs, especially in education, by adopting new designs and data-collection methods, from survey research to observations and interviews. The 1980s saw the formalization of evaluation as a professional/scholarly discipline, including the founding of the American Evaluation Association in 1986, and by the early 1990s standards of professional practice, including a broad commitment to methodological heterogeneity, had been adopted. The 1990s and 2000s witnessed rapid expansion of program evaluation worldwide, including the creation of the *International Organization for Cooperation in Evaluation* in 2003, as well as the diversification of evaluation interests in contexts ranging from business and health to social and governmental services to international development, and, of course, to all aspects of education.

The Emergence of Language Program Evaluation

Within applied linguistics, program evaluation is associated primarily with the field of language education and, to some extent, language policy and planning. Historically, language program evaluation paralleled the emergence and development of mainstream evaluation during the early decades, though the corresponding published record is scant. Two approaches were predominant during this first phase of language program evaluation (Beretta, 1992). On the one hand, evaluators sought to demonstrate the superiority of one language teaching method over another through the use of quasi-experimental comparisons between classes, schools, or both, utilizing batteries of language tests as the primary indicator of program effectiveness. On the other hand, short-term managerial evaluations were carried out for the purpose of monitoring programs and ensuring their accountability to funders. By and large, these evaluations occurred at the behest of large-scale English language teaching organizations (e.g., the Overseas Development Administration in the UK), and they featured brief visits to schools by a language expert (generally an applied linguist), who would reflect on aspects of program implementation and then render some kind of a judgment about the program's future.

Critical reactions to these prevailing approaches spawned numerous publications on evaluation during the 1980s and 1990s, initiating the first scholarly treatments of language program evaluation in applied linguistics (e.g., Mackay, 1988; Brown, 1989; Alderson & Beretta, 1992). First, evaluators realized that large-scale experimentation with language programs or methods was virtually impossible due to the lack of control over population sampling, teacher preparation, actual program delivery, and numerous other variables that inhere within real educational settings. Second, they argued that the "Jet-In Jet-Out Expert" (Alderson & Scott, 1992, p. 25) approach was largely arbitrary and hence unfair to program insiders, and that it led to very little in the way of empirical evidence that could be used for local purposes. Third, it became apparent that a thorough understanding of context and implementation was essential for an understanding of how and why language education practices were functioning or not, which implied new methodologies for investigating and accounting for complex interactions between people, environments, and program elements. Fourth, innovative efforts at involving teachers and other program insiders in evaluation led to the realization that participation by stakeholders is vital, given that such

involvement led to greater local investment in the process and more actions being taken to improve programs. Finally, perhaps the key contribution of this first generation of scholars was the broad agreement that language education needed to be evaluated for a variety of purposes, ranging from local development and improvement to external accountability and funding, and that any single evaluation method was not likely to meet all possible purposes. Accordingly, the starting point for any evaluation had to be the identification of precisely which purposes were being pursued, followed by the determination of appropriate methods.

Culminating this energetic initial stage in the scholarship of language program evaluation was the publication of a handful of highly informative textbooks and edited collections (see Suggested Readings), contributing a newfound awareness about the scope of language programs (from needs to outcomes) and useful guidance on the array of data-collection methods (from focus groups to proficiency tests). However, following the mid-1990s, publications on language program evaluation diminished markedly, and it was not until the mid-2000s that renewed interest in and demand for evaluation led to meaningful iterations in language program evaluation practice.

Contemporary Issues and Approaches in Language Program Evaluation

Several key issues have provided a major impetus for renewed interest in language program evaluation since the early 2000s. The accountability movement, coupled with a variety of mandates to evaluate educational outcomes, has, for better or worse, forced language educators to consider the role evaluation is playing in shaping their programs and practices. In higher education (e.g., in the form of university accreditation in the United States, quality assurance mechanisms in Japan, or assessment exercises in the UK), language programs are required to articulate the valued achievements of their students to the design of courses and curricula, to document that relationship using evaluation—in particular outcomes assessment—and to act upon the resulting evidence in cycles of program improvement (e.g., Norris, Davis, Sinicrope, & Watanabe, 2009). In primary and secondary education, accountability-driven evaluation takes the form of large-scale standardized assessments of the progress being made by learners towards the achievement of learning standards in core competencies; in the United States, for example, considerable evaluative attention has been paid to the English language development of immigrant and language-minority learners (e.g., Gottlieb & Nguyen, 2007). Similarly, governmental language education policies worldwide have come increasingly with the stipulation that policy implementation and outcomes be subjected to public scrutiny through evaluation, such as the assessment of Irish language development among school-age learners in Ireland (e.g., Harris, 2009). Lastly, the funding of research and innovation in language education is also increasingly accompanied by the requirement of rigorous external evaluation, such as the evaluation of experimental heritage language programs in Australia (e.g., Elder, 2009).

In spite of, or perhaps because of, this vigorous attention to externally mandated evaluations, a second trend has arisen in the form of internally driven evaluation of language programs. In a survey of college language educators in the United States (Watanabe, Norris, & González-Lloret, 2009), one of the main reasons reported for engaging in evaluation was a personal/professional responsibility to ensure the value of language education. Key here is the notion that language teachers are at the heart of all aspects of language education, and it is only through the direct involvement of language teachers in evaluation, and the valuing of their perspectives, that meaningful, lasting change can take place (e.g., Kiely, 2009). Also at stake is the emerging realization that evaluation offers a medium through

which language educators can express and demonstrate the unique contributions of their language programs to institutions and society, not least as a means of disciplinary survival in a time of burgeoning economic crises coupled with an existential crisis of the humanities in general (e.g., Norris, 2006).

In the contemporary era of heightened awareness and investment in language program evaluation, approaches have evolved considerably, building upon the initial foundations outlined above. Key characteristics include the following:

- Roles and responsibilities in evaluation have shifted, with greater emphasis on facilitation of evaluation processes by evaluation consultants (rather than the rendering of "objective" judgments) and direct participation in all aspects of evaluation by program insiders and other intended users; for example, Norris et al. (2009) document examples of university language teachers and administrators developing, implementing, and acting upon their own evaluations in response to external mandates.
- Much greater attention is being paid to the identification of intended users and uses for evaluation, and the prioritization of important questions, as the primary stage in operationalizing evaluations that will lead to meaningful decisions and actions; for example, Yang (2009) demonstrates how teachers and administrators in an English language program first collaborated in establishing the purposes for an evaluation and in determining appropriate data-collection methods, and then used findings to make needed changes in teacher induction practices.
- The focus of evaluation has been refined to specific elements of language programs at particular stages in their development and implementation; for example, Norris (2008) reports on multiple cycles of evaluating the assessment practices in a German language program, where distinct questions and methods were implied as assessments were first developed, then trialed, then used, and ultimately sustained.
- Data-collection designs and tools are becoming more precise, and multiple methodologies are regularly employed to answer evaluation questions; for example, Llosa and Slayton (2009) report on the contribution of both standardized achievement testing, within an experimental design, and classroom observations and interviews in order to capture the implementation realities of a supplementary reading program and its apparent lack of impact on English language learner development.
- Longitudinal evaluations are in greater evidence, with evaluation practices being built into language program delivery from the outset; for example, McDonough and Chaikitmongkol (2007) trace the collection and use of evaluative data over a year of innovation efforts in a task-based language program in Thailand.

While characteristics like these reflect renewed scholarly interest in the potential value of program evaluation to both illuminate and improve language education, it is also the case that countervailing trends persist, such as the heavy-handed emphasis on "objective" accountability testing for educational reform (e.g., the *No Child Left Behind Act of 2001*) and "rigorous" scientific methods for educational evaluation perpetuated by the US Department of Education in the form of its *What Works Clearinghouse*. It remains to be seen, then, to what extent language education culture will transform to incorporate evaluation as a regular part of its practice, in an effort to meet persistent requirements for accountability but also in pursuit of ongoing program development and perhaps even empowerment (Kiely & Rea-Dickins, 2005). Certainly, that eventuality will depend in part on the success of evaluation capacity-building efforts within language programs and applied linguistics (Davis, Sinicrope, & Watanabe, 2009), often in direct conflict with perceived and actual threats of external evaluation for pejorative or bureaucratic purposes. The future of language program evaluation will also depend on research into the realities of organizational

and other kinds of learning that can result from evaluation. If the key contribution of evaluation is provision of an empirical basis for learning about language education programs and policies, for the purpose of informing current and future decisions, then that premise must itself be examined. Similarly, the interface between theories of second language acquisition, language teaching methods, and educational programming remains ambiguous at best, yet it is precisely at this interface—as theory- and research-based ideas are put into practice with actual teachers and learners—that program evaluation stands to contribute not only to local decision making but also to more generalized understandings about effective language instruction. Accordingly, Kiely and Rea-Dickins (2009) "envisage that future evaluation for the development of instructional strategies will involve accounts of implementation . . . accounts of how decisions are taken, rather than 'branded' methods tested and quality-assured for replication in new contexts" (p. 668). A future where program evaluation is embraced as a core endeavor within applied linguistics may well be within reach of the next generation of language program evaluators, but only to the extent that publication and presentation venues are expanded, applied linguists are trained in evaluative methodologies, and scholarly traditions of meta-evaluation are fostered.

SEE ALSO: Assessment and Evaluation: Mixed Methods; Assessment and Evaluation: Quantitative Methods; Language Assessment in Program Evaluation; Needs Analysis; Syllabus Design

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Prompted Production

PATRICK REBUSCHAT AND ALISON MACKEY

Prompted production refers to language use that occurs in tasks which encourage, or "prompt," participants to produce particular linguistic structures. Prompted production tasks are widely used in language research (including child language development, second language research, psycholinguistics, and sociolinguistics) and represent a convenient way of collecting linguistic data. In contrast to naturalistic data collection procedures (e.g., classroom observations, diary studies), prompted production tasks are generally designed to elicit particular language structures (for example, English plural *-s*), which greatly facilitates the data collection process. In this entry, we describe four of the most common prompted production procedures, from the more structured to the less structured: elicited imitation, interactive tasks, narratives, and role plays.

Elicited Imitation

Elicited imitation tasks require participants to listen to linguistic stimuli and to repeat them after a delayed prompt. In a typical elicited imitation task, sentences are presented to participants auditorily, that is, either via a recording or orally by the researcher. Participants are instructed to listen to the sentences and to repeat them accurately when prompted to do so. Typically, directions might be as follows: "You will listen to 60 sentences. After every sentence, a prompt [++++] will appear on the screen. Your task is then to repeat the sentence as well as you can. It is important that you do not begin repeating the sentence before the prompt [++++] has been displayed." The prompt generally occurs several seconds after the end of stimulus presentation so that participants cannot reproduce the sentence based on rote memory alone. The sentences are typically designed to target certain grammatical structures, and the participants' ability to repeat them accurately is seen as a reflection of their internal grammatical systems. Elicited imitation has been used extensively in first language acquisition research since the 1960s (e.g., Fraser, Bellugi, & Brown, 1963). In second language (L2) research, the technique has gained in prominence as a measure of L2 competence over the past 15 years (see Munnich, Flynn, & Martohardjono, 1994; Erlam, 2006, for examples; see Bley-Vroman & Chaudron, 1994; Vinther, 2002; Jessop, Suzuki, & Tomita, 2007, for overviews).

The basic assumption underlying elicited imitation is that if a participant's grammatical system corresponds to the grammar used to generate a given stimulus sentence, it should be relatively easy to repeat. If not, accurate repetition should be difficult. For example, English as a second language (ESL) learners with advanced levels of proficiency should have little difficulty in accurately repeating a sentence like "John is going to talk to Mary about the new project in the morning," while accurate repetition of this sentence might prove too demanding for learners with lower levels of proficiency. The repetition of ungrammatical sentences ("John have went to talking to Mary about the new project in the morning") should be more challenging than the repetition of grammatical sentences, even though they contain an equal number of words. This is because elicited imitation goes beyond rote memory and repetition; it is a reconstructive process during which participants use

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their own grammatical systems to reproduce stimulus sentences. As Jessop et al. (2007) point out, participants often correct ungrammatical stimuli spontaneously, which they would not do if elicited imitations were simply rote repetitions.

Several important factors need to be taken into account when designing elicited imitation tasks. For example, proficiency levels are important because sentences that might be appropriate for low-proficiency participants might be inappropriate for participants with higher levels of proficiency. In order to ensure that participants cannot simply repeat the sentences based on echoic memory, researchers should check (a) that the prompt occurs after a delay (for example 3–5 seconds), and (b) that the sentences are sufficiently long (for example, between 12 and 17 syllables depending on proficiency). Finally, it is important to select the location of the target structure carefully. It is well known that the first and the last units of a sequence (for example, the first and the last words of a sentence) are generally more salient and therefore better retained than the middle part. In order to avoid bias in a stimulus set, researchers should ensure that the target structure occurs in the same location in all stimulus sentences.

Interactive Tasks

A wide range of tasks have been used in interaction-based research to obtain production data. These include picture description, spot-the-difference, story completion, map, and consensus tasks. Interactive tasks differ on a number of dimensions—for example, information flow (one-way vs. two-way), resolution (open vs. closed), goal orientation of the participants (convergent vs. divergent), and number of possible outcomes (single vs. multiple vs. no outcomes). For a detailed description of interaction tasks, see Mackey and Gass (2005). For examples of three different types of interactive tasks used in a classroom context, see Mackey et al. (in press).

Picture description tasks typically require participants to describe a picture to a partner who cannot see it. Pictures are usually selected by the researcher in order to target a specific grammatical structure. In a typical picture description task, one of the participants is given a picture (e.g., of a park scene) and instructed to describe it to a partner who needs to draw it (see Trahey & White, 1993; Iwashita, 2003, as examples). There are some important considerations to keep in mind when collecting production data by means of picture description tasks. For example, it is important to ensure that the picture cannot be seen by the listener; the drawing should be entirely based on verbal instructions. One way to accomplish this is through the use of a barrier, which can be made of cardboard or even a simple file folder. Participants should also be instructed not to reveal their pictures to their partners. Finally, it is also important to ensure that the pictures are appropriate in terms of vocabulary for the participants' proficiency level.

Spot-the-difference tasks utilize pictures that are identical except for a predetermined number of modifications. Participants are asked to find the differences through verbal interaction (see Iwashita, 2003, as an example). Often, they are told how many differences there are so that they have a goal to work toward. Spot-the-difference tasks require two or more learners to participate, and each holds different information that is vital to the completion of the task. Since information has to be exchanged among participants, spot-the-difference tasks are considered two-way tasks. Another example of a two-way task is the story completion task. In this type of activity, participants are given different parts of a story in written or pictorial form with instructions to work together to make a complete story (see Foster & Skehan, 1996, as an example). In order to construct a story, the learners take turns describing their pictures and attempt to come to a consensus on how to sequence them. As with picture description tasks, it is important to ensure that the pictures in story

completion tasks are appropriate for the level of the participants in terms of vocabulary. With regard to implementation, it is once again important that the participants not see their partners' pictures.

A final example of a two-way activity is the map task (see Gass, Mackey, & Ross-Feldman, 2005, as an example). Here, participants are given a map of a section of a city. Each participant can then be provided with different information about street closings, and they must explain to each other which streets are closed and when. Once this portion is completed, they have to determine a route from point A to point B, keeping in mind that certain streets are closed. In another variation of the map task, learners are given similar maps, but with each map containing different place markers. For example, subject 1 may be given a map marking the location of the library, city hall, and post office, while subject 2 is provided with a map showing the location of the high school, pharmacy, and bank. Each participant is then given a list of locations to find and thus needs to ask a partner for those locations.

Consensus tasks generally involve pairs or groups of participants who must arrive at an agreement on a given question or topic (see Slimani-Rolls, 2005, as an example). For example, participants might be told that ten individuals are stranded on an island, but only five can fit into a boat to return to the mainland. Characteristics are provided for each individual, and participants must decide which five people should be allowed to get on the boat. Consensus tasks may perhaps allow for more open discussion than other tasks since more than one outcome is possible. For this reason, they may provide various opportunities for learners to comprehend input, receive feedback on their output, and modify output by engaging in active discussion from varied perspectives in the course of reaching the consensus. As with other interactive tasks, it is important that the instructions stress the need for all participants to participate.

Narratives

Researchers are often interested in eliciting narratives. Perhaps the most straightforward way to do this is to ask participants to tell someone (either the researcher or another subject) about an event that occurred in the past or that will take place in the future, depending, of course, on what the researcher is interested in eliciting. For example, for tenses, one could ask participants to narrate what they did yesterday, what their typical day looks like, or how they intend to spend their summer vacations. A problem with this approach is that participants can avoid the target structure. A more structured way to elicit narrative production data is through narrations of video clips. Clips tend to be relatively short (2–4 minutes) and provide participants with a uniform prompt from which to speak. Data can be collected by asking participants to narrate or retell a silent film; alternatively, film clips with minimal dialogue are sometimes used (see Gass, Mackey, Alvarez-Torres, & Fernández-García, 1999). Gass et al. (1999), for example, selected film strips from *Mr. Bean* episodes in which the sound could be removed without affecting learners' comprehension, or, as is typical with *Mr. Bean*, very little dialogue was present in the original. This ensures that participants are not influenced by the speech of either their native language or the target language.

An important point to consider when eliciting narratives is planning time. Planning can impact both the quantity and the quality of the narratives, so researchers need to consider whether or not participants are given time to plan their utterances, whether they are allowed to take notes, and, if so, whether they may use those notes during the retelling. When using video clips to elicit narratives, researchers also need to decide whether the narrative should be produced orally or in written format, whether participants tell the story as the film is playing or after it has been shown, and, in the case of oral production,

whether participants narrate it to the recording device or to someone who they believe has not seen the film.

Role Plays

Role-play tasks provide another way of eliciting production data. Here, participants are presented with artificial situations, which are usually based on real life, and asked to respond naturally. The role play can involve other participants or the researcher. In Turnbull's (2001) study, for example, a screen was placed between researcher and subject. Both had a disconnected telephone as a prop. The researcher then made a pretend phone call and made a request to which the subject had to respond. Their dialogue was recorded for subsequent analysis. Role plays result in more naturalistic language data, especially when participants are not given time for planning. At the same time, the use of role plays can make it more difficult to elicit instances of the target structure. Since there are no specific prompts (say, in the form of pictures or video clips), participants might avoid the use of the target form more easily.

There are, broadly speaking, two types of role plays: open and closed. In closed role plays, participants are presented with scenarios and asked to give one-turn oral responses. For example, participants might be told that they missed a flight because of a delayed wake-up call and would then be asked to respond (e.g., what would they say to the hotel manager to receive compensation?). Closed role plays might not reflect naturally occurring language, but they have methodological advantages. Since they do not require interlocutors, closed role plays can be implemented with relative ease. (Participants could listen to the scenario from a tape, for example, and record their response on the same machine.) In addition, they offer focused opportunities to practice specific linguistic forms that are commonly used in certain speech acts (e.g., requests, apologies, etc.). In open role plays, participants are provided with a scenario (e.g., complaining about a hotel room to a receptionist) and asked to play it out. Participants may or may not be given time to plan their discourse in advance. Open role plays usually reflect natural language use more exactly. Having said that, one must recognize that, just like the other prompted production procedures, role plays are still collected in a non-natural environment (the classroom) and so are subject to some of the same limitations as other prompted production measures.

SEE ALSO: Grammar Analysis Techniques; Interviews; Prompted Responses; Quantitative Methods

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Prompted Responses

NAOKO TAGUCHI

Prompted responses are data elicited through experimental tasks in which participants do not produce spontaneous language but respond to stimuli in some way. Prompted responses are different from naturalistic data and interviews that are not elicited. Similar to prompted production that also forms elicited data (but in production), prompted responses are considered a reflection of underlying knowledge and processes. This chapter reviews prompted responses in three domains: linguistics, pragmatics, and psycholinguistics.

Linguistics

Within linguistics, knowledge of grammar has been a popular target of examination, owing to the influence of the universal grammar (UG) theory. The theory argues that human beings are born with a universal set of *principles* and *parameters*. *Principles* refer to core grammar common in languages, whereas *parameters* account for differences across languages (Chomsky, 1986). Research in the field of second language acquisition (SLA), an area of applied linguistics, concerns the extent to which UG constrains second language (L2) learners' grammar. To tap the mental representation of learners' grammar, UG research often uses receptive tasks to measure learners' "intuition" about grammaticality of sentences. An advantage of this data type is that, because performance constraints are minimal, the data are assumed to more closely reflect underlying knowledge than production data. This characteristic, however, is also a limitation. Without actual language use, the data do not tell us what learners actually do with the grammatical knowledge.

A common data collection method in UG research is grammaticality judgment tasks in which participants read sentences and indicate whether they are grammatical or not. The tasks allow researchers to investigate whether L2 learners can reject sentences that violate UG principles. See the example below from White and Juffs (1998). They used 30 grammatical and 30 ungrammatical sentences to examine Chinese learners' knowledge of one UG principle—island constraints. A movement of a *wh*-word from an embedded clause (b) is not possible, while a long-distance *wh*-movement is possible (a).

(a) Which man did Jane say her friend likes?
(b) *Which article did you criticize the man who wrote?

A variation of the grammaticality judgment tasks is magnitude estimation. It examines grammatical knowledge in terms of graduation (i.e., which sentences are more acceptable than others), rather than absolute judgments (i.e., acceptable or not) (Bard, Robertson, & Sorace, 1996). Respondents read and rate the first sentence to indicate how "good" the sentence is. This value serves as the baseline when rating subsequent stimuli. For example, if it is 10 times as good, the value becomes 10 times as large.

Compared with grammar, phonology has received far less attention. Nonetheless, there have been some attempts to measure L2 learners' phonological competence by analyzing errors in the perception of phonological composition. Researchers assume that erroneous decoding in hearing reflects learners' incomplete knowledge of the target phonemic systems.

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A common task used to detect phonemic misperceptions is a minimal pair task. Learners listen to pairs of words that differ in only one phonological element (e.g., "pit" and "bit"), which usually reflect a problematic consonant or vowel for learners based on the contrastive analysis. Then they either spell the word they thought they heard or choose it from a list of options. See the example below from Tench (2003) in which Korean learners of English listened to a total of 64 words and wrote down the word they thought they heard:

Target: "pull" /pul/	Ten out of 20 learners spelled it "pool" /pu:l/.
Target: "yeast" /yi:st/	Thirteen out of 20 learners spelled it "east" /ist/.

Pragmatics/Sociolinguistics

Pragmatics and sociolinguistics are concerned with language use in social context. These fields assume that production and perception of language are affected by social variables, such as setting, interlocutor status, and gender. Under this assumption, pragmatics research has examined learners' knowledge of proper linguistic forms to convey intentions or the strategies they use to project politeness in a particular social encounter. Common response data are the recognition of appropriate pragmatic expressions. The data are assumed to reflect learners' understanding of situational characteristics (e.g., participants' power difference and social distance) and their knowledge of preferred linguistic options in the situation. The advantage of this type of data is that the constructs under study are well defined. Researchers can build in the exact context variables in the stimulus situations and preselect the pragmatic expressions to test learners' knowledge. A limitation is that researchers need to collect baseline data from native speakers to establish the reliability of the correct option. This is not easy because perception of appropriateness may differ among native speakers from different backgrounds.

This type of data has been typically elicited through multiple-choice questionnaires. These questionnaires specify the situational context and provide several response alternatives from which participants must choose. See the example below from Jianda (2007) on the assessment of pragmatic knowledge of apology expressions in English:

> Situation: You are a student. You are rushing to the classroom as you are going to be late for the class. When you turn a corner, you accidentally bump into a student whom you do not know and the books he is carrying fall onto the ground. You stop, pick the books up, and apologize.
>
> (a) Oops, sorry, my fault. I'm in such a hurry. Here let me help pick these up for you.
> (b) I'm sorry, I will be late if I'm not in a hurry. I'll pay attention to this when I turn corner next time.
> (c) Oh, I'm very sorry. I'm going to be late for my class, and if I'm late, I won't be allowed to enter the classroom. But I like this course very much. So, sorry again!

As a variation, some studies used a scaled response questionnaire in which learners evaluated the degree of appropriateness of the target expression on a Likert scale.

In sociolinguistics, researchers collect a range of data on speech behavior and its variations across speakers and situations. Likewise, they collect data that reflect people's reactions to certain speech behavior. Here I will discuss the latter type of data. Reactions toward speech types are relevant data in SLA research because participants are usually speakers of another language who are not identified with the target language group. As a result, their speech tends to elicit certain reactions and impressions from native speaker groups.

A common method used to elicit this type of data is the matched guise test. Speakers who are fluent in two languages or dialects (i.e., guises) are tape-recorded. The recordings are later played in a random order, and participants are asked to judge the speakers' personality and character. Below is a sample questionnaire of prompts from Lambert, Giles, and Picard (1975). Participants were French–American bilinguals and French monolinguals. There were seven speaker varieties over different genders, social classes, and dialects.

What do you think of this person?

1. intelligent __: __ : __ : __ : __ : __ not intelligent
2. active __: __ : __ : __ : __ : __ passive

This study was intended to determine which language variety was most preferred by which group. This technique allows researchers to focus on assessing the reaction of a participant to a particular speech, controlling for other factors that might influence the reaction. However, like other questionnaire data, the sincerity of the responses is never certain.

Psycholinguistics

Different from linguistics-based researchers in the Chomskyan camp who are interested in the underlying representations of language, psycholinguistic researchers are interested in *processes* that underlie language use. With this focus, psycholinguistics research typically deals with online data, namely data that involve responses to ongoing stimuli, not to a preceding one. Here I will discuss two common types of online data: reaction time and eye movement.

Reaction-time data demonstrate how quickly one can respond to the presented stimuli. An assumption is that longer reaction time represents a greater processing effort. Hence, reaction time is an indirect reflection of ease/difficulty in processing the stimuli and the relative amount of linguistic, cognitive, and affective resources required for processing. An advantage of the data is that they help us to distinguish among linguistics stimuli and tasks according to their processing demands. However, there is one practical limitation of this method. Because it involves analysis of milliseconds, data need to be collected using a computer program, either self-made or commercially available.

A variety of processes have been examined with reaction-time data, such as lexical decision, sentence processing, grammatical judgments, and recognition of formulaic sequences. In lexical judgments, participants make a quick, accurate judgment about a word. The type of judgment varies from study to study. Word versus nonword judgments are a common task where participants decide if the target word forms a real word or not by pressing a "yes" or "no" button. For example, in Segalowitz and Segalowitz (1993), French–English bilinguals judged whether the target letter string presented after the prime formed a real word or not. The prime was either a category name or a meaningless string. Skilled bilinguals were faster to judge that the target word was a real word when it was related to the category name (e.g., target "APPLE" and prime "FRUIT"). Another type of lexical decision is semantic access. Participants decide whether the word refers to a living or nonliving object (e.g., the girl = living; a book = nonliving) (Segalowitz & Freed, 2004).

Reaction-time data have also been used in sentence processing research that examines processing strategies in syntactic parsing. L2 learners are found to transfer their L1-based processing strategies to process L2 input. When L1 and L2 strategies are not compatible, learners draw different interpretations, leading to incorrect understanding of the target

grammar. The competition model research has examined this premise (MacWhinney & Bates, 1989). In this model, surface forms, such as word order, animacy, and morphological markings, are termed "cues," and reliance on a specific cue is considered to be a preferred processing strategy. For example, when reading a sentence like "Tom ate pizza," English speakers tend to rely on word order and animacy cues to identify the agent of the action. However, in Japanese, case markings are a dominant cue because the agent is often marked with the subject-marker particle "ga." This cross-linguistic difference was found to affect processing strategies. L2 Japanese learners with L1 English background showed reliance on the animacy and word order cues, but not on the case-marking cue, when identifying the agent (Sasaki, 1994).

Eye movement tracking has a relatively short history, but it has become increasingly popular in reading and syntactic processing research. The data are often collected via a self-paced reading task. Participants read sentences or text on a computer screen while cameras track the movement of eyes. An assumption is that eye movement reflects underlying processing mechanisms—what parts of linguistic input learners attend to most, whether their eye fixation patterns differ from those of native speakers, and whether they regress like native speakers upon encountering ambiguous input. An advantage of this type of data is that, because eye movement is unconscious human behavior that one cannot easily regulate, the data could suggest a close reflection of underlying processes. The practical limitation is that researchers have to purchase eye-tracking equipment and get trained.

Roberts, Gullberg, and Indefrey (2008) analyzed eye movement to examine online resolution of ambiguous pronouns in L2 Dutch. Participants were native Dutch speakers, German learners of Dutch, and Turkish learners of Dutch. Dutch and German are non-null subject languages where overt subject pronouns are obligatory, whereas in a null subject language, like Turkish, they are optional. Participants completed a self-paced reading task that contained a series of Dutch texts:

> *Peter en Hans zitten in het kantoor. Terwiji Peter aan het werk is, eet hij een botherham.*
> Peter and Hans are in the office. While Peter is working, <u>he</u> is eating a sandwich.

In the example above, the referent of the pronoun "he" is ambiguous. The eye tracker recorded gaze location every two milliseconds, and the positions of eye fixations were analyzed for the time spent reading the region in which pronoun resolution took place. Results revealed similar eye fixation patterns among L2 readers regardless of their L1 backgrounds.

SEE ALSO: Naturalistic Data; Pragmatics: Quantitative Methods; Prompted Production; Sociolinguistics: Quantitative Methods; Surveys

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Pronunciation Assessment

LUKE HARDING

Introduction

Pronunciation assessment is perhaps the oldest recorded form of language assessment. The Book of Judges in the Old Testament describes the process by which the Gileadites identified and prevented the fleeing Ephraimites from crossing the River Jordan by enforcing the Shibboleth test:

> And the Gileadites took the passages of Jordan before the Ephraimites: and it was so, that when those Ephraimites which were escaped said, Let me go over; that the men of Gilead said unto him, Art thou an Ephraimite? If he said, Nay; Then said they unto him, Say now Shibboleth: and he said Sibboleth: for he could not frame to pronounce it right. Then they took him, and slew him at the passages of Jordan: and there fell at that time of the Ephraimites forty and two thousand. (Judges 12:5–6, King James Version)

In common parlance, the term "shibboleth" has come to refer to any type of sign which reveals an underlying social identity. Within the field of applied linguistics, the story of the Shibboleth has been used to highlight the way in which language tests may be used to separate in-group and out-group members (McNamara, 2005). However, it is important to understand that the Shibboleth was, first and foremost, a pronunciation test; and one which demonstrates clearly that the manner in which we articulate the sounds of a language can sometimes elicit severe judgment.

This entry will provide an overview of pronunciation assessment, with a focus on the evaluation of pronunciation ability in second language learners. It will begin with a description of the main purposes for which pronunciation assessments are made. Following this, it will outline some of the common methods which are currently used to assess pronunciation. Finally, the challenge of defining a construct for pronunciation assessment will be discussed.

Purposes for Assessing Pronunciation

Perhaps the most prominent purpose for pronunciation assessment in the field of applied linguistics is the measurement of pronunciation skills in a second language, either for diagnostic purposes (e.g., in establishing what areas of pronunciation a student might need particular help with), for achievement testing (e.g., to assess whether a certain feature has been effectively learnt), or for language proficiency assessments. In classroom-based contexts (for diagnostic and achievement purposes) pronunciation assessment may take the form of a "stand alone" measure conducted solely for the purpose of evaluating a student's ability to produce the sounds of the target language accurately. However, in the case of proficiency testing—particularly large-scale proficiency tests such as Cambridge ESOL examinations, the Test of English as a Foreign Language (TOEFL®), and the Test of English for International Communication (TOEIC®)—pronunciation usually features as one component within the broader construct of speaking ability.

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Pronunciation assessments are also made for a variety of other reasons within applied linguistics and related fields. First, it may be necessary to gain a measure of pronunciation ability for research purposes in order to compare an individual's pronunciation with other variables of interest. Second, assessment may be made for forensic purposes in order to draw conclusions about individuals' backgrounds on the basis of samples of their speech; for example, in identifying a specific speaker who has left threatening messages on a telephone (e.g., Rose, 2002), and more recently, as part of a "language analysis" through which asylum seekers' claims of their country of origin may be verified (though for a critique of such practices see Eades, Fraser, Siegel, McNamara, & Baker, 2003; Eades, 2005). Finally, pronunciation assessments are regularly made in clinical contexts by speech therapists. In such situations, a "phonological assessment" is used to diagnose specific speech problems, or to evaluate the effectiveness of intervening treatments (see Grunwell, 1993).

Methods of Pronunciation Assessment

The range of methods commonly used in the assessment of pronunciation in all of the domains described above may be understood as falling somewhere within a grid formed by two intersecting continua: from "holistic" to "analytic" approaches; and from "impressionistic" to "objective" approaches (see Figure 1). Holistic approaches take the form of global judgments of a speaker's pronunciation which are more likely to be made during assessment tasks that elicit extended discourse. Analytic approaches involve assessments of accuracy of discrete (or "atomistic") features of pronunciation (e.g., appropriate use of stress, appropriate use of intonation, appropriate use of schwa) measured against a pre-established norm. These are more likely to be made in conjunction with tasks that are specifically designed to elicit certain phonological features of interest. On the vertical axis, impressionistic approaches are those in which assessments are made by human raters (ranging from untrained "lay" raters to highly trained linguists or speech scientists), while objective approaches may involve the use of techniques from instrumental phonetics, automated scoring of speech, or objective tests (e.g., transcription tasks in the measurement of intelligibility).

In the case of second language pronunciation assessment, many of the best-known communicative English-language exams would fall somewhere within the holistic–impressionistic quadrant: with judgments made by human raters against scoring criteria which consist of global descriptions of pronunciation ability across a range of proficiency levels (even as they occur within the context of analytic rating scales for speaking). The

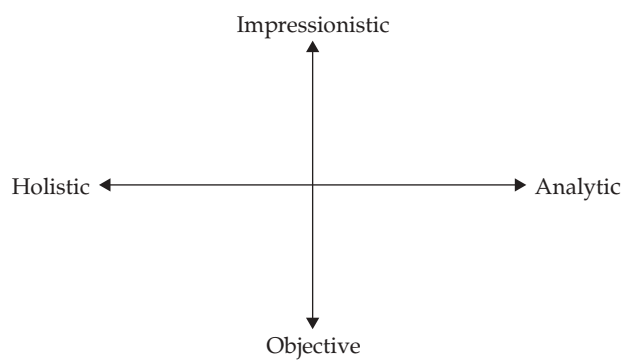

Figure 1 Methods of pronunciation assessment

International English Language Testing System (IELTS), a large-scale English-language examination developed by Cambridge ESOL, the British Council, and IDP Australia, provides an example of a typical case. In IELTS, pronunciation is assessed as one of four analytic criteria in the speaking test, alongside "fluency and coherence," "lexical resource," and "grammatical range and accuracy." From the information provided in the public domain speaking descriptors (see http://www.ielts.org/PDF/UOBDs_SpeakingFinal.pdf), a score on the pronunciation criterion is derived from a global evaluation which focuses on three broad features of a candidates' pronunciation: range, effectiveness/control, and "intelligibility" (an estimate of how well a speaker is understood; though see Isaacs, 2008, for a discussion of competing definitions of this term from an assessment perspective). The descriptive statements for Bands 8 and 6 are shown below:

Band 8
- uses a wide range of pronunciation features;
- sustains flexible use of features, with only occasional lapses;
- is easy to understand throughout; L1 accent has minimal effect on intelligibility.

Band 6
- uses a range of pronunciation features with mixed control;
- shows some effective use of features but this is not sustained;
- can generally be understood throughout, though mispronunciation of individual words or sounds reduces clarity at times.

A candidate's pronunciation is assessed as being at one band or another during his or her performance over the entire speaking test, which consists of three separate speaking tasks: (a) answering questions about yourself and your family, (b) speaking about a particular topic, and (c) engaging in a longer discussion about the same topic. The assessment is made by a single rater who is specially trained, and who undergoes regular moderating sessions. The score on the pronunciation criterion is then combined with scores on the other analytic criteria to arrive at a total speaking score (of which pronunciation is an equally weighted component).

This holistic–impressionistic model of pronunciation assessment, with variations (e.g., the number of raters used; whether rating is conducted "live" or with recordings of a candidate's speech; the nature of speaking tasks; whether the criterion is labeled "pronunciation," "delivery," or "intelligibility"), has been the standard approach to pronunciation

Table 1 Phonological control in the CEFR (Council of Europe, 2001, p. 117)

C2	As C1
C1	Can vary intonation and place sentence stress correctly in order to express finer shades of meaning.
B2	Has acquired a clear, natural, pronunciation and intonation.
B1	Pronunciation is clearly intelligible even if a foreign accent is sometimes evident and occasional mispronunciations occur.
A2	Pronunciation is generally clear enough to be understood despite a noticeable foreign accent, but conversational partners will need to ask for repetition from time to time.
A1	Pronunciation of a very limited repertoire of learnt words and phrases can be understood with some effort by native speakers used to dealing with speakers of his/her language group.

assessment in communicative language testing for a number of years. It is the basic method used across the full range of Cambridge Main Suite examinations, as well as tests produced by Educational Testing Service (ETS), such as the TOEIC® and the TOEFL®, and in specific-purposes language tests such as the Occupational English Test (OET). A notable feature of this communicative approach is the way in which pronunciation ability is assessed not only in terms of a speaker's accuracy in forming segments and using stress and intonation, but also in terms of how well that speaker is understood by a listener, as demonstrated in the descriptive statements for the IELTS bands shown above. This dual focus has also found expression in the Common European Framework of Reference (CEFR) where pronunciation is covered under the banner of "phonological control" (see Table 1). In this scale, comprehensibility is highlighted ("pronunciation is generally clear enough to be understood . . .) although at some points the focus is on specific features of articulation ("can vary intonation and place sentence stress correctly").

Because of the focus in communicative language testing on the effectiveness of a speaker's pronunciation for achieving clarity and conveying meaning, it has been natural to use human raters. However, this is often a time-consuming and costly element of test administration, and allows for subjectivity in the assessment process, particularly as speech intelligibility is commonly thought to involve both speaker- and listener-related factors (see Pickering, 2006, for an overview of this research). Recently, though, newer technologies have afforded the opportunity for test designers to expand into the automated scoring of speech, an area which holds much promise for the design of pronunciation assessments. The Pearson Test of English (PTE) Academic (as well as the Versant™ tests of English, Spanish, and Arabic) currently uses technology developed by Ordinate® to capture and score speech through an automated system. Within this system, pronunciation is assessed (together with other features of spoken performance) through statistical models that compare a candidate's performance with a large database of spoken performances that have previously been assigned scores by human raters. Interestingly, although the assessment of pronunciation through these methods is objective, and could presumably provide data on atomistic features of pronunciation in the PTE Academic the results are mapped onto one global score for "pronunciation" (one of six "enabling skills"), as well as contributing to item scores on speaking and integrated skills tasks.

In fact, analytic methods of pronunciation assessment are rare in the area of second language testing. Although several have been proposed in research literature (see Van Weeren & Theunissen, 1987; Koren, 1995), they have not been operationalized in high-stakes contexts. This is no doubt because it would be difficult to construct a test that measures discrete features of articulation within the prevailing communicative paradigm. Yet in many clinical and forensic domains, pronunciation assessment tends toward the analytic side of the spectrum in that specific features of pronunciation are often the focus of the assessment process. In these cases, assessments will be based either on impressionistic judgments, usually made by speech therapists, phoneticians, and other speech scientists, or on objective measurements (whether manual or automated) of the acoustic properties of recorded speech which may then be compared statistically with existing data sets of pronunciation patterns in the target community.

Challenges in Defining the Construct

One of the most significant challenges for pronunciation assessment—particularly in English-language testing contexts—is the existence of what Levis (2005) calls "two contradictory

principles": the nativeness principle and the intelligibility principle. The former refers to the idea that language learners should aspire towards a native-like accent in the second language, while the latter represents the idea that learners should aim to be understood by a broad range of listeners (including native and non-native speakers). The nativeness principle represents an orthodox approach to pronunciation pedagogy; however, the intelligibility principle has been supported by research that shows that a native accent is not necessarily the most intelligible variety for all listeners (Jenkins, 2000), and that although some features of second language phonology may be very noticeable to listeners, and may influence perceptions of strength of accent, they do not necessarily interfere with how well a speaker is actually understood (Derwing & Munro, 1997)

Yet although the focus of many current pronunciation assessments has shifted from a focus on "nativeness" to milder statements concerning accuracy and degree of listener effort, there are still many examples of pronunciation criteria for speaking tests that conflate both of Levis's principles. For example, the description on the Cambridge ESOL Common Scale for Speaking relating to pronunciation in the Certificate of Proficiency in English (CPE)—the highest level of the Cambridge Main Suite examinations—states that "pronunciation is easily understood and prosodic features are used effectively; many features, including pausing and hesitation, are 'native-like'" (Cambridge ESOL, 2008, p. 70). Part of the problem is that researchers are still far from determining what features of pronunciation contribute more or less to intelligibility. For example, suprasegmentals seem to be more important than segmental features (see Hahn, 2004), but the accurate production of segmental features will also be crucial in particular contexts (see Zielinski, 2008). Without such descriptions it has been difficult to establish what specific features of pronunciation should be made prominent in scales of pronunciation ability. There is an urgent need to develop a better description of how those features that contribute to intelligibility develop, particularly at the top end of the proficiency spectrum; otherwise, testing practitioners who design rating scales will end up resorting to "native-like accent" statements to distinguish these levels.

Conclusion

As pronunciation assessments continue to develop and be shaped by technology, an overarching issue remains: the social impact of pronunciation assessments, and the consequences of decisions which are made on the basis of scores. Although the Shibboleth is an extreme case, it highlights one of the most important issues for pronunciation assessment: While it is often primarily concerned with evaluating the comprehensibility of a speaker, pronunciation is such a salient social marker that any type of assessment practice must be understood as occurring within a social context in which certain accents are more valued than others (see Bourdieu, 1977). Standards which are evident in the trajectory of rating scales will filter back into pedagogy and possibly into wider views in the community about who has an "acceptable" accent and who does not. It is within this social context that a large market exists for "accent reduction" courses, many in particular aimed at learners of English as a second language. In this regard, pronunciation assessment is an area of language testing where issues of proficiency and identity intersect in unique and challenging ways, and those designing or using assessments need to tread carefully.

SEE ALSO: Accent Reduction; Assessment of Speaking; Intelligibility; Language Analysis for the Determination of Origin (LADO); Pronunciation Models; Rating Oral Language

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Pronunciation in World Englishes

DAVID DETERDING

Introduction

There are a huge number of speakers of English around the world, and many of them use varieties of English that no longer look to the speech of people in places such as the UK and the USA for their norms. This article describes the pronunciation of World Englishes.

A range of models has been proposed to represent varieties of World English. Here, reference is made to the Three Circles model (Kachru, 2005, p. 14), which was first developed in the 1980s. Although there are some weaknesses in this model, particularly because it is historically and geographically based, and furthermore some countries cannot easily be classified (Jenkins, 2009, pp. 20–1), it does provide a useful framework for the description of World Englishes.

Kachru classifies varieties of World English in terms of three circles (see Figure 1). The Inner Circle consists of the traditional sources of English, such as the UK, the USA, and Australia. The Outer Circle includes places which had a colonial link with the UK or the USA and which have now adopted English as an official language. Examples are Singapore, India, Nigeria, and the Philippines. Finally, the Expanding Circle consists of territories where there was no colonial link to Britain or the USA but where English is increasingly used as a language of commerce and international communication. Such places include China, Germany, and Brazil.

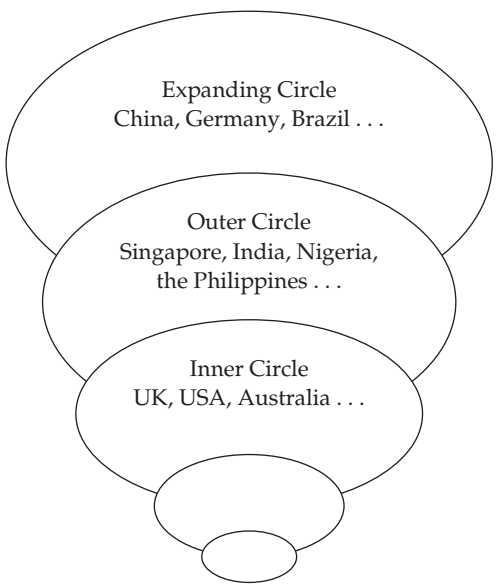

Figure 1 The Three Circles of English (adapted from Kachru, 2005, p. 14)

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Some characteristics of the pronunciation found in most Inner Circle Englishes are use of dental fricatives [θ] and [ð] at the start of words such as *think* and *this*; regular occurrence of reduced vowel in unstressed syllables, especially the weak forms of function words; and use of stress-based rhythm. These features are often absent in Outer Circle Englishes.

Here, a brief overview is offered for some of the features of English pronunciation in four Outer Circle countries: Singapore, Nigeria, India, and the Philippines. In each place, there is substantial variation in the English that is spoken, depending on such things as the ethnic and educational background of the speaker and the level of formality of the interaction. Nevertheless, there are features in each place which characterize the variety and which often provide a clear indication about where the speaker comes from.

Despite the great differences in the pronunciation of English around the world, there are also some features shared by a range of Outer Circle Englishes, and these may become increasingly acceptable as part of the norm for the pronunciation of English as it is used internationally. Such features are considered in this article.

Finally, brief consideration is given to the Englishes that are emerging in the Expanding Circle. Although speakers from these places still generally look to the Inner Circle for their norms, the sheer weight of numbers of Expanding Circle speakers means that the way they speak English will have an increasing impact on the international use of the language. Furthermore, many (e.g., Kirkpatrick, 2007) have argued that it is inappropriate for Expanding Circle territories always to have to refer to Inner Circle styles of usage, as it is demotivating for the English of teachers in the Expanding Circle always to be regarded as erroneous.

Essential to the description of World Englishes is the adoption of a descriptive stance and the avoidance of prescriptive language. Therefore, for the vowels, reference is made to the key words suggested by Wells (1982), so we can say that FACE may be pronounced as a monophthong [eː] or as a diphthong [eɪ] without suggesting either is "better." For consonants, we will sometimes use upper-case letters, specifically for the TH sounds (e.g., at the start of *think* or *three*), so we can say that voiceless TH can be pronounced as [θ], [t], [s], or [f] without indicating any of these is "correct."

Singapore English

English has been used in Singapore ever since it became a British colony in 1819, and it has been the primary medium of education throughout the school system since 1987, even though all children are also supposed to become fluent in one other language, their so-called "mother tongue": Chinese, Malay, or Tamil. There is substantial variation in Singapore English, and most speakers regularly switch between a colloquial variety (often called "Singlish") and a more formal variety depending on the situation. However, we can still identify a number of features that characterize Singapore English, even if they are not found in all styles of speech. The features described here are from Deterding (2007, pp. 12–39):

- Initial voiceless TH tends to be [t] at the start of words such as *thing* and *three*.
- The final sound may be omitted in words such as *first* and *world*.
- The DRESS and TRAP vowels are merged, so *send* and *sand* are homophones.
- The FACE and GOAT vowels are monophthongs.
- There is often no distinction between long and short vowels, so words such as *pool* and *pull* as well as *feast* and *fist* are homophones.
- A full vowel occurs in the unstressed first syllable of polysyllabic content words such as *compare* and *consider*.
- A full vowel is found in function words such as *of*, *that*, and the auxiliary verb *had*.
- There is syllable-based rhythm.

Nigerian English

Nigeria was a British colony from 1914 to 1960, and English was retained as an official language after independence, partly because it favors none of the different ethnic groups. There are a huge number of indigenous languages in Nigeria, and the English pronunciation of speakers depends to some extent on the ethnic background of the speaker, particularly whether it is one of the three main groups, each of which represents about 20% of the population: Hausa, Yoruba, and Igbo (Kirkpatrick, 2007, p. 102). Nevertheless, some common features can be suggested for the English spoken in the country. The following summary is extracted from Gut (2004):

- Voiceless TH is either [t] or [s], depending on the ethnic background of the speaker.
- The final sound is omitted in words such as *hand* and *post*.
- [g] occurs at the end of *sing* and *hang*.
- There is no distinction between the TRAP and PALM vowels.
- The FACE and GOAT vowels are monophthongs.
- There is a full vowel in the first syllable of *police* and also the final syllable of *sofa* and *resentment*.
- There are no weak forms for function words such as *but* and *the*.
- There is syllable-based rhythm.

Indian English

The British had a colonial presence in India from 1612 until independence in 1947 (Sailaja, 2009, p. 97). After independence, it was intended that Hindi would supplant English in all official domains after a transitional period of 15 years, but in fact English maintained its position even after that period, partly because of reluctance to use Hindi in the south of the country. Although India is a massive country, with a huge range of indigenous languages which can influence the English that is spoken, nevertheless there are some features of English pronunciation that seem to be found quite widely and which might be regarded as characteristic of "Indian English." The following features are based on Sailaja (2009, pp. 17–38):

- Voiceless TH is a voiceless dental plosive at the start of *things* and *thought*.
- A retroflex consonant occurs at the start of *today*, *terrific*, and *demand*.
- There is no distinction between /v/ and /w/.
- The FACE and GOAT vowels are monophthongs.
- There is a [g] at the end of *sing* and a [b] at the end of *climb*.
- Weak forms for function words are often avoided.
- There is syllable-based rhythm.

Philippine English

The Philippines is interesting for the description of emergent World Englishes because, unlike Singapore, India, and Nigeria, it was a colony of the United States rather than Britain, from 1895 till 1946. As a result, Philippine English is rhotic, with a clear [r] sound in words such as *four* and *cart*. Investigation of the pronunciation of English in the Philippines therefore allows us to consider the extent to which features of World Englishes extend among all newly emergent varieties, not just those historically derived from British English. The following features are based on Tayao (2008):

- Voiceless TH tends to be [t].
- For some speakers, [s] occurs at the start of *zebra* and *shoe*.
- For some speakers, [s] occurs at the end of *buzz* and *bush*.
- The TRAP and PALM vowels tend to be merged.
- The FACE and GOAT vowels are monophthongs.
- Reduced vowels are avoided.
- There is syllable-based rhythm.

Shared Features

Each of the varieties has its own features, so for example many Singaporeans make no distinction between the DRESS and TRAP vowels, some Nigerians have [g] at the end of *sing*, Indians may use retroflex [t] and [d] and also conflate /v/ and /w/, and some speakers from the Philippines do not distinguish /s/, /z/, and /ʃ/. However, there are also features that seem to be shared by all these varieties, and it is possible that these common features constitute elements of an emergent "Outer Circle World English." Such features include avoidance of dental fricatives; monophthongal FACE and GOAT; a relative absence of reduced vowels; and syllable-based rhythm. Each of these shared features is now considered in turn, and then we consider their impact on intelligibility.

Voiceless TH

The avoidance of the dental fricatives [θ, ð] is widespread in Englishes throughout the world, not just in Outer Circle varieties, but also in a few Inner Circle ones, including those of London, Ireland, and New York (Wells, 1982, pp. 328, 428, 515). This avoidance is not surprising in Outer and Expanding Circle varieties given that most other languages do not have dental fricatives and many speakers find them difficult.

The sound that is adopted for initial voiceless TH in Englishes around the world differs: [t] seems to be the most widespread in Outer Circle Englishes, including Singapore, India, the Philippines, and some speakers from Nigeria, but [s] is found with other speakers in Nigeria, and [f] is found in Hong Kong English (Deterding, Wong, & Kirkpatrick, 2008). We might also note that [t] and [s] are both common in Expanding Circle Englishes, with [s] being found in China (Deterding, 2006) and Germany (Swan, 1987).

The FACE and GOAT Vowels

In many varieties of British and American English, the FACE and GOAT vowels are realized as closing diphthongs. In fact, in some Inner Circle varieties, especially those of Australia and New Zealand, the diphthongal movement is quite substantial, and the vowels might be represented as [ʌɪ] and [ʌʊ] (Wells, 1982, pp. 597, 609).

However, FACE and GOAT seem generally to be monophthongal in most Outer Circle varieties of English (Kachru & Nelson, 2006, p. 38), not just those we have considered, but also in places such as Jamaica, West Africa, and East Africa (Gramley & Pätzold, 2004, pp. 270, 320, 324), though a few Outer Circle Englishes seem to be an exception to this rule, such as that of Hong Kong (Deterding et al., 2008).

Reduced Vowels

There is a shared tendency among Outer Circle Englishes for the use of full vowels rather than reduced vowels, not just in the unstressed syllables of content words such as

the first syllable of *compare* and *police*, but also in some function words such as *of* and the subordinator *that*. Vowel reduction has a direct effect on rhythm, so we consider these two issues together.

Rhythm

The relative absence of reduced vowels may substantially contribute to the perception of syllable-based rhythm in many Outer Circle varieties. Although claims about fixed categories of rhythmic timing in languages have recently been questioned (Roach, 2009, p. 110), the observation that some Outer Circle Englishes have a more syllable-based rhythm than Inner Circle varieties is common. In addition to the four varieties described here, syllable-based rhythm has been reported for the Englishes of East Africa (Gramley & Pätzold, 2004, p. 323), Jamaica (Trudgill & Hannah, 2008, p. 117), and Hawaiian Creole (Wells, 1982, p. 651).

Crystal (1995) notes that Inner Circle Englishes also sometimes exhibit syllable-based rhythm, for example in baby talk, many types of popular music, and some television commercials. He further suggests that syllable-based rhythm might one day become the norm even in Inner Circle Englishes (Crystal, 2003, p. 171), and he advises against fostering norms of rhythm where they are not appropriate (2003, p. 172).

Intelligibility

It has been shown that although there are substantial differences between the Englishes found in the various Outer Circle countries, some features seem to be shared, particularly the avoidance of dental fricatives, a monophthongal quality for FACE and GOAT, the avoidance of reduced vowels, and syllable-based rhythm. Jenkins (2007) has proposed a lingua franca core (LFC), a set of pronunciation features that are essential for successful international communication; and we might note that all the shared features mentioned here would fit well within her LFC proposals.

We might consider further what effects these shared features have on intelligibility, especially since it has long been established that Inner Circle varieties of English are not always the most intelligible for listeners around the world (Smith & Nelson, 2006). Of course, intelligibility is hard to measure, and so it is not straightforward to determine if any particular feature of pronunciation might help or hinder the chances of a speaker being understood by a range of listeners; but we can note that the language of air traffic ("Airspeak") is one of the domains that Crystal identifies as exhibiting syllable-based rhythm "because of the need to articulate with extra clarity" (1995, p. 175). And it further seems likely that use of full vowels instead of reduced vowels in unstressed syllables can help in improving intelligibility, at least for the kind of short, critically important utterances that characterize the language of air-traffic control. One might additionally note that the official radio telephony manual for pilots stipulates that both *three* and *thousand* should be pronounced with an initial [t], so it seems that this common Outer Circle realization of voiceless TH has become the recommended norm in Airspeak.

Given that there are now almost certainly more Outer Circle than Inner Circle speakers of English around the world (Crystal, 2003, p. 61), one might further speculate how the features of pronunciation that are shared by a wide range of Outer Circle speakers might influence the future evolution of English. It seems likely that these features will have a substantial impact on the way the language develops, and even if many speakers in the Inner Circle will undoubtedly continue to speak using traditional Inner Circle styles of pronunciation, it is probable that styles of speech shared among a range of Outer Circle Englishes will become increasingly accepted throughout the world.

The Expanding Circle

So far, the focus has been mostly on Outer Circle rather than Expanding Circle Englishes, partly because Outer Circle varieties tend to be more advanced in the process of evolving into mature, independent varieties which no longer refer to the Inner Circle for their norms (Schneider, 2007). In contrast, Expanding Circle varieties still generally derive their norms of pronunciation from the Inner Circle, so their status as independent varieties of English is less certain.

However, by some counts the majority of English speakers in the world today are actually in the Expanding Circle (Crystal, 2003, p. 61). In fact, one single country, China, may have more speakers of English than the whole of the Inner Circle combined, though of course there is huge variation in their competence in English. Let us briefly consider here some of the features of the pronunciation of English by speakers in China, particularly how these features differ from Outer Circle Englishes. The following items are extracted from Deterding (2006):

- Voiceless TH tends to be [s] at the start of words such as *think*.
- There is often an extra vowel at the end of words such as *and* and *first*.
- The final nasal consonant may be omitted from words such as *sun*, and the preceding vowel gets heavily nasalized.
- The consonant in the middle of *usual* is often [ɹ] rather than [ʒ].
- Vowel reduction is avoided in function words.
- There is syllable-based rhythm.

Note that the absence of reduced vowels in function words and the use of syllable-based rhythm are shared with Outer Circle Englishes, though other features, such as [s] for voiceless TH, the insertion of a vowel after word-final consonants, and the occurrence of [ɹ] in *usual*, make Chinese English distinct from most Outer Circle varieties. Only time will tell what influence the huge numbers of English speakers in China and other Expanding Circle countries might have on the future of English.

Conclusion

We have seen that there are many shared features among the various Outer Circle Englishes, although each variety also has its own distinguishing features. Some of the shared features are furthermore found in Expanding Circle Englishes in places such as China. It is suggested that these shared features may have an increasingly substantial impact on the future evolution of English worldwide.

SEE ALSO: English as Lingua Franca; Intelligibility; Intelligibility in World Englishes; Pronunciation Models; Varieties of English in Asia; Varieties of English in Nigeria; Varieties of World Englishes

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Pronunciation Instruction

TRACEY M. DERWING

History

Pronunciation instruction has been around for as long as people have been learning languages other than their mother tongues. The fact that much of the research in this area has focused on English is partly due to its status as a global language. English pronunciation materials for "outlanders" go back at least as far as 1665 when Owen Price, a Welsh schoolteacher, first published a manual describing the organs of speech (Price, 1665). Interest in the topic came to a head in Britain in the early 20th century when phoneticians such as Daniel Jones turned their attention to accent, with his book *The Pronunciation of English* (1927) serving as a standard for teaching learners of English. Later in the century, Brazil, Coulthard, and Johns (1980) made contributions to describing the language, and Cruttenden's (2008) version of *Gimson's Pronunciation of English* is still widely used.

In North America, interest in pronunciation teaching has waxed and waned, depending on the predominant approach to English as a second language (ESL) at the time. During the 1960s and 1970s, when the audiolingual method was popular, accurate pronunciation was highly emphasized. Some of the so-called designer methods also focused on pronunciation, but none more so than the Silent Way. Its creator, Caleb Gattegno, used a color code system to represent sounds, and severely limited the vocabulary of beginner students to ensure that they would be able to place most of their attention on the pronunciation of the new language.

With the advent of communicative language teaching, particularly in "inner circle" countries (Australia, Britain, Canada, New Zealand, and the USA), pronunciation took a back seat in many classrooms. It was assumed that with enough exposure to the second language (L2), learners' pronunciation would eventually approximate native-like patterns. Although some notable researcher/practitioners advocated for the teaching of pronunciation, such as Morley (1991), language programs tended to avoid the incorporation of pronunciation instruction into their curricula during the last two decades of the 20th century. Research on pronunciation to inform pedagogy was also limited during this period (Brown, 1991). However, more recently there has been increased interest in pronunciation teaching, as evidenced, for example, by greater availability and range in materials, special issues of journals devoted to pronunciation (e.g., *TESOL Quarterly*; *Prospect*; *Language Learning and Technology*), a speech, pronunciation, and listening interest section within TESOL, an annual international conference dedicated to pronunciation (Pronunciation in Second Language Learning and Teaching), and the creation of an international listserv as a forum for researchers and practitioners.

Terminology

Key concepts related to pronunciation instruction include "intelligibility," "comprehensibility," and "accentedness." Despite the different interpretations of these terms, the most common meaning of intelligibility is the extent to which a listener actually understands

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the productions of an L2 speaker. This can be measured using transcriptions of dictations, comprehension questions, true/false questions, or summaries of a speaker's productions. In L2 research, comprehensibility is often understood to be a scalar judgment of how easy or difficult L2 speech is to understand, whereas accentedness is a rating of the degree of difference between an L2 speaker's productions and the local variety of the language in question (Derwing & Munro, 2009). These three conceptualizations, although partially independent, are related in a complex manner. It is possible, for instance, for an L2 speaker to have heavily accented speech, yet be both intelligible and easy to understand to interlocutors. An individual who is unintelligible and difficult to understand, on the other hand, will always be judged as having heavily accented speech. Finally, it is possible for a speaker to be intelligible, yet difficult to understand, requiring significant effort on the part of the listener. The implication of the complex interplay of these dimensions for pronunciation teaching is that merely reducing accent should not be the goal of either the learner or the teacher, since only the enhancement of comprehensibility and intelligibility is likely to lead to improved communication. Another implication of this interplay is the importance of determining which aspects of an L2 learner's pronunciation interfere with intelligibility and comprehensibility. When that knowledge is available, a pronunciation teacher can select those features that will have the most constructive impact on a learner's speech.

While a lay understanding of the term "accent" may include any differences from local norms (such as phonological divergences, lexical choice, grammar, and culturally determined pragmatic behavior), in pronunciation teaching circles the term is usually limited to differences in suprasegmental and segmental productions. Suprasegmental aspects of language (prosody) refer to rhythm, stress, intonation, tempo, and voice quality, whereas segmentals are individual speech sounds (vowels and consonants). It is important to recognize that an L2 accent is not a speech pathology; it is a normal feature of L2 speech, particularly in language acquisition after early childhood. It is also noteworthy that pronunciation is not synonymous with either "phonology" or "phonetics," as is sometimes assumed. Finally, L2 pronunciation entails both perception (how one interprets what he or she hears) and production (the articulation of the new language). Thus pronunciation is a cognitive process (Fraser, 2010) that also involves motor skills; however, many textbooks tend to focus on the latter, although the former is more important.

Why Pronunciation Teaching Matters

Despite the crucial role pronunciation plays in oral communication, L2 instructors are often reluctant to teach it (Burns, 2006), sometimes because they feel ill-equipped to determine what their students' needs are, and how to address them (MacDonald, 2002). Notwithstanding their teachers' trepidation, L2 learners, in general, put a high premium on pronunciation instruction (Couper, 2003).

Although some learners study a second language for reading purposes only, most ESL and many English as an international language (EIL) students have the intention of listening and speaking in their L2. For the latter two groups, comprehensible pronunciation is as essential to successful communication as appropriate vocabulary and grammar are. Some L2 learners have no difficulty understanding their target language interlocutors or making themselves understood in the absence of explicit pronunciation instruction. However, for those L2 speakers who consistently experience intelligibility problems (both receptive and productive), appropriate pronunciation teaching can ease their frustration while at the same time help them to become more comprehensible to their interlocutors. Individuals in certain occupations, such as air traffic controllers, require wholly intelligible

speech; their comprehension should not be hampered by misperceptions in their own processing of input, and their productions should require little or no effort to understand at all times and under less than optimum conditions. Special pronunciation courses may be needed for potential employees in these positions.

A clear understanding of pronunciation issues is also important to many L2 speakers for social and psychological reasons. Immigrants, particularly, are apt at some point to experience some negative reactions to their L2 accents. Often such encounters, although unpleasant and potentially demoralizing, are relatively inconsequential, but there are many documented instances of prejudice that have led to unfair dismissal from work, and failure to employ a qualified job applicant or to provide housing to an L2 speaker (Munro, 2003). It behooves an instructor to discuss cases like these with students, and to help them understand their rights. Accent is also intricately tied to personal and group identity. Identity may be expressed in many different ways; some learners may wish to sound as target-like as possible, while others may want to retain aspects of their L1 phonology while speaking in their L2 to show group membership. Yet others may choose to vary those aspects of their L2 pronunciation that are volitional, depending on the interlocutor. Accent discrimination and identity are topics of high interest in the language classroom, and are worthy of discussion. Furthermore, conversations about the responsibilities and assumptions of interlocutors would be beneficial, again to promote learners' confidence and awareness of their own rights (Derwing & Munro, 2009).

Research on Pronunciation Teaching

Although numerous laboratory studies have investigated the improvement of learners' perception and production of L2 segmentals and suprasegmentals, the focus here is on classroom L2 pronunciation instruction. Only a few classroom studies have appeared in the literature, and not all of them have addressed intelligibility. Perlmutter (1989) conducted research showing that L2 immigrants to the USA exhibited significantly improved intelligibility after six months of instruction with a substantive focus on pronunciation. Unfortunately, because there was no control group, we cannot know for certain whether the improvement was a direct result of the instruction, or whether it could be attributable to the natural improvement that is typical of most newcomers in their early months of immersion in a second language (Flege, 1988).

In a later study, MacDonald, Yule, and Powers (1994) compared an ESL control group with learners who received one of three approaches to pronunciation instruction: explicit correction of errors, self-study in a language lab, and interactive feedback. Speech samples from the participants were collected prior to the interventions, immediately after, and two days later. The authors indicated that their results were inconclusive. Several factors disallowed generalizations from the study: the sample was small, the instructional timeframe was extremely short, and the exposure to type of instruction was not balanced.

Derwing, Munro, and Wiebe (1997) collected speech samples before and after a 12-week pronunciation-specific course focusing on suprasegmentals. The learners in the study had lived in an L2 environment for an average of 10 years, and their general proficiency in English ranged from high intermediate to very advanced. When untrained listeners transcribed sentences that had been randomized from the two data collection points, the postinstruction utterances were found to be significantly more intelligible.

In a follow-up study, Derwing, Munro, and Wiebe (1998) conducted a classroom-based experiment in which one class of ESL learners received 20 minutes of suprasegmental instruction per day for 10 weeks; a second class received a similar amount of segmental instruction; and a third class served as a control group, receiving no specific pronunciation

instruction. Note that this study did not compare different methods, but rather, the comparison was between different types of pronunciation content. All participants read a set of sentences aloud and provided picture narratives before and after the instructional period. These speech production data were then evaluated in two listening experiments. In the first, untrained listeners rated the before/after sentences on 9-point scales for comprehensibility and accentedness. Both the suprasegmental and the segmental groups showed improvement on both measures, whereas the control group made no gains in comprehensibility. The picture narratives were a more difficult task, because the learners had to decide on lexical choice, grammatical form, and discourse organization, as well as pronunciation accuracy. Six experienced ESL teachers rated the 48 narratives for comprehensibility, accentedness, and fluency. In this task, the suprasegmental group showed significant improvement in both comprehensibility and fluency, but the performance of the segmental and control groups was judged not to have improved over time. The authors concluded that both the task (sentence or narrative) and the focus of instruction (suprasegmental or segmental) influenced the results. They recommended that instructors address both suprasegmental and segmental aspects of pronunciation, indicating that the former seemed most helpful in extemporaneous productions, while the latter would be useful in instances of communication breakdown, when L2 speakers could focus on their phonological productions if they were aware of particular words or sounds that regularly caused them problems.

Couper (2003, 2006) conducted two classroom studies in which he compared his own L2 students' pronunciation errors before and after instruction. In both instances, the researcher ensured the students became explicitly aware of their problems, focusing on metalinguistic explanations of issues such as epenthesis, and pointing out regular patterns in English phonology. The students also received ongoing feedback on their productions. In both studies, the students showed improvement over time in the pronunciation features that were addressed.

Saito and Lyster (2011) examined the effects of form-focused instruction with and without corrective feedback (feedback was restricted to recasts) with Japanese learners of English. The form in question was the initial consonant in "run." More than four hours of communicatively based instruction presented to three groups of learners resulted in no change in the productions of the target sound in the control group (no form-focused instruction) or in the form-focused group that received no corrective feedback. However, the group that received recasts showed significant improvement. The authors concluded that it is essential for learners to receive feedback to let them know whether their productions are accurate enough, but that this feedback can occur in a meaning-based lesson with contextualized use of language.

Although most pronunciation classroom studies have relied on immediate posttests (or, in the case of Saito and Lyster, a test two weeks after instruction), Hahn (2002) assessed L2 learners' productions of nine patterns of stress before a pronunciation course, immediately after, and again at a much later time. Most of her participants' scores were higher at the third testing point than they were prior to instruction, although all but one student experienced some backsliding. More work on learners' retention of newly acquired skills is clearly needed. In particular, it would be useful to determine whether sporadic tutorials could secure improved retention and ongoing development.

There is still a paucity of classroom-based research on pronunciation instruction. Ongoing assessment of students who have completed pronunciation training is necessary to determine how long the effects of instruction last, and whether improved pronunciation leads to increased exposure to the target language. Research designs similar to Hahn's (2004) investigation of primary stress should be conducted with a range of accent variables, both separately and in combination, to determine their influence on intelligibility and comprehensibility.

What to Teach

Although the nativeness principle, "that it is both possible and desirable to achieve native-like pronunciation in a foreign language" (Levis, 2005, p. 370), is firmly held by many in the accent reduction industry, most pronunciation specialists agree that intelligibility and comprehensibility should be the guiding foundations for developing a pronunciation curriculum or incorporating pronunciation into a general L2 class (Jenkins, 2002). There are some thorny issues, however, that the instructor must address. First, who are the interlocutors with whom the learners will communicate? Jenkins (2002) has proposed a "core" of pronunciation features, primarily segmentals, that she argues should be taught to EIL students who regularly interact with other EIL speakers. In immigrant settings, learners are more likely to communicate with speakers of the local variety of the target language, but they may also interact extensively with L2 speakers of other languages. To identify learners' problem areas, pronunciation instructors may have to conduct individual assessments of learners, relying on their own comprehension of the students' speech and that of the others in the class. A needs analysis of students' speech should encompass factors such as general speaking habits (e.g., volume), a range of suprasegmental features, rate, voice quality, and certain segmentals, all of which have been shown to affect intelligibility.

Aspects of the L2 students' productions that seem most problematic for intelligibility or comprehensibility, or both, should be addressed first. For example, if a student speaks so quietly that it is difficult to hear any part of the message, regardless of the quality of the suprasegmentals or segmentals, work on enhancing volume is necessary. If a suprasegmental feature such as primary stress is consistently misassigned, intelligibility will be compromised (Hahn, 2004). Functional load, a hierarchy of minimal pairs proposed by Catford (1987), suggests the order of importance of segmentals in English. To date, the only experiment testing Catford's hypothesis (Munro & Derwing, 2006) confirmed that high functional load pronunciation errors have a greater impact on comprehensibility than do those carrying low functional load. This finding indicates that when teachers assess their students' productions they should not be guided by salience alone. Human beings are extremely sensitive to differences in accent; in fact, Major (2007) demonstrated that people are able to detect foreign accents in languages that they do not speak. Nonetheless, some of those differences have little or no effect on comprehensibility, however salient they may be (e.g., the interdental fricatives in English).

Instruction must also take into consideration contextualized uses of language. There is a tendency, particularly in pronunciation textbooks, to focus attention at the sentence, word, or individual phoneme level. As Levis and Pickering (2004) have demonstrated, intonation at the discourse level is not well represented when only sentence-level illustrations are provided. In their study on speech visualization of intonation, Levis and Pickering argue for the use of technology in teaching pronunciation at the discourse level.

Materials/Technology

The resources available for teaching English pronunciation have multiplied greatly in the last decade. Not only are there more textbooks for use with students, there are many more resources that utilize the computer, in the form of CDs or online courses. Celce-Murcia, Brinton, and Goodwin (with Griner) (2010) have reissued a substantially revised edition of their teacher resource book, which is a mainstay of many teacher preparation and ESL programs, along with two CDs that illustrate both general American speech and L2 accented English. In Australia there has been a strong focus on pronunciation teaching in recent years, and the government has underwritten the production of materials that are available

free on their Web sites. A downloadable handbook on teaching pronunciation (see Suggested Readings) explains why L2 learners may have difficulty conceptualizing sounds in their new language. Several other textbooks intended for preservice teachers have appeared on the scene, but new student resources have virtually exploded. As instructors and language program coordinators make choices for new software or online courses, they should take to heart the caveat "Buyer beware." There are exciting innovations in technology that can enhance learners' perception and production (Pennington & Ellis, 2000; Levis, 2007), but potential purchasers should conduct some research themselves before their students invest time and money.

Who Should Teach Pronunciation?

The people best suited to teaching pronunciation are L2 instructors with formal training themselves in pronunciation, listening, and speaking pedagogy. Unfortunately, many L2 teachers have had limited or no opportunity to obtain this background, and for this reason, some may avoid pronunciation altogether, while others may rely heavily on resources that may not address their learners' needs (MacDonald, 2002). A lack of expertise has not stopped entrepreneurs, who have filled a niche with accent reduction programs of questionable or even negative value (Derwing & Munro, 2009). The Internet has thousands of examples of programs that are one-size-fits-all, regardless of students' L1, and regardless of their own problems, which, in some cases, may be idiosyncratic. Another sector has also implemented accent reduction programs: many speech pathologists attract L2 clients for remediation purposes (Derwing & Munro, 2009). If a learner has a genuine pathology that interferes with intelligibility (e.g., a severe stutter) then a speech pathologist may certainly provide appropriate guidance, but in the case of L2 speakers who have no pathology, instructors who have a clear sense of second language acquisition and L2 pronunciation pedagogy are better equipped than a speech therapist to provide suitable instruction. Of course, a speech pathologist who has also studied the learning and teaching of a second language would have the skills necessary to appropriately assist an L2 speaker.

University and college TESOL programs have a responsibility to provide their students with appropriate credit courses in pronunciation pedagogy, to give them the confidence and capability to design suitable activities and provide feedback for L2 learners. It is essential that teachers gain this expertise; if they do not, they may rely on intuitions that actually mislead their students. For instance, Wang and Munro (2004) determined that Mandarin and Cantonese students had been taught that the primary distinction between the vowels in "sit" and "seat" was one of duration. Although there is a difference in the duration of these two sounds, vowel quality is actually the principal cue in North American English. However, teachers without adequate training directed students to focus on what was a secondary cue. In a brief training experiment, the authors were able to successfully change the perceptions of their participants by explicitly pointing out the difference in vowel quality. Similarly, instructors may encourage their students to slow their speech when, in fact, the problem may be some other aspect of their pronunciation that causes longer processing time on the part of the listener. It is crucial that pronunciation teachers not only understand the basic underpinnings of the sound system of the language they are teaching, but that they appreciate that their learners often attend to the L2 as though it were their L1. As a result, the students' categorization of speech sounds and suprasegmentals does not match that of the L2. In general, it is the role of teachers to establish where their students' problems lie. Although many instructors have developed excellent intuitions over the years, if we are to see extensive improvement in pronunciation teaching, universities and colleges must implement more teacher preparation in this area.

Future Directions

As teaching pronunciation gains more currency in language classrooms, it is important that researchers continue to investigate which aspects of L2 pronunciation have the most deleterious effects on intelligibility and comprehensibility, taking into consideration speech factors both in isolation and in combination. Most research on pronunciation teaching thus far has been carried out in English; more work in other languages is necessary. Computer technology offers considerable promise, but the extent to which technology instruction extends to free production should be explored. The role lexical frequency plays in the acquisition of certain segmentals should be clarified, as should the relationship between pronunciation and the learning of formulaic chunks. The effectiveness of various approaches to teaching pronunciation should be determined. Finally, ways to enhance interlocutors' willingness to listen to accented speech should be studied in greater detail.

SEE ALSO: Abercrombie, David; Accent Reduction; Computer-Assisted Pronunciation Teaching; Foreign Accent; Intelligibility; Pronunciation Assessment; Pronunciation Teaching Methods and Techniques; Speech Perception; Suprasegmentals: Discourse Intonation; Teaching Listening

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Pronunciation Models

DAVID DETERDING

Introduction

Many nonlinguists imagine that a model of pronunciation which is upheld as the standard, promoted in schools, and is the focus of reference materials such as dictionaries, is somehow better than a regional variety, and that people who speak a nonstandard variety are lazy. In contrast, linguists believe that all varieties of a language are linguistically equal, and that it is generally fortuitous if one style of pronunciation becomes adopted as the standard while others do not. Indeed, the style of speech that emerged as the standard pronunciation of English was based on the pronunciation found in the south of England simply because the court and government were based there (Mugglestone, 2003).

In many countries, standards are promoted by an official body, such as the L'Académie Française in France. In contrast, for English the standard is a de facto one, and there is no regulating body to determine what is "correct" and what is not. Nevertheless, models for English pronunciation have evolved, and they continue to be encouraged by the worldwide English-teaching industry.

Here, the two most commonly used models of English pronunciation are compared: received pronunciation British English (RP) and general American (GA). Then some alternative models of English pronunciation are mentioned, and there is a discussion of an alternative focus for language teaching derived from English as it is used as a lingua franca by non-native speakers (Jenkins, 2007). Finally models of pronunciation for two other major world languages, Chinese and Malay, are briefly considered.

RP versus GA

RP (Cruttenden, 2008) and GA are the accents most widely adopted as the basis for models of English pronunciation around the world, especially for teaching materials, and these two styles of pronunciation are the ones that are shown in the two best known pronunciation dictionaries, Jones, Roach, Hartman, and Setter (2003) and Wells (2008), even though there are actually rather few native speakers of RP and some writers observe that GA does not really exist (Preston, 2005).

The most salient difference between RP and GA lies in the occurrence of /r/: in RP, /r/ is only pronounced when it occurs before a vowel, while in GA it is pronounced wherever "r" occurs in the spelling, including in words such as *four* and *cart*. We call RP a non-rhotic accent, while GA is rhotic.

Some other differences between RP and GA are:

- RP has /ɒ/ in words such as *lot* and *cloth*, but GA has /ɑː/.
- RP has /ɑː/ in words such as *path* and *class*, but GA has /æ/.
- In RP, the medial sound in words such as *better* is [t], but in GA it tends to be a flap [ɾ].
- The medial /l/ in words such as *really* is a clear /l/ in RP but a dark /l/ in GA.

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- Some words such as *temporary* and *secretary* in GA have a secondary stress on the *-ary*, but in RP these words have a single stress on the first syllable.
- Some individual words differ. For example, RP usually has /aɪ/ in the first syllable of *either*, but many speakers of GA have /iː/; and in RP there is an /h/ at the start of *herb*, but not in GA.

Despite these differences, RP and GA are usually mutually intelligible, partly because the ease of global communication in the modern world ensures that speakers of these varieties get to hear each other's pronunciation quite regularly. Cruttenden (2008, p. 77) notes that in the 1930s people in Britain found American pronunciation hard to understand, but such difficulties have now by and large disappeared because of widespread exposure to American films.

Other Models of English Pronunciation

Schneider (2007) describes how varieties of English around the world often follow a similar trajectory in developing their own norms, gradually eschewing reference to external varieties such as RP or GA. For example, Australia now has its own distinctive style of pronunciation, and few Australians aspire to sound as if they come from Britain. Similarly, people in Scotland, Wales, and Ireland have their own standards of pronunciation which are independent of RP.

What have been termed "new varieties of English," such as that of Singapore (Deterding, 2007), are also increasingly evolving into independent varieties. Schneider (2007, p. 160) observes that Singapore English is in the fourth phase of a five-phase cycle of development, and it seems likely that, in time, it will progress to become a completely mature variety with its own standards for pronunciation and usage.

Teaching Based on English as a Lingua Franca (ELF)

Nowadays, most English speakers around the world do not have the opportunity or the desire to speak to people in places such as Britain and the USA. Jenkins (2007) argues that if speakers of English from countries such as China and Germany can communicate perfectly well with those from Brazil and Japan, their pronunciation should not be judged against that of a native speaker. The goal should be to achieve easy intelligibility, and it is irrelevant how native speakers might say things. She therefore proposes a lingua franca core (LFC) of just those features of pronunciation that are essential for international intelligibility, and she suggests that teaching should be based on this. The LFC includes most of the consonants of British and American English, vowel quantity (i.e., the long/short distinction) and sentence stress, but it excludes the dental fricatives, vowel quality, and lexical stress placement (Jenkins, 2007, pp. 23–4).

However, the proposals for LFC-based teaching are controversial. For example, Trudgill (2005) has argued that there is nothing wrong with a model of pronunciation based on a native-speaker variety such as RP.

Despite this ongoing debate, many now agree with the basic premise that teaching models should take into consideration local forms of pronunciation and should no longer adhere unquestioningly to external standards (Kirkpatrick, 2007).

Models of Pronunciation for Chinese and Malay

It might seem strange that RP and GA are so widely used as models of English even though there are few speakers of RP and GA is something of an artificial construct. However, the promotion of a minority style of pronunciation as the standard is actually quite common. Here we will consider models for Chinese and Malay.

In China, a standard form of the language is important as a unifying factor in a country so large and diverse. The standard model for pronunciation in China is called Pǔtōnghuà, 'Common Language', and it is based on the accent of Beijing. It is also promoted in Taiwan, where it is called Guóyǔ, 'National Language', and in Singapore, where it is called Huáyǔ, 'Chinese Language' (Chen, 1999, pp. 31–2), even though hardly anyone in either Taiwan or Singapore actually speaks a form that is close to the Beijing norm. One salient difference between the language as it is specified and as it is actually spoken by most people in Taiwan involves the retroflex fricative and affricates /ʂ, ʈʂ, ʈʂʰ/, the sounds that are written as "sh," "zh," and "ch" in the Pīnyīn system of spelling (Duanmu, 2007, p. 24). In Taiwan, these tend to be merged with the corresponding dentals /s, ts, tsʰ/, which are written as "s," "z," and "c" in Pīnyīn, with the result that 树 'shù' ('tree') may sound the same as 速 'sù' ('speed').

Just as with China, Malaysia is a large country with many different people, and that is one reason why a standard language is promoted, to build unity among the various people. Malay is the standard language of Malaysia, where it is called Bahasa Malaysia. It is also the official language of Brunei Darussalam and the national language of Singapore, and in both these countries it is referred to as Bahasa Melayu. It is quite similar to the national language of Indonesia, where it is called Bahasa Indonesia (Prentice, 1990). The model for pronunciation of Standard Malay is based on the accent of southern Johor. However, this style of pronunciation is used by few people. In Brunei the language that is actually used by nearly everyone is a dialect of Malay called Brunei Malay, which is substantially different from Standard Malay (Martin & Poedjosoedarmo, 1996). For example, Brunei Malay only has three vowels /i, a, u/ rather than the six vowels of Standard Malay /i, e, a, o, u, ə/. So once more, we find a model of pronunciation promoted as the standard even though few people actually speak it.

Conclusion

Norms of pronunciation are promoted in many modern nations, even though the varieties that are adopted are often actually spoken by few people. For English, the norms are currently being questioned by many scholars who suggest that models based on English as a lingua franca are more appropriate. Nevertheless the existing norms seem likely to persist for some time, as they are seen as important by governments and essential for language teachers.

SEE ALSO: Intelligibility; Phonetics and Phonology: Overview; Pronunciation Assessment; Varieties of World Englishes

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Pronunciation Teaching Methods and Techniques

JANET GOODWIN

Pronunciation teaching has traditionally focused on articulating individual consonant and vowel sounds (known as the *segmental* features). Conventional techniques include imitation (*listen and repeat*), articulatory explanations ("*Put your tongue here . . .*"), minimal pair exercises (*ship* vs. *sheep*), tongue twisters (*she sells seashells by the seashore*), and reading aloud. As communicative language teaching principles gained currency, greater emphasis was given to global elements such as stress and intonation (known as *prosody* or the *suprasegmental* features). Current methodology acknowledges the importance of segmentals as well as suprasegmentals, emphasizing how they function as an interdependent system. The pronunciation of any language should be presented as it naturally occurs—in the stream of speech, not as an isolated skill. Since this entry uses examples based on English, important features of other languages, like the teaching of tones in Mandarin or Vietnamese, will not be explicitly addressed. That said, effective pronunciation teaching involves: (a) understanding the basic sound system features of the language being taught, (b) setting realistic goals for learner achievement, (c) having an overall plan for instruction, and (d) incorporating a variety of techniques, tools, and technology.

Understanding the Basic Features of Pronunciation in English

Pronunciation is a way of packaging our speech for the listener. Speakers use pauses and intonation to divide their speech into coherent chunks. The listener's attention is drawn to the main point or element of a chunk through a rise or fall in pitch. Other meaningful words in the chunk may also be stressed but any words that a listener can figure out through grammar or context are usually not spoken clearly at all; they are simply squeezed into the intervals between stressed syllables. The pattern of stressed and unstressed syllables creates a rhythm that listeners use to comprehend what they hear, helping them to anticipate what a speaker will say next and to fill in gaps in comprehension. Although words are traditionally taught as having a fixed sequence of consonant and vowel sounds, as shown in the dictionary, this pronunciation may represent only the highly stressed form of a word. The unstressed form, if even recognizable as an individual word, might sound significantly different in the stream of speech.

Thought Groups

Just as punctuation guides the reader in processing written text, speakers use pauses to create coherent segments of speech, commonly referred to as *thought groups* (also *tone units* or *intonation units*). Consider the following phrase: *Woman without her man is nothing*. One set of pauses would produce this:

Woman / without her man / is nothing.

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while the meaning would change dramatically if the speaker paused at these points:

Woman / without her / man is nothing.

Thought group boundaries often occur between grammatical units, such as a clause or phrase:

The man you are looking for / doesn't work here anymore.

Although the frequency and placement of pauses vary in real speech, thought groups are a necessary component to making our speech comprehensible to a listener.

Intonation

Intonation, or "the melody of speech," is the pattern of rising and falling pitch within a thought group. Multiple conventions are used to represent intonation for learners:

- a musical staff showing pitch levels:

Extra high			
High		do	
Mid	How are you		
Low			ing?

- Arrows:
  How are you doing? ↗↘

- Contours:

  How are you doing?

Intonation patterns have traditionally been taught as corresponding to particular grammatical forms, such as fall-rise for yes/no questions (*Have you met him?*), or rise-fall for wh-questions (*What's he like?*). A broader look at intonation takes both the listener and the extended discourse into account, revealing how speakers use intonation to achieve a particular communicative purpose, such as backgrounding information the listener is assumed to know, or taking a turn in a conversation (Wennerstrom, 2001; Chun, 2002; Celce-Murcia, Brinton, & Goodwin, 2010). Moreover, intonation helps listeners comprehend a string of words as a coherent unit:

We need to / uh / kind of / get going.

Although the speaker has paused, the intonation contour signals that these words belong to a single thought group.

Prominence

The rise or fall of pitch in the intonation unit usually occurs on the *prominent* syllable (also called *focus*, *emphasis*, *primary phrase stress*, *tonic syllable*, or *nuclear stress*). In general, speakers give prominence to new information or to emphasize a contrast. What a speaker

chooses to highlight depends greatly on what was said previously. Notice how the same phrase can have a different prominent word depending on the question that was asked:

What are you doing?	*I'm LEAVing* (highlighting the action)
Who's leaving?	*I'M leaving.* (highlighting the doer)
Why aren't you leaving?	*I AM leaving!* (contradicting an incorrect assumption)

In her study of the impact of missing or misplaced prominence, Hahn (2004) found this feature played a significant role in intelligibility.

Rhythm

Whereas prominence is the extra emphasis given to one main element in a thought group, *sentence stress* refers to all the stressed words in the phrase. In English, *content words* (e.g., nouns, main verbs, adjectives) are generally stressed while *function words* (e.g., determiners, pronouns, prepositions) usually are not. *Rhythm* is the pattern created by an alternation of these stressed and unstressed syllables. Consider the following example in which content words are represented by uppercase letters and function words by a contracted or reduced form:

The GIRLS've EAT'n sm ***CAKE***

•◯•◯••◯

da DUM da DUM da da **DUM**

The rhythm of this phrase can be highlighted through the use of bubbles or nonsense syllables. Three syllables are stressed (*girls*, *eat*, and *cake*) but only the final one, *cake*, is prominent.

Word Stress

Each multisyllabic word in English has one highly stressed syllable, known as the primary stress. *Word stress* (also referred to as *syllable stress* or *lexical stress*) is often marked in dictionaries by a small raised line in front of the stressed syllable: /ˈlæŋgwɪʤ/. Speakers make stressed syllables salient for the listener by making them longer, louder, higher, or all of the before mentioned in pitch. Vowel quality is also key—the vowel in an unstressed syllable may be reduced to /ə/ or /ɪ/ but the vowel in a stressed syllable remains clear; notice how only the second (stressed) syllable in *banana* is spoken with a full, unreduced vowel: /bəˈnænə/.

Stress placement can depend on such factors as word origin, part of speech, or affixation. For example, the primary stress typically shifts to the syllable right before these common suffixes: *-ic* (*eLECtric*), *-ity* (*elecTRICity*), *-ion* (*electrifiCAtion*), and *-ical* (*eLECtrical*). Most practitioners agree that new words should be acquired along with their stress pattern. Accurate word stress is a significant component of intelligibility (Field, 2005; Zielinski, 2008).

Connected Speech

In *connected speech*, word boundaries can be blurred. Speakers generally pause between thought groups, or during hesitations, but not after each and every word. In fast speech, syllables blend together in a variety of ways:

Syllables may be linked together by a consonant sound or glide:

An apple (sounds like *annapple*)

Final consonants may shift to the next syllable:

They lived in Chicago. (sounds like *live-din*)

Two adjacent sounds may be articulated as a single new sound:

Why can't you? (sounds like *canchu*)

Sounds may be omitted:

He gave her a gift. (sounds like *gaver*)

Unstressed function words are usually shortened and their vowels reduced:

It lasted for four hours. (sounds like *fur* not *four*)

Native speakers use these shortcuts to ease communication. However, for non-native listeners, these modifications might render a familiar word unrecognizable in speech. For examples of how the pronunciation of a word can vary, visit Cauldwell's *Speechinaction* website (www.speechinaction.net/SPARC_FSU.htm).

Consonant and Vowel Sounds

Because sounds do not consistently correspond to a single letter or sequence of letters, phonetic symbols are used to represent pronunciation. Most dictionaries designed for English language learners use a modified form of the International Phonetic Alphabet (IPA). Whether a teacher chooses to introduce phonetic symbols may depend on the learner's age, proficiency, and goals.

Consonants are commonly illustrated in a chart showing place of articulation (where the sound is made), manner of articulation (how the sound is made), and voicing (whether the vocal cords are vibrating or not). This information can be conveyed through demonstrations and simple oral descriptions such as "*/p/ is a sound with lips together*" or "*/z/ is a sound that makes your throat vibrate and can be held*." *Consonant clusters*, in which two or more consonants are articulated in a row, as in the beginning and end of the word *strength*, can be particularly challenging for learners whose languages do not permit clusters.

Vowels constitute the core of the syllable, the sound that resonates and can most easily be lengthened. Vowels are distinguished by tongue position (front/central/back), tongue and jaw height (high/mid/low), degree of lip rounding, and the tension of the muscles (tense vs. lax). The pronunciation of vowels can vary markedly from dialect to dialect. Vowel charts with clickable sound files comparing British and American English can be found at Dillon's phonetics resources site at the University of Washington (http://faculty.washington.edu/dillon/PhonResources/vowels.html).

For a learner-friendly resource on how both vowels and consonants are articulated, visit the University of Iowa's *Phonetics: Sounds of American English* site, which includes animated graphics and video (www.uiowa.edu/~acadtech/phonetics/). It is important to remember that learning sounds in isolation is not sufficient. Understanding how a sound is articulated in real speech, or how crucial it is to intelligibility, is clear only when it is taught in context using authentic materials.

Setting Realistic Goals for Instruction

Pronunciation instruction, often labeled "accent reduction," can instead be viewed as "accent addition," acknowledging the value of the learners' previous language background (Kjellin, 1999). Viewed in this way, pronunciation teaching does not seek to "fix a broken accent" or to erase a speaker's L1 identity; the primary goal is successful communication between speakers and listeners. As Brown (1991b, p. 45) observes, "a speaker may be more intelligible or less intelligible to a listener, depending on who the particular listener is, rather than on the clarity of the speech itself."

These insights have led to greater respect for accent diversity. Since no one accent is dominant in every context, neither teachers nor learners need to sound like an idealized "native speaker." Instead, teachers—both native and non-native—should consider the multiple communicative situations their learners will face and, with the benefit of technology, incorporate authentic examples of these accent models into the classroom. Mastery of a particular regional accent may or may not be the learner's ultimate goal.

Traditionally, teachers have struggled to teach the entire sound system, much like a course in phonetics for linguists. However, no pronunciation course can teach everything; teachers need to set realistic and limited goals for instruction by making use of various resources. One important resource is the research on intelligibility in a particular context (Derwing, Munro, & Wiebe, 1998; Jenkins, 2000, 2002; Hahn, 2004; Zielinski, 2008). Teachers can also use the findings from a *contrastive analysis* to pinpoint potential difficulties for learners of a particular L1 (see Avery & Ehrlich, 1992; Swan & Smith, 2001; Walker, 2010). *Functional load*, the frequency and relative importance of a linguistic contrast, can help instructors decide whether a particular sound contrast, even if problematic, is worth addressing (Catford, 1987; Brown, 1991a; Munro & Derwing, 2006). Finally, teachers can tailor instruction for a specific learner or group of learners by obtaining a diagnostic speech sample and by having learners complete a questionnaire about their motivation and communicative needs.

Planning Instruction

Successful pronunciation instruction enables learners to understand and be understood, to make effective use of the language input they receive, to review and revise their speech, and to gain confidence in their ability to communicate. The framework below guides teachers in organizing pronunciation instruction in a five-stage process: description and analysis, listening discrimination, controlled, guided, and communicative practice (Celce-Murcia et al., 2010).

Initially, the teacher describes the feature and how to produce it, presenting multiple examples in natural contexts. In analysis activities, learners may apply rules or patterns to a new sample of speech, for example:

> *Directions: Put a slash (/) where the speaker might pause:*
> Hi, Jessica, it's Angela. Could you call me back when you get this message? I wasn't sure what the homework was for tomorrow's math class. Thanks, bye.

In the listening discrimination stage, learners identify or distinguish similar pronunciation features. One common technique involves discriminating between two words which are identical except for one sound, known as a *minimal pair*:

> *Listen and mark the appropriate response:*
> The teacher collected/corrected the homework yesterday.

___ a. Oh no! I forgot to hand it in!
___ b. I wonder how many I got wrong.

Practice with both extended listening and individual phrases is essential. Any authentic speech sample can be used for focused listening practice by having learners identify occurrences of a specific feature, such as connected speech.

Controlled practice activities focus almost exclusively on accuracy, primarily through reading aloud and choral repetition (see Gilbert, 2008, on the benefits of choral repetition). Practice texts should be relevant to learners' speaking needs—for learners who work in healthcare, the transcript of a medical interview might be suitable; for graduate teaching assistants in Chemistry, a transcript describing lab safety procedures is more appropriate.

In guided practice activities, learners formulate more of their own language as they gain control of the targeted feature. For example, learners preparing for a job interview might describe previous work experience while focusing on -ed and -s endings:

I have work<u>ed</u> in accounting for 5 year<u>s</u>.
I handl<u>ed</u> multiple account<u>s</u>.
I supervis<u>ed</u> three employee<u>s</u>.

During the final communicative stage, learners focus on the content of what they are saying. With sufficient practice in the earlier stages, learners are able to maintain control of the targeted features during activities such as role plays, debates, and interviews.

In each of the five stages, learners need feedback to determine if they are correctly perceiving or producing a particular feature. In listening activities, this may be a simple right or wrong answer. In small group exercises, peers as well as the instructor can provide feedback. During communicative activities, error correction is often delayed until the activity is completed, using notes taken during the performance.

Techniques, Tools, and Technology

Pronunciation practitioners employ a variety of resources to enhance instruction. Many techniques and tools are drawn from regular listening and speaking methods; others come from related disciplines, such as theater and speech pathology. Instructional technology has revolutionized the teaching of pronunciation in many ways; it provides access to models and practice opportunities outside the classroom as well as capturing the learner's speech for review.

Effective pronunciation instruction appeals to multiple senses. Sounds can be associated with a visual such as colors or key words (e.g., *blue shoe* for /u/). An understanding of rhythm can be enhanced by having learners make a physical gesture (e.g., clap or tap) on each stressed syllable. Relaxation and visualization exercises at the beginning of a lesson can help reduce learner anxiety.

Drama and imitation techniques offer discourse-level practice with stress, intonation, and connected speech. For example, learners can watch a brief TV or film clip, mark the pronunciation cues they notice onto a copy of the script, rehearse the scene with a partner, and finally review a recording of their performance and compare it to the original (Goodwin, 2005). Imitation techniques include *shadowing*, in which learners repeat along with or slightly after a speaker, and *mirroring*, where learners repeat the lines and mimic the speaker's movements (Hardison & Sonchaeng, 2005).

Pronunciation teaching is more effective when carried out with physical props. A pocket mirror allows learners to check whether lip position and mouth movements match a visual

model. Gilbert (1994) popularized the use of thick rubber bands and kazoos. The rubber band is stretched whenever pronouncing a stressed syllable and relaxed on each unstressed syllable. Speaking through a kazoo obscures individual words thereby highlighting intonation.

Common game formats can be adapted to address pronunciation. In conventional dominoes, players match tiles with the same number of dots; Hancock (1995) has players match either rhythm patterns ("*How do you do?*" and "*Where did he go?*") or vowel sounds ("*wait*" and "*gave*"). Bingo cards can be used for sound practice, substituting minimal pair words for numbers.

Other popular language teaching tools can have a pronunciation focus. Songs provide both listening discrimination and production practice (for examples of song exercise formats, see Miller, 2006). Poetry is commonly used to target rhythm and vowels. Comic strip dialog often contains examples of reduced speech (e.g., *gonna*, *wanna*, *hafta*) or prominence (usually in boldface type or capital letters). Knock-knock jokes can be used to illustrate features of connected speech. In the example below, the punch line comes from the similarity between "Jamaica" and a fast speech rendition of "did you make a."

A: Knock knock.
B: Who's there?
A: Jamaica.
B: Jamaica who?
A: Jamaica mistake?

One of the most valuable tools for teaching pronunciation is technology. The traditional language laboratory has evolved into a multimedia computer laboratory with expanding audio and video resources, pronunciation software, and Internet capabilities.

Voice recording allows learners to review their speech, access multiple pronunciation models, control the pace, amount, and type of practice, and receive individual feedback. Sound files can be created using free programs such as *Audacity* (www.audacity.sourceforge.net). One way to manage the load of responding to student recordings is to advise learners in advance of which feature to focus on and then limit feedback to that one feature. Teachers can note errors on a checklist, a student-generated transcript, or the text of the exercise. Learners can gain self-monitoring skills by submitting a self-review along with the recording.

Video is now available through DVDs, video podcasts, speech analysis displays, and video-sharing websites such as *Youtube*. Commercial video programs include complete pronunciation courses (Meyers & Holt, 2001, 2002) and teacher resource videos illustrating teaching techniques (Meyers & Holt, 1998; Burns & Claire, 2003). An increasing number of inexpensive pocket camcorders produce video that is easily uploaded to a Web site. Filming student role plays and presentations creates a powerful tool for self, peer, and instructor feedback.

Instructional software offers a variety of pronunciation models and extensive practice. The challenge is in letting learners know what error they have made and how to correct it (Levis, 2007). Two pronunciation programs with favorable reviews are *Streaming Speech* (www.speechinaction.com) and *Connected Speech* (www.proteatextware.com.au). Although it requires some expertise in phonetics, the free software program *Praat* (www.fon.hum.uva.nl/praat/) allows users to make voice recordings, import sound files, and view analysis tools such as waveforms, spectrograms, or pitch contours displays. Viewing a visual representation of intonation—both a target utterance and the learner's attempt to match it—is promising (Hardison, 2004; Levis & Pickering, 2004; Chun, 2007).

Internet technology provides access to sound, video, and sophisticated graphics. Learners can see how sounds are produced (www.uiowa.edu/~acadtech/phonetics/), watch video pronunciation lessons, practice distinguishing sounds (www.manythings.org/pp), hear

the pronunciation of words in online dictionaries (www.m-w.com), and practice imitating real speakers (www.englishcentral.com). Virtual language laboratories can be created through online courses or supplementary course Web sites using course management systems such as *Moodle* (http://moodle.org/) or *Blackboard* (www.blackboard.com/). Within such a Web site, tools such as *Wimba* (www.horizonwimba.com) offer a central location for recordings.

In summary, the goal of pronunciation instruction is for learners to interact successfully in the actual communicative situations they face or will face outside the classroom. These situations may include a variety of accents, not a single "native-speaker" variety. Rather than teaching the entire sound system, teachers make pedagogical choices based on the communicative importance as well as the teachability of an item, recognizing that both suprasegmental and segmental features contribute to intelligibility, since they function in speech as an integrated whole. A systematic approach to instruction enables learners first to notice new patterns in the target language and then to incorporate these patterns gradually into their speech. A wide variety of techniques and tools as well as continuing advances in instructional technology provide a solid methodological repertoire for the teacher of pronunciation.

SEE ALSO: Accent Reduction; Computer-Assisted Pronunciation Teaching; Pronunciation Assessment; Pronunciation Instruction

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Psycholinguistic Approaches to Vocabulary

GRETCHEN SUNDERMAN AND ALICIA CAMPBELL

A psycholinguistic approach to vocabulary is aimed at understanding how individuals store words in their mental dictionary, how they retrieve those words, and how their level of proficiency in each language affects lexical processing. The cornerstone of psycholinguistic approaches to vocabulary is the use of behavioral methods to measure how quickly (using reaction times in milliseconds) and accurately individuals process language. The nature of the questions and the experimental tasks vary when investigating individuals at beginning stages of bilingualism (i.e., language learners) and more skilled individuals (i.e., proficient bilinguals).

Lexical Storage

Over the years scholars have attempted to describe the organization of lexical knowledge in the bilingual mind. A well known and widely cited early proposal in the bilingualism literature is that of Weinreich (1968). Weinreich hypothesized that there were three types of lexical arrangements in bilinguals resulting from their different language experiences: coordinate, compound, and subordinate. Coordinate bilinguals learn each language in a separate environment and therefore each word has its own specific semantic representation. The coordinate bilingual would then have two sets of meanings and two lexical entries, both independent of each other. Weinreich's compound bilinguals are described as having learned the two languages in the same context, resulting in one semantic representation for each concept. The compound bilingual would then have one meaning linked to two independent lexical entries. Finally, Weinreich describes the subordinate bilingual as different from both the coordinate and compound bilingual in that the subordinate bilingual uses the dominant language as a filter for the second language. For example, if the bilingual's weaker language is Spanish, the word *libro* may evoke the word *book*, which will then access the meaning for that word. Thus, the subordinate bilingual has a primary set of meanings established through the first language, a primary lexical representation in the dominant language, and a secondary lexical system attached to the primary lexical system.

Potter, So, von Eckardt, and Feldman (1984) proposed models of the bilingual lexicon that are similar to Weinreich's descriptions, but capture lexical storage. The word association model assumes separate storage for words in the two languages but a shared conceptual store. In this model, as with Weinreich's subordinate bilingual, only first language (L1) words have direct access to the concepts and therefore second language (L2) words must necessarily be translated into the L1 to access meaning. The concept mediation model, resembling Weinreich's compound bilingual, depicts words from the two languages as being stored in separate lexicons with only one conceptual store. Unlike the word association model, both languages have access to the conceptual store and translation to the L1 is not necessary for L2 access to meaning.

Kroll and Stewart (1994) proposed the revised hierarchical model (RHM), including separate lexicons for each of the bilingual's languages and one shared conceptual store. This developmental model captures language development by proposing an initially larger

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L1 lexicon, with the size of the L2 lexicon increasing as new entries are added. Additionally, learners start with the strongest links from the L2 to the L1 and from the L1 to the conceptual store. With increased use of the L2, the L2 links to the concepts strengthen; the bilingual moves from lexical mediation through the L1 to direct conceptual mediation from the L2 lexicon.

These initial proposals describing the bilingual lexicon as two separate lexicons with either a shared or a common semantic system lead to a series of related questions about the nature of the lexicon. What exactly is in the lexicon? Are all aspects of a word in a separate lexicon? Are all meanings shared across languages? Indeed, current research suggests that, at least under some circumstances, the lexical representations may be integrated in one lexicon (e.g., Van Heuven, Dijkstra, & Grainger, 1998) and there may be limits to the degree to which even the semantics are shared across languages (e.g., De Groot, 1993; Pavlenko, 1999). Interested readers should consult Kroll and Sunderman (2003) for a detailed discussion of the RHM, an important developmental model of the lexicon that has received a great deal of empirical support.

Lexical Access in Proficient Bilinguals

Over time, the issue of lexical storage became inextricably linked to the notion of lexical access. In other words, it was difficult to tease apart where a word was stored from how that word was retrieved or accessed. Van Heuven et al. (1998) point out that separate lexicon models tended to be associated with selective access (only retrieving words from one lexicon), whereas integrated models assumed nonselective access (having both lexicons called upon for retrieval). Most of the recent psycholinguistic work supports the view that for proficient bilinguals lexical access is nonselective, with words from both languages activated in parallel (e.g., Van Heuven et al., 1998; Dijkstra, Grainger, & Van Heuven, 1999). The evidence for this view comes from psycholinguistic studies that take advantage of certain cross-language features (such as neighbors; see below) to test the relative activation of the nondominant language. These studies have shown that in comprehension for highly proficient bilinguals, both languages are active and never really "shut off."

Lexical Neighbors

Van Heuven et al. (1998) examined the influence of orthographic neighborhoods within and across languages. An orthographic neighbor is any word differing by a single letter from the target word, respecting length and letter position (Coltheart, Davelaar, Jonasson, & Besner, 1977). In English, the words *gate*, *date*, and *late* would be orthographic neighbors. For a Spanish–English bilingual, the Spanish words *mate* and *bate* would also be considered neighbors. Van Heuven et al. tested the neighborhood effect by means of a lexical decision task. In lexical decision, a participant is presented with a string of letters and is asked whether that string is a word or not. Past research has shown that monolinguals activate other lexical candidates that have overlap in orthography, phonology, and semantics (e.g. Andrews, 1997; Frost, 1998). Therefore, if monolinguals activate intralingual candidates, then there are two possibilities for bilinguals, depending on lexical access. In terms of the neighborhood effect, the selective models would suggest that recognition of a target word is only affected by the neighbors in the language of the target, and that cross-language neighbors should have no effect. Under this view, an input switch would be set to the specific lexicon and the other lexicon would functionally be shut off. The nonselective models suggest that words from both languages will be activated simultaneously, and therefore these models would predict that neighbors from other languages would be active too. This position predicts effects of cross-language neighbors with no switch set to the

lexicon of the target. Van Heuven et al. (1998) found support for the nonselective alternative; identification of English target words was affected by the presence of both Dutch (L1) and English (L2) neighbors. However, when the bilinguals were identifying Dutch (L1) target words, the amount of interference from the English (L2) was related to their proficiency. The more proficient the bilingual, the more interference the English words caused.

Overall, this experiment (along with others such as Dijkstra et al., 1999, using other types of cross-language features like homographs or cognates) provides strong evidence that in bilingual word recognition, lexical access for proficient bilinguals is nonselective in nature. Interested readers should see Degani and Tokowicz (2010) for a summary of research on both within-language and cross-language effects in lexical processing.

Lexical Access in Language Learners

Many of the studies on lexical access have been conducted with highly proficient bilinguals. Remarkably little research has traced the development of lexical form activation across L2 development. The few studies that have included comparisons of L2 speakers who differ in their L2 proficiency suggest that the pattern of cross-language influence changes with level of skill in L2 (e.g., Bijeljac-Babic, Biardeau, & Grainger, 1997; Talamas, Kroll & Dufour 1999; Sunderman & Kroll 2006). The next sections describe research related to cross-language activation and the underlying nature of the lexical and conceptual links in less proficient bilinguals.

Cross-Language Activation

Jared and Kroll (2001) investigated the development of lexical form activation. Native English speakers named words aloud in English (L1). These English speakers knew French as an L2, but differed in their proficiency. The words used in the experiment were chosen on the basis of the properties of their neighbors in English and in French. In particular, a neighbor was considered to be an enemy if the spelling and sound varied across languages. For example, a French enemy would be an English word like *bait*, which contains *-ait*, pronounced differently when it appears in a French word like *fait*. This experiment aimed to determine the effect, if any, of the presence of French enemies on English speakers naming words in their L1. The dependent measure was the time to begin to articulate the word and the corresponding accuracy. The results showed that for the English naming task without prior L2 activation, only effects from the English enemies were found with no cross-language influence.

However, when the participants performed a block of naming words in French, activating the L2, an effect from the French enemies was found on English naming time, but only for the most proficient L2 speakers. In other words, the most proficient L2 speakers were slower to name the English words with French enemies, once their L2 was active. When the block of French words contained the enemies themselves (i.e., the French words that looked like but did not sound like the English words to be named), inhibitory effects of the French enemies were found for English naming by less skilled L2 speakers. All participants were slower to name French words that looked like English words, even though they were naming in a French block. These results suggest that the system is able to function nonselectively even when both languages are active, but that the degree of language activation due to the proficiency of the learner affects this nonselective mode. In general, there is more of an asymmetry at early stages of L2 acquisition, with stronger effects from L1 to L2 than the reverse.

Van Hell and Dijkstra (2002) examined the influence of foreign-language knowledge on L1 performance. They recruited trilinguals, with Dutch as their dominant and native L1,

English as their L2, and French as their third language. French proficiency level was split, with some participants less proficient and others more proficient in this language. The tasks performed in this study were all completed in Dutch (L1) and the participants were unaware that the study was interested in their other languages. The materials in the tasks were Dutch words that were either cognates with English or cognates with French, or were non-cognates. (Cognates are words in different languages that have the same meaning and similar forms.) Van Hell and Dijkstra showed that, in a lexical decision task, the Dutch–English bilinguals were faster to recognize Dutch words that were cognates with English. Cognates are typically recognized more quickly in a lexical decision task utilizing both languages. In this task the participants had no instruction to use the other language, but all showed effects of their L2, English, thus providing compelling evidence for the non-selective nature of lexical access. Moreover, the participants with higher French proficiency were also faster to recognize cognates with French. However, the participants with lower French proficiency did not show a difference in response times between cognates with French and other cognates, thus suggesting that a minimal amount of proficiency is required in another language before its effect on the L1 is noticeable.

Form Versus Meaning

To investigate the nature of the underlying lexical and conceptual links in the developing lexicon, Talamas et al. (1999) used a translation recognition task performed by English (L1) native speakers of varying levels of Spanish (L2) proficiency. In a translation recognition task a participant is asked to decide whether the second word is the correct translation of the first word (e.g., *man–hombre*). On the critical trials where the participant had to say "no," the two words were related either by form similarity (e.g., *man–hambre*, where *hambre* means 'hunger') or by meaning similarity (e.g., *man–mujer*, where *mujer* means 'woman'). Talamas et al. (1999) found that the two types of critical trials produced different results depending on the proficiency of the bilinguals. For less proficient bilinguals, there was significant interference for form-related pairs, but little effect for semantically related pairs. For more proficient bilinguals, the pattern was reversed. This result suggested that the translation equivalent was active for beginning bilinguals. Sunderman and Kroll (2006) reported similar findings regarding the activation of the translation equivalent in less proficient bilinguals. However, their data also indicated that cross-language neighbors (i.e., words in Spanish that were similar to the lexical form of the English word, for example *man–mano*, where *mano* means 'hand' but looks like 'man') were active for both more and less proficient bilinguals.

Ferré, Sánchez-Casas, and Guasch (2006) also investigated this developmental shift from reliance on form to conceptual mediation and reliance on meaning. Spanish–Catalan participants of varying proficiencies and differing ages of acquisition performed a Catalan (L2) to Spanish (L1) translation recognition task manipulating relationships in form and meaning, with this relationship in meaning further manipulated as very close and close. Along with form and meaning, both proficiency and age of acquisition, a potential factor in the availability of semantic information for less proficient learners, were manipulated. Overall, the participants included 105 Spanish–Catalan bilinguals divided into an early bilingual group, a late proficient bilingual group, and a late nonproficient bilingual group, all of whom acquired Catalan in an immersion context. The results revealed that all participants were slower and less accurate on items related in form, suggesting that lexical form is active at all levels in all tested contexts. With respect to meaning, only the early proficient bilinguals were slower with semantically related items, but all groups were less accurate, to some degree, on such items. Additionally, both early and late proficient bilinguals experienced more interference from the very closely related semantic pairs than for the pairs related in form, suggesting that for these learners, meaning is more active than form.

With respect to lexical access, the research suggests that for all learners, aspects of form and meaning affect processing. Although more proficient bilinguals are better able to access meaning from their L2, even less proficient bilinguals experience semantic interference to some degree. However, context may affect this access, with activation of the L2 depending on prior use and level of proficiency. Importantly, once the L2 has been activated and whether the learner is aware of this activation or not, words from both languages are available and affect processing. It seems that even considering proficiency level and L2 activation, the nonselective viewpoint best captures lexical access in both proficient and developing bilinguals.

Given that previous research suggests that all languages are active to a certain extent and that aspects of both form and meaning affect processing, researchers are now seeking to determine how a bilingual resolves this competition. Is it possible that the bilingual has a mechanism that provides control over lexical access? According to Green's (1998) inhibitory control (IC) model, all words contain language tags specifying to which language they belong. During lexical access, the inhibitory control mechanism is able to suppress those words by virtue of their nontarget language tag, thereby allowing words in the target language to be selected and ultimately produced. Thus, researchers have begun investigating issues of inhibitory control and the potential factors that may affect its use and selection of one of a bilingual's languages.

Conclusion

A psycholinguistic approach to vocabulary examines how individuals store and access words in their mental dictionary and what factors may affect this process. While nonselective access is supported by the research, context, proficiency and prior usage may affect this activation. Currently, research is investigating how the bilingual manages this competition from their two languages and is able to perform a task in a target language. The findings from these studies will provide us with a more complete picture of the psycholinguistic processes related to vocabulary.

SEE ALSO: Formal Models of Bilingual Lexicons; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Organization of the Second Language Lexicon; Vocabulary Acquisition in Bilinguals; Vocabulary Acquisition in Second Language Acquisition

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Psycholinguistic Studies of Literacy

ANNIE PESHKAM AND DAVID N. RAPP

Literacy can be defined as the sets of skills or abilities that operate in the service of comprehension for information we read or hear or see. This includes moment-by-moment understanding of that information, as well as the potential application of any knowledge acquired from that information in future settings. Studies of literacy have often focused on the types of activities that are necessary to ensure successful reading experiences. These have included case studies of classroom behavior, investigations of teacher practices, analyses of the processes that underlie visual encoding of letter stimuli, and interventions designed to remediate struggling readers' difficulties (to name a few areas of interest). In line with the simple view of reading, as offered by Gough and Tunmer (1986) and Hoover and Gough (1990), many of these projects have focused on two core sets of reading activities—basic-level processes that underlie the types of pattern recognition activities necessary to decode and identify words and sounds, and higher-order processes that are necessary to extract meaning from words and sentences. Additionally, these projects might be broadly categorized as investigating two aspects of reading experiences: (a) the study of the *learning products* that result from reading, as measured by tests of reader comprehension and memory *after reading is completed*; and (b) investigations of the internal *mental processes* that individuals engage in *as they read a text*.

Psycholinguistics is the psychological study of language production and comprehension, for instance involving reading, speech, and even gesture. In this entry we will focus on reading comprehension. These topics are studied using empirical methods, including experimental methodologies designed to measure the processes and products of language use. Therefore, much of the research conducted by psycholinguists connects nicely with work conducted by researchers who are studying literacy in other fields. For example, psycholinguists might study how phonological features are activated when individuals read words, how syntactic ambiguities are dealt with during language processing, or the type of inferences that are more or less likely to be constructed for expository text materials (again, to name but a few projects). The benefits of employing a psycholinguistic approach, as with using any particular approach to the study of language, come from the applicability of its methodological toolkit for addressing specific questions about the processes and products of comprehension. The resulting research hypotheses, frameworks, and models have proven beneficial for investigating the type of issues that have been of interest to literacy researchers—again, the basic and higher activities that underlie language experience.

In general, psycholinguistic studies of literacy have focused on readers' attempts at recognizing various parts of language, separating and interpreting meanings, and constructing an integrated understanding across language units (e.g., words, sentences, and paragraphs). However, any examination of literacy that focuses solely on comprehension without consideration of the overall reader experience neglects the importance of broader factors that directly influence literacy. Many individuals' attempts to read are guided by instructions they receive before encountering a text, or goals they establish for using those materials later. Thus, psycholinguistic accounts, in line with more general approaches to literacy, have also attempted to think more broadly about the factors that might influence

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comprehension successes and failures. The goals, of course, are not only to uncover how individuals build meaning during reading but also to examine the influential factors that contribute to our everyday reading experiences, both of which are integral to building a more informed understanding of literacy.

In this entry, we will provide a brief review of several important features of everyday reading experiences that influence comprehension. We will specifically focus on higher-order processes and their contributions to literacy, as that is the approach we have taken in our own psycholinguistic research. First, we consider how the goals that readers bring to the reading experience, established through instructions, reader predilections, or motivated by elements of the text, influence comprehension. Second, we outline how readers derive meaning from the text during moment-by-moment reading. Here we will focus on the fundamental role of inferential processes as they have proven particularly influential in psycholinguistic accounts of literacy. Third, we provide a description of what readers' final representations of texts might look like after reading; in essence, what they have encoded into memory (and hopefully can retrieve as necessary). We have organized the entry into these sections in an effort to provide an introduction to psycholinguistic investigations of literacy, and to emphasize aspects of the reading experience that have implications for both theoretical understandings of reading, as well as practical applications in the design of literacy experiences and interventions.

Prereading Activities

Investigations of reading comprehension often focus on the types of prereading activities that can influence readers' experiences with a text. One of the goals of this area of research has been to outline some of the potential factors that can influence processes (i.e., the activities that occur during moment-by-moment reading) and products (i.e., what readers remember from the text) of comprehension. For example, individuals might be explicitly directed to read a text in a particular way, hold prior expectations about the materials they are about to read, or make decisions about approaching the text with specific goals. Instructions to attend to specific segments in a text might encourage reader focus on, and better memory of, those concepts than if instructions were not provided. Readers might also have very different expectations about the information they encounter, depending on a text's content or their own a priori beliefs, that can lead to genre-related differences in processing and retrieval from memory. Holding particular goals prior to reading, for example when reading for entertainment versus reading in preparation for an exam, might influence the effort that readers apply to material, and their resulting understandings. Examinations of prereading activities help reveal that reading experiences are guided, in part, by factors that play a role even before the reading experience begins. We provide a brief psycholinguistic review of how some of these prereading activities play an integral role in comprehending text.

Explicit instructions to approach or complete a task demand constitute one particular type of prereading activity. Specifically, a subset of research has looked at the influence of prereading questions on reading times (i.e., the time it takes to read a word or sentence) and recall of particular text segments. For example, prereading questions have been examined as to whether they help draw readers' attention to specific segments of an expository text (e.g., McCrudden, Schraw, & Kambe, 2005). Before reading, one group of participants might be asked to read a text while focusing on particular questions that target specific text segments, while another group is simply asked to read the text and remember as much as possible. Results from such studies indicate that guided instruction leads to improved recall for targeted text segments without a concomitant increase in reading times for those segments. This is one example of a prereading activity that affects reading by influencing

how individuals approach the text. The results suggest that instructions to focus attention on particular concepts or ideas can encourage the construction of memory traces for relevant materials. This type of finding empirically supports literacy practices that instructors often use spontaneously in their classrooms (i.e., asking students to focus on particular elements of their readings).

Readers' implicit expectations about text genres also exert an influence on comprehension activity. For example, consider the different ways readers might process expository versus narrative texts. Expository texts, which include textbooks, encyclopedias, or news articles, provide explanations that describe facts or principles. Narratives, which include fictional stories, describe event sequences that often follow a well-defined causal structure and typically involve one or more characters attempting to overcome obstacles to pursue a goal. The features associated with these genres are so familiar that a reader may hold specific expectations that influence how they process and remember texts (Wolfe, 2005). For example, in one study examining narratives, two different groups of readers read the same set of text excerpts (Zwaan, 1994); one group was told the excerpts were taken from European novels (i.e., literary condition), while the other group was told the excerpts were taken from major newspapers (i.e., news condition). Participants in the literary condition read the text more slowly and remembered more of the exact wording of the text than participants in the news condition. Presumably this was a function of readers' expectations that comprehension of literary texts relies more on remembering the exact words that were read, as compared to the gist-like memory that might be associated with reading and thinking about news articles. This type of evidence indicates that readers' literacy activities involve genre-specific beliefs about the way a text will unfold that can significantly impact processing of, and memory for, texts.

Of course, another way of looking at the influence of prereading activities would be to consider the explicit goals that readers might establish for themselves even before they approach a text. These goals also guide reading behaviors. For example, reading for a particular purpose specifically influences the types of information that readers attend to and remember later. In one relevant study, participants were provided with a text passage and either asked to imagine browsing through a magazine with the information (i.e., entertainment condition) or to imagine they were studying the text for an examination (i.e., study condition) (van den Broek, Lorch, Linderholm, & Gustafson, 2001). Participants read each sentence out loud and were asked to state any thoughts that came to mind. After reading they were asked to recall as much of the text as possible from memory. Participants in the entertainment condition made looser associations between text elements while thinking out loud and recalled a smaller proportion of informational content from memory than participants in the study condition. This shows that having a particular purpose for reading a text can influence the type of coherence-building processes (i.e., making associations between text elements) that occur during and after reading. The findings provide evidence that readers might have very different literacy experiences depending on the stance they take when they approach a text; that stance might be influenced by the intentions evoked by the text, the intentions that readers bring with them to the text, and interactions between the two.

The psycholinguistic studies we have described here reveal that prereading experiences prove crucial to understanding our everyday literacy activities. Some researchers have argued that our understanding of these prereading activities can have important implications for the development of curricula or reading interventions. For example, the degree to which a student is provided with focusing instructions during reading might impact the likelihood of engaging in processes of conceptual change (see Guzzetti, Snyder, Glass, & Gamas, 1993, for more detail on this issue). Thus, these investigations have both basic and applied value.

During Reading

To introduce psycholinguistic research that has examined reader activity *during* reading, we focus here on describing a particular mental process that is integral for comprehension —inference construction. Inference construction involves deriving information that goes beyond the content of a text. Readers generate inferences to fill in missing information, resolve discrepancies, or predict unmentioned events or facts, doing so by relying on relevant background knowledge or previous text content. For example, in order to comprehend the sentences "John walked into the garden and turned on the lawn mower. He later threw the grass into the dumpster" the reader might fill in the following missing information: a lawn mower is a machine used to cut grass, John cut the grass with the lawn mower, and after one cuts grass, the cuttings can be gathered and thrown away. This particular set of inferences might be used to bridge the two explicitly presented statements. In this section, we will describe some psycholinguistic studies that examine the inferences that individuals generate as they attempt to comprehend what they read. We note that inferences are considered by some a hallmark of skilled reading, and therefore understanding the role and consequences of inference construction can inform both basic and applied research on literacy activity.

Often, readers must establish connections between explicit text ideas by constructing inferences that connect one sentence with the next. For example, consider the following sentence pair (1): "Dorothy poured the bucket of water on the bonfire. The bonfire went out" (Singer, Halldorson, Lear, & Andrusiak, 1992). To understand the relationship between these two sentences, readers must construct the bridging inference that "water extinguishes fire." Studies testing bridging inferences often present individuals with these types of sentence pairs, or with pairs that do not necessarily afford the direct construction of bridging inferences, such as with (2): "Dorothy placed the bucket of water by the bonfire. The bonfire went out." If participants are asked to answer the question "Does water extinguish fire?" following these types of sentence pairs, they are much faster to answer yes to this question following the first pair than to the second pair. This is expected because the bridging inference is necessary in pair one (i.e., water was poured onto the fire and caused it to be extinguished), and thus active, by contrast with pair two (i.e., the water was only next to the fire that somehow went out). Bridging inferences are considered an essential activity for comprehension, as texts often leave out information that readers infer to "fill in the gaps."

Besides bridging inferences, readers are also capable of anticipating upcoming information by constructing predictive inferences. Studies seem to suggest that readers construct predictive inferences during moment-by-moment reading under specific circumstances. If participants are presented with statements that indicate a likely outcome (e.g., "The director and the cameraman were ready to shoot closeups when suddenly the actress fell from the 14th story"), they reveal activation of predictive-relevant information (e.g., the concept "dead"), compared to sentences that suggest no such outcome (e.g., "Suddenly the director fell upon the cameraman, demanding closeups of the actress on the 14th story") (McKoon & Ratcliff, 1986). Constructing predictive inferences can be a useful literacy activity, particularly in considering how texts might unfold given the previous material and readers' prior knowledge; in fact, teachers often ask students to hypothesize about upcoming events for both narrative and expository materials. Thus, understanding the circumstances under which readers might or might not construct predictive inferences can prove important for investigations of literacy skills.

Bridging and predictive inferences are classes of inferences that can be generated across many types of texts. However, more specific inferences also occur as a function of particular text features. For example, readers can infer characters' traits (e.g., Rapp, Gerrig,

& Prentice, 2001), emotions (e.g., Gernsbacher, Goldsmith, & Robertson, 1992), and intentions (e.g., Graesser, Singer, & Trabasso, 1994) when they read narratives. In addition, readers also keep track of various dimensions including space and time, in attempts to understand how events unfold and relate in texts (e.g., Zwaan & Radvansky, 1998; Rapp & Taylor, 2004). There is a rich and continually growing database of investigations that study the types of inferences readers might construct as they engage with texts (e.g., Graesser, Singer, & Trabasso, 1994).

It is generally agreed that inferences are crucial for building a coherent representation of the text. Nevertheless, there has been considerable debate concerning whether inferences are constructed as a matter of course, or whether readers construct them only under precise circumstances. Additionally, researchers have argued as to whether inferences might be constructed automatically, as a function of passive retrieval from memory, or whether inferences necessarily require strategic decisions about the activation of information from prior knowledge and the current text (readers interested in these topics are directed to reviews on the debate, including McKoon & Ratcliff, 1992; van den Broek, 1994; Zwaan & Rapp, 2006). While a full discussion of these issues is beyond the scope of this entry, current views contend that a comprehensive model of comprehension will need to consider how all of these types of processes might contribute to readers' literacy activities (e.g., Rapp & van den Broek, 2005).

In this section, we have discussed how readers' literacy activities are dependent upon inference processes that occur during comprehension. These studies focus on uncovering what happens during reading, as readers attempt to make sense of texts by making connections between text elements as well as between texts and prior knowledge. Inferences are at the foundation of literacy practice; they prove important in the design of interventions intended to help students not just identify the words in a text, but understand what a text is about.

After Reading

One of the goals of most literacy experiences is to acquire information that can be used later. Simply put, what we read or hear should be encoded in memory in such a way that it can be used to think about the world. During memory retrieval, individuals attempt to access their stored knowledge, and use that information to solve problems, make decisions, and so forth. In this section, we draw attention to some psycholinguistic investigations that have uncovered the nature of readers' memory and how memory processes are influenced as a function of text content.

A large body of research has shown that experiences with discourse can potentially lead to different levels or types of representations in memory. Readers can hold *surface*-level (i.e., memory for exact words read), *propositional*-level (i.e., the gist meaning that underlies sentences), and *situational*-level (i.e., information conveyed by the text but not necessarily limited to it) representations. Typically, the surface structure is retained only briefly, and what remains is the gist (Mani & Johnson-Laird, 1982). Additionally, situational representations might be formed if readers generate inferences to go beyond the ideas conveyed within the text. Tests to determine the types of memory representations readers might hold often evaluate the successes or confusions that accrue after reading texts. For instance, after being presented with either sentence (1) "Three turtles rested *beside* a floating log, and a fish swam beneath *them*" or (2) "Three turtles rested *on* a floating log, and a fish swam beneath *them*," participants might be tested with a recognition sentence that changes only the final pronoun, (3) "Three turtles rested on a floating log and a fish swam beneath *it*," and asked to indicate whether they had experienced this sentence before (Bransford,

Barclay, & Franks, 1972). Findings indicate that participants originally presented with sentence (2) were more likely to falsely report having previously seen sentence (3) than participants who were originally presented with sentence (1). Note that both sentences (2) and (3) describe a similar situation (i.e., a fish swimming beneath turtles and a log), while sentence (1) differs in terms of the described situation (i.e., a fish is swimming beneath turtles but not the log). Readers' confusion as to having seen sentences with similar situations suggests little in the way of an accurate surface representation, but rather a more gist-like and situational representation for the underlying meaning of the discourse.

While readers are more likely to retain memory for meaning rather than surface form, the content of a text can also influence what is likely to be remembered. For instance, the content of what we read is often connected by causal links. Information in the text that is linked causally to more information is better remembered than information with fewer causal connections (e.g., van den Broek, 1994). When participants are asked to read pairs of statements that vary in their causal strength, pairs with stronger causal relations (e.g., "Joey's big brother punched him again and again. The next day his body was covered with bruises") tend to be recalled better than pairs with weak causal relations (e.g., "Joey went to a neighbor's house to play. The next day his body was covered with bruises") (Keenan, Baillet, & Brown, 1984). Additionally, when the causal connections are more obvious or easier to infer, readers remember the events from those sentences better than when the connections are less obvious or difficult to infer directly. Thus, the content of the text can impact the degree to which a reader builds memory for text descriptions and can later retrieve that information from memory.

While successful retrieval is the optimal scenario for any literacy experience, readers often fall prey to memory failures. These types of failures can include situations in which information fails to be accurately recalled or, just as problematically, situations in which readers rely on inaccurate information that they have encoded into memory. This latter condition can be particularly problematic when readers encounter incorrect information in texts. To demonstrate the scope of this problem, studies have presented readers with stories containing inaccurate statements (e.g., "The capital of Kentucky is Louisville") for which the correct fact ("The capital of Kentucky is Frankfort") is well known according to norming data (Marsh, Meade, & Roediger, 2003). Following their readings of these texts, participants are provided with trivia quizzes, for which some of the questions are related to the statements provided in the texts (e.g., "What is the capital of Kentucky?"). Unfortunately, despite the fact that participants *should* know the answers to these questions, they often end up relying on the misinformation provided in the texts. That is, their reading of these stories often leads them to encode and rely on incorrect information, even when they should know better. What these kinds of findings indicate is that literacy experiences can often result in individuals learning about the world, but at times, what they learn might be inaccurate. Current projects attempt to discern exactly when readers will rely on what they read, and when they will ignore that information (Rapp, 2008). Understanding the contexts in which readers will update what they know, be it accurate or inaccurate, proves crucial to a complete understanding of literacy experiences.

Conclusions

In this entry, we have attempted to provide a brief review of psycholinguistic projects that are directly related to the study of literacy. The projects we have considered have focused specifically on higher-order comprehension processes; this includes the ways in which readers approach texts, the types of inferences and understandings they generate as they read, and the degree to which texts lead to the construction of memory for what has been

read. The research projects described here have been helpful in informing a basic understanding of the processes that underlie comprehension and the products that result from attempts to comprehend. In addition, these findings are now being utilized in the development of interventions that are intended to teach successful literacy skills, including inference construction and critical reading strategies (see Rapp, van den Broek, McMaster, Kendeou, & Espin, 2007, for an example of this work). In the future, we hope to see more connections between lab-based psycholinguistic investigations of language processing, and applied investigations of literacy in learning settings, with the goal of promoting effective discourse experiences.

SEE ALSO: Multimedia Digital Engagements by Readers and Learners; New Literacies of Online Reading Comprehension

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Pullum, Geoffrey K.

JOHN PAYNE

Geoffrey K. Pullum (1945–) is a general linguist specializing in the study of the English language. He has published over 250 works on a wide variety of topics in theoretical and applied linguistics.

He was born in Irvine, Scotland, and grew up in West Wickham, Kent. His secondary schooling was at Eltham College in southeast London. He left school early and worked in the popular music industry from 1963 to 1967. At that time he married Joan Rainford (born in Kingston, Jamaica), and resumed his education. He entered the University of York as an undergraduate in 1968, to study in the Department of Language founded by Professor Robert B. Le Page, and spent 1969–70 at a center for further education in Southall, Middlesex, studying the teaching of English to Punjabi-speaking immigrants. His BA in language (first class honors) was awarded in 1972, and his son Calvin James Pullum was born the same year.

He spent 1972–3 working as a teaching fellow at York, and 1973–4 as a research student at King's College, Cambridge. In the summer of 1974 he attended the Linguistic Institute at the University of Massachusetts at Amherst, and in September he took up a position as lecturer in linguistics at University College London. He was awarded the PhD in general linguistics by the University of London in 1976. He spent 1980–1 in visiting positions at the University of Washington and at Stanford University, and in 1981 accepted an appointment as associate professor of linguistics at the University of California, Santa Cruz. There he was promoted to professor in 1983; he served as dean of graduate studies and research from 1987 to 1993; and he was named distinguished professor of humanities in 2004.

Theoretical work has predominated in Pullum's research and teaching career. From the 1970s to the 1990s, he contributed many ideas which have remained influential to this day. These include the analysis of English auxiliaries (Pullum & Wilson, 1977) and criteria for distinguishing affixes and clitics (Zwicky & Pullum, 1983). In the 1980s he developed an interest in computational linguistics, working for several years as a consultant at Hewlett-Packard Laboratories advising a project on linguistic engineering and natural language processing. This work was associated indirectly with parallel work on the development of a computationally tractable theoretical framework for syntax, and led to the publication of the book *Generalized Phrase Structure Grammar* (Gazdar, Klein, Pullum, & Sag, 1985). During this time he also edited, with Pauline Jacobson, an important collection *The Nature of Syntactic Representation* (Jacobson & Pullum, 1982), and, with Desmond Derbyshire, the four volumes of the *Handbook of Amazonian Languages* (Derbyshire & Pullum, 1986, 1990, 1991, 1998). In 1986, with a second edition in 1996, he produced with William Ladusaw the *Phonetic Symbol Guide*, a practical guide to identifying phonetic symbols in the various linguistic literatures (Pullum & Ladusaw, 1996).

In the second half of the 1990s and early 2000s, Pullum collaborated on *The Cambridge Grammar of the English Language* (Huddleston & Pullum, 2002), a multiauthored book of which he and Rodney Huddleston were the lead authors. Intended for advanced researchers in fields such as English language course design rather than just linguists, the book won the Leonard Bloomfield Book Award in 2004, and was followed by a textbook, *A Student's Introduction to English Grammar* (Huddleston & Pullum, 2005). It is probably Pullum's best known work in applied fields. More recently, his theoretical work has returned to concerns

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with expressive power and the mathematical foundations of grammatical theory. This includes an analysis (Pullum & Scholz, 2010) of the flaws in generative linguistic argumentation for the claim that natural languages have infinitely many sentences.

However, in addition to his contribution to English grammar and theoretical linguistics generally, Pullum has always done applied work as well. His earliest publications were on applied topics, for example, work on the names of Indian and Pakistani immigrants (Pullum, 1970), and on Indian scripts and English language teaching (Pullum, 1971). He has returned to various applied topics in more recent years, most notably to a critique of nativist approaches to language acquisition, for example, arguments based on poverty of the stimulus (Pullum & Scholz, 2002).

The "Ebonics" brouhaha of 1996, when the Oakland Unified School District in northern California was mercilessly mocked in the press for an announcement about classroom recognition of African American vernacular English (AAVE), led Pullum to write a commentary on the controversy in *Nature* under the title "Language That Dare not Speak its Name" (Pullum, 1997). He later wrote "African American Vernacular English is not Standard English with Mistakes" (Pullum, 1999), a longer treatment of some of the properties of AAVE.

"Lexical Categorization in English Dictionaries and Traditional Grammars" (Pullum, 2009) is about getting the categories of words right in dictionary entries. "The Truth About English Grammar: Rarely Pure and Never Simple" (Pullum, 2010a) concerns issues in language proficiency testing. And "Prescriptive Grammar in America: The Land of the Free and *The Elements of Style*" (Pullum, 2010b) discusses the failings of the most popular prescriptive work on usage in the United States of America.

In addition to his scholarly writing, Pullum has always done occasional journalistic and popular writing about language too. His collection of satirical essays on linguists and linguistics, *The Great Eskimo Vocabulary Hoax*, was published in 1991, and a book of posts from the popular Language Log website (joint with Mark Y. Liberman) was published as *Far From the Madding Gerund* (Liberman & Pullum, 2006).

In 1994 Pullum married a philosopher of linguistics, Barbara Scholz, with whom he collaborated on a number of works, including Pullum and Scholz (2002, 2010). He moved to the University of Edinburgh in 2007 to become professor of general linguistics, and was elected a fellow of the British Academy in 2009. He sadly lost his wife Barbara Scholz to inoperable cancer in May 2011.

SEE ALSO: Descriptive Linguistics; Prescriptive and Descriptive Grammar

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Qualitative Corpus Analysis

VICTORIA HASKO

Definition and Philosophy

Qualitative corpus analysis is a methodology for pursuing in-depth investigations of linguistic phenomena, as grounded in the context of authentic, communicative situations that are digitally stored as language corpora and made available for access, retrieval, and analysis via computer. Researchers using qualitative corpus analysis as the methodological basis for their investigations adopt an exploratory, inductive approach to empirically based study of how the meanings and functions of linguistic forms found in the corpus interact with diverse ecological characteristics of language used for communication (speaker age, gender, level of education, and socioeconomic background; place and time of a communicative event; relationship between interlocutors; speech modality; etc.). A common belief shared by all corpus linguists is that it is important to base linguistic investigations on "real data," that is, actual instances of oral or written communication as opposed to contrived or "made-up" data. Unique goals of qualitative corpus analysis include facilitating computer-aided retrieval of authentic examples of the language phenomena under investigation, interpreting these empirical data in depth, and applying the ensuing insights to a broad range of intellectual explorations in language studies. This entry summarizes the evolution of the field, outlines the methodological foundations and principles of qualitative corpus analysis, and enumerates major areas of application of the methodology.

Evolution of Qualitative and Quantitative Approaches to Corpus Analysis

Although today we tend to associate all branches of corpus linguistics with a machine-readable format, language corpora were assembled and analyzed B.C. (before computers) by numerous language luminaries, such as Samuel Johnson, Alexander J. Ellis, Joseph Wright, James Murray, Harold Orton, and Sir Randolph Quirk, with application to grammatical, lexicographical, and dialectological endeavors (see Francis, 1992, for details). Thus, when working on entries for his *Dictionary of the English Language*, published in 1755, Samuel Johnson collected a large, handwritten corpus of illustrative literary, philosophical, and scientific examples (ca. 150,000 for ca. 40,000 entries) with the goal of capturing and recording the contextual riches of the collected texts in addition to their linguistic significance. Later, field and structural linguists, such as Franz Boas, Edward Sapir, Leonard Bloomfield, and Kenneth Lee Pike, adhered to the principle of basing studies on samples of attested observable data (McEnery, Xiao, & Tono, 2006). Although early "corpora" consisted of slips of paper, the work of the scholars collecting them was conducted in what we can identify today as the spirit and philosophy of qualitative corpus analysis.

The emergence and firm establishment of corpus linguistics as a methodology, in its modern, computer-based form, are associated with the groundbreaking efforts of W. Nelson Francis and Henry Kučera in developing the Brown Corpus of English in the 1960s. Their compilation of a 1-million-word corpus (an impressive size at the time of its first release

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in 1964) paved the way for quantitative corpus research but also undeniably created the foundation for methods underlying the modern approach to qualitative corpus analysis. Thus, the Brown Corpus was not compiled as a bank of unconnected words or sentences but rather was designed to include 2,000-word samples of meaningful, cohesive discourse, which were chosen on the basis of their representation of a wide range of diverse styles and varieties of prose. Although primarily syntactic, the tagging system taxonomy applied to the corpus was a step forward from raw corpora in that it illustrated the possibilities of carrying out more refined linguistic and metalinguistic analyses through corpus encoding. In terms of corpus retrieval options, the Brown Corpus employed a variable-length record format, allowing researchers to use word + context as criteria to retrieve not only isolated word forms but also full-sentence citations. These characteristics reflect the most basic utility requirements for a properly compiled corpus suitable for qualitative analysis.

Since the 1980s, the field of corpus linguistics has been dominated by quantitative approaches fueled by the development and propagation of super-corpora, such as the British National Corpus (BNC; 100 million words), the Collins Birmingham University International Language Database (COBUILD; 525 million words and growing), and the Cambridge International Corpus (CIC; 900 million words). At the same time, smaller, parallel, second-wave corpora have been springing up in the form of specialized databases designed by qualitative corpus linguists for meticulous, in-depth exploration of select linguistic phenomena or language varieties. Such corpora range from published collections of 1 million to 3 million words (Helsinki Corpus of Historical English; Michigan Corpus of Academic Spoken English [MICASE]; International Corpus of Learner English [ICLE]) to smaller and highly specialized corpora, such as the Manuscript-Based Diachronic Corpus of Scottish Correspondence or the Corpus of Written Creole (see Beal, Corrigan, & Moisl, 2007a, 2007b). A review of most recent qualitative research studies reveals a growing trend of conducting in-depth analyses on small, scrupulously collected samples of language in a specific context, which enable researchers to concentrate on the fine details of linguistic interaction and then to relate these details to the specifics of the speech event and to the larger community of which they are a part (Waugh, Fonseca-Greber, Vickers, & Eröz, 2007). The prospects for conducting thorough and multifaceted qualitative corpus investigations are looking even brighter with the emergence of multimodal corpora which allow for automatic analysis of not only speech but also such communication modalities as hand gesture, facial expression, body posture, and so forth (Kipp, Martin, Paggio, & Heylen, 2009).

Methodological Foundations

Qualitative corpus analysis is dually informed by the tradition of qualitative linguistic research as well as by research methods specific to corpus linguistics. The methods and principles for conducting qualitative corpus analysis are summarized below.

Corpus Design

A corpus suitable for fine-grained linguistic analysis should consist of complete, naturally occurring texts (oral or written) whose origins and provenance are well documented (see Sinclair, 1996). The requirement for naturally occurring speech acknowledges the importance of analyzing actual, authentic, and attested data, as opposed to invented examples. The focus on complete texts and the importance of social and communicative context in analyzing language is central to qualitative corpus analysis and the qualitative research paradigm in general, as "the context plays a part in determining what we say; and what we say plays a part in determining the context" (Halliday, 1978, p. 3). Therefore, it is expected that texts are carefully selected to offer a satisfactory representation of

modalities, genres, discourse communities, settings, or other language varieties, or all of these, that the corpus is designed to reflect.

Corpus Markup and Annotation

Corpus markup represents an important method of documenting the aforementioned descriptive "metadata" pertaining to the collected linguistic samples. Corpus markup is carried out by inserting standardized codes or tags in each of the documents of a raw corpus, with the codes kept separate from the corpus data per se. A number of markup schemes have been developed for encoding such specifications as document-wide information (document length, distributor, date, etc.), structural elements (e.g., chapter, titles, headings), and subparagraph structure (e.g., quotations, abbreviations, terms).

Annotation is a corpus-encoding method similar to markup, except that the former involves the encoding of linguistic information (for in-depth discussion of corpus annotation, see Garside, Leech, & McEnery, 1997). Corpus annotation can be characterized by varying degrees of specificity and may address different areas of linguistic analysis, such as part-of-speech tagging (the most common type); lemmatization; parsing; morphological, phonetic, prosodic, pragmatic, semantic, discourse, and metaphorical annotation; and error tagging. The latter types of annotation and error tagging are more commonly associated with qualitative corpus analysis research, because of the complex manifestations of the linguistic phenomena they cover. For example, differences between teasing and verbal dueling, discursive construction of hip-hop identity, or comparisons of television dialogue with natural conversation strategies (Partington, 2006; Ädel & Reppen, 2008) are contextualized phenomena not immediately observable on the surface or available for automatic retrieval from raw texts, because their linguistic instantiations are realized across morphemes or even thousands of words of running text. Various part-of-speech taggers are available for automatic annotation of large quantities of data, but when the encoding of finer linguistic categories characteristic of qualitative analysis requires a greater capacity for subtle judgment and the drawing of inferences, which are often cornerstones of rich and thorough qualitative investigations, manual annotation must be implemented by a human encoder. Accuracy and consistency are crucial factors for ensuring the reliability of the largely interpretive process of corpus annotation. Such solutions as development of a coding manual as a reference, thorough descriptions of the codes, instructions for applying these codes, and flowchart-style decision algorithm trees to assist coders are being utilized to minimize any arbitrary and individual variation in the manual annotation of complex phenomena.

Data Retrieval

The drudgery of painstaking corpus markup and annotation during qualitative corpus analysis starts paying off at the stage of data retrieval. The more complex the nature of the analyzed phenomena, the more corpus utility depends on the proper compilation and annotation of the corpus prior to carrying out the query; for this reason, corpora compiled for qualitative corpus analysis are typically conceptualized and designed with fairly specific research goals in mind. Various retrieval software applications are available for processing corpora, that is, for searching through it for particular words or surface structure, for displaying parts of it, or for analyzing specific linguistic features (e.g., WordSmith Tools, Mono Conc Pro, and XAIRA). While such programs can operate on plain text files, they take full advantage of annotated corpora, allowing for retrieval of all instances of surface structures containing the target tag(s) in the sampled corpus within a few seconds. Data searches can be as sophisticated as the annotation scheme applied to the corpus data.

The capabilities for automatic data retrieval during qualitative corpus analysis enable the scholarly community to replicate searches, with the purpose of reproducing and verifying outcomes of linguistic investigations, when corpora are publicly available and corpus markup, annotation, and problem-oriented tagging schemes are made available along with the published corpus. This is a significant benefit for a qualitative methodology, as qualitative approaches are often criticized for the difficulty of scientific reproduction and verification of their analyses.

Data Interpretation

Qualitative corpus analysis is a relatively new research enterprise with unique methods; yet at the same time, it draws on a variety of previously established methods of linguistic enquiry. Text selection, corpus size, markup, and annotation schemes are typically predetermined in qualitative corpus analysis before corpus compilation and are informed by such qualitative methodologies as narrative inquiry, genre studies, (critical) discourse and conversation analysis, ethnography of communication, contrastive analysis, and semantic and pragmatic analysis. The methodological merger between qualitative corpus analysis and "traditional" qualitatively oriented approaches is organic, in that they are oriented toward "telling the story" by accounting for the richness of the contextual factors that situate quantitative findings in the ecology of human communication. The merger is also mutually beneficial. On the one hand, without the insights accumulated by qualitative linguistic methodologies from various interdisciplinary areas over the last century, corpus methodology alone would lack the sophistication of the methodological apparatus, as well as the subject matter base for describing and interpreting the complex nature of human communication. For these reasons, in qualitative corpus research, corpus evidence is often supplemented with further experimental data (interviews, self-reports, elicitation, etc.), introspection, and inventions (see Chafe's principles, 1992). On the other hand, non-corpus-based qualitative approaches are typically constrained by rather limited size of text and a painstaking approach of accounting for each individual example of analyzed phenomena every time data analysis is conducted, whereas qualitative corpus analysis methodology creates affordances for (collaborative) compilation of larger data sets; computer-aided storage, annotation, and automatic retrieval; and replication and sharing of empirical evidence.

Although qualitative corpus analysis is often construed as *not* being concerned with frequencies and statistical classification of linguistic features identified in the data, the value of mixing qualitative and quantitative approaches to corpus research is uncontestable. Rich insights that stem from qualitative corpus analysis can serve as a precursor for quantitative approaches, allowing for quantification and classification of the linguistic forms, that is, for generalizing the findings of the qualitative analysis of a sample corpus to a larger population (Schmied, 1993). Or, vice versa, the results of quantitative corpus analysis can be explicated and illustrated through the interpretive power of qualitative methodology beyond the bare statistics of occurrence. In practice, qualitative corpus analysis is almost invariably used alongside quantitative approaches.

Practical Applications

A number of subfields of linguistics have benefited significantly from the application of insights and findings that stemmed from qualitative corpus analysis investigations. Corpora designed and executed in accordance with the aforementioned principles of qualitative corpus analysis methodology have had a major impact in the areas of sociolinguistics, discourse, pragmatics, semantics, and forensic linguistics. The field of lexical studies is

a particularly robust example: Modern dictionaries are able to offer significantly more precise, comprehensive, and up-to-date lexical entries because lexicographers have gained access to vast yet methodically annotated corpora, which enables them to tease apart and illustrate usage differences attributed to the wealth of contextual and interpersonal variables. Similarly, grammarians routinely rely on corpora both to verify probabilities of occurrence of grammatical elements in quantitative terms and to qualitatively hone, illustrate, and fine-tune grammarians' claims. Today, major publishing houses support corpus development and the publication of corpus-based dictionaries, grammars, and reference books (e.g., see COBUILD's extensive catalogue of text-based and electronic dictionaries and reference materials).

Qualitative corpus analysis has revolutionized the field of language education by providing an empirical basis for intuitions about what authentic interactions look like and which language structures, strategies, and patterns should be highlighted in language courses and analyzed for effective pedagogical treatment (O'Keeffe, McCarthy, & Carter, 2007). Corpora comprised of cross-sectional and longitudinal samples of learner speech have allowed second language (L2) language researchers to investigate the dynamics of L2 development at different proficiency levels and with regard to such variables as distance and transfer effects between first language (L1) and L2, instructional context, and age of acquisition; accomplishments in this area are exemplified in the prolific work of Sylviane Granger and her associates (2002 and elsewhere).

Conclusions

Qualitative corpus analysis is a methodology that has made a significant contribution to language studies by enabling researchers to access, highlight, and methodically explore attested linguistic phenomena that range from frequent to rare, simple to complex, and easily discernible to stretched over thousands of words. Fueled by technological innovation, informed by the breadth of multimethod approaches, and built upon the successes of various subfields of linguistic research, qualitative corpus analysis offers a unique and promising path to the continued discovery of the complexities of human communication, with richness, precision, and appreciation for its multifaceted ecology. In the future, the influence and growth of qualitative corpus analysis are likely to be spurred by both the "social turn" in many subfields of linguistics, favoring in-depth, contextually grounded methodological approaches to data analysis, and breakthroughs in computer technologies, alleviating the laboriousness of the processes of manual corpus compilation and retrieval.

SEE ALSO: Corpora in the Language-Teaching Classroom; Corpus Linguistics: Overview; Corpus Linguistics: Quantitative Methods; Multimodal Corpus-Based Approaches

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Qualitative Language for Specific Purposes Research

JOHN FLOWERDEW

The majority of the languages for specialized purposes (LSP) movement literature have been developed in the context of English. While there is considerable literature on other languages, for example, French, German, and Spanish, because of the international role of English as a lingua franca, the greatest interest has been in that language. Another entry would be required in order to deal with the non-English research.

The concept of specialized language and, following that, English for specific purposes (ESP) as a pedagogical endeavor, developed out of work by Halliday and his colleagues in the 1960s on language register (Halliday, McIntosh, & Strevens, 1964); register being defined as a language variety used for a particular purpose or in a particular social setting. Some early ESP work was quantitative in nature, but Widdowson (1978) was critical of this sort of quantitative analysis, arguing that linguistic form by itself does not give an indication of communicative function. Widdowson, accordingly, argued for a more functional orientation, at the same time insisting that language needs to be analyzed as discourse (i.e., above the level of the sentence) if form–function relations are to be identified. At about the same time, work was also conducted at the University of Washington on *rhetorical functions*, the language of, for example, description, classification, definition, comparison and contrast, and cause and effect in technical language, which again insisted on the need for linguistic description to look above the level of the sentence (see Trimble, 1985, for a summary of this work).

In a further development, a study by Tarone, Dwyer, Gilette, and Icke (1981) narrowed the focus of analysis further, limiting itself to considering one discipline, astrophysics; one genre, the research article; and one linguistic feature, the passive, the assumption being that the study of language variation cannot take the broad sweep that quantitative register analysis took, but must be limited to specific uses in specific contexts. In addition, Tarone et al. (1981) introduced a specialist informant, an astrophysicist, to the research, in order to obtain an "insider" interpretation. The use of specialist informants in ESP research has since become common, as has the "discourse-based interview," where specialist writers are invited to comment on their texts. Hyland's (2000) more recent work on disciplinary discourses is a prime example of the use of such interviews, in his case to support more quantitative corpus-based analysis.

The next, and still prevalent, approach to language description for ESP was genre analysis (Swales, 1990; Bhatia, 1993). Early work using this approach focused on determining communicative purposes of genres, as manifested in staged "moves" and how these purposes were determined by discourse communities (insiders regularly using the genres). This work typically focused on more formulaic and predictable genres such as the research article and the business sales letter. Probably the best known study was that of Swales (1990), where he analyzed the introductions to research articles into three communicative moves. The overall purpose of the introduction, Swales claimed, is to create a research space (hence the term CARS model as it is often referred to), the three moves (each with associated steps, or submoves) being: establishing the field, establishing a niche, and occupying the niche.

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More recently, under the influence of American composition studies and the "new rhetoric," or "rhetorical genre studies," greater emphasis has been put on the unpredictable nature of genres and the need in ESP to pay more attention to features external to the actual text, such as how genres function in genre networks, how genres often mix one with another, how they may vary according to discipline or profession, how they can be manipulated to rhetorical effect, and how they change over time. Whereas ESP approaches to genre are primarily text-oriented, new rhetoric researchers use more ethnographic techniques. Related to the "rhetorical genre studies" approach, Swales (1998) developed what he called "textographies," a hybrid approach involving both text analysis and ethnography based around texts.

As a result of more complex conceptualizations of genre, pedagogy has moved from a formulaic matching of moves and linguistic realizations to a more broadly based pedagogy involving contextual as well as linguistic analysis. Flowerdew and Wan (2010), based on combined naturalistic studies of how genres are created by accountants and how these genres are realized linguistically, argue for an ESP approach to genre which takes both the contextual and the linguistic dimensions into account, Flowerdew and Wan arguing that the combined value of the two approaches is equal to more than the two parts taken separately. In more recent work on genre, in a series of articles and using qualitative case-study methods, Cheng (2007) has started to investigate systematically the acquisition of genre in so-called genre-based pedagogy classroom contexts.

Although genre has been the most influential area of research and application for ESP in recent years, other approaches have also been developed. One such approach is contrastive rhetoric, where rhetorical differences between different languages and how features in the first language may affect the way individuals may express themselves in the second language (L2) is the focus of enquiry. This approach has, indeed, a much longer history than genre analysis, going back to the 1960s. After a period during which it fell out of favor, it has now come back into fashion. Considerable LSP research has been conducted using this approach, in Europe, in particular. Genres and languages/cultures which have been investigated include conference abstracts written by Ukrainians, research article introductions written by Spaniards, argumentative essays written by Eritreans, and research grant proposals written by Scandinavians. Most of this research, it should be noted, has been conducted in the area of academic discourse.

Another approach which has been used to investigate academic discourse, in particular, is naturalistic enquiry. Here, the emphasis is less on the actual language used and more on the beliefs, values, attitudes, and behavior which underlie such use. Using ethnographic techniques, such as (participant) observation, interview, audio, and video recording, the goal in this type of research is to develop "thick descriptions" which can be developed into explanatory interpretative accounts. Such analysis is usually based on prolonged engagement with the research participants. In one study, Flowerdew and Miller (1995), on the basis of a naturalistic study of Western university lecturers and their Hong Kong Chinese students, proposed a cultural model for L2 lectures consisting of four dimensions: ethnic culture, academic culture, local culture, and disciplinary culture. In a rather different context, South Africa, using interview data and pieces of student writing, Angélil-Carter (1997) analyzed a student's investment in prior discourses and the way these discourses hindered and facilitated his acquisition of written academic discourse. Prior (1998), in a much quoted study, used ethnographic methods to study how graduate students socialize themselves into a discipline through their writing. One important benefit of naturalistic research such as this is pedagogic, the assumption being that a better understanding of the motivations and behavior of the participants in the selected sites of engagement can feed into better pedagogy. However, researchers are careful not to make broad generalizations on what are situated studies.

While the work reviewed thus far has been descriptive, explanatory, and interpretive—influenced by work in critical theory and critical pedagogy—a certain element of criticality has entered the field. An early example of such work is that of Benesch (2001), who argued that needs analysis, which has always been a pillar of ESP practice, should incorporate what she referred to as "rights analysis." Rights for Benesch are political and negotiable, while needs may not be. Benesch (2001), in fact, applied critical pedagogy to the whole EAP (English for academic purposes) enterprise, highlighting the latter's roots in "pragmatism." Benesch's position is that students should be encouraged to participate in the setting of their curriculum. In terms of research method, Benesch's ideas are developed around her own experience as an EAP teacher in a New York university. Prior to Benesch, Pennycook (1997) had laid the ground for a broader critical approach to EAP, questioning the "pragmatic" credentials of the whole EAP enterprise and arguing that it may be culturally intrusive and hegemonic of Western values. His ideas were debated in an exchange of views with Allison (1996), who argued in support of the more pragmatic approach.

Another area of ESP research that has been receiving a lot of attention recently is that of English for research and publication purposes (ERPP). This research acknowledges the fact that many researchers and postgraduate students need to publish the results of their work in international journals published in English and that this represents a particular challenge for users of English as an additional language. Researching these issues has mostly taken the form of naturalistic enquiry. Following a large-scale survey and in-depth interviews concerning these issues in Hong Kong, Flowerdew (2000) followed a young scholar in his efforts to achieve publication of his manuscript, analyzing the text of the multiple drafts of the manuscript, the correspondence with editors and interviewing the research participant. Similar work has been done by Li in the context of Mainland China (e.g., Li, 2006) and in the European context by Lillis and Curry (2010).

Not developed within the context of ESP research, another approach to address issues of academic reading and writing has developed in the United Kingdom, that of "academic literacies." The particular emphasis of this approach is on writing (and reading) as social practice and as shaped by the context in which it is created. Although not normally considered as part of ESP, this approach nevertheless has a great deal to offer to that field, in its qualitative case study approach and in its focus on the situated aspects of language more than the language itself.

Perhaps because those working in universities are more likely to do research than those working in other professional spheres, most ESP related research has been conducted in EAP. Nevertheless, a body of research of relevance to English for occupational purposes (EOP)—particularly business English—has been developed alongside the more mainstream ESP literature (see Bargiela-Chiappini, Nickerson, & Planken, 2007, for review). Much of the early work in the 1980s and 1990s focused on the business letter. More recently attention has turned to other genres such as e-mails, mission statements, spoken presentations and, in particular, business meetings. Given the increasingly international nature of business, a considerable amount of work has gone into intercultural issues and interactions, Scandinavian business schools providing a lot of the impetus for such work (Bargiela-Chiappini et al., 2007).

At the beginning of this review it was stated that the greatest amount of literature in LSP was to do with English and has been in response to the tremendous expansion of that language as an international lingua franca. This short entry has tried to give an idea of the scope of this research. With the forces of history and economic power moving eastwards, it is quite possible that there will be an increasing demand for Chinese to develop in a similar direction. For the moment, though, English remains preeminent.

SEE ALSO: Critical English for Academic Purposes; English for Academic Purposes; English for Business; Genre and Discourse Analysis in Language for Specific Purposes; Language for Specific Purposes Research Methods

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Qualitative Literacy Research

RUTH HARMAN

Qualitative literacy research, developed in the fields of anthropology and sociology, is often defined as a research approach that focuses on interpretation; on how people interact with and make meaning of texts in particular social and cultural contexts. However, such a definition does not capture adequately the complex research process of a qualitative literacy study. Specifically, when conducting research, qualitative researchers need to have specific views on what literacy is (ontology), how it is structured and constructed (epistemology), and how it can be analyzed (methodology). In deciding upon a particular interpretive paradigm, often informed by interpretive, critical, or poststructuralist orientations to literacy, researchers are also influenced by the lens and sociohistorical traditions of their interpretive community (Kamberelis & Dimitriadis, 2005).

Similar to the trend in social sciences and humanities, qualitative literacy research has become an increasingly popular approach among second language researchers over the past thirty years. Qualitative research strategies in applied linguistics now include ethnographies, case studies, diary studies, narrative analysis, and discourse analysis among other approaches. Through these methodologies, second language researchers explore the subjective and social experiences of multilingual members of cultural communities as they interact with written or oral texts and other related semiotic systems. Because the majority of recent research in the field has been undertaken from sociocultural and critical perspectives of literacy, this entry provides a brief history of the emergence of these approaches along with a discussion of literacy studies in applied linguistics and related fields.

Literacy as Social Practice

In a seminal study about literacy studies, Street (1984) divided research into two broad and competing categories. In the first domain, he critiqued research which conceptualized and investigated reading and writing as "autonomous" mental processes with little focus on how they were embedded in particular social practices. This cognitive-based perspective still dominates other perspectives in second language literacy and language acquisition journals. Through experimental, quasi-experimental, or longitudinal case studies, AL researchers investigate issues such as how crosslinguistic factors or code switching influence the reading or writing proficiency of second language learners.

In the second category, Street placed research, including his own anthropological work, which subsumed the cognitive aspects in a larger exploration of the social and ideological factors integral to literacy practices. In other words, studies about reading and writing events involved an investigation of the larger social "Discourses" (i.e., cultural ways of knowing, thinking, and doing), which were shaped by sociohistorical factors and circulation of power (Gee, 1990). Although recent literacy researchers have questioned the overarching focus on the local in this view of literacy as social situated practice (e.g., Brandt & Clinton, 2002), the approach was and still is highly influential in generating a large number of ethnographies, case studies, and other research strategies in AL and education.

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New Literacy Studies

To explore how oral language and other semiotic systems (e.g., drawing) functioned as integral elements of situated and organized literacy practices, qualitative researchers in the late 1970s and early 1980s began to draw from methodologies of sociolinguistics, ethnography of communication, interactional sociolinguistics, and discourse analysis. Particularly influential in education studies and applied linguistics, ethnography of communication provided researchers with strategies to analyze how social discourse socialized children not only into a system of language use but also into the cultural assumptions, values, and purposes of a specific community (e.g., Cazden, John, & Hymes, 1972).

Heath (1983) used this analytic approach in her seminal longitudinal study *Ways with Words* to investigate how children in three discourse communities in North Carolina were socialized into making meaning of texts in culturally divergent ways, some of which were misunderstood and silenced in school. Implications from Heath's study pointed to the importance of validating community literacy practices in school contexts. Informed by her approach, second language researchers explored the mismatches between home and school sociolinguistic norms and interactional practices for bilingual children.

Early sociocultural literacy studies such as Heath's were also highly influential because they demonstrated how school literacy was only one of many ways that cultural groups used texts for organized social purposes. This "deschooling" of literacy paved the way for a proliferation of ethnographies and case studies on academic, workplace, prison, online, and youth literacy practices. Broadly referred to as new literacy studies (NLS), researchers explored how literacy practices differed across and within social domains, how they interacted dialectically with institutional and societal discourses, and how individual users and groups appropriated and resisted them (Gee, 1990; Barton, Hamilton, & Ivanič, 2000). For example, Harklau's (2000) ethnographic study compared how the same language learners were afforded a different set of literacy practices (e.g., curricula and classroom discourse) and social identities in their last year of secondary school and first year of community college. The study also highlighted how the institutional representations of immigrant students, conveyed through institutional and classroom practices, were appropriated and recreated by the students in one context and actively resisted in the other.

Multiliteracies

In the mid-1990s, with the advent of increasingly complex technologies of communication, the New London Group (1996) published a seminal article on multiliteracies, which encouraged researchers and educators to conceptualize literacy as a dynamic set of social semiotic processes that involved multiple modes (e.g., linguistic, visual, spatial, kinesthetic), media, and discourse communities. In classroom research, literacies often ignored in previous research (e.g., home, digital, personal, and community practices) were now investigated to see how the nexus of knowledge bases influenced and informed students' learning experiences.

Research explored, for example, how learners "redesigned" elements from popular media, graphic novels, and comic books for their own purposes. Dyson's ethnographic studies (e.g., 2003) showed how early elementary school children remixed voices from community, home, and popular media into their drawing and writing, when supported to do so by the permeable curricula of their teachers. On the other hand, Duff's (2004) discourse analysis study found that second language learners in two Canadian high school classrooms

lacked the necessary cultural and linguistic background to understand the hybrid classroom discourse that included multiple references to local popular culture. In other words, the interweaving of popular and instructional references in classroom discourse served as a dynamic third space for local students, yet as a marginalizing tool for immigrant students.

Research also explored the hybrid identities enabled by digital literacy practices such as online discussion forums, anime fan fiction, interest-based e-mailing lists, virtual worlds, and other participatory web activities. In several qualitative case studies, Lam (e.g., 2009) found that Asian immigrant youth, who had difficulty communicating in school, strategically redesigned an array of semiotic resources in digital contexts to expand their transnational communities and social identities. Similarly, Black (2005) showed how the multilingual and multicultural nature of anime fan fiction provided second language learners with the opportunity to fully participate and act as cultural resources for other fan fiction writers.

Academic Language and Literacies

In cognitive-based research, academic literacy and language are often treated as separate autonomous processes with clear developmental steps that can be measured. In sociocultural studies, on the other hand, academic literacy is conceptualized in ecological ways that often include exploration of cognitive, linguistic, out-of-school, personal and academic elements. For example, linguistics has played an increasingly important role in literacy research since the 1980s. Some of the most influential linguistics studies in K-12 contexts have been informed by systemic functional linguistics (SFL), which show how academic discourse knowledge is construed through use of a particular range of linguistic and structural choices that differ according to register, purpose, and audience. Schleppegrell (2004), for example, analyzed the patterns of meaning in science discourse that build description of natural phenomena through accumulated use of grammatical metaphor and tight clause cohesion. In other words, academic literacy is conceptualized and researched as a semiotic process.

Perspectives on what constitutes academic learning also vary in recent research. For example, researchers informed by sociocultural theories of language and literacy investigate how students' understanding of academic concepts is mediated and shaped by the complex interaction of classroom discourse, curriculum resources, and past experiences. Hawkins (2004) found that the agency, personal histories and cultural tools of two kindergarten English learners led them to negotiate a classroom ecological system in ways that provided them with differential access to school literacies. Also informed by theories of language socialization, researchers have investigated how second language learners are facilitated and constrained from becoming full literate members of different content literacies, depending on whether the hidden cultural assumptions and norms of the classroom discourse are made explicit or not.

In recent research, exploration of academic content areas also has been informed by a multiliteracies perspective. Moje et al. (2004), for example, found that the community and home funds of knowledge of middle school Latino students in Detroit mediated understanding of scientific concepts. For example, their parents' occupations provided them with lived knowledge and understanding of issues related to air pollution and quality. However, the researchers also found that these sources of knowledge remained hidden or silenced in classroom discourse. The authors, along with other researchers informed by a similar perspective on literacy, call for a third space that recognizes diverse funds of knowledge as integral elements in content literacy classrooms.

Critical Literacy Research

Although the term "critical" is used in divergent ways in qualitative literacy research, researchers share some basic tenets. First of all, critical researchers see literacy practices as having an ideological orientation, which means that they are shaped by the cultural values and assumptions of a particular "Discourse" (Gee, 1990). Based on this perspective, researchers investigate how and why the sociohistorical norms of institutional literacy practices such as those in education or medicine privilege some social groups and marginalize others.

Through research strategies such as critical discourse analysis, critical researchers have explored issues of resistance, resilience and power relations as they relate to literacy practices embedded in particular institutional discourses. In an institutional ethnography and critical discourse analysis study, for example, Gebhard (2005) showed how the organizational structure of schools and curricula in a post-Fordist California school system reflected and enacted larger social discourses that attributed marginalized status to English learners. Similarly, studies by Gutierrez and her colleagues used discourse analysis to investigate the social heteroglossia in school classrooms. Gutierrez, Rymes, and Larson (1995) analyzed how an urban school teacher exhibited a scripted and fixed notion of student/teacher identities in his interactions with his culturally diverse students and how the students, in turn, constructed an oppositional script that had little room for negotiation.

Along with their questioning of the discourses and ideologies underlying particular literacy practices, critical scholars often feel they need to contribute to improved social equity for the participants in their research studies. This belief in the potentially transformative nature of research has led to new ways of researching literacy such as participatory action research (PAR). PAR studies have documented how students designed and implemented social action research that emerged from their own interests, and not from questions raised by outside researchers or by teachers.

Poststructuralist Literacies

In a seminal article, Brandt and Clinton (2002) critiqued NLS researchers for an overemphasis on social issues in situated literacy events without accounting for the circulation of power from local to global contexts. The authors recommended that literacy be theorized as an actor or object that is appropriated by users in specific ways but whose meanings and purposes exceed the local articulation.

In recent second language research, especially in the context of digital and transnational studies, literary practices have been conceptualized as developing through a complex interweaving of cultural flows. For example, Pennycook (2007) explored how the transcultural flow of hip-hop involved a shunting and shifting of the form in dynamic ways when picked up by local users in locations as distant from one another as Senegal or Australia. The moves among these cultural appropriations led to a constant remixing, borrowing, and blending of languages, cultures, and identities.

Other poststructuralist studies deconstruct tidy categories in second language and literacy studies such as questions of attitude and motivation. For example, in her ethnographic study Norton (2000), pushed back against what she perceived to be too narrow a definition of motivation and identity in theories of second language acquisition (SLA). Informed by feminist poststructuralist theories of identity and language, she showed how the language learning of a group of immigrant women was shaped by their subject positioning in particular social and cultural contexts.

The reflexive turn in critical and postmodern research has also led to epistemological divides in qualitative approaches. Some researchers integrate postmodern critiques and notions of representation with traditional modes of qualitative inquiry. Others use alternative forms such as performance and auto-ethnography to research and represent the fluidity and multifaceted nature of identity and the problematic dynamics between researcher and the researched.

Conclusion

Over the past forty years, research on situated, academic, digital, and translocal literacies has galvanized researchers into exploring issues of meaning making, social identity, and text/context relationships in increasingly nuanced and innovative ways. In applied linguistics, however, a key challenge for researchers is the continued favoring of quantitative over qualitative research in the field. Qualitative researchers still tend to be defined and judged in binary opposition to quantitative researchers. They also tend to have more difficulty in obtaining national funding if their work assumes a critical or poststructuralist orientation to literacy.

Despite these challenges, qualitative literacy researchers continue to explore exciting new directions in the field. To address social equity, for example, critical participatory action research incorporates student voices and funds of knowledge as an integral element in their research design and implementation. In addition, new studies on immigrant and transnational identities from poststructuralist and critical feminist perspectives push the boundaries on how to conceptualize and research issues of language, power, and culture.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Critical Theory and Literacy; Ethnographic Approaches to Literacy Research; Multiliteracies in Education; Poststructuralism

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Qualitative Methods: Overview

PHIL BENSON

Introduction

Discussions of qualitative research usually begin by contrasting qualitative with quantitative approaches. Quantitative research may best be defined as research that relies on the reduction of data to numbers and statistical argument, and typically aims to produce knowledge that holds true of relatively large populations. In applied linguistics, quantitative approaches are often underpinned by theoretical assumptions about universal language learning processes and the influence of contextual factors such as gender, culture, and sociopsychological differences. Qualitative research in applied linguistics takes many forms and may best be defined as research that relies mainly on the reduction of data to words (codes, labels, categorization systems, narratives, etc.) and interpretative argument. In applied linguistics, qualitative research is also associated with a focus on the individual and the particular in regard to "cases" as subject matter, the visibility of the researcher and the specificity of findings. Whereas quantitative research findings are, in principle, unrelated to the identity of the researcher, qualitative findings are always contingent upon particular processes of data collection, analysis, and interpretation carried out by particular individuals in particular settings.

Historical Background

The rigorous approaches to qualitative research that are typical of published work in applied linguistics today have evolved from the less systematic approaches that prevailed for much of the 20th century. Applied linguistics research first became systematic through the adoption of quantitative methods from psycholinguistics and sociolinguistics in the 1960s and, with the rise of second language acquisition research in the 1970s, quantitative approaches became the norm. From the mid-1990s onwards, this norm has been challenged by qualitative research, although quantitative studies continue to dominate in purely numerical terms. More recently, there has been greater acceptance of the legitimacy of qualitative research and a growing interest in "mixed-methods" approaches that combine qualitative and quantitative methods.

In principle, a qualitative study represents one researcher's interpretation of a particular case or phenomenon, but the reader must also be able to see that this interpretation is based on rigorous treatment of data. The guidelines for qualitative research papers published in *TESOL Quarterly* from 2003 onwards were a significant landmark for qualitative research in applied linguistics (Chapelle & Duff, 2003). Yet there remains no single well-defined approach with an exclusive claim to the title "qualitative research." In addition to referring generally to research that uses qualitative methods, the term is also used to describe approaches such as ethnography and conversation analysis, which were well established before the concept of qualitative research came on to the scene. It is also used at times to describe approaches such as case study, discourse analysis, and action research that do not necessarily exclude quantitative methods. In applied linguistics, moreover, while some writers explicitly identify their research as "qualitative," many more simply

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use qualitative methods without using the this term (Benson, Chik, Gao, Huang, & Wang, 2009).

Applied linguistics has traditionally lagged behind other areas of the social sciences in the adoption of new research methodologies. The qualitative–quantitative "paradigm wars" of the 1970s and 1980s in which new interpretative approaches were seen as being incommensurable with quantitative approaches (Bryman, 2006) coincided with the rise of quantitative methods in applied linguistics. The first applied linguistics research manuals also dealt mainly with quantitative methods and statistical procedures (Brown, 1988; Seliger & Shohamy, 1989) and it was not until the early 1990s that qualitative methods made a significant appearance (Johnson, 1992; Nunan, 1992). Since the turn of the 21st century, it has become routine for research manuals to cover both quantitative and qualitative research, one of the more important recent examples being Dörnyei (2007), while three recent volumes have been devoted exclusively to qualitative approaches (Holliday, 2002; Richards, 2003; Heigham & Croker, 2009). Yet it would be fair to say that the quantitative–qualitative paradigm wars never really reached the shores of our field. While qualitative research was fighting for space in applied linguistics in the 1990s, the social sciences were already in the grip of a "proliferation of paradigms" (Wright, 2006) that is only now beginning to spill over into applied linguistics.

Qualitative Research in Applied Linguistics Journals

In a special issue of *TESOL Quarterly* on qualitative research, Lazaraton (1995) observed that few qualitative studies had been published in applied linguistics journals up to that point. Surveys at the turn of the 21st century, however, showed that the number of qualitative papers increased steadily during the 1990s (Gao, Li, & Lü, 2001; Lazaraton, 2002, 2005). More recent surveys suggest that the contribution of qualitative research papers has stabilized since the turn of the 21st century, and that qualitative papers remain in the minority in most journals (Benson et al., 2009; Richards, 2009). Benson et al. (2009) surveyed 10 international journals from 1997 to 2006 and found that *Applied Linguistics*, *Canadian Modern Language Review*, *Foreign Language Annals*, *Modern Language Journal*, *System*, and *TESOL Quarterly* were the most open to the publication of qualitative research, but that *International Review of Applied Linguistics*, *Language Learning*, *Language Testing* and *Studies in Second Language Acquisition* clearly preferred quantitative studies. The proportion of qualitative papers in individual journals also varied greatly, ranging from 43 percent in *TESOL Quarterly* to 4.5 percent in *Studies in Second Language Acquisition*, although none of the 10 journals surveyed have editorial policies that explicitly favor quantitative or qualitative research.

Benson et al. (2009) estimated that, on average, journals currently devote around 20 percent of their space to qualitative studies. More significantly, they identified more than 450 high-quality qualitative studies, suggesting that the database of studies was increasing year-by-year. This no doubt represents only the tip of the iceberg of qualitative research published as journal papers, book chapters, books, and theses. Journal surveys have also looked mainly at branches of applied linguistics concerned with language teaching and learning. A broader survey of the field would certainly reveal an even greater contribution of qualitative research.

Approaches to Qualitative Research

Commentators vary in their views of the most important approaches to qualitative research in our field. Davis (1995) identified qualitative research almost exclusively with work on language socialization and the ethnography of communication, while Lazaraton (2003) described ethnography and conversation analysis as the two main approaches in the field.

Gao et al. (2001) referred to a much broader range of approaches, including text analysis, ethnography, narrative inquiry, verbal reports, and classroom interaction. Richards (2003, p. 13) discussed seven "core traditions" of relevance to language teaching and learning: ethnography, grounded theory, phenomenology, case study, life history, action research, and conversation analysis, while Heigham and Croker (2009) includes chapters on narrative inquiry, case study, ethnography, action research, and mixed methods. Among these approaches, grounded theory and phenomenology have a very limited presence in applied linguistics, while action research is perhaps underrepresented in published work (Richards, 2009).

One of the difficulties in identifying approaches to qualitative research in applied linguistics, however, is that researchers often draw upon established approaches without necessarily subscribing to their underlying philosophies. Grounded theory, for example, is frequently cited in applied linguistics studies to signal an approach to data analysis, in which themes "emerge" from repeated reading of the data, but usually without reference to grounded theory as a philosophical and methodological approach to theory generation. Benson et al. (2009) also found that less than one third of the papers in their database explicitly identified with qualitative research or a named qualitative tradition such as ethnography or conversation analysis. The remaining two thirds simply used qualitative methods without naming their approach, or described themselves as, for example, "longitudinal," "classroom interaction," or "interview" studies. This points to an eclectic approach to qualitative research that is not strongly driven by philosophical or paradigmatic considerations. Indeed, applied linguistics research is now very often carried out by practitioners on scales that are too small to permit statistical inferences. Qualitative research is increasingly becoming synonymous with small-scale research, for which qualitative methods are the default.

Based on this broader view, it could be argued that case study and discourse analysis, rather than ethnography and conversation analysis (Lazaraton, 2003), are the two main forms of qualitative research in applied linguistics, or rather, that ethnography and conversation analysis now form part of the much larger categories of case study and discourse analysis, from which they are not always easily separated in terms of philosophy or the use of methods. Longitudinal research, think-aloud and stimulated recall, and narrative inquiry also make a small but significant contribution as distinctive qualitative approaches.

The tendency towards eclecticism is also reflected in ideological aspects of qualitative research. For the editors of one major collection in the social sciences, qualitative research is part of a move towards "a social science that is committed up front to issues of social justice, equity, nonviolence, peace, and universal human rights" (Denzin & Lincoln, 2005, p. 13). Lazaraton (2003, p. 3), on the other hand, argued that qualitative research in applied linguistics has no "clear sociopolitical agenda." This is no doubt true of the majority of qualitative researchers in the field, but it is equally true that applied linguists who subscribe to "sociocultural" theoretical frameworks, such as sociocultural theory, communities of practice, social realism, and ecological approaches, have tended to opt for qualitative methods. Croker (2009) also notes how critical theory, critical race theory, and feminist theory have generated research approaches such as critical discourse analysis, critical ethnography, and critical action research. The presence of these approaches in published work is limited, however, and the overall picture is one of a more pragmatic approach to the use of qualitative methods.

Data Collection Methods

In addition to a chapter on qualitative research traditions, Richards's (2003) includes chapters on interviewing, observation, and spoken interaction data, while Heigham and Croker

(2009) include chapters on observation, interviews, open-response questionnaire items, verbal reports and diaries, and discourse analysis. These methods cut across approaches to qualitative research and it is often their use, alone or in combination, that allows us to identify applied linguistics studies as qualitative.

From the perspective of methods, qualitative applied linguistics studies can be divided into two broad types: studies investigating people and social processes involved in language teaching, learning, and use and those investigating the properties of discourse or texts. Adopting the view that qualitative research is essentially concerned with people and social processes, Richards (2009, p. 152) considers that discourse analysis is only qualitative research if it focuses on the "individual or social dimension" of discourse. Around a quarter of the qualitative papers surveyed by Benson et al. (2009) used some form of discourse analysis as their main research method and the vast majority of these were indeed concerned with individual and social dimensions of (mainly spoken) discourse. Qualitative methods, in fact, have been the norm in linguistically oriented discourse analysis since the 1970s, with quantitative corpus-based methods making a relatively late entry into the field. What is of interest here, therefore, is the growing use of discourse methods to investigate processes of language teaching, learning, and use, in particular through emerging approaches such as "microanalysis of classroom discourse" (Zuengler & Mori, 2002), "conversation analysis for SLA" (Markee & Kasper, 2004), and "linguistic ethnography" (Tusting & Maybin, 2007).

A second point of interest is the growing use of multiple data sources in qualitative research. Benson et al. (2009) identified 12 distinct types of data in nondiscourse studies: interview and focus group transcripts; observation records and field notes; samples of student work; audio recordings of interactions; diaries and journals; policy, curriculum, and course documents; think-aloud protocols; stimulated recall protocols; open-ended questionnaire responses; video recordings; course evaluation data; and teachers' feedback on students' work. Around two thirds of the studies drew on two or more of these sources and one fifth used four sources or more. More than 50 different combinations of data were identified, although in many of the multimethod studies the findings section covered only one or two of the data sources. Certain patterns did stand out, however, and to simplify the picture somewhat, we might say that qualitative research in applied linguistics tends to draw on four main sources of data: interviews, audio recordings of interactions, observation records, and samples of students' work. These are used both singly and in a variety of combinations. Interviews and audio recordings also dominate in two senses: they are both the most frequently used sources in data collection and, in multimethod studies, the most frequently analyzed sources in the findings sections of papers.

Data Analysis Methods

Data analysis is perhaps the most problematic aspect of qualitative research in applied linguistics for several reasons. In contrast to data collection, data analysis is often described rather vaguely, if at all. The data discussed in findings sections may also represent no more than a fraction of the data described in the methods section and criteria for selecting the data to be discussed are often left unexplained. Lastly, terms such as "grounded theory" and "conversation analysis" are often substituted for a more detailed outline of data analysis procedures. Ortega and Iberri-Shea (2005) explain similar tendencies in longitudinal research by the constraints of the journal article format and academic pressure to publish articles before long-term projects are completed. A point that could be made here is that the length and format of journal articles has evolved mainly to accommodate quantitative studies. Qualitative researchers are better served by book and thesis formats and by the greater freedom that editors of thematic books are often able to provide.

One striking feature of qualitative research in applied linguistics is the tendency to convert all kinds of data to written form before analysis. Interviews, for example, are transcribed and quoted verbatim. In observation studies, field notes are increasingly replaced by audio and video recordings, which are also transcribed. These practices enhance rigor and transparency, but there is often a tendency, especially in ethnographies and case studies, to formalize procedures and lose sight of the bigger picture of the phenomenon under study. Multimethod studies also tend to prioritize data that are readily convertible to text. Interview and observation, for example, are the most frequently combined data collection methods, but observational data usually play a supplementary role. Findings sections are often built around extracts from interview transcripts, while observational data are used mostly as a source of contextual information. This may well be a consequence of our particular interest in language and text in a field in which, as Richards (2009, p. 159) puts it, "the bedrock exerts a magnetic pull towards linguistic analysis." Qualitative research in the social sciences certainly seems to be less rigorous in regard to the transcription and verbatim quotation of data and more open to interpretative analysis.

Issues of Quality

In her manual on classroom research, McKay (2006) lists nine contrasts between qualitative and quantitative research, including assumptions about the nature of reality, the roles of researchers, the purposes of research, approach to research questions, and a variety of issues concerned with research design and methods. This is, in a sense, a hierarchy of contrasts, in which those at the end of the list are, in principle, conditioned by those at the beginning. From this perspective, qualitative studies do not simply use qualitative methods, but rather use them in the context of a broader qualitative understanding of the nature of reality, the roles of researchers, the purposes of research, and so on. Like many other qualitative researchers, Croker (2009, p. 6) connects quantitative research to the positivist assumption that "there is only one, fixed, agreed upon reality, so research must strive to find a singular, universal 'truth'" while qualitative research is connected to the constructivist view that "each individual creates his or her own unique understandings of the world, so there are multiple constructions and multiple interpretations of reality." At the level of research design and method, on the other hand, Richards (2009, p. 149) identifies studies as qualitative if they are locally situated, participant-oriented, holistic, and inductive. Issues of quality in qualitative research are related, in part, to the fit between these levels of research philosophy and research design.

One noteworthy feature of qualitative research in applied linguistics is its tendency to be influenced by quality considerations that appear to be more appropriate to quantitative studies. Dörnyei (2007, p. 55), for example, observes that when quantitative researchers criticize qualitative research for not following "scientific method" or for having "too small sample sizes," they are essentially saying that qualitative research is not "quantitative enough." In principle, a qualitative study might investigate a single case with the aim of producing a purely interpretative insight into its nature, without any attempt at generalization. Studies of this kind are relatively infrequent in the applied linguistics literature, however, and mainly use longitudinal or narrative methods. The more typical qualitative study covers a small number of cases and involves, at least implicitly, a sample, a set of research questions, and some attempt to generalize based on rudimentary quantification of data. It is widely acknowledged that qualitative research does not preclude the use of numbers. It is less often observed that, once researchers begin to quantify data by, for example, reporting what "most," "some," or "few" of the participants said or did, their research is potentially open to scrutiny according to quantitative criteria.

A debate on this issue, which is yet to be resolved, emerged around the "qualitative research guidelines" that first appeared in the 1994 winter edition of *TESOL Quarterly*, which were initially based on ethnography and criticized for setting up arbitrary epistemological guidelines for would-be authors (Lazaraton, 2003). In the 2003 winter edition, the guidelines were expanded to include separate sections on case study, conversation analysis, and (critical) ethnography. There is a clear intention in these guidelines to raise standards for qualitative research to match those that apply to quantitative research. Yet in a commentary on the guidelines, Shohamy (2004, pp. 728–9) urged researchers to be "cautious that the guidelines do not restrict innovations in research designs by imposing fixed categories and forcing research into sealed boxes." Researchers should, she argued, feel free to "mix and blend different methods in the long journey towards answering research questions." Dörnyei (2007, p. 28) also observes that, despite the importance of rigorous and systematic procedures, "at the heart of any qualitative analysis is still the researcher's subjective sensitivity, training, and experience," while Richards (2009, p. 158) notes that checklists and guidelines are "no substitutes for systematic, sensitive and careful analysis."

While this emphasis on the quality of the researcher is more or less standard among qualitative researchers, it is not yet clear that the field of applied linguistics as a whole is prepared to accept qualitative research on these terms. Arguably, there has also been insufficient attention to issues of quality that are internal to qualitative research, such as the frequent tendency to treat interview or narrative data as factual evidence, rather than as problematic texts co-constructed by the researcher and participants, or the tendency noted above to treat multiple cases as "small samples." It is perhaps worth noting that qualitative researchers in applied linguistics often feel that they are under pressure to make their work comparable to quantitative research in order to get it published. It is possible, therefore, that these issues will only be resolved when the field as a whole acquires a greater awareness of the distinctive contributions to knowledge that qualitative research can provide.

Research Areas, Frameworks, and Themes

The most interesting, but least explored, aspect of the rise of qualitative research in applied linguistics concerns its distinctive contribution to knowledge in the field. What are we now discovering through qualitative research that several decades of quantitative research have failed to reveal? Paradoxically, this is a difficult question to answer straightforwardly, because there is now so much published qualitative research in the field. It can be answered indirectly, however, by looking at the areas of applied linguistics in which qualitative researchers have been most active, the theoretical frameworks to which it is linked, and certain themes that have begun to emerge across different areas.

Among the areas to which qualitative research has made the greatest contribution, migration, classroom research and writing research stand out most prominently. Migration has become a prominent area of applied linguistics research in recent years and has primarily been investigated through the experiences of individual migrants using ethnographic and narrative methodologies. Some of the most interesting and compelling research documents experiences of forced migration, but qualitative methods are also increasingly used in research on short-term residence and study abroad. Classroom research is a well established field that has traditionally embraced both quantitative and qualitative approaches, but it has been given new life in recent years by studies of classroom discourse (often using conversation analysis), case studies of classroom life and community, and qualitative studies of teachers' and students' beliefs and perceptions of what happens in

classrooms. As Richards (2009) points out, qualitative classroom research, among other contributions, has posed questions about the universal effectiveness of methods such as communicative language teaching. Research on second language writing has also benefited from a shift toward qualitative methods, notably in Matsuda and Silva's (2005) collection of papers, which address methodological issues in writing research from mainly qualitative perspectives.

To identify areas in which qualitative research is prominent, however, is to miss the point that qualitative methods now have a presence in virtually all research areas, including traditional bastions of quantitative methods such as language testing. This wider use of qualitative methods is partly related to the emergence of new theoretical frameworks and themes in research. Although the use of qualitative methods does not imply adoption of any particular theoretical framework, the rise of qualitative research in the 1990s went hand in hand with the debate that crystallized around Firth and Wagner's (1997) critique of the "cognitive and mentalistic" orientations of much applied linguistics research. Although Firth and Wagner's critique was not a manifesto for qualitative approaches, its methodological implications were clear, as SLA research was criticized for giving "preeminence to the research practice of coding, quantifying data, and replicating results," giving "preference to experimental settings rather than naturalistic ones," endorsing "the search for the universal and underlying features of language processes rather than the particular and the local," and prioritizing "etic (analyst-relevant) concerns and categories over emic (participant-relevant) ones" (p. 288). More broadly, the adoption of qualitative methods, whether theoretically motivated or not, has been influenced by Lantolf and Pavlenko's (2001) injunction for SLA researchers to treat language learners as "people" rather than "processing devices." In the light of this link with broadly "sociocultural" frameworks, three key themes have developed out of the rise of qualitative research concerned with identity, individual difference, and social context.

Identity has emerged as a key concept in applied linguistics research and is mainly investigated through qualitative research. Concern with identity arises naturally from the treatment of language learners as people and a corresponding interest in the impact of language learning and use on people's lives. Kinginger (2009), for example, documents a shift in research on study abroad from mainly quantitative studies of language proficiency gains to qualitative studies of learning processes in study abroad settings. This research is beginning to tell us more about the ways in which identity factors influence the success of study abroad and its impact on participants' sense of self as multilingual individuals.

By focusing on case studies, qualitative research is also promoting a stronger sense of the individuality of language learners and users. This is leading to a reconceptualization of individual difference, which has traditionally been understood in terms of social categories and psychological traits, as a product of the unique experiences that individuals accumulate over the course of their lives. Narrative inquiry is playing an important role here, as for example in Benson and Nunan's (2005) collection of papers, which use narrative methods to reconceptualize a number of individual difference variables.

Lastly qualitative research is contributing to an enhanced sense of the richness and uniqueness of social contexts for language learning and the social constitution of language processes. From a qualitative perspective, quantitative research tends either to isolate process from their contexts or to treat context as an external influence on behavior. Through qualitative research, on the other hand, we are gaining a better understanding of the language learner and user as a "person-in-context." In qualitative classroom research, for example, we are increasingly seeing learners and teachers as individuals whose identities are constituted within the context of the classroom, which is itself nested within further layers of institutional and social context.

Conclusion

To sum up, qualitative methods first made significant inroads into applied linguistics in the early 1990s. Since that time, they have become an established part of the research scene, although they are yet to, and possibly never will, supplant quantitative methods. Qualitative methods appear both in the form of established approaches borrowed from the social sciences and in the form of a more eclectic use of methods and techniques. Their use is often theoretically motivated, but more often researchers elect for qualitative methods as a practical solution to conducting small-scale research projects. The latter case may also reflect a shift towards the treatment of research participants as "people," which implies, for example, that answers to questions might be better sought by asking participants directly in an interview, rather than through the mediation of items on a remotely administered questionnaire.

The most significant development over the past decade, however, is the emergence of a substantial body of qualitative data-based studies and research texts in the field of applied linguistics itself. The rise of qualitative research in our field was, in part, a consequence of researchers exploring the social sciences in an effort to construct a "transdisciplinary" applied linguistics (Rampton, 1997). Qualitative methods arrived, in a sense, along with the social perspectives that researchers brought back from their explorations. This was, without doubt, a healthy trend, but it has also meant that applied linguists have too often relied upon, or uncritically applied, social science methodologies in their work. While the continuance of the trend towards transdisciplinarity is to be welcomed, the next phase in the coming of age of qualitative methods in applied linguistics will undoubtedly involve the development of new methodologies and articulation of standards that are specific to our field.

SEE ALSO ON QUALITATIVE METHODS: Case Study; Cognitive Constructivism; Computer-Assisted Qualitative Data Analysis Software (CAQDAS); Critical Ethnography; Critical Race Theory and Qualitative Research; Ecological Approaches in Qualitative Research; Emic and Etic in Qualitative Research; English and the Vernaculars From a Postcolonial Perspective; Epistemology and Ontology; Feminist Research; Focus Groups; Grounded Theory and Qualitative Research; Historiography; Institutional Ethnography; Interviews in Qualitative Research; Phenomenology and Hermeneutics; Positivism and Postpositivism; Poststructuralism; Qualitative Corpus Analysis; Qualitative Language for Specific Purposes Research; Qualitative Literacy Research; Qualitative Research on Bilingualism and Multilingualism; Qualitative Research on Information and Communication Technology; Qualitative Research in Language Planning and Policy; Qualitative Research in Rhetoric and Stylistics; Qualitative Sociolinguistics Research; Qualitative Teacher Research; Realism; Researcher Reflexivity; Validity in Qualitative Research; Wittgenstein and Language Games in Qualitative Research

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Qualitative Research in Language Assessment

CONSTANT LEUNG

Introduction

Assessment research addresses a diverse range of issues including identification of disciplinary content for assessment (e.g., subject-based concepts and knowledge in biology or English), principles of assessment, and means of charting students' knowledge and understanding. This entry will look at the heuristic usefulness of qualitative research with respect to these issues in relation to second/additional language assessment. The entry will open with a brief account of the characteristics of qualitative research approaches. The discussion then moves on to a summary report of an exploratory study connected to teacher-based assessment of English as a second/additional language. Some of the issues emerging from this study will form the basis of the concluding remarks which will highlight some of the affordances as well as complexities that qualitative research can generate.

Qualitative Research: Exploring Voices and Actions in Context

In language assessment a good deal of the research and development work draws on quantitative approaches. In quantitative analyses the key concept or theory adopted tends to be used by the researcher to interpret the meanings of individual actions or collective activities deductively. For example, if a theory posits that the length of time spent on studying a language is directly linked to learning outcomes (as indexed by test scores) then one can study this relationship through statistical analysis. At the same time there are many language assessment issues that qualitative research approaches would provide a different kind of analytic purchase. For instance, when a written assignment has been assessed as "satisfactory," or "good" or "60 marks (out of 100)" by raters, we might wish to investigate issues such as how the rubric of marking has been interpreted, what content or text features have been displayed in the student scripts and so on. In other words, what does "satisfactory" mean from the point of view of the raters and test takers?

Bryman (2004, p. 266) suggests that qualitative research in social science has, inter alia, three working assumptions:

- the relationship between theory and empirical investigation is often inductive in that the former emerges out of the latter;
- studying human (inter)action requires an understanding of participant meaning/s;
- the social world is constructed through social interaction, it has no independent thing-like existence.

In the second language education field, as Davis (1995, p. 433) observes, one of the key distinguishing characteristic of qualitative research is that it puts a good deal of premium on "gaining an understanding of the actor's meanings for social action." They use research

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tools such as analysis of relevant documents and texts (e.g., examination rubrics and student writings), communication- and interaction-based analysis (e.g., discourse analysis and focus/discussion groups), ethnography/participant observation, interviews, and think-aloud protocol. In the specialist field of English as a second/additional language assessment researchers have used qualitative research approaches and methods, sometimes in conjunction with quantitative approaches, to investigate a wide range of issues. For instance, Breen et al. (1997) conducted classroom observations and interviews with teachers to study the relationship between assessment framework and pedagogy; Davison (2004) used think-aloud protocols, interviews, and self-reports to study different culturally influenced practices in teacher-led classroom assessment in Australia and Hong Kong; Leung and Mohan (2004) carried out discourse analysis of teacher–student and student–student talk associated with reasoning and decision making in a study of classroom-based formative assessment; O'Loughlin (2008) conducted, among other data collection activities, document analysis, and semi-structured interviews with teaching staff and students on the use of IELTS for university selection; Poehner (2008) drew on classroom discourse analysis to build a case for a Vygotskyan approach to dynamic assessment in the classroom; and Rea-Dickins (2006) combined classroom observation (field notes and video recordings) of pupil–teacher interaction in classroom-based assessment and interviews with teaching staff to investigate the participant teachers' orientation and conduct.

In the following section a brief account of an exploratory study is provided to illustrate the ways in which qualitative research can be used to investigate issues in language assessment.

English as an Additional Language: Exploring Teacher Assessment

In England English-language learners (ELLs) in state-funded schools are expected to participate in regular subject lessons, irrespective of their English-language proficiency. All schoolteachers are expected to assist ELLs to develop their English irrespective of their subject specialisms (see Leung, 2009, for a wider discussion). One consequence of this policy is that there is a very wide range of teacher knowledge and expertise in relation to English as a second/additional language (EAL). As teachers are also assessors of EAL whenever they make judgments on students' performance in face-to-face interaction (often tacitly and nonconsciously), in written assignments, and in formal assessment tasks. Furthermore, when teachers provide feedback to students it can serve a formative purpose to help improve future performance (for a wider discussion on formative assessment, see Leung, 2004; Black and Wiliam, 2006). Therefore it is very important to develop a knowledge of the assessment criteria used by subject teachers when they assess ELLs. The following is a brief account of an exploratory study involving a group of four English (subject) teachers in a highly ethnolinguistically diverse London school (over 75% of the student population were EAL when data were collected in 2005/6). The teachers were Anne (with six years of teaching experience), Janet (25 years), Margaret (3 years), and Sally (25 years) (all pseudonyms).

The data for the empirical explorations are drawn from a set of audio recordings of the four teachers' think-aloud protocols while marking 12 pieces of writing by six ELLs in the spring term 2006. Participation was entirely voluntary. There was no stipulation as to specific topic/assignments, nor was there any requirement to target particular students, other than that the focal students should be in the process of learning to use the English language. In the event, the student work assessed included a variety of written English assignments in Years 9 and 10 (14- and 15-year-olds) covering topics such as short story

writing and summarizing Shakespeare plays. A total of 1 hour and 35 minutes of audio recording was collected. The marking of written assignments primarily served the formative purpose of improving learning, but it also contributed to teachers' knowledge of individual student progress. For reasons of focus and scope only some aspects of methodology and some of the findings are reported here.

In making the audio recordings the teachers were asked to verbalize what they were thinking and "doing" with the student texts, which would include their reading (sometimes aloud) of the texts and assessing them. They were asked not to be concerned with giving any rationale to explain their thinking. In other words, they were requested not to provide any comments or explanations for a non-present and imaginary third party, such as the researcher who would be listening to and analyzing the data. (For a discussion on think-aloud protocols see Ericsson & Simon, 1993, chap. 5; Green, 1998, chaps. 1 and 2; Young, 2005; Bowles, 2010, chap. 2.)

The audio recordings were orthographically transcribed to assist analysis. The recordings were listened to several times initially to form a holistic sense of the participant teachers' comments with particular reference to quality judgments and formative advice (Seidel, 1998), and to identify discourse indices of teaching writing approaches. For the latter task Ivanič's (2004) six approaches to teaching writing were used as a set of terms for coding purposes where appropriate (see Table 1 below). By explicitly citing Ivanič's work it is acknowledged that the description and analysis process was not entered into *tabula rasa*. Indeed in trying to make sense of what was going on, the author had to draw on own experience and knowledge. As Wolcott (1994) suggests, an important methodological characteristic in qualitative research is to be explicit about one's research purpose/s and the ways in which data have been constructed.

After making several "passes" over the recordings, so to speak, Leung was able to notice some of the teacher utterances which seemed to articulate teacher approaches to teaching writing; these were marked out in the transcripts for further deliberation. Utterances that resonated with Ivanič's approaches were coded first. The utterances that had been coded within a particular recording and across different teacher recordings were compared with one another to see if they were multifaceted (e.g., different kinds of skills picked up

Table 1 Teaching writing approaches (adapted from Ivanič, 2004)

Approaches	*Teaching and assessment focus*
Skills	Explicit teaching of rule-governed aspects of written language; focus on accuracy of production/reproduction
Creativity	Implicit teaching drawing on language experience; emphasis on interesting content/style
Process	Explicit teaching and modeling of writing processes; unclear assessment focus, probably some attention to evidence of drafting and revision
Genre	Explicit teaching of genres; emphasis on appropriateness of text types and language expressions
Social practice	Explicit teaching where social contexts and purposes are known; implicit teaching where the classroom is constructed to replicate an outside social environment
Sociopolitical	Explicit teaching of social and political analyses in relation to writing; focus on writing as challenge to existing power relations

by the different teachers in utterances related the skills approach), and if there were utterances which could be interpreted in different ways and could be categorized in more than one way in the light of the overall discourse context. As the analysis progressed utterances which appeared to express teaching approaches that were outside the Ivanič account were also marked. In this phase of the analysis Leung's codings were largely arrived at inductively (although actions were influenced by Leung's knowledge in the relevant fields, for example, Ivanič's framework; in that sense there was an element of deductive reasoning). These additional categories were included in an effort to capture, as Denzin (2002) puts it, the phenomenon under study. Throughout the analytic process there was a good deal of recursive self-conscious examination of the appropriateness of the codings assigned. The overall approach in the analysis was to reconstruct "meanings in data by means of post hoc structuring, categorizing and clarification" (Blommaert, 2001, p. 2). The following are examples of the data which reflect four of the approaches in Ivanič's framework.

Key:
Italics: student text being read out by the teacher (sometimes with incorporating corrections)
(.): brief pause
[text]: inserted information

Skills

Janet (marking a post-work experience report):
I have done my work experience in Lees Garden Centre . . . oh great he's [student] spelled those words right as well that's good . . . *the first day I was sweeping the floor putting the equipment in order* (.) *days after I went to a bridge for construction* (.) *days after* (.) *some days after I like it when I was chopping down a tree. It took me two days* (.) ok he's forgotten his full-stop here.

Creativity

Anne (marking a short story):
at the end I've put a positive comment coz she's obviously worked really hard on it and it is effectively written and ironically because she is English as a second language it is she actually writes English in quite a poetic way erm–.

Process

Sally (marking a piece of character appreciation on Lysander in *Midsummer Night's Dream*):
She [student] starts off um *the character I have been studying is Lysander* (.) *Lysander is a wealthy Athenian gentleman* (.) there are spelling errors and gentleman is split into two words . . . her writing is quite repetitive (.) she's obviously not proof-reading.

Genre

Anne (marking a piece on the comparison of the parent figures in *Romeo and Juliet*):
I am the drudge and toil in your delight act two scene five (.) *it means that she* [the nurse] *is willing to help Juliet in any way that will make her happy so she tries to take Juliet's side over the marriage to Paris but she* [nurse] *can't help changing her mind* (.) *Nurse says I think you are happier in this marriage in this second match* (.) And I've put in there that she needs to point out what part of the play it is in which this happens . . . classic tendency to stick a quote in and not give it any sort of context . . . erm, which isn't an EAL issue particularly it's just a lack of practice at essay writing.

The think-aloud protocols also suggested that the participant teachers were concerned with a number of other issues in student writing not covered by Ivanič's framework:

Student effort and achievement

Sally (marking a short story inspired by *The Signalman* text):

Um . . . no apostrophe (.) I think she [student] is trying to talk in the possessive but she doesn't get that at all (.) but she has worked very hard on this and I'm going to tell her that she is on the right lines and that she has used the topics effectively [students were given a topic list for guidance].

Second/additonal language (EALness)

Anne (marking a short story):

it is late autumn and this morning is clear and white, snow came down last night although it is early morning but there already . . . there are some footmarks out of the window, erm, I've crossed out the *but* because she doesn't need that and I have put already between *are* and *some* and the between *of* and *window* but I have left *footmarks* which we would normally say footprints instead of because there's a limit to how much you can take on board at this stage in a language acquisition.

Success/assessment criteria

Margaret (marking an assessment task—parodying a poem entitled "Not My Business")

you know not paying attention to sentence structures and so on she does that you know massive sentence at the end there with no division at all really . . . I think what she needs to focus on maybe is the success criteria [success criteria are lesson objectives].

Content

Sally (marking a character appreciation on Lysander in *Midsummer Night's Dream*):

She [student] is beginning to comment on Lysander's behavior (.) I am putting lots of arrows on the page because she has got a whole lot of information muddled up from one page to another (.) and I have commented that there is a reason for his love changing and she is using . . . the information at the wrong point.

Register

Anne (marking a piece on the comparison of the parent figures in *Romeo and Juliet*):

The parent figures in Romeo and Juliet are distinguished by each households (.) divided by two households that's another example of her using the dictionary and not getting quite the word she wants (.) I've just changed it . . . *Juliet's parent figures* are nur (.) the *nurse who acts as her nanny* (.) *Lord Capulet who acts her father* so I've put who is her father and Lady Capulet who acts again changing it again to is her mother.

Discussion

This small-scale exploratory study has shown that a qualitative research approach can help to illuminate the complex interiority of issues such as what counts as subject content and EAL development as understood and enacted by teachers *qua* assessors. With this approach to description and analysis it is possible to identify how ELLs' written work was being understood and assessed by particular groups of teachers. This kind of information can be very helpful when designing assessment criteria because it highlights the multifaceted nature of teacher *qua* rater judgments in specific curriculum domains, particularly for formative purposes. At the same time it can also point to issues in language assessment that would benefit from further research. For instance, some of the findings that emerged from the analysis were not easy to compartmentalize and label neatly. For example, when Anne remarked that "at the end I've put a positive comment coz she's obviously worked really hard on it and it is effectively written and ironically because she is English as a second language it is she actually writes English in quite a poetic way erm–," she was

commenting on both EALness, and effort and achievement. This bundled reasoning seems to reflect professional experience and appreciation of the long-term and complex nature of EAL development. It also signals the possibility of apparently commonplace assessment criteria on quality, for example, effective use of language, being interpreted and enacted in ways that might combine recognition of achievement with an allowance for mitigating circumstances.

Another finding has pointed to a more intricate content-language issue. In the "register" judgment Anne was also concerned with content but perhaps in a slightly different sense. Here the teacher was concerned with the use of language to express context-appropriate meaning as much as the understanding of the content per se, the kind of language use that Halliday might (1999, p. 16) describe as constructing a text that would "construct a new situation," using "*variation* in language, especially functional variation of the kind we refer to as 'register'." Here register can be taken to mean a set of meanings manifested through particular linguistic expressions that have legitimacy in a particular context (e.g., the use of specialist terminology in literature). At first glance, this would seem to be an issue of acceptable register. However, a closer look would suggest that the usage of "to act" in "Lord Capulet who *acts* as a father" was not deemed to be acceptable because the choice of the word "acts" did not fit in with the preferred way in which the story was meant to be understood (and expressed) in the context of studying a play (as understood by this teacher), which was itself a particular take on content. So, a judgment on linguistic usage may also turn out to be about content knowledge and vice versa. This is a subtle, but very important, issue for language assessment: judgments about appropriate language use have to take account of the notions of register, which encodes meaning with reference to authorial purpose, audience, and context.

Conclusion

The knotty issues discussed above are closely related to some of the central concerns in language assessment such as the meaning of an assessment grade or score, and the epistemological nature of the knowledge and skills being assessed. Studies using qualitative approaches can help us understand, inter alia, raters' working assumptions as to what is to be assessed. For instance, in the study reported above, by exploring the participant teachers' expressed responses and reasoning while marking student written assignments, it is possible to gain a close-up view of their priorities and concerns in assessment. Furthermore, the insights into the participant teachers' responses and decisions can help substantiate a more general observation that the enactment of teacher assessment is mediated by a whole host of disciplinary and individual dispositions. This observation would provide the warrant for further teacher assessment research that takes situated local practices and participants' meanings into account. Qualitative research approaches are well suited to addressing these issues of rater-mediated meaning and judgment in language assessment.

In general qualitative research approaches can be used to explore "how" questions to good effect. In language assessment there are many "how" questions, for example, how do examiners interpret the notion of "clarity of expression," how do test takers make use of visual and written information in answering comprehension questions, how do students make use of formative feedback, and so on. Qualitative research can produce a grounded view of assessment issues by attending to participant meanings and actions, which can contribute to a fuller understanding of the phenomenon at hand (including the "why" question). Findings from qualitative research can help to throw light on both theoretical and practical issues, and to set the agenda for further research in language assessment.

SEE ALSO: Conversation Analysis Methodology in Second Language Studies; Discourse Analysis in Language Assessment; Qualitative Methods: Overview; Validation of Language Assessments

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Qualitative Research in Language Planning and Policy

MARK PAYNE

Language-Planning Research

A clear and all-encompassing definition of language planning (LP) remains elusive. A working definition used by this author, taken from Joshua Fishman, is: "the organized pursuit of solutions to language problems, typically at the national level" (Fishman, 1974, p. 79). This definition is included among Robert Cooper's selected 13 definitions of a field that embraces both the societal focus in LP (status planning) and inherently linguistic matters (corpus planning), and ranges across a spectrum from national to local LP (Cooper, 1996). As Kaplan and Baldauf point out, LP is usually deliberate, governmentally driven, future orientated action designed to bring about changes in linguistic behavior (Kaplan & Baldauf, 1997). For example, a number of LP studies have influenced change in terms of national policies, such as Lo Bianco's work on the Australian National Policy on Languages which sought to develop a nationally coordinated language policy (Lo Bianco, 1987) or Tuin and Westhoff's work evaluating the foreign language capacity of the Dutch population in the Dutch National Action Programme (Tuin & Westhoff, 1997).

There are a number of ways of considering the field of language planning. It can be considered in terms of frameworks encompassing "status planning," "corpus planning," "language form," and "language function" (Haugen, 1983); it can be viewed in terms of "prestige" hierarchies—the greater the prestige of the planner, the greater the likelihood of LP success (Haarmann, 1990); and it can be considered in terms of an "accounting scheme" centered on questions concerning "actors," "behaviours," "people," "ends," and so forth (Cooper, 1996, p. 98). More recently, one can also consider LP as a "linguistic eco-system" (Hornberger, 2002) in which a number of dependent forces are at work, such as language "death," "survival," "change," and "revival" (Kaplan & Baldauf, 1997, p. 311). In LP and language ecology, "linguistic diversity" is seen as a "precondition for maintaining cultural and biological diversity . . . the ultimate aim . . . is to bring about an ecological balance which no longer requires management" (Mühlhäusler, 2000, p. 306). LP ecology calls for a paradigm shift in respect of the whole approach to LP, a shift away from seeing multilingualism as a "problem" to seeing linguistic diversity as an asset, though it is not clear from a qualitative research perspective how best to facilitate the shift. In research carried out in Australia into "An Ecological Approach to Language Revival," for example, views were sought from teachers, students and community members into how indigenous students could be motivated to revive their languages (see Mühlhäusler, 2000, p. 343). This is a "bottom up" strategy to ensuring the maintenance and survival of minority languages in the face of the advance of "world" languages, particularly English.

Language-planning studies have tended to be grouped, broadly, within the "macro" and "micro" categories. "Macro" means studies at national, polity level that take the form of historiographies. They are largely descriptive, historical accounts of the language-planning "situation" in a polity, such as the work on language planning in Australia (Lo Bianco, 1987). They are essentially studies that do not draw upon primary research data.

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Instead, they are often based upon secondary materials to describe a LP context, although the secondary sources used may themselves derive from empirical research, for example, statistics on languages spoken in a nationwide or regional census.

At the other end of the spectrum are micro language-planning studies. These are usually empirical studies based upon the collection and analysis of data within a school, classroom, or other small-scale language-planning context, extending perhaps up to a region, for example, London (Reid, Smith, & Morawska, 1985). Reid and his colleagues report on the Linguistic Minorities Project, which set out to work with local education authorities on ways of establishing the numbers and distribution of speakers of languages other than English in schools, to audit the teaching of minority languages and to study aspects of adult bilingualism (Reid et al., 1985). Such studies may be too small and intrinsically orientated to generalize from, and mainly of interest to those operating in similar contexts.

Although one would assume a between-category of mesolevel studies, most language-planning studies would appear to be either descriptive and "macro" or empirical-descriptive and "micro." That said, it has been argued that there is a mesolevel (Kaplan & Baldauf, 1997). An example, again, would be the London study which incorporates the findings of a major sociolinguistic survey and focuses in particular on interviews with some 1,100 adults drawn from seven different linguistic minorities (Reid et al., 1985). The potential limitation here is that if the mesolevel study is too empirically focused it may slip into the micro category, but if it is too broad and nonempirical it takes on the appearance of a macro study.

Macrolevel Studies

These represent the "traditional" language-planning studies. Typically, they comprise of a full description of the linguistic "history" of the polity or country or place in question and how each of these responds to the language-planning complexities it faces. This could be a mapping of L1 language development over the years, the issues surrounding the introduction of an official version of a L1, or the reintroduction of an indigenous language. Examples of such studies include Mexico (Terborg, Landa, & Moore, 2006) and Cameroon (Kouega, 2007). In Terborg et al.'s monograph on the language situation in Mexico, they focused on three distinct challenges they considered relevant for Mexican language policy: the multilingual situation and shift conflict between Spanish and indigenous languages; foreign language teaching as a growing need in the education system; and Spanish as the language of 90 percent of all Mexican citizens which plays an important role as a symbol of national identity (Terborg et al., 2006, p. 415). In his monograph examining the language situation in Cameroon where there are speakers of some 25 languages, Kouega addresses issues of language use and spread, language policy and planning, and language maintenance and prospects (Kouega, 2007, p. 3).

There is a subsection to descriptive historiographies which focuses on what could be termed the "metalinguistic," for example, the Francophone world which is not limited to one country (Salhi, 2002). Such studies could also be viewed from the perspective of post-colonial language-planning studies that consider issues around the use of indigenous languages as official languages to replace the imposed colonial languages such as French or English, for example the case of French in Zaire (Kamwangamalu, 1997). A further subgroup of historiographies combines the descriptive account of the "situation," usually the language-planning "evolution" of a country, with the taking of a particular theoretical position. Examples include "language ecology" in terms of vernacular literacy in the Pacific (Crowley, 2000) and "language rights" in relation to a general defense of the rights of minority languages (May, 2003). There are also language-planning studies focused on one

particular dimension of language planning, usually from one of the language-planning dimensions, such as language death (Crystal, 2000), language amalgamation and standardization, for example, the standardization of the Basque language (Hualde & Zuazo, 2007), and language prestige, for example, in relation to revitalizing the Welsh language (Ager, 2005).

Micro Language Planning

A potential weakness of language planning, as a field, is that it appears to be dominated by the "prestigious" macrolevel studies (Haarmann, 1990). There is a great deal of language-planning and language-related research that is ongoing and micro-orientated but ultimately overlooked. However, over time and since the 1990s in particular, micro language planning as a credible and recognized area of language planning has gained ground. A major strength of microlevel language planning is that the research methods utilized may be more transparent and replicable. For example, in Payne's (2006) study of foreign language planning in English secondary schools, teachers and pupils were sampled from across two case study schools. Data were collected by means of semi-structured interviews and pupil focus groups. Language lessons were observed conforming to a nonparticipatory strategy, and schools provided documentary data in the form of prospectuses and pupil statistics. A qualitative pupil-background language survey also comprised part of the data collection tools (Payne, 2006).

In Nekvapil and Nekula's (2006) research into language management within a Czech subsidiary of a German electronics company, the methodology was made explicit. They carried out 11 interviews with local and foreign managers, conducted participant observations, collected and analyzed written documents, and recorded a conference call (Nekvapil & Nekula, 2006, p. 313). Marriott's (2006) study "Micro Language Planning for Student Support in a Pharmacy Faculty" drew on empirical data including semi-structured interviews, a second main interview with a senior staff member, the collection of various written resources including the faculty's website and program materials. Two planning meetings were audiotape-recorded. Interviews with students were planned for the subsequent stage of the research project (Marriott, 2006, p. 330). Kirkgöz's (2007) study into language planning in Turkish primary schools was presented, partly, as an explicit case study. Focusing on a regional city and surrounding towns,

> Fifty teachers of English—27 graduates of ELT departments, two non-ELT graduates (with BSc degrees in mathematics and biology), and 21 graduates of French or German departments, with teaching experience ranging from two to 16 years—participated in the study. (Kirkgöz, 2007, p. 183)

Research tools included questionnaires, interviews and observations. Butler (2007) investigated foreign language education at elementary schools in Japan, combining what appeared to be secondary and primary source data in a micro language-planning study: "My analyses are based on various governmental documents, schools' reports, published academic papers, media reports, conference presentations, materials distributed at workshops for teachers, and my own field observations of selected schools" (Butler, 2007, p. 131). Loos (2007) conducted a language-planning case study of a Dutch parent company that runs a holiday center in Germany. In his investigation of language choices he interviewed the Dutch head of the human resources department, analyzed corporate documents (e.g., mission statement and information booklets) and transcripts of audio-recorded data of some 50 conversations between Dutch and German employees and guests (Loos, 2007).

Although these are all examples of micro language-planning studies, the language-planning boundaries can be seen to be blurred between the three realms of macro, meso, and micro. There are examples of what appear to be micro language-planning studies that may turn out to be more mesolevel or even macro-inclined. For more on this, see the "micro language planning" special edition of the journal *Current Issues in Language Planning*.

Methodologies in Language Planning

Macrolevel studies require, in essence, the skills of the linguistic-historian as the research is often based upon historical documents and secondary sources, including government documentation, census reports, and sociolinguistic statistics. The secondary sources will have been generated empirically prior to the macro study as primary source materials, but the macro language-planning researcher does not usually engage in first-hand empirical field research.

Microlevel studies on the other hand are usually based upon the generation of primary empirical data. This may include qualitative, quantitative, or both qualitative and quantitative questionnaires or surveys. This is particularly appropriate for sociolinguistic surveying of, for example, a village, school, or community. Amplifying beyond this will require sampling, for example, a couple of villages to generalize to a wider population. Depending upon the context, one-to-one interviewing may be required or focus groups of language speakers, perhaps extended to include in-depth life-history research. Within school-based research or other pedagogical environments, the observation of language classes and teachers may be appropriate, as in this author's research into multilingual schools and their contributions to the linguistic communities in which they were situated (Payne, 2006). There may also be some scrutiny of documentation, for example, school, company or governmental documents, websites and statistics as in Butler's investigation into the introduction of English into the Japanese elementary school system (Butler, 2007).

Limitations in Language-Planning Research

There are limitations to qualitative research in language planning. Macrolevel studies of linguistically complex polities provide a linguistic "overview," a "broad-brush" handling of sometimes very complex linguistic situations. Microlevel studies have a more "hands-on" feel and give a deeper insight into a specific linguistic situation but, in turn, do little to illuminate the wider picture. There are then the mesolevel studies that fall between the two and may seem less rigorous in that they attempt to bridge the macro/micro divide and can attempt to generalize to a large population from a small sample. For example, in their sociolinguistic survey of the Dhimba language in northern Namibia to evaluate the feasibility for Bible translation, Cameron and Kunkel generalize from a sample of 203 to a population of over 30,000 (Cameron and Kunkel, 2002). There would appear to be more published macro- and microlevel studies respectively, than mesolevel studies, perhaps underlining this as a slightly problematic area.

A major methodological issue in terms of qualitative research in general, and something beyond the bounds of an entry in this encyclopedia, is the ongoing tension between practitioners of "hard" quantitative-based research and "soft" qualitative-based research. A positivist could argue that language-planning research premised on the collection of qualitative data is inherently limited. That said, according to Mann "The qualitative interview has a growing presence in applied linguistics" (Mann, 2011, p. 6). The preference, however implicit, for quantitative-based research does not appear to have been addressed

in the key LP journals of *Language Problems and Language Planning* and *Current Issues in Language Planning*.

SEE ALSO: Language Policy and Planning: Overview; Sociolinguistic Surveys in Language Planning

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Qualitative Research in Rhetoric and Stylistics

CHRISTINE M. TARDY

Style was considered one of the five canons of early classical rhetoric, accompanied by invention, arrangement, memory, and delivery. Early rhetorical views of style focused primarily on the selection of words chosen "to produce the desired effect" (Quintilian, 1921/1986, Vol. III, p. 195). Despite its centrality to classical rhetoric, style has been less prominent in contemporary rhetorical studies. However, as Butler (2007) has argued, it is still present "in its dispersed form . . . often not *called* style but instead . . . named something else within the field" (p. 5). In applied linguistics, stylistics became a popular area of study in the 1950s, associated with structural features of text. As in rhetorical studies, this research was somewhat distinct from literary stylistics, or the study of style in literary texts. Although the histories of rhetoric and style in applied linguistics differ somewhat from their histories and relationships in rhetorical studies, the study of style (and of rhetoric) can similarly be considered to be rather dispersed, found in numerous areas of inquiry and not always thought of as distinct subfields of applied linguistics. For instance, rhetoric and style may be studied within research on text, genre and discourse analysis, stance, voice, and critical discourse analysis.

Generally, the study of rhetoric and stylistics within applied linguistics is carried out to describe written texts and textual variations. Depending on the objects of inquiry, applied linguists may analyze rhetoric and style in an individual text, texts used by a discourse community, texts representative of a historical period, or texts representative of users who share a linguistic background. Although researchers draw on quantitative, qualitative, and mixed-method research approaches, this entry outlines some of the more common using qualitative research methods used in the study of rhetoric and stylistics.

The Study of Rhetoric and Style in Discourse and Genre

A concept with multiple definitions in applied linguistics research, *discourse* is important to the study of rhetoric and style. A traditional linguistic definition of discourse is simply a complete text—for instance, a letter, a speech, a memo, or a phone conversation. Discourse, in this case, is a unit of analysis to be contrasted with sentence-level analysis. A second definition of discourse, which is not incompatible with the first, is that of an "identity kit" or "ways of being in the world . . . forms of life which integrate words, acts, values, beliefs, attitudes, and social identities" (Gee, 1989, pp. 6–7). Discourse, then, is language in a social setting, and that social setting becomes critical in understanding the text itself. Discourse analysis may examine texts of a particular disciplinary community, such as academic discourse or chemistry discourse, or the texts of individuals. Qualitative discourse analysis often focuses on aspects of text organization—for instance, text coherence or cohesion—as they relate to underlying social or cultural aspects of the texts. Within applied linguistics, text organization has been studied as a way to understand the rhetorical elements of a text. The ways in which a text is structured and arranged reveal assumptions about the reader–writer relationship and the preferred sequences for expressing logic, argument, persuasion, or all of these elements.

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Text coherence describes how ideas are linked within a text to create meaning. Research in coherence often focuses on a text's propositional units and the sequencing of those units. One common approach to researching coherence is topical structure analysis (Lautamatti, 1978), which examines topic development through the arrangement of sentences. Other schemes for analyzing discourse structure in terms of coherence include problem–solution structures and given–new structures. The study of text cohesion, on the other hand, examines the links among sentences that unify an entire unit of discourse. Major types of cohesion include reference, substitution, ellipsis, conjunction, and lexical cohesion (Halliday & Hasan, 1976). The study of cohesive devices has been used to study student writing as well as published technical and academic writing.

Additional frameworks of analysis, beyond those of cohesion and coherence, exist. For instance, Clyne (1987) offers an analytical framework for mapping discourse organization in terms of linearity, hierarchy, symmetry, and continuity. Researchers adopting this framework examine each dimension within a text and describe the features as if on a continuum —for example, linear, slightly digressive, or very digressive (Farrell, 1997). In sum, researchers of discourse may adapt or develop frameworks to aid in the analysis of rhetoric and style as they relate to underlying structures that communicate meaning within whole textual units intended for specific audiences.

Genres may be thought of as typified or conventionalized forms of discourse used to carry out repeated actions. Complaint letters, recipes, warning labels, and academic articles may all be considered genres. Genres have been described as primarily rhetorical forms, meaning that generic classification is based primarily on purpose and audience. This shared rhetorical aim tends to result in a preferred form that becomes conventionalized and recognizable over time. While rhetoric plays a defining role in genre, style is recognizable in the genre's form. In a seminal essay, Bakhtin (1986) describes style as inseparable from genre, arguing that style is linked to the individual speaker/writer, the thematic content of the genre, the relation between the speaker/writer and audience, and historical period. Because both rhetoric and style are crucial elements of genre, they are often studied as part of genre analysis.

One of the more common qualitative methods of genre analysis is known as move structure analysis (Swales, 1981). In this method, the researcher examines a collection (or corpus) of texts representative of the genre and seeks to identify common parts of the genre as they relate to the rhetorical goals that each part carries out. For instance, based on published research articles from multiple disciplines, Swales identified four rhetorical moves commonly found in research article introductions:

- establishing the field;
- summarizing previous research;
- preparing for present research;
- introducing present research.

Importantly, rhetorical move analysis serves as a method for identifying how specific communities carry out their goals within a text-genre. The method is therefore useful not only for researchers, who have used it to reach insights into specific discourse communities, but also for student writers, for whom a greater understanding of the rhetorical and social influences on written form can play an important part in learning.

The study of discourse and genre across cultural or linguistic groups has become an important area of inquiry in applied linguistics, referred to as contrastive rhetoric or intercultural rhetoric. Research in this area compares rhetorical, stylistic, or both patterns across writers of different first language (L1) backgrounds (e.g., Duszak, 1997; Connor, Nagelhout, & Rozycki, 2008), sometimes comparing texts written in different languages (the L1 of the

writer) and other times comparing texts written in one language by writers with different native languages.

Stylistic and Rhetorical Devices

In addition to studying organizational aspects of discourse and genre, researchers may also examine texts at a more micro level. On this level, the study of rhetoric and style is vast and encompasses a wide range of features. Traditional categories of linguistic text analysis, rhetorical analysis, and stylistic analysis include grammar, vocabulary, metaphor, and a broad range of rhetorical stylistic devices. While quantitative studies of rhetorical and stylistic devices tend to focus on frequency counts, qualitative research observes general patterns of use. Researchers also must consider the extent to which rhetorical and stylistic forms balance individual choice with the rhetorical constraints of genre.

Grammar

Grammatical choices—such as the use of passive voice or sentence length—give rise to style and rhetoric within the constraints of genre. For instance, the use of sentence fragments which omit a subject (e.g., "Led a team of engineers in research and development") is common and preferred in a résumé but would likely be seen as unusual, if not problematic, in a formal academic paper. Grammatical patterns that relate to genre and the relationship created between writers and readers are commonly studied—passive structures, imperatives, or verb tense, for example, can all create particular stylistic effects while serving rhetorical purposes for writers.

Vocabulary

Lexical choices are perhaps one of the most obvious stylistic features of texts. When writers have choices among synonyms, they select words that fit—or flout—genre and audience expectations while also perhaps considering personal preference. While the word "generate" may be preferred in a formal text, "make" may be preferable in a less formal text. Lexical choices may also signal identity or social alliances. For instance, the preference of many lesbian, gay, bisexual, or transgendered people to self-identify as "queer" signals a particular identity and political stance, yet the same word can be used in other contexts as a derogatory epithet.

Metaphor

Metaphor is a common category of investigating style through a cognitive approach. Metaphor allows us to transfer mental constructs. For instance, the metaphoric use of *lifting* in the following sentence from the *New York Times* serves to situate a ban on off-shore drilling as heavy and constraining: "The oil industry, its supporters in Congress and Gulf Coast officials have called for swiftly lifting the moratorium, saying that the ban was causing severe economic hardship." As Simpson (2004) notes, part of the effectiveness of metaphor lies in its novelty, so writers—writing in particular genres—may try to avoid use of overly familiar metaphors.

Other Stylistic Devices

Although grammatical, lexical, and metaphoric features are perhaps the most common rhetorical stylistic devices examined in applied linguistics, a broad range of other features may be considered in a stylistic analysis of text. For instance, parallelism (the repetition

of a grammatical structure), alliteration (the repetition of consonant sounds), anaphora (the repetition of lexical phrases that begin a sentence or phrase), and rhetorical questions all represent features that may be used for rhetorical or persuasive purposes in particular genres.

Visual Rhetoric

While traditionally the study of text in applied linguistics concentrated on linguistic features, the rise of new media and modes of communication has led to an increased focus on visual elements. Choices in font type and size, color, images, and document design all create stylistic and rhetorical effects. Fahnestock (2003) explores how both verbal and visual parallelism are used persuasively in scientific texts. For instance, Fahnestock illustrates how visual parallelism—the juxtaposition of three or more similarly sized images in a row—aids readers in drawing inferences from the images and therefore constitutes an argument. She draws on examples of texts in evolutionary science and entomology to illustrate how visual images can serve as persuasive devices. Looking at the relationship between disciplinary preference and visuals, Rowley-Jolivet (2004) has focused on the visuals used in conference presentations slides, examining how visuals create cohesion and express rhetorical claims. Comparing slides across three scientific disciplines, she links visual variations to disciplinary methodologies and epistemologies.

Writer Stance

One aspect of rhetoric and style that has received a great deal of attention has been that of writer stance, also described as rhetorical and linguistic resources which allow writers to express beliefs and judgments. These strategies "explicitly announce the writer and negotiate a rhetorical identity" (Hyland, 2002, p. 1093). First-person pronouns (*I*, *me*, *my*, *we*, *us*, *our*) provide one very overt tool for writers to express stance and commitment to their ideas. The use of these pronouns may be shaped by disciplinary preferences as well as by a writer's status as a relative novice or expert or even by the epistemological paradigms that a writer adopts within a discipline. The use (or non-use) of *I* may lead writers to appear more or less confident in and committed to their claims, and perhaps more or less self-reflexive in relationship to their research; the use of inclusive *we*, especially in single-authored texts, may signal an author's solidarity with disciplinary members, representing what Hewings and Coffin (2007) refer to as "consensual voice" (p. 126). While some studies have taken a quantitative approach to counting the frequency of occurrences of features like first-person pronouns, qualitative studies may instead identify general patterns of use.

Voice

Another area of discourse analysis which considers style and rhetoric is the study of authorial voice. The term *voice* is somewhat ambiguous, as it has been variously referred to as an individual expression of personal style and as a social construction of the author—that is, an image of the author constructed jointly by the writer and readers. One common socially oriented definition of voice, for example, describes it as "the amalgamative effect of the use of discursive and nondiscursive features that language users [appropriate], deliberately or otherwise, from socially available yet ever-changing repertoires" (Matsuda, 2001, p. 40). Matsuda (2001) specifically distinguishes voice and style by describing style as a factor that contributes to voice. Researchers studying voice from this perspective

examine those discursive (text-internal) and nondiscursive (text-external) features that make a text unique, from the perspective of the text's reader(s). For instance, in his study of the distinctive features used by a Japanese Web diarist, Matsuda (2001) found that the writer made use of the *katakana* alphabet, self-referential pronouns, and sentence-final particles in unexpected or unconventional ways. Turning to the perspective of how readers construct a writer's voice, Matsuda and Tardy (2007) adopted a mock blind peer review case study, in which two readers read and commented on an anonymous manuscript. They found that the readers tended to construct a writer's voice through the extent to which the writing conformed to or deviated from generic expectations. For instance, some deviations led the readers to construct the writer as a relative novice to the genre and discourse community, while certain conformities suggested to the readers that the writer was "earnest" and had "read a good deal."

Rhetoric, Style, and Ideology

While much research of rhetoric and style in applied linguistics aims to describe texts, critical discourse analysis (CDA) draws on these constructs as a means of critiquing texts by identifying underlying ideologies. Van Dijk (1998) defines ideologies as

> representations of who we are, what we stand for, what our values are, and what our relationships are with other groups, in particular our enemies or opponents, that is, those who oppose what we stand for, threaten our interests and prevent us from equal access to social resources and human rights. (p. 69)

Ideologies are realized and expressed in texts through discourse structures, including topics, discourse schemas, style, and rhetoric; therefore, the study of style and rhetoric plays an important role in CDA. Through close readings of public discourse such as political speeches, parliamentary debates, or newspaper editorials, CDA researchers demonstrate how stylistic and rhetorical devices (such as those described previously) represent social structures in ways that serve the interests of some while marginalizing others. For example, in a study of anti-immigration discourse in 107 texts published in a California newspaper, Ana (1999) identifies a dominant use of animal metaphors used to represent immigrants. Through the use of numerous examples culled from a wide range of texts, CDA researchers are able to identify patterns of text that serve to form mental representations that readers may not even be overtly aware of.

SEE ALSO: Discourse and Identity; Genre and Discourse Analysis in Language for Specific Purposes; Rhetorical Discourse Analysis

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Qualitative Research on Bilingualism and Multilingualism

OFELIA GARCÍA

Introduction

In the 21st century, the study of bilingualism and multilingualism has come to the forefront. With globalization and the flux in movement of people, goods, and information, the world's multilingualism and the plurilingual practices of its people have been made visible. Our understandings of bilingualism have shifted from those derived from monolingual perspectives, with bilingualism seen as simply double monolingualism (Grosjean, 1982). Instead, in the 21st century, bilingual practices are valued for their complexity, interdependence, and dynamism (García, 2009). The original "advances" in the study of bilingualism and multilingualism mostly used positivistic models of quantitative research methodology (see, for example, Joshua A. Fishman's approaches to the study of the sociology of language, William Labov's approaches to variationist sociolinguistics, and experimental psycholinguistic approaches to second language acquisition). Today, however, qualitative research methodology is increasingly used to study the complexity of the interdependent systems of bilinguals and plurilinguals, and the dynamism of bilingual practices in society.

The questioning of 20th-century models of bilingualism is also a product of epistemological changes about language and literacy practices, as well as new understandings of research processes. The development of critical sociolinguistic studies of bilingualism and the emergence of new literacy studies have made evident that language and literacy practices are shaped by local, social, and economic conditions, and that language and literacy practices contribute to reproduction of asymmetrical relations of power. This reflexive and sociocultural turn in epistemologies has also resulted in increased use of qualitative methodologies in studying bilingualism.

There are many traditions of qualitative research, and all have been used in the study of bilingualism and multilingualism. We review some of them below.

Qualitative Research on Bilingualism and Multilingualism

Although qualitative research is eclectic in its methods, we outline here the methods most often used in studying bilingualism. *Ethnography* is probably the qualitative method most used in the study of bilingualism and multilingualism. Ethnographers primarily learn by experiencing, and ethnography focuses specifically on the beliefs, values, and attitudes that shape the behavior of a particular group of people. Ethnographies of multilingualism show how language practices matter to people in their own terms. Examples of important ethnographies of multilingualism and sociolinguistic use in the construction of social difference and social inequality are Zentella's (1997) study of bilingualism, which traces bilingual practices of families in a New York neighborhood, Heller's (2006) work on linguistic minorities and modernity in Toronto, Canada, and Martín-Rojo's (2010) study of inequalities in multilingual classrooms in Madrid, Spain. Bartlett and García's (2011) ethnography of a bilingual high school for Latino immigrants in NYC goes beyond a

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sociolinguistic ethnography to include a study of language and education policies and the political economy surrounding schooling of immigrant youth. Focusing on language as social practice, "linguistic ethnographies" (Rampton et al., 2004) provide close analysis of situated language use that reveals the indexing of the social, political, and historical positioning of its speakers. A study combining both ethnographies of multilingualism and linguistic ethnographies is Blackledge and Creese's (2010) work on complementary schools in the UK.

Often, qualitative researchers studying bilingualism use a *case-study* methodology where the unit of analysis is bounded and the case is situated in local action. These are ethnographic case studies, meaning that there is intensive description and analysis of a phenomenon, but they are often of shorter duration than true ethnographies. Cases are frequently used to study the social dynamics of language use of bilinguals, that is, the speech events—who is involved, what is the purpose, what are the communication channels used, the topic of talk, the mood of the encounter, and the interactive routines.

Discourse analysis is another qualitative research method often used to study bilingualism and multilingualism. Unlike ethnography, discourse analysis enables researchers to study the structure of discursive practices itself—whether spoken, written or nonverbal—and often within interactions and in interrelated ways. Frequently discourse analysis functions jointly with ethnographic methods to identify semiotic and linguistic issues that are then explained by ethnography. This is the case in Elise Du Bord's (2008) ethnographic analysis of discursive practices at a day labor center and Pennington's (1999) analysis of bilingual classroom discourse at a high school in Hong Kong. Because of the linguistic hierarchies that are evident in the study of bilingualism and multilingualism, these topics are often approached through critical discourse analysis (CDA). CDA has been a way of explicitly connecting language ideologies and language practices to relationships of power. It makes connections between language and broader social theory, paying attention to power and ideology, and is an important research method to study the "othering" of immigrant language minorities.

Another important qualitative research method in the study of bilingualism and multilingualism is *narrative analysis*, which uses first-person accounts told in story form as data. Narrative analysis has been extensively used to study language practices and to collect natural speech data. Sometimes the narrative analysis is conducted on *fictional narratives*, that is, stories about fictional events, which are elicited with nonverbal prompts such as pictures, cartoons, or videos. *Frog, Where Are You?* is a picture book that has been frequently used for elicitation of narratives with bilingual and multilingual children. These stories allow researchers to explore the structural and narrative competence of bilingual individuals.

At other times, narrative analysis includes *biographies* or *life narratives*. These personal experience narratives can be elicited in a number of ways. Sometimes bilingual participants are asked to tell particular kinds of stories or to respond to specific questions. Sometimes, participants are given key events or key words to which to react, sometimes, narratives are spontaneous. In whichever way narratives are elicited, however, narrative analysis always takes the perspective of the teller, rather than that of society. Yet another variant of narrative analysis is the *linguistic autobiography*, often used to study the language practices of bilinguals, as well as the acquisition, loss, or maintenance and development of different bilingual practices.

A challenge of narrative analysis is having bilingual participants who can produce the narratives. A way of facilitating a narrative is to confront participants with provocative statements, images, or videos that personally engage them. Participants often produce longer narratives when recounting a critical incident. The rapport between researcher and participants is an essential element in conducting narrative analysis, since the analysis relies on the comfort level of participants.

Qualitative researchers of bilingualism and multilingualism, especially those interested in language policy, and specifically in bilingual/multilingual policy, most often conduct *historical* or *document analysis*. Most of the time, qualitative researchers collect documents, which are then subjected to interpretive policy analysis (Yanow, 2000). Interpretive policy analysis goes beyond the traditional analytical approaches. Policy is not examined for what it says and what it does; instead, interpretive policy analysis includes local meanings and the multiple reading of the policies by various stakeholders as interpretive communities. It includes the analysis of the language policies as texts as well as the enactment of the policies, which can also be "read." The way in which researchers conduct interpretive policy analysis is related to reader-response theory in literary analysis, but often discourse analysis is also used.

Sometimes document analysis is conducted on bilingual books or authors, and on song lyrics that use fluid language practices, especially hip-hop. Bilingual newspapers and bilingual advertisements also offer plenty of rich data that can be subjected to analysis. A recent extension of document analysis methods is that used in the field that has become known as linguistic landscape studies. Linguistic landscape studies focus on how multiple languages are represented and displayed in public spaces and places, and especially in multilingual signage.

A growing number of qualitative studies of bilingual and multilingual use focus on online literacy practices on the Internet. Interactions in forum sites, as well as chatrooms, are studied as ways of looking at multimodal multiliteracies. These new technologies are extending the ways in which we understand traditional document analysis.

In summary, qualitative methods of studying bilingualism and multilingualism conceive of knowledge as reuniting epistemology and hermeneutics. By doing so, qualitative methodology goes beyond a false distinction that has served to subalternize the kinds of "border" knowledge that bilinguals and multilinguals often have, and that distinguish them from monolinguals (Mignolo, 2000).

Data Collection and Analysis

In conducting research on bilingualism and multilingualism attention needs to be paid to the language practices in the events being studied. Plurilingual researchers are needed for multilingual encounters. But even when the researchers and the participants have language practices in common, decisions have to be made about how the discourse is structured and what discursive practices to use. It may be best to let the participants themselves choose the language practices of interaction with the researcher, if at all possible.

Researchers interested in studying bilingualism and multilingualism often record individuals or groups of speakers as they perform their identities. Sometimes this is done through observations, whereas other times it is done through interviews. Often both observations and interviews are used. Recording is done through audio or video recordings so as to gain understandings of verbal and nonverbal communication. Some qualitative researchers are interested in natural speech data, whereas others are interested in specific language forms, and yet others want to find out the attitudes and beliefs of speakers. Recording makes it possible to create audio and video databases that then allow for repeated playback and listening/observation, as well as for other researchers to review the data.

When recording is not possible, detailed field notes become important in qualitative research. Participant diaries or language diaries are often used to supplement the information. For example, a participant who keeps a language diary will be able to note the frequency and patterns of data that have emerged in recordings. In addition, diaries enable researchers to check self-reports of participants.

Observations and interviews (whether individual or group) can be analyzed for specific details of talk or for content. If the interest is in specific details of bilingual speech, transcriptions are most important, although it is possible not to transcribe an entire interview, but just specific segments. It is recommended that different types of data (for example, interview data and observation data) be used in combination. It is also possible to combine face-to-face individual interviews with other types of interviews, as well as with focus groups. The exchange of ideas that occurs in focus groups may provide substantive information, as well as ways of talking that are different from when conducting individual interviews.

Observations of bilingual encounters can be free or a frame can be chosen beforehand and included in an observation protocol. This is especially important when working with a team of researchers. Interviews are always unstructured, although developing an appropriate interview/narrative prompt or an interview guide ensures that participants are responding to the same stimuli.

In analyzing qualitative data, it is possible to use software to systematize the unstructured data into categories and themes. But researchers working with this software and multilingual data will have to be cautious that codes assigned pick up the multilingualism of the data.

Qualitative data collection and analysis, especially on bilingualism and multilingualism, is especially challenging. On the one hand, data is not simply reduced to numbers, but includes an enormous amount of textual data in many forms—verbal, images, sounds, gestures—often interconnected. On the other hand, it includes multiple discursive and semiotic practices, the product of multilingualism and multiculturalism. At the same time, its analysis requires researchers who are deeply connected to the meaning-making linguistic and cultural practices that are evident in the data. Without this connection, it is possible for the unstructured data of qualitative research methodology to remain distant and disconnected, a cacophony of pieces of data that do not in any way illuminate the sense making of multilingual encounters and plurilingual citizens.

SEE ALSO: Discourse Analysis and Conversation Analysis; Ecological Approaches in Qualitative Research; Interviews in Qualitative Research; Qualitative Methods: Overview; Qualitative Sociolinguistics Research

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Qualitative Research on Information and Communication Technology

PAIGE WARE AND MARK WARSCHAUER

Qualitative research on information and communication technology (ICT) covers a wide terrain, from studies examining online text comprehension (Coiro & Dobler, 2007) to multi-year ethnographic accounts of participation in online gaming (Thorne, Black, & Sykes, 2009) and fan fiction communities (Black, 2008). Rapid proliferation of ICT has fostered quantitative studies about relationships among technology use, Internet access, literacy learning, socioeconomic status, geographic location, and education level. However, as Hargittai (2010) shows in her quantitative analysis of such associations among young adults, researchers still have much to learn about patterns and contextualized differences within these larger trends. Qualitative research provides the necessary descriptive work to account for context and to explore theoretical frames for understanding the intersection of technology, language, and literacy. This entry begins with an overview of current qualitative research on ICT use as organized into classroom-, community-, and network-based studies, followed by a discussion of the methodological challenges posed in ICT research. Finally, new demands on qualitative researchers will be explored.

Current Areas of Inquiry in ICT Research

Qualitative research on ICT use generally takes place in classrooms, in community contexts, or with diverse online participants that are not centralized in one location (for syntheses, see Suggested Readings).

Classroom-Based Studies

Many classroom-based studies in elementary and secondary schools focus on particular sets of skills that have been theorized as potentially important when exploring new technologies, such as the skills needed for online navigation and reading (Coiro & Dobler, 2007; Lawless, Schrader, & Mayall, 2007) or for searching and processing information from the Internet (Kuiper, Volman, & Terwel, 2005). In a multi-case study of 10 culturally and linguistically diverse kindergarten to 12th grade (K-12) schools across the US that provided laptop computers for use by every student in one or more grade levels, Warschauer (2006) examined multiple layers of skills, roles, and system-wide change. His study, which combined classroom observations; interviews with teachers, administrators, students, and parents; and analysis of student- and teacher-produced documents, concluded that literacy processes, resources, and products changed markedly in laptop classes, resulting in more meaningful and student-centered classroom practices.

In postsecondary classroom contexts, foreign language and second language researchers and educators have used interviews, observations, discourse analysis, and text analysis to examine online communication in synchronous and asynchronous environments, with an emphasis on either language use or cultural understanding. While these studies differ in their choice of learner outcomes, task design, mode of communication, learner populations,

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target languages, and sample size (from single individuals to cohorts of classroom learners), they share interests in understanding how the nature of language teaching and learning has changed in multilingual and multimodal environments, and in the degree to which globalized notions of language, culture, and context intersect with local constraints of institutions and ideologies in new online realms (see, e.g., Warschauer, 1999).

Finally, virtual environments have been studied for their learning potential in postsecondary classes. A recent review by Thorne et al. (2009) discusses how researchers examine various linguistic and cultural aspects of virtual environments using task and ethnographic observations, interviews, participant mapping, questionnaires, and journals. For example, they describe Sykes's dissertation work deploying observations, surveys, interviews, and pre- and post-test data to investigate how learners developed Spanish pragmatics through game play in a specially designed environment called Croquelandia. Her study found both perceived and real positive outcomes in learners' abilities to make requests and apologies.

Community-Based Studies

Community-based programs are typically less tied to formal learning outcomes and have emphasized learner identity and agency (e.g., Hull & Nelson, 2005; Hull & Katz, 2006) and the potential for certain digital literacy practices such as gaming to offer new avenues for digital literacy mastery and expertise (e.g., Steinkuehler & King, 2009).

Some of the most extensive research on community-based literacy and technology projects draws from a multiyear digital storytelling community project in a low-income urban California community (Hull & Nelson, 2005; Hull & Katz, 2006). Digital Underground Storytelling for Youth (DUSTY) was a community–university collaboration for local youth and adults to write and share multimedia stories in a supportive, constructive environment. Data sources included an archive of hundreds of digital stories, one-on-one and focal group interviews, undergraduate student and researcher field notes and case studies, pre- and post-skills inventories, questionnaires, and digitally recorded interactions around computers. Case studies from the project have provided a semiotic analysis of multimodal expressive genres (Hull & Nelson, 2005) and illustrated the potential of digital storytelling to shape participants' learning trajectories and literacy identities (Hull & Katz, 2006).

In contrast, Steinkuehler and King's (2009) community-based research has focused on cognition, motivation, and mastery learning. They developed an after-school program in massively multiplayer online (MMO) gaming for adolescent boys, in which the researchers document through participant observation, multimodal field notes, participant artifacts, interviews, videotaped interactions, and pre- and posttest comparisons of student performance how motivation, apprenticeship, and mastery learning develop and how the digital skills acquired through gaming might plausibly transfer to academic work.

Network-Based Studies

Network-based studies are conducted outside of bricks-and-mortar contexts (for research reviews, see Steinkuehler, Black, & Clinton, 2005, or Thorne et al., 2009) and examine issues ranging from the construction of social identities through instant messaging and multilingual communities online (Lam, 2009), to English-language development in fan fiction communities (Black, 2008) and the social and cognitive demands of MMO virtual gaming worlds (Steinkuehler, 2008). Participation in these online "affinity spaces" (Gee, 2004, p. 85) is typically defined by shared interests, an inclusive environment of novices and experts, and a mixture of individual and distributed knowledge.

In her ethnographic work, Lam (2009) has used individual and focal group interviews, screen recordings of digital literacy practices, online transcripts, observations, and surveys to document the mutually constitutive identity formation that occurs when adolescent

language learners participate in multilingual, transcultural online communities. Lam's work precedes and complements Black's (2008) three-year ethnographic study of six English-language learners participating in international fan fiction communities. As a participant observer, Black drew on a database of her participants' fan fiction writing and the reviews, participants' Web sites, and interviews conducted via instant messaging and e-mail. She found that her focal participants became avid writers by contributing a large body of original and often multilingual writing and by providing peer feedback to others on the site.

Research studies by Lam (2009) and Black (2008) reflect larger trends common to ethnographic studies of language and literacy practices on social networks. First, these studies involve a large investment of participant observation time to gain an insider, or emic, perspective. Second, they typically move beyond concerns of language or literacy development in a conventional sense to instead focus on documenting the roles and functions of language as it is used in transcultural, transnational online settings. Finally, to accomplish this, such studies typically draw on and contribute to theoretical lenses that view literacy as multimodal and situated within larger institutional, social, and cultural discourses.

Considerations of Qualitative Methods in ICT Settings

Conventional qualitative data collection methods are commonly used in qualitative research on ICT, such as conducting interviews and observations, collecting field notes, amassing relevant documents, and disseminating surveys (Miles & Huberman, 1994). These methods, however, are based on face-to-face, physical settings and require new considerations in many ICT settings. Researchers committed to crossing, as Leander (2008) suggests, the "online/offline, virtual world/real world, and cyberspace/physical space binaries" (p. 37), must retool and repurpose these methods of data collection and analysis in order to capture interactions and information flows across digital as well as physical spaces.

Recent research highlights ways to consider the interaction between the *products* of digital communication (interaction transcripts, Weblog archives, videos, Web sites, etc.) and the *processes* of the production and consumption cycle (access, orientation, affiliation, collaboration, interactivity, etc.). In addition to interviews and surveys of students and teachers, and observational field notes, many studies use written data, such as downloaded and archived transcripts of synchronous chats or asynchronous blogs and discussion boards, to document and uncover patterns in language use and development.

In research that incorporates other visual and aural modes, such as digital videos, online gaming, social networking, and Internet search activity, researchers often use screen recording software to track participants' Internet activities as they engage in different online activities. Researchers of social networking and gaming activities gather transcripts and screenshots of the social interaction and activity that take place in various forums (online gaming, fan fiction, multilingual networking, instant messaging, listservs, chatrooms, and blogs) and triangulate this interactional information with other online activity, including participants' personal Web sites and updates, player manuals, and online guidebooks (see Black, 2008; Leander, 2008; Lam, 2009; Steinkuehler & King, 2009).

Examining the *processes* of ICT activity also presents new challenges in qualitative research. In ICT studies that are not bound to a physical location, the notion of "local groundedness" (Miles & Huberman, 1994, p. 10) is complicated when the local is no longer dictated by physical spaces. Traditionally, understanding an emic perspective is gleaned through individual and focal group interviews and prolonged periods of site observations. When participants are distally located in social networking studies of MMO games

(Steinkuehler, 2008) and fan fiction (Black, 2008), or in institution-based studies of international communication (Belz & Müller-Hartmann, 2003; Ware & O'Dowd, 2008), researchers seek other ways to understand the perspectives and contexts of participants across wide geographic areas. To this end, interviews have been conducted utilizing e-mail, listservs, instant messenging, and video conferencing. Kendall (2008) warns, however, that nonverbal communication and feedback, interactional rapport, and a natural conversational flow can all be compromised without face-to-face contact.

Other ICT research focuses less on the social aspects and more on underlying cognitive factors associated with new technologies. Tools such as think-aloud and retrospective protocols and directed graphs have been adapted to understand how individuals make sense of particular online activities and to locate potential patterns in such sense-making (see Steinkuehler et al., 2005).

New Demands in Qualitative Research in ICT

Qualitative methods require some modification in order to capture the full range of ICT activities across the many virtual and physical contexts highlighted here, but other new demands are placed on researchers in this area. Documenting ICT activity within and across multiple contexts of home, school, and Internet (Miller & Slater, 2000; Leander, 2008; Lam, 2009) raises issues related to time and expertise as well as to unprecedented aspects of ethics and privacy (Steinkuehler et al., 2005; Leander, 2008).

First, qualitative research in ICT requires a relatively strong degree of familiarity with research methods and language use as well as with the particular technology of focus. This added layer of expertise can require considerable time to obtain, even as the choice of technologies continues to expand. And yet, as Steinkuehler et al. (2005) warned, "your own technical literacy in the digital space of interest tightly constrains what you can observe and therefore are in a position to theorize" (p. 96). Achieving breadth of expertise requires time on the part of the individual researcher or a shift toward conducting research in teams of distributed expertise.

Examples of collaborative research are provided in studies of online intercultural communication, in which teachers and researchers in each participating country conduct interviews and observations (cf. Belz & Müller-Hartmann, 2003; Ware & O'Dowd, 2008); in ethnographic work, in which researchers conduct home and school visits on multiple focal participants using the same theoretical lens and framing questions (Leander, 2008); or in comparative ethnographies, in which researchers canvass larger sections of the population through interviews and surveys while also collecting online data (Miller & Slater, 2000). These three examples highlight different ways in which research teams have addressed the practical issues of obtaining representation and coverage of an area of inquiry when the information needed is not conveniently located in one physical space.

Issues related to ethics and privacy also pose new challenges. In strictly online contexts, a researcher often has only the participant's word for his or her identity. In Black's (2008) research on fan fiction, identity was verified through triangulating information gleaned from self-reports, consistencies in participants' presence on the Web across multiple online contexts, and signed written consent. Ethical issues arise around the extent to which any of the participants of the ICT activity who are not the focus of the research can or should be made aware of the study. Lam (2009) addressed this issue by having her focal participant inform her online contacts prior to recording any instant messaging sessions.

Leander (2008) documents further challenges associated with research online, including difficulties in obtaining human subjects' permission, in recruiting participants, and in maintaining the privacy of what he calls "incidental data" (p. 59), that is, interactions and activities that are documented by the researcher but which the participants might wish to

exclude from viewing by others. Leander therefore employed a series of precautionary measures, including obtaining consent through Web-based forms, allowing participants to view and delete sections of the transcripts of files before releasing them to the researchers, and developing longer-term, collaborative relationships with the participants.

Conclusion

Qualitative research is ideal for exploring new realms in which there is little previous research and thus difficulties in generating hypotheses. With technology-mediated interaction developing and changing so rapidly, qualitative research has been well suited to exploring the language and literacy practices that occur in such realms, and will likely continue to be in the future.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Ethnographic Approaches to Literacy Research; Multimodality and Literacy; New Literacies of Online Reading Comprehension; Online Intercultural Exchanges

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Qualitative Sociolinguistics Research

JULIET LANGMAN AND PETER SAYER

Qualitative sociolinguistics research (QSR) is an approach to sociolinguistic research that focuses on the ways in which people in communities use language to accomplish things in the world, and how they represent themselves to the world. QSR, in contrast to quantitative research, seeks to examine and explain the richness of language variation in particular contexts with an overall aim of understanding the relationships between language and the social world. As such, qualitative sociolinguistics research employs a range of data-collection and data-analysis tools and approaches that can lead to a "socially sophisticated approach to language variation that systematically takes into account the behaviors and motivations of speakers" (Chambers, 2003, p. 8).

Given the increasing complexity and interconnectedness of today's world, QSR places central importance on understanding how differences in language both reflect and help to create differences in—on the one hand—how individuals and groups use language, and—on the other hand—how they are evaluated or judged as a result of their language use by others. While QSR describes a particular research orientation, researchers in this area employ several related research methods, in particular ethnographic methods and discourse analytic approaches.

Formulating Qualitative Sociolinguistic Research

Qualitative research by its name implies a concern for the details and particularities of a research problem; in the case of sociolinguistic research, this entails a focus on the details and particularities of language use in context (Ramanathan & Atkinson, 1999). Key to any qualitative sociolinguistics research is a definition of language use and a definition of context. The concept of context can be understood in terms of a set of concentric circles of influence on a given language situation in which language is used for particular communicative functions. Beginning with the most local context, sociolinguists are interested in understanding how the moment-to-moment actions of one speaker in a particular time and place affect the form of what is said, the meaning that is intended, and the manner in which it is interpreted by others in the interaction. Social interactions are also framed by relationships among group members, which approaches such as social network analysis (Milroy, 1987) and communities of practice (Eckert & McConnell-Ginet, 1992) take as their starting point. Discerning and explaining differences in how language use both creates and reflects social groupings lies at the heart of sociolinguistics research. Through careful in-depth analyses of a wide range of situations and associated language use, a picture of how language works to structure society, and human relations within it, can be drawn.

QSR, like all other forms of research, starts with a particular question or issue. Consonant with the field of sociolinguistics, the research question or issue typically focuses on a social concern, for example understanding how individuals argue and misunderstandings occur, understanding how children and adults acquire the tools to communicate in their own or in new communities, or understanding how particular contexts serve to support or hinder individuals with different language practices when it comes to achieving their

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communicative and social goals. Topics or areas of concern in the last 20 years have included: differences in interaction both within groups and between members of groups based on social class, race, ethnicity, and gender; bilingualism and code switching; language planning and language policies; and educational and workplace practices. In each of these cases, research also often attempts to understand and explain inequality in terms of how individuals' language is evaluated.

Traditions in Qualitative Sociolinguistics Research

The use of qualitative methods in sociolinguistics generally belongs to one of three related approaches. The first derives from Dell Hymes's (1974) formulation of the *ethnography of communication* (also called the "ethnography of speaking"). The second is John Gumperz's (1982a, 1982b) work in the area of *interactional sociolinguistics* (see also Gumperz & Hymes, 1972). The third approach examines *language socialization* processes and focuses on the development of language use appropriate to a given community (Schieffelin & Ochs, 1986).

Hymes, coming from the tradition of linguistic anthropology, was interested in understanding how speakers accomplish social goals in given social situations in particular speech communities. His contributions—building on previous work, especially by Roman Jakobson—include the concept of *communicative competence* and the characterization of language use in nested contexts, namely, *speech situation*, *speech event*, *and speech act*. In addition, Hymes introduced the *SPEAKING model* as a mnemonic (Setting and Scene, Participants, Ends or goals, Acts, Key, Instrumentalities, Norms, and Genre) for examining all aspects of speech events that affect the form language takes and the associated language and social functions it fulfills. This model, moreover, provided qualitative researchers with a methodological tool or a frame for focusing on data to collect, and allowed for systematic and easily comparable analyses of situated language practices with a particular focus on the macrolevel of social situations and settings in which language is used.

Seminal works in the ethnography of communication tradition include Philips's (1983) study of how language differences between Warm Springs Indian and Anglo children in schools, for example the organization of interactional sequences and the use of silence, often made Anglo teachers perceive Native American children's behavior as reticent or noncommunicative rather than polite and deferential, as the students intended. Likewise, Heath's (1983) study of the literacy practices of three social groups revealed how values associated with particular language practices are socially constructed according to cultural norms and expectations. Eckert (2000) blended qualitative and quantitative methods to study the social structure of a typical high school. Her description and analysis of student cliques, "jocks," and "burn-outs" allowed her to demonstrate how language serves to structure social groups. What these studies have in common is their connection to the roots of ethnography: long-term participant observation in order to come to an understanding of language use from an insider (emic) perspective.

The second research tradition—interactional sociolinguistics established by John Gumperz (1982a, 1982b)—focuses on the face-to-face immediate context of interaction with the goal of understanding how each turn at talk influences subsequent turns at talk in ways that link any particular conversation to broader social categories. Such microlevel analyses of language use allow researchers to trace the linguistic and associated social origins of tensions that may exist across speakers that reflect broader patterns of inequality and that can lead to miscommunication. For example, Gumperz (1982a) analyzes how Indian and British participants in three short conversations had radically different perceptions of the attitudes and intentions of the Indian participants, based on the intonation patterns they used in simple questions: While the Indians intended to convey respect and deference, the

British perceived their interlocutors as "surly and uncooperative" because the communicative value of rising as opposed to falling intonation patterns on simple questions are reversed for speakers of these two different English-speaking speech communities. While this perspective focuses on a careful analysis of the linguistic form, it further requires the researcher to link the analysis of language features such as intonation to socially defined relationships between speakers.

Research from a *language socialization* perspective (Ochs & Schieffelin, 1984; Schieffelin & Ochs, 1986; Ochs, 1988) also examines language in use contextually and qualitatively. Here the primary focus of research is on how individuals—in particular children in their native communities—come to use language *appropriately* (i.e., in line with community norms). This strand of research is cross-cultural and also rests on the tradition of ethnographic observation and careful analysis of interactions, primarily caregiver and young child interactions. Such work, recently extended to include a focus on life-long socialization into new communities, focused on how individuals come to be "speakers of culture" (Ochs, 2002).

Observing Language Use in Context

To engage in qualitative sociolinguistics research means to spend time carefully observing and analyzing language in context in order to understand the language practices of individuals, the motivations or intentions underlying those practices, and how these language practices relate to society's norms or expectations about language. Johnstone (2000) traces this tradition of documenting language use to the field methods used by dialectologists in the 19th century who were interested in describing the linguistic characteristics of speakers of regional varieties. In contrast to quantitative sociolinguistics research, qualitative sociolinguistics research involves in-depth and often long-term observation of individuals and groups interacting naturally in society. Whereas a researcher using quantitative methods may use statistical correlations to show, for example, the complex connections between gender and social groups, a qualitative researcher may approach a similar question by analyzing both routine practices and "telling" examples to demonstrate how language constructs identity. For example, Ek (2009) analyzes how a young Guatemalan American woman negotiates her identity in contexts (home, church, and school) that represent and structure conflicting expectations with respect to ethnicity and gender. While quantitative researchers' data and analyses address questions of *how often* or *how much* a particular language practice occurs and is associated with social groupings, qualitative analyses are better suited to questions of *how* and *why* people engage in these practices (Johnstone, 2000).

Issues and Tools in Data Collection

There are several important issues related to collecting data on people's language practices. The first applies to both quantitative and qualitative methods, and was recognized early on by Labov as the *observer's paradox*. The dilemma arises from the fact that language use is highly situated and dependent both on speakers' perceptions of what their interlocutors know and need to know, and on how they wish to present themselves to their interlocutors. Therefore, when an observer enters the social scene, their presence changes the dynamic of how speakers use language, and data (language practices) are altered simply because the observer is there to record them. For example, if participants perceive the researcher as an outsider, they will likely adjust their speech, by simplifying their grammar and lexis (foreigner talk), or by altering the form or content of what they say in subtle ways to accommodate the researcher's presence. This might affect the production of exactly the

kinds of in-group linguistic markers or expressions of shared understandings that sociolinguists are interested in documenting.

There are several ways of counteracting the effect of the observer's paradox. Consonant with ethical issues related to working with human subjects, the preferred method is to be forthright about the purpose of the study, and to spend enough time interacting with people in the research setting so that the researcher's presence becomes familiar and participants' language use reverts mostly to what it would have been before the researcher arrived. This method, however, generally presupposes long-term engagement with the community, and does not resolve the observer's paradox as much as require researchers to locate themselves in the study and recognize that they have become part of the social scene they are investigating. Likewise, if researchers study a group of which they are already members or "insiders," they will have better direct access to the group's unfiltered language practices, though their insider status may cause other issues for their ability to analyze and interpret the data.

The tools for collecting qualitative sociolinguistic data are relatively straightforward; researchers generally rely on observation or participant observation supported by some combination of questionnaires, interviews, field notes, and recordings. The questionnaire or survey is a common instrument in both quantitative and qualitative studies since it can efficiently gather a large number of responses in a short period of time. The responses are easy to tabulate and present a straightforward set of results. Qualitative surveys often include Likert-scale (e.g., a five-point scale indicating agreement with a particular statement) and some open-ended items (Dörnyei, 2003). The limitation of questionnaires for language research is that they measure linguistic perceptions or beliefs rather than actual language practices, and include unrecorded adjustments to those perceptions based on the concept of the observer's paradox. It is also deceptively difficult to design good questionnaire items that will be interpreted in the same way by all respondents. Interviewing, like surveys, gathers *elicited data* by directly posing questions to participants. While interviewing is not as efficient as questionnaires, good interviewing techniques (Seidman, 2006) can yield rich insights about participants, in particular their own attitudes and perspectives on language use in the particular context under study. Field notes and recordings both serve to document *naturalistic*, that is, in situ language practices, language practices that are not directly elicited by the researcher. Taking field notes is a common practice in ethnography and is unobtrusive, although researchers are restricted by how much they can write down and are not able to go back and recheck the accuracy of their notes. Audio and video recordings have the advantage of allowing researchers to transcribe interactions more accurately. However, recording devices can be obtrusive—although less so today in many contexts, with digital devices so prevalent and much smaller in size. Nonetheless, as with all other forms of data collection, recording equipment always both focuses and therefore limits the data that can be gathered for analysis.

Recent Trends in Qualitative Sociolinguistic Research

Since the late 1990s, a number of new approaches to qualitative sociolinguistic research have emerged, each stemming from the traditions outlined above, but drawing new insights from theorizing and research in related fields. Most notable is the influence of sociocultural theory and, in particular, the *community of practice* model from cognitive science (Lave & Wenger, 1991), which has been taken up to examine language practices (Bucholtz, 1999; Eckert, 2000). With the introduction of this perspective a number of concepts, originally part of the work of either Hymes or Gumperz, have received greater attention. In particular, with the introduction of the community of practice as an alternative to the concept of

the speech community, the concepts of identity, ideology, and power have led to a shift in focus from understanding the normative behavior of individuals in groups to examining language practices at the margins, that is, language practices that individuals engage in to resist, subvert, or change community-wide practices. These studies examine the ambivalence, tensions, and contradictions that define intragroup as well as intergroup differences (Rampton, 1999).

Recent work has moved away from a normative or essentialist view of language practices, and aims to examine and explain the multiple and fluid ways in which language is used by particular groups of people in particular contexts. Nevertheless, these new approaches continue to employ the core data-collection techniques and insights from earlier research, while at the same time incorporating a different range of theoretical frames for analysis, frames that draw on a critical perspective of how language and society mutually structure one another.

In addition, there is a caveat worth noting with respect to the "quantitative-versus-qualitative" distinction; since the mid-1990s, following criticisms by variationist sociolinguists as well as anthropological linguists on work grounded in a single tradition, combined or mixed-methods approaches have emerged, which aim to provide richer explanations of observed differences in language use among members of communities under study. Those richer explanations, coming from a more in-depth examination of social contexts in which language use occurs, have been referred to as the third wave in sociolinguistic research (see Eckert, 2008).

SEE ALSO: Anthropological Linguistics; Emic and Etic in Qualitative Research; Ideology in Research Methodology; Interactional Sociolinguistics as a Research Perspective; Sociolinguistics: Mixed Methods; Sociolinguistics: Quantitative Methods

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Qualitative Teacher Research

ANNE BURNS

Introduction

The notion of teachers being active participants in research has a relatively long history in the field of general education. However, it is only since the late 1980s that it has received increasing attention and acceptance in the field of English language teaching. In this entry I discuss what is meant by teacher research and consider qualitative approaches typically used in teacher research. In particular I focus on action research, an approach to undertaking research which has gained ground in language teacher education.

What Is Teacher Research?

A range of terms is used to refer to research carried out by teachers. Among these are "teacher research," "practitioner research," "(collaborative/participatory) action research," "reflective inquiry," "teacher praxis," and "teacher as researcher inquiry." What they essentially have in common is that the research comprises investigation undertaken by in-preparation or practicing classroom teachers. However, classroom research cannot be defined as research undertaken by teachers, as it may be conducted by those working primarily as academic researchers. And action research may be undertaken by a wide range of practitioners in very different fields (e.g., business/management, policing, community social work). Bailey (2001, p. 491) makes useful distinctions between the terms "classroom research," "teacher research," and "action research": "the term *classroom research* refers to the location and focus of the study. *Teacher research* refers to the agents who conduct the study. *Action research* denotes a particular approach . . ." Thus, while teacher research is usually undertaken in teaching contexts, it could be carried out elsewhere. Borg (2010, p. 4) claims that "Teacher research is thus a broader term than action research—while action research (when conducted by teachers) will also be teacher research, not all teacher research follows the procedures which define action research." In this article, however, I focus on teacher research located in classrooms, and more specifically English language teaching (ELT) classrooms. In order to delineate even further discussion of what is now a large area of literature and research, the main part of the entry will deal with action research: its epistemological underpinnings, its processes, its methods, and its status in the ELT field.

Baumann and Duffy-Hester (2000) argue that teacher research in classrooms is characterized by several common features: the *emic*, or insider, perspective of researchers who have unique, situation-specific participant roles in inquiry; the blurring of theory and practice as *praxis*, that is, the mixing of reflection and practice within the research process; and the pragmatic and action-oriented nature of the research, whereby teaching is subject to inquiry, exploration, and evolution. Cochran-Smith and Lytle (1999, p. 22) summarize teacher research:

> in the broadest possible sense to encompass all forms of practitioner inquiry that involve systematic, intentional, and self-critical inquiry about one's work in K–12, higher education, or continuing education classrooms, schools, programs, and other formal educational

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> settings. This definition . . . does not necessarily include reflection or other terms that refer to being thoughtful about one's educational work in ways that are not necessarily systematic or intentional.

Cochran-Smith and Lytle's definition makes a helpful distinction between teacher research and reflection on practice. Their definition is in line with Baumann and Duffy-Hester, who stress that teacher research should be disciplined, intentional, and systematic, drawing as required both on more established methods from qualitative and quantitative paradigms and on emerging approaches (e.g., narrative/critical inquiry, introspective techniques, memoire, formative experiments) which offer ordered modes of inquiry.

In the field of general education, teacher research, overlapping with mid-20th-century developments in action research for teachers, has a detailed history. References to agendas and methodologies for teacher research are traceable to the intellectual traditions of Aristotle, and range from the work of Dewey (1904) to Kemmis and McTaggart (1988) and into the present (see Lytle & Cochran-Smith, 1994, for extended histories of teacher research). Developments in the second-language teaching field emerged in the 1980s (van Lier, 1988; see also Burns, 2005), although one early proponent was Lane (1962), who argued for teacher "experimentation" in the language classroom. Teacher research, and particularly action research, in ELT has burgeoned, especially during the last decade and a half (Burns, 2011). Various movements in curriculum theory and teacher education underpinned this emerging interest, including

- communicative language teaching,
- teachers as curriculum developers and course designers,
- the learner-centered classroom,
- classrooms as social contexts,
- reflective practice,
- teacher cognition,
- teachers as learners,
- the knowledge base of teaching,
- learner strategies, and learner independence and autonomy.

Concepts such as these which have permeated the field mediated the view that professional teachers benefit from becoming active and reflective investigators of their working environments.

Action Research as a Basis for Teacher Research

One of the most well-known forms of teacher involvement in research in ELT is action research. Acknowledging some of the subtle differences in terminology alluded to above, action research incorporates the following:

- It is research typically carried out by practitioners in a given field. In the field of ELT, teachers are therefore seen as major players.
- It offers a flexible, adaptive approach to doing research since it does not adhere to a particular research paradigm. The point of action research methodology is to use empirical approaches that provide a best fit for the issues under investigation.
- It allows for close and intimate engagement of the researcher in the research process. Action researchers are at the same time actors and investigators; thus, the technique is well suited to classroom and pedagogical investigation.

- It enhances and systematizes conditions that typically pertain to classroom practice. It harnesses the inevitably reflective dimensions of teaching and integrates them with affordances for more evidence-based practice than is normal in most classrooms.

Action research can be envisaged as embracing a "family" of research approaches. It is not "either/or" in methodological orientation but is eclectic, potentially drawing on both quantitative and qualitative paradigms and methods in ways that are the most appropriate for finding answers to practical challenges. It is typified by successive (iterative) cycles that involve researchers in phases of activity, reflection, empirical data collection, evaluation, and interpretation. As the research evolves, later cycles should become refined in their methods, data, and interpretations as the researcher's understanding deepens (see http://www.scu.edu.au/schools/gcm/ar/whatisar.html for useful definitions and resources for action research). Action research is often viewed as most productive when undertaken as a participatory or collaborative process as this allows for critical dialogue among those who are the most involved and affected by developments in practice (Kemmis & McTaggart, 1988; Burns, 1999).

Action researchers typically begin by identifying a "research-worthy" aspect of the practices or conditions within their immediate social environment, then plan strategies to enhance, mediate, and understand what is going on. The twin goals of action research are change (for development and improvement) and evidence (for understanding). Although action research is sometimes described (even dismissed) as "problem-solving," this characterization underestimates the intentions and scope of action research. The action and understanding that are at the base of action research are not simply to "fix up" technical teaching matters. Rather they are to enable practitioners to develop their own critical and evidence-based theories *of* practice which, given the particular education context and conditions, may differ materially and empirically from a disciplinary field's formal theories *for* practice.

While methods for data collection are eclectic, teacher action research is often commonly associated with qualitative strategies, probably because these may be more amenable and have been more generally represented in published accounts. Table 1 identifies methods that are frequently deployed.

Table 1 Methods for collecting action research data (adapted from Burns, 2010a, p. 57)

Observational strategies	*Nonobservational strategies*
Examples: • **Observation** by teacher or colleague on particular aspects of classroom action. • **Brief notes or recorded comments** made by the teacher while the class is in progress. • **Audio or video recordings** of classroom interaction. • **Transcripts** of classroom interactions between teacher and students or students and students. • **Sociograms**, maps, or layouts of the classroom that trace the interactions between students and teacher. • **Photographs** of the physical context.	Examples: • **Interviews** using semi-structured or open-ended questions. • **Focus groups**/class discussions. • **Questionnaires** and surveys. • **Journals**, diaries, and logs kept by teacher or learners. • **Classroom documents** or artifacts, such as teacher-made or textbook materials used, samples of student writing, speaking tests, assessment portfolios, or student self-evaluations.

In teacher action research, data collection should be balanced in a mutually reinforcing way with the priorities of teaching and learning. Data collection is not an end in itself, but a means to deepen personal practical knowledge, analytical skills, explanation, understanding, and interpretation.

Action Research in ELT

Over the last 20 years of the ELT teacher research movement, there have been various key phases, mainly reflected through the kinds of publications that have emerged. Three major types have marked this trajectory.

How-to Introductions and Guides

Several early publications gave impetus to the teacher research movement by focusing on the "how-to" of conducting research in classroom contexts. Nunan (1989, p. xi) aimed to provide "a serious introduction to classroom research to language professionals who do not have specialist training in research methods." Specifically, the purpose of this volume was to initiate teachers and teachers in preparation into ways of investigating and understanding their classroom practices. This volume was closely followed by Allwright and Bailey (1991), who were interested in introducing teachers to what researchers had learned about classrooms and how teachers "might go about continuing the explorations in our own classroom" (p. xvii). In the epilogue to this volume, Allwright outlined his emerging notion of "exploratory teaching," a parallel movement to teacher research, mostly recently manifested as exploratory practice (Allwright & Hanks, 2009). Over the years, as his later publications explain, Allwright has moved away from the notion of teacher research, which he criticizes for overburdening teachers, and toward the notion of practical understanding through exploration. While not specifically foregrounding teacher research, the concept of reflection as a central dimension of professional teaching was central to Wallace (1991), while McDonough and McDonough (1997) highlighted again the idea that the "interface" between research and teaching should be explored by teachers themselves. Similarly to the previous volumes, they offered research advice and "techniques" for teachers to understand and explore ways of doing research on classroom issues and questions. In the 2000s more resources providing such guidance have gradually become available.

Teacher Accounts

During the 1990s few accounts of teacher action research were available through journal and other publications. Of examples that did exist for would-be teacher researchers, Edge and Richards (1993), editing a volume for the IATEFL Teacher Development Special Interest Group (TD SIG), included accounts from Israel, Poland, and Australia. Richards (1998) provided short international case studies written by classroom teachers in the format of "context, problem, solution" with accompanying comments by well-known teacher educators. However, not all of these accounts could be said to conform to the systematic phases and data collection required in teacher action research. Perhaps the most sustained examples of teacher research at this time were the accounts in the *Teachers' Voices* eight-volume series, edited in Australia by Burns, Hood, and de Silva Joyce (Burns & Hood, 1995) and culminating in Burns and de Silva Joyce (2005). Other contributions came from special issues of the *TESOL Journal* (Volume 4, Issue 1) and *The Canadian Modern Language Review* (Volume 54, Issue 1). During this decade, teacher researchers and their mentors would have had to search across numerous journals to retrieve accounts authored by teachers.

The field has since moved rapidly on with more and more accounts written by teachers being published since 2000. Journals that devote space to teacher research include *Profile*, *English Teaching Forum*, *The Language Teacher*, *ELT Journal*, and the revived *TESOL Journal* now published online. Teacher researchers are able to access examples from a wide range of international contexts, such as collections of research reports that have emerged from the Middle East (Dubai and the Sultanate of Oman) and Asia (Singapore and Hong Kong). Professional associations like TESOL and IATEFL have also continued to promote and publish teacher accounts. A series published by TESOL which has contributed greatly to putting teacher research on the map is the *TESOL Language Teacher Research Series*, which features volumes from different world regions: Asia, Europe, the Americas, the Middle East, Australia and New Zealand, and Africa (see Burns, 2010b, for a comparative review of these collections).

Researcher and Teacher Educator Analyses

Academics involved in teacher education have also contributed to discussions of teacher research, sometimes as part of broader analyses of professional development. While book-length treatments of language teacher research from teacher education perspectives are relatively rare, notable examples critically analyzing the processes and outcomes of including teacher research in teacher development programs appeared from the early 1990s. These publications have dealt with issues such as the rationale, methodologies, experimentation, understanding, and impact that emerged from incorporating teacher research components into professional development. Accounts by teacher educators of learning from the experiences of introducing teachers to research come from India, China, Australia, Israel, the USA, Turkey, Hong Kong and Indonesia, and the UK (see Burns, 2005, 2011, for references to these publications). They document the benefits, challenges, and insights gained from these experiences. Benefits claimed include strengthening of teacher and teacher-researcher collaboration, development of personal and professional knowledge, enhancement of reflection and critical evaluation of classroom practices, growth of interest in research and knowledge of how to conduct it, greater sense of professionalism, and affirmation of effective practice. However, there is also no doubt from these accounts that the concept of teacher research faces numerous challenges. It is to the constraints and impediments that confront teachers in doing research that we now turn.

Constraints and Impediments in Teacher Research

Despite the advocacy of teacher research over two decades and the now considerable body of work building up around this theme, it cannot be denied that numerous obstacles still lie in the way of teachers undertaking research. Of these, time to do research is a prime constraint recognized from the early literature (Nunan, 1989). Teachers are rarely given time to research, or are rewarded for doing so, and generally have considerable teaching loads. Therefore, motivation to do research may not be high. Other limitations include indifferent, or even hostile, school cultures, leading to unsupportive or isolated conditions for would-be researchers; teachers' lack of research awareness, knowledge, and skills; beliefs of school leaders or peers that research brings little to teaching, or is of little interest; lack of resources or funding; and casualized work conditions (see Borg, 2010).

Even where conditions are more positive, teachers can feel that they are being "forced" to do research in order to support hidden policy or administrative agendas, as Miller (1990, p. 114) articulates: "nothing would please some administrators I know more than to think that we were doing 'research' in their terms. That's what scares me about the phrase 'teacher-as-researcher'—too packaged. People buy back into the very system

that shuts them down." At a time when many education systems around the world face greater funding squeezes, increasing performance management, and calls for teacher accountability, teachers may well perceive being called on by officials to do research to be a powerful disincentive.

Critiques of Teacher Research

A major critique that has faced teacher research in the past, and continues to face it, is its quality and rigor. Arguments include lack of reliability, overreliance on narrative and description, limited data analysis, the technicist/practical nature of the research, lack of critical depth and ethical accountability of experimentation with learner participants (see Burns, 2011). Some commentators consider the whole notion of teacher research as naive. Block (2000, p. 138) opines that it is "strong in theory but very difficult to carry out in practice." Dörnyei (2007, p. 191) assesses it as "a noble idea" that "just does not seem to work in practice," as "there is too little of it." He argues that it is primarily promoted by "researchers" and is therefore "top-down," and, "ironically," undemocratic. He questions whether it is in fact "viable" at all as research, as teachers "with little background knowledge and insufficient research experience," would be likely to produce "questionable or trivial results." Others echo his reservations. Ellis (2010, p. 89) refers to "methodological limitations" and casts doubts on its value to academic research.

In response to these kinds of criticisms, some have argued (Crookes, 1993) that teacher research needs to be judged not by the criteria of positivist research (experimentation, generalizability, replicability), but by other standards. These would include maintaining relevance to practice, testing relevance and reliability through cyclical reiteration (Kock, McQueen, & Scott, 1997), ensuring triangulation, incorporating sustained involvement and coding checks (Burnaford, 2001), and focusing on internal validity (Anderson & Herr, 1999). Currently, more lively and robust discussion on such standards takes place in disciplines beyond ELT (engineering, business, management, sociology, and so forth), which have increasingly incorporated action research into their fields of practice in relation to vocational needs. Similar extended debate within the ELT field would serve to seek legitimate acceptable standards for teacher research.

Conclusion

Although teacher research in ELT seems to be an unstoppable movement, it has still to show widespread impact on teachers and on empirical findings in the language teaching field (Borg, 2010; Burns, 2011). This entry has highlighted both some of the benefits claimed for teacher research and the impediments placed in the path of teacher involvement. In its defense, it can be argued that the whole notion of ELT teacher research is in its infancy and has yet to develop the support, sophistication, and reach that some would demand of it. The potential for the field of the teacher research movement would seem to lie in acknowledging a role for teachers in the enterprise of discovering, investigating, and understanding localized practices, and therefore in the testing out of the relevance of currently accepted theory, research, and policy.

SEE ALSO: Classroom Discourse; Classroom Research; Critical Pedagogy; Language Teacher Development; Practice in Second Language Instruction; Qualitative Methods: Overview; Qualitative Research in Language Assessment; Researcher Reflexivity; Teacher Education for Multilingual Education

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Quality in Interpreting

ECIS RESEARCH GROUP: RAFAEL BARRANCO-DROEGE, ÁNGELA COLLADOS AÍS, MARÍA MANUELA FERNÁNDEZ SÁNCHEZ, OLALLA GARCÍA BECERRA, EMILIA IGLESIAS FERNÁNDEZ, E. MACARENA PRADAS MACÍAS, AND ELISABETH STÉVAUX

Interpreting quality is a multifaceted and complex concept resulting from a variety of communication situations and interpreting types, including conference, community, court, and signed language interpreting. It also comprises the views, motivations, and goals of the interpreters and all other stakeholders—speakers, event organizers, public institutions, trainers, and so on.

Through the years, interests in quality research have evolved. Many questions still relevant today had already been addressed in the 1950s by interpreters who approached their work from an intuitive perspective. The 1970s saw psychologists carrying out quantitative studies which focused on the cognitive processes in simultaneous interpreting. They gauged quality in terms of errors in the transfer of linguistic information. In the 1980s and 1990s, interpreting scholars took research into their own hands to meet their specific goals and interests. They elicited the end users' perceptions about different quality parameters and examined the factors enhancing or undermining quality in conference settings. In the course of time, research on quality has become more interdisciplinary, has resorted to different methodologies, and is increasingly addressing the specific needs of modalities such as community, court, and signed language interpreting.

However, the concept of interpreting quality remains elusive for several reasons. Although there is some consensus as to a core of quality parameters, the relative importance granted to each parameter varies depending on the communication situation, the interpreter's role, and the needs and preferences of the stakeholders. In practice, the notion of "absolute quality" can be unrealistic, as it may be inappropriate or difficult to maximize quality in all of its parameters simultaneously. Therefore, interpreters deliberately foreground some quality parameters at the expense of others in order to fulfill communication preferences and achieve "quality under the circumstances."

To address this dynamic notion of quality, scholars have carried out empirical studies to identify patterns in the users' perception of quality, as well as factors that maximize or minimize the quality of the interpreter's performance in different settings. Research is taking place from two perspectives, focusing, on the one hand, on the relationship between the features of the interpreter's output itself and their perception by human agents (*product-oriented approach*), and, on the other hand, on the relationship between source speech, target speech, and circumstances (*process-oriented approach*).

The product and the process of interpreting have been addressed both in the profession and in training. For the purpose of quality assurance in a variety of market situations, professional associations and international organizations have defined standards and codes of conduct to address different aspects, for instance the role of the interpreter and working conditions. In their turn, trainers start by focusing on process-related aspects in order to gradually build up the students' skills, and turn to the product in the final assessment, in order to comply with the needs of the profession.

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The Perception of Quality

Most studies that address the quality of performance in interpreting have focused on the various stakeholders' perceptions of the interpreter's output, defining a core catalog of quality parameters: *accent*, *accuracy*, *complete rendition*, *correct grammar*, *fluency*, *intonation*, *logical cohesion*, *pleasant voice*, *style*, and *terminology*, among others. However, other factors like verbal back-channeling, eye-contact, body language, and attire are also taken into account in oral consecutive and bilateral interpreting and in all kinds of signed language interpreting, while aspects like microphone discipline and time lag are considered in simultaneous interpreting.

Quality perceptions were first studied in conference settings, and users' a priori expectations were elicited with the view to disentangle the relative importance they granted to the various quality parameters. Findings have shown that content-related parameters are regarded as more important than form-related parameters, such as voice features. In particular, *accuracy* and *logical cohesion* appeared consistently at the top of rating scales, while *pleasant voice* and *accent* were always bottom of the table. This was true even in settings such as TV interpreting, in which expressive features are particularly apparent. As to the rest of the parameters, their relative positions in the ranking have been observed to be variable.

Findings also revealed differences in expectations depending on users' professional background, gender, age, type of event, and experience with interpretation. Furthermore, users' preferences also vary with regard to the interpreter's role, as users in conference settings seem to favor interpreters staying in the background and playing what has been termed the "ghost role." In contrast, a more active role by interpreters is often advocated in community and signed language interpreting settings, although different views on the degree of coparticipation exist. This debate is driven by those who point to factors such as power relations and differences in the participants' social backgrounds that gain special relevance in these settings. Moreover, interpreters are more demanding than end users.

In an effort to test their findings on users' a priori expectations, scholars matched them against their actual assessment from an observational perspective in which users were asked to assess real interpretations regarding different quality parameters and in experimental studies in which selected parameters were modified in a controlled environment. These studies showed that weaknesses in certain form-related parameters such as *intonation*, *fluency*, and *accent* spilled over other parameters and degraded the perception of overall quality and even of *accuracy*, traditionally ranked top of users' expectations. The findings seem to confirm that users' mental representations of their priorities in interpreting quality are not quite in line with their actual perception of the quality of a given interpretation. This could be due to parameters sharing certain perceptual features (subparameters) or to psychological priming. In addition, gender, social background, experience with interpreting services, turn-taking rate of the interpreters, and the duration of the interpreting session have been seen to have a marked effect on the assessment of quality.

Consequently, the idea that end users are in a position to judge certain parameters, particularly *accuracy*, is challenged, and the need for a more precise definition of each quality component seems to be in order. In this spirit, recent strands of research have been using an interdisciplinary observational approach in order to analyze assessment patterns and find out more about the interaction between parameters.

Quality and the Interpreting Process

End users' perceptions of quality may provide a convenient yardstick of their satisfaction, but a comprehensive approach to quality also requires a close examination of the source

speech and the interpreter's rendition, as well as of the interpreting situation under which they are produced. Thus, in order to gain a deeper understanding of quality, scholars have examined the process of interpreting, taking into account the features of the discourse, the communication situation, and the mental representations involved. On the one hand, they have analyzed the interpreting product as a speech in its own right, trying to identify symptoms of possible failures and achievements in the interpreter's rendition (for instance, hesitations, false starts, and repairs). On the other hand, they have compared the interpretation with the source speech, both in terms of semantic equivalence and of communicative effect.

In the early days of interpreting studies, researchers carried out experiments in order to analyze aspects such as the speaker's speech rate, the length of the source speech and the availability of documentation on the interpreter's output. The validity of these studies has been challenged due to methodological shortcomings, as quality was considered to be tantamount to the occurrence of errors, substitutions, omissions, and additions in the interpreter's output as measured against the source text, and research approaches were refined in order to include pragmatic and contextual viewpoints more relevant to the reality of interpreting. Evidence suggests that the presence of *problem triggers* in the source speech and the interpreting situation, such as proper nouns and the speaker being out of sight of the interpreter, can jeopardize interpreting quality in general and accurate rendition of the source message in particular. Nevertheless, there is a high variability among interpreters, even when they have the same background, making apparent the complexity of research on quality once again.

Ongoing observational research is using corpora of genuine source speeches and their interpretations so as to cross-examine *problem triggers* with signs of achievements and failures in the target speech. Current research is resorting to large corpora in order to analyze variables such as setting, language combination, directionality, speaking style and speech rate, with a view to identify patterns in interpreters' choices and strategies, and how professionals go about monitoring and optimizing the quality of their output in different situations. These findings are expected to shed light on key issues in the design of professional standards and prove instrumental to the improvement of training.

Professional Standards and Codes of Conduct

Interpreting, as any social activity, is streamlined by norms, defined as internalized cultural conventions and constraints resulting from the expectations of the receiving context and society and governing the methods and strategies applied by the interpreter.

Norms are generally implicit, but they lie at the root of the professional standards and codes of conduct developed by professional associations and the interpreting services of international organizations and reflecting both in admission requirements and the quality control built into the interpreters' workflow. These types of regulations are not always formulated in terms of the parameters defined in quality research, but address a number of quality-related factors especially relevant to professional practice, like ethical issues (faithfulness, integrity, and confidentiality) and working conditions (contract clauses and booth specifications).

The development and social acceptance of standards is conditioned to the recognition of the authority of professionals and by the users having concrete expectations and a shared understanding of the quality of interpretation. In practice, interpreters are still struggling for the recognition of their profession and a consensus on the definition of their role, especially in contexts such as community, court, and signed language interpreting. This, along with the large number of local and regional professional associations, could be a reason for the coexistence of several professional standards and codes of ethics. However,

there is a certain degree of consensus at regional and national level in community, court, and signed language interpreting, and at an international level in conference interpreting.

In turn, some standardization agencies have also developed quality-oriented standards for interpreters. Examples are UNI 10547:1996 (Italy), ÖNORM D 1200:2000 and D 1201:2000 (Austria), Taalmerk Standard (the Netherlands), and ASTM F2089-01:2007 (USA). Interestingly enough, the European standard EN 15038, released in 2006, focuses exclusively on written translation.

Quality Assessment in Interpreter Training

While assessment of student candidates takes into account their profile and potential, there is a high degree of unanimity that graduates must live up to the same quality standards as professional interpreters. For this reason, in summative assessment, their performance is measured against the yardstick of professional standards. Accordingly, traditional training approaches have gravitated around practical guidelines aimed at improving the *product* of the interpretation, focusing particularly on the accurate rendition of the message of the source speech.

Still, during training, ongoing assessment strives to measure the development of competences and skills by the students. Since these two are subordinate to the interpreter's role in the interaction between three parties (speaker, interpreter, and recipient), modern training models have factored in both the features of the source speech and the communication situation, in an attempt to parameterize the interpreting *process*. In order to optimize the mental resources available during interpretation, students are encouraged to develop strategies aimed at minimizing certain cognitive efforts. These strategies may consist in dealing with the informational, cultural, and linguistic difficulties posed by the source speech, anticipating information, efficient note taking, and examining the frames and events involved and the intended function of the source and the target speeches.

In modern training models, the learning process is sequenced into a number of stages, each with their own goals and assessment procedures. However, there are no generally accepted standards as to the pace at which difficulty should be increased, and, most importantly, as to which specific weaknesses and achievements need to be focused in each stage in order to aid in the gradual development and refinement of interpreting skills, the appointment of evaluators (assessment by one or more instructors, peer-assessment, or self-assessment), and the evaluation procedure (for instance, merely writing down comments on a transcript of the source speech or analyzing recordings of the students' interpretations). Although different assessment criteria have been used, it has been observed that they often yield similar results, as they evolve around the same set of quality parameters and standards.

SEE ALSO: Analyzing Spoken Corpora; Interpreting Techniques and Modes; Models of Interpreting; Professionalization of Interpreters; Research on Signed Language Interpreting; Signed Language Interpreting: Types, Settings, and Modes; Teaching and Learning of Interpreting

Suggested Readings

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Quantitative and Mixed Methods: Overview

JOAN JAMIESON AND KIM MCDONOUGH

The types of language-related issues investigated by applied linguists are detailed and complex. They cut across many domains of social life from school to business, law, and government, to name a few. Questions pertain to issues such as the effectiveness of particular language-teaching practices, the language needs for prospective employees in a business, comprehensibility of language used for legal purposes, and assessment of language ability to meet government-set standards. In view of the many purposes of applied linguistics inquiry, it is not surprising that applied linguists draw upon a range of empirical methods for conducting research (Mackey & Gass, 2005; Dörnyei, 2007). The quantitative and mixed methods section of the encyclopedia introduces the characteristics of two approaches to research, which have been adopted and adapted from methods in social science, through entries that explain basic concepts underlying them, show the statistical tools used by researchers, and illustrate their use with descriptions of example studies.

Basic Concepts

Applied linguistics research aims to create new knowledge and address language-related problems in the real world. Accordingly, basic concepts underlying research activity consist of those that help to conceptualize the creation of knowledge, including their basis in particular worldviews and their methodological tools (Johnson & Onwuegbuzie, 2004; Onwuegbuzie, 2007). Quantitative methods are often characterized as working from the assumption that a single reality exists and therefore the KNOWLEDGE CLAIMS that are the objective of such research reflect this view. Quantitative research typically relies on deductive reasoning and hypothesis testing to confirm or refute theories, and therefore the statistical concepts including INFERENCE, PROBABILITY AND HYPOTHESIS TESTING, SAMPLING: MIXED METHODS, SAMPLING: QUANTITATIVE METHODS, and VARIABLES used to support such thinking are important. Quality concepts overarching the research process are related to the validity of results (see VALIDITY: MIXED METHODS) and the ethics of research practice (see ETHICS IN RESEARCH). Nine entries describe the basic concepts (see DESCRIBING AND ILLUSTRATING QUANTITATIVE DATA) that underlie quantitative and mixed methods research.

The methodological tools for data collection in applied linguistics include TESTS, INTERVIEWS, NATURALISTIC DATA, SURVEYS, VERBAL REPORT, PROMPTED PRODUCTION, PROMPTED RESPONSES, and GRAMMAR ANALYSIS TECHNIQUES (Gass & Mackey, 2007). Eight entries explain how these tools are used to collect data, as well as the factors that researchers consider when choosing methods for data collection. These basic concepts of quantitative research are important for understanding mixed methods research as well because mixed methods research contains elements of both quantitative and qualitative thinking, and in fact the mixed methods entries included emphasize their quantitative component. A more comprehensive introduction to qualitative research is available in the qualitative research section of the encyclopedia, and a more qualitative approach to mixed methods can be found in Hesse-Biber (2010).

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Statistical Tools

The statistical tools and the software that makes them accessible are fundamental to quantitative and mixed methods research in applied linguistics. The use of a variety of statistical tools is described in 14 entries to explain the logic of the statistical tests in the research design, assumptions about the data, and the effect on interpretations when assumptions are violated. Each entry highlights issues in the use of the statistical tools through examples of applied linguistics research. Whenever possible, both parametric and nonparametric procedures are described. Information is also included on how to interpret results using "rules of thumb" and explanations of effect sizes. The following statistical tools have been included: COMPARING TWO INDEPENDENT GROUPS, comparing more than two independent groups (see COMPARING TWO+ INDEPENDENT GROUPS), COMPARING GROUPS WITH MULTIPLE INDEPENDENT VARIABLES, COMPARING GROUPS WITH MULTIPLE DEPENDENT VARIABLES, COMPARING TWO RELATED SAMPLES, comparing more than two related samples (see COMPARING TWO+ RELATED SAMPLES), TESTING INDEPENDENT RELATIONSHIPS, MULTIPLE REGRESSION, STRUCTURAL EQUATION MODELING, CLUSTER ANALYSIS, discriminant analysis (see DISCRIMINANT FUNCTION ANALYSIS), FACTOR ANALYSIS, TIME SERIES, and META-ANALYSIS.

Example Studies

Seventeen of the entries illustrate how researchers have used quantitative and mixed methods tools in their research. In contrast to the statistical tool entries, which provide an overview of each test, the example study entries illustrate how these tools have been used to answer questions of interest in various areas of applied linguistics. These entries provide detail showing how researchers used a particular statistical test from research question to data entry, reading and interpreting results, and displaying the data. Each entry has cross-references to entries that explain the statistical tools as well as to those that provide an overview of the area of research represented by the example. Many of the entries include a data set related to the example study that readers can use to try out the statistical tool or data analysis technique.

Ten quantitative studies illustrate the use of statistical tools in the following areas: assessment and evaluation (see ASSESSMENT AND EVALUATION: QUANTITATIVE METHODS), bilingualism and multilingualism (see BILINGUALISM AND MULTILINGUALISM: QUANTITATIVE METHODS), corpus linguistics (see CORPUS LINGUISTICS: QUANTITATIVE METHODS), cognitive second language acquisition (see COGNITIVE SECOND LANGUAGE ACQUISITION: QUANTITATIVE METHODS), discourse and interaction (see DISCOURSE AND INTERACTION: QUANTITATIVE METHODS), language learning and teaching (see LANGUAGE LEARNING AND TEACHING: QUANTITATIVE METHODS), phonology (see PHONOLOGY: QUANTITATIVE METHODS), pragmatics (see PRAGMATICS: QUANTITATIVE METHODS), sociolinguistics (see SOCIOLINGUISTICS: QUANTITATIVE METHODS), and technology and language (see TECHNOLOGY AND LANGUAGE: QUANTITATIVE METHODS). Seven mixed methods entries illustrate how qualitative and quantitative techniques were combined to address topics in assessment and evaluation (see ASSESSMENT AND EVALUATION: MIXED METHODS), discourse (see DISCOURSE: MIXED METHODS), language learning and teaching (see LANGUAGE LEARNING AND TEACHING: MIXED METHODS), literacy (see LITERACY: MIXED METHODS), phonology (see PHONOLOGY: MIXED METHODS), sociolinguistics (see SOCIOLINGUISTICS: MIXED METHODS), and technology and language (see TECHNOLOGY AND LANGUAGE: MIXED METHODS).

The quantitative and mixed methods entries were selected according to three main goals: (a) to introduce basic concepts related to research design, data collection, and analysis; (b) to describe the statistical tools commonly used in applied linguistics research; and

(c) to provide examples of research that illustrates the use of quantitative and mixed methods tools across subdisciplines in applied linguistics. These entries provide a glimpse of one way in which knowledge in applied linguistics is constructed. More comprehensive information about the knowledge in applied linguistics is available in the rest of the encyclopedia.

SEE ALSO ON QUANTITATIVE AND MIXED METHODS: Hatch, Evelyn; Mixed Methods; Quantitative Methods

SEE ALSO: Qualitative Methods: Overview

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Quantitative Methods

HOSSEIN FARHADY

Introduction

There has been a plethora of ongoing debates in the field of applied linguistics on many aspects of quantitative research method (QRM) in the last few decades. Despite the validity and significance of the debates and their contribution to sharpening our understanding of the concepts, QRM remains as one of the most widely practiced approaches in social sciences in general, and in applied linguistics in particular (Lazaraton, 2005; Murtonen, 2005). Although such debates are important and necessary, this entry will focus on explaining the major features of QRM in as nontechnical terms as possible.

Most scholars would agree with the classic definition of the term "research" as a systematic approach to answering questions (Hatch & Farhady, 1982, p. 1). There are three key terms in this definition: a question, a systematic approach, and an answer. The controversies in the field are not on the definition of the term "research" but on different interpretations of the key terms in the definition. For instance, the nature of the question and the way it should be formulated, the approach to be taken to answer the question, and the quality of the answer to the question are all issues upon which no wide agreement exists among scholars. The differences in the interpretations of these concepts stem from different theoretical orientations that scholars adhere to because advocates of each theory believe in a number of assumptions that justify their interpretations (Kinn & Curzio, 2005). Therefore, to put the issue in an appropriate context, first an explanation on theoretical assumptions of QRM follows and then a description of how the three key terms in the definition function in practice.

Theoretical Assumptions

Generally, an inquiry is performed within a particular school of thought commonly referred to as a paradigm. This paradigm is believed to have four cornerstones: ontology, epistemology, methodology, and axiology (Onwuegbuzie & Leech, 2003). There are several popular paradigms such as positivism, constructivism, and relativism each with some axiomatic principles that scholars follow, or should follow, in practice. Since QRM is rooted in the positivistic paradigm, a brief definition of the key concepts and their treatment in this paradigm will help clarify the characteristics of QRM within this framework.

Ontology raises questions about the nature of reality and the nature of human beings in the world. According to positivism, there is a real world, the reality of which is expressed in terms of the relationships among variables, and the extent of these relationships can be measured in a reliable and valid manner using a priori operational definitions. Positivists believe in the verifiability principle, which states that something is meaningful if and only if it can be verified by direct observation. Thus, ontologically, positivism is a school of thought that excludes everything from its consideration except natural, observable, and measureable phenomena and their interrelationships.

Epistemology asks how we know the world and what the relationship between the inquirer and the known is. Epistemologically, positivism places a premium on objective observation

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of the "real world" out there. Positivists contend that the researcher (i.e., knower) and the object of the study (i.e., known) are independent. As such, researchers should remain objective and impartial in studying phenomena (Cohen, Manion, & Morrison, 2000).

Methodology focuses on the best means of acquiring knowledge about the world. Methodologically, positivists use deductive reasoning which is a system for organizing known facts in order to reach a conclusion. Conclusions are true only if the premises upon which they are based are true. That is, positivists emphasize the importance of a priori hypotheses and theories. The researcher manipulates at least one variable and then measures its effect on another variable, controlling potentially extraneous variables. Through such a procedure, valid cause–effect relationships are believed to be established and generalized as laws.

Axiology deals with the ethics and asks how moral a person a researcher should be in the world. Every ontology or epistemology has its own ethical stance toward the world and the self of the researcher. Positivists believe that inquiries should be value free. In other words, the researcher's values, interpretations, feelings, and musings have no place in the positivist's view of scientific inquiry. Positivists prefer rhetorical neutrality, involving an exclusively formal writing style using impersonal voice and specific terminology.

Putting the above-mentioned principles together, a working definition for QRM can be formulated as an inquiry where an impartial researcher investigates cause–effect relationships between the variables in a world of real objects. This derived definition is conceptually matching textbook definitions where scholars contend that QRM numerical data are collected on the variables and analyzed using mathematical methods (Aliaga & Gunderson, 2002). Following this definition, the three key concepts of "question," systematic approach, and "answer" in QRM will be detailed below.

Formulating the Research Question

QRM starts with a question which is formulated about the relationship between at least two variables. A variable is any attribute that changes from person to person (height), place to place (size), or time to time (temperature). Variables can be concrete, that is, directly observable and measurable such as height and weight; abstract, that is, not directly observable or measureable but inferred from observations and measurements such as intelligence and language ability; discrete or categorical, that is, either/or type such as left or right handedness, male or female; and continuous, that is, can take any value such as weight and language ability. Research questions can be formulated about the relationship between the variables to indicate either a cause–effect relationship or just go togetherness between them.

Example 1: *What is the effect of using multimedia tasks on the learners' listening comprehension (LC) ability?*

Example 2: *What is the relationship between the students' LC and reading comprehension abilities?*

The first question is of a cause–effect type where the researcher sets out to investigate whether using multimedia tasks will have any effect on the learners' LC ability. The second question, however, is of correlational type where the researcher intends to find an existing relationship between the two variables. No instruction or manipulation is planned to find a cause–effect relationship since the researcher appears on the scene after the fact and has no role in changing any one of the variables.

An important point in formulating a research question is defining the variables under investigation as clearly as possible in both theoretical and operational forms. Theoretical

definition puts the variable in the context of theories from which it is derived. To provide a reasonable theoretical definition, an in-depth review of literature needs to be performed. Operational definition, on the other hand, is to suggest a clearly measurable procedure for the variable in question. For example, LC ability may be defined theoretically as the ability to understand oral messages in real-life situations, and operationally as one's performance on a test which is designed to measure one's ability to understand oral messages.

Theoretical and operational definitions of a variable given in a particular research context may not be acceptable to all readers because they are specific to that research design. For instance, there may be different definitions of LC ability in theory and different measures of LC in practice. However, a working definition should be provided by the researcher that is most reasonable in the context of research. Despite the potential disagreement among scholars, it is an advantage of QRM that the researcher and readers share common definitions of the variables.

In addition to defining the variables, the researcher should determine the functions that variables are designed to serve in the process of research. Most common functions that a variable can serve in QRM are: independent, dependent, moderator, intervening, control, and extraneous. An independent variable is the main or the cause variable which is under the control of the researcher to be manipulated, while the dependent variable is the variable that depends on, or changes as the result of, the manipulation of the independent variable. For instance, in the example above, using multimedia tasks is the independent variable and performance on a measure of LC ability is the dependent variable because performance on this measure depends on the quality, quantity, and effectiveness of the multimedia tasks designed by the researcher.

A moderator variable is the variable that may influence the outcome of the dependent variable without being necessarily manipulated. For instance, within the context of this example, the researcher may hypothesize that males and females may benefit differentially from the multimedia instruction. In such a case, gender, as a moderator variable, may change the outcome of research. A control variable, on the other hand, is a variable whose effect is controlled or eliminated by the researcher so that the variation of this variable does not influence the outcome of research. Suppose the researcher believes that familiarity with computer may have an effect on the achievement and performance of the learners. Therefore, to eliminate the effect of familiarity with computer, the researcher selects participants who are absolutely unfamiliar, or equally familiar for that matter, with computer technology. In this case, any effect due to computer familiarity is removed from the research design, that is, controlled.

An intervening variable is the variable that intervenes between the independent and the dependent variables. It is often left unobserved and unmeasured because it is very often an abstract variable. In our example, due to the effect of the independent variable, that is, multimedia instruction, the participants learn and improve their LC ability. Although this learning process can neither be observed nor measured, its effect is manifested in the measurement of the performance on an LC test. In other words, the learning process is situated between the independent and the dependent variables and intervenes with the outcome of the research without being observed or measured. And finally, an extraneous variable is a variable whose presence is neither observed nor accounted for in the research design. Such variables may influence and contaminate the outcome of research without the researcher's awareness. In the example above, many variables such as age, educational background, learning style, motivation, and so forth may have some effect on the students' learning. In short, any variable that is not controlled by the researcher and may influence the outcome of research is called an extraneous variable.

When the research question is formulated with well-defined variables, it is converted into a research hypothesis to be tested. A hypothesis is a tentative statement about the outcome of research and can take two forms: null and alternative. A null hypothesis,

symbolized as H0, is generally stated in the form that the manipulation of the independent variable will not have an effect upon the dependent variable. The alternative hypothesis, on the other hand, symbolized as H1, stipulates an effect, either positive or negative, of the independent variable on the dependent variable. For instance, null and alternative hypotheses for the example above would be:

Null H0: *There is no relationship between using multimedia tasks and improvement in LC ability, or*
Using multimedia tasks will not have any effect on the improvement of LC ability.

Alternative H1: *There is a positive/negative relationship between using multimedia tasks and improvement in LC ability, or,*
Using multimedia instruction will have a positive effect on (facilitate) or a negative effect on (debilitate) the LC ability of the participants.

Selecting a null or an alternative hypothesis is often based on the review of the past research findings. If there is strong evidence about the relationship between the two variables, the researcher might decide to choose the alternative hypothesis to confirm or reject the previous findings. However, when there are controversial reports on the relationship between the variables under investigation, researchers usually go with null hypothesis. Possible forms of hypotheses are illustrated in Figure 1.

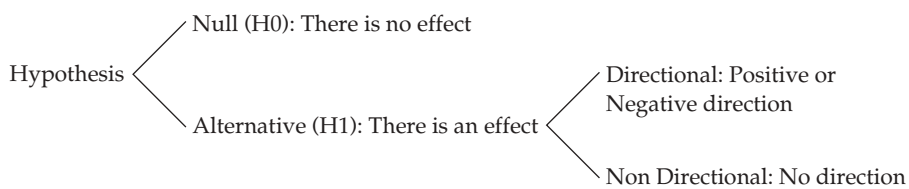

Figure 1 Forms of hypothesis

Following a Systematic Approach

When the research hypothesis is formulated, the researcher attempts to choose a systematic approach, technically called a research design, to test the research hypothesis. Many factors including the nature of the research question, the type and number of variables, the number and groups of subjects participating in research, and the type of collected data interact to form an efficient design that will optimize the outcome of research. In fact, there is no single best way to determine the design of research (Clark-Carter, 2004). However, research designs can be broadly divided into two major groups of experimental and nonexperimental where cause–effect relationships are investigated in the former and correlations in the latter. Depending on the factors mentioned above, experimental designs are classified into three categories of true, quasi-, and pre-experimental. A true experimental design is the most rigorous of all and has the following principles:

1. Subjects are selected randomly.
2. Two groups of experimental and control are formed.
3. A pretest is administered to both groups.
4. A treatment is given to the experimental group and a placebo to the control group.
5. A posttest is administered to both groups.

In a true experimental research, subjects are selected randomly. In random selection, every individual is given an equal chance to be included in the research and no bias is exercised since the selected sample should represent, as closely as possible, the population to which the findings of the research are intended to be generalized. Then the participants are divided into a control group and an experimental group. In the example above, the researcher should make certain, as much as possible, that the two groups have the same LC ability before starting the experiment. Therefore, even after random selection which minimizes prior differences among the selected groups of participants, a pretest is given to both groups and their performance is compared before the experiment. When the equivalence of the groups is statistically established, the experimental group receives the treatment, in this case multimedia tasks on LC, and the control group receives a placebo, or an irrelevant treatment, to make sure that both groups are treated similarly. After a predetermined length and intensity of giving the treatment, a posttest is given to both groups to see the effect of treatment on the participants' LC ability. A schematic representation of a true experimental design is given in Figure 2.

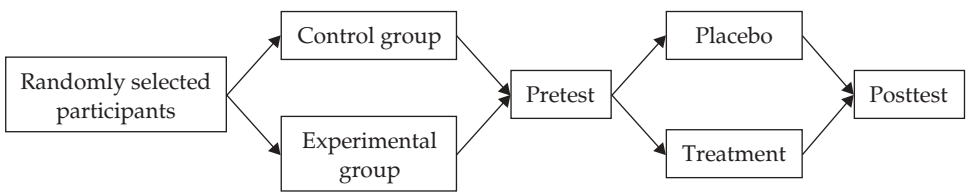

Figure 2 A schematic representation of true experimental design

It should be mentioned that not all QRM designs meet all these requirements. It is often very difficult to set up a true experimental design, especially in an educational context. If any one of the requirements of the true experimental design is not met, the researchers use pre-experimental designs. Further, quasi-experimental methods are designed to compensate for the weakness of pre-experimental designs. Of course, the farther away a researcher moves from meeting the requirements of the true experimental design, the weaker the claims about the cause–effect relationship between the variables will be. In the following section, some of the most common types of pre- and quasi-experimental designs will be presented. For the purpose of illustration, the symbol G will be used to refer to a "group," R to "random," T for "treatment," and X for a score.

The simplest design includes only one group of subjects, one treatment, and one test given to the subjects. This design, referred to as one shot case study, is represented in Figure 3.

G	T	X

Figure 3 A schematic representation of one shot case study

This design can be used as a base to build up more complex designs. For instance we can improve this design by adding one more group to make it a posttest only design as illustrated in Figure 4.

G1	T ———	X1
G2	0 ———	X1

Figure 4 A schematic representation of a posttest only design

To make this design more rigorous, pretests are given before the treatment and the resulting design is a two intact group pretest–posttest design as illustrated in Figure 5.

G1	X1	T	X2
G2	X1	0	X2

Figure 5 A schematic representation of a two intact group pretest–posttest design

Pre-experimental designs are frequently used in educational contexts in general, and in applied linguistics in particular because conducting true experimental designs is extremely impractical in educational contexts. For instance, two intact group pretest–posttest design, where a particular treatment, for example, multimedia tasks, is given to one group and no treatment to the other group, and both groups receive pretest and posttest, is very close to a true experimental design. The only missing parameter is the random selection of the subjects. It is not simply practical to select a group of subjects randomly from among the subjects who have already been placed in different classes on the basis of certain criteria.

To compensate for this shortcoming, quasi-experimental designs are developed where one group of subjects functions as both the treatment and control group. A common example of such a design is time series design. In time series design one intact group of subjects is selected and exposed to the treatment on several occasions and tested after each treatment. In one form of time series design, the subjects receive a pretest before the experiment. Then they receive a few sessions of treatment in a row as if they were in the experimental group and a posttest. Then they follow their regular instruction without receiving the treatment as if they were in the control group and a posttest. This design, called repeated time series design, is schematically represented in Figure 6.

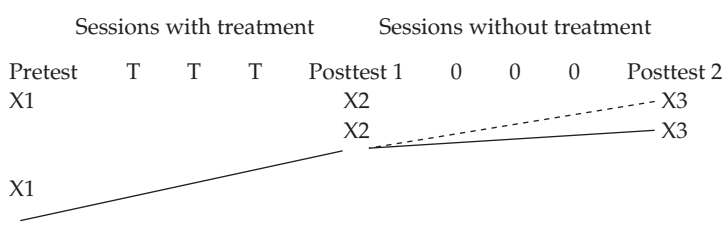

Figure 6 A schematic representation of repeated time series design

There are two likely outcomes for this design. If the average score of the subjects increases from the pretest to the first posttest, it indicates that the treatment has had a positive effect on the performance of the subjects (black line) provided that there is no considerable increase from posttest 2 to posttest 3 indicating that the increase in the first part of the experiment was due to the treatment. However, if there is a consistent increment in the scores from posttest 1 to posttest 2 (dotted line), it implies that the treatment does not have a specific effect and the trend of increase is the natural result of education.

Another version of this design is to present the treatment and test in alternating sessions. This design, called alternate time series design is depicted in Figure 7.

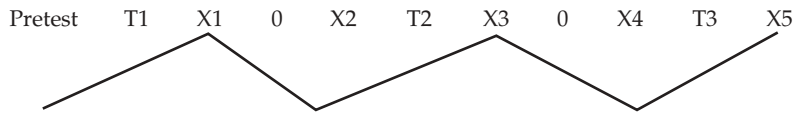

Figure 7 A schematic representation of alternate time series design

If the treatment is effective, the scores on the tests would show a rising and falling pattern as shown in the graph implying that the rise of the scores is due to the treatment. If the treatment does not have any effect, the score pattern will not show systematic rise or fall.

Factorial Designs

The designs mentioned above all involved one independent variable and one dependent variable. The test scores are obtained at different points in time either prior to or after the treatment. More often than not, the research project involves more than one variable. It is quite a common practice to include a moderator variable or allow more than one level of observation for the dependent variable. In such cases, factorial designs are employed. In fact, any simple design can be expanded into a factorial design by adding more levels to the independent variable or adding a moderator variable. For instance, in the example provided before, suppose the researcher speculates that boys and girls will respond differently to receiving multimedia tasks regarding LC ability. In such a case, a moderator variable is added to form a posttest only factorial design as shown in Figure 8.

G1 (M)	T	X
G2 (F)	T	X

Figure 8 A schematic representation of posttest–only factorial design

The design can be more rigorous by adding a pretest before the treatment to form a pretest–posttest factorial design shown in Figure 9.

G1 (M)	X1	T	X2
G2 (F)	X1	T	X2

Figure 9 A schematic representation pretest–posttest factorial design

This is very similar to intact group pretest–posttest design with the difference that in the factorial design the groups are male and female. Another example of factorial design would be to introduce two levels of the dependent variable. For example, giving multimedia tasks in class versus offering them through the Internet will form two groups for the same independent variable. Each group will receive multimedia tasks in a different form but the dependent variable is the same, that is, improving LC ability.

A few points are worth mentioning here. First, all the above-mentioned research designs, whether one way or factorial, involve only one dependent variable, that is, one measurable variable. Therefore, they are called univariate designs. When there are two or more dependent variables in the study, the design will be more complex and is called multivariate design (Meyers, Gamst, & Guarino, 2005). Second, not all QMR falls into the category of experimental designs. QMR could also be descriptive or correlational. When the focus of

research is on investigating the existing relationship between the variables without any intervention or manipulation, it is referred to as correlational research and the design is called bivariate since two sets of scores are obtained from each subject. In correlational research the selection of independent and dependent variables is arbitrary because none of the variables is manipulated. For instance, to investigate the relationship between students' language ability and their academic success, a correlational design is used by correlating scores on a measure of language ability and a measure of academic success obtained from each subject.

Following a version of experimental or nonexperimental designs, the researcher collects data on the variables. Data collection is an important stage in QRM because the validity of the findings of research will depend very much on the quality of the collected data. Therefore, great care should be exercised in selecting appropriate instruments for data collection.

Answering the Research Question

In order to answer the question set forth at the beginning of research, the collected data should be analyzed. Data analysis in QRM is performed by utilizing a body of techniques called statistics. There are good guidebooks on how to apply statistical techniques using computers. Probably SPSS is the most commonly used statistical package with good guidebooks specifically written for data analysis in applied linguistics and SLA research (Larson-Hall, 2010).

The final stage in quantitative research is to interpret the findings and discuss the implications of the findings for improving the theory and their applications to practice. The validity of the findings depends on the validity of research. Despite the objectivity in QRM, researchers should observe some reservations in making conclusions about the findings because statistical significance does not necessarily lead to a firm law. There is always human wisdom that should be applied to the interpretation of the findings. Strong statements should be avoided because the findings may not be perfectly valid.

There are two types of interrelated validity in QRM: internal and external. Internal validity refers to the extent to which the findings are due to the process of research and not due to other variables, and external validity refers to the extent to which the findings are generalizable to the population. To maximize the internal validity, researchers focus on the unique effect of the treatment by controlling as many variables as possible that might have an effect on the dependent variable. However, the more controlled the context of research, the farther away it will be from the real world and the findings will lose generalizability to the population because the context of population will be different from the context of experiment. That is, the higher the internal validity, the lower the external validity or generalization of the findings to the population. On the other hand, to maximize the external validity, the context of research should approximate the context of the natural real world. In such a case, the effect of the independent variable will be blurred due to the intervention of so many uncontrolled extraneous variables, thus decreasing the internal validity. Therefore, depending on the context of research and the importance of the findings, researchers are recommended to keep a balance between the internal and the external validity of the findings.

Further, some factors such as history, that is, what is happening to the participants outside the context of experiment; mortality, that is, the attrition in the number of participants during the experiment; test effect, that is, the effect of pretest on the posttest, just to name a few, are considered threats to the validity of the findings of research. As Kinn and Joan Curzio (2005) state, in many of the 450 research articles they examined, the

methodological and statistical procedures used in the quantitative research to inform recommended practices were not convincing. This implies that only in rare cases can researchers meet all the rigorous and vigorous requirements of QRM, especially in the contexts of human and social sciences. Therefore, researchers are strongly recommended to interpret the findings with caution and reservation.

SEE ALSO: Interviews in Qualitative Research; Mixed Methods; Probability and Hypothesis Testing; Qualitative Methods: Overview; Sampling: Quantitative Methods

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Quebec Charter of the French Language and Canadian Language Policy

FRANÇOIS VAILLANCOURT

The language policy of Quebec differs from those of other Canadian provinces and of the federal government since it is aimed at protecting and enhancing the use of the Francophone majority languages within its territory, while the other policies are aimed at helping the territorial minorities (Francophone outside Quebec, Anglophone within for the federal policy) preserve their language, mainly through transmission to their children by minority-language education.

The need for a language policy emerged in Quebec in the 1960s following studies for the federal Royal Commission on Bilingualism and Biculturalism that predicted a drop in the share of Francophones in the population of Quebec and showed that Francophones were amongst the lowest earners in Quebec. After two false starts (Bill 63 and Bill 22), Bill 101 was adopted in 1977 and, while amended, remains in place for the most part as designed. Bill 101 was a contentious piece of legislation pitting Francophones and collective rights against non-Francophones and personal rights. It remains contentious in 2010 as evidenced by the debate over restrictions on the use of private schools to access English public schooling.

The demographic issue was addressed by a primary/secondary schooling restriction that limited access to English-language schools; it was self-binding of the Francophone majority by law, replacing binding by a decree of Catholic leaders and restrictions on children of non-Canadian schooled parents—that is, international immigrants, usually allophones. Bill 101 was successful in this matter; in 1970, 205 of children to be targeted by Bill 101 attended English-language schools; in 2010, one can say that 85%+ attend French-language schools. In addition, Quebec was given powers with respect to the selection of international immigrants.

The economic issue was targeted by both Bill 101 and a set of economic polices aimed at strengthening Francophone ownership of Quebec's economy through both better education and greater access to capital. These policies led to an improvement in the returns on the labor market in knowing French and to an increase in the control of the economy by Francophones, as shown in Table 1 and Figure 1.

The end result of 50 years of change (1960–2010) is Quebec, a constituent unit of a bilingual federal country with substantial autonomy (measured by share of spending and revenue-setting powers) and a vibrant French culture that still faces a long-term threat of demographic decline and thus disappearance, assimilation, or both. Its new struggle is the integration of immigrants.

SEE ALSO: Economic Analysis of Language Policy and Planning; Linguistic Legislation; Multilingualism in Economic Activity

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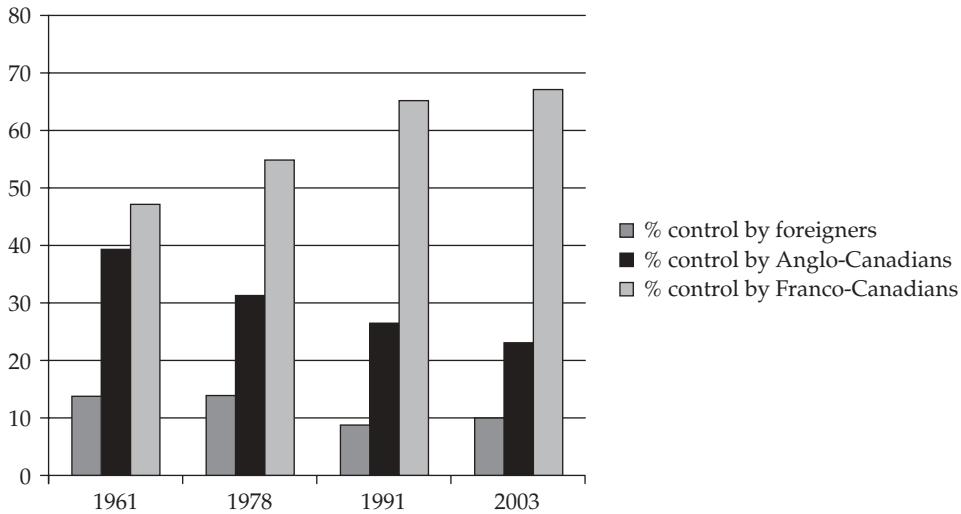

Figure 1 Share of Quebec's economy controlled by one of three groups, four years (adapted from Vaillancourt, Lemay, & Vaillancourt, 2007, table 5)

Table 1 Earnings premium with respect to unilingual Francophones, three sets of language skills, men and women, Quebec, four years (Vaillancourt, Lemay, & Vaillancourt, 2007, table 5)

	1970	*1980*	*1990*	*2000*
Men: unilingual Anglophone	+10	–7	–12	–18
Men: bilingual Anglophone	+17	0	0	0
Men: bilingual Francophone	+12	+5	+7	+12
Women: unilingual Anglophone	0	–5	0	0
Women: bilingual Anglophone	0	0	+5	+7
Women: bilingual Francophone	+10	+7	+11	+17

Note. We calculate net returns to language skills accounting for level of education, years of labor market experience and its square and weeks worked. We use the statistical tool of ordinary least squares (OLS). The dependent variable is the natural logarithm of labor income, and the independent variables are listed in the text as accounted for; these are the same variables as those used in Vaillancourt and Touchette (2001). A zero (0) indicates a given language skill has no significant impact on labor income; hence the labor income associated with that skill is the same as the labor income associated with the unilingual Francophone language skill, the reference category.

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Quirk, Randolph

CHRISTIAN MAIR

Randolph Quirk was born on the Isle of Man in 1920. In 1939 he enrolled at University College London (UCL), to read English under Albert Hugh Smith and Norse under Raymond Wilson Chambers. Having served in World War II from 1940, he resumed his studies in 1945. On his graduation in 1947 he joined UCL's English Department as a lecturer and was subsequently awarded the degrees of MA, PhD and DLitt, all solely in the fields of medieval English and Norse. He spent a year at Yale and Michigan in the United States as a Commonwealth Fund (Harkness) Fellow in 1951–2 and moved to Durham to become a Reader (1954) and subsequently a Professor of English (1958). He returned to UCL as a Professor of English in 1960 and succeeded Albert Hugh Smith as Quain Professor in 1968. Beyond his immediate professional domain in (English) linguistics, Randolph Quirk has been active in university and academic politics, serving as vice-chancellor of the University of London (1981–5) and president of the British Academy (1985–9). In recognition of his services, he was made a life peer (Lord Quirk of Bloomsbury) in 1994 and, as such, became an active member of the British House of Lords. The following universities have expressed their recognition of his work through the award of honorary doctorates: Aston, Bar Ilan, Bath, Brunel, Copenhagen, Durham, Essex, Glasgow, Helsinki, Leicester, Liège, London, Lund, Newcastle-upon-Tyne, Nijmegen, Open University, Paris, Poznan, Prague, Reading, Richmond, Salford, Sheffield, Southern California, Uppsala, and Westminster.

Randolph Quirk is one of the key figures of 20th-century English linguistics, who has made important contributions in numerous and diverse fields. Trained in the methods of philology and the history of the Germanic languages, he actively worked to extend the scope of English linguistics to include description and analysis of the present-day language, and in particular the spoken language. His first successful attempt at marrying the old and the new was to breathe new life into the study of Old English by describing it in terms of the "modern" structuralist methods (Quirk & Wrenn, 1955). However, the first of several claims to fame was the inception in 1959 of the Survey of English Usage, based on psycholinguistic elicitation and a one-million-word corpus of spoken and written British Standard English covering a wide variety of textual genres. Unlike the roughly contemporaneous Brown Corpus of Present-Day Edited American English, the SEU corpus was not designed "for use with digital computers" initially but made available in the form of millions of paper slips and a searching system based on filing cabinets into which these slips were sorted following a complex routine of classification. Potential drawbacks of this low-tech approach to corpus linguistics were more than compensated for by the delicacy of the transcription and analysis. For example, the richness of the prosodic and paralinguistic transcription of the original SEU spoken data has not been equaled by any digital successor project, including the later digital version of part of the Survey spoken materials itself (London–Lund Corpus, cf. Svartvik & Quirk, 1980). The hundreds of studies of instances of variable usage in contemporary British English that have been based on the SEU corpus have profoundly changed the terms of the debate between prescriptive traditionalists and linguistic descriptivists.

"Quirk et al." has become a household name as a shorthand reference to two major descriptive grammars of the English language, the 1972 *A Grammar of Contemporary English*

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and the 1985 *A Comprehensive Grammar of the English Language* (both co-authored with Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik). Through publications such as his seminal "Descriptive Statement and Serial relationship" of 1965, Randolph Quirk has also been a major innovator in theoretical thinking about grammar, developing the notion of gradience in syntactic structure, which helps us understand why grammatical categories which are clearly defined in the abstract may appear diffuse and fuzzy in language use and actual corpus data. A grammar which is robust and orderly in principle but has in-built room for flexible and context-sensitive extension is, of course, a grammar better suited to the needs of language teaching than an algorithmically designed formal grammar.

His numerous commitments in university administration and academic politics from the early 1980s meant that Randolph Quirk had to withdraw from the day-to-day management of the Survey of English Usage. He remained influential in the corpus linguistic community, however, and encouraged promising new initiatives "from a distance," as it were—for example the British National Corpus, completed in 1993, which at a size of 100,000,000 words was a daring venture into mega-corpus-building at the time.

Beyond his work on corpora and grammar, Randolph Quirk has been extremely influential as an informed commentator on language attitudes, English usage, and the politics of world English. Books such as *The Use of English* (1962, with Alfred Gimson and Jeremy Warburg), *The Linguist and the English Language* (1974), or *English in Use* (1990, with Gabriele Stein) combine scholarly expertise with lucid writing and a gift for focusing on that part of a linguistic controversy that interests the general public. At a time when British audiences still tended to have a prejudiced view of the status of American English, he spelled out the relationship between the two most important global reference varieties in a series of radio talks with Albert H. Marckwardt (later published as *A Common Language*—Marckwardt & Quirk, 1964). In addition, between 1969 and 1972, he found time to chair a government inquiry which transformed speech and language therapy into an all-graduate profession.

Long before the study of "varieties of English," "new Englishes" or "world Englishes" started booming in the 1980s and 1990s, Randolph Quirk had pointed out that "English is not the prerogative or 'possession' of the English. . . . Acknowledging this must—as a corollary—involve our questioning the propriety of claiming that the English of one area is more 'correct' than the English of another. Certainly, we must realise that there is no single 'correct' English, and no single *standard* of correctness" (Quirk, Gimson, & Warburg, 1962, pp. 15f.). It is against this background that we should read his defence of a global standard of English, which he expressed in a memorable exchange of views with Braj B. Kachru at the 1984 conference marking the 50th anniversary of the British Council (see their contributions to the collection of conference papers, Quirk & Widdowson, 1985). For Quirk, the pluricentricity of post colonial English is real, but a happy democracy of voices in which old and new Englishes, based in big and small communities, are spoken by native and non-native users, and share equal legitimacy and status, is a naïve illusion—and an illusion which may have dangerous social consequences, for example in the shape of endemic educational failure among marginalized social groups both in the Inner (ENL) Circle and in the Outer (ESL) Circle. In the heat of the debate Randolph Quirk was accused of perpetuating illiberal and conservative attitudes by some opponents. However, it seems that his assessment of a quarter of a century ago has stood the test of time surprisingly well, as has his skeptical refusal to join any of the linguistic bandwagons that have noisily come and quietly gone during his lifetime.

As a linguist and grammarian, Randolph Quirk commands the respect of his academic peers. All through his long career he has been among those experts on language whose advice has been sought and heard by the government, the media, and a wider general public. As *Homo politicus*, finally, he has left a mark in academic politics, the politics of English, and beyond. It is not surprising, finally, that Randolph Quirk, an energetic, charismatic,

challenging, and sometimes impatient teacher, has inspired generations of students, many of whom have become important (applied) linguists in their own right, such as, for example, Flor Aarts, Evelyn Abberton, Valerie Adams, Wolf-Dietrich Bald, Noel Burton-Roberts, Jennifer Coates, David Crystal, Derek Davy, Sidney Greenbaum, Liliane Haegeman, Michael Hoey, Robert Ilson, Ruth Kempson, Geoffrey Leech, Susan Peppé, Jan Rusiecki, Gunnel Tottie, and Jan Svartvik. The wide range of research interests developed by this group serves as vivid testimony to the key role Randolph Quirk has played in the modernization and expansion of academic research on language.

SEE ALSO: Corpora: English-Language; Greenbaum, Sidney

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Race

LEWIS R. GORDON

This entry focuses on race as discourse and its relation to culture, which, too, is discourse driven. This is not to say that race is discourse and culture is the same but instead that, as meaningful realities, they are governed by generative rules that, in turn, are also conditioned by similar sets of rules. The concepts are, in other words, *relational*, and as such, their definition often points beyond them to additional relationships.

For race, we begin with the term. The word "race" has its origins in the Middle Ages in Andalucía, Moorish-controlled Iberia, in the word *raza*. The word referred to breeds of dogs, horses; Jews, and Moors. This arrangement of things brings together zoological terms and religious cultural ones in a way that asserts a schema beneath the normatively Christian, which alerts us to its theological origins, and, with the zoological and anthropological elements, its claims to a form of theological naturalism. The term, although referring both to animals and human beings—and, in some instances, even to botanical life—eventually became primarily a term used for human designations, especially as discriminatory practices and hierarchies were conjoined to the concept to collapse into *racism*. Reflected here is the connection between race, language, and culture. As Carolyn Fluehr-Lobban reflects:

> If race is about phenotype, and language is about speech and communication, and culture is about common heritage and shared identity through distinct customs, dress, food, and more, why are these three so often confused? The answer may be that each is a convenient referent for "others" different from "ourselves" (whoever "we" may be) . . . (Fluehr-Lobban, 2006, p. 15)

This is not to say that human differentiation emerged in the Middle Ages. There is ample evidence in literature and artifacts from antiquity in which communities of people attempted to determine their location through difference. In most, differentia took the form of gods or deities above, animals below, and their group (designating what we would call "man" or the "human being") in the middle. Since the middle was self-referentially specific, other groups of people were often determined in relation either more toward animals or toward gods. There were, however, instances in which other human beings were placed in the same location of the group producing the documents, with differences marked not as hierarchies but horizontally situated. In both cases, whether in relation to gods and beasts, to both and other human beings, the human being, or what we understand as designating what we call human beings, has always been relational. That the human being is a relationship with other beings has not, however, often matched the metaphysics of the societies in which this often mythic understanding takes place.

In the modern world, mythic knowledge was secularized as scientific inquiry. The search for what is inside nature (and by extension inside human beings), that made things work, led to the emergence of modern natural science and an effort to construct the same for the study of the human beings. Race, then, became a mark of human difference as science also became a search for explanations of how the variety of human beings came to be. This concern led to the development of what could be called "raciology," where race became part of the repertoire of disciplinary and mundane discursive practices in the modern world and its own object of theoretical study. There was, in other words, race and the

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metatheory (theory about the theory or discourse) of race. For the former, race was part of everyday life, and competent speakers of a variety of European languages understood it, without much reflection.

Oddly enough, the *practices* of race did not necessarily depend upon competent use of the word "race" (and its correlates in the European languages) because of the global political and economic realignment of world relations premised upon racial hierarchy, where European nations representing whiteness eventually regarded themselves as the natural master over the browner and darker ones they eventually conquered and colonized. The many clerics, soldiers, sailors, and prisoners involved in this process hardly worked with clear notions of the rationalizations behind the human differences they encountered. For some, physical difference at times entailed normative difference. Thus, racist consequences were at times present without the explanation of race explicitly stated. This afforded a form of presence of race and racism as ever-present—what sociologists, drawing upon the thought of Durkheim, refer to as originating from seemingly "nowhere" (see Daynes & Lee, 2008).

The metatheoretical work on race involves examining the discourse by which race is studied. The philosopher, jurist, and anthropologist Anténor Firmin offered a critique of this form in Paris in 1885 in his response to the racist anthropology of Arthur de Gobineau. In the USA, this critique was also developed, in response to the social Darwinism of Herbert Spencer, by W. E. B. Du Bois, who noticed not only that the study of race produces "problem" populations, but also that the very question of human sciences suffered from the problem of studying changing subjects as fixed and stable ones. Yet Du Bois also subscribed to the "message" model of race, where each group was presumed to offer through their unique social expression, through culture, a gift to humankind.

Other responses to social Darwinism included those of Franz Boas, who debunked primitivist appeals to some populations living in the present and others in the past. In all, the question of race was increasingly separated from being rooted in naturalistic accounts to more socially and eventually culturally driven ones. Among those were also developments from criticisms of science itself as an absolute basis of human understanding. The most influential thought from this end was the vitalism of Henri Bergson, which influenced developments in 20th-century ethnography and its correlative critical debates. The important distinction between animal life and human life, *zoë* and *bios* in Ancient Greek, raised questions of cultural life, and, as might be expected, race as expressions of such. The roots of cultural racism emerged here, where, it is believed, there are inferior cultures created, in turn, by inferior people. The circular logic here is straightforward: Inferior people create inferior culture, which is the mark of inferior people. Hidden in cultural racism, in other words, is the notion that some people *could not* create valuable culture, or, in some cases, culture at all. An additionally questionable consideration here is the notion of "good" and "bad" culture, since, in the end, the evaluation of each would be through criteria posed by the evaluator, whose culture is presumed "good," or at least the standard of good.

The emergence of structural linguistics also affected the turn to the study of culture in important critical ways. Although the efforts by Ernst Cassirer are crucial here, the better known line followed from the impact of the linguist Ferdinand de Saussure's work and the eventual conjunction of his ideas with developments in Marxism, phenomenology, and psychoanalysis. The effect was most commonly known as structuralism, which placed a premium on *discourse*, especially language, in the study of race and culture, and poststructuralism, which focused on the anti-essentialist dimensions of structuralism. The opening observation about relationality came to the fore in structuralism and poststructuralism, much of which was explored in the terms of the former and anticipated in the case of the latter, in the thought of the Martinican psychiatrist and philosopher Frantz Fanon.

Fanon argued that race was neither phylogenetic (species determined) nor ontogenetic (a matter of individual bodies). It was *sociogenetic*, produced by a social world, the world of culture. He also argued that within that social world, there are normative expectations that make racism, as a function of that world, "normal." The problem, then, became one of examining the extent to which, as Du Bois had argued, the social, and by extension culture, as a changing and dynamically producing series of relations, can be transformed. In effect, then, the Du Boisian understanding of race as a discourse embedded in that of the human sciences of the modern world is substantiated by much of the metatheoretical discourse on race, including those, ironically, whose aims were the circumvention of race. It became present *as something to be avoided*.

The metatheoretical discourse on race, then, faced several important critical considerations. The first, as Du Bois noticed, was the tendency to ignore the force of self-critique. When encountering populations that do not fit the theoretical models and methodologies at hand, the response was often to treat the populations as recalcitrant, as problems, instead of assessing the viability of the discipline and its methods. Fanon, too, noticed this phenomenon, and he described it as the self-devouring of methods in the study of racism and colonialism. A group of scholars in African Diasporic philosophy and what has become known as Decolonial Studies in Latin America (see Gordon, 2006, 2008) have interpreted this critique as the identification of disciplinary decadence and colonial discourse (in which there is also the colonization of method). They have argued that race, as a human manifestation, exceeds singular disciplinary models of controlled study. It thus requires *transdisciplinary* efforts with the understanding of their own limits.

The second metatheoretical consideration pertains to the metaphysics of race. Here, the thought of Ernst Cassirer is again instructive. He argued for a relational understanding of reality in which meaning emerges also as a transition from signification to symbolization, which he described as "symbolic forms." Many theorists subsequently refer to the same as "structure." In Cassirer's thought, however, the world of culture, manifested by symbolic forms, is not only one of intersections and overlapping relations or structures but also of *different dimensions*—by which he meant the emergence of a peculiarly human world. This is significant for the understanding of race, since it suggests that race, as a symbolic, self-reflective activity of the human species, is about the production of meaning *onto* human bodies. Culture, in this sense, is thus more radical than the folkways, customs, and specific linguistic practices of different groups. It is also the more radical basis of their expression—namely, a human world as a world of symbolic disclosure.

The dimensional view of race brings to the fore the lived reality of race and racism. Race theorists, from Du Bois to Fanon to the present, have observed how people differentiated by race seem to live in different worlds even when in spatial proximity or under singular national boundaries. Called double consciousness, this phenomenon involves for the designated-inferior racial subject a construction of the self as seen by the designated-superior subjects. While the dominated racial subject is forced to think and speak through two worlds—theirs to each other and the dominant language—members of the dominant group live and speak as if their world were complete. Realization that the dominant world lacks an understanding of the schemas beneath it leads to the emergence of a second form of double consciousness—*potentiated double consciousness*. This form involves identifying the missing elements of the dominant structure, which, in effect, unveils its fundamental incompleteness.

The formal correlates of double consciousness and potentiated double consciousness, if placed in the framework of linguistics, would be the grammatical structure of false universality. In effect, the potentiated critique is that the avowed universal grammar is particular, and that the claimed particular location (as subaltern, dominated, inferior) was *more* universal, albeit also not *the* universal. Learning the languages by which these

distinctions are made manifest in effect opens up worlds and transforms worlds akin to critical discussions of intercultural communication. The crucial point here, however, is that, as exemplars of culture, they are in principle communicable across each human divide. Race, then, is always a communicative practice, as Fluehr-Lobban reminded us, but the difficulty posed by racism is that it involves the rejection of its own communicability.

A growing body of literature examines dissociative elements of racial discourses. In work influenced by existential phenomenology, this tendency is characterized as bad faith, and they often criticize race-blind models of human study as enabling racial dominance by groups who control the conditions of their self-representation. Among those also influenced by poststructuralism, this criticism usually identifies genealogies of power and how, in governing subordinated groups, dominant groups produce racialized subjects through distinguishing themselves as nonracialized subjects. In concrete form, in many conversations, writings, or readings where race is not identified, it presumably means that a member of the dominant group is the subject. To be raceless, then, simply means the power to racialize others. In countries where whites are the dominant group, "racelessness" becomes a coded term for "white."

Moreover, the structuralist and poststructuralist accounts also examine the semiological features of race discourses, where certain relations hide other relations. Thus, what is hidden in whiteness is its relation, in a binary system, to the gradations on which it is dependent for its designation. To be white as the extent to which one is not something else raises the question of whether one is also not something else by which whiteness is governed—that is, others who are *whiter*. These shifts of location, many of which are affected by shifting dynamics of power in societal institutions, leads to precarious efforts to stabilize racial categories, mostly through denial of the continued changes of the signs and symbols by which they could be meaningful. In psychoanalysis, where an unconscious is an underlying factor, processes of dissociation and trauma lead to discussions of dynamics of shame by which historical and other contextual resources are pushed to the wayside in linguistic performances of a preferred national (presumed as dominant group) *image.* Both the existential phenomenological and psychoanalytical (both of whose forms are too varied for elaboration here) converge on an understanding of the evasive tendencies of race discourses. Race, from these points of view, is an effort to avoid the risk of human communication.

Finally, although not exhaustively, efforts to stabilize race discourses, to fix the language of race, often lead to reductionistic models akin to the forms of disciplinary decadence mentioned earlier. To make the discourse pure, neat, and rigorously absolute leads to difficulties in accounting for the fact of racial mixture. These mixtures find correlates, as well, in discussions of cultural mixtures and linguistic mixtures. As with the disciplinary decadence model, some responses offer notions of isomorphism between race, language, and culture, where the result is one set of "whole" realities encountering another set of holistically constituted realities. Critics of this model include those in Africana philosophy of culture, who argue for the permeability and communicability of human communities, and those in what could be called the creolization-from-the-Global South groups, who examine creolization as genuine forms of mixture versus the forms where different groups live alongside each other instead of sharing, as their lived reality, the coproduction of culture.

SEE ALSO: Critical Analysis of Political Discourse; Critical Applied Linguistics; Cultural Hybridity; Cultural Identity; Cultural Studies; Ethnicity; Linguistic Imperialism; Postcolonial Studies; Religion; Subjectivity

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Rating Oral Language

PAULA WINKE

Assessment of oral language is useful for many purposes such as estimating proficiency growth in communicative language-learning environments. A critical component in the process of oral assessment is the rating of the speech samples by highly proficient speakers of the targeted language who have been trained according to rating criteria established by the test designers. Because the score on an oral assessment is intended to reflect the performance of the test taker (McNamara, 2001), raters are expected to provide an unbiased implementation of the rating criteria and thus remain invisible to the scoring process. Yet clearly, research has well established that raters' personal beliefs or backgrounds may affect their rating processes and the resulting scores. Thus, the factors involved in rating oral language are complex and intricate. Rating oral language is more complicated than rating written language (essays) because more of the test takers' nonlinguistic characteristics (such as voice quality, accent, and, in the case of face-to-face or video-based testing, gestures, expressions, and general appearance) are revealed and may inadvertently influence raters' score assignment. To rate accurately and reliably, raters of oral language need to be guided, trained, and monitored to ensure that their personal opinions, beliefs, and backgrounds minimally affect the scores they assign.

Many factors beyond the raters also impact oral test performance. The most prominent is, naturally, the test taker. Other factors include the test designers, the test specifications, the test tasks, the interlocutors (in the case of face-to-face or synchronous testing), the method of oral testing (one-on-one, face-to-face oral interviews, group or paired orals, or computer-assisted oral testing), the rating scales, and the rating process. Test developers do not want any of these to add construct-irrelevant variance to the scores (McNamara, Hill, & May, 2002). Although many of these factors are constrained by the operational testing conditions and cannot be determined by test developers (such as how the test is administered—in person or through the computer), rater behavior is something that research has found controllable to a degree. Thus, in any oral testing program, test developers should understand not only how raters influence the scoring process, but also how to best prevent them from doing so in idiosyncratic ways.

Rating Scales

Testing programs try to render the rating process as objective as possible through the careful design of detailed rubrics for the raters to use while assigning scores. Rubrics outline the criteria raters should attend to in the rating process and upon which raters should base their judgments. The criteria are often borrowed from other sources, such as the ACTFL Proficiency Guidelines (Breiner-Senders, Lowe, Miles, & Swender, 1999) or the example rubrics constructed within the Council of Europe Framework of Reference (Council of Europe, 2001). Or they may be created on the basis of a program's proficiency goals and objectives or of observed learner behavior (Fulcher, 2003). Rating scales and criteria are best when they are short, to the point, and easy to interpret (Luoma, 2004). However, short rating scales sometimes conflict with the need to provide enough details so that raters are not left to their own interpretations of what qualifies spoken performance as good.

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Rubrics may be holistic or analytic in nature. In holistic rating, raters assign a single score to the speech sample by taking into consideration the combined impact of different speech characteristics. With an analytic rubric, raters must attend to and rate distinctly different aspects of the test takers' speech, such as fluency, accuracy, complexity, and sociocultural competence (Iwashita, Brown, McNamara, & O'Hagan, 2008). With holistic rating, the individual characteristics of speech may be considered, but the rater must decide which characteristics have the most weight when assigning scores. In analytic rating, the rubric designates the weights of the different speech characteristics. Language testers have often discussed and analyzed the merits of each type of rating rubric (e.g., Alderson, Clapham, & Wall, 1995; Bachman & Palmer, 1996; Xi, 2007). The basic tenets of those arguments are that holistic scoring is more efficient, consistent, and cognitively simpler, while analytic scoring is more controlled and less dependent on raters' backgrounds, experiences, and value systems. An example of an analytic rating rubric used for rating the speech of native-English speakers learning Chinese, adapted from Winke (in press), is presented in Table 1.

Rater Training

Rater variability is impossible to completely eliminate, but rater training can effectively eliminate observable biases from scores (Lumley & McNamara, 1995; Fulcher, 2003). Rater training helps raters better understand the categories and criteria represented in the rating scale (Saito, 2008). Broadly speaking, rater training is conducted by having expert raters or trainers guide new raters through the rating process. The trainers and new raters discuss their use of the rating scale in judging selected performances of speech samples. Many language testing programs require raters to complete rater training and become certified as reliable raters by consistently rating a large sample of practice tests. Initial training sessions may be long (e.g., a three-day workshop followed by a month of practice rating) or short (e.g., a four-hour session). Research has found that longer rater training does not statistically improve the ratings of oral performance, but it has an effect on rating behavior: In particular, it may help raters set a frame of reference. In other words, training helps raters think along the parameters of the traits defined by the rating rubric and not use their own criteria in determining scores (Saito, 2008; Xi & Mollaun, 2009). Rater training may also be conducted between rater sessions to recalibrate or reorient raters to the internalized process of scoring. Wigglesworth (1993) found that training between rating sessions that included showing raters charts of their patterns of bias, estimated through Rasch analysis, increased inter-rater consistency in subsequent rating sessions. Other research has found that training can facilitate reliable rating in much the same way as long-term rating experience. Thus, rater training is essential to any oral assessment program because it helps raters consistently and reliably assign scores.

Rating Processes

Oral language can be elicited in at least two ways: live (in a face-to-face or online setting; in other words, *synchronously*, with a human interlocutor) or through a set of prerecorded prompts (*asynchronously*; e.g., via a computer). Each method impacts the types of possible rating procedures. In an asynchronous test of speaking ability, the test taker responds to prerecorded prompts and the test taker's speech is rated later (except in the case of automatically scored tests, such as Versant; see www.ordinate.com). Examples of asynchronous tests of oral proficiency include the Simulated Oral Proficiency Interview (SOPI), the Computerized Oral Proficiency Interview (COPI) (Kenyon & Malabonga, 2001), and the TOEFL Academic Speaking Test (TAST) (Xi, 2007). There are many advantages to asynchronous

Table 1 Analytic rubric for assessing Chinese as a foreign language

Score	*Accuracy*	*Fluency*	*Complexity*	*Sociocultural competence*	*Tones/accent*
1	Vocabulary and grammar not always accurate. Simple words and phrases not always correct.	Speech includes frequent pauses and hesitations; evidence of communication breakdown.	Speech comprises mostly single words or short, memorized stock phrases, mostly with present tense markers.	Evidence of culturally improper or non-native-like use of terms; may be unaware of what register to use.	Barely acceptable tones/accent. Chinese people not used to foreigner speech may not understand.
2	Vocabulary and grammar sometimes to mostly accurate. Words, phrases, and sentence structures not always correct.	Speech includes full sentences and natural fillers, but unnatural pauses and hesitations occur.	Speech includes full sentences, use of different tense markers, some use of connecting words or phrases.	Emergent use of Chinese words or phrases that indicate "thinking like a Chinese person." Some use of pragmatically correct register.	Acceptable tones/accent. Chinese people not used to foreigner speech may have a hard time understanding.
3	Vocabulary and grammar mostly accurate. Use of words, phrases, and sentences mostly correct.	Fluent speech with a few pauses and hesitations, normally rectified through circumlocution.	Speech contains full sentences with discourse markers. Use of various tense markers. Emergent use of advanced sentence structures.	Some evidence of "thinking like a Chinese person." Mostly pragmatically correct register.	Somewhat native-like tones/accent. Chinese people used to foreigner speech can easily understand.
4	Vocabulary and grammar very accurate and native-like.	Speech fluent without unnatural hesitations or pauses.	Able to be creative with language forms and use complex, advanced sentence structures.	Evidence of "thinking like a Chinese person." Pragmatically correct register.	Very native-like tones/accent. Chinese people can easily understand.

testing. Benefits include cost efficiency and the ability to collect multiple test takers' speech samples simultaneously and remotely (Weir & Wu, 2006). Multiple raters can listen to the recordings at a later time. Because raters of asynchronous tests hear recorded speech (meaning rater A and rater B hear exactly the same speech—their orientation to the speaker does not vary) and can listen multiple times, inter-rater reliability statistics (how consistent and similar raters are in assigning scores) from asynchronous testing can be viewed as extremely sound.

Synchronous tests are considered more time-consuming and expensive. When a test taker is administered a test synchronously, he or she interacts live with one or more interlocutors face-to-face, over the telephone, or through a synchronous online chat program or Web video-conferencing service (Volle, 2005). One or more of the interlocutors may also rate the test taker's speech simultaneously. However, when two raters rate a synchronously administered test, and one of those raters is the interlocutor, differences in score assignments might be attributable to the differences in the raters' perspectives: One rated from within the interaction, the other from outside. Nonetheless, this process of having at least one rater interact with the test taker is standard (Malone, 2003). Problematically, interlocutors as raters have been found to be more lenient in scoring than raters who rate recordings of asynchronously administered tests (Thompson, 1995), and individual raters have been found to rate differently depending on whether they are rating a live interaction or a recording of one. An alternative is recording the face-to-face or live test and having it rated afterwards by raters who did not participate in the oral test administration (McNamara & Lumley, 1997). This may be beneficial for the rating process because the raters are not cognitively overburdened, and yet the test taker responds to an interlocutor as in a real-life, communicative setting, which allows the rater to assess complex oral skills and interactive, communicative competence.

Rater Bias Patterns

No matter how much training a rater has had and how well the rating rubric is designed, rating oral language accurately on a scale is challenging. This difficulty stems, in part, from its socioaffective nature—there are personal attributes that can be perceived through speech, such as age, gender, or even ethnicity (through accent), that may influence how a rater perceives the speech. If the rater has any bias for or against such personal attributes, the biases may be reflected in the ratings he or she assigns. As described above, test designers attempt to lessen the impact of these biases through the design of thorough and detailed rating scales, as well as through intensive rater training programs and even rater retraining and recalibration programs. Yet raters still exhibit patterns of bias. Current research is focused on the origins of and reasons for these bias patterns.

One example of such research is the study of the first or native-language backgrounds of the raters and the differences in score assignment. As explained by Kim (2009), one reason why native and non-native speakers of the language being tested are examined in terms of rater variability is because testing programs are interested in exploring whether non-native speakers should be eligible as rater candidates. Research has shown various outcomes from having non-native speakers rate—it has shown that non-native raters can be more severe than native raters (Fayer & Krasinski, 1987); that native speakers can be the ones who are more severe (Brown, 1995; Hill, 1996), or that quantitatively there are no differences between native and non-native speakers (Kim, 2009; Xi & Mollaun, 2009). Thus, the debate continues. Fortunately, estimating biases statistically has become more simple in recent years with the development of multifaceted Rasch measurement (Weigle, 1998; Bond & Fox, 2001) and researchers' use of the computer program FACETS (Linacre, 2009) to implement Rasch analysis. Rasch analysis allows the researcher to uncover and understand raters' patterns of harshness or leniency in relation to any one group of test takers (Lumley & McNamara, 1995). Identifying these patterns as well as the characteristics in the rater and test-taker groups upon which they are dependent is the first step in creating tailored training programs to minimize bias.

Future Trends

Rating oral language is ever-evolving because advances in research improve our understanding of the rating process and the effects of rater training. Perhaps related to this research as well as to the constraints in testing environments, rating procedures continue to change. For example, rater training and recalibration efforts have been demonstrably effective in online settings (Hamilton, Reddel, & Spratt, 2001). With such findings along with cost constraints, more online rater training programs are emerging. In another area of research, ratings from face-to-face, oral proficiency tests have been shown to be reliable estimates of oral proficiency even when the testing is conducted in pairs (Davis, 2009; Ducasse & Brown, 2009) or group settings (Bonk & Ockey, 2003; Van Moere, 2006). Given this reliability, and for efficiency's sake, face-to-face testing may increasingly be conducted with test-taker pairs or groups for some purposes.

No matter how rating is conducted, studying the effects of rater background characteristics on raters' scoring will continue to be crucial to the establishment of an unbiased scoring procedure. When carrying out a rating procedure, if raters are influenced by factors that are not included in the scoring rubric that they are supposed to be applying, then those factors may be introducing unwanted, construct-irrelevant variance into the scoring process, thus clouding the interpretation that can be made of scores. Therefore, further research is needed to determine whether raters evaluating test takers' speech samples are influenced by extraneous factors (such as rater or test-taker background characteristics) that may impact their ratings of test-taker performance. Research in the area of rater characteristics and second or foreign-language testing has often relied on quantitative methods, but some studies have used qualitative or mixed methods to study rater cognition. For example, in the assessment of face-to-face oral proficiency interviews, Brown (2003) used retrospective verbal reports to investigate raters' reactions to test takers' performances and why they awarded the scores they did. Studies that do not use qualitative measures often lack an important component, and that is the ability to tap mental processes that may be suggestive of some particular characteristics not easily detected in a purely quantitative study. It is expected that more studies on rater bias will use mixed-methods approaches.

SEE ALSO: Assessment of Speaking; High-Stakes Language Testing; Computer Scoring of Spoken Responses; Language Assessment Methods

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Rating Scales for Language Tests

CAROLYN E. TURNER

The interest in the quality of language ability in educational, professional, and research contexts has evolved over the last three decades. In language testing and assessment settings examinees are increasingly required to perform tasks which generate extended samples of speech and writing (i.e., extended responses/performances such as interacting in discussions, writing essays). This is in contrast to previous practice where examinees were only required to respond to isolated items often in a cryptic response (i.e., discrete point items such as multiple-choice formats). For what has become labeled as performance testing/assessment, criteria are needed to guide the judgments of examiners (whether they are teachers, government assessors, researchers, etc.). Rating scales are tools that are developed to provide these needed criteria and do so in the form of scale descriptors. Their content is pertinent to the nature of the language ability of interest in a particular context of communication. This entry will provide background on rating scales as they are used in the broader field of applied linguistics and more specifically in the field of language testing/assessment. The following will include: definition and purpose, types and uses, approaches to development, issues, and challenges.

Definition and Purpose

The term *rating scale* will be employed here, but it is important to note that *scoring rubric* and *proficiency scale* are also frequently used terms in the literature. Sometimes the various terms are used synonymously and sometimes not (e.g., see Goodrich, 1996, for a common educational representation of "rubrics"). Here the topic will be narrowed to performance test/assessment scales which will be referred to as *rating scales*. Davies et al. (1999) define a rating scale as

> a scale for the description of language proficiency consisting of a series of constructed levels against which a language learner's performance is judged. Like a test, a proficiency (rating) scale provides an operational definition for a linguistic construct such as proficiency. (p. 153)

It is assumed that the purpose of this tool is to guide and facilitate the rating process and to contribute to the reliability of the judgments made by examiners. Judgments involve extended and sometimes complex language samples; therefore, rating scales help determine levels of degree in terms of language quality.

It is important to reiterate here that this entry will focus on performance test/assessment scales. Even though a discussion of measurement scales is beyond the scope of this entry, a brief statement will provide a framework for the discussion that follows. Going back to Stevens (1946) and simply stated we learn that

> measurement, in the broadest sense, is defined as the assignment of numerals to objects or events according to rules. The fact that numerals can be assigned under different rules leads to different kinds of scales and different kinds of measurement. (p. 677)

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We know these scales to be labeled as nominal, ordinal, interval, and ratio. In general, language performances are best represented by an underlying ordinal scale in that judgments of performances result in rank ordering. As will be seen in the discussion below, scale descriptors (and in some cases additional classification rules) are constructed to describe and represent scale levels, but the fact remains there is an existing underlying measurement scale.

Types and Uses

Rating scales have been categorized in several ways in the literature according to their scoring format. They have been dealt with from numerous perspectives, and each normally addresses a particular audience and context (e.g., large-scale education, classroom progress, government selection, aviation communication, research). The two most common and conventional formats are *holistic* and *analytic*. (See Hamp-Lyons, 1991, and Weigle, 2002, for detailed descriptions in writing contexts; and Fulcher, 2003, for speaking contexts.) Both are normally generic scales that are applied to performances on different tasks, by different groups, and for different assessment purposes. Holistic scoring for a writing performance, for example, is a single rating given for overall ability. The rating scale description may make reference to attributes such as organization, vocabulary range, grammar, but the final single rating is based on the rater's global impression of the performance. On the other hand, for analytical scoring, raters provide several ratings, each on a separate scale representing a different attribute. The separate analytic ratings are sometimes combined to indicate overall ability. In general, both holistic and analytic scales are developed with the assumption of level hierarchy. That is, the skills described at a lower level must be acquired before the skills at the next level can be acquired. In addition, Barkaoui (2008) points out that some of the well-known large-scale, standardized tests use these scales for writing. IELTS uses an analytic rating scale, whereas TOEFL, MELAB, and CanTEST use holistic rating scales.

Also evident in the literature are alternative formats to holistic and analytic scales. These are *primary trait* and *multitrait* scales. The difference is mainly that the scales are task specific, that is, the context is taken into consideration. The scale criteria, therefore, indicate how well a performance satisfies the requirements of a specific task. For example, a writing task may direct students to "Read the following article entitled *The appropriate steps to take when preparing for a final exam*, summarize it, and criticize its content, relating your arguments to your personal experience" (Turner & Upshur, 1996). This might be scored on two traits (multitrait), expressing the main ideas of the article, and quality of argumentation. The two extreme score levels of a five-point scale are provided in Table 1.

Table 1 Example of multitrait scoring scale (adapted from Turner & Upshur, 1996, p. 58)

	Trait	
Score level	*Main ideas*	*Argumentation*
5	All main ideas of the article are included and expressed clearly.	Two or more relevant arguments are well presented and effectively related to the writer's experience.
	. . . . .	. . . . .
1	Main ideas of the article are difficult to identify.	Arguments, if present, are inadequately presented or may be irrelevant. Relation to writer's experience may be unclear.

There are several considerations when deciding what type of rating scale to use. There is no one best scale type. It will mainly depend on the purpose and context of the assessment being carried out. It is also important, however, to make an informed decision and be familiar with the literature that describes the advantages and disadvantages of each type of scale. Barkaoui (2008), for example, provides a comprehensive overview after using a multifaceted Rasch model and correlational analyses on data from trained raters employing both holistic and analytic scales to university-level essays. Holistic scoring demonstrated a higher level of inter-rater reliability, but analytic scoring showed several advantages (e.g., variability in writer characteristics clearly emerged in terms of the scale's criteria, conflicts in rater decisions were reduced thus increasing intra-rater reliability). Other literature also describes problems with both these types of scales in terms of reliability and validity. For example: criteria for such scales may lack empirical support, thus scale-point descriptions may include features that don't actually co-occur or the sequencing of features is not consistent with reality, second language acquisition research, or both; in classroom settings, such scales may be too broad spanning a range from "no competence" to "native-speaker competence" resulting in student performances only falling into the middle range, thus rendering the scale less useful (Turner & Upshur, 2002; Coombe, Folse, & Hubley, 2007; Fulcher, Davidson, & Kemp, 2011).

Approaches to Rating Scale Development

The above categorization of scale types can become blurred when looking at approaches to rating scale development. This is because the appearance of a final scale does not always reflect the manner in which it was constructed. Even though rating scales have been in use for decades in applied linguistics and language testing, specific procedures for their development were not prevalent in the literature until the 1990s. There were exceptions, however (e.g., the former Test of Written English, Stansfield, 1986), but such reports did not provide general guidelines for development. It was assumed from previous research that scales were developed from a conceptual framework based on a theory of language (Jamieson & Poonpon, in press). With the onset of a focus on communicative language ability and performance testing (as mentioned at the beginning of this entry), a call for scales using empirical development procedures became apparent in the literature (Chalhoub-Deville, 1995; Upshur & Turner, 1995; Fulcher, 1996; North, 2000). From this time forward, categorizations and descriptions of different approaches to rating scale development (including the more recent empirically based scales) began to appear more frequently in the literature. Turner and Upshur (2002) classify three approaches employed in constructing scales: (a) using theoretical views about the development of L2 (second language) ability as a starting point, (b) relying on learning objectives and their sequencing in an L2 curriculum, and (c) empirically eliciting scale developers' descriptions of differences in a sample of L2 test responses (p. 50). More recently, in Fulcher et al. (2011), two approaches are described: (a) measurement-driven methods and (b) performance databased methods. The researchers introduce a new type of rating instrument within the performance data-based approach and label it performance decision trees (PDT). One of their goals is to try to accommodate the nature of interactions in communication settings. Also more recently, Jamieson and Poonpon (in press) discuss three approaches to scale development and scale refinement: (a) theoretically based, (b) functionally based, and (c) empirically based. In their description of the development of the TOEFL iBT speaking scale, they state three criteria for an effective rating scale "should be driven by a construct, be meaningful in given target language use situations, and be informed by analysis of actual spoken responses" (p. 5).

The more recent scale development approaches fall into the category of empirical methods which will be expanded here. They emerged as one response to criticisms of rating scales based solely on theory and have now been added to the repertoire of approaches as enumerated above. The resulting scale types fall into holistic, analytic, primary trait, and multitrait, but their construction is contingent on diverse empirical methods. The methods including their historical underpinnings are well explained in the literature. Some focus on validation and calibration of theoretically motivated performance descriptors and are measurement driven (e.g., North, 2000 in the development of the Common European Framework of Reference for Languages). Others focus on databased approaches with a close scrutiny of language performances as a starting point. Prominent language characteristics are identified and used to establish scale levels through statistical means (e.g., discriminant analyses, see Fulcher, 1996). A final performance databased procedure, and an example that will be described here, was developed within educational contexts and employs teachers as scale developers (see Turner & Upshur, 2002, for background on procedures based in personal construct psychology). Basically a group of raters (in this case, teachers) work with speech or writing samples. Repeatedly they individually rank the samples and then as a group come to a consensus on the specified number of levels. They identify and describe salient features that distinguish performances at adjacent levels. In this process scale descriptors emerge from holistically scaled samples. The resulting scale consists of an ordered set of binary questions related to the samples. They were initially labeled in Upshur and Turner (1995) as EBB scales: empirically derived, binary-choice, boundary-definition scales. Such scales are normally constructed for specific contexts and tasks. An example can be found in Figure 1. It is a scale developed by ESL secondary-level teachers in the French school system in Quebec, Canada. Its original purpose was for classroom use and the high-stakes ESL exit exam at the provincial level. As is the case

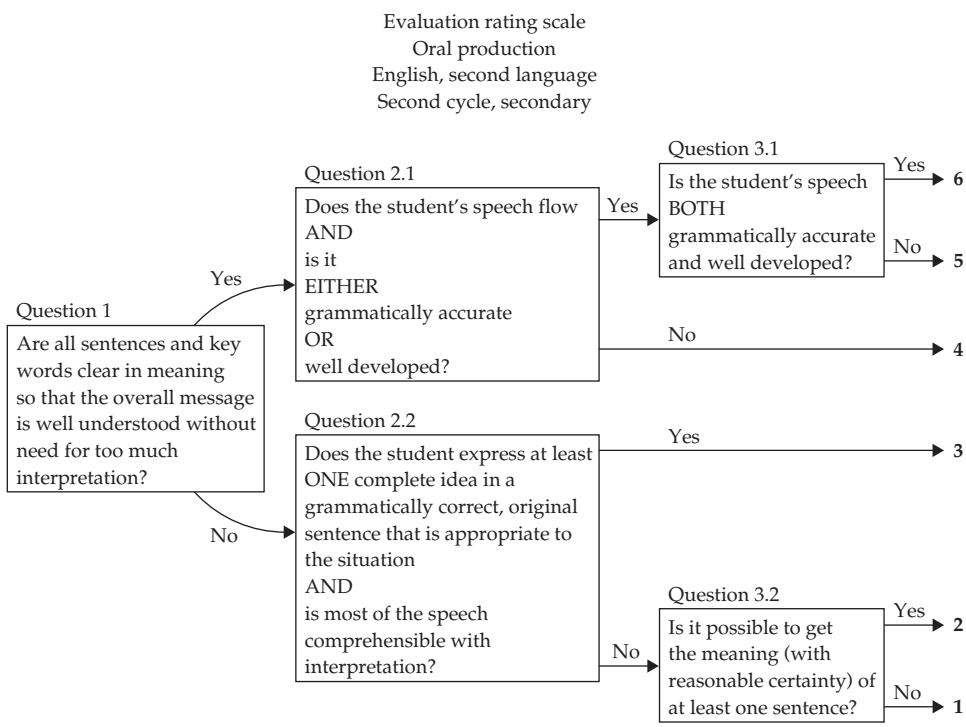

Figure 1 Example of an empirically derived rating (Turner, 2001, appendix A, p. 16)

with any category of scales, there are advantages and disadvantages to EBB scales. Even though they are efficient to use in educational settings and tend to have high inter-rater reliability, they are time-consuming to develop. Also due to their specificity of context, there is a lack of generalizability.

It is apparent from the literature that there are various views and practices concerning approaches to rating scale development as well as concerning the needed criteria for effective scales. Just as there is no one best scale type as mentioned above, there is also no one best scale development procedure. What is pertinent to know is that there are alternative development methods. Any selection should be driven by the assessment purpose and context which can greatly vary (e.g., a classroom setting versus a high-stakes test controlled setting). These in turn will drive the appropriate balance needed across rating scale qualities such as reliability, validity, and practicality (Bachman & Palmer, 1996; Neumann & Baker, 2008).

Issues and Challenges

This entry will conclude by returning to its beginning where the need for rating scales was discussed within the context of performance testing/assessment. Over the decades alternative types of rating scales and alternative approaches to rating scale development have emerged to meet this need. In combination with these efforts the inherent issues in the rating process have also been exposed. Rating scales are not just isolated tools that exist in a vacuum. Rating samples of language ability introduces a series of relationships that are being investigated in the research literature in that each one individually, in combination, or both may have effects on the final rating/score. Some of these are: examinee characteristics, task attributes, discourse qualities, rater characteristics, and scale types. Adding to the complexity is the growth and use of paired and group oral interaction assessments (McNamara & Roever, 2006; Ducasse & Brown, 2009; Fulcher et al., 2011). Figure 2 depicts a model of some potential relationships emerging in the rating process. The requirement to have raters (i.e., subjective judgments) has brought additional challenges such as inter- and intra-rater reliability and the contribution of rater training (Lumley, 2005). Through the development of many-facet Rasch measurement (Linacre, 2007) improved techniques for investigating rater effects is now possible. Therefore, we have made advances through the use of rating scales as tools to help measure language performance. With this use, however, ongoing research is needed to deal with the inherent issues that come with their use.

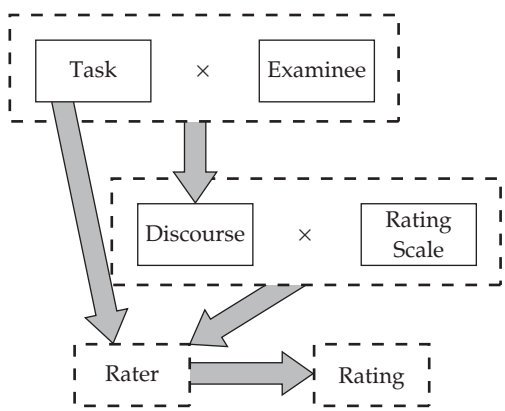

Figure 2 Potential relationships and effects in the rating process (Upshur & Turner, 1999, p. 106)

SEE ALSO: Assessment of Speaking; Assessment of Writing; Paired and Group Oral Assessment; Rating Oral Language; Statistical Analysis of Test Results

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Rational Choice and Cost–Benefit Analyses in Language Planning

WILLIAM P. RIVERS

Rational choice and cost–benefit analyses of language policies and language planning efforts are a subset and consequence of the relatively recent expansion of intellectual inquiry in language planning to include microeconomic phenomena (one of which is rational choice) and macroeconomic considerations (i.e., cost–benefit analyses). The economics of language planning focus on the economic analysis of language as a commodity, first proposed by Marschak (1965), Thorbrun (1971), and Jernudd (1971). In narrow terms of economic theory, commodifying language problematizes the acquisition of language skills and the intergenerational transfer (or loss) of languages in terms amenable to economic analysis. The decision to use or acquire a language, whether at the level of the individual or the polity, can then be weighed against the resources needed and the expected gains from using or acquiring one or another language. We shall see that the idea of "commodifying" broadly includes a range of concepts in human and social capital, to include the prestige and value accorded to a particular language on bases other than purely remunerative terms. Finally, proper application of economic models for language policy analysis recognizes the interaction of polity-driven planning efforts and individual decisions in terms of the outcomes of language policy and planning efforts.

Two main types of analysis have been conducted on the economics of language: return on investment through examination of census data (in the US, UK, Canada/Quebec, Australia, and New Zealand) correlating earning to language use and rational choice analysis of language as a *common* or *consumer good*. See Savoie (1995) for a review of studies, and Chiswick and Miller (1995) for a typical example. The majority language of a given polity almost always provides the higher return in terms of wages. It is the latter group of studies which offers rational choice as a potential explanation for language shift: if the utility of learning or using one language exceeds that which accrues to another language, then the individual learner or speaker will choose the language with the greater utility (Grin, 1994). Language as a *common* or *national good* is a subject for national policy decisions on which language to designate as official, and what standardization, rules, and incentives to promulgate to support the use and acquisition of the language (Pool, 1991; Selten & Pool, 1991). A subset of this area of inquiry treats language as a form of human capital, enabling cost-savings in communications between different language groups. That is, language is analyzed as a common good enabling competitive advantages to one or another language group (Breton, 1978). The former has traditionally been designated *status planning*, and the latter encompasses both *corpus* and *acquisition* planning (Lambert, 1999). The utility of designating and promoting one language over others may be economic, such as the decision in 1998 by Nigeria to promote French as a means of bettering its trade position with its officially Francophone neighbors (French, 1998), developing a sense of national or regional identity (Schiffman, 1996; Williams, 1997), promoting nationalist political policies (Fortin, 1978; Solanchyk, 1985; Dingley, 1989; Kreindler, 1997) or consolidation of power in one party or language bloc within a polity (Breton, 1978; Solanchyk, 1985; Hough, 1996; Laitin, 1998). The costs are typically in the capital required to promote the acquisition of the language in question (Selten & Pool, 1991) or in the potential economic and cultural

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isolation of a nation or region from its stronger monolingual neighbors, as in the case of Quebec before the Official Languages Act of 1981 (Fortin, 1978).

Language as a *consumer good*, subject to the purchasing decision of the individual speaker, has been the subject of a growing body of research. Breton and Mieszkowski (1977) first identified the potential for the analysis of language as a consumer good; Grin (1990) identifies utility functions and parameters for rational choice of language use, using Welsh as an example. Vaillancourt (1978, 1995) and Fortin (1978) extend this analysis to Quebec, commenting on the use of incentives for Anglophones to increase the prestige and economic return associated with acquiring and using French. Rivers (2002) used an analogous scheme to assess factors contributing to parental decisions on schooling in the Republic of Kazakhstan, with indications that maternal decisions to school Kazakh first language children in Russian-medium schools were driven in part by considerations of future career mobility and economic opportunity.

The ostensible goal of a cost–benefit analysis, whether post hoc as an evaluation of the implementation of a particular policy, or during the planning stages as an analysis of alternatives, is the straightforward determination of the expected gain from a policy per unit cost. As we shall see, conceptually this proves to be relatively intractable, in that while *costs* can be measured in terms of financial inputs required to implement a policy, *benefits* prove harder to quantify. This difficulty is particularly acute in macroeconomic cost–benefit analyses, where, as Brecht and Rivers (2005) note, "A cost–benefit analysis at the societal level involves the distinction between 'private marginal value' and the 'social marginal value.'" The societal benefit can be expressed as the sum of private marginal values—in other words, the sum total of what each individual would gain from the implementation of a given policy—or as the value derived by the society or polity as a whole. This latter approach allows for consideration of national security, economic competitiveness, and social justice as legitimate benefits of a particular policy. As Kaplan and Baldauf note, this formulation of the benefit of a language policy proves particularly difficult to quantify: "Even if one could prove unequivocally—and one never can—that language treatment had a salutary effect it would be hard to calculate in any satisfactory sense the relative cost accrued for the benefits received" (Kaplan & Baldauf, 1997, p. 163). In their study of the cost-effectiveness of minority language revitalization policies in Western Europe, Grin and Vaillancourt explicitly refuse to evaluate the social marginal value of language policies: "The efficiency of a policy can only be judged in relation with society's objectives, and the formulation of these objectives is a political process" (Grin & Vaillancourt, 1999, p. 3). What Brecht and Rivers (2005) propose is to accept the determination of policy objectives—that is, the putative benefits of a particular language policy—as a political process. For example, in the context of the foreign-language policies of the United States, they address the social marginal value of a linguistically competent workforce responsible for national security and the social marginal value of multilingual access to state social services. By rigorously identifying the needs for language capital, they provide a level of specificity that documents for political leaders the societal needs for language (Brecht & Rivers, 2005, p. 81). Among the specific subcategories they identify with respect to national needs for language capital are

- shortfalls in supply, where specific agencies or sectors have documented gaps in language coverage;
- shortfalls in capacity, where the underlying field resources (Brecht & Walton, 1994) are insufficient to enable the production of language capital—that is, the training of linguistically skilled individuals;
- asserted needs and demands, where policy makers and public officials indicate a requirement for language capital; and

- declared national policy, which states explicitly or implicitly the requirement for linguistic capital.

Brecht and Rivers then exemplify this structure with respect to social marginal value of language to US national security and social justice in the state of Maryland (Brecht & Rivers, 2005). Given specific benefits—that is, specific examples of social marginal value used as justifications and motivation for specific objectives of language policies—one can then assign costs to the attainment of these objectives.

We summarize by considering the applications of rational choice and cost–benefit analyses to language policy and planning. Among the immediate areas for further work for rational choice analysis is the consideration of individual choice for language use and intergenerational language transmission, in particular with respect to language revitalization and efforts aimed at reversing language shift (Fishman, 2001). As Rivers (2002) points out in his study of language shift in Kazakhstan, policy efforts that fail to consider individual choice may well fare poorly. Conversely, Grin (1990) shows that the prestige accruing to the use of Welsh had a demonstrable, salutary effect on the revitalization of Welsh. With respect to cost–benefit analyses, an immediate application we foresee is the practical one of developing clear, long-range language policies grounded in specific outcomes, these being tied to the costs and inputs required; a corollary of this level of rigor in planning is, at least in the US context, a transparent link between the policies often advocated by the language community, and the costs we ask government to bear. Making this link clearly allows a more persuasive argument to be made for the adoption of language policies, and places the policy objectives squarely in terms of the national interest and social justice.

SEE ALSO: Acquisition Planning; Economic Analysis of Language Policy and Planning; Multilingualism in Economic Activity; Quebec Charter of the French Language and Canadian Language Policy; Status Planning

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Reading and Content Area Learning

DARIN STOCKDILL AND ELIZABETH BIRR MOJE

The demands of school-based reading change as young people move into upper grades (i.e., sixth grade and above). Specifically, with increasingly specialized courses in the sciences, mathematics, social studies, and English-language arts come increasingly complicated texts and associated reading demands (Shanahan and Shanahan, 2008; Carnegie Corporation of New York, 2010). One of the reasons that many students struggle with reading at this level is the changing language they encounter in the context of content study. Language in the texts of the secondary school content areas is "more foreign, abstract, technical, and complex than the language that students typically encounter in elementary reading" (Fang & Schleppegrell, 2008, p. 3). Ironically, as reading demands increase, the instructional scaffolding needed to help students meet these language demands typically decreases.

Taking a closer look at "language in use" in classrooms is particularly important for both teachers and students. Precisely because they are learning the content for the first time, students are unlikely to be familiar with the discourses and language patterns of the disciplines that frame the subject areas of secondary school. What's more, students rarely possess the disciplinary, topic, and world knowledge necessary to draw inferences and engage in strategic reading that employs language cues as a guide. Consequently, their facility with reading and content area learning is dependent on teacher scaffolding of knowledge construction and instruction in disciplinary discourses and language patterns. Unfortunately, although content area teachers are generally skilled readers in their subject areas, they may take for granted or be unfamiliar with the linguistic and discursive themes of their particular subject areas (Fang & Schleppegrell, 2008; Rackley & Birdyshaw, 2008; Shanahan & Shanahan, 2008). In particular, many teachers fail to recognize the deep level of knowledge necessary to use language cues to make inferences among ideas in a text and have little understanding of how language works to cue readers; as a result, many secondary teachers often assume that students can simply take in content as they read.

This gap between students' knowledge and abilities and what teachers teach is located in a context where both written and oral texts are often crucial components in the development of content area knowledge. All classroom texts and activities, for example, are constructed through language, both oral and written, and secondary school classrooms are even more highly dependent on print—often read independently—than are elementary classrooms (Carnegie, 2010). Attending to the linguistic features of content area reading and discourse provides one useful tool for the consideration and development of content learning and reading comprehension. When teachers can recognize these features of their content areas and teach them explicitly to students, their students will be better able to unlock these codes and learn content more effectively. What, then, does one need to know to begin to open up the language codes of the content areas and what does a focus on language contribute to the study of content area reading?

Reading is a cognitive and sociocultural process, involving internal mental processes mediated by external social interactions and cultural practices. Specifically, reading occurs as a complex interaction between reader, text, and activity, all set in a range of contexts (Rumelhart, 1984; Snow, 2002). The reader brings language facility, knowledge, and motivation to the interaction; the text brings structure, varying levels of complexity, genre, topic,

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a point of view, and other such characteristics; and the activity provides a purpose and goals, environmental conditions, resources, and spatial and temporal frames for the act of reading (Anderson & Pearson, 1984; Tierney & Pierson, 1992; Moje, Dillon, & O'Brien, 2000; Snow, 2002; Moje, 2006).

Unfortunately, texts, students, and subject-matter classrooms are not stable, uniform entities, thus making the instructional task of teaching content area reading extraordinarily complex. Secondary school teachers might see between 80 and 180 students in a given day, depending on teaching load. Those students might hail from different communities, social classes, and racial or ethnic backgrounds. In addition, students who enter school with language backgrounds that do not closely match the dominant academic language of the country may have more difficulty with content area texts than do students whose language more closely matches the standard form. Therefore, a focus on language can be particularly useful to students because it can help them recognize the genres and text structures common to the discipline of that content area.

Like students, subject areas and classes can be diverse. Subject areas can be broken down into subfields of a given discipline or might represent different content standards. The timing of classes and schedules varies. Different kinds of resources are available across different disciplinary areas. And secondary school texts can vary along many dimensions, both within and across the content areas. Acknowledging and examining differences across students, subject matters, and texts is thus an important first step in linguistic research on content area reading. Given the scope of this essay, however, we cannot address each of these dimensions of content area reading in relation to linguistic study. Consequently, in what follows, we foreground the question of text and language differences by disciplinary area, with issues related to diversity of student language proficiencies and broader contexts of the secondary school and community taking the background. It is important to note, however, that students and broader contexts should never fade entirely from view, given the model that posits the act of reading as the *intersection* of each of these domains. That said, we focus on texts and classroom discourse to allow for a close analysis of the role of language in content area reading.

Types of Texts in Secondary Schooling

Over the span of even one day, students in upper elementary and secondary school classrooms will encounter a wide array of texts. In English classes students might read literary text, whereas in mathematics classes students are likely to read mathematical problems, proofs, or theorems, sometimes in textbooks, but often as embedded in teacher lecture notes. The same students in natural science (i.e., physics, biology, chemistry, earth sciences) classrooms might encounter information in print and tables, via textbooks or Internet sites; but in social science (i.e., history, economics, civics) classrooms they might be asked to read lengthy textbook passages connected to maps and charts, together with secondary sources and primary documents, such as speeches, diaries, and newspaper articles. With these variations in types of texts by subject area come variations in the dimensions and demands of texts.

Equally important, the features of those different texts vary *within* subject-matter areas and disciplines, especially as students progress through levels of schooling. Within the natural science subject areas of school a student might encounter a science textbook, lab manual, report, newspaper article, science magazine, or Internet passages that include definitions, moving images, and three-dimensional representations. The typical science textbook at the lower grades might be written in a style that varies from narrative to exposition, whereas the upper grades science textbook generally leans toward heavy exposition, with a smattering of narrative assumed to draw the reader in (Santa & Alvermann,

1991). By contrast, the genres of disciplinary scientific writing, for example in the form of lab or research reports, have clear standards for warrant drawn from empirical investigation and often employ particular discursive features to produce a distanced, objective style and tone. The phrase "It has been asserted," for example, when compared to the phrase "Halliday asserted," would be considered *low modality*, or a backgrounding of the actor to indicate uncertainty or open possibility. Low modality and other similar linguistic devices are key tools for hedging hypothetical statements or tentative conclusions (Myers, 1989; Lemke, 1990; Yore, Hand, & Prain, 2002).

Turning to the social sciences, students in a history class might encounter a history textbook, documents taken from archives (often referred to as "primary sources"), historical magazine articles, museum documents, and Internet passages (Bain, 2006). As in the natural sciences, Internet passages may be replete with hypertextual links that define terms or explain relationships among key actors or events in history, and in both cases, as well as in the English-language arts and mathematics, another type of text plays an important role: teacher lecture notes (Dillon, O'Brien, & Volkmann, 2001). Especially important is the question of how teacher talk matches or contrasts with the discourse of the disciplines (Lemke, 1990; Moje, 1997; Moje, Collazo, Carrillo, & Marx, 2001). One approach to discussing content area reading, then, is to acknowledge the role that multiple types of texts play in understanding how students learn to read in different disciplines, rather than focusing primarily on textbook passages, which are rarely the key text of secondary learning even if they are the most prominent. A second is to ask what differences there are among texts, both within and across subject areas, in terms of how content, voice and audience, and textual structure affect students' construction of meaning while reading.

Linguistic Differences Within and Across Subject Areas

A consideration of these differences leads to a focus on language in use and highlights, for example, how a first-person historical narrative is different from a fictional short story, or how a mathematics word problem is different in its language use and structure from the description of a scientific phenomenon. Halliday (1996) analyzed disciplinary discourse and texts in a way that fits neatly within a sociocultural model of reading as the interaction of text, reader, activity, and context. Halliday's focus on the functions of language in use and on the different meaning dimensions of texts offered tools for researchers and teachers alike to examine how the language of disciplinary texts presents challenges to students because the language itself functions as a way to communicate the epistemology —or the nature of knowledge and thought—of the discipline. For example, Halliday argued that science texts displayed particular patterns in grammar and organization. As in history, when developing a scientific argument scientific processes are often nominalized (changed from verb to noun phrases, e.g., *react* to *reaction*), and arguments are carried forward by thematizing, or making the process the subject of a new sentence, in order to carry the process further into its next step.

A focus on language in use highlights how these academic forms of language and text are different linguistically from the everyday speech and language of students. If students lack understanding of academic linguistic differences and expectations, then they may encounter difficulty in both reading and writing following content area norms. Writing in science generally employs a different tone and register from writing in literature and language arts, for example, and problems in navigating these differences become visible when students write research reports in history or science using informal language or syntax that places their own views in high modality. Students may transfer one type of genre often used in literature classes, the personal narrative, with its more informal register and narrative structure, to texts which should be more formal and have more complex

structures with claims and warrants, particularly if teachers are not attentive to the ways *they* talk about texts they want students to read and produce (Moje et al., 2001). If, however, students have never been explicitly taught these structures and if they have not had practice with the language used to create these relationships, then such transfer may be difficult.

Studies of Content Area Classroom Talk and Texts

Lemke (1990) drew from Halliday to focus on the thematic patterns in language used in science classroom talk. Lemke argued that relationships among scientific concepts covered in the classes were continually built and reinforced through talk. In his analysis of classroom conversations, he noted patterns of semantic relationships used to convey science knowledge, including the construction of cause-and-effect explanations, as well as the use of evidence to support scientific conclusions. Lemke found that teachers used language flexibly, finding different ways to communicate these patterns, often using everyday language to develop or explain scientific concepts (see Moje et al., 2001). In this way, teachers built upon students' existing concepts and the language they used to represent those concepts so that they could later develop more scientific conceptualizations and language practices. Lemke also demonstrated, however, that without careful attention to how language was used in the discussion of scientific concepts, teachers at times inadvertently communicated or reinforced misconceptions by substituting everyday terms for more precise scientific terms, thus miscommunicating the underlying scientific themes.

Discursive analyses of content area classrooms have also revealed epistemological assumptions of teachers and students that have implications for how they make sense of classroom texts. Brown, Reveles, and Kelly (2005), for example, analyzed the ways that science teachers' classroom talk positions students as certain kinds of people (i.e., as having particular science and student identities; see Barton, Tan, & Rivet, 2008). Similarly, Moje's (1997) analysis of one chemistry teacher's talk showed how the teacher positioned students as demonstrators of knowledge and herself as evaluator of knowledge, with classroom texts (including teacher lecture notes) the repositories of accurate and immutable science knowledge. This positioning developed as a result of classroom talk, despite the chemistry teacher's firm belief that scientific investigation was a process of discovery rather than a transmission of information. Similarly, Bain's (2006) analysis of what his high school history students assumed about the authority of textbooks demonstrated that students enter secondary school classrooms with assumptions about the nature of knowledge, the authoritative role of texts, and their own positions and identities as learners in relation to those texts. Only with skillful and explicit attention to written texts were these assumptions challenged in ways that allowed the students to read and think critically about historical concepts (see Bigelow, 1989).

Fang and Schleppegrell (2008), working within the framework of Halliday's (1996) functional linguistics, identified specific features of academic language in content area textbooks that have an impact on student reading: (a) the presence of multiple semiotic systems; (b) differing expectations for organization related to genre, register, and structure; (c) density and abstraction; and (d) technicality and authoritative stance. In one page of a textbook, for example, students may encounter various semiotic, or symbolic, representations of meaning. They may read text and then see a photograph with a caption, a table with numeric information, and then a cartoon. Each type of information requires a different set of interpretive tools. At the secondary school level, many different ideas may be packed into a small amount of written text and abstract concepts are often not unpacked.

Moreover, the vocabulary used with respect to these concepts differs as well. A "product" in math class is not the same thing as a "product" in economics. Mathematics vocabulary

often has an accompanying set of symbols that can be represented in different ways. The term "divided into," for example, can be written in several different ways and represented with more than one symbol. Technical terms are commonplace, but may be more easily identified in science when compared to terminology in the social sciences—although many colloquial terms are used in both the natural and social sciences, but are imbued with technical meanings that can be confusing to students (Moje, 2010). For example, *market* is a complex economic term yet students are familiar with its more colloquial and common usage as a store where they can buy food; similarly, the word "genes" is a word with which most youth are familiar, but whose technical meaning may be elusive or simply misunderstood. The word *ecosystem*, however, has fewer everyday meanings and students can more readily identify it as scientific language (Moje, 2010), even if they are unsure of its definition.

These aspects of content area text can be challenging for students, and teaching students to recognize language as important to understanding can help illuminate the sources of difficulty. Fang and Schleppegrell (2010) posited that student writing can also be shaped and improved by calling the attention of students to language and in particular to the three types of meaning presentation described by Halliday: (a) ideational meaning, which is located in the content; (b) interpersonal meaning, which is developed through voice and intended audience; and (c) textual meaning, which comes through the structure of language as communication. Schleppegrell and Go (2007) argued that students need to be taught to attend to what a text is about, how it expresses judgment and evaluation, and how it is organized or structured.

With a specific focus on history learning, Coffin (2006) argued that students in general need explicit instruction in and access to "the written texts of mainstream education, for example, a persuasive essay, a laboratory report, or a critical review of an artwork or literary text" (p. 414). In addition, students need instruction—and teachers need training—to help them understand how "texts are linguistically structured and shaped and the way in which writers draw upon grammar and lexis . . . to create different communicative effects" (p. 414). To bolster these claims, Coffin collected samples of student writing in secondary history classes and engaged in a comprehensive linguistic analysis of patterns of causal relations and the structure of arguments. Based on her findings, Coffin structured professional development experiences for teachers in which they worked with linguists to identify key structures and features of model texts. Teachers used this framework to provide explicit instruction around language. Students began with exercises that explored processes like nominalization, transitioning from phrases such as *Europeans invaded* to *invasion* in the next sentence to carry the idea forward. They then worked to integrate these practices into their own writing by first engaging in the joint construction and public production of texts on the whole class level.

An understanding of the linguistic features and structures of content area texts and the reading processes involved is helpful for educators, curriculum developers, and textbook authors as well. However, attention to language is not enough in and of itself. A linguistic approach to disciplinary and content area reading is but one way to consider instruction and research in this area (Moje, 2007). Attention to cognition, social and cultural connections, and disciplinary thinking or epistemology is also important. Moreover, attention to reading process and language does not explicitly address questions about the knowledge that students need to make sense of disciplinary texts. Content area texts generally assume a certain amount of prior knowledge on the part of the reader and instruction needs to take into account the dimension of reader knowledge. When integrated with the development of necessary knowledge and with making connections to young people's home and community experiences, attention to the language features of content area dialogue and texts, such as genre, register, grammar, and vocabulary, can help students develop deeper

comprehension and knowledge in their content area classrooms. Teacher education, both pre- and in-service, can also address these issues and raise teachers' awareness of the importance of attending to language in use in content area reading and instruction.

SEE ALSO: Multimedia Digital Engagements by Readers and Learners; Reading and Intertextuality; Reading–Writing Connection; Sociolinguistic Studies of Literacy; Writing and Content Area Learning

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Reading and Intertextuality

DAVID BLOOME AND HUILI HONG

Intertextuality can be defined as the juxtaposition of two or more texts. The juxtaposition of texts is ubiquitous in everyday life, in scholarly discourse, and in and across the social institutions of a society. Kristeva is credited with originating the term *intertextualité* in the 1960s (see Kristeva, 1986). There are, however, numerous related terms (Orr, 2008, lists approximately 1,200 closely related terms), many of which predate the coining of *intertextualité*. Although discussions of intertextuality are "at least as old as recorded human society . . . [and] we can find theories of intertextuality wherever there has been discourse about texts" (Worton & Still, 1990, p. 2), Kristeva's originating of the term can be viewed as part of a broader effort to transform how meaning in texts and language might be understood (Kristeva, 1980) by bringing Bakhtin's concept of dialogism (Bakhtin, 1935/1981) into contemporary discussions in literary theory, linguistics, and social theory (see Orr, 2008). Kristeva defined *intertextualité* as "the transposition of one or more systems of signs into another, accompanied by a new articulation of the enunciative and denotative position" (Kristeva, 1980, p. 15). The concept of *intertextualité*, as formulated by Kristeva, challenges scientific positivism, monologism, and ahistorical understandings of text (Orr, 2008). Thus, despite diverse definitions of intertextuality and debates about the scope and usefulness of the term (see Worton & Still, 1990; Allen, 2000; Irwin, 2004), what is at issue in the term "intertextuality" is not the simple juxtaposition of texts per se, but the deconstruction and reconstruction of dominant theories of semiotics, linguistics, hermeneutics, language, reasoning, and related topics including reading, composition, literary theory, and how a text is defined.

There are differing definitions of intertextuality based on what counts as a juxtaposition, how juxtapositions are accomplished, and how a juxtaposition of texts might count in constituting meaning(s) and social consequence(s). With regard to the former, scholars have focused attention on how juxtapositions are accomplished (inherent to the text, by the text's membership in a particular class or field, by the reader, through social interaction). With regard to how a juxtaposition might count, scholars have focused on how meaning is realized through a juxtaposition of texts themselves, how juxtaposed texts are related to discourse formations and cultural ideologies, and how juxtapositions of texts are taken up by, interpreted by, and used by people in meaningful ways including the (re)structuring of social relationships, social institutions, and social/cultural ideologies.

Within the last few decades, views and definitions of intertextuality have expanded by moving beyond consideration of literary texts to other cultural and artistic productions (Allen, 2000) and to the texts of everyday life including various modalities and media (e.g., Hanks, 2000; Meinhof & Smith, 2000). This expanded focus has been accompanied by a broadening of the theoretical foundations of intertextuality to include discussions of deixis, indexicality, memory, time and space (e.g., Hanks, 2000), power relations (e.g., Fairclough, 1992), and social interactions among interlocutors (e.g., Bloome & Egan-Robertson, 1993). The expanded focus has also been accompanied by interest in intertextuality in a broad range of disciplines and fields such as cognitive science (e.g., Goldman, 2004; Segev-Miller, 2007), semiotics (e.g., Lemke, 1995), anthropology (e.g., Briggs & Bauman, 2009; Hanks, 2000), history (e.g., Rouet, Britt, Mason, & Perfetti, 1996), education (e.g., Shuart-Faris &

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Bloome, 2004). The underlying premises of such studies of intertextuality, to greater and lesser degrees, include three premises articulated by Boyardin (1990, p. 12):

> The first is that the text is always made up of a mosaic of conscious and unconscious citation of earlier discourse. The second is that texts may be dialogical in nature—contesting their own assertions as an essential part of the structure of their discourse . . . The third is that there are cultural codes, again either conscious or unconscious, which both constrain and allow the production (not creation) of new texts within the culture; these codes may be identified with the ideology of the culture, which is made up of the assumptions that people in the culture automatically make about what may and may not be true and possible, about what is natural in nature and in history.

What counts as a juxtaposition, and how the juxtapositions of texts count, is contextualized by various discourse communities and the social, cultural, historical, political, and economic relationships among those communities.

What Counts as a Juxtaposition

One focus of scholarship on intertextuality has been on the features of text that explicitly reference other texts, including citations, references and bibliographies, reported speech, and explicit mention of other texts. Similar explicit features include text genres and book series that are by definition intertextual such as book reports, book reviews, and fiction sequels. Slightly less explicit are juxtapositions signaled by a distinctive writing style (e.g., children's books written in the rhyming style of Dr. Seuss).

Beyond the level of words, sentences, and writing style, scholars employing the concept of intertextuality have focused attention on the explicit and implicit relationship of one particular text with another (e.g., how Shakespeare's *King Lear* influenced Melville's *Moby Dick*; see Olson, 1947), how texts "influence" each other more generally (Clayton & Rothstein, 1991), and the role of a text in a sequence of texts (e.g., a diagnostic medical report leads to a pharmacy prescription; field notes lead to an ethnographic report; see Fairclough, 1992 on sequential intertextuality).

The juxtaposition of texts may also be a function of the reader and what "texts" the reader brings to the reading of a particular text (and how the reader brings those texts). A reader may read a target text with a memory of another text (spoken, written, visual, etc.) that she or he views as related. A reader may also bring to a target text personal experiences and knowledge that are useful for interpreting the target text. To characterize a reader's use of prior knowledge and experience as an intertextual process requires an assumption that prior knowledge and experience are also texts (see Volosinov, 1929/1973; Gee, 1985). Some formulations of the representation of meaning in memory by cognitive scientists also suggest that readers bring prior knowledge and experience to a reading as prior texts (e.g., Tulving, 1983). To the extent that reading with understanding requires the reader to bring to the target text some level of previous knowledge represented as text, all interactions between a reader and a text can be viewed as inherently intertextual.

The juxtaposition of texts may also be a function of the reading task and its interpersonal context. For example, in secondary-school history classes in the United States, students are often given a set of texts and asked to construct a historical representation based on that set of texts (simultaneous intertextuality; see Goldman & Bloome, 2005). Even when students are asked to read a single text, teachers may first prompt recall of related texts or frame the reading in terms of an upcoming test (itself a text) or composition assignment (successive intertextuality; see Goldman & Bloome, 2005).

The interpersonal context of the use of a text may also be implicated in the juxtaposition of texts. Although archetypal views of reading events envision a single reader and a single

text with a single authorized meaning, reading events often involve multiple people reading multiple texts, all interacting with each other (as might occur in a classroom where the students and the teacher are discussing comparisons between two stories they have read and the argumentative essay they are to compose). The illusion of the archetypal view and its contrast with the empirical reading event is highlighted in a study of elementary schoolchildren by Sterponi (2007). She documented how the students resisted the imposed one-reader-one-text-one-interpretation stance toward reading through clandestine interactions among themselves.

Every text can be viewed as inherently belonging to at least one class of texts and to at least one field of texts. A class of texts is similar in text type, genre, constitution, or modality. The field of texts can be viewed as the institutional domain of the use of a text. The institutional domain defines the social relationships contextualizing the use of the text. For example, *Where the Wild Things Are* (Sendak, 1988) belongs to the class of texts described as picture books, children's literature, fantasy, or dream stories. It belongs to the field of texts used in families and early childhood education, defined by and defining social relationships as parent–child and teacher–pupil respectively.

A text is inherently juxtaposed with all the other texts within its class and field, both individually and as a whole. As such, any text can be viewed as always indexing its particular class(es) and field(s). A text that is taken from one class or field and placed in another is recontextualized. Thus, the film version of *Where the Wild Things Are*, as well as having an intertextual relationship to the book and thus also to that book's class and field membership, is related to the class of texts that might be labeled as movies for children; and while its fields may still include the social institution of family, the film does not belong to the field of bedtime story reading.

The recontextualization of a text may create a new set of meaning potentials such as occurs when a text from one discipline is imported into another. Interdisciplinarity requires the juxtaposing of texts in a manner that creates a system of new meaning potentials not available in either of the previous disciplines' classes or fields (as opposed to multidisciplinarity, which can be defined as involving the parallel play of texts from varying disciplines and the potential for new meaning, but not the creation of a new system of meaning potentials). For example, the incorporation of chaos theory, a set of texts from mathematics and physics, into cultural anthropology (see Agar, 2004) creates new approaches to cultural analysis and definitions of cultural phenomena and processes.

What unifies the varying definitions of intertextuality above is that intertextuality is a primary characteristic of text and of reading; not an add-on or an accoutrement, but rather the essential nature of text and reading themselves. As Hanks (2000, p. 267) notes, "The important point is to realize that intertextuality displaces the object of study from individual texts to transtextual relations." As such, the term "text" as an integral, autonomous phenomenon is a non sequitur and might better be labeled an "intertext." The meaning potential of each text lies not in the text alone but in the relationship(s) of that text to the system of texts with which it might be juxtaposed within a field and a discourse community (see Porter, 1986).

Part of what is at issue is the degree to which the relationship of texts to each other is viewed as historical. Volosinov (1929/1973) argues that every word has a historical relationship to how it was used before and how it will be used in the future, each use reflecting and refracting its history. Whenever a person encounters or creates a text, the text does not come new, but with a history that contextualizes how its meaning. In this sense, any word, utterance, or text is always dialogic and always juxtaposed with what came before and what will come later. From this perspective, the contrast between dialogism and monologism is not about the inherent intertextuality of a text but about the stance taken toward a text: historical, dialogic, and heteroglossic or stable (ahistorical), monologic, and autonomous.

Bloome and Egan-Robertson (1993) take a slightly different approach to the inherent intertextuality of a text. Grounded in interactional sociolinguistics (see Gumperz, 1986), they argue that the juxtaposition of a text lies not in its nature per se, but in the social interaction of people using the text. Intertextuality is socially constructed and the set of texts that can appropriately be juxtaposed is also socially constructed. Intertextuality, from this perspective, consists of a series of situated social practices involving the use of texts that are adopted, adapted, contested, and transformed, as people interact with each other to accomplish the doings of their everyday lives.

Whether intertextuality is located in the text itself, in its class(es) and field(s), in the reader, in the task, in historical processes, or in social interaction, what counts as a juxtaposition of texts requires consideration of explicit and implicit intertextual references and signs, relationships among texts at multiple levels, the constraining and enabling role of discourse communities, and evolving ideological systems of texts. However, the significance of intertextuality is not in the mechanisms of juxtaposition per se, but in the ontological stance accompanying the juxtapositions.

How Juxtapositions of Texts Count

Rather than view a text as having a meaning warranted by the content and structure of its propositions (its text base), the concept of intertextuality frames meaning as deriving from the interplay of a text with other texts. The set of texts that might be juxtaposed and the ways meaning might be derived from their juxtaposition is constrained by the discourse community within which the text is being used and its intertextual practices. The set of intertextual practices of historians differs from that of physicists, bankers, lawyers, and automobile mechanics. Intertextual practices also vary across the social institutions of people's everyday lives such as family, recreational sports, the workplace, church, and so on. Intertextual practices within a discourse community are not fixed but are constantly being adapted and transformed; what texts are juxtaposed, how, by whom, when, and where, are constantly evolving. Thus, as Frow (1990, p. 46) quoting Culler (1981, p. 117) points out,

> 'There are no moments of authority and points of origin except those which are retrospectively designated origins and which, therefore, can be shown to derive from the series for which they are constituted as origin.' The prehistory of the text is not a given but is relative to an interpretive grid.

From a cognitive perspective, Goldman (2004) describes three intertextual models: the integration of multiple sources, an assimilative mode in which one text is "'swallowed up' by the other" (p. 328), and an "encapsulated" model in which the various texts remain relatively unaffected by the others, the inconsistencies across the texts unacknowledged (this "encapsulated" model is no less an intertextual relationship than the others, the meaningfulness lying in the separation; see Segev-Miller, 2007, for a similar description of intertextual models from a cognitive perspective). As Goldman notes, "the different ways that information across texts is related has implications for the construction of coherent mental representations" (2004, p. 344). In educational research, researchers have examined, among other topics, students' intertextual practices in written composition (e.g., Beach & Anson, 1992; Segev-Miller, 2007), how children and young people use intertextuality to build scientific understandings (e.g., Pappas, Varelas, Barry, & Rife, 2004), how they acquire historical knowledge (e.g., Perfetti, Britt, & Georgi, 1995), how they build literary understandings (e.g., Cairney, 1990), how students read for information (e.g., Hartman, 1992), and how they learn from digital, hypertext sources (e.g., Voithofer, 2006).

The heteroglossic nature of comprehension and interpretation characterizes not only the object of interpretation, but also the processes of text production and consumption. That is, the concept of intertextuality challenges models of language, semiotics, and communication in which an author or speaker encodes a meaning or intent into a text that is decoded by a reader or listener. It is replaced by a more diffuse, diverse, contested, and historical set of processes in which traditional conceptions of author, reader, and interpretive process are problematized and fictionalized. As Hanks (2000, p. 13) writes,

> What we call a work is actually a history of concretizations, then the meaning of any historical document is the trajectory of its reception. The first step in this trajectory is the making of the document itself, a production typically involving witnesses, scribes, and other institutional supports.

It is not just that meaning is no longer located solely in a text; but rather that the production and consumption of texts is inherently a heteroglossic, dialogic, and discursive construction taking place in spaces mutually defining and defined by these intertextual processes (Hanks, 2000). For example, the creation and production of the book *Where the Wild Things Are* involved an author, an illustrator, copy editors, a publishing company, a literary agent, marketing representatives, distributors, copyright and government officials, bookstore employees, consumers (e.g., parents, educators) who purchased the book, administrative assistants, printers, librarians, tax accountants and others, and all of the texts they created as they worked together and interacted with various audiences, constituencies, and institutions. Collectively, they locate the book within particular fields and spaces (including social institutions such as families and schools, Western English-speaking geographies, and socioeconomic classes and cultures that enact bedtime story reading, etc.). The "authoring" (production) of the book not only reflects a class and field of texts, but contributes to a representation of childhood both by the social practices promoted (which themselves become textualized) and by the nature of the story rendered in the words and pictures of the book as it plays against other stories and texts.

The context of consumption is also a set of intertextual practices involving multiple people, texts, and agendas played out against a differing social and cultural system of (inter)texts and (inter)textual practices. Within the context of consumption, the meaning constructed from the book involves more than an individualistic, mental situation-model associated with the story rendered (itself derivative of multiple texts juxtaposed with the target text). It also involves a set of social relationships (parent–child), social spaces (home), cultural practices (bedtime story reading), social institutions (family and the relationship of family to school), and a cultural ideology associated with an economic class (a middle-class culture of child rearing), all of which becomes textualized as these experiences are talked about, remembered, reflected upon, used as a basis for similar future activities, separated in time and space from other activities, and otherwise made meaningful.

Some scholars include interdiscursivity as a form or extension of intertextuality (e.g., Fairclough, 1992). The texts of one discourse community are juxtaposed with those of another. Interdiscursivity can occur at the level of words and sentences, at the level of genres and writing styles, or other levels. For example, the texts of international economic competition might be juxtaposed with the texts of reading education (as occurs in Anderson, Hiebert, Scott, & Wilkinson, 1985). The consequences of such interdiscursivity may be to redefine one discourse community in terms of the other (what Althusser, 1971, called interpellation); thus, reading education becomes a matter of economic policy. Alternatively, interdiscursivity can open up new forms of expression and new meaning potentials. For example, Tupac Shakur's hip-hop song "Changes," with its sampling of Bruce Hornsby's melodic song "The Way It Is," helped lay the foundations for a new expression of social and

cultural critique. Such interdiscursivity reflects past texts but refracts them in the creation of new meaning potentials and in creating potential for new discourse communities.

Several scholars have argued that what is at stake with the concept of intertextuality is not simply the meaning of a text, but rather how it indexes a crisis with dominant theories of language, semiosis, and knowledge.

> By proposing the connectedness of texts it puts the category of text itself into crisis; by pointing to the semantic connectedness of texts it focuses on the processes of semiosis and points away from the form-based starting point of most linguistic theories. By making text prior—text as produced out of elements of prior texts—it puts into crisis the structuralist/generativist notions of the generation of linguistic form. (Kress, 2000, p. 153)

As the set of texts (prior texts in Kress's terms) and intertextual practices within a discourse community evolve and change, as the boundaries of a text are recognized as diffuse rather than fixed, the stability of meaning and what counts as knowledge and as knowing is placed at risk. The concept of intertextuality calls for "dialogue," an interplay of texts, voices, practices, cultural systems, and ideologies, which may be responsive to each other but are not necessarily predictable or mimetic, but instead creative, transformative, and potentially carnivalesque (see Bakhtin, 1935/1981).

SEE ALSO: Analysis of Narrative in Interaction; Context in the Analysis of Discourse and Interaction; Conversation Analysis and Education; Conversation Analysis and Learning in Interaction; Critical Analysis of Discourse in Educational Settings; Critical Analysis of Multimodal Discourse; Critical Literacy; Sociolinguistic Studies of Literacy

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Reading and Language for Specific Purposes

WILLIAM GRABE AND FREDRICKA L. STOLLER

The uses and development of reading skills in Language for Specific Purposes (LSP) contexts have been, oddly enough, rarely discussed in recent years, even though LSP students typically study a second or foreign language for academic or professional purposes that entails substantial reading. The focus of attention in the LSP literature has rather been on other topics, with reading and reading-skills development only mentioned peripherally, if at all. For example, many LSP publications explore the role of input in instruction or reading–writing relationships; a number of needs analysis studies simply identify reading as an important skill for advanced LSP students; a few articles note the importance of reading, but then explore teaching technical or topic-specific vocabulary or complex sentence structures; and many articles discuss the general task of writing from sources. In most cases, reading abilities are simply assumed to be important, even though many LSP students begin their studies with poorly developed reading skills. Within this range of publications, almost no discussion exists of how to develop reading curricula or how to teach reading skills that would be useful for LSP students in undergraduate, graduate, or specialized professional-training contexts. In this brief entry, observations on the paucity of discussion about LSP reading and reading-skills development are addressed further. The entry also outlines ways in which this lacuna can be addressed in LSP contexts. An emphasis is placed on tertiary-level English for Specific Purposes (ESP) and English for Academic Purposes (EAP), the latter a subbranch of ESP, because of their predominance worldwide (Gnutzmann, 2009).

Waning Documentation About LSP Reading

The absence of concentrated attention to reading in LSP is widespread. A review of teacher-training volumes providing overviews of ESP research and instruction from the last decade reveals practically no consideration of reading-skills development or specific uses of texts in instructional tasks. These volumes include some discussion of the integration of content and language objectives, but, unlike explorations of writing instruction, little discussion is provided on how reading skills might be developed for ESP students. Similarly, a review of the last five years of journal articles in *English for Specific Purposes*, *Journal of English for Academic Purposes*, *TESOL Quarterly*, and even *Reading in a Foreign Language* (*RFL*) reveals almost nothing concerning the reading-skills development needs of LSP students, though limited research on reading motivation and strategies in ESP contexts is reported. One *RFL* article reports on the serious English reading difficulties experienced by Norwegian university students, due to impoverished vocabulary, slow reading, and overall poor language proficiency (Hellekjær, 2009). Overall, this gap in reports on LSP reading research and instruction is surprising given that so many LSP contexts around the world, and especially EAP contexts, recognize reading as a crucial ability that students need to develop for success in their studies or professions. This dearth of attention to reading is also somewhat striking because early discussions of ESP, especially English for Science and Technology

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(EST), were heavily devoted to the development of reading skills (Hudson, 1991; Flowerdew & Peacock, 2001; Celani, 2008).

In several countries, English as a foreign language (EFL) serves as the medium of instruction across or in a number of academic departments in key universities. In these contexts, non-native English students are expected to read materials in English that are relevant to their studies and professional training even though a high percentage of students are not skilled English readers. In many other EFL university settings, students pursuing degrees in science, technology, engineering, and math are expected to take English reading courses—in foundation programs or English language preparatory programs—to develop English reading skills. These programs are meant to bring students' proficiency level up to the basic minimum required for study in their chosen fields. Typically, these courses are less than fully successful for their stated goals because (a) students begin as false beginners in EFL reading, and (b) so few hours of instruction are provided that students do not have the time to become reasonably skilled readers, even when just concentrating on disciplinary specializations (see Dharmapriya, 1988; Anwar, 1994; Cobb & Horst, 2001; Ward, 2009).

In the years 1980–2000, the role of reading in ESP settings was treated in much greater depth. In the mid 1980s, Hutchinson and Waters (1987) promoted a strategy-based approach to ESP reading. Hudson (1991; see also Lynch & Hudson, 1991) reported on a detailed approach to a content-based EST reading curriculum in Mexico that was developed as part of a five-year research project. This work may be the single best earlier discussion of reading instruction in an advanced ESP context, and perhaps the only one to demonstrate empirically that their approach led to significant gains among students in the program. A Brazilian ESP project, that began in 1978 and continues to this day, places importance on the role of reading-skills development for ESP students and in ESP teacher training (Holmes & Celani, 2006; Celani, 2008; see also *ESPecialist Journal* for other relevant articles). And finally, Dudley-Evans and St. John (1998), in their often mentioned ESP volume, addressed the development of reading abilities from disciplinary texts.

The more recent shift away from reading, or a shift to assuming acceptable reading abilities among LSP students, is evident in the much greater current emphasis placed on writing abilities, genre awareness, discourse analysis, corpus studies, and students' socio-cultural needs in LSP contexts. Nonetheless, a number of key publications since 2000 describe the role of reading in LSP and report interesting research. Carson (e.g., 2001) describes advanced EAP reading and writing instruction from a task-based perspective that is still important today. Hirvela (2004) addresses reading–writing relationships and includes discussions of the importance of reading skills in EAP contexts, both as an outgrowth *from* writing tasks and as a key resource *for* writing tasks. Parkinson, Jackson, Kirkwood, and Padaychee (2007) provide a useful discussion of a curriculum project in South Africa. In this project, a 26-week curriculum draws upon sets of science texts for EAP content and builds eight three- to four-week thematic units designed to develop both reading and writing skills for foundation-level science students. At very advanced levels of disciplinary literacy training, Robinson, Stoller, Costanza-Robinson, and Jones (2008) promote a read-analyze-write approach to chemistry-specific literacy development that situates reading at the beginning of the process.

Despite these few recent explorations of LSP reading, the gap that exists in LSP/EAP research and curriculum vis-à-vis reading is surprising given the continuing strong emphasis on reading-skills development as a common goal of many tertiary-level EAP and ESP curricula, especially in EFL contexts. In the remainder of this entry, we introduce the reading skills needed by LSP students and offer suggestions for curriculum development and reading instruction.

Reading Skills and LSP Curricula

Most LSP needs analyses that have been reported validate the strong importance of reading skills in LSP contexts. Even though LSP and EAP contexts can vary enormously, LSP and EAP instruction at the tertiary level in many countries share some features. For example, students are generally assumed to have at least a low-intermediate knowledge of English vocabulary and grammar (however that might be defined), and they may have had some reading-skills practice, but little extensive reading in English (Gnutzmann, 2009). In LSP contexts, students are usually not English majors and reading-skills development has been identified as a major focal point for typical two-year English curricula (often one and a half to two hours per week, for a range of 105–40 hours of total instruction over two years). Students are expected to become fairly competent readers at the end of four semesters, at least within the narrow scope of their majors. Although not explored much in the LSP literature, publications on reading-skills development (e.g., Grabe, 2009) suggest that if students such as these are to have any degree of success with reading disciplinary materials in English, they need to

- develop a large recognition vocabulary (with an emphasis on disciplinary terminology);
- comprehend main ideas in (often complex and difficult) texts;
- recognize how texts are organized and how parts relate to each other;
- read strategically to achieve task purposes and maintain comprehension with longer texts;
- use text information to produce summaries, write syntheses, and evaluate information critically;
- use readings in English as input for learning disciplinary content;
- read extended discipline-specific texts fluently.

In truth, it is not a feasible pedagogical goal to develop all of these abilities in relatively limited instructional contact hours. This limitation in instructional time explains why LSP students commonly do not meet institutional expectations in terms of becoming skilled independent readers of disciplinary texts in English. In settings where students begin with a good foundation in English reading skills, considerable progress can be made, and instructional gains can be achieved.

A number of curricular principles for LSP courses that aim to help students improve their reading abilities are likely to be useful (Grabe, 2009). As far as possible, LSP reading curricula should be structured around these recommendations:

1. Use reading resources that are relevant, interesting, varied, and accessible.
2. Provide some degree of student choice.
3. Introduce and practice reading skills by first drawing on course texts for instructional examples.
4. Structure lessons around a prereading, during reading, and postreading framework.
5. Build connections between instructional texts and student background knowledge.
6. Provide opportunities for students to experience comprehension success.
7. Build expectations that reading occurs in every lesson.
8. Plan instruction that supports a number of developmental goals (see below).

Many of these general curricular recommendations (1–8) are straightforward but are often absent in LSP/EAP reading instruction. To the extent that these curricular guidelines can become regular components of reading instruction, more students will achieve some success in LSP/EAP instructional contexts. A more complete snapshot of what should occur

in an LSP/EAP reading course is achieved by expanding upon the developmental goals suggested in the eighth recommendation (above).

Reading Development Goals

To prepare LSP students for the demands of reading for specific purposes in their chosen fields of study, at least seven developmental goals should be supported through deliberate instruction (Grabe, 2009). From a teacher's perspective, instruction needs to

- build a relatively large recognition vocabulary (emphasizing academic and disciplinary vocabulary),
- use texts relevant to students' LSP needs and goals,
- provide practice with comprehension skills,
- build awareness of text structure,
- develop the strategic reader,
- promote reading fluency,
- motivate students to read,
- assess students' progress and development.

Each of these developmental goals requires ongoing attention and practice, and some deliberate efforts on the part of the LSP instructor, as discussed in the remainder of this section.

It is not realistic to expect LSP/EAP students who commonly have only one and a half to two hours of English instruction per week in many EFL settings to build a large reading vocabulary. Yet, with instructor encouragement, LSP students can work toward building a reasonably large recognition vocabulary centered on disciplinary and subtechnical academic words and phrases. Students should be exposed to many words by (a) identifying words in texts that they do not understand and finding out what these words mean, (b) studying word meaning lists and testing themselves on these words, (c) working with flash cards to practice word learning regularly outside of class, (d) learning to infer word meanings reasonably efficiently while reading, (e) collecting words that they find interesting in a word journal, (f) learning word family members and learning common derivational morphology for word building, and (g) using dictionary resources efficiently. These word learning suggestions would differ considerably in a teaching context with many more instructional contact hours, but instructional time limitations oblige students to take on more responsibility for word learning and require multiple brief encounters with words.

Texts assigned in LSP/EAP courses should be content-based, centering on relevant thematic materials, though they should be matched fairly closely to students' reading abilities. This expectation may lead to more texts being selected from content-area textbooks than from textbooks written specifically for language learners. A balanced text-selection approach, that combines simpler and more general nonspecialist texts with a smaller set of research-oriented academic texts, may be the most effective compromise.

LSP students need to focus most centrally on comprehending assigned texts. Building main-idea comprehension involves a combination of identifying main idea statements in the texts, sorting through complex lexicogrammatical information in key sentences (e.g., extended nominalizations, complex embedded clause structures), using comprehension strategies appropriately, and becoming aware of how discourse structure helps organize information in texts. Teaching comprehension strategies to students should not be carried out as a strategy-per-week, but rather as a consistent process of using strategies in every class to determine how best to understand a text. Both strategy instruction and discourse

structure awareness should be exemplified with the primary texts being used for instruction, not with separate texts brought in solely for those purposes.

As far as possible, students should be encouraged to read longer texts and for extended periods of time. In some cases, longer texts can be read faster and at lower comprehension levels if the assigned task is not too demanding. In this way, students practice working with longer texts and achieve some level of success. If resources are available and if the institution wants students to gain some level of reading fluency, then an extensive reading component should be integrated into the curriculum (Day & Bamford, 2002). Ultimately, if students are expected to become fairly skilled readers in English, they will need to read extensively. There is no short cut to becoming a good reader. Students only become readers by reading regularly (Grabe, 2009).

A concern sometimes expressed about LSP reading courses is that students are not motivated to work on their reading-skills development or read beyond minimal requirements. At one level, motivation depends on the institutional culture and levels of expectations; in cases where there are low institutional expectations and goals, it is difficult to address student motivation directly. In these settings, teachers need to locate sources of student interest and engagement. Teachers can also incorporate reading tasks into their instruction that (a) allow students to experience success on a regular basis, (b) lead to stimulating extended projects, (c) give students some degree of choice in task options or texts to be read, and (d) promote group support and collaboration. In situations in which institutional expectations are higher, a wide range of specific motivational objectives can be incorporated into classroom instruction to build student motivation and engagement (see Grabe, 2009; Guthrie, Wigfield, & Perencevich, 2004).

Assessment of reading improvement should be a regular feature of LSP reading instruction. Typically, reading achievement tests are used to determine student learning and to identify students' needs for continued reading-skills practice. Often, postreading comprehension questions and related tasks are used to gauge student success. While assessment of reading improvement is an expected part of most reading curricula, it is also important to recognize the value of "assessment *for* reading," an approach to helping students learn essential reading skills without the burden of grades for every task type. In fact, "assessment *for* learning," rather than "assessment *of* learning," is more likely to help students improve their reading skills over a longer curriculum time frame (see Davison & Leung, 2009; Grabe, 2009).

Limitations and Realistic Goal Setting

Reading instruction in LSP contexts varies widely. Certainly, LSP/EAP reading instruction for graduate students in more specialized contexts necessitates well-articulated instructional goals and higher expectations of students; students in such settings require higher motivation to succeed and greater engagement with realistic disciplinary material. In settings with well-articulated goals, such as reading-to-write a thesis, ESP/EAP instruction can guide students in reading purposefully and effectively so that they can use information from key sources in their written work.

The number of graduate students in specialized LSP contexts is fewer than the number of undergraduate students with LSP needs, especially in EFL settings. The undergraduate with LSP reading needs—enrolled in, for example, English foundation or preparatory programs—creates many challenges for teachers and students alike. In sorting through the challenges associated with reading-skills development, it is clear that true beginning students cannot learn to become reasonable readers of English in two years of reading instruction with minimal contact hours and low motivation to succeed. Often text materials

selected for such LSP courses are too difficult for students, selected because it is assumed that students want to read authentic content-area texts and will be supported by their background knowledge and common technical terminology. No empirical research that we know of supports such assumptions. Perhaps the most formidable challenge facing LSP teachers is the minimal number of hours commonly dedicated to their LSP courses, sometimes with unrealistically high expectations or, conversely, sometimes with few expectations. Either setting makes real reading gains difficult to achieve. Finally, there is often a lack of awareness on the parts of both teachers and administrators that students only become good readers if they read regularly and read a lot. If students are to become reasonably good readers in English, they need to read beyond the materials covered in class and they need to read on their own. Unfortunately, this is not a common outcome of many LSP reading curricula.

SEE ALSO: Genre and Discourse Analysis in Language for Specific Purposes; Multimedia Digital Engagements by Readers and Learners; Reading and Content Area Learning; Reading–Writing Connection; Teaching Reading

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Suggested Readings

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Reading–Writing Connection

JEROME C. HARSTE

I have often said to teachers, "If your reading program is having problems, your writing program probably has problems too. And vice versa, if your writing program is problematic, your reading program is more than likely problematic too." While some people may think these statements are speculative at best, what follows is an analysis of what we know about the reading–writing connection and why these statements are more fact than speculation.

Parallels between reading and writing exist at the graphophonic (letter–sound), structural (syntactic), semantic, and pragmatic levels of language. Parallels also exist between all of the expression of language, not only between reading and writing but also between reading and writing and speaking and listening. Carolyn Burke (see Harste, Woodward, & Burke, 1984) has referred to these parallels as a "linguistic data pool," by which she means that experiences in any expression of language become a resource to be used when engaging in another expression of language. What you learn from speaking (what to call things, how to talk about a topic, how language does the work it does) becomes a resource when you engage in another expression of language, be it reading, writing, listening, or speaking. Burke's model suggests a synergy between reading and writing. It is not just that reading and writing are correlated but rather that in juxtaposition they are generative, allowing language users to make leaps in terms of their growth and development as language learners.

Although these understandings may not have represented new ways to think about teaching children to read and write (Sprague Mitchell, 1950; Stauffer, Burrows, Coleman, & Swain, 1960; Jacobs, 1965; Hunt, 1980), they did suggest new avenues for research. In the 1960s researchers interested in the reading–writing connection studied it using correlation. Specifically they studied the relationship between spelling and phonetic knowledge. The correlations were always low, around .20, which when doubled explained only 4% of the variability found between spelling scores and reading scores. Hanna, Hanna, Hodges, and Rudorf (1966) fed a computer all of the known phoneme–grapheme correspondence rules of English (17,310 words) and then asked the computer to spell as many words as it could correctly. The relationship between phonetic rules and the correct spelling of words was much higher than anyone expected. While a quarter of the words not spelled conventionally were the highest-frequency words in the English language, the computer was able to spell correctly almost three-fourths of the words it was fed!

While surface-level studies of language have helped advance our understanding of the reading–writing connection, breakthroughs in our understanding of how we learn language were needed. In the 1960s teachers were told not to teach reading and writing together to young children. The assumption was that teaching both subjects together was too much information for the young child to take on. The advice given was that writing should not be introduced until after the child had learned to read, by which educators at that time meant learned the fundamentals of sounding out words and had a sufficient sight vocabulary to recognize function words "with automaticity" (Laberge & Samuels, 1974, p. 294). By "automaticity" Laberge and Samuels meant that sounding out had to be automatic so that attention could be focused on meaning. They saw reading as the mind having to

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do two things at once. Given new insights into language and learning this advice is questionable, with some theorists arguing (Goodman, 1996) that separating the systems of language makes the learning of both reading and writing harder than when they are taught in conjunction with one another.

Graphophonic Parallels

I am not going to argue against the direct teaching of phonics. However, I will argue that encouraging writing, and hence invented spelling, incorporates the best of what we know in terms of supporting literacy learning. P. David Pearson (2002) explains:

> At the most rudimentary level, when kids are encouraged to write—even at the very early age, pre-kindergarten and kindergarten—and they're encouraged to spell words as they sound them, two things happen. The first is that they develop phonemic awareness in precisely the way that the advocates of direct phonemic instruction intend for it to be learned and tested. But with writing, they do it, I would argue, in a much more incidental, less laborious, and more natural way. And it's acquired in the service of some other functional task, i.e., trying to communicate something with someone. (p. 1)

Our own research on what preschool children know about reading and writing prior to going to school (Harste et al., 1984) shows that all English-speaking children by age 6 come to school with some grapheme–phoneme knowledge. This was even true for children from inner-city settings and from areas where not much environmental print is found (such as on the Navajo Reservation). We also found that children as young as 3 years old could read certain items of environmental print, including "Stop" on a stop sign, "McDonald's" on a McDonald's cup, and "Milk" on a Kroger's milk carton. While they were clearly using the context to make sense of what we asked them to read, it is important to note that not one child said "Wendy's" or "Burger King" when shown a McDonald's cup. Their responses were far more predictable based on the graphemes that were shown them.

The same was true with the children's writing. While what they wrote was far from conventional, there was, nonetheless, a higher percentage of letters that corresponded to the message they said they were writing than one would predict if their production of letters were random. Children began by writing consonant letters but often place-held the vowels using a single letter. Alison, age 5, for example, used "o" over and over again and did so with surprising accuracy as to where vowels would be found in words (Harste et al., 1984, p. 54). The very fact that the children were writing letters instead of other shapes when asked to write verifies a very early reading–writing connection.

Even before children were writing letters in a conventional manner, we found that children whose name started with a curved letter (Shannon, Chris, Jerry) tended to produce circle-like shapes when asked to write whereas children with names that began with straight-line letters (Heather, Kezia, Ella) used more of a jagged up-and-down stroke to place-hold their writing. This was true in 93% of 3-year-old writing samples we studied. Often when children begin to form letters, it is the letters in their name that they repeat to place-hold their message (Clay, 2001). Our conclusion was that the child's name constituted the child's first "linguistic laboratory." Megan, one of the children we were working with, when shown a McDonald's cup, remarked, "Hey, that is the same letter as in my name!" The written language learning process begins to take on conventional forms with this kind of recognition, that the "m" in Mary and the "m" in McDonald's make the

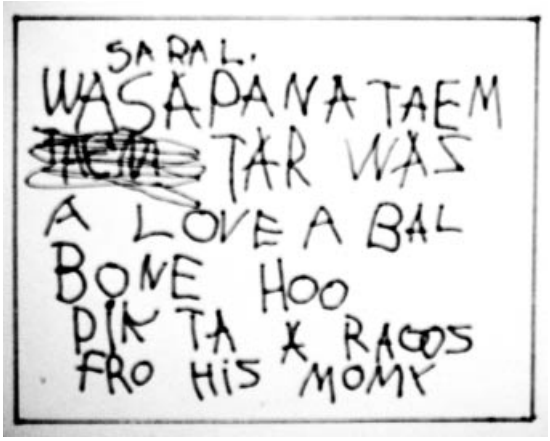

Figure 1 Sarah's mother's-day card © Jerome C. Harste

same sound. Our study, plus other studies of young children (Goodman, 1980; Baghban, 1984; Teale & Sulzby, 1986; Dyson, 1993; Martens, 1996), show that children at a very early age are attending carefully to print. While these studies focused on children in English-speaking communities, Emilio Ferreiro (1983) found the same could be said of South American children becoming literate in Spanish.

Equally surprising, we found that there was no order in language itself to the way it was learned. Children attended to what interested them based on their own experiences in language, learning, and life. One of my favorite writing samples is a mother's-day card which Sarah, age 5, created (Figure 1) (see Harste et al., 1984). When asked to read what she had written, Sarah read: "Once upon a time there was a loveable bunny who picked a rose for his mommy."

It is important to note that Sarah wrote "Once upon a time" as a single conceptual unit. While this is not a convention we use in English, Sarah is right in a very important sense. "Once upon a time" signals to the reader that this is fiction and hence the need to activate a different schema than one would if the text were nonfiction. Notice also that the majority of Sarah's text is written in word units and, although not conventionally spelled, most English-language users can read her text when asked to do so. In one instance Sarah writes using syllables as her graphic frame ("loveable" as "love a bal"), a move she probably made because of knowing how to spell the word "love." Sarah makes her "s"s like "z"s and does this consistently in words that end with the z-sound ("was" and "roses"). What is evident in this writing sample is that Sarah is testing multiple hypotheses about letter–sound correspondence. Her knowledge of graphophonics, already at 5 years of age, is extensive.

Charles Read (1975) was interested in children's phonological knowledge. He found that even misspellings such as writing "j-r-e-s" for "dress" can be explained by studying the point of articulation where letters are made in the mouth. "J" and "d" in this instance are both made at the same point of articulation. While not all children have as well-developed a sense of letter–sound correspondence as Sarah, by the time they enter first grade we found that all children have enough letter–sound knowledge to begin to build instruction from that base. Teachers of young children rarely, if ever, need to start from scratch when working on grapheme–phoneme correspondence.

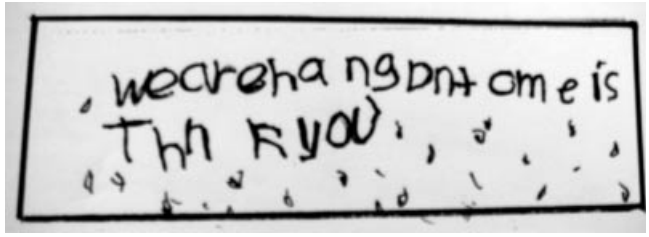

Figure 2 Message (Watson, 2007) © D. J. Watson

Structural Parallels

Children with severe reading problems often have abandoned syntax as a significant cuing system. Often the only way to support them in learning to read is to re-establish the link between the syntax of oral language and the syntax of written language. Roach Van Allen (1976) understood this and made it one of the key features of his language experience approach to reading. Children were taught that what they could say could be written and read. Teachers using this approach begin by having children dictate stories or important events in their lives, which then become the texts they use when learning to read.

Most children, even most children with reading problems, never totally abandon syntax as a cuing system. Kenneth Goodman and Carolyn Burke (1973) found that the miscues of all readers—even young children—are substitutions of the same grammatical class. As is evident in Sarah's mother's-day card, Sarah has a well-developed sense of syntax or the flow of language. Like many beginning readers and writers she writes one idea per page, using the page itself, rather than a punctuation mark, as a vehicle to place-hold a sentence or complete thought.

Spacing, of course, is an issue. Figure 2 (Watson, 2007) is a message Eric taped on his classroom door. When asked to read his message, he said: "We are having reading. Don't come in. Thank you." He, like many beginning readers and writers, labored at sounding out the words. The result, in his case, was place-holding some words with only a few letters ("ha" for "having" and "ng" for "reading"). Other children who labor at sounding out words end up with a string of letters, thus elongating the word due to the oral repetition of the word during the writing process (like "skoohkooool" for "school"). Although not clearly shown in Figure 2, Eric uses red blots (which he said was "blood") to make sure readers understood he meant business. His "thank you" at the end suggests that he understands larger structural issues such as politeness and how it typically operates in school settings.

As is also evident in Figure 2, once children move to writing continuous text, other issues, like punctuation, come into play. It is not uncommon for children to throw periods all over their text once they realize that a period ends a sentence. Like other reading discoveries that end up in their writing, once something becomes known it is often overused and abused before it takes on conventional form.

Yetta Goodman (Goodman, 1979) received a letter from Bill, an elementary student in a school she had visited. Bill had developed a new exclamation mark which he called "the sadlamation mark." Here is what he had to say: "Dear Yetta Goodman, I've invented a new punctuation mark. A mark for something sad. It is used in a sentence like this. I had a dog, it died. It does look funny but it will get better looking soon, just like all of the others." (See Figure 3 for how to make Bill's "sadlamation mark.") Bill's letter documents one child's attempt to work out syntactic markings, and like Sarah, Bill goes beyond the

Figure 3 Sadlamation mark (Goodman, 1979) © 1979 by the National Council of Teachers of English. Reprinted with permission

conventions the English-speaking community have elected to use in transcribing its language into a written form (in Bill's case he invents a new punctuation; in Sarah's case she draws a distinction between when "s" is written "s" and when it should be written as a "z").

Semantic Parallels

One of the real benefits of writing is that thoughts become visible and hence revisable. Peggy Atwell (1981) says "The very first editor that a writer encounters is him- or herself" (p. 101). In writing, the hand often lags behind the mind, or the ideas being generated. That is why first drafts often contain syntactic errors or even misspellings of known word usages, like writing "there" for "their." This mind–hand gap is as prevalent in experienced writers as it is in children new to writing.

In the cloze procedure (Bormuth, 1970) every *n*th word in a text is deleted and readers or writers are asked to put in words that grammatically and semantically fit, using their knowledge of language and the world. Though sometimes frustrating for readers, as an instructional technique, it is surprising how many grammatically and semantically acceptable sentences are generated by children of all ages. Bormuth found from 38% to 70% accuracy. Shanahan, Kamil, and Tobin (1982), however, found that when the sentences in a story were randomized, participants did as well as when the sentences in the story were presented in their original order. These authors' finding suggests that, whatever cloze measures, it is not allowing readers to use larger semantic and syntactic structures that operate in connected discourse to make predictions and refine hypotheses.

Kenneth Goodman (1968, 1996) found that one's knowledge of the world is an important cuing system in reading, allowing readers constantly to predict and confirm their meaning making during reading. One of the strategies developed by Goodman and Burke (1980) was synonym substitution, in which readers were asked to replace underlined words in a text with synonyms as they were reading. Schema theorists (Anderson & Pearson, 1984) built on this insight and the importance of activating background knowledge as a key to successful reading. Writers, too, have been found to be most successful when they write about things they know (Britton, Burgess, Martin, McLeod, & Rosen, 1975; Graves, 1983). It should be said, however, that Barbara Kamler (2001) argues that to create critically literate individuals for the 21st century, we need to help readers and writers unpack the

personal in terms of the social constraints that are operating on the meanings they make and the stories they write.

Pragmatic Parallels

Pragmatics has been defined as the rules of language use operating in a context of situation (Halliday, 1975). To go back to a language sample already introduced in this text, one cannot help but hope Sarah (see Figure 1) gets a job with Hallmark when she grows up, as she already understands the genre of mother's-day cards. Sarah's example clearly illustrates that pragmatics is not something that is added on to language when everything else is in place, but rather is part and parcel of the language-learning process from the beginning.

The language of story is different from the language of newspaper and different again from the language of the Bible or the everyday use of language. Linguists would say that each genre has a different register or set of rules that operate. All language varies by context of situation. Hansen argues (1985) that writing for authentic purposes is very different than writing for the teacher. This is probably most easily illustrated with an oral language sample. Edwards and Westgate (1987) found that school talk is very different than talk outside of the classroom. The example they give is that Speaker A asks, "What time is it?" Speaker B answers, "3 o'clock." Speaker A responds, "Very good." This example of language use they say only happens in school where Speaker A has evaluated the quality of the response Speaker B has given. In the outside world if this event had occurred, one most likely would get a "Thank you" as a follow-up response.

We (Harste et al., 1984) found that experience is a bigger factor than age or stage in written language learning. The more experience children have with language in a variety of settings, the more readily they are able to produce successful texts in both reading and writing. Our advice was that if you want your children to sound and write like a lawyer, let them hang out with lawyers. By 6 years of age children's stories sounded and looked like stories, their personal letters sounded and looked like personal letters, and their notes sounded and looked like notes.

Because of prior experience, language users can predict the kinds of texts that are likely to be found in that particular context. One of the problems with the way reading is taught in schools is that the predictability between text and context is broken; teachers can pull out anything at any time to have children read. While this is part of the pragmatics of reading instruction, it does not allow readers to activate the pragmatic schema they may have for a particular genre, or even the background knowledge they may have about a particular topic. Normally, readers read things they have selected and writers write things they know about. In operation in the real world, syntax, semantics, and pragmatics are familiar given prior experience and operate as a framing device. As mentioned earlier, Kenneth Goodman (1996) argues that we often make reading and writing difficult by teaching the systems of language in isolation, when in use all of the systems of language together support the reading and writing process.

Conclusion

Viewing the reading and writing connection from a process perspective, as authoring, has constituted one of the biggest breakthroughs in our understanding of English-language learning (Pearson & Tierney, 1984; Harste & Short, 1986; Short & Harste, 1996). While there are parallels at the graphophonic, structural, semantic, and pragmatic levels of language, seeing reading and writing in terms of "processes of mind" makes these connections even

clearer. Both readers and writers build from their background of experience to make predictions in reading and to get some thoughts down on paper in writing. During both processes revision is necessary, with meaning or semantics being the driving force. By sharing what one has read or by sharing a first draft in writing, others collaborate in meaning making by asking for clarification or by sharing insights they have on the topic being discussed. Revision, in both reading and writing, often happens both on the page and off the page. For the writer constant reading and rereading is a must. For the reader, composition is an ongoing process, even long after the eyes have left the page. No one rereads a book the same way after once having had a discussion with someone about what was initially read. The text is richer just as is the text in writing after collaboration, reflection, and recomposition. Pragmatically one can see these processes as repositioning oneself in one's world. And it is from this repositioning that a new level of authoring begins.

SEE ALSO: Psycholinguistic Studies of Literacy; Reading and Content Area Learning; Reading and Intertextuality; Relations Between Oral Language and Literacy; Sociolinguistic Studies of Literacy; Writing and Content Area Learning

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Realism

ALISON SEALEY

"Realism" is a term with a range of meanings in a number of academic disciplines. It is not a research method but a philosophical orientation, and even within philosophy "the word 'realism' is used in a bewildering variety of senses" (Williamson, 1995, p. 746). "*Naïve*" *or* "*commonsense*" *realism* is the belief that what we perceive through our senses is real and that objects have the properties which they appear to have. More sophisticated forms of realism recognize a more complicated relationship between the world as it appears to us, the world as it might possibly be, and the knowledge we can have of the relationship between these. The core of the philosophical issue is whether there is an objective reality independent of human perception. Realists maintain that entities which are mind-independent do indeed exist: this is an *ontological* claim—about the nature of reality—and not an *epistemological* claim about how we can gain knowledge of that reality. Metaphysically, then, realism is "a thesis about what the world is like, . . . not a semantic thesis concerned with how humans represent the world in thought or language" (Khlentzos, 2008).

These claims raise some obvious questions, including this one: since we can only ever know the world through human perception, what warrant can we have for asserting the existence of entities beyond those perceptions? Realists have commonly sought to answer this by asking a further question, namely: what must reality be like for us to have knowledge of it? In other words, for realists, theories are always about a reality beyond the theory, in light of the belief that our theories are constrained by the nature of the things we are trying to understand. This means that not all theories are equal. "[R]ealists differ from strong social constructionists in their claim that it is possible to make rational (though fallible) judgments about the relative value of competing theories, models and concepts" (Olsen, 2004, p. 136). Realists recognize that we do not have full, direct access to reality, and that human knowledge is necessarily partial, fallible, and mediated through language and other semiotic resources. This, however, does not lead them to conclude that there is no extra-discursive reality. As Sayer expresses it (1992, p. 83), "The world can only be understood in terms of available conceptual resources, but the latter do not determine the structure of the world itself." The belief that they do is referred to as the "epistemic fallacy." Realism, in its insistence on an extra-discursive reality, is opposed to many forms of relativism and to theories which see social reality as constituted wholly by representations and discourses. *Critical realism*, closely associated with Bhaskar, stands in opposition to "cognitive relativism and irrationalism or superidealism" (Hartwig, 2007a, p. 97), identifies itself as emancipatory, and in its strongest form posits "the real existence of *dialectically* universal rights to truth (learning) and freedom at the level of the real" (Hartwig, 2007a, p. 103, italics in original).

Realist approaches are usually allied with some form of naturalism (Bhaskar, 1979, 1998). In principle, both natural and social reality can be analyzed using broadly similar methods. Social realists are skeptical about the extent to which even the natural world is uniformly subject to governing laws, believing that it is more accurate to think in terms of tendencies—"the likelihood of certain things occurring, given certain sorts of conditions (Bhaskar, 1979, pp. 1–21)" (Carter & New, 2004, p. 2). Furthermore, the social world is understood to include things which are qualitatively different from the components of the nonhuman world.

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Research into both seeks causal explanations, but "[t]he complexities of human ambition, desire, interests and relationships are such that social relationships could never be reduced to a set of unchanging generalizations" (Carter & New, 2004, p. 1).

Realists, particularly critical realists, subscribe to the concept of a "stratified ontology," and the distinguishing feature of realism in social science, in a tradition that can be seen in the theories of Marx, Durkheim, Habermas, and Bourdieu, has been its insistence on the reality of structured social relations. Social structures are enduring, often over longer timescales than the human life span, and constitute a significant aspect of the contexts into which people are born. They are the result of human activity, but have "independent effects of their own—even apart from agents' knowledge of their existence. Examples include [material] relations that—even without agents' knowledge—are exploitative or that otherwise place agents' interests in conflict" (Porpora, 2007, p. 425). The "structure" aspect of society is analytically distinct from "agency."

Structured social relations provide the already-existing contexts which people encounter, and these may constrain or enable the projects they seek to pursue. Among the properties of human beings are intentionality and reflexivity. That is, as people we have the power "to self-consciously monitor our activities and deliberate internally upon the always already natural, practical, and social context in which they occur" (Hartwig, 2007b, p. 408). As acknowledged in Marxism, people make history, but not in conditions of their own choosing. The products of human consciousness and reflection give rise to culture: the "Cultural System," consisting of interlinked propositions, and "Socio-Cultural life," or "the stuff of Socio-Cultural interaction" (Archer, 1988, p. vxii).

Realism sees both structure and agency as causally efficacious; that is, people cause things to happen, but so too do structures: "by motivating or discouraging, constraining and enabling certain sorts of human action" (Carter & New, 2004, p. 12). This realist, stratified ontology is contrasted with the "downward conflation" of structural determinism, the "upward conflation" which envisages society as nothing but the collective result of the actions of individuals, and "central conflation," which presents structure and agency as mutually constitutive, precluding the possibility of exploring the effects of one on the other (Archer, 1995). In other words, "to reduce power, institutions, organizations and the distribution of various resources to local practices is to confuse and conflate very different kinds of social phenomena" (Layder, 2005, p. 108).

One further key concept of realist social theory is emergence. "Emergence is the idea that a whole can have properties (or powers) that are not possessed by its parts" (Elder-Vass, 2007, p. 28). Some entities, substances, properties, or systems are dependent for their existence upon other entities, substances, properties, or systems, but emergent properties are not reducible to their constituent parts. For example, emergentists "argue that human individuals, although composed of their biological parts, have causal powers of their own, which cannot be reduced to the powers of their biological parts" (Elder-Vass, 2007, p. 27). Reflexivity is one such emergent property "irreducible to the social or the biological" (Hartwig, 2007b, p. 408).

Methodologically, realism is not prescriptive, recognizing that there are many practical ways in which phenomena may be investigated. Nevertheless, the ontological claims accepted by realists have clear implications for research methodology. One implication of these distinctions is that the empirical study of any aspect of the social world should avoid the conflation of structure and agency, and allow for the recognition of their respective properties and powers. For example, social structures can provide contexts for, and exert influence on, social interactions, but they are not subject to empirical investigation in the way that conversations are. Likewise, human beings' capacity for reflexivity makes it inappropriate to try to study them in the same ways that unreflective entities (such as cells or stones) may be studied. Epistemologically, realists distinguish between

> the "transitive" effects of human agency (of experiment, controlled observation, technological expertise, carefully contrived laboratory set-ups, and so forth) and the "intransitive" dimension of a physical reality which must be taken to exist and exert its causal powers quite apart from [the] scope and limits of our knowledge. (Norris, 2007, p. 337)

The study of language from a realist perspective has taken various forms, and is relevant to a wide range of areas of linguistic and applied linguistic theory and method. Many kinds of research in the linguistic disciplines are consistent with a realist philosophy, whether or not this is declared explicitly in the research design or reports of findings.

The nature of language itself has been conceptualized within a stratified ontological framework. The concept of a universal grammatical system as a "deep" structure is consistent with that tenet of realism which maintains that what can be observed does not exhaust what is. One does not need to be able to observe directly the language acquisition device proposed by Chomsky (1965) in order to accept that some such configuration, as an evolved biological endowment of the species, may be the best explanation for human beings' capacity to acquire language. In this sense, Chomskyan conceptions of language may be classified as realist, although they have been criticized by critical realists as biologically reductionist (Jones, 2003, p. 280) and conflationary (Archer, 1988, p. 39). Other realists have suggested that languages are themselves cultural emergent properties. The speakers of human languages (as embodied entities with the innate capacity to communicate by means of sounds produced and received using the material, biological resources of the vocal and aural systems) develop actual linguistic systems over time and through social interaction, and these are understood as examples of emergence (Sealey & Carter, 2004). This conception accords with those emergentist accounts of language acquisition which "hold that linguistic form arises from interactions between the shape of the body, cognitive processing, and the nature of social interaction across a wide variety of timescales" (MacWhinney, 2006, p. 732). The conception of languages as complex systems (e.g., Larsen-Freeman, 2002; Larsen-Freeman & Cameron, 2008) is potentially consistent with realist theory, although there are some differences between these perspectives. Sealey and Carter (2004) argue that because actual human languages are not reducible to their component parts, constituting, as they do, an aspect of "culture," they have the causal power to "act back" on speakers by dint of the ways in which they shape what can be said and recognized as intelligible by other speakers. This kind of causal power is illustrated by the phenomenon identified as "semantic prosody" (Louw, 1993). When a speaker selects a word which is in itself nonevaluative, but is routinely used of negatively evaluated entities or processes, the word is "colored" with this negative evaluation and will be perceived in this way by other speakers of the variety. Findings such as these are readily accommodated within a realist framework, despite the fact that the researchers associated with them may declare themselves unconvinced by, or even hostile to, realism.

Similar observations can be made about many other areas of empirical research into language. Corpus linguists, for example, do not need to subscribe to a realist philosophy in order to carry out technologically assisted studies of large quantities of authentic language data and identify hitherto unnoticed patterns linking vocabulary, grammar, and the relations between them. However, the findings from such research are readily interpretable as examples of the emergent properties of structure, agency, and linguistic cultural resources. Seen from a realist perspective, corpus studies help to demonstrate how speakers make discourse and contribute to the existing discourse contexts which subsequent speakers encounter. Speakers make linguistic choices, but can only choose from the linguistic resources available to them, and not all speakers are equally placed to contribute to the forms of utterance—and writing—which are valorized and transmitted to subsequent generations of speakers.

Researchers who are concerned with language policy on a macro scale and the dominance of English in global communication study such phenomena from a variety of philosophical perspectives. A realist orientation precludes affording a linguistic variety agential powers (so would not, for example, include descriptions of "English" itself as "imperialist"). Rather, it invites exploration of such phenomena with reference to people, social structures, and cultural resources. People are conceived of as both agents with interests—as members of "*collectivities* sharing the same *life chances*" (Archer, 1995, p. 257, italics in original)—and as individuals with projects and goals, while the cultural resources on which they can draw (including access to linguistic varieties) are differentially distributed.

Applied linguistic research into language teaching and learning also encompasses a wide range of philosophical perspectives, associated with various research methods. Investigations that are compatible with a realist ontology acknowledge the social world as an open system and do not try to transfer methods appropriate for studying unreflective entities to the study of reflexive human beings. For example, as explained by Danermark, Ekström, Jakobsen, and Karlsson (2001, p. 67), experiments are "artificially closed systems" which "in the natural science sense of the term are not possible for social science." Thus to "subject" one group of learners to a "treatment" of one kind of teaching and another group to a different one, and then compare results, is for a realist misguided, because people have the properties of self-conscious adaptation. They therefore cannot meet the criterion, for experimentation, of closure, which requires "that there must not be any change or qualitative variation in the objects [studied]" (Danermark et al., 2001, p. 68).

Any research design that depends on the concept of social "variables" is, from a realist perspective, similarly suspect. Byrne (2002, p. 31) maintains that "variables don't exist. They are not real." His alternative explanation for the tendencies of certain outcomes to correlate with certain attributes is to identify the causal mechanisms of which such patterns may be the empirical traces. A mechanism is "not . . . a single *variable* but an *account* of the constitution and behavior of those things that are responsible for the manifest regularity" (Pawson, 1989, p. 130, italics in original). And, since causal powers inhere "not simply in single objects or individuals but in the social relations and structures which they form" (Sayer, 1992, p. 105), research design consistent with these claims is more holistic, seeking to identify the operative mechanisms and the contexts and circumstances within which they are causally effective.

Of the applied linguists who reject research methodologies based on variables and experiments, many use qualitative, interpretative methods in an effort to capture meanings and perspectives unavailable by other means. Again, methods such as observations, interviews, ethnography, and so on can all be deployed by researchers working within a realist framework. The distinctiveness of a realist approach is that interviews, for example, are understood not simply as discursive versions of the social world, intersubjectively "constructed" by researcher and interviewee, but as accounts, however partial, of actual experiences, of situations which exist independently of participants' perceptions of them. At the same time, and for the reasons outlined above, participants' accounts cannot provide information about those aspects of the social world which are more remote and opaque from direct perception. This makes it very likely that other methods will be needed to supplement interviews.

Finally, those applied linguists who explicitly identify themselves as realists are developing research approaches within the discipline. Probably the most prominent is Norman Fairclough, whose later accounts of critical discourse analysis root it in critical realism (CR) (e.g., Fairclough, Jessop, & Sayer, 2003). Other explicit applications of realist philosophy in applied linguistic research are found in the publications of authors such as Belz (e.g., Belz, 2002), Corson (e.g., Corson, 1997), and Sealey (e.g., Carter & Sealey, 2000, 2004; Sealey & Carter, 2004; Sealey, 2007, 2010).

SEE ALSO: Epistemology and Ontology; Mixed Methods; Positivism and Postpositivism

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Receptive Multilingualism

DARIA BAHTINA AND JAN D. TEN THIJE

Concepts of Receptive Multilingualism

Receptive multilingualism refers to language constellations in which interlocutors use their own language while speaking to each other. This mode was widely applied in the Middle Ages, but linguistic constellations were transformed into monolingualism determined by nation-state formation from the 17th to the 19th century. Mainly due to areas and countries where receptive multilingualism still flourishes, researchers have demonstrated increasing interest in the processes behind this type of multilingual communication. This entry first discusses the theoretical concept of this phenomenon and then describes historical developments, linguistic and mental characteristics, as well as current applications.

The discussions of the phenomena date back to Voegelin and Harris's "intelligibility" (1951) and Bloomfield's "dialect continuum" (1933). Close genetic relationship was claimed to enable inherent comprehension between dialects. Similar studies on mutual intelligibility were carried out in the 1950s and 1960s (e.g., Wolff, 1964). Intelligibility of closely related languages has been discussed from the Scandinavian perspective by introducing the notion of *semi-communication* (Haugen, 1953). The author claims that intelligibility occurs both on the surface level and on the level of mental processes of understanding. On the surface level, similarity can occur in linguistic forms, such as syntax, lexicon, or morphology, thus understanding requires little education or practice in that other language. Yet this definition implies incomplete communication, in which only "half-understanding" is reached.

The concept has been transformed in the direction of "successful" language mode, bringing along other alternatives, such as plurilingual communication, intercomprehension, and receptive bi/multilingualism. The idea of *plurilingual communication* applies to societal multilingualism (e.g., Switzerland) and to comprehension strategies, since intelligibility comes from individual plurilingual repertoires (Lüdi, 2007). Next, *intercomprehension* covers a similar domain when receptive skills are activated, but generally between typologically related languages (Berthele, 2007). *Receptive multilingualism* has been addressed in a number of studies (Zeevaert, 2004; Braunmüller, 2007; ten Thije & Zeevaert, 2007), where the concept is expanded by inclusion of typologically distinct languages and application of hearer-oriented activities.

Other dimensions that have been reflected upon in relation to the use of this mode are awareness of intelligibility, experience in how to apply this knowledge in multilingual communication, attitudes toward the languages involved, and availability of agreement to apply this mode. Haugen constructed the concept of semi-communication on the premises that interlocutors strongly depend on their experience and have to learn to understand the language of the other (Haugen, 1953). Similarly, Braunmüller (2007) in his studies emphasizes that awareness of the interactants concerning the mutual intelligibility of languages plays an important role. Next, ideological factors affect attitudes which in their turn can either enhance or block comprehension between communities and languages within a constellation. Finally, application of this mode might depend on institutional language policy or explicit personal agreement of social actors, or a shared communicative history, such as "discursive interculture" (Beerkens, 2010).

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"Lingua receptiva" (LaRa), in contrast to previous research, has been introduced by Rehbein, ten Thije, and Verschik (2012) in order to emphasize the receptive component. According to the definition, "*lingua receptiva* is the ensemble of those linguistic, mental, interactional as well as intercultural competencies which are creatively activated when interlocutors listen to linguistic actions in their 'passive' language or variety" (Rehbein et al., 2012). To enhance understanding of lingua receptiva, this concept can be compared to that of lingua franca, since both function as vehicular languages. The important distinction is that in the case of lingua franca the languages are non-native, whereas in the case of lingua receptiva the status of the language is not defining. In LaRa, interlocutors speak their L1 or any other language they are comfortable with.

Communicative Constellations of Receptive Multilingualism

The occurrences of receptive multilingualism appear to be manifold. In the late Middle Ages and early modern times, the situation in Europe and Scandinavia was complex and diglossic. Braunmüller (2007), among others (Börestam Uhlmann, 2001; Zeevaert, 2004), gives an overview of a pan-Scandinavian movement that propagated receptive multilingualism. A similar development took place in Europe when face-to-face trading interactions maintained the idea of successful communication with partial competencies in several languages. Rindler-Schjerve and Vetter (2007) documented the language-political situation in the Habsburg Empire with receptive multilingualism being the official ideology. Upon the disintegration of the empire, Europe was gradually absorbed in the idea of nation-state ideologies that replaced "imperfect" multilingualism with monolingualism in all social institutions.

Currently, the European language situation is being shaped by various processes such as globalization, decolonization, migration, and overall mobility. This postnational situation challenges the nation-bound concepts of language and leads to various potentially conflictual multilingual constellations. As a consequence, more attention is being paid to various models of multilingual communication. The European Commission promotes the maintenance of the 23 official languages in Europe so that all European citizens learn at least two languages in addition to their mother tongue. Receptive multilingualism could be a way to achieve that goal and the High Level Group on Multilingualism (2007) suggests research into various institutional settings.

Recently, studies on receptive multilingualism have focused on the following domains: border regions (Beerkens, 2010), institutional discourse (e.g., Ribbert & ten Thije, 2007), media (e.g. Nábělková, 2008), educational settings (e.g., Zeevaert, 2004), sales talk and business communication (e.g., Lüdi, 2007), written-text comprehension (Bezooijen & Gooskens, 2007), cross-generational and family discourse. The language constellations that have been studied so far list European language families, such as Romance, Germanic, and Scandinavian, Slavic languages, Finno-Ugric, Turkic languages, Indo-Iranian and Semitic languages, as well as diverse combinations that include constellations across language families.

Mental Processes of Receptive Multilingualism

Receptive multilingualism, as the name suggests, treats receptive competencies of the hearer as one of the two essential dimensions of this mode. Previous research on multilingual communication mainly concentrates on speaker competencies and activities. Therefore the following section elaborates on hearer activities, such as accommodation, alignment, and the metaphor of "inference-making machine" based on multilingual

repertoires.

Hearer and Speaker

On the linguistic surface level, hearer-oriented activities list all the processes that actualize and intensify the hearer's competencies, such as nonverbal and prosodic signals that steer the speaker's production, formulaic expressions signaling potential misunderstanding, echo questions, and other linguistic elements. Specific speaker activities within the receptive mode are exemplified by reformulations, repairs, recapitulations, rephrasing, and other types of metadiscourse elements (see, e.g., Rehbein & Kameyama, 2003). Other accommodation strategies contain slower and more accentuated pronunciation (Zeevaert, 2004).

The stages of understanding in receptive multilingualism can be reconstructed by applying the speaker and hearer plan (Rehbein & Kameyama, 2003) that describes mental steps in a hearer's perception. Recently this plan has been adapted to account for accommodation processes (Beerkens, 2010) that refer to the assessment of an interlocutor's L2 competencies as one of the crucial stages in the process of receptive understanding. These stages clarify processing in general and unveil a switch between perception in one language and production in the other, the so-called "turnover" moment. Accommodation can be ascribed to the field of sociolinguistics (Braunmüller, 2007), whereas alignment is a notion that describes similar processes from a psycholinguistics perspective. Alignment occurs when interlocutors adapt both linguistically and conceptually in order to enhance understanding (see, e.g., Pickering & Garrod, 2004). Adaptation can take the form of phonological, lexical, semantic, syntactic, or pragmatic convergence. In monolingual speech these processes are often automatic; in multilingual communication alignment could be used to ensure mutual understanding. Moreover, the turnover between languages is less complicated once speaker and hearer have activated similar structures (e.g., words or constructions) in their respective languages.

Inference-Making Machine

Another type of mental activation relevant for receptive multilingualism is the inference-making machine. This "inference-making machine" is claimed to connect seemingly unconnected utterances by activating linguistic and other types of knowledge (Sacks, 1985). The same processes are applicable to receptive multilingualism, for instance the notion of "wholistic" activation in bilinguals (Grosjean, 2008) or the concept of linguistic repertoires (e.g., Lüdi, 2007). Both theories presuppose simultaneous application of diverse plurilingual resources within individuals and thus non-compartmentalized (i.e., separate) use of the languages involved. In receptive multilingualism mutual familiarity with common speech formulas (i.e., idiomatic expressions, the ritualized and repetitive side of language) facilitates understanding between languages and varieties. In addition to linguistic and world knowledge, inferencing relies on common institutional and discourse-type (i.e., genre) knowledge. "Perceived language distance" or psychotypology (Kellerman, 1995) can either trigger or hinder activation of the inference-making machine, since interlocutors tend to have intuitions about the distance between languages involved. Interlocutors who use typologically close languages might be more aware of cognates (i.e., words that are recognizable across various languages) or similar syntactic structures in multilingual communication and thus be more effective in reaching understanding. The same applies to written discourse (Berthele, 2007), when readers show better performance when dealing with cognates or homographs and homophones (graphically or acoustically similar words). To sum up, both hearer and speaker profit from making inferences from all the resources of the languages involved in a communicative situation, as well as from other languages available in their linguistic repertoires.

Receptive Multilingualism Applied

Receptive multilingualism in the globalized world has been acknowledged as a means of language policy that supports language diversity and maintenance both top-down (High Level Group on Multilingualism, 2007) and bottom-up (Beerkens, 2010). The latter refers to a wide range of communicational settings where individual interlocutors or groups of people choose receptive multilingualism to effectively cope with the barriers of multilingual communication. Top-down developments, on the other hand, denote language policies that have been installed in order to manage linguistic diversity. Various European research projects on multilingualism have established a set of didactic concepts that either integrate receptive multilingualism in general language teaching (see the GalaNet and GalaPro Web sites at www.galanet.eu and www.galapro.eu) or develop language-specific strategies that aim for receptive competencies within those languages (see the EuroCom Web site at www.eurocomresearch.net). The GalaNet project has developed strategies of intercomprehension aimed at discovering plurilingualism as well as promoting comprehension skills among speakers of different languages, specifically among speakers of typologically related languages. The GalaPro project delivers online courses for teachers based on the GalaNet platform in order to cooperate in multilingual (French, Spanish, Italian, and Portuguese) educational settings. The EuroCom project provides several frameworks where similarities between typologically close European languages are compared in order to be made more accessible in multilingual communication. Romance, Germanic, and Slavic languages have been structured into "seven sieves" that are already available to speakers of those languages. According to EuroCom, Romance languages comprise the following elements as "sieves": international and pan-Romance vocabulary, sound correspondence, spelling and pronunciation, syntactic structure, morphosyntactic elements, and Latin-based suffixes and prefixes. Another line of applied research focuses on development of a learner's grammars from a hearer's perspective, such as 'Rezeptive Grammatik' for learners of German (see, e.g., Berthele, 2007). All these projects concentrate on acquisition of languages that are related yet different. Similarly, receptive knowledge of dialects has led to the establishment of didactic materials for constellations like German and Swiss German (Müller et al., 2009).

To conclude, receptive multilingualism represents an ensemble of multiple competencies that are applied by the interactants both in speaker and in hearer position. Interlocutors in this mode draw on the inference-making machine and available plurilingual repertoires (between languages that are typologically close or genetically unrelated). Historically, receptive multilingualism has been and still is an effective mode in various plurilingual constellations. This mode has therefore been rediscovered as a means of solving potential communicative problems and is already effectively applied in educational and other institutional settings.

SEE ALSO: Bilingual and Monolingual Language Modes; Cognitive Approaches to Communication Strategies; Crosslinguistic Influence and Multilingualism; Dynamics of Multilingualism; History of Multilingualism; Intercultural Communication; Multilingualism; Multimedia Digital Engagements by Readers and Learners

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Register

JENS ALLWOOD

Linguistic Variation

The fact that there are systematic differences between the ways in which people speak, write, and gesture in different parts of the world has led to a great number of concepts and terms having been proposed to capture this variation. Here is a nonexhaustive list: language, dialect, sociolect, register, sublanguage, activity language, restricted language, trade language, scientific language, text type, accent, "patois," jargon, slang.

All these terms focus on different aspects of linguistic variation. Some focus on the nature of the social group or institution that is viewed as a basis for the variant (e.g., nation, ethnic group—"language"; regional area—"dialect"; social class—"sociolect"; individual personality—"idiolect"). Others focus more on the purpose for which the variant exists (e.g., social activity—"activity language"; "sublanguage"; "genre"; "trade language"). Some, like "accent" or "text type," focus on what aspects of language are involved and some, like "jargon" or "slang," incorporate an evaluation of the language variety (in the case of "jargon" and "slang," usually negative).

So what are the distinctive features of the term "register" as a way of capturing linguistic variation?

What Is a Linguistic Register?

The term "register" is a fairly new term for a linguistic variant and seems to first have been used by Reid (1956, p. 32), perhaps inspired by J. R. Firth's notions of "situational category" and "restricted language" (see Léon, 2007), later picked up by Halliday, McIntosh, and Stevens (1964, pp. 174–5) and Trudgill (1983). It is based on an attempt to make a distinction between linguistic traits due to properties of the "user" (i.e., properties like regional background, social class, age, and sex) and "register," that is linguistic traits dependent on the "use" or "usage," where these traits are often produced by adaptation to properties of the situation of use, for instance adaptation to other speakers (e.g., being ingratiating or stern), to the purpose of what is being communicated (e.g., a persuasive vs. a humorous style), to the topic (e.g., the weather vs. politics), or to the occupation or role of the speaker in a particular activity (e.g., speaking as a teacher in a classroom or as a customer in a shop).

The distinction between "properties of the user" and "properties of use" is perhaps not totally clear and one might object to it by arguing that people can move from one country or region to another and change their language or dialect accordingly, and that they can move socially—be "social climbers" or "social descenders"—and change their sociolect. (This is also true for the social-class-related registers distinguished in relation to so-called creole language continua, i.e., "acrolect," "mesolect," and "basilect.") As people grow older, they change their age-dependent ways of speaking for biological reasons. They may even change their sex and thus perhaps change their gender-dependent ways of speaking. In addition, one may argue that not only is it possible for a person to change his or her

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language, dialect, sociolect, or age- or sex-dependent ways of speaking, but in fact it is also possible to learn all of these linguistic variants, and that many, perhaps most, people actually do learn several such variants and thus become multilingual, multidialectal, or multisociolectal speakers. Some even learn the variants of different age groups or can change to the language of the other sex. As a consequence of this, there are many examples that show how "user-dependent" types of linguistic variation can also be used for situational adaptation. All this means that, strictly speaking, the distinction between "user-dependent properties" and "usage-dependent properties" is difficult to uphold, if one believes that the user-dependent properties are unchanging and cannot be intentionally adapted to a particular situation.

However, since it seems useful to be able to distinguish different types of linguistic variation, the distinction might still be upheld if conceived of in a slightly different (and stipulative) way as follows: The term "register" will be used for features that are associated with profession, social activity, rhetorical style, subject matter (topic), emotional-attitudinal style, and so on (see below), and not for linguistic properties which are associated with a language (mostly based on nation or ethnic group), dialect (regional domicile), sociolect (social class) or idiolect (person), or age- and sex-dependent properties of language. A "register" is thus a set of linguistic features which are used for a particular function or purpose (excluding the purpose of trying to indicate membership in the above-mentioned groups), mostly produced in a specific social role, social activity, or profession.

Given this characterization, "register" as a concept comes close to and overlaps with terms like "sublanguage," "trade language," "genre," "restricted language," "activity language," and "text type." One difference is perhaps that "text type" and "genre" tend to be more associated with written language, while "register" often is more open to spoken language. The reason for the overlap between the terms derives from the fact that different authors with slightly different perspectives and backgrounds have discovered the situational and purpose-motivated linguistic variation we have described above and then attempted to describe it using terms associated with their own perspective. Some authors have tried to define and stipulate a difference between some of the terms (see Trosborg, 1997, p. 9, for an attempt to differentiate register, genre, and text type), while most authors either settle on one of the terms as generic or treat the terms as loosely associated, more or less synonymous, terms. See Biber (1988) and Biber, Conrad, and Reppen (1998) for an example of an author who in 1988 uses "genre" as a generic term for all the varieties he is studying and in 1998 uses "register" for more or less the same purpose. Whatever term is used, the linguistic variation that is intended to be captured by the term "register" has become an important source of inspiration in corpus linguistics (see, e.g., Biber, 1988, 2006; Biber et al., 1998; Trosborg, 2000; and Aijmer & Stenström, 2004).

Examples of "register" that have been mentioned are "motherese," "legalese," "news reporting language," "medical language," "engineering language," "persuasive," "phatic," and so on. Other examples might be the register of persuasion, the register of seduction, the register of teaching, advertising, preaching, or interrogation.

Types of Register

The examples of "register" that have been given above show that a register may be based on many different factors that are not necessarily mutually exclusive. One attempt to systematize the factors that determine a register has been made by Halliday (see for example Halliday et al., 1964, and Halliday, 1978), who claims that these factors can be summarized through the concepts "field" (mainly the activity type and subject matter or topic associated with a particular use of language), "tenor" (the relations, mostly given by social roles, between the communicators), and "mode" (including the difference between

spoken and written language, between dialogue and monologue, and between different rhetorical modes such as didactic, persuasive, and so forth). Some possible types of linguistic register are given below.

Professional Register

A professional register is made up of the common linguistic traits associated with the practicing of a particular profession—compare for instance the registers of lawyers, doctors, carpenters, dentists, politicians, academics, psychologists, historians, shoemakers, welfare workers, plumbers, tax collectors, civil servants, teachers, priests, accountants. The professions in the list are on different levels of abstraction, which indicates that the different professional registers may have properties in common. For example, lawyers, doctors, psychologists, and historians are all academics and their registers might thus have something in common. Similarly welfare workers and tax collectors are civil servants, and their registers might for this reason have common traits. Carpenters, plumbers, and shoemakers are craftsmen and might accordingly have other common traits. Some professions involve collaboration with clients or with other professions and might in addition to their own register pick up traits from the registers of the persons they work with, so lawyers and accountants might be influenced by their clients, teachers by their employers or students, or politicians by their voters.

A special type of professional register is associated with magic or religion. In many cultures, such registers can be very elaborate but still be limited to select members of the community. As another special case of professional registers, we can perhaps also include argots and so-called cryptolects (i.e., linguistic variants that are secret or difficult to have access to for the noninitiated).

Activity Register

The traits that can be associated with the language used in a particular social activity (see Allwood, 2000) can be called an "activity register." Examples of social activities in this sense are: meetings, negotiations, patient–doctor consultations, planning, interrogations, joking, quarrels, teaching, instruction, interviews, small talk, sermons, lectures, storytelling, giving advice, confessions, trials, lawyer–client consultations. Social activities can be distinguished from professions since a given profession usually involves participating in several different social activities. A lawyer can, for example, participate in a trial, in a consultation with a client, in a negotiation with an adversary, in planning with colleagues or in small talk with colleagues. A doctor can similarly have a consultation with a patient, have a planning meeting with colleagues, make small talk with other medical staff, and so on. A profession is, thus, typically characterized by a number of activities that are involved in carrying out the tasks of the profession. Often, these activities involve the use of a specialized activity register, for example tax law rather than law in general, the requirements of which go beyond the register that is more generally part of the profession.

If we examine the types of social activities exemplified above, we can see that, just as in the case of professions, they overlap and occur at different levels of abstraction. For example, negotiations and planning are both kinds of meetings and might, for this reason, have features in common. Patient–doctor consultation and lawyer–client consultation are both consultations and probably both involve giving advice, and they might thus have features in common. Interrogations and interviews are probably similar in several ways, as are teaching and instruction. Some activities are perhaps fairly unique, like a sermon or a trial, but we can see that a trial is also a kind of meeting and that even sermons and lectures are meetings of sorts, despite the fact that they all often involve a larger amount of one-way communication than is common in other meetings.

Another feature of the communication and language in a social activity is that it might be multifunctional, either sequentially or simultaneously. Thus a negotiation can simultaneously be a quarrel or a planning meeting and involve joking. The reason for this is that various terms for social activities and registers focus on distinct properties of interaction that can be simultaneously or sequentially present in a given interactive process. What this means is that specific occurring behaviors can sometimes be related to several registers and thus be multifunctional. For example, a loudly spoken claim can be part of the register of negotiation and the register of quarreling simultaneously.

Registers Depending on Topics, Roles, Rhetorical Purposes, and Emotional-Attitudinal Moods

Below are some examples of these types of registers:

Topics: Different topics have different vocabularies, perspectives and perhaps different grammatical constructions. Compare the topic-related registers of history, weather, medicine, and engineering.

Roles: Different roles in a family have different registers, for example "motherese," "fatherese," and perhaps "grandmotherese" and "grandfatherese." As we have seen above, roles can also be taken in the sense of a professional role or an activity role and thus be part of what determines the register of activities and professions.

Rhetorical purposes: Different rhetorical purposes like admonishing, being stern, seductive, or persuasive are connected with different registers.

Emotional-attitudinal moods: These are registers such as that of a quarrel, of a commiseration, or of a humorous, jocular interaction.

Covariation of Different Types of Register

Let us now examine the relationship between registers and some of the other types of linguistic variation not associated with nation, region, social class, or individual personality. Perhaps they can be grouped as follows, according to their main conceptual orientation and allowing for a certain overlap between them (the list of different possible registers is not meant to be exhaustive but merely to exemplify the types):

1. professional register (often overlaps with topic register), for example legalese, medical language, engineering language, jargon (negative evaluation of a professional register);
2. activity register (often closely connected with professional language and includes the register of particular activity roles);
3. rhetorical register, for instance persuasive, ingratiating, seductive, stern, humorous, apologetic, or phatic;
4. other registers (based on family, emotions-attitudes, evaluation, informality), for instance "motherese," baby talk, "fatherese," joking, quarrel, formal, casual, intimate, jargon, slang.

Activity registers and rhetorical registers can additionally perhaps be subdivided as follows, according to whether they are oriented to spoken language or written language, or neutral in this respect:

1. spoken registers, for example instruction, teaching, lecture, preaching, sermon, interrogation, interview, confession, lawyer–client consultation, trial, auction, giving advice, patient–doctor consultation, negotiation, planning, meeting, small talk, conversation;

2. written registers, for example genre, text type, advertising, cookery books, headlines, scientific articles, textbooks, novels;
3. neutral registers, for example style, activity language, sublanguage, trade language, news reporting language, narrative, poetic.

Two of these terms, "genre" and "text type," deserve special interest, since they are sometimes used in a generic sense, similarly to the way we are using "register" here. Both terms, besides having a more written-language orientation than "register," are also oriented more toward a lasting result of the communication than "register" (i.e., a certain kind [type] of text, e.g., a cookery book, a law book, a volume of poetry). "Register," in contradistinction, is less oriented to the end product and more oriented toward a particular type of linguistic competence, the use of which leads to the end product. Perhaps this is a consequence of one of the conceptual origins of "register" being the Firthian notion of the "linguistic repertoire" of a particular person (see Léon, 2007). For genre and text type, the end product —the type of text—is primary, even if secondarily we might also include the competence required to produce the genre or text type.

What Linguistic Features Can Be Part of a Register?

Some authors have wanted to restrict the linguistic features that constitute a "register" to vocabulary differences (e.g., Trudgill, 1983), while others have taken a more inclusive stance, in principle allowing for "register" to cover any linguistic features, which could mean that any phonological, morphological-lexical, syntactic, pragmatic (e.g., rhetorical), or gestural ("gesture" is here taken in the wide sense of a communicative body movement) trait that can be systematically associated with a purpose, social role, social activity, or profession could be taken as part of a register.

In principle, all properties of language that can be analyzed can automatically be compared with regard to register, if we have access to a computer-based corpus consisting of different written language texts or transcriptions of spoken language containing several registers. Some examples are:

1. frequencies of words, utterances, pauses, overlaps, collocations, phrases, sentences, and so on;
2. stereotypicality (number of duplicates or repetitions of words or collocations);
3. average word length, utterance length (mean length of utterance, or MLU);
4. vocabulary richness measures;
5. frequencies of different parts of speech.

For other examples see Biber et al. (1998) or Biber (2006).

Some Examples of Grammatical Register Features

Some examples of registers that have distinctive grammatical features are given below. We may here note that some of the differences that can be observed between the grammatical constructions of different registers are due to mere convention, while other traits can also be related to functional factors in the activity that the register is related to.

The register of *headlines*: A complete and grammatical headline can consist for example of a noun phrase (NP), like *The home front*, or a prepositional phrase (PP), like *After the party*, or of a nominalization with a PP, like *Singing in Turkey*. Complete headings often

lack subject or predicate verbs. In headlines there is often a lack of space, which leads to focusing on the most striking content features in order to catch attention.

The register of *scientific articles* often includes frequent use of passives and impersonal constructions, like *It was demonstrated that*. Scientific language also often uses fairly complex nominalizations; this leads to a use of abbreviations, such as *fMRI* (brain scanning: functional magnetic resonance imaging) or *NaCl* (chemistry: potassium chloride). A side effect of this is that sometimes scientific articles become less accessible to persons outside a particular scientific field, who do not understand the abbreviations. This may in turn be sometimes desirable and sometimes less desirable. It is often important to appear objective; this leads to a focusing on the object of inquiry in order to direct attention away from the subjective evaluations of the author. According to Biber (2006, p. 64), the passive voice is used overall in 20% of academic texts, compared to only 5% of the transitive verb phrases in spoken conversation. Part of the explanation is that the passive voice allows focusing on natural processes, while defocusing the agent involved in observing or creating the process. There is some variation between the written texts of different disciplines. Engineering textbooks use the passive in almost 30% of all verb phrases, while the percentage is lower in the humanities and social sciences.

Cookery books can include frequent use of imperative forms and measurements, for instance "Beat egg whites stiff. Gradually add ¼ cup sugar, beating constantly. Cream together shortening and remaining sugar" (from Woody, 1942, p. 71). The purpose of cookery books is to give instructions in how to prepare food. One way to do this is to use imperatives and another feature is to use measurements, so that interested readers will know what quantities of different substances to use.

The language of *auctions* includes frequent complete utterances consisting of numerals. The purpose is to sell objects at as high a price as possible. This naturally leads to a focus on numerals indicating the current bidding level of the object being sold. It is here interesting to compare the language of bingo games, which, for slightly different reasons, also contain utterances often consisting only of numerals.

Since different registers to some extent involve different subject matter and topics, perhaps the most easily detectable differences between registers concern vocabulary, although more grammatical features also occur, like differences concerning parts of speech or differences in sentence or clause type.

Some of the most striking differences between registers are correlated with the difference between spoken and written language. This can be seen, for example, if we consider the distribution of the parts of speech for spoken and written registers (see Table 1, which compares parts of speech in spoken registers with parts of speech in written registers in a corpus of Swedish).

The spoken language in the corpus comprises about 25 different registers and the written registers are made up of novels (fiction) and newspaper texts (see Allwood, Björnberg, Grönqvist, Ahlsén, & Ottesjö, 2000). As we can see, nouns are the most common part of speech in written registers, while the most common part of speech in spoken registers is pronouns. The difference can partly be explained by the fact that speaker and listener have more shared information available in spoken registers and, thus, do not need to give as many explicit descriptions of what is being referred to. Verbs are the second most common part of speech in both spoken and written registers. This is probably explained by the central role of the verb for predication, which, of course, is central to both spoken and written registers. As we can see, verbs have a slightly higher relative share in spoken registers, which can perhaps be explained by the higher incidence of information packaged in nominalized form in written registers (see also Biber et al., 1998; Biber, 2006).

Table 1 The parts of speech in spoken and written registers in Swedish (based on the Gothenburg Spoken Language Corpus [GSLC])

Rank: spoken registers	*Parts of speech*	*Share in corpus (%)*	*Rank: written registers*	*Parts of speech*	*Share in corpus (%)*
1	pronoun	22.58	1	noun	26.64
2	verb	19.39	2	verb	17.03
3	adverb	16.30	3	pronoun	16.45
4	noun	12.24	4	preposition	11.40
5	conjunction	8.41	5	adverb	9.78
6	preposition	7.14	6	adjective	7.52
7	feedback	5.96	7	conjunction	7.38
8	adjective	4.12	8	numeral	3.36
9	own communication management	2.18	9	feedback	0.27
10	numeral	1.51	10	interjection	0.16
11	interjection	0.18	11	own communication management	0.00

Adverbs and conjunctions are more common in spoken registers, while adjectives and prepositions are more common in written registers. Part of the explanation for this is that spoken registers have more main clauses linked by conjunctions, while written registers use more adjectives as modifiers in complex noun phrases and prepositions to build complex prepositional phrases, where more or less relevant circumstantial information is given.

Feedback words (fb words, e.g., *yes*, *no*, *m*) and "own communication management" words (ocm words, e.g., *eh, m*), used for hesitation, planning, and turn-keeping, are very much more common in spoken registers. This is not surprising, since their primary function lies in structuring spoken-language interaction and they really only become relevant in written registers when authors are trying to recreate dialogue.

There are also investigations of grammatical variation between written registers or between spoken registers. Some very interesting examples of variation between written registers can be found in Biber et al. (1998, p. 60), where it is shown that nominalizations are almost four times more common in academic prose (44,000 per million words) than in fiction (11,200 per million words), which, among other things, points to the important role of abstract nominal reifications in academic prose. Another observation pointing in the same direction is that the noun–verb ratio is almost twice as high in academic prose compared to fiction. In both these cases (nominalizations and noun–verb ratio), fiction is closer to spoken conversation.

When it comes to clause types, Biber et al. point out that *that*-clauses are more common in conversation than in academic prose and both extraposed *that*-clauses and *to*-clauses are more common in academic prose than in conversation.

There are also some interesting observations on tense variation in the verb phrase (Biber, 2006, p. 61). Most academic prose avoids the past tense (overall, less than 20% of all verbs are in the past tense). However, the dispreference is greater in some disciplines than others.

Engineering textbooks have only 5% of all verb phrases in the past, while education textbooks have 30% and humanities have 40% in the past. The explanation might be that engineering tries to give a timeless impression of what is being described, while this is less so in the humanities and social sciences. The texts from education use the past tense to report on past studies and past experiences in the classroom, while the humanities often provide descriptions of development with specific dates.

SEE ALSO: Corpora in Language for Specific Purposes Research; Corpus Analysis of Language in the Workplace; Corpus Analysis of Written English for Academic Purposes; Grammar in Academic Writing; Grammar Teaching and the Workplace

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Relations Between Oral Language and Literacy

ANNE HAAS DYSON

One might expect oral and written language to be perceived as having an intimate relationship, born of their kinship as modes of verbal communication. Quite the opposite is the case: one mode or the other has reigned supreme. This contentious relationship is not just a matter of scholarly interest. Ultimately, views of this relationship have consequences for the formal education of children and youth.

Ancient traditions of linguistics were influenced by prestigious religious and legal texts; the languages of those texts had to be preserved and, thus, their rules analyzed and taught as spoken languages changed (McGregor, 2009). In contrast, modern linguists of the early 20th century valued speech as the key source for understanding a language's grammatical system; they stressed a language's common features, not those that may have distinguished great writers (e.g., Bloomfield, 1933). By the 1970s, though, the relationship between oral and written language was itself a matter of intense scholarly attention. The two language modes were pitted directly against each other. On one side of the dichotomy was oral language, seen as a defining characteristic of being human and a pervasive medium of everyday interaction. On the other side was the relatively recent challenger, written language, seen as a tool for advancing individual and societal memory and reason and, thus, a defining characteristic of the "developed" world.

In recent decades, written and oral modes have begun to reconcile, as their battle for superiority has waned. They have been portrayed as situated symbol systems; they have both shared and differentiated potential as resources for representing and exchanging meanings. Ultimately, they find their niche in a social group's communicative repertoire, their respective uses adapted to the cultural, economic, and technological circumstances of people's daily lives. Indeed, in popular literacy practices, like spoken-word performances, and in ever-evolving digital media practices, speech, writing, image, and music are interwoven in multimodal productions.

The following sections consider the visions of oral and written relations that have dominated for the last 50 years, as well as how those visions have been complicated by popular culture and new technologies and, further, how they mediate issues of identity and power. The final section of the entry focuses on the ways in which different views of oral/written relations have influenced pedagogical visions of children's resources for, and means of, learning written language and, moreover, of the goals guiding language arts curricula themselves.

A Dichotomous Relationship: Maximally Different Modes of Language

Six-year-old Ezekial wanted to write "loud" that it would be cool playing soccer with his friend Jason. He wrote

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.C.O.O.L. P.L.A.I.N.G.

- Why did you put all the periods?≅ I asked.
- Because I want all of >em capitalized,≅ he explained (i.e., he was following the rule that a capital letter comes after a period).

In the above vignette (from Dyson, 2008), Ezekial was grappling with certain material affordances of oral and written modes. Written language is a second-order symbol system; that is, it is "a system of signs that designate the sounds and words of spoken language, which, in turn, are signs for real entities" (Vygotsky, 1978, p. 106). However, writing is not simply transcribed speech. For example, alphabetic signs, or letters, are selective in the aspects of the phonological or sound system that they represent (Sebba, 2007). Moreover, they do not systematically capture the sensual qualities of speech. Ezekial, though, tries to do so. Like a novelist or cartoonist aiming to capture the sound of a voice, he uses capital letters to indicate volume. Yet, even as he shouts out his pleasure, Ezekial attends to the standard punctuation rule for written prose—a capital letter follows a period (which conventionally indicates a syntactic unit, a sentence).

In the dichotomous view of oral/written relations, written language's intellectual and societal power is seen as in fact deriving from its removal from the sensual qualities of speech (intonation, stress, volume) and, also, from face-to-face encounters. Anthropologists (e.g., Goody & Watt, 1963) and psychologists (e.g., Olson, 1977) stressed this "autonomous" quality of written language; they put forward arguments about its consequences for both societal evolution and human cognition. These theorists articulated a "great divide" between literate and oral societies and between literate and illiterate individuals.

Against the backdrop of oral traditions for organizing and disseminating knowledge, written language, with its graphic dimension, lent itself to new ways through which societies could store, organize, and pass on information. Further, the alphabetic system was seen as amenable to the explicit representation of meaning in written texts; it thus supports the logical analysis of written statements themselves, separate from contextual common sense. Linguists in synch with this view focused primarily on quintessential oral and written texts (i.e., oral conversation and expository prose); they portrayed the two channels of verbal communication as maximally different registers of the language. For example, Chafe (1982) illustrated that, compared to oral conversation, written expository prose is produced more slowly and, given its material tracings, lends itself to reflection and revision. Thus, relative to conversational talk, expository written prose is more syntactically complex and compact, its ideas more elaborated (i.e., less embedded in an ongoing physical context).

Categorical boxes tend to deconstruct as their contents become unruly, and this is what happened to the dichotomous categories of oral and written language. Cultural anthropologists documented metalinguistic and analytic reasoning in the oral discourse practices of societies without written traditions (e.g., Finnegan, 1988). Sociolinguists noted the ways in which seemingly "oral" performative features, like rhythmic repetition and metaphoric expression, characterized celebrated achievements in written literature. Most dramatically, social historians and ethnographers of communication retheorized the nature of the relationship between oral and written language: it depended, not on the autonomous properties of a communication channel, but on the situated nature of its use.

Dynamic Relationships: Situated Modes in Communicative Use

Social historians undermined the dichotomy of oral and written language by painstakingly documenting the literacy "myth" (Graff, 1987). Just as there was no sudden arrival of oral

language, so too there was no abrupt arrival of written language and, moreover, no clean separation between the two modes. Written language spread gradually, its nature and use reciprocally related to the oral world in which it took shape. Further, there were no consistent societal consequences following the spread of an autonomous literacy: written language could be withheld from the masses or particular groups of people; it could be used to issue edicts and orders to control and limit behavior; and the elites might employ it to develop their economic plans, even as their workers had no use for it. Written language is thus "ideological," infused with the cultural, political, and economic dynamics of the institutions in which it is embedded (Street, 1984).

There are also no consistent intellectual benefits to learning written language. The cultural psychologists Scribner and Cole (1981), in a study of the Vai people in Liberia, illustrated that the cognitive benefits of written language depended on the nature of the goal-directed activity in which it was learned and used (i.e., the literacy practice); using literacy for a practice involving rote memory, as in particular religious training, yielded different benefits than one involving communication to a distant audience, like letter writing.

Scribner and Cole's work, linked to that of ethnographers of communication, gave rise to the notion of multiple literacy practices, with varied potential consequences. Both written and oral language are part of the communicative repertoire of particular social groups. Variations in that repertoire reflect individuals' participation in those groups, which are themselves sites of intersecting economic, political, and cultural forces like immigration, recession, and technological change.

Further, within any practice, oral and written language may be woven together in complex configurations as people gather to produce, use, and talk about texts for some purpose. For example, in the southern African American neighborhood studied by Heath (1983), written texts, be they newspapers or government forms, were typically reshaped in oral discourse, as people talked about their meanings; similarly, in church, the written word was lifted from the page as the preacher elaborated that word into an oral performance that enveloped and involved parishioners. In her study of the oral and written repertoire of urban junior-high students, Shuman (1986) argued that the adolescents' social lives were enacted through texts whose nature could not be simplistically categorized as oral or written. For example, a diary entry was similar to a conversational narrative in substance and style, but quite different in its social enactment: conversational narratives had relational consequences that private diary writing did not. Still some collaboratively written texts, shaped by peer talk and directed to adult authorities, were meant to have social consequences.

Sociocultural studies concerned with literacy development have illustrated how young children are socialized into communicative practices by observing, participating in, and playfully reenacting the talk-filled communicative events of families, communities, popular media, and formal classrooms (Razfar & Gutierrez, 2003). Because they hear, not just see, enacted literacy practices, they are able to "read" and playfully compose written texts well before they grasp the conventions of the symbol system.

This situated view of oral and written relations has thus provided vivid illustrations of the interwoven nature of oral and written resources in the contexts of particular lives. Informal interactions, collaborative work sessions, and formal meetings are all occasions for the generation, development, presentation, and revision of ideas encoded in diverse media, including print, and they are also occasions that generate, sustain, and enact relationships. Indeed, in contemporary times, oral and written languages may combine with music and images for complex multimodal and, indeed, multilingual productions; with the support of new digital technologies, those productions mediate local and global relations.

Designed Relationships: Spoken Word and Other Multimodal Productions

As language modes became part of a complex of semiotic resources for the production of texts, the term *design* was proposed as more descriptive of the process of making multimodal texts than *composition* (New London Group, 1996). Within a particular multimodal practice, different semiotic materials, including speech and writing, have different semiotic affordances, that is, their properties lend themselves to representing different kinds of meaning. Any resulting text is not a collage but a dynamic whole, as the modes complement or complicate each other. In a digital story, for example, music's rhythm may contextualize a narrative line of speech, itself punctuated by visual displays and iconic key words (perhaps even *COOL*); all work together to construct a multilayered meaning (Hull & Nelson, 2005).

Multimodality is not new. For example, young children's early writing has been described as "symbol weaving" (Dyson, 2001): written language may be one strand of a drawn, spoken, played out, and even sung world. The increasing importance of popular media in children's lives has underscored how talk, images, props, and written text may be interwoven in their play with well-known characters and plot lines. From a design perspective, children's developmental challenge is to learn the particular affordances of differing media in different communicative circumstances.

To further illustrate, poetry has long been linked to the human voice and to communal gatherings, even though its written form may cloud its ancient oral roots: it is "composed by the ear . . . designed to be heard" (Collins, 2003, p. 4). In contemporary times, spoken-word artists may wrestle with the poetics of their written words, but their writing is designed for oral performance, for the infusion of the flexible aesthetics of the human voice, and may include the accompaniment of music, dance, and other nonverbal modes. Spoken-word artists, linked to the cultural movement called hip-hop and, particularly, to rap, are rooted in meanings found and voices heard on city streets. With digital technology and, particularly, the Internet, locally grounded spoken-word performances travel globally and are appropriated and refashioned by youth wielding writing tools and flexible voices across cultures and languages.

Aesthetic texts, be they described as "spoken word" or "written novel," are prime textual sites for representing the voices—and the many spoken languages and language variants—found in culturally complex societies, where national borders and cultural ones are routinely crossed. In the intricate relationship of spoken and written symbols may be found complex issues of identity and politics.

Identity, Power, and Oral/Written Relations

In any language, vernaculars or spoken variants index sociocultural, historical, and geographic complexities. For example, variations in pronunciation, vocabulary, syntax, or discursive practices (e.g., greeting, storytelling, preaching) may index regional roots, ethnic cultures, and social classes. Given this backdrop of societal heteroglossia (Bakhtin, 1981), that is, of the complexity of a society's language(s), the relationship between oral and written language becomes a site for issues of power and identity. These issues flow from a central observation: The language of the politically and socially dominant group is regarded as the idealized "standard" (Milroy & Milroy, 1991). It is typically represented in, and influenced by, the standardized written system and its orthography, and its use is monitored and taught by the schools.

Spelling is a particularly illustrative site for the display of identity and political work around oral/written relations (Sebba, 2007). Conventional spelling can be manipulated to convey a vernacular voice, and doing so may serve or challenge the status quo. On the one hand, authors' deliberate respelling of words to convey perceived pronunciations, like their use of nonstandard syntax, may index the supposed "uneducated" language of particular social groups (Preston, 1985). On the other hand, such actions may be a powerful community means of self-representation and identity construction. For example, Olivio (2001) analyzes written rap lyrics for those orthographic and syntactic choices that speak to African American Vernacular English (AAVE). Among represented features are the absence of [r], the voiced stop for [th] (e.g., *dey*), and zero copula (e.g., *What side you on?* [p. 76]). The use of apostrophes suggests the deliberate manipulation of, and resistance to, dominant conventions (e.g., *po'* for *poor*).

Youth practices may entail an effort to craft vernaculars into written aspects of multimodal texts on diverse surfaces, among them T-shirts, backpacks, electronic spaces, concrete walls, and even bodies. For example, a young woman constructed herself as a "True Hamoz [true Samoan]" on her backpack; this, she wrote, was a commitment "fo lyph," an AAVE-inspired spelling (Paris, 2010). Identity is manipulated and even played with through electronic media, where language-learning youth may find communicative spaces for constructing multilingual selves and trying on written versions of vernaculars, safe from the evaluations of both teachers and peers (Lam, 2009).

This manipulation of written language to capture oral language differs from young children's invention of spellings based on their spoken words. Their writing may be influenced by home vernaculars, but it is unlikely to be a deliberate rejection of dominant conventions. Nonetheless, children, like literary artists, do violate known conventions to capture graphically the sensual qualities of the human voice. Although they tend to find syntax-based conventions difficult, children, like Ezekial and his peers, may more readily make drawn characters SHOUT, SCREEEEEEEM, and declare "I love you" in pictured dialogue bubbles (Dyson, 2008).

Educational Implications of Oral/Written Relations

Perspectives on oral/written relationships that do not portray these modes as dichotomous but, rather, as intertwined in cultural practices, collaborative partners in designed texts, and resources for crafting expressive selves suggest new visions of formal language-arts curricula and of learners themselves.

Within a dichotomous view, the seeds of school success are sown in the home, as parents read to children and talk to them in particular ways about books and their own experiences (Snow, 1983). Children from backgrounds deemed "non-mainstream"—particularly those without the bedtime storybook ritual—are at risk because they are too "oral," so to speak. This view supports an emphasis on the "basics" of literacy education (letters and sounds) and on explicit "literate" language lessons for low-income children.

To learn the use of any symbolic tool, learners need relevant experiences from which they can appropriate as they approach new demands. More situated views of oral/written relationships have led to broader visions of the communicative practices that may offer pathways to school literacy (e.g., cultural discourse practices, like oral storytelling, and media-based play, like assuming character identities). Such pathways are enveloped in talk among students, peers, and teachers. Through talk, others involve learners in the social use of literacy, modeling and guiding the necessary processes and responding to their efforts in situationally appropriate ways (Vygotsky, 1978). Students' production of even

the most formal of academic essays depends, not just on learning the characteristics of a text type, but on connecting new textual demands with related social practices and with the disciplinary conversations they are joining.

Finally, the fluidity of human populations, languages, and multimodal texts suggest new basics and goals for language arts education. These take into consideration children and youth's alertness to the communicative repertoire and symbolic material of their everyday lives. These basics would involve differentiating and expanding one's semiotic resources (e.g., symbol systems, languages, genres, spelling manipulations, punctuation possibilities). The goal would be, not the singular mastery of a standardized written language, but communicative flexibility and critical reflection, which would underlie thoughtful, playful, and public participation in an ever-changing world.

SEE ALSO: Ethnographic Approaches to Literacy Research; Family Literacy; Historical Development of Literacy Research; Indigenous Literacies; Language and Identity; Multimodality and Literacy

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Reliability in Language Assessment

CAROL A. CHAPELLE

Almost any test user will readily agree that tests should be valid and reliable, but if asked to explain what "reliability" means, most test users would be hard pressed, despite the widespread use of this measure in the documentation that accompanies language tests. Assessment experts would also agree that reliability is a central concern for interpreting assessment results, even to the point that it is an important part of most validity arguments. However, the experts would also point out that reliability is not a characteristic of a test, but rather a characteristic of test scores obtained from a given test administration or administrations.

Reliability, which means *consistency* or *stability* in language assessment, is most simply explained with reference to classical test theory, which posits a true score that an examinee would obtain on a test that was a perfectly reliable measure of an attribute. Such reliable tests exist only in theory but, hypothetically, if the attribute of interest were assessed by gathering many samples of performance on many tests of the attribute, a close approximation of the true score could be made. As Haertel explains,

> Any of these possible scores would have served the purpose of measurement equally well, but they would not all be identical. Taken together, this hypothetical collection of scores represents the general, enduring attribute of interest. Thus, it is important to determine the extent to which any single result of the measurement procedure is likely to depart from the average score over many replications. Other things being equal, the greater uncertainty associated with the results of the measurement, the less confidence should be placed in that measurement. (Haertel, 2006, p. 65)

The assumption underlying this perspective is that sources of inconsistency in test scores produce measurement error in the test scores. This error can come from factors such as difficult conditions for listening during a listening test, fatigue on the part of examinees, unclear instructions in one section of a test, poorly written test tasks, inadequate scoring rubrics on a writing test, or simply an inadequate sample of performance. The assumption is that any of these conditions arising from test development, test administration, and test scoring will affect scores randomly whereas performance based on the defined attribute (e.g., language ability, listening comprehension, vocabulary knowledge) will affect scores consistently. Estimating reliability, then, becomes a matter of sorting out the amount of consistency in scores from the amount of error.

Estimating Reliability

Methods for estimating reliability within a classical test theory perspective depend on the sources of error that one wishes to isolate, but each method is based on the fundamental idea of replication that Haertel described. Brennan (2001) argues that "the notion of replications is central to an understanding of reliability" because "reliability is a measure of the degree of consistency in examinee scores over replications of a measurement procedure"

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(pp. 295–6). In order to understand the reliability of any particular measure, then, the test developer needs to be able to define what a replication of the test in question would consist of. The clearest type of replication in testing is two administrations of the same test. A reliability coefficient is calculated as the correlation between the two sets of scores obtained by examinees who took the test twice, and such a reliability estimate is called the test–retest reliability. Parallel-forms methods require two forms of a test to be administered to the same examinees so the consistency of performance across forms can be estimated. In both cases the statistical procedure for estimating reliability is a correlation between the two sets of scores. Despite the methodological clarity of test–retest (and parallel-forms) reliability, in operational testing programs it is difficult to obtain two sets of test scores on exactly the same test or a parallel one from the same group of examinees. Instead, a variation of a split-half method is used in many operational settings.

Split-half methods treat a half of a test as a replication of the other half, and are therefore also called internal consistency reliability methods. Cronbach's alpha is the most widely used of the many methods for estimating internal consistency reliability in language testing and elsewhere. It can be calculated through the use of SPSS, for example, when the researcher has the item scores (dichotomous or polytomous) for each test taker. Inter-rater methods assess the consistency between the ratings given by two or more raters to a set of test performances, typically using a correlation. Observed reliabilities are affected by the manner in which the reliability was estimated. When the two testing events are separated by time, as in test–retest coefficients, they tend to be lower than when all samples of performance are obtained in a single testing event (Gronlund, 1985).

In each of these cases a statistic estimating the degree of relationship, or consistency across the repetitions, is used to indicate the reliability of the test scores. It is expressed as a value that can range from 0, meaning variation in test scores is completely random, to 1, indicating that variation is completely reliable, that is, attributable to one factor. Reliabilities of .90 and higher are considered very good, whereas reliabilities of below .70 indicate scores containing a lot of error. Whether or not the amount of error is too great, of course, depends on the nature of the test and its use. For a high-stakes test such as the Internet-based Test of English as a Foreign Language (TOEFL iBT®), which is used for admission decisions, an internal consistency reliability of .94 is reported for total scores (Enright & Tyson, 2011). However, this test takes hours to administer and contains multiple sections with multiple test tasks. Shorter tests with fewer items typically do not produce scores with such high reliability estimates. Such tests may still be entirely appropriate and useful for their intended purposes.

Applied linguists can find a discussion of reliability and instructions for calculating reliability in any current introductions to language testing, but Bachman (2004) and Brown (2005) provide the most thorough treatment. However, applied linguists tend to be interested not only in calculating reliability but also in interpreting it. They are therefore interested in understanding how observation of consistent performance can accurately reflect an attribute such as language ability that has so many inherent inconsistencies.

Should Language Performance Be Consistent?

Books on language assessment that present an in-depth perspective on the construct of language ability (Bachman, 1990; McNamara, 1996) hint at a potential contradiction between the way the construct is defined and the expectation that a good measure will exhibit consistencies in performance. Bachman's presentation of the multifaceted communicative language ability posits multiple factors including knowledge of aspects of language (e.g.,

vocabulary, pragmatics), strategic competence, and topical knowledge as part of the construct. If the construct of communicative language ability is itself so multifaceted and variable across language use contexts, why do language testers hold reliability up as an ideal quality in test performance?

In recognition of this apparent contradiction, Swain (1993) questioned the relevance of internal consistency reliability for test scores which are intended to reflect examinees' communicative language proficiency. If the construct of communicative language proficiency would not itself be expected to be internally consistent because it consists of components that do not necessarily develop simultaneously, how can consistency in test performance across tasks, occasions, or forms be sought? The consistency of measurement versus variability of construct meaning is a theme that is taken up regularly in applied linguistics, where many teachers and researchers see the variability of language ability as more evident and pertinent than the consistency, and thus question the utility of language tests, whose raison d'être is to provide scores that offer a consistent summary of examinees' language ability.

One approach to reliability taken by Bachman and Palmer (1996) is to recognize that the way the construct is defined will affect the expected level of reliability in scores. "If the construct definition focuses narrowly on components of language ability, the test developer can reasonably expect to achieve higher levels of reliability than if the construct is complex, including a wide range of components of language ability, as well as topical knowledge" (p. 135). Therefore in determining an acceptable degree of unreliability for a test, rather than categorically seeking maximum consistency, test developers are to analyze their tests to make sure that they do not produce scores reflecting unmotivated inconsistency. The idea that reliability needs to be evaluated in view of the construct definition and its degree of expected variability is useful in both practice and research.

Another useful perspective comes from Snow and Lohman (1989), who distinguished between the type of psychological model containing many components and processes that underlie performance and the psychometric model that is constructed to capture response consistencies. Mislevy (2006) takes this farther by displaying graphically the different levels of models that applied linguists may work with, from the delicately defined linguistic knowledge and processes, to a rougher construct description representing some of the primary components, to a psychometric model which can be expressed mathematically. Mislevy's approach emphasizes that assessments use models in order to capture a view of the attribute that is useful for some purpose. In this sense all models are inaccurate because they fail to capture some of the detail of the attribute; however, the criterion for the success of the model is not its correctness, but its usefulness. What is needed is models that are not so wrong as to not be useful, and for most purposes models underlying tests need to be consistent.

In contrast to these construct-relevance perspectives to reliability is another argument about the exclusive definition of reliability as replication. Moss (1994) notes that for many types of high-stakes decisions such as selecting manuscripts to appear in journals and applicants for academic jobs, the manner in which quality decisions are made does not draw upon the assumption that evaluators serve as replications. Instead, she argues that quality ratings are obtained by engaging in a hermeneutic process of expert judgment where experts apply their own judgments to arrive at an evaluation which may or may not agree with that of the whole group. Moss questions the unconditional value placed on reliability-as-replication as an indicator of test quality within validity arguments. She would rather "consider it one alternative for serving important epistemological and ethical purposes—an alternative that should always be justified in critical dialogue and in confrontation with other possible means of warranting knowledge claims" (Moss, 1994, p. 10).

Using Reliability Estimates

Reliability estimates are used regularly in the everyday business of language testing and in research that uses language test scores as one source of data. These uses of reliability attest to its utility in helping test users interpret individual test scores and the performance of a set of test scores in research. Reliability is fundamental to understanding the precision of individual test scores as indicators of an attribute because it is used to calculate the standard error of measurement, a metric directly interpretable as a range of test scores relative to the observed score where the examinee's true score probably lies. For example, the reliability of the TOEFL iBT noted above is placed into a formula to return a value of 5.64 as the standard error of measurement. This means that an individual who obtains a score on the TOEFL iBT can be assumed to have a true score within +5.64 to –5.64 of that score, with 68% probability. If the reliability of the TOEFL iBT scores were lower (i.e., less precise) the standard error of measurement would be greater, meaning that for any observed score, the true score would be within a larger range. The standard error of measurement is also useful for reminding test users that examinees' test scores (i.e., their observed scores) are only an approximation of the scores that the examinees would obtain based on their abilities if they were to take the test repeatedly so as to obtain a more accurate estimate of their ability. This theoretical score is called the true score, and it is something that can only be estimated, not known.

In research, reliability provides an indication of the extent to which scores obtained on a measure actually reflect one construct, in other words the extent of the true score ability that is the source of variation in scores. This is important because if a researcher is claiming to use a test score to mean one construct, such as grammatical knowledge, speaking ability, or communicative competence, and the score is intended to distinguish among test takers on the basis of their level of one construct, reliability evidence is needed. Moreover, statistically, the reliability of the measures in research affects the performance of the scores in other statistical procedures in correlational and experimental research. Both types of research seek to find systematic differences among test takers, but cannot do so unless the measures produce scores that distinguish consistently among test takers.

Because reliable test scores are most useful, one of the chief goals of test development and administration is to maximize reliability by assuring systematicity in all aspects of test development and administration. The chief rule of thumb is that the more samples of performance (i.e., the more test tasks) the more reliable the test scores. This rule follows from the basic definition of reliability as consistency across repetitions. Second, test developers attempt to minimize error associated with confusion about test tasks by trialing test items using just a few test takers to make sure tasks are clear. They also pretest items on a sample that is similar to the intended test takers because it is the set of test scores for which reliability is estimated rather than the test itself. This means that a test that produces reliable scores for one group of students may not for a second group with different characteristics. It is worth repeating that reliability is not a characteristic of a test, but a characteristic of a set of scores. Test developers also conduct analyses of the items to identify those that do not contribute to the reliability of the measure.

Limitations of the Classical Test Theory Perspectives

The fundamental concepts about consistency of test scores can be expressed from a classical test theory perspective, but today other approaches are used as well. Item response theory (Lord, 1980) provides item-level information about reliability that is useful for test development, particularly development of computer-adaptive testing. Generalizability theory

offers a means of isolating within one model components of error associated with different sources (Bachman, 2004). Structural equation modeling (Kline, 2005) tests the reliability of a measurement model within a more complex structural model. In all of these approaches, the language test is intended to capture what is consistent in the variation among a group for norm-referenced interpretations.

In classroom tests, such as a final exam, however, tests are intended for criterion-referenced interpretations and therefore the assumption that the desirable set of test scores should spread examinees across a normal distribution does not hold. In classroom tests, test takers' performance should be evaluated against a criterion of how much knowledge, skill, or understanding they displayed on the test. There remains an issue of consistency, however, because one would want examinees' scores to be consistent if they took the test twice or if different questions were used to elicit the performance concerning a particular ability. When criterion-referenced tests are used, consistency is estimated through the use of a metric of dependability (Brown & Hudson, 2002).

Despite the variety of approaches taken to reliability in different situations today, the basic concepts about reliability from a classical test theory perspective remain important for understanding the fundamental idea of what consistency means and why it is important.

SEE ALSO: Correlational Research in Language Assessment; Generalizability Theory in Language Testing; Modeling Language for Assessment; Statistical Analysis of Test Results; Structural Equation Modeling in Language Assessment; Validation of Language Assessments

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Religion

SOHAIL KARMANI

Of all the manifestations of human culture, language and religion are by far two of the most striking and most enduring—so much so that they are likely to feature very prominently as markers of group cultural identity, and in so doing inform our basic ideas as to how we set about defining and ordering the world. It is not surprising then that the history of civilizations is punctuated with conflicts that would appear to arise along mainly linguistic and religious lines. This is not in any way to suggest that language and religion are per se sources of conflict, rather that they lend themselves as easy pretexts (when or if a political or ideological need arises) in public appeals for reinforcement of the "home" culture and, in many instances, systematic vilification of the "enemy."

It is worth noting for instance that the term "barbarian" was first coined by the ancient Greeks during the Greco-Persian wars (499–449 BC) as a term of abuse in reference to the speech of the Persians. As the ancient Greeks then saw it, the Persians "babbled" in a language that was neither Hellenic nor one of the several Greek dialects—hence the onomatopoeic origin of the Greek term "barbaros." Much less surprisingly, the use (or more fittingly the abuse) of religion also played a key role in that conflict in further polarizing the two sides with each invoking their respective deities.

As regards the modern European era, particularly since the Peace of Westphalia (in 1648), the role of language and religion has been hugely significant in fostering the emergence and survival of the nation-state as we know it today. Specifically, the process of institutionalization has been crucial in conferring legitimacy to the idea of the official language(s) and religion(s) of the state. Interestingly, as Safran (2008, p. 172) observes, it has been largely through the process of institutionalization that a dialect is effectively raised to the status of official language and in much the same way a belief system is accorded the role of "state religion." It is not difficult then to appreciate how taken together language and religion have often served as the primary conduit through which disparate ethnic peoples could be homogenized and through which—often with considerable savagery—the nation-state has sought to establish a cultural consensus on which its legitimacy could be founded. Remarking on the instrumental role of language and religion in the management of state affairs, Immanuel Kant (1724–1804), the 18th-century German philosopher, wrote:

> It is . . . the desire of every state (or its ruler) to achieve lasting peace by . . . dominating the whole world, if at all possible. But *nature* wills it otherwise, and uses two means to separate the nations and prevent them from intermingling—*linguistic* and *religious* differences. These may certainly occasion mutual hatred and provide pretexts for war, but as culture grows and men gradually move towards greater agreement over their principles, they lead to mutual understanding and peace. (Cited in Reiss, 1991, p. 113; original emphasis)

Indeed, over time, with varying degrees of success, the nation-states of Europe were able to impose a political geography on the European landmass that was largely ordered along mainly linguistic and religious lines. At the domestic level, this process of cultural consolidation was given a further boost with the dawning of the industrial revolution and

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the subsequent urbanization of Europe's major cities. It was notably during this period—with the radical shift in the demography of the nation-state—that state-sponsored mass education systems as we know them today took root and began to take shape. Among other things, these nascent educational systems were to play a crucial role in molding the incoming rural masses and as a consequence help in further entrenching the official roles of language and religion.

But more broadly, at the international level, there was also a new dynamic that coincided with the industrialization of Western Europe. The steadily growing competition between rival nation-states for distant markets and resources—primarily in Africa, Asia, and the Far East—effectively ushered in the age of empires. And once again, to support this expansionist phase in development of the nation-state, language and religion frequently served as highly effective pretexts for plundering distant lands and subjugating foreign peoples. Indeed, as the case for empire was often framed, it was deemed the moral duty of the expansionist nation-states of Europe to "civilize the natives" and in so doing deliver them from their perceived backwardness and generally "pitiful" state of existence. Not infrequently, this self-styled "civilizing" mission took on a religious and linguistic dimension prompting rather bold and extraordinary pronouncements about the cultural superiority of European languages and religions. Not untypical of the times were the views of Read (1847) for whom the English language was deemed the "language of the arts and sciences . . . of civilization and religious liberty . . . the store house of the varied knowledge which brings a nation within the pale of civilization and Christianity." It was against this backdrop of imperial expansionism and a rising tide of European chauvinism that Christian missionary groups were able to better position themselves and thereby pursue their more specific goal of spreading the Gospel to the natives. It bears stressing here that this was sought not simply by spreading the English language and imparting Christian teachings, but also by a painstaking process of studying, documenting, and translating local languages with a view to aiding in proselytization efforts and ultimately of course in making the Bible accessible to subject peoples. In many respects, the Summer Institute of Linguistics, a contemporary US-based organization, can be seen as continuing in the long-standing tradition of translating the Bible into minority languages, as also its sister organization, Wycliffe Bible Translators, whose stated mission is "serving with language communities worldwide to express God's love through Scripture translation and compassionate service."

Gradually, however, as the age of empires began to wind down, subject populations found themselves coming to terms with the prospect of independence—a process that often entailed a robust rejection of Western imperialism, but curiously at the same time an eagerness to embrace an ideology of Western nationalism and with it a post-Westphalian blueprint for a nation-state. Eventually, what emerged of course (as we know it today) was a global system of nation-states, two particularly striking examples being Israel and Pakistan, both of which were founded explicitly on the basis of language and religion.

It could be argued—and perhaps with some merit—that the history of the relationship between the nation-state on the one hand and language and religion on the other has to some extent proved beneficial in promoting social cohesion, national harmony, and a deeply imbibed sense of citizenship. Undeniably, on several levels, current-day nation-states that share common bonds of language and religion are more likely to display a stronger sense of cultural, economic, and political proximity. The international ties that, for instance, link the English-speaking nations of the West have arguably a lot to do with their common linguistic and religious roots in much the same way as the common cultural heritage of the Arab League nations is to a large extent rooted in their collective experience of Arabic and Islam. Even so, it would be grossly disingenuous here not to point out that the nexus between the nation-state, language, and religion has also in many instances proved to be hugely catastrophic for linguistic and religious minorities, often leading to

untold misery and destruction for millions. Several modern-day examples come to mind; particularly worth mentioning here is the partitioning of British India (in 1947) during which several communal groups that had otherwise coexisted for centuries in relative peace were eventually torn apart by appeals to religious differences to be later abetted by artificially manufactured linguistic differences between Urdu and Hindi.

In more recent times, particularly since the end of the Cold War, language and religion have emerged once again as potent forces on the international stage. In 1992, Samuel Huntington (1927–2008), a renowned American political scientist, formulated his much-celebrated theory of the clash of civilizations. In a seminal 1993 article, Huntington proposed that the primary source of conflict in the post–Cold War world would be rooted in cultural, religious, and linguistic differences. Of particular concern to Huntington was what he saw as the intensifying civilizational clash between the West and the Muslim world. The controversial theory, though dismissed by a wide variety of critics at the time, rose to prominence in the aftermath of the terrorist attacks of the September 11, 2001, effectively becoming a convenient theoretical model for explaining subsequent global events in the greater Middle East region. One notable site wherein the intersection between language, religion, and politics has attracted the attention of geopolitical policy makers is in the ascending role of English-language teaching as a "public diplomacy" vehicle for pursuing narrow ideological goals of US power in the Arab and Muslim world (see, e.g., Karmani, 2005a, 2005b, 2005c, 2006).

SEE ALSO: Critical Discourse Analysis; Cultural Identity; Language and Identity; Language Planning in Religious Observance; Nation; Postcolonial Studies

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Research Articles in English for Specific Purposes

DWIGHT ATKINSON

The research article (RA) is the single most analyzed genre in English for specific purposes (ESP). This is understandable—it has been the main outlet for new knowledge in natural science and medicine for the past 150 years, and, in the 20th century, engineering and social science.

Defining the RA

Many RA studies assume a common definition: journal articles in empirically driven research fields reporting original research, with the experimental RA as primary exemplar. A further defining feature for some is the Introduction–Methods–Results–Discussion (IMRD) discourse structure. But the father of ESP RA studies, John Swales (2004), has argued that this definition is inadequate: RAs appear in marginally empirical fields like computer-simulation-based engineering, and nonempirical ones like theoretical physics; they may furthermore include review articles, natural history papers, and other work departing from assumed norms. For present purposes, I adopt the more commonly assumed definition—but as a *prototype* definition and without IMRD as a defining criterion.

History of the RA

The RA's history began with the founding of the first scientific journals. Foremost among these was the *Philosophical Transactions of the Royal Society of London (PTRS)*, established in 1665 and published almost continuously since. According to Atkinson (1999), papers in the early *PTRS* were usually author-centered, epistolary, brief, and somewhat miscellaneous in form and content. Where featured at all, experimental methods and results were relatively unelaborated, but became more elaborated by 1775. By 1825, articles were longer, research was being embedded in specific research communities, and the author-centered rhetoric was being replaced by an object-centered one. By the mid-20th century, papers showed much less concern for embedding research problems in particular communities, theoretical concerns took precedence, and research methods were commonly de-emphasized.

Various cross-time studies of scientific and medical RAs have been conducted. Each varies according to the texts sampled and analytic methods employed, but their findings tend to reinforce one another (Swales, 2004).

Present-Day RAs

Rhetorical Moves in RAs

The most analyzed aspect of present-day RAs has been their introduction sections. This is due predominantly to Swales's influence—his earlier work (e.g., 1990) focused on RA introductions, and was expanded in later publications (e.g., 2004). Along the way, Swales

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developed not just a description of, but a methodology for, studying RAs: *rhetorical move analysis*.

A "move" is a functional rhetorical unit within a larger, more-or-less ordered sequence. Swales's (1990) widely used "create a research space" (CARS) model divides RA introductions into three basic moves, originally labeled: "establishing a territory," "establishing a niche," and "occupying the niche," with each move encompassing a series of "steps," or submoves. Swales (2004) revised the CARS model in various ways, including renaming the third move "presenting the present work."

Many authors have applied Swale's analysis to their own RA introduction samples, testing its validity and scope. Numerous attempts have also been made to determine move sequences for other RA sections, study move variation in RAs across disciplines, and study move variation in RAs across languages.

Functional Linguistic Features in RAs

A substantial literature examines functional linguistic features in RAs. Hyland (1998), for example, studied the use of *hedges* to qualify truth claims—their major rhetorical function in RAs, where community acceptance is crucial to establishing findings as facts. Examining 27 articles from molecular and cell biology, Hyland developed a "polypragmatic model" of scientific RA hedging—"polypragmatic" because hedges often serve multiple functions simultaneously in RAs. The model includes two major "fuzzy" categories: *content-oriented hedges*, which mitigate differences between authors' views and field-accepted understandings; and *reader-oriented hedges*, which foreground the author–audience relationship.

Other notable studies of functional linguistic features in RAs include Vande Kopple (1998) on relative clauses, Rodman (1994) on active-voice verbs, Martinéz (2005) on first-person pronouns, and Halliday (1988) on nominalization and grammatical metaphor, although this last study does not concern RAs exclusively. Many other features have also been studied, both singly and in terms of their *probabilities of co-occurrence* (e.g., Atkinson, 1999).

RA Composing and Reading Processes

Composing process research and research on the construction of scientific knowledge combined in the 1980s and 1990s to yield valuable insights regarding the RA. Classic studies include Knorr-Cetina (1981), which revealed the highly constructed, rhetorical nature of RA writing in a food chemistry lab. Myers (1990, chap. 3) tracked two biologists' experience in getting "atypical" RAs published, centering on complex negotiation of knowledge claims. Berkenkotter and Huckin (1995, chap. 3) studied a biologist responding to journal reviewers' comments which forced her to emphasize the novelty and larger research context of her claims. In these and other studies, RAs are characterized as highly rhetorical products—strategic arguments more than reports of what actually happened in the lab.

Bazerman (1988, chap. 8) studied research physicists' RA reading processes, finding that they were selective, nonlinear, and highly purpose-driven. The physicists tended to read papers in their specializations starting with "the news"—title, equations, tables, and graphs of results, moving onto other sections as needed.

Discourse Community Studies

Ethnographies and quasi-ethnographies of academic communities sometimes highlight RA production. Latour and Woolgar's (1986) ethnography of a Salk Institute for Biological Studies lab concluded that the main purpose of lab activity was to produce RAs—highly rhetorical literate representations of laboratory research, in which knowledge claims were

relentlessly negotiated. Swales (1998) presented a quasi-ethnographic "textography" of three groups of academic text producers—botany researchers, applied linguists, and computer consultants. He found that while RAs were high-value products for two of these groups, other kinds of texts were also produced and valued.

Multilingual Writers and RAs

RA research in the last decade has focused extensively on multilingual writers (MWs) publishing in English. John Flowerdew has been especially active in this area. Surveying 585 Hong Kong academics, Flowerdew (1999a) found that international English-language journals were the favored publication outlet for 85%, and that although two-thirds felt disadvantaged when writing RAs in English, 87% also felt "confident or very confident" doing so, most having received doctorates in English-dominant countries. Flowerdew (1999b) determined that the greatest perceived weaknesses/disadvantages for such writers were facility of expression, vocabulary, time expended, and writing introductions/discussions.

Flowerdew (2000) interviewed 11 applied linguistics/language teaching journal editors on their treatment of MWs' submissions. All expressed positive concern, many described special efforts to support MWs, and all reported feeling that reviewers treated MWs fairly. They identified MWs' main writing problems as: (1) addressing research issues in ways relevant to their journal's readership; (2) establishing research niches in introduction/literature and discussion sections; (3) inadequate authorial voice; and (4) nativized rhetorical styles. Most editors also expressed the belief that MWs enriched the field greatly, offering unique viewpoints, topics, and linguistic sensitivity/knowledge.

Flowerdew and Li (2007) investigated mainland Chinese doctoral students' reuse of language from preexisting RAs, while Li and Flowerdew (2007) studied the role of professors, language professionals, and peers in helping students get scientific papers published.

Canagarajah (e.g., 2002) described the great challenges in composing English RAs in "off-network" (Swales, 1987) parts of the world, such as his native Sri Lanka. He showed how the Western/Center-based academic publishing system is heavily biased against periphery scholars because the latter have, among other things, virtually no access to current academic literature and little material support (e.g., copying facilities, up-to-date computers, travel funds, or sometimes even paper). Western RA publication is seen as a self-perpetuating process whereby the rich get richer and the poor poorer. A special feature of Canagarajah's work is that he locates his claims in a specific periphery academic community, and one he is intimately familiar with.

Teaching the RA in English for Specific Purposes

Much of the research reviewed so far was undertaken at least partly for pedagogical purposes. Standard research writing guides present general advice and conventions based on experience but no systematic empirical study of the genre(s) in question. Early pedagogical work in ESP (e.g., Trimble, 1985) took up where such guidebooks left off, basing itself at least partly on actual text analysis, with a focus on functional linguistic and rhetorical features.

The dominant pedagogical approach, however, proceeds from Swales's work: "genre awareness" or "rhetorical consciousness-raising" (Swales, 1990). A major dynamic in such courses, which often cover multiple research and research-related genres (e.g., conference abstracts, RAs, poster presentations, letters to journal editors), has students learning how their own field's RAs are structured by collecting text samples and then comparing them with those of their classmates in other fields. Modeling and direct teaching of rhetorical

moves may figure prominently, as does group work, including group composing. More than in other forms of second language instruction, teachers of such courses need to be willing to learn from their students and the research genres of their fields, and to be able to adapt their teaching to students' (at least somewhat unpredictable) needs and situations. Swales and Luebs (2002) described a research writing course for social psychology graduate students where exactly these attributes were paramount. Where students are actually producing texts for publication or evaluation, as in the just-mentioned course, regular one-to-one student–teacher consultations are invaluable.

An ongoing argument in ESP concerns whether subject specialists (e.g., engineers) need to be involved in teaching and developing course materials for genre-specific classes. The current wisdom seems to be that well-informed and experienced ESP teachers (i.e., with large amounts of genre, rhetorical, and linguistic knowledge but no specialist knowledge of their student' fields) can make a substantial contribution to students' understanding of the specialized genre forms and expectations of their field, although some background in a technological/scientific field is a definite advantage. It has also been frequently suggested that teachers assign students "ethnographic" work on research writing in their fields—that is, that they be required to investigate the processes, norms, and expectations of research writing in their specialties.

There are useful textbooks and associated materials for teaching the RA in ESP. Weissberg and Buker's (1990) now-classic *Writing Up Research* combines genre concerns such as move analysis with a focus on functional linguistic features to provide a thorough introduction to experimental RA writing. A second classic textbook, *Academic Writing for Graduate Students* by Swales and Feak (2004a), has a broader purview—only the last two chapters deal explicitly with RAs. Earlier chapters focus on writing skills and text types (e.g., writing summaries and problem-solution texts), which can be regarded as preparatory to RA writing. A teachers' guide for this textbook is also available (Swales & Feak, 2004b).

Conclusion

Empirical analysis (e.g., Baldauf, 2001) suggests that up to 85% of RAs in some fields are published in English, but such figures may actually underestimate English's dominance in RA publication. This dominance has deleterious effects. It advantages so-called native speakers of English and those educated in English-dominant countries, as well as creating conditions in which non-Western-based/English-reported research has little chance of being widely circulated. At the same time, certain advantages may accrue to having a single overarching lingua franca of research, including enhanced ability to share knowledge across (what were formerly, at least) linguistic and cultural borders.

English for Specific Purposes has devoted much effort in the last 30 years to describing the rhetoric, language, and contexts of English RAs. The field has now reached a point where its academic knowledge base regarding RAs is considerable, and a well-established pedagogy exists based on this knowledge. Future work in the field will be diverse, but the issue of making RA publication more democratic and less hegemonic will continue to occupy center stage for the foreseeable future.

SEE ALSO: English for Academic Purposes; English for Science and Technology; Genre and Discourse Analysis in Language for Specific Purposes; Intercultural Rhetoric in Language for Specific Purposes; Methods for Language for Specific Purposes; Writing and Language for Specific Purposes

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Research Methods and Sociocultural Approaches in Second Language Acquisition

HOLBROOK MAHN AND SHANNON REIERSON

Since the publication of Frawley and Lantolf's 1985 study, there has been a significant increase in second language acquisition (SLA) research using sociocultural approaches that draw from Vygotsky's theoretical framework and methodological approach. Researchers interested in diverse facets of SLA both in and out of educational contexts have utilized sociocultural theory in a variety of ways. Some have focused more on the internal aspects of language, the mental processes involved in making and communicating meaning through language acquisition, while others have focused more on the social, cultural, physical, and historical contexts of second language learning and acquisition. While researchers have relied on different interpretations and aspects of sociocultural theory, they all strive to understand second language learning and acquisition considering the role of sociocultural *context* as a mediating force in language development and use. They also recognize the essential role of semiotic mediation—making meaning through signs—in the development of the mind.

Lantolf (2000, p. 18) draws on the memoir of one of Vygotsky's closest collaborators, Alexander Luria's *The Making of Mind: A Personal Account of Soviet Psychology*, to describe sociocultural approaches.

> Because sociocultural research seeks to study mediated mind in the various sites where people engage in the normal activities affiliated with living, it undertakes to maintain the richness and complexity of "living reality" rather than distilling it "into its elementary components" for the purpose of constructing "abstract models that lose the properties of the phenomena themselves" . . . On this account, explanation of human activities is about observation, description, and interpretation guided by a theory that is careful not to compromise "the manifold richness of the subject." (Luria, 1979, pp. 174, 178)

Ever-developing systems of systems made manifold in complex, dialectical interconnections of mind and matter were the subject of Vygotsky's work. He advocated methods that were appropriate to the matter being studied—the unification of thinking and speaking processes—and not just methods borrowed from the natural sciences, which is what psychology had done in an effort to be recognized as an authentic field of science. He saw a dialectical relationship between theory and praxis in which testing theory in practice influenced the development of methodology.

The challenge faced by researchers developing sociocultural approaches to SLA research is similar to the one Vygotsky faced, since SLA research, in order to be accepted as a field, has also relied on methods developed by the natural sciences. In a special edition of the *Modern Language Journal*, Alan Firth and Johannes Wagner (2007) reflect back on their call ten years earlier for a reconceptualization of SLA, "for a theoretical, methodological, and epistemological broadening of SLA" to create "an SLA that was more interactionally sensitive, that also made room for an emic stance towards fundamental concepts, and that

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took seriously the theoretical and methodological consequences of a social view of learning and language" (2007, p. 804). They called for developing a perspective that includes language users in their social, cultural, and historical contexts.

In this retrospective, Firth and Wagner also reiterate their position that sociocultural approaches should be included in SLA, but distance themselves from the use of the term *sociocultural* to describe their own work, as the "sociocultural approach has already established itself within SLA and is associated with the work of Lantolf and others" (Firth & Wagner, 2007, p. 814). They describe the theoretical foundation that Lantolf developed as he and "several collaborators . . . engaged in SLA theory-building in the Vygotskyan tradition, producing what has become known as the sociocultural approach to SLA" (p. 805). The range of sociocultural SLA studies available today is a testament to James Lantolf's efforts in organizing and conducting research with students and colleagues and in developing collaborative efforts to disseminate, discuss, and analyze this important application of Vygotsky's work. These approaches seek to understand language acquisition in its manifold richness and draw on the experiences and introspections of second language learners, who learn language in very different contexts and situations of development.

The following overview does not attempt to give a comprehensive accounting of all of the work that has been done using Vygotsky's core concepts to investigate second language learning, teaching, and acquisition from a sociocultural perspective, but instead focuses on primary research that Lantolf and Beckett (2009) have highlighted and draws on the edited volumes of sociocultural research in SLA that Lantolf and his colleagues have compiled (Lantolf & Appel, 1994; Lantolf, 2000; Lantolf & Poehner, 2008), as well as books and articles that construct the theoretical framework that has guided sociocultural approaches to SLA (Lantolf & Thorne, 2006).

A challenge for sociocultural SLA research in constructing a methodological approach based on Vygotsky's theoretical framework is to recapture essential aspects of Vygotsky's overarching theory and methodological approach. A number of factors make this difficult. including: (a) Vygotsky's use of a dialectical approach based on the method of analysis developed by Marx and Engels; (b) the fact that his work was banned by the Soviet bureaucracy for twenty years, and that when it was "rehabilitated" interpretations of his work missed essential aspects; and (c) translation issues involving key concepts that are difficult to translate from Russian to English. Vygotsky examined the interconnectedness of all phenomena, "based on the concept that human activities take place in cultural contexts, are mediated by language and other symbol systems, and can be best understood when investigated in their historical development" (John-Steiner & Mahn, 1996, p. 191). The studies described below draw on these central concepts of Vygotsky's to guide research and to study second language learning through an examination of language use in different social and cultural contexts using a variety of quantitative and qualitative methods, including experimental, discourse analysis, self-report, text recall, case study, classroom based, longitudinal, historical/theoretical analysis, and others.

These methods reflect the wide array used in the broad range of studies investigating both L1 and L2 language acquisition. These methods are touched on in the descriptions of the sociocultural studies below. The focus, however, is on two aspects that make sociocultural approaches unique: first, the nature of the concepts being investigated, and second, the emphasis placed on the role of the context in which language learning is taking place. Lantolf (2000) has described how sociocultural approaches investigating SLA have focused on the main aspects/concepts of Vygotsky's work, including: mediation; inner speech, private speech, and internalization; the regulatory function of language; the zone of proximal development (ZPD) and scaffolding; testing, including dynamic assessment; and research methodology and theory. These concepts are used to organize an overview of sociocultural approaches to SLA research, starting with the concept of the ZPD.

Zone of Proximal Development

Vygotsky used this diagnostic principle to analyze the development of concept formation in children, often with an expert helping with the problem solving. He included peers as problem-solving collaborators in constructing meaning in the ZPD, but he did not investigate its relationship to adult learners. Vygotsky focused on analyzing the cultural development of children, looking particularly at the role that language played in the development of human consciousness. Therefore, his analysis did not go beyond the young adult. Sociocultural approaches to SLA research have expanded the application of this concept and shown its utility in analyzing the development of language learning and acquisition for adults.

For example, Aljaafreh and Lantolf (1994) conducted a longitudinal study with university students on feedback provided by an expert on learners' ZPDs and found that language development is a process that varies across learners, across proficiency levels, and across concepts or skills to be learned. Nassaji and Swain (2000) worked with two adults learning a second language and verified Aljaafreh and Lantolf's study, demonstrating that when L2 learners received relevant feedback within their ZPD, they were more likely to learn L2 article use. Also using the concept of ZPD to study adult L2 learning, Donato (Lantolf & Appel, 1994) examined peer dialogue and scaffolding within students' ZPDs as they collaborated to complete a difficult task. DiCamilla and Antón (1997) studied the role of repetition in collaborative writing sessions among adult L2 learners and found that repetition within their ZPDs helped scaffold the completion of their writing tasks. Using a microgenetic approach, de Guerrero and Villamil (2000) studied social interaction in peer revision during an L2 writing class with adults and found that the interaction helped to scaffold peer revision. "This study contributes to a greater understanding of the complex and intricate mechanisms that are at play during mediated interaction and highlights the behaviors that may facilitate or inhibit growth within the ZPD" (Lantolf & Beckett, 2009, p. 466). In three case studies of college-level L2 learners, Thorne (2003) documented the influence of the ZPD on students' Web-based dialogue and the use of different Web-based discussion formats that helped students succeed in communicating meaning for different purposes through different media.

Sociocultural researchers have also studied how an individual's self-reflection can create a ZPD for herself or himself. Verity (Lantolf, 2000) was able to use the concept of the ZPD to mediate the transition from being a successful teacher in the North American context to one in a Japanese context through writing in a diary. She described how conscious choices informed "her professional activity with the tenets of sociocultural theory, [and] awareness of the ZPD as a functional system motivated her to seek and create forms of self-mediation in a new and challenging environment" (p. 191). Kinginger (2002) conducted a historical review of the ZPD as it was interpreted in three different ways in its application to foreign language education in the United States. Kinginger's review was critical of some of the ways the ZPD had been appropriated into SLA research and in many ways reflected the critique of Dunn and Lantolf (1998) against those who wanted to equate the ZPD with Krashen's i + 1. As is reflected below, many sociocultural studies of SLA use the ZPD as they investigate other concepts of Vygotsky's.

Dynamic Assessment

An important consideration in using the concept of ZPD is the kind of assessment that can determine actual and potential levels of development. Lantolf (2008) describes how Luria developed psychological and educational measurements that avoided the pitfalls of

traditional approaches. "According to Luria, traditional assessments failed to differentiate between various groups of learners, offering only documentation of their poor performance. By co-constructing a ZPD with the learners, it was possible to uncover the source of their difficulties and to tailor an appropriate remediation program" (p. 16). A number of sociocultural researchers have applied dynamic assessment (DA) to SLA with a clear understanding of DA "as a development-oriented unification of assessment and teaching" (Lantolf, 2008, p. 17). A theoretical argument for the application of DA to SLA stresses that through such unification, educators are able to see that bringing a learner's "future into the picture requires mediation (i.e., instruction) that is sensitive to a learner's ZPD. Thus assessment without instruction overlooks the future, and instruction without assessment ignores the past, upon which the future is built" (Lantolf & Beckett, 2009, p. 470). Poehner (2008) gives an extensive overview of DA and reports on a number of studies, including, among others: (a) a longitudinal study using DA as a diagnostic tool to assess university L2 learners' abilities and achievements; (b) a study drawing on the work of Reuven Feuerstein, comparing DA to formative assessment, that concludes that formative assessment can be just as informative as summative assessment in determining learner development, if not more so; and (c) a study which looked at mediation and the ability to transfer what has been appropriated through mediation as two indicators of development and which found that DA was useful in assessing development in process.

Inner Speech

The concept of inner speech is an important component of Vygotsky's analysis of the unification of thinking and speaking processes resulting in verbal thinking. In differentiating his theory from the work of Piaget, who felt that egocentric speech in children disappeared, Vygotsky argued that instead of disappearing, egocentric speech is transformed into inner speech through internalization. Vygotsky studied inner speech in children as they developed their systems of meaning, but he did not study it in adults. Again, this is an area where sociocultural approaches to SLA research have taken a key concept and used it to understand second language learning and acquisition, especially with adult learners. Ushakova (Lantolf & Appel, 1994), using an "experimental-theoretical approach," examined the role of inner speech in SLA and concluded that because students relied only on L1 inner speech, L2 learners do not develop L2 inner speech. In spite of the controversial nature of this claim, Ushakova's study made a significant contribution to sociocultural approaches to L2 research with her assertion "that L2 learners rely on L1 meanings to organize the new language" (Lantolf & Thorne, 2006, p. 84.). Aneta Pavlenko's dissertation study looked at inner speech in immigrants and investigated its use in L2 acquisition by examining narrations by Russian and English L1 speakers about a three-minute film. She found that L2 learners used their new language to mediate their thinking. Pavlenko and Lantolf (Lantolf, 2000) later followed up on this study by conducting an analysis of documents in order to examine the experience of second language learners as they accommodated to the culture of the L2 and faced the loss of L1. In another dissertation study of second language learners, Holbrook Mahn (1997) used interviews, questionnaires, and written texts to examine students' attitudes toward the use of dialogue journals and the role of inner speech and verbal thinking as they made meaning through their writing. Antón and DiCamilla (1998) investigated the role of L1 in mediating thinking in L2 classrooms and the externalization of inner speech. A key function of inner speech is to help regulate thought and activity, a topic that is addressed after a description of another sort of regulatory speech: private speech.

Private Speech

This term applies to speech that is directed toward oneself but that, unlike inner speech, is articulated. While Vygotsky investigated egocentric speech, a type of private speech, most of the sociocultural studies on private speech have been conducted with adults. McCafferty (1994) examined self-regulatory private speech through a picture narration task and found that less proficient learners of L2 create more self-regulatory private speech than their more proficient peers. Swain, Lapkin, Knouzzi, Suzuki, and Brooks (2009), using quantitative and qualitative measurements, demonstrated through the use of pretests and posttests that private speech impacted the internalization and learning of concepts in L2. In a case study of private speech, Donato and McCormick (1994) demonstrated that language-learning strategies are learned as a result of socialization into a particular community of practice. Saville-Troike (1988) investigated ways in which children aged 3 to 8 years, who were native speakers of Chinese, Japanese, or Korean, used private speech to actively integrate their second language. She contrasted the use of the quantity and quality of the older children's use of private speech based on learning styles to that of younger children. Ohta (2001) conducted a case study of a university-level L2 classroom to describe how private speech supported the learning and internalization of the target language. She also described ways in which L2 learners were able to provide mediation within their peers' ZPDs. Centeno-Cortés and Jiménez-Jiménez (2004), in one of a small number of studies that have looked at the use of L2 to regulate thinking, gave complex cognitive tasks to participants in L2, showing that if students were able to use private speech in the L2, they were more successful on tasks than using L1 to complete the task. In a study of bilingual children, Smith (2007), through observations of interactive group activity and game playing, documented the private speech of ESL (English as a second language) children in bilingual contexts. The private speech produced by children was helpful in understanding what the children were learning and what their difficulties were.

The Regulatory Function of Speech

The way in which egocentric speech and inner speech are used to regulate thinking and activity was a central focus for Vygotsky, as it was for Frawley and Lantolf in their 1985 study—as noted above, generally considered to be the first application to SLA of a sociocultural approach based on the work of Vygotsky. Analyzing discourse generated by students providing oral narratives, Frawley and Lantolf showed how the linguistic features of oral narratives were demonstrative of the ability to regulate speech and thinking in L2 adults, as well as L1 children and adults, completing a difficult narrative task. A number of researchers following up on this study examined the language that was produced by L2 learners completing a task, both in the classroom and outside of it. Ahmed (Lantolf & Appel, 1994) used discourse analysis to examine cognitive regulation by focusing on tense marking in dialogue. Using two-way information gap tasks, Brooks and Donato (1994) analyzed the regulatory functions of speech between L1 and L2 speakers in collaborative tasks.

Gesture

Vygotsky maintained that an adult attributing communicative intent to an infant's grasping motion helped establish the social contact necessary for children to develop the pointing gesture as a symbol of their desires. The use of a symbol to communicate intention helped lay the foundation for the symbolic representation needed to communicate meaning through

language. Steve McCafferty (2002) was the first sociocultural researcher to look at the relationship between gesture and speech in L2 as well as at what gesture could reveal about internal speech and cognition. He examined the expression of motion events in L2 as a way to understand the relationship between speech and gesture, and focus on when expressions for motion vary from the L1 and L2. Jina Lee (2008) documented private speech and gesture in college-level ESL biology students and found that gestures accompanied by private speech helped students learn new scientific terms.

Social Situation of Development

As Firth and Wagner (2007) note, one of the major contributions that sociocultural approaches have brought to SLA research is the examination of the influence of context in studying SLA. Vygotsky insisted that all phenomena be understood as existing within social, cultural, natural, and historical contexts and developed the concept of *perezhivanie* (lived, emotional experience) to describe the relationship between an individual and the environment, broadly conceived to include social relationships. Key to his theory was the notion that the way in which individuals perceive, appropriate, understand, internalize, and emotionally respond to their experiences of interactions with their environment actually shapes the environment. Mahn and John-Steiner (2002) looked at the way that *perezhivanie* shaped L2 writers' ability to write in English.

Leo van Lier (2004), who has played a leading role in analyzing the centrality of context in language teaching, learning, and acquisition, has developed "an ecological perspective on language learning and teaching grounded in the principles of SCT and constructivist models of human activity . . . An ecological perspective compels us to reconceptualize learning as always and everywhere contextualized. Thus, not only do language and learning matter, but so do place, time, others, goals, and motives" (Lantolf, 2000, pp. 24–5). Negueruela's 2003 study marked the emergence of an orientation to SLA classroom-based research within a theory-as-educational-framework based on Vygotsky's conception of the dialectical unity between theory and praxis (reported in Lantolf & Beckett, 2009). Negueruela's research on his own L2 classroom utilized a sociocultural developmental model to support the learning, internalization, and subsequent communication of conceptual understanding as evidenced in three types of data: performance data, verbalization data, and data concerning explicit definitions of the linguistic features being analyzed. Negueruela found that meaning was more essential than linguistic factors.

Other sociocultural researchers have studied SLA in non-institutional educational settings. For example, Collignon (1994) studied Hmong individuals learning literacy through action research and described the need for a "culturally appropriate pedagogy" in which educators examine "the historical and social sources of learner's attitudes toward reading, writing, and thinking processes" (p. 331). She used a collaborative effort "with participants as informants rather than as subjects" and investigated literacy processes "in the fields, in homes and in classrooms where adults learn rather than in more traditional academic settings" (p. 331).

Historical/Theoretical

A key component of Vygotsky's approach to building a theory of psychological materialism was analyzing the prevailing theories about human consciousness for their strengths and shortcomings. The historical and theoretical work that has been central to sociocultural approaches to SLA research can contribute to this effort through a reconceptualization of Vygotsky's work. As noted throughout this entry, Lantolf's work has been instrumental

in establishing the theoretical framework for sociocultural approaches to SLA and for providing a historical perspective (Lantolf & Thorne, 2006). Other examples of historical/theoretical contributions include: Jane Zuengler and Elizabeth Miller on an overview of sociocultural and cognitivist approaches to SLA; Karen Johnson on sociocultural approaches to L2 teacher education; James Lantolf and Matthew Poehner on DA; Maria de Guerrero on a synthesis of research on the role of inner speech in second language learning and implications for teaching; Holbrook Mahn and Vera John-Steiner on Vygotsky's contribution to second language literacy acquisition, and Mahn on Vygotsky's system of meaning and L2 writers; the aforementioned work of Leo van Lier on an ecological perspective on L2 teaching; and William Dunn and James Lantolf on Krashen's i + 1 and Vygotsky's ZPD.

In summarizing their analysis of sociocultural approaches to SLA, Firth and Wagner conclude that

> Much SLA research that has been produced over the last decade bears witness to a marked increase in the number of sociocultural and contextual-interactional themes and concepts impacting upon SLA's research agenda, revealing an apparent growing awareness of the need to take seriously the requirement for a more balanced approach to SLA research. (2007, p. 803)

The significant contributions of sociocultural approaches to SLA research and the way these approaches have helped expand what constitutes SLA research are evident even from the present brief overview. An important contribution to be made in the future will be to reconnect with the ambitious research agenda on which Vygotsky was working at the time of his death. Important in this reconnection will be a reconceptualization of Vygotsky's work which focuses on its essential aspects—*znachenie* (meaning) *slova* (word, that is, language) as a unit of verbal thinking and the system of meaning—analyzed in depth in Vygotsky's *Thinking and Speech* (1987). Such a reconceptualization would also open up avenues for using a sociocultural approach to investigate SLA throughout the different stages of child development, including that of children who are raised bilingually.

SEE ALSO: Dynamic Assessment in Second Language Acquisition; Lantolf, James P.; Methodological Foundations of Sociocultural Theory; Ohta, Amy Snyder; Praxis and Second Language Acquisition; Second Language Acquisition and Gesture; Sociocultural Theory; Swain, Merrill; van Lier, Leo; Vygotsky and Second Language Acquisition

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Research Methods and World Englishes

MARGIE BERNS

World Englishes (WE) is a multidisciplinary field, and as such involves a wide variety of research traditions. The approaches to inquiry adopted and the methodologies and techniques selected for gathering, analyzing, and interpreting data and information are as varied as the disciplines within which studies on the Englishes of the world are conducted. For example, social science-based investigations usually adopt qualitative and quantitative methodologies. More language-based projects may draw on descriptive and historical methods of information-gathering and analysis while literary studies may choose from dominant critical theoretical frameworks. Thus, an attempt at cataloging the research methods associated with World Englishes is not a straightforward task.

In the scientific community at large a distinction is often drawn between "basic (pure) research" and "applied (practical) research." The former is generally associated with theoretical work that deals mainly with abstract constructs, while the latter is said to deal with concrete solutions to so-called "real world" problems. This characterization is, however, misleading because the boundaries between the two are not always clear, which militates against seeing the pair as an either/or proposition. A more accurate picture of the scope and nature of inquiry is rendered by regarding the two labels as opposite ends of a continuum (Perry, 2005). This view encompasses studies that are neither solely basic nor applied, but instead are more or less so and thus can be located at various points on the continuum between the two. This perspective also highlights the truth of the oft-cited maxim "there is nothing more practical than good theory," as the fundamental work done in WE over the past 50 years aptly illustrates.

A prime example of basic research ongoing since the 1960s is that associated with the pioneering work of Braj Kachru (1965). Sometimes labeled the Kachruvian paradigm (Kandiah, 1996), this work resulted in the formulation of a theoretical framework that has come to serve as the foundation not only for applied studies in WE, but also as a further basic study tool. Key components of the framework are several constructs which have been reconsidered in the light of the changing nature of English-language learning and use around the world. Notions that have been revisited by Kachru and others (see, e.g., Kachru, 1992; Thumboo, 2001; Kachru, Kachru, & Nelson 2006) include the familiar triad of English as a foreign language, English as a second language, and English as an international language; the concepts of native speaker and non-native speaker; questions of linguistic model, language standard, and norm; and conceptualizations of a society's norms of sociolinguistic appropriateness and a language user's communicative competence.

Model building is another type of basic research represented in WE studies. The Concentric Circle Model of World Englishes (Kachru, 1985) was designed to capture the spread and development of the world's Englishes from a geographical and historical perspective. It characterizes three main contexts of English learning and use, labels them as inner, outer, and expanding circles (nesting inside one another in this order), lists salient distinguishing features of each context, and identifies countries that share these features. With respect to its place on the basic-applied continuum, the circles model could be located closer to the middle point because it draws from and builds on the more abstract analysis of key concepts that preceded its design. Although the model is clearly practical for further

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foundational and applied study, it represents an intermediate stage toward more concrete application in such fields as education, policy-making, or creative writing.

A quintessential application of basic research in language studies is to the everyday concerns of language teaching (in fact, at one time "applied linguistics" meant application of linguistic insights exclusively to teaching of languages). World Englishes research on pedagogical issues includes investigations of language-teaching methodologies, the appropriateness and effectiveness of methods designed for inner circle contexts when applied in expanding circle contexts; instructional models of communicative competence to serve as the foundation of communicative approaches to language teaching; or choice of English variety for the classroom model that learners are to aspire to, that is, an inner, outer, or expanding circle model of English.

Language policy is another area of applied research informed by what has been labeled "Kachruvian studies" (Bolton, 2005, 2006). Investigations have examined the social and cultural effects and implications of government sanctions against the use of new varieties of English, as with Singapore's "good English" policy; the introduction of requirements for English instruction at the earliest stages of mandatory education, as carried out in China, Korea, and Taiwan, for example; or the linguistic and educational consequences of the No Child Left Behind Act on first-generation immigrant children in the USA.

The particular form that WE paradigm-based studies takes range from the exploratory to the empirical. Illustrations include empirical studies on the national uses of English; identification of main characteristics of English used for international communication at various linguistic levels; descriptions of registers in all types of media; development of extensive sociolinguistic profiles in various regions; comparison of contexts and methods of language teaching in diverse cultural and educational settings; study of local grammatical, linguistic, and literary traditions, and applications of the same to the analysis and description of World Englishes (Kachru, 1997).

In spite of the considerable influence of the Kachruvian paradigm and the extensive literature on multiple aspects of World Englishes done within its framework, it would be misleading to assume that everyone who engages in research on English bases their inquiries on its assumptions or shares its goals. English long has been explored, examined, and elaborated from a number of disciplinary orientations and with a variety of methodological strategies.

One means of understanding the complexity of the research territory WE covers and the array of perspectives on it is the classificatory scheme of approaches offered by Kingsley Bolton (2005, 2006). This classification systemizes disciplinary or subdisciplinary approaches taken by scholars and researchers, some of whom work within traditions from the late 19th century. It also includes the objectives and the exponents of each approach (see Table 1). As Table 1 shows, "Kachruvian studies" is but one of 11 extant areas in the field of language study that Bolton identifies as contributing to the expansion of knowledge about English and to the improvement of conditions related to its use and its learning.

The value of this scheme cannot be understated. It has significance for a general understanding of the research activities of those interested in the English language and also not only establishes World Englishes as a worldwide social, cultural, and linguistic phenomenon or as a paradigm associated with one school of thought, but also defines World Englishes as a broad field of inquiry that encompasses a range of traditions. Although Bolton sketches the objectives of inquiry within these traditions, his classification does not (nor was it meant to) describe how, for example, corpus linguists, lexicographers, or applied linguists interested in English in the global context go about gathering and analyzing information. In other words, what are their methods of inquiry? The following provides some examples.

The concern of English studies, as characterized by Bolton, is the specification of varieties of English from descriptive and historical perspectives. Concrete examples of how this is

Table 1 Approaches to World Englishes (from Bolton, 2005). Reproduced with permission of John Wiley and Sons

Approach	*Exponent(s)*	*Objective(s)*	*Timeline*
English studies	Quirk (1962, 1972, 1990), Burchfield (1985), Greenbaum (1985), Quirk & Widdowson (1985), McArthur (1992, 1998), Görlach (1995, 1998), Schneider (1997a, 1997b), and others.	To describe varieties of English from eclectic, descriptive, and historical perspectives. Situated against a tradition of English studies (Anglistik), dating from the late 19th century (e.g., the work of Otto Jespersen, Daniel Jones, and Henry Sweet).	1960s–present
English corpus linguistics	Greenbaum (1996), Nelson (1996), Meyer (2002), and others.	To provide accurate and detailed linguistic descriptions of World Englishes.	1990–present
Sociolinguistic approaches			
The sociology of language	Fishman (1972), Fishman, Cooper, & Conrad (1977), Fishman et al. (1996), and others.	To conduct research on English in relation to language maintenance or shift, ethnolinguistic identity, and so on.	1960s–present
A "features-based" approach	Trudgill & Hannah ([1982] 1994), Cheshire (1991), and others.	To describe varieties of English through dialectological and variationist methodologies. Situated against the long tradition of British and European dialectology.	1980s–present
Kachruvian studies	Kachru (1982, 1983, 1986a, etc.), Smith (1981, 1987), Lowenberg (1984), Gupta (1994), Pakir et al. (1994), Bautista (1997), Kirkpatrick (2002), Bolton (2003), Modiano (2003), and others.	To promote a pluricentric approach to World Englishes, highlighting both the "sociolinguistic realities" and "bilingual creativity" of Outer Circle (and Expanding Circle) societies.	1980s–present
Pidgin and creole studies	Reinecke (1937), Todd (1984), Mühlhäusler (1986), Romaine (1988), Holm (1988/1989), Sebba (1997), Mufwene (2001), and others.	To describe and analyze "mixed" languages and the dynamics of linguistic hybridization, beginning with the early work of Hugo Schuchardt (1842–1927).	1930s–present
Applied linguistics	Halliday, MacIntosh, & Strevens (1964), Strevens (1977, 1980), Brumfit (1982), Kachru (1982, 1986a, 1992a), and others.	To explore the implications of World Englishes for language learning and teaching.	1960s–present
Lexicography	Webster (1806, 1828) [USA], Yule & Burnell ([1886] 1969) [India], Butler (1981) [Australia], Orsman (1997) [New Zealand], Allsopp (1996) [Jamaica], and others.	To fulfill a range of objectives including the expression of a national linguistic identity (within the World Englishes context).	1980s–present
Popularizers	McCrum, Cran, & MacNeil (1986), Crystal (1995, 1997), and others.	To interest a mass reading public in issues related to World Englishes.	1980s–1990s
Critical linguistics	Phillipson (1992, 2000, 2003), Pennycook (1994, 1998), and others.	To express resistance to the linguistic imperialism and cultural hegemony of English. Derived from a Marxian political analysis or postcolonial theory.	1990s–present
Linguistic futurology	Graddol (1997) and others.	To predict future trends in the spread of English and English language teaching worldwide.	1997–present

done are the writing of grammars, comparing formal features of language varieties, recording the impact of contact between English and other languages, tracking linguistic changes over time, and investigating the notion of "good" and "bad" English. Although not included in Bolton's framework, literary analysis of texts written in the world's Englishes can be included under English studies. Analysis in contemporary studies may be guided by any one of a range of ideological perspectives, including the group of theories and perspectives that fall under postmodernism (Bertens, 2008), for example, postcolonial theory, critical theory, or feminist approaches. The methods of English corpus study research involve the collection of linguistic data, either written texts or transcriptions of recorded speech, and use of a variety of techniques, for example, computational, interactive, and manual, to code and analyze features. Lexicography, as the practice of dictionary making, involves compiling an inventory of words in a language and giving information on spelling, pronunciation, origins, definitions, history, and illustrations of use.

The sociology of language approach to WE employs case studies or questionnaire surveys, among other techniques common in the social sciences, as well as statistical analyses to research English in relation to such issues as the linguistic identity of social groups, social attitudes toward language, patterns and needs of national standard use, social varieties and levels of language, and the social basis of multilingualism. The features-based approach is another area of sociolinguistics that uses quantitative methods to find relationships. For example, using interviews, recordings, and observations, social class has been measured using any of a number (or combinations) of variables such as educational attainment, prestige, religion, gender, or power. Pidgin and creole studies may be theoretical or descriptive and use historical and sociolinguistic methods of analysis.

Bolton's formulation of the objective of Kachruvian studies as the promotion of a pluricentric and socially realistic approach to WE rightly suggests that the methods of inquiry within this approach are diverse. Firmly grounded in linguistics in general, one method involves analysis of linguistic characteristics using linguistic models and terminology in a range of texts and media. Another method associated with this approach is drawing a sociolinguistic profile of English in a particular country or region to describe the functions, status, and users of the language as well as its historical and attitudinal context. Insights and inquiries into new English literatures also fall within the framework of Kachruvian studies. Examples are investigations of literature in English that has traditionally been excluded from the canon because it was written by an author outside the inner circle. These studies look at how these non-native speaker writers use local varieties of English to convey culturally specific meanings, the stylistic choices they make in their fiction, poetry, and drama. Also represented by a variety of methods is applied linguistics, which draws on both the hermeneutic and empirical paradigms. Interpretive studies include stylistic analysis and close readings of texts and documents. Quantitative studies may be experimental or non-experimental and qualitative inquiry may be represented by grounded theory, narrative, ethnography, phenomenology, or case study.

Critical linguistics adopts the hermeneutic paradigm and is represented by studies in linguistic imperialism, which focus on why and how a language becomes dominant, and in critical applied linguistics, which concerns the field of applied linguistics more generally. Central to this approach is taking a perspective that is always cognizant of the interrelated notions of power, inequity, and the connection between an individual's identity and the capacity to make choices. Linguistic futurology uses sociolinguistic principles of the nature of language change and the techniques of scenario building commonly used by the military and by corporations to design plans for the future with respect to English. Popularizers use interviews, case studies, and other methods familiar to documentarians and journalists. Distinguishing this approach from the others is its use of language that is designed to be accessible to a non-specialist audience.

Given the number and variety of unanswered questions and unexamined issues that remain open with respect to English in the global context, there is plenty of room for all forms of research. As this overview of approaches taken to the study of World Englishes indicates, an array of viable paradigms, traditions, methods, and techniques are available in the quest to find answers and close gaps.

SEE ALSO: Phenomenology and Hermeneutics; Qualitative Sociolinguistics Research; Sociolinguistics: Quantitative Methods; Surveys; Traditional Approaches to Monolingual Lexicography

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Research on Signed Language Interpreting

JEMINA NAPIER

As with interpreting research more generally, signed language interpreting (SLI) research is an emerging subdiscipline of translation studies. Earlier publications on SLI mirrored those on spoken language interpreting in being based on personal observations and experiential accounts. However, more recently we have witnessed a "mini-explosion" of SLI research that is both quantitative and qualitative in nature, and across various domains of interpreting. The research is predominantly conducted in the USA, UK, and Australia, although examples can also be found from Canada, Italy, France, Austria, Ireland, Brazil, Sweden, and more recently China. There is also more evidence of international collaboration among signed and spoken language interpreter researchers.

SLI research is now widely accepted as informing our understanding of interpreter-mediated communication in all languages, not just those using a signed language. It should be noted, however, that the majority of SLI research reflects the settings in which SLI mostly occurs – in the community. Very little research has been conducted on signed language conference interpreting, as this domain forms a very small proportion of the work of signed language interpreters. This situation is changing as more deaf people obtain university qualifications and employment in professional roles that necessitate their attendance at conferences. With the growth of conference SLI provision, we may see more interest in conference SLI research.

Grbic's (2007) bibliometric analysis of SLI research provides an interesting picture of the research that has been conducted over the years. In developing a database of SLI literature, Grbic analyzed 908 research texts produced from 1970 to 2005. She found that there has been a significant increase in production over that time, with an acceleration in the mid- to late 1990s. The majority of texts were published as journal articles or collective volumes, and were distributed over various key themes. The themes include discussions of settings and modes, professional issues, quality issues, ethics, role and sociocultural issues, linguistic issues, cognitive issues, and research issues. In her conclusion Grbic states that "The data revealed that research into SL interpreting can contribute to the enhancement of knowledge, and to the general understanding of interpreting as a topic of scientific research" (p. 45).

Metzger (2006) and Napier (2011) have both presented overviews of SLI research publications and theses in their general discussions of SLI. Gallaudet University Press has introduced a *Studies in Interpretation Series* with volumes featuring quantitative and qualitative SLI research and several other volumes have been published which collate discussions of SLI research (see Suggested Readings). Furthermore, the *Sign Language Translator and Interpreter*—a research-focused journal published by St. Jerome—has now been converted into a book series.

SLI research has adopted four main approaches to the majority of research studies: (a) a discourse analytic approach (transcriptions of naturally occurring data); (b) an ethnographic approach (focus groups, interviews, field observations); (c) survey research (questionnaires); and (d) an experimental approach. More SLI practitioners are becoming involved in conducting action research engaging in reflective practice, which has been

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referred to as "interpreter fieldwork research" (Napier, 2011). Due to the relationship between interpreters and the deaf community and to language–culture dynamics between a majority language and a minority culture, a lot of emphasis is placed on ensuring that deaf consumers are satisfied with SLI provision. This has influenced a stream of SLI research that explores deaf consumer perceptions of SLI. Although SLI research covers a range of domains, it is not possible within the scope of this entry to cover them all. So here a snapshot will be presented of the key areas of the most prolific research domains. Readers can access more detail on the range of research by consulting the suggested readings.

Research Domains

Role and Ethics

Some SLI research concerns discussions of the role of the interpreter and ethical decision making. The work of Melanie Metzger (1999) has been particularly groundbreaking in analyzing the role of the signed language interpreter, and also of community interpreters more generally. She conducted a sociolinguistic analysis of two American Sign Language (ASL) interpreter-mediated interactions and "deconstructed the myth" that interpreters retain a neutral stance. Other authors have questioned the nature of codes of ethics, and the application of codes to professional practice and the impact on perceptions of the role of the interpreter. For example, in a survey of British Sign Language (BSL) interpreters, Tate and Turner (1997) presented a series of ethical dilemmas and analyzed interpreter responses to those dilemmas. They found the (then) British SLI code of ethics seemed to disable interpreters by encouraging them to respond in certain ways, when in fact they knew an alternative approach would be more effective even if it seemed to contravene the code. As a consequence, they suggested that the code should be revised to reflect current demands placed on interpreters. A more recent research-based approach to ethical and professional decision making in SLI has been put forward by Dean and Pollard (2001), who propose a *demand-control schema* (DC-S) to examine the complex occupation of SLI. Demand-control theory is a job-analysis method useful in studies of occupational stress and reduction of stress-related illness, injury, and burnout. Dean and Pollard have adapted the theory to apply to SLI, and describe sources of demand in the interpreting profession, including paralinguistic, environmental, interpersonal, and intrapersonal demands. They suggest that interpreters can use *decision latitude* and implement various controls to deal with the demands placed upon them. Dean and Pollard have carried out various pieces of research with interpreter educators and consumers to inform the development of the DC-S and establish how it can be applied in SLI education.

Profile

A range of demographic surveys have been conducted in order to develop a profile of the SLI profession worldwide. One of the first surveys was administered in the USA (Cokely, 1981) and presented a picture of signed language interpreters as typically females who work part time. This finding has been confirmed time and again in various other surveys in Canada, the UK, Australia, and Austria, to name but a few. A more recent survey in China has shown that SLI is still very much an emerging profession.

Interpreting Process and Product

Various research studies have been conducted that focus on the SLI process, and typically draw on psycholinguistic or sociolinguistic frameworks. For example, early psycholinguistic research looked at working memory in ASL interpreters (Isham & Lane, 1993), but this

has never been explored further. Dennis Cokely (1992) presented a sociolinguistic model for SLI based on his research of interpreters' time lag. Cynthia Roy (1989) broke new ground with her sociolinguistic analysis of SLI as a discourse process, and her work has led the way for other research on interpreter-mediated interaction. In the last decade or so sociolinguistic analyses have become more popular. There is therefore a great need for more psycholinguistic research to enhance our understanding of the SLI process on both a cognitive and a communicative level.

The interpreting process has also been innovatively explored in relation to the process of cooperation that occurs between two interpreters working together, or the cooperation and co-construction of meaning between interpreters, deaf and hearing interlocutors in monologic and dialogic settings (e.g., Cokely & Hawkins, 2003).

Alternatively, in evaluating the SLI product, comparative text analyses have been carried out on monologic interpretations into a signed language from a spoken language (e.g., Winston & Monikowski, 2003). These studies typically focus on accuracy, omissions, additions, or use of discourse markers, and several have discussed evidence of language contact between spoken and signed languages in interpretation.

Educational Interpreting

By far the largest domain of SLI research is on educational interpreting. Several survey-based research studies have shown that a large proportion of SLI work is in education, and discuss perceptions of role conflict for educational interpreters, rather than the analysis of accuracy or effectiveness of educational interpreting (e.g., Fleetwood, 2000).

More recently, SLI scholars have begun to question the effectiveness of interpreting for children's education, demanding more research and discussion. Aside from the development of, and research into the outcomes of, an educational interpreter performance assessment in the USA (Schick & Williams, 2004), there is very little empirical evidence regarding how well deaf students actually understand interpreters or experience their education through interpreter mediation.

One of the very few authentic qualitative classroom-based case studies of educational interpreting was conducted by La Bue (1998), who analyzed and compared teachers' and interpreters' utterances in a ninth-grade English class, and analyzed discourse markers, their functions, and the way they were interpreted, as well as equivalence of vocabulary and meaning. The interpreters in the study did not convey the footing shifts of the teacher, and therefore the deaf child did not receive the "invitation" to participate in discussion.

Aside from the issues in working with children in educational settings, signed language interpreters also now face the challenge of mediating tertiary education for deaf adults at all levels. Several ethnographic, linguistic, and experimental studies have investigated elements of university SLI, including strategies used by lecturers, deaf students, hearing students, and interpreters to fulfill their roles in the learning process (Harrington, 2005), and comprehension of interpreted lectures (Marschark, Sapere, Convertino, Seewagen, & Maltzen, 2004).

Legal Interpreting

Another central research domain sees a plethora of papers on legal SLI, with analyses of the interpreter role or SLI-mediated discourse in the courtroom, discussions of potential linguistic barriers that deaf people face in the legal system, and exploration of whether deaf people can serve as jurors. Here an overview is given of two major studies to date on SLI in court.

Brennan and Brown (1997) conducted a multimethod study of deaf people's access to justice in the UK through the observation of BSL interpreters working in court, a survey

of legal interpreters, and interviews with deaf people and interpreters about their legal interpreting experiences in police, court, and other legal settings. They highlight the fact that signed language interpreters experience conflict in terms of perceptions of their role; but the most interesting aspect of their study is their discussion of linguistic issues. In addition to the linguistic and discourse challenges faced by interpreters of all languages, SLI occurs bimodally, that is, between two languages that are expressed in different modalities. They found that the level of visual encoding required in BSL provided a challenge for BSL interpreters in relation to the use of superordinate terms which often come up in court, such as "murder," which do not have one established sign in BSL.

In her study of ASL interpreters in Canada, Russell (2002) conducted four mock trials with real judges and lawyers, some with experience of working with spoken and signed language interpreters, and interpreters worked in either the consecutive or the simultaneous mode. Three different discourse events were analyzed: (a) entering of direct evidence, (b) cross-examination, and (c) expert witness testimony. Russell found a statistically significant difference in terms of accuracy, with simultaneous interpretations 87% accurate, as compared with consecutive interpretations, which were 95% accurate.

Posttrial interviews with participants revealed that the lawyers and judges seemed to prefer experiencing interpretation in the simultaneous mode, especially during the cross-examination (for the lawyers). They stressed the importance of preparation with interpreters, and that interpreters should request permission from the judge to clarify information, or consult with one another. Deaf witnesses said that interpreters should be confident and well prepared, whereas the expert witness felt that it was important to prepare with interpreters, and commented that they did not seem comfortable using the consecutive approach or note taking. The interpreters also stressed the importance of preparation, and recognized that the quality of their interpreting was better when they used the consecutive mode.

Medical and Mental Health Interpreting

An emerging body of work in SLI research concentrates on the medical and mental health domains, although it is still relatively small. The findings overlap heavily with results from spoken language research on interpreter-mediated communication in medical or mental health contexts, in terms of the interpreter not being "invisible." Primarily, discussion has been based on personal reflections of practitioners, and to date Metzger's study is the only published discourse analytic case study of medical SLI based on authentic data. Several papers have documented health-care professionals' or interpreters' views on interpreting in health care, with data primarily gathered through surveys, interviews, focus groups, or desk research of databases (e.g., Smeijers & Pfau, 2009). Discussions of mental health SLI are also dominated by personal observations of interpreters and therapists, as opposed to research; however, some interesting research projects have emerged that document the process of, and issues in relation to, translation of psychological or psychiatric standardized assessment instruments into signed languages (Montoya et al., 2004). As detailed in the following section, signed language translation (SLT) is an emerging complementary area of research in the SLI field.

Signed Language Translation (SLT)

Until very recently, no one had given consideration to the fact that, although signed languages do not have a written form, it is possible to translate between a written language and a signed language. Since that time, several papers have been published concerning discussions of SLT of a range of texts from a written language into a signed language; for example, psychological test instruments (as mentioned above), educational assessment tools, children's books, or academic texts. Others have discussed the translation of signed

texts into written documents, such as the dictation of letters, narratives, or community information.

Although more research is needed, Leneham (2007) has argued for a different approach to the typological descriptions of translation and interpreting, and that we should move away from the focus on the language mode (i.e., written, spoken, signed) and focus instead on the process. Leneham argues that the key is in the preparability and potential for correction, and whether the target text is captured for posterity, and documents six SLT processes that can be considered as separate from SLI. This area of research is breaking new ground in the SLI field.

This entry has provided an overview of some of the key research domains in SLI research. Readers will notice that many of the references date from 1990 or later. This is a telling aspect of SLI research in that, although publications discussing SLI commenced much earlier than the 1990s, very little data-driven research was available until much more recently. Much more research is needed to understand the processes and products of SLI in more detail, and the similarities and differences between spoken language and signed language community interpreting, conference interpreting, and translation.

SEE ALSO: Community Interpreting; Health-Care, Medical, and Mental Health Interpreting; Liaison Interpreting; Second Language Acquisition of Sign Language; Signed Language Interpreting Profession; Signed Language Interpreting: Types, Settings, and Modes; Theory of Interpreting

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Research Techniques and the Bilingual Brain

BARBARA T. CONBOY

Introduction

Bilingualism—broadly defined as the regular use of two or more spoken or signed languages in a person's daily life—is frequent throughout the world, yet many models of how language is acquired and processed by the brain have been based on studies of monolingual children and adults. Practical need for normative data, and theoretical interest in the uniqueness of bilingual language processing, have increased the demand for research on the bilingual brain. At the same time, techniques for investigating the neural bases of language across age groups continue to develop, making the neural basis of bilingualism a promising area for future research.

Traditionally, basic research on the bilingual brain has addressed three main themes: (a) the functional organization of the neural systems involved in perceiving, storing in memory, comprehending, and producing each language of bilinguals; (b) structural or functional differences, or both, between monolingual and bilingual brains; and (c) the relative roles of maturational constraints on language acquisition (i.e., "critical periods") and proficiency levels in differences in brain organization within or across individuals. Recent advances in methodology have allowed researchers to address these issues in new ways—for example, studying the spatiotemporal dynamics of processing each language—and to extend their studies to very young children and infants.

This entry provides an overview of research techniques used to study how two languages are acquired and processed by individuals who learn a second language (L2) early in childhood, at roughly the same time as their first language (L1) ("simultaneous" or "early" bilinguals) and those who learn the L2 after the L1 has been mostly acquired ("sequential" or "late" bilinguals). These include clinical studies of individuals with brain pathologies, behavioral methods used to study the cerebral lateralization and organization of language functions, and current brain imaging techniques developed within the growing field of cognitive neuroscience. Key findings from studies of bilingual adults and children, and infants raised with dual language exposure, are provided. For a deeper understanding of each technique and specific examples of the research findings each has yielded, the reader is referred to available review papers and books on these topics.

Studies of Clinical Populations

The question of whether two languages are represented, processed, or both in distinct neuroanatomical systems was initially addressed through case studies of bilingual adults with neuropathology. Although findings from clinical populations cannot be generalized to normally functioning populations, they have provided information about the areas of the brain essential for language functioning, and have helped develop hypotheses subsequently tested using experimental methods with healthy individuals.

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Bilingual Aphasia

The term "aphasia" is used to describe any disorder that primarily affects specific language functions and is acquired through some form of brain injury, usually a focal brain injury. Prior to the availability of neural imaging techniques, aphasiology research relied on the correspondence between patients' behaviors and post-mortem analyses of brain anatomy in order to infer functional specializations for language. Such initial studies indicated that left perisylvian areas of the cerebral cortex (the inferior frontal and posterior temporal lobes) are essential for normal language functioning in all but a small percentage of individuals who have right hemisphere dominance for language. These findings have been replicated using modern imaging methods, though subcortical and right hemisphere areas are now acknowledged to also play important roles in normal language processing (see Fabbro, 2001; Paradis, 2004; Hull & Vaid, 2006).

Reports of bilingual and polyglot patients who showed differential impairment and recovery in each of their languages after brain injury began to appear in the scientific literature as early as the late 19th century. These observations led to the following major proposals regarding the functional organization of the bilingual brain: greater right-hemisphere involvement for both languages than in monolinguals; greater right-hemisphere involvement for L2 than for L1 processing; and involvement of separate as well as overlapping areas of the left hemisphere for both the L1 and L2. Subsequent research on aphasic patients and normally functioning bilinguals has indicated that the age of L2 acquisition, relative proficiency of the L1 and L2 (or the dominant and nondominant languages), and the frequency of use of each language affect cerebral specialization for language functions (e.g., Hull & Vaid, 2006). One current explanation for different patterns of impairment/recovery across languages is that L2 grammatical knowledge is often acquired through formal instruction rather than through the naturalistic, informal learning typical of L1 acquisition, is not incorporated into an individual's implicit linguistic competence, and does not become available for automatic use. Thus, depending on the site of a patient's lesion, and the extent to which L2 functions have become automatic through frequent use, functioning may be more severely affected in the L1 than in the L2, or vice versa. Cases of paradoxical recovery, in which a less dominant L2 is relatively spared after injury, may be explained by greater reliance of the L2 on explicit (declarative) memory processes, and lesser reliance on areas involving implicit (procedural) learning and automaticity (see Fabbro, 2001; Paradis, 2004).

Studies of aphasia have also led to proposals regarding control over the use of two languages in bilinguals. It has been proposed that disruption to an executive control mechanism located in frontal and prefrontal areas can lead to imbalances in the amounts of inhibition and activation of each language, leading to fluctuating performance across languages. Much recent work on the neural bases of normal as well as disordered language in bilingual individuals has focused on control over language switching and translation, or on levels of activation of each language (see Fabbro, 2001; Rodríguez-Fornells, Balaguer, & Münte, 2006; Abutalebi & Green, 2008).

Clinical Intra-Operative Studies

Case studies of patients undergoing brain surgery to remove tumors or areas affected by seizures have also provided insights into the organization of the bilingual brain. A pre-surgical clinical tool known as the "Wada test," in which a barbiturate (sodium amobarbital) is injected into the right or left carotid artery to temporarily disrupt function in the ipsilateral cerebral hemisphere, has been used to determine patients' cerebral dominance for cognitive functions. This test, and several other techniques (described below), are forms of a "virtual lesion" approach in which the effects of a lesion are simulated so that areas

essential for cognitive functions may be identified. In one early study, Rapport, Tan, and Whitaker (1983) reported on four polyglot patients for whom naming in both languages was significantly disrupted during temporary inhibition of the left hemisphere, but remained highly accurate during inhibition of the right hemisphere.

By the latter half of the 20th century, improvements in surgical procedures made it possible to perform a more precise "virtual lesion" test than the Wada test via direct electrical stimulation of discrete areas of the cortical surface or subcortical areas while an awake patient was engaged in a task. Direct electrical stimulation of neural tissue temporarily disrupts that area's function, simulating the effect of a focal lesion and allowing a high-resolution localization of the areas essential to that function. Intra-operative studies using direct stimulation have shown that bilingual individuals' two languages are represented in overlapping areas within the general language regions, and that the organization of two different languages within the brain may be affected by relative proficiency and use of each language, above and beyond the age of L2 acquisition. For example, stimulation of many regions in left frontal and temporal areas disrupts object naming in both languages of patients; however, there are also regions where stimulation affects only one language (for review, see Rodríguez-Fornells et al., 2006). Disruptions of language behaviors over less diffuse areas of cortex for the stronger than for the weaker language, regardless of age of L2 acquisition or whether the stronger language was the L1 or L2, led to the proposal that as an individual develops competence in a language, smaller cortical areas are needed for processing that language. Both the Wada test and cortical stimulation of left hemisphere areas have also been shown to induce disruptions in language control, in the form of involuntary switching from one language to the other (Kho et al., 2007).

Studies of Normally Functioning Populations: Behavioral Methods

Given the invasiveness of methods used intra-operatively, and problems with generalizing findings from clinical populations to normal populations, non-invasive methods have been devised for studying the organization of the brain for language processing in individuals with intact brain function. These methods can be broadly divided into behavioral and neural imaging techniques. In the following sections, several widely used behavioral techniques are briefly described.

Behavioral Techniques That Measure the Lateralization of Language Functions

Visual half-field, dichotic listening, and manual interference paradigms have been used to determine whether bilingual individuals show the same amounts of left-hemisphere dominance for L1 processing as monolingual individuals, and whether laterality patterns are similar for the L1 and L2 within individuals. Prior to the availability of modern functional neural imaging techniques, researchers devised experiments to determine laterality patterns by capitalizing on the nature of ipsi- and contra-lateral connections between higher-level processing mechanisms in cortical areas and peripheral sensory and motor mechanisms. For example, information presented to either visual field or ear is processed in the contra-lateral cerebral hemisphere before it is transferred to the ipsi-lateral hemisphere. In visual half-field experiments, an instrument called the "tachistoscope" limits the viewing of printed language or other visual stimuli to the left or right visual field, to isolate whether linguistic information is processed first in the right or left hemisphere. Similarly, in dichotic listening tasks, stimuli are presented concurrently to the left or right ear, and subjects repeat or write what they remember. In individuals with left-hemisphere dominance for

language, faster or more accurate processing occurs when language stimuli are presented to the right versus the left visual field or ear. In manual interference paradigms, a subject taps with the right or left hand while performing a verbal task, and the tapping rates for each hand are compared to baseline rates (tapping without doing a verbal task) for the same hand. Interference, in the form of a slowing of tapping rate, occurs for the hand contra-lateral to the language-dominant hemisphere.

Several studies using these paradigms have shown differences in bilingual and monolingual individuals and between languages within bilingual individuals. However, a meta-analysis showed that the results across studies support similar left-hemisphere dominance for language in late bilinguals as in monolinguals, except when L2 proficiency is low, and greater bilateral involvement for both languages in early bilinguals (Hull & Vaid, 2006).

Behavioral Techniques That Measure the Speed and Accuracy of Processing

Reaction time and eye-tracking procedures have been used to study whether the speed and accuracy of processing language stimuli differs for bilingual and monolingual individuals, for each language within bilingual individuals, and when phonological or semantic primes are available within and across languages. Such methods have been used to test models of the functional organization of language and the role of cognitive control processes in bilingual processing (for reviews, see Marian, Spivey, & Hirsch, 2003; French & Jacquet, 2004).

Reaction times, measured using button presses or eye movements, can be used to determine how quickly subjects access various types of linguistic information, such as verifying whether or not a word and picture presented simultaneously match, choosing which of two pictures matches a spoken or written word, deciding whether a string of spoken speech sounds or written letters is a word, and detecting semantic or syntactic violations in sentences. Voice activation can be used to measure the speed with which subjects name pictures depicting objects or actions, switch between languages, or translate words from one language to another. Priming experiments, in which the speed of producing or recognizing a word preceded by a related word (prime) in the same or other language is studied, and translation paradigms, in which speeds of translation from the L1 to the L2 and vice versa are compared, have shed light on the organization of the bilingual lexicon. Speeds of L1 and L2 processing, in mixed and single language conditions, have also been used to study language organization and control mechanisms. Eye-tracking paradigms have recently begun to be used with young bilingual children (Marchman, Fernald, & Hurtado, 2010).

Studies of Normally Functioning Populations: Neural Imaging Methods

Recent advances in cognitive neuroscience have allowed researchers to non-invasively study the spatiotemporal dynamics of language in groups of healthy individuals as well as those with neural pathologies using measures of ongoing brain activity and brain structure. Neural imaging techniques go beyond behavioral methods for studying the functional organization of the bilingual brain as well as differences in function and structure between bilingual and monolingual brains. Electrophysiological methods allow more precise recordings of the temporal aspects of real-time language processing than do behavioral techniques. Methods that involve imaging metabolic changes in brain tissue active during language tasks allow for a precise localization of language functions not possible with behavioral methods. Neural imaging can also complement behavioral methods for studying the mechanisms underlying bilingual individuals' control over their two languages.

While the neural imaging literature has grown tremendously over the past two decades, developmental neural imaging studies remain comparatively sparse due to limitations in the methodologies that can be used with infants and young children. For young children, electrophysiological studies remain the most popular method for studying language processing, although such studies also present methodological challenges and are relatively rare. Other promising techniques currently being applied to infants and young children are various forms of optical imaging. Neural imaging studies with infants and children being raised with two languages are extremely rare. In the following sections, several current functional neural imaging research techniques are reviewed, and examples of results are summarized. Excellent recent reviews of studies conducted with adults are available elsewhere (e.g., Paradis, 2004; Indefrey, 2006; Chee, 2009; see also Suggested Readings).

Transcranial Magnetic Stimulation (TMS)

TMS is a "virtual lesion" approach that is less invasive than direct cortical stimulation, and thus has allowed researchers to determine the areas essential for language functioning in groups of healthy individuals. In TMS, rapid changes in a magnetic field (pulses) next to the scalp induce a weak electrical current that activates neurons on the surface of the cortex just under the skull at the site of stimulation and can temporarily interrupt normal brain activity in that region. Although this stimulation is not spatially precise, the induced currents can be related to sites of activation within a few millimeters. When a TMS pulse is applied to an area while a subject performs a task, and performance on the task is momentarily disrupted, this is evidence that the area is essential for performing the task. TMS can also induce particular behaviors. For example, application of TMS to the dorsolateral prefrontal cortex in bilingual individuals undergoing treatment for depression unexpectedly induced an involuntary switch to the other language (Holtzheimer, Fawaz, Wilson, & Avery, 2005).

Positron Emission Tomography (PET)

PET was one of the first functional neural imaging techniques applied to the study of language and bilingualism. In PET, a radioactive substance injected into the bloodstream moments before a subject completes a task is imaged in the areas of the brain that are most active during the task, because of regional cerebral blood flow (rCBF) to those areas. For example, in one of the earliest functional neural imaging studies of bilingual adults, Klein and colleagues reported that PET showed the same activation in left inferior frontal areas for the L2 as for the L1 across several production tasks (Klein, Milner, Zatorre, Meyer, & Evans, 1995). However, greater activation (rCBF) was seen for the L2 in the left putamen, a subcortical structure involved in the phonological and articulatory aspects of speech, even though subjects were highly proficient in the L2.

Functional Magnetic Resonance Imaging (fMRI)

Because of its less invasive nature, fMRI is now more commonly used than PET for language studies of healthy individuals. In fMRI, hemodynamic (blood flow) responses in brain regions that occur several seconds after the firing of neurons indirectly measure brain activity. Because of this lapse, fMRI (like PET) does not measure brain activity with precise temporal accuracy, but is remarkably good at localizing primary regions of activation. Over the past two decades, numerous studies of bilingual adults and L2 learners have been conducted using fMRI, and these have indicated functional separation as well as overlap between languages, depending on the task and language histories of participants.

The fMRI technique has also been used to study the locus of control over language switching and translation in bilingual adults, and functional differences between bilinguals and monolinguals on nonlinguistic tasks. Given that fMRI requires subjects to remain nearly motionless, it is difficult to conduct such studies with young children. To date, there are no published fMRI studies of bilingual infants or very young children as they process language, and only a few studies with older bilingual children (e.g., Mondt et al., 2009).

Event-Related Potentials (ERPs)

ERPs are averaged epochs of brain electrical activity that are time-locked to the onset of a stimulus and thus ideally suited for studying the time course of the neural activity linked to language processing on a millisecond-by-millisecond basis. Due to the spreading of electrical potentials through the skull before they are recorded at the scalp, ERPs do not offer the precise information about where processing occurs that is possible with fMRI or PET, but they offer better temporal resolution and are more direct measures of brain activity. ERPs to language stimuli are typically characterized by a series of positive and negative waveforms peaking within the first few hundred milliseconds after stimulus onset, each of which reflects different sensory, perceptual, and cognitive processes during various stages of processing. The distribution of these components across the scalp, and the synchronization of particular frequency ranges of brain activity across different areas, may also be used to study functional specializations for aspects of processing. ERPs have been used to address questions about the relative speed of processing of each language, the functional specializations for different language processes (phonology, semantics, syntax, etc.) that vary with age of L2 acquisition and proficiency, and the cognitive-linguistic processes involved in translation and language switching (for reviews, see Moreno, Rodríguez-Fornells, & Laine, 2008; Kotz, 2009).

In addition to their temporal sensitivity, a strength of ERPs is that well-established components indexing language processing can be studied across different ages, including very young infants. For example, speech discrimination studies of children using variations on the same basic ERP paradigm that has been used with adults have revealed how age and experience with language affects the development of a mismatch response to phonemic contrasts in infants acquiring two languages simultaneously (García-Sierra et al., in press), infants with short-term L2 exposure (Conboy & Kuhl, 2010), and children in L2 educational settings (e.g., Rinker, Alku, Brosch, & Kiefer, 2010). ERPs have also revealed differences between bilingual and monolingual word processing in infants and children, and shown how word processing varies across and within children as a function of language experience, the phonological characteristics of each language, and the cognitive demands of processing language switches (Conboy & Mills, 2006; Vihman, Thierry, Lum, Keren-Portnoy, & Martin, 2007; Kuipers & Thierry, 2011).

Magnetoencephalography (MEG)

MEG, in which magnetic fields created by neural activity are measured at the scalp, is ideally suited for studying the neural bases of language processing because it has the same high temporal sensitivity as ERP but better spatial sensitivity given that magnetic fields are not distorted before they reach the scalp. Due to high operating costs, MEG is not as widely used in language research as ERP. One recent study of bilingual adults used a combined MEG and structural imaging approach to localize stages of written word processing in each language (Leonard et al., 2010). In other research, MEG used with adults during a nonverbal conflict task revealed different loci of control in bilinguals and monolinguals (Bialystok et al., 2005). To date, no MEG studies of bilingual infants or children have been published.

Near Infrared Spectroscopy (NIRS)

NIRS is a non-invasive optical imaging technique that indirectly measures neural activity by detecting changes in deoxygenated and oxygenated hemoglobin concentrations in the blood flow to activated areas from the absorption of infrared light measured at different wavelengths. Although NIRS is not as widely used as fMRI, it holds more promise for use with infants and young children because it is less sensitive to movement artifact. Research using NIRS has yielded both similarities and differences in the regions involved in language processing in bilingual adults, and work is currently being done with infants exposed to two languages (see Petitto, 2009).

Structural Imaging Techniques

The use of structural magnetic resonance imaging has allowed researchers to examine the long-term impact of speaking two languages on brain structure. Although a few structural imaging studies of bilingual children with neural pathologies are available (e.g., Mariën, Abutalebi, Engelborghs, & De Deyn, 2005), published structural studies of neurologically normal bilingual individuals are currently limited to adults.

A technique known as "voxel-based morphometry" (VBM) assesses differences in the composition of brain tissue after eliminating macroscopic differences in the shape of the brain, and can distinguish between gray matter (nerve cell bodies and unmyelinated axons and dendrites) and white matter (myelinated axons that connect neurons) (Green, Crinion, & Price, 2007). Studies using VBM have suggested that changes in the density of gray matter are linked to proficiency in an L2 and the age at which the L2 was acquired (e.g., Mechelli et al., 2004; Green et al., 2007). Experience-dependent changes in the structure of the corpus callosum in bilingual adults have also been reported (Coggins, Kennedy, & Armstrong, 2004).

Summary

A main finding of many of the studies reviewed above is that both the age of acquisition of a language and experience with that language affect the functional organization of the brain for language processing, and can also affect brain structure. A limited number of studies with infants and children being raised bilingually have also shown that, even when two languages are acquired early, the brain systems involved in processing each language vary according to relative language proficiency. Structural and functional differences between bilingual and monolingual individuals are strong evidence of the experience-dependent nature of brain development in humans, and suggest that readers must exercise caution when interpreting data from functional neural imaging studies in which predetermined regions of interest are compared across individuals. Moreover, information about the areas essential for normal functioning in all of an individual's languages is crucial for clinical decision making.

Prospective studies of the development of brain structure and function in children as they acquire two languages are needed. The study of bilingual children can inform how experiential factors influence the organization of two different languages within the same brains over time. Neural imaging methods also facilitate study of the cognitive mechanisms employed for those aspects of language processing that are unique to bilingualism or multilingualism (language control, switching, and translation). Another promising approach is to investigate how the amounts, timing, or locus of brain activity change over time by using similar paradigms in cross-sectional studies (across various ages), and in longitudinal studies (at various stages of L2 acquisition). Such research is expected to increase in the coming years, and will add to the growing literature on the bilingual brain.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Brain Imaging Studies and Vocabulary; Critical Period; Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Inhibition and Control in Second Language Acquisition; Input Processing in Second Language Acquisition; Multilingualism and Aphasia; Neurobiological Foundations for Second Language Acquisition; Organization of the Second Language Lexicon; Second Language Representation in the Brain

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Researcher Reflexivity

SUE STARFIELD

At a recent conference on discourse, one of the keynote speakers remarked during her presentation that the reviewer of a paper she had submitted for publication in an academic journal had asked for "more reflexivity." What could this throwaway comment have meant? This entry aims to help readers think about what researcher reflexivity might mean and what the reviewer might have had in mind.

Until fairly recently, social science research was characterized by its objectivity, particularly the objectivity of the researcher him-/herself. With the decline of positivism, and the rise of qualitative research methodologies, the researcher is no longer seen as a source of bias or error whose presence may interfere with the presentation of an objective social reality.

Well-known sociolinguist, William Labov, coined the phrase the "observer's paradox" as he tried to reduce what he perceived to be the interference caused by the presence of the researcher in the collection of speech data. The paradox lay in his trying to find out how people spoke when not being systematically observed; however, the only way to study this was to observe them (Labov, 1972, p. 209). While Labov devised various methods to reduce the perceived influence of the researcher, many qualitative researchers give serious attention to the presence of the researcher in the research field and the researcher's relationship with his/her research subjects.

Beginning in the 1970s, and increasingly since then, particularly in ethnographically oriented fieldwork, researchers began to question the position of the researcher as a neutral, objective outsider and suggest that, in order for any research field to be understood, the researcher would need to be reflexive about his/her "assumptions and biases" (Pillow, 2010, p. 272). Rather than being a source of contamination, the researcher's own sociohistorical and political location then needs to be fully acknowledged (Rampton, 1992). In what became known as the "reflexive turn," anthropologists and ethnographers in particular (see Clifford & Marcus, 1986; van Maanen, 1988) attempted to relocate the researcher as a presence in the research field and to allow the voice of the researcher to become part of the text. Linked to this was the "textual" turn, also influenced by postmodernism, in which the reports written by ethnographers and other qualitative researchers were seen to be constructed, rather than "true" representations of an observed reality. This view can be summed up by Geertz's (1988) claim that "its [ethnography's] epistemological foundations have been shaken by a general loss of faith in received stories about the nature of representation" (p. 135).

Schwandt (2001) defines reflexivity as "the processes of critical self-reflection on one's biases, theoretical predispositions, preferences and so forth" that acknowledge that "the inquirer is part of the setting, context, and social phenomenon he or she seeks to understand . . . [and] can be a means for critically inspecting the entire research process" (p. 224). Schwandt further points out that reflexivity thus construed can be an "important procedure for establishing the *validity* [author emphasis] of accounts of social phenomena" (p. 224). He also alerts us to the extent to which researcher reflexivity can influence the nature and structure of the written account, leading to texts that are "messy" (Marcus, 1998), "forefront the politics of representation by making visible, through reflexivity, how we do the work

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of representation" (Pillow, 2003, p. 176), and may, therefore, challenge the more traditionally structured "*realist tale* [author emphasis] written by a detached observer" (Schwandt, 2001, p. 224).

As Pillow (2010) has pointed out, once researcher objectivity was open to question, the researcher's subjectivity was also open to scrutiny and "questions of how research relations and researcher subjectivity impact the doing of research became equally important" (p. 272). The reflexive turn, together with the influence of feminism, has led to greater scrutiny of power relations between the researcher and "the researched." Feminist methodologies have drawn our attention to how knowledge is generated, how it is reported, and how it is used, through a focus on the research process in its entirety from formulating research questions to gaining access, conducting interviews and observation, research relations, analyzing data, and the writing process (Pillow, 2010).

As summed up by Pillow (2010) "reflexivity has become an important tool" for demonstrating the qualitative researcher's "awareness of the problematic of doing research" (p. 274). Moreover, as she points out, it is often used to "potentially validate and legitimize research precisely by raising questions about the research process" (p. 274).

Cameron, Frazer, Harvey, Rampton, and Richardson (1992) in *Researching Language: Issues of Power and Method*, provide us with an early example of applied sociolinguistic work that directly confronts issues of the researcher's presence in the research field and is specifically reflexive as to the power relations between researcher and "researched" and the authority that researchers have to represent the identities of the research participants in their written accounts. The researchers, for example, decided to share with their research subjects the outcomes of their (the researchers') analyses of the data they had collected. Their scrutiny of both their research practices and their privileged location as researchers does not seem, however, to have had a significant impact on applied linguistic research. It could be argued that applied linguistics has, in the main, remained largely immune from the discussions around reflexivity that have occupied much debate and discussion on methodology in the social sciences from the 1980s onwards (see Talmy, 2010b). This should not surprise us, as Richards's (2009) state-of-the-art review of qualitative research in language teaching between 2000 and 2007 indicates that the proportion of papers that have a qualitative orientation published in leading journals is at most 25 per cent of the total number and only 10 percent in over half of the 15 journals surveyed.

Despite the broadening and strengthening of qualitative approaches identified by Richards (2009), it seems fair to say that there is less evidence of researchers taking an explicitly reflexive orientation to their research. A recent study by Talmy (2010a) of a school community in Hawaii gives us an idea of what "more reflexivity" in qualitative research might look like. He comments that TESOL as a field seems reluctant to talk about race and racism: "a great many TESOL studies have been conducted by raceless researchers working with color-neutral participants in contexts oddly devoid of any dimension of racial politics or history" (p. 39). He then goes on to explicitly situate himself in the research process as he talks about not only how he has represented the participants' racial identities in his writing but also about how he was racially identified by the students and compelled to reflect on his own privileged location as a "white" researcher. He also reveals how, in and through the interview process, he momentarily becomes complicit in the racist discourse of some of the students. He concludes by raising questions about how teachers and researchers could address discourses of race and racism in the classroom in an environment that is silent about race.

Within reflexive approaches, Macbeth (2001) identifies positional and textual reflexivity as two related epistemological strands. The former "takes up the analysts' (uncertain) position and positioning in the world he or she studies and is often expressed with a vigilance for unseen, privileged, or, worse, exploitative relationships between analyst and

the world" (p. 38). Textual reflexivity directly addresses "the work of writing representation" (p. 41) and calls into question the traditional social sciences' portrayal of "the disembodied voice of the modern analytic text" (p. 42). To date, these understandings of reflexivity can be seen most notably in applied linguistic and language teaching research in the increasing number of self-reflective and semi-autoethnographic accounts by language educators and academic researchers on their own language/academic discourse socialization (Casanave & Vandrick, 2003; Casanave & Li, 2008; Nunan & Choi, 2010). Morgan and Ramanathan (2005) note the growing use of "narrative/autobiographies to link personal experiences with sociohistorical and institutional power relations" (p. 156). Writing these reflexive narratives can be seen, as Kleinsasser (2000) puts it, as a way of "making the familiar strange," enabling researchers to "consider more deeply, ethical and epistemological tensions" (p. 158). Although, as Pennycook (2005) has argued, simply producing an account that uses the first person "I" may not necessarily "constitute in itself reflexivity" (p. 299) as the "I" or self performed may still be a unitary, essentialist self.

Vandrick's (2009) *Reflections of a Second Language Educator* is positionally reflexive in that she examines what she names "the colonial shadow" and the privilege accorded to her by her social class location and whiteness as she grows up with her missionary parents in postcolonial India. As she becomes a language educator, she considers how her privileged location has shaped and continues to shape her world and her work. At the same time, through her adoption of a hybrid format for her book, she produces a text that is consciously structured as unlike a "typical" academic work and that has an "embodied" author who locates herself in space and time and is present in her text.

In an article published in the "forum" section of *TESOL Quarterly*, Lin et al. (2004) critique "mainstream TESOL theoretical and research canons" (p. 495) for their adherence to positivist, decontextualized and ahistorical theories and methodologies that ignore the extent to which the field of TESOL has itself been shaped by race and gender resulting in a division of labor—a "gendered and racialized theory-practice divide" (p. 496)—that privileges and values certain types of theoretical research while devaluing more practice-oriented work often performed by women from minority groups. Each of the seven authors reflexively situates herself in terms of race, gender, ethnicity, and status and locates herself institutionally as positioned by these intersecting discourses. The authors, through their collective authorship, and a choice of format that intersperses personal narrative with theorized explanation, can be seen to be mounting a challenge to conventions of academic discourse that are elsewhere unreflectively adopted and can be understood as excluding of nontraditional voices.

Nelson (2005) directly engages with what she terms "the increasingly common practice of researchers writing their own subjectivity overtly into their research" (p. 315) in discussing aspects of an article she published earlier in *TESOL Quarterly* (Nelson, 1999) in which she addressed textual reflexivity through "crafting a text" in two parts—the first theoretically oriented and the second the presentation of a transcript into which she inserts (in italics) her own "moment-to-moment commentary as an observer" (p. 316). While in the original article she located her own positionality fairly subtly, in the reflexive 2005 piece she more overtly identifies her standpoint and invites her readers to consider experimenting with "ways of writing the researcher's intersubjectivity into a research text [that] can help to produce texts that do not so much transmit knowledge as illuminate and query the complex, uncertain processes of knowledge making" (p. 318).

There has, however, also been a reaction to texts that are considered to exhibit overly both positional and textual reflexivity. Canagarajah (2005) sees reflexivity in research and writing as "a fashionable gesture in certain disciplines now, treated almost as an end in itself" (p. 309), while Maton (2003) is dismissive of much positional reflexivity as narcissistic.

Reflexivity as methodological tool (Pillow, 2003) has had some impact in applied linguists'

returning to scrutinize earlier, unproblematized representations of the research process. While interviews are a widely used method in qualitative applied linguistics research, as Talmy (2010b) points out, little attention has been paid to the interview itself as a socially constructed communicative event, worthy of investigation in its own right. Richards (2009) comments that "analysis of interviews in our field [language teaching] still tends to treat them as reports rather than accounts, relying on unproblematized thematic analysis" (p. 160). In much applied linguistic research, interview data tend to be presented as realist, naturalized, and unproblematically "true." Talmy (2010b) calls for

> heightened reflexivity about the interview methods that applied linguistics researchers use in their studies, on the role of the interviewer in occasioning interview answers, on the subject "behind" the interviewee, on the status ascribed to interview data, and on how those data are analyzed and represented.

He notes that relatively few studies problematize the status and nature of the interview. Similarly, Canagarajah (1996) is critical of Peirce's research on identity for not discussing how research subjects "negotiated subject positions with the researcher" (p. 328). Angélil-Carter (1997) however reflexively examined how, in an interview between herself and a student, power shifted between "interviewer" and "interviewee" as the topic shifted to one which the interviewee [the student] had much greater knowledge of than she did.

Coates and Thornborrow (1999) also problematize the notion that a transcript can be a "'true' version of a recording (audio or video) of spoken interaction" (p. 595). They set out to "challenge the assumption that there is such a thing as the perfect transcript" (p. 595), stressing that any transcription is always made on the basis of choices the linguist has made. They argue that data analysts have "failed to be frank" about this subjective dimension to transcription and attribute this to the "liberal humanist tradition in academia" (p. 596) that presents the researcher as an objective seeker after truth rather than as a reflective participant in the analytic process.

Ellwood (2006) revisits her doctoral work some years later and, while not problematizing her transcripts as such, interrogates her underlying assumptions through a close reexamination of seven minutes of her first interview with a Japanese student who "came out" to her in an interview. She scrutinizes the transcript as to her own positioning in and by discourses of heteronormativity and her positioning of the student through her interviewing practices. She frames her reanalysis in terms of a critique of conceptions of the notion of reflexivity itself as frequently used in educational research, concluding that while "researcher reflexivity is necessarily limited" (p. 81) as the researcher can never fully "know" their own subjectivity or its impact on their own research practices, "pursuing this sort of self knowledge is worthwhile nonetheless" (p. 82).

Ramanathan (2008) also returned to her doctoral research to critically revisit her ethnographic work on the discourses of patients suffering from Alzheimer's. Drawing on the work of Derrida, she reexamines some of her transcripts to set up again a counter discourse to "psycholinguistic" discourses on Alzheimer's. In a "confessional" paragraph which "disrupts" an otherwise fairly conventionally structured text, she describes how her initial attempts to do this were thwarted by her dissertation committee who rejected her approach as "too humanistic and not experimental enough" (p. 14), leading her to abandon this research and move into the field of ESL. Through Derrida's lens she is led to question whether research is ever concluded; what the nature of "original" research is; the work of interpretation that the researcher does; and where meaning is located.

In a shorter piece that led to a series of responses in the *Journal of Language, Identity and Education*, Ramanathan (2005a) challenged an editorial decision to excise a passage in a journal article in which she explicitly discussed her positionality. The journal "forum" that

ensued is one of the first such discussions in an applied linguistics journal to foreground the concerns discussed thus far in this entry around reflexivity, positionality, representation, and textuality. In an accompanying piece (Ramanathan, 2005b), she presents the deleted text in which she discusses her social class position in Indian society, in its original context, and highlights the significance of this passage to both her theoretical arguments and the light it throws on her positioning as a privileged researcher, originally from India, now speaking "from the West." Ramanathan and many of the other researchers whose work is discussed in this entry are experienced researchers, able to look back on earlier work and question and challenge. As Kleinsasser (2000) points out, however, writing reflexive texts that "blur distinctions between the personal and the theoretical" (p. 156), and in which the researcher acknowledges her multiple roles, can be risky for new researchers.

In an earlier piece, Canagarajah (1996) took issue with the standard research report writing genre being used by TESOL scholars for reporting on qualitative research, arguing that it embodied "the heady mood of positivism in the early days of empirical science . . . and served to maintain the pretense of objectivity, detachment, and neutrality, suppressing the agency of the researcher" (p. 323). He advocated the exploration of alternative modes of reporting that might include narrative, reveal process, be multivocal, dialogic, or collaborative (with participants). On the basis of the work discussed in this entry, the extent to which these sorts of reflexive texts are being produced in the field of applied linguistics more broadly appears limited and where they do appear, they are often shorter pieces in "forum" sections of academic journals. Alternatively, more narrative, autoethnographic pieces (often also shorter than traditional journal articles) have mostly been gathered in edited collections. Reflexive writing (and thus research that is reflexive) then seems caught between a rock and a hard place, reflexivity, both positional and textual, can be deemed irrelevant to the "real" research or a response to "fashion," while too little, as in the case of the researcher whose comment was cited at the beginning of this entry, may be perceived as not enough. However, as Pillow (2003, 2010) argues, reflexivity should always be critical and as such continue to "trouble" and make "uncomfortable" all received versions of knowledge. Applied linguistics, in Pennycook's (2005) words, "a constant catch up discipline . . . somewhat backward in its understanding of reflexivity" needs perhaps to give more consideration to researcher reflexivity to "push forward our thinking . . . in important ways" (p. 299).

SEE ALSO: Critical Ethnography; Epistemology and Ontology; Feminist Research; Interviews; Qualitative Methods: Overview; Subjectivity

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Revernacularization and Revitalization of the Hebrew Language

BERNARD SPOLSKY

Like other "revived" languages such as Welsh and Breton (Jones, 1998), the modern variety of Hebrew is sufficiently different from earlier versions to lead Zuckerman (2006) to suggest it be renamed *Israeli*. The change that took place at the end of the 19th and the beginning of the 20th century was not in essence *revival*, which suggests restoration of an earlier form, but two different processes. The first, at the turn of the century, was *revernacularization* (Fishman, 1991b, p. 13), namely a change of priority from reading and writing Hebrew to speaking it, and the associated development of ways to communicate about daily life rather than religious matters and the sciences. The second, after 1920 when there were already fluent native speakers (Blanc, 1954), was *revitalization* (Spolsky, 1991)—the reestablishment of natural intergenerational transmission, as new parents who had learned the language in school began to speak it to their babies.

Regularly called a miracle, the double phenomenon depended on a unique combination of circumstances. One basic feature was the strong nationalist ideology that also led to many nonlinguistic changes, such as the willingness of East European Jews to immigrate to Ottoman Palestine, to switch from town to country life, and to adopt agriculture and physical labor as ideals. A second set of conditions concerned language choices. Once they had agreed to abandon the Yiddish they associated with the Diaspora and the coterritorial languages like Russian and Polish that they had spoken in Europe with non-Jewish neighbors, there was little if any motivation for the Zionists to choose the Turkish of Ottoman government officials and soldiers, the spoken Arabic of uneducated Palestinian peasants, or the Classical Arabic used by Islamic clergy. French too was dropped after the drying up of Rothschild support for their village schools, and German—the most common language of science at the time, and an appropriate medium for advanced education—was rejected for ideological reasons. Hebrew was left as the logical choice, its importance bolstered during the half-century from 1919 to 1948 that it served as a symbol of resisting British rule of Mandatory Palestine.

The process of establishing the status and form of modern Hebrew, drawing on nationalist theories ("one nation, one land, one language") developed in 19th- and 20th-century Europe, and—taking advantage of the high status of Hebrew as a heritage language of religion and literacy—began in small farming villages in Ottoman Palestine where Jewish immigrants, most of them Yiddish-speaking, established schools in which the teachers were expected to use only Hebrew. Politically, it was an expression of Jewish territorial nationalism and a rejection of Diaspora languages, including the nonterritorial Jewish language, Yiddish (Fishman, 1991a).

During the last days of Ottoman rule, Hebrew spread to the new Zionist communal settlements (*kibbutzim*) whose settlers were even more radical in ideology and willingness to revolutionize their values, and it was soon established as the medium of instruction in most Jewish schools in the towns of Palestine, especially those conducted under the auspices of the *Hilfsverein der Deutschen Juden*, a philanthropic organization whose proposal to use German in tertiary science education was abandoned as a result of the 1913 "language

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war" (Cohen, 1918), in which high school teachers and pupils demonstrated in favor of Hebrew.

After the end of the First World War, Hebrew was recognized by the League of Nations and the British Mandatory government of Palestine as the third official language, alongside English and Arabic, and became the language of instruction not just in Jewish primary and secondary schools but also in the first two tertiary institutions, the Hebrew University of Jerusalem and the Haifa Technion. An activist Hebraist campaign, with the motto "*Ivri, daber ivrit*" ("[you are] Hebrew, speak Hebrew"), spearheaded by the Legion for the Defense of the Hebrew Language (Shur, 2000), continued in the Jewish community until the establishment of the state of Israel in 1948 (Shohamy, 2007).

With the establishment of the state of Israel, two significant steps were taken. First, a government policy for state schools laid down that they should choose the language of the community; all Jewish schools were to continue to use Hebrew as the medium of instruction, and all Arab schools were to use Arabic (a policy that preceded a decision to require Arabic in Jordanian schools by some 15 years). Second, the British Mandatory government policy on official languages, established as English, Arabic, and Hebrew in 1920 by the King's Order-in-council, was amended by cancelling "any instruction in the Law requiring the use of the English language" (Rules of Government and Law, 1948, paragraph 15b), leaving Hebrew as the dominant major official language and Arabic as a nominal official language, and dropping English as the *de jure* official language while maintaining its *de facto* importance (Rubinstein (1986) notes, for example, that English translations of the laws regularly appear before Arabic).

In the years that followed, the masses of new immigrants were taught and urged to speak Hebrew. Bureaucrats, schools, and the army played major roles in support, so that by the 1960s, Hebrew was firmly established as the dominant hegemonic language. It was a different language from the earlier versions of Hebrew (biblical, mishnaic, medieval, and *haskalah* or enlightenment). It had been modernized to handle concepts of modern technology and education, although many speakers and writers preferred borrowed words to the official coinages of the academy of the Hebrew language. Originally with a Hebrew name, it has used the borrowed epithet *akademia* for many years.

It is to be heard on radio and television, in the street and the home, in workplaces and schools, and even on the football field (although obscenities are commonly borrowed from Arabic), as well as in the physics laboratory (Spolsky & Shohamy, 1999).

There continue to be oases of other languages in Israel: neighborhoods where *haredi* (ultra-orthodox) Jews use Yiddish, or recent settlers use Russian, French, Amharic, Spanish, or English (often with regular code-switching); and villages or large towns where Arabic is the vernacular. Earlier Jewish multilingualism is being replaced by Hebrew–English bilingualism, with English providing access to advanced education (Spolsky & Shohamy, 2001) and serving as the language of wider communication for tourism, commerce, information technology, and connections with Diaspora communities. In the absence of a language question in the Israeli census since 1980, changes in the sociolinguistic ecology are largely unstudied. Also, as a result of the political implications (Kuzar, 2001) of recognizing the lexical, grammatical, and phonological modifications that have taken place in modern Hebrew, there continues to be dispute about the extent to which the language is different from earlier versions, but its centrality to current issues of Jewish and Israeli ideology is clear (Stavans, 2008).

SEE ALSO: Limits of Language Revival

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Reviving Irish From Independence to the Good Friday Peace Agreement

PEADAR Ó FLATHARTA

The New Irish State

This entry covers the period from the establishment of an Irish state in 1922 to the enactment of the British–Irish Agreement Act of 1999, when the Irish state agreed to restrict its sovereignty in Irish-language matters.

Part of the policy of the new Irish state established in 1922 was the revival of the Irish language as the language of public discourse. Although fully subscribing to this aim, it is unclear whether the leaders of the time fully understood the enormity of accomplishing such a task. The language spoken by a small percentage of people primarily in the west of Ireland was to be supported by a policy which can be summarized as follows: (a) the strengthening of the language in traditional language areas; (b) the revival of the language in all other areas through, primarily, the educational system; (c) a public administration system to promote the language; and (d) standardization and modernization of the language (Ó Riagáin, 1997). Such a policy would require a massive program of social and political change.

New Support Structures

The symbiotic relationship between the political movement and the supporters of cultural independence ensured a central place for Irish language in the new state. The Society for the Preservation of the Irish Language (Cumann Buan-Choimeádta na Gaeilge), founded in 1876, and Conradh na Gaeilge (the Gaelic League), founded in 1893, aimed at securing recognition for the language in Irish life and in particular in the educational system. The work of voluntary organizations focused on the importance of the language to the new state. The voluntary language sector established a key partnership role with the state apparatus. That relationship may be unique in national language planning systems.

The Irish language acquired an official status under the Constitution of 1922. The revised constitution of Ireland, Bunreacht na hÉireann, was adopted by the state in 1937. Article 8.1 of the constitution secures high status for the language as national and first official language of the state. The English language is recognized as another official language in Article 8.2.

Many of the language initiatives involved the Department of Education. In 1922 Irish became a compulsory subject in primary schools and in 1926 it became the medium of instruction in classes below second class. In the same year, An Gúm was established as part of the Department of Education and supported by a Terminology Committee to publish textbooks, dictionaries, and children's books in Irish. Irish became a compulsory subject for the secondary school Intermediate Examination in 1928, and for the secondary school Leaving Certificate in 1934. In 1946 grants were given to schools for excellence in Irish, and in 1958 rules to standardize grammar and spelling were adopted.

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Outside schools:

- in 1928 Taibhdhearc na Gaillimhe (the Irish Language National Theatre in the city of Galway) obtained its first annual subsidy;
- in 1927 Irish became a compulsory subject for entry into the civil service;
- the 1929 University College Galway Act obliged the University to provide courses in Irish and to employ bilingual staff;
- in 1940 the School of Celtic Studies was instituted as part of the Dublin Institute for Advanced Studies for research and as an academic publisher; and
- the Linguistic Institute of Ireland was established in 1967 and undertook many research projects in linguistics until its closure in 2003.

Support for non-state initiatives was also channeled through the Department of Education, and by the 1940s there was a myriad of organizations supported by state monies. To avoid duplication the government sanctioned the establishment of Comhdháil Náisiúnta na Gaeilge, a coordinating body for non-state organizations, in 1943.

A Government Department for the Gaeltacht

Gaeltacht (Irish-speaking) areas, geographically isolated and underdeveloped, primarily on the west coast, were defined following the Gaeltacht Commission Report of 1926, and were viewed as the source of language learning and support to add to the level of proficiency in the wider national community. The growth of English as the language of public and civic administration, however, threatened the linguistic integrity of the Gaeltacht areas. A report by Comhdháil Náisiúnta na Gaeilge in 1945 stated that 75–90% of church, government, local government, trade, transport, sport, and recreation affairs were in the English language only in Gaeltacht areas. A government department, Roinn na Gaeltachta (the Department of the Gaeltacht), was established in 1956 and it in turn administered Gaeltacht housing grants schemes since 1929, the 1934 scheme for Gaeltacht service industries to assist industries, and a 1952 scheme to subsidize the publishing of Irish-language books.

Economic Development in the Gaeltacht

A semi-state body charged with the economic development of the Gaeltacht, Gaeltarra Éireann, was established in 1957 under the aegis of the Department of the Gaeltacht. Údarás na Gaeltachta (the Gaeltacht Authority) was established in 1980 to replace Gaeltarra Éireann. The organization did not, however, enjoy full authority over Gaeltacht regions. Its remit was limited to economic, social, and cultural development, and the majority of the board of the authority was to be democratically elected by the people of the Gaeltacht every five years. The Údarás was established following a campaign for Gaeltacht rights. The new body continued the model of economic development developed by its predecessor, Gaeltarra Éireann, and proved successful in attracting inward investment. This investment creates valuable employment for the Gaeltacht communities. Údarás has been criticized for not paying due attention to securing the future of the language, for not developing a more holistic model of entrepreneurship, and for failing to halt the decline of the traditional language community. Some claim that the development policies have contributed to the decline of the language by strengthening the perceived higher status of English English in the boardrooms and Irish on the factory floor.

Arts and Media

In 1926 Raidió Éireann (the national broadcaster) came on air with a quota of programs in Irish. A separate national radio station, Raidió na Gaeltachta, was established in 1972, Raidió na Life (independent Dublin station) in 1993, and the TG4 television station in 1996.

The policy of creating literature and reading material in the language focused in the beginning on translating recognized authors, primarily from English, but later a substantial body of literature in Irish was produced by Máirtín Ó Cadhain, Máirtín Ó Direáin, Seán Ó Riordáin, and others. An average of 200 books in the language are published yearly, with a weekly newspaper, periodicals, and other developments in the electronic media. Traditional arts flourished in the period.

Change of Policy

A substantial policy change occurred in the 1960s, with the state now aiming at preserving the language in a bilingual society (Ó Murchú, 1970). This resulted in the weakening of the position of the language in civil and public administration. In 1973 Irish was withdrawn as a compulsory subject in the Leaving Certificate, and Ireland did not seek official working language status for the Irish language upon accession to the European Union. In 1974 the requirement of competency in Irish for employment in the civil service was abolished.

A state body, Bord na Gaeilge (the Board for Irish), was established in 1978 with a coordinating and promotional role. The Bord focused on influencing primarily at state level, while its statutory functions were limited to advice and consultation.

Parents were key players in a new movement to set up preschool and Irish-medium schools, Gaelscoileanna. Growth in this area has resulted in about 6% of the annual school cohort getting their education through the medium of Irish. An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta (COGG) (the Council for Gaeltacht and Irish-Medium Education) was established in 1998, with teachers, parents, and other education experts serving on the board, and charged with advising the Minister for Education, coordinating the provision of textbooks and educational materials, and commissioning research projects.

SEE ALSO: Language, Politics, and the Nation-State; Limits of Language Revival; Status Planning

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Reviving Māori

TONY TRINICK

The health of *te reo Māori* 'the Māori language' in New Zealand was significantly compromised throughout the course of the 20th century, with language loss accelerating post-World War II (Benton, 1991a). In 1930, a survey of Māori children estimated that 96.6% spoke only Māori at home. By 1960, only 26% spoke Māori (May, 2010). After nearly two centuries of contact with Europeans, the Māori language was, by the 1960s, endangered (Benton, 1991b), threatened with possible extinction (Spolsky, 2003).

The perilous state of the Māori language was highlighted by key studies in the 1970s (Benton, 1991b) and a subsequent Treaty of Waitangi claim (Waitangi Tribunal, 1986). The 1986 claim to the Waitangi Tribunal sought to have Māori recognized as a *taonga* 'treasure' and therefore guaranteed government protection under the 1840 Treaty of Waitangi signed between Māori and the (British) Crown (Orange, 1987). The Tribunal found in support of the claimants, and its subsequent recommendations to the government of the day led directly to the passing of the Māori Language Act (1987), which declared Māori to be an official language of New Zealand, and the establishment of Te Taura Whiri i te Reo Māori (Māori Language Commission; Harlow, 1993). These decisions accorded *te reo Māori* for the first time since colonization an official language status within Aotearoa/New Zealand, but with significant limits (May, 2003). For example, the Language Act did not extend the right to use or to demand the use of Māori in the public domain beyond the oral use of the language in courts of law and some quasi-legal tribunals (Spolsky, 2003).

In response to the endangered state of the Māori language, Māori groups and communities developed a range of grassroots education initiatives to revitalize, expand, and modernize the Māori language. These groups included early childhood (Te Kōhanga Reo; see King, 2001), primary school (Kura Kaupapa Māori; see Smith, 1990), secondary education (Wharekura; see Campbell & Stuart, 2009), adult education programs (Te Ātaarangi community-based group; see Spolsky, 1989), and tertiary institutions (Te Wānanga o Raukawa; see Royal, 2007).

Māori language planning has been largely reactive and has proceeded very much on an ad hoc basis without the cohesive force of an explicit and overriding policy (Harlow, 2003). Language planning can be seen as a body of ideas, laws, and regulations (language policy) beliefs and practices intended to achieve a planned change in language use in one or more communities (Kaplan & Baldauf, 1997). Although it may involve government action, a great deal of language planning occurs in a range of social contexts and at different levels (Spolsky, 2004). Researchers in language planning have attempted to differentiate three distinct kinds of activities: those concerned with attempts to modernize the language (corpus planning), those concerned with modifying the environment in which a language is used (status planning; Haugen, 1983; Kaplan & Baldauf, 1997), and acquisition planning, with a particular focus on its implementation in education (Cooper, 1989).

Corpus planning focuses on changes by deliberate planning to the actual corpus or shape of a language (Antia, 2000). This may be achieved by creating new words or expressions, modifying old ones, or selecting among alternative forms (Kaplan & Baldauf, 1997) and is often related to the standardization of a language (Clyne, 1997). The Māori language has had a standard orthography for some time (Harlow, 2003); however, the language has

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changed and developed greatly over the last two hundred years by borrowing words, modifying the meaning of existing ones, and creatively developing new ones. These changes have occurred for functional reasons over time without any specific language plan or policy (Keegan, 2005). Until the 1980s, the predominant process of creating new Māori words was to "borrow" English or in limited cases French words (Benton, 1991a).

Subsequent to the 1980s, the methodology was to avoid the use of borrowings from English but rather to look to classical sources for roots or create new words altogether (Barton, Fairhall, & Trinick, 1998; Keegan, 2005). In this regard, Māori is unique among the Polynesian languages of the Pacific (Trinick, 2010). Since the 1980s, there has been a very rapid expansion of *te reo Māori* vocabulary and the codification of the language, spearheaded by Taura Whiri i te Reo Māori, to keep up with language expansion demand from Māori-medium schools (Barton et al., 1998) and from government departments and businesses (Keegan, 2005). In many language development situations, the development of new vocabulary is rather incidental (Spolsky, 2004). But for Māori, the vocabulary needs have been great enough that committees and institutions like Te Taura Whiri have been set up to manage the process (Harlow, 1993). Despite the range of institutions, no centrally agreed body has emerged which is able to plan, coordinate, and define Māori language policy. As a consequence, Māori language planning continues on a disjointed basis (Harlow, 2003).

Status planning refers to deliberate efforts to allocate the functions of languages and literacies within a speech community (Kaplan & Baldauf, 1997). Status planning involves decisions a society or group must make about the language selection and implementation (Ridge, 1996). In New Zealand, these decisions are frequently driven by European attitudes to Māori (Boyce, 2005) and wider issues of human rights (May, 2000). The attitudes that the New Zealand population, particularly the majority European population, have to the Māori language were an important influence on the loss of the language in the first instance (Boyce, 2005), and can be a direct impediment to Māori language regeneration initiatives in the present (May, 2000). Research has consistently shown that the attitudes of non-Māori New Zealanders to the Māori language are considerably less positive than those within the Māori community (Nicholson & Garland, 1991; Te Puni Kōkiri, 2002, Harlow, 2005). This requires special language planning that targets the attitudes and behaviors of majority language speakers, or "planning for tolerability" (de Bres, 2008). For Māori to survive, it requires positive attitudes from both non-Māori and Māori, which ideally foster beneficial language behaviors (Boyce, 2005).

Corpus planning and status planning are often manifested in explicit language policies at government and local levels (Spolsky, 2003). It is argued that New Zealand has never had a comprehensive language policy at higher levels of government (Peddie, 2005) and planning and policy tended to proceed on an ad hoc basis (Kaplan, 1994: Peddie, 2005). However, there have been attempts to develop policies that relate to the Māori language. The first comprehensive Māori language policy was initiated by Taura Whiri i te Reo Māori to ensure not only that Māori was to be the principal language of a significant number of people in Māori domains, to be spoken by different generations and accepted in non-Māori domains, but also the development of positive attitudes (Spolsky, 2003). A range of subsequent policies was developed by various government departments, essentially with the same goals (Te Puni Kōkiri, 1999, 2003).

Although a component of the broader national language planning initiatives, education has been possibly better supported by government agencies and Māori communities. For language in education planning, the New Zealand Education Act (1989) and the Te Aho Matua Amendment Act (1999) are central. These acts and subsequent Māori-medium curriculum guidelines developed by the Ministry of Education legitimized teaching in the medium of Māori (not just Māori as a subject) for the first time since the late 1800s (McMurchy-Pilkington, 2004).

There is concern about the direction and focus of language planning and policy development with regard to the Māori language. Issues have arisen as to the somewhat ad hoc nature of the corpus development (Keegan, 2005), the dominant language ideology of purism (Harlow, 1993), and possible effects on Māori culture as a consequence of language change (Barton et al., 1998). Much of Māori language policy has focused on education. It is argued that education alone is not sufficient to reverse language shift, and that homes and communities have a major role to play in language continuation (Chrisp, 2005). Also, Māori has not been promoted enough by the government for the language to have a sufficiently good image (Nicolson, 1997). As a result, the number of fluent Māori speakers continues to diminish.

So What Is the Future?

According to Māori language surveys in 2001 and 2006, the decline in the number of Māori language speakers has been halted (Te Puni Kōkiri, 2003, 2007). However, the Māori language is still in a precarious state and requires continued strategic planning and policy to ensure its survival as a modern, vibrant language appreciated by Māori and non-Māori alike.

SEE ALSO: Indigenous Languages in the 21st Century; Minority Languages in Education; Status Planning; Teaching Indigenous Languages

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Rhetorical Discourse Analysis

JENNIFER ANDRUS

Introduction

Rhetorical discourse analysis (RDA) brings together methods and theories from strands of discourse analysis (DA), classical rhetoric, and rhetorical analysis. As I will show in what follows, rhetoric and DA share a common object, discourse, and some of the same concerns and concepts, such as interaction, context, style, and effect. The overlapping concerns create spaces where theories and methods can be brought together to add depth and nuance to analysis. The goal of much of the scholarship that uses an RDA framework is to better understand communication in context. As Tracy (2003) puts it: "rhetorical criticism and discourse analysis share the commitment to the close study of texts in contexts" (p. 727). In fact, van Dijk (1985) suggests that key people in the rhetorical tradition (Aristotle, among others) were the original discourse analysts. Johnstone (2008) argues that "rhetorical study has always involved discourse analysis, explicit or not, as rhetoricians have analyzed relatively self-conscious, public, strategically designed talk and writing to see what makes it work" (p. 7). Unsurprisingly, then, DA and rhetoric share some common assumptions, for example, that "discourses shape the world, and discourse is shaped by the world" (Eisenhart & Johnstone, 2008, p. 11), linguistic and stylistic choices are strategic, and rhetorical issues like ethics and civic engagement are enacted discursively. In other words, DA and rhetoric come together around the common view that language, whether spoken or written, does something in addition to or beyond merely reflecting the world as it is. DA and rhetoric also share a core interest in the particulars of discourse and communication. The association between the projects of DA and rhetoric create a space of cross-fertilization out of which a new theory of discursive action is emerging.

Though they have much in common, the fields of rhetoric and DA highlight different discursive processes, aspects of discourse, or both. In other words, the two fields have similar interests, but different ways of analyzing and talking about those interests, which allows them to be used together to attend to what Huckin (2002) calls "different levels of granularity" (p. 159). One way of thinking about the difference between the two fields is in terms of micro and macro (see Eisenhart & Johnstone, 2008). DA is oriented toward microprocesses: the linguistic details in stretches of spoken and written discourse (see Johnstone, 2008). Rhetoric is oriented toward macroprocesses: speaker authority, audience response, persuasion and other effects of texts, the rhetor's goals, contextually situated interaction, and the like. As it is described by scholars like Huckin (2002), Barton (2002a, 2002b), and Eisenhart and Johnstone (2008), DA is productively paired with rhetoric, because it is a context-sensitive, qualitative method that allows for a systematic, data-based, inductive approach to the analysis of texts and interaction. On the other hand, rhetoric offers discourse analysts tools for theorizing persuasion, authority, asymmetrical power relationships, and political activity. I should note that critical discourse analysis (CDA) is also concerned with macrolevel functions and asymmetrical relationships and politics, and it is certainly common for scholars to combine CDA with RDA (see Huckin, 2002; Cramer, 2008; Stewart, 2008; Andrus, 2011). DA and rhetoric also intersect in social psychology and

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pragmatics, but because that work falls outside of the specific aims of this entry, I will not detail those relationships. It is the goal of this entry to distinguish RDA from other forms of DA, describe its analytical benefits, and review current RDA scholarship. I will first give some background on the fields of rhetoric and DA.

The Tradition of Rhetoric

Traditionally, rhetoric traffics in local, discursively contingent probability rather than universal, abstract truth, which led to its rejection from the philosophies of Plato and Socrates. Rhetoric has been described as "an alibi for eccentricities, for interdisciplinarity and the violation of disciplinary boundaries, and for the development of alternate intellectual strategies and rogue practices" (Charland, 2003, p. 121). As such, rhetoric can be many things: a method of invention, a critical project, or committed to civic/political action (Charland, 2003). Because it is a sort of disciplinary chameleon, rhetoric is open to innovation and recombination with academic areas like DA. Chameleon though it may be, at the center of most approaches to rhetoric is an interest in the relationship between discourse and context (Bitzer, 1968; Vatz, 1973; Aristotle, 1991), in the stylistic details of discourse, or rhetorical figures, and in the contextual use of those figures to persuade a particular audience (Aristotle, 1991) or to create "identification" between the rhetor and the audience (Burke, 1950). The field of rhetoric is also concerned with civic action and the discourse of those in power (Huckin, 2002), leading Glenn (1997) to contend "rhetoric always inscribes the relation of language and power at a particular moment (including who may speak, who may listen or who will agree to listen, and what can be said)" (pp. 1–2). Rhetoric is thus concerned with the details that facilitate communication and persuasion, with some scholars particularly interested in the role power plays in the interaction.

Discourse Analysis

DA distinguishes itself from linguistics by analyzing discourse, or language in action (Johnstone, 2008). As Johnstone puts it, "calling what we do '*discourse* analysis' rather than 'language analysis' underscores the fact that we are not centrally focused on language as an abstract system" (p. 3). Similarly, Gee (2005) calls DA a method and theory for understanding how language gets used in context "to enact specific social activities and social identities" (p. 1). The aim of DA is to study larger linguistic structures, "chunks of information across a series of sentences," paragraphs, or texts (Johnstone, 2008, p. 6). Some scholars pair this view of discourse with a Foucauldian one (Discourse), looking for the ways that actually occurring discourse reproduces and circulates ideological structures that constrain and enable discursive choices and subjectivity (see Stygall, 2001; Gee, 2005). A scholar might consider DA to be "what they do, how they do it, or both" (Johnstone, 2008, p. 1). In other words, DA is sometimes an analytical framework at work in every level of a project, and it is sometimes more instrumental, a set of methods that can be imported into a project as needed. With the analytical attention on language in use and in longer stretches, DA is useful for the kinds of analytical projects that are completed in rhetoric.

Rhetorical Discourse Analysis

According to Barton and Stygall (2002), rhetoricians have been using DA methods for years, and likewise, linguists have occasionally pulled concepts from the rhetorical tradition. The label "RDA" is fairly new, with only a few scholars such as Arribas-Ayllon, Sarangi,

and Clarke (2009) explicitly using the label. They pair DA, which "focuses on the pragmatic, functional and contextual use of language to accomplish interactional objectives and organize social activities," with rhetoric, because of rhetoric's traditional "focus on the *persuasive* dimension of language use" (p. 175, emphasis in original). Thus, RDA allows them to understand how and why a text is persuasive. Gill and Whedbee (1997) also note rhetoric's long concern with persuasion and influence, as does Wooffitt (2005), who included a chapter called "Persuasion and Authority," in her book on conversation analysis (CA) and DA. RDA is thus oriented toward a view of language as rhetorical, persuasive, and constitutive, rather than neutral and reflective.

The collection *Rhetoric in Detail*, edited by Johnstone and Eisenhart (2008), is also aimed at both rhetoric and DA audiences, with many of the projects operationalizing an RDA framework—doing fine-grained analyses of typically rhetorical objects. In their introduction, Eisenhart and Johnstone (2008) argue that the combination of rhetoric with DA allows the rhetorical critic to proceed empirically, locating linguistic features in discourse and analyzing and explaining them using a combination of methods and theories. The articles in the book exemplify this claim, examining topics such as cold war refugees, bureaucratic style, arts controversies, educational chat, deafness, humor, scientific discourses on sexuality, futurity in political discourse, rhetorical agency, and the South African Truth and Reconciliation Commission. Other topics analyzed within an RDA framework are composition (Huckin, 2002; Mayes, 2010), disability studies (Barton, 2007), everyday talk (Tracy, 2002), media discourses (Cramer, 2008), medical discourses (Lay, 2002; Scollon, 2006; Arribas-Ayllon et al., 2009), legal discourses (Stygall, 2001; Andrus, 2011), political discourses (Huckin, 2002), refugees and transnational flows (Hanson-Easey & Augoustinos, 2010), and technical discourse (Friess, 2010). The remaining sections go into more detail about current work using RDA.

Rhetorical Discourse Analysis in Rhetorical Criticism

Johnstone (2008) argues that "rhetorical study has always involved discourse analysis, explicitly or not, as rhetoricians have analyzed relatively self-conscious, public, strategically designed talk and writing to see what makes it work" (p. 7). DA supplements rhetorical analysis by borrowing methods and theories from sociolinguistics, and other schools of linguistics, to collect, analyze, and explain such discourses. For example, Ahram (2008) uses Geertz's concepts of framing and footing with rhetorical analysis to understand identity construction in the Sunni Islamist movement in Iraq over the last five years. Huckin (2002) uses an RDA approach to interrogate a "discourse of condescension" established in letters between legislators and citizens, and Dunmire (2005) looks at the intersection between future tense and ideology in political discourse. Other work on political discourses focuses on refugees and transnational flows. For example, Hanson-Easey and Augoustinos (2010) examine Australian policies regarding Sudanese refugees. Still other work that draws from rhetoric and DA analyzes the intersection of discourses on sexuality, media, and the popularization of science (see Stewart, 2008). Some scholars add corpus linguistics to the mix to analyze, for example, the metonymic construction of "public" in deliberative democracy (Cramer, 2008). Concerned with the rhetorical force of legal discourses, Stygall (2001) uses RDA to understand the role of expert witnesses in trials, and Andrus (2011) analyzes trial and appellate discourses that constrain witnesses' narratives.

The collaboration between rhetoric and DA has facilitated recent rhetorical research of unplanned, spoken discourse, that is, interviews and "natural" or "spontaneous" talk, in a range of contexts. For example, Barton's work on disability narratives told by individuals with disabilities and legal professionals (2007), Lay's work on discourses of

midwifery (2000), Bhasin's work on humor and Indian identity (2008), and Tracy's work on identity construction in everyday talk (2002) analyze transcripts of ethnographically collected, spoken discourse.

Rhetorical Discourse Analysis and Rhetoric/Composition

The rhetoric/composition community also uses both ethnographic methods and RDA in classroom and pedagogy research. In their collection *Discourse Studies in Composition* (2002), Barton and Stygall explain that DA "offer[s] composition scholars methods of research that provide insight into the linguistic aspects of writing" (p. 2). To this end, they include work by linguists. As a context-sensitive, qualitative method, DA has been well used in composition studies, primarily to analyze classroom interaction, student writing, pedagogical style, and first-year writing programs (see Mayes, 2010), among other things.

Rhetorical Discourse Analysis in the Study of Language Structure and Use

It is arguably most common for linguists to use "rhetoric" or "rhetorical" in the non-academic sense of the word, to loosely mean persuasive language or language that is all style with no substance. When DA scholars use the term more technically, referencing the academic field of rhetoric, they tend to take an Aristotelian approach. This work focuses on the appeals (ethos, pathos, logos), rhetorical topoi, tropes, and figures (metonymy, metaphor, anaphora, etc.). For example, Johnstone (2009) uses the concept of ethos to explain how a speaker can create an enduring linguistic style. Biber, Connor, and Upton (2007) identify "rhetorical appeals analysis," which is based on the Aristotelian appeals, ethos, pathos, and logos, as a method of "bottom-up" DA. Gill and Whedbee's (1997) detailed description of rhetoric for discourse analysts focuses on persuasion and traditional concepts such as genre, context, credibility of the speaker, style, timing, and so forth.

Deviating somewhat from this model, Scollon (2006) applies Kenneth Burke's mid-20th-century approach to rhetoric in a (C)DA framework. This work is aimed at understanding the motives of a speaker or writer rather than the stylistic features of a discourse. Wooffitt (2005) also develops a broader view of rhetoric as constitutive, which she uses to find common ground between CA and DA.

Conclusion

The relationship between DA and rhetoric is typically one of borrowing—pulling in a single theory and method, or a set of them, out of one field into the other to enhance the analysis in some way. As more and more scholars combine these two fields, RDA is becoming an analytical framework in its own right. This is a promising development, because RDA provides a robust set of tools that allow the analyst to look at the micro and macro dimensions of different kinds of communication in order to understand the ways in which communication is situated, intertextual, and an ongoing activity. RDA also facilitates interdisciplinary research and interaction and allows for detailed, nuanced, and deep analyses, because it takes into account and responds to issues and concerns from multiple fields and disciplines. Taking into account more than one set of assumptions leads to careful work that pays attention to detail without losing sight of the bigger picture, as well as work concerned with the big picture that does not lose sight of the details.

SEE ALSO: Corpus Linguistics: Overview; Critical Discourse Analysis; Discourse Analysis and Conversation Analysis; Pragmatics: Overview

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Rhythm and Timing in Interaction

BEATRICE SZCZEPEK REED

The analysis of spontaneous discourse highlights an aspect of language that often remains unnoticed in other, more theoretically minded fields of linguistics: the emergence of language through real time. While it is possible to study language by analyzing decontextualized words and sentences, the role of language for human interaction can only be fully appreciated by studying how specific speakers use specific types of utterances at specific points in conversation. Any point in conversation is fundamentally defined by the utterances that precede it; and those that follow it. Many analysts of discourse therefore refer to this aspect of utterances as their "sequential location," that is, their position within and in relation to an emerging sequence of conversational events. However, the term "location" is a slight misnomer. What is referred to is, of course, not a place, but a moment in time. It is for this most fundamental feature of conversational language as unfolding through time that rhythm and timing are of crucial significance for an understanding of natural, spontaneous discourse.

It has been claimed that participants in naturally occurring English conversation routinely orient to a notion of "one party talks at a time" (Sacks, Schegloff, & Jefferson, 1974, p. 700). Although this assertion has been strongly criticized, particularly from a cross-cultural perspective, it does seem that even in interactions in which several participants speak simultaneously for lengthy periods, those participants orient to a notion of taking turns at speaking. In doing so, they show with each utterance they produce that they are in some way reacting to, or following up on, a previous utterance—either their own, or another speaker's. This perspective on language as emerging through time has led to a description of speaker changes as conversational "turn-taking" (Sacks et al., 1974), and coherent strings of turns as conversational "sequences" (Schegloff, 2007). Detailed analysis of spontaneous discourse has revealed, first, that speakers are extremely precise in their timing of next turns, and in their organization of talk into sequences; and second, that timing and rhythm play a fundamental role in the collaborative interactional process that is spontaneous conversation. Below are outlined some of the main implications of timing and rhythm for natural interaction.

Regarding the *timing* of next turns, analysts of discourse have long since noted the conversational significance of *when exactly* speakers produce their turns. Keeping in mind the sequentially emerging nature of interaction as described above, any turn is also a *next* turn (possibly with the exception of the turns that initiate interactions, such as first greetings). This status of turns as next turns means that we can describe their timing in relation to prior turns. An initial finding by early conversation analysts was the impressive accomplishment by conversational participants to produce next turns precisely at the moment at which previous speakers have stopped speaking. This feature of conversational turn-taking has been termed "precision timing" (Jefferson, 1973). It means that in the default case, next turns by next speakers are neither delayed by lengthy pauses nor produced too early, causing extensive overlapping speech. This ability to produce next turns so precisely in next position does not mean that pauses and overlapping speech are rare; however, it does mean that they are either very brief, or treated as potentially nonroutine by the conversational participants themselves, at least in many standard varieties of British and American English.

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The ability of conversational participants to time their next turn onsets exactly to previous speakers' turn completion points has led many analysts of discourse to investigate the predictability of language, and of turns-at-talk, particularly in English. The argument underlying this interest assumes that, given the cognitive effort involved in planning and the starting up of a next turn, it would be impossible for speakers to begin speaking so soon, that is without any pausing at all, if they had to wait for another speaker's utterance to be fully completed. And indeed, research on Dutch and German conversational language has found that a combination of word choice and syntax allows listeners to predict, sometimes relatively early on in the sentence, how and when a sentence is going to end (Auer, 1996; de Ruiter, Mitterer, & Enfield, 2006; Magyari & de Ruiter, 2008). Research on English conversations has found that intonation and rhythm help project on a more local level, that is less far into the future than lexis and syntax, when exactly a current turn may be completed (Grosjean, 1983; Couper-Kuhlen, 1991; Grosjean & Hirt, 1996; Schegloff, 1998; Wells & Macfarlane, 1998; Auer, Couper-Kuhlen, & Müller, 1999).

The routine nature of very precise next-turn timing means that by placing a next turn at exactly the moment at which a previous speaker has finished, a next speaker can show that their turn is default, not only in terms of its timing, but also in terms of the conversational action it is designed to accomplish. However, it would be wrong to suggest that the placement of next turns with no gap and no overlap is necessarily the preferred case; or that any next turn that deviates from this rule signals some sort of interactional problem. Close analysis of natural conversation shows that this interpretation would be too simplistic. Compare, for example, an invitation, followed by an acceptance of the invitation by the addressee: Were the acceptance to be delivered with no pause whatsoever, this could signify a routine sequential development, both in terms of its timing and its conversational implications. Were the acceptance of the invitation to be delayed, this may give cause for an interpretation of a nonroutine, and possibly dispreferred, development. Were the acceptance to be delivered slightly early, creating a small amount of overlap, this could be a particularly enthusiastic acceptance, and possibly the most preferred option. As this example shows, the three variations of timing—early, on time, or late—can have a significant impact on the interactional status of a next turn, and a strong influence on the subsequent development of the conversational sequence.

An even more frequently occurring example of early turn onset that nevertheless accomplishes a routine conversational action is the case of so-called "terminal overlap" (Jefferson, 1984). If we adopted an overly simplistic view of timing in conversation, turns that occur before a current speaker has finished speaking may be termed "interruptions." However, not all interruptions are illegitimate conversational actions, that is instances of speakers grabbing the floor when others are still in the middle of an ongoing utterance. Some early next turns occur because their speakers have predicted an upcoming turn completion in the immediate future, and have started speaking although the currently speaking participant has not entirely finished. Such terminal overlap typically involves no more than a single word of overlapping speech, and is not treated by participants themselves as problematic. Furthermore, some next turns are placed early, that is at noncompletion points, precisely because they are not designed as turns in themselves, but are instead designed as supporting a current speaker in their right to hold the floor (French & Local, 1983). For example, agreeing next turns such as "yeah that's right," or response tokens such as "mhm" are frequently produced when current speakers have not yet finished. Instead of being instances of problematic early timing, they are instead placed very precisely at moments during currently ongoing turns where such responses are made expectable by the unfolding interaction.

Instances of late timing, that is next turns which are placed after a short pause, can indicate a next speaker's delay, and as such signal interactional difficulties, as, for example,

in our above example of a delayed response to an invitation. However, gaps between speakers can also indicate unproblematic next turn onsets. This is the case in some instances in which speakers adhere very precisely to *speech rhythm*.

It is not at all surprising that speech is produced in a rhythmic manner: After all, many physical activities, such as breathing or walking, are done with great regularity. For unimpaired speech, humans also follow a broadly rhythmic pattern. However, the way in which speech rhythm is organized varies from language to language. Phoneticians have classified the languages of the world into two rhythm classes: stress-timing and syllable-timing (Pike, 1945; Abercrombie, 1967). Put very simply, stress-timing involves the perception of all stressed syllables as being placed on regular rhythmic beats; whereas syllable-timing involves a perception of each syllable as a rhythmic beat in itself. Since this original classification, research has shown that few languages fall entirely into one of these two categories; instead, languages are considered as being situated along a spectrum, and phoneticians speak of languages with a tendency toward either of the two classes (Dauer, 1983; Miller, 1984; Laver, 1994). English, particularly British English, has been described as having a strong tendency toward stress-timed speech rhythm. In a stress-timed language, every stressed syllable is perceived as a regular beat. This, however, does not mean that one would be able to set a metronome against an English speaker's speech and find the stressed syllables distributed across a perfectly isochronous rhythm. Instead, speech rhythm is very much a perceptive phenomenon. The human ear perceives stressed syllables in stress-timed languages as regular, even if their placement deviates to a certain degree from precise regularity.

Speech rhythm is most easily detected in read-aloud speech, where speakers' fluency is not hindered by the cognitive planning process that is required for spontaneous speech production. However, natural conversation, too, displays rhythmic organization. In fact, research by Erickson (1992) shows that not only speech, but also other actions, such as handling cutlery during a meal, are placed according to regular rhythmic beats. Returning to the above issue of turn-taking, rhythm has been discovered to be highly relevant for the negotiation over who speaks next in conversation. This has been revealed in research carried out primarily by Elizabeth Couper-Kuhlen (Couper-Kuhlen, 1991; Couper-Kuhlen & Auer, 1991; Couper-Kuhlen, 1993; Auer & Couper-Kuhlen, 1994; Auer, Couper-Kuhlen, & Müller 1999), who showed that, in English, conversationalists continue a previous speaker's rhythm in their immediately following turn. Couper-Kuhlen discovered that in instances of smooth turn-taking, next speakers produce the first stressed syllable of their turn precisely when the previous speaker's turn would have projected a next rhythmic beat. She shows that those turns that are "in time" with previous turns are the default case; whereas turns that are early or late, according to a previously established rhythmic pattern, are frequently also cases of turns that are otherwise interactionally problematic.

As Couper-Kuhlen shows, this finding allows for a new perspective on gaps between turns. While smooth turn-taking typically involves only minimal pausing between speakers, so-called "latching," that is the immediate startup of a next turn without even the slightest gap, is in fact rare. In reality, precise measurement of pauses in between turns shows that while we may notice some pauses in a given context, in a different context we may not notice a pause of exactly the same length. Couper-Kuhlen's finding of turn-transitional speech rhythm provides the answer for this discrepancy. In order to place their first stressed syllable on the next rhythmic beat as projected by a previous speaker's rhythm, next speakers may sometimes be required to leave a small gap between the two turns. If, for example, a first turn ends with a stressed syllable, and is not followed by any unstressed syllables; and if the next turn begins with a stressed syllable, and is not preceded by any unstressed syllables; then the speaker of the second turn will have to leave a gap the length of the rhythmic interval in order to place their next turn on the next rhythmic beat. This kind of

gap would not be very noticeable to listeners or participants themselves, as it would be part of the rhythmic organization of conversation. However, a gap of the same duration may be noticeable in another context, in which the rhythmic integration of a next turn requires an earlier placement of the first stressed syllable.

Later research showed that this kind of timing is used by conversational participants in order to design their talk as continuing a prior speaker's sequence, or as beginning a new sequence (Szczepek Reed, 2009). While new conversational sequences are typically begun after a noticeable gap between turns, continuations of sequences routinely involve rhythmic integration of the continuing turn.

Speech rhythm in discourse has also been found to have crosscultural implications. More generally, it has been identified by applied linguists to be a feature of speech that affects non-native English pronunciation (Adams, 1979; Taylor, 1981; Bond & Fokes, 1985; Brown, 1988), particularly if a learner's native language has a tendency toward syllable-timing, rather than stress-timing. The main influence of a syllable-timed rhythm on a stress-timed language is on the pronunciation of "weak forms," and other unstressed syllables. In English, and other languages classed as stress-timed, the practice of placing stressed syllables on regular rhythmic beats typically necessitates a rapid production of the unstressed syllables. Compare, for example, the sentences:

1. Last October Jane got sick.
2. Last October Jane had an accident.

In the first sentence, the same number of unstressed syllables follows each stressed syllable, making it easy to produce a rhythmic pattern. In the second sentence, the final interval, *Jane had an ac-*, contains two unstressed syllables, whereas previous intervals contained only one (*Last Oc-*; *-tober*). This means that in order to produce a regular rhythm across the stressed syllables, a speaker would have to pronounce twice the number of unstressed syllables in the same time interval which previously held only one. Furthermore, the fewer unstressed syllables occur in a given interval, the more time their speaker has for the production of the stressed syllable. It is this variability in the duration of syllables that is the defining factor of stress-timed languages. And it is this variability that provides the main reason for the extreme shortening of unstressed syllables in English. Therefore, learners of English whose first language is less stress-timed and more syllable-timed typically produce all syllables with more equal duration, and thus may give the impression that they are stressing more words than would be expected by a listener from a stress-timed language background.

With regard to the rhythmic organization of conversational turn-taking as described by Couper-Kuhlen (1991), interactions between speakers from stress-timed backgrounds with those from syllable-timed backgrounds show no consistent comparable pattern. Szczepek Reed (2010) investigated conversations between native speakers of British English, a variety with a strong tendency toward stress-timed rhythm, and speakers of Singapore English, a variety that has been classed as syllable-timed (Low, Grabe, & Nolan, 2000; Deterding, 2001). The data show that in any given interaction, only up to half of all turn-transitions from the British English speaker to the Singapore English speaker involved rhythmic organization. In those transitions in which cross-speaker rhythm did occur, it typically did not last longer than a single (first) syllable. This shows that while speakers of a language with a tendency toward syllable-timing seem to perceive stress-timed speech as rhythmic—as evidenced by their ability to place first syllables on the next projected rhythmic beats—they subsequently continue their turns in their own time, and according to their syllable-timed speech rhythm. In doing so, they are able to create fluent transitions; and also fluently deliver next turns.

As conversational spoken language emerges through time, and conversational utterances are placed in a temporal relation to prior utterances, timing is an inherent feature of natural discourse. Rhythm, on the other hand, can be described in terms of gradual differences: A speaker's turn may be more or less rhythmic; and a given language or variety may organize speech with different degrees of stress- or syllable-timing. Both aspects, however, impact on conversational speech in two ways. On a local level, both timing and rhythm are primary resources for participants' negotiations over turn-taking and the organization of conversational sequences. From a more global perspective, both aspects are prevalent in all speech, and exploited by conversationalists for the structuring of language in the ever-changing environment of spontaneous discourse.

SEE ALSO: Analysis of Silence in Interaction; Conversation Analysis and Turn Taking; Erickson, Frederick; Multimodality and Rhythm; Phonetics and Phonology: Overview; Suprasegmentals: Prosody in Conversation; Suprasegmentals: Rhythm; Suprasegmentals: Stress

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Rhythm in Discourse

FREDERICK ERICKSON

Introduction

Speech is uttered in real time. It is experienced as a succession of "now" moments, each "now" preceded by an immediately past moment. The rhythmic organization of that timing contributes both to our capacities as interlocutors to communicate referential meaning with one another and to organize conjoint actions together as speakers and auditors, actions such as turn exchange, and listening responses. Moreover, the rhythmic organization of uttering speech simplifies the perceptual and information-processing tasks presented to an auditor, by marking the continuous stream of verbal and nonverbal behavior with prominence points whose emphasis underscores the current "now" moment and enables the auditor to anticipate the next "now" moment to come—a moment whose location in real time is projected by the rhythmic organization of verbal and nonverbal behavior at the current "now" moment.

The Pulse Organization of Discourse

The verbal and nonverbal behavior involved in the performance of speaking is organized in terms of an underlying *pulse* or *cadence*—that is, the periodic action of a simple harmonic oscillator that produces a rhythmic cycle, in this case a wave form of a very low frequency. The time intervals between one pulse, the next pulse, and the one after that are roughly equidistant, that is, the intervals are not exactly identical—they are not perfectly isochronous—but they vary only slightly from one to the next (as in the musical performance style termed *rubato*, in which there are slight accelerations or decelerations across successive musical "beats." On these slight irregularities, see Osborne, 2009).

In many of the examples that Erickson and others have investigated, the pulse interval is approximately one second's duration—varying from slightly less than one second to slightly more than one second in duration. This is within the usual time frame of resting heartbeat (hence the term "pulse") and also of resting respiration. The pulse interval is also apparent in the alternation of steps while walking, and in military marching the periodicity of the pulse is in the same time frame as that for resting heart beat—one pulse per second (a Maelzel Metronome rate of 60). The time interval between two successive pulses determines the fundamental *tempo* of interaction—a faster tempo involves a shorter pulse interval and a slower tempo involves a longer pulse interval. In actual performance the pulse interval may vary plus or minus one or two tenths of a second, from one iteration of the pulse to the next, but overall in a series of pulses, perceived as a gestalt, there will be consistency in the pulse interval.

The pulse/cadence interval is experienced by humans in their earliest engagements in social interaction. Periodicity is apparent in the verbal and nonverbal behavior of caretakers and infants during play episodes. Malloch (1999), for example, reports that in one such episode the mother spoke to her child in bursts of speech that averaged 1.53 seconds in duration, plus or minus a maximum of 0.1 second. He shows this with a spectrograph

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print, which was reproduced in Erickson (2003, p. 14), together with a transcription from his spectrograph. In this transcription each burst of speech begins at the left margin (two successive dots equal a half second pause):

Mo: Come on . . a-
gain . . . .
Come on then
That's clever
(baby vocalizes)
Oh yes . . is

that right . .

well tell me some more then

Gratier (1999), using a different spectrographic display, reported a similar periodicity in vocalizations between mothers and infants, with a pulse tempo of roughly five in every ten seconds. Similar timing patterns have been reported over the past thirty years by the research group led by Daniel Stern. (See, for example, Beebe, Stern, & Jaffe, 1979; Jaffe, Beebe, Feldstein, Crown, & Jasnow, 2001. See also Trevarthen, 1999, and the discussion of musical perception and cognition by Temperley, 2001.) Recent papers (Gratier, 2003; Gratier & Apter-Danon, 2009) show how this periodicity is flexible, mutually produced by mother and infant.

In speech among adult interlocutors this pulse organization is also apparent, but it is manifested in more subtle ways. Some but not all of the stressed syllables occur at a relatively constant pulse interval, and a resumption of talk may also occur on that interval after a pause in speaking has taken place. The pulse interval is also marked by various nonverbal actions performed by the speaker—occurring either simultaneously with the stressed syllable or in "substitution" for a stressed syllable—on the "beat" of the interval (e.g., the point of extension in a gesture, a shift in postural position, the onset and offset of gaze between interlocutors). Other syllables and nonverbal actions are performed more and less rapidly in accommodation to the underlying pulse interval. Some of these more rapidly occurring units project ahead toward the next pulse occurrence to come, thus successions of unstressed syllables "lean forward," as it were—they are *enclitic* in relation to the "next" pulse that is about to occur. Moreover, the listening behavior of listeners often underscores the pulse interval: for example, nods, reaches, shifts in postural position, and verbal back channels (mhm, yeah) often occur on the "beat" of the pulse interval. Thus across the real time course of interaction the pulse interval is maintained jointly in the speaking and listening behavior of interlocutors.

Within breath groups demarcated by an overall intonation contour followed by a slight pause for a next breath, the syllable closest to the pause that is most prominently marked by an increase in pitch, or volume, or both is called the *tonal nucleus*. This syllable is not only marked by pitch, volume emphasis, both pitch and volume emphasis, or *stress*, but the tonal nucleus within a breath group usually is uttered at the pulse or cadence interval. Since, as Chafe has demonstrated (1994) the breath group is the primary information unit in speech—not the sentence per se, but the breath group—the pulse organization of speech rhythm and the capacity of speech to communicate information are fundamentally connected within the conduct of talk (see also Steedman, 1996; Wennerstrom, 2001).

In addition to providing a temporal scaffold which permits expectation of which next moments will be those in which important information will be communicated in speech, the pulse organization of talk enables the prediction of the completion of one speaker's utterance and the appropriate time for the beginning of another speaker's utterance, that is,

the pulse interval that is apparent within the performance of verbal and nonverbal actions in speaking supports expectations that help to organize turn exchange among interlocutors.

A rationale for these inferences about the functions of the pulse interval in supporting the auditor's capacity to understand what is being said as it is being uttered in real time comes from information-processing psychology. Modern cognitive psychology has identified serious limits on the amount of information that humans can perceive and comprehend in real time (Newell & Simon, 1972; Simon, 1979). In the ongoing speech stream and in the stream of nonverbal actions there is far more information present than can be processed cognitively. The pulse interval simplifies the information-processing task for auditors by enabling them to focus attention on the "now" moment—which is predictable from the gestalt/scaffold of a series of periodic previous moments. If important new chunks of information appear more often than not at a periodic pulse interval, then attention itself can be focused by auditors in pulses across time.

Examples From Oral Discourse

Here is an example from an academic advising interview in a community college (this example is discussed at length in Erickson & Shultz, 1982, pp. 86–93). The counselor had just asked the student what courses the student was currently enrolled in. He then asked about the student's academic plans for the coming semester. In the transcript, syllables receiving primary stress are shown in boldface type, at the left margin, together with a time indication calibrated in 24ths of a second, which is the speed at which sound cinema film is exposed—in the final print of the film each frame of film was successively numbered, for research purposes. Thus 24 units equal one second's duration.

C: *shifts postural position and clasps hands together*
now aaaaah
4050
pause as far as
4074

next semester
4124

pause
4150

why don't we give some
4176
(*C* <u>*reaches*</u> *for a small note pad . . .*

thought to ah . .
4200

pause to
4224

what you'd like to take there
4250
note pad is now in place in front of C)

pause
4274

pause do you
4300

plan on con-
4325

tin-u-ing along this P.
4350 (*C shifts in chair and*

E. major?
4350
rests left elbow on desk, touching chin with left hand)

pause
4400

S: yeah I

guess so . . I might as well keep it
4424
up
4450

Notice the sequence of single syllables uttered by the counselor that receive primary stress and that occur on the pulse interval: **now**, **next**, **why**, **thought**, **what**, **take**, **plan**, (con) **tin** (uing), (P.) **E**. These are sketching, as it were, an outline of new information points that are being revealed in a temporally connected series of next moments until the overall trajectory of new information is completed:

now (*a new topic is about to be stated*)
pause (*what is the new topic?*)
next semester (*that's the new topic—next semester*)
give some
thought
pause (*thought to what?*) to
what
take (*what courses you would take*)
pause
pause do you
plan (*what plan?*) on con-
tin-u-ing (*continuing what?*) along this P.
E. (*continuing in your current course of study?*)

This idea sequence was finally completed across a series of next moments marked by stressed syllables. It was a discourse unit consisting of a shift to future time as a topic, followed by a rhetorical question ("Why don't we give some thought to what you'd like to take there?") and an actual question specifically identifying the student's major course of study ("Do you plan on continuing along this P. E. major?") After the completion of the counselor's extended utterance the student began his answer with unstressed syllables just before the next pulse interval and continued with a stressed syllable, "**guess,**" on that interval, followed by a stressed on the next pulse interval: "keep it **up**." Thus the completion of the counselor's turn, with points of new information marked during the turn's course by stressed syllables on the pulse interval, was followed by the initiation of the

student's rejoinder in a turn that was also organized rhythmically in terms of the subsequent pulse intervals.

Here is another example that illustrates the timing of answer in relation to question. The following transcription shows the timing of the vowel in primary stressed syllables (in seconds and tenths and hundredths of seconds) as well as the pitch of the vowel (in Hertz units) and its volume (in decibels). As in the previous example, here the stressed syllables appear at the left margin of the transcript. This information was determined through digital recording of the speech, using the PRAAT software for acoustic analysis. Time was measured at the center of the stressed vowel, together with the pitch and volume information that appeared at that point in time. In a kindergarten-first grade classroom the teacher was conducting a mathematics lesson on sets and set properties. She had placed a set of triangle-shaped blocks on the floor and another set of blocks that were all green in color. Pointing to the set of triangle blocks the teacher said, "These blocks are all the property of the same what?" The students replied, "Shape, shape, shape" with increasing volume at each iteration of the answer:

T:		**these** blocks are all the		
	sec	6.17		
	hz	331.2		
	db	74.29		
		pro- perty of the same		
	sec	7.04		
	hz	249.1		
	db	78.99		
		what		
	sec	8.24		
	hz	397.3		
	db	76.76		
SS:		**shape**	shape	shape
	sec	9.28	9.44	9.68
	hz	372.2	324.4	335.7
	db	72.32	74.99	79.86

Notice that the pulse interval between the stressed syllables in the sequence is approximately one second (plus or minus 0.2 sec). Notice also that the two "echo" answer words after the initial answer "shape" succeed the first answer and one another at an interval of 0.2 seconds.

This timing pattern can also be illustrated by quasi-musical notation, in which pitches are not indicated but the speech rhythms are shown (see Figure 1).

In analyses published separately Erickson has shown how the regularity of timing between question slots and answer slots in discourse enabled more experienced first graders in this K-1 classroom to act as "turn sharks" at the beginning of the school year, stealing answer turns from less experienced kindergartners (see Erickson, 1996; Erickson, 2004, pp. 53–71). Another discourse function of the pulse interval appears to be the discourse organization of lists in speech. List item nouns can be uttered on successive pulses

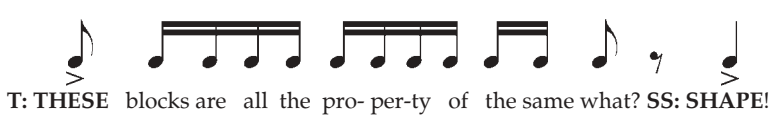

Figure 1 Musical notation illustrating the timing of an answer in relation to a question

as a way of showing semantic connections between them as members of a connected series. Erickson has illustrated this elsewhere, using quasi-musical notation to show the timing of the list item nouns (Erickson, 1982, 1992, 2004, pp. 36–48).

Conclusion

This entry has attempted to show how a basic scaffolding of timing organizes certain aspects of oral discourse in spoken English. Unstressed syllables tend to project toward those that receive primary stress within a breath group. More often than not the syllable receiving primary stress is uttered at a regular interval, a pulse interval, in relation to the primary stressed syllable in the previous breath group (and this pattern applies as well to some of the stressed syllables that are not primary within the breath group, such that the preponderance of stressed syllables within the speech stream stand in regular time relationships to one another). Emphasis points in gesture and in shifts in postural positioning and gaze often accompany or take the place of a stressed syllable of speech in marking the pulse interval. The pulse interval often is found to regulate the timing of turn exchange, and it also underscores the progressive revelation of chunks of new information. Erickson has argued that this timing framework in oral discourse simplifies the cognitive task of the auditor in tracking the meaning of what is being said and an implication of this is that our auditory and visual attention during the ongoing course of social interaction may itself occur in pulse bursts. This speculation could now be tested by continuous MRI scanning of brain function during conversational exchanges. To this author's knowledge that has not yet been done. Yet recent work on the timing organization of mother–infant interaction and on the neurobiology of musical perception (including the use of MRI scanning) and the kinesics of musical performance seems to confirm the importance of the pulse interval as an organizing device, and it seems reasonable to assume that this applies also in the real time conduct of conversation face to face among adults.

Auer, Couper-Kuhlen, and Müller (1999) in a monograph titled *Language in Time: The Rhythm and Tempo of Spoken Interaction* present numerous examples and interpretation that both support and partially contradict what is said in the previous paragraph. They acknowledge the importance of a pulse interval as an organizing device in oral discourse and they show this not only for English, a language in which syllable stress is especially heavily marked, but for Italian and German as well. They find the pulse interval to be particularly important in the regulation of turn taking. They agree that these timing patterns are an aspect of the implicit cueing systems in speech that Gumperz has called *contextualization* (see Gumperz, 1992; Auer & DiLuzio, 1992). However, they are not persuaded that the pulse interval is as ubiquitous in the organization of speech as Scollon (1983) and Erickson have claimed, and they are not persuaded by the quasi-musical notation Scollon and Erickson have both used to illustrate the timing of talk's uttering. In effect, they are concerned that we have over-interpreted our evidence, identifying stronger patterns of rhythmic integration in speech than what actually exists.

One reason for presenting PRAAT software measurements of timing in this entry, as well as timing data derived from the slow motion analysis of frame numbered cinema film, is to provide further evidence for the claims about rhythmic integration that Erickson has been making (as well as to provide independent evidence for the accuracy of the musical transcribing approach that Scollon and Erickson have used). It could be that the criticism of Auer et al. (1999) is correct and that organization of speech in terms of pulse intervals is more partial than Erickson and others have claimed. Further research is needed to determine this, including comparative study of languages to include a wider sample than those of Indo-European origin. As Erickson has reviewed a range of ethnographic films showing conversation in social interaction among Canadian Inuit speakers, Kalahari

Bushmen, Yanomamo from the Amazon river basin, and speakers of American English it appears to him that a regular pulse interval is apparent in the verbal and nonverbal behavior that occurs among interlocutors, but this remains to be demonstrated by machine analysis of the acoustic and kinesic phenomena that take place, using a wide cross-cultural sample of audiovisual recordings of interactional events.

Interestingly, a precursor to contemporary claims about the musicality of speech in English, especially concerning its timing patterns in stressed syllables, comes from an 18th-century author, Joshua Steele, who in 1775 published and presented to the president and fellows of the British Royal Society a treatise titled *An Essay Towards Establishing the Melody and Measure of Speech to be Expressed and Perpetuated by Peculiar Symbols*. The "peculiar symbols" referred to are a quasi-musical notation, using regular musical measures of two beats or three beats, showing both the rhythm of the uttering of syllables and their relative pitch levels. Among many examples, Steele included on page 47 a rendering in his notation of the manner in which he had heard the actor David Garrick deliver the beginning words of the soliloquy of Shakespeare's Hamlet. Erickson has converted that notation into the transcription approach used in this entry:

Hamlet, Act 3, Scene 1, line 55

to
be
. . or
not to be
pause
that is the
ques-tion

Further evidence from the 18th century concerning the timing of stressed syllables in English comes from the musical genre *recitative*, in which a composer deliberately imitates the timing and pitch of ordinary speech. In Handel's oratorio *Messiah* the following passage from the Hebrew scriptures (Isa. 35: 5–6) was set in recitative:

. . Then shall the
eyes of the
blind be
op-ened
. . and the
ears of the
deaf un-
stopp-ed

This and other examples of recitative are discussed in Erickson (2003), showing how the quasi-musical notation used by Scollon and Erickson is an adaptation of the recitative genre used by composers of the Baroque and Classical periods in music history. Handel wrote *Messiah* only about 20 years before Steele published his treatise on the musicality of speech prosody, and it is certain that Steele would have been familiar with recitative as a genre. Consider the semantic expectations set up by the grammar of the Isaiah text combined with its pulse interval organization, as the musical setting by Handel indicates it should be uttered: (*Then shall the what?*) The eyes. (*Of whom?*) The blind. (*Be what?*) Opened. (*And the what?*) The ears. (*Of whom?*) Of the deaf. (*Be what?*) Unstopped.

As a final example, consider the self-educated American statesman Abraham Lincoln, steeped in the language of Shakespeare and of the authorized version of the Bible. The

opening words of his Gettysburg Address were crafted with a high dignity and sonority analogous to that of the immediately previous examples. Again in the absence of machine recording one can only speculate how those words were actually spoken by Lincoln. But here is a hunch:

Four score and seven
years ago . . our
fa-thers brought forth upon this
con-tinent a new
na-tion . . con
ceived in liberty and
ded-icated to the propo-
si-tion that
all men are created
e-qual

To conclude, there is an aesthetic aspect to the pulse interval in oral discourse as well as a possible cognitive function for it—a special resonance that the pulse interval communicates. Moreover, if the discussion and evidence that has been presented here is correct, it suggests that when actors say "wait for the next beat" they mean it literally as well as figuratively.

SEE ALSO: Rhythm and Timing in Interaction

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Risager, Karen

MANUELA GUILHERME

Karen Risager is well known to researchers working in language and culture education and intercultural dialogue across Europe and beyond. She is a Danish scholar, with a global approach to the field, whose work on the relationship between language and culture within the scope of language education (second and foreign language) has inspired and contributed to structure theoretical research and teaching practice in the field all over the world.

She was born on July 15, 1947, in Frederiksberg, Denmark, where she grew up together with a younger brother. Her only son, Kasper Risager, was born in 1980. She attended high school at Rysensteen Gymnasium in Copenhagen. While in high school, she already showed an interest in world geography and languages and studied the geography of South America as well as the Dutch language and Ancient Greek.

Professor Risager holds a master's degree in general linguistics and French from the University of Copenhagen and later (2003) became Dr Phil (this equals the German degree *Habilitation*) in Cultural Encounters from Roskilde University, to which she has been attached since 1974. For many years she taught at the French department, at the Basic Studies Program for the Humanities (HIB/ICS and HAB) and at International Development Studies. More recently, she became very active in the creation and implementation of the Cultural Encounters program, a new interdisciplinary BA, MA, and PhD program at Roskilde University that started in 2000, focusing on identity constructions in a transnational, global, and postcolonial perspective. She was appointed Professor in Cultural Encounters in 2005. She then became the director and member of the board of the doctoral program on Intercultural Studies (the research group at Cultural Encounters) and the director of the research group on intercultural studies at Roskilde. In 2008, she was also appointed the director, and later became an ordinary member, of the working group on the Danish bibliometric research indicator in the fields of anthropology, ethnology, cultural encounters, and minority studies. She has also taught subjects related to intercultural competence at many in-service training courses for language teachers and other groups. Furthermore, she has been a consultant for the Ministries of Education and of Integration on several occasions, advising on the development of foreign language studies and the study of Danish as a second language. She is also cofounder of the Danish journal *Sprogforum, tidsskrift for sprog- og kulturpædagogik*.

Risager's research interest is twofold, dealing both with foreign language/culture education and with Danish as a second language. However, the core of her research interest is concentrated on a single interest, that is, on the relationship between language and culture and the various ways in which that relationship may develop during the learning of a language and of the ethnic cultures to which it relates, as well as the different circumstances of mobility that may surround and incorporate this process. It is therefore not surprising that she has become highly committed to a Danish cross-university research project on the linguistic and cultural learning processes of adult immigrants/refugees in Denmark. They are working with case material including a range of people from different parts of the world, and some of the work includes studies of the multilingual research process in relation to a range of languages. Risager is also a member of the international

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research center CALPIU which is led by Roskilde University and deals with "Cultural and Linguistic Practices in the International University."

She has applied her research interests to the development of both the cultural and social dimensions of Cultural Encounters and the more linguistic dimensions, especially on issues related to transnationalism, integration, and intercultural communication in Denmark and other countries. Another thing that fascinates Risager is the different images of Denmark created by various groups—different groups of immigrants, the tourist industry, Danes abroad, Danish media, and so forth. She is also very interested in studies of linguistic diversity and inclusive and exclusive language policies (as a part of cultural and social policies), in Denmark and in other countries. In addition, Risager has developed an interest in China, and educational relations between Denmark and China, since, in the spring of 2007, she was part of a Roskilde University delegation to several Chinese universities.

Her field of research is the relationship between language and culture, with special reference to sociolinguistics, anthropological and cultural linguistics, language and culture pedagogy, internationalization, and intercultural learning/competence. Among other things, she has been studying the images of culture and society that are created and transmitted within language teaching and citizenship teaching, mainly in foreign languages as well as in Danish as a second language for immigrants and refugees. She is especially interested in education in a global perspective (global education, world studies, education of the world citizen, cosmopolitanism), and her doctoral thesis dealt with these issues as part of a more general analysis of the relationship between language and culture. Her research on the theoretical relationship between language and culture, as well as on transnational language and culture pedagogy, has also included work with language hierarchies at international universities.

Karen Risager's publications are representative of her perspective on language and culture, both on their relationship in general and in intercultural learning and dialogue (see, e.g., Risager, 1998; Byram & Risager, 1999; Risager, 2003, 2004, 2006; Andersen, Lund, & Risager, 2006; Risager, 2007; Preisler, Fabricius, Haberland, Kjærbeck, & Risager, 2008; Risager, 2009, in press). Risager rethinks the link between language and culture, calling for a third position between the idea that the national language and culture are inseparable and the idea that language can be culturally neutral. She emphasizes the dynamic nature of language and culture by using the concept of "flow" in referring to linguistic and cultural global "flows," and she points out the complex nature of the language–culture nexus at the local level. She develops the concept of "languaculture" (or "linguaculture") as an umbrella term for the cultural dimensions of language. Finally, she analyzes the history of the national paradigm in international culture pedagogy and also develops a theory of a "transnational paradigm" in language and culture teaching and learning. Risager outlines the components of the intercultural competence of the "world citizen" where she points out the contemporary porosity of the national borders. Risager also explains that "the transnational paradigm rests on the recognition of linguistic and cultural complexity and on transnational flows" (2007, p. 193). This also inspires her view of the "global network of Danish speakers" who make theirs a "world language" because of their "actual geographical diffusion" (2006, p. 98). Risager has dedicated her attention to the contemporary cosmopolitan composition of Danish society, its linguistic and cultural diversity, as well as to the different approaches of immigrants to Danish society and citizenship. All the above proves the breadth of Risager's perspective on language and culture and demonstrates her vision of a multilingual and intercultural world.

SEE ALSO: Citizenship Education; Culture; Culture in Textbook Analysis and Evaluation; Intercultural Competence; Language, Culture, and Context; Language and Globalization; Linguaculture; Nation; Teaching Culture and Intercultural Competence

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Robinson, Peter

ROGER GILABERT

Born in London, United Kingdom, Peter Robinson is probably best known for his empirical studies, beginning in the mid-1990s, into the roles of attention and awareness during implicit and explicit second language learning, and the effects of task complexity on L2 learners' production and acquisition. Throughout his work in these areas he has consistently addressed the influence of individual differences in cognitive abilities on successful learning under implicit or explicit conditions, or on different types of task. His long list of academic interests and his contributions to the field of applied linguistics through journal articles, conference presentations, book chapters, and edited and authored books have revolved around three main hypotheses that he has put forward. These are the cognition hypothesis, the aptitude complex/ability differentiation hypothesis, and the fundamental similarity hypothesis, which will be further described below.

Peter Robinson obtained a BA degree in modern English linguistics and literature from the University of Wales, a PGCE in English education from the University of Nottingham, an MA in applied linguistics from the University of London, and a PhD in second language acquisition (SLA) from the University of Hawai'i. He has lived and taught in the United Kingdom, the Middle East, the United States, Australia, and Japan, where he is currently professor of linguistics and SLA at Aoyama Gakuin University in Tokyo. He has also been visiting professor at a number of universities worldwide and has editorial commitments either as editor of book series or as editorial board member of many academic journals in the SLA field. He has also been conference chair and organizer of a number of conferences, a plenary speaker at many local and international conferences, and is a prolific supervisor of many SLA-based BA, MA, and PhD theses.

Drawing on research and theory in SLA, developmental psychology and psycholinguistics Peter Robinson developed the cognition hypothesis of adult second language learning (Robinson, 1995, 2001a, 2003a) and its associated triadic componential framework (Robinson, 2001a, 2002b, 2003a, 2005a, 2007a, 2007c; Robinson & Gilabert, 2007). Influenced by the work of Givón (1995), Cromer (1991), and Slobin (1993), the basic tenet of the hypothesis is that language development can be promoted by manipulating the design of language-learning tasks so as to progressively increase the cognitive and conceptual demands they impose on learners. In childhood, increasing conceptual sophistication promotes language development, and the shift from what Givón (1995) called the pragmatic to the syntactic mode of production. For example, children (under two years of age) are initially only able to conceptualize and talk about things happening in the here-and-now, but later, with conceptual development, they are able to talk about the there-and-then, and this promotes their acquisition of past tense morphology and deictic expressions. In this sense, conceptual development "pushes" linguistic development (see Cromer, 1991; Robinson & Ellis, 2008). By default, adult L2 learners too may draw on and attempt to communicate using the ontogenetically earliest acquired concepts first in the early stages of L2 acquisition, and will try to find the simplest linguistic means to express them. This explains why early second language speech appears similar to the speech of users of pidgin languages. Robinson suggests that interlanguage will be optimally pushed to grammaticize more complex linguistic forms if the conceptual, attentional, and memory demands of the tasks increase in ways that recapitulate the sequence of conceptual development in childhood. This is

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what he calls the "natural order" for sequencing task demands (Robinson, 2003a, 2005a; Robinson, Cadierno, & Shirai, 2009).

The four basic predictions of the cognition hypothesis are that if task cognitive complexity increases along certain dimensions: (a) more complex and accurate messages will be produced to meet more complex tasks demanding more attention and memory; (b) learners will pay more attention to task demands, and therefore be more vigilant, and learn more from the features in the input they are exposed to; (c) as a consequence they will retain such features in the input for a longer time; and (d) performing simple tasks first and then more complex tasks will contribute to more efficient scheduling of attentional demands, and so better performance on more complex tasks. The cognition hypothesis is also driven by pedagogic concerns, such as the need to establish criteria for sequencing tasks in a syllabus (Robinson, 2005a, 2007a, 2009), and so it has associated with it a triadic componential framework that lists potential features of tasks that are susceptible to manipulation. These include cognitive task variables (e.g., the amount of reasoning they impose on learners or the number of elements they have to deal with during task performance), interactive variables (e.g., whether information flows in a single direction or in both directions between participants, or whether there is a single solutions or a number of solutions to the task), and affective variables (e.g., learners' aptitude or anxiety during performance).

The hypothesis proposes that tasks should be organized on the basis of their cognitive complexity (i.e., the attention and memory demands they impose on learners' processing) alone and not on their linguistic demands, as traditional syllabi have suggested. Such progressive increases in the complexity of task demands will speed up the passage through stages in interlanguage development, and will cause more attention to, noticing of, and retention of input. A fundamental aspect of the hypothesis is that not all dimensions of task complexity will cause the above mentioned effects, and so it distinguishes between variables that draw learners' attentional and memory resources to their performance and learning (i.e., resource-directing variables, such as the reasoning demands of the task) and those variables that contribute to task complexity but which disperse or deplete learners' attention and memory resources with negative effects for learners' performance and learning (i.e., resource-dispersing variables, such as not providing enough pre-task planning time).

Both the cognition hypothesis and its associated triadic componential framework have provided a theoretical basis for a wealth of empirical studies looking at the effect of task complexity on learners' oral and written production and their learning. As is typical of emerging fields, most studies have tried to isolate a single variable from the componential framework, with few studies looking at several variables simultaneously, or at the effects of task complexity longitudinally. So far most studies have looked at the effects of increasing task complexity along the degree of past time reference (i.e., +/− here-and-now studies), the number of elements involved in task performance, and the amount of reasoning that task design imposes on learners, and they have done so with a variety of task types and mostly in monologic mode. Some examples of empirical studies on the effects of task complexity on production and acquisition include: (a) studies on task complexity and monologic oral production (Robinson, 1995; Rahimpour, 1997; Michel, Kuiken, & Vedder, 2007; Gilabert, 2007a, 2007b; Ishikawa, 2007), (b) dialogic oral production (Nuevo, 2006; Robinson, 2007c; Gilabert, Barón, & Llanes, 2009), (c) monologic written production (Kuiken, Mos, & Vedder, 2005; Kuiken & Vedder, 2007a, 2007b), and (d) recasts and acquisition (Revesz, 2009).

Despite mixed findings, as yet, concerning the predictions of the cognition hypothesis, the area of task complexity is one of the most prolific areas of task-based research within the SLA field. This is confirmed by the large number of journal articles, conference presentations and symposia, and research networks, as well as MA and PhD theses written on various aspects of the theory in the last two decades. Motivated by the tenets and

predictions of the cognition hypothesis, task complexity studies are providing more and more information about the effects of manipulating task design on language performance and development, with important implications for syllabus design, classroom practice, testing, and SLA theory.

Beyond his interest in task design and how task internal features may contribute to L2 performance and development, Peter Robinson has carried out extensive work within the area of individual differences. Taking the person-in-situation approach to aptitude of Richard Snow (1987, 1994) as a source of inspiration, the basic claim of the aptitude complex hypothesis is that rather than a single, monolithic aptitude for language learning there exists multiple aptitudes and that these should be matched to the tasks and conditions under which students learn the foreign or second language. Simply put, the theory holds that there are different bundles of cognitive abilities (e.g., ability to notice gaps in your own interlanguage, ability to remember previous input, ability to process the meaning of messages) which are called upon under different conditions of L2 learning and exposure. Cognitive abilities, such as noticing the gap or memory for contingent speech, are in turn made up of a number of other primary abilities such as perceptual speed and pattern recognition in the case of the former and of phonological working memory capacity for the latter. Robinson (2001b, 2002a, 2005b, 2007b, 2010) advances four aptitude complexes associated with four different modes of instruction or pedagogical intervention. These are recasting (i.e., correct reformulations of an error by a more proficient interlocutor), oral input flooding (i.e., input manipulated to be rich in target forms), written input flooding, and explicit rule explanation. Which combinations of cognitive abilities (or "aptitude complexes") are drawn upon will therefore depend on whether students are being exposed to explicit rule explanations or to less intrusive interventions such as recasts or incidental learning by means of input flooding. For example, to learn from a recast learners will have to draw on both an ability to notice the gap (i.e., by which they notice what is missing or wrong in their interlanguage) and an ability for contingent speech memory (i.e., by which they remember what was previously said by the most proficient interlocutor), while for incidental learning through input flooding they will draw on their memory for contingent speech but also on their elaborate, semantic processing abilities.

Associated with the aptitude complex hypothesis is the ability differentiation hypothesis, which proposes that the strength in cognitive abilities contributing to each aptitude complex may vary from one individual to another. This means that, for example, a specific learner may have a high aptitude for noticing the gap in his or her interlanguage but may test low in his or her semantic processing abilities. That is, as in the case just mentioned, some learners will have clearly differentiated abilities. On the other hand, some learners may display similar strengths in all abilities, being high in aptitude on all of them, or low in aptitude on all of them. These differences in aptitude profiles, Robinson argues, explain individual differences in instructed language learning success. While still in need of more empirical studies exploring such aptitude complexes, both hypotheses lay the ground for research into the best ways of matching learners' individual cognitive differences to the instructional modes they are most likely to learn well under. Such links can be of enormous importance for successful instructional grouping and practice in foreign and second language acquisition, since matching aptitudes and instructional modes (and language learning tasks) should speed up second language acquisition processes.

Finally, the last hypothesis around which the work of Peter Robinson has revolved is called the fundamental similarity hypothesis of explicit, incidental, and implicit adult second language acquisition (Robinson, 1996, 1997a, 1997b, 2001b, 2003b, 2005c, 2007d). Largely inspired, among others, by the theories on attention and awareness of Richard Schmidt, the fundamental similarity hypothesis' basic claim is that when it comes to adult L2 learning, there are no fundamental differences between explicit and implicit learning.

This is a very similar position to the one held by Baars (2002) and Shanks and St. John (1994). All adult learning is the result of both attention to and awareness of input. Noticing (i.e., attention with awareness) and rehearsal (i.e., holding it in working memory for long enough for the new material to go into long-term memory) are necessary to learning, regardless of whether learning takes place under what laboratory experimenters call implicit versus explicit conditions. With regard to classroom learning, such noticing and rehearsal in working memory will take place regardless of whether adult learners are merely exposed to oral or written texts or whether they are receiving explicit rule explanations about how a language works. The difference lies, then, not in whether instruction is implicit or explicit, but on how much each instructional approach facilitates or enhances attention to, noticing of, and subsequent processing of forms in the input.

In sum, the work of Peter Robinson has contributed to applied linguistics from a cognitive perspective in the field of SLA. In the area of task cognitive complexity it has inspired and continues to inspire intense and extensive empirical research on the effects of manipulating task design on L2 performance and acquisition. In the area of individual differences, Peter Robinson has laid out some theoretical bases for the exploration of the links between certain combinations of cognitive abilities to success in language learning under different conditions of instructional exposure. Finally, his work has suggested that the implicit/explicit divide may not matter that much for instructed adult second language acquisition: what is more important is to develop instructional conditions (and design learning tasks) which foster the noticing and processing of new forms in the input.

SEE ALSO: Aptitude in Second Language Acquisition; Attention, Noticing, and Awareness in Second Language Acquisition; Explicit Learning in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Task-Based Learning: Cognitive Underpinnings

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Role of Deliberation in Language Policy and Planning

JOSEPH LO BIANCO

In an early phase of modern language planning and policy analysis there was a major focus on the idea of language problems and how language specialists could offer governments and other agencies solutions to these language problems. Borrowing from management theory and public administration early language planning work proposed operational models for the field involving an ordered sequence of research to understand and interventions to solve language problems. In effect this constituted the field of language policy and planning as various kinds of organized pursuit of solutions to language problems, in which the critical role was allocated to an expert language scholar. As a result language policy and planning itself became identified with procedures for analyzing language problems and the specification of protocols for how these are studied and interventions to resolve them.

A key notion imported from management theory was the central importance of problem solving, and, in turn, its assumption of an established or "objective" need or problem. Constructing a new hospital in a new residential area, or a new school in a zone where there are school-age children, or laying new tram tracks to support new model trams are all examples of "problems" or needs requiring expert assistance. Much early language policy assumed that language problems were rather like these ones, that is, uncontested social facts that correspond to the clear needs of a community. Language-planning specialists were optimistic that procedures for this kind of work would be devised and the field would achieve strong standing in academic life but would be characterized by clear links to the practical world of policy and problem solving. This optimism is reflected in Fishman's overview from 1971:

> Language planning as a rational and technical process informed by actuarial data and by ongoing feedback is still a dream, but it is by no means so farfetched a dream as it seemed to be merely a decade ago. (Fishman, 1971, p. 111)

The nature of the actual language problem would be determined by elected or appointed government officials and would preexist the processes of language planning. This approach characterized the work of many pioneers of language planning studies (e.g., Rubin & Jernudd, 1971) who famously asked *Can Language Be Planned*?; concluding that although language problems can be seen as "wicked" (i.e., complex) rather than "tame" (i.e., straightforward) they remain "policy tractable."

The idea of "tractability" is very important to this discussion. All of the examples given above, the new hospital, school, or tram tracks, are examples of problems that would attract high if not universal endorsement from the affected and even unaffected citizens. The determination of the precise nature of the problem would come from an authoritative body (e.g., government through its transport, health, or education minister) deciding what the problem would be (problem identification), in consultation with demographic experts or transportation specialists, and of course with the affected citizens. With regard to a

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language problem the next phase would involve the authority concerned commissioning language planning specialists to provide expert advice to public officials.

This is the model of Western liberal democratic governance, involving measures of democratic will and expert input, in which the ultimate point is a technical solution by disinterested experts to proffer "scientific" advice. The instruments of this advice would be surveys of language use/attitudes and public officials would then implement solutions, using classic techniques of public policy such as cost–benefit assessments to weigh up alternative courses of action.

This is the approach to language planning that typified the nation-building practices of its pioneers in postcolonial contexts in Asia and Africa in the 1950s and 1960s.

However, the ideal sketched out above often failed to produce the desired outcomes and the reasons for such failure are critically important to understand why language problems are usually more "wicked" than "tame" and therefore not always readily tractable. We can see this in the point at which the policy process most often failed, that is, its earliest phase, the one most specialists assumed to preexist the actual process of language planning: the problem identification phase. Put simply language problems are rarely objective and hardly ever uncontested.

This discussion is concerned with only one kind of language planning, leaving aside many more subtle kinds of planned language change, such as how social groups or individuals in their talk or other communication practices weigh up their expressive options or engage in self-correction, ideology displays, or impression management. Instead the discussion is on deliberate and conscious language policy making, and the proposal is to include deliberation activities with all language planning, not only with regard to solutions but also in relation to the definition of the underlying problem to be tackled, such as when governments distribute resources to support particular kinds of national language use or language education measures. Even by leaving aside subjective-personal realms of language planning and focusing on public ones we can see that the technical and scientific aspirations of early language-planning scholars are rather complicated.

The work of resolving identified language problems also involves personal and subjective realms of the actors involved, their various and sometimes incompatible interests and understandings of what is involved, who benefits, what specifically and how things are to be done, and so forth. In this regard language planning is clearly a multidisciplinary activity incorporating insights and methods from applied and sociolinguistics, economics, management theory, political and policy studies, sociology, and social psychology.

Some scholars made elaborate efforts to characterize the entire field of language problems. One impressive effort in this regard is by Hans Dua (1985). In this work Dua constructed a typology of language problems to reflect the real-world realities of Indian communication issues but this is widely applicable in other parts of the world. Observing how debates about language were posed and organized and what problems were identified and by whom, Dua was important for the whole field of language planning, arguing that the "characterization and systematic account of language problems of a speech community is a prerequisite to an adequate theory of policy formulation, language planning and language treatment" (p. 3). However, as it turns out, the characterization of problems and the participants in their definition and propagation gives rise to an almost infinite number of possibilities. In Dua's scheme *definers* of language problems can be insiders/outsiders, politicians/bureaucrats, researchers/professionals, and "the people." This "population of definers" gives rise to a variety of perspectives arrayed against social need defined in four ways. There are "normative needs," in whose definition professionals or experts dominate. There are "felt needs," in which affected groups or individuals prevail in the process of defining what will be taken to be the language problem policy making will need to solve.

There are also "expressed needs" which are those felt needs converted into action, and finally there are "comparative needs" in which a contrast is established among needs in various ways to permit discussion regarding decision making. Dua produced a matrix of problems along these lines and then organized them into how such problems are handled, in a series of oppositions, such as deeply or superficially, precisely or vaguely, among others.

The practice of specifying language problems and working out recommended treatments or solutions can be seen as theory or field building, and gave way to a later phase of critique. Most scholars identify the past decade or so of language policy analysis with "critique." This "phase of critique" is seen to expose biases, limitations of method or conceptualization, "technicism" (i.e., a desire to emphasize scientific and technical rather than human and negotiated aspects of the field), and other problems with language planning. However, while the phase of critique has been important it has neglected to propose improvements (see Lo Bianco, 2010, for critiques). Today there is more language policy making than at any time in history. Globalization, population mobility, and technology, have added to the multilingual complexity of the world and put before public authorities all over the world issues of social interaction and the management of resources, resolution of conflicts, and so forth, all of which have language and communication aspects. In this context a more purposeful effort to improve the practices of language policy making, to build on the work of the pioneers of the field rather than to endlessly deconstruct and expose its limited perspectives or partiality, is required.

What is missing from critiques of language planning and policy, however valuable some might be in exposing limitations and biases, is the critical dimension of how language problems come to be constituted as territory for the deployment of state resources, profes sional activity and symbolic prominence, in other words the politics of language policy and planning. Adding this focus would foreground the subjectivity of the actors, and give us a chance to assess whether the claim of partisanship is justified. The aim should be to strengthen language policy and planning rather than to have it abandoned, to assist it to become a more important scholarly and social practice, rather than one which would wither away after being subjected to critical scrutiny. Whether critiques are substantive, ideological, or methodological they would surely be addressed, as Fishman anticipated (1994), and are today mostly dated though they tend to circulate as though describing current language-planning practices. It is true that originally some language-planning specialists were uncritical toward their own practices and interests, but since the mid-2000s language planners have engaged in extended self-scrutiny and increasingly new modes of working in the language-planning sciences are emerging. In this entry a proposal is made to introduce the practice of deliberation conferences around the approaches to language problems as described by language-planning pioneers, such as Dua, to inject a participatory and democratic mode of operation and reduce the technical dimension with its air of imposing solutions onto communities of speakers. The aim essentially is to democratize the problem-definition phase of the language-planning cycle. It will always be true that language planners are not neutral technicians but a professional class of people with interests as well as skills; too many critics, aware of this weakness, were inclined to reject language planning because of this evident presence of subjectivity. But no human endeavor is absent of the interests and perspectives of the humans who engage with it; this does not preclude the possibility of disinterested practice nor does it invalidate the need for "scientific" scholarship. To argue otherwise is to be guilty of defeatism and leave policy makers and communities without the professional guidance and scholarship of generations of language planners, and to fail to use decades of language planning research and contemplation on real-world language problems.

Deliberation is a practice of organized discussion on the problems that will be taken to be the focus of the policy exercise. Analysts and critics of language policy and planning have paid too little attention to the processes of formulation of language policies and their implementation. A serious consequence of this lack of attention to the debates and arguments that precede the formulation of language policy is that little language policy analysis has addressed the process through which language policy is made. Policy-making activity is therefore reduced to a political or administrative set of procedures and regarded as less interesting to analysts than the content, effect, or cultural and ideological meanings of the policy outcomes.

Designs of language use and change are a central academic preoccupation since the so-called "language turn" in sociology, policy studies, and other disciplines (Majone, 1989; Turnbull, 2005). At the other extreme of the continuum we find more practical and "real-world" problems. Whether in education, labor market participation, citizenship practices, or health and legal procedures, questions of communication have become central to public administration. Progressively through global migration, trade and digital media exchange most societies have become both multilingual and highly mobile.

Deliberation can combine three main kinds of language planning (status, acquisition, and prestige) by inserting a formal process whereby those affected by language decisions of public authorities, the specialists, and the authority representatives engage together in *discourse re-framing*, whose aim is to produce the conditions for more "disinterested" and cooperative consideration of what is taken to be the language problem, what research is needed to understand it fully, and what solutions emerge to tackle it. In this way language planning can be tied to public discourse in how problems are framed and represented publicly and the potential of collaborative facilitation and data to advance their resolution.

Deliberation conferences emerge from theories of deliberative democracy which has become an important feature on the research agenda of several social science disciplines. There has been a surge in theory of deliberation and interest in its practice as "discursive" democracy in recent years (Uhr, 1998). Deliberation activity is contested by those who view politics as consisting only of the play of interests and power (Shapiro, 1999), and who tend to downplay or deny a role for debate and consensus, especially for debate and consensus produced by outsiders to the realm of politics, such as academics. However, this rejection of deliberation tends to view politics as an all encompassing activity, focused only on the institutional power of government. Many institutions operate with devolved responsibility and in this jurisdictional control political processes are located much closer to the real world of activity of professionals, such as teachers in schools, or immigration officials, or translators in hospitals or in legal settings. In these, and many other settings in which the delivery of services is linked to choices that must be made about language and literacy resources and planning, deliberation organized at a local level can be highly productive and supportive of multilingual and multiliterate possibilities.

Dryzek and Niemeyer (2006) have argued that the goal of deliberation should generally be a "meta-consensus" on the range and structure of beliefs, values, and preferences, as opposed to simple agreement on a course of action, the ranking of policy options, or the content of values. Although this is the focus adopted here, the long history of research on language problems gives grounds for belief that new approaches might yield convergence of ideas and possibly even agreement on courses of action as well.

One potential of deliberation processes being included in language policy making is that the large body of applied linguistic research of recent decades could potentially be tied more closely to program delivery or to new forms of social organization desired by communities. The potential benefits include overcoming weaknesses in overly professionalized language planning that marginalize affected populations by imposing on them understandings of language problems they do not share or contest. Contemporary deliberation

practices are themselves actively designed by all affected groups and offer a promise to foster engaged citizenship and improved educational and social opportunities. The field of language planning and policy would acquire information regarding understanding of complex problems and disputes on resource allocations in educational and social activities and how problem definition is constructed in the discourse processes of communities relating to professionals, each assisting the other to refine and develop a shared representation of the task at hand.

SEE ALSO: Colonialism and Language Policy and Planning; Critiques of Language Policy and Planning

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Role of Instruction in Second Language Acquisition Theories

JESSICA WILLIAMS

Although a natural relationship between theories of second language (L2) acquisition and instruction might be expected, surprisingly the connection between many theories and instruction is tenuous, or even absent. Since it is clear that the L2 often, indeed usually, proceeds in the absence of instruction, any viable theory of L2 acquisition should specify that instruction is *not* necessary. The possible role for instruction ranges from significant to helpful to no effect or, potentially, even detrimental. First, it is important to specify the target of instruction. Is it the morphosyntactic core, or does it include the L2 lexicon, phonology, and sociolinguistic rules? Second, if instruction has a role, what kind of instruction is indicated? The answer will depend, in part, on how a given theory handles the explicit–implicit knowledge interface. Teachers and researchers have long acknowledged that learners often seem to draw on knowledge they cannot articulate, and, conversely, are able to verbalize knowledge they cannot reliably use in communication. The theories below differ considerably on their acknowledgment of this interface and how they characterize it. This list of theories is by no means exhaustive; rather, it includes those that have been the most widely discussed.

Linguistic Theory—Universal Grammar (UG)

Historically, generative theory has been the most influential in linguistics, so it is no surprise that, although it is not a theory of learning, its influence extends to L2 acquisition. According to this theory, learners come to L2 acquisition with considerable knowledge of their first language (L1) and of the linguistic principles of UG. This knowledge is abstract, tacit, and normally not accessible to introspection. Acquisition is constrained by this knowledge, and new, implicit knowledge is acquired though exposure to primary linguistic input. Formal instruction on how the L2 works can increase a learner's explicit knowledge of the language, which is neither abstract nor a true reflection of UG. Crucially, in this theory there is no interface between explicit and implicit knowledge.

The lack of interface suggests that instruction that only affects explicit knowledge will be of limited use. Yet, recent research suggests that an explicit focus on functional morphemes and their features, which may constitute an acquisitional "bottleneck," may be useful (Slabakova, 2008). Instruction that includes input with relevant triggering data may also be helpful (White, 2007). Another role for instruction within UG is that it can inform teachers about the nature of L2 learning problems (VanPatten, 2010). Finally, other aspects of language acquisition, such as some lexical or pragmatic knowledge, which lie outside of UG, may benefit from instruction.

Skill Acquisition Theory

Skill acquisition theory is a theory of learning that explains the shift from basic knowledge to mastery. Language acquisition is much like the acquisition of any other skill (e.g.,

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multiplying numbers, riding a bicycle). It goes from an initial stage of slow and effortful behavior to fluent and effortless behavior. Initial acquisition may occur through observation or analysis by the learner, but can also result from direct instruction. The knowledge that is gained in this stage is called *declarative knowledge*. At this stage, in production and comprehension, words are retrieved one by one. Gradually, through repeated exposure and use, this is converted to *procedural knowledge*, which means that language can be used in larger, preassembled chunks that are stored in long-term memory. More practice leads to faster and more fluid retrieval. This scenario requires a permeable interface between explicit and implicit knowledge. What is learned through explicit instruction and with effort can, with practice, become implicit knowledge to be drawn on automatically and with little effort.

Skill theory posits a key role for instruction. The initial stages of acquisition benefit from careful explanation of rules, followed by deliberate practice, during which declarative knowledge remains available. Skill theory does not differentiate between modules of language, such as grammar and lexicon. However, neither does it treat all objects of learning as equal. For example, some grammatical rules are considered easier in that they can be readily articulated and have few exceptions. These are the aspects of language that are most amenable to instruction. Irregular and complex rules are learned less easily. For these, optimal instruction includes rules of thumb that approximate a rule, and continued exposure to input containing the form to be learned (DeKeyser, 2007).

Emergentism

Emergentism is another broad cognitive theory of learning in which language learning is considered similar to other kinds of learning. However, L2 acquisition poses special challenges because of the previous knowledge of the L1. Language learning is considered largely inductive and computational. Language acquisition mechanisms interact with massive amounts of linguistic data to arrive at statistical computations that impute regularities in those data. Thus, what might appear to be the learning of linguistic rules is actually the extraction of regularities from large numbers of exemplars. These exemplars are not limited to grammar rules. Rather, they are *constructions*, which include conventionalized form-meaning mappings, from morphemes to multiword chunks. Learning is based on individuals' memory of all the constructions they have seen or heard (Ellis, 2006). However, not all exemplars are equal in their learnability. For example, more prototypical form–meaning mappings are more easily encoded into memory than unpredictable mappings. In addition, language is naturally redundant, and some mappings are overshadowed by more salient cues to meaning. For example, lexical cues (e.g., *yesterday*) tend to block learning of less salient morphological cues (e.g., *-ed*) to the same meaning. Finally, form–meaning mappings from the L1 may impede learning of form–meaning mappings in the L2. As a result, some aspects of the L2 may be difficult to acquire on the basis of input alone.

Learners may benefit from the instruction that draws their attention to these aspects of the L2 (Robinson, 2007). Instructional materials that highlight less salient form–meaning mappings, or explanations that point out where the L1 might impede learning, can expedite L2 acquisition. Emergentism also has implications for the sequencing of learning tasks. Increasing the cognitive complexity of communicative pedagogical tasks over time can direct learners' attentional and memory resources in ways that will encourage L2 development. More demanding tasks will place increasing pressure on the learners' developing system, forcing them to draw on more complex constructions to encode more complex concepts (Robinson & Ellis, 2007).

Input, Interaction, and Output

The input-interaction-output (IIO) approach explains L2 acquisition as a result of exposure to natural input and learners' interaction with other (native or non-native) speakers of the L2. Through this interaction, learners are able to tailor input to their learning needs, to orchestrate opportunities for output, and to modify that output to bring it into a closer approximation of the target (Gass & Mackey, 2006). Input is the driving force in language acquisition. Some forms of input, however, are better than others. According to IIO, input that is far beyond the proficiency level of the student will be less helpful than input that is closer to the learner's current stage of development. Input must be comprehensible in order to be processed and acquired.

Instructional input can be modified to increase comprehensibility. Pedagogical tasks can also be designed to encourage learners to negotiate for meaning, thereby increasing their comprehension of the input. L2 acquisition is facilitated when learners notice new forms in the input, as well as any disparities between the input and their own production. Instructional implications of IIO include: (a) enhancement of input to call learners' attention to new forms, (b) feedback on ways in which their output differs from the target, and (c) opportunities for output. Output plays a crucial although indirect role in L2 acquisition in that it allows learners to compare target input to their production and to modify it accordingly.

Sociocultural Theory

According to sociocultural theory (SCT), human mental functioning is mediated by social and cultural activities and cognition cannot be understood outside of social interaction. Indeed, mental activity arises out of the interaction of humans with one another and with the objects in their environment. Thus, although many theories separate cognitive from social activity, SCT views these as parts of a unified whole. L2 acquisition, like all learning, is a socially mediated process, in which learners move from a stage in which they are regulated by objects in their environment, to a stage in which other, relative experts, must assist them in carrying out tasks, to a final stage in which they can regulate their own performance. No distinction is made between implicit and explicit forms of knowledge (Lantolf, 2000).

There is a significant role for explicit explanation in SCT. Concept-based instruction, which is rooted in SCT, is designed to raise learners' awareness of formal properties of language and gradually increase their control over it. Crucially, explanations must include complete conceptual meanings, not simply rules of thumb. Second, instruction should lead first to awareness, but then to control and internalization of conceptual knowledge. Finally, it must connect grammatical concepts with social interaction (Negueruela & Lantolf, 2006).

SEE ALSO: Collaborative Language Learning; Explicit Knowledge and Grammar Explanation in Second Language Instruction; Form-Focused Instruction; Input-Based Instructional Approaches; Learner Readiness; Output-Based Instructional Approaches; Practice in Second Language Instruction; Roles for Corrective Feedback in Second Language Instruction

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Role of Language and Place in Language Policy

JOHN E. JOSEPH

In no proper sense can languages be said to belong to places. They belong unquestionably to individuals, and in a more complex way to a whole people. The complexity lies in the fact that "a people" is largely defined by its language, and vice versa, in a way that is at best dialectical, and at worst circular. Even the names used to designate peoples, places, and languages are usually variants of the same word—Finns in Finland speak Finnish—except in the case of post-imperial situations such as have left English, French, Spanish, and Portuguese as the languages of many nations, and the religious spread that has put Arabic in the same condition.

It is true that groups of people who occupy contiguous territory and see themselves as having common interests tend to develop, over long stretches of time, ways of speaking that are distinctive to them, marking them out from groups who either are not geographically adjacent to them or else are perceived as having different, probably rival interests. In other words, language does tend to mark out the social features on which national belonging will come to be based—but it is only a tendency, because it also happens very frequently that the same way of speaking is shared by people with very different interests (religious ones, for instance), and that markedly different ways of speaking exist among a group of people who nonetheless see themselves as part of the same nation.

Individuals do tend to feel that *they* belong to both a people and a place, and they can have strong views about who else does or not belong to the place they consider theirs. Language plays a cardinal role in these matters, because of how it is indexed for identities of many kinds—national, local, ethnic, religious, and many others besides. This indexicality is extremely complex, operating at many levels. It is learned by mother-tongue speakers native to the place through a long apprenticeship that starts in the cradle. It can be learned by others starting later in life, but *only with intense effort*. The degree to which an "outsider" masters that complexity readily becomes a primary index of whether, and to what extent, he or she "belongs" to the place in the eyes of others who claim it as their own.

In the 1990s the view became widespread in political science and applied linguistics that peoples possess "language rights" comparable to other types of human rights, and this has been the guiding principle of language policy for the last two decades. But language rights are connected to place in a way that few other rights are. It is assumed that they apply to a people in their ancestral homeland having the right to use their traditional (or "heritage") language, as opposed to the national language which is generally used for official purposes and as the language of education. These rights are taken to have a greater legitimacy than whatever rights are possessed by relative newcomers to the place, even when the newcomer immigrants are more numerous than the heritage language speakers—indeed, even when the immigrant language is alive and vibrant, and the heritage language no longer has any monolingual speakers and is rarely used by persons under the age of fifty.

In this sense, language and place are a limit on democracy. The same rights are not shared by everyone in the polity; the voice of those with a claim to belong legitimately to the place counts for more than those who have come more recently. Why then has language

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policy in democratic regimes evolved in this direction? Generally in order to resolve past wrongs. The heritage languages in question inevitably have a history of having been repressed by a central government which, in the past, based language policy on the principle that the way to ensure equal political rights for everyone in the country was to make sure that they had equal access to the national language, in education, broadcasting and, insofar as possible, everyday life. It was never the case that such actions from the central government had no support in the populations whose language they were trying to eradicate: the more "progressive" elements in those populations agreed unsentimentally that all would be better off speaking the national language, especially if it was a "world" language, than that of their own locality.

Every place is multilingual, indeed "heteroglossic" in Bakhtin's (1981, written in 1934–5) sense that all linguistic activity consists of a multiplicity of different ways of speaking that are constantly intermingling with each other. For Bakhtin,

> A unitary language is not something given but is always in essence posited—and at every moment of its linguistic life it is opposed to the realities of heteroglossia. But at the same time it makes its real presence felt as a force for overcoming this heteroglossia, imposing specific limits to it. (Bakhtin, 1981, p. 270)

The impetus for overcoming heteroglossia is strong enough for its omnipresence to be regularly swept under the rug, and for the myth of monolingualism to be maintained in spite of all the evidence of multilingualism. Or indeed the reverse: certain places proclaim themselves to be multilingual when, in fact, they contain a relatively small proportion of multilingual individuals; the "multilingualism" of these places consists in the presence within them of segregated communities of monolinguals.

In the worst instances, strong ties of language and place can be invoked to justify policies of "ethnic cleansing" or genocide. Hitler attempted to justify his initial invasions of neighboring countries on the grounds that these German-speaking peoples were inherently part of the German nation; and, as Hutton (1999) has shown, his policies of oppression and ultimately extermination of the Jews were underpinned by the argument that, although their language, Yiddish, was a form of German, they had the perverse racial peculiarity of not being able to have a "mother tongue." They therefore did not belong to the German body politic but were a parasite within it.

Such beliefs emerged as unforeseen implications of German Romantic views on the origins of languages and how they are supposedly bound up with national mentalities. Despite apparently being discredited on account of the uses made of them by "scientific racism," such views continue to have a powerful hold on the imagination. The "Sapir–Whorf hypothesis," which partly reflects this heritage, continues to be one of the most widely known ideas of modern linguistics and is all that some students in adjacent fields know of linguistics. Sériot (2004) makes a penetrating critique of the form of semantic analysis developed by Wierzbicka (1997), whose work is based on the idea of semantic primitives that underlie all languages. In Western Europe, says Sériot, she is read as a universalist, and one of the bases on which her work is criticized is that it seems to work deductively from a priori principles rather than inductively from comparing actual language data. In Eastern Europe, however, she is read with the focus on how her semantic primitives are realized in such strikingly different ways in different languages, so much so that Polish and English ways of thinking appear to be strongly contrasted because of how the lexicon and grammar realize the semantic primitives differently. She is received, in other words, as a neo-Humboldtian linguistic determinist, and Sériot shows close parallels between Wierzbicka's conclusions and those of the Nazi linguist Leo Weisgerber. There is of course no implication whatever that Wierzbicka is a Nazi sympathizer. It is not even clear whether

the "Eastern" readings of her work that give rise to the parallel are ones she intended, and in a vivid reply to Sériot (Wierzbicka, 2008) she has made clear that she does not endorse them. But what Sériot shows is that this way of thinking about language and mind has a deep and enduring appeal.

Some of Wierzbicka's Eastern readers (e.g., Waşik & Waşik, 2004) use her views to support a critique of "linguistic imperialism" (see Phillipson, 1992), a belief that other, "bigger" languages are destroying their own language from the inside out. In other words, multilingualism is a *temporary phase* in language shift, the take-over of one language by another. This brings us to language policy, a field with a history of shifting but always ambivalent views about multilingualism (see Spolsky, 2004; Wright, 2004). When it emerged in the 1950s and 1960s as "language planning," it was mainly about limiting what was seen as the negative effects of multilingualism for the development of emerging postcolonial nations.

Multilingualism was regarded as "impossible" in the sense that we speak of an "impossible" situation, that is, one that exists but that has to be put to an end, or at least tempered, to achieve a goal regarded as essential. But after 1989 the perception gained ground that actually societal multilingualism was becoming impossible in the more usual sense, because English and other world languages were wiping out smaller languages across the globe at an unprecedented rate. Of course the use of "unprecedented" here is pure hype: no one knows anything about historical rates in this area, and it is certainly true that languages have arisen and disappeared everywhere and at all times. In the 1870s there was also a widespread perception that English was taking over the world, fueled by unprecedented developments in communications technology—the telegraph—transportation and mass immigration (see Joseph, 2004). And in the 1920s and 1930s the Soviet linguist N. J. Marr developed his theory of stadialism, which held that the languages of the world were steadily reducing in number and merging structurally. Marr is generally regarded as not entirely sane, and yet by seeing multilingualism as ultimately unsustainable, he would fit in perfectly well today at a conference on language policy, though he would not agree with the others present that anything they might do would put off the inevitable arrival of monolingualism.

This is all very strange to applied linguists who are involved with the teaching of English, since we see ever increasing evidence of diversity, new Englishes, which is to say new languages arising across the world where English is spoken, less rather than more mutually intelligible with each passing year. From our perspective, multilingualism looks very robust indeed, and Canagarajah (1999) and other proponents of "resistance" and "appropriation" are right to insist that the critics of "linguistic imperialism," while they are not completely deluded by any means, fail to appreciate the agency with which peoples across the globe are generating new languages using recycled materials. For Canagarajah, the principal strategy for combatting the global hegemony of English is to (re)incorporate mother tongues into the teaching of the target language. This not only validates the mother tongue in the students' eyes, but also helps challenge English by encouraging the encroachment of mother-tongue structures into "the very grammatical and discourse system of English"—in other words, resistance. Resistance increases the chances that students will feel that the (inter)language *belongs to them*—that is what is meant by appropriation.

Perhaps the most radical attempt at undoing any connection of language and place in language policy has been the critique launched and maintained by Davies (1991, 2003) against the concept of "native speaker" in applied linguistics. For Davies, the native speaker is a myth with dangerous and destructive consequences for language teaching and testing. It is mythical because, in reality, there is no clear boundary between native and non-native speaker. Some people are able to learn a language, even starting in adulthood, to a level that makes them all but indistinguishable from a native speaker (though it appears that fine differences in grammaticality judgments always remain). The myth is destructive,

Davies believes, because, in supporting the idea that language learners can never attain their goal, despite their best motivation, talents, and efforts, by virtue of where they were born and raised and other factors beyond their control, it is an unjustifiable form of social exclusion that applied linguistics should attempt to fight rather than to reinforce.

SEE ALSO: Language Policy and Planning: Overview; Language, Politics, and the Nation-State; Multilingualism and Language Rights

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Role of Linguistic Human Rights in Language Policy and Planning

TOVE SKUTNABB-KANGAS

Introduction: Linguistic Human Rights as Part of Language Policy

Linguistic human rights (LHR) can be defined as "only those language rights . . . which are so basic for a dignified life that everybody has them because of being human; therefore, in principle no state (or individual) is allowed to violate them" (e.g., Skutnabb-Kangas, 2008, p. 109; see Skutnabb-Kangas, in press-a, for a discussion of definitions). For basic presentations of LHR, including Web sites for all human rights (HR) instruments below, see Skutnabb-Kangas, 2000, in press-a, in press-b).

LHR can be *negative (or non-discrimination)* or *positive (or affirmative) rights*. Negative rights forbid discrimination on the basis of various characteristics, for example language. Positive rights, according to Max van der Stoel (1999), encompassing affirmative obligations beyond nondiscrimination, include a number of rights pertinent to minorities simply by virtue of their minority status, such as the right to use their language. They are necessary because a pure nondiscrimination norm could have the effect of forcing indigenous/tribal peoples and minorities (hereafter ITMs) to assimilate to a majority language, effectively denying them their rights to identity.

LHR can be discussed from an *instrumental* point of view, seeing languages purely as means of communication, or as markers of identity, with an *expressive* interest. LHR can be *individual*, as in Article 30 in the United Nations *Convention on the Rights of the* ***Child*** or in the UN *Declaration on the Rights of* ***Persons*** *Belonging to National or Ethnic, Religious and Linguistic Minorities*. They can also be *collective*, as in the UN *Declaration on the Rights of Indigenous* ***Peoples*** (UNDRIP) and the Council of Europe's *Framework Convention for the Protection of National* ***Minorities*** (even if both are constantly jumping between individual and collective levels) (all emphases added). LHR can be *personal* (a person has them, regardless of where in a country she or he lives) or *territorial* (as in Switzerland: people have language-related rights only in the cantons where a certain language—German, French, Italian, or Romansch—has been designated as official, but not in other cantons), or a combination of these (as in Finland). Finally, languages themselves (rather than speakers/signers) can also be granted rights (as in the *European Charter for Regional or Minority* ***Languages***). All of these rights are necessary, and there is no conflict between the various types of right.

Granting (or not granting) LHR to everybody should be seen as a part of a country's or region's language policy and planning (LPP). Language policy (LP) has been defined as

> [a] systematic, rational, theory-based effort at the societal level to modify the linguistic environment with a view to increasing aggregate welfare. It is typically conducted by official bodies or their surrogates and aimed at part or all of the population living under their jurisdiction. (Grin, 2000, p. 7)

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However, this definition excludes, more or less, LPP initiated, applied, and fought for or resisted by those who are "targets" of some language policies, such as ITMs; the following definition expands the scope:

> Sociocultural process that includes official acts and documents as well as everyday language practices that express normative claims about legitimate and illegitimate language forms and uses, and have implications for status, rights, roles, functions, and access to languages and varieties within a given polity, organization, or institution; the scholarly study of how decisions about language are formulated and implemented, often considered a subset of language planning. (Skutnabb-Kangas & McCarty, 2008, p. 9; see also McCarty & Wyman, 2009, p. 280 quoted below)

Various monitoring and complaint mechanisms in international law can partially make them agents in LPP, but only *after* the policy has been set by "official bodies."

Recourse to LHR can be seen as representing one strategy in LPP. It can use international law as an instrument to "modify the linguistic environment." This strategy can be used by "official bodies" (e.g., government or local authority representatives), when they are engaged in national and international *normative standard setting* (e.g., negotiating, signing, and ratifying HR instruments, or deciding on official or teaching languages—*status and acquisition planning*—but also when standardizing the corpus of languages, through grammars, dictionaries, and curricula, *corpus planning*). They can also *implement* various linguistic human rights, for instance in education, even those which are not demanded by international law.

The human rights system can also be used in attempting to influence governments that are otherwise committed to the gospel of neoliberalism or are in other ways *not* aiming to "increase aggregate welfare" of the population, such as Turkey vis-à-vis the Kurds (Skutnabb-Kangas & Fernandes, 2008). ITMs themselves can and do also refer to LHR when demanding rights. Often knowledge about LHR or lack of them, or about endangerment of ITM languages, plays a catalytic role in creating a movement for demanding LHR and other HR. LPP also happens through innumerable daily actions when people choose which language to speak to whom and when (*discourse planning*, Lo Bianco, e.g., 2010). *Technological planning* (Rannut, 2009), especially for demographically small languages, is also often initially bottom-up work. It is important to see LPP as both top-down and bottom-up, as a "multilayered sociocultural (and therefore political) process—complex modes of human interaction, negotiation, and production, mediated by relations of power . . . to illuminate crosscutting themes of cultural conflict and negotiation, identity, ideology, and linguistic human rights" (McCarty & Wyman, 2009, p. 280).

Supplying or Denying Linguistic Human Rights: Good or Bad Language Policy Circles

When the government provides or guarantees ITM language services, it is responsible for the "*supply increasing*" side of LP (see Grin, 2000, p. 53). A state can also *decrease supply*, for instance by stopping the training of minority mother-tongue teachers (as in Sweden in 2001), something that has been criticized by the Advisory Committee monitoring the ratifying countries' governments' behavior in relation to Council of Europe's *Framework Convention for the Protection of National Minorities* (see above). Likewise, states that deny access to free and compulsory basic education (which is a human right) are restricting supply. Almost 100 countries have introduced school fees for basic primary education, often prompted by the World Bank's and the International Monetary Fund's structural

adjustment demands. This fact has been strongly criticized by the former United Nations' Special Rapporteur on the Right to Education, Katarina Tomaševski (2001).

LHR can also be used as a "*demand-increasing*" mobilizing strategy, often by the ITMs themselves, with goals at several levels, locally, nationally, and internationally. Competence in a language increases when it is being used. Becoming/being competent in a language (here, in an ITM language) makes people realize that the language could be used in new areas/domains (for instance in formal education, rather than only at home, in informal education). This awareness may lead to demands for being allowed to use it in those new domains. Demand increases with use and if demands are being met by the government (or some other body, including the minority itself), which increases the supply side, this enables still more use.

If the supply side again increases as a result of this demand (so that, for instance, mother-tongue-medium—MTM—education is offered and minority-language teachers are being trained), this mutual positive influence may eventually lead to a "normalization" of a minority language's position: a situation where it *can* be used (government responsibility) and *is being* used (joint responsibility for minority and government) for many or most official purposes, in addition to private use. Its knowledge becomes a valued resource—linguistic capital which is then convertible to other forms of capital. This happened with the Catalan and Basque languages after Franco's death in Spain—the languages have been "normalized"—and is happening now in the Baltic states.

This "good LPP circle," with mutual positive influence between supply and demand, and with the goal of granting ITMs equal access to participation in society also linguistically, can harness (linguistic) human rights for democracy.

But many states are today in a "bad LPP circle": they are afraid of linguistic and other HR demands, especially demands about autonomy (minorities) and self-determination (indigenous peoples). Therefore they restrict supply (e.g., MTM education) in order to contain the demands. One example is the actions of those states in the USA that have restricted bilingual education or adopted pro-English cum anti-minority-languages legislation—or both—(see Menken, 2008, for the de facto negative LPP consequences of the No Child Left Behind policy). States refuse to grant positive LHR in education. Often they do not even want to respect negative nondiscrimination rights. Through this denial of LHR they are, instead of solving problems, breeding conflict, inviting trouble, undermining democracy, and often committing crimes against humanity. Offering education only through the medium of a language that minority students do not have full access to restricts supply; this may in time increase demand. Reasonable but unmet demands increase poverty (Amartya Sen, economics Nobel laureate; see Mohanty, 2000) and invite conflict.

Which Demands Are Justified? Is Speaking a Minority Language a Handicap to Get Rid Of?

The lively discussions about justice in political philosophy and political sciences in general, applied to minority rights (presented, for example, in Kymlicka & Patten, 2003), exemplify supply and demand well. Drawing especially on HR philosophers, researchers debate what kind of language rights can be justified on what bases: that is, which demands justify what kinds of supply. Should all inequalities that are due to characteristics not chosen by the individual be "compensated for" or "rectified" by the state? Being born to parents who speak a language that is not the dominant language in the society where the person lives, and suffering injustice if this language has low status, could be seen as a disadvantage for which an individual could justifiably demand "compensation"—that is, the state should offer more supplies, and, if so, for how long?

Most liberal political scientists do not think that states should support the maintenance of the existence of minority groups beyond present generations (see, e.g., articles by the editors in Kymlicka & Patten, 2003). They see speaking a minority language as some kind of a handicap (as in deficiency theories) to be compensated for. With this view, obviously this "handicap" should not be carried on to the following generations. If parents choose to do it, it is their responsibility. This liberal view concentrates on individual rights and therefore minority groups do not, according to many political scientists of this kind, have justifiable demands to continue their existence as minority *groups*. They are given the choice either to assimilate, or to continue *without* a justified claim for support for collective rights. The more communitarian-oriented political scientists are conspicuously absent from or silent (silenced?) in many of the most prominent debates.

There is, in theory, somewhat more "toleration" toward the demands of indigenous and tribal peoples to continue to exist as peoples, and, accordingly, toward their LHR. The UNDRIP (see above) includes some LHR that support this maintenance of ITMs' continued existence (especially Articles 13 and 14). The four countries that originally voted against it, Australia, Canada, New Zealand, and the USA, are at the same time among the top countries in having made indigenous and tribal languages "disappear" during the last 200 years through their genocidal LPP policies—all have since conditionally accepted it.

When Can an LHR Approach "Deliver"?

From a more critical perspective, David Harvey questions whether a human rights approach can represent an effective alternative to neoliberal marketization and commodification. Undoubtedly, the neoliberal insistence upon the individual as the foundational element in political-economic life opens the door to individual rights activism. But by focusing on those rights rather than on the creation of substantive and open democratic governance structures, we may simultaneously cultivate methods that cannot escape the neoliberal frame. Neoliberal concern for the individual trumps any concern for equality, democracy, and social solidarities (Harvey, 2005, p. 176). Naomi Klein (2008) likewise shows how a human rights approach that concentrates on documenting human rights abuses, and separating these from the neoliberal economic system that *requires* them in order to come to power and to be maintained against the interests of the majority of populations, has lost its intellectual honesty and integrity. A rhetoric of military intervention so as to hinder human rights abuses has been misused by the USA and its allies when invading Afghanistan and Iraq, the underlying universalist human rights principle here being made subservient to military-corporate globalization (see Phillipson, 2009). When human rights abuses such as historical and present linguistic genocide in education are documented and discussed (see Skutnabb-Kangas, 2000; Skutnabb-Kangas & Dunbar, 2010), LHR and LPP that denies them must be analyzed within the ecolinguistic macro-level context of the economic and political systems. The linguistic capital dispossession that the denial of LHR in education amounts to also dispossesses the world of much of the knowledge on how to maintain biodiversity, vital for the existence of humans on the planet. Much of this precious nuanced knowledge is encoded in the small languages of ITMs and other local peoples. In subtractive education it does not transfer to the languages that replace the small languages. LHR are a necessary but not sufficient part of critical subaltern-as-agent-driven LPP, and they can "deliver" when treated as such.

SEE ALSO: Critiques of Language Policy and Planning; Economic Analysis of Language Policy and Planning; International Law in Language Policy and Planning; Language Rights

in Language Policy and Planning; Linguistic Human Rights; Linguistic Imperialism; Linguistic Legislation; Mother-Tongue-Medium Education

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Roles for Corrective Feedback in Second Language Instruction

ROY LYSTER

The multifaceted roles of corrective feedback in second language instruction continue to attract the attention of both researchers and practitioners interested in how it can most effectively be integrated into classroom interaction in ways that benefit second language development. In contrast to theoretical arguments that a learner's underlying interlanguage system is affected only by positive evidence and not by negative evidence, other theoretical perspectives that run the gamut from cognitively to socially oriented suggest that corrective feedback is not only beneficial but may also be necessary for moving learners forward in their second language development. For example, a cognitive-interactionist perspective of second language acquisition attributes a role not only to positive evidence but also to negative evidence in the form of feedback that triggers noticing of nontarget output; skill acquisition theory attributes a pivotal role to feedback in tandem with practice that leads learners from effortful to more automatic use of the second language; and sociocultural theory views feedback as other-regulation that provides learners with dialogically negotiated assistance as they move toward more self-regulated use of the second language.

The overall effects of corrective feedback on learners' interlanguage development have been confirmed by recent meta-analyses synthesizing findings from a range of primary research (e.g., Lyster & Saito, 2010). The topic of corrective feedback in second language instruction, therefore, is approached in this entry on the premise that providing feedback is more effective than withholding feedback. Although only oral feedback will be addressed, feedback on writing is of equal importance in classroom instruction and evokes some of the same practical and theoretical issues that will be addressed here in terms of types, functions, and effects of corrective feedback.

Types of Corrective Feedback

Among various ways of classifying corrective feedback, one well-known taxonomy is Lyster and Ranta's (1997) identification of six types of corrective feedback, which was based on a detailed analysis of teacher–student interaction in French immersion classrooms. Ranta and Lyster (2007) later suggested that each of the six feedback types could be classified as either a reformulation or a prompt:

> Reformulation includes recasts and explicit correction because both these moves supply learners with target reformulations of their non-target output. Prompts include a variety of signals, other than alternative reformulations, that push learners to self-repair. These include elicitation, metalinguistic clues, clarification requests, and teacher repetition. (p. 152)

A recast is "the teacher's reformulation of all or part of a student's utterance, minus the error" (Lyster & Ranta, 1997, p. 46). Explicit correction also provides the correct form but,

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unlike recasts, "clearly indicates that what the student had said was incorrect" (p. 46). In contrast, prompts—which Lyster and Ranta (1997) referred to as *negotiation of form* and others refer to as *elicitations*—withhold correct forms and instead provide clues to prompt students to retrieve these forms from their current knowledge. The distinction between providing or withholding correct forms has proven to be a useful one in instructional settings, where teachers are able to make online decisions about whether to provide or to withhold correct forms in response to students' errors.

Distinctions among different feedback types are less categorical when it comes to comparing implicit and explicit types, because so many variables interact to determine degrees of explicitness from a learner's perspective. For example, the delivery of recasts varies from implicit to explicit as a function of: (a) the nature of the interactional exchange, with recasts more noticeable in explicit language-focused exchanges than in communicative exchanges; (b) the overall communicative orientation of a classroom, with recasts more easily noticed in form-focused classrooms than in meaning-focused classrooms; and (c) the orientation of individual learners, with form-oriented learners benefiting more from recasts than meaning-oriented learners. Also at the explicit end of the spectrum are recasts that are short, contain minimal changes, and include intonational stress (e.g., Loewen & Philp, 2006).

Corrective feedback considered explicit also comes in many shapes and sizes, especially in terms of *informativeness*, that is, "how much information is provided about the blame of the ungrammaticality" (Ortega, 2009, p. 75). Some explicit feedback techniques include provision of the correct form while others withhold the correct form and provide either metalinguistic information or simply a metalinguistic "clue" (i.e., not an explanation) indicating that the learner's utterance is ill formed. Prompts also range from implicit to explicit, but are distinguishable from recasts and explicit correction in terms of what Ortega (2009) calls *demand*: "the degree of conversational urgency exerted upon interlocutors to react to the negative feedback" (p. 75).

Functions of Corrective Feedback

Recasts are by far the most frequently used feedback across a spectrum of classroom settings. Reasons abound for their ubiquity; they are considered by some to be "pedagogically expeditious" (Loewen & Philp, 2006, p. 551). Others have documented how they fulfill important discourse functions that help to move lessons ahead when target forms are beyond students' abilities (Lyster, 1998), as well as specific scaffolding functions that promote a shift toward a more academic register, especially in content-based instructional contexts (Mohan & Beckett, 2001; Gibbons, 2003).

Recasts are also claimed to benefit second language development because they provide learners with a primary source of negative evidence. For example, Long (1996) argued that, because recasts preserve the learners' intended meaning, they free up cognitive resources that would otherwise be used for semantic processing. With meaning held constant, recasts have the potential to enable learners to focus on form and to notice errors in their interlanguage production. Others have argued, however, that this is the case only in form-oriented classrooms where the emphasis on accuracy primes learners to notice the corrective function of recasts. Otherwise, recasts can be sources of linguistic ambiguity, owing partly to their frequent occurrence in confirmations, confirmation checks, or expansions, all intended to confirm or disconfirm the veracity of the student's message (Lyster, 1998). Whether teachers recast ill-formed utterances or repeat well-formed utterances, their intentions appear to coincide with functions generally attributed to repetition in classroom discourse, namely, to acknowledge the content of the student's utterance or to "rebroadcast"

the student's message in order to ensure that the whole class has heard. Carpenter, Jeon, MacGregor, and Mackey (2006) found that even adult learners, as they viewed videotaped segments of a researcher responding to a learner with a mixture of recasts and non-corrective repetition, were more likely to identify recasts as non-corrective repetition than as recasts—regardless of whether or not they actually heard the learner's preceding utterance. This may be why recasts, when considered as conversational moves comprising *negotiation for meaning* (Long, 1996), have not proven as effective in classroom settings as in laboratory settings for focusing learners' attention on form. For example, in post-secondary content-based classes of Italian as a foreign language, Musumeci (1996) reported that the teachers "supplied key lexical items and provided rich interpretations of student responses, rather than engage in the kind of negotiation which would have required learners to modify their own output" (p. 314). Similarly, in the context of content-based ESL classrooms, Pica (2002) found very little negotiation for meaning that might be expected to move second language development forward, as the majority of students' non-target utterances were not addressed in any direct way.

From a conversation analysis perspective, Seedhouse (1997) argued that teachers' preferences for implicit uses of corrective feedback mark linguistic errors as embarrassing and problematic, which in turn contradicts the pedagogical message of "it's OK to make linguistic errors" (p. 567). He argued in favor of more direct and overt corrective feedback so that "pedagogy and interaction would then work in tandem" (p. 572). From other perspectives too, researchers have argued against over-reliance on implicit feedback and instead for the use of feedback that places demands on students to self-repair. Proponents of skill acquisition theory, which contends that learning entails a gradual transition from effortful to automatic use of the target language through practice in meaningful contexts, advocate a judicious use of prompts that push second language learners to practice emergent target forms in contexts of interaction. Sociocultural theory emphasizes the importance of feedback that assists novice learners in moving away from reliance on other-repair provided by experts and toward more reliance on the self, as the expert yields control to the novice in a graduated fashion. The output hypothesis also predicts that second language learners benefit more from being pushed to retrieve target language forms than from merely hearing the forms in the input, because retrieval and subsequent production stimulate the development of connections in memory and thus move language development forward. From an overall educational perspective, increasingly handing the floor over to students in this way is an integral part of scaffolding that enables them to take more and more responsibility for their own learning.

Effects of Corrective Feedback

To examine corrective feedback in terms of its illocutionary force and propensity for pushing students to modify their output, Lyster and Ranta (1997) borrowed the term "uptake" from speech act theory to refer to the range of possible utterances made by students in response to corrective feedback. Uptake includes student utterances either with repair or still in need of repair; student utterances with repair entail either self-repair or mere repetition. A question of concern to researchers and teachers alike is whether the subsequent processing triggered by different types of corrective feedback differentially affects second language development over time—a question necessitating quasi-experimental studies of corrective feedback with pre- and posttest measures.

Lyster and Saito's (2010) meta-analysis of 15 such quasi-experimental classroom studies of oral feedback revealed three patterns: (a) Recasts, prompts, and explicit correction all yielded significant effects; (b) prompts yielded large effect sizes and proved significantly

more effective in the within-group contrasts than recasts, which yielded medium effect sizes; and (c) the relative effects of explicit correction could not be distinguished from those of recasts and prompts. They interpreted these findings to mean that classroom learners (a) can benefit from the positive evidence available in recasts as well as from the opportunities recasts provide to infer negative evidence, but (b) seem to benefit even more from the negative evidence available in prompts and from the greater demand they impose for producing modified output. That the effects of explicit correction were not distinguished from the effects of recasts and those of prompts was attributed to the types of linguistic evidence available in explicit correction and the overlaps in this regard with recasts and prompts. That is, explicit correction—similar to recasts—conveys positive evidence by providing the correct form; at the same time, explicit correction—similar to prompts—conveys negative evidence by indicating that the student's utterance was incorrect.

Some research has specifically examined the role of linguistic targets in feedback effectiveness. In keeping with observations that recasts might trigger processing mechanisms that are particularly conducive to pronunciation development, Saito and Lyster (in press) demonstrated that, in the context of form-focused instruction, Japanese learners of English receiving recasts following pronunciation errors in their use of English /r/ improved more significantly than learners receiving the same form-focused instruction but without recasts. At least two other classroom studies specifically examined the differential effects of feedback types on different grammatical targets. Ellis (2007) compared the variable effects of recasts and metalinguistic explanations on ESL learners' use of regular past tense *-ed* and comparative *-er*, features that were hypothesized to differ in terms of grammatical difficulty, with past *-ed* considered easier than the comparative *-er*. The group receiving metalinguistic explanations showed greater effects on the more difficult form than the less difficult form, whereas the recast group did not show any significant gains over the control group on any of the measures. Yang and Lyster (2010) compared the effects of recasts and prompts on Chinese EFL learners' use of regular and irregular past tense forms in English, thus targeting a grammatical feature with different realizations in form but identical semantic and functional value. They found similar effects for recasts and prompts in the case of exemplar-based learning (irregular forms) but more significant effects for prompts than for recasts in rule-based learning (regular forms).

To account for the variable effectiveness of recasts, a complementary strand of research has focused on individual differences and learner perceptions of recasts measured in terms of either immediate uptake or subsequent recall. Many studies indicate that recasts of phonological and lexical errors are more noticeable than recasts of errors in morphosyntax (e.g., Carpenter et al., 2006), and a laboratory study by Trofimovich, Ammar, and Gatbonton (2007) showed that learners with stronger phonological memory, analytic ability, and attention control abilities were more successful than learners with weaker abilities at using the information available in recasts in order to produce a target-like form several minutes later. As to whether repetitions of recasts are of any value, some laboratory studies have found that, when learners repeat a recast, they are more likely to subsequently perceive its corrective intention during stimulated recall sessions (e.g., Egi, 2010), but other laboratory studies have shown that whether or not learners modify their output immediately following recasts is not associated with actual development (e.g., McDonough & Mackey, 2006). While more research into the role of immediate repair on learning outcomes specifically in classroom settings is needed, current research suggests that positive learning outcomes are associated with self-repair following prompts but not necessarily with learner repetition following recasts, whose variable effectiveness has instead been associated with specific input features such as length and prosody.

Future Directions

Research is increasingly suggesting that corrective feedback plays a pivotal role in the kind of scaffolding teachers need to provide to individual learners to promote continued second language growth. The time is ripe for further research into this potentially rich pedagogical tool, heeding the call by Russell and Spada (2006) for greater attention to "the constellation of moderating variables that could make a difference regarding CF [corrective feedback] effectiveness" (p. 156). This constellation includes variables intersecting at cognitive, linguistic, and socio-educational levels. In cognitive terms, individual differences are worthy of further pursuit, including learners' age: There is some evidence that younger learners are especially sensitive to the impact of corrective feedback. Further research is also warranted into the role of linguistic targets in feedback effectiveness and especially how these effects vary in conjunction with learners' developing knowledge of the target forms. Previous research has tended to conflate this variable, failing to distinguish clearly between relatively new and already internalized forms. Also worthy of further pursuit in terms of linguistic features is research designed to tease apart the specific attributes of recasts, prompts, and explicit correction that contribute to their variable effectiveness in classroom settings. In terms of socioeducational context, further research is warranted to explore how the differential effects of these attributes vary in relation to the overall communicative orientation of the instructional setting and the second or foreign-language learners therein. A timely contribution to future research into the multifaceted roles of corrective feedback would be more nuanced and multidimensional analyses of how variables such as feedback types, individual differences, linguistic targets, and instructional settings interact to mediate feedback effectiveness.

SEE ALSO: Form-Focused Instruction; Instructed Second Language Acquisition; Output-Based Instructional Approaches

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Romaine, Suzanne

TERTTU NEVALAINEN AND MATTI RISSANEN

Suzanne Romaine (1951–) has been Merton Professor of English Language at the University of Oxford since 1984. She was born in Massachusetts and graduated from Bryn Mawr College, Bryn Mawr, Pennsylvania in 1973 (A.B. magna cum laude, German/linguistics). She took her MLitt at the University of Edinburgh, Scotland, in phonetics/linguistics in 1975, and her PhD in linguistics at the University of Birmingham, England, in 1981. Her doctoral dissertation dealt with the methodology and status of sociohistorical linguistics. Prior to her Oxford chair she was senior research scientist in linguistic anthropology at the Max-Planck-Institut für Psycholinguistik, Nijmegen, Netherlands, and lecturer in linguistics at the University of Birmingham.

Romaine has held a variety of scholarships and visiting fellowships in many countries. Of these may be mentioned the Rotary International Foundation fellowship (University of Edinburgh) and the Canada Commonwealth Scholarship (Ontario Institute for Studies in Education, University of Toronto). In 1991/2 she was Kerstin Hesselgren Professor at the University of Uppsala. This award for outstanding women in the humanities is sponsored by the Swedish Research Council for the Humanities and Social Sciences. In 2004/5 she was the Royden B. Davis Chair in Interdisciplinary Studies at Georgetown University in Washington, DC, and in 2005/6 a resident fellow at the Center for Advanced Studies in the Behavioral Sciences in Stanford, California. In 1998 she was awarded an honorary doctorate from the University of Tromsø in Norway, and in 1999 from the University of Uppsala in Sweden. In 2010 she became a member of the Finnish Academy of Science and Letters. She has given guest lectures at universities in all parts of the world and plenary lectures at numerous international conferences.

Romaine's research interests are mainly focused on sociolinguistics, especially on problems of societal multilingualism, linguistic diversity, language revitalization, language acquisition, historical linguistics and language change, and language contact in the broadest sense. Other specializations include corpus linguistics, minority languages, pidgins and creoles, language and gender, literacy, and bilingual/immersion education. She has conducted extensive fieldwork in Europe, first on the language of working-class schoolchildren in Scotland and subsequently on patterns of bilingualism and language loss among Panjabi speakers in England as well as in the Pacific Islands region. Her research has also taken her to Papua New Guinea to study the language of rural and urban schoolchildren, and most recently to Hawaii.

Romaine's first monograph, *Socio-historical Linguistics: Its Status and Methodology*, was published in 1982. This pioneering work was, with reason, regarded as one of the primary texts in the new field of variation-based historical sociolinguistics. It combines theoretical considerations of modern synchronic sociolinguistics with a careful analysis of the development of relative clause formation in sixteenth-century Middle Scots. The case study raises fundamental questions about the status of sociolinguistic theory, and shows not only how the present can be used to explain the past but also how the past is relevant in explaining the present. Romaine suggests an integrative sociolinguistic theory at the intersection of sociolinguistics, historical linguistics, and general linguistics.

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Romaine's other important contributions to the history of English include Volume 4 (1776–1997) of *The Cambridge History of the English Language* (1998); Romaine was the editor of the volume and the author of the 50-page introductory chapter. She also wrote a long chapter on the contact between English and other languages for Volume 6 of the *Cambridge History*, with reference to the history of American English from its very beginnings to the 20th century. Her other contributions to the history of English consist of both general surveys and articles focusing on the development of grammatical details, such as relative clauses and the comparison of adjectives. Sociolinguistic approaches are, not unexpectedly, important in these studies.

Her other books stand as evidence of the extensiveness of her linguistic expertise in the fields of applied linguistics and the various branches of modern sociolinguistics. Of these may be mentioned *The Language of Children and Adolescents: The Acquisition of Communicative Competence* (1984), *Pidgin and Creole Languages* (1988), *Bilingualism* (1989; 2nd, revised ed. 1995, nominated for the British Association of Applied Linguistics Book of the Year), and *Language, Education and Development: Urban and Rural Tok Pisin in Papua New Guinea* (1992).

These studies are all informed by Romaine's interest in central issues in linguistic theory: language acquisition, universals, and linguistic change—without forgetting their practical implications for language policies and questions like bilingual education. In *Pidgin and Creole Languages*, Romaine defines and describes the life cycles and dynamics of the most common products of language contact, pidgins and creoles. Pidgins are found to have a structure of their own which is independent of the languages involved in the original contact. Romaine shows how the structural stability of a pidgin varies in different phases in its life cycle. Within this context, she analyses creole formation in terms of transmission, innovation, and borrowing. In *Bilingualism*, Romaine connects the sociolinguistics and psycholinguistics of bilingualism, and studies various aspects of bilingual behavior, such as code switching and language mixing. She focuses on the bilingual child and bilingualism in education, and examines common attitudes toward bilingualism and children's social and cognitive development and achievement at school. Her analysis draws on her extensive fieldwork on Panjabi/English bilinguals in Britain, and Tok Pisin/English bilingual children in Papua New Guinea. Variation and change in the English-based pidgin Tok Pisin constitutes the focus of a monograph of its own, *Language, Education and Development: Urban and Rural Tok Pisin in Papua New Guinea*.

Professor Romaine's other major monographs include *Language in Society: An Introduction to Sociolinguistics* (1994), *Communicating Gender* (1999), and *Vanishing Voices: The Extinction of the World's Languages* (2000), written jointly with Daniel Nettle. *Vanishing Voices* was the winner of the British Association of Applied Linguistics Book of the Year Prize in 2001.

Written in an accessible style, these three publications bear witness to the author's impressive command of her field. They also show the many ways in which this knowledge matters outside linguistics. In *Language in Society: An Introduction to Sociolinguistics*, Romaine emphasizes the interaction between language and society, covering issues such as language and gender, language in education, pidgins and creoles, and language change. Even with this wealth of knowledge, Romaine finds that sociolinguistics needs more empirical studies on non-Western societies and cultures. She adds that theoretical developments in the field would greatly benefit from closer collaboration between linguists and sociologists. In *Communicating Gender*, Romaine shows how culture and gender are communicated and understood through discourse. The textbook focuses on the cross-disciplinary nature of approaches to language and gender, and draws on diverse fields from anthropology to education, and communication to literary criticism. The award-winning *Vanishing Voices* addresses the extinction of the world's languages: half of them may die out in this century. Nettle and Romaine put this trend in the wider context of the threat to our ecosystem.

They defend the world's languages as the accumulated knowledge of humanity and propose that endangered languages can only be preserved by preserving the cultures and habitats of their speakers.

Suzanne Romaine's books have so far been translated into Catalan, Dutch, French, Italian, Japanese, Spanish, and Turkish. As well as editing Volume 4 of the *Cambridge History of the English Language*, she was the joint editor of *Creole Genesis, Attitudes and Discourse: Studies Celebrating Charlene J. Sato* (1999, with John Rickford), and of *Tok Pisin Texts: From the Beginning to the Present* (2003, with Peter Mühlhäusler and Thomas E. Dutton).

Romaine has published more than 150 articles covering her many fields of scholarly interest. Her most recent articles deal with multilingualism, language contact, minority languages, and the extinction of language. In the *Language and Linguistics Compass* (2007), Romaine's message is: "We should think about languages in the same way as we do other natural resources that need careful planning: they are vital parts of complex local ecologies that must be supported if global biodiversity is to be sustained."

Romaine was a member of the UNESCO Expert Group that produced UNESCO's position paper *Education in a Multilingual World* (UNESCO, 2003), and also wrote the background paper on Languages and Cultural Identities for UNESCO's report *Investing in Cultural Diversity and Intercultural Dialogue* (UNESCO, 2009).

SEE ALSO: Language Endangerment; Language Evolution: Pidgins and Creoles; Linguistic Diversity; Multilingualism; UNESCO and Language Policy and Planning

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Romanization of Vietnamese

JOSEPH LO BIANCO

Writing about East Asian language planning, Gottlieb and Chen (2001) point out that script reform and change are often synonymous with language policy. While all East Asian societies engage in forms of script planning, Korea and Vietnam stand out for the degree of their departure from the historic dependence on both imported and locally devised logographic (morpheme-based Chinese) writing. Korea's Hankul system is a consciously constructed script, sometimes described as "featural" (i.e., one in which graphemes correspond not to phonemes but to phoneme constituents such as voicing and other phonological properties), while Vietnam has adopted roman alphabetic writing with diacritic markers to accommodate spoken features of Vietnamese (D. H. Nguyen, 1992; X. T. Nguyen, 1995; Coulmas, 1996; Rogers, 2005).

The Vietnamese language appears an unlikely candidate for romanization, and yet it is one of the most successful examples of this process. Geographically the country is remote from Europe, the originating source of Latin-based writing, and culturally it resides within the East Asian sphere and shares its long reverence for literary education with an extensive classical Chinese heritage. Vietnam's experience of French colonization and the specific legacies of its anticolonial struggle, marked by nationalist and later socialist phases, forced the break in sociolinguistic conditions that permitted acceptance of script romanization. The nationalist phase won cultural elites away from the Chinese and the indigenous script varieties, while socialist ideology promoted population-wide adult literacy campaigns that recruited the nation's masses into romanized writing. The outcome was the unique national script of Vietnam, Chu Quoc Ngu, and its triumph over its orthographic rivals.

Vietnamese is the mother tongue of the more than 80 million people who call themselves *ngu'o'i Viet* or *ngu'oi' kinh*, the common language of the various ethnic groups in the political territory of the modern state of Vietnam, a language spoken in the border zones of neighboring countries, and the home language of more than one million expatriate Vietnamese, residing in Europe, north America, and Australia (Lo Bianco, 2001). Over the course of a long literary history Vietnam has used three writing systems: classical Chinese characters and two representations of Vietnamese. These are Chu nho or Chu Han, the "scholars'" script, or Han characters, which were introduced through ancient Chinese southward expansion into what is today north Vietnam, and dominated there for a millennium of Chinese rule and for centuries after under native dynastic monarchies. The Chu Nom, or Nom, is an indigenous variation of Chu Han called by D. H. Nguyen "the demotic characters." Nom was devised in the 13th century and functioned alongside, and often in opposition to, Chu Han for some 800 years, often in a division of the literary tasks of the society. The third main script developed among Catholic missionaries from Portugal and France, initially as an aid to their learning of spoken Vietnamese; it is sometimes called "roman script," Chu Quoc Ngu, but most commonly Quoc Ngu. The latter is now mostly referred to as "the national script" and since 1945 has predominated over the entire national territory and at all educational levels (DeFrancis, 1977; Lo Bianco, 2001).

The three scripts have historically performed distinctive functions within Vietnamese society and have often been associated with different population interests and with antagonistic political-religious and cultural traditions. Chu Han (Chinese in classical Chinese

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characters) was the exclusive and official form for public administration. Nom arose initially as a form of resistance literature against Chinese cultural and political sway and experienced several efforts at adoption, only to be resisted and suppressed, usually by officials loyal to the inherited Confucian traditions of the court. The coexistence of the two scripts, Han and Nom, represents what can be called social digraphia, that is, the creation of a long-term and relatively stable order in which different kinds of literary purposes, audiences, and modes of production were associated with an exclusive script and language.

While it is the case that only in recent decades has there been mass literacy, Vietnam can be considered "one of the most literary civilizations on the face of the planet" (Woodside, 1976, p. 2) thanks to the historic admiration of education and the prominent place given to literacy in social arrangements. This tradition of respect for writing has made script politics especially important in Vietnam's national history.

A pattern of separate written systems (a Confucian heritage rendered in Chu Han and a vernacular one rendered in Nom), along with their institutions and a growing canon of Buddhist literature and social observances conducted by Buddhist priests, all produced a gulf with the nonliterate majority and endured for more than 800 years. Nom attracted loyalty from radical nationalists, hostility from traditional bureaucrats, and pragmatic acceptance in the limited domain of indigenous literary production (DeFrancis 1977: 44). The highest literary achievement in the traditional canon, *Truyen Kieu*, is a Nom work by Nguyen Du, composed between 1802 and 1820. While using the outward form of Chinese characters, Nom script altered the basic system of representation, so that characters came to represent aspects of Vietnamese phonology rather than morphemes or words. The coexistence of Chu Han and Nom meant that each specialized in genres of literacy, so that total literary production was divided between poetry, novels, and creative writing in Vietnamese and public administration, scholarly, and classical writing in Chinese. Nom retained an advantage in that unlike Chu Han it was connected, however distantly, to the spoken language of the population; nonetheless, both scripts represented a barrier for the unschooled population. Many centuries later the politics of bridging this gap (Lo Bianco, 2001), this time in a struggle between Nom and Quoc Ngu, in the interests of seeking independence from French and later Japanese rule, was decisive in the struggle to win the support of the illiterate masses.

All attempts to have Nom replace Chinese writing at court were thwarted either by local interests, by Ming invasion, or by Manchu incursions, often resulting in the suppression or destruction of Nom literature. Under conditions of penetration by Western mercantile, missionary, and military adventurism from the 16th and 17th centuries, a new literary dynamic, a new form of writing and a new script politics were introduced. The defeat of the Tay Son dynasty by their rival Nguyen Anh, who enlisted the support of French military officers and ascended the throne as emperor-king Gia Long (1802–20), inaugurated Vietnam's final dynasty. Gia Long however, reinstituted Chinese works as the prime curriculum for education and favored Chinese over Nom.

Quoc Ngu is attributed to the Jesuit priest Alexandre de Rhodes, working around 1627 and 1638, who developed a basic notational guide his Portuguese predecessors had pioneered. The new orthography was published by de Rhodes in his 1651 *Dictionarium Annamaticum, Lusitanum et Latinum* as a phonemic rendering of Vietnamese with extensive use of diacritics to indicate sound quality and as tone markers over vowels. With some modifications made by other missionaries, the system remains essentially unchanged today (Marr, 1981, p. 167).

When French dominion was established over the whole territory of Vietnam by the mid-19th century, use of Quoc Ngu was restricted to religious documents and private letters within the small community of converts and missionaries, while the goal of French rule was to establish standard French as the language of its Indo-Chinese empire. French

administration was progressively established from 1861, the same year that printing of Vietnamese commenced and Quoc Ngu entered education for the first time in its classical form as an aid to learning. Not until the first decades of the 20th century did Quoc Ngu move outside its restricted circles of use and interest when it came to be promoted by both colonialist and comprador sections of Vietnamese society, always rejected and scorned by the scholar class at court and many of those who opposed all aspects of the French presence in Vietnam. Central here was education, and in particular native teachers; as Kelly argues, "The teachers held out against the French for over twenty years, despite the capitulation of the Vietnamese monarchy" (1978, p. 97). Eventually, central too was journalism, a language domain in which Vietnamese supporters of the French were assisted by the ruling administration to set up newspapers using Quoc Ngu so as to penetrate more deeply among the population. DeFrancis characterizes the relations among the scripts and languages in the latter part of the 19th century as follows: "While Vietnamese written in Nom continued to be used as a vehicle of direct or indirect opposition to the French occupation, Vietnamese written in Quoc Ngu was more and more becoming the language of collaboration" (1977, p. 148); or, Quoc Ngu for Catholics, Chu Nom for Buddhists, and Chu Nho for Confucianists (DeFrancis, 1977, p. 149).

Quoc Ngu grew in the early decades of the 20th century as opposition to French power expanded and campaigners saw advantage in the greater ease of literacy in the script to spread their message, gradually splitting Quoc Ngu from its past association with foreign collaborationism. This sentiment of political modernization became paramount between 1905 and 1945. Among the contributing factors were a new Asian confidence after Japan's defeat of Russia in 1904–5. A key figure was Phan Boi Chau (1867–1940), a nationalist inspired by Japan's assertiveness, whose historical analysis blamed the imperial court's attachment to Chu Han and Chinese as hobbling Vietnam's ability to resist French incursions, in line with new nationalist thinking among radical Chinese elements. In 1907 he called for the full introduction of Quoc Ngu in the education system (DeFrancis, 1977, p. 163). Another decisive development was the anticolonial thinking of the Tonkin Free School, established in March 1907. Its patriotic curriculum adapted but adopted Western liberal ideas and supported the growth of a "modern" and free state rather than a return to tradition. Quoc Ngu fitted its design of mass literacy and democratization.

This cultural rehabilitation of Quoc Ngu was an essential kind of language planning, though never conceived this way, and though Western ideas would be appropriated they were linked to what became the *Dong-Du* (Eastward Movement), which pressed for a separate national education system learning from Japanese precedents and Chinese ideas about post-traditional, postcolonial directions. The net effect of the conduct of nationalist politics in French or Vietnamese through Quoc Ngu was a rapid decline in knowledge of Chinese characters and also in Nom, which depended on knowledge of Chinese character writing, though key works, including those by Phan Boi Chau, were written in Chinese. To counter its opposition France too was forced to use Quoc Ngu in its appeals to wider strata of the population. As collaborators, independence campaigners, and modernizers all had recourse to Quoc Ngu, its syntax became more flexible, stylistic innovations and suppleness were expanded, and so it carried more interesting and persuasive arguments, and even those who opposed them were forced to utilize the script. As a result language and script became enriched and extended, in users and in uses, through translations and argument. In national unifying moves both Saigon and Hanoi were active, and in political and cultural journalism, fiction, poetry, and theatre scripts, they contributed to producing an explosion of new writing in Quoc Ngu, shared by older and younger writers committed to developing a common means of expression, and ultimately a single, multifunctional, standard language. The formal end of the classical Mandarin system commenced in 1916 in Hanoi with the abolition of tertiary examinations. Chinese characters and Nom were

formally abolished in 1918 in Vietnam's cultural capital of Hue, and in 1924 political reforms introduced three years of Vietnamese in some schools (Kelly, 1978). Both Chinese and ultimately French were losing their base in schools. Quoc Ngu had served French plans to detach Vietnamese intellectuals from their loyalty to Chinese culture, but then backfired against French policy as use of Quoc Ngu was required to campaign against the inroads independence campaigners had made with the ordinary Vietnamese.

From 1940 Japan imposed itself on a war-weakened France, and their rivalry for Vietnamese hearts and minds opened spaces for further growth for Quoc Ngu. This shared power system continued until Japan's full occupation of Vietnam in March 1945 and its surrender to Ho Chi Minh in September 1945. French counterattacks resulted in nine more years of struggle until the decisive defeat of the French at Dien Bien Phu in 1954 and their permanent departure from Vietnam. The country was divided at the 17th parallel, and the involvement of American and other forces on the side of the South in the Vietnam War continued armed conflict until 1975 and reunification under communist control.

The anticolonial struggles were also an extended and extraordinary language politics, with contradictory language planning and policy, that ultimately led to the unification of the national standard language expressed in Chu Quoc Ngu. After the withdrawal of the French, university examinations were conducted in Vietnamese, and French went from being the medium of instruction to an occasional foreign language, soon supplanted by the "politically correct" languages of Russian in the North and English in the South. The victory of Quoc Ngu was attained through literacy campaigns in villages and towns all across the North and after 1975 all across the national territory. As a result Quoc Ngu occupied all official domains, levels of education, social groups, and the entire country other than minority areas. The literacy campaigns were nationalistic in content and highly ideological; they offered access to the key texts and propaganda of the Communist Party. The educational goals of the 1945 Declaration of Independence included compulsory education and "total literacy" in Quoc Ngu, along with "Popular Mass Education" including the "learning of the national script . . . [It was] compulsory and free for all Vietnamese" (UNESCO, 1984, pp. 2, 3).

In October 1945 the then president Ho Chi Minh made an appeal to "the entire people to combat illiteracy," enshrining script choice in revolutionary reconstruction (UNESCO, 1984, p. 3). In the slogans of the campaigns, such as "To combat illiteracy is to combat foreign invasion," script choice was associated with foreign or local loyalty, political ideology, patriotism, and national security, ironically validating the French colonial fear that the national language, which it sought to use to dislodge the attachment of the Vietnamese to Confucianism, would become a weapon in the Vietnamese campaign against the French as well. In several waves of popular education across the whole country, millions of people were inculcated into literacy and political loyalty and a mass compulsory language policy was effectively implemented.

The digraphia of past periods of Vietnamese sociolinguistics, with Chu Han and Chu Nom dividing the communication tasks of the nation, and then Chu Nom and French or Quoc Ngu, and then French versus Quoc Ngu, was permanently dissolved in the major transformation of the communication realities of anticolonial politics in Vietnam. Separate struggles and politics were required by intellectuals and by ideologues, by nationalists and by modernizers, but all ultimately converged around supporting the national standard form of romanized universal literacy in standard Vietnamese.

SEE ALSO: Language Policy and Planning: Overview; Sejong the Great and the Creation of Hankul

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Russification in the Soviet Era

MART RANNUT

Russification is a form of linguistic imperialism (Phillipson, 1992), referring to both official and covert ethnic and language policies which were implemented by the Russian authorities during the tsarist empire and the Soviet Union, and continue to be implemented by the contemporary Russian Federation. The term comprises two different notions, one applied for domestic, the other for international purposes. The domestic application denotes forcible imposition of the Russian language and culture at the expense of the native language. Russia is a multiethnic country, and Moscow-encouraged immigration of Russian speakers into non-Russian areas aims at subtractive language shift from non-Russian to Russian and absorption of a Russian mindset. The international aspect refers to both legitimate Russian language and culture promotion and the associated positive attitudes toward Russian; but it also involves the imposition of unequal relations between Russia and the post-Soviet countries concerning economy and energy—raw materials, oil and gas—and security threats of various kind (in Georgia, Transdnistria, etc.). These are traded for concessions concerning national policies and for a privileged position for the Russian language and its speakers—the so-called "co-countrymen" (*so-otechestvenniki*) policy. The theoretical basis of the issue is provided in Rannut (2009a, 2009b), with a historical overview in Rannut (1994).

The concept of Russification was formulated in 1833 in tsarist Russia by the incumbent Minister for Education, Sergei Uvarov (1786–1855), who introduced it in the form of Panslavism entailing three constituents: the Orthodox faith, (imperial) self-governance, and nationalism. Russification meant subordination to the Russian state, including its government and the Orthodox church. The languages of rebellious nations, such as Poles and Lithuanians, were abolished from schools and public places, and in the Caucasus several Islamic nations were deported together with their cultures and languages.

During the reign of Alexander III (1881–94) language became a prominent goal within government. All state bureaucracy, as well as schools and railway and other management, shifted to Russian, whereas before that, French, German, and various local languages were widely used. Recognition of non-Russian autochthonous cultures, languages, and peoples, which constituted half of the population, was no longer tolerated. Censorship increased, and publications and other undertakings with an ethnic flavor were outlawed.

The Soviet Union, the successor of tsarist Russia, contained over 100 autochthonous ethnolinguistic communities, 22 of which comprised more than a million individuals according to the 1989 census. According to the first all-Union census of 1926, there were more than 130 ethnic communities. Slightly over half of the population was Russian and seven-tenths were Slavic. Fifteen republics' languages were spoken by more than 90% of the population. The number of nationalities was not equal to the number of languages, as some groups switched languages and others, such as Jews and Karelians, claimed several languages as their mother tongues.

The Soviet Union was composed of ethnic units that were divided into three categories, consisting of the 15 republics, 20 autonomous republics, and 18 autonomous (or national) areas and districts, the last two categories being subordinate to the republics. Though dominated by autochthonous nations, all republics were considered multilingual and in

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need of Russian as the common interethnic language. Different views on language and ethnic issues were not tolerated as the Soviet Union was politically a totalitarian regime with hegemonic control, with resources allocated by central powers in Moscow, and controlled by Russians. The Constitution was not regarded as a legal document and no free elections were held. The economy and judicial system were controlled by the Communist Party, the sole political party allowed. Non-judicial population control methods were widely used. Army, police, and the KGB operated in Russian under direct control from Moscow.

The main specific feature of language policies in the Soviet Union was the dominance of the political ideology that constituted the common core. Explicit Soviet language policy per se never existed as it was merely one dimension of Soviet Communist ideology. Ethnicity was regarded as a temporary phenomenon and an inherent feature of capitalism, generated by the capitalist form of production and doomed to perish with capitalism. The view that the problems originating from ethnicity, "the national question," had long been solved, and that there were not, and would never be, any ethnic or linguistic conflicts between nations or between the central government and these nations, was established as an ideological dogma and brooked no argument. This was based on the understanding that languages in and outside the socialist system developed according to different laws. Instead of struggle and shift, convergence and fusion were said to be blossoming. The term *gosudarstvennyi yazyk* 'national language' being an ideological taboo related to tsarist oppression, the Russian language was declared to be the language for interethnic communication (*yazyk mezhnatsionalnogo obshchenia*). The term *sblizhenie* 'convergence' was introduced, but assimilation as a term was denied, though this was the process taking place in reality. Thus, convergence (i.e., shift) to Russian by ethnic non-Russians and a decrease in the number of languages spoken were considered a positive sign of development in the direction of a Communist future.

Language variety and maintenance were seen not only as a nuisance, but as an indicator of ideological backwardness. The solution could not be the substitution of one language for another, as this would have been the capitalist way, but the elimination of the whole ethnic structure, achieved with the help of migration flows, deportations, mechanical mixing of people at their workplaces, and even mixed marriages. Such measures were implemented through the advance of the Russian language to non-Russian areas by language shift, together with migration, the shift to Russian of non-Russians in higher-status functional domains, and the simultaneous protection of Russian monolingualism in non-Russian areas by creating exclusively or dominantly Russian-language services there.

The motor of the process was the territorial rotation principle of people (through compulsory army service, prisons, Communist Party officials' appointments, etc.), producing an ever-expanding Russian-language environment. Correspondingly, the non-Russian native language maintenance system was demolished through the introduction of transitional or submersion models in education, causing obligatory language shift for higher-status functional areas. The process of convergence consisted of two stages: first, Russian became the language of interethnic communication in non-Russian areas, and in the next stage, Russian became the first language of the dominated ethnic group. The process was gradual and intergenerational.

Soviet language policy may by divided into five distinctive periods, roughly corresponding to the active rule of the Soviet leaders, all starting with an overture of vague and conflicting steps, due to the power struggle among the ruling elites. Thus, for a while, the former language policy was maintained under a new regime, and changed gradually according to the urgency and importance of the matter.

The first period, in the 1920s, was characterized by domestic wars, economic disaster, and other security threats. The central government was weak, but ideologically blossom-

ing: It was assumed that the revolution would spread from Russia to the rest of the world (the so-called export theory of Communism), and thus promoting Russian was unnecessary. Thanks to the weak central power, indigenous functionaries were used for spreading the new ideology, giving them a free hand in local language matters. This process was called *korenizatsia* 'indigenization' of the local ruling apparatus of the non-Russian areas. Several schools and courses were established to prepare local cadres, a literacy campaign was launched, and the Latin alphabet was promoted.

The second period began with Stalin's consolidation of power in the 1930s, when the state opposed and constrained any further attempt to develop and elaborate languages other than Russian. Ethnic cleansing started: Whole nations and ethnic groups were deported, including the Kalmyks, the Ingrians, the Circassians, the Chechens, the Ingush, the Jews, the Balkars, the Mesheti Turks, the Crimean Tartars, and the Volga Germans. After World War II an international form of Russification was introduced, as Russian was made the compulsory first foreign language in new Socialist countries and annexed states.

The third period started in the 1950s when Stalin's successor, Khrushchev, stopped the genocide and deportations of ethnic groups. However, his educational policy proved disastrous for minorities. In 1959 the union republics and autonomous republics passed laws on educational reforms which gave parents the right to send their children to a school where the language of their choice was used; parents who had decided to send their children to Russian schools were also given the right to choose whether or not they wanted their children to be taught the autochthonous language of the republic as a subject. Minority schools were put at a disadvantage, as they had to cope with the excessive load of teaching Russian. As Russian enjoyed higher status than most local languages, this resulted in an overall gradual shift to Russian as the medium of education. Many languages fell out of use as the media of instruction. All Karelian schools shifted to Russian at once, and the impact on the languages of Central Asia and of autonomous republics was fatal. Non-Russian schools were gradually replaced by Russian-medium ones. In the early 1960s, 47 languages besides Russian were used as a medium of instruction; by 1982, the number had dropped to 16. From the end of the 1960s higher education gradually shifted to Russian. As a result, in 1989 in the Soviet Union, education—at least, instruction in one's native language as a subject—was provided in 40 languages, and higher education was offered in 5 languages.

The fourth period, that of Brezhnev (1964–82), may be characterized by the non-neutrality of language. While in the West, languages of wider communication were presented as neutral linguistic tools, enabling larger and unrestricted communication, the Soviet language planners chose the opposite way, emphasizing the connection of ideology and language. The general thrust changed from the exclusive instrumental motivation of the previous period in language policy to an overt ideological motivation linked to identity politics.

In 1979 a special all-Union conference in Tashkent, titled "The Russian Language: The Language of Friendship and Cooperation Among the Nations of the USSR," recommended that subtractive teaching of Russian be started in preschool institutions from the age of five. The recommendations also concerned secondary and vocational schools and institutions of higher education. This was confirmed by a Communist Party Politburo meeting in 1983 and in several secret protocols. In ideology, *odnostoronneye nacionalno-russkoye dvuyazychie* 'one-sided national-Russian bilingualism' became one of the most popular terms in the Soviet language planning. The term had several deviations from the standard meaning:

- It concerned non-Russians only.
- It was seen as a transitional phase to Russian monolingualism.
- It was limited to Russian–non-Russian bilingualism.

- Bilingual speakers tended always to be seen as more cultural and intelligent than non-Russian speakers without the knowledge of Russian.
- Even a minimal knowledge of Russian qualified a person to be a bilingual.

Russification as a policy was stopped during the fifth period, Gorbachev's perestroika (1985–91), due to the weakness of central power. However, the policy's impact continued in the form of Russianization of third nations among non-Russian immigrants in national territories (Rannut & Rannut, 2010).

Russification proved to be an effective policy, resulting in the extinction of approximately one fifth of local languages during the existence of the USSR, according to census data (1926–89), with 50 languages currently either moribund or on the verge of it. After the collapse of the Soviet Union and starting with the economic revival in the 2000s, Russification within Russia has steadily increased through making the teaching of autochthonous languages to native speakers optional (i.e., the termination of the minority school system), liquidating some ethnic districts, such as the Komi-Permyak district and curbing the autonomy of others, and nominating nonspeakers of the local minority language concerned to govern ethnic districts.

Internationally, Russification has been in decline, due to the decrease of Russia's political and economic power in the 1990s. However, various models of the so-called Karaganov security doctrine have been promoted, especially toward the "near abroad" neighboring countries, where the aim is to control Russian speakers through media and entertainment produced in Russia and restricting integration to the symbolic nation, stressing the right to communicate solely in Russian. In some regions, such as Transdnistria, South Ossetia, and Abkhazia, in order to maintain control, quasi-independent political entities are formed by the Russian Army, controlled entirely by Russia, where education is provided mostly in Russian and the Russian language is maintained with military force. The post-Soviet Russification endeavors within the Baltic context are described in Hogan-Brun, Ozolins, Ramoniene, and Rannut (2009).

SEE ALSO: Language Endangerment; Language Planning and Multilingualism; Language Rights in Language Policy and Planning; Linguistic Human Rights; Multilingualism and Language Rights

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Sampling: Mixed Methods

KATHLEEN M. T. COLLINS

A sampling design comprises two components: the selection of a sampling scheme (purposive or probability) and a sample size. The scheme is implemented to select the individuals, contexts, groups, and observations that will serve as the sampling unit. This process is impacted by the researcher's perceptions about what constitutes credible data relative to the research question, and what are the viable ways of collecting data, given the study's scope and constraints upon resources, such as time and money. When conducting mixed methods research, termed mixed research in this entry, sampling design selection is more complex because the researcher must decide on selecting a sampling design for two or more phases of a study, and this decision accelerates the diversity of data collected and the demand on resources.

Overview of Sampling Designs

To determine the sample size for a probabilistic sample, the goal is to obtain a large enough sample to detect statistically significant relationships or differences and to limit sampling errors (i.e., differences between the sample statistics and the underlying population) (Johnson & Christensen, 2008). Optimally, this decision is based upon a power analysis, which is calculated to ascertain the degree of power necessary to reject the null hypothesis when it is false. For example, the minimum sample size recommendations for detecting moderate effect sizes in accordance with Cohen's (1988) criteria, with 0.80 statistical power, at the 0.05 level of significance is 21 per group (experimental design, one-tailed hypothesis), 64 participants (correlational design, one-tailed hypothesis), and 82 participants (correlational design, two-tailed hypothesis) (Onwuegbuzie, Jiao, & Bostick, 2004). Initially, the researcher devises a sampling frame comprising a listing of all the elements in the population of interest. To select a simple random sample, the researcher can consult a random numbers table, attach a number to each unit (individuals, contexts, observations), choose randomly a starting point, and begin to select numbers by advancing systematically in one direction (e.g., across to the right, or to the left, or up, or down).

Advanced random sampling techniques are an adaptation of simple random sampling (Johnson & Christensen, 2008). A stratified random sampling technique involves dividing the population into exclusive groups or strata based upon a specific variable (e.g., age, gender), and the researcher implements a process to choose systematically the sample. Cluster random sampling involves identifying a collective sampling unit (e.g., organizations) rather than a single sampling unit, and the sample selection occurs in one or more stages. Simple and advanced random sampling techniques generate variable-oriented numerical data. Subsequently, these data are analyzed using statistical analyses, and the researcher's goal is to formulate external statistical generalizations (Miles & Huberman, 1994). A generalization is defined as the degree that findings can be applied to the underlying population that served as the source for the selection of the sample.

Typically, random sampling schemes are linked to sample selections in quantitative designs; however, researchers implement both random sampling schemes and purposive sampling schemes when conducting quantitative research and qualitative research. For

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example, the researcher could select a purposive sampling scheme, such as a criterion sample comprised of individuals who are chosen strategically because they represent one or more criteria, and the data generated could be analyzed using quantitative statistical analyses. Alternatively, a random sample also could be selected, and the responses could be analyzed using qualitative analyses.

Qualitative data collection and analyses continue until securing additional cases does not generate any fresh information that can be included into the thematic categories, thereby reaching informational redundancy and data and theoretical saturation (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Guest, Bunce, & Johnson, 2006). The more homogeneous the sample relative to the variable of interest, the fewer the number of cases required to obtain saturation (purposive) and the fewer units (probabilistic) required to detect statistically significant differences or relationships (Guest et al., 2006; Johnson & Christensen, 2008).

Forms of Generalizations

The relationship between the sample design and the type of generalization desired by the researcher impacts credibility of the conclusions and meta-inferences. A meta-inference refers to the conclusions that are generated by integrating the inferences derived from the research activities occurring at multiple steps (conceptual, methodological/analytical, inferential [conclusions and explanations]) in the implementation of both approaches (Teddlie & Tashakkori, 2009).

The decision to utilize a particular sample in the quantitative and qualitative approaches or phases is guided by the decision to apply one or more of the following types of generalizations. Naturalistic generalizations are based upon the stakeholders'/research consumers' perceptions that the study's results are meaningful and applicable to other contexts (Stake, 2005). Analytic generalizations support the researcher's "analytic conclusions" (Miles & Huberman, 1994, p. 29), and this type of generalization is "applied to wider theory on the basis of how selected cases 'fit' with general constructs" (Curtis, Gesler, Smith, & Washburn, 2000, p. 1002). Case-to-case transfers reflect utilization of a multiple case sampling design to obtain a continuum of cases relative to the phenomenon under investigation. When formulating internal statistical generalizations, the researcher utilizes a subset of elite informants who are representative of the sample, and the findings are generalized only to that particular sample (Onwuegbuzie & Leech, 2007). External statistical generalizations refer to the degree that the findings from the randomly selected sample can be applied or generalized to the population, which served as the source for the representative sample selection.

Sampling Considerations in Mixed Research

Collins (2010) conducted a content analysis of published mixed sampling typologies, and produced the following five considerations implicit in the researcher's decision to select a sample design per phase of the mixed research inquiry. These considerations impact the degree to which the researcher maintains interpretive consistency between the sampling design implemented per approach and the credibility of the conclusions, meta-inferences, and generalizations (Collins, Onwuegbuzie, & Jiao, 2006, 2007).

The first consideration is the dependent relationship between the sampling design and the time orientation of the phases. A concurrent sampling design refers to the implementation of data collection activities and data analysis techniques in phase one (e.g., quantitative) that are independent of the data collection activities and data analysis techniques implemented in phase two (e.g., qualitative). It is at the data interpretation phase that the

analyses' results of both data sources (quantitative and qualitative) are interpreted. In contrast, a sequential sampling design refers to the dependent implementation of data collection activities and data analysis techniques in phases one and two. The dependent sequence indicates that the decisions made at phase one inform or shape the decisions made at phase two. In a sequential design, data analysis and interpretation of phase one data occur before implementation of activities in phase two. Sample scheme and sample size are integral components of a sequential design because both decisions can impact the decision to use certain types of data analyses. For example, in phase one, if the researcher collects qualitative data from a small criterion sample, the brevity of the qualitative data collected can limit the type of analyses (e.g., correspondence analysis, factor analysis) that could be implemented in phase two (quantitative).

A second sampling consideration is the relationship between the quantitative and qualitative samples selected for each stage of the study. These sampling relationships are identical, parallel, nested, and multilevel (Onwuegbuzie & Collins, 2007). Identical samples comprise the same sampling units (e.g., 40 health professionals) participating in both the quantitative phase and qualitative phase of the study. Parallel samples are composed of different sampling units (e.g., individuals) participating in each of the phases; however, the sampling units are selected from the same population of interest (e.g., two separate samples of health professionals). A nested sample comprises a subset of sampling units (e.g., settings) that are selected from the larger sample. For example, the larger sample consists of 40 health clinics that participate in one phase and the nested sample comprises 10 health clinic selected from phase one to participate in phase two. Multilevel samples consist of two sets of sampling units (e.g., contexts) that are selected from different populations (e.g., urgent care facilities and hospitals); however, each sample represents a different level of engagement with the variable that is the mixed inquiry's focus (e.g., disease prevention and clinical care).

Utilizing identical samples provides to the researcher the option to place equal emphasis on both data sources when drawing meta-inferences and generalizations. In contrast, the remaining types of relationships between samples could limit interpretations in terms of sample integration, unless the researcher prioritizes one set of findings (e.g., quantitative) in contrast to the other set (e.g., qualitative) when drawing meta-inferences and generalizations (Onwuegbuzie & Johnson, 2006).

The third consideration is the relationship between the combination of sampling schemes and the type generalization selected by the researcher (Onwuegbuzie & Collins, 2007). Utilizing a probabilistic random sampling scheme permits the researcher to apply an external statistical generalization, assuming that the representative sample is large enough to detect statistically significant differences or relationships. However, when using a nonrandom or purposive sampling scheme, the researcher is likely to apply the other types of generalizations. The types of generalizations available to researchers are summarized in the preceding section.

The fourth consideration is the relationship between the types of data collected, quantitative only, qualitative only, or a combination of both types, and the degree that these data types address the research question (Teddlie & Yu, 2007). The sample design impacts the degree of diversity represented in the data sets collected in the study. A researcher can collect a combination of both types of data, such as numerical or variable data and narrative or case data. The analyst would conduct analyses that are customarily associated with each form of data collected; specifically, numerical data are analyzed using statistical techniques, and the case-based data are analyzed using qualitative techniques. A researcher also can collect one form of data in a study (quantitative data or qualitative data), and conduct a cross-over analysis (Onwuegbuzie & Combs, 2010). For example, the researcher collects qualitative data (e.g., open-ended questionnaire responses), and these responses

are analyzed using qualitative techniques. The emerging themes are quantitized or converted into numerical data and analyzed statistically (Tashakkori & Teddlie, 1998). Alternatively, the researcher collects quantitative data in the form of Likert-formatted responses in a questionnaire; these responses are analyzed using quantitative techniques. The quantitative results are transformed (qualitized) into narrative data or profile data that are analyzed using qualitative techniques (Tashakkori & Teddlie, 1998).

The fifth consideration involves the researcher determining the emphasis (dominant or equal) that will be placed upon each phase when formulating conclusions, meta-inferences, and generalizations (Onwuegbuzie & Collins, 2007). When implementing a dominant emphasis, the researcher places priority on one phase (e.g., qualitative) in contrast to the emphasis placed by the researcher on the other phase (e.g., quantitative). Conversely, when implementing an equal emphasis, the researcher places equal weight upon data analyzed from both approaches. The decision pertaining to the emphasis is influenced by the type of generalization desired by the researcher and meeting the requirement for transferability. Subsequently, the researcher might decide to implement a "representativeness/saturation tradeoff" by emphasizing selection of a representative sample to acquire "breadth of information" in contrast to selecting a sample to acquire saturation or "depth of information" or vice versa (Teddlie & Tashakkori, 2009, p. 184).

Sampling Challenges in Mixed Research

There are four distinct challenges impacting sampling decisions (Collins, 2010). "Representation" refers to the challenge of selecting samples that will enable the researcher to collect credible data comprising both numbers and narratives. The researcher's goal is to collect quantitative data that have adequate power to detect statistically significant differences or relationships, and to collect an adequate amount of qualitative data to reach data saturation, and to reflect the sample's voice. "Inference legitimation" refers to the challenge of implementing a sampling design that allows the researcher to formulate credible conclusions, meta-inferences, and generalizations (quantitative) and to maximize descriptive validity and transference (qualitative) (Maxwell, 1992; Onwuegbuzie & Johnson, 2006).

The challenge of "integration" reflects the degree to which the sample design addresses the study's mixing goal, objective, purpose, and research question, and the degree to which there is a balance between the sample size per approach in terms of drawing conclusions, meta-inferences, and generalizations (Collins, 2010). Last, the challenge of "politics" relates to the degree to which the findings per phase are clear and balanced relative to addressing the study's mixing goal (e.g., study's long-term aim, study's impact on stakeholders) (Collins, 2010).

Hypothetical Mixed Research Study

Table 1 outlines the process a researcher might implement to address each of the aforementioned challenges by outlining the interconnections between sampling decisions and the sampling challenges associated with mixed research. As a context for interpreting these decisions, assume that in this hypothetical study, the sampling design consists of a multilevel sample consisting of two sets of individuals who represent varying levels of engagement with the variable that is the mixed inquiry's focus. In the quantitative phase, the sample comprises 85 participants who were selected using a cluster random sampling scheme, and who participated in an experimental design. The qualitative sample comprises 19 respondents who participated in a focus group. The researcher's intent is to make external statistical generalizations and analytic generalizations.

Table 1 Application of four mixed challenges to a hypothetical study

Type of mixed challenge	*Potential impact of sample design*
Challenge of representation	The researcher selected a random sample for the quantitative phase consistent with the power analysis (84 participants). The researcher conducted a member check (i.e., to ask the qualitative sample [19 participants] to review the focus group transcripts prior to analysis) (Lincoln & Guba, 1985) to maximize descriptive validity (Maxwell, 1992).
Challenge of legitimation	The researcher implements a "representativeness/saturation tradeoff" (Teddlie & Tashakkori, 2009, p. 184). The researcher places more emphasis on the results generated from the quantitative phase because the sample is larger, and was randomly selected. This decision allows the researcher to make an external statistical generalization based on the quantitative results, and to utilize the qualitative results for context-specific interpretations, and analytic generalizations (Curtis et al., 2000).
Challenge of integration	Implementing a representativeness/saturation tradeoff allows the researcher to maintain interpretive consistency (Collins et al., 2006, 2007) between the sampling design implemented per approach, and the credibility of the conclusions, meta-inferences, and generalizations drawn at the study's conclusions.
Challenge of politics	The goal of the study is to obtain information from stakeholders. Researcher implemented a multilevel sampling design (i.e., stakeholders who have a different level of involvement with the variable of interest), and collected two different forms of data (intervention data and focus group data). Both decisions elevate the diversity of data analyzed, thereby expanding the options to address potentially the challenge of politics.

Note. Please see Collins (2010) for an expanded discussion of these challenges.

SEE ALSO: Case Study; Sampling: Quantitative Methods

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Sampling: Quantitative Methods

JAMES DEAN BROWN

What Is Sampling?

Sampling is the act of choosing a smaller, more manageable subset of the objects or members of a population to include in an investigation in order to study with greater ease something about that population. In other words, sampling allows researchers to select a subset of the objects or members of a population to represent the total population. Sampling is used in language research when the objects or members (hereafter simply *objects* or *members*, but not both) of a population are so numerous that investigating all of them would be unwieldy. Such objects of study might include the total populations of all ESL learners, TOEFL examinees, essay raters, words, cohesive devices, and so on. For instance, to study the test scores of the roughly one million TOEFL examinees in a given year, a researcher might sample just 15,000. Sampling can thus increase the researcher's efficiency by minimizing the resources and effort needed to conduct the project (Brown, 2001, p. 71), while at the same time increasing the speed, scope, and accuracy of the project (as explained in Cochran, 1977, pp. 1–2).

Populations and Samples

Two words, population and sample, are key to understanding the more general concept of sampling. A *population* is the entire set of objects that are the focus of a research project. Let's say a researcher wants to study all the examinees who took the TOEFL in 1991. Few language researchers have the resources to collect and analyze a data set of a million test takers. So those researchers might take a sample of say 15,000 of the TOEFL examinees in one month of 1991 (as in Brown, 1999). This sample of 15,000 examinees who took the May 1991 TOEFL is meant to be representative of the entire population of those who took similar TOEFL tests in 1991 and beyond. If the data were appropriately sampled (i.e., the sample is actually representative of the population), the results of the study should also be approximately representative of results that would have been found if the study had been conducted using the total population.

Probability Versus Nonprobability Sampling

Sampling can be of two broad types: probability or nonprobability sampling. *Probability sampling* "has the characteristic that every element in the population has a known, nonzero probability of being included in the sample" (Levy & Lemeshow, 1999, p. 20). The advantage of probability sampling is that, one way or another, the objects are selected randomly into the sample, and thus the probability of each object being in the sample is nonzero and known. Table 1 shows that probability sampling can reference one of three things: the entire population, strata within the population, or clusters within the population. In these cases, the samples are often referred to as simple random, stratified random, or cluster random samples, respectively.

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Table 1 Probability and nonprobability sampling procedures

Sample reference	*Probability sampling*	*Nonprobability sampling*
Population	Simple random sample	Convenience sample
Strata	Stratified random sample	Stratified sample
	Quota	Quota
	Proportional	Purposive
Clusters	Cluster random sample	Cluster sample
	Quota	Quota
	Proportional	Purposive

Nonprobability sampling techniques do not use random sampling. Hence, each object in the population does not have a known, nonzero probability of being selected for the sample. Table 1 shows that nonprobability sampling can also reference the entire population, strata within the population, or clusters within the population. In these cases, the samples are often referred to as convenience, stratified, or cluster samples, respectively.

Methods of Probability Sampling

Simple random sampling at first seems straightforward because it only requires that each object in the population have an equal chance of being selected. However, problems arise when we look at the three steps (adapted from Brown, 2001, p. 72) that are necessary to make sure each member of the population has an equal chance of being included in the sample:

1. unambiguously identify the members of the population,
2. line up all the members of the population, and
3. randomly select the sample from all the members of the population.

The first step is often the hardest. Certainly, it is easy to identify all the examinees who took the TOEFL in a given year. The Educational Testing Service has records of those examinees. However, language researchers often run into thornier problems like how to identify the population of all ESL/EFL learners in the world, or the more narrowly defined population of all ESL learners in the United States, or the still smaller population of all ESL learners at a particular school on a given day. Even when the population is very narrowly defined as in the third example in the previous sentence, unambiguously defining that population may be difficult because it can be a moving target (e.g., students transfer to other schools, new students arrive, some students are absent, etc.).

The second step, lining up the data for the members of the population, is also fraught with potential problems for several reasons: (a) because politics may intervene (e.g., the principal of one of the schools may withdraw her school from the study); (b) because records are often incomplete or inconsistent even when they do exist; and (c) because human-subjects rules at various institutions may preclude researchers from requiring participant cooperation.

Once the researcher gets past the first two steps, the third step is a snap. Randomly selecting the members of the sample from the population can be done by generating a random number for each member of the population (using, for example, the =RAND()

function in a computer program like Excel™), then sorting the data on those random numbers, and taking the desired number of members from the top of the resulting list to be the sample. Alternatively, random selection can be done using numbers from a hat, cards from a deck, a table of random numbers, and so on. The point is that any procedures can be used that ensure that each member of the population has an equal chance of ending up in the sample.

By using random sampling to select the members of a sample, researchers minimize the effects of their own conscious or unconscious preferences, biases, wishes, and desires on the results of the study. A large enough sample of randomly selected members is widely accepted by researchers to be approximately representative of the population from which it was taken (for more on random sampling in language research, see Brown, 1988, pp. 111–13; 2001, pp. 72–4; Mackey & Gass, 2005, pp. 119–22).

Stratified random sampling references particular strata within the population and randomly selects representative members of those strata from the population to form the sample. This technique involves three steps:

1. Clearly define the relevant population.
2. Pinpoint the important *strata* (i.e., the salient characteristics like gender, educational level, nationality, etc.) for that population.
3. Randomly select members from each of the strata in the population (as discussed above for simple random sampling).

For instance, if researchers wanted to study the population of all international students studying at the University of Hawaii, they might want to (a) identify all the members of this population, perhaps from records at the International Student Office, (b) pinpoint the important strata (in this case, perhaps gender and academic status), and (c) randomly select members from males and females to represent the gender stratum, as well as from the graduate and undergraduate students to represent the academic status stratum. The selection can be done in one of two ways, using quota or proportional approaches. *Quota stratified random sampling* would occur if the researchers randomly selected equal numbers of males and females, and graduate and undergraduate students, so that, for example, the resulting sample might contain 100 male graduates, 100 male undergraduates, 100 female graduates, and 100 female undergraduates. *Proportional stratified random sampling* would occur if the researchers randomly selected students from each of the two strata in proportion to the occurrence of those characteristics in the total population such that a population that contained 16% male graduates, 21% male undergraduates, 24% female graduates, and 39% female undergraduates would result in a sample with the same percentages. Using either type of stratified random sampling has the distinct advantage of allowing the researchers to use the identified strata as variables in their study.

Cluster random sampling is a form of selection "in which the sampling unit, the unit of selection, contains more than one population element, hence the sampling unit is a cluster of elements" (Kish, 1965, pp. 148–9). The *elements* are the unit of analysis, but the sampling units are *clusters* of those elements and the clusters are randomly selected. This technique also involves three steps:

1. Clearly define the relevant population.
2. Pinpoint the important *elements* (e.g., schools, classrooms, homerooms, etc.) for that population.
3. Randomly select clusters of those elements from the population (as discussed above for simple random sampling).

For example, students might be the elements in a particular study, but the sampling would consist of clusters of students in homerooms. Thus, homerooms (clusters) would be randomly sampled, and each homeroom contains a cluster of students (elements) (Fink, 1995, pp. 14–17).

Quota cluster random sampling would occur if the researchers randomly selected equal numbers of students from each homeroom. *Proportional cluster random sampling* would occur if the researchers randomly selected students from each of the homerooms in proportion to their numbers in the total population, or used all of the students in the homerooms. Using either type of cluster random sampling has the distinct advantage of allowing the researchers to use the identified clusters as variables in their study.

Methods of Nonprobability Sampling

A *convenience sample* can be defined as the selection of objects of study that happen to be readily at hand (e.g., the students in my class and in my friend's class). A sample of convenience is probably not a sample at all. Given that it can only be said to reference itself, and cannot logically be said to represent anything larger than itself, a convenience sample would probably more appropriately be labeled a population. While a sample of convenience may be *ecologically valid* in the sense that it *is* the environment of interest to the particular teacher, generalizing beyond such a sample would be irresponsible because the sample *is* actually the entire population to which the results can be generalized.

Ordinary *stratified sampling* references particular strata but does not use random selection to sample from the strata. Instead, *quota* or *purposive* sampling strategies are typically used. *Quota stratified* sampling sets out to include certain numbers of persons or objects from particular prespecified strata. For example, a study using quota stratified sampling might nonrandomly include 10 male and 10 female Korean ESL students, 10 male and 10 female Korean EFL students, and 5 male and 5 female native speakers of English. In contrast, *purposive stratified* sampling involves using judgment to select members for the sample that are considered to be most representative of the population. For example, a purposive sample might be based on typical male and female students (the gender stratum) from each of the three years (the age stratum) in typical EFL classes in typical high schools in Korea. In the interest of credibility, the researchers should be prepared to defend these judgments of *typical* male and female students, *typical* EFL classes, and *typical* high schools.

Ordinary *cluster sampling* references particular clusters but does not use random selection to sample clusters or elements from the clusters. Instead, *quota* or *purposive* sampling strategies are typically used. *Quota cluster* sampling involves selecting certain prespecified numbers of clusters and elements from the population. For example, a study might include 10 students from each of 10 homerooms. In contrast, *purposive cluster* sampling involves using judgment to select clusters and elements for the sample that are considered to be most typical of the population. For example, such a sample might be based on all the students in three typical homeroom classes (one each from the first, second, and third years) at three typical high schools in a particular prefecture in Japan on a typical day. Again, in the interest of credibility, the researchers should be ready to defend their judgments of *typical* homerooms, high schools, and days.

Choosing the Right Sampling Strategy

One of the most common questions I get from graduate students doing quantitative research is, "What is the minimum sample size for my study?" That is a complex question to answer and, in fact, may be the wrong question altogether. Statistics books often cite the magic number 28 (or 30) as a rule of thumb for the minimum sample size to use, so students will

cite that number as a rationale for their relatively small sample sizes. This rule of thumb is not necessarily wrong. However, it is focusing on the *minimum number*, which may be the wrong way to think about this issue altogether. Why would researchers want to bet their entire study, or thesis, or dissertation on the *minimum* sample size? I prefer to think in terms of the sample size that is necessary to create a sample that is (a) adequately representative of the population, (b) maximally serving the purposes of the research, and (c) large enough to find statistically significant results if they exist in the population.

A Sample Should Be Adequately Generalizable to the Population

The *generalizability* of a sample is the degree to which it represents the total population, and similarly the generalizability of the results of a study is the degree to which the results based on the sample can be said to represent the same phenomena in the population.

If simple random, stratified random, or cluster random sampling have been used, and the sample is large enough, the researcher should have no doubts that the sample represents the population. If the researcher has doubts, then the sampling procedures need to be carefully examined and perhaps modified, or the size of the sample(s) should be enlarged, or both. Another way to look at this issue is that researchers should be as critical of their own research as they are of studies done by other researchers. That is, researchers should ask themselves if they would feel that the sample was large enough to be generalizable if this were another researcher's study.

A Sample Should Maximally Serve the Purposes of the Research

Another question related to sample size is the relative number and size of strata or clusters, which must be decided based on which type of sampling best serves the purposes of the research. If the population has fairly heterogeneous strata or clusters, either stratified or cluster random sampling may work better than simple random sampling, especially in cases where simple random sampling would result in too few members in each stratum/cluster, or would produce strata/clusters with markedly unequal sizes. This is especially true in cases where the strata/clusters will be used as variables in the analysis. However, if the sample is likely to be relatively homogeneous and fairly large, and the population strata/clusters will not be used as variables, simple random sampling would be the better choice because it is easier to use and generalize. Similar issues arise with selecting from among the nonrandom convenience, stratified, or cluster samples.

A Sample Should Be Large Enough to Find Statistically Significant Results if They Exist in the Population

The *power* of a statistical test (like a correlation coefficient, *t* test, etc.) "is the probability that it will lead to the rejection of the null hypothesis, i.e., the probability that it will result in the conclusion that the phenomenon exists" (Cohen, 1988, p. 4). Thus the *power* of a test indicates the degree to which researchers are likely to find a statistically significant correlation, mean difference, and so on, if the correlation or mean difference in fact exists in the population. If a study does not have sufficient power, one way to increase its power is to increase the sample size. Fortunately, the power statistic can be used to estimate how much larger the sample should be to achieve *X* amount of power (see for example Cohen, 1988; Kraemer & Thiemann, 1987; Dattalo, 2008).

So how large a sample is necessary to be large enough? On the one hand, it is safe to say that a large sample (relative to the population size) is likely to be more representative of the population than a small one. Clearly a sample of 9,999 out of a population of 10,000 ESL students is likely to be more representative of the population than a sample of 1000, or 100, or 10. In addition, samples that are selected in a manner appropriate for the research

being conducted are more likely to produce appropriate subsample sizes for any strata or clusters of importance to the research design. It is also a fact that larger samples tend to provide more statistical power than small samples. Thus, the researcher is more likely to find statistically significant results (if they exist in the population) if the sample size is large. On the other hand, because of politics, insecure administrators and colleagues, human-subjects rules, general human perversity, and so forth, data are often very difficult to collect in large numbers. So what is a researcher to do? I would argue that good researchers tend to ferociously focus their efforts on this sample-selection stage of their research, and get the largest sample they can practically obtain because they recognize the crucial importance of sampling to the quality of their eventual research results.

The Effects of Murphy's Law on Sampling

In addition to all the potential sampling problems discussed above, other issues may arise that can lead to less than ideal samples, especially when the objects of study are people. First, human-subjects requirements may lead to samples that are based on volunteers, who may have characteristics that make them unrepresentative of the population. Second, some participants may drop out of the study halfway through, and thereby affect the characteristics of the remaining sample (i.e., making it unrepresentative of the population). Finally, some members of the sample may produce incomplete data by not answering some questions, test items, and so on, which may in turn necessitate dropping them from the sample. These are all problems that researchers must plan for with the goal of minimizing their effects on the resulting sample.

SEE ALSO: Comparing Two Related Samples; Comparing Two+ Related Samples; Generalizability Theory in Language Testing; Inference; Quantitative Methods; Quantitative and Mixed Methods: Overview; Sampling: Mixed Methods

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Sapir, Edward

FRANS GREGERSEN

Edward Sapir (1884–1939) was born in Lauenberg Pomerania, the son of Lithuanian Jews. The family moved first to England and later to New York, where Sapir grew up. He studied with Franz Boas at Columbia University and was profoundly influenced by him. Sapir had a career which took him to Ottawa (1910–25), Chicago (1925–31), and finally Yale as Sterling professor of anthropology and linguistics. Sapir was one of the greatest researchers within the field of American Indian languages and a general linguist of major importance.

Sapir's importance for applied linguistics lies in his seminal writings within the psychology and anthropology of language and in his fathering of the so-called Sapir–Whorf theorem of linguistic relativism. Sapir is one in a long line of researchers (which may be traced at least as far back as Wilhelm von Humboldt) to contemplate the idea of extreme particularism (as opposed to universalism). Where universalism stresses the universal character of language and hence the many similarities between the various languages, particularism in its many guises will invariably focus on the differences and, in particular, on what these differences might mean to language users. In one of his papers, Sapir formulates the idea as follows:

> Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection. The fact of the matter is that the "real world" is to a large extent unconsciously built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached. (Sapir, 1929, p. 209)

We find here a number of themes which would keep recurring in later discussions: the distinction between the objective, external world and the subjective one, mediated by the "language habits" of a particular society. Notably, the word "culture" does not occur, rather the worldview ("distinct worlds") so dear to von Humboldt is alluded to.

By formulating an idea which could be pursued as an extreme form of particularism coupled with a stress on the linguistic representation of a social reality, Sapir has become the father of discussions of linguistic constructionism and incommensurability, be it in translation between languages or paradigms (Kuhn), in bilingualism, or in communication between communities which use languages belonging to different linguistic families. The idea, though mind-boggling, is simple: If we live in distinct worlds because our linguistic habits make us see our worlds differently, then we can never (fully) understand one another. Yet, in the New York where Edward Sapir grew up, very many people were at least bilingual, spoke languages which were different, and still lived at least in the same city and went to the same universities. The question then becomes: How different do language structures have to be for them to be, or imply, different worlds? Sapir's student Benjamin Lee Whorf formulated an answer in his distinction between Standard Average

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European and the American Indian languages (the prime object for both Sapir and his pupil).

Sapir's ideas have been influential in several areas:

The study of language acquisition: Language habits are acquired along with language structure. Accordingly, theorists of language acquisition like Dan Slobin have contributed decisively to creating new answers to the Sapirian questions by looking at 'thinking for speaking' instead of a simple influence from language upon thought.

In the study of translation: Incommensurability of worldviews will always be the extreme end of the scale leading from perfect translatability via the situation where a translator has to create a whole new style in order to accommodate both the *écriture* and the language habits of a particular writer in another language, and to the end point of perfect impossibility of communicating a distinct idea in a language which does not know or accept that idea. Take the alleged violent form of communicating aggressive offense, for example, in some cultures and try to translate that into cultures that do almost anything to preserve the other's face!

In the study of literacy, Sapir's early recognition of the psychological reality of the phonemic contrasts has had some importance, and in the so-called code theory of Basil Bernstein's sociolinguistics, Sapir is explicitly referred to as creating the missing link between language and subcultures. Note that here we are dealing with distinct linguistic practices within the same nation-state (viz. the UK).

But Sapirian ideas have of course mainly been pervasive in anthropological linguistics: What do the typological, grammatical, and lexical differences between the language studied and the language in which the results are formulated really mean? In this sense, the Sapirian question is tied not only to cultural relativism—the idea that all languages are equally valuable, equally complicated, equally developed, although they differ in many ways—but also to epistemological relativism: If two ideas are formulated in different languages (and language may here be taken quite broadly as distinct practices within the same language system), we also have the idea of the incommensurable Kuhnian paradigms of the theory of science. The two ideas may not be compared (and thus evaluated) since there is no common ground to stand on.

Sapir's legacy within linguistics proper has been somewhat obscured by the fact that he died young and that his colleague Leonard Bloomfield became a major influence instead, but Sapir's brilliant insights continue to thrill and fascinate researchers within the cultural sciences. His collected works are published by De Gruyter.

SEE ALSO: Anthropological Linguistics; Cross-Cultural Pragmatics; Cultural Linguistics; Culture; Interlanguage Pragmatics; Linguaculture

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Schachter, Jacquelyn

TEJ K. BHATIA AND WILLIAM C. RITCHIE

Dr. Jacquelyn Schachter contributed extensively to pioneering basic research on second language acquisition (SLA) in the 1970s and 1980s as the field was becoming independent of its previous role as a subsidiary to language teaching. In addition to her research, Schachter contributed to the expansion of the field by extensive editing of volumes of collected papers, conference proceedings, and periodicals.

Schachter was educated at the University of California in Los Angeles, USA, receiving her BA, MA, and, in 1971, her PhD at UCLA. Soon after she earned her PhD, she became a faculty member at the American Language Institute of the University of Southern California, also in Los Angeles. In the early 1990s, she left Southern California to become a member of the faculty of the Department of Linguistics at the University of Oregon in Eugene, Oregon.

Schachter's work on the presence or absence of subjacency, a principle of universal grammar (in the sense of generative grammar), in the grammars of adult second language learners (Schachter, 1989, 1990) is, perhaps, her most important and best known work. Subjacency limits the movement of elements (such as question words) within sentences in the grammars of adult native speakers and is claimed to be innate in the child language learner—as are all principles of universal grammar (UG). The question that Schachter investigated was whether this principle remains in force in the adult second language learner or whether there are critical or sensitive periods during which learners develop grammars that include principles like subjacency but before which and after which they do not. Schachter studied native speakers of languages that lack rules that move question words either entirely (as Korean does) or to a large extent (as Chinese and Indonesian do). Schachter interpreted the results of these studies as showing that the grammars developed by adults in these cases do lack the principle and that there is therefore a sensitive period for the acquisition of grammars that include subjacency and that adult second language acquisition is therefore incomplete with respect, specifically, to the subjacency principle. This conclusion thus supports her general incompleteness hypothesis (Schachter, 1990), which states that second language acquisition in adults is incomplete with respect to the operation of at least one principle of UG—that is, subjacency—and perhaps others as well.

In addition, she and a former student, Dami Lee, published important work on the conditions, universal in some form in the grammars of all first languages (hence, argued to be innately or genetically determined), that specify what noun phrase(s) in a sentence can be the antecedent of a reflexive form (like *himself*) or a pronoun (like *him*) in order to see whether or not these same conditions apply in adult-acquired second languages (Lee & Schachter, 1997). The study, they report, is a refinement of earlier studies bearing on sensitive periods in which participants were tested as adults and differentiated according to their first serious exposure to the second language; instead, Lee and Schachter tested participants in five age groups (who were putatively younger than the sensitive period or within the sensitive period or beyond it) as they were in the process of learning the second language, having (in the general case) arrived in an English-speaking environment three years before the study. The participants in the five groups show different profiles for the conditions on antecedent-reflexive pairs and antecedent-pronoun pairs, indicating that

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the putative sensitive periods for the two conditions differ from each other. On the basis of these results, Lee and Schachter argued their multiple sensitive periods hypothesis, which claims that the sensitive periods for different principles of UG may differ, thereby requiring recognition of the possibility that there may not be just one sensitive period for grammar acquisition *in toto*, but that there are multiple sensitive periods.

Schachter published a number of important overviews of research in the field from the late 1980s to the mid-1990s. In Schachter (1988), she reviewed work that casts doubts of various sorts on UG as a sufficient account of the adult's capacity for second language acquisition. In Schachter (1996a), she argues that a general notion of learning may give a better account of the process of SLA in some respects than the notion of "triggering" that had been proposed within the generative framework. In Schachter (1996b), she reviewed the full research literature bearing on the presence/absence of critical or sensitive periods for language acquisition and their consequences for adult SLA and argued for the existence of what she referred to as "windows of opportunity" for the acquisition of (second) languages during which the learner is sensitive to input that determines the presence of principles of grammar in the grammars that result from adult SLA and after which he/she is not. These were, of course the "sensitive periods" of earlier and later work.

In earlier work on research methodology—in fact, Schachter's earliest publications—she dealt with the issue of whether or not the practice of error analysis—that is, the identification of the learner's errors as being determined by the nature of his/her native language or by general properties of language development—provides a significant account of the learner's knowledge of the second language. In a classic study (Schachter, 1974), she collected relative clauses in the written output of students of L2 English whose L1s had relative clauses that resembled those in English with respect to order of head noun and relative clause (native speakers of Arabic and Persian) and those of students whose L1s differed from English in order (Chinese and Japanese). She found that the Chinese and Japanese students produced significantly fewer errors in their English relative clauses than the Arabic and Persian students, but that the Chinese and Japanese students produced significantly fewer relative clauses—in effect, *avoided* producing relative clauses in English—than the Arabic and Persian students did, hence showing for the first time that in some cases avoidance is a clearer effect of L1–L2 difference than number or type of error. Connecting her basic research with the classroom—as she often did—she subsequently coauthored an article (Schachter & Celce-Murcia, 1977) in which the pitfalls of using error analysis as a basis for teaching are examined.

She also worked on the phenomenon of language transfer. This work includes both an empirical study (Schachter & Rutherford, 1979) and a theoretical proposal (Schachter, 1983). In the first-named work, she and her coauthor argue that the overproduction of existential sentences in the L2 English of L1 speakers of Chinese and Japanese is a consequence of the topic-prominence of these two languages as opposed to the subject-prominence of English. In the second-named paper, Schachter proposes a new account of the notion of transfer based on notions of hypothesis testing and concept formation from the literature of cognitive psychology.

Another area of research methodology addressed by Schachter is the use of learner grammaticality judgments or intuitions as evidence for or against specific hypotheses about the learner's underlying knowledge of the L2. Schachter, Tyson, and Diffley (1976) argue for a third type of judgment (in addition to "grammatical" and "ungrammatical") in characterizing learner judgments—namely, "indeterminate." Schachter and Yip (1990) provide evidence showing that one must consider processing (performance) factors as well as the learner's grammatical competence in explaining learner judgment.

Variability is a prominent feature of the learner's performance in the second language and Schachter (1986b) addresses four possible sources of this phenomenon: (a) the situation

in which a given utterance is produced, (b) utterance processing, (c) the language itself, and (d) the analyst him/herself.

Finally, Schachter (1998) critically examines methodological issues in three areas of SLA research: approaches to the study of SLA phenomena from the point of view of linguistic theory, the conditions under which second languages are learned, and the role of attention in SLA.

A crucial issue both in the theory of second language acquisition and in language teaching is the nature of the linguistic input that is available to the learner in the process of acquisition; and a number of different claims have been made about this central factor in SLA. Schachter (1986a) discusses three different approaches that have been taken to the question of what the input to a second language learner is and considers the value of each in arriving at an account that will contribute to our understanding of the phenomena of SLA.

Turning now to Schachter's more direct contributions to classroom practice, both of her works in this area (Schachter, 1981, 1991) are concerned with providing corrective feedback to students when they produce errors in the classroom. After briefly recounting the kinds of corrective feedback teachers used at the time, the first publication suggests a set of hand signals that can be used to indicate to the student what kind of error he/she had made, thus avoiding the necessity for interrupting the class to provide a verbal correction. The second work is also concerned with corrective classroom feedback, though from a slightly more theoretical point of view. Since corrective feedback constitutes "negative evidence" for the learner—that is, evidence that certain utterances in the second language are ungrammatical and it has been found that a child acquiring his/her first language does not make use of such evidence in learning their first language, the question arises as to whether adult second language learners make use of such evidence. Schachter notes that results of the basic research on this important practical issue are unclear and expresses the hope that the issue will be resolved in the future.

As noted above, in addition to the publication of basic research and overviews of the field, Schachter has contributed considerably to the expansion of the fields of TESOL and SLA research by coediting two very important volumes of readings, Robinett and Schachter (1983) and Gass and Schachter (1989) as well as a book series for Lawrence Erlbaum Associates entitled *Second Language Acquisition Research: Theoretical and Methodological Issues*. She was also the editor of the conference proceedings for the international TESOL conferences of 1978–80 and the editor of the *TESOL Quarterly* from June of 1978 to 1982.

As is clear from the above, Schachter's scholarly work focused on basic research in SLA. Nonetheless, she never lost sight of the relevance of this work for application to the resolution of pedagogical issues. Schachter writes (1993), "We need to create a mindset in which both teachers and researchers view classrooms as laboratories where theory and practice can interact to make both better practice and better theory" (p. 181).

SEE ALSO: Generative Grammar; Roles for Corrective Feedback in Second Language Instruction; Universal Grammar and Second Language Acquisition

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Schiffrin, Deborah

ALEXANDRA JOHNSTON

Introduction

Deborah Schiffrin has been a professor of linguistics at Georgetown University in Washington, DC since 1982. She has also taught at the University of California at Berkeley. She lives in the Washington, DC area with her husband and two children.

Her areas of expertise include sociolinguistics, pragmatics, and discourse analysis, and her research interests cover a broad array of topics in language in interaction, including narrative analysis, contrastive approaches to discourse analysis, grammar in interaction, language and identity, and discourse and history. She has made groundbreaking contributions to the study of discourse markers (Schiffrin, 1987), discourse analysis, and narrative analysis. She has written four books, edited five books, and published over 51 articles and book chapters (her home page is at http://www9.georgetown.edu/faculty/schiffrd/index.htm).

Academic Background

Deborah Schiffrin (1951–) was born and raised in Philadelphia, Pennsylvania. She completed both her BA and MA in Sociology at Temple University in Philadelphia. Her first publications appeared in journals of sociology, such as a paper on the handshake (first published in *Semiotica* in 1974 and reprinted in 1981), and "Opening Encounters" (*American Sociological Review*, 1977). She then earned her doctorate in linguistics at the University of Pennsylvania in Philadelphia under the direction of William Labov. Her early influences included three very different scholars who have each had outsized impact upon the study of language: Noam Chomsky, the linguist who developed "transformational grammar"; William Labov, the sociolinguist who revolutionized research methods of sociolinguistics with his studies of dialectal features and everyday oral narrative; and Erving Goffman, the sociologist whose observations of the details of social interaction and the presentation of self found fertile ground in the field of discourse analysis.

The work of these three scholars prompted Schiffrin (personal communication, 1998, giving a narrative account of her career) to shift her research toward answering fundamental questions of language and social interaction: What do we say? How do we say it? What is its structure? What does it mean? And why does it matter? She thus turned her intellectual focus toward sociolinguistics and discourse analysis. Two members of her dissertation committee taxed her with separate challenges: William Labov urged her to use "sociolinguistic methodology to solve problems that have long vexed scholars." Erving Goffman told her to "illuminate a phenomenon that would remain associated with [her] throughout [her] career" (Schiffrin, 1998, in personal communication to author). She fulfilled both charges with her dissertation study and subsequent publications on discourse markers and narrative.

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Discourse Markers

Discourse markers are expressions like *well*, *but*, *and*, *so*, *oh*, and *y'know*. They are "one set of linguistic items that function in cognitive, expressive, social, and textual domains" (Schiffrin, 2001a, p. 54). Schiffrin's study of discourse markers (1987) analyzed oral discourse obtained through sociolinguistic interviews using methods developed by Labov for use in variation analysis in order to account for the distribution of markers in spoken discourse. In demonstrating which markers occurred where, and why, Schiffrin attended both to the structure and meaning of the language used as well as the interaction (by showing what was going on at the moment of use within the interaction).

Schiffrin defined discourse markers as "sequentially dependent elements that bracket units of talk" (Schiffrin, 1987, p. 31). In other words, "nonobligatory utterance-initial items that function in relation to ongoing talk and text" (Schiffrin, 2001a, p. 57). She showed that discourse markers could be considered as a set of linguistic expressions drawn from word classes as diverse as conjunctions (*and*, *but*, *or*), interjections (*oh*), adverbs (*now*, *then*), and lexicalized phrases (*y'know*, *I mean*). She also proposed "a discourse model with different planes: a participation framework, information state, ideational structure, action structure, exchange structure" (Schiffrin, 2001a, p. 57). Her analyses "showed that markers could work at different levels of discourse to connect utterances on either a single plane or across different planes." An example of the discourse marker *but* connecting several planes is reproduced below (Schiffrin, 2001a, p. 57).

Jack: [The rabbis preach,["Don't intermarry"
Freda: [But I did– [But I *did* say those intermarriages
that we have in this country are healthy.

Schiffrin states that

> Freda's *but* prefaces an idea unit ("intermarriages are healthy"), displays a participation framework (nonaligned with Jack), realizes an action (a rebuttal during an argument), and seeks to establish Freda as a current speaker in an exchange (open a turn at talk). *But* . . . thus has four functions that locate an utterance at the intersection of four planes of talk. (2001a, p. 57)

In addition to the functions shown above, discourse markers also display relationships that are local (between adjacent utterances), global, or both (across wider spans, structures of discourse, or both). Schiffrin shows they also add meaning to discourse (such as when *oh* marks information as "new" or "unexpected"). She concludes her analysis by specifying "conditions that allow a word to be used as a discourse marker: syntactically detachable, initial position, range of prosodic contours, operate at both local and global levels, operate on different planes of discourse." (Schiffrin, 1987, p. 328, cited in Schiffrin, 2001a, p. 58). The key to discourse markers may be their multifunctionality on different planes of discourse that "helps to integrate the many different simultaneous processes underlying the construction of discourse, and thus helps to create coherence" (Schiffrin, 2001a, p. 58).

Following Schiffrin's groundbreaking study of discourse markers, the first to thoroughly study the structure, function, and use of discourse markers in spoken discourse, the field of study has exploded. Scholars in linguistics and related fields have analyzed markers in various languages, their use in different interactive contexts, in language contact situations, and beyond (for a review, see Schiffrin, 2001a, pp. 54–5).

Further Contributions to Narrative Analysis and Discourse Analysis

Schiffrin's work on discourse markers came from a corpus of sociolinguistic interviews, primarily conducted with Jewish Americans in Philadelphia, during the course of which interviewees recounted hundreds of stories. These stories provided data for rich analysis, and Schiffrin's interest in oral narrative has continued from her earliest research to the present. She has written about arguments (1984, 1985, 1990), explored the sociolinguistic construction of identity (1996, 2006b), and demonstrated how events in life story narratives are retold for different purposes in different interactive contexts (2006a, 2006b).

Applying what she knew from analyzing naturally occurring stories in everyday interactions, Schiffrin widened her focus to other types of stories, including life stories and oral histories, which often combine elements of public and private discourse. A research fellowship from the Center for Advanced Holocaust Studies at the Holocaust Memorial Museum allowed her to transcribe a recording of the life story of a Holocaust survivor. She then examined how language use creates and reproduces identities at "textual, interactional, and cultural levels," in addition to relation-based identities (such as among family and friends: see, for example, "Mother and Friends in a Holocaust Survivor Oral History," 2002). The analyses of Holocaust life histories also included examination of change over time; that is, retellings of the same material at different times. She also studied terms of reference about place and experience in public discourse about the Holocaust, as well as of Japanese-American internment camps during World War II (Schiffrin, 2001b, 2001c).

Schiffrin also served as principal investigator for a National Science Foundation research grant to investigate topic-related variation, or the different ways that people indicate what they are talking about. The grant allowed her to explore her interest in the different levels at which topic can be identified, how topic intersects with information structure (such as how old and new information is indicated within the same sentence), and how information is foregrounded and backgrounded. In addition, Schiffrin explored her growing interest in functional approaches to language, such as how grammar "serves" the needs of communication. The research she undertook during this period not only produced articles on the functional and communicational aspects of specific words, such as the uses of *then* in temporal clauses, but also served to illuminate broad differences among different frameworks used to conduct discourse analysis, the subject of her second book, *Approaches to Discourse* (1994).

Approaches to Discourse traced how discourse analysis uses methods drawn from several other disciplines such as anthropology, sociology, philosophy, in addition to linguistics. Her book described and compared several approaches to the linguistic analysis of discourse, including speech act theory, pragmatics, conversation analysis, ethnography of communication, interactional sociolinguistics, and variation analysis. A second edition adds critical discourse analysis and narrative analysis to the broad methodological overview. Within each framework, Schiffrin presents original analyses of specific examples of language in use to illustrate the similarities, differences and overlaps among the approaches.

SEE ALSO: Analysis of Narrative in Interaction; Discourse Markers

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Schmidt, Richard

JANNY LEUNG

Richard W. Schmidt (1941–) is a versatile linguist whose primary research area is in the role of cognitive and affective factors, such as attention, awareness, and motivation, in adult second language acquisition (SLA) and foreign-language learning. He is also interested in both macro- and microsociolinguistics and the problems of learning and teaching difficult, less commonly taught languages.

Among his many contributions, Schmidt is perhaps best known for his work on the role of attention and awareness in SLA, an issue that is central to many theoretical and practical controversies in the field, such as mechanisms of language acquisition, the development of interlanguage and second language (L2) fluency, existence of implicit learning, and foreign language pedagogy. Schmidt claims that all learning requires attention and a low level of awareness (which he calls "noticing"), but not necessarily an intention to learn. This noticing hypothesis has been influential in SLA. He argues that awareness at the level of understanding is needed for explicit learning but not for implicit learning.

Schmidt has also written essays on wide-ranging areas including Arabic sociolinguistics, speech acts, advertising language, communicative competence (1983), interlanguage phonology (1987), and learner motivation (Schmidt, Boraie, & Kassabgy, 1996), and co-edited the *Longman Dictionary of Language Teaching and Applied Linguistics* (Richards & Schmidt, 2010).

Professional Life

Schmidt grew up in Massachusetts and obtained his BA from Harvard University in 1963. Before he pursued his postgraduate studies, he served as a foreign service officer for the US Information Agency, with assignments in Washington, Beirut, and Cairo. He then completed an MA and a PhD in linguistics from Brown University in 1971 and 1974. His doctoral dissertation was titled *Socio-Stylistic Variation in Spoken Egyptian Arabic: A Re-examination of the Concept Diglossia*. He lived in Rhode Island, Lebanon, and Egypt before settling down in Hawaii in 1976. He is currently professor in the Department of Second Language Studies and director of the National Foreign Language Resource Center at the University of Hawai'i at Manoa. He served as president of the American Association for Applied Linguistics in 2003–4 and received a Distinguished Service and Scholarship Award from them in 2009.

Ideas

Both the nativist tradition (focusing on universal grammar as a deep internal factor) and extreme empiricist approaches (such as connectionism, focusing on input as an external factor) to SLA seem to undermine the role of the learner's conscious mental processes. In recent years, more and more researchers have become interested in the cognitive requirements of learning, most notably attention and awareness.

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Schmidt (1995) sees attention and its subjective correlate, awareness, as nearly isomorphic. He characterizes attention as limited, selective, partially subject to voluntary control, responsible for controlling access to consciousness, and essential for action control and for learning (2001). Attention is required not only for the learning of meaning and structure; Schmidt (1993) argues that for pragmatic learning to take place, attention to the pragmalinguisitc or sociopragmatic information is also necessary. His perspective is consistent with many SLA models. For instance, Pienemann and Johnston (1987) argue that the acquisition of developmental grammatical features is related to the learner's expanding processing space and the freeing of attentional capacity. Many psycholinguistic models also emphasize that cognitive factors such as perceptual salience and frequency, which affect attention, determine the ways in which the target language input is processed (e.g., Towell & Hawkins, 1994). Developmental progress is thought to be triggered by attention paid to the gap between what the learner can currently produce and what the target language is like. However, there are theorists (e.g., Carr & Curran, 1994) who argue that attention is important but may not be necessary for all kinds of learning.

According to Schmidt, consciousness—in the sense of "awareness" but not "intention" or "knowledge"—may be distinguished at three levels: perception, noticing (or focal awareness), and understanding (for a different conception of consciousness, see for example Block, 2005, who makes a distinction between phenomenal consciousness and access consciousness). Noticing is a subjective experience that can sometimes be operationally defined as availability for verbal report, subject to memory and metalanguage limitations. Only noticed information stands a chance of entering long-term memory.

The role of consciousness in language learning is an issue that sparked ample controversy. There are those who believe that accurate language production depends on a conscious understanding of the target language system, and thus consciousness-raising can facilitate language learning (Rutherford & Sharwood Smith, 1985). The opposite camp holds that much of language learning essentially takes place unconsciously (e.g., Seliger, 1983), and that learning without awareness is possible. And then there are those who argue that conscious and unconscious processes can both lead to "learning," but they involve distinct mechanisms that result in different outcomes (e.g. see Krashen, 1981, who proposes that learning is conscious while acquisition is subconscious).

From an analysis of his own production data when he learned Brazilian Portuguese, Schmidt notes that other than words he had been taught explicitly, he produced only forms that he noticed people saying to him (Schmidt & Frota, 1986; see Tomlin & Villa, 1994, for a criticism of such diary studies, based on the observation that writing diary entries requires not only noticing but reflexive self-awareness). In Schmidt (1990) he reviewed the psychological literature on consciousness and argued that although subconscious processes are important for and common in language comprehension and production, subliminal language learning is impossible, and noticing is the necessary and sufficient condition for input to become intake. Mere exposure to input and subconscious processing are not enough to drive language development. Subliminal and blind-sight studies provide evidence for merely detection without awareness but not learning without awareness; evidence for implicit memory or learning by amnesiacs is seen as irrelevant to his noticing hypothesis because his claim is that it is *at the time of learning* that learning requires awareness (1995). Incidental learning is clearly possible and effective as long as task demands focus attention on what is to be learned.

Schmidt (1990, 1995) acknowledges that implicit learning, defined as learning without awareness at the level of understanding, remains a possibility. Although overall he feels that the evidence for implicit learning is weaker than often claimed, he thinks a case may be made for some implicit learning of foreign languages, especially when fuzzy categories, such as gender acquisition in French, are involved. He has later become more convinced

of the existence of implicit learning (e.g., "Both implicit and explicit learning surely exist," Schmidt, 2001, p. 4). Schmidt holds that implicit learning is based on frequency counting via simple associative learning mechanisms, rather than unconscious rule abstraction. An example of how such associative learning mechanisms may work has been provided by connectionists (e.g., Rumelhart & McClelland, 1986), who found that a network of units can demonstrate rule-like behavior, but knowledge is represented only as association strengths distributed across a network. Schmidt (1990) regards the connectionist framework as appealing because it is consistent with the developing view that assumes a qualitative difference between conscious and unconscious processes.

Regarding the relationship between implicit and explicit knowledge, the noticing hypothesis, which is now a mainstream belief in SLA, incorporates the weak interface position, as it assumes that explicit knowledge may only indirectly affect the acquisition of implicit knowledge by focusing learners' attention on the input features that are relevant to the target grammatical structure.

SLA researchers tend to agree that conscious rule application is not useful for fluent language performance. Extending from his interest in attention and language acquisition, Schmidt (1992) analyzes psychological mechanisms that underlie the development of L2 fluency, construed as a good ability to produce language in real time in an L2. He regards fluent speech production as automatic procedural skill that does not require much attention and effort. Certain aspects of speech production (e.g., phonological processing) may become automatic, but others, such as conceptual processing, continue to demand attentional resources.

Other than cognitive factors in L2 and foreign-language learning, Schmidt is also interested in socio-affective factors such as motivation. Using a questionnaire study involving 1,554 Egyptian learners of English, Schmidt et al. (1996) have identified three basic dimensions—affect, goal orientation, and expectancy—to motivation for learning foreign languages. These authors have also found that motivation is related to learning strategies and preferences. For instance, learners who scored high on the affective dimension tend to prefer communicative approaches in the classroom. In 2001, Schmidt edited a collection of essays on motivation with Dörnyei (Dörnyei & Schmidt, 2001). In this collection, Schmidt and Watanabe (2001) report the results of a survey of motivation on 2,089 learners of five different foreign languages (Mandarin Chinese, Tagalog, French, Japanese, and Spanish) at the University of Hawai'i. Factor analysis reveals that the underlying factor structure consists of value, expectancy, motivational strength, competitiveness, and cooperativeness. Ethnic heritage also emerged as a factor. The motivational factors of value, motivational strength, and cooperativeness seem to affect strategy use and pedagogical preferences more strongly than others.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Motivation in Second Language Acquisition

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Schumann, John H.

BOB JACOBS

If the field of applied linguistics were a kitchen, John H. Schumann (born May 23, 1943) would be one of the master chefs. As one of the founding members of the field of second language acquisition, it is not surprising that his interest in language learning began early. He received both his BA and MA in Russian from Fordham University. Subsequently, he worked in the Peace Corps as a volunteer teaching English and then as the director of their Teaching English as a Second Language (TESL) program in Iran. In 1975, he received an Ed.D. in Human Development from the Harvard Graduate School of Education. In this same year, with this diverse background, he began his academic career when he joined the University of California at Los Angeles (UCLA) TESL/Applied Linguistic Program, which already had a well-established faculty (e.g., Clifford Prator, Donald Bowen, Russ Campbell, Evelyn Hatch, and Marianne Celce-Murcia). For 16 years (1985–2001), Schumann chaired the department, directing its focus on second language acquisition (SLA), assessment, and discourse analysis. During this time, the UCLA doctoral program became one of the preeminent applied linguistics departments in the world.

At UCLA, Schumann's research evolved in several identifiable stages. The early focus was on developing the pidginization hypothesis he had proposed in his dissertation, which suggested that an individual's restricted second language (or interlanguage) is a consequence of psychological distance from speakers of the target language (Schumann, 1976, 1978b). This was essentially a descriptive linguistic approach for characterizing the early stages of SLA. A logical extension of this hypothesis was to expand the perspective to include not only affective but also social factors, in what became known as the acculturation model (Schumann, 1978a, 1986). Acculturation was seen as a causal variable in SLA insofar as social-psychological integration into a target language culture could facilitate SLA. This second phase in Schumann's research went beyond linguistic descriptions of a learner's interlanguage and began an explanatory endeavor that opened up a broader view of language acquisition, one that eventually incorporated neurobiology.

This venture into neurobiology evolved out of his definition of applied linguistics. Rather than accepting the field as the narrow application of linguistic theory to language acquisition, Schumann adopted a much broader, eclectic perspective: applied linguistics is the application of diverse fields of inquiry (e.g., psychology, neurobiology, anthropology, linguistics) to language-related issues. Schumann thus encouraged his students to explore language from a variety of different perspectives, one of these being neurobiology. It was this kind of inquisitive, supportive environment that led to some of the early neurobiologically oriented publications about language acquisition (Jacobs, 1988; Jacobs & Schumann, 1992), speculative work that went well beyond the original neurofunctional foundations laid a decade earlier by Lamendella (1977). In this vein, Schumann founded the UCLA Neurobiology of Language Research Group. Part of this undertaking involved working with the well-known neuroscientist Dr. Arnold B. Scheibel of the UCLA Brain Research Institute. Together, they provided graduate students with a solid neurobiological foundation from which issues in language acquisition could be addressed. In this way, Schumann and his students outlined important areas of neurobiological research that could shed light on the language acquisition process.

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This neurobiological stage of investigation was no minor undertaking for an established researcher attempting to tackle an entirely new discipline. Nevertheless, Schumann began intensively studying the intricacies of neuroanatomy and neurophysiology. Over several years, he developed sufficient expertise to extend his earlier links between affective factors and SLA. Although he initially underscored the amygdala's involvement in emotional processing, he recognized that the amygdala did not work in isolation (Schumann, 1997). He therefore proposed a tripartite stimulus-appraisal system that highlighted the interactions between the amygdala, the orbitofrontal cortex, and the body proper. This stimulus-appraisal system provided a neurobiological mechanism for an individual's preferences and aversions, which determine how an individual reacts in various language learning situations, and helps us understand their ultimate language proficiency in such environments. Working with his students, Schumann pursued a broad neurobiological account of learning from the perspective of language acquisition, resulting in a comprehensive overview where they clearly delineated fact from speculation and made insightful extrapolations from current brain research (Schumann et al., 2004).

This focus on the neurobiology of affect led to an evolutionarily based reexamination of how language is acquired. The resulting theory, known as the interactional instinct (Lee, Mikesell, Joaquin, Mates, & Schumann, 2009), suggests that linguistic structures in primary language acquisition are complex adaptive systems that emerge from conversational interaction, which is neurobiologically driven by affiliative reward systems in the brain (Schumann, 2007). Because the brain detects and learns verbal interaction patterns, grammar is epiphenomenal (i.e., a secondary consequence of the learning process), requiring no reliance on an innate universal grammar (Chomsky, 1965; Pinker, 1994). In this perspective, learning is viewed as being similar to a form of foraging (Schumann, 2001). As such, learning is a biological imperative in infants and motivates their interaction with conspecifics, resulting in the virtually inevitable acquisition of the primary language. In adults, however, there is a great deal more variability in SLA success, in part because of the affective and psychological factors previously outlined by Schumann (Schumann, 1978a, 1986, 1997), but also because of neurobiological factors (e.g., genetic variations and ontogenetic changes in receptor density) on which Schumann and his colleagues have begun to elaborate (Lee et al., 2009). The interactional instinct thus brings Schumann full-circle by allowing him to integrate his earlier social-psychological work on affect with more recent neurobiological investigations. This synthetic approach provides an evolutionarily plausible mechanism for the acquisition of the culturally inherited artifact known as language. Insofar as this area of inquiry is rich with possibilities, we can expect his future work will continue to integrate neurobiology, evolution, and language acquisition.

As representative as these academic foci are, several of Schumann's more "peripheral" publications actually provide a deeper understanding of his broad philosophical palate. In one of his earlier works, for example, Schumann (1983) drew parallels between quantum physics and SLA research, noting that researchers create the reality they investigate, and that philosophical flexibility is required to appreciate the aesthetic aspects of SLA theory building. Certainly, SLA has long been driven by competing theories. In this regard, Schumann (1993a) explained why the philosophical notion of falsification is problematic for evaluating SLA theories. In a different vein, Schumann (1993b) merged his interests in acculturation and neurobiology when he stepped outside SLA circles to explore the neural underpinnings of diversity in multicultural environments. Finally, in a return to philosophy, Logan and Schumann (2005) recently proposed that language is part of the symbolosphere (i.e., the nonphysical world of symbolic relationships). In this view, language is an emergent cultural artifact that arises from social interactions among brains and, as such, shares much with other cultural constructs (e.g., religion, law). What characterizes all of these

perspectives and his main research interests is a scholarly stretching of academic boundaries to advance our understanding of what language is, and how it is acquired.

Indeed, Schumann's academic and philosophical inquisitiveness is demonstrated by his interdisciplinary contributions to the field of applied linguistics. Not only has he been a prolific writer, he has also guided the careers of several generations of young scholars. On a more personal level, he applies this same omnivorous inquisitiveness to his culinary pursuits, often preparing elaborate dishes for colleagues as they discuss the latest research in the field. Indeed, it is in these moments when new ideas are discovered . . . that one can be sure there is a scholar in the kitchen.

SEE ALSO: Hatch, Evelyn; Motivation in Second Language Acquisition; Neurobiological Foundations for Second Language Acquisition; Neurobiology and Motivation in Second Language Acquisition; Selinker, Larry

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Science of Language Policy and Planning

DAVID BRADLEY

Language policy and planning has a long history, but an explicit theoretical framework has only developed in the last 50 years. Usually the process is regarded in a unitary way, and called language planning, while the specific decisions involved are said to constitute language policy.

An early approach was that of Kloss (1969), which divides this into *status planning* and *corpus planning*. Status planning or language policy relates to decisions about the status and use that languages should have within a community. Corpus planning or language planning relates to the form and structure of languages: graphization of a written variety, standardization of its grammar, and modernization of lexicon. Status planning is often the role of governments and educational authorities; their decisions are frequently based on nation-building and other political and social agendas. Corpus planning may also be carried out by central authorities, though ideally this work is done by linguistically sophisticated experts and mainly based on established norms.

Another four-stage framework was devised by Haugen (1966): *selection*, *codification*, *elaboration*, and *dissemination*. Selection and dissemination correspond to status planning, while codification and elaboration are part of corpus planning. Selection is the choice of languages and their standard varieties. Codification is the graphization of the written form and standardization of grammar and vocabulary. This may involve creation, modification, or replacement of orthographies, similar decisions about grammar and vocabulary, preparation of standard grammars and authoritative monolingual and bilingual dictionaries. Elaboration is the expansion of the use of the language and modernization through additional areas of new vocabulary or new genres of literary and other uses. Dissemination is the educational, social, and other implementation of the codified and elaborated varieties, also sometimes called "acquisition" planning.

Both these models lack an essential component: evaluation; that is, the assessment of the success of policy and planning decisions and if necessary changes in their form or implementation. They also do not explicitly mention linguistic human rights, such as the right of minorities to mother-tongue education and access to government and national life.

A language policy is inherent in any political entity or institution, whether it is explicit or not. That is, every such entity has some official language or languages, even if this has not been proclaimed or legally instituted. These languages also have a standard form. Sometimes the form changes gradually through time, but more often the written and formal spoken variety becomes fixed for a longer or shorter period and thus gradually becomes archaic and less representative of current speech usage. This may sometimes lead to reform of the written variety, though such reforms are often contentious and tend to occur mainly after political changes. For much of recorded history, language policy has been a major tool of nationalism and building national identity, and language planning has often worked to unify nations around a single standard language, often at the expense of regional varieties and other local languages.

Sometimes the basis of policy decisions is explicit, as in the case of the former Soviet Union or the Peoples' Republic of China, where non-Russian and non-Han Chinese nationalities were recognized based in part on their language, and standard varieties of

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each language were selected based on being central, spoken by a large group, intelligible to other varieties and having an established sociocultural status, then codified in ways reflecting current political criteria. This meant the use of romanization in the Central Asian part of the Soviet Union in the 1920s and its replacement by Cyrillic in the mid-1930s, and in China in the 1950s the use of a romanization based on that codified for Chinese, then its replacement by Arabic-based scripts in the 1970s. Languages like Tajik and Uzbek had a 1920s romanization and a 1930s Cyrillic script in the Soviet Union, and a 1950s Chinese-based romanization and a 1970s Arabic script in China; of course in Afghanistan they continued to be written in Arabic script.

We lack explicit records for the political basis of early language policy and planning decisions, but the development of a standardized orthography, grammatical conventions, and vocabulary is a component of language policy; thus one might say that people like the Sanskrit grammarian Panini, the Alexandrine grammarians for Greek or Priscian for Latin were language planners who codified existing language norms and made them explicit. Similarly, the use and spread of Latin and Greek across the Mediterranean world two millennia ago was a status-planning process, as is the use and spread of Arabic in the Islamic world, and the use and spread of English in the modern world.

Language policy decisions are constant and dynamic, made every time one chooses to socialize children in a particular language, every time a teacher chooses a particular linguistic form, every time a government bureaucrat selects a language to address a member of the public, every time a government makes a proclamation, and so on. Political change may lead to linguistic policy changes, as in Greece where the diglossic high Katharevousa became associated with the military government and was eliminated from most official uses with its loss of power in 1974. Another example is the shift away from Latin in the Catholic Church, started in the mid-1960s but not yet complete.

In some countries, official or unofficial bodies have been created whose sole or primary purpose is to codify and standardize a national language. Their creation is directly related to other kinds of nation-building processes; many focus on lexicon. One early unofficial example was the Accademia della Crusca, established to maintain the purity of the Italian language in 1582. An early official example is the Académie Française, established by Richelieu in 1635, which continues to make linguistic decisions for French. For example, it recently coined a new word for e-mail, *courriel*, a contraction of *courrier électronique*, to replace the English loan *mél*. Many other countries have more recently established similar bodies, for example the Royal Institute in Thailand, established in 1933, or the Dewan Bahasa dan Pustaka (Institute of Language and Literature) in Malaysia, established in 1956 (Bradley, 1985). Some, like the Académie Française and the Royal Institute in Thailand, have developed into elite institutions whose membership is a recognition of status within the educated stratum of a society, not just for those working to standardize a national language. Others remain closer to their language policy and planning roots, and some remain government bodies.

Institutions formulating policy may develop gradually, as in China where the Association for Writing Reform of the Communist Party established in 1949 became the government Research Committee for Chinese Writing Reform in 1952, the Committee for Chinese Writing Reform in 1954, and finally the ministry-level State Language Commission in 1985. Policy bodies may also have their status and powers weakened, as in China where the State Language Commission merged into the State Education Commission in 2000.

Official language policy bodies usually make extensive corpus decisions, often piecemeal: orthography reform such as the elimination by the Académie Française of the circumflex accent from French (without consulting the rest of Francophonie), coining new words, fulmination against loanwords like *le weekend*, and so on. In some countries, the decisions of the policy-forming body are widely respected, implemented and used, while in others they are a source of amusement and are largely ignored.

One outcome of competing language policy decisions in different political entities is that a single language may become pluricentric (Clyne, 1992), having more than one norm in different countries. An extreme example of this is Chinese, where the 1956 character reform simplified nearly 40% of all characters, leaving Taiwan and Hong Kong using the traditional characters, with Singapore eventually changing sides in 1979 to the simplified characters (Bradley, 1992). We now recognize distinct Serbian, Croatian, and Bosnian languages, as a result of political separation; they were formerly all regarded as varieties of a single Serbo-Croatian language. Jespersen's aphorism, that a language is a dialect with an army and a navy, perhaps applies here.

In countries with or without an official language policy body, this role is also fulfilled by other government institutions: ministries of education, defense, interior, welfare, minority affairs and so on. "No policy" really just means no explicit legally codified policy with official status. The lack of an explicit policy may facilitate movements promoting a single national language, such as Official English in the United States from the 1980s (Crawford, 1992).

Linguists have contributed extensively to formulating and implementing national language policies in recent years, most notably the Australian Joseph Lo Bianco, who drafted a language policy for Australia (Lo Bianco, 1987), the first explicit language policy for any English-speaking country, led its implementation, and has also helped to draft policies for many other countries.

A major current issue for language policy and planning is linguistic human rights, such as early education through the mother tongue for minority groups, transitional to a national language (Tollefson, 1991; Hornberger, 2008). UNICEF and UNESCO have taken a leading role here. Another issue is the encroachment of covert status planning on corpus planning (Fishman, 2006).

SEE ALSO: Language Policy and Planning; Role of Linguistic Human Rights in Language Policy and Planning; Status Planning

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Scientific and Technical Translation

SUE ELLEN WRIGHT

Even as products and procedures derived from science and technology are omnipresent in the twenty-first century, scientific and technical texts abound—from pharmaceutical inserts to wordless product assembly diagrams—designed one can assume to avoid the necessity of translation for international markets, but frequently incomprehensible in any culture. "Pure" scientific texts document leading-edge research. So-called "science writing," on the other hand, distills scholarly texts written by experts for experts and popularizes them for the educated lay reader. The application of scientific principles to technological products and processes (sometimes called "technology transfer") generates design documents, drawings, production and quality assurance manuals, and computer programs, all reflecting high levels of professional and technical expertise. On the side of the final customer, however, technological products frequently include instructions for nonexpert users. New inventions inspire countless patents, written in a special technical language melded with sometimes arcane and even archaic legal discourse. Similar hybrid varieties appear in official regulations governing the introduction of technology and science in areas affecting business, industry, public health, and the environment. Sci-tech Web pages and computer applications vie for international audiences. Difficulty levels range from the highly complex (e.g., specifications for a nuclear power plant) to the purposefully clear ("plain-text" instructions for using a medication). Any and all of these text varieties may under certain conditions require translation into one or many languages (Göpferich, 1995).

Defining Parameters for Sci-Tech Translation

Scientific and technical translation, especially if software localization materials are included, comprises the lion's share of texts generated by the translation industry. If and when a translation service provider (TSP; or language service provider, LSP) considers the translation of any text, a number of translation parameters must be identified, either informally, or as part of a coherent project plan. In this context, a parameter is any definable factor used to customize a translation project. Many requestors do not know how to best meet their needs and those of their end users. As a consequence, the TSP will ask questions relevant to the parameters and integrate the answers into a blueprint for the final product and its relative quality. Some parameters may seem obvious at first glance, but it is not uncommon that significant errors and misunderstandings can occur if items are omitted (ASTM, 2006).

Language Pair or Pairs

Well-informed requesters usually know the language of a text and probably the desired translation target language as well. Sometimes, however, the TSP may have to determine the source language because clients cannot distinguish Catalan, for instance, from Spanish. The target language can be equally difficult—a request for Spanish for the South American market may ignore the fact that Portuguese will also be required if the intended audience includes Brazil. A request for "Belgian" or "Swiss" confuses nationality with language,

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and failure to specify the desired language variety (en-GB [British English], for instance, instead of en-US [American English]) can result in a less useful target text.

Sociopolitical and economic factors determine translation source languages. Sci-tech translation tends to flow from language communities where new ideas and processes are invented and new products are produced. As a consequence, more texts are probably translated from languages such as English, Japanese, German, Korean, and Chinese because these languages are associated with strong research and industrial bases. Far more translation is also required for information-rich products like computer software, automobile, or airplanes than for maize or rice, where international users can be expected already to know the fairly simple instructions for how the product is used in the target culture.

Progress in language technology and cultural awareness supports multilingualism, particularly on the Web. Nevertheless, English continues to function as the language of high-level innovative science and as the source language for many scientific texts. This is true even when authors are not Anglophones because many articles are written by speakers of English as a second language or by international collaborative groups whose common scientific language is English. In situations (such as software localization) where interfaces and documentation will be translated into many languages, it is not uncommon for the text to be written in or translated into English first and for the other languages to be generated starting from English as a kind of pivot text (Ammon, 2001).

Subject Field

Most importantly for specialized texts, the subject field of the text must be identified. Science as such encompasses such fields as mathematics, astronomy, statistics, computer science, bioscience, chemistry, earth science, medical science, and the like (Wright, 2011). Technology involves the application of scientific observation to the creation of products and processes designed to benefit human endeavors of all kinds. Subject field classification can take place at a highly granular level, for instance description of brake bands used inside automotive transmissions (as opposed to other subfields involving automotive drive train components). Once a TSP has determined the subject field of a text (which may require the intervention of a language specialist), an effort is usually made to match the text to a translator competent in both the language and the subject combination.

Text Class

Texts are further classified according to the text type and variety (sometimes called "genre"). Text type concerns the intention or function of a text, that is, whether it is primarily informative, expressive, persuasive (sometimes called "appellative"), or perhaps interactive with the reader ("phatic"). Although one might expect sci-tech texts to be primarily informative, they may incorporate elements of advertising or encourage readers or listeners to adopt certain science-oriented strategies (for instance, adopting healthy lifestyles or promoting environmental "green" awareness). Materials prepared for certain populations may employ rhetorical devices designed to engage the trust and identification of the target audience in order to influence behavior (for instance, family planning information provided to immigrant populations with limited educational background). Translators working with such materials require highly sensitive familiarity with language usage, cultural attitudes, and even taboos in order to ensure that the target text conveys the desired intention. Text varieties reflect certain cultural expectations for the purpose and function of a text. The introduction above lists a range of text varieties. In this entry, "text class" represents the interaction of text type and text variety.

Terminology and Special Language

Knowledge of general language usage does not guarantee accurate special language competence because the rules and conventions applied to the selection of scientific and technical terms can vary considerably from language to language and subject to subject (Sager, McDonald, & Dungworth, 1980). Texts for translation also usually present novel information, so even experienced expert translators generally need to explore the terminology and content of each new text in order to document reliable equivalents in both languages. Sci-tech translators study so-called *background* and *parallel texts* (sources of information on the topic in the source and target languages, respectively) and frequently maintain terminological resources documenting lexical equivalents.

In addition to terminological information, translators are also concerned with text-related constraints, which can vary considerably from one language community to another and from one text class to another. In terms of style, the use of passive structures versus active verbs or the nominalization of verbs needs to reflect the expectations of the target audience. Even the way that individual cultures structure information can vary, such as the differences between Chinese and Western medicine, or even between German and Anglo-American classification of machine tools. Terms and concepts assigned to new technologies, like computer science, for instance, may be nicely parallel because contemporary researchers collaborate internationally. Traditional technologies, like steel making or agriculture, may, however, display vastly different term forms and concept ordering systems in different language communities.

Register and Situational Diversity

Subject field, text type, and text variety combine with language register to affect "situational diversity" (Sager & Nkwenti-Azeh, 1989, p. 19). Just classifying a text as medical does not necessarily mean that terminological or stylistic choices are cut and dried. The specific intention for the target text will determine choices on all levels. In many cases, the intention of the source text and that of the target text are hetero-functional (Nord, 1997). For instance, a text written for scientists in one language may actually be substantially rewritten as it is translated in order to produce a more popular science article—this is not uncommon when English scientific articles are popularized in another language. Learned terminology that is readily understood by experts may be explained or revised to appeal to lay readers, and strictly factual, informative presentation may be altered to add persuasive, entertaining, or phatic elements designed to engage a different readership. Even at the same relative level, science writing for a lay audience in English may sometimes be more serious in tone and less entertainment-oriented than science writing in German, but nevertheless, there are significant differences in style between publications—an article on the same topic written for *Wired* will be styled differently than one appearing in *Scientific American*.

The same medical topic may be reworked multiple times in order to present information to research experts, medical practitioners, educated patients, or uneducated patients with limited reading abilities. Register and the presentation of ideas may be carefully modified to accommodate cultural prejudice or the age and experience of a particular target audience. There are other ways that register plays a role. Regulations may require that pharmaceutical instructions printed on the outside of a medication package, which are extremely important for the user to understand, are written in plain language. In contrast, extensive fine-print inserts that are sometimes included inside the packaging are frequently technical and not all that accessible to the average reader. The way such materials are written or translated may even be prescribed by consumer-protection legislation in some countries and not in others. Such legal restrictions may also affect material safety data sheets, documentation for clinical trials, and other standardized reports and specifications.

Relative Translation "Quality"

Literary translators may choose to translate only texts that are well written in their source languages. Sci-tech translators rarely have this option. Scholarly books and journal articles, as well as textbooks, may be well vetted, and some science and technical writing is produced by trained technical communicators. A growing body of technical texts (aeronautical and automotive engineering, for instance) and texts for localization are often carefully prepared with translation in mind. These high-quality texts may even be written using controlled language, thus ensuring consistent terminology and rigorous style (Controlled English, 2007). Unfortunately, many other texts are of very poor quality, so much so that translators often strive to improve the target text.

There is no absolute set of criteria for determining the quality of a completed sci-tech translation. In industry, large quantities of scientific and technical material are translated using machine translation to produce so-called "indicative translations." Sometimes brief synopses are created by less-qualified translators when there are too many texts to process and too few expert professionals, especially in less common languages. Both these activities can result in *gisting*, a style of translation that gives a notion of the content of the original without promising perfection. Such translations can be used for the purpose of triage, giving users an idea of which out of many texts should be given greater attention, or perhaps which segment of a longer text should be translated.

By the same token, other translations may be subject to very stringent quality analysis, and the assessment of the final product will reflect not just the abilities of one translator, but rather the experience and dedication of a whole team of experts. Many texts, such as computer interfaces or Web pages, must function in a way that is identical to the function of the original text, which means that they must be processed carefully using computer-assisted translation (CAT) tools that preserve or even adapt the functional elements of the text to ensure performance. Quality issues are reflected not only in the text itself, but also in layout and presentation in whatever medium is required. Ultimately, quality is measured in terms of requester expectations as reflected in the parameters specified in the project plan.

SEE ALSO: Computer-Assisted Translation; Corpus Analysis of Scientific and Medical Writing Across Time; English for Science and Technology; Grammar and Doctor–Patient Communication; Language for Specific Purposes: Overview; Technology and Terminology; Technology and Translation

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Scollon, Ron

NAJMA AL ZIDJALY

Introduction

Ron Scollon (1939–2009) was a prolific writer, social activist, and scholar who contributed multivariously to the study of language in (inter)action. Scollon is the author and editor of 17 books and over 90 essays, articles, and reviews on child language acquisition, intercultural communication, literacy studies, anticipatory discourse, mediated discourse analysis, and public discourse, with a special focus on native Alaskan languages and Asian interethnic communication (much of his research is coauthored with his partner Suzanne Wong Scollon). Scollon was also a founding editor (for North America) of *Visual Communication*, a cutting-edge journal on visual semiotics, and worked extensively as an intercultural consultant and in helping document a number of Athabaskan languages and cultures. Scollon's mediated discourse theory and its methodological framework nexus analysis advanced the field of applied linguistics by influencing the way discourse analysis is conceptualized and practiced. His vast theoretical contributions additionally have had wide application in education, public discourse, and professional and intercultural communication settings.

Academic Background

Ron Scollon received his BA in Japanese linguistics in 1971, his MA in linguistics in 1972, and his PhD also in linguistics (language acquisition, Athabaskan) in 1974, all from the University of Hawai'i. At Hawaii, Scollon also received training in Athabaskan linguistics from esteemed Athabaskanist—and a student of Edward Sapir—Li Fang-Kuei, resulting in Scollon collaborating with Li on the documentation of Dene Suline, Chipewyan (Holton, 2009). Once graduated, Scollon opted for an untraditional academic path—changing posts relatively frequently and doing a great deal of outside consulting work and freelance writing. This nonconformity broadened his academic and personal experiences, enabling him to develop his nonconformist ideas about language and the social space it occupies in reality.

After sporadically teaching linguistics courses at the University of Hawai'i from 1974 to 1978, Scollon took a post at the Alaska Native Language Center, University of Alaska at Fairbanks. While holding this position (1978–83), Scollon helped document the Alaskan Native language of Tanacross. To connect Alaskan faculty and students who lived across a 1,280-mile span, in 1981, the Scollons used the University of Alaska computer network to become the first in North America—perhaps in the world—to use e-mail conferencing to teach graduate for-credit literacy classes—four years prior to the invention of the Internet. Scollon additionally became the first to use the ethnography of speaking and sociologist Erving Goffman's interactional framework in an Athabaskan context to combat interethnic discrimination. These initiatives together with Scollon's (1980) pamphlet on Athabaskan–English interethnic communication, according to Holton (2009), have impacted Athabaskan classrooms tremendously, where his work is still used.

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From 1983 to 1992, Scollon was an independent scholar, consultant, and lecturer on communication in organizations, media, intercultural communication, and language education, with a client list of over 50 governmental, business, and educational agencies in the United States, Canada, and Asia. In 1992 he joined the English Department at City University of Hong Kong, where his ideas about culture and communication culminated in the widely used *Intercultural Communication* (coauthored with Suzanne Scollon) that placed Scollon as a preeminent expert in the field. In 1998, Scollon became a professor of linguistics at Georgetown University, Washington, DC. In 2001, he launched his theory, mediated discourse analysis, which investigates a relationship that had perplexed him since his dissertation: that between language and human action. In 2005 Scollon retired professionally but continued being intellectually active.

Major Contributions

Scollon's academic journey (shared with Suzanne Scollon) has contributed to—and created—a number of academic fields within and beyond applied linguistics. The belief that language was a part of a whole and that the whole needed to be examined to understand the part of language (Norris, 2009) led Scollon to draw upon philosophy (Bhaskar & Nishida), psychology (Vygotsky & Wertsch), literary theory (Burke), sociology (Latour & Goffman), semiotics (Peirce & Hall), and even geography (Tuan) (Stockburger & Jia Lou, 2009).

Applied Linguistics

Scollon's contributions to applied linguistics fall into two categories: language acquisition and literacy studies. Scollon launched his academic career in 1976 with a book—based on his dissertation—on child language acquisition, *Conversations With a One-Year-Old*. Through a detailed case study, this book influenced the field of child language acquisition by introducing an innovative, interactional approach to language development. Scollon introduced the concept "vertical construction," meaning one-word utterances that, as opposed to horizontal constructions such as sentences, are connected semantically but separated by pauses, intonation, and stress. This concept enabled Scollon, first, to demonstrate, contrary to then-held beliefs, the primacy of discourse development over syntactic development and, second, to showcase child agency in directing conversations, pointing consequentially to the centrality of interaction in language development. These original findings, according to Wright Fogle (2009), have impacted the field of first and second language acquisition ever since, evidenced by the continued use of many of his ideas, especially that of "vertical construction."

Ron Scollon contributed further to applied linguistics in his 1981 book *Narrative, Literacy, and Face in Interethnic Communication* (coauthored with Suzanne Scollon), which examines the relationship between language socialization and literacy. This book is considered a classic of the academic field of new literacy studies, an interdisciplinary approach that views literacy as a social practice (Gee, 1996). Just as *Conversations With a One-Year-Old* changed how people conceptualized child language acquisition, *Narrative, Literacy, and Face* alerted researchers to the crucial role of home language socialization patterns in school literacy. It did so by showing how children from Arctic Village, Alaska were socialized into literacy at home differently than those in English-speaking homes, giving the latter an advantage over Athabaskan children at English-speaking schools. Literacy thus is argued to be a culturally situated social and political practice instead of a mere act of reading and writing. This new conceptualization of literacy—together with Scollon's numerous other works on literacy that reject the great divide between orality and literacy by arguing for

multiple types of literacies—has demonstrated the need to take into account cultural differences in language socialization—a concept that had previously eluded academics and educators alike (Zavala, 2009).

Mediated Discourse Theory

Scollon's biggest contribution to linguistics is his innovative approach of mediated discourse theory and its methodological framework, nexus analysis. Scollon has always been interested in language; his theoretical position, however, differed from mainstream discourse analysts: while others took the primacy of language as a mode of communication at face value and backgrounded everything else as context, Scollon spent a lifetime and many publications, such as *Mediated Discourse as Social Interaction* (1998), dissecting this "context" to unravel the exact role of language in human action. These investigations have led to the following truisms: language is not the primary mode of communication; language and action are mutually constitutive; actions are social (they create identities) and are always mediated by either language or other nonlinguistic mediational means such as using a computer or gaze; discourse, thus, is best conceived as either a form of action or a component of action—as a mediational means. This calls for a new approach to the analysis of discourse.

In *Mediated Discourse: The Nexus of Practice* (2001), Scollon names this new theory mediated discourse analysis (MDA), which shifts the unit of analysis from language to the mediated action, the moment social actors act, in real time, using various discursive and nondiscursive mediational means. MDA draws upon and links theories that centralize action (e.g., mediated action and practice theory) with theories that centralize language (e.g., critical discourse analysis and interactional sociolinguistics) and the dialectical relationship between discourse and action (e.g., conversational analysis and anthropological linguistics). In so doing, it provides a unifying starting point for discourse analysts and other communication-oriented scholars to understand language in conjunction with action.

Since linguistics to Scollon was a lens through which social issues can be addressed, he designed an ethnographic methodological guide called *Nexus Analysis* to accompany MDA (*Nexus Analysis: Discourse and the Emerging Internet*, 2004, coauthored with Suzanne Scollon). This "how to do socially active discourse analysis" manual postulates that to link discursive micro interactions with broader social issues, the analysis must be broadened to encompass not only moments of actions but also the histories, roles, and motives of involved participants and the mediational means they use. Only then can one truly uncover what really happens when people take action. With MDA and nexus analysis, Scollon challenges the limits of discourse analysis by providing a unifying theory and methodology that engages with discursive research that addresses social change—in so doing, he influences not only the field of discourse analysis but linguistics in general.

Intercultural Communication

Interethnic miscommunication was an interest of Scollon's throughout his career. Contrary to other linguistic anthropologists studying Native American languages, Scollon did not simply resort to "culture," a term he constantly problematized, as an explanation for the breakdown in communication between members of different communities. Instead he continued posing two questions: What is culture? And what is intercultural communication? These questions enabled him to illustrate interactionally how otherwise incomprehensible differences blamed on culture originate from discordant interactional styles and worldviews that affect interactions (Vail, 2009). In *Intercultural Communication* (1995, 2001), the Scollons replace the murky concept "culture" with the concept "discourse systems," which eliminates problematic overgeneralizations and oversimplifications. They also replace "intercultural

communication" with "interdiscursive communication" since cultures do not interact, but individuals—and discourses—do. Scollon (2002) in a published article argues further for conceptualizing intercultural discourse as a nexus analysis because it is an ongoing process of construction and negotiation among individuals—thus widening the analysis to encompass action, mediational means, and participants' histories, roles, and motives because it is the only way to truly uncover the root of interethnic communication problems. In so doing, he establishes a theoretical framework for intercultural communication which, in addition to correcting many previous misconceptions, balances between theoretical inquiries and practical implications.

Public Discourse and Multimodality

Scollon's interests extended beyond conversations, such as those between people of different ethnic backgrounds and experiences, to public discourse. In *Discourses in Place: Language in the Material World* (coauthored with Suzanne Scollon, 2003), Scollon initiates a new approach to teaching and researching language in the material world, arguing that we can only interpret the meaning of public texts like road signs, notices, and brand logos by considering the world that surrounds them. The Scollons' theory of geosemiotics analyzes public discourse not only in terms of linguistic content but also ethnographically, in their physical context. This theory has important ramifications for semiotics, human geography, cultural anthropology, and linguistics; it illustrates that studying tools of communication as separate from their situated use is insufficient to understand communication. Additionally, it has led to a recent burst of dynamic multimodal research (e.g., Jones, 2005; Norris, 2007; Al Zidjaly, 2011). In contrast to Kress and van Leeuwen's (1996) renowned visual semiotics framework which analyzes multimodal texts separated from situated use, these new models postulate that visual analysis must be grounded in social and multimodal contexts. In 2008, Scollon's work in the area of public discourse culminated in an original book on how to do specifically public discourse analysis of public hearings.

So What?

Linguistics to Scollon was a tool to bring about social change by reducing ethnic discrimination and educational disparities; hence, his research was always driven by the question: So what? Scollon's original approach to academic and social research has advanced the field of linguistics theoretically, analytically, and practically. Scollon's work encourages scholars to broaden analytic contexts and question not only long-held beliefs but also their own motives and roles in creating change. His legacy is best expressed in these words from his last academic lecture (2009, p. 21): "we need to be more flexible in our thinking about the issues of social and political life that occupy so much of our time and analytical space." The diverse career and innovative scholarship of Ron Scollon has opened a space for creative and flexible thinking, enabling others to continue to pursue the academic and activist paths he has forged in applying linguistics to the world.

SEE ALSO: Anticipatory Discourse; Intercultural Communication; Mediated Discourse Analysis

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Searchlinguistics

DAVID CRYSTAL

Searchlinguistics is the application of linguistics to analyze and alleviate the problems that arise when people try to provide or obtain information through online search. The term is not yet standard, but the problems are well recognized, and the demand for solutions is pressing. Several types of e-activity are involved, including the following:

1. online advertising, where the requirement is to ensure that ads which appear on a Web site are relevant, focused, and sensitive to the content of a page;
2. e-commerce, where the requirement is to obtain data about specific products in online catalogs;
3. search engine assistance, where the requirement is to receive accurate, relevant, and up-to-date hits;
4. automatic document classification, where the requirement is to find all files which deal with a specific topic or combination of topics;
5. Internet security, where the requirement is to identify undesirable activity on a site, such as pedophile activity in child chatrooms.

There has been variable progress in each of these areas, but all present difficulties arise out of the lack of a linguistically sophisticated frame of reference, as the following attested examples illustrate.

The Problems Illustrated

In relation to (1): A CNN page reported a street stabbing in Chicago, and the ads down the side of the screen said "Buy your knives here," "Get the best knives on eBay." A page on a German Web site described heritage tours of Auschwitz, and an accompanying banner ad from a German energy company advertised cheap gas. The advertising industry is keen to develop more sophisticated methods of targeting ads on pages in order to guarantee relevance and avoid insensitive misplacement. Companies are naturally upset when their ad agency places their products on irrelevant pages or in embarrassing locations. It harms their image and loses them sales.

In relation to (2): An inquiry for "shampoo" (where the inquirer meant "hair shampoo"), made via a search box on an online retail site, received a cluster of responses mainly about carpet shampoo and car shampoo. Another, to an online bookstore, asked for books by "David Crystal"; among the list of books received were some by the linguist and some by a Scottish poet with the same name. There was no way of determining which book belonged to which author. The confusion was compounded by the "further information" provided: "people who bought this book," said the text accompanying a book written by the Scottish poet, "also bought the following . . ."—listing several books by linguists. With a really common name, such as various writers called John Smith, the possibilities for confusion are legion.

The retail industry is keen to develop more customer-friendly methods of interrogating online databases, but finds it difficult to anticipate all the factors which impede good

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communication. An example is the inadequate specification of variant forms. A search (in Britain) for *mobile phones* on an electronic equipment retail site received the implausible response: "we have no mobile phones." Repeated attempts using various lexical, grammatical, and orthographic variants (e.g., *mobile-phone*, *mobile phones*, *cellphones*, *cell phones*) all received the same negative response. Eventually it transpired that the only search term the software recognized was *cellular phones*. Faced with such e-incooperativeness, many people would not have the patience to continue their inquiry, and a sale would be lost.

In relation to (3): A request from a search engine for information about *apples* (where the inquirer had in mind the fruit) produced several million hits, but all the results on the opening page were about computers and the Beatles, including several results which were seriously out of date. An economist who typed in *depression*, expecting information about the financial climate, was swamped with results to do with mental health. Improving the relevance, accuracy, and up-to-dateness of search queries, without making the user do all the work (e.g., by adding extra search words or scrolling through pages of hits), is a continual goal of search engine companies, especially those trying to compete with Google. From the inquirer's point of view, the aim is to save time and obtain the most meaningful hits. From a Web site-owner's point of view, the aim is to achieve a high ranking for the site in any set of results.

In relation to (4): A lawyer failed to find all the documents in a database relating to a case in Bosnia and Herzegovina because he searched only for the name of the country in that orthographic form and failed to search for *Bosnia-Herzegovina*, *Bosnia & Herzegovina*, and other alternatives. Another found himself flooded with unwanted documents because a search for *New Mexico* also brought in material from Mexico, New York, and other locations containing the word *New*. In the first case, important information relating to the precedents in a case was not retrieved. In the second, much time was wasted, as the lawyers had to read through a great deal of material before discovering that a document was irrelevant.

In relation to (5): A newspaper article reported the story of a teenager ending up in a dangerous situation having agreed to meet offline an apparently innocent contact made during a chatroom conversation. The contact turned out to be a male predator. Several companies are now concerned to find ways of identifying potentially dangerous content within the discourse of chatrooms and social networking sites. The dangers have increased following the increased provision of content via cell phones. Parents at least had the opportunity to monitor online activity when this took place through the home computer, but this opportunity is lost when the contact is made directly to a child's cell phone. Similar issues arise in relation to the use of the Internet to plan terrorism, fraud, or other criminal activities.

The Problems Analyzed

To a linguist, all these problems have one feature in common: they do not take into account the ambiguity inherent in the use of language.

In relation to (1), the software has found the lexeme *knife* appearing several times in the news report, assumed that this was what the page is about, and looked for the same word in the available ad inventory. It ignores the fact that *knife* = 'weapon' and *knife* = 'cutlery' are very different linguistic entities. If the software had looked at the linguistic context surrounding the word, it would not have made the erroneous identification: *knife* = 'weapon' would be accompanied by such lexemes as *murder*, *blood*, and *police*; *knife* = 'cutlery' would be accompanied by such lexemes as *fork*, *spoon*, and *plate*. A similar ambiguity lay behind the gas example: *gas* = 'method of killing' vs. *gas* = 'source of domestic energy'.

In relation to (2), the various contexts in which the word *shampoo* appears were not distinguished because the inquirer had not anticipated the ambiguity by using a more

specific search term. In this example, the alternatives are easy to see, as *shampoo* is a concrete term with few senses. In the case of words which have many senses, or which are more abstract in meaning, such as *depression*, it is not always obvious how to express a search in such a way that all the unwanted contexts are excluded. In the case of the Amazon authors, the problem arose because of the lack of an appropriate authorial classification in terms of either biography or subject matter. In the *mobile phones* example, the factors being ignored were to do with British and American English, grammatical number, and orthographic conventions.

In relation to (3), once again the various senses of a word (*apple*, *depression*) were not being distinguished. Plainly the problems arose from the polysemic character of the words—in the case of *depression*, failing to separate the senses relating to the knowledge categories of mental health, meteorology, economics, and geology. It might be thought that simply increasing the number of search terms will improve the relevance of hits in relation to inquiries: this turns out to be not always the case. Because of the way search engines typically work, increasing the number of search terms can bring an increased diversity of results. More relevant results will be found, but they can be hidden within further irrelevant hits. And in any case, thinking up exactly which search terms produce the best results is not always easy. Adding *deep* to *depression*, for instance, will not resolve the ambiguity.

In relation to (4), we see the ambiguity problem in relation to place-names. A glance at any gazetteer will show that the same name (*Lancaster*, *Newtown*) can turn up dozens of times in various countries. The orthographic variation encountered in the Bosnia example is just one variable, made more difficult when accents (often ignored by the software) are part of the words. Not all searches can be made successful by the simple expedient of adding an extra locator (e.g., *Lancaster* + *UK*). For example, it is not a straightforward matter to frame a search so that it finds only entries on the state of *New Mexico* while ignoring all entries relating to the country of *Mexico*.

Ambiguity also arises in relation to (5), but in a different way, involving the pragmatic interpretation of sentences as well as the polysemy of individual words. All suspicious activity involving language is coded in some way. No terrorists, fraudsters, or pedophiles are going to openly declare their intentions in plain language. Rather, their meanings are expressed indirectly and the overall import builds up over a period of time. Any individual sentence, viewed in isolation, appears to be innocent. Only when viewed as part of a sequence with other sentences does a picture emerge of a hidden intention. In the case of pedophile activity, for example, the sentence *How old are you?* is innocent enough as a casual inquiry; but seen along with such other sentences as *Are you alone?* or *What are you wearing?*, a different linguistic profile appears. We need to distinguish between innocent conversations and those which, through their use of suggestive words and sentences, build up a suspicious pattern of discourse over time. Such analyses are not easy to make, however, for reasons that are nothing to do with linguistics. It is difficult to obtain samples of authentic data to analyze in order to provide norms. Applied linguists need to obtain clearance from the relevant authorities whenever they propose to engage in counter-criminal research, and this is never easy to obtain.

Directions for Research

The above examples suggest several directions for future searchlinguistic research.

A semantic approach is needed to describe the polysemy of lexical items, relate the senses to a knowledge hierarchy representing online content, and assess the contribution individual lexical items make to the semantic identity of an e-text. It is not enough to say that *depression* has the four meanings noted above; we must assign each use to the knowledge domain to which it belongs. *Depression* = 'downturn in economic growth' needs to

be assigned to "economics"; *depression* = 'area of low pressure' to "meteorology"; and so on. The amount of ambiguity presented by a lexical item also needs to be taken into account: an item such as *quarterback* makes a high-value contribution to the domain of "American football," because it is rarely encountered outside this setting; when we see that word on a page, it is virtually certain that the page is going to be about American football. By contrast, an item such as *depression* is less predictive because it is used in four domains; and an item such as *country* has a very low predictive rating, because it can be used in relation to hundreds of domains (all the countries of the world, for a start). Once lexical items have been identified in this way, it is possible to build up lexical sets which specify the semantic content of a knowledge domain, and this can then be used to build a filter which will analyze the content of Web pages, as in the iSense and Sitescreen products developed by an e-advertising network (ad pepper media, 2008a, 2008b). These sets need to include high-frequency collocations, and they also extend the traditional remit of semantics, as proper names have to be included, in view of the fact that Web content contains many brand names, models, company names, logos, and other "encyclopedic" expressions.

A grammatical analysis needs to be made to ensure that all morphological and syntactic factors are taken into account, such as inflectional variants (*mobile phone(s)*) and compounding alternatives (*cellphone, cell-phone, cell phone*). Word-class tagging may be needed to distinguish homographs (*bear* verb vs. *bear* noun). And syntactic information is required whenever we need to refer to sentence structure in order to resolve an ambiguity. In advertising, for example, clients often want their ads to appear only on pages which say "nice" things about their product; they do not want their ads to appear on pages which say "nasty" things. To identify these different kinds of sentiment, lists of positive and negative lexemes must be compiled. Positive items in English would include *fantastic*, *best*, *wonderful*, *marvelous*; negative items *awful*, *terrible*, *disaster*, *bad*. But, in any review, we have to allow for the effects of negation: *her latest recording is by no means bad*; *his new book is not one of his best*. The positive meaning of a lexical item can be reversed by the syntactic context in which it occurs. A grammatical perspective is thus critical.

A sociolinguistic or stylistic analysis perspective is needed to ensure that lexical lists are truly comprehensive—for example, including formal and informal variants (*television / telly*, and the various kinds of slang), regional differences (e.g., American vs. British English, such as *color / colour*, car *boot / trunk*), and within-region alternatives in spelling, punctuation, and capitalization (*judgment / judgement, Bible / bible*). Stylistic issues also arise in relation to pages with figurative or rhetorical content, such as metaphor, irony, sarcasm, and other forms of expression where the language operates at different levels. We do not want a football report which happens to refer to players "sliding all over the pitch like ducks on an icy pond" to be classified as a page about ornithology. In this respect, poetry is likely to be the most difficult genre for a searchlinguistics to handle.

A pragmatic perspective is needed to take into account differences which arise out of the purpose of Web pages. Why does someone write a Web page? Is it to inform, to entertain, to persuade, to express extreme views, to titillate, to sell . . . ? The pragmatic purpose inevitably affects the linguistic character of the page: for example, pages intended to sell products will have their own lexical character (*your account, basket, special offers* . . .), as well as a distinctive graphical and functional layout, and pages with extreme views will typically contain a great deal of taboo language. More fundamentally, the digital medium is changing our notions of how texts are created, as illustrated by the multiauthoring of wiki pages. Indeed, the traditional notion of written text as having stability and determinate boundaries is called into question by sites (such as forums and chatroom interactions) where what we see can alter from one moment to the next (Crystal, 2010).

Searchlinguistics can never be a purely synchronic study, because the linguistic content of the Internet is time-sensitive. Each page is time-stamped, even though the date at which a page was brought into being is often not immediately evident. Searches give the appearance of being synchronic, though in fact they present simultaneously hits from different time periods. Disentangling the conflicts in the data (e.g., when a series of search results gives different population estimates for a country) is not always easy, and this problem is going to increase as the Internet archive grows.

A diachronic perspective is also essential in resolving the ambiguities mentioned above. New terms are constantly being introduced into a language, and they have to be added to the lexical sets; for example, in 1999 any set of lexical items relating to Iraq would not have included the phrase *weapons of mass destruction*—something which became necessary in 2003. Or, to take a more commercial example, as new models of automobile come on the market, their names and model designations have to be incorporated. The diachronic perspective also applies in retrospect. As more historical material becomes searchable, lexical sets devised for the present day need to be adapted to be appropriate to the earlier period. The lexical set for road vehicles devised for the 2000s, for example, is not going to work well when applied to a newspaper corpus relating to mid-Victorian English, with its *broughams*, *phaetons*, and *landaus*.

Searchlinguistics is in its infancy because the industry that it aims to service is in its infancy. It is an industry, moreover, which is rapidly evolving, as new technologies become available and present fresh challenges and opportunities. A complication is that this is a highly competitive industry which is continually "moving the goalposts," as businesses strive to keep ahead of each other, so that it is hard for applied linguists to keep up (Crystal, 2008). For example, whatever strategies might work for Internet search on computers, these have to be adapted as Internet access becomes increasingly routine via cell phones. And fresh search problems are generated as the amount of text in a file reduces, as in the formal constraints imposed by Twitter (limited to 140 characters) or text messaging (160 characters), or on Internet pages where the content is predominantly visual, and analysts need to refer to the underlying metadata to obtain sufficient text to carry out any linguistic analysis at all. The way the data is coded also varies, so that it is not always easy to guarantee that a "scrape" of a page to extract relevant text will exclude unwanted material, such as search menus, help files, and programming formulas. For such reasons, searchlinguistics presents applied linguists with some of their most intriguing challenges.

SEE ALSO: Concordancing; Cyberpragmatics; Grammar and Electronic Communication; Lexical Bundles and Technology; Lexical Priming; Technology and Culture; Technology and Literacy; Technology and Phrases; Technology and Terminology

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Searle, John R.

JÚLIA BARÓN PARÉS

John Rogers Searle (1932–) has made an outstanding contribution to the philosophy of language. His work on the speech act theory, with the well-known *Speech Acts: An Essay in the Philosophy of Language* (1969), has been among the most influential in linguistics and applied linguistics, specially within the field of pragmatics. John R. Searle's work has also been recognized for his research on the philosophy of mind and social philosophy.

John R. Searle was born in Denver, Colorado, and studied at the University of Wisconsin from 1949 until 1952. He then attended Oxford University as a Rhodes Scholar where he studied under the influence of John Austin from 1952 to 1959. At Oxford University he obtained a bachelor of arts (1955), a master of arts (1959), and a doctorate in philosophy (1959). He is currently a Slusser Professor of Philosophy at the University of California, Berkeley.

During his career, John R. Searle has been a lecturer and a visiting professor at several prestigious universities in the United States and around the world and has obtained honorary degrees from universities across the world: the University of Belgrade (2009), the University of Turin (2000), the University of Bucharest (2000), the University of Wisconsin (1994), and Adelphi University (1993). He is an honorary professor at the Tsinghua University, Beijing (2007) and at East China Normal University, Shanghai (2007). He has been awarded with numerous prizes including the Puffendorf medal (Sweden, 2006), Mind and Brain prize (Italy, 2006), National Humanities medal (USA, 2004), Jovellanos prize (Spain, 2000), and the Distinguished Teaching award at the University of California (Berkeley, 1999), among other prizes and honors. Likewise, Searle has been president of the American Philosophical Association (Pacific Division, 1990) and he has been a member of the American Academy of Arts and Sciences since 1977. Most of his research has focused on the philosophy of language; he is specially known in the field of pragmatics for his work on speech act theory. Following John Austin's (1962) philosophy of language, speech act theory postulates that when communicating, people perform three types of acts: a *locutionary act*, an *illocutionary act*, and a *perlocutionary act*. In addition, Searle presented a taxonomy of speech acts (*representatives*, *directives*, *commissives*, *expressives*, *declarations*) which has been widely used in pragmatics.

In relation to the illocutionary force of speech acts, Searle also proposed the concept of intentionality in his work *Intentionality: An Essay of the Philosophy of Mind* (1983). Based on the illocutionary acts, intentionality was developed as, first, the speaker's objectives which lie underneath each speech act and, second, as the collective intent in social action rather than an individual act, which is the basis for the creation of social reality, as discussed in *Collective Intentions and Actions* (1990) and in *The Construction of Social Reality* (1995).

Searle's work has additionally focused on the philosophy of mind and consciousness. One of the most controversial contributions to the field has been the "Chinese room argument." This argument, which was approached in "Minds, Brains, and Programs" (1980), aims at raising the weaknesses of artificial intelligence. Strong supporters of artificial intelligence had previously claimed that it would be impossible to distinguish a machine from a person. As a response to this, Searle conducted the Chinese room experiment to demonstrate that even if computers have programs which may allow them to simulate native

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speakers' answers that does not entail that computers are capable of understanding. As part of his work on the philosophy of mind, Searle delved into the philosophical debate about the dichotomy of consciousness and brain. With "Biological Naturalism" (2007) Searle claimed that consciousness actually exists and is a result of specific brain processes.

Apart from his contributions to the philosophy of language, mind, and social philosophy, Searle became involved in politics while he was in Berkeley. He joined the Free Speech Movement, a university political movement which fought for the students' rights and freedom, and which also claimed that politics should not be prohibited on the university campus. As a result, he wrote *The Campus War* (1971) in which he presented the political and social situation of that time, dealing with the possible causes which had led to the students' political reaction toward 1960s America and against the lack of free speech at university settings.

John R. Searle's work on the philosophy of language has had an immense impact on the field of pragmatics, with a major influence on interlanguage pragmatics and cross-cultural pragmatics. Searle's taxonomy of speech acts has been the most commonly used taxonomy in pragmatics in order to examine how different speech acts are performed in different languages and cultures.

As for interlanguage pragmatics, Searle's speech act theory has been the basis of numerous studies on how learners of a foreign or second language use and develop speech acts in the target language, both in the classroom and outside it. It is also important to mention that Searle's theories have also raised numerous criticisms, among them, the idea that Searle's theory of illocutionary acts is based on functional criteria (the use of complete sentences as illocutionary acts), while a speech act is actually a pragmatic feature that may be formed by a stretch of speech with a communicative function. In addition, his idea that the speech acts are semantically universal has been highly criticized, with numerous claims that these may actually vary with culture (e.g., Wierzbicka, 1991). Finally, Searle has also been criticized for overlooking the role of the listener in the interaction. However, Searle's concepts are still among the most influential in the field of pragmatics, his work is being translated into multiple languages, and his theories are still being applied, adopted, adapted, criticized, and investigated all over the world.

SEE ALSO: Cross-Cultural Pragmatics; Interlanguage Pragmatics; Speech Acts Research

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Second Language Acquisition and Gesture

GALE A. STAM

Introduction

A gesture as defined in the *American Heritage Dictionary: Fourth Edition* is "a motion of the limbs or body made to express or help express thought or to emphasize speech." Today, gesture in its broadest sense of bodily movement is an accepted area of study in a number of disciplines that involve human thought, interaction, or expression such as cognitive psychology, psycholinguistics, anthropology, communication, dance, music, and recently second language acquisition (for examples of the breadth of gesture research, see the journal *Gesture* and the International Society for Gesture Studies at www.gesturestudies.com).

In order to understand gesture's relevance for second language acquisition, it is necessary to know what different kinds of gestures there are, what their relationship is to speech and language, and what research has been conducted on gesture in second language acquisition. These topics are discussed in the next sections.

Gesture

Often when people think of gesture, the first thing they think of is a gesture such as the "okay" sign—a culturally specific gesture, an *emblem*, which differs in meaning from culture to culture. However, emblems are not the only type of gesture. Gestures can be arranged along a continuum in terms of their relationship with speech (Kendon, 1988). This continuum, named *Kendon's continuum* in honor of Adam Kendon (McNeill, 1992, 2005), encompasses movements that range from gesticulation (spontaneous movements of the hands and arms that accompany speech) to sign languages:

Gesticulation→Speech-Linked Gestures→Emblems→Pantomimes→Sign Languages

Gesticulations (Spontaneous Gestures)

Gesticulations (spontaneous gestures or co-speech gestures) only occur with speech. They are synchronous with speech and often occur with elements of high communicative dynamism, that is, contrastive, focused, or new information (McNeill, 1992). In addition, their strokes tend to co-occur with prosodic peaks (Nobe, 2000). Gesticulations perform the same pragmatic functions as speech. These gestures and their co-occurring speech complement each other, where the gestures indicate an aspect present in the speaker's thought, but not expressed through speech.

Gesticulations can be analyzed in terms of their semiotic properties, and several different classification systems have been developed for categorizing them. The majority of these are variations of David Efron's original system of batons, ideographs, deictics, and physiographs. The various categories are not mutually exclusive, and gestures may fit more than one category at a time. Therefore, McNeill has recommended that gestures be analyzed

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in terms of dimensions such as "*iconicity, metaphoricity, deixis, 'temporal highlighting' (beats), social interactivity*" (McNeill, 2005, p. 41), not categories.

According to McNeill, gestures that have iconicity represent concrete objects or actions, for example, a hand moving upward and produced at the same time as the word *up* is uttered while those with metaphoricity represent an abstract idea, for example, two hands holding an *idea*. This is not to say that the gesture with metaphoricity does not have iconicity as well. It has both dimensions: iconicity for a container and metaphoricity for an idea. This is why it is important to describe gestures in terms of dimensions and to look at their accompanying speech. Gestures with deixis involve points to entities in real or abstract space indicating location or time. Those with temporal highlighting (beats) consist of quick movements of the hand either back and forth or up and down in time with the speech rhythm. These occur at the metalevel of discourse and highlight information: they may introduce new characters and new themes, summarize action, and accompany repairs. Gestures with social interactivity indicate interaction between a speaker and a listener, for example, a speaker saying *What do you think?* and extending a hand toward a listener on *you think* for the listener to respond.

Gesticulations serve many functions and may serve several functions simultaneously as Stam and McCafferty (2008) have pointed out. Besides adding information that is not present in individuals' speech, they may serve to lighten speakers' cognitive load and improve their performance in other areas. They may help speakers organize spatial information for speaking and aid in the conceptual planning of speech. In addition, they may indicate transition in cognitive and language development. They may be used to retain turns during conversation and listeners may gesture to indicate to speakers that they are actively involved in the conversation. Finally, gestures may indicate speech-production difficulties and facilitate lexical retrieval.

Speech-Linked Gestures

Speech-linked gestures are similar in form to gesticulations; however, they differ in timing. They occur with speech, but they are not synchronous with speech. They fill a speech gap, a grammatical slot in the sentence, and their execution completes the sentence and produces what Tatiana Slama-Cazacu has termed *mixed syntax*, for example, "Sylvester went [gesture of an object flying out laterally]" (McNeill, 2005, p. 5).

Emblems

Emblems (or quotable gestures according to Adam Kendon) are gestures that can occur with or without speech. These gestures are conventionalized, translatable gestures whose meaning is well-known to all members of a cultural group. They are gestures such as the "thumbs up" gesture (fist with thumb up) or the Dutch gesture for *lekker* 'tasty, yummy' (flat hand moving back and forth roughly parallel to the head at a small distance, 1–2 inches from the ear). Many emblems go back to Roman times, and the same form may have various meanings in one culture, as well as different meanings in different cultures. Emblems are learned gestures and are, therefore, teachable.

Pantomimes

Pantomimes are gestures that occur without speech. These movements can depict objects, actions, or an entire story. Pantomimes are the types of gestures people make when they are playing a game like charades.

Signs

Signs are codified gestures that occur without speech, have linguistic properties (i.e., phonology, morphology, and syntax) and are equivalent to lexical words (McNeill, 2005). They form the basis of sign languages. There are two types of sign languages: primary sign languages—sign languages used in Deaf communities such as American Sign Language (ASL), and alternate sign languages—sign languages that develop in communities where speaking is impossible because of the task people are engaged in or taboos such as the sawmill sign system, monastic sign languages, and Australian Aboriginal sign languages (Kendon, 1988).

Speech, Gesture, and Language

Prior to the 20th century, gesture was primarily studied in two ways: from Roman times to 1700, as it related to rhetoric, that is, how gestures could enhance a speaker's presentation; and from 1700 to 1900, as a precursor of oral language for the information it could give about language evolution. It was not until 1941 that gesture began to be studied in a systematic manner in human interaction with the groundbreaking work of David Efron.

Efron compared the gestures of Southern Italian immigrants (speaking Italian) and Eastern European Jewish immigrants (speaking Yiddish) with those of assimilated Southern Italians and Eastern European Jews (all speaking American English) in the United States. He found that the Eastern European Jewish immigrants used primarily their forearms and hands as well as less gesture space than the Southern Italian immigrants and produced metaphoric gestures, whereas the Southern Italians used their entire arm and produced iconic or emblematic gestures. He also found that the gestures produced by the two assimilated groups had become more similar and more American in nature.

Although Efron's work opened the door for more research on body movement and gesture in the decades that followed (e.g., the work of Birdwhistell, Ekman, & Friesen, and Condon & Ogston), gesture was viewed as part of nonverbal communication or body language and paralinguistic, outside of language, by researchers. This perspective, however, changed in the 1970s with the work of David McNeill and Adam Kendon who independently proposed that speech and gesture are aspects of the same process.

While analyzing a speaker's speech and gesture in a filmed segment of discourse, frame by frame, Kendon found that the speaker's gestures and speech pattern were very much related, "as if the speech production process is manifested in two forms of activity simultaneously; in the vocal organs and also in bodily movement, particularly in movements of hands and arms" (Kendon, 1972, p. 205) and recognized that gesture like speech was organized in hierarchical units. According to Kendon (1980), these hierarchical units included *gesture phases*, *gesture phrases*, and *gesture units*. Gesture phrases (the entire gesture movement from beginning to end) are composed of gesture phases, which include *preparation* (movement to a position for the stroke to start), *stroke* (the part of the gesture that conveys meaning), and *return* (return to rest position), and gesture units are composed of more than one gesture phrase. Kendon's organization with the addition of the gesture phase of *holds* (pre-stroke and post-stroke), that is, holding of the position, by Sotaro Kita and the use of the word *retraction* as well as *return* has become the standard way to refer to the components of a gesture and has enabled researchers to analyze gesture in a consistent way. Of these gesture phases, only the stroke is obligatory within a gesture phrase; the other phases may or may not occur.

McNeill realized "that language and gesture were two sides of one 'thing'" (McNeill, 2005, p. xi) while watching a translator translating his words into French and gesticulating

at a conference in Paris in 1971, and he began systematically researching gesture in the early 1980s. His focus has been on the relationship between language, gesture, and thought, and he used speakers' gestures along with their speech as an enhanced window to observe mental representations and processes (McNeill, 1992).

According to McNeill, speech and gesture express two aspects of thought—the verbal and the imagistic—and develop from a growth point, "the speaker's minimal idea unit that can develop into a full utterance together with a gesture" (McNeill, 1992, p. 220), a psychological predicate in Vygotskyan terms. This growth point consists of both imagistic and verbal aspects. McNeill (2005) proposes an interactive model for verbal thought, an *imagery–language dialect* in which thought, language, and gesture develop over time and influence each other and in which the static and dynamic aspects of language are combined.

As a result of the insights of Kendon and McNeill, speech and gesture have been seen in a new light, and the number of gesture studies has increased. These studies have been conducted by researchers with differing perspectives and have resulted in several different theories being proposed to account for the relationship of speech and gesture (e.g., the work of Hadar & Butterworth, Feyereisen, Freedman, Kita & Ozyurek, and de Ruiter).

Gesture in Second Language Acquisition Research

As a result of Kendon's and McNeill's work, a growing number of papers and empirical studies over the past 30 years have considered the role of nonverbal communication and gesture in first language (L1) acquisition (for a review, see Gullberg, de Bot, & Volterra, 2008) and second language (L2) and foreign-language teaching and research (for a review, see Stam & McCafferty, 2008). Studies on gesture in L1 acquisition have examined such topics as the co-development of speech and gesture in the L1 including the developmental trajectories for the different types of gestures, children's use of gesture space, the relationship between nonverbal behavior and intonation, children's pointing gestures and their meaning, gesture use during early language development, gesture–speech combinations as a transition to two-word utterances, environmental effects on children's gesture use, and the age that children exhibit L1 thinking for speaking patterns in speech and gesture. In contrast, gesture in L2 acquisition studies, the focus of this entry, has concentrated on such topics as communicative competence and emblems, learners' gestures, bilingual development, assessment, teachers' gestures, and gestures as facilitators of L2 comprehension and acquisition. These L2 topics will be discussed in the following sections.

Although it is the norm in the field of L2 acquisition and gesture to cite the researcher related to each finding, the purpose of this entry is to give a broad overview to a lay audience; therefore, that custom has been set aside for the purpose of focusing on findings.

Communicative Competence and Emblems

Recognizing that communicative competence in another language involves more than just linguistic competence, several researchers (e.g., Pennycook, 1985; Wylie, 1985) have advocated for the teaching of emblems and nonverbal behavior, kinesics and proxemics, in the second/foreign-language classroom, while others have proposed that learners be tested for their nonverbal ability (for a review, see Stam & McCafferty, 2008). In addition, differences between native and non-native speakers' comprehension of emblems have been empirically tested. The studies found significant cultural and age differences in the interpretation of these gestures: native speakers and older children are much better at comprehending them than non-native speakers and younger children.

Learners' Gestures

Learners' gestures have been examined from several perspectives: the rate of gesturing, the type and function of gestures, their relationship to L2 thinking, and as an aid to L2 learners. Several studies have looked at how language fluency affects gesture frequency (e.g., Gullberg, 1998; Stam, 2006) and found that L2 learners produce more gestures when speaking their L2 than their L1 and that the learners' proficiency level has an effect on the number of gestures they produce, for example, intermediate learners produce more gestures than advanced learners. In addition, Elena Nicoladis and colleagues have found that L2 learners used more deictic gestures per word in their L2 than their L1 and that there was evidence of bidirectional transfer, L1 to L2 (French to English) and L2 to L1 (Spanish to English), in gesture rate between high and low frequency gesture languages.

Furthermore, Gullberg (1998) has shown that learners use gestures as communication strategies to overcome expressive problems such as lexical shortcomings, grammatical difficulties, and fluency-related problems. Stam (in press) has demonstrated that the types of gestures learners use during lexical retrieval vary depending on whether they are trying to retrieve a word or they are eliciting the word from an interlocutor, and Tabensky (2008) has found that the task has an effect on the types of gestures learners use. The gestures used during expository discourse differ from the ones used during interactive discourse and are related to the type of speech that is used.

A number of studies have looked at the speech and gesture of L2 learners to investigate whether their thinking for speaking about motion changes with L2 acquisition with the assumption that if the learner has acquired the L2 conceptualization then their co-speech gestures should look L2-like (e.g., Stam, 2010). These studies have concentrated on different aspects of the motion event, with some investigating the expression of path, others manner, and still others ground. Some of the studies (e.g., Kellerman & van Hoof, 2003) found no shift in the learners' thinking for speaking patterns whereas others (e.g., Stam, 2006) did. Stam proposed that this shift in the L2 learners' speech and gesture was reflective of their developing interlanguage systems and contained aspects of both their L1 speech and gesture system and the L2 speech and gesture system. In addition, Brown and Gullberg (2008) found that the L1 speech and gesture of L2 learners, even with intermediate proficiency in the L2, were affected by learning a second language and that crosslinguistic transfer is bidirectional.

Several studies (e.g., Gullberg, 2008) have examined learners' speech and gesture with referent marking and found that learners have an overuse of lexical noun phrases in maintained reference compared to L1 speakers and that they often mark maintained referents with anaphoric gestures. Gullberg has suggested that the gestures may be lightening the learners' cognitive load and they "could potentially be regarded as a cognitive, speaker-directed communication strategy for grammar and discourse" (Gullberg, 2008, p. 203).

Within a Vygotskyan sociocultural framework, the role of gesture in L2 acquisition has been explored in several different contexts. The role of gesture in other-regulated and self-regulated private speech has been examined (see McCafferty & Stam, 2008), and it has been found that the learners' gestures exhibit a self-regulatory function and help them in gaining control of the task they are engaged in. Additionally, the appropriation of L2 metaphoric gestures has been investigated, and it has been found that L2 learners, especially naturalistic learners acquire L2 metaphoric gestures and internalize their concepts even when they cannot express these concepts verbally.

McCafferty (2008) has argued that *mimesis* (imitation) in terms of gesture is an important aspect of L2 development that has been overlooked in L2 acquisition theories. In addition, he has examined the interactions of a Taiwanese learner of English and a native English speaker and found that gestures were used in the co-construction of meaning to create

zones of proximal development. He found that the same learner used gestures as a mechanism to help him think and organize his discourse and beat gestures as a means to help him parse his L2 into syllables and gain control of the language's prosody.

Conversation analysts such as Junko Mori and David Olsher have studied L2 learners' gestures and they have found that "embodied completions" in conversations, that is, the use of gesture or gaze, pantomime, head movements, and shifts in body positions to complete verbal utterances, contribute to mutual elaboration and intersubjectivity, while gesture-enhanced repeats in repairs have the potential to provide learners with intermodal cognitive input, if they attend to them, and promote language learning.

Bilingual Development

The research by Nicoladis and colleagues (e.g., Nicoladis, Mayberry, & Genesee, 1999) has shown that gesture use is related to language development. They investigated the gesture use and the spoken-language development of five bilingual (English–French) boys and found that their use of iconic and beat gestures was related to their language development (Nicoladis et al., 1999). Their use differed in the two languages and was connected to the number of morphemes in the children's utterances. A subsequent study by Mayberry and Nicoladis (2000) found that gesture frequency increased with increased language development and that a change occurred in the types of gestures produced. There was a shift from points to iconics and beats; however, the proportion of iconics and beats produced was not the same as that of adults.

Assessment

Furthermore, the effect of gesture and other nonverbal communication on oral proficiency assessments has been empirically investigated by several researchers. Nambiar and Goon (1993) found that scores on oral proficiency interviews were significantly higher in a face-to-face condition than an audio-only condition because raters had more information about the learners, while Gullberg (1998) found that oral proficiency was rated significantly higher in a video-condition when gestures could be seen than in an audio-only condition and that narrative skills were also rated higher when gestures could be seen. In addition, other research has found that learners were rated higher if their gestures and nonverbal behavior were closer to the norms of the language culture being evaluated regardless of verbal performance and lower if they were not.

Teachers' Gestures

Teachers' gestures have been explored from a number of perspectives. Some researchers (e.g., the work of Allen, Henzl, Lazaraton, and Moskowitz) have conducted descriptive studies of teaching gestures used in the L2 classroom and demonstrated that an important amount of gestures are produced by language teachers whatever the language taught (Spanish, French, English). Others (e.g., the work of Tellier) have focused on the functions of teaching gestures (management of the class, evaluation, and explanation) and the importance of gestures in attracting and maintaining students' attention. Still others (e.g., the work of Sime, Faraco, & Kida, and Hauge) have looked at the types and form of teachers' gestures and learners' perception and understanding of them and found that students noticed different gestures and attached different meanings to the gestures depending on what was relevant for their own learning and that although teachers' gestures were useful, sometimes they were confusing to students particularly, emblematic gestures. Because of the potential impact teachers' gestures have on learners, the researchers of teachers' gestures have also advocated for teaching gestures to be part of language teacher training.

Gestures as Facilitators of L2 Comprehension and Acquisition

The role gestures and nonverbal behavior play in comprehension has been another area of investigation. For example, calling attention to the important role of kinesic behavior in L1 listening comprehension, Susan Kellerman has pointed out the deficiencies in using audio-only material in the L2 classroom for developing listening comprehension and has contended that listening comprehension material should include kinesic behavior. In addition, research on the role of facial cues and gestures on listening comprehension and discourse comprehension has found that both visual information (facial cues and gestures) and proficiency level have an effect on both listening comprehension and the understanding of discourse, and Tellier has found that the presentation of an English story along with gestures allowed French children who had never studied English to understand the story and expressions within the story.

In addition, whether native speakers altered their gestures in a manner similar to what Ferguson had termed *foreigner talk*, that is, whether they simplified their gestures, when speaking with non-native speakers to facilitate their comprehension was examined in the work of Thomas Adams. He found that native speakers used more mimes, iconics, and deictics with non-native speakers than they did with native speakers; however, they used the same amount of metaphorics and emblems in both conditions. This issue of gesturing differently to native and non-native speakers has been further investigated by Tellier and Stam (2010) in regard to future language teachers before and after they undergo teacher training.

The question of how gestures can contribute to memorization of vocabulary has also been explored. Allen (1995) found that learners that were presented with emblematic gestures along with French expressions recalled the expressions better than those who were not, and Tellier (2008) found that when children reproduced a gesture during the course of memorizing a word in their L2, they remembered the word better than when they just saw a picture or an illustrative gesture.

Conclusion

In conclusion, the studies exploring the role of gesture in L2 acquisition are varied and shed light on different aspects of the acquisition process and classroom interaction. However, the field of L2 acquisition and gesture is still in an emergent stage, and there is much more research that needs to be done (see Gullberg, 2010, for a discussion of the methodological issues that need to be addressed). Nevertheless, looking at both speech and gesture in L2 acquisition holds promise for enhancing our understanding of the L2 acquisition process, learners' interlanguage systems, their thinking patterns, their understanding of discourse, memorization processes, and the impact that teachers' gestural behavior has.

SEE ALSO: Conversation Analysis and Multimodality; Crosslinguistic Influence and Multilingualism; Crosslinguistic Influence in Second Language Acquisition; Genesee, Fred; Gesture Analysis in Second Language Acquisition; Language Teacher Development; Lantolf, James P.; Multimodal Discourse Analysis; Multimodal Teaching and Learning; Pennycook, Alastair; Private Speech in Second Language Acquisition; Rating Oral Language; Sociocultural Theory and Interlanguage Pragmatics; Thinking for Speaking in Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Second Language Acquisition of Sign Language

BENCIE WOLL

Introduction

The recognition of sign languages (SLs) as fully grammatical languages has had as a consequence a growing interest in SLs and Deaf culture and a proliferation of SL teaching programs throughout Europe and North America. American Sign Language (ASL) has become one of the most commonly taught languages in North America and is widely accepted in higher education as satisfying foreign/second language requirements. However, in spite of the large number of individuals learning an SL as a second language (L2), there are relatively few studies of SL as an L2 (Mayberry, 2006).

Acquisition of a Signed Language as a Second Language (L2)

Both hearing and deaf adults frequently learn SLs as second languages. These include teachers, interpreters, therapists, researchers working with children, and deaf adults who have grown up with a spoken language as an L1. The small but growing literature has begun to emphasize both similarities and differences between learning spoken languages and SLs as L2s. These studies are beginning to shed light on those features of L2 learning which relate to modality. Like spoken languages, SLs are natural languages. Unlike spoken languages, however, SLs use the visual-manual modalities for their expression and reception: produced with the hands, arms, and face, and perceived through the eyes. This means that research on L2 acquisition must recognize that there are two kinds of L2 acquisition: unimodal—learning an additional language in the same modality as the first language (M1)—and bimodal—learning an additional language in a modality different from the L1 (M2) (Emmorey, Borinstein, Thompson, & Gollan, 2008).

For example, L1 learners of an SL may later learn some other SL as an L2, an example of unimodal bilingualism comparable to acquiring two spoken languages as L1 and L2. This is common where SLs are in close geographical proximity, as is the case for Irish SL (ISL) and British SL (BSL) in Northern Ireland (the two SLs are historically unrelated and are mutually unintelligible). An example of bimodal or cross-modal bilingualism is the L2 SL learning by deaf adults and adolescents who are proficient in a spoken L1, which is often in a read and lipread form. Another type of sequential L2 learning of SLs is found in educational programs that teach SLs such as BSL or ASL to preschool and primary school children as a second language (Daniels, 2003). However, the most common context in which SLs are acquired as L2s is by hearing adults.

One important question is whether the sensory modality of the first and second languages changes what we know about L2 acquisition over the lifespan. Another important question for deaf people is whether and how the age of L1 acquisition (often delayed in this population) affects the ultimate outcome of L2 learning (Mayberry, 1993). Clearly several factors must be considered in any account of L2 acquisition of SLs: sensori-motor modalities, the

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temporal order of the L1 and L2 acquisition, and the ages when the L1 and L2 are acquired. Here the primary focus is on sequential L2 acquisition in hearing adults with a spoken language as an L1. Various features of SL as L2 will be discussed here: (a) learnability; (b) iconicity; (c) phonology and motor skills; (d) the role of the face; (e) grammar; (f) the role of gesture; (g) social issues.

Learnability

Although there are no clear findings as to which aspects of SL are harder to learn, a descriptive study by McKee and McKee (1992) reports both student and teacher intuitions regarding the degree of learning difficulty of several features of ASL. Teachers and students agreed that adapting to the visual-gestural modality, that is, becoming comfortable with using the body, was a major area of difficulty. Both groups also mentioned dexterity and coordination in producing and connecting signs, facial expression and other nonmanual signals, spatial indexing through deixis, eye gaze, and body shift and classifiers. Fingerspelling was also rated as highly problematic. Wilcox and Wilcox (1991) also mention nonmanual grammar features, complex morphology, and the use of classifiers as difficult for learners to comprehend as well as to produce.

Iconicity

Unlike spoken languages, where arbitrariness in the referent–symbol relationship is not only predominant but is seen as an intrinsic design feature of language (Sutton-Spence & Woll, 1999), iconicity—a visually motivated relationship between the referent and the symbol—is pervasive in SLs (Taub, 2001). However, studies of the acquisition of SLs as L1 all indicate that iconicity plays only a limited role in young children's acquisition of SL vocabulary, and there is contradictory evidence as to the role iconicity may play later in individuals who have acquired an SL as an L1 (Thompson, Vinson, & Vigliocco, 2009). In contrast, the first stage of adult L2 learning of SLs is characterized by a marked reliance on the perceived iconic features of signs. Beginning signers use iconicity as a mnemonic aid to remember new vocabulary items for both sign expression and recognition (Campbell, Martin, & White, 1992; Hoemann & Kreske, 1995) and seek visual motivation for every sign form, whether the sign is visually motivated or not. Unlike infants, adults have experience of interpreting gestural representations and this ability facilitates recall and learnability in iconic signs. In Campbell et al. (1992) hearing adult learners of BSL and sign-naive subjects were presented with different lists of signs in BSL and then were asked to identify signs from the first list in a second list of signs. Those with some experience of learning BSL performed better than sign-naive subjects. For both groups, iconic signs were easier to recognize than non-iconic signs, suggesting that access to an iconic representation facilitates recall. Early stage L2 learners may recruit gesture and pantomime to aid memory, a strategy perhaps analogous to early stage spoken language L2 learners using the sound patterns of their native language to help them remember the sound patterns of the L2. However, Ortega and Morgan (2010) have shown that this strategy in L2 learners of BSL may lead to articulatory errors.

Although visual motivation is apparent for a large percentage of signs, all SLs have phonological structure—that is—meaningless articulatory units which combine to make the words/signs of the language. Signers process the phonological structure of SLs during language comprehension and production (MacSweeney, Waters, Brammer, Woll, & Goswami, 2008), just as users of a spoken language do.

Phonology

Unlike children acquiring an SL as an L1, hearing adults acquiring an SL an L2 can perform complex movements with arms and hands and have a fully developed perceptual system. They should thus have no difficulties in perceiving the phonological parameters that constitute a sign. Nevertheless, L2 learners have to develop new motor skills and adjust their attention to capture all relevant features of signs and there is evidence suggesting that hearing adults experience some of the same motor difficulties as children when they acquire a visual-spatial language.

Mirus, Rathmann, and Meier (2001) have shown that under some circumstances, hearing adult learners of an SL tend to proximalize movement just as children acquiring an SL L1 do. They asked four groups to view and repeat signs from an unfamiliar SL. Group 1 comprised deaf native users of German Sign Language (DGS); Group 2 comprised hearing adults with minimal exposure to DGS. These two groups were presented with signs from ASL. The third and fourth groups comprised deaf native signers of ASL and hearing adults with practically no exposure to any SL respectively, who were presented with signs from DGS. Proximalization (transfer of movement from a joint more distant from the body to a joint closer to the body: for example, substituting elbow movement for wrist movement) occurred frequently in all groups, with Group 4, who had no experience of any SL, most likely to proximalize movement. The deaf groups were better than either of the two hearing groups. The authors attribute this to their greater experience of using their bodies as language articulators (i.e., indicating a modality effect). These findings suggest that despite having mature motor systems, those for whom an SL is not just an L2 but an M2 only gradually become sensitive to movement features and how to achieve accurate articulation.

Rosen (2004) examined production errors in ASL lexical phonology made by beginning L2 adult learners. The errors were shaped by perception of sign formulation and poor motor dexterity. Production errors resulting from poor motor dexterity included substitutions, displacements, switches, additions, and deletions. Production errors shaped by perception include mirroring of hand movements, and addition and deletion of features within segments. Rosen explores the applicability of a number of analytical models such as L1 transfer to his data but reports that none capture the essence of phonology production errors in L2 ASL, and proposes a cognitive phonology model to account for the errors.

Face

McIntire and Reilly (1988) examined whether the communicative facial expressions of people who use a spoken language are transferred into ASL facial grammar. They conclude that while preexisting affective facial expression does serve as a transition in acquiring nonmanual grammar in ASL, the learner must first go through a reanalysis stage in which previous knowledge is processed as being linguistically meaningful. This reanalysis process seems to be necessary both for adult L2 learners and for infant L1 learners. This reanalysis also appears to play a role in the L2 acquisition of grammar in SL.

Grammar

Beyond vocabulary learning, L2 learners of SLs must also master morphology and syntax. One problem for L2 learners is that the syntax and morphology of SLs are not always taught. Many courses primarily teach the established lexicon of SLs, along with fingerspelling. This inadvertently encourages beginning L2 learners to express SL vocabulary using the word order patterns of their spoken L1. The result is a kind of learners' signing, where

L2 content words (vocabulary for people, actions, internal states, and objects) are signed according to the word order of the L1 without the morphology and syntax of the target language.

Spatial Grammar

Taub, Galvan, Piñar and Mather (2008) examined the L2 acquisition longitudinally of three components of ASL: classifier structures, role shift or constructed action structures, and the use of location in the signing space. They tracked the early development of certain spatial skills that are central in the production of these three structures to address whether preexisting spatio-visual skills transfer into the acquisition of the spatial aspects of ASL.

Role shift (the use of changes in body orientation to represent different roles in discourse) was produced with some linguistic nuance early (i.e., correct body part movement and matching facial expression.) However, correct eye gaze for role shift developed more slowly in ASL than facial expression. Ability to use third-person reference in discourse also developed early, with various skills in handling location in signing space patterning together at an early stage.

Taub et al. (2008) see the source of these early skills as the outcome of transfer from preexisting gestural skills. Linguistic transfer—the role of previous linguistic knowledge—is an important topic in the study of L2 acquisition.

Gesture

Although cospeech gesture does not have a grammatical function, it interacts with the grammatical elements of spoken languages in systematic ways (Kendon, 1986; McNeill, 1992). Since gesture makes use of the visual-spatial domain, existing gestural abilities may transfer into the L2 acquisition of the spatial features of SLs. For SLs, these actions are tightly constrained to unify with lexical and grammatical elements, and are used with consistent meanings within an SL community. In contrast, cospeech gestures are loosely integrated with speech, have considerable variation in shape, size and clarity, and vary in what they communicate.

Taub et al. (2008) report a degree of relationship between the ability to establish consistent spatial coordinates in gesture and the ability to establish spatial reference in ASL, and between the ability to use classifier-like handshapes in gesture and the development of verbs of location and movement in ASL. Their research suggests that transfer can occur even when the L1 and L2 are in different modalities. While linguistic spatial skills have no parallel in the spoken modality, preexisting visual-spatial skills may predict the development of spatial skills in an SL. Additionally, gesture as a component of transfer may predict aptitude in L2 SL acquisition, and may also contribute to the creation of teaching strategies and methodologies to make use of learners' preexisting visual-spatial skills.

Social Issues

Pivac (2009) investigated students who had acquired New Zealand Sign Language (NZSL) as a second language (L2) as part of their studies for a diploma in sign language interpreting. The study explored NZSL learning outside the classroom setting through semi-structured interviews in a bilingual context (NZSL and English) to uncover informal learning opportunities especially within the social context of the Deaf community, and individual learner strategies utilized by "good learners" of NZSL. The findings indicated that the social

relationships and networks developed with L1 users, which facilitated access to an array of NZSL learning opportunities, were of key importance. Learner involvement with deaf social networks resulted in significantly improved linguistic, pragmatic, and sociocultural competency. The findings show the importance of research on adult L2 SL learning outside the classroom context.

Conclusions

Research on L2 acquisition of SLs provides a new perspective on L2 acquisition which is not available if only the learning of a second spoken language is considered. In particular, issues of transfer and modality are highlighted by research in this field. These in turn have implications for models of L2 acquisition in terms both of linguistic theory and cognition.

SEE ALSO: Corpus Analysis of Sign Languages; Crosslinguistic Influence and Multilingualism; Crosslinguistic Influence in Second Language Acquisition; Gesture Analysis in Second Language Acquisition; Research on Signed Language Interpreting; Second Language Acquisition and Gesture; Signed Language Interpreting Profession; Signed Language Interpreting: Types, Settings, and Modes

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Second Language Acquisition via Second Life

JAMES MILTON

Virtual environments such as Second Life offer learners of foreign languages the possibility of extensive language use which has previously only been possible by visits to a foreign country. These sites are widely patronized by non-native speakers but the language gains which occur, if any, are unknown. This entry therefore pays particular attention to a recent project whose objective is to test the language gains which emerge from dedicated language learning environments in Second Life. These suggest that, if appropriately used, virtual environments like Second Life can be a very valuable asset in foreign-language learning (http://secondlife.com/).

Background and Traditional Classroom-Based Teaching

It is an axiom of learning a foreign language that the optimal way to do this is to spend time living and working in the country where the language is spoken. Total immersion in a foreign country allows, in principle at least, maximum exposure to the foreign language, and creates every opportunity for communicative use of the language as learners go about their daily tasks. However, for the majority of foreign-language learners, young children learning at school, this is not an option. As Häcker (2008) notes, exposure to the foreign language is limited to the textbook and the foreign-language classroom for most learners. For motivated learners, particularly of English, there is also access to films, pop songs, and much of the Internet to supplement foreign-language input. For a lucky few, this exposure may be supplemented by a study visit abroad or an exchange program.

If life in a foreign country provides almost limitless time and exposure to the rich variety of the foreign language, the learning environment of the classroom is very different. The time available is often strictly limited by the demands of other subjects in the curriculum but, as Milton and Meara (1998) note, the time available for learning a foreign language is crucial to success. Studies show how limiting the nature of the textbook and the classroom can be. Häcker (2008) notes how few structures and vocabulary are taught in UK foreign-language classrooms, for example. Tschichold (2008) points to the emphasis on only the most frequent vocabulary in these textbooks. Perhaps explaining both these observations, Milton (2009) points to the absence of thematic variety and the high degree of repetition involved in the foreign-language textbooks used in the United Kingdom. A study by Richards, Malvern, and Graham (2008) observes how dependent French foreign-language exam grades in UK schools are on knowledge of the most frequent 1000 words only. It seems that textbooks and current educational systems can provide very limited exposure to the foreign language resulting in insufficient knowledge for effective communication.

The language classroom can also be a poor place for language interaction between learners. Even in the best regulated of classrooms there will be a tendency for the teacher, who knows the subject, to talk and for the pupils, who do not, to listen. Good language teachers attempt to modify this and give every possible opportunity for learners to talk

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but in a classroom with 20, 30 or even 40 students, the amount of language they can produce must be small. In a study of a single oral class by Al-Saif (2011) it is clear that teacher talk outweighs the contribution of all learners combined, more than double, that the learners produce only a handful of words each, and that the language environment appears to be lexically poor.

The Opportunity for Second Life and Interactive Virtual Environments

One of the benefits offered by technology assisted language learning and teaching is that, unlike the traditional classroom, it can offer much greater opportunity for language use and interaction, and because of the nature of the Internet, interaction with native speakers. Wikis and blogs, for example, encourage learners in language production. They can also encourage interaction, as users collaborate in the production of texts or engage in discussions about them. Sykes, Oskoz, and Thorne (2008, p. 530) note that this is a change in the learners' usual stance from consumers of knowledge to full participation in the educational community. This enhances learners' reading and writing in the foreign language (Ducate & Lomicka, 2005) and students perceive benefits, particularly in intercultural competence, through linking this way with native speakers (Elola & Oskoz, 2008). The opportunity for developing communicative competence and pragmatic awareness, producing language which is appropriate to the situation in addition to being meaningful, is thought to be particularly important (Sykes et al., 2008, p. 535). There are also potential limitations with wikis and blogs since exchange of information through these media, are generally written and asynchronic. There can be a considerable time delay between each exchange. This may help the learner struggling to assemble text for communication quickly but one of the challenges for foreign-language learning is to develop the speed and automaticity of response which is necessary for fluent oral communication.

Virtual environments in particular offer the opportunity for real-time oral interaction in a variety of relatively normal-looking settings, using the learner's foreign language. It should not be a surprise, therefore, if virtual travel in a 3-D virtual environment arouses the interest of teachers and learners alike. Most children will be aware of the possibilities of 3-D worlds through computer games. In these games the world is usually quite narrowly confined and the users move their characters, or avatars, around this world to solve puzzles or battle aliens. But other 3-D worlds are broader in scope, run online, and offer adults the opportunity to travel around the virtual environment meeting other avatars and talking with them in real time. There are virtual shops to visit and clothes and other items can be bought using virtual money. There are virtual bars and nightclubs where your avatar can dance. Such a site can offer a more broadly social function and, reflecting the real world, can have different country or city locations. In one such virtual world, Second Life for example, there is a virtual London, a virtual Dublin, and a virtual Athens where you can take a walk around a virtual acropolis, just to pick three sites at random. As an example of what this looks like, Figure 1 shows a screenshot of this author's avatar in virtual Trinity College Dublin.

The Theoretical Underpinning of Second Life and Interactive Virtual Environments

For learning to occur, these environments must present language and provide the opportunity for learners to use it. Where there is no language there will be no learning. The presentation of the foreign language and the way learners engage with it is also crucial

Figure 1 Screenshot of an avatar appearance in the Second Life® virtual learning environment (Second Life is a trademark of Linden Research, Inc.)

for success. Clark and Gruba (2010) report on an attempt to learn Korean using a social networking site where the materials were inappropriate, dull, and routine. The outcome was poor motivation and less than optimal learning.

The interaction which is part of membership of virtual environments offers features which are thought to be a particular benefit to language learning. The opportunity for the use of authentic language in meaningful tasks, if these can be created in the virtual environment, fits well with the tenets of task-based language learning: an approach which is designed to foster fluency and learner confidence (for example Brumfit, 1984; Willis, 1996; Willis & Willis, 2007). This approach also fits with social interactionist theory and competition theory (MacWhinney & Bates, 1989) where extensive language exposure is a requirement of learning: virtual environments are thought to offer the opportunity for lots of exposure. It should further provide the learner with comprehensible input gained through interaction. Negotiating meaning and modifying output, the processes learners engage in to get a clear understanding of each other, are considered central to second language acquisition (Long, 1985, 1996).

If the opportunities for foreign-language exposure and interaction can be harnessed then there also appear to be real opportunities for language gain.

Practical Suggestions for Second Language Learning in Virtual Environments

There is the opportunity for real-time communication in a site such as Second Life but the nature of the environment also has limitations for pedagogy. Much of the interaction of these environments can be language free. Young learners particularly like the experience

of flying in Second Life, for example, but this requires no language at all. Users also like changing the appearance of their avatar but this also involves little or no language. To be effective, use of the environment must lead learners in directions that will offer the opportunity for improvement.

The European-funded lifelong learning project entitled Vill@ge (Virtual Language Learning through Edutainment Activities; 143370-2008-LLP-GR-KA2-KA2MP) uses Second Life as a platform and is an example of how the creators of language learning environments have attempted to harness the benefits of these environments for learning, and avoid the pitfalls of nonlinguistic interaction (http://village.exodus.gr/echome.asp?lang=2). The Vill@ge island therefore has a number of virtual buildings designed to fit with the aims the learners are set. University level learners who are studying English for business and commerce are provided with virtual banks, travel and estate agency shops, and show homes to visit and practice in. Primary level learners have virtual supermarkets, a clothes shop, a zoo, and a karaoke bar to visit. The names of animals, clothing and food and drink, and structures associated with these are standards of elementary language courses.

When visiting these locations, learners are paired with a native speaker in another country and they are set tasks or role plays to carry out. The university learners may, for example, take the role of a bank assistant and have to deal with native-speaking customer avatars who, within the role play, are trying to open an account or take out money. Primary age learners are set tasks such as shopping. One avatar has a shopping list and has to explain to the other avatar what needs to be bought and put in the virtual trolley. Figure 2 illustrates the shopping environment in the supermarket. If an object is not known then it can be found and pointed at by way of explanation, or the users can explain, illustrate, and negotiate meaning. Users have the option of speech or typing in which to communicate and learners in particular appreciate the opportunity to see the language written down as an aid to learning. Crucial to the success of these activities is the way language use is a requirement of interaction, so if you want to change the clothes on your avatar for example, you have to negotiate with another avatar to do this. If your language lets you down, you cannot achieve what you want. Other features of the virtual world, like

Figure 2 Screenshot of the supermarket shopping task on the Vill@ge island using the Second Life® virtual world

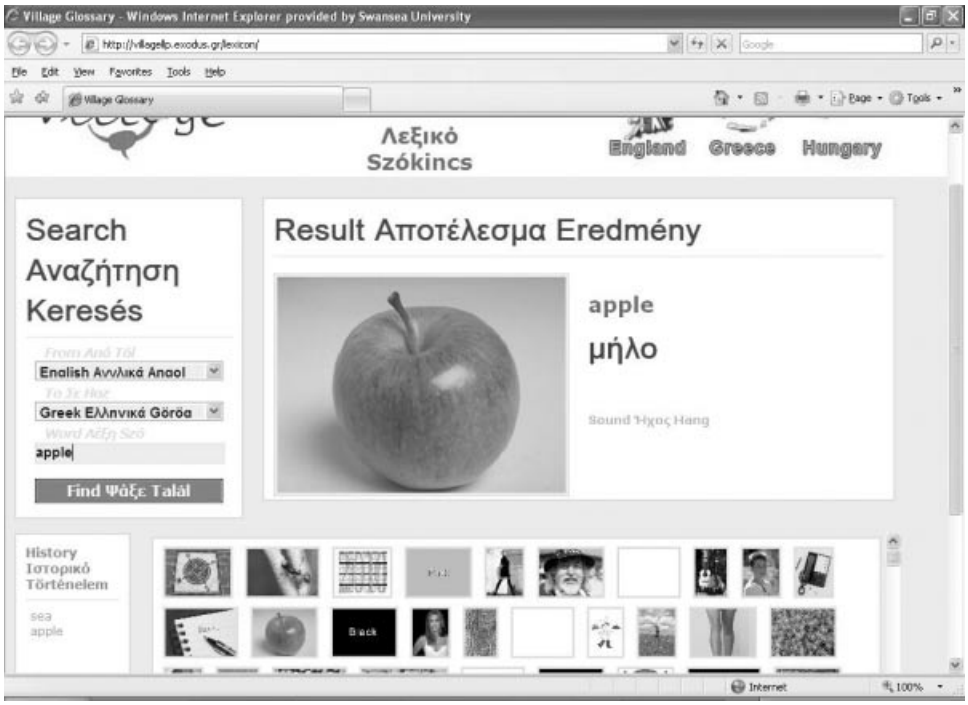

Figure 3 Screenshot of the Pictionary language support feature on the Vill@ge island virtual world program

flying or the use of cars, can be held back as rewards for the successful completion of language tasks.

Primary age learners will typically be low level and will require language support features to be built into the environment. Learners have access to a dictionary, or perhaps more accurately a pictionary, via virtual computers in the program and where unknown words can be found and heard. Figure 3 gives a screenshot of this facility on the Vill@ge island and which, for the purposes of this European program, works in English, Greek, and Hungarian.

The environment can also be changed and obstacles added for games where learners have to direct each other through the maze of buildings. Crucially, the dedicated island allows learners of this age to move uninhibited through the environment and to interact with every avatar. Access to the island can be controlled and restricted, and there is no opportunity in this environment for unadventitious meetings with unknown and potentially predatory adults.

An interesting potential feature of this environment is the use of bots as customers, taking advantage of the predictability and formulaicness of language in some situations. These bots, avatars driven by the computer rather than by another person, can potentially be preprogrammed with questions, and to listen out for keywords in the answers they receive which can trigger relevant follow-up questions. This is a formidable programming and linguistic task, of course, but it offers a pointer to the future of these programs.

Details of Second Life and access to the virtual world it provides can be found at http://secondlife.com/. Details of projects which make use of Second Life explicitly for virtual travel and foreign-language learning can be found at http://village.exodus.gr/ and http://www.britishcouncil.org/hongkong-english-secondlife.htm

The Evidence We Have for Learning in Virtual Environments

The subject of technologically assisted language pedagogy is a vibrant area of research (Thorne & Reinhard, 2008) but, as Clark and Gruba (2010) comment, comparatively little of this work is directed at social networking sites and virtual environments. Indeed, Chapelle (2010, p. 72) stresses the absence even of good methodologies for assessing the benefits which might emerge from use. From the information we have it seems that research supports the idea that high levels of interaction and the negotiation of meaning result from using these virtual environments (for example, Shih & Yang, 2008, and Sadler and Nurmukhamedov reported in Thorne, Black, & Sykes, 2009, p. 809). This may be the product of the way working through avatars reduces communicative inhibition and encourages risk taking in language use (Peterson, 2010). There appear also to be benefits in terms of motivation and the learners' attitude to learning and correction (Kuriscak & Luke, 2009). Milton, Patrikakos, Antonopoulou, Papakostopoulou, & Papatheodorou (2000) and Filipoupolitis (2005) report increases in both length of utterance and in the speed with which these utterances were produced, suggesting increases in fluency, through communication in a virtual environment. However, despite the considerable potential, as Sykes et al. (2008, p. 535) note, there is little research addressing the effectiveness of the use of these environments. The question, *Do learners really get better in these environments?* remains unanswered.

Data collected from use of the Vill@ge environment (Milton, Szabo, Orosz, Griffiths, & Bonabos, 2011) confirms the high volumes of learner language, mostly oral, which are produced. In Al-Saif's (2011) study, learners in a traditional oral class produced fewer than twenty words each on average in a 45-minute class. In the same time, primary learners performing tasks in Second Life produced on average over a hundred words each, and university level learners over seven hundred. A feature of the younger learners' language use is the comparatively limited speed with which language interaction can take place. Oral interaction can produce unmanageable demands in terms of the speed with which low level learners can processes language, and the speed with which they can respond. A more workable use of the environment, for these learners, appears to involve the use of typed messages in support of speech (also noted in Milton & Garbi, 2000). The interaction does not appear as stilted as would be the case if this were purely spoken language. Among university level learners, the use of typed messages is much more restricted. They spell out unknown vocabulary and use text-messaging conventions, such as ;-), to provide encouragement and support for each other.

University level learners in this study also demonstrated increases in the quantity of language produced, and length of utterance, with each successive session in Second Life. This suggests that the learners become more fluent through interaction in this environment: more confident in using their English productively and quicker in recalling the language they want. Where these learners were taught Hungarian by their partners for an hour, the rate of vocabulary uptake appeared high: about forty words were learned receptively on average. This is comparable with the vocabulary focused informal activities described in Horst and Meara (1999), Milton (2008) and the bilingual list learning experiment in Fitzpatrick, Al-Qarni, and Meara (2008).

Limitations of Second Life

If these findings appear encouraging there are also shortcomings and limitations to the business of learning, and organizing language learning, through these environments. A principal one is the transience and cost of much of the technology that makes sites such

as these possible. Sites such as Second Life require computers with fast processing and high specification graphics cards in order for them to run successfully. Such machines can rapidly become outdated and the cost of keeping updated is far from small. Allied with this problem is the way technology develops so that the sites themselves become outdated and are superseded by others. If dedicated facilities and materials have been created for a site which then becomes redundant, then the time and effort used to create the learning environment will also be redundant. Dedicated materials and sites may be necessary because of the issue of security on sites which may not be monitored where young learners are interacting with others whose purpose for being there may be a long way from language learning. Anyone, in principle, can use a site such as Second Life and begin to use a foreign language but for most young learners access may have to be limited and controlled to ensure they are not placed in the way of danger. This type of security comes at a cost. The use of these sites may not be a cheap route to language learning after all.

A second shortcoming lies in the nature of the environment itself which, while fast and realistic compared to the sites available even a few years ago, still fails to mimic completely the nature of interaction in the real world. The use of avatars means that features of interaction which govern language, gestures and facial information such as lip shape, are missing. Necessary elements of language such as turn taking, and even comprehension itself, are hindered by their absence. There are gestures available in these sites, shrugs and winks for example, but these are limited and are hard to manipulate with the facility that would be the case in real life. Other aspects of the environment are also limited. Handling items on supermarket shelves, or placing posters on walls, either cannot be done or requires extensive and expensive programming dedicated to a learning activity. The interaction may be fun, and that will encourage the use of these sites and so foster language use and learning, but these sites are not yet a complete imitation of a real visit to a real foreign country.

SEE ALSO: Computer-Mediated Communication and Second Language Development; Distance Language Learning; Emerging Technologies for Language Learning; Mobile-Assisted Language Learning; Multimodality and Literacy; Using the World Wide Web for Language Teaching

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Second Language Experimental Pragmatics

NAOKO TAGUCHI

Experimental study is a type of quantitative research developed in the natural sciences to establish a cause–effect relationship between variables in a tightly controlled study design (Dörnyei, 2007). In the field of interlanguage pragmatics, the causal links have been explored by such questions as: "What effects does something have on pragmatic development?" and "What is the reason for the variations observed in learning outcomes?" Causal factors examined in previous research include learner-specific issues such as age, gender, and motivation; external factors such as types of learning context and length of residence in the target culture; and classroom factors related to instructional methods and practice. This entry will discuss those factors in two categories: learning context and instructional intervention. Under each category, example experimental studies will be presented in light of their methodologies and the types of cause–effect relationships that they tried to establish.

The Effect of Learning Context in Pragmatic Development

The causality links between learning context and pragmatic gains have been explored by a line of studies that directly compared a second language (SL) context (learning a language in a country where the language is spoken) and a foreign language (FL) context (learning a language in a country where the language is not spoken) for their effects on pragmatic gains by sampling learners from each physical environment. These studies typically recruited a group of learners in a study-abroad context and measured the learners' pragmatic progress over time. The researchers then compared the results of the first study with data obtained from a domestic, at-home group. The underlying premise is that the SL context is a likely causal variable for pragmatic development because of abundant opportunities for pragmatic practice. Learners have opportunities to observe how people convey appropriate levels of politeness and formality in speech acts or how people express meaning in an indirect manner. These opportunities available in the host country are considered to facilitate pragmatic development.

Taguchi's (2008) study is one example in the line of study-abroad research. She compared SL and FL learners of English for their ability to comprehend implied speakers' meaning (see example test item below). Here, the target implied meaning is in Susan's second utterance, and the correct inference is that Susan does not like the job.

Dave:	Hey Susan. I didn't know that you're working here.
Susan:	Yeah, I'm working in the Student Union cafeteria. I work there Monday through Friday, starting at six.
Dave:	You sound busy. Do you like the job?
Susan:	My mother wanted me to take it.
Question:	Does Susan like the job?

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The computerized listening test had 60 such items, including 48 targets and 12 filler items. Participants were Japanese students of English in the USA (ESL) and in Japan (EFL). They were equated in terms of age, previous learning experiences, and initial proficiency. The listening test was administered twice to the groups over time to see the gains in accuracy and comprehension speed (i.e., response time or average number of seconds taken to answer each item correctly). Results showed that both groups made significant gains over time. However, participants from the EFL group gained far less in speed than in accuracy. In contrast, ESL learners showed significant improvement in comprehension speed with a sizable effect size, but with only marginal improvement in accuracy.

The causality claims drawn from these studies are mixed. While the majority of the findings reveal an advantage of SL over FL context in pragmatic performance, evidence also exists suggesting that FL learners demonstrate better performance than SL learners. Furthermore, as shown in Taguchi's study, the positive effect of residence abroad was not all-encompassing over different pragmatic aspects; some pragmatic targets were better assisted by the experience of living in the SL context, while others were susceptible to learning context.

For example, Bardovi-Harlig and Dörnyei (1998) documented the superiority of SL learners over FL learners in their ability to detect pragmatic and grammatical errors in speech acts of request, apology, suggestion, and refusal. Learners watched video scenes in which the interlocutors' speech acts contained either grammatical or pragmatic errors. One example was as follows:

Context: It's Anna's day to give her talk in class, but she's not ready.
Teacher: Thank you, Peter, that was very interesting. Anna, it's your turn to give your talk.
Anna: I can't do it today but I'll do it next week.

Was the last part appropriate/correct? Yes No
If there was a problem, how bad do you think it was?
Not bad at all ___ : ___ : ___ : ___ : ___ : ___ Very bad

Participants were learners of English in Hungary (EFL) and the USA (ESL). EFL learners detected more grammatical errors than ESL learners did, while ESL learners detected more pragmatic errors. The findings were confirmed by Schauer's (2006) replication study which found that, compared with EFL learners in Germany, German ESL learners in England recognized a considerably higher number of pragmatic errors.

However, Niezgoda and Röver's (2001) study, another replication of Bardovi-Harlig and Dörnyei, yielded contrasting findings. EFL learners in the Czech Republic detected a higher number of pragmatic and grammatical errors in speech acts and judged both error types as more serious than ESL learners did. EFL learners' sensitivity to pragmatic inappropriateness was attributed to the fact that they were advanced speakers enrolled in a teacher-education program. Proficiency also interacted with the appropriateness judgment. Low-proficiency learners in both environments recognized more pragmatic than grammatical errors and rated pragmatic errors as more severe, but the tendency was the opposite for the high-proficiency learners.

In summary, the cause–effect relationships between learning context and pragmatic development have yielded a mixed picture. Some studies supported the facilitative effect of SL over FL context, but others did not. The residence-abroad experience also brought about different effects according to pragmatic targets. For example, Röver (2005) showed that the decisive variable for the comprehension of routines was study abroad, while proficiency played a crucial role in the comprehension of implied meaning and production of speech acts.

These mixed findings also suggest challenges of experimental studies with learning context as a variable. One difficulty in research design relates to "selection bias," meaning that the outcome differences are artifacts of the differences in preexisting characteristics of the groups (Larzelere, Kuhn, & Johnson, 2004). This is a likely problem here because participation in the study-abroad program is voluntary, and thus those who choose to locate themselves in a SL context might be more motivated than those who remain in a FL context. Without groups being comparable, it is difficult to eliminate competing explanations for the observed differences. A larger problem relates to the definition of learning context. Many factors operate simultaneously in one context, and it is very likely that the multiple variables interact with individual learners' characteristics such as motivation, attitudes, and proficiency to yield sizable gains. Hence, it is virtually impossible to control all the factors involved in a learning environment and attempting to do so might result in an artificial laboratory setting that does not present a realistic, intricate picture of the context.

The Effect of Instruction in Pragmatic Development

Instructed learning that focuses on pragmatics is a growing area of research, as shown in the mounting experimental studies published since the beginning of the 21st century and a few edited volumes that focus on instructed pragmatic acquisition (Rose & Kasper, 2001; Alcón & Martínez-Flor, 2005). These intervention studies have examined whether and how teaching affects the acquisition of pragmatic knowledge by comparing different instructional methods for their relative effects. These studies typically use a "pretest/posttest control-group design" in which treatment groups who received different instruction are compared pre- and post-instruction, and then compared to a control group who received no instruction. Any differences in the results among groups are attributed to the only difference between them—the treatment variable.

One popular label used to categorize instructional methods and compare their effects is explicit versus implicit instruction. The former involves a direct explanation of the target pragmatic features followed by focused practice, while the latter withholds explanation but provides ample input and practice opportunities in which learners develop implicit understanding of the target pragmatic forms and their uses.

Takahashi (2001), for example, compared four instructional conditions in teaching English request-making forms (e.g., "I was wondering if you could VP"; "Do you think you could VP?"). The four conditions included: (a) "explicit teaching," in which students received explanation about proper request forms in a situation; (b) "form comparison," in which students compared their request forms with those of native speakers; (c) "form search," in which students identified target request forms in dialogues; and (d) "meaning focused," in which students listened to dialogues that contained request forms. The treatment sessions were conducted over four periods, each lasting 90 minutes. Instructional effect was measured by a discourse-completion test (DCT) in which participants wrote down request forms in response to situational scenarios. Results revealed that the explicit group outperformed all other groups in producing correct request forms.

In contrast, several studies showed that implicit instruction is equally effective in pragmatic development. For example, Martínez-Flor and Fukuya's (2005) study compared explicit and implicit instruction in the acquisition of a speech act of suggestion in L2 English. The explicit group received direct explanation about suggestion expressions after watching video clips. The implicit group did not receive explanation but watched video clips in which target suggestions were highlighted in boldface. Learning outcomes were measured by a written and oral DCT. No significant differences were found between the two groups posttest in the appropriateness of the suggestion expressions. The findings imply that, as

long as the target forms are made salient during intervention, implicit methods could produce similar effects to explicit instruction.

In addition to the explicit–implicit dichotomy, the deductive–inductive opposition has also been examined in relation to instructional conditions in experimental studies. A deductive approach involves explicit explanation of rules followed by their applications, while an inductive approach involves discoveries of rules through exposure to examples (Decoo, 1996). Takimoto (2008) applied these approaches to the teaching of requests in L2 English. Participants were divided into four groups: a deductive group, two inductive groups, and a control group. The deductive group received explanation about request forms and completed the "structured input tasks" in which they read a conversation involving a request-making situation and selected the appropriate request form from two alternatives. One inductive group completed the "structured input tasks" too, but did not receive explanation. Another inductive group completed problem-solving tasks in which they compared request forms in dialogues. Results showed that the three treatment groups outperformed the control group. There was no difference among the treatment groups, except that in the listening test the deductive group could not retain their learning at delayed posttest.

These instructional intervention studies are good examples of experimental studies in interlanguage pragmatics research. These studies observe basic considerations of experimental methodology—the use of a control group, tight control of treatment conditions, and use of pre- and posttests. However, a limitation of many of the studies is that they were not true experimental studies: they were quasi-experimental studies because they used intact groups and did not use random group assignments to create the comparisons from which treatment-caused change is inferred. Several techniques could help minimize pretest differences between the treatment and control groups, such as matching participants from each group on a case-by-case basis on one or more variables or using analysis of covariance, a statistical method that adjusts preexisting differences (Dörnyei, 2007). Yet not all intervention studies in pragmatics have used these techniques.

Despite these limitations, quasi-experimental studies have an advantage in that treatments take place in authentic environments using genuine class groups, consequently enhancing the generalizability and ecological validity of the studies. In addition, some improvements are seen in more recent instructional studies, including the use of multiple assessment measures of learning outcomes and explicit reporting of their reliability (e.g., Takimoto, 2008; Tateyama, 2009), use of a delayed posttest to measure robustness of learning (e.g., Takimoto, 2008), and a relatively large sample (e.g., 130 participants in Pearson's 2006 study). These features add to the rigor of the experiment and enhance the validity of the claims drawn from the findings. Another notable trend is the use of computer technology to implement instruction (e.g., Kakegawa, 2009; Sykes, 2009; Utashiro & Kawai, 2009; Li, 2011). Use of computers in instructional studies could help enhance the quality of experiments by ensuring the comparability of the amount and format of instruction between control and treatment groups.

One issue that merits attention in instructional studies is the choice of measures used to assess learning outcomes, and the degree of correspondence between the treatment and the assessment measures. While studies usually provide an explicit rationale for their selection of particular instructional methods, very few studies state their rationale for the choice of outcome measures. Choosing the right outcome measures is critical because the types of measures often function as moderating factors for observed learning benefits. Hence, when designing an experiment, it is important to clarify what skills and knowledge components the instruction intends to target and whether post-instruction measures could adequately assess the areas targeted in instruction. For example, in Martínez-Flor and Fukuya's (2005) study, the instructional target was the syntactic forms of suggestion expressions, and learning was measured with a DCT and role-play tasks in which participants produced the speech act of suggestion. The speech act was evaluated by native-speaker

raters, but the study did not report the precise evaluation criteria used by the raters or what aspects of speech act the raters focused on. It is possible that the raters were focusing on other aspects of the speech act (e.g., openings and closings, affective strategies) than the suggestion of head acts (the minimal linguistic unit used to realize the speech act) targeted by the instruction. Furthermore, very few studies have reported who the raters were or what went on during the norming sessions. Because the types of outcome measures inevitably affect findings, careful selection and thorough description of them are essential in experimental studies.

Conclusion

In summary, experimental studies in interlanguage pragmatics have utilized a variety of techniques to examine the effect of one variable on the other in a format of controlled laboratory experiments. These studies have made great effort to control extraneous, intervening variables. In studies that examined the effect of learning context in pragmatic development, researchers have tried to create groups that are comparable in age, background, and proficiency but differ in the context of study. On the other hand, in instructional studies that examine the effect of specific teaching methods on pragmatics learning, effort has been made to control various aspects of treatment conditions such as length, timing, and delivery of instruction. Recent developments in technology hold great promise in introducing consistency in treatment, thereby enhancing comparability among experimental conditions. Future experimental pragmatics will continue to expand its scope by adding more variables to examine and enhancing the quality of experiments.

SEE ALSO: Classroom Research on Pragmatics; Interlanguage Pragmatics; Pragmatic Development in Study-Abroad Contexts; Second Language Pragmatic Development; Testing in Pragmatics Research

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Second Language Pragmatic Development

MIDORI ISHIDA

Research on the development of second language (L2) pragmatic competence began as early as the late 1970s and became a systematic area of inquiry within interlanguage pragmatics research from the mid-1990s. As a response to the calls for developmental studies of interlanguage pragmatics by Kasper and Schmidt (1996) and Bardovi-Harlig (1999), quite a few studies have been conducted to investigate the route of development, roles of routine formulas, the relationship between grammatical and pragmatic development, and factors that affect pragmatic development. While early studies of interlanguage pragmatics in the tradition of cross-cultural pragmatics focused on speech acts such as requests, apologies, complaints, suggestions, refusals, compliments, and responses to them, developmental studies of L2 pragmatic competence have considerably expanded its focal objects of learning. Such studies cover not only a range of speech acts but also other social actions such as greetings, conversation openings and closings, and agreeing and disagreeing. The use of particular linguistic resources such as discourse markers (e.g., *but*, *y'know*), modal expressions (e.g., *I think*, *might*), and forms indicating politeness and other social meanings including stances and social relationships (e.g., French address forms *tu* and *vous*) are also the focuses of developmental L2 pragmatics studies. Moreover, new studies of L2 pragmatic development examining interactional competence, with which L2 speakers contribute to the collaborative accomplishment of a social activity within an ongoing social encounter (e.g., closing a conversation, making a collaborative decision), are starting to surface.

Major Findings of Developmental Changes

Research on L2 pragmatic development has shown certain routes of development over time. The longer the period of L2 learning and the higher the general proficiency, the more aware of pragmatic errors L2 speakers become. However, development of perceptive abilities does not guarantee the development of productive abilities. Developing sensitivity for situational constellations, or sociopragmatic competence, seems to lag behind development of pragmalinguistic features (i.e., deployment of linguistic resources for making particular pragmatic actions), especially in a foreign-language context, where the target language is not used as the primary medium of social interaction. However, L2 speakers gradually decrease inappropriate performances that are based on their first language (L1) and their performances approximate more to those of L1 speakers of the target language (TL; e.g., Barron, 2003), although they do not become equivalent. On L2 speakers' performance of face-threatening acts such as requests and apologies, the head acts (i.e., the core of the speech acts) are at first direct with reliance on illocutionary force indicating devices (IFID; e.g., *I'm sorry* for apologies; *Can you?* for requests), but become more indirect by means of syntactic and lexical downgraders. In addition to more refined use of internal modifications, L2 speakers also expand the range of external modifications that support the head act.

Specifically on the development of competence in performing requests, extensive research has revealed a rather consistent route of development, through both cross-sectional studies

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and longitudinal case studies (e.g., Ellis, 1992; Achiba, 2003): At the most rudimentary stage of development, L2 speakers with little grammatical knowledge heavily depend on the context, for example, by simply naming the object that they are requesting to obtain and using no verb in the head act. Their requests are direct with no mitigation at first (e.g., *Come here*), but gradually become indirect. Formulas such as *please* and *Can I?* play a vital role in specifying an action as a request, and later use of conventionally indirect strategies such as *Would you mind xx-ing?* allows L2 speakers to fine-tune their requests. With higher proficiency, L2 speakers' requests become more TL-like: They use a wider variety and a greater number of internal modifications for downgrading (e.g., *I was wondering if you could possibly xx?*) and external modifications for providing support for the request. With a greater repertoire of linguistic means, L2 speakers also gain abilities to perform more sociopragmatically appropriate actions according to the context.

With regard to developmental changes in the use of routine formulas, at the earliest stage of development, L2 speakers use formulas (e.g., *Can I get xx?*) to accomplish certain actions despite their limited command of linguistic structures. Overgeneralized use of one formula for a range of functions occasionally results in pragmatic failure. However, over time L2 speakers begin using formulas productively by understanding their grammatical constituents (e.g., *Can S V?*) and with more sophisticated command of linguistic structures. The functions that a formula serves also change, for example, from using *please* simply as a marker of requests to using it as a marker of politeness for modifying a request (Achiba, 2003; Barron, 2003). L2 speakers also refine the use of formulas within the sociopragmatic parameters for its use. TL-like formula use helps reduce verbosity, although proficient L2 speakers may become overly verbose due to their command of linguistic structures (e.g., Blum-Kulka & Olshtain, 1986).

As proficient L2 speakers' non-TL-like verbosity suggests, L2 pragmatic development is not a linear process corresponding to proficiency gains. While some studies found that a high level of grammatical knowledge was necessary for achieving high pragmatic competence (e.g., Barron, 2003), there have also been reports that grammatical knowledge does not guarantee higher pragmatic competence (e.g., Salsbury & Bardovi-Harlig, 2001). Moreover, grammatical competence may not be necessary for performing certain pragmatic actions, as found in Schmidt's (1983) study of an L2 speaker of English, Wes. Despite a rudimentary level of his grammatical competence, Wes was able to perform certain actions (e.g., saying *Sitting?* instead of *Shall we sit down?*) and later his incorrect grammatical construction eventually disappeared. Precedence of pragmatic competence over grammatical competence was also observed in a series of longitudinal studies of modals used by L2 speakers of German at the beginning level (e.g., Dittmar & Terborg, 1991). Kasper and Rose (2002) propose the universal pragmatics principle to explain such findings: Even with a rudimental level of grammatical competence, L2 speakers can exhibit considerable levels of pragmatic competence when participating in L2 social interactions, due to their already developed L1 pragmatic competence which carries across languages. Yet they still need to learn TL practices in areas where L1 and L2 norms and expectations differ, and linguistic realization of L2-specific practices can be achieved with higher grammatical knowledge of the L2.

Factors Affecting Developmental Processes

Research has found that, in general, L2 speakers rarely attain competence equivalent to that of L1 speakers despite their relative pragmatic development, even with higher general proficiency and a longer period of L2 learning in the TL community. Several cognitive explanations for such limitations have been provided, including the lack of noticing

(Schmidt, 1993) and limited control of processing the L2 (Bialystok, 1993). Schmidt hypothesized that the necessary condition for pragmatic development is the L2 speaker's allocation of selective attention to L2-specific pragmatic practices. Schmidt's noticing hypothesis has motivated researchers to experimentally investigate effects of instruction that assists L2 speakers' noticing of specific L2 pragmatic practices. The experimental research collectively suggests that focused instruction is better than exposure alone, and effective when explicit explanations are given. However, even when higher pragmatic knowledge is achieved through explicit instruction, L2 speakers may not become pragmatically fluent, for example, at responding to L1-speaking interlocutors, as found in House's (1996) study. House explains her finding through Bialystok's proposition that adult L2 speakers' main task for achieving higher pragmatic competence is to attain high control of processing of the L2 in real time.

Other factors affecting pragmatic development include L1–L2 transfer, length of residence in the TL community, and availability of relevant input and corrective feedback. While more positive transfer (resulting in TL-like performance) and less negative transfer (resulting in non-TL-like performance) of L1-based pragmalinguistic and sociopragmatic knowledge are observed in L2 speakers with higher proficiency, transferability is affected by various factors such as the targeted pragmatic actions, proximity of the L1 and the TL practices, and the L2 speaker's perception of the proximity. Furthermore, although there are benefits for L2 speakers living in the TL community, various pieces of research have reported that such an environment does not guarantee pragmatic development. Certain areas of pragmatic competence (e.g., routines of greeting and leave-taking, advice-giving, refusal of offers) develop in a relatively short period of time, but others (e.g., compliments, use of certain modal expressions) take longer. This may be due to varied availability of relevant input and corrective feedback. Ethnographic studies have shown that the relative status of the L2 speakers and the kind of social activities that they engage in have particular constraints on the input and feedback that they receive (e.g., Siegal, 1994). It has also been found that some L2 speakers do not follow TL-like practices even with enough grammatical and pragmalinguistic knowledge and processing control, possibly to intentionally deviate from the perceived TL norm as an act of maintaining their sense of identity (e.g., Siegal, 1994; Barron, 2003). Such findings evoke the question of the adequacy of setting TL speakers' normative performance as the ultimate goal of L2 pragmatic development.

Expansion of Research Approaches

Research on L2 speakers' subjectivity suggests the need to expand the views of language and language learning for the study of developmental pragmatics. One of the relevant theoretical frameworks that developmental L2 pragmatics research has drawn on since the late 1990s is the theory of language socialization (Schieffelin & Ochs, 1986). The theory explains language learning as a process that is interconnected with the process of attaining a competent membership in a social group. L2 language-socialization research has shown that L2 speakers are not automatic processors of L2 input but are agents who choose their own pathways of language learning and use. Through ethnographic studies, researchers have revealed contextual details in which L2 learners' pragmatic development is facilitated or constrained. For instance, age has been revealed as an important contextual factor not so much because of the speakers' cognitive capacity but because it influences the ways in which others interact with the speakers. Siegal (1994), for example, found that L2 speakers of Japanese in their early 20s were regularly spoken to in the informal style during their stay in Japan while such input was infrequent for a middle-aged woman. As Siegal's study illustrates, the context for learning is constrained by the conduct of interlocutors and the community's attitudes toward learners. The ideology of host communities that

high competence is difficult to attain in an L2 is also constricting because L1 speakers with such an ideology may use simplified foreigner talk and employ different standards for L2 speakers. Furthermore, in non-pedagogically oriented interactions, adult L2 speakers rarely receive explicit feedback on their pragmatically deviating actions (e.g., DuFon, 1999).

Based on these findings, we can see the need to examine in detail the exact nature of interactional organizations to deepen our understanding of the mechanisms of learning that lead to L2 pragmatic development. A small but increasing number of recent studies have explored this issue by applying theories and methodologies that are established in other disciplines. For example, using language socialization theory, Ohta (1999) showed that L2 speakers develop competence in providing listener responses through participation in the interactional routine of question–answer–response sequences. Because novices can gradually take more control of the routines through repetitive participation, interactional routines are considered an important site for language socialization. The sociocultural theory of L2 learning (Lantolf, 2000), which sees language-mediated interactions as important tools for expanding L2 speakers' potential, also provides a theoretical framework for understanding L2 pragmatic development. For instance, Belz and Kinginger's (2003) study of telecollaborative communication showed how L1-speaking interlocutors' use of address form and their explicit assistance (e.g., *Use "du" to be more personal*) helped L2 speakers of German develop their competence in using address forms of solidarity. Moreover, recent studies that employ conversation analysis reveal in detail the processes in which higher pragmatic competence emerges even within a short space of time and through instruction (e.g., Huth, 2006; Ishida, 2006; Gonzalez-Lloret, 2008). For example, through microanalysis of decision-making activities that an L2 speaker and an L1 speaker of Japanese engaged in during a 10-minute interactional task, Ishida (2006) showed how the L2 speaker began to take a more central role in co-constructing the activity: The L1 speaker's repeated use of decision-making moves (e.g., *Jaa sore ni shiyoo* 'Then let's decide on it') made clear the interactional function of the prior *ne*-marked assessment (e.g., *Ii ne* 'It's good, isn't it?') and the positive response to it (e.g., *Un* 'Yeah') as the precursor to a decision-making move, and the L2 speaker was later able to use decision-making moves in this sequential position.

Evaluation and Prospects

While systematic investigations of L2 pragmatic development have begun only since the mid-1990s, this research area has grown at a fast pace. The scope of research on pragmatic competence and its development has expanded from a centralized focus on speech act performances to interactional competences and negotiation of one's identity in the TL community. By importing various methodologies and drawing on theories from relevant disciplines, L2 developmental pragmatics research has produced a considerable amount of important findings: routes of pragmatic development and its relationship with the development of grammatical competence, and factors affecting the developmental processes including one's L1 pragmatic competence, noticing of relevant input, availability of corrective feedback, types of instruction, types and amount of input, one's positionality in the TL community, and various configurations of social interaction in which one recurrently participates.

Adjustment and innovation of research methodology have also taken place. While written responses to discourse-completion tasks constitute an effective data set for comparing different groups of participants, more developmental studies that utilize audio- and video-recorded data of spontaneous interaction have been conducted to enable meticulous analysis of L2 speakers' pragmatic actions contingent to the ongoing process of interaction. Around the mid-2000s, when Kasper (2006) called for studies on discursive pragmatics, a small

number of developmental studies began to appear that analyzed L2 speakers' pragmatic competence as it manifested itself within sequential contingencies. For example, through conversation analysis of post-instruction interactions in his classroom study of instructional effect on compliment responses, Huth (2006) documented an L2 speaker's spontaneous L1-based response and her immediate repair with a TL-like one. His analysis suggests the potential of conversation analysis to reveal the relationship between L2 pragmatic knowledge and the level of processing control, which was raised by Bialystok (1993).

The issue of resistance to TL norms constitutes another object of inquiry in the L2 pragmatic development research. So far, L2 speakers' choice to deviate from perceived TL norms has been identified first by detecting differences between L1 speakers' and L2 speakers' performances, and then by extracting L2 speakers' self-report on their language use. However, some researchers began to document the ways in which their identity struggle is manifested in the actual interaction. Huth's (2006) study provides an excellent example of how L2 speakers' resistance to performing a TL-like speech act was found in their use of a high pitch and laughter, which indicated their consideration of compliment responding as a staged performance. Since the act of resistance and the activity of negotiating identity involve one's pragmatic competence, the changes in the ways in which L2 speakers negotiate their identity with the use of L2 linguistic resources will figure as an important object of investigation in developmental L2 pragmatics research.

Another issue that could be further investigated is the mechanism of learning in non-pedagogical contexts of language use. While instructional intervention studies have demonstrated the effectiveness of drawing students' selective attention to particular L2 practices and promoting inductive learning, such instruction is usually not provided to L2 speakers living in the TL community. The question arises as to what kind of interactional processes help them achieve higher pragmatic competence without instructional intervention. L2 developmental research on pragmatic competence has the potential to further the understanding of how relevant L2-specific practices can be made salient for L2 speakers to notice and how effective feedback on their pragmatic actions can be provided. Such understanding could also have practical implications for language educators.

SEE ALSO: Classroom Research on Pragmatics; Conversation Analysis Methodology in Second Language Studies; Cross-Cultural Pragmatics; Interlanguage Pragmatics; Pragmatic Development in Study-Abroad Contexts; Pragmatics Research Methods

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Suggested Readings

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Second Language Reading, Scripts, and Orthographies

KEIKO KODA

Reading has several unique properties. One such property is the universal dependence of writing systems on language. According to the "Universal Grammar of Reading" (Perfetti, 2003), writing systems encode spoken language and as such, do not represent meaning directly independent of language, necessitating language in decoding and encoding meaning in print. Reading thus is the dynamic pursuit embedded in two interrelated systems—a language and its writing system—and its acquisition requires making links between the two systems. Inevitably, learning to read entails systematic deductions at two levels: the general mapping (uncovering *which language element* is directly encoded in each graphic symbol) and the mapping details (unpacking *how* the symbols are used to encode spoken words).

When literacy learning occurs in a second language (L2), the demands for the required linkage building increase exponentially. Unlike monolingual first language (L1) reading, L2 reading is crosslinguistic, involving two languages in virtually all of its operations. Because each instance of L2 learning to read comprises a distinct combination of languages, the mapping requirements vary both within and across learner groups. L2 reading is further compounded by additional sources of variances as it encompasses a wider range of learners, including those of different ages and with diverse language backgrounds, than does L1 reading. L2 reading research must take into account these multiple diversities and the resulting complexities uniquely associated with L2 reading development. This entry describes (a) how orthographic knowledge contributes to learning to read, (b) how this knowledge varies across languages, and (c) how the knowledge acquired in one language affects learning to read in another language.

In this entry, the term, *writing system,* is used in reference to both the writing system of a language and an abstract type of writing system. In the latter sense, writing systems can be classified into three types: alphabetic, syllabic, and logographic (Coulmas, 2003). In the alphabetic system, each symbol represents a phoneme, while, in the syllabary, individual symbols denote distinct syllables. In contrast, a logographic character corresponds holistically to the meaning and sound of an entire morpheme. Within each system, considerable variations exist in the specific details in which graphic symbols are physically placed in encoding spoken words. *Orthography* refers to these language-specific details, and has been defined as "the standardized variety of a given, language-specific, writing system" (Coulmas, 2003, p. 35). Finally, the term *script* refers to the graphic form of the symbols of a writing system. To illustrate, English and Russian writing systems are both alphabetic, but they differ in their scripts—the former employs the Roman script and the latter uses the Cyrillic. English and Spanish are alphabetic, both employing the Roman script, but differ orthographically in spelling conventions.

Role of Orthographic Knowledge in Learning to Read

Although linkage building (making links between language and print) is universally required for learning to read, how it is accomplished differs considerably in typologically

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diverse languages. To uncover the general mapping principle in English, for example, children must understand that each letter represents a distinct sound—either a consonant or a vowel—and then gradually work out the details of sound–symbol correspondences. In contrast, children learning to read Chinese must first realize that each graphic symbol (character) corresponds to the meaning and sound (single syllable) of one whole morpheme and subsequently, learn how individual characters are combined to form compound characters.

In learning the mapping details, children must deduce the specific way in which graphic symbols are used to represent spoken words. The skills optimal for the required mappings are shaped to accommodate the specific features of the grapheme–language relationships in the orthographic system employed in a particular language. Korean and Hebrew writing systems, as an illustration, are both alphabetic, but their orthographic properties differ considerably. The Korean Hangul, as a case in point, consists of 24 basic symbols, each representing a single phoneme—either a vowel or a consonant. Unlike English, however, the Korean symbols do not appear individually; rather, they must be packaged into square blocks, representing distinct syllables. Reflecting the dual-level representation, Korean children exhibit strong sensitivity to both syllables and phonemes (Cho & McBride-Chang, 2005). In contrast, the Hebrew symbols represent only consonant phonemes (Shimron, 2006). Hebrew vowels are shown in the form of dots and dashes, and placed below, above or to the left of symbols. In the consonantal Hebrew, children develop stronger sensitivity to consonants than vowels (Geva, 2008). In order to explore long-term effects of literacy experience in one language on learning to read in another, it is essential to clarify the method of identifying the facets of *orthographic knowledge* critical for the required grapheme-to-language mappings, and variation therein, across a wide range of languages.

Development of Orthographic Knowledge

Current psycholinguistic theories hold that learning involves detecting, abstracting, and internalizing structural regularities implicit in input. Input exposure and experience therefore are the key determinants of learning outcomes—that is, what is learned and how well it is learned. In this view of learning, *orthographic knowledge* is defined as an elaborate matrix of correlations among graphemes, phonemes, syllables, and morphemes (Seidenberg & McClelland, 1989), and the resulting associative networks linking these constituent elements emerge through cumulative grapheme-to-language mapping experience (Adams, 1990). The more frequently a particular pattern of mappings are experienced, the stronger the linkages that hold the elements together. Ultimately, it is the strength of these linkages that supports speedy and effortless mappings. The internalization of a particular pattern of mappings is recognized as such when the mappings are executed through automatic (nondeliberate and nonvolitional) activation triggered by print input (Logan, 1988).

Under this view of learning, crosslinguistic variation in orthographic knowledge occurs in two dimensions: (a) the linguistic information directly encoded in each graphic unit and (b) regularity in grapheme-to-language correspondences. Such variation was tested in early experimental studies employing a variety of word recognition tasks. Their results showed that phonological and graphic manipulations induce different responses in readers of contrasting (alphabetic and logographic) writing systems (Frost, Katz, & Bentin, 1987; Hatta, 1992). Clinical observations of Japanese aphasics also revealed that two types of Japanese aphasic patients (those with Kana or Kanji impairment) have lesions in different areas of the brain, and thus provide further support for the hypothesis that typologically diverse writing systems require different neurological processing (Sasanuma, 1984; Hayashi, Ulatowska, & Sasanuma, 1985). By means of neuroimaging, moreover, recent studies have identified unique patterns of neural activation for reading printed words in alphabetic and logographic writing systems (Bialystok & Luk, 2007; Perfetti et al., 2007).

The psycholinguistic grain size theory (Ziegler & Goswami, 2006) offers a plausible explanation of how the observed variation in decoding behaviors relate to varying consistency in symbol-to-sound correspondences both within and across writing systems. Children initially develop sensitivity to larger phonological units in speech and gradually refine their sensitivity to distinguish smaller units. Although the sequence of phonological development is similar across languages, the precise ways in which spoken sounds are mapped onto graphemes vary across writing systems. In learning to map, children must understand the most effective grain size for achieving decoding efficiency in their writing system. According to the theory, the optimal grain size in each writing system is determined by the amount of orthographic information required for decoding. In phonologically transparent orthographies, decoding necessitates little orthographic information. The grain sizes required for decoding in these systems are small at the phonemic level. In contrast, in phonologically opaque orthographies, decoding demands far more orthographic information, and thus, necessitates larger grain sizes, such as syllables, rimes, and even morphemes.

L2 Reading Development

Dual-language involvement, as noted above, is a major characteristic of L2 reading. Once established in one language, reading skills transfer across languages, and are incorporated in learning to read in another language. Research has shown that transferred L1 skills alter the manner and the rate in which a new set of skills are shaped in a later acquired language (Wang, Koda, & Perfetti, 2003; Hamada & Koda, 2008; Das, Padakannaya, Pugh, & Singh, 2011). Multiple diversities are another characteristic as L2 reading encompasses a wide range of learners, including those of different ages and with divergent L1 backgrounds. The clear implication is that the cognitive and linguistic foundations vary across diverse learner groups to a greater extent than those typically assumed to exist among beginning L1 readers. Hence, L2 reading development is inherently more complex and diverse than monolingual L1 reading development. L2 reading research has examined how L2 reading acquisition varies among cognitively and linguistically diverse L2 learners.

Integral to this research is the notion of crosslinguistic transfer. Within the input-driven view of learning, transfer is defined as automatic activation of L1 mapping patterns triggered by L2 print input (Koda, 2008). For transfer to occur, the skills in question must be well rehearsed—to the point of automaticity—in the first language. Well-established L1 skills, transferred through automatic activation during L2 reading, are operative when learning to read in an L2, and as a result, L2 mapping skills evolve through crosslinguistic interaction between transferred L1 skills and emerging L2 orthographic knowledge. Under these premises, three factors are central to L2 reading skills development: (a) L1 orthographic knowledge, (b) L2 orthographic knowledge, and (c) similarity between L1 and L2 orthographic properties.

L1 Orthographic Knowledge

In exploring the impacts of prior reading experience, a growing number of studies have investigated how corresponding reading skills between two languages are related through batteries of tasks designed to measure a range of reading subskills, including phonological awareness (Durgunoglu, Nagy, & Hancin, 1993; Bialystok, McBride-Chang, & Luk, 2005; Wang, Perfetti, & Liu, 2005), morphological awareness (Saiegh-Hadd & Geva, 2008) and decoding (Durgunoglu et al., 1993; Geva & Siegel, 2000). Collectively, these studies have established crosslinguistic relationships in a small, but critical, set of subskills across diverse combinations of first and second languages in biliteracy development.

From a language-specific perspective, other studies involving adult L2 learners have examined whether L1 orthographic properties explain variations in L2 decoding behaviors

among L2 learners with diverse L1 orthographic backgrounds. Inasmuch as the critical contrast between alphabetic and logographic literacy lies in the relative reliance on phonological and graphic information during decoding, in these studies, L2 stimulus words were manipulated *either* phonologically (e.g., blocking phonological information by replacing words with unpronounceable symbols, such as தஎ; Koda, 1990) or graphically (e.g., creating visual distortion by replacing real words, such as "read," with their case altered version "ReAd"; Akamatsu, 1999), and the magnitude of the manipulation employed was compared among L2 learners with contrasting L1 backgrounds. Their data demonstrated that diverse L2 learner groups responded differently to the two types of manipulation (Green & Meara, 1987; Koda, 1998; Akamatsu, 1999) and that the reported differences were identifiable with the orthographic properties of the participants' respective first languages (Koda, 1990, 1993; Ryan & Meara, 1991). Viewed together, these findings suggest that previously acquired L1 mapping skills are involved in L2 reading development, systematically altering L2 decoding behaviors.

More recent studies have directly compared the relative impact of L1 and L2 orthographic knowledge on L2 decoding performance. To isolate the impact stemming from each language involved, L2 stimulus words were manipulated *both* phonologically *and* graphically within each study, using a wide range of tasks, including semantic category judgment (Wang, Koda, et al., 2003), associative word learning (Hamada & Koda, 2008, 2010), and word identification (Wang & Koda, 2005). In such a design, the extent that a particular manipulation affects both groups is used as a basis for gauging the L2 orthographic impact, and the extent that the effect of the manipulation varies between the groups serves as an index of L1 orthographic impact. Their data generally suggest that proficiency-matched L2 learner groups are similarly sensitive to L2-specific orthographic properties; that learners with contrasting L1 orthographic backgrounds rely on phonological and graphic information in varying degrees during L2 decoding; and that L2 properties have a much stronger impact on L2 decoding skills formation, overriding the variance attributable to L1 properties.

L2 Orthographic Knowledge

As the key determinants of learning outcomes, input exposure and experience play a vital role in the acquisition of reading skills. Analysis of input properties thus is vital in explaining how the required mappings are acquired in a particular language, and how the resulting skills vary across languages. Despite its obvious significance, little information is available on the nature of L2 print input and its impact on L2 reading development. Of late, however, preliminary efforts are underway to explore how specific input properties enhance the initial stages of learning to read in a second language.

Wang, Perfetti, and Liu (2003) examined how curriculum-based input frequency affects character knowledge development among native English-speaking learners of Chinese. Using a lexical decision task, the researchers found that these learners were capable of detecting structural violations even after one semester of studying Chinese; and that a notable portion of performance variance was accounted for by the frequency of the target characters. These findings imply that adult L2 learners are quickly sensitized to the major structural properties of a new writing system; and that print input frequency greatly enhances the formation of such sensitivity.

The impact of print input and exposure has also been studied with school-age students learning to read Chinese as a heritage language (CHL) (Koda, Lu, & Zhang, 2007). The researchers analyzed the properties of the Chinese characters introduced in Grade 1 through 6 textbooks specifically designed for CHL learners. Based on the analysis, they then measured the students' sensitivity to the identified properties. Their data demonstrated that different facets of morphological sensitivity matured in different degrees in CHL learners;

and that the different maturational rates were systematically related to structural transparency and functional salience of the instructed characters. Taken together, these initial findings suggest that L2 input characteristics play a decisive role in explaining how L2 reading skills are shaped and utilized.

Distance Between L1 and L2 Orthographic Properties

Orthographic distance refers to the degree of similarity between the orthographic properties of two languages. Because combinations of languages are at variance across L2 learner groups, orthographic distance differs in each instance of L2 reading acquisition. When L1 and L2 orthographic systems share similar properties, transferred L1 mapping skills are readily available in the new language without any substantial adjustment. In contrast, when the two are typologically distinct, substantial modifications are necessary for transferred skills to be functional in L2 print information processing. Orthographic distance thus is an additional source of variance in grapheme-to-language mapping skills among L2 readers with related and unrelated L1 orthographic backgrounds. Although distance effects have been widely acknowledged, little has been explored as to how shared structural properties facilitate L2 reading development.

Muljani, Koda, and Moates (1998) shed substantial light on the issue by testing orthographic distance effects on L2 intraword structural sensitivity. Comparing lexical decision performance among proficiency-matched adult ESL learners with related (Indonesian employing a Roman alphabetic script) and unrelated (Chinese using a logographic system) L1 orthographic backgrounds, the researchers found that only Indonesian participants benefited from intraword structural congruity (i.e., spelling patterns consistent between English and Indonesian), but their superiority was far less pronounced with structurally incongruent items whose spelling patterns were not shared with either L1. The findings would seem to suggest that although orthographic similarity has a general facilitative impact, accelerated efficiency is more localized than has been thought, occurring only for the operations whose demands are analogous, if not identical, between two languages.

Similar findings have been reported in studies comparing grapheme-to-morpheme mapping efficiency among L2 learners of English (alphabetic, concatenative) with related (Korean: alphabetic, concatenative) and unrelated (Chinese: logographic, non-concatenative) L1 backgrounds (Koda, Takahashi, & Fender, 1998; Koda, 2000). Not surprisingly, Korean learners were more efficient in morphological segmentation and analysis than their proficiency-matched Chinese counterparts, but the efficiency gap was substantially reduced when the groups were confronted with the items whose structural properties are unique to English. Here again, the findings suggest that the distance effect is far more specific and localized than has been generally assumed.

In brief, the studies investigating crosslinguistic interaction, though still limited in quantity, suggest that L1 reading experience has long-lasting impacts on L2 reading development, explaining a significant portion of the variance in mapping efficiency in proficiency-matched, but linguistically diverse, L2 learners. L1-induced variance is less evident, however, in the items whose features are specific to the target language. Hence, it appears that the formation of L2 mapping skills is guided by insights stemming from both L1 and L2 orthographic properties, but L2 input is the dominant force in shaping those skills in the new language.

To summarize, as the dynamic pursuit embedded in a language and its writing system, reading requires making links between two systems, and its acquisition entails systematic deductions of how spoken language elements are mapped onto the unit of graphic symbols that encode them. The skills optimal for the requisite grapheme-to-language mappings therefore vary across languages. In L2 reading research, the critical question is how orthographic knowledge acquired in one language influences the formation of the

grapheme-language mapping skills in another language. Cumulative evidence suggests that L2 mapping skills emerge through crosslinguistic interaction between transferred L1 skills and L2 print input. L1 and L2 orthographic knowledge thus both contribute substantially, though in distinct manners, to L2 reading development.

SEE ALSO: Bilingual Literacy; Crosslinguistic Influence in Second Language Acquisition; Learning to Read in New Writing Systems; Orthography

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Second Language Representation in the Brain

JUBIN ABUTALEBI AND MEIYUN CHANG-SMITH

Introduction

Second language (L2) representation in the brain refers to the neurolinguistic and neuroscientific study of the cerebral organization of multiple languages in the human brain. From early accounts of selective loss and recovery in bilingual aphasia (i.e., loss of language due to a brain lesion) to recent brain imaging studies, issues inherent in the neurolinguistics of bilingualism have inspired researchers for more than a century. Investigations into the neural basis of bilingualism focus not only on how two languages are represented in the brain (i.e., the anatomical locations) but also on how these languages are processed by the brain. One general assumption is that processing of a supposedly "weaker" L2 may occur via different mechanisms from those that mediate processing of the underlying, "stronger" first language (L1). In this entry, after a brief historical overview, we will illustrate findings inherent in the representation of L2s, followed by a section focusing on bilingual language processing.

Historical Overview

The first scientific approach to studying L2 representation was the study of bilingual aphasics. Several clinical aphasia studies have shown that bilingual aphasics do not necessarily manifest the same language disorders with the same degree of severity in both languages. In some cases, the L1 is recovered better than the L2. In other cases, the converse pattern is manifested. Since the landmark study in 1895 by the French neurologist Pitres, who was the first to draw attention to the frequently differential rates of language recovery following aphasia in bilinguals, many different recovery patterns have been described. These include selective recovery of a given language (i.e., one language remains impaired while the other recovers); parallel recovery of both languages; successive recovery (i.e., after the recovery process has taken place for one language, the other language follows); alternating recovery (i.e., the language that has first recovered will be lost again due to the recovery of the second language); alternating antagonistic recovery (i.e., on one day the patient is able to speak in one language while the next day only in the other); and pathological mixing of the two languages (i.e., the elements of the two languages are involuntarily mixed during language production). The study of bilingual aphasia is important because it indicates the cortical regions necessary for performance of a linguistic task (e.g., speaking in L1).

At present, however, we lack a causal account for the various recovery patterns and hence cannot predict clinical outcomes. Concerning the possible factors involved, no correlation has been found between the patterns of recovery and neurological, etiological, experiential, or linguistic parameters: neither site, size nor origin of lesion, type nor severity of aphasia, type of bilingualism, language structure type, nor factors related to acquisition or habitual use.

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Theoretical conjectures arising from studies of bilingual aphasia developed along two distinct lines: a more traditional approach and a more dynamic one. The more traditional "localizationist" view argued, for instance, that the specific loss of one language would occur because the bilingual's languages are represented in different brain areas or even in different hemispheres. Hence, a focal brain lesion within a language-specific area may impact only on that specific language while leaving the other language intact. In contrast, according to the "dynamic" view, selective recovery arises because of compromises to the language system rather than damages to differential brain representations. A selective loss of a language arises because of increased inhibition, that is, because of a raised activation threshold for the affected or lost language or even because of an imbalance in the means to activate the language because of the lesion. Following this view, a language is not destroyed by the lesion but temporarily inaccessible. It is worth noting that Pitres's proposal was for a "dynamic" explanation of language recovery in bilingual aphasics: Language recovery could occur only if the lesion had not entirely destroyed language areas, but only temporarily inhibited them through a sort of pathological inertia. According to Pitres, the patient generally first recovered the language to which she or he was predominantly exposed (which may not necessarily be the native language) because the neural elements subserving "the more exposed language" were more strongly consolidated in the brain.

A large number of reported recovery patterns in bilingual aphasia may be explained by the dynamic view. As postulated by Paradis (1998), a parallel recovery would then occur when both languages are inhibited to the same degree. When inhibition affects initially only one language for a period of time and then shifts to the other (with disinhibition of the prior inhibited language), a pattern of alternating antagonistic recovery occurs (see Green, 1986). Selective recovery may occur if the lesion has permanently raised the activation threshold for one language. Finally, pathological mixing between languages would occur when languages cannot be selectively inhibited any more.

In general, the aphasia data have provided a rich source of evidence on the range of language disorders and language recovery patterns in bilinguals. However, there are limitations to the generalizability of such data to neurologically healthy individuals. Concerns about the lesion-deficit approach include the inability to determine whether specific language deficits are the result of damage to a specialized language component at the lesion site, or whether the damaged area is simply part of a larger neural network that mediates a given component of language. Likewise, aphasia data do not allow us to separate effects of injury from those of neural plasticity or a reallocation of healthy cortical tissue for the mediation of language functions lost as a result of brain injury. Nevertheless, studying the effects of brain damage on linguistic function in bilinguals has led to a number of interesting observations about the nature and course of language impairment and recovery, which in turn has stimulated researchers to apply functional neuroimaging techniques to investigate bilingual language processing at a more fundamental level.

The Neural Representation of L2

In order to successfully learn an L2, a whole new set of phonological, lexico-semantic, and morphosyntactic knowledge, distinct from the L1, needs to be stored and mentally instantiated. Whereas for L1 acquisition, the shaping and organization of such knowledge usually lead to a fairly effortless tuning of all cognitive processes subtending language, the same phenomenon hardly ever occurs for an L2 learned after early childhood. An important question to unravel is whether L2 learning is constrained by the "critical" time period which is paralleled in neural terms by maturational changes in the brain (McDonald, 2000).

Although it has been clearly demonstrated that successful L1 acquisition can occur only during a certain age span, the same may not necessarily hold for L2 learning. L1 acquisition and L2 learning show clear dissimilarities with respect to the learning processes and the mastering of various components of language. Only in the rare case of simultaneous double L1 acquisition from birth (or from very early childhood) can one see fully balanced acquisition (Chang-Smith, 2009, 2010).

Researchers have hypothesized a "fundamental difference" between L1 acquisition and L2 learning. An influential position, namely the critical-period hypothesis (CPH; Johnson & Newport, 1989; Birdsong, 2006) claims that there is a critical period in acquiring full competence (phonological, lexico-semantic, and morphosyntactic representations) in two (or more) languages. Despite the rapid developments in cognitive neuroscience since the early 2000s, the neurocognitive basis of L2 learning and processing is still not well understood. For example, there is still no firm consensus about how L2 learners comprehend or produce language in real time.

Neural Representation of L2 Grammar

The CPH postulates the existence of a critical period for acquisition of segmental phonology, inflectional morphology, and syntax. Changes to the human language faculty (or language acquisition device) induced by neural maturation are postulated to constitute the basis of the substantial differences between L1 speakers and L2 learners in the acquisition and attainment of grammatical competence (Johnson & Newport, 1989; Birdsong, 2006).

The declarative/procedural model (DP; Ullman, 2001) provides a rationale for the supposition of differential representation by claiming that in normal monolinguals, words are represented in a declarative (i.e., explicit) memory system whereas grammatical rules are represented in a cognitive system that mediates the use of procedure memory (i.e., implicit memory that is processed without conscious awareness). When an L2 is learned after the critical period, it cannot rely on the implicit resources that are used for L1 grammatical processes, and thus grammatical processing in the L2 would be carried out by explicit resources. However, with increased proficiency, aspects of grammar might become increasingly dependent on procedural memory (Ullman, 2001). Since implicit and explicit knowledge are mediated by distinct neural systems (i.e., Broca's area and the basal ganglia for the first type and left temporal areas for the second), late L2 learners would use different and more posterior brain areas (left temporal areas) than would L1 speakers (Broca's area and the basal ganglia) whenever they compute L2 grammar (Ullman, 2001).

In contrast to Ullman's view, Green (2003) argues instead that L2 learning arises in the context of an already specified, or partially specified, language system (i.e., L1). According to the convergence theory (CT; Green, 2003), if Broca's area has learned to compute grammatical processing for the L1 during the initial stages of language acquisition, it will perform the same kind of computation also for an L2. Differences may arise in the initial stages of L2 learning, where additional brain areas for processing the newly learned L2 are required, but once an L2 reaches a comparable degree of proficiency, its neural representation will converge toward that of the L1 (Broca's area and basal ganglia in the case of grammar processing).

A strong source of evidence in favor of the CT comes from studies of artificial grammar learning. In a landmark study, Opitz and Friederici (2004) investigated with functional magnetic resonance imaging (fMRI) the acquisition of language-like rules of an artificial language. Increased proficiency in the artificial language was associated with increased recruitment of Broca's area. In a further study, Friederici, Bahlmann, Helm, Schubotz, and Anwander (2006) confirmed those findings. These results support the notion that learning L2 grammar (albeit an artificial one) is achieved through an existing network mediating

syntax in the L1. In more naturalistic settings (i.e., studies investigating bilinguals) the available evidence clearly points out that both low and highly proficient bilinguals engage for an L2 the same neural structures responsible for L1 grammatical processing. For example, studies investigating single word processing in an L2 such as verb conjugation (Sakai, Miura, Narafu, & Muraishi, 2004) and past tense word processing (Tatsuno & Sakai, 2005) showed increased activity around the areas mediating L1 syntax (i.e., Broca's area). Furthermore, Sakai et al. (2004) showed that the acquisition of grammatical competences in late bilingual twins is achieved through the same neural structures for processing L1 grammar. Such findings appear to be inconsistent with the direct application of the DP model to the bilingual case because the model proposes that the basal ganglia are not involved in syntactic encoding in L2.

In summary, these studies show us that the same set of brain areas responsible for the acquisition and processing of L1 grammar is also involved for those of L2, independently of age of L2 acquisition and proficiency. Second, there may be differences regarding the extent of brain activity in the sense that L2 processing (with a lower degree of proficiency) would entail additional areas located around Broca's area (but not in posterior brain areas as suggested in Ullman, 2001). Third, the differences in the extent of brain activity seem to vanish once the proficiency is comparable to that in the L1; hence the neural representation of the L2 converges to that of the L1 as suggested by Green (2003). However, it remains to be determined why exactly there is more activity for an L2 (especially when spoken with a low or non-native-like proficiency) in Broca's area and surrounding areas. Following Indefrey (2006), it might be that bilinguals compensate for lower efficiency by driving this region more strongly.

Neural Representation of L2 Phonology

Languages differ in many properties, including their phoneme inventories. Correctly perceiving and producing the sounds of an L2 is a challenging task, as evidenced both by widespread anecdotal evidence and by a number of formal studies. Problems of this kind are observed even for those who have been exposed to an L2 for considerable periods of time and hence have had plenty of opportunities to learn its sounds (Pallier et al., 1997). In the same way as for syntactic processing, critical or sensitive periods have been postulated also for phonological processing (Singleton, 2005).

From a neuroanatomical perspective, monolingual phonetic perception and production appears to involve specialized networks in the left hemisphere—the major areas involved are Wernicke's area in the left temporal lobe, the supramarginal and angular gyrus in the parietal lobe, and also Broca's area in the frontal lobe, as shown by functional neuroimaging of both adults (see, for a review, Démonet, Thierry, & Cardebat, 2005) and young infants (Dehaene-Lambertz et al., 2002). Recent neuroimaging studies also provide evidence for a shared neural network for L1 and L2 phoneme perception and production (e.g., Heim & Friederici, 2003). The temporal dynamics in this network during phoneme perception shows a primacy of Wernicke's over Broca's area, while the reversed pattern occurs during production. Heim and Friederici (2003) interpreted this finding with respect to the functionality of the different regions within the shared network, with Wernicke's area being the storage of sound forms and Broca's area the processor necessary to extract relevant phonological information from the sound storage.

We may again pose the question as to whether L2 phonological representations are acquired, stored, and processed in a different manner from those of the L1 at the brain level. A series of studies specifically investigating phonological processing are now available in the literature. For instance, Callan, Jones, Callan, and Yamada (2004) investigated the neural processes underlying phoneme perception using the fMRI method. The same set of phonemes (i.e., English syllables starting with /r/, /l/, or a vowel) were tested on

native English speakers and low-proficiency Japanese L2 learners of English. Greater neuronal activity for L2 compared with L1 speakers of English during perceptual identification of /r/ and /l/ relative to vowels was observed in Broca's area, Wernicke's area, and parietal areas (including the supramarginal gyrus). Conversely, more extended activity for L1 English speakers was found in the anterior parts of the temporal lobe. For L2 English speakers, Callan et al. (2004) suggested that the more extended involvement of neural structures for non-native phoneme identification may be related to the use of internal models of speech articulation and articulatory-orosensory representations that are used to overcome the difficulty in L2 phoneme identification.

In summary, although the functional neuroimaging literature on phonological processing in bilinguals is rather limited (as compared to the multitude of studies investigating morphosyntactic and lexico-semantic processing), some tentative conclusions may be drawn: the available evidence shows that L2 phonology, like grammatical processing, is essentially acquired and processed through the same neural structures mediating that of the L1. As to the extension of brain activity, studies indicate that overall L2 processing is in need of greater recruitment of neural resources. One reason for this observation might be that many studies have used late and low-proficiency L2 learners (i.e., Callan et al., 2003; Wang, Sereno, Jongman, & Hirsch, 2003; Callan et al., 2004), or monolingual subjects who, for the experimental purpose, were asked to learn phonetic contrasts in a foreign language (Golestani & Zatorre, 2004). In the latter case, it is possible that the greater brain activity may reflect the accommodation of a new set of sounds by the existing native speech system rather than the acquisition of a non-native phonetic contrast in an L2 context. In the former case (i.e., L2 English speakers), it is plausible that processing sounds in the L2 is subserved by less well-tuned neural representations, or may require greater cognitive effort, or both, and therefore requires greater neuronal activity than processing sounds in the L1.

Neural Representation of L2 Lexico-Semantics

In the context of the multilingual brain, many studies have addressed the question of whether the neuroanatomical organization of the bilingual mental lexicon may also be affected by neural maturation. One class of models delineates two different levels of representation within the architecture of the bilingual's memory that are "hierarchically" related (Potter, Von Eckardt, & Feldman, 1984). For example, the revised hierarchical (RH) model (Kroll & Stewart, 1994) claims that separate lexical memory systems contain words for each of the two languages, whereas concepts are stored in an abstract memory system common to both languages. At the early stage of L2 development, L2–L1 mediation mainly occurs between translations at the lexical level; with further L2 development (i.e., for highly proficient late bilinguals), L2 lexical codes become more tightly bound to their specific conceptual representations.

By contrast, the other class of models, including the bilingual interactive activation model, postulates three levels of representations (Dijkstra & van Heuven, 2002; see also the interactive model proposed by Silverberg & Samuel, 2004). The lexical level contains words, and "above" them at the conceptual level (lemma level) their meanings are represented, whereas "below" them their orthographic and phonological features (letters and phonemes) are represented at the lexeme level.

The "hierarchical" and the "interactive" models put forward different hypotheses concerning the relationship between the age of acquisition (AOA) of an L2 and the shaping and nature of the semantic conceptual representations for L1 and L2 words, although both models postulate that the L1 and L2 share common conceptual representations, irrespective of the AOA of the L2. In contrast, Silverberg and Samuel (2004) claim that only for early bilinguals will common semantic representations cluster at the conceptual level. However, higher levels of L2 proficiency enable lexical-semantic mental representations more closely

resembling those constructed in the L1. According to Green's CT (2003), many of the qualitative differences between native and L2 speakers may disappear as proficiency increases.

Irrespective of the experimental paradigm employed (such as picture naming, verbal fluency, word completion, and word repetition), functional neuroimaging studies consistently reported common neural activations in similar left frontal and temporo-parietal brain areas, when the degree of L2 proficiency was comparable to that in the L1 (see, for reviews, Indefrey, 2006; Abutalebi, 2008). It is noteworthy that the same set of areas are commonly engaged when monolinguals perform the same tasks. The fact that the observed activation patterns for L2 lexical retrieval were found to be similar, if not identical, to those for the L1 with the same individuals indicates that a bilingual can utilize the same neural structures to perform identical tasks for both languages. Moreover, this happened irrespective of differences in orthography, phonology, or syntax among languages (Chee, Tan, & Thiel, 1999). On the other hand, bilinguals with low proficiency in the L2 engaged additional brain activity, mostly in prefrontal areas (Indefrey, 2006; Abutalebi, 2008). It is also worth mentioning that these findings were confirmed by employing experimental paradigms such as lexical decision and semantic judgment tasks in bilinguals (Abutalebi, 2008). Indeed, low-proficiency bilinguals activated the prefrontal cortex more extensively.

In summary, functional neuroimaging studies illustrate that an L2 is processed essentially through the same neural networks underlying L1 processing. L2-related differences are found for low-proficiency and/or less exposed bilinguals in terms of greater engagement of the left prefrontal cortex or the selective engagement of prefrontal areas located outside the classic language areas (more anterior to language areas).

Neural Dynamics of L2 Processing

How may we interpret the overall finding of greater engagement of the left prefrontal cortex during L2 processing (i.e., if mastered in a not yet native-like fashion), not only in lexical tasks but also, as shown above, during grammatical and phonological tasks? It has been proposed that activity within the prefrontal cortex may reflect executive control over access to short- or long-term memory representations such as grammatical, phonological, or lexical representations to assist L2 processing (Abutalebi & Green, 2007; Abutalebi, 2008).

This leads us finally to discuss one of the most salient and unique aspects of bilingualism, namely "language control." Language control refers to the ability of bilinguals to suppress one language while speaking the other. Indeed, language competition is resolved by actively inhibiting the so-called "non-target language." Consider the fact that individuals can perform different actions as a result of the same stimulus. For instance, a bilingual can name a presented word in the L1 or translate it into the L2. The task goal must be maintained in the face of conflicting goals and the various actions required to perform the task must be coordinated (e.g., retrieve or compute the word's phonology from its spelling or retrieve the meaning of the word and select its translation). Once a given task is established, however (e.g., speaking in the L2), competition with alternative possible tasks (speaking in the L1) may be resolved more automatically. Where individuals wish to alter their goal (for example, to switch from speaking in one language to speaking another), they must disengage from the current goal and switch to the new goal.

Psycholinguistic evidence points to the fact that such interference is more common when speaking a weak L2. In that case, for example, when asked to name a picture in the L2, the bilingual speaker has to inhibit the L1 in order to prevent interference. Functional neuroimaging studies using experimental tasks like picture naming, switching, translating,

and so forth have elegantly shown that these tasks are accompanied by the activation of brain areas that are not directly linked to language representation but rather to executive control (such as the left prefrontal cortex, the left caudate nucleus, and the anterior cingulate cortex; Abutalebi et al., 2007). The engagement of these areas is obviously more relevant when subjects have to process a weak L2 (Abutalebi et al., 2008). The functions generally ascribed to the prefrontal cortex comprise working memory, response inhibition, response selection, and decision making, while the left caudate was reported to be important for language selection and set switching. The anterior cingulate cortex is related to functions such as conflict monitoring, attention, and error detection. It becomes clear that the engagement of these structures provides a cerebral testimony of the cognitive processes inherent to bilingual language processing: competition, and control between languages.

In contrast, a "strong" L2 system (i.e., an L2 in which the speaker is highly proficient) is processed in a more native-like fashion and, hence, in a more automatic manner without the engagement of brain areas related to cognitive control.

Conclusions

What we may conclude is that, first of all, the long-held assumption that the L1 and L2 are necessarily represented in different brain regions or even in different hemispheres in bilinguals is not confirmed by neuroimaging studies. On the contrary, there is ample evidence that the L1 and L2 are processed by the same neural structures. The patterns of brain activity associated with grammatical, phonological, and lexical processing are remarkably consistent among different languages that share the same brain language system. These relatively fixed brain patterns, however, are modulated by a number of factors, chief among which is the degree of L2 proficiency. The complex process of L2 acquisition may be considered as a dynamic process, requiring additional neural resources (i.e., more brain activity) in the early stages. These additional neural resources are mostly found within the left prefrontal cortex, the left basal ganglia, and the anterior cingulated cortex, and seem to be associated with the greater control demand when processing a "weaker" L2 (Abutalebi, 2008). Once the L2 learner gains sufficient L2 proficiency, its processing becomes more automatic and less in need of those additional neural resources. At this stage one may suppose, in concert with existing psycholinguistic evidence (Kroll & Stewart, 1994), that the L2 is processed in the same fashion as the L1.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Critical Period; Crosslinguistic Influence in Second Language Acquisition; Inhibition and Control in Second Language Acquisition; Lexical Access in Bilingual Visual Word Recognition; Models of Lexical and Conceptual Representations in Second Language Acquisition; Organization of the Second Language Lexicon; Research Techniques and the Bilingual Brain; Second Language Speech Perception and the Brain; Sentence and Discourse Processing in Second Language Comprehension; Spoken Word Production in Second Language Acquisition

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Second Language Speech Perception and the Brain

YUE WANG

The theoretical framework of second language (L2) speech perception and processing is based on the nature–nurture interplay in language learning. Theories have traditionally been dominated by the critical-period hypothesis (CPH), which suggests a maturation-based constraint in learning, resulting from the loss of plasticity of the brain after puberty. Current views posit that L2 speech learning is influenced by linguistic experience, as later learning may be constrained by initial exposure to a native language (L1). Nevertheless, speech learning can improve as learners gain experience in the L2, as the mature human brain is believed to remain malleable. While the nature–nurture issues cannot be framed in all-or-none dichotomies, the debate is still current as to the extent to which speech processing and learning are influenced by linguistic experience, or reflect lower-level encoding of physical properties, as well as the extent to which they involve an interconnected system within the realm of cognitive processing. Specifically, research in L2 speech processing and learning has addressed these issues from three perspectives: (a) whether the processing of L2 speech employs specialized neural substrates and how it is influenced by experience with an L1 speech system; (b) how learning-induced plasticity is instantiated in the brain; and (c) how L2 speech learning patterns extend across lower-level sensory physical and higher-level cognitive processes.

Differences in L1 and L2 Speech Processing

To address whether L2 speech engages specialized neural mechanisms, empirical research has investigated the nature of the differences between L1 and L2 speech processing. Initial research on the laterality effects of native and non-native speech compared the processing of Thai lexical tones by native Thai listeners and by English listeners whose L1 was nontonal (Van Lancker & Fromkin, 1973). The task was dichotic listening, in which two different tones were presented simultaneously, one to each ear. Since the right ear is primarily connected to the left hemisphere and the left ear to the right hemisphere through contralateral pathways, a right-ear advantage (indicating left-hemisphere dominance) was expected if tones were processed as linguistic stimuli. The results showed that only the native Thai listeners exhibited a significant left-hemisphere dominance. A follow-up study with musically trained English listeners revealed no hemispheric dominance for tone either, indicating that the left-hemisphere dominance found in the Thai listeners was due to their linguistic experience rather than greater familiarity with pitch contrasts. Consistently, research with Mandarin Chinese tone revealed that while Chinese listeners processed tone predominantly in the left hemisphere, Norwegian listeners exhibited bilateral processing, despite their experience with Norwegian tone (Wang, Behne, Jongman, & Sereno, 2004). Taken together, these studies suggest that left-hemisphere specialization for speech sounds occurs only when they are part of the listener's phonemic repertoire.

The behavioral differences for native and non-native speech processing have been revealed in neural-based studies. One widely used approach is to examine the event-related

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brain potentials (ERP), by comparing the differences in the peak amplitude and latency of brain waves associated with the detection of differences in the stimuli. A particularly important ERP component in auditory speech processing is called mismatch negativity (MMN), consisting of a peak amplitude difference in the waveforms at around 150–200 ms post-stimulus onset upon detection of stimulus differences. Thus, the existence and magnitude of MMN may reflect the ability to distinguish speech sound contrasts. ERP studies have revealed that native and non-native speech processing may involve different sensory acoustic and linguistic levels, with native processing more susceptible to higher-level linguistic influence. For example, in the processing of Hindi stop consonants, an MMN was seen in Hindi but not English listeners, whereas the two groups did not differ in the ERP responses reflecting lower-level processing of acoustic signals (Sharma & Dorman, 2000). Similar processes have been shown with the processing of phonemic pitch contrasts versus within-category acoustic changes in pitch, where only the native group exhibited enhanced MMNs for phonemic differences, but response patterns to acoustic changes were the same for both native and non-native groups (Chandrasekaran, Krishnan, & Gandour, 2009b). Indeed, research has consistently revealed larger MMNs in response to the native speech contrasts than to those that are nonexistent in listeners' native phonetic inventories. These findings indicate that listeners are more sensitive to phonetic features in an L1 phonetic context, demonstrating experience-dependent neural effects in native and non-native speech processing.

Additionally, neuroimaging approaches (such as functional magnetic resonance imaging, fMRI) have been used to examine how the difference between native and non-native speech processing is localized in the brain. These techniques measure regional changes in blood flow in response to changes in neuronal activity, thus enabling localization of particular mental processes. Research has shown that the differences between native and non-native speech processing involve a network of brain regions, which go beyond the classic language areas in the left hemisphere such as Broca's and Wernicke's areas. For example, for lexical tone and vowel duration, native listeners revealed left-hemisphere activation in the pre-frontal, frontal (Broca's), temporal (Wernicke's), and parietal areas, while non-native listeners exhibited predominant right-hemisphere processing but a lesser degree of left-hemisphere involvement, even for those whose L1 was tonal. In contrast, for nonlinguistic pitch or duration patterns the native and non-native listeners exhibited similar patterns of bilateral processing in the frontal and parietal areas (Gandour et al., 2002). These findings agree with the behavioral and ERP results discussed above, indicating a language-specific top-down processing of pitch where non-native listeners' experience with acoustic cues may not be generated to higher-order linguistic processing. Moreover, the processing of different L2 linguistic speech features may involve different neural correlates depending on the nature of corresponding features in the L1. For example, while native tone-language users processed tone predominantly in the left-hemisphere temporal cortex, they processed intonation in the homologous right-hemisphere regions, presumably due to the greater linguistic functional use of tone than of intonation. In contrast, non-native listeners did not reveal any differences for the two tasks since tone was not used in their L1s (Fournier, Gussenhoven, Jensen, & Hagoort, 2010). Likewise, when processing prosodic focus and intonation, Chinese listeners showed different cortical patterns for L1 (Mandarin) and L2 (English) focus but not intonation, presumably because the phonetic manifestations of focus rather than intonation differ in the L1 and L2 (Gandour et al., 2007).

Thus, the behavioral and brain data consistently reveal that, compared to L1, L2 speech processing may involve delayed latency and weaker sensitivity, as well as different and additional cortical regions, with the nature of these differences being determined by L2 users' linguistic experience.

Experience- and Learning-Induced Plasticity

Given the differences between native and non-native speech processing, one subsequent question is the extent to which the human brain has the capacity to change with continuous L2 learning. Empirical research has shown that language-related cortical responses differ as a function of experience with an L2, depending on such factors as age of L2 acquisition (AOA), L2 proficiency, and exposure to and training in the L2.

First, age has been shown to affect hemispheric lateralization for L2 speech: Learners with an early AOA tend to involve more left-hemisphere processing than do late learners (e.g., Sussman, Franklin, & Simon, 1982). Moreover, ERP research has revealed changes in MMN patterns as a function of L2 proficiency, showing that advanced rather than naive Hungarian learners of Finnish approximated native Finnish MMN patterns for processing the Finnish vowel contrasts (Winkler et al., 1999). These findings indicate experience-induced cortical differences in L2 speech processing.

One widely used method to experimentally assess the plasticity of the brain in L2 speech learning is laboratory-based perceptual training. Initial behavioral studies have shown that, after about two weeks' training, adult L2 learners can significantly improve their perception of L2 speech contrasts, suggesting that the adult human perceptual system still has the capacity to change. Consistently, ERP results have demonstrated that training can enhance the MMN responses (particularly in the left hemisphere) to L2 speech contrasts (Zhang et al., 2009). Moreover, changes in neural sensitivity due to training may be differentially affected by listeners' L1. For example, after training with Thai tones, Chinese listeners (with a tonal L1), compared to English listeners (with a nontonal L1), exhibited a larger negativity at a delayed latency, indicating that tonal L1 users were more sensitive to linguistically relevant pitch differences (Kaan, Wayland, Bao, & Barkley, 2007). Training effects have also been exhibited in the spatial domain, showing that the cortical effects of learning an L2 involve both the expansion of preexisting language-related areas and the recruitment of additional cortical regions. After training with English /r–l/, Japanese learners' improvements were associated with extended bilateral cortical and subcortical regions involved with auditory-articulatory mappings related to speech processing (Callan et al., 2003). Likewise, for American learners of Mandarin tones, the cortical instantiation of training effects involved increased and expanded activation in Wernicke's and adjacent areas as well as the right-hemisphere regions homologous to Broca's area (Wang, Sereno, Jongman, & Hirsch, 2003). Moreover, training may result in a higher degree of neural efficiency, focusing on the areas involved in native processing (Golestani & Zatorre, 2004). Particularly, more successful learners have shown increased activation in the left-hemisphere regions associated with L1 linguistic processing, indicating an association between the degree of neural plasticity and language learning (Wong, Perrachione, & Parrish, 2007).

In sum, these patterns indicate progressive cortical changes with training and increased proficiency, suggesting that cortical representations may be continuously shaped with experience and learning.

Across Acoustic, Linguistic, and Cognitive Domains

While L2 speech processing apparently involves language-specific brain mechanisms, it is also a part of an interconnected neural system entailing integrated mechanisms across sensory-motor, linguistic, and general cognitive domains.

As discussed earlier, L2 speech processing may to a large extent overlap with the processing of acoustic information. For example, while native processing of fricative contrasts consistently elicited an MMN in the left hemisphere, non-native processing involved

a shift in MMN amplitude from the right hemisphere for the initial frication noise to the left hemisphere for the later fricative–vowel transition, reflecting non-native listeners' sensitivity to the acoustic differences of the stimuli (Lipski & Mathiak, 2007). Moreover, the weaker and later MMN responses in processing some L2 speech contrasts may have stemmed from the reduction of acoustic information available to L2 learners or to the difficult acoustic context that the neighboring sounds create (Frenck-Mestre, Meunier, Espesser, Daffner, & Holcomb, 2005). Additionally, listeners may seek alternative routes to process L2 speech by encoding the cortical regions used for articulatory-orosensory, primary auditory, and acoustic processing (Callan, Jones, Callan, & Akahane-Yamada, 2004).

As speech processing occurs concurrently with that of other linguistic domains, the processing of L2 phonetic information may uniquely interact with lexical, semantic, and prosodic processing. For example, while Spanish learners showed increased activation in the right-hemisphere regions for processing phonological information compared to semantic information in their L2 (English), the processing patterns for these two types of stimuli in their L1 did not differ, suggesting shared neural networks for L1 and L2 semantic processing but L2-specific phonological neural circuits (Pillai et al., 2003). Similarly, L1 and L2 phonological representations have been shown to differ in the mental lexicon: Spanish-dominant Spanish–Catalan bilinguals exhibited a larger phonological error-related ERP component in detecting words involving Catalan vowels, whereas they showed a larger semantic-related ERP component for words involving Spanish vowels (Sebastian-Galles, Rodriguez-Fornells, de Diego-Balaguer, & Diaz, 2006).

L2 speech processing may also involve cognitive processes such as memory, attention, and cognitive control. Greater attention and cognitive control have been claimed to be associated with additional activities in the prefrontal and anterior cingulated cortex. Likewise, better L2 attainment may be correlated with more optimal engagement of phonological working memory, indexed by greater activation in the left insula (Chee, Soon, Lee, & Pallier, 2004). Additionally, speech shares some neural mechanisms with music, given that pitch and temporal perception are fundamental to both. It is thus conceivable that music experience may facilitate speech learning. Indeed, for linguistic pitch (tone) processing in Mandarin, English musicians approximated the native Chinese patterns with larger MMNs than English non-musicians (Chandrasekaran, Krishnan, & Gandour, 2009a). Music experience has also been shown to facilitate the categorization of prosodic endings in an L2, as indexed by the earlier ERP responses for non-native learners with musical experience compared to non-musicians (Marques, Moreno, Castro, & Besson 2007). These findings imply that long-term experience in pitch across domains may result in cortical plasticity to pitch.

Conclusion and Future Directions

Taken together, empirical evidence cumulatively indicates that L2 speech processing involves experience-dependent but domain-general processes. On the one hand, the processing of L2 speech does encapsulate unique neural substrates under the influence of the L1 system. On the other hand, it does not just engage a single process or a single domain, but rather functions in the context of language processing in general, reflecting the integration of cortical networks across sensory-motor and cognitive levels. Moreover, L2 speech processing involves a dynamic process as a function of experience and learning. A convergence of data speaks against the maturation-based CPH, revealing neural plasticity involving changes in the temporal dynamics and cortical organizations of L2 representations in the brain.

Nevertheless, the nature of the CPH in L2 speech learning is still a matter of ongoing debate, as the brain data have only recently been systematically quantified with the advent

of neuroimaging techniques. It remains to be elucidated how cortical representations can be continuously shaped with learning. Future longitudinal studies tracing L2 speech learning trajectories are needed in order to define the agents of neural plasticity at various stages. Another direction for future research is to take into account individual differences. Although not yet extensively investigated, existing evidence indicates that the nature of individual processing patterns may trace the origin of speech processing as well as predicting learning success. All in all, L2 speech research addressing different stages of learning, different domains involved, and different factors affecting learning will lead us toward a complete picture in unraveling the neural mechanisms underlying L2 speech learning.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Critical Period; Research Techniques and the Bilingual Brain; Second Language Representation in the Brain; Speech Perception

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Second Language Vocabulary Attrition

LYNNE HANSEN

The forgetting of words is commonly experienced by learners of languages after the mother tongue. While loss of languages acquired in classrooms and in foreign and second language contexts has been a focus of research only recently (for an overview of this subfield of applied linguistics, second language attrition, see Bardovi-Harlig & Stringer, 2010), the loss of vocabulary has received greater attention than have other aspects of language, leading to interesting insights on factors which impede or promote lexical retention. While descriptive data-based studies have dominated this area of inquiry, theoretical frameworks suggest promising research directions for the future.

In language attrition research, second language (L2) lexical knowledge has been defined and investigated in various ways (for an early review see Weltens & Grendel, 1993). Thus, the variety of research methods and the complex nature of lexical knowledge need to be kept in mind in the interpretation and comparison of studies of vocabulary loss. For example, pioneering investigations of L2 vocabulary attrition in the Netherlands focused on the receptive knowledge of words, which has since been found to be more readily acquired and less prone to loss than productive knowledge. Although the attriters judged their lexical loss to have been considerable, little attrition was actually found in their receptive knowledge (Weltens, 1989). Thus, Weltens and Grendel (1993) suggested that future research should focus on the *production* of words. Subsequent studies have done so to a large extent as they investigated three main populations of language attriters: (a) college and high school students, (b) child returnees from residence abroad, and (c) returned LDS (Church of Jesus Christ of Latter-Day Saints) missionaries (Bardovi-Harlig & Stringer, 2010).

Linguistic and Extralinguistic Influences on Lexical Attrition

Evidence on the influence of language distance on lexical loss comes from paired-associate learning experiments. L2 cognate translations were learned and retained better than non-cognate translations by university students (Ellis & Beaton, 1993; De Groot & Keijzer, 2000). Thus, the assumption is that the more an L2 word resembles the corresponding word in the first language, the better it will be maintained. This idea is supported further in examinations of vocabulary attrition in natural contexts. For example, Weltens's (1989) study of the L2 French lexicon of Dutch students found high-frequency cognates were retained best while low-frequency non-cognates were most vulnerable to loss. In another adult population, LDS missionaries, the rates of both lexical learning and loss related significantly to the distance between the first language (L1) and the particular L2 learned (Hansen, 2011). Similarly, in a study of L2 English attrition and retention in university students two years after instruction ended, Xu (2010) found that Dutch learners (L1 related closely to English) maintained their vocabulary, while Chinese learners (L1 unrelated to English) experienced lexical attrition.

An early finding on word-length effects on retention was that longer words in L2 German were more difficult to learn and to retain than shorter words by L1 English university students (Ellis & Beaton, 1993). In a more unexpected finding in a study of L1 English missionaries who had learned German, Korean, or Chinese abroad, there was a significant

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effect of the length of the corresponding L1 words on L2 lexical retention (Hansen, Kim, Lee, & Lo, 2010). While L2 word length did relate significantly to retention, the relationship with L1 length was even stronger. In a longitudinal study of returned missionaries, Hansen (2011) found that words relearned by returned missionaries in 2010 differed in length between words they had forgotten before 2000 and words they had forgotten between 2000 and 2010 (earlier forgotten words tended to be longer). The difference did not reach the level of significance for the length of the forgotten L2 words themselves but was significant for length of the corresponding words in L1 English.

Evidence on frequency effects on word retention comes from Dutch and German students returned from study abroad in Spain who named high-frequency Spanish words faster and more correctly than medium- and low-frequency words in a picture-naming task (Mehotcheva, 2010). In a study of returned missionaries, a word's vulnerability to loss related significantly to the number of occurrences per 1,000 in L1 English but not to the frequency of the target word itself in the second language (Hansen, 2011). While frequency affects L2 vocabulary *acquisition* in L2 contexts because it determines exposure (Ellis & Beaton, 1993), in L2 vocabulary *attrition* evidence from the missionary studies suggests that, at least in an L1 context, a word's vulnerability to loss may be affected to a greater extent by frequency of the corresponding word in the mother tongue than by the frequency of the word in the L2.

Although concrete words have been found easier to learn than abstract words (Ellis & Beaton, 1993; De Groot & Keijzer, 2000), several recent studies of the L2 English of Arabic- or Farsi-speaking adults in the Middle East failed to find significant differences between them in vocabulary attrition; nor did they find differences in susceptibility to loss between general versus technical terms (for a review, see Abbasian & Khajavi, 2010).

The importance of age in child lexical attrition has been substantiated in numerous studies which report that the younger the child, the more rapid the word loss (for a review, see Tomiyama, 2009). For example, Cohen's (1989) investigation of the loss of productive vocabulary in Portuguese as a third language of two English–Hebrew bilingual children, aged 9 and 13, found that, after nine months of discontinued contact, the younger subject exhibited greater lexical loss in storytelling than the elder. Yoshitomi (1999) argued that, although not immediately apparent, L2 attrition starts as soon as children return home from a stay abroad.

Although rapid attrition of unused vocabulary is the rule for young children, adults may experience more favorable outcomes, influenced by the extent of their initial vocabulary attainment. For example, in Mehotcheva's (2010) study of returnees from study abroad in Spain, initial Spanish proficiency was the most reliable factor in predicting results on picture-naming scores later on. Similarly, in Xu's (2010) study of the English attrition of Chinese and Dutch university students, one of the main findings was the strong effect of initial L2 proficiency on subsequent retention. For adults who attain relatively high levels of proficiency, such as Dutch students who learn French at school (Weltens, 1989) and LDS missionaries (Russell, 1999), an initial plateau of a few years is reported during which loss is slight. For the returned missionaries this is followed by a more accelerated decline over several decades, which increases in middle age (Hansen, 2011). Learners who attain lower levels of proficiency, however, follow a different attrition path from that of the advanced learners, as in a study of 773 former students of Spanish who experienced significant lexical attrition during the first three to six years following instruction (Bahrick, 1984). Subsequently their knowledge remained level for several decades, with an accelerated decline in middle age.

With regard to affective variables, Weltens and Grendel (1993, p. 146) suggested that learner attitudes and motivation in lexical attrition may have a relatively weaker effect

than in lexical acquisition. To investigate this idea, a research design incorporating several affective variables was used in studies of both missionary vocabulary acquisition (Hansen, Lam, et al., 2012) and returned missionary vocabulary attrition (Hansen, Chong, et al., 2012). The results suggest that, while language-learning motivation has a relatively strong effect in acquisition, it has only marginal significance in the retention of words after return to the English milieu. With regard to attitudes toward the second language and culture, although a positive trend in the relationship with vocabulary knowledge is discernable in the learner data (attitude toward language and culture related significantly to learners' vocabulary score), none is found for the returnees (attitude did not relate significantly to attriters' score). In addition, although belief in a spiritual component in language learning relates significantly to missionary vocabulary acquisition, after return we see no relationship between this belief and subsequent maintenance of mission lexicon. Thus, an overall comparison of acquisition and attrition data of the missionary population supports Weltens and Grendel's (1993) conception of affect playing a relatively minor role in L2 vocabulary loss. Similarly, in a study of the L2 vocabulary retention of Dutch and German students who had learned Spanish in Spain, Mehotcheva (2010) found no firm support for the role of attitude and motivation. Furthermore, in a study of the effects of attitudes toward L2 English on its attrition, Xu (2010) found a modest effect in the lexical attrition of Chinese university students, but none for Dutch students, as pointed out in the earlier discussion of the influence of the distance between the L1 and L2 on vocabulary retention.

In summary, salient linguistic influences on L2 word retention are the distance between the learner's L1 and the L2 (words in related languages are easier to remember), L2 word length (shorter words are easier to remember), and L2 word frequency (more frequent words are easier to remember). However, in L1 contexts of loss, at least, there is evidence that the length and frequency of the corresponding L1 word may have an even stronger influence on retention (if the corresponding word in the L1 is shorter/more frequent, the L2 word will be easier to remember). Extralinguistic influences affecting lexical retention are age (older children retain words better) and vocabulary size (learners who learn more words retain a larger proportion of the words known). Little evidence is found, however, for the influence of affective factors such as motivation and attitudes in L2 lexical attrition.

Theoretical Explanations Applied in L2 Vocabulary Attrition Studies

Hypothesis-driven investigations are in the minority in language-attrition research to date, with most of the studies predominantly empirical and exploratory in nature. Among the few theories applied in studies of lexical loss, the dormant-language hypothesis holds that, even at the end point of attrition, where conscious knowledge is lost, vestiges of the language endure in the mind. In L2 vocabulary attrition research, this idea surfaces in relearning studies motivated by the savings paradigm from cognitive psychology. The savings approach is based on the premise that, for previously known words that can no longer be recalled or recognized, knowledge remains that can be activated in relearning. The hypothesis receives support in studies of the L2 vocabulary of children who had forgotten words learned abroad (Tomiyama, 2001), of adults who had forgotten words learned in childhood (De Bot & Stoessel, 2000), and of adults who had forgotten words learned as adults during residence abroad (Hansen, 2011).

The oldest theory applied in vocabulary attrition research is the regression hypothesis, which predicts that the path of attrition will be the reverse of the path of acquisition (for a review, see De Bot & Weltens, 1991). In a 12-year longitudinal study of the retention of Japanese particles by returned missionaries, Russell (1999) reported that the particles

acquired most recently tended to be lost first, as predicted by regression theory. In cross-sectional missionary studies, having established rank-order scores for missionary vocabulary learning in each of six languages (Chinese, German, Japanese, Korean, Portuguese, and Spanish), Hansen (2011) found that words with higher rank order in the learning period tended also to have an advantage in the retention of these languages over 50 years. Similarly, in a study of the acquisition and attrition of Chinese and Japanese numeral classifiers by missionaries, accuracy comparisons between learners and attriters indicated that the counter words which are most accessible in learning tend to be retained longest, and those which are less accessible in learning are more susceptible to loss (Hansen & Chen, 2001).

Hansen and Chen (2001) also examined their Chinese and Japanese numeral classifier data in light of markedness theory. In L2 acquisition theory, hierarchies of markedness impose paths of least resistance (acquisition orders) in language learning. For classifiers, research on their occurrence and development in many languages has established an implicational scale of markedness which tended to be adhered to by the adult learners and attriters in both their learning and loss of counter words. That is, the least marked classifiers tended to appear earlier and to be retained longer.

Conclusion

There has been progress in our understanding of lexical attrition since Weltens and Grendel's (1993) conclusion that the effects of such variables as proficiency level, language distance, and attitude were unclear. While we have seen clarification of the influences of these and other factors in vocabulary loss since the early 1990s, still we are left with a shortage of theoretical explanations for the phenomenon. Furthermore, current trends in science are away from models which are based on linear and hierarchical assumptions such as those of markedness and regression theory.

The applications of the savings paradigm in vocabulary relearning studies attest to the continuing presence in memory of "forgotten" words. What appears to happen in the course of language attrition is a general reduction in the availability of lexical information. Through disuse, the language attriter may initially take longer to retrieve lexical elements. Over time the search for stored knowledge may increase in length and difficulty until the final stage of L2 vocabulary attrition when words are entirely inaccessible or, as we say, "forgotten."

A criticism of the previous approaches for explaining lexical attrition has been the failure to recognize the systematic and dynamic nature of vocabulary knowledge. In remedying this weakness, dynamic systems theory (DST) is suggested as a promising candidate to be used in accounting for language and language development (De Bot, Lowie, & Verspoor, 2005). However, the theory is challenging due to the complexity of interacting factors in the systems and lack of clarity about the methodology which could be applied. Another suggestion comes from Meara (2004) who states that real strides in theorizing about the L2 lexicon will occur only when vocabulary researchers take on board the radically new ways of looking at vocabulary that are emerging on the edges of computational linguistics. However, the potential interest in these ideas lies largely in experiments that have not yet been conducted.

SEE ALSO: Cognates; Second Language Word Difficulty; Vocabulary Acquisition in Bilinguals; Vocabulary Acquisition in Second Language Acquisition; Vocabulary Loss in the First Language

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Second Language Word Difficulty

BATIA LAUFER

To understand why some words are easy and some are difficult for second language learners, we should first clarify what is meant by knowing a word. Word knowledge can be defined as the information about a word which is stored and interconnected in our mind. This knowledge has typically been described as consisting of a range of aspects of knowledge including knowledge of spoken and written form, morphological knowledge, knowledge of word meanings, knowledge of the word's grammatical features, knowledge of how the word is related to other words in the language (i.e., paradigmatic and syntagmatic associations), and knowledge of constraints to be observed in the use of the word (Richards, 1976; Nation, 2001). Thus, knowing a word has been seen to involve a variety of different kinds of interrelated "subknowledges." The term "word" includes multiword units which form one unit of meaning. Thus *of course*, *as a matter of fact*, *put off*, and *sit on the fence* are treated as words and the features of difficulty discussed here are relevant to single words and to multiword units.

A word can be known receptively or productively. Receptive knowledge is associated with listening and reading and implies that we are able to comprehend the input and are able to perceive the form of the word and retrieve its meaning or meanings. Productive knowledge is associated with speaking and writing and implies that we can retrieve the appropriate spoken or written word form of the meaning that we want to express. Ideally, knowing a word means mastering all the "subknowledges," both receptively and productively. In practice, however, each of these "subknowledges," or features, can be mastered to various degrees by a second language (L2) user.

We will now look at separate features of knowledge in terms of potential learning difficulties they may induce. We will notice that some of these difficulties are related to the word itself, others to the interaction between the word and other words familiar to the learners either in their first language (L1) or in the language they are learning. As our concern here is the intrinsic difficulty of words, we will not discuss other factors outside the word and the lexicon, which may affect learning difficulties, such as teaching techniques, learner motivation, word frequency in the input, and so forth. Nor will we discuss non-objective word features such as meaningfulness and imageability. A word can evoke a different number of images and have differential meaningfulness to different people. Similarly, we will not discuss abstractness, which is related to the degree of imageability, which, in turn, can be user-related.

Spoken Form: Pronounceability

The difficulty of an L2 word may depend on how easily it is pronounceable in terms of its individual phonemes, their combinations, or suprasegmental features (stress, tone, intonation). The difficulty of pronunciation is largely determined by the learner's L1 phonological system. The L1 system may be responsible for the learner's inability to discriminate between some phonemes and subsequent confusion of words differing in these problematic phonemes. Examples of problematic pairs of words for learners of English are: *ban/van* for Spanish speakers; *live/leave*, *bad/bed*, and *think/sink* for speakers of Hebrew;

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six/sex for speakers of Arabic. Similarly, the initial consonants or clusters in *just*, *shop*, and *strange* may be hard for Spanish speakers, while the final clusters in *clothes* and *film* are hard for speakers of Hebrew. The variability of English stress (*photograph*, *photography*, and *photographic*) with subsequent weakening of vowels in the unstressed syllable may also affect the difficulty of word pronunciation.

Written Form: Spelling

The degree of sound–script correspondence in a word can be a facilitating, or difficulty-inducing factor. Learners of Italian will know how to pronounce a new word they see in a text. So will learners of French, provided they know which letter combinations represent which sounds (e.g., eau /o/) and that final consonants are not pronounced (e.g., *printemps*). In English, however, the written form of a word may provide no clues to its pronunciation, for example, the letter *o* is pronounced differently in *love*, *chose*, *women*, and *odd*. Words with incongruence between the sound and the script are good candidates for mispronunciations and spelling errors. A different writing system in L1 can also account for some difficulties in the recognition and production of written words. Native speakers of Semitic languages, which do not represent all the vowels in script, tend to be "blind" to vowels in English and confuse written words with identical or almost identical consonants *pulls/pulse*, *decimal/dismal*, *available/valuable*, and *embrace/embarrass.*

Word Form: Morphological Structure

Some inflectional features that can affect word difficulty are irregularities of plural, gender of inanimate nouns, and noun cases. Among derivational features of difficulty are irregularities in the combination of morphemes (e.g., *over* in *overfly* means 'on the top/across', but in *overthrow* it can mean 'put an end to' and in *overcook* 'too much') and deceptive transparency (Laufer, 1989). Deceptively transparent words look as if they were combined of meaningful morphemes, though they cannot be broken into morphemes, for example, *shortcomings* was interpreted by students as 'short visits' (*short* + *comings*), *discourse* as 'in the wrong direction', *infallible* as 'something that cannot fall down', and *outgrow* as 'grow outside'.

Synformy: Similarity of Lexical Forms

Studies of lexical errors in writing, association tests, and tests that elicited distinctions between words showed that learners tend to confuse words that are similar in sound, script, or morphology (Laufer-Dvorkin, 1991; Fitzpatrick, 2006). Similar lexical forms were called "synforms" by Laufer. She identified 10 categories of synforms, each category representing a different pattern of similarity. Some examples of synforms are: *adapt/adopt*, *conceal/cancel/counsel*, *embrace/embarrass*, *cute/acute*, *lunch/launch*, *industrious/industrial*, *exhausted/exhaustive*, *economic/economical*, *sensible/sensitive/sensual*.

Grammatical Properties of a Word

Most problems with grammatical properties of the word result from L1–L2 difference. For example, if a prepositional verb in one language is nonprepositional in another language, or a count noun in one language is noncount in another, learners tend to transfer the L1 grammatical properties. Hebrew L1 speakers drop the preposition in *operate on*, but add

a preposition to *enjoy* and say **enjoy from*. They also assign the plural form to some non-count nouns **advices*, **evidences*. Word class and length are sometimes claimed to affect word difficulty. However, it is not clear that these features can be properly isolated from other word properties. For example, long words can be combined of familiar morphemes, as in *unavoidable*, and this familiarity facilitates learning.

Meaning

The most important property of word knowledge is the ability to connect word form to its meaning, or meanings for those words that have several meanings. Semantic knowledge also entails the awareness of boundaries between semantically similar words, for example, *wastebasket* and *rubbish bin*, *walk* and *stroll*. Languages share lexical common ground resulting from universality of human experience. Without such common ground, it is questionable whether teaching and learning foreign vocabulary would be possible. Yet different languages classify some areas of experience in different ways by means of words. When the foreign language and the learner's mother tongue classify an area of experience in the same way, that is, attach a different "label" to a similar concept, the only learning task is to remember a new word for a familiar referent, for example, English and French *write* and *écrire*, *computer* and *ordinateur*. However, in many cases, the "parallel" concepts in the two languages do not overlap. For example, both *house* and *home* are expressed by the same word in French *maison.* Similarly, *evaluate*, *appreciate*, and *estimate* are translated in Hebrew as *leha'arich*. The semantic boundaries between *cup* and *glass* are not the same as between *kos* and *sefel* in Hebrew. Though *a glass* cannot be made of plastic and *a cup* can, both *kos* and *sefel* can be made either of plastic, paper, or glass. A particular word in one language may cover only part of the uses of its translation "equivalent" in another language, and each of the words has other uses of its own. For example, *go* can be translated into Hebrew as *halach* in *He goes to a good school.* But *go* is translated into *nasa* when the action involves some kind of transport as in *He went from London to Paris*. But *nasa* can also mean *travel* and *halach* can mean *walk*. *Walk*, however, can be translated as *tijel* when an element of leisure is involved. Lack of word-for-word overlap between L1 and L2 meanings is also the most important factor in collocation (word combination) difficulty (Nesselhauf, 2005), as will be mentioned later. For example, *follow instructions* is translated by *obey instructions* in Hebrew. Lack of one-to-one overlap in the lexical coverage of a concept is a source of learning difficulty. In addition to traditional error analysis studies which showed that this was one of the major L2 lexical difficulties (Duškova, 1969; Ringbom, 1982), some recent psycholinguistic studies lend support to the same conclusion and show that even advanced L2 learners map English words onto the L1 concepts (Jiang, 2004).

Languages can be different in the figurative meaning of a word or word phrase even though their literal meaning may be similar. So the literal meanings of *red tape* and *miss the boat* is identical in English and Hebrew. However, there is no idiom in Hebrew which means *red tape* in the sense *bureaucracy* and the figurative expression for 'miss an opportunity' is 'miss the train'. Laufer (2000) found that some types of idioms are avoided in L2 production even when learners are familiar with them, particularly idioms that do not exist in the L1 or are partially similar to the L1, as in the two examples above. Yet idiomaticity seems to present a difficulty even when the L1 and the L2 are similar in the idioms. Kellerman (1986) found that Dutch learners of English assumed that some idioms with the words *break* and *eye* would not transfer to English even though they were identical in the two languages. Grant and Bauer (2004) distinguish between figuratives and core idioms. Figuratives are expressions where with some effort a relationship can be seen between the parts and the whole, as in *give the green light* and *just what the doctor ordered*. Core idioms

are expressions where the meaning of the parts does not provide access to the meaning of the whole, as in *by and large* and *out of hand*. They constitute a much smaller group, yet they are very difficult to learn.

An extreme case of lack of semantic overlap is a lexical void, which means that an L2 word has no translation in the L1 due to nonexistence of a concept denoted by the L2. Spanish does not seem to have exact equivalents for *fussy*, *fidget*, and *grudge*; Hebrew has no equivalent for *cozy*, *quaint*, or *in-laws*. Learning a word which is a void in L1 is a difficult task since a new concept has to be created together with a word to represent it.

Language learning would be easier if one form were associated with one meaning. In practice, one word form could represent several meanings (e.g., *bank*, *subject*, *lie*), or one meaning could be represented by different word form (e.g., *lift/elevator*, *meet/encounter*).

Learners who came across such words in a text and were familiar with one meaning only did not abandon it even though it did not make much sense in context (Bensoussan & Laufer, 1984). For example, *since* (because) was interpreted as *from the time when*, and *course* (duration) as *part of a meal*. In production, learners may prefer words without multiple meaning, for example, *The Labor party was in power* rather than *The Labor party was in office*.

Form and Meaning vis-à-vis L1

Many words in a newly learned language may be similar in their form to the word form in learners' L1 since some languages are historically related (e.g., English and French) and even languages unrelated genetically borrow words from other languages. Thus a French-speaking learner of English will have no problem learning *liberty*, *simple*, and *educate* because they are similar to *liberté, simple,* and *éduquer*. These words are called "cognates" in languages that are related historically, and "borrowed words" in unrelated languages. However, sometimes though the form is similar in two languages, the meaning is not. In French, *actuel* means 'topical', not 'actual', *sympatique* means 'nice', not 'sympathetic'. Words that are similar in form but different in meaning are called "false friends." In learning these words, learners have to dissociate a familiar form from a familiar meaning and acquire a different one.

Register

Learners are often unaware of the fact that lexical items that are frequent in one mode of discourse may sound strange in another, or that words that are acceptable when used with some interlocutors may be out of place with others. For example, *the lesson commences at 9 a.m.* sounds strange in spoken language. A teacher would not suggest to a parent that she take her child to a *shrink*.

Word Combinations: Collocations

Collocations are habitually occurring lexical combinations that are characterized by restricted co-occurrence of elements and relative transparency of meaning, for example, *submit an application*, *heavy traffic*, and *follow instructions.* Since many collocations are comprehensible if the learner is familiar with the individual words, the difficulties occur in language production. Some collocations are overused by learners, by comparison with native speakers, for example, collocations constructed with core verbs (*be*, *have*, *make*, etc.), while other native-like collocations are not used at all (Cobb, 2003). Errors are abundant in the performance of learners, including in the language of advanced college learners, particularly when collocations differ in L1 and L2 (Nesselhauf, 2005; Laufer & Waldman, 2011).

Conclusion

The discussion above shows that word difficulty implies mastering patterns of knowledge that learners are unfamiliar with. For example, words that refer to concepts familiar from L1 are easier than words that denote concepts nonexistent in L1; a word with several meanings is more difficult than a word with one meaning. It also follows from the discussion that active or productive knowledge is more difficult to achieve than passive or receptive knowledge because there is more to learn about a word in order to use it correctly (except in the case of borrowed words). Comprehending a word requires the knowledge of its meaning. The other features of the word are provided by the text writer or speaker. Using a word, on the other hand, requires the knowledge of its pronunciation, or spelling, collocations, grammatical features, and register.

SEE ALSO: Approaches to Second Language Vocabulary Teaching; Depth of Vocabulary Knowledge; Lexical Collocations; Lexical Transfer and First Language Effects

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Segments

ROBERT S. CARLISLE

What Is a Segment?

Oral language is a system of communication that relates sound to meaning. Speakers of languages know that the meanings of words are different from one another because words are composed of different sequences of sounds. Native speakers of English, for example, will correctly state that *frog* has four sounds, revealing an ability to perform a rudimentary segmental analysis to identify the sound segments, also known as phones, found in human language. Though identifying the segments in words seems like a simple task, it is actually quite remarkable because any analysis of the physical record of the stream of speech displays that speech is a continuous property that does not readily reveal even the boundaries of words let alone the boundaries of individual sounds. Nevertheless, speakers can identify individual sound segments, and the assumption that words can be divided into discrete sounds, the absolute slicing hypothesis (Goldsmith, 1976), has been a necessary condition for the development of the International Phonetic Alphabet and modern phonology (see Odden, 2005, as an example). Further evidence for the existence of discrete sounds comes from the ability of speakers to manipulate them both consciously and unconsciously. When people play oral language games such as pig Latin, they consciously manipulate individual sounds by first moving one; if a word begins with a consonant, they move it to word-final position. Next, they insert a long *a* sound (here denoted as *ay*) to the end of the moved consonant. So a phrase such as *big bad beast* is rendered as *igbay adbay eastbay*. Speakers also unconsciously move sounds. Slips of the tongue reveal that speakers can transmute two sounds from two different syllables or words provided that they occur in the same position in both sources. Famous examples of this transmutation come from spoonerisms such as the uttering of *the queer old dean* for the intended *the dear old queen*. Speakers could only make such errors if sounds were discrete and independent. Further evidence for the manipulation of discrete sounds is that speakers of any language can produce sounds in isolation. If asked to produce the sound of *s*, speakers will, nearly without exception, produce an *s* sound. One last piece of evidence is that if speakers are given an environment such as __*at* and asked to create words by inserting one sound, they can produce an inventory of words such as *cat*, *fat*, *mat*, and *rat*.

Phoneticians and phonologists cannot pinpoint the exact number of segments in language, but Ladefoged (2005) estimates that the world's languages contain about 600 consonants and 200 vowels. Some of these segments are so similar, however, they could not occur in the same language to signal differences in meaning; that is, they are not contrastive in the same language. For example, English and Russian have a *p* sound, both of which are bilabial; nevertheless, the two differ in articulation. Whereas English speakers merely bring their lips together to form the sound, Russian speakers draw their lips slightly inward before putting their lips together, so although the two differ in articulation and count as two segments in the world's languages, acoustically, the two sounds are so similar no language uses both to contrast meaning.

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Phonemes and Allophones

A change in sound can result in a change in meaning, a point easily verified with a minimal pair test. A minimal pair consists of two words that differ by only one sound occurring in the same position in both words; for example, the words *far* and *tar* form a minimal pair because *f* and *t* contrast in the same environment, *_ar*. Sounds contrasting in the same environment are known as phonemes. Phonemes, however, are not actually individual sound segments in themselves; rather they are cognitive abstractions physically represented by a number of phonetically similar segments that speakers classify in the same phonemic category. Take the phoneme /k/ in English as an example. (Phonemes are encased in slashes, also called virgules.) This phoneme is realized by a number of phonetically similar sound segments known as allophones. These different allophones differ on two features and different combinations of those features. The first feature is place of articulation; /k/ is normally a velar sound as in *cool*; that is, the back of the tongue rises up and touches the velum. However, when /k/ is pronounced before a non-low front vowel as in *key*, the body of the tongue moves further forward and touches the palatal region; in other words, the /k/ becomes palatalized, which readers can prove to themselves by uttering the words *cool* and *key* back to back a number of times. The second feature distinguishing the different allophones of /k/ is aspiration, an audible puff of air occurring between the release of the sound and the beginning of the vibration of the vocal cords that is a feature of the following sound. The aspirated allophones of /k/ occur in syllable-initial position before stressed vowels. As concrete examples of how these features configure differently, the *k* allophone in *cat* is aspirated, but not palatalized; the one in *kin* is aspirated and palatalized; the one in *skin* is palatalized but not aspirated; and the one in *scone* is neither aspirated nor palatalized. As just exemplified, different allophones of the same phoneme have different configurations of features, and where the different combinations of features occur depends upon phonological environment. The ability of native speakers to produce the appropriate allophone in any particular environment contributes to the speakers' accent. If a native speaker of English were to substitute an unaspirated *k* allophone in *kiss* for the normally aspirated allophone, he or she would not change the meaning of the word because allophones of the same phoneme do not contrast, but the person would no longer sound like a native speaker.

Segments and Features

Segments are not indivisible, being composed of subsegmental properties known as features. Among other properties, features identify the place of articulation of a segment (where in the oral cavity a sound is produced), whether it is voiced or voiceless, whether it is a vowel or consonant, whether it is oral or nasal, and whether it is a continuant (a sound that can be lengthened, such as *s*) or a noncontinuant (a sound that cannot be lengthened, such as *t*). For example, the segment [s] is composed of the following features: [+consonantal], [–sonorant], [–syllabic], [–nasal], [+continuant], [+anterior], and [+strident]. Each segment in a language is composed of a unique set of features, known as a feature matrix. However, the importance of features is not only to uniquely describe how each segment is produced, but to identify natural classes, groups of sounds that share one or more features and function as a group.

The members of a natural class function as a group in two ways. First, phonological processes apply to the sounds comprising a natural class. For example, vowels in American English are nasalized before nasals; that is, vowels acquire the feature of [+nasal] as in *bone* but not in *boat*. Second, natural classes frequently comprise the phonological environment in which a process takes place. As mentioned above, the natural class of vowels becomes nasalized only before the natural class of nasals. The production of a unique

segment in a given phonological environment displays the fact that speakers configure the phonetic features of segments in different environments; thus vowels which normally lack the feature of [+nasal] in their feature matrix acquire that feature only before nasals.

Segments in Second Language Acquisition

One great task facing second language (L2) learners is to configure features to produce the appropriate segments in given environments in the L2. The difficulty of this task is revealed in the great variability displayed in interlanguage segmental phonology; L2 speakers generally use a number of segments for any target segment in the L2. Some of these segmental variants come from the transference of sounds from the first language (L1); others appear novel and completely unpredictable. In addition, the production of segmental variants is greatly constrained by language universals.

Variation

In the 1960s a few sociolinguists began applying quantitative methodologies to analyze dialects, a procedure known as variation analysis (e.g. Labov, 1966, 1969; Wolfram, 1969). In the mid-1970s researchers began applying variation analysis to the study of interlanguage phonology, finding that L2 phonological production is also characterized by variability; L2 speakers use a number of variants for any L2 target segment, and the frequency with which the segmental variants occur is influenced by phonological environment. Variation is so common in L2 phonological production that Major (2001) has asserted that "any model, theory, or purported explanation that fails to account for variation is not accounting for the data, period" (p. 60).

Among the first to apply variation analysis to L2 acquisition were Lonna and Wayne Dickerson. L. Dickerson (1975) examined the production of (z) in English by native Japanese speakers. (Variables are encased in parentheses.) The variable had five variants with four environments conditioning the frequency with which the variants occurred. The target variant, [z], occurred most frequently before a vowel, less frequently before silence, and least frequently before consonants. In a second study with native Japanese speakers learning English, W. Dickerson (1976) examined the production of (l) in prevocalic position. The variable had five variants, conditioned by two sets of interacting constraints, one set before the variable and one set after. The target variant [l] occurred most frequently after silence, less frequently after a vowel, and least frequently after a consonant. The height of the vowel following the variable also influenced the frequency of the target variant, its presence being most frequent before a low vowel and least frequent after a high vowel. These two constraints interacted so that the target variant occurred most frequently in word-initial position before a low vowel, as in *lap*, and least frequently as the second member of a biliteral onset before a high vowel, as in *sleep*. (An onset consists of all consonants before a vowel in the same syllable, so the *sl* in *sleep* is a biliteral onset.)

In their third study with Japanese speakers learning English, Dickerson and Dickerson (1977) examined (r) in prevocalic position, finding that the occurrence of the target variant [r] also depended on the height of the following vowel: The lower the vowel, the higher the frequency of the target variant. In another early study, Gatbonton (1978) examined the production of the voiced *th* sound—(ð)—in English by French speakers and found that the occurrence of the four variants was conditioned by five preceding environments within and across word boundaries, the target variant [ð] occurring more frequently after a vowel than after any of the four consonantal environments.

Later studies relying on sophisticated statistical procedures revealed which phonological environments best induced the presence of target variants. For example, Rau, Chang, and

Tarone (2009) examined the production of the voiceless *th*—/θ/—in English by native Chinese speakers. As in previous studies, the researchers found that the L2 learners produced a number of variants including the target variant [θ]. Using a VARBUL analysis, the researchers were able to rank the environments and even combinations of environments that favor and disfavor the presence of the target variant. The L2 speakers produced a higher frequency of the variant in an onset, *thin*, than in a coda, *with*. (A coda consists of all the consonants after a vowel in the same syllable.) They also produced the target variant more frequently both in onsets and in codas when it was the only member, so the target variant appeared more frequently in words such as *thin* and *with* than in *three* and *fourth*. Finally, the target variant appeared more frequently in both onsets and codas when the vowel of the syllable was simple rather than a diphthong; consequently, the target variant appeared more frequently in words such as *thank* and *math* than in *thousand* and *mouth.*

Transfer

Transfer is a vital process in the structuring of interlanguage segmental phonology; learners readily transfer L1 segments into the L2. Positive transfer occurs when an L1 segment substitutes for a phonetically similar segment in the L2. For example, in Spanish the sound *n* is normally dental whereas the *n* in English is alveolar. Speakers of either language learning the other will tend to transfer the L1 segment into the L2 without hindering communication. Negative transfer of segments occurs when the substitution results in difficulties in communication. Spanish does not have a high back rounded lax vowel as in the English words *would* and *stood*, and Spanish speakers first learning English tend to transfer their high back tense vowel, with the consequence that *a good look* sounds like *a gude luke*.

Early adherents of contrastive analysis, such as Lado (1957), claimed that sounds that are similar across the L1 and L2 would be easy to learn, and those that are different would be difficult. However, this claim has been challenged by researchers such as Flege (1995), who proposed that the similarities between two languages rather than their differences cause the greatest problems in the authentic production of L2 segments. This is because L2 learners may perceive an L1 sound as equivalent to one in the L2 even though they differ on some features. Once L2 learners regard two sounds as equivalent, they may not make further effort to reconfigure the necessary features to make the L2 sound more native-like. For example, both French and English have voiceless stops: *p*, *t*, and *k*. In French these sounds are never aspirated. In English, however, the stops are aspirated in syllable-initial position before a stressed vowel. When English speakers learn French, they must learn to suppress aspiration. However, English speakers apparently regard their aspirated segments as equivalent to the French unaspirated segments and tend to produce segments with more aspiration than the French norm even after considerable experience with the L2 (Flege, 1987).

In contrast, some segments that are entirely nonexistent in the L1 may be relatively easy for learners. Flege (1987) examined the production of the French high front rounded vowel as in *tu* and found that English speakers had little difficulty producing it even though it is nonexistent in English. Also, Japanese speakers were able to successfully acquire the trilled *r* in Russian (Larson-Hall, 2004) though they apparently have much more difficulty acquiring the non-trilled *r* in English, supporting Archibald's claim (2009) that L2 learners may be able to acquire new sounds if they consist of salient phonetic cues. Archibald also asserts that some L2 sounds may be relatively easy to acquire if L2 learners can reconfigure features already present in the L1. However, as previously discussed, even though English speakers can produce unaspirated voiceless stops, they have difficulty suppressing aspiration when required to produce them in syllable-initial position in languages such as Spanish and French.

Though much evidence exists for transfer being an important process structuring interlanguage phonology, research has also revealed that L2 learners produce segments in the L2 not found in either the L1 or the L2. For example, Nemser (1971) found that Hungarians learning English sometimes substituted *sth* for [θ], a sound occurring neither in English nor in Hungarian. In addition, Major (1986) found that Spanish speakers learning English produced an *r* sound not evident natively in either language.

Language Universals

A strong version of the contrastive analysis hypothesis asserted that researchers should be able to predict which sounds L2 learners would transfer, but a lot of research evidence weighs against this claim. For example, speakers of European French and Quebec French learning English substitute different sounds for the voiceless *th*, the former generally substituting [s] and the latter [t] even though they speak the same native language (Brannen, 2002; Lombardi, 2003). Further evidence against predictability comes from the variability found in the production of L2 segments previously discussed.

Eckman (1977) increased the ability of researchers to predict which segments would be easier to acquire by supplementing contrastive analysis with the notion of markedness as revealed through implicational relationships. Two structures are in an implicational relationship if the presence of one implies the presence of the other. The implied structure is marked (less preferred universally) relative to the other structure (see Greenberg, 1965, for examples). One example of markedness is the relationship between voiced and voiceless obstruents in word-final position. (Obstruents are consonants produced by two articulators actually touching or coming very close together; examples of voiceless obstruents include *p*, *t*, *k*, *f*, and *s*.) Many languages, such as Basque, German, Finnish, and Russian, allow only voiceless obstruents in word-final position. Other languages, such as English, allow a voicing contrast in word-final position, but no languages allow only voiced obstruents in word-final position, revealing that voiceless obstruents are less marked than voiced obstruents in that position. Flege and Dravidian (1984) examined the production of word-final voiced stops in English by native speakers of Spanish, Mandarin, and Polish. Spanish allows only a small number of continuants in word-final position; Mandarin allows only sonorants; and Polish allows both sonorants and obstruents, but the obstruents are devoiced. Because Polish speakers devoice obstruents in word-final position, the expectation was that Polish speakers would devoice more frequently than would the speakers of the other two languages. However, given that voiceless obstruents are less marked than voiced obstruents, speakers of all three languages should devoice some voiced obstruents in word-final position. The results supported the prediction: Polish speakers devoiced 48.3% of the final voiced stops; Spanish speakers 43%; and Mandarin speakers 29.5%, revealing that even speakers of languages that do not have either voiced or voiceless stops in word-final position will frequently produce the less marked variant.

The role of language universals is especially evident in the insertion of segments. L2 learners variably insert an unstressed vowel to modify onsets and codas disallowed by the syllable structure conditions of the L1. For example, neither Spanish nor Portuguese allows onsets consisting of [s] followed by another consonant. When native speakers of these two languages attempt to learn languages such as English or Swedish, which allow sC onsets, they tend to insert a vowel before the onset, thus forming a new syllable beginning with the vowel. The frequency of this vowel insertion (known as prothesis) depends upon the structure of the onsets because they are in implicational relationships, some being more preferred universally than others. The length of the onset is a factor; languages having sCC onsets as in *spleen* also have sC onsets as in *spoon*. Research has clearly demonstrated that L2 learners will more frequently use prothesis before the longer onset than before the shorter (Carlisle, 1997). Even sC onsets of the same length are in implicational relationships, so onsets consisting of [s] followed by an obstruent are more marked than

those consisting of [s] following by a nasal, which in turn are more marked than those consisting of [s] following by a liquid, /l/ or /r/. Again, research has revealed that these implicational relationships influence the frequency of prothesis. L2 learners use prothesis most frequently before words such as *stop*, less frequently before words such as *snow*, and least frequently before words such as *slow* (Carlisle, 2006).

Just as prothesis is a prevalent strategy for modifying onsets, deletion is a prominent strategy for modifying codas, and again syllable structure universals influence the frequency of deletion. Universally, longer codas imply the presence of shorter codas. If a language, such as English, has triliteral codas as in *forced*, it will have biliteral codas as in *lost*, and singleton codas as in *lot*. Research in L2 acquisition has revealed that the frequency of deletion correlates with the length of the coda. Weinberger (1987) examined the production of word-final codas by four adult speakers of Mandarin and found that they modified 5.5% of the singleton codas, 29.8% of the biliteral codas, and 42% of the triliteral codas. Anderson (1987) examined the production of English codas by native speakers of Egyptian Arabic and of Amoy and Mandarin Chinese. The native Arab speakers modified 2% of the singleton codas, 17.4% of the biliteral codas, and over 30% of the triliteral codas. The Chinese speakers modified 20% of the singleton codas, 50% of the biliteral codas, and 74% of the triliteral codas. For both groups, increases in the length produced significant increases in the frequency of modification.

Interlanguage phonology is a complex system characterized by inherent variability, and even though researchers have evidence for important processes such as transfer and the moderating influences of language universals in the structuring of the system, they are just as far from accounting for the formation of interlanguage phonology as they are from accounting for the formation of interlanguage syntax (Archibald & Young-Scholten, 2003).

SEE ALSO: Comparative Phonetics and Phonology; Foreign Accent; Generative Second Language Phonology; Intelligibility; International Phonetic Alphabet; Phonetics and Phonology: Overview; Phonological Acquisition; Phonological Analysis; Prediction in Teaching Pronunciation; Syllables

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Sejong the Great and the Creation of Hankul

JAE JUNG SONG

Sejong the Great (1397–1450) is regarded as the inventor of Hankul, arguably the most scientific and systematic writing system in the world. Sejong's writing system was devised on the basis of his understanding of the sound system of Korean, the equivalent of which can be found in some of the fundamental principles of modern phonology. The name of the writing system was initially Enmwun (meaning 'vulgar writing') but was changed in 1912 to Hankul (originally meaning 'great writing' but now generally understood to mean 'Korean writing').

Sejong, the third son of King Taejong of the Yi Choson Dynasty (1392–1910), ascended the throne in 1418 as the dynasty's fourth king at the age of 22. He was an unusual king in the sense that he was not only a monarch but also an exceptional scholar. Sejong's achievements during his reign (1418–50) are well documented not only in military expeditions but also in other areas, including agriculture, arts, law, music, medicine, science, and technology (see Kim-Renaud, 1992). The world's first udometer was invented under his auspices in 1442, almost two hundred years earlier than a similar device appeared in the West. In 1420, he established Ciphyencen ('The Academy of Worthies'), where he fostered a wide range of literary and other scholarly activities, including the "testing" of Hankul.

Unlike most monarchs that the world has known, Sejong was most benevolent. His philanthropic attitude toward his people was epitomized by his invention of Hankul. Having no script of their own, Koreans had had to draw upon characters imported from China. Although there had been a few attempts to adapt Chinese characters (as the Japanese had done with their Hiragana and Katakana systems), the dominant writing system in Korea, until the end of the 19th century, was Chinese. Only the powerful and educated (i.e., the ruling class) were able to learn and use Chinese characters; the masses had no access to writing of any kind. Sejong, educated in Chinese writing and classics, was so concerned about the absence of a writing system for ordinary Koreans that he decided to invent one. The documents explaining his own justification of Hankul and the exposition of the writing system have survived. The king made a remarkable statement in the preface to *Hwunmincengum* ("The Correct Sounds for the Instruction of the People," October 9, 1446):

> The [sounds] of our country's language are different from those of the Middle Kingdom [China] and are not confluent with [the sounds of Chinese] characters. Therefore, among the [ignorant] people, there have been many who, having something to put into words, have in the end been unable to express their feelings. I have been distressed because of this, and have newly designed twenty eight letters, which I wish to have everyone practice at their ease and make convenient for their daily use. (translation from Ledyard, 1966)

Not surprisingly, the ruling class held on to Chinese characters even during Sejong's reign. Chinese was an emblem of their high social status. Monarchs who contemplated any departure from the norms of the ruling class would be seen to jeopardize the very

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Table 1 Hankul: the basic set

Consonants														
ㄱ	ㄴ	ㄷ	ㄹ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㅌ	ㅍ	ㅎ	
Vowels														
ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ					

foundation of that ruling class and ultimately of the monarchy itself. The amount of opposition to Hankul from the ruling class was indeed almost insurmountable. Following Sejong's death, Hankul was relegated quickly to the status of a "vulgar" writing system, used mainly by women and commoners. The situation did not change until the rise of Korean nationalism in the late 19th century. It is against this backdrop that Sejong's initiative in inventing the Hankul writing system must be understood and appraised.

When the invention of the Hankul writing system was announced in 1443–4, there were 28 letters, four more than in present-day Hankul. Four original letters dropped out of use due to subsequent changes in Korean. The 24 letters used in present-day Hankul are in Table 1.

Three important things need to be noted about the conceptual basis of Hankul, as explained clearly in *Hwunmincengumhaylye* ("Explanations and Examples of the Correct Sounds for the Instruction of the People"). First, some of the letters, particularly consonant letters, have a strong articulatory basis in their formal design. For example, consider the letter symbols for /k/ and /n/. In order to produce /k/, the back of the tongue must be raised so that it comes into contact with the soft palate or velum. The outline of the tongue in that position served as the basis for the shape of the letter ㄱ. The sound unit of /n/, in contrast, is produced by putting the tip or blade of the tongue against the upper front teeth. The outline of the tongue in that position formed the basis for the shape of the letter ㄴ. Second, this articulatory orientation is augmented by the way some of the "complex" letters were designed on the basis of "simple" letters. Common phonetic properties—or distinctive features, in phonology parlance—are consistently indicated by strokes added to basic letters. For instance, the difference between the lax and aspirated stops in Korean (i.e., /p, t, c, k/ vs. /ph, th, ch, kh/) is aspiration or a strong puff of air. The lax stops don't have this property whereas the aspirated stops do. The presence of aspiration is marked by the addition of the same vertical stroke to the letter symbols for the lax stops. The letter symbols for /t/ and /k/ are ㄷ and ㄱ, respectively, and those for /th/ and /kh/, that is, ㅌ and ㅋ, respectively, are based on the former letters with the addition of the same horizontal stroke in appropriate places. The third point concerns the fact that the same consonant letters are used regardless of whether they appear in syllable-initial or syllable-final positions. For instance, the same letter symbol ㄱ is used whether it begins or ends a syllable. This may sound like too obvious a point, but this fact was not recognized in the received Chinese scholarly view prior to, and at the time of, the invention of Hankul. More importantly, the concept of abstract sound units or phonemes was well understood in the creation of Hankul. For example, the same symbol ㅅ is used to represent two different realizations (i.e., allophones) of the same phoneme /s/. This phoneme is pronounced either as [ʃ] before the front high vowel /i/ or as [s] before other vowels. This difference is "ignored" in Hankul as, being contextually determined, it does not contribute to meaning (i.e., the very concept of phoneme in modern phonology). These and other characteristics must be regarded as an insightful discovery on the part of Sejong himself.

Table 2 Hankul: the complete set

Consonants																		
ㄱ	ㄲ	ㄴ	ㄷ	ㄸ	ㄹ	ㅁ	ㅂ	ㅃ	ㅅ	ㅆ	ㅇ	ㅈ	ㅉ	ㅊ	ㅋ	ㅌ	ㅍ	ㅎ
Vowels																		
ㅏ	ㅐ	ㅑ	ㅒ	ㅓ	ㅔ	ㅕ	ㅖ	ㅗ	ㅘ	ㅙ	ㅚ	ㅛ	ㅜ	ㅝ	ㅞ	ㅟ	ㅠ	ㅡ	ㅢ	ㅣ

Hankul is said to have only 24 letters (Table 1). There are in reality as many as 40 letters in all (Table 2). However, the popular claim that Hankul has only 24 has some truth in it in that the additional 16 are not produced *ex nihilo* but on the basis of the "basic" letters in Table 1. The design of some of the additional letters is also well motivated in phonetic terms. The letters for the tensed stops (and tensed fricatives) are a case in point. When the tensed stops are produced in Korean, the airstream is blocked not only at the place of articulation, for example [pp] at the lips, but also at the vocal cords. This property of the tensed stops is represented in Hankul by "doubling" on the lax stop letters. For example, the symbol for /pp/ is designed by the juxtaposing two instances of the symbol for /p/, i.e., ㅃ vs. ㅂ.

Finally, mention must be made of "the block principle" in Hankul. Sounds combine with one another to form larger units known as syllables. Syllables are made up of one vowel and one or more optional non-vowel sounds, that is, consonants and semivowels. The concept of syllable plays an important role in Hankul. Instead of appearing in a linear fashion (like English), Hankul letters are assembled into graphic blocks. For example, consider the word *tal* 'moon'. Instead of arranging the three letters for /t/, /a/, and /l/ in a linear manner as in the romanized rendition *tal*, the block principle ensures that these letters be all represented in a single graphic block. The word *tal* is written as 달. The block principle makes good sense in view of the fact that, when Hankul was invented, the predominant writing system was that of Chinese characters, which were (and are) written in graphic blocks. Hankul began to be used—and still is to a certain extent—in conjunction with Chinese characters. Thus it was almost inevitable for the Hankul letters to be written in graphic blocks in line with Chinese characters.

SEE ALSO: Language Policy and Planning: Overview; Phonetics and Phonology: Historical Overview; Phonetics and Phonology: Overview

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Self-Access and Independent Learning Centers

HAYO REINDERS

Introduction

Self-access centers (SACs) are learner-oriented language learning environments that encourage the development of learner autonomy. SACs provide materials, activities, and staff support to help learners develop the skills necessary for taking control over the content, pace, and method of their learning. SACs do not have to be physical spaces (although in practice they often are); increasingly, learning environments are being designed that either combine a physical space with an online *support* system or provide all elements of self-access online (see, e.g., Alford & Pachler, 2007; Conacher & Kelly-Holmes, 2007; "My English" in the online resources section below). SACs are especially common at tertiary institutions, although they exist at all other school levels, including in primary schools.

Self-Access Pedagogy

SACs developed from the early 1970s as one practical manifestation of the development from behaviorist to constructivist and humanist approaches to learning. In many cases, SACs have replaced existing language laboratories to offer an environment where the focus is firmly on the individual learner and on encouraging learners to take responsibility for their own learning process. SACs do not generally offer set materials or a curriculum, and teacher involvement is mostly limited to *supporting* individual learners and to *facilitating* the (self-)study process (Lamb & Reinders, 2006).

SACs are not only different from the teacher-controlled laboratories they replaced but are also not simply a specialized type of library. Libraries are repositories of information, and although SACs contain a large number of materials and systems for retrieving them, their focus is on the learning process and on supporting this, rather than merely on the provision of information. Another misconception is that self-access learning is the same as self-study. Although a great deal of learning in a SAC is generally done individually, most centers offer spaces and activities for learners to work together. Some organize language exchanges, pair students to work together, or offer materials and activities that require group work.

Although SACs aim to develop autonomy, self-access learning is not necessarily autonomous learning. It is possible for students to simply do their homework there or to follow the teacher's instructions. SACs are often used for remedial purposes, when students are given materials appropriate to their level and interest in order to catch up with the rest of the class. In other words, different types of learning (and even teaching) are possible in a SAC.

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Elements of Self-Access Centers

The most immediately recognizable element of a SAC or (online) system is the provision of materials. The selection, creation, and adaptation of materials for self-access is different from that for classroom teaching. As the materials are generally chosen and used by students themselves, they need to be clearly described in terms of their level, their content, and many other aspects, and then recorded in a way that facilitates student access to this information. Commonly this is done through the use of a computer database that students can search by using specific parameters. In addition, materials are usually coded by color or in some other way, and placed together by topic or level so as to provide easy access. Materials also need to be self-contained, meaning that they need to include all the information and ancillary materials necessary to allow learners to use them without the help of a teacher. This means that the instructions need to be comprehensive, that sufficient explanation needs to be given, and that answer sheets and feedback mechanisms need to be included. When evaluating SACs, it is important to determine whether the materials have been successfully adapted for self-learning. It is not uncommon to find materials for self-study (Jones, 1993) or for self-access (Reinders & Lewis, 2006) that offer students little support to work without the help of a teacher and that fail to include advice on analyzing needs, setting goals, or monitoring improvement.

Another common element of SACs is the provision of language learning activities. These include pair work such as language exchanges and "study buddy" programs, as well as group activities such as "discussion groups," "movie clubs," and "reading circles." Some centers also offer workshops, usually with some focus on improving learning skills (as opposed to the development of language skills only). For example, a workshop on writing skills might focus on ways of proofreading or getting feedback from others, rather than (only) on the elements of a good essay.

Perhaps the defining element of SACs is their focus on the development of learner autonomy. A range of methods is used to increase students' awareness of the language learning process and their own role therein. Most SACs offer some kind of needs analysis, ranging from self-assessment sheets to large-scale institutional assessments. Most also offer instruments for setting and keeping track of learning goals. These can be in the form of a learning diary or an (online) portfolio and in some cases include computer monitoring of learning activities and improvement. The provision of strategy instruction, either through workshops or through self-study worksheets, is also common. In many cases there is some focus on the development of metacognitive strategies, such as those needed for planning one's learning and monitoring progress. Finally, in some centers students' learning is actively monitored by an adviser (see below) or with the help of the computer. For example, the Electronic Learning Environment at the University of Auckland records the amount and type of learning and matches this with the student's language needs. Where a mismatch is detected, the computer will prompt the learner to change either their goals or their learning behavior (Reinders, 2007). Such systems are becoming more common and are in some cases replacing the SAC as a physical center with a completely online system.

Many centers also include language advising or language counseling sessions (although sometimes these are offered as a stand-alone service) (Mynard & Carson, 2012). A language advisory session is a meeting between a student and an adviser with the aim of improving the language learning experience for the student. An adviser and a student may, for example, work together to identify the student's learning needs and to identify the most appropriate resources and learning strategies, and the adviser may give feedback on learning progress. The eventual aim of such sessions is to encourage the students to reflect on their own learning, and to gradually ask them to make all decisions of the learning process by themselves.

Benefits of Self-Access

The purported benefits of self-access include its flexibility in allowing learners to study whenever, however, and (in the case of online self-access) wherever they want. Self-access can offer learning opportunities where traditional courses are unavailable or not feasible because of students' time constraints, or because institutional language needs are too great or diverse to be met through regular classroom education. The pedagogical benefit of the greater control learners have in self-access is the increased individualization of the learning process; students can work on those areas that are relevant to them, and may therefore be more motivated to continue their learning outside the classroom, or to see a stronger connection between their classroom and out-of-class learning.

There have also been claims about the potential for self-access to lower the costs of language education. In practice, however, this is often not the case. SACs still need to be staffed with language advisers and need constant updating of their materials, as well as extensive technical support. They are rich in materials and technology and therefore expensive to establish and maintain. Some SACs are established mainly to reduce the number of classroom teaching hours, and learners are not given sufficient support. In these cases, the SAC functions more as a computer room or homework center and the pedagogic benefits are minimized.

The most important potential benefit of self-access is its contribution to the development of learner autonomy. SACs are intended to focus students' attention on the learning *process* and encourage them to become responsible for managing their own learning. Learners can develop the skills to plan and monitor their own learning, find their own resources to support themselves, and learn to work with other learners. In this way, SACs have the potential to empower and help students prepare for their lifelong learning.

SEE ALSO: Innovation in Language Teaching and Learning; Self-Assessment; Technology-Supported Materials for Language Teaching

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Online Resources

The Bibliography of Learner Autonomy contains over 1,700 references in the area of autonomy as well as self-access and independent learning. Researchers can add their own publications: www.autonomybibliography.info

The self-access learning environment "My English" can be accessed here: http://myenglish.kmutt.ac.th. The University has provided a username and password that can be used as a guest account. Functionality of the guest account is limited.

The AILA Research Network for Learner Autonomy has an active community and a regularly updated Web site with articles, news, and information about conferences in the areas of autonomy and self-access: www.ailarenla.org

Language advising http://ec.hku.hk/1to1

Self-Assessment

SARI LUOMA

Self-assessment of second or foreign-language ability refers to the language learner's evaluation of his or her own language skills, usually in connection with a language course or as part of other forms of language assessment. Self-assessments typically ask students to respond to closed or open-ended questions or "can do" statements to indicate how well they feel they can perform in the language. In classrooms, self-assessment activities may also include learner diaries, self-reports, and periodic self-assessment of achievement of course goals, as well as learners' contributions to portfolios. Sometimes self-assessment is conducted directly after learners perform a language task by asking students to rate their own performance according to specific criteria. Self-assessment can be used to increase students' awareness of the criteria by which teachers and others judge their language skills. Sometimes self-assessment is also used in language research when multiple observations of language ability are needed, or as a quick method to get a rough estimate of respondents' language skills in large-scale surveys, as in the Eurobarometer studies (e.g., European Commission, 2001). This entry concentrates on the use of self-assessment for learning-oriented purposes.

Background

Epistemologically, the rise of self-assessment in education is associated with the rise of sociocultural theory in education (Gipps, 1999). Sociocultural approaches contrast with the traditional, hierarchical concept of teaching where the expert teacher transmits knowledge to the pupil and accordingly exerts the power of the expert in examining the students' knowledge. Sociocultural approaches, in contrast, emphasize the role of the learner and the learning community in the learning process and outcomes. From this perspective, learners should also be engaged in the assessment process with the aim of sharing power and responsibility with them and, ideally, producing engaged, motivated learners who monitor themselves and who are aware of their goals and in charge of their learning (Broadfoot, 1996). As the learner becomes more engaged and empowered in the learning and assessment cycle, the teacher's role in this approach becomes that of a guide and supporter. Self-assessment is an important tool to engender this engaged participation (Black & Wiliam, 1998).

Many proponents of self-assessment in language education, including Oscarson (1997) and Little (2005), point out that the development of self-directedness needs to proceed in small steps and with careful guidance from the teacher. Otherwise, as exemplified in studies quoted by Gipps (1999), learners will find self-assessment challenging and therefore perhaps not very appealing. When support is given, however, as exemplified by Hasselgreen (2003) and Little (2005) among others, even primary-grade students can develop an autonomous learning style through repeated, concrete self-assessment tasks answered with the help of the teacher; associated goal-setting for next steps of learning at a concrete level; and periodic summaries of these assessments to look back on the students' progression of achievement.

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Some Prominent Examples

Self-assessment started to be promoted in language education relatively late, compared to other fields of education and research. One of the early efforts was coordinated by the Council of Europe in the early 1970s. A working group within the Council developed a communicatively oriented system for adult foreign-language learning with a strong emphasis on learner autonomy. They first defined the outline of an adult-oriented language-learning program called the threshold level (Van Ek, 1980). The threshold level did not include actual self-assessment instruments, but it defined in detail the acts that the language learner should be able to accomplish in order to act *independently* in the target language environment (early "can do" statements). Soon afterwards, the Council also published the first compilation of suggested self-assessment questionnaires for language learning (Oscarson, 1978). Subsequent developments of the Council of Europe's work include:

- The Common European Framework of Reference (CEFR; www.coe.int/t/dg4/linguistic/cadre_en.asp), which includes self-assessment as an integral component of the envisioned learning path and specific advice for considering the place of self-assessment in the learning course (Council of Europe, 2001; full text also available from the link at the Council of Europe portfolio Web site: www.coe.int/portfolio). The CEFR presents a self-assessment grid where the Council of Europe's six proficiency levels are defined in short statements for comprehension (listening and reading), speaking (spoken interaction and spoken production), and writing. The appendixes include more detailed DIALANG self-assessment statements for listening, reading, and writing, as well as the ALTE "can do" statements for listening/speaking, reading, and writing, which are meant for the use of educators who are helping language learners achieve their goals (ALTE, 2002; www.alte.org/cando/).
- The European language portfolio (ELP) (www.coe.int/portfolio; Council for Cultural Cooperation, 1997; Schneider & Lenz, 2001), which is a three-part document intended to support and verify a learner's accomplishments in language learning. It includes a language passport, a language learning biography, and a dossier where learners can display their work in all the languages they know. Self-assessment forms a prominent part of the "language passport," which opens with a self-assessment grid that covers the CEFR self-assessment categories listed above. The intention is that the learner regularly updates this grid for each language that he or she knows (see also www.coe.int/t/dg4/portfolio).
- DIALANG (www.dialang.org; Huhta et al., 2002), a computer-based diagnostic language assessment system for fourteen European languages. Self-assessment features prominently in the DIALANG design. If users choose a test of listening, reading, or writing, they are asked to self-assess their abilities before starting the test by answering 18 can do statements. The self-assessment is used in assigning them to one of three levels of test difficulty. When the test is completed, the users get feedback on the test results as well as the degree of match between their self-assessment and test performance. They may also choose to view advice on possible reasons for mismatches.

Parallel to the Council of Europe work, self-assessment practices and methods were also developed in other learner-oriented language learning frameworks. A classic American example is Chamot and O'Malley's (1994) CALLA framework. CALLA is a cognitive approach to language teaching that is based on explicit teaching of learning strategies. Self-assessment forms the core of metacognitive strategies, which include planning, monitoring, and evaluating. Monitoring encompasses students checking for comprehension and evaluating their own comprehension and production during task performance.

Evaluation forms its own phase in the CALLA lesson sequence, during which students are asked to explicitly reflect on what they have just learned and evaluate how well they have learned it, how well the strategies they used worked for them, and what they might want to do differently next time they meet a task like this. The evaluation is conducted through simple, structured forms as part of the CALLA classroom routine.

Self-assessment also plays a central role in constructivist approaches to assessment, especially portfolio assessment. The language learner's portfolio is a broad, student-assembled collection of tasks that represent the student's language learning from a defined period, such as a course, a school semester, or even a multi-year language-learning program. In addition to final products, the portfolio may include successive drafts of a particular piece, self-evaluations, and journal accounts of learning processes. It should include an explanation of criteria for choosing particular pieces to display, a reflection of the student's learning process, an evaluation of its successfulness, and plans for future learning goals (Paulson, Paulson, & Meyer, 1991). Similar to the CALLA approach, the focus in portfolio assessment is on the development of learner autonomy through improved self-monitoring and self-evaluation skills.

Questions, Challenges, and Ways Forward

An obvious question about self-assessments is their validity as indicators of learners' language ability. Researchers have investigated this question by comparing self-assessment results to teacher grades or test scores, and the results are mixed. Oscarson (1984), summarizing several studies, found that adult students' self-assessments corresponded fairly well with teacher evaluations, and Hasselgreen (2000) found that with initial support, 11–12-year-old Norwegian students were "almost disconcertingly realistic about what they can and cannot do in English." Chen (2006), studying Taiwanese college students of English, similarly found that the students' self-assessments corresponded well with teacher ratings after the students received training in self-assessment.

In contrast, Patri (2002) investigated self and peer assessment of oral presentation skills in English at a university in Hong Kong and found that when students met in small peer groups to receive feedback on an oral presentation, their peer evaluations matched teacher evaluations fairly closely, whereas the accuracy of their self-assessment did not improve after peer feedback. Noting a pattern of low performers overestimating and high performers underestimating their own and their peers' skills, Patri speculated that the students' perceptions about their own performance were too strong to be influenced by peer feedback, whereas the students more readily changed their peer evaluations upon hearing the views of others. Kaivanpanah and Alavi (2008) investigated Iranian learners' self-assessment of their vocabulary knowledge. Students had to assess how well they knew the meaning of words they likely did not know in three texts. In between two rounds of self-assessment, they completed a vocabulary test that asked them to define the meaning of the same words that the self-assessment questionnaire included. Results indicated that students overestimated their knowledge of unknown words both before and after they completed the vocabulary test, and only very slight improvements were found between the two self-assessments. The researchers suggested that self-assessment may be influenced by culture, as Iranian males turned out to overestimate their vocabulary knowledge significantly more than females, which the authors considered to correspond with their cultural upbringing. The issue of individual and cultural factors influencing self-assessment has also been raised by numerous other researchers (e.g., Oscarson, 1997; Alderson, 2005) and remains an open area of research, especially important in contexts where the comparability of self-assessments between students from diverse backgrounds is of importance.

Another key question in self-assessment is whether there is systematic variation between self-assessments either in terms of the methods used to derive the self-assessment or the skills being assessed. Ross (1998) investigated this question by conducting a meta-analysis of 60 studies that compared self-assessments and external assessments and combining this with an original empirical study on the accuracy of student self-assessments during a learning course. Based on earlier studies, he suggested that learners are likely to provide more accurate self-assessments (using external assessments as criteria) if they respond to can do statements that define concrete language use experiences that are familiar to the learners than if they are asked to use a proficiency scale with more abstract definitions of language skills. His meta-analysis indicated that students were more apt at self-evaluating their reading and listening skills than their speaking and writing skills, though notably, the correlation coefficients between self-assessments and other measures for listening varied widely between studies. He explained the findings by noting that self-assessment statements typically describe contextualized language use situations, and students may have many more such experiences with listening and reading than with speaking and writing.

During the past ten years, conceptual developments in self-assessment in language learning seem to have reached a plateau. Most of the substantial studies referenced in this entry were written in the last two decades of the 20th century. The newer studies, while proposing new instruments, have not brought up any significant advances in the theory or practice of self-assessment. Neither have new proposals for self-assessment use arisen recently from the area of learning-oriented language assessment. This may be because the current research base offers reasonable support to the ways self-assessment is used in the service of language learning, so there is little urgency to develop better tools or to understand better how to interpret and use the results. Or, new developments might be just around the corner. For example, in connection with the CEFR-related studies, Little (2005) raises the question of whether the can do statements focus too much on tasks and too little on the quality of language needed to address the tasks effectively, such as grammatical accuracy, phonological control, or sociolinguistic appropriateness. Such evaluations are typically made by language teachers, and it will be interesting to see whether it is possible to develop effective self-assessment instruments for the same purpose (see www.beds.ac.uk/research/bmri/crella/cando for an English profile can do project). Another recent proposal by Alderson (2005) reintroduces Bachman and Palmer's (1989) suggestion of perhaps developing negatively worded self-assessment statements ("I cannot (yet) do X" or "I have difficulty doing Y") for diagnostic purposes. Such applications of self-assessment in new contexts and purposes might provide interesting results in the future.

SEE ALSO: Common European Framework of Reference; Sociocultural Theory; Teaching Language-Learning Strategies

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Selinker, Larry

LYNNE STALLINGS

> What I gradually realized was that no matter what we did . . . my Yiddish-speaking grandmother, in the United States about 50 years . . . , could not be understood by her grandkids who only wanted to speak English. . . . But some in that ghetto could do better than others. . . . I remember wondering: "What's going on here?"; "Why can't she do that?"; "How can this be?" All these issues still intrigue and excite me. (Selinker, 2006, p. 201)

Larry Selinker (1937–), Emeritus Professor of Applied Linguistics at the University of Michigan, writes this scenario and its corresponding questions to reflect what he calls "the fossilization puzzle," in which the majority of language learners fail to achieve the language abilities of a native speaker. It is this puzzle that has provided the impetus for his career and the significant contributions he has made to the field of second language acquisition (SLA), a remarkable accomplishment given that SLA was not yet a field in the early 1960s when he began his graduate studies.

As an undergraduate studying Hebrew language and literature at Brandeis University in the 1950s, Selinker took advantage of early opportunities for hands-on experience with language learning and teaching, studying abroad in Israel in his junior year, teaching English in the Republic of Guinea after completing his master's degree in linguistics at American University, and then teaching English for foreign students. Since then, Selinker has held primary teaching positions at the Universities of Washington, Michigan, and London, and has taught linguistics and applied linguistics courses as well as English Institute courses.

While some of Selinker's most prominent work, as captured by the scenario above, centers on language transfer, interlanguage, and fossilization, which are detailed below, a significant part of his early experience was shaped by his teaching at the University of Washington, where he and Louis Trimble were asked to teach English for science and technology (EST) courses in the Engineering Department. What began as specialized teaching courses resulted in large-scale research projects about the discourse of science and technology, resulting in collaborative articles about EST (e.g., Selinker & Trimble, 1974; Selinker, Todd-Trimble, & Trimble, 1978).

As a PhD student at Georgetown University, Selinker was a student of Robert Lado, whose 1957 article set forth procedures, via contrastive analysis (CA), for making comparisons between a learner's native language (NL) and the target language (TL), suggesting that differences would allow observers to make predictions about learners' errors. In Lado's CA courses, therefore, Selinker and his peers compared first and second language systems, predicting what parts of the native language the learners would "tend to transfer" to the TL (Lado, 1957, in Selinker, 1992, p. 7). In the early 1960s, however, with the field reflecting on Noam Chomsky's critique (1959) of B. F. Skinner (1957), the theoretical underpinnings of the field were shifting from behaviorist principles to more cognitive-based principles. Following this shift, although Selinker and his peers frequently challenged Lado that "the contrastive analysis thing was wrong," they learned a valuable lesson from Lado, who "had his students go out and empirically test [the hypotheses]" (Selinker, 1996).

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In his dissertation, Selinker followed Lado's advice, continuing on to explore "linguistic and psychological factors involved in language transfer" (Gass & Selinker, 1993, p. 5). Testing the extent to which Israeli Hebrew teens transferred NL word order of object, time, and place expressions (e.g., I bought downtown the postcard) to the target language, English (e.g., I bought the postcard downtown), Selinker did find effects of NL transfer on the TL, but also concluded, among others (see Nemser, 1971 and Corder, 1967, cited in Selinker, 1972), that the NL–TL dichotomy was insufficient in predicting what errors learners would make.

During a Fulbright Fellowship with Pit Corder at the University of Edinburgh (1968–9), Selinker addressed that gap, asserting that the learner must, in addition to the NL and TL, have an interlanguage (IL). Specifically, Selinker defined interlanguage as "a separate linguistic system based on the observable output which results from a learner's attempted production of a TL norm" (1972, p. 117). In interlanguage, the learner is neither using the NL nor the TL, but instead a system with its own set of grammatical rules. Selinker provides the example of a native Hebrew speaker who, although fluent in English, would produce the sentence, "What did he intend***ed*** to say?" (emphasis added), when speaking English. This sentence reflected neither English nor Hebrew syntax, and was thus part of the learner's interlanguage system.

Furthermore, Selinker (1972) identifies at least five second language learning processes that explain IL behavior: language transfer, transfer of training, second language learning, strategies of second language communication, and overgeneralization of TL linguistic material (1972, p. 118). To illustrate these processes, the language transfer process, for example, might result in a learner transferring a sound from the NL to the TL. Thus, Selinker provides the example of a French learner of English who uses the French /r/ (a uvular sound) when pronouncing English words with "r" in them (1972, p. 119). In addition, the interlanguage example in the previous paragraph represents the overgeneralization process whereby learners overgeneralize rules to the TL such as the past tense morpheme "-ed" (p. 121).

Selinker explains that an adequate second language theory must also account for the fact that a majority of learners, like his grandmother, continue to produce incorrect structures in the TL even after they have been learned. To account for such observational data, Selinker introduces and defines fossilization, whereby learners "will tend to keep . . . surface linguistic material . . . in their IL productive performance, no matter what the age of the learner or the amount of instruction he receives in the TL" (1972, p. 134).

These seminal pieces of research have undoubtedly influenced second language acquisition studies, moving the field beyond the NL–TL dichotomy that was present in CA, but also resulting in several related publications that served to forward and refine Selinker's ideas. Another noteworthy publication by Selinker is *Rediscovering Interlanguage* (1992). Published 20 years after Selinker's first interlanguage article, the premise of the book is to help the field more clearly understand IL by relating it to historical texts in the field. Borrowing from Garfinkel (1967, cited in Selinker, 1992), Selinker adopts a "purposeful misreading" methodology to read foundational texts in CA, error analysis (EA), and bilingualism, for example, from fresh perspectives (Selinker, 1992, p. 4). He is careful to note that in rereading texts, readers should take care not to focus on the "defects [which] lead . . . to the infamous 'baby and bathwater syndrome'" (Selinker, 1992, p. 3).

To illustrate Selinker's approach, consider CA as a case in point. Selinker acknowledges that he was "part of the unfortunate movement that threw out the contr[astive] analysis baby with the bathwater" in the 1960s (Selinker, 1996), admitting that most CA research has since been disregarded:

> It is a pity that the CA literature, especially the CA dissertation literature, is a buried literature and thus so unknown. It is perhaps an intellectual tragedy of sorts, since so much detail is worked out in this literature . . . from this literature, the interested language teacher or SLA researcher can create scores of testable hypotheses about what L2 learners are doing and be helped by CA detail to investigate IL. (Selinker, 1992, p. 97)

Nonetheless, he demonstrates how a purposeful misreading approach might show the value of CA and, in particular, "how rich a theory [Lado] really had" (Selinker, 1996). Explaining that CA was rejected because of strong statements that promised too much (e.g., "The learner will do X or Y," Selinker, 1992, p. 3), Selinker revisited Lado's work, examining his work for hypotheses that might prove useful for SLA theory today. More specifically, he revisited Lado's work from an IL perspective, noticing that a learner's language inherently contains variation. With the knowledge of IL variation in mind, Selinker reframed Lado's strong statements to create hypotheses that could be empirically tested: "a learner *might* do X and/or Y under Z conditions" (Selinker, 1992, p. 4).

In another example, Selinker considers data from his 1960 unpublished MA thesis (cited in Selinker, 1992), designed to "predict some of the difficulties that speakers of Israeli Hebrew (IH) *might* have learning English" (1992, p. 100). Using phonological patterns identified in IH and English, Selinker compares NL Hebrew sounds with TL English sounds, a common approach taken in contrastive analysis. But rather than confining himself to the comparisons and strong statements associated with CA, he uses the data to show that hypotheses about an IL could be articulated and tested. For example, when comparing Hebrew and English, one notices that the bilabial /w/ exists in English, but not in Hebrew. As a result, a prediction is made that producing /w/ in the IL will be difficult. Yet Selinker argues that these types of hypotheses have not been empirically tested, leaving the SLA literature without some fundamental truths. Thus, Selinker asked the audience at the 1990 Georgetown University Roundtable on Languages and Linguistics: "[C]an we continue to ignore the rich reframed IL detail of our CA predecessors and, thus, in a historical sense, continue to trivialize our own attempts at SLA theory making?" (Selinker, 1990, p. 142).

In *Rediscovering Interlanguage*, Selinker (1992) provides evidence that his answer to the question is an unqualified "No," not only for CA but in other areas of language learning as well. With this implied charge to consider the history of the field and rethink how we approach research, it is evident that Selinker's path to solving the fossilization puzzle extends beyond language transfer, interlanguage, and fossilization. While these areas are undoubtedly important to the field of second language acquisition, we benefit equally, if not more, from Selinker's reminders to conduct empirical research just as Lado taught him when the field of SLA was emerging.

SEE ALSO: English for Science and Technology; Fossilization; Gass, Susan M; Interlanguage; Lado, Robert; Trimble, Louis

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Semantic Prosody

WINNIE CHENG

Semantic prosody refers to the attitudinal meaning, often pragmatic, of a lexical item. Attitudinal and pragmatic meaning are multifaceted and therefore semantic prosody has been characterized in a variety of ways by researchers (Whitsitt, 2005; Hunston, 2007; Stewart, 2010). The various facets of the definition of semantic prosody are evident from a chronological review of linguists' work on this aspect of language (Stewart, 2010).

A Chronological Review

When describing a word form that was likely to be followed by something positive or negative, Sinclair (1987) referred to "good/positive" or "bad/negative" semantic profiles. For instance, Sinclair pointed out a specific lexicogrammatical environment, or "semantic environment" (1987, p. 112), of the phrasal verb *set in*, noting that the subjects of this phrasal verb always referred to some unpleasant states of affairs, such as *rot*, *decay*, *despair*, or *bitterness*, and so *set in* is described as having a bad semantic profile (pp. 155–6). The co-occurrence of the most frequent collocates and *set in* thus created a negative default value, which explained both semantic associations of words and speakers' attitudes about their choice of words.

This phenomenon was termed "semantic prosody" by Louw (1993, p. 157) when he linked semantic prosody to Firth's (1957) phonological prosody due to a process of "phonological colouring" (Louw, 1993, p. 158). Louw defined semantic prosody as a "consistent aura of meaning with which a form is imbued by its collocates" (p. 157), and so the words *utterly*, *bent on*, and *symptomatic of*, which were followed by *destroying*, *ruining*, *clinical*, *depression*, and *multitude of sins*, were imbued with undesirable meanings due to a transfer of meaning from their habitual co-text. Semantic prosodies were seen as "reflections of either pejorative or ameliorative [semantic] changes [over a period of time]" (p. 169) that were based on frequent forms that "can bifurcate into 'good' and 'bad'" (p. 171). Louw (1993) also pointed out the diachronic nature of semantic prosodies, remarking that semantic prosodies were "the product of a long period of refinements through historical change" (p. 164).

Bublitz (1996) observed that "Words can have a specific halo or profile, which may be positive, pleasant and good, or else negative, unpleasant and bad," similar to Louw's (1993) "aura of meaning," and that semantic prosody refers to negative or positive semantic coloring of node and collocate (Bublitz, 1996, p. 9).

Stubbs (1995) examined the semantic prosody of a great number of words, including *accost*, *amid*, *amusement*, *backdrop*, *care*, *cause*, *commit*, *community*, *deadlock*, *distinctly*, *soar*, *heritage*, *lavish*, *loiter*, *lurk*, *proper*, *provide*, *somewhat*, *standard*, *undergo*, and *untold*, and shifted to the term "discourse prosody" from "semantic prosody" in order to better describe the discourse and pragmatic functions of semantic prosody.

Sinclair (1996) developed the notion of "semantic prosody" in his model of five categories of co-collection of the lexical item/unit of meaning: Semantic prosody and the core were obligatory categories and collocation, colligation, and semantic preference optional

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categories. Sinclair defined "semantic prosody" as "attitudinal, and on the pragmatic side of the semantic/pragmatics continuum . . . It expresses something close to the 'function' of an item—it shows how the rest of the item is to be interpreted functionally. Without it, the string of words just 'means'—it is not put to use in a viable communication" (1996, pp. 87–8).

In fact, semantic prosody came to be regarded as the most important of all, as "the selection of the item is controlled by the prosody, because the whole point of expressing oneself in this way is to pre-evaluate the actions, which would otherwise be evaluated positively by the reader/listener" (Sinclair, 2004, p. 175). From the point of view of the speaker/writer, the textual process of constructing a lexical item was described as follows:

1. First the speaker/writer selects a semantic prosody of *x* applied to a semantic preference *y*.
2. The semantic preference in turn controls the collocational and colligational patterns.
3. The final component of the lexical item is the (invariable) core. (Sinclair, 2004, p. 34)

Thus Sinclair (2004, p. 34) suggested that "the initial choice of semantic prosody is the functional choice which links meaning to purpose; all subsequent choices within the lexical item relate back to the prosody." For instance, the "textual sequence" (p. 34) of Sinclair's (1991, 2004) "the naked eye" as a lexical item is described as follows:

> The speaker/writer selects a prosody of difficulty applied to a semantic preference of visibility. The semantic preference controls the collocational and colligational patterns, and is divided into verbs, typically *see*, and adjectives, typically *visible*. With *see*, etc., there is a strong colligation with modals—particularly *can*, *could* in the expression of difficulty —and with the preposition *with* to link with the final segment. With *visible*, etc., the pattern of collocation is principally with degree adverbs, and the negative morpheme *in-*; the following preposition is *to*. The final component of the item is the *core*, the almost invariable phrase *the naked eye*. (Sinclair, 2004, p. 34)

Partington (2004, pp. 131–2) defined semantic prosody as a kind of evaluative meaning which was "spread over a unit of language which potentially goes well beyond the single orthographic word and is much less evident to the naked eye." Coffin, Hewings, and O'Halloran (2004) defined the term as "The way in which apparently neutral terms come to carry positive or negative associations through regularly occurring in particular collocations" (p. xxi).

In Hoey's (2005) work on "lexical priming," words and word sequences were primed for "pragmatic association" (pp. 26–9); for instance, the property of "vagueness" was associated with "sixty," which co-occurred with *about*, *around*, *almost*, *up to*, and *getting on for* (pp. 26–7). Baker, Hardie, and McEnery (2006) define semantic prosody as "the way that words in a corpus can collocate with a related set of words or phrases, often revealing (hidden) attitudes" (p. 58).

Features of Semantic Prosody

Hunston (2007, p. 250) identifies a few "sites of disagreement" regarding the features of semantic prosody, namely (a) "the issue of whether semantic prosody is to be regarded as the property of a word/expression or of a longer unit of meaning"; (b) "whether semantic prosody's attitudinal meaning is best expressed as a binary distinction (positive vs. negative, favourable vs. unfavourable) or whether its characterization should ideally be conceptually more specific"; (c) "the question of whether semantic prosody can 'carry

over' from one context to another"; and (d) whether the semantic prosody is a type of meaning or a type of semantic or pragmatic process.

Very recently, Stewart (2010) gave a summary of features of semantic prosody, many of which are observed to stem from either Sinclair's or Louw's tradition. Features from Sinclair's approach are that:

- it is central to the unit of meaning, one of the two obligatory elements;
- it is considered within a synchronic framework;
- it is a feature of a unit which is larger than the single word/expression;
- it is not restricted to semantically "neutral" lexical items; and
- it is not restricted to descriptions in terms of "good" or "bad."

Features from Louw's approach are that:

- it is transferred or attached meaning;
- it is considered within both a diachronic and a synchronic framework;
- it is a feature of the word;
- it is associated above all with more semantically "neutral" lexical items; and
- it is generally expressed by means of a binary distinction whose primary terms are "good" and "bad" (positive/negative, favorable/unfavorable). (Stewart, 2010, p. 161)

Stewart argues that Sinclair's interpretation of "semantic prosody" should be referred to as "discourse prosody" to better capture the function in the discourse, and Louw's interpretation remains to be referred to as "semantic prosody" (2010, p. 161). Stewart therefore suggests that the concept of "semantic prosody" be "profitably split into two concepts, notwithstanding some overlap between the two" (p. 163).

The semantic prosody features reviewed by Stewart (2010) are (a) contributions from scholars on the concept since 1987, with a focus on its evaluative function and its hidden quality; (b) synchronic and diachronic issues; (c) the potential drawbacks of viewing semantic prosody as belonging to the word or part of a longer sequence of words; and (d) issues regarding inferring semantic prosody from concordances from corpus data. Some of the features (Hunston, 2007; Stewart, 2010) will be further described in the following.

Evaluative or Attitudinal Function

Stewart observes that "the evaluative quality of lexical items described as being associated with semantic prosody is not always manifest," arguing that some semantic prosody examples in the literature do not actually express any attitudinal function, for example, describing something as visible or invisible to the "naked eye" (Sinclair, 2004) could be heard as a statement of fact rather than an evaluation or attitude (Stewart, 2010, p. 22).

In addition, semantic prosodies are considered context-dependent and register-dependent. For example, when *load of* is followed by *rubbish*, *nonsense*, and so forth (Louw, 2000), the phrase suggests a negative evaluation, but the same prosody does not apply to "Another Load of Crystal Candy and Cadbury's Chocolate Being Delivered" written on the side of a fleet of delivery trucks, the writer's intention of which may be to get others' attention "through an eye-catching word combination" (Stewart, 2010, p. 23). Another example is the verb "cause," which "loses its association with negative evaluation when it occurs in 'scientific' registers" (Hunston, 2007, p. 263), although such are often individual instances of occurrence rather than the norm. Stewart notes that the evaluative function of semantic prosody is sometimes equated to connotation, expressing "second-order or peripheral meanings" (Stubbs, 1993, p. 35), and yet the connotative aspect is in conflict with Sinclair's

view, that is, semantic prosody plays "a central, pivotal role within the unit of meaning" (Stewart, 2010, p. 40).

Hidden Quality and Semantic Neutrality

Another feature commonly discussed in the literature is the hidden, subliminal, covert, concealed, and subconscious quality of semantic prosodies (Stewart, 2010). Stewart observes that "prosodies are usually attributed to semantically more 'neutral' items" (p. 32) because words with inherent semantic neutrality "lend themselves more readily to analyses of any hidden shades of meaning" (pp. 32–3). Examples of words that are characterized by semantic neutrality are "happen," "cause," "commit," "undergo," "provide," "somewhat," "utterly," "absolutely," and phrasal verbs such as "set in," "break out," "sit through," "come about," "bring about," and "fork out" (p. 32). In comparison, "semantic prosodies characterising more obviously positive or negative items . . . are relatively uncommon" (p. 33), with the exceptions of, for instance, "rife" (Partington, 1998, p. 67), "reckless" (Stubbs, 2001, p. 85), and "fickle" (Tognini-Bonelli, 2001, pp. 19–21).

Diachronic and Synchronic Process

A debated feature of semantic prosody is whether semantic prosody is a feature of a word or part of a longer sequence of words (Hunston, 2007; Stewart, 2010). With regard to the diachronic and synchronic process of semantic prosody, very often, semantic prosodies are regarded as metaphorical meaning that "may be attached, be taken on, be taken, be acquired, be accorded, be carried or be held; it may imbue, colour, taint, rub off, be reflected or spill over; further, prosodic meaning is an aura, a halo, a shade or a hue, and is the result of infection or contagion" (Stewart, 2010, p. 43). In this sense, semantic prosody is viewed diachronically, as the focus seems to be on the processes of semantic change; for example, "set in," "utterly," and so forth were semantically neutral in the past but have since been habitually co-occurring with semantically, in most cases, negative words, and so have acquired negative semantic evaluative meaning.

As noted by Stewart (2010), however, so far analyses of semantic prosody have been carried out synchronically, in the sense of either using synchronic rather than diachronic corpora (p. 47) or not studying the origins of meaning of words (p. 48). Stewart suggests that instead of interpreting semantic prosody diachronically as "transfers of meaning" that "presumably take place over a period of time" (p. 51), semantic prosody should be viewed synchronically as "*distributed over*, or better, *characteris*[*ing*] or *belong*[*ing*] *to* a unit of meaning/language/discourse" (p. 51). Sinclair's (1996) definition of semantic prosody as "primary and central to the unit of meaning, and [able to] represent the reason for making the meaning of a word" (p. 54), best illustrates the synchronic framework.

This synchronic view about semantic prosody involves both node and co-text, that is, the entire unit of meaning that is "selected by the speaker/writer *en bloc* on the basis of its global meaning" (Stewart, 2010, p. 60). In other words, semantic prosody neither belongs to "the node and can be traced back to the co-text," nor has meaning "passed during the course of time from the co-text to the node" (p. 60).

Property of a Word or a Longer Unit of Meaning

The second discrepancy involves whether semantic prosody is "a feature of (i) a word alone, or (ii) a word + co-text, i.e. the broader environment" (Stewart, 2010, p. 57). Examples of the first alternative include: "*affect* has a clearly negative prosody" (Stubbs, 1995, p. 45) and "Another word which has an unfavourable semantic prosody is the adjective *rife*" (Partington, 1998, p. 67). The second alternative can be illustrated with Sinclair's (1996, p. 90) "true feelings," where the expression is the core of a compound lexical item which

has the following inherent components: a semantic prosody of reluctance–inability, a semantic preference of expression (and a strong colligation of a verb with the semantic preference), a colligating possessive adjective, and the core. As remarked by Sinclair (1996, pp. 87–8), "semantic prosody has a leading role to play in the integration of an item with its surroundings." In his analysis of "regime," for example, Sinclair (2003, pp. 17–21) classifies "changes" in the concordance line *changes if his twenty-year old regime is to survive. This month marks the* as good, with the explanation that "changes have to be made, which implies that the regime is not good" (p. 19), and so changes are needed to improve the bad regime. This shows that reference is made to specific co-text or context, rather than simply considering "whether changes were conventionally favourable or unfavourable" (Stewart, 2010, p. 98).

Inferring Semantic Prosody from Concordances

Stewart (2010, p. 160) raises objections to "the traditionally tight link between semantic prosody and corpus data," as illustrated in, for example, "semantic prosody can be observed only by looking at a large number of instances of a word or phrase, because it relies on the typical use of a word or phrase" (Hunston, 2001, p. 142), and "[the study of semantic prosody] has only become possible with the advent of large corpora and suitable software" (Adolphs & Carter, 2002, p. 7). Stewart (2010) argues that semantic prosody, as a type of meaning, cannot be "observed," suggesting that "The 'exposure' of data in a concordance may give the impression that meaning can be seen and observed" (p. 107). In fact, what happens is that it is the lexical item's environment which is "revealed," and then "the analyst makes inferences from the environment about the presence or absence of a prosody" (p. 81). The issue that Stewart is more concerned about is the claim (e.g. Baker et al., 2006) that semantic prosody is solely about "words in a corpus" (Stewart, 2010, p. 58), and can be observed/revealed "only" by computational methods (p. 81). Stewart argues that semantic prosody can equally be inferred by "non-computational methods, i.e., by elicitation and introspection" (p. 81). Identifying a semantic prosody from corpus data involves two macro-stages: (a) choosing a relevant and appropriate search, and (b) scanning the corpus data retrieved in order to identify collocations and semantic preferences and then "translating" these into a prosody, to convert data into evidence (pp. 83–5). The second stage is, however, highly interpretive and involves subjective judgments about text fragments (p. 85), due not only to individual analysts' worldviews but also to their approach to "the network of relationships and interactions existing between the various constituents of any given concordance" (p. 91). Such interpretive methods to identity semantic prosody may be inferior to introspection, as, in addition to different analysts' interpretations that may differ from one another, "frequently hasty categorizations such as 'pleasant' and 'unpleasant' are the outcome of personal and potentially arbitrary points of view"; the extent of the textual chunks analyzed may be different; and "the relevant meaning of words appearing near the keyword in a concordance may not be clarified by the immediate lexical environment" (p. 103). The complex and highly subjective process of inferring semantic prosody from a corpus is linked to the way concordances are typically presented (Stewart, 2010, pp. 120–1), despite the advantage of discovering patterns of usage and meanings (Stubbs, 2007, p. 155). Stewart discusses the implications of the various ways of determining semantic prosody (2010, pp. 107–18). First, restricting the analysis of semantic prosody to examining five or six words to the right and left of the node in the concordance can lead to speculations about the broader textual environment and not provide sufficient co-text and context for discourse and pragmatic analysis (pp. 107–8). In fact, Koller and Mautner (2004) recommend a span of 25 words to the right and left of the node. Second, the concordance gives an impression of group cohesion and textual unity, and may lead to perceived, and generalized, semantic consistency (Stewart, 2010, pp. 108–13). Third, the constancy and centrality of

the node (key word) laid out in the concordance may lead the researcher to suspend "hunches about the meaning of the keyword and let the co-text take over," rather than focusing on how words (the node and its co-text) "interact and influence each other constantly" (p. 114). Fourth, visually the node in a concordance is physically separated from its textual environment, and this explains why in the literature the word is perceived as expressing basic meaning and semantic prosody is supplied by the co-text (pp. 115–16).

Conclusion

The concept of "semantic prosody" was introduced in Sinclair's (1987) "semantic profiles" to account for the phraseological tendency, or "the idiom principle" (Sinclair, 1987), to describe the way words are co-selected by speakers and writers, and developed later in his model of five categories of co-selection of a lexical item. This area of interest in fact began as early as 1966 when Sinclair observed that the word and the lexical item would not always coincide. As both a useful notion and a valuable analytical category, semantic prosody will continue to contribute to research in major fields of applied language studies, including lexicography, text and discourse analysis, pragmatics, and translation (Dam-Jensen & Zethsen, 2008), in a range of sociocultural contexts of interaction.

SEE ALSO: Lexical Semantics; Lexicogrammar

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Sentence and Discourse Processing in Second Language Comprehension

LEAH ROBERTS

Introduction

In applied linguistics (AL), researchers have always been concerned with second language (L2) learners' knowledge of the target language (TL), investigating the development of TL grammar, vocabulary, and phonology, for instance. However, the accumulation of TL knowledge is only part of what a learner comes to know about the new language: L2 acquisition also involves developing the ability to put this knowledge to use in real time, and this is the topic of L2 sentence and discourse processing (or *L2 processing*) research. The focus tends to be on comprehension processes, and comprehending the input in real time involves a complex set of processes.

Listeners and readers do not wait until the end of a sentence or a piece of discourse before they begin to try to interpret the input, but rather do so *incrementally*. In other words, as each word is encountered its meaning is accessed, and an attempt is made to integrate it as quickly as possible into the unfolding discourse representation. This attempt at immediate interpretation can sometimes lead to erroneous analyses of the input, as illustrated by readers' processing difficulty with a classic "garden-path" sentence like *The horse raced past the barn fell.* This sentence causes problems because on encountering the verb *raced*, readers are "led up the garden path" and assume that it is the main verb. However when the verb *fell* is encountered in the input, it becomes clear that the initial interpretation was wrong—it is *fell* that is the main verb—and readers have to reprocess the sentence to come up with the correct relative clause analysis (*The horse that was raced past the barn fell*). Readers therefore show evidence of incremental processing, constantly attempting interpretation as the sentence unfolds in real time, and in doing so, they apply their grammatical and semantic knowledge to the input, and also subject the resulting analysis to pragmatic and world knowledge to ensure a plausible interpretation. At the same time, and on the basis of these ongoing analyses, comprehenders also predict what is likely to come next in the input.

How are these processes affected when a speaker is processing in their L2? As well as providing more details about the nature of the human sentence processing mechanism in general, findings from L2 sentence and discourse comprehension studies can inform debates on issues and questions that are central to AL. For instance, how do L2 learners process the input in comparison to native speakers? To what extent does the first language (L1) influence learners' moment-by-moment processing of the TL? What are the effects of factors such as proficiency, age of acquisition, and differences in working memory capacity?

Researchers in the field of L2 processing often borrow methods from the monolingual sentence/discourse comprehension field, and focus on similar types of constructions: in particular, the processing of ambiguous input and the linking of linguistic elements to each other in sentences and discourse. As well as investigating these types of constructions—which allows for a picture of the processing mechanism at work—L2 processing researchers are also interested in how learners handle sentences that are ungrammatical

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in the TL, in order to see how sensitive they are to its structural properties. These broad topics are elaborated on below, illustrated by key findings from studies that have investigated how L2 learners process sentences and discourse in real-time comprehension.

Processing Ambiguities

Much research into L2 sentence comprehension has investigated learners' handling of ambiguous input. This is because investigating comprehenders' moment-by-moment processing decisions when more than one analysis of the input is available gives us an insight into the nature of the processing mechanism. Often, studies focus on learners' processing of garden-path constructions where native speakers' incremental analyses, as described above, can lead them to temporarily misanalyze the input. In an experimental context, it is *comparable* processing difficulty that provides evidence of a "garden-path effect."

For example, consider the sentences in (1a) and (1b).

(1) a. After Bill drank the water <u>proved</u> to be poisoned.
    b. After Sam arrived the guests <u>began</u> to eat and drink.

During the reading of sentences such as (1a), the noun phrase (NP) *the water* is likely to be initially interpreted as the direct object of the preceding verb *drank*, arguably because structurally, this is the "least-effort" option for the processor (Frazier, 1979). However, when the next word in the input is encountered—the main verb *proved*—it becomes apparent that misanalysis of the NP *the water* has occurred, because the verb *proved* requires a subject, and under this initial analysis, there is no NP available to fulfill the subject role. Therefore the reader is forced to revise the initial grammatical role analysis of *the water*, changing it from direct object of *drank* to the grammatical subject of the verb *proved*.

Evidence of this garden-path effect is found, for example, in reading-time studies where processing difficulty is reflected in readers' slow-downs at the point where it becomes clear that they have misanalyzed the input (e.g., at the verb *proved* in 1a), in comparison to the same point in a sentence where no misanalysis has occurred, for instance in a sentence like (1b). Sentence (1b) contains the verb *arrive*, which, as an intransitive verb, does not subcategorize for a direct object. Drawing on their knowledge of the lexical-semantic properties of intransitive verbs during their real-time processing, this means that readers are unlikely to misanalyze the immediately following NP *the guests* as direct object, in contrast to the NP *the water* in (1a). Thus at the reading of the main verb in the sentences—the disambiguation point—(1b) should be easier, and therefore faster to process, than (1a). Processing models differ in the precise details of the underlying causes of these comparative processing costs, but all assume that such a cost will occur (for an overview and helpful discussion of parsing models see Vasishth & Lewis, 2006).

The fact that readers are garden-pathed in such instances is evidence of incremental processing, and one of the major questions that has been asked of L2 learners is whether they too are able to process the input incrementally, assigning grammatical analyses during real-time comprehension. The overall answer to this question would appear to be yes. Like native speakers, L2 learners of different language backgrounds show reading time slow-downs at the point of disambiguation (at and following encountering the main verb *proved*) for temporarily ambiguous sentences like (1a) (e.g., Juffs & Harrington, 1996). However, not all garden-path sentences are equally difficult to process: Comprehenders' commitment to an analysis during real-time comprehension differs in strength as a function of a range of semantic factors, reflected in different degrees to which processing difficulty is observed. For instance, the more semantically plausible an initial analysis, the more

strongly committed to it comprehenders are, and therefore the more difficulty they have in recovering from misanalysis (e.g., Christianson, Hollingworth, Halliwell, & Ferreira, 2001).

Like native speakers, L2 learners' online commitments to certain analyses have been found to be sensitive to such semantic factors. For example, L2 learners are faster at reading sentences where the ambiguous NP is not a plausible direct object for the initial verb (2b) in comparison to those with a plausible direct object (2a) (as reported in Roberts & Felser, 2011; see also Williams, 2006; Dussias & Cramer Scaltz, 2008).

(2) a. The journalist <u>read the book</u> had amazed the judges.
b. The journalist <u>read the girl</u> had amazed the judges.

L2 learners, therefore, can process the input incrementally. However, their moment-by-moment processing has in some cases been found to differ from that of native speakers, in particular where the learners' L1 has an influence. For instance, Frenck-Mestre and Pynte (1997) found that English learners of French hesitated when reading in their L2 intransitive verbs like *obéir*—in English *obey* is optionally transitive—which suggests a direct influence of the subcategorization properties of learners' L1 on their processing of the L2. Even more subtle or indirect L1 influences on L2 learners' real-time comprehension of garden-path constructions has also been observed, such as whether a learner's L1 has grammaticalized aspect or not (Roberts & Liszka, 2008).

Despite these L1 influence findings, there are many studies in which a learner's L1 has been found to have no effect whatsoever, even when (a) in paper-and-pencil tasks learners perform like native speakers, and (b) the learners could in principle transfer linguistic knowledge from their L1. For instance, Havik, Roberts, van Hout, Schreuder, and Haverkort (2009) reported that in an offline measure, German L2 learners of Dutch preferred the subject-first word order when reading temporarily ambiguous subject-relative ([3a] below) and object-relative clause (3b) constructions. This subject-first preference is often observed in native speakers of flexible word-order languages, and, critically for this study, had been reported for native speakers of both German and Dutch. However, the German L2 learners' subject-first preference in the Havik et al. study was not reflected in their real-time sentence comprehension. Specifically, they did not slow down when the number information on the auxiliary verb forced an object-first interpretation (3b), unlike native speakers of both Dutch and their L1, German, with comparable constructions.

(3) a. Daar is de machinist die de conducteurs <u>heeft</u> bevrijd uit het treinstel.
There is the driver who the conductors <u>has</u> freed from the carriage.
'There is the train driver who <u>has</u> freed the conductors from the carriage.'
b. Daar is de machinist die de conducteurs <u>hebben</u> bevrijd uit het treinstel.
There is the driver who the conductors <u>have</u> freed from the carriage.
'There is the train driver who the conductors have freed from the carriage.'

Given the results reported earlier showing that L2 learners can assign grammatical roles during online comprehension, the question arises as to why the German learners in this study did not appear to find object-first relative clause constructions comparably difficult to process, despite the strong similarity between Dutch and their L1, German. The authors argue that incremental processing may indeed occur in L2 processing, but only when there is enough lexical-semantic (or meaning) information in the input. In other words, L2 learners may postpone making online commitments to an analysis in the absence of lexical-semantic information. Given that in (3) both the NPs are animate and therefore

equally semantically able to be subjects or objects, in this case the learners were not garden-pathed. In other words, they were not committed to an analysis and so they were not surprised by incompatible subsequent material in the input, even though the constructions under investigation are maximally comparable between the L1 and the L2 (for strikingly similar findings, see also Papadopoulou & Clahsen, 2003).

Support for this conclusion was found in the results of a comparable self-paced reading study (Jackson & Roberts, 2010). German L2 learners of Dutch read sentences like (4), which differed from those in (3) in that one of the two ambiguous NPs was animate (*de clown* 'the clown') and the other inanimate (*de taarten* 'the pies'). Unlike those in the Havik et al. (2009) study, the German L2 learners performed like native Dutch speakers, and showed evidence of an online preference for subject-first constructions. That is, they were quicker to read the sentences which forced a subject-first in comparison to an object-first reading, indicating that they assigned a subject grammatical role to the animate NP, and did so during their online processing. Thus in contrast to those in the Havik et al. study, the L2 learners showed evidence of having an expectation for either a subject- or an object-first analysis (created on the basis of lexical-semantic cues which were absent in the Havik et al. materials, such as *subject is likely to be animate, object is likely to be inanimate*), and these incremental analyses were either confirmed or disconfirmed when the readers encountered the disambiguating auxiliary verb later in the input.

(4) Voor de kinderen is <u>de clown die de taarten heeft</u> gegooid het hoogtepunt
For the children is the clown who the pies has thrown the highlight
van de voorstelling.
of the performance.
'For the children the clown who threw the pies was the highlight of the performance.'

In sum, L2 learners appear to be native-like in their ability to incrementally process such sentences, assigning grammatical roles during real-time comprehension, and rapidly accessing and applying semantic (e.g., plausibility and subcategorization) information to their ongoing analyses of the input. However, the results reported above suggest that incremental processing may occur only in the presence of enough lexical-semantic information: In its absence, analyses may be suspended. Suspending online commitments to analyses could indeed be a sensible strategy, given that L2 learners appear to have more difficulty in recovering from initial misanalysis than native speakers in general (see, e.g., Roberts & Felser, 2011).

Processing Dependencies

As well as focusing on ambiguities, L2 processing researchers have also been interested in learners' processing of syntactic dependencies; in other words, how links are established between elements within or between sentences. For example, in order to interpret a sentence like that in (5), the fronted element *which book* must be linked to the verb that appears later in the sentence, *wrote.* In (6), the pronoun *he* has little meaning until it is linked to a lexical NP earlier in the discourse, *John*. In processing terms, establishing dependencies between elements in real time is of interest because the process entails that the comprehender must hold certain information in memory (*which book* in [5] and *John* in [6]) while incrementally processing the input, and then, at the correct point later on (at or immediately after *wrote* in [5] and *he* in [6]), the link must be established, where all the relevant information is integrated such that full interpretation of the utterance can take place.

(5) *Which book*$_i$ did you say Fred wrote e_i?
(6) *John*$_i$ told Sally$_j$ how *he*$_i$ had got a new job.

Although it has been demonstrated that L2 learners can establish dependencies among constituents during real-time processing, the results from some studies suggest that they may not do so in a manner identical to that of native speakers. Specifically, some research has found that even very advanced L2 learners may not make use of purported syntactic "gaps" (the position from which a constituent has moved, e.g., following *wrote* in [5], marked e_i) during the real-time establishment of dependencies in complex constructions. For example, Marinis, Roberts, Felser, and Clahsen (2005) reported that for native English speakers, integrating the moved object *the nurse* with the embedded verb *angered* in (7a) was facilitated by the availability of an intermediate syntactic gap at the clause boundary (e_i'), compared to sentences of the same length that did not contain an intermediate gap (7b).

(7) a. The nurse [$_{CP}$ who$_i$ the doctor argued [$_{CP}$ e_i' that the rude patient had angered e_i]] is refusing to work late.
b. The nurse [$_{CP}$ who$_i$ the doctor's argument about the rude patient had angered e_i] is refusing to work late.

In other words, for the native English speakers, reading the verb *had angered* was faster in (7a) than in (7b).

This suggests that the comprehenders activated the fronted constituent at this grammatically determined position, which "refreshed" it in memory midway through the sentence, and in turn made it more activated, and thus more easily available for integration with the verb in (7a) in comparison to (7b). However, the advanced L2 learners of English—even those in whose L1 relative clause constructions are formed in the same way (Greek, German vs. Japanese, Chinese)—were not faster to read the verb *had angered* in (7a) than in (7b). Critically, this was the case even though they had no trouble comprehending the sentences. Marinis et al. (2005) argue that the dependency between the fronted constituent (*the nurse*) was integrated with the subcategorizing verb (*had angered*), but that no use was made by the L2 learners of any structurally determined intermediate position.

As stated above, the L2 learners performed like each other, and differently from the native speakers of English, irrespective of whether relative clause constructions worked in a comparable way in their L1 to that in English. It was on the basis of these and similar findings in L2 processing (e.g., Felser & Roberts, 2007), together with the observed lack of L1 influence in the absence of lexical-semantic information, that Clahsen and Felser (2006) proposed the Shallow Structure Hypothesis for L2 processing. This hypothesis claims that L2 learners' mental representations are less grammatically detailed and more semantically/lexically driven than those of native speakers. There is some debate on the matter, though, with some researchers arguing that L2 learners would in fact show parallel effects to those of native speakers with sentences like (7) if given enough time (see e.g., Dekydtspotter, Schwartz, & Sprouse, 2006), and arguing that L2 learners are therefore quantitatively rather than qualitatively different from native speakers.

It may be that observed L1–L2 processing differences are found only for such structurally very complex sentences. Using eye-tracking, Roberts, Gullberg, and Indefrey (2008) investigated whether German and Turkish L2 learners of Dutch would process subject pronouns in texts (as in [8] below) in the same way as Dutch native speakers. Such *pronoun resolution* or *co-reference* involves establishing a dependency between elements: The pronoun (*hij* in [8]) must be linked to a referent (or *antecedent*) in the earlier discourse. There might

be only one referent (grammatically) available for the pronouns, as in (8a) where the masculine singular pronoun *hij* can co-refer only with the referent *Peter*. However, often there are ambiguous contexts, where more than one referent can potentially co-refer with the pronoun, as in (8b) (*Peter* and *Hans*), and where the comprehender must draw on information from various sources (syntactic, pragmatic, information structural, etc.) to establish the link between the pronoun and its referent.

(8) a. De Werknemers zitten in het kantoor. Terwijl Peter$_i$ aan het werk is, eet hij$_i$ een boterham.
'The workers are in the office. While Peter$_i$ is working, he$_i$ is eating a sandwich.'
b. Peter$_i$ en Hans zitten in het kantoor. Terwijl Peter$_i$ aan het werk is, eet hij$_i$ een boterham.
'Peter$_i$ and Hans are in the office. While Peter$_i$ is working, he$_i$ is eating a sandwich.'

When Roberts et al. elicited the learners' interpretation for the ambiguous pronoun (e.g., [8b]) during a paper-and-pencil task, an effect of the L2 learners' L1 was evident: When asked for their preferred referent for the subject pronoun the German L2 learners patterned with the Dutch native speakers, overwhelmingly choosing the most recent, sentence-internal referent for the pronoun (*Peter*; Dutch 100%, German L2 learners 91%), whereas the Turkish learners chose this referent only 55% of the time. Under an L1-influence account, these findings are predicted. That is, German and Dutch subject pronouns work similarly, and both differently from Turkish. In Turkish (a so-called *null subject* language), to achieve co-reference with the most recent, and therefore psychologically available, referent *Peter*, no subject pronoun would be used, as illustrated in (9a). This is the default case. Use of an overt pronoun (e.g., *o* 'he/she') is marked, and thus signals the non-default interpretation: in (9b); this means co-reference not with the most recent referent, *Peter*, but with the non-local referent *Hans*. A similar interpretation can be obtained in the Dutch example (8b) by placing stress on the pronoun *hij*.

(9) a. Peter$_i$ ve Hans ofiste oturuyorlar. Peter$_i$ çalışırken, __$_i$ sandeviç yiyor.
Peter and Hans office sit-PL. Peter work, sandwich eat.
'Peter and Hans are in the office. While Peter is working, he is eating a sandwich.'
b. Peter$_i$ ve Hans$_j$ ofiste oturuyorlar. Peter$_i$ çalışırken, o$_j$ sandeviç yiyor.
Peter and Hans office sit-PL. Peter work, he sandwich eat.
'Peter and Hans are in the office. While Peter is working, **he** is eating a sandwich.'

Despite the L1 influence observed in the offline data, unexpectedly, during real-time comprehension the L2 learners patterned together, and differently from the native Dutch speakers. Both the German and the Turkish learners took longer to process the pronoun *hij* in the ambiguous (8b) than in the unambiguous context (8a). What can account for the difference between the results of the tasks? The authors argue that since pronoun resolution in general involves computing and integrating grammatical and discourse-pragmatic information at the same time, it is this integration of information from multiple sources during real-time comprehension that is more problematic for L2 learners than for native speakers, and so causes processing slow-downs. This appears to be the case even when the L1 and the L2 are typologically closely related (German, Dutch), and irrespective of a comprehender's final interpretation for the pronoun.

In sum, the results from the studies on dependency processing suggest that L2 learners may have trouble integrating, during real-time comprehension, grammatical information with information from other sources.

Processing Ungrammatical Sentences in the L2

Another topic that has recently been focused on in L2 processing is that of L2 learners' sensitivity to the (un)grammaticality of the L2 input: assessing what is and what is not grammatical in a learner's current *interlanguage*, and thus, obtaining a picture of what a learner knows about the L2 (Schimke, 2009). Researchers from a formal (*universal grammar*, UG) perspective focus on the observed difference in ultimate attainment between L1 and L2 learners. Debate in this research framework centers on the properties of learners' underlying grammar, in particular in the context of discussions on the presence or absence and development of functional projections, which in turn inform debates on whether or not learners have access to the principles and parameters of UG.

Some researchers claim that the observed optionality in the production of target-like morphology that is very often characteristic of L2 learners reflects a problem that lies at the level of grammatical representations: Learners have a "representational deficit," and are unable to acquire L2 forms unless these are present in the L1 (e.g., Hawkins, 2005). Others claim that learners of any L1 background can acquire these L2 forms, and so the difficulty rather lies with *accessing* them: a processing/accessibility problem (e.g., Prévost & White, 2000), and this predicts difficulty during real-time processing. Traditionally, researchers have studied learners' production and elicited their grammaticality judgments, and therefore they have had to infer from explicit, often metalinguistic data what may underlie L2 learners' difficulty with the TL. More recently, greater use has been made of more implicit, online processing techniques to gain a picture of learners' underlying grammar, and therefore such processing studies can add critical data to current debates in L2 acquisition (e.g., Hopp, 2009).

Conclusion

To conclude, even though learners may show the same patterns of interpretation as those of native speakers in tasks that measure ultimate interpretation, they may have arrived by a different route: Thus investigating how L2 learners process the TL in real time can inform us of the nature of the human sentence processing mechanism in general. Furthermore, using converging methods in the study of L2 acquisition gives a more detailed and rounded picture of what a learner *knows* about the TL, given that proficiency involves the acquisition of knowledge and ability to put it to use in real-time processing.

SEE ALSO: Brain Activity During Second Language Processing (ERP); Online Psycholinguistic Methods in Second Language Acquisition Research; Sentence Production in Second Language Acquisition; Universal Grammar and Second Language Acquisition

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Sentence Production in a Second Language

JUDIT KORMOS

The Basic Architecture of L2 Sentence Production

Sentence production has four important components: (a) *conceptualization*, that is, planning what one wants to say; (b) *formulation*, which includes the grammatical, lexical, and phonological encoding of the sentence; (c) *articulation*, in other words, the production of speech sounds; and (d) *self-monitoring*, which involves checking the correctness and appropriateness of the produced output (Levelt, 1989). In L1 (first language) production, planning the message requires attention, whereas formulation and articulation are automatic. Automatic processing mechanisms can work in parallel, which makes L1 speech generally smooth and fast. In the case of a second language (L2), however, formulation and articulation are often insufficiently automatized and require conscious attention, which hinder parallel processing and might make the speech of nonproficient L2 learners appear slow and hesitant.

In Levelt's (1989) model, which was originally devised to account for L1 speech production, there are three knowledge stores: the store for the knowledge of the external and internal world (*semantic memory*), the *mental lexicon*, and the *syllabary*. Semantic memory contains linguistic and nonlinguistic concepts as well as meaning-related memory traces associated with these concepts. The mental lexicon has two levels: a *lemma* and a *lexeme* level. The lemma contains syntactic and the lexeme level morphophonological information related to lexical items (Levelt, 1989). The syllabary stores the automatized gestural scores used to produce syllables. Based on empirical findings in L2 speech production research, it can be hypothesized that all these knowledge stores are shared between L1 and L2 (de Bot, 1992; Kormos, 2006). In L2 production, however, an additional L2-specific knowledge store might be needed: the declarative memory of syntactic, morphological, and phonological rules in L2. In L1 production, these rules are assumed to be automatized and to be part of the encoding systems (Levelt, 1989). For bilingual speakers, however, many of the phrase- and clause-building as well as phonological rules are not automatic and are stored in the form of declarative knowledge. Ullman (2001) cites several pieces of evidence from neuroimaging research that declarative knowledge concerning grammar is stored in a brain region distinct from the area which is responsible for the processing of automatized rules.

One of the basic mechanisms involved in producing speech is *spreading activation*. Spreading activation is a metaphor adapted from brain research, which is based on the finding of neurological studies that neural networks consist of interconnected cells (neurons) that exchange simple signals called activations via the connections they have with each other (Hebb, 1949). The speech processing system is assumed to consist of hierarchical levels (conceptualization, formulation, articulation), among which information is transmitted through activation spreading, and of knowledge stores such as the lexicon, within which activation can also spread from one item to related items. Decisions are made on the basis of the activation levels of the so-called *nodes* that represent various units such as concepts, word forms, phonemes, and so forth. The node of the required category which has the

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highest level of activation is accessed. Immediately after this node is selected, it spreads its activation further to the lower-level nodes.

Encoding Second Language Speech

Sentence production in L2 speech starts with conceptualizing the message, which involves the activation of the relevant concepts to be encoded and deciding on the language in which the message will be conveyed. The output of the conceptualization process is the *preverbal plan*, which contains the conceptual specifications for the message. L1 and L2 concepts are assumed to be stored together in the semantic memory (Francis, 2005) and can be identical, shared, or rarely completely separate. The extent to which L1 and L2 concepts are shared depends on the concept (e.g., concepts expressed by concrete nouns tend to be shared, while those expressed by abstract nouns show partial overlap), the situation in which the L2 was acquired (e.g., if the two languages were learned and are used in different environments, concepts might be separate) and the speaker's level of proficiency (e.g., at the beginning level L2 concepts are completely mapped on L1 concepts, whereas at advanced levels the L2 conceptual representation is greatly enriched) (de Groot, 1992).

In the first phase of *conceptual preparation* the message is generated through *macro planning and micro planning*. Macro planning involves the elaboration of the communicative intention. Communicative intentions are expressed by *speech acts*, which are actions one performs by speaking such as informing, directing, requesting, apologizing, and so forth (Austin, 1962). In order to perform a speech act one needs to select the information to be encoded and decide on the order in which this information will be conveyed. Once these decisions have been made, micro planning can start. In micro planning speakers decide on the perspective that they need to take in conveying the message (e.g., whether they would say "The dog is chasing the cat" or "The cat is chased by the dog"). At this stage speakers also consider whether an object, a person, or a situation has already been mentioned in previous discourse. This influences decisions such as whether a noun or phrase or a pronoun (e.g., "the father" or "he") should be used. Similar decisions concerning what constitutes new and old information are also made in the micro-planning stage. In addition, micro planning involves giving propositional content to the message, such as specifying the referents and the argument structure of the message, as well as assigning thematic roles (e.g., who is the experiencer or patient of actions), specifying the referents (i.e., quantifying, describing, or both quantifying and describing it) and the mood of the message (e.g., declarative, interrogative, imperative, etc.) (Levelt, 1989). The micro plan also contains language-specific information, for example, the selection of the appropriate tense in the language one speaks. The outcome of the macro- and micro-planning processes is the *preverbal plan*. As the name suggests, this preverbal plan is not yet linguistic although it is linguistically accessible, that is, it is assumed to contain all the necessary information to convert meaning into language.

The language of the message also needs to be set in the conceptualization phase. Language choice is dependent on sociolinguistic factors such as the nature of the communicative situation, relationship of the interlocutors, prestige of the languages involved, and so forth. In most bilingual speech production models language choice is indicated in the form of a *language cue*, which is added to the activated conceptual information (e.g., de Bot, 1992; Kormos, 2006). The language cue is attached to each concept separately, and therefore it is possible that in the case of encoding a sentence, a preverbal plan consists of a string of activated concepts to which different language cues are added. Conceptualization, especially the micro-planning stage, is greatly influenced by the language to be used in communication. Different languages categorize events and concepts in different ways, which affects

the encoding of motion, spatial relations, time, as well as global discourse structure (Slobin, 1996). As a consequence, during micro planning speakers have to select language-specific conceptual features and need to tailor their message in a way that is encodable in the selected language.

Remaining still at the phase of conceptualization, we also need to consider the problem that not every instance of language is creatively constructed. In fact, the majority of our utterances are combinations of memorized phrases, clauses, and sentences, which together are called formulaic language (Pawley & Syder, 1983). In order to account for the use of formulae, one possibility is to assume that chunking—the creation of larger production units—is done at the level of the conceptualizer. In other words, it might be postulated that for expressing various communicative functions such as requesting, apologizing, expressing surprise, and so forth, speakers have conceptual chunks consisting of a group of concepts, which they activate as one unit when routinely expressing certain communicative intentions. These conceptual chunks spread activation to the corresponding linguistic chunks, which are also stored and retrieved as one unit (i.e., one lemma). An alternative mechanism for encoding formulaic language is proposed by Pickering and Garrod (2004), who regard formulaic language as evidence against the linear nature of speech production. They argue that in certain cases, "people might short-circuit parts of the production process" (p. 181) and speakers might not always implement every stage of speech production.

In most models of speech production (e.g., Levelt, 1989, Dell & Juliano, 1996), it is assumed that not only the concept that the speakers want to encode is activated, but semantically related concepts also receive activation. For example, in the case of the concept of DOG related concepts, such as CAT, WALK, BONE, and so forth, also become active. When bilingual speakers use one of their languages, the concepts in the other language will also be activated to some extent. Only the intended concept in the selected language is chosen for further processing (e.g., Levelt, 1989).

In bilingual speech production models, lexical encoding means the matching of the conceptual specifications and the language cue with the appropriate lexical entry in the mental lexicon. The conceptual specifications send activation both to L1 and L2 lemmas (Hermans, Bongaerts, de Bot, & Schreuder, 1998; Costa, Caramazza, & Sebastián-Gallés, 2000) and they both compete for selection (Hermans et al., 1998; Lee & Williams, 2001). The winner of the competition is the lemma whose features match all the conceptual specifications including the language cue (Poulisse & Bongaerts, 1994). The mental lexicon contains L1 and L2 lemmas and lexemes; in other words, it is a depository of a speaker's knowledge of word forms (lexemes) and their syntactic and morphological features (lemmas). Just as the conceptual system, the lexicon is conceived of as a network in which entries have connections with each other. Connections might exist between L1 and L2 lemmas and lexemes, and between items within languages. Well known and frequently used L2 entries occupy a central position in the network and have a high number of links with other items, whereas words not known very well by L2 speakers can be found at the periphery of the network (Wilks & Meara, 2002). The strength of connections might also vary, at the beginning of the learning process links between L1 and L2 items might be stronger than links among L2 lexical entries (Kroll & Stewart, 1994).

Syntactic encoding in speech production entails two important procedures. First, syntactic information related to a lexical item such as gender in languages like Italian or German, countability status (i.e., whether a noun is countable or not), and optional and obligatory complements of verbs are activated. Next, syntactic encoding mechanisms are triggered, which assemble phrases and clauses using the activated words and their syntactic features. For example, in the case of the verb "enter" the information concerning optional complements is activated, and a verb-phrase building procedure is initiated, which encodes the object such as "the room." It is hypothesized that for balanced bilinguals L2

lemmas point to syntactic information that is specific for the given L2 entry, while for lower-level learners L2 lemmas might be associated with the syntactic information of the corresponding L1 item. This is supported by the frequent occurrence of transfer errors, when syntactic information concerning particular words is transferred from L1. This processing stage draws on declarative knowledge stored in the mental lexicon. The next major phase involves phrase and clause structure building, aligning grammatical information across phrases (e.g., subject–verb agreement) and arranging phrases in the appropriate order. At this stage L1 speakers and balanced bilinguals use procedural knowledge of syntactic and morphological rules of the language, which are automatically applied. L2 learners at lower levels of proficiency might proceed in several ways. First of all, some of the rules might be acquired already in the form of procedural knowledge, while other rules might be stored in declarative memory and used consciously. It is also possible that some rules are not acquired at all. In this case some kind of communication strategy is used, which might be the conscious transfer of the rule from L1, or simply juxtaposing the lexically encoded concepts after each other to express the intended message.

L1 and L2 syntactic encoding procedures might interact in a number of ways. As already mentioned, L1 syntactic information and encoding procedures might be transferred to the L2. In addition, L1 syntactic encoding procedures can influence the likelihood with which L2 procedures that are similar to the ones in the learners' L1 are used (Meijer & Fox Tree, 2003).

The next phase of processing is phonological encoding, which involves the activation of the phonological form of the word to be encoded, syllabification and setting the parameters for the loudness, pitch, and duration of intonational phrases consisting of several words. At this stage again, the basic mechanisms of phonological encoding are similar in L1 and L2 production. As far as the activation of phonological word forms in L2 processing is concerned, it is assumed that the phonological form of nonselected lemmas can also be activated, which means that both L1 and L2 lexemes compete for selection in bilingual phonological encoding (Costa et al., 2000). As a next step, phonological word forms activate the phonemes of the word in serial fashion, starting from the first phoneme and ending with the last one (Roelofs, 1999). Phonemes are stored and retrieved as one unit such as [b] and not as a list of features such as [+voiced] [+labial] [–nasal] (Roelofs, 1999). L1 and L2 phonemes are stored in a single network (Poulisse, 1999) within the lexicon at the lexeme level, and memory representations for phonemes that are identical in L1 and L2 are shared (Roelofs, 2003). Once acquired, phonemes that are different in L1 and L2 are stored as separate representations. At the beginning of the acquisition process, however, L2 specific phonemes are frequently equated with an L1 phoneme that is similar to the target phoneme (Flege, 1987). In the case of balanced bilinguals, syllabification and metrical encoding proceeds in the same way. Similarly to the processes of syntactic encoding, L2 learners at lower levels might need to resort to the declarative knowledge of lexical and postlexical phonological rules or, in the lack of it, transfer these rules from their L1.

In phonetic encoding, articulatory gestures for syllables are retrieved. Syllable programs for L1 and L2 are stored together in the syllabary. Beginning L2 speakers mostly rely on L1 syllable programs, whereas advanced L2 speakers usually succeed in creating separate chunks for L2 syllables (de Bot, 1992).

The final process of speech production is monitoring, which proceeds in a similar way in both L1 and L2 production. In order to avoid the necessity of duplicating knowledge, Levelt (1989) assumed that the same lexicon is used for both production and perception, and the same speech comprehension system attends to one's own speech and to other speakers' utterances (via the acoustic-phonetic processing module). Furthermore, the interpretation of the perceived messages is carried out by the same conceptualizing module as the one in charge of generating one's own messages. In Levelt's system of speech processing

there are three monitor loops (i.e., direct feedback channels leading back to the monitor) for inspecting the outcome of the production processes. The first loop involves the comparison of the preverbal plan with the original intentions of the speaker before being sent to the formulator. In this phase the preverbal plan might need modification because the speaker finds that the formulated message is not appropriate in terms of its information content or is not acceptable in the given communicative situation. The second loop concerns the monitoring of the phonetic plan (i.e., "internal speech") before articulation, which is also called "covert monitoring" (see also Postma & Kolk, 1993). In simple terms this means that in certain cases the speaker notices an encoding error such as an erroneously selected word before it is actually uttered. Finally, the generated utterance is also checked after articulation, which constitutes the final, external loop of monitoring, involving the acoustic-phonetic processor. Upon perceiving an error in the output in any of these three loops of control, the monitor issues an alarm signal, which, in turn, triggers the production mechanism for a second time.

Speaker–Hearer Interaction in Speech Production

The encoding mechanism presented above considered the speaker in isolation engaged in a monologue. Speech production, however, usually involves at least two interlocutors who interact with each other in a dialogue. Psycholinguistic models of speech production rarely consider the speaker–hearer interaction and if they do, it is mainly with regard to how speakers take the context of speaking into account when formulating their utterances. In Levelt's (1989) model it is the so-called situation model, which holds information on what had been said earlier in the interaction. The situation model is assumed to guide the macro-planning phase of speech production. In a dialogue, which is a joint activity, it is evident that the situation models of the listener and the hearer interact.

The question is how the interaction of the situation models takes place. Pickering and Garrod (2004) propose that the basic process responsible for explaining successful communication between interlocutors is *alignment*. This means that in order to understand each other, the speaker's and listener's situation model needs to be coordinated, in other words, they need to have a shared representation of the context of the conversation. The basic tenet of Pickering and Garrod's model of the dialogue is that it is not only the situation model that needs to be aligned between the interlocutors but also lower levels of linguistic representations (i.e., lexical and semantic representation). They further argue that alignment is automatic and proceeds through priming, that is, the "activation of a representation in one interlocutor leads to the activation of the matching representation in the other interlocutor directly" (p. 177). This mechanism explains why people tend to use similar words, expressions, and linguistic structures to the ones produced by their interlocutors.

SEE ALSO: Fluency; Foreign Accent; Models of Lexical and Conceptual Representations in Second Language Acquisition; Organization of the Second Language Lexicon; Spoken Word Production in Second Language Acquisition; Thinking for Speaking in Second Language Acquisition

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Shohamy, Elana

KENDALL A. KING

Elana Shohamy is an internationally recognized scholar in the study of language testing, language policy, immigration, and linguistic landscapes. Her research, writing, teaching, and consulting work over the last three decades have advanced our understanding of how language, testing, and public policy interact to produce differences in educational access and achievement across groups, as well as the roles of these forces in the negotiation of power and identity within multilingual societies such as Israel and the United States.

Shohamy's earliest writing and research investigated the measurement of second/foreign language speaking proficiency and reading (Seliger & Shohamy, 1989) with emphases on the biases of various testing methods (Shohamy, 1982). In subsequent decades, her work addressed a wide range of language assessment issues including alternative assessment, oral testing, classroom and diagnostic assessment, and "washback," with a focus on the social and political dimensions of language tests (e.g., Shohamy, 1994, 1995a, 1995b, 1996, 1997, 1998a, 2001a; Shohamy & Hornberger, 2007). Shohamy's best known contribution in this area concerns the power and misuses of tests; she examined how language tests are used by central authorities as tools to implicitly and covertly impact teaching, learning, and de facto language policies. Shohamy documented the negative consequences of tests in contexts of second language learning, migration, and, more recently, in the global phenomenon of language tests for citizenship (e.g., 1998b, 1998c, 2001b, 2008, 2009; Shohamy & Hornberger, 2007; Shohamy & Kanza, 2009). Her work in these areas, and in particular her leading role in bringing an ethical, humane, and political dimension to the largely psychometrically oriented field of language testing, were recognized by the International Language Testing Association with the Lifetime Achievement Award granted at the Language Testing Research Colloquium in April, 2010 at Cambridge University, England. Shohamy's current testing work draws attention to the need for more just and inclusive assessment procedures such as multilingual, multicultural tests that recognize and incorporate students' knowledge and skills.

Shohamy has extended this critical examination of language testing into the area of language policy. She was instrumental in the introduction of a new multilingual language policy in the Israeli educational system and has written widely on dimensions of Israeli language policy, such as the learning of spoken Arabic, the need to use Arabic as a medium of instruction at universities, and the cultivation of home languages (e.g., Spolsky & Shohamy, 1999). Her book, *Language Policy: Hidden Agendas and New Approaches* (2006) introduced an expanded language policy framework that illustrated how everyday, often invisible mechanisms (e.g., tests, workplace regulations, linguistic landscapes) create de facto language policies. These implicit policies, Shohamy argues, lead to inequalities, violation of individual human rights, suppression of diversity, and marginalization of both individuals and groups. Her recent work draws from archival, historical, and biographical research to document the hidden costs to individuals of Hebrew-only ideology as part of Hebrew revitalization and the concomitant suppression of home languages such as Yiddish (Shohamy, 2008). She was a founding editor—and currently serves as an editor—of the international, peer-reviewed journal *Language Policy*.

Most recently, Shohamy has been instrumental in the development of the field of "linguistic landscape" (Ben Rafael, Shohamy, Amara, & Trumper-Hecht, 2006), cohosting

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an international conference and coediting two books on the topic (Shohamy & Gorter, 2009; Shohamy, Ben Rafael, & Barni, 2010). The study of linguistic landscape, broadly interpreted as the analysis of language (both written and visual) in public space and the messages it delivers in terms of policy, power relations, ethnicity, and education, is quickly becoming a major focus of sociolinguistics, attracting myriad theoretical and methodological approaches and holding clear practical and political implications. Her most recent projects focus on the ideologies delivered via the linguistic landscape in the city of Tel Aviv and on how Arabic is constructed as a minority language despite its wide use within communities in Israel.

Shohamy has held visiting research and teaching positions around the world, including at the University of California, Berkeley, Georgetown University, Hong Kong Institute of Education, Pennsylvania State University, and the University of Toronto. She is currently Professor of Language Education, and Chair of the Language Education Program at Tel Aviv University. In addition to her lifelong fascination with language, identity, justice, and urban entities, she is passionate about bike riding, photography, and people, including, but not limited to, her two granddaughters, Alma and Liya.

SEE ALSO: Critiques of Language Policy and Planning; Language Assessment Methods; Language Policy and Planning: Overview; Language Testing and Accountability; Language Testing and Immigration; Linguistic Landscape; Revernacularization and Revitalization of the Hebrew Language

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Shuy, Roger

PHILIP GAINES

Roger W. Shuy (1931–) is an American linguist with specializations in dialectology, discourse analysis, sociolinguistics, and forensic linguistics. Shuy was an important figure in the formation and development of the field of applied linguistics, having cofounded the American Association of Applied Linguistics, who honored him in 1999 with the Award for Distinguished Scholarship and Service. He also cofounded the association New Ways of Analyzing Variation (NWAVE) and served on the editorial board of *TESOL Quarterly*. Shuy is perhaps best known for his many books and articles on the relationship of language and the law.

Shuy received his BA in English at Wheaton College in 1952 and his MA from Kent State University. While working on his PhD at Case Western Reserve University, a course in Middle English sparked the interest in English language studies that would define his academic career. Under the dialectology mentorship of Raven McDonald, Shuy completed his dissertation in 1962 on the Northern–Midland dialect boundary in Illinois. While doing his doctoral work at Case, Shuy first taught high school English and then accepted a position teaching linguistics at Wheaton College, counting among his students Walt Wolfram and Ralph Fasold, both of whom later became important scholars in sociolinguistics. Shuy subsequently taught at Michigan State, where he helped found the MSU linguistics department, at the same time conducting a pioneering Detroit dialect study.

A turning point in Shuy's theoretical and methodological approach to language variation occurred at the Linguistic Society of America Summer Institute at Indiana University in 1967, where he was influenced by the wide-ranging sociolinguistics work of William Labov and John Gumperz. Shuy subsequently was appointed director of sociolinguistic research at the Center for Applied Linguistics in Washington, DC, a private nonprofit organization founded by Charles Ferguson. While at CAL, Shuy was asked by the dean of the School of Languages and Linguistics at nearby Georgetown University to design, develop, and direct a new sociolinguistics PhD program there. He agreed, and in anticipation of its opening in 1969, the program recruited nationally and internationally for high-achieving students, many of whom have since gone on to distinguished careers in sociolinguistics.

Following a chance encounter in 1979 with an attorney who enlisted his help in a criminal law case involving language as the major evidence, Shuy began to focus on forensic linguistics, working on a wide range of case types but with a particular emphasis on criminal cases. Shuy was appointed chair of linguistics at Georgetown in 1988, where he continued to teach and research until his retirement in 1996 as distinguished professor of linguistics emeritus. He was later inducted as a fellow of the Linguistic Society of America. Following his retirement from Georgetown, Shuy relocated to Montana to continue consulting and lecturing on forensic linguistics. In 2009, Shuy was chosen as editor of the *Oxford Studies in Language and Law* series, published by Oxford University Press.

Shuy's work in forensic linguistics emerged from substantial scholarship in language studies. His early focus was American dialectology, with an emphasis on social dialects and urban language. Representative works include *Social Dialects and Language Learning* (1965) and *Discovering American Dialects* (1967). During this time, Shuy also brought his scholarly interests to bear on applied linguistic matters with the publication of books and articles on teaching and learning Standard English, bilingualism, literacy, and medical

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communication. Shuy's attention to language variation continued well into the 1970s, making significant contributions to the emerging general field of sociolinguistics, coediting a series of collections published by Georgetown University Press on issues, research, and trends in sociolinguistics, particularly from a cross-disciplinary perspective. The emphasis of Shuy's scholarly work is best identified as applied sociolinguistics, which, according to Suzanne Romaine (1994, p. vii), "deals with the social and political implications of fundamental inequalities in language use in various areas of public life, e.g. school, courts, etc." Shuy's primary interest has always been to bring current linguistic theory to bear on real-life language events.

In the late 1970s and early 1980s came Shuy's turn to the study of the interface of linguistics and law, which later became commonly referred to as forensic linguistics. For Shuy, the starting point for the analysis of language in legal contexts has always been linguistics: The researcher examines the text, whether written or spoken, through the lens of the core areas of linguistic description and analysis—phonetics, morphology, syntax, semantics, and so forth. The language under consideration may be susceptible to revealing analysis from multiple linguistic perspectives. Early representative journal articles by Shuy include discussions of the role of linguistic evidence in defense cases, topic analysis in criminal evidence, the linguistic analysis of tape recordings, comprehensibility in police interactions with suspects, and dialects as evidence in law cases. Other work focused on the linguistic analysis of warning labels, product liability, car sales discourse, the Miranda warning, and bilingual evidence. Shuy's recognized authority for the application of linguistics to legal matters is represented by the inclusion of his articles "Forensic Linguistics" in Aronoff and Rees-Miller's *The Handbook of Linguistics* (2000) and "Applied Linguistics in the Legal Arena" in Candlin and Sarangi's *Handbook of Communication in Organisations and Professions* (2011a).

Along with Malcolm Coulthard of the University of Birmingham, Shuy was largely responsible for the birth of forensic linguistics as a distinct subfield within applied linguistics. While the (probable) first extant scholarly use of the term "forensic linguistics" appeared in a 1968 article by Swedish linguist Jan Svartvik, it was not until the late 1970s that Shuy and other language scholars began vigorously exploring the implications of linguistic analysis for a range of texts—both spoken and written—at issue in legal and law enforcement contexts. While others in both linguistics and law had been studying the interface between linguistics and language use in legal contexts, Shuy demonstrated the extent and variety of potential approaches.

Perhaps the most significant scholarly contribution made by Shuy in forensic linguistics has been the range and detail of example analyses—and accompanying commentary—he has offered in a series of important scholarly monographs, beginning in 1993. In his first book in this series, *Language Crimes: The Use and Abuse of Language Evidence in the Courtroom* (1993), Shuy applied principles of speech act theory, conversation analysis, politeness theory, discourse analysis, and topic analysis to identify meaning and intentionality in police tape recordings of individuals suspected or accused of "language crimes" such as bribery, threats, and perjury. In *The Language of Confession, Interrogation, and Deception* (1998a), Shuy examined the form and style of the language of police interrogators and their suspects to determine the amount of manipulation performed by the questioners and the degree of deception/truthfulness of their respondents. *Bureaucratic Language in Government and Business* (1998b) explored problems of meaning and comprehensibility in a wide range of documents and forms used by both governmental and commercial entities, with an eye toward making such documents more transparent for consumers. In *Linguistic Battles in Trademark Disputes* (2002), Shuy demonstrated how virtually all the core areas of theoretical linguistics can be enlisted to help resolve legal conflicts in which claims to the ownership of words, phrases, and symbols are contested.

Shuy revisited the domain of law enforcement in *Creating Language Crimes: How Law Enforcement Uses (and Misuses) Language* (2005)—this time to analyze the language of undercover operatives and their suspect targets, using discourse and conversation analysis techniques to reveal the ways in which law enforcement personnel manipulate verbal interaction in order to create the appearance of guilt. In a break from his discussions of actual cases, Shuy wrote *Linguistics in the Courtroom: A Practical Guide* (2006), essentially an advice manual for new and prospective forensic linguists, based on his extensive experience in the linguistics analysis of language in evidence. *Fighting Over Words: Language and Civil Law Cases* (2008) was a scholarly foray into civil forensic linguistics in which he analyzed business contract disputes, deceptive trade practices, product liability, copyright infringement, discrimination, and trademarks. In *The Language of Defamation Cases* (2010), Shuy brought a panoply of linguistic techniques to bear in the analysis of allegedly libelous and slanderous language in a host of cases ranging from statements made in newspapers and on television to disputes involving religious leaders and entertainers. A similarly broad range of approaches characterizes *The Language of Perjury Cases* (2011b), in which Shuy shows the value of linguistic methodology for understanding how evidence is gathered and analyzed in prosecutions for perjury.

SEE ALSO: Forensic Discourse Analysis; Forensic Linguistics: Overview; History of Forensic Linguistics; Qualitative Sociolinguistics Research

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Signed Language Interpreting Profession

JEMINA NAPIER AND DELLA GOSWELL

Interpreting is an applied linguistic activity; the act of mediating between languages and cultures involves the application of linguistic knowledge across a wide range of communicative settings. Most interpreters work between two or more spoken languages, that is, within the same language modality; however, some interpreters work between two different language modalities. Signed language interpreters mediate communication between deaf and hearing people, across spoken and signed languages.

Signed language interpreters share the same values and aspirations as their spoken language counterparts in relation to norms of behavior (role), standards, ethics, professional associations, regulations, testing, and training. As with the broader interpreting field, signed language interpreting practice is diverse, with wide variation internationally in terms of stages of professionalization, provision of interpreter training, and certification.

Interpreting contexts can be split into two key domains, with different demands and relational features: "conference" interpreting and "community" interpreting. A major catalyst for the professionalization of spoken language interpreting was the requirement for large-scale simultaneous relay of testimony in multiple languages at the Nuremberg trials post-World War II (Baigorri-Jalón, 1999). This raised the profile of interpreting work, as well as the cognitive demands, and established the model and expectations of conference-style interpreting as the industry benchmark. The recognition of community interpreting (also referred to as liaison and public service interpreting) as an equally legitimate yet different style of interpreting work, where practitioners relate directly with clients in more interactive and varied settings, has come more recently (Hale, 2008).

In comparison, signed language interpreting (SLI) emerged from the community first; SLI practitioners were working with deaf people in medical, legal, and other dialogic settings long before they started working at conference level (Grbić & Pöllabauer, 2006). This entry gives an overview of the SLI profession with examples from around the world, including its development from Deaf community roots and the recognition of signed languages, the establishment of SLI associations and training, and the evolving concept of interpreter role. (A capital "D" is used to refer to the Deaf community as a collective who identify themselves as having a cultural and linguistic identity which is expressed by the use of a natural signed language. However, a lower-case "d" is used to refer generally to deaf persons as potential consumers of interpreting services, since not all of these individuals identify as culturally "Deaf," even if they use a signed language in some form.)

Origins of the SLI Profession

The role of many children from immigrant families is akin to that of a "language broker" (Morales & Hanson, 2005), doing ad hoc interpreting from an early age for family members in a range of community settings. Thus, spoken language interpreters working in community settings are typically members of the same ethnic group as their clients (Gentile, Ozolins, & Vasilakakos, 1996). Most have grown up as bilingual (or multilingual) members

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of the minority-language-speaking community, which engenders trust between interpreter and client (Edwards, Temple, & Alexander, 2005).

Similarly, hearing children who have deaf parents (often referred to as "children of deaf adults"—Codas) often undertake informal interpreting for their parents or other deaf family members (Preston, 1994). Therefore, many people who became the first generation of signed language interpreters grew up bilingually, using the local signed language at home with deaf family members, and the majority spoken/written language in all other communication outside the home (Bishop & Hicks, 2005); they either consciously or accidentally became interpreters. Although they are classified as native users of the signed language, bilingual Coda interpreters are not strictly members of the same minority-language/cultural group as their deaf parents, or deaf clients, because they can hear.

Prior to the professionalization of SLI, the role of "interpreter" for deaf people dealing with the mainstream was typically taken on by Codas, welfare and religious workers, and teachers at deaf schools (Napier, McKee, & Goswell, 2010). These early practitioners often had no formal linguistic or SLI training. Their "passport" into working with the Deaf community was their signed language skill and their intrinsic knowledge and understanding of the Deaf community.

A Paradigm Shift

Research on signed languages and Deaf communities has led to a paradigm shift in terms of who can become a signed language interpreter, and the overall status of the SLI profession. Deaf communities throughout the world have their own indigenous signed languages. Linguistic research has confirmed that these languages have their own grammar and lexicon and are not simply a manual representation of the surrounding spoken language. In fact, the research has established that signed languages are syntactically complex, with distinctive morphological, phonological, and sociolinguistic features.

It is now widely accepted that deaf people belong to a collective linguistic and cultural minority group and identify with one another by using the natural signed language of their country. The traditional medical perception of deaf signed language users as solely a disability group has therefore broadened to include a social model of deaf people as minority-language users (Ladd, 2003). Subsequently, many countries have formally recognized their signed languages as legitimate community languages in their own right. Signed languages are now routinely taught in a growing number of tertiary (postsecondary) institutions alongside spoken languages. Students can choose to learn to sign as a second language, a "foreign"-language study requirement, or because they aim to work with deaf people professionally. For example: as interpreters, educators for deaf children, social workers, speech-language therapists, or audiologists. In some countries, the national signed language is also taught in secondary schools as a foreign-language subject.

At the same time as emerging research legitimized signed languages, the adoption of human rights (race and disability) legislation in many countries from the 1980s and 1990s has reinforced the rights of linguistic minorities (including deaf people) in terms of access to education, employment, and services through accommodations such as interpreting. With formal language recognition and legal entitlement (i.e., funding), SLI provision has moved from a welfare base, to a viable profession, especially in developed Western countries such as Australia, Canada, Finland, the United Kingdom and United States of America. In many other countries, for example, Kosovo and Kenya, the SLI profession is still nascent (Napier, 2009).

Professionalization: Establishment of Professional Associations

Many of the foundation stones for the SLI profession were laid in the United States. In 1964, the Registry of Interpreters for the Deaf was established to create standards of practice for American sign language (ASL) interpreters, guidelines for the provision of interpreters, and regulation of interpreting quality and behavior via a code of ethics. The Conference of Interpreter Trainers (CIT) was subsequently established in 1979, with the goal of enabling information exchange between signed language interpreter educators and trainers in the USA, facilitated through a biennial convention. This process of constituting professional associations for signed language interpreter practitioners and trainers set the benchmark for other countries to follow. For example, professional SLI associations were established in Sweden in 1969, Canada in 1980, Finland and Scotland in 1982, England, Wales and Northern Ireland in 1987, Australia and Japan in 1991, Austria in 1998, and—more recently—Kosovo in 2006.

The SLI profession started developing a more international profile with the establishment of the European Forum of Sign Language Interpreters (EFSLI) in 1993 and the World Association of Sign Language Interpreters (WASLI) in 2003. Both of these umbrella associations are assisting in the connection and cohesion of signed language interpreters in different countries and at different stages of professional development.

Professionalization: Interpreter Role

Along with the establishment of SLI professional associations and training has come a shift in thinking around the role of the interpreter. The community beginnings of SLI, carried out by family, welfare workers, and missionaries, initially led to a perception of role often described as the *helper* model of interpreting (Pollitt, 1997). As SLI started to align with spoken language interpreting norms (based on conference interpreting models), and deaf people became more empowered with improved access to higher education, the helper model was eschewed in favor of a more detached and professional stance: the *conduit* model of interpreting (Pollitt, 1997). Other metaphors used for this more mechanistic approach included describing interpreters as telephones, bridges, or channels to communication (Roy, 1993).

Signed language interpreters in many countries adopted a code of ethics based on the experience and expectations of conference-style interpreting, where practitioners perform their work in a booth at the back of a conference venue, and do not interact with their consumers. For this type of interpreting work, the tenets of rigorous impartiality and interpreter neutrality are logical and realistic as conference interpreters are "disembodied voices": heard but not seen by either side.

For signed language interpreters (in fact, any interpreters working in interactive community settings), the conduit approach of absolute impartiality and neutrality cannot be applied so strictly. Dialogic interaction, even within the same language and culture, can be messy—participants are not always eloquent, they make mistakes and can misunderstand each other's intentions. When interpreters are added to the mix, they are often the only ones who can see the communication mismatches and repair linguistic or cultural misunderstandings. As a result, SLI practitioners working in community settings felt constrained by codes of ethics that implied their role was invisible, especially in assignments where intervention was clearly required to ensure effective communication between the parties.

SLI scholars (e.g., Roy, 1992) took the lead in debating the role of interpreters in community settings, and started addressing the complexity of interpreter-mediated interaction,

identifying the interpreter as a third party participant. The strictly conduit model for SLI practitioners working in these settings was therefore challenged, and has shifted to a *bilingual-bicultural* approach (Pollitt, 1997), where the interpreter is now seen to be responsible for making linguistic and cultural decisions and adjustments where appropriate. Spoken language interpreter perceptions of role also have moved in this direction, thanks to the work of scholars such as Wadensjö (1998), whose research showed that interpreters do actually participate in interpreted interaction, and Angelelli (2004), who clearly demonstrated that interpreters are not invisible players.

Professional Ethics

Many SLI associations initially adopted codes of ethics directly from their spoken language affiliates, which typically include adherence to the principles of confidentiality, impartiality, accuracy, and faithfulness in interpretation. Many of the original codes tended to adopt a proscriptive model that detailed what interpreters should not do. The re-definition of the interpreter role has generated further exploration of the concept of SLI professionalism and how to frame ethics that best support work in a community setting. Cokely (2000) proposed a more values-based code that represents the needs of all stakeholders: interpreters, deaf and hearing consumers, service providers, and paying clients. The Canadian SLI association was the first to update its code, reflecting Cokely's suggested approach, after extensive consultation with their Deaf community. The new code sets out core values to aspire to, rather than behaviors to avoid. The Australian SLI association subsequently adapted its code to reflect this model.

Compared with other minority-language users, and their spoken language interpreters, deaf consumers seem to have a strong vested interest in the workings of their allied SLI profession; perhaps because deaf people's usage of interpreters is more frequent, across more domains, and lasts for a lifetime. In countries where deaf people are professionally qualified and rely on interpreters in their workplace, their influence is critical—they are very clear about how they want to work with interpreters, what they need, and what they expect (Hauser & Hauser, 2008). As an acknowledgment of the close relationship between deaf consumers and signed language interpreters, WASLI has signed a joint agreement with the World Federation of the Deaf, to work in close partnership for the benefit of deaf people who use signed languages and the worldwide SLI profession.

Recently, deaf people have been recognized as having interpreting skills in their own right and are being employed as "deaf interpreters," often in situations where a deaf client has additional communication barriers and the "regular" hearing interpreter does not have the additional skills to manage alone. For example, where a deaf client uses idiosyncratic signs or gestures, sometimes unique to a family; uses a foreign signed language; has minimal or limited communication skills; is deaf-blind; uses signs particular to a given region, ethnic or age group; or is in a mental state that makes ordinary interpreted communication difficult (Napier et al., 2010). In these cases skilled deaf signers can bridge the gap, using innate linguistic and cultural knowledge of the Deaf community that most "hearing" interpreters cannot match. Deaf interpreters also work in conference settings, interpreting between two different signed languages (see Forestal, 2005, for further discussion of deaf interpreters).

Profile of Signed Language Interpreters

As a consequence of the linguistic, political, and social developments outlined in this entry, the population of signed language users and interpreters is changing. More people from "outside" the Deaf community are learning the language of the community, which in turn feeds into interpreter training programs. The typical interpreting student is now not a

native signer, but someone who has grown up in the mainstream spoken language community and has learned to sign as a second language. In addition, where deaf people have had access to higher education, they have raised the bar in terms of the skills needed for interpreting in tertiary education and professional work settings. These developments have had a major impact on the SLI profession, and in many countries, the increased demand for interpreters outstrips the supply.

The typical profile of signed language interpreters in Western countries with established SLI professions is as follows: female, young, white, second language (non-native) learners of a signed language, working part-time in community settings (e.g., medical, legal, education), and with increasing numbers having a university qualification, not necessarily in interpreting (Brien, Brown, & Collins, 2002; Napier & Barker, 2003). A female-dominated industry with part-time workers (and therefore low-income earners) has implications for the emergence of a fully fledged profession in the longer term.

The sociolinguistic and cultural backgrounds of interpreters, particularly in relation to language acquisition and education, have evolved over time. Due to the higher status and profile of signed languages and the availability of sign language acquisition courses, the pathways into SLI are diverse and, apart from deaf family connections, are triggered by general language learning interest, or direct contact with deaf people (for example, as neighbors, or in the workplace). From that starting point, many more interpreters are entering the profession through formal interpreter training programs.

Professionalization: Interpreter Training

With increased demands on interpreters working with deaf clients across a broad range of contexts, interpreter training works hard to keep pace. Different countries have a range of systems for the education, training, and accreditation of signed language interpreters. Training ranges from ad hoc intensive short courses to established formal university programs, and interpreter certification is obtained through annual testing programs or by qualification on completion of a training program (see Napier, 2009). The majority of countries start out with short courses in order to meet an immediate need via basic training. After (sometimes many) years of government lobbying, fundraising, and perseverance, a number of formal programs have been established with an infrastructure of professional regulation, monitoring and standards.

Many developing countries are still struggling to establish their SLI profession, as are some "developed" countries, such as Belgium (Haesenne, Huvelle, & Kerres, 2008). In other developed countries, however, much progress has been made. Signed language interpreters in the USA are now required to complete a Bachelor's degree before they can become certified with the Registry of Interpreters for the Deaf. These qualifications can be in any area of study, not necessarily in interpreting. In the United Kingdom, signed language interpreters are required to have a national vocational qualification as a minimum before being admitted as a member of the Register of Sign Language Interpreters. In Australia, it is a requirement that any candidate seeking to obtain a "license to practice" at professional interpreter level from the National Accreditation Authority for Translators and Interpreters (NAATI) must have either general education to degree or diploma level in any field, or interpreter accreditation at NAATI Paraprofessional level. Higher educational requirements in these countries are attracting a different applicant pool, including people who may not have previously considered SLI as a career option.

The sites of SLI interpreter education programs reflect the move from a medical disability perspective on deafness and deaf people to a more language-based social model. SLI training has traditionally been offered in departments for disability studies, deaf studies,

welfare, or social studies; however, SLI education is increasingly becoming mainstreamed in linguistics, translation and interpreting, or language departments. In some countries SLI students are now training alongside translators and interpreters of spoken languages. While most SLI credentialing is regulated by a national signed language-specific body, a small proportion of SLI credentialing is integrated into a broader national language certification system—for example in Sweden and Australia.

In sum, it can be seen that the SLI profession has come a long way in a relatively short time and has much in common with the spoken language interpreting profession in terms of professional standards, education, and understanding of the role of the interpreter. Key differences include the involvement of deaf people in shaping the profession (from a consumer perspective as well as being practitioners themselves) and the changing demographic of interpreters entering the profession. Readers who are interested in more information concerning emerging SLI trends and future directions are referred to Napier (2011), for a more comprehensive discussion of these issues.

SEE ALSO: Community Interpreting; Corpus Analysis of Sign Languages; History of Interpreting; Interpreting Techniques and Modes; Professionalization of Interpreters; Research on Signed Language Interpreting; Second Language Acquisition of Sign Language; Signed Language Interpreting: Types, Settings, and Modes; Teaching and Learning of Interpreting

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Signed Language Interpreting: Types, Settings, and Modes

NADJA GRBIC

Translators, interpreters, and scholars working in the field of translation and interpreting have developed particular classifications and classification systems in the course of time. First of all, we differentiate between translating and interpreting as more or less separate activities, and between translation and interpreting studies as different (sub)disciplines. We also distinguish between diverse translation and interpreting types, settings and modes, cutting up the translation–interpreting map into various different fields of practice. This entry will first offer a brief introduction to the general issues of categorization and will then focus on categorization in the field of signed language interpreting (SLI).

Categorization and Classification

Categorization is the process of classifying objects, people, practices, and even elements such as time and space as members of a category, defining them according to their similarity to other members of that category. In addition to the formal classification systems that lead deliberately to some kind of standardization, such as classification systems in libraries, ad hoc classifications fill and affect our everyday lives. Categories do not, however, exist independently of space and time; they always adjust to social and intellectual developments (see Bowker & Star, 2000; Grbic, 2010).

In the active process of classifying, we may face technical problems. One technical problem is the fact that our world is full of ambiguities (Bowker & Star, 2000, p. 24). In the translation and interpreting field, for example, there are certain events that do not fit into our traditional, normalized classification of *either* translation *or* interpreting. These are events that might include features of both translation *and* interpreting, such as signed language translation. Such instances have led to the introduction of the concept of "hybrid" forms and have called into question traditional classification systems.

SLI Types/Settings and Modes/Techniques

In the field of SLI—and interpreting as a whole—we usually differentiate between interpreting modes, interpreting types, and interpreting settings, which allows us to differentiate between various categories of practice. As Grbic and Pöllabauer (2006) have shown, those labels are not always used consistently in the literature. Here, "interpreting type" will be defined as the "context in which it occurs" and "interpreting mode" as the "way in which it is carried out" (Shuttleworth & Cowie, 1997, p. 84). "Interpreting technique" is often used as a synonym for "interpreting mode." Spoken language interpreting literature often uses the term "type" to refer to the context in which an interpreting session occurs, whereas in the SLI literature, the term "setting" has become prevalent.

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SLI Working Modes or Techniques

The invention of transmission equipment in the 1920s, which made it possible for spoken language interpreters to work simultaneously, made it necessary to differentiate between the consecutive interpreting technique which had been used until then and the henceforth technically possible simultaneous mode or technique. In the simultaneous mode, the speaker talks continuously while the interpreter renders the source text as soon as he or she has heard enough to understand, lagging a few seconds behind the speaker. To do this, spoken language interpreters sit in a booth, listen to the speaker through a headset, and deliver the text into a microphone. In the consecutive mode, the interpreter renders the target text after the source text has been delivered. Consecutive interpreting can be conceived as a continuum from rendering very small speech segments to long passages or even whole speeches (Pöchhacker, 2004, pp. 18–19).

As signed language interpreters' work spans different modalities (spoken and signed), which means that there is no acoustic overlap between source and target language, they can technically always work in the simultaneous mode. Another reason why the consecutive mode is less available to signed language interpreters is that they cannot divert their attention from the deaf client's speech (Napier, McKee, & Goswell, 2006, pp. 26–8). There are, however, linguistic and situational factors that would make consecutive interpreting a better choice. According to Russell (2005) there might be situations, especially in legal and medical settings, when the more time-consuming mode of consecutive interpreting is perhaps more appropriate as it enables the interpreters to ensure a greater degree of accuracy.

A special form of simultaneous interpreting is sight translation or sight interpreting. This means reading aloud or signing a text written in the source language for a live audience in the target language, that is, interpreting a written text in real time. In this case the interpreter's output is simultaneous not with the source text production but with the interpreter's perception of the written source text (Pöchhacker, 2004, p. 19). This can happen in many situations, such as when an interpreter is asked to interpret a patient information sheet at a doctor's office or a legal document in a courtroom setting. As sight interpreting implies a modal shift from written to spoken, it has frequently been labeled as "hybrid."

SLI Types and Settings

As interpreting takes place in various socio-institutional contexts, each of which places various different constraints on the interpreting activity, the categorization of interpreting according to interpreting type or setting is widely applied. A comparative study of standard handbooks and encyclopedias of translation/interpreting studies showed that these books describe various different interpreting types (Grbic & Pöllabauer, 2006). All of the reference works studied mention conference interpreting; court interpreting (also referred to as legal interpreting when including a greater diversity of settings, ranging from police interrogations to asylum hearings and courtroom interpreting); and community interpreting (also referred to as dialogue interpreting or public service interpreting). Two of the works also refer to liaison interpreting, practiced in commercial negotiations, and one of them mentions media interpreting. In publications on spoken language community interpreting, those types are often subdivided into subtypes or settings, such as medical settings, social settings, and so forth.

In handbooks on SLI the authors usually refer to interpreting settings when talking about the context in which an interpreting assignment occurs (e.g., Frishberg, 1990; Stewart, Schein, & Cartwright, 2004; Napier et al., 2006; Humphrey & Alcorn, 2007). Such handbooks generally describe the settings in which signed language interpreters typically work, which

are educational, legal, medical, mental health, social service, and employment settings, as well as less common, but nevertheless relevant settings such as religious, conference, and performance interpreting. Generally, these settings are explained in terms of their particular features and challenges, introducing subject-specific relevant knowledge where appropriate, as these contexts tend to vary considerably. Furthermore, these handbooks provide information in a more didactic sense, offering guidance on the standard qualifications needed for a given setting and appropriate strategies to use in order to tackle challenges, such as contextual and specialist knowledge, preparation, participants, language use, terminology, cultural issues, interpreting techniques, positioning, teamwork, role models, emotional issues, ethical issues, and so forth.

Research also reflects the importance of various different setting-specific features and socio-institutional constraints. In a bibliometric survey on research on SLI from 1970 to 2005, a corpus of 908 publications was classified with regard to the thematic focus of the texts (Grbic, 2007). Studies on a specific setting proved to be the most popular focus of interest throughout the period under study, the most prominent setting being educational interpreting (47%), followed by the legal domain (14%) and the mental health setting (10%). Interestingly, in spoken language community interpreting, the two major domains are legal and medical settings (Pöchhacker, 2004, pp. 162–3).

Typologies

In interpreting studies, several attempts have been made to establish more complex and comprehensive categorizations of interpreting events. Mason (1999, p. 148), for example, uses the variables of mode (consecutive, simultaneous, etc.), field (medical, courtroom, etc.), and tenor (addresser–addressee relationships) in order to differentiate between various interpreting types or settings. Humphrey and Alcorn (2007, pp. 159–61) put together a table of SLI events, taking the number of clients in interpreted interactions as the basic variable. For each area of work (education, religious, mental health, etc.), they distinguish between three types of interaction: one-on-one, small group, and large group. In the medical area of work, for example, we find one-on-one medical consultations with the patient, small group meetings with family or staff, and large group sessions for community health programs in larger rooms, such as a big auditorium. Other authors, such as Pöchhacker (2004, p. 24), have developed more complex and elaborate typologies. Pöchhacker's map of the territory of interpreting studies was conceived as a "spectral model" which strives to avoid clear-cut, static categories and instead allows for fuzzy edges between variable dimensions. The spectral model introduces a set of eight "vertical dimensions": medium, setting, mode, languages (cultures), discourse, participants, interpreter, and problem. Each of these comprises several "horizontal parameters." The setting dimension of the spectrum, for example, comprises a continuum of both international and intra-social settings, reaching from multilateral conferences on the left-hand side to media, court, and educational interpreting in the middle and interpreting in medical or social settings on the far right.

Translation—Interpreting Hybrids

Just as there are always ambiguities in nature, so there are events that do not fit into our traditional, normalized classification systems. Turner and Pollitt (2002, p. 41) proposed the notion of "hybrid" forms of SLI, which could open up "the possibility of revisiting our understanding of other forms and [permit] some of their richly textured hybridity to be appreciated and more fully understood." Griesel (2009), who studied (spoken language)

theater translation, sees translation–interpreting hybrids as types of interlingual transfer, which consist of phases of interpreting as well as of translating, and as such become inseparable compounds. Ashworth, even further, coined the term "transterpreting" as a hybrid form of translation and interpreting to describe interlingual, translated text chat, which is interactive written discourse in real time, possessing as such similarities to spoken discourse (O'Hagan & Ashworth, 2002, p. 14).

Signed language translation (SLT) is another relatively new category, which emerged as a consequence of digital video/DVD technology and information and communication technology on the one hand, and resulted on the other hand from certain policy measures concerning e-accessibility, particularly Web accessibility, for disabled persons. Technically speaking, it comprises the interlingual and intermodal transfer of fixed or frozen (written) texts in spoken languages into fixed or frozen signed texts (video) in any signed language. In this case, the source text is permanently available, which comprises a major difference to interpreting; the translator works without time constraint and the target text can be checked and corrected. SLT includes the translation of children's books, religious texts, tests, handbooks for Deaf students, and so forth. SLT is often carried out by Deaf translators (see Leneham, 2005; Stone, 2007).

Other Categorizations: Specialized Techniques

In addition to the categorization of modes/techniques, types/settings, and the recently emerged domain of SLT, there are a few further categories, which are usually dealt with under labels such as "special communication techniques" (Frishberg, 1990, pp. 151–77) or "specialized interpreting skills" (Napier et al., 2006, pp. 136–59). One group involves the use of specific technology as a typological parameter, while the other is related to specific consumer groups who might not use a regional variant of a national signed language.

SLI events involving specific technologies include telephone interpreting and video remote interpreting. While during telephone interpreting the interpreter will be in the same place as the Deaf person making the telephone call for him or her, during video remote interpreting the interpreter is at a different location to one or both clients. In the USA, a differentiation is made between video relay service (VRS) and video remote interpreting (VRI). VRS involves interpreting a phone call between a hearing and a Deaf consumer through an interpreter who typically works in a relay center. VRI serves a hearing and a Deaf person who are in the same location, such as a doctor's office, while the interpreter provides the service in a different location.

Interpreting events which are related to the communication requirements of specific user groups involve transliterating (using a variety of signing that is close to the structure of the spoken language involved); interpreting for the Deaf-blind (through either tactile signing or tactile finger-spelling); interpreting for people with minimal language skills (Deaf persons who do not have a full competency in either a spoken or a signed language); and International Sign interpreting (working in a more or less improvised, restricted, and nonstandardized contact language used at international events for Deaf people lacking interpreters into their own signed language).

SLI may also involve interpreting between different signed languages, which is frequently carried out by Deaf interpreters. They usually work in teams with a relay interpreter (Boudreault, 2005). Multilingual, multicultural assignments are multiplex, involving Deaf and hearing interpreters and ranging from interpreting for (im)migrants and minorities to interpreting in international conference settings (Locker McKee & Davis, 2010).

SEE ALSO: Community Interpreting; Conference Interpreting; Interpreting Techniques and Modes; Legal Interpreting; Liaison Interpreting; Media Interpreting; Research on Signed Language Interpreting; Signed Language Interpreting Profession

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Silence and Participation in the Language Classroom

COLETTE A. GRANGER

In many cultures silence is an accepted and valued aspect of classroom participation and learning. However, in many (though not all) educational settings deemed "Western"—especially language classrooms—speech is highly privileged, and silence is viewed as the absence of engagement with what is being taught. Since the aim of language teaching is most often communicative competence, and production is the most readily assessed evidence of that competence, this view is understandable. Nevertheless, it may overlook important ways in which some learners use silence, including as a form of participation rather than a means of avoiding it. This discussion details how silence and participation are defined in language-learning settings and enumerates research that illustrates how sociocultural, pedagogical, relational, and intrapersonal factors influence silence and participation.

The terms *participation* and *silence* are often opposed in second language research. The former refers to activities such as raising one's hand to speak, being active in class discussion, engaging in oral presentations, posing and answering questions, while the latter refers to the absence of such actions and, more specifically, to a lack of target language production. Learners' silences can range from seconds-long pauses before answering questions, to the ability or willingness to speak in some situations but not all, to a "silent period" of weeks or months which, depending on the definition, can consist either of a total absence of speech (Gibbons, 1985) or of a limited stock of memorized routines and formulae that enable some face-saving as well as some communicative and social coping strategies. Because this silent period mimics the preverbal period of first language acquisition save in one aspect—it is not universal—it is of particular interest to language researchers.

Silence is of interest and concern to educators too, since production of the target language both demonstrates and reinforces learning: "When students produce the language that they are studying they are testing out the hypothesis which they have formed about the language" (Tsui, 1996, p. 146). Moreover, like all educators, language teachers are bound by curricular demands and by the requirement to assess learners' progress. To do this they need documentable evidence, of which talk is an important component.

Many explanations for learner silence have been advanced, with sociocultural factors among the most frequently named. Some cultures and education systems—for example, Korean and Japanese (Chen, 2003), Finn (Lehtonen & Sajavaara, 1985), and Inuit (Crago, 1992) are viewed as producing reticent, passive, silent learners. Gender too has been named as a factor in silence, sometimes in conjunction with ethnicity, race, or both, as female students are often observed to participate orally much less than males (Morita, 2004; Julé, 2005). Clearly there are connections between culture, ethnicity, and gender on one hand, and classroom silence or verbosity on the other. However, to view these influences as fixed and straightforward is to ignore their interrelatedness with teaching practice as well as to gloss over individual learner differences.

Teachers have considerable power in their classrooms, and their teaching practices, which are informed by curricular requirements and institutional demands as well as by culture and by educators' conscious or unconscious beliefs and biases, can marginalize

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and even silence learners. In 1996, Tsui identified overly difficult input, inequitable speaking opportunities, and inadequate "wait time" following questions—due, she observed, to teachers' difficulty tolerating silence—as among the ways educators contribute to reduced participation. Liu's (2000) work with Asian students in US universities identified 110 factors influencing oral participation and its absence. While sociocultural aspects were most predictive, affective, and pedagogical factors including shyness, teacher encouragement or the lack of it, comfort, workload, and stress levels (pp. 164–5) were close behind. Similarly, Cheng (2000) named unfamiliar or unsuitable teaching methods (including those focusing on discussion and questioning or pair- and group-work) as common causes of what appeared to be learner reticence and passivity—arguing that such causes are situation-specific rather than culturally determined.

Indeed, to attribute learner silence solely to factors in the learner's home culture can be dangerous because it overlooks the role these same cultural biases play in creating both the constructs of *silence* and *participation*, and teachers' understandings of them. By privileging speech as a means to knowledge and understanding, a way of demonstrating learning, and a form of cultural capital (Cameron, 2000), and by making assumptions about learners that are grounded in stereotypes of race, culture, gender, and (dis)ability, teachers can produce precisely the classrooms they may be trying to avoid. For instance, Julé (2005) found conversations in a British Columbia ESL classroom heavily skewed toward male students, observing that: "the teacher appear[ed] to engage with the contributions made by the boys and seem[ed] to dismiss the contributions made by the girls" (p. 34) to the extent that the ratio of male-to-female student speech was a startling 9:1, with girls seeming little more than observers. And Ellwood and Nakane (2009) found that Australian teachers' reluctance to call on Japanese students—whom they saw as "silent when other students engage in discussion . . . [and unable] to be critical of the material they learn, to question authority, and to speak to their teachers in a relaxed manner" (p. 217)—was rooted in stereotype and as such both negative and incorrect, as those same students reported themselves wanting to speak but lacking confidence due partly to the lack of opportunity engendered by teacher attitudes.

Confidence or the lack of it is one of many individual differences that play into learner silences, participation, or both. Others include experience, motivation, fear and anxiety, language aptitude, cognitive and learning styles, and strategies (see Saville-Troike, 1988; Tsui, 1996). For example, a study by Chen (2003) of two Korean and Japanese learners attributed their reticence to personal and family characteristics as well as cultural and educational experiences. And in regard to gender, Morita's (2004) female Asian subjects explained their "relative silences"—partly attributable to culturally determined gender roles—in individual terms too, naming "limited content knowledge, personal tendency and preference, learning goals, identity as a less competent member, outsider or marginal status, role as a relative newcomer . . . [or] someone with limited English imposed by others, and instructor's pedagogical style" (pp. 586–7). One study participant even gave distinct reasons for her silence in three different courses, citing as influences one teacher who she felt perceived her as "quiet but legitimate," another who marginalized her as "relatively powerless," and her own "strong sense of alienation" (p. 589).

Characteristics of individual teachers and students, teaching ideologies and methods and cultural aspects, and the interrelatedness of all of these can contribute to a learner's sense of alienation in the face of a new language and, in turn, to silence. In light of this, to consider silence as only and always a lack of speech—or the absence of classroom participation—is to neglect other possibilities (Cameron, 2000; Green, 2008; Ellwood & Nakane, 2009). In 1988 Saville-Troike suggested that "a tendency in the second language learning field to equate overt production with active learning, and lack of overt production with passivity and disengagement," had "led to an unconscious assumption that nothing

of significance was happening unless learners were talking to others" (pp. 568–9). This point is crucial, for while second language learning is clearly a social and interpersonal undertaking, it is also a profoundly *intra*personal process, involving the remaking of the self in and through the new language, and at times resistance to that remaking, either of which might be manifested in silence (Granger, 2004).

Often accompanying discussions of what causes silence are suggestions for ways to end it. These suggestions include: clearly communicated expectations, active teaching of questioning and interrupting strategies, and carefully designed opportunities for equitable turn taking and small-group discussion (Morita, 2004); the use of writing (Harklau, 2002) and digital technologies (Lotherington, Holland, Sotoudeh, & Zentena, 2008); soliciting and responding to learners' perceptions (Garrett & Shortall, 2002); and negotiated classroom dynamics that honor authentically reciprocal dialogue (Hayes & Matusov, 2005), and tolerate errors, alternate perspectives, and even silence (Green, 2008). This latter is crucial: to the extent that for some learners silence may have been "chosen"—deliberately or unconsciously—as a means to work through the profound intrapersonal and identity-related losses that can accompany the gains of a new language (see Granger, 2004), it may be useful for educators and researchers to work toward the recognition of, and respect for, learner silences as—in at least some cases—a positive and meaningful aspect of the language-learning process and an essential component of participation in that process.

SEE ALSO: Affect and Language Teaching; Identities and Language Teaching in Classrooms; Identity and Second Language Acquisition; Individual Differences in the Classroom; Teaching Language-Learning Strategies

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Sinclair, John

MICHAEL STUBBS

John McHardy Sinclair (June 14, 1933–March 13, 2007) made major contributions to three related areas of applied linguistics: language in education, discourse analysis, and corpus lexicography. He was born and grew up in Edinburgh, Scotland. He studied and later lectured at the University of Edinburgh, and in 1965, at the age of 31, he was appointed to the foundation Chair of Modern English Language at the University of Birmingham, England. Although he stayed in Birmingham for the whole of his formal university career, he traveled extensively in many countries, and introduced large numbers of young researchers to work in linguistics. He was awarded honorary doctorates from the Universities of Gothenburg, Sweden, and Erlangen, Germany, and honorary professorships from the Universities of Jiao Tong in Shanghai, China, and Glasgow, Scotland. He formally retired in 2000, but continued to teach and research, and to attract leading linguists and students from around the world to the Tuscan Word Centre, an institution which, together with his second wife, Elena Tognini-Bonelli, he founded in Italy. He died at his home in Florence in March 2007.

In the 1960s, Sinclair was developing views which were, for the time, widely regarded as unrealistic, but which by the 1990s had become widely accepted. In Edinburgh and Birmingham between 1963 and 1969, he built up a computer-readable corpus of spoken language in order to study the relation between statistically defined units of lexis and psychological units of meaning. Nowadays, it is difficult to project oneself back to a period in which there were no PCs, and in which the university mainframe computer was hardly powerful enough to handle Sinclair's corpus of 135,000 running words. He argued that spoken English provides the best evidence of the common patterns of language use, that linguistic description must be concerned primarily with a theory of meaning, and he explicitly formulated several principles which are still central in corpus linguistics today. This early work tackled a question which has still not had a satisfactory answer: How can the units of meaning of a language be objectively and formally identified? Since computers in the early 1970s were not powerful enough to handle large text corpora, the work was shelved and taken up again in the mid-1980s, and the original research was not formally published until 2004 (Sinclair, Jones, & Daley, 2004).

In the 1970s, Sinclair's main focus was on educational linguistics. In one project (Sinclair & Coulthard, 1975; Sinclair & Brazil, 1982), he audio-recorded discourse in school classrooms, in order to study the prototypical units of teacher–pupil dialogue. This work emphasized the analysis of long texts, as opposed to the short invented sentences which were in vogue at the time. Again Sinclair was well ahead of mainstream thinking in linguistics. Within philosophy, work on speech act theory (by Austin, Searle and Grice) was still very new, but this Oxford "ordinary language" philosophy was not based on attested language use, but on invented data—anathema to Sinclair's approach. Halliday's work provided a general functional background, and within anthropology and sociology, work on social interaction (by Hymes, Goffman, Labov and Sacks) was becoming available, but there was little systematic linguistic description of connected discourse. Sinclair was again following the principle proposed by his teacher, J. R. Firth, in the 1930s that spoken language, especially conversation, is "the key to a better understanding of what language really is and how it

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works" (Firth, 1935, p. 71), but it was only some ten years later, in the mid-1980s, that work on pragmatics became a standard topic for linguistics.

Sinclair proposed that classroom discourse is hierarchic: a classroom lesson consists of transactions which consist of exchanges which consist of moves which consist of acts. Readers immediately recognized the prototypical IRF exchange structure; a sequence of initiation—response—feedback (Sinclair & Coulthard, 1975, p. 64):

I *Teacher*: What is the name we give to those letters? Paul?
R *Pupil*: Vowels.
F *Teacher*: They're vowels, aren't they?

He was also active in developing teacher-training programs. He argued that knowledge about language is "sadly watered down and trivialized" in many educational discussions (Sinclair, 1971). He directed a project which produced communicative games to meet "the language needs of urban classrooms" (Sinclair, 1973, p. 5), and another project which developed ESP materials (English for specific purposes) for the University of Malaya (Sinclair, 1980). One of his last projects, started around 2000, is *PhraseBox*, which helps children in Scottish primary schools to develop their vocabulary and grammar via real-time access to a 100-million-word corpus (Sinclair, 2006).

His work on text and discourse analysis always included literary texts. In the 1970s, along with the novelist David Lodge, his colleague in the English department at Birmingham, he developed a course on stylistics. From one end, they taught grammar through literature, and from the other end, they showed that literary interpretation required grammatical analysis. Sinclair demanded that linguistics must be able to handle all kinds of authentic texts: if it cannot handle the most prestigious texts in the culture, then there is a major gap in linguistic theory. Conversely, literary analysis must have a systematic basis: "if literary comment is to be more than exclusively personal testimony, it must be interpretable with respect to objective analysis" (Sinclair, 1971). He consistently emphasized the need to analyze long texts, and to search for observable textual evidence of meaning.

From the 1980s onwards, he returned to computer-assisted methods to study the patterning in large text corpora, and this became the basis of his most influential work as editor of a major series of language reference materials which were designed as pedagogic tools for advanced learners of English. He directed the COBUILD (Collins Birmingham University International Language Database) project in corpus-assisted lexicography, and became the founding editor in chief of a series of dictionaries and grammars. In 1987, along with a powerful team of colleagues—many of whom have made important contributions to corpus linguistics in their own right—he published the first dictionary based entirely on corpus data (Sinclair, 1987a). This was followed by a series of other dictionaries and grammars (Sinclair, 1990; Francis, Hunston, & Manning, 1996–8), plus associated teaching materials. By the year 2000, the machine-readable text collections consisted of hundreds of millions of running words, and Sinclair could show that some lexical and grammatical patterning is visible only across very large corpora.

Moon (2007), one of the senior COBUILD lexicographers, explains why the project's new data and methods had such "a catalytic effect on lexicography." When the project started there simply was no "viable lexicographic theory," whereas lexicography is now part of mainstream linguistics. However, commercial and academic priorities were not entirely compatible, and the approach was in some ways too innovative to be a total commercial success. By 1995 other major British dictionary publishers (Cambridge University Press, Oxford University Press, and Longman) had adopted the ideas, but made the dictionaries more user-friendly. It is nevertheless the COBUILD project which developed the lexicographic theory (Sinclair, 1987b).

Many of Sinclair's main ideas about corpus linguistics are formulated in what is now a modern classic (Sinclair, 1991), whose title, *Corpus Concordance Collocation*, summarizes a chronological and logical sequence. First, you need a corpus: a machine-readable text collection, ideally as large as possible. Second, you need concordance software which can identify patterns in the corpus. Third, these patterns involve collocations: the regular co-selection of words and other grammatical features. Paper concordances have been a scholarly tool since the Middle Ages, but modern concordance software can search large corpora very fast, re-order the findings, and help to identify variable phrasal units of meaning. Sinclair commissioned collocation software in the 1970s, and one of his last projects was as a consultant on a new generation of collocation software (Cheng, Greaves, Sinclair, & Warren, 2009).

Sinclair argued consistently that it is wrong to assume that the word is the primary unit of meaning: "the normal carrier of meaning is the phrase" (Sinclair, 2005). In a series of papers (Sinclair, 1996, 1998, 2005), he proposed an original phrasal model of semantic units. The overall finding of this work is that the phraseological tendency in language use is much greater than usually suspected, and that its extent can be quantified. In the last book published before his death (Sinclair & Mauranen, 2006), he continues to argue that many traditional grammars work only on simplified (often invented) sentences, but that a grammar must be able to handle raw texts of any type whatsoever. Sinclair here develops his view that significant units of language in use are multiword chunks, but the approach is via a detailed discussion of individual text fragments, as opposed to repeated patterns across large text collections. Either way, he makes a significant break with mainstream linguistic approaches.

Sinclair's work was for a long time not widely known, partly because he often published in rather obscure places, and began only post-1990 to collect his work into books with leading publishers. He was proud of the fact that, when he was appointed to his chair in Birmingham in 1965, he had no PhD and no formal publications. His first publication (Sinclair, 1965) appeared in the same year. He always remained skeptical of journals and their gate-keeping processes, which he saw as driven by fashion rather than by standards of empirical research.

In all of his work, he argued consistently against the neglect of textual analysis, which affected both linguistic and literary theory from the 1960s onwards. And his theoretical and applied interests, in discourse analysis, educational linguistics, corpus linguistics, and lexicography, were always closely related. Sinclair belongs to a long empirical tradition of British and European text analysis, derived from his own teachers and colleagues (especially J. R. Firth and M. A. K. Halliday), but represented in a broader European tradition (e.g., by Otto Jespersen) and in a much more restricted American tradition (e.g., by Charles Fries). He always saw the central task as the description of meaning. This was also true of Firth and Halliday, but it is Sinclair who made a sustained attempt to develop an empirical semantics. It led to major theoretical proposals and also to the very substantial COBUILD series of reference works. Finally, Sinclair's work is full of new observations and findings about English which were made possible by the computer techniques which he helped to invent. He is therefore one of the very few linguists who have changed the way we perceive language. In the words of one of his best known remarks: "The language looks rather different when you look at a lot of it at once" (Sinclair, 1991, p. 100).

SEE ALSO: Classroom Discourse; COBUILD Project; Concordancing; Corpus Linguistics: Historical Development; Traditional Approaches to Monolingual Lexicography

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Skehan, Peter

JANNY LEUNG

Peter Skehan (1944–) is a British linguist whose main research focus revolves around individual differences (especially language aptitude) and second language acquisition. His research interests also cover task-based instruction, language testing, and psycholinguistics. He has widely published in journals such as *Language Testing*, *Language Teaching*, *Applied Linguistics*, and *Studies in Second Language Acquisition*, and contributed chapters to many English-language teaching (ELT) and second language acquisition (SLA) books.

His popular monograph *Individual Differences in Second-Language Learning* (Skehan, 1989) laid the foundation for the budding area of individual differences (ID) research in SLA. The book reviewed learner differences such as aptitude, motivation, learner strategies, personality, and interaction between learner characteristics and types of instruction, also addressing pedagogical implications. Given the much greater variability in language development patterns amongst second language learners than those amongst first language acquirers, Skehan's work has been critical in explaining why learners differ from one another. His work marks a stark contrast with the universalist approaches, which are mostly concerned with learner similarities, and was a timely addition to the field.

In his later book *A Cognitive Approach to Language Learning* (Skehan, 1998), Skehan tackles second language acquisition from a processing perspective. With an interest in the way in which the brain processes the second language, Skehan emphasizes language learning as a cognitive activity and investigates second language learning through the cognitive abilities of the learner and the processing problems that the learner has to confront—a perspective which has largely been neglected by normative approaches to SLA. The book ambitiously touches on issues stretching from second language learning, performance, instruction and assessment, to learner styles, strategies and characteristics.

Professional Life

Skehan was born in Wales. After receiving his BA from Keele University, he pursued further studies at the University of Western Ontario and the University of the New Sorbonne (Paris III), subsequently obtaining his PhD from the University of London. The focus of his doctoral work was language aptitude.

He worked as a junior school teacher and an industrial language trainer in the United Kingdom, and taught English as a foreign language (EFL) in France. He lectured at Birmingham University and the Institute of Education, then took up a post as professor at Thames Valley University and later at King's College London before moving to the Chinese University of Hong Kong until his retirement in 2009.

Ideas

Individual Differences and Language Aptitude

Universalist accounts have dominated the study of language acquisition for several decades. Both structural and generative linguists focus their attention on the universal patterns that underlie the languages of the world. Early cognitivists such as Piaget were also mainly

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interested in developmental stages and cognitive processes that are supposedly shared by all language learners. Skehan draws attention to how language learners differ, arguing that their diversity and individuality are crucial facts that any successful theory of language acquisition ought to account for. He discusses individual differences in SLA, ranging from language aptitude, motivation, learning strategies, to cognitive and affective influences, in his first monograph published in 1989. In addition to individual differences, Skehan also considers other psychological constraints in SLA such as cognitive load and attention and sees language learning from a processing perspective.

Aptitude research became marginalized as communicative approaches grew in importance; because its consequence was taken to diminish the value of individual effort, its effects were assumed to be confined to formal contexts (Krashen, 1981), and catering for different aptitude profiles did not fit the commercial interest of textbook publishers. Critic Neufeld (1979) also argues that everyone possesses language learning ability and that it is unclear what aptitude tests actually measure. Skehan (1986b, 2002) defends aptitude research against its critics by arguing that aptitude is also relevant for informal learning, and that it is of significant theoretical and practical importance for SLA. The relevance of aptitude to second language success has been reiterated by recent studies, such as Abrahamsson and Hyltenstam (2008), who have shown that native-like adult second language learners possess a high degree of language learning aptitude.

Skehan (1986a) has updated Carroll's (1965) depiction of aptitude. He proposes that it is more appropriate to see aptitude as comprising three components: auditory ability, linguistic ability, and memory ability, and that they correspond to the information processing stages of input, central processing, and output respectively. This linkage allows for the influence of individual differences on different stages of information processing. Generalizing from individual differences research and his own study on some 100 children studied as part of the Bristol Language Project, Skehan argues that some people are endowed with better cognitive and linguistic abilities for language learning than others, and that IDs in second language acquisition are connected with similar IDs in first language acquisition (Skehan, 1986b). His finding that first and foreign language aptitudes are related implies that the capacity to learn a first language, regardless of whether it is innate or established early in life, is also deeply involved in second language learning (although later, in his 2002 chapter, he acknowledges that opposing evidence was found in critical period studies, e.g., DeKeyser, 2000). Aptitude, Skehan argues, is "the second or foreign language equivalent of a first language learning capacity" (1986b, p. 200) and therefore its importance should not be undermined. To substantiate his arguments, he surveys and summarizes second language developmental stages and relates each stage to a putative aptitude component (Skehan, 2002, pp. 88–91). In considering the relevance of aptitude to existing language acquisition theories, Skehan holds that there appears to be "no place" in universal grammar (UG) which can account for individual differences (Skehan, 1986b, p. 201). Aptitude research seems to have created a puzzle for UG theorists, unless they assume that some people may be endowed with "more" of a universal grammar or possess a "more efficiently organized" universal grammar.

Skehan also criticizes the status of the Monitor in Krashen's SLA model (1985), which deals with online performance, in relation to the rest of the model, which is concerned with the process of learning over an extended period of time. He argues that the temporal separation means that individual differences that may be manifested in monitor use do not connect up with the other central components of the model, and therefore the model necessarily trivializes individual differences. In contrast, Skehan holds that the 'good language learner' model proposed by Naiman, Frohlich, Stern, and Todesco (1978) is a better explanation that demonstrates the range of potential influences on language learning success, encourages quantification of the different influences, and offers some scope

for conceptualizing interaction effects. Skehan believes that the concatenated or research-then-theory approach, as used in the Naiman model, is more suited for research into individual differences. Such an approach postulates a rudimentary categorization of relevant variables, and then implies a research program that seeks quantitative data about the variables.

Task-Based Instruction and Testing

As far as first language acquisition is concerned, Skehan has not challenged the nativist view, which holds that language development is driven by maturation factors rather than communication or input, and that prior to the end of the critical period, a language acquisition device primarily directs language acquisition processes. However, Skehan (1998) rejects the nativist approach to SLA, arguing that this model fails to generate unambiguous, testable predictions, keeps modifying itself, lacks external validity, and does not illuminate postcritical period learning processes. Taking a processing approach, he finds it more useful to see language as a dual-mode system which is learned and represented in the form of rules and exemplars. This system is constrained by the operations of a limited capacity information-processing mechanism, in which the construct of noticing is crucial. This understanding has shaped Skehan's view on pedagogy. He regards the 3P approach (presentation, practice, and production) as "out of fashion" (Skehan, 1996) and advocates the task-based approach to instruction and testing, which is believed to engage the learners' naturalistic acquisition system, stretch the underlying interlanguage system and drive development forward. Processing-based analysis of tasks assesses their information-processing load, which is useful for the task designer who needs to strike a balance between the attentional demand of language use and development, as well as that between a concern for form and for meaning.

In his characterization of tasks, Skehan emphasizes that meaning should be primary, and that tasks must bear a relationship to comparable real-world activities. Skehan (1992) proposes a three-way distinction of the analysis of tasks, based on code complexity, cognitive complexity, and communicative pressure. These task dimensions shed light on task difficulty, which in turn determines how much processing resources the learners are left with for a focus on form. It is believed that attention is needed for noticing and interlanguage change, and greater attention to form can lead to higher levels of accuracy. Encouraging an adequate focus on form is deemed particularly important for older learners, whose natural predisposition is toward meaning, and this predisposition is potentially harmful to their second language development. Much of the difficulty faced by the second language learner is in having to cope with performance, which is biased toward meaning, while controlling the complex second language system. This tension between form and meaning exists at any moment of language use.

Extending from his interest in the use of tasks in instruction, Skehan (2001) uncovers the systematic effects that task characteristics (including familiarity of information, dialogic versus monologic; degree of structure; complex outcomes; and transformation) have on assessment performance. Task-selection decisions are found to have significant consequences on the fair treatment of candidates, and therefore tasks should be taken as a relevant unit for the design of tests. More specifically, a variety of processing conditions should be built into assessment in order to allow the test results to be generalized to a range of performance conditions. Indeed, Skehan agues that the method of assessment is not a technical problem, but the central problem in assessment, since it forms the basis of how language is elicited, how performance is engaged and what implications can be drawn about the candidates' language ability. The task-based performance literature may be further linked with the Levelt model of first language speaking to distinguish between factors that address the complexity of tasks and factors that affect the way in which expressions are built (Skehan, 2009a).

All in all, Skehan believes that psycholinguistic studies deserve greater attention by language researchers, and he has made it a constant theme in his work that a better understanding of psychological processes is fundamental to advancing and unifying the study of language learning, teaching, and assessment. He calls for further research into the role of memory and attention in second language processing, and this focus is reflected in his recent work involving empirical studies on lexical performance, the effects of strategic planning on performance, etc. (Skehan, 2009b; Skehan & Foster, 2005).

SEE ALSO: Aptitude in Second Language Acquisition; Learner Varieties; Task-Based Assessment; Task-Based Learning: Cognitive Underpinnings

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Skutnabb-Kangas, Tove

ROBERT PHILLIPSON

Tove Skutnabb-Kangas (TSK), born July 6, 1940, grew up in Finland with two mother tongues, Finnish and Swedish. She studied Nordic philology, education, and psychology at the University of Helsinki and had the good fortune, directly after her MA, to be employed as a research assistant to Einar Haugen at Harvard University, USA in 1967–8. Haugen played a key formative role in establishing fields that have flourished over the past half-century: bilingualism studies, language policy, and the ecology of language. When TSK returned to Finland she was instrumental in these topics being introduced in academic and policy contexts in the Nordic countries. This led to a career with a major worldwide impact on multilingual education, minority studies, linguistic human rights, language policy and power, and the relationship between biological, cultural, and linguistic diversity. Her impact has been twofold: on academic scholarship and on involvement in ongoing struggles for justice.

TSK taught in a variety of contexts while preparing a PhD thesis (Helsinki, 1975) on the school achievement of Swedish mother-tongue boys in a bilingual vocational school in Finland. In the theoretical part, she systematized definitions of mother tongues (languages learned first, identified with, best known, or most used)—these are now often used as default definitions. Later she also ranked the definitions in terms of how much they respect linguistic human rights, stating that the identification definition is the only reliable one, and that one can also have a mother tongue which one does not know (particularly well)—central for revitalizing the mother tongues of indigenous peoples that have been unlearned through forced assimilation. She later wrote an advanced doctoral thesis (DPh, Roskilde, Denmark, 1987) on language and power, and the education and identity of migrant minority, working class Finnish children in Sweden. The empirical evidence unambiguously demonstrated that mother-tongue-based bilingual education could deliver in ways that submersion into a monolingual alien language and culture never could. She has also systematized definitions of bilingualism (Skutnabb-Kangas, 1975), and characteristics of bilingual education models and prerequisites for successful education (e.g., Skutnabb-Kangas, 1981, 1988, 1995, 2000).

TSK and Pertti Toukomaa, a Finnish social psychologist, wrote two monographs for UNESCO, *Teaching Migrant Children's Mother Tongue and Learning the Language of the Host Country in the Context of the Socio-Cultural Situation of the Migrant Family* (Skutnabb-Kangas & Toukomaa, 1976) and *The Intensive Teaching of the Mother Tongue to Migrant Children of Pre-School Age* (Toukomaa & Skutnabb-Kangas, 1977). These publications ensured that their ideas were disseminated worldwide and made for links with key scholars in bilingualism, in particular from Canada, India, and the United States. She has been deeply involved in minority education issues in Sweden and Norway since the late 1960s, in relation to both immigrant minority and indigenous education, including successful struggles for the only indigenous peoples in European Union countries and Norway, the Saami. Mother-tongue-medium education from preschool to university level is now a reality for some Saami.

After a UNESCO conference in Paris in 1972 where Wallace Lambert presented the first results of Canadian immersion education of English-speaking students through the medium of French, TSK suggested similar experiments in Finland for Finnish-speaking dominant

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group children through the medium of Swedish (*Multilingualism for All*, see Skutnabb-Kangas, 1995). All was clear—parents, children, the municipality—but a change of Minister of Education postponed immersion in Finland for another ten years.

TSK moved to Denmark in 1979, which has given her firsthand experience of life as an immigrant. This has been challenging: Denmark markets itself as progressive and liberal, but has subjected its entire immigrant and refugee population to crudely assimilationist policies, culturally and linguistically. Her empathy with the struggles of indigenous peoples and marginalized minorities worldwide has had a deep influence not only on these peoples themselves but also on the focus of her work. This led to seeing discrimination on grounds of language having ideological and structural functions similar to racism and sexism. The concept *linguicism* was coined by TSK in 1986 and put to practical academic use in a range of contexts. She defined it as "Ideologies, structures and practices which are used to legitimate, effectuate, regulate and reproduce an unequal division of power and resources (both material and immaterial) between groups which are defined on the basis of language" (Skutnabb-Kangas, 1988, p. 13).

Her book *Tvåspråkighet* (in Swedish 1981, in English 1984, *Bilingualism or Not—the Education of Minorities*) showed powerfully that matters of language, education, and culture needed to be situated in their economic and political contexts. A multidisciplinary approach has been a cornerstone of her research since that time. Phillipson edited a volume in 2000 to celebrate TSK's 60th birthday, *Rights to Language: Equity, Power and Education*. The volume has 50 contributors from anthropology, applied linguistics, communication, discourse analysis, economics, education, law, linguistics, media studies, policy analysis, political science, psychology, social theory, and sociolinguistics, as well as creative writers. All the contributors were people who had influenced TSK's professional development and who were influenced by her work.

Since the early 1980s TSK has worked closely on postcolonial education issues and the role of English worldwide. This interest was initially triggered by involvement in NGO educational "aid" from Norway and Denmark to the Namibian liberation movement, SWAPO, which was then in exile. Linguistic imperialism, a type of linguicism, has had a major influence on the policies of donor countries and the World Bank, consolidating the position of former colonial languages and English as the dominant language of corporate globalization and United States interests. These influences on language policy are covered in her 2000 magnum opus (818 pages), *Linguistic Genocide in Education—or Worldwide Diversity and Human Rights?*

A further central concern for almost 40 years has been developing the concept of linguistic human rights. This has required looking in depth at the evolution of relevant national and international laws, and making a case for language rights as fundamental human rights. This is now increasingly accepted, though the struggle for the implementation of such rights is uphill in most parts of the world, as can be seen from the many contributions to two coedited anthologies, *Linguistic Human Rights: Overcoming Linguistic Discrimination* (Skutnabb-Kangas & Phillipson, 1994), and *Language, a Right and a Resource: Approaching Linguistic Human Rights* (Kontra, Phillipson, Skutnabb-Kangas, & Váradi, 1999).

TSK has written over four hundred scholarly articles, on such topics as the linguistic oppression and lack of linguistic human rights of Kurds in Turkey, of the Deaf and their sign languages, and of many indigenous peoples worldwide. Her books and articles have appeared in almost 50 languages. TSK has lectured worldwide, studied language policy issues on most continents, and been a keynote lecturer at hundreds of international conferences. She has functioned as an expert for many international bodies, including UNESCO, the Council of Europe, the High Commissioner on the Rights of Ethnic Minorities of the Organization for Security and Cooperation in Europe, and the UN's Permanent Forum on

Indigenous Issues. She has been involved in the establishment of minority multilingual education schemes in many countries, including Nepal and India. These innovations are an encouraging sign that some governments in postcolonial countries are introducing mother-tongue-based multilingual education, as documented recently in two anthologies (Skutnabb-Kangas, Phillipson, Mohanty, & Panda, 2009; Skutnabb-Kangas & Heugh, 2011).

TSK was the vice-president of Terralingua for its first seven years. Terralingua works "to sustain the biocultural diversity of life—the world's invaluable heritage of biological, cultural, and linguistic diversity—through an innovative program of research, education, policy-relevant work, and on-the-ground action" (from the mission statement, at www.terralingua.org), and worked especially to connect the more biodiversity-centered issues in the organization to educational linguistic human rights as central for promoting endangered languages and knowledges (Maffi, Skutnabb-Kangas, & Andrianarivo, 1999; Skutnabb-Kangas, 2001; Skutnabb-Kangas, Maffi, & Harmon, 2003; see also Skutnabb-Kangas & Phillipson, 2008; Skutnabb-Kangas, 2011).

Two expert papers for the United Nations Permanent Forum on Indigenous Issues, written with Robert Dunbar, an international human rights lawyer, and indigenous colleagues (Magga, Nicolaisen, Trask, Dunbar, & Skutnabb-Kangas, 2005; Dunbar & Skutnabb-Kangas, 2008), led to the publication of the path-breaking monograph *Indigenous Children's Education as Linguistic Genocide and a Crime Against Humanity? A Global View* (Skutnabb-Kangas & Dunbar, 2010). These publications show that to educate indigenous/tribal and minority children through a dominant language in a submersion or even early exit transitional program violates the right to education. It prevents access to education because of the linguistic, pedagogical, and psychological barriers it creates; it often curtails the development of the children's capabilities and thus perpetuates poverty; and it is organized against solid research evidence about how best to reach high levels of bilingualism or multilingualism and how to enable these children to achieve academically in school. They also consider the extent to which the various forms of submersion education practiced both earlier and today by states could be considered to give rise to *international criminal responsibility*, exploring the application of the legal concepts of genocide and of crimes against humanity.

TSK is on the editorial boards of many international scientific journals. She is the editor of the book series *Linguistic Diversity and Language Rights* (see also activities and publications on her quadrilingual Web site, www.tove-skutnabb-kangas.org). TSK was the recipient of UNESCO's Linguapax prize in 2003.

SEE ALSO: Linguistic Human Rights; Mother-Tongue-Medium Education; Multilingualism and Language Rights; Phillipson, Robert; Role of Linguistic Human Rights in Language Policy and Planning; UNESCO and Language Policy and Planning

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Snow, Catherine

M. SUSAN BURNS AND ARIEH SHERRIS

"It's time for dessert, Nina. What's hibernating in the freezer?"
"Ice cream?"
"Yes!"

This is an exchange between Catherine Snow and Nina, almost three years old, the first author's daughter, at a joint family gathering at Snow's home. Nina's mother thought, here we go, a new vocabulary word "hibernating" for Nina! Snow, of course, was contextualizing her chosen low-frequency vocabulary item in a simple stock question form and a familiar context (i.e., dinner, dessert, and freezer). The example reflects Snow's personal dedication to the role of input, spontaneous modifications, interaction, and linguistic environment, a dedication that has lasted 40 years and revealed itself in studies of family table talk, pragmatics, syntax, vocabulary, and literacy in first and second language learning, producing research that has influenced nearly two generations of researchers, teachers, and language and literacy policy makers worldwide. In an early peer-reviewed publication based on her dissertation Snow wrote "mothers under properly motivating conditions can predict to some extent what kinds of speech modifications their children will require . . . the presence of the child remains a potent factor in eliciting still more extensive modifications" (Snow, 1972, p. 557).

Catherine Elizabeth Snow, born December 14, 1945, in Toledo, Ohio, received her BA in psychology in 1966 from Oberlin College in Oberlin, Ohio, and was awarded highest honors, Phi Beta Kappa, for her thesis titled "Effects of Luminance and Contrast on Contour Dependent Color After-Effects." In 1967, her thesis "Conjunctive and Disjunctive Thinking in Children" led to an MA in psychology from McGill University in Montreal, Quebec. In 1971 McGill University awarded Snow a PhD in psychology for her thesis "Language Acquisition and Mothers' Speech to Children."

Snow described her career as well as her work in second language development as being impacted by her appointment at the Institute for General Linguistics, University of Amsterdam in Amsterdam, the Netherlands from 1971 to 1978 (personal communication, 2010). Under examination at that time was sequential second language acquisition of Dutch by 5- to 7-year-old immigrant children. Concurrent research activities included a variety of linguistics projects in which Snow became lead statistician at the Institute. Snow describes her research at that time and in future scholarship as

> enabling me recurrently to see links from current topics to new ones . . . I started out studying language development in young children . . . and then because I was in Holland got interested in first language acquisition and second language acquisition in the ways that they were similar and different . . . then moving to Harvard and thinking about literacy development . . . children again using the resources of social interaction to construct models for this new domain. (personal communication, 2010)

Selected areas in which Snow has made significant impact on approaches to second language development are highlighted below, keeping in mind that this work is intimately

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related to her initial interest on first language acquisition. In a similar manner additional work in early language and literacy are also highlighted.

An early advocate of psychosocial concepts of L2 and bilingual acquisition, Snow has conceptualized in her laboratory and naturalistic research (Snow & Hoefnagel-Höhle, 1978) that older learners acquire a new language more rapidly than younger ones as part of her critique of maturational constraints on L2 acquisition. In her critique of critical/sensitive period hypotheses for second and bilingual language acquisition, Snow and her colleagues demonstrate numerous neurological and cognitive studies of SLA are flawed (Marinova-Todd, Marshall, & Snow, 2000); this stand has generated considerable controversy (Hyltenstam & Abrahamsson, 2001), which she and her colleagues address (Marinova-Todd, Marshall, & Snow, 2001).

In the mid-1980s, Snow, together with Brian MacWhinney, developed the child language data exchange system (CHILDES) (MacWhinney & Snow, 1985). CHILDES was conceived as a collection of corpora openly accessible to researchers to both contribute corpora and research the corpora of others. The database has produced a wealth of research from several different disciplines. Today it can be accessed via the Internet (http://childes.psy.cmu.edu/). Much of Snow's data used for the purposes of studying first and second language acquisition and establishing durable linkages between oracy and literacy has been subsequently contributed to CHILDES (e.g., Snow & Dickinson, 1990; Snow, Perlmann, & Nathan, 1994).

The theme of building language for literacy is echoed throughout Snow's work on literacy development and recommended practices: a longitudinal study of language and literacy development among low-income children who were followed for 15 years from age three (home-school study); following the language development of young children participating in the early head start intervention; studying the language and literacy development of first and second language learners; and considering aspects of transfer from L1 to L2 in the domains of language and literacy. Results of these studies have shed light on the development of language and literacy as well as key components that are integral to early intervention in these areas. Decontextualized language and use of rare words by families at home and teachers at school (including preschool) are associated with students' literacy acquisition in kindergarten as well as reading comprehension through high school (Snow & Tabors, 1993; Snow, Tabors, & Dickinson, 2001; Snow, Porche, Tabors, & Harris, 2007). Results related to language and literacy development and vocabulary transfer from L1 for L2 learners includes a study of cognate instruction with Spanish-speaking learners of English that showed positive impact of such instruction on reading comprehension (Carlo et al., 2004).

Her jointly authored book, *Preparing Our Teachers: Opportunities for Better Reading Instruction* (Strickland, Snow, Griffin, Burns, & McNamara 2002), is one of several efforts she has been involved in to develop consensus among teacher-educators about what pre- and in-service elementary teachers need to know about language and literacy, in particular to serve second language learners effectively. Snow has also written about bilingualism and its relation to language policy issues such as bilingual education in the United States and in developing nations, and about testing policy. She is currently involved in efforts to improve middle-school literacy outcomes, in partnership with other Boston area researchers and the Boston public schools.

Catherine Snow's policy work includes chairing a number of national panels, including the National Academy of Sciences committee that prepared the reports *Preventing Reading Difficulties in Young Children* (1998) and *Early Childhood Assessment: Why, What, and How* (Snow, Van Hemel, & Committee on Developmental Outcomes and Assessments for Young Children, 2008), the RAND Reading Study Group that prepared *Reading for Understanding: Toward an R&D Program in Reading Comprehension* (2002) and the National Academy of

Education's Study group that prepared the report *Knowledge to Support the Teaching of Reading: Preparing Teachers for a Changing World* (Snow, Griffin, Burns, & NAE Subcommittee on Teaching Reading, 2005). Findings related to second language learners are encountered throughout these reports; consider, for example, in *Preventing Reading Difficulties in Young Children* (Snow, Burns, & Griffin, 1998, p. 11),

> If language-minority children arrive at school with no proficiency in English but speaking a language for which there are instructional guides, learning materials, and locally available proficient teachers, these children should be taught how to read in their native language while acquiring proficiency in spoken English and then subsequently taught to extend their skills to reading in English.
>
> If language minority children arrive at school with no proficiency in English but speak a language for which the above conditions cannot be met and for which there are insufficient numbers of children to justify the development of . . . such conditions, the instructional priority should be to develop the children's proficiency in spoken English.

In a similar manner her work on many other policy panels and projects, for example, *English Plus: Issues in Bilingual Education* (Cazden & Snow, 1990), *Achieving High Educational Standards for All* (Ready, Edley, & Snow, 2001) and the *Strategic Education Research Partnership* (Donovan, Wigdor, & Snow, 2003, and ongoing) have impacted bilingualism and language policy issues in the United States and developing nations.

In conclusion, Catherine Snow's research, policy, and practice span three main areas: (a) language acquisition, language socialization, and parent–child/child–child interaction; (b) bilingualism, second language acquisition, and bilingual education; and (c) literacy and language-literacy relations. Her major contributions include: (a) language acquisition as the root of literacy in both first and second language but also literacy acquisition as the necessary continuation of language acquisition, reflecting her belief that full-fledged adult academic language skills are not accomplished without literacy; (b) the importance of addressing all areas of language, including pragmatics and vocabulary, when examining social interactive facilitation of language learning and when thinking about language assessment or the relation of language and literacy; and (c) the importance of knowledge about both first and second language acquisition for teachers of literacy.

SEE ALSO: Assessment of Young English-Language Learners; Bilingual Education; Child Pragmatic Development; Cognates; Depth of Vocabulary Knowledge; Early Bilingual Education; Vocabulary Acquisition in Second Language Acquisition

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Social Evaluation of Second Language Speech

JENNIFER MILLER

Introduction

In a time of unprecedented mass global movements of people, the number of people who use more than one language to communicate has never been greater. International migration is at record levels, as are numbers of refugees and asylum seekers. Trends dictating global flows of people are driven by armed conflict, growing economic integration and globalization, increasing transnationalism and technological innovation, population growth, climate change, and human-made disasters. One consequence is the flow of languages across the world, to the point where plurilingual, multicultural societies are the norm in many countries, and in many world cities hearing other languages and many varieties of the dominant language is a daily occurrence. As people begin to learn and use the dominant language in their new countries, it is important to address how their language use is viewed and heard by others.

The idea that people make judgments about the speech of others is far from new. In 1913, Shaw's renowned play *Pygmalion* showed that social acceptance and legitimacy at different echelons of society can be manipulated via speech. Giles and Powesland's (1975) *Speech Style and Social Evaluation* set the agenda for many researchers to explore social judgments about speech, as well as language attitudes, and the ways we accommodate (or don't) to the speech of others. In recent times, research has tied social judgments about spoken language to identity, power, and legitimacy, in both first (L1) and second language (L2) use. In the case of the latter, the traditional binary of native speaker vs. non-native speaker, and assumptions about native speaker competence, have been challenged (Lippi-Green, 1997; McKay, 2003; Miller, 2009). In both cases, the role of the hearer has become a central focus. This entry is about the judgments people make about the social language use of L2 speakers, about the speech and the speaker.

Before turning to such judgments, it is important to clarify the notions of context and competence in L2 use. People have multifarious purposes for learning or using an L2 and achieve these purposes to varying degrees of success. This entry focuses on the second or additional language use of speakers who have developed some (but not near-native) fluency in the language, and are heard by mainstream native or near-native speakers of that language. That is, the social evaluation concerned is of a recognizably non-native user by a native or dominant language speaker. It is also understood that the "second" language may in fact be a third, fourth, or any additional language for a speaker.

Evaluating the Non-Native Speaker

The internationalization of English has caused many to rethink the notions of native and non-native speaker. To give some idea of context, Graddol (2006) estimates that numbers of people learning English will peak at two billion by 2020, and currently a billion people

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use English as an L1 or lingua franca. In addition, the vast majority of English-language teachers around the world are now "non-native" users of English (Matsuda & Matsuda, 2001).

The complex practical activity of speaking constructs aspects of identity, but also requires the collaboration of the listener, who must not only hear but, as Bourdieu (1991) points out, must also believe. What are the implications for those who are heard to speak with an accent, or to use nonstandard forms of any language? All too often, their speech is used to subordinate them socially. Lippi-Green (1997) insists that standard language and non-accent are abstractions. She suggests there are ideological aspects of standard language, which represent "a bias toward an abstracted, idealized, homogenous spoken language which is imposed by dominant bloc institutions and which names as its model the written language of the upper middle class" (p. 64). Lippi-Green outlines what she terms a "language subordination model," a system through which speakers who are heard as different may be systematically marginalized at school, in the workplace, and in the media. She provides evidence that accent, for example, may become a "litmus test for exclusion" (p. 64).

Munro and Derwing (1999) focus on the intelligibility of L2 speech, noting that accent is only one factor of many that determine what kind of a hearing an L2 speaker receives. In fact, they observe that L2 speakers who are judged to have very strong accents can be nonetheless intelligible and highly comprehensible to most or all listeners. A later study (Derwing, Rossiter, & Munro, 2002) looked at difficulties faced by native speakers in understanding Vietnamese-accented English. It was found that training in phonological and cross-cultural awareness improved the native speakers' comprehension and the quality of their interactions with non-native speakers.

In Llurda's (1993) study on language proficiency and social acceptance, native speakers recorded their perceptions of utterances by unseen non-native speakers. Llurda found that high levels of proficiency were perceived by listeners as indicators of strong educational background and intelligence, but also of attractiveness, self-confidence, and leadership qualities. A number of studies, starting with Giles and Powesland (1975) and Bourhis, Giles, and Lambert (1975), also indicate that listeners make critical social judgments about speakers, even without seeing them. These can include judgments about intelligence, status, education, and class (Giles & Coupland, 1991). And so the sound of someone's speech can be a marker of inclusion, exclusion, and difference. Additionally, in spoken interactions, Giles and Coupland's concepts of *convergence* (building solidarity with the speaker) and *divergence* (establishing distance) reflect both evaluation and the way the listener chooses to position himself or herself in relation to the speaker.

The social evaluation of an L2 (including proficiency) may be used by native speakers as a basis for discrimination. In a world characterized by increasing diversity, as well as dislocation and social and cultural inequalities, McKay (2003) suggests that "it is time to recognize the multilingual context of English use and to put aside a native speaker model of research and pedagogy" (p. 19). Yet frequently institutions and teachers are complicit in promoting a standard language ideology which rejects or marginalizes certain varieties of English. In language testing, for example, scales measuring L2 proficiency reserve the highest levels for the near-native or native-like speaker or writer. Maum (2002) shows that in the teaching English to speakers of other languages (TESOL) workplace, non-native speakers often face discrimination based on accent and "credibility." Other studies also indicate that non-native English speakers struggle to achieve legitimacy within the field of TESOL, and are not assigned the status and power of native speaker teachers (Duff & Uchida, 1997). This is a tangible example of how sounding different can have social and material consequences, as well as shape the social and professional experience of speakers. In this way, a negative view of someone's speech is also an attack on their identity. As Lippi-Green (1997) writes, "the evaluation of language effectiveness—while sometimes

quite relevant—is often a covert way of judging not the delivery of the message, but the social identity of the messenger" (p. 17).

Identity and Second Language Use

The role of language in constructing identity has frequently been demonstrated by research. Identity has been described as "relational, constructed and altered by how I see others and how they see me in our shared experiences and negotiated interactions" (Johnson, 2003, p. 788); "an account of oneself and others in a relationship of reciprocity and mutual recognition" (Létourneau, 1997, p. 61); and "Being recognized as a certain 'kind of person' . . . connected not to internal states but to performances in society" (Gee, 2000–1, p. 99). The common threads here are that identity is relational, negotiated, discursively constructed, and socially enacted, and that being recognized and heard by others is a critical part of the representation of identity. A recent case study of a young Hispanic woman (Varghese, Morgan, Johnston, & Johnson, 2005) highlighted the conflicting and evolving identities of non-native teachers who become English teachers. Marc (the teacher in question) lists some of the labels or ways her identity has been ascribed since she left Mexico, as follows: "Here I was/am an ESL learner, Latina, Mexican, woman, single, Catholic, student of colour, NNEST [non-native English-speaking teacher], minority, Hispanic, bilingual, and I don't know what else . . . people just label me" (p. 27). Note that most of these labels refer directly or indirectly to her language use, with the possible exception of "woman, single, Catholic." The authors stress, however, that notions from social and psychological identity theory such as in-group and out-group identities are too oppositional and static, and do not account for the shifts and indeed progress made by speakers in different social interactions. Marc's labels above hint at the breadth of the elements which comprise her identity and the ways in which she is perceived.

If one accepts the idea that identity is relational, interactional, and contextualized socially, it cannot be viewed as an "*entity*," but rather needs to be seen in relation to discursive, social, cultural, and institutional practices, tied to processes of legitimization and power. It also means that one should not underestimate the power of the hearer to accept or reject the spoken discourse of L2 speakers.

Ways of Hearing Second Language Speakers

In his introduction to Bourdieu's *Language and Power* (1991), Thompson writes that in Bourdieu's terms, "differences in terms of accent, grammar and vocabulary—the very differences overlooked by formal linguistics—are indices of the social positions of speakers and reflections of the quantities of linguistic capital (and other capital) which they possess" (p. 18). In the multilingual contexts described above, L2 speakers are faced with communicating in the dominant language of a particular country. For example, the 150 language groups of Australia need to learn and to speak English to participate in education, the workplace, daily functional interactions, and social settings. As Bourdieu indicates, accent, nonstandard grammar, or any struggle to express meanings may become part of the evaluation of the hearer, who may accept or deny both the message and the identity of the speaker. A speaker's experiences in "finding a voice" may vary widely depending on their personal resources, such as language proficiency, social capital, personal biography, interactional skills, knowledge, and attitudes (Miller, 2009). Negative evaluations of L2 speech may be consequential for the speaker in social, professional, and psychological terms. Accent, as Lippi-Green (1997) observes, sometimes functions as "the last back door to discrimination" (p. 73). In summary, one cannot view L2 speech in isolation from social and cultural practices, or speaking in isolation from hearing (Miller, 2003).

Research by Carrier (1999) uses the related notion of social status with regard to L2 listening and comprehension. She concludes that social relationships have an effect both on language behavior and on conversational interaction, and therefore also impact on listening comprehension. That is, it seems likely that knowing someone beyond a superficial acquaintance may change the way we hear, and lead to more productive interactions. Carrier also demonstrates that a strong accent does not equate with poor intelligibility.

Reframing the Social Evaluation of Second Language Speech

The listener has significant power to allow speakers to become audible to dominant language speakers. In a study of the role of language in self-representation for immigrant students in Australia, Miller (2003) suggests that for those still acquiring a language (as many L2 speakers are), the way people are heard by English speakers is just as important as how they speak English. As one year 11 Taiwanese student said,

> If your English is as fluent as Australian students, the Australian students do not really see you that much differently. I saw them talking to those Asian students whose English is good in the same way as they would to other Australian students. (p. 170)

Miller's model and theorization of audible difference, language use, and identity outlines the interrelationships of language competence, social capital or status, audibility, legitimacy, and the social conditions needed for the negotiation of identity (p. 176). The role of the hearer as arbiter in the model makes it possible to generalize some principles in the social evaluation of L2 speech.

Unlike a quantitative academic judgment about language proficiency, the social evaluation of L2 speech occurs in many professional and social contexts and through multiple social interactions on a daily basis. The collaboration of the listener is a part of these interactions, and on the basis of the kinds of social evaluation made, the listener may choose to support the L2 speaker in the interaction, or to abandon them. Speakers may demonstrate many aspects of language proficiency, but be perceived as L2 speakers due to their accents, intonation, grammar, vocabulary, or other prosodic features. Hearers also take into account aspects of the speaker's identity, including social status. For example, a Chinese businessman whose sometimes unintelligible English has been described as "mangled" and "Chinglish" may find it hard to get a hearing. But if that man is also John So, the longest-serving lord mayor of Melbourne (2001–8), many things change. John So was wealthy, innovative, energetic, and an effective mayor, and he enjoyed a cult status in the city, especially among young people, partly because of his "funny English" and good humor about it. In other words, his social and political status was a key to how he was heard as a speaker.

For speakers who do not enjoy a privileged social status, the response of listeners may be tied to social attitudes and a willingness to accommodate L2 speakers. The problem for some L2 speakers is that they find it hard to establish social relationships when their use of the dominant language is still insecure. Norton and Toohey (2001) remind us that access to social communicative events is critical for L2 speakers to progress, to integrate socially, to represent their own best interests, and to negotiate their identities. The dominant language community may or may not open up possibilities for learners to practice and to participate in these critical social interactions.

It seems important that native speakers of any language learn how to listen to those who are using a second or additional language, or one they may still be acquiring, and how to hear above the noise of difference. This has been referred to as "taking the mainstream headphones off" (Miller, 2003, p. 177), to make space for new and emerging voices

to be heard. The danger of negative evaluations of those who sound "different" is the very real danger of social exclusion and discrimination.

SEE ALSO: Discourse and Identity; Language and Identity; Native Speaker

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Social Influences on Second Language Speech Acquisition

JETTE G. HANSEN EDWARDS

Social influences on second language (L2) speech acquisition are external or environmental factors that impact L2 learning and use. While numerous influences could be defined as social, the most commonly researched are length of residence (LOR) in the L2 environment, amount/extent of first language (L1) and L2 use, gender, social identity, target language variety, and interlocutor accommodation. Research on social factors began in the 1970s, influenced by work in sociolinguistics by Labov and colleagues on L1 variation. While a number of the influences investigated by L2 researchers, namely LOR and gender, have attracted a great deal of interest, the majority of the factors have been under-researched and underrepresented in the literature. However, social factors may have a significant effect on the acquisition and use of the L2 as findings from research on social factors convincingly shows that learners are

> active agents in their language use, language choices, and targets for acquisition. That is, they are not passive recipients of the target language, and variation in production is typically systematic, and may be due, in part, to social marking due to gender, identity, accommodation, to the interactant, and the linguistic environment, etc. (Hansen Edwards, 2008, p. 251)

LOR has received the most attention in research on social influences, under the premise that a longer LOR equals greater quality and quantity of L2 input and use. It has typically been researched as a predictor variable of L2 accent and measured through native-speaker accentness ratings of sentences spoken by L2 learners. However, despite the greater attention paid to LOR, firm conclusions cannot be drawn due to mixed results of the research; additionally, LOR is often confounded with age of arrival (AOA) as the learners with the longer LORs have often also arrived in the L2 culture at an earlier age. The real effect of AOA and LOR may be due to differences in the learning environment as younger arrivals typically have richer L2 use environments due to peers and schooling. This may be the case for differences between younger and older children as well: In their work with Chinese L2 learners of English, Jia and Aaronson (2003) found that children with a younger AOA tended to develop more L2 networks and retain fewer L1 friends while children with an older AOA preferred to retain L1 social networks. After several years in the L2 environment, the younger children had a higher proficiency in the L2 than the older children. An additional concern is that a longer LOR does not in itself guarantee greater L2 use as LOR does not measure quality and quantity of L2 input and interaction; learners can have a long LOR in the L2 culture and still have primarily L1 social networks and L1 use opportunities. To address this concern, a number of studies (e.g., Guion, Flege, & Loftin, 2000) have focused on the amount/extent of L1, L2, or both L1 and L2 use instead of LOR. While early research on the amount of L2 use found that it did not appear to affect L2 accent, more recent research suggests that greater L2 use and contact with native speakers results in increased L2 fluency and decreased L1 accent. Confirming research on LOR, the research

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on extent of L1/L2 use also suggests that an early AOA increases the chance that learners form L2 social networks and have greater L2 use opportunities. As Flege, Frieda, and Nozawa (1997) state, the level of attachment learners have to the L1 community and openness to sound like native speakers of the L2 may be related to their AOA in the L2 culture. Finally, research indicates that it may not only be greater L2 use that affects L2 accent, but also decreased use of the L1 that has an effect, a finding that has been corroborated by research by Flege and colleagues (Flege et al. 1997; Guion et al. 2000). L2 speakers with a higher use of the L1 have stronger L1 accents than those who do not speak the L1 frequently. Age effects on L1 use are unclear: While some research found that L1 use affected L2 accent regardless of AOA, other studies have found that AOA did impact L2 accent, in some cases more than L1 use.

Research (Rehner, Mougeon, & Nadasdi, 2003) on the acquisition of linguistic variation by L2 learners has also focused on whether immersion/study abroad experiences or contact with native speakers of the L2, or both enable learners to acquire native-speaker L2 sociolinguistic variation patterns. Findings suggest that learners who have immersion experiences in the L2 culture or home-stay experiences with members of the L2 culture acquire similar variation patterns to native speakers of the L2 and that an increased amount of contact with native speakers results in greater usage of native-like variation patterns.

Gender is also a commonly researched social factor. Early research on gender operationalized it as "sex," and employed it as one of a number of predictor variables for pronunciation accuracy; however, as Piske, MacKay, and Flege (2001) note in a review of these studies, the findings are mixed and no conclusions can be drawn on the effect of sex on pronunciation accuracy. Current research views gender as a social construct and examines how gender affects use of different L2 variants, resistance to use of particular L2 features, and access to L2 use opportunities. Similarly to the findings from L1 sociolinguistic research (Coates, 1993) which has found that in many speech communities, women use more prestige variants than men, L2 research (Adamson & Regan, 1991) has also found that women typically use more formal variants than men, suggesting that different L2 norms are being targeted based on gender, with the L2 women targeting the speech norms of native-speaking women and the L2 men targeting the speech patterns of native-speaking men. For example, Adamson and Regan (1991) in research on Vietnamese and Cambodian L2 speakers of English, found that the women had a higher use of the prestige form of {-ing}, which is [iŋ], than the men, who conversely had a higher use of the less prestigious variant [In], leading Adamson and Regan to hypothesize that the learners were targeting the gendered {-ing} use patterns of the native speakers in their community. Gender may also affect language choice, as findings from research suggests. Ohara (2001) and Siegal (1996) both examined the L2 use of Western women learning Japanese; it was found that some women resisted using particular features of the L2 that they perceived would create a gendered identity in the L2 that was in conflict with their L1 identity. For example, the women in Siegal's study avoided the use of certain grammatical markers as they perceived these markers as being too humbling even when it was sociolinguistically appropriate to use them. Similarly, several women in Ohara's study resisted using a high-pitched voice as they felt it portrayed a "cute" feminine image at odds with their own self-image. Gender may also constrain the level of access that learners have to L2 use opportunities (Kouritzin, 2000). For example, L1 gendered cultural norms may limit women's access to ESL courses, as well as opportunities for L2 use.

Social identity has also been the focus of several strands of research in SLA. One strand investigates the use of L1/L2 pronunciation features as social marking while another strand has focused on how learners construct or resist developing a viable L2 identity. Both of these strands have been investigated under the framework that identity is expressed via the use of different L1/L2 linguistic markers. L2 speakers may selectively choose to use

L1 or L2 features to signal either an L1 or an L2 identity, ethnic affiliation, or both; in work on ethnic affiliation among French-Canadian learners of English, Gatbonton (1975) found that the use of English interdental fricatives was correlated with the learners' ethnic identity. Even learners with a young AOA may use L1 features for social marking if they have strong connections to their L1 community and extensive use of the L1. It has also been found that the extent and type of social networks, symbolizing extent of acculturation to and affiliation with the L2 culture, may be connected with overall L2 pronunciation accuracy as well as the degree of usage of particular L1 or L2 pronunciation features. Lybeck (2002) found that her participants' use of either a Norwegian L2 /r/ or English L1 /r/ was connected with their level of acculturation. These findings indicate that learners may actively use particular L2 features to signal an in-group identity or they may resist using particular L2 features, preferring to use L1 social markers, to either resist constructing an L2 identity or to retain an L1 identity. As all of these examples illustrate, identity is also crucially related to motivation, willingness, and openness toward communicating in the L2.

Recent research on social identity has focused on "passing" (Piller, 2002), which refers to the use of "stereotypical features characteristic of a particular variety in order to pass" as a native speaker of that variety (p. 193). As Piller suggests, the rationale for passing may not only be the wish to be perceived as a native speaker of the L2, but also to hide the L1 background possibly to avoid being stereotyped. It is a short-term "performance" or act of identity that is not possible to sustain for a longer period of time. Research by Moyer (2004) found that the L2 speakers of German in her study at times avoided using features of the L1 and used L2 features specifically to try to "pass" as native speakers of the L2. Trying to "pass" as a native speaker or performing L2 culture via the use of social markers may not always be welcomed by members of the L2 culture if they perceive the speaker is not a rightful member of that culture, as Lo's (1999) research on Chinese American and Korean American men has found. One of the Chinese American men had an extensive Korean peer group and had learned to speak L2 Korean via this network. However, his use of Korean was rebuffed by a Korean American, who perceived this "use of intimate in-group Korean American terms as an attempted appropriation of identity . . . [which] constitutes an unwarranted claim to insider status in a group he is not entitled to be a member of" (pp. 474–5).

In contrast to strategically employing features in order to "pass" as an inside member of the L2 culture, speakers may also avoid using particular features of the L2. As research by Siegal (1996) and Ohara (2001) shows, resistance to the use of L2 features may not be due solely to the desire to retain an L1 identity, but may instead be a rejection of the L2 identity that the use of the L2 features signals. In both studies, the women resisted using linguistic features (grammatical markers in Siegal's study and a high-pitched voice in Ohara's) as the use of these features symbolized a femininity identity in Japan that the L2 speakers perceived to be "too humble" a stance or "too silly" or frivolous (Siegal, 1996, p. 363).

Finally, research has also indicated that confidence in using the L2 helps learners to construct a viable L2 identity, which in turn helps them become "audible" (Miller, 1999) in the L2. In her research on immigrants to Australia, Miller (1999) found that learners who saw themselves as "rightful" speakers of English had the confidence to actually speak English when they moved from an English as a second language to a mainstream high school. Moyer's (2004) research on immigrants to Germany also found that confidence in using the L2 was the major determinant of the learners' ability to develop a viable L2 identity and social networks.

L2 speakers can also be active agents in targeting a particular variety of the L2. As Beebe (1985) states, L2 speakers are not "passive recipients of comprehensible input or incomprehensible input from native speakers (NSs) but [are] active participants in choosing the target language models they prefer and thus acquiring 'the right stuff' according to their

values" (p. 404). Research in this area assumes that learners "understand that their speech community is not homogeneous, that they are exposed to many varieties of English, and that they [sic] can make choices among these varieties" (Goldstein, 1987, p. 418). The findings from research in this area indicates that a particularly variety of the L2 may be targeted by learners based on peer group contacts, social class, gender, and geography.

The effect of the interlocutor on the pronunciation of L2 speakers has also been investigated. This research has typically been framed under the speech accommodation theory (SAT), developed to explain style shifts during interactions and the motivations for these shifts (Beebe & Giles, 1984). It has been found that both children and adults may vary their L2 use both in terms of amount of talk and use of L2 grammatical and phonological markers based on their level of identification with their interlocutor. In specific, learners may diverge or converge linguistically from an interlocutor who is a member of the L2 culture in order to show L1 ethnic solidarity (divergence from the interlocutor) or distinctness from the L1 group (convergence to the interlocutor).

In summary, there is a wide range of social influences on learners' acquisition of the L2. How the learner reacts to these influences is perhaps the most important and compelling aspect of this research. Findings indicate that far from being passive recipients of their language learning environment, learners actively choose, reject, and manipulate the use of L2 features in order to retain and develop viable L1/L2 identities which may be linked to gender, ethnic affiliation, perceptions of being a rightful speaker of the L2, and the level of affinity with the interactant, the language, and the culture, and so forth. Motivation for learning the L2—and its symbiotic relationship with identity—may also influence how learners react to their L2 environment. These findings have implications for future research in areas such as motivation and attitudes as well as language dominance and language shift as the learner eventually either shifts to the L2 (depending on AOA, LOR, and other social influences) or remains effectively an L2 speaker with a limited social and linguistic range. These strands bear investigation in future research on the effect of social influences on L2 speech acquisition.

SEE ALSO: Bilingualism and Age; Flege, James; Foreign Accent; Gender and Second Language Acquisition; Identity and Second Language Acquisition

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Social Networks in Second Language Acquisition

NAOMI KURATA

Some people believe that one of the best ways to learn an L2 is to make friends with native speakers and to communicate with them using the language. There are, in fact, a significant number of studies that highlight the importance for students of moving beyond the classroom and participating in social interactions in the L2 in real-life situations (van Lier, 1996; Savignon, 1997). The possible benefits of out-of-class interactions with native speakers include enhancing learners' sensitivity to the target culture and increasing their self-confidence as well as willingness to use the L2, which, in turn, has a positive effect on L2 learning processes (Archangeli, 1999; Yorozu, 2001). However, few of these studies examine the social contexts in which such opportunities are constructed, and many seem to assume that as long as contact with native speakers is available, L2 learning and use will be unproblematic. As Neustupný (1987, p. 7) rightly maintains, there will be no practice and no learning unless language learners can find speakers of the L2 who agree to communicate with them. One of the principal ways to find such speakers in out-of-class contexts is through the learners' personal social networks.

Linguistic behavior occurring within speakers' social networks has been one of the major concerns in the field of sociolinguistics. Despite the increasing importance of concepts of social networks in this field as well as in other disciplines, learners' social networks in SLA settings have received little empirical attention to date, compared to network research relating to other sociolinguistic topics (Preston, 1989; de Bot & Stoessel, 2002). This entry will introduce some major theories of social networks and the significance of some concepts from them, and then discuss how the concepts have been applied to SLA.

Definitions of "Social Networks"

A great number of researchers have studied different types of social networks in a variety of disciplines, and, in turn, have defined these types of networks in different ways. As Barnes (1969, p. 53) explains, perhaps owing to the diversity of contexts in which the idea of a network has been applied, there is considerable confusion in the literature. A number of studies, for example, focus on communication and use the term "communication networks" (Rogers & Kincaid, 1981). On the other hand, sociolinguists who study networks are often concerned with the relationship between linguistic variations and speaker connections, and use terms such as "social networks," "personal networks," and "relational networks." Milroy (1987, p. 178) defines "social network" as "the informal social relationships contracted by an individual." Preston (1989, p. 152), on the other hand, explains that the number and type of relations an individual has to others compose his or her "network"; groups of such interrelated individuals are described as "social networks."

The diversity of these terms used in network studies is partly related to types of network analysis. According to Schensul, LeCompte, Trotter II, Cromley, & Singer (1999), there are three major contemporary approaches to networks as follows: ethnographic network mapping, ego-centered or personal network research, and the examination of full relational

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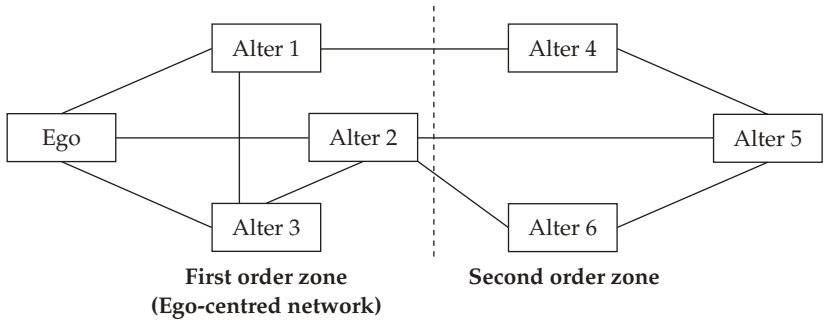

Figure 1 Ego-centered network

social networks. The first approach uses ethnographic field research methods to describe the most common groups found in a culture. Studies based on the second approach describe index or focal individuals (often called "egos") and all of the people (sometimes called "alters") whom these focal individuals identify as members of their personal networks. More specifically, ego networks are defined as the ties of ego to alters located in his/her first order zone (those he/she actually knows) as well as the ties among the alters in this zone (see Boissevain, 1974) (see Figure 1). In this figure, the two members that are connected by a solid line know each other and connections to other individuals through the first order zone contacts (Alters 4, 5 and 6) form a layer of the second order zone. Lastly, the third approach requires the researcher to identify a naturally occurring social network and to examine the relationships among, and between all of the members of the network. The second approach relating to "personal network research" has been most commonly applied in SLA research, which is generally interested in the language development of individual learners. This is partly because this approach allows us to collect highly descriptive data about individual learners' social networks from their point of view and to explore the relevance of these networks to L2 use and learning.

Significance of Social-Network Approaches and Major Theories

As mentioned above, network research has gained importance in a variety of academic fields. This is because concepts of networks allow us to expand our knowledge about the ways in which humans think, behave, and organize their daily lives within their own personal cultural context. Kim (1988, p. 107), for example, claims that network analyses enable us to find out emergent patterns of interpersonal communication behavior by examining the structure and contents of relational networks. Milroy (1987, p. 174) maintains that network concepts are a valuable tool of sociolinguistic analysis because these concepts are not limited by intercultural differences in economic or status systems. She also highlights the major contribution of network concepts to analysis of the manner in which individuals utilize the resources of linguistic diversity available to them. Furthermore, some other researchers claim that classic sociolinguistic factors, including gender and educational level, only give half of the picture about the social interactional mechanisms that enable speakers to maintain or change their language behavior whilst social-network concepts are useful in providing more complex and probably plausible explanations about these mechanisms (Raschka, Li, & Lee, 2002, pp. 22–3). Here, change of language behavior includes not only language shift/loss but also language acquisition. Regarding communicative competence as a situated phenomenon, Smith (2002) likewise argues that social-network approaches are an ideal tool to study this competence because the approach

enables us to investigate multiple, relevant discursive contexts in speakers' personal networks.

Social networks can be analyzed in depth using a wide variety of techniques and analytical variables. Which of these techniques and variables are utilized and how they are applied are different in different studies, depending on their aims, types of data, settings, and so forth. In L2 learning settings, social-network theories that originally derived from empirical research in sociolinguistics as well as anthropology have been mainly utilized. One measure of network type is "multiplexity," that is, the diversity of social relations between individuals. A relation between two persons that is based on a single role relation (for example, neighbor or workmate) is referred as "uniplex" or "single-stranded," whilst a relation that covers many different roles (for example, workmate, friend, and neighbor) is termed "multiplex" or "many-stranded" (Boissevain, 1974). Multiplex relations seem to be stronger than uniplex ones, in the sense that one role relation reinforces others. In addition, Boissevain (1974) hypothesizes that there is a greater accessibility and response to pressure between two persons with a multiplex relationship than those with a uniplex relationship and that people who have multiplex relations will be more intimate (in the sense of friendly and confidential) than those who have uniplex relations.

Another variable relevant to network research in SLA is "frequency of interaction." This variable is a result of the quality of the relation in that it often reflects multiplexity of shared roles and the nature of the elements exchanged (Boissevain, 1974). However, this does not apply to all the relations, as two persons may not necessarily think that their relation is important, even if they meet quite often. In other words, frequency of interaction can be, but is not necessarily, an index of the investment of the persons in the relationship.

"Density" is also an important criterion that measures the number of connections among people who are linked to the focal person. It is, therefore, an index of the potential communication between parts of the network and thus of the quantity and types of transactions that can be exchanged (Boissevain, 1974). "Clusters" are segments of networks which have a relatively high density (see Figure 2 which shows two clusters: Clusters A and B linked via ego). The persons who form clusters are more closely linked to each other than they are with other members of the network. Clusters are often recruited from different activity fields.

These are some of the social-network notions that have been drawn on in the SLA research from a network perspective. The next section will outline some major findings of this research and suggest how these notions are related to L2 learning and use.

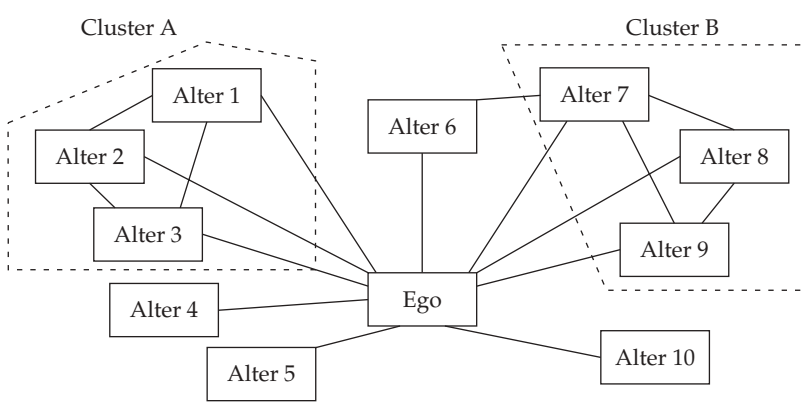

Figure 2 Clusters A and B linked via ego

Research Into the Links Between Social Networks and SLA

Two studies that are directly concerned with the relationships between the characteristics of social networks of immigrants or expatriates and L2 language learning have been undertaken by Smith (2002) and Wiklund (2002). Wiklund (2002) examined the social networks of bilingual (immigrant) adolescents in Sweden, and assessed the role of networks in their development of L2 proficiency and school success. Unlike the other studies that will be introduced below, Wiklund does not examine the comprehensive personal networks of these participants but only a subset of their three best friends from each of three groups: own ethnic group, Swedes, and an ethnic group other than their own and Swedes. By correlating the network scores of each participant, including density, multiplexity, and frequency of interaction, with his/her proficiency in Swedish, the researcher highlights the importance of differently oriented social networks in the development of L2 proficiency. More specifically, the highest network scores were reached by those whose networks were oriented equally toward Swedes and groups other than their own. In addition, these participants as well as those whose networks were mainly oriented toward Swedes tended to perform better in Swedish. Considering network scores as a sign of sociality, which is likely to promote L2 use, the researcher explains that in these two types of networks negotiation of meaning occurs, which facilitate SLA.

Smith (2002), on the other hand, presents a multiple case study of US expatriates living in Southeast Asian cultures. Utilizing a modified version of the social support network inventory and oral situation test (OST) as a research instrument, the researcher examined the participants' comprehensive personal or egocentric social support networks and explored the correlation between their network properties and L2 communicative-competence measures. Similar to Wiklund (2002), Smith found that "frequency of interaction with hosts" and "percentage of host nationals in the network" are positively related to communicative competence. In addition, Smith found a weak correlation between the size of the networks and competence. Smith also claims that the factors of "density" and "closeness" may negatively affect the informants' communicative competence since dense networks, where close relationships are often formed, may seclude the expatriates enough to prevent exposure to new lexical items and sociolinguistic situations, thereby impeding language learning.

Both Smith (2002) and Wiklund (2002) were thus interested in the correlations between the characteristics of social networks and L2 proficiency. In order to measure this proficiency, they required their informants to produce written texts or to take oral tests to assess their proficiency. Given an increasing awareness of contextual and social aspects in language learning research, it is also important to investigate how actual interactions with network members influences SLA. Tarone (1997) suggests that the way native speakers and learners behave in a formal, task-oriented context cannot be assumed to be the way they behave in the real world and highlights the necessity to study L2 learning processes in natural settings for everyday communication.

Kurata's (2004a, 2004b) research takes up in part Tarone's (1997) suggestion of the significance of examining authentic interactions in natural settings. Her research presents a case study of the social networks of upper-intermediate level language learners studying Japanese at an Australian university. Dealing with a wide range of data, including interactive discourse occurring in naturalistic environments as well as introspective reports and interviews, the study examined the relationship between the learners' networks and SLA in their home country. Utilizing Boissevain's (1974) criteria for network analysis, the researcher compared the characteristics of the informants' current networks with those that existed prior to their in-country experiences. In addition, her study applied the framework of communicative competence developed by Neustupný (1987) and sociocultural

theory to analyze the informants' language learning in their actual interactions within their networks.

The results of Kurata's research indicated that a number of characteristics, such as "multiplexity," the variety of backgrounds of their network members, and the close relationships between the informants and their network members were probably related to the raising of their nonlinguistic as well as linguistic awareness. Moreover, she found that the learners of Japanese in this research made significant investments in interaction in "clusters" (segments of networks which have relatively high density), and, in turn, they were exposed to Japanese culture as well as Japanese language usage in natural settings. It was argued that this exposure would facilitate opportunities for L2 learning. Furthermore, the analysis of some naturally occurring interactions within the learners' social networks revealed that these interactions provide a very valuable source of comprehensible input and output, which possibly leads to language learning.

As regards Japanese learning in host-country settings, there are a number of case studies that have examined the links between learners' social networks and L2 learning. The concept of network was first employed in this setting by Haruhara (1992), who investigated "networking strategy." In this study, Haruhara stressed the importance for learners to consider their daily life situations as learning. Subsequent to Haruhara's study, the Committee of Network Research in the Japanese Language Education Society carried out research into learners' Japanese language acquisition from a network perspective (Nihongo Kyooiku Gakkai Nettowaaku Choosa Kenkyuu Iinkai [The Network Research Committee of the Japanese Language Education Society], 1997). Their research includes several case studies that focus on the effect of learners' networks on Japanese language acquisition, the learners' evaluation of their networks, and the linkage between their learning strategies and the maintenance of their networks. The participants of these studies were foreign residents of Japan with a variety of backgrounds, such as refugees, foreign wives with Japanese husbands, overseas students, and so on. The researchers employed ethnographic methods, for example, participant observation, and interviews with learners, their partners, and their teachers.

The results of these case studies revealed some important factors that facilitate Japanese learning, including learners' active participation in networks where they can engage in a variety of activities and can develop mutual and close relationships with native speakers, and the existence of key persons who support the establishment and the maintenance of networks or encourage learners to participate in different networks. On the other hand, there are a few negative factors affecting Japanese learning. A number of participants in this research believed that networks with co-nationals hindered them from establishing networks with native speakers and impeded the improvement of their Japanese skills. Moreover, some other cases in this research demonstrated that a lack of active participation in networks with either co-nationals or Japanese native speakers resulted in a lack of information about Japanese learning and of opportunities to communicate with native speakers.

Other SLA Research in Social-Network Contexts

Within English as a foreign language (EFL) settings, two more recent studies explored the relevance of learners' social networks to their L2 learning (Ferenz, 2005; Palfreyman, 2006). Ferenz (2005) investigated the types of social networks in which six graduate students at an Israeli university discussed their L2 disciplinary writing tasks and the impact of these networks on the development in their L2 academic literacy. Ferenz identified two types of social networks, namely, academic-oriented and nonacademic-oriented networks. Her

analysis further indicated that the members in the former social networks assisted the students in promoting their L2 advanced academic literacy, among other things, by developing their disciplinary knowledge as well as modeling L2 literacy practices. The students' nonacademic-oriented social networks, in contrast, were claimed to promote general literacy skills. Ferenz also suggests that students develop academic-oriented networks in order to pursue academic identity as well as academic goals whereas nonacademic social networks reflect the students' other types of identities and goals, such as those of a professional nature. Ferenz finally recommends that students' identities, goals, and access to supportive social and academic environments should be taken into consideration for the learners' L2 literacy development.

Focusing on social and material L2 resources outside formal learning settings, Palfreyman (2006) examined how the use of these resources by female university students in the United Arab Emirates was shaped by social contexts. Based on an online survey as well as interview data, Palfreyman found that the students utilized a wide variety of resources in these settings to practice L2 as well as to clarify their understanding of the language. Viewing social networks as a key concept in understanding the ecology of social resources, Palfreyman claimed that gender and perceived expertise in English affected the students' use of these resources. Relatively high English proficiency of the students' older sisters, for example, was found to contribute to an available source of expert help. Palfreyman thus suggests that social networks influence the accessibility and use of social resources. In addition, the findings demonstrate that the students themselves acted as sources of English expertise, which, in turn, might strengthen their status, social identity, or both in their family as well as community.

A significant multiple-case study concerned with the effect of social networks on academic literacy socialization in an ESL setting was conducted by Zappa-Hollman (2007). Combining the notions of social networks (Milroy, 1987) and communities of practice (Lave & Wenger, 1991), she proposes the concept of "individual network of practice" (INoP). This concept is defined as "all the social ties of any given individual, whether weak/distant or strong/close, relevant to the phenomenon under study" (Zappa-Hollman, 2007, p. 21). The researcher found INoP useful as an analytical construct to examine the nature and impact of six Mexican exchange students' interpersonal relationships on their L2 academic literacy development and performance at a Canadian university. More specifically, one of the participants' (female) investment in INoP ties provided her with affective and academic returns, both of which were positively related to her socialization into the academic culture of her host university, including its attendant literacy practices. In addition, this study reveals that the network members from whom this participant mostly received such returns were characterized by multiplex ties, such as friends, classmates, and sometimes also team mates at university.

Although the above brief review of the literature has provided insights into the links between learners' networks and L2 learning, it tells us little about the processes of how learners construct opportunities for L2 use and learning in their natural interaction within their social networks. There are, however, an increasing number of studies that discuss the issues of learners' access to such opportunities from poststructural perspectives. They argue that although the learners actively shape their own L2 use and L2 learning experience, they can construct such experiences only to the extent that their sociocultural contexts, including social networks, allow them to do so, and that the construction of this experience is pertinent to that of the learners' identity. From a social network perspective, the importance of the interaction between social networks and speakers should be stressed. In other words, social networks influence speakers, but speakers themselves also choose and influence social networks.

Kurata's more recent study (2007a, 2007b, 2010, 2011) examines how opportunities for L2 use and L2 learning are socially constructed in foreign-language learners' social networks. Through triangulation of ethnographic data, including interactive discourse occurring in natural social settings and interviews, and utilizing sociocultural theory alongside of other poststructural perspectives, Kurata pursued a holistic approach for exploring major factors that affect the construction of these opportunities, including individual, interpersonal, and larger societal/institutional factors. She also applies Auer's (1984, 1988) approach to code switching and transfer in order to conduct an in-depth examination of L1/L2 selection at a micro level.

The findings of Kurata's study reveal that the students in her study were able to establish social networks in which native speakers of Japanese were participants on an equal footing, such as friends, peers, or both. More importantly, the study also indicates that the same students sometimes have difficulty gaining access to informal interactions in Japanese in these networks, in particular, in the university domain. This difficulty can be attributed to various factors, including the learners' history as an L2 learner/user, shared or divergent goals of the interactants, and the dominance of English in the community. However, the analysis of processes of L1/L2 selection and negotiation in their interactions demonstrates that access to L2 appears to be mediated by both micro- and macrolevel factors, such as strength of signaling the learner's preference for L2 and norms in the community where the learner is situated.

As regards opportunities to learn L2, in noninstructional settings there was a general disinclination for linguistic correction and assistance. A possible conflict between the interactants' role as a communicator and that as a novice/expert user of L2, among other things, may contribute to this. These settings, however, seemed to offer opportunities for the learners to utilize available interactional resources and to possibly further develop relevant competence as well. In the case of semi-instructional settings, including language exchange partnerships, the native speaker's provision of assistance with regard to lexical knowledge represented the most frequent overt type of learning opportunity, but there were other opportunities that were not so obvious.

The general picture that emerges from the literature review undertaken above is that concepts of networks have provided a powerful analytical tool for research in a diverse range of L2 learning contexts, such as host-country versus home-country settings, learners from minority populations versus foreign-language learners, communicative competence versus academic literacy, and so forth. The concepts also allow SLA researchers to analyze an individual learner's personal networks in depth, which, in turn, help them to explain important parts of the social structure that facilitates or constrains L2 use and learning. Furthermore, as shown in the above studies, the social-network approach allows for both quantitative and qualitative analyses. This approach thus enables both examinations on a larger scale and detailed case studies at the same time. Indeed, as de Bot and Stoessel (2002) claim, without examining qualitative data, the quantitative component of network research cannot be evaluated fully by itself.

Future SLA Research From a Social-Network Perspective

The above network-related research in SLA settings has thus contributed information to our current knowledge concerning the way people learn an L2 outside educational settings. However, given that numerous SLA studies suggest that L2 social interaction is a valuable source of L2 learning, this research area should attract more empirical attention in the future. In particular, with the spread of the Internet, students now have the opportunity to use an L2 outside of the classroom in many more ways than were previously possible.

However, researchers have only recently begun to explore how the new technologies, including online chat and social networking services, affect the maintenance and development of learners' informal social networks with L2 speakers as well as their actual language use and L2 learning within these networks (Pasfield-Neofitou, 2007a, 2007b). Pasfield-Neofitou (2007a, 2007b), for example, examines the features of intercultural Internet chat between learners of Japanese and their Japanese friends and how these learners use this medium as an opportunity for communication and for informal language learning. She found that chat was a vehicle for cementing or continuing social interactions between some learners and their Japanese friends despite their geographic separation. In terms of L2 learning, her analysis revealed that repair was more frequent when learners had a primary goal of language learning rather than social interaction, and that the visual nature of text-based chat seemed to facilitate repair. Intercultural online communication in L2 learners' informal social networks is thus an important area for future investigation.

SEE ALSO: Identity and Second Language Acquisition

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Social, Dynamic, and Complexity Theory Approaches to Second Language Development: Overview

AMY SNYDER OHTA

Social, dynamic, and complexity approaches to second language acquisition (SLA) take a process-oriented view of language. In general, this view sees process and product in a dynamic relationship, always in process, always in flux, always changing just as individuals are always changing across the lifespan (Lantolf & Thorne, 2006; Larsen-Freeman & Cameron, 2008). Along with using the term *acquisition*, which is in wide use in the field of SLA, but implies a static view of language, the researchers represented in this section often prefer the term *development*, which better reflects a dynamic, variable, process-oriented view of how people develop facility in languages beyond their native language(s). In the remarks here, intended to provide an overview of the Social, Dynamic and Complexity Approaches to Second Language Development section, as well as within the entries of this section, the terms *acquisition*, *learning*, and *development* are all used. Generally what is meant, both in entry titles and in texts describing L2 research, is a dynamic, process-oriented view of language, acknowledging that human facility with language is always in motion and always changing. Though the word *acquisition* is not always the best word to portray this view of language as process, for the sake of simplicity, the term SLA is often used throughout the section.

The title of this section contains three important terms: *social*, *dynamic*, and *complexity*. *Social* refers to social interaction. It also refers to the development of human language and higher mental processes as a social interactive process, one that not only results in human development but also shapes the formation of human cognition and personality such that human functioning on all levels, including the level of thought retains a social interactive character. In this section, this social view of human cognition is represented by scholars using sociocultural theory (SCT), a framework grounded in the work of Lev Vygotsky and his colleagues, as well as other sociocognitive approaches. Scholars working with such approaches also see language development as *dynamic* and *complex*. That is, as characterized by change, and as involving multiple factors. The latter two terms relate most strongly to another set of approaches to SLA: dynamic systems theory (DST) and chaos/complexity theory (CCT). While these title words most strongly relate to these approaches to SLA, they also evoke other approaches and topics in the discipline that are covered in this section. In other words, this section is not theory- or approach-specific, but the entries here are included based upon the broad principle that the areas of study represented are based in a view of language learning and development that is simultaneously culturally embedded, socially interactive, dynamic, and complex.

Language development is integrated with human social and cognitive development such that children not only develop language, but through these processes they also influence the social groups and societies of which they are members (Ochs, 1988). Second language development is arguably even more complex, as it involves the re-mediating of mind to function using a new set of cognitive tools. The field of second language acquisition has grown more and more diverse as researchers have grappled with this complexity. While

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early studies in the field tended to assume cause–effect epistemologies, seeking to understand variables that were necessary and sufficient for SLA, researchers today who embrace the cognitive, psychological, social, societal, and historical complexity of L2 development are working to better understand a wide range of L2 developmental processes. The diversity of SLA studies is such that this encyclopedia devotes a number of sections to SLA and related areas of inquiry: the present section, Social, Dynamic, and Complexity Approaches to Second Language Development, and four other sections, Cognitive Second Language Acquisition, Bilingualism and Multilingualism, Bilingual Education, and Language Teaching and Learning. In addition, second and foreign-language (L2) research is also covered in the sections Lexis, Phonetics and Phonology, and entries related to bilingualism and multilingualism are also represented in the sections Translation and Interpreting, Lexis, Literacy, Qualitative Methods, and Quantitative Methods.

Social, Dynamic, and Complexity Approaches to Second Language Development contains 34 entries. These entries relate to a range of areas of inquiry, both new and old in the field of SLA. Entries relate to L2 development processes, classroom language learning (and beyond), approaches to SLA, and learner characteristics.

L2 Developmental Processes

While all entries in this section relate to developmental processes, there are a number that direct our attention toward particular areas of L2 development. How does an individual's facility in the L2 develop over time? How does a learner construct a linguistic system for the language being learned? The entry INTERLANGUAGE describes sociolinguistic variationist research applied to SLA in an area of inquiry that dates back to the early days of the field. There are also entries considering development of particular L2 skills, including writing development (see WRITING DEVELOPMENT IN SECOND LANGUAGE ACQUISITION), and oral and written narrative development (see NARRATIVE DEVELOPMENT IN SECOND LANGUAGE ACQUISITION: ORAL AND WRITTEN). Use of gesture (see SECOND LANGUAGE ACQUISITION AND GESTURE) when speaking a second or foreign language is a newer area of inquiry in SLA that is also included here.

Language Learning in the Classroom and Beyond

Facility on second and foreign languages develops in a variety of settings. The encyclopedia has an entire section devoted to classroom settings—the section entitled Language Teaching and Learning. The present section also touches on this area, investigating classroom research (see CLASSROOM RESEARCH IN SECOND LANGUAGE ACQUISITION), teacher beliefs (see BELIEFS IN SECOND LANGUAGE ACQUISITION: TEACHER), and learner beliefs (see BELIEFS IN SECOND LANGUAGE ACQUISITION: LEARNER) in SLA. The entry on praxis (see PRAXIS AND SECOND LANGUAGE ACQUISITION) relates to the work of language teachers themselves and the integration of theory and practice. Other entries also relate to the classroom setting, such as the entries devoted to the zone of proximal development (see ZONE OF PROXIMAL DEVELOPMENT IN SECOND LANGUAGE ACQUISITION) and collaborative dialogue (see LANGUAGING: COLLABORATIVE DIALOGUE AS A SOURCE OF SECOND LANGUAGE LEARNING). The entry on LANGUAGE SOCIALIZATION IN STUDY ABROAD considers how language develops both in classroom (tutored) learning and untutored learning in various settings in the broader community. Whether abroad or at home, language-learning opportunities are deeply related to learner involvement in L2 social networks (see SOCIAL NETWORKS IN SECOND LANGUAGE ACQUISITION).

Approaches to SLA

A number of entries in this section relate to particular approaches to SLA, or to particular research methodologies. Theoretical systems covered here are sociocultural theory (SCT) (see RESEARCH METHODS AND SOCIOCULTURAL APPROACHES IN SECOND LANGUAGE ACQUISITION), dynamic systems theory (DST) (see DYNAMIC SYSTEMS THEORY APPROACHES TO SECOND LANGUAGE ACQUISITION) and chaos/complexity theory (CCT) (see CHAOS/COMPLEXITY THEORY FOR SECOND LANGUAGE ACQUISITION). The last two are often considered together. The section also contains entries related to qualitative approaches to studying SLA including entries on ethnographic approaches (see ETHNOGRAPHIC APPROACHES TO SECOND LANGUAGE ACQUISITION RESEARCH), narrative approaches (see NARRATIVE APPROACHES TO SECOND LANGUAGE ACQUISITION), and sociocognitive (see SOCIOCOGNITIVE APPROACHES TO SECOND LANGUAGE ACQUISITION) approaches to SLA.

Some approaches to SLA are further developed through additional related entries. For example, there is an entry on variability in the DST approach (see VARIABILITY IN A DYNAMIC SYSTEMS THEORY APPROACH TO SECOND LANGUAGE ACQUISITION) and one on COMPLEXITY IN MULTILINGUAL SYSTEMS, which draws upon both DST and CCT. These approaches are closely linked with neurobiological approaches to SLA as well, and this section contains an entry on the NEUROBIOLOGICAL FOUNDATIONS FOR SECOND LANGUAGE ACQUISITION, as well as one exploring NEUROBIOLOGY AND MOTIVATION IN SECOND LANGUAGE ACQUISITION and development.

Other entries also relate to this framework, which is grounded in the cultural-historical psychology of Lev Vygotsky (see VYGOTSKY AND SECOND LANGUAGE ACQUISITION). Some of these relate to Vygotsky himself or to key concepts or constructs in sociocultural theory: INNER SPEECH IN SECOND LANGUAGE ACQUISITION, INTERNALIZATION IN SECOND LANGUAGE ACQUISITION: SOCIAL PERSPECTIVES, PRIVATE SPEECH IN SECOND LANGUAGE ACQUISITION, and the ZONE OF PROXIMAL DEVELOPMENT IN SECOND LANGUAGE ACQUISITION. Others concern concepts that are deeply related to sociocultural principles but use newer terminology, such as entries on praxis (see PRAXIS AND SECOND LANGUAGE ACQUISITION), languaging/collaborative dialogue (see LANGUAGING: COLLABORATIVE DIALOGUE AS A SOURCE OF SECOND LANGUAGE LEARNING), and DYNAMIC ASSESSMENT IN SECOND LANGUAGE ACQUISITION. There are also entries discussing research methods in SCT (see RESEARCH METHODS AND SOCIOCULTURAL APPROACHES IN SECOND LANGUAGE ACQUISITION) and the METHODOLOGICAL FOUNDATIONS OF SOCIOCULTURAL THEORY. These entries, taken together, provide an overview of the work of L2 researchers in this area of neo-Vygotskyan research. There is also an entry focusing on how L2 researchers apply the work of Vygotsky's contemporary Bakhtin (see BAKHTIN AND SECOND LANGUAGE ACQUISITION) to SLA.

Individual, Learner Characteristics

Individual differences is an area of interest in SLA that has produced a great deal of research (Robinson, 2002). Despite the term "individual" differences implying that such research must focus on particularities of particular learners, early research in this area tended to consider groups of learners, conducting research using factor analysis and other quantitative approaches. Researchers coming from social, dynamic, and complexity approaches, however, have worked to place the individual at the center of such research. A number of entries in this section, therefore, strongly relate to individuality and learner characteristics, including entries on motivation (one on MOTIVATION IN SECOND LANGUAGE ACQUISITION in general, and one on NEUROBIOLOGY AND MOTIVATION IN SECOND LANGUAGE ACQUISITION), social networks (see SOCIAL NETWORKS IN SECOND LANGUAGE ACQUISITION),

gender (see GENDER AND SECOND LANGUAGE ACQUISITION), identity (see IDENTITY AND SECOND LANGUAGE ACQUISITION), agency (see AGENCY IN SECOND LANGUAGE ACQUISITION), and then also language play (see LANGUAGE PLAY IN SECOND LANGUAGE ACQUISITION) in SLA. In addition, focus on individuals is strong throughout the section, as many of the studies use methodologies that focus on careful study of individual learners.

Conclusion

This brief overview has served to outline the areas covered in this section, as well as to touch on other parts of this encyclopedia with entries related to social, dynamic, and complexity approaches to SLA. However, in the brief space allotted to this introduction, much has been omitted. The reader is encouraged to explore this encyclopedia, as there is much related work outside of the realm of SLA as well. We are most fortunate to now have such a monumental work in the field of applied linguistics, to provide students and professionals with a stronger grounding in this field both as it relates to SLA and to language issues across society.

SEE ALSO ON SOCIAL, DYNAMIC, AND COMPLEXITY THEORY APPROACHES TO SECOND LANGUAGE DEVELOPMENT: de Bot, Kees; Gass, Susan M.; Heath, Shirley Brice; Kramsch, Claire; Lantolf, James P.; Larsen-Freeman, Diane; Norton, Bonny; Paulston, Christina Bratt; Schumann, John H.; Snow, Catherine; Swain, Merrill; Tarone, Elaine; van Lier, Leo; Young, Richard

SEE ALSO: Bakhtin, Mikhail M.; Classroom Discourse; Gee, James; Hymes, Dell; Immigrant Discourse; Kasper, Gabriele; Ochs, Elinor; Ohta, Amy Snyder; Pavlenko, Aneta; Qualitative Research on Bilingualism and Multilingualism

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Societal Pragmatics

JACOB L. MEY

Introduction: Why "Societal Pragmatics"?

Given that pragmatics, by definition, is social, one could legitimately raise the question: Why is it necessary to talk about "societal pragmatics"? Implicit in this question is a preliminary assumption, which leads us to a further, more fundamental question: What do we mean by saying that pragmatics by definition is social, and why is this a "given"?

In the course of the last century, the study of language (also called "linguistics") has moved away from the classical paradigm, in which the study of language was either mainly *historically* oriented (where do languages come from and how are they related?), or focused its interest on linguistic *structures* (how do languages go about organizing their expressions?). The first question was typically the object of "historical grammar," as it used to be called; the second question belongs in the realm of syntactic studies, which for a great part still are understood by many as the primordial area of linguistic interest. What is called the "pragmatic turn" in linguistics may thus be described as a "shift from the paradigm of theoretical grammar (in particular, syntax) to the paradigm of the language user" (Mey, 2001, p. 4).

But what is such a "paradigm of the user" all about? Here, our question must naturally direct itself at what the users *do* with their language, or "how they do things with words," as expressed by John L. Austin in the title of his famous posthumous treatise (1962).

The Importance of the User

The idea of a user naturally presupposes the idea of *use*: "use is what a user does." When it comes to language use, we can easily observe that language is used primarily for the purpose of communication. The business professionals concluding a deal communicate their preferences and conditions by using language. Lawyers use language to communicate their viewpoints to the judge and the jury, while advertisers express themselves through language when providing suggestive or useful information about their products. Even on the domestic front, partners agree or disagree, quarrel and make up again, using the linguistic resources at their disposal. And when it comes to education, communicating knowledge and checking feedback on provided input would be impossible without language.

But communication should not be thought of as a one-way or two-way street, with somebody (the sender) throwing out some message and somebody else (the receiver or receivers) catching it and retuning it like one does a volleyball serve. The idea of language users acting like "talking heads" (as is often proposed in initial chapters of introductory linguistics textbooks) is not only limiting but downright misleading. While it is true that communication mainly happens by means of language, language is certainly not the last word. And society should be taken seriously when we are dealing with communication. The "one-way street" is not only limited and limiting, but it basically leads nowhere if it isn't placed in its proper context: society.

As to the users of language, as social beings they use language and communicate strictly on society's premises. Society not only controls access to language but it enables its users

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in their communicative activities. While pragmatics in general—as the study of the way humans use their language in communication—is based on society's premises, societal pragmatics explicitly invokes those premises and inquires how they affect our language use. Hence, while "pragmatics is defined as the study of language in human communication as determined by the conditions of society" (Mey, 2001, p. 6), societal pragmatics emphasizes the social conditions under which we live and use language, and tries to determine in what specific ways these conditions or respectively facilitate or obstruct, indeed, "make and break," our use of language.

Society and Its Discontents

There are many ways of looking at society. Philosophers and economists of the "objectivist" obedience have considered society as an inevitable but hardly desirable way of going about our social business; for British economists of the 19th century, the ideal society was considered a kind of "night watchman": a necessary, but not necessarily popular institution.

A more adequate, contemporary view of society is one by which the economic conditions under which we live are considered to be of decisive influence on the way we organize our social world, including the way we express ourselves in words and emotions. This view distances itself both from a strict economic determinism, by which social relations are thought to be exclusively materially bound, and from the view that our social relations exist between individuals in the first place, to be extended beyond the "two-way street" interaction alluded to above, to comprise a more extended give-and-take. There is a German proverb that says *Der Mensch ist was er isst* ("Humans are what they eat"). One could modify this to say "Humans are what they make": the capacity of humans to produce useful things leads them to invest their mental and material energies in the object they have made.

Of Things and Words

Karl Marx was one of the first who focused on the special character of the human-made object as encapsulating human social relations in the shape of a *thing*: the "fetish," as he called it. When the social relations of production and consumption in our society become measured by, even defined by, the marketing value of their outcomes, our social relations themselves, too, become "things." But when this happens, we no longer see the processes that led to the production of useful goods, but only the end results, the marketable commodities. The value of the product is not measured in terms of the social relations that were necessary to produce it. Its only value is what can be expressed in terms of the market. As Marx states: "The value of a thing is the price it will bring" (Marx, 1954, I, ch. 1, sec. 1, n.7). The market is indifferent to the conditions of labor under which the marketable goods are fabricated; the outcome of the human labor is uniquely represented in the money value that the market allows one to charge for it.

As far as language is concerned, the "thing" character of the marketable product carries over to its linguistic expression: words become abstract value carriers that bear no relation to the conditions under which they were created. An expression like "welfare reform," as currently used in many communities worldwide, has lost its connection to the context in which it was first launched: a desire on the part of a governments to limit its expenditures, without regard for those who were supposed the bear the brunt of the "reform."

It is certainly no exaggeration to say that there are worlds of difference between the various uses of a term; yet all uses have in common the fact that they reflect (and often "mask") the modes of thought and ideologies that were prevalent in the societal contexts

where they originated. Societal pragmatics sees it as its primary task to "unmask" manipulative use of language, and to set the record straight by connecting controversial and "masking" expressions with their proper contexts.

The next few sections will deal with another aspect of societal pragmatics: abuse—rather than use—of language. The concluding sections will address how a societal pragmatics may counteract the manipulative use of language by acting upon it in an emancipatory way, by "recontextualizing" the users, that is, placing them and their languages in their own, appropriate contexts.

Abusive Language

In every day usage, "abusive language" is thought to consist of vituperative words and expressions, as when we call people names, or diminish their dignity as humans by comparing them to low-prestige animals. In a broader context, the terminology we create for controversial natural and social phenomena often is abusive in that it puts the user in a double bind: thus, some of our leaders have been instructed to use a term like "climate change" in order not to offend their constituents, who may be shocked to hear that the "global warming" their own actions are actively promoting is the current ecological downturn's real cause and name. A societal pragmatics should look for ways to express sensitive matters in such a way that we neither offend our listeners, nor discredit the integrity of our words.

Language and Sex

Other instances of abusive language frequently occur in the general area of language and gender and are often referred to under the common label of "sexist language."

The British feminist linguist Dale Spender coined the expression "man made language" and used it as the title of an important early work on sexual discrimination by way of language (Spender, 1980). Her book wants to make us aware of the social oppression that is built into the common assumption that a male use of language is essential superior to a female use, where "male" and "female" are considered to be equivalent to, respectively, authority and submission. What's more, the female members of society are often made "invisible" by the universal use of the male pronoun *he* and the general referring term for "humans" *man*. Much of this is, so to speak, built into the very foundations of one's language. At times, we are able to remedy some of these grammatical incongruities, for example by not saying "he" when the person we refer to could be either male or female, but using a form like "he or she" (in writing, one could use "s/he"). The main thing is to be aware of the invisible oppression of one of the human sexes by omission or "erasure," as it is now commonly called.

In all this, we have to realize that for tens of thousands of years the social conditions in which our species has lived have been dominated by males. In such an oppressive societal situation (see Mey, 1985, pp. 25–6), the powerful dominate the powerless, not only in material respects, but also regarding other, less tangible matters, such as the use of language. Becoming aware of this oppression is the first condition for engaging oneself actively on the side of the oppressed—first of all women, for whom the fact that "man" has made language is the very cause of their linguistic oppression. Every time we force ourselves to use a form like "she or he," rather than the so-called generic "he" (supposedly covering both sexes), a little step is taken toward the realization of the fact that "man-made language" is an historical accident, not a natural condition which cannot be changed.

The presence of women in the world can be emphasized and protected through this small, seemingly insignificant shift in the language—and therefore, it is not useless or

in vain. The next sections will treat in more detail why, and how, an "emancipatory" view of social conditions should be part of any decent societal pragmatics.

Emancipatory Pragmatics

The term "emancipatory pragmatics" is an extension of what elsewhere I have called "emancipatory linguistics" (Mey, 1976, 1979, 1985, 1994, 2001, in press; see also Signorini, 2009). The first question to ask is what is meant by "emancipatory"? What or who emancipates, and from what?

The ancient Romans used the term to characterize the process by which a slave was freed from his or her bonds. The slave's relation to the master (and metonymically, the slave him- or herself) was termed *mancipium*, literally a "taking by the hand"; when the slave gained freedom, in a legal process called *manumissio*, literally a "sending off from the hand," this legal bond and the ensuing obligations were extinguished. When it comes to emancipatory linguistics, the term was originally intended to signify the freeing of the language users from the societal oppression as it was manifested in language. In the latter half of the 20th century, sociolinguists such as Basil Bernstein remarked on the fact that social origin often leads to societal inferiority in matters of education and use of language. The socially inferior were also underprivileged with regard to culture and the workings of democracy. An emancipatory linguistics was thought of as ideally serving the underprivileged, the "proletarians of the word," and as such was seen as part of the social struggle. Especially in the realm of education, these thoughts were instrumental in various attempts to reform the curricula of the various levels of the educational system, in particular where the weakest recipients of instructional benefits were found: primary schools, not only back home but also in developing and "threshold" countries.

The Limits of Emancipation and the Need for Anticipation

Pragmatics is all about the use of language and the people who use language. Freeing them from the bondage of false beliefs and societal oppression is thus an appropriate task of a societal pragmatics that is true to the ideals of emancipation. But emancipation in and of itself is not enough: there is a life after emancipation. Pragmatics has a paramount role in the liberation of the users, but it must follow up the emancipatory process in sustained supportive action. In other words, in order to be successful, emancipation presupposes an *anticipatory* activity.

Such a task is not just confined to the here and now; we must look ahead, and this is where anticipation comes in. (My use of the term "emancipatory pragmatics" is inspired by what anthropologists such as Robert B. Textor have called "anticipatory anthropology," described as "a disciplined effort to discover proactively what members of a human group want and what they fear, and what sacrifices they are prepared to take, toward realizing the former or avoiding the latter"; Textor, 2009, p. 21.) Since pragmatics is about the use and users of language, an emancipatory pragmatics *proactively* deals with how to use language in a nonoppressive, even liberating way. By looking ahead, rather than just confirming or critiquing the status quo, societal pragmaticists endeavor to proactively promote and create a language use that will prevent people from abusing the gift of language to their own egoistic ends. The task of such an anticipatory societal pragmatics is to foresee and prevent abuses of the kind that were mentioned earlier, and enable the users to counteract all sorts of abusive language before it starts being accepted as the normal way of dealing with the world and its inhabitants. In this way, an emancipatory societal pragmatics will be able to undo the negative effects of what I call "manipulative discourse."

Manipulative Discourse

The term "discourse" is often used to characterize not just speech, but the ensemble of attitudes that people have vis-à-vis their "life world," to use an expression dear to Ludwig Wittgenstein. Discourse not only manifests itself in language; it is handled and nurtured by language, specifically through the ways in which we express our ideological preferences linguistically. In this sense, discourse not only creates and recreates the social fabric on which it is predicated, but it also disposes us toward accepting the particular societal order that we happen to live under as universally valid and natural.

The discourse of manipulation can be thwarted by adopting a societally pragmatic stance, for example by practicing a (pro)active understanding of one's adversaries. Other manipulative discourses that come to mind in the context of a societal pragmatics are embodied in the language of social oppression, of sexual discrimination, of (neo)colonialism, and so on. Recently, we have witnessed the rise of a specific "discourse of terrorism," by which acts of violence are glorified as heroic deeds, and their perpetrators are lionized as "martyrs." Among young immigrants living in the cities of the United States and Europe, a new attitude takes the discourse of terrorism as embodying their own resistance to global capitalism, their kinfolks' fight for independence, and their own desire to improve their livelihoods (the populations of the inner cities of France and Britain may serve as egregious examples).

In order to turn back the wave of violence that is rolling in over our society, we need to redefine the mentality that is expressed in this discourse; but also, proactively and emancipatorily, we need to replace the language itself that is being used in the terrorist discourse. Why should a suicide bomber be called a martyr and not a mass murderer? Replacing the discourse of terror with a discourse of "doing no harm" (for instance as in the Gandhian tradition of *ahimsa*) is a first, and very necessary, step toward eliminating terrorism itself. A proactive discourse that propagates a societally pragmatic approach to these and other societal evils may point the way to ending abusive discourse, and emancipate us from the tyranny, not only of the language of evil, but of the social evils that are at the bottom of abusive language.

Anticipating the Future

A caveat is in order here. Anticipating a person's needs can be used to manipulate him or her to ends that the manipulated person does not perceive as justified, or simply does not agree with (Norrick, 2009). This kind of manipulative anticipation oversteps the boundaries of other people's "territories of information" (Kamio, 1994), or impinges on the private spheres of the very people whose sufferings we empathize with (Heritage, 2007). An emancipatory pragmatics with a proactive, anticipatory thrust should be aware of these dangers, and not fall back in the old groove of paternalistic colonialism, by which the "poor natives" were considered as unruly children, to be educated in accordance with the beliefs of the colonizers and "formed" in their images.

Societal pragmatics, while being aware of this danger, nevertheless should stride boldly ahead. Ultimately, even less preferable actions are better than taking no action at all. But our actions should be informed by correct, theoretical insights, and this is where societal pragmatics, in its proactive, anticipatory version, comes in. Earlier, I said that pragmatic linguistics has as its aim the unveiling of abuses of language; societal pragmatics, in force of its emancipatory potential, will have to anticipate such abuses of language and prevent manipulative discourses from being acknowledged as the only correct way of talking about our actual problems, be they of a political, social, or even ecological nature. Thus, societal

pragmatics embodies the practice of a socially motivated and socially responsible societal discourse.

SEE ALSO: Anticipatory Discourse; Austin, John L.

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Sociocognitive Approaches to Second Language Acquisition

DWIGHT ATKINSON

Historically, it has been assumed that second language acquisition (SLA) is a mental process, which takes place largely in isolated cognitive space (e.g., Long, 1997). But what if SLA extends freely into body and world? What would it look like then? These are the questions motivating sociocognitive approaches to SLA.

Theoretical Foundations

The main conceptual foundations of sociocognitive approaches are: (a) ecological perspectives on mind and activity, (b) extended and embodied approaches to cognition, (c) situated studies of multimodal interaction, and (d) research on "intention-reading" and behavioral synchrony.

Ecological Perspectives on Mind and Activity

From Descartes onward, the separation of mind from body and world has dominated Western thought. Only recently (with a few major exceptions) have concerted challenges arisen. Ecological approaches emphasize relationality over discrete elements: In ecosocial systems, mind, body, and world are co-dependent for their functionality and existence.

Bateson (1972), a major proponent of ecological approaches to mind, described an axe-wielder felling a tree: "Each stroke of the axe is modified or corrected, according to the shape of the cut face of the tree left by the previous stroke. This self-corrective . . . process is brought about by a total system, tree–eyes–brain–muscles–axestroke–tree" (p. 317). The quotation-ending list suggests the activity's integrated nature: Environment, body, cognition, and tool-wielding cannot be separated. Bateson concluded: "The mental characteristics of the system are immanent, not in some part, but in the system as a whole" (p. 316).

Extended and Embodied Cognition

Extended and embodied approaches to cognition are currently sweeping cognitive science, but have barely affected SLA studies. Both approaches assume that human intelligence is ecologically adaptive—that it functions to aid survival in an ever-changing environment. Classic cognitive science, on the other hand, views cognition as the computational crunching of decontextualized, logic-like problems and data (Boden, 2006).

The case for cognition-as-adaptive-intelligence goes as follows: Intelligence originally evolved to promote survival-enhancing behavior—obtaining food and shelter, mating, child care, and so forth. Even today, humans are considerably better at solving real-world problems than the abstract puzzles of cognitive tests and school mathematics (Glenberg, 1997). This is not to dismiss "offline" cognition, but it does relocate its ultimate basis in moment-to-moment adaptivity. Thus, means–ends reasoning probably arose in the context of procuring food and building within-group alliances (Dunbar, 1996), and is still used largely for practical purposes.

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Following Bateson, *extended* theories of cognition argue that, far from being buried in minds, cognition projects out into the world. Thus, clocks, organizers, and calendars participate intimately in cognitive planning and execution; cognition-for-environmental navigation depends heavily on environmental structures, for example, road grids, signs, traffic lights, lane markers, GPS signals, maps, other cars, radio information, and so forth, when driving. Even academic writing is an intricate dance of onboard cognition with books, notes, computers, revision processes, and, sometimes, writing groups, conferences, and interlocutors (Clark, 2001). Although such phenomena are standardly treated as distinct from cognition, consider this alternative:

> If, as we confront some task, a part of the world functions as a process which, *were it done in the head*, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world *is* . . . part of the cognitive process. (Wilson & Clark, 2009, p. 8)

This view's implications are radical: Cognition extends promiscuously into the world, at least in certain cases. Regarding SLA, the corresponding argument is that we learn in integrated *sociocognitive* space (see below).

Embodied approaches to cognition study the body's role in cognitive processes. Classic cognitive science views mind as separate from body, yet research shows that: (a) perception, cognition, and sensorimotor action share common neural underpinnings; (b) cognitive representations are body-based; (c) cognitive development depends on embodied experience; and (d) cognition likely evolved to keep the body environmentally viable (see Glenberg, 1997; Gibbs, 2005; Atkinson, 2010a for reviews).

Situated Studies of Multimodal Interaction

Most language processing and learning research assumes environments reduced to cognition and language. Yet gestures, smiles, body orientations, and paragraph breaks are just as expressive as lexis, intonation, and grammar. In fact, many such sign systems function integratively.

Anthropologists led by Goodwin (e.g., 2006) have unveiled the multimodality of meaning-making in interaction. Real-world communication results from diverse, juxtaposed sign systems, for example, in face-to-face interaction: body orientation, gesture, gaze, facial expression, intonation, grammar, lexis, and in-the-world meaning-making resources like graphic artifacts (e.g., charts, datebooks), tools (e.g., computers, blackboards), and structures (e.g., road grids, classrooms). If meaning is made via such ecologies, then SLA must also depend on them. Obviously, this is far from seeing SLA as the product of isolated minds.

Intention-Reading and Behavioral Synchrony

Humans are master intention-readers—our sociality depends on our sensitivity to others, and corresponding behavioral adjustments. Levinson (2006a) located this sensitivity in our "interaction engine"—our evolved capacity to: (a) ascribe intentions to others, (b) know what others are thinking about our thinking, (c) have "Gricean intentions"—"intentions driving behaviors whose sole function is to have the . . . intentions recognized" (Levinson, 2006b, p. 87), and (d) deploy interaction-promoting behaviors like greeting, turn taking, and repair.

Levinson highlights the cognitive side of reading intentions, which furthermore seem to be largely discrete and conscious. Research on *embodied intention* (Yu, Ballard, & Aslin, 2005) suggests that gaze, gesture, body orientation, and so forth, also contribute crucially

to understanding a broader range of phenomena, from discrete intentions to inchoate emotions. As discussed below, this has major implications for SLA.

The ability to "read" others fluently and easily enables the exquisite behavioral synchrony underlying adaptive human interaction. Such coordination promotes—just as disalignment retards—efficient, effective social action. Witness the feeling of being so highly aligned with an interlocutor that she really does seem to read one's mind, versus the fact that conversations featuring excessive pausing, false starts, and repair tend to be regarded as *failed* conversations.

Sociocognitive Approaches to SLA: Three Principles

Three principles underlie sociocognitive approaches to learning/SLA: (a) the *Inseparability Principle*, (b) the *Learning-is-Adaptive Principle*, and (c) the *Alignment Principle* (Atkinson, 2010a).

The Inseparability Principle

This principle states that mind, body, and world collude in producing SLA-as-ecosocial action. Consider Bateson's woodcutting scenario again, this time vis-à-vis learning. Each time mind-body-axe strikes tree, a new ecology emerges: as the tree is reconfigured, the whole system adapts. At a first approximation, learning just *is* this process whereby mind-body-world is restructured through ecosocial action (Atkinson, Churchill, Nishino, & Okada, 2007).

Learning/SLA thus involves the rearrangement of organism-plus-environment. This differs radically from the mainstream perspective, wherein linguistic input is extracted from the world and processed by "lonely" cognition. Sociocognitive approaches emphasize the *thickening* of mind-body-world relations over their progressive detachment and attenuation: instead of building elaborate, self-contained cognitive world models, we learn to better use "the world [as] its own best model" (Brooks, 1990, p. 5).

This is not to suggest that nothing is internalized in SLA, but fully elaborated and enclosed cognitive-linguistic representations are implausible due to their non-adaptivity: Human behavior must be environmentally open and situationally responsive to ensure worldly survival. Alternative understandings of language emanate from its everyday uses: Phatic communion is thought to consume most of our linguistic efforts (Dunbar, 1996), and primarily involves using linguistic/semiotic tools to align with others. Grammar, from this perspective, is substantially for social interaction (Ochs, Schegloff, & Thompson, 1996).

The Learning-Is-Adaptive Principle

Assuming that cognition is adaptive intelligence, this principle foregrounds the role of learning in ecosocial adaptivity. What else could learning be than the process by which we more effectively align with our environments? As mentioned above, viewing SLA as the progressive extraction of language from world is prima facie implausible if language is for social interaction.

Bateson's example highlights learning-as-adaptivity. We learn by doing—through effecting ecosocial action. Our actions create new situations, inducing new *actions* in ourselves and others. Thus, in trying to use a new language, we produce social action, which reconfigures the mind-body-world we share, or are trying to share, with others. This is a far cry from theories which sever acquisition from use and competence from performance.

The Alignment Principle

This principle holds that SLA occurs via alignment—the complex, often public means by which humans effect ecosocially adaptive interaction (Atkinson et al., 2007). Alignment undergirds sociality:

> A social relationship may be said to exist when . . . people reciprocally adjust their behavior to each other with respect to the meaning . . . they give . . . it, and when this reciprocal adjustment determines the form . . . it takes. (Weber, 1922/1978, p. 30)

Reprising Bateson's example one last time, imagine the tree felling now as a *two*-person operation—two individuals alternately striking a tree. This interaction is "triadic"—the axe-wielders affect each other while affecting the world, adjusting their responses to the ever-changing environment. How do they do it? Crucially, they monitor each other's actions, including their embodied intentions and emotions. Thus, if one member—let's call him Toshi—reorients his gaze, facial expression, and body markedly as his turn to strike comes, a new meaning—a new activity—is potentially signaled: Maybe Toshi wants to rest. His partner—call her Deborah—will adjust her actions accordingly. (Note, however, that although conventional expectations guide social behavior, they by no means determine it.) This in turn affects Toshi—depending (partly) on the nature of Deborah's actions, he may proceed to rest or resume chopping.

The Alignment Principle holds that embodied intentions and emotions, in concert with worldly structures like dictionaries, bars, classrooms, and grammar exercises, lead SLA: ecosocial alignment—the outcome of evolutionarily deep capabilities including Levinson's interaction engine, Yu et al.'s (2005) embodied intention, and Wilson and Clark's extended cognition—supports SLA at every turn. It does so by promoting attunement across social actors-plus-environment. That is, communicative action occurs across a broad array of semiotic resources, many of which precede language and are substantially universal. Far from being locked in individual minds, these resources are "in the light"—circulating openly in the sociocognitive environment. If they were not publicly present—if *all* language learning were not built on a base of perceivable, understandable, and actionable communicative resources—then how could it occur? In that case, universal grammar would be the only plausible explanation.

Interaction furthermore takes place in *situated activity systems* (Hutchins, 1995)—commonly occurring, more-or-less structured ecologies in which human beings, social practices, semiotic tools, and non-human environments come together to perform social action. Consider service encounters. Although locally instantiated, service encounters share a common structure the world over: sellers offer buyers goods; buyers determine which goods they want, then request them from sellers; sellers give goods in exchange for money or other goods. This general schema provides a *participation framework*—an arrangement of roles and activities which are highly predictable and thus easy to align with, even when participants have little else in common. Substantially all human activities occur within activity systems—systems which provide general frameworks for understanding. In so doing, they constitute "alignment machines"—frameworks in which collaborative action can be performed, including in the absence of a common language. Activity systems thus powerfully scaffold SLA.

Sociocognitive Approaches to SLA: Examples

In this section I review three studies suggesting the importance of alignment in SLA.

Embodied Intention in SLA

In exploratory research, Yu et al. (2005) examined the effects of gaze on the acquisition of L2 word segmentation and vocabulary. An L1 Mandarin speaker wore a tiny head-mounted video camera that filmed the (wordless) picture book he held as he narrated a story based on its pictures. A second camera recorded the speaker's eye movement vis-à-vis the pictures as he narrated. The latter video results were then superimposed on the original video by indicating gaze direction with crosshairs.

Twenty-seven monolingual English-speaking participants were divided into three equal groups, which respectively (a) watched the combined video (including audio), that is, featuring the "intention-cueing" crosshairs; (b) watched the original video (including audio), that is, without crosshairs; or (c) listened to the audio track only. A multiple-choice test of speech segmentation and vocabulary was then administered to all participants. Results showed statistically significant advantages for the video-plus-crosshairs group in both speech segmentation and vocabulary acquisition.

This research suggests how alignment can facilitate SLA. The crosshairs more closely approximated a pointing finger than gaze, even if the latter is attended to closely (as Yu et al.'s literature review substantiates, at least for L1 learners). The results nonetheless indicated how ecosocial environments can provide cues for SLA. As shown below, multimodal alignment is pervasive in SLA contexts, providing many "ways-in" to naturalistic SLA.

Gaze in Conversation

Goodwin (1980) studied the role of gaze in conversational organization. In initiating speech, speakers bid for listeners' attention. This attention is usually signaled by the listener gazing at the speaker. The speaker typically confirms the listener's gaze by gaze-checking early in the utterance. If she finds the listener gazing in return, she continues speaking; otherwise, she typically pauses until the gaze arrives, or restarts and repairs the utterance. The latter is shown in (1), where "LG" marks onset of listener gaze (Atkinson, 2010b, following Goodwin, 1980, p. 275 and 2006, p. 101):

```
(1)  A: We went t- I went to bed really early last night
     B:            LG _____________
```

Goodwin (2006) described the opportunities these phenomena provide for language learning. First, pausing segments the speech stream, thereby providing valuable information regarding what constitutes units in the language. Second, restarts make public the constituent structure of utterances, for example, the base predicate in (1). Third, restarts present options for paradigmatic substitution, for example, *we* versus *I* in (1). Conversation thus provides language-learning opportunities via natural processes of alignment and interaction.

Alignment in Grammar Exercise Completion

Atkinson et al. (2007) studied alignment in a videotaped English as a foreign language (EFL) tutoring session. "Tomo," an experienced EFL teacher, was working with "Ako," a Japanese junior high school student, on a school-assigned grammar exercise.

In (2), from Atkinson et al. (2007, p. 175), Ako and Tomo translate part of the Japanese prompt, *Anata wa ima made ni tegami o kaita koto ga arimasuka?* ('Have you ever written a letter in English?'):

```
(2) 01 A:  ((Reads first part of exercise item quickly under her breath))
           > ∘Anata wa ima made ni eigo de tegami ∘< (2.0)  Ima made ni=
           [Lit: You [SUBJ] ever in English letter]         Ever
    02 T: ((Softly shadows A's volume, intonation, and bodily orientation))
           =∘Un ima made∘
             Right, ever
    03     (1.0)
    04 A:  [Ne:ba:
           Never
    05 T:  [>Sakki no tsukaeba iin janai?< ((Searches unsuccessfully for
             earlier item on worksheet, using pen as pointer))
             Why not use the one you used before?
    06 A:  Ima made (.8) ne- e:va ka
           Ever.         Ne- ever?
    07 T:  Have you ever toka nantoka=
           Have you ever blank
    08 A:  =Have you eva writu, written=
           Have you ever write, written
    09 T:  =Un.
           Right.
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In line 1, Ako aligns with the first part of the prompt by reading it quickly under her breath. She then repeats—thus further focusing attention—the time adverbial *ima made ni* ('ever'), a crucial indicator of verb tense. In line 2, Tomo aligns with Ako in at least six ways, by (a) timing her own utterance to follow Ako's without a pause, (b) using an agreement marker (*Un*, 'Yes'), (c) speaking in the same quiet tones as Ako, (d) partially repeating the adverbial, (e) using the same 1–3–2 intonation pattern used by Ako in repeating the adverb, and (f) assuming a bodily orientation which is almost identical to Ako's (see Atkinson et al., 2007, Picture 1.1). Next, in line 4, Ako takes a first stab at translating the adverbial, offering the inaccurate *ne:ba:* ('never').

Tomo's response (line 5) is an attempt at extended cognition. She suggests using an already completed exercise item containing the target structure as an in-the-world model. On searching, however, Tomo fails to locate the item. Ako then reverts to guessing the adverbial's translation, attaining the correct answer in three steps: (a) restating the Japanese adverbial in the form Tomo earlier used, (b) partially repeating her earlier guess with *ne-*, and (c) producing the correct answer (*e:va* 'ever').

In line 7, Tomo takes Ako's *e:va* and repackages it in a grammatical construction, thus reconfiguring the mind-body-world system substantially. More specifically, Tomo builds Ako's *e:va* into a fill-in-the-blank frame, *Have you ever toka nantoka* ('Have you ever blank'), thereby reformulating the task as a search for the correct form of the main verb. In so doing, Tomo narrows the sociocognitive "problem space" considerably, providing Ako with significant in-the-world scaffolding. Ako's response confirms Tomo's decision: Ako immediately repeats the grammatical frame, filling the blank first with *writu* ('write'), and then self-correcting to the target form, *written*.

This example indicates how alignment may function in SLA. Most notable is the public nature of problem solving—while minds are clearly involved, so are bodies and world: the three work together. Thus, in line 1, Ako "externalizes" her cognition by reading the exercise item aloud, and then does the same with the adverbial. In so doing she publicly signals her attentional focus, thus allowing Tomo to align and co-cognize with her. Likewise, in lines 6 and 8, Ako makes incorrect guesses before hitting on the correct answer, as if by linguistically materializing the former she paves the way for the latter. For Tomo's part, she multimodally aligns with Ako in line 2, thereby confirming and co-constructing Ako's focus on the adverbial; she suggests an extended cognitive solution to translating the

adverbial in line 5; and in line 6 she radically reconfigures the task by building a fill-in-the-blank scaffold around Ako's correct translation of the adverbial. Through all these activities, alignment operates in a case of potential SLA.

Conclusion

Historically, SLA has been viewed largely as the cognitive intake and processing of linguistic input. While not denying that internalizing and processing input are important—albeit input more widely and multimodally construed—sociocognitive approaches highlight a different sense of the input metaphor: how learners *themselve*s are input into rich sociocognitive environments—environments supporting L2 development at every turn (Atkinson, 2002). If SLA extends across mind, body, and world, and if human sociality is conducted via situated activity systems, then it will be impossible to view mind as the *sanctum sanctorum* of SLA.

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; Conversation Analysis Methodology in Second Language Studies; Dynamic Systems Theory Approaches to Second Language Acquisition; Lemke, Jay; Levinson, Stephen C.; Multimodal Discourse Analysis

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Sociocultural Theory

JAMES P. LANTOLF AND MATTHEW E. POEHNER

Vygotsky's (1926/2004) monograph *The Historical Meaning of the Crisis in Psychology* is his foundational work in which he lays out the theoretical basis of his theory of culturally mediated mind, which is eventually expanded into his much better known publication *Thinking and Speech* (Vygotsky, 1987). In *The Crisis* Vygotsky proposes his solution to the classic Cartesian mind/body problem which had fractured psychology, and in many ways continues to fracture Western psychology to the present. In Vygotsky's day, one set of psychological models (e.g., Freudian psychology, Gestalt psychology, hermeneutic psychology) attempted to access mental processes through introspection externalized through speech, while the other (e.g., American behaviorism, Pavlovian reflexology) focused on movement of the physical body as an external manifestation of unobservable mental processes. Those trying to bridge the gap between the two adopted an eclectic approach whereby they attempted to weld elements from each psychology into a unified theory of mind. Needless to say, these efforts failed to generate workable hypotheses and methods for psychological investigations. Wilhelm Wundt, considered by most to be the founder of modern experimental psychology, proposed a complete separation between psychologies that focused on higher-order mental processes (i.e., voluntary memory, perception, attention, language, and rational thinking), which he understood to originate with *culture*, and those that dealt with more basic, *biologically governed,* non-voluntary processes including reflexes and non-voluntary memory, attention, and perception that humans shared with other higher mammals. Wundt recommended that voluntary processes be assigned to disciplines other than psychology, including anthropology (in his time, sociology), linguistics, and literary studies and that the involuntary, biologically endowed processes remain in psychology to be studied through experimental (scientific) methods, privileging measurement of discrete traits and behaviors, as in reaction-time research (for a fuller account of Wundt's argument, see Cole, 1996). Wundt's solution then reinforced Cartesian mind/body dualism, widening rather than narrowing the gap between the different approaches to the study of mind. Vygotsky argued for a third option, which was to create a completely new psychology based on Marx's materialist dialectic.

Vygotsky's Dialectical Scientific Psychology

Dialectics offers a way of overcoming the oppositions at the core of dualisms not by choosing one option over the other, but by showing how they can be brought together into a unified synthesis in which both components are necessary for the system to function. A compelling example is provided by Marx (1858/1972) in the *Grundrisse* (the precursor to *Das Kapital*), where he discusses the dialectical relationship between production and consumption. Accordingly, the production of goods is stimulated by the needs of those who consume the goods while at the same time the very production of goods awakens the need for consumption. Without production there can be no consumption and without consumption production is useless. To paraphrase Marx (1858/1972, p. 225), a house not lived in is not a house and a dress not worn is not a dress. A dialectical relationship, then, is comprised of a unity formed by two objects or processes that seem to be, for all intents

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and purposes, contraries or opposites. Each component can still be identified independently of the other, but without the other the full force of the unity is compromised or lost completely. Consider for a moment a simple object, such as a pencil with an eraser on one end and a sharpened point on the other. One end of the pencil creates symbols and representations, while the other erases them, the human agent functioning with this tool to compose and erase. It's only in this creative activity that the dialectical relation is established. Both processes are independent and can function without the other, but together they enable the creation of written texts—a process that usually requires creation and elimination of visible marks representing our thinking activity.

Vygotsky brought the dialectic into psychology and argued that human consciousness, the proper object of study for psychology, results from the dialectical unity of two distinct though necessary components: our biological endowment and our cultural inheritance. Without both of these a human psyche was impossible. Biology endows us with the necessary foundation, a brain, but a brain is not a mind. For this we need culture, which endows us with the capacity to intentionally organize and control (i.e., mediate) those processes that come ready-made with a brain. The synthesis of these components results in uniquely human mental life.

If human thinking were fully determined by the brain, then the relationship between humans and the world would be as direct as it is with other forms of life. This relationship would largely be characterized as stimulus and response. The organism would react and adapt to circumstances in its environment, as happens in the case of other animals. Human consciousness is unique in that culture, including artifacts (e.g., language, numbers, art, music, etc.) and activities (e.g., play, work, leisure, worship, politics, economic systems, etc.), is inserted between the human organism and the world and thus creates an indirect, or *mediated*, relationship. Vygotsky reasoned that just as humans can change and control the world through the use of physical tools—culturally created artifacts that come between humans and the world—we can also change and control our mental life through the use of culturally created symbolic tools, the most important of which is language. Hence, humans do not merely react and adapt to the world; they act on and change the world. In the same way, they act on and control their mental life.

A culturally created artifact such as language endows humans with the ability to filter and organize in specific ways various aspects of the physical world and it further endows us with the capacity to inhibit reactions to incoming stimuli, a necessary feature of planning. In turn, planning allows us to carry out activities symbolically, on the ideal level, before we implement them in the material world. Thus, architects build houses on paper, or computers, symbolically before building them in reality. This allows the architect to detect and avoid potential problems before they occur in three-dimensional space. In addition, the plans can be transmitted to other individuals, who following the plans are able to construct the edifice. The dialectic between symbolic (ideal planning) activity and concrete physical (objective) activity imbues humans with the capacity to intentionally and systematically change the world and with it themselves.

Genetic Method: Vygotsky's Historical Developmental Approach to Mind

Having formulated a dialectical basis for psychology, Vygotsky realized that traditional procedures (i.e., reaction-time experiments, introspection) for studying mind were incommensurate with an understanding of humans as historical beings. He recognized that the coming together of biology and culture was itself a historical process. That is, humans were not born as fully thinking beings; rather they became such as they were socialized

into their cultural communities. To study human thinking could not be adequately achieved once a human psyche had been fully formed and was operating smoothly, as is the case with normal adults. Instead, following Marx, Vygotsky proposed a methodology which traced the historical development of human consciousness. The methodology is known as the *genetic method*, because it is predicated on the notion that mind develops as individuals (and even entire communities) appropriate and use mediating artifacts found in a culture to organize and regulate their thinking.

The most significant artifact humans use to regulate their thinking is language. As a symbolic system language has a reflexive capacity whereby it is directed outward at others during social interaction and inward at the self during mental activity. The aspect of language that matters here is not linguistic form but linguistic meaning. Accordingly, higher (i.e., voluntary) forms of human mental activity are semiotically mediated. To understand how the process of mediation functions requires observation of the processes as they are being formed during the *ontogenesis* of individuals or the *cultural history* of an entire community. When children start to appropriate language they begin the process of gaining control over their own thinking. When communities appropriate new symbolic-making capacities, as for example occurred during the computer revolution, they learn new ways of mediating their relationship to the world and to each other.

One of the most important capacities that human adults possess, and which children must develop, is planning. As explained, a core feature of this process is planning on the ideal plane through the use of language (and other symbolic systems) before acting on the concrete plane (see the architect example above). The advantage of being able to plan symbolically is immeasurable. Early in life children act without rational thinking (i.e., without planning), but following years of interaction with representatives of their culture, whose primary responsibility is to socialize them into the community, they develop the capacity to act as a consequence of rational thought, which means they act in accordance with plans formulated primarily through the semiotic capacity offered by language.

Luria (1982), an influential colleague of Vygotsky's, documented the historical phases through which children develop the capacity to plan actions through language. At first they are unable to plan and merely react to stimuli from the world. Next they are regulated by the sounds but not the meanings imparted through language. Then they are regulated by the meanings of language expressed in the social speech of others. They develop the ability to use language, as in private speech, to regulate their own behavior but the speech must be external (i.e., social in form but psychological in function). Finally, they use language internally to regulate their mental, and even physical, behavior. When this stage of development is reached, a new dialectical unity is created which brings together the ideal symbolic form of activity (i.e., planning) and the concrete material form of the same activity in the physical world. Thus, for example, children at this stage, as with adults, are able to plan a drawing before materializing it with paper and pencil. Earlier in their development children can state what they have drawn only after creating the image.

Theory and Practice in Dialectical Science

Intentionally planning objective action on the symbolic, or ideal, plane is connected to the central dialectic of the theory that emerges from Vygotsky's integration of Marx's (1845/1978) "11th thesis on Feuerbach". The 11th thesis can be paraphrased as follows: the function of theory is not to interpret the world but to change it. In adherence with this principle, Vygotsky argued that the true test of a theory is not the quality of the ideas it generates or the extent to which it holds up in a laboratory but the extent to which it results in changing practice and, with it, the ways in which humans live and develop. In *The Crisis*

Vygotsky (1926/2004) compares the relationship between theory and practice in dualistic psychology and in the new dialectical psychology he proposed. In the former practice depends on theory, but the reverse is most definitely not the case. Practice is the "conclusion, the application, an excursion beyond the boundaries of science, an operation which lay outside science and came after science" and most of all success or failure of the application has "practically no effect on the fate of the theory" (p. 304). In dualistic science, as Vygotsky argued (p. 304), theory does not depend on practice and therefore it need not have any real-world consequences.

Following through on the implications of the eleventh thesis, Vygotsky insisted that for the new dialectically grounded psychology, practice is the site *sine qua non* for testing theory. It "pervades the deepest foundations of the scientific operation and reforms it from beginning to end. Practice sets the tasks and serves as the supreme judge of theory, as its truth criterion." Moreover, practice "dictates how to construct the concepts and how to formulate the laws" (p. 304). To link this back to earlier comments with regard to planning and activity, we can see that theory represents the ideal (i.e., the plan), symbolically formulated component of activity, while practice is the concrete instantiation of the ideal. Hence, activity is carried out on two planes, the ideal and the concrete, but each is not independent of the other. Each ineluctably depends on the other. Without a plan or a theory activity verges on mindless behavior, and without practice an ideal plan or theory is useless verbalism. It is like the dress not worn or the house not lived in.

The unity of theory and practice argued for by Vygotsky is known as *praxis*, a concept that has a long and complex history traceable to Greek philosophy (see Bernstein, 1971; Sanchez Vasquez, 1977). As Sanchez Vasquez (1977, p. 149) puts it, "All praxis is activity, but not all activity is praxis," because "human activity properly speaking only occurs when actions designed to transform an object are initiated on the basis of an ideal result or end, and culminate in an actual, concrete result or product" (p. 150). Without a guiding idea or theory, activity lacks an objective goal and therefore is not praxis. For instance, when humans walk along a beach they leave footprints in the sand. The making of footprints, unless done with a plan, as for example to leave a trail for someone else to follow, is not praxis although it qualifies as activity. The key to praxis is the unity and bidirectional flow of ideal (i.e., theoretical) activity carried out symbolically and concrete activity carried out in the material world.

Sociocultural theory is a theory that is fundamentally and necessarily connected to the world as the site where the theory is to be tested. For the past nearly 80 years it has been tested in a wide array of venues, including the workplace (see Engeström & Middleton, 1996), hospitals and clinics (Luria, 1973, 1979; Vygotsky, 1993), social reform (Ratner, 2006), and above all education (see Ilyenkov, 1974; Newman, Griffin & Cole, 1989; Moll, 1990; Newman & Holzman, 1993; Kozulin, 1998; Daniels, 2001; Wells & Claxton, 2001; Stetsenko & Arievitch, 2004; Karpov, 2005; Holzman, 2009). As becomes apparent from reading this research, changing things through praxis is at the same time understanding the very object(s) of study that changes. In other words, to change is to understand and to understand means to change (not merely to observe). From this perspective, the previous separation between basic and applied research evaporates. As Vygotsky (1926/2004, p. 305) argued, "applied psychology is psychology"—a scientific discipline that both generates (rather than consumes) theories and gauges the validity of its theories through practical real world activity.

SEE ALSO: Bakhtin and Second Language Acquisition; Dynamic Assessment in Second Language Acquisition; Praxis and Second Language Acquisition; Vygotsky and Second Language Acquisition: Zone of Proximal Development in Second Language Acquisition

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Sociocultural Theory and Interlanguage Pragmatics

EMILY F. RINE AND RÉMI A. VAN COMPERNOLLE

Introduction

Vygotskyan sociocultural theory (SCT) (e.g., Vygotsky, 1978, 1986; for second language [L2] development, see Lantolf & Thorne, 2006) has been extended to interlanguage pragmatics (ILP) research in a number of interesting and fruitful directions since the 1990s. The central concept of SCT, *mediation*, refers to the idea that higher forms of human mental activity (e.g., intentional memory, voluntary attention, communication) involve the integration of culturally constructed auxiliary stimuli, commonly called *mediational means* or *artifacts*, foremost among which is *language*. Internalization of mediational means enables humans to control basic (i.e., biologically endowed) psychological functions from the outside (Vygotsky, 1978), transforming them into specifically human, culturally based mental abilities. Within this perspective, ILP development is seen as a socially mediated (i.e., culturally based) process rather than an acquisitional (i.e., internal, inside the "mind/brain" of the learner) phenomenon. In addition, from the perspective of SCT, ILP development is as much about consciousness as it is about performance abilities.

The concept of mediation has been invoked in two distinct ways within SCT-informed ILP research. The most common invocation of the term refers to assistance provided by a more competent person, such as teacher or peer assistance during a learning task or communicative event. This type of social, or *interpersonal*, mediation supports learners in developing their understanding of or ability to use pragmatic features of language. A less frequently discussed conceptualization of mediation—at least in ILP research—relates to Vygotsky's argument that language is itself a mediating artifact. Pragmatic features of language mediate social actions, identities, and the qualities of interpersonal relationships. The question for ILP researchers centers on the extent to which L2 pragmatic features come to be personally meaningful mediating artifacts for learners. To be sure, the two emphases are interrelated, with the former focusing on the processes by which the latter may develop. In the general SCT literature, a similar distinction has been made between *meta-mediation* (i.e., human mediation provided to facilitate the internalization process) and *psychological mediators* (i.e., the mediational means to be internalized; see Negueruela, 2008).

The interplay between social mediation and the internalization of mediational means may be described in terms of what is probably the best-known concept in SCT: *zone of proximal development* (ZPD; Vygotsky, 1978). The ZPD is the metaphorical space between what the learner is able to do independently (i.e., completed development), on the one hand, and what the learner is able to do with support from another person, on the other. In the ZPD, mediating agents (e.g., teachers, more expert peers) support the learner in internalizing mediational means; hence the connection between meta-mediation and psychological mediators, as described above. Importantly, the ZPD concept is not co-equivalent with related notions of assisted performance, collaboration, scaffolding, and so forth, which primarily focus on the concept of "assistance" during performance; rather, the ZPD fundamentally entails a transformative process in which mediational means are

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internalized, via meta-mediation, as personally significant artifacts for the learner (Lantolf & Thorne, 2006). As noted above, the internalization of pragmatic features of language is not coterminous with gains in performance abilities, but rather describes the extent to which learners are able to (re)mediate their interactions with the world through the L2, including the accomplishment of social actions, the performance of social identities, the creation and maintenance of particular qualities of social relationships, and so forth.

The remainder of this entry discusses two strands of SCT-informed ILP research carried out to date. First, we report the findings of observational research using SCT as a theoretical or analytic lens as a means of interpreting questions related to ILP development. While these studies focus primarily on issues of interaction, participation, and access to L2 communities, they also illustrate the advantages of using an SCT to observe ILP development. Second, we address a relatively new wave of educational praxis-oriented SCT research into ILP development. Such research incorporates SCT principles into the design of ILP instructional programs.

Interaction, Participation, and Access in ILP Development

As noted above, a central claim in SCT is that a person's cultural development is mediated by more expert or competent members of society. Social mediation takes place as children or other learners (e.g., adults in a classroom), in cooperation with others, take part in culturally organized activities in which the appropriate mediational means may be modeled, explained, or both. For this reason, SCT-informed ILP research accounts for the role of interaction and participation in, as well as access to, developmentally beneficial forms of activity. It is also important to note that SCT research into ILP does not focus solely on predetermined sets of pragmatic features (e.g., speech acts) but, additionally, considers patterns of interaction and participation in general to be pragmatic resources for the accomplishment of social actions, both within and beyond formal, structured educational environments.

In one of the earliest studies to invoke Vygotskyan concepts in the field of ILP, Shea (1994) challenged the Gumperzian analytical tradition of interpreting miscommunication in intercultural communication as a "mismatched interpretation of contextualization cues" due to differences in cultural backgrounds and styles (p. 516). Shea observed the interactions between advanced Japanese English as a second language (ESL) speakers and their native speaker (NS) English interlocutors in order to show how the *quality* of the interlocutors' responses to the non-native speakers (NNSs), rather than cultural differences, directly affected the NNSs' opportunities for learning and participation in the interactions. Shea illustrated that the ways in which utterances are interpreted in interaction are mediated by how interlocutors position themselves and are positioned along several dimensions in conversation.

Although Shea's (1994) study provided an important message about the role of access to participation in a given practice for development in contexts outside of the classroom, more common to ILP research are those studies involving and interested in classroom interactions. In two studies involving a Spanish as a second language classroom, Hall (1995, 1998) showed how differences in the ways the initiation–response–feedback (IRF) sequence unfolded during a particular practice called "practicing speaking" over the course of one semester had both interactional and social consequences for the members of one particular class. In Hall (1995), the author was interested in how topics were established and discursively managed in an interactive practice designed to provide speaking opportunities in Spanish. She found that the devices used to create topics and maintain topical coherence were very limited and different from the types of linguistic devices used in naturally occurring conversation; thus, "the developmental consequences of providing

such a limited repertoire of possibilities for students in any classroom are likely to be as limited" (Hall, 1995, p. 53).

In a follow-up study, Hall (1998) provided a different analysis of the same classroom, focusing this time on the effects the structure of the IRF sequence itself had on opportunities for participation in the class. Hall discovered that while the structure of the IRF sequence itself remained fundamentally the same for each of the participants, the ways in which the teacher responded to and allocated turns based on the follow-up move (i.e., granting two students "primary" status versus the "secondary" status of the other two) directly impacted the differential quality and quantity of learning opportunities afforded to each of the students. The importance of how the teacher allocated and responded to student turns for creating opportunities for learning was similarly noted by Antón (1999) in a study of two first-year university French and Italian classes. By shifting the discourse moves they use from "teacher-centered" to "learner-centered," teachers involve the students in negotiation, which functions to scaffold the students and provide them with assistance in the ZPD (p. 303).

While the dynamics between teachers and students are certainly an important part of any classroom experience, several researchers showed that peer-to-peer interaction is oftentimes just as powerful for inciting development, allowing participants to act as *both* expert and novice in the same task, such as in collaborative group work or in one-on-one interaction. In a Japanese as a foreign language classroom, Ohta (2001) found that opportunities for development may still be found within the IRF sequence if we shift our expectation of what the target of learning is when using this type of sequence. More specifically, teacher-directed IRF sequences may be massively restrictive in who may speak at a given time (i.e., the teacher overwhelmingly produces the assessment tokens); however, students are, by the same token, exposed to abundant examples of listening assessments being done by the teacher on a daily basis. This input, coupled with peer-to-peer practice doing the IRF sequence, allowed students to develop the pragmatic resources for being an active listener by improving use of response tokens and assessments over time.

A series of studies by Belz and Kinginger investigating development in telecollaboration and study abroad (Belz & Kinginger, 2002, 2003; Kinginger & Belz, 2005) have expanded this line of research by arguing that SCT "suggests a principled way toward documentation and explanation of the specific manner in which intercultural interaction fosters language development in particular contexts" (Kinginger & Belz, 2005, p. 370). In particular, they have highlighted the advantages of performing *microgenetic* (moment-to-moment) as well as *ontogenetic* analyses on data to illustrate development within the paradigm of French and German second person address (i.e., French *tu* vs. *vous* and German *du* vs. *Sie*). The concept of microgenesis comes from Vygotsky's (1978) developmental (or "genetic") approach to cognition. According to Vygotsky, the only way that one can understand development is to situate it in terms of its historical origins in the material, social world and to trace the physical and social transformations it undergoes. Comparing the two types of analysis, Kinginger and Belz (2005) note that "Microgenetic study of *language* development closely examines the particular features of interactive settings as development takes place, whereas ontogenetic study is more longitudinal in scope, tracing changes as they occur over more extended periods of time" (p. 373, italics in original). In addition to showing how a telecollaborative partnership afforded a wider range of opportunities for using the T form (*du*) in sociopragmatically appropriate ways, Belz and Kinginger (2003) were able to show how, through a combination of explicit peer instruction, opportunities to observe peer language use, and the motivation to maintain positive face with their German peers, most of the American students were able to either dramatically or gradually improve the appropriateness of address form use in German over the span of the telecollaborative partnership.

In Kinginger and Belz (2005), the authors presented two case studies, one from a German–American telecollaborative partnership and one from an American student studying abroad in France, the former highlighting a microgenetic analysis and the latter an ontogenetic one. These complementary analyses combined learners' performance data with their metapragmatic awareness, which allowed the researchers to link environment to personal agency and identity, as reflected by their actions. Both analyses showed that developmental pathways are not linear, but idiosyncratic, and shift as the learners' own motivations, goals, and relationships with their interlocutors change over time. In an expanded study of American university students studying abroad in France, Kinginger (2008) documented how learner histories, orientations to language, and access to L2 communities during residence abroad shaped ILP development, with specific reference to awareness and performance of address forms, speech acts (greetings and leave-taking), and colloquial vocabulary. This research is especially important because it highlighted the variability inherent in studying abroad and the qualities of learners' achievements by focusing on the *particular qualities* of learners' experiences in France rather than treating the study abroad experience as a monolithic, determining factor in ILP development.

Educational Praxis in ILP Development

As highlighted in the preceding section, a number of studies have used SCT as a theoretical or analytic lens for tracing ILP development. A relatively new wave of research, however, has adopted SCT principles for the design of pragmatics pedagogy—that is, rather than using SCT to interpret ILP development, SCT forms the basis for intervening through pedagogy to intentionally promote the growth of pragmatic knowledge and abilities. This, Vygotsky (1997) argued, was the ultimate goal of SCT as extended to formal educational settings—the "artificial" (i.e., intentional) development of the person.

Ohta (2005) provided an early example of extending Vygotsky's (1978) ZPD concept to ILP instruction by reinterpreting previous non-SCT pedagogical research. She focused on the qualities of support provided to learners in a classroom context that may promote ILP development. Ohta argued that the ZPD concept may provide much-needed insight into the nature of ILP development and, at the same time, help to improve ILP instructional programs. She was not very specific in making recommendations for creating ZPDs in the classroom. Two recent research programs—reported in Vyatkina (2007; see also Belz & Vyatkina, 2008) and van Compernolle (*n.d.*)—have, however, provided more specific models of Vygotskyan-inspired ILP pedagogies.

Vyatkina (2007) expanded research into ILP development in telecollaborative, intercultural partnerships by adding a pedagogical intervention component focusing on German modal particles. In other words, not only did Vyatkina trace ILP development as it occurred in a telecollaboration context, but she used the developmental learner corpus as a pedagogical tool for providing "focused instruction [on modal particles] based on corpus-enabled contrastive and developmental analyses" (Belz & Vyatkina, 2008, p. 34) throughout the two-month project. These data (i.e., the learners' own discourse recorded as textual transcripts) were used in the classroom to focus learners' attention on their own use of modal particles in comparison to their German native speaker interlocutors', with guidance (i.e., mediation) from the teacher. A microgenetic analysis of the corpus revealed gains in the learners' metapragmatic awareness of the importance of modal particle use in German conversations from the pedagogical interventions, as evidenced in their post-intervention cumulative course portfolios. Additionally, learners demonstrated a general increase in the number and variety of modal particles produced over the two-month partnership,

sometimes even superseding the number of particles produced by the German partners in a given week, although the distribution and collocation patterns of particular modal particles produced did not always match that of the NS use.

Van Compernolle (*n.d.*) adopted a concept-based approach to ILP instruction, drawing on Galperin's (1989, 1992) model of systemic-theoretical instruction, to develop a six-week sociopragmatic enrichment program for US university learners of L2 French. Concept-based instruction (CBI) focuses on teaching holistic, coherent concepts (i.e., meanings) and then mapping those concepts onto relevant linguistic forms. Concepts are presented both verbally (either in speech or in writing) and imagistically in the form of pedagogical diagrams. Verbalization tasks (e.g., explaining to oneself how the concepts work and explaining one's performance in relation to the concepts) are used to promote learners' internalization of the concepts. In turn, learners' emerging conceptual knowledge is applied to concrete communicative problems and performances, such as problem-solving worksheets and spoken-interactive tasks.

Van Compernolle's study centered on teaching the concepts of self-presentation, social distance, and power status through "concept cards" (written explanations of concepts) and a number of pedagogical diagrams depicting the concepts. The concept cards and diagrams were used to promote verbalized reflections among learners, both independently and cooperatively with an expert tutor, as a means of developing conceptual knowledge of language. The learners also engaged in a series of problem-solving and spoken-interactive tasks that were mediated by an expert teacher.

Van Compernolle demonstrated that the enrichment program simultaneously promoted concept-based pragmatic knowledge (i.e., understanding pragmatics through concepts) and enhanced performance abilities (i.e., conscious and accelerated control over language forms). However, the author stressed that developmental trajectories were not identical for all learners. Instead, because CBI serves to provide learners with coherent, systematic ways of thinking about language, it also encourages learners to construct their own personally significant (i.e., mediated) relationship between meanings and forms. With regard to ILP development in van Compernolle's study, this issue related to individuals' orientations to current and future L1 and L2 identities and desirable social relationships, and how they can be constructed through the conceptual meanings indexed by relevant language features. This inter-individual variation, van Compernolle argued, was evidence that the CBI enrichment program promoted internalization of the concepts—a process of making mediational means one's own (Lantolf & Thorne, 2006)—rather than rote memorization and non-thoughtful replication of native speaker pragmatic conventions.

Conclusion

SCT-informed research has highlighted the centrality of mediation in ILP performance and development. The bulk of this work has focused on issues of interaction, participation, and access to culturally organized activities, using SCT as a theoretical lens through which to analyze and interpret learners' actions and knowledge. More recently, however, Vygotsky's proposals have begun to inform pedagogical interventions explicitly aimed at promoting the development of ILP abilities. In addition, van Compernolle's (*n.d.*) study emphasized not only the importance of *social mediation* (in this case, interactions with an expert tutor), but also the qualities of *psychological mediators* (i.e., sociopragmatic concepts). In this sense, SCT provides the framework not only for designing pedagogies (i.e., how to teach) but, more importantly, for reconceptualizing what the object of instruction is.

SEE ALSO: Classroom Research on Pragmatics; Interlanguage Pragmatics; Pragmatic Development in Study-Abroad Contexts; Pragmatics of Second Language Computer-Mediated Communication; Second Language Pragmatic Development; Sociocultural Theory; Teaching Pragmatics; Vygotsky and Second Language Acquisition; Zone of Proximal Development in Second Language Acquisition

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Sociolinguistic Studies of Literacy

MIKE BAYNHAM

Sociolinguistics and Literacy Studies

The connection between sociolinguistics and literacy studies is not as obvious as it might seem. Introductory textbooks in sociolinguistics tend not to mention literacy in their indexes, while books on literacy do not typically list sociolinguistics in theirs. Sociolinguistics of different sorts has, however, been a significant influence in the development of literacy studies, as this entry will show. To understand how, it is important to distinguish between a number of intellectual strands or traditions within sociolinguistics.

Variationist sociolinguistics studies the correlation between linguistic variables and social factors, typically in relation to nonstandard spoken language. Although variationist sociolinguistics has made a broad contribution to literacy-related topics such as dialect and standard and language education, famously Labov's critique of Bernstein (in Labov, 1972), it has made no direct contribution to studies of literacy as such and is clearly focused on variation in spoken language.

Interactional sociolinguistics, associated foundationally with the work of John Gumperz, is concerned with the construction and interpretation of meaning in social interaction. Again, the program of work here is overwhelmingly concerned with spoken language, but the approach has been productively applied to literacy studies in Cook-Gumperz (2006).

Ethnography of communication, the third sociolinguistic strand, associated with the foundational work of Hymes, although Gumperz was also involved in its inception (see Gumperz & Hymes, 1972), is another strand which has had a major influence on literacy studies. Ethnography of communication (EoC) uses ethnographic methods to investigate and describe the communicative practices of a given speech community. From the very beginning, the EoC approach envisaged literacy, or at least written language, within its scope. Basso (1974), for example, outlines a programmatic approach to the ethnography of writing within the EoC framework. For ease of reference and to encompass other social science influences on literacy studies (introduced below), I will refer to the "social turn" in literacy studies.

The Social Turn in Literacy Studies

The emergence of the "social turn" in literacy studies can be dated to the early 1980s. While it can be characterized as sociolinguistic in orientation at least in the EoC sense, there were other significant influences from anthropology (see Street's seminal *Literacy in Theory and Practice*, 1984) and sociology (see Baker & Luke, 1991; Luke, 2004). Sociolinguistics as a discipline has shown itself to be relatively permeable to other social science influences, particularly in relation to a desire to move away from description and toward explanatory social theory of various kinds (e.g., Coupland, Sarangi, & Candlin, 2001). In this entry, reference will be made to these other social science influences as appropriate. The social turn can be seen as a reaction to psychologically and pedagogically oriented approaches, well characterized by Goodman's (1985) psycholinguistic approach. The social turn thus involved a turn away from questions of instruction and toward a consideration of literacy

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in its social context and thus its contexts of use: from acquisition theories of literacy to use theories of literacy. Ironically, however, the first major study in this new approach which investigated literacy as social practice, undertaken among the Vai in Liberia, was entitled *Psychology of Literacy* (Scribner & Cole, 1981).

Baynham and Prinsloo (2009) identify a *first generation* of empirical literacy studies, among which are Scribner and Cole (1981) as well as Scollon and Scollon (1981), Heath (1983), and Street (1984). Street memorably contrasted ideological and autonomous models of literacy, arguing against writers such as Goody (1981) and Ong (1982), who assumed large-scale consequences of literacy in human development. His arguments brought an influential strand of critical anthropology to bear on literacy studies which somewhat diverted attention from Hymesian EoC for nearly two decades, although there are currently indications of its resurgence. Of the above, the work of Scollon and Scollon and Heath were the most clearly influenced by EoC. Key theoretical constructs were the *literacy event*, defined as "occasions in which written language is integral to the nature of participants' interactions and their interpretative processes and strategies" (Heath, 1983, p. 50), and *literacy practices*. The literacy event can be easily identified empirically in terms of Hymes's SPEAKING framework, the idea of the literacy practice is more challenging, drawing as much on social theory such as critical anthropology as on sociolinguistics as such. On literacy as practice, Barton and Hamilton write:

> literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written texts. . . . literacy practices are patterned by social institutions and power relations and some literacies become more dominant, visible and influential than others. (1998, p. 7)

Social theory of various sorts brought questions of power, dominance, and inequality to the fore, ensuring that literacy studies took a critical perspective on the social order, linking with activist perspectives on education (both school and adult) for which literacy was also a crucial issue.

A *second generation* of literacy studies brought to bear the methodologies and theoretical constructs of these earlier studies in a series of empirical studies, typically focusing on vernacular or local literacies (Prinsloo & Breier, 1996; Barton & Hamilton, 1998; Gregory & Williams, 2000; Martin-Jones & Jones, 2000). Prinsloo and Breier's Social Uses of Literacy (SoUL) project examined the literacy practices of the disenfranchised in South African townships; Barton and Hamilton undertook a longitudinal study of the everyday, in their term local, literacies in Lancaster and the UK; Martin-Jones and Jones brought together research into literacy in multilingual settings; and Gregory and Williams conducted a study of literacy based on long-term ethnographic engagement with the Bangladeshi settlement in East London, notable for its emphasis on the interaction of home and school literacies in the learning lives of children.

Third-generation literacy studies (e.g., Baynham & Prinsloo, 2009) demonstrate a significant diversification of the range of topics and issues addressed. There is a problematization of the "local" in the context of a pervasive trans-localism, contrasting with the sense of place implicit in some earlier studies (see Brandt & Clinton, 2002). There is a return to pedagogical questions, eschewed in the earlier studies, whether in the focus on home–school interactions in the literacy lives of children, or the role of academic literacies in higher education (e.g., Ivanic, 1998; Lillis, 2001). There is a recognition of the impact of new technologies and electronic means of communication on the shaping of literacy practices (Warschauer, 1999) and a recognition of the impact of the visual and other modalities on literacy (Kress, 2003). Last but not least, there is recognition that a social account of literacy needs to be complemented by a cognitive account (Gee, 2000). We will now consider these developments thematically.

Academic Literacies

Academic writing has been a subject of study from a number of perspectives (for an overview, see Lea & Stierer, 1998), most notably those taking a linguistic angle in work on English for academic purposes and genre studies (i.e., writing as text; Swales, 1990). The academic literacies approach (Ivanic, 1998; Lillis, 2001) advocates a focus on both *texts and practices*, emphasizing writing (as it has primarily focused on writing) as constructed in specific disciplinary and institutional contexts, informed by particular ideologies and values, the apprentice academic writer can be understood as a legitimate peripheral participant in the academic community of practice (Wenger, 1998), learning the "ways with words" of a particular subject of study. Rather than a generic academic skill, academic writing is seen as highly diverse, shaped by the individual disciplines and subject areas. Different perspectives, influenced by different understandings of institutional power and student agency, emphasize the student writer as apprenticed into the academic community, as legitimate peripheral participant, or as critically appropriating new styles of writing. Key illustrative issues have concerned the social construction of plagiarism, academic literacies and identity, and the impact of disciplinarity and interdisciplinarity on writing practices.

Literacy and Pedagogy

It should be recalled that the social turn in literacy studies was initially a move away from a focus on pedagogy and literacy instruction. In a sense this is too important a topic to be long neglected, and researchers such as Maybin (2004) apply the insights of the social turn in literacy studies to school-based literacy. The work of Freebody on schooled reading represents a continuing strand of research which goes back to the focus on critical reading pedagogy in Baker and Luke (1991). A number of recent publications have signaled a return to questions of pedagogy (e.g., Pahl & Rowsell, 2005; Street, 2005; Barton, Ivanic, Appleby, Hodge, & Tusting, 2007). The papers collected in Street (2005) are grouped into a focus on *early years* (e.g., Stein & Mamabolo, 2005, on early literacy practices in a South African school), *adolescent years* (e.g., Oldham, 2005, on literacy and media in secondary schools in the UK), and *adult literacies* (e.g., Leung & Safford, 2005, examining the literacy practices of nontraditional students in higher education). The study reported in Barton et al. (2007) investigates the relationship between learners' lives and their engagement with learning opportunities. Ivanic (2009) reports on a study which applied a literacy studies research approach to examine the role of literacy practices in the vocational curriculum. The literacies of a college student on a vocational course involve: literacies for being a student, such as for registration procedures; literacies for learning; literacies for assessment; and literacies for imagined futures, such as work placements. The study examined the interrelationship between the students' vernacular, everyday literacies and literacies for learning, identifying areas for fine-tuning in the vocational curriculum to enable students to draw on their vernacular literacy practices.

Home School Literacy Studies

As mentioned above, Gregory and Williams (2000) is a study in which the interactions between home and school literacies are examined. This was, it should be recalled, a primary driver of the ethnographic work undertaken by Shirley Brice Heath and her students written up in *Ways With Words*. In Chapter 7, Gregory and Williams analyze "playing school" interactions at home between older and younger siblings and are able to show a high degree of similarity between the strategies employed by the older sibling playing

teacher and the actual reading teacher. Cruickshank (2006) examines the home and school literacies of Lebanese teenaged boys, his longitudinal ethnographic fieldwork enabling him to track the emergence of the computer as a site of literacy activity in the home. Street (2005) and Purcell-Gates (2007) both bring together case studies of literacy in diverse home and school settings. A strand of this work is developed by Freebody (Freebody & Freiberg, 2008) drawing on ethnomethodology and conversational analysis, research that addresses the challenging question posed by Heap (1991): "What counts as reading?"

Multimodal Literacies

One of the developments in the last two decades that has further problematized the question of what counts as reading is the notion of multimodality. To the extent that literacy studies treat as important the interaction between spoken and written language in literacy events, it is already multimodal, but the concept of multimodality is particularly associated with the shift to the visual that Kress and van Leeuwen (2001) and others have detected in communication practices. This is particularly in evidence in relation to the digital shift in literacy and in this context the dimension of multimodality will be very relevant.

Digital Literacies

Studies of digital (Lankshear & Knobel, 2008; Gillen & Barton, 2010) or electronic literacies (Warschauer, 2009) focus on the impact of the introduction of new technologies on literacy practices. Kress (2010, p. 6), in a contribution to Gillen and Barton (2010), argues for four dimensions involved in this impact: (a) an increase in the multimodality of communication; (b) a shift from page to screen; (c) changes in social structures and social relations, in particular changes in authority and gender structures; and (d) transformation of the traditional post-Gutenberg medium of book and mode of writing to the screen as medium and the image as the dominant mode. Added to these are implications for transnationalism. Lam's research (e.g., Lam, 2004) shows how online chat rooms create an environment for multilingual online communication that redraws the boundaries between spoken and written language as well as between language and national boundaries, creating, in effect, transnational spaces for transnational literacies (see below). It is thus becoming increasingly unviable to conceptualize literacy without taking into account the dynamic changes in the means of communication, their impact on literacy practices, indeed the blurring of boundaries between spoken and written language that are involved. Warschauer (2009) investigates this through the online communication practices of young Egyptian professionals, finding a preference for English in Web browsing and formal e-mails, but with switching between the use of English of colloquial Egyptian dialect in Romanized script in informal e-mail communication.

New opportunities afforded by interactive Web 2.0 environments such as blogging (Davies & Merchant, 2006), Facebook, and Skype are greatly increasing the opportunities for authoring online, albeit within the constraints of the particular platform, as well the amount of visual material that is available, with some sites such as Flickr being built around the sharing and tagging of photographs.

Trans-Local Literacies

One of the emphases of Street's ideological model of literacy lies in its insistence on the contextually situated, as it were local, nature of literacy, in contrast to the autonomous

model which treats literacy as a neutral, transferrable skill, with extensive benefits and impacts in the project of modernity. We have seen how this emphasis on the contextualization of literacy gave rise to a number of studies which examined literacy in local contexts, emphasizing its situatedness, particularly in relation to dominant, school-based constructions of literacy. A challenge to this perspective, as articulated in Brandt and Clinton (2002) and Luke (2004), is that the local perspective on literacy ignores the dynamic interactions of local with global flows and processes. A response to this challenge gives rise to an emerging focus on transnational or trans-local literacies (Warriner, 2007) or, as Kell (2009) argues, for a trans-contextual approach. All of these highlight the fact that literacy is not just situated but also travels from site to site, and context to context, both within and across borders. Kell (2009) reports a study of the literacy practices involved in building a house in the South African township of Khayalethu, identifying literacy practices that, while focused on the local context of the site where the house was to be built, also brought in literacy practices at community, local council, and provincial scales. Such an analysis accounts for the simultaneity and interactivity of much contemporary literacy activity, while retaining the insight that "the global is also profoundly local" (Baynham, 2004, p. 289). McGinnis, Goodstein-Stolzenberg, and Saliani (2007) examine the hybrid, online textual practices of young people who are bringing together linguistic and ethnically diverse identities in the writing or authoring spaces which they appropriate on the Web. Such authoring spaces exploit the current affordances of digital literacies, but are also clearly multimodal in character. While retaining the focus on situatedness which has been such a crucial aspect of the social turn in literacy studies, transnational, trans-local and trans-contextual studies emphasize the complex interactions between phenomena of different scales: the measuring of the dimensions of a planned house on the ground, the regulations on such dimensions as they exist in a council planning office. Such studies extend the ability to capture the complexity of literacy studies, vastly increasing the ability to deal with the operations of power for example, without departing from literacy studies key premises.

Literacy and Theories of Learning

The social turn in literacy studies, as pointed out above, was initially a turn away from questions of pedagogy and learning toward questions of use. Just as questions of literacy pedagogy are too important to be long neglected, so are questions of literacy learning. Rather than going back to the psycholinguistic approach of the 1980s, literacy studies have sought to identify approaches to learning congruent with a social perspective. Gee (2000) identifies a number of these: sociocultural theory, activity theory (Engstrom, 1990), and situated cognition theory (Lave & Wenger, 1991). These approaches provide a basis for the timely reintroduction of the dimension of learning into literacy studies and are likely to be a productive theme for continuing work.

Conclusion

In this entry sociolinguistic approaches to literacy have been located within a broader social turn, taking in influences from sociology and anthropology and other social science disciplines, while identifying a clear sociolinguistic influence, derived from the ethnography of communication. Building on early work in the 1980s and 1990s, current work is influenced by a number of factors such as the increasing salience of multimodal communication, the dramatic increase in digital communication, and the no less dramatic increase in global interactivity, and transnationalism, which have forced a reconsideration of the question

"What counts as literacy?" and a refocusing of what is meant by local in a globalized world. Initially a turn away from pedagogical and learning orientations to literacy, there is currently an increased emphasis on both these aspects, albeit from a social perspective. At present it seems as if the theoretical and methodological frameworks developed in literacy studies are sufficiently robust and flexible to respond to the challenges of these new literacy landscapes, indeed it is in the exploration of these newly emerging literacy environments, in a kind of crucible of semiotic change in progress, that the most exciting current work is being done.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Discourse Analysis in Literacy Research; Ethnographic Approaches to Literacy Research; Indigenous Literacies; Literacy and Transnational Migration; Literacy in Community Settings

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Sociolinguistic Surveys in Language Planning

PAULIN G. DJITÉ

There are a number of useful approaches to collecting data in language planning (Fishman, 1974; Kloss & McConnell, 1974–84; Haugen, 1988; Breton, 2003). Of these, sociolinguistic surveys have pride of place, when it comes to small, medium, or large-scale research projects (Cooper, 1980; Casad, 1993; Baker, 2003).

The purpose of sociolinguistic surveys is to assess the linguistic and sociolinguistic situations in one or a number of speech communities within a locality, a region, or a state, through a set of questions seeking to find out who speaks what language to whom, under what conditions and for what purpose(s) (Kaplan & Baldauf, 1997). Both individuals and speech communities often control several languages or varieties of languages, which they use for specific objectives, with clearly identified audiences. Sociolinguistic surveys aim to collect basic information regarding speech varieties, their speech areas, and their relationships. They ask questions eliciting judgments on differences or changes in language use and can help measure the ability of individuals within a speech community to speak, understand, or both speak and understand another language, the vitality of these languages, the differences and similarities in speech of communities that speak related speech forms, noting comprehension or collecting details of linguistic form, and people's attitudes to different languages or varieties of languages (Koenig, Chia, & Povey, 1983; Salami, 1986). They are intended to answer questions such as:

1. How many languages or speech varieties are there in a given community?
2. Where are they spoken and by how many people?
3. What is the level of inter-comprehension among speakers of the various speech varieties?
4. Are the language varieties spoken in the community healthy, or are there indications of language shift?
5. What are the attitudes within the community toward the other speech varieties and toward their speakers?
6. What speech variety(ies) or language(s) is officially promoted?

They are also intended to answer question such as: In what language(s) do people in a particular speech community go about the activities of everyday life, such as socializing (e.g., speaking to parents, peers, siblings, children, partner, other relatives, workmates)? In what language(s) do they participate in various other social activities, such as shopping, going to church or to the mosque, listening to the news, reading, learning (e.g., primary, secondary and university education)?

The answers to these questions will help form a general picture of the language situation in a speech community, in terms of language comprehension, language viability, and language attitudes. It is not uncommon for individuals to socialize in one language and work in another, or to learn in a mother tongue at primary school level, then in a regional, official, or both regional and official language at secondary and tertiary levels (Kaplan & Baldauf, Jr., 1997).

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Sociolinguistic surveys involve some conceptualization of the language/ethnic make-up of a speech community, its history, as well as some notions of the political and economic forces at work within it. They also involve the formulation and design of appropriate data collection instruments (i.e., questionnaires, interviews, observation, or all three of these). The methods used in sociolinguistic surveys depend on the questions the researchers are trying to answer (questionnaires, group and individual interviews, retelling of stories, direct observation, etc.) and the reliability of the results varies according to the method used and the rigor with which it is applied. It is important, for instance, to work out from the start whether the research instruments will be written or not, and in what language(s). It is also important to determine the best way to administer the data collection instruments; will a questionnaire, for example, be posted to respondents and returned by post, or will it manually distributed and collected?

The research instruments often need to be refined along the way, in terms of length, appropriateness, relevance, and significance of parameters. Finally, the data will need to be collated and processed regularly and in a timely manner, and in several formats (e.g., computerized numerical format, interview notes, secondary data from documentary evidence, etc.) Selection of the research instruments to be used is based on the quality of the data needed on the one hand, and the time and cost that can be invested in a survey on the other.

Depending on their scale and objectives, sociolinguistic surveys may last from a few days to as long as three to four years. Long-term sociolinguistic surveys (i.e., lasting three to four years) require extensive presurvey organizational planning, in order to ensure an adequate research team is assembled, and adequate resources and time are provided to achieve the aims of the survey. They also often require the collection of preliminary data, in order to inform the design of the survey instruments (i.e., questionnaires, interview format and contents, etc.).

Sociolinguistic surveys can be conducted from various perspectives, for example, anthropological, ethnographic, historical, and so forth. The latter is most valuable for tracking change over time and is important, as the historical development of language use and its interaction with other cultural elements in a speech community is key to understanding the role and place of a particular language or language variety (Hornberger, 2005). Historical evidence is always crucial for testing hypotheses about language-related issues. The anthropological perspective is mainly concerned with the field study of language and shows what aspects of language(s) are used for which purposes. This approach is useful in the development of terminological equivalence. Approaching sociolinguistic surveys from the perspective of the ethnography of communication helps understand the sociolinguistic resources available in particular speech communities, and the ways in which native speakers enact communicative acts in a variety of situations.

Sociolinguistic surveys are usually a first step in a complex process that can include a (survey) report. This report may contain recommendations, which may in turn lead to a series of policy decisions, and eventually an implementation plan to resolve a particular issue(s) raised in the report. The results of language surveys are used for a variety of purposes (e.g., implementation of educational programs, language development work, status planning, etc.).

SEE ALSO: Qualitative Research in Language Planning and Policy; Qualitative Sociolinguistics Research; Surveys

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Sociolinguistics: Mixed Methods

STEPHEN CALDAS

Mixed methods research incorporates both quantitative and qualitative research techniques, and provides a broader, more rounded, and multifaceted perspective on the complex reality of social settings than either quantitative or qualitative approaches alone (Teddlie & Tashakkori, 2009). A mixed methods approach can be especially illuminative at the level of the case study, which has traditionally relied only on qualitative techniques like observation and field notes. However, with the collection of enough longitudinal numerical data, quantitative analysis can be used to corroborate qualitative findings in a linguistic case study. This entry provides examples of how the author and his wife used both quantitative and qualitative data analysis in their 19-year mixed methods case study to rear their three children to be French–English bilingual, biliterate, and bicultural. In 1979, monolingual English-speaking Stephen met and fell in love with monolingual French-speaking Suzanne from Quebec, Canada, during her three-weeks of summer study abroad in Stephen's home state of Louisiana. Following their marriage a year later, and much effort to learn each other's language, the young couple decided to rear their yet-to-be-born children simultaneously in both languages. They documented their efforts in both qualitative and quantitative studies published in a series of articles (Caldas & Caron-Caldas, 1992, 1997, 1999, 2000, 2002; Caldas, 2008) and a book (Caldas, 2006).

At the beginning of our bilingual project, before our first child, John, was born in 1985, we determined that Stephen would address him only in his native language (English), and Suzanne would address him only in her native language (French). This approach is referred to as "one parent, one language" (Döpke, 1992). When John was 18 months old, we modified our family language policy and both began to address John only in French. We continued this policy with the birth of identical twin girls Valerie and Stephanie in 1987. For the duration of the study our family spent academic school years (10 months) in southern Louisiana, and summers (June and July) in an all-French-speaking community in the province of Quebec, Canada. The twins attended a French immersion school program in Louisiana from the second through the seventh grades. John only attended a half year in a French immersion program in Louisiana (during the fourth grade). All three children attended approximately six weeks of all-French elementary schooling in Quebec, Canada.

Qualitative Methods

The authors of this study were participant observers, a qualitative research technique developed by anthropologists like Margaret Meade (1928) and first applied in early sociolinguistic research by Ronjat (1913). The parents were active participants in the family while at the same time trying to understand and explain the sociolinguistic dynamics they were observing.

As a participant observer in constant consultation with his wife, the lead author kept careful ethnographic field-note observations documenting how his children were reading, writing, and speaking French and English. He began systematically writing field notes when John was 9;3 and the twins were 7;3. These field notes spanned 11.5 years, though the bulk of the entries were written based on observations during the nine years from 1994 to 2003.

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The field-note entries made references to which languages the parents and children were speaking, what they actually said, who they said it to, when they said it, and the family linguistic context at the time. The notes were for the most part written on a computer by the author in the early morning or late at night. The author also jotted down notes on paper he carried with him. The entries were written based on observations both in the family residences in Louisiana and Quebec, and when traveling together with the children in the USA, Canada, Mexico, and Europe. The following entry, written in Louisiana when John was 9;3 and the twins 7;3, is a typical entry in terms of style and content:

> Today was the first day of school for the three kids. Both Suzanne and I noticed that after school all the children spoke only in French. In response to my question (in French) of how her day went, Valerie volunteered that she at times had trouble speaking in English. John, overhearing her, immediately jumped in and said, "C'est vrai, lorsque je parlais anglais des fois j'ai dit 'oui, parce que,' sans penser." ["It's true, when I spoke English sometimes I said (in French) 'Yes, because,' without thinking."]

The author did not formally code common themes or words in his field notes, as some qualitative researchers do. Rather, he used the field notes as a historical narrative which provided rich description over a long period of time, which he could compare with the quantitative data (discussed below). Whereas this approach seemed to work for our project, coding is an important qualitative tool that could have yielded even more important insights had it been employed.

In an effort to have the children describe their perceptions of what it was like to develop as a bilingual in their two monolingual cultures, the author created a qualitative/quantitative instrument written in English which he termed the "bilingual self-perception survey." The survey included seven open-ended questions soliciting written information from the children about how they felt being bilingual around their friends in both monolingual English-speaking Louisiana, and monolingual French-speaking Quebec. The children completed the surveys on their own (and alone) at three different times spanning eight years from early to late adolescence and into early adulthood. The author analyzed, synthesized, and compared the children's responses over time in an effort to demonstrate how the children's self-perceptions of their bilingualism changed over the course of their adolescence (Caldas, 2008).

Quantitative Methods

The author also constructed two almost identically worded quantitative surveys, written in French, to longitudinally measure the children's French proficiency. One survey was completed by the children themselves at the same three times as they completed the bilingual self-perception survey. The other was completed by the children's native French-speaking teachers and camp counselors over a four-year period (5 teachers and counselors altogether for John and 10 for the twins). Each French-proficiency survey had 10 questions gauging the children's abilities to read, write, speak, understand, and function in French compared to a native French-speaking child of the same age. Each question was followed by a five-point Likert scale with values ranging from 1 (very inferior) to 5 (very comparable). As an overall global measure of French proficiency, the author calculated an overall average proficiency rating for each child by adding all the Likert values together and dividing by the total number of survey questions (10). This is a valid approach, since each question was phrased such that the higher the Likert value, the greater the proficiency in some aspect of French. A perfect score would be 50 (10×5). The responses to this survey allowed for a more objective measure (other than the authors' perceptions) of the overall French proficiencies of the children based on the observations of knowledgeable educators, as well as the children's own self-perceptions.

The author conducted paired samples *t*-test comparisons of each child's overall French proficiency scores at Times 1–3. This allowed for a determination of whether the children's overall perceptions of their abilities in French were changing over time. The ability to determine whether there are statistically significant differences between mean scores when using *t* tests is a function of sample size: The larger the *N* (or number of items on the survey, in our example), the more likely one will find a statistically significant difference, if there is a meaningful difference to be discovered. By way of example, a determination was made that Valerie's and Stephanie's perception of their overall abilities did not change significantly from Time 1 (age 10;10) to Time 2 (age 16;1), though John's perceptions of his own abilities did indeed significantly increase from Time 1 (age 12;10) to Time 2 (age 18;1). Also, the children's overall scores could be compared to one another, which allowed for determinations such that all three children's overall perceived French proficiency increased from Time 1 to Time 3, but John's score increased the most.

The author also correlated all of the children's French proficiency responses with each other at Time 1, Time 2, and Time 3 in order to tell if the children's ratings of the various dimensions of French proficiency covaried in similar ways. As with *t* tests, obtaining a statistically significant correlation coefficient (Pearson's *r*) is likewise a function of *N* (i.e., the number of survey items). This procedure allowed for a determination that Valerie's and Stephanie's responses at Time 1 (age 10;10) were, somewhat surprisingly for identical twins, not significantly correlated. However, John's and Stephanie's responses at Time 1 *were* positively correlated ($r = .701$, $p < .05$). That is, John and Stephanie tended to rate themselves higher and lower on the same items at Time 1, while the twins' responses at Time 1 were not statistically related to each other. (The children's French proficiency survey responses were also correlated with the average scores of their teachers.)

As a measure of the children's language dominance (as opposed to "proficiency" or "preference"), the author used Edelman's contextualized measure of the degree of bilingualism (Edelman, 1969). Edelman's measure is used to determine in which language a bilingual is dominant in three areas of life—the home, the school, and the neighborhood (denoted by "E"). The measure was employed by asking each child to name as many things as he or she could think of in a 45-second interval, first in French and then in English, in each domain (the order of the languages was alternated with each administration). For example, the child was asked, "Name as many things as you can think of that have something to do with your school." The author took a pencil tally of each word the child uttered. The author administered this instrument separately to each child on 20 occasions over a 27-month period beginning when John was 10;8 and the twins were 8;8. An Edelman's coefficient is a ratio of French to English dominance. Values can range from 0 to 1, with ratios greater than E = .5 indicating French dominance and ratios less than E = .5 indicating English dominance. The following formula was used to create the ratio:

$$\left[\left(\frac{\textit{number of French words (tokens)} - \textit{number of English words (tokens)}}{\textit{larger of the two}}\right) + 1\right] \div 2$$

The reader is encouraged to insert the actual figures below for John into the Edelman's formula and verify that the E values presented are correct:

John's French/English utterances on February 4, 1996 used in Edelman's coefficient

Domain	*French*	*English*	*E*
Home	30	30	.50
School	21	25	.42
Neighborhood	20	25	.40

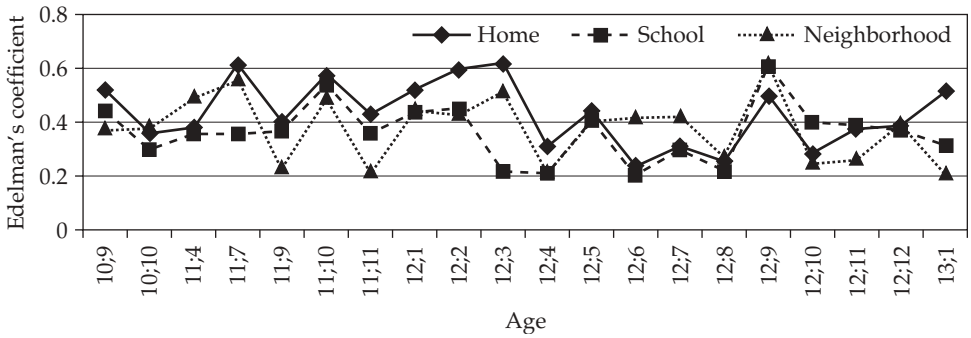

Figure 1 John's shifting bilingual dominance in three domains © Stephen Caldas

The Edelman's coefficients for longitudinal trends were analyzed and the coefficients were correlated (since an *N* of 20 was sufficiently large) in each of the three domains for each child, and between the three children. An average Edelman's coefficient was also created for each child at each administration by averaging the three domains. There was a statistically significant correlation between the neighborhood and home domains for both John ($r = .53$, $p < .05$) and Stephanie ($r = .48$, $p < .05$). In other words, during administrations when both children had high Edelman's ratios in the neighborhood domain, both children also tended to have high ratios in the home domain. Thus, thinking in French in one area of life may positively influence French thinking in another area (see Figure 1 for John's dominance trends).

Correlating the children's Edelman's coefficients with each other in each domain revealed a moderate positive relationship between John and Stephanie in the home domain ($r = .55$, $p < .05$), and an even stronger relationship between Stephanie and Valerie ($r = .59$, $p < .01$). What this may indicate is that the children's fluctuating bilingual dominance was likely being influenced by the home domain in a similar way over the 27-month period.

An overall global average measure of bilingual dominance was created for each child in each domain, and in all three domains averaged together. For each child, paired samples *t* tests were run comparing the overall average Edelman's coefficient in each domain to determine where there were statistically significant differences. For example, *t*-test comparisons revealed that there was a statistically significant difference between the overall ratio of French to English spoken by John in the home domain (E = .24) compared to the school domain (E = .19). Thus, though he was English-dominant in both domains, he was significantly more English-dominant in the domain of schooling.

The global ratios revealed that no child was overall French-dominant in any domain over the 27-month period, and that Valerie had the highest overall ratio (E = .45), followed by Stephanie (E = .42) and John (E = .40). Also, all three children were most French-dominant in the home.

Audiotaping

The author began six years of systematically audiotaping family dinnertime conversations on an almost weekly basis when John was aged 9;7 and the twins were 7;7. The audiotaping sessions, which were 10 minutes in length, were conducted in both the Louisiana and the Quebec residences. The sessions almost always included all five family members, and never included any non-family members.

The author and his wife listened to five minutes of every taped session over the six years ($N = 68$ total), and separately tallied the number of French and English words (tokens) they heard the father, mother, John, and twins (together) speak at each dinnertime session.

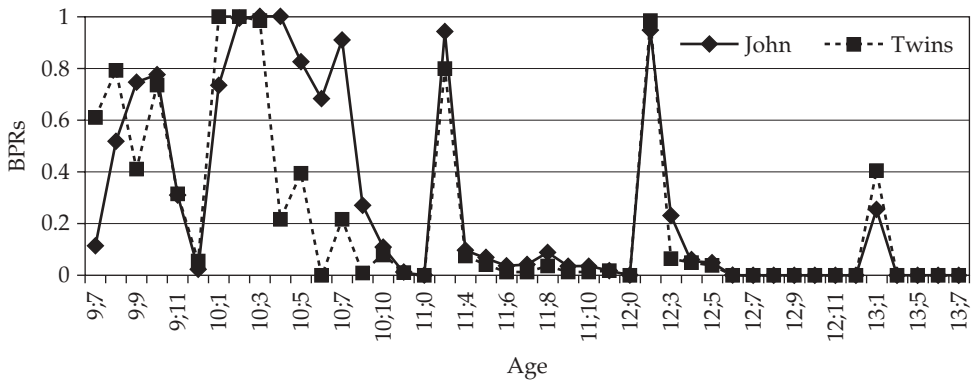

Figure 2 Bilingual preference ratios (BPRs) of John and twins, superimposed by age 9;7 through 13;7 © Stephen Caldas

(The twins were counted as one person because their voices were too similar to be clearly distinguished.) Then, to minimize error, the tallies by each parent were combined for each person and divided by two to create an average number of French and English words spoken by each family member. Monthly averages were created for everyone.

The author used the Edelman's formula (given above) to create a ratio of spoken French to English words at each taped session for each family member. This index, which we have termed the bilingual proficiency ratio (BPR), is a measure of bilingual proficiency, and is indicative of the degree to which the children and parents preferred to speak French or English (Caldas & Caron-Caldas, 2000). As with the Edelman's coefficient, values can range from 0 to 1, with greater numbers indicating a greater preference for French, values of .5 indicating an equal preference for either tongue, and values of less than .5 indicating a preference for English. This metric was useful for many purposes, including correlating family members' responses. However, it was especially useful for comparing and tracking longitudinal trends in shifting language preferences over the most critical years of adolescence in both Quebec (where John's preference was always for French) and Louisiana (where John's preference was increasingly for English; see Figure 2 for John's shifting BPRs).

As an indicator of changing bilingual preference, the BPRs of the children all indicate very clearly that their preferences for speaking French were highest in early/pre-adolescence, and plummeted beginning about age 10;5 in the Louisiana context. However, in the Quebec family context, the children's BPRs remained very high throughout the study, indicating a decided preference for speaking French around the family dinner table while in Canada.

Conclusions

In sum, using mixed methods allowed for the triangulation of qualitative and quantitative data to show the effect of sociolinguistic context on the children's developing bilingual identities and language preferences. The qualitative data give a feel for the children's changing perceptions of their bilingualism as they moved into and through adolescence. The quantitative data corroborate with numbers and statistical significance what we observed and recorded in our field notes.

SEE ALSO: Bilingualism and Multilingualism: Quantitative Methods; Case Study; Quantitative and Mixed Methods: Overview; Surveys

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Sociolinguistics: Quantitative Methods

JACK GRIEVE

Introduction

Variationist sociolinguistics was one of the first branches of linguistics to adopt a quantitative approach to data analysis (e.g., Fischer, 1958; Labov, 1963, 1966, 1969; Wolfram, 1969). While the earliest variationist studies did not usually employ statistical methods, they were concerned nonetheless with identifying a relationship between the values of a quantitative linguistic variable and the levels of a categorical social variable. The linguistic variables analyzed in traditional variationist studies represent an alternation between two distinct linguistic forms (or variants) that convey the same basic meaning (Labov, 1972; Wolfram, 1991). Examples of linguistic variables include sets of alternative pronunciations, equivalent grammatical constructions, and synonymous words. The basic goal of variationist research is to identify the social factors that influence the choice between the variants of linguistic variables. For example, Labov (1966) found that the likelihood of pronouncing /r/ following vowels was directly related to the socioeconomic status of speakers in New York City. Labov also found that the pronunciation of /r/ was related to age, with younger speakers being more likely to pronounce /r/ than older speakers in the upper middle class, but with older speakers being more likely to pronounce /r/ than younger speakers in the lower middle class. Labov argued that the pronunciation of /r/ was most common in the language of the younger upper middle class because this pronunciation was in the process of becoming the more prestigious form, but that this pattern was reversed in the language of the lower middle class because older speakers were more likely to be aware of the prestige associated with the pronunciation /r/ than younger speakers, and were thus more likely to adopt the innovation, revealing their social aspirations.

While early variationist studies focused on simple relationships between the value of a linguistic variable and the value of a social variable, over time more advanced methods for the analysis of linguistic variation were developed. Since the 1970s, the most common statistical method in sociolinguistic research has been logistic regression, which is used to test if the alternation between the variants of a linguistic variable is predicted by various aspects of the social background of a speaker, while also taking into consideration the effect of the linguistic environment in which each token of the variable is produced (Cedergren & Sankoff, 1974; Sankoff & Labov, 1979). For example, Ashby (1981) used a logistic regression to analyze variation in the use of the negative particle *ne* in French, which can optionally be deleted, as negation is marked redundantly elsewhere in the sentence. Ashby found that age, social class, and gender all affect negative-particle deletion in French, with the young, the lower middle class, and women being more likely to delete *ne*. Sociolinguistic research of this type has repeatedly shown that linguistic variation is correlated with numerous factors related to the social background of speakers, including age, gender, ethnicity, and socioeconomic status, as well as various linguistic factors.

While logistic regression is a standard technique in sociolinguistics, no form of regression analysis is common in regional dialectology, the precursor and now a subdiscipline of the field. Indeed, one of the main factors that led to modern sociolinguistics superseding traditional dialectology was its adoption of a statistical approach to data analysis. Traditional

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dialectology did not employ statistical methods, but relied instead on the subjective analysis of categorical display maps plotting where the different variants of a linguistic variable occurred across a region (e.g., Wenker, 1881; Gilliéron, 1902–10; Kurath, Hansen, Bloch, & Bloch, 1939–43; Kurath, 1949; Kurath & McDavid, 1961). Modern American dialectology (e.g., Pederson, McDaniel, & Adams, 1986–93; Carver, 1987; Labov, Ash, & Boberg, 2006) is still largely based on subjective approaches to data analysis; basic statistics are computed, but the identification of regional patterns is still based primarily on the judgment of dialectologists. In European dialectology, a quantitative approach known as dialectometry (Séguy, 1971, 1973; Goebl, 1982, 2006; Nerbonne et al., 1996; Nerbonne & Kleiweg, 2003, 2007) has become common, but it involves initially aggregating the values of numerous linguistic variables and thus offers no direct method for testing if an individual linguistic variable exhibits a regional pattern, in the way that logistic regression allows for social patterns to be identified in the distribution of a linguistic variable. The reason that regression has not become a standard tool in regional dialectology is because regional linguistic patterns are not necessarily linear. A linear pattern is possible, such as the gradual change in the value of a linguistic variable from the southwest to the northeast of a region; however, non linear patterns are also possible, such as the clustering of a variant in the center of a region or the presence of numerous smaller clusters across a region. While linear regional patterns could be identified in the distribution of a linguistic variable by conducting a regression with longitude and latitude as predictors, non linear patterns, which seem to abound in regional dialectology, cannot be easily identified using any form of linear regression.

This entry presents a solution to this problem—a quantitative method for identifying significant linear and non linear regional patterns in the values of an individual linguistic variable measured across a series of locations. The method is based on two measures of spatial autocorrelation: global Moran's *I* and local Getis–Ord *Gi**. These statistics allow for significant regional clusters to be identified in the spatial distribution of a linguistic variable. Moran's *I* identifies variables that exhibit significant levels of spatial clustering, while Getis–Ord *Gi** identifies the location of high- and low-value clusters. These statistics are used here to test if four measures of *not* contraction are regionally patterned in a corpus of letters to the editor representing the language of 200 cities from across the United States. In addition to illustrating the use of these statistics, this study also demonstrates that regional linguistic variation exists in written Standard American English. This is an important finding in and of itself, as it is generally assumed that regional linguistic variation, and sociolinguistic variation in general, does not exist to a significant degree in the written standard, but only in writing that directly represents the spoken vernacular (Schneider, 2002).

Data Collection

This study is based on a corpus of letters to the editor representing the language of 200 cities from across the United States. The letter-to-the-editor register was selected for analysis because it is a variety of written Standard English that is particularly suitable for a study of regional linguistic variation: Letters to the editor are annotated for their author's place of residence, written by a large number of authors from across the United States, published frequently, and made freely available online. The corpus of letters to the editor was compiled by downloading letters published between 2000 and 2008 from the online archives of hundreds of American newspapers. Once downloaded, each letter was sorted into a city subcorpus based on its author's place of residence, as indicated in the byline of the letter. City subcorpora were then formed for the 200 cities whose residents had contributed at least 25,000 words of text. The corpus includes cities in every state in the

contiguous United States, including most major cities. The entire corpus contains 154,269 letters written by 126,422 authors totalling 25,794,656 words.

Data Analysis

Four measures of *not* contraction were analyzed across the 200 city subcorpora: *not* contraction following copular and auxiliary *be* (e.g., *he is not/isn't there*), auxiliary *have* (e.g., *he has not/hasn't spoken*), auxiliary *do* (e.g., *he does not/doesn't mind*), and modals (e.g., *he will not/won't mind*). The variables were computed by calculating the proportion of contracted *not* relative to full *not*—see Equation 1, where f_{cont} is the frequency of the contracted form and f_{full} is the frequency of the full form.

$$(1) \quad v = \frac{f_{cont}}{f_{cont} + f_{full}}$$

Each contraction variable was measured in this way for each city subcorpus.

In order to determine if each measure of *not* contraction exhibits a significant regional pattern, each variable was subjected to an analysis of spatial autocorrelation—a measure of spatial dependency that quantifies the degree of spatial clustering in the values of a variable (Cliff & Ord, 1973, 1981; Odland, 1988). First, an analysis of global spatial autocorrelation was conducted using global Moran's *I* (Moran, 1948; Odland, 1988). The value of Moran's *I* ranges from –1 to 1, where a negative value indicates that neighboring data points tend to have different values, a value approaching zero indicates that neighboring data points tend to have random values, and a positive value indicates that neighboring data points tend to have similar values (Odland, 1988). The formula for calculating global Moran's *I* is provided in Equation 2 (Odland, 1988), where N is the total number of locations, x_i is value of the variable at location i, x_j is value of the variable at location j, $\bar{x}$ is the mean for the variable across all locations, and w_{ij} is the value of the spatial weighting function for the comparison of location x_i and x_j.

$$(2) \quad I = \frac{N}{\sum_i \sum_j w_{ij}} \frac{\sum_i \sum_j w_{ij}(x_i - \bar{x})(x_j - \bar{x})}{\sum_i (x_i - \bar{x})^2}$$

The spatial weighting function is a set of rules that assigns a weight to every pair of values in the distribution of a variable based on proximity. In this study, a standard binary weighting function with a 500-mile cutoff distance was used, so that comparisons between locations within 500 miles of each other were given a weight of 1 and all other comparisons were given a weight of 0. A 500-mile radius was selected so that locations traditionally classified as being within the same dialect and cultural regions could be compared. In order to determine the significance of the computed value for Moran's *I*, a standardized *z* score was obtained, under the assumption of randomization (see Odland, 1988). The *z* score was then interpreted as significant if it was larger than or equal to 2.50—the *z* score corresponding to a two-tailed .0125 alpha level, which was selected based on a Bonferroni correction for four variables. A significant positive *z* score indicates that neighboring locations have similar values at a greater degree than would be expected by chance.

In addition to measuring global spatial autocorrelation, which tests whether a variable is regionally patterned, local spatial autocorrelation was measured in order to identify the location of high- and low-value clusters in the spatial distribution of each variable. Local spatial autocorrelation was measured using local Getis–Ord *Gi** (Ord & Getis, 1995). Unlike global Moran's *I*, which returns one value for a variable indicating the degree of regional clustering, local Getis–Ord *Gi** returns a *z* score for each location for a variable indicating the degree to which that location is part of a high- or low-value cluster. The formula for calculating a Getis–Ord *Gi** *z* score is provided in Equation 3 (Ord & Getis, 1995).

$$(3) \quad G_i^* = \frac{\sum_j w_{ij} x_j - \bar{x} \sum_j w_{ij}}{\sqrt{\frac{\sum_j x_j^2}{N} - \bar{x}^2} \sqrt{\frac{N \sum_j w_{ij}^2 - \left(\sum_j w_{ij}\right)^2}{N-1}}}$$

A significant negative Getis–Ord *Gi** *z* score indicates that the location is part of a low-value cluster, whereas a significant positive Getis–Ord *Gi** *z* score indicates that the location is part of a high-value cluster. The Getis–Ord *Gi** *z* score was interpreted as significant if it was larger than or equal to 2.50, based on the Bonferroni correction described above. Once computed, the Getis–Ord *Gi** *z* scores for each variable were then mapped in order to identify the location of significant high- and low-value clusters.

Results

Based on the analysis of global spatial autocorrelation, significant clustering was identified for three of the four measures of *not* contraction: *be not* contraction ($I = 0.039$, $p = 0.001$), *do not* contraction ($I = 0.077$, $p = 0.000$), and *modal not* contraction ($I = 0.050$, $p = 0.000$). Based on the adjusted p value, *have not* contraction was not found to exhibit significant levels of clustering ($I = 0.024$, $p = 0.033$). Maps displaying the corresponding Getis–Ord *Gi** *z* scores for the three measures of *not* contraction found to exhibit significant levels of global spatial autocorrelation are presented in Figures 1–3. These maps identify the location of high- and low-value clusters in the distributions of the individual variables. Based on an analysis of these local spatial autocorrelation maps, it is clear that all three variables exhibit similar regional patterns, contrasting the language of the East Coast, where *not* contraction is relatively uncommon, with the language of the rest of the United States, where *not* contraction is relatively common. However, while the low values for all three

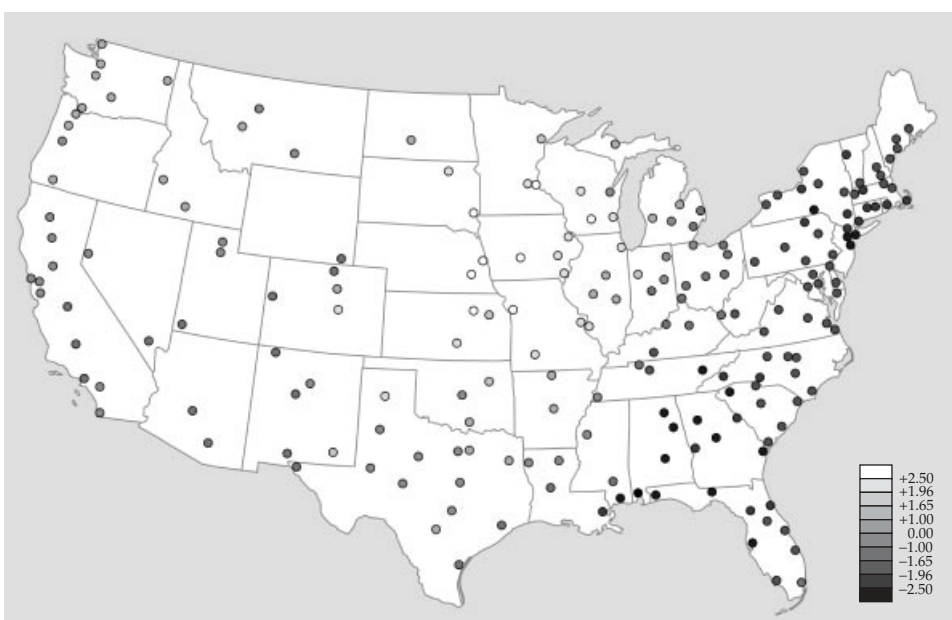

Figure 1 *Be not* contraction Getis–Ord *Gi** *z* scores

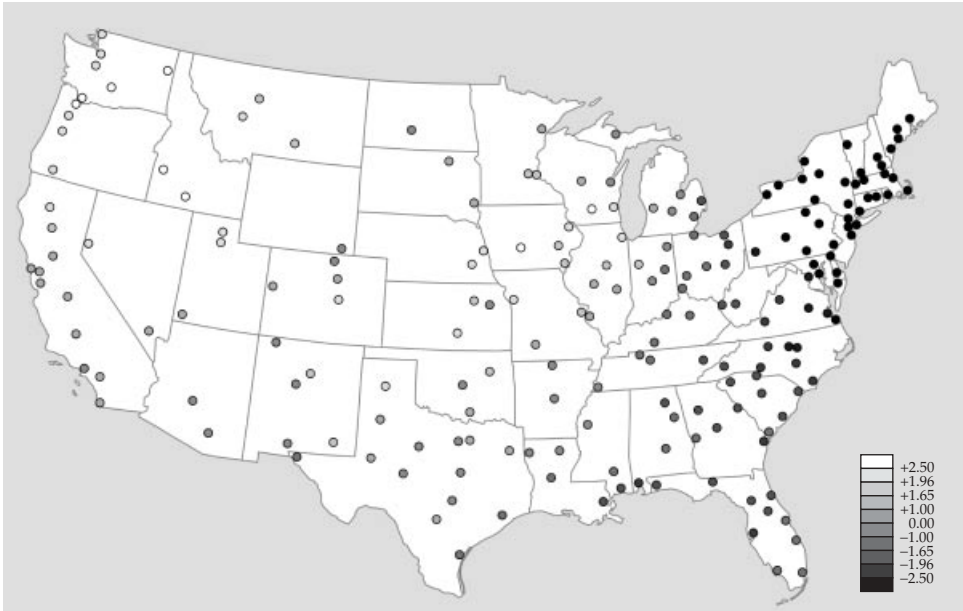

Figure 2 *Do not* contraction Getis–Ord *Gi* z* scores

Figure 3 *Modal not* contraction Getis–Ord *Gi* z* scores

measures cluster in the east, the focal areas for *do not* contraction and *modal not* contraction are in the northeast, whereas the focal area for *be not* contraction is in the southeast. The focal areas for the high-value clusters are in the Midwest for all three variables, especially the western Midwest and the northern Plains, as well as the Pacific Northwest for *do not* contraction.

Discussion

The study found that *not* contraction is regionally patterned in written Standard American English, with letters to the editor from the western United States exhibiting a higher rate of *not* contraction than letters from the eastern United States. It is surprising that a contrast between the east and the west has been identified by the autocorrelation analysis, as previous surveys have found that the contrast between the north and the south is far stronger in American English (Kurath, 1949; Carver, 1987; Labov et al., 2006). The east–west contrast is also unusual because it groups the Midwest with the west; the Midwest is generally considered to be an extension of eastern dialect regions. The results of this study show that, in terms of *not* contraction, the language of the Midwest is distinct from the language of the east coast. This finding makes sense intuitively: when asked, Americans identify a distinct Midwest dialect region (Preston, 2002), and the Midwest and the northeast can also be distinguished on historical, cultural, geographical, and political grounds (Zelinsky, 1973).

The general finding that regional linguistic variation exists in written Standard English is also an important result because it challenges the common assumption that sociolinguistic variation, including regional linguistic variation, does not exist in written standard language (Schneider, 2002). The results of this study show that this assumption is false: Regional linguistic variation does exist in written Standard English. More generally, this finding implies that regional linguistic variation is more common than has been previously assumed. If regional linguistic variation exists in written Standard English, it seems likely that regional linguistic variation exists across the range of English registers, not only in the spoken vernacular. The statistical approach to data analysis described here, particularly when coupled with a corpus-based approach to data collection, constitutes a method for identifying regional variation across a range of registers, especially in registers where regional patterns may not be as strong as they are in the spoken vernacular. This was certainly the case in the present study: If the autocorrelation statistics had not been employed, it would have been difficult to convincingly identify regional patterns in *not* contraction.

In addition to these important findings, the study also demonstrates how measures of spatial autocorrelation can be used to analyze regional linguistic variation in the values of an individual linguistic variable. In essence, the spatial autocorrelation statistics allow for regional patterns to be identified in the spatial distribution of a linguistic variable in the same way as logistic regression allows for social patterns to be identified in the social distribution of a linguistic variable. Overall, the advantages of the statistical approach are clear. It allows for an objective, unbiased, and replicable analysis of regional linguistic variation to be conducted, where regional patterns are identified based on significance testing as opposed to the judgment of the dialectologist. This not only allows for the presence of obvious patterns to be confirmed but it also allows for patterns to be identified that may have been overlooked by a subjective analysis. Arguably, identifying a variable that exhibits a regional pattern and describing this pattern is the most basic form of analysis in regional dialectology; however, until now, there has been no acceptable statistical method for conducting this analysis. In modern dialectology, the analysis of an individual linguistic variable is usually accomplished through the subjective examination of a map plotting the raw values of the variable. In modern dialectometry, the analysis of individual linguistic variables is usually ignored. The two measures of spatial autocorrelation presented here provide a statistically justified method for identifying regional linguistic patterns in the values of an individual linguistic variable.

SEE ALSO: Corpora: English-Language; Corpus Analysis in Dialectology; Corpus Linguistics: Overview; Corpus Linguistics: Quantitative Methods; Quantitative Methods; Variables

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Sociological Approaches to Translation

GISELLA M. VORDEROBERMEIER

An initial indication to the potential significance of a future "translation sociology" or "socio-translation studies" can be dated to a seminal lecture delivered by James S. Holmes in 1972, to which translation studies also owes its name (see Holmes, 1988/1972). In the intervening years sociological approaches have developed into an important field of study, which can justly claim to be more than merely another "hyphenated sociology" and which, in studying the phenomena of translation and interpreting as unique cultural techniques, has much to contribute to honing sociological concepts. It must be noted, however, that sociology—despite the claim already inherent in its origins as a discipline to be able to deal with virtually an infinite number of objects of research without being subject to any corresponding constraints—discovered translation as an object of study at a comparatively late date. In translation studies, too, a sociological point of view has only gradually gained acceptance (Simeoni, 2005; see also Wolf, 1999, 2003).

The sociological approaches which currently present themselves to the observer are in large part a product of the increasing attention paid in recent years to asymmetrical power relations, the (im)possibility of neutrality in translation and interpretation processes, and the associated perception and visibility of translators and interpreters in society at large. Important contributions come from within the discipline itself (among the important figures in this respect are Buzelin, Gouanvic, Inghilleri, Simeoni, Sela-Sheffy, and Wolf) as well as from outside it (e.g., Casanova, 2004, and some of the contributions in Heilbron & Sapiró, 2002, 2008). To date, studies on translation from a sociological point of view outweigh those which seek to bring a sociological perspective to bear on interpreting or which cover both fields of study. Arguably this has more to do with the divergences in the developments undergone by the two subdisciplines than with questions concerning the applicability of the sociological concepts that have predominated. An additional factor is that literary translation has so far attracted far more attention than technical translation. Very thorough appraisals of the state of the art in the sociology of translation in general are offered by Wolf (2007a) and—focusing primarily on research projects influenced by Bourdieu—by Inghilleri (2005).

The central aim of the sociological approaches is to render translation (and interpreting) describable and explainable as social practices, as social facts, and thus as "socially regulated activities" (Hermans, 1996). This includes examining the role of the actors in processes of selection, production, distribution, and reception of translations (Wolf, 2003; Bachleitner & Wolf, 2010, pp. 12–14). The intention is to shed light on the decisions and negotiation processes that underlie the emergence of concrete translations and condition their specific features. A further issue concerns the social structures or higher-level contexts of action in which practices of translation are embedded and how they in turn influence these structures. Another topic of research is how macro- and micro-contexts intermesh in interpreter-mediated situations (Inghilleri, 2003). Researchers are interested in what can be said in sociological terms about the significance of translations and interpreted renderings, and hence also of translators, and what conclusions can be drawn from the quantity and constituents of translation flows between different cultures concerning the relative prestige enjoyed by languages, which are likewise treated as actors (Bachleitner & Wolf, 2010). Here,

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the examination of translation flows appears to offer an excellent approach to analyzing the international(ized) market in cultural or symbolic goods, where the relevant studies draw, with various degrees of theoretical sophistication, on the concepts of Bourdieu (see the articles in Heilbron & Sapiró, 2002, 2008; Casanova, 2004). Besides these approaches, studies within the sociology of the professions have been devoted to issues of professionalization and the status of translators as a professional group. In an attempt to systematize the contributions to date, Wolf distinguishes between a "sociology of the agents," a "sociology of the process," and a "sociology of the product," which reveals the main lines of research, though of course overlaps occur (Wolf, 2007a; Chesterman, 2006). Sociological concepts have also demonstrated their potential in an ethics of translation (Gouanvic, 2007a, pp. 41–9) and an ethics of the translator (Inghilleri, 2008).

Initial distinctions concerning the actors involved in the process of translation and the various associated roles, which have remained relevant for subsequent sociological examinations, were made by Holz-Mänttäri in the 1980s in a contribution which took its orientation from the theory of action and retained a strong emphasis on the cooperative aspects (though without thematizing potential associated problems; see Wolf, 1999). The conceptualization of translation as a norm-regulated process within the context of a descriptive approach that considers translations as facts of the relevant target culture (descriptive translation studies)—Gideon Toury being a prominent exponent—also laid important foundations for a sociological approach. The conception of "translation as institution" (Hermans, 1996) led to a differentiation concerning the degree of obligatoriness of norms, where this property of norms does not arise *ex nihilo* or from abstract entities, such as culture or society, but from the power of interpretation and implementation of the actors and institutions standing behind them (see also Hermans, 1998). The focus of analysis, therefore, is social realities. Hermans (1996) conceives of norms, following Luhmann, as simultaneously cognitive and normative expectations which do not exhibit first and foremost the character of rules or constraints but are primarily geared to reducing behavioral uncertainty and enabling cooperation (see the problem of double contingency in Luhmann, 1984).

Since the 1990s sociological approaches to translation have been enriched by integrating the problems and methods of three theorists in particular, first Pierre Bourdieu and Niklas Luhmann, and later also Bruno Latour. These approaches now make important findings available in turn to other disciplines, thus raising the prospect of a convergence among them.

Pierre Bourdieu's *theory of practice as practice* (see Bourdieu, 2003/1997) represents a theory of action which transcends conventional antinomies between "agency" and "structure," between subjectivity and objectivity, and between internal and external explanatory factors (see Bourdieu, 2000/1972). As such it has played a major role in consolidating sociological approaches to translation in theoretical and methodological respects, in addition to spurring a large number of case studies. In Bourdieu's strictly relational conception, which is diametrically opposed to substantialist ones, the conditions of possibility of actions depend on the interplay between *field* and *habitus* (Bourdieu also speaks of "silent complicity" between *field* and *habitus*). With his concept of *fields*, Bourdieu, like Luhmann, pursues a theoretical approach seeking to explain differentiation (on the differences and commonalities see Kneer, 2004). According to Bourdieu, *fields* are governed by at least four central principles: They constitute themselves through protracted, and to a certain extent reversible, processes of autonomization; they are hierarchically structured; they are marked by permanent internal struggles to preserve or change positions within the *field*; and they reproduce themselves through these same struggles. Examples of *fields* are the literary, scientific, political, religious, economic, and juridical. Each *field* has its own *illusio* (not to be confused with "illusion"), a set of beliefs to which those participating in the *field* adhere,

which those entering the *field* adopt, and which are not reducible to those prevailing in other *fields*. Likewise each *field* exhibits a specific distribution of the different kinds of *capital*, be it economic, cultural, social, or symbolic.

Theorists who defend a Bourdieuian approach to translation as a social practice question, in part for different reasons, whether it is appropriate to speak in terms of a "translation field." In support they argue that the preconditions for the existence of an autonomous "translation field" outlined above are not met, because in this case there is too much instability, the social relations geared to translation are not durable, and the struggle for positions is not sufficiently pronounced (Wolf, 2007b). Furthermore there are doubts concerning the degree of autonomy from other *fields*, which feature as clients (Gouanvic, 2007b, p. 81).

Habitus is a generative principle comprising schemes of perception, of thinking, and of acting which are simultaneously social and cognitive modes of di-vision (i.e., vision and division) of the world. The incorporation of a "primary habitus" begins virtually with the first breath the agent takes, whereas the agent develops a "secondary habitus" upon entering a specialized *field*. When applied to translation studies the concept of *habitus* as simultaneously structured and structuring makes it possible to account for the social trajectories of translators in a very illuminating manner. Taken together, these concepts provide translation studies with analytical instruments that can serve as a corrective to the concepts of norms, rules, laws, strategies, and idiosyncrasies, which seem to be located either too much on the side of society or culture or too much on the side of the individual. Whereas the peculiar explanatory power of the concept resides primarily in the unquestioned pre-stabilization achieved by the *habitus*, it also makes it possible to analyze how cleavages between *habitus* and *field* can arise. The latter is shown by a study on the discomforting topic of the demeanor of military linguists in Guantánamo and the ethical conflicts they experienced (Inghilleri, 2008).

Gouanvic has demonstrated convincingly how the "importation" of whole subfields (he uses examples of the importation of science fiction and realist novels from the USA to France; see Gouanvic, 1999, 2007a) is brought about not by needs or gaps in the target culture but by *homologies* between the cultures concerned. He goes so far as to understand *illusio* in terms of tendencies of cultural superimposition in the process of globalization (Gouanvic, 2007b, p. 90), so that we would have at our disposal a threefold analytical instrument: the *illusio* of single texts, the *illusio* of genres, and the *illusio* of literature per se. Besides the central analytical instruments of Bourdieu outlined above, his approach allows for consideration of phenomena such as the "consecration mechanisms" conducive to the evolution of new subfields or the enhancement of one's status through the accumulation of *symbolic capital*.

In contrast to the selective reception of Pierre Bourdieu's oeuvre within a variety of disciplines and national contexts, in translation studies he is perceived as a sociologist as well as an ethnographer, though perhaps to a lesser extent as a philosopher. The critical potential of his approach began to make itself felt in translation studies because scholars working within this strand of translation sociology were highly receptive to these different aspects of Bourdieu's work.

Actor-network theory (ANT) was developed in the context of science studies by Bruno Latour and his colleagues (Latour, 2005). One of its essential features is its focus on not treating "the social" as an attribute. The productive "disconcertment" which this entails begins already with the definition of what constitutes a social group. According to Latour, there are no preexisting social groups which can readily serve as units of analysis. In this context we can only speak of *group formation* (2005, p. 29). Moreover, the sociologist depends on these processes of group formation for her research—while being implicated in them herself—because they leave traces which are the only material accessible to her.

Actions on this conception are not produced by actors; rather the latter are moved to act. However, it would be a misconception and reductive to invoke "power" or "social forces" as underlying motives and the ultimate explanation (2005, pp. 82–3). Not only persons can serve as actors for Latour; nonhumans and (hybrid) objects also possess "agency" in the relevant sense. The ability to induce action is captured by the notion of *translation*, which in this approach does not simply proceed smoothly but always involves a corresponding effort. Thus *translation* is something entirely different from mere diffusion, transportation, or transmission (Latour, 2005, pp. 106, 108). The *networks* that result from such sequences of *translations* have a conceptual status and it would be a complete—and all too common—misunderstanding to treat them as something concrete, even palpable, on an analogy with social or technical networks or to associate them with the activity of "networking" in organizations or its results (2005, pp. 128–33). On the whole it is not only preferable but indispensable for every research project to concentrate on the process and—to cite a formulation ceaselessly employed by Latour—"to follow the actors" in a meticulous way. Taking ANT as her point of departure, the sociologist cannot settle questions of scale—that is, whether a sociological study concerns the micro-, meso-, or macro-level—in advance but can answer them only in the context of ongoing research itself. These aspects find tangible expression in a study by Buzelin (2007) of "translations in the making," as exemplified by three translation projects in three independent publishing houses in Québec. Her approach proves to be highly productive, especially in the context of increasing globalization in the publishing industry. It also seems to be in accord with Latour's cautionary note that research within ANT must take into consideration the peculiarities of the case at hand (Latour, 2005, p. 130). Buzelin concludes that it would be timely to recognize the extent to which translation is the result of processes of co-editing and of co-translation in which far more actors exercise influence than is commonly assumed, something which can be confirmed only with the kind of ethnographic accuracy provided by an ANT study (Buzelin, 2007). It is interesting to note that, whereas translation scholars who take their lead from Bourdieu for the most part do not assume the existence of an autonomous field of translation, among other things because of the instability of relations resulting from translational exchange (see above), Buzelin is forced to conclude that her findings—that is, the patterns observed—exhibit an unexpectedly high level of stability (2007, p. 165). She follows Latour in concluding that the main contribution of ANT to translation studies resides in providing a remedy for the criticism of Bourdieu that he supposedly neglects concrete contents (of works of art, scientific findings, etc.; see Latour 2005, pp. 234–7), while at the same time enhancing the ability to account for unpredictability and creativity (Buzelin, 2005). Instead of adopting a retrospective view, embracing ANT means studying processes while they are ongoing, while their outcomes are still uncertain and there is still risk of failure. All in all, Latour elevates the status of exhaustive descriptions above something which is often discredited as "mere description" lacking in explanatory power (Latour, 2005, p. 150; see also p. 137). As far as points of convergence and divergence between the theories of Bourdieu and Latour are concerned, Buzelin is convinced that the two theories may be mutually enriching (Buzelin, 2005; for discussions of other network theories in relation to translation see Buzelin & Folaron, 2007).

The theory of social systems (SST) of Niklas Luhmann (1984) is concerned with the functional differentiation of society into *systems* (e.g., the political, juridical, economic, religious, cultural, etc., systems) and their *environments* (i.e., everything outside the system in question). "Functional" here should not be understood in the sense of fulfilling a function with respect to some higher-level entity of whatever kind. *Systems* consist (exclusively) of *communications* regulated by *binary codes* which are peculiar to the corresponding system, and it alone, and are concretized in so-called *programs*. Because *psychic systems* have their own medium, namely consciousness, they are relegated to the *environment*, with the result

that systems theory dispenses with persons or individuals as actors. *Systems* can react only to *communications* within their own *codes* (e.g., new/old for the cultural system or true/false for the scientific system). *Systems* are characterized by *autopoiesis*, that is, the ability to perpetuate themselves, and they exhibit *operational closure*, so that autonomy—in contrast to Bourdieu's theory (see Kneer, 2004)—is not a matter of degree, but is a fundamental feature of *systems*. This is not to say that the systems in question do not involve any interactions or contacts whatsoever with other systems (in their status as *environment*). These come about by way of *(inter-)penetration* (see Luhmann, 1984, pp. 289–96), *irritations*, and *perturbations*, which are not only unavoidable but necessary and can eventually bring about changes in the *system*, though they are always mediated by the system-specific codes.

That translation can also be conceived in systemic terms and hence as self-referential—*communications* producing *communications*—is due to the fact that there is never a final, irrevocable translation (otherwise it would cease to be a translation), but only temporarily valid versions open to contestation (Hermans, 2007). Interpreting translation in terms of Luhmannian systems theory leaves open at what level translation should be situated. Here the theory presents a range of interpretive options. Rereading previous texts in translation studies not necessarily formulated in terms of systems theory, Tyulenev maintains that translation can be regarded, and has been regarded, either as itself a system (see Hermans, 1999, 2007), as a "subsystem", or as a "boundary phenomenon" regulating the opening vs. closing between *system* and *environment* (see Tyulenev, 2009).

It is impossible to overstate the importance of the contribution of the sociology of translation to the self-reflection of the discipline. This can lead, among other things, to a Bourdieuian socio-analysis of translation scholars which relates their attitudes to the respective positions in the scientific field from which they formulate their theories. It could also take the form of including the discipline itself within the field of observation, following systems theory. Whereas during the initial phase of development of sociological approaches it may have been indispensable to concentrate on just a few conceptual frameworks, this may give way in the not too distant future to an increasing diversification of approaches.

SEE ALSO: Cultural Capital; Literary Translation; Norms of Translation; Strategies of Translation

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Solan, Lawrence M.

NICCI MACLEOD

Lawrence M. Solan (1952–) is Don Forchelli Professor of Law at Brooklyn Law School, and well known for his contributions to the field of language and law with his books *The Language of Judges* (1993) and *Speaking of Crime: The Language of Criminal Justice* with Peter Tiersma (Solan & Tiersma, 2005), as well as numerous scholarly articles. Prior to joining Brooklyn Law School in 1996, Solan was a partner in the firm of Orans, Elsen, and Lupert, where he specialized in complex civil litigation. Before that, he served as law clerk to Justice Stewart Pollock of the Supreme Court of New Jersey. He served as president of the International Association of Forensic Linguistics from 1999 to 2003, and is on the editorial board of *The International Journal of Speech, Language and the Law*. His publications within the field of language and law have been concerned with the interpretation of written legal texts such as contracts and statutes (Solan, 2004), admissibility in US courts of linguists' testimony in general (Solan & Tiersma, 2004) and more specifically as "semantic tour-guides" in cases of disputed interpretation of legal documents (Solan, 1998).

After completing his PhD in linguistics at the University of Massachusetts in 1978, Solan attended Harvard Law School, during which time he took a summer job at the Manhattan law firm Phillips Nizer. It was here that his interest in the interface between language and the law was first aroused. Representing a chemical company in dispute with its insurance company over the latter's refusal to pay out proceeds following some severe environmental damage, he found himself concerned with the language of the insurance policy. With the realization that many of the disputes had arisen as a result of choices over punctuation and syntax, the two areas of expertise became united. Solan started collecting examples of judges' discussion of language, which subsequently formed the basis of his 1993 book, the result of his investigations into those occasions when disputes over meaning in legal documents arise and "judges act as linguists" (Solan, 1993, p. xi). The examples he presents demonstrate that judges' linguistic descriptions are inconsistent, and often incoherent and idiosyncratic. He puts forward two explanations for this: first, the pressure on judges to legitimize their power by speaking with an authoritative voice and second, the necessity of giving the appearance of adhering to the rule of law. "Judges do not make good linguists," he claims, "because they are using linguistic principles to accomplish an agenda distinct from the principles about which they write" (Solan, 1993, p. 62). Solan discusses several linguistic phenomena which have resulted in conflicting interpretations of legal documents, including referential ambiguity arising from the use of pronouns, which he describes as "semantically degenerate . . . they do not contain enough on their own to name the individual to which they are intended to refer . . . a natural source of uncertainty" (Solan, 1993, p. 38). He moves on to discussing lawyers' pursuit of precision in drafting legal documents, noting that it has given rise to the gradual development of a special, "superprecise" syntax. He discusses the ongoing tension between precision and comprehensibility, concluding that while legal professionals could "engage in an all out effort to write more clearly, with fewer unnecessarily legalistic expressions," doing so would "never be sufficient to make natural language any more precise than our cognitive capacities permit" (Solan, 1993, p. 138).

Another area in which Solan has published widely is the admissibility of linguists' testimony in US courts (Solan, 1998; Tiersma & Solan, 2002, 2004; Solan & Tiersma, 2004).

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Courts in the USA have allowed linguists to testify on such issues as the probable origin of a speaker, the comprehensibility of a text, whether a particular defendant understood the Miranda warning, and the phonetic similarity of two competing trademarks. When the issue at hand is the interpretation of legal texts, however, the admissibility of linguistic testimony has been more controversial. Reasons for judicial reluctance to admit linguistic expertise in these matters include concerns that it is not sufficiently reliable, the sense that it is up to judges, not linguists, to decide meaning as a matter of law, and the belief that meaning can just as well be decided by a jury (Solan, 1998). In his 1998 article Solan explores this last issue in depth, acknowledging that while a jury's intuitions are sufficient for matters of interpretation when the crucial statements or discourses are short and straightforward, in those cases where a linguistics expert is able to increase a juror's confidence "by converting . . . an intuitive sympathy into a structured understanding" (Solan, 1998, p. 94), their services can be of assistance. The linguist, he postulates, can assist judges and juries in evaluating linguistic issues fully, acting as a "semantic tour guide." The role of the linguist in these situations is not, Solan claims, to give his or her expert opinion on the meaning of a text, but to explain the *basis* of possible meanings, and to point out alternative interpretations. Thus, while judges may sometimes be quite justified in prohibiting unhelpful expert testimony, "if a jury is forthrightly told about the scope of a linguist's expertise, there is no reason why the system should not benefit from this knowledge" (Solan, 1998, p. 96). More careful consideration of the potential benefits of expert linguists' assistance, he concludes, "can ultimately serve to enhance the status of linguistics as a useful tool in legal analysis" (Solan, 1998, p. 102).

Solan and Tiersma's (2005) book presents a comprehensive review of the many areas around the intersection of language and law, paying particular attention to the relevance of pragmatic theory to criminal procedure, the provision of language-based evidence, and crimes—such as bribery, threats, and perjury—that are committed *by means of* language. It therefore provides a detailed exploration of the ways in which linguistics and related fields can provide a better understanding of the workings of the US legal system—and consequently, provide tools with which to address the problems therein. At the time of writing, Solan's book on the interpretation of statutes, *The Language of Statutes: Laws and Their Interpretation* was published in 2010, and *The Oxford Handbook of Language and Law*, coedited with Peter Tiersma, was published in 2012.

SEE ALSO: Forensic Linguistics: Overview; Legal Language; Tiersma, Peter

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Sound and Spelling

BENEDETTA BASSETTI

Spelling means representing a language in writing by using the letters of an alphabet according to conventions. This entry will first describe the principles by which spelling represents sound and review differences in phonological transparency among alphabetic writing systems. It will then overview the consequences of the sound–spelling relationship for reading, spelling, literacy acquisition, metalinguistic awareness, pronunciation, and linguistic descriptions of spoken language.

The Representation of Sound in Alphabetic Writing Systems

Unlike other types of writing systems that represent syllables, consonants, or other language units, an *alphabetic writing system* represents each phoneme of a spoken language with one symbol. It is therefore a *phonographic system* (it represents the sounds of the spoken language), and in particular a *phonemic system* (it represents phonemes; for an overview, see Coulmas, 2003). Alphabetic writing systems are written with *scripts* (sets of written symbols) called *alphabets*, whose smallest units are called *letters*. Although there are just a few alphabetic scripts, many languages are written with an alphabet. The most widely used one is the Roman alphabet, other often-cited examples are Greek and Cyrillic, and less well-known ones include the Armenian and Georgian alphabets. Writing a language using letters is called *spelling* (although the term can also be used for nonalphabetic writing systems).

Alphabetic writing systems work on the principle of segmenting spoken language into phonemes and representing each phoneme with a grapheme, for instance representing the English word /kæʃ/ with <cash> (the symbols "< >" denote an orthographic form). A *grapheme* is the smallest identifiable unit in a writing system (see Coulmas, 1999). In an alphabetic writing system, a grapheme can be a letter or a letter combination. For instance, in English the grapheme <b> consists of one letter and represents the phoneme /b/, the grapheme <sh> is a digraph (combination of two letters) and represents the phoneme /ʃ/. Since in English there are more phonemes (e.g., 44 in British English Received Pronunciation) than letters (26), it is not possible to represent all phonemes by means of a single letter. The higher number of phonemes compared with letters can explain why /θ/ is represented by the digraph <th>, and why <th> represents both /θ/ and /ð/.

The correspondences between graphemes and phonemes in alphabetic writing systems are called *grapheme–phoneme correspondences* (GPC, also "grapheme–phoneme conversion rules"), and in the opposite direction the correspondences between phonemes and graphemes are called *phoneme–grapheme correspondences* (PGC) (see Coulmas, 2003). For instance, in English the grapheme <d> corresponds to the phoneme /d/, and the phoneme /ʃ/ to the grapheme <sh>. Correspondences are specific to each writing system. For instance, in both the English and Italian writing systems the grapheme <b> corresponds to /b/, but whereas the grapheme <ch> corresponds to /k/ in Italian, in English it corresponds to /k/ (in *chaos*), /ʃ/ (in *machine*), and /tʃ/ (in *child*). Therefore, the same orthographic word <china> is pronounced /kina/ in Italian and /ˈtʃʌɪnə/ in English.

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Phonological Transparency

In an ideal alphabetic writing system, the same phoneme should always be spelled with the same grapheme and the same grapheme should always be pronounced with the same phoneme. This is the *alphabetic principle*. No writing system follows this principle entirely, but different writing systems are more or less close to it.

Different writing systems then have different levels of *phonological transparency*, and are described as more "transparent" or "opaque." This has also been called *orthographic depth*, and different writing systems have been described as "deeper" or "shallower" (e.g., Katz & Frost, 1992). Examples of phonologically transparent alphabetic writing systems include Finnish, German, and Spanish, while French is an example of an opaque one (for descriptions of various writing systems, see Daniels & Bright, 1996; Coulmas, 1999; Joshi & Aaron, 2006). Italian and English are often cited as examples of writing systems at the opposite ends of this phonologically transparency continuum, and will be used as examples in this entry. In transparent writing systems such as Italian there are mostly (but not only) one-to-one correspondences between graphemes and phonemes and between phonemes and graphemes. For instance, in Italian <a> is always pronounced /a/ and <b> is always pronounced /b/; in the opposite direction, /a/ is always spelled <a> and /b/ is always spelled <b>. In English, the grapheme <a> can represent many phonemes (e.g., /æ/ in *cat*, /ɛ/ in *many*, /ɔː/ in *call*, /ɑː/ in *father*), and <b> can represent /b/ or be silent (as in *debt*); in the opposite direction, /b/ can be spelled <b> or <bb>. Some English graphemes correspond to high numbers of phonemes, for instance even the relatively rare grapheme <gh> can correspond to /g/ (in *ghost*) or /f/ (in *enough*), be silent (as in *high*), or even correspond to /p/ (as in *hiccough*) and /ə/ (as in *Edinburgh*). In English there are then one-to-many grapheme–phoneme correspondences, and one-to-many phoneme–grapheme correspondences; furthermore, correspondences for vowels are more complex than for consonants, due to the large number of vowels and the small number of vowel letters (see Carney, 1994, for British English correspondences, and Venezky, 1999, for American English ones). The degree of transparency is not the same across directions, whether grapheme-to-phoneme or phoneme-to-grapheme, and in various writing systems GPCs are more transparent than PGCs (e.g., see Harris & Giannuoli, 1999, for Greek). There is currently no agreement on how to calculate degrees of phonological transparency, although various proposals have been put forward, for instance calculating the phoneme-to-grapheme ratio (Coulmas, 2003).

Beyond the Alphabetic Principle: The Case of English Spelling

English is often presented as a clear example of a phonologically opaque alphabetic writing system, but its low level of phonological transparency is partly due to a higher level of morphemic transparency than other writing systems.

The low level of transparency of written English has several causes. It is partly due to historical reasons, because the spoken language evolved but the spelling of words remained fixed (for a history of written English, see Scragg, 1974). For instance, the <k> in <know>, which is silent in contemporary English, was pronounced in Old English, and it therefore represents a phonemic transcription of an earlier spoken word. Another reason is that foreign words were introduced from languages that had different grapheme–phoneme correspondences, so in English the same grapheme <c> is pronounced /k/ or /s/ in words of French origin ('cab,' from *cabriolet*; 'cede,' from *céder*) and /tʃ/ in words of Italian origin ('cello,' from *violoncello*). English GPCs can then derive from those of classical languages, Romance languages, and other languages.

Another reason why English is phonologically opaque is because it is more morphologically transparent, and phonological transparency is sacrificed in order to maintain morphological transparency. For instance, the past tense morpheme is pronounced /t/, /d/, or /ɪd/ depending on the phonological context, but it is always spelled <ed>. In a fully alphabetic writing system there would be three different spellings, for instance <t>, <d>, and <ed>. Also, in English /saɪn/ is spelled as <sign> with a <g> to show its common morpheme with <signature> regardless of the pronunciation. The Italian writing system instead represents the sound of words regardless of their morphology, spelling <segno> with <e> and <significato> with <i> to represent the spoken forms /ˈseɲːo/ and /siɲːifiˈkato/, whereas a morphologically transparent representation could for instance be <signo> with an <i>. English can therefore be placed lower than Italian on the phonological transparency continuum, but higher on the morphological transparency continuum.

Some of the irregular correspondences between sounds and spellings in English are then due to the fact that the writing system does not only aim at representing sound. Although having different written forms for the same phonological form creates difficulty for spelling, it can facilitate reading, for instance with homophone disambiguation, as when in English /raɪt/ is spelled as <right>, <write>, or <rite>, or content words such as *inn* and *bee* are spelled with three letters but function words such as *in* and *be* are spelled with two letters (Cook, 2004). Such spellings may confuse writers but may facilitate readers. Still, despite the advantages of a morphemically transparent writing system, there is a commonly held view that the best alphabetic writing system is a phonologically transparent one. For this reason, there have been various proposals for spelling reforms to bring spelling closer to sound, from Noah Webster's American spelling to the proposals of the English Spelling Society in the United Kingdom, or for simpler spelling systems to be used with children, such as the Initial Teaching Alphabet, which have enjoyed varying degrees of success (for an overview, see Sampson, 1985).

Consequences of the Relationship Between Sound and Spelling

The level of phonological transparency of a writing system affects reading and spelling processes, literacy acquisition, and even literate speakers' metalinguistic awareness and pronunciation. For instance, children learn more phonologically transparent writing systems faster than more opaque ones, so that literacy acquisition is faster in Greek and Italian children than in English-speaking children (Elley, 1994), and the latter struggle particularly in reading pseudowords, that is, nonexisting words that can be pronounced using grapheme–phoneme correspondence rules (Seymour, Aro, & Erskine, 2003). Phonemic awareness, that is, the ability to identify and manipulate phonemes, also develops earlier in children who acquire literacy in more transparent alphabetic writing systems (Spencer & Hanley, 2003). Compared with readers of more phonologically transparent writing systems, readers of more opaque writing systems rely more on the whole-word strategy and less on grapheme–phoneme decoding (Frost, Katz, & Bentin, 1987); they need to decode longer orthographic units such as onsets, rimes, and syllables (the "psycholinguistic grain size theory," Goswami, Ziegler, Dalton, & Schneider, 2003); and they need to rely more on analogy for reading words (Gombert, Bryant, & Warrick, 1997). Dyslexia may be more widespread among users of more phonologically opaque alphabetic writing systems (Smythe, Everatt, & Salter, 2003), and dyslexic users of such writing systems may display more severe difficulties (Paulesu et al., 2001). Second language learners are often influenced by the relative levels of phonological transparency of their first and second language writing systems in their reading and spelling processes and second language phonemic awareness (Cook & Bassetti, 2005), and the spelling of second language words can even affect second language learners' pronunciation (Bassetti, 2008).

Finally, another important issue is whether the relationship of sound and spelling affects the development of linguistic theories. Spelling provides a permanent visual representation of language, which is likely to affect people's ideas about their spoken language. Nonlinguists are affected by the orthographic representations of sound when performing metalinguistic awareness tasks, such as counting or manipulating phonemes in spoken words, so that literate English speakers count more phonemes in a word that is spelled with more letters (e.g., <pitch> vs. <rich>, Derwing, 1992). Such effects of orthography on phonemic awareness appear in children concurrently with literacy, when for instance children start considering nasal consonants as separate phonemes (Treiman, Zukowski, & Richmond-Welty, 1995) and counting more phonemes in words spelled with more letters (Ehri & Wilce, 1980). In some cases, word pronunciations have changed due to their spellings: *spelling pronunciations* happen when people pronounce a word by using grapheme–phoneme correspondences to sound out the word's written form, and such pronunciations can then become standard. This is why *author* is pronounced with a /θ/ rather than its original pronunciation with a /t/ (Bloomfield, 1927). Some scholars have then even argued that linguists' analyses of the spoken language might also be influenced by the characteristics of their writing systems. For instance, it has been suggested that the concept of phoneme only emerged because Western linguists were literate in alphabetic writing systems (Linell, 2005), and that the phoneme was originally conceived as the unit that would be represented by a grapheme in an ideal writing system (see Sampson, 1985).

Conclusion

In conclusion, the relationship between sound and spelling is more complex than saying that spelling represents sound, as different alphabetic writing systems vary in their position along the phonological and morphological transparency continua. The complex relationship between sound and spelling affects reading, spelling, literacy acquisition, metalinguistic awareness, pronunciation, and possibly linguistic descriptions of spoken language.

SEE ALSO: Orthography; Second Language Reading, Scripts, and Orthographies

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Spada, Nina

PATSY M. LIGHTBOWN

Nina Spada (1953–) is internationally known for her classroom-centered research on second language learning and teaching. In scores of publications she has reported on descriptive and experimental studies designed to characterize the interaction between teachers and students and to discover the features of this interaction that are most effective in promoting second language development.

Spada received her BA from the University of British Columbia in 1975. She taught ESL (English as a second language) to adult learners in Vancouver before moving to Montreal to pursue her MA at Concordia University. At Concordia, she continued teaching and also worked on curriculum development for students in pre-university ESL courses. Among her colleagues at Concordia was Michael Long, whose work on interaction in SLA (second language acquisition) was influential in her later work in classroom observation. In her MA research she investigated the influence of out-of-school contact with English on the second language learning of young Francophone learners in Quebec schools, where, at the time, classroom teaching was typically limited to an audio-lingual approach. The study was carried out in the broader context of a research project directed by Patsy M. Lightbown, who was to become her colleague and coresearcher on many studies of classroom SLA.

In 1979–80, Spada was among the first international scholars teaching in the People's Republic of China. At the Guangzhou Institute of Foreign Languages (now Guangdong University of Foreign Studies) she worked with Chinese and Canadian colleagues to develop communicative language teaching approaches and materials that were compatible with the needs and resources of Chinese institutions for training English-language teachers.

On her return from China, Spada enrolled in a PhD program at the Ontario Institute for Studies in Education at the University of Toronto. During her studies there, she was involved in the Development of Bilingual Proficiency project where she collaborated with Patrick Allen and Maria Fröhlich in creating a scheme for observing and analyzing classroom interaction. The scheme, called COLT (Communicative Orientation of Language Teaching), proved to be an effective tool for assessing characteristics associated with communicative language teaching. COLT has been used in classroom-based research around the world. In 1995 Spada and Fröhlich published a book that provided scholars with a detailed explanation of COLT categories and coding procedures, as well as examples of some of the many research projects in which it had been used in Australia, Canada, Greece, Japan, and Spain.

Spada's doctoral research extended her MA thesis by exploring the interactions between type of instruction and out-of-class second language use on the L2 development of adult classroom learners of ESL. Because students in her study were exposed to instruction that differed in terms of its communicative orientation (assessed through the use of COLT), she was able to show that instructional characteristics can have different effectiveness according to how and how much students use the language outside the classroom.

On completion of her PhD, Spada went to the University of Michigan, where she further developed her research interests with colleagues including Susan Gass and Virginia Samuda. In 1985, she returned to Canada to take up a position at McGill University where she would remain for 15 years. In collaboration with other researchers at McGill and Concordia,

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including Patsy M. Lightbown, Lydia White, and Roy Lyster, she produced dozens of publications and conference presentations, many of them based on research in experimental "intensive" ESL programs in Quebec primary schools. Using COLT in both observational and experimental studies, the research team was able to identify instructional characteristics that were related to successful learning. These studies produced substantial evidence for the effectiveness of classroom interaction that focused primarily on meaning but also included form-focused teaching. In 1997, she published a much-cited state-of-the-art paper on form-focused instruction in the journal *Language Teaching*. At McGill, Spada supervised the doctoral studies of scholars who are now teaching at universities in Canada and the United Kingdom. In addition, she served as a member of doctoral committees for students in second language education, linguistics, and educational psychology.

In 2000, Spada took up a professorship at the University of Toronto. In this post, she has continued to carry out research on classroom teaching and learning. Among the research projects she has led at the University of Toronto is an investigation contrasting form-focused instruction that is integrated into meaning-focused activities with form-focused instruction that is provided separately from meaning-focused activities. The research has included studies of students' and teachers' attitudes toward these two types of instruction, explored through the use of questionnaires that are administered both before and after the participants engage in instructional activities that exemplify the two approaches. In this context, Spada has mentored many graduate students in the research process and supervised the thesis research of numerous MA and PhD students. In keeping with her commitment to classroom teaching, she also teaches courses for undergraduate students in teacher training programs.

Spada's service to the profession includes several years as a member of the board of the American Association for Applied Linguistics, followed by terms as Vice President and conference organizer and then as President and Past President. She has been an invited professor or speaker throughout Canada as well as in Europe, Latin America, Asia, Australia, the United States, and the United Kingdom. As a reviewer/evaluator or editorial board member, she has contributed to the work of virtually every major journal publishing research in second language acquisition. For John Benjamins, she coedits the *Language Learning and Language Teaching* series, in which she has edited more than a dozen books by high-profile researchers.

Articles based on Spada's research have appeared in *SSLA*, *Applied Linguistics*, *TESOL Quarterly*, *Language Learning*, *TESL Canada Journal*, *Language and Education*, *Canadian Modern Language Review*, and other professional journals and edited books. She is coauthor (with Patsy M. Lightbown) of *How Languages Are Learned*, first published in 1993. The third edition was published by Oxford University Press in 2006 and is a foundation text in many applied linguistics and teacher education programs. Spada's publications, presentations, and teaching have provided scholars, teachers, and students with valuable insights into how instruction affects second language learning in different environments.

SEE ALSO: Classroom Research; Form-Focused Instruction; Instructed Second Language Acquisition

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Spanish for Specific Purposes

LOURDES SÁNCHEZ-LÓPEZ

Introduction

This entry provides a general description and an overview of Spanish for specific purposes (SSP) as an emerging subdiscipline within the languages for specific purposes (LSP) framework. To understand the teaching and learning of SSP today we need to take a look at the history of LSP. The teaching of LSP originated in the 1960s in the United Kingdom and was established as a discipline as English for specific purposes (ESP). A landmark publication, *The Linguistic Sciences and Language Teaching* (Halliday, Strevens, & McIntosh, 1964), called for linguists to carry out research based on samples of language in specific contexts to develop appropriate pedagogical materials. The focus of LSP had as its primary goal to fulfill the communicative needs of a specific group of people (Hutchinson & Waters, 1987). Since the 1960s, slow but steady global attention has been given to LSP in both research and the development of pedagogical materials for the classroom for the professions, such as business, law, medicine, sciences, social work, translation, and interpretation, among others.

Background

Even though ESP has had a definite place in education and research globally for decades, it is only since the 1980s that SSP has been part of the academy, especially in Europe and the United States, and more recently in some parts of Latin America. The growing immigration flows of Spanish-speaking people from all parts of Latin America to the United States and Europe have impacted educational and professional settings on both sides of the Atlantic leading to an urgent need for Spanish for specific contexts.

In the United States Spanish is the most widely taught language at all levels of education and the second language of the country, with almost 49 million Spanish speakers in 2009 and a projected Hispanic population of 132.8 million (30% of the total population) by the year 2050 (US Census Bureau, 2010). In Europe, Spanish is the second most common foreign language taught after English, and the Spanish-speaking population is growing due to immigration from many Latin American countries. For example, the 2010 Spanish census shows that 40% of the total immigrant population comes from Latin America (Instituto Nacional de Estadística, 2011). As the overall number of first language Spanish speakers in the world, estimated at 329 million (Lewis, 2009), keeps increasing, Spanish has a prominent place in many countries, especially in academic and professional contexts.

In direct relation to the growth of Spanish as a world language, recent data suggest an urgent need to revise foreign-language curricula to meet the needs of students and society better (Modern Language Association, 2007, 2009). As Doyle, an SSP pioneer (2010) claims:

> In addition to language acquisition and the traditional study of literature, civilization and culture, and linguistics, how do we enhance the preparation of today's students of Spanish for fuller participation in the global village and economy into which they will graduate? How might they become better prepared to put their study of other languages and culture

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> to use, which increasingly factors in their real world needs and inclinations, once they begin to seek gainful employment? (p. 80)

Many university programs internationally have been responsive to these new needs and have adapted (or are in the process of adapting) their existing Spanish programs or have developed new programs to respond to these emerging trends (Sánchez-López, 2010; Doyle, 2010). As ESP has been well established worldwide for decades, now SSP is also being recognized as a focus of study in higher education. In the early 1990s in the United States, Europe, and Latin America many new course offerings in SSP (business, medical, and legal Spanish, Spanish for teachers, and translation and interpretation, among others) began as parts of mainstream language programs. As an outgrowth from this movement, completely new specialized freestanding programs, such as minors, certificates, majors, or graduate degrees, emerged in these areas (see Sánchez-López, 2010 for a selection of SSP programs). As a consequence, there has been a corresponding proliferation of textbooks, instructional Web sites, professional conferences, workshops, and scholarly papers focusing on SSP.

Three of these initial SSP efforts have become landmark references in the field and deserve to be mentioned. In 1988 the US Department of Education created the Center for International Business Education and Research (CIBER) to promote the country's capacity for international understanding and competitiveness. Today there are 33 CIBERs which serve as regional and national resources to business people, students, and educators. Each CIBER offers activities to advance the study and teaching of international business. Furthermore, in 1998 the American Association of Teachers of Spanish and Portuguese (AATSP) published a volume titled *Spanish and Portuguese for Businesses and the Professions* providing a wealth of expertise in areas such as course and program development and implementation, needs analysis, and cross-cultural communication training (Fryer & Guntermann, 1998). The first part of this work focuses on Spanish and Portuguese for business since Spanish for business was well established before other specific purposes within SSP. The second part presents articles on other professions such as health, law enforcement, social work, translation and interpretation, and science and technology, describing the development of SSP within these contexts and future directions. Today, these areas are also well established within SSP. Another pioneer and now landmark professional resource is the Congreso Internacional de Español para Fines Específicos which held its first meeting in Amsterdam in 2000. Organized by the Spanish Department of Education and the Spanish Embassy in Belgium, the Netherlands, and Luxemburg, the CIEFE gathers international professors and researchers in SSP to discuss current research in the field and future directions. Today the number of SSP professional conferences, workshops, and publications has escalated, although relatively few compared to ESP (see Sánchez-López, 2010, for a selection of pedagogical resources).

Characteristics of Spanish for Specific Purposes

SSP is not considered as a discipline separate from the teaching and learning of Spanish for general purposes, but as an extension (Sánchez-López, 2006). The primary characteristics of SSP are student specificity, needs assessment, communicative precision, real-life and task-based methodology, and instructor flexibility and interest.

Specificity

Similar to ESP, the specificity of SSP programs is not rooted just in the teaching of a specific language (Spanish), nor is it only determined by the specific professional context. The

specificity of SSP depends largely on the students themselves. Generally, courses are geared toward adult learners (both traditional or regular/degree-seeking and nontraditional or nonregular/nondegree-seeking learners), who already have a basic Spanish language background, and who clearly need or will need the language in specific professional or academic contexts (Hutchinson & Waters, 1987; Sánchez-López, 2006).

Needs Assessment

It is for this reason (specificity) that a needs assessment prior to the development of SSP courses or programs is paramount to ensure their quality and success (Lepetit & Cichocki, 2002; Lear, 2006; García-Romeu, 2006). A model needs assessment in an SSP context was done by Lepetit & Cichocki (2002) with pre-health students in South Carolina. The analysis examined the student population, student aspirations, and course content. The students identified three important needs factors: writing and aural skills development, a learning environment that places them in contact with native speakers of Spanish, and the learning of cultural content. These results were pivotal to designing Spanish for health-related professions courses for this state. More recently, Lear (2006) conducted a qualitative case study in a prenatal clinic with a large Hispanic patient population. The study examined the perceptions of the health professionals toward existing "teach-yourself" medical Spanish materials. The results indicate that professionals did not find these materials to be appropriate to their needs. The survey led to the development of pilot syllabi based on more flexibility, a focus on receptive skills, and communicative strategy instruction. Finally, García-Romeu (2006) proposed two different SSP needs assessment tools: a communicative and learning needs survey and a learning outcomes and curriculum negotiation survey. A key characteristic of these tools is that the student is considered the point of departure for the course curriculum development.

Communicative Precision and Knowledge of Sociocultural, Intercultural, and Professional Contexts

Since students need the second language to communicate in specific professional and academic contexts, communication must be precise and there must be a focus on knowledge of the cultural context to promote clear and effective professional exchanges. A key focus is on the reduction of miscommunication and misunderstanding, which could have serious negative implications in many professional situations (Council of Europe, 1996; Llobera, 2000).

Task-Based Instruction and Experiential Learning

To be able to function effectively in academic and professional contexts, people must carry out different tasks required by the specific context. This implies that the use of pragmatic skills is oftentimes more important than grammatical knowledge (Long, 2003). Traditionally, SSP materials have been developed around specific texts. However, SSP materials should be developed around specific tasks to resemble real-life situations as much as possible. Task-based learning helps with the needs assessment processes mentioned earlier. These types of real-life activities are essential in SSP instruction and learning. In addition, SSP curricula typically encompass some type of experiential learning (internship or service-learning course) that gives students the opportunity to practice their linguistic skills in a professional and real-life setting (Felices Lago, 2003; Juan Lázaro, 2003; Long, 2003).

Instructional Flexibility and Professional Interest

SSP instructors must be flexible to be able to: (a) design their course according to the needs assessment results, and (b) constantly adjust their curriculum according to students' needs

and the frequent changes in the professional world. In addition, although SSP instructors do not need to be experts in the target profession, they must have a sincere interest in developing their knowledge in the field in order to connect with students and find the most appropriate instructional resources (Sabater, 2000).

Recent Research in Spanish for Specific Purposes

The four primary areas of SSP studies are business, health professions, law, and translation and interpretation, which are the areas where there is the most immediate need for communication with clients, patients, employees, and other businesses. Therefore, an increasing number of scholarly papers explore these topics, whether it be descriptions of SSP courses or programs, or research studies (Peck, 1987; Mason, 1991, 1992; Held, 1994; Lepetit & Cichocki, 2002; Kalist, 2005; Lear, 2006; Navarro, 2007; Davidson & Long, 2010).

Peck (1987) developed a Spanish course for social workers at UCLA. The main goals were to teach the students to interact more efficiently with Latino clients and carry out tasks in Spanish "in a culturally sensitive manner" (p. 402), and to teach them to develop lifelong language learning techniques. Prior to developing the seven-week course, there was a detailed needs analysis which involved faculty of the School of Social Welfare, administrators from Los Angeles County Department of Children's Services, the Los Angeles County Department of Mental Health, and the United Way. Based on the success of the course, the article provides recommendations for similar courses in other disciplines.

Similarly, Mason (1991) developed an independent study medical Spanish course for pre-med Spanish majors at the University of Virginia. This pilot course illustrated the critical institutional need to offer the course regularly. In addition, it served as a model for subsequent pilot courses with similar characteristics in other areas, such as legal Spanish for pre-law students (Mason, 1992).

Recognizing the new needs and demands of students and the local community, Delgado Community College in the New Orleans area developed a five-year curriculum revision plan to include a series of SSP service courses for allied health professionals, criminal justice professionals, social workers, and business. Different college and local entities were involved in the process. These courses proved popular among students and community members and helped with recruitment and retention (Held, 1994).

Another notable SSP study conducted by Kalist (2005) used data from the National Sample Survey of Registered Nurses 2000. Kalist concluded that bilingual registered nurses (Spanish–English), as opposed to other professions where there are no salary increases offered for proficiency in additional languages, receive wage premiums up to 7% above their annual salary, depending on the number of Spanish speakers in the county of employment. This study offers documentation of economic benefits not only for the SSP field, but also suggests the immediate need for health-related professions programs to add Spanish to their curricula.

Navarro (2007) presented the most relevant aspects of SSP in higher education in Italy after the University Reform. She studied the Spanish course offerings in 30 Italian universities and observed an exponential growth in courses focused on SSP due to new academic requirements and the increasing importance of the Spanish language in the field of international relations.

One of the first pilot SSP courses for medical students was recently developed at the University of Alabama at Birmingham (Davidson & Long, 2010). Due to local increasing demand to communicate with Spanish-speaking patients, a five-day intensive elective course was developed and implemented by UAB faculty for second- and third-year medical students.

Assessment in Spanish for Specific Purposes

Language assessment is an integral part of LSP teaching and learning. Douglas (2000), in his work *Assessing Languages for Specific Purposes*, defines testing languages for specific purposes as

> that branch of language testing in which the test content and test methods are derived from an analysis of a specific situation, such as Spanish for Business, Japanese for Tour Guides, Italian for Language Teachers, or English for Air Traffic. (p. 1)

He argues that tests are not general or specific in purpose because all tests are developed with a purpose. However, he maintains that all tests belong to a continuum of specificity from general to specific, and adds that LSP tests fall within communicative language testing, since these should offer the same qualities of good testing practices.

Two of the best known examinations in SSP are the certificate/diploma in Spanish for business, tourism, and health sciences (Diploma, Certificado Superior y Certificado Básico de Español de los Negocios, Turismo y Ciencias de la Salud) from the Madrid Chamber of Commerce and the University of Alcalá, and the "Listening public translation examination" (Spanish), a test developed by the US Federal Bureau of Investigation (FBI) to evaluate whether bilinguals' language skills are adequate for monitoring conversations in Spanish in contexts of illegal activity, and for writing a summary of the content of such activity.

Another widely recognized tool to assess SSP use is Doyle's 54-item inventory of testing exercise typology for business Spanish (Doyle, 1998), which can serve as a good model for any SSP instructor. He argued for evaluation as the point of departure in the design of any business Spanish course or program. That is, he felt that the best place to assess needs was to look at learner outcomes and then use those to develop the syllabus and determine what methodology to use for future courses/programs.

Challenges

Even though SSP has come a long way in the last two decades, it still faces critical challenges that need attention. These key challenges are all interconnected and impact one another, and include

1. Instructors: Many instructors of Spanish do not feel confident enough to teach (even less develop) SSP courses because they wrongly believe that only "super-instructors" (Sabater, 2000) can do it. As has been discussed earlier, SSP instructors do not need to be experts in the target profession. However, they need to have some knowledge of the target profession to be able to connect with their students, be comfortable around them, and choose appropriate instructional materials.
2. Recognition: There is still a lack of professional recognition in higher education for SSP teachers, especially in the United States. Some university departments and administrations still give more importance to traditional fields such as literature or theoretical linguistics when it is time to evaluate for promotion or tenure.
3. Inadequate funding: Since there is a lack of professional recognition, some universities do not invest adequately in qualified instructors and professors for SSP courses and programs. Therefore, they often rely on part-time instructors.
4. Limited pedagogical training: Although there is a growing body of SSP professional resources such as symposia, conferences, workshops, and publications, formal methodology courses or programs in SSP are not common. Typically, instructors have

to resort to self-training by adapting their regular methodological knowledge and experience to the new SSP courses.

5. Limited pedagogical resources: Even though there has been a proliferation of SSP pedagogical resources since the 1990s in terms of number of publications, there is still a deficit of high-quality materials based on best practice instruction due to the short history of SSP.

Recommendations and Future Directions

The SSP field clearly has a significant present and an exciting future. As the demand for SSP courses, certificates, and degrees continues to increase worldwide, there must be a parallel proliferation in SSP research to support informed best practice instruction. We urge SSP instructors of all ranks to conduct action research in their classrooms as well as scientific studies to solidify our expanding body of literature, and to improve SSP instructional resources. In addition, SSP-related internships and service learning must become an integral part of SSP course work and of the students' experiential learning component. Institutions of higher education, and in particular languages departments, must give SSP the place that it deserves in terms of recognition and funding. Moreover, teacher education programs must invest in SSP training to avoid, once and for all, the existing self-trained workforce. Finally, the more traditional languages departments worldwide must look at the future proactively by adding SSP to their long-range planning to be able to keep pace with their community and student demands.

SEE ALSO: Assessment of Academic Language for Specific Purposes; Assessment of Business and Professional Language for Specific Purposes; Content-Based Instruction in English for Specific Purposes; Culture and Language for Specific Purposes; Historical Development of Language for Specific Purposes; Intercultural Rhetoric in Language for Specific Purposes; Language for Specific Purposes: Overview; Materials for Language for Specific Purposes; Methods for Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes; Teacher Education for Language for Specific Purposes

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Spanish Standardization

MERCEDES NIÑO-MURCIA

A linguistic standard is an abstract model of a given real-life language, proposing to define correct, pure, or genuine usages. Standardization is a work of linguistic engineering, not a natural process. A self-selected group of speakers decides which norms would regulate the correct use of the language. Standardization may or may not ever be put into practice to the same degree among all the language's multiple speech communities. It is an ideal toward which educated speakers gravitate as it becomes a widely publicized marker of social status (Calvet, 1974; Milroy & Milroy, 1985; Joseph, 1987).

In Spanish-speaking communities today, educated speakers are brought up with prescriptions of the Real Academia Española (RAE) ('Royal Spanish Academy'), founded in 1713 in Madrid. It was chartered to be the central institution in defining a canon of correct usage for all the Crown's subjects in domains that then spanned the globe. RAE dictionaries and grammars defined and illustrated "good" language usage. However, in 2007 the RAE and the delegates from the national academies in Spanish-speaking nations approved a grammar more open to pan-Hispanic regional norms.

Historically, we can trace the Spanish standardization process to the 11th century in the then-capital city of Toledo where standardized written production in the vernacular language that later became known as Castilian took normative shape through rules for composing royal documents. The chancery of Alfonso VI (1030–1109) diffused the Carolingian script which other Spanish chanceries adopted. Spelling rules for writing the vernacular added another important aspect to standardization. Alfonso X "the Wise" (1221–84) played an important role in standardizing official written usage.

An equally important agent of standardization was Antonio de Nebrija. His immensely influential *Gramática Castellana* ('Castilian Grammar', 1492/1980) and *Reglas de Orthographia en la Lengua Castellana* ('Spelling Rules in the Castilian Language', 1517/1977) constituted the first grammatical corpus for any neo-Latin language. Nebrija was conscious of the graphophonemic dilemmas that his system would create. In a preface he wrote "But I say that today nobody writes our language purely for lack of some letters: [there are ones that] we pronounce and do not write; and others that on the contrary we write and do not pronounce." After Nebrija, from the 16th through 17th centuries there followed over 20 new Spanish grammars.

When the newly founded Spanish Real Academia de la Lengua Espaňola (RAE) two centuries later wrote upon its coat of arms the slogan *Limpia, fija y da esplendor* ('Cleans, fixes, and lends radiance'), it was proclaiming a mission to protect an already-normativized language from impurities and change, and to enhance its beauty. To these ends the RAE produced as its collective work a *Diccionario de la lengua castellana* also known as *Diccionario de autoridades* (1726–39) because its entries cited desirable usages with quotations from well-known authors and a *Gramática de la lengua castellana* in 1771.

The RAE had undertaken further standardization of Spanish, which at that time still used a variety of spelling norms. Spanish grammarians and philologists, holding diverse and sometimes extreme positions, had already debated spelling for centuries. Every scribe looked for some way to represent problematic sounds inherited from Latin. As early as the sixteenth century, conflict arose between the etymologist or Latinizer (who would maintain graphic Latinisms even if they clashed with the spoken language), and the

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phonologist, who believed that writing should reflect popular pronunciation. In the 18th century there was still no uniformity.

Although the RAE had begun by recommending etymological orthography, it did not sustain this position for long because diachronic values would give way before demand for answers about current usage and pronunciation, questions to which etymology could not provide adequate solutions. In 1738 the RAE announced a treatise on orthography "que facilitasse la escritura en cuanto fuesse posible, sin tanta dependencia del origen de las voces" ('that would make writing as easy as possible, without so much dependence on the origin of words'). The 1741 treatise that was supposed to fulfill this promise paradoxically bears as its title *Orthographía de la lengua castellana*. The *th* and the *ph* prove that etymological standards still had some force. By 1754, the title had been changed to *Ortografía de la lengua castellana*. Nevertheless, it was not until the 19th century, in the fourth edition of the dictionary, and in 1815, in the eighth edition of its *Orthography*, that the words *cristiano*, *sustancia*, *oscuro*, and others were widely written in their now-familiar, un-etymological forms. In spite of the RAE's efforts, in the 18th century usages remained less than uniform. This situation lasted into the 19th century, when the Crown itself found it necessary to put forward a royal order (April 25, 1844) establishing the teaching of academic orthography. By petition of Queen Isabel II, the RAE published the *Prontuario de ortografía de la lengua castellana* ('Handbook of Orthography of the Spanish language', 1857). It was to be adopted by editors in Spain and Paris, and it served to popularize academic spelling in America. It was not until then that academic orthography became widespread in the New World.

These standardizing efforts left out of account, however, the variations which Spanish speech had been acquiring overseas for 300-odd years. The matter of orthographic reforms for Americans was to be a formative focus of intellectual life in the republics then gaining independence. In this matter Andrés Bello played an important role. Bello feared that just as Latin had broken up into multiple vernaculars across the Roman Empire, Spanish might lose its transatlantic and transpacific unity spanning the peninsula and the ex-colonies. He published a *Gramática de la lengua castellana destinada al uso de los americanos* ('Grammar of the Castilian Tongue Dedicated to the Usage of Americans', 1847/1850) and worked up a system for spelling reform (1844/1884, p. 394).

The *Nueva Gramática de la Lengua Española* (RAE, 2009) approved by the language Academies of Spain, the Philippines, the United States of America, and 19 Latin American countries in 2007 includes diatopic (place-linked) details of variations according to "national" habits of Spanish-speaking countries not only from Spain. These changes create a larger tent for the game of standardization.

SEE ALSO: Cultural Capital; Language Ideology in the Discourse of Popular Culture; Multilingualism and Identity; Nation; Prescriptive and Descriptive Grammar

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Special Purposes Vocabulary

PAUL NATION AND AVERIL COXHEAD

An important distinction to guide vocabulary teaching is the division between high-frequency and low-frequency words (Nation, 2008). High-frequency words occur often in the language and thus cover a large proportion of a text. They make up a relatively small group of words. For these reasons it is useful and feasible to give them deliberate attention during class time. This kind of attention can include direct teaching of the words, vocabulary activities, giving the words attention in intensive reading, and focusing on them when developing skill at using vocabulary strategies. Low-frequency words on the other hand are a very large group of words which provide very poor text coverage. Although they need to be learned once the learner knows the high-frequency words of the language, they do not deserve much classroom time. Learners need to learn them, but teachers should focus on strategies for dealing with them rather than on the words themselves.

For several reasons, the high-frequency words of the language are seen as being a group of around two thousand word families (Nation, 2001). A word family consists of a headword and its inflected and clearly related derived forms. One way of increasing the number of high-frequency words in the language is to develop lists of special purposes vocabulary. Because this vocabulary is of particular importance to certain groups of learners, it thus provides an opportunity for further direct vocabulary teaching and a planned deliberate focus on the vocabulary.

Working out what special purposes vocabulary learners should focus on is a part of the curriculum design process called needs analysis (Nation & Macalister, 2010). Needs analysis has the purposes of (a) quickly and efficiently meeting the needs of the learners, and (b) providing clear goals for language courses. Needs analysis can have several focuses. One of its focuses involves looking carefully at the language that learners will need to use and describing that so that it can become the basis for a language course.

The Academic Word List

Academic vocabulary exists for two major reasons (Hirsh, 2004). First, because of its Latinate nature, it signals the formality and seriousness of the subject matter. Second, it consists of vocabulary that allows academics to do the kinds of things that academics typically do. That is, it provides the kind of vocabulary that is needed to review previous research, to evaluate that research, to describe the methodology of a piece of research, to describe the results of the research, and to suggest the implications and applications of the results.

The best-known list of special purposes vocabulary is the Academic Word List (Coxhead, 2000). This is a list of 570 word families which are particularly important once learners know the high-frequency words of English and want to go on to do academic study through the medium of English. The list contains words which are frequent across a wide range of academic subjects. The list is divided into ten sublists according to the frequency and range of the words.

The following procedure was used to make the 3,600,000 token academic corpus that the list was based on. A large number of texts were collected from the four faculty areas of humanities, science, commerce, and law. Each of these faculty areas was divided into

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seven subject areas, giving a total of 28 subject areas. Each subject area contained roughly the same total number of running words, and roughly the same balance of short and long texts.

The following criteria were used to select word families for the Academic Word List.

1. The word family could not be in 2,000 word families of *A General Service List of English Words* by Michael West (1953).
2. The word family had to occur in all four faculty divisions of the corpus, and had to occur a minimum of 10 times in each faculty division.
3. The word family had to occur in at least 15 of the 28 subject divisions of the corpus.
4. The word family had to occur with a frequency of at least 100 occurrences in the corpus.

Criterion 1 ensured that the words were not also general purpose words. Criteria 2 and 3 were range criteria, making sure that the word was a generally useful academic word. Criterion 4 was a frequency criterion, making sure that the word was common enough in academic text to make it worth learning. Applying these criteria resulted in a list of 570 academic word families which was divided into 10 sublists based on range and frequency of occurrence.

Finding Special Purposes Vocabulary

The essence of special purposes vocabulary is that it has a close connection with a particular topic area or group of topic areas. This semantic connection is reflected in the range and frequency of the vocabulary. That is, special purposes vocabulary is much more common within a particular topic area than in other topic areas. Compared to other words, a special purposes vocabulary has words of limited range and higher frequency. In the case of the Academic Word List, the words on the list are very frequent in a range of academic texts, giving a coverage of around 10% of the running words, but are infrequent in novels, providing a coverage of less than 2% of the running words.

The AWL has been used to develop further lists of specialized vocabulary. For example, Coxhead and Hirsh (2007) developed a pilot science word list of 318 word families from a corpus of first year university texts. The science list covered 3.71% of the science corpus, on average 3% higher than coverage of arts, commerce and law texts from Coxhead's (2000) academic corpus. These coverage figures indicate that the science list is technical in nature and is a useful step from general academic vocabulary to special science vocabulary. Another example of using the GSL and AWL as a framework and building a business word list comes from Konstantakis (2007). This list was created using a business English course book corpus. The resulting word list of 560 word families covered 2.79% of the specialized corpus (Konstantakis, 2007, p. 89), meaning that the combined coverage of the GSL, the AWL, and this specialized list is 93.17%. This coverage figure means that students who knew all the words on these three lists would be close to knowing almost all the words on a page in a business English course book.

Chung (2003) used these range and frequency features to develop a way of quickly finding the technical vocabulary of a subject area (Chung & Nation, 2004). Put simply, the procedure involves developing a special purposes collection of texts and a much larger general-purpose collection of texts called the comparison corpus. The comparison corpus should not contain any of the special purposes texts. For example, in Chung's study, the special purposes corpus was an anatomy text. The 2-million-word token comparison corpus included newspaper texts, novels, academic texts (but none from medicine or

anatomy), and magazines. The frequency of words in the two corpora are compared, and words which only occur in the special purposes corpus or which occur much more frequently in the special purposes corpus (Chung used a cut off ratio of 50 to 1) have a more than 90% chance of being technical vocabulary.

Another way to find special purposes vocabulary is to build a word list that starts at the beginning of students' studies and works steadily toward the vocabulary of their particular subject area. One example of such an approach is Ward (1999), who developed a corpus of 1 million running words (or tokens) using five engineering texts and extracted the most frequently occurring 3,000 words in those texts as a word list of engineering, which he then divided into three sublists: Eng1, Eng2, and Eng3. The coverage of these lists over engineering texts ranged from very high in the case of Eng1 at about 91%, down to 3–4% for Eng2, and around 1% for Eng3. Ward concludes that students specializing in engineering with reading as a primary aim would be well served to study Eng1 and Eng2, particularly in situations of limited exposure to English.

Technical Vocabulary

Chung found that 31.2% of the running words in the anatomy text were technical words. That is, almost one word in every three words in the text was a technical word. These technical words were made up of what otherwise would have been classified as high-frequency words (*neck*, *shoulder*, *heart*), academic words or low-frequency words. A large proportion of the different words in the anatomy wordlist were words that were largely peculiar to the field of anatomy—*xiphoid*, *carotid*, *subcostal*. The list contained 4,270 different word types. Chung considered that the word type was the best unit for counting rather than word families because not all members of a word family necessarily shared the technical use.

Chung also looked at an applied linguistics text using the same kind of procedure. She found that around 20% of the running words were technical words, but unlike the words found in the anatomy text, a very large proportion of the different word types, around 88%, were words that commonly occurred outside of that subject area—*language*, *word*, *negotiation*. The technical word list based on the applied linguistics text contained around 835 word types.

A Newspaper Word List

Chung (2009), using a procedure and criteria very similar to that used in the making of the Academic Word List, made a list of newspaper vocabulary based on the news sections of newspapers, and using the four divisions of local news, international news, business news, and sports news. To ensure that the words in the list would have wide range within a variety of English-medium newspapers, the newspaper corpus was made up of texts from three different English-medium newspapers from different parts of the world. The making of the corpus was a very difficult task because it involved a large number of very short texts and also involved careful checking that texts from news agencies like Reuters and API were not duplicated in different parts of the corpus. The resulting list contained 588 word families and covered around 6% of the running words in a different corpus. Proper names were excluded from the list.

Every text has its own special purposes (topic-related) vocabulary. The search for special purposes vocabulary that occurs in a range of related texts is an attempt to apply the very useful teaching principle that work on today's text should have the goal of making tomorrow's text easier.

SEE ALSO: Corpus Analysis of Written English for Academic Purposes; Explicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Teaching Language for Academic Purposes; Vocabulary and Language for Specific Purposes

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Speech Acts Research

MARÍA ELENA PLACENCIA AND CARMEN GARCÍA

Introduction: Defining Speech Acts Research

Speech acts research is, in general terms, concerned with examining *what* people *do* with language in interaction, such as exchange greetings, make requests, compliment, congratulate, or express sympathy to others. They may do these things in a variety of different ways as a function of a range of contextual factors which speech acts research gives itself the aim of disentangling. For instance, in making a request, the way we ask a close friend to run an errand for us is likely to be different from the formulation we would employ with our boss when asking for a salary raise.

Speech acts research thus deals essentially with language as social action, although this notion is not restricted to speech acts research. In fact, it has different origins and is common to different approaches to the study of language in social interaction, including interactional sociolinguistics and conversation analysis (CA). The perspective on language as social action underlying speech acts research derives from speech act theory (SAT), advanced by Austin (1962), and later developed by Searle (1969, 1975, 1976).

Within SAT, speech acts constitute the basic unit of communication. They comprise three acts: the *locutionary* act, which corresponds to the literal meaning of an utterance; the *illocutionary* act, which relates to the speaker's intended meaning; and the *perlocutionary* act, which corresponds to the effect the performance of a speech act has on an audience.

The locutionary and illocutionary distinction is central to the notion of *indirect* speech acts, which refers to the widespread phenomenon of performing one particular speech act by means of another (Searle, 1975). Two basic types of indirectness have been distinguished: *conventional* and *nonconventional*. A classic example of the former is *Can you pass the salt?* Literally, this is a question about one's ability to pass the salt; however, through convention, this utterance functions as a request and it is interpreted as such in a dining scenario in English. On the other hand, if we say *This is tasteless*, expecting that someone will pass the salt to us, this utterance would be a case of nonconventional indirectness since it is not a formulation normally associated with requests; instead its meaning would need to be derived from the context.

The notion of the perlocutionary act was not given much attention within Austin and Searle's theory; yet it is central to current perspectives on communication that regard meaning as something that is negotiated in interaction. The crux of the matter is that utterances can have multiple meanings and people do not necessarily interpret utterances as they were intended. In speech act analyses, therefore, the hearer's reaction is often a useful indication of how an utterance was interpreted in a particular context.

Also distinctive of SAT is Searle's (1976) proposal that there is a set of things that we can do with language, formulated into a taxonomy with five basic categories: *directives* (e.g., requests), *expressives* (e.g., compliments), *commissives* (e.g., promises), *representatives* (e.g., statements), and *declarations* (e.g., declaring an event open). These categories have served as points of departure for innumerable speech acts studies.

Speech acts, however, constitute only one domain of study in the examination of language use in social interaction, as there are other things we do with language that are not speech acts. For example, in conversation, we use different mechanisms to take turns, to

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propose a topic of conversation, and so forth, aspects of language use that are core to CA, a sociological perspective on language in social interaction.

Scope of Speech Acts Research

Speech acts research is wide ranging, covering both theoretical inquiry and empirical study of a host of speech acts in numerous languages and social contexts, constituting one of the most prolific areas within pragmatics. In relation to empirical studies, methodological issues are normally addressed within these studies; however, they have also been the object of examination per se.

Bearing in mind the wealth and breadth of speech acts research, a brief sketch of the whole area is provided below.

Theoretical Inquiry

Theoretical discussions have been concerned with Searle's taxonomy of speech acts, the further refinement of key concepts within SAT, and a consideration of the universality of their application. A topic that generated considerable interest in the 1980s and 1990s, and that continues to do so, is that of (in)directness. Key questions that have been addressed include what (in)directness is, whether (conventional) indirectness is a universal phenomenon, and whether indirectness is linked to politeness. Regarding the first question, for example, Blum-Kulka, House, and Kasper (1989), building on Searle (1969, 1975), proposed a detailed categorization for requests (and apologies) that distinguishes levels of directness and a range of mechanisms employed to upgrade or downgrade the force of an utterance. Downgraders include the use of politeness formulas such as *please* as well as explanations, as in *Could you please help me with this suitcase? I have a bad back*. In fact, Blum-Kulka et al.'s categorization has been the most influential to date in speech act analysis (see below), having been employed in countless studies of directives and other speech acts. A glance at empirical studies on directives, however, shows that consensus about what (in)directness is, and how it can best be described, is not unanimous.

With respect to the universality of conventional indirectness, this has been tested through a myriad of studies (see also below). Likewise, Searle's contention that there is a link between indirectness and politeness has been widely explored. Wierzbicka (1985) was among the first to contest this claim with reference to directives in Polish, highlighting the culture specificity of Searle's proposal. However, the main impetus for examining the connection between indirectness and politeness came from Brown and Levinson's (1978/1987) influential theory of politeness, which presented requests as face-threatening acts requiring redress, and conventional indirectness as a key strategy for offering such redress.

A consideration of the possibilities and limitations of SAT, particularly in its application to discourse in general, has also been a concern for a number of scholars. Discussion has centered, for example, on problems of applying the theory to stretches of talk. This relates to the absence from the theory of the hearer, which rules out any negotiation of meaning, and which in turn results in the theory offering a static view of language. Likewise, the theory has been criticized for not taking into account the social context in which different speech acts are produced and interpreted (Rosaldo, 1982).

Most empirical studies available, however, have been greatly influenced by developments in the ethnography of communication that placed the examination of speech act performance within specific social contexts in particular *speech communities* (see Hymes, 1964/1972). Indeed, Ervin-Tripp's (1976) study of directives and Manes and Wolfson's (1981) studies of compliments, both in American English, represent the earliest speech act

studies in this tradition; they paved the way for the examination of speech acts from a sociocultural perspective. Likewise, speech acts research has been shaped to some extent by developments in CA. For example, the focus in numerous speech act studies has shifted from isolated utterances to extended stretches of talk; this development has gone hand in hand with the incorporation of (some aspects of) CA methodology into speech acts research, particularly the recording of interactions, which facilitates examining extended stretches of talk.

The extent to which SAT theory can shed light on social practices associated with particular professions, as well as communication problems in social life, is something that received a certain amount of attention in the early years and continues to be explored today (see Guendouzi & Müller, 2006).

Empirical Studies

Empirical speech acts research in essence involves mapping functions to given utterances, that is, identifying the action(s) being performed from the context of use, or, conversely, mapping utterances to functions (Jacobs & Jucker, 1995). In relation to the latter, the researcher may want to find out, for example, how particular groups (e.g., German and British teenagers) carry out requests in comparable situations, so a role-play scenario may be set up to elicit the relevant linguistic realizations from a set of informants. Yet a third key concern can be described as investigating why people perform, or abstain from, certain actions, why they do them in particular ways, or both; this has taken many researchers into the investigation of (im)politeness and the management of interpersonal relations in different sociocultural contexts.

The majority of empirical studies focus on present-day use, but there is a growing number of studies taking on a historical perspective. The former examine speech acts in face-to-face interactions, in written communication as well as in a range of interactions mediated by old and new technologies including telephone, e-mail, discussion forums, and so forth. The latter focus on a range of written texts including, for example, plays and other works of fiction, as well as letters and court proceedings.

Research on speech acts has been guided by the concerns and methodologies of a number of (sub)fields. Within pragmatics, five main strands of research which are interlinked can be identified: studies in cross-cultural, interlanguage, intercultural, variational, and historical pragmatics. A plethora of speech act studies can be found under the first two headings, particularly relating to studies carried out in the 1980s and 1990s. On the other hand, there is a growing body of work in subfields of more recent vintage, such as variational and historical pragmatics.

Cross-Cultural Pragmatics

Cross-cultural pragmatics compares "the ways in which two or more languages are used in communication" (House, 1986, p. 282), taking into account the importance of situational and social factors. The best representative of this type of studies is the Cross-Cultural Speech Act Realization Project (Blum-Kulka et al., 1989), in which the realization patterns of requests and apologies were compared across seven languages. Blum-Kulka et al. developed a research instrument (the Discourse Completion Test or DCT, a type of written questionnaire), subsequently widely adopted in the field, and a categorization framework for request and apology strategies. In terms of directness levels in requests, an important finding that came from this study is that *conventional indirectness* was overall the most frequently used strategy across the situations and languages examined. This finding prompted a large number of contrastive studies among different languages.

The languages that have received the most attention in this area are English, Japanese, Spanish, Arabic, and Chinese. Results from these studies have shown that while similar strategies might be used in the performance of a given speech act, the frequency and combination of strategies may differ. Additionally, they have revealed different perceptions of politeness and what is appropriate to do in a given culture.

Interlanguage Pragmatics

Scholars in this area are interested in studying what second or foreign-language learners do vis-à-vis native speakers' performance. For those engaged in speech act studies and language learning, the assumption is that "intercultural miscommunication is often caused by learners . . . falling back on their L1's sociocultural norms and conventions in realizing speech acts in the target language" (Takahashi, 1996, p. 189).

Since Wolfson and Judd's (1983) groundbreaking publication on interlanguage pragmatics, empirical research based on learners from different language backgrounds has developed in this area. Studies have mainly concentrated on comparing learner–native differences in the variety and distribution of strategies used in speech act realization, the linguistic forms selected, and the preferred politeness strategies.

A related research area is the teaching and assessment of pragmatic competence, including speech act production and interpretation (see García, 1996; Ishihara & Cohen, 2010).

Intercultural Pragmatics

Intercultural pragmatics focuses on the way people perform actions in bilingual and multilingual settings. Two seminal works in this area are Valdés and Pino (1981) and Clyne (1994). The former focused on compliment responses in a bilingual community in New Mexico, comparing the behavior of bilinguals with that of Spanish- and English-speaking monolinguals. It uncovered some features unique to the bilingual group.

Clyne's study looked at the use of directives, expressives, and commissives during meetings and other work situations in Australia. Participants included immigrants from Asia or the Pacific whose first language was not English. Clyne looked at interlingual transfer at the discourse level showing the cultural embeddedness of a number of linguistic practices.

The rationale behind many cross- (rather than inter)cultural studies is to contribute to intercultural communication by uncovering possible areas of communication conflict. However, as Spencer-Oatey (2008, p. 72) has suggested, "cross-cultural (i.e., comparative) studies do not tell us how people will necessarily behave or react when they take part in intercultural interactions."

Variational Pragmatics

Variational pragmatics is concerned with the impact of macro-contextual factors, such as ethnicity and region, on the way people do things with language. Regional variation, for instance, refers to the study of intralingual variation at the level of (sub)national varieties of a particular language (Schneider & Barron, 2008). For example, Schölmberger's (2008) study of apologies in French French and Canadian French illustrates variation at the national level, whereas Placencia's (2008) work on requests in two varieties of Ecuadorian Spanish illustrates regional variation at the subnational level. The languages that have received the most attention in this area are Spanish, German, and English. On the other hand, the speech acts categories that have been more widely examined are directives and expressives.

Studies of requests (and other directives) have focused on variation in directness levels and the use of upgrading and downgrading lexical and morphosyntactic devices,

while recent studies have started to incorporate prosodic features. A number of studies have shown that there are similarities at the level of overall strategies (e.g., directness vs. conventional indirectness), but differences in terms of sub-strategies and the use of upgraders/downgraders. With respect to expressives such as compliments, the analysis has normally involved the comparison of semantic and syntactic formulas as well as preferred types of responses.

Historical Pragmatics

Historical pragmatics is a subfield of relatively recent development that is at the intersection of pragmatics and historical linguistics. With respect to speech acts, key questions that it seeks to answer are, for example, whether speakers of a particular language used the same range of speech acts in a period of time in the past as is employed at present and whether they used them in the same way (Taavitsainen & Jucker, 2008, p. 2). Some studies also seek to uncover norms and values that guided language use in a certain period in the past.

While initial interest in the area can be traced back to the 1970s, the publication of the first issue of the *Journal of Historical Pragmatics* in 2000 is a turning point in speech acts research from a historical perspective (see Taavitsainen & Jucker, 2008, for an overview).

Methodological Aspects

Speech acts have been examined from different theoretical and hence methodological perspectives. Within cross-cultural, interlanguage, and variational pragmatics, two favored research tools are the DCT and role play. Both allow for the setting up of comparable situations of interaction and for the control of social variables. The advantages and limitations of these methods vis-à-vis field notes from observation, recordings of naturally occurring interactions, or both have been the object of examination in several studies within the past two decades (see Golato, 2003). As a result, refinements of the two tools have been proposed (see Barron, 2003) and the need for more than one methodological perspective has been emphasized (see Cohen, 1996).

Given the nature of inquiry within historical pragmatics, alternative tools have had to be adopted, involving the exploration of small-scale and large-scale corpus-based methods. Methodological issues, such as matters of recognition and recall related to large-scale computerized searches, are currently under consideration in this area (see Jucker & Taavitsainen, 2008).

While discussion of the advantages and limitations of different methods in speech acts and pragmatics research continues, there is consensus that a combination of perspectives offered by different methodologies can provide a fuller picture or a more in-depth understanding of speech act performance; at the same time, the general view is that the choice of research method(s) ultimately depends on the aims of the study and the research questions being addressed.

The Future of Speech Acts Research

This brief overview has shown the wealth and breadth of speech acts research particularly in relation to empirical studies that have been carried out to date in multiple languages and contexts and from different perspectives. Despite the limitations of a SAT approach, the studies available have greatly contributed to our understanding of the things we do with language, what appear to be some universal features in contemporary use, and features pointing to cultural distinctiveness in language use. This, in turn, has provided

baseline data for studies on interlanguage pragmatics. Historical studies have begun to add a new dimension to our understanding of how the manifestation of certain actions has changed over time, reflecting changes in norms and values.

There is clearly a need for continuing the different lines of research outlined here to identify the (similarities and differences in the) realization of different speech acts in different languages, by different cultural groups, in different periods. While there is an abundance of studies on directives and expressives, there is scope for more studies on these categories with more diverse populations and a wider range of settings, as well as for studies on other types of speech acts. In relation to contemporary use, greater population mobility, and the development of technologies that make intercultural encounters an everyday reality, more attention needs to be paid to intercultural communication in speech act studies. Finally, with respect to methodological aspects, diachronic speech act studies have brought to the fore the interest of computerized corpus-based methods for present-day speech acts studies (see Jucker & Taavitsainen, 2008). While refinements to computerized large-scale searches are still required, such methods appear to offer an interesting avenue for large-scale speech acts research in the future.

As indicated in the introduction, a SAT approach has its limitations, since there are other domains of study of language use beyond speech acts; therefore there are aspects of language use where SAT can offer useful insight and others where other approaches are more suitable.

SEE ALSO: Cross-Cultural Pragmatics; Intercultural Communication; Interlanguage Pragmatics

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Speech Acts

ANDREA GOLATO AND PETER GOLATO

Linguists and language philosophers have long since recognized that language is not only used to describe states of affairs and events, but also to do certain things (for instance complaining, praising, etc.). The acts a speaker performs when uttering a sentence under normal circumstances are called *speech acts*. The term "speech act" goes back to the language philosophers John L. Austin and John R. Searle. Their theories were groundbreaking in the 1960s and beyond because of their focus on language use. Since then, speech act theory has been highly influential and has been used for language analysis not only in the fields of language philosophy and linguistics, but also in applied linguistics, psycholinguistics, and computer science. Like any approach to the study of discourse, it is not without its critics. More recent theoretical work has been aimed at overcoming some of its perceived shortcomings.

The entry is structured as follows. We first discuss what speech acts are and how they were defined by Austin and Searle. We then briefly describe some of the criticisms that are leveled at speech act theory from other discourse perspectives. In a next step, we point to more recent theoretical work trying to overcome this criticism. Finally, we provide a brief overview of the fields in which speech act theory has been used.

The Beginnings: Austin's Description of Speech Acts

Speech act theory originated with a series of William James lectures given by Austin, an Oxford philosopher of language, at Harvard University in 1955. These lectures were published as *How to Do Things With Words* in 1962. Austin's theory originated in his observation that, in contrast to prevailing views held at the time, declarative sentences were not necessarily always either true or false with respect to the state of affairs they described. He noted the existence of declarative sentences which, upon being uttered, seemed to perform actions. Examples of such sentences include *I now pronounce you husband and wife* when uttered at the end of a marriage ceremony, *I name this ship the USS Enterprise* when uttered while breaking a bottle of champagne across a ship's bow, and so forth. Austin noted that for such sentences, their truth value (whatever it might be) was largely irrelevant. For Austin, what was interesting about such sentences was that by uttering them under the right conditions, the speaker performed an action. Austin called such sentences *performatives* or *performative utterances*, which he distinguished from *constatives* or *constative utterances* which describe facts and states of affairs. While constatives could be either true or false, Austin held that performatives could be either *felicitous* (or *happy*) or *infelicitous* (or *unhappy*), with the difference in felicity depending on whether the performative was uttered under the appropriate *felicity conditions*. Austin proposed four types of conditions for a performative to be felicitous:

1. The uttering of the words by the appropriate person under the appropriate circumstances has to be an accepted convention.
2. The participants involved in the procedure have to execute it completely and accurately.

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3. Any thoughts, emotions, or intentions required by the convention have to be genuinely experienced by the participants.
4. The participants must view the procedure as binding.

Austin further proposed a distinction between *explicit,* and *implicit* or *primary performatives*, the chief difference between them being that explicit performatives contained performative verbs such as *pronounce*, *name*, *declare*, and so forth, and which name the action being performed, whereas implicit or primary performatives did not contain a performative verb (e.g., *you're out!*, uttered by an umpire during a baseball game).

Finally, Austin held that in uttering language, a speaker performed three types of acts: (a) a *locutionary act*, basically corresponding to the act of phonation; (b) an *illocutionary act* such as pronouncing, naming, declaring, and so forth; and (c) a *perlocutionary act*, corresponding to the effect of the illocutionary act upon the hearer (e.g., someone is married after hearing *I pronounce you husband and wife*).

Searle's Expansion of Speech Act Theory

In his 1969 book *Speech Acts: An Essay in the Philosophy of Language*, Searle, an American philosopher of language at the University of California-Berkeley and a student of Austin's proposed an elaboration of Austin's three-part, locutionary–illocutionary–perlocutionary distinction. For Searle, speakers simultaneously accomplish four acts when they utter a phrase: (a) an *utterance act*, which is the act of uttering words, sentences, and so forth; (b) a *propositional act*, which is the act of referring and predicating; (c) an *illocutionary act* such as pronouncing, naming, declaring, and so forth; and (d) a *perlocutionary act,* which is the effect of the illocutionary act upon the hearer. Searle held that illocutionary acts were central to the study of semantics, and posited that they were rule-governed according to a set of necessary and sufficient conditions. Using the speech act of promising as an example, these necessary and sufficient conditions would be (a) a *propositional-content condition* whereby the promise must refer to a future act; (b) a *preparatory condition* in which the hearer would prefer that the speaker carry out the promise, and in which the speaker would not otherwise carry out the aforementioned promise in the normal course of events; (c) a *sincerity condition* in which by uttering the promise, the speaker genuinely intends to carry out the associated action; and (d) an *essential condition* in which the speaker intends for the promise to cause an obligation to perform the action. Searle drew a further distinction between *regulative rules*, which are rules of behavior (i.e., conventions) governing activities which exist independently of those rules (e.g., rules of traffic circulation, table etiquette, etc.), and *constitutive rules*, which both regulate and constitute behavior (e.g., rules of baseball, blackjack, etc.). For Searle, the rules of speech acts were more reminiscent of constitutive rules than of regulative rules. This led to a reformulation of the aforementioned necessary and sufficient conditions into rules.

Criticism

Searle's description of speech acts has drawn criticism over the years. One of the issues raised concerns the felicity conditions for various speech acts that Searle established. It has been noted that often, these felicity conditions actually contradict empirical behavior, that is, they contradict what can be observed in actual interaction. In her criticism of Searle, Trosborg (1995) uses the case of commands as evidence. According to Searle, one of the felicity conditions for issuing a command is that one holds a certain authority over the conversational partner and simultaneously, the conversational partner must be obliged to

follow the command. However, Trosborg (1995) points to the work of Ervin-Tripp (1976) on directives in family interactions to show that in this particular setting, commands can also be given by speakers who do not hold authority over the hearer.

In addition, it has been pointed out that the felicity conditions which are claimed to be universal have a certain ethnocentric perspective in that they often only apply to (some) Western cultures but not to Eastern cultures. This is the case for instance with the notion of volition. While volition is an important felicity condition for a variety of speech acts in American culture, it is far less important in Japanese culture. Trosborg (1995) points to research by others that indicates that in Japanese culture, social status and discernment are far more important. In other words, research indicates that felicity conditions vary with culture and are not universal as claimed by Searle.

In Searle's theory, the intention of speakers is the driving force, hence meaning is contained in individuals (Streeck, 1980) and is in turn represented and expressed in sentences. Examining the transcript of any stretch of conversation, however, it becomes apparent that people do not speak in complete sentences, yet they are able to understand each other without any difficulties. In addition for Searle, the illocutionary force a speaker is conveying is derived from the sentence the speaker produced. However, the same sentence uttered in two different contexts can have two different illocutionary forces. For instance, saying "The cake is wonderful" can function as a compliment when it is uttered shortly after tasting the first forkful of cake. When it is uttered after having consumed the last bite of cake, however, it typically functions as a request which subsequently yields an offer of an additional piece from the conversational partner (Golato, 2005; see Streeck, 1980, for additional examples).

Researchers working from a variety of other research traditions have also argued that speech act theory neglects the listener's role (e.g., Streeck, 1980; Reiss, 1985; Trosborg, 1995). Searle's model is very much a speaker-centered model in which communication flows only in one direction, namely from the speaker to the hearer. The illocutionary acts of a speaker certainly do have an effect on a hearer's actions, beliefs, and thoughts. But we know that communicative events require the active participation of the hearer, in that they have to interpret the talk directed at them (Streeck, 1980). Moreover, hearers regularly shape utterances of speakers with whom they are interacting. For instance, frowning while the conversational partner is speaking may cause the conversational partner to stop an ongoing action, to rephrase it, to clarify it, and so forth. And similarly, nodding vigorously while a conversational partner is speaking may cause him/her to cut a sentence or story short.

Recent Work

More recent theoretical work on speech act theory is aimed at addressing some of these criticisms. This work has primarily focused on perlocutionary acts in order to capture the interactive nature of speech acts. Here, van Eemeren and Grootendorst's (1984) work on expanding Searle's theory needs to be mentioned. They correctly observed that when speakers perform an illocutionary act, they do not merely want the hearer to understand the utterance, but they also want to elicit an appropriate response. Making a hearer understand would be a communicative or illocutionary act, while making the hearer react would be an interactional or perlocutionary act. According to van Eemeren and Grootendorst (1984, p. 24), perlocutionary effects can be distinguished into two parts, namely *inherent perlocutionary effects* and *consecutive perlocutionary effects*. Inherent perlocutionary effects are essentially the acceptance of the speech act by the interlocutor (such as granting a request), while consecutive perlocutionary effects consist of all other effects of the speech acts (such

as actually complying with the request, etc.). Van Eemeren and Grootendorst stress that both illocutionary acts and perlocutionary effects (and here both inherent and consecutive ones) are necessary parts of a given speech act. In line with speech act theory's grounding in intentionality, van Eemeren and Grootendorst (1984, p. 27) only consider those consecutive perlocutionary effects which the speaker indeed tried to bring about. Put differently, only intended effects are considered, while accidental effects (for instance those based on misunderstandings or mishearings) are not considered. These intended effects are then part of the speaker's meaning or intention regardless of whether they actually occur in interaction (Trosborg, 1995).

Applications of Speech Act Theory

Speech act theory has been widely used as a theoretical framework for the analysis of language. This is the case in linguistics generally, and in particular in pragmatics. In applied linguistics, it has been employed in studies on first and second language acquisition (particularly in interlanguage research), and in studies contrasting speech acts across cultures. More recently, the framework has also been adopted in experimental approaches to the study of the acquisition of pragmatics. It is also used in fields external to linguistics and philosophy, such as in computer science where it is applied in speech recognition technology.

SEE ALSO: Austin, John L.; Searle, John R.; Speech Acts Research

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Speech Analysis Software

ANNA MARIE SCHMIDT

Speech analysis software consists of tools that can be used in the second language (L2) classroom, by researchers or by individuals, to explore and measure important characteristics of speech production. Many of these characteristics have been shown to influence appraisal of an L2 speaker by the native English-speaking listener (Derwing & Munro, 1997). Teachers and researchers can demonstrate and measure characteristics of both acoustic and articulatory aspects of speech, including prosody, morphology, phonology, and phonetics.

Speech analysis software, however, does not interpret the analysis or highlight what is important to the L2 learner in the speech signal analysis display. Knowledge of speech acoustics is basic to the accurate use of the tools. Knowledge of the literature for speech analysis in L2 production is also invaluable. Use of speech analysis will enrich the investigation, understanding, and teaching of pronunciation and is well worth an investment of time in learning about the acoustics of speech production and the functions available in speech analysis software. Familiarity with these tools will facilitate an understanding of speech training software currently being developed for L2 speakers.

At one time, speech analysis software entailed racks of specialized equipment and dedicated computer systems. Currently, a desktop or laptop with a good external microphone and a quiet space is all that is needed for many types of speech analysis. Many Web sites explain microphone choices and specifications. (Microphones for research are usually more expensive than those required for classroom demonstration use.) Classrooms may even come equipped with computer projection software capable of supporting demonstration of acoustic and articulatory characteristics of speech in real time. Available software for speech analysis ranges from free to quite costly, but only the more costly programs require complex external hardware. Naturally, the more costly equipment usually provides more detailed and, sometimes, more accurate speech analysis. However, free programs will serve the purpose for L2 pronunciation classes and for many research purposes.

Using Speech Analysis Software in Applied Linguistics: What to Measure?

In general, measurements are made of silences, frequencies of components of the speech signal, transitions between acoustic elements, and durations of acoustic elements in the speech signal. Measurements may be made before and after instruction related to one or more of these characteristics either in a classroom or in a research setting. Measurements may also be used to observe differences between acoustic characteristics of the first language (L1) and English.

The following are brief summaries of the analyses most often employed and investigated by researchers and L2 instructors.

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Analyzing Fluent Speech

Fluent speech production for an L2 speaker is speech that flows with few silent pauses or filled pauses (i.e., uhms) in the utterance. Pauses with and without fillers occur as all of us speak, but a large number of them may make comprehension of an L2 speaker's utterances more difficult for the listener (Tanner & Landon, 2009). A waveform and a spectrogram are effective for counting and measuring silences and filled pauses. Isolating and removing the fillers and pauses from recorded utterances, then playing back the original and the manipulated sentence, demonstrates the increase in fluency without pauses.

Analyzing Prosody

The term "prosody" includes the rise and fall of the pitch (intonation) carried in the vowels of an utterance, the rhythm grounded in the duration of the vowels, and the variations in loudness of the vowels across an utterance. Prosodic elements are called suprasegmentals because pitch, rhythm, and loudness changes occur in patterns across the speech sound segments. Prosodic patterns may be different for the L2 speaker's L1. Inaccurate prosody can confuse, for example, new and old information in a sentence. Derwing, Munro, and Wiebe (1998) suggested that L2 speakers who were taught about global prosodic elements were able to generalize prosody to spontaneous speech use more easily than they were able to generalize teachings about the speech segments.

Global sentence intonation tracks replicate both word stresses and phrase-final pitch declination. The tendency in English to fall in pitch at the ends of phrases and utterances, as well as the use of pitch rises on the stressed vowels of stressed syllables within words, is visible in speech analysis software pitch tracks, which can be analyzed across utterances. Pitch tracks only reflect voiced speech since the program tracks the fundamental frequency (F0), which is interpreted by the human brain as the pitch of the voice, and, thus, will display breaks in the pitch track for voiceless speech sounds. Currently, L2 speaker training using usual feedback for teaching L2 prosody is a focus of research. For example, Hardison (2004) used pitch tracks to improve English speakers' French prosody. Chun (1988) reviews software and applications of speech analysis tools to teaching intonation.

Analyzing VOT

Voice onset time (VOT) is the most studied characteristic of speech production in both L1 and L2 speech research. VOT is the time from the explosion of a stop consonant beginning a word to the beginning of voicing for the following vowel. VOT categories include pre-voiced, short-lag, and long-lag VOT. Voiceless stops in English are characterized by long-lag VOT while voiceless stops are pre-voiced or short-lag. Specific VOT values differ among languages (Lisker & Abramson, 1964). Even when differences in VOT values are small they may make a large difference in perception of stop consonants. For example, Spanish uses short-lag VOT values for voiceless /p/ while English uses long-lag VOT values. English listeners hearing a native Spanish speaker say 'peach' will often perceive 'beach'.

Analyzing Vowel Duration

Crosslinguistically, vowels tend to be longer before voiced consonants than before voiceless consonants. (Thus, the vowel /i/ in 'bead' is longer than the vowel in 'beat'.) English requires an enhancement of this difference. Speakers from some L1 backgrounds produce a smaller than necessary duration difference; speakers from other L1 backgrounds produce no difference. If an L1 has few or no final voiced consonants, a speaker of that language

is unlikely to produce a vowel duration difference in English. Without a duration difference, word pairs such as 'mate/made' and 'tack/tag' sound the same to English listeners. Vowel durations are measured from waveform and spectrographic displays.

Analyzing Spectral Characteristics of Speech: Vowels

Spectral characteristics of speech are those related to the frequency components of speech sounds, both for vowels and for sections of some consonants. Vowels can be characterized by the first two or three formants. However, Hillenbrand, Clark, and Nearey (2001) demonstrated that the transitions into and out of the vowel may be more important than the steady state of the vowel in vowel recognition. Both steady-state formants and transitions are visible and measurable in spectrographic displays.

Analysis of vowel formants can be used to understand the variety of vowels produced by an L2 speaker. English uses about 12 vowels (depending upon how "vowel" is defined); other languages use more or fewer. One pronunciation task faced by the L2 speaker is producing new or slightly different vowels in English. Analysis of vowel formants illustrates vowel accuracy as well as progress in developing vowels.

Some consonants are defined as being similar to vowels in a spectrographic analysis. The liquids and glides /r l j w/ are analyzed in terms of formants, like the vowels. For example, in order to produce an accurate /r/, the second and third formants should approach each other during production. Spectrographic analysis of /r/ formants is more accurate than perceptual analysis when evaluating /r/ production.

Analyzing Spectral Characteristics of Speech: Consonants

Most consonants are shorter and exhibit more abrupt changes in the speech signal (i.e., stops and affricates) than vowels. Fricatives, for example, differ in the frequency area containing the most acoustic energy (center of gravity). An /s/, for example, has a higher-frequency center of gravity than an /ʃ/. English has 10 voiced and voiceless fricatives; other languages may have fewer. Analysis of an L2 speaker's frequencies in fricative productions indicates accuracy of production.

Speech Analysis Software Programs

The simplest tools will show a waveform view of a speech signal recorded on a computer. Both Apple (through GarageBand) and Microsoft (through Sound Recorder) applications record, display, and play back a speech signal from the built-in microphone on the computer or from an external microphone. The size of the speech utterance saved is limited only by the space on the computer's hard drive. To add spectrographic views to analysis capabilities, use a program designed for speech analysis. Interpreting waveforms and spectrograms requires knowledge of the components of the speech signal and practice using the programs. Tutorials exist for most programs. A computer sound card is necessary for recording unless the program entails the addition of external speech acquisition hardware.

Speech sound analysis programs will continue to be developed and to disappear. The following software programs (free and commercial) are in widespread use currently.

PRAAT (Boersma & Weenink, 2010) (free; PC and Mac) is one of the most used freely available programs. PRAAT capabilities range from basic waveform and spectrogram analysis to specialized complex analyses of interest to researchers. Tutorials are available both within the program and on dedicated Web sites. The PRAAT menus are organized differently from most software designed to record and explore the speech signal, requiring familiarization with program functions.

Speech Filing System (Huckvale, 2008) (free; Windows only) is a set of speech acquisition and analysis tools with tutorials. The SFS program performs recording, display, and analysis of speech signals, including waveforms, spectrograms, and frequency analysis among other functions. Also available are separately downloadable modules such as WASP for waveform and spectrographic analysis and PROREC for recording words or sentences, which can be prompted with displays on the computer monitor.

The KayPentax Computerized Speech Lab (*n.d.*) (commercial; Windows only) employs dedicated speech input hardware for controlled speech acquisition and analysis uncontaminated by computer noise. The CSL basic program provides an extensive set of analyses including waveform, spectrographic, and frequency analyses. Additional software packages are available containing databases of speech sounds (Phonetic Database and Video Phonetics Database).

Multispeech (commercial; Windows only) is a modification of the CSL for use without dedicated sound acquisition hardware. Multispeech uses the integrated computer sound card, performing the same functions as CSL. The additional CSL software packages also run on Multispeech.

TF32 (Milenkovic, 2005) (free demo and commercial; Windows only) analyzes speech frequencies in several ways. The demo version does not record but will open sound files recorded with other software programs for analysis. TF32 will display a waveform and spectrogram, will determine center of gravity for fricatives, and will display pitch, among other functions.

SIL Speech Analyzer (2007) (free; Windows only) and Wavesurfer (2005) (free; Windows only) are basic software programs that offer waveform and spectrographic analysis as well as the playback, cutting, and pasting functions found in the other programs.

Articulatory Analysis of Speech

Speech analysis software to investigate speech articulation is generally commercial. The gathering of articulatory speech data requires specialized hardware, as well as analysis software. These are dedicated systems, some adapted from medical technology, that help us understand the physical production of speech sounds. Magnetic resonance imaging (MRI) uses available technology to gather data about the structures within the oral cavity, including soft tissue (the tongue) and bone (the jaw, teeth, and palate) as the speaker lies within the magnetic chamber.

Ultrasound analysis of speech shows the soft tissue, but not the surrounding palate and jaw, as the speaker talks. Again, this is available technology applied to gathering speech data in real time. The ultrasound sensor is placed beneath the chin; the ultrasound beam of high-frequency sound waves is directed up into the oral cavity to illuminate the movements of the tongue.

Electromagnetic articulography (EMA), developed especially for speech sound research, uses sensors, temporarily attached to the tongue, jaw, and lips, to display tongue movement for vowels and consonants. The speaker sits under a helmet containing the hardware.

Motion sensor systems (optical tracking) involve the temporary attachment of sensors to body parts that move. Movements are tracked and displayed for analysis. For speech production, sensors can be attached to the lips and jaw to study lip rounding and jaw position for vowels and consonants.

Some articulation analysis systems are more transportable and are useful for individual instructional use as well as for research. The electroglottograph (EGG) is an instrument that examines vocal fold vibration for voiced and voiceless sounds and may be used for analysis of the singing voice. Electrodes are placed on either side of the larynx, registering phases of contact between the vocal folds.

Electropalatography (EPG) software displays tongue-to-palate contact for consonants. The user is fitted with a retainer-like pseudo-palate containing electrodes and connected to a computer. When the speaker's tongue touches the electrodes, dots will light up on a computer monitor display of the roof of the mouth. In this way, an accurate analysis of place of articulation can be made. EPG has been used to teach L2 speakers to modify the way they make English sounds (Gibbon, Hardcastle, & Suzuki, 1991; Schmidt & Beamer, 1998). EPG findings demonstrate that even adult speakers can learn accurate tongue positions for consonants that do not exist in the L1 phonology.

SEE ALSO: Computer-Assisted Pronunciation Teaching; Phonetics and Phonology: Overview; Pronunciation Assessment

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Speech Perception

SUSAN GUION-ANDERSON

It may be safe to assume that most readers have had the experience of listening to a conversation in an unknown foreign language. The reader (as listener) may have experienced speech flowing through the perceptual system with no sense of how to process it. Apart from not knowing the meaning of words, the naive listener does not know where one word begins and another ends. Some individual segments (consonants and vowels) may seem similar to native segments, while others may not. To complicate matters, two separate phonemes (contrastive segments) in the unknown language may both seem similar to a single phoneme in the native language. Prosodic features such as fundamental frequency, intensity, and duration may code lexical information in the native language but phrasal information in the foreign language or vice versa. These sorts of difference between the languages may cause the listener to misinterpret acoustic information in the speech stream. How can a listener move from complete incomprehension to successful speech processing through the course of second language acquisition? What learning mechanisms are likely involved? What factors affect the learning process? Over the past several decades, researchers have delved into these questions and developed promising theoretical frameworks and proposed explanations that continue to be evaluated.

Preliminaries

It has often been observed that some aspects of second language (L2) speech perception are easily learned, while other aspects are difficult, requiring much time and effort, if they can be learned at all. Areas of relative ease and difficulty in a specific L2 are also known to vary by the first language (L1) of the learners (e.g., different difficulties for Japanese versus Spanish learners of English), indicating that speech perception is affected by language experience. Research into the acquisition of first language speech perception corroborates this inference: infants are able to discriminate segmental contrasts not part of their ambient language, leading to their characterization as universal perceivers. However, during the first year of life, exposure to the native language causes a change in perception such that by 6 months infants begin to lose their sensitivity to non-native vowel contrasts (Polka & Werker, 1994), and by 10 to 12 months they no longer discriminate some non-native consonant contrasts (Werker & Tees, 1984).

An early developmental explanation of this perceptual reorganization during the first year of life was that infants were equipped with innate, universal speech perception abilities and that these abilities were lost or maintained depending on linguistic exposure (Eimas, 1975). However, subsequent research found that the speech perception abilities of young infants were shared with other species (Kuhl & Miller, 1978) and that human adult listeners could discriminate even the most difficult non-native contrasts under favorable conditions (Strange & Dittmann, 1984). These findings indicated that development of speech perception could be accounted for by a general auditory processing mechanism, rather than a speech-specific innate mechanism. Further, the ability to access auditory information was not lost, and, under certain conditions, it was accessible to adults. A new view developed

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in which changes in the perceptual systems of infants were ascribed to higher-order cognitive changes (Kuhl, 2000). On this view, speech learning was seen as the establishment of cognitive categories and learned processing strategies.

Effects of First Language Learning on Speech Processing

Exposure to different languages results in different processing of the same acoustic input. The processing system becomes attuned to the acoustic cues that reliably distinguish linguistic categories in the L1. Thus, listeners, when presented with an array of stimuli orthogonally varying in two or more acoustic dimensions, will vary in the relative weight they assign those dimensions in speech processing. For example, Iverson et al. (2003) presented English and Japanese listeners with synthetic stimuli in which the first and second formant frequencies varied in two dimensions. Consistent with the correlation of the third formant with the English /ɹ/–/l/ distinction, native English listeners weighted the third formant more heavily in perceptual tasks. Conversely, native Japanese listeners weighted the second formant more heavily. Japanese learners of English are widely known to have difficulty with the /ɹ/–/l/ contrast. These results suggest that the cause of the difficulty lies in the learned perceptual processing in which the second formant is weighted more heavily than the third due to characteristics of the Japanese phonetic system.

Learned weighting of acoustic cues has also been documented in the prosodic domain. For example, Gandour (1983) found that language background affected the relative weighting of acoustic correlates to tone: fundamental frequency (F0) trajectories. The relative importance of the dimensions of F0 height (e.g., high, mid, or low tone) and F0 direction (e.g., rising, falling, or flat tone) varied by native language of the listener. The relative importance of the dimensions varied across the listeners as a function of language background for both tone languages (Mandarin, Thai, Taiwanese, and Cantonese) as well as a non-tone language (English). Within the domain of stress, experience with a non-stress language can lead to an inability to perceive stress in an L2. Dupoux, Pallier, Sebastián-Gallés, and Mehler (1997) found that French learners of English had difficulty discriminating words that varied only in stress placement. As French does not have contrastive stress, Dupoux and colleagues have argued that French listeners do not attend to stress placement for lexical identification.

Beyond weighting some acoustic information more heavily than others, linguistic experience can affect the weightings within perceptual cues such that perceptual sensitivity along an acoustic dimension is reduced near distributional peaks in the native language. In this vein, the native language magnet (NLM) model (Iverson & Kuhl, 1995) proposes that linguistic experience warps perceptual space. In this model, prototypical variants of a phonetic category function as "magnets" in that exemplars that are equidistant along an acoustic dimension (e.g., first or second formant frequencies in the vowel space around /i/) are not equidistant in the perceptual dimension: the exemplars in the perceptual dimension are more closely clustered around good exemplars of a phonetic category (e.g., those with formant frequencies closer to prototypical /i/) and less closely clustered around marginal exemplars. This weighting allows for efficient categorization of within-category variation in the native language but may cause distinctions in a foreign language to go unattended. In this way, learned processing of phonetic information may affect speech perception of newly encountered languages.

In addition to acoustic-auditory frameworks, cross-language perception has been considered in an articulatory framework. The perceptual assimilation model (PAM) (Best, 1995) proposes that listeners will detect similarities and dissimilarities to native sounds based on perceived articulatory properties (e.g., the constriction locations, active articulators, constriction degree, and phasing of speech sounds). The perceived distance between

the unknown foreign sounds and the closest L1 sound leads to differences in discriminability between the foreign sounds. For example, two foreign sounds assimilated to the same native category (e.g., English /ɹ/ and /l/ both assimilated to the Japanese liquid /ɾ/) will be difficult to discriminate, whereas two foreign sounds assimilated to two different native categories (e.g., English /t/ and /d/ assimilated to Japanese /t/ and /d/ respectively will be more easily discriminated. Some foreign sounds, such as clicks (velaric ingressive sounds found in some African languages), will be assimilated as nonspeech sounds by listeners from non-click languages and, thus, easily discriminated.

Second Language Speech Processing and Learning

Malleability of Speech Processing in Adults

Attunement of the processing system to the phonetic structure of the L1 has consequences for L2 acquisition. As native speech perception proceeds in a highly automatic fashion, in which listeners extract the relevant acoustic information in practiced, or over-learned, routines, listeners are able to concentrate their processing resources on the content of the message and need allocate little attention to the form of the message. In other words, listeners are focusing on *what* is said and not *how* it is said. This automaticity is adaptive and facilitates robust perceptual processing and efficient oral communication: interlocutors can focus on communicating information and do not need to divide their attention between meaning and form. In light of these observations, Strange and colleagues (Strange & Shafer, 2008) are developing a model of speech perception in which language-specific patterns of speech perception, termed selective perceptual routines (SPRs), are proposed as the cognitive mechanism by which native speech sounds are processed and categorized. The SPRs which have been adapted to the native language may, however, be inappropriate for the L2 and continued processing of non-native sounds as native sounds may block acquisition. Thus, the second language learner has the task of detecting differences between native and non-native sounds and then developing the appropriate SPRs for the L2. As non-native listeners retain the sensory ability to detect differences in even the most difficult non-native contrasts under optimal conditions (see review in Strange & Shafer, 2008), they have the ability to detect the form of non-native speech. This ability may lead to the development of the cue weighting functions appropriate to the L2.

Empirical findings suggest that learners can indeed change aspects of their perceptual processes. Studies of both naturalistic learning and laboratory training with adults indicate that linguistic exposure can change the relative weightings of acoustic information in speech processing. Francis and Nusbaum (2002) found that native English speakers could be trained to use novel acoustic dimensions when processing Korean stop consonants. Likewise Gottfried and Beddor (1988) found that more advanced English learners of French exhibited more native-like weighting of spectral and duration cues to French vowels than less advanced learners. In the prosodic domain, Guion and Pederson (2007) found that more advanced English learners of Mandarin Chinese weighted the tonal cue of fundamental frequency slope more heavily than less advanced learners. These results indicate that speech processing systems in adults remain at least somewhat malleable and are able to adapt to the needs of L2 speech processing.

Acquisition of Second Language Speech Categories

Beyond the malleability of the speech processing system in terms of attentional weighting of specific acoustic information, learning to perceive L2 speech is widely considered to include the learning and development of new speech categories in long-term memory. Research in this area has largely focused on acquisition of segmental speech categories

(consonants and vowels) and has been guided by the framework set out in the speech learning model (SLM) proposed by Flege (1995). In line with observed changes in adult speech perception, the SLM holds that the ability to acquire new speech categories remains intact across the lifespan. Another basic tenet of the SLM is that L1 and L2 categories reside in the same phonetic space, and therefore may interact with each other. For example, L2 speech categories that are perceptually assimilated to L1 categories may develop as merged L1-L2 categories, taking on characteristics of segments in both languages. Conversely, L2 speech categories with detectable differences from the L1 are established separately. These separate L1 and L2 categories may also interact with each other through a process of dispersion in which speech categories are repelled from each other in order to maintain distinct cognitive categories. Evidence for the merger and dispersion of L1 and L2 categories is typically provided from production studies. As an example of a merged category, Flege (1987) found that French learners of English produced both English and French /t/ with a voice onset time (VOT) intermediate between the two languages. An example of dispersion was found with Quichua learners of Spanish who produced their L1 vowels differently from near monolinguals in an apparent effort to distinguish L1 and L2 vowels (Guion, 2003).

Many factors have been identified as affecting L2 category formation. Some of the more commonly discussed factors are (a) age at time of learning or development of the L1 system; (b) similarity between the L2 category and the closest L1 category; (c) the role of attention in learning; (d) salience and typological factors; and (e) development of the L2 system. Here, a brief discussion of each of these factors, along with example empirical findings, is presented.

It is generally found that an earlier age of acquisition leads to greater success in L2 learning. The domain of speech perception is no exception. For example, Tsukada et al. (2005) examined the ability of child and adult Korean learners of English to discriminate English vowels. Even though the adult and child groups had similar lengths of residence in an English-speaking country, the child group was better able to distinguish English vowel contrasts than the adult group. Findings such as these are interpreted in two major ways. One proposal is that there is a maturational critical period around puberty, before which time speech categories can be formed and after which time learning will be non-native-like (Patkowski, 1990). Another view holds that the ability to form speech categories is available to learners of all ages, but the extent of L1 development will affect the ability to learn an L2. Flege (1995) proposed that more developed L1 categories are more efficient and robust processors of acoustic information. Therefore, more developed L1 systems are less likely to detect differences between L1 and L2 sounds and, as a result, less likely to develop L2 speech categories.

The perceptual assimilation of L2 sounds as L1 sounds also affects the development of L2 speech categories. The PAM (Best, 1995) notes that L2 sounds can be assimilated as more or less good examples of L1 categories, as speech sounds but not a good fit to any L1 category, or as non-speech sounds. The SLM (Flege, 1995) predicts that the less complete the assimilation of an L2 sound to an L1 sound, the more likely a learner is to discern differences between the sounds. Discernment of differences, in this view, leads to establishment of an L2 category separate from the L1. This proposal is sometimes characterized by the summary that "new" sounds are more easily acquired than "similar" sounds. Additionally, age of acquisition is thought to modulate the likelihood if discerning differences between L1 and L2 sounds. For example, Japanese listeners tend to map both English /ɹ/ and /l/ on to the Japanese flap /ɾ/ (Iverson et al., 2003). However, English /l/ is a better example of Japanese /ɾ/ than English /ɹ/, predicting slightly more success learning English /ɹ/ than /l/ (Guion, Flege, Akahane-Yamada, & Pruitt, 2000). However,

the asymmetry is seen to more clearly benefit the formation of an English /ɹ/ category in child rather than adult learners (Aoyama, Flege, Guion, Yamada, & Akahane-Yamada, 2004).

In order to establish new speech categories, learners must come to attend to the relevant acoustic cues that encode the L2 sounds. As reviewed earlier, attention to specific acoustic dimensions can be modified in adults through naturalistic exposure and training. This is an important step in speech category formation, as attentional orienting to specific features of the incoming signal increases the likelihood of processing those features in short-term memory, for example, rehearsing in a phonological loop. Likewise, processing in short-term memory increases the likelihood of transfer to long-term memory (Logan, Taylor, & Etherton, 1996), in other words, learning. Guion and Pederson (2007; Pederson & Guion-Anderson, 2010) have demonstrated that attentional orienting toward novel, foreign-language speech categories facilitates learning of those categories. Listeners were trained on the same stimuli from an unknown foreign language under two conditions. In one condition, the listeners were oriented to a specific aspect of the speech signal and in the other condition the listeners were oriented to another aspect of the speech signal or to some other aspect such as meaning. They found that orienting to a specific aspect of the speech signal increased learning of that aspect, even when exposure was the same across groups. These findings suggest that mere exposure to L2 speech is not sufficient for learning L2 speech categories; the learner must allocate attentional resources to the specific acoustic features that encode the L2 sounds in order for learning to occur.

It has been proposed that characteristics of certain speech sounds are more likely to be attended to and subsequently learned due to their inherent perceptual salience. Burnham (1986) suggested that perceptually robust sounds are typology common, learned early in L1 acquisition, and easy to discriminate regardless of language experience. Although it proved difficult to designate sounds as robust or fragile in subsequent work, the idea of psychophysical salience has been extended to L2 learning and it has been claimed that certain acoustic cues are more likely to be employed in L2 speech perception due to their overall greater strength and availability in the acoustic signal. In this vein, Polka and Bohn (2003) put forth the peripherality hypothesis in which they propose a language-universal perceptual bias in vowel perception. They note that a vowel change from a less peripheral vowel (such as /y/, /ɔ/, or /ɛ/) to a more peripheral vowel (such as /i/, /u/, or /æ/) is more discriminable than a direction of change from a more peripheral to a less peripheral vowel and suggest that humans are predisposed to respond differently to vowels that occupy the more peripheral location within the vowel space, such that more peripheral vowels serve as reference points or perceptual anchors.

The development of the L2 linguistic system may also influence the establishment of L2 speech categories. Recently, the PAM has been extended to go beyond phonetic similarity and perceptual assimilation of unknown foreign-language sounds to encompass considerations of L2 acquisition (Best & Tyler, 2007). Specifically, linguistic knowledge of L2 phonological structure is thought to play a role in L2 to L1 category assimilation. For example, the phonotactic patterns and orthography of an L2 sound may influence its assimilation to a L1 sound: an English learner of French may consider the French uvular fricative /ʁ/ an variant of the English coronal approximate /ɹ/ due to phonological, morphological, and orthographic similarities, even though they are phonetically quite disparate. Also, development of the L2 lexicon may play a role in the development of L2 categories. As more words are learned, the functional load of an L2 contrast, especially one that was originally mapped to a single L1 category, may drive the formation of a new category to encode the phonological distinction in the L2.

Speech Perception Training and Pedagogical Implications

As a regular facet of L1 acquisition, the perceptual system becomes tuned to the needs of the ambient language. Acoustic cues which reliably encode contrastive phonological information are attended, whereas non-reliable cues come to be under-attended. This language-tuned processing becomes automatized and leads to fast, robust processing of the L1. Native listeners are adept at processing speech under difficult conditions such as noise masking or situations in which there are many concurrent conversations (Strange & Shafer, 2008). This automatic processing is necessarily language specific and will not be well suited to the needs of an L2. For the learner to successfully process speech in an L2, they must learn to attend to the relevant acoustic cues of the language and to ignore cues that are relevant for the L1 but lead to unsuccessful processing of the L2 (Iverson et al., 2003). The L2 learner possesses an adaptive perceptual system that, with considerable exposure, may accommodate an L2 and result in efficient (though perhaps not completely native-like) processing (Gottfried & Beddor, 1988). It has been suggested that the learner must detect differences between the L1 and L2 through attentional, nonautomatic processing in order for the new processing strategies to develop (Pederson & Guion-Anderson, 2010). These detected differences can then begin to form the basis of new speech categories and speech processing mechanisms, as the reoriented selective attention acts as "hooks" to bring in the relevant acoustic information for further processing and encoding in long-term memory. These observations can be brought to bear on training of L2 speech perception.

Early training studies used synthetic speech systematically varying along acoustic dimensions relevant to phonological contrasts in the L2. The use of such unnatural, constructed stimuli was aimed at orienting learners' attention to the relevant L2 acoustic parameters. For example, Strange and Dittmann (1984) varied the formant structure from a typical /ɹ/ to a typical /l/ to make a set of training stimuli in a continuum from "rock" to "lock." Japanese learners of English benefited from the training and were more accurate in perception of the synthetic stimuli after training. However, the trainees did not improve in their perception of naturally produced speech. It seemed that such training had succeeded in reorienting attention to the relevant acoustic cues but that a robust and generalizable processing ability had not been developed.

A type of training employing more richly varied training materials, termed "high variability" training, was developed to facilitate the formation of categories that could encompass the processing needs of naturally encountered speech. Pisoni and colleagues reported a series of experiments using naturally produced training stimuli produced by a variety of talkers in a variety of words. For example, Lively, Pisoni, Yamada, Tohkura, and Yamada (1994) found that high variability training was effective in achieving general, rather than stimuli-specific, perception of English /ɹ/ and /l/ by native Japanese speakers. The training generalized to new speakers and to new words. Additionally, the benefits of training were retained for at least six months. Further investigation found that high variability perceptual training transferred to speech production as well. Bradlow, Pisoni, Yamada, and Tohkura (1997) found that Japanese listeners trained to identify English words with /ɹ/ and /l/ not only improved in the perception of the contrast, but also were more accurate in the production of the contrast after training. High variability training has also been used successfully with prosodic elements. Wang, Jongman, and Sereno (2003) trained English listeners on Mandarin Chinese tone perception using multiple talkers and tokens. As in the case of segmental training, there were significant post-training gains in both perception and production of tone. These studies suggest that highly variable training stimuli facilitate development of robust L2 speech categories, segmental and prosodic, that can be used in both production and perception.

The results of these training studies have pedagogical implications, suggesting that classroom teachers provide explicit instruction about what to "listen for" in order to allow students to orient their attention toward relevant aspects of the L2 speech and develop their "hooks" into the L2. Once this is accomplished, learners can break out of their automatic processing routines and take in the acoustic information relevant to the L2 for further processing. After learners have developed their ability to attend to specific acoustic features relevant to the L2, high variability input may be provided to allow learners to develop robust categories. Research suggests a variety of talkers and materials should be used. Teachers may wish to provide a variety of both native and non-native speakers' productions at this stage. Such exposure may not only improve L2 speech perception but may also benefit L2 speech production.

SEE ALSO: Acoustic Phonetics; Comparative Phonetics and Phonology; Phonological Acquisition; Prediction in Teaching Pronunciation; Pronunciation Instruction; Pronunciation Teaching Methods and Techniques; Second Language Speech Perception and the Brain; Segments; Suprasegmentals: Tone

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Spoken Word Production in Second Language Acquisition

ALBERT COSTA, ELIN RUNNQVIST, AND KRISTOF STRIJKERS

When the multilingual aphasic patient AH is asked to describe her day in Italian, she answers in the following manner: "I cannot *comunicare con* you; I am a *disastro* today" (taken from Abutalebi, Miozzo, & Cappa, 2000). This example of pathological mixing between languages dramatically reveals the situation faced by bilinguals on a daily basis: how to restrict the speech production process to only one language. In other words, how do bilinguals manage to confine their lexicalization process to the intended language without suffering major interference from the other language? Intuitively the answer to this question might seem simple, assuming that each language is stored and accessed in a separate mental dictionary. However, psycholinguistic and neuroscientific research has taught us that the dynamics of the bilingual lexicon is highly interactive, meaning that the retrieval of words in one language entails the activation of words in the other. As a consequence, the control of the language output in the bilingual speaker—often referred to as the bilingual language control issue—is central to avoid crosslinguistic errors. In this entry, we provide an overview of the investigation dedicated to bilingual language production and control in the fields of experimental psychology and cognitive neuroscience. First, we will briefly summarize the dynamics of bilingual word production to introduce the topic of bilingual language control. Second, we will focus in more detail on the functioning, development, and possible neural substrates of this language control. Furthermore, we will also report some of the collateral effects that the need of language control may have both for domain general executive control and for lexical processing. Finally, we will discuss some findings regarding processing differences between a bilingual's two languages during speech production.

Dynamics of Bilingual Word Production

The process of producing speech involves several stages which unfold over time in a more or less sequential manner. Basically, once we know what idea to express (conceptual preparation), we have to find the right words for our message (lexical access), give them a physical shape (phonological encoding) and articulate them. A crucial tenet of models of speech production is "spreading activation." Accordingly, it is widely assumed that the target concept (say "cat") spreads activation to other, semantically related concepts (for example to "dog" and "mouse") (e.g., Levelt, Roelofs, & Meyer, 1999), which in turn spread some activation to their lexical representations. Most researchers agree that all activated words will enter into a competitive process in order to get selected for production. To ensure that eventually the intended word is chosen for communication, there has to be a mechanism capable of selecting the lexical representation with the highest level of activation among all candidates.

This sample of interactivity within the system gave rise to one of the most studied questions in bilingualism: is it possible to shut off one language while speaking in the other? Extensive research has proven that the answer is negative, meaning that for a given target

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concept ("cat"), not only semantically related words within the same language become activated ("dog"), but also the corresponding translation word and related words in the nontarget language ("gato," "perro") (e.g., Thierry & Wu, 2007). Given the parallel activation of the bilingual's two languages and taking into account that bilingual speakers seldom commit crosslinguistic errors (e.g., Poulisse, 1999), a powerful language control mechanism must be operative ensuring the successful orchestration of word selection during bilingual speech production. Note that the principle of spreading activation between a bilingual's languages is also broadly accepted in language comprehension. Nonetheless, the dynamics underlying language control or the extent to which this control is exerted are not necessarily similar between comprehension and production: in the latter case speakers have to actively retrieve the words from memory, while in the former case at least part of the linguistic content is already provided by the input (e.g., Costa & Santesteban, 2004b). Therefore, language control in bilingual speech production is likely to play a more central role than in comprehension.

Bilingual Language Control in Speech Production

The dominant view of the functioning of the language control mechanism in bilingual speech production is that it inhibits the activated words belonging to the language in which we do not wish to speak (e.g., Green, 1998). This process can be thought of as similar to those of everyday tasks such as driving the car where we need to suppress irrelevant information in order to perform successfully (in the case of driving to avoid accidents). Most of the evidence for this inhibitory account comes from experimental paradigms such as language switching (e.g., Meuter & Allport, 1999), picture–word interference (e.g., Mägiste, 1984) and semantic priming (e.g., Lee & Williams, 2001). Studies combining these paradigms with neurophysiological techniques such as ERPs and fMRI have observed patterns of activation that are compatible with this inhibitory account (e.g., Abutalebi et al., 2007; Christoffels, Firk, & Schiller, 2007). Nonetheless, some recent research points out that the answer to how bilinguals control their languages might be more complex and seems to depend on factors such as proficiency. In this manner, it has been observed that more proficient bilinguals show different behavioral (e.g., Costa, Miozzo, & Caramazza, 1999; Costa & Santesteban, 2004a) and neurophysiological patterns (e.g., Indefrey, 2006) in comparison to less proficient bilinguals. For example, while low proficient bilinguals are slower in returning to their L1 after speaking in an L2 than in the reverse case, high proficient bilinguals show no such asymmetry (e.g., Costa & Santesteban, 2004a). Similarly, low proficient bilinguals seem to engage more brain areas related to cognitive control when speaking an L2 as compared to high proficient bilinguals (e.g., Abutalebi & Green, 2007). This has led some researchers to propose a shift in the language control mechanism as a function of proficiency: while low proficient bilinguals rely more strongly on inhibition, the mechanism in high proficient bilinguals might be more automatic focusing directly on the relevant language for communication (e.g., Costa & Santesteban, 2004a).

Although many details regarding the exact nature and functioning of bilingual language control and how it might differ between low and high proficient bilinguals remain unanswered, a fruitful idea which emerged in recent years is that it entails domain general control mechanisms which are not exclusively bound to language. Both in patient studies (e.g., Abutalebi et al., 2000) and hemodynamic studies (e.g., Crinion et al., 2006; Abutalebi et al., 2007) it has been observed that brain areas in subcortical structures, particularly the left caudate, and brain areas in the frontal lobe, particularly the anterior cingulate cortex (ACC) and Broca's area, are involved in tasks requiring language control. Interestingly, the same network of brain regions is involved in nonlinguistic tasks that require increased

cognitive control and attentional demands (e.g., Botvinick, Nystrom, Fissell, Carter, & Cohen, 1999). This overlap in findings encouraged researchers to assume that the same network ensuring successful control over competing behavior is also engaged for the successful control of our language output (e.g., Abutalebi & Green, 2007). The possibility of a common network subserving linguistic and executive control has led to a new line of research examining the consequences of exerting such a cognitive control on a daily basis, both for language processing itself and for other cognitive abilities.

The Bilingual Advantage in Executive Control

Indeed, the constant need to maintain two languages separate during speech production seems to have a positive impact on executive control. For instance, it has been shown that bilinguals outperform monolinguals in a variety of nonlinguistic stroop-like tasks, ranging from conflict resolution to task switching. Interestingly, this kind of bilingual advantage has been found for babies (e.g., Kovács & Mehler, 2009), children (Bialystok & Martin, 2004), older adults (e.g., Bialystok, Craik, Klein, & Viswanathan, 2004), and even for younger adults who are at the peak of their attentional abilities (e.g., Costa, Hernández, & Sebastián-Gallés, 2008; Costa, Hernández, Costa-Faidella, & Sebastián-Gallés, 2009). Perhaps because there is no general agreement about how executive control works, the origin of this bilingual advantage is not fully understood yet. Nevertheless, the most appealing manner to interpret such effects is by assuming that they originate from the need to inhibit words in the nontarget language and that this inhibitory mechanism is shared between language and domain general executive control. However, stronger and more direct evidence for this hypothesis is required, especially since some of the studies have suggested alternative explanations to that of shared inhibitory control to account for the bilingual advantage in executive functioning (e.g., Costa et al., 2009).

The Bilingual Disadvantage in Lexical Processing

While the cognitive load imposed by constantly processing two languages is beneficial for executive control, on the other side of the spectrum it has been proven to imply certain disadvantages in the linguistic domain. Recent investigations have revealed a bilingual difficulty in accessing the lexicon, reflected in slower naming latencies, decreased verbal fluency performance, and more frequent tip-of-the-tongue states in L1 for bilingual speakers compared to monolinguals (e.g., Gollan, Montoya, Cera, & Sandoval, 2008; Bialystok, Craik, & Luk, 2008; Ivanova & Costa, 2008). This negative impact of bilingualism on the speed of lexical access even in L1 could be explained as a consequence of the bilingual speaker's need to resolve competition during lexical selection (e.g., Bialystok et al., 2008). Nonetheless, an equally plausible explanation that has been put forward for the naming-cost assumes it to be a mere frequency effect in disguise: bilinguals use the words in both their languages to a lesser extent than monolinguals which makes their links between semantics and phonology weaker resulting in a slower retrieval (e.g., Gollan et al., 2008).

Another collateral effect of becoming a bilingual speaker may be the loss of lexical robustness in the first language. For example, when people learning a second language in a context of immersion are asked to produce as many words as possible in their L1 pertaining to a given category, they perform worse at the end of their study-abroad experience compared to the moment of arrival (e.g., Baus, 2010). Similarly, immersed second language learners are outperformed by classroom learners in such verbal fluency tasks (e.g., Linck, Kroll, & Sunderman, 2009). These results might be relevant for explaining the phenomenon known as first language attrition which refers to the gradual deterioration of the mother

tongue (e.g., Levy, McVeigh, Marful, & Anderson, 2007; but see Runnqvist & Costa, in press). However, just as for the bilingual naming disadvantage, it is unclear if the loss of lexical robustness is due to the inhibition of L1 words during L2 speech, or to a decrease in use of the words in L1 leading to a lower individual frequency value of these words.

Processing Differences in L1 and L2

We have so far mainly focused on the manner in which bilinguals control their language output and on the possible consequences of this control. To conclude, we will dedicate some words to another area of investigation within bilingual speech production that explores processing differences and similarities between the two languages of bilinguals. The general question here is whether the neuronal circuits involved in language processing are quantitatively, qualitatively, or both quantitatively and qualitatively distinct between L1 and L2. While some neuroimaging studies do not observe reliable differences in brain activation between L1 and L2 production (e.g., Hernandez, Martinez, & Kohnert, 2000), others report a stronger involvement during L2 production of frontal brain regions such as Broca's area (e.g., De Bleser et al., 2003). According to a recent meta-analysis these differences in hemodynamic results seem to be primarily generated by variables such as proficiency, exposure, and age of acquisition (Indefrey, 2006). Thus, there does not seem to be any qualitative neuronal dissociation between L1 and L2 production, but there might be some quantitative differences during L2 speech for late L2 learners and low proficient L2 speakers. The areas more strongly recruited by the latter group of bilinguals have been linked to a stage that occurs near the end of speech planning, namely postlexical syllabification (e.g., Indefrey, 2006). This conclusion is surprising since it seems to claim that no extra resources are required for accessing the words from the lexicon itself in a weak second language compared to a strong first language. However, a recent study using a more fine-grained temporal technique (ERPs) revealed lexical processing differences between first and second language production for early and high proficient bilinguals (e.g., Strijkers, Costa, & Thierry, 2010). This finding suggests that with the proper technique earlier and more subtle differences between L1 and L2 can be detected. It will be interesting to combine ERP findings with those of hemodynamic studies in order to have a complete spatiotemporal map of speech production in both L1 and L2 and explore the developmental trajectory of this map in function of important influences such as second language proficiency.

Concluding Remarks

In sum, bilingual speech production is still a young but vibrant area of investigation with its own specific questions as reviewed above. While extensive research has established the general ground of the dynamics of bilingual speech production, the challenge for the future is to find new methods and paradigms able to specify the exact nature of the language control mechanism and its role in explaining the collateral effects of bilingualism.

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SEE ALSO: Attrition and Multilingualism; Bilingualism and Cognition; Bilingualism and Speech Perception; Brain Activity During Second Language Processing (ERP); Formal Models of Bilingual Speech Production; Inhibition and Control in Second Language Acquisition; Second Language Representation in the Brain

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Spoken Word Recognition

HELEN FRASER

Introduction

One of the most basic aspects of learning a language is learning its words, or vocabulary. Applied linguistics rightly gives a good deal of attention to understanding the processes by which word meanings are learned, in both first and second language acquisition. But of course, words are not just meanings. Each word, as well as having a characteristic meaning, also has a characteristic sound, or pronunciation, which is just as important for learners to understand as its meaning. However, the processes by which the sounds of words are recognized tend to be given less attention in applied linguistics.

This may be because recognizing spoken words seems so easy in everyday experience. The difficult issue, it seems, is recognizing written words, especially in languages like English that have irregular spelling. However, the reason spoken word recognition seems easy is because it is highly practiced and very familiar, not because it is simple—as becomes evident in second language contexts, when learners struggle to recognize even the simplest words (such as *red* or *led*).

In fact, spoken word recognition is one of the most complex skills of human cognition, and the foundation of other crucial skills, especially (since words must be recognized before they can be reproduced) of pronunciation. Applied linguistics really needs a solid understanding of the complex nature of spoken word recognition, framed in a theory that offers practical guidance on how to respond to a variety of common problems in teaching and learning.

This entry outlines some of the key findings of research on spoken word recognition and suggests how understanding this topic is relevant to applied linguistics, especially second language teaching.

The Nature of Speech

Spoken word recognition is commonly understood via an everyday theory which sees it as a straightforward process of identifying phonemes in the acoustic speech wave, and putting them together to form meaningful words. It may seem odd to call such an apparently obvious idea a theory, but it functions as a theory in the sense that it provides a conceptual framework which guides the understanding of many observations about spoken language.

The problem is, this apparently obvious theory rests on the assumption that words in speech are discrete (have clear boundaries), invariant (essentially the same each time they are spoken), and composed of a sequence of phonemes (individual speech sounds) that are themselves discrete and invariant—in much the same way as words on a printed page are made up of discrete, invariant letters grouped into discrete invariant words (but without the irregularity of spelling).

As was discovered in the 1950s, when attempts to build computer speech systems on the basis of this everyday theory resulted in spectacular failure, these assumptions about speech are incorrect. Despite the impression given by everyday experience, speech is not

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a sequence of discrete invariant phonemes, but a continuous stream of sound. In reality, there are no clear boundaries systematically segmenting the speech stream into words and phonemes (Port, 2007). In addition, unlike printed letters, which have an invariant form—for example, the letter "r" has the same shape each time it appears on this page—each individual phoneme covers a whole category of highly variable forms (called allophones), not normally noticed by ordinary speakers. For example, the phoneme /r/ is pronounced with distinctly different allophones in "rain" and "train." In fact, phonemes show so much variation (unnoticed in everyday perception), it is fair to say they are different every time they are pronounced (Ladefoged, 2005), and in ways far more complex than suggested by the very basic examples that can be given here. The effect is that, far from being like printed letters, even the clearest speech is like very messy handwriting—except that, unlike handwriting, speech lacks gaps not just between letters, but also between words.

These characteristics of speech create what are known as the "segmentation" and "invariance" problems, which together create what became the defining question of spoken word recognition research for many decades (Perkell & Klatt, 1986): How do people categorize the continuous stream of speech into phonemes to allow word recognition—despite the segmentation and invariance problems?

Theories of Spoken Word Recognition

Currently several broad classes of theory of spoken word recognition are available to address this question. One, originating from early "motor theory" (Lane, 1965), claims that invariant units do in fact exist in speech—not in the form of acoustically defined phonemes, but rather in their underlying physical gestures (movements of tongue, lips, etc.), which the human perceptual system is geared by evolution and experience to pick up directly. A major problem faced by this class of theories is difficulty in identifying such invariant gestures in the stream of speech. So while more sophisticated versions of this idea survive as "direct realist" or "ecological" theories (Fowler, 2003), motor theory as such has mostly fallen aside. It did, however, make a lasting contribution with its concept of "categorical perception"—a postulated mechanism whereby acoustically different allophones (such as those in "rain" and "train") can be categorized as the same phoneme (/r/) at low levels of mental processing, without conscious awareness (Repp, 1984).

A second class of theories of spoken word recognition, currently the most widely accepted, tend to be called "cognitive" in applied linguistics (e.g., Zuengler & Miller, 2006). A better term, however, is "computational," since, following the lead of Chomsky and others, these theories model the human mind as a kind of computer (Pinker, 2003). Rather than attributing the apparent invariance of phonemes to invariant gestures, as in motor theory, these theories see spoken word recognition as a process that takes a continuous, variable speech wave as input, and computes (subconsciously) invariant representations suitable for "lexical access" (the process by which a word's meaning is "looked up" in a "mental lexicon"; Byrd & Mintz, 2010). Categorical perception is considered an important part of this mental processing, and has been investigated extensively, as part of a research program, with considerable development in its theoretical conceptualization.

One issue that emerged early in the development of computational theories is that they require the phonological form of a word (i.e., its pattern of phonemes, syllables, and features) to be determined before lexical access—much as an orthographic form (spelling) is needed before a word's meaning can be looked up in a physical dictionary. Reasonable as this may seem from the perspective of the everyday theory of word recognition, many experiments over the past half-century or more have shown that recognition of the meaning of entire words often precedes, overrides, or is independent of recognition of individual phonemes (Byrd & Mintz, 2010). For example, words can be recognized even if significant

portions of their phonological form are missing or altered; words containing exactly the same units of sound can be interpreted very differently depending on the context in which they are heard (not just the preceding context; the following context can retrospectively influence recognition of earlier words); parts of words, or even whole sequences of words, which sound quite clear in meaningful context, are frequently unrecognizable if heard in isolation. Such phenomena are called "real word effects," and are similar to the more widely known "word superiority effect" of visual word recognition, which acknowledges that, in reading, it is easier for people to recognize whole words than individual letters.

Observations of real word effects, along with other considerations, have caused computational theories of word recognition to be elaborated to include processes that allow meaning and context to influence word recognition via interaction of "top-down" information (from meaning and context) with "bottom-up" information (from the acoustic speech signal). However, while there is general agreement about the need to incorporate top-down processing into word recognition models, there is considerable debate about exactly how this is achieved. The result is that there is now a range of quite complicated theories of spoken word recognition, postulating different phonological units (some reject the role of the phoneme in favor of larger units like syllables, or smaller units like phonological features) and different types of computation.

Spoken Word Recognition in Applied Linguistics

Computational theories have provided a great deal of knowledge about speech in general and word recognition in particular, and are useful for predicting and explaining observations about the spoken word recognition behavior of proficient speakers. Unfortunately, they tend to be rather less useful when applied to teaching and learning situations. Originating during the post-behaviorist split between theoretical and applied linguistics, these theories were developed through computational modeling rather than through direct engagement with teaching and learning practice. The mental processes they postulate tend to be abstract, disembodied, divorced from social and cultural context, and, most importantly, beyond the reach of conscious control, which limits their relevance to classroom teachers seeking to influence the linguistic behavior of learners. Together, these factors contribute to the situation alluded to in the introduction: word recognition is given less attention than it deserves by applied linguistics.

Another contributing factor is that, during the period computational theories were developing, language teaching practice was developing communicative methods, favoring implicit learning over explicit teaching. While this resulted in generally improved methods of teaching, it offered little guidance for teachers in how to help learners with spoken word recognition and production when explicit instruction is needed, as it often is (Derwing & Munro, 2009).

The problem is that without a good understanding of the complexities of spoken word recognition, teachers may tend, in offering explicit instruction, to fall back on the everyday theory of spoken word recognition. For example, they may try to make things simpler for learners by focusing on phonemes as if they were discrete, invariant components of words. Indeed, this was the recommended approach for some time (Baker, 1981). More recently, a number of limitations of purely phoneme-based teaching have been identified (Celce-Murcia, Brinton, Goodwin, & Griner, 2010), and teachers are increasingly recommended to focus on suprasegmentals, such as syllables, stress patterns, and intonation (Gilbert, 2005). While this has been shown (Hahn, 2004) to be more successful in some situations, it is not a panacea. After all, it is one thing to advocate teaching suprasegmentals, and another to understand exactly how to do so effectively (Fraser, 2010).

Sociocognitive Theories of Pronunciation

It is here that a third class of theories is proving valuable. "Cognitive" or "sociocognitive" theories reject the assumption that human cognition involves the kind of subconscious mechanistic processing featured by computational theories. They take a special interest in categorization as a basic, general cognitive process (Taylor, 2003), and give a central role to meaning, embodiment, and sociocultural context in understanding how the human mind categorizes reality in all its forms.

Sociocognitive theories have a lot to offer applied linguistics in general, and are being actively exploited in several areas of language teaching, including vocabulary (Tyler, Takada, Kim, & Marinova, 2005). Their take-up in relation to spoken word recognition has been slower, but involves exactly the same principles: Categorization of the variable acoustic speech wave into spoken words relies, like all other kinds of categorization, on meaning and context (see the fascinating series of experiments summarized in Cutler, 2010).

While it is difficult to give central place to meaning and context in computational theories, this is no problem in sociocognitive theories, which recognize that the "simplest" form of speech perception is not decontextualized recognition of meaningless syllables (the "nonsense words" of many computational experiments), but understanding of real, meaningful words and phrases in real, meaningful social contexts. This requires rejection of the assumption shared by both computational theories and the everyday theory: that phonemes are the basic units of speech (De Knop, Boers, & De Rycker, 2010). In fact, sociocognitive theory argues that recognition of meaningless sublexical units, such as phonemes or syllables, far from preceding word recognition, actually depends upon prior recognition of larger, meaningful units, such as morphemes, words, and phrases. While this idea may seem strange at first, it offers a simple, general account for the "word effects" that cause such difficulties for computational theories, and sees variability not as a "problem" but as an aid to perception (Dahan & Magnuson, 2006).

Pedagogical Implications

Accepting the view of sociocognitive theory that words are more basic than phonemes suggests that, when learners have trouble recognizing and reproducing words, the most useful way to help may be, not via reference to decontextualized phonemes, but via assistance with picking out similar words from different speakers in different contexts. In other words, it suggests it might be easier to teach *red* and *led* than /r/ and /l/. Once words can be recognized, they can be compared and contrasted with other words to help achieve phonological awareness (the ability to recognize, produce, and manipulate sublexical units such as phonemes and syllables).

This is similar to the order in which words come to be recognized in first language acquisition (though second language learners generally have the advantage of more mature cognitive skills). The problem is that it is easy for teachers, and even theorists, to forget how much effort is needed in first language acquisition before children can achieve even the most basic task of recognizing the same word spoken in different contexts by different people. Thus adults tend to believe that each word has "a pronunciation" (as represented in a dictionary). In fact, of course, just as each word has multiple meanings, so each also has multiple pronunciations. Think, for a simple example, of the word *probably* as pronounced by men, women, and children, as a citation form and in various sentence contexts, and so on.

As discussed above, speech is more like messy handwriting lacking gaps between words than like a printed text. Reading such handwriting cannot be achieved by looking for

individual letters to put together into words, but requires first picking out words and then reconstructing the letters. The same is true of speech—meaning necessarily comes first. Indeed, it is interesting to note that even in reading a printed page, where the segmentation and invariance problems do not apply, meaning and context frequently override "bottom-up" information from the printed letters (making it difficult, for example, to spot typographical errors in proofreading).

According to sociocognitive theories, then, the first stage of acquisition is learning to recognize meaningful words in meaningful contexts. This involves the difficult task of learning to categorize a range of very different word pronunciations as "the same word." Only when this has been achieved can this category of pronunciations be compared and contrasted with those of other words to start the process of recognizing sublexical categories of phonemes, syllables, and so on. In other words, the first "categorical perception" that has to be mastered, according to sociocognitive theory, is not categorization of a range of different allophones as instances of a single phoneme, but categorization of a range of different pronunciations as instances of one particular word.

A further implication of sociocognitive theories of spoken word recognition is the use they make of observations about the stages through which phonological awareness is achieved. It is clear that in first language acquisition, children learn to categorize larger sublexical units, such as units of meaning, rhythm, and rhyme, long before they gain awareness of individual phonemes (Gillon, 2007). The same is true for many second language learners. This gives a rationale for the success of teaching word recognition through suprasegmentals, but also highlights the importance of basing the teaching of suprasegmentals on larger, meaningful units of sound. For example, it suggests, as a way to help learners struggling with suprasegmentals, defining syllables not as sequences of phonemes, but as parts of words, defined by patterns of rhythm and stress. Then, through comparing and contrasting those patterns, syllables can be shown to have constituents, which can be defined as phonemes.

Conclusion

The facts of spoken word recognition are usually presented via computational theories which are not just hard for teachers to understand but also of limited relevance to the practical tasks of applied linguistics. Presenting them instead via sociocognitive theory makes them more accessible, and easier to incorporate into established practices of communicative language teaching. An apparent difficulty is that understanding the sociocognitive theory of spoken word recognition means overcoming some highly entrenched but incorrect everyday assumptions, especially the view that recognition of spoken words requires the prior recognition of phonemes or other phonological units. Once this initial hurdle is overcome, however, sociocognitive theory offers a conceptual framework that can make teaching pronunciation exceptionally effective, interesting, and enjoyable.

SEE ALSO: Approaches to Second Language Vocabulary Teaching; Lexical Access in Bilingual Visual Word Recognition; Vocabulary Acquisition in Second Language Acquisition; Vocabulary Learning Strategies

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Spoken Word Recognition in Second Language Acquisition

ANDREA WEBER AND MIRJAM BROERSMA

In order to decode the message of a speaker, listeners have to recognize individual words in the speaker's utterance. Spoken word recognition involves two central processes: multiple word activation and competition. The incoming speech calls up a set of potential word candidates that match with the unfolding input, and the activated word candidates then compete for recognition (for models of spoken-word recognition see e.g., McClelland, 1991; Gaskell & Marslen-Wilson, 2002; Norris & McQueen, 2008). As the word *steak* is heard, for example, words with similar sounds like *stay*, *stale*, *stain*, *take*, and *ache* will be considered in parallel with *steak*. The fact that words resemble one another (e.g., *drunk* and *trunk* only differ in the voicing of the initial consonant), and short words may be embedded within longer ones (e.g., *ink* in *pink*), complicates the task for the listener.

Nevertheless, recognizing spoken words is usually effortless in one's native language (L1), but the same task can be much more demanding when listening to a second language (L2). Main issues in L2 word recognition research concern the involvement of the L1 and L2 lexica and the influence of the phonological structure of the listener's mother tongue, with the focus being on lexical representations of word form.

More Lexical Activation for L2 Listeners

The processes involved in spoken word recognition are presumably universal. The question is thus not whether multiple lexical activation and competition occurs in L2 spoken word recognition, but how much of it occurs. There is ample evidence by now that part of the effort of L2 listening is caused by an increase in the competitor set for L2 listeners.

Words From the L1 Lexicon

A major factor responsible for increasing the competitor set is that L2 listeners are not able to keep their two lexica apart. That is, when listening to their second language, they cannot prevent themselves from activating words from their native language. For example, when Dutch listeners hear the English word *leaf*, they not only activate *leaf* but also the similar-sounding Dutch word *lief*, meaning 'sweet' (Schulpen, Dijkstra, Schriefers, & Hasper, 2003). Words from their native language also activate when the overlap with the second language only concerns word onset. Dutch listeners experience activation of the Dutch word *deksel*, 'lid', when hearing the English word *desk* (Weber & Cutler, 2004), and Russian listeners activate the Russian word *marku*, 'stamp', when hearing the English word *marker* (Marian & Spivey, 2003).

For L2 listeners the set of activated words is therefore not restricted to words that are phonologically similar within the second language, but is enlarged by words that are similar across the first and second language. Although the speech signal contains enough phonetic-acoustic information for the L2 listeners to know which language is being heard (e.g., the /d/ in English *desk* and Dutch *deksel* differs in voice onset time), L2 word recognition is bedeviled by parallel activation of two lexica, even for highly proficient L2 listeners.

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There is a ray of hope, however. Recent findings suggest that activation of the L1 is much reduced when the L1 word is semantically incongruent with a sentence's context: for example, English listeners activate English *pool* less strongly in the French sentence *Marie va nourrir la poule*, 'Marie will feed the chicken' (Chambers & Cooke, 2009; FitzPatrick & Indefrey, 2010).

Words With Easy Sounds From the L2 Lexicon

L2 listeners also suffer from an increase in lexical activation from within the second language itself. They are less efficient in deactivating unintended words than native listeners are, even when the speech does not contain any sounds that L2 listeners find particularly difficult. This is indirectly suggested by research showing that second language listeners are more affected by neighborhood density than are native listeners. Both L1 and L2 listeners find it harder to recognize words coming from a high-density neighborhood (i.e., words for which a large number of other words exist in the mental lexicon that differ by a single sound) than words from a low-density neighborhood. The more words are activated because they sound similar to the speech input, the harder it is to recognize the intended word. For L2 listeners, however, the difference between words with high- and low-neighborhood density is much larger than for native listeners (Bradlow & Pisoni, 1999).

More direct evidence for L2 listeners being less efficient in deactivating unintended words comes from a study by Rüschemeyer, Nojack, and Limbach (2008). They found that when Russian learners of German hear the German word *Tisch*, 'table', they activate *Fisch*, 'fish', long enough for its meaning and word associations to be retrieved, whereas this is not the case for native listeners of German. Interestingly, Russian listeners activate the unintended word *Fisch* even though they can easily hear the difference between the onset of *Fisch* and *Tisch*.

Words With Difficult Sounds From the L2 Lexicon

Perceiving differences between similar-sounding words is not always easy for L2 listeners. This is because L2 sound perception is often inaccurate (for an overview, see Bohn & Munro, 2007). In particular, discrimination of second language sound contrasts that are ignored in the listeners' native language may never reach native standards. Japanese listeners, for example, have notorious difficulty in distinguishing English /r/ and /l/, which both map (badly) to a single Japanese category which is phonetically between /r/ and /l/, and Dutch listeners find it difficult to perceive the difference between the English /æ/ (the vowel in *cat*) and /ɛ/ (the vowel in *desk*). These perceptual difficulties with L2 sounds affect L2 word recognition in at least three ways.

First, the distinction between minimal pairs can get lost. Dutch learners of English do not treat minimal pairs such as *flash* and *flesh* as two different words; rather, hearing *flash* also leads to the activation of *flesh* (Cutler & Broersma, 2005). Similarly, even highly fluent Spanish-Catalan bilinguals who have acquired both languages early in life show the same effect when listening to Catalan minimal pairs differing in sounds that are not contrasting in Spanish (Pallier, Colomé, & Sebastián-Gallés, 2001). Luckily, this is not a frequent problem. The number of minimal pairs in the English lexicon, for example, is relatively small, especially when compared to the number of homophones (e.g., *rain–reign*) that listeners have to handle anyway (Cutler, 2005). An increase in lexical competition due to the misperception of minimal pairs therefore occurs only rarely.

Second, words with different onsets are treated as matching in onset when perceptually difficult sounds are involved. When listeners hear a word, all words with overlapping onsets are initially activated. Thus, upon hearing the first syllable of *panda*, English L1 listeners activate not only *panda* but also *panel*, *panic*, and *pantry*, among others. As soon

as more than the first syllable is heard, the activation of the incorrect word candidates decreases, and by the time the whole word *panda* has been heard, no activation of the incorrect candidates remains (Zwitserlood, 1989). For L2 listeners, however, this initial set of competitor words is expanded by words that differ in a perceptually difficult sound contrast in the initial portion of a word. That is, for Dutch listeners, hearing English *pan-* additionally activates words like *pencil*, *penny*, and *pension* (Weber & Cutler, 2004). Similarly, for Japanese listeners, hearing *rocket* causes temporary lexical activation of *locker* (Cutler, Weber, & Otake, 2006). Since the overlap in these cases is only temporary, the initial confusion will not lead to a lasting misinterpretation of which word is being heard. Nevertheless, the extended availability of incorrect interpretations slows down the L2 word recognition process. Analysis of the English vocabulary has shown that this type of confusion occurs frequently and causes substantial added lexical competition for L2 listeners (Cutler, 2005).

Third, parts of one or more words might be mistaken for another word that the speaker did not say at all. When English L1 listeners hear the word *DEFinite*, this also temporarily activates the embedded word *deaf*. For L2 listeners, however, this can extend to cases where the speech signal does not actually contain an embedded word. Thus, for Dutch L2 listeners who hear English *DAFfodil*, the nearly embedded word *deaf* is also activated, while this is not the case for English L1 listeners (Broersma & Cutler, in press). Similarly, native listeners of Dutch, which distinguishes voiced and voiceless consonants but not in word-final position, activate *groove* when they hear the near-word *groof* in biG ROOFs (Broersma & Cutler, 2008). Similarly, Spanish-Catalan early bilinguals do not distinguish accurately between Catalan words and near-words differing in Catalan-only contrasts (Sebastián-Gallés, Echeverría, & Bosch, 2005). Besides sounds, perception of suprasegmentals can be difficult for L2 listeners as well, and has been shown to affect word recognition. Spanish, for example, has minimal pairs that only differ in the location of stress, but in French, stress is not used contrastively. French learners of Spanish have great difficulties rejecting a near-word (for example *gorró*) as a word, when it is created from an existing Spanish word (e.g., *górro*, 'hat') by changing the location of stress (Dupoux, Sebastián-Gallés, Navarrete, & Peperkamp, 2008). Listeners will eventually solve the misunderstanding because an erroneous parsing of the speech signal leads to meaningless leftovers (e.g., a person who hears *deaf* in *daffodil* will be left with *-odil* as a meaningless leftover), but this still requires a time-consuming detour. Again, analysis of the English vocabulary has shown that the problem of nearly embedded words occurs very frequently (Cutler, 2005).

Difficulties of Segmenting Speech Into Individual Words for L2 Listeners

The phonological similarity of words would be less problematic if the beginning and ending of words was as clearly marked in speech as it is in written language, where white spaces indicate word boundaries. But speech is a continuous stream of sounds, and listeners have to segment the stream into recognizable units (i.e., words) themselves. Since pauses in speech regularly occur within words and are missing between words, listeners have to use other information to locate word boundaries in an utterance. Information sources for L1 listeners include rhythmic structure, phonotactics, lexical knowledge, and fine phonetic detail. Listeners are often less efficient in exploiting these language-specific information sources in their L2, mostly because their L1 segmentation strategies interfere.

Rhythmic Structure

One strategy listeners use to facilitate segmentation of running speech is based on the specific rhythmic structure of their L1. In English and Dutch, for example, most words

begin with a stressed syllable, and native listeners of those languages use stress to find word boundaries. For example, English listeners find the embedded word *mint* much faster when it is followed by a strong syllable with full vowels (as in *mintayf*) compared to when it is followed by a weak syllable with reduced vowels (as in *mintef*) (Cutler & Norris, 1988). Comparable segmentation strategies of native listeners have been found for syllable-timed and mora-timed languages like French and Japanese, respectively (Cutler, Mehler, Norris, & Seguí, 1986; Sebastián-Gallés, Dupoux, Seguí, & Mehler, 1992).

When listening to an L2, listeners tend to use the segmentation strategy they know from their L1. French listeners use the syllable-based segmentation strategy that is appropriate for French even when they are listening to English, and English listeners are not using that strategy when listening to French (Cutler et al., 1986). Similarly, native listeners of English or French persist in using L1 segmentation strategies when listening to Japanese (e.g., Otake, Hatano, Cutler, & Mehler, 1993).

Constraints on Sound Sequences

Constraints on sound sequences within syllables (so-called 'phonotactic' constraints) are another information source used for speech segmentation (for L1 listening research, see McQueen, 1998). For example, in English, /sl/ as in *sleep* is a legal syllable onset but /ʃl/ ('shl') and /ml/ are not, and while a boundary between /s/ and /l/ is possible but not required, /ʃl/ and /ml/ clearly mark a syllable boundary and possibly also a word boundary in English. German, on the other hand, requires a syllable boundary between /s/ and /l/ and between /m/ and /l/ but not between /ʃ/ and /l/. Highly proficient German learners of English use both L1- and L2-specific knowledge to segment English speech. Their knowledge of English phonotactics helps them detect the English word *lunch* in *glarshlunch*, but their interfering German phonotactic knowledge also leads to facilitated detection of *lunch* in *moycelunch* (Weber & Cutler, 2006).

Lexical Knowledge

Recognizing one word helps listeners find other words. When listeners recognize a word they know, especially when it is a longer word that is not likely to be part of another word, they expect the onset of a new word to follow. Thus, when listeners hear *anythingcorri*, they expect *corri* to be the beginning of a new word following *anything* (e.g., 'corridor'). Both native and non-native listeners use such lexical knowledge for segmentation (White, Melhorn, & Mattys, 2010). Beneficial effects are, however, smaller for L2 listeners than for L1 listeners (Mattys, Carroll, Li, & Chan, in press). This may be because L2 listeners usually know fewer words than L1 listeners, and because L2 listeners are less certain about which stretches of speech are words and which are not.

Phonetic Detail

Fine phonetic differences in how a sound is pronounced can also provide information about word boundaries. For example, the /t/ is pronounced with aspiration in the phrase *keeps talking*, but without aspiration in *keep stalking*. English listeners use these pronunciation differences to decide which phrase they heard. L2 learners, on the other hand, cannot use this information as efficiently. Thus, both Spanish and Japanese learners of English distinguish between the two interpretations much less accurately than English native listeners do (Altenberg, 2005; Ito & Strange, 2009).

Summary and Outlook

Recognizing spoken words in one's mother tongue is easier than recognizing words in a second language, learned later in life. Of course, with a restricted vocabulary it is very difficult and sometimes impossible to understand a second language. But even if a listener knows all the words and is highly proficient in the L2, it is still harder to recognize spoken words in the L2 than in the L1. Although L1 listeners are usually not aware of the complex processes underlying word recognition, L2 listeners are often painfully aware of the complexity of the task of speech comprehension. Difficulties with L2 word recognition become even more evident during noisy listening conditions, for example, when an L2 listener tries to follow a conversation in a crowded pub. (For research on L2 listening in noise see, e.g., Golestani, Rosen, & Scott, 2009.)

As described above, one major factor responsible for the difficulty of L2 listening is that more words are competing for recognition for L2 listeners than for L1 listeners. For L2 listeners, the set of potential word candidates is multiplied with parallel activation of words from the mother tongue and of words from the second language that native listeners would not consider during recognition. The processes of lexical activation and competition in spoken word recognition are determined by phonological overlap between the speech input and words in the lexicon. But in L2 listening, the notion of phonological overlap gets a different meaning, as L2 listeners can experience overlap where L1 listeners do not.

Another factor contributing to the difficulty of L2 word recognition is that L2 listeners are less efficient than native listeners in segmenting the continuous speech stream into individual words. For L1 listeners, the task of segmentation is facilitated by numerous indications to word boundaries such as rhythmic cues, phonotactic constraints, lexical knowledge, and phonetic detail. Although L2 listeners can exploit these cues to some extent, they often cannot do so as successfully as L1 listeners.

An explanation for the difficulties of L2 listening is that listeners have already learned to speak and understand their mother tongue, and the experience with their L1 interferes with L2 acquisition (e.g., Birdsong, 1999); other explanations are biologically or socially based (see, e.g., Bialystok, 1997; Hyltenstam & Abrahamsson, 2003). Infants tune their perception very early to characteristics of their mother tongue in order to make speech processing as efficient as possible. When a second language is learned later in life, understanding the new language is then aggravated by this specialization in the mother tongue.

Yet, having an L1 already can also be beneficial for second language acquisition. Adult L2 learners have a wealth of linguistic and non-linguistic knowledge that they can bring to the task of acquiring a second language. For example, they have a set of phonemic categories that will partially overlap with the L2, they also know about words and how they are structured, they have conceptual representations for concrete and abstract objects, and they can draw on orthographic knowledge for learning new word forms. L2 learners can and do exploit all these sources for the learning task, as shown, for example, by recent research on the use of orthographic information in learning new words in an L2 (Escudero, Hayes-Harb, & Mitterer, 2008; Kaushanskaya & Marian, 2009). Luckily, the capacity for implicit learning also turns out to be larger for adult L2 learners than previously thought. Adult learners can successfully extract segmental, phonotactic, and lexical knowledge about an unknown language after a few minutes of uninstructed listening to an unfamiliar language (Gullberg, Roberts, Dimroth, Veroude, & Indefrey, in press).

Further, L2 listeners benefit from their L1 knowledge when listening to L2 speech produced with an L1 accent. L2 listeners recognize words more easily when the L2 speaker has the same native language as the listeners. Thus, Russian learners of Hebrew recognize Russian-accented Hebrew words faster than Arabic-accented Hebrew words (Leikin, Ibrahim, Eviatar, & Sapir, 2009), and Dutch learners of English recognize Dutch-accented

English better than Japanese-accented English (Broersma, Aoyagi, & Weber, 2010; Weber, Broersma, & Aoyagi, in press) or German-accented English (Hanulikova & Weber, in press). These effects have been explained as long-term adaptation to the accent that the L2 listeners hear the most (i.e., the accent typical of the speakers around them).

The flexibility of lexical processing for L2 listeners still needs to be more fully understood. Currently, research on L1 listening has provided us with ample evidence for a dynamic account of spoken word recognition. L1 listeners' ability for short-term adaptation to speaker- and language-specific aspects of speech (e.g., adaptation to a bad telephone connection, a speaker with a lisp, or a regional accent), and their ability for long-term learning, now needs to be investigated in detail for L2 listeners. The outcome of this research will inform us about individual differences in language learning, and will provide insights into the interplay of flexibility and stability in the speech recognition system.

SEE ALSO: Bilingualism and Cognition; Bilingualism and Speech Perception; Bilingual and Monolingual Language Modes; Brain Activity During Second Language Processing (ERP); Lexical Access in Bilingual Visual Word Recognition; Organization of the Second Language Lexicon; Second Language Speech Perception and the Brain; Spoken Word Production in Second Language Acquisition; Spoken Word Recognition

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Spolsky, Bernard

ELANA SHOHAMY

Bernard Spolsky is one of the most original thinkers in the field of applied linguistics today and has had an important impact on advancing many sociolinguistic-related domains such as language maintenance and revival, language policy, multilingualism, educational linguistics, and the history, use, and ethics of language testing.

Born in New Zealand in 1932, Spolsky was educated at Wellington College, Victoria University College of the University of New Zealand, where he earned BA and MA degrees, and Auckland Teachers' Training College. He later earned a PhD at the University of Montreal.

He taught at high schools in New Zealand, Australia, and England, and at universities in Canada, the United States, and Israel. He was an assistant professor of education at McGill University (1962–4), and assistant professor of linguistics at Indiana University (1964–8) where he was the director of the English as a Foreign Language Program. At the University of New Mexico from 1968 until 1980, he was professor of linguistics, elementary education, and anthropology as well as the Dean of the Graduate School. There he established the Navajo Reading Study to study the effect of teaching reading in the pupil's native language (Spolsky, 1974).

In the early part of his career he became active in the fields of language testing (Spolsky, 1977) and bilingual education (Spolsky, 1978a), and proposed the establishment of the field of educational linguistics (Spolsky, 1978b). He also published a pioneering work on language learning theory (Spolsky, 1989).

In 1980 he was appointed professor of English at Bar Ilan University in Israel, and was active in the teaching of English in Israel, chairing the Ministry of Education professional committee. In addition to teaching and service as department chair and dean of humanities and directing scores of students for MA and PhD degrees, he founded the Language Policy Research Center at Bar Ilan University, which carried out several studies. The first was a study of the past and current sociolinguistic ecology of Jerusalem (Spolsky & Cooper, 1991). With E. Shohamy, he conducted a large-scale study of the language education policy of Israel which documented the different languages taught and used in Israeli schools (Spolsky & Shohamy, 1999); a position paper was the basis of the new national language education policy adopted by the Israeli Ministry of Education in 1996. Other studies conducted at the center included the first investigation of the academic achievement of immigrants in Israeli schools (Levin, Shohamy, & Spolsky, 2003) and, with M. Amara, sociolinguistic studies of Palestinian Arabic describing the divided village of Barta (Spolsky & Amara, 1997) and the town of Bethlehem (Spolsky, Amara, Tushyeh, & de Bot, 2000). Another area Spolsky worked in was historical sociolinguistics (Spolsky, 1985).

In 1980 Spolsky was one of three founding editors of the journal *Applied Linguistics*, and in 2001 he established the journal *Language Policy* and was its first editor.

It is language policy that defines Spolsky's work over the past two decades. Summarizing it, his book *Language Policy* (2004) offered a new approach to the field, introducing notions of ideology, policy, and practice, and focusing on human and civil rights affecting language. A follow-up, *Language Management* (2009a), examined policy in domains other than the nation-state: the family, religion, work, the military, and supranational organizations.

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Spolsky is currently editing the Cambridge *Handbook of Language Policy*, preparing a special issue of *Language Policy* on language academies, and continuing studies of religious language management (Spolsky, 2003).

Spolsky has also edited handbooks and encyclopedias on language testing (Palmer & Spolsky, 1975) and educational linguistics (Spolsky, 1999). In his work on language testing, Spolsky has focused on ethical issues of impact and consequences (Spolsky, 1984). He has written about professionalism, washback, impact, ethicality, and rights in numerous articles and in his most influential book, *Measured Words* (Spolsky, 1995), which traces the history of language testing and then concentrates on the emergence of high-stakes international English tests in the USA and the UK in the 1960s. Using archival documents, he investigated hidden agendas in the development of TOEFL (Test of English as a Foreign Language) and the IELTS (International English Language Testing System), raising questions about the ethicality of these tests and their capability of measuring language. Reading the book, one begins to understand the political and economic motivations that lead to the use of tests for gatekeeping and selection of people, going far beyond the simple goal of measuring language knowledge.

His activist work has been felt in many areas but especially in his close relationship with the Māori community, where Spolsky was instrumental in the educational policy for reviving the language, consulted by the New Zealand government and various educational groups (Spolsky, 2009b).

Over the years, Spolsky has held a number of distinguished positions. He was a Senior Associate at the National Foreign Language Center of Johns Hopkins University in Washington, DC, a Senior Research Scientist at the Center for the Advanced Study of Language at the University of Maryland, and 2010 Charles Ferguson Fellow at the Center of Applied Linguistics, Washington, DC. His professional service included terms as president of International TESOL, founding secretary of the American Association of Applied Linguistics, president of the International Language Testing Association (which gave him a lifetime achievement award), and publications executive director and journal editor-in-chief of Asia TEFL since its founding.

Spolsky's is a household name among applied linguists—his work is constantly being quoted and referred to in all fields; his critical and original thinking, and his broad interests in theory, research, and practice has been inspirational to us all and should continue to be in years to come.

SEE ALSO: Ecology and Multilingual Education; Educational Research in Language Minority Students; Language Planning and Multilingualism; Multilingual Education in North America; Multilingualism; Revernacularization and Revitalization of the Hebrew Language; Reviving Māori; Status Planning

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Sarangi, Srikant

HELEN SISSONS

Srikant Sarangi is professor in language and communication and director of the Health Communication Research Centre at Cardiff University. He is also honorary professor, Faculty of Humanities, Aalborg University (Denmark; 2009–14) and professor in language and communication at Norwegian University of Science and Technology, Trondheim (2009–11). His research interests are in discourse analysis and applied linguistics; language and identity in public life and institutional/professional communication studies.

Research

Sarangi has long argued for a practice-based platform for applied linguistics. In his 1999 book edited with Celia Roberts *Talk, Work and Institutional Order: Discourse in Medical, Mediation and Management Settings*, Sarangi proposed an interdisciplinary approach to understanding and explaining professional talk and its role in institutional settings arguing that academic research can have a practical application within institutions.

Further, as the founding editor (with Christopher Candlin) of the *Journal of Applied Linguistics*, Sarangi used the inaugural volume to call for "the widening of the applied linguistics lens" (Candlin & Sarangi, 2004).

He is well known for working closely with the health profession, among other things researching situated language use and the fairness and reliability of oral examinations in undergraduate and postgraduate medical examinations for candidates from ethnic minorities (Sarangi & Roberts, 1999). He is also a proponent of including the teaching of communication skills in all health-care programs and has written extensively on how effective communication is crucial in the prevention, treatment, and management of disease.

He established the Health Communication Research Centre (HCRC) in 1998 as an interdisciplinary initiative within Cardiff University. The center's stated aims are to encourage dialogue between users of health care, health care professionals and other interested groups to "provide a dynamic and constructive voice in health communication research" (www.cf.ac.uk/encap/research/hcrc).

To this end, the center coordinates communication and discourse-based research in the area of health and social care. Specifically, it strives to develop new, joint research which is not only of academic excellence but also of practical relevance.

Sarangi has recently (2009) again proposed expanding the boundaries of applied linguistic and discourse analytic themes and sites as a way of recognizing the emerging interest in communication-focused activities in professions, particularly health and social care, law, therapy and counseling, business and marketing, and education. He suggests a scholarly area devoted to "language/discourse of professions" and argues in favor of an "applied linguistics of professions." He characterizes the transition as a shift in focus from "professional discourse as a register" to "professional discourse as an expert system" with its attendant context-specific tacit knowledge sources.

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History

Sarangi's interest in the English language and its uses started early. He received a distinction in BA in English before completing a master's in English and American literature. Sarangi earned his PhD in the Department of Linguistics and English Language at Lancaster University, a major international center of teaching and research in linguistics and human communication.

On the staff were Professor Norman Fairclough, a proponent of critical discourse analysis, and Professor Geoffrey Leech, who later became part of the team that compiled the British National Corpus, a 100-million-word collection of spoken and written texts designed to be representative of British English from the 1990s.

Sarangi's teaching career started in India where he lectured in English from 1979 to 1989 before spending time in London and Singapore. He joined Cardiff University in 1993 first as a lecturer, then in 1999 as reader and in 2002 he took his present position as professor in language and communication.

Publications and Research Grants

Srikant Sarangi is the founding editor of *Communication & Medicine* (Equinox); editor of *TEXT & TALK*, an interdisciplinary journal of language, discourse and communication studies (formerly *TEXT*) as well as coeditor with Christopher Candlin of the *Journal of Applied Linguistics* (Equinox).

He is the author and editor of 10 books, 5 journal special issues, and he has published over 150 journal articles and book chapters. In addition, he has presented more than 400 papers (including plenaries, invited keynotes, workshops, and colloquia) at international conferences and other forums—ranging from mainstream applied linguistics and sociolinguistics to medical and professional ones.

His major publications include *Language, Bureaucracy and Social Control* with Professor Stefaan Slembrouck (1996) which was an important contribution to the debate about the bureaucratization of language; *Talk, Work and Institutional Order*: *Discourse in Medical, Mediation and Management Settings* with Celia Roberts (1999) which is mentioned above; *Discourse and Social Life* with Professor Malcolm Coulthard (2000) which includes chapters from some of the most influential researchers in the field: Norman Fairclough, Ruth Wodak, Ron Scollon, Theo Van Leeuwen and Geoffrey Leech among others; and *Sociolinguistics and Social Theory* with Professor Nikolas Coupland and Professor Christopher Candlin (Coupland, Sarangi, & Candlin, 2001). His latest book is *Genetic Testing: Accounts of Autonomy, Responsibility and Blame* with Michael Arribas-Ayllon and Angus Clarke (Arribas-Ayllon, Sarangi, & Clarke, 2010).

Sarangi is also general editor (with Christopher Candlin) of three book series: *Studies in Applied Linguistics*, *Studies in Language and Communication*, and *Communication in Organizations and Professions*. He serves as an editorial board member for other journals and book series, and as a consulting advisor. Over the last ten years, he has held visiting academic attachments in many parts of the world.

He has held several project grants from funding bodies, including the Wellcome Trust, the Leverhulme Trust, and ESRC, to study aspects of health communication such as genetic counseling, quality of life in HIV/AIDS and telemedicine. He has also carried out research with particular reference to the assessment of consulting and communication skills into communication in primary care and palliative care.

SEE ALSO: Candlin, Christopher N.; Medical Discourse

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Standard Language Ideology and African American Vernacular English

AKUA DUKU ANOKYE

A universal struggle is to find and exert one's own voice and to break the patterns of silence. African Americans, for example, have struggled with the desire to name and identify themselves whether using names based on their geographical beginnings, or the distasteful names used by colonizers and slave owners. In 1966 Maulana Ron Karenga, political activist, former chair of Afro Studies at Cal State Long Beach, and major proponent of Kawaida, a philosophy based on social and cultural change, initiated the first Kwanzaa celebration (Karenga, 1988). Part of the ritual involved the reciting of principles, among them Kujichagulia, self-determination. This was not the beginning of the struggle for self-determination, but a modern verbalization of the need to exert one's self to speak for oneself to give voice to one's own concerns.

Descriptions of Black English date back to the earliest writings about language in America. As early as the 17th century questions about the names used to represent African slaves or indentured servants arose, and until this day similar battles are being fought, for example, by African American women in the hip-hop revolution. Who will "represent" and how will they be represented?

The ability to speak "well" is a very important component in the African American experience. Tied to performance, the use of language is the means by which many African Americans achieve recognition in the community. The widespread phenomenon, used to earn the community's respect, has its roots in African verbal art. "Nommo," belief in the magical power of the word, frames the African American experience. This power spans social, political, musical, spiritual, emotional, even psychological boundaries.

Geneva Smitherman's 1994 book *Black Talk*, a dictionary of African American terms, serves to illustrate the fact that naming is an appropriate analogy for understanding the relationship between oppression and self-identifying through language. The author uses a variety of historical examples of African American discourses from music, slang, church, and popular culture to demonstrate the analogy.

Language use by African Americans has led to one of the ugliest ongoing controversies in America. From the early description of Negro dialect by "Marcel" (W. F. Allen) as phonetic decay and debasement of language on the isolated St. Helena in the Georgia Sea Islands in 1865, to Allen's patronizing 1916 *Literary Digest* editorial that describes plantation songs as full of warm-blooded sentimentality, we see the negative depiction of African Americans through their language. Even when Zora Neale Hurston published her seminal work on Negro folklore in 1935, which represented the language, culture, and discourse style as accomplishments of pride, she was deeply criticized for exposing Negroes in a distasteful light.

In spite of documented evidence, there is still today denial either that Black English exists or that it should be classified as bona fide, even though features of Black English are used in some form by a substantial number of African Americans and are often co-opted by television, advertising, and the media. Over one hundred years after the Allen description of Negro dialect, at the height of the Oakland School Board controversy naming

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Ebonics as a language, the Linguistic Society of America announced a resolution affirming that whatever the name used, the language variety was rule-governed, systematic, and distinct.

Countee Cullen's 1925 poem, "Incident," depicts the pain inflicted upon an impressionable child when called out of his name. In a 1996 essay by Keith Gilyard we become acquainted with more contemporary methods of critiquing the impact of words. Gilyard is interested in the master narrative and the need to "flip the script," an adaptive response to victimization via language—the counter-story. He sets up a dialogue between expression and repression, debilitating and therapeutic, African American literature and African American rumor, to illustrate language issues. Emma Jackson writes a 1999 article that is an analysis of the same pejorative name creating havoc in Countee Cullen's poem. Based on interviews with African Americans from various backgrounds and experiences, this article attempts to examine changing definitions and perspectives.

While W. F. Allen in 1865 misunderstood the spirituals of slavery as the only form of music produced by the Negro, Amiri Baraka's 1963 work illustrates the historical development of the blues out of the shouts and spirituals resulting from a better acquaintance with English as well as greater isolation following emancipation. Gwen Pough, in a speech delivered at the 2001 American Studies Association Conference, explains that rappers speak for the people and voice their concerns. Like their earlier counterparts, the poets and the lyricists, the blues men and women, the workers, the slaves, their mission is to use language and style to "represent" the world, the complex cultural practices, styles, and innovation. As attention turns to women's language and use, we learn that Black women rappers seek to confront and change their representations, to challenge the double standard, and to claim space for themselves.

The push for standardization of any language artifact brings with it political and cultural manifestations that have particularly affected African American language. In an environment where one is being bombarded by racialized imagery and discourse, issues of intellect and identity must continually be explored. Whether it is the work of teachers in elementary classrooms or politicians on the hill, our society must undergo a repositioning of cultural and linguistic diversity that interrogates social contexts and allows multiliteracies to enrich our culture. From a pedagogical position we know that identity is expressed verbally through language variety. How does the African American Vernacular English ideology address learning language, or economic issues, or the digital divide? The challenge is that the roles of language, occurring across a wide range of sites, must strive for social justice. For African Americans who embrace their language choice as dear, their ideology is supported from beginning to end with the recognition of the power of words. What's in a name? The inalienable choice to speak for and be oneself. It is the very nature of one's identity.

SEE ALSO: Code Switching; Cultural Identity; Cultural Representation; Discourse and Identity; Language and Identity; Linguistic Diversity; Multiliteracies in Education; Race

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Standardization in Human Language Technology

SUE ELLEN WRIGHT

The unqualified title "standardization" in the context of applied linguistics may conjure up the notion of standardizing language itself, but more commonly, language-related standards establish guidelines, frameworks, and formats designed to create, maintain, and process language resources, such as text corpora or lexicographical and terminological databases. The elaboration of standards for using language in computerized environments starts with an aspect as basic as displaying a text in a local computer application or as Web content. At the more complex end of the spectrum, it involves using words and text strings as semantic reference points to enable powerful new search capabilities on the Web. This entry examines foundational standards for representing language; both word and concept orientations to documenting lexical information; support for authoring, translation, and localization; and standards for corpus development. "Language engineering," which can imply changing the way humans use language, has given place to the development of human language technologies that enable language to function as the crucial component of an ever-expanding knowledge infrastructure.

Standards for Language Technologies

Traditionally, industrial standards have played a role in assuring quality and consumer protection. Early standards enabled the interoperability of products in collaborative and sometimes high-risk situations; for example, specification of dimensions for hose fittings allowed firefighters from different fire companies to work together battling large fires (ANSI; see "Online Resources" below for full forms of standards acronyms). Today national, regional, and international standards specify materials, performance, process, and procedural standards, and address the quality of existing products and services. These kinds of standards frequently define guidelines for best practices. Recent trends have also moved toward functional standards that specify requirements for implementing new technologies, especially in computer environments, instead of prescribing methods associated with existing solutions. For instance, the standard for TCP/IP (Transmission Control Protocol/Internet Protocol) literally made the Internet possible (W3C). Many language-related standards fall into this second category, although some do indeed describe best practices for existing methods and products.

Baseline Standards

Language Codes

The fundamental challenge for language-related standards is the identification and representation of all human languages. These identifiers are catalogued in the ISO 639 family of language code standards and are available to the public via the ISO Concept Database (ISO CDB). Two-letter (e.g., French = *fr*) and three-letter (e.g., French = *fra* for *français*)

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codes evolved separately in different communities of practice (terminology management, library science, and ethnolinguistic field research) long before their universal application in computing environments. Today they facilitate the display of languages on local computers and on the Web, and they control printer functions for the production of hard-copy texts. They are also used to identify oral/aural discourse and music lyrics, or the language used in a wide variety of social contexts, such as the home language of school children. They can be combined with script, character, and country codes to create language tags used to designate so-called "locales"—the regions or in some cases social environments where specific languages varieties are used (Unicode CLDR; e.g., fr-CA = Canadian French; zh-hans-CH = Chinese, simplified characters, PRC). In addition to spelling and usage rules, these tags support the localization of applications and Web pages by providing critical information such as date formats and currency values, as well as indicating which spelling and grammar checkers to use for different language varieties. The structure of locale tags represents the convergence of standards from a variety of normative bodies: Unicode Consortium "code points" for each character and symbol for a broad collection of scripts; ISO 639, 3166, and 15924 (language, country, and script codes, respectively); IANA's implementation of the language codes; IETF Best Current Practice (BCP) 47 combination rules for generating language tags; and the W3C specification for using IETF tags on the Web and specifically in markup languages. Current language codes cover almost 7,000 ancient and modern languages, including identifiers for Esperanto and Klingon. The set is subject to ongoing revision, reflecting new insights and political realities affecting the distribution and recognition of languages worldwide.

Markup Languages

It is not the object of this entry to discuss nonhuman languages. Nevertheless, markup languages play a significant role for standards-supported language resources. The W3C Hypertext Markup Language (HTML) is the most familiar of the markup languages. At its most basic, hidden codes (called tags) indicate to a Web browser how a piece of text should be presented (displayed) on screen or in print: <bold><italics>The Ballad of Frankie and Johnie</italics></bold>. HTML is derived from Standard Generalized Markup Language (SGML, ISO 8879), which featured the notion of logical markup, where structural elements in a document (e.g., a title, introduction, etc.) are marked up and a second program called a stylesheet determines the layout: <title>The Ballad of Frankie and Johnie</title>. The powerful thing about this approach is that the developer can change the actual display throughout a document by just changing the stylesheet and not all the instances of <title>. XML (eXtensible Markup Language) was developed to represent data on the Web, which HTML is not powerful enough to do. It also features logical markup, which means it can represent all kinds of information about pieces of text: grammatical information, discourse-related categories, and so forth. XML is often called a *meta-markup* or *container* language because it provides framework rules and tools that can be used to create an unlimited number of formats designed to describe whatever attributes researchers or authors find interesting. XML and the related RDF (Resource Description Framework) format are consequently being used to develop a wide variety of standardized annotation schemes for marking up language resources or even replacing currently common word-processor markup.

Concept Versus Word Orientation

ISO TC 37 has historically focused on concept-oriented management of specialized language terminology. Whereas traditional lexicography examines words and their many senses,

the concept-oriented approach isolates a single sense in a specific subject field or subfield and defines the underlying concept. This view draws on a long tradition, from Aristotle (384–322 BC) onward to modern cognitive science and semiotics. Early terminologists made doctrinaire demands for "monosemy and mononymy" (univocality) in the context of specialized terminology, but terminologists today document all the potential synonyms and foreign-language equivalents associated with individual concepts, even when preferred usage is specified. Contexts and collocational usage are also critical when establishing terminological reference.

Originally intended to support standardized terminology for ISO technical committees, TC 37 standards concerning concept orientation include ISO 704 (general principles), 1087 (terminology), and 10241 (layout for ISO terminology sections and standards). Best practices for creating digital terminologies are further defined in ISO 12616 (translation-oriented terminology work) and ISO 26162 (terminology management systems), as well as a number of guidelines for terminology projects and product assessment. The concept-oriented paradigm has proven highly popular for translation and localization, especially when large numbers of domain-specific languages are involved. It has also been widely adopted by a number of other communities of practice for standardizing terms, labels, and data element names. These include metadata standards (ISO/IEC 11179 family of standards and Dublin Core), where term-like data elements used for field names and enumerated values are specified in order to support the interoperability and interchangeability of data. In a similar fashion, ECCMA and ISO 184 define cataloging labels in their *electronic Open Technical Dictionary*, which supplements ISO 8000 standards for master data quality. The Object Modeling Group's (OMG) Semantics of Business Vocabulary and Business Rules (SBVR) project combines insights from linguistics and computer science, using natural language and formal logic to create a machine-processable environment for enforcing compliance with business rules. Long-term collaboration between ISO Technical Committees 37 and 46 is reflected in the concept-oriented approach taken for the development of thesauri and other controlled vocabularies.

Concept orientation is also fundamental to the development of domain-specific ontologies. Fueled by Sir Tim Berners-Lee's (1955–) vision of a smart "Semantic Web," where search engines would return highly precise and complete results for queries stated in human language, a broad and varied effort is being invested in the development of new interactive knowledge infrastructures. Here the W3C standards RDF, OWL (Web Ontology Language), and SKOS (Simple Knowledge Organization Scheme) are being implemented to assert semantic relationships between defined concepts represented by labels, which look a great deal like concept-oriented terms. Regardless of whether Lee's grand scheme is visionary or realizable, the resulting networks are gradually improving information retrieval and processing on the Web.

The reliability of such semantic associations relies on their validity, or more specifically, on the level of trust that users can place in their defined concepts. Homonymy, synonymy, and ambiguity plague data elements and ontological labels in the same way that they do in human language. As noted above, ISO expert committees traditionally write precise definitions for terms and concepts they use in writing ISO standards, as well as for symbols and other codes. In similar fashion, concepts for data elements (called data categories in the terminology community) are defined and further specified by a variety of expert communities. In the past, these authoritative definitions have frequently been printed on paper or placed on the Web as PDF files, where they are inaccessible to machine processing. Recent policies regarding the creation of standards as databases now provide online access to ISO definitions via the ISO Concept Database. In a parallel development, the ISOcat Data Category Registry provides a working environment where experts can specify data categories on an ongoing basis, producing an ever-expanding repository of concepts and

definitions for the full range of language resources. Current coverage includes domains such as language resource metadata, morphosyntax, lexicography, terminology, and a growing list of other topics. ISOcat straddles the private and public standardized sectors by providing a working environment allowing experts to develop their data category specifications and selections (subsets of the collection) in private working groups. At the same time, ISO 12620, which defines the ISOcat model, offers the option of standardizing those selections whenever a group reaches consensus to do so. ISO 24619 on persistent identification provides guidelines for using permanently resolvable uniform resource identifiers (URIs) to ensure reliable access to entries in authoritative resources like the CDB and ISOcat. Coupled with identifiers like those used in the Dublin Core initiative, their goal is to provide reliable, speedy reference to citations from anywhere to anywhere on the Web.

Despite the traditional attention paid to terminological activities by the TC37 and 46 communities, standardizers have not ignored or deprecated lexicography. ISO 1951 on representation of entries in (lexicographical) dictionaries continues to be updated. The twin standards ISO 16642 (Terminological Markup Framework, or TMF) and 24613 (Lexical Markup Framework, or LMF) provide meta-models for the two distinct views. TMF is specifically limited to the rigorous terminological view, while LMF supports a variety of lexically oriented applications, ranging from the representation of entries in electronic dictionaries to a set of extensions specialized for morphology, semantics, and syntax, along with models for representing multiword elements and special constraints. LMF specifically excludes the representation of TMF data structures, but provides clear guidance on how the two frameworks can be linked via crosswalks between individual concepts and single sense elements in lexical resources. These standards are based on work from both TEI and the EAGLES/ISLE Multilingual Isle Lexical Entry project, which explored options for representing lexical entries in SGML and XML/RDF frameworks. Some applications actually use the terminological approach to collect concept entries that can then be reassembled into multisense lexicographical entries. For instance, IBM has developed such an in-house solution, called Translexis. The standards community is likely to include both views in the growing language and knowledge documentation infrastructure. The popular WordNet resource, for instance, incorporates aspects of both the lexical approach and terminological treatment with its use of both synsets and shallow ontological views.

Translation, Localization, and Controlled Authoring

In contrast to many of the other standards cited here, translation and localization standards are more akin to traditional industry standards in that they often define best practices and guidelines for translation services, and to a certain extent, translation products. CEN EN 15038 and its Canadian counterpart, CAN/CGSB-131.10-2008, specify criteria for certifying translation service providers, while ASTM 2575-06 provides guidelines for clients and service providers to define parameters for translation job specifications, on which quality assessment criteria can be based. None of these documents defines a clear metric for quantifying translation quality. SAE J2450 attempts such a metric aimed at evaluating the quality of translations in the automotive industry, excluding elements of style. While not a standard per se, the American Translators Association *Framework for Standard Error Marking* specifies a graduated error quantification template and is widely regarded as a model for assessing the quality of translations or for translators when viewed from the standpoint of an absolute quality scale. LISA's *List of QA Model Error Categories* engages a more holistic view of all aspects of the translation/localization product and overall process. Despite the attention paid all these standards, the issue of "inter-rater reliability" remains

a concern because different evaluators tend to produce different scores even when using a supposedly unified rating scale. Assessment standards continue to be the subject for standards development (ISO 14080), but future work must distinguish between translator competence and translation quality, in addition to linking criteria for quality assessment with parameters defining specific translation tasks. Interpreting standards are less common, although ASTM offers its comprehensive F2089-01(2007) guidelines. ISO TC 37 is developing a standard for community and public service interpreting (ISO 13611). Actual certification of translators, translation service providers, and interpreters is widely viewed as a national or regional activity. Particularly in the area of public service interpreting, local, national, and regional laws, regulations, and ethical practices vary, which poses a challenge for the development of a high-level international standard.

LISA is probably best known for its Translation Memory eXchange (TMX) standard, which has been widely implemented by developers of translation memory applications. The TMX format provides a system-neutral XML representation of paired translation units that make up translation memories exported from tools designed to assist human translators during the translation process. The interoperability of such translation memories is compromised by differences in segmentation rules used by different tools or tools settings, so TMX is augmented by Segmentation Rules eXchange (SRX), which is designed to improve leverage among translation memories. LISA's Termbase eXchange (TBX) and TBX-Basic provide platform-independent representation of terminology database material. This standard demonstrates the close interaction with other standards: ISO 16642 as a meta-model, and ISO 12620/ISOcat for the data categories used to fill out the model. Before its demise in 2011, LISA coordinated joint standardization with ISO TC 37 for TBX (ISO 30042), TMX (covered in ISO 24616, Multilingual Information Framework, or MLIF), and SRX.

Terminology management as described above sometimes results in the specification of preferred terms to be used in certain environments, such as for standards or in the software and document development process for specific companies or other enterprises. Controlled languages are more constrained because they not only specify preferred terminology. They also standardize syntax and grammar, with the goal of improving legibility, supporting the reusability of authored text chunks, and facilitating translation, even machine translation. They are most frequently used to produce documents such as maintenance manuals. A case in point is ASD Simplified Technical English, or ASD/STE. Developed originally by Boeing, ASD/STE is currently a recognized standard in the aerospace industry and is used too for the production of other defense- and manufacturing-related documents. The OASIS group also supports controlled authoring of semantically tagged, topic-related text with its DITA (Darwin Information Typing Architecture). Developed in tandem, DITA and OASIS' XLIFF (XML Localisation Interchange File Format) standard support efficient localization of dynamically changing textual content.

Annotation Frameworks for Text Corpora

XML has also been used to create annotation schemes designed to express or describe textual and semantic features in text corpora and other language resources. A number of players have contributed to this effort, beginning with the Text Encoding Initiative (TEI) in 1994, working at that point with SGML. A sequence of US/European research projects (EAGLES/ISLE and CLARIN) have gone on to develop annotation schemes for cross-platform, cross-application representation of aspects of digitized text. These activities have fed back into the work of ISO TC 37, SC 4. Starting with a basic framework for representing feature structures, current solutions focus on morphosyntactic, semantic, syntactic, and linguistic annotation, including markup for discourse structures and time-related elements.

The ISOcat DCR cited earlier functions as a central repository for data category concepts used in the various related tagging systems and annotation schemes. This work contributes to an overall goal to create an "integrated and interoperable research infrastructure for . . . language resources" (CLARIN).

In the context of corpus linguistics, one of the intrinsic artifacts of alphabetical languages that facilitates the implementation of automatic processing strategies is the presence of white space between lexical units. Languages like Russian and German that merge smaller words to form long single words pose some problems in this regard, but the major challenge is with non-white-space languages like Japanese, Chinese, and Korean. In the face of extensive research being conducted on word segmentation and named entity recognition, ISO 24614 provides a discussion of general principles as well as guidance specifically for Chinese written texts.

Terminology Policy

Language planning topics are dealt with elsewhere in this Encyclopedia. Certainly one component of language planning and policy involves the regulation or at least the strong recommendation of specialized terminology for many individual domains and language communities. Originally published as an Infoterm report, the UNESCO *Guidelines for Terminology Policies* (2005) has been further elaborated as ISO 29383, *Terminology Policies: Development and Implementation* (2010). The document provides policy makers in governments, administration, nonprofit, and commercial organizations with guidelines and a methodology for developing and implementing a comprehensive policy or strategy concerning the planning and management of terminology.

SEE ALSO: Bilingual Lexicography; Language Policy and Planning: Overview; Special Purposes Vocabulary; Technology and Teaching Language for Specific Purposes; Technology and Terminology; Technology and Translation; Translation, Localization, and Internationalization; WordNet

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Standard Setting on Language Tests

DORRY KENYON

Standard-setting practices are becoming common in language testing in cases where test developers and users want to *link* student performances on language tests to verbally defined levels of proficiency, such as the levels of the Council of Europe Framework of Reference for Languages (Council of Europe, 2001). Such practices draw upon the psychometric literature, in which standard setting "refers to the process of establishing one or more cut scores on tests . . . [that] function to separate a test score scale into two or more regions, creating categories of performance or classifications of examinees" (Cizek & Bunch, 2007, p. 13). Such categories are intended to provide interpretive meaning to examinees' test performances, whether classifying an examinee's performance as "pass" or "fail," or "novice," "intermediate," "advanced," or "superior," particularly for decisions that are of some consequence to examinees and score users. Although psychometric and statistical tools are used in standard setting, the process itself is a socially moderated procedure (i.e., determined by judgments made by individuals in a social context). Professionals in standard setting investigate and develop technical procedures aimed to limit randomness, estimate its extent, and ensure that the final outcome is the result of a principled synthesis of relevant perspectives.

Several features of the best standard-setting methodologies help minimize arbitrary outcomes. Fundamental to these methods is the use of panels of large numbers of stakeholders whose knowledge and experience make them qualified to serve as panelists. The analysis and reporting of data from both independent judgments and consensus-building processes documents both variability among panelists and the extent to which consensus was reached. For example, internal replications, such as dividing a larger group of panelists into subpanels and analyzing and reporting variation within and across these subpanels, provide evidence of the generalizability of the outcome. Careful documentation of each study includes the background and qualifications of panelists, detailed description of the procedures and materials used, the analysis of the data and results, and an evaluation by participants of their experience. Such documentation allows others to judge the quality of the study, provides the required information to replicate the study with another set of panelists, and presents evidence to support the final results. Researchers have investigated a variety of methodologies, and methodologies developed more recently (such as bookmarking and body of work) recognize the need for panelists to draw on their experience with individuals similar to the test takers to evaluate direct observations of student performances (whether on selected response or constructed response items) and to be presented with a judgmental task that reduces cognitive complexity to the greatest extent possible.

The Historical Social Context

Current knowledge and practice in standard setting were originally developed through psychometric research in the context of certification testing. While the fourth edition of *Educational Measurement* contains a dedicated chapter on "Setting performance standards" (Hambleton & Pitoniak, 2006), the primary discussion of the topic in the third edition occurred in "Certification of student competence" (Jaeger, 1989). In the second edition,

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more sophisticated approaches to standard setting were confined to an important footnote in Angoff's (1971) chapter on "Scales, norms, and equivalent scores."

The recognition that the attribution of competency is also a social construct that may have serious consequences for individuals, groups, institutions, agencies, and other bodies implies that, implicitly or explicitly, a standard-setting study is normally done on behalf of, and to provide information to, some policy council or other body that will ultimately authorize the results. Carson (2001) points out that "[c]ertification is credentialing by either a governmental authority or a private entity" (p. 427). Although this point may not be explicitly stated in the language testing literature, it is important to recognize that whenever a linking is done between performances on a language test and performance level descriptors, some authority or entity ultimately stands behind the outcome, whether an identified formal body or the test publisher who makes the results of a study public. Because attainment of performance levels may have serious consequences for test takers or others, the undertaking of any standard setting must be done with due diligence. In the best situation, all who are involved in the process explicitly recognize that the results of the study are recommendations to a final body that gives power to the outcome and that the process is not conducted in a social vacuum.

Referring to decisions made based on results of competency tests, Jaeger (1989) pointed out, "To the extent that invalid inferences are exposed, and measurement practices that reduce validity are eliminated, the value of competency testing can be increased and societal damage resulting from competency testing can be minimized" (p. 511). In the current climate of accountability for educational outcomes in the United States, the use of defensible standard-setting procedures has perhaps even greater weight and continues to generate a growing body of research (see, for example, Philips, 2001). The needs of the National Assessment of Educational Progress (NAEP), which provides US policy makers with "The Nation's Report Card" and interprets student performance as basic, proficient, or advanced, has provided resources for much scholarly research on comparing and developing standard-setting methodologies (Loomis & Bourque, 2001). The "No Child Left Behind" legislation of 2002 required states to define performance expectations for students and to test students to determine attainment of those expectations. This requirement has lead to widespread application of standard-setting methodologies in the United States in a very high-stakes context.

Examples of Linking Language Tests to Proficiency Level Definitions

Standard-setting methodologies from the psychometric tradition are being used to link language tests to proficiency level definitions. First, in the European context, the publication of the Common European Framework of Reference (CEFR) (Council of Europe, 2001) and its widespread influence created a need for test developers to link performances on their assessments to the CEFR levels. To provide guidance, the Council of Europe produced a *Manual for relating language examinations to the Common European Framework of Reference for Languages (CEFR)* and *Reference supplement* (Council of Europe, 2009), available online. This manual first appeared as a preliminary pilot version in 2002–4. According to the introduction, the aim of the manual

> is to help the providers of examinations to develop, apply and report transparent, practical procedures in a cumulative process of continuing improvement in order to situate their examination(s) in relation to the Common European Framework (CEFR). The Manual is not the sole guide to linking a test to the CEFR and there is no compulsion on any institutions to undertake such linking. However, institutions wishing to make claims about

the relationship of their examinations to the levels of the CEFR may find the procedures helpful to demonstrate the validity of those claims." (p. 1)

Two examples of the use of the manual to link performances on the Test of English as a Foreign Language (TOEFL) to the CEFR levels are readily available online (Tannenbaum & Wylie, 2005, 2008).

Second, in the United States, the requirement of the 2002 "No Child Left Behind" legislation resulted in annual assessment of all English-language learners against English-language standards. The annual testing is to provide evidence that English-language learners are growing in their acquisition of the English language. While individual states determine the test that they will use, performances on all tests must be linked to state-adopted English- language development standards. An example of how linking was done for the (currently) 25 member states of the WIDA Consortium is provided in Kenyon (2006).

Issues and Directions in Standard Setting

Fundamentally, standard setting provides evidence concerning the meaning of scores. In language assessment, such meanings are often stated in terms of verbal descriptions of language proficiency levels such as the CEFR, the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages, the Interagency Language Roundtable Language Skill Level Descriptions, or English-language proficiency levels described in state standards such as the WIDA ELP Standards. Providing evidence linking scores to their interpretations is an important part of developing a validity argument for test score use or an assessment use argument (Bachman, 2003). Therefore, standard setting is an essential process in a validity argument for test scores intended to index levels on a scale consisting of verbal descriptors. Three significant challenges need to be addressed if standard-setting studies are to play the role that they should in the validation of language assessments.

First, the necessary resources need to be allocated in test development projects because conducting such studies is resource intensive and no single study may be deemed definitive. Language test developers who seek to relate performances on their tests to proficiency levels will need to include the time, money, and personnel resources to conduct such studies before their tests become operational. Indeed, if providing such score interpretations is the primary purpose of the assessment (as in the case of the WIDA Consortium's ACCESS for ELLs®), this goal will guide many decisions in the design of the test. Nevertheless, this step of the test development and validation process will definitely increase the burden on test development resources.

Second, because an evaluative decision needs to be made about the appropriateness and adequacy of the results of standard-setting studies, language test developers need to be clear as to what body or entity will ultimately stand behind the use of links between test performances and their interpretation based on standard setting. In the high-stakes case of ACCESS for ELLs®, the highest policy-making committee of the WIDA Consortium must approve and authorize the published links and the interpretation of performances on its test in terms of the Consortium's proficiency levels. In contrast, the CEFR manual appears unclear about what policy body, besides the test developer, is ultimately responsible for standing behind links established through standard setting.

Third, language testers need to contribute to the continuing research to understand and improve the process of standard setting. With a proliferation of standard-setting methodologies being used by language testers in Europe, new approaches to investigating standard setting are also appearing. In the US psychometric literature, research studies comparing

alternative methodologies routinely solicit data from participants. Yet analyses of panelists' comments tend to be superficial and quantitatively oriented. The interdisciplinary nature of language testing holds promise that more qualitative analyses of such data will begin to appear. A first step in this direction was demonstrated by Papageorgiou (2010), whose research sheds light on the potential use (or misuse) of impact data when linking test performances to proficiency levels. The sharing with standard-setting panelists of how many students will fall into each performance level if the links are set as proposed by the outcome of the study is typically recommended as a "reality check." This practice has its origin in US accountability testing. State policy decision makers do not expect drastic shifts in the numbers of students in each category from year to year, and may be especially concerned about the number of students in the bottom category. However, when language testers use standard setting to link test performances to proficiency levels, impact data can be very confusing when the recommendations of panelists are not confirmed. For example, panelists may doubt the process they followed if students in their institution's level C1 class are being designated as B2, even though an alternative explanation could also be made that the C1 class was mislabeled.

Qualitative studies by language testers will clarify panelists' decision-making processes and provide guidance as to recommendations on the composition of panels. Discourse analysis of consensus-building discussions may also shed light on how to improve procedures to avoid, for example, dominance by an individual in swaying the opinion of a group. The social nature of the process makes it ripe for the insights applied linguistics can provide. For this research to have the greatest impact, results will need to be accessible to researchers in the more psychometric tradition as well. Similarly, language testers using standard-setting methodologies need to keep abreast of the latest research in standard setting from the psychometric tradition.

SEE ALSO: Cut Scores on Language Tests; Language Testing and Accountability; Qualitative Research in Language Assessment; Rating Scales for Language Tests

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Stansfield, Charles

DANIEL J. REED

Dr. Charles W. Stansfield is president of Second Language Testing, Incorporated (SLTI), a thriving test-development company that he created in 1994, which has clients in government, education, and in the private sector. He has been a leading authority in the field of second language testing since the 1970s, being especially well known for his innovative work in language test development and for his significant contributions to the professionalization of language testing as a field. In particular, he played a leading role in the development of tests for more than 25 languages and dialects, worked hard to establish the International Language Testing Association (ILTA), and served as that organization's first president (1992–3). He has held several major positions over the years including program administrator for the *Test of English as a Foreign Language* at Educational Testing Service (ETS) in Princeton, NJ (1981–6), director of the Foreign Language Education and Testing Division and director of the ERIC Clearinghouse on Languages and Linguistics at the Center for Applied Linguistics (CAL) in Washington, DC (1986–94), and president of SLTI since 1994. In 2007, Stansfield was presented with the ILTA Lifetime Achievement Award.

Education and Early Years (1968–81)

Stansfield's interest in language testing did not fully develop until after he had completed graduate school. Throughout his undergraduate and graduate studies, he passionately pursued a number of other areas related to language learning. In the process, he earned a BA in Spanish (1968), an MA in foreign language education (1969), an MS in teaching English as a foreign/second language (1970), and a PhD in foreign/second language education (1973)—all from Florida State University. He studied abroad in Valencia in Spain, Bogotá in Colombia, and Monterrey in Mexico. Thus, Stansfield emerged from graduate school with extensive training in three distinct fields: Spanish, English as a second language (ESL), and bilingual education. Such a diverse background was considered unusual at the time, but it turned out to be surprisingly appropriate for the career path that he followed.

After leaving Florida State University, Stansfield taught Spanish at the University of Colorado from 1970 until 1981, ascending the ranks from instructor to associate (tenured) professor. In 1976–7, he spent his sabbatical taking courses in statistics and measurement. During this period, he also started and directed a Peace Corps Training Center in Managua, Nicaragua (1978), where he became a certified oral proficiency interviewer, and director of the University of Colorado Study Abroad Program in Xalapa, Mexico (1974–5) and in Valencia, Spain (1973). Like many good bilinguals, he occasionally did translations and informal interpreting.

At ETS (1981–6)

At ETS, Stansfield became widely known as a very competent test program administrator. As the associate director of language programs at ETS, and research administrator for the

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Test of English as a Foreign Language (TOEFL), Stansfield's ESL training, combined with the skills and knowledge of testing he had attained after graduate school, made him an ideal supervisor for the projects that were being conducted at ETS at the time. ETS TOEFL Researchers were from education research and measurement backgrounds and had no special training in language learning or language testing. Stansfield worked with the ETS researchers to help them to develop proposals to present to the TOEFL Research Committee on topics that he felt were most urgent to address based on the growing body of literature on language testing. He also helped to translate the ideas of ETS statisticians into terms that could be understood by the language testing specialists on the research committee, as well as by ETS test developers.

At ETS, Stansfield was made director of the newly operationalized Test of Spoken English (TSE). During its first year of worldwide operations, the test was taken by only 30 examinees, which generated an internal ETS recommendation that the test be discontinued. However, Stansfield argued to the TOEFL policy council that the operational program should be continued. He predicted in 1981 that the TSE would have 10,000 examinees by 1990. In fact, it reached that number that very year. Stansfield wrote the first TSE Manual, trained raters, personally adjudicated all significant score discrepancies across raters, and produced several ETS research reports on the TSE, several of which resulted in journal publications (see Powers and Stansfield, 1985). He also designed and supervised the development of the Speaking Proficiency English Assessment Kit (SPEAK), for use by universities in testing foreign applicants for teaching assistantships on campus. SPEAK continues to be used, over 30 years later.

In 1981, Stansfield was also given responsibility for another newly developed test, the Secondary Level English Proficiency (SLEP) test, following its first year of operations. The SLEP situation was identical to that of the TSE. Stansfield saw that the SLEP could be successful as an off-the-shelf test for use in US public schools. At the time, ETS had little experience with off-the-shelf tests and was lukewarm to continuing any type of SLEP program. However, again Stansfield gained the support of the TOEFL policy council. Stansfield personally took charge of marketing the SLEP and published on it as well (Stansfield, 1984). The SLEP continues to be sold by ETS today and a number of new forms have been developed.

Stansfield's first year at ETS was also the year of publication of what turned out to be a very influential paper by Canale and Swain (1981). The Canale and Swain model of communicative competence included components of sociolinguistic competence and strategic competence, as well as the traditional grammatical competence, and thus helped the language testing field move beyond the more simplistic, discrete-point model that had been dominant since the 1960s. At ETS, however, this new model was not automatically accepted, and Stansfield had to serve as an agent for change. A major example of Stansfield's influence was his advocacy for adding an essay to the TOEFL. The TOEFL had always been made up entirely of multiple-choice items, and previous experience with a writing sample requirement for the SAT had convinced ETS psychometricians that the associated reliability problems outweighed any validity benefits claimed by a free response format.

The skepticism of many of his colleagues notwithstanding, Stansfield presented a proposal to the TOEFL policy council to add a writing sample to the TOEFL. Stansfield argued that the bleak consequences of staying with an exclusively multiple-choice model were that the TOEFL would be perceived as being outdated in terms of its design, and that the prestige of the program would suffer serious decline. Fortunately, the TOEFL policy council agreed.

The next steps in the development of what became the Test of Written English (TWE) were to do a survey of the types of writing tasks that were typical in universities, to write prompts based on those task types, to field-test those prompts, and to create a scoring

rubric with associated scoring procedures. Three task types were selected: compare and contrast, take a position, and describe and interpret a chart or graph. The accepted holistic scoring approach at the time was to divide a sample of examinee papers by topic and to write a few sentences describing the different levels of competence they exhibited, thereby creating a rubric for each topic. This was the part that bothered Stansfield. He felt that a topic-based rubric said nothing about overall writing ability. He argued persistently for the development of a "cross-topic rubric," an idea that was not a part of the literature on holistic scoring and considered unrealistic at the time. However, the efforts that went into the development and extensive trialing of the cross-topic rubric paid off (Stansfield, 1986). After the first operational administration of the TWE, ETS psychometricians and writing specialists were surprised by the significantly higher-than-normal reliability produced by the new cross-topic rubric. After subsequent administrations showed equal or even higher reliability, the cross-topic approach to developing a holitistic scoring guide became standard in writing assessment and continues to be so today. The TWE, whose development and operationalization Stansfield directed, became a valuable complement to the TOEFL. At the time he left ETS, he was developing a long-term research agenda for the TWE (Stansfield & Ross, 1988).

At the Center for Applied Linguistics (1986–94)

In 1986, Stansfield left ETS to begin a language testing unit at the Center for Applied Linguistics (CAL). Whereas Stansfield's position at ETS had allowed him to apply his ESL background to work on important English language tests, his position as director of the ERIC Clearinghouse on Languages and Linguistics at the Center for Applied Linguistics afforded him the opportunity to return to non-English languages, and thus to make use of his training in Spanish and bilingual education. He quickly established a testing unit at CAL. One of his main accomplishments was to develop a set of tests that employed a format that would facilitate moving proficiency testing from the government into academia. The two-on-one oral proficiency interview had worked well in US government language programs since the 1950s, but a more practical approach was needed if oral proficiency testing was to be conducted at colleges and universities nationwide. The simulated oral proficiency interview (SOPI) was created for this purpose. Like the TSE, it made use of prerecorded, contextualized prompts, and thereby eliminated the need for interviewers and the associated expense and difficulties of training them. The SOPIs could also be scored on the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines.

His work on the SOPIs followed up on John Clark's success in obtaining high correlations between the Chinese Speaking Test (which also employed a semi-direct format) and live interviews with the same candidates. During his first two years at CAL, Stansfield replicated Clark's success with diverse languages (Portuguese, Indonesian, Japanese, and Hebrew). As in the case of SPEAK, the idea was to create a test that an institution could purchase and administer by training their own raters. This led to the development of "rater training kits" that included training materials that explained the test format and scale. The kits also included recordings of "benchmark" samples at each level on the scale along with "justifications" that explained why a particular sample had a particular rating, and not a lower or higher one. He then created enhanced SOPIs in other languages, including the commonly taught languages, such as French, German, and Spanish. In addition, a special form of the SOPI was also developed for the specific purpose of testing candidates for Spanish, French, and bilingual education teacher certification in Texas. The tests Stansfield created and subsequent forms were used for 20 years in Texas.

President of Second Language Testing, Inc (1994–present)

Stansfield left CAL in 1994 to start SLTI. It is unique in its focus on test translation and language test development. Most companies do not limit themselves to one subject area such as language, and they provide full services in the sense of administering and scoring tests as well as developing them. SLTI's niche is to develop tests, language tests only, and to do any needed, related research such as validation and standard setting, and then turn those tests over to the organizations that commissioned them.

Just after leaving his position at CAL, Stansfield received a Mellon Fellowship to study municipal, state, and federal tests for court interpreters. He was also contracted separately to evaluate the Federal Court Certification Exam (FCICE) and to suggest a multiyear program of improvements. These experiences allowed him to utilize two parts of his background that he especially enjoyed: Spanish, and the testing of translators and interpreters. His expertise in interpreter testing grew, as did his reputation in this area. About five years later, in 2001, his company SLTI received a contract to modify the FCICE (Spanish-English screening test), and has continued to create new forms of that test ever since. In recent years SLTI has expanded into developing tests for medical interpreters and for military translators and interpreters. SLTI has also developed listening-summary translation examinations for the US government in Southern Min, Farsi, and five dialects of Arabic.

After creating SLTI, Stansfield also obtained the rights to the Modern Language Aptitude Test (MLAT), the Modern Language Aptitude Test-Elementary (MLAT-E), and the Pimsleur Language Aptitude Battery (PLAB). He formed the Second Language Testing Foundation, a not-for-profit entity to publish these tests and ensure that they would continue to be available. Work related to these tests has included the development of a model for adapting existing aptitude tests (which are mainly designed for persons whose first language is English) to speakers of other languages. A version of the MLAT-E was developed and validated within this model, the Modern Language Aptitude Test-Elementary Spanish (MLAT-ES), or which is also known by its Spanish title, *Prueba de Aptitud para Lenguas Extranjeras*, abbreviated PALE. SLTI also continues work in aptitude testing, and has developed multiple new forms of the US government's defense language aptitude battery as well as multiple forms of a DLAB screening test, the Pre-DLAB.

One of SLTI's current projects is to assist tribes in developing tests of Native American languages under a contract with the Bureau of Indian Education. SLTI is providing technical assistance to the Navajo, the Sioux, Miccosukee, Cherokee, Laguna Pueblo, and Bug-O-Nay-Ge-Shig tribes. The project has already produced an annotated bibliography and a review of the literature on the testing of indigenous languages around the world (Haynes, Stansfield, Gnyra, Schlief, & Anderson, 2011).

In February 2011, SLTI became a wholly owned subsidiary of Berlitz Languages Inc. As of this writing, Stansfield remains president of SLTI, which continues to make language tests for a variety of clients, including US Government agencies, large testing companies, large private corporations, and educational organizations.

Summary

There are a set of prominent threads that run through Stansfield's long, productive, and ongoing career: his continued interest in the testing needs of foreign language, ESL, and bilingual educators, his involvement in aptitude testing, his work in translation and interpretation, and a special knack for successfully collaborating with different types of organizations. He has worked with private companies large and small, government agencies, K-12 educators and academics while maintaining an active interest in entrepreneurship

and innovation and a concern for the development of the language testing profession. In all these areas, Stansfield is highly respected for his productivity and leadership.

SEE ALSO: Assessment of Speaking; Assessment and Testing: Overview; Assessment of Writing; Clark, John L. D.; Rating Oral Language; Rating Scales for Language Tests; Technology and Language Testing

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Statistical Analysis of Test Results

ANTONY J. KUNNAN AND NATHAN T. CARR

Introduction

Statistical analysis of test results provides information to test developers and users that can be used as evidence to build an overall validity argument which supports links between the observations of performance on language tests to score interpretations, and score-based decisions (Kane, 1992, 2006; Xi, 2008). The choice of which statistical analyses to perform, and their interpretation, depend in part on whether the test results to be analyzed are from a norm-referenced test (NRT) or a criterion-referenced test (CRT). In the former, a test taker's performance is compared to other test takers' performances who took the same test; while in the latter approach, a test taker's performance is interpreted with reference to a set of performance criteria (such as standards or mastery levels with respect to test content) previously set by the test developer or a stakeholder. Sometimes, a test is designed to be used as both an NRT and a CRT, but this fact is also relevant to statistical analysis.

Statistical Analyses

Statistical analyses provide a means of systematically summarizing examinees' performance on a test to provide information about both the examinees and the test as a measure for a particular group of examinees. The latter use of statistical analysis is the main focus here—the use of statistics for evaluating how good a test is for its intended purpose. The statistical procedures are grouped according to four of the perspectives on test quality, which can be used in demonstrating the validity of test interpretation and use: evaluation, generalization, explanation, and utilization (following Bachman, 2005, and Chapelle, Enright, & Jamieson, 2008).

Evaluation

Evaluation issues pertain to the defensibility of the manner in which examinees' performance is summarized into test scores. Examinees' scores are used to reflect their performance and therefore the link between performance and score needs to be supported in several ways.

First, it is important to understand the distributions of the test takers. Statistical analysis can reveal the distributions through calculation of the following: mean, median (used for small samples), mode, and standard deviation. These results will provide information on the examinees' scores in terms of the average score (mean), its mid-point (median), most frequently occurring score (mode), and the overall variation from the average (standard deviation). For large groups and in contexts where further statistical analysis is planned, skewness (scores bunching toward to the right, center, or left of a score distribution shape) and kurtosis (whether the scores are peaked or flat in terms of the score distribution shape) would also be examined. Overall, these descriptive statistics inform the test researcher or classroom teacher about how a test-taking sample performed on a test. (See Carr, 2008, for a more complete discussion.)

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Second, we need to evaluate the statistical characteristics of items, tasks, and tests. One approach in assessing the quality of test items and tasks or improving their overall quality is to pilot (or pretest) the test items or tasks. The data obtained need to be scored and coded to provide a database for statistical analyses. Statistical analyses can then be conducted with a view to evaluating whether the items and tasks behave as intended. The identification of which items are appropriate or problematic is accomplished through *item analysis*, consisting of analysis of *item difficulty*, *item discrimination*, and *distractor analysis*.

Item difficulty is most commonly estimated by using *item facility* (*IF*; also commonly referred to as *p*), the proportion of test takers who responded to a test item correctly. In the case of NRT, ideally, items will have an IF near .50; that is, half of the test takers will answer each item correctly. The item will then provide the maximum information for the largest group of test takers (i.e., those in the middle ability range, if scores are in fact distributed normally, as they should be on an NRT). Allen and Yen (1978) point out, however, that in practice, items ranging between .30 and .70 are generally acceptable. Items outside this range are deemed to be too difficult or too easy, respectively. On the other hand, in CRT we hope that 50% of the test takers whose ability level is at the cut score will answer a given item correctly. In practice, unfortunately, this is a very difficult proposition to manage; as a result, in CRT item analysis, IF is usually only reported for general information, and to assist with the interpretation of discrimination and distracter analysis results.

Item discrimination can be analyzed following two approaches for both NRT and CRT: correlational and subtractive. In NRT, the correlational approach uses the point-biserial (pb(r) or $r_{\text{p-bis}}$) correlation coefficient between each item and the total score on that section of the test. If the test is one homogeneous whole (e.g., composed entirely of discrete-point grammar items, rather than separate grammar and vocabulary sections), of course, the items should be correlated with total test score. The correlational index is interpreted as the relationship between performance on the item and on the section or test as a whole; it is therefore simply an item-total correlation. The subtractive NRT index is the upper–lower discrimination (*item discrimination*, abbreviated ID or ID_{UL}). This is the difference between the IF for high-scoring and low-scoring test takers; these two groups are usually defined as the top and bottom 25%, 27%, or thirds of the test takers taking the test. One drawback to using ID is that it ignores the performance of all the test takers in the middle. Thus, when sample sizes are large enough ($n > 35$, perhaps), the point-biserial may be preferable.

In CRT, the correlational approach uses the ϕ (phi; also referred to as item ϕ) correlation coefficient between each item and mastery/nonmastery classification (mastery = 1, nonmastery = 0). Items should, of course, be correlated with section mastery/nonmastery when there are distinct sections. The most commonly used CRT subtractive approach is the B-index, which is calculated by subtracting the IF for all test takers who failed the test (nonmasters) from that of test takers who passed the test (masters). Another less commonly used subtractive CRT index is the difference index (DI). This requires administering a test twice, either to the same group before and after instruction, or to one group of test takers who are presumed to have mastered something and another group who presumably have not (e.g., test takers in two levels of a language program). Like the B-index, it is calculated by subtracting the IF values for the two groups. Both item phi and the B-index are cut-score dependent; that is, as with phi lambda ($\Phi(\lambda)$), if there are multiple cut scores, they must be reported for each cut score. Similarly, when more than two groups are used for the DI (as in a placement test), it must be reported for each pair of adjacent groups (levels one and two, levels two and three, and so on).

When interpreting discrimination indices for an NRT or CRT, the same rules of thumb apply. For the point-biserial or item ϕ, ideally, items should have discrimination values of .30 or above. For ID, the B-index, and the DI, values should be .40 and above. These

values are what is typically expected in the context of professional item development for high-stakes testing, though; in the case of locally developed tests, particularly those to be used for classroom testing, it is often necessary to accept lower values. These rules of thumb—both for discrimination and for difficulty—are *not* absolutes, and it is important to keep in mind that these analyses matter most when it is necessary to improve a test with poor internal consistency. When a test already has high reliability or dependability, it is probably only necessary to worry about the worst items, unless one is hoping to shorten the test.

This discussion of difficulty and discrimination assumes that scoring is dichotomous; that is, that each question is scored as either correct or incorrect, with no partial credit possible. With polytomous scoring (i.e., when questions are worth more than one point, with partial credit possible), however, some adjustments must be made. First, rather than IF, we use IF*, which is equal to the average score for a given item divided by its number of points possible. We then use IF* in calculating the $ID_{U\text{-}L}$, B-index, or DI. Technically, this also changes the correlation coefficient being used, so that the point-biserial and phi are not being calculated. Practically speaking, however, there is no change, since these are both Pearsonian coefficients, and a computer will use the same formula. The only difference is that the correlation should technically be called a Pearson *r*, rather than a point-biserial. These slight complications notwithstanding, though, the interpretations for IF*, $ID_{U\text{-}L}$*, B*, DI*, and the two correlational estimates of discrimination are the same as for their NRT equivalents.

Distractor analysis: Item analysis, or consideration of difficulty and discrimination, tells us which questions on a test are problematic. In the case of multiple-choice tests, we can then examine the distractors (incorrect choices) on those questions to help improve them. One way to do this is to see what percentage of test takers selected each option, and then revise or replace each one that was not selected by at least 10% of the test takers (Bachman, 2004). Two other approaches involve examining the relationship between test takers' total scores and their distractor choices. The first of these methods is to calculate the point-biserial correlation of each option with total score. This is done by, in effect, "scoring" an item as many times as it has options; thus, a three-option question would undergo the process three times, once for each option. The correlation for the correct answer will, of course, be the same as the item's point-biserial estimate. The correlations for the distractors, on the other hand, should all be negative. A *positive* correlation for a distractor is problematic, particularly if it is not close to zero—that is, if choosing a particular incorrect option is associated with having a higher score on the test, then something is clearly wrong. A final method is to compare the proportions of test takers in the high and low groups (the same ones as are used in the ID, B-index, or DI) who selected each distractor.

Third, we turn to analyzing rating scales and raters. When analyzing scores based on ratings, we are concerned with both inter-rater consistency (how similar the ratings are that are produced by different raters), as well as intra-rater consistency (how consistent each rater is; that is, whether the rater would give the same score at different times or on different occasions).

Perhaps the simplest approach to estimating the consistency of ratings is to correlate sets of ratings. This correlation is often reported by itself, but to be used as a reliability estimate, it should be adjusted using the Spearman-Brown prophecy formula. When there are more than two ratings, the Fisher *Z*-transformation should be applied to each correlation, the correlations then averaged together, and the result retransformed to a correlation coefficient. Another approach that can be used when there are multiple scores (for multiple raters, multiple tasks, or for individual subscales of an analytic scoring rubric) is to calculate Cronbach's alpha as an estimate of the internal consistency of the ratings.

A more informative approach is to use generalizability theory to estimate the consistency of scoring. This offers the added advantage of identifying which facets of the measurement process are contributing most to unreliability. The main disadvantage of using generalizability theory is that it requires a greater degree of technical expertise. The same is also true of many-faceted Rasch theory, which can be used to complement generalizability theory. Its greatest advantages are that it provides ability estimates for each test taker, and difficulty or severity estimates for each rater, task, or rubric subscale. It can also provide diagnostic information on whether individual raters are showing more or less variability in their ratings than would be expected.

In "messy" rating situations, those in which there is inconsistent overlap in terms of which rater scored which test takers, the rater agreement proportion (RAP) can be used. This is the proportion of ratings for a given task (essay, spoken response, etc.) that are the same; for example, if three out of four ratings are the same, the RAP is .75.

Fourth it is important to understand differences in group performance. When different test-taker groups take a test, some groups may perform better than others on some test items. These groups may self-report memberships through a questionnaire (examples of self-reporting are gender, race and ethnicity, age, native language, second language learning, etc.), assigned by a test designer (examples, test accommodations, planning conditions, computer use, etc.) or assigned by a researcher in an experimental research setting (examples, experimental group versus control group; treatment 1 group versus treatment 2 group, etc.).

The analysis of variance and *t* test statistics can provide information as to whether group differences on certain test items or tasks are statistically significant. Test-score differences among test-taker groups will normally also require an examination of test bias.

Generalization

To evaluate the assumptions associated with generalization, test scores need to be analyzed in terms of their reliability, dependability, and generalizability. In NRT, the concern is with the consistency of scores (technically, consistency of ranking, but in practice it is generally treated as consistency of scoring), which is referred to as reliability. In CRT, we are concerned with two areas of consistency, both referred to as dependability. The first is the dependability of scores, and the second is the dependability of classification. In general, however, it is important to provide an index of score consistency (and classification consistency, for CRT), as well as an estimate of the margin of error associated with the estimate (for NRT, the standard error of measurement, or SEM; for CRT, the criterion-referenced confidence interval, abbreviated the CRT CI or CI_{CRT}).

Two important alternative paradigms for looking at measurement consistency have been developed in the last few decades: generalizability theory (G theory) and item response theory (IRT). Generalizability theory is particularly suited to analyzing rated performances, as in tests of speaking or writing, but is not limited to these contexts, however. G theory can be used to analyze both NRT and CRT results, and also provides estimates of the margin of error for test scores, as well as classification consistency for CRTs. IRT is particularly suited for working with large (i.e., numbering hundreds or thousands) test-taker groups. Detailed explanation is beyond the scope of this entry, but it is important to mention an IRT variant known as the many-facet Rasch model, which is particularly useful with rated performances.

Explanation

To support explanations of score meaning the key applications of statistics are explaining the constructs being assessed, explaining test performance, and conducting concurrent validation studies. One way of looking at score meaning is through an analysis of the

composition or structure of the scores; whether the test structure (or language abilities as operationalized in the test) is unitary or divisible (or multicomponential). This can be examined through exploratory factor analysis (EFA), which seeks to identify hypothetical factors that account for the patterns of correlations that are observed in test scores (from individual items or tasks). In confirmatory factor analysis (CFA), a proposed test structure is specified in advance and the data available in the form of test scores are used to evaluate it. Structural equation modeling can also be used for this purpose (see Kunnan, 1995, 1998). Concurrent validation studies are conducted by examining how well a new test's scores correlate with some other test's scores that have already been demonstrated to be useful in decision making, or have been demonstrated to be a good measure of the intended construct. Such studies use correlations to analyze the data.

Utilization

The utilization portion of a validation argument needs to provide support for the intended test uses. Statistics are helpful in this area in standard setting, estimating classification errors, and understanding test consequences and washback.

When test takers receive scores for their test performance, they are typically accompanied by other classifications such as "pass" or "fail," or categories or levels of performance (such as "needs improvement," "basic," "proficient," "advanced," or "unqualified," "qualified" and so on). These classifications are based on standards that have been set either in terms of pre-specified percentages of "pass" or "fail" (such as 5% or 10% pass rate) as in NRTs, or pre-specified performance or content standards (operationalized in terms of cut-points or cutoff score) as in CRTs. While both types of standard-setting procedures need to be defended, performance and content standards are more complex because the procedure involves many steps and a clear research design. Understanding consequences and washback are other ways of appreciating the effect of utilization or decision making of the test.

Software and Reporting

Software

Many software programs, some general and others written specifically for assessment, can be used for analyzing test results. For entering, organizing, and cleaning data, Microsoft Excel or a similar spreadsheet is a simple, easily available, and easy-to-use choice. It also provides adequate descriptive statistics, has very powerful features for creating graphs, and can calculate the Pearson *r*, although non-Pearsonian correlations must be calculated manually. For anything beyond the simplest statistics, however, a true statistics package should be used. Some of the most common ones are IBM SPSS Statistics (formerly SPSS), STATA, BMDP, R, and SAS.

For NRT and CRT item and distractor analyses, Microsoft Excel can be used fairly easily, and can also be employed for calculating reliability (Carr, 2011). As for software specifically developed for handling reliability and item analysis, Lertap and ITEMAN are two commonly used packages. Lertap runs within Microsoft Excel, taking advantage of its file formats, output options, and familiar interface. ITEMAN, on the other hand, works with ASCII-format data files.

For generalizability theory, while the basic estimates can be calculated using results from general statistics packages, there are three packages developed by Brennan that are available for free and can calculate results automatically—aside from calculating proportions of variance, which requires manual addition and division by the user. These are GENOVA, the original program; urGENOVA, which accommodates unbalanced designs;

and mGENOVA, which accommodates both unbalanced and multivariate designs (e.g., when there are multiple subscales within a rubric).

For IRT, BILOG and MULTILOG are perhaps two of the best-known packages, with BILOG used for handling dichotomous data, and MULTILOG for polytomous items. The program PARSCALE, on the other hand, can apply both dichotomous and polytomous models. Two well-known programs for applying the many-facet Rasch model, as opposed to IRT models in general, are FACETS and WINSTEPS.

For factor analytic studies, IBM SPSS Statistics can be used to perform exploratory factor analyses. Other programs are needed, however, to perform confirmatory factor analyses and structural equation modeling (SEM), the best-known are EQS, LISREL, AMOS, and M+.

Reporting

Reports of statistical analysis results should contain descriptive statistics and correlations among all the variables. The number of decimal places to be reported generally depends upon the scale of the variables, but for correlations, two or three places is the norm, although five places is appropriate if the correlations might be used as data for factor analytic studies replicating or extending the project. Test- or survey-based studies should include reliability or dependability estimates for the overall test or survey, as well as for each section or scale for which separate scores are reported. Each reliability or dependability estimate should be accompanied by its corresponding CRT confidence interval or standard error of measurement.

In reports or papers discussing CFA or IRT results, model fit must be discussed. In these studies, as well as in those using EFA, it is also important to explain how the final model was developed, how it compared to other plausible models, which other models were considered, and why they were rejected. Factor loadings should be reported in all factor analytic studies, as well as any correlations among factors. In the case of CFA and SEM studies, diagrams or figures of models are important for ease of understanding by readers. All journal articles or research reports based on factor analytic studies, particularly those employing CFA and SEM, should include an appendix containing the correlation or covariance matrix and standard deviations of all variables included in the study. This information is essential in allowing others to replicate and verify results.

Conclusion

These statistical analyses of test results provide an overview of the types of procedures that are used to investigate how tests perform with particular groups of examinees. These types of analyses are needed to build a validity argument which supports the links that test users hope to be able to make between test performance, test-score interpretations, uses, and decisions. Only fundamental statistical procedures used in standard test analysis contexts were included in this entry. Variations in test constructs, research design, data collection, and research questions might need approaches not discussed here.

SEE ALSO: Bias in Language Assessment; Comparing Two+ Independent Groups; Correlational Research in Language Assessment; Cut Scores on Language Tests; Factor Analysis; Generalizability Theory in Language Testing; Inference; Structural Equation Modeling; Validation of Language Assessments; Washback in Language Assessment

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Status Planning

SUE WRIGHT

Status planning concerns itself with the conscious choice of the variety(ies) that will become the official language(s) of the state, the medium of its institutions, and the means for interaction between state and citizens. As an activity it is a recent phenomenon, only appearing in its present form with nation building and the nation-state.

It occurred first in Europe, where the nation-state model developed. As the concept of nation-state spread, so too did the ambition to achieve congruence of territory, people, and language within the state. National elites worldwide foster national linguistic homogeneity.

Status planning may, however, prove to be a short-lived phenomenon. In the early 21st century, the political landscape has changed. In many ways we are entering a postnational era and the new context may not be as favorable to top-down language planning as the nation-state era.

Feudal Europe

Status planning did not exist as such in medieval Europe. The feudal system developed language practices organically and there was no central decision-making process influencing language choice. The three main classes (nobility, clergy, and peasants) were not linguistically homogeneous. Those at the very apex of the ruling class acted on a European stage, marrying, inheriting, making alliances, and waging war across the continent. The great dynasties were multilingual, as were the lesser aristocrats in their retinues.

The clergy was another pan-European group. Priests and members of religious orders were at the very least bilingual with knowledge of the sacred language as well as their first language. Catholic monks and priests were all under the authority of the pope in Rome and even the lowliest parish priest knew a little Latin, the sacred language, and could interact with fellow Catholic clergy from any country. The Orthodox Church also centralized authority and had sacred languages that acted as lingua francas.

The third and most numerous class, the peasantry, was, in contrast monodialectal. Anchored on the land, under the control of their feudal lord and rarely traveling far from home, peasants used dialects with limited territorial reach. Europe before 1500 thus presented a linguistic landscape where difference came from class and calling. We cannot yet discern linguistic cohesion within polities nor a mosaic of national linguistic groups.

The State-Nations

Linguistically homogeneous nation-states began to develop in the 16th and 17th centuries, as monarchs in the west of Europe wrested power from their aristocracies, fixed the borders of their states, and centralized authority in their capitals. The feudal system crumbled, law was no longer a local affair, and the state was increasingly administered by a new breed, the literate, secular bureaucrat. Increasingly these administrators abandoned Latin as the language of literacy to work through the prestige vernaculars—the languages

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of the king, the court, and the major commercial centers. In France, this was the dialect of the Ile de France; in England, the dialect of the southeast Midlands; in Spain, the dialect of Castile. They were soon to be confirmed as languages of power in early examples of status planning. François I enshrined his own variety of French as the language of state by the Edit de Villers-Cotterêts in 1539. In 1535, Henry VIII ruled that all agents of the crown in Wales were to use English in official settings.

Other developments aided the standardization and spread of these prestige vernaculars. The introduction of printing to Europe in the late 15th century provided a technology that allowed cheap reproduction of texts. From the early 16th century, the controversies of the Reformation encouraged literacy. People wanted access both to the sacred word and to interpretations of it. The printers anxious to sell the product to the largest market possible would not supply translations in dialects with small numbers (Anderson, 1991). People's desire for the sacred texts overrode their reluctance to read in a dialect that was not quite their own.

For two centuries spread of the standardized languages of state was limited to the growing middle class. A diglossic situation developed and only began to disappear when there was profound political and economic change. This came when the doctrine of the monarch's "divine right to rule" was challenged, for example in the English Civil War, the American War of Independence, and the French Revolution. For the first time since antiquity, the masses were to be involved in governance. Consulting and informing the "sovereign people" was, however, problematic. The population was still massively rural, still speaking local dialects.

In France, the revolutionary government soon realized the massive task confronting them if the "people" were to be consulted. Only a minority spoke French (Grégoire, 1794). At first all communications were translated into the various languages and dialects of France. Then, in 1793, the revolutionary government changed policy and reconfirmed the Edit de Villers-Cotterêts. Using French became a patriotic duty, a sign of loyalty to the Revolution. There is, of course, a big jump between making a status planning decision and implementing it. It was another century before the revolutionaries' language policies were realized. The most significant step toward a French-speaking France was free, obligatory, French-medium primary education, introduced in the 1880s. The official language of the state also spread as a side effect of other developments: industrialization and urbanization drove the rural population from the isolation of their villages into the linguistic melting pot of the towns and cities where the national language acted as a lingua franca; citizen armies brought conscripts together and encouraged acquisition and use of the national language; greater democracy required media for the nation-wide debate necessary before elections and referenda. Top-down planning together with spin-off from these other processes brought about national communities of communication. Most moved to the national standard because linguistic unification fitted with the prevalent ideology and was seen as part of national identity and patriotism. Those who did not accept it (or who were excluded) have suffered to a greater or lesser extent, always viewed as minorities and not fully part of the national group.

The Nation-States

The ideal of sovereign peoples ruling themselves in their own inalienable territories proved an intoxicating idea. In Germany, Herder (1784) argued that a nation was a natural state of affairs, its members molded by their geographical niche, shaped by their own exclusive history, speaking their own unadulterated language and needful of their own sovereign territory. This line of reasoning approaches the idea of congruence of language, people,

and state from the opposite direction. Rather than fixing frontiers and then legislating to encourage homogeneity, nation building became a homogeneous people's search for discrete territory. The problem in this ideology was the concept "language." Where geographically did a "language" start and stop? "German," for instance, was spoken from Friesland to the Baltic, from Schleswig-Holstein to Switzerland, from Alsace to Austria. Did all these speakers constitute a nation? They already possessed a common standard written language, *Hochdeutsch*, which Luther's translation of the Bible in the 16th century had played a role in establishing. In the event the German nation-state formed in 1871 was not a home for all German speakers. Its Prussian leaders adopted ethnolinguistic criteria for membership only insofar as it suited their broader political strategy.

Nonetheless, Herderian ideology inspired central and eastern Europe throughout the 19th century. The idea that a sovereign people should have its own territory and that any exterior power that tried to dominate it should be resisted had powerful appeal in this part of Europe, divided among the Russian, Austro-Hungarian, and Ottoman empires. However, before proto-elites could begin to mobilize for self-determination, their proto-nations had to be brought to an understanding that they were discrete groups. The communication challenge was the same as that faced by the French revolutionaries. As Tom Nairn (1977) famously put it, "the elites had to invite the masses into history and the invitation had to be written in a language that they could understand." So language planners played a key role in the process. Linguists codified and standardized the dialects designated as national language, aiming to promote the greatest possible comprehension within the "nation" and to provide a clear demarcation from neighbors on the language continuum (Kloss, 1967). The "national" language was spread through education in the vernacular. Songs, folktales, and legends in dialect were collected and written down in the new standard. The political project of independence was elaborated in the national language. And from the Balkans to the Baltics there was growing national awareness. When the treaties at the end of World War I broke up the defeated empires and established a number of new nation-states in central and eastern Europe, their elites thus had national languages in place, ready to be designated the official languages of the new polities.

The Nation-State as World System

The ideology of nationalism spread worldwide. In the 19th century, revolutionary movements in South America were successful in wresting power from the imperial powers of Spain and Portugal. In the 20th century, the ambition to be a sovereign people in an independent state swept through Africa and Asia, and the French, Dutch, and British empires were dismantled. Immediately these new nation-states began nation building. Most had diverse populations because of the frontiers created by colonialism. The situation resembled the case of the state-nations, namely, several cultural/linguistic groups found themselves together as citizens under one law and one set of institutions. New governments copied the language planning of European nation building and mostly opted for state monolingualism. Some chose languages that had their origins as regional lingua franca, others the former colonial languages, in order not to give any single autochthonous group linguistic advantage. However, status planning has generally proved unsuccessful in the multilingual settings of Africa, Asia, and South America. The adoption of a single language of state has tended to reinforce class divisions within society rather than create a cohesive community of communication. Many states seem to be in the phase between planning decisions and policy implementation. For example, not all states can yet provide education for all in the state language. Of course, as mentioned above, the realization of policy process took some time in Europe; in France it was a full century before the revolutionaries' aim of placing

a French-speaking school teacher in every village was finally achieved. So, based on this experience, language planning may yet prove successful in the younger nation-states.

Moving Beyond the Nation-State

However, there are a number of other reasons why the process may be different; indicators suggest we are moving into a new era where the nation-state system is not the exclusive political frame. A nation-state could be defined (see Özkirimli, 2000) as a territory with stable borders which possessed a national government that was the sole authority for its citizens; a domestic market protected by quotas and tariffs; a national defense force, staffed through conscription; a population that identified with the state through the complex influence of national media, a national education system, a standardized national language, and national symbols and icons. We are now witnessing how these factors are changing:

- National governments are no longer sole law giver and law enforcer for citizens. Human rights increasingly take precedence over national governments' jurisdiction where there is abuse. The United Nations (UN) has sanctioned intervention within sovereign territory and brought political or military leaders before its international courts.
- The end of communism allowed the free market model to penetrate every part of the globe. The World Trade Organization pressurizes states to open up their domestic markets to foreign competition. Regional groups have set up common markets; the EU (European Union) provides the most developed example with free movement of people, capital, goods, and services within its external borders.
- The cataclysmic wars of the 20th century provoked widespread dissatisfaction with the nation-state system and the ethnocentrism it encouraged. Attempts have been made to construct an international forum for resolving disputes; a state under threat can appeal to the United Nations. Today national governments rarely rely solely on their own defense forces; many belong to regional defense organizations such as NATO (North Atlantic Treaty Organization). The system is far from perfect or complete, but it is also a long step from former reliance on "balance of power" diplomacy and the defense capability of national armies.
- National media focused attention on the national scene and played an important role in the construction of national identity (Anderson, 1991). In a globalizing world flows of information and webs of contacts now cross borders. The Internet permits millions of individuals based anywhere in the world to interact in real time. Satellite and cable television construct transnational audiences in varied geographical locations. Those who are literate and have access to the hardware and electricity necessary are able to break free of national constraints.
- Education was the bedrock of nation building. Elites were largely formed in national universities. Only a tiny number of intellectuals and artists could aspire to global experience. This is no longer the case. In 2008 over 3.3 million tertiary students were enrolled outside their country of citizenship (OECD, 2010).

In all of these internationalizing projects and processes the high boundary fences of the nation-state are being dismantled. Individuals are increasingly likely to find themselves asked to be a member of transnational teams and act in international or supranational forums. The question then arises: in what language can contact take place? In all transnational settings there has been a steady trend toward use of a lingua franca. This is, at the present moment, English.

There are several points to make about the spread of English as a global lingua franca. First, people gravitate to one lingua franca; they do not see the need to learn many lingua

francas. Thus although international and supranational bodies officially designate a number of languages as their official languages, the growing tendency is to use English. This is to be noted in the UN, where Arabic, Chinese, English, French, Russian, and Spanish are official languages. It is also occurring in the EU, where the official languages of all member states are also official languages of the EU, and where there have been immense efforts to achieve multilingualism.

Second, where national bodies have made determined efforts to halt the encroachment of English within the state, citizens have often rejected such policies and found ways of countering them. The French government brought in laws to protect use of French in the public space in 1975 and again in 1994. French citizens have, however, flouted much of the legislation (Ager, 1998) and the language loyalties of the nationalist era seem attenuated.

Third, where individuals see English as a means of their (or their children's) social promotion they demand access to it. English seems a necessary if not sufficient factor in entry to elites. In 2002 the Malaysian government began an experiment to teach mathematics and science subjects through English language. In 2010 the policy was abandoned, but the following year, 2011, saw a vociferous campaign in Malaysia (http://thestar.com.my/) to reverse this decision. In India, the Dalits are lobbying for English-medium education, seeing in it the opportunity to break out of their low social position (Babu, 2010). The pro-English lobby argues that if the state does not supply English-medium education, then parents with the means to do so will turn to the private sector and the class divide will be reinforced by language skills.

We cannot yet know the linguistic outcomes of the new global context and there are certainly too many economic and political uncertainties to say whether the move to English as a second language will continue or falter. However, it is safe to predict that status planning cannot play a central role in restricting a lingua franca. At the supra- and international level of interaction all language change is likely to be organic and unplanned, since there is no acknowledged authority that can rule on cultural and linguistic matters. At the state level, language planning will only be accepted if it coincides with new patterns of behavior and identity, new social pressures, and the individual's personal project in the globalizing world.

We thus have a new development in status planning. Whereas measures to introduce the national language to national groups were immensely successful, attempts to maintain linguistic equality among states or to contain the spread of English as a lingua franca have been spectacularly unsuccessful. The lesson to draw from this seems to be that status planning delivers when it is in accordance with other phenomena. Learning and using the national language supported the adoption of nationalism as an ideology, patriotism as a way of being, as well as aiding social promotion within the nation-state. In a globalizing world, people seek the linguistic means to enter the virtual and actual networks of the new context. They want access to global flows of information. They refuse to be denied the opportunity to gain the linguistic skills that seem to be a prerequisite to benefiting from globalization, in order to maintain the old ideal of congruence of language territory and people.

SEE ALSO: Cultural Identity; Multilingualism and Ideology; Multilingualism and Language Rights; Multilingualism and Minority Languages; Nation; Prestige Planning

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Strategies of Translation

SANJUN SUN

The term "strategy" in "translation strategies" is often used synonymously with such terms as "procedure," "technique," "method," "tactic," "approach," and so forth. Their meanings overlap, and translation researchers define them in various ways. Despite the terminological confusion, discussions of translation strategies can be traced back to Cicero's advocacy of sense-for-sense translation in 46 BC, and are widely covered in translation textbooks for their pedagogical significance. This topic also relates to broad theoretical issues in translation studies.

Researchers have attempted to distinguish translation strategy from its synonyms, and to develop their own classifications from different perspectives. For example, Lörscher's (1991) classification is based on a cognitive approach, while Chesterman's (1997) differentiation uses a textual approach. Yet, the conceptual confusion has not been dispelled. This entry tries to distinguish translation strategies, techniques, and procedures, and to consolidate existing classifications.

It seems that clear-cut definitions of these terms might not work as well as prototype definitions. Most researchers would agree that the two prototype translation strategies are literal translation and free translation. The former focuses on the level of words, while the latter goes beyond the word level and emphasizes the creation of a target text that sounds natural in the target language. These two strategies are described in a variety of oppositions: word-for-word translation versus sense-for-sense translation; source-oriented translation versus target-oriented translation; direct translation versus oblique translation (by Vinay and Darbelnet); adequacy versus acceptability; formal equivalence versus dynamic equivalence (by Eugene Nida); semantic translation versus communicative translation (by Peter Newmark); overt translation versus covert translation (by Juliane House); documentary versus instrumental translation (by Christiane Nord); foreignization versus domestication (by Lawrence Venuti), and so on. While these binary oppositions have much in common, they reflect different perspectives and emphasize different translation aims and effects. For instance, word-for-word translation and sense-for-sense translation are text-level or segment-level strategies. Nida's (1964) formal equivalence versus dynamic equivalence is mainly from a linguistic perspective and involves reader response. The domesticating translation versus foreignizing translation pair, proposed by Venuti (1995), reflects a cultural interventionist perspective. The two strategies affect the choice of text for translation as well as the translation process. Venuti advocates the foreignizing strategy in order to "register the linguistic and cultural differences of the foreign text" (1995, p. 81) and combat the cultural dominance of readers in dominant cultures such as the USA.

The "literal versus free" debate has been one of the central issues in translation theory and criticism throughout the ages. However, it is now generally believed that this dichotomous debate is relatively sterile, as the two strategies are part of a continuum (Hatim & Munday, 2004, p. 230), and the selection of a strategy is a function of the theoretical assumption of "what is a translation" text type (e.g., serious literature, children's literature, technical texts, print advertisements), domain (e.g., IT, legal), function (e.g., for publication, information, or light entertainment), prestige of the source text (e.g., the Bible, pulp fiction), motivation (e.g., payment), and other factors (or constraints).

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Having discussed the two prototype strategies, let us turn to the definitional question: what is a translation strategy? Lörscher (1991), Chesterman (1997), and other researchers agree on a few defining characteristics of a translation strategy: (a) it is goal-oriented, (b) it is problem-centered, (c) it requires making coordinated decisions, (d) it is potentially conscious, and (e) it involves text manipulation. The aforementioned two prototype translation strategies have these characteristics. Since a translation strategy involves problem solving, a categorization of translation problems would correspond to a categorization of translation strategies. The difficulty with this, however, is that there are a number of ways in which problems can be categorized. For instance, the categorization criterion can be the prior knowledge required to solve them, the nature of the goal involved, and the complexity of the problems involved (Robertson, 2001, p. 6).

Problems, according to their scale, can be divided into global (or general) problems and local (or specific) problems. Jääskeläinen (1993, p. 116) makes a corresponding distinction between global strategies (i.e., "the translator's general principles and preferred modes of action") and local strategies (i.e., "specific activities in relation to the translator's problem-solving and decision-making"). Global strategies might be dictated by or with the commissioner while local strategies are up to the translator. In addition, local strategies are designed to handle specific problems and need to be consistent with the chosen global strategy. Jääskeläinen found that global strategies are much more frequently and consistently used by professional translators than by nonprofessionals.

From Jääskeläinen's perspective, literal and free translation strategies are global strategies since the translator has to think about the goal of the translation and how the target text should affect the readers. The global strategy chosen will affect the translation process. Since local strategies are immediately followed by specific techniques, which affect the translation result and the micro-units of the text, and are classified by comparison with the source text (Molina & Hurtado Albir, 2002, p. 509), local strategies are basically translation techniques. As translators grow in competence, some former translation problems will no longer present an obstacle to them; some of their local strategies become semiconscious or unconscious, and the use of certain techniques to cope with certain problems is automatized.

Vinay and Darbelnet's (2000) taxonomy of translation techniques (which they call "procedures") has a wide impact. They did a comparative stylistic analysis of French and English, and divided the seven procedures they discovered into two general strategies: direct/literal translation and oblique translation. The former includes: (a) *borrowing* (i.e., borrowing a word or expression from the source language, such as the Chinese word "kung fu" in modern English); (b) *calque* (which is a kind of borrowing whereby the structure of the original word or phrase is maintained but its morphemes are replaced by those of the target language; for example, the Chinese word "motian dalou," literally "sky-scraping big building," is a calque of skyscraper); (c) *literal translation*. Oblique translation includes: (d) *transposition* (i.e., changing the word class or grammatical structure without changing the meaning of the message, as in rendering a noun in the source text into a verb in the target text); (e) *modulation* (i.e., changing the point of view or cognitive category in relation to the source text, as in rendering a negative construction into a positive one: "not complicated" becomes "easy"); (f) *equivalence* (e.g., translating "to kill two birds with one stone" into Chinese as "to kill two eagles with one arrow"); (g) *adaptation* (i.e., a shift in cultural reference when the type of situation being referred to by the source text is unknown in the target culture, such as using the word "seal" for sheep when translating the Bible into Inuktitut).

Among local translation strategies, Chesterman (1997) distinguishes between comprehension strategies (for understanding and analyzing the source text) and production strategies (for the production of the target text). From a linguistic perspective, he divides production strategies into mainly syntactic/grammatical, mainly semantic, and mainly pragmatic, with

each category containing 10 techniques. Syntactic strategies involve purely syntactic changes, manipulate form, and include such techniques as calque, transposition, and sentence structure change. Semantic strategies mainly pertain to changes concerning lexical semantics. They manipulate meaning and contain techniques such as synonymy, emphasis change, and paraphrase. Pragmatic strategies have to do with the selection of information in the target text, and often involve syntactic or semantic changes as well. Pragmatic strategies include cultural filtering, explicitness change, information change, transediting, and so forth. Some of these techniques are obligatory during translation in a given language pair, while most are optional.

Many researchers (e.g., Lörscher, 1991) believe that a translation strategy is a procedure or a sequence of actions. However, this is not consonant with the dictionary definitions of strategy. According to the *Oxford English Dictionary*, strategy refers to "a plan for successful action based on the rationality and interdependence of the moves of the opposing participants," while procedure is defined as "[t]he fact or manner of proceeding with any action, or in any circumstance or situation; a system of proceeding; proceeding, in reference to its mode or method; conduct, behaviour." Krings (1986, p. 268) defines translation strategies as "potentially conscious plans for solving a translation problem." Strategies involve adopting procedures to solve problems, and the chosen procedure will influence the result.

Now let us turn our attention to translation procedures (referred to as "translation strategies" by some researchers) and procedural steps. Gerloff (1986) identified the following text processing strategies: (a) problem identification, (b) linguistic analysis, (c) storage and retrieval, (d) general search and selection, (e) inferencing and reasoning strategies, (f) text contextualization, (g) editing, and (h) task monitoring. In his empirical studies, Lörscher (1991) recognized 22 elements constituting translation strategies (or procedural steps), including nine original ones and 13 potential ones, such as realizing a translational problem, preliminary solution to a translational problem, and the mental organization of source-language text segments. During the translation process, these elements are combined by translators into *basic structures*, *expanded structures*, or *complex structures* of translation strategies. He found that professional and nonprofessional translators differ in the distribution and frequency of the strategies employed, but do not differ qualitatively; that is, their mental processes do not reveal significant differences. He concluded that it is impossible to ascertain "[w]hen faced with problem X, [translators] employ strategy Y," but we can find out "[w]hen several [translators] are faced with a problem X, many or most of them employ similar or the same types of strategy" (p. 280). Darwish (2008) identifies four distinct translation procedures employed in translating: recursive strategy (i.e., a circular and revisional process), waterfall strategy (i.e., a sequential unit-by-unit process), stop-and-go strategy (i.e., a block-by-block process), and mixed strategies (i.e., a combination of the previous three strategies).

In some translation textbooks (e.g., *Thinking German Translation: A Course in Translation Method* by Hervey, Loughridge, & Higgins, 2006), "translation method" is often used as a cover term for "translation strategy," "translation technique," and even "translation procedure." For instance, there are literal and free translation methods. Compared with translation strategies, which are highly individualistic, translation methods are supra-individual and well tested (Lörscher, 1991, p. 70). However, "translation method" in English is often associated with such modes as machine translation and computer-aided translation. The term "translation approach" is often used in a vague sense, while "translation tactic" is rarely used.

Discussions of translation strategies before the 1980s were primarily prescriptive, and researchers tended to argue for one translation strategy against another. Since the 1980s, empirical research into translation strategies, techniques, and procedures has become

increasingly common. There are two major empirical approaches in this regard: product-oriented and process-oriented. The former approach mainly refers to corpus-based contrastive analysis: a parallel corpus consisting of source texts and translations is built for analyzing the frequency of shifts (i.e., textual differences between source text and target text) and the various translation strategies and techniques employed. The factors to be considered can include text type, domain, synchronic and diachronic variation in language features and translation norms, idiosyncrasy, certain language features (e.g., metaphors, allusions), among others. In a process-oriented approach, translators are usually asked to translate a passage while thinking aloud, and the process will be recorded and then analyzed. The factors that might influence the frequency and distribution of translation strategies and procedures may include translation competence (e.g., novice translators versus professional translators), language direction (i.e., from or into the mother tongue), text type, domain, translation brief, translation difficulty level of the test passage, time pressure, and so forth. These factors need to be manipulated or kept constant in an experiment in order to make meaningful comparisons.

In PACTE's (2003) translation competence model, strategic competence (for solving problems and optimizing the process) is the most important sub-competence among five sub-competencies (i.e., bilingual, extralinguistic, knowledge about translation, instrumental, and strategic). Investigating translation strategies will have significant pedagogical implications and may benefit research on machine translation.

SEE ALSO: Cognitive Approaches to Translation; Functional Approaches to Translation; Norms of Translation; Text-Based Approaches to Translation

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Structural Equation Modeling

ROB SCHOONEN

Structural equation modeling (SEM) refers to a flexible and rich analytic approach that can be used to address a variety of research questions through a combination of factor analysis, analysis of variance (ANOVA), and regression analysis. Although not (yet) widely used in applied linguistics, SEM has been applied in research to test complex hypotheses about performance levels of groups, relationships between variables, and the invariance of these relations across various groups, such as different first language (L1) groups, age groups, or proficiency groups. For example, the contributions of syntactic skills and vocabulary knowledge to reading proficiency might differ for L1 and second language (L2) speakers. SEM provides means to test whether the contributions for these two constituent variables are the same across groups (see Van Gelderen et al., 2003). SEM also helps in investigating direct and indirect relations between dependent and independent variables in language research. Beron and Farkas (2004) studied the extent to which oral skills affect the reading success of young children directly and the extent to which these oral skills are the mediating variables when it comes to the effect of race and mother's education on reading success in school. Using SEM, the researchers were able to design a complex model and to test it against the available empirical data, showing that the oral skills are indeed an important mediating variable for class and especially race effects.

Furthermore, correlations and regressions in common analyses with observed scores may be attenuated by the unreliability of the observed scores. SEM provides means to take the measurement error into account. Thus, the researcher is likely to draw conclusions that are more valid in the sense that they are not affected by measurement error.

The general approach in SEM is modeling relationships between observed variables, hypothesized underlying latent variables, or both. The input for the analyses is raw data from which variances and covariances (i.e., unstandardized correlations) are derived. Other terms than SEM that have been used to refer to this technique include "covariance structure analysis" and "causal modeling." SEM can be conducted using software packages, such as Lisrel, EQS, AMOS, or Mplus. In the remainder of this entry, the layout of a structural equation model consisting of a structural model and a measurement model will be briefly discussed, as well as the selection and evaluation of a preferred model among plausible choices. Next, a few special applications will be introduced to illustrate the flexibility of the approach. Finally, the most important (statistical) assumptions underlying the use of SEM are presented and a few cautionary comments are made.

Modeling Data

To be able to use SEM, a researcher has to be explicit about the model that is expected to describe the relations between all theoretical variables involved. This part of SEM is called the *structural model*. The theoretical variables are often operationalized by one or more test scores or questionnaire data. The relationships between these so-called observed or manifest scores and the theoretical or latent variables are modeled in another part of the SEM, the *measurement model*. This latter part addresses the question of whether the observed test scores available for, for example, language achievement can indeed be considered as

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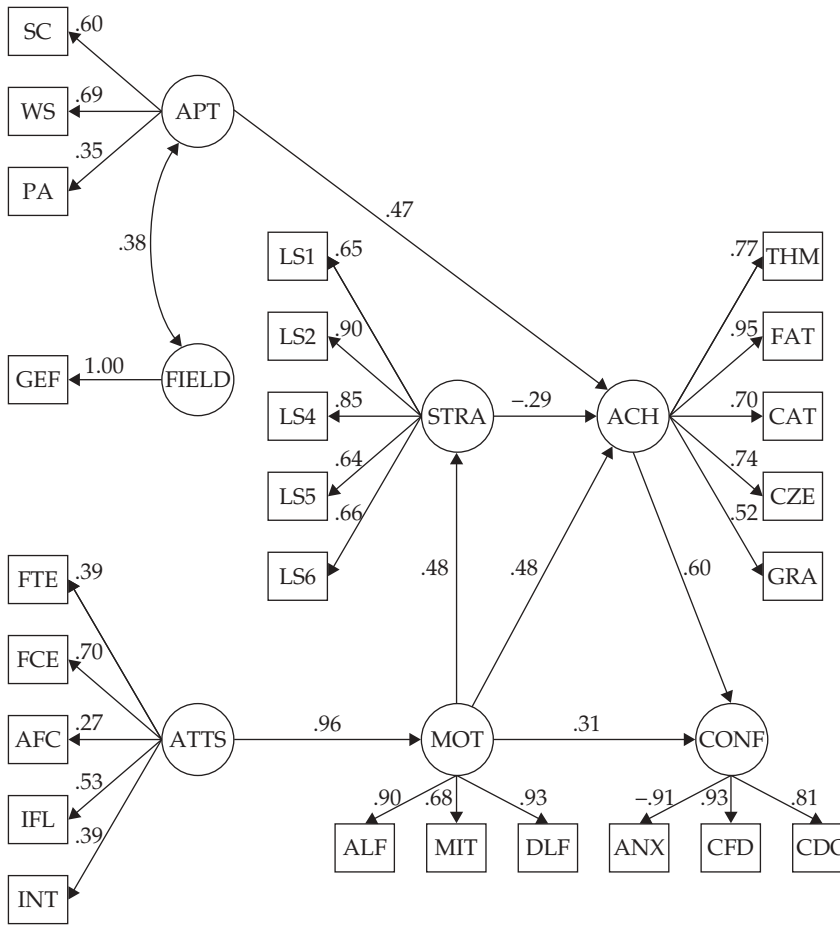
indicative of a single consistent underlying (latent) variable. Having operationalized the theoretically relevant variables, the researcher can address in a structural model how the latent variables relate to each other.

Standard procedures such as ANOVA and multiple regression analysis can be considered special cases of SEM (Hoyle, 1995; Kline, 2005). In all cases there are dependent variables, the scores the researcher tries to explain, either by a categorical variable (e.g., gender; ANOVA) or by one or multiple predictor variables (regression analysis). Also, the relationship between a set of variables and a hypothesized underlying factor, commonly explored in factor analysis, can be more extensively investigated with SEM by specifying or precluding factor loadings in advance.

SEM has also been credited with improving the rigor and complexity of empirical research. A researcher using SEM is more or less forced to develop a model. Because SEM has no default analyses, a researcher has to specify which relations between variables to compute and which ones are hypothesized to be nonexistent. The need to build a model prior to the analyses requires meticulous thinking about one's hypotheses concerning constructs and their interrelations (Hoyle, 1995). Such models can include so-called *indirect effects.* That is, an independent variable predicting an outcome variable—as in Beron and Farkas's (2004) study of oral language skill predicting reading success—can be a dependent variable at the same time and as such be predicted by a third variable, as oral language skill is predicted by race and parental education in Beron and Farkas (2004). With this feature, complex models can be designed to evaluate direct and indirect effects of, for example, background variables and learning condition variables on language performance. This kind of analysis can be done with observed variables (path models) when there is just one observed variable per theoretical variable, or at the level of the latent variables when multiple measures per theoretical variable have been included in the design to allow for model testing with "error-free" variables.

Using SEM to test a theoretical model is relatively new to applied linguistics; it has been used in recent studies of first and second language reading and writing proficiency (e.g., Abbott & Berninger, 1993; Schoonen et al., 2003; Van Gelderen et al., 2004; Phakiti, 2008). One of the earlier applications was to model the role of affective variables in language learning, as in Gardner's socioeducational model of L2 learning (Gardner, Tremblay, & Masgoret, 1997). Gardner and colleagues operationalized seven latent variables (by convention depicted as circles as in Figure 1) with a range of observed test and questionnaire scores (depicted as boxes). In this analysis (Gardner et al., 1997), Language Aptitude is measured by three (observed) variables (Spelling Clues, Words in Sentences and Paired Associates), and this part of the overall model is a measurement model. As is indicated by the factor loadings in Figure 1, Language Aptitude "explains" each of the observed scores to some degree (as indicated by the coefficients, .60, .69, and .35). All three measures are also affected by other effects (error), which is sometimes indicated by another arrow toward the observed score box (not shown in Figure 1). The latent variable based on these three observed variables can be considered *free of measurement error*, and thus regressions and correlations in the structural model are not affected (attenuated) by measurement error. In other cases, when there is just a single observed indicator for the latent variable, the latent and observed variable are equated to each other, as is the case for the theoretical variable Field Independence, measured by Group Embedded Figures (see Figure 1). In this latter case the advantage of error-free latent variables no longer holds.

The structural part of the model concerns the relationships between the latent variables, which can be directional as in regression analysis (single-headed arrows in Figure 1) or nondirectional as in correlation analysis (e.g., double-headed arrow between Field Independence and Language Aptitude in Figure 1). Gardner's model nicely illustrates the fact that some effects of (latent) variables can be mediated by other (latent) variables.



APT: Language Aptitude; SC: Spelling Clues; WS: Words in Sentences; PA: Paired Associates; FIELD: Field Independence; GEF: Group Embedded Figures Test; ATTS: Language Attitudes; FTE: French Teacher Evaluation; FCE: French Course Evaluation; AFC: Attitudes toward French Canadians; IFL: Interest in Foreign Languages; INT: Integrative Orientation; STRA: Language Strategies; LS1: Remembering More Effectively; LS2: Using Mental Processes; LS4: Organizing and Evaluating Learning; LS5: Managing Emotion; LS6: Learning with Others; MOT: Motivation; ALF: Attitudes toward Learning French; MIT: Motivational Intensity; DLF: Desire to Learn French; ACH: Language Achievement; THM: Theme Test; FAT: French Achievement Test; CAT: Thing Category Test; CZE: Cloze Test; GRA: Grades in French; CONF: Self-Confidence; ANX: Language Anxiety; CFD: Self-Confidence; CDO: Self-Rated Proficiency (Can Do).

Figure 1 The causal model (Gardner et al., 1997, *Modern Language Journal, 81* © Wiley-Blackwell)

For instance, Motivation has an indirect effect on Language Achievement that is mediated by Language Strategies, which has a direct effect on Language Achievement. At the same time Motivation also has a direct effect on Language Achievement. So, as was mentioned above, (latent) variables can be independent variables, that is, "predicting" other (latent) variables, or dependent variables, that is, being regressed on other variables, or both.

Variables that are regressed on other variables may still show an amount of "unexplained" variance. In Gardner's model this is not indicated, but in other applications of SEM, it often is, again, by means of single-headed arrow toward the (latent) variable. In regression analysis, it would not have been possible to model direct and indirect effects and to test their existence, nor would it have been possible to work with "error-free," latent variables. Estimates of correlations or regressions weights that are based on latent variables are not attenuated by unreliability of the measurements and as such provide a better indication of the actual strength of the relationships.

It is not difficult to imagine many more possible relationships between the seven latent variables in Gardner's model. The flexibility in modeling these structural relationships is one of the strengths of SEM, but also one of its challenges. How can a researcher decide which model to choose?

Evaluation and Comparison of Models

The basic input of an SEM analysis is the covariance matrix of the observed variables, with the variables' variances on the diagonal. The model specifies relations between observed and latent variables and between latent variables in terms of regressions, covariances, and variances. These parameters can be either free to be estimated, fixed at a certain value (typically zero), or constrained to be equal to another parameter. Based on these specifications a series of equations can be formulated with the specified model parameters on the one hand, and the observed (co)variances from the input matrix on the other hand. The model parameters are estimated such that a model-derived covariance matrix fits the observed matrix as closely as possible (Hershberger, Marcoulides, & Parramore, 2003). There are various criteria for minimization of the differences between the model-derived and the observed matrix, such as *maximum likelihood* and *generalized least squares* (Jöreskog & Sörbom, 1996; Kline, 2005; Ullman, 2007).

The ultimate selection of a model largely depends on its fit to the data. Researchers have many fit indices at their disposal and the evaluation of a model should be a weighing of the available indices that all have slightly different foci. First of all, there is a statistical evaluation of the model which tests whether or not the observed covariance matrix can be considered a sample matrix from the estimated population matrix. The difference between the two is expressed in a chi-square (χ^2) statistic with a corresponding degrees of freedom (*df*) and associated *p*-value. The χ^2 test is very sensitive to sample size, number of parameters in the model, and the degrees of freedom. In large samples, χ^2 is often statistically significant, which in this case means that the model has to be rejected because of the difference between the observed sample and the estimated population matrix, usually an undesired situation as SEM is essentially a confirmatory procedure. In these cases the χ^2 test might be misleading, as the statistical significance will largely be caused by a very high level of statistical power to detect small differences rather than serious misspecification in the model. Therefore, the ratio of χ^2 and *df* is often used as a more descriptive measure; χ^2/df preferably not exceeding 2 (Ullman, 2007).

Other frequently used, more descriptive measures are the comparative fit index (CFI), the root mean squared error of approximation (RMSEA), and the standardized root mean square of residual (SRMR). The CFI (like its related indices) is a so-called incremental fit index that indicates the relative improvement of the tested model over a baseline model, the so-called independence model. This latter model assumes that all variables are independent, that is, uncorrelated in the population (Kline, 2005). RMSEA is a fit index that indicates error in approximation. In doing so it corrects for model complexity and favors parsimony, taking sample size into account. The SRMR is directly related to the difference

between the observed standardized covariance matrix and the estimated standardized population matrix, that is, the correlation matrix and the reproduced correlation matrix. The SRMR is the mean (absolute) correlation residual. The fit of a model is considered acceptable when CFI ≥ .95, RMSEA ≤ .06, and SRMR ≤ .08 (Hu & Bentler, 1999). However, we should bear in mind that the fit indices are general, overall measures that may not reflect local misspecification in a model. Therefore, it is highly important to review all the estimated parameters and to check their meaningfulness (Kline, 2005).

Researchers seldom test a single model. Often two or more competing models are compared, or modifications to an initial model are evaluated. In those cases a researcher can of course compare the aforementioned fit indices, but, as explained above, different fit indices foreground different aspects of a model. The difference between two models can be tested statistically when the models are nested, that is, when one model is a special case of the other, for example, because it has one or more free parameters fixed or constrained in comparison to the more general model. By definition, a more restrictive model will fit the data less well, but it is also more parsimonious and thus has more degrees of freedom. The difference in chi-square ($\Delta\chi^2$) with the corresponding difference in degrees of freedom (Δdf) is also chi-square distributed and therefore can be considered a statistical test for equal fit. If the chi-square difference test is not statistically significant, the more parsimonious model is to be preferred, because the fit has not changed significantly, despite the fixing or constraining of the parameter(s). The parameter(s) involved can be considered fixed or constrained. However, if the chi-square difference test is statistically significant for a particular model, its parameter(s) cannot be fixed or constrained without a significant decrease of fit (Kline, 2005; Ullman, 2007).

Comparing different models this way, Sawaki, Stricker, and Oranje (2009) tested several models that were to represent the factor structure of the Internet-based Test of English as a Foreign Language (TOEFL-iBT). The best-fitting model turned out to be one that consisted of four latent variables, one for each language skill—-reading, listening, speaking, and writing—and a so-called higher order variable, ability in English as a second or foreign language (ESL/EFL), that represents the communality among those four latent variables. In another study, Song (2008) explores three subskills of reading and listening proficiency and the communalities of these subskills: understanding the main idea, understanding supporting details, and making inferences. Comparing models for one, two, or three subskills in each mode and a model that combines listening and reading subskills, Song showed that a three-factor model fits best for listening, and a two-factor model for reading. The subskills were not fully common across the two modes. Including two mode factors in the model, one for listening and one for reading, substantially improved model fit (Song, 2008). These complex relationships between variables could probably not be inferred from an inspection of the correlation matrix of the subskill scores, a multiple regression analysis, or a factor analysis.

Special Applications

Higher-Order Factors

Because SEM allows a researcher to model the relationships between (observed and latent) variables in a theoretically motivated way, higher-order factor analyses of, for instance, the hierarchical structure of intellectual abilities can be conducted (Chen & Michael, 1993). In language assessment, researchers have tested models of the hierarchical structure of speaking assessment data, that is, raters' ratings (observed scores) of task performances (first-order factor) and several task performances representing speaking proficiency (second-order factor) (see De Jong, Steinel, Florijn, Schoonen, & Hulstijn, in press). Sawaki et al.'s

(2009) study of the TOEFL-iBT also included a higher-order factor (i.e., ESL/EFL ability) in the final model.

Controlling for Variables

SEM also enables a researcher to investigate the covariance between two variables while controlling for a third one, that is, to study partial covariance (Preacher, 2006). In their study of L1 and EFL writing, Schoonen, Van Gelderen, Stoel, Hulstijn, and De Glopper (2011) tested lexical retrieval speed by having participants press the key of the initial letter of depicted words on a computer keyboard. This procedure confounds lexical retrieval and keyboard skills. However, keyboard skills were assessed separately and eventually partialed out from the correlation between lexical retrieval and writing proficiency; that is, this correlation was estimated *controlling* for keyboard fluency (Schoonen et al., 2011).

Analysis of Mean Structures

In structural equation models, the structure of mean scores of observed and latent variables can be modeled as well, and as such SEM allows for all kinds of ANOVA-like analyses. Rovine and Molenaar (2003) describe how to use SEM for conducting one-way ANOVAs, repeated measures ANOVAs, and mixed models. A special kind of analysis of the mean structures concerns the investigation of development or change in longitudinal studies. The growth of latent variables can be modeled as linear, quadratic, or otherwise. In general, these latent growth models (Duncan, Duncan, Strycker, Li, & Alpert, 1999; Kline, 2005; Ullman, 2007) presume two latent variables, one indicating the *intercept*, that is the initial level, and one indicating the *slope*, that is, the growth rate. These two latent variables reflect individual differences in initial level and growth rate, and thus individual growth curves. Stoel, Peetsma, and Roeleveld (2003) investigated children's language development in the school years in relation to their school investment and self-confidence. In their growth analysis, they found that the language development (i.e., the growth curve) was nonlinear and also that the growth rate of language ability was positively associated with the growth in self-confidence and with school investment. Growth rate is a latent variable that can be a dependent or independent variable in more complex models, as is illustrated by Stoel et al. (2003). See Ross (2005) for another example.

Multigroup Analysis

Models of relationships between variables and mean structures might hold for specific groups, such as L1 speakers, but possibly not for other groups, such as L2 speakers. These kinds of research questions can be addressed in SEM, using *multigroup analysis*. A multigroup analysis tests whether one and the same model is adequate for two or more different groups or samples. Researchers can also test hypotheses about specific parameters in different groups. Does the general structural model hold in all groups, allowing different estimates for regressions and other parameters? Or, more restrictively, is the model completely identical in the groups, that is, with the same structural and measurement model and identical parameter estimates? The researcher can fix parameters to be equal across groups in one run and release this constraint in a second run. Difference in model fit can be considered a test of the tenability of the equality hypothesis. For example, can we expect the constellation of constituent subskills of language proficiency to be the same for different groups of language learners? Van Gelderen et al. (2003) studied the components of English reading proficiency in students who learned English as an L2 compared to students who learned English as a third language (L3). These authors found that, despite differences in reading level and reliability of the measurements, the contributions of the different components skills to EFL reading proficiency were largely the same for the two groups.

Purpura (1998) studied strategy use in low-ability and high-ability groups of test takers and found, among other things, that relationships between strategy use and test performance are not equivalent across the two ability groups.

Comparing relations between latent variables across groups or within groups at different points in time presupposes that the researcher is dealing with the same latent variable. However, measurement models and their interpretations might differ across groups or over time. Therefore, it is recommended to test different degrees of *measurement invariance* (see Meredith, 1993) in advance. This means that restrictions on equal factor loadings, means, and residual variances are tested successively across the measurement models in different groups or at different points in time. Equal factor loadings and means are considered a prerequisite for meaningful comparisons. For an application, see Schoonen et al. (2011).

Assumptions and Cautionary Notes

SEM is typically used for the analysis of continuous interval data. The variances and covariances of the observed variables are compared with the variances and covariances estimated from the model parameters. Parameters are estimated such that the differences between the two variance–covariance matrices are minimized. This process of model fitting and evaluation entails a number of assumptions about data and the model (see Jöreskog & Sörbom, 1996; Hershberger et al., 2003). One is that the continuous variables show a multivariate normal distribution. When the data are highly non-normal, the χ^2 tends to be too large and other fit indices tend to be too low. In this case, the standard errors of the parameters will be underestimated (West, Finch, & Curran, 1995), possibly leading to the wrong interpretations and decisions. Different procedures are available to deal with non-normal continuous variables, such as transforming the non-normal data, as well as using adjusted fit indices, distribution-free estimation, and/or bootstrapping (West et al., 1995; Jöreskog & Sörbom, 1996; Kline, 2005). Special cases are ordinal data and categorical data. In those cases special precautions are needed to compute an appropriate covariance or correlation matrix as input data (Jöreskog & Sörbom, 1996; Kline, 2005; see also Rovine & Molenaar, 2003).

SEM can be deployed to test a theoretical model in a "strictly confirmatory" way (Jöreskog, 1993). Depending on the fit statistics the researcher will either reject or accept the model as correct. However, theories in the social sciences, including applied linguistics, are seldom sufficiently explicit to test one single model. Researchers are more likely to have two or more competing "alternative models" that are tested against the available data, or, even more likely, researchers only have general assumptions about the relationships between variables and they aim at "model generating" (Jöreskog, 1993, p. 295). In the latter situation, the model is modified after each run, that is, nonsignificant parameters are dropped and at other places parameters are included to optimize model fit. SEM software provides tools to evaluate the addition (i.e., modification indices or Lagrange multipliers) or deletion of parameters (i.e., Wald W statistic), making it easy to explore many models. However, with this procedure the researcher runs the risk of capitalizing on chance and of making more Type I errors than is desirable (see Green, Thompson, & Babyak, 1998). In search of maximum fit, researchers often allow for a covariance between measurement errors in models (so-called *correlated error*). Such a parameter (like all others) should have a theoretical underpinning, because it indicates that two variables are correlated more strongly than is represented by the general model. Such additional covariance implicitly refers to an additional factor or latent variable involved, such as the testing method used. In sum, the flexibility of SEM is a great asset, but also contains a risk of over-fitting. When using SEM and modifying models one should bear in mind that parameters, especially

paths (regressions) or covariances between (latent and/or observed) variables, or both, need to be theoretically meaningful (Hershberger et al., 2003). Furthermore, despite what the graphical representation with the one-way arrows suggests, SEM is an analytic tool based on covariances or correlations and therefore relations cannot be interpreted as being causal. Or as Ullman (2007, p. 682) puts it: "Attributing causality is a design issue, not a statistical issue."

Research in applied linguistics is likely to increasingly draw upon SEM because of the tools it provides for a range of sophisticated questions and hypothesis testing, most of which cannot be addressed with other analytic techniques. Complex models of relationships between numerous variables can be tested as one complex hypothesis. Furthermore, SEM can model unreliability of test scores and separate it from the substantive analyses of (latent) variables to test models. Perhaps most important, however, SEM prompts the researcher to model relations between variables a priori and thus to theorize about hypotheses.

SEE ALSO: Factor Analysis; Multiple Regression; Structural Equation Modeling in Language Assessment; Technology and Language: Mixed Methods

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Structural Equation Modeling: A Multidisciplinary Journal.

Structural Equation Modeling in Language Assessment

YASUYO SAWAKI

Structural equation modeling (SEM) is a multivariate statistical technique used to examine underlying relationships among observed and latent (unobservable) variables. SEM takes a confirmatory approach to testing the degree to which a hypothesized model specified a priori fits data. SEM is typically used to examine covariance structures, namely, the pattern of covariation among a set of observed and latent variables. However, SEM is a flexible, overarching framework that can address various other types of research questions as well. For example, a type of SEM application called multiple-group analysis allows one to compare covariance structures as well as mean structures (mean performance levels) across groups. Moreover, growth modeling can be used to examine the pattern of growth, that is, performance changes on a set of variables of interest over time.

Previous SEM Applications in Language Assessment

In his overview article in the SEM special issue of *Language Testing*, Kunnan (1998) pointed out that the number of SEM applications in the field of language assessment was quite small at the time of his review. Since then, however, the number of SEM studies published in the field has been increasing steadily. Since Bachman and Palmer's (1981) first application of SEM to language assessment, SEM has been employed to address a variety of research questions. Some recent applications have focused, for example, on construct validation of language tests (e.g., Llosa, 2007; Sawaki, Stricker, & Oranje, 2009), empirical validation of substantive theories (e.g., Phakiti, 2008), exploration of the relationship between language test performance and learner characteristics (e.g., Purpura, 1999), and comparison of factor structures of language tests across heterogeneous groups of individuals (e.g., Shin, 2005; Stricker, Rock, & Lee, 2005). Moreover, Brindley and Ross (2001) offer a rare example of an application of growth modeling to language assessment. This entry focuses on basics of covariance structure analysis.

What Is an SEM Model?

SEM can be viewed as an extension of familiar statistical techniques such as regression analysis, path analysis, and factor analysis. A regression model defines direct predictive relationships among observed variables in a regression equation, where one or more variables serve as predictors of a criterion variable. Meanwhile, an SEM model defines both direct and indirect predictive relationships among a set of variables in a series of regression equations. While SEM is similar to path analysis in this sense, a notable advantage of SEM over path analysis is that one can test interrelationships among observed as well as latent variables that are unaffected by measurement error. Moreover, SEM subsumes factor analysis, as mentioned below.

In SEM two types of models are defined. One is a measurement model, which specifies predictive relationships between a latent variable and its indicators (observed variables).

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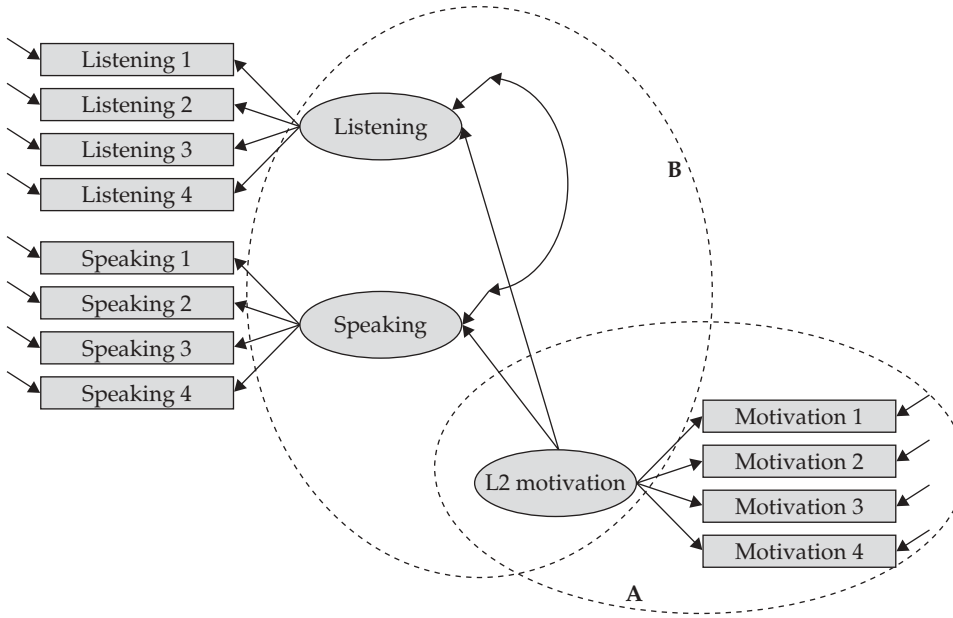

Figure 1 A sample path diagram

The other is a structural model, which specifies predictive relationships among latent variables. A full SEM model comprises both measurement and structural models. A confirmatory factor analysis (CFA) model is a special type of SEM model that represents the measurement model only.

As an illustrative example, suppose that an investigator tests a hypothesis that second language (L2) learning motivation predicts listening and speaking abilities. Accordingly, the researcher administers an L2 learning motivation questionnaire as well as L2 listening and speaking tests to a group of learners. Suppose further that the survey and the two tests comprise four subtests each. Figure 1 is the path diagram for this example.

In a path diagram, by convention, a latent variable is represented by an oval, an observed variable by a rectangle, a regression path by a single-headed straight arrow, and a covariance between variables and residual variances (see Figure 1) by a double-headed curved arrow. The researcher hypothesizes that there are three latent variables that are related to one another (L2 listening and speaking abilities and L2 learning motivation) and that the subtests serve as indicators of the corresponding latent variables. Ellipsis A shows the part of the measurement model for L2 learning motivation. The single-headed arrows connecting the latent variable and its indicators denote regression paths, showing that L2 motivation predicts learners' subtest scores on the questionnaire. Moreover, the other set of single-headed arrows pointing at the observed variables represent residual variances, namely, the part of observed variances of the variables not explained by the latent variable.

Similarly, the left-hand portion of Figure 1 shows the part of the measurement model for listening and speaking. The structural model is denoted by Ellipsis B. The regression paths indicated by the single-headed straight arrows stemming from L2 motivation toward the other two latent variables show that L2 motivation predicts learners' listening and speaking abilities. The other set of single-headed straight arrows pointing at Listening and Speaking are residuals for these latent variables. Moreover, the covariance between the residual variances depicted by the double-headed arrow reflects the hypothesis that part of covariation between listening and speaking abilities is not explained by L2 motivation.

Three Approaches to SEM Applications

Jöreskog (1993) presents three approaches to SEM applications. The first is a strictly confirmatory approach, where a researcher specifies and empirically tests the goodness-of-fit of one and only one model. The second is testing alternative models, where a researcher compares relative goodness-of-fit of multiple SEM models offering alternative explanations about underlying relationships among observed and latent variables. The third is model generating, where a researcher specifies a tentative SEM model. Then, from empirical analysis results, he or she modifies parts of the initial model to develop a model that is substantively interpretable and fits the data well.

All these approaches have been used in previous language assessment studies in various ways. For instance, Phakiti's (2008) SEM study has a feature of the first approach because he tested only one SEM model depicting hypothesized interrelationships among knowledge about and use of strategies and reading test performance over time. Carr (2006) offers an example of the third approach. He generated SEM models that well represented interrelationships among test task characteristics and test performance on a reading comprehension test by discarding unnecessary variables and adding and dropping model parameters through testing a series of SEM models. The second type of applications plays an important role in construct validation of language tests in particular. This is because an important aspect of test validation is to explicitly reject plausible rival hypotheses. As an example of the second approach, Sawaki, Stricker, and Oranje (2009) compared multiple CFA models in a construct validation study of the TOEFL® Internet-Based Test (iBT). The TOEFL iBT™ test is designed to assess academic English as a second language/English as a foreign language (ESL/EFL) ability in the reading, listening, speaking, and writing modalities. Separate scores for these sections and a total score are reported to test users. Thus, by comparing the relative goodness-of-fit of competing CFA models, Sawaki et al. examined the degree to which the test was functioning as measures of the different constructs.

Figure 2 visually represents Sawaki et al.'s strategy. First, they identified a baseline model that reflects the basic test design comprising the four sections. Once they had confirmed a reasonable fit of this model to data, Sawaki et al. compared this model against the three alternative models that provided competing hypotheses to the underlying factor structure of the test. All the alternative models were more parsimonious than the baseline model. In other words, the alternative models involved fewer estimated model parameters than the baseline model. This approach was taken because a parsimonious model tends to replicate well in different samples. As the result, a higher-order factor model comprising four factors corresponding to the four modalities and a general factor underlying the four factors was identified as the final CFA model for the test form analyzed.

Steps Involved in an SEM Analysis

Six major steps involved in conducting an SEM analysis are summarized below. Further technical details about each step can be found in Jöreskog (1993), Kunnan (1998), Raykov and Marcoulides (2006), and Ullman (2007).

Step 1: Data Check

The appropriateness of data for SEM analysis is examined. Issues for consideration in this step include various statistical issues such as input data type (i.e., categorical vs. continuous data), sample size, presence of outliers, linearity of relationships among observed variables, and normality of score distribution. In particular, checking multivariate normality of data

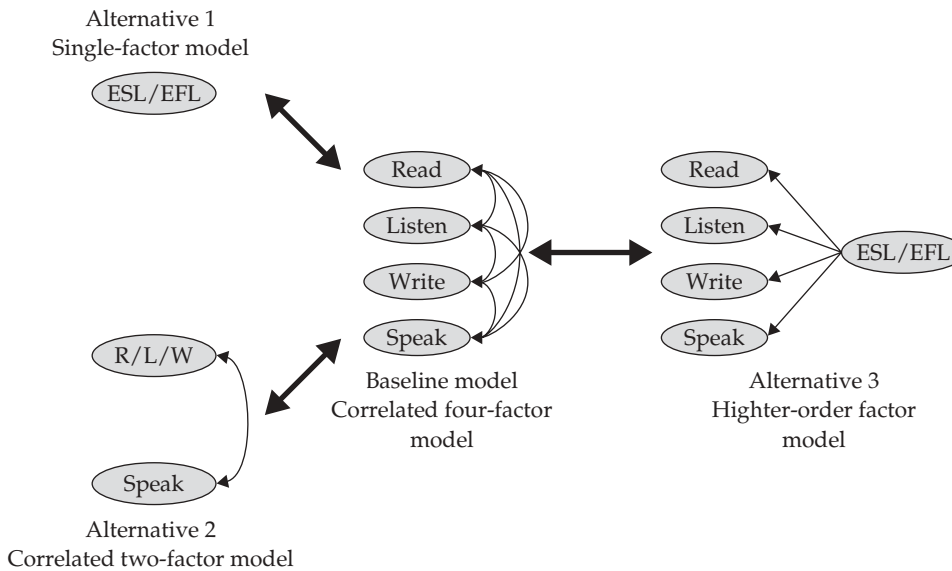

Figure 2 CFA model comparison strategy employed by Sawaki et al. (2009)

Note. ESL/EFL = Academic ESL/EFL ability; Read = Reading ability; Listen = Listening ability; Write = Writing ability; Speak = Speaking ability; R/L/W = Reading, listening, and writing abilities

is essential because certain estimation methods (Step 4) assume multivariate normality. If this condition is not met, the data might be transformed. Alternatively, appropriate adjustments might be made when model fit is evaluated in Step 5.

Step 2: Model Specification

The next step is to specify an SEM model to be tested. As shown in the sample SEM model presented in Figure 1, decisions concerning how to specify predictive relationships among latent and observed variables are informed by substantive theory and previous empirical evidence.

Step 3: Model Identification

An SEM model is said to be identified when there is a unique solution for each model parameter being estimated. In order for this to happen, three conditions must be satisfied, although meeting them does not guarantee model identification. First, each latent factor must have a sufficient number of indicator variables. Second, the model degrees of freedom (*df*) must be positive. A positive model *df* results if $p(p+1)/2$, where p denotes the number of observed variables, is larger than the number of estimated model parameters. Third, the scale for each latent factor must be established. To achieve this, either the factor variance or a regression path for an indicator of the factor is fixed.

Step 4: Model Estimation

A mathematical function is fit to data in order to estimate model parameters. An appropriate estimator should be selected from among a variety of options by carefully considering various statistical issues such as data type, sample size, and normality of data.

Step 5: Testing Model Fit

Goodness-of-fit of a proposed SEM model to data is examined by evaluating how well the proposed model reproduces the observed covariance matrix. It is essential to evaluate model fit from multiple perspectives, including statistical and descriptive indices of overall model fit, residuals (discrepancy between observed and model-predicted covariance matrices), and substantive interpretability of model parameter estimates.

Step 6: Model Comparison/Modification

If multiple alternative models are compared, the relative goodness-of-fit of the models is compared from statistical and substantive perspectives. The same criteria as those considered in Step 5 are used for the comparisons. When two models being compared are nested with each other (i.e., when a model is a more parsimonious version of the other), a chi-square difference test can be used to statistically test the relative goodness-of-fit of the two models. Testing of an initial SEM model may be followed by model modification. A model modification process is guided by substantive theory, often with model modification indices. Such indices can be used, for instance, to identify model parameters that can be added to improve model fit and those that can be dropped without compromising model fit.

SEM Software

A range of statistical packages for conducting SEM analyses are currently available. Popular ones include AMOS, EQS, LISREL, and Mplus. While all of these have full capabilities to conduct SEM, their features differ slightly from one another. For a comparison of key features across different statistical packages, see Ullman (2007).

Writing About SEM Analysis Results

There has not yet been a clear consensus as to how to report SEM analysis results. For example, opinions as to which model fit indices to report vary across different SEM researchers. However, some references, such as Boomsma (2000), Hoyle and Panter (1995), and Ullman (2007), offer useful guidelines as to how to report SEM analysis results.

SEE ALSO: Factor Analysis; Multiple Regression; Structural Equation Modeling

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Study Abroad

JANE JACKSON

As a consequence of globalization and the push for internationalization on campuses across the globe, we are witnessing a dramatic increase in the number of students who are studying abroad. In 2006, the United Nations Educational, Scientific and Cultural Organization (UNESCO) estimated that there were more than 2.5 million students being educated at the tertiary level outside their home country, up from an estimated 1.7 million in 2000. By 2025, nearly 8 million students are expected to be educated transnationally (http://atlas.iienetwork.org/). While some join "year-abroad" or semester-long exchange programs, an even greater number are taking part in short-term sojourns, ranging from four to seven weeks, or micro-sojourns lasting three weeks or less (Spencer & Tuma, 2008). To facilitate comparisons of these programs, the Forum on Education Abroad (2009) published a glossary of terms used in North America, while Coleman (1997) provides insight into residence-abroad nomenclature in European contexts.

Students join study-abroad programs for diverse reasons. Some aim to enhance their foreign-language proficiency and gain firsthand exposure to elements of the host culture, as in the traditional "junior year-abroad" programs that were popular several decades ago. To fulfill a degree requirement in their home institution, students may take foreign-language courses at a commercial language center or university in the host culture. Not all students have language and cultural learning as their primary goal, however; some may focus on the acquisition of academic knowledge in other areas of study (e.g., architecture, engineering), others may aim to enhance their professional skills (e.g., business, health care) in another global context, and some may do both. Those with an advanced level of proficiency in the host language may study alongside host nationals in regular subject courses and then transfer credits to their home institution. Due to the emergence of English as the global language of internationalization, a growing number of non-English-speaking countries are now offering study-abroad students exposure to local (and global) course content through English.

Besides duration, aims, and medium of instruction, there are many other variations in study-abroad programs that may influence student learning, including housing options (e.g., homestays, residence in a dormitory, sharing an apartment with host nationals). Further, some programs may be faculty led, whereby an instructor or professor from the home institution accompanies a group abroad. A professor of French in the United States, for example, may travel to France with a group of students and teach French-language or cultural studies courses alongside local professors. In response to internationalization policies, institutions are also establishing exchange agreements with foreign counterparts, providing increased opportunities for students to venture abroad on their own.

The degree of pre-sojourn preparation, sojourn support, and reentry debriefing provided to study-abroad students also varies. It ranges from none at all to the integration of credit-bearing components into the undergraduate curriculum in the home institution (e.g., pre-sojourn, sojourn, post-sojourn coursework). Some institutions have developed an intensive predeparture orientation to address the challenges that sojourners may face in an unfamiliar sociocultural context (e.g., culture shock, language barriers, sociopragmatic differences, unfamiliar teaching styles).

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The integration of ethnographic inquiry into study-abroad programming can help student sojourners become more systematic learners of language and culture and better prepared for life in the host speech community (e.g., Jurasek, Lamson, & O'Maley, 1996; Roberts, Byram, Barro, Jordan, & Street, 2001; Jackson, 2006; Ogden, 2006). In this experiential mode of learning, students are introduced to the aims and methods of ethnographic exploration: participant observation, note taking, interviewing/conversation techniques, and the use of visuals (e.g., digital photographs). With adequate support and preparation, students can develop the skills and confidence necessary to investigate a cultural scene in their home environment, reflect on their personal biases, and gradually move from description to analysis. In the host culture, they can then undertake an ethnographic project, which requires prolonged interpersonal contact across cultures and focuses attention on sociocultural aspects of the host language.

Ethnography is not the only approach used to optimize study-abroad learning. At the Center for Advanced Research on Language Acquisition (CARLA) at the University of Minnesota in the United States, applied linguists have collaborated with intercultural educators to develop language and culture strategy materials to enhance the linguistic competence, sociopragmatic awareness, and intercultural communication skills of students on stays abroad (Cohen, Paige, Shively, Emert, & Hoff, 2005).

Ethnographic training and fieldwork (or other forms of experiential learning), and regular debriefing sessions during the sojourn can promote deep, critical reflection and accelerate language and (inter)cultural learning. To maximize and extend student learning, adequate post-sojourn debriefing is also important. While some institutions of higher education offer credit-bearing courses for returnees, the reality is that few provide this level of support.

Most language educators and students still assume that firsthand exposure to the native speech community along with formal classroom learning provides the best environment for learning an additional language and culture; however, is this necessarily the case? What actually happens when students study abroad? What do we know about language and culture learning in study-abroad programs? What does the research tell us?

Freed (1995) drew attention to second language acquisition research in study-abroad contexts, showcasing studies in the following areas: predicting and measuring language gains in the host culture; comparative investigations of language study at home and abroad; the acquisition of sociolinguistic competence in a study-abroad setting; and diary studies that centered on student perceptions of learning abroad. The majority of these studies addressed individual and group differences in linguistic outcomes (e.g., fluency, lexical and grammatical development, use of communication strategies). Although the findings were mixed, most lent support to the notion that study abroad can help learners become "fluent" speakers of the host language. When compared with foreign-language students who remain in their home environment, those who study abroad "appear to speak with greater ease and confidence, realized by a greater abundance of speech, spoken at a faster rate, and characterized, correspondingly, by fewer dysfluent-sounding silent and/or filler pauses" (Freed, 1995, p. 26). Freed (1995, p. 28) acknowledged that applied linguists have much to learn about "how students actually spend their time while abroad, which language they speak with friends and host families, the purposes for which and the amount of time they actually spend using the target language." Coleman (1997) also called for longitudinal studies that track the linguistic, affective, and cognitive development of student sojourners.

Collentine and Freed (2004, p. 157) warned study-abroad researchers that "focusing on traditional metrics of acquisition such as grammatical development might not capture important gains by learners whose learning is not limited to the formal classroom." Many large-scale, product-oriented studies have also been criticized for ignoring the sociocultural, political, and historical contexts of the learning situation. In response, a number of applied

linguists have been investigating the processes involved in language and (inter)cultural learning using introspective techniques (e.g., diaries, first-person narratives, interviews), and such approaches as case studies and ethnographies (Coleman, 2006; Kinginger, 2009). Qualitative researchers argue that an examination of the storied experiences of student sojourners helps elucidate what actually transpires on stays abroad.

In the first in-depth qualitative investigation of student migration within Europe, Murphy-Lejeune (2002) examined year-abroad students in three different programs: Erasmus (the European Region Action Scheme for the Mobility of University Students), bilateral language assistantships, and a French business-school program. Interview data revealed that the experience of mobility can transform students' concepts of "space" and "home" as they adjust to an unfamiliar environment and engage in new social scenes. Disorientation can also lead to an identity crisis.

Pellegrino (2005) investigated the self-presentation of American learners of Russian who participated in study-abroad programs in Russia. Several factors were found to inhibit their use of the host language, including anxiety, low self-esteem, and gender-related issues. Patron's (2007) investigation of French students on a year-long sojourn in Australia also drew attention to the impact of gendered identities on language learning. Through case studies of American undergraduates learning French in France, Kinginger (2008) raised further awareness of the complex interrelationship between motivation, identity, gender, language socialization, and culture learning.

Using an ethnographic approach, Jackson (2008, 2010) examined the language and (inter)cultural development of Chinese university students who participated in a short-term sojourn in England. While most enhanced their intercultural sensitivity and became much more confident when using the host language, their trajectories differed due to a range of factors (e.g., host receptivity, degree of investment in language and culture learning, personality attributes). As noted by Ryan (2003), "Residence in another country does not automatically produce interculturality." Knowing the grammar and vocabulary of the host language does not ensure intercultural communicative competence. Moreover, if students do not find their hosts welcoming, they may return home with negative stereotypes further entrenched.

More research in a variety of contexts is needed to better understand the multifarious internal and external elements that may foster or hinder language and culture learning on stays abroad. The findings can then provide direction for further enhancements in study-abroad programming.

SEE ALSO: Ethnographic Approaches to Second Language Acquisition Research; Identity and Second Language Acquisition; Intercultural Competence; Intercultural Learning; Language, Culture, and Context; Language Socialization in Study Abroad; Language Study Abroad; Pragmatic Development in Study-Abroad Contexts

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Subjectivity

CLAIRE KRAMSCH

The feminist scholar Chris Weedon defines subjectivity as "the conscious and unconscious thoughts and emotions of the individual, her sense of herself and her ways of understanding her relation to the world" (1987, p. 32). This definition has been rephrased by Kramsch (2009) to underscore the symbolic nature of subjectivity as "our conscious or unconscious sense of self *as mediated through symbolic forms*" (p. 18, emphasis added). It is the symbolic meaning we give to ourselves, our perceptions, reactions, and thoughts, that orients our relationship to others. Subjectivity is produced discursively, that is, we are formed as subjects through the symbols we create, the chains of signification we construct, and the meanings we exchange with others. Subjectivity involves both the conscious mind and the unconscious body's memories and fantasies, identifications, and projections.

This is not to say that the subject creates itself anew. Our subjectivity is constituted and shaped in interaction with our environment through the discourse of others—a subjectivity-in-process (Kristeva, 1986). We only learn who we are through the mirror of others; in turn, we only understand others by understanding ourselves as Other (Kristeva, 1991). The term subjectivity, then, does not mean narcissistic indulgence or arbitrariness and lack of objectivity, but, as Bakhtin (1986) would say, a responsibility to signify, use, and interpret signs, to respond to and "reaccentuate" signs, to pass judgment and take moral decisions. Thus subjectivity, inscribed in discourse, lies at the intersection of the individual and the social.

> Language is the place where actual and possible forms of social organization and their likely social and political consequences are defined and contested. Yet it is also the place where our sense of ourselves, our subjectivity, is *constructed*. . . . Subjectivity is produced in a whole range of discursive practices—economic, social and political—the meanings of which are a constant site of struggle over power. (Weedon 1987, p. 21; emphasis in the original)

The Vocabulary of Subjectivity

Subjectivity has been of particular interest to feminist scholars within a poststructuralist tradition (Kristeva, 1986; Weedon, 1987; Butler, 1997; Threadgold, 1997), who have coined such notions as: subject, subjectivation, subject position, and intersubjectivity. The **subject** is distinct from the individual, the person, or even the self. The *individual* is usually taken to be a member of a group or collective community. It is a sociological or political entity that is guaranteed rights and obligations and has a certain social and cultural identity. The *person* is a moral, quasi-metaphysical entity whose integrity needs to be safeguarded and nurtured. The *self* is a psychological entity that is given to each human being at birth and is to be discovered, respected, and maintained. The *subject* is not given, but has to be consciously constructed against the backdrop of social and cultural forces that both bring it into being and threaten to destroy its freedom and autonomy. Subjectivity, as the creation and maintenance of a subject, emerges and develops through the use of symbolic forms like language, images, music (Deacon, 1997).

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Our ability to recognize and accept ourselves as subjects with emotions, feelings, memories, and desires is the prerequisite to developing our sense of self. In this sense, subjectivity is a process of **subjectivation** that feminists and poststructuralist critics call "decentering" (Threadgold, 1997, p. 5). It is a process in which the speaking subject as subject of enunciation strives to see itself and others in their full range of historical possibilities—hearing and seeing not only what they say and do, but what they could have said and done in the past, and what they could say and do in the future given the appropriate circumstances. One could say that becoming a subject means becoming aware of the gap between the words that people utter and the many meanings that these words could have, between the signifiers and the possible signifieds, between who one is and who one could be. This gap has been viewed by artists, philosophers, and feminist scholars as the very essence of life, change, and renewal.

The subject's internal sense of coherence and continuity over time is socially constructed via the discourses and the idealized cognitive models (Lakoff, 1987) available in the community. It is the family, the school, the community that enable children to give meaning to their feelings, their experiences, their memories, in particular through language and through narratives of the self. The term **subject position** refers to the way in which the subject presents and represents itself discursively, psychologically, socially, and culturally through the use of symbolic systems. It comes from a view of the subject as decentered, historically and socially contingent upon its interaction with other contingent subjects. The many subject positions we take up during our lives sediment to form the historical, recognizable patterns that we call "identities."

The term **intersubjectivity** is used with a different focus in discourse analysis and ethnomethodology on the one hand, and in poststructuralist feminist linguistics on the other. Discourse analysts and ethnomethodologists who study language as social interaction define intersubjectivity as a social accomplishment through the structural features of conversation. In this discourse analytic tradition, intersubjectivity is achieved on the basis of how participants orient to one another and to the here-and-now context of an interaction. When used by poststructuralist scholars, the term intersubjectivity goes beyond what is achieved in daily encounters between speakers. It is to be found in the shared memories, connotations, projections, inferences elicited by the various sign systems we use in concert with others. In this sense intersubjectivity is synonymous with intertextuality—*text* standing for any stretch of discourse, in whatever modality, produced at whatever point in time and in whatever place. What poststructuralist approaches to subjectivity add to the social interactionist approach is a symbolic and an historical dimension. What people say is both more and less than they intend to say. Bakhtin's notion of *addressivity* (1986, p. 95) captures the fact that any utterance is a response to past utterances by now living or no longer living individuals, and that it addresses, or calls for a response from, others.

Poststructuralist Perspectives

Given Weedon's poststructuralist orientation, based on Foucault (1970), Althusser (1971), Kristeva (1986), and other feminist thinkers, and her interest in avoiding the essentialism of identity politics, it is not surprising that she speaks of "subject positions" rather than identity. Subject positions are taken up in discourse, they are ways of making meaning that are contingent on the social, moral, and ideological conditions of possibility afforded at the moment. Poststructuralist thought views the subject as both constructing and constructed by (subjected to) larger discourses, or regimes of meaning, which are realized, though not exclusively, through language:

> The individual is both the site for a range of possible forms of subjectivity and, at any particular moment of thought or speech, a subject, subjected to the regime of meaning of a particular discourse and enabled to act accordingly. The position of subject, from which language is articulated and from which speech acts, thoughts or writing appear to originate, is integral to the structure of language, and, by extension, to the structure of the conscious subjectivity which it constitutes. (Weedon, 1987, p. 34)

In the same manner as the structure of the language we use constrains, but does not determine, what we can say, the structure of acceptable discourses in the time and place that we occupy constrains, without dictating, who we can be. Such a view is called "post-structuralist" because it rejects any fixed, unitary meaning attached to the structure of the linguistic sign and it highlights the power struggles that surround the making and organizing of meaning. For example, the sign "woman" can be interpreted in many different ways depending on how you choose to position yourself as speaking subject; it is not dictated by biology or social convention, even though there are dominant discourses that seek to make such subject positions into fixed and stable identities. Scholars of subjectivity underscore the power that subjects have to resignify dominant discourses and thus to subvert the established order. Referring to hate speech and the injurious use of terms like "queer," Butler writes: "Speech is not only defined by social context, it is also marked by its capacity to break with context" (1997, p. 40). "As we think about worlds that might one day become thinkable, sayable, legible . . . the resignification of speech requires opening new contexts, speaking in ways that have never been legitimated, and hence producing legitimation in new and future forms" (p. 41).

Subjectivity in Second Language Acquisition (SLA)

The sociocultural turn in SLA research of the last 20 years (Block, 2003) has been accompanied by what one could call an inward turn. Researchers are keen to explore the construction and reconstruction of social identities (Norton, 2000) or "selves" (Pavlenko & Lantolf, 2000) through membership in social communities that cut across institutional lines and lay a claim to "social spaces and prerogatives" (Pavlenko, 2005, p. 197). At the same time, they have turned their attention to the emotional (Pavlenko, 2005; Dewaele, 2010), subjective experiences of L2 learners (Kinginger, 2004; Kramsch, 2009). The recent proliferation in the book market of language memoirs, autobiographical testimonies, immigrant life stories, and other confessional accounts of bilingual experience, written by bilingual writers in their L2, has offered fascinating insights into the subjective aspects of SLA. They have provided ample data that require new modes of analysis and interpretation. They confront applied linguists with their cross-disciplinary position between the social and the human sciences.

The *coup d'envoi* to an exploration of subjectivity in SLA was given by Bonny Norton Peirce (Peirce, 1995), who was the first to put identity and subjectivity on the agenda of SLA research. In her influential longitudinal study of five immigrant women in Canada, she described in detail through participants' diaries and interviews over a six-month period the difficulties these women had in acquiring English and the changes in social identity they experienced. Their struggles were less with the English language itself than with the identity they were forced to take as helpless immigrants at the bottom of the totem pole. Their motivation to learn the language was recast as *investment*—a "learner's commitment to learning an L2, which is viewed as related to the social identities they construct for themselves as learners" (Ellis, 1997, cited in Norton, 2000, p. 11). For Norton, investment is different from instrumental motivation inasmuch as it requires the learners to "constantly

organize and reorganize a sense of who they are and how they relate to the social world" (p. 11). Drawing on Pierre Bourdieu's economic metaphors, in particular his notion of cultural capital, Norton describes how learners "invest" in the second language and "expect good return on that investment" (p. 11). At the same time, inspired by Weedon's feminist and poststructuralist theory, Norton insists that "a learner's investment in the target language may be complex, contradictory and in a state of flux" (p. 11). Since an investment in the target language is also an investment in a learner's own identity, this identity, she writes, is "constantly changing across time and space" (p. 11). Norton's study has been influential in featuring language learners as having complex, multiple, and conflictual identities which they draw on to find appropriate "subject positions" in the new communities they are seeking to belong to.

However, while Norton, Pavlenko, and other applied linguists have drawn on Weedon's work to argue for educational equity and social justice, especially for immigrant learners of English, their use of the terms identity and subjectivity has resulted in some confusion in applied linguistics (for a review, see Block, 2008, pp. 217–18). Because of their close alignment with Vygotskyan sociocultural theory and collaborative learning theories, they have conflated identity and subject position and "converted subjectivities, as it were, into more stable identities" (Block, 2008, pp. 217–18). Weedon was clear about locating subjectivity in discourse in the sociohistorical, Foucauldian sense of "modes of thought" in a given period of history. She writes:

> Discourse is a structuring principle of society, in social institutions, modes of thought and individual subjectivity . . . Meanings do not exist prior to their articulation in language and language is not an abstract system, but is always socially and historically located in discourses. Discourses represent political interests and in consequence are constantly vying for status and power. *The site of this battle for power is the subjectivity of the individual and it is a battle in which the individual is an active but not sovereign protagonist.* (Weedon, 1987, p. 41, emphasis added)

The difference between agency and sovereignty is crucial to understanding the inherent tension between an individual's subjectivity and the identity options given to him or her by the group. This tension creates the conditions of possibility in which the speaking subject may be heard and listened to. The struggle about subjectivity is not about which social identity will be acknowledged and accepted (e.g., woman, mother, gay, immigrant, etc.), but which kinds of concepts may be thought at all (e.g., women's rights and gay marriage in Islamic societies; communist ideals in capitalistic societies). As Pennycook writes:

> [In a Foucauldian sense] discourse does not refer to language or uses of language, but to ways of organizing meaning that are often, though not exclusively, realized through language. Discourses are about the creation and limitation of possibilities, they are systems of power/knowledge (pouvoir/savoir) within which we take up subject positions. (Pennycook, 1994, p. 128)

Because the poststructuralist position on subjectivity views power as plural and relational, it has been accused of "leading to pluralism and relativism and ultimately to individualist politics" (Weedon, 1987, p. 178). Weedon is keenly aware of the relations of oppression produced and reproduced in discourse, but, like other feminist theorists (e.g., Kristeva, Butler), she does not believe theories of oppression have an external guarantee of absolute "truth" or "reality." Rather, "they have a strategic status, depending on the specific discursive power relations in play" (p. 180). In other words, the purpose of poststructuralist theory is to problematize the very categories offered by dominant discourses, such as

"man," "woman," "community," or "identity," and to explore which subject positions are strategically possible and which are impossible in a given time and place. A focus on subjectivity does not mean abandoning the possibility of social change, it only means questioning the ideological and historical basis of the various discourses at hand and defining one's subject position case by case. Despite Weedon's clarifications, the poststructuralist position has not been adopted as intended by those who are keen to empower immigrants in English-dominant societies. Applied linguists who, like Norton and Pavlenko, have recast Weedon's feminist theory of subjectivity into a theory of identity in SLA are now joined by researchers like McNamara (2010), who find in poststructuralism fruitful avenues for research and teaching practice in applied linguistics.

Research Methodology

The current debate about the poststructuralist use of the term "subjectivity" raises the question of the application of SLA research to language teaching and learning. Is the goal to help learners find the best possible social identity in order to claim social spaces and prerogatives? Or is it to understand the conditions of possibility of appropriating both the forms and the use of the language in unequal discursive practices and historical settings? In short, is SLA research meant to help *prescribe and predict* the success of various pedagogic interventions or to *describe and document* the ecological complexity of the SLA process?

In applied linguistics, subjectivity has been studied through ethnographic approaches such as published language memoirs, life stories, and other autobiographical testimonies (e.g., Pavlenko, 2001; Kinginger, 2004, 2009; Kramsch, 2009) which have called for a mode of analysis that is more akin to literary interpretation than to sociolinguistic analysis. Identity and subjectivity illuminate two different but complementary aspects of the self and two different emphases placed on representatives of the "symbolic species" (Deacon, 1997). These can be seen either as members of a community (identity) or as makers of meaning through the use of symbols (subjectivity). Between statistical surveys and qualitative ethnographies, Bourdieu (2003), who would not want to be included among the poststructuralists, has offered a third reflexive mode of analysis which he called "participant objectivation," and which is finding resonance among sociolinguists. This mode of analysis eschews both the facile narcissism of researchers' self-disclosure and the positivistic stance taken by social scientists who discard all subjectivity in their search for objectivity. By exploring the personal, political, social, and cultural conditions of possibility of their own research questions, researchers objectivate their own participation in the research project and give new meaning to the notion of subjectivity in applied linguistics.

SEE ALSO: Agency in Second Language Acquisition; Cultural Identity; Identity and Second Language Acquisition; Language, Culture, and Context; Study Abroad; Teaching Culture and Intercultural Competence

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Suprasegmentals: Discourse Intonation

LUCY PICKERING

Intonation is narrowly defined as the linguistically significant use of pitch movement at the suprasegmental level. This contrasts intonation with *tone*, which refers to the systematic use of pitch at the lexical level as seen in languages such as Chinese. A broader definition of intonation, often used for pedagogical purposes, includes intonation group analysis, that is, the alignment of the pitch contour with phrasal or clausal groups separated by pauses.

The intonation system in English performs multiple functions (Tench, 1996). Analyses in the first half of the 20th century ascribed primarily attitudinal and grammatical functions to intonational contours; more recently, however, prompted by a consideration of the cohesive devices underlying entire spoken texts, a principally textual or discourse function has been identified. Studies suggest that speakers signal topic structure by using pitch height and pause length to mark boundary strength. Listeners are also able to identify major discourse boundaries and predict when an utterance is likely to end using only features such as pause length and pitch variation (Cutler, Dahan, & van Donselaar, 1997).

In addition to this informational function, intonation plays an important role in successfully maintaining conversational involvement (Couper-Kuhlen & Selting, 1996). Systematic conventions of pitch variation are used to communicate understanding of status differences between interlocutors and project speaker assumptions regarding what information is new or shared in the context of a specific interaction (Brazil, 1985/1997). Thus, intonation bears a high communicative load in terms of both structuring information and expressing relationships between discourse participants, and forges a natural link between linguistic and sociolinguistic aspects of language (Gumperz, 1982).

The term *discourse intonation* is currently used to refer both in general terms to the discourse functions of intonation described above (Chun, 2002) and more specifically to the model of discourse intonation proposed by David Brazil (1985/1997) in his work on the English intonation system.

Brazil's model has become influential in British and Asian contexts and to a lesser extent in the United States. It has been applied to both native varieties and World Englishes (e.g., Cheng, Greaves, & Warren, 2008) and to second language (L2) varieties of English (e.g., Hewings, 1995). Unlike earlier models of intonational meaning (e.g., Halliday, 1967) which proposed that intonational primitives were coextensive with information units, syntactic clauses, or both, Brazil's builds an independent system based on phonological form which assigns a primarily pragmatic function to intonation choices. In this model, intonational structure contributes directly to a negotiation of a *state of convergence*, or informational or social confluence between interlocutors. Pragmatic intent is understood by speaker-hearers of the same community based on their shared set of sociocultural and linguistic experiences, which allow interlocutors to comfortably maintain interactional involvement. In common with Pierrehumbert and Hirschberg's (1990) model of intonational meaning based on American English, Brazil proposes a componential model in which meaning is conveyed by specific components of the contour rather than the shape of the contour as a whole. The four systems that comprise Brazil's system—the tonic segment, key choice, termination choice and tone choice—are summarized in Figure 1 and described in detail below.

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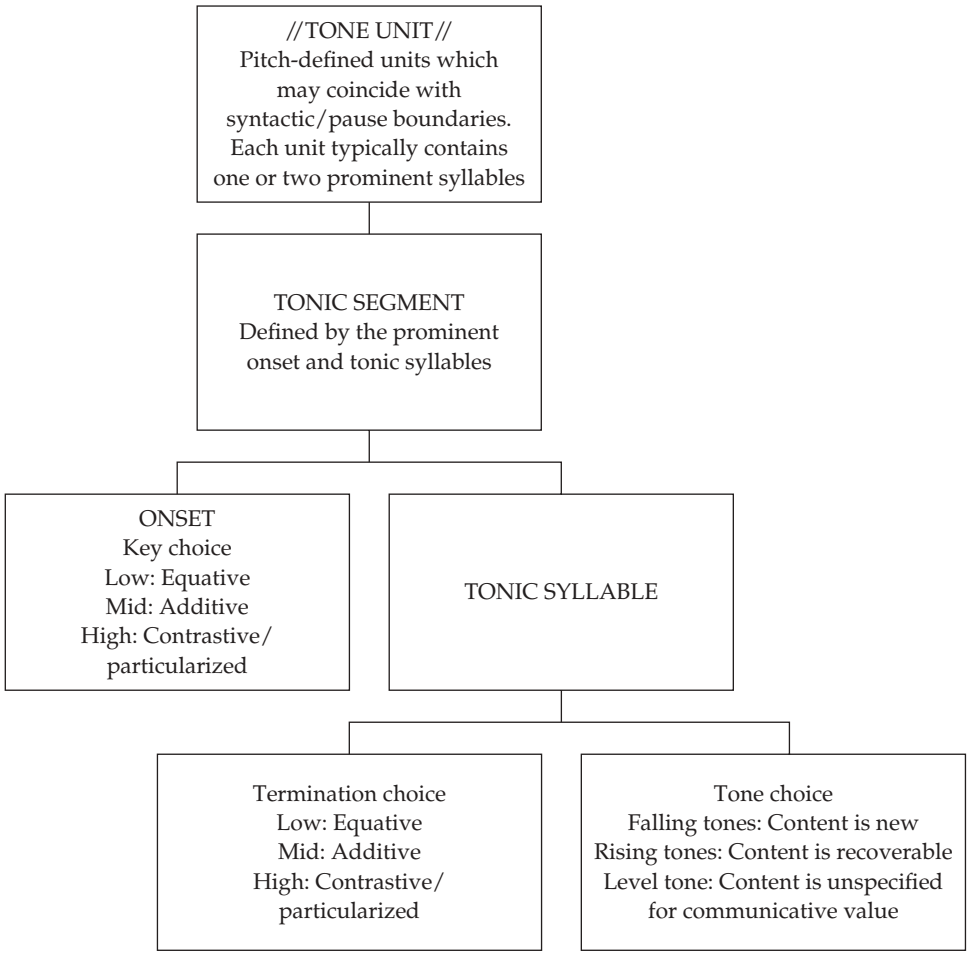

Figure 1 Model of discourse intonation (adapted from Brazil, 1985/1997)

Tone Unit and Tonic Segment

Stretches of spoken discourse are divided into pitch-defined *tone units* which may also coincide with non-pitch-related phenomena such as pause units. Within each tone unit *prominent* or stressed syllables define the tonic segment of the unit, that is, the part of the unit comprising linguistically significant pitch choices. The speaker assigns prominence based on their assessment of the current understanding of the hearer(s). In (1)–(3), adapted from Brazil (1997, pp. 22–3), prominent syllables (shown in capital letters) co-occur with the (R)esponder's understanding of the new information that the (Q)uestioner is seeking in each specific case:

(1) Q: What card did you play?
R: //the KING of SPADES// (both the kind of face card and the suit are new information)

(2) Q: What spade did you play?
R: //the KING of spades// (only the kind of face card is new information)

(3) Q: Which king did you play?
R: //the king of SPADES// (only the suit is new information)

Typically, a tone unit will comprise two prominent syllables, an *onset* and a *tonic syllable*, which are the sites for significant pitch choices within two systems of pitch level (*key* and *termination* choice) and a system of pitch movement (*tone* choice.) These three interlocking systems form the basic components of the intonation system in English and have independent implications for the communicative value of the discourse.

Key and Termination Systems

The two systems of key and termination are concerned with pitch level. They operate in conjunction with the tonal system and play an important role in the local management of turn-taking structure and inter-speaker cooperation. Key choice is realized on the onset syllable (the first prominent syllable in the tone unit) and termination choice on the tonic syllable. In cases where there is only one prominent syllable in the tone unit, both key and termination choice fall on the same syllable, as shown in the examples below. Using the voice range of the speaker as a "minimally fixed framework" (Couper-Kuhlen, 1986), the first onset key is identified as either high, mid, or low. Subsequent termination levels are identified as appreciably "higher than" or "lower than" the preceding key choice. Each of the pitch level choices carries a specific pragmatic value.

Choice of high key or termination on a prominent syllable denotes the constituent (or matter of the tone unit) as either *contrastive* or *particularized*, that is, highlighted as crucial over and above the surrounding information:

(4) FAILED//
//he took the exAM// and
He did not pass, as you might have expected: contrastive. (Sinclair & Brazil, 1982, p. 144)

Mid key choices have an additive function and denote the constituent as an *expansion* or *enlargement* of the information in previous units:

(5) //he took the exAM// and FAILED//
He did both: additive. (Sinclair & Brazil, 1982, p. 144)

A mid-level termination choice carries an expectation that the hearer will concur with the utterance. In conversational exchanges, it is essentially the unmarked key and termination choice.

Finally, a low key choice signifies an *equative* value in relation to previous units; that is, the information will match any previous expectations held by the hearer:

(6) //he took the exAM// and
FAILED//
As you would expect; from what you know of him you will assume that taking it involves failing it: equative. (Sinclair & Brazil, 1982, p. 144)

In exchange structure, a low termination choice carries an additional restrictive function as it indicates the completion of the exchange. This is particularly evident in interactions between participants of unequal status where it is the prerogative of the participant with the higher status to signal the end of the exchange, as we see in typical teacher–student (T–S) interactional exchange units:

(7)
```
      H
T:    M   //where do we get TEA from//
      L

      H
S:    M   //CHIna//
      L

      H
T:    M   //CHIna//
      L                 //GOOD//
```

Tone System

The tone system is concerned with pitch movement rather than pitch level. Tone choice describes the choice of a rising (both rising and falling-rising), falling (both falling and rising-falling), or level pitch movement on the tonic syllable or nucleus of the tone unit, that is, the last prominent syllable in the tone unit. Tone selection marks both the informational status of the utterance and its social significance within the context of the interaction and is chosen by the speaker based on her understanding of the background knowledge of the hearer. Falling tones ([↘] and [↗↘]) indicate the speaker's assumptions that the propositional content of the tone unit is a new assertion in relation to the hearer, that is, in some way changing the state of the hearer's current understanding or unrecoverable from the context. Rising tones ([↗] and [↘↗]) indicate that the speaker assumes this information is part of the shared background between participants and agrees with the current worldview of the hearer. This shared information may be recoverable from the preceding discourse or prior knowledge assumed by the speaker to be common ground at that time. This is demonstrated in (8), adapted from Brazil (1997, p. 68), in which (8a) assumes that the common ground is Benjamin Jones, and (8b) assumes that the common ground is his profession (tone choice is underlined):

(8) a. //↗BENjamin JONES// ↘is a DOCtor// 'talking of Benjamin Jones, he's a doctor'
    b. //↘BENjamin JONES// ↗is a DOCtor// 'talking of doctors, Benjamin Jones is one'

The notion of inclusiveness inherent in a rising tone choice is also apparent in interactional exchanges in which speakers wish to project a broader common ground in order to decrease the affective distance between themselves and their hearers; for example, the use of a rising tone rather than a falling tone when contradicting a previous speaker in order to avoid the appearance of overt disagreement (Hewings, 1995). In (9), adapted from Pickering (2001, p. 244), a chemistry teacher uses this strategy to indicate that a student has incorrectly responded to his question:

(9) T: //How do we test for that compound specifically?//
    S: //We heat it//
    T: //↗ WELL// if you remember that didn't ↗WORK too well//

The last of the five tones, the level tone choice (➔), is marked as communicatively neutral and presents the utterance as neither shared nor new but simply a language specimen. By placing the utterance outside of the context expressed in the other parts of the discourse message, the speaker can signal a suspension of the moment-by-moment negotiation for any number of reasons related to the social or informational aspects of the interaction. Brazil suggests that the level tone is most commonly used in two situations. The first is in semi-ritualized or routinized language behavior such as choral prayer or giving directives in the classroom: //➔ stop WRITing// ➔PUT your PENS down// (Brazil, 1997, p. 138). An utterance presented in this manner can be glossed as "these are not my words addressed particularly to you on this occasion; they are rather a routine performance whose appropriateness to our present situation we both recognize" (Brazil, 1997, p. 136). The second is in places where the speaker may have momentary problems with linguistic coding. For example, unplanned discourse is often filled with pause fillers and other kinds of hesitation markers, which will frequently be uttered in a level tone. Level tones may also occur when the speaker is unfamiliar with the language itself, as may happen with non-native speakers of English or when young children read aloud. In both cases, decisions in the intonation system may be made on the basis of the linguistic organization of the text rather than of concern for how any given utterance meshes with the context of the interaction for the benefit of the hearer.

It should be emphasized that with regard to all of these systems—prominence, tone, key, and termination—there is no absolute requirement that a speaker must obey the expected constraints. Rather, the intonation systems operate on the premise that, generally speaking, a speaker's contributions are designed to be understood. From this, we assume that speakers will assess the state of convergence between themselves, the hearer, and the message. However, it is also important to remember that speaker intention can override any expected choices that may be anticipated based on context.

A significant innovation in Brazil's model is the inclusion of the relative pitch onset level at the left edge of the tonic segment (realized on the onset syllable.) From this, two additional pitch regularities that appear in spoken discourse can be derived: the pitch sequence and pitch concord.

Pitch Sequence and Pitch Concord

The inclusion in the model of key choice, or relative pitch onset level, provides a principled framework for the description and interpretation of a prosodic unit larger than the tone unit: a *pitch sequence.* These intonational paragraphs are also described as *paratones* or speech paragraphs in the literature (Wennerstrom, 2001). A pitch sequence comprises a stretch of consecutive tone units that fall between two low termination choices. Prominent phonetic boundary cues include a high key onset with increased volume and rate, and a low termination possibly accompanied by laryngealization, a drop in volume, and narrowing of the pitch range. In addition to the boundary criteria, there is typically a gradual descent in pitch across the unit, usually referred to as *declination*. A pitch sequence may be uttered by one speaker or shared between two participants in an exchange. It typically delimits longer sections of speech and may be related, in terms of communicative value, to the next or previous pitch sequence or the consistent tone units within it.

Brazil also proposes a mechanism of *pitch concord*, which describes pitch range interactions between speakers. In exchanges, following the introduction of a new range of pitch norms, a second speaker may aim to match an initial key choice to the final termination choice of the first speaker; that is, a high termination from the first speaker will "invite" a second speaker to produce a similar high onset pitch. This is also described in the literature as *prosodic matching* (Szczepek Reed, 2006).

As with any linguistic system, intonational choices are conventionalized and contextually meaningful in discourse. Recognition of overall *prosodic composition* (Tench, 1996) is one way in which we identify different language events; for example, we are hearing classroom discourse as opposed to hearing the news on the television or radio. Brazil's model of discourse intonation enables us to explore precisely how we understand these choices both for pedagogical (see, for example, Bradford, 1988, and Cauldwell, 2003) and analytical purposes.

SEE ALSO: Brazil, David; Suprasegmentals: Intonation; Suprasegmentals: Prosody in Conversation

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Suprasegmentals: Intonation

JOHN LEVIS

Intonation

Intonation refers to a combination of acoustic parameters, including duration, intensity, and pitch used to communicate discourse meaning. It is different from tone, the systematic use of voice pitch to distinguish lexical items. The most important parameter, pitch, is determined by the fundamental frequency, or F0, of speech, and is measured in hertz (Hz) or semitones. F0 can only be measured during voiced intervals because voiceless segments have no F0, and thus leave a gap in the measurement of pitch, as in the beginning segment of the word *fine* in the sentence in Figure 1 (marked by the arrow). Lack of measureable F0 may also occur because of other features of the speech signal such as excessive creaky voice or insufficient loudness.

Ladd (2008) diagrams the relationship between the two clearest types of intonational meaning in English, relative prominence and tune (Figure 2). As an answer to the question, "How much did it cost?" the falling tune in (a) is a straightforward reply, while the rising tune in (b) communicates uncertainty or questioning. The different prominence patterns (or tonicity) in (c) and (d) occur in very different discourse contexts because they single out FIVE for special attention. If someone asks, "Did you say it cost nine pounds?" the

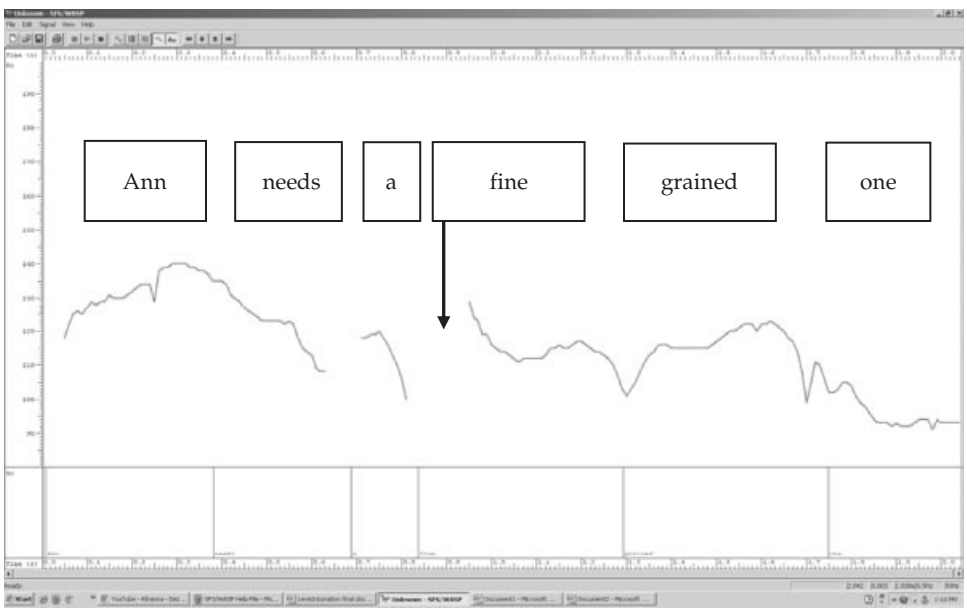

Figure 1 Fundamental frequency (F0) of the sentence *Ann needs a fine-grained one* (using SFS/WASP speech analysis software)

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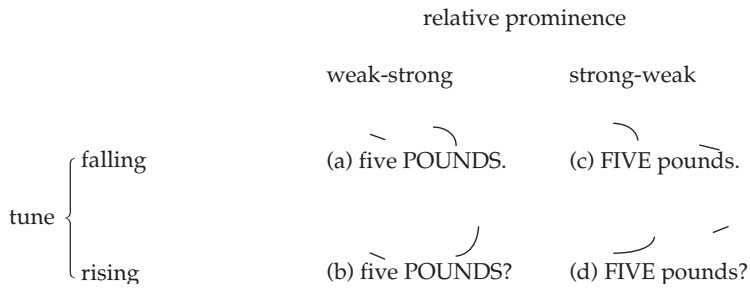

Figure 2 Tune and relative prominence in English

answer in (c) can be given, while (d) is used to combine uncertainty and the special attention to FIVE, as in "Did it cost FIVE pounds? FIVE pounds? I'm not sure." Regardless of the discourse context, two distinct uses of pitch are represented, one at the end of utterances, the other marking particular syllables as prominent.

Describing Intonation

According to Ladd (1980), "our first task in analyzing intonation must be to identify the inventory of meaningful elements" (p. 14). However, there are significant disagreements in applied linguistics about the linguistic categories of intonation and how they can be mapped onto the phonetic reality of continuous pitch movement. The inventories of meaningful elements vary according to language, with various ways to describe these elements even for the same language (Hirst & DeCristo, 1998).

Until the 1970s, intonation was largely described impressionistically. Today, all serious claims about intonation are subject to instrumental measurement. However, this shift in approach has not settled the debate over whether intonation is best described as static (that is, made up of level tones) or dynamic (made up of moving tones).

Straddling these two dominant approaches with a unique approach to description was Dwight Bolinger, who wrote from the 1950s to around 1990. Bolinger highlighted the importance of pitch accents, which continue to be central in all descriptions of intonation. He defined these in terms of the pitch movement used to accent syllables. Thus, "the pitch does two things at once. First, it signals an accent on that syllable. Second, its direction—up, down, or level—contributes to the melody" (Bolinger, 1986, 24). Bolinger's influence on intonation has been substantial, but his intonational description is rarely referred to in applied linguistics.

Historically (when looking at descriptions of English), a major disagreement in applied linguistics descriptions has been whether intonation's atomic components should be represented as static or dynamic, that is, whether pitch contours are comprised of pitch levels or are better seen as holistic configurations. In descriptions of English intonation, the pitch level approach has been favored by Americans, while the configurations approach has been favored by British applied linguists. The two approaches have long used different notation schemes, whose descriptions largely address many of the same issues. The traditional American levels approach has always built into meaningful configurations, while the British configurations approach has always included more basic elements that make up the configurations. Nonetheless, it is useful to understand the historical evolution of the two approaches, if only because their formalism remains a powerful mask to underlying similarities.

```
1 Look
2     th            fall
3       e       It's    i
4           re!            ng!
```

Figure 3 Pike's four-level system of intonation

The Levels Approach

The levels approach was pioneered by Pike (1945) who posited four phonemic (or tonemic) pitch levels for American English (Figure 3).

In this approach, intonation is defined in relation to the stressed syllables of speech, similar to Bolinger's notion of pitch accent, an insight essential to modern accounts. (See Liberman, 1978, for another treatment.) Stressed syllables start each contour, and an utterance can have multiple contours. Pitch levels 2 and 3 are the norm for the voice, with level 1 used for strong emotion or attitudinal meaning, and level 4 used primarily for endings. The two falling contours in Figure 3 are described as º1–4 and 3-º2–4. The beginning of each contour is the stressed syllable, and the end is the final point before the next contour begins. In Pike's system, it is possible to have multiple, meaningfully distinct contours of the same general shape, e.g., º1–4, º2–4, º3–4, º2–3, º1–3, and º1–2 are all falling contours, each with a different attitudinal meaning.

Pike's formalism was originally meant as both theoretical description (the four levels were based on English but were thought to be universal) as well as an applied approach to teach foreign learners of English. Although four levels are no longer used for describing English intonation, having been replaced by the two-level approach of Pierrehumbert (1980), four levels are still widely used in applied materials for teaching English (Celce-Murcia, Brinton, & Goodwin, 2010). After Pike, various researchers used the four-level system, some with 1 representing the highest level and some with 4, and the actual connection of numbers to pitches was flexible. Today, the standard in pronunciation teaching materials has the highest pitch as level 4 and the lowest as level 1.

Pike's approach had flaws, most critical being the system's descriptive overgeneration of contours with little clear difference in meaning. If two contours were phonetically distinct, they were assumed to also be meaningfully distinct. For example, the º2–4 and º3–4 contours were both falling and considered different contours with related meanings. Pike himself recognized a potential difficulty, saying that contours that were similar in form (such as the falling contours) shared common abstract meanings, in this case, the meaning of "CONTRASTIVE POINTING" (Pike's emphasis, 1945, p. 44).

The levels approach pioneered by Pike was revisited by Liberman (1978), reflecting renewed interest in intonational description, meaning (Ladd, 1980), and specialized contours (Bing, 1980). Research on pitch accent in Swedish (e.g., Bruce, 1983) was applied by Pierrehumbert (1980) to the description of English intonation, providing a principled account of both phonetic accuracy and phonemic distinctiveness as well as the connections between underlying tonal structure and the phonetic shape of utterances.

Pierrehumbert's account also broke new ground in that it relied on instrumental measurements rather than impressionistic description. She argued that H and L tones operated in three different discourse domains: the pitch accent (at least one in each spoken phrase, marked with the diacritic *), the end of the intermediate phrase (the phrasal tone, marked with –), and the end of the intonational phrase (the final boundary tone, marked with %). The combination of H and L tones therefore make up the contour, such as H* L– H%, or a falling-rising contour.

Pierrehumbert's account of pitch accents also accounted for the alignment of the pitch accent to rhythmic structure via the placement of the stressed syllable, such that there were six possible pitch accents in English (H*, L*, L*+H, H*+L, L+H*, H+L*). In each of the complex pitch accents, the stressed syllable is aligned with the *, and the pitch movement occurs either before or after the stressed syllable.

Pierrehumbert's system is now dominant in theoretical and laboratory accounts of intonation (see Ladd, 2008) and has been codified into the ToBI system ("Tones and Break Indices") (http://www.ling.ohio-state.edu/~tobi/) for laboratory investigations in a wide variety of languages. Investigations using ToBI have led to a variety of modifications to the original system depending on the languages being investigated. However, the system is rarely used in applied linguistics research (e.g., Wennerstrom, 1998; Levis, 2002) and pedagogical materials. This divide between linguistic and applied linguistic accounts of intonation means that applied linguistics as a field rarely shows awareness of this significant body of research.

The Configuration Approach

The other major descriptive approach to intonation can be seen in the British tunes approach, sometimes called the configuration approach by Bolinger (see Ladd, 1980). Although the configuration approach also includes smaller elements, as in the levels approach, intonation contours are more often treated as unified wholes, and the overall tunes are treated as meaningful units of the intonational system. (It can also be argued that the levels approach included overall tunes, but the impression is that the levels were more important than the tunes.)

In British accounts of intonation, sentence-final contours are often called "nuclear tones" (e.g., Cruttenden, 1997) in that they include both the nucleus (or prominent syllable) and the following pitch movement. Thus a falling nuclear tone would include a prominent jump in pitch on BEST (the nucleus) and a falling pitch to the end of the utterance. Nuclear tones are typically marked with shorthand diacritics (e.g., ` ´ ˇ for falling, high rising, falling-rising, etc.), a system first used by Harold Palmer in 1922 and codified by Roger Kingdon in 1958 (Ladd, 1980).

(1) A: Is that your friend?
B: He's my very `BEST friend.

Intonation thus involves, besides other acoustic features, meaningful pitch in several domains. Halliday (1967) calls the primary domains *tone, tonality,* and *tonicity*. Tone (elsewhere and more commonly called *tune*) is intonation to communicate meaning at the end of a sentence. Thus the choice of rising versus falling in the utterance *He's ready* is an example of a tone choice. Tonality divides spoken phrases, as in the sentence *If you leave now, don't come back*. Third, tonicity is the use of pitch to single out a word or syllable as informationally prominent, as in *HE'S ready* versus *He's READy*. It also may include significant uses of pitch range called KEY (Brazil, 1997).

An extensive treatment of intonation from this approach was O'Connor and Arnold (1961), a work equivalent in scope to Pike's description of American English. (Like Pike, they also wrote to teach intonation to foreign learners of English.) Although contours are largely seen as unified wholes in the configuration approach, pitch is also meaningful in smaller domains of the utterance. For example, the preceding words in the response in (1) also have a role in the configurations approach, as in (2). The first stressed syllable preceding the nucleus is the start of the Head, unstressed syllables before the Head are

called the Prehead, and the syllables following the Nucleus are called the Tail. The intricacies of the full system of description are beyond the scope of this entry, but all were thought to be meaningful intonational choices.

(2) He's my very `BEST friend.
prehead | head | nucleus | tail

Intonational Meaning

Intonation contributes to linguistic meaning in a variety of domains, such as marking juncture between spoken phrases, highlighting, or backgrounding particular words or syllables, marking the ends of intonational phrases with movement, and using extremes of pitch range to carry discourse or contrastive meaning. Other types of meaning (e.g., emotional) are only partially connected to pitch variation, and native speakers inconsistently identify emotions from speech (Crystal, 1969; McLemore, 1991).

A mistaken belief is that intonation reinforces grammatical meaning. While intonation may sometimes correlate with syntax (for example, declaratives in English tend to have falling tones in most contexts), intonation is not simply a mirror of grammar. Instead, it provides an independent source of pragmatic or sociolinguistic meaning. Some research has shown that half of all polar questions (yes/no) in English can occur with rising intonation and half with falling (Thompson, 1995). Recent research on Dutch shows that phonological, syntactic and pragmatic factors all serve to distinguish rising intonation and question fall-rise intonations in read and freely spoken questions (Lickley, Schepman, & Ladd, 2005). Modern theoretical approaches to meaning do not assume a direct causal link between intonation and grammar, but the temptation to connect the two remains strong in pedagogical approaches.

The kind of meaning that intonation contributes to an utterance remains a subject of dispute. Pike (1945) believed that intonation directly represents a speaker's attitude toward the content of what is being said, reflecting the commonsense saying, "It's not what she said, it's how she said it." Intonation "modifies the lexical meaning of a sentence by adding to it the speaker's attitude toward the content of the sentence" (p. 21) and that "if a man's tone of voice belies his words, we immediately assume that the intonation more faithfully reflects his true linguistic intention" (p. 22). Although intuitively appealing, attitudinal meaning depends both on other features of linguistic and discourse context and intonational choices (Ladd, 1980; Chun, 2002).

An influential approach to intonational meaning (Halliday, 1967), connected intonation to information structure: that is, pitch movement on the prominent syllable in English highlights new information in a tone unit. Likewise, the use of low pitch on informationally important words signals that the words contain given information that can be expected to be shared between interlocutors in the context. The appeal to new and given information is ubiquitous in materials used to teach English intonation to foreign learners. Brazil (1997), for example, connects new and given information in discourse to the type of nuclear tone used, that is whether it is generally falling, rising, or level. This *discourse intonation* approach has been used in applied linguistics by researchers such as Pickering (2001) and Cauldwell (*n.d.*).

An influential approach to meaning is Pierrehumbert and Hirschberg (1990). Based on Pierrehumbert (1980), it provides a compositional account of intonational meaning. Each domain of intonation (pitch accent, phrasal tones, and boundary tones) contributes abstract meanings to the overall utterance. Adding these meanings accounts for a logical full interpretation of an utterance. While this method is comparable to earlier approaches to

intonational meanings, such as Pike's "contrastive pointing" and O'Connor and Arnold's compositional meaning tied to different parts of the sentence-level contours, Pierrehumbert and Hirschberg's account is too abstract to be applied directly to teaching.

There are still many questions regarding both the description of intonation and the kinds of meanings it contributes to utterances in discourse. In addition to a large body of work on English, intonational research is increasingly carried out for many other languages. European languages remain the most widely studied, with Japanese, Korean, and various varieties of Chinese also having been examined. Much remains to be done in exploring the relationship of tone and intonation, in looking at the intonation of more non-European languages, and in developing applied approaches to intonation that make explicit connections to laboratory phonology approaches and theoretical accounts of intonational form and meaning.

SEE ALSO: O'Connor, J. D.; Pike, Kenneth Lee; Suprasegmentals: Discourse Intonation; Suprasegmentals: Rhythm; Suprasegmentals: Tone

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Suprasegmentals: Prosody in Conversation

BEATRICE SZCZEPEK REED

While students of language have been interested in the relations between sounds and meaning since the very beginning of linguistic inquiry, interest in the phonology of natural conversation is a more recent phenomenon. This is the case because traditionally, language has been studied primarily as an abstract system of rules and patterns, rather than an everyday human activity. However, during the second half of the 20th century a strand of research developed for which naturally occurring talk was the principal focus. Conversation analysis (CA), which originated in sociology, and discourse analysis (DA) were adopted by a number of linguists. Phoneticians and phonologists working in this field began to investigate the suprasegmental aspects of speech—that is, intonation, pitch range, rhythm, stress, speech rate, loudness, and voice quality—by following the conversation analytic approach of studying language from the perspective of those who use it—that is, the conversationalists themselves. This entry focuses on the research field that was directly influenced by CA, and has since become known as *interactional linguistics*.

Since the early 1980s, interactional linguists, among them Elizabeth Couper-Kuhlen, John Local, Richard Ogden, and Bill Wells, have brought to light previously undiscovered prosodic practices that show speakers' use and interpretation of prosody on a local level of conversation. The main findings in this area concern three major conversational activities: turn taking, sequence organization, and the accomplishment of specific conversational actions.

When it comes to negotiating over who speaks when, and for how long, participants in naturally occurring conversation draw on a combination of linguistic and interactional cues. For example, finished contributions, or "turns," are typically characterized by syntactic, pragmatic, and prosodic completion (Ford & Thompson, 1996). The prosodic aspect of turn completion takes different forms, depending on which language, and which variety of that language, a participant speaks. For example, Local, Kelly, and Wells (1986) show that in Tyneside English, complete turns involve a slowing down in speech rate toward the end of the turn, a sudden increase and decrease in loudness on the last stressed syllable, lengthening of that syllable, centralized quality on the final vowels, and either a step up or a drop in pitch on the last stressed syllable. Similar sets of features were described by Local, Wells, and Sebba (1985) for London Jamaican English, and by Wells and Peppè (1996) for Ulster English. These works show that participants do not orient to individual prosodic cues on their own, but instead employ clusters of prosodic features—an early warning against a simplified correlation between prosodic cues and interactional functions. Later, Szczepek Reed (2004) demonstrated that almost any intonation pattern that is part of the repertoire of English tones can occur in turn-final position, and that any analysis of prosody and turn taking requires detailed study of the kinds of turns in question. This means that prosodic cues themselves do not carry any inherent turn-related meaning; for example, low falling pitch does not "mean" turn completion. However, in co-occurrence with other cues it can be used and interpreted by participants as completing a turn, while in different contexts it may be used for other conversational actions.

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Bearing in mind this contextual nature of prosody, there are prosodic parameters that do seem particularly relevant for turn taking. Among those that have been studied in detail are pitch accents, rhythm, and voice quality. Schegloff (1998) and Fox (2001) show that in their US American English data, high pitch accents, or "pitch peaks," that occur at the end of participants' turns foreshadow upcoming opportunities for transition, or "transition relevance places" (TRPs). Wells and MacFarlane's (1998) investigation of West Midlands English finds that in their data participants also treat final accents as transition relevant; however, in that variety, the final accent is not a "peak," but a "valley." These researchers therefore argue "that it is the occurrence of the final major accent itself that projects an upcoming TRP, and not just the phonetic characteristics of the postaccentual syllables" (1998, p. 288). Once again, the importance of close attention to prosodic variation across accents is demonstrated by these findings: While both speakers of US American English and speakers of West Midlands English orient to final pitch accents as turn-taking cues, their precise prosodic realization may vary considerably.

The following extract from the Santa Barbara Corpus of Spoken American English Part 1 (Du Bois, Chafe, Meyer, & Thompson, 2000) shows an example of a participant orienting to a pitch accent as signaling a TRP. Angela has just told her friend Doris that she is looking for a certain type of senior citizens' service. Immediately prior to the transcribed section, Doris offers to help and provide this service as a friend. In reply to this offer, Angela comes in with her turn at line 1.

```
(1)  SBC011 This retirement bit
1  Angela:  WELL,
2           I would like to hAve it on a ↑BUSIness ↓BAsis <<l>
            wi[th somebody.>
3  Doris:     [w- well
4           ALL RIGHT;
5           WE'LL put it on a bUsiness bAsis,
```

What is interesting in this exchange is the precise moment at which Doris comes in to speak. She starts up in overlap with Angela, and a superficial reading of the transcript could suggest an interruption. However, looking at Angela's turn design we can see that immediately prior to Doris's start up Angela has reached a point in her utterance that is (a) syntactically complete, in that *well I would like to have it on a business basis* is a potentially complete sentence; and (b) pragmatically complete, in that it is a meaningful reply to Doris's previous offer of help. Prosodically, it ends in a pitch peak, followed by a fall down to the bottom of Angela's voice range. This prosodic pattern is indicated in the transcript by the upward arrow preceding the word *business*, and the downward arrow preceding the word *basis*. The fact that Doris comes in to speak at precisely this moment is evidence that from her point of view, these cues—and possibly other, gestural cues that we as analysts are not aware of—signal to her that Angela has reached a point of possible completion. And indeed, although Angela has not finished speaking, the prosodic design of her remaining words *with somebody* is produced with very low pitch register, and without pitch accents.

Another research finding that points to speakers' continuous monitoring of each other's prosody for turn-taking opportunities concerns the interactional role of speech rhythm. In her work on English rhythm, Elizabeth Couper-Kuhlen discovered that speakers of English tend to continue the rhythmic patterns established by a previous participant's turn in their own next contribution (Couper-Kuhlen, 1993; Auer, Couper-Kuhlen, & Müller, 1999). As English rhythm tends toward stress timing, stressed syllables occur at roughly regular time intervals. Continuing a rhythm across a turn transition means that a next speaker must produce the first stressed syllable of his or her turn precisely at the moment when,

according to the previous speaker's rhythmic pattern, a next beat is expected. Couper-Kuhlen showed not only that this is the norm for English conversations, but also that interactants treat speaker changes that occur early or late according to a prior rhythm as problematic. This practice means that participants are continuously monitoring the timing of each other's talk with great precision. It also shows that in spontaneous interaction, the placement of utterances at precisely defined conversational locations is treated as meaningful, above and beyond the semantic meaning of the words and sentences involved.

Voice quality deserves specific mention here, as it has traditionally been ignored by most linguists as not bearing meaning. However, Richard Ogden has found that, at least in Finnish, voice quality is used as a turn-taking cue. In Ogden (2004) he shows that a change from modal, that is, default voice quality to combinations of creak, breathiness, and whisper accompanies many turn endings in Finnish, and is treated by conversationalists as turn-relevant. This finding suggests that an analysis of prosody in discourse cannot be restricted to what has traditionally been labeled "suprasegmental." As many non-discourse-oriented linguistic approaches take as their scope of analysis the single sentence, and the single speaker, voice quality does not appear as a contrastive feature in those fields. However, a prosodic parameter used for turn taking can only be observed when the data under analysis are conversations, rather than single-speaker sentences. In this case, therefore, the method and scope of analysis must adapt to a rather different object of study.

A second area in which research on prosody in conversation has been fruitful is the organization of talk into sequences. Here, prosody seems to be particularly involved in one aspect. During an emerging interaction speakers repeatedly encounter points at which they have to signal to their co-participants whether they are continuing a current course of action, or whether they are starting something new. It is at these sequential "forks in the road" that prosody is employed—sometimes exclusively—to show which direction a speaker is taking. For example, Local (1992) shows that when participants interrupt the course of their own current turn, the prosodic design of their talk following this interruption shows whether they are continuing the turn they were engaged in before, or whether they are beginning a new turn, thus aborting the previously unfinished utterance. One prosodic parameter that is used for this purpose is pitch register, that is, a participant's overall pitch level. Talk that is designed as continuing a previous turn continues the pitch register of that previous turn: the pitch level at the beginning of the continuation matches precisely that at which the speaker previously left the abandoned turn. In contrast, talk that starts something new begins with higher pitch. Couper-Kuhlen (2004) also describes how participants use a sudden increase in pitch and loudness when they are starting a new conversational sequence; and continue previous pitch and loudness levels when they are continuing what they were previously in the process of doing.

A slightly different practice is described in Szczepek Reed (2009). While the above-mentioned research reports that an increase in pitch and loudness is typically associated with a new conversational activity, this work explored an underlying principle according to which newness is achieved prosodically by doing something different to prior talk as such; however, not necessarily by using a particular prosodic design, such as higher pitch or loudness. Szczepek Reed (2009) shows that by either repeating or not repeating a previous speaker's prosodic patterns, participants indicate whether they are continuing a sequence or starting a new one. This even holds for cases such as greeting sequences, in which participants may use the same lexical token—such as *hello* or *hi*—to respond. Next speakers may either match the prosody of the prior greeting, thus offering a continuation of the greeting sequence, or not match the previous prosodic pattern, and thus start a new greeting sequence, to which the previous speaker then replies with a return greeting.

The third area of discourse in which prosody plays a major role is the accomplishment of specific conversational actions. A large amount of research has been carried out on the

prosodic configurations of specific types of turns and actions. From the perspective on prosody in discourse, the most interesting cases are actions that are distinguished exclusively by their prosodic design. In her research on quoting and reported speech in interaction, Couper-Kuhlen (1996) found that conversationalists use two different prosodic patterns for the distinct activities of quoting and mimicking an immediately previous speaker. Both cases involve a next speaker's matching a previous speaker's pitch register. However, participants distinguish clearly between two ways in which this can be achieved. In instances of "quoting," next speakers repeat a previous speaker's register on a relative scale, that is, they use the same register according to their own voice range. For example, in the case of a female first speaker whose utterance is delivered with high pitch register, a man quoting her adopts a pitch register that is high in his own range. On the other hand, instances of "mimicking" involve pitch register matching on an absolute scale. In this case, the male speaker repeats precisely the pitch register of the previously speaking female participant, resulting in a pitch register that is situated extremely high in his voice range. While quoting is interactionally neutral, mimicry is used as a strategy for criticism or derision. In both cases, the second speaker's turn contains verbal repetition of the previous participant's utterance. It is only the prosodic design that gives away the conversational activity of that repetition as being an instance of quoting on the one hand, or mimicry on the other. Couper-Kuhlen's work on mimicry, and on rhythmic integration, and Szczepek Reed's work on matching prosodic patterns in greeting sequences (mentioned above) shows that continuing a previous speaker's prosody is an integral part of conversation. However, there seems to be a degree at which such *prosodic orientation* (Szczepek Reed, 2006) becomes "too much," and can turn into sarcasm and a display of interactional power relations.

A very different conversational action has been described by Auer and Rönfeldt (2004) in their work on aphasic speech. Their analysis of the speech of one particular patient with aphasia reveals that a prosodic practice described in medical-oriented literature as "prolixity," and treated there as a symptom of the cortical brain injury, is in fact a conversational strategy to overcome word retrieval problems. The practice in question involves producing an utterance from which the main element is missing, yet which is decreasing in loudness —typically a prosodic sign for turn completion. Immediately following this aborted utterance the speaker starts up again at a higher loudness level. This practice makes it difficult for co-participants to join in, as the speaker's prosodic cues continuously contradict the semantic/pragmatic content of his or her utterances. However, Auer and Rönfeldt show that the practice of designing his incomplete utterances as complete, and starting up immediately afterwards with a next turn, allows the aphasic speaker to conceal word retrieval problems in a face-saving manner. The prosodic pattern and the resulting conversational difficulties are revealed to be interactional strategies, rather than direct consequences of brain injury.

Recent decades of research on prosody in conversation have shown that prosody must be taken seriously as a relevant interactional parameter. However, the work in this field has also demonstrated that prosody must be studied in the context of the many other interactional resources participants have at their disposal. Therefore, it is in the combination of those different spheres of influence that the complexities and challenges for an understanding of prosody lie.

SEE ALSO: Conversation Analysis and Interactional Linguistics; Conversation Analysis and Turn Taking; Phonetics and Phonology: Overview; Suprasegmentals: Discourse Intonation; Suprasegmentals: Intonation; Suprasegmentals: Rhythm; Suprasegmentals: Stress; Suprasegmentals: Tone; Voice Quality

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Suprasegmentals: Rhythm

YUKARI HIRATA

Overview

Research in rhythm has progressed over the past 70 years involving multiple disciplines such as phonetics, phonology, psycholinguistics, first and second language acquisition, cognitive science, neuroscience, and developmental psychology. One major question has been whether languages of the world can be categorized into a certain number of rhythm classes based on a given definition in phonological, acoustic, articulatory, or perceptual terms. This question of rhythm typology also includes the issue of whether there are distinct rhythm classes with measurable indices in empirical data, or whether language rhythms differ in a gradient, instead of categorical, fashion; e.g., Spanish not belonging to the same rhythm class as French, but being closer to French than to English. The presence of rhythm in language is uncontroversial, but it has been a challenge (or a fascinating problem), to describe, define, and prove rhythms of world languages in terms that can be agreed upon.

Researchers have also explored questions such as: How do infants acquire a native language rhythm, and how does their earlier knowledge of rhythm help them to segment speech streams and learn individual words and sentence structures? Is it possible for adults to acquire second language rhythms perfectly? Is the perception of rhythm language-specific or species-specific, or does it involve more general auditory mechanisms shared by humans and other primates? What is the role of rhythm in perceiving spoken words? How does the perception of one's native language relate to the perception of nonspeech rhythm as in music or simple sequences of beeps? How is the perception of speech rhythm reflected in brain function?

Rhythm Typology of the World's Languages

Earlier studies between the 1940s and 1960s identified three major rhythm classes: *stress-timed, syllable-timed*, and *mora-timed*. In stress-timed languages, such as English, stressed syllables are said to recur at equal time intervals, whereas in syllable-timed languages, such as French, all syllables recur at equal intervals. This rhythmic recurrence, or *isochrony*, was proposed on the basis of how languages are produced, and thus was examined by acoustic analysis of produced speech. However, studies failed to find a definitive answer to explain the presence of isochrony in measured duration of intervals, e.g., between stressed syllables in English, although this tendency was observed (Lehiste, 1977, 1980). Dauer (1983) found that interstress intervals of stress-timed languages such as English and Thai are no more isochronous than those of syllable-timed languages such as Spanish, and argued that the traditional rhythm classification is not supported by phonetic and acoustic investigations. One challenge of acoustic analysis of naturally produced speech is that speech signals are bound to be so variable that it is difficult to make a conclusive judgment about whether measured intervals of, for example, 85 milliseconds and 100 milliseconds are similar enough to be considered as evidence for isochrony.

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A turning point in rhythm studies was the idea that this rhythm classification has mostly to do with differences in phonological structures, and not with isochrony in acoustic signals (Dauer, 1983). One example is a phonological rule governing whether unstressed vowels are reduced or not in a given language, e.g., the English word *to* /tuː/ is reduced to /tə/ when it is unstressed in a sentence. This vowel reduction affects the overall rhythm, since the reduced vowel is consistently shorter in duration. Dauer (1983) also pointed out that rhythm differences appear according to how complex syllable structures are in each language. For example, in French 74% of syllables are open (e.g., CV and V) and only 26% are closed (e.g., CVC and CVCC), whereas in English 44% of syllables are open and as many as 56% are closed. She also argued that the notion of the stress-timed and the syllable-timed rhythms does not refer to two distinct categories but rather to gradient characteristics in a continuum: a particular language could be more or less stress-timed or syllable-timed than others.

The third rhythm class that has been identified is *mora-timed*, in which isochrony is expected to exist in the unit of the mora. Moras are similar to syllables but length-sensitive, e.g., a syllable with a long vowel counts as two moras, and each mora takes about the same amount of time to say. For example, in Japanese, /koːkoː/ with two long vowels, meaning 'high school,' and /kudɑmono/, 'fruits,' take about the same amount of time to say—each word containing four moras. Mora isochrony is another independent topic investigated over 50 years. Many studies support the existence of mora isochrony in various acoustic/durational measures (e.g., Port, Dalby, & O'Dell, 1987), but other studies do not (e.g., Warner & Arai, 2001).

Evidence of Rhythmicity in Speech Signals

Another turning point of rhythm studies was in the 1990s to 2000s, when researchers revisited the question of duration in search of acoustic evidence for the stress-timed, syllable-timed, and mora-timed classes. Unlike earlier work by Lehiste (1977, 1980), studies by Ramus, Nespor, and Mehler (1999) and Grabe and Low (2002) did not search for isochrony but adopted different approaches. Ramus, Nespor, and Mehler (1999), for example, calculated more global measures, such as the proportion of summed vocalic intervals (such as vowels) over the entire sentence duration (%V), and the standard deviation of consonantal intervals over the sentence (ΔC). Ramus et al. (1999) found that these two measures were successful in classifying the eight languages they examined: English, Polish, and Dutch as stress-timed languages; French, Spanish, Catalan, and Italian as syllable-timed languages; and Japanese as a mora-timed language. According to these acoustic indices, rhythm is defined in terms of how much the overall vocalic portions occupy as a proportion of the whole utterance (%V), and how variable the consonants are (ΔC, partially reflecting on syllable complexity such as CV, CCV, CCCV, VC, CVC, CVCC, etc.) in the entire produced utterance.

Grabe and Low (2002) also took an approach that departed from the traditional search for isochrony. They examined *pairwise variability indices*, which express the level of durational variability in successive pairs of vocalic portions (vocalic PVI) or successive pairs of intervocalic or consonantal portions (intervocalic PVI). They were successful in classifying British English, German, and Dutch as stress-timed languages and French and Spanish as syllable-timed languages, although they could not classify Japanese as a separate class of mora-timed language. Their data, however, looked more complex when 18 languages were examined altogether. On the question of the categorical or gradient nature of rhythm classification, their data suggested it to be "weak(ly) categorical" (p. 10).

Rhythm as a Perceptual Entity

Two criticisms have been raised about the approach that searches for evidence of rhythmicity in duration of speech signals. The first is that rhythm cannot be captured accurately when we attempt to characterize it exclusively with *produced* acoustics of speech, and that we need to take *perception* into account (Kohler, 2009). Lehiste (1977) showed that English listeners tend to *hear* interstress intervals as being more isochronous than they actually are in production. The earlier notion of rhythm as described in Woodrow (1951) was "the perception of a series of stimuli as a series of groups" (p. 1232). Only a few studies (Ramus, Dupoux, & Mehler, 2003) examined native adults' perception of rhythm as evidence for the existence of rhythm classes.

The second criticism arises if we consider that the way we *perceive* speech rhythm is an essential part of characterizing or defining it. Researchers (e.g., Arvaniti, 2009) have pointed out that perceptual rhythmicity is described in terms not only of duration, but also of fundamental frequencies (which are associated with our perception of pitch height) and intensity (which is related to our perception of signal strength). They point out that studies which only focus on *timing*, looking exclusively at the durational aspect of speech, would miss an important point about how we perceive rhythm. They argue that rhythm studies should focus on perceptual utilization of duration, fundamental frequencies, and intensity in grouping and patterning of prominence (which differ greatly from one language to another), and that the search for a single acoustic index of duration is misguided. Even the idea that stress-timed versus syllable-timed rhythm classes are valid categories has been questioned (Arvaniti, 2009).

Rhythm as Entrainment

Another line of approach has been to view rhythm as a psychological entity that has a tendency to entrain in speech syllable chains (Port, Cummins, & Gasser, 1995; Tajima, Zawaydeh, Kitahara, & Port, 2000). Their approach utilizes a *speech cycling* paradigm, in which speakers are asked to repeat a phrase over and over with the guidance of a metronome. It examines whether salient parts of speech, such as stressed syllables, fall at rhythmic intervals. Port et al. (1995) asked speakers to repeat an English phrase, *Take a pack of cards*, and measured the point in time where the final stressed syllable, *cards*, fell in the interval between the first stressed syllable, *take*, in one repetition and that in the next repetition (i.e., the total phrase interval). The hypothesis was that if speakers do not have internal rhythmicity in their speech, the points of time when the last stressed syllable (i.e., *cards*) occurs would be random, but if they have an internal oscillator for entrainment, the occurrence of *cards* would fall at predicted phases such as 1/3, 1/2, and 2/3 of the total phrase interval. The results supported this hypothesis: Of many trials of the produced phrase, the most frequent occurrence of the final stressed syllable was at the point near 1/2 of the total phrase interval, and the second frequent occurrence was at the point near 1/3, and the third near 2/3. This kind of regularity is not normally observed in spontaneous speech of various lengths due to constraints of articulatory gestures needed to produce variable consonants and vowels. However, this approach attempts to capture the underlying production mechanism that is responsible for speech rhythm.

Of interest to applied linguists are experiments that compared different languages with this speech cycling paradigm. Tajima et al. (2000) examined production of several sentences differing in the locations of stressed and unstressed syllables in English and Arabic, and those differing in the locations of pitch accent in Japanese. Their results for English and Arabic were similar to those of Port et al. (1995) mentioned earlier. The final *stressed* syllable

in both types of sentences such as *BUY DOUG a BEER* and *GIVing the GIRL a DOUGHnut* (stressed syllables in upper case) fell at the point near 1/2 of the total phrase interval. This indicates that it is not *any* final syllable that falls at the 1/2 point, but it is the *stressed* syllable that makes up the rhythmicity. In contrast, for Japanese, it was consistently the final syllable (or mora), regardless of the location of pitch accent, that fell at the 1/2 point in sentences such as *dokudami da* ('It is chameleon plant' with no pitch accent) and *goma dare daKE da* ('It is only sesame dressing' with the pitch accent in the second-to-last syllable, marked in upper case). Experiments with the speech cycling paradigm, thus, can demonstrate cross-linguistic differences in the manifestation of rhythm.

Rhythm and Language Acquisition

Abundant research in infant speech acquisition includes the work of Nazzi, Bertoncini, and Mehler (1998), who found that five-month-olds were able to discriminate rhythms of languages across rhythm classes, e.g., English (stress-timed) versus Japanese (mora-timed), but did not discriminate rhythms of languages within the same rhythm class, e.g., Italian versus Spanish (both syllable-timed). Given the traditional notion of stress-, syllable-, and mora-timed rhythm classifications, we might ask questions such as how native adult speakers of a syllable-timed language learn a stress-timed language, or how a speaker of one rhythm class might be negatively affected when learning a language of the other rhythm class. Does the rhythm of one's native language transfer positively when learning a second language of the same rhythm class? Is it premature to ask these questions when we do not have solid agreement about the rhythm classes as discussed in earlier sections?

White and Mattys (2007) point out that caution is needed when interpreting data of non-native speakers with regard to rhythmic indices, as touched on above. For example, they point out that the rhythm index ΔC of Ramus et al. (1999), i.e., the standard deviation of consonantal intervals, shows an inverse correlation with speech rates. Thus, even if native speakers of Spanish learning English showed a high value in ΔC, which is an expected characteristic of English, this result might not mean that they have mastered native-level English because the high ΔC value might simply mean that they spoke English slowly because they were second language learners. White and Mattys (2007), however, solved this problem by normalizing the speech rate, and showed that rhythmic indices can be useful in characterizing non-native speakers' production of rhythm. Using the rate-normalized standard deviation of vocalic interval duration, they showed that native English speakers' English had the highest value, native Spanish speakers' Spanish had the lowest value, and English speakers' Spanish and Spanish speakers' English had values somewhere in between.

Studies in the acquisition of speech rhythms are not limited to those that focus on rhythm classes. Trofimovich and Baker (2007) examined the durational ratio of unstressed to stressed syllables in spoken English, and compared the ratios between native English speakers and native Korean speakers learning English. Lee, Guion, and Harada (2006) examined both the duration and intensity ratios of unstressed to stressed syllables in characterizing English produced by Japanese–English and Korean–English bilinguals who started learning English at the ages of 1 versus 15–16. Tajima (2005) examined native Japanese speakers' (in)ability to count the number of English syllables. As mentioned before, Japanese is considered to be a mora-timed language, and the inability of Japanese speakers to count English syllables was affected by a number of factors, such as syllable structure complexity (Tajima, 2005). Hirata (2004) examined native English speakers' (in)ability to count moras in Japanese words of one to six moras in length, e.g., /ko/ 'children' with a short vowel (one mora) and /koː/ 'this way' with a long vowel (two moras). Results

showed that native English speakers were unable to count moras accurately and biased to count syllables (one syllable in both of the above examples) due to their inability to perceive length contrasts, but that their perception improved through auditory training. Finally, a series of studies examined how speakers of various languages segment a series of consonants and vowels, and differential results revealed distinctions in their rhythm classes (e.g., Murty, Otake, & Cutler, 2007). Crosslinguistic research in rhythm is rich and multifaceted, and in the future will continue to provide insights into issues regarding both acquisition and rhythm typology.

SEE ALSO: Suprasegmentals: Stress

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Suprasegmentals: Stress

REBECCA HINCKS

Stress is a feature of pronunciation in which a syllable is given more emphasis than surrounding syllables. It is intrinsically contrastive: A single syllable cannot be stressed in isolation, but only in relation to other syllables. Stress is a critical aspect of the pronunciation of multisyllable words. The term "stress" has also been used by some scholars in connection with the word in an utterance that has been emphasized by the speaker—for example, *I only wanted ONE potato* (not two or three). This emphasis has been termed, for example, "sentence stress," "contrastive stress," or "nuclear stress." However, these terms are misleading, because the kind of stress produced here functions at the discourse level, using intonation to produce meaning. This contrasts with the use of the term to describe features of a word's pronunciation, which is more or less fixed, instead of variable depending on speaker intent. Better terms for "stress" at the discourse level use the words *accent, prominence,* or *focus.* This entry will deal primarily with word-level stress, which is also known as lexical stress.

Stress can be difficult for some people to consciously perceive, particularly for non-native speakers of a language, but also even for some native speakers. It can be helpful to begin by considering how stress patterns are used to create rhythm in poetry and song, for example, the opening lines of the well-known "A Visit from St. Nicholas," attributed to Clement Moore (Anonymous, 1823):

> 'Twas the NIGHT before CHRISTmas, when ALL through the HOUSE
> Not a CREATure was STIRRing, not EVen a MOUSE
> The STOCKings were HUNG by the CHIMney with CARE
> In HOPES that Saint NICHolas SOON would be THERE

Throughout the poem, two unstressed syllables are followed by a stressed syllable (a type of metrical foot known as an anapest), though the beginning of each line can be either one or two unstressed syllables. The one-syllable words that are stressed are generally content words, and the unstressed words are generally function words such as prepositions, articles, and auxiliary verbs. The two-syllable words (*Christmas*, *creature*, *stirring*, *even*, *stockings*, and *chimney*) are all stressed on the first syllable, as is the one three-syllable word (*Nicholas*). These are the standard pronunciations of these words—the word *CREAture*, for example, would be mispronounced if one were to say *creaTURE*—and their stress patterns have been used to create the rhythm of the poem.

Germanic languages like English have a strong preference for the alternation of stressed (or strong) syllables with unstressed (or weak) ones. Strong syllables always contain full vowels, while weak syllables have reduced vowels, most often schwa. In traditional poetry, words are deliberately arranged into feet of two or three syllables following a specific pattern. In connected speech, syllables can also be grouped into feet analogous with the bars of musical notation. Germanic languages also have a strong tendency toward isochronicity, that is, the production of stressed syllables at roughly equal intervals in continuous speech, with unstressed syllables—whether there are one, two, three, or even more of them—filling the gaps between them. This phenomenon is also known as stress

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timing. Other languages, among them French and Spanish, tend toward what is known as syllable timing, in which all syllables are produced with largely equal weight. Many scholars (e.g., Cruttenden, 1986; Jenkins, 2000) have pointed out that these distinctions should not be taken as binary contrasts, but rather scalar differences. Nevertheless, mastering the pronunciation of a second language (L2) where stress peaks are produced differently than in one's native language can be a challenge for many learners.

Research has shown that we may rely on stressed syllables for word segmentation in streams of continuous speech (Cutler & Norris, 1988). In many languages, stress appears in a relatively fixed position within the word. With morphological exceptions, the first syllable of the word is stressed in Czech and Finnish, while the penultimate syllable receives stress in Spanish and Welsh, and the final syllable in French and Turkish. English, however, allows for stress to be placed in any syllable of a multisyllable word. The language contains a number of pairs of words where the grammatical class of the word is distinguished by stress placement. Many of these are noun–verb pairs, such as *REcord/reCORD* and *PREsent/preSENT*, where the noun is stressed on the first syllable and the verb on the second syllable. Adjectives can also be contrasted with verbs or nouns, as in *PERfect/perFECT* and *conTENT/CONtent*. Lexical meaning distinguished by stress is also a feature of other languages, for example, German (*UMfahren/umFAHren*, 'to drive over something' vs. 'to drive around something') Dutch (*beDElen/BEdelen*, 'to give everyone one's part' vs. 'to beg') and Italian (*PRINcipi/prinCIpi*, 'princes' vs. 'principles'). While these minimal pairs can be useful to illustrate what stress is, it should be noted that stress distinctions do not carry a high functional load in any language (Cruttenden, 1986).

Words of more than two syllables can emphasize more than one syllable by using secondary stress as well as primary stress. The word *TEleVIsion* in English, for example, has primary stress on the first syllable, and secondary stress on the third syllable. In International Phonetic Alphabet (IPA) notation, primary stress is shown by a small vertical line above the beginning of the stressed syllable, and secondary stress by one below the beginning of the syllable, so that the dictionary entry reads /ˈtɛləˌvɪʒ(ə)n/. Phonetic notation also reveals the extent to which the unstressed syllables are reduced, so that both the second and fourth syllables of *television* are pronounced as schwas.

There are a few rules that can be learned regarding which syllable in a word should be stressed in English. One governs compound nouns, which are stressed on the first syllable of the compound to distinguish the referent from a non-compound. For example, when we say *HOTdog*, the referent is a food item rather than a *hot DOG*, meaning a suffering pet. There is only one *WHITE House* in the United States, while there are many *white HOUSES*. The non-compounded combinations, where nouns and adjectives are freely combined, are known as phrases, and receive stress on the final element of the combination, such as *a pretty PICTure* or *an old BUILding.* A number of words in English shift stress placement with the addition of morphemes, suffixes, or prefixes. For example, the word *PHOtograph* becomes *phoTOgraphy, photoGRAPHic*, or *photoGRAPHical.* In this class of words, many of which originate from Greek, there is a tendency for the third syllable from the end to be stressed, in what is known as antepenultimate stress.

Beyond the rules for compounds, phrases, and morphological shifting, the situation for predicting stress placement in English becomes more complicated. Theoretical approaches were undertaken by the generativist school with the goal of deriving extensive stress rules (e.g., Liberman & Prince, 1977), and this work found pedagogical application in the work of Dickerson (e.g., Dickerson & Finney, 1978). More recent work takes a descriptive rather than a theoretical approach, by looking at stress patterns in specific corpora. In a study whose purpose was to find techniques to improve the accuracy of automatic speech recognition, Cutler and Carter (1987) found that 90% of content words in conversational English (the London–Lund Corpus) either were monosyllabic or began with a stressed

syllable. Of the polysyllabic words in the corpus, 70% had primary stress on the first syllable, a proportion that could be useful and reassuring to know for L2 speakers uncertain about where to stress words. However, stress patterns become slightly more complicated when less frequent vocabulary is examined. The Academic Word List (Coxhead, 2000) contains the 570 word families above the 2,000 most frequent in academic writing. These words are likely to be encountered by language learners primarily in writing, and it is important that uncertainty about how they are stressed should not present a barrier to using them in speech. Murphy and Kandil (2004) found that 14 different stress patterns characterize 90% of the polysyllabic words in the word list. While 14 is a manageable number of patterns to learn for students who have the benefit of focused instruction in pronunciation within the bounds of an English for academic purposes (EAP) program, it is also evidence of the diversity of stress patterns in this type of English vocabulary. Learners (and sometimes their instructors) can also be confounded by the fact that there exists as well a fair degree of variation in stress placement between varieties of English (Gimson, 1980), and by the fact that polysyllabic, etymologically foreign words such as *parameter* can be cognates between languages, differing often in stress placement, and thereby at risk of being treated as a false friend in the L2.

How Stress Is Produced Acoustically

The extra emphasis given to a stressed syllable is a product of the three basic elements of prosody: pitch, duration, and intensity. A stressed syllable is higher in pitch, longer, and louder than its surrounding syllables. Researchers are not necessarily in agreement as to whether any one of these features plays a dominant role in our perception of stress. One theory is that the strongest perceptual cue is higher fundamental frequency (what is perceived as pitch), with duration and intensity coming in second and third places respectively (Lehiste, 1970), but other writers point to duration (e.g., Liberman & Prince, 1977) or to intensity (e.g., Crystal, 2008) as being most salient. It may also be the case that languages, or even individual speakers, vary in the extent to which they employ one feature or another in the production of stress (Jenkins, 2000).

Figure 1 shows an acoustic analysis of a male radio journalist's production of the phrase *it was technology that took us to the moon*. This utterance contains one four-syllable word where lexical stress placement is an issue, and eight monosyllabic words which can also receive emphasis at the discourse level, using the same acoustic means as those that create lexical stress. The analysis window here shows information about pitch and duration, but not loudness. The bottom half of the figure represents pitch movement, with rising pitch on the second syllable of the word *technology*, as well as the words *took* and *moon*. The waveform at the top of the figure reveals that the second syllable (circled) in *technology* is somewhat longer than others, except for the final syllable of the utterance. The longer duration and rising pitch of the second syllable of *technology* show that it is stressed as it should be in standard English, and indicate its function as a "docking site" (Wennerstrom, 2001, p. 47) for pitch accent in the utterance. Two monosyllabic content words are also accented within the utterance, *took* and *moon*, and the lines from *no* to *took* and from *took* to *moon*, which are copies of each other, illustrate that the pitch peaks that appear at the ends of these syllables are equally distant from each other in time (isochronicity).

Teaching Stress

Knowing where to put stress in a multisyllable word is part of knowing the word's pronunciation. Misplaced stress on words spoken in isolation can impede intelligibility for

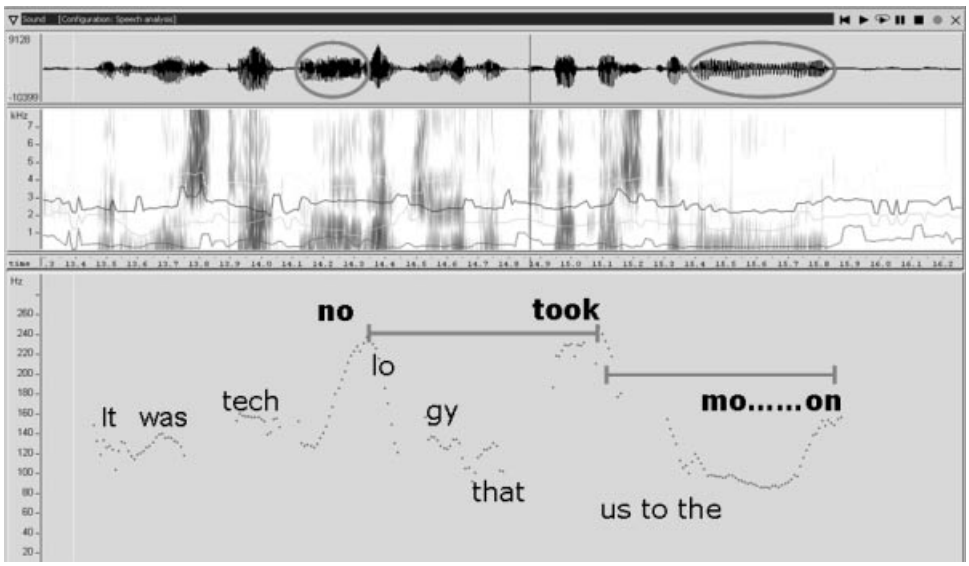

Figure 1 An acoustic analysis of a professional speaker's production of the utterance *it was technology that took us to the moon*, showing waveform, spectrogram, and fundamental frequency (pitch)
Note. Encircled parts of the waveform correspond to lengthened syllables, and the lines from *no* to *took* and from *took* to *moon* indicate equal length between pitch peaks (isochronicity).

both native and non-native listeners (Field, 2005). However, the extent to which misplaced lexical stress creates problems in actual lingua franca communication is unclear (Jenkins, 2000).

Learners require both the ability to produce stressed and unstressed syllables with automaticity, and the knowledge of the correct stress pattern. Successful teaching techniques for production and perception of stress include physical responses (Gilbert, 2005) such as tapping, clapping, or stretching elastic bands on the stressed syllable—techniques that heighten awareness of stress but focus more on its temporal aspects (its longer duration) rather than on the pitch movement that is also an important acoustic correlate. Speaking words through kazoos or humming them gives concrete feedback as to whether pitch has been raised on stressed syllables, while chanting rhythmically (Graham, 1978) allows natural language to be used and should encourage pitch movement as well as rhythmic variation. Practicing pronunciation with the help of computer-based speech analysis can visually demonstrate to students when they have been successful in using pitch movement to stress words. Teaching effort must be put into teaching not only how to stress syllables, but also how to reduce unstressed syllables by altering vowel quality toward schwa.

Learners also need to know what pattern to apply to new vocabulary items. They should at the very least be taught the most productive stress pattern rules, and how to identify stress notation in dictionary entries. Murphy (2004) describes a teaching technique that establishes conventions for discussing stress patterns with students, whereby words are classified according to their number of syllables and the syllables that have primary and secondary stress. Grouping words by stress patterns has psycholinguistic validity, insofar as there is strong evidence that a word's stress pattern plays a role in how it is stored in our mental lexicon (Aitchison, 2003).

SEE ALSO: Suprasegmentals: Intonation; Suprasegmentals: Rhythm

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Suprasegmentals: Tone

RATREE WAYLAND

Voice pitch is used to change word meaning in the majority of the world's languages. Such languages are referred to as tone languages. In these languages, words change their meanings depending on the voice pitch, or tone, used to produce them. These lexical tones are characterized by their pitch height, or register (e.g., high, mid, and low), and their pitch contours (e.g., level, falling or rising). Mandarin Chinese, for example, has four contrastive tones: tone 1 (high level), tone 2 (mid-high rising), tone 3 (low falling-rising) and tone 4 (high falling). Thus, in Mandarin, the consonant + vowel string *ma* spoken with tone 1 means 'mother', with tone 2 means 'hemp', with tone 3 means 'horse', and with tone 4 means 'a scold or reproach'. Despite their prevalence among the world's languages, tone languages remain understudied, and much remains to be learned about their linguistic structures and representations as well as their processing and acquisition.

Tone Languages of the World

Tone languages are found mainly in Africa, East and South-East Asia and the Pacific, and the Americas.

African tone languages are characterized by having fewer contrastive tones than those spoken in East and South-East Asia. Tonal inventories of many African tone languages show only a two-level tone contrast, high versus low; contour tones, which are widespread in Asian tone languages, are rare.

A smaller tonal inventory in African tone languages is compensated for by its richer and more complex tonal behaviors due to its interaction with the languages' rich word-formation systems (morphology). Unlike Asian and Pacific tone languages, where tones are lexically associated with a specific syllable or word, tone association in African languages is usually phonologically controlled: Phonological rules tend to place tones at the edges of words, on prominent syllables, at phrasal boundaries, and so forth (Yip, 2002). Such phonological phenomena as tone spreading, deletion, and alternation are also common among African tone languages, resulting in a rich and complex tonal phonology.

Asian tone languages are characterized by their larger tonal inventories, simpler morphology, and less complex tonal phonology. Tone languages spoken in the Americas, on the other hand, exhibit a larger tonal inventory than those of African tone languages, but their morphology and tonal phonology are less complex.

Similar to those of African tone languages, syllable structures of Asian and Pacific tone languages are rather simple, consisting frequently of only an initial consonant and a vowel with or without a final consonant. Tonal contrasts thus serve to increase what would otherwise be the small number of possible syllables in these languages.

Lexical Tone Notations

Phonetic transcription practices of lexical tones vary among linguists working with tone languages from different regions.

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African

Africanists mainly employ acute (´), grave (`), and level (¯) accent marks to represent the high, the low, and the mid tones respectively; for example,

High	bá	
Low	bà	or unmarked
Mid	bā	or unmarked

Low and mid tones are sometimes left unmarked, particularly when they are analyzed as the default tone contrasting with the phonological high tone.

Asian

Linguists working on East Asian tone languages commonly use the "Chao tone letters" system to represent tones. In this system, a speaker's pitch range is divided into five equal levels, with 1 representing the lowest pitch range and 5 the highest. A sequence of numbers represents the contour of the tone: Level tones are represented with a single digit or two of the same digits, and contour tones are represented with two or three digits. Zero digits means the syllable does not have a phonological tone of its own. These digits are written next to the syllable and may be accompanied by a diagram indicating the tonal shape. For example, level and contour tones of a hypothetical Asian tone language may be represented as follows:

Level tones	High	na55 ˥
	Mid	na33 ˧
	Low	na11 ˩
Contour tones	Falling	na51 ˥˩
	Rising	na35 ˧˥
	Low falling-rising	na215 ˩˧˥

Among South-East Asianists, the Chao number system is also accompanied by a grave (`) accent mark, an acute (´) accent mark, or their combination (ˆ , ˇ) placed above the vowel of each syllable to indicate a low, a high, a falling, and a rising tonal contour respectively. A mid tone is usually left unmarked. The five phonemic tones in Thai, for example, are represented as follows:

Mid (falling)	na:32	'rice field'
Low (falling)	nà:21	'a nickname'
(High) falling	nâ:51	'face'
High (rising)	ná:45	'aunt'
(Low falling-)rising	nǎ:213	'thick'

The Americas

Americanists also use digits to transcribe tones. However, the digits are reversed from the Asian tradition, so that 5 represents the lowest pitch range while 1 represents the highest. Level tones are represented with a single digit, and a hyphen is often inserted between the two digits representing a contour tone; for example:

Level	High	ka1
	Low	ka5
Contour	Low rising	ka5-3
	High falling	ka1-3

Tone Processing

Besides F_0 (fundamental frequency), lexical tone consists also of other acoustic features. These include duration, amplitude, and phonation type (e.g., breathy, creaky). In Mandarin Chinese, tone 3 has the longest duration and tone 4 the shortest. The amplitude of tone 3 is the lowest while that of tone 4 is the highest. Tone 3 is also often produced with a creaky voice. Thus, in addition to pitch, length, loudness, and phonation type also facilitate tonal discrimination.

Besides determining acoustic dimensions employed in tone perception, researchers are also interested in brain lateralization during auditory processing of lexical tones. It has been suggested that processing of linguistically relevant auditory events is predominantly lateralized to the left hemisphere. Under this functional account, pitch should be processed predominantly in the left hemisphere among native tone-language listeners, given that pitch carries a linguistic function in these languages. Evidence taken to support this hypothesis was provided by studies using dichotic listening tasks in which tones were presented simultaneously to both ears for identification. A right-ear advantage (REA) was reported for native Thai and Mandarin Chinese speakers, suggesting left-hemisphere dominance in lexical tone processing among native tone listeners (Van Lancker & Fromkin, 1973; Wang, Jongman, & Sereno, 2001). Further evidence in support of left-hemisphere dominance in lexical tone processing comes from studies on aphasic patients with left-hemisphere damage (Gandour & Dardarananda, 1983). Absence of REA was, however, also found in some dichotic listening studies (Baudoin-Chial, 1986). In addition, an REA was not found for every native tone listener. Furthermore, a possible confounding influence of brain processing of real-word stimuli (in which the pitch is embedded) that were used in some previous studies has been suggested (Wong, 2002). Thus, our knowledge of how lexical tones are processed by the brain remains incomplete, but will likely be improved with a more refined methodology.

Lexical Tone Acquisition

In comparison to the acquisition of vowels and consonants, research on how both children and adults perceive and produce lexical tones remains scarce. A study by Harrison (2000) showed that Yoruba-learning infants were more successful at detecting pitch difference in isolated syllables than were English-learning infants. Mattock and Burnham (2006) reported the ability to discriminate Thai lexical tone contrasts and their analogous nonspeech (violin-sound) tone contrasts among Chinese-learning infants at both 6 and 9 months of age. In contrast, 9-month-old English-learning infants, but not 6-month-olds, showed a decline in lexical tone discrimination, while their discrimination of the violin tones remained intact. Mattock, Molnar, Polka, and Burnham (2008) also found that English and French infants alike failed to discriminate a Thai tone contrast at 9 months of age. These results suggest that the linguistic function of pitch in the ambient language affects its perception in infancy. Specifically, perceptual sensitivity to a lexical tone contrast seems to decrease among infants whose ambient language is nontonal, but remains intact among tone-language-learning infants. Interestingly, this perceptual reorganization occurs between 6 and 9 months of age, the same age range reported for vowel and consonant.

Research on lexical tone production in childhood is also scarce. The focus of some studies, mainly on Asian tone languages, has been to determine the order of tonal acquisition. Li and Thompson (1977) found that Mandarin tone 1 was produced the earliest, followed by tone 4. Tone 2 and tone 3 were easily confused and were the last to be acquired. Cantonese high level (55) and low level (11) tones were produced first by Cantonese children, followed by the mid level (33) and the rising (25) tones. The low rising (13) and the low level (22) tones were the last to be acquired (Tse, 1978). Tuaycharoen (1977) found the Thai mid (falling)

and low (falling) tones appeared first at around 1 year of age, followed by the (low-falling) rising tone. The (high) rising and (high) falling tones did not appear until four months later. These findings are interesting as it is well documented that the mid (falling) and low (falling) tones are the most challenging for native Thai-speaking adults to discriminate. The finding that Thai (low-falling) rising tone was produced earlier than the high (rising) and (high) falling tones is almost the opposite of that found for Mandarin children, suggesting that tonal acquisition order is language-specific and may depend on tonal inventory size, frequency of occurrence, and relative acoustic and auditory saliency of tones in the system.

In Africa, the research focus is on the age at which the tonal contrast is acquired, given that most African tone languages only have a two-tone contrast. Demuth (1995) reported that the contrast between the high tone and the default low tone on root verbs in Sesotho was acquired by the age of 3. This seemingly older age of tonal mastery among Sesotho children may be due to the complex relationship between morphology and tonal phonology discussed earlier.

Regarding relative age of tone and segmental acquisition, studies have suggested that children have full control of lexical tone production by the age of 2, prior to their mastery of segmental production. A child in Li and Thompson's (1977) study, for example, was able to produce a Mandarin utterance with perfect tones, but with less than adult-like consonants.

Studies on lexical tone acquisition among adult second language (L2) learners are also sparse. In general, perceiving a lexical tone contrast is challenging for non-native listeners. Perceptual error rates, however, vary across tones and contexts. This perceptual difficulty may be due to the way non-native tone listeners process lexical tones. Unlike native listeners, non-native tone listeners place more emphasis on the average F_0 and extreme end points and less on the F_0 contour information when identifying tones. Tone perception is also less "categorical" among non-native listeners. Furthermore, non-native listeners do not perceive pitch and segmental information in an integrated manner, and thus an irrelevant change in one affects perception of the other.

Tone production is also challenging for non-native tone speakers. Both tonal height and tonal contour errors have been documented. American-English-speaking students of Mandarin, for example, tend to produce Mandarin tone 1 (high level) with a falling contour and a pitch register that is too low in their tonal space. Non-native tone speakers tend to also use a narrower pitch range to produce lexical tone distinction. As in perception, production error rates vary from tone to tone.

Differences in the linguistic function of pitch in the first language (L1) may account for perception and production difficulties that non-native tone speakers experience. The fact that native tone speakers were better at perceiving tonal distinction of another tone language than non-native tone speakers (Wayland & Guion, 2004) suggests a general benefit of shared linguistic function of pitch at the phonological level. However, variation in perceptual and production error rates across tones within a tone language additionally implies L1 interference at the phonetic level. For example, acoustic similarity between the rising-falling intonation contour on the rightmost pitch-accented syllable (tonic syllable), commonly used in declarative utterances in English, and the high falling pitch contour of Mandarin tone 4 may explain why this Mandarin tone was identified most accurately on the final syllable (Broselow, Hurtig, & Ringen, 1986). Perceptual focus on pitch height rather than pitch contour among native English listeners may also reflect the importance of pitch height in English intonation and lexical stress. Finally, differences in pitch contours of corresponding tones in Mandarin and Cantonese may explain tonal confusion patterns of Mandarin tones by Cantonese listeners (So & Best, 2010). Thus, L1 transfer at both the phonological and phonetic levels affects non-native perception and production of lexical tones.

Previous research also indicates that tonal discrimination ability improves with experience (Wang, Spence, Jongman, & Sereno, 1999; Wayland & Guion, 2004). Improved perception leads to improved production and vice versa (Leather, 1990; Wang, Jongman, & Sereno, 2003). With training, the ability to integrate and use pitch to identify (pseudo-)words has also been demonstrated (Wong & Perrachione, 2007).

The effects of musical background on perception have also been explored. In general, musical background has a positive impact on the perception of lexical tones. An influence of lexical tone background on musical pitch perception has also been documented. Tone speakers are often (but not always) better than nontone speakers in pitch discrimination. Furthermore, more individuals with absolute pitch are found among native speakers of tone languages. However, the relationship between absolute pitch and lexical tone learning remains unclear.

Pedagogical Implications

Influence of L1 suprasegmental system both at the phonological and phonetic levels is an important consideration in the teaching of a tone language. Native tone speakers learning another tone language may outperform learners from a nontone-language background. However, phonetic differences of corresponding tones in the two tone languages may be an important source of interference. For both groups of learners, attention should be paid to pitch dimensions (height or contour) that are not linguistically contrastive in the L1. Explicit instruction on the entire pitch contour of the target language may prevent learners from paying attention to only pitch dimensions that are linguistically relevant in their L1. Given their mutual and reciprocal benefits, both perceptual and production training using both real words, nonwords (e.g., pure tones, hums), and pseudo-words are encouraged to promote auditory and linguistic levels of perception. In the initial stage of training, the use of nonwords and pseudo-words with familiar L1 sound sequences may allow learners to better focus on pitch patterns of the target language. Training should extend from shorter to longer syllable strings to ensure accuracy in various positions. Using stimuli produced by multiple talkers in various phonetic environments should promote tone normalization ability. Finally, possible effects of the learner's musical background should also be noted. Musicians are auditorily more acute than nonmusicians in pitch perception, but their superior ability to acquire lexical tones has yet to be confirmed.

In summary, our understanding of tone—its linguistic structure, representation, processing, and acquisition—has increased over the years, and research on lexical tone perception and production has yielded valuable insights into the mechanisms underlying the acquisition of tones that can be used to guide and improve the teaching and learning of tones.

SEE ALSO: Phonetics and Phonology: Overview; Second Language Speech Perception and the Brain; Speech Perception

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Surveys

ELVIS WAGNER

Research involving the use of surveys to collect data has long been prevalent in applied linguistics. Survey research differs from experimental research in that the researcher does not try to manipulate or control the setting or variables being studied (Nunan, 1992; Mackey & Gass, 2005). Rather, the researcher seeks to compile or gather information that usually cannot be observed directly or examined through performance data. Surveys are useful in collecting data that respondents are able to report about themselves, including factual information (e.g., background characteristics, biodata), and behaviors such as habits, personal history, or learning strategies. Survey research is also useful in operationalizing and measuring abstract psychological constructs such as language learner attitudes and beliefs, motivation, and anxiety.

Survey research is usually subdivided into questionnaires and interviews (Brown, 2001). These two types of data collection techniques vary in the mode in which the data are elicited, and also the way in which the participants respond to the elicitation. With questionnaires, the data are usually elicited through written questions or statements that the participants respond to (usually) in writing, while with interviews the elicitation is usually done orally, with the participants also responding orally. Questionnaires can be used to gather data from large numbers of participants relatively quickly and efficiently. For more information about data elicitation involving interviews, see the "Interviews" entry in this volume.

Questionnaires

Questionnaires can be designed to have open-ended or closed-ended responses or a combination of the two. With open-ended questionnaires, the participant responds to a written prompt (a question or a statement) asking for information, an opinion, and so forth. For example, a questionnaire could ask "What is your L1?," in which a single-word answer is expected, or it could ask, "Why are you learning English?," in which a much longer answer could be expected. With closed-ended questionnaires, the participant is forced to choose an answer from a list of possible answers. For example, the question "What is your L1?" could have languages listed from which the participant chooses one. For the question, "Why are you learning English?," the participant has to choose from a number of possible answers, such as "I like to travel," or "I like to learn languages."

In general, the type and depth of information that the researcher is seeking dictates the type of questionnaire used. That is, if researchers want to explore an issue in great depth or explain a particular phenomenon, they will often collect large amounts of data from a smaller number of individuals (using open-ended questionnaires or interviews), and usually utilize qualitative data analyses. On the other hand, if researchers want to be able to make claims about the generalizability of the results of the research, they will necessarily have to collect data from a larger number of individuals, which usually requires the use of closed-ended questionnaires and quantitative data analysis techniques. Of course, a survey instrument containing a combination of open-ended and closed-ended items is possible, and often desirable.

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In order to make valid inferences from the results of survey research, it is vital that the instruments used for data collection be well designed and validated. The creation of survey instruments is beyond the scope of this entry, but the reader is urged to consult Dornyei and Taguchi (2009) or Brown (2001) for detailed instructions in survey instrument development.

Questionnaires can be self-administered or group-administered. Self-administered questionnaires are usually mailed to respondents, or, increasingly, researchers will e-mail a link to a Web site hosting an electronic questionnaire. These self-administered questionnaires allow individuals to complete them at their convenience. While self-administered questionnaires have the advantage of allowing a large number of participants to be included in the study, they also have the inherent disadvantage of lower response rates, which presents problematic sampling and generalizability issues. Group-administered questionnaires are administered to a group of respondents at the same time, often in classrooms, making administration and completion of the questionnaires more systematic, and usually allow for the researcher to be able to answer questions that respondents might have.

Researchers using questionnaires must use appropriate sampling techniques to ensure the generalizability of the results. The issue of sampling is often neglected in applied linguistics survey research. In order to ensure that the results of the data analysis from the sample of participants is generalizable to the larger population, appropriate probability sampling techniques must be implemented (i.e., random, stratified random, systematic, and cluster sampling) (Perry, 2005; Vogt, 2007).

Scales in Quantitative Survey Data

Much of the applied linguistics research using questionnaires involves the attempt to measure and analyze psychological constructs that are impossible to observe directly. Scaling is the process of creating instruments to measure and quantify these constructs so that statistical analyses can be performed on the data. Data from open-ended questionnaires usually require some sort of qualitative analyses, which is beyond the scope of this entry. Some data from open-ended questionnaires, however, can be quantified. These data would include nominal responses, which would require a coding scheme to then convert the data to a categorical scale. Closed-ended questionnaires might also result in nominal data, if respondents are forced to choose from a list of nominal alternatives. Ordinal scales allow for the things being measured to be rank ordered in comparison to each other. So, for example, test takers might be ranked according to how they scored on the test, with the person scoring the highest ranked first, the next highest score ranked second, and so on. With ordinal scales, the rankings depict the order, but there is no information about the distance between the different points on the scale. In contrast, interval scales are measurement scales in which the points along the scale are at equal distances or intervals no matter where they are located on the scale. Temperature scales such as Fahrenheit or Celsius are examples of interval scales. Similarly, data from language tests are usually perceived as being on an interval scale (although they are probably not truly equal interval scales). Ratio scales are interval scales in which the "zero" on the scale indicates a total absence of the variable being measured (Kelvin is an example of a temperature ratio scale).

In applied linguistics survey research using closed-ended questionnaire items, Likert items are most commonly used. Likert items involve a statement, and the respondent has to choose a response to that statement from a number of choices. Often there are five choices: *strongly disagree*, *disagree*, *no opinion/don't know*, *agree*, *strongly agree*. However, respondents have a tendency to bunch their responses toward the middle of the scale, and so Likert items with seven or even nine choices are also common, in an attempt to ensure

more variance in the measurement. Alternatively, researchers sometimes create Likert items in which the neutral item (the *no opinion/don't know* option) is excluded, in order to force respondents to choose a response, again in an attempt to avoid central tendency bias, and to ensure more variance in the measurement.

Usually multiple Likert items will be used to measure the same construct or dimension of that construct. These multiple items are designed to be very highly related to each other, and use slightly different wording to make essentially the same statement that the respondent must respond to. The sum of these multiple Likert items are then considered to be a scale or subscale of the construct being measured. This is a summative scale. To use a common example from applied linguistics research, a questionnaire composed of a series of Likert items might be administered to a group of learners asking them about their level of anxiety related to language learning. This overall questionnaire might consist of a number of smaller subscales (e.g., language test anxiety, language classroom anxiety, language speaking anxiety). There might be three or more Likert items related to each of the smaller subscales or dimensions of the overall construct of anxiety.

Summing (and averaging) responses from Likert items to create a scale or subscale is done for a number of reasons. The reliability of measurement of a particular unidimensional construct will be higher if several items are used rather than a single item. In addition, creating a summative scale allows for the researcher to treat the data as interval data, and parametric analyses can subsequently be conducted on the data. Measurement experts debate whether an individual Likert item should be considered interval data, because it is unlikely that respondents necessarily perceive the five different responses as equidistant (on an interval scale) (Vogt, 2007). However, the treatment of summative Likert scale data as interval data is less problematic, and is commonly done in applied linguistics research.

Other types of scales used in survey research include cumulative scales (sometimes referred to as Guttman scales) and semantic differential scales (see Dornyei & Taguchi, 2009, for more information about the different types of scales commonly used in applied linguistics survey research).

Analysis of Questionnaire Data

For nominal or categorical questionnaire data, the response data are usually tabulated. The appropriate measure of central tendency would be the mode. In order to make comparisons, the chi-square test would be used. For correlation, biserial or point-biserial correlations would be used to correlate categorical data with interval data. For individual questionnaire items using an ordinal scale (e.g., an individual Likert item), because the data are technically ordinal the most appropriate measure of central tendency would be the median, although the mean is often used. For correlations involving ordinal data, Spearman's rank correlation coefficient should be used.

For Likert item questionnaire data, the multiple items measuring each specific dimension of a construct can be combined to create summative scales or subscales. A numerical score is used to correspond to the responses. On a 5-point Likert scale, *strongly agree* is replaced by a 5, *agree* is replaced with a 4, and so on. The scores for all of the items in the summative scale are combined, and the data can then be considered interval data. It is recommended that at least three items be used to create a summative scale. If an item (or more than one item) in the summative scale is negatively worded, it is vital to ensure that the item is reverse-coded during the data preparation stage. If the summative scale data are normally distributed, then parametric data analyses can be conducted with the data.

To ensure that all of the individual items in a summative scale are indeed measuring the same construct, a reliability analysis is necessary, usually using Cronbach's alpha. If the alpha is sufficiently high (Vogt, 2007, calls for a minimum of .70), then there is evidence

that the individual items are all reliably measuring the same construct, and a summative scale would seem appropriate; parametric data analyses can be conducted on the data and group comparisons made. It is important to realize that, depending on how the questionnaire is constructed, it might not be appropriate to estimate the internal consistency reliability of the overall instrument. That is, if the questionnaire is designed to measure a number of different constructs, then a reliability analysis for each summative scale is necessary. If the questionnaire involves a large number of individual items, and is administered to a large number of respondents, then factor analysis can be conducted on the data to ensure the reliability of the individual items.

Critiques of Survey Data

One of the major criticisms of survey research focuses on the validity of using questionnaires to measure an abstract, unobservable, psychological construct (e.g., anxiety). These types of constructs are multidimensional and inconstant abstractions (Dornyei, 2001), yet researchers are forced to try to measure them using only a relatively small number of statements or questions that a participant has to respond to.

This problem is compounded in applied linguistics research by the fact that respondents are often required to read and respond to the statements in their second language. There is always concern about the extent to which the respondents truly understand the statements that they are required to respond to. Obviously, the language in L2 questionnaires should be as simple and straightforward as possible, but again this is difficult to implement when trying to operationalize and measure abstract psychological constructs. An alternative is to translate the questionnaire into the respondents' first language, but this is often more feasible in a foreign language context than in a second language context. Variation in translation also entails threats to the validity of the results. One way to address these issues is through the use of back translation. Here the instrument is translated into the L1 of the participants, and then a different translator (or translators) translates the L2 instrument back into the L1, in order to investigate how closely the back-translated instrument corresponds with the original instrument.

Another critique of survey research utilizing interviews and questionnaire data involves how reliably the construct is being measured. Time constraints, language considerations, and interviewers' and respondents' attitudes and level of motivation, fatigue, and tolerance all affect reliability of measurement. In general, the more items a survey instrument has, the more reliable it tends to be, but there is a cut-off point where adding more items becomes counterproductive. Respondents can quickly become fatigued and less tolerant to responding to questions (especially in an L2), and so researchers must carefully consider how many items to include on survey instruments. In addition, writing effective survey questions is not an easy task, and poorly developed questionnaire items or interview schedules often create threats to reliability with survey research data (Wagner, 2010).

Conclusion

Survey research involving interviews and questionnaires has a long history in applied linguistics research, and our understanding of language learners' attitudes, beliefs, anxieties, motivation, and strategies has benefited greatly from the research involving survey methodology. Although the research has been criticized in a number of areas as described above, it is also important to note that most of these critiques relate to shortcomings in how the research was conducted, rather than the research methods themselves. Because of the need to investigate internal, usually affective variables that cannot be observed

directly or examined through performance data, survey research has played and continues to play a vital role in the advancement of the field.

SEE ALSO: Describing and Illustrating Quantitative Data; Interviews; Qualitative Methods: Overview; Quantitative Methods; Sampling: Quantitative Methods; Variables

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Svartvik, Jan

HANS LINDQUIST

Jan Svartvik (b.1931) studied at Uppsala University, Duke University, and the University of Durham. After receiving his licentiate from Uppsala University in 1961 he spent four years as a research assistant and later assistant director at the Survey of English Usage at University College London. He received his doctorate from Uppsala in 1966 and was a lecturer at Gothenburg University before he was appointed to the chair of English at Lund University, which he held from 1970 to 1995. He has received doctor *honoris causa* degrees from the University of Bergen, Masaryk University, Brno, and the University of Helsinki.

Early Work: Prosody, Grammar, and Elicitation Tests

During his four years at the Survey of English Usage at University College in the early 1960s, under the directorship of Randolph Quirk and with colleagues such as Sidney Greenbaum and Geoffrey Leech, Svartvik was introduced to the principles of collecting and analyzing corpora of both spoken and written English. One publication that he co-authored at this time (Quirk, Duckworth, Rusiecki, Svartvik, & Colin, 1964) was a study of the correspondence of prosodic to grammatical features in English—an early sign of the interest in the spoken language which has been a strong element throughout his career, as well as a first indication of his zest for using computers in linguistic research.

Although corpus work was central to the studies carried out at the Survey of English Usage, it was supplemented with elicitation tests with native speakers in order to access information which was not available in corpora. Quirk and Svartvik (1966) use three types of elicitation tests to investigate degrees and kinds of acceptability—judgment tests, operation tests, and selection tests. The starting-point was the Chomskyan idea that the fundamental aim of grammar is to account for "all and only the grammatical sentences of a language" (Chomsky, 1957, p. 13, 21, quoted in Quirk & Svartvik, 1966, p. 9). One of the most important conclusions of the study, however, was that the results indicated that "clear-cut categorization is futile and may actually inhibit our understanding of the nature of linguistic acceptability" (p. 99). The authors also found that gradience persisted in grammatical as well as lexical acceptability (p. 100). Gradience was to remain an important notion in Svartvik's descriptive work in grammar.

Description and Theory: The Passive

Svartvik's doctoral dissertation, *On Voice in the English Verb* (1966), also starts out with a reference to Chomsky and in particular to the interest in the passive shown by generative linguists, the "passive transformation" being one of the prototypical transformations. Svartvik, however, points out that his aim is not primarily theoretical, but rather to provide an adequate corpus-based *description* of the phenomenon of voice in English. After analyzing a corpus of 323,000 words of spoken and written British English from 1950 to 1964, he proposes that there is a "passive scale" from types with a clear relationship between active and passive clauses to those where the passive is better seen as a clause type in its own

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right. He found a low proportion of passives with *by*-agents and identified a number of lexical restrictions on the verbs in passive constructions. He was thus able to show that results from a corpus study had obvious relevance also for theoretical discussions.

Corpus Building

In 1975, after returning to Sweden, Svartvik embarked on a new major corpus project. The spoken component of the Survey of English Usage had originally been transcribed on slips that were kept in filing cabinets at University College London. In order for this treasure to be made available to all interested scholars, Svartvik and a team of colleagues began work on transferring the transcriptions onto computer tape to create the London–Lund Corpus of Spoken English. For a long time the resulting electronic corpus of approximately half-a-million words remained the biggest corpus of spoken English and it has been used for many groundbreaking studies of spoken discourse. One third of the corpus (170,000 words) was also published in book form (Svartvik & Quirk, 1980). The corpus and research carried out on it are described in Svartvik (1990).

Grammar Writing

One of the outcomes of the research carried out on the Survey of English Usage material was the writing of *A Grammar of Contemporary English* (GCE) by Quirk, Greenbaum, Leech, and Svartvik (1972), where Svartvik was the only non-native linguist among the four authors. Although not strictly corpus-based, the book used some corpus data and was considered the leading reference grammar at the time.

The GCE had several spin-offs, one of which was *A Communicative Grammar of English* (Leech & Svartvik, 1975). This innovative grammar book was inspired by developments in communicative language teaching and by the Hallidayan functional approach to language. Its main part is not organized according to linguistic structures, but under four main kinds of *meanings*: "Concepts," "Information, reality and belief," "Mood, emotion and attitude," and "Meanings in connected discourse." Under the subheading "Influencing people," for instance, there are sections "Commands," "Requests," "Advice, suggestions and invitations," and "Warnings, promises and threats." Although never a mainstream text, the grammar has been constantly in print and came out in a third edition in 2003. Svartvik has also cowritten best-selling contrastive grammars for the Swedish secondary school (Svartvik & Sager, 1971) and for Swedish universities (Svartvik & Sager, 1978).

In 1985, the four authors of the GCE published a totally new and much larger reference grammar, *A Comprehensive Grammar of the English Language* (Quirk, Greenbaum, Leech, & Svartvik, 1985). This magnum opus is still corpus-informed rather than corpus-based. Prominent features behind the analyses in the grammar are concepts such as gradience, scales, clines, and indeterminacy which sometimes lead to alternative analyses. Criticized by some for alleged instances of terminological ambiguity and vacillation, it is still the most comprehensive description of present-day English and as such remains a major reference point for studies of the English language.

Promotion of Corpus Linguistics and Applied Linguistics

Jan Svartvik was one of the founding fathers of the International Computer Archive of Modern and Medieval English (ICAME) and has remained an active promotor of corpus linguistics in many different capacities. In Svartvik (1992, pp. 8–10) he presented the

advantages of corpus linguistics in a preface to a collection of papers that he edited. His arguments are given here in abbreviated form:

- Corpus data are more objective than data based on introspection.
- Corpus data can easily be verified by other researchers and researchers can share the same data instead of always compiling their own.
- Corpus data are needed for studies of variation between dialects, registers and styles.
- Corpus data provide the frequency of occurrence of linguistic items.
- Corpus data do not only provide illustrative examples, but are a theoretical resource.
- Corpus data give essential information for a number of applied areas, such as language teaching and language technology (machine translation, speech synthesis, etc.).
- Corpora provide the possibility of total accountability of linguistic features—the analyst should account for everything in the data, not just selected features.
- Computerized corpora give researchers all over the world access to the data.
- Corpus data are ideal for non-native speakers of the language.

However, he points out that it is crucial that the corpus linguist engages in careful manual analysis as well. Total accountability and close attention to the data is characteristic of Svartvik's work as a descriptive linguist and grammar-writer. All through his work, from his dissertation on the passive in English and onwards, he has also stressed that corpus work has a bearing on theory.

Svartvik was vice-president in 1978–81 and president in 1981–4 of the International Association of Applied Linguistics (AILA), and in 1981 he organized the Sixth International Congress of Applied Linguistics (AILA 81) in Lund. He has served on many national and international committees on various aspects of corpus linguistics, applied linguistics and the teaching of languages in schools and universities. He has been the coeditor of several collections of papers and book series, and a member of the editorial board of a number of scholarly journals.

Computational Linguistics and Applied Corpus Linguistics

Apart from the rather obvious case of using data from corpus analyses in the writing of reference works and pedagogical grammars, there are other applications of corpus methodology. In the mid-1960s, Svartvik was asked to make a linguistic analysis of a number of statements made by Timothy John Evans, who had been hanged in London for the murder of his wife and daughter in 1950 but was believed by many to be innocent. He made a statistical analysis of sentence and clause length, clause linkage and nonstandard language in the statements and found some support for Evans's claim that certain parts of his statements were true and others were not (Svartvik, 1968, pp. 45–6). In October 1966, Evans was granted a posthumous free pardon. Svartvik does not claim any credit for the pardon, but he has been given the credit for coining the term "forensic linguistics" in the process.

Svartvik also applied computer techniques to theoretically interesting linguistic problems. In Carvell and Svartvik (1969), the authors used a computer program primarily intended for the classification of bacteria in order to develop automatic methods for classifying linguistic data. The corpus consisted of 10,000 words from the Survey of English Usage. Just like Svartvik (1966), they found the concept of gradience to be relevant, since their results showed a few fairly distinct classes with some partially overlapping ones.

Another innovative venture which combined theory and computational application was the Text Segmentation for Speech (TESS) project, which was begun in 1983 and sprang

out of the work with the London–Lund Corpus (Svartvik, 1984). This was an early Natural Language Processing (NLP) project aiming at investigating how natural speech is segmented or chunked into "tone units" and at developing theories that predict English intonation in order to improve automatic text-to-speech systems.

Popular Writing

After his retirement in 1995, Svartvik used his pedagogical skill and mastery of many aspects of the English language to write a number of popular handbooks for the Swedish and the international markets. His entertaining book on the history and development of the English language (Svartvik, 1999) won the Swedish August prize (named for August Strindberg) for "Swedish non-fiction book of the year" and was later rewritten in an English version (Svartvik & Leech, 2006). Together with his son Rikard he wrote two useful handbooks for Swedish users of English (Svartvik & Svartvik, 2001, 2004), which have been translated into several other languages.

Conclusion

Svartvik's work is characterized by a strong interest in the intricacies of the English language and a desire to produce correct descriptions of its minute details—to get the facts right. Although not a theory builder, he has always been aware of ongoing theoretical discussions, being inspired by them and producing work that feeds into them. He has played an important role in developing and promoting corpus linguistics. Another prominent aspect of his work is his pedagogical zeal, which has led him to writing handbooks for schools, universities, and the general public in Sweden and abroad as well as contributing frequently to the pedagogical debate. A third feature is an interest is technology, which facilitated cooperation with computer specialists and the development of technical solutions in dealing with especially transcribed spoken data. Finally, Svartvik's love for language can be detected in his lucid writing style and in his famous after dinner speeches at ICAME conferences and other gatherings.

SEE ALSO: Analyzing Spoken Corpora; Corpora: English-Language; Corpus Linguistics: Historical Development; Johansson, Stig; Quirk, Randolph

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Swain, Merrill

SHARON LAPKIN

Merrill Swain (1944–) has made multiple scholarly contributions to the field of applied linguistics. Her prolific and groundbreaking research can be categorized under three main headings: (a) immersion education; (b) output, collaborative dialogue, and languaging; and (c) testing and assessment.

Immersion Education

Swain's name is virtually synonymous with immersion education in Canada. Building on the evaluation of the first immersion program in Canada (Lambert & Tucker, 1972), Swain's extensive immersion program evaluations in at least six school districts in Ontario, followed later by similar evaluation studies in other parts of Canada, ensured that the findings from these large-scale studies would be generalizable; in fact, there was a great deal of consistency in results across evaluations of specific immersion program models, in large part because of the care taken in the design of the component studies. Thus, cohorts of students within each school district were matched as closely as possible with comparison groups, they were followed longitudinally as they progressed through the grades, and new cohorts were also assessed to allow for cross-sectional comparison.

The research questions centered on immersion students' achievement in French, first language (in the early years that language was always English), and academic subjects such as science. The possible cognitive impact of studying through a second language was also measured, using mainly intelligence tests. The findings were reassuring, establishing that immersion students learned content material to the levels of comparison groups, that progress in their home language kept pace (and sometimes overtook) that of their regular English program peers, that their levels of French proficiency far exceeded what was possible in "traditional" French second language programs, and that any cognitive effects were neutral or positive. From the beginning, although the mandate was to conduct large-scale quantitative evaluation studies, Swain supplemented these with careful, qualitative explorations of second language acquisition by immersion students, the nature of immersion student talk and writing, and the integration of language and content teaching in immersion classrooms, among others (e.g., Swain, 2000a).

In 1997, Swain and Johnson discussed immersion education as a category within bilingual education from an international perspective, defining its key characteristics. Swain and Lapkin (2005) revisited these core features of the prototypical immersion program in the Canadian context, in light of the changing demographics of the society. Thus, for example, the core feature specifying that the L2 is the medium of instruction in immersion programs was reformulated to read "the immersion language is the medium of instruction" to accommodate the fact that many students enrolling in immersion speak immigrant languages at home. A second feature, that immersion aims for additive bilingualism, could be taken for granted in the first decade or two of immersion education in Canada when immersion students were all Anglophones; in 2005 it became important to state that maintaining the additive nature of immersion meant that the home languages of the diverse immersion student population had to be supported at school so that immersion would not become a subtractive environment.

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The "laboratory" nature of immersion programs early in their development meant that they provided an ideal context for examining second language learning in a relatively controlled environment. Swain's nuanced understanding of the unique nature of immersion gave rise to the construct she is perhaps most famous for, that of output.

Output, Collaborative Dialogue, and Languaging

A chronological reading of Swain's writings on the construct of output is instructive. In 1985, she reacted to Krashen's (1985) input hypothesis as inadequate to account for learning in an immersion context; in other words, input alone, she felt, could not explain the acquisition of the target language. Immersion students reached advanced levels of listening and reading comprehension, but their language production (speaking and writing) remained inaccurate in spite of large quantities of comprehensible input. Swain argued that immersion learners had too few opportunities to produce French and were not being systematically "pushed" in their output. Comprehensible output, one step beyond learners' current interlanguage, was as central to L2 learning as comprehensible input.

Building on this early work, Swain (1995) posited three functions of output: (a) noticing (raising awareness about gaps in students' knowledge of the L2); (b) hypothesis testing (language production triggers feedback on the language they generate, which often prompts learners to modify their output and to learn); and (c) the metalinguistic function (where learners reflect on language consciously). Swain (1995) concluded by introducing the Vygotskyan idea that learning occurs during social activity, specifically dialogue where students solve problems they encounter in their language learning. This collaborative dialogue (Swain, 2000b), entailing problem solving and knowledge building can be examined for "learning in progress"; in fact collaborative dialogue mediates these processes. In Swain (2000b), "output has been extended to include its operation as a socially constructed cognitive tool" (p. 112) and Swain explicitly embraces sociocultural theory of mind as an explanatory framework for learning, including L2 learning.

Revisiting the construct of comprehensible output, Swain (2005) explained that output is both product and process, and emphasizing that "the activity of producing the target language" (p. 474) is key in moving learners from semantic to syntactic processing and to reflecting on their language use. She discusses the complementary nature of information processing and sociocultural theoretical approaches to L2 learning, suggesting that the latter "puts language production in a 'star role'": "Speaking (and writing) are conceived of as cognitive tools—tools that mediate internalization; and that externalize internal psychological activity . . . tools that construct and deconstruct knowledge; and tools that regulate and are regulated by human agency" (p. 480).

Her quest to capture the dynamic nature of output led Swain (2006a) to coin a new construct, namely languaging. She suggested that speaking and writing are "tools of the mind, mediating the cognition and re-cognition of experience and knowledge" (p. 106). Languaging is a form of shared cognition, made visible when learners talk through cognitively complex problems. Languaging implies learner agency and provides learners with a cognitive and affective tool as they construct meaning, together (i.e., collaborative dialogue) or individually.

Testing and Assessment

Swain's contributions to testing and assessment began with the seminal paper coauthored with Michael Canale in 1980, "Theoretical bases of communication approaches to second language teaching and testing." In that article, components of proficiency (grammatical,

sociolinguistic, strategic) in a second language are identified and rationalized. Shortly thereafter, Canale (1983) added discourse competence to the framework, and the framework was used as the basis for a large-scale project intended to validate these four constructs statistically. In a 1983 publication, Swain illustrated how a testing unit developed for grade 9 French immersion and based on this framework was highly communicative in nature. She articulated four principles of communicative language test development: "start from somewhere" (basing a test on sound theoretical principles), "concentrate on content" (ensure that the content was motivating, substantive, integrated around a theme, and interactive), "bias for best" (elicit the learner's best performance by providing clear instructions, adequate time and access to aids such as dictionaries), and "work for washback" (provide extensive information to teachers who administer the testing unit, so that the nature of the test will influence pedagogy).

A decade later, when the statistical exploration of results from a battery of communicative language tests (including the one referred to above) had yielded low internal reliabilities, Swain (1993) asked, with respect to second language testing, "Is there a conflict with traditional psychometrics?" In fact, she argued convincingly that low levels of internal consistency indicate the complexity of second language proficiency and that traditional testing theory was incompatible with the variation one would expect in communicative language behavior.

In keeping with her growing interest in a sociocultural theory of mind as a theoretical lens, Swain (2001) turned her attention to what might be learned by examining dialogue between learners. Learners are less anxious in group testing than they are in individual test situations, thus helping to "bias for best." Learners co-construct knowledge as they interact, and learner dialogues also enhance our understanding of their cognitive and strategic processes and allow us to witness learning in progress. Thus, "the content of the dialogues of test-takers could provide test-developers with targets for measurement" (p. 297).

Finally, in a chapter that explores the complementary contributions of information processing and sociocultural theory of mind perspectives, Swain (2006b) asks "What does it mean for research to use speaking as a data collection tool?" She argues that verbal protocols collected as learners take language tests, often by means of stimulated recall, actually change or improve learner performance. Reflecting aloud on or "languaging" their performance enables learners to "talk through" their language learning problems; that talk mediates and enhances their learning.

Final Comment

Ultimately, Swain's greatest contribution to applied linguistics may lie in the gift she has for making complex concepts accessible to multiple audiences—theoreticians, second-language researchers, teachers, and learners alike. This talent is highlighted in the recent volume by Swain, Kinnear, and Steinman, wherein learner narratives exemplify key concepts in sociocultural theory as it relates to second language learning.

SEE ALSO: Immersion Education; Languaging: Collaborative Dialogue as a Source of Second Language Learning

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Swales, John M.

BETTY SAMRAJ

Perhaps most widely known for the create-a-research-space (CARS) model to account for the rhetorical structure of research article introductions, John M. Swales has made an indelible mark on English for specific purposes (ESP) through his many discourse studies of academic genres and by the significance of his publications on the relationship of linguistic research to the teaching of English for academic purposes (EAP), the role of English in the research world, and materials development for advanced academic writing. His research covers three main areas: genre analysis in terms of rhetorical moves, corpus linguistics, and pedagogical matters including materials development, EAP course development, and broader issues such as the role of English in the academic world.

Swales's career in English-language teaching (ELT) began in Italy and Sweden in the early 1960s where he taught a variety of students including young researchers, elementary schoolchildren, and housewives, and was followed by a teaching stint in a Libyan university. Following a graduate diploma in ELT and Linguistics at Leeds University, Swales's rich career in ELT continued in Libya, the UK, and Sudan, characterized by materials development, teacher training, and publications in ESP. A faculty position at Aston University was the site for some of his early important research. Swales then served both as the director of the English Language Institute and a professor of linguistics at the University of Michigan, from which he retired in 2006. During this period he also served as coeditor of the international journal, *English for Specific Purposes*.

Genre Analysis

Swales's early work on research article introductions gave rise to the CARS model (1990a), where the structure of this part-genre is accounted for in terms of three rhetorical moves, establishing a territory, establishing a niche, and occupying the niche, and their constituent steps. Further studies on research article introductions in different languages and disciplines inspired by the CARS model led to a revision of this model in Swales's (2004) recent book, *Research Genres*, where the three-move structure is preserved but with some changes made to the constituent steps. Swales and other EAP scholars have continued research on the structure of other sections of the research article and other academic genres, such as the submission letter, grant proposal, and PhD defense, in terms of rhetorical moves, building on the form–function relationship that underpins the CARS model.

Swales has also conducted valuable work on discourse features such as the use of citations and imperatives, which has added another layer to our understanding of academic discourse. His early work on citations (Swales, 1986), drawing on different fields such as the sociology of science and rhetoric, is a good example of the benefits of the interdisciplinary perspective that often underlies his research. It is therefore not very surprising that Swales's research itself has had wide-ranging effects on other specializations, such as computational linguistics (Teufel & Moens, 2002).

Perhaps even more important than the number of descriptive studies on academic genres that have ensued from Swales's CARS research are the concepts—genre, communicative purpose, rhetorical move, and discourse community—that Swales's work has established

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as key in the field of applied linguistics in general and ESP work in particular. One of the first mentions of the notion of genre in applied linguistics research was in Swales's work on research article introductions in 1981 (see also 2001a, p. 47). Swales (1990a) provides an extensive discussion of the concept in his book *Genre Analysis*, tracing its use in various other fields such as rhetoric and folk studies, and arrives at a working definition of genre (p. 58). This comprehensive treatment of the concept has led to literally hundreds of EAP studies. Over time, it has been expanded to include relationships amongst genres, such as genre networks, sets, and chains, which Swales synthesizes and reflects on in *Research Genres* (2004). Swales (1996) also introduces the notion of occluded genres, which are genres hidden from public view, such as evaluation letters for tenure and promotion, and notes that these can therefore prove challenging for novices in an academic community.

In his original theory of genre, Swales (1990a) posits a clear relationship between communicative purpose, genre, and its structure. However, the privileged role played by communicative purpose in a text's genre categorization is problematized and a more nuanced role is argued for instead in his later work because the communicative purpose for a text may not be obvious on the outset and may not even be agreed upon by a group of experts (Askehave & Swales, 2001; Swales, 2004). Another major contribution of Swales's work in genre analysis has been the rhetorical move framework, which is related to the notion of communicative purpose. Swales (2004, pp. 228–9) defines a move as a "discoursal or rhetorical unit that performs a coherent communicative function" in written or spoken discourse and descriptions of genres in terms of moves and their constituent steps have played an important role in exploring issues such as genre relatedness, genre evolution, and genre variation.

Another key component in Swales's genre theory is the discourse community in which genres are produced and consumed. Subsequent genre-based studies have revealed that discourses are not always produced in monolithic discourse communities but communities of practice bounded by disciplinary and cultural values. Following a problematization of the concept of discourse community, the notion of a place discourse community is developed in Swales's (1998, p. 204) *Other Floors, Other Voices*, a textography of three communities of practice: a computing resource site, a university herbarium, and an English language institute, situated in a building at the University of Michigan. Mostly through a thick description of discursive practices in these three sites, he concludes that two of these can be given the status of a place discourse community.

Corpus Analysis

Swales's more recent research employing corpus techniques focusing on sentence level features may first appear to be a shift from Swalesian genre analysis. However, a consideration of his work before his CARS fame reveals that Swales had an early interest in characterizing the grammatical features of specialized discourses, such as verb frequency in scientific English. A number of his corpus-based studies are based on the *Michigan Corpus of Spoken Academic English* (http://micase.elicorpora.info), a corpus he was instrumental in creating. An example is a study of the metatextual uses of *thing* and *point* in various speech genres (Swales, 2001b). He concludes, among other things, that the use of *point* can vary in its metatextual function depending on whether the genre is monologic or dialogic. A recent coauthored study (Wulff, Swales, & Keller, 2009) based on a specialized corpus of conference presentations and discussions, *The John Swales Conference Corpus*, explores phraseological choices in the presentations and discussions, the characteristics of the chairs' discourse, and the nature of humor in the presentations and discussions, leading to the conclusion that presentations include more features of empiricist repertoires than

the ensuing discussions.

Materials Development and ELT

Swales's impact on the field of EAP has not only been through his extensive descriptive studies of academic discourses but also through influential EAP textbooks produced over the last 40 years. Swales's devotion to materials development in his early years of teaching in Europe and the Middle East comes through quite clearly in the stories recounted in his memoir, *Incidents in an Educational Life* (Swales, 2009a). One of Swales's earliest ESP textbooks, *Writing Scientific English* (1971), which sold more than 50,000 copies, includes these early materials that were created to meet the specific needs of his students. His more recent EAP textbooks coauthored with Chris Feak (such as Swales & Feak, 2004) draw on our understanding of the rhetorical organization and linguistic attributes of key academic genres. In addition, these pedagogical materials reflect the teaching philosophy held by Swales and other key EAP scholar-practitioners, which includes raising the discourse consciousness of junior scholars and graduate student writers, acknowledging the variation in the discourse practices of different disciplinary communities, and engaging students in discourse-based tasks leading to the production of key genres.

Beyond producing EAP materials, Swales has also contributed significantly to the theory–practice interface by explicitly discussing various parameters in the teaching of EAP, and not dismissing problematic or uncomfortable aspects of this enterprise. Swales was an early proponent of the use of discourse analysis in teaching (Swales, 1990b) and believed in the value of explicit teaching. In addition, Swales has used his vast knowledge of the field and varied experiences around the globe to provide insights on the field of ELT as a whole. He has remarked on the growth of ELT as an "intellectual, educational, and commercial activity" (1993, p. 290) while at the same time noting the poor remuneration given to ESL lecturers in US universities. Questions on the role that ESP teaching has played in the demise of academic registers in other languages such as Swedish and German, although unusual to be raised by someone whose career is closely tied to the field, have been thoughtfully discussed (Swales, 1997).

Also important for the field of ELT in general and ESP in particular have been the publications detailing not just successes in applying the results of discourse research to the development of EAP courses and teaching activities but also cases where such endeavors have been met with less than complete success. A success story Swales and his coauthors (Swales, Barks, Ostermann, & Simpson, 2001) discuss concerns the construction of a graduate-level EAP course for Architecture students based on analysis of videotapes of a key academic speech event in the discipline, the final critique, and the sorts of literacy events assigned in the Master's Architecture program, as well as interviews with instructors and students. This paper usefully shows how macro- and micro-analyses of both successful and unsuccessful student productions can be applied to EAP course design. An example of a less successful materials development experience is found in a paper titled, "Integrated and Fragmented Worlds: EAP Materials and Corpus Linguistics." Here he describes a number of different tasks he created for advanced students in an EAP course, drawing on corpus studies he conducted, but evaluates them as an "educational failure" and a "discourse analytic shot in the dark" (Swales, 2002, p. 162) and posits reasons for this.

Another area of pedagogical challenge Swales addresses is the issue of the difficulty of finding suitable texts for EAP instruction, an issue not openly addressed in the EAP literature, as he points out. Swales (2009b) analyzes his experiences of materials development and, in particular, carefully describes drafts of a student's literature review that he constructed to be used in tasks used for teaching the writing of the literature review. He

uses these materials to argue for the creative production of materials by EAP instructors when the perfect text is difficult to locate. What is also exemplary about this piece is the generosity with which these materials are offered in this article for others to use in their own classes.

Two important features about Swales's professional career are evident from this overview of his contributions to ESP. First, as we review the arc of Swales's academic career, an interesting pattern, admittedly with some simplification, emerges. His was a career that began with the teaching of English where materials development played an important role, which was followed by extensive descriptive studies of academic discourse, which then ultimately led to further materials development as seen in the EAP textbooks coauthored with Chris Feak. A second noteworthy point about Swales's research development is that, although new areas of research have been added such as corpus studies of oral academic language, Swales has not left original areas of investigation such as genre analysis of academic writing. In fact, his research career is not one of linear movement from one area to another but rather one of integration of new areas to other earlier areas of research.

SEE ALSO: Corpus Analysis of Written English for Academic Purposes; Genre-Based Language Teaching; Language for Specific Purposes: Overview; Needs Analysis; Teaching Language for Academic Purposes; Writing and Genre Studies

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Syllables

JULI CEBRIAN

A unit of phonology intermediate in scope between the segment and the word, the syllable is a familiar concept among linguists and nonlinguists, and a useful unit of analysis in the description of sound systems and phonological phenomena, even if its relevance beyond its descriptive role is sometimes questioned.

In most languages it is not difficult to tell the number of syllables in a word or a phrase. There would be little dispute among English speakers that the words *brown*, *napkin*, and *intercontinental* consist of one, two, and six syllables, respectively. These speakers would probably agree that the two syllables in *napkin* are 'nap' and 'kin.' The ease with which syllables can be counted is often used as an argument for the validity of the syllable as a phonological constituent. Another argument comes from syllabaries, that is, writing systems where characters designate syllables rather than individual sounds, such as those of the Iroquois language Cherokee, the Liberian language Vai, and the Tibeto-Burman language Yi (Trager, 1972; Rogers, 2005).

Syllabic units also serve as benchmarks for descriptions of the development of child language. Around five to seven months of age, baby noises start to resemble adult speech sounds appearing in sequences of syllables such as reduplicative babbling (e.g., [babababa]), or variegated babbling (e.g., [badadomi]) (Oller, 1980). At this stage in language development, then, the syllable appears to be present as a unit of phonological organization (Vihman, 1992). Further, experimental studies provide evidence for the role of the syllable in speech segmentation and language production, although results vary depending on the clarity of syllable boundaries and the experimental task (e.g., Mehler, Dommergues, Frauenfelder, & Seguí, 1981; Mattys & Melhorn, 2005; among others).

Syllables also play an important role in poetry, where the number or type of syllables, or both, in a verse define the type of meter or rhythmic structure of that verse. In some languages, like Spanish and French, meter is determined by the number of syllables in a line, while in other languages the type of meter depends on the distribution of stressed (or prominent) and unstressed syllables, as in English.

Defining the Syllable

The fact that counting syllables is relatively easy may suggest that syllables are easy to define. However, a satisfactory definition of the syllable has not yet been found. One approach to describing syllables is to examine what is necessarily present in one. If we reexamine the words *brown* and *napkin*, we can say that these words have one and two syllables, respectively, because they contain one and two vowel sounds, that is, the 'ow' in *brown* and the 'a' and 'i' in *napkin*.

There is then a difference between consonants and vowels that makes vowels stand out and signal a separate syllable. This difference has been explained in terms of a property of speech sounds known as sonority. Vowels are the most sonorous sounds and as such they constitute peaks in sonority amid the less sonorous consonants. However, what sonority exactly means is not entirely well understood. For example, sonority has been said to refer to the intensity (or loudness) of sounds relative to that of other sounds with similar

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Table 1 The sonority scale

Manner category	*Sounds*	*Sonority*
Vowels	[a, i, ʌ, o, u]	6
Glides	[j, w]	5
Liquids	[l, r]	4
Nasals	[m, n, ŋ]	3
Fricatives and affricates	[s, f, ʧ, ʒ, θ]	2
Stops	[b, g, t, k, c]	1

degrees of stress, pitch, and duration (Ladefoged, 2001), or as the ability of some sounds to make certain types of cavities resonate (Spencer, 1996; Clements, 2009). For example, Spencer explains that vowels, glides (like [j] and [w], the initial sounds in *yellow* and *wine*, respectively), approximants (like [l] and [r]), and nasals (like [n] and [m]) are sonorant sounds because when they are produced some part of the vocal tract is made to resonate. The remaining sounds, fricatives (like [s]), affricates (like the first and last sound in *change*), and stops (like [p], [d], [k]), are not sonorants but obstruents, because they are articulated with friction or a sudden burst of sound within the vocal tract without much resonance.

Regardless of the definition of sonority, there is general consensus among phoneticians and phonologists that sounds can be arranged on a scale from most to least sonorous in what is known as the sonority hierarchy or scale. There are different versions of the scale which vary with respect to the number of distinctions considered, but a generally accepted arrangement is the one given in Table 1, adapted from Selkirk (1984). At the most sonorous end we find the vowels, with low vowels such as [a] being more sonorous than high vowels like [i], followed by glides. Among the consonants, [l] is the most sonorous, nasal sounds are next, and fricatives and stops are found at the low end of the scale. Within each manner category, differences in sonority between voiced (more sonorous) and voiceless sounds or among different places of articulation have also been distinguished (e.g., Ladefoged, 2001).

Sonority does not simply determine what the syllable peak is; differences in sonority among consonants play a role in their distribution. When more than one consonant precedes or follows the peak, the general tendency is for the sonority of the consonants to decrease the further they are from the vowel. This is what is referred to as the sonority principle, also known by other terms such as the sonority sequencing generalization (SSG) (Selkirk, 1984).

Figure 1 illustrates the degrees of sonority of the sounds in the English words *magic, thrilled,* and *fact*, following the numerical index given in Table 1. The two sonority peaks in *magic* are the vowels 'a' and 'i', which are surrounded by less sonorous sounds, indicating that the word has two syllables. The word *thrilled* exemplifies a syllable with two consonants preceding and following the vowel. In both cases, the consonant that is closer to the vowel is of greater sonority than the consonant at the edge, supporting the SSG. Finally, in *fact* we find two consonants of equal sonority at the end, a characteristic that has yielded modifications to the SSG that include the possibility of a sonority plateau (see Clements, 1990). Every word has as many syllables as peaks.

Vowels are the most common segments to occupy a peak position crosslinguistically, but consonants are also possible. Consider the English words *label* and *sudden*, commonly pronounced without an intervening vowel between the 'b' and the 'l' and the 'd' and the 'n', respectively. According to the SSG, given the sequencing in *label*, the vowel 'a' (/eɪ/), the stop /b/, and the lateral /l/ cannot be part of the same syllable and thus the two

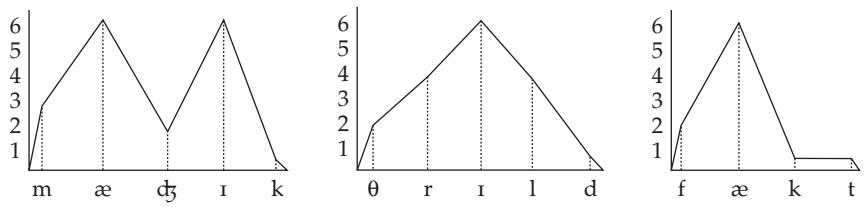

Figure 1 Sonority peaks in the words *magic*, *thrilled*, and *fact*

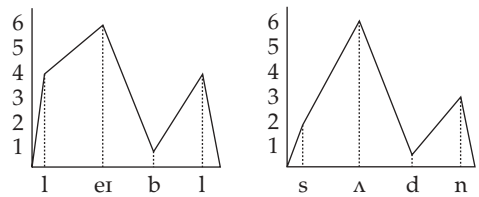

Figure 2 Sonority peaks in *label* and *sudden*

peaks in *label* correspond to two different syllables. This is illustrated in Figure 2. Consonants like the 'l' and 'n' in these examples are referred to as syllabic. In English, these are typically nasals and liquids (i.e., /l, r/). Although it is uncommon, it has been claimed that some languages allow obstruents in the syllable nucleus, such as the Imdlawn Tashlhiyt dialect of Berber, which has words like *tFtKt* 'you suffered a sprain', where the fricative F and the stop K are syllabic (Dell & Elmedlaoui, 1985, p. 113; but cf. Coleman, 2001).

There are, however, a number of cases that remain problematic for a sonority-based definition of the syllable. A notorious example is the existence of word-initial sequences made up of a fricative followed by a stop, as in English *stone* or German *Stein* (/ʃtaɪn/) 'stone'. According to the SSG, these words would consist of two syllables each, corresponding to the two peaks in sonority, that is, the initial fricative and the vowel. Similarly problematic cases are postvocalic sequences of a stop followed by a fricative as in *labs*, *width,* or *fists*, which also run counter to the SSG. Theories of syllabification have offered explanations based on the notion of extrasyllabicity, arguing that these segments are dependent on levels of prosodic structure that are higher than the syllable such as the foot, the prosodic word, or the prosodic phrase (Liberman & Prince, 1977; Clements & Keyser, 1983; among others). More dramatic examples of clusters that violate sonority sequencing can be found in Slavic languages, as illustrated by the Russian word мзда (/mzda/) 'bribe' or the Polish words *bzdurny* (/bzdurnɨ/) 'silly' and *lwy* (/lvɨ/) 'lions'. Further, other challenges are posed by words like *cuddling* or *darkening* which would consist of two syllables following the SSG, but may be pronounced as three syllables by many speakers, as *cudd-l-ing*.

Despite these exceptions, the syllable can be described as a unit made up of minimally a sonority peak and possible margins of lower sonority. The next issue to consider is whether elements within a syllable are arranged according to a specific structure.

Syllable-Internal Structure

Among different accounts of syllable-internal structure, perhaps the most frequently described is the division into onset, nucleus, and coda (but see also Kahn, 1976, and Clements & Keyser, 1983, for flat structures without sub-syllabic constituents, and the

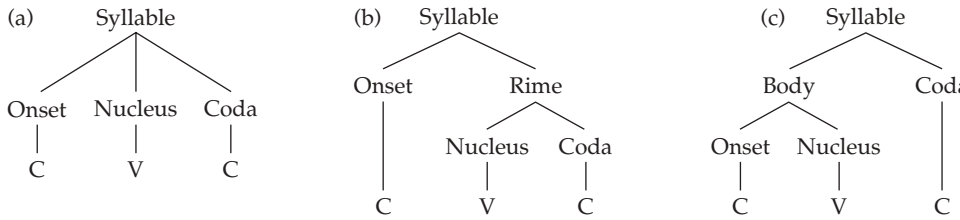

Figure 3 Syllable-internal structure: (a) ternary branching, (b) right binary branching, (c) left binary branching

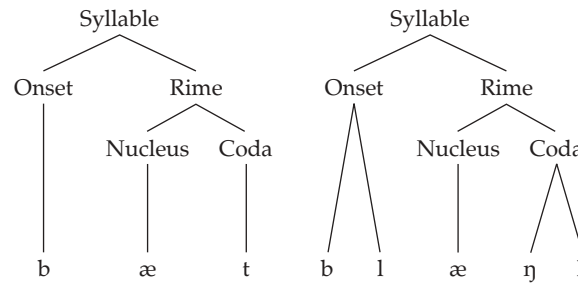

Figure 4 Syllable-internal structure: examples from English

moraic approach discussed below). The peak of the syllable occupies the nucleus, prenuclear elements constitute the onset, and postnuclear segments make up the coda. Figures 3a–c illustrate three possible arrangements (C stands for consonant and V for vowel). Figure 3a shows a nonhierarchical structure (e.g., Haugen, 1956), Figure 3b illustrates a binary branching organization where the nucleus and the coda together constitute the rime (or rhyme) (e.g., Fudge, 1969; Blevins, 1995), and Figure 3c depicts an alternative binary structure with the onset and the nucleus forming the body (e.g., McCarthy, 1979). The nucleus is the only obligatory element, as illustrated by one-syllable words like English *I* or *awe*. A syllable may be onsetless, as in *arch*, or lack a coda, like *law.* Several consonants may be found in the onset, as in *straw*, or in the coda, as in *elves*, or in both, as in *blank*. Syllables that end in a vowel are called open or free syllables, whereas syllables that end in a consonant are known as closed or checked. Figure 4 shows the structure of the English one-syllable words *bat* and *blank* in an onset–rime organization.

Evidence for syllable-internal structure is drawn from different sources. On the one hand, there is evidence from common speech errors. Slips of the tongue frequently involve the transposition of segments occupying the same syllabic position, such as the production of *philosophy* as *phisolophy*, where both the [l] and the [s] occupy an onset position. Spoonerisms are a kind of speech error in which the commutation generates proper words, as in *You hissed my mystery lectures* for *You missed my history lectures*, attributed to the Oxford scholar Rev. William Spooner (1844–1930). This example also shows that two syllable onsets have been interchanged. Support for the onset–rime division comes from controlled experimental techniques such as word learning games and syllable manipulation tasks (Treiman, 1986; Treiman & Danis, 1988; Kapatsinski, 2009; among others). For example, in a task that required blending two CVC words into one (e.g., the non-sense words *pob* and *gaf*), English speakers tended to associate the onset of the first word with the rime (VC) of the second word (i.e., *paf*) rather than associate the body (CV) of the first word with the coda of the second word (i.e., *pof*) (Treiman, 1986, p. 484). Similar results were obtained

with real words. Different patterns, however, have emerged for other languages. Yoon and Derwing (2001) provide evidence from a series of experiments that the body–coda approach best captures the structure of the syllable in Korean.

Further evidence for the rime comes from languages in which the distribution of stress (i.e., prominence) or tone (type of pitch melody) in a word or phrase is influenced by the amount of structure in the syllables, that is, the syllable weight. In such languages there is a distinction between light syllables, which typically end in a short vowel (or a vowel and a consonant in some languages), and heavy syllables with a more complex rime consisting of a long vowel, or one or more consonants, or both. Crucially, it is generally the rime, and not the onset, that contributes to syllable weight. For example, in languages like Latin, stress falls on the penultimate syllable (the one before last), as in *refectus* 'set over', except when the penultimate syllable is light, in which case the preceding syllable carries stress, as in *existimo* 'esteem' (Kenstowicz, 1994, p. 292). The rime is precisely the part of the syllable involved in poetic rhyming patterns. For instance, lines in a verse are said to rhyme when they share all the sounds from the last stressed syllable on. Hence, words like *bite*, *fight*, and *write*, which share the same nucleus and coda, constitute a perfect rime, but the same effect is not obtained with *bite*, *bait*, and *boat*, which share the same onset and coda, or with *bite*, *mate*, and *goat*, which share the coda only.

The greater importance of the rime vis-à-vis the onset in many languages is one motivation for moraic approaches to syllable-internal structure in which morae, or units of weight, are assigned to elements in the nucleus and the coda, and syllable weight is determined by the number of morae (e.g., Hyman, 1985; Hayes, 1989; among others). This approach finds support in the existence of moraic writing systems like Japanese Hiragana and Katakana scripts (Rogers, 2005, p. 276), where characters correspond to morae rather than to segments or syllables.

In addition, the syllable, or syllable constituents, are also the domain of some segmental level processes. For example, the distribution of the variants or allophones of a given phoneme are sometimes best captured in terms of syllabic structure. English has a velarized variant of the sound *l* ([ɫ]), that is, produced with the back of the tongue raised toward the hard palate in addition to the alveolar constriction. In some English varieties velarized *l* occurs at the end of the word (e.g., *sill*) or before a consonant in word-medial position (e.g., *silver*), or before a consonant in word-final position (e.g., *silk)*. Referring to the syllable coda as the context for this pronunciation of *l* accounts for all three positions.

If syllables are to have internal structure, an issue to consider is how strings of sounds are organized into syllables. One prevalent principle is the fact that onsets tend to be maximized, that is, an intervocalic consonant is syllabified with the following vowel rather than with the preceding one. Similarly, a sequence of two intervocalic consonants will be syllabified with the following vowel so long as the sequence conforms to the sonority principle and is a permissible onset in that language. For instance, while *replace* can be syllabified as *re-place*, a word like *dictate* would not be parsed as *di-ctate* but rather as *dic-tate,* since *ct-* ([kt-]) is not a possible onset in English. In a number of cases, however, syllabification is not straightforward. Onset maximization predicts that words such as *lemon* and *panic* will be syllabified as *le-mon* and *pa-nic*. However, lax vowels like the 'e' in *lemon* and the 'a' in *panic* are restricted to closed syllables in English, and thus would require the words *lemon* and *panic* to be syllabified as *lem-on* and *pan-ic*. Speech error data and syllable manipulation experiments lend support to this division, although, in addition to the quality of the preceding vowel, other factors also influence the syllabification of the medial consonant, such as the position of stress, the type of consonant, and the spelling (Treiman & Danis, 1988; Derwing, 1992; among others). Such cases have led some scholars to propose that consonants can be ambisyllabic, that is, can belong simultaneously to the coda and the onset (e.g., Pulgram, 1970; Kahn, 1976).

Syllable Types and Phonotactics

Languages vary as to the shape of syllables they allow. The most common syllable is CV. While the nucleus is a necessary position in all languages, the number of elements that are required or allowed in other positions varies from language to language. Some languages, such as Arabic or Dakota, do not have onsetless syllables. Other languages lack codas, like Hawaiian or Fijian, or have strong restrictions on coda consonants, like Japanese, which only allows a nasal or part of a word-internal geminate (or double consonant) in the coda (see Blevins, 1995, for a typology and examples). If a language has syllables with complex onsets or codas (CCV, CVCC), it also has syllables with single onsets or single codas (CV, CVC). In English there can be up to three consonants in the onset, the first consonant in a sequence of three being the fricative /s/ alluded to above. English coda clusters can contain up to four segments, as in *sixths* (/sɪksθs/), *glimpsed* (/glɪmpst/), *twelfths* (/twɛlfθs/), although in actual connected speech the cluster is likely to be simplified. Such long sequences of consonants typically end in a consonant with a coronal place of articulation (dento-alveolar region) such as /s, z, t, d/.

The knowledge about the number and possible combinations of segments that can be found in the different syllabic positions in a given language is called phonotactics. In English, for instance, /ŋ/ (the final nasal sound in *ring*) is found only in the coda, while /h/ is never found there. Sequences of more than one consonant in the onset or the coda tend to obey the sonority sequencing principle discussed above. Thus, in English we find onset clusters of increasing sonority made up of obstruents + sonorants, such as /br-/ and /tw-/, as in *bread* and *twice*. Similarly, we find coda clusters of decreasing sonority such as /-lʃ/ and /-ft/ in *Welsh* and *draft*, and we also find sequences of equal sonority codas such as /-vz/ and /-pt/ as in *lives* and *apt*, again typically with a coronal consonant in final position.

Just as languages differ in the syllable types they allow, so they also differ in their phonotactics. Unlike English, Swahili and Cantonese allow /ŋ/ in onset position. In present-day English, a nasal can be followed by an obstruent in the coda, as in *lamp* or *ink*, but the reverse cluster, an obstruent (other than /s/) followed by a nasal, such as *kn-*, is not a possible onset (clearly, the *k* in *know* or *knee* is not pronounced). By contrast, Czech and German do allow such sequences, as in Czech *pnutí* 'tension' or German *Kneipe* 'bar'.

A language's phonotactic restrictions determine the extent to which foreign words will be modified when introduced in the language. For example, although Spanish has complex onsets, it does not have onsets consisting of an /s/ plus another consonant. As a result, a word like English *snob* is converted to a phonotactically acceptable form such as *esnob*, syllabified as *es-nob*. More dramatic adaptations can be observed in borrowings from English into languages with more limited syllable inventories, such as the Hawaiian word for *elephant*, [ʔelepani], or the Japanese word for club, [kurabu]. In these cases, in addition to some segmental changes, the English words have been modified by means of the insertion or deletion of segments so as to match the preferred CV syllable structure of the target language.

As we have seen, the syllable is a unit of phonology that contributes to different phonological phenomena such as stress assignment and allophonic distribution of sounds. Speakers have intuitions about the syllable, and the phonotactic knowledge of how sounds combine to form syllables and words in a given language is an integral part of what speakers know about their language. Despite the fact that its reality as a necessary phonological constituent is sometimes questioned, the syllable is a useful tool in descriptive and contrastive analyses of languages and is arguably the domain that best captures some linguistic generalizations.

SEE ALSO: Phonological Acquisition; Segments; Suprasegmentals: Rhythm; Suprasegmentals: Stress; Suprasegmentals: Tone

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Syllabus Design

PETER ROBINSON

Syllabus design involves decisions about the *units* of classroom instruction and organization, and the *order* in which they are to be taught, or organized for learners. These decisions are constrained, in different ways, by two *purposes* that syllabi fulfill in educational settings —to promote "learning" and to ensure "accountability." With the first of these purposes in mind, choice of the unit of analysis for sequencing whatever is to be worked on in classrooms must draw on what is known of the psycholinguistic processes implicated in second language acquisition (SLA). Consequently, there are variations between proposals for syllabus design which reflect different theoretical positions on the psycholinguistically valid units of analysis for L2 learning, and also the sequence in which they should be presented to learners. One could call these "bottom-up" proposals, made by SLA researchers who are concerned with the *complementarity* of decisions about units and sequencing with what is known about *learning processes,* and the levels of L2 attainment that they lead to.

On the other hand, syllabi are necessary so that government agencies, institutions, and teachers can be *accountable* for what is taught in a program, and so that comparisons can be made across institutions, enabling instruction to be coordinated across settings and national boundaries (North, 2001). One could call these "top-down" proposals, which are concerned with the *feasibility* of implementing decisions about syllabus design across a range of settings and languages taught, and with how *comparable* their concomitant assessment procedures are with respect to the societal goals of L2 education. Since these "top-down" implementational considerations must logically assume the correctness of one or another of the "bottom-up" language-learning process proposals for syllabus design, only the latter are described in what follows.

Grammatical Syllabi

Since the 1920s, and the work of Harold Palmer and others in the Reform Movement who emphasized the controlled presentation of grammatical structures and oral practice following classroom presentation, grammatical syllabi have featured prominently in programs for second and foreign-language learners. Intuitive criteria of relative usefulness and simplicity were used as a basis of selection and grading, and these criteria continue to guide selection and sequencing of grammatical structures in many published teaching materials. Ellis (1997), however, provides a contemporary psycholinguistic rationale for adopting a structural, grammatical syllabus. He argues that explicit, declarative knowledge of L2 grammar can influence the development of implicit declarative knowledge, and through communicative activity implicit declarative knowledge can be proceduralized and used in spontaneous skilled performance. The main constraint on what structures should be taught, and when, is that learners must be developmentally ready to incorporate the explicit grammar instruction into their interlanguage. Ellis cites research by himself, Pienemann (1989), and others showing that learners pass through stages of development in the acquisition of, amongst other things, morphemes, question forms, and forms for expressing negation. Unless grammatical instruction is timed to the learner's point of development, Ellis argues, it will not influence the developing implicit knowledge base.

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Since stages of development are learner-internal and hidden from the teacher, timing is difficult to manage. However, Ellis claims that explicit grammatical knowledge serves a number of other functions: it can be used to monitor production; it can help learners to notice features in the input; and it can help learners to compare their own production with a target model, and in some cases notice the gap between them. Knowing about grammar, Ellis argues, is therefore useful, and a structural syllabus can be used to organize and promote this knowledge.

Semantic Syllabi

In the 1970s the Council of Europe initiated a project (see Wilkins, 1976) which aimed to specify a common framework for teaching and assessing "communicative competence" in foreign-language education. The aim was to specify syllabi in terms of three categories of meaning common across languages; semantico-grammatical meaning or notions, such as "time" and "quantity;" modal meanings, such as degree of certainty and scale of commitment; and communicative functions, such as agreeing, requesting, or complimenting. These provided a way of going from specified types of meaning, or universal communicative and conceptual categories, to their token realization in specific languages. This is an unordered inventory: what provides sequencing constraints on these notional categories, and their realizations in language, is the idea of a common core of notions and functions, useful for all communicative goals and purposes, which must be mastered before those particular to specific communicative purposes. Similarly, Negueruela and Lantolf (2006) have recently proposed that concepts should be the minimal units of instruction, and that explicit instruction in grammar can "promote learners' awareness and control over specific conceptual categories as they are linked to formal properties of language" (2006, p. 82). These conceptual units of instruction can be selected based on what is known of L2 development—for example, progressive aspect is first used in development to express the concept of activity and only later to express achievement—or they can be based on an analysis of the differences between how the languages already known and the language to be learned package concepts, such as time and motion, for grammatical expression.

Usage-Based Lexical Syllabi

The development of large-scale corpora over the last twenty years has also led to proposals for frequency-based syllabi which use lexical items or collocations as the units of syllabus design. For example, rather than structurally grading the grammatical content of the syllabus, Willis (1990) argued for grading it lexically using corpora of language use to identify word frequency at the 700-word, the 1,500-word, and the 2,500-word levels. Words in the corpora are itemized as collocations exemplifying each word's typical patterns of use. In the lexical syllabus these three corpora are the bases of exposure at three levels of learner development. Willis claims that exposure is not sequenced or controlled within these levels, and the lexical syllabus "does not dictate what will be learned and in what order," rather "it offers the learner experience of a tiny but balanced corpus from which it is possible to make generalizations about the language as a whole" (Willis, 1990, p. vii).

Task-Based Syllabi

Since the mid-1980s, tasks have been increasingly researched and theorized as a basis for syllabus design. In contrast to the units of syllabus design described above, tasks are a

nonlinguistic unit. Bygate and Samuda (2008), Long and Crookes (1993), and Skehan (2003) are in broad agreement about the psycholinguistic motivation for task-based syllabi, citing research showing (a) little resemblance between acquisitional sequences and instructional sequences based on linguistic forms (e.g., Lightbown, 1983); (b) evidence that learning is nonlinear and cumulative, rather than linear and additive as linguistic (structural, semantic or lexical) syllabi imply (e.g., Selinker & Lakshmanan, 1992); and (c) research showing the influence of learnability on the order in which items can be learned. In one proposal for task-based syllabus design (Long & Crookes, 1993) units of real-world activity involving language use identified on the basis of a needs analysis (target tasks) are subsequently broken down into simpler versions, which are presented in an order of increasing complexity, so as to eventually approximate the full complexity of the target-task demands. In this view, the nonlinguistic features of tasks contributing to their relative complexity are the basis of sequencing decisions. Robinson (2007) has described a taxonomy of task characteristics, and principles for sequencing increasingly complex pedagogic tasks based on it. In his SSARC model for task-based syllabus design (Robinson, 2010), the complexity of the *performative demands* that tasks make are increased across sequences of pedagogic task versions of target tasks (e.g., first performing the task with, and then without, planning time). Subsequently, the *conceptual demands* made by target tasks are increased across pedagogic versions (e.g., from "no causal reasoning" to "causal reasoning" demands). The rationale for this model is to first promote faster access to and *control* over what learners already know of the L2, and then to promote reanalysis and *development* of form–concept mappings that may need to be made in order to achieve success in target-task performance. Similarly, Duran and Ramaut (2006) describe a "complexity scale" which they developed to grade and sequence the "cognitive and communicative processing demands" of tasks for learners at basic and more advanced proficiency levels. In contrast, other proposals for task-based syllabi involve sequencing tasks according to specific linguistic criteria, so as to promote awareness of grammatical structures or lexical items provided in the input to task performance (Nunan, 2004). In these cases, pedagogic tasks are used to implement a linguistic syllabus, and so are more properly called language-based syllabi, with task practice activities.

SEE ALSO: Instructed Second Language Acquisition; Needs Analysis; Needs Analysis and Syllabus Design for Language for Specific Purposes

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Synthetic Immersive Environments and Second Language Pragmatic Development

JULIE M. SYKES

Synthetic immersive environments (SIEs) are engineered, digital spaces which draw on the complex, goal-directed, collaborative game-play behavior of massively multiplayer online games (MMOGs) "to produce explicit, educationally related outcomes in simulated, relevant interactional contexts" (Sykes, 2008, pp. 10–11). They represent a significant advance in pedagogical innovation, which allows for treatment of the complexities associated with a variable pragmatic system while, at the same time, teaching salient norms and patterns that may be especially useful for learners. In doing so, SIE creation and implementation has the potential to break down instructional barriers that second language (L2) pragmatics researchers have often linked to the lack of pragmatic instruction in the foreign-language classroom (e.g., Bardovi-Harlig, 2001; LoCastro, 2003; Rose, 2005; Félix-Brasdefer, 2007). Pragmatic competence requires the mastery of numerous different skills (e.g., recognition, comprehension, and production), as well as exposure to a variety of tasks and interactions allowing pragmatic behaviors to be developed and nurtured (Koike, 1994; Bardovi-Harlig, 2001; Kasper & Rose, 2002; LoCastro, 2003; Cohen, 2005). This entry gives an overview of the features of SIEs most relevant for L2 pragmatic development, presents a sample project, and suggests a possible research trajectory for continued work in this emerging area.

Significant Features of SIEs for L2 Pragmatics

Identifying significant features of SIEs for L2 pragmatic development requires an understanding of the principles of commercial game design work, games studies, and educational gaming. The ways in which features become meaningful in any immersive space will always remain specific to the players involved, the context of the digital environment, the design of the immersive experience, and, in the case of SIEs, the pedagogical objective of game play. Therefore, considering the characteristics of any immersive space and game-play experience is essential. Nevertheless, it is possible to target general elements that deserve special attention when considering language learning, and, more specifically, L2 pragmatics.

In a general overview, Purushotma, Thorne, and Wheatley (2008) present 10 key principles for video game design for foreign-language learning. These can be summarized as follows:

1. The key focus should remain on fail states.
2. The learning focus should remain primarily on meaning, with secondary attention to form.
3. All elements should be playful.
4. Metalinguistic explanations should be included separately from core game play.
5. Learning should be organized around tasks.
6. Gradual scaffolding of new content should be used.
7. Assessment should examine both process and product.

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8. Designers and instructors should consider a full range of gaming platforms.
9. Games should allow for individual game-play choices by learners.
10. Multiplayer games should provide players with meaningful and distinct roles.

While their focus remains on all kinds of digital games, this compilation of research is especially important for those designing, building, and evaluating their own SIEs related to a variety of language learning objectives. Sykes, Reinhardt, and Thorne (2010) further explore the above principles as related to second language acquisition (SLA) research and practice. These authors provide a detailed explanation of fail states, task-based learning, and player interaction. Drawing on each of these theoretical discussions as well as work specific to L2 pragmatics (i.e., Sykes, 2009, 2010; Sykes, Oskoz, & Thorne, 2008), it is possible to highlight the components that are especially relevant for L2 pragmatic development. This section focuses on three features which have the potential to be especially important in overcoming existing barriers to L2 pragmatic instruction: individualized learning experiences; meaningful interactive spaces; and multiple, complex fail states with meaningful feedback. Each should be carefully considered when designing or evaluating SIEs for L2 pragmatic development.

Individualized Learning Experiences

Subjectivity, defined by Ishihara (2006) as "one's view and perception of the world composed of individual dispositions (such as self-identity, values, beliefs, morals, feelings, and personal principles)" (p. 2), has been shown to have a profound impact on pragmatic choices in an L2 (Cohen, 1997; LoCastro, 1998, 2001). For example, research demonstrates that learners of Japanese and French consciously diverge from the pragmatic norms present in the target culture (e.g., the coding of hierarchy and gender), even if it means it might cause problems in future interactions (LoCastro, 1998; Saville-Troike, 1998; Ishihara, 2006). Creating experiences where individual learners are encouraged and empowered to make informed pragmatic choices is very difficult, yet essential.

In order to develop the strategies and skills needed to make informed pragmatic choices, learners must have the opportunity to experiment with, and understand, the impact of the various pragmatic choices they make. Moreover, they must have the opportunity to choose the contexts and scenarios most relevant to their interests and personalities, while at the same time engaging with meaningful content that may influence their pragmatic choices. SIEs can provide a learning space in which this can happen. They account for individualized experiences through character and game-play choices. For example, learners can choose the gender, personality, look, and movement of their avatar (i.e., their in-game character) as well as the number and types of quests (i.e., tasks or missions) they choose to complete. By encouraging learners to utilize the gaming environment for practice and learning in an individualized manner (e.g., selecting tasks and quests relevant to their own learning interests), it is predicted that students will become even better informed about the consequences of the pragmatic choices they make, an important step in L2 pragmatic development. Learners are able to experiment with different levels of adherence and establish a pragmatic system with which they are comfortable. Instructors are better able to evaluate the places in which gaps still occur as well as the crucial areas in which subjectivity plays a role in learner divergence through reflection and processing with the learners themselves.

Meaningful Interactive Spaces

Meaningful interactions are an important component of L2 pragmatic development. Learners need to be given choices over contexts, interactions, and perceptions (Kasper, 1997; Rose,

2005). While role-play scenarios and practice situations can be helpful, they are not necessarily sufficient for learners to internalize new pragmatic behaviors (Félix-Brasdefer, 2007). A key to successful pragmatic instruction is providing learners with meaningful interactive experiences, one of the reasons that conversation analysis and corpora analysis have become popular contexts for both research and instruction (see, for example, Belz & Vyatkina, 2005; González-Lloret, 2007, 2009).

SIEs also offer the possibility of providing meaningful, engaging interactional experiences, with both nonplayer characters (NPCs) and other interlocutors, quite different from those possible in a typical foreign-language classroom session (Thorne, 2003; Sykes, 2009). Learners not only participate in the interactions inherent in the SIE, but also have the opportunity to create their own contexts and control their own social environments. As a result, these types of immersive experiences add an additional level of pragmatic complexity and authenticity. This allows learners and instructors to simultaneously address the sociopragmatic features and pragmalinguistic formulas (Bardovi-Harlig, 2001; Félix-Brasdefer, 2002; Rose, 2005). Furthermore, through experimentation with a variety of sociopragmatic considerations, learners are given the opportunity to transform their interactional experiences in the L2 and further the development of their own pragmatic system.

Fail States and Feedback

Feedback represents one of the most difficult aspects of L2 pragmatic instruction. The instructor must determine whether a learner is making a pragmatic "error" based on lack of knowledge or understanding, or whether the deviation from the norm is intentional (Bardovi-Harlig, 2001). Therefore, scaffold feedback scenarios in which learners are able to feel the consequences of their choices (e.g., an upset interlocutor, a loss of an invitation, or an unsuccessful request) allow pragmatic feedback to move beyond a right/wrong approach to a more complex, realistic system. Through in-game monitoring and game play, instructors can also monitor progress and guide learners as needed to enhance the SIE learning experience.

Vital to the creation and implementation of this type of feedback system is the existence of fail states throughout the SIE experience. Fail states in SIEs can be explicitly designed to emulate genuine consequences of pragmatic miscommunication (e.g., gain/loss of invitations, heightened/lessened homesickness, more/fewer friendships), thereby encouraging multiple attempts at various tasks (i.e., practice) without significantly raising the affective filter. Purushotma et al. (2008) put forward the claim that "we should engineer the game to cater primarily to failure and partial success" because these fail states are vital to language learning. Since this feedback is inherent in the game, delivered through a variety of mechanisms (e.g., the loss/gain of assets, the ability to do certain things, additional help from the avatars in the space), learners are given permission to fail and experiment with language. This also serves as ongoing, leveled assessment of the learner's L2 pragmatic abilities. Recreating an authentic experimentation and feedback experience in an immersive space affords learners the opportunity to test various types of pragmatic behavior prior to participating in interactions outside of the SIE. If learners gain the pragmatic skills necessary in the virtual space, they will be more prepared for interaction in other contexts as well. As is the case with any mediated environment, there is an inherent danger in learning the pragmatics of the environment itself, as opposed to L2 pragmatic skills that transfer to other interactional contexts. One must make careful design decisions when developing SIEs to enhance transferability. For further discussion see Sykes et al. (2008) and Thorne, Black, and Sykes (2009). Nevertheless, the benefits of proving meaningful, authentic feedback through varied fail states instantiate a strong need to create transferability.

Figure 1 Requesting a book from your host sister, Croquelandia © Julie Sykes

Sample SIE Project

Croquelandia was the first SIE explicitly designed to target L2 pragmatic abilities, specifically requests and apologies in Spanish. It is presented here not as an example of an ideal of what should be done, but rather as a real-world example of the possibilities for L2 pragmatic development via SIEs.

In Croquelandia, players set out on a series of missions (i.e., quests) in which they have to perform various types of requests and apologies. These fluctuate in difficulty based on differing levels of imposition, solidarity, and power; each scenario requires distinct types of pragmatic behavior. For example, in one scenario, a player loses a book and must ask to borrow it from his or her host sister, and in another, must apologize to a professor for missing an exam (see Figure 1). Successful completion of quests is based on the reaction of the character with whom the player is interacting and can be repeated for practice and experimentation purposes.

Tips and hidden clues are built in to the SIE, which includes the typical places encountered in study-abroad experiences: the host family's home, the plaza, the market, and the university. In addition to NPC interactions, players can interact with one another via synchronous voice and written chat in addition to an asynchronous discussion board.

Empirical research related to Croquelandia (Sykes, 2009, 2010) has been focused on the role that SIEs can play in enhancing advanced language learners' L2 pragmatic performance (i.e., their ability to perform requests and apologies in Spanish). Utilizing a synthesis of 120 hours of in-game behavior observation data, survey data, pre- and posttests, and one-on-one participant interviews, data were triangulated to gain a comprehensive picture of the impact of the SIE on pragmatic acquisition. This included the examination of in-game

behavior, user perceptions of their experience, and learning outcomes related to in-game participation. While many questions still remain, this project has pushed us one step further in determining when SIEs are especially useful (or not useful) in L2 pragmatic development.

Future Research in This Area

As this area of study advances in both depth and breadth, there are a number of important considerations related to SIEs and L2 pragmatic development which must be addressed. While empirical work has begun, additional research is imperative to understand how and when various types of digital games, and especially SIEs, may (or may not) be useful for L2 pragmatic development. Key questions related to further understanding of SIEs and L2 pragmatic development include the following:

- *Individualized experiences*: In what ways can we create meaningful individualized experiences for learners in SIEs? How is L2 pragmatic development influenced by tasks, learner choices, pragmatic content, and perceptions of these immersive experiences? Can similar (or better) experiences be created in commercially available digital games without the monetary and time investment required to develop an SIE?
- *Task design*: What types of tasks are best suited to L2 pragmatic development? How do these differ based on the areas of pragmatics being addressed as well as the type of SIE being created?
- *Interaction*: How can interaction with other players and NPCs be structured and enhanced to lead toward more productive L2 pragmatic development? What areas of L2 pragmatic development are best suited to interaction in immersive spaces? How does development through these interactions compare to other interactive experiences in both mediated and unmediated contexts?
- *Fail states and feedback*: How can fail states and feedback be incorporated to maximize L2 pragmatic development? How should fail states be structured to encourage experimentation for the enhancement of L2 pragmatic development? How can this feedback be used to enhance transferability of the skills learned in SIEs to other L2 contexts? What areas of L2 pragmatic development are best suited to this type of feedback?

This is not intentioned as a comprehensive list of all of the areas that still need systematic inquiry. Rather, it represents the wide variety of research projects to be undertaken as the field moves toward a more comprehensive understanding of the role SIEs can play in L2 pragmatic development. SIEs are by no means the only solution to overcoming barriers to L2 pragmatic development. However, initial research in this area reveals promising potential for continued advancements.

SEE ALSO: Cohen, Andrew D.; Conversation Analysis and Education; Gee, James; Pragmatics in Learner Corpora; Pragmatics of Second Language Computer-Mediated Communication; Second Language Pragmatic Development

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Systemic Functional Linguistic Approaches to Teaching English-Language Learners

MEG GEBHARD

This entry describes a sociocultural perspective on academic language development informed by Halliday's theory of systemic functional linguistics (SFL) (Halliday, 1996; New London Group, 1996). This perspective provides teachers with tools for supporting English language learners (ELLs) in recognizing the difference between everyday and academic language and in teaching students how academic language functions in the disciplinary texts students are routinely required to read and write in schools (Martin & Rose, 2003, 2008; Hyland, 2004; Schleppegrell, 2004; Christie & Derewianka, 2008). Therefore, from an SFL perspective, the job of the ELL teacher is to heighten students' awareness of the importance of linguistic variation and broaden students' abilities to use language more expertly and critically across a variety of social, academic, and political contexts (Gebhard, Demers, & Castillo-Rosenthal, 2008; Gebhard, Willett, Jiménez Caicedo, & Piedra, 2010).

Language and Education in SFL

SFL was first applied to primary and secondary education during the 1980s as a way of teaching academic literacies to linguistically and culturally diverse students in Sydney, Australia. Educational linguists, such as Christie, Derewianka, Kress, Macken-Horarik, Martin, and Rothery, drew on SFL to support teachers in making the workings of school-based language practices, or genres, transparent and potentially transformative for students, especially students from nondominant communities (Cope & Kalantzis, 1993). Despite important differences among SFL scholars, all share a sociocultural understanding of language and how academic literacies develop in schools that differs from behavioral and psycholinguistic orientations of language learning and teaching. An SFL perspective has three characteristics. First, academic language development is not understood in behavioral terms as a decontextualized process dependent upon students practicing a set of grammatical and rhetorical patterns. Nor do SFL scholars understand the ability of students to acquire academic language in purely psycholinguistic terms, which suggest humans have an innate capacity to develop language naturally in due course through oral interactions and engagement with texts. Rather, SFL scholars view language learning as a social process and language as a dynamic system of linguistic choices that students learn to use to accomplish a wide variety of social, academic, and political goals. From this perspective, teaching involves critically apprenticing ELLs to making more expert linguistic choices sensitive to the contexts in which they are interacting by exploring how language functions to construct relationships among participants (e.g., differences of familiarity and status), convey meaning or ideas (e.g., everyday versus disciplinary conceptions of events), and organize the flow of information depending on whether interactions take place orally, in writing, or through computer-mediated modes. These three functions, which Halliday calls interpersonal, ideational, and textual, operate simultaneously and offer teachers and students

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a contextual basis for analyzing how language varies in relation to who is communicating with whom, what they are communicating about, and the modes through which they are interacting (Martin & Rose, 2003, 2008; Schleppegrell, 2004).

Second, SFL focuses on the range of linguistic choices available to culturally diverse students when they attempt to read and write academic genres such as narratives, descriptions, definitions, explanations, and arguments (Christie & Derewianka, 2008). From this perspective, the concept of linguistic choice operates simultaneously at the phonological, morphological, lexical, clause, rhetorical, and ideological levels, and reflects the degree to which students have been socialized into and wish to align themselves with valued ways of knowing and being at home, work, and school. As many studies have shown, schooled ways of using language, knowing, and being differ from everyday home and peer practices in significant ways (Heath, 1983). Based on their research with ELLs in the United States, Gebhard and her colleagues remark that these differences take on even more significance as students are required to read and write about unfamiliar topics using technical language and drawing upon meaning-making resources that differ greatly from the language practices students use at home or with peers. As such, these researchers maintain that "one of the goals of SFL-based pedagogy is to make visible and explicit the workings of academic English and support students in becoming critically aware of the differences between everyday and disciplinary language practices" (Gebhard, Harman, & Seger, 2007, p. 422).

Third, language variation is viewed as a political meaning-making resource that students can learn to use to position and reposition themselves in a rapidly changing world. As Luke (2000) makes clear, the work of the ELL teacher therefore is double-edged in that it:

> is principally about building access to literate practices and discourse resources, about setting the enabling pedagogic conditions for students to use their existing and new discourse resources for exchange in the social fields where texts and discourses matter. These constitute the social semiotic "toolkit" that one puts to work in educational, occupational, and civic life. . . . Literacy education, then, is about access and inclusion, and potentially discrimination and exclusion. It is about setting the conditions for students to engage in textual relationships of power. (p. 449)

As described by the New London Group (1996), educators can do this kind of double-edged teaching by supporting students in critically analyzing and appropriating academic language to accomplish social, academic, and political tasks of relevance to them and their communities. They describe how teachers and students can accomplish this work through: (a) situated practice in using academic genres; (b) overt instruction in how to systematically analyze the linguistic features of genres and to develop a metalanguage for talking about how specific texts are constructed or "designed"; (c) critical framing to support students in standing back from what they are studying and viewing it critically in relation to its context; and (d) transformed practice, which puts academic language to work in other contexts (New London Group, 1996, p. 88). Using this approach, the goal of critical SFL pedagogy is not to canonize and reproduce academic language practices or to replace home and peer ways of using language. Rather, critical SFL works to acknowledge and value the multiple social and linguistic worlds to which students already belong and to support them in participating in and creating possible future worlds by expanding the meaning-making resources available to them.

SFL-Based Pedagogies

SFL pedagogies have been used internationally for many years (Cope & Kalantzis, 1993; Hyland, 2004; Whittaker, McCabe, & O'Donnell, 2009). The most widely known teaching

practice is the "curriculum cycle," developed in the 1980s by educational linguists in Australia (Macken-Horarik, 2002). This approach has three phases. Phase one is a planning phase. From an analysis of a disciplinary genre students are routinely asked to interpret and produce in school, teachers design a project that will teach ELLs new disciplinary knowledge and associated language practices simultaneously over the course of the instructional cycle. Phase two is the modeling phase. Teachers explicitly guide students in critically analyzing representative text types to provide ELLs with access to both content and genre knowledge. This involves discussion about how the author has structured his or her text to achieve a purpose in communicating to an audience and how the author has used key words, phrases, and grammatical constructions to convey the content of the text, or "field," to construct the intended voice, or "tenor," and to support the flow of information, or "mode" (Martin & Rose, 2008, p. 19). Last, phase three is the production phase. With support from teachers and peers, students draft, revise, and edit their own texts, independently attending to how their linguistic choices construct the subject matter, maintain text coherence, and reflect their voices as members of various discourse communities. During this process, teachers provide ELLs with graphic organizers, guidelines for revision, and opportunities for collaboration and feedback.

SFL Pedagogy in the United States

In the United States, as in other countries, educational reforms over the last decade have placed increasing demands on ELLs and their teachers. As a result, a number of applied linguists have drawn on SFL scholarship to help teachers support the academic literacies of ELLs and speakers of nondominant varieties of English, particularly in the context of high-stakes school reforms such as No Child Left Behind legislation and English-only mandates (Achugar, Schleppegrell, & Oteiza, 2007; Brisk & Zisselsberger, 2010; Gebhard et al., 2010). In California, for example, Schleppegrell and her colleagues collaborated with teachers to analyze the academic language demands placed on students by state curricular frameworks and aligned exams (Schleppegrell, 2003). They identified the genres California teachers were required to teach and students were required to read and write in school (e.g., recounts, narratives, responses to literature, summaries, descriptions, explanations, reports, arguments, and analytic essays). In addition, they made recommendations regarding how state frameworks could be revised and aligned to support all students, not just ELLs, in developing "pathways" to academic literacy across disciplines as they transitioned from elementary to secondary schools (2003, p. 20). These pathways center on developing students' (and teachers') metalinguistics awareness of genre and register features as students progress from reading and writing more everyday texts such as personal narratives, descriptions, and procedures to reading and writing more technical and grammatically denser texts in specific content areas, including, for example, scientific laboratory reports, mathematical proofs, explanations of historical events, and analyses of literature.

With regard to history, Schleppegrell and her colleagues developed professional development institutes called the California History Project (CHP). These institutes introduced teachers to SFL tools they could use to deconstruct the meaning of textbook passages and primary source documents. Achugar et al. (2007) report that teachers planned lessons that enabled more in-depth discussion and understanding of history using these tools. In summarizing the findings of their study, these researchers report that students made significant gains on the California History–Social Science test (a standardized measure) and ELLs were among those who showed the greatest benefits (Achugar et al., 2007, p. 15).

In Massachusetts, Gebhard and her colleagues arrived at similar conclusions based on their work with elementary and middle school teachers (Gebhard et al., 2010). This project,

the ACCELA Alliance (Access to Critical Content and English Language Acquisition), provides sustained and reciprocal professional development to teachers, teacher educators, and literacy researchers by engaging in collaborative investigations of the academic literacy development of nondominant students attending urban schools. These case studies use SFL to assist teachers in designing curricular interventions based on the "Curriculum Cycle," to support ELLs in negotiating the language demands of high-stakes exams and using academic genres to explore topics relevant to them and their communities. For example, second graders created a class blog to respond to each other's writing (Shin, Gebhard, & Seger, 2010); fourth graders analyzed genre features in Puerto Rican children's literature to write their own narratives (Gebhard et al., 2010); and fifth graders researched the benefits of recess to make an argument for reinstating recess in persuasive letters to their principal (Gebhard et al., 2007).

Similar to the finding of the California History Project, ACCELA case studies suggest that teachers developed a deeper understanding of both disciplinary content knowledge and associated language practices, both of which are essential components of teachers' knowledge base. The data also reflect that ACCELA's approach aided teachers in negotiating the imposition of scripted approaches to instruction and the language demands of high-stakes testing while making space for students to read and write about topics that mattered to them and their communities, and that SFL pedagogy supported emergent ELL writers in analyzing and producing more coherent and autonomous texts reflective of written as opposed to oral discourse.

Conclusion

In sum, research over the last three decades suggests that SFL pedagogies have the potential to support ELLs and their teachers in recognizing the difference between everyday and academic language and in teaching students how academic language functions in the disciplinary texts students are required to read and write across content areas. Moreover, recent studies conducted in the United States demonstrate that the use of SFL pedagogy can support teachers and ELLs in critically negotiating the demands of school reforms and to appropriate academic language to accomplish social action in and outside of school.

SEE ALSO: Genre and Discourse Analysis in Language for Specific Purposes; Halliday, M. A. K.; Systemic Functional Linguistics; Writing and Genre Studies

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Systemic Functional Linguistics

JENNIFER HERRIMAN

Systemic functional linguistics (SFL; http://www.isfla.org/Systemics/index.html) was founded in the 1960s by M. A. K. Halliday, who developed the theory between the 1930s and 1950s from the work of J. R. Firth and his colleagues in London, among others (Halliday, 1967–8). In the 1970s, Halliday moved to Australia and the University of Sydney became the center of SFL. Since then the theory has spread and been applied to a large number of languages. Different versions of the theory have been developed by Fawcett (2000) (Cardiff grammar), Gregory (2002) (communication linguistics) and McGregor (1997) (semiotic grammar).

SFL starts from the premise that language is an instrument of social interaction which has evolved to meet our communicative needs in society (Halliday & Matthiessen, 1999; Bloor & Bloor, 2004). It does not exist as an autonomous formal system. Instead, it is a meaning-making resource which not only represents our world but actively constructs it. The form of language can therefore be best explained by examining it in relation to the functions which it has evolved to serve. The main focus in SFL is therefore on the analysis of authentic texts, that is speech and writing produced in real-life social interaction, rather than isolated sentences.

The language used in a text is determined by the context in which it is being used. There are two different types of context: the context of culture, or genre, and the context of situation, or "register" (Eggins, 1994, pp. 25–80). Genre is the institutionalized way that language is structured in various stages, in order to achieve a certain goal. A sales transaction, for instance, is normally achieved by a sequence of stages starting with a sales initiation and sales request, followed by a price and sales clarification, and completed by payment and purchase closure (Ventola, 1988). Register comprises three variables: *field*, *tenor*, and *mode*, each of which has an effect on how we use language. The *field* of a text is its content, that is what the language is being used to talk about, which may range from everyday topics to technical ones. The *tenor* of a text is determined by the social roles of the people involved in the communication and the relationships between them. This has three simultaneous dimensions: power, which ranges from equal to unequal relationships (e.g., close friends vs. employee and employer); contact, which ranges from frequent to occasional (e.g., spouses vs. acquaintances); and affective involvement, which ranges from high to low (e.g., lovers vs. business associates). The *mode* of a text is the way in which communication takes place, for example whether it is written, computer-mediated, spoken face to face or on the telephone, and so on.

These three variables are associated with three chief functions of language, which are referred to respectively as the *ideational*, *interpersonal*, and *textual* "metafunctions" (Halliday & Matthiessen, 2004, pp. 29–31). The field of a text is associated with the ideational metafunction. This is the usage of language to make sense of, and talk about, the world around us and within us. It has two components: the experiential and logical metafunctions. The experiential function is concerned with the content of language, and the way in which we represent our experience of the world as a kind of process, activity, state, or happening in which people and things are involved, and which take place in certain conditions (described in terms of who did what to whom and when, where, how, why, etc.). In, for

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Table 1 Register and metafunctions

Field	Ideational	Experiential	Representing experience as a process with participants and circumstances
		Logical	Connecting representations of experience
Tenor	Interpersonal		Exchanging information or goods and services
Mode	Textual		Organizing the message

example, the statement *June reads the newspaper on the train*, experience consists of three component parts: the process of reading, two participants involved in this process (*June* and *the newspaper*), and one circumstance associated with this activity (its spatial location *on the train*). The logical function concerns the ways in which representations of experience may be connected to each other by different types of relationships, such as by simple addition, for example *June read the newspaper and Pete made the dinner*, or by a relation of dependency for instance a temporal relationship, such as *June read the newspaper while Pete made the dinner*.

The tenor of a text is associated with the interpersonal metafunction. This is the usage of language to establish and maintain relations with other people. This involves taking on different kinds of speech roles in communication. There are two main types: speech roles which exchange information (e.g., statements or questions) and speech roles which exchange commodities and services (e.g., offers or commands). Tenor also involves adjusting one's claims about the validity of what one is saying, for example by using *probably* in *She probably reads the newspaper on the train*, and expressing various kinds of attitudes, for example by using *fortunately* in *Fortunately, he makes the dinner every Sunday*.

The mode of a text, finally, is associated with the textual metafunction. This is the usage of language to organize these ideational and interpersonal meanings into a coherent message which fits in with the other messages surrounding them and with the wider context in which talking or writing takes place. This metafunction is therefore referred to as the "enabling" function (Halliday & Matthiessen, 2004, p. 30). The relationship between register and metafunctions is represented in Table 1.

Language creates these three kinds of meaning—ideational, interpersonal, and textual—simultaneously. Each clause, then, represents a part of human experience, that is, some process, change, or state in the external or our own internal environment (ideational meaning); it interacts with others in some way (interpersonal meaning); and it is organized as a message which fits in with the language around it (textual meaning). The way in which we create these different kinds of meanings is a process of choosing from finite sets of choices, or "system networks," in the language system (Eggins, 1994, pp. 198–219). Choices are made on three levels: the level of meaning itself ("discourse semantics"), the wordings which realize these meanings (i.e., syntax, lexicon, and morphology, which together make up "the lexicogrammar" of a language), and the sounds or letters used to express them (phonology or graphology). These choices are not made consciously, but depend on the context in which the language is used. They become meaningful because there is an opposition between what is chosen and what is not.

Each of the metafunctions of language has its own system networks. The chief system in the ideational metafunction is the system of "transitivity" (Halliday & Matthiessen, 2004, pp. 168–305). (This term is used here in a broader sense than its traditional meaning of whether verbs take objects or not.) This is the choice of what kind of process takes place, who or what participates in this process, and what kinds of circumstances may be associated with any of these processes, such as conditions of time, place, and manner, and other

Table 2 Processes and participants

Process type	*Example*
Material	*Tim* (actor) *made* (process) *a copy* (goal) *for Rose* (beneficiary).
Mental	*Pete* (senser) *didn't know* (process) *the correct answer* (phenomenon).
Relational	*This river* (carrier) *is* (process) *dangerous* (attribute). *That tall man over there* (value) *is* (process) *my brother* (token).
Verbal	*We* (sayer) *told* (process) *her* (receiver) *the exciting news* (verbiage).
Behavioral	*John* (behaver) *coughed* (process).
Existential	*There is* (process) *a better solution* (existent).

constraints such as cause, reason, and concession. There are six types of processes, and each process type has its own set of participant roles. Material processes are processes of doing and happening, such as *make*, *throw*, *go*, *give*, and *perform*. They always have an actor who is carrying out the doing or happening, and they may also occur with other participants, such as the goal, which is the person or thing to which the activity is done, or the beneficiary, which is the person or thing that the activity is done for. Mental processes are processes of thinking, seeing, or feeling such as *believe*, *know*, *hear*, *realize*, *like*, *hate*, and so on. The chief participants are the senser, which is typically a human being, and the phenomenon, which is what is sensed. Relational processes are processes of being and having, such as *be*, *seem*, *look*, *appear*, *have*, *own*, and so on. They may be descriptive, with a carrier and its attribute, or identifying, with a token and its value. Verbal processes are processes of saying, such as *tell*, *ask*, *complain*, *order*, and so on; the chief participants are the sayer, the receiver, and the verbiage, what is said. Behavioral processes are processes of human physiological and psychological behavior, such as *cough*, *smile*, *dream*, *cry*, and so on; and finally, existential processes are processes of existing, such as *be*, *exist*, *remain*, *follow*, *occur*, and so on. These have only one participant, the behaver, and the existent. Together these six process types make up the outer world of physical experience, the inner world of consciousness, and the world of abstract relations (see Table 2). They are not discrete categories, but shade into one another, forming a model of experience which can be visualized as a circle (Halliday & Matthiessen, 2004, p. 172) (see Figure 1).

In addition to the transitivity system, which perceives the world in terms of whether an activity has an impact on another participant or not, there is another system for encoding our experience of the world: the system of ergativity (Davidse, 1992; Halliday & Matthiessen, 2004, pp. 280–302). This is when experience is presented from the perspective of whether a process happens by itself, for example *The vase broke*, or whether it has been caused by external factors, for example *Paul broke the vase*.

The interpersonal metafunction has network systems for interaction with others: the systems of mood, and modality. Mood is the choice of declarative, interrogative, or imperative clause types in order to carry out different speech roles (Halliday & Matthiessen,

Table 3 Modality

Likelihood	*It might happen.*
Inclination	*I want it to happen.*
Usuality	*It usually happens.*
Obligation	*It must happen.*

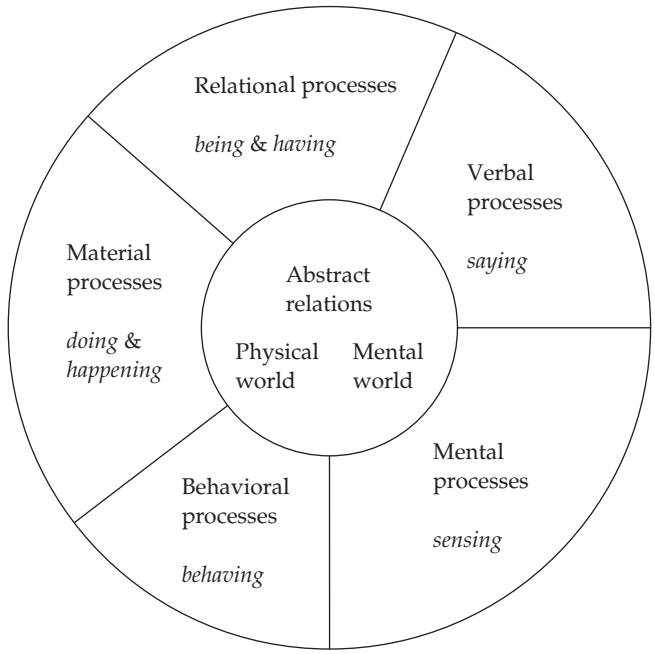

Figure 1 Process types in English (a simplified model of experience)

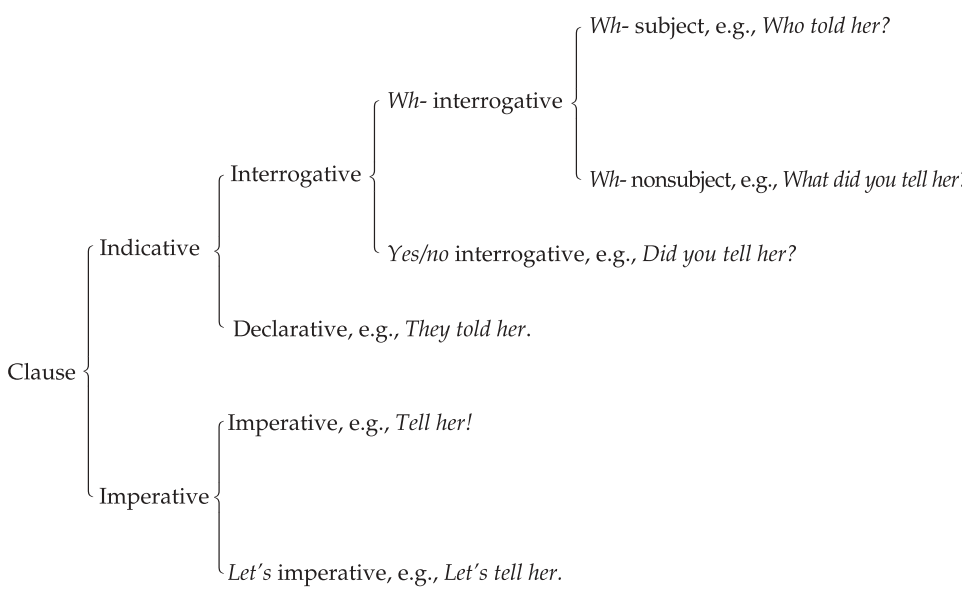

Figure 2 A simplified system network for mood in English

Table 4 Appraisal

Engagement	Monoglossic	*Ken has resigned.*
	Heteroglossic	*Peter said/It is said that Ken has resigned.*
		Ken may/must have resigned.
Attitude	Affect	*I am happy/disappointed about this.*
	Judgment	*He's a dishonest/reliable/capable person.*
	Appreciation	*This is a beautiful ring.*
Graduation	Force	*This is very/slightly dangerous.*
	Focus	*He's no/a real gentleman.*

2004, pp. 134–43) (see Figure 2). Modality is the expression of judgments of likelihood, inclination, usuality, or obligation (Halliday & Matthiessen, 2004, pp. 146–50) (see Table 3).

The interpersonal function also involves choosing who or what is to be made modally responsible for the activity that takes place. This is done by making it the subject of the finite verb in the clause (Halliday & Matthiessen, 2004, pp. 117–20). (In, for example, *John/the stone broke the window* and *The window had been broken*, modal responsibility for the activity of "breaking" is assigned to the subjects, *John*, *the stone*, and *the window*, respectively.)

The interpersonal metafunction has a network system for evaluative meanings, the appraisal system (Martin & White, 2005) (see Table 4). This is made up of three subsystems: engagement, attitude, and graduation. Engagement is concerned with the extent to which speakers engage with alternative voices in their texts, that is whether they choose to ignore them altogether by issuing categorical statements (monoglossic), or whether they choose to acknowledge their existence (heteroglossic, i.e., dialogism in a Bakhtinian sense). The latter may be done explicitly by attributing what is being said to another source, or implicitly by, for instance, qualifying what is being said with expressions of doubt, certainty, and so on. Attitude is made up of affect (feelings, such as happiness or disappointment), judgment (the evaluation of someone's character and behavior), and appreciation (the evaluation of things). Graduation, finally, is concerned with up- or downgrading the force and focus of what is being said.

The textual metafunction has three main network systems for organizing the content of the message into a text: the systems of information (Halliday & Matthiessen, 2004, pp. 87–92), cohesion (Halliday & Hasan, 1976; Halliday & Matthiessen, 2004, pp. 524–85), and theme and rheme (Fries, 1995; Halliday & Matthiessen, 2004, pp. 64–87 and 93–105). Cohesion is the way in which speakers connect meanings to each other both within and across sentences, for instance by using pronouns to refer back to something mentioned earlier, or using conjunctions which connect the message in different ways. The information system is the way speakers organize language into units of given and new information, depending on what they wish to present as already known or unknown to their addressees. This is usually signalled by intonation. The system of theme and rheme, finally, concerns the way in which speakers order the content of the message into its point of departure (the theme) and what is to follow on (the rheme). What is typically selected as the theme depends on the type of clause. In English declarative clauses, the theme is typically the subject; in *wh*- interrogatives, it is the *wh*- element, the missing piece of information that is being asked for, and in imperatives it is the verb (see Table 5).

Themes may be simple, in which case they consist of experiential meaning only, for example *the house*, or multiple, in which case they are preceded by textual or interpersonal meanings. Table 6 depicts a multiple theme which is maximally extended by both textual and interpersonal meanings (Halliday & Matthiessen, 2004, p. 81).

Table 5 Themes and rhemes

Clause type	*Theme*	*Rheme*
Declarative	*The house*	*had been burgled the night before.*
Interrogative	*Who*	*burgled the house?*
Imperative	*Listen*	*carefully to what I am saying!*

Table 6 Multiple theme

	Theme		*Rheme*
Textual	Interpersonal	Experiential	
Well, but then	*surely Jean wouldn't*	*the best idea*	*be to join in.*

Speakers are able to give prominence to different parts of a text by rearranging the content into the theme and rheme. For instance, an unusual element may be made into the theme, such as the object, for example *These matters* (theme) *we'll deal with later* (rheme); one element may be singled out and placed in focus as the theme, for example *It was Ann* (theme) *who made the cake* (rheme), and the content of a message may be split into two parts in an identifying theme and rheme structure, such as *What Ann wants* (theme) *is another piece of cake* (rheme).

Choices from these network systems are made simultaneously on the different levels of language, that is, meanings are realized by wordings from the lexicogrammar, and these are expressed by letters or sounds. Most choices of meanings and their wordings are so usual that they are perceived as natural and straightforward. Processes and their participants, for instance, are typically realized in the lexicogrammar by verbs and nouns, respectively. Similarly, commands and questions are typically realized by imperative and interrogative clauses (direct speech acts). It is, however, possible to pair meanings with less typical wordings, thereby creating what is referred to within SFL as "grammatical metaphors" (Simon-Vandenbergen, 2003; Halliday & Matthiessen, 2004, pp. 586–658). There are two chief types of grammatical metaphors: ideational and interpersonal metaphors. Ideational metaphors are less typical choices from the system of transitivity (Halliday & Matthiessen, 2004, pp. 635–58). This is when, for instance, instead of realizing a process and its participants by its natural wording as a clause, for example *The company developed the product*, these meanings are encapsulated in a noun phrase, for example *product development*. This results in a different representation of experience where the process and its participants have become a new entity that may, in turn, participate in another process, for example *Product development has caused us a lot of problems this year*, where *product development* is the subject of a material process and thereby represented as the actor responsible for causing *a lot of problems*. Using ideational metaphors such as these allows writers to pack more information into the clause. Ideational metaphors tend to emerge in late childhood, and are typical of academic writing (Halliday & Martin, 1993). Interpersonal metaphors are less typical choices from the systems of mood and modality (Halliday & Matthiessen, 2004, pp. 613–35). Metaphors of mood are indirect speech acts, when, for instance, a command is realized by an interrogative clause, for example *Could you pass the salt?* rather than by an imperative, or when a question is realized by a declarative clause, for example *I wonder where he's hidden the key* rather than by an interrogative. These metaphors are an

important negotiating resource in conversation, as they allow a speaker to attend to their addressee's positive or negative face. Metaphors of modality are when modal meanings such as likelihood are represented by separate clauses, for example *I think that he has arrived already*, or *It is likely that he has arrived already*, instead of within the clause by their more natural wording as modal verbs or adverbs, such as *may/might*, or *perhaps*. These metaphors are a means of making one's opinion explicitly subjective (e.g., *I think*) or explicitly objective (e.g., *It is likely*).

A text, then, is the outcome of the series of choices which makes up its meanings. As these choices are determined by the context in which language is being used, certain types of text are characterized by patterns of probabilities. Sports reports, for instance, are likely to have many material processes; recipes are likely to have more imperatives than, for instance, academic writing; and biographies are likely to have human participants and temporal expressions as their themes.

SFL has a strong commitment to usefulness, and has been applied to a wide range of areas. These include child language development (e.g., Painter, 2000) and educational linguistics (e.g., Schleppegrell, 2004; Christie, 2005), stylistics (e.g., Toolan, 1998), computational linguistics and artificial intelligence (e.g., Teich, 1999), and the study of language disorders, such as aphasia (e.g., Armstrong, Ferguson, Mortensen, & Togher, 2007). SFL is also frequently used for critical discourse analysis (e.g., Bloor & Bloor, 2007) and the analysis of multimodal texts (e.g., O'Halloran, 2006).

SEE ALSO: Critical Discourse Analysis; Functional Grammar; Grammar and Discourse

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Tannen, Deborah

CYNTHIA GORDON

Introduction

Deborah Tannen, University Professor and Professor of Linguistics at Georgetown University (Washington, DC), is best known for elucidating the role of language in interpersonal relationships. A widely recognized public intellectual, Tannen is author of three books that spent time on the *New York Times* best-seller list, most notably *You Just Don't Understand* (1990), which examines gender differences in communication and spent nearly four years on the list (eight months as number one). Tannen is also an extremely accomplished scholar; she is a substantive contributor to topics as varied as language and gender, intercultural communication, linguistic strategies in spoken and written discourse, and family communication. In addition, Tannen has helped shape the subfield of discourse analysis into one that embraces its status as an applied variety of linguistics.

Biography

Deborah Tannen (born 1945) entered linguistics via literature and composition. She earned, in English literature, a BA at Harpur College (now subsumed under Binghamton University, SUNY) and an MA at Wayne State University (Detroit, MI). Tannen was teaching writing at Lehman College (CUNY) when she decided to attend the 1973 Linguistic Institute at the University of Michigan, which focused on "language in context," a rather new subject in the (then Chomskyan grammar-dominated) field. Inspired by courses taken with A. L. Becker and Robin Tolmach Lakoff, Tannen pursued MA and PhD degrees in linguistics at the University of California, Berkeley. There she studied with Lakoff, John Gumperz, and Wallace Chafe. Tannen was appointed Assistant Professor at Georgetown University in 1979, completing her PhD the same year.

While Tannen is now associated with "discourse analysis"—a diverse, primarily qualitative set of approaches to studying conversation or language use—the term was not widely used when she was starting out. Tannen not only served (with Gumperz) as a pioneer in the discourse analytic approach of interactional sociolinguistics, but also sought to build connections with other approaches such as conversation analysis. She organized the 1981 meeting of the Georgetown University Round Table on languages and linguistics (GURT), bringing together scholars in the burgeoning area of discourse analysis and showing its broad applicability. She also organized the 1985 LSA/TESOL Institute (a joint institute of the Linguistic Society of America and Teachers of English to Speakers of Other Languages) on "Linguistics and Language in Context: The Interdependence of Theory, Data, and Application," connecting to it a GURT conference addressing the same theme. GURT proceedings (Tannen, 1982a; Tannen & Alatis, 1986) include multiple participants who profoundly influenced the field, including Becker, Gumperz, Lakoff, Emanuel Schegloff, Frederick Erickson, William Labov, Ron Scollon, and Teun van Dijk.

Tannen's seven general-audience books have brought linguistics to the public; these include best sellers *You're Wearing THAT?* (2006), *You Were Always Mom's Favorite!* (2009),

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and *You Just Don't Understand* (1990). Tannen has appeared frequently on national television and radio, and writes regularly for major newspapers and magazines, including *the New York Times* and *Washington Post*. She is even more prolific within academia, authoring four books and editing or coediting eleven, and publishing over 100 articles, chapters, and essays. Tannen's research has appeared in major academic journals, among them *Language*, *Language in Society*, and *Text & Talk*. She also serves on the editorial boards of major journals.

Contributions

Tannen's diverse contributions are summarized in what follows.

Interactional Sociolinguistics as an Approach to Intercultural Communication

Tannen is most closely associated with interactional sociolinguistics, founded by Gumperz (1982), to explain the role of sociocultural knowledge in establishing involvement and conveying meaning in interaction. Much of Gumperz's work focused on how speakers of different cultural backgrounds use language and paralanguage to indicate how they mean what they say. Tannen's focus on sub cultural differences extended Gumperz's approach. In her dissertation, Tannen analyzes an audiotaped, transcribed Thanksgiving dinner conversation of six friends, three of New York Jewish extraction (including Tannen) and three Gentiles (two from California, one from England). Published as *Conversational Style* (2005), the book serves as a primer in interactional sociolinguistics.

"Conversational style" refers to "the basic tools with which people communicate," including features of talk like pausing, pitch, and narratives (Tannen, 2005, p. 4). Tannen's book reveals how style similarities often produce positive exchanges, whereas even minor differences can cause consequential misunderstandings. For example, simultaneous talk —talking while another speaker is talking—was used and understood differently by different participants in Tannen's study. The New Yorkers tended to "talk along" with others to show interest; while appreciated amongst themselves, this strategy was interpreted negatively—as interruption—by those not sharing this style.

Also an innovation was Tannen's examination of motivations behind style differences. Building on linguistic politeness and communicative style research by Lakoff (e.g., 1975), Tannen demonstrates how language serves humans' simultaneous needs for connection and independence. She thus relates her argument to Brown and Levinson's (1987) discussion of politeness strategies and positive face (akin to connection) and negative face (akin to independence). Tannen devises a style continuum ranging from *high-involvement* to *high-considerateness*; while speakers of the former style (like the New Yorkers) focus on serving the other person's needs for solidarity, speakers of the latter (like the Californians) focus on honoring the other's independence. Neither style is "good" or "bad," although interaction between them is potentially problematic.

Conversational Style provides the theoretical backdrop for *That's Not What I Meant!* (Tannen, 1986), which demonstrates Tannen's commitment to raising awareness of how linguistics contributes to understanding interpersonal relationships.

Language and Gender

You Just Don't Understand (Tannen, 1990), which develops one chapter of *That's Not What I Meant!*, was a general-audience blockbuster. And, as Lakoff's (1975) *Language and Woman's Place* ignited linguistic research on gender in the 1970s, Tannen's book initiated the area's second explosion in the 1990s.

Tannen (1990) takes a cultural approach, building on Maltz and Borker's (1982) conceptualization of female–male communication as a kind of intercultural communication. She suggests that women and men tend to have different conversational rituals. Whereas all conversations balance connection and hierarchy, conversational rituals common among women tend to emphasize connection, while those common among men tend to focus on relative status. Like Maltz and Borker, Tannen traces these differences to research on children's socialization in same-sex playgroups.

As regional style differences can cause misunderstandings, so too can gender-related differences. For example, Tannen observes that many women engage in troubles talk to create interpersonal connection through symmetry, whereas many men create connection through competition-based rituals, like exchanging playful insults. When these differing patterns intersect—as when a man responds to a woman's complaint with advice, rather than a matching complaint—mutual frustration sometimes results. The book's observations and arguments had profound cultural effects; for instance, the now-ubiquitous observation that men generally don't like to ask for directions traces to *You Just Don't Understand*.

Tannen's academic publications have further investigated the complexity of gender and communication. Borrowing terminology from Goffman (1977), Tannen (1996) emphasizes that behaviors are "sex-class-linked": They are linked to the class of women (or men), and not necessarily to individuals. This highlights how speakers show their alignment with a given class moment-by-moment, and thereby construct their own gendered identities in interaction. Further, Tannen offers a nuanced understanding of how relational dimensions of particular interest to gender scholars are constantly being negotiated in all interactions. Importantly, she points out that a single strategy, like simultaneous talk, or being silent, could be a move either for power or solidarity (hence are ambiguous), or both at once (hence, polysemous).

Tannen's publications on gender provide a touchstone for many follow-up studies, both congenial and critical. With its focus on differences between gendered styles, her work is often contrasted with studies focused more explicitly on power (the "dominance" approach). Tannen's frustration with this tendency to reduce complex interrelated phenomena to a two-sided "argument" between scholars in opposing camps led her to write *The Argument Culture* (1998), in which she encourages multifaceted dialogue rather than dualistic debate in numerous realms, including academia.

Spoken and Written Discourse Strategies

Talking Voices (Tannen, 2007 [first published in 1989]) is Tannen's fullest account of how linguistic strategies create meaning in interaction. It demonstrates how "literary" strategies —specifically, repetition, dialogue, and imagery creating details—are the same strategies that make up everyday conversations. This book is the capstone of Tannen's work in the 1980s on orality and literacy (e.g., 1982b); it also brings that research into dialogue with her analyses of conversational discourse.

An important, broad function of the strategies *Talking Voices* examines is achieving "conversational involvement," or "an internal, even emotional connection individuals feel which binds them to other people as well as to places, things, activities, ideas, memories, and words" (Tannen, 2007, p. 27). "Constructed dialogue"—a term Tannen introduces as an alternative for the traditional term referring to quotation, "reported speech," is one involvement-creating strategy. She builds on theorizing by Bakhtin (1975/1981) and others to suggest that "reporting" previously uttered speech is impossible, because recontextualizing words (even if as word-for-word repetition) fundamentally alters their meaning. As Tannen (2007, p. 109) states, "the construction of dialogue represents an active, creative, transforming move."

This quotation evokes the recent burst of interest in linguistics in intertextuality, or textual interconnectedness. In fact, in the introduction to the second edition of *Talking Voices*, Tannen (2007) remarks that the book can be viewed as arguing for a theory of intertextuality that links repetition and recontextualization to meaning-making and relationship-building.

Framing and Family Relationships

Another theoretical concept to which Tannen has contributed greatly is Goffman's (1974) "frame," which refers to what is taking place at a given conversational moment, or the definition of the situation. Tannen's interest in framing began in her exploration of cognitive frames underlying oral and written narrative accounts (see Tannen, 1979). Contributions to Tannen's (1993) edited volume *Framing in Discourse* further develop framing by showing how frames are linguistically constructed, and how participants negotiate alignments within frames. The book also reveals the applicability of a framing approach to numerous contexts, from small-group discussions, to sermons, to medical encounters.

Framing continues to be of interest for Tannen, who, since 1999, has concentrated on family discourse. She codirected (with Shari Kendall) a study for which four American couples with at least one child audio-recorded their own conversations nearly non-stop for one week. This study further develops a linguistic understanding of framing while investigating how family members use language to create and negotiate identities, relationships, and beliefs (see Tannen, Kendall, & Gordon, 2007). Tannen develops additional aspects of her earlier work in analyzing these family conversations; for instance, Tannen (2004) identifies a special kind of constructed dialogue she calls "ventriloquizing," demonstrating how a speaker takes on the voice of a copresent pet or preverbal child as a resource for communicating with another family member.

Tannen (e.g., 2006, 2009) has also published general-audience books on family conversation, once again making the results of academic research in the field of linguistics available to the public.

Conclusion

Deborah Tannen has played an important role in developing discourse analysis, including shaping its key terms (like intertextuality and frame), methods (from collecting data to engaging in academic discourse), and topical interests (like spoken and written language, the discourse analysis of conversation, and language and gender). Her work has substantially advanced academic and lay understandings of human communication and relationships. In other words, Tannen is not only a discourse analyst but an extraordinarily productive contributor to applied linguistics (her Web site is: www.deborahtannen.com).

SEE ALSO: Analysis of Gender in Interaction; Family Discourse; Interactional Sociolinguistics as a Research Perspective; Intercultural Discourse

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Tarone, Elaine

BONNIE SWIERZBIN

The most succinct summary of the applied linguistics and teaching career of Elaine Tarone (1945–) is the title of one of her early books: *Focus on the Language Learner* (Tarone & Yule, 1989). Her research and teaching career has focused on second language (L2) learners as social beings in a variety of contexts and has emphasized the effects of those contexts on both the learners' use of language and the manners in which they learn it. She is one of the leading theorists of variationist second language acquisition (SLA), which has as its fundamental premise that the form of second language learners' utterances can vary dramatically depending on the learners' perceptions of social contextual variables such as the interlocutor, task, or topic. In a variationist perspective of SLA, variability in a learner's interlanguage (IL) (e.g., *I study grammars* vs. *I study grammar*) is not viewed as "noise" in the researcher's data or necessarily as errors for a teacher to correct; instead, variability is considered to be a potential source of new language forms appearing in the learner's IL and an indicator of transition in the language development process.

Variationist approaches to SLA draw upon the theory and methodology of the sociolinguistics of language. As described in Bayley and Tarone (in press), variationist SLA includes five central theoretical assumptions. The first is that just as every first language speaker has a range of speech styles for use in a variety of social circumstances, an L2 speaker has a range of interlanguage styles which depend on the social context. For L2 speakers as for first language speakers, styles range from informal (vernacular) to formal. The second assumption is that, of these styles, the learner's vernacular style, used in meaning-focused communication, is the most systematic. This means that learners' interlanguage may be more fluent and accurate in some contexts than in others, so that a researcher investigating or a teacher evaluating a learner's IL in just one context is not seeing an accurate or complete picture. In addition, although a learner's IL is systematic, it follows the learner's own rules; that is, each learner may have a different view of what the target language rules are, which is the third theoretical assumption. The next central assumption is that the speech of an L2 learner is impacted by the identity of the researcher just as it would be by any interlocutor. In particular, a learner may be influenced by the presence of a researcher to produce a more formal style rather than the vernacular the researcher wishes to observe. The final assumption is related to the sociolinguistic notion of a speech community, that is, speakers grouped into a common social category, for example, a neighborhood, academic discipline, or religious affiliation, and who share linguistic norms. Although this notion is extremely useful for the study of linguistic variation in traditional sociolinguistics, the assumption in variationist SLA is that the relevant speech communities for L2 learners are difficult to identify and that these learners may not construct their identities in a way that is consistent with the categories that are prevalent in traditional sociolinguistics, resulting in individual patterns of L2 language acquisition that vary from the patterns found in groups to which the learner may belong.

These assumptions have been empirically tested in studies by Tarone and others working with the variationist paradigm using methodologies that borrow from the Labovian framework of sociolinguistics. Several methodological characteristics are typical of this framework. First, studies examine both longitudinal and cross-sectional data. Next, they employ multiple elicitation tasks that are designed to demand differing amounts of attention

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to speech. Finally, the tasks elicit data on multiple linguistic levels including phonological, morphological, and syntactic (Tarone, 1988). Studies producing evidence that the use of learner language is affected by social context include Tarone and Parrish (1988), Major (1999), Geeslin (2003), and Mougeon, Rehner, and Nadasdi (2004). One particularly important study linking this work to interlanguage development is Tarone and Liu (1995), which provides a longitudinal account of a 5-year-old Chinese boy learning L2 English (also described in Liu, 2000). The child was observed in three social contexts: playing with researcher Liu, who was a family friend, working at his school desk with peers, and interacting with his teacher. The play context was the one in which each new stage of English questions tended to emerge, spreading next to the peer context. New stages always occurred last in interactions with the teacher. The play context also appears to have stimulated a change to the supposed universal order of acquisition of English questions, with Stages 4 and 5 appearing there weeks before Stage 3 questions emerged in peer interactions. Thus, social context affected the stages of second language development in one of the only longitudinal studies to have tracked these two variables.

Born in Modesto, California, Elaine Tarone received a BA in English and Spanish from the University of California at Berkeley (1966) along with a lifetime secondary teaching credential, also in English and Spanish (1967). In 1969 she was awarded a diploma in Applied Linguistics from Edinburgh University, Scotland, where department chair S. P. Corder and Fulbright scholar Larry Selinker were challenging behaviorist views of second language development. The following year she earned an MA and in 1972 a PhD, both in Speech Science from the University of Washington, Seattle, where she wrote her dissertation while riding on the ferries plying Puget Sound. Her early work included a study on intonation in African American Vernacular English (AAVE), heavily influenced by sociolinguist William Labov's pioneering work with urban dialects (Labov, 1966, 1972). Her dissertation on intonation patterns in AAVE was the first on this topic.

At both Edinburgh University and the University of Washington, Tarone's perspective and intellectual development were deeply influenced by and, in turn, influenced the ideas of Larry Selinker while interlanguage theory (Selinker, 1972), the first major effort to explain L2 acquisition, emerged amid his discussions with students and colleagues. As the interlanguage hypotheses were being developed, Tarone introduced sociolinguistic theory in order to explain the variation that Selinker found in IL data, and variationist SLA, Tarone's interpretation of interlanguage theory, was born.

As a graduate student at the University of Washington, she was part of the "Washington school" of rhetorically based research on English for science and technology (EST) led by Louis Trimble. In analyzing scientific and technical writing under the guidance of Trimble and Larry Selinker as they taught specialized English as a second language (ESL) courses for engineering students, the research group members learned how to ascertain the major characteristics of particular English registers, and, just as importantly, how to supply a framework for ESL students to employ as they in turn analyzed texts in their specific scientific domains. Working with Trimble profoundly influenced Tarone's research (e.g., Tarone, Dwyer, Gillette, & Icke, 1981). In addition, his pedagogical approach with attention to individual students' needs clearly parallels Tarone's life long dedication to identifying and meeting the local needs both of language teachers-in-training in her classrooms and of L2 students in their classrooms, as demonstrated by her early book, *Focus on the Language Learner* (Tarone & Yule, 1989) to her most recent, *Exploring Learner Language* (Tarone & Swierzbin, 2009). In these works, and in her work as director of the Center for Advanced Research on Language Acquisition (CARLA) at the University of Minnesota, she has sought to engage language teachers as reflective practitioners in the study of learner language, which, in her view, lies at the core of effective language pedagogy.

Her recent work at the University of Minnesota has continued the pattern of bringing new perspective to SLA theory by taking advantage of information from related fields. The influence of Labov as well as the insights of sociocultural theorist Mikhail Bakhtin can be seen in the theory and methodology of Tarone's approach to variationist SLA, for example, in eliciting vernacular speech through language play (Broner & Tarone, 2001). Her groundbreaking research with illiterate and low-literate adult L2 learners in the Somali immigrant community includes Tarone, Bigelow, and Hansen (2009) and Bigelow, delMas, Hansen and Tarone (2006), winner of the 2007 TESOL/Heinle Distinguished Research Award. This research team applied concepts from cognitive psychology and neuropsychology to show that alphabetic print literacy affects adults' processing of oral L2 input, specifically that low-literate adult learners have more difficulty accurately recalling oral morphosyntactic recasts than do learners with higher levels of literacy. Studies with this previously under-researched population have broadened the view in the SLA field regarding the human capacity for language processing and acquisition.

Elaine Tarone has played a key role in bringing the fields of sociolinguistics and SLA together with a focus on the language learner as a social individual. In doing so, she, together with her fellow researchers, has expanded the SLA research enterprise to include less commonly studied L2 learners in a variety of authentic social contexts, and thus greatly contributed to the universality of SLA theory.

SEE ALSO: Interlanguage; Language Play in Second Language Acquisition; Selinker, Larry; Teaching Adolescent and Adult Language Learners With Limited or Interrupted Formal Schooling; Trimble, Louis

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Task-Based Assessment

GEOFF BRINDLEY

Task-based assessment (TBA) is defined by Brindley (1994, p. 74) as "the process of evaluating, in relation to a set of explicitly stated criteria, the quality of the communicative performances elicited from learners as part of goal-directed, meaning-focused language use requiring the integration of skills and knowledge."

TBA can be classified as a form of performance assessment which focuses on actual performance of practical skills rather than abstract knowledge (Wigglesworth, 2008). Thus, assessment in a task-based approach to language teaching is concerned with establishing how well learners are able to mobilize language to achieve their communicative goals, rather than examining their knowledge of language systems and structures.

The design of task-based tests and assessments usually begins with the identification of the real-world language use tasks that learners will need to carry out in order to achieve their communicative purposes (e.g., writing an essay, ordering a meal, understanding spoken instructions, etc.). This is followed by a description of the key performance features that will be elicited by the tasks (e.g., fluency, grammatical accuracy, breadth of vocabulary, etc.). Rating scales containing these features are then constructed that enable judges to grade the quality of testees' task performance in the assessment situation. The resulting information on task achievement may be reported to relevant audiences in a variety of ways, ranging from simple numerical scores to complex descriptive profiles. For example, a global rating or level for the skill(s) involved may be reported in general terms (e.g., "basic user") which may then be referenced to more detailed qualitative descriptors of performance (e.g., "can ask and answer simple questions in areas of immediate need"). In some assessment systems, ratings for particular tasks may be combined to create a numerical score for the language skills assessed; in others, achievement may be reported as a list of "can do" statements that describe the specific language-related tasks that the learner is able to carry out.

Approaches to TBA

Bachman (2007) describes two approaches to TBA. The first of these is based on the view that the inferences that we want to make on the basis of task performance are about the underlying abilities that the testee possesses. Thus, if we administer a speaking task to a learner (e.g., giving a presentation in class), the information elicited by the task would be used to make inferences concerning the construct of "speaking ability." In establishing the dimensions of the task and specifying rating criteria, linguistic elements such as control of grammar and vocabulary or topic development would therefore usually figure prominently. In contrast, the second approach to TBA focuses on what the testee can actually *do* rather than on the abilities they possess, that is, on how successfully they can perform the actual task. Here, as Long and Norris (2000, p. 60) point out, "the construct of interest is the task itself." In this case, the information from the example of the speaking assessment task above would be used principally to predict future performance on similar real-life tasks, and "real-world" criteria—not always linguistically based—might be used in rating testees' performance. For example, continuing the above example of the class presentation,

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the assessor might be interested in factors such as the degree to which the speaker was able to convey key factual information or use techniques for holding the audience's attention. While these aspects of the performance are indirectly dependent on language use, they also involve other "nonlanguage" factors.

The existence of these two approaches highlights the importance of being clear about the types of claims we want to make on the basis of the results of TBA, and constructing the task specifications and assessment criteria accordingly. In some cases, such as foreign-language-learning contexts where it is difficult to specify learning purposes and contexts in advance, assessment tasks may be used as indicators of general language ability. On the other hand, where communicative goals are clearer, such as language learning for vocational or other specific purposes, information from TBA can serve as a basis for inferences about testees' ability to perform similar tasks in the real world. However, as Kim (2004, p. 2) comments, "regardless of which approach is to be taken, appropriate tasks for the assessment need to be selected and their characteristics thoroughly described."

Advantages of TBA

Using tasks as a basis for assessment has a number of advantages, particularly where classroom assessment is concerned (Brindley, 1994):

- It focuses teachers' and learners' attention on language as a tool for communication rather than on language knowledge as an end in itself.
- It enables assessment to be integrated into the learning process through the use of attainment targets which are directly linked to course content and objectives.
- It enables learners to obtain useful diagnostic feedback on their progress and achievement, since clear performance criteria are provided against which they can compare their performances.
- It facilitates better communication between users of assessment information (e.g., potential employers) and educational institutions through the use of various forms of outcome reporting which are couched in performance terms and are hence intelligible to nonspecialists.

Issues and Problems in TBA

Despite these advantages, TBA is not without its problems, both theoretical and practical. In particular, concerns have been expressed relating to the validity and reliability of some forms of TBA, and the practical constraints involved in its implementation (Brindley, 1994, 1998a; Norris, Brown, Hudson, & Yoshioda, 1998; Wigglesworth, 2008). Let us look at these briefly in turn.

Validity and Authenticity

One of the main concerns surrounding the validity of TBA involves the issue of authenticity. Since task-based assessments attempt to replicate authentic language use situations that the language learner would encounter in "real life," it is tempting to see them as valid by definition: if we want to find out how language learners can speak a foreign language, it seems logical to put them in a situation that requires them to speak. However, language-testing researchers have pointed out that this assumption of "automatic validity" is open to question on a number of grounds (Bachman, 1990, 2007). In the first place, an assessment activity is by definition an artificial situation: no matter how realistic the task is, people

still know they are being assessed under special conditions (Spolsky, 1985), and their performance may not be the same as it would in real life. A second problem with "authentic" assessment tasks is the difficulty of generalizing from a one-off performance to other situations of language use. Although a language learner may demonstrate competence in one context (e.g., responding to questions in a face-to-face interaction with a sympathetic teacher), this skill may not transfer to other contexts (e.g., negotiating a problematic transaction with an unsympathetic public official). Addressing this issue, Bachman (1990) argues that authenticity lies not only in the surface resemblance between assessment tasks and real-world behavior but also in the extent to which different areas of language skills and knowledge are sampled in the task. This is what he refers to as *interactional authenticity*. In order to construct valid "authentic" tests of communicative language ability, Bachman suggests that test construction needs to be based on a theoretical framework which includes the language abilities of the test taker as well as the characteristics of the testing context. Thus, continuing the example given above, in constructing an oral test, the test developer needs to start with an idea of what is understood by "speaking ability," what its components are, and which of these components are to be assessed, drawing on our best current understanding of the nature of the ability or abilities in question. However, factors that affect the context in which the language will be used (such as the setting, interlocutors, channel of communication, etc.) also need to be taken into account. In this way, a sampling frame can be developed which reflects a variety of contexts of language use and enables test users to see which different ability components are being sampled by which tasks.

Validity and Construct Definition

A second concern about TBA relates to construct definition which refers to the act of specifying the nature of the abilities that are the object of assessment and identifying a set of criteria according to which learners' performance can be rated or scored. A range of different approaches—some empirical, some not—have been adopted to task specification and identification of rating criteria. These include:

- "Expert judgment" approaches whereby suitably qualified individuals such as content experts or teachers are asked to identify the key features of learner performance that are involved in particular tasks.
- Theory-based approaches which use theoretical models of language ability such as the Bachman (1990) and Bachman and Palmer (1996) frameworks as a basis for defining the test construct and selecting the performance tasks that will be used.
- The use or adaptation of existing proficiency-rating systems and scales that attempt to describe and quantify language performance.

Each of these approaches has its drawbacks. Expert judgment approaches have been questioned on the basis that it is difficult to elicit appropriate and usable descriptions of language behavior from "experts" such as teachers or employers (Griffin & McKay, 1992). A further problem with this approach relates to reliability. Evaluating the quality of language performance is a highly subjective process, and even judges who have undergone extensive training may still disagree, making it difficult to obtain the high levels of rater agreement that are traditionally demanded in high-stakes situations (McNamara, 2000). In addition, from a practical perspective, gathering and analyzing data from expert judges involves considerable time and expense, and might not be a feasible option for many educational institutions.

Theoretical models of language ability are also open to question on a number of theoretical and practical grounds. Not only is the relationship between the elements of

composite models such as that proposed by Bachman and Palmer unclear, but also the complexity of such models makes it difficult for test developers to adapt them to practical test situations, as Bachman himself acknowledges (2007, p. 69). In addition, according to some testing researchers, the failure of such models to specifically incorporate the social dimensions of interaction (for example, the role of the interlocutor in oral interaction) means that they provide an incomplete account of the elements that are involved in real-life communication (McNamara & Roever, 2006).

In view of the potential problems involved in using expert judgment approaches and theoretical models as a basis for developing TBA, it is not surprising that many test developers opt for the easiest way to define assessment criteria and describe language performance by turning to existing rating systems, either in unmodified or adapted form. Many such systems are used in a wide range of language-learning contexts for describing and assessing language performance, and range from large-scale transnational curriculum and assessment schemes such as the Common European Framework of Reference (CEFR, Council of Europe, 2001) to more localized frameworks and scales that target the proficiency requirements of particular populations. However, these too have been subject to critique from both a theoretical and political standpoint. In the first place, very few have been developed or validated empirically, leaving some doubt as to the accuracy with which the scale descriptors reflect actual learner performance (Brindley, 1998b). Hudson (2005, p. 218) suggests that even scales that claim to be empirically based, such as those used as part of the CEFR, present only a partial picture of the complex range of factors that make up language ability. A further concern with frameworks and scales relates to their implementability. In this regard, it has been pointed out that educational authorities have in some cases introduced task-based curriculum and assessment frameworks and scales without providing adequate levels of infrastructural support to enable teachers to understand and apply the assessment tools (Eckes et al., 2005). This raises the critical issue of practicality, to which we now turn.

Practicality

There is no doubt that TBA is extremely time-consuming and, by extension, expensive compared to standardized indirect modes of assessment that require no human scoring. Developing and piloting assessment tasks, eliciting and rating individual performances, training (and retraining) interlocutors and raters, conducting moderation sessions, and creating and maintaining task banks is a much more complex and resource-intensive exercise than administering traditional discrete-point tests. In addition, TBA makes considerable demands on teachers, not only in terms of time but also of skills, particularly in cases where they are the principal agents of assessment and are responsible for constructing their own tests or tasks. For practitioners, the introduction of a new assessment system constitutes a major change event and the importance of support in terms of time, funding, and resources cannot be overestimated. A major investment in professional development and associated infrastructure is therefore necessary if teachers and learners are to obtain the maximum benefit from the use of TBA (Brindley, 1998a).

Conclusion

With economic globalization has come an increased focus on the functional communication needs of an increasingly mobile international workforce. The rationale for task-based approaches to language learning is thus now more obvious to educational policy makers than it was a decade ago. Around the world, TBA is increasingly being adopted at a system level in a wide range of educational contexts in which "traditional" public examinations

had previously dominated. Although some of the problems discussed in this entry have arisen during implementation, there is some evidence to suggest that if carefully planned and appropriately resourced, the integration of TBA procedures into the curriculum can be achieved in a way that enhances both teachers' and learners' confidence while at the same time improving opportunities for learning (see, for example, Davison, 2007).

However, the key challenges identified in this entry remain. In the first place, in relation to the validity question, a lot more work needs to be done in order to develop assessments which reflect current theories of language learning and language use, and which are based on empirical analyses of actual learner performance (Fulcher, 2008). At the same time, as far as reliability is concerned, if TBA is to have public credibility, a considerable investment will be required to develop and maintain systems for ensuring consistency in the way in which performances are judged. Finally, at a practical level, the adoption of TBA may necessitate a reconceptualization of the purposes of assessment on the part of the various stakeholders who are involved in language-learning programs. Teachers and learners will need to become accustomed to thinking of language tasks not simply as activities but also as indicators of progress and achievement. Learners will thus need to understand the criteria according to which their performances will be judged and to learn how to use feedback from assessment to improve their performance. This, in turn, will necessitate a closer examination of the components of language tasks and a raising of learners' awareness of how language functions to achieve particular communicative purposes. As far as other "consumers" of assessment information are concerned (e.g., parents, employers, educational administrators), the reporting of task performance means that they will have to be educated to accept assessments that are complex and multidimensional, rather than traditional test scores. This will not be easy, and will necessitate close cooperation and continuing dialogue between all of the stakeholders involved in language programs.

There is no doubt that TBA in language learning is firmly established at the level of the classroom where it has demonstrated the potential to bring about significant improvements in the quality of learning. As it moves into high-stakes areas such as certification and selection, however, it remains to be seen whether the benefits will be perceived to outweigh the considerable costs involved. In this regard, it is to be hoped that the value of TBA will be as evident to those outside the classroom as it is to those within it.

SEE ALSO: Assessment in the Classroom; Assessment of Business and Professional Language for Specific Purposes; Bachman, Lyle F.; Common European Framework of Reference; High-Stakes Language Testing; Rating Oral Language; Rating Scales for Language Tests; Test Specifications; Validation of Language Assessments

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Task-Based Learning: Cognitive Underpinnings

PETER ROBINSON AND ROGER GILABERT

Over the past thirty years, proposals for task-based language teaching (TBLT) have drawn on a variety of claims about, and research into, the cognitive processes thought to promote successful second language acquisition (SLA). A brief overview of these will be given below. They reflect a shift from a concern with how TBLT can facilitate comprehension of input, to how it can facilitate interaction and attention to output, and the development of increasingly target-like speech production. They also reflect the progressively sophisticated knowledge that SLA research has provided concerning cognitive processes such as implicit, incidental, and explicit learning, and automatization of knowledge.

Cognitive Processes in Task-Based Learning

In his account of the theoretical motivation for the task-based "procedural syllabus" Prabhu (1987) argued that: "task-based teaching operates with the concept that, while the conscious mind is working out some of the meaning-content, a subconscious part of the mind perceives, abstracts, or acquires (or re-creates as a cognitive structure) some of the linguistic structuring embodied in those entities, as a step in the development of an internal system of rules" (pp. 70–1). Prabhu's cognitive rationale for TBLT is thus compatible with Krashen's (1982) claim that *comprehensible input* is necessary for learning, and that it promotes incidental learning of a tacit, implicit knowledge base. Long (1985) argued that the *interaction* that task work promotes is additionally important since it provides one way in which input can be made comprehensible, as well as a context for attending to problematic forms in the input and output during task work. Consequently, Pica, Kanagy and Falodun (1993) described a taxonomy of task characteristics in order to promote further research into which of these characteristics optimally promoted interaction work. Swain (1985) argued that attention to *output* produced during task performance could additionally facilitate SLA, since it provided a context for comparing the speaker's performance with an interlocutor's, and noticing gaps and mismatches between them, and for hypothesis testing about the formal means for expressing meanings and communicative intentions in the second language (L2).

Skehan (1998) provided the first detailed *psycholinguistic* rationale for the effects of some aspects of task demands on learning and performance, focusing in particular on the extent to which having time to plan a task led to increases in the *accuracy*, *fluency* and *complexity* of speech produced, when compared to performance on tasks where planning time was not available. Robinson (2001) also provided a psycholinguistic rationale for how *cognitive complexity* can be increased along two broad dimensions of the demands made by tasks, and claimed that these would have distinct influences on learning and performance. Increasing demands on "resource-directing" dimensions, he argued, directs learners' attention to aspects of language used to structure increasingly complex concepts, facilitating awareness of how these concepts are differentially encoded in the L2, so prompting L2

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development. Along these dimensions, initially *implicit* knowledge of the L1 concept-structuring function of language (see Talmy, 2000) becomes gradually *explicit*, and available for change, following a natural developmental order reflected in the sequencing decisions. In contrast, along "resource-dispersing" dimensions, increasing task demands has the effect of gradually removing processing support (such as planning time) for access to current interlanguage, and thus practice along them requires, and should encourage, faster and more automatic L2 access and use. Along these dimensions, therefore, improvements in performance will involve initially explicit knowledge becoming more automatized.

Design Characteristics Affecting the Cognitive Processing Demands of Tasks

Current research into the cognitive underpinnings of TBLT is focused on the effects that design characteristics of tasks have on the cognitive processes that facilitate L2 production and learning. Some of the design characteristics of tasks that have received the most attention from researchers are described below.

Planning Time

There have been many studies of how tasks can be made easier for second language learners by giving them time to plan what they will do or say in the L2 (Ellis, 2005). This is perhaps the area that has received the most attention by SLA researchers interested in tasks, and it has clear implications for effective pedagogic decision making. In general, the studies that have been done seem to show that having time to plan a task increases the accuracy, fluency and complexity of learner language.

Single/Dual Tasks

Another dimension of task complexity that is similar to this is the single–dual task dimension. It is much less complex to answer a phone call in the L2, than it is to answer a phone call and monitor a TV screen at the same time, to check the weather, or changes in exchange rates, for example (Robinson, Ting, & Urwin, 1995). The latter, dual task, disperses learner attention over a number of L2 stimuli. In general, tasks made complex on this dimension also lead to poorer accuracy, fluency, and complexity of performance.

Intentional Reasoning

In contrast to the above dimensions of task complexity, other task characteristics may direct learners' attention to the language needed to meet complex task demands. On these dimensions Robinson (2001) argued that increasing task complexity should lead to more accurate and complex learner language, over time. However, complex tasks on these dimensions also negatively affect fluency. For example, in L2 English, tasks which require complex reasoning about the intentional states that motivate others to perform actions can be expected to draw heavily on the use of cognitive state terms for reference to other minds—*she suspected, realized*, etc.—and in so doing orient learner attention to the complement constructions accompanying them—*suspected that, wonders whether*, etc.—so promoting awareness of, and effort at, complex L2 English syntax (Robinson, 2007; Ishikawa, 2008).

Spatial Reasoning

Another example of resource-directing task demands are those tasks which require complex spatial reasoning, and articulation of this in describing how to move, and in what

manner, from point A to point E, by way of intermediary landmark points B, C, and D, etc. These can be expected to draw heavily on the use of constructions for describing motion events (Cadierno, 2008). Such tasks therefore have the potential to promote awareness of lexicalization patterns in L2 English for describing these motion events, in which motion and manner are typically conflated on verbs (e.g., *rushed*) and paths are expressed outside the verb in satellites that conflate a number of motion events (e.g., *rushed out of the house, down the street and into the post office*). English lexicalization patterns are different from those in Japanese, where motion and path tend to be conflated on verbs, and manner encoded separately (e.g., *isoide haitta*). Consequently, Japanese makes much less use of event conflation in reference to motion than English does. So a task requiring complex spatial reasoning (giving directions from a large map of an unknown area) may prompt Japanese L2 learners of English to revise their preferred ways of referring to motion, in line with English lexicalization patterns (Cadierno & Robinson, 2009).

Here-and-Now/There-and-Then

In yet a different conceptual domain, tasks requiring reference to events happening now, in a shared context (here-and-now) orient learner attention to morphology for conveying tense and aspect in the present, compared to events requiring much more cognitively demanding reference to events happening elsewhere in time and space (there-and-then). There-and-then tasks require greater effort at conceptualization (since events are not visually available in a shared context) and greater demands on memory (Gilabert, 2007). One effect of performing tasks on this dimension is to draw learners' attention to the morphological forms and phrases that can be used to refer to the present and the past in English, and these are needed to help them perform the tasks. The morphology for referring to the past in English is much later acquired by L2 learners than the morphology for referring to the present, so complex tasks may promote learner attention to, and use of, this later acquired past tense morphology. That is, in this and other cases of increasing the complexity of resource-directing demands of tasks, Robinson's "cognition hypothesis" (2001) predicts more "noticing" of L2 forms (Schmidt, 2001), more uptake and incorporation of them, as well as increasing accuracy and complexity of production on complex compared to simpler task versions.

Effects of Cumulative Increases in the Cognitive Demands of Tasks

To date, the effects of the design characteristics of tasks contributing to their cognitive complexity (as described above) have often been contrasted for their distinct effects on learning and performance. However, for TBLT a key issue is the cumulative effect of increasing the complexity of pedagogic task demands, so as to gradually approximate the full complexity of real-world, target-task performance (Long & Crookes, 1993). With this in mind, Robinson (2005) has made the following theoretical claims about the effects of cumulative influences in the demands of tasks on cognitive processes thought to facilitate SLA. Some of these claims are the focus of current research, while others remain issues for future research.

Output

The first of these claims is that increasing the cognitive demands of tasks contributing to their relative complexity along resource-directing dimensions (e.g., from – to + intentional reasoning demands) will push learners to greater accuracy and complexity of L2 production in order to meet the consequently greater functional/communicative demands they

place on the learner. That is, greater effort at conceptualization will lead learners to develop the L2 linguistic resources they have for expressing such conceptualizations. Some research findings support this claim (Robinson, 2007; Ishikawa, 2008). Related to this first claim is the prediction that increasing task demands will lead to a higher number of interactional episodes (e.g., language-related episodes, clarification requests, or recasts) which are known to push second language development. Some studies have provided evidence of such a claim (Robinson, 2007; Gilabert, Barón, & Llanes, 2009).

Uptake

The second claim is that cognitively complex tasks promote heightened attention to and memory for input, so increasing learning from the input, and incorporation of forms made salient in the input. So, for example, there should be more uptake of oral recasts on complex tasks, compared to simpler tasks, or more use of written input provided to help learners perform tasks. Some research findings support this claim (Revesz, 2009; Baralt, 2010).

Memory

Related to this, the third claim is that on complex tasks there will be longer-term retention of input provided (e.g., in the form of written prompts, or oral feedback) than on simpler tasks. There are currently no studies that have addressed this claim.

Automaticity

Fourth, the inherent repetition involved in performing simple to complex sequences will also lead to automaticity and efficient scheduling of the components of complex L2 target-task performance, compared to target tasks performed without the benefit of such pedagogic task sequencing. This should be revealed in estimates of the fluency with which target tasks are performed following a sequence of increasingly complex pedagogic tasks (as manifested by fewer incidents of self-repair, fewer hesitations, etc.), as well as in criterion-referenced measures of the extent of successful target-task performance. There are currently no studies that have addressed this claim.

Aptitudes

Fifth, individual differences in affective and cognitive abilities contributing to perceptions of task difficulty will increasingly differentiate learning and performance as tasks increase in complexity. This is likely to be an intense area of future research, since it can reveal much about the cognitive processing prerequisites for successful task-based learning and performance, and since it will ultimately be desirable to match individual profiles in task aptitudes to those conditions of task performance that learners are best suited to, in order to optimally facilitate TBLT outcomes for learners. In line with this claim, Robinson (2007) found that greater output processing anxiety led to less complex speech production on complex tasks (with intentional reasoning demands), compared to those with lower output anxiety, but these differences in output processing anxiety had no effect on complexity of speech produced on simple tasks (without intentional reasoning demands). On the other hand, examining the same task complexity differential, Baralt (2010) found that individual differences in working memory capacity did not predict greater accuracy, fluency or complexity in performance on complex versus simpler task versions. Robinson (2010) describes individual, task aptitude measures that could profitably be used in future studies of this issue.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Instructed Second Language Acquisition

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Teacher Education for Language for Specific Purposes

DAVID R. HALL

Introduction

The teaching of language for specific purposes (LSP) has a very long history, found in various forms in ancient China and in ancient Greece. A key difference between the ancient and modern teachers of LSP, however, is that the ancients were teaching language in and for a context that they themselves had already mastered. Teachers of rhetoric, of legal language, and of courtly discourse were expert practitioners, passing down their expertise to apprentices. By contrast, modern teachers of English for electronics, Spanish for marketing, Japanese for business, or Chinese for civil engineering are, with some exceptions, not members of the discourse community which they are aiming to have their students join. Most language teachers, where they have training, are trained as language teachers, not as subject specialists.

Modern LSP, most widely known initially in its English for specific purposes (ESP) manifestation and especially in that of English for science and technology (EST), became widespread in the 1970s, and was closely connected with the teaching approach known as communicative language teaching (CLT). Before the advent of LSP, in cases where language teachers did not simply become language teachers by virtue of being a native speaker of the target language, their teacher training was likely to focus on methodology, grammar, and perhaps literature. CLT brought about a genuine paradigm shift, causing teachers to foreground issues of propositional content, communicative purpose, and context, focusing, in other words, on what people wanted to say to whom in what context and with what intended outcome. The problem for LSP teachers, recognized only slowly in the development of this new paradigm, was that the focus on the learners and their intentionalities meant that teachers could no longer decide in advance what language was to be used in the classroom. Privileging learners' own purposes means relinquishing full teacher control of the classroom. LSP also, in most cases, changes the relative status of teachers and learners. Compared with the more traditional view of the teacher as the expert, LSP carries with it the concept of shared expertise, where the learners are likely to have more experience and knowledge than the teacher in the specific area being targeted. This change may of course be seen as a threat or as an opportunity, depending on the educational philosophy and personality of the teacher, and on the cultural expectations of the roles of learners and teachers in different parts of the world and in different institutions.

In these circumstances, the training of teachers for the role of specific-purpose language teaching takes on an added importance. The well-trained language teacher knows how to introduce new language structures, to get his or her learners to practice language items, to focus on accuracy, to exploit language points as they arise, to use language within fairly controlled parameters, and all the other things that language teachers routinely do. LSP teaching, however, forces teachers to go beyond their own levels of expertise and, in effect, to become researchers as well as teachers: "the dividing lines in ESP between researchers

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and teachers, or curriculum designers, materials developers, and teachers, are frequently blurred. Since even the earliest days of ESP . . . practitioners have viewed assessment of specific needs as requiring research skills and creative approaches to novel situations" (Belcher, 2006, p. 135).

Content Expertise

Some language teaching operations assume that anyone who is qualified to teach languages is also qualified to teach LSP. Regrettably, this often includes teachers who have few qualifications at all, other than being native speakers. Though this is quite common in many poorer countries where English-speaking backpackers get jobs as language teachers, it often comes as a surprise to see the same practices and attitudes in relatively well-resourced institutions of higher learning in the Western world. Adamson (1997) points out that "regular" faculty working in modern language departments are reluctant to get involved in teaching languages to non-majors, and "The task of teaching these courses falls to staff in language centres, usually part-time native speakers, recruited locally" (p. 142). In his attempt to introduce specialized classes in French, German, or Spanish for science, business, tourism, accountancy, and the law, Adamson was distraught to find that such courses "are being taught . . . by native speaker tutors who are not professional language teachers and whose experience, if any, is likely to have been in continuing education and other non-academic types of teaching" (1997, p. 143).

Even where teachers are experienced and appropriately trained, there are disagreements about how much specialist training LSP teachers need. Janet Sutherland summarizes her skepticism neatly:

- ESP teaching is no different from "standard" foreign language teaching. Harumpf . . .
- ESP teaching at its best requires teachers to be fully qualified in both EFL and in the subject area. Again, harumpf. (Sutherland, 1995, p. 6)

General advice to aspiring LSP teachers often emphasizes the need for some knowledge of the specific language. One career-advice Web site has this to say:

> ESP . . . is required by many businesses and is generally well paid (up to $50 an hour). This type of position generally requires at least a Teaching Diploma and, possibly more importantly, expertise in the type of English being taught. (About.com., 2010)

It is not always clear, however, how exactly this expertise might be obtained and indeed what exactly constitutes a "type of English." Some LSP theorists do not mention specific language at all, but talk about understanding the methods and culture of the specific content area:

> It would be advantageous to develop an awareness of the principles and concepts driving the discourse community in the field. For example, if you are going to teach a group of bioscience majors, it would be helpful to know about the scientific method that guides their manner of study and research. (Kinoshita, 2006, p. 4)

At the opposite end of the scale from those who teach only by virtue of being native speakers, there are many who believe that the LSP teacher must be a fully qualified expert teacher both in the subject matter and in language. Kone (2007) goes some way toward this position when he describes the initial ESP teacher training course that he developed in the Côte d'Ivoire, going beyond his stated principle that "Basic knowledge in business,

science and technology is necessary in rendering an ESP teacher operational in nearly all technical and vocational fields" to actually providing what he calls "parallel training."

Content-based instruction (CBI) has a similar approach (Stryker & Leaver, 1997), in which language learning takes place through a primary focus on content. The "content," however, may or may not be related to a specific learning purpose; the approach may, for example, use topics that are of general interest to the particular group of learners in the classroom. The proponents of content and language integrated learning (CLIL) go much further, suggesting that CLIL teachers must have expertise in language and in pedagogy, while having a parallel level of expertise and a primary focus on content to be taught as part of the regular syllabus. In CLIL, classroom practice must fully integrate all three elements: content, language, and pedagogy:

> Teachers undertaking CLIL need to develop multiple types of expertise: among others, in the content subject; in a language; in best practice in teaching and learning; in the integration of the previous three; and, in the positioning of CLIL within an educational institution. (Marsh, Mehisto, Wolff, & Frigols Martin, 2010)

Context Expertise

While many LSP situations will likely not fall under the CLIL, or even the CBI, umbrella, this last quotation already hints that adequate teacher training involves much more than language teaching methodology and knowing something about the specific-purpose topic, when it mentions the "positioning" of the endeavor within the wider institutional context. LSP operations will always involve groups of diverse stakeholders. These include, naturally, the language teachers and learners, but they also involve other teachers, work colleagues, head teachers, line managers and supervisors, and, above all, the purse-holders—those who are funding the operation. Managing relations with all of the different groups, especially where the operation involves changes to existing practices, is a skill that the LSP teacher has to develop. Among the management issues that confront the LSP teacher are that the perceptions of what is needed may differ between stakeholders; that there may be different opinions on what constitutes evidence of the success of a course; that different groups might have quite different agendas; and that the status of the LSP teacher has to be established and maintained at a high enough level to ensure efficient delivery of the course with adequate resourcing of time, personnel, equipment, and space. As many LSP teachers, particularly in the private language school sector and in pay-for-service operations, will also need to negotiate contracts with the purse-holders, training in financial management is also necessary.

On the issue of what constitutes specific-purpose language, it is clear that the concept has undergone a major change since the early days of modern LSP, when the emphasis was on analysis of language as text. Analysis of whole texts (as opposed to isolated sentences) was a change that resulted in a more multifaceted examination of the text, involving not just the text as a stand-alone object for analysis but also the users of the text, the uses to which the text is put, the context in which the text is generated and received, the relationship between the text and other texts, and the actions that ensue from use of the text. This has resulted in practitioner-researcher attention being turned to sociological macro-issues such as power relationships, identity, group structure and membership, and "other considerations of what it means to be able to use the resources of a language effectively in a whole variety of social, cultural, economic, political, professional, personal and institutional contexts" (Hall, in press).

The work of sociologists such as Derek Layder (1993, 1997) has been particularly influential, with its focus on the link between research and practice and its privileging

of multi-perspective analytical approaches. Such approaches have underpinned much recent analytical work in language, for example Bhatia's four-space model (2004, pp. 18–22), Candlin and Crichton's model of interdiscursivity (Candlin & Crichton, 2010; Crichton, 2010), and Wodak's extensively contextualized analytical procedures (Wodak, Muntigl, & Weiss, 2000).

It is clear that the budding LSP teacher and course designer will need to understand and be able to deploy various discourse analytical techniques if we are to avoid the situation, common in earlier LSP practice, where the analyst took an outsider's perspective only, without understanding how the discourse, its stages, and its motivations were perceived by others. The practice of LSP is littered with examples of the language teacher making unwarranted assumptions about communication practices in the technical area concerned (see Swales & Feak, 2000, for an example of the different ways lawyers and language teachers interpreted case-study texts).

Essential Knowledge and Abilities

We are now in a position to be able to attempt an inventory of what might be included in a training course for LSP teachers.

First of all, in seeking to become a teacher of LSP, the novice must be able to examine and reflect on each of the components of the acronym itself.

- *Language*: How can it be said to be specific? In what terms can its specificity be identified and analyzed? What kinds of analysis will be useful? How comprehensive does such analysis need to be? Do all stakeholders have similar ideas about what language is, how it works, and how proficiency is measured?
- *Specificity*: How specific can we be? What trade-off is there between effectiveness (more specific?) and efficiency (less specific?)? In "selling" the course to decision makers, what part will specificity play, and what compromises need to be made?
- *Purposes*: Whose purposes? How immediate are the purposes? At what point can we measure whether the purposes have been fulfilled?

In addition, the practitioner needs to be an effective teacher, to have a view about how languages are taught and learned, to know what different classroom practices are available, to understand how success might be measured, to manage classrooms, to devise appropriate materials and activities, to structure both individual classes and entire programs—in short, to have all of the other features common to any successful teacher.

But the LSP teacher also needs training in management, particularly in change management, people management, negotiation skills, time management, and financial management. We might also mention here skill in public relations, or what is sometimes referred to as "impression management," whether operating in a commercial language school, where repeat business is a necessity for economic survival, or as part of a larger operation such as a public school or a university, where the status of the LSP teacher is a major consideration both in obtaining adequate resources and in establishing productive collegial relationships with content teachers and senior decision makers. Establishment and maintenance of respect for the professional credibility and integrity of the course provider are important both in workplace training and in academic contexts, whether in the private or public sector. Marginalization of the language experts within larger organizations has been and continues to be a major issue, having a particular impact on recruitment and appropriate remuneration of suitably-qualified practitioners.

This inventory might be grouped into three major areas that one would expect to see in any teacher-training course for LSP:

- pedagogy,
- context-embedded language and discourse analysis, and
- management.

There are several universities around the world that offer named postgraduate degrees in LSP (or its variants) or elective specializations within broader degrees in language teaching or applied linguistics. There are also many short courses run by the public and private sectors. Many such courses are now available in distance or online modes. There are several specialist publications (such as *English for Specific Purposes, English for Academic Purposes, GERAS* (in French), *International CLIL Research Journal*), organizations (such as the Asia-Pacific Rim LSP and Professional Communication Association), conferences (such as the European LSP Symposium), and special interest groups of larger organizations and societies (such as the IATEFL ESP SIG and the TESOL ESP interest section). The Web allows access to a rich array of resources for LSP teacher training, including sites offering lesson plans, practical classroom activities, and discussion forums for the exchange of ideas.

SEE ALSO: Content-Based Instruction in English for Specific Purposes; Context in the Analysis of Discourse and Interaction; Corpora in the Language-Teaching Classroom; Critical Analysis of Discourse in Educational Settings; Language Learning and Teaching: Overview; Language for Specific Purposes: Overview; Language Teacher Development; Methods for Language for Specific Purposes

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Teacher Education for Multilingual Education

OFELIA GARCÍA AND TATYANA KLEYN

If, as García (2009, p. 5) states, "bilingual education is *the only way* to educate children in the twenty-first century," then *all* teachers must be prepared both to advance the plurilingual competencies of students, as well as teach students with different home language practices and bilingual abilities. With the increased movement of people, goods, and information brought about through globalization, the world's classrooms are becoming more diverse in every way. It is difficult today to find a teacher in any part of the world who is not faced with a multilingual classroom. Some classrooms are multilingual because the children have home language practices that differ from those of school. Other classrooms are multilingual in that the purpose of instruction is precisely to make children bilingual or plurilingual. Thus, all teacher education programs in the 21st century must prepare teachers for multilingual education. No longer can a specialist, such as a second language teacher or bilingual educator, be solely responsible for the education of bilingual students who either speak multiple languages or who are learning an additional language in school.

Throughout the world most teachers are initially educated at tertiary institutions, either teacher training colleges or universities. Often these teacher education programs follow traditional disciplinary divisions whereby teachers are trained as specialists in a particular field. Although each area may have its own body of literature, professional organizations, and teacher certification areas, few opportunities exist for prospective teachers to learn across specializations. Usually issues related to educating *emergent bilingual students*, whether language minorities learning a dominant language or language majorities learning additional languages (García & Kleifgen, 2010), are relegated to those specializing in language or bilingual teaching. And yet, it is increasingly important for all teacher educators to become knowledgeable about issues surrounding the education of emergent bilinguals, that is, those who are acquiring an additional language, and bilingual students, those who are already speakers of more than one language. This requires increased collaboration between teacher educators in different content areas and specialists in bilingualism in education. However, this does not mean that teacher education should cease to prepare teachers for particular subjects, for specialized teachers will always be needed. What this means is that in many ways all teachers in the 21st century need to be prepared to be bilingual teachers (Adelman Reyes & Kleyn, 2010); that is, they need to see themselves as building on and developing the students' additional languages whilst educating them.

Of course, teacher education is not limited to tertiary education, for professional development throughout a teacher's career is never-ending. This is because of the dynamism of life itself, changes in sociopolitical contexts, variations in conceptions of knowledge, as well as teaching and learning, technological and instructional material innovations, and the constant transformation of students themselves. All teacher education programs, whether at tertiary institutions or those that take place in local teacher unions and centers or local schools, must have a curriculum that develops three strands of competencies: (a) understanding about bilingual students and their families, especially students from language minority backgrounds; (b) knowledge of language and bilingualism/multilingualism;

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and (c) awareness of how to deliver a pedagogy for multilingualism. But in order to develop understanding of these strands, which we elaborate upon below, these topics cannot be simply taught in a traditional manner. Instead, teacher education programs must find ways to have prospective teachers interact directly with emergent bilingual students, their families, communities, and classrooms to construct their own insights and ways of teaching. Here we review three ways of delivering this situated-teacher education preparation previously identified in García (2008): (1) descriptive reviews, (2) micro-ethnographies, and (3) direct experience in schools.

Descriptive reviews develop teachers' abilities to pay close attention to, as Carini (2000, p. 11) says, "the child in motion," that is, the bilingual child engaged in learning activities that are meaningful. Furthermore, descriptive reviews develop teachers' abilities to use language descriptively through cases and examples, while avoiding judgmental or evaluative language. These descriptive reviews are an important foundation for multilingual education, as close attention is paid to children's physical, emotional, cognitive, and learning characteristics, while noticing the child's language practices, as well as those of the teacher. Thus, the review combines the holistic education of the child with language and bilingual development. Because bilingual students live in communities that are often different from those of teachers and the school, descriptive reviews of students are not sufficient to develop the capacity needed for multilingual education. Instead, the observational and descriptive language use skills developed through descriptive reviews have to be applied to *micro-ethnographies* of communities and families in which all teachers partake—that is, teachers have to become ethnographers, as they learn to broaden their observational skills from the child to the community. Participating in the larger community allows all teachers, but especially those who may be outsiders to the communities where their students live, to have a better sense of the community's funds of knowledge (Moll, Amanti, Neff, & González, 1992) and to understand cultural and linguistic contexts to inform their curriculum and pedagogy. Finally, there is no coursework or workshop for teacher preparation that can substitute for *direct experience* with multilingual students and their families in schools. All prospective teachers need to be immersed in school life early, to observe teaching, and to eventually participate in assisted teaching and assisted assessment of student learning with an experienced mentor (Hawkins, 2004). One way of making direct experience an integral part of teacher education is to build collaborations between teacher education programs and local schools with strong bilingual/multilingual programs and a large multilingual population. Professional Development Bilingual Schools (PDBS) provide a setting in which prospective teachers can experience good practices with regard to developing bilingualism and paying attention to the different home language practices of students under the tutelage of experienced teachers.

The first strand of a teacher education curriculum for multilingual education must be to develop *understandings of bilingual students and their families*. All teachers need to be able to observe bilingual children closely and describe them engaged in meaningful learning activities. Teachers also need to be able to understand what sets the child in motion, an understanding which spans beyond the learning activities of the school to the child's home and community life. Teachers need to become knowledgeable of the many home language and cultural practices of the children, and be able to build on that knowledge not only to engage with individual children, but also to share it with all the children in the multilingual classroom. To build this knowledge, collaboration with families is key. For example, the *language awareness programs* established by Hélot and Young in Alsace (2006) brought multilingual families into classrooms where all the children were exposed to the cultural and linguistic backgrounds of their peers.

Beyond linguistic and cultural information, teachers need to develop a sociopolitical consciousness about the nature of the linguistic diversity of the children and the languages

they are trying to promote. They should be able to answer the following questions: Are the children immigrants themselves? Children of immigrants? Autochthonous minorities? Indigenous peoples? Autochthonous majorities? If immigrants, were their parents voluntary or involuntary minorities? What is the group's sociohistorical association with the society? What are the children's individual sociolinguistic profiles, as well as that of the ethnolinguistic group to which they belong? How does the group fare with regard to social class structure? Is the group structurally incorporated in the economy? How does the group's language rank in terms of linguistic hierarchies? Has the ethnolinguistic group experienced language loss or language shift? What has been their success in language maintenance or language acquisition? Has the ethnolinguistic group experienced racism or linguicism? In the past or in the present? Teachers then need to act on all this information by constructing curricula and pedagogies (see below) that build on the sociopolitical and sociolinguistic profiles of the children in question.

A second strand of a teacher education curriculum for multilingual education has to do with *knowledge about language, bilingualism, and language acquisition*. Teachers need to be cognizant of basic sociolinguistic and psycholinguistic essentials (Hawkins, 2004; Bartels, 2009). They should understand that academic language is a product of standardization and has little to do with the languaging, that is, language practices, at home. And they should understand that all languages have been socially constructed and are products of valuing based on their social and political power. Literacy, as Street (2005) has shown, is not a monolithic construct made up of a discrete set of skills, but involves s*ocial practices* that are embedded in a web of social relations that maintain asymmetries of power. Thus, learning academic language is not a neutral activity.

With regard to bilingualism, prospective teachers need to recognize it not as a "problem," but rather as a "resource" (Ruiz, 1984) for individual learning, group learning, and society at large. It is important for teachers to understand the cognitive benefits of bilingualism and biliteracy—the analytic orientation to language known as greater *metalinguistic awareness* (Bialystok, 2007), the flexible perceptions and interpretations of heightened *divergent or creative thinking*, and the greater practice in gauging communicative situations, giving bilinguals increased *communicative sensitivity* (Ben-Zeev, 1977).

All teachers should also be familiar with Jim Cummins's work on the relationship of a student's home language and the development of an additional language. Cummins's concept of *linguistic interdependence* and his related theoretical construct of *common underlying proficiency* posit that both languages bolster each other in the student's acquisition of language, literacy, and knowledge (Cummins, 1981). Teachers of multilingual classrooms need to be especially sensitive to the difference between what Cummins calls *basic interpersonal communication skills*—surface fluency in conversational language or in writing supported by cues that have little to do with language itself (gestures, repeating, providing examples)—and more abstract decontextualized language, or, in Cummins's terms, *cognitive academic language proficiency* (CALP), which is needed for most school tasks. Teachers should also be aware that research throughout the world has shown that although emergent bilinguals can usually acquire the language of everyday communication in one to three years, it takes *five to seven years*, if not longer, to develop more abstract language abilities in an additional language.

The major social, linguistic, political, and psychological issues that surround the development of biliteracy should be explored in teacher education programs using Hornberger's *continua of biliteracy* (2002), while developing understanding that positive transfer across literacies is maximized when students are allowed to draw from all their existing languaging.

Teachers in the multilingual classrooms of the 21st century must also be familiar with the concept of *dynamic bilingualism* (García, 2009) which goes beyond the notion of two autonomous languages and of the additive or subtractive bilingualism models of the 20th

century, and instead suggests that the language practices of *all* bilinguals are complex and interrelated, rather than linear. Dynamic bilingualism refers not to languages that students *have*, but to the development of different language practices to varying degrees that students and teachers *use* in order to interact with increasingly multilingual classrooms and communities. Thus, *translanguaging* (García, 2009), the process by which students and teachers engage in complex discursive practices in order to make sense and communicate in multilingual classrooms, should be understood by the teacher. Translanguaging includes code switching—the shift between two languages in context—but differs from it in significant ways, for it includes other bilingual practices that go beyond a simple switch of code, such as the translanguaging pedagogy introduced by Cen Williams (cited in Baker, 2001), where bilingual students read in one language and then take notes, write, or discuss in another.

In the 21st century understandings about how to teach all children should be centered on the concept of multilingualism and dynamic bilingualism, as opposed to monolingualism or monoglossic conceptions of bilingualism (García, 2009). Teachers need to be made aware of the fallacy of traditional second language acquisition concepts such as first and second language, native language, mother tongue, ultimate language attainment, and fossilization. Thus, children must be viewed not just as second language learners, but as emergent bilinguals who contribute to the formation of a multilingual world.

The third strand of a teacher education curriculum for multilingual education has to do with enabling teachers to construct a *pedagogy for multilingualism*. García (2009, pp. 318–29) proposes two basic principles of a multilingual pedagogy: (1) *social justice*, including advocating for equity, promoting language affirmation, upholding rigor, having high expectations, and advocating for fair assessment; and (2) *social practice*, including quality interactions, collaborative learning, authentic situated practices, connection to students' worlds and identities, and a focus on language practices.

Teacher education programs must instill an awareness that multilingual education is one way of acting on social justice by exposing the linguistic hierarchies that determine which languages and speakers are privileged. But beyond exposure and acknowledgment, teacher education programs must develop the teachers' courage to advocate for individual students, groups, programs, and policies that favor multilingualism. Teacher advocacy can take on many forms—from educating colleagues and administrators about multilingual issues, to speaking out about inequities, to teaching students to advocate for their own linguistic, educational, and human rights.

An advocacy stance is critical when it comes to the assessment of multilingual students. The current context requires the use of monolingual tests, which lack validity for this population (Shohamy, 2005). Furthermore, any assessment, regardless of the content area, is first and foremost an assessment of the language in which it is given (García & Menken, 2006). Thus, teacher education programs need to make all teachers aware of the potentially dangerous ways that high-stakes assessments in students' nondominant languages unfairly and inaccurately portray emergent bilinguals as deficient, and to encourage them to advocate on behalf of their multilingual students.

When social justice drives teacher education for multilingual education, programs strive to support teachers in constructing a pedagogy of inclusion so that all children's home language practices are acknowledged, included, and developed. Thus, a multilingual pedagogy includes the notion of *critical care* (Rolón-Dow, 2005), encompassing authentic relationships of care and trust, while at the same time addressing the more difficult questions of otherness, difference, and power (Valenzuela, 1999). Through a critical care stance toward all students, educators can construct a pedagogy that differs from the curriculum, standards, and assessments which generally stem from mainstream values of monolingualism and monoculturalism.

Under the second principle, *social practice*, teacher education for multilingual education needs to develop teachers' abilities to collaborate. In order to support multilingualism, partnerships between content teachers and language teachers are required to ensure students are both learning content and developing additional languages. A collaborative team teaching (CTT) model can expand the ability of all educators to teach for multilingualism. The collaborative disposition of teachers for multilingualism needs to extend beyond schools by building connections with families, community-based organizations, and governmental organizations that support the use of different languages.

All teachers also need to be able to identify and create resources across languages and cultures that are authentic and representative of students in their classroom (and beyond). This includes trade books, textbooks, videos, and Web sites. The availability and visibility of such resources sends a direct message to students about the worth of their languages, and subsequently themselves.

Twenty-first-century teacher education programs for multilingual education must not only provide a curriculum for all teachers that includes these three strands of knowing about bilingual/multilingual students, bilingualism/multilingualism, and multilingual pedagogies. They must also break out of the traditional mode of delivering instruction, through the incorporation of a multilingual/heteroglossic and experiential pedagogy that allows for differences in descriptions, observations, and experiences.

SEE ALSO: Bilingual Education and Immigration; Bilingualism and Bilinguality; Bilingual and Multilingual Education: Overview; Empowerment and Bilingual Education; Materials Development for Multilingual Education

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Teaching a Second or Additional Dialect

JEFF SIEGEL

Definitions

The term "dialect" refers to varieties of the same language that differ from each other in vocabulary, pronunciation, and grammar, and that are associated with particular geographic regions or social groups. The learning of a second or additional dialect is referred to here as second dialect acquisition (SDA).

SDA is concerned mainly with three broad types of dialects: national, regional, and social. A national dialect is a way of speaking a language that is characteristic of a particular country—for example, Canadian, American, and Australian English and European and Brazilian Portuguese. With regard to English, an important subtype of national dialect is World Englishes, such as Indian, Singapore, and Philippine English.

Many people think of a national dialect as the "standard"—the abstracted and idealized version of a dialect originally spoken by the upper middle classes of one dominant region of the country, and later "standardized" in written form—for example, standard British English and High German. In some countries, however, the standard is a variety very different to what is spoken colloquially by most of the population. Such a situation is referred to as "diglossia" (Ferguson, 1959)—as found, for example, in Egypt with Egyptian colloquial Arabic and Classical Arabic.

A regional dialect is spoken in one particular area of a country—for example, Cockney and Liverpool English in England, and Swabian and Bavarian in Germany. A social dialect, on the other hand, is a variety of a language spoken by a particular group based on social characteristics other than geography. SDA is most relevant to speakers of social dialects that are based on ethnicity (ethnic dialects), such as African American English and Chicano Spanish. Both regional and social dialects are generally unstandardized.

Contexts for SDA

As in second language acquisition (SLA), the study of SDA can be divided into two broad contexts: naturalistic and educational. Naturalistic SDA refers to learning a new dialect (the D2) without any formal teaching. This most often occurs when people who speak a particular regional dialect as their first dialect (D1) migrate to another part of the same country where a different regional dialect is spoken—for example, speakers of various American dialects moving to Philadelphia (Payne, 1980) and speakers of rural Norwegian dialects moving to Bergen (Kerswill, 1994). Naturalistic SDA also occurs when people migrate to another country where a different national dialect is spoken—for example, speakers of American English to Australia (Foreman, 2003).

Educational SDA involves formal training. There are three different educational contexts. In the first two contexts, students are normally adults, the emphasis is on pronunciation, and instruction is generally one-to-one or in small groups. Dialect coaching involves teaching actors to speak in various national, regional, or ethnic dialects for the purpose of dramatic

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performance. Dozens of dialect coaches (or voice coaches) have Web sites offering their services—often with lists of films, plays, and other productions that they have worked on. There is also an association of dialect coaches and related professionals: the Voice and Speech Trainers Association (VASTA). In addition, some educational institutions offer courses or workshops on learning dialects for acting.

Accent modification (or accent reduction) training is aimed at students who want to change their existing dialect for some reason: for example, immigrants wanting to speak the national dialect of their newly adopted country, and more commonly, speakers of regional or ethnic dialects wanting to speak a variety closer to the standard in order to improve their prospects in education or employment. One important area concerns the "call center" industry in countries such as India and the Philippines where World English varieties are spoken. To improve communication with customers from countries such as the USA and Britain, many call centers require that their employees undergo accent modification training to replace some of the more noticeable features of their variety with features of American or British English (see Mesthrie & Bhatt, 2008, pp. 216–18).

The third and most common educational context for SDA is the classroom in the formal education system. The D2 is normally the standard dialect, and the emphasis is on grammar and vocabulary, rather than pronunciation. The learners are initially children who come to school speaking an unstandardized dialect markedly different from this standard—usually in one of the following categories:

1. Regional dialects: for example, D1 Swabian, D2 standard (or High) German (Ammon, 1989);
2. Colloquial varieties in diglossia settings: for example, D1 Greek Cypriot dialect, D2 standard Modern Greek (Yiakoumetti, 2006);
3. Ethnic dialects: for example, D1 African American English, D2 standard American English (see Rickford, Sweetland, & Rickford, 2004).

Other common situations may involve older students. These include "heritage language learning" settings: for example, speakers of Chicano or Puerto Rican Spanish in the USA learning standard Spanish (Fairclough, 2005). There are also cases of immigrants who speak varieties of World Englishes, for example, speakers of Philippine English learning standard American English (Tayao, 2006).

Finally, another classroom situation can be considered as entailing SDA, although the varieties involved are not normally considered to be dialects of the same language. This is where the D1 is a creole language and the D2 is the standard form of its lexifier (the language which provided the bulk of its vocabulary), which is used in the education system: for example with Hawai'i Creole (D1) and standard American English (D2). While most linguists would say that such creoles and their lexifiers are separate languages, a large proportion of their speakers view them as different varieties of the same language. Classroom SDA, then, occurs for speakers of creoles in countries such as Jamaica and Guyana (Craig, 1999), and for creole-speaking immigrants in countries such as Canada and the USA (Winer, 2006).

Key Issues in Classroom SDA

The most striking aspect of classroom SDA is that it is usually expected to occur without any specific teaching or academic program. D1 speakers are not considered to be language learners, and are not given any special instruction to help them acquire the D2. The reasons for this include the similarity between the first and second dialect (D1 and D2) as opposed

to a first and second language (L1 and L2). The view persists that dialects are simply careless speech or incorrect forms of the standard dialect. In addition, there is the belief that using the students' D1 as a bridge to learning the D2 in the classroom would disadvantage students by exacerbating interference and by wasting valuable time that could be devoted to the standard. Siegel (2006) presents a rebuttal of these views and other unfounded arguments against using the D1 in the classroom.

However, unstandardized dialect- and creole-speaking students are truly disadvantaged in many other ways. First, they have to learn how to read and write in a variety of language that they do not already know (the D2), and learn content in subjects such as mathematics in that variety as well. Second, they may become frustrated by constant correction and not being able to express themselves in the variety they do know, their D1, which is usually denigrated or not considered appropriate for the classroom, or both. Regional and ethnic dialect speakers in mainstream programs and immigrants speaking indigenized varieties and creoles are faced with the additional disadvantage of having to compete with classmates who already speak the D2. Other obstacles include negative attitudes of teachers, who often know very little about their students' D1 and therefore cannot distinguish errors caused by systematic differences between the D1 and the D2 from those caused by carelessness. There are also issues of social identity, as students may be averse to learning and using the D2 because it is seen as closely associated with a different social group. With regard to linguistic factors, students may be unaware of the more subtle linguistic differences between the D1 and the D2.

Pedagogical Approaches

The teaching of standard English as a second dialect approaches of the 1960s and 1970s did attempt to give special instruction in SDA using methodology from foreign-language teaching (FLT) or teaching English to speakers of other languages (TESOL). However, these approaches were abandoned as being ineffective or inappropriate (Siegel, 2003). More recent approaches make use of the students' D1 to help them acquire the D2. The instrumental approach uses the students' D1 as a medium of instruction to teach initial literacy and sometimes content subjects such as mathematics, science, and health. This approach has been implemented in situations where the D1 is clearly distinguished from the D2 and where all students in the classroom are speakers of the D1—for example, in creole-speaking countries such as Haiti and the Seychelles, and communities in Australia and Papua New Guinea.

In the accommodation approach, the D1 is not a medium of instruction or subject of study, but it is accepted to some extent in the classroom, for example, by sometimes allowing students to speak or write in their home varieties, or utilizing students' own interactional patterns and stories for teaching the standard. Literature and music from students' communities may also be accommodated into the curriculum. Unlike the instrumental approach, speakers of unstandardized dialects involved in the accommodation approach can be in a mainstream classroom alongside other students who speak varieties closer to the standard. This approach has been successfully used with speakers of African American English and Hawai'i Creole.

In the awareness approach, the students' D1 is seen as a resource that can be used for learning the standard D2 and for education in general. Teaching programs using this approach have at least two of the following three components. In the accommodation component, students' D1 is accepted in the classroom in various ways, as described above. In the sociolinguistic component, students learn about variation in language and the many different varieties that exist, such as types of dialects and creoles. They also find out about

the sociohistorical processes that lead to a particular variety becoming accepted as the standard. In the contrastive component, students learn about the rule-governed nature and linguistic characteristics of their own varieties and see how they differ from those of the varieties of other students and from the standard. This approach can also be used in classrooms where students have a variety of linguistic backgrounds. Several awareness programs have been evaluated, for example, for speakers of Hawai'i Creole (Afaga & Lai, 1994), the Greek Cypriot dialect (Yiakoumetti, 2006), and African American English (Maddahian & Sandamela, 2000). These show that this approach, like the instrumental and accommodation approaches, leads to greater interest and motivation and higher rates of participation. In addition, they result in higher scores in tests measuring reading, writing, or oral skills in the standard D2 and in some cases to increases in overall academic achievement.

SEE ALSO: Varieties of World Englishes

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Teaching a Third Language

ULRIKE JESSNER

Introduction

In 1962 Elizabeth Peal and Wallace Lambert published an article on the cognitive advantages of bilingual children in the Montreal area (Peal & Lambert, 1962). Although several critical voices were raised with regard to the research methodology employed in the study, their work motivated a number of scholars to pursue this line of research and, after nearly fifty years of intensive study of the phenomenon of multilingualism, it has become widely known that under certain conditions multilingualism can be cognitively advantageous. A strong focus on multilingualism as a characteristic feature of citizenship has been detected as a recent step in sociopolitical and educational development in the European context. In line with this development, an increasing number of scholars worldwide have shown particular interest in third language acquisition (TLA) (see geographical distribution of authorship in articles in the *International Journal of Multilingualism* since 2004).

Definitions of Multilingualism and Third Language Learning

Multilingualism is still seen as an exception and is equated with multiple monolingualism, that is, it is assumed that somebody can only be called multilingual if s/he knows all of her/his languages on native speaker level. Ever since Grosjean's publication in 1985 on the bilingual as a specific but competent speaker-hearer, more researchers have arrived at a more realistic view of bilingualism. Nowadays scholars, even those with different theoretical backgrounds working in the field, seem to agree that multiple monolingualism has to be considered a very rare phenomenon, if existent at all. In multilingual context, languages are used and acquired in dependence of the need for the multilingual individual, and the languages used on a daily basis complement each other in the multilingual repertoire (Grosjean, 2010). As a further development of Grosjean's ideas and as a reaction to ideas from Chomskyan linguistics, Cook (2003) has developed the concept of multicompetence, which is described as a kind of supersystem distinguishing the monolingual speaker from the L2 user.

The term "multilingualism" has been used for different linguistic phenomena. Whereas for a group of scholars it refers to bilingualism as the most common researched form of multilingualism, others prefer to use it only when more than two languages are involved since for this group it is also important to note differences between second and third language acquisition processes (for an overview of the discipline see Aronin & Hufeisen, 2009).

Languages are acquired in natural and instructed contexts and the two forms often intertwine. In many cases worldwide, English is studied as a third language (Cenoz & Jessner, 2000). This is the case, for instance, in bilingual migrant children such as Turkish children in Austria who get in contact with English as a first foreign language at school. Also in all minority-language contexts, such as the Basque Country or Friesland in Europe, English is learned as a third language, if introduced as the first foreign language. But third

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language learning can also take place at school when a second foreign language is taught, for instance French or Spanish in German schools (for more examples of trilingual scenarios see Hufeisen & Jessner, 2009).

Research on Third Language Learning in Instructed Settings

Research on third language learning has been concerned with sociolinguistic, psycholinguistic, and educational aspects of the multiple language learning processes. Sociolinguistic studies investigate multilingual communities, whereas psycholinguistic studies focus on the individual multilingual learner, and educational studies of third language learning concentrate on specific learning contexts and the conditions and products of language learning. The most frequently third languages researched are English, German, and French (for a list of studies see Jessner, 2008).

Psycholinguistic studies have played a major role in L3 research since the formation of the new discipline of TLA was heavily influenced by results stemming from psycholinguistic studies on crosslinguistic influence. In a number of studies it was found that the L2 in the multilingual system fulfills a particular role in the L3 learning process. When L3 learners rely on their prior language knowledge, they tend to fall back on their L2 as a source default and supplier language in the learning process, which has turned out to be governed by factors such as psychotypology, recency, and the foreign language effect (for an overview see De Angelis & Dewaele, 2009). But also linguistic and language learning awareness play a key role in L3 learning models, such as the factor model proposed by Hufeisen (see Hufeisen & Jessner, 2009) and the dynamic model of multilingualism proposed by Herdina and Jessner (2002). Both proposals have turned out influential for L3 teaching.

One of the issues that have turned out to be of concern for all areas of research is language attitudes or attitudes toward languages. The prestige of a language (or a language variant) not only influences a multilingual's willingness to maintain a migrant or minority language in a new environment, but it also exerts influence on the attitudes toward learning further languages (see Lasagabaster & Huguet, 2007, for a large-scale questionnaire study on the attitudes of preservice teachers toward third language learning). Another area of major interest focuses on the age factor. Recently published data have shown that an early start of English as a third language does not necessarily lead to the expected high level of proficiency because of limited input (see Cenoz & Jessner, 2009, for a more detailed discussion).

Multilingual Teaching

As there is ample evidence from TLA research that learning a second language differs from learning a third, implications for the teaching context arise from this knowledge. These mainly concern the development of cross-language approaches to language learning, a common curriculum for all language subjects in an institution, and consequently changes in teacher training toward multilingual teacher training. All in all, a multilingual approach to language teaching needs to be developed (see Hufeisen & Jessner, 2009).

A number of cross-language approaches to language education have been suggested to foster synergy effects and cross-fertilization through cooperation between the languages and the language subjects in a classroom. These suggestions present the results of research on multilingualism and of scholars interested in language awareness. For example, Hawkins already in 1999 referred to language learning as language apprenticeship by emphasizing that the main aspects of language learning concern the process of how to learn to learn a language and to engage in cross-language comparisons with particular reference to the role

of L1 in second language learning (Hawkins, 1999). Cummins (2001) suggested transformative pedagogy using collaborative critical inquiry to develop critical language awareness. Students should be made aware of language forms and uses, and this can be partly done through crosslingual comparison of European languages deriving from Latin and Greek such as cognates and proverbs. An increased focus on multilingual awareness as a core ability of multilingual proficiency (or multicompetence) has been suggested by Jessner (2006) as a prerequisite for multilingual teaching.

In a number of European projects, new approaches to multilingual teaching have been developed. For example, the EuroCom (European Comprehension) project (www.eurocom-frankfurt.de) has concentrated on how to provide European citizens with a solid linguistic basis for understanding each other, at least within their own language family. Such an approach includes optimal inferencing techniques in typologically related languages in order to develop at least receptive skills in the new language and has so far been applied to Romance, German, and Slavic language families. At the center of interest in other projects has been the creation of synergy in language learning by learning and teaching beyond language borders (see Hufeisen & Jessner, 2009, for more details).

The ultimate goal of all these efforts is to arrive at a common curriculum for teaching languages in institutional contexts (Hufeisen & Lutjeharms, 2005). Such an integrated approach to language teaching requires the cooperation of all the language teachers in an institution as well as teacher training that focuses on developing language and language learning awareness among the teachers, students, and teachers as learners, since language learning is a life-time process. Furthermore, such a curriculum should be able to integrate minority or heritage languages, or both, as well as a number of foreign languages which are of interest to the social community, and it should be based on training of all teachers as multilingual teachers (Krumm, 2005).

Outlook

There is no doubt that multilingualism is interpreted as useful. Yet, if we want to guarantee multilingualism for all, not elite multilingualism for some, the application of multicompetence approaches to language proficiency development offers a promising way of how to approach the multifaceted challenges of multilingual teaching. This means that politicians who struggle with the challenges of migrant education have to be informed by multilingualism researchers with a holistic point of view, focusing primarily not on the deficits of multilinguals in the dominant language, but on all the linguistic and cognitive abilities of a multilingual learner. Such a view needs to be called upon for the development of multilingual teaching as well as multilingual assessment methodology in all contexts. Consequently, a reorientation toward multilingual norms is necessary to understand the requirements of successful multilingual education.

SEE ALSO: Crosslinguistic Influence and Multilingualism; Multilingual Education in Europe; Multilingualism; Multilingualism and Metalinguistic Awareness; Teaching for Internationalization and Critical Citizenship; Teaching for Language Awareness

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Teaching and Learning of Interpreting

CHRISTINE W. L. WILSON

The teaching and learning of interpreting has a short history. Although interpreting has shadowed human activity throughout the ages, the first practitioners of interpreting were people with language skills, but without training in interpreting. As has been observed in more recent times, these "natural" or "lay" interpreters would interpret intuitively; subsequently, knowledge acquired through personal experience might be shared with others beginning to interpret, as master to novice.

With some rare exceptions (see Caminade & Pym, 1998, pp. 280–2), the first examples of formal teaching and learning of interpreting date from the 20th century, born out of the emergence of interpreting as a profession. A number of influences began driving forward the first waves of this evolution. First, changes in international relations, including the establishment of the United Nations (UN) in 1945, and technological developments enabling simultaneous interpreting. Second, the spread of globalization. Third, the growing respect for equality and diversity both between countries (e.g., as encapsulated in the status of the official languages of the member states of the European Union [EU]) and within countries (e.g., as regards the languages of minority communities—including indigenous Deaf communities). The professionalization of interpreting entails a need for both quality interpreting and an increased number of interpreters; it also highlights the fact that it is not sufficient to rely on people who happen to be bilingual or polyglot, but rather there is a need to educate people as interpreters. Following World War II, this realization motivated universities in Europe, Asia, the Americas, Africa, and Oceania to offer courses in interpreting. However, as highlighted by Angelelli, "interpreting entered academia in order to meet a pragmatic need rather than to become an object of study" (see Angelelli, 2004, pp. 8–12).

Whilst there is general consensus within the profession that the initial teaching and learning of interpreting should take place at university level—as for any professional activity—there is some tension between "training" (vocationally motivated and market-driven) and "education" (socially situated learning rooted in theoretical principles). This tension is deep-rooted, since even within the university sector there is a tendency to use the term "training," remarks Angelelli whilst exploring the consequences of divorcing "training" from research and theory in interpreting education (2006, p. 23). In contrast, those who rely on the services of interpreters often favor vocational routes of training because they want more interpreters, faster. The reality tends to be dictated by financial considerations tempered by legislative and policy requirements, underpinned by considerations of quality.

The teaching of interpreting is often viewed as divided into two distinct fields of activity: conference interpreting (CI) and community or public service interpreting (PSI). However, there is a third field, often referred to as signed language interpreting (SLI), which straddles both fields of activity. These three fields are not in the same phase of professional development (Pöchhacker & Shlesinger, 2002, p. 5).

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Teaching Structures

The teaching and learning of interpreting does not conform to a single pattern: rather there exists a spectrum of approaches depending on the country (or region within a country), the languages involved, or the field of interpreting. At one extreme remains the self-taught interpreter, followed by induction and basic training provided by organizations (including public sector and nongovernmental bodies) or interpreting agencies. Then there are short courses offered by training providers (possibly private) which sometimes lead to formal accreditation by a professional body or national authority. A significant proportion of the teaching of interpreting takes place in vocational colleges and, at the other end of the spectrum, degree courses are offered at undergraduate and postgraduate levels in universities. Differences in modes of delivery add further layers of complexity: as well as full-time courses, more flexible options, such as part-time, blended, or distance learning, may be offered.

An enduring challenge in the teaching and learning of interpreting is how to ensure "professional readiness"—how to bridge the divide between training or education and professional practice. It is common for courses to integrate "real world simulations" into teaching, and some institutions incorporate formal work-based experience into their programs. However, different positions are adopted regarding the role of a traineeship: in some cases it is combined with the taught course (prequalification), whereas an alternative model is for students to first complete their taught course and then move onto a professional traineeship (postqualification). In other cases, particularly where no traineeship scheme exists, it is the professional interpreting body or other more experienced members of the profession or in the workplace acting as mentors who help the newly qualified interpreter make the leap from learner to professional.

Indeed, given the constrained scope of any taught provision, as well as the range and evolving nature of interpreting activity, it is important to recognize the vital nature of continuous professional development (CPD) and the role of employers, professional interpreting bodies, and international events (such as workshops at conferences) in facilitating this.

Conference Interpreting

Conference interpreting (CI) can be regarded as the oldest of the three fields, in terms of professionalization and the associated development of formal teaching and learning. This is illustrated by that fact that the first university schools of interpreting, in Moscow, Heidelberg, Geneva, Vienna, and Washington DC (Georgetown University) were founded respectively in 1930, 1933, 1940, 1943, and 1949.

The teaching of CI is almost systematically situated at university level—with a predominance of courses at postgraduate level. A European master's in conference interpreting has also been developed: offered by 18 partner institutions teaching the same core curriculum. Undergraduate level programs exist; however, the teaching of CI—especially simultaneous in the booth—may be positioned later in study programs when competence in language has been proven.

University CI courses exist in combinations of the world's most spoken languages—especially the official languages of the UN and the EU—or in languages particularly relevant in the host country. However, when "new" language combinations are required on the international stage, teaching provision may need to be introduced at university level for the first time. International cooperation helps foster developments: for example, the teaching of conference interpreting was formally introduced to China in 1979 thanks to a joint project between the UN and the Chinese government which evolved into the

Graduate School of Translation and Interpretation, Beijing Foreign Studies University, in 1994. Over the years, international bodies (such as the EU and the World Bank) have provided funding to support the development of university interpreting programs, mainly by enabling new countries (e.g., Turkmenistan and Madagascar) to benefit from the expertise of established interpreting schools.

International collaboration amongst universities teaching CI extends to student exchange programs, which allow students to spend a proportion of their studies in partner institutions, and many institutions are members of international networks such as the Conférence Internationale Permanente d'Instituts Universitaires de Traducteurs et Interprètes (CIUTI), the oldest international association of universities with translation and interpretation programs (established in 1960).

The training of teachers of CI is mainly conducted in-house: within universities where new staff learns from more experienced staff. However, reflection on the teaching of interpreting took off in international forums in the 1980s (e.g., the 1986 Trieste conference: *The Theoretical and Practical Aspects of Teaching Conference Interpreting*) (Gran & Dodds, 1989) and professional bodies (e.g., the Association Internationale des Interprètes de Conférence or AIIC) and major employers (e.g., EU bodies) have been proactive in facilitating opportunities for the training of trainers. Specific developments, such as the certificate course offered by the University of Geneva (launched in 1996) which has led to the development of a master's in interpreter training, and the master's in translation and interpreting pedagogy offered by Macquarie University, Australia, illustrate the progress which has been made. Nonetheless, the education of teachers of conference interpreting is still regarded as insufficient.

Community or Public Service Interpreting

The teaching and learning of community or public service interpreting (PSI) between spoken language pairs presents a much more fragmented picture with provision situated all along the spectrum of possibilities. The position will primarily be determined by a country's particular circumstances: for example, whether it has several official languages (Canada) or depending on the country's policies regarding migration and multiculturalism. Even in countries with long-established, well-developed provision for certain language pairs (e.g., Australia, or Sweden where the teaching of PSI dates from 1968), basic provision may remain all that is available in language combinations new to the country or involving so-called "rare" or "exotic" languages. As stated by Hale in 2007, "compulsory pre-service training in Community Interpreting is far from being a reality anywhere in the world" (Hale, 2007, p. 166).

When PSI is taught in state institutions, it tends to be situated at vocational college level, rather than university level. Furthermore, courses are often short, part-time, or CPD courses, rather than courses integrated within the national education system. In a study on provision in the United Kingdom, De Pedro (2010, p. 101) "surmised that only one university offers a one-year specialized programme" in PSI. However, worldwide, a number of universities integrate PSI as a specialization within existing interpreting degree programs and there is a growing consensus within the interpreting profession that the teaching and learning of PSI should be provided at university level. This is particularly true as regards certain subdomains such as legal or medical interpreting—a trend which is likely to be further stimulated by legislative changes and the setting of standards, as well as the increasing interest of international professional interpreting bodies, such as AIIC, in PSI, and models provided by country specific bodies such as the National Accreditation Authority for Translators and Interpreters (NAATI), in Australia. Since 1999, CIUTI also accepts as members institutions which only teach PSI.

The teaching of dedicated, university-level courses in the subdomain of legal or court or judiciary interpreting has an established history in some countries, but this is not a general rule. In the USA, for example, against the background of the Court Interpreters Act of 1978, a first certificate course in court interpreting was offered in 1983 (Monterey Institute of International Studies) and the first degree program (currently MA in bilingual legal interpreting Spanish–English) was launched in 1996 (University of Charleston, South Carolina). In addition the National Association of Judiciary Interpreters (NAJIT), founded in 1978, provides active support for education in the sector (Mikkelson, 1999, p. 7). On the African continent, a BA in court interpreting was launched in 2000 (University of South Africa). In contrast, in Canada, Vancouver Community College offers the only training in court interpreting. In Europe, factors such as the 2010 European directive on the rights to interpretation in criminal proceedings (Council of the European Union, 2010) and the activities of the European Association of Legal Interpreters and Translators (EULITA), founded in 2009, are expected to drive forward the development of courses.

The subdomain of medical or health care and mental health interpreting is served by a wide diversity of courses. A sampling of 33 medical interpreter training programs in the USA (Hablamos Juntos, 2005) found that courses ranged from six hours to twelve months in duration; even university provision varies significantly—short courses, graduate certificates, single modules (see Ertl & Pöllabauer, 2010). This is a common pattern: for example, Monash University (Australia) offers two professional development modules in health interpreting, the second of which focuses on mental health. The master's program in health interpreting and health applied linguistics, at the University of North Texas (launched in 2004), is a rare example of a dedicated degree in this field.

In addition to concentration on certain domains within PSI, university-level provision may remain restricted to the more commonly used languages in a country (e.g., the Spanish/English language pair dominates in the USA). Therefore, despite the movement toward university degrees, there is some evidence of another trend: the introduction of qualifications or recognition at a level lower than that agreed to be the appropriate minimum standard. In the United Kingdom, for example, the National Occupational Standards in Interpreting (NOSI) had set this minimum at level 4 (equivalent to final year of an undergraduate degree). In 2010, NOSI trainee interpreter units (at level 3) were introduced. This is a development driven mainly by the needs of PSI and market pressure, but also motivated by considerations of quality in addressing the difficulty some new interpreters (often already providing interpreting services in rarer languages) have in obtaining any professional qualifications (CILT, 2006). Other countries adopt different nomenclature: for example, language aide and recognized, paraprofessional, professional, conference, and conference (senior) interpreter (NAATI, Australia).

Given the number of language combinations required in the PSI field in some countries (often over 100) and limited resources, innovative approaches for delivering PSI teaching in universities have emerged which include courses built around nonlanguage specific core provision, taught in a single language (see Slayter, 2006); flexible, distance or blended learning approaches, including online provision (Skaaden & Wattne, 2009); adult learning; and collaboration between universities in different countries.

Interest in the teaching and learning of PSI has been growing since the first of the series of Critical Link conferences focusing on community interpreting (in Canada, in 1995) and the first Conference of the European Babelea Association for Community Interpreting (in Vienna, in 1999). However, training of the trainers in this field has often not developed beyond courses introducing a particular curriculum (see Furmanek, 2010), with rare exceptions such as the MA in teaching interpreting in the USA (launched 2004), billed as "the only one in the northern hemisphere to focus on public service interpreting didactics" (Wake Forest University).

Sign Language

The history of the recognition and status of a sign language in its native country is likely to impact on where the teaching and learning of sign(ed)/spoken language interpreting is situated. Consequently, in the USA, where sign language was not forced "underground" as in some other countries, structures for teaching and learning American sign language (ASL)/English interpreting became the focus of attention in the 1960s (e.g., when it was agreed, in 1964, that a workshop for interpreter educators should be held to develop a curriculum for interpreter training programs) and the Conference for Interpreter Trainers (CIT) was established in the USA in 1979 (Ball, 2009, p. xi). In Europe, in Sweden, sign language interpreter training began in 1968, the same year as community interpreting (Hein, 2009, p. 125), but in a number of countries worldwide, where acceptance of the indigenous sign language is still emerging, formal teaching of SLI is still to be established. In India, for example, where an association of sign language interpreters was founded in 2007, interpreter training is emerging, but remains minimal (Rao, 2007). The World Association of Sign Language Interpreters (WASLI) is very active in promoting the teaching and learning of interpreting worldwide.

The teaching of SLI is often situated in colleges and is primarily vocational in nature. However, university courses (undergraduate and postgraduate degrees) exist. Initially, many courses were housed within social science or Deaf studies departments, but sign languages have become integrated into a number of university schools of translation and interpreting as one of the languages in their portfolio—sometimes as separate programs (e.g., Macquarie University, Australia), but in some cases (e.g., University of Graz, Austria) sharing the same curriculum as spoken language students. There is also international collaboration between universities: for example, a joint European Master's in Sign Language Interpreting (EUMASLI) developed by universities in Finland, Germany, and Scotland. In some respects, SLI leads the field, for example, a bachelor's degree specializing in medical interpreting exists for American Sign Language/English (Rochester Institute of Technology/National Technical Institute for the Deaf). WASLI has also published guidelines for interpreter education (Russell & Locker-McKee, 2009) to assist countries developing provision.

In the SLI field, there are also opportunities for the training of the trainers of interpreters; the first of the interpreter trainers' workshops organized in association with the European Forum of Sign Language Interpreters (EFSLI) conference took place in 1999, in Madrid, and Macquarie University's MA in translation and interpreting pedagogy is also open to teachers of sign language. In the USA, a study conducted into the domains and competencies required for teaching interpreting (Winston, 2005) fed into a sign language-specific master's in interpreter pedagogy (Northeastern University).

Teaching Programs

There is broad agreement regarding the skills required in an interpreter: therefore, general agreement regarding the curriculum of a teaching program. This is evidenced in standards and codes of practice which are often the result of collaboration amongst interpreting practitioners, teachers of interpreting, professional bodies, and service users. However, the balance between the component elements within taught programs varies (see Swabey, 1992, 2002; Gile, 1995; Hertog, 2001; Sawyer, 2004; Angelelli, 2006; Napier, 2006; McDermid, 2009; Ertl & Pöllabauer, 2010).

Interpreting students are expected to develop an excellent level of competence in all their working languages, good knowledge of the cultures related to their working languages and of the professional cultures of the domains in which they work, to understand how communication works, to have cross-cultural competence and good interpersonal skills,

and to be able to manage ethical issues. They also need "translation" skills—to be able to transfer "meaning." Interpreters need memory skills, voice production and presentation skills, and to be able to prepare for interpreting assignments (to research a topic and build glossaries) and use technology in supporting their work. Angelelli defines the development requirements for health-care interpreting according to six areas: cognitive processing, interpersonal, linguistics, professional, setting-specific, and sociocultural which she then unpacks in more detail (Angelelli, 2006). Cognitive processing development, for example, would include active listening and split-attention; interpersonal development, the concept of role, visibility, and neutrality; and linguistic development, switching between registers, and so forth.

The range of interpreting specific skills students are expected to master may include different modes: such as consecutive (supported by note taking) and simultaneous (which may include *chuchotage*—whispered interpreting—and sight translation). The list may include liaison interpreting and remote interpreting (by telephone or video-conferencing). Interpreters will be expected to function as part of an interpreting team, and perhaps in a relay interpreting situation.

As well as acquiring a range of competencies and skills—particularly in recent years with the shift in focus toward student-centered learning—it is considered important that learners become "reflective practitioners" and courses seek to develop their ability to reflect on their own and their peers' performance.

This is not an exhaustive list, but illustrates the extensive needs of the interpreting profession and the challenge of addressing the full range of requirements in any teaching program. Therefore, the aim of most courses is to provide a solid foundation in the core skills and the strategies which will enable learners to build on this base and adapt to meet professional challenges.

There remain a number of substantive differences between teaching programs: some concentrate on developing learners' language skills in parallel with interpreting skills (often in undergraduate level courses), whereas others require learners to have acquired a high level of proficiency in their working languages before learning interpreting (common at postgraduate level). In some institutions learners study translation in parallel with interpreting, but in others interpreting is studied in isolation—or after completing studies in translation.

There are different traditions regarding the number of languages studied and the direction of interpreting: for example, SLI students will be taught to work into sign language—their second or third (B or C) language—even for international conference settings. This would be unusual—except perhaps in local markets—in the case of many spoken languages.

The profile of courses also varies as they respond to the key needs of different interpreting fields. For example, liaison interpreting, *chuchotage*, and sight translation are considered core requirements in any PSI course, but may have less weighting in a CI course with its ultimate aim of preparing interpreters to work simultaneously in the booth. Conversely, the simultaneous mode is used more frequently in PSI settings (e.g., educational or faith related settings in the USA), particularly as PSI interpreters' skill levels increase, and is the main mode used by sign language interpreters.

At the stage of initial training, except for basic PSI courses, it is unusual for courses to concentrate on preparing students to work in specific sectors, such as the media, medical, or legal domains. Specialization in interpreting is mainly offered postqualification by professional interpreting bodies and others providing CPD.

Traineeships, however, play a key role in teaching and learning interpreting and may be described as a practicum, apprenticeship, or an internship. A practicum usually takes the form of a period of work-based experience—perhaps linked with a study project—to be completed before entering the final year, as a significant part of the final year or following

the final year's taught elements as a requirement for obtaining the award. The use of the "apprenticeship" label (more usually linked with a trade) and the "internship" label (more usually linked with a profession) is a reminder of the training/education tension. The former tends to be used when the work experience and taught elements run concurrently throughout the program. The latter (whether pre- or postqualification) tends to involve a period of "hands on" experience in the professional role (albeit supervised), but the distinction between internship and practicum may be blurred. It is becoming increasingly rare for an interpreting course (especially in the PSI and SLI fields) not to include a traineeship component.

The Teaching/Learning Triad

Learners

A recurring pattern is that the first interpreters come from a background where, due to parentage or personal circumstances, they have grown up mastering the languages required —even fulfilling the role of family interpreter. As most Deaf parents have hearing children, this is particularly striking in Deaf communities, and many interpreters working in the PSI field also come from the minority-language communities.

The second wave of learners often emerges from professions closely associated with the need for interpreting: from diplomatic backgrounds, from social services, or the voluntary sectors.

As the fields of interpreting professionalize, they attract wider attention and, for many students, interpreting becomes the target career on completing college or university. Their ultimate aim is often to work as a staff interpreter, but circumstances—including market demands for certain languages—may dictate that they will work freelance, perhaps in both local and international markets, perhaps offering the full range of interpreting services across conference and public service fields, and perhaps only able to make a living wage if interpreting is combined with other employment. Such considerations inevitably impact on the overall design and resources invested in a taught program, as well as on the demand and competition for learning opportunities.

Where selection onto interpreting courses is permitted within the education system, excellent command of the working languages is often one of the main selection criteria. However, excellence in language does not guarantee excellence in interpreting; conversely, initial weaknesses in language proficiency do not preclude a student developing into an excellent interpreter. Therefore, there has been much debate over how to evaluate interpreting potential and a number of schemes for aptitude testing have been developed (Pöchhacker, 2004, pp. 181–2), although their accuracy remains contentious.

Teachers

The question of whether interpreters should be taught by "practitioners" or "academics" continues to resonate within the body of teachers of interpreting. Nonetheless, it is generally agreed that interpreters should be taught by people with experience of interpreting as practitioners, with knowledge and understanding of pedagogy, of the underlying theoretical principles, and of recent research (see Furmanek, 2010). If these attributes cannot be combined in individuals, a team teaching approach may be successfully adopted. As interpreting fields professionalize, more practitioners conduct research and become members of academic staff which helps dissolve the divisions between theory and practice. There is also growing dialogue and collaboration across fields that are fading the boundaries between CI, SLI, and PSI.

Service Users

A recent focus (particularly in PSI and SLI) is on the role of members of service user groups, including other professional bodies, in the teaching of interpreters. Not simply training such personnel to work with interpreters, but rather the interlinked approach (Perez & Wilson, 2011). This means involving members of other professional bodies (police officers, doctors, etc.) more centrally in the teaching of interpreters and in the development of teaching and guided learning resources: an approach which creates a positive spiral. Furmanek specifically discusses the positive spin-offs of students' internships for service users' learning about interpreting (Furmanek, 2004).

Challenges for Teachers and Learners

Interpreting is not a static field of activity, but is in constant evolution. Models change over time depending on the phase of professional development, the focus and findings of research underpinning practice, and shifts in the contextual framework (e.g., understanding of interpreting on the part of user groups together with increased scrutiny of interpreting). The evolution of technology and the downward pressure on costs also impact on what is expected of a professional interpreter. Consequently, from the moment of qualification, an interpreter's professional readiness faces the need for continuous updating. Therefore, the ultimate objective in teaching and learning interpreting is the development of a solid foundation in the core skills together with the tools to continually reflect on one's own practice and review the practice of the profession.

SEE ALSO: Community Interpreting; Conference Interpreting; Heath-Care, Medical, and Mental Health Interpreting; History of Interpreting; Legal Interpreting; Models of Interpreting; Professionalization of Interpreters; Signed Language Interpreting Profession; Teaching Translation and Interpreting

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Teaching and Learning of Translation

KELLY WASHBOURNE

Context: Translators, Academia, and the Marketplace

Translators provide products and services, and work with written documents, as distinguished from interpreters, who work as oral language mediators. Although it is less common to work in both fields, except at the community level, many students in translation and interpreting schools pursue a dual-track degree or course of study. It is generally accepted that the required skill sets for translation and interpreting only partially overlap. Traditionally, translators have learned their craft informally: through on-the-job training or in unstructured apprenticeships. Many translators today still learn by working in the language services market, though an array of program options within academia have opened in the last decades, commonly at the undergraduate (first-cycle) and master's (second-cycle) levels. Graduate or undergraduate certificate programs are another option, and are generally shorter than degree programs. The foundational degree is generally accepted to be the master's, whereas the bachelor's is seen as preparatory. PhD programs (third-cycle) in translation tend to be designed to train not translators but rather scholars of translation, usually in the academic discipline of translation studies. Qualified translation graduates find work as language policy consultants, translation tool vendor representatives, project managers, terminologists, acquisitions editors, literary translators, and translator trainers. Translators are employed in a variety of industries: schools and universities; major newspapers; multinational companies; health care and social assistance, especially hospitals; and other areas of government, such as federal, state, and local courts, or international organizations. Translation agencies (bureaus) also outsource much of their work to translation vendors. Publishing companies are employers of translators, usually through a work-for-hire contract; this type of translation is sometimes known as *editorial translation*. An increasing percentage of translators are self-employed, and thus today's students work toward mastery in more than languages—the mandate for a strong foundation in entrepreneurship exists, as in-house opportunities are growing steadily fewer. Many translators rely on other sources of income to supplement earnings, such as teaching or language consultancy. Most well-developed translation programs around the world offer some form of business of translation course in which such related professionalizing issues of self-marketing, standards and payment practices, and bidding for work are addressed.

Although ethics is a growing area of research within translation studies, it is rare to find courses centered on ethics; usually this important aspect of becoming a translator is incorporated, and not always systematically, into a theory or principles course at the introductory level. To break into the language industry, many inexperienced translators do pro bono humanitarian translation, social services translation, or other work that commonly undergoes close revision by a reviewer or editor. The freelancer's best credential at present, apart from or in addition to a related academic degree or degrees, is to become certified in his or her language combination(s) through such organizations as the American Translators Association in the United States, which also has a mentorship program, and to meet continuing education requirements to keep the qualification current. There are, moreover, many regional, national, and international conferences focusing on translation,

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many of which welcome student participation or are open only to students. Online and print journals that feature translation pedagogy research number perhaps in the hundreds, and include, to name only a few, *Translation and Interpreting Studies*, *Translation and Interpreting*, the *Interpreter and Translator Trainer*, *JoSTrans: The Journal of Specialized Translation*, *Current Trends in Translation Teaching and Learning*, and *Chinese Translators Journal*. It may be said, then, that the teaching and learning of translation extend well beyond the classroom.

Training and Education

The term *translator training* is preferred in environments in which industry drives many of the goals, text types, and methods of instruction, in which a vocationalized curriculum lends itself well to measurable learning outcomes, and in which concern centers on actual stakeholders. *Translator education*, by contrast, emphasizes theoretical models, actively promotes and evolves through interdisciplinarity, and privileges the learner's all-around development. These two approaches tend not to be absolute, mutually exclusive, or even clearly defined as such within given programs or in the discipline. Translation faculty rosters are sometimes broadly characterized by an analogous divide: between, on the one hand, practitioners who teach and, on the other, part-time translators—or even non-translators—whose focus is on academic research in translation studies or translation informatics. Qualifications for entry into translator training and education programs vary: Many students enter programs while still in the language acquisition stage, despite some claims that translation competence depends on language mastery. Other student translators may be sworn translators in their home countries, or have experience working as a freelancer or in an in-house (staff) position, the two primary employment options for qualified translators. Just as translators must requalify for each job they are assigned, or have earned the good faith of a translation commissioner, trainees or students must learn to acquire strong subject area proficiency in at least one area in order to compete professionally. They often require on-the-job training in addition to their pre-professional degrees. Some international organizations such as the United Nations, and companies such as SDL, offer internships. Usually the eligible applicant's area of study must be in linguistics, modern languages, or translation. Untrained bilinguals, occupying the "gray market" shadows of industry, and translating without knowledge of best practices and principles of the field, can prove to be a costly, short-sighted investment for all concerned, as a poor translation can damage a brand, company, or professional relationship, and undermine pricing structures and the status of the translation field, which, due to its relative incipiency, still incites debates over whether it is a profession or an occupation. Formal translation education, which has made quantum progress since its postwar infancy in the 1950s, alleviates some of the burden of sustaining a largely unregulated industry.

Technology

The teaching and learning of translation are undergoing a technological revolution. Consequently, industry is driving the need for functional ability with *translation tools* and especially their underlying processes, terminology management, and value-added skills such as revising, editing, proofreading, and desktop publishing (DTP). Computer-aided (or computer–assisted) translation tools (CAT tools), also known as translation environment tools (TEnTs), include databases for harmonizing terminology and project management, as well as for allowing the user to leverage segments of previously translated text and other content so they can be recycled as needed, commonly known as *translation memory programs* (TM). Another subclass of machine translation (MT) is machine-assisted human

translation (MAHT), which holds out enticing possibilities for the translation pedagogue. Translation schools and programs are catching up with these new realities and demands. Career prospects are growing apace in software internationalization and Web page localization. These areas, which are now requiring course development at both the graduate (postgraduate) and undergraduate levels, consist of tailoring or making products, text, or images acceptable to target-country market norms, and call for considerable engineering and testing work. Multimedia or audiovisual translation, particularly in countries that import and adapt English-language media production, are well represented in graduate seminars throughout Europe, as are other topics from language engineering, such as terminology, and linguistic corpora and their use in translation and empirical translation research. Pioneering use of corpora in translator training has been made in Ireland, England, and Italy, in particular.

Specialized Translation

Specialized translation has its unique problems and pedagogical challenges, not least of which is the problem of terminology, and the perhaps greater, related, problem of conceptual difficulty for the nonspecialist. Kelly and Martin (2009, p. 295) identify the trend of placing specialized translation at the end of the curriculum, suggesting it is more complex. While specialized translation usually demands more documental work for the translator, some argue that general translation in translator training environments is in some ways equally difficult, in that multiple fields must be contended with, and the repetition of concepts and terms is less, hence mastery must happen more quickly. At all events, there is considerable consensus that overspecialization too early in one's academic career runs counter to the trends of the globalized economy, which relies on technologies that quickly can fall out of demand or become obsolete. The best transferable skill in this connection is specialized writing. Many translation programs require a business writing or technical writing component in response to the growing demands that translators become proficient in writing technical and business documentation, as the gap between job descriptions of tech writer and translator becomes more indistinct.

Literary translation, while not a highly remunerative activity, is nevertheless an important area of the field, and is almost universally taught. Literary translation is distinguished from "nonliterary translation," or the perhaps now-preferable term, *pragmatic translation*. Courses in literary translation, both practical and theoretical, often explore such translational phenomena as multiple valid renderings, the problem of a translation's dual authorship, connotation, retranslation, power and patronage, censorship, gender, the status of the translator, the reader's expectations of transparency, translator constraints, and intratextuality and intertextuality. The transferable skills from this *domain*, or translation subject area, lend themselves well to such in-demand translation modalities as "transcreation," a portmanteau used in multicultural marketing to suggest the reconceptualization, cultural adaptation, or creative reworking of the source text—a brand or an ad, for example. This emerging practice is a boon to translation teachers, who can design tasks built around the need for students to negotiate pragmatic, cultural, semiotic, and other dimensions of signification and reception beyond literality. Literary translation has become a part of many creative writing MFA degree programs, and courses in stylistics in particular commonly form part of the literary translator's education, for example at the University of East Anglia (United Kingdom), as do professional scenarios such as editing a journal of literary translation. The *translation of sacred texts* is a domain related to literary translation, and engages many of the same issues, including polysemy, canonicity, and the instability of so-called source texts. Sacred texts in most secular institution classroom contexts are

studied and theorized—compared, historicized, problematized—more than they are translated or retranslated.

Institutional Affiliation

Given the complexities of training and educating translators, and the changing realities in which translators work, controversies about where to house translator training programs do not show signs of abating. As translation professionalizes, one area of contention relates to the debatable claim that the traditional home of translation—modern language departments—often cannot produce faculty possessed of the technological and text-typological competence needed to produce pre-professional learners for industry, as many of these faculty come from liberal arts backgrounds. Compounding this tension are the growing pains associated with the expanding mission of many such humanities departments from linguistics, literature, and culture to a vision that embraces language "for the professions," outreach, and experiential learning. Some scholars hold that translation should be taught from independent institutes, while others seek to continue to accommodate translation in traditional modern language departments; the latter becomes more untenable as translation becomes less linked with mere bilingualism and is recognized as a highly skilled profession. Translation as a tool to support language learning in language acquisition environments still attracts support, though the practice has fallen into disrepute, at least among many translation theorists. In sum, it is still somewhat rare to find translation housed comfortably in academia, and variables are many and ever-changing: Even the configuration of faculty expertise affects every aspect of translator learning, from what language combinations are offered to the classroom methodologies used.

Directionality

The issue of working into or out of one's mother tongue (a term that many theorists are now questioning or rejecting) is known as *directionality*. Directionality is a productive, ongoing debate, when not beset by arguments from convenience. Translators in the field work predominantly into the L1, one's native or "A" language, though there are many exceptions, especially where texts can undergo extensive revision, in cases of team translation, when scarcity of qualified L1 translators make this practice a necessity, or when the document is for "information only." In *pedagogical translation* (Beeby Lonsdale, 1996, p. 13), or translation for the purposes of improving linguistic skills, translation into a non-mother tongue (L2, or "B" language) is often termed *indirect translation*, and is widely accepted, usually with the tacit understanding that it involves gaining insight into working into one's adopted language, but is not vocational training for working into the L2. Study abroad is not an absolute requirement in most programs, though translation success unequivocally correlates with a strong and current command of the B language of one's combination, and particularly the linguistic and extralinguistic knowledge (subject and world knowledge) of the domain area(s) in question.

Models of Translator Training

Typically courses in translation are *language-specific*—"workshop" or practical courses—or *non-language-specific*—theory and craft courses. The role of theory in translator curricula is among the most debated questions in the field; much of the resistance to theory comes from practitioners or students who understand it to be an arcane tangent rather than a

structured body of concepts derived from practice and with real bearing on translations. Also, instructors' overreliance on the literary in canonizing and exemplifying translation theory often hampers theory's wider acceptance in the classroom.

Learning translation today involves focus on the *translation process* as well as the *translation product*. The former has been given impetus in recent decades from data-driven research findings in the cognitive, descriptive, and empirical models of learning: Think-aloud protocols (TAPs) can provide insight into learner decision paths; "learner corpora" reveal patterns of errors and can give valuable predictive information about problem areas; and eye-tracking can aid in discovering the learner's novice behaviors (for example, their overuse of extrinsic resources and underuse of inferencing; or their reliance on smaller translation units, or segments). The processes a translator undergoes place the translator as an actual mediating presence, a decision maker. One timeworn approach to translation —before the 1980s and in many cases still used today—focused exclusively on the source and target texts, with little or no recognition of the translator's agency. Theorists have come to consider the translator as a whole person, a social agent in a nexus of relationships both affective and interpersonal. Studying how translators learn and think, rather than simply how texts work, is a key development in the field. This concern for the learner as well as the learning, typified by learning theory's *process objectives*, which acknowledge the social, political, cultural, and psychological needs of the learner over and above performance (Richards, 2001, pp. 133–4), has gained adherents in recent years among translation teacher-scholars.

Traditional translation practica often assumed translation occurs "in a vacuum," that is, without any sense of how the text would operate in the target system; instructors would model the "correct" translation and measure success in accordance with the student's degree of deviation from it. In the model widely favored today, students, individually or in role-playing teams, are assigned partial-task or whole-task translations that are usually authentic or semi-authentic: actual translation assignments or pedagogically modified versions of them. A *translation brief*, or commission, is provided. Students are challenged to respect the situationality of the texts from and into which they are translating—that is, to use functionalist considerations of how the text will be used, by whom, and any transculturations, changes of register, or additions that the translator may need to, or choose to, perform in response. The functionalist approach—anchored by this application of *skopos*, or function—has been highly influential (see, for example, Nord, 1997, or Kussmaul, 1995). Translation strategies—at both the microtextual and macrotextual levels—figure prominently in these negotiations.

Myriad task and activity types form part of the practical translation sessions, and may include a term project involving a whole workflow: price quote, project term bank, revision, and layout (Reinke, 2005, p. 12, following Nord, 1996); translations in pairs; "gisting" or summary translation; resolution of specific documentation or research problems; contrastive macrotextual analysis of text type conventions between languages; "common pitfalls" and other awareness-raising discussions; "round robin" group edits or translations; information-gap tasks; or role-play enactments of different communicative situations. The learning process in translation practica stresses procedural knowledge, knowing *how* rather than *what*, and conditional knowledge, knowing *when* to apply it. Students unlearn facile received knowledge of "equivalence"—a concept that has fallen under attack as passé under the new conceptions of a translation not as a mirror image of the source, but as a rewriting for new purposes. The concept of "fidelity," consequently, is outmoded in favor of *adequacy* to the brief, or in short, of conformity to job specifications. Translator training, then, has evolved beyond contrastive linguistics and discussions of "loss" and "gain." *Competence models* for translation trainees too have grown in complexity, and in most cases include intercultural, interpersonal, and interlinguistic dimensions. One nuanced model,

the EU Tuning Project, identifies *instrumental, interpersonal*, and *systemic* competences (Kelly, 2005, p. 35). These include the process-related features of translation that bear not only on abilities but also on translator *qualities* that, although not always objectively measurable, are consistent with good practice (e.g., teamwork, adaptability, commitment).

The full implications of the competences expected of recent graduates have yet to be exploited in curriculum and task design. There is a need for more synthesizing, evaluative tasks that are demanding cognitively and metacognitively, such as updating and verifying glossaries; producing style guides; vetting translators; critiquing field testing practices such as back-translation; devising an assessment standardization; identifying and maximizing different kinds of translational reading, including the active reading needed for parallel text evaluation or intratextual coherence markers; or bringing text-linguistic and discourse analysis insights to bear on actual translations. Curricular design still needs to account more creatively for distance learning and other forms of remote course delivery; interactive, hypertextualized "translation simulators" and scaffolded translations can be built to provide research and drafting support; different trainee learning styles can be empirically defined and accommodated; editing can be brought more formally into the standard skills taught; differences between expert and novice behavior can be introduced into the trainees' awareness as a diagnostic tool; and ultimately, more "training the trainer" courses can be devised to complement peer learning at conferences. Vibrant, ongoing dialogues and interconnections formed between theory, empirical research, and pedagogical applications are enriching the field for the future in ways barely glimpsed today.

Teaching and learning translation are interdisciplinary in part, perhaps, by the nature of the field, but perhaps too because they are still in their infancy, and derive much from tangential fields; as translation in academia grows, its pedagogy will in turn drive developments on its margins.

SEE ALSO: Assessment of Translation; Descriptive Translation Studies; Functional Approaches to Translation; Strategies of Translation; Translation and Interpreting and Bilingualism; Translators' Code of Ethics

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Teaching Business English

ZUOCHENG ZHANG

Teaching business English is an important growth area in English-language teaching. It involves understanding three key facets: business, business English, and teaching business English. These aspects will be dealt with in turn below.

Business can be understood narrowly as commercial transactions (Zorn & Simpson, 2009). Broadly, it refers to a wide range of "economic, public, and social activities such as trade, management, finance, marketing, tourism, journalism, and law" (Chen & Wang, 2009, p. 5) or "a range of contexts in which members of various kinds of organisations interact to achieve business, organisational or relationship goals" (Zorn & Simpson, 2009, p. 32). As these understandings specify the wide range of business contexts in which English can be used, they may help in pinning down the scope of business English and the teaching of business English.

Business English (BE) is recognized as an important branch of English for specific purposes (ESP) (Ellis & Johnson, 1994; Dudley-Evans & St John, 1998). Another perspective on business English is that of business discourse. Business discourse is an umbrella term that covers a wide range of research involving the ways people in business use talk and writing to get their work done and to achieve their goals (Bargiela-Chiappini, 2009). While the perspective of ESP offers an operating framework for teaching business English, the business discourse view sheds light on the target situations learners of business English are prepared to function in. These perspectives contribute to defining business English as the teaching of the system of strategic communication in international business in which participants adopt or adapt business conventions and procedures and make selective use of lexicogrammatical resources of English as well as visual and audio semiotic resources to achieve their communicative goals (Zhang, 2007).

While teaching business English shares the principles of ESP, it requires more of the analysis of learner needs, the subject matter, the teacher, and the teaching methodology, each of which will be discussed in detail respectively.

Learners of business English fall into two general types: pre-experience learners and work-experienced learners (Dudley-Evans & St John, 1998). Work-experienced learners are familiar with business operations. They attend business English classes to learn how to conduct familiar business activities in English. As they are usually under time pressure, with certain hours of the working days allocated to training, they tend to have clear objectives to meet for the time frame. Pre-experience learners are usually at an academic institution or a vocational school with no time pressure to meet specific objectives. What they need includes knowledge and skills for their target situations. Lying in between are low-experience learners (Ellis & Johnson, 1994). These learners are usually junior company members or people who are moving jobs. They are learning both about their new job and the language for doing the job. Quite recently there has emerged a special type of pre-experience learner, notably the students of business communication studies in Radboud University Nijmegen in the Netherlands and the business English majors in the University of International Business and Economics in China. These learners are enrolled in faculties of arts or languages, but their curriculum content shifts from the traditional focus on language and literature to international business communication. Take the business English

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majors in China, for example. They attend the four-year business English program and will earn a bachelor's degree upon successful completion of the program. In addition to learning business practice and business discourse, they take compulsory courses in business-related disciplines such as economics, management, and international business law (Chen & Wang, 2009).

The subject matter for these various types of learners is specifiable and specific. One of the tenets of ESP is that priority is given to learners whose needs determine what to teach and how to teach (Hutchinson & Waters, 1987). Learner needs are usually described with reference to their purposes of learning, target performance situations, starting level, and target level (Ellis & Johnson, 1994). The descriptions have been evolving, reflecting the changing understanding of the nature of business English. Since the 1960s, the teaching of business English has undergone several stages of change, from the teaching of specialist vocabulary to speaking, listening, reading, and writing skills in business contexts, to notions and functions, to business communication skills such as presentations, meetings, and negotiating (Ellis & Johnson, 1994). As research in business discourse continuously exposes practices and language use that characterize business professionals, the curriculum content for business English students incorporates more and more knowledge of business. For example, the curriculum for business English majors in China draws on Bhatia's (2002, 2004) theoretical framework of professional expertise described in terms of disciplinary knowledge, professional practice, and discursive competence (Zhang, 2008). There are courses in disciplinary knowledge, like micro- and macroeconomics, marketing, finance, and fundamentals of business law. The courses that represent professional practice include international business, professional etiquette, and business ethics. Courses in business discourse involve a range of genres and activities that students expect to handle in their study of the disciplinary knowledge and professional practice.

The teacher of business English should be subject-informed. It was once widely believed that ESP teachers were language specialists and it was not necessary to have subject expertise (Hutchinson & Waters, 1987; Ellis & Johnson, 1994). This assumption was accepted by many at a time when ESP was promoted by language teachers who generally received training in language and language teaching rather than business subjects. Yet when pre-experience learners, especially business English majors, are involved, a teacher with no idea of the subject matter will find it much more difficult to survive in the business English classroom. On their list of the areas of knowledge and understanding for teachers of business English, Dudley-Evans and St John (1998) put "some knowledge of management theories and practice" (p. 61).

Since business English has the goal of preparing learners for expert performance in their target professional situations, teaching methodology is best described as eclectic and learner-oriented—that is, ready to adopt whatever methods will ensure learning. In the case of job-experienced learners, the teacher is likely to play the role of a language consultant (Dudley-Evans & St John, 1998). The "deep-end strategy" (p. 190) may be effective. According to this teaching strategy, learners may be set a task to perform using their existing English competence. Their performance reflects their personal and professional approach to the task at hand. For pre-experience learners, in particular business English majors, teaching is informed by subject-specific methodologies such as role play (Ellis & Johnson, 1994) and case study (Almagro Esteban & Pérez Cañado, 2004; Zhang, 2008), as these methods help learners both to take in knowledge and to gain hands-on experience of business operations and the language in use in these practices.

A number of issues can be identified in teaching business English at the present time. Teaching business English understandably aims at bridging the gap between the classroom and the workplace (Bhatia, 2004). It thus requires a sound description of the target situation. Although research in ESP and business discourse has been accumulating, partly thanks to

research partnership between academics and business professionals (Cheng & Mok, 2008), a systematic description of the English in use in international business contexts is still needed (Seidlhofer, 2004; Nickerson, 2005; Piekkari, 2009). The research findings available also need to be translated into teaching materials (Nickerson, 2005; Kankaanranta & Louhiala-Salminen, 2010).

The social theory of learning with its emphasis on practice (Wenger, 1998) has had a tremendous impact on business English education. Learning business English is more about picking up a practice and taking on a professional identity. This opens up new understandings of the goals of business English education. It also has implications for the process of teaching business English. For example, learning can be viewed as a process where learners become legitimate participants being socialized into the target community of practice under the guidance of their teachers, ideally as expert participants who provide them with role models. This view puts the learner firmly at the center of learning. It has the potential for transforming the teacher–student relationship. Moreover, authenticity and specificity (Dudley-Evans & St John, 1998) will be crucial in materials and task design.

As critical studies of business discourse reveal the ways inequality in race, gender, and power is embedded, naturalized, or neutralized in business discourse (Mullany, 2009; Parker & Grimes, 2009), these findings are likely to prompt teachers and students of business English to be critically aware of the operations of business discourse. The "accommodationist" approach to teaching, that is, being uncritical about and restricted to helping learners to cope with their target performance situations (Dudley-Evans & St John, 1998, p. 231), will receive increasingly critical attention. This development calls into question the ideology underpinning ESP education and the teaching of business English, and may indicate a shift away from the focus on meeting the practical needs of students and the workplace to recognizing the urgency of preparing students for addressing social inequality and injustices and participating in increasingly globalized and multicultural societies (Richards, 2001).

SEE ALSO: Content-Based Language Instruction; English for Business; Genre-Based Language Teaching; Language Ideology in a Language Classroom; Language for Specific Purposes: Overview

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Teaching Culture and Intercultural Competence

CLAIRE KRAMSCH

What Is Culture?

Despite the numerous definitions offered by applied linguists, many language teachers still don't know how to define culture nor how to teach it. Many are not convinced that it is the role of the language teacher to teach something that is better taught by anthropologists, sociologists, literary critics, or historians. Which aspects of culture should be taught in a language class: facts of geography and history, national symbols, small cultures or ways of life, myths, and ideologies? Which kinds of culture: national, regional, professional culture; high culture or popular culture? And whose culture should be taught: the culture of a target country or the hybrid culture of multilingual individuals who straddle various national cultures?

These questions affect different language teachers differently, depending on the needs and purposes of their students. Where foreign languages are learned for professional opportunity, physical survival, intelligence gathering purposes, or even for mere philological or linguistic interest, culture may be perceived as a less important component of language study. By contrast, where they are learned for intercultural understanding, for social survival in an immigration context, for reconnecting with one's linguistic and cultural heritage, or for general humanistic purposes, culture becomes central to the language learning enterprise. Which aspects of culture and whose culture will be worth teaching will also depend on the symbolic value of the language taught and on the educational priorities of the educational institution.

There are roughly two different ways of looking at culture in language teaching, depending on one's disciplinary and political orientation, and on whose interests are being served: modernist and postmodernist. These two perspectives on culture coexist today in the theory and practice of language learning and teaching.

Teaching Culture: Modernist Perspectives

Until the 1970s, culture was seen as the literate or humanities component of language study. In the 1970s and 1980s, following the communicative turn in language pedagogy, culture became synonymous with the way of life and everyday behaviors of members of speech communities, bound together by common experiences, memories, and aspirations. In both cases, speech communities were seen as grounded in the nation—the national context in which a national language was spoken by a homogeneous national citizenry.

Big C Culture

As a humanistic concept, culture is the product of a canonical print literacy acquired in school; it is synonymous with a general knowledge of literature and the arts. Also called "big C" culture, it is the hallmark of the cultivated middle class. Because it has been

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instrumental in building the nation-state during the 19th century, big C culture has been promoted by the state and its institutions, for example, schools and universities, as national patrimony. It is the culture traditionally taught with standard national languages. Teaching about the history, the institutions, the literature, and the arts of the target country embeds the target language in the reassuring continuity of a national community that gives it meaning and value. National cultures are always bound up with notions of the "good" and "proper" way of life which is why they elicit pride and loyalty. Because they are imbued with moral value, language learners who have grown up with other values find it often difficult to understand foreign cultures on their own terms. They find refuge in cultural stereotypes, or in literary fiction. With the advent of communicative language teaching, the humanistic concept of culture has given way to a more pragmatic concept of culture as way of life (the little c culture, see below). But the prestige of big C culture remains, if only as *lieux de mémoire* in Internet chatrooms named, for example, *Versailles*, *Madison Avenue*, or *Unter den Linden*—cultural icons of symbolic distinction.

Little C Culture

With the focus now on communication and interaction in social contexts, the most relevant concept of culture since the 1980s has been that of "little c" culture, also called "small cultures" (Holliday, 1999) of everyday life. It includes the native speakers' ways of behaving, eating, talking, dwelling, their customs, their beliefs, and values. Research in the cultural component of language learning has been deeply interested in cross-cultural pragmatics and the sociolinguistic appropriateness of language use in its authentic cultural context. To study the way native speakers use their language for communicative purposes, the convention of "one language = one culture" is maintained and teachers are enjoined to teach rules of sociolinguistic use the same way they teach rules of grammatical usage, that is, through modeling and role playing. Even though everyday cultural practices are as varied as a native speaker's use of language in everyday life, the focus is on the typical —sometimes stereotypical—behaviors, foods, celebrations, and customs of the dominant group or of that group of native speakers that is the most salient to foreign eyes. Striking in this concept of culture is the maintenance of the focus on national characteristics and the lack of historical depth.

The sociolinguistic concept of culture takes on various forms depending on whether the language taught is a foreign, second, or heritage language. In foreign language (FL) classes taught outside of any direct contact with native speakers, culture is mostly of the practical, tourist kind with instructions on how to get things done in the target country.

FL learners learn about the foreign culture as an exotic curiosity; they try to adapt to it or temporarily adopt it as their own when they travel to the country. In second language (SL) classes taught in the target country or in institutions run by native speakers abroad (e.g., British Council, Goethe Institute, Alliance Française, Instituto Cervantes, Confucius Center), culture can also take the form of exposure to debates and issues of relevance to native speakers in the target country, or of discussions about living and working conditions for immigrants. In the same manner as children are schooled into becoming proper citizens, so are immigrants acculturated into the habitus of nationally defined native speakers; they acquire a national home they can be loyal to and a national identity of which they can be proud. Culture as a process of nurturance and socialization is achieved mainly through schooling in its written, literate tradition (Kramsch, 1998). This notion of culture as nurture is of course never very far from culture as control.

In heritage language (HL) classes taught to native speakers who wish to connect with their ancestral roots, culture is the very *raison d'être* of language teaching. It is not, however, without presenting major difficulties when the heritage community has either lost much of its original everyday culture (e.g., Native American languages), or when its speakers

belong to a community that historically no longer exists (e.g., Western Armenian or Yiddish). The teaching of culture in HL classes is very much linked to identity politics.

Intercultural Competence

The term "intercultural" emerged in the 1980s in the fields of intercultural education and intercultural communication. Both are part of an effort to increase dialogue and cooperation among members of different national cultures within a common European Union or within a global economy (see Jackson, in press). In Europe, the concept of intercultural competence emerged alongside the concept of communicative competence (e.g., Byram, 1997) with a social and political orientation (for excellent surveys, see Risager, 2007). Byram and Zarate (Byram, 1997) identified five *savoirs* or capacities that constitute intercultural competence: *savoirs* (knowledge of self and other, of interaction, individual and societal); *savoir apprendre/faire* (skills to discover, interact, or both); *savoir comprendre* (skills to interpret and relate); *savoir s'engager* (critical cultural awareness, political education); *savoir être* (attitudes: relativizing self, valuing others). Recently some European educators (see, e.g., Hu & Byram, 2008) have used various ways to evaluate intercultural competence, based on the Common European Framework of Reference and on Milton Bennett's model of intercultural relativity (Bennett, Bennett, & Allen, 2003).

In the United States the development of intercultural competence is at the core of genre-based literacy curricula (Byrnes, 2002) or online telecollaboration (Ware & Kramsch, 2005) at the college level. It has been recently promoted in foreign-language departments as an organizing principle of the curriculum (Schulz & Tschirner, 2008). In all these cases, culture is a modernist notion tied to the characteristics of native members of a national community who speak the national language and share in its national culture. This modernist definition of culture has been challenged by a lingua franca like English that knows no national boundaries, and by global social actors who contest the supremacy of the native speaker as well as the notion of neatly bounded speech communities (see next section). The notion of the third culture kid (TCK) (Dewaele, 2009), that captures the transnational identities of today's multilingual, hybrid, mobile youth, can be seen as a late modern phenomenon that has fueled the imagination of postmodernist scholars (see below). Because TCKs have loosened their ties to any particular culture of origin, their trans- or multinational identities have helped researchers understand the postmodern condition of the multilingual individual (for a proposal for a transnational pedagogy, see Risager, 2007).

The concept of intercultural competence has been given a new meaning by those who use computer-mediated communication (CmC) to foster interaction in the L2 between native and non-native speakers (NNS) and among NNS, and to enable them to access and manipulate foreign cultural environments (Kern & Warschauer, 2000). Intercultural competence has been both enhanced and impeded by CmC. On the one hand, the increased use of CmC to develop L2 communicative competence has led to a reorientation of language learning toward conversational fluency, online chatting ability, the negotiation of surface features of speech, and a focus on common experiences in the here-and-now. It has enhanced participation in online communities (e.g., Lam, 2008) and the development of identities liberated from the social constraints of the real world (Baym, 2000, pp. 143–74). On the other hand, the direct access to L2 speakers and the cultural immersion provided by CmC has enhanced the illusion of semiotic immediacy and cultural authenticity that has sometimes led to disappointment if not outright hostility in intercultural encounters (e.g., Ware & Kramsch, 2005). It has not necessarily led to the in-depth exploration of cultural, historical, and ideological differences. In the globalized geopolitical landscape of today, there is a growing interest among applied linguists for more complex, ecological approaches to culture that are postmodernist in outlook.

Teaching Culture: Postmodernist Perspectives

The multiplicity of cultures represented today in any given schoolroom or workplace has led applied linguists to adopt an approach to intercultural communication that takes into account the multiple, changing, and often conflictual nature of culture and intercultural relations. This way of looking at culture has been called poststructuralist, ecological, or postmodernist depending on which scholarly tradition it draws on. Because it no longer sees culture as a set of stable societal structures and national traditions, but focuses instead on culture as multiplicity, change, and power struggles, it has been called poststructuralist. For example, Norton (2000), drawing on feminist poststructuralist theory, has focused on the strategies used by new immigrants to draw on their multiple identities to resist marginalization in the workplace. Pennycook (2007) has illuminated the changed parameters of global popculture in the multilingual urban centers of late modern societies.

In language education, the fact that language learners increasingly do not agree on the definition of common tasks, do not share the same goals and values, the same historical memories, and interpretation of events as other speakers of the language, has prompted some applied linguists to adopt an ecological approach to the teaching of culture (Kramsch & Steffensen, 2008). They stress the relationality of self and other across multiple timescales in a decentered perspective, where the meaning of events emerges in a nonlinear way in interactions with others, and social reality is constructed minute-by-minute in the ongoing discourse.

Indeed, postmodern scholars are less interested in the notion of "identity," that seems too stable and essentializing a term, than in the notion of "subject position," which speakers and writers perform in discourse (Kramsch, 2009). In online or face-to-face interactions, students are seen as constructing their own and others' subject positions through the questions they ask and the topics they choose to talk about. These subject positions constitute over time a discursive practice that we call "culture." They are acted out on a much larger scale in national debates like, for example, the one surrounding the wearing of the Islamic veil in French public schools. This cultural debate cannot be taught in an American classroom through mere explanations of cultural difference. It has to be constructed with the students by making explicit the presuppositions behind their own religious beliefs; how educational history is constructed differently in the two countries; how French secularism is constructed in the American press; how freedom of religion is constructed in France and in the United States; and how the separation of Church and State is talked and written about on the global scale of Christendom and Islam.

In a postmodernist perspective, then, culture has become a discourse, that is, a social semiotic construction. Native and non-native speakers are likely to see their cultural horizons changed and displaced in the process of trying to understand others. A postmodernist definition of culture attempts to account for these new realities. If culture is no longer bound to the territory of a nation-state and its history, then we have to see it as a dynamic discursive process, constructed and reconstructed in various ways by individuals engaged in struggles for symbolic meaning and for the control of identities, subjectivities, and interpretations of history. As the postmodern sociolinguist Jan Blommaert (2005) has shown, these struggles take place simultaneously on multiple and conflicting time scales: the 21st century time of global ecological concerns clashing with the 20th century time of national industrialization and modernization as well as with the much older time of tribal territorial disputes and age-old cultural traditions. As "layered simultaneity" (Blommaert, 2005, p. 130), culture cannot be directly read into behaviors and events, it has a meaning that depends on who does the reading and from which historical position in society.

Conclusion

In sum, while culture has always been an indissociable part of language teaching, the links between the language taught and the sociocultural context in which it is used have become much more diversified than they used to be. These links are now defined by a host of individual, institutional, and ideological factors that render the task of the foreign-language educator particularly complex. The teaching of culture will always experience a tension between, on the one hand, the need for identifying, explaining, classifying and categorizing people and events according to modern objective criteria and, on the other hand, the desire to take into account the postmodern subjectivities and historicities that are becoming increasingly apparent in our decentered, globalized world. Both needs are reflected in language, which makes the task of the language teacher both more complex and more relevant than ever. The role of the applied linguist is to describe and explain this complexity and to suggest ways in which it can be turned into an educationally fruitful experience.

SEE ALSO: Cultural Identity; Intercultural Competence; Intercultural Learning; Online Intercultural Exchanges; Subjectivity

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Teaching English as a Foreign Language in Kindergarten to 12th Grade

YUKO GOTO BUTLER

As English has increasingly gained prominence as a means of global communication, one can find various reforms in English education at the K–12 levels in those regions where English has traditionally been taught as a foreign language (EFL). While it is highly debatable whether the concept of EFL itself is valid (Nayar, 1997), the present entry defines EFL as English learning and teaching that takes place in *the expanding circle* wherein English traditionally has not had an institutionalized, official status (Kachru, 1992). There are various issues that have arisen as a result of such reforms at the K–12 levels in EFL education. However, due to the limited space available, I will focus on the following four issues: (a) the goals of English learning; (b) starting English education earlier; (c) instructional challenges; and (d) assessment.

The Goals of English Learning

In EFL settings, due to the increasing demands for global interaction in English, a command of English can be considered as "a near-universal basic skill" (Graddol, 2006, p. 15), rather than a luxury for elites or merely an academic subject to be studied at school. The governments in EFL regions see developing high proficiency in English among their citizenry as part of a larger national strategy. Acquiring a high degree of *communicative competence*, or developing the four balanced skills (i.e., listening, speaking, reading, and writing) for the purposes of social interaction, is often specified as one of the central goals of EFL education. The governments of some EFL regions, such as Europe, also feel that cultivating a new identity as a speaker of English as a lingua franca (along with other foreign languages) is an increasingly important part of the multilingual and multicultural education of their citizens (Jones & Saville, 2009).

In order to respond to such demands, EFL regions have undergone dramatic changes in their English education policies regarding their curricula, instructional practices, teacher-training programs, assessments, and accountability systems. Efforts have been made to develop benchmarks or standards within various nations as well as across nations, such as the Common European Framework of Reference for Languages (CEFR, the Council of Europe, 2001).

However, it is not uncommon to observe substantial gaps between the goals set by governments or standard-setting bodies and the actual implementation practices seen in classrooms. The very notion of communicative competence itself can be defined and understood in various ways and often can be a source of confusion among local educators. What should be considered as the target model, such as whether it should be *English as a lingua franca* (ELF) or a particular native-speaker model, is also a matter of debate among educators in many EFL settings. While the concept of ELF itself has gained increasing recognition among EFL educators, many of them still appear to have ambivalent feelings about implementing ELF in their own classrooms (Jenkins, 2007).

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Concerns have also been expressed by policy makers and opinion leaders regarding the promotion of English in curricula. Some see this as a potential threat to students' native linguistic and cultural identities and feel that English can be a source of socioeconomic division both within a given region as well as across nations. It is a tremendous challenge for many policy makers to secure for their citizens equal access to English education, to allocate resources effectively, and to minimize regional achievement gaps among students and schools (e.g., Butler, 2009; Enever, Moon, & Raman, 2009).

Starting EFL Earlier

In order to develop higher proficiency in English, many governments in EFL regions have lowered the age at which EFL instruction begins. English as a foreign language instruction at the elementary school level, or even at the preschool level, has become increasingly popular in some areas.

The decision to start EFL instruction at successively earlier ages appears to be, in part, based on the assumption that children are better at learning languages. Despite the widespread belief in this assumption, however, empirical research to date concerning the relationship between the age at which foreign-language instruction begins and students' ability to acquire a given language still remains largely inconclusive. Applying the critical-period hypothesis (CPH) to foreign-language learning is not appropriate. CPH, in principle, is an argument regarding one's potential neurobiological mechanisms for acquiring critical abilities and skills for survival. However, foreign-language education often does not provide the learner with an opportunity to fully utilize such mechanisms. A number of factors other than age have been reported to influence students' learning. Such factors include: (a) the number of hours allocated for instruction; (b) the intensity of instruction; (c) the goals of language education programs; (d) individual learner factors such as aptitude, motivation, gender, and socioeconomic background (SES); (e) teacher qualifications; (f) resource availability and community support; (g) the local language environment; (h) how to define and measure "learning outcomes," and so forth (e.g., Nikolov & Mihaljević Djigunović, 2006).

Currently, there is substantial variation in early foreign-language education (including EFL) with respect to the goals set for students and actual teaching practices. However, we can roughly identify three major models for instruction: (a) the foreign-language experience or exploratory (FLEX) model; (b) the foreign language at the elementary school (FLES) model; and (c) the immersion model. The FLEX model aims to develop children's awareness of and sensitivity to various languages and cultures; this takes precedence over teaching the target language per se. FLES aims to develop children's foreign-language proficiency, usually with a special emphasis on the oral skill domains, as well as cultivate their cultural awareness. In some FLES programs, limited subject content (e.g., math and science) may be incorporated (such as is found in content-based FLES programs). In programs focused on teaching via immersion, the school curriculum is taught through the medium of the target language itself. Since the goals of these models are different, the expected outcomes should be defined accordingly.

Among the three models above, FLES is currently the most commonly employed around the globe. A review of the literature from various regions, however, indicates that FLES programs face a number of common challenges. The primary challenges include: (a) the limited time and resources available to support such programs; (b) insufficient training and support for teachers; (c) difficulties related to curricula and assessment designs; and (d) discontinuity in the ways in which such programs are implemented as students move from the elementary to the secondary school levels (e.g., Enever et al., 2009).

While research on EFL learning among young learners is still scarce in general, the major findings thus far include, but are not limited to, the following (e.g., Nikolov, 2000; Edelenbos, Johnstone, & Kubanek, 2006):

- The potential benefits of introducing EFL for young learners include not only linguistic development but also metalinguistic, cognitive, social and interpersonal development. Positive attitudes and enhanced motivation toward learning English have been consistently reported as the major advantages of introducing early foreign-language education.
- For children to have a higher level of motivation to learn a foreign language, they need activities which challenge them intellectually and give them a feeling of accomplishment, rather than merely having fun (e.g., playing games).
- Children's foreign-language development, both in terms of accuracy and fluency, is not steady but rather is complex and recursive.
- Evidence has shown that children benefit from receiving systematic reading and writing instruction from an early stage in their foreign-language learning, along with listening and speaking instruction. Children also can benefit from activities which focus on accuracy of forms and meaning, as well as activities focused on fluency.
- Children from the kindergarten level onwards can benefit from having opportunities to reflect on their own performance and strategies when using a foreign language.

Curriculum and Instructional Challenges

With the focus on developing students' communicative competence as a central goal of EFL education in many countries, *communicative language teaching* (CLT) has been widely employed in many recent EFL policy initiatives. Along with the promotion of CLT, various types of related instructional approaches and methods have frequently been promoted among teachers, including learner-centered teaching, task-based instruction (TBI), teaching English through the medium of English (TETE), and so forth (Holliday, 2005).

However, a number of studies have reported various difficulties in implementing CLT in EFL classrooms (e.g., Bax, 2003). The difficulties addressed in these studies appear to be largely attributable to two issues: one has to do with the conceptualization of CLT itself and the other has to do with the adaptation of CLT to local contexts.

First, there are different interpretations regarding what constitutes CLT, and the various choices and related approaches and methods have often been employed rather confusingly in EFL practices. CLT is commonly considered by teachers as being almost synonymous with the avoidance of grammar instruction, focusing on teaching speaking or the exclusive use of the target language or both (e.g., Littlewood, 2007). This may in part stem from the heavy reliance on grammar-translation-based instruction in the past. Some observers have also indicated that many activities introduced in EFL classrooms under the name of CLT are not communicative but rather are behavioral in nature (Grenfell, 2007).

Second, difficulties with implementing CLT also appear to arise when sufficient consideration is not given to local factors in its implementation. There are a number of local factors that may greatly influence teaching outcomes, including large class sizes, heavily form-focused high-stakes exam systems, insufficient resource availability, a lack of competency in this area among teachers, conflict with local cultural and educational values, and so forth (e.g., Fotos, 2005).

Various suggestions have been offered to EFL teachers to facilitate the successful implementation of CLT and other related approaches and methods. For example, Littlewood (2007) proposed a five-step model for adopting CLT where teachers in East Asia can gradually replace activities for "noncommunicative learning" with activities for "authentic

communication" (p. 247). It appears that when new approaches and methods are adopted locally, the process of *reinterpretation* and *adaptation* is essential. It is also important to note that no single approach or method, whether CLT or otherwise, works well across all contexts or under all circumstances (Prabhu, 1990; Butler, 2009).

Assessment

In response to increasing globalization and successive changes in the goals and instructional approaches in EFL at the K–12 level, various reforms in assessment have been undertaken in many EFL regions. Some of the most significant issues that have arisen from these reforms include: (a) the inclusion of oral assessments in high-stakes tests or accountability systems (or both); and (b) developing assessments that are aligned with the benchmarks and standards associated with EFL curricula, including various types of alternative assessments.

With regard to the first issue, as oral activities have increasingly become emphasized in EFL policy initiatives, efforts have been made to incorporate some form of oral assessment in in-house standardized tests or accountability systems in many EFL nations. Listening comprehension tests are frequently incorporated even in high-stakes norm-referenced standardized tests such as high-school exit or college entrance exams, many of which had focused heretofore almost exclusively on written language proficiency (i.e., reading, grammar, and writing). Speaking tests, although they are not yet very popular, have been incorporated in high-stakes tests in some nations, such as in the English foreign-language oral matriculation test in Israel. However, the effects of the inclusion of oral components in high-stakes standardized tests on instruction itself (i.e., the *washback effects*) do not appear to be as straightforward as one might expect in many cases (Cheng, Watanabe, & Curtis, 2004).

With regard to the second issue that has arisen with recent reforms in assessment, while norm-referenced standardized tests are still very popular in many EFL nations and regions, a growing number of EFL policy initiatives have adopted criterion-referenced approaches to assessment in which student performance is evaluated in relation to attainment levels, benchmarks, or standards. The aim of including such an approach is to create a direct alignment among curricula, instructional practices, and assessment. In some EFL regions, various types of alternative assessments such as teacher observations, portfolios, self-assessments, and peer-assessments are also included in their accountability systems. There is some indication, however, that the implementation of assessments that are aligned with benchmarks and standards also creates some dilemmas and challenges among different stakeholders.

Conclusion

EFL education has undergone drastic changes with respect to its goals, the starting age of instruction, instructional approaches, and assessments, all of which have changed to some extent in order to respond to the changing needs of learners and societies in an increasingly globalized world. Any innovative move in policy initiatives creates challenges and difficulties among different stakeholders. As a variety of Englishes have been created and developed, and as English has spread across the globe, various local factors continue to influence and be formulated into the implementations of EFL policy initiatives worldwide.

SEE ALSO: Critical Period; English as Lingua Franca; Washback in Language Assessment

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Teaching English as a Foreign Language to Students With Specific Learning Differences

JUDIT KORMOS

The Nature of Specific Learning Differences

In our globalized world, proficiency in another language is often as important as other basic competencies such as literacy and arithmetic skills. Therefore, it is of great importance that students who have special educational needs receive assistance not only in basic academic skills but also in learning foreign/second languages (L2). Providing these language learners with adequate support is especially imminent in the case of English, which has become an international language, and which is a foreign language most frequently taught in many countries of the world.

In order to understand the English-language-learning processes of students with specific learning differences (SpLDs), we first need to describe the types and characteristics of learning differences that constitute SpLDs. SpLD, a term currently used in the United Kingdom, highlights the view also endorsed by the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006) that disability is a socially constructed barrier, which "may hinder full and effective participation in society on an equal basis with others" (p. 4). SpLDs are thus seen as differences in individuals' abilities which might pose challenges in particular aspects of learning if their environment does not accommodate their needs. SpLDs include dyslexia, dyspraxia (motor coordination difficulties), dyscalculia (mathematics difficulties), ADD (attention deficit disorder) and ADHD (attention deficit hyper-activity disorder) (SpLD Working Group, 2005). It has to be noted, however, that both the terminology describing learning differences and their definitions vary from country to country. Although official figures show great variation, SpLDs are estimated to affect 5–20% of the population (International Dyslexia Association, 2002).

Among SpLDs, dyslexia is the most widely researched. One of the most influential definitions of dyslexia today is that of the International Dyslexia Association (2002), according to which:

> Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

A number of etiological causes of dyslexia have been proposed, of which the most widely accepted one is that dyslexia is primarily a result of weak phonological processing skills, which result in difficulties with differentiating sounds, segmenting words into sounds, ordering sounds, and associating sounds with printed letters (Vellutino, Fletcher, Snowling, & Scanlon, 2004). These underlying processing problems do not only affect the acquisition of first language (L1) literacy skills but can also influence the success of second language acquisition (Sparks & Ganschow, 1993).

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The Effect of SpLDs on the Cognitive and Affective Processes of Language Learning

In their linguistic coding differences hypothesis, Ganschow and her colleagues argue that "the primary causal factors in successful or unsuccessful FL learning are linguistic; that is, students who exhibit FL learning problems have overt or subtle L1 deficiencies that affect their learning of a foreign language" (Ganschow, Sparks, & Javorsky, 1998, pp. 248–9). It is widely acknowledged that L1 linguistic skills provide the basic foundation for foreign-language learning (Spolsky, 1989). For example, memory for verbal material helps us remember words in our first language as well as in a second language. Phonological short-term memory, which can temporarily store verbal information before it is encoded in long-term memory (Baddeley, 2003), aids in decoding sequences of sounds and associating them with words and their meanings, which is essential in learning reading and spelling both in L1 and in L2. Verbal reasoning skills are related to grammatical sensitivity, that is, the ability to identify the grammatical role of words in context, and inductive language-learning ability, which helps learners identify linguistic rules in the input. Both of these abilities play an important role in the acquisition of L2 syntax and morphology by helping students to discover rules and regularities of the language. These cognitive abilities are also the constituents of language-learning aptitude, which is a significant cognitive determinant of language-learning success (Carroll, 1981). Empirical research on the language aptitude of students with dyslexia indeed shows that students with dyslexia tend to score consistently lower on all the components of tests of foreign-language aptitude than those with no apparent signs of learning differences (e.g., Downey, Snyder, & Hill, 2000).

There is very little empirical research on the L2 learning processes of students with SpLDs other than dyslexia. Fletcher, Morris and Lyon's (2004) study shows that students with dyscalculia also score somewhat lower than the expected standard on tests assessing phonological processing abilities. Jeffries and Everatt's (2004) research also indicates that children with different types of SpLDs such as dyspraxia and ADHD might exhibit very similar cognitive profiles to children with dyslexia. Thus it can be assumed that learners with other types of SpLDs might also have lower language aptitude scores and experience difficulties in language learning. In addition, children with ADHD, dyslexia, and dyscalculia were found to have difficulties in sustaining attention (Fletcher et al., 2004). Attention is a key to language learning; therefore, the reduced attentional capacities of these students are expected to influence the success of second language acquisition. It also needs to be considered that different types of SpLDs often occur in combination and have different degrees of severity, which can result in varying levels of cognitive abilities underlying L2 learning, and hence in a continuum of language-learning difficulties (Sparks & Ganschow, 1993).

In addition to cognitive abilities, affective factors also play an important role in second language acquisition. Motivation, language-learning anxiety, and self-confidence are generally listed among affective factors that might potentially influence language-learning outcomes. Students with SpLDs, especially those with dyslexia, frequently experience failure in language learning, and consequently, they are at a risk of losing their motivation to learn foreign languages (Csizér & Kormos, 2009), develop symptoms of foreign-language anxiety (Piechurska-Kuciel, 2008), and might have low self-esteem and self-confidence (Crombie, 2000). In a recent questionnaire survey conducted with Hungarian dyslexic learners of English and German, Csizér, Kormos, and Sarkadi (2010) found that dyslexic language learners displayed significantly less positive motivational characteristics than their nondyslexic peers. They argued that "language learners with dyslexia might easily get caught in a vicious circle because of their problems in language learning, they lose their motivation, which then might lead to experiencing further failures." The findings of

the study also indicated that dyslexic students have negative self-concept in the academic domain of language learning. Csizér et al. (2010) also conducted interviews with dyslexic English-language learners to examine their motivational characteristics. The interviews revealed that the motivation and language-learning attitude of students with dyslexia were influenced by the instructional setting. Teachers' general in-class behavior, method of instruction, and attitude to dyslexia were found to have an important effect on the students' language-learning attitudes and the effort they were willing to invest in language learning. These findings point to the high importance of instructional factors in creating favorable motivational conditions for students with SpLDs in L2 learning.

Dyslexia is often the cause of students' anxiety in academic contexts and in the private sphere of life. Piechurska-Kuciel (2008) investigated the English-language-learning anxiety of dyslexic students in a Polish secondary school context and found that dyslexic students displayed significantly higher levels of anxiety all through their language-learning career than their nondyslexic peers. The cognitive effects of anxiety might further aggravate the language-learning difficulties of students with dyslexia. Moreover, due to the anxiety-factors associated with foreign-language classrooms, when having the choice, students with SpLD might decide to opt out from language learning.

The Language-Learning Outcomes of Students With SpLDs

Dyslexic students show great differences in their cognitive abilities, which is also reflected in their achievement in language learning. In a study conducted in Norway, Helland and Kaasa (2005) found that dyslexic learners of English with good auditory processing skills performed worse than their nondyslexic peers only in tests of L2 spelling, grammar, and word reading, whereas dyslexic participants with poor auditory abilities scored lower on all the components of the English language test including L2 listening, speaking, vocabulary, grammar, and sentence reading. This shows that dyslexic language learners cannot be regarded as a homogeneous group of students, and their cognitive profiles have to be considered carefully in instructional programs and in assessment practices.

Among the other types of SpLDs, it is only ADHD that has been researched in the field of L2 learning. Sparks, Javorsky, and Philips (2005) found that if ADHD was not associated with dyslexia, students in US colleges with attention deficit performed just as well in language learning as their peers with no apparent signs of ADHD. Therefore, it would seem that ADHD alone might have little effect on the success of second language acquisition. We have to note, however, that in the case of younger children with ADHD, reduced attentional capacities might have a more significant impact on how much attention they can devote to various aspects of the linguistic input, and these students might experience problems in language learning.

Many language teachers and education policy makers believe that students with SpLDs, especially those with dyslexia, only have difficulties in acquiring spelling and reading in another language. Helland and Kaasa's (2005) research mentioned above, however, shows that students with severe symptoms of dyslexia seriously lag behind their nondyslexic peers in almost every component of English language proficiency, including grammar, vocabulary, reading, writing, and listening skills, and this finding was also replicated by Kormos and Mikó (2009) in a recent study conducted in Hungary. In an interview study Kormos and Kontra (2008) also asked language teachers with a wide range of expertise in teaching students with dyslexia what difficulties they noticed their students experience in language learning. They mentioned writing and spelling with the highest frequency, but they also gave account of problems in acquiring reading and listening skills, as well as vocabulary and grammatical knowledge. Kormos and Mikó (2009) also interviewed

Hungarian dyslexic learners of English, who reported the most serious difficulties in writing and spelling as well as problems with learning how to read in an L2 and remembering words and understanding grammatical rules.

Although we must not underestimate the difficulties involved in learning another language, especially English with its nontransparent orthography, we have to note that a large number of students with SpLD become competent L2 users. In our view, three factors are essential for the successful attainment of L2 skills. First of all, learners need a supportive classroom environment, in which the teaching and assessment methods are adapted to their needs. Second, innovative instructional methods using multi-sensory techniques need to be applied to facilitate the language-learning processes of students with SpLDs (see e.g., Schneider & Crombie, 2003). Third, students themselves must be aware that they can only overcome their difficulties if they invest sufficient energy and effort into the process of language learning. In many cases, the level of effort and persistence needs to be higher than for students with no SpLDs in order to compensate for the differential functioning of cognitive abilities needed for language learning. Finally, the notion of success might need to be reconsidered in the case of learners with SpLD and realistic educational objectives in language learning have to be established for these students.

SEE ALSO: Aptitude in Second Language Acquisition; Foreign-Language Teaching for Students With Language-Learning Problems; Working Memory in Second Language Acquisition: Phonological Short-Term

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Teaching English for Medical and Health Professions

BARBARA J. HOEKJE

The teaching of English for medical and health professions (TEMHP) is a growing enterprise worldwide linked to the rise of English as an international language of health care, global employment flows, and an increasing focus on communication in medical education and practice.

A great variety of medical fields are included under the heading of medical and health professions; major areas of focus have included physicians, nurses, pharmacists, and many other fields such as physical therapy and dentistry.

Following Maher (1986), two broad areas within TEMHP can be distinguished. TEMHP for academic purposes includes preparing learners for English-medium coursework in medicine, nursing, and other health-care programs, both in countries where English is a first or official language and, increasingly, in countries where English is a second or foreign language as well. TEMHP for occupational purposes includes preparing learners for occupational and professional activity such as conference presentations, research publications, and workplace communication. Because academic medical programs include clinical training, academic and occupational purposes overlap in clinical and other settings.

A further area within TEMHP focuses on the specific requirements of gate-keeping tests such as the US Medical Licensing Exam (USMLE) (Tipton, 2005), the Australian Occupational English Test (OET), and the UK Professional and Linguistics Assessments Board (PLAB).

Approaches to course development, teaching methodology, and materials have evolved within TEMHP as within ESP (English for specific purposes) in general. From an early concern with register analysis and features of medical texts (Maher, 1986), focus has shifted to the communicative needs of the target language use (TLU) setting, especially the clinical setting (Shi, Corcos, & Storey, 2001; Bosher & Smalkoski, 2002; Duff, Wong, & Early, 2002; Eggly, 2002). The communicative needs of the clinical practitioner are identified through ethnographic observations, interviews with major reference groups, and investigations of the attitudes and reflections of the learners themselves (Chia, Johnson, Chia, & Olive, 1999). Transcripts of spoken language as well as written medical texts are analyzed with discourse analysis approaches, including genre analysis, that extend beyond a focus on lexis only (El Malik & Nesi, 2008; Olmstead-Wang, 2009).

Teaching methodology in TEMHP has also evolved as in English for specific purposes. The development of learner autonomy is a key focus for TEMHP, where learners continue to face new and diverse contexts for communication throughout their professional lives. In a clinical interviewing course for international doctors, for example, doctors learn to monitor and improve their clinical interviewing skills through extended post-course video taping and review (Eggly, 2002). Well-sequenced instructional approaches can make use of information-gap and other activities to raise learners' awareness of critical language issues (Shi, Corcos, & Storey, 2001). Communicative approaches utilize role plays and simulations to provide opportunities for learners to practice the language of the TLU setting (Shi, Corcos, & Storey, 2001; Bosher & Smalkoski, 2002; Eggly, 2002).

An increasing focus on problem-based learning (PBL) within ESP supports learner autonomy and makes use of learners' content knowledge. A PBL approach is used, for

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example, to develop learners' cognitive and linguistic strategies in a content-based academic English curriculum for premedical students in Brunei Darussalam (Wood & Head, 2004) and second-year doctors-in-training in Japan (Kimball, 1998). PBL approaches are taken in nursing and other health-care education programs as well.

With such a rapidly developing field, the need for texts and materials is growing. Published texts for communication within health-care contexts are increasingly available—both those designed specifically for the second or foreign-language course environment and all-purpose resources that can be adapted for ESP instruction, such as general texts for doctors on developing skills for communicating with patients. The Internet is a rich resource for authentic medical texts and materials such as those generated for professional medical conferences (Kimball, 1998; Olmstead-Wang, 2009). Such resources are increasingly available through free and commercial services. General resource Web sites offering orientation and pedagogical materials include the Web site of the Educational Commission on Foreign Medical Graduates (www.ecfmg.org) for the US context; DoctorConnect (www.doctorconnect.gov.au) for the Australian context; and Englishmed (www.englishmed.com), sponsored by the Leonardo Da Vinci project for the European Union.

Course developers can increasingly turn to language corpora (e.g., the Cambridge International Corpus, www.cambridge.org/elt/corpus/cancode.htm, and the Nottingham Health Communication Corpus) as resources for actual language use between patients and health care providers.

A key area for further research within TEMHP remains the nature of the interaction of language, content, and culture within medicine and health care. In the globalizing contexts of English for medical and health-care purposes, communicative situations are increasingly complex. Clinical settings may be sites of multilingual language use where medical and nursing students negotiate between the languages of instruction, clinical practice, and patients. Shi, Corcos, and Storey (2001), for example, document the cognitive and linguistic complexity of language use in Hong Kong for medical students moving from Cantonese conversations with their patients to English with their tutors in an English-medium medical curriculum in Hong Kong. The cultural basis of health-care practice needs further recognition. In ESL (English as a second language) settings where there are large immigrant communities, TEMHP must take the multicultural, multilingual nature of the patient population into account (Bosher & Smalkowski, 2002; Duff, Wong, & Early, 2002).

SEE ALSO: English for Medical Purposes; English for Nursing; Materials for Language for Specific Purposes; Methods for Language for Specific Purposes

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Teaching for Internationalization and Critical Citizenship

JANE JACKSON

The trend of accelerating global interdependence presents both opportunities and challenges for communities, institutions, and citizens on all continents. Today's ever-changing world increasingly demands global competency, effective intercultural communication skills, and linguistic ability in more than one language, especially English, the global language of the 21st century.

In response to globalizing forces, including "market-driven neoliberal and neocolonial politics" (Kubota, 2009, p. 612), institutions of higher education around the world are reassessing their mission and responsibilities. Most have been grappling with the following questions: How can they raise their international profile and compete in this "knowledge economy"? How can they best prepare their students to become critical, global citizens and professionals in today's diverse world? How might they help students and faculty become internationally knowledgeable and interculturally competent? What steps can they take to provide students with a transformative international education? Similar issues are being addressed by international schools from kindergarten to 12th grade (K-12) and by other educational institutions at all age levels.

In some contexts change is largely motivated by economic imperatives. The General Agreement on Trade in Services (GATS) in North America, for example, has led to an emphasis on international branding and income generation (e.g., offshore campuses, distance education). Further, the dominance of English on the world stage is compelling many institutions with a less widely spoken language to adopt English as the medium of instruction in some programs to attract international students and generate much-needed revenue. Critics maintain that this is resulting in cultural homogenization, such as the domination of "Anglo-based academic standards and ideologies" (Knight, 2008), and the commercialization and commodification of higher education (Bassett, 2008; Knight, 2008). Kubota (2009, pp. 612–13) also argues that this trend is curtailing "the development of translingual and transcultural competency in foreign languages for English-speaking students."

Whatever the motivation (e.g., economic, sociocultural, linguistic, political, academic), institutions are realizing that students and teachers must be better equipped to contribute to their nation's effectiveness and competitiveness on the international stage. Besides the push for Englishization, in many quarters, there is growing awareness of the importance of mindful intercultural communication and responsible global citizenship to promote peace, stability, and cooperation in the world. Consequently, more and more institutions are embedding an international, intercultural dimension into their teaching and research.

Kälvermark and van der Wende (1997, p. 19) define internationalization as "any systematic sustained effort designed to make higher education more responsive to the requirements and challenges related to the globalization of societies, economy and labor markets." This process involves the integration of "an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education" (Knight, 2004, p. 11). In contrast with globalization, internationalization is more directly concerned with educational initiatives and linkages between countries that foster social, economic, political, and cultural

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relationships. The term "internationalization" is usually linked to higher education, whereas "global" education is more commonly associated with K-12 schooling.

As institutions turn their attention to the preparation of globally competent students (and teachers), there is more awareness of the need to define what this actually means. What is critical citizenship? What knowledge, attitudes, and skills are needed for individuals to be globally and interculturally competent?

"Interculturally competent persons," according to Chen and Starosta (2006, p. 357), "know how to elicit a desired response in interactions and to fulfill their own communication goals by respecting and affirming the worldview and cultural identities of the interactants." For these interculturalists, intercultural communication competence is "the ability to acknowledge, respect, tolerate, and integrate cultural differences that qualifies one for enlightened global citizenship" (p. 357). For Fantini (2007, p. 9), intercultural communicative competence is "a complex of abilities needed to perform *effectively* and *appropriately* when interacting with others who are linguistically and culturally different from oneself." Implicit in his definition are individual traits and characteristics (e.g., personality); the domains of relationships, communication, and collaboration; the dimensions of knowledge, attitude, skills, and awareness; proficiency in the host language; and a developmental process.

Like intercultural competence, global competence (sometimes referred to as "transnational competence," "global citizenry," or "global literacy") is defined in numerous ways. For Olson and Kroeger (2001), a globally competent individual has adequate knowledge (e.g., understanding of cultures, languages, global events and concerns), perceptual understanding (e.g., open-mindedness, sophisticated cognitive processing, resistance to stereotyping), and intercultural communication skills (e.g., adaptability, empathy, cross-cultural awareness, intercultural mediation) to interact successfully across cultures in a globally interconnected world. The Stanley Foundation, an American organization which advocates peace and world citizenship, defines global competency as "an appreciation of complexity, conflict management, the inevitability of change, and the interconnectedness between and among humans and their environment" (see www.stanleyfoundation.org). From their perspective, "globally competent citizens know they have an impact on the world and that the world influences them. They recognize their ability and responsibility to make choices that affect the future."

Hunter (2004) surveyed senior international educators, transnational corporation human resource managers, and United Nations officials to gather their views about the knowledge, skills, attitudes, and experiences necessary to become globally competent. For these individuals, a globally competent person is someone who is "able to identify cultural differences to compete globally, collaborate across cultures, and effectively participate in both social and business settings in other countries" (Deardorff & Hunter, 2006, p. 77). Global competence entails "having an open mind while actively seeking to understand cultural norms and expectations of others, leveraging this gained knowledge to interact, communicate and work effectively outside one's environment" (Hunter, 2004, p. 74).

Based on this survey, Hunter (2004) developed the global competence model to provide a framework for international educators to prepare "global-ready graduates." Central to his model is the belief that if one is to achieve global competency, one must recognize that one's own worldview is not universal. This framework emphasizes that "attitudes of openness, curiosity, and respect are key starting points upon which to build the requisite knowledge and skills" (Deardorff & Hunter, 2006, p. 79). Davies and Pike (2009, p. 67) also maintain that "education has a key role to play in elucidating the concept [of global citizenry], nurturing a sense of allegiance at the planetary level, and preparing young people to play active and constructive roles in an interdependent world." How might this be achieved in practice? What experiences, at home and abroad (both inside and outside the classroom), can promote global competency? How can teachers incorporate internationalization strategies

into their curricula to stimulate learning of this nature? What role can second language (L2) or foreign-language education play in the cultivation of critical citizenship?

An expanding number of institutions of higher education (as well as K-12 schools) are incorporating reflexivity and critical thinking components into the international/global dimension of their programs, including L2 education. Gacel-Ávila (2005, p. 125) maintains that critical pedagogy can stimulate "students' awareness of a global perspective on human problems" and help them "to recognize and respect cultural differences." As institutions play a central role in the formation of citizens and future professionals, this critical approach is vital to help prepare students for responsible citizenship in a global community. Critical engagement, self-reflexivity, and global competency are all important, and assessment practices need to be put in place that reward student learning in these areas.

In some institutions, internationalization efforts focus on the home campus; others offer study-abroad programs or international (faculty or student) exchanges, or both. In some cases, strategies and activities at home and abroad are connected and fully integrated, while in others, they remain separate domains. The term "internationalization at home" (IaH) refers to "the embedding of international/intercultural perspectives into local educational settings" (Turner & Robson, 2008, p. 15) with the aim of enhancing the global awareness, international understanding, and intercultural competence of teachers and "non-mobile" students. IaH initiatives aim to prepare individuals for life in an interconnected world whereby contact with people from other cultures (e.g., face-to-face, e-mail) is increasingly the norm.

For students, IaH usually consists of: courses and programs that have an international, intercultural, linguistic, global, or comparative dimension, or all of these (e.g., a "globalized" curriculum; L2 education with a critical, cultural dimension; multicultural or intercultural education; area, regional, cultural, or global studies; peace education); work placements or projects at international organizations; and the integration of local and international students both in and outside the classroom. Related extracurricular activities include international student clubs or international and intercultural events on campus, or both. Institutions may encourage students to participate in local cultural and ethnic community organizations through service-learning, internships, work placements, course projects, L2 tutoring, and applied research.

Instructional technology also facilitates IaH learning and intercultural contact. For example, e-lectures may be delivered by professors from multiple nations, students may use their L2 to collaborate on projects with counterparts at a foreign university, and the World Wide Web may connect students with foreign libraries and databases. The ease of virtual intercultural contact means that students and teachers on their home campus can now "journey" to other parts of the globe through the Internet, providing increased exposure to other languages and cultures.

A growing number of applied linguists (e.g., Guilherme, 2002; Byram, 2006, 2008; Birch, 2009; Jackson, 2010) are advocating a critical approach to foreign culture teaching/learning that will contribute to education for global citizenship. They recommend incorporating cultural content into language classes and the adoption of a critical approach to it. In particular, they stress the development of critical cultural awareness to stimulate deeper understanding and appreciation of self and other. In their promotion of language education for democratic citizenship, they recognize the importance of both reflective (subjective) and analytical (objective) cognitive processes and the cultivation of a more empathetic, open mindset.

Linked to critical citizenship is the notion of the "intercultural speaker," which Byram (2008) refers to as the "outcome" of teaching for intercultural competence. He describes the intercultural speaker as "someone who is aware of cultural similarities and differences, and is able to act as mediator between two or more cultures, two or more sets of beliefs,

values and behaviors" (p. 75). More specifically, these individuals use their linguistic skills and sociolinguistic competence to develop intercultural relationships. These competent, flexible communicators "engage with complexity and multiple identities" and "avoid stereotyping which accompanies perceiving someone through a single identity" (Byram, Gribkova, & Starkey, 2002, p. 5). For Guilherme (2004, p. 298), *critical* intercultural speakers are able to "negotiate between their own cultural, social and political identifications and representations with those of the other," and in the process, become aware of "the multiple, ambivalent, resourceful, and elastic nature of cultural identities in an intercultural encounter" (Guilherme, 2002, p. 125).

Increasingly, educators are recognizing that intercultural competence and a deeper understanding of the global community are essential for students to become capable, engaged, critical citizens. Byram (2008) argues that "it is the purpose of FLT [foreign-language teaching] and the duty of teachers, not only to combine utility and educational value, but also to show learners how they can and should engage with the international globalised world in which they participate" (p. 229). Critical citizenship necessitates self-awareness, the motivation to become engaged, respect for self and other, and the acquisition of the skills and knowledge that facilitate constructive interaction with people from different parts of the globe. Through "intercultural citizenship" education (Byram, 2008), teachers can foster the requisite skills and understanding that characterize an international civil society. As Olson and Kroeger (2001) warn, "anything less than a global intercultural education places our students at a severe disadvantage as they go forth into our globally interdependent and interculturally complex world" (p. 135). Byram (2008) proposes that future foreign-language teaching proceed on the basis of this understanding; however, much more work needs to be done to translate these ideals into practice.

SEE ALSO: Citizenship Education; Identity and Second Language Acquisition; Intercultural Learning; Internationalization and Localization; Teaching Culture and Intercultural Competence

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Teaching for Language Awareness

AGNETA M.-L. SVALBERG

Defining Language Awareness

Language awareness (LA) is defined by the Association for Language Awareness (ALA) as "explicit knowledge about language, and conscious perception and sensitivity in language learning, language teaching and language use" (retrieved April 19, 2011 from http://www.lexically.net/ala/la_defined.htm).

LA as "sensitivity" is the intuitive understanding of the effects of using language in particular ways. It is highly developed in good writers and gifted speakers. "Explicit knowledge about language," on the other hand, allows a person to articulate what they know about language and ask questions about it, and this can facilitate and enhance language learning. But the relevance of LA is not limited to classroom language learning. It is a multidisciplinary and multidimensional field which covers affective, social, power, cognitive, and performance aspects, including language use and attitudes in wider society (James & Garrett, 1991). A recurring theme in LA work is the idea that exposure to and exploration of a language or languages is a worthwhile activity in itself which can contribute to cognitive development and intercultural understanding, and that it can facilitate further language interest and learning.

A term sometimes used as a synonym of LA, for example in van Lier and Corson (2008), is "knowledge about language" (KAL). There are also a number of terms equivalent to LA in languages other than English, for example Éveil aux Langues (French), Sprachbewusstheit (German), Consciencia Lingüística (Spanish), and Språkmedvetenhet (Swedish). Although each term has connotations specific to their context of origin, they all refer to the same general field of research and practice.

A Brief History of Language Awareness

The LA movement in the UK grew out of a concern about literacy issues, and about linguistic (in)tolerance (Hawkins, 1999). In the 1970s, the so called "Bullock Report," *A Language for Life*, on the teaching of English in schools, emphasized the importance of language for all school subjects and had a major influence on this debate, as did work by a number of linguists, for example Michael Halliday's text-based (rather than sentence-based) grammar, and John Sinclair's pioneering work in corpus linguistics. By the 1980s, the term language awareness (LA) had become commonly used among education and language professionals (Donmall-Hicks, 1997), and there were a number of LA-inspired initiatives in language teaching in the UK. The government commissioned a project, Language in the National Curriculum (the LINC Project 1989–92) which produced language materials for schools (Carter, 1990). Their functional approach and inclusive attitude to non-standard varieties, however, clashed with prevailing views and the materials and recommendations were never implemented. The present National Literacy Strategy requires the explicit teaching of grammar, but does not necessarily lead teachers to adopt a LA pedagogy. Around the time of the LINC Project, in 1992, the Association for Language Awareness (ALA) was formed, with Eric Hawkins as its founder and inspirational driving force. The association,

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which has an international membership, publishes a journal, *Language Awareness* (Routledge), and holds a biennial international conference (www.languageawareness.org/).

In the rest of Europe, LA research and practice has been prompted mainly by multilingual contexts and fluctuating populations, with their concomitant linguistic richness and complexity. The French-led Socrates-Lingua funded project EVLANG (Éveil aux Langues) was, as the name indicates, concerned with the initial "awakening" stage of LA, and thus sought ways of promoting—in participating primary schools—an awareness of the local communities' languages and cultures. It served as inspiration and model for a number of subsequent projects and for the EDiLiC (Education for Linguistic and Cultural Diversity) Association, founded in 2001, which consists of teams of teachers in a dozen European countries and beyond, doing practice based research in schools. The association organizes international conferences, sometimes in collaboration with ALA (www.edilic.org).

Language Awareness Pedagogy

Unlike traditional explicit approaches to language teaching, which rely heavily on teacher explanation and teacher input, LA requires learners to be active and inquiring. Language learners in a LA approach will typically be asked to investigate and discuss language, often taken from authentic text (i.e., text produced for purposes other than language teaching) and to draw their own conclusions on the basis of what they notice in the text.

Learners talking to each other about language is central. It is thought that the learners' engagement with the language in such social interaction will facilitate learning. The teacher has a key role in setting up the students' tasks so that they focus attention on a specific teaching point (e.g., a grammatical structure, or a social characteristic of language use). Underlying this exploratory approach, and the use of authentic text, is a view of language as ever changing and variable depending on its purpose and context, rather than as a body of fixed unchanging facts (Borg, 1994). Language is presented in context, and the learners are encouraged to analyze and talk about it in order to discover and formulate their new knowledge. Both cognitive and affective engagement are thought to be essential. Through social interaction the learners also acquire learning skills.

LA is compatible with language learning theories which place a particular value on explicit knowledge and learning. It builds on research evidence in the 1980s and 1990s which showed the importance of "noticing" and "attention" (Schmidt, 1990). Researchers point out that attention is a limited resource, so we are not able to notice everything in the language input. Noticing does not guarantee learning but learning does not happen without noticing. One way of finding out what learners notice is to set up tasks which they have to solve by discussing the language with each other. Research on learners' talk about language in so called "language related episodes" seems to confirm the central role of noticing, and also highlights the importance of social interaction in helping learners construct knowledge (Swain & Lapkin, 2002). In this LA is essentially constructivist drawing on sociocultural theories of learning.

An issue in LA pedagogy is the role of terminology, or "metalanguage." It seems clear that knowledge of, for example, grammar terms or rules does not necessarily lead to successful language learning (Alderson, Clapham, & Steele, 1997). Learners' knowledge of metalanguage is, however, seen by LA teachers as a tool which can help them analyze and talk about language. The objective is not to memorize terms and rules but for learners to make connections between the forms of the language and their meaning and use.

Some techniques associated with a LA approach are *discovery* learning, *consciousness-raising*, *reformulation*, and *dictogloss*. Although the use of the terms varies, discovery activities tend to be more strictly guided than consciousness-raising tasks. Through carefully controlled examples, the learner is led to "discover" a particular rule or pattern of usage.

Consciousness-raising tasks, in contrast, are typically more open ended, and may not lead to one "right" answer. Learners might, for example, discuss the meanings and implications of modal verbs in a particular text. This will make them aware of the importance of the social and cultural context, for example the relationship between the speakers, in the use and interpretation of modal verbs. In "reformulation" the learners simply compare their own texts with a reformulation by the teacher. Dictogloss is a more elaborate way of creating the conditions for learners' active noticing of language. It involves them attempting to reconstruct in writing a text which they have listened to while taking notes. They then compare the original text with their own version, noticing and discussing the differences they find.

Multilingualism and Intercultural Language Awareness

In classrooms as in society, multilingualism (including bilingualism and plurilingualism) is increasingly the rule rather than the exception. The dialects, varieties, and languages a person knows can be seen as a repertoire they draw on, rather than as totally separate and distinct language sets. Jessner (2008) argues that learning a third, fourth, and so forth, language is essentially different from learning a second language. The reasons are the more highly developed metalinguistic awareness of multilinguals (i.e., their conscious knowledge of and ability to analyze and describe language) and the complex dynamics of the languages in the repertoire. The languages of a multilingual person affect each other, develop, and sometimes decline (so-called "attrition"). Jessner employs dynamic systems theory (DST) to model multilingual language development. Many who are unfamiliar with DST have heard of the related *chaos theory* and the "butterfly effect"—theories which help us understand complexity (see also Larsen-Freeman & Cameron, 2008). In addition to these cognitive and learning issues, multilingual contexts such as international student communities or immigrant and host populations raise a number of sociolinguistic questions related to, for example, language and identity and language and culture (e.g., Kramsch, 1993).

With reference to the teaching of modern languages in the UK, Phipps and González (2004) argue that it is essential to shape a common "intercultural being," and that talking about language and languages is central to this pursuit. Their approach is critical and constructivist. Critical LA (CLA), drawing on Foucault and others, focuses on language as an expression of existing power structures and how it constructs and perpetuates them, as illustrated in a paper by Fairclough (1999) on the discourse of global capitalism. The social and historical context is crucial. Pennycook (2001, pp. 94–100) describes CLA as critical discourse analysis with a pedagogic purpose (see also Norton & Toohey, 2004).

In a number of European countries, including Austria, Switzerland, Portugal, Greece, France, and Catalunya in Spain, education authorities have introduced LA into their school or teacher education curricula (Svalberg, 2007). Authors in Europe and beyond (e.g., Perregaux, 2006) argue for multilingual awareness in school settings, and the creation of a shared culture by drawing on the languages and cultures in the community. It is becoming accepted that language teaching and learning, including intercultural awareness, is essential for developing "intercultural citizenship" (Byram, 2008). At the same time, however, modern foreign languages in the UK are in decline. One initiative which strives to stimulate school pupils' interest in language learning is the Foreign Language Awareness Group for Schools (FLAGS; University of Birmingham) which offers exposure to new languages in an e-learning format (http://www.routesintolanguages.ac.uk/westmidlands/events/12-jan-09.html).

LA is promoted as a means of overcoming or avoiding negative attitudes, and increasing tolerance and understanding between language communities. Language attitudes have been explored by researchers such as Lasagabaster (2003) and Garrett, Coupland, and

Williams (2003). Some government agencies and local authorities strive to raise awareness of linguistic issues in their respective bilingual or multilingual communities. In Ireland, the Institute of Public Administration has offered language awareness training for public servants which includes discussion of attitudes to and stereotypical views of the Irish language and its speakers. In Wales, the Language Awareness Infrastructure Support Service (LLAIS) was set up in 2006 to "ensure that health and social care research in Wales takes full account of the bilingual nature of Wales and its speakers; and to enhance the delivery of health and social care services to Welsh speakers in Wales" (www.llais.org). This is in recognition that the LA of health-care workers in bilingual settings can affect the quality of health care.

Conclusion

LA is conscious knowledge of and sensitivity to how language works. It involves noticing and reflecting on language form, meaning, and use. In teaching, LA is seen as a means of stimulating interest in learning languages, and making language learning more successful. With its emphasis on autonomy in language learning, and on cultural and linguistic respect and inclusiveness, it would seem to capture important facets of the 21st century zeitgeist, and to be of relevance well beyond the classroom. Critical LA can help us understand how language is used for political and other purposes, to persuade and manipulate us, and can help us use language more effectively to make our own voices heard. Finally, as bilingual and multilingual settings are increasingly the norm in the UK and in the world, a well-developed LA is becoming necessary in the workplace and in dealing with the public.

SEE ALSO: Authenticity in the Language Teaching Curriculum; Explicit Knowledge and Grammar Explanation in Second Language Instruction; Teaching Culture and Intercultural Competence; Teaching for Internationalization and Critical Citizenship; Using Metalanguage in Teaching

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Teaching Grammar

DILIN LIU

Grammar instruction has always been an important, albeit controversial, component in language teaching, especially second language (L2) teaching. Questions related to grammar teaching include: what constitutes grammar teaching, whether grammar should be taught, which grammar description approach to use, which grammatical forms/rules to teach and in what order, when and how to teach grammar, what variables to consider in grammar instruction, what realistic results to expect, and what teachers should know/do to enhance grammar instruction. Debate about these issues has been framed and driven by new research findings and theories about language and language teaching.

What Constitutes Grammar Teaching?

Historically, grammar teaching has been viewed primarily as presenting, explaining, and practicing grammatical forms or rules as evidenced by the way grammar is taught in the Grammar-Translation teaching method and many traditional language-learning textbooks. In this view, grammar teaching typically begins with the teacher introducing/explaining a grammatical form (e.g., adding "s" to a singular regular noun to produce its plural form) followed by students practicing the target form in oral and/or written exercises. With new understandings about the role of *noticing* and consciousness-raising in language learning, however, the concept of grammar teaching has expanded to include any instructional activity "that draws learners' attention to some specific grammatical form in such a way that it helps them either to understand it metalinguistically [i.e., in explicit linguistic terms] and/or process it in comprehension and/or production so that they can internalize it" (Ellis, 2006, p. 84). In this broader view, grammar teaching does not have to include explicit presentation/practice of a target language form. Instead, it can be any learning activity that draws students' attention to the target form that will help them grasp it, even if the activity involves only comprehension since comprehension may eventually lead to production/acquisition.

Should Grammar Be Taught?

This question did not really become an issue of much debate until the 1970s when communicative language teaching, noted for its focus on communication skills and downplaying of the role of grammar teaching, emerged as a dominant teaching approach. The debate intensified when Krashen (1981) advanced his SLA theory, the monitor theory, which distinguishes between language acquisition and language learning and dismisses grammar instruction as unhelpful for language acquisition. According to Krashen, learned grammar, as conscious knowledge, does not contribute to language acquisition; it serves only as a monitor in language production when there is time to access it and the focus of the context is on form. Arguments against grammar instruction have also been made on the assumption that L2 acquisition, like L1 acquisition, occurs mostly as a result of the interaction between language input and universal grammar (UG), i.e., innate language

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knowledge. Evidence for the argument against grammar teaching came primarily from research findings in the 1970s that L2 learners follow basically the same order in acquiring language forms regardless of their L1 and learning conditions.

However, the anti-grammar-teaching position has since been seriously challenged. As reported in several extensive reviews of research on the effects of grammar instruction (Norris & Ortega, 2000; Ellis, 2006), many studies have shown that while grammar instruction may not affect the order of the acquisition of forms, it can, when appropriately done, accelerate acquisition rate and enhance learners' attainment, including their ultimate achievement, of accuracy and fluency. Furthermore, studies that compared explicitly instructed learners with implicitly instructed or uninstructed learners indicate that those who received grammar instruction, especially explicit instruction, appeared to gain a better command of the target structures and to progress more quickly in language development than those who received no instruction (Norris & Ortega, 2000; Ellis, 2006). Of course, as the reviewers of the studies caution, these research findings do not constitute completely convincing evidence for grammar teaching because (a) many of the studies assessed learning using restricted measurements with a focus on form (e.g., fill-in-the-blanks and sentence combination); and (b) the results of studies that measured learning using free, communication-oriented responses are not entirely conclusive. Yet, despite a lack of clear evidence for its usefulness, there has been a revived interest in grammar instruction since the 1990s as demonstrated by the many publications on the topic. The revival is not, however, characterized by a simple return to the old practice but marked by a passionate search for new, effective ways for grammar instruction that can help learners acquire their L2 more successfully.

Which Grammar Approach Should Be Used?

This is an essential pedagogical grammar question, for a key function of pedagogical grammar is to offer a description and analysis of the grammar of a language for the purpose of teaching/learning that language. The question is important because it can determine to a great extent which grammatical features to teach and how to teach them. Various grammar approaches have been used in L2 teaching. Before the 1970s, *prescriptive grammar* and structural grammar dominated as shown in the grammar-translation teaching method and the audiolingual method. Since the 1970s, these two rule-focused grammars have given way to an integrative *descriptive grammar* informed by various important contemporary linguistic theories, such as *systemic functional linguistics/grammar*. This integrative descriptive approach, best exemplified by Celce-Murcia and Larsen-Freeman (1999), treats grammar as a complex system involving not only form but also meaning and use (its contextual appropriateness). In this approach, the discussion of any given grammatical form will involve all three aspects because they are a closely integrated whole where "a change in one will involve a change in another" (Celce-Murcia & Larsen-Freeman, 1999, p. 4). Also, grammar teaching in this approach is discourse/content-based with grammar presented and practiced in coherent chunks of discourse rather than at the sentence level. Such an approach aims to help L2 learners grasp grammar as a resource they can use to make meaning effectively and appropriately in a variety of contexts. Grammar learning is thus as much about learning how to use language forms for communication as about learning language forms. It is a dynamic process that Larsen-Freeman (2003) calls "grammaring," through which L2 speakers learn to use grammar to communicate successfully.

More recently, two relatively new types of grammar approach have gained attention in L2 teaching: (a) *lexicogrammar* and *pattern grammar*, and (b) *cognitive grammar* and *construction grammar*. The two in each pair are grouped together because the second one in each pair

is in essence derived from the first. Lexicogrammar, an important component of systemic functional grammar, treats lexis and grammar as two inherently interconnected parts of one entity. Such a view has been supported by *corpus* research findings, which demonstrate that a grammatical structure is often lexically bound (i.e., typically composed of certain specific lexical items) and lexical items all have their own grammar in that they have their unique distribution in grammatical patterns (Biber, Johansson, Leech, Conrad, & Finegan, 1999; Hunston & Francis, 2000). Pattern grammar generates lexicogrammatical patterns from corpus data. By collapsing the boundaries between lexis and grammar, lexico/pattern grammars focus on fixed/semi-fixed structures formed by usage. Cognitive/construction grammars posit that language structures are generally not arbitrary but motivated by general human cognitive processes, and human language knowledge is not innate but usage-based. Such a grammatical approach views *form* as any syntactic, morphological, and prosodic patterns or symbolic units (collapsing the traditional boundaries among them) and *meaning* as a combination of lexical semantics, pragmatics, and discourse structures, for example, "*What's up?*" is viewed as a symbolic unit for greeting based on its repeated use as such.

Thus in language teaching, as usage-based approaches, both lexico/pattern and cognitive/construction grammars focus on the study of lexicogrammatical patterns via ample actual usage examples. As an example, in teaching the English ditransitive structure (V+NP+NP), a corpus-based cognitive/construction approach would have students examine, in a corpus/corpora, the use of the prototype verbs in this structure/construction (e.g., *give/buy/teach*) and then generate, from the many relevant corpus examples, the usage/semantic patterns (i.e., the verbs typically used in this structure/construction due to its meaning restrictions), rather than generate/abstract the syntactic rule for forming the structure/construction (a traditional practice). Syntax plays little role in this approach, for a grammatical structure/construction is taught as a variable set of possible meaningful lexical combinations. Such a usage-based and meaning-/conceptualization-focused approach may make traditionally difficult-to-explain usages easier to explain and understand (e.g., a cognitive explanation for why both *gave a book to someone/give someone a book* are acceptable but we only say *gave someone a hug*, not *gave a hug to someone*, is that a "hug" is not something transferable and the person must be adjacent to the hugger to be hugged).

Which Grammatical Forms/Rules Should Be Taught and in What Order?

Superficially, this does not appear to be a difficult question because most language curricula and course books seem to embrace a comprehensive approach to grammar that proceeds typically from simple, regular, and/or useful grammatical forms to complex, irregular and/or less useful ones as defined by perceived utility to the learner. In reality, the question is very challenging and heatedly debated. Some language educators contend that only a few simple and easily applicable rules (e.g., the use of *s* in plural noun formation) should be taught because most of the other rules are too complex to be teachable. However, research has shown that learners, with proper instruction, can grasp very complex forms. Some other scholars believe that there are simply too many grammatical rules to teach and that many rules can be grasped by learners on their own. Hence instruction should focus only on forms that are difficult to learn. Yet determining which forms are difficult and warranting instruction is a very complex issue. First, there are two different types of learning difficulty: "(a) difficulty learners have in understanding a grammatical feature and (b) . . . the difficulty they have in internalizing a grammatical feature so they are able to use it accurately in communication" (Ellis, 2006, p. 88). As an example, most EFL/ESL

learners have little difficulty understanding the use of the past tense *-ed* but they often have difficulty using it correctly in a consistent manner.

So far, the latter type of difficulty has been largely overlooked in the selection of grammatical forms for instruction. The first type, difficulty in understanding a rule cognitively, has been the major consideration, but there have been competing theories about what constitutes such learning difficulty and which forms to include in instruction. The first major competing theory, founded on contrastive analysis, calls for teaching forms that are different from learners' L1 in meaning, structure, and/or distribution because these forms are believed to pose greater difficulty for L2 learners. This theory has proven problematic: research has shown that cross-language differences do not always present difficulty. The second theory, derived from universal grammar, advocates teaching marked forms because such forms are uncommon and hence more difficult to grasp than unmarked forms. However, markedness is not yet a clearly defined concept and hence not easy to apply. The third theory, grounded in error analysis, argues for using learners' persistent errors as a reference for selecting forms for instruction. A problem with this theory is that often the most persistent errors are not those that learners have difficulty understanding but those they have difficulty in using correctly in a consistent manner. One other related theory that has bearing on the issue is the *learnability/teachability* hypothesis (Pienemann, 1984). It assumes that grammatical forms are acquired in a certain order and, consequently, only forms that students are ready to acquire should be taught. Yet, in practicality, determining learners' readiness for a given form is not an easy task. In short, the question of which grammatical forms to teach and in what order still remains debatable.

When and How Should Grammar Be Taught?

Concerning when grammar should be taught, there are two schools of thought: one for teaching grammar early and one against it. The pro school has two main arguments: (1) L2 learners need to grasp some basic grammatical forms in order to engage in meaningful language learning; (2) lack of grammar learning initially often results in L2 learners using and developing incorrect language. The opposition also has two major arguments: (1) L2 learners often can develop some competence in the language without grammar learning; (2) many L2 learners who study the language in the classroom do not "progress beyond the initial stages of language learning" and will benefit more from natural learning in developing a "threshold communicative ability" (Ellis, 2006, p. 91). So far, there is no clear, definitive answer to this question.

Another question related to the timing of grammar teaching is when it should be done in a given lesson. Should it be carried out early in the lesson before most of the other activities, or after some interactive activities? Like the former question, this one does not have a clear, definitive answer, either.

The question of how grammar should be taught is very broad and complex because there are many variables and types of instructional practice that should be considered in answering the question. Given that the issue of how variables influence grammar instruction is very important in and of itself, it is addressed separately below. Regarding instructional practices, there have been a plethora of labels, including explicit/implicit instruction, task-based instruction, *focus on forms* versus *focus on form*, and inductive/deductive instruction. Due to space constraints, only the following types will be discussed.

Explicit Versus Implicit Instruction

Explicit instruction generally refers to the practice of explaining a target grammatical rule, often with the use of grammatical terminology, and examples of the rule that may include

negative evidence (error correction), or overtly asking students to notice, discover, and/or explain a target rule in the language input. In contrast, *implicit instruction* typically means the practice of providing learners with language input containing a grammatical structure enhanced or manipulated via one form or another, such as visual enhancement, to covertly draw learners' attention to the form. Explicit grammar teaching was the dominant practice in traditional teaching methods, but since the 1970s it has been seriously challenged and the implicit approach has been celebrated as a better choice. More recently, research has shown that both approaches can be effective if used appropriately, although explicit instruction is not appropriate for young children.

Inductive Versus Deductive Teaching

Inductive grammar teaching begins by providing learners with many examples of a rule for them to practice and then has the learners discover/generalize the rule on their own. In this approach, students usually provide rule explanations. Deductive teaching, on the other hand, commences by giving learners a rule and then has the learners apply the rules in various exercises. In general, the former approach is a better choice because (a) it conforms to the typical way humans learn, (b) discovery learning leads to better understanding and retention, and (c) students are more motivated when given the opportunity to discover rules than when being told the rules. Of course, some learners perform better with, or prefer, deductive learning due to their learning style and/or the freedom from worry about making errors in discovering/generalizing rules. Deductive learning is also often less time-consuming than inductive learning, which is an important issue for many L2 learners and teachers alike. Therefore, both inductive and deductive approaches can be useful depending on the learner and the context.

Input-Based Versus Output-Based Instruction

The distinction between input-based and output-based instruction is fairly straightforward: the former focuses on the comprehension of the form being taught and the latter on the production of it. An important new grammar teaching approach that can be classified as input-based instruction is *input-processing instruction* developed by VanPatten (1996), which is noted for its manipulation of the input of forms to have learners process it in such a way that they can effectively notice and grasp the form in the input.

What Variables Should Be Considered in Grammar Instruction?

Age, educational background, learning style, and proficiency level are very important learner variables. Learning goals and settings are some other important variables to consider in order to design effective grammar instruction in a given context. For example, explicit grammar teaching is obviously inappropriate for young children due to their limited cognitive ability. For learners with little formal education in their native language, overt instruction using metalinguistic terms is not beneficial, or not as beneficial as implicit teaching via structured input on form. While analytical learners may excel with explicit instruction, holistic learners often suffer under it. Similarly, intermediate and advanced learners gain more from explicit teaching than beginning learners. Concerning the variables of learning goals and settings, explicit grammar instruction is usually not helpful for newly arrived immigrants learning survival language, but it is often necessary for college L2 students learning reading and writing. In short, many variables have to be considered when deciding how to teach grammar.

What Realistic Results Should Be Expected?

Grammar learning is a long process. It may follow a U-shaped developmental pattern in which a learner produces a target form correctly in the initial learning stage, but then incorrectly, before finally becoming able to use it correctly again. Thus teachers should not expect learners to grasp a form completely after it has just been taught. Instruction may help learners notice the form and/or understand part of it, but often it will take more exposure/practice for them to develop a solid command of the form. Of course, the learning results and the time needed for the results to occur may vary from learner to learner, and from one grammatical form to another due to the difference in the level of difficulty.

What Should Teachers Know/Do to Enhance Their Grammar Instruction?

This is a very important question because teachers play a crucial role in the success of grammar instruction—an extremely challenging endeavor, as has been shown. According to studies on grammar teaching in teacher education (Liu & Master, 2003), besides possessing a solid knowledge of grammar and good teaching skills/techniques, teachers should empower themselves by engaging in critical examination of the grammar descriptions and instructional practices they use. They should also continually acquire new understandings about grammar and experiment, along with new teaching strategies and technology, because grammar instruction is an area that has experienced, and will continue to experience, rapid development.

SEE ALSO: Attention, Noticing, and Awareness in Second Language Acquisition; Cognitive Grammar; Explicit Learning in Second Language Acquisition; Form-Focused Instruction; Grammar in Language Teaching and Education; Implicit Learning in Second Language Acquisition; Input Processing in Second Language Acquisition; Learner Readiness; Lexicogrammar; Pattern Grammar; Prescriptive and Descriptive Grammar; Processability Theory and Teachability; Systemic Functional Linguistics; Teaching Grammar and Corpora; Universal Grammar and Second Language Acquisition

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Teaching Grammar and Corpora

TONY BERBER SARDINHA

Corpora have been used in teaching grammar for nearly 25 years (Willis & Willis, 1988). During this time teachers and researchers have discovered a growing number of benefits that seem to follow. Some teachers see corpus-based pedagogies as a means of encouraging independent learning, illustrating real uses of abstract rules, presenting authentic everyday grammar, promoting exploratory inductive learning. The manner of grammar presentation foregrounds the most frequent patterns, thereby lightening the burden on students by downplaying infrequent structures, breaking down the distribution of features across registers, and providing a fine-grained picture of grammar that leads to a nuanced understanding of structures (Johns, 1991; McCarthy, 2004; Biber & Conrad, 2010; Hughes, 2010; McCarten, 2010).

However, some teachers and researchers point out that using corpora in grammar classes often means teaching traditional clause grammar, it generally requires students and teachers to be tech-savvy, corpora cannot give negative evidence (i.e., show that something cannot occur), materials are difficult to generate, and examples can be decontextualized (see Ädel, 2010; Römer, 2010). To better understand these advantages and limitations, this entry describes the various approaches taken to the use of corpora for language teaching.

Corpus-Based, Corpus-Driven and Corpus-Informed Approaches

Grammar-teaching approaches can be distinguished as being either corpus-based, corpus-driven (Tognini-Bonelli, 2001), or corpus-informed (McCarthy, 2004).

In a *corpus-based* approach, structures or patterns to be taught are identified in a top-down direction; they are predetermined by reference to a particular theory, and the role of the corpus is to provide details about their frequency and distribution. In a grammar classroom, this will generally translate into tasks in which the teacher selects a particular grammatical feature and students then query a corpus for it. The corpus findings will then illustrate the uses of that feature.

In *corpus-driven* investigations, teachers and students start out with minimal assumptions about which structures to look for, and by relying almost entirely on basic units such as word and text, they search a corpus for recurrent patterns. In the classroom, this may materialize as bottom-up activities, such as data-driven learning tasks (Johns, 1991). In these, students generate hypotheses about the data or develop questions about grammar from other activities, analyze concordances, and confront their initial expectations.

The *corpus-informed* approach originated in applications of corpus linguistics to pedagogy, unlike the previous techniques, which emerged out of research. A basic principle is that "corpus data alone does not dictate an instructional syllabus" (McCarthy, 2004, p. 15). Consequently, materials writers are free to take actions that would be frowned upon in the two previous orientations, including adapting examples and sequencing teaching points regardless of their frequency in a corpus.

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Direct and Indirect Means, and Examples of Research-Backed Materials

Broadly speaking, teaching grammar with corpora can be done in two ways: directly, when teachers and students handle corpora themselves, and indirectly, when materials writers and course designers analyze corpora and build their findings into grammar activities (Römer, 2010).

Direct applications generally include some form of corpus search results that are either produced in the classroom or prepared ahead of time by the teacher. The most typical corpus query tool used in these applications is the concordance. A concordance is a list of the occurrences of a string of characters, word, or expression in a corpus together with portions of the text in which each occurrence was originally embedded. The particular items that are searched for are defined by the aims of the course or class in question.

As far as *indirect* ways of using corpora for teaching grammar, there are a number of high-quality, research-backed materials that teachers and students can explore in grammar classes. For reasons of space, only three sets of these will be mentioned here.

The first one is the *Longman Grammar of Spoken and Written English* (*LGSWE*, Biber, Johansson, Leech, Conrad, & Finegan 1999), a large-scale comprehensive grammar entirely based on corpus-linguistics research. With a focus on linguistic variation, the grammar covers a wide range of traditional grammatical issues, from word classes to phrasal and clausal categories, but it also innovates by including topics such as the grammatical marking of stance, the grammar of conversation, and a detailed treatment on lexical expressions (bundles). Teachers can use the *LGSWE* in the classroom to describe most features of English grammar from a descriptive, not prescriptive, point of view. Being an academic grammar, it is perhaps best suited for very advanced or university-level classes. The many charts included in the grammar can prove very useful aids in presenting frequency information, especially by highlighting how frequently different features are distributed across different registers (conversation, fiction, news, and academic). There is also a simplified student version of *LGSWE* and a workbook. A recent addition is Conrad and Biber (2009), a volume that presents both theory and practice on a wide range of features, all deriving from corpus research. Its contents stretch from conventional issues such as verb tenses and definite articles, to unusual topics for a grammar, such as the noun "thing" and nonsexist language choices. This series can be described as both corpus-based and corpus-driven, since it often recognizes the validity of grammatical constructs, but it also illuminates them by specifying how they are realized lexically and how typical they are in each register, none of which had been predicted by theory. Since some language samples included in the practice books have been simplified where necessary, it also aligns itself with the corpus-informed approach.

The second set of materials is the *Collins COBUILD Grammar Patterns* series, which comprises volumes on verbs (Francis & Hunston, 1996), nouns, and adjectives (Francis & Hunston, 1998), as well as a workbook and a theoretical monograph (Hunston & Francis, 2000). This series is a prime example of corpus-driven research, since both pattern and meaning groups were arrived at from such basic units as the word and parts of speech.

The final series discussed here is *Touchstone* (McCarthy, McCarten, & Sandiford, 2005), a corpus-informed multilevel course-book series. In keeping with its philosophy, while it incorporates results from corpus-linguistics research, the authors are not bound by corpus statistics as they try to strike a balance between research findings and teaching methodology. Priorities are set by pedagogical principles and the corpus findings are added to the contents. *Touchstone* books look like traditionally prepared materials; corpus research remains essentially "under the hood," and corpus-analysis tools are not visible.

In both teaching and research, however, what we see is that -informed, -based and -driven form a continuum, and that researchers, learners and teachers will normally move from one end of the spectrum to the other. For instance, a learner may begin exploring a corpus for reported speech from the corpus-based side, looking for "says/said that + personal pronoun + verb" and wind up at the corpus-driven end by discovering that certain verbs are more likely to follow "says" than "said"; verbs like "feel," "see," and "take" are more frequent with "says" whereas "need," "expect," and "wish" occur more often with "said" (according to the Corpus of Contemporary American English—COCA). Conversely, someone who starts out from the driven end of the continuum looking for "was + ing" may find out that many instances of this pattern will be used to report speech ("she was telling me . . .") thus moving over to the corpus-based camp. But at the same time, as they look at concordance lines, they may discover that this particular realization generally involves reporting interesting news (McCarthy, 2004, p. 16), which will bring them back toward the corpus-driven end. And teachers may select and simplify corpus examples to best illustrate particular grammar points, which is consistent with corpus-informed principles.

Tools, Top-Down and Bottom-Up Corpus Handling

Handling corpora requires corpus-processing tools. Concordancers are the most popular of these. Two basic ways in which concordances can be used in grammar classes are the following:

- *Top-down approach*: This involves working deductively from a rule or structure down to the data or examples. Categories into which to fit the data may be presented before or after the analysis of concordances. One way to implement this is by having students analyze concordance lines and classify them into categories provided by the teacher.
- *Bottom-up approach*: This is characterized by inductive work, where no grammatical categories are assumed beforehand but are derived from patterns found in the data. Typically, teachers will first ask students to find patterns in a concordance and then interpret them in grammatical terms. These patterns may be formed by lexis, grammar, or both. Students may use previously learned features or propose new ones to account for the data. What is important is that the initial analysis is not restricted by a set of predefined categories.

The method of exploring concordances for grammar teaching in a bottom-up approach is not fundamentally different than their use for teaching other linguistic strata, such as vocabulary. This is because bottom-up analysis without a priori categories tends to highlight the lexicogrammar of the language.

In grammar teaching, however, the grammatical end of the scale is given prominence, thus highlighting structural properties of the patterns rather than word combinations.

In addition to string-based searches, teachers and students may do tag-based concordancing, provided their corpus has been tagged (coded). One of the most common tagged features is part of speech (POS), and several online corpora nowadays incorporate POS tagging. Unfortunately, there are many different tagging schemes, which may confuse students, but in general the tagging conventions are well detailed on most online corpora pages. POS tags can be very helpful in teaching and learning grammar, as they help students to pick up word classes and similar characteristics that would not be amenable to searching in a straightforward way without the tags.

In COCA (www.americancorpus.org), a query such as the following will bring up the most common verbs following "studies have":

Words: studies have
Collocates: [v*]
Horizon: 0,2

The code next to "Collocates" is the actual tag that indicates "all verbs," and "Horizon" refers to the position of the tag in relation to the first word being searched for, namely the second one to the right of "studies." The results show a list of verbs and their frequencies, which include "shown" (N=1260), "been" (N=536), and "found" (N=452).

By choosing to display the results as a chart, the user will notice that the highest bar, by far, is that for the academic register, with 38.3 occurrences per million words. The chart will also reveal that the frequency of this pattern has risen over the last 20 years, from 8.4 per million in the beginning of the 1990s to 15.08 in 2005–10. Finally, by clicking on each chart bar, the user will obtain concordance lines for the corresponding section of the corpus.

The exploration of a corpus in this way can then be complemented by comparing the results of hands-on investigations with those published in reference materials. For example, Conrad and Biber (2009, pp. 7–9) have a unit on discovery verbs, including "studies have shown," which can be explored in conjunction with the analysis of a corpus. This is one way in which direct and indirect methods can complement each other.

If students and teachers want to tag their own corpora, they can do so using a range of tools, some of which are freely available online. The TreeTagger, for instance, can be downloaded free of charge (www.ims.uni-stuttgart.de/projekte/corplex/TreeTagger/DecisionTreeTagger.html). A graphic interface can also be fetched and run with the tagger, simplifying the process of tagging individual files. An online version of TreeTagger is available at the CEPRIL Web site (www2.lael.pucsp.br/corpora), for a number of languages. VISL (Visual Interactive Syntax Learning) is another popular tagger that can be accessed online (http://beta.visl.sdu.dk).

In addition to POS tagging, parsing or syntactic annotation is another type of markup that is very useful for teaching grammar. Whereas POS will enable teachers and students to retrieve word classes (nouns, verbs, adjectives, etc.), parsed corpora (sometimes also known as treebanks) will allow users to find syntactic constituents such as phrases or groups. For instance, the sentence "My best friend gave me chocolate yesterday" is represented in the Penn Treebank II as follows:

```
(TOP (S (NP-SBJ my best friend)
        (VP gave
            (NP me)
            (NP chocolate)
            (NP-TMP yesterday))
        .))
(http://www.ldc.upenn.edu/ldc/online/treebank/README.intro)
```

Syntactic constituents are represented each on a separate line, and both brackets and indentations reflect how each line is subordinated to the lines that precede it. So, "(S" refers to the top unit that was parsed, namely the whole sentence. This is then broken down into a noun phrase functioning as subject of the sentence (NP-SBJ my best friend) and a verb phrase (VP) that comprises the remainder of the sentence. This VP is then further subdivided into three separate NPs (me, chocolate, yesterday). As with POS-tagged

corpora, parsed corpora differ among themselves in terms of the conventions followed for parsing. Students and teachers may find parsed corpora much harder to use than plain text or POS-annotated ones. Again, fortunately, documentation is available on some treebanks, which can be helpful for teachers who want to introduce parsing into grammar teaching. Currently, however, there is a shortage of materials on how to use treebanks in the classroom, and as a result they remain largely ignored in teaching grammar.

An exception is VISL, which offers a graphic interface for searching previously parsed corpora as well as for allowing users to annotate their own corpora automatically. VISL was designed with classroom practitioners in mind, and because of that and its visual appeal, it may be easier to incorporate into grammar teaching than other treebank resources. For instance, Java tools enable users to see parsed sentences as trees rather than plain text, which will perhaps look more familiar to students and teachers.

Caveats

Some caveats to using the tools and techniques surveyed here should be noted.

First, as far as infrastructure goes, some preconditions need to be met—the most obvious of which is access to computer facilities; accessing an online corpus entails an Internet connection; using concordances in the classroom requires copying and/or some form of projection by beamer or electronic board. There is a digital divide in the world, meaning large numbers of people have very limited access to technology (Hughes, 2010, p. 407), but there are alternatives where such infrastructure is scarce. One is concordancing by hand on a blackboard (Willis, 1998); another is accessing free online corpora in Internet cafes or LAN houses.

Second, with regard to levels of proficiency, it is important to bear in mind:

- *Searching online corpora*: This is not likely to prove challenging to most students, especially the generation Y, given the similarity to searching the Web. Most beginners should experience no problems.
- *Concordance analysis*: Short lines and lack of context may hinder comprehension. Learning to read concordances requires training. Perhaps most appropriate for intermediate and upper levels of proficiency.
- *Part of speech tagging, parsing, treebank searching*: These are very sophisticated techniques that require both technical skills and theoretical knowledge. As such, best suited for advanced students, and possibly most appealing to students with a background in hard sciences.
- *Corpus-based and corpus-driven materials*: Most of these materials are better suited for advanced classes.
- *Corpus-informed materials*: These tend to cater for students at all levels.

Finally, most activities involving corpus materials are probably best described as traditional PPP (presentation, practice, production) tasks. These normally incorporate some form of explanation or noticing, followed by question and answer, gap filling, matching or sentence completion. Concordances are usually gapped, and students have to fill in the missing words. Oddly, for an area that relies on technology, corpus linguistics does not live up to its expectation in the classroom. Teaching materials are essentially paper-based, and reflect the tools used by researchers in their trade—basically texts, concordances, frequency lists, and taggers. They could be made more effective by incorporating a wider range of visual technologies, such as word clouds, charts, and animation, and exploring different kinds of text in the classroom, such as online video, video games, and music (Berber Sardinha, 2010).

SEE ALSO: Concordancing; Corpora in the Language-Teaching Classroom; Corpus Linguistics in Language Teaching; Emerging Technologies for Language Learning; Lexicogrammar; Pattern Grammar

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Teaching Indigenous Languages

BARBRA A. MEEK

Introduction

In the introduction to the edited volume, *Teaching Indigenous Languages*, Dr. Jon Reyhner reflected that "I have written on this subject of maintaining and renewing indigenous languages before . . . but the recent work of Dr. Evangeline Parsons Yazzie and Dr. Richard Littlebear . . . has crystallized for me the centrality of this effort for the survival of indigenous peoples" (1997, p. v). This survival, according to Reyhner and those he cites, is characterized by the sense of well-being, safety, and belonging that accompanies the knowing and speaking of a familial language, the language of one's ancestors, and the language of one's family. Therein lies the challenge for indigenous language educators, activists, and supporters, the challenge of teaching a language effectively enough to stimulate a sense of belonging and of fulfilling the ultimate goal—indigenous (language) survival.

Reyhner, founder of the "Stabilizing Indigenous Language" symposia, and many of the people who have participated in these symposia, have been working toward this goal since well before the inception of these meetings in 1994 and regularly thereafter. The sentiments of these participants, which emphasize the critical link between language, cultural well-being, and human rights, have recently been underscored by the United Nations' Declaration on the Rights of Indigenous Peoples, or DRIP, which positions language as central to the rights of indigenous peoples and the responsibility of nation-states to protect it. Article 14 spells out this commitment:

> States shall, in conjunction with indigenous peoples, take effective measures, in order for indigenous individuals, particularly children, including those living outside their communities, to have access, when possible, to an education in their own culture and provided in their own language. (http://www.un.org/esa/socdev/unpfii/en/drip.html)

While the purpose of this entry is to provide a general overview of the literature, the central concern focuses on the ways that these linguistic rights may facilitate the linguistic practices—the "small" steps—taken toward teaching, acquiring, and sustaining indigenous languages. As Reyhner's reflection highlights, maintenance and renewal are not simply about learning a language; they are about socialization into an entire cultural grammar.

Core Issues

In the past decade, a wealth of literature has emerged addressing the ideological and practical challenges of indigenous language instruction. For the most part, this literature builds on and continues to systematize the earlier work on language shift, the process whereby a marginalized language begins to shift away from being a community-wide everyday vernacular to being a more esoteric, specialized code known only by elder community members. This process is articulated most notably in Joshua Fishman's book, *Reversing Language Shift* (Fishman, 1991), a stage-by-stage guide to assessing and reversing

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the shift of indigenous and minority languages. Any substantial reversal of such language shift requires the recovery of a sustainable speech community.

Toward that end, the literature offers a range of approaches for teaching indigenous languages, many designed according to the age and grammatical competence of the participating individuals. To inspire novice child speakers, especially preschool-age children, immersion programs are recommended, frequently modeled after the "language nests" used to revitalize Māori and Hawaiian languages (King, 2001; Wilson & Kamanā, 2001). For older children, immersion models as well as more school-based programs have been developed, incorporating a literacy and a cultural component into the indigenous language curriculum (e.g., Eder, 2007) as well as translating other courses and pedagogy into or through the indigenous language (e.g., Harrison & Papa, 2005). For adults, university-based classes, community-based workshops, language camps, and master–apprentice programs have been implemented in order to entice adult speakers to speak the indigenous language again and to facilitate nonspeakers to speak it for the first time (e.g., Hinton, Vera, & Steele, 2002; Morgan, 2005). However, not all indigenous languages have become imperiled equally. Indigenous languages still spoken may require the development of more sophisticated instructional materials, techniques, and curricula that can rival the educational experiences offered in more dominant, usually European, foreign-language classes. "Sleeping" languages, on the other hand, require archival research for grammatically and verbally reconstituting the language prior to the development of any curriculum materials or immersion programs (Hinton & Hale, 2001). Thus the specific goals and techniques of these indigenous language projects may vary.

Four Challenges

While the specific goals and techniques of indigenous language projects may vary, many of the challenges remain and are rooted in the variability of the resources, the materials, and the institutions which structure the teaching of indigenous languages. Four prominent issues pervade the literature on teaching indigenous languages: the entanglements of the literacy–orality debate; the marginality of indigenous language texts; the development, accessibility, and use of language media; and the overall management of and support for indigenous language teaching. In other words, what materials and routines can and are used, how do these techniques encourage or discourage community participation, and how are such teaching programs evaluated, supported, and controlled?

Literacy has long been an issue in indigenous language development. On the one hand, literacy projects create space for documenting indigenous languages, for creating curriculum materials, and for incorporating indigenous practices into dominant institutional domains. On the other hand, some indigenous people argue that their heritage languages are orally based and therefore inappropriate for entextualization and the project of literacy. An oft-cited case illustrating this stance is that of Puebloan groups and their approaches to language teaching (Benjamin, Pecos, & Romero, 1997). The challenge for teaching involves the development of effective verbal techniques that encourage acquisition and the integration of culturally relevant activities that inspire speaking but respect the sociological constraints on the performance of certain genres of speaking at certain times or by certain individuals (Eder, 2007). Immersion programming has made significant strides toward addressing the needs of an orally based approach.

Where literacy and writing are pedagogically welcome, the challenge resides in the development, manufacture, and distribution of useful, engaging language materials, texts, and other media. One of the issues to consider in the creation of language materials is the formatting of the indigenous language in relation to the dominant language. Many indigenous language materials are locally made by indigenous language teachers, though

in some cases, state-funded materials have been produced. Even so, their appearance, level of detail, and topical breadth pale by comparison with state-funded, mass-produced textbooks. Marginalizing their linguistic appearance further is the prominence of the dominant language within the indigenous language texts. One strategy for interrupting this dominance is to minimize the prominence of the dominant language (for glosses only) or to entirely remove the dominant language from the text (Meek & Messing, 2007). Additionally, more than one dialect may exist within a language community. How will this linguistic diversity be accommodated, and how will new words be created? This issue again complicates the development and manufacture of language media.

Another issue is accessibility: Who will have access to the media and how will they use it? And, more specifically, how will such media encourage acquisition? One case illustrating the challenges of media development describes how competing ideologies about language ultimately can discourage the use of media like the Internet because such methods for teaching language (and culture) contradict community-wide philosophies of learning and socially sanctioned trajectories of acquisition (Nevins, 2004). People, especially older adults, felt threatened by the new technologies being used to transmit their language because they disrupted ordinary interactional means of transmission and the structuring of authority between older and younger generations implicit in these means. The issue of authority also surfaces in relation to the training and credentialing of teachers where the challenges are the opportunities and resources individuals have to acquire the necessary credentials and background in order to become teachers and to have a rewarding experience (Hinton & Hale, 2001). By extending indigenous language learning to institutional venues, dilemmas over authority, power, and control emerge, exacerbated by the funding and resource requirements demanded for the creation of media and the facilitation of training and access.

This illustrates that the final challenge for teaching indigenous languages inevitably resides within the political economy surrounding indigenous language efforts (see Sims, 2005). In order for indigenous communities to develop programs, train instructors, and maintain educational continuity, resources and funding are critical. The United Nations' appeal to nation-states for the recognition of indigenous groups' rights to self-determination begins to offer an opportunity for indigenous groups to mobilize support and to force dominant regimes to support their efforts. However, establishing funding to sustain their progress is just one step. With funding comes expectations and struggles over control and accountability. As tribes and other indigenous groups begin to articulate their own educational goals and protocols, these struggles will hopefully diminish, but until such accommodations, cooperative agreements, and collaborations have been established, this broader challenge for teaching indigenous languages remains.

Conclusion

Reflecting on the survival of Navajo, Bernard Spolsky highlighted "the importance of seeing language and education in the full social, cultural, religious, and political context," noting that "if efforts to reverse language shift are to be successful, they must target and transform multiple forces and institutions in each dimension of this context" (2002, p. 157). Ultimately, for each indigenous community, the challenges and solutions will be realized in a variety of ways, impacted by the different language ideologies in circulation (Echeverria, 2003) and the various opportunities that indigenous communities will have to realize linguistic sustainability.

SEE ALSO: Advocacy in Language Teaching; Heritage Language Teaching; Immersion Programs

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Teaching Integrated Skills

ALAN HIRVELA

Introduction

Teaching foreign-language skills in an integrated way—that is, with what is sometimes called a "blending" of the skills within a teaching/learning event as opposed to teaching them separately from each other—traditionally was not seen as an option by language teachers. Instead, the focus was on teaching a single skill at a time. This was due in large part to the domination of the ubiquitous and venerable grammar-translation method, with its emphasis on building grammatical knowledge and control (Kelly, 1969; Howatt, 1984). Richards and Rodgers (2001) and Stern (1983) show how, in the mid- to fairly late 20th century, the emergence of the oral proficiency-oriented audio-lingual method likewise stressed a single skills emphasis in language teaching. What Widdowson (1978) called the "conventional pedagogic practice" during that period worked on a basic principle that "appears to be an adherence to segregation rather than integration: 'divide and rule' . . . language teaching commonly consists of units in which 'comprehension', 'grammar' and 'composition' appear as separate sections, and language practice books tend to be based on the same distinctions" (p. 144). Thus, the core skills of speaking, listening, reading, and writing, along with closely related skills areas such as grammar and vocabulary, were taught in isolation from each other.

The evolution of the field of applied linguistics during that period, coupled with the Hymesian notion of "communicative competence," played a pivotal role in changing this "divide and rule" orientation to language teaching theory and pedagogy. Embedded in the notion of communicative competence is the *reciprocity* between language skills that constitutes real-life communication. From communicative competence came the popular teaching approach called communicative language teaching (CLT), where the ability to communicate meaningfully in the target language became the focus of pedagogy.

CLT, with its emphasis on discourse as opposed to isolated or decontextualized sentences, and on real-life communication as opposed to mere accumulation of knowledge of the target language, allowed for the creation of teaching approaches which asked learners to draw on different language skills (instead of just one) in order to fulfill a communicative purpose. Thus, what Widdowson (1978) calls the "principle of integration" took center stage in the communicatively oriented classroom, and applied linguists and language teaching specialists set about generating frameworks, activities, and materials that called for the combining of language skills. This "principle of integration" revolves around the idea that language learners must learn how skills work together in the production and reception of discourse and thus how to use those skills in such ways.

Why Not Teach Skills in Isolation?

One way of looking at language instruction, the one that, as noted earlier, has dominated the history of language teaching, is the *segregated* skills approach. In this approach, teaching is oriented toward one skill at a time. Oxford (2001) notes that this can also be called

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the language-based approach "because the language itself is the focus of instruction" (p. 1) rather than actual use of the language. In addition to the perhaps intuitive appeal of such an orderly, systematic way of teaching language is the fact that there are instances in which learners need only one particular skill. For example, scientists in non-English-dominant countries may require the ability only to *read* English so as to stay informed about new developments in their field via its professional literature.

However, as Oxford (2001) observes, in this approach "the emphasis is not on learning for authentic communication" (p. 1). This, she says, "is contrary to the integrated way that people use language skills in normal communication" (p. 2). Thus, unless the goal of language instruction is to address a very specific need of the kind described earlier, the segregated skills approach will leave learners ill-equipped to actually use the target language. They will, as Widdowson (1978) famously asserted in one of the influential early critiques of such instruction, acquire knowledge of formal *usage* of the language rather than genuine ability to *use* it for communicative purposes. The integrated skills approach addresses this need for an emphasis on *use*.

Approaches to Integrated Skills Instruction

One way to look at integrated skills instruction is to say that skills can be taught in a *semi-integrated* approach featuring restricted combinations of skills. This is most commonly seen in combined speaking and listening courses, or courses combining reading and writing. Other combinations are also possible, as illustrated recently in Weissberg's (2006) book *Connecting Speaking and Writing in Second Language Writing Instruction*. In essence, any combination of skills is possible. Underlying this semi-integrated approach are two fundamental and overlapping beliefs: (1) that the skills involved draw upon the same core sets of underlying skills and processes, and (2) that each of the primary skills is normally used in conjunction with the other. Writers, for example, often draw from source texts read (e.g., newspaper articles, Web site essays) as they compose, while readers may use writing to make sense of reading (e.g., taking notes, writing annotations in the margins of a text). In a similar vein, learners can be taught to use writing to enrich listening for purposes such as attending academic lectures.

The other way to look at skills integration is the *fully integrated skills* approach, in which teachers seek to have students use more than two skills in the production of discourse. This is where the notion of "blended" skills is fully operative. This is because, say Peregoy and Boyle (2005) while discussing the linking of listening, speaking, reading, and writing, "In natural, day-to-day experience, oral and written language uses are not kept separate and isolated from one another. Instead, they often occur together, integrated in specific communication events" (p. 120). In this way, explains Oxford (2001), learners are exposed to "authentic language," and this "challenges them to interact naturally in the language." As a result, "Learners rapidly gain a true picture of the richness and complexity" of the target language (p. 2).

Applications of Integrated Skills Pedagogy

Oxford (2001) notes that, whether in the semi-integrated or fully integrated formats, there are two principle applications of integrated skills pedagogy. *Task-based* instruction is one of them. Hirvela (1987) illustrates this approach in his communicatively oriented "designing a dog-exercise machine" task in which students, working in small groups, must develop a design for such a machine. Reading, writing, listening, and speaking blend together in various alignments as the students discuss their emerging design (linking speaking and

listening), write a description of it and read drafts while doing so (writing and reading), and present their design to the class (speaking), which also involves listening and responding to questions about the project. Thus, the completion of this kind of task necessitates use of all the major language skills, and never in isolation from one another. This kind of approach generates communicative competence as students interact simultaneously with various language skills.

The other major application of integrated skills instruction, according to Oxford (2001), is the *content-based* form of pedagogy. While the task-based approach "stresses doing tasks that require communicative language use," she says, content-based language teaching "emphasizes learning content through language" (p. 1). This entails the use of various combinations of language skills while performing activities related to learning subjects such as history, math, and science. As Brinton, Snow, and Wesche illustrate in their 1989 book *Content-Based Second Language Instruction*, there are different ways in which foreign-language and content area teachers can work together to ensure that students acquire the skills combinations required in the acquisition of content area knowledge and ability.

Conclusion

Widdowson (1990) explains that "all pedagogy is involved in some kind of grading or ordering to allow for the gradual development of learning" (p. 120). The integrated skills approach does so by promoting *interaction* between language skills. How the skills combinations are "ordered," and how extensive the combinations are, depend on the goals of the language course and the needs of the learners. Integrated skills instruction creates opportunities for learners to experience the reciprocity that exists between language skills. In this way they experience language holistically, rather than in isolation, and are better equipped to use their language skills effectively in the ways in which they are employed in real-world contexts. Teaching language skills in this integrated manner has been an important feature of language teaching pedagogy since the communicative movement took root in the early 1980s, with specialists continuing to find newer and richer ways to generate interaction between the skills learners must acquire.

SEE ALSO: Content-Based Language Instruction; Integration of Language and Content Learning

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Teaching Language for Academic Purposes

KEN HYLAND

Introduction

Language for academic purposes teaching refers to a distinctive approach to language education based on an identification of the specific language features, discourse practices, and communicative skills of target academic groups, and which recognize the particular subject-matter needs and expertise of learners (Hyland, 2006).

The growth of diversity in the students entering universities in many countries as a result of widening access policies, the increased attention given to effective teaching by funding bodies, and the incentives of offering English for Academic Purposes courses to fee-paying students from around the world, have all contributed to the growth of this sector. Accompanying these developments, moreover, has been a growing awareness that academic communication presents considerable difficulties for many students. The communicative demands of the modern university involve far more than simply controlling language errors or perfecting an "academic style." Supported by an expanding range of publications and research journals, there is a growing awareness that students, including native speakers of the language of study, have to take on new roles and engage with knowledge in new ways when they enter university (Prior, 1998; Hyland, 2009). They quickly find that the language they use to write essays, read textbooks, and understand lectures differs considerably from that which they are familiar with in their homes and workplaces.

Teachers now acknowledge that the complexity and immediacy of these challenges cannot be addressed by some piecemeal remediation of individual error. We no longer see students' difficulties as a linguistic deficit which can be topped up in a few language classes, but have come to regard teaching language for academic purposes as developing new kinds of literacy, equipping students with the communicative skills to participate in particular disciplinary contexts. Pedagogic practices therefore attempt to offer systematic, locally managed approaches which draw on a number of key ideas, the most important of which I set out below.

Needs Analysis

Needs analysis refers to the techniques for collecting and assessing information relevant to course design: it is the means of establishing the *how* and *what* of a course. While not unique to teaching languages in academic contexts, the use of systematic means to define the specific sets of skills, texts, linguistic forms, and communicative practices that a particular group of learners must acquire is central to it. Needs analyses inform its curricula and materials and underline its pragmatic engagement with occupational, academic, and professional realities (e.g., Dudley-Evans & St John, 1998). Needs can involve what learners know, do not know, or want to know, and can be collected and analyzed in a variety of ways, mainly drawing on questionnaires, observations, tests, and text analyses (e.g., Brown,

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1995; Hyland, 2003). Its importance recognizes the diversity of both students and disciplines. Research shows, for instance, that the kinds of genres students have to write, the ways these are constructed, the style of lecture delivery, and the assessment practices they need to master all differ considerably across disciplines (Hyland & Bondi, 2006).

The concept of *need* has been expanded beyond the linguistic skills and knowledge required to perform competently in a target situation. On one hand it now includes *learner needs*, or what the learner must do in order to learn, incorporating both learners' starting points and their perceptions of need (Hutchison & Waters, 1987). More recently, the question of "whose needs?" has been asked more critically, raising questions about target goals and the interests they serve rather than assuming they should exclusively guide instruction. The term *rights analysis* has been introduced to refer to a framework for studying power relations in classrooms and institutions and organizing students and teachers to bring about greater equality (Benesch, 2001, 2009). The importance of needs to teachers is that it means understanding learners and target contexts, discourses, and socio-political contexts.

Collaborative Pedagogies

A second feature of teaching languages for academic purposes is the desirability of working in tandem with members of the specialist fields it seeks to describe and teach, adding subject specialists' skills and knowledge to the language teacher's expertise in communicative practices. This allows the topics, content, and texts of the profession to act as vehicles for teaching particular discourses and communicative skills.

Students bring to their classes some knowledge of their specialist fields and the kinds of communication that go on within them, and this implicit knowledge is useful in a number of ways. One way is that it encourages teachers to draw on students' specialist expertise to promote relevant communicative activities in the classroom, particularly through relying on tasks and materials that display authenticity, or faithfulness to real-world texts and purposes. Another way that teachers often collaborate with learners is by assisting them to build on their latent understandings of the discipline to explore the ways that communicative intentions are expressed (Swales & Feak, 2004). Teachers also need to collaborate with subject experts. Often the specialist can assist as an informant, providing teachers, or students, with background and insights into the kinds of practices that experts engage in and the texts they use (Johns, 1997). Alternatively, collaboration can involve the specialist acting as a consultant, assisting the teacher to select authentic texts and tasks. More centrally, the specialist can be directly involved through team teaching or by linking a language course with a specialist course by jointly planning tasks and coordinating instruction (e.g., Haas, Smoke, & Hernandez, 1991).

Consciousness-Raising

Much current teaching is strongly focused on rhetorical consciousness-raising, or helping students to become more aware of the language, discourses, and communicative practices in their fields. This means the teacher is closely involved in studying the texts learners will need to use beyond the classroom and finding ways to highlight their features for them. Consciousness-raising is a "top-down" approach to understanding language and encourages us to see grammatical features as "the on-line processing component of discourse and not the set of syntactic building blocks with which discourse is constructed" (Rutherford, 1987, p. 104). Focusing on language is therefore not an end in itself but a means of teaching learners to use language effectively by encouraging them to experience for themselves the effect that grammatical choices have on creating meanings.

This is often novel for students as it seeks to assist them to create, comprehend, and reflect on the ways texts work as discourse rather than on their value as information. It guides learners to explore key lexical, grammatical, and rhetorical features and to use this knowledge to construct their own examples of the genre. Consciousness-raising is therefore designed to produce better writers and speakers rather than simply better texts. Here the teacher's goal is to illuminate the genres that matter to students so that they understand them and use them effectively. Tasks take various forms but generally involve students, often in small groups, analyzing, comparing, and manipulating representative samples of the target text so that features become apparent.

Genre Teaching

Finally, genre pedagogies have become extremely influential in teaching languages for academic purposes. Genres are socially recognized and repeated ways of using language and pedagogies support learners with methods which foreground the meanings and text-types at stake in a situation. These methods offer writers an explicit understanding of how texts in target genres are organized and why they are written or (less often) spoken in the ways they are. To create a well-formed and effective text, students need to know the ways writers structure their purposes in different stages and the lexicogrammatical patterns which typically occur in these stages. The teacher's task is therefore to assist students toward a command of this through an awareness of target genres and an explicit grammar of linguistic choices.

Genre pedagogies assume that writing instruction will be more successful if students are aware of what target discourses look like, but this reproductive element can encourage conformity and prescriptivism (e.g., Freedman, 1994). The dangers of a static, decontextualized pedagogy must be guarded against, but there is nothing *inherently* prescriptive in a genre approach. Teaching practices take a number of forms but usually involve the teacher exploiting relevant and authentic texts through tasks which increase awareness of their purpose and their linguistic and rhetorical features. These include investigating the texts and contexts of students' target situations, encouraging reflection on writing practices, exploiting related genres, and creating mixed-genre portfolios (Paltridge, 2001; Johns, 2002). This makes language learning both more relevant and immediately useful to learners in their studies. More importantly, however, the provision of a rhetorical understanding of texts and a metalanguage to analyze them shifts instruction from the implicit and exploratory to a conscious manipulation of language and choice. It allows students to see texts as artifacts that can be used, modified, questioned, compared, and deconstructed, thus making them easier to create while revealing the assumptions and ideologies that underlie them (Christie, 1987).

Conclusion

Space limitations prevent a fuller coverage, but I have highlighted some key issues in teaching language for academic purposes and pointed to the fact that teachers have become researchers of the genres and communicative practices of their students' target situations and of their own classrooms to discover the ways they learn.

SEE ALSO: English for Academic Purposes; Genre and Discourse Analysis in Language for Specific Purposes; Needs Analysis and Syllabus Design for Language for Specific Purposes

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Teaching Language for Peace

PATRICIA FRIEDRICH

As has happened with other transdisciplinary and international concerns, the study of peace is now addressed by many different scholars in an equally diverse number of realms of expertise. This preoccupation is in many ways a reflection of the manner in which globalization and the flow of people, ideas, and products around the world have created not only excitement and new possibilities but also challenges for understanding among human beings. The disciplines interested in peace range from education to psychology, from political science to economics, and from the medical fields to studies in sustainability. The majority of these disciplines now pursue peace studies as a collaborative endeavor among several areas of knowledge, and many scholars work aided by the framework first established by Galtung (1964), according to which both negative peace (i.e., the absence of war) and positive peace (i.e., the building of fair social institutions) need to be addressed for comprehensive peace to result. In sum, peace studies is transdisciplinary in its very conceptualization and therefore open to a variety of creative endeavors by members of different linguistic communities.

It seems intuitive then to expect that applied linguistics, as a field of study that deals with one of the vital elements of human experience—language—would follow suit and contribute to this important multidisciplinary discussion on peace and the ways to achieve it. While there are many ways for applied linguists to address peace, the framework proposed by Gomes de Matos (2000, 2006; also in Friedrich, 2007) covers three important realms that can be conceptualized and addressed in the language classroom: peace through language, peace linguistics, and peace sociolinguistics.

The first of these elements is education about peace through language. In this case, language is a vehicle for the communication of pedagogies, practices, and policies that contribute to peace. Within peace education, scholars, teachers, and students find ways to more easily design and implement a curriculum of peace that addresses issues such as preservation, conflict avoidance, and minority rights among others. A teacher can, for example, teach through the use of a text that discusses access to water or other vital resources, or have students write a newsletter about peace initiatives. As with all other aspects of education, language figures as an important tool for the transmission of knowledge, exchange of ideas, and maintenance of sound institutional practices; without language, education simply could not be.

The second element, in which language is both the vehicle and the central theme, is the realm of cross-cultural and peaceful communications. In that case, cross-cultural differences in language use, variation in rhetorical styles, the language of diplomacy, and also individual ways of using language non-threateningly are addressed. For example, within this realm, scholars can investigate and teachers can teach ways to promote successful language use that fosters understanding between speakers of different tongues despite their potentially different beliefs and values. They can help different specialized fields revamp their jargon so as to eliminate language that is demeaning to one or another group (e.g., women, ethnic minorities, and so forth). In sum, this realm is concerned with the more directly linguistic aspects of peace building and conflict avoidance—both their investigation and then the teaching of such findings to different stakeholders. In the classroom, teachers engaged

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in peace linguistics will, for example, discuss linguistics terms that foster collaboration as opposed to those that might lead to communication breakdowns, or they might survey what terms in the media can heighten a sense of insecurity and fear. This realm is important because it demonstrates to learners that our linguistic choices matter and that by being conscientious users of language, we can cause a positive impact in the world.

Lastly, the third element contextualizes the first two by adding to the teaching of peace macro-level elements that challenge the sociolinguistic realization of peace (i.e., its achievement in societal structures influenced by politics, economics, attitudes, and other dynamic forces). Within this realm one goal is to find ways in which the politics of language complicate the establishment of peace-related practices, and ways in which these political aspects can be navigated successfully. For example, within peace sociolinguistics, scholars might investigate and teachers might discuss which language dynamics are contributing to linguistic homogenization or what linguistic rights are not being upheld within a given society. As might be expected, this domain will raise awareness of the forces working with (and sometimes against) language as well as the ways in which policy, education, and activism can help alleviate their impact when such impact is detrimental. This is also the realm in which large frameworks are developed and communicated to interested parties.

Within applied linguistics, many approaches and related subfields can and have been actively involved in either peace education through language, linguistic education, or sociolinguistic education. For example, Osborn (2000) has addressed peace in the foreign language classroom and the relationship between language teaching and social justice (Osborn, 2006). Birch (2009) has written about the role of the English teacher in civil society. Critical applied linguistics (Pennycook, 1994, 2001), on the other hand, brings to light the ways in which power plays a significant role in language dynamics and thus contributes to linguistic imbalances that in turn result in conflict. World Englishes (Kachru, 1986), or the study of English varieties around the world (and their cultures and contexts), has contributed significantly to an understanding of attitudes toward language as well as the importance of respecting and embracing linguistic diversity. Studies in language ecology (Nettle & Romaine, 2000) have highlighted through their ecological metaphor the importance of balance, documentation, education, and sound policy making when it comes to ensuring the survival of languages. Studies in linguistic rights (Skutnabb-Kangas, 2000) have demonstrated that language does not fall outside the realm of human rights but rather plays a significant role in guaranteeing inclusion, access to education, and knowledge and respect for linguistic heritage. Finally, a new paradigm called "nonkilling linguistics" (Friedrich & Gomes de Matos, 2009) has in innovative and bold ways started to highlight the contributions that linguistics (alongside mathematics, physics, engineering, and other areas of human knowledge) can make to a world without violence and killing.

Much remains to be done, however, when it comes to unveiling the intricate and complex connection between language and peace. While individual scholars have certainly addressed that relationship in their scholarship (Canagarajah, 1999; Crystal, 2004), peace linguistics (Gomes de Matos, 2000, 2006) and peace sociolinguistics (Friedrich, 2007) are only now starting to morph into recognizable (trans)disciplinary orientations. However, a growing interest in peace studies in general, as represented by blossoming programs in many universities around the world and by the availability of many more peace-related jobs in government, nongovernmental organizations, the private sector, and education, will possibly mean a boost in peace-language initiatives and studies as well.

SEE ALSO: Advocacy in Language Teaching; Critical Applied Linguistics; Critical Pedagogy in Language Teaching; History of World Englishes; Intercultural Communication; Language Ideology in a Language Classroom

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Teaching Language-Learning Strategies

JOAN RUBIN

Introduction

Learning strategies, considered inherent to the act of learning, are what students do when trying to learn and address their learning problems. Research over the past thirty years increasingly confirms that helping language learners to use learning strategies effectively results in increased language proficiency and learner motivation (see Hassan et al., 2005, for the best review of this topic). Continuing investigation has outlined effective instructional strategies for promoting learning of these strategies (Brown & Palincsar, 1982; Coyle, 2007; Graham & Macaro, 2007, 2008; Harris, 2007). In addition, language teacher educators are now identifying the most effective practices to develop teachers' ability to incorporate learner strategies into their language curriculum.

Types of Learning Strategies and the Learner Self-Management Model

More than three decades of research has led to the identification of specific learning strategies adopted by language learners of a range of ages and learning styles (both expert and novice) studying a variety of languages. Several kinds of strategies have been identified: cognitive, metacognitive, and socioaffective. Research (Chamot, 2005; Vandergrift & Tafaghodtari, 2010) has determined that successful language learners control their learning by using metacognitive strategies (i.e., thinking about learning) and making decisions about what to do.

To understand the relationship among these different strategies Rubin (2005) proposed the learner self-management model, based on Butler's (1997) discussion of learner self-regulation as "The ability to deploy procedures and to access knowledge and beliefs in order to accomplish learning goals in a *dynamically* changing environment" (p. 37, italics in the original). Rubin defines *procedures* as the actions learners take to manage their learning by planning (e.g., setting goals, criteria/evidence, a time line; task analysis; creating an action plan), monitoring/noticing, evaluating, problem solving, and implementing problem solutions. Task analysis consists of task purpose (why you want to reach your goal), task classification (what you know about the task) and task demands (how to proceed based on your task classification). Rubin observed that in order to select appropriate cognitive and socioaffective strategies, learners need to base the selection on their task classification.

Adapting Wenden's (1995) definition, Rubin (2005) further defined *knowledge and beliefs* as: task knowledge, person knowledge, strategy knowledge, background knowledge, and beliefs. She then underlined the critical interaction between procedures (strategies to manage learning) and knowledge (information needed for learners to manage their learning).

Cohen (1998, cited in Manchón, 2008, p. 4) provides the most consistent rationale for teaching learning strategies.

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> The strategy training movement is predicated on the assumption that if learners are conscious about and become responsible for the selection, use, and evaluation of their learning strategies, they will become more successful language learners . . . In other words, the ultimate goal of strategy training is to empower students by allowing them to take control of the learning process.

Learning involves getting, storing, retrieving, and using information. As such, many cognitive learning strategies are similar to processes identified by other second language acquisition researchers: awareness, attention, hypothesis formation and testing, and practicing. Memory plays a critical role in storing and retrieving; a range of memory strategies can enhance this process. Motivation (Dörnyei, 2001) has been identified as another critical element in the learning process. Pintrich (1999) defined three aspects of motivation: self-efficacy (the belief in one's ability to accomplish tasks), task value (the belief that the task is worth doing), and goal orientation toward learning. If learners are able to manage their learning, greater self-efficacy results.

Characteristics of Learning Strategy Instruction

According to Macaro (2001), "Strategy training is a gradual, recursive, and longitudinal process" (p. 266). Consequently, those interested in promoting strategy instruction should not expect a quick fix, but rather an organized, well-informed endeavor to help learners move toward the goal of self-management. Other important characteristics of learning strategy instruction include that it be contextualized, scaffolded, explicit, with choice, with control, and relevant.

Contextualization

Contextualization means that strategies are taught as part of a language lesson, since the purpose of teaching learning strategies is to enable learners to more easily attain a specific learning goal and accomplish a task. Hence, it is neither effective nor efficient to teach strategies in the absence of goals. The teaching of self-management (including the knowledge needed to use procedures) and the product (i.e., the language) must be integrated since both are interconnected aspects of learning.

Scaffolding

Scaffolding is another critical element in teaching learning strategies. It involves the teacher providing just the right amount of support to enable learners to progress. As learners gain control of their use of strategies, teachers can fade the scaffolding and shift more responsibility for learning to the students. Examples of scaffolding include modeling strategy use, explaining what, why, when, and how a strategy can be used, and providing examples. Fading includes providing just a hint or a prompt. The advantage of scaffolding is that it can be individualized and given "just in time," leading to less learner frustration.

Explicitness

In a classic study, Brown and Palincsar (1982) provided three types of instruction: blind, informed, and controlled. In the blind mode, learners were given an exercise without any explanation of how to perform it; in the informed mode, learners were presented with a strategy, its name, and why it was useful; and in the controlled mode, learners were not only told the name of the strategy and why it was useful but also when it might not be useful. The study found that informed learners outperformed blind learners, and controlled learners did best, illustrating the importance of explicit strategy instruction.

Choice

An important factor in motivating learners and developing their ability to self-manage is giving learners choices about the materials they use to practice, the goals they set for themselves (i.e., what to focus on), their purpose in doing a task (i.e., why they want to focus on a goal), and how they want to go about working on a task. Chamot and Genovese (2009) found that giving students choice of materials increased their motivation.

Control

Strengthening learners' control over their learning is the ultimate goal of strategy instruction. Such instruction includes development of procedures along with enhancing knowledge and clarification of beliefs. Pintrich (2000, cited in Manchón, 2008) observed that it is especially important for learners to set their own goals if they are to achieve control of their learning. Rubin (2005) added that not only do they need to set their own goals but also to establish criteria (i.e., observable evidence) for determining whether they have reached their goals and to do task analysis for selection of appropriate strategies. However, consistent with Macaro's (2001) observation about the amount of time strategy instruction takes, Rubin and McCoy (2008) found that multiple practice opportunities are needed for learners to be able to establish criteria consistently.

Relevance

Strategy instruction should be directly related to the problems that learners are seeking to solve. Unless strategy instruction is used to solve specific learning problems, learners will regard it as an additional burden and simply superfluous.

Instructional Sequences

Although there are a number of models for teaching learning strategies (White, Schramm, & Chamot, 2007, p. 112; see also Rubin, Chamot, Harris, & Anderson, 2007, p. 142), common to all these models is a sequence of four steps: (a) *preparation*: teachers raise learner awareness of problems and strategies; (b) *presentation*: teacher models, names, and explains new strategy, suggesting possible benefits—this can help students become more aware of the thinking and learning process; (c) *practice*: teacher provides multiple practice opportunities to help students move toward autonomous use of the strategies through gradual withdrawal of the scaffolding, eventually enabling transfer of strategies to fresh tasks; and (d) *evaluation*: learners use criteria to evaluate effectiveness of strategies and determine whether they addressed their problem (and, if they did not, to consider what other strategies to use).

Regarding the first step of "preparation," Rubin et al. (2007) provide a comparison of several awareness-raising techniques: questionnaires, focus groups, journals, asking a specific question, and reading about the learning process. An additional awareness-raising technique is cold practice followed by a discussion of strategies used and how effective they were. In terms of the second step of "presentation," one of the most effective techniques for modeling is to "think aloud" whereby teachers (or students) say out loud their thoughts about problems encountered while performing an activity. In this way, students can become aware of how the teacher and other learners try to resolve problems. As far as "practice" is concerned, sufficient practice is critical; it can take many forms and, as mentioned earlier, should be integrated with learning an aspect of the language. Lastly, the fourth step of "evaluation" should be based on preestablished criteria that a learner has achieved a goal. Such criteria can be jointly established when learners are beginning

to understand procedures and can be faded when they are more comfortable with the process.

When first introducing learning strategies, especially to beginners, presenting those that are most likely to lead to success will help learners to recognize the value of this endeavor. Many researchers note that strategies which can enhance memory are the most likely candidates. Rubin et al. (2007, p. 159), note that such success will build self-efficacy (i.e., self-confidence), which is an important component of motivation. Further, they note that "learners should themselves directly feel that the knowledge given through strategy intervention is immediately and directly useful to them" (p. 159). Wenden (1987) observes that not all learners react favorably to strategy instruction and that, in particular, expert learners find such instruction a waste of time. However, since this observation was made when the custom was to present strategies one by one, instead of encouraging learners to consider which of several strategies would work for them, this may no longer be the case. Finally, after much consideration, it is agreed that there are no good or bad strategies, rather strategies that are appropriate for a particular learner, for a particular task, or for a particular goal in a particular setting.

More research is needed to confirm the long-term effect of intervention on language proficiency, to clarify how such interventions are affected by academic level, and to determine which instructional sequences are the most effective for addressing individual differences.

Role of Social Context

Research has shown that social context can affect use and acquisition of learning strategies in two ways: (a) the kind of "learning community" that the teacher builds (Takeuchi, Griffiths, & Coyle, 2007); and (b) how the culture of the subject matter influences the strategies selected by a learner (Uhrig, 2004).

Takeuchi et al. (2007) consider the role of the classroom as a learning community, noting that learning has both an individual and a social component. The social component includes scaffolding (by teachers and peers), group work, sharing problem-solving strategies, and socially constructed goals. In addition, scholars of sociocultural theory suggest that agency and power relations can affect learning, either positively or negatively. Uhrig (2004) found that the strategies which a learner uses depend on the demands of a task (e.g., degree of class participation expected, kind of assignments) and that such demands can influence the extent to which a learner needs to work with a social network to solve learning problems.

Challenges in Teaching Strategies

Teachers' success in promoting the use of learning strategies depends on a number of variables beyond their control. Among these are mandated textbook requirements; high-stakes tests; curricula; class size and configuration; and schedules. When these macrostructures are not aligned in such a way as to facilitate the teaching of learning strategies, it can be more challenging to teach them. Rubin (2010) provides some effective solutions to these difficulties, including strong administrative support and a supportive network of colleagues. Another challenge may be learners' beliefs and experience about who bears the major responsibility for learning. It can take a lot longer to develop learners' ability to take control of their learning when they believe that it is the teacher's responsibility for learning to take place. Finally, it is critical for teachers to be thoroughly grounded in the process of teaching learning strategies; administrators should provide the necessary time and training for this to happen (see Rubin, 2010, for a review of challenges in so doing).

SEE ALSO: Affect and Language Teaching; Individual Differences in the Classroom; Motivation in Second Language Acquisition; Sociocultural Theory; Working Memory in Second Language Acquisition: Phonological Short-Term; Zone of Proximal Development in Second Language Acquisition

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Teaching Adolescent and Adult Language Learners With Limited or Interrupted Formal Schooling

MARTHA BIGELOW

Worldwide, formal schooling is not available to all individuals for reasons ranging from political and social unrest on a large scale to economic necessity among individuals and families. Circumstances causing limited formal schooling also cause international migration. This phenomenon of massive movement of people into economically developed countries explains the appearance of students without formal schooling in language classes and other educational programs. Limited or interrupted formal schooling has serious consequences for adolescents and adults who are learning a language or becoming schooled in a new language.

One of the most important consequences of limited or interrupted formal schooling among this population of language learners is low levels of print literacy skills. It is possible to become print literate outside of school—a family member or sibling could teach an individual to read and write, even during difficult times. However, little or no print literacy is fairly common and is usually the result of limited or dramatically interrupted formal schooling. In the United States, it is estimated that there are about 750,000 adult immigrants who lack print literacy in any language (McHugh, Gelatt, & Fix, 2007). While these adolescents and adult learners are wise and capable in many domains, often including the acquisition of new languages through the oral modes, they have not had the opportunity to learn how to produce and interpret print in the language(s) they speak. This is not to say they do not possess other literacy skills, framed broadly (e.g., the literacies needed to understand poetry genres in the oral mode, the literacies needed to deconstruct the meaning of a piece of art). Students must have the opportunity to acquire the basics of print literacy (e.g., text orientation, notion that print carries meaning), and in many educational settings in the world, students must acquire the basics of *alphabetic* print literacy. The process of becoming literate in an alphabetic language such as English or Arabic involves learning sound–symbol correspondences, blending sounds, word segmentation, and many other skills which typically fall under the broad categories of phonemic awareness and phonics.

With regard to prior literacy, research has shown that learners who have strong mother-tongue literacy can use these skills in a new language (Koda & Zehler, 2008). It is possible to transfer, on a basic level, the notion of the alphabetic principle which includes knowing that there are predictable links between sounds, symbols, and words. Learners without print literacy must acquire these skills. The transfer of literacy skills also makes it possible for educated and highly literate adults to transition to a new workplace or educational system. It is possible to acquire rather quickly new genres of writing, and leverage reading strategies to comprehend text in a new language, when an individual has mastered many genres of writing and is educated at a level typical to their age in their home country.

Many researchers have argued that print literacy, and particularly alphabetic print literacy, changes the way one processes language in the mother tongue (e.g., Petersson, Ingvar, & Reis, 2009), as well as in an additional language (Tarone, Bigelow, & Hansen, 2009). Literacy,

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some argue, even alters the way people think, in broad terms (e.g., Ong, 1982). What does the visual codification of language do to the mind? What does it do to how oral language is processed? In their study of corrective oral feedback, Tarone et al. (2009) found that literacy helped language learners accurately repeat a recast (correct reformulation of an error they produced) which focused on the syntax of question formation in English. Recasts which offered corrections on multiple errors were recalled better by participants who were more literate as well. Ong (1982) argues that the type of schooling characteristic of Western societies supports literacies and ways of thinking that are characterized by abstraction, classification, hierarchicalization, and hypothesizing. Adolescents and adults without print literacy have unique instructional needs because of these differences in how they use and process language.

Another consequence of limited or interrupted formal schooling is little knowledge in what we think of as school subjects, framed in ways legitimized by the discourses prevalent in Western academia. An adolescent or adult without formal schooling may have learned how to cure the sick, build a house, raise children, enact a famous folktale, or grow vegetables, but this knowledge cannot be explained in terms of academic subjects such as mathematics, biology, or literature. Knowledge among unschooled adolescents and adults is acquired through observation of and interaction with skilled individuals, not through books, conventional laboratories, or analysis of canonized works. Furthermore, formal schooling supports the acquisition of certain ways of thinking that are idiosyncratic of formal schooling. Consider academic language functions such as describing complex tables, charts, relationships between characters, and writing complex ideas following the conventions of different disciplines (e.g., Zwiers, 2006). Typical ways of learning these skills through classroom tasks, group work, handouts, or Web sites may be other ways in which learners without familiar schooling undergo a mismatch in background experience with same-age peers without interrupted schooling.

The differences in worldview and experience between language learners (and teachers) with and without formal schooling may seem like an abyss (Watson, 2010). On one side of the abyss is indigenous knowledge, orality, traditional ways of transmitting information; and on the other side is highly digitized, literate, and academic ways of being. Some of the implications for teaching involve the recognition of the following principles. First, literacy must be taught (Royer, Abadzi, & Kinda, 2004; Birch, 2007), but taught in ways that are appealing and appropriate to adolescents and adults (Vinogradov & Bigelow, 2010). Second, metalinguistic knowledge, or explicit understandings about how language works as a system, may be helpful in beginning to visualize oral language and better notice certain morphemes or syntactical patterns (Lindberg, 2003; Kurvers, Vallen, & van Hout, 2006). However, this knowledge must build on existing skills and develop as the ability to visualize language develops. Finally, instruction must move from the concrete to the abstract through a scaffolded and culturally relevant curriculum (Klassen, 1991; Farr, 1994; DeCapua & Marshall, 2010).

SEE ALSO: Input Processing in Second Language Acquisition; Literacy in Community Settings; Teaching Literacy

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Teaching Less Commonly Taught Languages

KIMI KONDO-BROWN

Less commonly taught languages (or LCTLs) is a label primarily used in the context of teaching foreign or heritage languages in the United States (USA). It technically refers to any one of the 6,909 known living world languages (see Lewis, 2009) other than English, as well as Spanish, French, and German—the three most commonly taught foreign languages in American schools, colleges, and universities. LCTL enrollment figures and instructional capacity differ considerably across time and place, depending on the demographic, cultural, economical, and political context (e.g., Brown, 2009). As one way to address this diversity, Brecht and Walton (1993) proposed to categorize LCTLs into four subgroups, depending on the total enrollment figures in US postsecondary institutions, which range from as low as a single digit up to thousands: "the principal less commonly taught languages" (i.e., LCTLs generally available in the USA such as Arabic, Japanese, and Russian); "the much less commonly taught languages;" "the least commonly taught languages;" and "the rarely (or never) taught languages."

Today, overall enrollments in LCTL programs are rapidly expanding at all levels. Although LCTL programs within the K-12 system are still far less numerous than those offered in American higher education, their development in recent years is nonetheless phenomenal. For example, two recent national enrollment surveys, one for K-12 (kindergarten through 12th grade) and the other for colleges, indicate that enrollments in LCTLs such as Arabic and Chinese blossomed in recent years (Furman, Goldberg, & Lusin, 2007; Rhodes & Pufahl, 2009). At the college level, other LCTLs such as Russian, Japanese, Portuguese, and Korean also increased by a large margin, but the increase was not as dramatic as Arabic and Chinese. Due to the expansion of LCTL instruction, the dominance of these commonly taught languages relative to LCTLs is narrowing in US colleges and universities (Furman, Goldberg, & Lusin, 2007). If one wants to discover where LCTLs are taught in American educational institutions, the Center for Advanced Research on Language Acquisition's (CARLA) LCTL project provides one of the largest databases covering the availability of LCTL programs (see http://www.carla.umn.edu/lctl/db/index.html). The LCTL project database presently provides information for over 300 languages offered at more than 2,000 educational institutions in the USA.

One reason for the recent expansion in LCTLs is the continuing national demand. The USA needs citizens who can demonstrate ability in LCTLs and expert knowledge of the countries or regions where these languages are spoken (Ryding, 2001). These skills and knowledge are not only necessary for conducting US overseas diplomacy, but also are critical in light of the current political climate and the global economy. Due to the increased national requirement for citizens who are proficient in LCTLs, the USA has expanded federal support for these languages at all levels. In K-12 schools, some of the most important federally funded programs and initiatives include the Foreign Language Assistance Program (FLAP) and STARTALK (http://startalk.umd.edu). FLAP is one of the largest federal providers of resources for foreign-language instruction at K-12 schools, and it has been instrumental in promoting LCTL programs in K-12 schools. STARTALK is a National Security Language Initiative (NSLI) program administered by the National Foreign

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Language Center at the University of Maryland and is one of the most significant federal initiatives for critical LCTLs, offering teacher development as one of its mandates in addition to outcomes-driven programs across K-16.

At the college and graduate levels, for example, the federal government has funded a number of national flagship programs as part of the National Security Education Program (NSEP) in recent years. These programs are offered for LCTLs which are critical to national security such as Arabic, Chinese, Korean, Persian, and Russian in competitive university foreign-language departments (some are in K-12 schools) and have opened up a very promising avenue for those who are motivated to achieve professional-level proficiencies in these LCTLs. Another example is the Foreign Language and Area Studies (FLAS) fellowship program. The FLAS is one of the largest and most important components of federal support for American graduate students who are working toward advanced language ability in LCTLs. Funded in the late 1950s, the FLAS program goals have gone through many transformations (see McDonnell, Stasz, & Madison, 1983), but federal support for LCTL training has remained a major priority.

Thus, there is considerable national interest in and federal support for promoting LCTLs in order to meet the nation's diplomatic, economic, and security needs. At the same time, federally funded national centers, such as the National Heritage Language Resource Center (http://nhlrc.ucla.edu/), promote the teaching of LCTLs as heritage languages. In fact, many learners of LCTLs in American educational institutions are studying these languages as their heritage languages (Lee, 2005). Broadly speaking, heritage languages are any family or ancestral languages spoken by immigrant or indigenous groups. Therefore, heritage students on LCTL courses may be studying the language as their first-learned language, the language used in the home, or as an ancestral language that is no longer spoken in the family or community. In the USA, heritage language instruction in LCTLs is widely available within and outside the formal education system. At present, no comprehensive data are available on the availability of such instruction, but the Heritage Languages in America Web site (www.cal.org/heritage/index.html) provides perhaps the most comprehensive information for heritage language courses available in LCTLs.

To some extent, whether or not the target language is an LCTL, professional foreign-language teachers may employ a set of assumptions or hypotheses about language teaching that draw on second language acquisition and pedagogy research (Walker & McGinnis, 1995). In fact, LCTL materials developers *do* create instructional and assessment materials and pedagogical strategies using the existing second language acquisition theories or curriculum or assessment models (e.g., Johnston & Janus, 2009; also see chapters that deal with LCTLs in Stryker & Leaver, 1997). At the same time, since LCTLs are taught on a relatively limited scale, LCTL teachers may face issues and challenges that other types of language teachers do not have to deal with. For example, it has been a major concern that professional development opportunities as well as instructional and assessment materials are less available to LCTL teachers than they are for teachers of languages in a dominant position (McGinnis, 1994; Johnston & Janus, 2003). Also, standards-based proficiency tests such as the online Standards-Based Measurement of Proficiency (STAMP, see www.avantassessment.com/products/about_stamp.html) developed by the Center for Applied Second Language Studies (CASLS) are currently only available for a limited number of LCTLs.

In addition, although language teachers of any type may have to cope with individual differences in proficiency levels, learning needs, and interests within the same classroom, the degree of variation may be considerably wider in LCTL classes. Many LCTL classes are mixed-ability courses where teachers are trying to meet the needs and interests of students from various language backgrounds in terms of heritage language backgrounds, class standing [graduate and undergraduate], etc. (see Ilieva, 2008). Projects that specifically address this issue are emerging. For example, the Center for Advanced Language

Proficiency Education and Research (CALPER) project, entitled Teaching Domestic and Heritage Language Learners in LCTL Courses (http://calper.la.psu.edu/heritage.php), has developed multimedia professional development materials for LCTL teachers who teach in mixed-level courses where heritage and foreign-language students are enrolled in the same classrooms. Furthermore, the widely cited US Foreign Service Institute's empirical data suggest that, depending on how close the target language is to English, vastly different numbers of instructional contact hours may be necessary for students to achieve the desired target proficiency level (Liskin-Gasparro, 1982). Languages belonging to the more or most difficult-to-learn categories are generally LCTLs. Such information suggests further challenges that LCTL teachers may face.

There are notable federally funded centers and organizations that provide support for LCTL teachers and learners who often lack suitable materials. For example, the National Council of Less Commonly Taught Languages (NCOLCTL) is a national organization that aims to promote instruction and research on LCTLs and LCTL teaching. NCOLCTL is committed to enhancing advocacy for LCTLs and LCTL teachers; it hosts an annual conference and publishes a peer-reviewed journal (for more information, visit http://www.ncolctl.org/jncolctl-links). NCOLCTL and the Language Institute at the University of Wisconsin-Madison have recently developed three new standards-based online courses on teaching LCTLs at the postsecondary level (for information visit http://www.ncolctl.org/resources/links/online-teaching-course).

The LCTL project at CARLA mentioned above also provides resources for teaching and learning LCTLs. The center's Web site provides a link to instructional materials available in a variety of LCTLs (www.carla.umn.edu/lctl/materials/index.html). The project actively produces LCTL-related publications and hosts professional workshops that help LCTL teachers obtain practical tools and hands-on experience in developing instructional materials specifically designed for the target LCTL learners. The National Foreign Resource Center (NFLRC) at the University of Hawai'i also publishes a variety of research findings and instructional materials for LCTLs. For example, one of the NFLRC publications by Spreen (2002) offers technology-based instruction options for LCTLs (the entire document is available at http://www.nflrc.hawaii.edu/networks/TR25/). Other online resource projects such as the Webliography of LCTLs hosted by the federal Interagency Language Roundtable (www.govtilr.org/web_lctl/index.htm) and the Language Materials Project (www.lmp.ucla.edu/) hosted by the University of California, Los Angeles provide rich resources for LCTL teachers by creating numerous links to online Internet materials for a variety of LCTLs.

Thus, partly due to the national mandate to enhance US citizens' ability in LCTLs, enrollments in LCTLs in the USA have shown remarkable growth in recent years. Through advanced technologies, conferences, and workshops, national resource centers and organizations have played a vital role in providing instructional materials and professional training to LCTL teachers across the nation. Clearly, federal support for these centers and organizations will continue to be critical to the future development of LCTL programs in US educational institutions.

SEE ALSO: Advocacy in Language Teaching; Heritage Language Teaching

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Teaching Listening

LARRY VANDERGRIFT

Listening is a critical part of everyday life; yet it is the weakest language skill for many second and foreign-language (L2) learners. This may be because listening is a particularly complex cognitive skill that must be carried out automatically in real time. Listeners must process speech which may be characterized by phonological irregularities (e.g., accent, reduced forms); simultaneously listen to new speech delivered at a speed over which they have no control; segment this sound stream into meaningful units; and, interpret what the speaker means. This is no small feat and L2 learners are rarely given any systematic support to learn to control these processes.

This entry will present a brief overview of the processes involved in L2 listening, current research on the teaching of L2 listening, and a pedagogical sequence for sensitizing language learners to the processes underlying listening. I argue that teaching L2 learners how to listen can help them better control these listening processes and become more successful listeners outside the classroom.

L2 Listening Processes

Listening comprehension is an active process of meaning construction in which listeners, based on their purpose for listening, attend to and process aural and relevant visual input, automatically in real time, in order to understand what is unequivocally stated and to make all necessary inferences implied in the message (Buck, 2001). In order to do this, listeners engage in bottom-up and top-down processing, using different knowledge sources to interpret the intention of the speaker. Bottom-up processing involves segmenting the sound stream into meaningful units. When listeners work in a bottom-up manner, they construct meaning by gradually combining increasingly larger units of meaning from phoneme-level up to discourse-level features. Top-down processing, on the other hand, involves the application of context and prior knowledge to build a conceptual framework to interpret the meaning of what is understood. Listeners use initial cues (linguistic, paralinguistic, or visual) in the text or the context of the listening event to activate a conceptual framework for interpreting the message. The different knowledge sources listeners can apply to this interpretation process include experiential, cultural, text, linguistic, and pragmatic knowledge. Linguistic knowledge gleaned from the decoding process and world knowledge applied to the interpretation process interact in parallel fashion as listeners create a mental representation of what they have heard (Hulstijn, 2003).

Although successful listening comprehension involves a judicious interplay between the two processes, the degree to which listeners use one process more than the other will depend on the purpose for listening, learner characteristics (e.g., age, language proficiency), and the context of the listening event. A listener who needs to verify a specific detail, for example, will engage in more bottom-up processing than a listener who is interested in obtaining the gist of what happened. Successful listening depends on the degree to which listeners can coordinate these processes efficiently. First language (L1) listeners do this automatically, with little conscious attention to individual words. L2 listeners, on the other hand, usually have more limited language knowledge; therefore, not everything that they

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hear may be processed as efficiently. Either comprehension breaks down or they use compensatory strategies, contextual cues, and any other relevant information available to them to guess at what they did not understand.

Anderson's Cognitive Model of Listening Comprehension

A useful cognitive model for gaining greater insight into how listeners construct meaning while bottom-up and top-down processing occurs is Anderson's (1995) differentiation of listening comprehension into three interconnected phases: perceptual processing (perception), parsing, and utilization. Although they may suggest a sequence, the listening phases in this model have a two-way relationship with each other, reflecting the interactive and integrated nature of the processes.

During the perception phase, listeners recognize sound categories of the language, pauses, and intonation emphases, and hold these in working memory. Perception involves bottom-up processing. Listeners encode incoming speech by (1) paying attention to the text to the exclusion of other sounds in the environment; (2) noting similarities, pauses, and acoustic emphases in the sound stream relevant to a particular language; and then (3) grouping these according to the categories of the identified language. This is the initial stage in the word segmentation process.

During the parsing phase (also bottom-up processing), listeners segment what was retained in working memory and begin to activate potential words. Listeners retrieve word candidates from long-term memory (LTM) based on different cues; however, meaning is often the principal cue in segmentation. As language proficiency develops, listeners activate successful word candidates (for the context) more quickly and hold meaning in increasingly larger chunks of information.

Finally, in the utilization phase, which involves top-down processing, listeners relate the resulting meaningful units to information sources in LTM to interpret the intended or implied meanings. An important characteristic of this phase is that listeners use information from outside the linguistic input to interpret what they have retained. Using linguistic, world, and pragmatic knowledge (different types of knowledge stored as schemas in LTM), listeners elaborate on the new information and monitor it for congruency with both their previous knowledge and their developing interpretation of the text as often as necessary within the time available. Listeners generate a conceptual framework in which to slot the emerging meaning of the text or utterance and to interpret beyond the literal meaning of the input. Listening comprehension then becomes a process of matching what is heard with expectations based on prior knowledge and making contextually informed elaborations in order to infer the speaker's meaning.

Regulation of these cognitive processes is facilitated by the listener's metacognitive knowledge about L2 listening (Goh, 2008); that is, knowledge and beliefs about the task-, person-, and strategy-related factors that interact during any cognitive activity. Application of metacognitive knowledge is a mental process shared by successful learners; in fact, metacognition accounts for a relatively high percentage of variance in learner performance (Veenman, Van Hout-Walters, & Afflerbach, 2006). There is extensive evidence that learners' metacognition can directly affect the process and the outcome of their learning (Zimmerman & Schunk, 2001), that it is positively linked to motivation and self-efficacy (Paris & Winograd, 1990), and that it can help learners regulate their comprehension (Pressley, 2002). Vandergrift, Goh, Mareschal, and Tafaghodtari (2006) observed that about 13% of variance in listening achievement could be explained by metacognition. Furthermore, research on listening strategy use (e.g., Vandergrift, 2003a) has revealed that successful L2 listening involves a skillful orchestration of metacognitive and cognitive strategies to regulate listening processes and achieve comprehension.

Teaching Listening: Bottom-Up and Top-Down Approaches

Teaching L2 listening typically focuses on the product: the correct answer. As a result, research on improving L2 listening has focused primarily on experimental studies to improve listening test scores. While this body of research has been useful to demonstrate that providing L2 listeners with contextual information can improve comprehension, there has been little interest in determining *how* listeners use this information to improve comprehension or what they do when comprehension fails. An exclusive focus on the product, often associated with testing, creates a high level of anxiety and does not help listeners learn how the comprehension process works. This narrow focus calls for a more enlarged pedagogy of listening that not only helps improve comprehension ability but also helps listeners deepen their understanding of the demands and processes of L2 listening and better manage their comprehension efforts. The following sections will examine some bottom-up and top-down approaches to L2 listening instruction and then present a more holistic, integrated model of listening instruction that can raise greater learner awareness of the processes involved in L2 listening.

Bottom-Up Approaches

The bottom-up dimension of listening involves decoding the sound stream. Research shows that when listeners attempt to segment the speech stream, they are confronted with three basic challenges: processing problems (an inability to rapidly locate word boundaries), text problems (inadequate L2 vocabulary knowledge), and intrusion problems (involuntarily applying L1 segmentation procedures) (Cross, 2009a). Since word segmentation remains particularly difficult for lower-proficiency listeners, an important skill to develop in L2 listening instruction is rapid word recognition.

There is very little research, however, on the types of activities that help learners automatize their ability to recognize words in speech. In terms of listening exercises, teachers can engage students in analysis of parts of the text transcript, in dictation, or in analogy exercises, within the context of a listening task (e.g., post-listening phase), so that these exercises are part of meaningful language use (Goh, 2002). Field (2008) provides a framework of remedial activities to rectify listening problems. To develop automaticity in word recognition, Hulstijn (2001) recommends listening to "i-1 level" texts so that listeners can listen for slight discrepancies between the aural and written forms of the text. Dictogloss can help L2 listeners notice differences between their reconstructed text and a written transcription of the original (Wilson, 2003) and gain greater insight into their comprehension errors. Although these exercises show promise for the development of perception skills, they do not yet have empirical support.

Technology can also be used to develop perception skills. Repeated audio delivery, slowed audio text delivery, and digitized audio text transcripts can be particularly helpful for segmenting or analyzing the individual components of the speech stream. Videos with multilingual sound tracks and captions offer L2 listeners the choice of captions in L1 or L2 to facilitate comprehension. Although L2 captions can facilitate comprehension, long-term effects of learning, in terms of listening improvement and vocabulary learning, still need to be determined (Jones, 2006). Captions may facilitate immediate comprehension; however, their usefulness for learning to listen is still a matter of debate; students will not *learn* how to listen if they become dependent on reading captions to understand listening texts (Vandergrift, 2004). In order for students to learn how to listen, they should resort to these tools only after they have first tried to understand the message using real-life listening strategies such as prediction and monitoring.

Top-Down Approaches

The top-down approach to listening involves the application of prior knowledge (world, linguistic, textual, pragmatic, and cultural) as well as metacognitive knowledge about listening to the comprehension process. The role of world knowledge in successful L2 listening comprehension has long been established. Research into pre-listening activities has documented positive effects on listening performance for visuals, advance organizers, and questions. Provided with a context, listeners can activate prior knowledge and develop a conceptual framework for inferencing what is not understood. Although world knowledge is important for facilitating comprehension, it can also be misleading when used inflexibly. Listener use of prior knowledge can lead to inaccurate comprehension when it is not supported by corroborating evidence as the text unfolds (Macaro, Vanderplank, & Graham, 2005). This underscores the importance of flexibility in the comprehension process; listeners must continually monitor their comprehension.

Research on the systematic development of metacognition, that is, listeners' awareness of the L2 listening process and their ability to regulate the underlying processes (prediction, monitoring, evaluating, and problem solving), is a relatively recent development. Listening diaries and questionnaires (Goh, 2002) and process-based discussions (Vandergrift, 2003b; Goh & Taib, 2006) can provide learners and instructors with important information concerning L2 listeners' degree of awareness of listening problems and how to rectify them. The Metacognitive Awareness Listening Questionnaire (MALQ), a short self-report instrument grounded in listening theory, can raise learner awareness of the processes underlying L2 listening or help language instructors diagnose student listening problems (Vandergrift et al., 2006). Research shows that L2 listeners of different ages and backgrounds, engaged in process-based listening tasks that raise awareness of metacognitive processes underlying listening, have reported increased motivation, confidence, and strategy knowledge (Vandergrift, 2003b; Goh & Taib, 2006).

Research evidence for the long-term benefits of strategy instruction remains inconclusive (Field, 2008). Evidence that skilled listeners appear to use strategies in an interconnected fashion (e.g., Vandergrift, 2003a) may explain why instruction in individual strategies does not appear to lead to overall listening improvement (Field, 2008). A recent study by Cross (2009b) found no differences between a group receiving explicit strategy instruction and a comparable group receiving no explicit instruction. Cross hypothesizes that the significant improvement of both groups might be attributed to the use of a task-based pedagogical sequence reflecting real-life listening similar to the pedagogical sequence advocated by Vandergrift (2004, 2007). On the other hand, Graham and Macaro (2008) recently demonstrated that both a high- and a low-scaffolded group out-performed a control group at the end of the study and six months later. However, the researchers attribute improved listening performance to the "clustering of strategies" and the task-specific and learner-centered characteristics of the intervention.

Integrating Bottom-Up and Top-Down Approaches: A Pedagogical Sequence for Teaching Listening

Until recently, little attention has been given to systematic practice in L2 listening. Systematic practice with a sequential repertoire of strategies has already been documented in L2 reading, where there is general consensus that this kind of instruction is more effective than individual strategy instruction for teaching comprehension skills (Grabe, 2004). In the case of L2 listening, however, this approach to instruction is just beginning to emerge. Table 1 outlines a task-based, pedagogical sequence that leads listeners through the processes involved in real-life listening, developing both the top-down and bottom-up

Table 1 Pedagogical sequence for teaching L2 listening (adapted from Vandergrift, 2004, 2007)

Pedagogical stages	*Metacognitive processes and strategies*
Pre-listening: planning/predicting stage	
1. After students have been informed of the topic and text type, they predict the types of information and possible words they may hear.	1. Planning and directed attention
First listen: first verification stage	
2. Students verify their initial hypotheses, correct as required, and note additional information understood.	2. Selective attention and monitoring
3. Students compare what they have understood/ written with a partner, modify as required, establish what still needs resolution, and decide on the important details that still require special attention.	3. Monitoring, planning and selective attention
Second listen: second verification stage	
4. Students verify points of earlier disagreement, make corrections, and write down additional details understood.	4. Selective attention, monitoring and problem solving
5. Class discussion in which all class members contribute to the reconstruction of the text's main points and most pertinent details, interspersed with reflections on how students arrived at the meaning of certain words or parts of the text.	5. Monitoring and problem solving
Third listen: final verification stage	
6. Students listen specifically for the information revealed in the class discussion which they were not able to decipher earlier, or compare all or selected sections of the aural form of the text with a transcript of the text, or do both.	6. Selective attention, monitoring, and problem solving
Reflection and goal-setting stage	
7. Based on the earlier discussion of strategies used to compensate for what was not understood, students write goals for the next listening activity.	7. Evaluation and planning

dimensions of listening as well as metacognitive awareness of the cognitive processes underlying listening (see Vandergrift, 2004). Through an orchestrated use of hypothesis formation (planning) and verification (monitoring), with the judicious application of prior knowledge to compensate for gaps in understanding (problem solving), along with opportunities for reflection (evaluation), listeners can acquire implicit knowledge about listening processes and achieve greater listening success.

This pedagogical sequence has strong theoretical support, in that it closely parallels research findings demonstrating implicit learning through task performance (Johnston & Doughty, 2006). It also finds empirical support in some recent studies. Over the period of one semester, intermediate-level learners of French who were guided through this process approach to listening significantly out-performed learners in the control group (Vandergrift & Tafaghodtari, 2010). To control for the variables, both groups were taught by the same

instructor using the same texts. Not only did the experimental group significantly outperform their control group peers but, more importantly, the less-skilled listeners in the experimental group made greater gains than their more-skilled peers, demonstrating that less-skilled listeners, in particular, can benefit from this kind of guided listening practice. Cross (2009c) investigated the development of metacognition through the same pedagogical sequence with more advanced Japanese learners of English. Listeners demonstrated the usefulness of collaborative dialogue in mediating metacognitive development; in particular, strategy awareness, comprehension awareness, and text awareness. Finally, using this same sequence with low-proficiency and high-proficiency civil servants in intensive language training, Mareschal (2007) documented, from triangulated data, how learners were better able to regulate their listening processes as a result of the pedagogical intervention, particularly the low-proficiency group. Systematically leading language learners through the process of listening as part of regular listening activities is beneficial because it encourages learners to practice some of the metacognitive processes underlying real-life listening.

Fundamental to this pedagogical sequence is repeated and systematic exposure to the same sequence of metacognitive processes used by skilled listeners. Although the teacher will initially play a greater role, scaffolding should be gradually removed so that students do the work themselves and the process becomes automatic. Furthermore, matching all or parts of the aural text with the written text helps listeners develop awareness of form–meaning relationships and word recognition skills. It is important, however, that the latter step takes place only *after* listeners have engaged in the cognitive processes underlying comprehension, using only cues natural to real-life listening.

Buck (1995) recommends that, in order to become successful listeners, language learners need lots of listening practice. He suggests that this can be facilitated if teachers understand the underlying cognitive processes, sensitize students to the intricacies of listening, and provide "optimum" listening practice. The pedagogical sequence presented in this entry can help L2 learners by sensitizing them to the cognitive processes underlying listening, helping them regulate these processes, and thereby improving their listening ability.

SEE ALSO: Affect and Language Teaching; Automatization, Skill Acquisition, and Practice in Second Language Acquisition; Computer-Assisted Language Learning Effectiveness Research; Pragmatic Awareness in Second Language Learning; Spoken Word Recognition in Second Language Acquisition; Teaching Language-Learning Strategies; Teaching Reading; Working Memory in Second Language Acquisition: Phonological Short-Term

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Teaching Literacy

EVE GREGORY

There can be few issues as contentious as the teaching of literacy in Western societies. Literacy (or the lack of it) has been seen as responsible for a country's economic success or failure, its increased or decreased crime rate, as well as the level of civilization or morality of its citizens. Little wonder, therefore, that the way in which literacy is formally taught has made numerous U-turns over the past century. No sooner has one approach established itself than evidence is found to suggest that it fails some children. Consequently, the hunt is always on for the foolproof approach, whereby all children will learn to command the skill of reading and writing proficiently by the end of their primary schooling. Yet it always remains elusive. It is against this backcloth that we need to understand the contrasting beliefs as to how literacy is learned and, consequently, how it should be taught. What follows is a brief résumé of these beliefs and the corresponding approaches to teaching both reading and writing in Western societies during the 20th and into the 21st century.

The Teaching of Reading

The relationship between reading, language, and the mind has long been a question of debate. In his revolutionary book *The Psychology and Pedagogy of Reading*, published in New York in 1908, Edward Huey claimed that reading is "a highly complex task which involves very many of the most intimate workings of the mind" (p. 6). However, since then there have been contradictory ideas on exactly how complex a task reading actually is and how exactly these "workings of the mind" take place. The traditional debate, which took place throughout the 20th century, sometimes referred to as "the great debate" by Chall (1979) and explained fully by Adams (1995), was between those supporting "bottom-up" and those upholding "top-down" processes as to how children learn to read. Such specialist jargon can sometimes be confusing, but it is important to understand these terms since they reflect theories that have been influential in informing reading tuition throughout the 20th and into the 21st century. At its simplest, the "bottom-up" theory claims that learning to read proceeds from the particular to the general: from the smallest unit of meaning (individual sound or *phoneme*) to the largest, or knowledge of the word (*semantic knowledge*) and knowledge of the structure of language (*syntactic knowledge*).

Those supporting the "bottom-up" process of reading maintain that learning requires a reconstruction of the sound forms of a word on the basis of a graphic representation, whereby understanding arises as a result of a correct re-creation of the sound form of words. Early reading tuition based on the "bottom-up" theory will stress the need to teach children to match phonemes (sounds) to *graphemes* (symbols) which are gradually built up into *lexis* (words) and larger units of meaning. This approach to teaching reading is sometimes referred to simply as taking a "phonic" approach to beginning reading. In its extreme form, individual sounds form the starting point, whereby a child only gradually learns to blend these into syllables and words. This is often called *synthetic phonics.* However, whole words may be broken up into similar sound patterns (e.g., f-ork, p-ork) which is often referred to as *analytic phonics*.

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An equally strong view informing the teaching of reading comes from educationalists for whom "top-down" approaches are as important as "bottom-up," for whom phonics teaching is only one strategy among others, and for whom "meaning" and "decoding" are intrinsically linked. These researchers and practitioners, from a number of countries in the Western world, see learning to read as an interaction between information from four sources: the graphophonic (sound to symbol correspondence), the lexical (recognition of whole words), the syntactic (understanding and predicting the grammatical structure of a sentence), and the semantic (understanding the meaning or the sense relating to the culture or text). These beliefs translate into approaches to teaching reading that offer children whole and meaningful texts (often referred to as "whole language" in the USA or "language experience" in the UK) whereby phonics will principally be used as a second step to dissect words that are meaningful and familiar to children. In other words, children start from *meaning* rather than *sound* as in the "bottom-up" approach.

The Teaching of Writing

The teaching of writing has often taken a back seat in contrast with reading tuition. This is possibly because it has traditionally been recognized as a skill reserved for the more powerful members of society rather than a skill accessible to all. The writing practices of ordinary people are often rendered invisible (Street & Street, 1991). Kress (1982, p. 34) refers to "productive" and "reproductive" writing, whereby productive writing goes together with high levels of education and economic or political power; reproductive writing refers to the routinized writing of scribes, secretaries, and schoolchildren. The distinction made between *content* (the creative act of composing) and *form* (spelling and grammatical accuracy), or "composing" and "scribing" (Hendricks, 2007), is likewise reflected in the teaching approaches in formal educational settings. If children are treated as "authors" (having "authority" over their writing), teachers will focus more on the content than the form. If, on the other hand, they are seen as "scribes," emphasis will rather be placed upon spelling and grammatical accuracy rather than the creative content itself.

As with the teaching of reading, there have been contrasting views on how best to promote the art of writing in school. During the 1970s and 1980s there was a strong swing to viewing children as emerging "authors," learning through a process of constructing meaning into text. This approach, often known as the "process approach" to teaching writing, shifts the focus from a completed text to learning the processes required for writing. Graves (1983) divides the writing process into several stages, beginning with initial discussion and drafting, and moving on to conferencing, revising, editing, and publishing, where the child chooses the topics and is guided by the teacher. The process approach was criticized by others who saw the danger in children (a) neglecting the "form" (spelling and grammar) necessary for their work to be understood, and (b) neglecting a full range of genres (purposes of writing, such as procedures, descriptions, reports, explanations, arguments, and different types of narrative).

From this, therefore, developed the functional or genre approach to teaching writing, whereby teachers use cyclical, systematic, and explicit instruction delineating four stages: (a) introducing a text model of the genre, (b) analyzing the structure and grammatical features of the genre with the learners, (c) jointly producing a text of the same genre with the learners, (d) letting the learners write the genre independently (Martin, 1985). Genre theorists argue that factual writing can give access to genres of power and enable a critical engagement with social reality in ways that other forms of writing do not. Thus the dispute in ways of teaching writing has centered largely on (a) the importance of "content" in relation to "form" (i.e., the substance and content of the writing itself vis-à-vis the grammar,

spelling, and punctuation in which it is expressed), and (b) the importance of expressive writing (i.e., writing emanating from the "self," one's thoughts and feelings) as opposed to factual or other types of writing.

Sociocultural Ideas on Literacy in Practice

More recently, a third view has become influential in the teaching of literacy in formal settings: the "social" or "sociocultural approach" to reading. Proponents stress the importance of understanding all forms of literacy as integral parts of *cultural practices* (Heath, 1983; Street, 1984; see also Barton & Hamilton, 1998; Gregory & Williams, 2000). In other words, in their outside school lives, children become members of different cultural or social groups demanding knowledge of different types of literacies (e.g., the literacy of a church, mosque, or temple, scout or other youth group) which should be recognized and acknowledged by the school.

Such acknowledgment also means that teachers recognize the different mediators or informal "teachers" of literacy in children's lives, such as parents, siblings, grandparents, peers, and other members of the community, as well as the different reading materials that children might be using in these contexts (Gregory, 2008). These studies see reading and writing in terms of "literacies" rather than "literacy" (Gee, 1996) and stress the importance of recognizing that literacy learning is multimodal, often involving new technologies as well as rituals, objects, song and dance, and so forth (Gregory, Choudhury, Ilankuberan, Kwapong, & Woodham, in press; Marsh, 2004; Pahl & Rowsell, 2010). Teachers who work within a sociocultural framework of teaching reading attempt to build a variety of such materials into their formal literacy curriculum.

Sociocultural ideas on the development of reading and writing and how best to facilitate them have been influential in recent years. The model put forward by Freebody and Luke (1990) includes four sets of reading and writing practices:

- text encoder or encoding written and visual language, i.e., cracking the codes of texts;
- working with the purpose of texts, i.e., asking what this text does to me or what I might do with this text here and now;
- making or producing meaning with texts, i.e., constructing written and visual texts for social purposes;
- text analyst practices, i.e., constructing underlying values, beliefs, and views.

Crucially, sociocultural views of writing emphasize the importance of realizing that reading and writing practices do not take place in isolation from one another, nor in a vacuum. They are expressions of the context and situation as well as the wider cultural setting in which writers find themselves. In the 21st century, this entails recognition that literacy in homes and communities will be multimodal, often multilingual, and involving different scripts. It will be the responsibility of teachers to recognize this as they set about teaching in schools.

Conclusions

This brief résumé of the teaching of literacy (reading and writing) summarizes the contrasting theories that are held on *why* children learn to read and write as well as *how* they go about doing it and the role of the teacher in facilitating this. Cognitive views of reading and writing regard literacy as a skill which can be taught by engaging the child in mental activities (phonics learning or the learning of spelling, grammar, etc.). Within this frame-

work, the *meaning* of a text and the purpose for which it is read or written takes second place. Sociocultural views, on the other hand, view reading and writing as inherent parts of cultural practices. Children must become familiar with each of these parts in order to be accepted as *members* of a practice. Within this frame, *cognition* is, perhaps, taken for granted under the umbrella of occurring naturally in being part of a group. Teachers have been trained with a greater or lesser emphasis on each belief, according to the political and social views of the time. This swings and roundabouts situation is unlikely to change in the near future.

SEE ALSO: Language Assessment Literacy; Learning to Read in New Writing Systems; Teaching Reading; Teaching Writing

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Teaching Pragmatics

NAOKO TAGUCHI

Pragmatics, a subject within linguistics, focuses on how people perform, interpret, and respond to language functions in a social context. Learning a language involves more than learning grammar and lexis. The rules of proper communication, such as how to speak appropriately in a situation or understand another person's intention, are critical skills to master in order to become a fully competent speaker in another language. These objectives of pragmatics learning are represented in the connection between *pragmalinguistics* and *sociopragmatics* (Leech, 1983). *Pragmalinguistics* refers to the linguistic forms available to perform language functions, while *sociopragmatics* refers to the appropriateness of the linguistic forms in a given social context. Pragmatic competence requires both types of knowledge, as well as processing skills that mobilize this knowledge in real time communication. Learners need to have a range of linguistic forms at their disposal in order to perform language functions (e.g., greetings), but at the same time, they need to understand the sociocultural norms and rules that govern the usage of these forms (e.g., what to say to greet a certain person). Hence, in second language (L2) learning, grammar (forms), and pragmatics (rules of communication) deserve distinct attention but should be learned conjointly, because the object of pragmatics learning is form–function–context mappings—knowledge of forms and their functional possibilities, as well as contextual requirements that determine the form–function mappings.

The significance of pragmatic competence in L2 learning has been articulated in theory, pedagogy, and assessment. Theoretical models of communicative competence born in the 1980s and 1990s situated pragmatic competence as an indispensable component of L2 proficiency, apart from grammatical, discourse, and strategic competencies (Canale & Swain, 1980; Bachman & Palmer, 1996). Since then, the models have served as a guiding framework for the empirical investigation of pragmatic competence, defined as speakers' *ability to perform language functions* and *knowledge of socially appropriate language use*. Pragmatic competence has thus been operationalized as a measurable construct, and tasks and instruments have been developed to elicit and examine it in pedagogy and assessment. Correspondingly, these models of communicative competence have been applied to pedagogy and assessment. For instance, communicative language teaching and the notional-functional approach have included pragmatics as important objectives of instruction. Standardized assessment measures such as ACTFL (American Council of Teachers of Foreign Languages, 1999) and the Common European Framework (Council of Europe, 2001) have also designated pragmatic competence as part of the target construct of measurement. These trends have fortified the claim that pragmatic competence should be taught and assessed.

Having recognized the prominence of pragmatics in the field, this entry will review three central issues in the teaching of pragmatic competence: targets of pragmatic instruction, instructional practice and materials, and current challenges in pragmatics teaching.

Instructional Targets: What Pragmatics Can Be Taught?

The selection of focal pragmatic features for instruction clearly reflects disciplinary histories. Following the first appearance of the term "pragmatics" in Charles Morris's (1938) *Theory*

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of Signs, a number of influential pragmatics theories were born in the field. Austin's (1962) speech act theory, Searle's (1969) taxonomy of speech acts and the distinction between direct and indirect speech acts, Brown and Levinson's (1978) politeness theories (see also Leech, 1983), Grice's (1975) cooperative principles and conversational implicature, and Sperber and Wilson's (1995) relevance theory all served as a common framework for examining pragmatic phenomena across languages and language users. The concepts and terminologies stemmed from these theories have provided a platform for organizing units of instruction in pragmatics.

By far, speech acts (e.g., requests, refusals, apologies, compliments, and compliment responses) have been the most popular goals of instruction because of their clear connections among linguistic forms, language functions, and social context. Typically, syntactic forms and strategies used to realize speech acts are taught in conjunction with situational variables that determine the degree of politeness and indirectness of the forms (i.e., power relationship, social distance between the interlocutors, and the degree of imposition). For example, Rose and Ng (2001) used film segments containing compliment exchanges to teach common syntactic formulas of compliment speech act in English:

NP {is, looks} (really) ADJ (e.g., That dress is really nice.)
I (really) {like, love} NP (e.g., I really love that dress.)
PRO is (really) (a) (ADJ) NP (e.g., That's really a nice dress.)

In conjunction with the compliments, learners were taught a range of compliment response types (i.e., acceptance, deflections, and rejection), and were also made aware that deflection is a preferred strategy.

Other instructional studies have dealt with the comprehension of implicature, namely the ability to comprehend speakers' intentions conveyed in an indirect, nonliteral manner (e.g., Bouton, 1999). In those studies, learners were exposed to dialogues that contained implicature and were explicitly taught how to interpret them. Examples include the Pope-question implicature (e.g., Saying "Is the Pope Catholic?" in response to a question whose answer is obviously affirmative) and implicature based on Grice's maxim of relevance (e.g., responding to the question "Did you like the movie?" by saying "I was glad when it was over").

Other more recent pragmatics approaches and their neighboring fields have also informed the choice of instructional goals in pragmatics. Studies have incorporated sociolinguistic notions of register variation and speech styles such as address terms, for example, formal *V*-form and informal *T*-form in German (Belz & Kinginger, 2003) and formal versus informal speech styles encoded in grammar (Ishida, 2009). Research in discourse functional linguistics and conversation analysis have led researchers to conclude that interactional devices such as discourse markers, pragmatic routines, patterns of small talk, and deixis are important pragmatic features to teach. For example, the learning target in Liddicoat and Clozet's study was an appropriate response to the French question, *T'as passé un bon week-end?* ('Did you have a good weekend?'). Students learned the logistics of how to respond to this question and project attentive listener behavior.

A target area that has received far less attention is fluency when performing these pragmatic functions. Pragmatic fluency, like other areas of fluency, has recently received empirical attention as an aspect of pragmatic competence that characterizes speedy and efficient processing of pragmatic knowledge. Research has shown that accuracy and fluency are distinct components of pragmatic performance: they do not develop in parallel and are affected differently by contextual and individual factors (e.g., Taguchi, 2008, in press). There are only two instructional studies that are targeted at improving pragmatic fluency. House (1996) examined speech rate, pause length, and repairs in learners' production of

conversation routines, discourse strategies, and speech acts (e.g., greeting and leave-taking) in L2 English. Li (in press), on the other hand, investigated whether or not different amounts of practice could yield differential effects in the development of accurate and speedy recognition and production of request-making forms in L2 Chinese. Because empirical findings are limited, future research in the role of instruction on fluency development is promising.

Instructional Practice and Materials: How Can Pragmatics Be Taught?

Given the complexities of pragmatics that involves the connections among forms, functions, and contexts, one would naturally wonder whether pragmatic competence is indeed teachable. A bulk of studies in the 1990s showed that most aspects of pragmatics are susceptible to instruction, meaning that instruction is better than no instruction for pragmatic development. Having established the benefit of instruction, the field has evolved around a question of efficacy: What instructional methods are most effective? This question has been taken up by a line of instructional intervention studies that implemented a planned pedagogical action directed toward the acquisition of select pragmatic features. These studies compared the effect of one teaching method over another by measuring the degree of learning from pre- to post-instruction. One popular distinction used to categorize and compare instructional methods is explicit versus implicit teaching. The former typically involves explicit explanation of target pragmatic features followed by focused practice, while the latter withholds explanation but provides ample input and practice opportunities in which learners develop implicit understandings of the target pragmatic forms and their uses.

Alcón's (2007) study is an example of an intervention study that compared explicit and implicit treatment on Spanish learners of English in their acquisition of request forms in English. The explicit group received metapragmatic information regarding request-making forms. Then they were asked to find examples of requests in provided scripts and to justify their choices. The implicit group received awareness-raising tasks which featured input enhancement (i.e., requests and related sociopragmatic factors placed in bold type or capitalization) but received no metapragmatic explanation. In the posttest, both groups outperformed the control group, while no significant group differences were found in pragmatic awareness; however, only the explicit group maintained learning up to the delayed posttest given three weeks after the treatment.

Previous studies have generally confirmed the superiority of explicit over implicit instruction in teaching pragmatics, particularly when the length of instruction is short (see Jeon & Kaya, 2006, for review). However, there is evidence that teaching methods also interact with pragmatic targets. Rose and Ng (2001) found that an inductive approach was more effective for teaching pragmalinguistic forms of complimenting, whereas a deductive approach was more advantageous for teaching the sociopragmatic rules of compliment responses (how to respond to a compliment).

Although these intervention studies have long centered around the "methods debates"—implicit versus explicit, deductive versus inductive, and production versus comprehension based instruction—the by-product of this bulk of research is a variety of teaching materials generated to teach pragmatics in the classroom. Because pragmatics entails linguistic resources for performing communicative acts in social contexts, teaching materials inevitably reflect several key elements: social context, functional language use, and interaction. Activities and tasks have been designed to incorporate these components. For example, consciousness-raising tasks have learners listen to naturalistic or scripted conversations

either live or through video or audio, with attention directed to the target pragmatic features and sociolinguistic variables of the speech events, for example, setting, participant relationships, and the level of formality (e.g., Ishida, 2009). Similarly, receptive-skills tasks expose learners to pragmatic input but have them act on them by evaluating the appropriateness of the target pragmatic forms on a rating scale or by selecting appropriate forms from a list of expressions (e.g., Takimoto, 2009). Productive-skills tasks have taken a variety of formats, including role plays, structured conversations, and discourse completion test. In role plays, students assume certain roles in hypothetical scenarios and interact with peers to practice speech acts (e.g., Pearson, 2006).

More recently, technology has brought exciting new options for the format of pragmatics teaching. There are several Web sites dedicated to L2 pragmatics (see Cohen, 2008, for review). These Web sites provide interactive multimedia modules where learners can watch video clips of conversations involving speech acts, read explanations of the speech acts and cultural tips, and complete exercises. Computer-assisted language learning (CALL) has also expanded our options of pragmatics instruction. Ward, Escalante, Al Bayyari, and Solorio (2007), for example, developed a computer program in which learners of Arabic practice back channels by producing them in response to prerecorded utterances. A computer then analyzes the timing of the back channels and provides feedback. Synchronous and asynchronous computer-mediated communication (CMC) and telecollaboration are other available instructional tools within CALL. A series of studies by Belz and her colleagues demonstrated the effectiveness of CMC in teaching speech acts, address forms, and modal particles (e.g., Belz & Kinginger, 2003). CMC offers learners an authentic context for communication by having them engage in online dialogues with native speakers during telecollaboration. Target pragmatic features appear in a contextualized manner, and the input is still, which makes it easier for learners to notice the targets. Another promising new technology is a virtual environment that simulates the computer game Second Life. Sykes (2009) created a virtual online space simulating a Spanish study-abroad environment. Learners of Spanish were able to move their avatars throughout the environment and interact with built-in content by practicing speech acts of requests, apologies, greetings, and service encounter interactions. This type of instructional practice brings together the key elements of pragmatic teaching—context, functional language use, and interaction—with added values of authenticity and self-discovery.

Teacher-arranged materials have been the mainstream in pragmatics teaching, as reviewed thus far. Nevertheless, previous studies have provided evidence that learners can learn pragmatic features through classroom use of the target language even when pragmatics is not an intended learning target. These studies take a language socialization approach by adapting rich, qualitative analyses of classroom input and interaction to unveil opportunities and resources for pragmatics learning. A good example is Ohta's (2001) study on the acquisition of acknowledgment and alignment expressions in L2 Japanese. In this study, acknowledgment is identified as a feedback signal used to show attentiveness in conversations (e.g., *soo desu ka* meaning "oh really"), while alignment is an emphatic feedback signal (e.g., *ii desu ne*, meaning "That's great, isn't it?"). Naturalistic recordings of classroom interactions revealed learners' gradual development of frequent, appropriate use of these signals through recycled use of them in peer talk. Collaborative peer–peer interaction created a range of opportunities for students to use the targets that were not available in teacher-fronted exchanges. These findings indicate the potential of opportunities for and outcomes of incidental pragmatics learning in different classroom practices and activities.

Another emerging venue of instructional practice for pragmatics is strategy training. Learning strategies has been a topic of L2 learning since the 1970s, owing to a seminal work by Rubin (1975) that defined learning strategies as conscious or semi-conscious learning behaviors that learners deploy to enhance their L2 knowledge and abilities. Elaborate

taxonomies of strategies (i.e., cognitive, metacognitive, and affective) have been developed and applied to teach the four language skills as well as vocabulary and grammar. Applying the concept to pragmatics, Cohen (2005) recently developed taxonomies of speech act strategies that could be used in strategy-based instruction. The taxonomies have three main categories: strategies for the initial learning of speech acts (e.g., identifying the target speech acts and gathering information about them), strategies for using the speech act material that has already been learned (e.g., using a memory aid to remember the speech act expressions), and strategies for learners' metapragmatic considerations (e.g., evaluating appropriateness of their own speech acts). These taxonomies, in part, echo the earlier claim made about the importance of autonomous learning where learners act as ethnographers and collect pragmatics information (e.g., Bardovi-Harlig, 1992), however, it advances this claim in a more systematic manner. Whether strategy training proves to be a useful option for pragmatics teaching remains for future empirical investigation.

Challenges of Pragmatics Teaching

Previous sections discussed the "what" and "how" in pragmatics teaching and presented a range of options for goals and instructional practice. This entry concludes with three challenges in teaching pragmatics. These challenges come from the nature of pragmatics that involves language use affected by considerations of language users, social context, and norms of interaction. First, teachers should be concerned about which norms to teach. For a long time, the native speaker model has been the norm of pragmatics pedagogy. In most classrooms, pragmatic behaviors by native speakers, typically inferred from native speaker intuition or through data collected from a group of native-speaking participants, are presented as optimal models for learners to emulate. However, with the rapid spread of globalization and transculturalism, the assumption of uniform native-speakerness has been increasingly challenged (Davies, 2003). In reality, there is a variety of native speakers in a given language and culture. They come from different regional, educational, and professional backgrounds, which inevitably influence the manner in which they project politeness, the criteria they use to judge appropriateness of language behaviors, and the range of linguistic repertoires they possess to perform interpersonal functions (Mori, 2009). Because it is virtually impossible to teach all varieties, one challenge of pragmatics teaching is to choose a target model that serves the purpose of instruction, but at the same time to afford students opportunities to be aware of a range of pragmatic options.

Related to the selection of a target pragmatic norm, another challenge of pragmatics teaching is in the area of needs analysis. It is important to assess who the students are in class and what their individual needs are for their own language study. These analyses of needs will inform our choice of pragmatic variety to focus on in class, but at the same time, they will help us consider individuals' subjectivity when making pragmatic choices in interaction. Some learners may want to conform to the pragmatic norms and forms of the given culture, but others may elect not to use the forms, perhaps signaling a desire to maintain their identity. Empirical evidence supporting this comes from Ishihara and Tarone (2009), who reported cases in which learners of Japanese resisted pragmatic use of higher-level honorifics or gendered language based on their subjectivity, beliefs, and experiences. Pragmatics deals with situation-appropriate sociolinguistic behavior, and learners should be informed of the consequences that accompany their choice of behavior. Yet, the choice should be left to the learners themselves, and their own learning needs and goals.

The last challenging area in pragmatics teaching relates to the goal of instruction. Traditionally, teachers and researchers preselected one or two pragmatic features and taught them in a structured, fixed discourse context. This approach assumes a static view of pragmatic competence in which pragmatic competence is a constellation of bits of

pragmatic resources that have a stable property and do not change across discourse contexts and participants. However, this traditional view has been challenged by the recent poststructuralist perspective that holds pragmatic acts are dynamic in nature, constructed, and negotiated through interaction among participants (Kasper, 2006; Mori, 2009). The challenge of future pragmatics teaching, then, is to reconceptualize the goal of instruction to reflect this new epistemology. Pragmatic competence, signified by one's ability to perform language functions and one's knowledge of socially appropriate language use, should be practiced and promoted in more authentic dialogic activities where learners have choices to adapt their pragmatic resources to ongoing interactions.

SEE ALSO: Input-Based Instructional Approaches; Instructed Second Language Acquisition; Measuring the Effectiveness of Second Language Instruction in Research; Output-Based Instructional Approaches; Teaching Culture and Intercultural Competence; Teaching Language-Learning Strategies; Technology-Supported Materials for Language Teaching

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Teaching Reading

WILLIAM GRABE AND FREDRICKA L. STOLLER

This entry focuses on academic reading contexts and corresponding instructional approaches. Although second language reading instruction is also carried out in early bilingual child and adult literacy contexts, academic contexts are spotlighted here because of their pervasiveness in second and foreign language settings.

Teaching reading may best be envisioned in terms of what the fluent reader, either first language (L1) or second language (L2), is able to do and how curricula are designed to guide L2 students to this level of fluency. Reading is a complex ability that requires the fluent reader to draw information from the visual features on a page and to combine this information with reader background knowledge to form a coherent interpretation of text meaning. Skilled reading involves a number of critical features:

- setting appropriate goals in line with the reader's purpose;
- drawing upon L2 linguistic resources at word, syntactic, and discourse levels;
- recognizing words rapidly and accurately;
- engaging with the text to determine main ideas and their connections;
- using strategic processing to monitor comprehension, recognize difficulties, repair possible miscomprehension, and adjust goals as needed;
- reading texts for extended amounts of time to build fluent text processing;
- maintaining a level of motivation to persist with the task through goal completion.

To prepare L2 readers for the demands of academic reading, curriculum development efforts should (a) build on research identifying reading skills, (b) recognize the need for a long-term commitment to the incremental development process, (c) take into account the fact that some skills build on the prior development of other skills and resources, and (d) recognize that students must engage in real reading from very early stages.

Research on Reading with Implications for Instruction

Many research studies have demonstrated conclusively that learners need to establish letter–sound correspondences and phonological awareness as an early skill for reading development (Ehri, 2006; McCardle, Chhabra, & Kapinus, 2008). If this skill is not well established in a learner's L1, it must be addressed in early L2 reading instruction. Vocabulary knowledge is a second critical resource for reading development. Nation (2006) estimates that 8,000–9,000 word families are required for an L2 reader to read with reasonable fluency and comprehension. Schmitt (2008) estimates that this word-family requirement amounts to receptive knowledge of approximately 35,000 different words for fluent L2 reading skills, a total that is similar to multiple English L1 vocabulary studies of high school graduates (see Stahl & Nagy, 2006; Grabe, 2009). Word recognition and passage reading fluency are strong predictors of elementary school L1 reading abilities, and also a strong predictor of poor readers through secondary school (Sabatini, 2002; Klauda & Guthrie, 2008). Evidence for the connection between L2 reading fluency and reading comprehension is beginning to emerge (Gorsuch & Taguchi, 2008). Similarly, evidence for the impact of

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extensive reading on reading comprehension development, in L1 and L2 contexts, argues for the importance of extended exposure to print for reading development (see Grabe, 2009).

Research also demonstrates the importance of grammar knowledge, reading strategies, discourse structure awareness, background knowledge, and reading motivation for L1 and L2 reading comprehension. In several studies, grammar has been a powerful correlate of reading abilities, with similar findings in a number of reading assessment studies. Research on reading strategies has demonstrated that reading strategies, especially when taught in effective combinations, strongly influence reading comprehension (Guthrie, Wigfield, & Perencevich, 2004; McCardle et al., 2008). Discourse structure awareness is now generally recognized as important for reading comprehension (Grabe, 2009). Similarly, the importance of background knowledge, even if sometimes difficult to measure, is widely seen as a critical component of reading abilities (e.g., Klauda & Guthrie, 2008). Reading motivation, as a critical component ability for reading development, is now well documented in L1 contexts and is being explored in L2 contexts (McCardle et al., 2008; see Grabe, 2009).

These research findings, and additional research reported in Han and Anderson (2008), Hudson (2007), and Koda (2005), argue for the importance of numerous component skills and language resources for the development of reading abilities. The establishment of key reading skills and cognitive resources for reading, however, does not immediately translate into effective instructional principles or goals. These findings must be framed within overall curricular approaches to reading instruction. At present, there is interesting evidence for the effectiveness of certain approaches to L1 reading instruction; similar evidence for L2 instructional approaches, while emerging more slowly, offers helpful curriculum development principles (Hedgcock & Ferris, 2009; Anderson, 2009; Grabe, 2009). While it is important to acknowledge that no set of curricular principles can be easily imported into all instructional contexts, the list below outlines one possible set of principles that provides a reasonable starting point for building an instructional framework. Of course, the importance assigned to these principles is influenced by needs analyses, institutional and teacher perspectives, students' strengths and weaknesses as well as their language proficiency levels, and constraints imposed by time, costs, and prior teacher training.

1. Integrate skill instruction with extensive practice and exposure to print.
2. Use texts that are interesting, varied, attractive, abundant, and accessible.
3. Provide some degree of student choice in reading materials and reading activities.
4. Introduce reading skills and guide student practice by first drawing on texts in course textbooks (key skills and comprehension strategies should be exemplified initially from the texts being read in class).
5. Develop lessons structured around pre, during, and postreading.
6. Build connections between texts and student background knowledge.
7. Provide opportunities for students to experience comprehension success (consistently frustrating L2 reading experiences typically leads to student disengagement).
8. Build expectations that reading occurs in class every day or in every lesson.
9. Plan instruction around a curricular framework that:
    - promotes word-recognition skills,
    - builds a large recognition vocabulary,
    - guides comprehension-skill development,
    - builds awareness of discourse structure,
    - develops the strategic reader,
    - promotes reading fluency,
    - develops extensive reading,
    - motivates students to read,
    - integrates content learning and reading.

For the purposes of this discussion of reading instruction, the focus is on the distinct elements of the ninth principle above. A careful consideration of these features, followed by the selection of the most important ones for consistent instruction, will likely lead to a reading curriculum that can help students develop academic reading abilities.

Emphases for Reading Instruction

Promote Word-Recognition Skills

Most L2 students on an academic track at secondary and tertiary education levels will have reasonable control over word-recognition skills, but checking how quickly and accurately students can read a word list provides a useful diagnostic tool, particularly if a teacher is concerned about students' reading progress. Students who have difficulties with letter–sound correspondences can benefit from consistent word-recognition training (see Birch, 2006). Vocabulary development, extensive reading, and fluency practice lead to improved word-recognition skills as do practice with flash cards, timed word-list reading, and word-matching and word-recognition exercises.

Build a Large Recognition Vocabulary

Advanced L2 reading requires an L2 recognition vocabulary level anywhere above 10,000 words (see Nation, 2006; Schmitt, 2008). At the same time, the need for students to know the 2,000 most frequent words still retains its force as a key argument for vocabulary instruction. To institute an active vocabulary development framework in an L2 reading curriculum, carefully designed instructional activities must be built around the following eight features:

- procedures for selecting target vocabulary,
- techniques for introducing new words,
- practice opportunities,
- activities to build word-learning strategies,
- a vocabulary-rich environment to support learning,
- word-collection activities,
- tools to build motivation for word learning,
- activities that recycle texts and vocabulary.

Useful resources for exploring each of these features include Baumann & Kame'enui (2004) and Stahl and Nagy (2006) for L1 ideas, and Folse (2004), Nation (2008), and Zimmerman (2009) for L2 ideas.

Guide Comprehension-Skill Development

The ability to understand a text requires a reasonable knowledge of basic grammar, the identification of main ideas in the text, an awareness of discourse structure, and strategic processing for more difficult texts. Reading comprehension instruction—that helps students find main ideas and express what a text is about—should give some attention to directed grammar teaching, particularly at beginning and lower-intermediate levels. However, more advanced reading courses should not be structured around extensive grammar review.

Main idea comprehension is not an easy skill to teach and typically teachers *assess* comprehension rather than *teach* comprehension through postreading questions (see Anderson, 2009). Postreading comprehension questions *can* offer good instructional opportunities if teachers ask students to explain why an answer is appropriate and where the text offers

support for the answer. Main idea comprehension can be promoted through class discussions about how to understand a text better, what the main ideas are, how information is connected across parts of the text or to other readings, and what linkages may exist between ideas in the text and student background knowledge. Class conversations may start with postreading comprehension questions, followed by requests for further elaboration and explanations involving multiple students (Grabe, 2009).

Build Awareness of Discourse Structure

Raising students' text structure awareness represents another critical feature of reading curricula. Writers' goals determine basic discourse organization, and the specific information that a writer presents has a major impact on how a text is organized. A teacher with some knowledge of text organization and discourse signaling markers can help students build their knowledge of discourse organization. Six activities for building text structure awareness are listed below, though many more could be incorporated into reading curricula.

1. Preview texts and highlight key words that signal text structure.
2. Highlight a paragraph and decide its function in the text.
3. Fill in a graphic organizer (e.g., table, chart, graph, timeline, outline) and identify text signals that support placement of information in the organizer.
4. Identify patterns of discourse organization (e.g., cause–effect, comparison–contrast, problem–solution) and generate simple graphic displays.
5. Reorganize scrambled paragraphs and sentences to reassemble a text or to create a good summary.
6. Match main ideas and supporting information across two columns.

A number of key principles guide text structure instruction. First and foremost, this type of instruction must be consistent and continual. Second, teachers should use the texts that students are already reading for other purposes so that students see the pervasiveness of discourse structure; teachers should not introduce "special" texts to demonstrate discourse structure. Finally, students should be given the opportunity to explain to the teacher and classmates how texts are structured and how discourse structure is signaled (see Grabe, 2009; Jiang & Grabe, 2009).

Develop Strategic Reading

Strategies for reading comprehension build on linguistic resources (words, phrases, and structures) and support the basic comprehension model developed by the reader. When good readers read for careful comprehension, they actively engage academic texts through multiple strategies and a heightened level of metacognitive awareness. These strategies (adapted from Pressley, 2002, pp. 294–6) are often applied in combinations that support each other to achieve comprehension. Strategic readers typically:

- plan and form goals before reading,
- form predictions before reading,
- read selectively according to goals,
- reread as appropriate,
- monitor their reading continuously,
- identify important information,
- try to fill in gaps in the text through inferences and prior knowledge,
- make guesses about unknown words to keep reading,

- use text structure information to guide understanding,
- attempt to integrate ideas from different parts of the text,
- build interpretations of the text as they read,
- build main idea summaries,
- evaluate the text and the author and form feelings about the text,
- attempt to resolve difficulties,
- reflect on information in the text.

Teaching for strategic reading involves a number of important steps. First, teachers introduce a strategy and discuss how, when, and why to use it, and then add it to a class list. Once introduced, the strategy is practiced and fine-tuned repeatedly throughout the course. Second, teachers model combinations of strategy uses while reading aloud to the class so that students can "witness" strategies being used. Over time, students are encouraged to verbalize strategies that they are using, usually through class discussions about how to understand the text. Third, teachers promote ways to monitor comprehension. Options for students include asking if the text is making sense, rethinking goals for reading, and deciding, at certain points, what the main ideas of the text are. Fourth, students are encouraged to use multiple strategies in combination and build familiarity and automatic strategic responses to the texts that they are reading. Teaching students to become strategic is central to reading comprehension instruction and deserves greater instructional attention (see Pressley, 2006).

Promote Reading Fluency

Building word and passage reading fluency requires a curricular commitment, rather than sporadic attention. Teachers must explain to students why they are working on fluency and "sell" students on fluency, rate, and recognition activities. When fluency activities are done right, students enjoy and look forward to them.

Developing word-recognition fluency can be carried out through repetition and "beat the clock" practice with flash cards and timed readings of lists of words that have already been introduced. Students also improve word-recognition fluency when rereading texts, reading along in a text as the teacher reads aloud, and engaging in extensive reading. Passage-level fluency can also be developed through extensive reading, recycling through previously read texts to accomplish new tasks, and timed-reading activities.

Repeated reading is becoming an important component of L1 reading curricula, and many alternatives exist for providing repeated reading practice (Rasinski, 2003; Rasinski, Blachowicz, & Lems, 2006). Unassisted repeated reading involves students reading aloud short passages alone (either at school or at home) until they reach a set reading rate. Assisted repeated reading can involve students in reading a passage silently along with an audiotape, reading a passage aloud with an audiotape, reading a passage with a teacher or aide, or first listening to a passage and then reading along (among other variations).

Develop Extensive Reading

Extensive reading, to be reasonably successful, requires a significant effort in motivating students (Bamford & Day, 2002; Day & Bamford, 2002; Grabe, 2009). Students need to be aware of the goals and benefits of extensive reading. They also need to be encouraged to read extensively at every reasonable opportunity, given many opportunities to read extensively, and provided choices in their reading selections (e.g., graded readers and level-appropriate reading material). Some ways to engage students in extensive reading are listed below.

1. Provide many attractive reading materials.
2. Allot time for in-class free reading or sustained silent reading.
3. Create opportunities for different types of reading out of class.
4. Have a good class library.
5. Read interesting material to students.
6. Find out what students like to read and why.
7. Interest students in reading topics.
8. Share what the teacher reads and why that material is interesting.
9. Have students share and recommend reading material.

Building extensive reading skills requires long-range curriculum planning if it is to have a major impact on fluency and reading comprehension development. There is no way to get around the fact that students become good readers only by reading a lot.

Promote Motivation for Reading

Teachers commonly believe that they do not have a major role to play in student motivation for reading. This view could not be further from the truth. Few students expect to become good, fluent L2 readers. Students know that reading development is effortful, and they need motivational support from teachers and the curriculum itself. Motivation can be supported in numerous ways:

1. Have students share interests.
2. Promote the development of group cohesiveness and collaborative support with more difficult tasks.
3. Increase students' expectancy of success.
4. Have good lead-ins for major texts and tasks to build initial interest.
5. Match student skills with challenge.
6. Make the curriculum relevant to students.
7. Help learners be active participants so that learning is stimulating and enjoyable.
8. Build real levels of expertise in topics of readings.
9. Give students some degree of choice within the curricular framework.

Integrate Content Learning and Reading

Designing a reading curriculum requires decisions about which goals have a high priority and how to combine high-priority goals into a coherent educational plan. While not every component skill and knowledge base introduced in this entry can receive equal attention, one approach to building a coherent and effective reading curriculum is to combine emphases on content and language learning, often labeled content-based instruction (Stoller, 2004, 2008). Evidence from L1 reading contexts has empirically demonstrated the effectiveness of such an approach (Guthrie et al., 2004).

A content-based approach offers opportunities for extended reading, motivational learning experiences, strategic responses to increasingly complex tasks, greater choices in reading materials, and growing challenges to match growing skills. The combination of content and language learning objectives provides opportunities for integrated skills use, meaningful project work, the recycling of important skills on a regular basis, the rereading of texts, and realistic tasks for interpreting, integrating, and evaluating information from multiple texts. These types of activities are similar to those that students are likely to encounter in academic settings (Stoller & Grabe, 1997; Guthrie et al., 2004; Grabe, 2009).

Concluding Comments

This entry outlines an array of instructional practices that can be integrated into an innovative and effective framework for teaching L2 reading. A short article can only begin to identify the potential instructional options and variations that could help make a difference in L2 students' reading success. Continued explorations of effective reading instruction practices, built upon persuasive instructional research studies, are to be encouraged for the benefit of the many L2 students who need to improve their reading abilities for academic purposes.

SEE ALSO: Graded Readers; Learning to Read in New Writing Systems; Teaching Language-Learning Strategies; Teaching Literacy

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Teaching Translation and Interpreting

CLAUDIA V. ANGELELLI

Introduction

Translation and interpreting (T&I) refers to a very specific case of language and information processing. Translation (T) entails conveying a text initially written in a source language (with or without the intention of being translated) into a target language. Although the term has been used as an umbrella term to include oral texts, it is technically reserved for written ones. Interpreting (I), on the other hand, refers to the rendition of an oral or signed text originally produced in a source language into an oral or signed text in the target language.

Since its inception, the teaching of T&I has been intertwined with language teaching. Examples are the use of translation as a way to teach foreign languages as in the grammar translation method in the 1950s, and the teaching of language enhancement courses in T&I programs as a way to improve translation skills (Angelelli & Degueldre, 2002). Although the fields of second language acquisition and the two scholarly communities of translation studies and interpreting studies have not historically engaged significantly in the sharing of knowledge and theories, they have begun to communicate more in recent years. The beginnings of this conversation can be seen in more recent works on teaching and testing for translation and interpreting (Schäffner & Adab, 2000; Colina, 2002, 2003; Angelelli, 2004, 2006).

Historical Background

The first university T&I programs were developed in Europe in the early 1940s—for example, at the universities of Geneva in Switzerland in 1941, Vienna in Austria in 1943, and Mainz-Germersheim in Germany in 1946 (Schäffner & Adab, 2000). At the time, the focus was, as it is today, on developing translation competence as well as in understanding the process of translating and producing a valid product. While translation entered academia as an object of study, programs in interpreting were developed to meet a pragmatic need. The education of interpreters was prompted by the need to ensure communication between speakers who did not share a language. After World War II, the sudden demands to train more interpreters resulted in the emergence of a newer focus on interpreting all over the world. Universities in Europe (Belgium, Denmark, France, Germany, Italy, Spain, and the United Kingdom), Asia (Taiwan, Korea, and Japan), the Americas (Argentina, Canada, Chile, Mexico, Uruguay, USA, and Venezuela), Africa (Egypt and Tunisia), and Oceania (Australia and New Zealand) began to offer courses, programs, and degrees in interpreting (Angelelli, 2004).

Current programs in T&I are of diverse nature, ranging from short undergraduate certificates to doctoral studies. Their area of specialization also varies. Some programs offer a focus on either translation or interpreting, others combine both. Undergraduate degrees tend to be more general while graduate degrees have areas of specialization such as translation and software localization, or conference or court interpreting. Courses and

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programs are offered in the traditional face-to-face classroom mode, completely online, or in blended approaches that combine face-to-face with online instruction. Furthermore some programs offer students real-life experiences such as courses taught in the form of internships (e.g., in T&I agencies or companies that have T&I divisions) or via service-learning components (e.g., doing translation projects or interpreting assignments for nonprofit agencies under supervision).

In addition to courses and programs in academic settings, there is a variety of short courses and workshops offered by the T&I industry and by professional associations. The goal of many of these short courses and workshops is on training rather than education. They cover a vast array of topics, from how to use a specific software application, to how to exercise one's memory. Instructors are generally practicing professionals who rely on their experiential knowledge. Even though these courses do not substitute formal education in T&I, they are popular among individuals seeking information and wanting to build on their bilingual ability. In the USA, for example, a degree in T&I is not a requirement to exercise the profession, and thus many bilingual individuals with command of two languages and some technical knowledge in a specific field seek these courses as a quick opportunity to explore a career.

T&I Competence

The goal of T&I academic programs is to develop T&I competence. Defining competence is not an easy task. This is partly due to the fact that both translation and interpreting are highly complex activities which involve many diverse areas of knowledge and skill. There is currently no one definition of translation competence and its components that is universally accepted within the academic field of T&I studies. In fact, there is debate about how to define T&I competence and exactly how their constituent elements are to be conceptualized, broken down, and interconnected.

Wilss (1996) initially described translation competence as consisting of three primary components which include: (a) source language receptive competence, coupled with (b) target language reproductive competence, operating within (c) a supercompetence which reflects the ability to transfer the message from one language to another. This description of translation competence emphasizes that it is not merely enough to transfer a message from one language to another, but rather that there is a need to be strategic about it (Valdés & Angelelli, 2003). Presas (2000) helps us further refine the idea of Wilss's supercompetence by defining what it is that makes translation competence different than bilingual competence. She emphasizes that a competent translator uses specialized linguistic and cultural knowledge to control interference in both the reception of information from the source text and the production of the target text. Thus, the competent translator does this in part through making a transfer at the level of meaning rather than at the level of words and phrases between two connected but separate code systems, that is, two languages. Many contemporary academic definitions of translation competence view translation as a specialized type of communication. They see the translator as interpreting a text that was written to perform a function in the source language and culture and delivering it into a new form in order to perform a function in the target language and culture (Kiraly, 1995, 2000; Cao, 1996; Neubert, 2000; Colina, 2003; and see also several papers in Schäffner & Adab, 2000). This type of functional approach to translation views translation competence as a specialized type of communicative competence.

Agreement on what constitutes interpreting competence, on the other hand, seems to be limited only to the areas of linguistic and information processing skills. As it is the case with all situated practices, however, interpreting competence goes beyond the acquisition

of linguistic and information processing skills to include skills in the following areas: interpersonal, professional, setting specific (e.g., conference interpreting, court interpreting, health-care interpreting), and sociocultural factors (Angelelli, 2006). In the area of interpersonal skills, discussions center around the role interpreters play, how they manage their agency, and how the power interpreters hold varies across settings (Angelelli, 2004). In terms of professional skills, students learn about the standards of practice and code of ethics of the profession. Because interpreting is a situated practice, student interpreters learn how their performance as conference interpreters (Sawyer, 2004) varies in comparison to their performance as court (Berk-Seligson, 2000) or medical interpreters (Angelelli, 2004), and how the different settings in which they perform impose different constraints on their work.

Students and Teachers

In T&I classrooms, students fall within a continuum of circumstantial or elective bilinguals (Valdés & Angelelli, 2003; Angelelli, 2010). It is important to appreciate the degree to which T&I require students to master a language. Unlike language courses in which students use language to communicate and errors are considered a sign of language acquisition, in T&I courses students are expected to work with almost flawless language and error tolerance is extremely low. It follows that many students will present programs with the challenge of meeting proficiency enhancement needs. On the one hand, the levels of proficiency of elective bilinguals sometimes may not be adequate to enter T&I courses (Wilss, 1996; Colina, 2002; Angelelli, 2010); for example, in the USA by the time students graduate from college having learned a second/foreign language, their language proficiency level is intermediate, high, or advanced. To account for this, some T&I programs offer language enhancement courses (Angelelli & Degueldre, 2002), which in some cases are scheduled either as prerequisites or mandatory courses during the program. Enhancing the language skills of circumstantial bilinguals, on the other hand, is also a difficult task. They generally need to work on academic language and register. Courses on these topics are not readily available in languages other than English. In addition to a high level of language proficiency, students are expected to acquire a sense of problem solving, active listening, note taking, and split attention skills in order to perform the tasks of consecutive and simultaneous interpreting. Students should also develop research techniques and acquire terminology relevant to the topic at hand.

In terms of who is in charge of a T&I classroom, individuals who teach T&I come from different paths (Colina, 2003). They can be faculty members crossing over from various related fields from either social sciences or humanities, or they can be T&I professionals or language teachers. They are also themselves either elective or circumstantial bilinguals. At present there is no degree program on T&I teacher education.

Methods and Materials

Institutions that teach T&I face common problems. In Colina's terms (2003, p. 1), in the USA the most important ones are lack of consistent pedagogical and methodological criteria on how to approach the issues of translation teaching, and course design.

In T&I teaching the relationship between theory/research and practice is similar to the one that exists in language teaching. T&I research looks at T&I both as processes and products, discusses relationships between source and target texts, focuses on quality and assessment, and the constructions of ideologies as well as power relations. In practice, teachers approach the teaching of T&I from an experiential perspective, in most cases

relying on their own work as practitioners (Colina, 2003). When theory/research and practice come together, we see T&I teachers focusing on the correspondence or lack thereof between the source and target texts, on replicating the function of the original text, and on helping students develop the discourse of the setting where the translation or interpreting assignment takes place. With a few exceptions, instructors base their teaching on their experience rather than on pedagogical principles (Colina, 2003; Kelly, 2005). This means that materials or tasks are seldom organized in order of increasing difficulty or with a pedagogical goal in mind. Rather they are organized by themes. So students move from a general text to an economic, political, or scientific one and they are asked to research and develop appropriate terminology. The underlying assumption is that practice makes perfect.

T&I teachers who generally use authentic materials to teach classes and classroom activities tend to replicate real-life assignments. In interpreting classes, for example, students are asked to read about the topic of the interpreting assignment they are about to do in both the source and target language. The goal is that students become familiar with ways of speaking as if they were experts in the field, and they must also activate their own vocabulary and knowledge in that area. In translation courses, students are asked to find parallel texts (Wilss, 1996) in the target language. The goal is for students to work with the same text types (genre) across languages.

Testing and Assessment

A deep understanding of communicative T&I competence is key to design a construct that allows us to create the most theoretically sound assessment of that competence. In T&I studies, discussions on testing center around the measurement of either the T&I product or the process. In the past, due to the background of T&I instructors (Colina, 2003; Angelelli, 2006), little attention was paid to basic principles of testing such as reliability and validity. Testing was asystematic. Currently, as a result of more sophisticated research within T&I studies and more dialogue with other areas of pedagogy and measurement, discussions about validity and reliability of tests as well as development of measurement instruments and use of rubrics have begun to emerge. The need to establish levels of performance and measurement of areas beyond linguistic and information processing skills is ahead of us. Much work still needs to be done in this area, but T&I studies have finally made the turn toward empirical work.

SEE ALSO: Assessment of Translation; Conference Interpreting; Health-Care, Medical, and Mental Health Interpreting; History of Interpreting; History of Translation; Interpreting Techniques and Modes; Legal Translation; Literary Translation; Medical Translation; Teaching and Learning of Interpreting; Teaching and Learning of Translation

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Teaching Vocabulary

STUART WEBB AND PAUL NATION

Teaching vocabulary effectively requires preparation and planning. Teachers need to ensure that their students are spending time learning the words that are most useful to them. Teachers also need to have clear goals for vocabulary learning during the course and make their students aware of these goals. It is also important for teachers to use an approach that will help their learners develop comprehensive knowledge of the target words, and to measure vocabulary learning in the course. The following sections will provide a brief discussion of these issues.

Which Words Should Be Learned?

The unknown words which have the greatest value to the students deserve attention in the classroom. Typically these words are the highest frequency words that remain to be learned or words which fill a special need for the learners. The most frequent words reoccur most often in spoken and written text, so they have the greatest value for comprehension and use. For example, Nation (2006) found that the most frequent 2,000 word families in the British National Corpus (BNC) accounted for just over 89% of words in the Wellington Corpus of Spoken English, and the most frequent 3,000 word families and knowledge of the proper nouns accounted for just over 96% of the words. This finding demonstrates the relative value of learning the high-frequency vocabulary. While low-frequency words still have value, they are not encountered often enough to warrant attention in the classroom. Instead teachers need to help students learn strategies to deal with low-frequency words. Using vocabulary learning strategies effectively will increase the potential for vocabulary learning outside of the classroom.

In the initial stages of vocabulary development, the most frequent 1,000 word families should be learned, followed by the most frequent 1001–2000 word families. There are several lists derived from the frequency and range of occurrence of words that are useful resources for teachers. Michael West's (1953) General Service List (GSL) and Nation's (2004) BNC word lists are perhaps the most useful. The GSL is derived from written discourse while the BNC lists are derived from both written and spoken discourse. These lists are freely available from Paul Nation's home page http://www.victoria.ac.nz/lals/staff/paul-nation.aspx as well as from Tom Cobb's useful vocabulary resource the Compleat Lexical Tutor http://www.lextutor.ca/.

Words which fill a specific need should be learned once the high-frequency vocabulary is known. Coxhead's (2000) Academic Word List is one example of useful vocabulary for students who know the highest frequency words and are planning to study at university. The list of 570 word families accounts for 8.5–10% of the words in a range of academic texts from different disciplines. Technical words are useful for those who need to learn about a specific topic and are encountered often within a particular content area. Chung and Nation (2003) found that 30% of the words in an anatomy text could be classified as technical items.

Teachers need to measure their students' vocabulary size to determine which words deserve attention in a course. Ideally, this should be done at the beginning of the course.

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There are several established tests which can be used, such as the Vocabulary Levels Test (Nation, 1983, 1990; Schmitt, Schmitt, & Clapham, 2001), the Eurocentres Vocabulary Size Test (Meara & Jones, 1990), the Productive Levels Test (Laufer & Nation, 1999), and the Vocabulary Size Test (Nation & Beglar, 2007). The Vocabulary Levels Test is most useful for determining the extent to which students know the highest frequency vocabulary. The Vocabulary Size Test is also very useful because it can provide some indication of vocabulary knowledge at each 1,000-word level up to the 14,000-word level, and it measures total vocabulary size.

What Are the Vocabulary Learning Goals?

Teachers should have clear vocabulary learning goals for their students. This is particularly important in the early stages of vocabulary development when increasing vocabulary size will have a significant effect on the degree to which learners can use and understand language. The goals should be dependent on the time available for vocabulary learning inside and outside of the classroom and the methods used for learning. Explicit learning methods are fast and efficient. For example, research on learning word pairs has shown that learners can acquire from nine to 58 L2 vocabulary items per hour with an average of 34 (Thorndike, 1908), to as many as 166 L2 words per hour (W.B. Webb, 1962). More recently, Cobb and Horst (2001) found that deliberate learning with concordances for an hour a week for two months resulted in 140–80 words learned (around 16 to 20 words per hour). In comparison, incidental learning gains are relatively small, and are dependent on the amount of input; words are learned gradually through repeated encounters in context. For example, in the L1 learning context, where there is typically a large amount of input each day, young native speakers may incidentally learn approximately 1,000 word families each year (Nation, 2001). However, in an EFL (English as a foreign language) context where L2 input is limited, incidental vocabulary learning may not have as much effect on increasing vocabulary size (Cobb, 2007). Researchers tend to agree that an approach that combines explicit and incidental learning conditions may be most effective (Nation, 1990, 2001; Laufer, 2003; Hunt & Beglar, 2005 and also http://nflrc.hawaii.edu/rfl; Webb, 2007a).

Learners need to be aware of the vocabulary learning goals. If teachers expect a specific number of words to be learned each week, and over the duration of a course, knowledge of these goals may encourage learning. Moreover, learners should understand how these goals can help them to reach certain vocabulary size thresholds which may allow them to better understand the target language. For example, a vocabulary size of 3,000 word families and knowledge of proper nouns might be sufficient for comprehension of television programs (Webb & Rodgers, 2009a) and movies (Webb & Rodgers, 2009b); a vocabulary size of 6,000–7,000 word families may be necessary for comprehension of conversation; and a vocabulary size of 8,000–9,000 word families may be necessary to understand novels and newspapers (Nation, 2006). Making learners aware of their vocabulary size at the start of a course and the vocabulary learning goals within the course can help them to see the value of working toward both the course and the threshold goals. If there is a principled approach to vocabulary learning within the institution, it may also be possible to indicate when learners might be able to reach certain goals such as understanding conversation and television programs. These are goals for receptive learning. For productive use, smaller vocabulary sizes may be sufficient. Michael West developed minimal productive vocabularies for speaking and for defining words that consisted of much less than 2,000 words. However, judgments of the quality of writing are positively affected by a richer vocabulary and so such limited productive vocabulary sizes need to be seen as intermediate goals.

Table 1 Description of vocabulary knowledge (taken from Nation, 2001)

	Spoken	R	What does the word sound like?
		P	How is the word pronounced?
Form	Written	R	What does the word look like?
		P	How is the word written and spelled?
	Word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express the meaning?
	Form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
Meaning	Concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	Association	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
	Grammatical functions	R	In what patterns does this word occur?
		P	In what patterns must we use this word?
Use	Collocation	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	Constraints on use	R	When, where, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this word?

Note. R = receptive knowledge, P = productive knowledge

How Will Vocabulary Be Learned in the Course?

Once the vocabulary learning goals for a course have been decided, teachers need to plan how those words will be learned. An awareness of the different aspects of vocabulary knowledge may help teachers to create a plan that leads to comprehensive vocabulary development. Although tests typically equate vocabulary knowledge with successfully linking form and meaning, knowing a word involves much more. Developing fluency with a word involves knowing its form, meaning, and use, and being able to use and understand the word in a native-like manner. Table 1 provides a useful description of vocabulary knowledge.

Table 1 shows that to effectively learn words there needs to be some focus on developing both receptive and productive knowledge, and there also needs to be emphasis on learning the form, meaning, and use of each word. This means that if we expect our learners to fully learn a word, completing a single activity will probably not be sufficient. Table 1 shows what is involved in gaining depth of knowledge of a word. This knowledge is gradually acquired and is typically not the result of one piece of teaching or learning. That is why Nation (2001) introduced "the four strands" as a framework for planning an effective vocabulary learning program. The notion of the four strands is that vocabulary development will be optimal if there is a similar amount of time given to learning in each strand. The four strands are meaning-focused input, meaning-focused output, language-focused learning, and fluency development.

Meaning-focused input involves learning through listening and reading, with the primary goal being comprehension and enjoyment. In the meaning-focused input strand the lexical demands should be minimal and approximately 98% of the words that are encountered should be known to learners. This is supported by research that indicates that when learners know 98% of the words in written text, they are able to read and understand text without assistance (Hu & Nation, 2000). Reading and listening to material that is at this level of difficulty may allow learners to focus their attention on the unknown words. Nation (2001) suggests that knowing 98% of the words in a text provides the ideal conditions to successfully guess words in context. In meaning-focused input, learners make gradual gains in vocabulary knowledge through repeated encounters with unknown words in context. Words that teachers believe that their students know may also be enriched through encounters in original contexts. Extensive reading and listening are most commonly associated with meaning-focused input.

In the meaning-focused output strand, the aim is for learners to strengthen and deepen their vocabulary knowledge by using recently encountered words in speech and writing. One of the challenges of this strand for teachers is to design tasks that require the use of the target vocabulary in original contexts. One way this can be achieved is by placing the target words within the instructions and making it necessary for the students to use those words to successfully complete the task (Nation & Newton, 2009). Through meaning-focused output learners can increase all aspects of their productive knowledge of words.

The strand which is typically associated with vocabulary learning is language-focused learning. In this strand the aim is to explicitly focus students on learning words and to train learners how to effectively use vocabulary learning strategies. The highest frequency words deserve deliberate teaching in the classroom. Teachers may wish to spend a reasonable amount of time teaching several aspects of knowledge for important words or they may spend less time and focus on a single aspect of knowledge (typically form and meaning). Word cards, vocabulary notebooks, intensive reading, and activities that involve linking form and meaning are some examples of language-focused learning activities. Teaching vocabulary learning strategies is also an important part of this strand because there are too many low-frequency words in a language to teach, and teachers need to ensure that their students can effectively deal with low-frequency words outside of the classroom. The strategies which have the greatest value are guessing from context, learning from word cards, using word parts, and dictionary use (see Nation, 2001, for a detailed description of each strategy). Helping learners gain morphological awareness of inflections and regular, productive derivational affixes can result in better knowledge of word families. If students can use these strategies correctly, they should be able to learn more words because the potential for successful vocabulary learning will increase. It is important for teachers to make time to teach each strategy over a number of classes and check to make sure their students can successfully use them. There is plenty of evidence that deliberate learning quickly results in stable learning (Laufer, 2005), and this learning results in the kind of knowledge needed for normal language use. Any course that includes deliberate learning will give better results than one that does not include this important strand.

It is important that there are spaced multiple encounters with each word. While there is no fixed minimum number of repetitions, the general consensus is that there should be at least somewhere between 7 and 16 meetings with each word. There is an enormous amount of evidence that spaced learning is much more effective for long-term recall than massed learning. Repetition is very important for learning and repetition in new contexts is particularly important as it enriches as well as strengthens previous knowledge (Joe, 1995).

The aim of the fluency development strand is for known words to be used or understood in a more native-like manner. It is one thing to know the meaning of a word and another to be able to use it fluently. Activities that focus on fluency involve using very easy material with familiar content that does not contain any unknown vocabulary, grammatical features, and discourse features. There should also be some pressure to achieve a higher speed. Activities that are commonly associated with fluency development are speed reading and the 4/3/2 task, where a learner speaks to another learner on a topic for four minutes, then gives exactly the same talk to another learner for three minutes, and finally to a third learner for two minutes.

Vocabulary development will be enhanced if learning occurs in all four strands because while each strand may help facilitate vocabulary knowledge to some extent, they are not likely to be effective in developing comprehensive vocabulary knowledge. For example, if words are learned incidentally through extensive reading in meaning-focused input, learners may gain information that was provided in the contexts to some degree. However, their knowledge will be derived solely from what could be gained from those contexts. Encountering words in context can lead to gains in all aspects of knowledge (Webb, 2007b) but the extent to which learners may be able to successfully use those items may be limited.

Activities that build on the knowledge initially gained in one strand can strengthen and deepen learning. For example, if learners are first given the meanings of words in a language-focused learning task, their understanding and use of those words will be limited to what could be gained through the meanings provided. Encountering those words again in meaning-focused input may consolidate knowledge and has the potential to expand on the knowledge initially gained. The meaning of words can be elaborated upon when encountered in meaning-focused input, and learners may gain greater awareness of how those words are used. Meaning-focused output activities can help expand productive knowledge. Activities from the fluency strand move learners toward a more native-like use of vocabulary. While teachers cannot be expected to micromanage the learning of each word, they should find that if they try to incorporate a range of activities from each strand over a course, learners develop greater knowledge of target vocabulary than if target words were only encountered in one or two strands.

How Will Vocabulary Learning Be Assessed?

Measuring vocabulary knowledge during a course can have several benefits. First, it shows learners the value that is placed on vocabulary learning. Vocabulary learning does not have to play a central role in course assessment. However, a lack of assessment may indicate to learners that vocabulary learning is a peripheral goal that is of lesser importance than other language-learning goals. Short quizzes may be sufficient to demonstrate the need for a continued focus on vocabulary learning. A second reason for measuring vocabulary knowledge is that it also makes learners aware of their progress. Vocabulary tests can clearly demonstrate to learners that they have made progress in their language learning in a short period of time. This can provide encouragement for future learning. Third, tests can be created to raise awareness of the different aspects of vocabulary knowledge. For example, learners could be tested on their receptive or productive knowledge of form, meaning, derivatives and inflections, and collocations. Tests or test items could vary between the aspects of knowledge that are assessed. The use of tests measuring different aspects of knowledge may also help learners to expand on their initial learning by focusing on unknown or partially known aspects of knowledge. Finally, planned vocabulary tests can act as a cue for further encounters with target items. Teachers can plan tests at specific times to help learners consolidate their knowledge of words.

Conclusion

As we have seen, teaching vocabulary involves important decisions regarding what vocabulary learners need to focus on, how they will focus on it, and how they can take control of their own learning. The vocabulary teacher's main task is planning so that these decisions are made and implemented in the most effective way.

SEE ALSO: Assessment of Vocabulary; Explicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Teaching Language for Academic Purposes; Vocabulary Acquisition in Second Language Acquisition; Vocabulary and Language for Specific Purposes

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Teaching Writing

ROSA M. MANCHÓN

Introduction

The significance of developing the ability to express oneself in writing cannot be overestimated. As noted by a leading scholar in the field, writing "is central to our personal experience and social identities, and we are often evaluated by our control of it" (Hyland, 2002, p. 1). Partly as a consequence of globalization, school and society are also expected to promote multiliteracy development, that is, literacy in more than one language. This means, for instance, that being able to write in an additional language (L2) is crucial in the lives of many professionals worldwide, for whom communicating through writing in a second language is both part of their daily professional routine and a gateway to their professional development and advancement. Academic publishing in today's globalized world would be an obvious example of this (e.g., Belcher & Connor, 2001; Flowerdew & Li, 2009). In the realm of education, writing in an L2 is also part and parcel of students' lives in a variety of settings. These include, but are not restricted to, (a) academic and professional contexts in which the acquisition of (new forms of) L2 literacy is crucial—for instance, language for specific purposes or English as a second language (ESL) academic writing programs; (b) content-based instruction, such as immersion or content and language integrated learning (CLIL) programs; and (c) foreign-language (FL) instruction at both university (e.g., Byrnes, Maxim, & Norris 2010) and primary and secondary school levels (e.g., Reichelt, 2009).

The relevance of writing at personal, societal, professional, and educational levels, coupled with the myriad contexts in which L2 writing is learned and taught, may explain the exponential growth of research in the field. L2 writing specialists have explored a range of theoretical concerns related to the three central components of writing, that is, the writers themselves, the texts they produce, and the contexts in which they write and learn to write (see Leki, Cumming, & Silva, 2008 for a recent review). From a more applied angle, and given that, with minor exceptions, the development of literacy is contingent upon educational opportunities, pedagogical concerns have also attracted intense scholarly attention. Featuring prominently in the research agenda are attempts to elucidate the manner in which writing teachers can best respond to and assess their students' writing, as well as how L2 writing teachers and L2 writing programs can best assist L2 writers in their efforts to express their voices, purposes, and intentions in an additional language for academic or professional purposes, participation in society, and personal growth. Disciplinary discussions have more recently added a welcome scrutiny of the role that writing can and should play in instructed second language acquisition (SLA) (e.g., Manchón, in press).

Acknowledging the variety of contexts in which writing is learned and taught necessarily implies a concomitant acceptance of the idiosyncrasy of these diverse educational settings with respect to the purposes of and approaches to the teaching of writing that characterize them. A general consensus in the field is that teaching writing should be viewed as a socially situated phenomenon, hence the need to search for locally relevant pedagogies. This is so because learning and teaching writing in each context is dependent

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upon a unique combination of educational values, material and personal conditions, and social practices that are not, and should not be taken to be, universal and, therefore, generalizable across contexts and learners/users. It is also collectively agreed that teaching writing, in whichever guise, is not a neutral and value-free enterprise—to the contrary, many voices have been raised to acknowledge the importance of the educational, ethical, ideological, and sociopolitical dimensions of diverse and divergent understandings of literacy (and writing) and, consequently, of the pedagogical options endorsed when teaching it.

Three Broad Perspectives on Purposes for the Teaching of Writing

The teaching of writing may be guided by two main purposes, generally referred to as "learning to write" and "writing to learn," the latter including learning both content and language. In *learning-to-write* conditions, writing is learned and taught as an end in itself, and the ultimate aim of the teaching program is to facilitate the development of (multi)literacy for educational or job-related purposes, as well as for full participation in society. Learning-to-write programs are associated with, for instance, (a) composition classes for ESL students, basic writers, Generation 1.5 members, heritage language learners, and remedial writers (Matsuda, Cox, Jordan, & Ortmeier-Hooper, 2006); (b) adult L2 literacy classes; (c) language for specific purposes (LSP) programs, especially for academic purposes (e.g., Leki, 2001a); or (d) writing support offered in writing centers (Williams & Severino, 2004). In contrast, in *writing-to-learn* conditions, writing is viewed as a means to an end. While writing to learn has so far been equated with *learning disciplinary subject matter in the content areas* (e.g., Newell, 2006), we will see in later sections in this entry that in an SLA-oriented line of inquiry, writing to learn is also associated with using *writing as a tool for language learning* (Polio & Williams, 2009).

These general purposes for the teaching of writing are not mutually exclusive and can, and often do, coexist in one and the same instructional setting. This would be the case for university foreign-language degree studies, in which learning to write and writing to learn are often viewed as inseparable dimensions of the same educational project. One very clearly articulated curricular proposal in this respect is the German program at Georgetown University (Byrnes et al., 2010), which relies on writing as an ideal site for the simultaneous learning of cultural content and language. Writing is conceived of as meaning making, and the curricular progression entails the writing of a range of texts that vary in terms of which dimension of knowledge construction is in focus and in terms of the personal or social nature of the discourses and genres that are the objects of instruction.

The multiplicity of purposes in the teaching of writing, on the one hand, coupled with the variety and idiosyncrasy of contexts in which writing is learned and taught, on the other, has resulted in an equally varied repertoire of instructional options, which, in turn, have been informed by developments and insights in the fields of linguistics, composition studies, first and second language writing, language for specific purposes (especially, English for academic purposes), and instructed SLA.

Principles and Practices for Teaching Writing in Learning-to-Write Contexts

Learning-to-write contexts have undoubtedly been the most widely investigated, and they feature most prominently in the L2 writing pedagogical literature (e.g., Kroll, 1990; Hyland, 2002). This research has evolved around two main axes. On the one hand, instructional

practices have been informed by disciplinary discussions about concerns of paramount importance in the writing classroom, among which the following have attracted special attention: (a) the response to students' writing (see e.g., Hyland & Hyland, 2006); (b) the development of voice in academic writing (e.g., Carter, Lillis, & Parkin, 2009); (c) issues in writing from sources and plagiarism (e.g., Pecorari, 2008); and (d) assessment principles and practices (e.g.,Weigle, 2002).

On the other hand, various approaches for teaching of writing have been implemented over the years. As noted by Silva (1990), collectively considered, they represent "a cycle in which particular approaches achieve dominance and then fade but never really disappear" (Silva, 1990, p. 11). These teaching approaches vary with respect to the degree of articulation of the curricular proposals that derive from them, and also with respect to which of the three essential elements of writing constitutes the core of the pedagogical option, that is, texts, writers, or readers and contexts of writing (Cumming, 2001). *Product-oriented approaches* (including controlled—or guided—composition and current/traditional rhetoric) place emphasis on the texts that L2 writers need or are asked to produce in educational or professional settings or for community and workplace writing. Texts are viewed as "objects" (Hyland, 2002), and the goal of the program is to help students produce different kinds of texts. The focus of instruction is on the patterns and forms of organization characteristic of various text types. Model compositions displaying the features that students are expected to use in their own writing are presented, and students are instructed in, for instance, differences among text types, ways of organizing information in paragraphs, or correct sentence structure.

In contrast, *process-oriented pedagogies* focus on the writers themselves and result in more learner-centered classrooms. Based on a view of writing as a cognitively demanding and problem-solving task, the aim of the teaching program is to help L2 writers become good writers by empowering them with the strategies deployed by expert writers and also by helping them to engage successfully in a variety of processes characteristic of expert writers' composing behavior, such as generating ideas, planning, goal setting, monitoring, evaluating, and searching for language with which to express one's intended meaning. Accordingly, the emphasis is not so much on the final product or text, but rather on the intervening processes that lead to the finished product, that is, on what the L2 writer does and should do from conception to completion of his or her own text. This explains the crucial role played by teacher scaffolding and peer interaction in this approach to the teaching of L2 writing.

Finally, *post-process approaches* include a range of pedagogies, including genre-based teaching, critical literacy, and social constructivist approaches (see Atkinson, 2003). They vary from previous approaches in, first, their conception of both texts (now seen as discourse) and writers (with an emphasis on issues of ideology and agency), and, second—and very importantly—in having added the social dimension of writing (hence the theoretical and pedagogical interest in the contexts in which writing takes place).

The most thoroughly articulated post-process curricular proposal is genre-based teaching, which encompasses several pedagogical options (see Hyland, 2004). Genre-based instruction evolves around texts and the social nature of writing. The term "genre" refers to "complex oral or written responses by speakers or writers to the demands of a social context" (Johns, 2002a, p. 3). Accordingly, the texts L2 writers are asked to produce are seen as manifestations of the use of language to achieve specific purposes, in particular situations, and for particular readers. When these discursive and social lenses are applied, composing and writers' choices are viewed as "context-dependent, motivated by variations in social activity, in writer–reader relations, and by constraints on the progress of the interaction" (Hyland, 2003, p. 21). Genre-based curricula are needs-oriented (i.e., the genres chosen for instruction are based on student needs), explicit (some forms of genre pedagogies

include explicit and systematic explanations of genre characteristics), and goal-oriented (the aim of the teaching program is to empower students with the means to be able to use language for the production of texts that are appropriate for given social purposes and contexts). These three characteristics help explain the strong linguistic basis of genre teaching.

These various approaches to the teaching of L2 writing have collectively contributed to enriching L2 writing instruction and should be viewed as complementary rather than mutually exclusive. They all have strengths and weaknesses, and they all have something to offer to teachers helping students learn to write in an additional language. As noted by Ann Johns, a leading L2 writing specialist and experienced L2 writing teacher, her long and sustained experience in composition writing has convinced her that the most effective approaches to the teaching of writing "acknowledge the complexity of the writing process as both cognitive and social" and also "assist students in researching various literacy situations and genres" (Johns, 2002b, pp. 118–19).

Principles and Practices for Teaching Writing in Writing-to-Learn-Content Contexts

This approach to the teaching of writing (mainly associated with L1 writing) focuses on the link between writing and learning disciplinary knowledge in a variety of educational settings, mainly in university contexts. The best known instantiation is the Writing Across the Curriculum (WAC) movement, two sub-approaches of which are Writing to Learn (which has been informed by various theoretical models, as recently reviewed by Newell, 2006) and Writing in the Disciplines (see Hirvela, in press).

The basic tenet is that writing represents an ideal site for learning content in that writing shapes thinking and can lead to a process of discovery and knowledge construction. Therefore, writing is thought to promote higher-level thinking skills (particularly critical thinking) and disciplinary learning. Accordingly, students are instructed in how to use writing in their discipline knowledge throughout the course of their studies. In his review of empirical work in the field, Hirvela (in press) contends, first, that L2 writers find it difficult to use writing for the mastery of disciplinary knowledge and, second, that their success is crucially related to the instructional support and guidance provided by both writing and content area teachers.

In the field of L2 writing, writing-to-learn approaches are associated with content-based instructional options. One of them is content and language integrated learning (CLIL, also known as content-based instruction or CBI in the United States). CLIL is an instructional approach that is becoming very popular in the European context at the levels of research and teaching (see Ruiz de Zarobe & Jiménez-Catalán, 2009, for a review). While to date little attention has been paid to writing in studies on European bilingual education, in general, and in CLIL in particular, some work has been done, mainly at the secondary school level. For instance, focusing on proficiency in a bilingual Spanish–Basque context, where the foreign language (English) is not used outside the classroom, two years in CLIL groups gave students a significant advantage in English writing as compared to students in a traditional EFL (English as a foreign language) class (Lasagabaster, 2008); in the same study, students in a CLIL context who were one year younger also outperformed the control group. Focusing on the texts written in two secondary CLIL history classes, a longitudinal study showed the development of features of academic register as well as the role of oral preparation as scaffolding for writing (Llinares & Whittaker, 2009). However, this research is still in its infancy with respect to writing and we are, therefore, a long way away from being able to derive pedagogical implications for the teaching of writing in CLIL contexts. The same applies to other forms of content-based instruction, in which the

empirical research base available has not translated into systematic guidelines for the teaching of writing, partly due to the low priority that the development of writing skills has been given in the empirical research agenda.

Principles and Practices for Teaching Writing in Writing-to-Learn-Language Contexts

This dimension of writing instruction is linked to disciplinary discussions about the role and teaching of writing in instructed SLA. These have evolved around three main issues: (a) the language-learning potential associated with literacy practices (e.g., Manchón & Roca, 2007); (b) the various ideological, educational, and material consequences (for both teachers and students and at both personal and institutional levels) that may derive from introducing writing into school programs (Leki, 2001b); and (c) the ethical and educational dimensions of teacher preparation programs for the teaching of writing in distinct foreign-language contexts (Casanave, 2009).

In her review of the research on the potential of writing for supporting language learning, Manchón (in press) concluded that the available empirical evidence suggests that writing fosters L2 learners' engagement in a number of processes which are thought to be conducive to language learning, particularly practice, focus on form, noticing, and metalinguistic reflection, and that these benefits can be leveraged in both individual and collaborative writing. However, many more open questions exist regarding what type of learning results from the linguistic processing fostered by writing. Manchón (in press) concluded that, tentatively, research findings might be interpreted as suggesting that these potential learning outcomes appear to be dependent on task-related and learner-related variables, such as (a) whether or not L2 writers are given sufficient time to complete their writing tasks (so that they can engage in the type of problem-solving behavior posited to foster language learning); (b) whether or not the interaction engaged in during collaborative writing results in collaboration and mutual scaffolding (so that the full potential of collaborative dialogue and mutual scaffolding is exploited); (c) whether or not the pedagogical intervention requires students to engage in explicit, deep processing learning conditions (so that deeper levels of noticing and reflection are promoted); and (d) whether or not learning conditions entail an iterative process of written output, some form of input/feedback on one's own writing, noticing and reflection processes and, finally, rewriting and revised written output.

Conclusion

The teaching of L2 writing should be seen as encompassing a whole range of pedagogical contexts in which writing is learned and taught, in ways that are shaped in great part by the varied purposes for the learning and teaching of writing, which in turn lead writing teachers to draw on varied principles and practices for guiding their writing instruction. This explains why teaching writing must necessarily be seen as a socially situated phenomenon, hence the sustained effort of researchers and practitioners over the years to search for theoretically grounded and locally relevant pedagogies.

SEE ALSO: Assessment of Writing; Content-Based Language Instruction; Critical Pedagogy in Language Teaching; Genre-Based Language Teaching; Peer Response in Second Language Writing; Teaching Language for Academic Purposes; Writing Development in Second Language Acquisition

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Technology and Culture

DAVID MALINOWSKI

Introduction

Technology and culture: perhaps few words are more commonly uttered when making reference to the conditions under which language learning and teaching today take place. Whether explicitly or implicitly, *technology* regularly frames discourse and practices of language learning and teaching: as Chapelle (2009) has observed, the vertical spread of technology through language classrooms and curricula has led to a situation in which "the historically-constructed line between applied linguists who work in CALL [computer-assisted language learning] and those who produce other forms of language learning materials is difficult to maintain" (2009, p. 67). And, in light of the social turn in second language acquisition and the move in applied linguistics toward a conception of competence that is both "translingual and transcultural" (Modern Language Association, 2007), *culture* is irrefutably central to the language learning endeavor.

Yet what makes technology and culture such an interesting pairing is the fact that, while both in some sense form *contexts* for language learning and teaching (language learning is often said to happen "in culture," and "through technology"), learning culture is often also posited as a *goal* of language learning, while learning technology is not. Since the calls in the 1990s for language learners to move beyond communicative competence and develop *intercultural* communicative competence (Byram, 1997, and also discussed below), an approach to language education that incorporates critical awareness of one's own and target cultures has been regarded as essential. Less prominent in applied linguistics research is the assertion that learners and educators ought to cultivate a critical awareness of technology as well. Yet, as Kramsch, A'Ness, and Lam (2000) argue, technological mediation does not just enhance the same cultural learning—or "culture game"—that is taking place off-screen and offline. Rather, technology fundamentally changes the nature and rules of the game itself.

Accordingly, this entry will attempt to draw connections between technology and culture that show these concepts to be mutually implicated in each other—even more, perhaps, than they behave as independent variables. The following two sections introduce various perspectives on technology and culture in light of recent thinking in language learning and teaching contexts. The final section will show how these concepts apply to Internet-mediated intercultural foreign language education, an important and growing area of technology in language education (see Belz & Thorne, 2006). Throughout, the intent of this entry is to highlight the need for a critical understanding in applied linguistics of how both language and culture are transformed, or "technologized," by their digital and networked mediation inside and outside of the language classroom—a fact of great consequence for learners' abilities to understand and be understood, to act and relate to others, and to assume new identities in another language.

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Technology Outside-In: From Tool to Medium

When theorists and practitioners of CALL, electronic or digital literacies, computer-mediated communication, and applied linguists more generally refer to "technology," the term is often used interchangeably with "technological tools" (Levy & Stockwell, 2006, p. 2): computer applications like Microsoft Word, Web tools like blogs or wikis, virtual environments like Second Life, or desktop video-conferencing applications like Skype or iChat. Studies that explore the affordances, applications, and limits of these types of environments for language learning and teaching abound (see the Suggested Readings section below for a selection).

But, as Kern (2006) points out, *technology-as-tool* is just one metaphor for understanding the role of the computer and related technologies in language learning. Along with the *computer-as-tool* metaphor, computers are understood *as tutors* when they act as a counterpart for the language learner, helping her or him to cultivate linguistic or communicative competence. Further, with the proliferation of digital communications applications, hand-held devices, and expanded contexts of use in the late 1990s and early 2000s, Kern and others argue that understanding the roles of the computer *as medium* has become of crucial importance, and of central concern to CALL research generally.

This formulation—*computer as medium*—raises questions about the limitations of terms such as "tool" or even "computer" as stand-ins for "technology," when the teaching and learning of languages today clearly implicates not just material objects, but physical settings, spatially and temporally distributed processes, historical and cultural practices, and the bodies, minds, and imaginations of learners. Indeed, while applied linguistics has developed ever-increasing sophistication in how it conceives of language and linguistic processes, it has been criticized for viewing technology in overly simplified and deterministic ways.

Thus, in thinking about future directions for research on the role of technology in language education, applied linguists would do well to consider a broad range of evidence demonstrating linkages between the tools we use (and how we use them), on one hand, and the emergence of cultural norms, social identities, and ways of acting that become possible for learners and educators, on the other. For example, communications technology theorists such as Naomi Baron suggest that working, socializing, and studying with mobile and networked communications devices "always on" has profound social and cognitive consequences for "the kind of people we become" (Baron, 2008). Meanwhile, many philosophers of technology insist that humans, machines, and other elements of daily life *all* "act" together as equal participants in larger networks (see, for example, Latour, 1988 on "actor-network theory"). And, within the field of applied linguistics itself, the emerging strand of ecological approaches to language learning and teaching insists that learners' subjectivities are sustained (and even produced) by the cultural, symbolic, and material elements around them (see Larsen-Freeman & Cameron, 2008). These interrelationships between people, tools, and environment are the focus of much current research on technology, and will be explored further in the final section below.

Culture, Interculture, and Transculture: Fit for Technology?

Positing that "technology" can be seen not just as a separate tool, but as deeply implicated in the formation of language learners and teachers themselves might also serve the interests of developing a nuanced view of "culture" in theory and practices of language learning and teaching. This is because, while there is wide agreement in the literature that cultural essentialism and self-serving us/them binarism should be things of the past, the idea that the teaching of culture can be separated from the teaching of language still appears

to have much currency. Yet, whether the operative concept of culture be the "Big C" approach of interpreting standardized, national Cultures as they have been thought to reside in great works of literature and national histories, or the "little c" approach that sees culture as the lived social practices, pragmatic conventions, and background knowledges of "native speakers," theorists taking into account the contemporary condition of flows of media, people, and imaginations argue that cultures are multiple, fluid, and emergent in linguistic practice, among speakers "native" and "non-native" alike.

Here we focus briefly on the work of Michael Byram, Karen Risager, and Claire Kramsch, three figures in the last two decades' literature on language and culture who have made important innovations in advancing the concepts of "intercultural" and "transcultural" competence. Byram's (1997) work in defining and applying intercultural communicative competence (ICC) has been widely influential and has contributed to the development of educational policy guidelines in Europe. It posits three linguistic competences and five cultural *savoirs* (knowledges, attitudes, and skills) thought necessary for the intercultural learner to relativize her own linguistic and cultural experiences in light of the cultural other. Building upon this, Risager (2007) reinterprets ICC in the course of her major survey of the literature on language and culture teaching, seeking to map out a place for "'the world citizen' seen from the perspective of language and culture pedagogy" (p. 222). By treating separately the relationships between language-and-culture and language-and-discourse, and through her explorations of the semantic, pragmatic, poetic, and identity dimensions of language, she demonstrates the multileveled interweavings of language and culture in practice. Further, Risager's work is noteworthy for thoroughly debunking the common paradigm in teaching and practice through which people and events are interpreted primarily as *national* entities.

One crucial tension that might be said to underlie Risager's and other conceptions of ICC with respect to technology in general, though, is the nature of the wired and hypermediated realities populated by language learners online and off, and upon which much intercultural communication today is premised. Here the question is not so much whether language learners' linguistic and cultural realities admit worlds that are both everyday and construed (Risager intimates it does in her work), but whether the semantic, contextual, and poetic functions of language acknowledge the ways they are refigured through the technologies in which they manifest. Here the work of Kramsch helps in understanding language and cultural learning as not just implicated in linguistic and social practice, but as *technologized* through and through—that is, where language learners' basic subjectivities and abilities to act symbolically in the world are radically refigured by, and within, larger political and historical forces (Kramsch, 2009). As intimated in much of the literature on cyberculture, new media studies, and digital humanities (see, for example, Hayles, 2005; Silver & Massanari, 2006), the mediation of *both* the imagination and technological, material interfaces are held to make necessary a more postmodern concept of symbolic or semiotic competence. Such visions of competence place direct focus on to how cultural representations and semiotic forms are themselves constitutive of, and not just tools employed by, world citizens and classroom subjects, both virtual and real.

Technology and Culture in Practice: The Case of ICFLE

Considering these competences in light of the fact that the technologies employed in educational contexts are increasingly *social* in nature, we now direct attention to what has been termed "internet-mediated intercultural foreign language education" (ICFLE; see Belz & Thorne, 2006). Perhaps most recognizable among different genres of ICFLE is *telecollaboration*, described by O'Dowd (2007) as "the activity of engaging language learners in interaction and collaborative project work with partners from other cultures through

the use of online communication tools such as e-mail, videoconferencing and discussion forums" (p. 4). Other modalities include tandem learning partnerships that can take place through asynchronous or synchronous exchanges of texts and opinions, and participation in established, non-educationally oriented Internet communities like discussion forums and multiplayer games.

Among these genres, the location of the technologically enabled language learner either inside or outside the language classroom may be seen to have deep consequences for the fostering of cultural and linguistic competencies. In general, telecollaboration-style interactions and certain formations of tandem learning are understood to take place within the confines of the school and university language classroom, where the problematics of the teacher's role in planning, facilitating, and evaluating intercultural dialogue have received considerable attention. Indeed, O'Dowd and others have emphasized the crucial role of the teacher in mediating e-mail and other-medium interactions between distally located partners, precisely because of the conflicts that can and do arise in telecollaborative projects. Meanwhile, it is understood that in transgeographic and often multilingual online forums, instant messaging environments, virtual worlds, and massively multiplayer online games (MMOGs), there is no teacher and no classroom proper. Indeed, the very *absence* of a teacher and any overt pedagogical framework might help to enable what Thorne (2008) terms an "immersive learning flow"; in this case, Thorne writes, "interpersonal dynamics within digitally mediated non-institutional environments enable personally relevant engagement, which in turn can be associated with a range of potential developmental trajectories" (p. 316).

A key question awaiting resolution regarding language learners' engagement with culture and (via) technology is whether and how this immersive and "personally relevant engagement"—one that is undoubtedly culturally significant—can facilitate the learner's self-awareness and critical reflection on the "differences in meaning, mentality and worldview" that characterize transcultural dialogue (Modern Language Association, 2007, p. 5). No doubt this is in part a question of precisely *how* technological tools are put to use either inside or outside of the classroom; here Thorne's (2003) concept of "cultures of use," that is, the "historically sedimented characteristics that accrue to a [computer-mediated communication] tool from its everyday use" (p. 40), would seem to be an important guidepost for both in-class teachers and out-of-class designers of ICFLE activities. However, if we are to acknowledge, as a diverse body of research does, that the proliferation of networked, multimedia technologies has not only helped to enable new learning and participation structures, foster language play, and encourage the adoption of alternate and multiple identities—but also to blur the very boundaries between language learning, socializing, and even traveling—then there would seem to be a need for language teachers and theorists to consider not just cultures-of-use, but also the operative technologies-of-users.

In his philosophical treatise *On the Internet*, Hubert Dreyfus (2001) concedes that there is much that the Internet has to offer for those who use it to *extend* their real-world information retrieval or social interactive activities. But, in the end, he finds that its horizontal organization and disembodied, anonymous participation structure lead to a loss of community, co-presence, vulnerability, responsibility, and, crucially for the interests of language learners and educators, the very ability to make meaning. Certainly, observations of this sort need to be investigated further empirically to test their applicability in the increasingly hybridized mediascape of today; certainly as well, processes of "normalization" (Bax, 2003) of computers and other learning tools throughout language classrooms and curricula are far from even, and far from complete. Nonetheless, there are numerous signs in the applied linguistics literature that critical future questions linking language, culture, and technology will hinge not just on how to use technological *tools* to enhance language learners' communicative, intercultural, or even transcultural competence, but on understanding

technological *processes* that can create, transform, and mask cultural difference and learner subjectivities.

SEE ALSO: Computer-Mediated Communication and Second Language Development; Cultural Representation; Culture; Language, Culture, and Context; Linguaculture; Subjectivity

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Technology and Discourse Intonation

DOROTHY M. CHUN

Introduction

One of the first applied linguists to use the term "discourse intonation" was David Brazil, who proposed a theory of how intonation contributes to the communicative value of speech in British English, based on the work of Halliday (1970). In the introduction to his theory, Brazil stated that he was "unashamedly concerned with function" and described intonation as "a set of speaker-options formulated without explicit reference to grammar" (Brazil, 1975, pp. 1–2). What this means is that when a speaker chooses to use a particular intonation pattern, the pattern chosen is not based on common intonational patterns for statements, questions, and other grammatical structures, but is rather dependent upon the surrounding discourse in the conversation, in particular what came before (in terms of common knowledge, topic, assumptions) and in expectations and intentions for the future. Although most work to date involves English, this appears to be true for other languages as well; that is, that there are no set intonational patterns, for example, for statements or questions, because different intonational patterns are used in different contexts and within a specific discourse (see Molholt & Hwu, 2008, for examples in Mandarin Chinese).

Brazil believed that there is a small, finite number of functionally contrastive pitch configurations in English and that each of these configurations has its own meaning. "Meaning" in this context does not refer to attitudinal notions such as "expectant" or "surprised," or to grammatically derived concepts such as "interrogative" or "declarative." Rather, of importance is the continuous assessment of discourse by the speaker and a choice of one intonation pattern over another for the purpose of achieving coherence and cohesion in the discourse—in other words, the interactional significance of intonation. Brazil's theory thus differed from previous theories of intonation not in proposing a different set of components, but rather in ascribing different meanings and functions (ones that derive from usage in discourse) to more or less traditional components. For work by other linguists in this subfield, see Brown, Currie, and Kenworthy (1980); Coulthard and Brazil (1981); Johns-Lewis (1986); and Ford and Thompson (1996), to name but a few.

A common belief in discourse intonation studies is that both theoretical and pedagogical models should be based on naturally and authentically occurring speech, interactions, and conversations. As Couper-Kuhlen and Selting (1996) suggested, intonation must be viewed and interpreted within the context in which it occurs, that is, is spoken. It has a signaling function within the discourse and is part of a real-time, ongoing process of interaction, where speakers react to the way in which their interlocutor is using intonation (pitch, rhythm, timing) and "conform" to it or "break away" from it. Speakers and hearers cooperate to avoid conflict and to resolve conflict when necessary. The focus is on the "reconstruction of patterns as cognitively and interactionally relevant categories which real-life interactants can be shown to orient to" (Couper-Kuhlen & Selting, 1996, p. 46).

An example of an intonational choice in context was provided by Bradford (1996): Although a falling intonational contour might be expected at the end of a statement, a speaker might choose to use a high rising terminal intonational contour (or *upspeak*) as "a bonding technique which upspeakers use to promote a sense of solidarity between

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themselves and their interlocutors" (p. 23). This rising tone serves a participatory function by encouraging the hearer's continued involvement in the exchange.

The pedagogical implications of discourse intonation for language teaching have been delineated by Brazil, Coulthard, and Johns (1980), who suggested the kind of teaching syllabus that could be derived from Brazil's seminal model. Other applied linguists who have also taken discourse approaches to the teaching of intonation include Clennell (1997), who focused on equipping international students to communicate effectively in native-English-speaking universities, and Pickering (2001, 2004), who investigated tone choice by international teaching assistants (ITAs) and showed that their inability to exploit tone choice and intonational paragraphs to highlight local vs. global information structure contributed to communication failures between ITAs and their students.

Since the 1980s, the rapid development of technologies for quantifying intonational features and the increasing use of computers to visually display intonation have led researchers and teachers to investigate how technology can be used for the teaching and learning of discourse intonation (Chun, 1998, 2002). For excellent reviews of work on computer technology for teaching and researching pronunciation, see O'Brien (2006) and Levis (2007). This entry discusses specifically how technology can (a) illuminate the discourse intonation features of a language, (b) provide a visual comparison of first language (L1) and second language (L2) intonational patterns, and (c) be used effectively in software for teaching discourse intonation to L2 learners.

Using Technology to Quantify Discourse Intonation

The importance of technology for teaching discourse intonation was confirmed in a state-of-the-art chapter on research and teaching pronunciation and intonation by Jenkins (2004), who stated "Of the recent findings of pronunciation research, the most influential in terms of pedagogic developments fall into two main groupings: those concerned with issues of context and those that relate to technological advances" (pp. 109–10). In English-language teaching, intonation has been considered to be a key to effectiveness in spoken language for some time, but the use of visualization technology has been a crucial recent advance in the teaching of intonation.

Levis and Pickering (2004) showed how teaching can be enhanced by connecting technology to an understanding of how intonation functions in discourse. Their study examined two discourse-level uses of intonation, namely the use of intonation paragraph markers and the distribution of tonal patterns, and they demonstrated convincingly that speech visualization technology provides a more sophisticated understanding of how pitch functions systematically in discourse. Without technology, learners simply had to rely on their auditory perceptions of pitch changes and movement. But, according to Levis and Pickering (2004), "the use of visualization technology has made intonation practice reliably available to even those without the ability to confidently identify pitch changes" (p. 517), thus removing one of the most important obstacles to the teaching of intonation.

Sentence-level practice is insufficient for teaching how intonation is used in connected speech; what is needed is software that presents longer stretches of speech, along with explanations of the systematic meanings of discourse pitch movement. Specifically, by expanding the context of computer-based practice material to the discourse level, learners can be shown and can practice pitch patterns that mirror authentic patterns in contextualized speech. They can learn, for example, how to signal contrastive information structure by making the relevant syllable prominent, or how to choose an appropriate pitch height in order to indicate a boundary marker for a paragraph.

Molholt and Hwu (2008) described how technology can illuminate features of discourse intonation in Chinese by contrasting two versions of the Mandarin Chinese utterance *Ni*

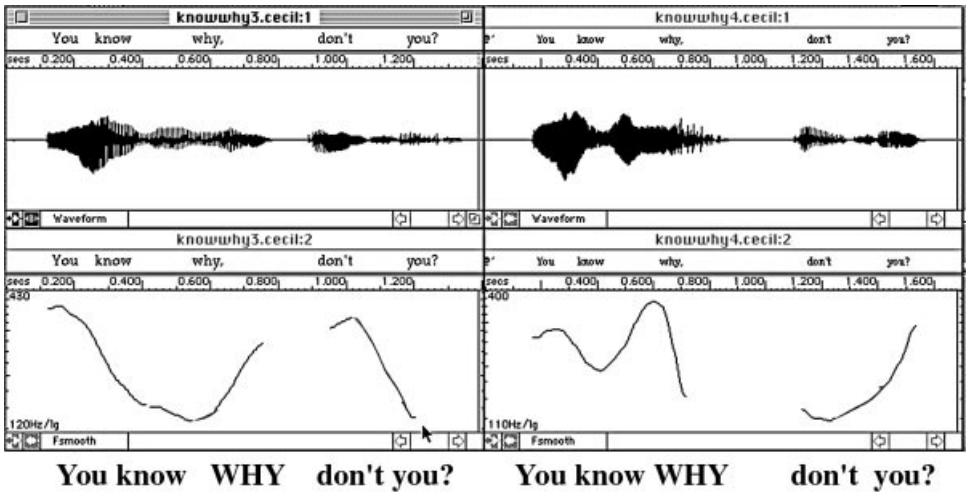

Figure 1 Different renditions of the question *You know why, don't you?* (Chun, 2002; © John Benjamins)

zai gan shen me? 'What are you doing?' with the "neutral" pronunciation, which would use the sequence of lexical tones for each of the words in the question. The visual acoustic representations of the question asked in different contexts revealed that (a) when expressing strong curiosity in a friendly way to a child, the high pitches of the word tones are even higher than in the neutral utterance, and the final syllable ends in a *rise* (as opposed to the slight *fall* that would be used in the neutral utterance); and (b) when asking an adult the same question in a demanding way, the high pitches are much higher than in (a) and the falling intonation on the final syllable is much more abrupt a fall than in the neutral utterance (Molholt & Hwu, 2008, p. 117, Figure 5.26).

Chun (2002, pp. 220–1) illustrated how intonation in English can signal the discourse expectations of the speaker. The left-hand portion of Figure 1 shows the utterance *You know why, don't you?* with rising intonation at the end of the first clause, *You know why*, and falling intonation at the end of the second clause, *don't you*, with the questioner assuming that the listener does know why and wanting to confirm this fact. The rising intonation on the first clause may indicate a sort of reminder to the listener, who may know why but may not be willing to accept the reason.

The right-hand portion of Figure 1 shows the same words, *You know why, don't you?*, but this rendition shows falling intonation at the end of the first clause and rising intonation at the end of the second. This pattern is used when the speaker thinks or expects that the listener knows why, but then has doubts and wishes to confirm this fact. These examples illustrate the contextualized nature of intonation in discourse: The utterances are marked intonationally not to signal that they are questions or statements, but rather to signal underlying assumptions and expectations about the response. Marking shared knowledge and presuppositions is a function of intonation at the discourse level. The important principle illustrated here is that there is not a one-to-one correspondence between syntactic type and intonation pattern, but that different combinations of these structures occur, depending on pragmatic intentions and meanings.

Comparing Discourse Intonation of L1 and L2

In addition to comparing the same utterance said in different contexts within a language, another approach to teaching L2 discourse intonation is to first compare the intonation

features of L1 and L2 (or of two varieties of a language, as in the case of different varieties of English). For example, Pickering and Wiltshire (2000) studied the phonetic correlates of accent and stress that distinguish Indian English from American English dialects, and found that in the discourse of university teaching assistants lexically accented syllables are often realized in Indian English with a relative drop in frequency (pitch) and without a reliable increase in amplitude (loudness), whereas lexically accented syllables in American English reliably increase in both frequency and amplitude. The quantification of the phonetic correlates involved recording classroom discourse and acoustically analyzing the speech using the Computerized Speech Lab (CSL) software from Kay Elemetrics (now KayPENTAX, www.kayelemetrics.com).

In a similar vein, Wennerstrom (1998) compared four aspects of intonation that contribute to achieving cohesion in the lectures of native speakers of English and of Mandarin Chinese speakers lecturing in English. She found that native speakers of English (a) used higher pitch to distinguish content words from function words, (b) often used utterance-medial nonfalling boundary tones, (c) made a large distinction between contrasting and given lexical items, and (d) differentiated rhetorical units through increased pitch range at major organizational junctures. In contrast, the Chinese speakers with lower levels of English proficiency who lectured in English (a) did not use as great a pitch difference to distinguish newly introduced content words and function words, (b) often used low boundary tones in mid-utterance position, (c) did not consistently use pitch to distinguish contrasting items from given items, and (d) did not receive high speaking scores when they failed to use increased pitch range to mark topic shifts. After quantifying specific features of discourse intonation in different languages or by speakers of a language with different L1s, technology can then be used to train L2 learners; this is discussed further in the next section.

Software for Teaching and Learning L2 Discourse Intonation

An excellent example of commercially available discourse-oriented intonation materials is Streaming Speech (Cauldwell, 2002), which goes beyond sentence-level practice. Based on Brazil's theory of discourse intonation, it is targeted at advanced learners of British or American English. All of the speech samples are unscripted narratives that have been meticulously and extensively "repurposed" for pedagogical use. All of the recordings of natural spontaneous speech have been analyzed in terms of both a traditional syllabus that deals with vowels and consonants, and, more importantly, a discourse syllabus that deals with the choices that speakers make in terms of pitch and stress and the strategies they use to communicate effectively in real time. The discourse syllabus introduces the notion of the speech unit, which is described as a stretch of speech with its own rhythm, tones, and other features that make it stream-like. Learners are made aware not only of different tones (e.g., falling, level, and rising) but of their relative frequency of occurrence in English as well. Learners are taught about the use of high and low key, and how to pause in ways that are acceptable and comprehensible to listeners. There are also opportunities for learners to practice dealing with common occurrences in spontaneous speech, such as restarting after mistakes, self-correcting, and repeating themselves.

Streaming Speech provides speech unit transcriptions with notations (see Figure 2). The notations indicate the speech unit number, speech unit boundaries, tones (arrows), where the tone begins (underlined), prominent syllables (capitalized), and speed (words per minute). Learners can listen to an entire recording and can also play back selected speech units at the click of a button.

In Figure 3, the graphics (arrows and underlining), audio, and animation of the pitch movement allow learners to observe the direction of the pitch change while simultaneously hearing the utterance spoken. The use of authentic speech is in stark contrast to the vast

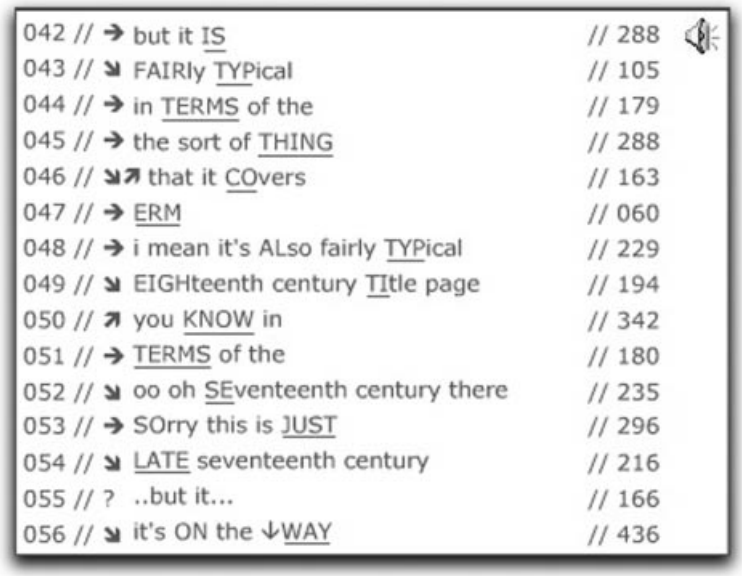

Figure 2 Screenshot of Streaming Speech unit transcription (www.speechinaction.com; © Streaming Speech)

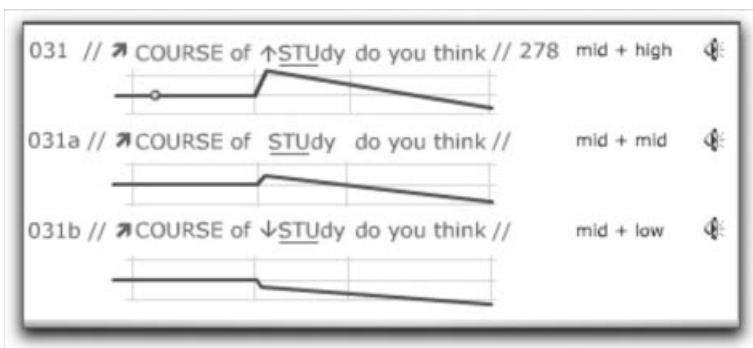

Figure 3 Screenshot of Streaming Speech pitch animation (http://www.speechinaction.com/ © Streaming Speech)

majority of programs for pronunciation, which use stilted, unnatural-sounding recordings, usually not based on authentic speech. The program does not incorporate automatic speech recognition (ASR) and pronunciation evaluation, which many other commercial packages purportedly offer and which will be discussed further below.

Two limitations of the software are (a) that actual fundamental frequency representations are not included, which would allow learners to see, for example, the degree of fall or rise of the pitch (this, incidentally, could easily be done using an open source program such as Praat, http://www.fon.hum.uva.nl/praat); and (b) that learners do not receive any kind of feedback (which could be remedied perhaps by allowing learners to record their utterances to an online voice board, e.g., Audacity, audacity.sourceforge.net, so that an instructor could provide individual feedback).

To date, there is a paucity of studies on evaluating the effectiveness of using technology to teach discourse intonation, but an excellent model for such work is provided by Hardison (2005), who employed contextualized input in prosody training for L2 speakers of English

whose L1 was Chinese. The learners received training input using Anvil, a free Web-based video annotation tool that displays both videos of a speech event and visual displays of the pitch contour (imported from phonetic tools such as Praat). Each of the participants gave a series of oral presentations, which provided the source for his or her training materials. Two groups received training input that involved both selected video segments of their presentations and displays of their pitch contours; they then practiced with the CSL software. Two other groups received training input that consisted only of the visual display of their pitch contours (without the video), which they then practiced with the CSL software. Within each of the pairs of groups, one group trained with discourse-level segments from their presentations, while the other group trained with only individual sentences. Results showed that the prosody or intonation of all four groups improved after the training, but the discourse-level input produced better transfer to novel natural discourse. The findings of Hardison's study using technology-based training, namely that "meaningful contextualized input is valuable in prosody training when the measurement is at the level of extended connected speech typical of natural discourse" (2005, p. 175), provides strong support for the effectiveness of technology to teach and train discourse intonation.

As mentioned above, ASR technology has become prevalent in commercial products for language learning. But one of the biggest obstacles to developing effective software is that prosody is a very complex phenomenon involving a number of components, including intonation (loudness and pitch), stress, accent, and rhythm (duration and pauses). Holland and Fisher (2008) acknowledged that prosody fluctuates much more than basic vowel and consonant sounds, depending on the surrounding semantic and pragmatic context of an utterance. They also noted that the enormous variation in how native speakers realize intonation and rhythm is a great challenge for developing reliable algorithms for prosodic analysis, suggesting that "One way to contend with individual variation is to express prosodic measures not in absolute but in relative terms, such as the duration of one syllable compared to an adjacent one. CALL prosody prototypes have been developed on this principle to detect learners' departures from acceptable native values of given utterances" (p. 13). For example, one difficulty that becomes obvious when using ASR software is reconciling the speed of speech of the native speaker model and the L2 learner. If the learner speaks at a slower or faster rate than the native speaker model, a comparison of the waveforms and pitch contours will not be identical unless this difference can be correctly identified and adjusted by the software. But the mere difference in speed is not necessarily problematic in terms of how native-like or acceptable an utterance sounds.

Conclusion

Although the use of intonation in discourse has been studied linguistically in many languages, this knowledge has not been applied extensively to language teaching. There are several reasons for this, the first being that prosody is a complex aspect of spoken language. Second, even though software for acoustic analyses is freely available and can display visualizations of pitch contours, most language teachers do not themselves understand the concepts of discourse intonation, much less feel able to teach them to their students. Third, although commercial software for learning pronunciation contains ASR components, the feedback that is provided to learners does not explain precisely how the learner's utterance differs from the native speaker's model utterance, nor does it quantify what must be changed in order for the utterance to be comprehensible or appropriate for the discourse. For the future, linguists, language teachers, and acoustic software engineers must collaborate in order to provide meaningful, easily interpretable feedback to learners.

SEE ALSO: Brazil, David; Computer-Assisted Pronunciation Teaching; Suprasegmentals: Discourse Intonation; Suprasegmentals: Intonation

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Technology and Teaching Language for Specific Purposes

ESTELA ENE

Technology is constantly transforming the way we live and learn. Its applications in language teaching, learning, and research diversify with the rapid advances of technology. While some language teachers and learners may be satisfied with or contextually limited to "low-tech" audio/video equipment or the CD-ROM that accompanies almost every textbook, there are many applications that offer exciting options to be explored in education. The issues of accessibility to technology that remain are offset by notable exceptions. For example, as a result of demand and affordability, cell phones and MP3 players and the related applications (including basic language-learning software, games, instant messaging (IM), podcasting, etc.) are surprisingly accessible. The cell phone has spread where other technology is scarce, because it can replace other larger, expensive devices. "The cellphone is the fastest growing technology platform in the developing world. India is the largest market for cellphones worldwide, with the majority being bought by illiterate and semi-literate users," who gain opportunities for "out-of-school language learning . . . [that] open the doors for employment and further education" (*Mobile and Immersive Learning for Literacy in Emerging Economies*, para 2).

Current uses of technology in language teaching comprise CALL (computer-assisted language learning) applications including asynchronous computer-mediated communication (ACMC) such as e-mail; synchronous CMC—chat, text, and instant messaging; audio and video conferencing; computer games and virtual learning environments (VLEs) (for example, Second Life or Moodle); Web-based collaborative publication tools (wikis, blogs, vlogs); social networking sites (Facebook, Twitter, MySpace, LinkedIn); distance learning via the Web or ITV (interactive television), total or partial (hybrid or blended) online instruction. Technology can enhance tasks for teaching any language skill, designing teaching materials, delivering course content, assessing learning, or conducting research. A course may employ several applications; for example, in a hybrid writing course, students may read authentic materials on the Internet, e-mail peer-reviews, video conference with the instructor, co-construct texts in a wiki, and publish on the Web. There is no prescribed number of applications one should use as long as the use of technology is pedagogically grounded. Teachers can adopt a "weak CALL approach" whereby technology is a mere "tool to facilitate learning, providing authentic material on which to work;" or see it as "the environment through which the whole learning process takes place" (Fernández Toledo, 2002, p. 253).

In technologically enhanced language teaching, many practices are explicitly or implicitly consistent with second language acquisition theories that see interaction and negotiation of meaning as central to language learning (Smith, 2003). Sociocultural theories that prize the collaborative nature of learning extend to the communities of practice (CoPs) (Wenger, 1998) in virtual environments. Corpus linguists value the authenticity of extremely large samples of language that can be accessed and manipulated via computers and even the Web.

Some instructional merits of technology are well known. CMC fosters increased interaction, learner autonomy and equality, and sociolinguistic competence (Belz, 2003). Asynchronous CMC supports planning and focus on accuracy (Thorne & Payne, 2005).

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Web-supported applications offer opportunities to connect globally, interact with native speakers, mine information, and share personal and professional interests—all from the convenience of one's own (handheld) computer, anytime, anywhere. The world's adherence to technology worries many people, but most recognize that it facilitates interaction and innovation in ways that prove its value in education.

Most of the literature on language learning and technology focuses on language for general and academic purposes (LGP and LAP, respectively). English is usually the object of study, but strong teaching and research communities have developed around technology in teaching general or academic German and Spanish (for example, Belz, 2003; Oskoz & Elola, 2010). With LSP (language for specific purposes) being primarily reactive to needs rather than reflective, many implementations—excepting perhaps online teaching—go undocumented.

Web-Based Applications

The creation of the World Wide Web (WWW) in the early 1990s opened avenues in education. In the last decade, the Web has delivered the promised connectivity among people and interactive access to unprecedented amounts of information. These developments have earned the Web a renewed name: Web 2.0. It offers more than e-mail, listservs, bulletin or message boards/forums, and static screens of information. The Web's new age offers increased capability for collaboration in social networking sites (SNSs), blogs, wikis, and video-sharing sites (YouTube) accessible from computers and portable devices. Currently, major browsers allow the creation of personal learning environments (PLEs)—myYahoo!, myMSN, iGoogle—in which teachers and learners can customize their profiles with mini-applications or widgets and connect to communities with similar interests.

Integrating **e-mail** in courses is a common occurrence. E-mail addresses may be tied to a major search engine like Yahoo! or Google, an institutional closed-circuit server (intranet), or a CMS/LMS (a course/learning management system such as Blackboard, WebCT, or Desire2Learn—or D2L). E-mail lists called listservs can be easily formed from an option built into any account. Forums or bulletin/message boards are Web spaces related to certain Web sites where readers can comment on a topic by posting e-mail-like messages that will appear in chronological or topical threads. CMSs/LMSs also feature threaded discussion boards. In LSP studies, e-mail interaction has been analyzed for discourse patterns in professional environments (Jensen, 2009).

Another distinct characteristic of the modern version of the Web is that users can combine applications. The result is often a multimodal environment that blends print with photography, video or audio files, or hyperlinks. Such combinations are often encountered in **e-courses** delivered online—partially (in hybrid/blended form) or totally. Interesting uses can be seen in ESP writing courses. Hsieh and Liou (2008) supplemented their Moodle-based EAP writing course with a peer online writing and editing room (POWER) and a concordancer of academic written English (CARE), both cocreated by the authors. A **Moodle** is a CMS/LMS also known as a **virtual learning environment (VLE)** which is free and open-source e-learning software (FOSS/FLOSS) whose licensed users can access the software code and manipulate the design. Xing, Wang, and Spencer (2008) and Henry (2007) used e-courses and HTML Web sites respectively to improve the writing skills of natural science and engineering students.

LSP Web sites provide access to LSP courses offered by universities, private institutes, or teachers. The minimum amount of LSP offered by Web sites consists of separate units on basic language for business interactions—the online equivalent of pocket-size phrase books—sometimes linked to basic assessments in the form of blank-filling or multiple-choice exercises. Others specialize in English for engineering, medicine, finance, tourism

and hospitality, aviation, or business and are sometimes cataloged on professional LSP Web sites (for example, see ESP on the Web, Linguistic Funland!, Opp-Beckman & Westerfield (2008), Volterre-Fr).

Web design applications—such as Adobe Dreamweaver or the older Web-based Netscape Frontpage—are also used to achieve instructional goals. In EAP writing, Shin and Cimasko (2008) taught ESL freshman students in the USA to use Dreamweaver and Microsoft Word to create personal Web sites to publish their writing assignments. In EMP (English for medical purposes), Muangsamai (2003) asked learners to build Web pages on medical topics after critically analyzing other sites. Exposing students to English from authentic Web sources without requiring that they publish was motivational in Fernández Toledo's study (2002) on teaching and curriculum design for students of English for library and information science.

Wikis are Web spaces where the users can cocreate content by posting, coediting, revising and interlinking texts. The most famous wiki is Wikipedia—a perfect example of collaborative globally available text. Newer CMSs incorporate wikis. In language classes, wikis are usually used for group projects. WebQuests in which learners search for information on the Web often precede the cocreation of a research paper. The public Wiki Wiki Web allows users to experiment with creating new or existing wikis. Carr, Morrison, Cox, and Deacon (2007) used a wiki in a net-based political science course in South Africa and found that, despite the wiki's learner-centeredness, its transparency and novelty posed risks to the students, teachers, and tutors. To help learners overcome confusion, some have combined the use and analysis of wikis with communication via voice chat using Skype or Voice Direct (Oskoz & Elola, 2010).

Blogs are personal Web pages administered by a single individual. As written texts that contain hyperlinks and which invite responses from others, blogs too can support writing, reading, pragmatic, and research skills. Recently, multimedia blogging has become popular. In addition to text, or instead of it, blogs feature audio files (audioblogs), video extracts (vlogs), or camera phone pictures (moblogs). In ESP, Grosseck and Holotescu (2009), using Holotescu's blog cirip.ro as an LMS for a two-week sociology course, concluded that the medium had great positive effects on the participants' attitudes and relationships.

Social networking sites (Twitter, MySpace, Facebook, LinkedIn) are among the newest, fastest-growing and least-researched applications. They are multimedia microblogging sites in which users can congregate for personal or professional purposes. Major browsers offer account owners the option to create and invite others to networks/groups/forums (e.g., Yahoo! Groups). Customizable SNSs are useful options for those who do not work with a CMS/LMS. Ning.com is popular among educators; some SNSs were designed specifically for educational use (Colloquia and Elgg). McBride (2009) focuses on the potential of SNS in language courses primarily for general or academic purposes, acknowledging challenges (e.g., lack of student or teacher desire to join—perhaps because they are unfamiliar with the site, too busy, or prefer another SNS; diminished equality; perceived loss of status for the teacher) and suggesting tasks that can alleviate known issues.

LinkedIn, now about five years old, is a business-oriented social networking site available in English, French, German, Italian, Portuguese, and Spanish. Users post résumés, professional profiles, and mission statements; join professional organizations; and communicate on professional topics. Materials from LinkedIn can be used to analyze and teach the features of business documents or job searches.

Facebook houses the Language Exchange project, which brings together communities of language learners, teachers, and businesses looking for opportunities to practice, travel, or offer language services. Links to the video-sharing site YouTube abound. Some of the communities linked to the project are smaller networking sites themselves and can serve as an entry point into communities of language users looking to practice German, Italian, Spanish, Spanish for medicine and tourism, and English.

The new practice of social bookmarking, whereby users can tag sites by assigning a personalized key word or phrase saved as a URL, serves as a content management tool that facilitates collaborative research (Sykes, Oskoz, & Thorne, 2008).

Virtual worlds constitute "An important area that warrants significant attention in considering the relevance of mediated contexts . . . the realms of open social spaces (e.g., *Second Life, There,* and *Active Worlds*), massively multiplayer online gaming spaces (MMOGs) (e.g., *World of Warcraft*, *Everquest,* and *Eve Online*), and synthetic immersive environments (SIEs) (e.g., *Croquelandia* and *ZON*)" (Sykes et al., 2008, p. 534). Hadjistassou (2009) studied the use of virtual environments as a supplement to a Blackboard-mediated online business English course and reaffirmed these merits as well as concerns related to students' familiarity with the medium.

Mobile Devices

The popularity of mobile devices and their perceived potential for enhancing language learning is linked to their ability to access the Web, which is a feature as important as (if not more important than) their portability. Their relevance to language teaching led to the term MALL (mobile-assisted language learning). The size of mobile devices predisposes them to "on-the-go" uses (e.g., daily single-word mini-lessons; blank-filling quizzes; short spoken or written texts; e-mail and blogs). Today, "[m]obile applications are more and more expected to be as full-featured as desktop applications" (Godwin-Jones, 2010, p. 6). Contemporary **smartphones**—Apple's iPhone and iPod Touch, Google's Android, Nokia's Symbian, RIM's BlackBerry (to mention only the most well known)—are handheld computers with multimedia, wireless and Web-surfing capabilities. They can handle pictures, audio and video recordings, music, clocks, calendars, games, documents, spreadsheets, and PDF files. Frequently, they are in the hands of business people, offering them access to instant translators (for example, Google translate), online dictionaries, and language games—even online language courses. The utilization of smartphones for LSP is likely to be more popular than we realize.

The global spread and profitability of language applications for mobile phones led to advanced developments, some in languages other than English. In China, Nokia models with language applications already installed access course sites through the company's online learning site. Verizon offers translation applications for Spanish, French, Japanese, or German. The Swedish organization Learning-by-SMS.com is "believed to be the first company using this technology to teach" Spanish, French, Italian, and German. Berlitz and DailyLit offer five-minute language lessons via e-mail. Apple's iTunes U features learning materials and lessons. In Chinese Pod, a free account gives access to daily podcasts from among over 500 existing lessons, also available in Spanish; multimedia language lessons are supplemented with transcripts and study tools (electronic flashcards, reading comprehension exercises, a pop-up dictionary, and self-assessments); and one can practice with a native speaker via mobile phone or Skype (see also www.mlearnopedia.com).

Digital audio and video players, fast becoming ubiquitous, download, store, and play audio or video files. Podcasts (a word resulted from the blending of *playable on demand* and *broadcasting*) and vodcasts (video podcasts) are audio or video files that can be downloaded through Web syndication and played on a number of devices, including digital players, phones, and computers. Language teachers and learners can record themselves and deliver files via a Web platform endowed with RSS feeds, or they can link course content to podcasts from other sites. Podcasts can enhance the teaching of speaking, listening, and culture skills, and can constitute the basis of discussions and writing assignments.

E-readers and **tablet computers** are some of the newest devices on the market. E-readers, such as Amazon's Kindle and Barnes and Noble's Nook, available since 2007, are handheld

devices that use software designed for the display of electronic, simple or multimedia texts (e-books) that can be downloaded wirelessly. E-readers can assist in developing reading and listening skills and include text-to-speech options that convert written to spoken text. **Tablet touch-screen computers** such as Apple's iPad can browse the Internet, download applications, stream media, and be synched to a desktop. Like other devices, their use in language teaching remains to be explored.

Conclusions

Today's LSP professionals and learners have at their disposal a vast array of technological devices and services, which raise some pedagogical uncertainties and offer many new areas of inquiry to explore. While technology is undoubtedly useful for supporting learner autonomy, flexibility, access, connectivity, and interest, some concerns persist. In his study of English for business purposes (EBP), Brett (2000) reached a conclusion which has since been confirmed: technology should be used regularly and meaningfully in teaching. Among evidence that instructional goals can be accomplished in e-learning, particularly with autonomous learners, we also know that some students can feel lost, especially when using online courses (Sampson, 2003). Sykes et al. (2008) review concerns related to individual differences and assessment. Basharina (2007) cautions that global e-learners will not be equally successful in their learning experiences and highlights the significance of cultural differences, while others worry that technology facilitates the supremacy of global English while aiding in its teaching.

The quick pace at which technology develops does not allow time for evaluating its educational effectiveness. In LSP, most uses are in the hands of communities that are not interested in research. It may be that the field will never be able to assess a technology fully before a new one is invented. A more thorough documentation and exploration of technology in LSP, especially in linguistic contexts other than English, would provide a more rounded perspective on this area. For now, the world of LSP and technology remains a promised land ripe for exploration.

SEE ALSO: Computer-Assisted Language Learning Effectiveness Research; Computer-Mediated Communication and Second Language Development; Corpora in Language for Specific Purposes Research; Distance Language Learning; Emerging Technologies for Language Learning; Mobile-Assisted Language Learning; Technology-Supported Materials for Language Teaching

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Technology and Language Testing

DAN DOUGLAS

Introduction

The use of technology in language testing has been with us for many years—one could argue that allowing test takers to use pencils with erasers was a technological innovation at one time in language testing. Overhead projectors, slide and film projectors, audio recorders, videodiscs, and video players were once cutting-edge technologies that were incorporated into language assessment at one time or another. Computers were introduced into assessment as early as 1935, when IBM Corporation released a "test scoring machine" that could accurately score selected response tests 10 times faster than humans (Chapelle & Douglas, 2006), and computers and the Internet are now used to develop, distribute, administer, and score language tests, and deliver test results. Such technologies as podcasting, video podcasting (vodcasting), and voice/video over Internet protocols (VoIP) are being explored for their potential for language teaching and assessment, as are computer-based simulated environments, or virtual worlds, such as Second Life (Linden Lab, 2009). Computer-assisted language testing is no doubt here to stay, in spite of some well-considered misgivings on the part of language-testing professionals (e.g., see Spolsky, 2008). The key question for language test developers and users is not whether these technologies should be used for language testing, but rather include the following:

- How does language performance differ with different technologies?
- How does the use of technology affect the definition of the language ability construct we are attempting to measure?
- What are the effects of the use of technology in language assessment on test-taker attitudes such as anxiety and motivation?
- How does technology affect the nature of assessment tasks that can be developed?
- What are the limits of technology for scoring constructed response assessment tasks and how does automated scoring differ from human scoring?
- How can technology be used in test development?

The remainder of this entry will review where we are at the present time in the task of investigating these questions. Although the title of this entry is "Technology and Language Testing," the main focus will be on computer and Internet technologies and their uses for test development, administration, delivery, scoring, and analysis.

Language Performance and Different Media

There is little question that language use is a different experience when done on a computer screen as opposed to live or print media. Mangen (2008) argues that

> the particular sense of being, deeply and for an extended period of time, phenomenologically immersed that we typically experience when reading a novel, is related to and at least partly dependent on the very materiality of the print pages of the book itself. (p. 416)

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Whereas, with electronic text, by virtue of its being intangible, is at least potentially devoid of this phenomenological immersion. The same may not be true of writing: there is evidence that the composing process may be enhanced by the use of a computer over pen and paper (Barrera, Rule, & Diemart, 2001). It seems obvious that there will be differences in speaking performance when speaking with a live interlocutor versus speaking to a computer screen, even in synchronous modality, and there is research investigating the nature of the differences (e.g., Vandergriff, 2006). Having a human audience, even when the audience is silent, probably produces differences in discourse compared to speaking impersonally. Similarly, listening to live speech may result in a different comprehension process than listening to electronic speech, even when accompanied by video (e.g., Wagner, 2007). In principle, any change in the input or response technology in a language test can potentially affect the ways we process language, whether we are assessing reading, listening, writing, or speaking, or a combination of these. A question we need to ask in each case, therefore, is how these differences affect test performance, and more importantly, our interpretations of test performance.

Technology and the Construct to be Measured

In light of the point made in the previous section, we need to define the construct we wish to measure in a language test taking into account the technology being used to deliver the test and collect responses. In their book on the use of computers in language assessment, Chapelle and Douglas (2006) defined language ability in recognition of the joint role that language and technology play in communication: "the ability to select and deploy appropriate language through the technologies that are appropriate for a situation" (p. 107).

If a particular technology is a relevant aspect of a language-use situation, then a language user who is not competent in using that technology cannot be considered competent in communication in that context. In one situation, sending an e-mail message may be the appropriate way to communicate, while in another, a telephone call might be more suitable, and in yet another situation only a face-to-face conversation will do. In our language tests, therefore, we need to consider what technologies—and these include paper and pencil as well as computers and the Internet—are most appropriate for the situations most relevant to the test takers and score users, and for the purposes the test is intended to fulfill. We must define the language construct to include appropriate technology in light of the target situation and test purpose.

Technology and Test-Taker Attitudes

We know that, generally speaking, younger people are more technologically adept than those of "a certain age," but this tendency is far from universal and many test takers find computer-assisted language tests confusing and unwieldy, not to mention communicatively unnatural. Although there is not much research on the effect of test anxiety on test performance, the findings suggest that it is moderately negative, particularly in low to intermediate proficiency learners (In'nami, 2006), although in a well-conceived study using structural equation modeling, In'nami found no effect of test anxiety among high proficiency learners on a low stakes listening test performance. In spite of such findings, we still don't know much about the effects of anxiety in individual test takers, nor do we know very much about the effects on test anxiety brought about by computer (Taylor, Jamieson, Eignor, & Kirsch, 1998). Recent work by Wall and Horák (2008, cited in Alderson, 2009) suggest that computer familiarity, however, may be becoming less and less of a concern.

Attitude also affects the way test takers interact with the material available on a computer screen. Wagner (2007) found that when offered visual support in the form of a video in a listening test, participants oriented to the images only 69% of the time, and there was a wide range of individual variation, with some test takers looking at the screen as much as 90% of the time and others as little as 50%. Apparently, some test takers felt that the video distracted them from focusing on the aural input or that the images did not contain any information that was crucial to their comprehension.

Technology and Assessment Tasks

The above discussion suggests that different technologies might be appropriate for delivering test input and collecting responses and that these should reflect the language-use situations that are the focus of the assessment. Computers can provide images, both still and video, to suggest appropriate communicative settings and participants, and can simulate different instrumentalities, including telephone conversations, face-to-face interviews, control tower to pilot radio messages, and so on. For example, the computerized oral proficiency instrument (COPI), produced at the Center for Applied Linguistics (Malabonga, Kenyon, & Carpenter, 2005), employs

> written files and audio directions in English, written and audio directions in the target language, a graphic file of a picture that accompanies the task (for those tasks that have pictures), and an audio prompt from a native speaker of the target language. (p. 63)

Similarly, Lopez, Alba-Juez, Aragones, and Molina (2006) report on the development of an instrument similar to the COPI but propose to include a voice recognition and verification system to allow for test-taker identification in a distance assessment format. Some of the developers of the Internet-based DIALANG diagnostic tests have provided some examples of experimental test tasks made possible by computer technology (Lancaster University, *n.d.*). These include the use of video and audio clips and interactive images in listening tasks, onscreen text reorganization tasks, and drag and drop listening, reading, and vocabulary tasks. These sample tasks are offered in the spirit of experimentation and are worth exploring to consider how they might affect the construct being measured. Another example of a use of technology in assessment tasks is the computer-assisted *Basic English Skills Test Plus* (BEST Plus), produced by the Center for Applied Linguistics (2009), in which the test tasks are delivered on a computer via a CD; the administrator reads the prompt from the screen, listens to the test taker's response, and enters a rating on the computer. Based on this input, the program determines the difficulty level of the next tasks and presents it. The test taker occasionally is requested to look at the screen for visual input, but does not operate the computer. Finally, Kenyon and Malabonga (2001), in a comparison of tape-mediated, computer-based, and face-to-face speaking assessments, found that participants rated the adaptive computer-based assessment "easier" since it provided input more at each participant's level of ability, while they rated the face-to-face oral assessment a better assessment of real-life speaking skills.

The Promise and Threats of Automated Scoring

Automated language evaluation and scoring programs are being used in a number of different tests at the present time. For example, the Versant series (Versant Arabic, English, Spanish, Aviation, and Junior English Tests) of speaking assessments (Pearson Education, Inc., 2009a) are delivered over telephone lines or locally on a computer and test takers'

responses are scored automatically by speech processing technology "trained" on a large sample of speakers of the language being assessed. The algorithm assesses sentence mastery, vocabulary, fluency, and pronunciation. Rate of speech, length and position of pauses, stress, and segmentation contribute to the measurement of pronunciation and fluency, while structure and vocabulary are assessed by comparing actual responses to those expected. The test publishers report a correlation between human raters and the automated Versant system at 0.97, virtually indistinguishable (Pearson Education, Inc., 2009b).

Another testing program that is exploring the use of automated scoring in both written and spoken production is TOEFL, though in lower stakes situations than claimed for Versant. The scoring of writing is done by a scoring "engine" called *e-rater*, which focuses on four types of features: syntactic, discourse, lexical, and topical (Chodorow & Burstein, 2004). Syntax is analyzed by "tagging" each word in an essay with an appropriate part of speech and then assembling these into phrasal and clausal units, providing information about the essay's syntactic variety, while discourse is analyzed by having the program look for discourse markers such as *in summary*, *in conclusion*, and so on. Lexical features analyzed include the number of unique words in the essay and measures of word length, on the grounds that longer words reflect range, frequency, and morphological complexity. Finally, the topical score is based on analysis of topic-specific vocabulary used in the essay, compared with that used in criterion essays written by learners of different ability levels. As is the case with the Versant scoring system, e-rater scores show a fairly high degree of agreement with those produced by trained human raters: e-rater scores either match or are within one point (on a six-point scale) of humans' scores 96% of the time (Chodorow & Burstein, 2004).

Concerns about Automated Scoring

Clearly, there are concerns among test developers and other language professionals about automated scoring. For example, Norris (2001) argues that "It is doubtful that the complexities of [speaking] performances and the inferences that we make about them will be captured by automated scoring" (p. 99). In a similar vein, with regard to the evaluation of writing, Weigle (2002) notes that "The notion that writing can be graded on the basis of linguistic features of the text rather than the message that the text conveys is understandably abhorrent to writing teachers" (p. 236). Indeed, researchers in the TOEFL program (Chodorow & Burstein, 2004), in their study exploring the validity of e-rater, concluded the following:

> In practical terms, e-rater01 differs from human readers by only a very small amount in exact agreement, and it is indistinguishable from human readers in adjacent agreement. But despite these similarities, human readers and e-rater are not the same. When length is removed, human readers share more variance than e-rater01 shares with [human readers]. *The human readers must be sensitive to additional characteristics of writing that the machine is not* [emphasis added]. (p. 31)

Thus, although the developers of such automated scoring systems can show that there is a positive correlation between the scores produced by the system and those given by humans, the question remains of whether there are aspects of language production that humans are sensitive to that computers do not recognize. In other words, are humans and computers giving similar scores to an essay but for different reasons? In a study designed to explore this question, Lee, Gentile, and Kantor (2009), have found some evidence that there are

> reasonably strong associations between several e-rater variables and multi-trait rating dimensions in some areas of essay quality, such as organization, vocabulary, and mechanics. This means that, for these variables, both e-rater and human raters are focusing on similar or related aspects of examinees' essays. (p. 21)

However, they also found some discrepancies between human rater dimensions and those of e-rater, and suggest further research to refine the automated system. The science, and art, of automated language evaluation is improving all the time, as applied linguists understand more about the nature of writing and speaking performance and as techniques of computer-assisted natural language processing become more and more sophisticated, but we are still some years, perhaps decades, away from being able to rely wholly on such systems in language assessment, and for the present time it would be unwise to make high stakes decisions about people based solely on assessments rated by computers. For a thoughtful, and entertaining, review of a book on the machine scoring of student essays (Ericsson & Haswell, 2006), see Cumming (2007), who emphasizes "the need to examine systematically the uses of computerized tools for writing assessment as they are actually implemented by instructors, students, and educational institutions" (p. 81).

Technology and Test Development

Apart from the uses of computer technology in the delivery and scoring of tests, there are a number of technological tools to assist in the development of language tests, including authoring tools for creating the computer-based tests themselves and language analysis tools for discovering and describing the target language features to be tested. Test authoring tools will not be discussed here. Language analysis tools are associated mainly with corpus linguistics, including discourse and conversation analysis. A language corpus is a large collection of text (upwards of a million words), representing the target language use situation related to the proposed test, that can be analyzed for its lexical properties by means of concordancers, which assist in analyzing word frequency, phrases, and collocations. Concordancers are often associated with specific corpora such as those available from Cobb (2009), which includes access to the Brown University Corpus and the British National Corpus, among others; the Linguistic Data Consortium (2009); the Michigan Corpus of Academic Spoken English (English Language Institute, 2009); and the Corpus of Contemporary American English (Davies, 2009). Concordancers provide not only information about how words and phrases are used in immediate linguistic contexts, but often allow the downloading of the entire transcript the items appear in, a particularly valuable feature in specific purpose language assessment.

Another aspect of test development that technology has made possible is not quite as overt as the tools available for computer applications: the access test developers now have to each other's expertise via the Internet through e-mail, synchronous communication, and voice-over-Internet applications such as Skype. Stansfield (2009) has pointed this out succinctly:

> Location is now irrelevant. Two test developers can communicate with each other as quickly across continents as they can across the hall. This offers tremendous opportunities for test developers around the globe, in that they can pool their resources and work together anywhere. (p. 320)

Indeed, since language test development is best done in groups (see Davidson & Lynch, 2002), Internet-mediated communication can be a great boon to usually underfunded research and development teams.

Conclusion

Technology is an inescapable aspect of modern language testing and indeed can be great boon to test developers in providing for efficient, effective test construction, delivery, response, scoring, reporting, and analysis. The use of technology can enhance authenticity both through using the technology that is appropriate to a target communicative situation and using technological multimedia capabilities to highlight appropriate situational aspects of test tasks. Technology must be taken into account when defining the construct to be measured in our tests, and at various points developers are cautioned that the use of technology for its own sake can lead to the trivializing of language test tasks by limiting what we include in our tests to those things that can be delivered easily by computers or the Internet or that can be scored easily by machines. As noted at the beginning of the entry, the use of technology in language assessment really isn't an issue we can reasonably reject—technology is being used and will continue to be used. Our responsibility is to see that it is used in the service of language assessment and that language assessment is not distorted or trivialized by mindless uses of technology.

SEE ALSO: Authoring Tools for Language Assessment; Corpus-Based Testing; Technology-Supported Materials for Language Teaching; Technology and Teaching Language for Specific Purposes

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Technology and Language: Mixed Methods

YU-LI CHEN

Using technology for teaching and learning is a current challenge for language teachers, as evidenced by the various studies that have been conducted to understand why and how teachers have incorporated modern technology into their instruction (e.g., Groves & Zemel, 2000; Epper, 2001). This entry offers an overview of the advantages of applying a mixed methods research design to explore the ways language teachers adapt to current rapid technological advances. The portion of the study described in this entry used the quantitative technique of structural equation modeling (SEM) and the qualitative technique of interviews (see Chen, 2008a, 2008b, for details of the study).

Mixed Methods Research Design

Greene, Caracelli, and Graham (1989) listed five purposes for mixed research: triangulation, complementarity, development, initiation, and expansion. When a mixed methods study is applied, time order (concurrent vs. sequential) and paradigm emphasis (equal status vs. dominant status) are the dimensions to consider. That is, researchers should determine whether a qualitative phase is preceded by a quantitative one or vice versa and whether the quantitative or the qualitative phase has a dominant status.

This mixed methods study examining teachers' information and communication technology (ICT) use employed a concurrent triangulation strategy, as the quantitative and qualitative data collections both occurred in one phase. A triangulation strategy takes advantage of the strengths of one method as a means of compensating for the weaknesses inherent in the other method. According to Creswell (2003), a concurrent triangulation strategy can result in "well-validated and substantiated findings" (p. 217). Quantitative and qualitative paradigms were emphasized equally in this study.

Data analysis of the quantitative study results represented a deductive approach, while analysis of the qualitative results represented an inductive approach. Use of a triangulated strategy allows convergence of the research findings and strengthens the knowledge claim (Creswell, 2003). For these reasons, the combined use of both quantitative and qualitative methods was best for the present study to explain and explore why and how these English as a foreign language (EFL) teachers use ICT in their instructional practices.

Quantitative Phase

The strategy of inquiry used in the quantitative part of the study was a survey. The survey measured the extent to which EFL teachers in northern Taiwanese higher education used ICT and the factors which influenced their use. Understanding the variables that explain or relate to an outcome can make solutions to the problem clearer.

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The Survey

A questionnaire was developed to measure the extent of ICT use in participants' instructional practices and the factors influencing their use. All items were revised for comprehension and clarity through the procedures of literature review, think-alouds, expert reviews, and a pilot study. A total of 311 EFL teachers from northern Taiwanese higher education participated in the quantitative part of the study.

Respondents were asked to indicate agreement or disagreement with the statements on a four-point scale. After the data were collected from the actual survey, Cronbach's alphas were initially calculated to examine the internal consistency reliabilities for all the variables in the study. Items were organized into seven major sections, reflecting the variables of interest: institutional support (internal consistency reliability .86), beliefs (.86), perceived capabilities (.84), attitudes (.76), constructivist thinking (.60), classroom pedagogy (.74), and actual Internet use (.92). Teacher training was measured by the total numbers of hours participants received training. A checklist of different types of training was provided to make sure that all the responding teachers had the same sets of criteria for this item.

SEM Analysis

A central concept for SEM models is covariance and the analysis of covariance structures. Even though most research on technology uses reported factors based on correlation and regression methods, there is more information in a covariance statistic than in a correlation statistic. The goal of SEM analysis is to understand the correlation patterns among a set of variables and to explain as much of their variation as possible with the model. SEM analysis can be viewed as a combination of path analysis and factor analysis. The full model consists of a system of structural equations. Correlations and covariances are analyzed to determine the extent to which the proposed model replicates the relationships of the observed variables (Kline, 1998; Maruyama,1998).

SEM was used to build a model that predicted the level of ICT use in language instruction of the northern Taiwanese EFL teachers. A model of the relationships among a set of eight variables frequently discussed in the literature on language studies was developed.

The Analysis of Moment Structures (AMOS) software version 7.0 was used for the SEM analysis. Performing the analysis involved specification, estimation of free parameters, assessment of fit, and modification of the model. The standardized causal effect size shows the percentage of explanation of the different latent factors. The AMOS output reports a model fit summary that contains several fit indices for the determination of the model fit with the empirical observed data (Table 1). In general, if the vast majority of the indices indicate a good fit, then there probably is a good fit. The Bentler Comparative Fit Index

Table 1 Model fit indices and suggested guidelines

Model fit indices	*Values (suggested guidelines)*
χ^2/df	Less than 3.0
CFI, GFI, IFI	Roughly 0.9 or larger
RMSEA	0.05 or below/good fit; below 0.08/fair fit
RMR	Roughly 0.05 or less (the smaller the better)

Source: Kline (1998); Klem (2000); Thompson (2000); McDonald & Ho (2002)
Notes: χ^2 = chi-square; *df* = degree of freedom; CFI = Bentler Comparative Fit Index; GFI = Jöreskog-Sörbom Goodness of Fit Index; IFI = Incremental Fit Index; RMSEA = root mean square error of approximation; RMR = root mean square residual.

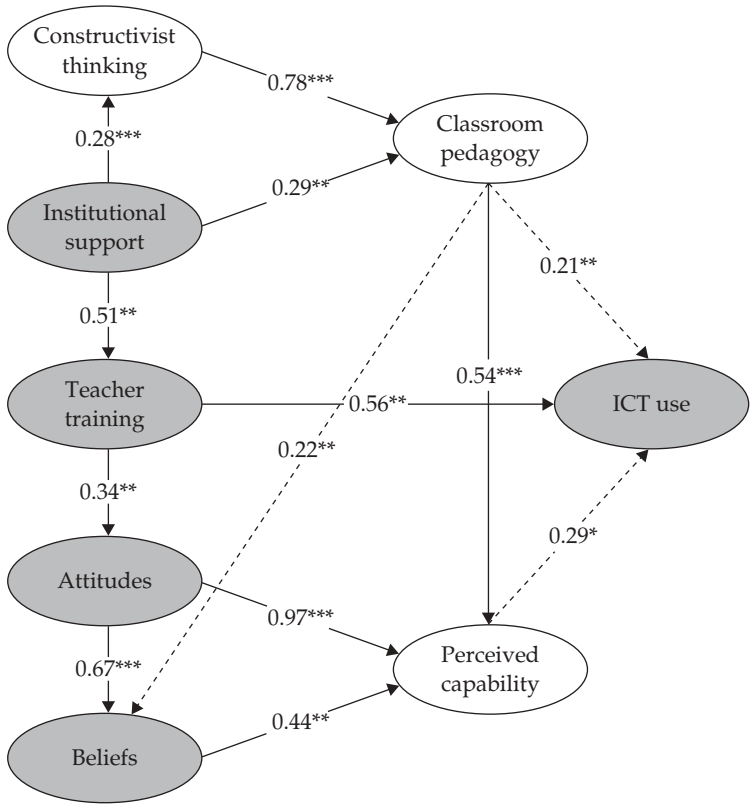

Figure 1 Path model of Internet use
Notes: **p* < .10, ***p*-value < .05, ****p*-value < .001. Number of participants = 297; χ^2/df = 372.164/217 = 1.175; $p < .001$; GFI = 0.923; CFI = 0.929; RMR = 0.054; RMSEA = 0.049. For more details about the model, see Chen (2008a).

(CFI), the Jöreskog-Sörbom Goodness of Fit Index (GFI), or the Incremental Fit Index (IFI) are reported to describe the overall proportion of explained variance.

Cases with missing data were excluded, so the sample sizes decreased from 311 to 297 for the SEM analysis. Explaining the factors that influenced 297 Taiwanese EFL teachers in their use of ICT, Figure 1 indicates the variables that had either direct or indirect effects. From the SEM analysis, the presented model has adequate fit with χ^2 (chi-square) = 372.164, *df* (degrees of freedom) = 217, and $p < .001$.

As shown in Figure 1, teacher training was positively related to ICT use. The standardized direct effect of teacher training on ICT use was 0.56. That is, due to the direct effect of teacher education on ICT use, when teacher education goes up by 1 standard deviation, ICT use goes up by 0.56 standard deviation. Teacher training was also positively related to attitudes (.34, $p < .05$). Attitudes had a large effect on both beliefs (.67, $p < .05$) and perceived capability (.97, $p < .05$). Perceived capability mediated the effect of attitudes on ICT use. Attitudes mediated the effects of teacher training on both perceived capability and beliefs.

Qualitative Phase

The qualitative findings were intended to assist in explaining and interpreting the results of the quantitative data and to give additional insights into the issues, providing rich,

contextual understanding. According to Merriam (2002), the qualitative study is designed to "uncover or discover the meaning people have constructed about a particular phenomenon. The researcher wants to obtain an in-depth understanding of a phenomenon, an individual, a situation . . . they want to know how people do things" (p. 19). As the study was intended to discover and understand the meaning that ICT use has for the participants, data were gathered to build concepts and theories instead of testing them as in a positivist study.

The Interview Protocol

An interview protocol was developed based on the research questions, the questionnaire, and initial responses in a pilot study. Ten open-ended questions were asked (e.g., "What motivates you in using the Internet in your instructional practices?"). The purpose of the qualitative phase was to explore *what* factors influenced these teachers' use of the Internet and to explain *how* and *why* they used the Internet. The data collected via interviews with 22 selected teachers shed light on several issues. These teachers' replies allowed insight into different levels of ICT use and allowed the researcher to understand how these teachers applied ICT, and whether the results corroborated the findings from the quantitative study. Responses also allowed the researcher to explore other factors (than those included in the survey) that influenced teachers' use of ICT and to determine teachers' purposes for using ICT.

Analysis of the Interview Data

The retrieved qualitative data were analyzed from transcriptions of the interviews to identify whether there were recurring patterns or common themes among these participants. An interactive qualitative inquiry within a phenomenological framework was employed (McMillan & Schumacher, 2001; Creswell, 2003). Several themes inductively emerged. Many of the teachers interviewed used online materials to supplement classroom instruction and to expand students' learning opportunities outside the classroom. These teachers applied ICT tools more in the listening aspects of curricular areas. Some of their ICT-based instruction, however, was primarily in the experimental phase. In addition, several teachers attempted blended teaching in their instruction.

These teachers received training in technology and they all agreed that training was crucial for their application. Since there are abundant resources and tools on the Internet, all the teachers interviewed agreed that teachers should take advantage of these. The teachers recognized that ICT integration instruction is a trend, and they complied with the school policy of using the instructional platforms their institutions provide for their long-term goals of development and with a view to creating paperless environments.

These teachers use modern technologies for different purposes. They had been trying innovation to increase students' interest and motivation in learning. They had a commitment to continuous innovation and hoped to provide variety in instruction. In addition, they could provide updated, authentic, and multimedia instructional materials. Their ultimate goal was to assist students in developing autonomous and lifelong learning.

Major barriers and issues facing these teachers in ICT integration instruction were as follows: (a) need for time investment; (b) feelings of uncertainty when trying innovation; (c) insufficient institutional support; (d) lack of cooperation or teamwork among colleagues; (e) appropriateness of course content; (f) need for workshops focused on technology application in language instruction; and (g) lack of planning for technology integration into the classroom.

Interpretation of the Results

The results from both phases were compared and synthesized, revealing that teacher training appeared to be the most prominent determinant of ICT use. Teachers were more likely to try innovation after they received training. Teacher education affected teachers' attitudes toward ICT use, which might result in subsequent changes in classroom behavior. When teachers had positive attitudes toward ICT use, they perceived themselves as competent and were likely to use it more. Institutional support was also important, but even if institutions supported ICT use, teachers did not use it until they received more training.

These results implied that continuous professional development facilitates efficient and successful implementation of ICT use in language instruction. The results implied that teacher training is necessary for innovative methods and effective implementation of technology in instruction, as teachers should have the necessary knowledge and skills in ICT integration. However, ongoing professional programs or workshops should not be technocentric only. The results also implied that pedagogical content knowledge (Shulman, 1987) regarding technology use (Zhao, 2003) should be emphasized. Continuous professional development should be unique to language instruction and meet the needs of language teachers.

SEM Example

Because SEM is a relatively new statistical technique for applied linguistics' researchers in technology, a step-by-step example is provided below.

To start a basic SEM computation using AMOS, assume that you have an Excel or SPSS file with four (4) observed variables namely, X1, X2, Y1, Y2 (see Appendix). Again, let us

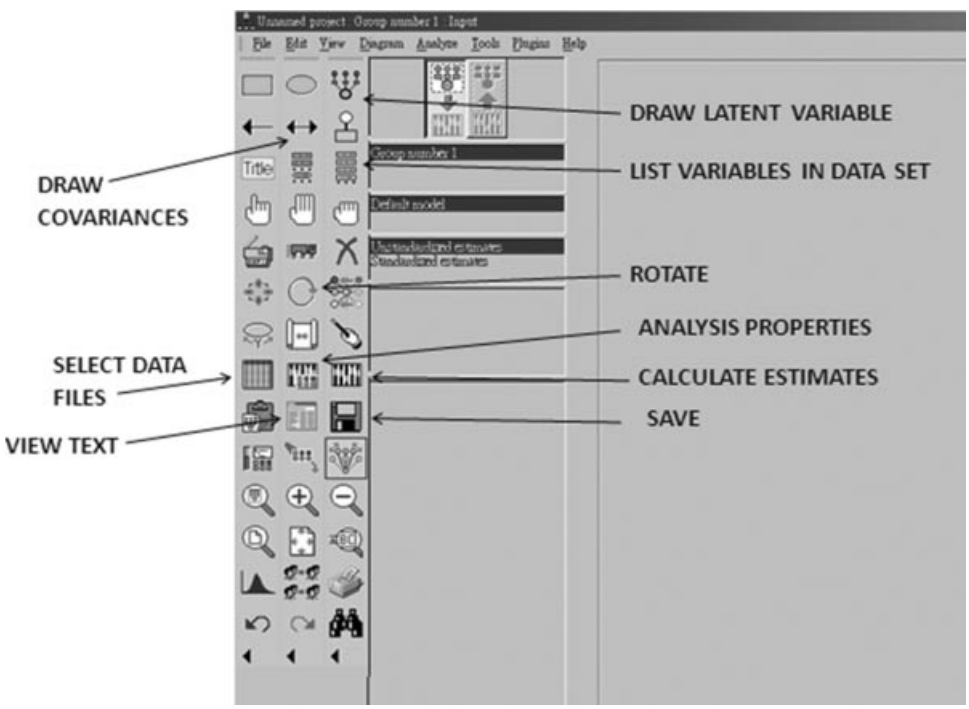

Figure 2 Procedure of SEM analysis using AMOS version 7.0: Step 1

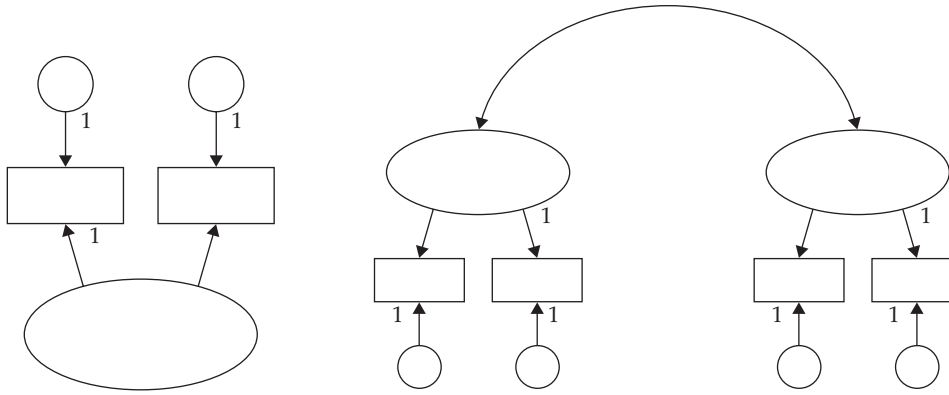

Figure 3 Procedure of SEM analysis using AMOS version 7.0: Step 2

assume that our hypothesis states that X1 and X2 have a common implied latent variable. For example, theoretically *Incentives* (X1) and *Grants* (X2) have a common implied latent variable, *Institutional support* (F1). Then again, *Anxiety* (Y1) and *Confidence* (Y2) also have a common implied latent variable, *Attitudes* (F2). The objective of SEM is to see whether there really exists a latent variable among each of the observed variables, so as to see the strength of their relationship. At the same time, SEM can also see the strength and direction of relationship among the latent variables.

Step 1: When you open the AMOS Graphics program, you will see the basic screen as shown in Figure 2. There is a MENU at the top of the screen, while the left side shows the most commonly used short-cut ICONS. Move the cursor over the ICONS to show a brief description of their function.

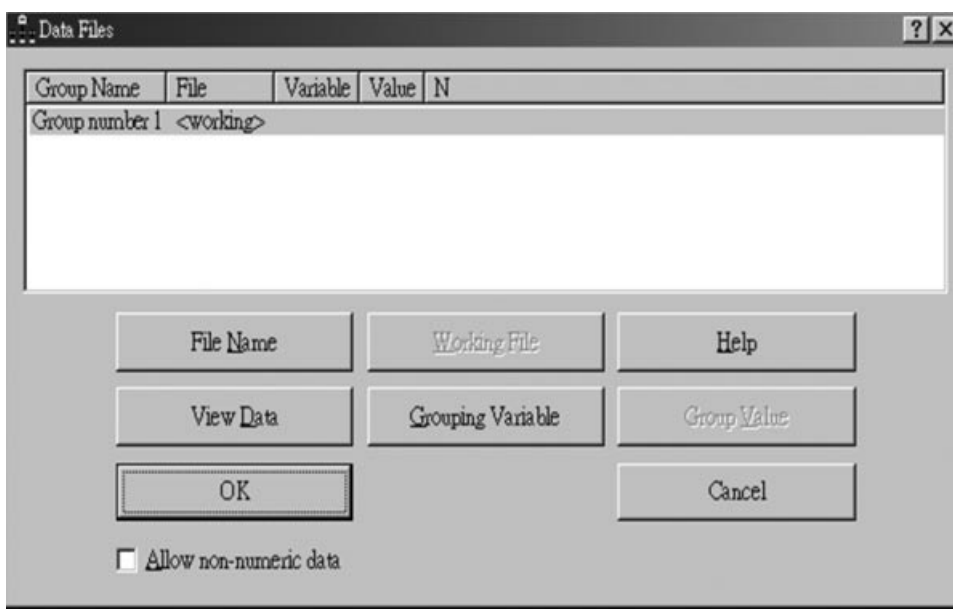

Figure 4 Procedure of SEM analysis using AMOS version 7.0: Step 3

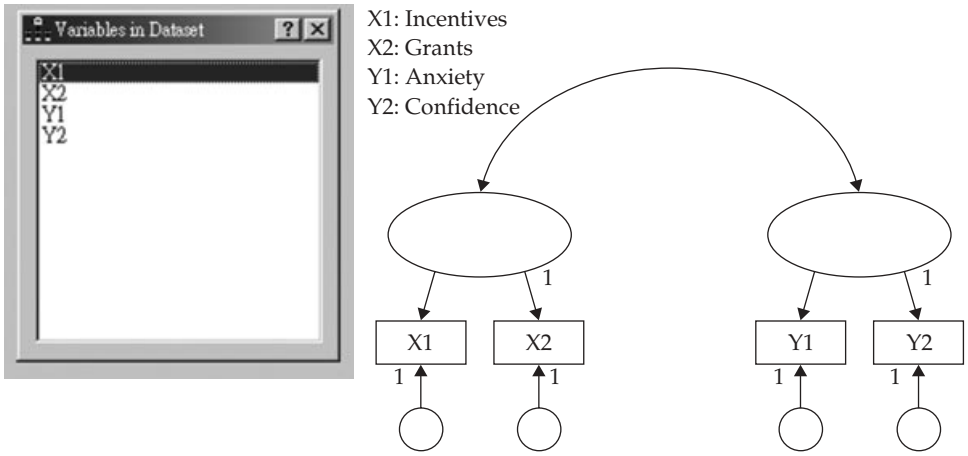

Figure 5 Procedure of SEM analysis using AMOS version 7.0: Step 4

Step 2: To start, as illustrated in Figure 3, click the DRAW LATENT VARIABLE icon three times to show the figure on the left. Do this twice, then use the ROTATE icon to rotate the figures 180 degrees. Then click and drag using the DRAW COVARIANCES icon to produce the figure on the right.

Step 3: As shown in Figure 4, click the SELECT DATA FILES icon, then click FILE NAME to select your data file. Click OK to confirm.

Step 4: Click the LIST VARIABLES IN DATA SET icon to show the listing of variables. Click and drag each of the observed variables into their respective SQUARES, as shown in the right of Figure 5.

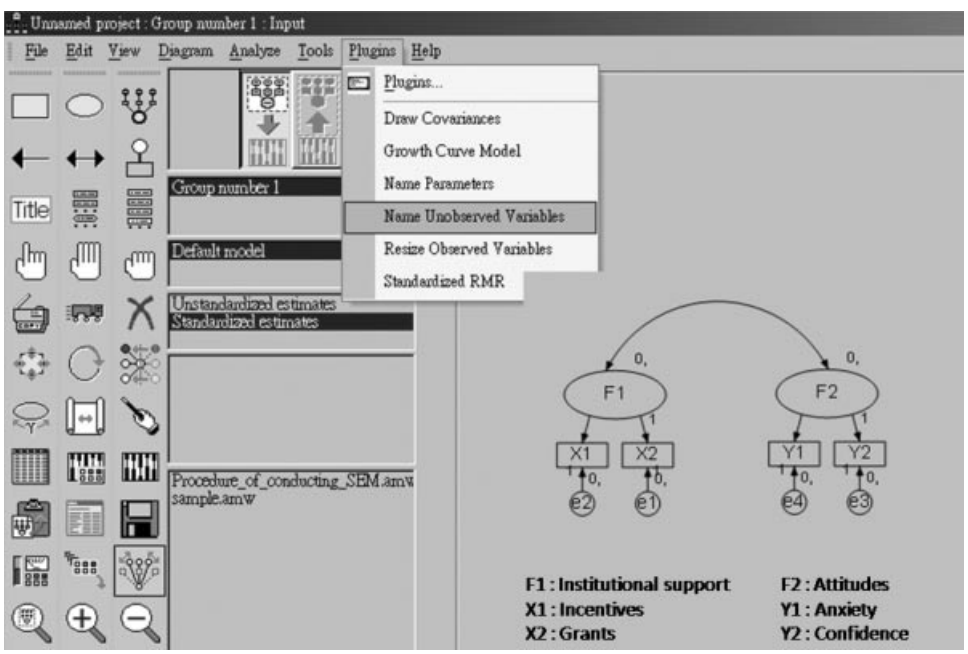

Figure 6 Procedure of SEM analysis using AMOS version 7.0: Step 5

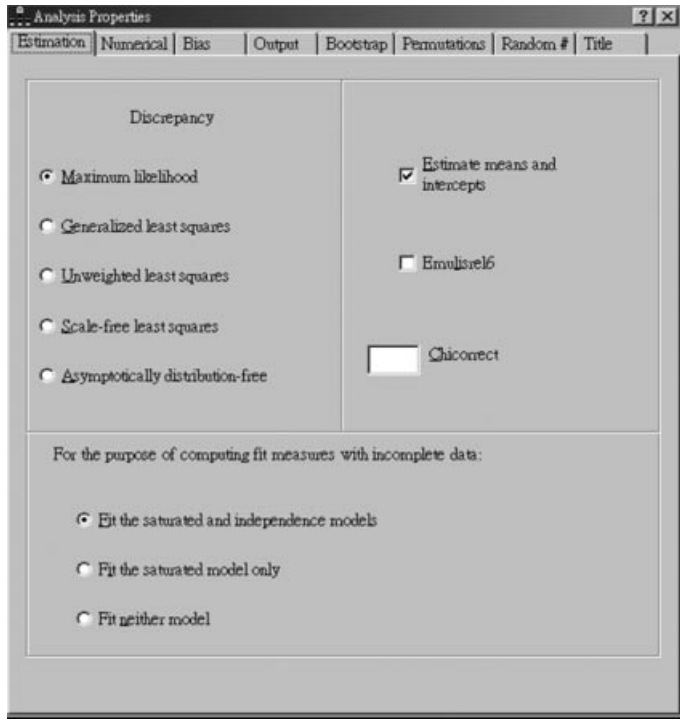

Figure 7 Procedure of SEM analysis using AMOS version 7.0: Step 6

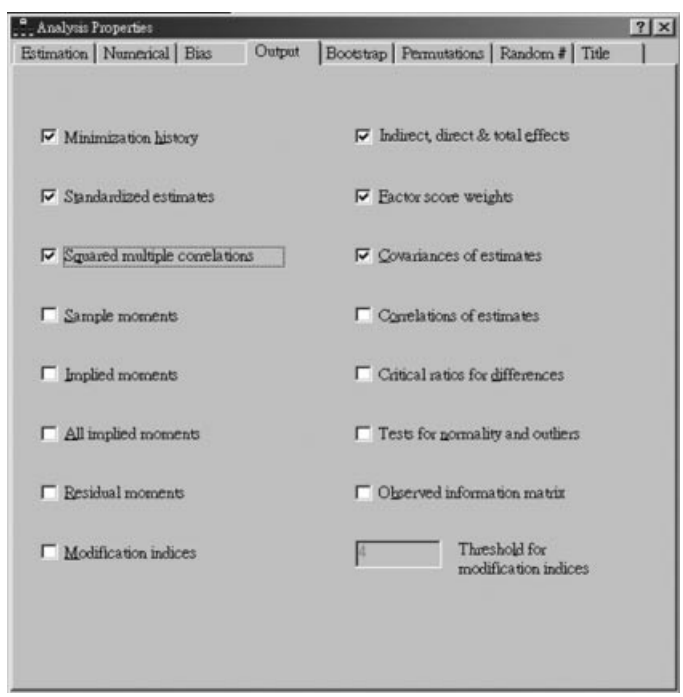

Figure 8 Procedure of SEM analysis using AMOS version 7.0: Step 7

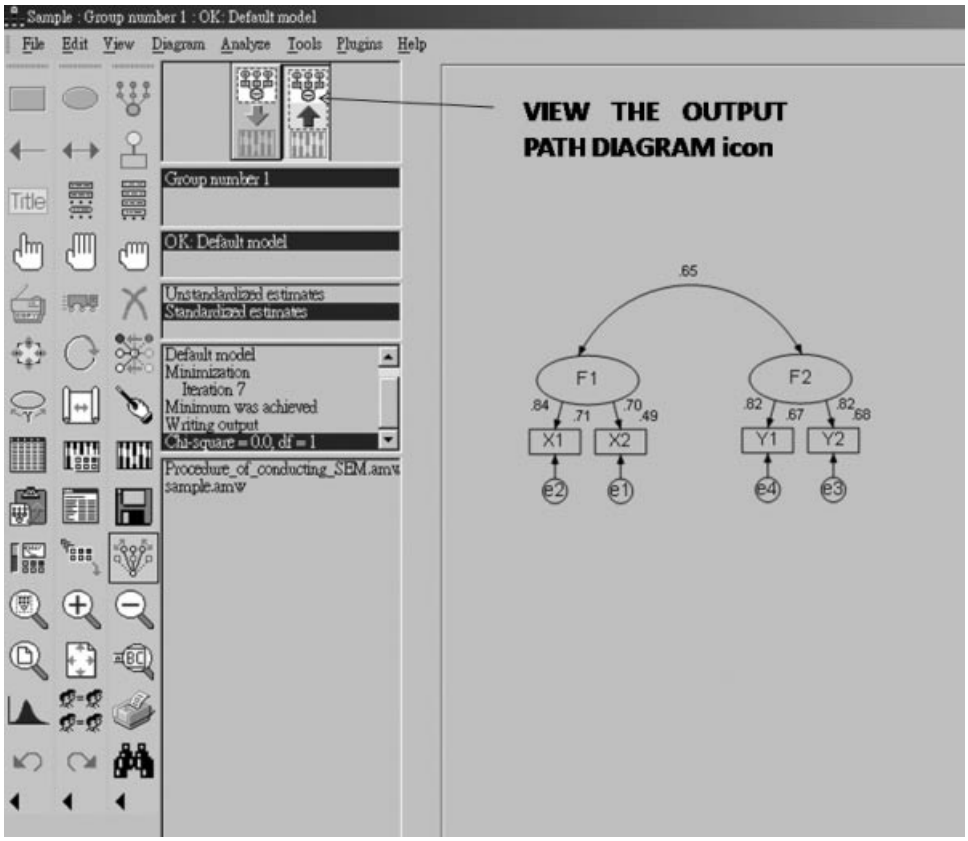

Figure 9 Procedure of SEM Analysis using AMOS version 7.0: Step 8

Step 5: Select the PLUGINS menu and click the NAME UNOBSERVED VARIABLES options as shown in Figure 6 to name all the remaining variables.

Step 6: Click the ANALYSIS PROPERTIES icon and choose the ESTIMATION tab. Select the options MAXIMUM LIKELIHOOD and ESTIMATE MEANS AND INTERCEPTS as shown in Figure 7.

Step 7: Select the OUTPUT tab, then select the options shown in Figure 8.

Step 8: Click the CALCULATE ESTIMATES icon to calculate. To show results click the VIEW TEXT icon. To see the output values, click the VIEW THE OUTPUT PATH DIAGRAM icon as shown in Figure 9.

Appendix: Sample Data for SEM Analysis

X1 (*Incentives*)	*X2* (*Grants*)	*Y1* (*Anxiety*)	*Y2* (*Confidence*)
4	3	4	4
1	3	3	3
1	2	2	2
1	2	3	3
2	2	1	1
4	4	3	5
3	3	4	3
3	3	2	3
3	4	3	2
4	3	3	3
5	4	5	5
3	4	4	3
3	3	3	3
4	4	2	2
3	3	2	2
2	4	4	3
3	2	3	3
1	3	2	2
2	3	4	3
3	3	4	2
4	5	5	5
2	3	2	2
2	2	4	4
3	2	3	2
2	3	3	2
4	3	4	4
2	3	2	2
2	2	3	2
3	3	3	2
2	2	1	1
3	3	2	2
4	3	3	4
3	3	4	3
3	3	1	2
5	4	4	2
1	1	1	1
4	2	3	3
1	1	3	3
4	3	4	4
2	3	4	2
3	2	2	2
3	3	3	2

X1 *(Incentives)*	*X2* *(Grants)*	*Y1* *(Anxiety)*	*Y2* *(Confidence)*
2	3	2	1
4	4	3	3
2	1	4	2
1	2	2	2
3	4	3	3
2	3	2	2
4	3	4	4
3	2	4	4
3	3	3	2
4	4	3	4
1	2	3	4
3	3	3	4
3	3	3	2
2	3	4	4
1	2	2	2
2	3	3	3
4	4	5	4
2	3	2	3

The latent variable, Institutional support (F1), is measured by two observed variables: Incentives (X1) and Grants (X2), whereas the other unmeasured variable, Attitudes (F2), is measured by Anxiety (Y1) and Confidence (Y2). The standardized causal effect size shows the percentage of explanation of the covariances or correlations between the two latent factors. From the AMOS output summary, if the vast majority of the indexes (χ^2/df, CFI, GFI, IFI, RMSEA, RMR) meet the required criteria as shown in Table 1, then there is probably a good model fit. (Note: If the resulting values do not comply with the required criteria, modify the model and run SEM again.)

SEE ALSO: Interviews in Qualitative Research; Mixed Methods; Structural Equation Modeling; Structural Equation Modeling in Language Assessment; Surveys

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Technology and Language: Overview

THOMAS COBB

The technology and language section of the encyclopedia introduces the reader to a sample of the most interesting yet representative ways that information technology (IT) is being applied to language tasks, in more than 50 specific and well-developed examples, largely but not exclusively in a language-learning context.

At first glance, language and technology are fairly distinct entities. Language technologies could be like cooking or housekeeping technologies, where the various tools and gadgets tend to make the activity easier to perform and hence less engaging both physically and cognitively. But while tools and gadgets abound for making language creating and language processing tasks easier or more efficient, as this volume attests, their overall effect is not to make us less aware of language, but more.

The language–technology link has been noticed by many, for example here by Halliday (1994, p. xxiii) with regard to sound recordings and discourse: "Perhaps the greatest single event in the history of linguistics was the invention of the tape recorder, which for the first time has captured natural conversation and made it accessible to systematic study." But the same point can be made for other language technologies and domains of language analysis.

All language technologies, first in the guise of writing, and later in the extensions of writing, first rest on some initial analysis of what language is and does—as logographic writing rests on an awareness of words, and alphabetic writing on an awareness of sounds—and second, externalize, objectify, and stabilize language events such that we tend to become more aware of what they are and what we can do with them. This awareness-raising function of language technology is an implicit background throughout this section and is developed more explicitly in TECHNOLOGY AND LEARNING VOCABULARY.

Another implicit theme in this section is a focus on technologies that tell us something about language or let us do something with language that could not be done, or done on a significant scale, without the use of those technologies. The technologies introduced here are hence "necessary" rather than "nice."

The awareness theme is a major focus in most of the 57 entries in this section (including biographies) that target some aspect of language acquisition, learning, instruction, or testing that directly involves language learners, normally of second languages. A further half dozen entries are more concerned with research into the nature or effects of language learning, and a similar number concern deployments of technology in investigations of language nature, use, or processing that have no immediate learner involvement. The last category includes both theoretical models of language where some form of information technology (IT) plays an integral role, as well as a selection of IT-based tools used in the linguistics professions. Four entries step outside the circle of enthusiasm to look at issues, complexities, and potential downsides to the unreflective use of language technologies, whether in the social or educational spheres.

The purpose of this overview is to group the entries in this section into provisional themes and provide links to their whereabouts, thus giving the reader a starting point for their explorations, and in that spirit links will also be provided to entries in other parts of the encyclopedia that have a significant technology component.

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Technology and Language Learning

Within the Skill Areas

Contributions of technology to the first two of the "four R's" of language learning (writing and reading, listening and speaking) are covered in entries on TECHNOLOGY AND TEACHING WRITING and TECHNOLOGY AND LITERACY, and INFORMATION RETRIEVAL FOR READING TUTORS. Listening is handled broadly in TECHNOLOGY AND LISTENING, and then both in more detail and in some mixture with speaking in TECHNOLOGY AND PHONETICS, AUTOMATIC SPEECH RECOGNITION, TECHNOLOGY AND DISCOURSE INTONATION, and two entries on text-to-speech technologies: a pedagogical entry TEXT-TO-SPEECH SYNTHESIS IN COMPUTER-ASSISTED LANGUAGE LEARNING and an entry describing the development of this technology, TEXT-TO-SPEECH SYNTHESIS DEVELOPMENT. Ways of computing the learning opportunities from both printed and spoken texts (movies) are discussed in COMPUTER-ASSISTED VOCABULARY LOAD ANALYSIS.

Across the Skill Areas

Learning technologies without a particular skill focus are probably the largest theme in this section, and these include TECHNOLOGY AND LEARNING VOCABULARY, TECHNOLOGY AND LANGUAGE TESTING, NATURAL LANGUAGE PROCESSING AND LANGUAGE LEARNING, and COMPUTER-MEDIATED COMMUNICATION AND SECOND LANGUAGE DEVELOPMENT. Four entries in this category look at the exploitation of corpora across the skills in language learning —TECHNOLOGY AND USAGE-BASED TEACHING APPLICATIONS looks in broad terms at the pedagogical uses of large standard corpora, CONCORDANCING works the same terrain more at the hands-on level, and LEARNER CORPORA and CORPUS-BASED TESTING are specific applications of the corpus idea to learning. Two entries look at multi-skill learning from an artificial intelligence (AI) perspective—a general entry, INTELLIGENT COMPUTER-ASSISTED LANGUAGE LEARNING, and a more specific entry, LEARNER MODELING IN INTELLIGENT COMPUTER-ASSISTED LANGUAGE LEARNING. Two entries look at the growing tendency for learning technologies to mean mobile technologies: MOBILE-ASSISTED LANGUAGE LEARNING (MALL) and EMERGING TECHNOLOGIES FOR LANGUAGE LEARNING. One entry describes the role of technology in creating linguistic resources such as bilingual dictionaries tailored to learning, LEXICOGRAPHY ACROSS LANGUAGES. One entry is a pedagogical adaptation of a technology originally developed a professional purpose (see below), COMPUTER-ASSISTED LANGUAGE LEARNING AND MACHINE TRANSLATION.

The work of two of the longest serving and hardest working heroes of computer-assisted language learning are celebrated in the biographies section on Frank OTTO and our general editor, Carol A. CHAPELLE.

Technology-Based Learning Environments

A special category within multi-skills is the use of technology to create a comprehensive learning communities or environments. One entry looks at these from the perspective of social networks, ONLINE COMMUNITIES OF PRACTICE, another from the perspective of multi-player immersive game environments, SECOND LANGUAGE ACQUISITION VIA SECOND LIFE. From another angle, TECHNOLOGY AND CULTURE looks at the uses of technology in recreating the cultural context of language learning. Two entries deal with the creation of learning environments in a distance-learning context, a general entry DISTANCE LANGUAGE LEARNING, and a more detailed look at the technologies involved in MULTIMODAL COMPUTER-MEDIATED COMMUNICATION AND DISTANCE LANGUAGE LEARNING.

Preparing and Measuring Success in Technology Implementation

Making good pedagogical use of such diverse and complex technological opportunities is of course far from obvious, and the section thus includes entries on both LANGUAGE TEACHER TRAINING IN TECHNOLOGY and LANGUAGE *TRAINER* TRAINING IN TECHNOLOGY (emphasis added). It also includes two entries on researching the effects of a technology implementation, a general entry entitled COMPUTER-ASSISTED LANGUAGE LEARNING EFFECTIVENESS RESEARCH, and another that itself employs an interesting technology to investigate not just effect but process in technology implementations (or other topics), LEARNER RESPONSE SYSTEMS IN SECOND LANGUAGE TEACHING.

The use of IT-based instrumentation in acquisition research generally is a large topic in its own right, represented here by an entry on PRIMING RESEARCH, but also as aspects of entries already mentioned such as COMPUTER-ASSISTED VOCABULARY LOAD ANALYSIS.

Beyond Pedagogy: Technology in Language Description and Analysis

At one remove from learners and classrooms are accounts of language technologies performing a broader analysis but nonetheless one intended to have implications for language learning which are perhaps not yet fully obvious. These include ANALYZING SPEECH CORPORA, LEXICAL PRIMING, LEXICAL BUNDLES AND TECHNOLOGY, and TECHNOLOGY AND PHRASES. At a different remove are the uses of technology mainly designed for native speaker language use and development, including CONCORDANCING, CORPORA AND LITERATURE, MONOLINGUAL LEXICOGRAPHY, and LEXICOGRAPHY IN NON-EUROPEAN LANGUAGES. At a further remove are analyses of what language is and how it functions at a psycholinguistic level with no obvious bearing on use or learning (yet), including CONNECTIONISM AND TECHNOLOGY and a biography entry on one of the leaders in this research, James L. MCCLELLAND.

Language Technologies and the Professions

Corpus linguistics and language instruction are of course not the only professions to deploy language technologies. TECHNOLOGY AND TRANSLATION is also an application in its own right. And behind translation technology stands the vast pinning down of lexical units and mappings in TECHNOLOGY AND TERMINOLOGY, with a glimpse into the intricacies this involves in the more detailed TERMINOLOGY AND DATA ENCODING. Language technologies are also deployed in professions not typically thought of as having a major language component, such as law, medicine, and social work; the entry EXPORTING APPLIED LINGUISTICS TECHNOLOGY looks at the application of some of the above technologies to concrete problems in medical discourse.

Managing Technology Proliferation

It has probably not escaped the reader's suspicion that many of the technologies gathered into this section have probably been developed piecemeal, without much regard to their fit within a universe of language technologies. Yet a number of subfields of technology and language have now developed to keep the whole operation moving more or less together. STANDARDIZATION IN HUMAN LANGUAGE TECHNOLOGY describes aspects of the compatibility effort in general terms, and INTERNATIONALIZATION AND LOCALIZATION deals with the more specific issue of running Web programs and pages across language boundaries.

Technology Across Section Boundaries

The present section focuses specifically on the what, how, and why of language technologies, but given the increasing integration of language and technology at any number of levels it was unlikely that this section would monopolize the topic. There are probably not many entries in this encyclopedia that do not make at least some reference to technology and language, and that is still just scratching the surface of this massive and exciting enterprise.

Preserving Perspective

Beyond the many exciting implications of the language technologies for science, culture, and education are of course the larger questions about values, winners and losers, and to what it is all leading. A biographical entry on BUSH, VANNEVAR AND HYPERTEXT, the father of hypertext, goes beyond the excitement of hypertext to assess potential downsides and unresolved issues as this mode of reading becomes dominant in our culture. An assessment of the effects of technology on education and society more broadly is discussed in LANGUAGE AND THE DIGITAL DIVIDE, and further developed in a biography entry about its author Mark WARSCHAUER. From a different angle, SEARCHLINGUISTICS argues that a major downside of a life ever more bound up with the mixed quality output of search engines is that the technology has developed faster than the linguistics—namely, searches remain largely based on words out of context, which is hardly how words are understood in either linguistics or in our minds. The unstated research question behind these reflective entries is whether any problems caused by language technologies will be solved by more technology or by less.

Reflection

This overview was intended as a useful guide to the section but may also suggest its many gaps, important topics barely mentioned, and in retrospect a lack of hierarchical signaling in the titles that might have made navigation clearer. It may also disclose the many potential overlaps between virtually all its articles that no amount of cross-referencing can fully indicate. And finally, the proposed classifications and groupings are somewhat arbitrary and might have been made differently by a different editor, or by the same one a month later! Language and technology are in a fast-moving and dynamic relationship.

SEE ALSO: English for Science and Technology; Multimodality and Technology; Qualitative Research on Information and Communication Technology; Technology and Language: Mixed Methods; Technology and Language: Quantitative Methods; Technology and Teaching Language for Specific Purposes; Technology-Supported Materials for Language Teaching

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Technology and Language: Quantitative Methods

LI-TANG YU, HSIEN-CHIN LIOU, AND VIPHAVEE VONGPUMIVITCH

Introduction

As time is an important variable in second language acquisition (SLA), longitudinal studies play a crucial role in research. Time-series designs (TSDs) are particularly useful in investigating effects of language instruction longitudinally (Ortega & Iberri-Shea, 2005). TSDs compensate for lack of random assignment or control groups, but require repeated observations before the treatment (to form a baseline) and after the treatment (to investigate the effects of the treatment) (Mellow, Reeder, & Forster, 1996). Inferential statistical tests are used to estimate whether changes in participants' behavior are beyond those expected by chance.

One application of TSDs is to investigate the effects of technology on language instruction. Computer technologies have the capabilities of providing a variety of input thought to be beneficial to language learners (Smith, 2004; Bush, 2008). Consequently, many researchers explore the extent to which these technologies actually facilitate language learning, particularly concerning their impact on vocabulary teaching and learning (Sun & Dong, 2004; Ma & Kelly, 2006). One tool, the concordancing program, provides learners with direct access to corpora from authentic language materials. With abundant language input, it is hypothesized that learners inductively discover the patterns and exceptions of language use. Such a language lookup process is known as "data-driven learning" (Johns, 1994), in which learners take responsibility for their learning pace, becoming autonomous learners as researchers (Bernardini, 1996). Several studies have supported the hypothesis that using concordancing helps enhance university- or tertiary-level learners' vocabulary knowledge, including vocabulary growth (Cobb, 1997), deep word processing (Horst, Cobb, & Nicolae, 2005), receptive and productive lexical competence (Lee & Liou, 2003; Chambers & O'Sullivan, 2004), and collocation knowledge (Varley, 2009).

The study described in this entry examined the effectiveness of Web-based concordancing on vocabulary learning at the primary school level, focusing on learners' development of word meaning, word usage, and sentence production using a TSD. Several vocabulary tests were administered to explore participants' vocabulary knowledge. Repeated-measures analysis of variance (ANOVA) was used to analyze the differences in vocabulary scores across time to show the participants' development of vocabulary knowledge.

Method

Participants in this study were 7 EFL fifth-graders screened out of 22 students from an intact class with varying proficiency levels but similar computer literacy. The participants had at least four years of experience learning English as a subject at school. A Chinese–English bilingual concordancing program (http://candle.fl.nthu.edu.tw/child) was specifically designed for Taiwanese primary school students, with a corpus taken from sentences which were modeled on those in their English textbooks (see Figure 1). To familiarize them

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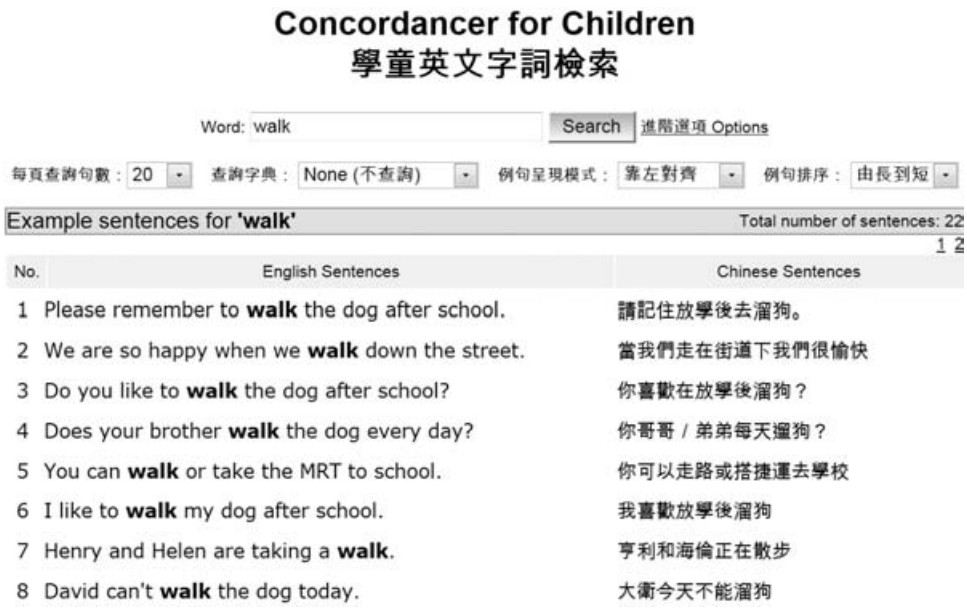


Figure 1 Program snapshot

with the concordancer functions and vocabulary activities, the participants were given 40 minutes of hands-on training five times.

The entire project lasted for 28 weeks. The participants' knowledge of target verbs was repeatedly examined in three phases: before the concordancing activities as the pretest phase, during the activities as the treatment phase, and after the activities as the posttest phase. The format of a vocabulary test item (see Table 1) was consistently adopted in the three phases.

Assessment in each phase involved multiple-wave data collection to closely monitor participants' progress. The procedure for data collection is shown in Table 2.

Three pretests were given to tap the participants' understanding of English verbs (those they had learned and about 60 to be learned) for the purpose of determining the baseline of their knowledge. Those verbs of which the participants missed all aspects of meanings, word usage, and sentence production were recycled again in the next pretest. The pretest was given three times in a period of 14 weeks to ensure the participants did not show word knowledge given in any of the three pretests. The findings showed each participant had 12 unknown verbs, which became their target words for learning in the treatment phase; 6 of the verbs were common to the seven participants and became our assessment target.

Table 1 Sample vocabulary test item

Feed	Chinese word meaning: (students gave the Chinese word meaning) 餵 (Chinese character of *to give food to*) Word usage: (students gave it in Chinese metalanguage as shown below) 人 + feed + 動物 + 時間 (*person(s) + feed(s) + animal(s) + time*) Sentence production: (students gave the English sentence using the target verb *feed* to correspond with the word usage above) I feed my dog every day.

Table 2 Data collection procedure

Task	*Time frame*
Pretest	
Pretest 1	Week 1–3
Pretest 2	Week 6–7
Pretest 3	Week 14
Treatment	
Session 1, 2, 3	Week 15
Session 4, 5	Week 16
Session 6	Week 18
Session 7, 8, 9	Week 19
Session 10, 11, 12	Week 20
Posttest	
Posttest 1	Week 21–2
Posttest 2	Week 22–3
Delayed posttest 3	Week 27–8

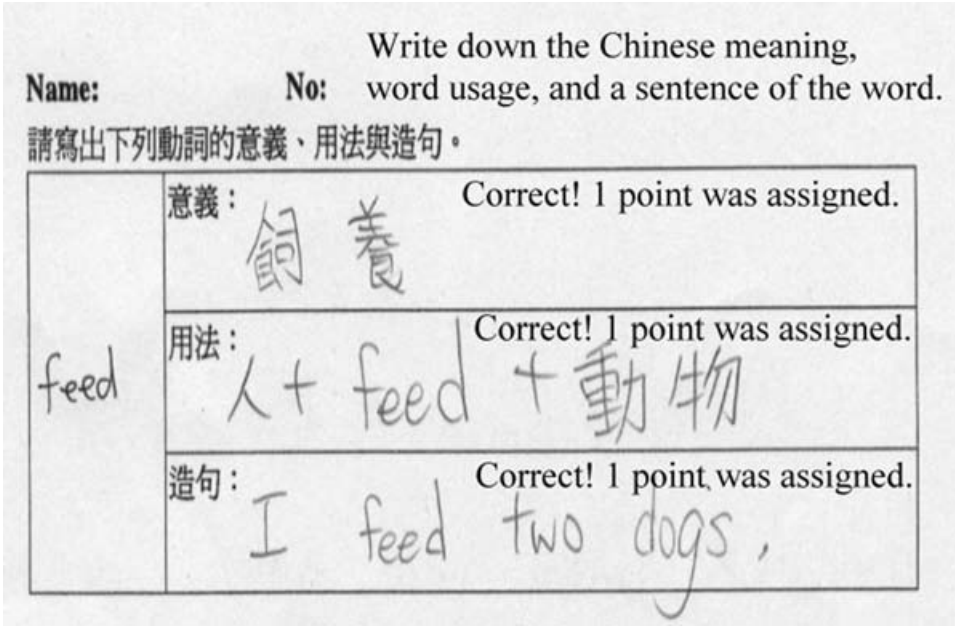
For the treatment, the concordancing activities were carried out in twelve 30-minute sessions over six weeks. In each session, students checked one of their unknown words of the day and looked it up in the concordancer. Then they took notes about the word's three aspects: meaning, usage, and the sentence concordance output that illustrated the word. Once the students understood the word of the day, they turned off the computer screen and completed one or two translation (Chinese) sentences adapted from the concordancing output. After completing the sentences, the students turned on the screen again and checked the answer. If time was sufficient, they reviewed the word of the day and the previous words. Lastly, when they were ready, they turned off the screen again, and finished a vocabulary test item of the day by writing down the three aspects for the target word (meaning, word usage, sentence production).

After the treatment, in order to observe the participants' growth and retention of word knowledge, they received two posttests which contained the 12 verbs studied plus 12 distracters one week after the treatment phase. Four weeks after the second posttest, they were given a delayed posttest. The two posttests and the delayed posttest contained the same items but in a different order.

A scoring method (see Figure 2) was designed by the researchers to evaluate the participants' performance on the vocabulary tests. If the participants could provide correct individual answers to the word meaning, the word usage, and the sentence production, they received one point for each aspect; otherwise, if they answered any of them wrong, they received zero for that aspect. The performance of the participants on the vocabulary tests was at first separately evaluated by both the first researcher and a graduate student majoring in teaching English to speakers of other languages (TESOL). If the scores of the word meaning, the word usage, and the sentence production given by the two raters were not uniform, the ambiguous items were marked. Final decisions were made after the two raters had discussed the ambiguities and reached 100% agreement on the scores.

Analysis

Participants' verb knowledge was operationalized as follows: (a) the average score on the three pretests, (b) the average score on sessions in the treatment, (c) the average score on


Name: No: Write down the Chinese meaning, word usage, and a sentence of the word.

請寫出下列動詞的意義、用法與造句。

feed	意義： 飼養	Correct! 1 point was assigned.
	用法： 人+feed+動物	Correct! 1 point was assigned.
	造句： I feed two dogs,	Correct! 1 point was assigned.

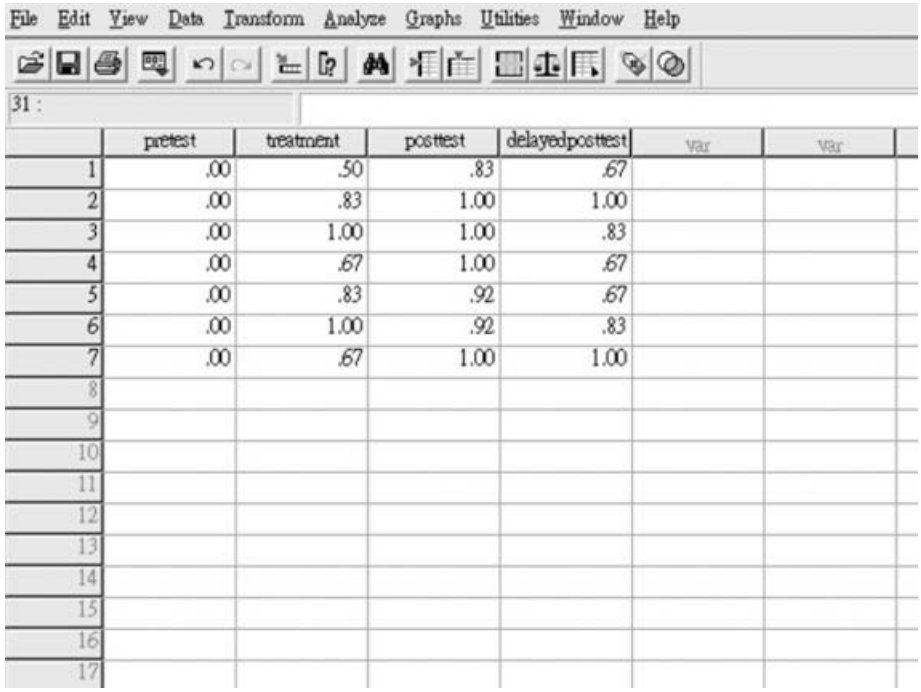
Figure 2 Scoring sample

the two posttests, and (d) the delayed posttest score. In order to examine the development of verb knowledge over time, the statistical procedure of repeated-measures ANOVA was selected, since all four variables to be compared were from the same participants. Because of data limitations including the sample size and normal distribution with homogeneous variance (Foster, Barkus, & Yavorsky, 2006), the nonparametric repeated-measures ANOVA (i.e., the Friedman test) was used to analyze the participants' performance.

Let us take the analysis of word usage as an example. The procedures for entering the data, running the tests, and obtaining the results in SPSS software are explained and illustrated in Figures 3–5. First, data must be entered in each column. As shown in Figure 3, you need to define which column represents what variable. Variable names are in the top of each column. The seven participants are represented by the numbers beginning each row, 1–7. Scores in the four columns represent the mean scores on the six target words the participants received on the four observation occasions.

Next, as shown in Figure 4, you need to click on the menu options ANALYZE > NONPARAMETRIC TESTS > K RELATED SAMPLES. Move the variables to the "Test Variables" box and check "Friedman." To display the descriptive statistics, click the "Statistics" button and check "Descriptive."

If a significant difference is found among the four observation occasions, a post hoc analysis is needed to ascertain where the difference lies. The Wilcoxon signed-rank test should be chosen as it allows comparison of two related variables at a time (Larson-Hall, 2010). As shown in Figure 5, click on ANALYZE > NONPARAMETRIC TESTS > 2 RELATED SAMPLES. Move the variables "pretest" and "treatment" to the right to make Pair 1 and make "pretest" and "posttest" Pair 2. The rest can be done in the same manner. It is important to note that because there are multiple comparisons (in this case, six) an adjustment must be made to the significance level to guard against Type I error. Using the Bonferroni adjustment (Larson-Hall, 2010), the significance level of .05 was divided by 6 to yield .008 as the upper level needed to claim statistical significance.



	pretest	treatment	posttest	delayedposttest	Var	Var
1	.00	.50	.83	.67		
2	.00	.83	1.00	1.00		
3	.00	1.00	1.00	.83		
4	.00	.67	1.00	.67		
5	.00	.83	.92	.67		
6	.00	1.00	.92	.83		
7	.00	.67	1.00	1.00		

Figure 3 Screenshot of data entered in SPSS

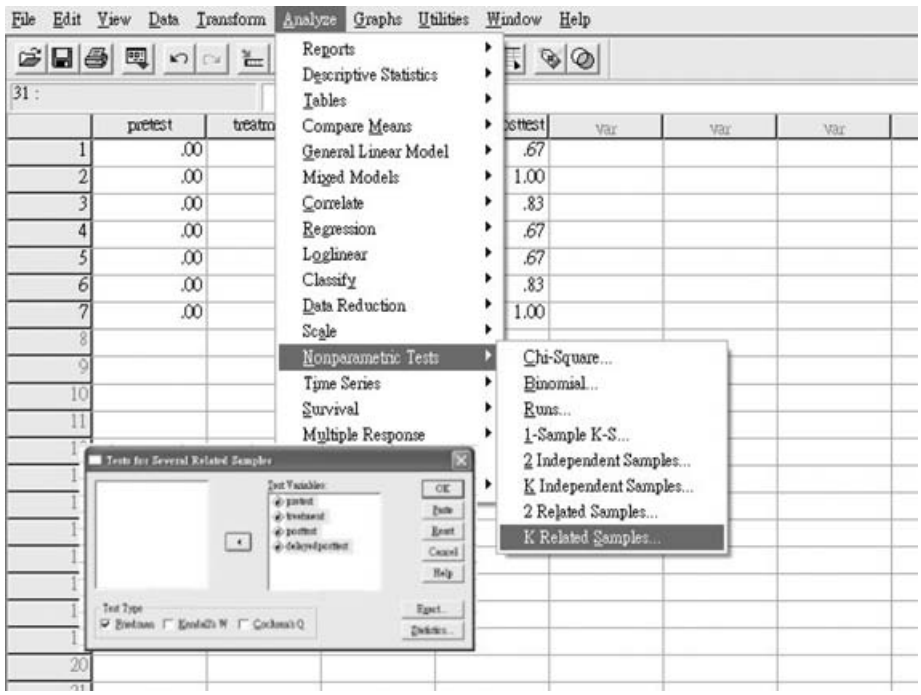


Figure 4 Screenshot of path to open the Friedman test in SPSS

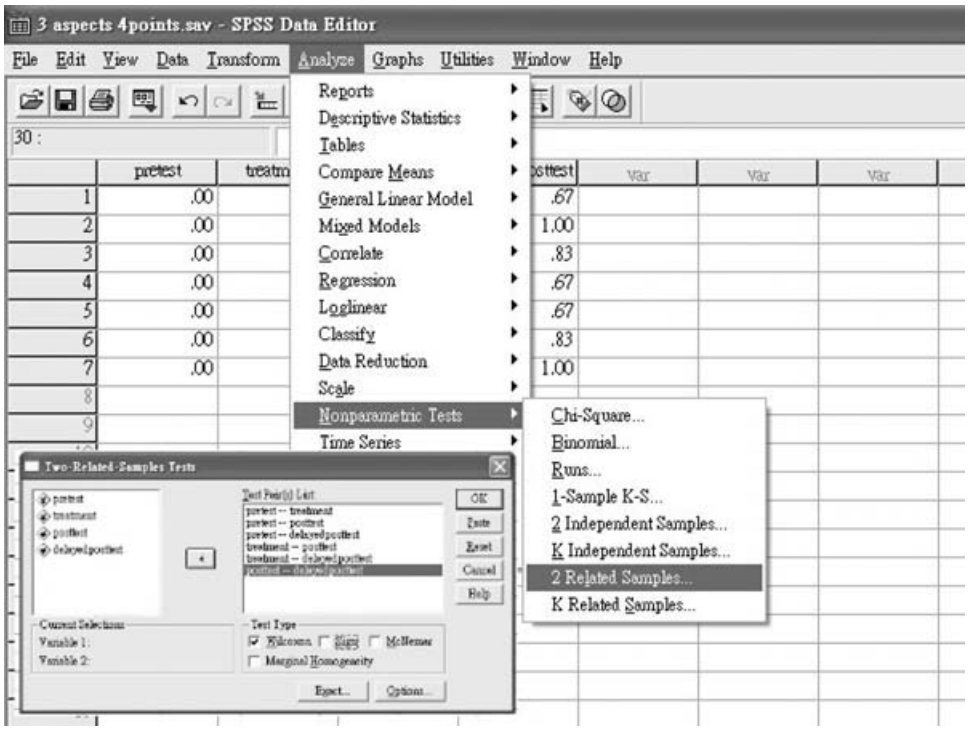


Figure 5 Screenshot of conducting post hoc analysis of Friedman test using Wilcoxon signed ranks in SPSS Data Editor

Results

Looking at the results of the Friedman test in Table 3 and Table 4 from the SPSS output, we can see that the mean ranks of the four variables are significantly different from one another ($\chi^2 = 16.14$, $p < .05$). As shown in Table 5, the results of the post hoc analysis demonstrated that the z scores calculated for the differences between the pretest on the one hand, and the posttest and the delayed posttest on the other hand, were significantly different. (Note also that the difference between the pretest and the treatment fell just short of statistical significance.) These results also show us that there were no statistically significant differences among the treatment, posttest, and delayed posttest scores.

Discussion

The participants' scores after the concordancing treatment phase significantly increased from the pretest. When the participants interacted with the target words through a concordancer, they analyzed possible word usage by testing the hypotheses via various example sentences. The benefit of such a meaningful and autonomous vocabulary learning approach seems to be supported by our research findings. In other words, these learners advanced their knowledge of the word's usage by means of concordancing consultation. These findings are in agreement with Chambers and O'Sullivan's (2004) and Lee and Liou's (2003) studies: Users can gain vocabulary knowledge through concordancing.

Table 3 Descriptive statistics of the Friedman test

Occasion	*Mean*	*Standard deviation*	*Minimum*	*Maximum*	*Mean rank*
Pretest	.00	.00	.00	.00	1.00
Treatment	.79	.19	.50	1.00	2.71
Posttest	.95	.07	.83	1.00	3.64
Delayed	.81	.15	.67	1.00	2.64

Note. $n = 7$.

Table 4 Results of the Friedman test

n	7
Chi-square	16.14
Degrees of freedom (*df*)	3
Asymptotic significance	.001*

Note. Chi-square, *df*, and asymptotic significance are used in the output of the Friedman test in SPSS. * $p < .05$

Table 5 Results of the Wilcoxon signed-rank test (post hoc analysis of the Friedman test)

	Treatment – pretest	*Posttest – pretest*	*Delayed – pretest*	*Posttest – treatment*	*Delayed – treatment*	*Delayed – posttest*
z	–2.38[a]	–2.41[a*]	–2.39[a*]	–2.01[a]	–.54[a]	–2.02[b]

[a] Based on negative ranks. [b] Based on positive ranks. * $z_{critical}$ for $p = .008$ is 2.39 for a directional hypothesis.

The retention of the word knowledge did decline in the delayed posttest occasion after a lapse of four weeks following the posttest, but not to a statistically significant degree. In line with the results in Chan and Liou's study (2005), the concordancing effects lasted until the delayed posttest.

The Quantitative Approach in Computer-Assisted Language Learning Studies

The TSD allowed us to observe our students' development of English vocabulary over seven months repeatedly and to establish the effects of the concordancing instruction. Such a design is valuable as an exploratory, hypothesis-generating investigation. However, because of the small number of the participants resulting from the intensive nature of TSDs, our findings have limited generalizability (Mellow et al., 1996).

The statistical tests illustrated above are nonparametric. Several nonparametric tests like the Friedman test and the Wilcoxon signed-rank test only preserve information about the order of the rank and ignore the exact values. Some information about the data is lost. Therefore, nonparametric tests produce less information than parametric tests and are less powerful in testing hypotheses concerning the probability of reaching significant differences (Book, 1977; Dörnyei, 2007). Still, nonparametric tests can apply to a wide variety of data which are nominal and ordinal as well as interval. Besides, unlike parametric tests, they

make less stringent assumptions of data, such as the shape of normal distribution and homogeneity of variance. No matter what the size of observation samples is, nonparametric tests can still be applied (Hatch & Lazaraton, 1991; Weiss, 2002).

Together, TSDs and nonparametric statistical tests combine to provide computer-assisted language learning (CALL) researchers with a powerful approach with which to trace the linguistic development of small samples of CALL users during their schooling.

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SEE ALSO: Comparing Two Related Samples; Comparing Two+ Related Samples; Concordancing; Corpora in the Language-Teaching Classroom; Teaching Vocabulary; Technology and Language: Overview; Technology and Learning Vocabulary; Technology-Supported Materials for Language Teaching; Time Series; Web-Based Lexical Resources

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Technology and Listening

PHILIP HUBBARD

As one of the four core skills, listening plays an important role in most modern language teaching methodology. Morley (2001) recognizes four general models for listening activities: listening and repeating; listening and responding to comprehension questions; task listening, where the learner processes spoken language in order to achieve some other objective, such as following directions on a map or taking notes; and interactive listening, where the learner switches between the role of listener and speaker as in small group discussions. Listening has long been linked to technology for recording and broadcasting the human voice, and each of the preceding models has been implemented using relevant technologies. The phonograph, audio and video tape (the former especially linked to the language laboratory), radio, television, and the telephone have all provided tools for enhancing the availability of opportunities for listening. Most recently, however, digital technology in the form of DVDs, CD-ROMs, and files played, streamed, or downloaded from the Web have allowed for a new range of interactivity with recorded material. Internet voice and video applications like Skype (www.skype.com) allow for listening and speaking integration in natural communicative activities, with the added option of text-based chat for clarification.

History

In terms of computer technology, a breakthrough in listening for language learning was the laser videodisc in the 1980s: it allowed the listener to use such features as random access, captioning in the native and target language, multiple soundtracks, annotations, glossary support, and links to comprehension checks. The 1980s also saw audio capabilities appearing in personal computers: a leader in this revolution was the Apple Macintosh with its built-in sound system—disc-based listening programs were developed for it using Apple's HyperCard authoring application. As CD-ROM drives became common on computers in the 1990s, there was a rapid growth in commercial language learning programs employing multimedia in the form of integrated text, sound and animated graphics, many of which claimed to represent a complete language learning solution and included listening as one of the skills.

Although video could be saved on and played from early CD-ROMs, the amount of material one CD could hold was notably limited. The invention and rapid spread of DVDs beginning in the mid-1990s added a new set of options for listening. Like the laser videodisc, the DVD allowed for random access of digitally stored material including not only the video but alternate synchronized sound tracks. Over time DVDs came to displace VHS tapes as the cost of both disks and their players dropped and made them accessible for widespread institutional use.

Beginning in the late 1990s, the greatest changes in listening have occurred due to the spread of audio and video files on the World Wide Web. Along with CD-ROMs and DVDs, the Web has impacted the teaching and learning of listening in the following areas: availability of and access to a broad range of current materials, inclusion of first language or

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target language text, presence of lexical support and other annotations, the listener's control of the speech signal, and the listener's manipulation of the speech signal. Some of these features have been the subject of research studies while others have appeared in practice-based literature.

Listening Materials

In terms of listening materials, there is an enormous—and growing—supply available in both commonly taught and many less commonly taught languages that can be used by teachers in class or laboratory settings or by learners working independently. Besides audio and video materials on CD-ROMs, DVDs, and the Web, there are also portable formats, podcasts and vodcasts, for audio and video respectively, for handheld devices like MP3 players and smart phones. Some of these are dedicated listening materials developed specifically for the purpose of language learning, including both teacher-created and commercial language software products and supplementary resources from language textbook publishers to accompany their print materials. There are also many sources of authentic, native speaker materials on the Web. Some of these can be accessed from sites that provide dedicated language learning support (added transcripts, subtitles, annotations, glossaries, and quizzes) to make the authentic material more accessible to learners. More commonly, authentic materials may include just text support in the form of subtitles or transcripts for the assistance of the hearing impaired, which can also be useful for language learners. Google's advanced video search (http://video.google.com/videoadvancedsearch) not only allows the user to limit the search to a particular language but also to look specifically for captioned videos. While it is true that the majority of authentic materials, especially those on popular free sites such as YouTube (www.youtube.com), are accompanied by no text support, they can still be valuable to learners at a level advanced enough to comprehend them to a degree.

As noted above, materials with some form of text support can be found for many languages. Subtitles (or captions—the two will not be distinguished here), which can appear in either full or keyword versions and in either the first or second language, can increase comprehension and make it possible to link the spoken language to more familiar or salient forms. Online transcripts of both audio and video offer advantages similar to those of subtitles, but with the added potential of linking directly to online glossaries or dictionaries (e.g., www.babylon.com). The addition of target language text support not only assists comprehension but improves the potential for acquiring new words and phrases or reinforcing those already partially learned (Danan, 2004). This is because it is often difficult for learners to isolate individual forms from the speech stream so that they can be attended to and singled out to reflect on or to look up in a dictionary afterward. Furthermore, text support can help with phonological processing of word boundaries and reduced forms. Although transcripts have always existed for some audio material, and captioning was available on many VHS videos and still is on a lot of broadcast television shows, their wider availability online today makes them more natural elements of the language learning environment.

Listening With Text Support

Evidence from a number of studies suggests that listening with text support can be helpful in subsequent nontext-supported listening in both the short and long term as well as in incidental vocabulary acquisition (Danan, 2004). Markham and Peter (2002–3) showed that both first language and target language subtitles helped students of Spanish with a subsequent unsubtitled listening comprehension assessment compared to students who

had viewed preliminary material without subtitles, further noting that first language subtitles were more effective for this particular group than target language subtitles. Guichon and McLornan (2008), while also acknowledging the value of both L1 and L2 subtitling, noted that L1 subtitling may cause more lexical interference.

In a comparison of subtitles and transcripts, Grgurovic and Hegelheimer (2007) addressed the question of whether students engaged in listening comprehension tasks where both subtitles and transcripts were available would use one more than the other. Using tracking data, they concluded that for the group as a whole subtitles were used significantly more frequently. However, some individuals preferred transcripts. Beyond improving comprehension and supporting vocabulary development, Borras and Lafayette (1994) demonstrated the impact of listening with subtitles on subsequent oral language tasks: students controlling subtitles in a French video through a computer program outperformed students who did not view the video with subtitles. Finally, Hulstijn (2003) provided arguments based on connectionist theory for presenting listening activities with delayed text support and described an application that uses this feature along with "chunking" input using pauses between utterance fragments to promote more automaticity in bottom-up processing. While the preceding research demonstrates the value of text support in the classroom setting, Vandergrift (2004) cautions that listening practice with text support does not properly prepare learners for the reality of processing real-time connected speech.

Another area of interest in technology in listening is the question of how computer-based lexical support can influence comprehension and acquisition of vocabulary. As noted, one of the features of text support is that it allows the isolation of lexical forms, which can then be linked to either a dedicated glossary or electronic dictionary. Jones and Plass (2002) showed that for beginning French students, both text recall and vocabulary learning were better with combined pictorial and text annotations, and that on a delayed posttest, the pictorial influence was stronger. Xu (2010) reviewed the literature on the impact of multimedia vocabulary annotations on incidental vocabulary learning and comprehension for both reading and listening. He concluded that for listening, there were mixed results regarding the superiority of multimedia over single mode annotations (picture or text alone) for vocabulary acquisition, but that there is convincing evidence that annotations with picture and text together improve comprehension, and the effect is stronger when collaboration is allowed. Other research has explored the degree to which students use these supports when offered them: Hegelheimer and Tower (2004), for instance, found that few students in their study used the textual gloss option during a listening activity.

Manipulation of Aural Language

Another application of technology relevant to listening comprehension and language acquisition is in the control and modification of recorded speech. At the level of control, modern digital media players offer all the features that analog tape players did and more. In addition to a time marker, pause, fast-forward and rewind controls, there is typically a "playbar" with a slider allowing the user to move rapidly from one part of an audio or video to another. Some players, such as the VLC player (www.videolan.org/vlc), additionally include keyboard controls that allow the user to jump back a set amount (e.g., two seconds), arguably a useful feature for language learners wishing to repeat a string they just heard. Besides control, it is possible to use technology to modify characteristics of the speech signal. For example, some players come with graphic equalizer controls, allowing the user to change the relative strengths of the frequency ranges in the audio or video to optimize them for human speech.

Perhaps the most intriguing modification, however, is to the speech rate. Unlike phonograph records and audio and videotapes, digital speech signals can be slowed (or accelerated) in the time domain without changing their frequencies, thereby maintaining

a more natural sound even when slowed. Several media players have this feature. Although early research on slower speech showed no consistent advantages to it, Zhao (1997) found that students who were allowed to control the speech rate, slowing it as desired, outperformed those who had no control on comprehension measures. Jensen and Vinther (2003), though not allowing student control, concluded that slower speech seemed to influence students' noticing of grammatical forms. In both cases, the speech rates were preset (slow and fast) by the researchers. Further research is clearly needed in this area now that users can readily control the degree to which speech can be slowed or accelerated.

Learner Control

Finally, a key theme found in studies on a range of topics related to listening and technology (Zhao, 1997; Hoven, 1999; Grgurovic & Hegelheimer, 2007) is that learner control or choice is an important factor. This may include choice of listening task, choice of materials, choice of supports, or choice in the path through the listening activity. Rost (2007), for example, recommends giving the user control over input speed, pausing, and replay functions. Control alone does not necessarily provide a positive outcome: Roussel, Rieussec, Nespoulous, and Tricot (2008), who tracked student use of pause, rewind, and fast-forward functions with French students listening to German MP3 audio files, noted differences in their use patterns. More competent students listened holistically and less competent ones paused more often. The ability to make informed choices as to which controls and supports to use and when to use them has been argued to be enhanced by dedicated learner training (Hubbard, 2004).

Theoretical Perspectives

In addition to the research base, several attempts have been made to look at digital listening from a more comprehensive theoretical point of view. Hoven (1999) proposed a learner-centered model for multimedia listening integrating sociocultural methodological principles (mediation, goal-oriented learning, zone of proximal development, and community of practice) with listening comprehension processes and texts, instructional design criteria, and learner features. Chapelle (2003) drew on hypotheses within the interactionist perspective, sociocultural theory, and depth of processing theory to suggest how language acquisition can be promoted when the interaction is between human and computer rather than human and human. For example, she proposed that assistance provided by a computer program on request, such as translation, definitions, simplification, elaboration, repetition, and highlighting, represent modified input that can make meaning more comprehensible and forms more salient. More recently, Plass and Jones (2005) have proposed a multimedia model combining Mayer's cognitive theory of multimedia and Chapelle's application of the interactionist perspective of second language acquisition to computer-assisted language learning. In their model, which appears applicable to listening to video as well as using multimedia glossing for lexical development, visual and linguistic input is integrated in a dual-coding process that makes comprehensible input more likely to become intake for language acquisition.

Assessment of Listening

Besides its potential for improving listening skill instruction and language acquisition through the aural modality, computer technology can also be used for language assessment, where the computer's ability to deliver consistent audio and video quality, maintain

time control, record student responses, and even automatically score them, can add to the reliability and efficiency of the assessment process. In addition to classroom uses, computer-based assessment for listening proficiency and placement is occurring in institutional settings and in commercial tests, such as the TOEFL iBT (Internet-based test of English as a foreign language). Additional possibilities include adaptive testing of listening to increase assessment efficiency and drawing appropriately leveled items from a larger pool to construct individualized tests. Looking at student behavior during multimedia listening tests, Wagner (2007) found that contrary to previous claims that students focused on their test papers and failed to make use of the visual channel, test takers in his study spent the majority of their time (an average of 69%) orienting to the video although they oriented to it more during a dialogue sequence than a short lecture.

Future Directions

If there is one thing we can predict for the future, it is that technology for listening will continue to evolve. But beyond the technology, we can expect the research and methodology base in this area to keep growing as we develop more sophisticated techniques and strategies for interacting with digital materials through the skillful use of text support, hypertext-linked glossaries and dictionaries, and manipulations like speech rate control. Robin (2007) predicted that in the next five to ten years, effective use of these along with translation bots and interactive voice chat will make it possible for learners from a broad range of learning styles to experience a much wider range of input at an appropriate level than has previously been the case, or than would be possible with off-the-shelf software.

Based on present trends, we can also anticipate expansion in the range and availability of options for mobile listening, through smart phones and other handheld devices, as well as interactive listening and speaking experiences in virtual worlds like Second Life. Outside of the occasional language classroom that still relies on audio and VHS cassettes, it is becoming increasingly rare for language students to draw their listening experiences from analog recordings. Perhaps even more important, when listening to recorded material, whether on podcasts, DVDs, streamed lectures and television shows, or YouTube or other online videos, listeners of all kinds have access to the same media controls and text support that are useful for language learning. In this digital era, then, the listener has more command over input than ever before. Thus, in allowing learners to use these controls and supports—and even training them in how to use them effectively to the degree we can—we are not just providing scaffolding, we are preparing them for future authentic online listening experiences beyond the classroom.

Despite the promise of these new technologies, recent texts on listening theory and methodology (Flowerdew & Miller, 2005; Field, 2008) include little discussion of their unique properties as aids to listening comprehension and language acquisition through the aural channel, suggesting that computer-based listening of all sorts has not yet made it into the methodological mainstream. To date there have been no monographs or edited volumes on the topic, although there was a 2007 issue of the online journal *Language Learning & Technology* (http://llt.msu.edu/) devoted to the theme of technology and listening comprehension. It seems evident that this is an extremely productive area of inquiry for future applied linguists.

SEE ALSO: Assessment of Listening; Emerging Technologies for Language Learning; Second Language Speech Perception and the Brain; Spoken Word Recognition in Second Language Acquisition; Teaching Listening

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Technology and Literacy

DENISE E. MURRAY

For centuries, scholars and governments have both decried the introduction of new technology as a destroyer of societal values and promoted it as responsible for civilization advances. Taking a diachronic perspective on literacy-related technologies, this entry demonstrates that such technologies are grounded in the ideologies of their contexts of use.

Defining Terms

Because both literacy and technology are contested terms the position taken here is discussed. Technology will refer to any item that extends human capacity, thus including technologies as diverse as eyeglasses, chalk, writing, telephones, and computers. What is meant by literacy is more controversial. Traditionally, it has been defined as the ability to read and write. For example, the 1958 UNESCO definition was "a literate person is one who can, with understanding, both read and write a short simple statement on his or her everyday life" (UNESCO, 2004, p. 12). After much criticism, failures of UNESCO-sponsored literacy campaigns, and ideas from literacy scholars, in 2003 UNESCO determined that "Literacy is the ability to identify, understand, interpret, create, communicate, and compute, using printed and written materials associated with varying contexts" (UNESCO, 2004, p. 13). This definition still does not take a critical approach, which involves questioning and challenging dominant ideologies.

Defining literacy in terms of reading and writing, even taking a critical perspective, does not encompass all of the ways people use semiotic systems. Many other systems have been attached to the term literacy—media, computer, visual, information, financial, scientific, and cultural. Written literacy has itself been subdivided into basic, functional, and print literacy. Literacy is not one skill set for one purpose; rather, there are multiple literacy practices, depending on the context and purpose of the literacy event. Literacies are intimately woven into the fabric of sociocultural practices of thinking, valuing, believing, and interacting. "There can be no disinterested, objective, and value-free definition of literacy: The way literacy is viewed and taught is always and inevitably ideological" (Auerbach, 1991, p. 71). Street (1995) therefore differentiated between the autonomous (skills such as word attack skills, sound-symbol relationships, or letter recognition) and ideological (shared values attached to literacy practices) dimensions of literacy.

As new literacy technologies have developed, the powerful with expertise in the old technologies claimed that they thwarted and limited human capacity rather than extending it. Underlying this ostensible reason for resisting the new technologies was their concern about *whose* human capacity might be extended and *whose* power might be restricted. To illustrate, this entry will focus on four eras—Ancient Greece, Medieval Europe, the printing press, and the information age.

Literacy Technologies

Writing systems developed independently in Mesopotamia (3000 to 2000 BC), China (1200 BC), and Mesoamerica (400 BC). Many scholars cite Greece as the origin of an

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alphabetic system, while others claim the Greek alphabet was an adjustment to that of the Phoenicians.

Ancient Greece

Both Socrates and his student Plato were less bothered with autonomous literacy than with ideological literacy. They were concerned with what people did with the information gained through literacy, condemning the move from oral to written language because it would disrupt the social status quo. For Plato, only the elite should have power and making writing available to others was disruptive, "once a thing is put in writing, the composition . . . drifts all over the place, getting into the hand not only of those who understand it, but equally of those who have no business with it" (Hamilton & Cairns, 1989, p. 521). Furthermore, writing gave people only the appearance of wisdom. In the Phaedrus, Plato used the parable of King Thamus in Egypt to criticize writing because of the effect it had on memory:

> this invention will produce forgetfulness in the souls of those who have learned it. They will not need to exercise their memories, being able to rely on what is written, calling things to mind no longer from within themselves by their own unaided powers, but under the stimulus of external marks that are alien to themselves. (Hamilton & Cairns, 1989, p. 520)

For Plato, the essence of human communication was in the dialogic. The "Socratic method" forced speakers to analyze their own ideas so that the only sustainable ideas are those that the speaker can "reflectively defend in face-to-face dialogue with someone else" (Gee, 1996, p. 27).

Yet literacy scholars have claimed that the invention of writing was the invention of a new technology of the intellect (Goody & Watt, 1968) that shapes the way we understand the world and ourselves (Olson, 1994). They and others claimed that the change from oral to written cultures led to changes in intellectual development, such as logical, objective thinking, and challenging tradition, with alphabetic writing being particularly influential because of its abstract representation of sounds. Alphabetic writing contrasted with previous writing systems such as pictograms, logograms, and Chinese because they are difficult to use, leading to only an elite being in possession of the skills and associated power. Alphabets, on the other hand, are democratic.

Medieval Europe (AD 500 to AD 1440)

Medieval Europe had rich written manuscripts, but the province of written literacy was restricted to scholar-priests, royal bureaucrats, or secretaries, who, as holders of knowledge, held great power. Most formal uses of literacy were in Latin, Greek, or Arabic (depending on the part of Europe), not the local vernacular. By the 13th century, literacy had spread to record keeping in business and lay education for students not intending to become religious, and in England the Lollards, dissidents challenging the power of the Catholic Church and its monopoly on reading and interpreting the Bible, published their tracts in the vernacular.

The general population, however, had highly developed visual literacy, depicted in stained glass windows, paintings marking the Stations of the Cross, or icons. Interestingly, although Islam's holy book was also in writing, because Islam did not permit representations of human beings, mosques were decorated with religious texts. Consequently, believers needed to be able to read Koranic texts, resulting in the Koranic school tradition where Muslim boys learned to read. However, the reading was primarily rote memorization, with only the appearance of reading, with these boys not able to use their literacy for other

purposes (Ferguson, 1971). Similarly, the religious of Medieval Europe, although some were able to read for meaning when scribing, did not for fear they would inadvertently write their own interpretation of holy texts, rather than replicate them.

The Printing Press

The printing press allowed texts to be reproduced in quantity and to be fixed forms of reference, leading to indexing. However, early printed texts replicated scribal manuscripts, with the same illuminations, page layouts, and letter shapes. The church hierarchy took a dim view of the ordinary person having access to the Bible without the intervention of trained clergy to interpret it. Pope Alexander VI, for example, declared "It will be necessary to maintain full control over the printers so that they may be prevented from bringing into print writings which are antagonistic to the Catholic faith" (quoted in McCorduck, 1985, p. 23). In Britain, unorthodox ideas were circulated in printed books in English, leading to a 1536 act of parliament preventing women and lower classes from reading the Bible (Lawson & Silver, 1973).

Social historian Eisenstein (1979), on the other hand, considers that the printing press positively transformed society. It freed cognitive functions from memorization so they could be used for thinking, such thinking leading to the Reformation and the Renaissance. With more texts available, scholars could compare ideas and formulate new ways of thinking. With vernacular language structures fixed through print, nationalism could evolve. McLuhan (1962), who popularized this view of the printing press, credited it with the rise of science, industry, logic, capitalism, nationalism, and rationalism.

The Information Age

Both synchronous and asynchronous modes of ICT communication involve different configurations of the autonomous and ideological dimensions of literacy. Moreover, the various uses of ICT literacies have also been excoriated. Ong (1982), echoing Plato, said that "[w]riting is passive, out of it, in an unreal, unnatural world. So are computers" (p. 79). Others attribute positive changes in society to ICT. Others are concerned that online communities and social networks may replace offline communities and social networks as people isolate themselves in front of their computer terminals, rather than interacting with friends and relatives face-to-face (Kraut et al., 1998). However, for most people, computer-mediated communication is an extension of their social interactions (McLuhan, 1994), another tool in their repertoire of communication (Murray, 1991).

Synchronous modes include chat, instant messaging (IM), and texting (SMS). Chat was invented prior to e-mail, which only became possible once store and forward was developed, allowing asynchronous communication. Chat did not capture the imagination of the general public, but e-mail did, largely because it is asynchronous and did not have a limited number of characters (Murray, 1991). Today, three of the most popular communication modes have a restricted number of characters—texting, chat, and Twitter.

In Twitter, the two most common words are *the* and *I*. While the former is the case for other written material, the use of *I* is a result of the sociocultural literacy practice of Twitter. Men have more followers than women, the reverse of other social networking sites; "Twitter resembles more of a one-way, one-to-many publishing service more than a two-way, peer-to-peer communication network" (Heil & Pisorski, 2009).

Texting is "bleak, bald, sad shorthand. Drab shrinktalk . . . Linguistically it's all pig's ear . . . it masks poor spelling and mental laziness. Texting is penmanship for illiterates" (John Sutherland, quoted in Crystal, 2008, p. 13). However, the simplified register used in texting is not new, nor does it hinder literacy. Just as in e-mail and chat, texters accommodate language to their context. Not all texters use abbreviations or other grammatical

or orthographic devices (Thurlow & Brown, 2003; Ling & Pedersen, 2005). Furthermore, texting has caught on around the world among adults as well as teenagers.

The most popular asynchronous mode is e-mail, initially the province of propriety companies and universities. Even so, fax was more widely used, largely because the technology was not very different from ones people already knew—the telephone and the photocopier (Murray, 1995). In the late 1990s, e-mail became popular, with more user-friendly interfaces and more people having access to computers at work or at home. More recently, with cell phone access, e-mail has continued to gain in popularity, but not to the extent of texting and IM, largely because many people use cell phones for such access and typing words without QWERTY keyboards is tedious.

Recently John Freeman (2009) condemned e-mail:

> It has put us under great physical and mental strain, altering our brain chemistry and daily needs. It has isolated us from the people with whom we live, siphoning us away from real-world places where we gather. . . . It has made it more difficult to read slowly and enjoy it, hastening the already declining rates of literacy.

Approaches to the Effects of Technological Innovations

Scholars have posited two different theories concerning the introduction of new technologies. The deterministic model claims that the technology inevitably leads to changes in human thinking and behavior. The social shaping of technology (SST) model holds that the technological innovation finds acceptance and diffusion occurs because of the sociocultural values and needs of the time.

Technological Determinism

From this perspective, technology develops without reference to outside forces and sociocultural practices, as McLuhan (1962) and others claimed for printing. The progression is linear, inevitable, and the new replaces the old; it affects society and changes it.

> [N]ew technologies are discovered, by an essentially internal process of research and development, which then sets the conditions for social change and progress. Progress, in particular, is the history of these inventions, which "created the modern world." The effects of the technologies . . . are as it were the rest of history (Williams, 2005, p. 5).

The technology of literacy has been a prime example of technological determinism through the long tradition of ascribing cognitive consequences to literacy.

Those who reject new literacy technologies also take a deterministic point of view because their claim is built on the premise that the new is inevitably destroying society and its values. In the examples of the different literacy technologies discussed above, both sides of technological determinism are actually arguing over "issues of power and control—over form, authorship, distribution of knowledge, and the very construction of knowledge itself" (Murray, 2000, p. 44).

SST

An alternative reading of the influence of new technologies examines them in their context. From this perspective, sociocultural precursors to the technological innovation facilitate its acceptance, and the technology amplifies certain sociocultural characteristics (or not). In discussing media literacy, Lewis and Jhally (1998) noted: "a textual analysis which takes

place without examining the institutional, cultural, and economic conditions in which texts are produced and understood is necessarily limited. It [media literacy] is about an awareness of why those messages are there" (p. 111).

Despite the railings of Plato and claims of a literate culture in fifth-century BC Greece, it was still primarily an oral culture, with political and legal proceedings being conducted in spoken language. Literature too was read aloud. Furthermore, alphabetic literacy, rather than being the cause of scientific thought and reasoning, amplified ways of thinking already valued. The Greeks already valued language, whose characteristics they objectively critiqued and played with for humor such as in plays on words. Both wit and rhetoric were used with skill. Further, claims that the alphabet caused syllogistic reasoning are unfounded because such reasoning also developed in India and China, neither of which had alphabetic writing systems (Gough, 1968).

Similarly, in Medieval Europe oral language was the primary form of communication, with even written books being read aloud. Even after print materials became available, people continued to memorize large quantities of text. These practices continued because of the value they held for the particular societies. In Medieval Europe the "spread of reading and writing skills had created a market for books, and the economic systems of the late Middle Ages predisposed industrious businessmen like Caxton and Gutenberg to fill a need where they saw one" (Pattison, 1982, p. 99). The success of printed texts was not the result of Gutenberg's invention, but of the sociocultural practices of the time. Although not universal, literacy was sufficient to support print production. Protestantism promoted individual understanding of the Bible; so the reformers in Germany and elsewhere encouraged literacy. The Protestant reformers themselves were reflecting changes in social values already taking hold in Europe—individualism, nationalism, and secularism.

The invention of the computer also co-occurred with major changes in global trade and diplomacy. Each of the ICT literacies found a niche that resonated with existing and emerging sociocultural practices. With global trade, for example, asynchronous modes became vital for communication across time zones.

Texting became popular because it is unobtrusive and permits privacy in public settings, compared with talking on a cell phone, and it can be more direct, allowing communicators to dispense with the phatic communication required in spoken communications. However, in the United States, because computers were ubiquitous, e-mail became more popular, compared with in Europe (Naomi Baron quoted in Crystal, 2008, p. 98).

Despite the dire predictions of those who take a negative deterministic perspective, most texters understand the needs of their audience and know when to choose which language variety for which purpose and which audience (Crystal, 2008). Furthermore, a recent Pew study of the Internet and mobile phone use in the United States (Hampton, Sessions, Ja Her, & Raines, 2009) shows that people have not become more isolated, but have larger and more diverse discussion networks.

An Ideological Perspective

"*Nothing* follows from literacy or schooling. Much follows, however, from what comes *with* literacy and schooling . . . namely, the attitudes, values, norms, and beliefs" (Gee, 1991, p. 280) that shape literacy practices in the culture in which it is used. Mackay and Gillespie (1992) suggest extending the SST model to include the ideologies that shape the technology. They argue that designers and marketers play roles in this shaping—but not deterministically because users appropriate the technology for their own purposes, as with the inventions of the telephone and wireless. For example, the telephone's appropriation led to sociocultural practices such as "the protocols of voice mail, the ubiquitousness of telemarketing,

or the use of a telephone number as identification" (Murray, 2000, p. 51), or as a third party in face-to-face interactions when people text during dinner or meetings. Similarly, Babbage and Alan Turing might be surprised that their computational machine became a social networking tool. A technology that was introduced to facilitate business and an application designed for military research (the Internet) were co-opted for personal communication. As Kaestle reports concerning the technology of literacy,

> Princeton historian Lawrence Stone once remarked that if you teach a man to read the Bible, he may also read pornography or seditious literature; put another way, if a man teaches a woman to read so that she may know her place, she may learn that she deserves his. These are the Janus faces of literacy. (Kaestle, 1991, p. 27)

From an ideological perspective, these are the Janus faces of technologies.

Conclusion

Changes brought about by the introduction of new literacy technologies are the result of complex sociocultural imperatives. The technologies either impede prevailing and emerging sociocultural values or amplify them. If the former, the technology is not extensively adopted; if the latter, the technology is embraced in the service of those sociocultural values it can amplify. These different technologies adapt language and each focuses on particular linguistic choices that are best suited to the technology.

SEE ALSO: Conceptualizing and Researching "New Literacies"; Literacy Practices in Virtual Environments; Technology and Culture; Technology and Learning Vocabulary

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Technology and Phonetics

REBECCA HINCKS

Sound cannot be studied methodically unless it can be captured in some way, and so from the phonograph to the tape recorder to the computer, the development of new technologies has facilitated the study of phonetics. Indeed, it is difficult to imagine studying phonetics without technology. Other entries in this encyclopedia discuss the topics of acoustic phonetics, speech analysis software, automatic speech recognition, text-to-speech synthesis, and computer-assisted pronunciation teaching. This entry will thus simply provide an overview of the position of technology in phonetics.

Major contributions to the understanding of speech have been made by researchers whose basic training was in science or engineering. Scientists and engineers have developed systems for analyzing the acoustic signal, and for transforming text to speech and vice versa. The developments of these technologies have been motivated by the desire to perform basic research in speech production and perception, but also for more practical purposes; for example, to develop aids for people with different types of sensory and physical disabilities, to create effective and natural speech-based computer interfaces, or to provide valuable pronunciation feedback to second language (L2) learners. The necessity for creating systems with practical applications can serve as a catalyst for insights into spoken language itself (Greenberg, 2001).

The study of phonetics is traditionally divided into three areas: *acoustic phonetics*, the study of the speech signal itself; *articulatory phonetics*, or how we produce speech using our vocal tract; and *auditory phonetics*, or how we hear and perceive speech.

Technology and Acoustic Phonetics

When people think about technology and phonetics they may first think about *speech analysis software*, which is used to visualize and manipulate sound. The benefits of this technology were once restricted to those who could buy relatively expensive software, but the advent of freeware/shareware for speech analysis now allows anyone with a computer to work with sound files in multiple ways. The features of these programs vary, but all provide at least a waveform, spectrogram, and display of fundamental frequency. A well-maintained, versatile, and widely used downloadable system is Praat (Boersma & Weenink, 2008); another is WaveSurfer (Sjölander & Beskow, 2010), which is open source.

Language teachers and linguists should be familiar with the capacities of these programs so that they can use them to teach and do research in pronunciation (Levis, 2008). For example, a study of regional variation in vowel production could be enhanced by actually measuring the formant frequencies of the respondents' productions (Palmstierna, 2007). A study of nonstandard question formulation in the lingua franca environment could use pitch tracings to see whether final-rising question intonation was actually being used (Björkman, 2010). Students having difficulty perceiving the difference between long and short vowels could look at spectrograms of their productions, comparing them to models, so that visual information could support the missing auditory information (Wik & Hjalmarson, 2009). These are just a few examples where a basic use of speech analysis has improved the quality of teaching and research. Work has also been done with applying speech

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analysis in new ways. Hincks and Edlund (2009) gave feedback on the standard deviation of fundamental frequency to Chinese first language (L1) speakers of English in a successful effort to get them to speak with more pitch variation in an oral presentation situation.

A second important technology in phonetics is *speech synthesis*, also known as text-to-speech (TTS). Here major roles have been played by engineers, for example Gunnar Fant, whose basic training was in electrical engineering. His source–filter theory of speech production (Fant, 1960) models the larynx as a source of sound energy, and the vocal tract as a filter shaping the phonemes. The source–filter theory was used to develop the first parametric (rule-based) TTS synthesizers, among them PAT (developed at MIT by Walter Lawrence), OVE I, and OVE II (Klatt, 1987). Parametric synthesizers are still used today in research because of their flexibility, but techniques that concatenate (chain together) fragments of recorded human speech (Hunt & Black, 1996) have been able to achieve more natural-sounding speech synthesis. Recent developments in speech synthesis focus, for example, on adding a visual component by integrating the synthesis with an embodied agent, or talking head (Beskow, 2003; Massaro & Light, 2004) or with a model of the vocal tract (Engwall & Balter, 2007). It is hoped that these developments will provide a richer environment for pedagogical applications of speech technologies, such as speech training for the hearing impaired and L2 pronunciation training.

A third major speech technology is *automatic speech recognition* (ASR). Speech recognition is not to be confused with voice recognition, or speaker recognition, the purpose of which is to identify a person by the sound of his or her voice. ASR systems can be built to recognize a large number of different speakers using a relatively limited vocabulary, or for a single speaker with a large vocabulary. The last decade has brought much progress in the accuracy of ASR for English, particularly for speaker-dependent dictation systems. Dictation software can now be used to speed up the process of transcribing monologue (Hincks, 2010). Caution should be used, however, when trying to use dictation software on accented speech.

ASR is a key component of *dialogue systems* for communicating with computers, but it is only the first step in the process. In order for the computer to be able to respond to the speech input, it must also shape some kind of understanding of the message using another technology: natural language processing. Many applied linguists would welcome the creation of intelligent and natural dialogue systems that could also respond to the accented speech of an L2 learner, allowing the learner to have a "conversation" with the computer. This achievement would be a bonanza for those who believe in communicative language learning as opposed to the drilling exercises for which computers are most naturally suited, but these research objectives have yet to be met truly successfully.

Technology and Articulatory and Auditory Phonetics

Phoneticians studying articulation are aided by a variety of techniques for producing images of the hidden generation of the sounds within the vocal tract. Early work used X-rays to film subjects producing sounds in real time; now safer techniques such as magnetic resonance imaging are used. Using electropalatography, or a prosthetic palate containing electrodes, phoneticians can study the contact between the tongue and the palate. Data regarding the movement of visible features such as the lips and face can be gathered using motion capture, wherein subjects wear markers whose movement is detected by a special camera. This information can be used to create animated faces that can be displayed producing recorded or synthesized speech, providing important visual support to the auditory message.

The study of auditory phonetics has a strong connection to the telephone industry, so that the telephone signal can be shaped to transfer the sounds that perception most relies on. Within auditory phonetics, speech signal processing has enabled auditory phoneticians to develop hearing aids and cochlear implants for the hearing impaired.

Current Research Challenges for Speech Engineers

The annual Interspeech conference, run by the International Speech Communication Association (ISCA), attracts over a thousand full-paper submissions on speech research. The papers address issues in speech production and perception as well as new techniques for speech technologies. Within ASR, researchers work, for example, on how to recognize larger vocabularies, and speech in noisy environments. Many papers address prosody and emotional speech, with the aim of improving the naturalness of TTS and the ability to recognize prosodic contributions to meaning in speech. Speech translation technology is a topic of recent interest, as is the possibility of conducting searches in spoken documents. Computer-assisted pronunciation training needs to be improved by the creation of more meaningful feedback, which not only detects deviations in pronunciation but tells the student how to correct them. The study of discourse and dialogue has its own special interest group within ISCA (SigDial), as does the field of speech and language technology in education (SLaTE). Those applied linguists whose background is more within the social sciences than the hard sciences should not hesitate to explore the literature published by ISCA and journals such as the *Journal of Acoustical Sciences* and *Speech Communication.*

SEE ALSO: Automatic Speech Recognition; Computer-Assisted Pronunciation Teaching; Speech Analysis Software; Technology and Discourse Intonation; Text-to-Speech Synthesis in Computer-Assisted Language Learning; Text-to-Speech Synthesis Development

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Technology and Phrases

GILL PHILIP

Like many linguistics terms, "phrase" also has a nontechnical use in the general language. We notice and comment on (especially unusual) "turns of phrase"; most of us at some time in our lives have asked for help in "how best to phrase" a request or a letter; and, when travelling, we often make use of foreign phrase books. Rarely does it occur to us to define what we mean by "a phrase," or to wonder why phrases are sometimes more useful to us than single words are. This entry explains what phrases are and provides an overview of the most common phrasal types. It also discusses some of the ways in which phrases can be identified and retrieved automatically and semi-automatically from computer language corpora.

What Is a Phrase?

According to Gries (2008), a "phrase" consists of two or more word forms which together express a semantically complete meaning. The words may undergo morphological variation (in most phrases), and usually occur in an established sequence. This definition is maximally inclusive. Phrases encompass a heterogeneous range of linguistic structures including idioms (*throw caution to the wind*), proverbs (*too many cooks spoil the broth*), conventionalized similes (*as dead as a dodo*), quotations (*to be or not to be*), sayings (*if you can't beat 'em, join 'em*), catch-phrases (*here's one I prepared earlier*), formulaic greetings (*how do you do*), phrasal verbs (*set up*, *look into*, *get away with*), and complex prepositions (*in order to*, *on behalf of*). Some, such as *by and large* or *for the most part*, are completely frozen, meaning that the word forms and their sequencing are always the same: No inflected forms or additional elements are allowed, and no inversion of the words is possible.

Frozen phrases are very much the exception to the rule. The *canonical form* of a phrase, normally used as its citation form in dictionaries and other reference works, is in fact only one of its possible realizations, albeit typically the most commonly occurring one. Phrases bend to the will of the textual environment in which they are used: verbs inflect for number and person, tense and aspect (though change to verb mood is much rarer); personal pronouns have to agree with their grammatical subjects and objects; nouns are pluralized and attract modifiers; prepositions are altered so that they reflect grammatical relations more appropriately. Phrasal verbs belong to this middle cut of phrasal types: Their verbal component has full inflectional capabilities (*give up*, *gives up*, *gave up*, *given up*, *giving up*), and the verb's direct object can interrupt the phrasal sequence (*take off*; *take it off*; *take your coat off*). Phrasal verbs aside, many phrases contain a variable slot, often for a direct object, as in *bear something in mind*; or a possessive pronoun, as in *shake in one's shoes*.

To complicate matters further, some phrases appear not to have a canonical form at all, and indeed may not even require any single lexical item to be present. Instead they consist of a lexicogrammatical configuration which combines aspects of syntax and semantics in a more abstract manner. One such phrasal type is the *semi-prepackaged phrase*, which can be illustrated with *the faintest idea*, and its variants (Francis, 1993, p. 144). *Faintest* can be replaced by any superlative adjective denoting indefiniteness (including *least*, *slightest*,

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remotest, *foggiest*), while *idea* can be replaced by any noun belonging to the same semantic set (e.g., *conception*, *notion*); yet not one of these single words is essential for the meaning to be conveyed successfully. Another kind of phrase which has no canonical form is the *idiom schema* (Moon, 1996). This differs from the semi-prepackaged phrase in that it features a central metaphorical conceit which provides the motivation for the meaning conveyed. Idiom schemas can exploit semantic sets in the realization of their variant forms, allowing content words to be replaced by others with a similar semantic content (e.g., *quake/tremble/shiver* in place of *shake* in *shake in one's shoes*), but ultimately the conceit takes precedence. The schema [numeral + hyponym + *short of a(n)* + superordinate] with its underlying conceit of incompleteness can be realized as *one sandwich short of a picnic*, *several cards short of a full deck*, *a few gallons shy of a full tank*, all of which are interpreted to mean "slightly crazy" (Moon, 1996, p. 252).

Identifying and Extracting Phrases Using Technology

Fully Automated Methods of Identifying and Extracting Phrases

The inherent plasticity of phrases poses problems for computational approaches to phraseology, with the result that at present, the fully automated identification and retrieval of phrases from computer language corpora have still not been achieved. This does not mean that phrases and other recurrent word sequences cannot be retrieved automatically, only that retrieval is either over- or under-selective. If over-selective, it excludes the many noncanonical instantiations of the phrase; if under-selective, manual intervention is essential to discard irrelevant examples.

It is in seeking to extract phrases from computer corpus data that the difference between phrases and lexical bundles becomes clear. *Lexical bundles* (Biber, Johansson, Leech, Conrad, & Finegan, 1999) are uninterrupted strings of three or more words which recur with significant frequency in a data set. Since they are defined in terms of statistical frequency, they can also be identified and retrieved statistically: any three-word sequence in a data set can be said to be a lexical bundle provided that its frequency matches or exceeds the established cut-off point.

Phrases are on the whole much "messier" than lexical bundles, and automatic identification is only possible for completely frozen phrases and for the canonical forms of fixed and semi-fixed phrases. In other words, only phrases which are also lexical bundles can be retrieved automatically. Unfortunately, a great many phrases have a tendency to be variable. Noncanonical forms, as well as instantiations of semi-prepackaged phrases and idiom schemas, lack the regularity of lexical bundles, so much so that instantiations of phrases are often unique. As a consequence, they cannot be located automatically on the basis of recurrence or absolute frequency. The vast majority of lexical bundles, on the other hand, while identifiable automatically, are missing the "semantic completeness" that is necessary if they are to qualify as phrases. To give an example, the lexical bundle *a matter of* is a part of many established phrases (e.g., *it's a matter of life and death*, *it's only a matter of time*, *as a matter of fact*), but it must combine with other words before it can be said to express a complete meaning. It can be defined as a phrasal fragment, but it is not a proper phrase, while *as a matter of fact* is both a (frozen) phrase and a lexical bundle.

Since the majority of phrases are semi-fixed rather than completely frozen, there is a risk that they will not be picked up by algorithms designed to extract lexical bundles (or *n-grams*). These algorithms search for uninterrupted ("contiguous") sequences of particular word forms, not interrupted sequences of lemmas. But where traditional n-gram location fails, more sophisticated search procedures come in. Recent advances have led to the development of skip-grams and concgrams, both of which are designed to overcome the

limitations of n-grams while remaining fully automatic (no human intervention required) and therefore empirically sound.

As the name suggests, a *skip-gram* (Guthrie, Allison, Liu, Guthrie, & Wilks, 2006) allows for interruptions to occur within the word string because the algorithm can ignore ("skip") up to four extraneous words. As a result, the recurrent words are located even if they do not always occur in an uninterrupted sequence. For example, it would allow the string *bear in mind* to be identified even when it occurs as *bear something in mind*, that is, with the direct object pronoun in its grammatically appropriate place, without classing *bear it in mind* or *bear what you said in mind* as distinct n-grams. The main limitation of skip-grams is that they are unable to process strings longer than three words in length (tri-grams), and the four-word skips, while apparently generous, may be insufficient even to allow for a modified noun in direct object position.

Concgrams (Cheng, Greaves, & Warren, 2006; Greaves & Warren, 2007; Greaves 2009) offer better coverage in both of these areas. Concgrams can process 2- 3- 4- and 5-grams, and the maximum skip between words is 50 characters, which is approximately 12 words (Greaves, 2009, p. 2). The n-grams can be extracted automatically (though this takes a very long time), or can be user-defined instead; for example, stipulating *bear* and *mind* to uncover all co-occurrences of those words, contiguous and noncontiguous. Additionally, the algorithm searches for the words in the n-gram irrespective of their sequential order. This makes it possible to extract a range of permutations which can be found in natural language, especially fronting (e.g., **in mind I'll bear it*) or reversal (e.g., *a wolf in sheep's clothing*, *every silver lining has a cloud*). These advances have greatly facilitated the extraction of phrases from corpora, but some problems remain. The most important of these is probably that inflected forms, being distinct character strings, belong to separate n-grams (a search for *bear in mind* will not retrieve *borne in mind*). There is also the perennial issue of meaningfulness: Algorithms calculate frequency and recurrence but cannot differentiate between a string that is meaningful and one that is not. As a result, the data retrieved using skip-grams or concgrams require manual intervention to discard irrelevant hits before analysis can take place.

Semi-Automatic Methods of Identifying and Extracting Phrases

The study of phrases has a long history in the pre-corpus era, and many phraseologists limit their study to decontextualized canonical forms. Corpus phraseology is largely a branch of corpus lexicography, and the most prevalent reason for studying phrases in corpus data is to examine how they are actually used in text, to improve descriptions for dictionaries and language learners. In order to do this effectively, it is essential to go beyond the canonical form alone and examine all the uses of a phrase in the data.

Before the appearance of concgrams, corpus phraseologists had no option but to make judicious and sometimes inventive use of the available query software. Locating phrases in all their permutations is not straightforward, because corpus query software is designed to locate character strings (words), not meanings. Different scholars have tackled the matter in different ways, but in essence all of them have resorted to multiple searches which are then collated and verified manually. The searches performed make use of well-established software tools which are included as a matter of routine in corpus query packages, namely the wild-card character and the intervening span. The wild card can be attached to the end of a word to represent any further characters, and therefore to retrieve inflectional variants of regular verbs, noun derivations, and so forth; it can also be used in place of any single word. The intervening span option allows skips to be inserted, typically up to a maximum of five words. Additionally, most commercially-available corpora have been lemmatized. Lemmatizing software indexes all inflected forms under their lemma, so if the data set has been lemmatized, it is possible to extract all inflected forms

in a single search. Applied to *bear in mind*, this would draw together *bear* and all its inflected forms: *bears*, *bearing*, *bore*, and *borne*. The advantage of a lemmatizer over a simple wild card is that it includes irregular forms alongside the regular ones: In other words, *bore* and *borne* are located with the help of a lemmatizer but not with a wild card (it would only retrieve *bear*, *bears*, and *bearing*).

Philip (2008, 2011) explains in some detail the kind of procedure that has to be followed in order to extract phrases semi-automatically from corpus data. The procedure is admittedly laborious, but at present the most exhaustive available. A first search extracts the canonical form. Subsequent searches are designed to extract inflectional variants, truncated forms (by shortening the string), inversion (by reversing the string), and substitution (using wild cards to replace actual words). In all of these searches, the number of possible intervening words is set at the maximum permitted by the query software (typically five). The combined queries are then collated and duplicates eliminated. Following this comes manual selection of the examples, in which instances of the phrase, including apparent exploitations and permutations, are set to one side and non-candidates discarded. Finally, the relevant concordances are subjected to analysis, which may be computer-aided if the selection is saved as a new file and run through a concordance package.

Working With Phrases

Extracting phrases from corpora is a means to an end, not the end itself. Only once the instantiations of a phrase—be it frozen or variable, in its canonical form or a variant—have been gathered together is it possible to proceed with linguistic analysis.

Phrases are meaningful by definition, but meaningfulness comes in several guises. In addition to the more familiar semantic meaning, phrases are also associated with pragmatic, functional meanings. Corpus phraseology views phrases as lexical items which, like single words, are part of "units of meaning" (Sinclair, 1996), meaning that they attract collocations, colligations, semantic preferences, and semantic prosodies in "concentric rings of phraseology" (Philip, 2011, p. 38). The semantic prosody of a phrase is its function, so it should come as no surprise that phrases can perform any one of a range of functions: They can be evaluative, situational, modalizing, text-organizational, or all of these (Moon, 1992, p. 495) in addition to, or indeed instead of, conveying information. Some phrases (e.g., *on the other hand*, *as it were*) are primarily pragmatic and have minimal semantic value; others—famously idioms—combine semantics with a range of expressive functions. These functions can be ascertained only by studying phrases in context. Corpus linguistic tools, automatic and semi-automatic, have allowed phraseology to move beyond semantics and syntax toward a fuller understanding of what phrases are used for, and why.

SEE ALSO: Formulaic Language and Collocation; Formulaic Sequences; Lexical Bundles and Technology; Lexical Priming; Semantic Prosody

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Technology and Learning Vocabulary

THOMAS COBB

To date, vocabulary is the dimension of language that has been most intimately involved with technology. Vocabulary is the subject of more entries in this section of the Encyclopedia than phonology, syntax, or pragmatics, and it has been subject to several distinct types of computational analysis—lexicographical, terminological, collocational, keyword, frequency, and others. But in terms of vocabulary learning, a simpler and older technology than any of these has had and continues to have the greatest effect on the kind and number of words that people can learn, and that is the technology of writing (Ong, 1982). When the practice of writing words down becomes widespread in a language, it determines the vocabulary that will have to be learned as well as offering the means for learning it.

That said, much of the vocabulary that anyone knows has been learned without any involvement of a technology at all. Infants hear speech streams, gradually infer their global meanings from context, and more gradually still, identify their units, including words. But lexicons acquired exclusively in this manner without the assistance of writing are destined to remain rudimentary, whether on the level of individuals or communities. Writing, as a recoding of the speech stream that slows its rate and enables repetition, review, and parsing, promotes far more extensive learning than real-time language use alone.

But as with many technologies, writing comes with a downside. The effect of making lexicons easier to learn by writing them down has been to make the overall task of vocabulary learning more difficult, because writing allows lexicons to expand up to and beyond the point of learnability. This entry looks at how writing and its allied technologies first made lexicons easier to learn, then harder to learn, but are now making them easy again.

The Vocabulary to Be Learned

When a language is spoken but not written, as was the case with all languages until relatively recently, and remains the case with most (Coulmas, 1989), there is a limit on how large its lexicon can become, one presumably imposed by the human memory and lifespan. If users of unwritten languages are required to encode progressively more complex messages, they tend to carve further distinctions within words (declensions, case endings, and verb categories) rather than coining new words, probably because it is easier to learn variations on known items than new items. Without a written form to suggest what the words in the speech stream actually are—the pieces of language between empty spaces—it is not clear the speech stream is ever very clearly parsed. Several unwritten languages "do not have a word for *word*" (Coulmas, 1989, p. 20). Research with language users that have for some reason missed out on acquiring literacy suggests that they may not have a word for *word* either. Tarone studied the language use of young Somali immigrants to the United States who had never learned a written language, and found they lacked very basic word handling skills such as repeating pseudowords and building associations between phonologically similar units (Tarone, Bigelow, & Hansen, 2007). Such inabilities can be predicted to limit vocabulary learning from oral input.

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Vocabulary size counts of preliterate languages are necessarily inferential, but it seems that about 10,000 lemmas (headwords plus inflections and tenses) is the norm. This is the calculated size of several unwritten Australian languages (Dixon, 1980, p. 2). Even in the 12th century, five centuries after Old English was given a written form by Christian missionaries, it comprised only 20,000 lemmas (based on a count of the University of Toronto's *Dictionary of Old English Corpus*, ca. 2005). English now comprises some 470,000 headwords (in *Webster's Third New International Dictionary, Unabridged*, with the 1993 Addenda). English is always a special case, with its many incoming and outgoing linguistic invasions, but the pattern obtains: there is no major written language with a lexicon as small as 10,000 words. Of course, no current speaker of English knows anything like its entire lexicon. Goulden, Nation, and Read (1990) calculated that even educated adult native speakers have recognition knowledge of only 13,000 to 17,000 word families, so it is reasonable to infer that less educated or semiliterate adults would have knowledge of fewer words than that, or something roughly comparable to the size of an unwritten language.

When words are written down in a consistent form with spaces on either side, some of the burden of identifying and remembering them is offloaded to an external memory, and hence more words can be tracked and accessed. There are two versions of the argument for the cognitive consequences of writing. Members of the "Toronto school" conclude that the invention and use of phonetic writing caused new kinds of thinking to become possible (the position of Goody, Olson, Havelock Ellis, and McLuhan). Other students of writing effects find in writing mainly the possibilities of supporting, offloading, and extending memory (e.g., Donald, 1991), without any necessity of causality. The argument here is adequately framed by the latter proposal. Words written down are also more difficult for the language to prune through collective forgetting or dark ages; written lexicons tend to pile up relentlessly. Of course, not all ways of writing words down lift the memory burdens of vocabulary learning equally. Writing systems are constituted to favor one of two constituencies, those learning a language or its experienced users (Sampson, 1985; Venezky, 2004). Spanish with its abundant and reliable phonological information and small number of perceptual units (letters and letter parts) favors the learner; words known in speech can easily be identified in writing, and vice versa. Chinese with its minimal phonological information and vast number of perceptual units favors rapid processing by those who manage to learn it. A logographic or Hanzi text can be read about three times faster than the same text written in romanized Pinyin by readers who are equally experienced in both scripts (according to Sun & Feng, 1999).

Very large lexicons generally, in whatever writing system, also favor competent users at the expense of learners. There are simply a lot of words to learn in a language like English or French. Academic underachievement is a topic of growing concern in educational policy and research in most Western countries, and increasingly researchers are identifying lexical inadequacy as a major cause. Cummins (1981) observed that children often master the vocabulary of interpersonal communication but fail to develop the "cognitive and academic" language proficiency that is encoded in less familiar lexis. Corson (1985) went further, postulating a "lexical bar" consisting of the terms of science, analysis, and research which many children never become familiar with. Chall and Jacobs (2003) identified a widespread "fourth grade slump" at about age 10 when schoolchildren move beyond the lexis of familiar situations toward that of written texts.

The problem of inadequate lexis is particularly acute for those who wish to function at a high level in a second language (L2), as a large and growing number presently wish to do, especially in English. Perhaps this explains why it was mainly researchers concerned with English as an L2 who tackled the too-much-vocabulary problem with a view to finding solutions. A number of L2 pedagogical theorists had long experimented with ways of making the vocabulary learning task more manageable for learners of English (Palmer,

1917; West, 1926/1955), but this goal awaited the development of text computing to become truly attainable.

The computational analysis of text is a natural development of the basic technology of writing, a secondary literacy, in terms of what it reveals to language users about the language they are using. Writing systems exposed basic patterns in language, such as where words start and stop, and to this text analysis adds how many and which words there are in a text, in which other texts they also occur, and how frequently or infrequently. It also refines definitions of where words really start and stop, that is, not necessarily at the spaces, for example, in the case of multiword units like "by and large" or "as a matter of fact." But the effects of these two literacies are potentially quite different. If primary literacy expanded the lexicon out of the reach of many L1 and most L2 learners, the secondary literacy can be used to bring it back.

There may be a half million words in English, but how many of them are needed to function in a particular context? Corpus linguists since the 1970s have built progressively more comprehensive models of languages as machine-readable text corpora (Kučera & Francis, 1967; Leech, Rayson, & Wilson, 2001). Pedagogical scholars have found ways to use these corpora to calculate the effect of knowing different amounts of vocabulary for different purposes (Nation, 2006; Cobb, 2007). Text coverage has now been calculated for several different functional domains including conversation (Adolphs & Schmitt, 2003), academic reading (Coxhead, 2000), domain specific reading (Chung & Nation, 2004), and the discourse of TV and movies (Webb & Rodgers, 2009). Coverage data twinned with comprehension data (e.g., by Schmitt, Jiang, & Grabe, 2011) shows reasonably clearly that the 6,000 to 8,000 most frequent word families are needed for reading in an academic environment, a challenging yet learnable figure. This research is in progress, with several important refinements under way, including Martinez and Schmitt's calculation (described in Martinez & Murphy, 2011) of the coverage of the most frequent multiword units, and Cobb's (in press) calculation of the coverage of the separate words buried in high-frequency homographs like "bank." Basic versions of this technology are available for teachers now, such as the Vocabprofile Web site (http://lextutor.ca/vp/bnc/) which helps teachers modify learning input to a particular frequency zone. Some experts in the field are currently experimenting with Web searches for texts at particular lexical levels. The goal is to help learners focus on the words they need rather than casting them adrift on the open seas of lexis.

From this perspective, then, while one language technology (writing) allowed lexicons to expand to or beyond the limits of learnability, another (text analysis) is busy discovering zones of learnability within these lexicons. But even when clearly identified, such zones will still number word families in the hundreds or even thousands and mastering them will remain a daunting task inevitably left largely to individuals to accomplish. What resources will be available to individuals wishing to undertake a substantial vocabulary upgrade?

The Means of Learning Vocabulary

Learning to read is clearly the first and biggest step in building a lexicon, but is reading alone, even in a targeted lexical zone, the most efficient method of vocabulary expansion? This is one of the most vexed questions in applied linguistics research. A conclusion reached by many researchers (e.g., Laufer, 2005; Cobb, 2008) is that while reading is typically an adequate resource for L1 lexicon building (but see Chall & Jacobs, 2003), it typically is not for L2 lexicon building (but see McQuillan & Krashen, 2008). This section looks at vocabulary learning technologies that go beyond simply meeting words in reading.

Writing is no longer the only technology that can slow language down and render it plain for retention and learning purposes. Numerous types of spoken language media can now perform some version of one or more of these functions, including cassettes, MP3 sound files, and DVDs. Some media can do this in conjunction with writing, whether prerecorded audio-texts, videos with subtitling, or real-time text-to-speech created by computer programs. While there is as yet no true text-to-image technology, vast databanks of images both still and moving have been constructed matching much of the high-frequency lexicons of several languages (e.g., by Rosetta Stone, www.rosettastone.com/).

And yet the most interesting approaches to accelerated vocabulary acquisition continue to proceed from written representations with any additional media playing a supplementary role. What the more recent learning technologies add to the basic technology of writing is decontextualized simulations of word handling tasks. These tasks are basically four in number—retrieving forms from meanings, meanings from forms, holding forms in memory, and adapting meanings to novel contexts. A set of word cards remains the basic paradigm for achieving the first three of these.

The data structure of a word card—more likely nowadays to appear on a computer screen or game console that on the two sides of an actual card—divides the word's information into two parts, front and back, shown and hidden, with roles reversible. One part is the to-be-learned word or phrase, the other some information associated with the word, whether a short definition in L1 or L2, a picture, a translation, a context sentence with the word missing, or other pertinent associate. The learner shuffles the word cards (or clicks randomize), looks at the cards one at a time, tries to recall the information on the other side, confirms his or her response and undertakes remedial learning as needed, and so on through pack or stack, then repeats. The "other side" can of course be either side. In one round the learner looks at the word and tries to recall the meaning, and in the next looks at the meaning and tries to produce the word. These receptive and productive activities are two of the basic word handling operations mentioned above, and the third—retaining the form in memory—is involved in both of them. An array of strong paired-associate studies from the verbal learning era of psychology (up to roughly 1970) underpins the use of word learning cards, many of them brought to bear on vocabulary expansion in an interesting paper by Mondria and Mondria-De Vries (1994). These researchers propose a plan for recycling the word cards in a shoe box of five compartments: all words start in the first compartment and move toward the fifth and thence out of the system if their information is consistently recalled, or back toward the front if not. Words that need the practice get it, and vice versa, and numerous words can pass through the system efficiently.

Word cards are also supported by research findings more recent than those of the paired-associate studies. The emphasis on form in word cards, for example, exploits the findings of Barcroft (2006) that the learning of form not meaning is in some ways the greater challenge of word learning. The emphasis on speed and repetitive practice exploits Segalowitz and Hulstijn's (2005) finding that lexical access is key to language processing. Word cards have also proven a useful laboratory for exploring second language learning variables, for example Elgort's (2007) finding that the gloss on the card back is more useful for advanced learners in the target language than in the L1.

Numerous versions of word cards and flashcards now appear on both Internet and mobile devices bringing with them such computational advantages as algorithms for sequencing the presentation, record keeping, and the capacity to make and store large numbers of cards easily. In the case of electronic flash cards, card-back information can include multiple choice items instead of simple translations or glosses, or other word associations and representations in the form of images, sound files, video clips, and whatever other information might be linked from the World Wide Web (iKnow! at http://smart.fm/ allows learners

to import Flickr images from www.flickr.com). Reviews and comparisons of word card learning systems including the following are provided by Godwin-Jones (2010) and Nakata (2011): SuperMemo (www.supermemo.com/), vTrain (www.vtrain.net/), MemoryLifter (www.memorylifter.com/), P-Study (www.takke.jp/), WordChamp (www.wordchamp.com/), Quizlet (www.quizlet.com/), eSpindle (www.learnthat.org/), and Word Engine (www.wordengine.jp/).

However, as Nakata notes, few if any of these card systems offer opportunities for generative use of learned items (meeting or using words in new contexts, the fourth basic handling operation mentioned above). And few if any access information from a corpus or dictionary. A system attempting to do some of these is Horst, Cobb, and Nicolae's (2005) Group Lex (http://www.lextutor.ca/group_lex/demo_lab/), where learners enter their own words and definitions, hear their words rendered in text-to-speech, build and take quizzes using their own or each other's contexts (Which word goes in this context? Which word corresponds to this gloss?), and then novel contexts from a level-appropriate corpus.

Not one of these learning systems reviewed by Nakata appears to (a) focus on timed interactions and automaticity development, (b) tell learners which words they should be looking at beyond those they have found for themselves, or (c) facilitate game interactions or other opportunities for collaborative learning, a key idea in both the socioconstructivist and social networking agendas. One system attempting to do all three is My Word Coach for Nintendo (http://mywordcoach.us.ubi.com/). The tutor inside this set of interactive real-time games knows in advance the entire lexicon of English—or at least the 14,500 most frequent words of the British National Corpus frequency list (Leech et al., 2001)—knows the learner, uses a high quality learner dictionary for its glosses (*Cambridge Advanced Learner's Dictionary*), encourages wireless collaboration and timed competition between learners, and has undergone extensive testing with strong results on several dimensions of word knowledge (Cobb, 2011).

Beyond Word Cards

The use of word cards is of course not the only vocabulary learning technology imaginable. Indeed, no amount of beefing up of the paired-associate model can move it very far from the beginner end of the word learning process. Word card systems, pairing words with small glosses or translations, or practicing the recognition of form, are closer to the initial phase of word acquisition than the final, that being the complex, generative fitting of known words to novel contexts as required for the productive skills of speech and writing or even the receptive skills of high level reading and real-time speech processing.

Two kinds of technology support for the refinement of existing vocabulary knowledge are available to both L2 and L1 learners. The first is simply the vast array of learning opportunities present in the communications technologies currently available. A learner can receive input in almost any L2 of almost any quantity and quality from any location through devices with options that serve language-learning purposes whether or not intended to do so. Media players can be paused and repeated. Radio broadcasts that were interrupted or poorly comprehended can be retrieved as podcasts and listened to again. Hemingway's strategy of learning French by reading the daily news first in English and then in French was only possible because he lived in Paris; but now with newspapers in every major and most minor languages online, any learner can adopt this practice for any pair of languages for the price of an Internet connection. Language learners without their own corpora and concordance programs can Google for their collocates in a writing assignment (Is it "approaches to a solution" or "approaches for"?). The opportunities for vocabulary enrichment in integrated gaming environments like Second Life have barely been contemplated.

But there are some more limited, deliberate technologies for deepening existing vocabulary knowledge. A number of these at various degrees of trialing and testing are under development on Cobb's Lextutor Web site to support the more advanced learner's vocabulary development in contexts of actual language use. This stage of vocabulary learning may be better named "lexicogrammatical learning" since grammar becomes more relevant as a feature of word use as learning proceeds. Some examples follow.

Reading: Lextutor's hypertext builders link users' texts to a set of click-on resources including text-to-speech for individual words or short phrases, recorded speech or video where available for whole texts, dictionary, or concordances for any word or expression, and a simple means of storing words of interest for post-reading investigation (http://lextutor.ca/hypertext/), research, and related development program (Cobb, 2009).

Writing: Writers in search of the next word or its form for the texts they are writing can click to get a concordance for the last word they managed to get down (or last two, or last three) to see if there are any patterns in the Brown corpus that are applicable to their choice (http://lextutor.ca/concord_writer/).

Error feedback: Teachers embed links to selected corpus information beside their learners' collocation or other errors in electronic submissions. Learners correct the error in light of the corpus information. Described and tested in Gaskell and Cobb (2004; http://lextutor.ca/concordancers/concord_e.html).

Metalinguistic awareness: Learners submit their own texts to Vocabprofile analysis (http://lextutor.ca/vp/) or Keyword analysis (http://lextutor.ca/keywords/) to reflect on how the lexical properties of their own texts compare to those of other learners or native speakers.

Reaction time: Learners send their own word selections to a pedagogically adapted lexical decision task instrument as a means to build up their word recognition speed and work toward automaticity (http://lextutor.ca/rt/).

Future

It is argued here that spoken language does not normally create stable word representations, and hence, that learning vocabulary from spoken language alone takes place slowly and not very extensively. But this picture could change in the near future with the emergence of automatic speech recognition (ASR) technology. If any spoken utterance such as a phone conversation could be simply transformed into an accurate written rendition with a device that was, say, a part of one's mobile telephone, then the vocabulary learning opportunities of speech would be significantly expanded and the distinction between speech and writing significantly reduced. Such a realignment could make a big difference to vocabulary learning, since most people listen to far more language than they read. We are perhaps 10 years away from a highly usable version of such a technology.

Conclusion

If the sizes of modern written lexicons are prodigious, the tools available for coming to grips with them are also prodigious. This entry proposes that language technologies and lexicons grow together—as more words can be learned, more words will need to be learned, in a dynamic growth scenario that shows no sign of abating. But it also proposes what was created by technology can also be managed by it.

Few would dispute that vocabulary is the aspect of language learning that has been most involved with information technology up to now, but they might not agree about

the reason. The reason commonly given is that discreet units like words are all that the current state of information technology can handle. A more interesting reason is that technologies and lexicons were intimates long before the advent of computer technology and they form a natural pair.

SEE ALSO: Automatic Speech Recognition; Computer-Assisted Vocabulary Load Analysis; Information Retrieval for Reading Tutors; Mobile-Assisted Language Learning; Second Language Acquisition via Second Life; Technology and Usage-Based Teaching Applications; Text-to-Speech Synthesis in Computer-Assisted Language Learning; Web-Based Lexical Resources

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Technology and Teaching Writing

JOEL BLOCH

Writing teachers aim to prepare their students to meet future writing demands both in and outside of academia. These demands are inextricably linked to the technologies that students will use to perform a wider and wider range of both digital- and print-based writing tasks. Since the introduction of the personal computer, technology has been shown to be a valuable tool in the teaching of writing. Walter Ong (1982) pointed out that all forms of writing are also types of technologies. Pencils, pens, and typewriters are technologies as are computers, computer networks, and the various writing spaces, such as Web pages, blogs, social networking sites, and Twitter, that today are found on the World Wide Web. In this sense, the technologies used for writing can be seen as an expanding set of resources, each with inherent strengths and weaknesses for particular functions. Tim Berners-Lee (1999), one of the first developers of the World Wide Web, has written that these new technologies, which today are sometimes known as Web 2.0 technologies or collectively as the "Read/Write Web," have been primarily designed to make it easier to create and publish information. The writing teacher's challenge is to understand the strengths and limitations of these technologies well enough to make the best use of them. In this entry, I examine how these new technologies have affected the teaching of writing. This entry is divided into four parts: a short history of the use of technology, new opportunities for using technology for teaching writing, the challenges for using technology, and suggestions for overcoming them.

A Short History of the Use of Technology in the Writing Classroom

The history of literacy has demonstrated that the definition of being literate is constantly evolving. Literacy has always been affected when new technologies are introduced. The invention of the printing press has been said to have led to the Protestant revolution by increasing the availability of the Bible (Eisenstein, 1979). This evolution has affected both the importance given to the various forms of literacy and the pedagogical approaches used to teach them (Graff, 1987). The growth of the Internet as both a writing tool and a writing space has greatly accelerated this change by supporting new forms of written communication, each different from the others. Since the introduction of the computer into the language-learning classroom in the early 1980s, technology has been a valuable tool for teaching writing despite the initial fears about how technology could replace the teacher. In reality, technology has turned out to be supportive of traditional and new approaches for teaching writing. For example, multiple drafting, which was a cornerstone of the various process approaches to writing, was facilitated by the ease with which one can use word-processing programs to revise or edit a paper without having to retype it each time. Early uses of technology included helping students with the invention of ideas, another important aspect of the process approach. The evolution of the pedagogical importance of the social aspects of the writing process was likewise facilitated by the development of computer networks, first with local networks that linked students and teachers within a classroom and then with ever wider networks that connected users worldwide (Bloch, 2007). The development

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of asynchronous discourse, such as e-mail, listservs, forums, and blogs that are read in a different time frame from that in which they are written, and synchronous discourse, such as chat and virtual worlds that are read in the same time frame, has provided the means to write in a variety of ways to a variety of audiences using a variety of different forms of language (e.g., Warschauer, 1999). This development was accentuated with the introduction of multimedia, computer games, and social networking sites, all of which can provide different spaces and motivations for writing. Publishing this writing and participating in the development of new information on the Internet have further changed the nature of social interactions between the writer and the reader, as well as the nature of the writer's audience. Both asynchronous and synchronous forms can be used for generating and sharing ideas in a social context throughout the writing process for teacher–student and student–student interactions, each of which can produce varying forms of literacy, student motivations for learning and using technology, and connections between the reader and the writer. Other forms of reader–writer interaction, such as teacher commenting or peer review, have also evolved with the development of the traditional word-processing technologies. The comment function found in most word-processing programs, for example, allows both teachers and students to place their own comments in a text; the writer can respond to each comment the reader has made. These technologies have produced varying forms of literacy, often depending on their internal nature or architecture, and how they have been implemented. For example, the production of synchronous and asynchronous discourses can involve different cognitive processes and social interactions, each of which can produce various forms of discourse. Chat is produced spontaneously without much advanced planning, much like group discussions or face-to-face tutorials. Listservs or blogs, on the other hand, can promote more in-depth discussions that can be shared at any time throughout the writing process. When using these forms of online discourse, teachers must clearly choose which technology better matches their goals for the class.

New Opportunities for Teaching Writing

These technologies have provided students the ability to publish their writing to audiences far beyond that of their teacher and their classroom. These changes have affected how we read, write, access information, and interact with each other, leading to what Bolter (2001) called a new paradigm in reading and writing by changing how texts are created, distributed, and read. The ongoing development of the World Wide Web has supported new technologies that can be used not only as tools for writing but also as new forms of literacy. Web pages, cell phones, and Twitter are being used to create novels as well as short communications that can be used for discussions. The evolution of the World Wide Web has also created new opportunities for publishing and accessing information that can transcend the boundaries of the classroom and the limitations of print text. Students can publish their writing, enhanced with pictures, images, audio, video, and layout design, to whoever can access the Internet, thus providing a different audience and writing experience. Digital storytelling, for example, is a form of multimedia literacy that encourages writers to synthesize their written texts with images, audio, and video to explore different ways that these modalities can create new forms of inquiry and meaning, thus exploring new ways of writing and thinking (Lambert, 2010). Twitter, for example, has also been used for back-channeling lectures and discussions, which can have positive as well as negative implications for teaching. Political reporting and even protests are being organized around the world using cell phones, Twitter, blogs, YouTube, and a host of other networked technologies (Rheingold, 2003). Cloud computing, where applications are located on the Internet rather than on individual computers, has changed how users can collaborate with

each other and share information. These new writing spaces have raised challenging possibilities for students who have different strengths and weaknesses in their literacy development, as well as for students who may need to use these new forms of literacy for communicating throughout their careers and personal lives (Bloch, 2008). Each technology raises its own questions about literacy, authorship, and identity, and therefore each can play a different role in developing student literacy. Bolter (2001) argued, for example, that Web pages can decentralize the relationship between the reader and the writer by giving readers more control over leaving one page and connecting to another. As the worldwide use of Wikipedia shows, wikis can promote the idea that texts are never finished and can be continually improved through collaboration. Although blogs can be individually or collectively authored, the popularity of individual bloggers writing in many different languages about every possible topic has reinvigorated the centrality of the online author (Bloch, 2007). As authored texts, blogs can support students in developing their own unique voices as well as providing texts that other students can incorporate into their writing. Grammar teaching has been changed dramatically by the introduction of Web-based concordancing programs that are freely available to teachers and students (e.g., Hunston, 2000). Programs such as the View (www.corpus.byu.edu/bnc) are freely available. These are also interesting examples of how the design and implementation of a technology can affect its use. Access to these programs can depend on the architecture of the technology; therefore changing this architecture can affect who can use them and how they are used. For example, the interface that connects users to the database can affect the availability of the program and the ease with which it can be used. While traditional concordancing programs were primarily used by researchers to study language, the ability to access these programs online has made them available to both teachers and students whenever the programs are needed to create teaching materials and to solve syntactic and lexical problems. Programs can also be integrated with other technologies to create new types of learning environments. The URL of a concordancing program can be inserted into a written comment in the text on a student paper, so that the student can directly access the program to help respond to the teacher's suggestions, whenever and wherever that information is needed. The way teachers and students access and share information has been greatly enhanced by new online Web sites that support the ability to tag and aggregate information. Users can collect, filter, and share information from the Internet for either personal or group use. Older technologies, such as listservs, e-mail, and chat, remain popular with writing teachers for helping students develop and share their ideas as well as to communicate with other users worldwide. Newer technologies, such as cell phone apps, may someday become important teaching tools. Each new form of technological literacy raises both old and new questions about what it means to be a literate person and what are the consequences of these new forms of literacy for the development of the students' more traditional writing skills.

Challenges in Using Technology for Teaching Writing

These new developments can also be overwhelming for teachers. Bombarded continually by the introduction of newer technologies, often not specifically designed for teaching writing but with great potential, teachers often feel compelled to implement new technologies even before understanding the old ones. Researchers may not be able to keep up with this onslaught either. Some technologies, such as virtual worlds like Second Life, have steeper learning curves and technical requirements, which can reduce the number of teachers and researchers who can use these technologies and consequently the number of new ideas for developing new uses. The backgrounds of the students can also become

a critical factor in how technologies are used. Teachers today often encounter a generation of "digital natives" who not only may know more about the technology than the teachers do, but may also bring different values, attitudes, and experiences to writing and technology than did previous generations of students, although how different these students are is not always clear (Palfrey & Gasser, 2008). As a result, teachers may cede some control over the classroom to better-trained students, and students may better develop their learning autonomy. Each technology has its own limitations as well. For example, a teacher wishing to use the comment functions found on most blogging services and word-processing programs to allow for discussion between the reader and the writer may discover that this feature may not promote the kinds of interaction that chat or e-mail can (Bloch, 2007). Blogs can also be useful for publishing and sharing ideas, but, despite their commenting functions, may not be as useful for collaborating. Wikis, on the other hand, can be used both for publishing texts as well as for promoting collaboration and peer review. Tweets, which are limited to 140 characters, can create opportunities for writing and social interaction but may not allow for the deeper development of ideas or the incorporation of multimedia. Social media sites, such as YouTube or Facebook, may be useful for publishing and sharing information but also raise new concerns about its privacy and control. The architecture or structure of the technology can also affect its implementation. The use of some technologies may require a large investment of time for training students. For example, the ease with which concordancing programs could be accessed did not mean that teachers and especially students who were not familiar with them could use them easily. Additional training, along with the possible redesign of the user interface, is necessary for new users to become familiar with these programs. With the growing importance of digital forms of multimedia to add new modalities to the traditional print forms of literacy, teachers who have focused only on print literacy may have to become visually literate as well. Old problems can become intensified online. The ease with which information can be cut and pasted from the Internet has led teachers to fear a "plagiarism epidemic" (Howard, 2007), which has sometimes turned the Internet into a technological battlefield between students cutting and pasting materials and teachers employing plagiarism detection Web sites to catch them. For both teachers and students, the great abundance of information on the Internet has also raised a number of complex issues about the legal and moral use of intellectual property for educational purposes in a global society. Both teachers and students must become more aware of their rights to use intellectual property and the legal and ethical constraints on its usage if they want to be effective citizens of the World Wide Web.

Overcoming Challenges

I would like to suggest three guiding principles for teachers to consider for implementing and evaluating technology in the writing classroom. The first is that technology is never neutral. Each implementation of an individual technology or a group of technologies can affect the outcomes in the classroom (e.g., Feenberg, 2002). Such outcomes can vary depending on the implementation individually or in combination with other technologies, the backgrounds and attitudes of both the teachers and students, and the nature of the writing tasks. The second principle is that the introduction of technology is never deterministic. The impact of factors such as teacher or student background can be modified by additional training, the design of the technology, classroom integration, and the quality of outside technical support. Even minor changes in the implementation, such as the training or support given to students, can affect the outcomes of technological use. Some problems can be mitigated by substituting one technology for another or combining different

technologies; for example, integrating the URL of a concordancing Web site into a word-processing file. One important consequence of these two principles is that it is difficult to generalize the failures and success of a technology in one context to other contexts. The third, and perhaps most important, principle is that teachers should decide which technologies to use by first analyzing the kinds of problems they wish to solve and the backgrounds of their students, and not by the technologies they might want to use. The proliferation of new technologies has forced teachers to consider even more carefully the relationship between the literacy goals of their courses and the specific literacies produced using each technology. Then teachers must decide how to modify their implementation to respond to the kinds of problems that will inevitably occur.

Conclusion

The growing importance of technology as a tool and as a form of literacy has been a worldwide phenomenon. Being able to access the Internet has long been an important concern for teachers. Today, access does not simply refer to being able to log on to the Internet but includes having a wide variety of unrestricted information available at a price one can afford. These technologies have given both teachers and students more autonomy in how they learn and with whom they learn. The so-called "digital natives" may not be intimidated by these new technologies but still may not know how to use them effectively. The growing complexity of the new technologies has increased the need for teacher training and professional development, while the availability of 24/7 access to other teachers and often open access materials and research has helped meet this challenge. Teachers can set up their own personal learning spaces where this information can be aggregated so that these materials can be used individually or shared with others. Web sites such as Netvibes, and tagging programs such as Diigo, which allow users to place information in categories of their own choosing, can help teachers and students conduct research, collaborate, and create new texts. The introduction of every form of technology and the resulting development of every form of literacy have always prompted similar questions, an issue Plato raised two thousand years ago when he questioned the effect of literacy on memory. What kinds of cognitive skills are involved with each form of literacy? How does the introduction of new technologies change social relationships? Do some forms of literacy produce more complex texts that affect how the information is read and understood? How do these concepts of authorship and audience affect the writing process? What has been learned from the long history of thinking about the use of technology is that answering these questions becomes more complex as new technologies and the resulting new forms of digital literacy emerge. As Graff (1987) warns, becoming literate does not always bring the benefits that are promised, either to the teacher or to the learner. The one overriding question that many teachers have asked from the moment technology was first introduced into the language classroom is "Do these technologies make for better language learners?" This question has always been difficult to answer, in part because of the complexity of factors that make it difficult to generalize from one context to another. To grasp these issues, teachers must cross disciplinary boundaries to better understand the complexities of using technology (Bloch, 2007). These include CALL research (e.g., Hanson-Smith & Rilling, 2007) and first language composition teaching as well as research in the theory and pedagogy of technology (Selfe, 1999; Feenberg, 2002) and intellectual property law (e.g., Lessing, 1999, 2008). The continuing growth of the Internet will inevitably challenge and frustrate teachers as more and more new technologies come online, which will continue changing the nature of literacy and how it is taught. However, these new technologies can provide teachers the opportunities to connect with each other as well as with new sources

of information to better meet these frustrations and exploit their pedagogical potential for the development of 21st-century literacies. As Selfe (1999) argues, teachers must pay attention to technology in both its micro-usage, to further the educational goals of the classroom, and its macro-usage, to further the social and economic goals of their society.

SEE ALSO: Computer-Mediated Communication and Second Language Development; Emerging Technologies for Language Learning; Exporting Applied Linguistics Technology; Language and the Digital Divide; Literacy Practices in Virtual Environments; Pragmatics of Asynchronous Computer-Mediated Communication; Pragmatics of Chat; Pragmatics of Second Language Computer-Mediated Communication; Second Language Acquisition via Second Life; Teaching Writing; Technology and Culture; Technology and Literacy

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Technology and Usage-Based Teaching Applications

DEE GARDNER

Recent advances in computer technology have allowed the study of human language to progress in ways that were not possible when experts relied on human judgments alone (Sinclair, 2004). One of the chief developments in this regard has been the compilation and exploration of substantial collections of electronic texts consisting of language in its actual use. These "usage-based" language collections—referred to as *corpora* (singular, *corpus*)—exist in many languages of the world (German, French, Chinese, Spanish, Portuguese, etc.), with English corpora being by far the most extensively developed and investigated to date, and therefore the primary focus of the remaining discussion.

During the past 15 to 20 years, this technological boon for language study has led to the creation of large *mega-corpora*, many of which have been systematically organized according to genre (conversation, scripted speeches, newspaper and magazine articles, fiction, academic prose, etc.). The most influential of these large "structured" corpora are:

1. British National Corpus (BNC); 100 million words; publicly accessible; www.natcorp.ox.ac.uk/
2. Corpus of Contemporary American English (COCA); 400 million words and growing; publicly accessible; www.americancorpus.org/
3. Bank of English, also known as the Collins Corpus; 2.5 billion words and growing; publicly accessible; http://web.quick.cz/jaedth/Introduction%20to%20CCS.htm
4. Cambridge International Corpus (CIC); 1 billion words and growing; privately held; http://www.cambridge.org/elt/corpus/international_corpus2.htm
5. Oxford English Corpus; 2 billion words; privately held; www.askoxford.com/oec/?view=uk.
6. Longman Spoken and Written English Corpus (LSWE); 40 million words; privately held.

Linguistic discoveries involving these structured mega-corpora are now well-documented, and include extensive descriptions of grammar, word frequencies, multiword items (idioms, phrasal verbs, etc.), and collocates (the common neighbors of words). Many of these corpus investigations have also resulted in the publication of extensive reference resources for language training such as descriptive grammars and dictionaries for language learners.

Several corpora of more specialized language have also been created and extensively investigated, such as the Michigan Corpus of Academic Spoken English or MICASE (Simpson, Briggs, Ovens, & Swales, 2002) and the International Corpus of Learner English or *ICLE* (Granger, 2003). Additionally, there has been a growing interest in the extremely large unstructured language corpora available on the Web through search engines such as Google, with access to words and word combinations possibly numbering in the trillions. These are also beginning to make their way into language education and user-friendly online corpus applications for the Web are beginning to emerge.

Indeed, electronic corpora have recently inspired a host of usage-based or "data-driven" teaching resources and methods, which are based on the way people really talk or write,

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rather than on the intuitions of researchers, course designers, materials developers, or even instructors themselves. While corpus-based sources of data for language training have been around for nearly 80 years, thanks to tedious manual calculations and rudimentary computer analyses in the early days of linguistic computing, the recent rise of the modern machine-searchable mega-corpora, the growing number of more specialized electronic corpora, and the general availability of high-powered personal computers have spawned a new generation of technology-driven, usage-based teaching applications that are reshaping not only what is being taught, but how it is being taught. To date, the areas that have been most affected deal primarily with vocabulary, grammar, and discourse issues, although more top-level aspects of language such as pragmatics and metaphor are beginning to be impacted as well. The remainder of this discussion will focus on three areas of language education that to date have received the most attention in the pertinent literature: lexical and lexicogrammatical teaching approaches, corpus-based technology applications for language teaching and learning, and teacher training involving usage-based language applications.

Lexical and Lexicogrammatical Teaching Approaches

Usage-based teaching applications have had a significant impact in emphasizing the role of vocabulary (lexis) and the intricate connections between vocabulary and grammar (lexicogrammar). The pioneering work in the 1980s with the Bank of English led to the first major corpus-based teaching application in the form of a *lexical syllabus* (Sinclair & Renouf, 1988), which was further developed into *The Lexical Syllabus: A New Approach to Language Teaching* (Willis, 1990).

However, the most publicized of the vocabulary-centered teaching curricula has been *The Lexical Approach* (Lewis, 1993). Relying heavily on corpus-based analyses of real language, this approach puts vocabulary squarely in the middle of the instructional emphasis, paying particular attention to the broader notion of lexis, which includes not only single words, but also collocations (groups of words that tend to co-occur) such as common expressions (e.g., *how are you*, *good morning*), phrasal verbs (e.g., *break up*, *put out*), idioms (e.g., *kick the bucket*, *pop the question*), other frequently occurring word combinations (e.g., *economic forecast*, *absurd idea*, *chemical reaction*), and *colligations*—a more general type of collocation where certain words or types of words regularly co-occur with or within particular grammatical patterns (*I think that . . .* , *I hope that . . .* , etc., but not *I ran that . . .* , *I swim that . . .* , etc.).

According to Lewis (2000), evidence from modern electronic corpora suggests that "millions" of these various types of collocations exist in the English language, leading him to conclude that "Within the mental lexicon, collocation is the most powerful force in the creation and comprehension of all naturally occurring text" (pp. 48–9). Language teaching under this concept emphasizes the identification, production, and combination of frequently occurring groups of words (chunks) to meet learners' real communication needs, claiming to mirror the way that most native speakers naturally store and use the language to save mental processing energy during actual communication. It is based on the principle of frequencies of word-patterns in actual usage (*grammaticalized lexis*), and represents a radical shift from traditional grammar-based teaching approaches, which often emphasize the construction of novel sentences based on known grammatical rules and structures (*lexicalized grammar*).

A somewhat more balanced view of the roles of lexis and grammar in language education is found in the *pattern grammar* approach (Hunston, Francis, & Manning, 1997). Again based on frequencies in actual usage from a mega-corpus, this view suggest that the English

language is comprised of patterns of words that have both lexical and grammatical significance, and that groups of words with similar patterns tend to share similar meanings. For instance, Hunston et al. (1997) suggest that words meaning "shout" or "make a noise" such as *bark*, *growl*, *hiss*, and *yell* are mostly found in the grammatical pattern Verb + *at* + Noun (e.g., *bark at the cat*, *growl at the man*, *hiss at the dog*, *yell at the umpire*). Advocates of pattern grammar summarize the instructional goals for their approach as follows:

> Patterns can form an integral part of a structural or notional syllabus, but their association with lexis make[s] them a natural accompaniment to a lexical approach. They can be seen as putting the grammatical "flesh" on to the "bones" of a lexical syllabus. (Hunston et al., 1997, p. 215)

A more recent application of usage-based data is Cambridge's *Touchstone* series (McCarthy, 2004). Drawing from the North American English portion of the Cambridge International Corpus, the designers claim to have identified "the most useful grammar and vocabulary for learners from a basic to an intermediate level," and "how people communicate in everyday situations, especially in conversation" (p. 2). The designers then utilize this information as the basis for the language instructional approach found in the *Touchstone* series.

Finally, no discussion of corpus-based vocabulary applications would be complete without mention of the vocabulary-levels approach of Nation and his colleagues (Nation, 2001), which has had perhaps the greatest impact on the general fields of applied linguistics and TESOL (teaching English to speakers of other languages). In brief, this approach emphasizes the distribution of vocabulary in written and spoken texts in terms of corpus-based, predetermined lists of words (general high-frequency words and academic high-frequency words) and words not on those lists (technical, topic-specific, and low frequency words).

Especially pertinent to our current topic is the fact that Nation and his colleagues have developed (a) user-friendly computer programs such as Range, which can identify and categorize the vocabulary of essentially any text or combination of texts (up to 32 texts) to meet specific instructional contexts and needs, and (b) usage-based vocabulary assessment tools such as the Vocabulary Size Test, which can be used for language proficiency testing and instructional placement purposes (both programs are currently downloadable at http://www.victoria.ac.nz/lals/staff/paul-nation.aspx). While this vocabulary-levels approach (and its associated technologies) does not constitute a vocabulary curriculum itself, its supporting role continues to impact large numbers of language training curricula, including Nation's own recent work on curriculum design in language education. Cobb (*n.d.*) has recently adapted these vocabulary tools for use on the Web (www.lextutor.ca/), and has coupled them with his own online applications to assist language teachers and learners with various vocabulary issues.

Corpus-Based Technology Applications for Language Teaching and Learning

Bernardini (2004) makes the distinction between "uses of corpora as sources of descriptive insights relevant to language teaching/learning and uses of corpora that directly affect the learning and teaching process(es)" (p. 15). While the lines between these two uses of corpora may be blurred at times in the literature, it might be helpful to think of the distinction as "resources" versus "methods." However, for purposes of our present discussion, we rely on both types to provide a more general description of the way technology and corpora have combined to shape many aspects of language education in recent years.

Concordancing

The most frequent connection between electronic corpora and classroom language instruction has been in the practice of concordancing, which is essentially computer-generated lines of text from actual corpora with a key word or words in context (KWIC) highlighted in each line, as seen in the following selected and reformatted lines for the key word "chip" retrieved from the search engine used with the Corpus of Contemporary American English (COCA) (Davies, 2008):

1	2009	MAG	America	Christian becomes material in the hands of the sculptor, who will lop off and *chip* away as he sees fit. This is one reason for the strong reactions for
31	2009	MAG	GolfMag	If your shot flies too far, you'll leave yourself plenty of room to *chip* the ball and run it up close. Pars are scarce when you're chipping
36	2009	MAG	GoodHouse	and spices. Our 20 volunteers didn't need any prodding to grab a tortilla *chip* and dig in—and you won't either with these primo picks. First
42	2009	MAG	PCWorld	scramble data as it's written to disk. Seagate's Maxtor BlackArmor puts the *chip* on the hard drive's circuitry, in what's called fulldisk encryption.
56	2009	NEWS	NewYorkTimes	she said, only made her tougher." If you've got a *chip* on your shoulder and you're dysfunctional, you'll either be depressed or repressed
61	2009	NEWS	SanFrancisco	mini grilled cheese sandwiches, French fries (of course) and warm chocolate *chip* cookies with iced milk shooters. # "They absorb the alcohol," Ms.

Concordance lines can be used by teachers and more advanced learners to study such language issues as morphologically related words (e.g., chip, chips, chipping, chipped), close synonyms (*utter* silence, but not *sheer* silence; *sheer* beauty, but not *utter* beauty), grammatical parts of speech (nouns, verbs, adjective, adverbs, articles, etc.), collocations (compound nouns, fixed phrases, idioms, etc.), grammatical structures (progressive aspect, passive voice, etc.), and language varieties (US vs. UK English, spoken vs. written English, etc.).

Chief among the free, publicly accessible search engines are the various interfaces to the 100-million word British National Corpus (BNC), including:

1. Xiara-BNC (Oxford University Computing Services, *n.d.*, www.oucs.ox.ac.uk/rts/xaira/)
2. Phrases in English or PIE (Fletcher, 2003, http://phrasesinenglish.org/).
3. BYU-BNC: The British National Corpus (Davies, 2004, http://corpus.byu.edu/bnc/).

The search engine for the more than 400-million word Corpus of Contemporary American English or COCA (Davies, 2008, www.americancorpus.org) is perhaps the most versatile and widely available interface currently online, and is rapidly gaining in popularity, with approximately 50,000 unique users (based on Google Analytics) since it came online two

years ago (Mark Davies, personal communication, March 26, 2010). Making concordancing and other corpus consultations possible for the average language learner and teacher is the hallmark of the COCA search engine.

Historically, concordancing in language education has been used by actual learners to promote vocabulary development through repeated contextual exposures, and to enhance their awareness of the specific linguistic characteristics of various academic genres such as medical research articles, PhD theses, and various business-related writings. In fact, the use of corpus-based concordancing in English-for-specific-purposes education has been recognized for several years (reviewed in Flowerdew, 2005), and the explosion of literature in this area over the past 10 years confirms that it is a readily accepted methodology among many educational researchers and language educators, especially in the higher levels of academic training.

English for Specific Purposes

In our own review of recent usage-based teaching applications, we found an astounding number of articles covering a variety of corpus-driven applications in specialized language areas, such as biochemistry, history, biology, business English, tax accountant writing, research article introductions, medical studies, general academic prose, professional legal education, and even office hour consultations. These, and many others, were published within the past 10 years, attesting to the fact that usage-based or data-driven methodologies have found a home in contexts where specific academic English is being studied, and especially where learners are being asked to distinguish between different genres of the language.

Additionally, the rise of various *learner corpora* in such settings have allowed teachers and researchers the opportunity to study typical uses of a target language by nonnative writers and speakers and to compare these between various language groups and against native (target language) norms (Gilquin, Granger, & Paquot, 2007). In short, this rich source of data shows teachers and learners where target language growth is happening well and not happening well, and, therefore, where work is needed.

However, the clear connection between technologically heavy corpus applications and higher education is not as readily apparent in more elementary levels of language training. In fact, the inductive nature of learning from concordance lines—that is, learning language patterns, meanings, and rules from examples—is often viewed as a necessary skill to take advantage of concordancing and related methods. This is not a skill normally associated with lower proficiency language learners. Although attempts are being made to close this apparent gap between corpus-driven learning and instruction at lower levels of language competence, it nonetheless remains one of the greatest obstacles for full acceptance of corpus-based methodologies in language education.

Teacher Education and Usage-Based Language Applications

McCarthy (2008) points out that while language teachers have been known to be consumers of corpus-based materials, such as language-rich reference grammars and dictionaries, they have not been as quick to embrace corpus-based resources from the perspective of conducting their own research or as "reflective" practitioners (p. 564). He concludes that this is likely due to a lack of specific corpus-based training in their formal education as teachers.

In the most extensive review to date of teacher and learner attitudes toward data-driven learning (DDL), Boulton (2009) also cites teachers' sheer lack of exposure to corpora and corpus applications as the main obstacle to full acceptance of these modern methods in

the language classroom. In short, "DDL has simply not yet penetrated the consciousness of the teaching profession world-wide" (p. 91). According to Boulton, insufficient teacher training with corpora often leads to unnecessary skepticism, because teachers struggle to figure out how to incorporate such methods into their primary language instruction; they may see some use for themselves, but are apprehensive to expose learners to corpus applications, and they often feel burdened by the time commitment required to adopt fully such methods, especially because they are generally treated as optional training and are rarely part of their normal course examinations.

Additionally, for technology-driven, usage-based teaching applications to meet the diverse needs of language professionals, teacher education must also begin to encourage and train teachers to develop and utilize their own classroom-specific corpora (McCarthy, 2008). This will require teachers in training to not only understand the concepts of basic corpus construction, but also become familiar with technological applications and tools for analyzing them, such as:

1. Compleat Lexical Tutor (www.lextutor.ca/)
2. Range and Frequency Programs (www.victoria.ac.nz/lals/staff/paul-nation.aspx)
3. WordSmith Tools (www.lexically.net/wordsmith/)
4. Xaira (www.oucs.ox.ac.uk/rts/xaira/)
5. MonoConc (http://www.athel.com/mono.html)
6. WordCruncher (www.hlanalysis.com/WordCruncher/WC.aspx)
7. AntConc and AntWordProfiler (http://www.antlab.sci.waseda.ac.jp/software.html)

Finally, technology in usage-based teaching applications falls under the much more general area of technologies in education, and should therefore be treated with the same rigor as any such innovations. Failure to do so could be costly in terms of human and monetary resources expended. On the other hand, with rigorous evaluation and appropriate adjustments, technology-driven, usage-based applications hold great promise for advancing the way languages are taught and learned.

SEE ALSO: Concordancing; Corpora in the Language-Teaching Classroom; Corpora in the Teaching of Language for Specific Purposes; Corpus Analysis for a Lexical Syllabus; Corpus Linguistics in Language Teaching; Corpus Linguistics: Overview; Formulaic Language and Collocation; Language for Specific Purposes Learner Corpora; Vocabulary and Language for Specific Purposes

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Technology-Supported Materials for Language Teaching

DOROTHY M. CHUN

Introduction

In using technology to support language teaching, it is important to consider first what one's goals are and what research has shown with regard to instructed second language acquisition (SLA). If the goals are to meet the ACTFL (2006) Standards (the five Cs: communication, cultures, connections, comparisons, communities) or the CEF (Common European Framework) (Council of Europe, 2001), then communicative competence and the ability to understand and compare languages and cultures would be high priorities. Research in computer-assisted language learning (CALL) has flourished, both in terms of determining effective uses of technology and in advancing SLA theories (see Hubbard, 2009, which is a four-volume compilation of seminal work in CALL, and Chapelle, 2009, who discusses a number of theoretical SLA perspectives and how they have influenced the development of CALL materials and tasks). Chapelle (2009) proposes that the expanding use of technology changes the nature of communicative competence theory:

> communicative competence needs to include the ability to communicate using readily accessible L2 technology aids (such as online bilingual dictionaries and tools that check grammar), the ability to make appropriate linguistic choices in face-to-face, remote, written, and oral modes, and the ability to choose appropriate technologies for communication and language learning. (p. 750)

This entry will provide a brief overview of the types of technology-supported materials that have been shown to be effective for language learning and a preview of the currently available technologies that have the potential to aid language teaching. To oversimplify (due to length constraints), CALL materials will be categorized chronologically, with reference to technological capabilities (pre-World Wide Web, Web 1.0, Web 2.0, and Web 3.0), and to the SLA theories prevalent at the time (see Table 1).

Table 1 Overview of CALL materials

	Pre-World Wide Web	*Web 1.0*	*Web 2.0*	*Web 3.0*
Types of CALL	Tutorial	Read-only	Read-Write	Portable personal
	Multimedia software	Interactivity CMC	Social networking communities	Augmented reality
Main SLA theories	Behavioral, cognitive linguistic	Psycholinguistic, interactionist	Sociocultural Teaching language in use	Ecological, cultural-historical

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Early CALL (Pre-World Wide Web)

Prior to the creation of the World Wide Web (www) in 1993, CALL materials were first developed in the 1970s and 1980s as stand-alone software programs for mainframe and personal computers and were primarily tutorial in nature, providing drill and practice for vocabulary, grammar, and the traditional four skills. Learners could do vocabulary and grammar drills and receive immediate feedback for discrete point answers. They could record themselves speaking, and, if they had access to acoustic phonetic software, they could see visualizations of their intonation curves.

Exercises for listening, reading, and writing could be done on computers, and computerized bilingual dictionaries were available. The use of multimedia (text, visuals, audio) in the 1990s was found to be effective as it provided learners with information about their L2 in multiple modes. For example, studies found that when learners receive both textual and pictorial information about lexical items, they learned these vocabulary words better than when they accessed textual or pictorial glosses alone (e.g., Chun & Plass, 1996a). Similarly, when learners both heard the way words were pronounced and saw visual representations of the words, they remembered these words better than when they only saw a visual (Jones & Plass, 2002). For L2 reading, the effect of using multimedia to improve comprehension has been mixed. Some studies have shown that multimedia glosses are effective for aiding comprehension (Yanguas, 2009) and that video previews can enhance comprehension (Chun & Plass, 1996b). Although Erçetin (2003) found that contextual video annotations are accessed significantly more than textual, audio, or picture annotations, other studies showed significant *negative* relationships between reading comprehension and graphic and video annotations (Plass, Chun, Mayer, & Leutner, 2003).

In line with the emphasis on communicative language teaching (CLT) in the 1980s and 1990s, early forms of computer-mediated communication (CMC), such as e-mail and local area networks, allowed L2 learners to communicate in their L2. Computer-assisted written classroom discussion, for example, allowed greater participation and provided learners with opportunities to express a wider range of discourse functions than in typical, spoken classroom discourse (Chun, 1994). In terms of cultural learning, in early CALL, videos and films could be viewed on videodiscs, and learners could perform related exercises in order to enhance their cultural knowledge.

Web 1.0

With the emergence of the World Wide Web in 1993, the first generation Web 1.0 was primarily "read-only" content on static Web sites, and the Internet provided greater (and instantaneous) access to authentic L2 texts and materials than had been available before. During this period, software and Web sites were developed to be more "interactive," going beyond tutorial CALL. Language instructors and CALL developers capitalized on the possibilities for more immediate and expanded forms of CMC, allowing for communication in the L2 with native speakers. Asynchronous CMC, such as bulletin boards and forums, and synchronous CMC, such as instant messaging and text chatting, increased opportunities for L2 use. Studies found that the use of such tools enhanced language learning by simulating face-to-face conversation and that text chatting might have a positive effect on real-time L2 speaking (Payne & Ross, 2005). Asynchronous discussions were shown to be similar to the question–response–evaluation sequence of the traditional language class, while in synchronous discussions, the quantity and quality of discourse functions were found to be similar to those in face-to-face conversations (Sotillo, 2000).

CMC studies provided valuable insights into SLA processes. For example, synchronous chat was shown to provide many of the same benefits ascribed to the interaction hypothesis

and the negotiation of meaning (Blake, 2000; Lee, 2001). With the growing focus since the turn of the millennium on culture and intercultural communicative competence (ICC) and on the application of sociocultural theory to L2 learning, studies have revealed both advantages (Müller-Hartmann, 2000) and pitfalls (O'Dowd & Ritter, 2006) of using CMC.

Web 2.0

Web 2.0 (a term mentioned as early as 1999 by DiNucci but closely associated with the O'Reilly Media Web 2.0 conference in 2004) might be characterized as a "read-write," user-generated content, sharing, collaborative tool, including such technologies as blogs, wikis, social networking sites, and picture and video sharing sites. For L2 learners, blogs and wikis allow them to become active authors and work collaboratively online through social networks, increasing their authentic language use and their intercultural communicative competence (Ducate & Lomicka, 2008).

In line with contemporary approaches to L2 learning, both first (Web 1.0) and second (Web 2.0) generation CMC tools have shown positive results, allowing learners to negotiate for meaning, develop their identities and increase intercultural understanding. Enhancing agency and authorship have also been suggested as primary benefits of using Web 2.0 tools for communication (Warschauer & Grimes, 2007).

Emerging studies have reported on other types of the second generation of CMC tools, for example, podcasting, videoconferencing, social networking sites in languages other than English, microblogging on Twitter, collaborative writing in wikis, chatbots as peer or tool for language learners, the virtual world *Second Life*, and multiuser virtual environments for L2 language and pragmatics acquisition. In addition to virtual social spaces, massively multiplayer online gaming spaces (MMOG) are also being investigated for their potential for L2 learning (Sykes, Oskoz, & Thorne, 2008). These studies all contribute to Chapelle's (2009) vision that the goal of expanded communicative competence should include L2 learners' ability to communicate in multiple modes (face-to-face, remote, written, and oral).

Web 3.0 and the Future of CALL

The third generation Web 3.0 has been labeled the "portable personal web," and for L2 learners, this will allow even greater personalization of language learning tools, complementing the subfield of intelligent CALL (ICALL), which has the capacity for a deeper analysis of learner input and individualization of the learning process (Heift, 2010). Mobile devices will be become increasingly multifaceted, though the question remains as to whether mobile platforms will be as effective as computers (Stockwell, 2010). In addition, the accessibility of mobile devices at all times may well result in the blurring of the distinction between school and nonschool learning, that is, learning inside versus outside the classroom. Also to be studied for their effect on L2 learning will be Web 3.0 technologies for "augmented reality," which can provide live direct (or indirect) views of a real-world L2 environment whose elements are augmented by virtual computer-generated imagery.

Contemplating the future of technology for language learning is an exciting prospect. It is this author's opinion that the greatest promise is in hybrid or blended learning environments, in which technology is seamlessly integrated into everyday teaching, learning, and communicating. As Chapelle (2009) cautioned, language teachers will need to choose appropriate technologies based on what has been shown to be effective. In developing multiliteracies in the 21st century, it is becoming clear that learning will take place in and beyond the L2 classroom.

SEE ALSO: Instructional Computer-Assisted Language Learning; Online Intercultural Exchanges; Using the World Wide Web for Language Teaching

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Tense and Aspect

KATHLEEN BARDOVI-HARLIG

The term "tense and aspect" actually includes three terms, *tense*, *grammatical aspect*, and *lexical aspect*. It is rather likely that readers of this volume may have encountered these concepts in nonspecialist and pedagogical literature conflated under the term *tense*. These terms refer to three distinct but related concepts. *Tense* locates an event or situation on the time line. In English, *John loves Mary* (present) and *John loved Mary* (past) show a difference in tense. *Grammatical aspect* provides a means of expressing one's view of a situation or event. For example, we may view an event as completed or continuing. *John sang* (simple past) and *John was singing* (past progressive) show a contrast in grammatical aspect, although both are in the past tense. Both *tense* and *grammatical aspect* refer to categories of verbal morphology. In contrast, *lexical aspect* deals with the semantics of a predicate. For example, a predicate may express a state or an action (compare *John seems happy* and *John swims*), or an action with duration or one that has no duration (*John changed the tire* and *John recognized Mary*).

Tense

Tense is a deictic category that locates an event on the time line, usually with reference to the time of speaking (Comrie, 1976; Dahl, 1985). When we encounter the term *tense* we typically think of past, present, and future. Reichenbach (1947) developed a notational system along the time line which is still referenced today. The three components of the Reichenbach analysis are E (event time), R (reference time), and S (speech time). In the past, for example, event time and reference time co-occur and precede speech time (E, R > S); in the present, the three coincide (S, R, E). The pluperfect, sometimes called the past-in-the-past (*When I got there, the class* <u>*had begun*</u>), is considered a relative-absolute tense, whereas the present and past are absolute tenses. As in all past tenses, the event ("the class began") takes place before the time of speaking (E > S), but the pluperfect refers to another event (i.e., "getting there"), represented as E > R > S. The most common interpretation of the present perfect is current relevance of a past situation (Comrie, 1976). Following Reichenbach, this is expressed as E > R, S.

Although future is often thought of as a tense, not all languages have a morphological future. Spanish, French, and Italian, for example, have morphological futures, but English does not. Instead, English uses the modal *will* to indicate future. Many languages also have a *go*-future in which the verbs *go* or *come* form a periphrastic future (Bybee, Perkins, & Pagliuca, 1994). The future is always semantically modal because the future is always partially imagined; intention, volition, and desire are part of the semantics of future expression (Bybee, 1985; Dahl, 1985).

Although tense locates events on the time line, it is important to note that languages also employ other linguistic means to redundantly or exclusively place events in time; these include the use of adverbials, calendric references, and even place names to order events. All languages have lexical means of referring to time, but not all languages mark tense.

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Grammatical Aspect

In contrast to tense, *grammatical aspect* does not locate an event or situation on the time line, nor does it relate the time of one situation to another. Rather, it is concerned with "the internal temporal constituency of one situation; one could state the difference as one between situation-internal time ([grammatical] aspect) and situation-external time (tense)" (Comrie, 1976, p. 5). Grammatical aspects provide different ways of viewing situations (Comrie, 1976; Smith, 1983; Dahl, 1985). In Romance languages there are two past tense forms—the perfective and the imperfective. The perfective forms—*pretérito* in Spanish, *passé composé* in French, and *passato prossimo* in Italian—encode the view of a situation or event as a whole and as completed. In contrast, the imperfective past—*imperfecto* in Spanish, *imparfait* in French, and *imperfetto* in Italian—encode explicit reference to the internal temporal structure of a situation, "viewing a situation from within" (Comrie, 1976, p. 24). Germanic languages generally lack the morphological distinction of preterite and imperfect found in the Romance languages. English exhibits contrast between the progressive and the simple, whereas neither German nor Dutch marks grammatical aspect as English does. According to Comrie, the characteristics of the imperfective in all languages tend to be habituality and continuousness/durativity.

An important consequence of viewpoint aspect (i.e., grammatical aspect) is that the same occurrences can be reported in different ways. For example, an event can be presented as one event in an ordered series in which case it is viewed as completed and carries the perfective past: *Chaplin came home . . . He picked an orange, kicked the orange outside, and they had dinner*. Alternatively the narrator might open up the event with the progressive: *They were having dinner, and Chaplin realized there was no milk* (adapted from a learner narrative [Bardovi-Harlig, 1998]). The event is still completed, but for the purpose of the narrative, it opens an interval during which another event occurred.

Lexical Aspect

Lexical aspect—which deals with the semantics of predicates and their inherent temporal make-up—has been divided in various ways. For example, readers may recall a division from language arts lessons that distinguishes between description verbs (such as *be, seem, have*) and action verbs which parallels the linguistic distinction between stative and dynamic predicates. This is a sound initial distinction, but binary aspectual distinctions tend to group dissimilar predicates together. One four-way analysis is traced back to Aristotle and was introduced to modern linguistics by the work of philosophers Vendler (1957/1967) and Kenny (1963). (See Binnick, 1991, for the history of the study of aspect.) Vendler proposed a four-way division that distinguishes the aspectual categories of states (STA), activities (ACT), accomplishments (ACC), and achievements (ACH). These are often referred to as Vendler categories.

Each of the categories has distinguishing characteristics. States persist over time without change. Examples of states include *seem*, *know*, *need*, *want*, and *be* (as in *be tall*, *big*, *green*). Activities have inherent duration and involve a span of time; like *sleep* and *snow* they have no specific endpoint. Examples of activities include *rain*, *play*, *walk*, and *talk*. Achievements capture the beginning or the end of an action (Mourelatos, 1981) as in *The race began* or *The game ended*, and can be thought of as reduced to a point (Andersen, 1991). Examples of achievements include *arrive*, *leave*, *notice*, *recognize*, and *fall asleep*. Accomplishments have both an endpoint (like achievements) and inherent duration (like activities). Examples of accomplishments include *build a house* and *paint a painting*. Achievements and accomplishments can be grouped together as telic predicates, known as "events" (Mourelatos, 1981).

The classes of statives and activities can be grouped together as atelic predicates. Aspectual categories apply to the verb and its arguments (Dowty, 1979; Freed, 1979) but are most commonly discussed as relating to predicates.

The Vendler categories can be distinguished by three features (Andersen, 1991): [±punctual], [± telic], and [± dynamic]. The feature [+ punctual] distinguishes achievements from all other verbs. The feature [+ telic] distinguishes predicates with endpoints (*sing a song*) from those without (*sing*), and so distinguishes achievements and accomplishments from activities and statives. The feature [+ dynamic] distinguishes dynamic predicates (for example, *play*, *read a book*, *wake up*) from stative predicates (such as *seem* and *know*).

The literature on lexical aspectual classes has developed diagnostic tests that distinguish the aspectual categories from each other. These tests are very important in applied linguistics, and for acquisition research discussed briefly below. One such test is the *in + time phrase/for + time phrase* test, which distinguishes activities from accomplishments and achievements. Activities are acceptable with adverbial phrases such as *for ten minutes*, but unacceptable with phrases such as *in ten minutes*. The fact that *John slept for an hour* is acceptable, but that ??*John slept in an hour* is not (indicated by question marks) indicates that *sleep* is an activity.

Accomplishments and achievements are acceptable with *in*-phrases, but unacceptable with *for*-phrases as seen with the accomplishment *build a house* which is acceptable in *John built a house in a year* but odd in ??*John built a house for a year* (the latter invites an interpretation in which the same house was built repeatedly for a year). The same results obtain for achievements such as *notice the painting*: *John noticed the painting in a few minutes*/?? *John noticed the painting for a few minutes* (Dowty, 1979).

The progressive test is often used to distinguish states from dynamic durative predicates (i.e., states and achievements from activities and accomplishments). States and achievements will fail the progressive test (**John is liking Mary*; **Susan is recognizing Bill*) whereas activities and accomplishments will pass (*Bob is swimming*; *Clarice is writing a book*). Dowty (1979) provides a comprehensive set of tests and reference lists of predicates by aspectual categories. (See Binnick, 1991, for a review).

Tests of the Vendler categories for languages other than English followed later and included Spanish, French, and Japanese (Jacobsen, 1982). Applied linguists have developed further tests for identifying lexical aspect in learner production. In addition, Shirai proposed ordering aspectual tests in both English and Japanese (Shirai, 1991, 1998) to improve efficiency and accuracy for coding natural production samples from both native speakers and learners (see Bardovi-Harlig, 2000, for a review).

Tense and aspect also play a role in narrative structure. Hopper observed that competent (native) users of a language "mark out a main route through the narrative and divert in some way those parts of the narrative that are not strictly relevant to this route" (Hopper, 1979, p. 239). The use of tense and aspect is one way that speakers distinguish the main events (the *foreground*) from the supporting events and information (the *background*). In the foreground successive events may be marked in the preterite or simple past. The foreground is on the narrative time line, but the background is not, and speakers may use the background to predict, interpret, or supply information about earlier or simultaneous events.

Tense and Aspect in Second Language Acquisition

Second language acquisition is one area of applied linguistics that has been actively investigated. The emergence of verbal morphology in second language acquisition has four main characteristics (Dietrich, Klein, & Noyau, 1995). First, the development of temporal

expression is slow and gradual. However succinctly analysts (or teachers) can describe a tense-aspect system of a language, learners acquire its formal components and form-meaning associations in stages that take time to complete. Second, as part of the slow and gradual acquisition of the tense-aspect system, form often precedes function and verbal morphology may emerge without the target meaning. Third, irregular morphology precedes regular morphology. Finally, learners tend initially to avoid discontinuous marking such as aux + V-tense inflection and formulate an initial hypothesis that tense is realized by suffixed inflections. This is reflected in the initial use of the past participle for the French *passé composé* and the Italian *passato prossimo* and of V-*ing* in English for the progressive.

L1 acquisition studies found that children were sensitive to lexical aspect in the morphological encoding of past events. Antinucci and Miller (1976) reported that in conversation seven Italian-speaking children and one English speaking child (ages 1;6 to 2;5) used the past participle with change of state verbs with clear results (e.g., *venire* 'come', *cascare* 'fall', *arrivare* 'arrive') but no past marker with states (e.g., *volere* 'want', *sapere* 'know') or activities (e.g., *volare* 'fly', *caminare* 'walk'). Bronckart and Sinclair (1973) reported similar results from an experimental production task in which 74 French-speaking children (ages 2;11 to 8;7) used perfective past forms (*passé composé*) for actions with clear results and present forms (*présent*) for inherently durative events. Bronckart and Sinclair (1973) and Antinucci and Miller (1976) concluded that young children encode events with past (tense) only when there is an endpoint; in other words, initial distribution of past morphology is determined not by time as in a tense system, but by lexical aspect.

With the L1 research as a background, second language acquisition researchers also began a similar line of investigation resulting in what has come to be known as the aspect hypothesis (Andersen, 1991). The aspect hypothesis maintains the importance of the initial influence of lexical aspect in the emergence and spread of tense-aspect morphology in past-time contexts. The aspect hypothesis can be broken down into four separate claims (Shirai, 1991, pp. 9–10; Andersen & Shirai, 1996), stated in terms of grammatical aspect and its relation to lexical aspect (following Vendler categories):

1. Learners first use (perfective) past marking on achievements and accomplishments, eventually extending use to activities and statives.
2. In languages that encode the perfective/imperfective distinction, imperfective past appears later than perfective past, and imperfect past marking begins with statives, extending next to activities, then to accomplishments, and finally to achievements.
3. In languages that have progressive aspect, progressive marking begins with activities, then extends to accomplishments and achievements.
4. Progressive markings are not incorrectly overextended to statives.

The acquisitional claim goes beyond the affinity of verbal morphology for predicates of semantically compatible lexical aspectual categories; it additionally claims that in the initial stages—in the past—verbal morphology will be in complementary distribution according to aspectual category, unlike in the target languages investigated in the same studies, where contrast is possible.

Recall that verbal morphology also plays a role in narrative structure. Learner narratives also follow linguistic universals: the *interlanguage discourse hypothesis* predicts that learners use emerging verbal morphology to distinguish foreground from background in narratives. Learners show greater use of perfective past in foreground than in the background. Moreover, they show greater use of imperfective and progressive in the background than in the foreground. Unlike the perfective past which can occur in both foreground and background, the imperfective and progressive only occur in the background in targetlike use (Bardovi-Harlig, 2000).

Using both frameworks, data form learners of English suggest a hierarchy that predicts which verbs in a narrative will be inflected by learners with limited linguistic resources:

1. Achievements are most likely to be inflected for simple past, regardless of grounding.
2. Accomplishments are the next most likely to exhibit the simple past. Foreground accomplishments show higher rates of use than background accomplishments.
3. Activities are the least likely of all the dynamic predicates to carry simple past, but foreground activities show higher rates of simple past inflection than background activities. Activities also show use of progressive in the background.

This illustrates the influence of lexical aspect and narrative structure in tense-aspect acquisition, and suggests areas for consideration by other areas of applied linguistics such as instruction and materials development.

SEE ALSO: Adverbs; Cognitive Second Language Acquisition: Quantitative Methods; Narrative Discourse

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Technology and Terminology

LYNNE BOWKER AND DES FISHER

Terminology is the discipline concerned with the collection, processing, description, and presentation of terms, which are lexical items used to designate concepts belonging to a specialized subject field (Sager, 1990, p. 2). Terminology and technology have a long history: one of the first applications of computers to language was the development of large-scale collections of terminology known as term banks. First developed in the 1960s, and still in use today, term banks contain a series of records, which present information about terms and the concepts they represent (e.g., grammatical category, definition, contexts, synonyms, foreign-language equivalents). They are essentially organized repositories of condensed terminological data.

The advantages of using an electronic storage medium are clear: space is not at a premium as is the case with printed resources, updates can be implemented more quickly, and contents can be searched and accessed more easily. However, while computers have long been used to store terminological data, the collection and analysis of information was done in a manual fashion—by gathering and poring over printed documents—for many, many years after the introduction of computers. Although any aspect of terminology work can be performed manually, such an approach is time-consuming and labor-intensive, which necessarily limits the amount of information that can be processed. Additionally, some types of information, such as frequency data, can be collected more reliably with computer assistance. Therefore, in recent decades, there has been a noticeable shift from the passive use of computers as mere repositories to the active integration of computerized tools into most areas of terminology work. Indeed, technological developments have permitted such improvements in productivity, quality, and accessibility that it has become virtually unthinkable for those carrying out terminological research not to take advantage of the wide range of electronic resources and tools available to them.

Terminology work has always been corpus-based in the sense that information about terms and concepts has been gathered primarily from texts. However, the increasing availability of documents in machine-readable form (e.g., Web, databases, e-books, and journals) means that terminologists can—with the help of specialized software—consult a wider range of documents than ever before. Electronic texts that meet project criteria (e.g., subject, date, language) can be gathered into a corpus and processed in a variety of ways using a range of tools (Bowker & Pearson, 2002).

Term Extractors

For example, one type of tool used by terminologists is a term extractor, which attempts to automatically identify all the potential terms in a corpus and then presents this list of candidates for verification. Term extractors can use any of several different underlying approaches (Cabré Castellví, Estopà Bagot, & Vivaldi Palatresi, 2001; Lemay, L'Homme, & Drouin, 2005). Frequency- and recurrence-based techniques essentially look for repeated sequences of lexical items. The frequency threshold, which refers to the number of times that a sequence must be repeated, can often be specified by the user. Pattern-based techniques make use of part-of-speech-tagged corpora to search for predefined combinations

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of grammatical categories (e.g., adjective + noun) that typically correspond to term formation patterns. Meanwhile, corpus comparison techniques compare the relative frequency of a given lexical pattern in a small specialized corpus and a larger general reference corpus to determine the likelihood that the pattern corresponds to a term. Moreover, these various approaches can be combined in hybrid term-extraction systems.

Recent enhancements to some term extractors include the ability to handle lemmatization and orthographic variants. In addition, as illustrated in Figure 1, bilingual term-extraction systems attempt to identify the equivalents of candidate terms in parallel corpora (i.e., corpora of texts in one language aligned with their translation into another language), and currently, researchers are seeking ways to identify such equivalents in comparable (i.e., non-translated) corpora. While the lists of candidates generated by term extractors are not perfect—there will almost certainly be instances of both noise (non-pertinent items identified) and silence (relevant patterns missed)—they nonetheless provide a useful start for anyone having to identify terms in a large document or series of texts.

Candidate term	**Frequency**	**Candidate equivalent**	**Score**
draft Charter	4	l'égalité des chances pour tous	100
social cohesion	4	promotion de la non-discrimination et de l'égalité des chances pour tous	66
equal opportunities	3		
fundamental social rights	3		
non-discrimination	3	**Context**	
Social Charter	3	1. The new generation of programmes in the field of education, training and youth can make a valuable contribution to the promotion of non-discrimination and **equal opportunities for all**.	La nouvelle génération de programmes dans le domaine de l'enseignement, de la formation et de la jeunesse pourra apporter une contribution non négligeable à la promotion de la non-discrimination et de **l'égalité des chances pour tous**.
international organizations	2		
Member State	2	2. The Commission will ensure the promotion of non-discrimination and **equal opportunities for all** in the context of enlargement and relations with third countries through:	La Commission veille à la promotion de la non-discrimination et de **l'égalité des chances pour tous** dans le cadre de l'élargissement et de relations avec les pays tiers grâce à :
social security	2		

Figure 1 Candidate terms and proposed equivalents automatically identified by a bilingual term extractor

```
amous cell carcinoma, and malignant melanoma. The last one can be fatal
such as breast cancer and malignant melanoma did not exceed expected ra
re a total of 20 cases of malignant melanoma in 19 patients (8 invasive)
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Figure 2 A monolingual KWIC display for the search term *malignant melanoma*

There are two main types of skin cancer: non-melanoma and **malignant melanoma**.	Il existe deux principaux types de cancer de la peau : les cancers non-mélanocytiques et les mélanomes.
There are three main types of skin cancer: basal cell carcinoma, squamous cell carcinoma and **malignant melanoma**.	Les trois principaux types de cancer de la peau sont le carcinome basocellulaire, le carcinome spinocellulaire et le mélanome.

Figure 3 A side-by-side display of the results for the search term *malignant melanoma* in a bilingual parallel concordancer

Corpus Analysis Tools

Once potential terms have been identified, terminologists can use these as access points into the corpus and go on to explore the surrounding context in more detail using tools such as concordancers. A concordancer searches for all occurrences of a specified pattern and displays the results in context in an easy-to-read format, such as a Key Word in Context (KWIC) display, as illustrated in Figure 2, or, in the case of a parallel corpus, in a bilingual display as shown in Figure 3. Note that concordancer searches can be simple (e.g., key word) or advanced (e.g., wildcard, Boolean, fuzzy).

Terminologists can read the surrounding context to learn more about the concept or the usage of the term. They can also sort the data according to words occurring before or after the search term to reveal phraseological patterns. Some corpus analysis tools can also calculate statistically significant collocations and co-occurrents (e.g., using mutual information, *t* scores, log likelihood). The value of including such information on term records is increasingly being recognized since many of the users of such resources (e.g., translators, technical writers) seek this type of usage information to help them with their task of producing a text that reads well.

In addition, corpora can be searched using knowledge patterns, which are lexical items that can reveal semantic relations between concepts (Meyer, 2001). For example, knowledge patterns such as *part of*, *consists of*, or *includes* might reveal a knowledge-rich context that illustrates a meronymic, or part-whole, relation between two concepts. This type of information can be helpful for learning more about concepts or for constructing useful definitions for inclusion on a term record.

Another useful type of information that can be obtained from corpora is frequency data. Computers excel at counting, and many corpus analysis tools include a feature that counts all the occurrences of each lexical item in a corpus. More advanced tools allow lemmatization and the disambiguation of homographs, which produces more accurate counts. Frequency data is difficult to gather manually, but it can be helpful for determining which of several variants or synonyms is more commonly used, for example. Similarly, information about frequency is used by terminometric tools, which aim to measure the degree of implantation of various concurrent terms designating the same concept in a subject field (Quirion & Lanthier, 2006).

Terminology Management Systems

While terminologists tend to compile the results of their research into vast and widely accessible lexical resources such as term banks, other language professionals also conduct terminological research. For example, individual translators often have to solve terminological problems they run into when translating a text. In order not to have to repeat this research in the future, many translators use a terminology management system (TMS) to create their own terminology databases or termbases, which can be likened to small-scale, personalized term banks.

When used as a stand-alone tool, a TMS is very similar to a term bank in that it is essentially a searchable repository for recording the results of terminological research. However, most translators use TMSs as part of an integrated tool suite or translation environment tool (TEnT), which may include a word processor, translation memory system, machine translation system, and term extractor. In this setting, a TMS takes on a much more active role, and this has had a considerable impact on how translators carry out their term research.

For instance, many TMSs have an active term recognition or automatic term look-up feature, which interacts directly with the word processor. The contents of the source text that the translator has to translate are automatically compared against those of the termbase. Whenever a match is identified, the translator is alerted that there is an entry for that term in the termbase. The translator can then consult the termbase entry and, if desired, paste the equivalent directly into the text with a single click. In fact, some TMSs go one step further and offer a feature known as pretranslation. If pretranslation is activated, the equivalents for all matches are automatically pasted into the text as part of a batch process. The advantages of using this type of integrated TMS are that translators can work more quickly and can ensure that terminology is used consistently.

Indeed, in order to further optimize their use of the technology, some translators have begun to change the way in which they record data on term records within a TMS. For instance, since the automated features such as active term recognition and pretranslation do not make use of information such as definitions or contexts, translators have begun to streamline the contents of their term records, often including only terms and their equivalents (O'Brien 1998, p. 118). In addition, as noted by Kenny (1999, p. 74), translators are no longer simply recording the canonical form of a term (e.g., infinitive form for verbs, masculine singular form for nouns) as advised by terminology textbooks (e.g., Sager 1990, p. 145). Instead, they are recording the most frequently encountered form, or even multiple forms, to facilitate one-click pasting into the target text without the need for additional editing.

Moreover, as observed by Bowker (2011), translators are not restricting themselves to including only terms on term records. Since any type of reusable information—term or otherwise—could prove useful, translators who work with TEnTs are beginning to fill their TMSs with records for a mixture of terms and nonterms, even though this contradicts the principles put forth in the terminology literature (e.g., Dubuc, 1997, p. 38). Such effects brought about by technology call into question how language professionals are trained in the use of terminology tools. Bowker and Marshman (2009), for example, have advocated a more integrated approach to technology training that better reflects the ways these tools are used in the contemporary workplace.

Prospects for Terminology and Technology

It is worth taking a brief look to the future to consider additional ways that technology might impact the terminology profession. For instance, work continues on the development

of standards for exchanging data between different terminology tools. Term Base eXchange (TBX) is an open, XML-based standard for exchanging structured terminological data; it has been approved as an international standard by the Localization Industry Standards Association (LISA) and will soon be published by the International Organization for Standardization (ISO). Furthermore, collaborative terminology ventures—particularly as part of volunteer efforts—are now facilitated through the use of wiki technology, which provides, a centralized platform with a Web interface, templates, discussion pages, revision histories, and content protection options to allow for managed collaboration. Tools are also being developed to semi-automate the labor-intensive task of corpus construction (Barrière, 2006), as well as other aspects of corpus analysis (Barrière & Agbago, 2006).

Finally, in addition to being impacted by technology, it is worth noting that terminology research itself is contributing to the development of new tools. For example, terminology is playing a key role in the development of tools for ontology building or knowledge structuring, controlled-language checking, and information retrieval (including tasks such as query expansion and cross-language information retrieval). Thus, it is clear that terminology and technology will continue to evolve and influence one another in the years to come.

SEE ALSO: Computer-Assisted Translation; Concordancing; Corpora in Language for Specific Purposes Research; Corpora: Specialized; Technology and Teaching Language for Specific Purposes; Technology and Translation; Term Banks; Terminology and Data Encoding; Translation, Localization, and Internationalization; Translation Tools

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Terralingua

LUISA MAFFI

Terralingua (www.terralingua.org) is an international nongovernmental organization (NGO) founded in 1996. It is the world's first organization with a mission to sustain the biocultural diversity of life—our invaluable global heritage of biological, cultural, and linguistic diversity.

Terralingua's guiding idea is that the diversity of life is diversity in nature and culture, and that biodiversity, cultural diversity, and linguistic diversity are interrelated and interdependent. Historically, human communities co-evolved with the natural world in the process of adaptation for survival. In the course of this long-term adaptation, humans developed in-depth knowledge about their ecological niches and how to use and manage ecosystems and biodiversity in ways that ensured the continued availability of natural resources needed for survival. This cultural knowledge was encoded in the local languages and transmitted through language use. Therefore, there is an intimate, some would say inextricable, link between language, knowledge, and the environment.

The continued vitality of local languages and of the cultural knowledge they encode and transmit supports the continued vitality of the local ecosystems and their biodiversity. At the same time, thriving ecosystems and biodiversity sustain the people living in them and foster the thriving of their cultural knowledge and languages. Conversely, if there is a loss of vitality at any level, all other aspects of the diversity of life are affected. This inextricable link between language, knowledge, and the environment is what Terralingua refers to as "biocultural diversity" (Maffi, 2001; Harmon, 2002).

Most of the world's biocultural diversity is found in areas occupied by indigenous peoples. Indigenous languages make up 80–5% of the total number of living languages, which is estimated at 6,909 languages in the 2009 edition of *Ethnologue* (www.ethnologue.com), though most indigenous languages (with some notable exceptions) are spoken by relatively small populations. While there is no one-to-one correspondence between languages and cultures, languages can be taken as a useful proxy for cultural diversity, suggesting that most cultural diversity is also represented by indigenous peoples. Research conducted by Terralingua, mapping the global distribution of linguistic diversity against the global distribution of biodiversity (Oviedo, Maffi, & Larsen, 2000; Skutnabb-Kangas, Maffi, & Harmon, 2003; Stepp et al., 2004), has revealed significant overlaps between the geographic patterns of linguistic diversity and that of biodiversity worldwide, with most of the world's biodiversity located in areas of high linguistic diversity. The highest concentration of biocultural diversity occurs between the tropics, with three "core areas" in the Amazon Basin, Central Africa, and Indomalaysia-Melanesia (Harmon & Loh, 2004).

However, biocultural diversity is currently under serious threat. The world is experiencing a "converging crisis" of extinction of biological, cultural, and linguistic diversity. Global data on biodiversity loss show that between 1970 and 2005 there was a loss of 30% in the world's biodiversity. Terralingua's Index of Linguistic Diversity (Harmon & Loh, 2010) shows that, during the same period of time, global linguistic diversity has eroded at a similar pace: There has been a 20% decline since 1970. These mirroring trends suggest that biocultural diversity as a whole is on a downward path. An examination of the causes of this converging extinction crisis points to many of the same social, economic, political, and ecological factors affecting loss of diversity at all levels in a cumulative and synergistic

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fashion. Therefore, it also follows that addressing the extinction crisis requires action at many levels.

For this reason, Terralingua advocates and applies an integrative approach to the conservation, maintenance, and revitalization of the diversity of life in all its forms, through a comprehensive program of research, education, policy-relevant work, and on-the-ground action. From a biocultural perspective, the conservation of biodiversity benefits from the maintenance and revitalization of local languages and cultures, and the maintenance and revitalization of languages and cultures is all the more effective insofar as it goes hand in hand with the conservation of the local biodiversity. Terralingua's book *Biocultural Diversity Conservation: A Global Sourcebook* (Maffi & Woodley, 2010) is the first analysis of integrative biocultural conservation efforts from all over the world. It illustrates a great diversity of initiatives taken by indigenous and local communities, and many organizations working with them, to sustain local languages, cultures, and environments.

These and the many other efforts that are taking place worldwide offer hope for stemming the global loss of biocultural diversity. However, to be sustained and to be fully successful, on-the-ground efforts need to be bolstered by policies favorable to biocultural diversity. Since 2000, there have been signs that an integrative biocultural perspective has begun to make its way into the statements of principle and the programs of work of major international organizations such as UNESCO, UNEP, IUCN, and several others. However, by and large actual policies for the integrated protection of linguistic, cultural, and biological diversity are still lagging behind the statements of principle. Furthermore, in principle binding protection of biocultural diversity can only be ensured through national legislation, and very few countries have taken any steps in this direction.

A major effort is needed to promote understanding of and appreciation for the biocultural diversity of life. Such an effort requires educating people about the vital importance of biocultural diversity for the future of humanity and all of life. In the second decade of its work, Terralingua is concentrating on this educational effort, through a variety of initiatives, building on earlier experiences such as its collaboration with UNESCO in the production of the educational booklet *Sharing a World of Difference: The Earth's Linguistic, Cultural, and Biological Diversity* (Skutnabb-Kangas et al., 2003). The goal is to create global awareness of and caring for biocultural diversity among students and the general public, so as to engender a groundswell of support for biocultural diversity and a favorable climate for the development of policy for biocultural diversity protection.

SEE ALSO: Heritage and Community Languages; Language and Identity; Language Policy and Planning: Overview; Language Rights in Language Policy and Planning; Status Planning

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Test Design and Retrofit

GLENN FULCHER

Test Design

All defensible test design presupposes a clear and unambiguous statement of the test purpose. This involves documenting in a test framework the intended test-taking population, the uses for which this population is expected to use language, the inferences to be drawn from the test scores, and the precise nature of the decisions that will be made about individuals. Without a clear statement of purpose it is unclear what evidence might be relevant to a validation argument, or what principles might be used to make design decisions. As Rulon (1946, pp. 290–1) put it prophetically, "A test cannot be labeled as valid or not valid except for some purpose."

This principle is universal and unequivocal, because tests are tools used by society and institutions to distribute limited resources to the most deserving on meritocratic grounds (Latham, 1877, pp. 28–9). The testing enterprise is one "in which the object is to select the most suitable persons for a certain purpose" (p. 2), and "The purpose of language testing is always to render information to aid in making intelligent decisions about possible courses of action" (Carroll, 1961, p. 314). This entails using test scores to make decisions about individuals that will impact upon their immediate and future prospects in life. It is therefore not ethically acceptable for high-stakes decisions to be made using instruments that are not demonstrably relevant, useful, and sufficient for the defined purpose.

There is therefore an intimate connection between the decisions to be made, the inferences about individuals drawn from scores, and test design. In order to explore this connection we find a useful analogy in architecture. Buildings are always designed with a purpose in mind. It would not occur to an architect to start work on the blueprints for a building without first defining its intended use. "No building, as far as I know, ever really delighted its users if it proved . . . unsuitable for their needs," wrote Broadbent (1973, p. vii), arguing that building purpose and user needs should drive design, so that the building becomes "an environmental filter between man and his environment." There is little point designing a hotel in which to house aircraft, or a cathedral as a family home. A language test is a filter between test takers and a postdecision future. There is no value in administering a test of academic English to migrant farm workers, or a business English test to oil-field engineers. Worst of all are buildings with no purpose at all, for they claim to be usable for any purpose. These are difficult to find, because architects realize their potential for dereliction. One such example is the London Dome, a structure meant to be endlessly adaptable, but which lay unused for seven years from the turn of the millennium until extensive (and extremely expensive) structural retrofits were undertaken to turn it into the O2 arena. The same is true of language testing. As Ingram (1968, p. 70) once refreshingly put it: "All tests are for a purpose. A test that is made up without a clear idea of what it is for, is no good."

A link between test purpose, test design and validation has long been implicit in the assessment literature, even when validation was seen primarily as a post hoc activity. Working within primitive validity theory, researchers were keenly aware of the reverse chain of reasoning from decisions to design that we see in architecture. Ruch (1924, p. 13)

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writes "For an examination to possess validity it is necessary that all the materials actually included be of prime importance, that the questions sample widely among the essentials over which complete mastery can reasonably be expected . . . and that proof can be brought forward that the test elements (questions) can be defended by arguments based on more than mere personal opinion." The requirement for an argument to support the chain echoes down the decades (Kane, 2006), and is embedded in the primary standards of educational assessment (AERA, 1999, p. 17). In recent years the argument-based approach to validation has made the link between purpose, design, and validation much stronger. An interpretive argument that is constructed to justify a claim of score meaning minimally involves three inferences: a scoring inference that justifies the allocation of a score to an observable attribute, a generalization inference from the observation to the universe of generalization, and an extrapolation inference from the universe of generalization to the target domain (Kane, 2009, pp. 57–8). The observations, what test takers actually do under test conditions in relation to test tasks, must generate evidence that can be generalized well beyond the test itself. Thus, Mislevy (2007, p. 463) is correct when he states that "considerations of test use, even if implicit, are integral to design." Fulcher and Davidson (2007, p. 51) take this one step further in arguing that all such considerations should be explicit, coining the phrase "effect-driven testing" to describe a model in which the role of the test designer is "to picture the effect the test is intended to have, and to structure the test development to achieve that effect" (p. 144). In common with architecture, this also implies that designers "think about intended beneficial impact as the test is built, and be willing to knock it down when things change" (p. 177).

The "nuts and bolts" of test design are therefore intimately and inevitably connected with test purpose and validation (Fulcher, 2010, p. 5). Evidence-centered design (ECD) (Mislevy, Almond, & Lukas, 2003) is a systematic approach to test and task design that links purpose to design through an evidential basis for design decisions (Pearlman, 2008), the outcome of which is embodied in test specifications. The evidence to support design decisions, the record of the design decisions, and the final design documents can then be compiled into a narrative that puts forward a case for supposing that inferences from test scores are useful and relevant for the intended test purpose. Chapelle (2008, p. 320) refers to this as a "validity argument from test design." Examples of validity arguments such as those to support the use of the Internet-based Test of English as a Foreign Language (TOEFL iBT) show that design decisions, and the reasons for these decisions expressed as warrants and backings, now constitute the largest part of the argument (Chapelle, Enright, & Jamieson, 2010, p. 10).

Test design is therefore a form of architectural design activity, complete with an intended purpose and use, design documents, rationales, and criteria by which it is possible to judge the success of the outcome.

Test Retrofit

Once a test has been designed and is in operational use, it requires ongoing maintenance. By analogy with architecture, both buildings and tests require retrofits to incorporate state-of-the-art technologies and meet the changing needs of users. Buildings and tests that do not evolve will cease to be used and decay (Brand, 1994, p. 110). As Davies (2008, p. 110) says of the English Proficiency Test Battery (EPTB) and the English Language Testing Service (ELTS): "EPTB and ELTS were largely one-off operations, they were not maintained with new material on a regular basis and they did not have the advantage of being informed by new (and ongoing) research." Both were ultimately demolished, and a new structure erected on the site.

"Retrofit" refers to the process of making changes to test specifications after the test has been rolled out for operational use. There are two primary motivations for retrofitting tests, which are parallel to those in architecture. The first is to make improvements to the test without altering its principal purpose; this is referred to as an "upgrade retrofit." The second is to change or broaden the original purpose so that its use can be extended to additional groups of test takers; this is referred to as a "change retrofit" (Fulcher & Davidson, 2009).

Test Architecture

Test and architectural design are both modular, and involve design layers (Brand, 1994, pp. 12–23; Mislevy and Risconscente, 2005). Each layer in the design has its own unique function. While some layers may be modified independently, they all work together to create the intended effect. When a retrofit is proposed, it may affect one or many layers. The layers of design are illustrated in Figure 1.

The site of a building is the most stable and least likely to change. The structure is also difficult to alter, comprising as it does the foundations and the load-bearing components. However, retrofit is sometimes essential if the structure begins to weaken. The skin of the building is the exterior surface; this is replaced from time to time, either when new materials become available, fashions change radically, or the skin deteriorates so much that it is no longer water-resistant. The space plan is modified more frequently, depending on the number, and needs, of users. "Stuff" is moved around on a regular basis. Finally, the services include heating, plumbing, electrical writing, ventilation, and so on. These are modified frequently in order to maintain the building in a useable condition as other layers are retrofitted. Each of the layers has a parallel in language testing, which can be partially explained using concepts from evidence-centered design.

Site — Models of communicative competence and language use change very little over time. Similarly, discourse practices in real-world domains, and the functions required to undertake specific purpose language tasks, are largely stable. These constitute the theoretical and descriptive building site, which only periodically experiences tectonic shifts.

Structure — The structure of a test is set out in a framework document that describes test purpose, the constructs of interest (from models), discourse domains relevant to the population of interest, task models, and other real-world criteria which score users wish to predict. Much applied linguistic work is

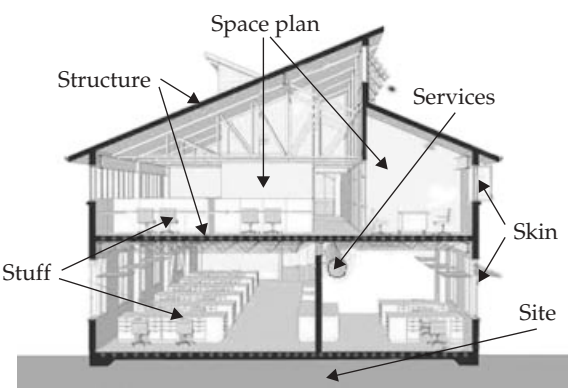

Figure 1 Layers of architectural design and retrofit © Glenn Fulcher

required to create the structure, which is context-specific. For example, the genres and scripts of the service industry, and the constructs needed for successful performance, have changed little over time (Fulcher, Davidson, & Kemp, 2011).

The first two layers of site and structure are set out in a test framework document, while the layers below the structure are typically articulated in the test specifications.

Skin — The testing equivalent of the skin is the delivery model, which states how the test is delivered (e.g., Internet, computer, or paper and pencil), and the presentation model, which states what the test takers will encounter. Alterations to the skin are more frequent, but carried out only when essential because their high visibility often causes user unease in the face of impending change.

Space plan — The test assembly model creates the space plan for the test. This model states how long the test will take to administer, how long input material should be, and how many item types and of what kind should be included. The plan sets out how the domain is represented within the limited space available in a test.

Stuff — The individual items are the "stuff" that occupies the space. These are changed and moved around in test forms almost at will, although if new item types are introduced this would trigger a change to the services.

Services — The service layer provides a building with usability. In a test, the service layer is the interpretive argument (Kane, 2006) that provides the rationale for the decisions made in all other layers in order to justify the interpretations made from test scores, which in turn supports the use of the scores in decision making for the intended purpose. Thus, whenever a change is made in any architectural layer, the interpretive argument will need some adjustment.

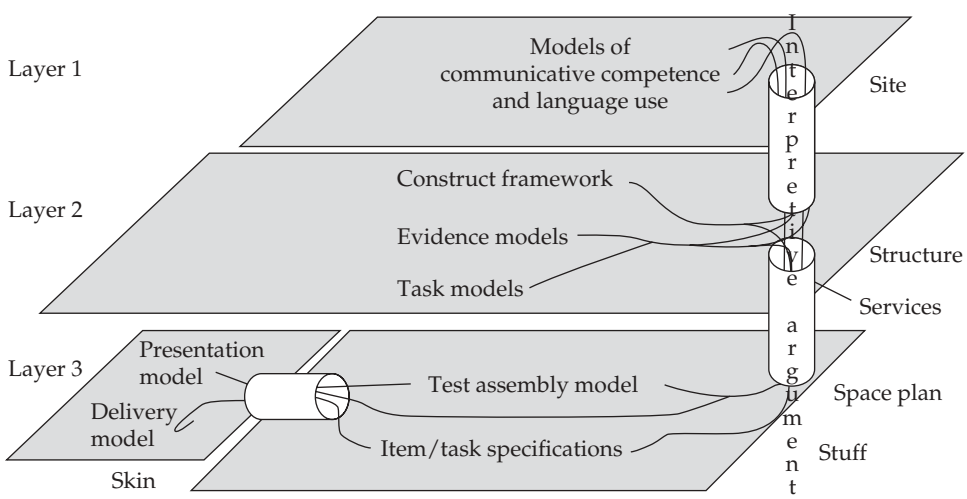

Figure 2 Test architecture and retrofit (Fulcher & Davidson, 2009, p. 134)

A retrofit program may require changes to any or all of these levels. Figure 2 relates the levels of test design to the architectural layers. In the discussion of upgrade and change retrofits below, we suggest which layers are likely to be affected, although all retrofits are likely to minimally require changes to the services as the interpretive argument is the fundamental component that demonstrates that the test is fit for purpose.

Upgrade Retrofits

Upgrade retrofits are part of the process of building and test maintenance. They do not change test purpose but enhance it by improving its usability for intended functions. Upgrade retrofits almost always occur in the layers of the skin, space plan, or stuff, with appropriate alterations to services. In buildings, for example, accessibility for the disabled is a major impetus for retrofits to space plans. Similar accommodations are retrofitted for tests, primarily in the skin (e.g., Braille readers), or the space plan (e.g., timing) (Bolt & Thurlow, 2004).

Other upgrade retrofits to tests include the addition of new item types to better represent a construct, improving items to increase reliability (stuff), or adjusting subtest length (space plan) in order to achieve better content representativeness. Most reported retrofits operate within the lower architectural layers (Weir, 2003). For example, the most recent retrofit to the International English Language Testing System (IELTS) has been to the skin, with the launch of a computer-based version in 2005 (Davies, 2008, p. 102), and Davies indicates that future retrofits are likely to focus on improving the reliability of performance subtests (p. 110), which will be at the layer of space plan and stuff, with minor changes to services.

From time to time an upgrade retrofit requires alterations to the structure. In architecture, structural alterations are normally carried out when there is a threat to the safety of the building; seismic retrofit is the most common and is very expensive. For the same reason, structural retrofits are also rare in language testing and take place primarily when the existing structure can no longer support the required inferences and decisions. For example, in 1966 a listening subtest was added to the Cambridge Proficiency (CPE) test (Weir, 2003, p. 24), and in 2005–6 a speaking subtest was added to the Test of English as a Foreign Language (TOEFL) (Chapelle, Enright, & Jamieson, 2008). It is arguably the case that without these costly additions the tests may have become obsolete.

Tests, like buildings, are not "finished" when they start to be used. They must adapt if they are to keep pace with fashion, technology, and the ever changing demands of their users and occupiers.

Change Retrofits

Disraeli is reported to have said that "the secret of success is constancy of purpose." Once the purpose is embedded in the structure of a building or a test, its future success depends upon constancy. As Davies (2008, p. 93) reports, when IELTS underwent a major usability review in 1993, "test purpose was to remain what it had been. . . ." As long as the structure remains in place, there is a clear rationale for the gradual evolution of other architectural layers.

Yet, there is tension between the principle of clear, unambiguous test purpose and the business objectives of many test providers. When there is a requirement to generate income from test sales, the most effective way of meeting targets is to increase test volume. Wendler and Powers (2009, p. 1) admit that "it is not difficult to see how an off-the-shelf product can bode well for an organization's finances: New product development is slow and

expensive, and when businesses can attract new customers to their existing offerings, the result can have benefits—both for the organization's bottom line and, in terms of decreased costs, for customers also." This can involve using a test with a new population; drawing inferences that were not intended; and making decisions in completely new contexts.

This is the architectural equivalent of changing the use of the building from that which was originally intended. The church becomes a restaurant and bar, a substantial home is transformed into office accommodation, or a tower block into a motel. Change retrofits require extensive alteration at every architectural layer, including the services, which have to meet all the health and safety regulations appropriate to the new use. In testing, the primary validity standards must be addressed as if for the first time. In architecture, change retrofits are the subject of extensive consultation with all the people who are likely to be affected, and the relevant authorities who must be satisfied with the safety of the new use. While the same principles apply to language tests, they are not always applied.

With volume in mind, it has become customary for some test providers to list the variety of purposes for which a test is used by cataloging institutions or companies that "recognize" the test; they do not explicitly condone these uses, but neither do they advise against them. Nor does the test provider attempt to collect evidence to support the "safety" of these "unauthorized" uses. Thus, the documentation from one test lists "recognition" from organizations as diverse as universities, immigration authorities, medical, nursing and dental councils, pharmaceutical companies, laboratories and veterinary practices, charities, manufacturers from petroleum to software products, personnel agencies, financial institutions, market research and consultancy firms, airlines, tourist authorities and international trading agencies, legal practices, and the telecommunications industry. And a football club.

The nature of communication, discourse practices, and genres across this range of uses is so diverse that one test cannot meet all needs. It will inevitably be construct- and content-underrepresentative to a greater or lesser degree for all but its primary purpose, and be construct-irrelevant for many of its new uses. The language and communication needs of medical staff are not the same as pilots, tour guides, or petroleum engineers. This inconsistency of purpose leads to a state of *validity chaos* (Chalhoub-Deville & Fulcher, 2003, p. 502): it is impossible to design a validation research agenda to address the suitability of the test for all its uses. Rather, there is an unstated assumption of *validation generalizability*, that whatever evidence has been amassed for the primary purpose can be generalized to all other contexts of use. While generalizability is an important quality of scores, it refers to tasks and items within a domain that could reasonably be sampled for any form of a test (Fulcher, 2003, pp. 135–6). It does not refer to any task or item, drawn from any domain, that might allow extrapolation to different populations, contexts, discourse practices, and decisions.

As change of test purpose and use is tacitly encouraged, but potentially expensive retrofits avoided, it is not surprising that there is a paucity of published change retrofit studies. The few that are in the public domain tend to rely upon standard-setting activities to show score relevance to new uses. This approach still begs the question of construct- and content-relevance. Standard setting in itself is not enough to address change retrofit issues, and is no substitute for a robust retrofit process. To a large degree the "standard-setting fallacy" has been encouraged by the growing use of documents like the Common European Framework of Reference (CEFR). For example, if a claim is made that a level B1 on its scale is required for immigration purposes, a standard-setting activity for a test constructed for an entirely different purpose can establish a test cut score at the A2/B1 boundary; but this does not mean that the test, its content, or the meaning of the cut score, is in any way relevant, useful, or sufficient for making immigration decisions.

Indeed, there is considerable evidence to suggest that those who use off-the-peg tests do so in order to achieve policy ends, and have little concern for test purpose, score meaning, or the validity of extrapolation to their decision context (Read, 2001). The testing industry's failure to adequately document change retrofit (or admit the lack of it), while encouraging unrestricted growth in volume, is widespread. The increased use of "mediating documents" such as the CEFR merely compounds the problem. There is, however, little incentive to change a misuse that drives up test volume, and hence profit. This should be a cause for major concern, as potentially life-changing decisions are being made about many test takers on the basis of questionable reasoning, with an inadequate or nonexistent evidential basis.

The Retrofit Process

Generic guidelines for test retrofit are published by the International Test Commission (2000), but these do not foreground test purpose and construct-relevance issues. Wendler and Powers (2009, p. 6) are much more aware of the threats to inferences and decisions when a change of purpose is proposed; they recommend a careful analysis of the similarity and differences between the original and new uses, and the construction of a validity argument to justify any claim that the test will function in the same way in the new context. These activities may lead to new validation studies and a retrofitting program. Fulcher and Davidson (2009, pp. 137–9) provide a comprehensive description of the steps needed to change test purpose and carry out necessary retrofits, which include:

1. Establishing a retrofit team
2. Documenting assembly and analysis
3. Evaluation of the need and possibility of retrofit
4. Evaluation of the likely effects of a retrofit
5. Making a go/no-go decision
6. Planning the retrofit according to relevant standards
7. Establishing a research agenda to support retrofitting decisions
8. Making necessary public announcements
9. Documenting all decisions and design changes.

The purpose of crafting a deliberate retrofit plan and associated research agenda is to ensure the relevance of the test to its new purpose (or that the upgrade will be a significant improvement upon the old). It should also increase the probability that the retrofitted test is useful for making the intended decisions, that there will be few (if any) unintended postretrofit consequences, and that the inferences from test scores are sufficient (in conjunction with other available evidence) to minimize error.

Tests, like buildings, change after they are built. Some layers change very slowly, if at all, while others evolve much more quickly. Brand (1994, p. 17) writes: "The quick processes provide originality and challenge, the slow provide continuity and constraint. Buildings steady us, which we can probably use. But if we let our buildings come to a full stop, they stop us." Change is necessary and inevitable. However, it is essential that it should be purposeful, planned, audited, and open to public and expert scrutiny.

SEE ALSO: Language Assessment Methods; Test Specifications; Uses of Language Assessments; Validation of Language Assessments

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Test Specifications

FRED DAVIDSON

Introduction

A test specification ("spec") is a generative blueprint for test items or tasks from which many equivalent test items or tasks can be produced. Specs present an operationalization of the test content, that is, they present the test in measurable terms (Davidson, Hudson, & Lynch, 1985). Test specifications are not a new concept. They have been used to control test content and ensure reliability for many decades. Arguably, Ruch coined the term (see Ruch, 1929, p. 150), and even earlier, he presents guiding language for multiple-choice tests in Ruch (1924, pp. 95–9).

Specs can be written at different levels of generality, from an overarching view of test content to a highly detailed and rich description of an individual item or task (Davidson & Lynch, 2002, pp. 11, 53–7). Specs evolve over time and enhance test validity as shown conceptually in Figure 1; the number of steps and revisions shown in this figure are conceptual, and the actual amount of revision will vary in each test development situation.

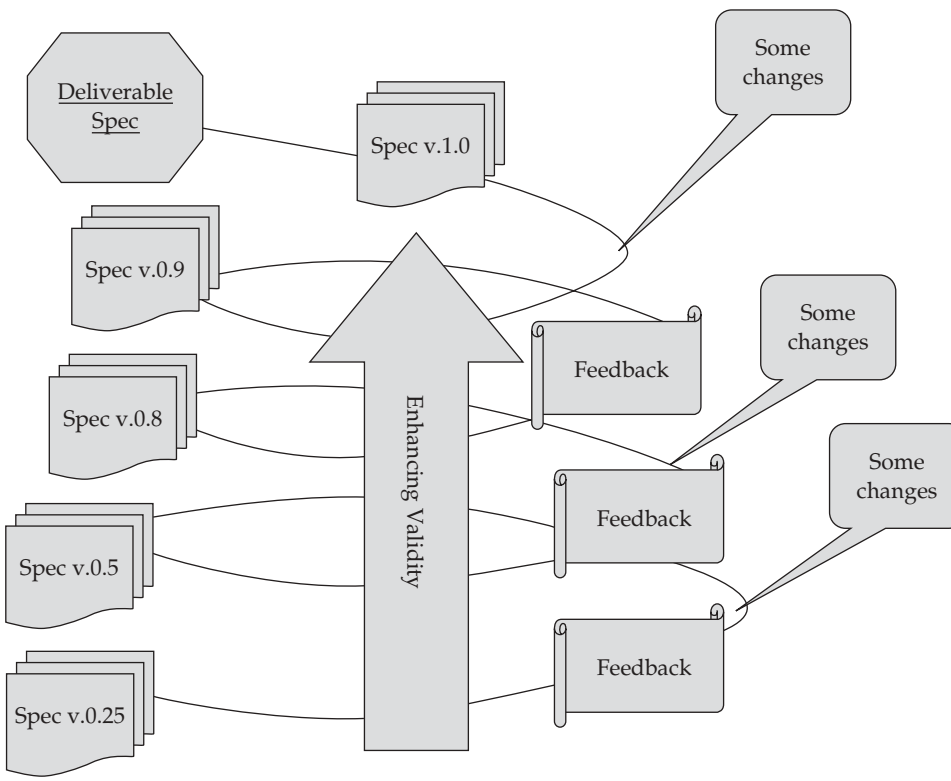

Figure 1 The evolution of a test specification © Jinshu Li, 2006, p. 20

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Changes to test specs depend on feedback, which is of two types: (a) expert review and discussion of the specs, and (b) empirical data from test tryouts and operational use. If the spec documents go through successive versions, the whole process can be audited to present a validity narrative (Davidson & Lynch, 2002, p. 9; Li, 2006).

The Sources of Test Specifications

Test specs originate from many influences. Theories of language learning and teaching affect the design and content of test specs. For example, a teaching institution may have a daily schedule of four contact hours, each dedicated to the four language skills. Logically, the entry and placement test for that institution would be divided into four parts (reading, writing, listening, and speaking), and this division would be evident in the structure of the test specs. Another influence on the origin of test specs is logistics and budget. For example, a language-teaching institution may be facing sudden and unanticipated growth in its student population. This growth puts strain on the existing entry and exit testing, and so the institution (perhaps against its teachers' best wishes) is forced to make sacrifices, such as elimination of some rated assessment in favor of machine-scorable tests.

Davidson and Lynch (2002, chap. 5) propose a name for the constellation of contextual forces that shape the design of test specifications: the mandate. The design and layout of test specs responds to the mandate, and hence, there (really) is no standardized layout of a specification. If the mandate includes strong influences about language theory, then the structure of the spec may reflect that theory. If, on the other hand, the context allows teacher latitude in pedagogical practice, the specs may seem rather atheoretical. At the end of the day, all styles of detailed specs share but two things in common: they present sample(s) of the items or tasks that the spec is intended to generate and they provide guiding language about those samples (Fulcher & Davidson, 2007, pp. 54–5).

Examples of Test Specifications

An example of a highly general set of specs is given in Table 1—this would be accompanied by sample items or tasks; that is, the test booklet itself.

Table 1 provides little guidance about how to measure each skill. It is (essentially) an organizational tool that states how many items of each type are needed. It is likely that richer specs will also be necessary for this test situation, most likely, at least one detailed spec per row. The balance of this entry concerns such detailed specs, for that is where the true generative power of test specification is realized.

Table 1 A sample table of specifications (adapted from Davidson & Lynch, 2002, p. 66)

Skill tested	*Number of tasks/items per skill*	*Type of task/item per skill*	*Special materials and comments*
Vocabulary in context	20 items	Multiple choice with formulaic stem	Passages needed; 2–3 items per passage
Scanning	20 items	Multiple choice: specific information from passage	Passages needed; 2–3 items per passage
Skimming	20 items	Multiple choice: general information from passage	Different passages from scanning; 1–2 items per passage

The following is a detailed specification for testing vocabulary. This example serves two purposes. First, it illustrates the typical level of detail necessary in generative test specifications, and second, it illustrates the nature of feedback in test development (because it is not yet refined):

Spec Title: Testing Vocabulary in Context
This spec is intended for use in an ESL/EFL teaching situation in which the students need to figure out the meaning of words from contextual cues. The output of this spec is a multiple-choice item, in which the selection of the correct answer depends on information found elsewhere in a body of text.

The stem of the item should follow a set formula: "As used in line XX, the word 'YYYYYY' means." The best choice should be directly discernible from the text, and should be given as choice (c) (Choice order will be randomized before assembly of the full test).

Distracters (a) and (b) should be a known and plausible meaning of the target word but one that is irrelevant to the text as presented. Distracter (d) should refer to word or concepts elsewhere in the text but present an implausible meaning of the target word.

Up to three items can be generated for a given text.

The text should be 50–200 words at an intermediate difficulty level. The topic should be a familiar concept, thing, place, or person; however, some specialized knowledge or exposition is permitted (so that contextual vocabulary cues can be obtained).

Sample Text (retrieved December 1, 2009 from http://en.wikipedia.org/wiki/Handcycle):

1. A handcycle is a type of human powered land vehicle powered by
2. the arms rather than the legs, as on a bicycle. Most handcycles
3. are tricycle in form, with two coasting rear wheels and one
4. steerable powered front wheel.

5. Many manufacturers have designed and released hand-powered
6. recumbent trikes, or handcycles. Handcycles are a regular
7. sight at HPV meets and are beginning to be seen on the streets.
8. These usually follow a delta design with front wheels driven by
9. standard derailleur gearing powered by hand cranks. Brake levers
10. are usually mounted on the hand holds, which are usually set
11. with no offset rather than the 180° of pedal cranks. The entire
12. crank assembly and the front wheel turn together, allowing the
13. rider to steer and crank simultaneously.

14. Thanks to modern technology, handcycles come in a variety of
15. styles, making them accessible to people of all abilities,
16. including many persons with disabilities. There are also
17. hybrids between a handcycle, a recumbent bike and a tricycle.

Sample Item One:
As used in line 7, the word "HPV" means:

(a) hand project version
(b) hand propelled variation
(c) human-powered vehicle
(d) hand-propelled vehicle

Sample Item Two:
As used in line 12, the word "assembly" means:

(a) a gathering of people
(b) a gathering of bicycles
(c) a handcycle's pedal mechanism
(d) a bicycle's pedal mechanism

This test specification is at an early developmental stage and would probably not even merit a conceptual "Version 0.25" as shown in Figure 1. Before it becomes operational, feedback about a number of problems is needed through discussion or trial or both:

1. Sample Item One does not test a word; it tests an abbreviation. Is this desirable?
2. The spec requests a passage that presents a familiar topic, but it allows some specialized knowledge. Is this sample text acceptable with regard to topic familiarity, or is it too specialized? Should the spec have additional guiding language that clarifies the permissible boundaries of specialized knowledge for the passage?
3. There is no guidance on the overall difficulty level of the passage. What is the teaching context? If these items are going to be used at a particular instructional level, does this text represent the kind of reading activities typical at that level?
4. Distracters (a) and (b) can refer to plausible meaning outside of the text. Only distracter (d) is designed to capture a plausible in-text meaning. If the item really tests contextual vocabulary, should this proportion be changed, such that there are two in-text plausible distracters and only one that refers to extra-textual meaning? Alternatively, should all three distracters be plausible in-text meaning?
5. What is the meaning of "plausible," both inside and outside of the text? For instance, is choice (d) in each sample item doing roughly the same thing?
6. Does the sample text and each sample item really tap into contextual clues, or might the test taker use real-world knowledge? How can this be controlled? Some vocabulary-in-context tests use nonsense words instead of actual language. Is that a viable alternative?
7. What does it mean that the best choice is "directly discernible" from the text? Precisely what analytical steps does the test taker follow in order to figure out the meaning of the target word?

The spec is probably not yet ready for tryout, although even at this early stage some informal piloting may help, particularly if it is done in a focus-group style so that the test takers can give direct feedback right after the questions are answered. The spec certainly is not yet ready for operational and productive use. The spec needs feedback, and further discussion and consensus building are necessary. This discussion would trigger changes to the spec, and it can evolve from one version to the next, as shown in Figure 1.

The Evolving Nature of Test Specifications

Such evolution is where specification-driven test development really contributes to validity. At the beginning of the life of any detailed test spec (e.g., a conceptual version 0.10, in which this vocabulary item might reside), the focus of the spec is in a state of creative chaos. As time progresses and feedback comes in, the testers come to an agreement about what they wish to measure, and how they wish to measure it. It is very important to delay a rush-to-production if at all possible. Instead, test developers should grant sufficient time for debate and (if logistically feasible) tryout.

It may seem that developing detailed test specs is a time-consuming process. Spec writing can be streamlined through reverse engineering, which is the production of a test specification

from existing items or test tasks. For example, in a content-based language-teaching situation, the following test question might be on file:

> After oxygen, silicon is the most common chemical element found in combination in the rocks that make up the Earth's crust. Very few people, however, have ever seen pure silicon. That is true not because silicon is invisible, but because it is usually found in combination with other elements.
> What does the passage say about pure silicon?
> (a) It is useful.
> (b) It is rarely seen [this is the intended correct choice].
> (c) It is like oxygen.
> (d) It is invisible.
> (Retrieved December 10, 2009 from www.bhcc.mass.edu/inside/687)

The teachers could analyze this item and begin to write guiding language for it, such as:

> This item type focuses on reading of academic scientific language. A three-sentence factual paragraph is followed by a multiple-choice question. The first sentence presents some general truth or state. The second presents some unusual fact associated with the first. The third explains why that fact is unusual. The multiple-choice question tests direct close reading of the unusual fact. The distracters present misreadings of other facts or assertions elsewhere in the paragraph.

This is called "straight" reverse engineering, for which the goal is to generate equivalent test items. It is also possible to do "critical" reverse engineering, during which the original test item might be improved (Fulcher & Davidson, 2007, p. 57).

Another way to streamline specification-driven test development is to use archetypes, which are extremely common item or test tasks (Fulcher & Davidson, 2007, pp. 58–9). For example, if a group of teachers gather and wish to write a test item about careful reading of scientific myth-dispelling language (like the previous example), they might realize that they all have the same kind of item in mind: one in which a short passage is followed by a multiple-choice test question. Archetypes are beneficial because they represent common item types that are familiar to all: teachers and students alike. However, such familiarity may lead a test development team away from true innovation and in some instances can stifle creativity in test design.

In any test spec, the sample item or task fulfills an extremely important role; in effect, the sample item is the archetype. Guiding language alone cannot generate tests. This is particularly true in tests that yield constructed discourse, for example, an essay, or in tests for oral interviews and other face-to-face test settings. The sample may involve actual examples of student performance: sample student essays or recordings of a previous oral test.

The sample specs illustrated in this entry have been for multiple-choice testing. If the student selects the correct response, then (typically) a single point is awarded, and the test score is the sum of those points. Specs can also be used to describe constructed response tests such as an essay exam or an oral interview. In those cases, the spec typically also includes a rating scale (or refers to an existing external rating scale).

Test Specifications and Constructs: An Illustration

Test specifications encourage test developers to discuss the construct at a very productive and detailed level of dialogue, and such a discussion may lead to insights about theory and pedagogy. For example, in the vocabulary spec, comment (5) about plausibility raises

intriguing problems of theory. The test developers may quickly agree on an existing definition of "plausibility" that they all share. Perhaps it is a simple everyday meaning like "reasonable and sensible" (retrieved December 10, 2009 from www.urbandictionary.com). Perhaps the teachers realize that the everyday meaning is not suitable for the linguistic nature of text-based semantics, and so they need to clarify what that term means in their guiding language. They might borrow the phrase "reasonable and sensible" but elaborate it in language such as: "as related particularly to this passage" or "as related particularly to this passage, and excluding meanings of the word not pertinent to this passage." For the purposes of this entry, it is not really relevant what "plausible" means. The point is to illustrate the productive and detailed debate that happens naturally as specs evolve. This discussion takes time and eventually even includes both negative and positive guiding language and examples (i.e., in a later version of the spec, they might show examples of what is and what is not a plausible distracter). Once the spec reaches an overall point of consensus, they can look back at the evolution of a difficult but crucial term (like "plausible") and document how their evolved understanding of that term—bolstered, perhaps, by trial data—arrived at consensus and stability. Doing so is an "audit" of a test spec (Davidson & Lynch, 2002, p. 9; Li, 2006). The audit helps to document validity not only of the test but of difficult theoretical notions that underlie the test.

What is more, the test developers might discuss and debate a tricky term—like "plausible"—in light of their experience in language classrooms. They might recall and document the kinds of mistakes and successes that their students display in decoding meaning from text. Perhaps that is what triggered the test spec in the first place; the classroom experiences may have been a large element of the "mandate" for the exam (Davidson & Lynch, 2002, chap. 5). Perhaps these teachers have discovered that students tend to look for discourse clues in a very narrow range of text, and so they might define "plausible" to mean: "reasonable and sensible as determined across the entire text." If they do this, then the test developers are engaging in effect-driven test development, which is an approach to testing that draws from the philosophical school of classical pragmatism. Effect-driven pragmatic testing operates from the simple precept that the nature of a thing lies in its effect or outcomes. In test development, such a view can enhance washback (Fulcher & Davidson, 2007). If the test developers think first and foremost about the effects that they wish to see, then they can shape their test to achieve that outcome, and they can better build a link between teaching and testing. This perspective works best if it is done at the level of a test spec, so that the test developers not only resolve difficult terminology and concepts but ensure that the sample items and tasks represent the resolution on which they all eventually come to agree.

Concluding Remarks

The best way to learn about specification-driven language test development is to work with a test spec over time and see how it changes and evolves. This entry has attempted to capture that experience and provide something that can be read and studied, hopefully of value, but not in itself dynamic. The reader is strongly encouraged to try out the dynamic nature of test specifications through application to his or her own language-teaching context.

SEE ALSO: Assessment of Reading; Assessment of Speaking; Assessment of Vocabulary; Assessment of Writing; Validation of Language Assessments; Washback in Language Assessment

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Testing in Pragmatics Research

CARSTEN ROEVER

It may seem contradictory to talk about "testing" in the context of "research": after all, testing in a narrow sense is usually done to collect evidence for real-world decisions and involves stakes for all parties involved in the process, and tests therefore need to be based on a carefully designed interpretive validity argument (Messick, 1989; Kane, 2006; Bachman & Palmer, 2010), which in itself requires a fairly extensive research program. However, testing in a simpler sense is the measurement of the strength of an attribute, which does not necessarily have to be the basis for a high-stakes decision. Rather, it might be undertaken to answer a research question; for example, to evaluate the effectiveness of an instructional intervention intended to improve learners' knowledge or skills, trace learners' development in language abilities over time, or compare participants with each other who differ in theoretically interesting background variables, such as proficiency level, gender, native language, or study-abroad experience.

It is the latter type of testing, which is intended to ascertain the degree to which learners have a certain type of knowledge or skill, which will be discussed here. This entry will start out by delineating some criteria of test quality, which are relevant to any type of test, and then describe some testing approaches used in second language (L2) pragmatics research.

Criteria of Test Quality

The overriding criterion of test quality is validity, which can be defined as "an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the *adequacy* and *appropriateness* of *inferences* and *actions* based on test scores or other modes of assessment" (Messick, 1989, p. 13; emphasis in original). This definition highlights the fact that validity resides in conclusions and decisions rather than in test items: A test is not in itself valid or invalid. Rather, the interpretations or conclusions from test scores may be more or less valid, which we can gloss as "defensible" or "reasonable." For tests used for research purposes, such conclusions are frequently answers to theoretically based research questions; for example, whether learners in the English as a second language (ESL) environment have higher pragmatic than grammatical awareness (Bardovi-Harlig & Dörnyei, 1998), whether a study-abroad experience leads to more target-like judgments of social relationships (Matsumura, 2001), whether a certain type of instruction is more effective than another or no instruction (Takimoto, 2009), or whether proficiency affects learning of implicature more than exposure (Bouton, 1999; Roever, 2005).

Messick (1989) identifies two major threats to validity: construct underrepresentation and construct-irrelevant variance. Construct underrepresentation describes a situation where the test taps only a certain subset of ability or knowledge but inferences are drawn across a much wider domain. For example, a test that assesses only learners' comprehension of implicature but whose scores are used to make claims about their overall pragmatic competence would be underrepresenting the construct. Conversely, construct-irrelevant variance describes the influence of confounding factors that are not the focus of assessment, such as the effect of learners' reading proficiency when taking a test on speech acts.

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In high-stakes tests, decisions based on score interpretations need to be supported by an argument demonstrating the defensibility of the scoring system, interpretations of scores, and decisions based on scores (Kane, 2006; Bachman & Palmer, 2010). While a carefully constructed interpretive argument requires a number of validity studies which would be beyond the reach of most researchers designing tests for research purposes, some fundamental markers of quality apply equally to any test. For conclusions to be defensible, a test must be

- reliable—it measures precisely;
- standardized—all test takers do the same or equivalent tasks, they all get scored following the same criteria, and performances are comparable;
- authentic—the tasks elicit performances that test takers would also display in real-world interactions;
- construct-relevant—the tasks cover the target domain and neither underrepresent the construct nor are contaminated by construct-irrelevant variance; and
- practical—the test uses resources sparingly, which makes it more likely to be employed.

The following section will briefly discuss some tests that have been developed as assessment instruments in L2 pragmatics research, and which can serve as models for the design of tests for research purposes.

Tests of L2 Pragmatics

Some tests have been developed in L2 pragmatics research for the explicit purpose of providing a basis for decisions, but none has so far been used large-scale. The first major test development project was Hudson, Detmer, and Brown's (1995) test battery for Japanese ESL learners. Their tests focused on the speech acts of request and refusal and consisted of oral, written, and multiple-choice discourse completion tests (DCTs), a role play, and two self-assessment scales. The test was designed as a general proficiency test and led to a good deal of research and several spin-offs (Yamashita, 1996; Yoshitake, 1997; Brown & Ahn, 2011; Liu, 2006).

The second larger assessment project was Roever's (2005, 2006) test, which also contained a DCT section but in addition assessed learners' recognition of situational routine formulas and the comprehension of implicature through multiple-choice tasks. Roever (2005) reports on the validation of his test using Messick's (1989) approach, and underscores the close connection between assessment and research by showing that in the course of conducting validity studies, new research findings emerge, such as the central role of L2 proficiency for comprehending implicature (Roever, 2005), or existing ones are confirmed, such as the superiority of learning routine formulas in the target language environment (Roever, 2005, in press).

Tests designed for research purposes do not generally follow such wide-ranging and rigorous validation procedures as the instruments described above, but their claims also tend to be much more limited, and usually focus on a particular aspect of pragmatic knowledge or ability for use.

Measuring Performance

Test instruments in pragmatics research can be placed on a continuum from tests eliciting online, real-world equivalent performance to tests eliciting offline knowledge.

The most performance-oriented measure is observation of learners in natural interactions. This is, however, logistically complicated and ethically problematic as it requires unobtrusive and even covert observation. Standardization is difficult if learners are simply taped in a wide variety of interactions since interlocutor reactions and the type of interaction cannot be controlled. On the other hand, such an approach would provide the most persuasive data and enable defensible claims about learners' ability to use pragmatics in actual interaction. Two studies have used authentic discourse data, and dealt with the problem of standardization by focusing on one type of institutional interaction. Bardovi-Harlig and Hartford (1996) recorded academic advising sessions, and compared non-native and native speakers' performance in an early and a later session. The authors analyzed suggestions and rejections of suggestions by the students, as well as the content used in both, comparing frequencies between groups and across time. Similarly, Al-Gahtani (2011) investigated learning of requests by learners of Saudi Arabic at four proficiency levels who interacted with an administrator at two data collection points five months apart. The learners were not aware at the time that they were part of a research study. Al-Gahtani coded requests for head acts and internal and external modifications (Blum-Kulka, House, & Kasper, 1989) and also analyzed the sequential organization of the interaction (following Schegloff, 2007). He found very little change over time but distinct differences between proficiency groups. Neither study is a "test" in the traditional sense of scoring learner performance, but both employed a native-speaker baseline and compared average learner performance with average native-speaker performance to find evidence of development or differences between proficiency groups.

A more standardized but less authentic method is collection of role-play data, which has been used quite frequently in pragmatics research. Role plays allow a certain degree of standardization through the role-play instructions, and where they are carried out with trained role-play conductors (rather than between participants), the conductor can also follow behavioral guidelines in how to interact with the participant. However, role plays are not identical to natural interactions (Aston, 1993) and therefore lack authenticity, since participants are aware that they are being evaluated and that it is specifically their language that is in focus. Okada (2010) argues that despite this shortcoming participants need to make use of the same resources they would rely on in natural conversation, but it is unclear how exactly the role-play situation affects production in terms of sequential organization of interaction.

Role plays have been widely used in interlanguage pragmatics research to investigate speech acts such as request (Taguchi, 2006), apology (Trosborg, 1995), refusal (Félix-Brasdefer, 2004), and complaint (Trosborg, 1995), as well as gambits and routine formulas (House, 1996). For example, Taguchi (2006) compared the performance of requests by Japanese ESL learners at two proficiency levels and a group of native English speakers. She rated the participants' requests for appropriateness and coded them according to the Cross-Cultural Speech Act Realization Project (CCSARP) (Blum-Kulka et al., 1989) coding scheme. While Taguchi did not investigate the conversation around the requestive head act, Félix-Brasdefer (2004) compared refusals by learners of Spanish with different length of residency and included English and Spanish native-speaker data. He also coded strategies, but took other discursive moves into account as well. In a rare primarily interactionally focused study, Al-Gahtani and Roever (2011) investigated differences in requestive interactions between four proficiency groups of ESL learners using the tool set of conversation analysis. These authors found a greater occurrence of pre-sequences and less interlocutor involvement at the higher proficiency levels, as well as indications that only high-proficiency learners were taking the situational context into account. Role-play performance is rarely scored, although Takimoto (2009) is an example; this study scored learner production for

appropriateness, abbreviating Hudson et al.'s (1995) much more detailed scoring system, which involved six criteria. No study has scored other aspects of the interaction, such as the need for interlocutor repair moves, learner versus interlocutor control of the interaction, and pre- and post-sequences surrounding the head act.

Both authentic conversation and role plays are low on practicality and difficult to standardize, and there are no statistical procedures for evaluating their reliability. However, both offer authentic data if production and performance are the focus of the research, and they allow the investigation of interactive abilities, which are outside the reach of measures eliciting offline knowledge. We will now turn to these.

Non-Performance Measures

Probably the most widely used testing instrument is the DCT, recently, for example, for investigating requests (Woodfield & Economidou-Kogetsidis, 2010), refusals (Wannaruk, 2008), apologies (Warga & Scholmberger, 2007), and others (Barron, 2007). DCTs elicit offline knowledge about speech acts, that is, what participants think they would say in the situation described in the prompt. These tests do not allow claims about performance or interactive abilities and are therefore most appropriate in research situations where the goal is the elicitation of isolated speech acts, such as initial greetings, compliments, or expressions of gratitude. DCTs have strong logistical advantages in that they allow researchers to systematically vary contextual variables like power, social distance, or degree of imposition, enable systematic sampling of participants by background variable of interest (e.g., proficiency level, native language, length of residence), and facilitate the simultaneous collection of large amounts of data, even through research confederates or via the Internet. In their common written format, DCT responses do not require time-consuming transcription (although oral DCTs do), and since all participants respond to the same prompts, DCTs appear to have a high degree of standardization. However, the latter claim is problematic, as it is difficult to ensure that all participants interpret the DCT prompt in the same way.

Scoring of DCT responses is unusual in pragmatics research, where the focus is primarily on describing the differences between participants in terms of strategy use. However, where DCT responses are scored, scoring usually relies on a rating scale to quantitatively express appropriateness judgments. For example, Takimoto (2009) had two raters score the appropriateness of DCT responses on a request DCT using a scale of 1–5. He obtained a near-perfect correlation between raters (.995) but does not report absolute agreement or the more common index of Cohen's kappa. He then used two-way repeated measures ANOVA and line graphs to investigate the effect of instruction by comparing pretest, posttest, and follow-up scores of four groups. Employing scoring of responses allowed him to run such complex statistics, which would not have been possible using simple frequency measures.

A special case of DCTs are multiple-choice DCTs, where participants choose the "most appropriate" utterance from among three to four response options. This type of instrument elicits sociopragmatic judgment and does so more directly than written or spoken DCTs, in which learners' general L2 proficiency can introduce construct-irrelevant variance. Multiple-choice DCTs are also highly practical as scoring can happen entirely automatically, and they have been used in effect-of-instruction studies (Koike & Pearson, 2005) and to document the effects of exposure in study abroad (Matsumura, 2001). However, they are problematic instruments. Hudson et al. (1995), as well as Yamashita (1996), found low reliabilities on their dichotomous multiple-choice DCTs, the central problem being that it was very difficult to design clearly incorrect distracters that were not acceptable to at least some native speakers. Both Liu (2006) and Matsumura (2001) also found low levels

of native-speaker agreement in their multiple-choice DCT, but Matsumura circumvented this problem by using partial-credit scoring, that is, assigning four points to the answer chosen by the majority of native speakers, three points to the answer chosen by the second largest group, two points to the answer favored by the next largest group, and one point to the answer chosen by the smallest group of native speakers. Such an approach is highly problematic from a construct perspective, however, since it implies that some answers from the native-speaker benchmark group are better than others, and converts interval-level data to ordinal-level data, thereby distorting differences in degree of preference between responses.

Another approach to eliciting sociopragmatic (acceptability) judgments is to have learners judge the characteristic of a target exemplar in context, usually by means of a rating scale. For example, Bardovi-Harlig and Dörnyei (1998) pioneered a video-supported acceptability rating task, in which learners were shown a brief conversation whose final utterance contained either a grammatical error, a pragmatic infelicity, or no error. Learners were then asked to judge the target utterance on a scale ranging from "not bad at all" to "very bad." Bardovi-Harlig and Dörnyei found significant differences in degree of acceptability judgments between pragmatic infelicities (rated as more serious by their ESL population), and grammatical errors (rated as more serious by their English as a foreign language [EFL] population). It is notable that a native-speaker baseline was not an issue for the scoring of responses, because these authors were interested in learners' impressions of the relative importance of socially appropriate and grammatically correct language use and how these impressions would be influenced by the learning context.

Takimoto (2009) used a magnitude estimation approach for his acceptability judgments, where learners judged the first item on an 11-point scale and the following items in relation to this anchor item. He scored learner judgments using a partial-credit approach based on a native-speaker baseline, but does not provide details on how this was done. Cook (2001) also used acceptability judgments, but took a different theoretical perspective. She investigated learners' ability to recognize appropriate speech styles in Japanese as a foreign language by asking them to identify which of three tape-recorded self-introductions would be appropriate for an applicant in a job interview.

Finally, a number of knowledge-oriented tests have not focused on speech acts and appropriateness. Bouton (1999) pioneered a multiple-choice instrument assessing comprehension of ESL implicature and traced learners' changes over time, claiming that some types of implicature are learned through exposure whereas others require instruction. However, Roever (2005) showed that it was increases in learners' proficiency rather than pure exposure that contributed to their development of implicature comprehension. Taguchi (2008) added measurement of reaction time to L2 implicature research, opening up an interesting and as yet under-explored dimension of L2 pragmatics research.

Another area where testing has taken place is routine formulas. They were part of Roever's (2005, 2006) assessment battery, and Roever (in press) used data from the original assessment study to show that some routine formulas can be learned outside the target language context, others are acquired very quickly in the target language context, and others take much longer to be learned even for learners with a high degree of exposure. Bardovi-Harlig (2009) tested routine formulas productively through a DCT-type instrument designed to elicit a formula. She found an interesting relationship between grammatical ability and production of formulaic expressions, indicating that even with these highly standard expressions, general proficiency plays a role.

Multiple-choice and brief-response measures that are clearly referenced against a native-speaker benchmark (though this is of course problematic in itself; see Kasper, 1995) might look the most like "tests" since they are highly standardized, allow reliability computations, and are highly practical. However, their construct coverage is relatively small,

allowing conclusions only about learners' judgment or knowledge but not about their ability for use. Researchers and consumers of research need to be aware of the limited reach of these studies, which have very little to say about learners' ability to use language in context.

Summary

Testing in pragmatics research is primarily done to discern the effects of instruction, study abroad, and in some cases general proficiency. As the instruments used for research purposes do not carry stakes for participants, there is rarely any rigorous validation process involved, in contrast to the development of test instruments for formal assessments. While the expenses associated with a large-scale validation study are outside the reach of smaller research studies, evaluating tests for research purposes as to their validity is important for assessing the quality of L2 pragmatics research studies.

The future of this area will need to see an increase in performance measures. While non-performance measures show whether learners have the pragmatic knowledge necessary for real-time language use, it is of far greater relevance to find out how and to what extent learners actually implement their knowledge in using the target language. While performance measures like role plays can provide evidence of learners' ability for use, they tend to be resource-intensive and difficult to standardize, so future methodological research will need to find ways to ensure comparability across participants while keeping the interaction as authentic as possible. Exploring the use of technology for simulating interactions and investigating how such simulations compare to role-played and real-world talk will also need to be a central area of research.

SEE ALSO: Classroom Research on Pragmatics; Interlanguage Pragmatics; Pragmatics Research Methods; Second Language Experimental Pragmatics; Second Language Pragmatic Development

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Testing Independent Relationships

STEFAN TH. GRIES

In one of the most frequent empirical scenarios in applied linguistics, a researcher's empirical results can be summarized in a two-dimensional table, in which

- the rows list the levels of a nominal/categorical variable,
- the columns list the levels of another nominal/categorical variable, and
- the cells in the table defined by these row and column levels provide the frequencies with which combinations of row and column levels were observed in some data set.

An example of data from a study of disfluencies in speech is shown in Table 1, which shows the parts of speech of 335 words following three types of disfluencies. Both the part of speech and the disfluency markers represent categorical variables.

Table 1 shows that 30 *uh*'s were followed by a noun, 20 *uhm*'s were followed by a verb, etc. One question a researcher may be interested in exploring is whether there is a correlation between the kind of disfluency produced—the variable in the rows—and the part of speech of the word following the disfluency—the variable in the columns. An exploratory glance at the data suggests that *uh* mostly precedes conjunctions while silences most precede nouns, but an actual statistical test is required to determine (a) whether the distribution of the parts of speech after the disfluencies is in fact significantly different from chance, and (b) what preferences and dispreferences this data set reflects. The most frequent statistical test used to analyze two-dimensional frequency tables such as Table 1 is the chi-square test for independence.

The Chi-Square Test for Independence

The chi-square test for independence is introduced by describing how data analysis is conducted using the open source statistical language and environment R (R Development Core Team, 2010), which can be freely downloaded from http://cran.at.r-project.org and which runs on all major operating systems.

Entering the Data

The first step in the analysis of two-dimensional frequency tables is to start the R program and enter the frequency table into R. For example, to enter the above data in Table 1, the

Table 1 Fictitious data on the correlation of Disfluency and Part of speech 2

	Noun	*Verb*	*Conjunction*	*Totals*
uh	30	70	90	190
uhm	50	20	40	110
silence	20	5	10	35
Totals	100	95	140	335

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researcher would type the following at the console prompt (where `c` means "combine values into a vector, or sequence," `ncol` specifies the number of columns into which the sequence of numbers should be coerced, <- represents an assignment arrow, and the Pilcrow sign ¶ means "press ENTER"):

```
x <- matrix(c(30, 50, 20, 70, 20, 5, 90, 40, 10), ncol=3)¶
```

This creates the matrix of the frequencies shown in Table 1 and stores it as an object called `x`. However, since this matrix does not yet have row and column names, it is useful to add such names using the function `list`. This function takes two vectors, first the row names, second the column names:

```
attr(x, "dimnames") <- list(Disfluency=c("uh", "uhm", "silence"),
POS=c("Noun", "Verb", "Conjunction"))¶
```

If one now tells R to display the object `x`, then the data are shown nearly exactly as represented in Table 1:

```
x¶
          POS
Disfluency  Noun  Verb  Conjunction
  uh          30    70           90
  uhm         50    20           40
  silence     20     5           10
```

If one needs the row and column totals of `x`, too, then these can be obtained from the function `addmargins`:

```
addmargins(x)¶
          POS
Disfluency  Noun  Verb  Conjunction  Sum
  uh          30    70           90  190
  uhm         50    20           40  110
  silence     20     5           10   35
  Sum        100    95          140  335
```

Assumptions

The second step involves determining whether the data are such that one can in fact compute a chi-square test for independence. This test has three assumptions of two different kinds: the first two have to do with the frequencies that would be expected if the data were randomly distributed; the third has to do with whether the data points are independent of each other or not. The three assumptions are the following:

- 80% of the expected frequencies are greater than 4;
- all expected frequencies are greater than 1; and
- all observations are independent of each other.

In R the first two assumptions are best tested with the function of the chi-square test itself, but the third assumption requires the researcher to consider whether data points—individual occurrences of a disfluency with the part of speech of the following word—are related to each other. This would be the case if, for example, one and the same speaker

provided more than one data point to the data set. In such a case, an individual speaker's preference for a particular disfluency, or a particular disfluency before some part of speech, could bias the statistical evaluation of the data. Another threat to independence could arise if disfluencies were from different speakers but from successive turns in the same conversation, because then a disfluency in turn t might be influenced by the one in turn $t - 1$ because of priming effects. We will assume that this is not the case here because, for instance, each collected disfluency is from a different speaker in a different conversation.

Testing the assumptions of the chi-square test is important because, when the data violate the assumptions of the test, its results cannot be trusted: If (too many) expected frequencies are too small, then the test becomes anti-conservative and may return a significant result although the null hypothesis is correct, and if the data points are not independent of each other, then the computation of the expected frequencies will be biased. Making sure that the test's assumptions are met is therefore paramount.

Computing and Significance Testing

If the assumptions of the chi-square test are met, it can be computed very easily in R. The function for the chi-square test is called `chisq.test`, and it takes two arguments: the table for which one wants to compute a chi-square test (here: `x`), and an argument `correct` that is set to `TRUE` or `FALSE`, depending on whether or not one wants to use a so-called continuity correction, which is sometimes recommended for sample sizes between 20 and 60 and which will therefore not be needed for this example. The researcher assigns the result of the chi-square test to an object `x.test`:

```
x.test <- chisq.test(x, correct=FALSE)¶
```

Nothing is returned, but the data structure `x.test` now contains all the results. Three things must now be done. First, the researcher should inspect the frequencies that would have been expected by chance—that is, when there is no correlation between the kind of disfluency and the part of speech of the following word—by calling the part of the test results that contains the expected frequencies:

```
x.test$exp¶
          POS
Disfluency      Noun       Verb  Conjunction
  uh        56.71642  53.880597     79.40299
  uhm       32.83582  31.194030     45.97015
  silence   10.44776   9.925373     14.62687
```

(One can also compute each expected frequency of a cell manually by dividing the product of the cell's row and column total by the total of the table, for example, 190·100 ÷ 335 = 56.71642, and so forth.) Obviously, all expected frequencies are greater than 4 so the application of the chi-square test is justified. Therefore, the second step is to determine whether the observed result from Table 1 is significant—that is, different enough from the expected result shown above—by calling the overall result:

```
x.test¶
      Pearson's Chi-squared test
data:  x
X-squared = 45.2273, df = 1, p-value = 3.566e-09
```

In this example, there is a highly significant correlation between the kind of disfluency and the part of speech that follows: p is much smaller than the critical value of $p = 0.05$ that is usually adopted in the social sciences: 3.566e-09 = $3.566 \cdot 10^{-9}$ = 0.000000003566. However, the fact that there is an overall significant result does not reveal which of the nine cells is/are most responsible for this effect, i.e. what to focus on most in the interpretation. To identify these cells, one can inspect the so-called Pearson residuals.

```
x.test$res¶
          POS
Disfluency       Noun       Verb  Conjunction
  uh        -3.547512   2.196002    1.1892280
  uhm        2.995361  -2.004245   -0.8805362
  silence    2.955245  -1.563384   -1.2097935
```

If the Pearson residual in a cell is positive, then the observed frequency in that cell is greater than the expected frequency in that cell, and if the Pearson residual in a cell is negative, then the observed frequency is less than the expected frequency. The more the Pearson residual deviates from 0, the stronger that effect. In this case, therefore, the strongest effect is the dispreference of *uh* before nouns (observed frequency: 30, expected frequency: 56.7), followed by the preferences of *uhm* and silences before nouns (observed frequencies 50 and 20, expected frequencies 32.8 and 10.4 respectively). By contrast, the Pearson residuals for conjunctions are closer to zero, since their observed frequencies are closer to the expected ones.

Graphical Interpretation and Effect Size

The above kind of interpretation of chi-square tests can often be facilitated considerably with graphical displays. Figure 1 shows two frequent plots, which can be created with the following two lines:

```
mosaicplot(t(x))¶
assocplot(t(x))¶
```

The left panel shows a so-called mosaic plot, in which the box sizes are proportional to the cell frequencies and where the lack of alignment of the margins between the boxes indicates correlational structure; for example, compare the small box of *uh*:Noun against the long box for *uh*:Verb. The right panel shows a so-called association plot, in which dark and light gray rectangles indicate observed frequencies greater and less than the expected frequencies respectively, and in which the area of the box is proportional to the difference in observed and expected frequencies. It is therefore easy to see that the significant effect is mostly due to the fact that *uh* is less likely before nouns and more likely before verbs and conjunctions, and that *uhm* is less likely before verbs, and so forth.

Finally, in order to be able to compare results from different studies, one needs to compute an effect size, which is independent of the sample size. For two-dimensional tables, a statistic called Cramer's V is used. It falls between 0 ("no association") and 1 ("perfect association") and is computed as shown in (1), where min(r,c) means "take the numbers of rows and columns (here, each is three) and pick the smaller of the two":

$$(1) \qquad V = \sqrt{\frac{\chi^2}{n \cdot (\min(r,c) - 1)}}$$

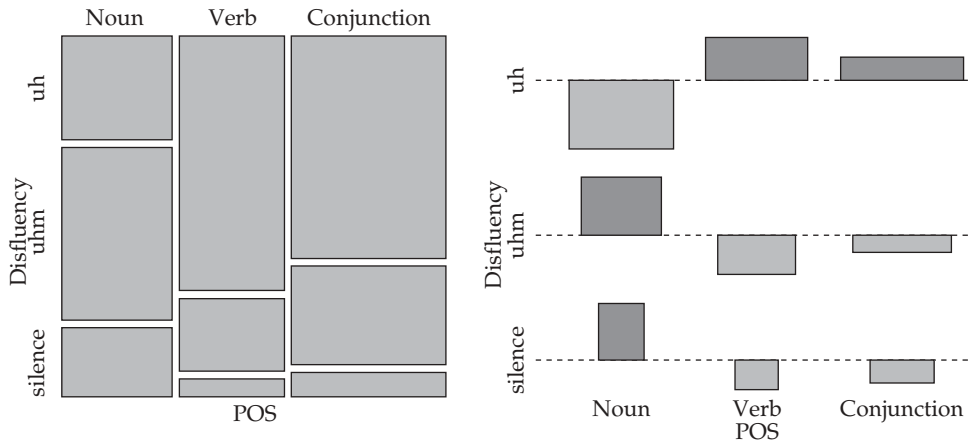

Figure 1 A mosaic plot (left panel) and an association plot (right panel) for the data in Table 1

In this example, the effect size can be computed with the following code, where `sqrt` means "square root," `x.test$stat` represents the chi-square value of the chi-square test stored in `x.test`, `sum(x)` represents the sample size *n*, and `dim(x)` returns the numbers of rows and columns of the data table `x`, of which then the minimum (`min`) is taken. The resulting Cramer's *V* value is relatively small, certainly much closer to 0 than to 1:

```
sqrt(x.test$stat/(sum(x) * (min(dim(x))-1)))¶
X-squared
0.2598142
```

To report the result of a chi-square test, the researcher should provide the table of observed frequencies, the chi-square value as well as its *df*, its *p*-value, and the effect size. The next section discusses very briefly one way to proceed if the expected frequencies are too small to use the chi-square test, namely an exact test.

An Exact Alternative: An Exact Test for Independence

Sometimes, one may not have data that result in expected frequencies large enough to meet the conditions of the chi-square test. For instance, one may have obtained only 20% of each cell's frequency in Table 1, as in this table `y`.

```
y <- x/5¶
y¶
           POS
Disfluency  Noun  Verb  Conjunction
  uh           6    14           18
  uhm         10     4            8
  silence      4     1            2
```

A chi-square test on `y` shows that more than 20% of the expected frequencies are smaller than 3:

```
chisq.test(y, correct=FALSE)$exp
                POS
      Disfluency       Noun       Verb  Conjunction
        uh        11.343284  10.776119    15.880597
        uhm        6.567164   6.238806     9.194030
        silence    2.089552   1.985075     2.925373
chisq.test(y, correct=FALSE)
            Pearson's Chi-squared test
      data:  y
      X-squared = 9.0455, df = 4, p-value = 0.05997
```

A test that can be applied to such tables is the Fisher–Yates exact test. The application in R is very straightforward:

```
fisher.test(y)¶
        Fisher's Exact Test for Count Data
data:  y
p-value = 0.05338
alternative hypothesis: two.sided
```

The test shows that the distribution is not significant: *p* is too large. This is interesting for two reasons: First, as can be easily seen, the *p*-value of the Fisher–Yates exact test of `y` (0.05338) is closer to the standard significance level of 0.05 than the *p*-value of the chi-square test of `y` (0.05997): The two tests differ especially with small sample sizes. Second, this is interesting since, in percentages for example, the distribution in `y` is of course the same as in `x`: *uhm*:Verb is still four times as frequent as silence:Verb, which shows how sensitive *p*-values are to sample sizes and why sample-size independent effect sizes should always be provided.

This example from quantitative corpus analysis provides only one of many uses for these two tests of correspondence between categories of nominal or categorical variables. Like many other statistical tests, the chi-square has assumptions about the data that need to be checked. Data failing to meet assumptions can be analyzed in a different way, in this case, using the Fisher–Yates exact test.

SEE ALSO: Corpus Linguistics: Overview; Corpus Linguistics: Quantitative Methods; Describing and Illustrating Quantitative Data; Inference; Probability and Hypothesis Testing

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Tests

LESLIE GRANT

Tests are used in applied linguistics research to measure variables of interest to researchers. A test is "a particular type of measurement that focuses on eliciting a specific sample of performance" (Bachman, 2004, p. 9). Test tasks "elicit performance from which we can make the inferences we want to make" (p. 9). Language ability is one, but not the only, variable of interest in applied linguistics research, and therefore, language testing is a critical area of concern. Because language ability, like all constructs, cannot be seen directly, test takers demonstrate their linguistic abilities by observable choices, words, and actions. These choices, words, and actions are taken as evidence of the ability in question; thus, every test score is the result of the process of inference whereby observed performance is interpreted as indicative of the test takers' level of ability on the construct measured. Researchers who use test scores in their own studies often count on proficiency tests that have been developed for educational purposes, but in many cases, they need to develop their own tests in order to measure the specific construct that they intend to study.

Proficiency Tests in Research

When researchers in applied linguistics include language proficiency as one of the variables in a study, it is typically operationalized, or defined for the purposes of the study, as a score from a language proficiency test. Language proficiency test scores are intended to reflect a general language ability that is independent of language training and background (Hughes, 2000). Two of the best known tests used as proficiency measures in research are the *Test of English as a Foreign Language* (*TOEFL*) and the *International English Language Testing System* (*IELTS*). These test scores are intended for use in admissions decisions in colleges and universities. Both tests measure reading, writing, listening, and speaking by using multiple choice for reading and listening, and essays and speech samples for writing and speaking, respectively.

Research Uses of Tests

Although proficiency tests are developed for educational gatekeeping decisions, they appear frequently in applied linguistics research for varied purposes. In educational studies of language development, such tests serve as a means of describing the proficiency levels of subjects, and sometimes they are used to describe levels of outcomes that are attained by participants in the research. Second language acquisition researchers use such language test scores to operationalize levels of language ability in order to categorize learners into high- and low-proficiency groups (Gass & Selinker, 2008). In research on learners' performance, the language samples themselves obtained from such tests are often used for study. For example, Isaacs (2008) studied speech samples from the *Test of Spoken English* (*TSE*) to investigate issues tied to intelligibility of international teaching assistants. Jarvis, Grant, Bilkowski, and Ferris (2003) reported on various profiles of second language writers using writing samples—including samples from the *Test of Written English* (*TWE*). Finally, in language testing research, the actual tests are subjects for research studies which are

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typically aimed at better understanding the meaning of test scores and seeking evidence justifying their use for particular purposes.

Selecting Tests

Researchers interested in using established tests should find out if the tests have been examined in terms of psychometric characteristics such as reliability and validity. Many tests are reviewed in *Buros Mental Measurement Yearbook* (www.unl.edu/buros), and researchers can also find information at test publishers' Web sites. However, just as a critical stance is needed to examine the tasks, responses, and scoring of tests, the same is true for reported reliability and validity. Studies reporting validity should be considered in view of the sample of test takers used to conduct the validation research. Reliability, too, should be examined as it is sample specific; researchers need to estimate reliability for their own studies in addition to reporting what others have found. These explorations will lead to determining the usefulness of the test for research purposes and will lead researchers to make more informed decisions regarding their own findings when they are based, in part, on test scores.

In any research study using tests, it would be wise to try to get a copy of the test—or at least a detailed description—so that test methods and response types can be examined. In this way, the analyses and interpretations of the test scores will be more appropriate and limitations can be acknowledged in the research study. In addition, for researchers creating their own tests, examining existing tests may give them ideas.

Test Design for Research

Many researchers find that existing tests are not sufficiently focused on the specific areas of investigation in their research, and they therefore need to design their own tests. The plan, or table of specifications, is a blueprint for a test (e.g., Miller, Linn, & Gronlund, 2008). Test specifications are formulated as a basis for sampling systematically from the domain that the research needs to measure. Often a needs analysis informs the process of domain definition, so in building a listening test, for example, one might describe contexts for listening: listening at the store, listening to the gist of the news, listening for details at work, etc. In other cases, the domain is identified on the basis of the theoretical construct of interest. For example, a table of specifications for listening ability might be developed based on a theoretical definition of listening consisting of listening subskills (e.g., listening for the main idea and listening for details). Because language constructs are complex, test specifications are important for ensuring that the test will appropriately sample from the relevant domain. In order to define the relevant aspects of the test, the specifications should include information about each of the following aspects of the test method.

Input and Expected Responses

Language tests range from questions on paper to much longer performances of language use. Test takers may read prompts on a paper and write a response, role play a situation, or present a short talk on a topic. Traditional response types such as multiple choice, true/false, matching, and short answers work well for testing knowledge *about* the language, while tasks requiring learners' engagement and performance are better tests of how test takers *use* the language to accomplish certain goals and carry out tasks.

Designing appropriate methods is particularly challenging in language testing relative to other subject areas because *language is used to test language*. This challenge is even greater at lower levels of proficiency. For example, it would be futile to ask beginning language learners to produce an essay or speak for several minutes on a topic. Low-level language

learners might only be able to recognize key vocabulary and simple routine phrases. It would therefore make good sense to ask the learners to demonstrate understanding through actions, or perhaps by choosing an item from a set of choices or circling a picture of the word that is heard. Learners would need only to recognize the correct response and indicate that response.

As learners progress in language skills, the assessments frequently require the processing, production, or both of connected language or discourse. Such test tasks ask learners to work out the meaning of the language presented on the test and then produce linguistic responses, either orally or in writing, or select appropriate responses from a set of choices. Cloze tasks and information transfer tasks may be used on such tests. Listening tasks might include listening to a short conversation and answering multiple-choice questions or filling in a table or chart. Obviously, when learners are more advanced, it is possible to use tests that involve longer language segments of discourse to be either comprehended or produced. Test takers might be asked about the overall message or tone of the writer, for example. Writing and speaking samples produced by test takers are also of considerable length. For example, test takers might be asked to write or speak about influential persons in their lives or they might be asked their opinion on a topic such as animal rights.

Scores and Measurement Scales

In most tests used in applied linguistics research, test scores are typically computed as a tally of correct responses to test tasks or on the basis of judgments or descriptions of a level of test takers' performance. Selected response items are typically machine-scored. On the other hand, responses such as speech samples and essays more typically require at least one human rater who has been carefully trained. Common practice involves having two raters evaluate samples independently, using a scoring guide, or rubric, to guide their scoring. In some test settings, one of the ratings is generated by computer. Whether the raters are human or computer, inter-rater reliability, or rater consistency, needs to be maintained between the raters.

While the test scores described above are numerical, researchers should carefully consider the type of data being reported, and then determine statistical tests that are appropriate for use with that type of data. Scores computed from correct item responses are treated as interval scales of measurement; such data can be treated as continuous for statistical analyses. Ordinal data might be obtained with test scores if the scores are generated from judgments of ranked levels of language performance or if the analysis is conducted on items employing a Likert-type scale. Pass/fail or advanced/intermediate designations may represent nominal data. Other nominal or categorical data might consist of different first language backgrounds, home country, or topic assignment.

Computers and Testing

In developing tests, it is worthwhile to consider how advances in computer technology have prompted changes in tests. While some computerized tests are similar to their paper-and-pencil counterparts, other tests are uniquely created for computers with items that involve moving sentences in a language sample, using the mouse to show comprehension of geographic locations, or using technology to talk interactively online. Computer adaptive testing has also been embraced by applied linguists, and these tests result in tailored tests that can more quickly target a learner's ability in many cases.

With these advances, research directions related to technology and its impact on language testing have been pursued. Examples include work on the length of reading passages delivered on the computer (Liu, Schedl, Malloy, & Kong, 2009), investigation of visuals in computer-based testing (Ginther, 2002; Ockey, 2007), and computer familiarity (Taylor,

Kirsch, & Jamieson, 1999). Chapelle and Douglas (2006) provide an informative discussion of advances in computer technology in testing, suggesting that it may be possible to test in new and different ways through the use of technology.

Conclusion

Tests are an important part of research in applied linguistics. Researchers should note, however, that test scores do not equal *true* language ability. Linguists continue to debate the construct itself, while language testers do their best to create procedures that will enable language learners to demonstrate what they know or can do with language. To complicate matters further, tests are not administered in a vacuum to only one type of learner; thus, factors such as test administration, conditions, format, method, scoring, and the test takers themselves introduce variation or "noise" in a way that makes it challenging to be sure that a test score does, in fact, represent language ability. Likewise, individual factors such as background knowledge, prior experience, and test anxiety can influence test performance. Research on working memory indicates that test takers vary in their ability to remember cognitively demanding information. In a listening test, for example, often a stimulus is only heard a single time, making it critical for the examinee to remember what he or she heard. Thus, individual variation in working memory adds an important layer to test performance, and test scores are impacted. Research in these areas and others tied to learners continues to inform testing practices and test score interpretation. Researchers who are informed about these issues will be better able to understand the strengths and shortcomings of the tests they use.

SEE ALSO: Assessment and Testing: Overview; Automated Essay Evaluation and Scoring; Computer Scoring of Spoken Responses; Ethics in Language Assessment; Language Testing in Second Language Research; Scoring Oral Test Responses by Computer

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Text-Based Approaches to Translation

LEONARDO GIANNOSSA

Theoretical Tenets

The text-based or textual approach to translation regards a text as a communicative act which takes places in a situationally and culturally significant context. In this sense, translation is more than a mere interlinguistic transcoding activity. The text to be translated, or, as is often referred to by translation scholars and translators, the source text (ST), is viewed as a coherent chunk of lexical items and is analyzed globally at the supra-sentential level by looking at its overall meaning, textual features, and communicative function(s). The translation unit is no longer the word or sentence, as is the case with the linguistic approach, but rather the text as a whole. The translator's task is to produce a translation or target text (TT) which is textually and communicatively equivalent to the ST. This is accomplished by encoding the ST information into equivalent target culture textual prototypes (see Neubert & Shreve, 1992, discussed below).

To better understand how this approach deals with the translation process, it is first necessary to talk about text linguistics, a discipline which emerged in the 1970s and informed many of the theoretical constructs and notions underlying the textual approach to translation. The theoretical foundations of text linguistics can be traced back to the late 1960s when linguistic researchers felt the need to investigate language beyond the sentence level. This need was met by the emergence of such fields as *discourse analysis*, *text grammar*, and *pragmatics*.

Within text grammar, a new theory of text which shifted the focus of analysis from the micro- to the macro-level was put forward by Petöfi (1971) and van Dijk (1972). Petöfi, on the one hand, added a new dimension to the study of texts which had until then been disregarded, namely *contextuality*, which refers to nontextual relations such as text reception and text interpretation. Van Dijk, on the other, described texts as consisting of a deep or macrostructure and a surface or microstructure.

Another important turn in linguistics, which also contributed to the shift from the sentence to the textual level, was the so-called *pragmatic turn*, which was initiated by Austin (1962) and his *speech act theory*, and by Grice (1975) and his *maxims*. They both focus on the implicit force of utterances and point out that the interpretation of them may depend on the pragmatic occasions on which such utterances occur.

It is de Beaugrande and Dressler (1981), however, who bring together the syntactic, semantic, and pragmatic features in the description of texts. In their pioneering work *Introduction to Text Linguistics*, they define a text as "a communicative occurrence which meets seven standards of TEXTUALITY" (p. 3). These seven standards are: (a) cohesion, (b) coherence, (c) causality, (d) intentionality, (e) acceptability, (f) informativity, and (g) intertextuality. The authors state that whenever any of these seven standards fails to be achieved, the result is a noncommunicative text, that is to say, a nontext. Besides, this idea of texts as communicative occurrences points to the purposefulness of the communicative act in which the text takes shape and meaning. In other words, a text is produced to fulfill a communicative function, which is one of the main concepts on which the textual approach is grounded.

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The introduction of text linguistics into translation studies also questioned the word- and sentence-level notion of equivalence which until the 1970s was advocated by many exponents of the linguistic approach to translation. As a matter of fact, it is only after text linguistics found its application to translation studies and translation began to be viewed as representative of a particular text type that the notion of equivalence acquired a textual/global meaning (Luo, 1999).

Eugine Nida may in this respect be regarded as one of the precursors of the global approach to text analysis and translating. His notion of equivalence in translation could be said to anticipate what would later be known as the textual approach. He views the act of translation as a reproduction in the target language (TL) of "the closest natural equivalent of the source-language message, first in terms of meaning and secondly in terms of style" (Nida & Tabber, 1969, p. 152). Nida also states that "the traditional focus of attention in translation was on the word. It was recognized that that was not a sufficiently large unit, and therefore the focus shifted to the sentence. But again, expert translators and linguists have been able to demonstrate that individual sentences, in turn, are not enough. The focus should be on the paragraph, and to some extent on the total discourse" (p. 152). Though Nida never applied text linguistics to translation, he held the view that translation units extended beyond the sentence.

The common belief shared by linguistics-oriented and linguistics-informed translation scholars, that translation occurred between the words of two languages, was challenged, as Neubert (1996) points out in his article "Text-Linguistics of Translation: The Textual Approach to Translation," by "the advent of text or discourse analysis in the 1970s and 1980s" (pp. 87–8). Thanks to the discourse perspective, the author adds, the notion of translation unit widened and so did the translator's horizon. Translators started looking beyond the individual words and phrases, thus taking into account what happens at the inter- and supra-sentential levels. Neubert claims that, with the advent of the textual perspective on translation, the focus shifted from "a more narrow semantic to a wider communicative or semiotic perspective" (p. 90). The textual approach is in Neubert's view grounded on two tenets, or rather, there are two aspects to it, which are termed *holistic translation* and *generic translation*. These two aspects, put together, make up the so-called textual approach.

The holistic approach claims that the general purpose of translation is to capture the overall message of the ST and transfer it into the TT. Both the translation process and product are ultimately justified on the basis of any assessment of the global textual function. With the exception of intertextualiy, the standards of textuality need to be reproduced and respected during the translating act. However, it is pointed out that since these standards are culture-specific, they depend on what constitutes normal reading in the target culture and for the target readership. The generic approach to translation, on the other hand, involves "paying attention to grammatical, lexical, and stylistic markers characteristic of an entire class of texts forming a part of a text world" (Neubert, 1996, p. 94). Translating a text implies translating a member of a particular text type or genre with all its distinctive features characteristic of that particular class of texts. It is emphasized that it is the concept of text type that underlies the notion of generic translation. Many text linguists and translatologists have over the years tried to come up with their own text typologies based on communicative functions (Buhler, Reiss, etc.). However, Neubert (1966) notes that these classifications are subjective and that, rather than focusing on devising a universal system of features characterizing specific text types, researchers should focus on compiling a list of features that a group or groups of texts share. In other words, they should concentrate on the intertextual relationship.

Another core idea underlying the textual approach to translation is the notion of *communicative value*, which replaces the linguistics-based notion of meaning. Indeed, as stated

in Neubert's article and later on in his book co-written with Gregory Shreve (1992), translators deal with communicative value. Unlike meanings, which are components of the linguistic system, communicative values are derived holistically from their position in the entire text and generically from the role they play in shaping a specific text type (Neubert, 1996).

Text-Based Models

Over the past forty or so years, a number of translation scholars have put forward several text-based translation models. All of them are characterized by a top-down approach to text, analysis and text-type classification. As a rule, their classification of texts, in general, and translations, in particular, is based on language and textual functions. Of all the language models that have been proposed over the years, three have mostly been used in and applied to the translation field: Bühler's (1990/1934), Jakobson's (1960), and Halliday's (1970).

German psychologist Karl Bühler, in his threefold organon model of language, distinguishes between representational, emotive-expressive, and conative functions (1990/1934, pp. 34–7). Representational function is related to objects and relations in the real world and describes extralinguistic reality; emotive-expressive function is associated with the speaker/writer of the message; and the conative message is focused on the receiver of the message.

Jakobson (1960) adopts Bühler's distinction but adds three more functions based on his communicative act model: phatic, metalingual, and poetic functions. The phatic function is contact-oriented and is used to establish, prolong, or discontinue communication. The metalingual function is focused on the code, whereas the poetic function is focused on the message.

Halliday (1970), by contrast, proposes a simple categorization of language functions. He identifies only three of them: ideational, interpersonal, and textual. His ideational function is content-oriented; his interpersonal function expresses a speaker's attitudes and also aims at influencing the addressee's behavior. His textual function is what links language with the situation in which it is used. This textual function relates to the internal organization of linguistic terms. Since a text is language in use, it inevitably implies the first two functions, ideational and interpersonal, which may be regarded as the two components of the textual function.

As far as translation theory is concerned, Katherine Reiss (2000/1981) applies Bühler's language functions to translation through her text-bound approach. She states that in order for translators to produce a functionally equivalent TL text, they need to find out the functions of the source language (SL) text. As a matter of fact, Reiss, as one of the prominent proponent of the functionalist approach, defines texts as *intentional* (my emphasis) acts of communication. By "intention," the author refers to speech purpose, the verbalization of which endows a text with one or more communicative functions of which only one is dominant. She proposes a three-stage process for clarifying the functions of the SL text.

The first stage of the analysis aims at the establishment of the text type, though she points out that this kind of ST-based text typology is valid as long as the function of the translation is the same as that of the original document. She identifies three basic text types: informative (focus on the content), expressive (focus on the artistic organization of the content), and operative (focus on making the content persuasive). This text-type classification is solely based on Bühler's functions of the linguistic signs (representational, emotive-expressive, and conative functions), rejecting Jakobson's phatic and rhetoric functions on the grounds that they do not actually give rise to a specific text type but are rather

realized in one of the three forms of communication identified by Reiss (namely informative, expressive, and operative). In addition to these three basic types, she isolates one more: the multimedial text type, which relates to material consisting of verbal texts accompanied by additional nonverbal information.

The second stage of the analysis aims at the establishment of the text variety, which is defined by the author as "super-individual acts of speech or writing, which are linked to recurrent actions of communications and in which particular patterns of language and structure have developed because of their recurrence in similar communicative constellations" (Reiss, 2000/1981, p. 165). The third and last stage is the analysis of style. At this stage, the translator has to identify which linguistic means were used by the author to realize specific communicative functions, as well as clarify how the text is constructed.

After this three-stage analysis comes the reverbalization phase, whereby the ST content is transferred into the TT. In the reverbalization phase, the text type determines the general method of translation, whereas the text variety determines the choices that the translator has to make as to language and text structure conventions.

Like Reiss's, Nord's model of text functions draws on Bühler's language model, but adds a fourth, which she calls phatic function. Nord (2005/1988) too adopts a functionalist approach to translation and proposes an analysis of the ST as a benchmark for decisions about the feasibility of the translation task, which ST units will be relevant to a functional translation, and which translation strategy to adopt. Unlike Reiss, however, Nord considers the TT purpose, as described in the initiator's instructions, as the main determinant of a translation. Though the TT function is the one determining the translation process, the translator still needs to undertake an ST analysis, because only by comparing the function of the ST with that established by the initiator can one decide which ST elements to keep or change during the interlinguistic transfer. According to Nord's model, the text is taken to be a communicative interaction, since it is used or produced within the framework of a communicative situation involving a sender, a receiver, a message, a code or medium, and a purpose which justifies the communicative act. Her distinction between text and nontext is grounded on the criterion of communicative function, which is the main determinant of textuality in a text. Indeed, the syntactic and semantic features of a text are subordinate to the communicative function thereof.

Nord's text approach to translation is top-down, starting from the pragmatic level. At this level, the translator has to decide the function of the translation, and a distinction has to be drawn between the functions that will be kept invariant in the TT and the ones that will be adapted. The second level concerns the conventions, more precisely style conventions, which will be determined by the translation type chosen on the basis of the function. Only after these two stages will the differences in language come into play.

A major contribution to the textual approach to translation came from Neubert and Shreve (1992), who thoroughly describe the textual approach in their work *Translation as Text*, in which they state that, in the top-down approach characterizing the text-linguistic model, sentences are translated by taking into account the conventions existing for a particular text type or textual category in a particular culture. This model locates meaning equivalence beyond the sentence level, namely at the textual and communicative level. The two authors identify seven factors accounting for the creation of textual and communicative equivalence. These factors are: (a) intentionality, whereby a text is written to attain a particular goal (the author's intent); (b) acceptability, which means that the text needs to be accepted as such based on peculiar textual features; (c) situationality, which implies that a text is always situated in communicative and social settings: (d) informativity, which is "a measure of the information a translation provides to an L2 [second language] reader about L1 [first language] events, states, process, objects, individuals, places and institutions"

(p. 89); (e) coherence, which refers to the logical structure existing between informational units in a text; (f) cohesion, which is "the reflection of semantic coherence at the textual surface" (p. 102); and (g) intertextuality, which relates to the set of expectations about what a text should look or be like. Neubert and Shreve (1992) also maintain that textual equivalence derives from prototypes, which are defined as "knowledge structures which are used and applied when interpreting or producing a text" (p. 130). It follows that two texts are said to be equivalent when "their textual profiles are derived from situationally and functionally equivalent prototypes" (p. 142). Hence, in order for the ST and TT to be communicatively equivalent, they do not need to share the same textual surfaces or semantic content, but rather need to "yield similar information to similar readers in essentially similar situations" (p. 143). Therefore, it is the function and purpose of a translation that are decisive factors in producing and assessing communicative equivalence.

Snell-Hornby (1995/1988), in *Translation Studies: An Integrated Approach*, deems translation to be a matter of texts culturally embedded in situations. Her integrated approach was, as she points out, influenced by the Gestalt school, in particular by the principle which states that the whole is more than the mere sum of its parts. Applied to translation, this means that the analysis of the parts "cannot provide an understanding of the whole" (p. 35). Her approach provides for a text analysis proceeding from the macrostructure of the text to the micro-unit of the sign. The first step that the translator has to take is to see the ST as a unit embedded in a given situation. The text is to be identified in terms of culture and situation. The second step is to analyze the structure of the text by tracing the web of relationships among lexical items. The third step involves using Fillmore's (1977) scenes-and-frames approach, according to which the linguistic forms used in a text are always related to the experience and response of a reader. Frames are collections of words and grammar rules whereas scenes are the experience situations that find expression in frames. Applied to the translation process, this implies that the translator-reader builds up scenes from the SL frames, and these scenes are affected by the translator's experience and internalized knowledge. Then she or he has to choose TL frames that are able to evoke those very same scenes in the TT (Snell-Hornby, 1995/1988).

Last but not least, Juliane House's (1981) textual approach, though mainly developed for quality assessment, provides a detailed model for the ST and SL function analysis which Reiss's (2000/1981) model vaguely accomplished. In House's view, equivalence implies preserving three aspects of meaning across two different languages: semantic, pragmatic, and textual. Of the three, it is the textual meaning that should be kept invariant in translation since it links sentences into a cohesive and coherent whole. In House's words, a textual function is "the application or use which the text has in the particular context of situation" (1997, p. 37). To identify this function, she relies on register analysis, in that register correlates linguistic features with situational features. The author later proposed a revised model which features genre as a linkage category between register and textual functions, because she realized that some of the deeper similarities and differences between texts cannot be accounted for by such situational dimensions as tenor, field, and mode of discourse (House, 1997).

Overall, the above-mentioned text-based models could be grouped into two major approaches. One is purely text-linguistics-driven and resorts to register, discourse, and pragmatic analysis to find out about the syntactic, semantic, stylistic, and pragmatic regularities of the ST so as to produce a situationally and linguistically appropriate TT. Within this approach, Nord, House, and Snell-Horby stand out. The other approach may be labeled text classificatory in that text type is the major determinant of translation strategies and the benchmark for translation quality assessment. Reiss's and Hatim and Mason's (1990) text classifications exemplify this approach to translation.

SEE ALSO: Discourse Analysis and Conversation Analysis; Functional Approaches to Translation; Linguistic Approaches to Translation; Pragmatics and Grammar; Strategies of Translation; Translation Theory

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Text-to-Speech Synthesis Development

CAROLINE HENTON

Background

Speech synthesis, as defined in *The International Encyclopaedia of Linguistics*, "is the automatic generation of speech using linguistically salient acoustic or articulatory properties, or spoken units that are selected and controlled using computational commands" (Clark & Henton, 2003). Machines that synthesized speech (synthesizers) were unveiled first in 1939 at the New York World's Fair. In the following 50 years, early vocoder synthesis was improved upon by parametric synthesis and linear predictive coefficient (LPC) synthesis. Parametric (or formant) synthesizers get control information either by analyzing relevant acoustic parameters in speech, or by rules operating on a character string (i.e., text). LPC synthesis uses the representation of the speech signal as a set of coefficients that try to predict the signal from past values in the time domain; LPC accounts for resonance and pitch movements well, but fails in natural voice quality because of the invariant nature of glottal pulses. For a history of the development of, and progress in, speech synthesis, see Klatt (1987), van Santen, Sproat, Olive, and Hirschberg (1997), and Clark and Henton (2003).

The speech quality of vocoder, parametric, and LPC synthesizers, while useful in speech perception and modeling research, was not acceptable for wide, mainstream deployment in commercial applications until the early 1990s. At that time, synthetic speech research and development switched to the concatenative method whereby units recorded by a human being (diphones, syllables, words, phrases, and so forth) are selected from a large database according to sophisticated algorithms, to be spliced together to form new utterances. The widespread use of the variable-length unit selection approach (Henton, 2002a) has brought much improved naturalness and intelligibility to synthetic speech.

Text-to-speech (TTS) systems transform text and symbols into spoken output. TTS systems are the most widely used application of speech synthesis in, for example, information technology and aids for the blind and people with other disabilities. Typical TTS systems contain modules for text normalization (illustrated below), morphological analysis and parsing, lexicon(s), grapheme-to-phoneme rules, and phonological rules.

This entry focuses on the development and deployment of general-purpose, unrestricted TTS synthesis in the most common scenarios for American English. It does not survey Web-based, free, embedded, or niche TTS that has been designed or modified for use in, for example, mobile devices (smartphones), navigation systems, "talking dictionaries," hand-held speaking translators, or other limited language-learning applications, including simple "speak and spell" applications.

High-Quality TTS Synthesis Across Languages

Currently, the most natural synthetic speech available in American English is "Alex," a male voice integrated with the Mac OS X operating system on all Apple computers. This voice is scalable: It can handle a large increase in users or workload without undue strain. It is used to speak music titles and artists on iPod devices, as well as forming the core of

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the "VoiceOver" application (see below). High-quality American English TTS that runs under the Windows operating system and others is also available from AT&T (www.research.att.com) and Nuance Communications (www.nuance.com). Over the course of two decades, Nuance has come to dominate the American English speech technology market by merging with or acquiring other TTS providers, including Lernout and Hauspie, Berkeley Speech Technologies, Centigram Communications, Dragon Systems, Rhetorical Systems, and SpeechWorks. Nuance now supplies two TTS systems: RealSpeak™ and Vocalizer 5. The synthetic speech produced by Tellme (www.tellme.com) is unique because it is designed to speak items in niche data domains. When combined with mobile GPS and Microsoft's Bing search engine, Tellme's voice services allow spoken query and TTS response for stocks, sports, news, weather, and driving directions, for example. However, if Tellme's "Zira" synthetic voice is used for general text output, unnatural segmental errors are apparent, and prosody is absent except for declarative statements.

Scottish-based Cereproc (www.cereproc.com) has developed diverse voices with American, Scottish, Black Country (loosely, Birmingham, England) and Southern British English accents. The European Acapela Group (www.acapela.com) has TTS in 25 languages that use 50 standard voices or a user's own voice. More than 20 of Acapela's Infovox (small footprint) voices are integrated for personal accessibility use by AssistiveWare, based in the Netherlands. Loquendo (www.loquendo.com) offers TTS for all major European languages, Australian English, some "minority" languages such as Catalan, Valencian, and Galician, and a broad variety of Latin American Spanish dialects: American, Argentinean, Chilean, and Mexican. Romanian-based Ivona (www.ivona.com) produces TTS in Romanian, Polish, American English, and two British English voices developed in cooperation with the Royal National Institute of Blind People (RNIB), UK. In addition to American English, NeoSpeech (www.neospeech.com) provides TTS in Japanese, Mandarin Chinese, Korean, and Latin American Spanish.

TTS Applications for Blind, Deaf, and Physically Challenged People

People who depend on speech synthesis include the blind, the physically impaired, those suffering from repetitive stress injuries (RSI), dyslexics, autistic children, and others who have language impairments (Henton, 2002b). For these individuals, TTS is used in quotidian tasks that involve audio feedback; for example, to verify the computer has heard them correctly, to read aloud information, in delivering instruction, practice exercises, encouragement, and confirmation messages. Speech synthesis may also be used for speech input to computers or other "listening" devices.

People who are blind or have low vision are served especially well by Apple Computer. Every new Mac computer includes an advanced, full-featured screen-access technology, called VoiceOver, that allows control of the computer. VoiceOver (www.apple.com/accessibility/voiceover) offers much more than simple TTS. It uses speech to describe the status of the computer and actions and activities as they occur. It also provides additional keyboard commands and other input options, including Braille display input. VoiceOver is unique because, unlike other speech tools and aids for the visual- and learning-disabled (e.g., Kurzweil 3000, www.kesi.com/research.aspx), it is not a stand-alone screen reader: It is integrated into the Mac OS X operating system. VoiceOver works with a wide range of applications—word processors, spreadsheets, browsers, audio software, utilities, and more, including those built into Mac OS X. VoiceOver is also the first screen reader to provide plug-and-play support for Braille displays.

In 2009 Animated Speech Corporation (http://itunes.apple.com/us/artist/animated-speech-corporation/id340888074) released an animated tutor iPhone application that uses

Baldi®, a "talking head" (agent) created by Massaro and colleagues (Massaro, 2006). Baldi provides realistic visible speech and can read aloud Web pages, RSS feeds, books, articles, and personal text files. Users control the rate of speaking, facial look, and emotion. No Internet connection is necessary for the speech and animation, because the software runs locally on the iPhone platform.

Talking Agents, Language Tutoring, and the Needs of Hearing-Impaired People

Talking agents can provide visual speech cues to make messages more understandable for the hearing impaired, as well as for others in difficult environments, like parties and crowds. Talking agents are autonomous software agents that communicate using speech and (facial) gestures to behave like interactive partners, and to supply relevant information. Using visible speech and any TTS system such agents can supply effective language tutoring. Talking agents are popular with children: Deaf-oral children, autistic children, students of English as a second or foreign language, reading-disabled (including dyslexics), and first language learners may all benefit from such visible speech.

There are many advantages to using talking agents such as Baldi as language tutors (Massaro, Cohen, Beskow, & Cole, 2000). Agents never get tired, bored, or impatient; they never suffer from sore throats; or have "bad days." Massaro, Cohen, Beskow, and Cole (2000) used the "Vocabulary Wizard" in schools for profoundly deaf-oral children, where pupils wear hearing-aids, have cochlear implants, or a combination of both, to enhance their hearing. These children improved their speech perception and production, and increased their vocabulary (Massaro, 2006). Using synthetic speech in language tutoring allows for endless repetition and volume adjustment to suit the user. More importantly, some training manipulations for deaf-oral children are easier to do with synthetic speech, such as lengthening the speech segments. Additionally, Baldi has a transparent mouth model, showing the tongue, palate, teeth, and lips. The tongue can be controlled to mimic natural tongue movements (Massaro, 2006). Tongue movements can be slowed down to emphasize place of articulation, and the rate of the synthetic speech can be reduced to rates far slower than a human could produce. Using a see-through dynamically talking agent, critical speech organs can be highlighted, noncritical parts can be hidden, and normally hidden parts can be revealed. Further, the orientation of the face can be changed to display different viewpoints while speaking, such as a side view, or a view from the back of the head (Massaro, 2006). All these features are of great benefit to deaf-oral and autistic children, who have difficulty in perceiving auditory speech alone. Teachers and parents believe that this learning is better than if the children had received human instruction alone.

Autistic children are most commonly diagnosed by a limited ability to comprehend and produce spoken language. They also exhibit cognitive, perceptual, and social differences. About 50% of autistic children fail to develop any form of functional language (Massaro, 2006). Moreover, many who do eventually speak exhibit language development delay. Any tools that can assist these children with developing communication skills are valuable. Students with autism have learned a significant proportion of new words using a vocabulary-training program. These children react well to synthetic communication; indeed, it appears that computer lessons are intrinsically motivating for most autistic children. Computers diminish the difficulties (and distractions) autistic children experience in face-to-face social interaction. Of course, there is always the danger that learners will mispronounce a word if the TTS mispronounces it.

Talking agents can provide phoneme-discrimination exercises, storybook reading, and constant vocal companionship, and, in an extreme case, they can be thought of as virtual

caregivers. Developmentally dyslexic children may improve their phonological and reading skills using an agent as a tutor. Talking agents can highlight and pronounce troublesome spelling sequences and different parts of a sentence, and add paradigms of similar-looking or similar-sounding words.

Synthetic Speech for Narration

Using synthetic speech for narration is more efficient and cost-effective than a human reading: there is no need to record hours of text, and the content can be updated easily. Electronic reader-devices can read aloud books, newspapers, and RSS feeds without the need for the author or a voice talent to read the text. For these applications, it is essential that the TTS includes excellent *text normalization*. Text normalization transforms text to make it consistent; it is performed before text is processed to generate synthesized speech. Such processing includes correct interpretation of lower or upper case letters (including acronyms), removing punctuation and diacritics from letters, and expanding abbreviations.

The TTS provider must also monitor pronunciation accuracy frequently, to avoid such embarrassment as the mispronunciation of "Obama" and "Celtics" by Nuance's TTS on the Kindle 2. Woo (2009) and colleagues have designed enhanced podcast content for iPods with color screens, which also contain archival images and maps. There are plans to narrate tours (of, e.g., Sydney's Birthplace Walk) using synthetic speech.

Emotions in TTS

The development of both stylistically and emotionally expressive synthetic speech has been investigated for many years (Henton & Edelman, 1996). The overall conclusion from speech research, language modeling, and psychology is that it is impossible to find invariant acoustic speech patterns with recognized emotions. Nevertheless, Loquendo has marketed expressive synthetic speech. Their voices have been enlivened with a repertoire of "expressive cues." The inclusion of this feature appears to have compromised both the naturalness and the accuracy achieved through unit selection.

Variety in Synthetic Speech

Early speech synthesizers produced only male voices well (Henton, 1999). This presented a real problem: In 1982, a young woman suffering from cerebral palsy noted that she used a mechanical voice to speak but found it demoralizing that only a male voice was available to her. In addition to being ignored, women's voices were often lumped together with those of children. As late as 1987, Klatt lamented, "it is very likely that a synthetic female voice will remain an elusive goal" (Klatt, 1987, p. 781). Developments in concatenative synthetic speech in the 1990s allowed researchers to synthesize female speech better. In the past two decades, synthetic voices have become more diverse and represent voices across sexes and more ethnicities and cultures. Speech databases exist for the creation of synthetic speech with different English accents, such as British, American, and Australian (see above), Welsh (Williams, 1995), and Indian (Sen & Samudravijaya, 2002). However, no synthetic speech exists, for example, in Jamaican or South African English. The lack of African American synthetic voices raises a question about equal access for all across the United States.

Conclusion

Synthetic speech is available in many languages and deployed in a wide range of environments. Benefits of this technology have spread into education, factory assembly lines, navigation systems, and entertainment, as well as providing essential assistance for physically, visually, vocally, and hearing-impaired people. Some potential applications for TTS, for example in reading prescriptions and drug names, should not be pursued for safety reasons (Henton, 2005). Predictions that it will soon be possible to synthesize any kind of text in a specific style (e.g., emphatic, formal, informal, and so forth) and in the emotional tone required (e.g., happy, sad, angry, and so forth) are premature. It remains important to continue to test TTS performance in the areas of pronunciation accuracy, text normalization, pausing, and other aspects of prosody. General-purpose TTS systems will continue to improve with better rules for intonation and (de-)accenting, with the semantic disambiguation of homographs, and with the constant maintenance of exceptions dictionaries. It may yet be possible to dispute van Santen's claim (1998) that TTS systems require real-world knowledge to sound perfectly natural.

SEE ALSO: Text-to-Speech in Computer-Assisted Language Learning

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Text-to-Speech Synthesis in Computer-Assisted Language Learning

ZÖE HANDLEY

In very simple terms, speech synthesis is the process of making the computer talk, and text-to-speech (TTS) synthesis is a specific type which takes raw text as input and aims to mimic the human process of reading. TTS is the technology which allows dictation software, such as IBM ViaVoice, to *read* your dictated texts back to you. It was also the technology behind Texas Instruments' Speak & Spell spelling bee program launched in the 1980s. While interest in the use of TTS in computer-assisted language learning (CALL) only really began to take hold around the year 2000, some of the potential benefits of the use of TTS in CALL had already been identified around the time that Speak & Spell was launched. At this time, Bruce Sherwood (1981) observed that typing/editing text is easier than (re)recording voice, that navigating through a textual database is easier than retrieving recorded samples from an audiotape, and that TTS synthesis has the capacity to generate speech models on demand—benefits which researchers continue to see in the use of TTS synthesis in CALL (Dutoit, 1997; Keller and Zellner-Keller, 2000; Handley and Hamel, 2005; Kang, Kashiwagi, Treviranus, & Kaburagi, 2008). This entry discusses the way in which these benefits have been exploited to provide learners with tools to support them in their language-learning activities as well as tutorial software focusing on the acquisition of specific areas of linguistic knowledge and language skills.

Tools Integrating TTS Synthesis

Two classes of tools have been developed to support students in their language-learning activities which exploit the benefits of TTS synthesis presented above. These are "talking dictionaries" and "talking texts."

Talking Dictionaries

Talking dictionaries are electronic dictionaries which integrate audio for the presentation of the contents of dictionary entries. The integration of audio to convey the pronunciation of the words is particularly useful for learners because it bypasses the need to be proficient in interpreting phonetic transcriptions, something which can be very difficult given conventions vary (Knowles, 1986). Talking dictionaries integrating digital recordings of human speakers also bypass this need. However, dictionaries integrating recordings of human speakers typically only provide one pronunciation model per entry, that of the headword. The generative power of TTS makes it possible to provide learners with pronunciation models for not only the headwords, but also their inflectional forms, derivations, synonyms, and antonyms as well as definitions and examples of usage. Few talking dictionaries, however, exploit this unique capacity of TTS synthesis. Two examples which do are the Breton talking dictionary produced by Mercier et al. (2000) and the *Oxford Hachette French Dictionary on CD-ROM*. Yachi's (2007) talking dictionary for young learners of English exploits the capacity to generate speech models on demand in a different way. This dictionary, which is compatible with interactive whiteboards, is authorable.

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Talking Texts

The *Oxford Hachette French Dictionary on CD-ROM* also integrates a talking-text facility, a tool which will read aloud any section of text the learner types or copies into it from another application. Talking texts are also quite popular in CALL. Another example of a talking-text facility can be found in Spanish for Business Professionals by Kirk Hagen of the University of Houston Downtown. Each unit of this course focuses on a dialogue. Having studied this dialogue, learners are encouraged to practice the language they have acquired in a chatroom. Learners can use the talking-text facility to listen to their own and others' messages.

Dictation systems, such as IBM ViaVoice and Dragon Naturally Speaking, are an extension of talking-text applications. Dictation systems integrate both automatic speech recognition (ASR) and TTS to allow the user to dictate a text and have that text read back to them. As extensions of talking-text applications, one can imagine dictation systems also being used in language learning as described above (Chapelle & Jamieson, 2008). The same is true of screen readers. A screen reader is a piece of software designed for use by the visually impaired and people with language impairments, which reads aloud the contents of the computer screen using a TTS system. Some commercially available examples are TextHelp, NaturalReader and ReadPlease.

Tutorial Software Integrating TTS Synthesis

As mentioned above, it has also been suggested that tutorial CALL could exploit the benefits of TTS.

Vocabulary

There are two specific benefits of using TTS in tutorial software focusing on vocabulary. First, TTS enables learners to access the pronunciation of a word in addition to its form and meaning. As Nation (2001) observes, there is more to knowing a word than being able to recognize its orthographic form and retrieve its meaning. Second, as mentioned above in relation to talking dictionaries, using TTS for the presentation of pronunciations bypasses the difficulties associated with phonetic transcriptions (Knowles, 1986). The *Software Linguistico Interattivo Multimediale* (*SLIM* or *System for Interactive Multimedia Language Learning*; Delmonte, 2008) is an example of a piece of tutorial CALL software focusing on vocabulary which exploits these benefits.

Grammar

The advantages of using TTS in tutorial CALL focusing on grammar are similar to those of using it in vocabulary CALL (Handley, 2006) and have been exploited in a variety of ways. TTS has been used to aurally present grammar exercises from the learners' normal course-book in a language laboratory setting (Stratil, Burkhardt, Jarratt, & Yandle, 1987; Stratil, Weston, & Burkhardt, 1987), text unscrambling exercises (Delmonte, 2008), and automatically generated individualized grammar exercises (de Pijper, 1997). The latter use is particularly interesting because it takes full advantage of the generative capacity of TTS to provide learners with unlimited practice with aural support.

Pronunciation

In contrast with the use of TTS in vocabulary and grammar software, the use of TTS in tutorial CALL focusing on pronunciation is controversial. While some argue that "the current quality of synthesis varies from language to language and [is] not fully ready as

a model for students who are learning to speak like the natives" (Egan & La Rocca, 2000, p. 5), others believe that TTS may be particularly suitable for use in the teaching of pronunciation, in particular intonation: "The advantage of synthesized intonation contours compared to those realized by the speaker is that their melodic pattern is more formalized. Thus the generalized contours free from additional emotional coloring are used as models" (Skrelin and Volskaya, 1998, p. 24). Nevertheless, a few tutorial CALL systems focusing on pronunciation have been developed. SAFexo, a module of the Système d'Apprentissage du FRANçais (SAFRAN) CALL environment (Hamel, 2003), uses TTS to provide the pronunciation models in exercises focusing on both the phonetic and prosodic levels. Software for learners of Breton produced by Mercier et al. (2000) uses TTS to provide pronunciation models at the prosodic level.

Reading

A very general benefit of the use of TTS in tutorial CALL focusing on reading might be that it helps learners to focus on what they are reading and stops them becoming overwhelmed by the multiplicity of links and colors characteristic of Web-based materials (Moisa & Ontanu, 1999). More specifically, tutorial CALL applications have been developed to support the development of both lower-order and higher-order reading skills. In terms of lower-order skills, the ability to match letters, or graphemes, to the speech sounds that they represent is believed by many to be a prerequisite for reading. In response to this, the CALL tutor SAFRAN (Hamel, 2003) integrates TTS to provide learners with a model against which they can compare their productions in three activities designed to reinforce the grapheme-to-phoneme, namely (a) anagrams, (b) tongue twisters, and (c) karaoke. Regarding higher-order reading skills, the SLIM system (Delmonte, 2008) integrates TTS for the presentation of reading comprehension activities. The comprehension questions are automatically generated by the natural language generation system GETARUNS; Delmonte's SLIM system, therefore, also exploits the capacity of TTS to automatically generate speech models on demand.

Writing

TTS has also been used in exercises designed to reinforce the phoneme-to-grapheme relationship. For example, in the CALL system SAFRAN (Hamel, 2003), TTS provides the stimuli in the following activities: (a) gap-filling (or cloze) exercises, (b) hangman, (c) word searches, (d) homophone exercises, and (e) dictations. Of these, dictation is quite a popular use of TTS and its benefits have been exploited in a number of different ways. While SAFRAN does not take advantage of the unique capacities of TTS which include its ability to generate models on demand and its flexibility—SAFRAN uses TTS to read predetermined texts to the learner—Sherwood's (1981) software for Esperanto exploits the capacity of TTS to generate speech models on demand to provide learners with individualized feedback, and Ordictée, the Breton dictation system developed by Mercier et al. (2000), exploits the flexibility of TTS synthesis to dynamically adapt the speed of delivery of dictations to learners' pace (typing speed). In terms of higher-order writing skills, it has been suggested that aural feedback provided through the use of TTS synthesis might help learners to notice errors in their written compositions (Chapelle & Jamieson, 2008).

Speaking

Arguably, the best way to develop speaking skills is through conversational interaction with native speakers. While computer-mediated communication (CMC) technologies such as chat applications and Skype have made it easier for learners to get such conversational practice, many learners may be daunted by the prospect of engaging with a native speaker.

Computer-simulated conversational practice with an avatar may help learners to build their confidence. There are, however, a number of obstacles to providing this sort of practice. One is that responses in dialogues are unpredictable and may be infinite in number. It is therefore not possible to predict and store all possible responses to learner utterances using digitally recorded human speech. TTS synthesis with its unique ability to generate spoken utterances from text on demand provides part of the solution to this problem—speech understanding and dialogue management systems provide the others (Jurafsky & Martin, 2000). Spoken Conversational Interaction for Language Learning (SCILL; Seneff Wang, & Zhand, 2004) is an example of a CALL system that integrates TTS for this purpose.

Listening

Traditionally, listening was taught by presenting learners with a passage to listen to and then asking them to answer questions and complete activities based on that passage. TTS is being used to present activities of this type in software developed by the Virtual Language Center (VLC), namely Storyboard, Cloze and Jumbler games. While many attempt to teach listening in this way, for others this is not *teaching* listening, it is *testing* listening. In this vein, TTS has been integrated into activities aimed at teaching low-level listening skills. For example, Sherwood's (1981) CALL software for Esperanto also uses TTS to present the stimuli in auditory discrimination exercises, as does SAFRAN (Hamel, 2003).

Is TTS Ready for Use in CALL?

Despite the potential benefits of the use of TTS in CALL, as we have seen above, few applications have been commercialized. One potential reason for this is that many still associate TTS with the robotic speech produced by early TTS systems such as that used in Speak & Spell. Yet, the quality of the output of TTS systems has significantly improved since the 1980s. In fact, some believe that the quality of TTS has improved to such an extent that the output for short utterances is indistinguishable from recordings of human speech and might, therefore, pass the Turing Test (Schroeter et al., 2002). The output of TTS systems is, however, still not free from error and does not sound perfectly natural. In fact, perfectly natural-sounding speech may remain elusive for many years to come because TTS systems require real-world knowledge to resolve some of the ambiguities found in texts and determine appropriate prosody (van Santen, 1998). The question remains whether the quality attained by current TTS systems is adequate for use in CALL. On this point, while some argue that anything less than perfectly natural-sounding native-like speech is not appropriate for use in CALL (Egan & La Rocca, 2000; Eskenazi, 2009), others argue that when TTS synthesis can outperform the more advanced learners it will be ready (Keller & Zellner-Keller, 2000); still others argue that when an expert speaker is not available, any spoken input no matter how poor the quality is acceptable (Delmonte, 2008). There is, however, little evidence to support either view as few evaluations have been conducted. In fact, only two evaluations of systems based on the current approach to TTS—namely concatenative synthesis—were found. The first of these studies (Kang et al., 2008) compared the comprehensibility of the speech generated by AT&T Natural Voices with that of natural speech by asking a group of Japanese learners of English to transcribe, translate, and rate the comprehensibility of a corpus of stimuli generated in both ways. It found little difference between the synthetic speech and the natural speech for word-length stimuli. The study, however, had a significant limitation; only one TTS system was evaluated. This is an important limitation because speech quality differs significantly across TTS systems and may even differ across different voices generated by the same system (Handley, 2006). Taking this into account, the second study, Handley (2009), evaluated a range of French

TTS systems. This study found that TTS systems which integrate nonuniform unit-selection synthesis (Henton, 2002), a specific form of concatenative synthesis, are ready for use in CALL applications which exploit the unique capacity of TTS synthesis to generate novel speech models on demand. The evaluators in this study were, however, teachers of French, not learners. If CALL applications integrating TTS synthesis are to move from prototypes to commercial or freely available applications (Holland & Fisher, 2008) and learners are to profit from the benefits that TTS synthesis can bring to CALL, further evaluations, in particular intervention studies with learners, need to be conducted.

SEE ALSO: Automatic Speech Recognition; Computer-Mediated Communication and Second Language Development; Emerging Technologies for Language Learning; Text-to-Speech Synthesis Development

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Theory of Interpreting

MAGDALENA BARTŁOMIEJCZYK

Theory of interpreting is a dynamically developing field of study dealing with various aspects of oral and sign language translation in its several modes and a wide range of settings. The current output of publications (articles and books) in the field can be estimated at a few hundred a year. As opposed to the beginnings, when most studies were published in French or in English, today there is a much more heterogeneous scene, with a lot of recent studies being published exclusively in Japanese, Korean, or Chinese. Topics related to interpreting are popular choices for diploma, MA, and PhD theses. Interpreting research poses a number of challenges, many of which are unique to the field. The aim of this entry is to briefly present the major investigative approaches which have become established over time, giving some examples of prominent studies representing them.

Historical Perspective

Gile (1998), whose classification has gained a wide acceptance, enumerates four periods of research into interpreting. The first three of them are, in fact, limited to conference interpreting.

The "early writings period" covers literature from the 1950s and early 1960s. Its authors, such as Jean Herbert, Jean-François Rozan, and Gérard Ilg, mostly did not purport to write scientific texts, but rather to educate aspiring and beginning interpreters and maybe also inform the general public about the job of the conference interpreter and raise the consciousness of delegates making use of interpretation in meetings they attended. The handbook by Herbert (1956) may serve as a highly representative example. The very subtitle, *How to Become a Conference Interpreter*, expresses the purpose and spirit of the book. Statements were usually made on the basis of authors' own experience as conference interpreters and/or interpreting teachers, but the methods and reasoning processes leading to these statements were not explained.

The "experimental period" (the 1960s and early 1970s) was characterized by much research done by psychologists and psycholinguists (e.g., David Gerver, Frieda Goldman-Eisler, Henri Barik), exploring aspects such as ear–voice span, pauses in delivery, the effect of noise on the interpreter's performance. Practicing interpreters had a negative attitude to such studies, considering the experimental conditions too far from real interpreting experience.

The "practitioner's period," lasting from the late 1960s until early 1980s, saw the involvement of numerous interpreters and interpreting teachers into the discipline. Their studies were mostly not empirical, but speculative and theoretical, based on intuitions or on facts collected through nonsystematic observation. Prominent examples of works from this period include the publications of the Paris School, the most important representative of whom is Danica Seleskovitch. Her very influential book on conference interpreting (1978, first published 1968) discusses the controversial concepts making up her "*théorie du sens*," such as deverbalization, a stage in the interpreting process between the reception of the source text and the production of the target text when absolutely no trace of the linguistic form of the source text is present in the interpreter's mind. Another widely contested view

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of this theory is that interpreting is language-independent, as both text comprehension and production happen spontaneously in any language of which the interpreter has the necessary command.

The "renewal period" started in the mid-1980s. Research is done mainly by practicing interpreters, who, in opposition to the previous period, are willing to incorporate findings and methods from other scientific disciplines (see the section on Interdisciplinarity below). The number of empirical studies is constantly rising. The scope of interest has widened considerably to include other modes and settings beside conference interpreting, such as court interpreting (e.g., Berk-Seligson, 1990), community interpreting (e.g., Wadensjö, 1998), medical interpreting (e.g., Angelelli, 2004b), and sign language interpreting (e.g., Metzger, 1999). One of the most popular theoretical concepts of this period is Gile's (1995) effort models of consecutive and simultaneous interpreting, highlighting the problem of the interpreter's limited processing capacity, which has to be strategically distributed among several concurring tasks (e.g., listening and analysis as well as note-taking during the first phase of consecutive interpreting).

Empirical Research

The process of introducing empirical methods into interpreting research was mostly initiated by scholars previously active in other disciplines, who brought with them their own methodological tools. Empirical research can be divided into two main types: experimental research and observational research.

The main advantage of experimental research is that it enables relatively high comparability of obtained data; for example, the same source text can be interpreted in the same booth by dozens of interpreters working under very similar conditions (although some factors, such as the participants' motivation or present physical and mental condition, are beyond the experimenter's control). The most important disadvantage of experimentation, however, lies in the fact that experiments take part in an artificial environment, which may lead to a situation that is not typical at all of the normal work environment. Consequently, it is important to stress the need to design experiments properly, that is, so as to make the materials and conditions as close to field reality as possible. It is unacceptable, for example, to use source texts of a type that is actually never interpreted. Many interpreters report that an unrealistic situation in an experiment makes for processes which depart considerably from those that occur during actual interpreting. Some practicing interpreters go so far as to reject all research based on experiments as devoid of ecological validity.

Another crucial problem of experimental research is the availability of participants. Professional interpreters rarely agree to take part in experiments, especially if they are offered no remuneration for the time and effort they would have to devote. As a result, numerous studies are based on data obtained from just a few participants, which makes any generalizations concerning the results difficult to justify. On the other hand, many experimenters base their studies on data provided by students of interpreting, who are much easier to recruit than professionals, especially for interpreter trainers. Such studies usually do not suffer from scarcity of participants, but the main doubt they raise is to what extent they actually reflect interpreting as performed on the market. It is not problematic as long as the researcher admits that the results obtained in such a study apply to interpreting trainees at a certain stage of interpreter education (corresponding to that of the participants); however, sometimes the results are presented as referring to professional interpreting as well. Bilinguals who are neither professional interpreters nor interpreter trainees are also sometimes asked to participate in experiments connected with interpreting. This makes sense in studies on modes of interpreting that are sometimes actually performed

by ad hoc interpreters (e.g., liaison interpreting by a bilingual child of immigrants in everyday situations, medical interpreting provided by a bilingual nurse for a foreign patient at hospital), but not in studies of conference interpreting. Bilinguals (e.g., advanced foreign language students) can certainly serve as a control group to compare some aspects of their cognitive processes and so forth with those of conference interpreters, but it is not acceptable to draw any conclusions concerning conference interpreting on the basis of interpretations provided by nonprofessionals.

Let us consider an early example of experimental research on interpreting. Gerver (1969) examined the effects of various presentation rates on the performance of interpreters. A native speaker recorded a French text (a fragment of a speech originally presented at a UNESCO conference on human rights) at a rate of approximately 120 words per minute. The tape was afterwards processed so that the speaking rate changed every 110 words. The successive fragments of the experimental source text had the speaking rates of 95, 112, 120, 142, and 164 words per minute. The speech was presented to 10 professional conference interpreters in a language laboratory. Half of them were asked to shadow it (i.e., repeat in French), and the other half to interpret it into English (their mother tongue). Both tracks of each recording were transcribed onto pen tracks obtained by means of an EEG pen recorder. This made it possible to measure speech time, pause time, and ear–voice span (e.g. the delay between a source text element and its counterpart). Ear–voice span was calculated for every fifth word. Additionally, the experimenter counted the number of correctly shadowed or interpreted words (literal translation was not necessary). The analysis showed marked differences between the performance of "shadowers" and interpreters. For example, the performance while shadowing deteriorated only at the highest speaking rate, whereas interpreting showed more omissions after each speaking rate change. Ear–voice span was longer for interpreting and it increased much more when the speaking rate rose than in the case of shadowing.

As regards the experimental design, the interpreting task must be evaluated as fairly realistic. The participants are conference interpreters. The source text is an authentic speech and it often happens that a speaker who delivers his or her speech quite slowly at the beginning speeds up as it progresses. Shadowing, however, is not an activity anyone is required to undertake for any practical reasons. Even as a pre-interpreting exercise it is highly controversial. Therefore it is not completely clear why it should be useful to compare it with simultaneous interpreting. As for analysis of the recorded material, counting correctly rendered words has since been replaced, in similar studies, with propositional accuracy score, a method considered to be better suited to analyze interpreting performance.

The main advantage of observational research is the authentic data it provides, whose representativeness for processes involved in interpreting cannot be challenged. Data from a number of case studies conducted in similar field conditions may lead to reliable generalizations. The main problem encountered by researchers engaging in observation, on the other hand, is access to authentic interpreting data. This is especially true of community interpreting, which often requires confidentiality. The interlocutors as well as the interpreter frequently object to recording and analysis of interpreted conversations. Therefore, observational studies of community interpreting are relatively rare, mostly conducted by experienced researchers, and typically published as a book (e.g., Wadensjö, 1998; Tryuk, 2004). As for conference interpreting, the number of source and target texts in the public domain, available for analysis, is constantly rising, as they are nowadays often broadcast on TV or placed on Web sites (e.g., debates of the European Parliament [EP] as well as their interpretations into official European Union languages can be found on the EP's Web sites). This makes observational studies feasible for students writing their BA or MA theses.

In their most typical manifestation, observational studies analyze recorded material (source texts and target texts) from an interpreted event. Pöchhacker's book (1994) can

serve as a good example of a comprehensive study based on a large corpus of observational data containing all source and target text for the English–German language pair from an international congress (over seven hours of original speeches and, correspondingly, of interpretations). The material enabled a detailed analysis of the interpreting situation (with features such as intertextuality and interaction between the speaker and the audience taken into consideration) as well as the interpretations (compared, whenever necessary, with the original speeches). The latter focused on two aspects: correctness and surface quality of the text (the profile of the text, speech length, speaking rate, pauses, instances of voiced hesitation, slips of the tongue, and self-corrections). The book shows the wide range of research directions and possibilities that a sufficiently large corpus of observational data can offer. However, many small-scale studies focusing on just one source text and its rendition (e.g., Pöchhacker, 1997, analyzing a nine-minute-long speech by President Clinton delivered in Berlin and its German interpretation) or a single interpreted event broadcast on TV (e.g., Kurz, 1993a, analyzing a US presidential debate) are valuable contributions too.

There are numerous studies employing questionnaires to investigate attitudes to different aspects of interpreting (especially quality), started by Bühler (1986), that must also be seen as examples of observational research (e.g., Kurz, 1993b). Angelelli (2004a) investigated whether interpreters' perception of their role depended on their social background and on the settings they worked in. She used comprehensive surveys (Interpreter's Interpersonal Role Inventory, IPRI, designed to measure interpreters' attitude toward their visibility in the interpreting process) on a large sample (293 participants) of conference, court, and medical interpreters from three countries. The book describes in detail the process of designing IPRI, from the search for similar instruments, through validation by discussing all the questions with 14 interpreters and pilot studies on 93 participants (trainee and professional interpreters), to the revision resulting in the final version with 13 background questions on social factors and 38 questions concerning visibility. The analysis of the responses to the questions and of additional, unsolicited comments revealed significant correlations between the interpreters' perceptions of their own visibility and factors such as their age, income, ethnicity, and the interpreting setting. Against the ingrained belief that an interpreter should act as a "ghost" (Kopczyński, 1994), the respondents working in all settings perceived themselves as having some visibility through their contribution to, among other factors, conversation management, cultural mediation, facilitating mutual respect and trust between the interacting parties. Medical interpreters claimed to have more visibility than court or conference interpreters.

Interdisciplinarity

A large portion, and probably even the majority, of interpreting research is closely linked, in one way or another, to other scientific disciplines, such as psychology, sociology, linguistics, or neurophysiology. Toury attributes this interdisciplinarity (or "multidisciplinarity," as some prefer to call it) primarily to the involvement of scholars whose original field of scientific interest was not translation studies, but who saw translation and interpreting as "new, intriguing areas of application for tools they already had at their disposal; areas which would be close enough to their 'mother' disciplines as well as sufficiently unexplored to warrant research with the help of these tools" (Toury, 1991, p. 45). Some of these scholars made a foray into interpreting research with one or two studies, and some have continued to regularly provide very valuable input over many years. A prominent example of the latter is Ingrid Kurz (formerly Pinter) from the University of Vienna, who started out in psychology, and was one of the first scholars to write a PhD on interpreting (in 1969).

Appreciating the crucial role other scientific disciplines play for translation studies, Malmkjær (2000) also notes some potential problems resulting from this phenomenon.

First of all, the level of knowledge may be insufficient, which applies equally to a translation scholar's knowledge of another discipline and to knowledge of translation studies acquired by a scholar from another discipline. Second, wholesale borrowing of a complete theory rather than just a research tool may lead to explaining translation in the service of the discipline from which the theory has been adapted rather than in the service of translation studies. Third, there is a danger that another discipline comes into the foreground to such an extent that translation is lost from sight. And, last but not least, the question of prestige can be considered, and a discipline providing insight for other disciplines will normally be seen as stronger than a discipline drawing from other disciplines. This section will discuss some examples of studies combining interpreting research with elements imported from other fields (for which Malmkjær's term "feeder disciplines" is used).

Psychology was the point of departure for the studies of conference interpreting in the "experimental period." This is not surprising, as most authors of these studies were trained psychologists. This wave of research is not without some serious shortcomings, but it launched empirical research into interpreting and probably represents the only period in its history when so many noninterpreters took an interest in interpreting. What attracted psychologists the most were the "mysterious" mental processes underlying listening and speaking at the same time in simultaneous interpreting. However, many of them failed to understand the strategic dimension of interpreting, for example the fact that an interpreter may choose to omit some portions of source text as redundant or having minor importance, or add something by way of explaining some culture-bound concepts.

Oléron and Nanpon's study (2002) was based on both observational and experimental data, although the second type was clearly given priority. The authors applied a quantitative analysis to their experimental material to determine, among other things, the delivery rate (number of words per minute) of speakers and interpreters. The most important part of their findings, however, concerns ear–voice span. Although the average ear–voice span lay somewhere between two and three seconds, it was discovered that its distribution was very asymmetrical, ranging from 0.5 to 11.1 seconds, and probably depended on many variables such as the speed of delivery or length and frequency of pauses in the original speech.

Valuable as this study is, due to the fact that it raised interest in interpreting as a research object and posed numerous important questions, it must be noted that it suffers from many methodological weaknesses, some of them typical of interpreting research done by noninterpreters. First of all, the number of participants was very small—only three professional interpreters. Second, the interpreting situation was unrealistic. In some parts of the experiments, the participants were requested to interpret strings of disconnected words and sentences, which never happens in practice. In the part in which they did interpret coherent texts, the texts were not of the type that would appear in conferences: fragments of Saint-Exupéry's book *The Little Prince* and the *UNESCO Courier*, chosen because they existed in a number of different language versions and thus enabled interpreting in several different language combinations.

Another popular feeder discipline for interpreting research is neurophysiology. For example, Fabbro, Gran, Basso, and Bava (1990) describe an experiment where simultaneous interpreting was studied by means of an experimental procedure known as verbal–manual interference paradigm. Fourteen advanced interpreting students with Italian as first language and English as second language were asked to interpret, while tapping a key connected to a counter, proverbs (which involves the meaning-based approach) and lists of words (which involves the form-based approach) in English and in Italian. The resulting interference did not show any pronounced difference between right and left hand, which suggests that simultaneous interpreting requires the involvement of both hemispheres. There was, however, a very considerable difference between interpreting with the meaning-based approach and with the form-based approach, the percentage of disruption for both hands

being much higher for the former condition. This suggests that meaning-based interpreting is a more demanding cognitive task.

The third crucial feeder discipline for interpreting studies is linguistics, or rather various branches of it. Cohesion studies, for example, have been of great interest to scholars engaged in research on interpreting. Shlesinger (1995) set out to validate empirically the hypothesis that a simultaneously interpreted text differs in the types and density of cohesive ties from the source text. In the experiment she conducted, 13 advanced interpreting students were asked to interpret from English into Hebrew an authentic impromptu speech in English. They did it twice in succession in a standard laboratory used for teaching simultaneous interpreting. The purpose of the second interpretation was to establish whether participants would make any nonrandom changes in the cohesive links due to the prior knowledge of the source text. Their interpretations were recorded and transcribed. The source text made extensive use of cohesion and contained cohesive links of four types: lexical cohesion, reference, substitution, and conjunction. The results of the experiment confirmed the initial hypothesis by revealing extensive shifts in each type of examined cohesive devices, particularly those which were seen as not indispensable to comprehend the informational content and those whose understanding required prior knowledge that the subjects did not have.

Another branch of linguistics particularly relevant for interpreting research is pragmatics. In Setton's highly technical book meant as "a bridge between interpretation studies and mainstream linguistics" (1999, p. xiv), Setton relied to a great extent on the findings of pragmatics, describing the effect of context rather than just source text on the target text. On the basis of a corpus of German–English and Chinese–English interpretations (obtained partly under real conference conditions and partly experimentally), he showed how the extralinguistic information available to the interpreters helped disambiguate and sometimes enrich the informational content present in the source message. World knowledge and situational knowledge both had a role to play in this aspect.

The 1990s and the 2000s saw the emergence of sociology and sociolinguistics as crucial feeder disciplines for interpreting research. Wadensjö (1998), for example, explored community interpreting as a special case of interaction, significantly different from conversations between two individuals. On the basis of observational data collected in authentic medical and legal settings involving interpreting between Swedish and Russian, she looked at interpreters as social actors and interpreting as "a matter of both linguistic and social competence" (1998, p. 14). She was among the first to challenge the prescribed nonparticipatory role of interpreters, which has since become the focus of a number of socially oriented studies dealing with the roles played by interpreters working in a wide range of settings such as police stations, courts, hospitals, and universities (e.g. Metzger, 1999; Roy, 2000; Angelelli, 2004a, 2004b).

Other fairly popular feeder disciplines include history (e.g., Bowen, Bowen, Kaufmann, & Kurz, 1995, discussing the role of interpreters in various historic events on the basis of information obtained from primary and secondary sources), and physiology (e.g., Klonowicz, 1994, investigating the management of energy resources in simultaneous interpreting by measuring blood pressure and heart rate of interpreters, as cardiovascular activity reflects effort and stress).

Conclusion

Interpreting research nowadays has many facets. It moves away from prescriptivism. It seeks to describe all interpreting modes and settings and all aspects of interpreting, including long-standing issues such as interpreter education or directionality (interpreting from

or into one's native language), as well as new topics such as performance of interpreters having no formal education in the profession. The proportion of empirical studies is on the rise, as is the interest in modes other than conference interpreting, the traditional domain of interpreting research. However, interpreting theory is divided, mainly into the psycholinguistic and sociolinguistic approaches, which look at different aspects of interpreting (information processing vs. interpersonal relations during interpreted interactions), and do not merge. Angelelli suggests the need for "an integrative theory of interpreting" that "will include and account for the discourse features of an interaction and the social context in which it is embedded, as well as the information processing aspect of the task" (2004a, p. 89).

SEE ALSO: Community Interpreting; Conference Interpreting; Interpreting Techniques and Modes; Liaison Interpreting; Media Interpreting; Models of Interpreting; Neurolinguistic and Cognitive Aspects of Interpreting; Quality in Interpreting; Teaching and Learning of Interpreting

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Term Banks

HANNE ERDMAN THOMSEN

According to the international standard ISO 1087–2:2000, a term bank is a "data bank containing terminological data," i.e., "data related to concepts or their designations." It contains terminology relevant to one or more subject fields, and can thus be compared to a dictionary of (some) language for special purposes. Term banks are maintained in the context of an institutionalized organization such as a government agency or a department of a major company.

A term bank consists of one or more termbases or terminological databases. The format of a termbase will usually be an electronic database (or terminology management system —TMS) although during the early historical development of terminology work, term banks were in paper format (e.g., card indexes) and could be published as books.

The purpose of a termbase is usually to facilitate consistent and nonambiguous communication, including translation, within a specific subject field and/or for a specific purpose. Depending on the scope of a term bank, its termbases may treat a single field for a given company, or many specialized fields may be included to meet the needs of a broader audience.

Contents of Term Banks: Information Categories and Exchange Formats

The central information categories in a termbase or term bank are the term (or terms, in the case of synonyms) and the definition. To each of these, a number of related categories may be added, e.g., pronunciation, grammar, usage examples (term-related categories), or subject and semantically related concepts (concept-related categories). In a multilingual term bank, equivalent concepts in the languages treated are grouped together in one entry.

The international standard ISO 12620:2009 specifies criteria for creating a metadata registry designed to standardize data categories used in a wide range of language resources, including data categories for term banks and termbases. The online Data Category Registry, http://www.isocat.org/, includes several sets of data categories used in concept-oriented terminology databases. Designers of individual applications may collect their own subsets of this extensive inventory of items for use in their own work. ISO 30042:2008 describes formats for structuring and marking up data for exchange purposes.

Terminology Versus Lexicography

Term banks are compiled and organized according to the terminological or onomasiological working method, as opposed to dictionaries, which are compiled according to the lexicographic or semasiological method. The semasiological method is word-oriented, the point of departure is the expression, and the lexicographer finds and describes the various senses or meanings of each expression. The onomasiological approach, on the other hand, is concept-oriented. Here, the terminologist takes as point of departure the concepts that are relevant for a subject field and looks for the expressions that are used for designating each

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Table 1 Lexicographic dictionary entry for *tape*

tape
1. A long narrow strip of magnetic material used for recording sound, pictures or information
2. A cassette that contains tape in sense 1
3. A long narrow strip of material with a sticky substance on one side. Synonym: adhesive tape; sticky tape
4. A narrow strip of material that is used for tying things together or as a label
5. A long narrow strip of material that is stretched across the place where a race will finish. Synonym: finishing tape
6. A long narrow strip of material that has measurements marked on it and is used for measuring the length of something. Synonym: tape measure; measuring tape

of them, i.e., the designations. These different approaches result in two types of data collections, which differ with respect to the way entries are organized.

In a lexicographic dictionary the central organizational unit is the expression (headword or lemma), and each entry contains all possible senses associated with the headword as shown in Table 1, which quotes the entry for the word *tape* in a dictionary (the senses cited here are found in Hornby, 2005).

Table 2 Terminological entries containing the term *tape*

1 TERMS: tape
SUBJECT: magnetic media
DEFINITION:
A long narrow strip of magnetic material used for recording sound, pictures or information

2 TERMS: tape
SUBJECT: magnetic media
DEFINITION:
A cassette that contains a long narrow strip of magnetic material used for recording sound, pictures or information

3 TERMS: tape; adhesive tape; sticky tape
SUBJECT: adhesives
DEFINITION:
A long narrow strip of material with a sticky substance on one side.

4 TERMS: tape
SUBJECT: fasteners
DEFINITION:
A narrow strip of material that is used for tying things together or as a label.

5 TERMS: tape; finishing tape
SUBJECT: racing
DEFINITION:
A long narrow strip of material that is stretched across the place where a race will finish.

6 TERMS: tape; tape measure; measuring tape
SUBJECT: metrology
DEFINITION:
A long narrow strip of material that has measurements marked on it and is used for measuring the length of something.

In a term bank, the organizational unit is the concept—sense or *unit of knowledge* (ISO 1087–1:2000)—as shown in Table 2, which contains six entries corresponding to the senses in Table 1.

In the term bank, entry three above will be found when looking up any of the expressions *tape, adhesive tape*, or *sticky tape*. Note that a general dictionary would need to include all of the senses, whereas a term bank would include only the entries relevant for the subject fields covered in that collection; e.g., a term bank on textile manufacturing would contain only entry six.

Terminology Work

Systematic terminology work is described in the standard ISO 704:2009, originally based on work by Wüster (Wüster, 1931 and later), who showed how the analysis of relations between concepts provides a systematic overview of the terminology in a subject field.

The systematic method treats one well-defined subject at a time, for example, sound recording (*tape* 1) or tailoring (*tape* 2). Within a subject, a further systematic ordering is possible by showing the relations between the concepts in so-called concept systems such as the one shown in Figure 1, which was created using a TMS called i-Term.

Figure 2 shows how the introduction of characteristics for each concept makes it possible to identify relevant criteria of subdivision (white boxes) and get a better overview of the field.

An advantage of ordering concepts systematically is that it helps determine whether all relevant concepts have been included. Another advantage is that definition writing becomes much easier. The ideal definition in both lexicography and terminology is the intensional definition, which cites the superordinate concept and the delimiting characteristics. Without a concept system, it is often difficult to identify the immediately superordinate concept, as can be seen if one tries to construct a concept system from dictionary entries.

Monolingual and Multilingual Term Banks and Termbases

Term banks, like dictionaries, may be mono- or multilingual. In the case of a multilingual term bank, concepts may be conceived as either language-independent or language-dependent. In the language-independent view, each entry in the collection contains one concept, which may be described by (identical) definitions in each of the languages covered. In the language-dependent view, however, each entry contains one concept per language,

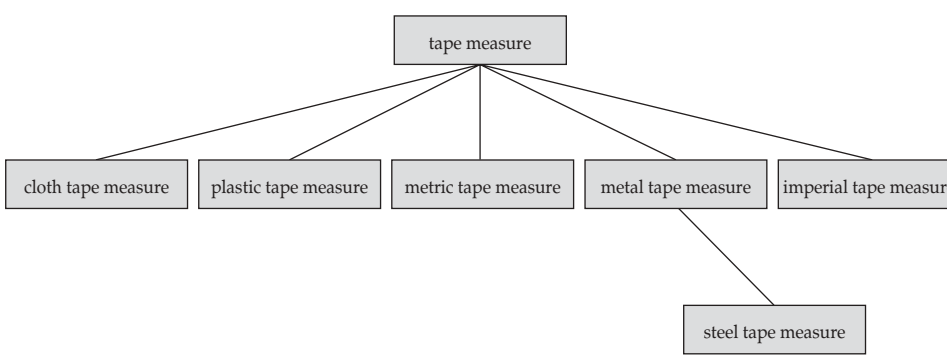

Figure 1 Concept system showing types of measuring tape

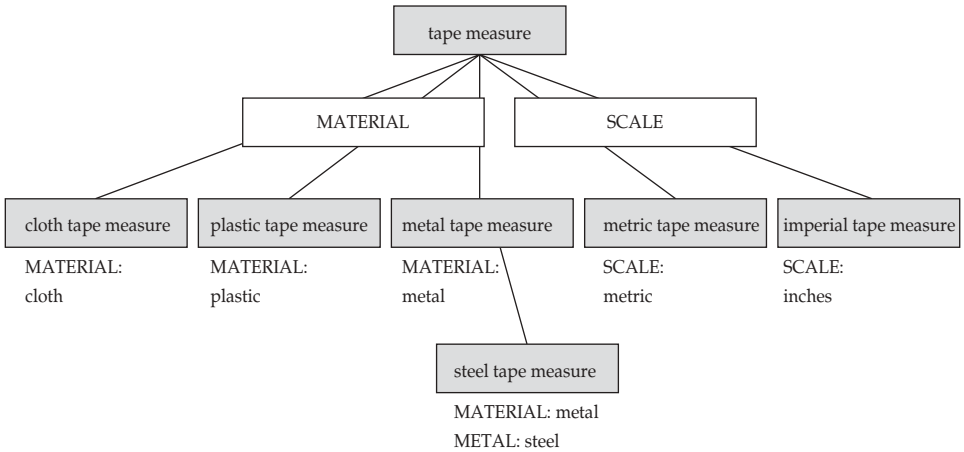

Figure 2 Concept system with characteristics

and if the concepts are not fully equivalent, notes that explain these differences may be added.

Usually the language-independent view can be advocated within technical fields, as these are developed in international contexts. An example could be *tape* in the field of sound recording. But in term banks covering fields such as educational systems, the language-dependent view can account for the differences and for incomplete equivalence between concepts in two languages. In fact, *culture-dependent view* would be a more correct term: The education systems in Canada and Switzerland differ, though one of their languages is the same (French).

National or Supranational Term Banks Versus Organization-Specific Ones

The most prototypical and classical organization to maintain a termbase is a translation provider, either a translation company, an individual translator, or the translation unit within a larger company or organization. In these cases termbases are used to ensure consistency, e.g., within one (large) translation task, especially if more than one translator is involved, across product releases or several versions of the same document, and in the case of translation companies, a termbase may be used to keep track of customer preferences regarding the choice between synonyms.

Termbases are maintained by both public and private organizations. Typically, in countries with more than one official language, such as Canada or Switzerland, termbases or even term banks are maintained by government agencies responsible for language and translation, and likewise in international organizations such as the European Union or United Nations. Some of these term banks are publically accessible, e.g., IATE and Termium (see the list of online resources). Some national term banks may focus on the (single) national language while still including translations for selected areas into some languages, either minority languages (e.g., Sami in Sweden) or some of the internationally dominant or important languages (e.g., English, French, Chinese).

Private companies may primarily need term banks to ensure consistency in product development, marketing, and localization of products. Hence, large information technology

companies such as IBM, Nokia, and SAP maintain term banks and processes for terminology management. Term banks may also be used to minimize misunderstandings due to ambiguity within the company itself, and in large, international companies, multilingual term banks can be crucial for ensuring unambiguous communication across languages and cultures. There are even examples of mergers between (monolingual) companies with term banks, where the contents of the two term banks showed clear differences in the understanding of some terms—differences that could have led to misunderstandings and hostility if they had not been handled.

Terminology Management Systems (TMS)

Some term banks are maintained in simple documents or spreadsheets, but a proper database is much more efficient. There exist off-the-shelf TMSs, both free and commercial, and some larger companies and organizations develop their own systems.

A TMS may be integrated with a translation memory system (TM) but not all systems are. In cases where the TMS integrated with the preferred TM system does not meet the demands set up for terminology work in the organization, it is possible to use one TMS for terminology work and export data to the TM-integrated one.

In order to allow for this, it is necessary to ensure that the information categories (or data categories) in the two TMSs are the same and that a proper exchange format is described.

Current Research

Current research within applied terminology focuses on the development of automatic methods for terminology work, such as term extraction and extraction of semantic relations between concepts. Theoretical research issues in terminology include relation types, similarities between relations and characteristics, and the relationship between concept systems and various other types of ontologies.

SEE ALSO: Bilingual Lexicography; Computer-Assisted Language Learning and Machine Translation; Language for Specific Purposes: Overview; Monolingual Lexicography; Traditional Approaches to Monolingual Lexicography; Vocabulary and Language for Specific Purposes

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Terminology and Data Encoding

MARIE-CLAUDE L'HOMME

Terminology is "the study and field of activity concerned with the collection, description, processing and presentation of terms" (Sager, 1990, p. 2). A term can be defined as a lexical unit that conveys a specialized meaning (a meaning that is related to a field of knowledge, such as accounting, biology, computer science, history, or physics). Terminology shares many characteristics with lexicography, but has developed over the years as a separate field of activity and produces its own descriptions. Terminological descriptions can appear in specialized dictionaries (in printed or electronic form), large term banks, or in-house terminological databases.

Computer applications are used at nearly all stages of terminology work (term identification in running text, collection of information about these terms, encoding of data; L'Homme, 2010). This entry will focus on some of the technologies that are available today for the last stage, that is, encoding terminological data. However, before doing so, a brief historical account will be presented and a few basic principles on which the encoding of terminological data relies will be described.

A Brief Historical Account

Storage of terminological data in electronic form started as early as the 1960s, long before general language dictionaries were computerized. Terminological databases were set up by various private and public organizations (see Rondeau, 1984) and have been used to store, manage, and retrieve terminological data ever since. Although their design has changed drastically, some of these early databases are still updated today and can be accessed on the Web (e.g., IATE, http://iate.europa.eu; *Grand dictionnaire terminologique*, www.granddictionnaire.com; Termium Plus®, http://www.termiumplus.gc.ca/site/termium.php?lang=eng&cont=001). From the very beginning, databases have been considered as the proper medium for storing terminological data, and much effort was devoted to devising efficient methods to organize this data, whereas computerized general language dictionaries often consisted of an electronic copy of printed material.

Over the years, terminological repositories have gone through a number of important technological changes. The first ones to be launched were managed by large organizations and were first stored on servers only accessible via a modem connection. During the 1980s, some were distributed on CD-ROMs that needed to be updated. Data structures commonly used were classic databases or indexed text. Nowadays, terminological data are placed in more flexible environments, such as relational databases or structured document formats using markup languages (e.g., XML, eXtended Markup Language), and can be developed by any user interested in storing this kind of data. In addition, terminological data can be stored on electronic media for different purposes: disseminating information about specialized terms in the Internet, storage of terminological data for in-house use, or automatic retrieval of terminological equivalents in machine or computer-assisted translation.

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Terminological Data: Basic Principles

Although the technology available for encoding terminological data has evolved over the years as pointed out in the previous section, the organization of terminological data per se (type of information encoded, number of fields used to encode this data, etc.) has remained basically the same; at least when compared to that of lexicographical data.

Terminology makes a clear distinction between the *concept* and the *denomination* used to refer to this concept. The concept is the content of the linguistic sign and its delimitation is based on its position in the knowledge structure of a specific subject field (often this position is defined by the experts in the said field). The denomination refers to the linguistic form and to the formal facet of the linguistic sign. The combination of a concept and a denomination corresponds to a *term*.

In a terminological repository, one entry describes a specific concept and all the denominations used to designate this concept—defined as true synonyms—are listed in the same entry (e.g., *email*, *e-mail*, *electronic message* will appear in an entry devoted to the concept "e-mail"). Most terminological databases are bilingual or multilingual; hence, the listing of all denominations applies to all languages considered (e.g., EN: *email*, *e-mail*, *electronic message*, *electronic mail*; FR: *courriel*, *courriel électronique*, *mél*, *mail*, *email*; ES: *correo electrónico*, *mensaje electrónico*). If the same linguistic form refers to two separate concepts, it appears in different entries. For example, *valency* refers to different concepts in the fields of linguistics and chemistry and will thus appear in two different entries.

The data categories found in entries are quite similar in most terminological repositories (Sager, 1990; Cabré, 1999; Pavel & Nolet, 2001). As can be seen in Figure 1, they consist of: a subject field label, a language identifier, a headword (generally the preferred term), other linguistic forms used to refer to the concept (synonyms, abbreviations, and deprecated terms—i.e., those not recommended for use), grammatical information, usage labels, a definition, contexts (textual extracts in which a term is used); observations (an optional data category designed to supply additional information on the concept or one of the terms listed in the entry), and references.

In addition to the standard data categories listed in the previous paragraph, some terminological descriptions have started to supply other kinds of information. Below are a few examples of the kinds of recent additions to terminological repositories:

- Illustrations: Terminological entries can contain pictures or a graphical reproduction of the concept being described.
- Related terms: Terminological entries can highlight specific relationships between the term considered in the entry and other closely related terms in the same subject field. For example, in an entry describing the term *mouse*, the following links can be provided:

Subject field: telecommunications

English	**Français**
email, n.	courrier électronique, n. m.
Var. e-mail	Syn. courriel
	Not recommended: email, mail

Definition: A digital message sent by a user of a computer network to another user by means of electronic transmission of data.
Context: Tons of emails are sent each day and they become a very common target for spammers (THSM209).

Figure 1 A term record

  - *peripheral device*: a generic term (a hyperonym);
  - *optical mouse*, *mechanical mouse*, *cordless mouse*: specific terms (hyponyms);
  - *button*, *scroll wheel*: parts of the *mouse* (meronyms); and
  - *cursor*, *pointer*: the objects on which the mouse acts (arguments).
- Collocations or typical phrases: Some entries contain an additional data category for combinations in which terms typically appear. For example, in an entry describing the term *email*, the following verbal collocations can be listed: *write an email*, *send an email*, *delete an email*, *forward an email*. Similarly, in the term record for *mouse*, the following collocations can appear: *move a mouse*, *click on something with a mouse*.

Encoding Terminological Data in Electronic Form

The remaining sections present the most common technologies used for storing and organizing the terminological data described in the previous section.

Flat and Relational Databases

Since many terminological descriptions focus on standard data categories, the first and still most commonly used electronic repository for encoding terminological data is the database. In a database, the information is structured in accordance with the following principles (see Figure 2):

- The data is structured in a systematic way for all concepts described; in other words, the data structure remains the same for all the concepts described throughout the database.
- The sum of information related to a concept is described in a record.
- Each piece of information is placed in a separate cell called a *field*.

In a database, since the data are structured in separate fields, each piece of information can be manipulated separately for specific purposes: data extraction, searches, sorting according to different criteria, and so forth. This is a clear advantage over printed media in which data can only be accessed through one (or sometimes two) data categories.

Nowadays, databases are relational, and this allows developers to place the information linked to a specific concept in separate data structures to overcome problems related to the overload of information in the same record. For example, the information on the terms *email* and *mouse* could be dispatched in three separate data structures: The first one would contain linguistic information, the second one contexts, and the third one collocations (see Figure 3). A formal mechanism—namely a *relation*—will ensure that the information relevant to a specific term or concept can be found in the different structures. In Figure 3, the relation is made possible since the fields "English entry" that appear in the three data structures contain identical character strings.

Subject field	English entry	English variant	English definition	English context	French entry	French synonym	French not recommended
Telecommunications	email	e-mail	A digital message …	Tons of emails …	courrier électronique	courriel	email, mail
Computing	mouse		A peripheral device …	The movement of the mouse …	souris	souris informatique	

Figure 2 A data structure in a terminological database

Data structure 1: Terms and linguistic information

English entry	Grammatical information	English variant
email	n.	e-mail
mouse	n.	

Data structure 2: Terms and contexts

English entry	Context	Reference
email	Tons of emails are sent each day and they become a very common target for spammers.	THSM209
email	You can send this email safely to some friends.	GMLD222
email	Do not respond to all emails you receive, especially those sent by someone you do not know.	DNBL008
mouse	The movement of the mouse over the surface is mirrored by a pointer on the monitor.	DEVICE02
mouse	Common input devices are the mouse and the keyboard.	DNGJFI29
mouse	Once you have installed your wireless mouse, you can start moving the pictures on the screen.	FJDSLI98

Data structure 3: Terms and collocates

English entry	Collocation	Collocate
email	send an …	send
email	write an …	write
email	forward an …	forward
email	delete an …	delete
mouse	move a …	move
mouse	click on something with a …	Click

Figure 3 Different data structures in a relational database

Relational databases are now commonly used to organize terminological data related to different languages. They become very convenient if several languages are taken into account: The data specific to each different language can be clearly separated from the data which are linked to the concept and assumed to be language-independent (see Figure 4).

Structured Document Formats

Increasingly, terminological data can be organized in structured documents and organized using *markup languages*, such as XML. In structured documents, data are structured by means of tags; these are placed within the text. The data structure is superimposed on the data, which no longer need to be placed in a separate environment as is the case in databases. Figure 5 shows how simple terminological data can be organized using XML tags.

One advantage structured documents have over standard databases is the fact that tags can be represented in a hierarchy, allowing data to be structured at different levels. This functionality can be used for different purposes: Figure 6 illustrates a case where the definition is further structured in order to signal related terms.

Structure 1: Concept

Concept	Subject field	Definition
email	Telecommunications	A digital message sent by a user of a computer network to another user by means of electronic transmission of data.

Structure 2: English terms

Concept	English entry	Grammatical information	Usage note
email	email	n.	Preferred term
email	e-mail	n.	Variant

Structure 3: French terms

Concept	French entry	Grammatical information	Usage note
email	courrier électronique	n. m.	Preferred term
email	courriel	n. m.	Synonym
email	email	n. m.	Not recommended
email	mail	n. m.	Not recommended

Structure 4: Spanish terms

Concept	Spanish entry	Grammatical information	Usage note
email	correo electrónico	n. m.	Preferred term
email	mensaje electrónico	n. m.	Synonym

Figure 4 Different data structures in a multilingual terminological database

```
<Entry>
        <Subject field>telecommunications</Subject field>
        <Headword>
                <English headword>
                        <English preferred term>email
                                <Grammatical information>n</Grammatical information>
                        </English preferred term>
                        <English variant>e-mail
                                <Grammatical information>n</Grammatical information>
                        </English variant>
                </English headword>
                <French headword>
                        <French preferred term>courrier électronique
                                <Grammatical information>n. m.</Grammatical information>
                        </French preferred term>
                </French headword>
        </Headword>
        <Definition>A digital message sent by a user of a computer network to another user by means of
        electronic transmission of data.</Definition>
         <Contexts>
                <Context-En-Pref>Tons of emails are sent each day and they become a very common
                target for spammers.</Context-En-Pref>
                <Context-En-Pref>You can send this email safely to some friends.</Context-En-Pref>
                <Context-En-Pref>Do not respond to all emails you receive, especially those sent by
                someone you do not know.</Context-En-Pref>
         </Contexts>
</Entry>
```

Figure 5 Terminological data in XML

```
<Definition>A
        <Related term>digital message</Related term>
        sent by a user of a
        <Related term>computer network</Related term>
        to another user by means of electronic transmission of data.
</Definition>
```

Figure 6 Structuring data within tags

⇒ Peripheral device ("connected to the computer")
  ⇒ Output peripheral device ("used to output data from the computer")
  ⇒ Input peripheral device ("used to enter data into the computer")
  ⇒ Pointing peripheral device ("used to act on objects in the graphical interface")
    ⇒ Mouse ("used to move and point on objects in the graphical interface")
      - Optical mouse
      - Mechanical mouse
      - Etc.

Figure 7 Classes in a hierarchy

Repositories for Knowledge: Ontologies

In specific projects, terminological data can be stored in *ontologies* (Gómez-Pérez, Fernández-López, & Corcho, 2004). (The expression *terminological knowledge base* is sometimes preferred in terminology circles; Meyer, Eck, & Skuce, 1997.) Ontologies are sophisticated environments in which pieces of knowledge (which can be viewed as concepts as terminology defines them) are represented in such a way that the relationships between them are formally linked and interpreted. Once knowledge related to a specific domain is properly represented in this kind of environment, automatic reasoning can be applied to specific aspects of this knowledge. Ontologies can be very complex, and only a few basic principles on which they rely will be mentioned here.

An ontology represents concepts, their relationships and their properties. Concepts are organized hierarchically in the form of classes (see Figure 7) and can be linked to a number of instances (i.e., individual realizations of concepts). Each class is assigned a number of properties that should apply to all members of this class. The properties assigned to the mother classes are said to be *inherited* by daughter classes. Of course, even in restricted fields of knowledge, concepts can seldom be organized in a simple hierarchy, and ontologies are equipped with devices allowing sets of restrictions to be specified.

Concluding Remarks

This entry has described the basic principles according to which terminological data are represented, and has given a quick overview of the different technologies that can be used for that purpose. Once stored in any of the formal environments described above, terminological data can lend themselves to all sorts of exploitations: retrieval of specific sets of data for presentation in a printed dictionary, extraction of equivalents for machine or computer-assisted translation, automatic reasoning on knowledge in a domain, and so forth.

SEE ALSO: Technology and Terminology; Term Banks

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Theses and Dissertations in English for Specific Purposes

BRIAN PALTRIDGE

There are a number of discussions in the literature of the issues that second language students face when writing a thesis or dissertation in English. One key issue that arises in this literature is the difficulty that many students face in meeting the demands of the kind of writing required of them at this particular level of study. It is not always clear to them whose responsibility it is that their piece of writing meets the requirements of their level or area of study. This is made more difficult for students who do not have an English-speaking background by their lack of familiarity with the conventions and expectations of thesis and dissertation writing in English. As Dong (1997, p. 10) notes, writing a thesis or dissertation

> involves learning a new set of academic rules and learning how to play by these rules. Often these rules change from discipline to discipline, and the audience and the purpose of writing vary according to each writing context. For non-native students, the mismatch of writing difficulties and expectations operating in their home countries compound their writing difficulties.

As Johns and Swales (2002) have pointed out, even the basic outline of a thesis or dissertation is a complex issue that needs to be negotiated among supervisors and students, and subfield, methodology, and choice of theory are often strong determining factors in terms of what the thesis or dissertation might look like. It is not the case that there is simply one way to write a thesis or dissertation that is acceptable in every area of study. Notwithstanding, there are certain conventions that theses and dissertations are expected to follow. These are, however, often not clearly stated and may be quite different from the conventions and expectations governing how this kind of text might be written in the student's first language and culture.

Furthermore, some students from a non-English-speaking background may bring with them different expectations and perceptions of the supervision process based on the academic conventions and cultures of their country of origin, such as who is responsible for choosing the research topic, who is responsible for the final content of the dissertation, and who is responsible for the quality of the writing of the final product (see Paltridge & Starfield, 2007, for further discussion of these issues). It is important, however, not to take a stereotyped view of how a student from one language and culture will necessarily write in another. One of the key findings of research in this area is that all students are individuals with their own preferences and ways of writing, which may or may not be influenced by their first language and culture.

There are many factors that influence the decisions a student makes while writing a thesis or dissertation in English. These include the orientation of the project they are describing, the student's perceptions of the audience of their text, the discipline in which the student is writing, and the values and expectations of the academic community at which the text is aimed. Paltridge (2006) provides an analysis of the context of thesis and

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dissertation writing, discussing the range of factors that impact on how the text is written, how it is read, and, importantly, how it is assessed. These factors include the social and cultural context in which the thesis or dissertation is being written (along with factors such as the setting, focus, and perspective of the text); the purpose and intended audience for the text; the relationship between writers and readers of the text; expectations, conventions, and requirements for the text; the background knowledge, values, and understandings it is assumed the writer shares with their readers; and the relationship the student's text has with other texts. Each of these is important as they all, in their way, have an impact on what the student writes, and the way they need to write it.

The issue of disciplinary discourses has been taken up by researchers such as Hyland (2004) who discusses the relationship between the cultures of academic communities and their discoursal practices. Through close textual analyses, he provides insights into the social practices and institutional ideologies of different academic communities and what this means for writing texts such as theses and dissertations. Writers such as Prior (1998) have carried out ethnographic examinations of contextual issues in thesis and dissertation writing. As Prior's work reveals, disciplinary enculturation is very much a case of ongoing negotiation between students and their professors, mentors, and peers, rather than just a case of learning the language and culture of the academy.

Dudley-Evans (1999), Thompson (1999), and Dong (1998) describe a number of types of thesis and dissertation that occur in different academic disciplines. Dudley-Evans terms the typical "IMRAD" (introduction–methods–results–discussion) type of dissertation a "traditional" dissertation. Thompson further refines this category, dividing traditional dissertations into those that have "simple" and those that have "complex" patterns of organization. A further kind of dissertation is the "topic-based" dissertation. The "topic-based" dissertation typically commences with an introductory chapter, which is then followed by a series of chapters that have titles based on subtopics of the topic under investigation. The dissertation then ends with a conclusion chapter. Dong (1998) describes doctoral dissertations that are based on a compilation of publishable research articles, which are quite different from other sorts of doctoral dissertations. The research article chapters are more concise than typical dissertation chapters with less of the "display of knowledge" that is often found in a doctoral dissertation. In terms of audience, they are written more as "experts writing for experts," than novices "writing for admission to the academy." In this sense, they contrast with the "traditional" type of dissertations described by Dudley-Evans and Thompson.

Paltridge (2002) extends the work on thesis and dissertation types in a project which explored the extent to which published advice on the organization and structure of theses and dissertations concurs with what happens in actual practice. The study examined guides and handbooks which focus on thesis and dissertation writing and postgraduate research. Only a few of the books examined devoted a substantial amount of space to this topic. A wider range of dissertation types was found than the guides and handbooks would suggest occurs. None of the books that were examined contained all of the dissertation types described by Dudley-Evans, Thompson, and Dong even though all of these types were found in the data set that he examined.

Other discourse-related research into thesis and dissertation writing has investigated the introduction to theses and dissertations, the literature review, dissertation acknowledgments, discussion sections, and conclusion chapters. Researchers have also examined metadiscourse, authorial identity, textual borrowing, qualitative dissertation writing, voice, identity, argument, audience, and rhetorical awareness in second language thesis and dissertation writing.

Important books which describe the experiences of second language thesis and dissertation writers include Casanave's (2002) *Writing Games* and Casanave and Li's (2008) *Learning*

the Literacy Practices of Graduate School. In her opening chapter to this latter volume, Casanave points out that, for second language doctoral students, it is not just a matter of becoming proficient in English; it is a matter of learning how to participate, fully, in an academic community of practice and learning what all of this entails. Other authors in Casanave and Li's volume discuss identity construction in the new and different community of practice, learning from mentors, working with supervisors, writing qualitative research, and "how to survive" graduate school. As Tardy (2009) points out, most students have not been through this experience before and need to learn the conventions, expectations, and procedures of the task they are engaged in, at the same time as they are carrying it out.

A number of authors have also discussed the teaching of thesis and dissertation writing (see e.g., Paltridge, 2003; Starfield, 2010). Swales and Feak's (2004) *Academic Writing for Graduate Students* and their (2000) *English in Today's Research World*, as well as their expansions of this book (Feak & Swales, 2009; Swales & Feak, 2009) are especially important texts. Although not written as research monographs, these books are strongly influenced by research into the thesis and dissertation genre. *English in Today's Research World* pays particular attention to genre networks, that is, the sets of genres that postgraduate students need to be able to produce, and participate in, in the course of their study and beyond. It also provides detailed advice on particular parts of theses and dissertations such as the literature review, dissertation abstracts, and acknowledgments.

There are a number of directions which future research on this topic might explore. The area of research known as "contrastive rhetoric," or more recently "intercultural rhetoric," compares genres in different languages and cultures. Many studies in this area have focused on academic writing in general, although many fewer have compared thesis and dissertation writing across cultures.

A further useful development in dissertation-writing research, which could be further expanded to thesis and dissertation writing, is Swales's (1998) notion of *textographies*. A textography is an approach to the analysis of written texts which combines elements of text analysis with ethnographic techniques in order to examine what texts are like, and why. That is, it aims to get an inside view of the worlds in which the texts are written, what guides the writing, and the values that underlie the texts that have been written. This approach provides both a situated and contextualized account of academic writing that would be useful to future dissertation writers (see Paltridge, 2008, and Paltridge, Starfield, Ravelli, Nicholson, & Tuckwell, in press, for further discussion of this).

The use of literacy autobiographies (Starfield, 2010), and literacy portraits (Casanave, 2002), is a further research direction that is being taken up in thesis- and dissertation-writing research. These kinds of accounts are able to provide important insights into second language dissertation writers' worlds in that they "allow us to recontextualise discourses that position international students and others from non-English speaking backgrounds as different, or lacking and come to understand them as having achieved and succeeding in meeting great challenges" (Starfield, 2010, p. 138). In a study that describes a dissertation-writing class which had a mix of native- and non-native-speaker students, one native-speaker student said:

> Sometimes the non-native speakers were much more advanced than I was. They came much better prepared and were much more on track than I was. I have a lot of respect for their ability. I don't understand what the difference is. We all knew nothing when we came in. It's not English that is the problem. Maybe they had grammatical mistakes, but I had them as well. It's more about how you can sort, analyze, and approach the whole thing, not just whether you can write grammatically correct sentences. (Paltridge, 2003, p. 89)

It is important to remember, then, that in dissertation-writing research it's "not all about language" and that second language students are no less capable than native-speaker students of being successful dissertation writers (and doctoral researchers) in English-language academic settings.

SEE ALSO: Belcher, Diane; Dudley-Evans, Tony; Hyland, Ken; Intercultural Rhetoric in Language for Specific Purposes; Johns, Ann; Paltridge, Brian; Swales, John M.

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Thibault, Paul

KAY L. O'HALLORAN

Paul J. Thibault (b. 1953) has a distinguished research background in general and applied linguistics in areas relating to the sociocultural and biological-physical dimensions of human meaning-making activity, which he has developed into a transdisciplinary field of knowledge involving social semiotics, cognitive science, psychology, biology, and complex dynamical systems theory.

Thibault was awarded the degree of BA honors (Class 1) in English language and linguistics at the University of Newcastle in New South Wales, Australia, and the degree of PhD at the University of Sydney, Australia, in December 1985. His PhD thesis was supervised by M. A. K. Halliday in the Department of Linguistics. Following this, he held posts at the University of Bologna, Italy (1985 and 1990–2), University of Sydney, Australia (1986–9) and University of Verona, Italy (1987–9) before being appointed Associate Professor in English Language and Linguistics at the University of Padua, Italy, in 1992.

In these early stages of his academic career, Thibault developed a "praxis-based" approach to social semiotics for exploring the relations between social processes, textual products, and signs in *Social Semiotics as Praxis* (Thibault, 1991). Thibault also explored general philosophical questions in relation to language and communication, including an in-depth re-examination of Ferdinand de Saussure's social-semiological metatheory in relation to modern linguistic and social theory in *Re-reading Saussure. The Dynamics of Signs in Social Life* (1997).

Thibault remained in Italy until 2004, as associate professor in English language and linguistics at the University of Venice, Italy (1995–2004) and visiting associate professor of English language and linguistics in the Faculty of Education Sciences, University of Bologna (1998–2001). In November 2002, he won a national competition in Italy for the position of full professor (although this post was not taken up). From January to December 2002, he was visiting professor in the Department of English, Lingnan University in Hong Kong. In September 2004, Thibault was appointed as tenured professor of Linguistics and Media Communication at Agder University College, Kristiansand, Norway. In addition, he was visiting professor in the Faculty of Education at the University of Hong Kong (2009–11) and honorary professor in the School of Foreign Languages and Literatures at Beijing Normal University (from 2006).

During this time, Thibault explored the role of the body–brain complex in social meaning-making practices in *Brain, Mind, and the Signifying Body* (2004a) with the aim of developing an "ecosocial semiotics" which, following Jay Lemke, was capable of reconnecting body–brain processes and interactions to the social and cultural practices which directly act upon and affect human bodies. Thibault saw that many of the fundamental questions concerning ecosocial semiotic theory could only be addressed through an engagement with foundational concepts and questions of both the social and the life sciences, which had been given new direction and impetus by the development of complex adaptive dynamic open systems theory. The key features of this new perspective were the inclusion of time, irreversibility, the embedding of systems in higher-scalar environments, and individuation. Thibault (2004a) theorized the inseparability of the semiotic-discursive and physical-material cross-couplings and dynamics and the materiality of the body as playing a central role in social meaning-making activity.

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Thibault describes how the linkages of semiotic integration of meanings across different space and time scales relate to the structure of agency and consciousness in *Agency and Consciousness in Discourse* (2004b) by connecting his theory of ecosocial semiotic systems to consciousness as a complex adaptive system which operates on many different levels of brain–body–world relations. In the process of developing his new theory of agency and consciousness and their formation across different scalar levels of semiotic and material organization, Thibault reviews and evaluates the contributions of linguists, psychologists, biologists, semioticians, and sociologists such as Basil Bernstein, Mikhail Bakhtin, J. J. Gibson, Michael Halliday, Walter Kauffman, Lakoff and Johnson, Jay Lemke, Jean Piaget, Stanley Salthe, Colwyn Trevarthen, and V. N. Vygotsky.

In these two major works, Thibault (2004a, 2004b) transcends text- and discourse-based theories which locate the architecture of language and its functionality in abstract verbal-textual patterns to "languaging behavior" which is related to human mental and somatic capacities. Thibault views languaging as a culturally shaped extension of our neurobiological capacities, rather than a tool that is instantiated from an abstract system of options. Moreover, languaging behavior is seen to be embedded in action and perception, rather than existing as reified text-internal verbal patterns (Thibault, 2011).

With Anthony Baldry (University of Messina, Italy), Thibault has codeveloped since 1997 the online multimodal concordancing and authoring system *MCA* (MCA.unipv.it), as part of a major Italian national research project CITATAL and LINGUATEL, researching on corpus linguistics, text analysis, translation, multimodality, and language learning. Baldry and Thibault's (2006) *Multimodal Transcription and Text Analysis* explores multimodal theory, transcription, and analysis across print and digital media from a social semiotic perspective, advancing Thibault's conception of scalar hierarchies in multimodal meaning-making practices, and has become a standard text for those engaged in multimodal studies.

In addition, Thibault has written numerous journal articles and book chapters including research on child language development, narrative discourse and its grounding in prior nonverbal perceptual and semiotic modalities, embodied interaction and face-to-face communication as action systems in both human and nonhuman cases and, more recently, investigations on narrativity, self, and hypertext and transformational and transcendental aspects of grammar in relation to our experience of the world.

Thibault's research trajectory and associated works illustrate the breadth, depth, originality, and richness of his contributions to applied linguistics.

SEE ALSO: Halliday, M. A. K.; Lemke, Jay; Multimodal Text Analysis

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Thinking for Speaking in Second Language Acquisition

TERESA CADIERNO

Introduction

The "thinking for speaking" (TFS) hypothesis is concerned with the possible effects of language on the kind of thinking that occurs online in the process of using language. This hypothesis constitutes a modified version of the linguistic relativity hypothesis which relates language to a particular worldview. The TFS hypothesis was proposed by Slobin (1996) on the basis of research conducted on first language (L1) acquisition, but in the past few years the implications of the hypothesis for adult second language (L2) acquisition have started to be investigated in systematic ways.

Thinking for Speaking and Linguistic Relativity

The linguistic relativity hypothesis, that is, the possibility that language can influence thought, has constituted an important part of Western intellectual discussions over the centuries. The hypothesis is, however, best associated with the work of Whorf (1956), who claimed that as language affects the way we think, speakers of different languages must arrive at somewhat different views of the world.

Recently, Slobin has proposed a more cautious and dynamic version of the linguistic relativity hypothesis—the TFS hypothesis—where he replaces the abstract entities "thought" and "language" with the names of the activities "thinking" and "speaking" in order to draw attention to the mental processes that take place when speakers formulate utterances. In other words, rather than focusing on the potential influence of language on speakers' general thought, that is, on speakers' patterns of attending to, categorizing, and remembering objects and events, the TFS hypothesis is concerned with the mental processes that occur during the act of interpreting and verbalizing experience.

Specifically, Slobin's TFS hypothesis focuses on the effects that the obligatory grammatical categories of a language may have in directing their speakers' attention—while speaking—to the dimensions of experience that they encode. Crosslinguistic research has shown that languages present striking variations in this respect. For example, when speaking about past events, speakers of Turkish are obliged to choose between two past tense inflections, one for witnessed events and another one for unwitnessed events (Slobin, 1996). Great variation has also been documented in how languages express spatial relationships. For example, whereas in English placing an apple in a bowl or placing a video cassette in its case are described by their native speakers (NSs) as putting one object *in* another, in Korean both events are described with different verbs, as this language makes an obligatory distinction between a loose-fitting type of relation (an apple in a bowl) and a tight-fitting one (a video cassette in its case) (Bowerman, 1996).

What the above examples show is that at the moment of linguistic encoding, one must fit one's thoughts into the available lexicogrammatical forms of the particular language that one is speaking. According to the TFS hypothesis, the language that we speak directs

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us to attend—while speaking—to the dimensions of experience that are coded in its grammatical categories (e.g., whether an event has been witnessed or not by the speaker, or whether the objects we are describing are in a tight or loose type of relation), and over time, this repeated attention leads to specific rhetorical styles.

Thinking for Speaking in L1 Acquisition

Empirical support for Slobin's TFS hypothesis has mostly come from crosslinguistic research examining how NSs of different languages—both children and adults—talk about the conceptual domain of motion (e.g., Berman & Slobin, 1994; Slobin, 1996, 2004). This research has been inspired by Talmy's (e.g., 2000) typological work, which has identified two main types of languages according to how the semantic components of a motion event (such as path and manner) are lexicalized, that is, expressed in surface linguistic forms.

Satellite-framed languages (S-languages) such as the Germanic and Slavic languages tend to encode path (i.e., the direction of motion) in satellites such as verb particles (e.g., *down*, *out*, and *up*), and motion and manner (i.e., the way in which the motion is performed) in the main verb. In contrast, verb-framed languages (V-languages) such as Romance and Semitic languages tend to express motion and path in the main verb (e.g, *subir* 'go up', *bajar* 'go down'), and manner of motion in a separate constituent such as an adverbial or gerund.

(1) The bottle floated out of the cave.
(2) La botella salió de la cueva flotando.
'The bottle went out of the cave floating.'

Example (1) illustrates how English, an S-language, expresses manner of motion in the verb *float*, whereas path is coded in the verb particle *out*. Example (2), on the other hand, shows how Spanish, a V-language, codes path of motion in the verb *salió*, whereas manner of motion is expressed in the gerund *flotando*.

Crucially, previous studies have shown that NSs of typologically different languages (S- vs. V-framed languages) tend to focus on different aspects of motion events in narrative discourse (see Slobin, 2004, for an overview). For example, speakers of S-languages tend to encode more detail explicitly about the movement along paths, leaving the settings to be inferred, whereas speakers of V-languages tend to encode more detail explicitly about the scene setting, leaving the trajectories to be inferred. Examples in (3) and (4) illustrate these tendencies in English and Spanish:

(3) The deer threw him off over a cliff into the water.
(4) Lo tiró. Por suerte, abajo, estaba el río. El niño cayó en el agua. (Slobin, 1996, p. 204)
'(The deer) threw him. Luckily, below, was the river. The boy fell into the water.'

In (3), the detailed trajectories described allow the listener to infer that there is a cliff above the water, whereas in (4), the static description *below, was the river* allows the listener to infer that the trajectory went from some elevated place down to the water. These tendencies can be attributed to the grammatical resources that are available for the expression of motion in the two types of languages, as English, but not Spanish, allows for compact expressions such as (3) where complex trajectories are described by way of accumulating several path satellites within a single clause.

Important differences have also been found with respect to the expression of manner of motion. The lexicons of S-languages contain a wider variety of manner of motion verbs

(e.g., *dash*, *swoop*, *scramble*), and the speakers of these languages tend to provide more frequent and varied manner information than speakers of V-languages do when describing motion events. Speakers of S-languages thus seem to pay more online attention to this aspect of experience while talking about motion than speakers of V-languages do.

In addition to the differences just mentioned, research examining the simultaneous use of speech and gestures (e.g., Kita, 2009) has revealed crosslinguistic differences in the gestures employed by NSs of typologically different languages. For example, Turkish speakers express path and manner in separate clauses and perform separate path and manner gestures, whereas English speakers express path and manner in one clause and may conflate them into one gesture.

The systematic differences found in NSs from typologically different languages have led Slobin to conclude that in acquiring their native language, children learn particular ways of thinking for speaking, that is, they learn "to attend to particular aspects of experience and to relate them verbally in ways that are characteristic of that language" (Berman & Slobin, 1994, p. 611). In other words, each language trains its NSs to pay online attention to particular details of events when talking about them.

Thinking for Speaking in L2 Acquisition

Slobin's TFS hypothesis has important implications for adult L2 acquisition. In such a perspective, learning another language entails learning another way of thinking for speaking (Stam, 1998; Cadierno, 2004, 2008), that is, learning the particular verbalized orientation to experience encoded in the grammatical resources of the L2. With respect to motion events, this involves (a) learning which particular details of a motion event must be attended to in the input and expressed in the L2 (e.g., online attention to trajectories vs. static descriptions, and varying online attention to manner of motion); and (b) learning how the semantic components of a motion event (e.g., path and manner) are mapped into L2 surface forms.

In the last few years, research into TFS and L2 acquisition has addressed two main research questions, namely, whether and to what extent adult language learners are able to learn the appropriate L2 TFS patterns, and whether and to what this extent this learning is influenced by the specific verbalized orientation of their L1. Empirical work has predominantly focused on the expression of motion, but other semantic domains such as temporality and aspect (e.g., von Stutterheim, 2003), definiteness (e.g., Ekiert, 2010; Han, 2010), and plurality (e.g., Han, 2010) have been examined as well.

The results of this research provide a complex picture, which can be summarized in three interrelated points. First, adult language learners can develop appropriate L2 TFS patterns over time, but this development does not necessarily affect all aspects of a motion event equally (e.g., expression of manner vs. path). That is, within individual learners, some aspects become target-like, whereas others reflect the influence of the learners' L1 TFS patterns. Second, the influence of the L1 TFS patterns can also be seen in the learners' gesture patterns. And third, the development of appropriate L2 TFS patterns seems to be particularly difficult when it involves expressing new grammatical distinctions, that is, distinctions that are not coded in the learners' L1.

The first point can be illustrated by the findings of Cadierno (2004) and Cadierno and Ruiz (2006). These studies have shown that intermediate and advanced learners with an L1 S-language (Danish) and an L2 V-language (Spanish) were able to adopt the L2 TFS patterns in relation to some aspects but not others. For example, they were able to express manner of motion in L2 Spanish with the same degree of elaboration as Spanish NSs and learners with typologically similar L1s and L2s, that is, Italian learners of Spanish; and

half of the learners were able to pay appropriate online attention to scene setting and static descriptions when describing motion events in L2 Spanish. Some of the learners, however, showed traces of their L1 TFS patterns. For example, they tended to provide more complex and elaborated path descriptions than Spanish NSs, as evidenced by the use of inaccurate constructions incorporating anomalous path particles (e.g., **El niño fue arriba de una roca* 'The boy went on top of a rock').

The second point has been shown in studies examining speech and gesture about motion events in an L2 (e.g., Özyürek, 2002; Kellerman & van Hoof, 2003; Brown & Gullberg, 2008). This research shows that both speech and gesture reveal L1-based TFS patterns. For example, when speaking in L2 English, beginning and intermediate Turkish NSs tend to express path and manner in separate clauses, and perform separate path and manner gestures.

The third point can be illustrated by recent research conducted on various semantic domains, namely, motion (e.g., Hasko, 2010), definiteness (Ekiert, 2010; Han, 2010), and plurality (Han, 2010). This research shows that advanced language learners experience difficulties in learning to encode semantic distinctions that are obligatory in the L2 but absent in their L1. This is the case with the obligatory marking of unidirectionality versus non-unidirectionality in L2 Russian by L1 English speakers (e.g., *I'm walking down Gorky Street* [unidirectional] vs. *I'm walking up and down familiar backstreets in my favorite city center* [non-unidirectional]), the appropriate use of L2 English articles by learners of non-article languages such as Polish and Chinese, or the appropriate expression of L2 English plural marking by L1 Chinese speakers. These findings furthermore indicate that acquisitional difficulties can take place not only when the learners' L1 and L2 are typologically different, but also when they are typologically similar (e.g., Polish-speaking learners of L2 English), a result that is congruent with the intra-typological differences being noted in the literature within given types of language (e.g., Ibarretxe-Antuñano, 2004).

The results of the existing research raise several interesting questions for future research, including whether the development of appropriate TFS patterns is possible for all aspects of the L2 (in both speech and gesture); what learning conditions, including L2 pedagogy, can favor such development; and what influence individual learner variables such as language aptitude, memory, or learning motivation may have on this development (Han & Cadierno, 2010).

SEE ALSO: Cognitive Linguistics of Second Language Acquisition; Crosslinguistic Influence in Second Language Acquisition; Gesture Analysis in Second Language Acquisition; Linguistic Relativity and Second Language Acquisition; Second Language Acquisition and Gesture; Typology and Second Language Acquisition

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Third Language Acquisition

JASONE CENOZ

Is it the same to acquire a second language or a third language? Does the second language play a role in third language acquisition? Are we more expert learners if we have already learned a second language? These are fascinating questions taking into account that multilingualism is spread all over the world. This entry discusses the issues examined in third language acquisition research in order to answer these questions. The entry has three sections. In the first section the scope and focus of this research area are defined. The second section gives an idea of the different situations in which a third language or an additional language is learned. In the third section some of the main findings are discussed.

The Scope of Third Language Acquisition

"Third language acquisition" (TLA) has received a lot of attention in the last years but its definition is not an easy task. TLA refers to the acquisition of a language that is different from the first and the second and is acquired after them. The use of the term TLA highlights that there are differences between acquiring a second and a third language and it is a reaction against the use of the term "second language acquisition" (SLA) as a general term for the acquisition of any language other than the first. The term TLA is increasingly used but its scope is not always clearly defined. It can refer to the language chronologically acquired after the second or to any language acquired after the second language. The use of TLA for a fourth, fifth, or sixth language is related to the idea that there are important differences between SLA and TLA but probably not between TLA and the acquisition of additional languages. When several languages are involved, it is sometimes difficult to identify an order because besides chronological order there can be different levels of proficiency in the languages, simultaneous acquisition or intermittent acquisition when the process of acquiring a language takes place in different periods in life (Hammarberg, 2009). One possibility to solve this problem is to refer to "the acquisition of third or additional languages" or even to "the acquisition of additional languages."

Why is the acquisition of a third (or additional language) different from SLA? The main differences in the process are that third language learners have the experience of acquiring a second language and that they also have some degree of communicative competence in the second language and not only in the first language. Learners of a third or additional language have a larger linguistic repertoire at their disposal and can use this repertoire as a resource when they have limitations in the target language. They can also code switch and code mix to express their communication intent better. TLA research focuses on these differences and highlights the importance of taking learners' prior experience and competence in different languages into consideration in order to provide an accurate account of the language acquisition process. Third language learners could progress faster because they are experienced language learners but they may also follow a different route than SLA learners because of this previous experience and also because they have access to two linguistic and communicative systems. It has been proposed that the largest qualitative differences can be found between SLA and TLA rather than between the acquisition of a

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third and additional languages (Hufeisen, 2004, p. 8). However, more research is needed to confirm this hypothesis.

SLA and TLA also have a lot in common, both theoretically and in terms of research methodologies, but research on TLA is more complex because apart from all the factors and processes involved in SLA, TLA entails some specific characteristics.

Diversity of Third Language Acquisition

TLA is common for many people all over the world. It is more common in bilingual and multilingual contexts where two or more languages are used and a foreign language is taught at school. This is the case of some European regions where a minority language is used (Catalonia, Basque Country, Friesland, Wales) along with the state language and English, French, or other languages are learned as third languages. TLA is also common in the case of immigrant children who speak their first language at home but learn the language of the host country and a foreign language at school. This situation can be found in Western Europe and countries such as the United States, Canada, Australia, and New Zealand where immigrants speak their first languages at home, learn the language of the host country and in the case of schoolchildren additional languages as part of their education. TLA also takes place in areas where multilingualism is part of everyday life and people use different family and tribal languages plus a lingua franca, a national language, or both. There are many other situations in which individuals need to communicate in three languages for other reasons, professional or not.

TLA is potentially more diverse than SLA. The sociolinguistic and educational contexts in which the different languages acquired are potentially more diverse than those involved in SLA. For example, the second language can be used at school or in the community and the third language can be a foreign language (i.e., English L2 and French L3 for a Chinese schoolchild in England) or both the second and third language can be used at school and in the community (i.e., English L2 and Welsh L3 for a Chinese speaker in Wales) or both the L2 and the L3 can be foreign languages taught at school. There can be differences regarding the status of the languages at school, as school subjects or languages of instruction. There can also be diversity regarding linguistic distance between the first, second, and third languages. When more than three languages are involved, more diversity can be found in the acquisition contexts. For example Todeva and Cenoz (2009) list 32 different possible acquisition orders involving combinations of seven different languages that are acquired simultaneously or consecutively. They explain that they only focus on chronological order but that diversity can be related to many other factors related to the dynamic nature of multilingualism such as attrition or the relearning of languages.

The study of TLA has received considerable attention lately and there is a specific journal devoted to TLA and multilingualism, *The International Journal of Multilingualism* (Routledge), and the bi-annual conference on "Third Language Acquisition and Multilingualism." Research on TLA focuses on the specific characteristics of this process and covers linguistic, psycholinguistic, sociolinguistic, and educational issues (see for example Flynn, Foley, & Vinnitskaya, 2004; Safont, 2005; Jessner, 2006; De Angelis, 2007; Cenoz, 2009; Leung, 2009; Wrembel, Gut & Mehlhorn, 2010).

Main Trends in Third Language Acquisition Research

Research on TLA has focused on different areas but two have received considerable attention: the effect of bilingualism on TLA and crosslinguistic influence.

When analyzing the differences between second and third language learning one of the main questions is to see whether bilingualism has an effect on TLA. Most studies on the effect of bilingualism confirm that bilinguals, being more experienced language learners or language users in the case of early bilingualism, have advantages over monolinguals when acquiring additional languages. The results concerning tests of general proficiency indicate that bilinguals progress faster than monolinguals particularly when bilinguals have acquired literacy skills in both their languages. For example, research on TLA in the Basque Country, Catalonia, Canada, and the United States has reported that bilingual learners obtained higher scores than their monolingual counterparts in the acquisition of English or French (see Thomas, 1988; Bild & Swain, 1989; Sanz, 2000; Cenoz, 2009). These advantages have been associated with more developed learning strategies and enhanced metalinguistic awareness (see Jessner, 2006; Kemp, 2007). In a narrative about his process of becoming multilingual, Kamanga (2009, p. 121) confirms these advantages:

> I can say that learning languages has become easier with every language that I have added to my repertoire. The more languages I know, the more linguistic information I have as a resource to additional languages.

In general terms, the advantages of bilingualism in TLA are more evident when the L2 and the L3 are closely related such as Spanish and Italian. However, bilingualism is not the only factor involved in TLA and in some cases differences in socioeconomic and socio-educational status have an important influence. For example, in a study comparing L3 learners who were immigrant in the Netherlands and Dutch schoolchildren learning English as an L2, Van Gelderen et al. (2003) found no advantages related to TLA.

Another main area of research in TLA is to analyze the differential roles of previously acquired languages on the acquisition of the target language. Research has proved that learners are influenced by both their L1 and L2 when learning a L3. Research on crosslinguistic influence in TLA has tried to identify the factors that are more influential (Ringbom, 2007; De Angelis, 2007; Hammarberg, 2009). In the case of the lexicon, research indicates that speakers borrow more terms from the language which is typologically closer to the target language. The effect of proficiency in the L2 and the L3 has also been analyzed and learners have been found to borrow more terms from both the L1 and L2 in the first stages of language acquisition. The influence of the L2 can be found even when proficiency in this L2 is not high. Another factor that can potentially affect crosslinguistic influence is "recency" and learners are more likely to borrow from a language they actively use than from other languages they may know but do not use. Regarding the relative weight of the L1 versus the L2 as a source language in crosslinguistic influence, the so-called "foreign language effect" (Meisel, 1983) or also "L2 status factor" that favors the L2 as a preferred source of borrowing has been proposed (Hammarberg, 2009). However, it is difficult to isolate the effect of the different factors so as to predict more accurately the roles of the L1 and L2 in different situations of TLA because of the great diversity of TLA situations and the interactions among these factors (see, for example, Wrembel et al., 2010).

Final Remarks

Research on TLA shows that there are, indeed, some differences between SLA and TLA and that these differences cannot be ignored when conducting research on the acquisition of different languages. It is necessary to consider the learner's whole linguistic repertoire and to be aware of the possible influence of his/her prior linguistic knowledge and prior experience as a learner on the acquisition of the target language. It is also important to

take into account that TLA research can be informed by SLA research because these two processes have a lot in common. TLA research has developed in the last years but it is still in its infancy. It is necessary to specify more accurately the process of acquiring third languages and explore the specific qualitative differences between SLA and TLA in the route followed by learners. Another important issue is to analyze the differences between TLA and the acquisition of additional languages in order to confirm or reject the hypothesis that the main differences are between SLA and TLA. From a more applied perspective it could be very useful to identify the way that bilinguals can benefit more from their previous experience as language learners in multilingual educational programs.

SEE ALSO: Bilingual and Multilingual Education: Overview; Crosslinguistic Influence and Multilingualism; Crosslinguistic Influence in Second Language Acquisition; Multilingualism; Multilingualism and Metalinguistic Awareness

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Tiersma, Peter

BLAKE STEPHEN HOWALD

Peter Meijes Tiersma (1952–) is a linguist and lawyer who is Professor of Law and Honorable William Matthew Byrne, Jr. Chair at Loyola Law School in Los Angeles, California. Tiersma's research and scholarship focuses on numerous types of language in the legal system from a linguistic science perspective, typically drawing on theoretical constructs in historical linguistics, discourse analysis and pragmatics (e.g., speech act theory, Austin, 1962; and implicature, Grice, 1975). For example, Tiersma's *Legal Language* (1999) explores the origins of legal language from the early Anglo-Saxons, through the Norman Conquest, to present day forms (e.g., statutes, testimony, contracts, judicial opinions, etc.) from the perspective of both linguistic and jurisprudential theory and practice. The relevance of this work, which expands the early work of Mellinkoff (1963), stems from the fact that, in a given legal system, there is often a disconnect between the structure and meaning of written laws and the application of those written laws to factual scenarios in the real world, potentially leading to incongruous results. Linguists have sought to correct this disconnect by highlighting the need to understand the history of a given language and basic ideas in linguistics (with an eye toward making intelligent reforms—e.g., the plain language movement). Tiersma also tackles these issues in the face of modern-day computer technology in *Parchment, Paper, Pixels: Law and the Technologies of Communication* (2010).

Closely associated with this general research on the nature of legal language is Tierma's focus on the language and comprehensibility of jury instructions. In the US legal system, jury instructions are typically written in a complex legal style that can be difficult to understand. However, jury instructions serve as guidance to individuals tasked with determining whether or not a party to litigation is guilty or liable and what punishment may follow. Given the importance of such a task, confusion, language-based or otherwise, should be avoided. Tiersma convincingly argues for clarity and comprehensibility of jury instructions in several articles (e.g., Tiersma, 2001; Tiersma & Curtis, 2008) and has advised numerous jurisdictions on how to better structure and draft jury instructions (Tiersma is a member of the California Judicial Council Advisory Committee on Criminal (2005–present) and Civil (2003–present) Jury Instructions).

In addition to jury instructions and general issues in language and law, Tiersma has also contributed to linguistic analyses of particular language-based legal issues such as defamation (Tiersma, 1987), perjury (Tiersma, 2004) (known as *language crimes*, following Shuy, 1993), and product warnings (Tiersma, 2002). These topics typically fall under what is known as *forensic linguistics*—where language, and the linguistic analysis thereof, is evidence in a given legal proceeding. Further (teamed up with Larry Solan—a linguist and lawyer from Brooklyn Law School), Tiersma has contributed to policy-level issues in forensic linguistics (e.g., the legal system's response to linguistics and linguists' conduct in legal proceedings); including authorship analysis (Solan & Tiersma, 2004), voice analysis (Solan & Tiersma, 2003), and linguistic testimony in general (Tiersma & Solan, 2002). Many of these insights are consolidated in *Speaking of Crime: The Language of Criminal Justice*, which introduces and analyzes multiple applications of linguistics in criminal law settings (Solan & Tiersma, 2005). Like any forensic science, understanding the application of linguistics in the legal system requires an attention to the rules and procedures that govern

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the intersection between science and law. *Speaking of Crime* provides a concise discussion of the issues that linguistic science faces in criminal law, the history of its application, and the key legal doctrine implicated.

Tiersma's linguistic training began as a German Studies major at Stanford University where he graduated with a BA, Phi Beta Kappa. After graduating, and teaching English for a year in the Netherlands, he entered the PhD program in linguistics at the University of California at San Diego. Tiersma focused on phonology and historical linguistics with particular emphasis on the Frisian language (Frisian, of the "Western" variety, is spoken in the Friesland region of the Netherlands. The "Northern" and "Eastern" varieties are spoken in Germany—all varieties are a distinct language). Tiersma received a Fulbright Fellowship to conduct fieldwork in the Netherlands—ultimately serving as the empirical basis for his dissertation on phonological theory. In the years following his PhD, he lectured at the University of California at San Diego and the Miami University of Ohio and continued to work on Frisian, including the writing of a reference grammar. Tiersma then shifted to a legal career, which began at the University of California, Berkeley, law school where he was an associate editor of the *California Law Review*. After earning a JD, Order of the Coif, Tiersma clerked for Justice Stanley Mosk of the California Supreme Court and worked as a litigation attorney in several law firms in California.

Tiersma is active in the language and law community in both academic linguistic and legal organizations. He was president of the International Association of Forensic Linguistics (IAFL) from 2005 to 2007, and has also served on the Committee of Social and Political Concerns, Linguistic Society of America (2006–9) and the Panel of Academic Consultants for the 8th Edition of Black's Law Dictionary (2004). He is a member of the editorial board of the *Journal of Speech, Language, and Law* (2004–present) and an organizer (along with Larry Solan and Dieter Stein of Heinrich-Heine-Universität, Germany) and founding member of the International Language and Law Association (ILLA).

SEE ALSO: Language of Jury Instructions; Legal Language

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Time Series

J. DEAN MELLOW

Research Purposes

The time-series design (TSD) allows applied linguists to investigate two issues: (a) the nature of language use or acquisition over time; and (b) the effect of a specific variable or session of learning on that use or acquisition. The time period of investigation could be seconds and milliseconds, as in applied phonetics research that measures vocal-fold vibrations (e.g., Mergell, Herzel, & Titze, 2000) and spoken discourse research that measures stages in speech planning and production (e.g., Roberts & Kirsner, 2000). This entry focuses on the study of language use and development across days and weeks and in response to particular sessions of instruction.

To investigate development over time, researchers typically choose between longitudinal case studies and cross-sectional studies. In a longitudinal case-study design, researchers elicit parallel samples of language on a regular basis (e.g., once per week or month) over a period of months or years and are able to validly investigate the temporal path of language development. That path may include increases in accuracy and range of use, as well as restructuring of a learner's interlanguage system, which may be revealed by temporary decreases in accuracy (i.e., U-shaped development). In a cross-sectional design, researchers study the language used by learners at different proficiency levels, as determined by factors such as age, number of language courses completed, length of residence in a culture with the new language, or score on a general proficiency test. Researchers infer that these different learners validly represent sequential stages in the acquisition process. Of these two options, the TSD utilizes longitudinal sampling of language use.

To investigate the effect of a specific session of learning, researchers frequently use a pretest–posttest design with a treatment group of learners and a control group. By comparing the posttest changes in the treatment group to those of the control group, researchers are able to assess the effect of a learning event. Researchers control for alternative variables that could cause changes (e.g., learning opportunities outside of the classroom, aspects of aptitude or motivation) by randomly placing learners in each group and by using relatively large groups of learners. The TSD is an alternative for investigating the effects of a learning event. By collecting a number of uses of language for an individual learner before the learning event, a comparison of pretest and posttest scores can reveal whether the developmental patterns in language use were affected by the learning event. However, the results of one case study cannot be generalized to other learners.

TSDs have not been frequently used in applied linguistics research, often because of the difficulty in collecting consistent samples of language over an extended period of time. Participating learners often have life circumstances (such as moving away from the research location) that inhibit regular, long-term attendance at data-collection sessions. To encourage the use of TSDs by applied linguists, an example of a relatively practical, simple design is provided to illustrate some of the key design features. These key features include: establishing sufficient internal validity (confidence that causality has been demonstrated) through sufficient numbers of pretest and posttest scores, assessing the effect of a developmental trend on the interpretation of subsequent acquisition, and assessing the effect of variation

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on the interpretation of development (for additional discussion, see Mellow, Reeder, & Forster, 1996).

Example Study

An example of a TSD is illustrated in Figure 1. During a 201 day period, a 12-year-old Spanish learner of English (pseudonym Ana) wrote narratives that explained 15 different wordless picture books (for additional discussion, see Mellow, 2008). Ana had moved to an English-speaking country just prior to the beginning of the study. She began the study with moderate receptive abilities, but more limited productive abilities. During the period of the study, she attended English language schooling for six hours each day. For a four-week period during the study, Ana wrote her own story (*Laura and her friends go to the zoo*). Her mother (pseudonym Sinthya, an EFL teacher) gave Ana feedback on a series of drafts that Ana wrote. One issue that Sinthya suggested was for Ana to avoid the exact repetition of words and instead to use a more varied and precise vocabulary. The TSD allows us to investigate whether Sinthya's process writing instruction resulted in changes in Ana's word use in her narratives. Figure 1 shows the number of different types (not tokens or instances) of nouns that were the heads of noun phrases in the first 200 words of each text

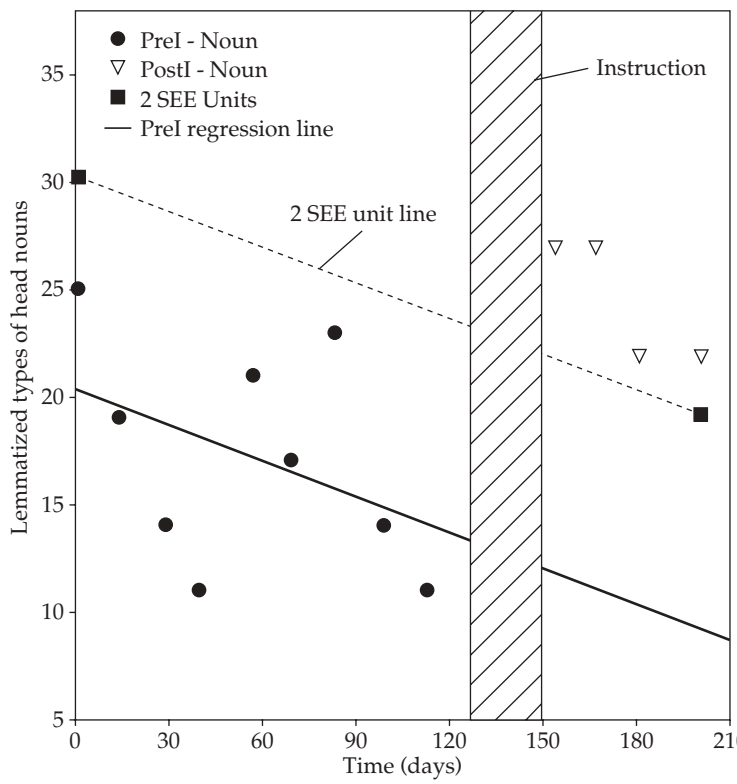

Figure 1 Scatterplot of scores, a preinstruction (PreI) regression line projected into the postinstruction (PostI) phase, and a parallel line two standard error of estimate (2 SEE) units above the PreI regression line for the number of types of head nouns (Noun) within the first 200 words of each text written during the 201 days of the study

Note: Michele Akçar and Maria Clemencia Gonzalez assisted with this data collection and analysis.

that Ana wrote. The coding was lemmatized: inflectional variants (e.g., *book*, *books*) were counted as just one type of noun.

An examination of the scatterplot of scores during the preinstruction (PreI) phase (day 1 to day 126) shows that Ana used between 11 and 25 different types of nouns in the nine stories that she wrote, averaging 17.2 different types. During the postinstruction (PostI) phase (day 157 to day 201), Ana used between 22 and 27 different types of nouns in four stories, averaging 24.5. When a TSD has this small number of data points (nine PreI scores, four PostI scores), a visual examination of the scatterplot is often the best approach for interpreting the results. The PostI phase has two scores that are higher than any of the scores during the PreI phase and two other scores that are comparable to the highest PreI scores. This visual examination suggests that the instruction was effective and encouraged Ana to use consistently a variety of types of nouns. By visually comparing nine PreI scores to four PostI scores, this TSD allows a researcher to be fairly confident that the high scores were due to the instruction and not to another factor. In other words, the internal validity is relatively high.

Beyond a visual inspection of the scatterplot, the TSD allows additional analytical procedures that can increase the precision of the interpretation of the results. A moderate number of PreI datapoints allows researchers to assess the developmental trend before instruction and the amount of variation that is typical of the learner's use on this type of task. To characterize the trend and variation in the PreI data, a regression line has been plotted through the scores and extended into the PostI phase. The PostI results in relation to the projected regression line must be interpreted with caution. Specifically, the sample size (N = 9) in the PreI phase is quite small in order to validly use a regression line (see Tabachnick & Fidell, 1989, p. 129). In addition, the regression line has been projected outside of the PreI data period and the estimates of variation and error are increasingly less accurate when the scores are farther away from the center of the PreI phase for which the regression line was computed (e.g., Gottman & Glass, 1978, p. 204; Fleming & Nellis, 1994, p. 248). For these reasons, the term *statistically significant* cannot be used to describe large pretest–posttest differences in scores that are interpreted through the use of this regression line. A term such as *noteworthy* is more appropriate.

An examination of the PreI regression line in Figure 1 shows that there was a trend in which Ana used fewer types of nouns in her later stories than in her earlier stories. This trend may be due to an increase in her use of other types of words (not illustrated here) as her writing ability improved and her sentences became more complex. If this downward trend had continued, Ana would have only used 10 to 15 types of nouns during the PostI phase, even though the average during the PreI phase was 17.2 types. Thus, one of the key features of the TSD is that developmental changes over time may be observed and used to interpret data.

An examination of the PreI data points also shows that Ana varied considerably in the number of types of nouns that she used (between 11 and 25). The amount of variation can be seen by noting that six of the data points are quite far away from the regression line. The computation of a regression line produces standard error of estimate (SEE) units (i.e., the variation or error not accounted for by the regression line). If data are distributed normally, approximately 95 percent of the scores fall within two SEE units of the regression line (see Woods, Fletcher, & Hughes, 1986, pp. 101–3, 231). To show the amount of variation in the PreI phase more precisely, a line has been drawn two SEE units above the regression line and then extended into the PostI phase. In combination with the downward slope of the regression line, the 2 SEE line within the PostI phase confirms the general visual analysis of the scatterplot. All four PostI scores are above the 2 SEE line. The increase in the number of types of nouns after instruction was noteworthy. In addition, the amount of variation

in the PostI scores appears to be less than the PreI variation. Thus, another strength of the TSD is that variation in language use can be observed and used to interpret the data.

Additional Design and Analysis Possibilities

A TSD can be elaborated by increasing the number of data points per learner or by increasing the number of learners or both. If a large number of data points per learner is obtained, a variety of mathematical models can be used to interpret the data. Many of these analyses have been utilized within a dynamic systems approach to development (e.g., van Geert & Steenbeek, 2005).

The systematic inclusion of multiple learners can increase the internal validity of a design. If several learners randomly receive the experimental treatment session at different points in time, then these replications of the single-case design are called a multiple-baseline design (e.g., Mellow et al., 1996). Specific statistical tests, such as Revusky's R_n, have been developed to interpret changes in scores in multiple-baseline designs (e.g., Revusky, 1967; Kazdin, 1982). In another type of design with multiple learners, Ishida (2004) utilized a TSD that combined scores for pretest, treatment, and posttest periods and used a repeated-measures analysis of variance, in conjunction with a Helmert analysis, the Pearson product–moment correlation coefficient, and implicational scale analyses.

In order to investigate and interpret the effects of instruction, the use of TSDs can be informed by fundamental issues in measurement and in theories of acquisition. Prompted production tasks, such as narrative descriptions of wordless picture books, elicit extended discourse that is relatively authentic and communicative (i.e., has high construct validity). However, parallel tasks need to be carefully chosen or created and then presented in a random order. One threat to the internal validity of the study in Figure 1 is that the final four picture books were all created by the same illustrator. It is possible that the nature of those pictures elicited more nouns than did books by other illustrators.

In addition to variation in language use due to differences in elicitation tasks, other aspects of variation result because language is not a fixed system but instead is a dynamic system that changes over time and is used differently in different contexts (e.g., Larsen-Freeman, 2006). The language use of learners exhibits an especially high degree of variability. Larsen-Freeman (2006, p. 593) argued that this variation "should not be dismissed as measurement error." When the effects of instruction are assessed with measures of central tendency (such as averages or means), high amounts of variation often lead to differences that are not statistically significant. However, current theories of acquisition, such as emergentism and dynamic systems theory (e.g., Ellis & Larsen-Freeman, 2006; de Bot, Lowie, & Verspoor, 2007), focus on both variation and central tendency, necessitating the types of quasi-experimental designs, such as TSDs, that can fully investigate the nature of language acquisition and use.

This discussion has illustrated that the TSD is a type of quantitative research that involves quantification of data, numerical analyses, and the assessment of causal relationships between variables (Mackey & Gass, 2005, pp. 2, 137–8). However, a TSD may also have characteristics that are typical of qualitative research, including a smaller number of research participants that allows careful and detailed descriptions of naturalistic and communicative language use, as well as analytic categories and hypotheses that emerge from these rich data (Mackey & Gass, 2005, pp. 2, 162–4). This combination of characteristics reveals that TSDs are especially fruitful as applied linguistics research that can complement other types of quantitative and qualitative studies.

I would like to thank Michele Akçar and Maria Clemencia Gonzalez who assisted with data collection and analysis.

SEE ALSO: Case Study; Dynamic Assessment in Second Language Acquisition; Measuring the Effectiveness of Second Language Instruction in Research

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Traditional Approaches to Monolingual Lexicography

THOMAS KLEIN

Lexicography is properly the practice of writing dictionaries, and more generally of compiling and recording information about the lexicon of a language and presenting it effectively to native or non-native speakers and learners of the language. This entry will focus on traditional *monolingual* lexicography, which presents and defines the words of a language using only other words of that language, as opposed to *bilingual* lexicography, which works between two languages; it thus presupposes at least some base knowledge of that language. The entry will begin with a brief overview of traditional monolingual lexicography and its history, move to the structural challenges lexicographers must address, and finally consider what the future may hold for the field and for dictionaries.

Traditional Lexicography and the "Prototypical" Dictionary

The term "traditional lexicography" refers to those approaches to dictionary writing which have been practiced since the inception of monolingual lexicography, even as they have been shaped both by discoveries in linguistics and by commercial concerns. Traditional lexicography is generally associated with books (although electronic dictionaries are rapidly taking their place) and, as books, dictionaries have a rich history and occupy a central position in the literate culture of many societies, if at times a problematic one, not least for their perceived role in prescribing usage, that is, of setting standards in the use of language. At other moments, dictionaries have a descriptive function, that is, of recording and cataloguing language, and may be a source of great cultural pride. They might be known by such terms as lexicons, word lists, or glossaries, and be manifested in such forms as dictionaries of synonyms (thesauri), technical dictionaries, dialect dictionaries, collocation dictionaries, or learners' dictionaries. However, this entry will focus on what many readers may consider the "prototypical" dictionary: the alphabetical monolingual all-purpose dictionary (Van Sterkenburg, 2003, p. 3).

Certainly, the general public's understanding of dictionaries and lexicography often differs considerably from that of the lexicographers themselves, who are faced with practical questions of how to organize their dictionaries, gather information, decide what needs to be included (and excluded), and present that information in a helpful way. Since the 1960s, lexicography has evolved to become an object of academic study in its own right: The literature about lexicography is sometimes referred to as "metalexicography." Its relationship to applied and theoretical linguistics remains a subject of debate, some commentators regarding it as a subfield of applied linguistics, others regarding it as a distinct discipline (Tarp, 2008; De Schryver, 2009). Both Béjoint (2010, chap. 10) and Atkins and Rundell (2008, p. 4) deny the status of lexicography as a theory (see also Bogaards, 2010). Thus, while modern lexicography certainly draws upon many of the findings of both theoretical and applied linguistics (and often employs sophisticated technology), some have wondered whether it is not more of an art than a science. It seems likely that many of those people engaged in the actual practice of lexicography would say that it involves quite a bit of both.

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History and Development of Monolingual Dictionaries

A review of the history of lexicography is useful because, in many ways, the problems faced by past lexicographers are ones still faced by those working in the field today. The first practice of lexicography may go as far back as 2600 BC when the Akkadians wrote thematic summaries of the Sumerian language on clay tablets (Van Sterkenburg, 2003, p. 8). While the Indian, Chinese, and Arabic cultures all practiced forms of monolingual lexicography one or more millennia ago (Haywood, 2003; Katre, 2003; Xue, 2003), in Western Europe lexicography was at first wholly bilingual, and appeared in the form of medieval manuscript glosses, whereby vernacular equivalents were written above each word in the Latin or Greek text for the benefit of the text's non-native readers; these glosses might subsequently be assembled into glossaries, organized topically, to facilitate second language learning (Hüllen, 1999). The first books we might recognize as dictionaries proper appeared in the European Renaissance and were bi- and even multilingual (polyglot); for instance, Berloment's 1586 *Colloquia et dictionariolum* presented columns of equivalent Flemish, English, German, Latin, Italian, Spanish, and French words, the first column organized in rough alphabetical order.

For many native speakers of earlier stages of English, the need for a monolingual dictionary might not have been immediately obvious until the European Renaissance. For a speaker of Old English, for instance, with its relative absence of borrowed vocabulary, most words would be semantically transparent, even those elaborately compounded and affixed. With the dramatic influx into English of Latin-derived and other foreign terms from the 16th century onward, this was no longer the case. At the same time there arose a general anxiety about the language, especially regarding what words properly belonged to it. Thus in 1582 Mulcaster catalogued but did not define 8,000 English words, while Cawdry's 1604 *A Table Alphabeticall* is often regarded as the first monolingual English dictionary. Cawdry's title page is revealing:

> A Table Alphabeticall, Conteyning and teaching the true writing, and understanding of hard usuall English wordes, borrowed from the Hebrew, Greeke, Latine, or French. &c. With the interpretation thereof by plaine English words, gathered for the benefit & helpe of Ladies, Gentlewomen, or any other Unskilfull Persons.

Cawdry's dictionary was thus what is known as a "hard-word" dictionary, and his basic purpose is not unlike that of lexicographers today: According to the title page, readers should "more easilie and better understand many . . . wordes, . . . and also be made able to use the same aptly themselves." His definitions were simple semantic equivalents (for instance, *ebulliated* is defined as "boyled"). For the following 50 years, dictionaries, both in England and on the European continent, focused essentially on hard words; however, perhaps to increase the value of their product, lexicographers began to introduce non-linguistic information, as we see for instance in this entry from Blount's 1656 dictionary defining *Coffa* (coffee):

> A kind of drink among the Turks and Persians (and of late introduced among us) which is black, thick and bitter, distrained from Berries of that . . . name, thought good and very wholesome: they say it expels melancholy, purges choler, begets mirth, and an excellent concoction.

This sort of entry introduced a debate which continues today regarding what kind of information dictionaries should include: Should they involve just words and definitions, or should they include cultural and encyclopedic information?

From the later 17th century onward, new dictionaries entered a fiercely competitive market, compelling editors to include ever more words and definitions and such non-lexical information as place-names and the names of mythical figures. Kersey's 1702 dictionary was one of the first dictionaries in English to include common words. Specialized dictionaries were also introduced, focusing on etymology, spelling, pronunciation, and "cant" or slang, among other topics.

In the midst of all this activity, however, Johnson's 1755 dictionary stands out as a particularly important achievement for monolingual lexicography. Though not all-inclusive, Johnson's work was quite comprehensive. In addition to including clear indications of a word's part of speech and its derivation, he established what is still essentially the modern lexicographical pattern for defining and ordering distinct word senses and, though working from self-selected examples from "the best writers," prefigured the corpus-based approach to lexicographical definition, as this example shows:

ECO'NOMIC. / ECO'NOMICAL. *adj.* [from *economy*.]
1. Pertaining to the regulation of an household.
   Her quick'ning power in ev'ry living part,
   Doth as a nurse, or a mother serve;
   And doth employ her *economick* art,
   And busy care, her household to preserve. *Davies*.
2. Frugal.
   Some are so plainly *economical*, as even to desire that the seat be well watered, and well fuelled. *Wotton's Architect*.

In the words of one scholar, the strength of this dictionary lies in the way that "Johnson strips away both Latin and source references to focus exclusively on what the word means and denotes" (Lancashire, 2005, p. 158); likewise, Johnson's notes on usage provide "a rich and elaborate set of information" in contrast to earlier writers (Barnbrook, 2005, p. 198).

Elsewhere and later, in the USA, the commercial and cultural need for a "universal" dictionary (i.e., one including all words in the language, or as near to that as possible) was answered by Webster's 1828 *American Dictionary of the English Language*, which included the largest number of entries of any dictionary up to that point, and used American spellings and pronunciations. Curiously, while Webster was critical of Johnson's at times idiosyncratic and "vulgar" definitions, he retained many of them with only slight modifications, reflecting a time-honored practice among lexicographers to draw heavily upon previous work (even to the extent of plagiarizing). Nonetheless, Webster remains a household name representing the authority of the dictionary in general.

The *Oxford English Dictionary* (*OED*), which was begun in the mid-19th century, first completed in 1933, but since then more or less continually updated, continues to stand as a major lexicographical achievement. Its goal has been to record all words entering the English language since the Old English period and to track their development using illustrative quotations from extant works, following Johnson's example. However, unlike Johnson's dictionary, the quotations were originally generated by a volunteer corps of readers who scanned historical and recent works for illustrative uses of words and then wrote their examples on slips of paper and posted these to the editorial team, for many decades led by the charismatic James Augustus Murray. The dictionary broke ground not only by its scope but also by its attempt to be essentially descriptive in nature, though occasionally violating this principle (Brewer, 2007). Now available online, it offers itself as a clearing house both for new words and for new uses of words in English; editors are thus continually faced with the practical problem of when to accord a word official status.

Historical dictionaries for other languages have followed the *OED*, including the *Grande dizionario della lingua italiana* for Italian and the *Trésor de la langue française informatisée* for French, although these have tended to draw their examples chiefly from canonized authors, thus having a strongly prescriptive aspect (Beltrami & Fornara, 2004; Baider, 2007). Since the 1960s, however, lexicography has been deeply influenced by corpus linguistics so that most new dictionaries are built from illustrations drawn from corpora, following Sinclair's belief that "natural language use constitute[s] the best source of linguistic evidence" (Krishnamurthy, 2008, p. 231). As Rundell (2002, p. 140) writes, the "corpus revolution" has advanced to such a degree that it is now generally assumed that "corpora of naturally-occurring text [will] provide the primary data source for all good dictionaries." In theory, this means that dictionaries will be derived from objective evidence; in practice, the editor's intuitions about the language are usually still important.

Findings in linguistics and applied linguistics have influenced, and been influenced by, modern lexicography in other ways. Since the definition of words involves dealing with their form, meaning, and function, those branches of applied and theoretical linguistics that treat phonetics, phonology, morphology, semantics, syntax, collocation, and pragmatics (among other topics) are all potentially relevant to lexicography. Svensén (2009, p. 3) remarks, "there is almost general agreement that linguistics forms an import basis for [modern] lexicographic work, and conversely, that lexicography and its products have made considerable contributions to linguistic research." Thus, work in frame semantics, which asserts that word meanings can only be explained and understood in terms of the conceptual structures, beliefs, and cultural practices of a given speech community, and in lexical collocations, which governs the contexts in which words appear, may well have been influenced by the development of learners' dictionaries, such as the *Collins COBUILD English Dictionary*, which seeks to provide elaborate intra- and extralinguistic contextual illustrations of particular words.

Structuring the Dictionary

The practice of lexicography involves a number of common concerns beyond those mentioned above. Among these are the problems of how lexicography's final product will be structured, how the words or *lexemes* (the more precise linguistic term for the basic abstract unit underlying grammatical and phonological variants, such as ***see***, *sees*, *seeing*, *saw*, *seen*) will be presented, and especially how their meanings will be defined.

Lexicographers generally mark a distinction between a dictionary's overall structure and organization—its *macrostructure*—and the structure and presentation of its individual entries or articles—its *microstructure*. Both categories may be shaped in particular ways to reflect the needs of users, and by the same token they may well determine how effective a particular dictionary is.

The macrostructure of the typical dictionary is an alphabetical structure organized around the base form of the words contained within the dictionary. It is difficult to overstate the importance that alphabetization, especially letter-by-letter (that is, alphabetization that continues beyond the first letter of the word), has played historically in the organization of dictionaries; even lexicons of languages like Chinese, whose written form is not based on letters but on logographs, may follow a form of alphabetization (Xue, 2003). While alphabetization has considerable advantages, it may also widely separate semantically or etymologically related words; as Hüllen (1999, p. 11) notes, "*creatine* is placed between *create* and *creation*, *credenza* between *credential* and *credibility*." The macrostructure may also take such forms as a topical or thematic structure, where lexemes are organized into broad areas of human knowledge and experience, each broken into further categories and

subcategories. This is indeed the structure of many thesauri, which "help users in finding words or the synonyms and antonyms of words or stylistic variants [and] provide the basic vocabulary within a semantic domain" (p. 15).

The microstructure of each entry in the prototypical dictionary may take different forms and may include different kinds of information; in general, lexicographers aim to follow (but may not always achieve) a consistency of presentation. The base form of the word presented, known as the *headword* or *lemma*, may be followed by such information as an indication of the part of speech, pronunciation, etymology, usage labels, ranked definitions, and usage illustrations among many other features (including pictures). Lexicographic microstructure depends heavily on a hierarchical organization, both in the ordering of elements and in their typographic presentation, the purpose of which "is to assist the user in identifying and distinguishing the different items and in finding them as quickly as possible" (Gouws, 2003, p. 35), as well as determining their relationships. This of course requires the lexicographer to make many judgment calls—for instance, deciding how to distinguish homophonic but etymologically distinct headwords.

Though users go to dictionaries for many different reasons, it is likely that the most common reason is to find a definition of the various meanings of a word. Van der Meer (2006, p. 604) observes that "after centuries of practical lexicography, there is still hardly any consensus on how to divide the semantic space of a lexical item. Nor does theoretical semantics seem to have made any impact with respect to this problem." Van der Meer argues, against the emphasis on collocation and context, that "speakers normally have a context-free idea of [a lexeme's] meaning" (p. 608). This echoes Wiggins's (1971, p. 33) earlier sentiment that "it is a part of the equipment of a mature speaker of a language that he possesses some principles . . . which enable him to invent or 'cotton onto' new uses of a word and see their rationale." It may be said that art enters in here in particular; since the lexicographer must somehow acknowledge this innate ability, "anything that absolutely denies the reader the opportunity to find out the meaning of a word he has looked up is the most serious defect a dictionary can have" (Landau, 2001, p. 157).

Future

Regarding the future of lexicography, there is reason to be both optimistic and cautious. As De Schryver (2009) shows, the field of lexicography as an academic discipline continues to develop apace; as in any other vibrant field, several specialized journals are devoted to it, including the *International Journal of Lexicography* (England), *Dictionaries* (North America), and *Lexikos* (South Africa); other linguistic and philological journals also frequently publish articles with a lexicographic focus.

As for dictionaries themselves, it is clear that in the near future they will continue to provide the same kind of help they always have to users. Learners' dictionaries for non-native speakers and research in dictionary use represent areas of particularly dynamic development. With global shifts in populations and political power, it is easy to see why. The function of dictionaries as catalogues and archives of language will likewise remain important, especially in the instance of rapidly changing or disappearing languages, even if the audience for such dictionaries remains small or academic. With the rapid development of unique fields of expertise and experience, some form of specialized dictionaries will also continue to be useful.

The transition from print to electronic form of many dictionaries has provided a number of benefits as well as some negatives. For instance, the electronic *OED* allows for easier and specialized searching; more generally, definitions can be retrieved more rapidly, with dictionaries readily available in smartphones and handheld devices. Some users, however,

may feel that something is lost in the transition from print to digital format. Web searches for definitions may yield an overabundance of results, with no clear hierarchy to prioritize them (and sometimes with a surprising absence of the particular definition for which the user is searching). In the absence of a physical, branded book, dictionaries will probably lose both their autonomy and their authority. The form of the electronic dictionary is certainly extremely convenient, but some of the enthusiastic claims initially made for them have not fully delivered on their promise (De Schryver, 2003; Lew & Doroszewska, 2009).

While the user-generated encyclopedia has enjoyed great success in recent years, the same cannot be said generally of attempts to create user-generated dictionaries. At least in the case of English, entries either are inadequate or are simply reproductions of previous print dictionaries. As the creation of the original *OED* demonstrated, while lexicographical content might be generated by non-specialists, the effective arrangement of that content is dependent on the careful work of trained editors. Thus, while a computer can now generate the illustrative quotations for a corpus-based dictionary instantly (and as such is an extremely useful tool), there is no prospect that the painstaking work of an editor can be fully automated (Rundell, 2002). New projects such as OmegaWiki, an attempt to create a "dictionary of all words of all languages" through the efforts of users, have been touted (Meijsson, 2009); like the polyglot dictionaries of the Renaissance, such projects may be more intellectual curiosities than genuinely and consistently useful.

Finally, Tarp (2009) speaks about the current "identity crisis" facing lexicography. This is partly due to the dictionary's changing status described above; it also arises inevitably from the rapid development of lexicography itself as an academic discipline which has resulted in a separation between theoretical approaches to lexicography and actual practice. It will be interesting to see what the 21st century holds both for the field and for dictionaries; certainly, lexicography will continue to be practiced and relevant, but in what form is anyone's guess.

SEE ALSO: Bilingual Lexicography; COBUILD Project; Johnson, Samuel and Lexicography; Lexical Collocations; Lexical Semantics; Lexicography Across Languages; Lexicography in Non-European Languages; Monolingual Lexicography; Webster and American Lexicography

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Transcribing Multimodal Interaction

HELEN SISSONS

In appreciating what is involved in transcribing multimodal interactions, the researcher must first understand what constitutes multimodal data. A multimodal approach to communication understands that people use a range of modes, not just language, to communicate. They may employ images, gesture, gaze, posture, and so on, and the relationship they form between these modes communicates meaning. Therefore each of the communicative modes used by research subjects during an interaction is analyzable data. When collecting such data, a researcher generally utilizes video- or audio-recorded data collection methods, or both. Then, because transcribing multimodal interactions is time-consuming and complex, the researcher must carefully select representative samples from the raw data before beginning the transcription process.

Background

It is the developments in technology which have allowed researchers to gather multimodal data and afforded them transcription methods which take account of multiple modes. However, it is only relatively recently that researchers have recognized the advantages to understanding that analyzing interactions from the point of view of more than one communicative mode afford.

In the 1990s, Gumperz and Berenz wrote that when people are talking they exchange verbal and nonverbal signals informing them how the conversation is progressing: "Conversing in turn rests on speakers' and listeners' interpretation of verbal and nonverbal signs or contextualization conventions; that is, systems of cues that guide conversational management" (Gumperz & Berenz, 1993, pp. 91–2). They presented a transcription system that focused on speakers' and listeners' use of nonverbal as well as verbal signs to convey and understand information and to maintain what Goffman (e.g., 1963) called "conversational involvement," Common nonverbal actions were described within square brackets. Others researchers too referred to the nonverbal or extralinguistic characteristics of interactions, but spoken language remained the focus (Flewitt, Hample, Hauck, & Lancaster, 2009, p. 41). In 1996 the New London Group, which included Courtney Cazden, James Gee, Gunther Kress, and Allen Luke, began to be interested in multimodality. From their investigations it became clear that in the "new," multimedia, multimodal landscape, researching meanings beyond the purely linguistic was necessary (Jewitt, 2009, p. 19).

In the late 1990s and early 2000s there began an increased focus on multimodality within research and the employment of visual research methods (Scollon, 1998, 2001a, 2001b; Kress, Jewitt, Ogborn, & Tsatsarelis, 2001; Kress & Van Leeuwen, 2001; Van Leeuwen & Jewitt, 2001). However, the new focus brought challenges as to what data to collect and how to represent these novel kinds of data as text.

Multimodal Data Collection

As already mentioned, innovative technologies have provided new tools for data collection, such as digital photography and video- and audio-recording devices. While researchers

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have recognized that these technologies can create rich data, no one type of data on its own can give a full picture. Norris writes when explaining her long-term ethnographic study of two German women that "as each form of data has its own weakness, a collection of various forms of data allowed triangulation" (Norris, 2011, p. 82). She and most other researchers continue to use interviews, documentation, and field notes alongside the newer tools, merging the resources to enable a fuller analysis. "The combination of 'new' and more traditional tools for data collection creates a dynamic constellation of resources, where meanings are produced through the inter-relationships between and within the data sets, permitting the researcher literally and metaphorically to 'zoom in' on fine-grained detail and to pan out to gain a broader, socially and culturally situated perspective" (Flewitt et al., 2009, p. 44).

Multimodal Transcription

Having a "constellation of resources" has implications for transcription. In order to present and analyze such diverse data, new kinds of research texts have had to be devised. Given the relative youth of multimodality and the heterogeneous backgrounds of the researchers, it is not surprising that different transcription systems have been devised depending on what the researcher wants to discover and the type of data they have. "No matter which transcription system is used, it is generally well understood that the transcript guides—or even forces—the analyst to a certain interpretation of analysis, which, of course, simultaneously constrains the analyst to a certain interpretation as well" (Norris, 2011, p. 112).

Any transcript necessarily prioritizes some details and omits others altogether (Flewitt et al., 2009, p. 45). The challenge is that the format should accurately exemplify events in a manner that can be clearly understood and that aids the purpose of the research. The transcript system used should also exploit fully and represent fairly the data collected. Therefore the transcription format for static texts such as newspapers is likely to be different from that used for naturally occurring interactions.

Some researchers focusing on the analysis of texts both static and dynamic (O'Halloran, 2004; Baldry & Thibault, 2006; Bateman, 2008; among others) have devised systems for the analysis of these genres. Others, including Norris, are interested in naturally occurring interactions. She presents a system suitable for the analysis of such interactions where gesture, gaze, proximity of the participants, and setting may all provide information which needs to be included in the transcription.

Data Annotation and Analysis Tools

In addition to the systems discussed above, a range of annotation and analysis resources for audiovisual data are now available. These include annotation tools, such as ANVIL, ELAN, EXMARaLDA, MacVisTA, and TASX, which offer an interface set out like a music score rather than an annotated text document format. Hence, when data come from several participants speaking and producing various nonverbal behaviors simultaneously, this sort of layout has the potential to be easier for the researcher and reader. The tools also allow for the importing of other software, such as speech annotation software like Praat and XWaves, and time-stamped files for statistical processing in packages such as Excel. A review of these resources is presented in Rohlfing et al. (2006).

Data analysis software packages such as HyperRESEARCH, NVivo Atlas.ti, MAXqda, QUALRUS, and Transana offer a framework for the organization, coding, searching, and retrieval of data. For a discussion of these see Flewitt et al. (2009) and the Computer Assisted Qualitative Data Analysis (CAQDAS) Web site (http://caqdas.soc.surrey.ac.uk).

What Is Transcribed?

Conventionally the focus of research was on language, and the unit of analysis was a turn in speech. In multimodality, however, language is only ever one mode among an ensemble of modes and is not elevated above the others. For multimodal researchers, the unit of analysis can be a visual unit, it can be temporal, or it can be an action. Baldry and Thibault (2006), for instance, use time as a unit of measurement, a unit being one second, while Norris (2004, 2011) uses mediated actions as a unit of analysis, for example a hand gesture or a gaze shift (see below). No matter what the unit, the representation of multiple modes in meaning making results in multimodal transcription being a time-consuming and complex exercise. For an effective transcript that clearly represents how the different modes interact to reveal the meaning of the text or interaction, the researcher or transcriber has to decide how much detail is necessary to fulfill the aims of the research while at the same time keeping the transcript uncluttered enough for a clear reading by an audience.

A number of researchers use columns to represent simultaneous multimodal phenomena (Baldry & Thibault, 2006); still others mix images with verbal transcriptions of speech and descriptions of action to present the interplay of multiple modes. Goodwin (2007) incorporates drawings, video stills, timed pauses, superimposed arrows, and analysis into his transcripts (for a description, see Flewitt et al., 2009, pp. 46–51). One of the more innovative transcription systems is highlighted here: that of Norris. Unlike many researchers who still present their data in written form—that is, the modes are translated into the verbal mode—Norris's transcription is image rich.

A Transcription Case Study

Norris explains that a transcript is a first analysis, which is used for the purposes of further analysis as well as for representation (2011, p. 113). Including images in the verbal transcript, she argues, allows for a more comprehensive analysis of interactions. Her unit of analysis is the mediated action. The smallest of these actions Norris calls the lower-level actions, which may be a gesture, a postural shift, or an utterance. Higher-level actions such as a conversation or presentation are made up of chains of lower-level actions that must be represented on a transcript. "The task of a multimodal transcript is not to analyze the images that are incorporated, but rather to use the images in order to describe the dynamic unfolding of specific moments in time in which the setting and the non-verbal play as much a part as the verbal" (Norris, 2011, p. 111).

For the researcher wishing to use Norris's system, she suggests the production of individual transcripts for each communicative mode—for example, layout, gesture, gaze, proxemics, and spoken language—which could then be collated with the help of time as the reference into what she calls a final multimodal transcript of the site of engagement. She has outlined some conventions for each communicative mode, which are explained in more depth in Norris (2004, 2011).

Spoken Language

Norris bases her transcription of spoken language in part on Tannen's (1984) transcription conventions.

1. Punctuations reflect intonation, not grammar.
2. ┌Brackets show overlap:
   └two voices at once.
3. CAPS indicate emphatic stress.

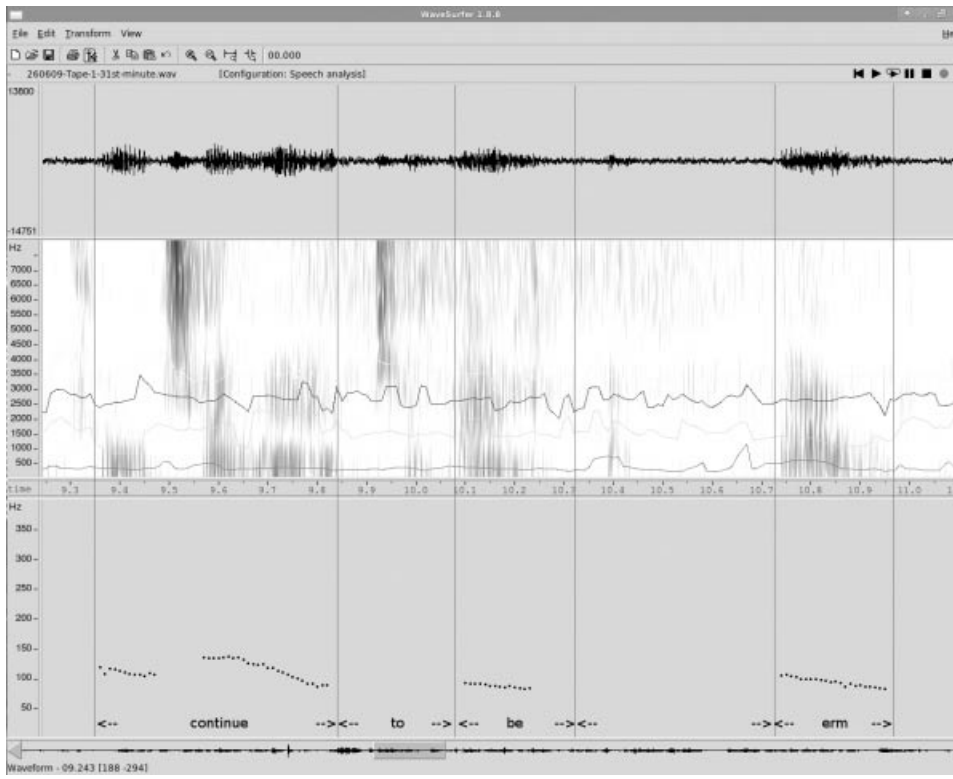

Figure 1 Intonation patterns in waveform as shown in WaveSurfer

4. Numbers in parentheses ( ) show the length of pauses in seconds.
5. Latching is indicated by these brackets.
6. – marks a glottal stop or abrupt cutting off of sound.
7. 0:00.00 indicates the minute, second and millisecond (or frame) of the beginning of an utterance.
8. In order to replicate the intonation patterns as waveforms in the multimodal transcript, each utterance is viewed in an audio program such as PRAAT or Wavesurfer (see Figure 1).

Proxemics

Norris transcribes proxemics (proximity of the participants) as follows:

1. An initial still image shows the distance that the participants are from one another and from relevant objects.
2. A new image shows each change in proxemic behavior by the participants, and the time in minutes and seconds of the image as it appears in the original clip is marked.

Figure 2 Video stills for a multimodal transcript (Sissons, 2011) © Routledge

Posture

The participants' posture is transcribed.

1. An initial still image shows the posture of the participants.
2. A new image shows each postural change by every participant, and the time in minutes and seconds of the image as it appears in the original clip is marked.

Gesture

The participants' gestures are transcribed.

1. The onset or rest position is shown, then the stroke or highest position, and then the retracted or rest position of the gesture, and the highest and lowest position for a beat.
2. Some gestures also show the mid-points of the preparation, retractions, or both. If the gesture includes a post-stroke hold, that is indicated in a separate image.
3. The times of the still images as they appear in the original clip are always marked.

The same is done for the other modes relevant to the interaction. Many modes will overlap, and the researcher uses the timings marked on the screen grabs and in the audio transcript to produce a final transcript which illustrates such overlaps as and when they are important. In the final transcript spoken language has to be reproduced, illustrating intonation patterns, pitch, and volume of the speakers.

It is clear from the timings shown in Figure 2 that the unfolding interaction has been illustrated using images which do not appear at uniform time intervals. This is because of the need to illustrate the modal meaning making as it occurs. Had every fourth image been displayed, for example, meaning would have been missed.

Further, in transcribing each mode separately it becomes clear, Norris notes, that the hierarchy of modes changes during an interaction. At one moment speech and manual gesture will be in the superordinate position, at another gaze and so on. In the example in Figure 2, posture, proxemics, and use of the mediational means (the cleaning tools shown) as well as spoken language are central to the meaning making in the interaction.

Conclusion

The introduction of new technologies has afforded opportunities as well as challenges for researchers wishing to gather and transcribe multimodal data. As yet there is no widely accepted paradigm for the transcription of multiple modes, but it is becoming more recognized that the aim in the analysis is not to prioritize language. Questions, however, still remain for the researcher as to how much complexity can be included in a transcript before readability becomes too impaired.

SEE ALSO: Conversation Analysis and Transcription and Data; Multimodal Interaction Analysis; Transcribing Multimodal Interaction; Transcription

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Transcription

NORBERT DITTMAR

Problem Space

Transcription (from Latin *transcribere*, 'to transcribe') means "any graphic representation of selective aspects of speaking and of one or more persons' behaviour and setting concomitant with speaking" (O'Connell & Kowal, 1995, p. 646). The Latin proverb *verba volant, scripta manent* ("words are fleeting, but written they remain") reflects the fact that only written discourses were taken as "legitimate" text resources in developed societies before the 20th century. Most of the world's societies use a coded written alphabet which fits the norms of a standard language and serves as a normative system for any legitimate public communication. It is a code independent of social context and the changing conditions of verbal interactions in situational settings.

Writing and speaking are quite different communicative activities: Oral language use implies social, emotional, and referential proximity ("familiarity") in dynamic interactions in a specific situational context, whereas written language represents local, referential, and emotional distance in communication (Fiehler, Barden, Elstermann, & Kraft, 2004). Although stenographic representations (Crystal, 1997, p. 382) and standardized protocols in the second half of the 20th century (Dittmar 2008, pp. 24–5) were used as technical tools for the conservation of oral communication, most of the current definitions of transcription are based on *scientific criteria*: The written representation of spoken language should be as authentic as possible, reflecting the "real" communication situation in coding the verbal and nonverbal aspects of communicative exchanges in the most adequate way. The sign repertoire of a transcription system (TS) should represent the oral messages on the basis of analogical observational adequacy (see below on Jefferson's "eye-dialect" for an inadequate solution). Modern histories of TSs distinguish the development of (a) at the end of the 19th and the beginning of the 20th century, a narrow phonetic system (the International Phonetic Alphabet [IPA]) for representing the sound system of different dialects of a particular language like German, Italian, American English, and so forth, and of different standard languages in the world in order to facilitate language teaching; and (b) a broad transcription of all kinds of communicative genres and styles according to authentic conversational criteria, including prosodic and nonverbal behavior, with an emphasis on the criterion of "good readability."

Historical Development of Transcription Systems

The first writing systems are documented 3,500 years BC. In order to conserve moral, religious, and legal principles for the sake of authenticity, collective memory, and reliability, humans of different groups and societies developed writing systems of very different forms (pictograms, ideograms, hieroglyphs, and logograms). But besides the codified written standard, many communication communities (tribes, ethnic groups) used only oral ways and varieties of speaking. Anthropological linguists were first motivated in the 19th century to document the whole diversity of human languages in order to compare them.

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The most efficient tool for documentation has been the IPA, first published in 1888; it codes the phonetic equivalents of the particular sounds of all languages worldwide in a universal representation. A phonetic symbol corresponds to an oral version of a sound in real life. Thus the pronunciation of standard German /s/ (phoneme) is realized by the two variants [s] and [z] in oral communication. Wherever the repertoire of phonetic symbols does not render precisely enough the quality of the sound, *diacritics* supply the particular phonetic values. Each phonetic symbol is an abbreviation of the articulatory features of a sound; for example, [p] stands for the combination of the categories *voiceless*, *bilabial*, and *plosive.* The complete IPA can be downloaded from the Internet (http://www.langsci.ucl.ac.uk/ipa/IPA_chart_(C)2005.pdf), while the most useful and complete source of all facts and phenomena about and around the IPA is the *Handbook of the International Phonetic Association* (International Phonetic Association, 1999). A comprehensive overview is found in Dittmar (2008, pp. 68–80), and there is a very technical and sophisticated presentation in Gibbon, Moore, and Winsky (1997). The SAMPA system, which enables the PC user to apply all IPA symbols (diacritics included) in a particular program, is presented in full technical detail in IPA (1999) and Gibbon et al. (1997).

Although IPA is still used today in nearly all foreign-language learning courses as a basic source for the acquisition of pronunciation, the IPA phonetic profiles of dialect varieties were made by experts for experts. Indeed, these transcriptions never came down to the lay public. The "profiles" disappeared in the archives. Thus, two characteristics mark IPA transcriptions in the middle of the 20th century: They (a) excluded the lay public, as they were unreadable for "normal" members of a speech community; and (b) were restricted to purely phonetic information, leaving out any pragmatic, semantic, or conversational aspects. On the other hand, the large historical tradition of literary transcription in fiction partly compensated for this. Authors like Raymond Queneau (in French), Alfred Döblin (in German), Luigi Pirandello (in Italian), and James Joyce (in English), among many others, created easily readable alphabetic ways of representing oral utterances in their work. These "natural" transcriptions were taken into account by linguists in the last 30 years of the 20th century. Inspired by the large international pragmatist movement ("the pragmatic turn"), linguists developed literal transcription by using easily readable symbols and enriching them by adding nonverbal aspects of annotation (see Jefferson in Atkinson & Heritage, 1984; Schegloff, 2007).

The rise of pragmatics and sociolinguistics in the last 30 years of the 20th century stimulated the broad recording of everyday speech and conversation, and motivated researchers to develop annotations for transcription focusing on pragmatic aspects (pauses, turns, turn taking, and prosody). Good readability was conceived as a presupposition of intensive international exchange and comparability of data based on reliable transcriptions. The progress in conversational pragmatics since the beginning of the 1970s is documented in Schegloff (2007) and for sociolinguistics by Dittmar (2008). This pragmatic turn coincided with the increasing interest of many linguists in founding their theory and methodology on solid empirical data (corpora).

Communicative Social Practices and Transcription Design Principles

Many prominent linguists are interested in a usage-based *construction grammar* founded on corpus data. Applied linguistics (psycholinguistics, sociolinguistics, foreign-language learning, and discourse analysis) is also existentially interested in authentic data from natural communicative genres as a basis for adequate target language training. "Good" grammar is today based on (transcribed) data; these "realistic" grammars are useful for

foreign-language teaching. The transcriber, according to pragmaticians, is no longer only a *Homo faber* doing his or her work but somebody who makes "theoretical" decisions about linguistic explications by choosing a particular coding system. This view has been underlined by Du Bois: "Transcription is theory . . . How we transcribe doesn't just reflect our theories of language, it also shares them, drawing our eyes to some phenomena while leaving others in shadow" (1991, p. 71). Instead of maintaining the IPA position (exact phonetic transcription by experts), he asks for *discourse transcription* (DT), defining it "as the process of creating a representation in writing of a speech event so as to make it accessible to discourse research . . . The process of DT is never mechanical, but crucially relies on interpretation within a theoretical frame of reference to arrive at functionally significant categories, rather than raw acoustic facts" (p. 73). Du Bois conceives speech as interactive communicative practices in a situational and social context. On the one hand, the transcription design principles (TDPs) should define the minimalistic (universal) standards of transcription; on the other hand, they should deliver a solid account of those characteristics the study is looking at. The following TDPs should be recognized, according to Du Bois (1991, p. 76):

> the words spoken, written so as to allow each lexical item to be recognized; an identification of the speaker of each turn; the temporal sequencing of utterances, whether these follow each other in succession or are simultaneous (as when speakers overlap); basic units in which the utterances were articulated, such as turns and intonation units; intonation contour, whether functionally or phonetically classified; accent; fluctuations in timing such as tempo, pause and lengthening; nonverbal noises made by speech event participants, such as laughter, throat-clearing, inhalation; non-utterance events that become relevant to the interaction . . . ; meta-transcriptional and "evidential" comments on the transcription itself.

It is useful to specify the TDPs explicitly for a "gain in theory." Researchers thus get clear theoretical criteria for an adequate choice of the descriptive and explanatory aims of an empirical study. Du Bois distinguishes five broad maxims, which he comments on in detail (1991, p. 78):

"1. *Category definition*: define good categories." The categories should be explicitly defined and sufficiently general (i.e., they should not depend on specific discourse and language contexts).
"2. *Accessibility*: make the system accessible." The choice of particular transcription symbols should be realized according to principles of simplicity and optimal readability (i.e., iconic symbols).
"3. *Robustness*: make representations robust." The symbols should not be susceptible to confusion, technical deficits, missing distinctions, and so forth.
"4. *Economy*: make representations economical." There should be no redundancy, but instead distinctiveness, restriction to the most essential phenomena of spoken language, and easy recognition.
"5. *Adaptability*: make the system adaptable." First, there should be a simple set of categories which help to realize a rough transcription; then, further categories which have to be defined in narrow correspondence to these basic categories should enable a fine and detailed transcription.

Edwards (2001, p. 322) gives full theoretical backing to these categories in ordering them into

Table 1 Relation of type of data and the time component

Data type/time	*What to consider before you start? (Time 0)*	*What to add to document? (Time 1–Time* n*)*
Recording-related metadata	Tape labeling conventions, media file formats and naming conventions	Recording medium, date, recorded persons, tape label
Time-free metadata	Staff questionnaire with conventions for assuring anonymity, participant's name, date and place of birth, sex, professional background, first contact with the L2	See Figure 2
Time-sensitive metadata	Conventions for protocols and other metadata	Intensity of contact with the new language community, language knowledge (subjective)
Annotations/ transcripts	File formats and naming conventions, annotation conventions and tools	Files and folders organization, controlled vocabularies for annotation values
Lexical data	Compatibility of annotation formats and exploration tools	Word lists, annotation value lists

1. *general principles*—encoding processes like transcription, coding, and markup; principles of category design such as discriminability, exhaustiveness, and contrastiveness; and principles of visual display such as proximity of related events, visual separability of unlike events, time–space iconicity, mnemonic marking, efficiency, and compactness;
2. *contrasting methods and assumptions*—distinguishing between format- and content-based decisions, the latter discussing words, units of analysis, pauses, prosody, rhythm, turn taking, and nonverbal aspects; and
3. *practicalities*—including technological advances.

While all these principles are debated today, most of them are widely respected. Most important technical progress has been realized in the last two decades. The architecture of different kinds of data has been developed in detail (see Table 1 and Skiba, Dittmar, & Bressem, 2008).

A Cross-Category Grid for the Comparison of Contemporary Programs

Dittmar (2008, pp. 81–165) provides a grid of relevant DT categories and subcategories in the perspective to isolate differences between the available systems (see Figure 1 for an outline).

Figure 1 enables us to compare the symbols selected in a TS for the most important parameters. The central categories relevant for the comparison are in the middle of the figure. The subcategories of each of these are given in a box with the same initial letter as the main category. So with respect to the "design" (D) of a given system, three characteristics (D-1, D-2, D-3) are given; the "turn," on the other hand, is subcategorized into four

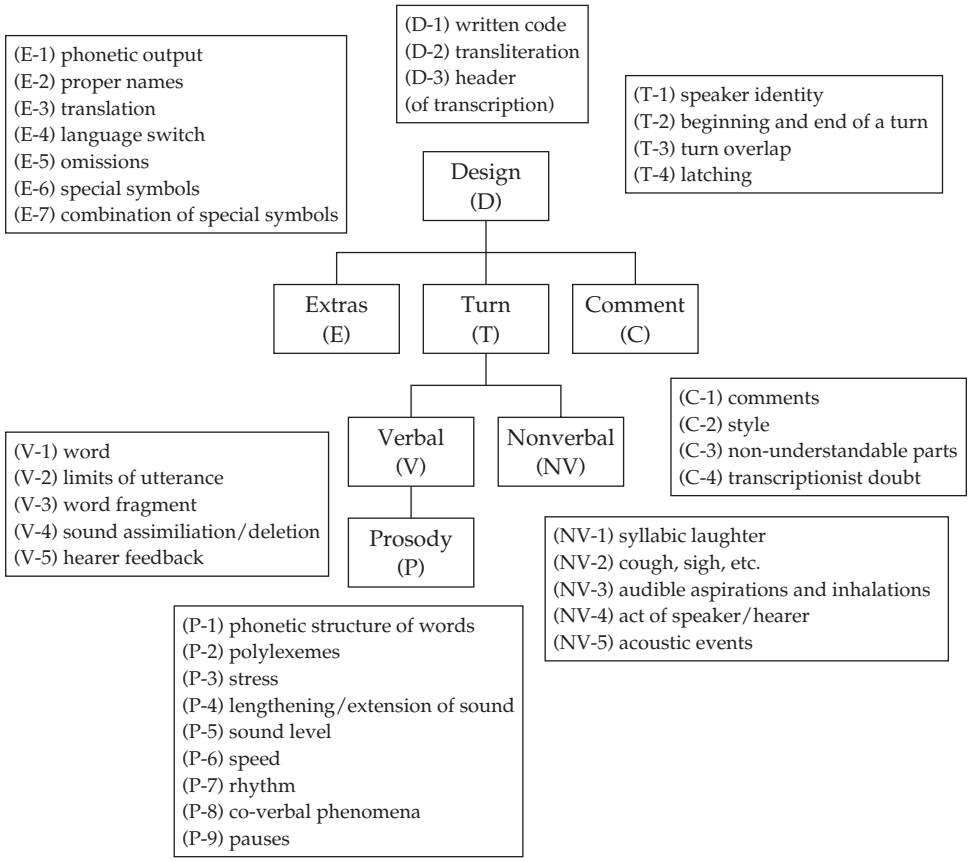

Figure 1 Grid for the comparison of contemporary DT programs

symbolic fields which have to be marked (and when they are not marked something important is missing); and so forth.

Some differences between the three most widely used DT systems are discussed below, with other minor alternative issues.

Conversation Analytic Transcription

The Basic Model

The earliest, most comprehensive, and internationally known DT is that practiced by Gail Jefferson and supervised by Harvey Sacks and Emanuel Schegloff within the framework of conversation analysis (CA) (Atkinson & Heritage, 1984, p. 12; see Schegloff, 2007, for supplements on important problems). It made DT accessible to a broad public of conversationalists all over the world.

Jefferson called the conventionalized principles of literary transcription a kind of *eye-dialect* ("put what you hear in the most iconic way into letters," e.g., *cuz* for 'because', *askedche* for 'asked you'), but with no particular prescription for its coding (see for a good illustration of these principles Jefferson in Atkinson & Heritage, 1984, p. 197). *Readability* and *attention to interactive processes* revolutionized transcription. Most attention is paid to

the fundamental category of *turn*. The borders of and transitions between turns (latching, simultaneity, overlapping, etc.) are conceived as the skeleton of conversational transcription. *Prosody* (differences in pitch, accent, emphasis, speed and volume of speech delivery, etc.) is taken into consideration, although the categories for its representation remain still too superficial (see below on GAT). Aspects of nonverbal behavior are commented on in double parentheses; for example, "((end of the sentence))."

Schegloff updated Jefferson's conventions (Atkinson & Heritage, 1984, p. 12) in Appendix 1 of his 2007 book. You can listen to model transcriptions for conversations in Schegloff (*n.d.*); other model transcriptions can be looked up in Schegloff (2007, pp. 270–86). CA transcription is widely used by Anglophone conversationalists.

As reasonable as this first revolutionary "simplest systematics" of transcription seemed to many linguists working in pragmatics in the 1980s, critical reviews revealed its weaknesses and missing aspects. Criticisms included the absence of leading theoretical principles (Du Bois, 1991; Edwards, 1993b, 1993c), the underrepresentation of prosodic distinctiveness (Selting, 1996), the arbitrariness of Jefferson's "eye-dialect," and the nonapplicability of transcription data processing computer programs. For analyzing particular discourse variants (particles, connectives, syntactic options, etc.), the annotations should have been chosen to fit existing PC programs which could handle the basic data for frequency analysis (corpus linguistics). Many conversationalists therefore used CLAN (Child Language Analysis) from MacWhinney's (1991) CHILDES project. Other criticisms of technical aspects, such as import of tools like PRAAT or ELAN, have been raised by Kowal and O'Connell (1995), Sager (2001), and Wittenburg, Skiba, and Trilsbeek (2004). The best modern account of what is needed (tools, computer programs, etc.) is to be found in Deppermann and Schütte (2008). "Radical" conversationalists maintain that a manageable "simple systematics" of transcription is sufficient because researchers should base their descriptions as far as possible on authentic spoken sources.

The GAT Model

GAT (Gesprächs-Analtytische Transkription, 'transcription for the analysis of conversation') was developed by a group of German (conversational) linguists in order to create a substantial, robust, easily readable, and manageable system which all linguists interested in discourse analysis could use. According to these authors, a standardized version used by everybody in the same way would facilitate cross-conversation analysis and the comparison of data. It was conceived for the transcription of everyday talk and communicative genres; it is very much inspired by Jefferson's CA conventions, but supplies the field of prosody with necessary systematic detail, distinguishing between different qualities of word and sentence accent, pitch register (changes in the pitch contour), and pitch volume (forte vs. piano, accelerando vs. rallentando, crescendo vs. diminuendo). Attention is paid also to types of *pauses*, ways of aspiration, and laughter, among others. GAT distinguishes *basic* and *narrow* transcription, the latter mostly concerned with fine annotations of prosodic aspects. Like the basic model described above, GAT starts with a transcription header specifying the participants involved in the recording, the kind of social encounter, the technical equipment, and relevant observations on the part of the researcher (Dittmar, 2008, pp. 141–5; see Selting, *n.d.*).

GAT is used in Germany (as the most standardized DT) and many other parts of Europe, particularly Austria, Switzerland, France, and Italy. Integrating most of the CA conventions and elaborating annotations for turn (taking) and prosody, it is a valuable candidate for a worldwide standard format of transcription. GAT is not linked to a particular tool of discourse annotation like EXMARaLDA (see below) or CLAN, but stands on its own. GAT 2, a revised version of GAT 1, appeared too late for consideration in this entry (Selting et al., 2009).

First and Second Language Acquisition

CHAT (Codes for Human Analysis of Transcripts), developed by Brian MacWhinney on the framework of the CHILDES project since the late 1980s, offers a rich semiotic repertoire for the representation of verbal, paraverbal, and nonverbal discourse data. The conventions for coding data are tailor-made for studies of first and second language (L1 and L2) learning. On the one hand, there are iconic symbols as in CA and GAT; on the other hand, signs and symbols are used which do not go back to literary transcription and do not have a natural (iconic) analogy to the external world (e.g., "@" for laughter). This aspect of the design is most visible in the conventions for discourse aspects (see for a detailed evaluation Edwards 1992, 1993a). but technically there is no real problem. The great majority of L1 and L2 projects all over the world work with CHAT. L1 and L2 learning is documented nearly completely by the CHILDES system, which consists of three parts:

1. documentation of discourse and talk coded in CHAT;
2. a data bank of transcripts formatted in CHAT (documentation of longitudinal studies, both L1 and L2); and
3. the computer program CLAN, a tool for data analysis.

A detailed handbook on CHAT and CLAN, giving information about all the coding principles and possibilities of data analysis, can be downloaded from http://childes.psy.cmu.edu. A great advantage of CHAT is the possibility of defining special tiers in the transcription for coding in detail particular phonetic, phonological, morphological, syntactic, semantic, or pragmatic aspects of linguistic phenomena under study (see in particular Dittmar, 2008, pp. 158–60).

Other Issues

To match the aims of a particular empirical linguistic study, there are still other TSs available. The best and most detailed collection of different approaches is documented in Edwards and Lampert (1993). Skiba et al. (2008) give an overview of decisions, options, and solutions for transcribing, archiving, and analyzing data corpora with different tools according to specific theoretical aims and methodological criteria; for encyclopedic overviews see Edwards (2001) and Gibbon et al. (1997). A fresh account of the most recent developments in the field is Deppermann and Schütte (2008); the pragmatic journals *Pragmatics* and *Gesprächsforschung* (www.gespraechsforschung.de) currently publish articles on transcription.

Problems of an Annotation System for Nonverbal Behavior

There is a quite lively debate about the degree to which nonverbal behavior should be integrated into an overall transcription combining verbal and nonverbal aspects. DT systems like CA and GAT code transcriptions without explicit nonverbal annotations. As mentioned above, they solve the problem by commenting verbally on the context in double parentheses; for example, "((X eats))." A full account of the state of the art is given by Dittmar (2008, pp. 169–86). One main problem in coding nonverbal behavior is the segmentation of the kinesic behavior. An integrated coding system has been worked out by Sager (2001; 2005), published in German. Sager's annotation system is quite readable and not too complex. It is, however, difficult to get an adequate picture of an ongoing conversation when lots of verbal and nonverbal symbols appear simultaneously. An integrated transcription is as difficult to read as all the notes of a symphony.

An alternative solution is the interlinear integration of video clips which match, in a well-selected sequence, the turns of talk. The visual correlation of the verbal data promises

a more direct, accessible, and intuitive interpretation of the simultaneous gestalt of verbal and nonverbal. There is good technology available for the integration of pictures into the current transcription (http://www.lat-mpi.eu/tools/elan, http://www.mpi.nl/IMDI/documents/Proposals/IMDI_MetaData_3.0.4.pdf).

Computer Programs

Design

The transcription design is a central, but not the only relevant, concern of a sophisticated corpus linguistics. Metadata documentation is an important part of establishing a corpus. Deppermann and Schütte (2008, p. 184) give advice on indicating all details of an audio recording. Another problem is that transcriptions have to be edited. There are three modes in which this can be done.

1. In the *vertical or sequential* mode, each turn is represented in a new transcript line. This mode of writing inherently marks the boundaries of turns. GAT demands a segmentation of lines according to functional and prosodic units. This sequential mode can be handled by the transcript editor EXMARaLDA (see below), which can convert data from one mode into another.
2. In the *partiture* mode, similar to a musical score, every participant in a communicative event is assigned his or her own individual line, which, in principle, gives a potentially endless horizontal axis. Specific transcript editors (e.g., EXMARaLDA; see below) enable researchers to represent talk in such a way that it is conceived of as being located on a continuous (time) line.
3. In the *column* mode, the course of turns is represented vertically from top to bottom, not horizontally as in the partiture mode. Each participant is assigned his or her own column. This mode has advantages for the presentation of asymmetries in talk and for focusing on single speakers. It has been used for the analysis of parent–child interaction and for language acquisition research (e.g., the CLAN editor in the CHILDES project). Therefore, import and export as well as convertibility of annotation files are key features that need to be considered prior to data annotation.

Annotation

Modern annotation tools for transcription, coding, and so on can greatly facilitate direct access to the underlying media and thus profoundly influence the annotation process and its end products. Starting with real (primary) data, the annotation process facilitates the coding of pronunciation and intonation; in that sense, modern transcription can also be seen as a kind of annotation—an annotation of the data stream (Bird & Liberman, 2001). Computer programs that allow direct integration of media and system-independent coding are recommended. Another way to ensure quality is through Unicode-based character encoding and XML-based structures. Table 1 above and Figure 2 illustrate the kinds of data annotated according to specific functions of corpus description. There is a logic to the architecture in the way of ordering (non)verbal data, types of metadata, files and folders organization, and technical and medial representations. A detailed overview of the solution to these problems is found—as an overview of the relevant computer programs and their theoretical basis—in Dittmar (2008) and Skiba et al. (2008). Figures 2, 3 and 4 show how to represent the metadata of informants in a representative pattern.

Intraduction of the informants (first interview)

1. Biographical data/social data
1.1 Blinded name, number, and code
1.2 Sex
1.3 Date and place of birth
1.4 Last residence in Poland
1.5 Personal situation in Poland
1.6 Education
1.7 Training/work in Poland
1.8 Arrival in Berlin
1.9 Beginning of recordings
1.10 Language competence in German
1.11 Other languages

2. Initial situation in Berlin
2.1 Acquisition of German school contexts (type, length, intensity of the course)
2.2 Assessment of language competence in German
2.3 Work (type, how many hours per week)
2.4 Personal situation/social contacts
2.5 Living arrangements

Figure 2 Time-free data: social data—first interview questionnaire (from the P-MoLL project; Skiba, Dittmar, & Bressem, 2008)

Informant (code):
Protocol:

Name: Date: Time of recording:
Recording device: Place:
Persons present:

If the learner learns German at a school:
a) where
b) since when
c) how many hours a week
d) which textbook
Which lessons have been dealt with since the last interview?
Personal learning impression:

Situation (food, drinks):
Topics of conversation (striking features of nonverbal aspects such as gestures, facial expressions, shock):

Figure 3 Sheet for coding metadata

File name: P-DS6E1.CCP

L1: P
L2: D
INFORMANT: I=S(ascha) P10
TEST NUMBER: 6
CYCLE: 1
TEST NAME: CCP
DATE OF RECORDING: 07.04.86
PLACE OF RECORDING: seminar room, FU Berlin
RECORDING DEVICE: SONY TCM-600 B
DEVICE USED FOR TRANSCRIPTION: SANYO TRC 8700
TRANSCRIBED BY/AT: Lena, 08.04.87
SIDE OF TAPE: 1
VIDEO (Y/N): N
EXPERIMENTER: Lena
LENGTH OF STAY AT THE TIME OF THE RECORDING: 7 months

Figure 4 Example of header for transcriptions containing relevant information on the recording

Programs

There are at least three major PC programs which offer enormous resources for handling and analyzing DT data with different, very efficient tools.

1. EXMARaLDA (Extensible Markup Language for Discourse Annotation) is an XML-based system for doing transcription and corpus description by computer technology. The transcript editor allows the conversion of one coding system into another. EXMARaLDA uses a partiture editor (see above) and software tools such as the *corpus manager* and particular *exploration tools* which open large possibilities of storing, processing, exploring, and manipulating data. EXMARaLDA can also import and export other programs, including the following two.
2. PRAAT is a sophisticated program for analyzing all kinds of prosodic phenomena http://www.slp.utoronto.ca/Assets/SpeechLanguage+Pathology/assets/PrattMan.pdf, http://www.fon.hum.uva.nl/praat or www.praat.org.
3. ELAN is a very efficient anthropological tool of cross-level and metadata description (see Skiba et al., 2008; Wittenburg et al., 2004).

Exploration

Combining metadata and annotation searches expands the possibilities for data exploration. For example, some programs (e.g., CLAN) correlate length of stay with morphosyntactic variables, but only when this kind of information is stored in the conventions chosen for file names. More generally, adhering to data format standards at each stage of the study is of crucial importance, as is widely acknowledged in discussions found in the most important coding manuals, including those produced in conjunction with CHILDES (MacWhinney, 1991), ESF (Perdue, 1993), and LIDES (Barnet et al., 2000). An alternative to existing norms is XML-based formats. These allow easier conversion of data and are future-oriented (see Wittenburg et al., 2004).

Practicalities

Transcription is a time-consuming activity, and high levels of performance and precision are necessary: Talented transcribers are often talented musicians. Transcription is a scientific art. The more reliable it is, the better the observations of everyday verbal behavior. In addition to Dittmar (2008), not listed here because it is in German, the best introductions and tutorials for doing transcription are:

1. Du Bois, Cumming, Schuetze-Coburn, and Paolino (1992)—a DT manual of 225 pages treating all possible problems and giving practical examples and advice;
2. Depperman and Schütte (2008)—practical and, in particular, technical support; and
3. Edwards (2001)—practical and technical support.

SEE ALSO: Conversation Analysis and Transcription and Data; Interactional Sociolinguistics as a Research Perspective; Pragmatics in the Analysis of Discourse and Interaction

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Technology and Translation

LYNNE BOWKER AND DES FISHER

The application of technology to translation got off to an early but inauspicious start in the post-World War II period, when initial attempts were made to develop fully automatic high-quality machine translation systems intended to replace translators. Researchers learned, however, that translation was a highly complex task consisting of more than simply word-for-word substitution. Contextual, pragmatic, and real-world information proved very difficult to program, and attention has since shifted to finding ways in which computer tools can assist, rather than replace, professional translators. Indeed, in our current fast-paced, globalized, and information-thirsty society, the use of technology by translators is no longer a luxury but a necessity if they are to meet escalating market demands for the speedy delivery of high-quality texts in many languages.

Computer-Assisted Translation Tools

Many different types of electronic resources and tools are of interest to translators when they carry out computer-assisted translation (CAT). These include electronic dictionaries and term banks, word processors, voice recognition software, corpus analysis tools, terminology extractors and terminology management systems, localization tools, translation memory systems, and even machine translation systems. In addition, it is becoming increasingly common to find a range of such tools integrated into a tool suite or translation environment tool (TEnT), which allows the various elements to interact or the output of one to become input to another. In fact, TEnTs are the most popular and widely marketed translation tools in use today. While individual components differ from product to product, the main module around which a TEnT is constructed is a translation memory (TM), which, in turn, usually functions in close association with a terminology management system (TMS). Detailed descriptions of the operation of TEnTs and their components can be found elsewhere (e.g., Bowker, 2002; Quah, 2006; L'Homme, 2008), but a brief explanation follows since a basic knowledge of how these tools work is key to understanding how they have impacted the translation product, process, and profession.

A TM tool allows users to store previously translated texts and then easily consult them for potential reuse. To this end, source and target texts are stored in a TM database as bitexts. An aligned bitext is created by first dividing the texts into segments—which typically correspond to sentences—and then linking each segment from the source text to its corresponding segment in the translation. When a translator receives a new text to translate, the TM system first divides this new text into segments and then compares each of these against the contents of the TM database. Using pattern matching, the TM system determines whether any portion of the new text has been previously translated as part of a text stored in the TM database. When the TM system finds matches for a given segment, they are presented to the translator. These matches can take a number of forms, including exact matches (identical), fuzzy matches (overall similarity), partial matches (a specific portion is the same), and term matches (a term appearing in the text segment has a corresponding entry in the integrated terminology database). A translator is never obliged to accept the matches identified by the TM system; these are offered only for consideration

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and can be accepted, modified, or rejected as the translator desires. Moreover, if no match is found for a given segment, the translator will have to translate it from scratch or send it to an integrated machine translation system to produce an initial draft.

While TM systems are at the core of TEnTs, they are often integrated with TMSs, which can greatly enhance TM functionality. A TMS is used to store terminological information in and retrieve it from a terminology database or termbase. Translators can customize term records with various fields (e.g., term, equivalent, definition, context, source), and they can fill these in and consult them at will in a stand-alone fashion. Retrieval of terms is possible through various types of searches (e.g., exact, fuzzy, wild card). However, termbases can also be integrated with TM systems and work in a more automated way. For example, with an automatic terminology look-up feature, a TMS can scan a new text, compare its contents against a specified termbase, and automatically display records for any matches that are found. If they so choose, translators can then paste the equivalent found on the term record directly into the target text with a single click. Moreover, translators can further automate this step by using a feature known as pretranslation, whereby the system will operate in batch mode to automatically replace any terms in the text with their equivalents from the termbase.

Benefits and Costs

The oft-cited benefits of using TEnTs include increased productivity and improved quality. By recycling relevant portions of previously translated texts, translators can work more quickly. In addition, automatic consultation of termbases results in greater consistency. Quality can also be enhanced by using TM databases and termbases whose contents are specific to certain clients or text types. Several recent surveys of the translation industry (e.g., Lagoudaki, 2006) confirm that an increasing number of translators—across the public, private, and freelance sectors—are indeed availing themselves of such technology, and many claim to have a higher income as a result (Gauthier, 2008, p. 10). Nevertheless, the impacts of technological integration are wide ranging, and potential users must evaluate both the benefits and the costs of translation tools before adopting them.

For example, the type of text to be translated might influence such a decision. Given the way TMs operate, any gain in efficiency depends on the TM's ability to return relevant matches. Texts that are internally repetitive or that are similar to others that have already been translated (e.g., revisions, updates, and texts from specialized fields) will tend to generate useful matches. Texts that are less "predictable," such as marketing material or literary works, will not. Once matches are found, simply being able to automatically copy and paste desired items from the TM database or termbase directly into the target text can save translators typing time while reducing the potential for typographic errors. However, significant gains in productivity are usually realized in the medium to long term, rather than in the short term, because TEnTs are sophisticated tools whose introduction entails a learning curve during which productivity could decline. In fact, a number of translators find these tools so challenging to use that they simply give up on them before realizing any such gains (Lagoudaki, 2006, p. 17).

With regard to quality, CAT tools still depend on human translators; should a client have a TM that it wants used for its work, the translator has no control over its contents. Furthermore, the segment-by-segment processing approach underlying most TM tools means that the notion of "text" is sometimes lost (Bowker, 2006). For example, translators may be tempted to stay close to the structure of the source text, neglecting to logically split or join sentences in the translation. To maximize the potential for repetition, they may avoid using synonyms or pronouns. Moreover, where multiple translators have contributed to a collective TM database, the individual segments may bear the differing styles of their

authors, and when brought together in a single text the result may be a stylistic hodgepodge. Although such strategies may increase the number of matches generated by a TM, they are likely to detract from the overall readability of the resulting target text and thus negatively impact quality.

Professional Implications

Translation technology also affects the professional status of translators, their remuneration, and their intellectual property rights. For instance, some clients ascribe less value to the work of the translator who uses a TEnT. If working with such tools is faster and easier than human translation, clients may ask to pay less for it. When a TM offers matches, should the translator offer a discount? Clients may be even more demanding if they use their own TM to pretranslate a text before sending it to a translator. Yet, even exact matches must be evaluated to determine their suitability for the new target text, and the translator may need to make adjustments depending on the communicative context. In addition, using technology comes with some overheads, such as the time required to update and maintain databases. As a result, new payment models, such as hourly charges, fixed-price contracts, or even a volume-based tiered-pricing model (Joscelyne & van der Meer, 2007b), are beginning to replace traditional fee structures, such as billing by the word or page. Furthermore, the trend away from desktop TM systems toward Web- and server-based access to TM databases is giving more control to clients and less to translators, particularly freelancers. Under this model, translators are restricted to using the client's databases and do not have the option of adding matches to or retrieving them from their own TMs, which makes it difficult for translators to build up their own linguistic assets (Garcia, 2008, p. 62).

Ethical, financial, and legal questions surround the ownership and sharing of electronic translation data. The contents of a TM are source texts and translations, the ownership of which presumably remains with the client. However, when collected as a database, control and ownership become uncertain. Various stakeholders may wish to exchange or sell a corpus, TM database, or termbase, and initiatives such as the TM Marketplace, the TAUS Data Association, Lingotek's collaborative translation portal and Lionbridge's Logoport have been established to facilitate such efforts (Joscelyne & van der Meer, 2007a).

Future Developments

Looking to the future, interest in translation technology will continue to grow, and tools and applications will advance likewise. For instance, the profession is likely to sustain an increased integration of technology such as voice recognition tools, as well as controlled-language checkers and translation quality assurance software. The integration of machine translation with TMs is also on the rise (Joscelyne & van der Meer, 2007b). Researchers are actively working on enhancements to TMs that would see the integration of linguistic analysis (e.g., to neutralize the effects of inflection on matching) or the possibility of identifying the precise sections of the target-language segment that should be preserved or modified in the case of fuzzy matches. Tools to extract bilingual terminology and phraseology from comparable (i.e., non-translated) rather than parallel corpora are also under active development.

Standards such as Translation Memory eXchange (TMX), TermBase eXchange (TBX), and XML Localization Interchange File Format (XLIFF) are becoming more widely adopted (Savourel, 2007, p. 37). The range of available open-source translation tools continues to grow and will undoubtedly increase the uptake of translation technology. Moreover, other technological frameworks are also beginning to emerge, such as the use of wikis for collaborative translation (Désilets, 2007)—often in the context of volunteer efforts—and

crowdsourcing or hive translation, where the work of nonprofessional translators is harnessed (Garcia, 2009).

The profession is also likely to undergo an increased commoditization and sharing of resources such as corpora, TM databases, and termbases, as well as further migration toward Web- and server-based access to these resources (Joscelyne & van der Meer, 2007a, 2007b). In addition, new types of jobs are appearing in the field, such as translation technicians or paratranslators (similar to paramedics or paralegals), who are responsible for managing the implementation and maintenance of translation technology.

Translation technology has clearly influenced translation practices and transformed how we think about the product, goals, and uses of translation work. Technology and translation will continue to evolve and to influence one another, and members of the profession must take care to develop best practices that take into account both the possibilities and the limitations of technology use in this field.

SEE ALSO: Computer-Assisted Translation; Post-Editing of Machine Translation; Technology and Terminology; Translation, Localization, and Internationalization; Translation Tools

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Translation and Interpreting and Bilingualism

CLAUDIA V. ANGELELLI

Introduction

Translation and interpreting are deeply interconnected with bilingualism. Without high degrees of bilingualism, neither translation nor interpreting is feasible. This does not mean, however, that either translation or interpreting is a by-product of bilingualism. Rather it means that high attainment in bilingualism is a precondition for highly proficient translation/interpreting. The relationship between language ability, types of bilingualism, and translation/interpreting performance has not been sufficiently researched.

Studies on the intersection between bilingualism and translation or interpreting do not abound. They have emerged from various fields and have focused on different issues. Examples coming from education—especially in the area of the gifted and talented—and bilingualism are studies that have looked at the ability of certain talented bilinguals to translate or interpret for their immediate communities even at early ages (Valdés, Chávez, & Angelelli, 2000; Valdés, Chávez, & Angelelli, 2003; De Ment, Buriel, & Villanueva, 2005; Orellana, 2009). Studies from educational psychology and psycholinguistics have shed light on how bilinguals process information simultaneously in two languages (Bialystok, 1991; Bialystok & Hakuta, 1994). Research in translation and interpreting studies (Harris, 1978, 1980; Angelelli, 2010) have looked at the ability of bilinguals to act as translators-interpreters and have compared bilinguals and professionals in their ability to assess good performance (Colina, 2008, 2009). These fields of study have conceptualized the interaction between bilingualism and translation/interpreting differently. In the field of translation and interpreting studies, which is the focus of this entry, bilingualism has not been problematized enough. In some instances it appears to be conceived as a monolithic concept (e.g., "true" bilinguals are those with high degrees of proficiency in the two languages; others with lower degrees of proficiency are considered language learners) or it is taken for granted. A prevailing view is that for a professional to be considered bilingual he/she has to exhibit equal mastery of the two languages to be able to work with them or to be able to interpret in both directions (e.g., English into Chinese and Chinese into English). In other words, an interpreter or a translator seems to be considered bilingual only when he/she has attained native-like control of two languages (Valdés et al., 2003).

This conceptualization differs from the prevailing one in the field of bilingualism, which may consider bilinguals all those individuals who have a range of competencies that may not necessarily be the same in both languages. As such a bilingual could be an individual who has minimal competence in reading, writing, speaking, or listening in a second language or may be a person who can make use of two or more languages in everyday situations even with linguistic disfluencies (Valdés & Figueroa, 1994). The truth is that bilingualism is not a monolithic construct; instead it is fluid and varies across the individual's lifetime. Researchers have created typologies to help describe bilinguals' abilities (e.g., Valdés & Figueroa, 1994, pp. 7–20).

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Types of Bilinguals

Bilinguals can be classified in several ways. One possibility is to consider the reasons that led individuals to become bilinguals, in other words, if it was an election or a life circumstance that resulted in the person's bilingualism to evolve. Based on the different reasons or conditions in which bilingualism occurs, it may be classified as circumstantial or elective bilingualism (Valdés & Figueroa, 1994, p. 12). Elective bilinguals are those who acquire a language by choice. Either through formal classroom contexts or through less formal learning environments such as home-stay exchange programs, these individuals acquire a language different from their mother tongue. The term "elective" refers to the fact that these individuals do not really need the other language to function in their immediate communities. High-level elective bilingualism is encountered (as well as required) in translation or interpreting classrooms and among practicing translators and interpreters.

In contrast, circumstantial bilinguals need to acquire a second language, the societal language in which they find themselves newly immersed, in order to survive in their immediate communities and participate fully in the new society. These individuals find themselves in a place where their first language is no longer enough to meet their communicative needs (Valdés & Figueroa, 1994, p. 12). Bilingualism thus co-occurs with many other circumstances of a person's life. Some of these can be intermarriage, processes of nationalism and federalism, the need for education, or trade, among other social factors (Valdés & Angelelli, 2003). In addition, languages in contact also lead to circumstantial bilingualism (Appel & Muysken, 1987). For example, a Spanish-speaking Guatemalan family immigrates to the USA, seeking economic opportunities or different educational possibilities for their children. Neither of their languages, Spanish or Mixtec, represents the language used in their new country. Therefore they must acquire a certain degree of proficiency in the new societal language (English) to participate economically, educationally, politically, and socially beyond their immediate community. At the same time, they need to maintain their home languages to be able to communicate with members of their family and their community back home. Their bilingualism is not a matter of individual choice as much as the result of a change in their life circumstances.

Bilingual Typologies and Translation/Interpreting Professionals

Translation and interpreting professionals generally discuss their bilingualism in terms of their working languages (i.e., the languages in which they are proficient enough to work into/out of) rather than in terms of their ability to communicate in them. For this professional group, an equilingual seems to be the model. Professional associations that bring together translators and interpreters (e.g., American Translators Association [ATA] or Association Internationale des Interprètes de Conférence [AIIC]) also use this classification in their professional directories. According to these directories, the strongest language is generally called the A language and the second strongest one is the B language; the third is the C language, and so on (see AIIC, 2010). Often the B language coincides with the elective language of a professional, and the individual's native language is labeled as his/her A language. In addition, interpreters consider their C language as a passive language (as opposed to a working or active language). This means that they can comprehend the C language enough to work out of it but they cannot work into it. As mentioned earlier, however, bilingualism is fluid and this classification may vary throughout one's professional career. For example, if/when a translator/interpreter has moved into a country or region where his/her C language is the societal language, in time his/her C language may change and become a B language, turning a passive language into an active one. In addition, in those professional associations in which there are tests available to certify interpreters/

translators, the distinction between the two languages is also made for certification purposes. Tests measure languages separately. Therefore a translator can be certified only from B to A or A to B (see ATA, *n.d.*), or in both directions.

The concern about demonstrating a high degree of bilingualism and the expectation of working languages are not the same across all types of interpreting or all professional associations. For example, while AIIC has explicit ways of categorizing languages, and AIIC interpreters are expected to identify the languages in their language combination as A, B, or C, this is not the case for the National Association of Judicial Interpreters and Translators or for the California Healthcare Interpreting Association, to name just a couple of others. Interpreters declare a language combination (e.g., English–Chinese) without specifying if they can work into or out of one or the other). Interpreters in the legal or medical setting do not work only into or out of one language: They generally have to work in both directions. This may be due to the nature of the encounters in which they work. Since encounters between health-care providers and patients or between defendants and lawyers involve dialogues in which monolingual interlocutors use only one language, interpreters are expected to broker the interaction by using both languages in both directions (i.e., interpreting out of Chinese into English and out of English into Chinese; CHIA, 2002).

Bilingual Typologies and Translation/Interpreting Classrooms

Circumstantial bilinguals together with elective bilinguals make up the student population of a translation or interpreting classroom. Research in bilingualism has established that not all bilinguals are identical, and they cannot be subsumed under a single standard (Valdés & Figueroa, 1994, p. 7). This fact bears consequences in the education of translators and interpreters. Thus, the notion of circumstantial or elective bilingualism is essential to the fields of translation and interpreting pedagogy. This difference among students impacts directly on the development of their professional ideologies among future translators and interpreters. The elective bilingual generally becomes bilingual through formal education, by taking courses, although it may also be the consequence of elective exposure, for example traveling or spending time in the country where the other (elective) language is spoken. Some circumstantial bilinguals become translators/interpreters in order to help their families and immediate communities communicate. They may think they become translators/interpreters to help or advocate according to their family needs. In sum, since not all bilinguals are alike, and since different types of bilinguals populate translation and interpreting classrooms, it is essential to bear these differences in mind when educating future translators/interpreters. Their different backgrounds, life experiences, and linguistic experiences, as well as their perceptions of their roles and of their own bilingualism, may impact their performance in the classroom (Angelelli, 2010).

In addition, circumstantial bilinguals (also called "heritage speakers" when it comes to their language education, as the language is that of their families and they have been exposed to that language at home) present a wide range of language abilities. Some heritage speakers may have consistent literacy skills, while others may be able to read at an advanced/superior level but have difficulties writing. Others still may have high oral skills but be less able to either read or write. Most heritage speakers have issues with register and at times may have underdeveloped language repertoires. Therefore, in translation and interpreting classes, language ability (as a precondition to translation/interpreting) cannot be taken for granted and degrees (and types) of bilingualism need to be explored. In addition to how students perform, both in terms of language and in terms of translation/interpreting skills, we also have to consider how these different types of bilinguals conceptualize their roles as translators and interpreters and their views on professionalism. Types and categories of bilinguals also represent the different upbringings of individuals

who perform or may perform as translators or interpreters. Their upbringings greatly impact how they understand different situations and shape their expectations as they provide (or receive) a service. Among immigrant and deaf families, communicative needs are constant and professional translators/interpreters are sometimes out of reach, due to either cost or availability. Therefore, these circumstantial bilinguals may grow up thinking translation and interpreting is a more personal than communicative skill; it is a service they have/want to perform for their families. This different conceptualization of what service is, what an interpreter does, and where the boundary between the professional and the personal roles lies is essential to the socialization of future interpreters and the construction of a professional ideology. This is especially important in the education of translators and interpreters. These differences should also be considered at the time of assessing students of translation and interpreting (Angelelli, 2010).

Challenges in Research

The difficulty faced in studying bilingualism per se, as well as in reference to translation and interpreting, is that it is confounded by the multitude of conditions and situations in which bilingualism and translation/interpreting may occur. Researchers have pounded questions related to how individuals become bilinguals, the relationship between interpreting and neurolinguistics, the role that each of the two languages plays in the life of the bilingual, and how high levels of bilingualism can be attained, described, and measured without reference to monolingual standards. Research has also looked at bilingual individuals in a situated context and raised questions regarding the relationship between majority and minority monolinguals in situations of language contact. Questions have been about who interprets for whom in which situations, what the social characteristics of the different kinds of interpreters are—in terms of language proficiency, life experiences, socioeconomic status, and ethnicity—and the challenges encountered by interpreters brokering communication between speakers of more and less dominant languages (Valdés & Angelelli, 2003, p. 69).

Researchers (Harris, 1978, 1980; Harris & Sherwood, 1978; Toury, 1984, 1995; Hakuta, 1986; Malakoff & Hakuta, 1991; Zentella, 1997; Valdés et al., 2000; Valdés et al., 2003) have studied the abilities of bilingual children and youngsters in order to determine whether the capacity to translate/interpret is innate or acquired. Their research has also demonstrated the special cognitive, linguistic, and sociolinguistic abilities they exhibit as they perform the role of family (volunteer) interpreter. These studies conducted with bilingual children and youngsters are important to understand the developmental stages of translation/interpreting as well as the acquisition of skills, motivation, and learner strategies. However, they are not without controversy. Some organizations expressly discourage or severely condemn the use of minors in interpreting. Even when there are instances in which bilingual youngsters have to interpret for their parents and members of their immediate families because society cannot meet their communicative needs, the presence of these bilingual youngsters is either denied or regarded with some suspicion. Thus, the implementation of these important studies is, at times, problematic.

Research in Bilingual Youngsters, Translation, and Interpreting

Work with young interpreters, while not focused particularly on bilingualism, contributes to our understanding of life experiences of the individuals who begin to interpret early in their lives (Valdés & Angelelli, 2003). With the exception of early work on young interpreters and translators (Harris, 1978, 1980; Toury, 1984, 1995) and historical work on translation

and interpreting (Karttunen, 1994), very little has been written about the lived experiences of interpreters or about the development of such exceptional types of bilingualism within the field of translation and interpreting studies.

Researchers have observed the role that bilingual youngsters, and many times children, have played in attempting to help their parents by serving as their interpreters or translators (Zentella, 1997; Valdés et al., 2003; Orellana, 2009). These parents and family members who do not speak the societal language receive assistance from their children in everything from placing an order at a restaurant, renewing a driving license, or understanding their doctor (Valdés et al., 2003). Bilingual youngsters step up to interpret for their families and members of their immediate communities in view of: (a) the pressing communicative needs of monolingual speakers, (b) the shortage of qualified interpreters, and (c) the youngsters' own bilingual abilities (Valdés & Angelelli, 2003). By studying bilingual communities, researchers have shed light on how and why monolingual adults and bilingual youngsters team up to cope with communicative needs.

During the first study of young circumstantial bilinguals performing as interpreters, conducted in a high school in California (Valdés et al., 2003), two distinct findings became apparent. First, although some students were classified by their teachers as low-level English speakers (the societal language), their English abilities when interpreting for their families were functional, notwithstanding minor errors and disfluencies, so that the meaning of the message was conveyed and understood. Second, their interpreting skills were sufficiently advanced to allow them to convey the tone and stance of the English message to their parents. Furthermore, in terms of their heritage language, while some second- and third-generation children of immigrant families may lose the command of their native language in the process of adapting to the new culture and its language, the students in the study mentioned above acquired English while retaining their heritage language, Spanish. This ability to use the heritage language effectively while interpreting for family and friends is present not only in bilingual children but also in college students. De Ment et al. (2005, pp. 259–61) report on Asian and Latino college students who continue to be called upon to translate for their parents, as immigrant parents continue at times to feel uncomfortable with their English-language abilities and their limitations in communication.

Another interesting feature of bilingual youngsters acting as interpreters is that many of them perform interpreting with ease for their families with absolutely no training or formal education in either translation or interpreting (see for example Zentella, 1997; Valdés et al., 2003; De Ment et al., 2005; Orellana, 2009). While bilingual youngsters successfully carry out complex communicative activities as language brokers in bilingual interactions, their languages are evolving. Therefore, while their performance may have been marked by disfluencies (Valdés et al., 2003), they nevertheless perform a task similar to that of translators and interpreters. What sets circumstantial bilinguals who choose to interpret for their families and immediate communities apart from translators or interpreters is (a) that they mediate interactions between members of communities with which they have strong bonds and cultural ties and (b) that they do not have the privilege of choosing among the interactions, settings, topics, and situations in which they interpret or translate. They face challenging situations which many times involve the welfare of their own family members. This makes situations much more personal and sensitive. Young interpreters become advocates, usually for a parent or close family member, under exigent circumstances (Zentella, 1997; Valdés et al., 2003). Controversial as these issues might be, they need to be explored rather than taken for granted, judged, or ignored. They reveal important information about the interaction between bilingualism, translation, and interpreting. Life circumstances often shape bilingual youngsters for the roles they play as family translators/interpreters, providing them with the necessary repertoire of habits, beliefs, and values, the appropriate models of emotional response, and the modes of perception which build upon vital skills and knowledge.

SEE ALSO: Bilingual Literacy; Health-Care, Medical, and Mental Health Interpreting; Literacy and Bilingualism; Literacy and Heritage Language Maintenance; Multilingualism; Signed Language Interpreting Profession; Translation and Interpreting: Overview

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Translation and Interpreting: Overview

CLAUDIA V. ANGELELLI, BRIAN JAMES BAER, AND NADJA GRBIC

Within the field of applied linguistics the subfields of translation and interpreting, including signed language interpreting, have experienced explosive growth over the past two decades. The reasons for this are many and varied, ranging from the increasing globalization of the economy to the creation of new multinational political entities, such as the European Union, to a growing recognition that access to quality mediation in crosslinguistic communication is a basic human right. Current immigration patterns, which produce immediate linguistic needs, coupled with instant crosslinguistic information sharing and exchanges made possible by the Internet, such as video conferencing, Skype, and other electronic resources, have greatly increased demand for translation and interpreting services and have highlighted the need to produce more high-quality translators and interpreters.

Recent developments in the study of translation and interpreting reflect these changes in demand and mode of delivery. Technological innovations, while increasing demand, have also contributed to efficiencies in the delivery of translation and interpreting services, as well as in the study of translation and interpreting products and processes. All this has, in turn, accelerated the professionalization of translation and interpreting, as witnessed by the growth of professional associations offering certification and professional development programs, and the emergence of translation and interpreting studies as an independent discipline within institutions of higher education, supported by scholarly journals, book series, publishing houses, and funding opportunities.

Advances in computer-assisted translation and interpreting tools, machine translation programs, video conferencing, and voice over the Internet have made a certain degree of computer expertise a prerequisite for any professional translator and interpreter. Given the high demand for well-trained interpreters, institutions at times rely on telephone or video-conferencing interpreting services to facilitate communication with speakers of non-societal languages. This resource may be especially helpful for speakers of less commonly spoken languages. The appearance of new technologies, in turn, has generated a lively discussion in the field of translation and interpreting pedagogy as to how best to teach and assess the necessary computer skills. Specifically in translation, the fact that many certification exams, until only recently, have been taken with paper and pen suggests a gap between technological innovation in the field and pedagogical response to that innovation. Technological advances, which have helped fuel the rapid growth of the language industry, in turn, have led to a diversification of the workforce. Translation and interpreting training must now prepare students to assume positions not only as translators or interpreters but also as project managers, managers of language services, terminologists, software localizers, quality-control supervisors, and revisers of both human- and machine-generated written and oral texts.

Technological advances have also facilitated the study of translation and interpreting-related phenomena both as a product and as a process, often referred to as descriptive translation and interpreting studies. Controlled collections of texts, or corpora, for example, allow researchers to isolate general patterns across texts, challenging long-standing beliefs with empirical data. The same is true of databases of oral interviews between patients and health-care providers who communicate with the help of interpreters; data generated in this way allow researchers to deconstruct myths of interpreter performance (e.g., that they

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are more or less visible in the interaction). Corpora are also increasingly used in translator training programs in order to expose students in a hands-on way to the principles of terminology management while empowering them to create their own resources, tailored to their specific needs. In interpreting pedagogy, teachers have begun to use discourse analysis to explore authentic crosslinguistic exchanges.

In terms of process-oriented translation research, eye-tracking software has shown great potential as a supplement to traditional methodologies, such as keystroke logging and think-aloud protocols, for unlocking the secrets of the translator's brain. In process-oriented interpreting research, studies reveal the strategies used by interpreters in brokering communication. Empirical data allow researchers to describe self-monitoring and correction techniques. These findings are valuable in teaching students of interpreting to use pauses strategically and to determine appropriate degrees of intervention on the part of the interpreter.

Although technological innovations have had a great impact on research agendas in translation and interpreting studies, there is another important influence shaping the study of translation and interpreting phenomena today. That is the continuing influence of poststructuralist theory, or postpositivist thinking, on the conceptualization and study of translation and interpreting. Researchers and theoreticians continue to pursue the implications of translation and interpreting conceived not as the transfer of a message from one linguistic system to another, but rather, as a culture-specific and historically determined rewriting or re-enacting of texts. The influence of sociology and cultural studies on research agendas in translation and interpreting studies has been especially pronounced over the last ten years insofar as its methodologies focus on specific sociocultural configurations and the agents who are produced by them and who, in turn, reproduce them. Methods and concepts from sociology and anthropology have also been crucial in helping translation and interpreting scholars refine and complicate notions of globalization and cultural exchange. In the case of interpreting, scholars now recognize that there are specific sociological issues that arise in the various settings in which interpreting takes place (e.g., conference, court, medical), and that these differences should be reflected in the development of pedagogical methods. Sociological approaches are also useful in exploring the issues that arise from the gap between the supply of professional or qualified interpreters and the demand for service. In studying the issue of volunteer interpreters, for example, scholars have demonstrated that access to services on the part of linguistic minorities does not always equate with access to meaningful and high-quality information, which many times can only be provided by professionals.

In addition to entries on translation and interpreting, this section includes a number of entries that deal specifically with signed language interpreting. Signed language interpreters mediate between deaf and hearing people and work between two different language modalities, spoken and signed. They share the same professional standards as spoken language interpreters in terms of role, ethics, and training, but, as the development of the profession largely depends on social and cultural contexts and institutional constraints, the practice of signed language interpreting (SLI) differs internationally in terms of stages of professionalization, provision of interpreters, and interpreter training. Signed language interpreters typically work in educational, legal, medical, mental health, social service, and employment settings, as well as in less common, but nevertheless important settings, such as religious, conference, and performance interpreting.

SLI research is a subdiscipline of translation and interpreting studies; it has witnessed a dramatic increase in research, employing a range of different theoretical approaches and research methods. Although current research focuses on various domains of interpreting, the majority of SLI research reflects the settings in which SLI most commonly occurs—community interpreting and educational interpreting. Research topics, therefore, often

include questions of interpreter role and ethics, which are also well represented in interpreting studies as a whole. Apart from sociological and sociolinguistic approaches, studies have been conducted on the cognitive process involved in SLI and on the (quality of the) product. From a methodological point of view, research includes discourse analytic methods, ethnographic methods, survey research, and experiments. Several papers have been published on sight translation/sight interpreting and signed language translation (SLT) of a range of texts, such as Web sites, psychological tests, educational resources, and children's books. SLT is a relatively new phenomenon, which emerged as a consequence of advances in information and communication technology. It comprises the interlingual and intermodal transfer of fixed or frozen (written) texts in spoken languages into fixed or frozen oral or signed texts (video) in any signed language.

While there are significant differences in terms of the training and practice of translators, interpreters, and signed language interpreters, all three subfields are dedicated to the exploration of cross-cultural communication, broadly understood, and are today experiencing rapid expansion due to a host of issues linked to processes of economic, political, and cultural globalization and to technological advancements. The entries below reflect the major developments in the areas of theory, pedagogy, practice, and technology, and are meant to provide a roadmap for those interested in navigating three interrelated fields that are among the most rapidly developing in the area of applied linguistics.

SEE ALSO ON TRANSLATION AND INTERPRETING: Assessment of Translation; Audiovisual Translation; Bible Translation; Cognitive Approaches to Translation; Commercial Translation; Community Interpreting; Computer-Assisted Translation; Conference Interpreting; Cultural Approaches to Translation; Descriptive Translation Studies; Functional Approaches to Translation; Health-Care, Medical, and Mental Health Interpreting; History of Interpreting; History of Translation; Interpreting Techniques and Modes; Liaison Interpreting; Linguistic Approaches to Translation; Literary Translation; Media Interpreting; Medical Translation; Models of Interpreting; Neurolinguistic and Cognitive Aspects of Interpreting; Norms of Translation; Official Translation; Post-Editing of Machine Translation; Professionalization of Interpreters; Quality in Interpreting; Research on Signed Language Interpreting; Scientific and Technical Translation; Signed Language Interpreting Profession; Signed Language Interpreting: Types, Settings, and Modes; Sociological Approaches to Translation; Strategies of Translation; Teaching and Learning of Interpreting; Teaching and Learning of Translation; Text-Based Approaches to Translation; Theory of Interpreting; Translation and Interpreting and Bilingualism; Translation, Localization, and Internationalization; Translation Theory; Translation Tools; Translators' Code of Ethics

Translation Theory

MARIA TYMOCZKO

General Considerations About Theory

The current concept of theory in academic disciplines began to develop in tandem with the scientific revolution during the early modern period, with most parameters of the concept of theory having been worked out in the natural sciences. Thus, it is no surprise that the word *theory* is relatively new in English, first attested in the last decade of the 16th century, nor is it a surprise that the word has held a variety of meanings during the last 400 years as the natural sciences themselves have shifted their understandings of the relationships binding theory, hypotheses, experiments, and data. It follows that in order to understand the concept of theory, it is more useful to see theory as a term of art or a technical term rather than a word whose meaning and usage are most apparent in ordinary language. As a result, investigating the use of theory in ordinary language as a means of understanding the concept of theory—a common strategy in the philosophy of language since Wittgenstein—fails in this instance. To delineate theory in applied linguistics, particularly with reference to a relatively new field such as translation studies, it is essential to acknowledge the following: the concept of theory in any academic field must be framed by the history and methods of the natural sciences, specifically the relationship between theory and empirical practices in these fields.

Thus, definition 4 of "theory" in the *Compact Oxford English Dictionary* (1971) (hereafter *OED*) is the relevant entry for understanding theory in translation studies and other areas of applied linguistics: "a scheme or system of ideas or statements held as an explanation or account of a group of facts or phenomena; a hypothesis that has been confirmed or established by observation or experiment, and is propounded or accepted as accounting for the known facts; a statement of what are held to be the general laws, principles, or causes of something known or observed." Definition 4 is attested earlier than and contrasts with definition 6, the definition that the *OED* calls the "loose or general sense": "a hypothesis proposed as an explanation; hence, a mere hypothesis, a speculation, conjecture; an idea or set of ideas about something; an individual view or notion." Often applied linguists and translation studies scholars are not clear about these different meanings of the word *theory*, thus tenaciously seeing theory in arguments that are in fact merely "individual views or notions" and "speculations." This is particularly a tendency of scholars with little training in the natural sciences who do not understand the reciprocal relationships that bind theory, the development and testing of hypotheses, experimental design and execution, the definition and collection and examination of data, and the consequent reexamination of theory on the basis of those investigations—in short experimental methods in general (see Tymoczko, 2007, pp. 140–86).

Translation studies emerged as an academic field after World War II and many of the field's initial preoccupations and investigations were motivated by the use of translation during the war, particularly the role of translation in intelligence and propaganda. During World War II there were many people involved in coding and decoding all around the world and operatives were translating to and from more languages than had ever before been used concurrently for strategic purposes. Moreover, because the war had a global

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scale and reached into normally isolated areas, an awareness of the range and diversity of the world's languages and cultures came to the fore, even as translation among them was necessitated. This historical context for the development of translation studies explains why earlier generalizations about translation are not necessarily theoretical, both because they do not account for a sufficiently broad range of cultural and linguistic data related to translation and because such statements (e.g., the discourses about translation in both Europe and China before World War II) were formulated without regard to the nature of theory in an academic discipline per se (see, e.g., the compendia in Robinson, 1997a, and Cheung, 2006a).

As it has been constituted, translation studies has included the study of both written translation and interpreting; in what follows, therefore, the term *translation* refers to both the written and oral modes of transposition across languages and semiotic codes (see Jakobson, 1959). Since the 1950s a succession of schools of thought about translation has ensued, with most making some lasting contribution to translation theory defined in the sense of coordinated hypotheses that have been confirmed by observation and that account for the known phenomena. Many of these schools have published extensive numbers of case studies that have generated data with theoretical implications. Some of the most important approaches to translation studies that have left their mark on translation theory include linguistic approaches, functionalist approaches, systems approaches, cultural studies approaches, and more recently internationalist approaches (see Tymoczko, 2007, pp. 15–53). None of these schools can be rigorously separated from the others; together they confirm the principles of translation theory outlined below.

Theoretical Principles Currently Accepted in Translation Studies

The following formulations summarize the durable theoretical principles of translation studies that have emerged since World War II. Note that there is a radical difference between outlining agreed tenets of translation theory and reviewing the history of attempts to theorize translation. This entry has the former as its goal rather than the latter, thus subsuming the contributions of some venerable schools of translation studies (e.g., *skopos theory*; see Nord, 1997) under a broader rubric. Note as well that in the following theoretical formulations, the term *translation* can refer to either process or product. This semantic overlap is a function of English rather than a universal; however that may be, both aspects of translation must be accounted for in translation theory (see Holmes, 1994, pp. 67–80).

1. Translation involves negotiating fundamental linguistic and cultural anisomorphisms and asymmetries. Examples might include lexical asymmetries based on contrast, such as *yes/no* in English vs. *oui/non/si* in French versus a double lexical void in Old Irish which indicates assent and dissent by other means. Lexical asymmetries also are apparent in differences in semantic fields of corresponding words across two languages and in divergent patterns of semiosis. There are also morphological asymmetries such as the tense differences between languages that require distinguishing completed action from continuous or habitual action and those that do not, or distinctions in languages that mark gender or number and those that do not. Morphological asymmetries are often large when two languages come from different language families (such as Indo-European and Semitic languages). Syntax is also often highly variable between languages, particularly in translation across two language families, and idioms are by definition almost always asymmetrical across languages. Similarly, cultural asymmetries are inevitable between any language pair, however close, exemplified by differences in values that affect the understanding of concepts (e.g., individualism);

differences in material culture such as variations in tools and technology; means of differentiating and organizing a society; or differences resulting from climate and the natural world, such as variations in flora, fauna, and the like (see Jakobson, 1959). During the process of translation, such anisomorphisms and asymmetries require that translators make decisions and choices about representations in the target text (TT) created by the translator. Anisomorphisms and asymmetries also require that a translator make choices about the interpretation of meaning: decisions about the meaning of the source text (ST) and choices about the construction of meaning in the TT. (See Vinay & Darbelnet, 1958/1995; Nida, 1964; Catford, 1965; Fawcett, 1997.)

2. As we have seen, translation involves decisions and choices about meanings in the ST and constructions of meaning in the TT, where a text is understood as being either oral or written. Because meaning is language specific and meaning is conditioned by contextual relevance, translations and their source texts have different meanings. It is therefore misleading to say that the task of the translator is to preserve meaning or to create a text that has the same meaning as the source. (Classic discussions of this topic include Jakobson, 1959; Quine, 1959; Catford, 1965; a review of the issues is found in Tymoczko, 2007, pp. 265–309.)
3. Meaning in a ST or a TT extends far beyond semantic meaning. In translation a practitioner must pay particular attention to functional aspects of texts; the functionalist dimension of texts is central in every type of translating, from translation of sacred texts and advertisement localization to community and legal interpreting. Literary translators are called upon to be attentive to functionalist aspects implicit or explicit in form. The patronage and the material or physical basis of the production of an oral or written translation can also affect its meaning. (See Nida, 1964; Catford, 1965; Nord, 1997; Tymoczko, 2007, pp. 265–309.)
4. Because translation involves decisions, choices, and constructions related to meaning, there is no single correct way to translate. Translation equivalence is a posteriori in nature. The particular configuration of equivalence in a translation can be defined only by descriptive studies of the actual translation in relation to context. The a posteriori nature of translational equivalence, entailed by the processes and practices of translation, led Gideon Toury to propose the following a posteriori definition of a translation: "any target language text which is presented or regarded as such within the target system itself, on whatever grounds" (1982, p. 27; See 1980, pp. 14, 37, 43–5). (On the a posteriori definition of the status of a translation, see also the arguments in Hermans, 2007, pp. 1–25.)

   It follows from the theoretical principles elaborated thus far that translation equivalence is a form of similarity rather than identity. Like similarity in any domain (as cognitive scientists have demonstrated), the range of possible similarities that can be perceived and constructed in the process of translating is large and the possible ways of constructing similarity in the translation of any text are highly variable (see Broeck, 1978; Arduini & Hodgson, 2004; Tymoczko, 2004, and sources cited). Descriptive studies have shown that cultural norms and ideals about translation, which impact on notions of translation equivalence, have varied widely across time and space.
5. An entailment of the decisions, choices, and constructions involved in translating is that translation is a metonymic process. Translations are partial representations of their source texts. Translators also introduce into their translations additional metonymies that have significance related to the target languages and cultures. Such metonymies and partialities are not defects of translation; they enable translated texts to be received and understood by target audiences, to participate in discourses of the target culture, and to speak to the concerns of the audience. A translator's choice of metonymies or partialities can have a variety of functions ranging from esthetics and

representations of the target text to its ideology and political import. (See Levý, 1967; Holmes, 1994, pp. 35–52; Tymoczko, 1999, pp. 41–61; Tymoczko & Gentzler, 2002, pp. xvii–xviii.)

A corollary of this principle is that the metonymic nature of translations guarantees the afterlife of source texts. Textual metonymies in translations deliver texts in terms that target audiences can relate to despite having other languages and traditions or living in other contexts, cultures, and time periods. Paradoxically, therefore, source texts are dependent for their continued survival on translations as much as translations are dependent for their existence on source texts. (On the afterlife of texts, see Benjamin, 1923/1969.)

6. Translation equivalence can be stipulated explicitly or implicitly, as can any linguistic behavior including grammar or lexis. In the case of translation, equivalence can be stipulated or prescribed by general cultural norms or by a particular authority in a specific context, such as a business, a patron, a religious institution, or a government. For the development of translation theory and the understanding of translation behavior in general, however, descriptive approaches that move beyond culturally bound norms and prescriptions are essential. A broad sampling of translation processes and products must be investigated with reference to their specific contexts in time and space. (See Toury, 1980, 1982, 1991, 1995; Hermans, 1985.)
7. Translation is a form of rewriting and as such has many commonalities with other forms of rewriting including versions of texts adapted to specific media (such as film), versions adapted to specific audiences (such as children), editions, anthologies of texts, literary and textual histories, critical studies of texts, and so forth. Investigating the commonalities that translations share with rewritings illuminates both the processes and products of translation, and vice versa. The identification of translation as a form of refraction or rewriting is related to the metonymic nature of translation. (Foundational studies taking very different approaches to the question include Lefevere, 1982a, 1985, 1992; Holmes, 1994, pp. 23–34; Vieira, 1994.)
8. Because translation involves choices and because strategies of translation vary so widely, like other forms of cultural production, translations are best seen in the context of cultural systems. On the level of the texts themselves, translations and translation choices relate to cultural systems such as language, the repertory of text types, and poetics. Translations themselves form subsystems of textual systems—notably literary systems—and collectively can be grouped by parameters such as function, audience, text type, formal effects, and patronage. Translations are in turn embedded in larger social and cultural systems, including economic, patronage, political, and ideological systems. To understand the metonymics of a translation and its function in a culture, it is useful to investigate its position using a systems analysis that takes in all these levels. (See Even-Zohar, 1978, 1990; Toury, 1980, 1995; Hermans, 1999.)
9. Translations are an ideological and political form of cultural production. The second phase of descriptive studies has clearly documented the political nature of translation, ranging from postcolonial and feminist aspects of translation to translations that have figured actively in the service of ideological movements and political programs. Ideological effects are often particularly apparent in interpreting. Because translation is highly ideological and has an important role in shaping culture, societies often control or even limit translation through a variety of means ranging from prescriptive norms to censorship. (On these issues see Lefevere, 1982b; Venuti, 1992, 1995, 1998; Simon, 1996; Flotow, 1997; Robinson, 1997b; Bassnett & Trivedi, 1999; Tymoczko, 1999; Simon & St-Pierre, 2000; Davis, 2001; Merkle, 2002; Tymoczko & Gentzler, 2002; Calzada Pérez, 2003; Baker, 2006; Tymoczko, 2010a.)

10. Translation is a cluster concept. Ideas about translation have varied widely across time, place, culture, and language. It is not possible to specify necessary and sufficient conditions that can be used to identify all instances of translation and that at the same time exclude all non-translations across time and space. Toury points to the nature of translation as a cluster concept in defining translation as a culturally bound practice that has an a posteriori nature, quoted above in principle 4. Because translation is an open practice and because new forms of translation can always be invented, translation is an open concept in terms of both its processes and its products (see Tymoczko, 2007, pp. 54–106.) The nature of translation as a cluster concept is perhaps most clearly seen in the widely divergent conceptualizations of translation in the varied languages and cultures of the world and in the widely different documented histories of translation internationally. (Examples are found in Rose, 2000; Hung & Wakabayashi, 2005; Hermans, 2006.)

Conclusions Implied by These Theoretical Principles

Stated directly and simply as above, these basic theoretical principles of translation studies may seem to be a slender achievement for a field that is half a century old. As with the principles of other established theories (such as the theory of gravity or germ theory), they may even seem obvious. Each principle, however, has a broad and deep reach. Taken together these theoretical assertions provide an integrated framework that serves to explain the data associated with observed translation products and processes. In some cases they also have predictive power. Because translation is an open concept issuing in an open set of examples, however, translation theory cannot aspire to being primarily or infallibly predictive.

In the exposition of the principles above, there have been obvious crosscurrents. For example, the choices that translators must make in negotiating linguistic and cultural anisomorphisms and asymmetries are directly related to the metonymic aspect of translation and also to the ideological nature of translation as process and product. The metonymic aspect of a translation is also an entryway into understanding how a translation differs in meaning from the source text and how a translation can profitably be approached from the point of view of systems analysis. In turn it is a short jump to seeing that similarity is the relationship binding source texts and their translations, with translational equivalence being an a posteriori notion. Finally the metonymic nature of translation is also a primary reason that translation is a cluster concept.

These interlocking theoretical tenets also explain the vast divergence that many translations exhibit when compared with their source texts: choices about how to negotiate linguistic and cultural asymmetries, the construction of meanings in translation, the variant ways that different types of meaning can be privileged, and the nature of rewritings in general all contribute to significant types of divergence in a target text. Such divergence is often notable, for example, in advertisements and media productions, and in interpreting. The theoretical principles elaborated here explain the popularity of the new term *localization* that has emerged in response to challenges posed by translating for the new media, differentiating new concepts of translation from old Eurocentric stereotypes of translation being primarily a form of "carrying across" (see Tymoczko, 2010b).

The crosscurrents indicate that the division of translation theory into a definitive number of principles is essentially arbitrary: one might choose to divide some of the foregoing principles (e.g., designating Benjamin's proposition about the role of translation in the afterlife of texts as a separate principle rather than a corollary) or to join others. Such decisions about segmentation of the theory are essentially trivial; what is much more important is to see that the principles form a dense and consistent conceptual web.

The well-woven nature of these principles speaks to the strength of the theoretical framework that the field of translation studies has begun to develop: it is an integrated framework in which the various principles intermesh and mutually support each other. Together they facilitate investigation of data, in part by allowing the development of hypotheses that serve to interrogate translation processes and products consistently across a broad range of contexts. The framework is also flexible enough to accommodate discoveries associated with new data through reformulation or expansion of some of the principles of the theory. The principles are also amenable to being elaborated in greater delicacy in response to new data. Such expansion can be seen, for example, in the detailed investigations undertaken of the functional aspects of translation processes and products, discussed above in principle 3. Similarly detailed examinations of the role of norms in translation have been undertaken, thus extending the articulation of principles 4–6 (see, e.g., Hermans 1991, 1993, 1996). Moreover, this repertory of theoretical principles is open: it is likely that additional theoretical principles will emerge in translation studies in the near future and that they will be able to be incorporated into the existing framework.

This is all to say that translation theory as it has been developed thus far sets a firm foundation for research on translation within the discipline of translation studies. It is comprehensive and adaptable enough to support the reciprocal relationships that bind theory, the development and testing of hypotheses, the definition and collection of data, the experimental methods of empirical research in general, and the recursive rethinking of theory required by the results of such research. The foundation seems broad enough, deep enough, and flexible enough to be durable as the discipline of translation studies continues to grow. Whatever major shifts in translation theory might be projected, most of the foundational theoretical principles about translation discussed above will endure and be incorporated into future paradigms of translation theory (see Kuhn, 1962).

Together these components of contemporary translation theory also have powerful implications. For example, if taken seriously, they make it impossible (or at least impracticable) to teach translation in a narrow, prescriptive manner or to inculcate rigid, automated behaviors in students, except when such prescriptions serve very local and limited norms. (Here it is necessary to distinguish the teaching of language competence from the teaching of translation per se.) Indeed the theoretical framework that has emerged in translation studies indicates that translation pedagogy must be extraordinarily open so as to prepare students for the actual challenges of translating metonymically, responding to context and shifting norms as time and culture themselves change.

Similarly these theoretical principles indicate that ethical questions are central to the task of the translator and the role of translation in cultures. The choices that translators must make in adjudicating linguistic and cultural differences, the construction of meanings in target texts, the metonymic relationships between source and target texts, the nature of rewriting, and the ideological aspects of translation all indicate that there is a powerful ethical aspect to translation. Translators are important shapers of cultures, both source cultures through their representations and target cultures as well. In the limiting case the ethical responsibilities of translators extend globally, far beyond loyalty to their employers. This moral dimension to translation is seldom acknowledged in statements of professional ethics promulgated by professional associations of translators.

Difficulties in Formulating Translation Theory

The formulation of a durable translation theory has been impeded by a number of factors. Most important has been lack of attention to a sufficiently broad base of data from which theoretical conclusions can be drawn. General theoretical principles must accommodate data from the broadest possible range of cultures, must include data about the past as well

as the present, and must apply to any arbitrary pair of languages. Because the data base upon which translation theory is formulated is so large, it is difficult to find scholars or research groups who can muster a sufficiently broad perspective to formulate durable theoretical proposals. Particularly pernicious is the tendency of scholars who promulgate theoretical assertions based on contemporary professional translation practices in a single culture area and who even set aside what they consider to be marginal cases in their own cultures—for example, community interpreting or translation in oral cultures both past and present.

The question of incorporating a sufficiently broad base of data in formulating translation theory is but one aspect of a larger problem in translation studies, namely widespread scholarly lack of expertise in the methods and practices of empirical research. In a great deal of research and writing on translation, inadequate understandings about the relationship of theory and hypothesis, methods of collecting and analyzing data, and appropriate procedures related to sampling and reproducibility of research have constituted barriers to the development of durable translation theory (Tymoczko, 2007, pp. 140–86).

The development of translation theory has also been hampered by Eurocentric dominance in the field of translation studies. Translation has burgeoned in Eurocentric cultures since World War II, both as a consequence of the role that translation played in the war and as a result of the language policies of the European Union. The decision of the European Union to retain as official languages all 23 official languages of the member states of the EU has resulted in the European Commission being the largest employer of translators in the world. The Commission has rather strictly regulated translation policies and practices, however. As a consequence much of what has been written about translation in Europe during the past several decades has implicitly fallen within the framework of contemporary translation pragmatics in Europe and has addressed issues most pertinent to European languages and cultures. What has passed for theory in this context has inevitably tended toward a fairly narrow purview that rarely is applicable to an internationalist view of translation throughout history.

The rise of English as the dominant global language has similarly tended to impede the development of translation theory applicable to a broad linguistic, cultural, and temporal foundation. Because English has increasingly become the dominant language of the discipline of translation studies, the vocabulary of English itself (see Lakoff & Johnson, 1980) issues in theoretical concepts and hypotheses that tend to be posed in terms of Eurocentric perspectives (see, e.g., Susam-Sarajeva, 2002; Cheung, 2006b; Lianeri, 2006). Misleading Eurocentric pretheoretical presuppositions—ranging from the assumption that societies are normally monolingual or that translation is normally a procedure undertaken by a single individual (rather than a team) to the belief that the concept of translation itself can be defined by necessary and sufficient conditions—assumed by many writers using English and other European languages have also undermined attempts to theorize translation studies (Tymoczko, 2006). The problem is exacerbated by the spread of Eurocentric pragmatics and Eurocentric norms of translation within the economic climate of globalization; as a consequence of economic incentives, translation pedagogy internationally is often based on materials developed in Eurocentric contexts and written originally in English (Tymoczko, 2009, p. 405).

Finally, current nationalism and ethnocentrism in general also work against the development of durable translation theory. What has been said above illustrates the problems of Eurocentrism, but similar problems are found in other parts of the world. For example, in China debate ensues about whether Chinese scholars should develop a theory of translation that is independent of Western influences, based solely on Chinese translation traditions. Prima facie it should be obvious that it is not possible to develop a comprehensive and successful ethnocentric theory with respect to translation practices and products that are

ipso facto cross-cultural. Whatever the geographic center of an ethnocentric approach to translation, such accounts can scarcely aspire to the status of being theory in the sense we began with: theory "accounting for the known facts" and "being a statement of what are held to be the general laws, principles, or causes" of the observed phenomena of translation across time and space.

SEE ALSO: Functional Approaches to Translation; History of Interpreting; History of Translation; Theory of Interpreting; Translators' Code of Ethics

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Translation Tools

KEIRAN J. DUNNE

In the wake of the digital revolution and the advent of the knowledge economy, the concept of "tool" has expanded beyond its traditional meaning of an implement for performing or facilitating mechanical operations to encompass specialized software applications that help users accomplish specific tasks on computers. In this way, translation-specific applications are typically referred to as "translation tools." More than mere jargon, this usage underscores the commonalities between specialized software applications and their mechanical forebears: Both are operated by people; both are designed to facilitate specific tasks; and both are only as good as their operators. This entry offers an overview of translation tools, the problems they have been designed to solve, the ways in which they have evolved, and their limitations, with a focus on their primary components: terminology management and translation memory.

Terminology Management Tools

Since the 1960s, it has been clear that terminology is the primary challenge posed by the translation of commercial, technical, and scientific information (Krollmann, Schuck, & Winkler, 1965; Schulz, 1971; Wright, 2001). Over the past several decades, the evolution of science and technology has given rise to new concepts and terms at such a rapid pace that even specialized translators are unable to keep abreast of all of the pertinent literature in the field, let alone document all of the new terms (Schulz, 1971). In addition, most translators are not subject-matter experts (Goetschalckx, 1979; Woyde, 2001). Consequently, when they encounter terminological problems in language for special purposes, as in scientific and technical texts, translators need full information on the use of the terms in the given field, including examples of actual usage in context, in addition to definitions and technical information (Goetschalckx, 1979). Finally, terminological problems tend to be magnified by the "stovepipe" or "silo" effect. The compilation of glossaries and other terminological data on paper or in the brains of individual translators hinders access to that information by other potential users. Disseminating terminological data via paper printouts and dictionaries is laborious and costly. In the absence of effective mechanisms for coordinating terminological research, documenting the findings, and sharing the data, terminology work often involves duplication of effort: "more often than not, each translator does research that has already been done" (Dubuc, 1972, p. 207). These factors explain why searching for the proper term is the single most laborious task and the primary source of errors in technical translation, and why translators may spend as much as 75% of their time researching and consulting terminological resources (Krollmann et al., 1965; Automatic Language Processing Advisory Committee, 1966; Dubuc, 1972; Wright, 2001).

In the 1960s and 1970s, translation departments of government entities and large companies, including the Terminological Bureau of the European Coal and Steel Community, the West German Federal Armed Forces Translation Agency, the French Association for Standardization, and the Siemens company, addressed these problems by developing multilingual terminology data banks (centralized terminology repositories in digital format) to (a) provide information about individual words and phrases (definitions, examples,

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translations); (b) create glossaries specifically for the texts being translated; and (c) produce up-to-date specialized dictionaries and glossaries for general use (Hutchins, 1978).

The advent of centralized term banks simplified the creation and maintenance of terminological records; moreover, by enabling networked access to the terminological data and output via either a screen display or paper printouts, such systems provided a relatively rapid, easy, and cost-effective way to share terminological data (Felber, 1983). Users reported that text-related glossaries that had been created using centralized term banks enabled quantitative and qualitative improvements in translation work (Krollmann, 1974). However, early term banks were developed on and for mainframe computers. Therefore, access to these systems was limited to translators working for the governments, universities, and large companies that owned them, as mainframes were prohibitively expensive for personal users.

This situation persisted until the commoditization of the personal computer (PC) in the 1980s and the appearance of mass-market tools that provided access to terminology from within a word processor, giving translators "complete freedom to create translations without burdening them with the mechanical task of constantly looking for terminology" (Good, 1988, p. 91; see also Wright, 1988). However, early desktop terminology management tools presented a number of limitations. For example, they did not allow networked access and offered only unidirectional search and retrieval.

The advent of the Internet fueled the development and rapid growth of the market for outsourced professional translation services in the late 1990s and early 2000s (O'Hagan, 1996; O'Hagan & Ashworth, 2002). However, the disaggregation of translation work proved to be a two-edged sword. Although it allowed translators located anywhere in the world to work with clients located anywhere in the world (provided that each had a data connection), the decentralization of project teams—and thus of linguistic assets such as terminology databases—raised the risk of inconsistency, especially when projects involved multiple translators or when translation team members changed from one project to the next. Thus, since the early 2000s there has been a move back toward centralization with the development of server-based terminology management tools, accessible over the Web.

Although the critical role of terminology in the translation process has been understood for four-plus decades, terminology management tools are not widely used in current professional practice. The causes of this neglect are twofold. On the one hand, proper operation of the tools requires knowledge that many translators do not possess. For example, use of SDL Trados MultiTerm and other concept-oriented terminology management tools requires knowledge of data modeling. One cannot simply launch such programs and begin entering terms; one must first model the structure of the term entry to be used within the application; only then can the user begin entering and documenting terms. On the other hand, many companies and large organizations perceive terminology management as a time-consuming, labor-intensive activity that is outside of their core business, not realizing that terminology is a valuable knowledge asset (Warburton, 2001). This problem is compounded by the difficulty of calculating the cost of managing—or of failing to manage—terminology (Wright, 1998).

Translation Memory Tools

Although terminology managers enable translators to address what is arguably the most critical variable in the translation process, they do not offer what many translators today would consider the key functionality of translation tools: a means of "recalling" previously translated material. According to cognitive scientists, humans can only hold seven chunks of information (plus or minus two) in short-term memory at any one time (Miller, 1956; Mandler, 1967; Simon, 1974). The inherent constraints on short-term and long-term human

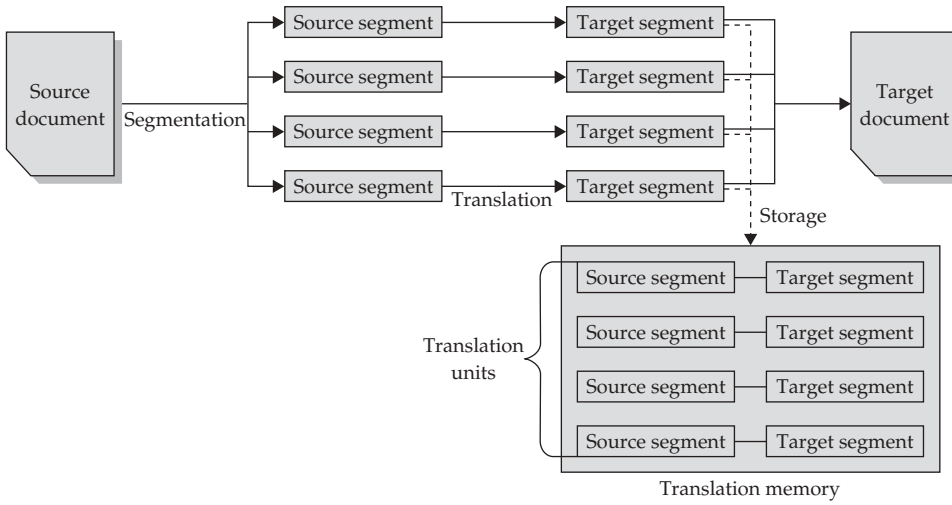

Figure 1 On-the-fly translation memory creation: segmentation of source text, translation of individual segments, and storage of translation units © 2011 Keiran J. Dunne

memory have important ramifications for translation. Recognizing that texts requiring translation were often repetitive, or included material from other previously translated documents, or both, Krollmann (1971), Arthern (1979), and others proposed computer-based systems for storage and retrieval of translated material. This concept of translation reuse, although well understood in the 1980s, was not widely implemented in translation tools until the 1990s due to limitations of the then-current technology, and has since become known as "translation memory" (TM).

TM tools help translators recall and reuse previous translations. Some TM tools integrate into a word processor, such as Microsoft Word; others offer word-processing-like functionalities in a dedicated translation environment. TM tools divide the text into chunks, or segments. Segmentation rules are typically based on punctuation and formatting marks. In this way, the user can decide whether the tool should segment the text whenever it encounters a specified punctuation mark (e.g., a period, tabulation, new line character, or paragraph mark). In practice, texts are most often segmented at the sentence level. As the translator works through the text, each source-language chunk is stored along with its corresponding translation as a *translation unit*; the repository in which the translation units are stored is known as a *translation memory* (see Figure 1).

TM tools not only store translated segments but also retrieve them for reuse. The tools compare segments in the file being translated to the contents of the translation memory and retrieve full or partial matches according to the minimum match threshold defined by the user. This analysis and retrieval functionality relies on character-based matching. The tools do not understand the meaning of sentences being translated or that have previously been translated and stored in the translation memory. Instead, they compare the string of characters in a given source-language segment to the various source-language segments stored in the translation memory (see Figure 2).

An example will serve to illustrate the mechanics of translation reuse. Suppose that a translator encounters the sentence, "An error occurred while opening the file." This sentence contains a total of 41 characters, including spaces. If the translator has previously translated this particular sentence, the tool will retrieve and insert the corresponding target-language equivalent into the working document and indicate that it is an exact match, typically using some form of color-coding. The translator can then confirm the

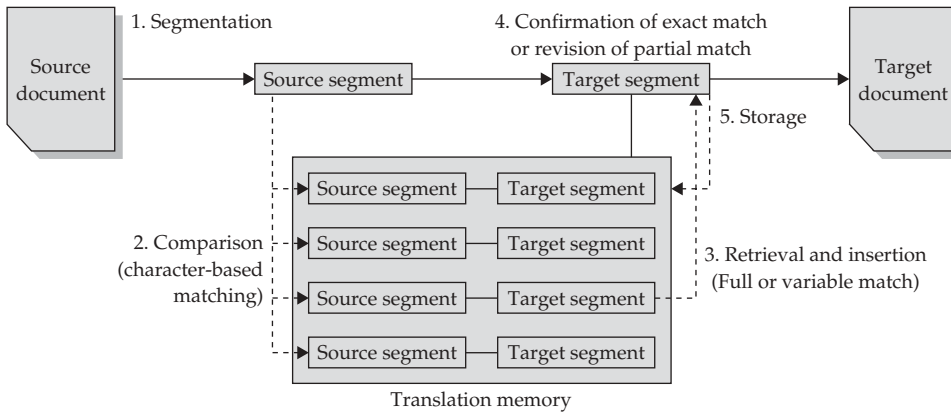

Figure 2 The mechanics of translation reuse © 2011 Keiran J. Dunne

match and proceed to the next segment. Suppose that the translator has not previously encountered this exact sentence, but has translated a similar one, such as "An error occurred while copying the file." In this scenario, because the two sentences are similar but not identical, the source-language segment stored in the TM (and by extension, the target-language equivalent) is said to be a *variable match* or *fuzzy match* compared to the new source-language sentence. From the perspective of the TM tool, which assesses equivalence using character-based matching, the two sentences differ only by seven characters ("copying" vs. "opening"), so the translation stored in the TM is deemed to be an 83% match for the current source sentence. If the minimum match threshold is set to 83% or less, the tool will retrieve and insert the corresponding target-language sentence into the working document, and the translator can simply edit the differing portion of the target segment instead of having to translate the entire segment from scratch (see Figure 2 above).

Some tools take the concept of matching further and offer an "exact" or "in-context" matching functionality. Such a match occurs when the segments that immediately precede and follow the active segment are identical in the document being translated and in the translation memory. To enable greater time savings, current TM tools offer both pre-translation and automatic propagation of full and fuzzy matches downstream in the active file, allowing the translator to move from one translatable segment (or variable match) to the next, instead of working though every single segment in the file.

In addition to the storage and automatic comparison/retrieval functions described above, TM systems also offer a query or concordancing functionality whereby the user can search for occurrences of a given term, phrase, or sentence in the TM. The tool will then retrieve and display the source segments in which the search string appears, along with the corresponding translations, up to the maximum number of results specified in the settings. In this way, translation memory not only enables reuse of previous translations, but makes it easier to achieve consistency in translation, since translators are not forced to rely on their memory of how they translated a given expression in the past, but can search for and retrieve the specific source term or phrase and then find and reuse the corresponding translation.

Finally, current-generation TM tools offer "as-you-type" automatic translation suggestion, optional integration of machine translation, and quality-control features such as spelling, grammar, formatting, and terminology checkers. By enabling the reuse or recycling of legacy translation segments, TM tools help translators to work more quickly with less mental effort and to ensure greater consistency in and across translations, whether working alone or as part of a team (assuming that the materials being translated present a

significant amount of repetition). Consistency, however, is a two-edged sword: If the translation is defective, it will be defective consistently.

Terminology Extraction Tools and Alignment Tools

The notion of reuse on which translation tools are based presents several inherent limitations. Terminology databases and translation memories are created and filled by translators as they perform their work. Consequently, there is a time lag between the creation of a terminology database or translation memory and the point at which those resources reach optimal size and scope. Software designers addressed these problems by creating terminology extraction tools and so-called "alignment" tools. Terminology extraction helps the translator or terminologist save time by automating the identification and acquisition of term candidates. These tools use statistical and morphosyntactic algorithms to parse documents and acquire term candidates, which can then be validated and extracted for subsequent work in a terminology management tool. Along similar lines, alignment tools enable the creation of TMs from legacy translations performed without using translation memory. In an alignment tool, the user loads one or more source files and the corresponding target files and defines the segmentation rules. The tool then parses each source-language and target-language text pair, segments the content of the files according to the user-defined rules, and establishes a preliminary alignment. After confirming the correctness of the alignment and making changes as needed, the user can save the aligned text pair(s) or export the aligned segments to a new or existing translation memory, or both. Alignment enables translators to bootstrap the process of TM creation and development, but requires considerable manual effort. The decision to perform an alignment thus depends on the project parameters and the likelihood of receiving similar work in the future.

Standards

The development of competing TM tools, most of which stored data in proprietary formats, gave rise to a new issue, namely data exchange and interchange. To address this problem, the Localization Industry Standards Association created a number of open XML-based translation tool-related standards, including TMX (Translation Memory eXchange) for TM data; TBX (TermBase eXchange) for terminological data; SRX (Segmentation Rules eXchange), for sharing of segmentation rules across tools; and XML Text Memory (XML:TM) for the retention of document structure along with TM segments (Wright, 2006). In addition, XLIFF, the XML Localisation Interchange File Format from OASIS (the Organization for the Advancement of Structured Information), has been adopted as a native format by a number of tools and become an important tool-related standard.

Limitations in the Current Model of Translation Reuse

In the current market, translation typically occurs apart from, and subsequent to, the authoring of source materials. In other words, authoring and translation are perceived as two distinct processes, instead of two facets of multilingual communication. Because current authoring tools do not include support for terminology management or translation memory, authoring of source materials and translation of those materials require the use of separate tool-sets. Moreover, the functionality of TM tools is often linked to specific versions of authoring software such as Microsoft Office or Adobe Creative Suite. When new versions of authoring software are released, TM users need to upgrade their applications to be able to work with the new file formats.

Other limitations inherent in the current model of translation reuse are more fundamental. Because translation memory tools are designed to address the problem of repetition, they are not well suited to all text types. Of the eleven types of translation studied by Webb (1999), only four—commercial, legal, scientific, and technical—are well suited to the use of translation memory. The other seven types do not contain a sufficient proportion of repetitive content to benefit from the use of translation memory. The reliance on the sentence as the primary unit in the current model of translation reuse effectively undermines the ability to retrieve clauses, phrases, and other examples of subsentential repetition, as Macklovitch and Russell observe (2000). Sentence-level segmentation and the storage of translated segments as isolated sentences also prevents the translator from ascertaining the position of the segments in the context of the original source document; indeed, "the very notion of a document is lost" (Macklovitch & Russell, 2000, p. 140). The sentence-based approach also implicitly assumes that the sequence of segments—that is, the rhetorical structure of the document—is not an operative variable in translation. This may be true when translating highly technical procedural documents, but is not necessarily true for other types of material. Finally, the sentence-based approach also shifts the emphasis of translation away from texts and meaning to words and sentences, which ironically has been one of the major critiques historically leveled at machine translation. Empirical research indicates that the sentence-by-sentence approach of TM tools leads to an unnatural focus on the sentence, which affects both the task and product of translation (Dragsted, 2006).

Conclusion

The digital revolution, the Internet, and globalization have profoundly changed the scale, scope, and speed of communication, and in so doing, fueled a great increase in demand for professional translation (O'Hagan & Ashworth, 2002). Translation tools have emerged as critical productivity aids in response to this increased demand. However, the sentence-based model of translation reuse on which the current generation of tools is based is inherently limited. In addition, the current tool-set is designed to facilitate the translation of *documents*. However, the past decade has witnessed a shift from the authoring of documents to the creation of *content*, the advent of structured (semantic) authoring, and on-demand, single-source publishing, whereby content is increasingly divorced from context and presentation (Rockley, 2003; Gollner, 2009). It remains to be seen how translation tools will evolve in response to these developments.

SEE ALSO: Commercial Translation; Computer-Assisted Translation; Corpus Analysis in Translation Studies; Internationalization and Localization; Scientific and Technical Translation; Standardization in Human Language Technology; Technology and Terminology; Technology and Translation; Translation, Localization, and Internationalization

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Translation, Localization, and Internationalization

KEIRAN J. DUNNE

Translation, localization, and internationalization are interdependent processes whereby digital content and products developed in one locale are adapted for sale and use in one or more other locales. To understand the meaning of localization and internationalization and their relationship both to each other and to translation, it is necessary to consider when, why, and how they arose and the ways they have changed over time.

"The world's second oldest profession" (Somers, 2003, p. 11), translation remained relatively unchanged for thousands of years until the digital revolution and the rise of mass-market software. In the 1980s, thanks to the commoditization of the PC (personal computer), "typical users were no longer professional computer programmers, software engineers or hardware engineers" (Urien, Howard, & Perinotti, 1993, p. ix). US-based software companies realized that large markets were emerging for products such as spreadsheet programs and word processors that would enable average people to work more efficiently. Efforts to tap nascent mass markets soon moved beyond improving software reliability and user-friendliness to targeting international users by offering products in their language. "For a software product to have wide market acceptance in a non-English-speaking environment, it was essential to convert the software so that users saw a product in their own language and firmly based in their own culture" (Urien et al., 1993, x).

Adapting software for international markets was initially characterized as "translation on the computer for the computer" (van der Meer, 1995). However, it quickly became apparent that this work was "related to, but different from and more involved than, translation" (Lieu, 1997) because it encompassed not just translation of the interface but *all* local market requirements for culturally dependent representation of data, including character sets and encodings (scripts and glyphs), sorting rules, date formats (MM/DD/YYYY vs. DD/MM/YYYY, etc.), calendars (e.g., Gregorian, Hijri, Japanese Emperor Era, etc.), and decimal separators (comma vs. period), among other things. In software engineering, these local market requirements are collectively designated by the term "locale." Locales are designated as "language-country pairs; for example, French-Canada is one locale, while French-France is another" (Cadieux & Esselink, 2002). In the late 1980s, adapting software for international markets thus came to be known as "localization." By 1990, the provision of localization service was perceived as a distinct industry, as evidenced by the creation that year of the Localization Industry Standards Association (Lommel, 2007, p. 7).

To software companies, the incremental costs of localizing products seemed minimal compared to the size of the markets to which the localized products would provide access. However, initial localization efforts were complicated by the fact that the process occurred separate from, and subsequent to, the development of the original products (Esselink, 2003b, p. 4). This "localization-as-afterthought" approach proved problematic for several reasons. First, localization teams often had to return products to the development teams to enable translation and localization (by implementing support for the display of Asian languages, for example). Second, the translatable text was embedded in the software source code. Identifying and locating translatable text proved very challenging to localization

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teams that had not been involved in the development of the products. Finally, because localization involved modification of the source code, creating X localized versions of a product required X corresponding sets of code, each of which had to be localized, compiled, tested, debugged, updated, and managed separately (Luong, Lok, Taylor, & Driscoll, 1995, p. 3). The development, maintenance, and support of multiple localized versions thus proved prohibitively complex, time-consuming, and costly.

Not surprisingly, technological complexity was the hallmark of early localization efforts. Software localization involved many more activities than traditional translation, including multilingual project management, software and online Help engineering and testing, conversion of translated documentation to different formats, as well as translation memory creation and management (Esselink, 2003a, p. 69), and these activities required the use of a wide variety of specialized software tools. Localization thus required strong technical and instrumental expertise in addition to traditional translation expertise and domain knowledge. "Throughout the 1990s, the localization industry tried to turn translators into semi-engineers," observes Esselink (2003b, pp. 6–7).

This trend was relatively short-lived, however. Driven by a desire to improve their return on investment, companies soon realized that "certain steps could be performed in advance to make localization easier: separating translatable text strings from the executable code, for example. This was referred to as *internationalization* or *localization-enablement*" (Cadieux & Esselink, 2002). Internationalization is an engineering process that precedes localization: "the goal of internationalization is to have software that can run anywhere in the world without having the source code changed or recompiled for different languages and local conventions" (Luong et al., 1995, p. 3), thus lowering the effort and cost of localization and increasing the speed and accuracy with which it can be accomplished. In practice, internationalization involves the separation of the culturally dependent contents of the user interface that may require modification, known as *resources*, from the core of the application and their storage in one or more *resource files* that are linked to the application (Hall, 1999, p. 298).

Resources in a typical program include bitmaps, icons, menus, dialog boxes, string tables, and accelerator tables (see Figure 1). Bitmaps are graphic files such as toolbar buttons. Icons are small images that represent and provide shortcuts to the program and to files created using the program. Menus are lists of commands that display at the top of the main program window. Dialog boxes are secondary windows within the program that display information (e.g., status, error and warning messages) and/or request additional input from the user. A string (short for "string of characters") is text that is stored and displayed as a group. Strings include menu items, command button captions, dialog box title captions, and status messages. Finally, accelerators are shortcuts that enable users to execute standard commands in Windows by simultaneously pressing the Ctrl key plus a specific letter on the keyboard.

Today, most locale-dependent aspects of data presentation can be managed via internationalization features built into host operating systems or by using development frameworks and runtime environments that offer extensive internationalization support, such as Java (Deitsch & Czarneki, 2001) or Microsoft's .NET Framework (Smith-Ferrier, 2007). If the software has been properly internationalized and no translatable text is embedded in the source code, the localizer works only with resource files and does not touch the functional code of the application. Consequently, translation of strings in menus, dialog boxes, and string tables now comprises the bulk of the hands-on work of software localization. In some cases, depending on the source and target languages and the specific internationalization strategies employed, the localizer may also need to resize dialog boxes to account for translation-related string expansion. Visual localization tools allow users to view resources in context as they perform the nuts-and-bolts work of translating strings and

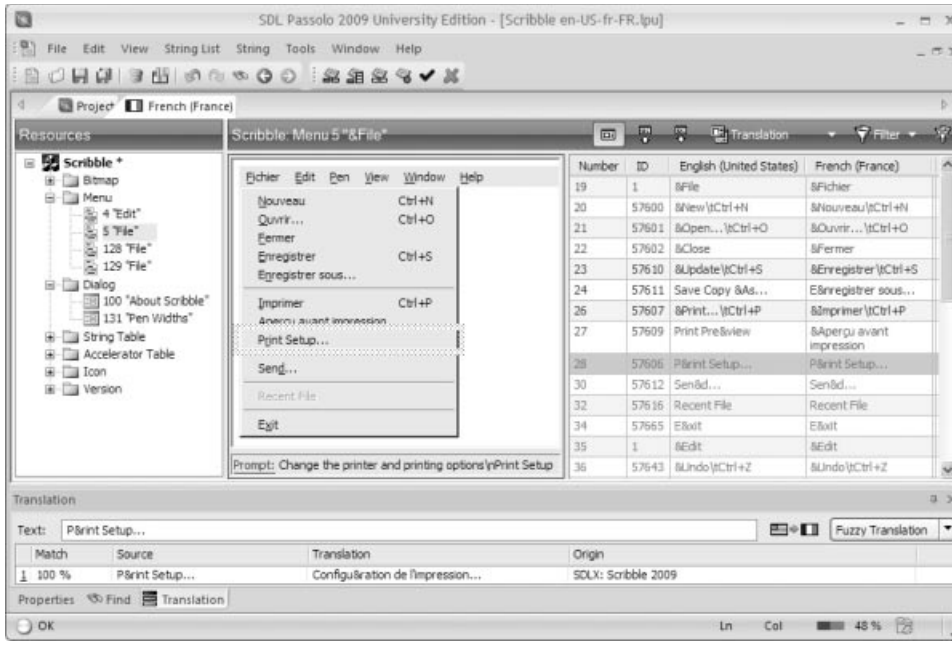

Figure 1 Localization of a sample application called Scribble using a visual localization tool. The left pane displays the localizable resources, the central pane displays the selected resource in visual mode, and the right pane displays the corresponding source and target strings in tabular format. Scribble © 2010 Keiran J. Dunne

resizing dialog boxes, and to use translation memory and terminology management tools during the process.

The fact that internationalization and the use of resource files enable software developers to address most locale-related issues upstream in the software development process, *prior to localization*, raises the question of what precisely distinguishes localization from translation today. Given that localization in practice consists primarily of translation of strings, it would seem that the term has come full circle and once again essentially means "translation on the computer, for the computer." In fact, the blurring of the boundaries between translation and localization suggests a *convergence* of these processes is occurring as authoring and publishing undergo an evolution similar to localization.

Historically, authoring and publishing were distinct processes and professions. In the 1980s, however, digital authoring tools such as word-processing software appeared that were "designed to make it easy for authors to make documents look good. In doing so, they [turned] authors into desktop publishers," notes Rockley (2003, p. 165). Much like early localization efforts that required changes to the source code, desktop publishing made content reuse difficult. Content reuse requires format modification and conversion, which tends to be labor-intensive and may require the creation of custom programs (Rockley, 2003, p. 165). These problems were exacerbated by the advent of the Web and its evolution into an enterprise communication platform. Desktop-based authoring and publishing could not keep up with the velocity of change on the Web, and the need to provide documents and content in an ever-increasing number of outputs for an increasing variety of devices, including PCs, PDAs (personal digital assistants), smart phones, and GPS (global positioning system) units.

The past decade has witnessed the increasing adoption of XML-based authoring strategies (Savourel, 2001, p. 7; Rockley, 2003, pp. 159–71) and content management systems (Rockley, 2003, pp. 178–91) in response to these challenges. XML is an application-independent markup language that enables the separation of content and format. XML focuses on the structure of content and documents, not on presentation. Formatting is controlled by style information that is stored in separate files and applied to the content to create a document on the fly in response to a user request. Along similar lines, content management systems (CMS) are repositories "designed to manage 'information chunks' (generically known as 'content'), usually no longer than a couple of paragraphs," which are combined to create a customized document in response to a user request (Biau Gil & Pym, 2006, p. 11). Although translation of XML content or of information chunks stored in a CMS does not constitute "localization" as the process has been traditionally understood, "content translation projects are now often considered as localization projects simply because of the complex environments in which the content is authored, managed, stored and published," as Esselink observes (2003b, p. 7). Complexity, once the hallmark of software localization projects, is now a defining characteristic of large-volume translation as well.

Finally, another fundamental characteristic now shared by localization and content translation is the fact that they do not involve translation of *linear text*, but rather translation of disembodied *strings* or *chunks* of text. "In understanding text, a reader must not only be able to integrate information within sentences but also make connections across sentences to form a coherent discourse representation," as Rayner and Sereno observe (1994, p. 73). However, it is not always possible to make such connections while translating strings: "Due to their non-linear structure and lack of narrative thread, software programs cannot be 'read' in the same way as [traditional documents]" (Dunne, 2009, p. 197). The same can be said for XML content and CMS chunks. Translation of strings or information chunks is technologically simpler than traditional localization because it does not require translators to compile or build target files, but is cognitively more complex because it requires translators to construct a mental model of a text that does not yet exist.

Ultimately, the convergence of the terms "localization" and "translation" is symptomatic of the evolution of digital "texts" over the past 25 years. The translation of nonlinear text without context and "texts without ends" (Biau Gil & Pym, 2006, p. 11) raises profound questions for students, scholars, educators, and practitioners about the nature of translation and, by extension, multilingual communication in the digital world. As Esselink observes, "it looks likely that while translators will be able and expected to increasingly focus on their linguistic tasks . . . the bar of technical complexity will be raised considerably as well" (2003b, p. 7).

SEE ALSO: Computer-Assisted Translation; Internationalization and Localization; Technology and Translation; Translation Tools

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Translators' Code of Ethics

ROSEMARY ARROJO

Every translation promises to represent the original in a different linguistic and cultural environment, and often in a different time. The complex process that makes it seem possible necessarily raises questions regarding the propriety of the translator's performance. How does a translation do justice to the original? What should the translator do in order to produce a faithful translation? How should the domestic and the foreign relate to one another? In fact, it would be practically impossible to address either the theory or the practice of translation—on any level, in any context, for whatever purpose—without at the same time invoking some kind of implicit or explicit code of ethics that should guide translators and reassure us about the legitimacy of their activity.

In the more than 2,000 years of scholarship on translation produced in the West, ethics has been largely associated with demands of total fidelity to the source text and culture as the central principle informing the translator's task. Insofar as the Western tradition has been basically Platonic, and, thus, generally defined by the belief in the possibility of a clear-cut opposition between idealized originals and their faithful repetitions in other contexts, it relies on the view of translation as the transportation of the same meaning across languages and cultures and, consequently, must also search for ways to appease its own deep-seated anxiety about the risks involved in this potentially dangerous operation.

The implicit code of ethics for translators in this strong tradition must repudiate or repress any possible sign of their interference in the process of translation. An opposing set of views on the topic, which can be associated with the increasing dissemination of postmodern, anti-Platonic thought in the last three or four decades, is interested precisely in the differences that translations and translators unavoidably bring to the process of meaning construction that shapes cultural products and identities. When translation is recognized as an inevitable agent of change and transformation, its implications become essential not just for a redefinition of the translator's task and the codes that supposedly guide it, but for all of us interested in a broader understanding of the productive relationships it establishes between the domestic and the foreign.

The Traditional Conception of Translation: For an Ethics of the Same

There is no better example of the sacralization of originals that is part and parcel of the Western, mostly Platonic, Judeo-Christian tradition than the treatment usually given to religious texts. An appropriate illustration can be found in one of the first documents about translation known to this tradition: the letter written by one Aristeas around 130 BCE on the translation of the Hebrew Scripture into Greek undertaken in the kingdom of Ptolemy Philadelphus (285–247 BCE). According to Aristeas's version of the legend of the Septuagint, the translation was carried out by a select group of 72 translators who worked together in perfect harmony and made sure that they always washed their hands and prayed before approaching their task. Fully committed to "make all things symbols of righteousness and truth," the 72 translators finished their Greek "transcription" of the original in 72 days "as

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if this coincidence had been the result of some design" (Robinson, 2002, p. 6). The suggestion that there was indeed some divine intervention in the process seems to have placated the fear that their version could somehow constitute an illegitimate representation of God's word, and also underscored the decision by "the leaders of the people" to turn the translation into another sacred original that should remain untouched so that it "might be preserved imperishable and unchanged always" (Robinson, 2002, p. 6).

Inasmuch as ethics in translation has been so inextricably related to the neutral repetition of the same, the reflection on the topic is dominated by reminders of the need to curb the dangers of difference, often associated with the translator's potentially improper handling of the original. In the *Essay on the Principles of Translation*, published in 1791 by the Scottish historian Alexander Frazer Tytler, for example, a good translation is defined as that "in which the merit of the original work is so completely transfused into another language as to be as distinctly apprehended, and as strongly felt, by a native of the country to which that language belongs as it is by those who speak the language of the original work" (Robinson, 2002, p. 209). Following this conception, Tytler implicitly proposed a detailed code of ethics that could be summarized by his three "general laws of translation": first, "the translation should give a complete transcript of the ideas of the original work"; second, "the style and manner of writing should be of the same character with that of the original"; and, finally, the translation "should have all the ease of original composition" (p. 209). If we consider them carefully, Tytler's "laws" appear to be far more demanding (and even less realistic) than the general principles that seem to have directed the Septuagint. While for Philadelphus's contemporaries it sufficed that the translation allegedly offered a legitimate—albeit divinely guided—"transcription" of the original, Tytler prescribed total fidelity *both* to the source *and* to the target languages and cultures, suggesting that the process of translation should miraculously erase any possible difference involved in the transposition of meaning across different languages, different cultures, and different time frames.

These notions and concerns have been at the core of the scholarship on translation produced in the West at least since the letter of Aristeas and are still in full force today. As George Steiner pointed out in 1975, "all theories of translation—formal, pragmatic, chronological—are only variants of a single, inescapable question" about the ways in which fidelity should be achieved (Steiner, 1975, pp. 261–2), a question that has hardly included or considered the translator's perspective and circumstances. Predictably, the issue of fidelity is also fundamental for contemporary professional organizations such as the American Translators Association (ATA), whose current "Code of Ethics and Professional Practice" (approved in October of 2010) establishes that their members accept as their "ethical and professional duty," first and foremost, "to convey meaning between people and cultures faithfully, accurately, and impartially" (http://www.atanet.org//membership/code_of_professional_conduct.php). Thus, also for the ATA, ethics in translation is practically synonymous with accuracy and impartiality. Placed in an ideally neutral space between the domestic and the foreign, between different people, different languages, and different cultures, translators and interpreters are viewed as mere bridges that should make it materially possible for meaning to travel, unchanged and untouched, from one side to the other. Therefore, in order to be ethical, translators and interpreters should remain invisible and neutral and, at the same time, appropriately apply some specific knowledge—of the languages, the topics, and the terminology involved—as well as have adequate access to professional tools and reference materials. (See also Chesterman, 2001; Howard, 2009.)

This conception of translation, like the ones behind the Septuagint and Tytler's "laws," implicitly proposes an unrealistic code of ethics that not only relies on the possibility of the repetition of the same, but also grossly downplays the translator's role in the actual production of translated texts. However, as the ATA document inadvertently shows, the

question of ethics in translation is far more complex than this conception might suggest. In fact, one cannot even begin to properly address it without taking into account the inescapable issue of the translator's agency and how it determines the choices without which there would not even be any translation. It is certainly significant that in the Association's "Code of Ethics" most of the principles following the initial recommendation regarding fidelity actually try to establish guidelines for translators and interpreters on how to be ethical in their inevitable partiality. The ATA's second principle appropriately suggests, for instance, that members should "hold in confidence any privileged and/or confidential information entrusted to [them] in the course of [their] work," a recommendation which involves at least some form of partiality: when translators and interpreters hold information in confidence, they have consciously chosen to pay allegiance to something or to someone, not to all those parties that might need or profit from the information.

Furthermore, as the ATA also seems to recognize, there are other elements to be considered by translators and interpreters regarding the ethics of their activity. It cannot be ignored, for example, that such professionals are usually paid for their work and that they often develop business relationships among themselves, relationships which do require them to privilege certain interests over others. Thus, the Association urges members "to define in advance by mutual agreement, and to abide by, the terms of all business transactions among [themselves] and with others." Again, it could be argued that what is recommended here is not the application of an ethical guideline that could miraculously guarantee impartiality and protect all the interests at stake in such exchanges but, rather, that professionals become aware of their interests and those of others and, thus, choose and negotiate what interests should be honored by those involved.

Since translation never takes place in a vacuum, and since it is not possible for translators and interpreters to be equally faithful to *both* the original *and* the target languages and contexts, or to protect all the often-conflicting interests of those represented in these different positions, they cannot be exempt from having to make choices in every aspect of their work and, thus, from being partial in what they do. And this is precisely why ethics is such a fundamental issue not only for translators and interpreters but, also, for those who study the mechanisms and the impact of their activity.

A Postmodern Conception of Translation: For an Ethics of Difference

The overall foundation of a postmodern, anti-Platonic framework for translation is the notion that language works as an instrument that inescapably creates and disseminates, rather than merely communicates, meaning. As it questions the belief in the possibility of clear-cut oppositions between content and form, the original and its repetitions, the interpreter and what is being interpreted, an anti-Platonic conception of language will necessarily consider the reader's or the translator's perspective as a constitutive agent in the process of meaning construction. Therefore, translation can no longer be conceived in terms of an impersonal transportation of stable meaning across different languages, cultures, and contexts, but is recognized, instead, as a form of transformation, a "regulated transformation of one language by another, of one text by another" (Derrida, 1978, p. 20), the limits of which are decided and implemented by translators and their contexts and circumstances.

Once the translator's intervention is acknowledged as the element that fuses and transforms the foreign into the domestic, or vice versa, we can also begin to consider a different code of ethics for the profession in order to make it possible for meaning to travel and be transformed elsewhere. Basically, it would recognize the impossibility of erasing or repressing difference in both the process and the product of translation, and, consequently, redefine

the translator's role, which could no longer be described as a passive bridge between the domestic and the foreign. If translators stop hiding their authorial role behind vague notions of ethical impartiality, they will have to learn how to face the consequences of their visibility and be responsible for the choices they make and the allegiances they choose to cultivate in their work. In fact, from this perspective, it would actually be unethical and irresponsible for translators to insist on hiding behind claims of neutrality or to wash their hands of the responsibilities involved in the highly complex and influential work they do (Arrojo, 1998; Venuti, 1998).

The consequences implied by these views are far reaching and fundamental, not only for the theory and practice of translation but also for translator training, which, more than ever, should concentrate on the vital importance of ethics for the profession and strive to enable future translators to become more aware of their authorial role and to take on the responsibilities that it brings. Furthermore, one might consider that this new code of ethics for translators should also involve an explicit effort to educate clients, readers, critics, professional organizations, and all those who are directly affected by their work on how to reevaluate the opposition that tradition has built between originals and translations (Arrojo, 2005). These issues and the possibilities they have created for a broader understanding of what a translators' code of ethics might entail have also been the object of a growing, interdisciplinary trend in the humanities and social sciences that recognizes the essentially political role of translation in the construction of cultures, identities, and global relationships, thus serving as a valuable instrument for a better understanding of the ways in which the domestic and the foreign, the national and the global, the dominant and the subaltern, or the past and the present, relate to and are shaped by one another. (See for example, Bermann & Wood, 2005; Bachmann-Medick, 2009.)

SEE ALSO: History of Translation; Linguistic Approaches to Translation; Sociological Approaches to Translation; Translation Theory

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Trimble, Louis

ELAINE TARONE

Louis Preston Trimble (1917–88) was a leader of the American "Washington School" of rhetorically based research on English for science and technology (EST). EST mostly concerns English-medium scientific and technical writing focused on facts and hypotheses about facts, and includes journal articles, teaching textbooks, and technical manuals (Trimble, 1985, pp. 5–6). The Washington School was a group of scholars at the University of Washington in Seattle between 1967 and 1988 who were then considered "the only serious and influential" group in the USA working on EST (Swales, 1985, p. 58). Trimble led this group in the development of the "grammatical-rhetorical" approach, which fundamentally assumed that in researching scientific and technical language use, it is not sufficient to identify grammatical forms in isolated sentences; rather, it is important to identify the relationships between such grammatical forms and their rhetorical function in the discourse. Discourse is here defined as a collection of connected sentences and paragraphs that together make up a coherent, cohesive text. The "grammatical-rhetorical" EST researcher aims to study the rhetorical organization and functional content of EST discourse as well as its "rhetorical-grammatical" relationships—for example, the way tense markers function in such rhetorical devices as defining, classifying, describing, or evaluating information (Trimble, 1985).

Throughout Trimble's life, he was also a writer of fiction (producing more than 60 titles: mysteries, westerns, and science fiction). During this period, he also earned a living by hog ranching, house painting, ditch digging, stump ranching, and accounting (Selinker, Tarone, & Hanzeli, 1981, pp. v–vi, 225–7). But his academic career began to flourish in 1967 at the University of Washington when he was hired by the College of Engineering in a groundbreaking program to teach specialized English as a second language courses for undergraduate engineering students. Almost immediately Trimble, working with Larry Selinker, realized that they knew very little about the particular characteristics of the English register used in engineering. As teachers, they took it seriously when their students brought in text samples from engineering books or research articles in which grammatical use did not accord with sentence-level rules they were learning in ESL grammar books. "Our research began with an effort to determine the essential nature of scientific and technical English by finding its major characteristics and where it differed (if it did) from other forms of written English" (Trimble, 1985, p. 1). In that research enterprise, Trimble and Selinker included Mary Todd (later Mary Todd Trimble) and graduate students like Robert (Bley-)Vroman, Thomas Huckin, John Lackstrom, and Elaine Tarone in a highly collaborative and innovative research project, led by Trimble, that produced many of the publications listed in the References below. It is probably fair to say that the subsequent research endeavors of all these individuals were profoundly influenced by their exposure to Trimble's "rhetorical" approach to EST, which will be described below.

Trimble defined "rhetoric" in EST as the process of producing a piece of scientific or technical writing by choosing and organizing information for a specific set of purposes and a specific set of readers. This rhetorical process includes the sequencing of items of information, and the expression of the relationships that exist between these items. According to Trimble, the cognitive processes of EST rhetoric are structured in a well-defined, if implicit, hierarchical pattern, with several levels in EST discourse. Level A in

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Trimble's framework designates the overall objective of the piece of discourse, such as to detail an experiment, or make a recommendation, or present a new theory or set of hypotheses. Level B consists of general rhetorical functions that can be used to develop the objective selected above. Examples of general rhetorical functions used to detail an experiment might be to state the purpose, report past research, state the research question, present the apparatus used in the experiment, present the procedures used in the experiment, and so on. Some of these Level B functions may appear as distinct sections of, say, a technical report. Level C consists of specific rhetorical functions that develop each of the general functions in B. For example, in accomplishing the general rhetorical function of presenting an apparatus, the writer might use one or more of these specific rhetorical functions: (a) description: physical, function, process; (b) definition; (c) classification; and (d) visual–verbal relationship. Finally, Level D consists of rhetorical techniques that show the relationships among the rhetorical units of Level C: orders (time order, space order, cause and result) and patterns (order of importance, comparison and contrast, analogy, exemplification, illustration) (Trimble, 1985, pp. 10–11).

Trimble used this framework for EST rhetorical processes not only to structure research, but also (and perhaps even primarily) to provide non-native English readers and writers with a framework to help them analyze and improve their comprehension and production of scientific and technical English discourse. A major problem for such learners, according to Selinker, Todd Trimble, and Trimble (1976), is that rhetorical information in scientific discourse is typically implicitly stated, because the writer assumes that the reader already knows the rhetorical conventions of the discipline. For pedagogical purposes, this means that learners need analytical tools so they can identify such disciplinary rhetorical conventions on their own. In a highly inductive pedagogical approach, Trimble used a "discovery procedure" to get his engineering students to use the general rhetorical process framework described above in carrying out the same kind of close analysis of scientific and technical texts that he himself did in his research for publication. Trimble's pedagogy included the core principles of individualization, parallelism, and the use of different categories of text as a focus of instruction. Individualization means designing a set of general assignments that could be used by each student in a given class to meet his or her individual needs. Parallelism means selecting a unit of EST discourse for focus that had exemplary rhetorical, grammatical, and lexical features and scientific subject matter at a level that is understandable by students from many fields of study. Useful categories of texts could be authentic, adapted, synthesized, or created, depending on the level and needs of the class. Particularly in helping engineering students to understand EST discourse, Trimble found it necessary to distinguish two types of paragraphs: the conceptual paragraph (all information selected by a writer to develop a core generalization) and the physical paragraph (the piece of text separated out on the page by spacing or indentation) (Trimble, 1985, pp. 44–51).

One of the most important steps that the research group led by Trimble carried out in analyzing a piece of EST discourse was

> the determination of the rhetorical-grammatical relationships; that is, of the specific grammatical elements which appear to be governed by the rhetorical functions that writers choose to carry their information. This helps readers understand why a particular piece of grammar (for example, a verb tense or mood or definite article) is used in a particular text when this use may seem to violate the logic or the "rules" of the language. (Trimble, 1985, p. 70)

This tool of rhetorical-grammatical analysis produced some of the most startling and oft-cited research findings of the Washington School.

In one rhetorical-grammatical analysis, for example, Trimble and colleagues found that in research article literature reviews reporting related research, tense choices were made by many EST writers nontemporally—that is, their use of present, present perfect, or past tense to refer to the work of others was unrelated to the publication date of that work. Rather, their tense choice indicated whether they viewed the reported work as supportive of, or contradictory to, their own position: Present tense marked the supportive work, and past tense marked the opposite (Lackstrom, Selinker, & Trimble, 1973; Todd Trimble & Trimble, 1982). Trimble (1985) provides an authentic example of this kind of tense choice; in this text, a space scientist reports two studies this way: "Davis (1962) . . . deduced" but "Elvey (1957) . . . on the other hand . . . has observed." The use of past tense for Davis and present perfect for Elvey, Trimble argued, has nothing to do with the publication dates of the studies being cited, but simply signals to the reader that the writer agrees more with Elvey's observation than with Davis's deduction (Trimble, 1985, p. 126).

A similar rhetorical-grammatical analysis showed that in astrophysics journal articles, passive voice is not used to indicate scientific objectivity, as ESL grammar books still tend to state; rather, writers' selection of active or passive voice with verbs in a logical argument signals to the reader whether the verbal action is their own original contribution (active) or is a standard procedure in the field (passive) (Tarone, Dwyer, Gillette, & Icke, 1981). Rhetorical-grammatical analysis was also later used to examine article use in ESL (Huckin & Olsen, 1983; Todd Trimble & Trimble, 1985) and presupposition in technical writing (Selinker, Trimble, & Vroman, 1974), to analyze ESL learners' difficulties in distinguishing passive and stative verbs in EST discourse (Trimble, 1985, pp. 115–18), and to teach the use of modals in EST discourse (Lackstrom, 1978).

Much of the work of Trimble and colleagues has subsequently been taken up and further developed by such scholars as John Swales, whose seminal and still useful volume *Genre Analysis* (1990) provides the useful construct of "discourse community" to contextualize Trimble's "rhetorical" approach to EST and account for the social factors underlying it.

Louis Trimble was a scholar who was modest about his role in the field and went out of his way to involve others in his work and to foreground their accomplishments while minimizing his own. His work in EST was not motivated by ego or influenced by academic hierarchy. It was first and foremost focused on helping his international engineering students to read and understand the English language texts they encountered in their classes, and to write more comprehensible prose for their teachers and publishers. He involved his students in his pedagogy, regularly inviting them to bring examples of these texts into class along with their questions about what they found there, and he involved graduate students and other teachers in thinking about those questions as well as their own. In doing so, and in thinking seriously about what the answers to these questions might mean, he made a lasting intellectual contribution, moving the field of EST in America into new and exciting territory.

SEE ALSO: English for Academic Purposes; English for Science and Technology; Grammar in Academic Writing; Grammar and Discourse; Historical Development of Language for Specific Purposes; Methods for Language for Specific Purposes; Reading and Content Area Learning; Reading and Language for Specific Purposes; Selinker, Larry; Swales, John M.; Teaching Reading

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Tucker, G. Richard

RICHARD DONATO

For over 40 years, G. Richard Tucker (1942–) has contributed significantly to research in diverse domains within the field of applied linguistics and has provided inspiring leadership to the profession. His influential research is far-reaching ranging from early psycholinguistic research on various aspects of bilingualism (Cohen, Tucker, & Lambert, 1967; Tucker, 1968; Tucker, Lambert, Rigault, & Segalowitz, 1968) to his more recent work in sociolinguistics, heritage language learners, and assessment of innovative foreign language programs in the United States (Paulston & Tucker, 2003; Tucker & Donato, 2003; Tucker, 2004, 2007).

Tucker earned his BA in psychology in 1964 from Williams College, and his MA and PhD in psycholinguistics from McGill University in 1965 and 1967 respectively. Upon graduation from McGill and over the next ten years, Tucker served as a project specialist for the Ford Foundation in Manila, Beirut, and Cairo. Concurrent with his international work with the Ford Foundation in language education, Tucker was a member of the psychology faculty at McGill University where he quickly moved through faculty ranks and earned the title of professor in 1976.

During his tenure at McGill (1967–78), Tucker became a pioneer in the field of sociolinguistic approaches to second language acquisition, bilingualism, and bilingual/immersion education. Some of Tucker's most well known research on the comprehensive evaluation of the bilingual education project in the Quebec community of St. Lambert was conducted during this time. With colleagues Lambert and d'Anglejan, Tucker was among the first researchers to conduct longitudinal investigations of diverse aspects of French–English bilingual education in the elementary grades. His research included studies of the comparative achievement in subject matter learning in two languages (Tucker, 1975), functional proficiency and communicative skills of bilingual children (Genesee, Tucker, & Lambert, 1975), and the cognitive consequences of bilingual schooling (Bruck, Lambert, & Tucker, 1977). Tucker's research in this area has provided the theoretical and methodological framework for similar studies of educational innovations and has served as a basis for education policy on dual-language instruction worldwide.

While investigating second language learning and innovative immersion instruction in his North American home, Tucker maintained an active research agenda that contributed significantly to understanding linguistic diversity and language policy in developing countries around the world (Tucker, Taylor, & Lambert, 1970). He investigated attitudes toward linguistic diversity in Egypt and the Philippines (Tucker, 1969), ethnic group interactions in multiethnic societies (Tucker, Taylor, & Reyes, 1971), and the structure of English-language policy in Jordan and in China (Harrison, Prator, & Tucker, 1975).

After leaving McGill in 1978, Tucker became president of the Center for Applied Linguistics, a position that he held until 1991. While at the Center for Applied Linguistics. Tucker created a vibrant center of applied linguistic research, research documentation and dissemination, and professional support and services for language teachers. In recognition of his extensive work in building one of our most notable applied linguistics resource centers in the world, the Center for Applied Linguistics instituted the G. Richard Tucker fellowship. This fellowship provides applicants with the opportunity to work side-by-side with the center's researchers during four weeks over the summer months.

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Tucker's research during his time as president of the Center for Applied Linguistics (1978–91) took a decidedly different turn from his previous work. During his presidency of the center, Tucker began to focus extensively on international aspects of language teaching, educational policy, and language planning. While maintaining his research and publications on bilingual education in North America, Tucker explored applied linguistic issues from a global perspective. His writings during this time reflected Tucker's desire to investigate the implications of research across national borders and instructional contexts (Tucker, 1979, 1981a), to establish a national research agenda for language education (Tucker, 1983a, 1983b), and to identify the ways to develop a language competent society here and abroad (Tucker, 1986, 1987, 1991). Additionally, Tucker's research reflected a clear sociolinguistic orientation to unraveling the emergent complexities of social policy and its relationship to second language acquisition in instructed contexts (Tucker, 1981b). Although his research and position papers expanded beyond the early days of the St. Lambert project to encompass now a broad worldview, Tucker remained anchored in the realities of the classroom and in the need for principled approaches to instruction based on the best available research evidence and psycholinguistic theory. With his colleague, Jodi Crandall, Tucker produced a series of studies on content-based language instruction that set the stage for research and theorizing in this area that has extended into the present (Tucker & Crandall, 1989; Crandall & Tucker, 1990).

In 1992 and following his presidency at the Center for Applied Linguistics, Tucker joined the Modern Languages Department at Carnegie Mellon University where he received the title of Paul Mellon University Professor of Applied Linguistics. In 1995, he became department head, a position he held until 2007 when he was appointed as interim dean of student affairs for the 2008–9 academic year.

Tucker remained a prolific scholar and researcher despite the demands of university administration. While at Carnegie Mellon University, his research reflects two areas for which Tucker is well known as an international authority, namely, language policy and planning and innovative second and foreign-language program development and evaluation. In his early years at Carnegie Mellon University, Tucker continued to write extensively on language policy and practice analyzing issues such as, the English-only movement, the education of linguistically and culturally diverse students, and the need for a language competent citizenry.

Reminiscent of his work in Canada with Lambert and colleagues, in 1994 Tucker turned attention to the development, implementation, and assessment of innovative foreign language programs in schools in the Pittsburgh area. With his colleague Donato and graduate students at Carnegie Mellon University and the University of Pittsburgh, Tucker initiated program development and research initiatives on the teaching of Japanese and Spanish to elementary school students. His collaborative research in this area is the first to investigate empirically foreign-language learning in US elementary schools (Donato, Antonek, & Tucker, 1996). His studies included investigations of the cumulative achievements of children participating in these programs (Tucker, Donato, & Antonek, 1996), attitude profiles of various constituencies and decision makers (Tucker, Donato, & Murday, 2001), and challenges that face the implementation of sequential language study (Donato & Tucker, 2007). His studies remain a primary source of information for school districts implementing foreign-language instruction across the grade levels.

Tucker has been recognized for his achievements with numerous honors and awards. To name a few, he was the recipient of the National Association for Bilingual Education (NABE) honoree of the year for significant contributions to the body of research on language acquisition and the establishment of sound bilingual education programs. In 1997, he was awarded the American Council on the Teaching of Foreign Languages Paul Pimsleur Award for his research on the comprehensive evaluation of foreign-language programs

in the elementary school. His extensive service to the profession was recognized with the James E. Alatis service award given by teachers of English to speakers of other languages. At Carnegie Mellon University, he received the Elliott Dunlap Smith Award for distinguished teaching and educational service in the college of humanities and social sciences. From the American Association of Applied Linguistics, he was awarded the Distinguished Scholarship and Service Award.

Tucker's extensive service record to the profession includes multiple year service as advisory board and executive committee member to organizations such as the International Research Foundation for English Language Education, the Summer Institute of Linguistics, and the American Association of Applied Linguistics.

Tucker continues his work at Carnegie Mellon University where he recently accepted the position of associate vice-provost for education at the university's Qatar campus. Tucker will reside on the Qatar campus beginning in August 2010 and plans to remain active in his research collaborations, student advisement, and professional service.

SEE ALSO: Assessing Multilingualism at School; Attitudes and Motivation in Bilingual Education; Content-Based Language Instruction; Heritage Languages and Language Policy; Language Policy and Multilingualism; UNESCO and Language Policy and Planning; US Foreign-Language Teaching in Kindergarten to 12th Grade

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Turell, Maria Teresa

MARIA S. SPASSOVA

In many countries around the world forensic linguistics is a well-established discipline, which seeks to describe the existing interplay between language and law. Forensic linguists like to refer to their discipline in terms of three areas of study: language of the law (the study of legal and administration discourse); language of the court and the legal process (the analysis of linguistic varieties of all those actors involved in judicial settings, such as judges, lawyers, defendants, witnesses, police); and language as evidence (the use of linguistic evidence in linguistic profiling and forensic voice and text comparison to help a court decide on speaker identification, authorship attribution, plagiarism detection, and trademark litigation cases, among many others).

Maria Teresa Turell, who was born in 1949 in Barcelona (www.upf.edu/pdi/iula/teresa.turell/), started pioneer forensic linguistic work at the end of the 1990s with two main purposes: (a) to launch forensic linguistics in Spain and Spanish-speaking countries, and (b) to make the epistemological and methodological foundations of this discipline at an international scale more rigorous and reliable. Turell's work in forensic linguistics draws from her long-standing research activity in the field of sociolinguistic variation, language contact, and multilingualism studies, reflected in the many funded projects that she has coordinated (CICYT-BFF 1990-0580; CICYT-BFF 1993-0725; CICYT-SEC 1996-0627; EU-FABULA 1998; EU-FABULA 2000; DGI-BFF 2001-0820; DGI-HUM 2004-05404-02) and the numerous publications that have appeared in books, collective volumes, and national and international journals (Turell, 1987, 1990, 1991, 1995, 2001, 2003, 2005a, 2007a, 2008a; Casesnoves, Sankoff, & Turell, 2006).

Turell held a Fulbright Visiting Postdoctoral Research position between 1984 and 1985 at the University of Pennsylvania Linguistics Laboratory, directed by William Labov. In her capacity as Professor of English Linguistics since 1986 and also as head of research group UVAL (Unitat de Variació Linguistica – www.iula.upf.edu/uval) in several Spanish universities—Universitat de Barcelona, Universitat Rovira i Virgili, and Universitat Pompeu Fabra—since the mid-1980s, at the turn of the 21st century Turell is conducting and supervising research both on linguistic variation within the speech community and on intra-speaker/writer and inter-speaker/writer variation in apparent and real time and across different textual genres, thus contributing to the task of measuring and describing an individual's idiolectal style, which still seems an unattainable goal for modern forensic linguistics, particularly in the area of authorship attribution. Since 2003 she has been the director of ForensicLab (www.iula.upf.edu/forensiclab), the forensic linguistics laboratory at Institut Universitari de Lingüística Aplicada, where she has been promoting teaching, research, and expert witness activities in this field. She is the academic director of the first master's degree offered in Spanish around the world (Master en Lingüística Forense IDEC-IULA: www.idec.upf.edu/master-en-linguistica-forense-espanol), which started in 2007–8.

Turell is the principal investigator of two funded research projects on forensic idiolectometry (MEC-HUM 2007-29140-E and MCI-FFI 2008-03593-FILO: www.iula.upf.edu/rec/ideolec/index_eng.htm), the results of which have contributed to introducing validity (internal and external) and reliability in the forensic comparative analysis of real-world texts and texts derived from real forensic cases. She has supervised two PhD dissertations in forensic phonetics (Cicres Bosch, 2007 http://www.tdx.cat/TDX-0411108-101619/; López

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Escobedo, 2011) and one in forensic authorship attribution (Spassova, 2009), and is also promoting and supervising research in other forensic linguistic areas such as deception in police interviews within the common law system, police interrogation in Spain, sexual child abuse, and trademark litigation. Results from this research are directly integrated within the teaching activities and expert witness performance of the staff members of ForensicLab.

Professor Turell's qualifications—BA honors in English language and literature (Universitat de Barcelona, 1973), MA in linguistics and ELT (University of Leeds, 1975), PhD in Catalan philology (Universitat de Barcelona, 1981), MA in forensic linguistics (Universitat Pompeu Fabra, 2008)—guarantee quality performance in her consultancy work as a forensic linguistic expert. She takes consultancy work for texts written in Spanish, Catalan, English, and French. Turell has provided linguistic evidence for more than 15 years and has been involved in more than 40 criminal and civil cases in Spain, Peru, and the United States. She specializes in (a) detection of plagiarism (between texts written in Spanish or Catalan and between Catalan or Spanish translations of an original text written in English or French); (b) forensic text comparison leading to more reliable decisions in authorship attribution; (c) semantic interpretation of ambiguous legal texts; and (d) trademark litigation. She has worked on many different forms of written texts, both in Spanish and Catalan: short texts, such as e-mails and faxes, and anonymous letters; medium-size texts such as informative reports in nonspecialized magazines; and longer texts such as terrorist conspiracy documents, as well as textbooks. In all cases where it is possible, she applies both qualitative and quantitative statistical analyses to ensure reliability and internal and external validity of results.

She has lectured extensively on all these forensic linguistic areas in Spain and the United Kingdom. Results from Turell's research and activity as a forensic linguistics researcher and expert have appeared in the *International Journal of Speech, Language and the Law* (Turell, 2004, 2010), and other journals (2007b, 2008b) and collected volumes (Turell, 2005b, 2008c; Spassova & Turell, 2007; Turell, Cicres, & Spassova, 2007; Gibbons & Turell, 2008). In collaboration with Teresa Castiñeira she is preparing an article entitled "Issues Facing a Multilingual Legal System: Two Systems, Two Languages in Catalonia?" She is also preparing two more books: *Language and Law Across Judicial Systems*, to be submitted to the Oxford University Press *Language and Law* series, and a popular introduction to forensic linguistics, coauthored with John Gibbons, which will be entitled *Delatados por el Lenguaje*.

M. Teresa Turell is a member of the Advisory Board of the Oxford University Press *Language and Law* series and elect vice-president of the International Association of Forensic Linguists (IAFL). In 2009, the Forensic Linguistics Laboratory, ForensicLab, whose director is Professor Turell, received the 2009 Knowledge Transfer Award from the Universitat Pompeu Fabra Board of Trustees.

SEE ALSO: Forensic Linguistics: Overview; Legal Interpreting; Linguistic Analysis of Disputed Meanings: Trademarks; Plagiarism

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Typology and Second Language Acquisition

ANNA GIACALONE RAMAT

The Relationship Between the Typological Approach and Second Language Acquisition

In recent years increasing emphasis on typological research has triggered a growing interest in the implications of typological findings on second language acquisition (SLA). The typological approach is relevant to acquisitional studies in (at least) two respects. The first of these is the crucial role of comparative methodology: the process of learning a second language involves a structural and functional comparison of the two linguistic types. Typological distance can be correlated to learning difficulties and learning pace; indeed, the presence of two different systems in the learner's mind is in all respects a contact situation at the individual level. Second, learner languages (or interlanguages) are a subset of human languages and as such a source of validation for typological universals. The implications of the typological approach have been scarcely recognized in the literature; however, this point was clearly stated by Greenberg (1991, p. 39): "one may say that universals apply equally to interlanguage and to primary language."

Typological universals are inductive generalizations about features of human languages, they are not innate properties of the human mind. This means that in typology first language is not the privileged focus for studying human linguistic capacity, as it is in generative linguistics; also, second languages contribute to research into the nature of language and help us to understand the structure and functions of human languages. In general, however, the relation between typology and SLA has been considered an unequal one, with typology as the source of hypotheses for studies of SLA. This idea has nowadays been replaced by a more balanced approach in which the role of SLA research is not limited to providing empirical data, but can contribute to revealing or refining the organization of universal properties (Comrie, 1984; Giacalone Ramat, 2003a). Moreover, as suggested by Comrie, language universals "lend themselves to ready transposition into predictions about ease of acquisition." The image of "cross currents" between typology and SLA research suggested by Huebner and Ferguson (1991) provides a template for actual and future research.

Functional Typology: Some Concepts and Their Implications for SLA

Functional typology aims to formulate constraints upon variation for a broad range of phenomena. Since the early days when the emphasis was on structural classification of types across languages during the nineteenth and twentieth centuries, typological studies have turned to the search for crosslinguistic generalizations (language universals) based on representative surveys of languages (Greenberg, 1966). Universals of language can be subdivided into *substantive universals* and *formal universals*. Substantive universals may be *absolute* (such as the universals that all languages have consonants, vowels, nouns, and

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verbs) or *implicational* (relating the presence of one grammatical property to the presence of some other property)—for example, if a language has first-/second-person reflexives, then it will have third-person reflexives (Comrie, 1989, p. 17).

Typological universals may have exceptions: this means that they are not absolute, but indicate tendencies (this fact does not diminish their validity, although absolute universals would be stronger). Word-order patterns, in particular the order of the major constituents of the clause, are typically formulated as statistical generalizations ("with more than chance frequency" to use Greenberg's expression): they are "statements of limitations on cross-language variation" (Comrie, 1989, p. 94). Universals in the typological approach thus contrast with universals in the formal generative approach as being inductive rather than deductive and part of innate linguistic ability. A survey of typologically relevant phonological and grammatical structures in the languages of the world is provided by *WALS* (Haspelmath, Dryer, Gil, & Comrie, 2005).

One of the earliest studies on typological universals that found an application in second language acquisition was the noun-phrase accessibility hierarchy for relative clause formation (Keenan & Comrie, 1977). The hypothesis was that learners of a second language would find it easier to acquire relativization on elements higher on the hierarchy (subjects and direct objects) than on elements lower on the hierarchy (oblique objects, possessors). While earlier work on native-speaker usage and SLA has largely borne out the predicted order, further studies have revealed a number of constructions in which the syntactic constraints between the relative clause and the main clause have been loosened to obtain a general noun-modifying clause. Furthermore, crosslinguistic study of relative clauses has pointed to considerable variation among the strategies adopted for specific positions on the hierarchy. Different strategies were found not only across different languages, but also at different levels of the same language (oral versus written, informal versus formal speech); substandard varieties of Romance as well as Germanic languages have revealed the use of different strategies with respect to standard varieties: pronoun retention, invariable markers, gapping, and the influence of various semantic and pragmatic factors.

Relative clauses in learner languages share structural similarities with findings from typological research: both strategies of juxtaposition and the use of invariable markers for all positions on the accessibility hierarchy are documented (though in fact relativized positions are mostly limited to subject and object). Consider the following examples from early learners of L2 Italian (Giacalone Ramat, 1999):

prendi mio eh una dialio io eh porto cinese
take-2SG my a journal I take 1SG chinese
'I would take with me a journal (that) I brought from China' (CH, L1 Chinese)

c'è un mio amico- lui si chiama ehm Lo/Lorenzo eh lui abita Greisietto
there is a my friend him is called Lorenzo him lives G.
'There is a friend of mine whose name is Lorenzo, who lives in G'. (MK, L1 Tigrinya)

The second example shows a kind of presentational construction of the type pointed out by Givón (1990, p. 655) in which the use of anaphoric pronouns represents a paratactic strategy of clause connection, also common in pidgins.

Hawkins (1987) has discussed predictions for the order of acquisition and expected types of learners' errors derived from implicational universals, while Hawkins (1999) introduced a performance perspective based on processing considerations to account for the distribution of relative clause patterns. Other correlations between typological generalizations and developmental patterns in L2 acquisition are provided by an analysis of the emergence of indefinite pronouns among L2 Italian learners (Bernini, 2003) according to the predictions of language typology.

It has been noted that learner languages lack morphological distinctions, irrespective of whether or not the source language or the target language are rich in morphology (Giacalone Ramat, 2009). The growth of morphology in learner languages partially reflects universal principles suggested by functional typology such as markedness principles.

External explanations for implicational universals, based on features outside grammatical structure, can be found at the cognitive, psychological, and pragmatic levels: it has been suggested that the reason why the subject position is the position available in all languages for relative clause formation is to do with ease of processing, as independently shown by acquisitional data (Keenan & Comrie, 1977).

The Role of Markedness

The concept of markedness, taken from the Prague school and adapted by Greenberg (1966) to crosslinguistic universals, essentially concerns a set of asymmetries characterizing pairs of linguistic elements. For example, according to structural markedness criteria, the marked member of a category will be expressed by at least as many morphemes as the unmarked member of the same category. A typical case would be the English plural marker *-s* in front of the zero singular (Croft, 2003). Typological markedness criteria exclude the type with marked singular and zero plural (this pattern is rare indeed: it is found e.g., in feminine nouns in several North Italian dialects*: la skara* 'the staircase'/*i skar* 'the stairs'). Leaving aside the whole set of markedness criteria, what is interesting from the acquisition perspective is that in linguistic oppositions the unmarked member of an opposition is favored over the marked one at all levels. Thus, markedness criteria lend themselves to predict ease and/or difficulty in L2 acquisition.

Frequency is a correlate of markedness: the unmarked member of an opposition is more frequent in language use (and also across languages—e.g., the singular is more frequent than the plural). Frequency of patterns in the input affects first language acquisition (Tomasello, 2003); although there are fewer studies on SLA, it is reasonable to expect that frequency might play a role (see Ellis 2002, p. 143).

Typological markedness and frequency may predict both language change and acquisition: the most frequently used words in a language undergo grammaticalization processes, may be abbreviated, and even substituted: the cycle of *pas* negation in French from Latin *passum* 'step' to the negative construction *ne . . . pas*, reduced to *pas* in the spoken language, is a case in point.

The effect of typological markedness on acquisition may be illustrated by the development of gerunds in L2 Italian (Giacalone Ramat, 2003a). On the one hand, in native Italian, gerunds as a means of adverbial subordination are more marked than finite forms; on the other hand, in the acquisition of Italian, the different functions of gerunds emerge according to a developmental sequence that can be read as a markedness scale, with the progressive periphrasis *stare*+gerund as the least marked construction followed along the scale by predicate gerunds and sentence gerunds as the most marked constructions.

The notion of typological prototypes is based on a view of categories defined in terms of core or central members and peripheral members. The analysis of prototypical transitive constructions as a cluster of features such as the presence of two participants, one agentive and volitional the other affected (Hopper & Thompson, 1980) is a clear example of the prototypical approach. In the acquisitional perspective, prototypical meanings for grammatical categories are expected to be acquired earlier than nonprototypical meanings because they are more accessible in that they require less elaboration by the mind (Taylor, 2008). In typological research, Dahl (1985) has argued for a past time prototype in the languages of the world that would associate past temporal reference, telic actionality, and perfective aspect. There is wide literature confirming that learners preferably associate past

grammatical markers to telic verbs that match the prototypical associations such as "break" or "find" (Andersen & Shirai, 1996). Although the prototypical approach has proved to be a useful tool in understanding the genesis and development of temporal and aspectual categories in learner languages, more research is needed on the interaction of various factors which contribute to the patterns observed. The so-called "primacy of (inherent) aspect" leaves many questions unanswered, particularly as to the origin of actional categories and whether they belong to learners' innate equipment or are acquired by children and adults on the basis of linguistic experience. According to recent research (Giacalone Ramat & Rastelli, 2008), prototypes in the area of predicate actionality would not belong to innate endowment, but have to be learned in the course of acquisition, taking into account the morphological and semantic environment of lexical predicates. Learners seem to grasp the actional content of predicates tentatively using a compositional approach.

Motivations for Typological Universals and Language Acquisition

One of the central aspects in typological studies is the search for motivations for observed synchronic crosslinguistic patterns. The competing motivations model has provided "an important class of explanations for both typological variation and constraints on that variation" (Croft, 2003, p. 64). The two main functional motivations are the economic motivation (the principle that the most frequently used expressions should be coded by means of the lowest number of morphemes) and the iconic motivation (maintaining that the structure of language should reflect the conceptual structure or the semantic structure as closely as possible). The economic motivation is reflected in markedness theory (unmarked forms are usually the shortest morphologically). Explanations in terms of economy are likely to be correlated to highest text frequency. An application of the iconic principle was proposed by Givón (1990, p. 826) as the "binding principle" governing the degree of grammatical integration of a complement clause with its main clause on the basis of the degree of control exerted by the main clause agent over the realization of the event or state of affairs in the complement clause. Evidence for the role of this iconic principle in acquisition comes from the development of clause-combining strategies in L2 Italian: modal predicates and phrasal predicates are regularly followed by reduced (or "deranked") infinitive forms, as predicted by Givón's iconic principle, while utterance predicates which entail a weak semantic integration with their complement clause are mostly followed by finite verbs in the complement clause (Giacalone Ramat, 1999). Furthermore, infinitive predicates depending on modal verbs emerge among the first attempts by learners to combine two predicates.

The general one-to-one principle (or "isomorphism" between meaning and grammatical form) is another iconic principle adhered to in acquisition. Although some violations have been reported, learners strive toward transparent diagrammatic relationships between form and meaning. In the acquisition of tense and aspect, for example, the tendency "from implicit to explicit" has often been pointed out: after a very early phase in which tense features are left unexpressed because of lack of grammatical knowledge, learners gradually develop tense marking in order to make temporal relations explicit (Dietrich, Klein, & Noyau, 1995). The effect of iconic motivation has also been recognized in word order, where it may give rise to patterns of competing motivations. As noted by Haiman (1985, pp. 237–8) the principle that "old information comes first in an utterance" would assign focus to the last element, while the principle of "what is uppermost in the speaker's mind tends to be first expressed" assigns focus to the first element. A further iconic principle frequently attested in learners' utterances is that of natural order, stating that the order of

mention of different events mirrors the order of occurrence; this principle in more advanced or native varieties may be overridden by syntactic devices.

As discussed above, competing motivation models can account for variation in language types, since no one language type is ideal, i.e., wholly motivated, because of competition among different principles governing the existence of language types. In addition, it has turned out that competing motivation analyses may contribute to a better understanding of developmental processes in acquisition.

The Issue of Transfer

A crucial factor in language acquisition is the role of the source language. Although there is no doubt that transfer influences learners' approach to a second language in subtle and complex ways, as the abundant literature has shown, we will be only concerned here with the interaction of typological universals and source-language structures.

In their study of two bilingual children exposed to Cantonese and English, Matthews and Yip (2003) provide a case to assess the weight of the dominant Cantonese language, in spite of the marked status of Cantonese prenominal relative clauses. The transfer of prenominal relative clauses to the children's English, triggered by external factors (the dominance of Cantonese in the children's environment) overrides the children's tendency to initially assume unmarked options. A subsequent stage in the children's bilingual development revealed the production of postnominal relative clauses with resumptive pronouns, a development that instantiates a universal strategy and as such an option universally available to language learners. Adduced motivations for transfer are external factors and there are structural similarities between prenominal object relatives and main clause word order.

This case shows that the children's early bilingual development may reflect a combination of both transfer and universal processes.

Some Further Relevant Topics on Second Language Research

Work on the impact of typological parameters on second language research has revealed some as yet unexplored aspects of the development of L2 competence. Needless to say, language acquisition is a far more complex process that involves several factors beyond typological findings. Other studies of interlanguages have addressed specific aspects of the acquisition process, e.g., they have aimed at the definition of developmental stages for diverse structures, such as negation, interrogative clauses, or the order of development of the grammatical means of temporal reference (see Pienemann, 1998, and for L2 Italian Giacalone Ramat, 2003b).

Analyses of naturalistic (or spontaneous) L2 learners have been highly influential in European and American linguistics, showing the emergence of grammar along paths that involve mechanisms and principles based on cognition, language use, and perception.

Learner languages are gradually built taking advantage of iconicity and economy principles; they also show the operation of some semantic and pragmatic principles that determine the form (and in particular the order of constituents) of learner utterances. The pragmatic principle of placing the focus last in the utterance (*focus last*) and the semantic principle of placing the NP with the most control first (*controller first*) govern the structure of the utterance at an initial stage, but can come into conflict in some discourse contexts, with one of them being overridden. Such conflicts have been identified as the motivating factors for the further development of interlanguages toward the target language. It has also been claimed that language learners universally develop a simple but efficient form

of language called the "basic variety" whose organizational constraints belong to the core attribute of the human language capacity (Klein & Perdue, 1997).

Recent work within SLA research has focused on usage-based models for investigating the emergence of systematic patterns in first *and* second language acquisition (Tomasello, 2003; Goldberg, 2006). Several studies have also underlined the role and impact of perception (mirrored in saliency), of processing abilities, of the input, and of discourse pragmatics in the development of child and adult language acquisition. While such approaches have become increasingly influential in the study of acquisition, the goal of this entry has been to illustrate the insights provided by typological studies on acquisition and also to sketch a synthesis of current work that shows how second language data can help to provide a better understanding of typological universals in their interaction with specific conditions of language production.

SEE ALSO: Cognitive Linguistics of Second Language Acquisition; Conversation Analysis and Language Acquisition; Crosslinguistic Influence in Second Language Acquisition; First Language Development of Grammar; Input Processing in Second Language Acquisition; Interaction Approach in Second Language Acquisition; Learner Varieties; Second Language Pragmatic Development; Thinking for Speaking in Second Language Acquisition

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UNESCO and Language Policy and Planning

CLINTON ROBINSON AND GABRIELLE HOGAN-BRUN

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) is the specialized agency of the UN system that carries the flag globally for the human and intangible aspects of society and development. Founded in London in 1945 during the aftermath of World War II, its charter (UNESCO, 1945) emphasizes the importance of knowledge, values, and attitudes in the conduct of human affairs. The opening words of the charter have an abiding relevance: "*since wars begin in the minds of men, it is in the minds of men that the defence of peace must be constructed*." The underlying concern for peace, respect, dignity, and diversity continues to inspire its global work and leadership role—a concern within which language occupies a critical place.

UNESCO defines its role in part as a clearing-house and a laboratory of ideas, and it is from these perspectives that the organization addresses questions of language. If, as Ager (2001, p. 5) asserts, language planning is the way in which "organised communities . . . attempt to influence the language(s) their members use," and language policy is "official planning carried out by those in political authority," then UNESCO has to be seen as exercising an upstream function. Given its international and intergovernmental nature, it has no direct impact on language use nor on official planning—its influence is indirect and can best be characterized as shaping the policy environment. Thus, UNESCO has influence in the context of establishing guiding principles and seeking consensus among its 193 member states. From UNESCO's point of view, it is the latter which determine policy and implement planning. UNESCO addresses issues of language policy and planning in the areas of culture, education, science, and communication.

From the perspective of culture, UNESCO sets language in the context of "intangible heritage" and of cultural diversity. Defining "intangible heritage" as the "representations, expressions, knowledge . . . that communities, groups . . . recognize as part of their cultural heritage" and as that which "provides . . . a sense of identity" (UNESCO, 2003a, p. 2), language is listed as a "vehicle of the intangible cultural heritage." UNESCO developed in 2003 a Convention for the Safeguarding of the Intangible Cultural Heritage, a normative instrument whose application in member states is monitored on a regular basis. In terms of UNESCO's programs, this convention has given prominence to action on endangered languages with the elaboration of criteria of endangerment and the development of an online interactive *Atlas of Endangered Languages* (Moseley, 2010; the online version is available at http://www.unesco.org/culture/languages-atlas/).

Through these initiatives, UNESCO works to improve policies not only to preserve the world's languages in terms of documenting them before they disappear, but also to promote their greater use in social domains (UNESCO, 2009). The focus on languages that are endangered has left a gap in UNESCO's attention to indigenous and minority languages that, while not currently in danger of disappearing, are nevertheless under long-term threat. In principle, UNESCO addresses this through a further normative instrument, the Convention on the Protection and Promotion of the Diversity of Cultural Expression (UNESCO, 2005, p. 5). Clearly, this has potential implications for policies on language—all

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the more so since the convention stresses the importance of protecting the cultural expressions of "minorities and indigenous peoples" (UNESCO, 2005, p. 7). However, language as such is not mentioned in the convention, even though its emphasis on "diversity of cultural expression" implies a concern for the linguistic dimension.

However, in line with its human rights principles UNESCO produced two important instruments, the 1978 Declaration of Race and Racial Prejudice, which challenges linguistic discrimination, and the 2002 Declaration of Cultural Diversity, which especially links questions of cultural diversity with human rights. Advocating policies of cultural pluralism (in Article 2), it calls for policies that encourage inclusion and participation for all citizens to foster social cohesion in our increasingly diverse societies. It contains an action plan committing participating parties to cooperation on objectives which include language-related issues. UNESCO is now developing a coordinated cross-sectoral approach linking migration, integration, and language policies (see De Guchteneire & Pecoud, 2009).

At the heart of UNESCO's mandate to fulfill the right of every person to a basic education of quality is a concern for access, and determining the language of education has been a key question since its foundation. In 1953, UNESCO espoused the position that "every effort should be made to provide education in the mother tongue" (UNESCO, 1953, pp. 47–8), and it has maintained a consistent stance since then. Fifty years later, an education position paper reiterated the same principles: "UNESCO supports mother tongue instruction as a means of improving educational quality" (UNESCO, 2003b, pp. 30–1). The 2003 document elaborates further principles of bilingual and multilingual education, and of language learning as an aspect of intercultural education. The Education for All Global Monitoring Report, published by UNESCO annually since 2002, has consistently called for language policies which give maximum access to educational opportunity by using the first language of the child. In its 2010 edition, the report identifies language as a cause of marginalization from education, particularly for ethnic minorities, and calls for the "development of intercultural and bilingual education" as a priority to improve access and quality (UNESCO, 2010, p. 273).

In parallel to its focus on language as a vehicle of intangible cultural heritage, UNESCO also supports policies which promote indigenous languages as vectors in discovering and describing indigenous knowledge systems. In aiming to demonstrate the necessity of using local languages as a means of accessing those systems the organization promotes languages in the process of documenting examples of indigenous knowledge systems. The implications for language planning and policy, while made explicit by UNESCO, need to be presented through advocacy on a larger scale. Language is also a factor in UNESCO's exploration of the links between biological and cultural diversity, with an emphasis on promoting policies that give respect and full value to local perceptions and linguistic categorizations of the natural environment (UNESCO, 2008).

In terms of communication, UNESCO focuses on supporting policies promoting multilingualism in the electronic media, or cyberspace. The pertinent resolution (UNESCO, 2003c) calls for multilingual approaches to both content and operating systems, specifically to

> promote human interaction on the Internet by encouraging the creation and processing of, and access to, educational, cultural and scientific content in digital form, so as to ensure that all cultures can express themselves and have access to cyberspace in all languages, including indigenous ones. (2003c, p. 6)

The emphasis on indigenous languages echoes UNESCO's concern in culture, education, and science to ensure that smaller population groups who are distinguished by language have the same rights and opportunities as others. However, while the principle is well

established and regularly articulated, it does not necessarily mean that the policies of national governments move strongly in that direction.

As a way of giving coherence to its own action in these various areas of language policy and planning, UNESCO operates an intersectoral platform on languages, one of whose projects in 2010–11 is to develop a language policy toolkit with the aim of assisting governments to develop policies that integrate the interconnections between education, media, cultural diversity, language endangerment, and other relevant domains, recognizing that policies in one area have implications in another.

UNESCO's impact on language policy and planning is indirect. What does it depend on? On one hand, the research and pilot projects provide an evidence base on which member states can more confidently design policies, and on the other, impact will depend on the vigor and determination with which UNESCO communicates the collective perspective it represents. In a world where linguistic diversity is under threat from various globalizing tendencies, UNESCO's role in highlighting the need for inclusive policies respectful of diversity is ever more essential.

UNESCO's unique mandate within the UN system places it in a position to remind its member states and the world at large of the significance of the human dimension of collective endeavors—learning and education, culture, communication, and science. Language is both a means and a symbol of development in these areas, and UNESCO's global leadership on language issues will continue to be of crucial importance.

SEE ALSO: Endangered Languages; Indigenous Languages in the 21st Century; Linguistic Diversity; Multilingualism and the Internet; Multilingualism and Language Rights

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Universal Grammar and Second Language Acquisition

TERESA PARODI

This entry will introduce universal grammar (UG) with respect to second language (L2) acquisition. It will first deal with the notion of UG and how it works in the adult language and in the acquisition of the first language (L1) before turning to the acquisition of an L2.

General Points

The UG framework takes a cognitive approach to language. A grammar is understood as the knowledge we have of our own language ("of" the language, not "about" it; for example, speakers of a language are able to produce a negated utterance, even if they cannot explain the linguistic process leading to it). This knowledge allows us to produce and to understand utterances in this language. It also allows us to identify sounds, words, sentences, and combinations of them that are part of this language or are not.

Native speakers know not only what expressions mean, but also whether the form of a given expression is or is not consistent with the grammar of their language. And it is here that UG plays a role. UG is assumed to be part of the innate language faculty. The role of UG is to determine in advance what is or is not a possible grammar. UG provides an inventory of possible grammatical categories (e.g., nouns, verbs, plural, or tense as both morphological and semantic categories) as well as an inventory of possible grammatical operations; that is, it determines the way in which grammars can function. Some aspects of language hold across languages (so-called principles of UG); others are language specific. Language variation is not random: Languages do not form questions following linear ordering rules of the type "the question word should be the third word in the interrogative clause," which would yield *did Taroo <u>what</u> eat?* as well as *did your <u>what</u> friend eat?* Languages vary along certain lines, known as parameters of language variation. For example, all languages have question words, but their distribution varies: They can appear in the position where non-question words appear in declarative clauses, as in the Japanese sentences of (1), or in a position at the edge of the clause, as in the English sentence (2).

(1) a. Taroo-wa *keiki-o* tabemasita
Taroo-top cake-acc ate

b. Taroo-wa *nani-o* tabemasita-ka
Taroo-top what-acc ate?

(2) *What* did Taroo eat?

UG in L1 Acquisition

Before getting into L2 acquisition it is helpful to have a brief look at how UG works in L1 acquisition, focusing in particular on the initial state, the developmental process, and the

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end state. The last is clear: The outcome of L1 acquisition is inevitably the adult version of that particular language. How do children get there? The obvious answer is that children learn their L1 through exposure to linguistic experience: Children need to be exposed to their L1 and receive sufficient input. However, the linguistic data children are exposed to are both under- and over-informative. They are under-informative in that not all possible words, forms, and expressions will be represented in what children hear. Absence from the input could mean either that that expression has just not occurred by chance or that the expression is impossible in that particular language: Children are able to identify those expressions that belong to the latter set, and to establish some kinds of grammatical knowledge, in spite of the fact that the input is under-informative. An example is the identification of possible antecedents for anaphors like *himself*, as in example (3). In this case there are two participants, *Tom* and *Max*; *himself* could in principle refer to either of them, but in English it can only apply to *Max*.

(3) Tom said that Max hit himself.

On the other hand the input may be potentially misleading about the target language, as it may contain false starts, repetitions, speech errors, and so forth (over-informative input). UG mitigates the effects of the under- and over-informative input (*poverty of the stimulus*) by offering a framework of categories and operations that constrain the search or hypothesis space within which grammatical representations are formulated and, thus, guiding both interpretation and production. The initial state in L1 acquisition is, then, UG paired with exposure to linguistic experience. UG guides development, so that the child's grammar is at all stages a possible human grammar, as opposed to a wild collection of words without any particular organization or organized according to individual rules, which would make the child unintelligible for everyone else. UG guidance accounts for the fast rate of acquisition and for the similarity of developmental stages across individuals learning the same language and across different languages.

UG in L2 Acquisition

If we now turn to L2 acquisition, the central question is whether in this case the acquisition process is guided by UG as the acquisition of the L1 is. What would be the evidence? We can compare with the acquisition of the L1 and its initial, intermediate and final stages.

Given the end point in the acquisition of the L1, the most straightforward evidence would be if learners would achieve in the L2 a level of proficiency equivalent to that of a native speaker of that language. Arguably, most speakers of an L2 do not become native-like. This in itself, however, does not exclude the possibility that UG is constraining the process: Recall that children acquiring their L1 go through stages that are different from the adult grammar but, as said above, each of them represents a natural grammar. The same could apply to developmental stages of L2 grammars. We will explore this in what follows.

With respect to the initial stage, recall that for the L1 the assumption is that the initial stage consists of UG plus exposure to data of the relevant language. Learners of an L2 by definition already have an L1, which represents UG as it is instantiated in that particular language. But L2 learners will need to go beyond that instantiation toward the L2 target: Transfer from the L1 alone will not do. They need to acquire phenomena which are not part of the L1. And the question which arises here is: If the L1 is constrained by UG, will these constraints also hold in the L2?

Does UG Constrain the Development in the L2?

This question was at the center of the debate about UG access in the 1980s (White, 1985; Clahsen & Muysken, 1986, 1989; Bley-Vroman, Felix, & Ioup, 1988). Specifically the question was whether it is possible to construct a grammar beyond that of the L1. As such, it is directly related to that of parameter (re)setting: Is it possible to modify the parametric specification of one's own language? Is the outcome a natural grammar or a "wild" one?

L2 learners, particularly at early developmental stages, show effects of transfer from the L1. For example, speakers of Chinese, a language without articles, leave out articles in English, a language in which they are obligatory. Initially transfer effects were taken as evidence against the involvement of UG in L2 acquisition (no UG access; Clahsen & Muysken, 1986). Later it was acknowledged that, as the L1 is UG constrained, whatever is transferred from it must by definition also be UG constrained (indirect access to UG; Clahsen & Muysken, 1989).

But is UG actively constraining the L2 beyond what is instantiated in the L1? Are the production and comprehension of structures and phenomena not attested in the L1 also constrained by UG?

Evidence of UG Constraints in the L2

Evidence of UG constraints in the L2 are in the first place the *systematicity of the interlanguage* and, furthermore, a systematicity which *represents a possible human grammar.*

Learners make "errors": they produce or understand language in ways which diverge from that of native speakers. But, as first claimed by Selinker (1972), learners' errors are systematic, which points to a rule-based system. This is Selinker's idea of an interlanguage, a grammatical system in its own right, as opposed to "habits" taken over from the L1 (contrastive analysis hypothesis; Lado, 1957) or a random collection of "errors." The study of L2 in the UG framework adopts the basic idea of interlanguage (Selinker, 1972): Errors are systematic, which indicates that the system is rule based.

Assuming, then, that interlanguage is rule based, the question arises whether interlanguage representations are also *possible* human grammars, an instance of a *possible* natural language.

Are L2 Grammars Possible Natural Language Grammars?

Clustering of Morphological and Syntactic Properties

One way of answering this question is by observing specific phenomena in an L2 and testing whether they are compatible with a UG analysis. There are numerous examples of studies with this focus. A straightforward case is the clustering of morphological and syntactic indications of finiteness on the verb. Finite verbs are marked for agreement, tense, or both, depending on language-specific properties. Finite and nonfinite verbs have different distributions in the sentence. This is clearly visible in English (or German or French) in that finite verbs, marked for person agreement and tense, precede negation, while nonfinite ones follow negation. See (4a–c).

(4) a. Kim has *not* seen Robin *English*
finite nonfinite
b. Kim hat Robin *nicht* gesehen *German*
finite nonfinite
c. Kim a *pas* vu Robin *Colloquial French*
finite nonfinite

Children learning their L1 have been observed to be very accurate very early with the clustering of morphological and syntactic markings: Verbs marked for tense and agreement do not occur in the slot for nonfinite verbs (Clahsen, 1988; Pierce, 1989; Meisel, 1994; among many others). Negation consistently follows finite verbs and precedes nonfinite ones, as in the French examples (5a–b):

(5) a. marche *pas*
walk.3sg not
's/he doesn't walk'

b. *pas* casser
not break.infinitive
'don't break (it)'

It is less clear how this clustering works in L2 acquisition. One of the reasons for this is the fact that L2 learners, particularly adult learners, have lasting problems with bound morphology (e.g., realization of affixes), which, in turn, makes it difficult to distinguish finite and nonfinite verbs. Some authors (Clahsen & Muysken, 1986, 1989; Meisel, 1991, 1997) claim that the clustering does not exist in L2 acquisition, a fundamental difference with L1 acquisition. According to these authors L2 learners fail to mark agreement and tense consistently and the distribution of negation follows semantic, rather than syntactic, criteria. Their observations are based on the fact that in L2, German verbs which according to the context should be finite lack the morphological marking and, in some cases, occur with the wrong distribution. An example would be (6), produced by a speaker of Italian (Clahsen, Meisel, & Pienemann, 1983), the German equivalent of *I no buy*, where the negation immediately precedes the verb to which it applies; this distribution is, however, incorrect in a finite context. According to the authors mentioned, the learners follow a strategy based on linear order and semantics, rather than structural criteria. This, in turn, means that any grammatical knowledge in the L2 is drawn from the L1; given that the L1 is assumed to be constrained by UG, this constraint applies also to the L2 in cases of transfer from the L1.

(6) ich *nein* kauf
I no buy.root
Target: 'ich kaufe nicht, ich habe nicht gekauft'

A different interpretation of these data is offered by Parodi (2000), who observes that the omission of morphological markings affects a subset of verbs, namely, full lexical verbs (or "thematic" verbs). Modals, auxiliaries, copula *be*, and possessive *have* ("non-thematic" verbs), on the other hand, display correct subject–verb agreement in over 90% of the contexts over a two-year period. Crucially, these verbs also occur with the expected distribution for finite verbs, that is, to the left of negation as in example (7). This is in striking contrast to thematic verbs, with a rate of 59% of correct agreement and a fluctuating distribution. In other words, the clustering of morphological and syntactic properties does hold, but is initially limited to the subset of non-thematic verbs, and extends to thematic verbs in the course of development.

(7) aber er hat *nich* die papier
but he have.3sg not the papers
'but he has no documents'

Other authors (Lardiere, 2000; Prévost & White, 2000) acknowledge the omission of tense and agreement markings, but claim that the distribution of verb forms is still not random. Their claim is that verbs which show the morphological marking never occur with the wrong distribution. According to these authors this indicates that syntactic constraints are operating in the interlanguage.

These examples illustrate how researchers compare L1 and L2 acquisition asking to what extent UG constrains the latter; that is, whether the interlanguage is a possible human grammar.

Poverty of the Stimulus Effects

Schwartz and Sprouse (2000), however, observe that UG-compatible analyses of interlanguage data may become obsolete if the theory they are formulated in evolves. These authors point out that for this reason, possibly the best way of clarifying the role of UG in L2 is by focusing on effects of poverty of the stimulus, that is, properties which are not part of the L1 and which are underdetermined in the L2 input. Poverty of the stimulus effects can be evident in the speakers' knowledge of grammaticality and ungrammaticality: Native speakers know which expressions (sounds, words, sentences) are part of their grammar or not, that is, which expressions are "grammatical" in their system. For example, a speaker of English knows that while (8a) is possible in certain registers, (8b) is not. In technical terms we would say that, although subjects are obligatory in English, they can be left out in a colloquial context (8a). Omitting the subject, however, is impossible in an embedded clause (8b).

(8) a. _ seems that it's raining
b. it seems that _ is raining

Poverty of the Stimulus in the Syntax

In the L2 acquisition literature there are many studies which address the question of grammaticality in syntactic distribution. The domain of anaphors can offer an example, specifically about the binding of anaphors with their antecedents. There is crosslinguistic variation in the way anaphors bind to local or nonlocal antecedents. Recall example (3), here repeated as (9). In English *himself* can only refer to *Max* (local antecedent). In a comparable Japanese example like (10) (Thomas, 1995, p. 222), on the other hand, *zibun* can refer to either *Tom* or *Max*. Notice, crucially, that both *Tom* and *Max* are subjects, respectively of the matrix and the subordinate clause.

(9) Tom said that Max hit *himself*.

(10) Tom-wa Max-ga *zibun*-no butta to iimasita.
Tom-topic Max-nom self-gen hit comp said

English allows only for local binding of anaphors, so the same holds when the antecedent is a nonsubject: Long-distance binding is impossible. In example (11) *himself* can only mean *Max*. Interestingly, Japanese does not allow for long-distance binding either if the antecedent is a nonsubject. Consider example (12) (Thomas, 1995, p. 221): In this case the long-distance binding of *zibun* can refer to Tom's (i.e., the subject's) book, but not to Kim's.

(11) Tom said that Max showed a picture of *himself*.

(12) Tom-wa Kim-ni Max-ga *zibun*-no hon-ga suki-da to iimasita.
Tom-top Kim-dat Max-nom self-gen book-acc like-cop comp said
'Tom told Kim that Max likes self's book.'

What examples (10) and (12) show is that anaphors can bind to a long-distance antecedent provided this is a subject. Long-distance binding of a nonsubject is not possible. The reason

Table 1 Response "true" in percentages

Groups	*Long-distance subject*	**Long-distance nonsubject*
L2 low proficiency (n = 34)	55	54
L2 advanced (n = 24)	57	14
Native speakers (n = 34)	89	18

is that antecedent and anaphor must be in the structural configuration known as c-command. This configuration holds for a long-distance reflexive like Japanese *zibun*, which can be c-commanded by a noun phrase (NP) subject of a matrix clause. Locally binding anaphors can have subject or nonsubject antecedents. But the c-command configuration does not hold in a bi-clausal sentence like (12), if the anaphor *zibun* is interpreted as having a non-subject antecedent outside its own clause (Thomas, 1995).

Given the facts just described, the Japanese input is under-informative for a learner. While it is clear that *zibun* can bind a long-distance antecedent, the input does not provide clear evidence about the constraints on interpretation, namely, that *zibun* can only refer to a long-distance subject. The question arises whether learners of Japanese whose native language does not allow long-distance binding can learn the properties of *zibun* and disallow binding with a nonsubject in a matrix clause.

Thomas (1995) tested this question with English learners of Japanese at two proficiency levels, low and advanced. The test methodology was a truth-value judgment based on the context provided by a sequence of pictures accompanied by written utterances. Each scenario was followed by a statement which the participants had to evaluate as true or false. There were four items per condition. The aim was to find out whether learners of Japanese are aware of the possibility of long-distance binding of an anaphor to a long-distance subject as opposed to a nonsubject. Table 1 (from White, 2003, p. 49) illustrates the results. The figures represent percentages of "true" responses.

The table shows that low-proficiency learners accept subject and nonsubject antecedents at more or less the same rate. High-proficiency learners, however, appear to be making a clear difference between subject and nonsubject antecedents. Thomas's (1995) hypothesis concerns a specific subset of learners, namely, those who admit long-distance binding of *zibun*. The question is whether the grammar of individual learners shows the requirement that the long-distance antecedent should be a subject. The criterion used to determine the individual consistency in a particular feature of *zibun* is that of three or four out of four responses. Thomas (1995) identifies 23 out of 54 participants who consistently accept long-distance binding. Out of these 70% reject long-distance nonsubject antecedents of *zibun*.

The study illustrates a case in which learners achieve knowledge of properties of an L2 grammar which are not explicit in the input, that is, a case of poverty of the stimulus in the domain of syntax. UG is assumed to make up for the under-informativeness of the input by providing a framework of categories and operations that limit the search space and, thus, to guide both production and interpretation,

Poverty of the Stimulus in the Syntax–Semantics Interface

The syntax–semantics interface is another domain in which native speakers have knowledge of (un)grammaticality. We find an example in the domain of argument structure, specifically with respect to intransitive verbs (13, 14). These verbs have only one argument, which is realized as a subject. This only argument is in some cases an agent, as in *laugh* (13), and in others a theme, as in *open* (14). While agents make prototypical subjects, themes are

more closely associated with objects (*X opened the door*). There is a parallel between the theme argument as a subject of an intransitive verb (14) and passive subjects (15). (In [15] *the door*, initially the object of the verb *open*, is realized as subject.) Intransitive verbs with a theme subject have been called "unaccusatives" (Burzio, 1986).

(13) Kim laughed. (intransitive, subject: agent)

(14) the door opened. (intransitive, subject: theme, unaccusative)

(15) the door (theme) was opened. (passive sentence)

There is a range of syntactic and morphological effects of unaccusativity in different languages, which makes it a potentially revealing field in which to test the role of UG in L2 acquisition. It is interesting to see whether L2 learners are sensitive to unaccusativity effects.

An indication that this is indeed the case comes from errors of passivization, as observed by Zobl (1989), Oshita (2000, 2001), and Balcom (1997), among others. In examples (16) and (17), from learners' production, the intransitive verbs are used with passive morphology (Oshita, 2001). Further evidence comes from cases like (18) (Zobl, 1989), in which the subject of the unaccusative verb appears postverbally, a type of inversion only attested with unaccusative verbs. These results are confirmed by experimental studies, such as Hirakawa's (2000) on the acquisition of L2 Japanese, which shows that English and Chinese learners make a correct distinction between unaccusative and other intransitive verbs.

(16) my mother *was died* when I was just a baby.

(17) an accident *was happened*

(18) I was patient *until dried my clothes*

The studies mentioned show that L2 learners are sensitive to thematic roles and what their default mapping to the syntactic realization is: In cases in which the mapping of thematic roles to syntax is not the default option (i.e., the subject is an agent), the learners resort to passivization or a linear order which reflects the default association of the theme role with the object function. In other words, the learners are making use of linguistic knowledge of aspects not explicitly present in the input.

Poverty of the Stimulus and Properties Not Present in Either L1 or L2

A further type of poverty of the stimulus evidence comes from a learner grammar which could display properties not present in the L1 or the L2, but reflecting general linguistic properties present in other languages. Clearly, in this case the learners must have abstracted those linguistic properties with the help of UG.

An example is found in the already-mentioned study by Parodi (2000) on the acquisition of German by speakers of Romance languages. Parodi finds a consistent difference between modals and auxiliaries ("non-thematic" verbs) on the one hand, and full lexical or "thematic" verbs on the other. These verb classes differ with respect to both morphological properties and syntactic distribution in the learners' system, although neither the Romance L1s nor the L2 German carry out such a distinction. Interestingly, this distinction between thematic and non-thematic verbs is present in other natural languages, and the most immediate example is English. In this language, non-thematic verbs (modals and auxiliaries) inflect differently from thematic verbs: They have no *-s* in the third person in the present tense,

for example. In addition, this has a syntactic correspondence: Non-thematic verbs appear to the left of negation, a position blocked for thematic verbs. (See [19].)

(19) Tim will *not* arrive in time.
*Tim arrives *not* in time

These results are taken as an indication that learners are sensitive to the properties of finite and nonfinite verbs and their distribution, and establish a relation between morphology and syntax, although not in the way their L1 or the L2 does it. This is, again, a case in which the linguistic knowledge available to L2 learners goes beyond the evidence in the input.

Summary

The UG approach views language as a mental system and offers a principled account of language learning; in this particular case, of the acquisition of the L2. The account is based on linguistic analyses which make specific predictions about the acquisition process, which can be tested and proved true or false. It looks at how words and constituents are combined to create novel utterances and offers explanations on the properties of the interlanguage: how the learners arrive at the target-like forms in production or the target-like interpretation, as well as why the learners' production and interpretation deviate from those of native speakers of a certain language.

The approach also offers ways of accounting for crosslinguistic variation and how this will work in specific combinations of L1 and L2; that is, it makes specific (testable) claims about the role of the L1 and that of the input (Braidi, 1999, p. 74). Exposure to primary linguistic data is imperative and the type of data (naturalistic immersion, classroom material) will undoubtedly shape the learners' output alongside the L1.

The fact that this approach takes a cognitive perspective does not mean denying the existence of other components in language and its acquisition, such as communicative (types of exchange: conversation, a formal written text, etc.) and sociolinguistic aspects (gender, socioeconomic level of the speakers, what the language is used for—e.g., business, education, family language). There are, however, some aspects which are independent of communicative or sociolinguistic aspects. For example, the way a language marks tense (e.g., by suffixes on the verb or by adverbials) and the way an embedded clause is structured are not likely to be affected by the socioeconomic level of the speakers. A change of register is likely to lead to a different lexical choice, but not to a different grammatical choice, such as to mark tense on a noun instead of on a verb. In this sense the approach is complementary to a sociolinguistic approach: They focus on different linguistic aspects.

The UG perspective on L2 acquisition offers linguistically informed explanations of why learners behave as they do, beyond the direct comparison of language strings. These explanations can form the background for psycholinguistic or neurolinguistic testing. They also provide valuable insights which can be incorporated into the design of classroom and test materials.

SEE ALSO: Critical Period; Crosslinguistic Influence in Second Language Acquisition; Generative Grammar; Input Processing in Second Language Acquisition

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US Foreign-Language Teaching in Kindergarten to 12th Grade

MARCIA HARMON ROSENBUSCH

Introduction

There is growing recognition in the United States that in order to participate fully in the interconnected world, people need the ability to speak other languages and collaborate with other cultures. This recognition is accompanied by a growing awareness that the US educational system must teach students these skills to prepare them for the future.

The importance of other languages and cultures to US national security was highlighted by the events of September 11, 2001 (9/11). At this time, federal agencies did not have individuals fluent in languages infrequently taught in US schools, such as Arabic, Urdu, and Farsi, who could translate critical security-related information from spoken language, documents, and Web-based communications (Jackson & Malone, 2009). During this past decade, the military also has come to recognize the critical role of foreign-language proficiency and cultural competence for effectively carrying out its work. In response, the *Defense Language Transformation Roadmap* was designed, which requires that all military personnel receive language and regional familiarization training during deployment and that military officers become proficient in a foreign language for advancement (Department of Defense, 2005).

The Committee for Economic Development (2006) has called for an increase in capacity for international commerce and economic development to enable the United States to compete successfully in the global marketplace. To accomplish this, the committee recommends strengthening the educational system to increase the foreign-language skills and cultural understanding of US students to prepare them for working on global teams and negotiating with clients from other countries.

The Historical Context

A rich sociopolitical and historical context has shaped K-12 foreign-language education in the United States. World and national events impacting the direction of foreign-language education include the wave of one and a half million European immigrants (1850–1900), World War I (1914–18), World War II (1935–45), the launching of Sputnik (1957), and the 9/11 attacks (2001). Committed individuals also have had an important influence on foreign-language education. Among these are US Representatives Paul Simon (IL) and Leon Panetta (CA) who were instrumental in catalyzing the 1979 President's Commission on Foreign Languages and International Studies, whose report resulted in a surge in K-12 foreign-language enrollment (D. Edwards, personal communication, January 12, 2010).

In US schools, foreign-language instruction is offered most commonly at the high school level. Over 90 percent of public and private high schools have offered foreign languages during the past 21 years (1987–2008) (Rhodes & Pufahl, 2010, p. 23), even though in 2008 only an estimated 48 percent of public high school students were enrolled in foreign-language classes (p. 28). Foreign-language instruction in middle and elementary schools has been less stable. Between 1997 and 2008, a statistically significant decrease was reported

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in the percentage of schools offering programs at middle school (from 75% to 58%) and elementary school (from 31% to 25%) (pp. 22–3). Spanish continued to be the most commonly taught language across K-12 levels of instruction, while French, German, Japanese, and Russian decreased from 1997, and Chinese and Arabic increased (pp. 33, 36).

The traditional pedagogical classroom approach to foreign languages has been grammar, translation, and literature. After Sputnik, when the federal government encouraged the study of mathematics, science, and foreign languages, the audio-lingual method was used, in which listening and speaking is taught through stimulus–response learning. In the 1970s, as a result of research on students' first language acquisition, the communicative approach, which focuses on the development of a learner's communicative competence, was proposed. In recent years, online foreign-language learning has emerged as a viable delivery option, whether in formal classes or individual study.

Recent Key Changes in the Profession

Student Standards and Assessment

The Goals 2000 Educate America Act (1994), an important step in national educational reform, recognized foreign languages as a K-12 core curriculum content area as a result of the profession's advocacy efforts, and provided funding to develop voluntary national student content standards (Phillips & Draper, 1994). In a unique collaborative effort among professional organizations, the K-12 foreign-language standards were developed and published in 1996. Among the challenges in developing the standards were the facts that program models varied widely and that foreign-language programs offering articulated instruction across K-12 levels were rare.

The forward-looking philosophy of the standards emphasizes educating all students and equipping them "linguistically and culturally to communicate successfully in a pluralistic American society and abroad" (National Standards in Foreign Language Education Project, 2006, p. 7). The focus of the standards is on developing communicative competence through three modes of communication (interpersonal, interpretive, and presentational) and five goal areas (communication, cultures, connections, comparisons, and communities). The student standards have been revised twice and expanded to include all levels of instruction K-16 and to address multiple languages. By 2008, the implementation of national or state foreign-language standards in public elementary schools was reported to be at 76 percent; and in public secondary schools at 89 percent (Rhodes & Pufahl, 2010, p. 74).

The communicative approach to foreign-language teaching emphasized in the standards led to the development of performance guidelines that benchmark student language development throughout learning (American Council on the Teaching of Foreign Languages, 1998), providing a basis for, and expanding the types of, student assessment. New approaches to assessment were conceived, including the integrated performance assessment, which measures a student's classroom progress in meeting the national standards (Adair-Hauck, Glisan, Koda, Swender, & Sandrock, 2006) and LinguaFolio (National Council of State Supervisors for Languages, 2009), which involves students in their own self-assessment and goal setting. Additionally, both face-to-face and online assessments expand the options.

Teacher Standards and Assessment

National educational reform included the development of standards for the preparation, licensure, and professionalism of K-12 foreign-language teachers: National Council for Accreditation of Teacher Education standards focus on the accreditation of teacher preparation programs (American Council on the Teaching of Foreign Languages [ACTFL]

2002); Interstate New Teacher Assessment and Support Consortium (INTASC, 2002) standards, on the licensing of beginning foreign-language teachers; and National Board for Professional Teaching Standards (NBPTS, 2001), on the recognition of accomplished teachers. These standards represent a focus on a continuum of professional preparation, from preservice teacher to accomplished professional, and a change in philosophy that integrates theory and practice and focuses on performance rather than coursework.

Challenges in the Profession

Implementing the Teaching of Less Commonly Taught Languages (LCTLs)

The National Language Conference (2005), sponsored by the Department of Defense, brought together leaders from government, industry, academia, and language associations to address the nation's foreign-language capabilities and define a vision for the future. Among the recommendations is to build "upon the foreign language skills and cultural understanding of America's heritage communities" (p. 9). The report also recommends that "elementary and secondary schools should provide incentives for students to enroll in and continue taking foreign language instruction throughout their school years" (p. 11). The National Security Language Initiative (US Department of Education, 2006) followed up on the need to increase the teaching of LCTLs in the nation through projects funded by the Office of the Director of National Intelligence and the Departments of Defense, Education, and State.

The national focus on LCTLs has resulted in an increase in the number of students studying some LCTLs among those elementary and secondary schools offering languages, with a statistically significant increase from 1997 to 2008 in the percentage of these schools that teach Chinese. In fact among secondary schools offering languages, Chinese instruction rose from one percent to four percent (Rhodes & Pufahl, 2010, p. 34).

Educated heritage speakers residing in the United States have been recruited to serve as teachers in LCTL programs, yet their numbers are not sufficient to meet the need. Additionally, the College Board, China's Hanban/Confucius Institute Headquarters, and the National Council for State Supervisors for Languages (NCSSFL) have established a partnership to provide guest teachers from China for US K-12 Chinese programs.

Providing highly qualified and certified LCTL teachers, experienced in the culture of US schools and well versed in the national student foreign-language standards, is a major challenge. Not infrequently, these teachers also are assigned to teach in more than one district or more than one state through distance learning technologies that are typically self-paced and asynchronous, which is a challenging assignment even for US-trained teachers.

Implementing Effective Programs

To achieve an effective articulated K-12 program, whether classes are face-to-face, Web-based, or both, each level of the language program needs to share a similar philosophy and goals and needs to build on what students have already learned to do in the language at the previous level. Students also need to be able to participate in meaningful interpretive, interpersonal, and presentational communication and to receive personalized feedback on their language use. The foreign-language class, therefore, must be of a size for which such student participation and teacher feedback is feasible. Establishing systematic assessment of students' language skills and sharing outcomes across levels of instruction are also critical to program articulation, allowing students to be placed in appropriate classes at the next level of instruction.

The identification or development of appropriate curriculum for heritage language learners is important when planning well-articulated programs. Since heritage learners often come with varied levels of academic preparation and a wide range of linguistic skills, they need to be assessed and accommodated into courses that will further their language skill development. All students, including heritage students, need the opportunity to be awarded graduation credit based on demonstrated mastery of language skills.

Achieving articulated programs requires maintaining the support and funding necessary for elementary and middle school foreign-language programs, both of which decreased in statistically significant numbers between 1997 and 2008 (Rhodes & Pufahl, 2010). Of elementary schools that provided comments on losses in their programs, 85% clarified that the No Child Left Behind Act of 2001 had had a negative impact on the school's foreign-language program. As one respondent noted, "Funds and time have been directed to reading and math" (p. 76). Implementing articulated foreign-language programs that effectively build language skills across K-12 levels of instruction continues to be a significant challenge.

Ensuring High-Quality Teachers

A review of research and successful programs indicates that the single most important factor in whether students learn the foreign language is the competence and skill of the teacher, including both the teacher's proficiency in the language and culture and their professional knowledge and skills (Jackson & Malone, 2009, p. 18). While the NCATE, INTASC, and NBPTS teacher professional standards have enhanced the training and certification of elementary and secondary foreign-language teachers, challenges remain.

One of the most significant challenges is the development of alternate, fast track, and effective preparation and certification of individuals with a high level of language proficiency and cultural knowledge. This is particularly important with LCTLs teachers who are recruited from abroad and then trained in the United States by methods instructors or peer teachers who do not have experience in teaching character-based languages that lack cognates.

Another important concern is in the ways in which higher education meets the preservice teacher preparation requirements. Methods instructors who are generalists, without a foreign language or who lack experience teaching at the K-12 level, may be assigned to teach the foreign-language teacher preparation courses and supervise field experiences and student teaching.

An additional concern is in providing accessible, ongoing professional development opportunities specifically designed to enhance the understandings and skills of practicing K-12 foreign-language teachers in conjunction with new developments in the field. For example, White (2006) reports that many foreign-language teachers are not prepared to engage their students with those from other languages and cultures in technology-mediated interactions that are pedagogically sound. In fact, more than 60% of foreign-language teachers report that, more than any other kind, they want to receive technology-related professional development (National Research Center for College & University Admissions, 2009, p. 22).

Research

To further strengthen its case for building national capacity in foreign languages, the profession should expand research on foreign-language education and make research findings accessible to the profession and the community. Minimally, the profession should advocate for funding to collect annually, analyze, and report on K-16 student language enrollments and K-16 foreign-language teachers by language, rather than every five to

ten years as is current practice (Jackson & Malone, 2009). The profession also should research the proficiency levels attained by K-12 students in various program models and language learning, itself, especially the effective uses of technology as a tool in language learning. Additionally, the profession should strongly encourage the administration of the National Assessment of Educational Progress (NAEP) in foreign language, which was developed but never administered.

Future Needs

A national initiative on standards, the *Common Core Standards Initiative* (Council of Chief State School Officers [CCSSO], *n.d.*), is currently underway, cosponsored by the Council of Chief State School Officers with the National Governors Association Center for Best Practices. This initiative is an effort to create greater commonality and rigor in K-12 curriculum content across the 51 states and territories that have committed to collaborate on the project. This initiative currently involves the development of voluntary standards for college- and career-readiness and new, internationally benchmarked K-12 standards for mathematics and English-language arts. For the new K-12 content standards, an assessment system will be developed to measure student performance and professional development for educators will be redefined.

Should the development of standards for additional content areas besides mathematics and English-language arts occur, the foreign-language profession would once again need to negotiate a position of inclusion among the subjects considered essential to the K-12 curriculum. Clearly, professional unity and advocacy continue to be important tools for the K-12 foreign-language profession.

This time, however, the profession will not be alone in clarifying to the nation the importance of studying foreign languages and cultures. Among the national reports supportive of K-12 teaching of foreign languages, the National Research Council has argued that "the pervasive lack of knowledge about foreign cultures and foreign languages threatens the security of the United States as well as its ability to compete in the global marketplace and produce an informed citizenry" (O'Connell & Norwood, 2007, p. 1). Additionally, the CCSSO in its 2006 Global Education Policy Statement clarified its belief:

> that students will be best poised to achieve their full potential and contribute most to society when they have complete access to a system of education that recognizes and incorporates best practices from around the globe, teaches skills and knowledge necessary for success in the 21st century, and utilizes high-quality and rigorous curricula, including instruction in world languages and cultures. (CCSSO, 2006, p. 3)

This statement is powerful evidence that we are coming to consensus in our nation on defining K-12 foreign-language instruction as a priority. Clearly, foreign-language teaching at the K-12 level has much to contribute to the preparation of our nation's youth and the future of our nation in a globalized world.

SEE ALSO: Advocacy in Language Teaching; Heritage Languages and Language Policy; Language, Politics, and the Nation-State

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Uses of Language Assessments

ANNIE BROWN

Introduction

Language tests are used in many contexts and for many purposes. Language test scores are used to make many types of decision about people and programs. They are used, inter alia, to screen, place, and classify students; to hire, promote, or even dismiss employees; to provide diagnostic information and to inform language interventions; to evaluate the effectiveness of language programs and to act as tools for data gathering in research. Tests are used to make decisions which, in many cases, can have serious implications for the life chances of test takers.

Test use, or purpose, is frequently cited as the first consideration in test design (see, for example, ILTA, 2007). Davies (1990) states that *Why do we test language?* is the first question that a language test constructor should pose, and must be asked before we can resolve the *what*, or content question. This is because the purpose for which the test will be used drives the definition of the skills to be tested—the domain specification—so that a test may have a general or specific purpose, and may focus on one or more language skills or components of language ability. So, for example, if a test is to be used for selection or admission, the designers need to define the knowledge and skills required to succeed in work or study in the specific context. Similarly, if a test is to be used for placement into syllabus-based levels within a language program, the designers need to start by defining the knowledge and skills required at each level in order to place students appropriately. In the next section we will provide an overview of the ways in which test use has been characterized in the language-testing literature.

Test use is central to validity theory, whether in a traditional or more current conceptualization. Validation is concerned with the gathering of evidence which supports or refutes the inferences that are made about test takers based on their performance on the test, and the decisions that are made about learners based on their test scores. It is, therefore, fundamentally about test use. According to Kane (2006, p. 17),

> To validate an interpretation or use of measurements is to evaluate the rationale, or argument, for the claims being made, and this in turn requires a clear statement of the proposed interpretations and uses and a critical evaluation of these interpretations and uses.

In the last section we will discuss the role of test use in evolving theories of test validity.

Test Use: Traditional Classifications

Language tests have been classified according to their purpose or use in a number of ways. However, in general, three broad uses of language tests are distinguished—test use for the assessment of language learners, test use for language program evaluation, and language test use for or within research (Bachman, 1990; Davies, 1990).

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Test Use for the Assessment of Learners

The assessment of learners is perhaps the broadest of the three categories, and the language-testing literature reveals a number of ways of describing test use for the assessment of learners. These include proficiency, achievement, aptitude, diagnosis, placement, progress, admission, and selection (Alderson, Clapham, & Wall, 1995; Hughes, 2004, inter alia). Davies et al. (1999, p. 205) identify three main purposes: proficiency, achievement, and aptitude, each of which can have further distinctions.

> A proficiency test, for example, may have a selection, placement, or diagnostic purpose as well as offering a means of certification of language proficiency. Alternatively, an achievement test may, in addition to indicating progress, also be used for certification or form part of a process of program evaluation. An achievement test may also have a diagnostic function, which in turn may assist in selection or placement decisions, or it may simply be intended as a means of motivating students to learn. An aptitude test is likely to be used to assist in decisions about selection of participants for a course of instruction.

Another approach is to distinguish uses of tests by the point in the instructional cycle at which they occur, an approach taken in the classification of educational tests more generally. Thus Bloom, Hastings, and Madaus (1971) distinguish initial evaluation (used to diagnose strengths and weaknesses and to place students into classes or courses), formative evaluation (used to evaluate progress during a course), and summative evaluation (used to measure attainment or achievement at course completion). Following this approach, Bachman (1990) classifies language tests according to their intended use as follows: admission decisions (which includes selection, entrance and readiness tests), identification of the appropriate instructional level or areas where instruction is needed (placement and diagnostic tests), and decisions as to whether individuals should progress or are attaining the program's objectives (which includes progress, achievement, attainment, or mastery tests).

Here, as a framework for discussing test uses further, we distinguish four points at which assessments are used:

- gatekeeping assessment, used prior to entry to work or study;
- placement and diagnostic assessment, used at the commencement of a course of study;
- progress assessment, used during a course of study; and
- achievement assessment, used at the end of a course of study.

Assessment for gatekeeping. Gatekeeping tests (also called entrance, admission, or selection tests) are tests used to inform decisions about entry to courses, institutions, or professions, although a language test is typically used in conjunction with other information, such as evidence of academic or professional skills, rather than on its own. Gatekeeping tests are often designed to measure the proficiency of the test taker relative to a specific real world purpose, for example, whether she knows enough of the target language to follow a lecture, or to work as a tour guide. Because gatekeeping tests are not based on a course of instruction, test design tends to derive either from a theory of language for a general proficiency test, or from the findings of a needs analysis for a specific purpose test (see Douglas, 2000).

Standard setting is a critical issue in gatekeeping tests, as is the consideration of how to deal with test takers who are close to the cut score. Because gatekeeping tests tend to be high-stakes, they often generate preparation courses and have a washback effect on teaching. While most language tests used for gatekeeping are proficiency tests, aptitude tests may also be used to select recruits into a language program. A more controversial use of language tests as gatekeeping instruments is to determine eligibility for asylum, migration,

or citizenship. While this is by no means a new application of language tests, it is currently an issue which is receiving much attention in the language-testing literature.

Assessment for placement and diagnosis. Placement and diagnostic tests are designed to identify the appropriate instructional level for learners and to identify test takers' strengths and weaknesses, or areas where instruction is needed. Information from such tests is typically sought at the beginning of a language course, for planning of courses of instruction, identifying areas where remedial instruction is necessary, or both. According to Davies et al. (1999, p. 41),

> Relatively few tests are designed specifically for diagnostic purposes. A frequent alternative is to use achievement or proficiency tests (which typically provide only very general information), because it is difficult and time-consuming to construct a test which provides detailed diagnostic information.

Assessment of progress. Also called formative assessment, progress tests or assessments are administered during a course of instruction and used to measure the progress that students are making toward defined goals. The content of such assessments is generally drawn from the course objectives, and is relatively narrow in focus. The results may be used to inform the decision as to whether to move on to the next unit or provide remedial instruction. Progress tests and assessments tend to be developed in-house or drawn from a course book.

In response to the development of social constructivist perspectives, the view of the role of formative assessment has changed from simply being a measure of progress to serving the purpose of promoting students' learning actively. This is reflected in models of assessment such as assessment for learning (Black & Wiliam, 1998; Black, 2003) and dynamic assessment (Poehner & Lantolf, 2005; Poehner, 2009). In these models, assessment does not simply support learning from the outside; learning occurs *within* the assessment process.

Achievement assessment. Achievement tests are typically administered at the end of a course of study in order to evaluate the extent to which students have mastered the course objectives. Such assessment is also known as summative assessment. The content of achievement tests typically samples from the full set of course objectives. The results of the test may be used to inform the decision as to whether student should move on to the next level, may be used to certify students as having completed a program and reached a certain level of proficiency or content mastery, or indicate linguistic readiness to move into another type of study program or work context.

Test Use in Program Evaluation and Research

Davies (1990) and Bachman (1990) distinguish the use of language tests to assess individuals from other uses, including their role in evaluating language programs and their research function. Tests may play a role in both formative and summative program evaluation, along with other forms of data, both quantitative and qualitative. Tests can be used as pre- and post-measures, or post-measures alone, according to the research design. Tests may be selected to reflect theory or the program syllabus (termed *program neutral* and *program specific* by Beretta, 1986), and be norm- or criterion-referenced, again depending on the design of the study (see, for example, Lynch, 1996).

As research instruments, Bachman (1990) argues that language tests can support research into the nature of language proficiency, language processing, language acquisition, language attrition, and language teaching. Davies (1990) distinguishes research from experiments: in research, language tests are used to test hypotheses about language and language learning, whereas in experiments, they are used as tools in language learning studies.

Test Use and Test Validity

Validity refers to the degree to which evidence and theoretical rationales support the adequacy and appropriateness of the interpretations of test scores entailed by the proposed uses of tests (Messick, 1989). Thus, we do not refer to the validity of a test but to the validity of the interpretation of a score *for a particular purpose*. In this sense, then, test use drives the validity argument. A test score may be appropriately, or validly, used for one purpose, but not for another. While the way in which validity has been conceptualized over the years has changed somewhat, the role of test use as central to the validity argument has not changed.

Validation involves the gathering of various types of evidence to support the use of a test for a particular purpose, and validity refers to the degree to which the evidence supports the inferences that are drawn from the scores and the use that is made of them. Difference aspects of validity draw on different types of evidence, such as content evidence, criterion-related evidence, and consequential evidence, which together contribute to a unitary concept of validity (Messick, 1989, 1994). So, for example, content evidence is concerned with the operationalization of the construct and involves an evaluation of the extent to which the content of the test is relevant to the target language use context. This is of particular concern in the development of a specific purpose language test (Douglas, 2000) or, in the case of a placement, progress, or achievement test, the extent to which the test adequately represents the curriculum. Criterion-related evidence examines the relationship between the test and another measure which is known to be valid. This may be another test (concurrent validity) or performance in the target context using, for example, grade averages or supervisor evaluation (predictive validity). Criterion-related evidence is thus crucially concerned with test use. Recent developments in validity theory (e.g., Kane, 1992, 2006; Mislevy, 1996) take an argument-based approach, in which a validity argument is constructed to provide an overall evaluation of the proposed interpretations and uses of test scores through an analysis of evidence for and against the proposed interpretation or use. Validity is a matter of degree and depends on the soundness of reasoning, or plausibility of the interpretive argument. These theories are beginning to be used in language test validation, most notably in the validity argument developed for the TOEFL iBT (Chapelle, Enright, & Jamieson, 2008).

Consequences of Test Use

While the consequences of test use have always been important to validity, it was not until Messick that they were explicitly referred to as an integral aspect of construct validity, what he termed *the consequential aspect of validity*. In Messick's view, social values and social consequences cannot be ignored in considerations of test validity. "The questions are whether the potential and actual social consequences of test interpretation and use are not only supportive of the intended testing purposes, but at the same time are consistent with other social values" (Messick, 1995, p. 741).

In light of the positioning of the consequences of test use as an aspect of test validity, a number of language-testing researchers (e.g., Davies, 1997; Hamp-Lyons, 1997; Kunnan, 2000) have raised the questions of whether, or to what extent, testing specialists should take any responsibility for decisions about non-intended use of tests or for unintended consequences of test use. In other words, at what point does the test developer's responsibility end? What if, for example, the threshold on a test used to determine whether prospective immigrants have sufficient English is raised in order to limit the number of entrants during an economic downturn? Davies (2008) argues that it is not possible for a tester as a member of a profession to take account of all possible social consequences and seeks, it seems, to limit responsibility to the more traditional validity concerns: "What can

be done is the internal (technical) bias analysis and a willingness to be accountable for a test's 'fairness.' In other words, limited and predictable consequences we can take account of and regard ourselves as accountable for" (2008, p. 433). Others, within the framework of critical language testing (Shohamy, 1998, 2001a, 2001b; Lynch, 2001), argue that language testers have a responsibility to challenge the status quo in order to "protect [society] from undemocratic principles" (Shohamy, 2001b, p. 373).

In fact, the increasing use of language tests as a means of making decisions about individuals and programs and the growth of language testing as an industry in the 20th century has led to increasing concern about the appropriate and inappropriate uses of tests and ethical action on the part of testers and testing organizations. Despite McNamara's claim of "a reluctance on the part of the language-testing profession to seriously engage with language testing as a social and political practice" (McNamara, 2008, pp. 422–3), not only have professional organizations begun the development of codes of ethics (see, for example, ILTA, 2000) but there is a growing body of writing on the social and political consequences of test use, and the use of tests as instruments of social control, for example to determine immigration, citizenship, and professional entry and progress (Spolsky, 1995; Shohamy, 2001a; Eades, Fraser, Siegel, McNamara, & Baker, 2003; Hawthorne, 2005; McNamara, 2008; Blackledge, 2009; Kunnan, 2009, inter alia). More of a challenge is "the lack of an adequate theory of the social context in which tests find their place even within discussions of the social dimensions of language tests" (McNamara, 2008, p. 423).

Conclusion

Language test use has always been central to test design and test validation. Test purpose drives the definition of the test construct; and the validity of the inferences that are drawn about language learners based on their test performance are dependent on the test being appropriate for the use to which it is put. More recent conceptualizations of validity view test use in broader perspective, as an ethical issue, and this is reflected in the language-testing literature through discussion of professional ethics and presentation and discussion of particular cases of language test use and abuse.

SEE ALSO: Cut Scores on Language Tests; Ethics in Language Assessment; Fairness in Language Assessment; Language Testing and Immigration; Standard Setting on Language Tests; Test Specifications; Validation of Language Assessments

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Using Metalanguage in Teaching

HELEN BASTURKMEN

The term *metalanguage*, or "language about language" (Berry, 2005, p. 3), is used increasingly in the language teaching literature. Some writers use the term to refer to technical and semi-technical linguistic terminology, such as *verb complement* and *sentence* (Ellis, 2005b, p. 151) and some to refer more widely to any use of language to analyze, describe, or articulate language, including nontechnical terms, such as *mean* or *say* (Basturkmen, Loewen, & Ellis, 2002, pp. 7–8). To illustrate, in a language teaching classroom, a teacher might say "to be fed up with someone *means* you're a little bit annoyed with their behavior," or a student might ask "is it a *noun?*" Metalanguage plays a key role in pedagogic grammars. These grammars often include a glossary of terms reflecting the view that learners need to be familiar with at least some key terms in order to avoid "tortuous, confusing circumlocutions" in discussions of the target language (Fortune, 2005, p. 22).

The term *metalanguage* and the associated term *metalinguistic explanation* are used in conjunction with a range of linguistic forms and features, including grammar, lexis, phonology, and discourse. In instruction on pragmatics, the related terms *metapragmatic comment* or *metapragmatic explanation* are used to denote language or description of pragmatic forms and features, such as speech acts and politeness (Eslami-Rasekh, Eslami-Rasekh, & Fatabi, 2004; Alcón Soler, 2005). For instance, the terms *imperatives*, *interlocutor, requests*, and *order* are used in the following metapragmatic explanation of request speech acts, which is taken from Alcón Soler (2005):

> Imperatives are used to ask people to do something when one of the interlocutors has a higher position or they know each other very well. Example: In making his request O'Neill uses an order (*Daniel, shut up*) which shows he knows Daniel very well. (p. 431)

The subject of metalanguage appears in discussions of explicit language knowledge and language awareness. In language learning, a distinction is drawn between learners' implicit and explicit language knowledge. The former comprises unanalyzed knowledge which learners are either unaware of or cannot articulate and the latter comprises analyzed knowledge which they are aware of or can articulate (Ellis, 2005a; Roehr, 2007, p. 179). Metalanguage is thus seen as part of a learner's explicit language knowledge. Although connected, language awareness and metalanguage are not synonymous. It is possible for a learner to demonstrate language awareness without using metalanguage. For example, a learner may be able to identify and correct an error but not be able to explain the error or state the rule behind it (Berry, 2005, p. 12). Researchers typically define "metalinguistic knowledge" for the purposes of research as the ability to correct, describe, and explain errors (Roehr, 2007, p. 175). The available evidence indicates that learners' metalinguistic knowledge is related to language proficiency (Elder & Manwaring, 2004; Roehr, 2007), although findings related to the strength of the relationship vary across studies.

One important issue is whether the use of metalanguage in language teaching is helpful. Arguments made in favor of using metalanguage in language teaching include its role and value in grammatical explanations, metapragmatic explanations (Alcón Soler, 2005), editing writing (Cajkler & Hislam, 2002), helping learners repair spoken errors (Bouffard &

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Sarkar, 2008), self-study and accessing accounts in grammar materials (Berry, 2004, 2005), helping advanced learners understand difficult semantic relations and teaching "analytical" learners (Hedge, 2000, p. 160), and helping learners focus their attention on linguistic forms during collaborative writing tasks (Fortune, 2005).

However, there are also arguments against the use of metalanguage in language teaching. These include its potential to be unintelligible for low-proficiency learners, young learners, and low-literacy adult learners. It may simply be more appropriate to "guide students into seeing patterns" (Hedge, 2000, p. 160) rather than delving into talking about language through explanations and descriptions. The latter argument is related to the debate over the relative merits of explicit instruction (instruction involving rule explanation) and implicit instruction (instruction not involving rule explanation and not directed at any specific language form) (see Ellis, 2005a, pp. 716–17). Whether the teacher adopts a deductive approach to explicit instruction (starting with the explanation or rule) or an inductive approach (starting with samples of language, and for example using consciousness-raising tasks that require learners to try to formulate a rule based on their observations of a targeted language item in the samples), the question remains "as to whether talking and thinking about grammar . . . requires a technical metalanguage or whether it can be done in non-technical ways" (Hedge, 2000, p. 163).

Metalanguage may also feature in questions and queries about language arising incidentally in the language teaching classroom. Basturkmen et al. (2002) investigated the use of metalanguage in focus-on-form episodes occurring in meaning-focused communicative activities in lessons for young adult, intermediate, and pre-intermediate learners in a private English-language school setting. These were episodes in which students and the teacher attended to linguistic items triggered by problems in students' utterances or the students' or teachers' wish to clarify a linguistic feature. Teachers and students were found to use metalanguage in around one third of such episodes, and in student-initiated episodes the use of metalanguage appeared to correspond to subsequent attempts to produce the targeted form. The following example illustrates a student-initiated focus-on-form episode. In this episode, two "technical" metalinguistic terms are used (*syllable* and *stress*). Student 1 attempts to use the targeted form (preDICTion) in the follow on move.

Student 1: PREdiction?
Student 2: I think the second <u>syllable</u> is <u>stressed</u>
Student 1: preDICTion
Teacher: preDICTion. (Basturkmen et al., 2002, p. 6)

As described above, the use of metalanguage in language teaching is a subject of some debate. It is, however, generally recognized that metalanguage does play a role in language teaching in many contexts.

SEE ALSO: Explicit Knowledge and Grammar Explanation in Second Language Instruction; Teaching Grammar; Teaching for Language Awareness; Teaching Pragmatics

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Using Popular Culture in Language Teaching

PATRICIA A. DUFF AND SANDRA ZAPPA-HOLLMAN

Defining Popular Culture

Although popular culture is pervasive in contemporary Western and other highly urbanized, postindustrial societies impacted by globalization, it can be difficult to define and delimit the term. That is because popular culture means different things—both theoretically and practically—to different people, and what is "popular" today can lose popularity quickly as the novelty wears off and new cultural forms emerge (Storey, 2006). Television programs, commercials, movies, sports broadcasting, radio programming, hip-hop, online media, blogs, YouTube, concerts and poetry slams, computer games and simulations, comic books and trade fiction, and various social media, texting tools, and clothing fashions can all be considered contemporary manifestations of popular (pop) culture—usually with mass (commercial) appeal and relevance to large swaths of the population. Because of the way these media attract large numbers of people, and because culture learning is generally considered an integral part of language learning, pop culture has a potentially powerful and motivating role to play in second language (L2) education and socialization (Murray, 2008).

Rationale for Integrating Appropriate Pop Culture in Contemporary Language Education

Learning about and participating in pop culture consumption, production, and critique is an important part of language learning and socialization into new cultures and is also an aspect of critical literacy (Zuengler, 2004) and critical praxis (Mackie & Norton, 2006). Another rationale for engaging language learners in pop culture practices is that they can potentially be immersed in language and interaction outside of classrooms and can become connected virtually or in person with others with a passion for the same cultural forms and practices. Being conversant with cultural forms of widespread interest in a community is a way of finding a common platform and greater integration into local social networks and values. Pop culture by definition is a vernacular form of culture that has immediacy, currency, and cachet—providing students symbolic, social, and cultural capital in their encounters with others. Having students do projects involving adaptations of pop culture or their own creations, becoming very familiar with particularly significant cultural genres, can enhance their understanding of the host culture or other cultures.

Incorporation of Pop Culture in L2 Education

Scholarship highlighting the educational value of pop culture for the second language or foreign language classroom has focused on materials such as comic books, manga, anime,

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film, TV soap operas, hip-hop music, and online tools such as Twitter and social networking sites, thus covering a wide range of genres and media. In the 1990s and early 2000s, work focused on how to incorporate film, comic books (e.g., *Archie* comics, *Spiderman* superhero texts), and television content effectively into first and second language classroom literacy events and discussions (Norton & Vanderheyden, 2004; Mackie & Norton, 2006; Ranker, 2007). The linguistic accessibility of these comics or graphic novels (short dialogues, images, brief descriptive prose) as well as their appealing content and format (colored cartoons usually in strips) help engage young language learners, especially in literacy practices and discussions about social and cultural themes.

Manga, Japanese comics in graphic-novel format, and anime, animated cartoons, both long-standing pop culture staples in Japan, have gained such popularity in North America that they are being used to support and motivate learners' Japanese and English first and second language literacy (Black, 2006; Fukunaga, 2006). Both types of material can also provide a window on cultural representations traditionally ignored in the L2 classroom, and expose learners to samples of situational discourse that may challenge stereotypical, static notions of the language. Viewers and readers can also take part in collaborative fan fiction communities revolving around anime and other print-based texts or multimedia in which they can create their own texts (Black, 2006). Manga can engage readers in complex multiliteracy practices that support students' development of higher-order thinking skills. Similarly, while fictional, anime can serve as a springboard for discussions on global issues, on themes that might be taboo in certain cultures, on gender representations, and on different aspects of Japanese culture (Fukunaga, 2006).

Television genres like soap operas or telenovela (particularly popular across South America), which include (melo)drama and mystery, have also made their way into the L2 classroom. For instance, the very successful *Destinos* Spanish language series created by Bill VanPatten and colleagues in the early 1990s in the telenovela format is available in VHS and DVD and now also accessible online, free, for personal use through Annenberg Media (www.learner.org/resources/browse.html?discipline=3). Similar online digital tools, videofiles, and narratives exist for teaching English and French L2 learning (see aforementioned Web site). More recently, the BBC developed *Mi Vida Loca*, an interactive Spanish drama/mystery series presented in short downloadable chapters available online (www.bbc.co.uk/languages/spanish/mividaloca/). Korean soap operas (e.g., *Jewel in the Palace*) have become a pop culture sensation in Korea, elsewhere in Asia, and in North America and these can also be adapted for Korean language education purposes. While the above examples are simulated-authentic materials, the plots, themes, character development, and story pace emulate the real-life (or historical) characteristics of this pop culture TV genre, thus bringing to the L2 classroom aspects of the target culture which are usually not included in educational materials.

Film, another important, fairly universal visual genre, also represents a popular and accessible source of target linguistic and cultural knowledge for the L2 learner. French-language classrooms, for instance, can draw on film as a resource to teach about *la francophonie* (the French-speaking world) and its diversity across regions (Rose, 1997). In the ESL (English as a second language) classroom, the advantages and limitations of using film for language education and critical thinking have been addressed from a critical pedagogies perspective by Mackie and Norton (2006).

Hip-hop culture and rap have also been identified as powerful transformative pedagogical tools despite their marginal position in mainstream education, and are highly popular among youth worldwide (Alim & Pennycook, 2007). In a variety of language classrooms, these genres are being used to tap into students' creativity and interests in the target language, provide practice across language skills and genres, and engage students in sociocultural critique, commentary, and identity work.

Myriad possibilities for L2 teaching and learning through the Internet also exist. Weblogs (blogs) and podcasts give learners remote access to target-culture speakers' views on topics and issues relevant to their daily lives; through Twitter, an Internet tool for posting short commentaries online, students learn about issues relevant to contemporary target-culture society by, for instance, following news "tweets" (short postings) which provide a constant flow of information on current events (Scinicariello, 2008). Many popular television dramas now also have online components, wikis, chatrooms, and other forums to enable viewers to exchange opinions about unfolding events (Williams, 2008). Online video games and social networking sites such as Second Life are used as platforms to launch L2 learners into a virtual target-culture immersion experience that recreates aspects of real life, and gaming and related social networking for language learning are attracting widespread attention now from language learners, instructors, and researchers (Thorne, Black, & Sykes, 2009; Zheng, Young, Wagner, & Brewer, 2009). Games can be adapted and used for more academic purposes, such as producing short documentary-like programs in the virtual space of Second Life or researching and producing YouTube videos on a topic chosen by students. Several university Chinese-language programs in the USA (e.g., Second Life "Chinese Island" at Michigan State University's Confucius Institute and "MyChina Village" at the University of Oregon) are experimenting with Second Life as a virtual space in which learners can experience simulated, highly situated aspects of Chinese language and culture and also interact with other "real people" (via their avatars) in the same space using Chinese. Zheng et al. (2009) researched native and non-native English speakers' interactions in the virtual world Quest Atlantis as a way of developing the learners' English proficiency. In online spaces, students can observe and appropriate different identities and the language that goes with those identities, can have more access to different registers, genres, and language structures than they might have access to in the classroom or in their own communities, and can explore new social worlds with others (e.g., Harrison & Thomas, 2009). Learning in this manner has the potential to become highly social, distributed, collaborative, and experimental.

Discussion

There are several advantages to using pop-culture-infused instructional materials: its incorporation of vernacular language and multimedia broadens course language and cultural content, and exposes students to cultural forms of current interest to a segment of the target language culture (e.g., that of their peers). It serves as a catalyst for increased motivation and language practice, and provides opportunities for developing learner autonomy. In addition, the hybrid, multimodal nature of some pop culture texts fosters creativity and the development of critical thinking skills and multiliteracies.

Although some of the topics represented in pop culture material may help learners negotiate identities and challenge stereotypes, not all students will be equally ready to embrace the sometimes crude forms of language, street culture, and subversive messages in these texts; issues of sexuality, violence, or other social concerns may render the material inappropriate, particularly in sensitive multicultural contexts and in formal classroom learning. Moreover, pop culture material presupposes a great deal of linguistic and cultural background knowledge. For example, a TV show like *The Simpsons*, which has enjoyed record-setting popularity in many countries for nearly two decades, is highly intertextual and includes references to a wide range of social, political, cultural, and other contemporary issues (Duff, 2004). Thus, the show can be interpreted on different levels, but it can be quite inaccessible to outsiders or novices. It also requires instructors to have a deep understanding of (cross-)cultural references. Educators must, therefore, be aware of the obstacles

faced by newcomers to environments that are rich in those same elements with which they may lack experience (Duff, 2001, 2002, 2004). In addition, when it becomes out of date, pop culture material loses its power, so it needs constant updating. Lastly, not all students appreciate the content of pop culture: some students, depending on their educational and social backgrounds, purposes, and interests, may actually aspire to learn "higher" forms of culture (such as the canonical "classics" of the language) and not those they consider to be too "low brow."

In order to make the best use of the affordances of pop cultural media, teachers must also be educated in these new media and into how to incorporate them into instruction appropriately. Pop culture has been studied academically in film school, cultural studies, youth studies, philosophy departments, and elsewhere, but perhaps much less so in teacher education programs. That trend appears to be changing, however, with elective courses on how to incorporate pop culture into language education offered at some universities (e.g., University of Hong Kong), but it needs to be addressed more widely and systematically.

Conclusion and Future Directions

Pop culture offers many possibilities for language educators, language learners, and those who wish to continue to practice their already well-developed language skills and cultural knowledge in new environments. Pop culture outside of the classroom is often simply a form of recreation and entertainment for people; for instructional purposes, however, pop culture must be used with discretion and in a theoretically sound and appealing way in order to meet students' interests and needs as well as educational and institutional goals. Finally, although practical adaptations of pop culture in L2 learning contexts (e.g., gaming, virtual worlds) abound, there has been insufficient research in applied linguistics and language education documenting learning processes and outcomes in these creative spaces.

SEE ALSO: Age-Appropriate Instruction and Assessment for School-Age Learners; Authenticity in the Language Teaching Curriculum; Critical Discourse Analysis of Popular Culture; Teaching Culture and Intercultural Competence; Technology-Supported Materials for Language Teaching; Using the World Wide Web for Language Teaching

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Using the First Language and Code Switching in Second Language Classrooms

KATY ARNETT

The place of learners' first language (L1) in the second and foreign-language (SL/FL) classroom has evolved along with the methods of language teaching. The grammar-translation method relied heavily on the learners' L1 to teach the meaning of the target language (TL) and was eventually abandoned in favor of approaches such as the audio-lingual method, which advocated for oral communication in the TL and total exclusion of the L1. The role of the L1 in the SL/FL classroom was largely unquestioned until the 1970s, with the advent of the era of communicative language teaching (CLT). Since that point, the role, purpose, and value of the L1 in the traditional FL/SL classroom have been a more prominent area of debate, with no immediate consensus in sight. Though multiple conceptions of "code switching" exist, for the purpose of this entry, this term will denote the practice of alternating between the L1 and the target language TL at the word, phrase, clause, or sentence level (Timm, 1993, p. 94). Thus, code switching can be intra-sentential or inter-sentential.

Perspectives on the place of code switching in the FL/SL classroom tend to fall into one of three camps: The L1 can/should have an open and active role in the FL/SL classroom with no restrictions on usage (e.g., Cook, 2001); the L1 can certainly be a resource in the FL/SL classroom, but its application and relevance to the learning situation must be clearly defined (e.g., Turnbull, 2001); or the L1 should be excluded completely from the FL/SL environment because it dilutes the ability of the learner to access L2 input and engage in meaningful TL interactions (e.g., Duff & Polio, 1990). As pointed out by Levine (2003, p. 344), and echoed in prior reviews of the topic (e.g., Turnbull & Arnett, 2002), participants in the debate "often base their assumptions and arguments largely on intuitions about best practices, anecdotal evidence, and personal classroom experience."

Prior research has revealed numerous reasons for which the L1 may be used by either teachers or learners, including: clarification of message/meaning; attempts to minimize student anxiety; delivery of certain types of content (e.g., grammar, classroom management); and building rapport with students or among peers, or both, in the class (Rolin-Ianziti & Varshney, 2008). Studies on L1 use within the past decade have revealed more information about the timing and reasons for L1 use (e.g., Chavez, 2003) and the impact of L1 use on the classroom participants, environment, or both (e.g., Rolin-Ianziti & Brownlie, 2002; Levine, 2003; Rolin-Ianziti & Varshney, 2008). Prior empirical studies on code switching most often examined discourse patterns among the teachers and students, which shed light on the communication and teaching functions associated with L1 use (e.g., Duff & Polio, 1990; Polio & Duff, 1994).

Different theoretical frameworks about second language (L2) acquisition/learning hold different positions regarding the proper role of the L1 in the FL/SL classroom. The socio-cultural view, which acknowledges the importance of appropriate scaffolds and collaborative elements of learning, sees the L1 as an additive element to the learning experience

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(e.g., Antón & DiCamilla, 1998). Through this view, the L1 can be used in language classrooms as a way to provide support to the L2 learner at strategic moments. Adherents of theoretical views rooted in the value of input and/or interaction, on the other hand, tend to see L1 use as incompatible with the process of how one becomes proficient in a language (e.g., Polio & Duff, 1994). Krashen and Terrell (1983) indicated that learners should not have access to their L1 in the new language environment; meaningful communication in the L2 classroom can only occur in the L2. However, Krashen has since indicated that the L1 can have a value for the classroom, but for this to be so, the L1 cannot discourage the use/presence of comprehensible input in the classroom (Krashen, 2004).

The presence of the L1 in an FL/SL learning environment can be shaped by multiple factors beyond a theory of language learning. In 2002, Turnbull and Arnett published a review of the works examining the reasons for teacher L1 use in the FL/SL classroom. This work revealed multiple influences for the classroom teacher, including: teacher beliefs about language learning and teaching, teacher preparation, institutional policies regarding language use, the relationship/overlap between the L1 and the TL, the lesson objectives, the nature of the task under consideration, and the availability of appropriate teaching materials. For many years within the literature, it has been assumed that teacher L1 use is a strategy for reducing student anxiety (most likely because of concerns about the role of the affective filter in the L2 classroom), but two recent studies of learner perspectives (Levine, 2003; Rolin-Ianziti & Varshney, 2008) revealed conflicting findings about the role of the L1 in reducing anxiety; the former study concluded that L1 use did not diminish student anxiety, while the latter reached the opposite conclusion.

Levine (2003, p. 355) makes three specific recommendations about the place of code switching in the language classroom. These recommendations were informed by an empirical consideration of the relationship between teachers' and students' beliefs about L1 use and learner anxiety in the FL/SL classroom; these constructs had been posited in earlier literature (e.g., Turnbull, 2001). Levine's recommendations included acknowledging that the FL/SL classroom environment should embrace the view that the L1 has a role and value, marking the use of the L1 in the classroom environment, and collaboratively establishing the parameters for L1 use in the classroom.

Levine's recommendation about the marked use of the L1 recalls Myers-Scotton's (1993) markedness model, a theoretical framework which views code switching in relation to the rights and obligations of the interlocutors within a situation; under this lens, Myers-Scotton contends that the speakers have an inherent awareness of which language code is the default form (i.e., the unmarked code) and which language code would be atypical or less natural to use in that context (i.e., the marked code). The use of either code at a particular moment can be used to convey new meanings or ideas to the other interlocutors, such as their membership in a particular group (i.e., as an individual who is multilingual); their attitudes about the other language, its culture, or both; or their being someone who does not know the TL equivalent of the L1 term. As Hinkel (2005) explains further, in the L2 classroom context where learners share the L1, the default unmarked code would be the L1. To ask the students to altogether deny their knowledge of the L1 within the FL/SL environment is in direct opposition to their natural inclination for code usage with each other. Though FL/SL classroom environments that comprise a mix of first languages might more easily establish the L2 as the unmarked code, in general, for many L2 speakers, the L2 will likely represent, to a degree, a marked code. The markedness model and Hinkel's (2005) assessment of what the model means for code switching in the L2 classroom align with the two aforementioned perspectives which envision a role for code switching in the L2 classroom.

The markedness model also facilitates a consideration of bilingual education, which openly endorses the use of two languages in the classroom. In most such circumstances,

either (a) the learners all share the same L1 and are learning the L2, or (b) some members of the class share one L1 and the rest of the class shares another, and the L2 for each group of students is the L1 of the other group. In bilingual classrooms, it is not uncommon to see whole blocks of instruction delivered in either one of the two languages, with potentially specifically designated times, subjects, or both for certain languages. The languages thus coexist, with neither one holding more power than the other in the instructional setting; this is the opposite of the relationship between the L1 and the L2 in the traditional L2 classroom, where the L2 is the dominant language.

As we move further into the 21st century, there is still a demonstrated need for empirical considerations of the role and impact of the L1 on the traditional L2 classroom, so as to properly guide pedagogical and political decision making with sensitivity to different educational and linguistic goals across varied contexts. From what has been learned so far from the research, it is clear that future explorations must continue to consider the link between belief and practice.

SEE ALSO: History of Language Teaching Methods; Immersion Programs

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Using the World Wide Web for Language Teaching

MARTA GONZALEZ-LLORET

The World Wide Web ("WWW" or "the Web") is a system of documents interconnected through hyperlinks, or points of reference to information in the same or a different document accessed via the Internet, and visible with a Web browser (i.e., Internet Explorer, Mozilla Firefox, Safari). Although the terms "Internet" and "WWW" are often used interchangeably, they are not exactly the same thing: the WWW is an application built on top of the Internet (World Wide Web, 2008). As of January 2009, with more than 1,463 million Internet users and 218 million Web sites (Pingdom, 2008), the Web has proven tremendously appealing for L2 teaching and learning. In this entry, I first discuss some well-known options for using the Web for language teaching purposes and I then focus on a selection of Web 2.0 tools and their potential for language teaching and learning.

The Web offers an excellent environment where students can find a wide variety of well-constructed, interactive exercises to practice their L2. The advantage of engaging with these exercises on the Web (rather than on paper) lies, first, in the possibility of receiving immediate feedback, which allows a student to notice the gap that there may be between their language and the target language, an important step for language acquisition (Schmidt, 1995). In addition, these exercises include multimodal forms of input (audio, video, hyperlinks, and so forth) which can make the input more salient, richer, and more comprehensible—and, therefore, more productive for L2 learning (Chapelle, 1998; Doughty & Long, 2003). These activities range from grammar-based exercises (see for example Barbara Kuczun Nelson's Web page: http://www.colby.edu/~bknelson/SLC/index.php; and Asencio & Desnoyes: http://www.ccdmd.qc.ca/ri/aztecas/) to audio and text comprehension activities, language games (see the BBC Web site: http://www.bbc.co.uk/worldservice/learningenglish/), and information search activities (see USC Beaufort Library: http://www.sc.edu/beaufort/library/pages/bones/bones.shtml for an excellent basic tutorial on searching the Web). Among search activities, WebQuests are widely used in primary and secondary education. A WebQuest is an inquiry-oriented activity in which students use information from the Web to support their "thinking at the levels of analysis, synthesis and evaluation" (Dodge, 1995, n.p.). WebQuests are student-centered, based on authentic materials (text, video, audio), and include culturally rich information. Students must process this information, usually collaboratively, to create a product, such as a class presentation, document, or exhibit. (See http://webquest.sdsu.edu/ for more information and examples.)

Truly novel options for language teaching on the Web are what has been called Web 2.0 tools, which are described as mainly services (rather than packed software) involving users actively. They harness the collective intelligence of the users to get richer as more people use them; they have lightweight, easy-to-navigate interfaces, and trust their users as co-developers (O'Reilly, 2005). Included among Web 2.0 tools are virtual immersive environments (VIEs) such as simulations, virtual worlds, and MMOGs (massively multiplayer online games), as well as authoring spaces such as blogs and wikis. These tools can be approached individually or as collaborative environments. The latter option may be advantageous for language acquisition, since it promotes interaction and negotiation (Long,

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1985), making input comprehensible and pushing students to produce comprehensible language (Swain, 2000). In the remainder of this entry, I will briefly describe a selection of these Web 2.0 tools, focusing on their potential for language teaching.

VIEs are Web contexts, not easily accessible outside the computer, in which students can submerge themselves and become active participants without the pressure of losing face when making mistakes. In addition, VIEs follow the educational principle of "learning by doing" (Dewey, 1998), and they are student-centered activities which allow learners to go at their own pace and spend as much time as desired in the environment, individualizing their learning and respecting their developmental processes (Doughty & Long, 2003). They also keep students motivated by allowing them to set their own goals and decide how to reach them (Bryant, 2006).

Although most of these technologies were created to be used outside the realm of education (see Sykes, 2008 for an exception), recently interest has been sparked in their use in educational settings (Gee, 2005; Shaffer, 2006). See for example the construction of "intelligent and interactive" avatars for different educative settings by Vcom3D (www.vcom3d.com). In all these Web environments, through authentic contact students learn the interactive norms of other participants, appropriate language use, and pragmatic rules. They develop the necessary literacies and intercultural competence to function in the environment (Sykes, Oskoz, & Thorne, 2008) as well as to negotiate their own identities (Gee, 2005).

Authoring spaces, or Web writing tools, are another family of Web 2.0 that offer tremendous potential for language teaching. Among them, blogs are journals written on a Web platform which can include not only text but also multimedia (pictures, video, and sound) and hypertext (links to other pages on the Internet). They can be used individually or collaboratively and they are organized around the person, rather than the subject matter. Blogs allow students to practice L2 reading and writing skills and to collaborate, persuade, and develop ideas not only as individuals in the closed environment of a classroom, but as part of a group in a public arena, a factor which gives them a sense of agency and freedom to express their ideas (Bloch, 2007). Blogs can also be used as tools for peer reviewing and as spaces for collaborative project writing. Numerous sites offer simple, ready-to-use blog services (e.g., Blogger: www.blogger.com/), including blogs for language learning (Eslblogs: http://eslblogs.org/). Although blogs can be used for collaborative writing, the chronological order of the postings limits the interactivity of the users. Wikis, on the other hand, encourage truly collaborative writing efforts. The term "Wiki" ("quick" or "fast" in Hawaiian) is short for WikiWikiWeb, an open-editing system in which anybody can edit, add, or delete content on a page. The most popular Wiki is certainly Wikipedia (www.wikipedia.com), a publicly created encyclopedia. Similarly to blogs, the potential of wikis for language learning resides in their collaborative nature and the possibility this has for L2 writing acquisition (Godwin-Jones, 2003; Kessler, 2009).

In this era of electronic information, Web 2.0 tools not only support language learning processes in unprecedented ways but they do so while also stimulating new conceptions of literacy and learning. For these reasons, it is becoming increasingly important for the areas of applied linguistics that investigate language learning to explore how these tools can be exploited and integrated into the L2 curriculum.

SEE ALSO: Computer-Mediated Communication and Second Language Development; Emerging Technologies for Language Learning; Online Communities of Practice; Technology and Teaching Writing

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Validation of Language Assessments

ALISTER CUMMING

The validation of a language assessment involves, most simply, gathering compelling evidence that the assessment does what it claims to do. Expectations for effective validation, however, have become increasingly complex, sophisticated, and demanding in recent decades. The basis for validation has been theorized, various research methods and technologies have proliferated, and the uses, accountability, and consequences associated with language and other forms of assessments have increased and diversified greatly. Indeed, validation is far from simple. It has come to be conceived as a long-term process of accumulating, evaluating, interpreting, conveying, and refining evidence from multiple sources about diverse aspects of the uses of an assessment to fulfill particular purposes related to its guiding construct(s), including the methods of assessment and reporting as well as other uses of information and activities relevant to the assessment, in both the short and long terms, by diverse populations.

From this current view, arguments for validation of language assessments need to be as substantial, and as fully substantiated and accountable, as are claims for scientific knowledge, public policy, or resolution of legal disputes. Such stringent expectations apply particularly to high-stakes tests, whose results have profound consequences for individuals' career or life opportunities as well as for educational or other public institutions, for example, in determining admission to or completion of educational programs, decisions about immigration or employment, or certification to perform professional or other vocational duties. These uses of language assessment, which make particularly high demands for validity evidence, are at one extreme among the range of purposes for language assessments. Accordingly, the most extensive programs of research to validate language tests have concentrated on a small set of English-language tests that are used widely around the world for high-stakes decisions about university admissions, immigration, and employment, such as the Test of English as a Foreign Language (TOEFL, in its current version as the TOEFL iBT, Internet-based Test; e.g., Chapelle, Enright, & Jamieson, 2008) and Cambridge exams such as the International English Language Testing System (IELTS; e.g., Weir 2004) (see Cumming, 2007; Xi, 2008; Stoynoff, 2009).

Rigorous validation research is also conducted, though less widely circulated, on a national or state basis for various language tests or exams that certify completion of school or other programs, that judge qualifications for professional licensure, or that serve purposes of monitoring or reforming educational systems (e.g., Brindley, 1998, 2000; Chalhoub-Deville, 2009). Language assessments, of course, also feature in research studies, where the validation of instruments and procedures is an integral assumption. However, as Thomas (1994) demonstrated, greater rigor and precision would be desirable in many reports of research about language learning that involve assessments of second language (L2) proficiency. Expectations for validation evidence and reasoning also obtain where language assessments are less formal, contingent on local situations and standards or shared familiarity and understanding, notably for educational purposes such as diagnostic or achievement assessments, decisions to allocate grades or program completion, aligning program curricula with benchmark standards, or even teachers' responses to routine classroom tasks or assignments or learners' self-assessments (Alderson, 2005; Fulcher, 2008; Council of Europe, 2009; Cumming, 2009).

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Concepts of Validity Applied to Language Assessments

The concept of validity, which guides validation practices, is integral to the very idea of assessment (i.e., a procedure, such as a test or a set of tasks, capable of providing information that can be trusted to make certain decisions about people's abilities). Validity features centrally in professional standards as "the most fundamental consideration in developing and evaluating tests," which define validity as "the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests" (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999, p. 9). General definitions of validity, such as appear in the *Oxford English Dictionary*—"possessing legal authority or force," "technically perfect or efficacious," and "sound and to the point; against which no objections can fairly be brought"—are also relevant to the more technical definitions of validity applied to language assessments (Cumming & Berwick, 1996, p. 1). If an assessment is not valid, why bother using it? Or worse, risk being misinformed by it? Two frameworks have been influential in the professional literature on language assessment in recent decades. The first framework is a theoretical description of the concept of validity, whereas the second focuses on how to engage in the processes of validation through research and argumentation.

Unitary Theory of Validity

Messick (1988, 1989) put forward a comprehensive definition of validity that suggests what the scope of validation research should be for assessments generally. His unitary theory of validity placed central emphasis on the construct (i.e., theoretically and empirically supported concept or ability) being assessed. Messick argued that validation research needs to ensure that results from assessments represent the intended construct accurately and do not underrepresent it or vary unduly because of sources irrelevant to the construct. That is, people's performance on a language test may vary for many reasons such as their first language (L1) literacy, specialized knowledge, or test-taking abilities. However, a valid test of L2 proficiency should ensure that results from the test vary because of the construct being assessed, not other things. For this reason, a valid test needs to define precisely how language proficiency is conceptualized and addressed (recognizing that the construct of "language proficiency" has multiple dimensions and may be conceptualized and evaluated in different ways for different purposes) and to ensure that results from the assessment are not inadvertently influenced by other factors. At the same time, validation is local in the sense of involving a particular purpose for assessment, the definition of language proficiency adopted, unique instruments and procedures to elicit language performance or knowledge, and a specific test-taking population.

Also integral to Messick's unitary theory are two sets of distinctions, which he depicted in a "progressive matrix" to describe and inform the scope and nature of validation research. The first distinction is between interpretations and uses of an assessment. *Interpretations* refer to evidence internal to an assessment, such as analyses of its content, specifications, methods, and values—all focused on the construct being assessed. *Uses* refer to the procedures involved in and information and decisions resulting from an assessment, which also must be consistent with the construct being assessed. Messick's second distinction is between evidence and consequences. *Evidence* for validity may come from a range of empirical methods (described below) to analyze the content, consistency, or patterns in score results, and so forth. *Consequences* consider the values implicit in these empirical data plus the impact or washback that the use of an assessment has on societal systems or groups (e.g., for education, effects on teaching, learning, and instructional materials and for particular populations and situations, in both the short and long terms). Validation

research is obliged to consider all of these aspects of an assessment. Systematic and rigorous evaluation of evidence for and consequences of the assessment are needed, as are careful interpretations of the properties of an assessment and analyses of its ongoing uses for its designated purposes.

Messick's framework was endorsed and adapted for studies on language assessments in Bachman (1990), Cumming and Berwick (1996), and Kunnan (1998). Bachman and Palmer (1996) proposed a framework for operationalizing Messick's theoretical discussion of validity into a widely employed framework for developing, evaluating, and validating the usefulness of language assessments in terms of six qualities: validity, reliability, authenticity, interactiveness, practicality, and impact. Weir (2004) similarly elaborated a framework for developing and validating language assessments suited to both formal tests and informal teaching practices, focusing on analyses of test takers, social contexts, theories of language abilities, response formats, scoring procedures, comparisons between assessments, and impact on society. Recent discussions of Messick's framework, such as McNamara (2006), underscore the need to devote attention to issues of fairness, ethics, and values, which are integral to language assessments, particularly in view of the growing influence of practice-oriented, argument-based validation.

Argument-Based Validation

A more recent presentation of validation, articulated influentially by Kane (1992, 2006), follows from Messick's framework as well as approaches developed originally for program evaluation (e.g., Cronbach, 1988). Kane's ideas emphasize and refine the logic, evidence, and rhetoric of arguments for the validity of an assessment. As Xi (2008, p. 181) observed, "the major strength of Kane's approach lies in providing a transparent working framework to guide practitioners in three areas: prioritizing different lines of evidence, synthesizing them to evaluate the strength of a validity argument, and gauging the progress of the validation efforts." Kane adopted Toulmin's (1958) framework for analyzing argumentation (originally devised to span a range of disciplines) into a set of principles for constructing, substantiating, evaluating, and refining an argument to demonstrate that an assessment does what it claims. Kane distinguished two fundamental steps to construct a validity argument: first, articulating an interpretive argument then, second, developing and evaluating the evidence for the argument as well as rebutting potential counterevidence. Mislevy and colleagues (e.g., Mislevy & Yin, 2009) have proposed similar principles and criteria, asserting the importance of careful reasoning and empirical evidence from task performance in the design of validity arguments supported and evaluated by systematic validation research.

Bachman (2005) further articulated these ideas to prescribe the reasoning and research needed for validation of the uses of a language test. Bachman and Palmer (2010) integrate this approach into a single "assessment use argument," providing conceptual links between interpretations, decisions, and consequences as well as a comprehensive approach to issues of fairness. To date, the most extensive application of validity argumentation to a specific language assessment has appeared in Chapelle et al.'s (2008) documentation of the planning, research, and development that, over more than a decade, went into redesigning the TOEFL iBT. The extent and rigor of this particular project imply that the resources required for such programmatic validation research may be available (or even worthwhile) only for high-stakes, consequential tests used on a large scale. At the same time, this example attests to the fundamental necessity of extensive validation research and systematic reasoning in all language assessments, setting high standards for expectations about validation evidence and logical argumentation, as well, in less demanding or local contexts.

Approaches to Validation Research

That validity requires careful reasoning and strong supporting evidence has long been a fundamental principle in research in the social sciences. Seminal books on research methods, such as Campbell and Stanley (1963), popularized the centrality of validity in the design and analysis of experimental types of research half a century ago. These authors distinguished between evidence and inferences related to (1) the internal validity of a research design (i.e., the extent to which results can be attributed directly to experimental conditions) and (2) its external validity (i.e., the extent to which results of the research generalize to populations or settings other than those investigated directly). Campbell and Stanley enumerated the common threats to validity in research, observing that most research studies in the social sciences aim to achieve internal validity at best, but seldom aspire to results that could apply generally across contexts (e.g., through stratified random sampling of research participants to represent full populations in a society). In recent decades, the concept of validity has remained fundamental in all empirical research, though experimental types of research have seldom been applied to language tests. Instead, argument-based approaches to test validation have expanded the concept of evidence relevant to validity greatly so as to include a wide range of reasoning, methods, evidence, and purposes of inquiry, including qualitative as well as quantitative orientations.

Xi (2008) provided a comprehensive synopsis of methods commonly used to gather empirical evidence used in validation research for language tests, organizing these as a sequence of inferences that progress logically through phases in establishing the type of validity argument Kane suggested:

- *evaluation* to link test performance to observed scores (e.g., by analyses of test conditions, scoring rubrics, rating processes, or rater bias);
- *generalization* to link observed scores to the universe of scores (e.g., by reliability or internal consistency analyses, including Rasch analyses and generalizability studies);
- *explanation* to link the universe of scores to their interpretations in test contexts (e.g., by factor analyses, structural equation modeling, experiments, group difference studies, analyses of discourse produced during test performance, observations, or self-report methods such as verbal reports, interviews, questionnaires);
- *extrapolation* to link the universe of scores to interpretations to real-world situations (e.g., by needs analysis, corpus analysis, follow-up studies, or connections to external criteria such as grades in courses); and
- *utilization* to link interpretations to uses (e.g., by analyses of score reporting, decisions made based on test results, and long-term consequences for institutions or stakeholders, i.e., washback).

As Xi's categories (or related discussions and examples in Weir, 2004; Bachman, 2006; Cumming, 2007; or Stoynoff, 2009) demonstrate, the research methods employed to validate language assessments have recently taken many forms, including discourse analysis (e.g., Lazaraton, 2002), verbal reports (e.g., Green, 1997), or interviews and observations of teachers (e.g., Wall & Horák, 2008)—alongside the conventional types of correlational or factor-analytic analyses of scores established since the 1960s for large-scale language tests (e.g., by Lado, 1961), which in turn have themselves taken increasingly complex and sophisticated forms. Functionally, these approaches to research aim to provide evidence for the following in language assessments:

- *content relevance*, using corpus, task, or needs analyses to specify the content of assessment items, tasks, or discourse; to align the assessment with curriculum standards or

educational or job requirements; or to meet the expectations of users of assessment information (e.g., teachers, students, program administrators, parents, or employers);

- *construct representation*, using task or discourse analysis, observations, or surveys to ensure that the tasks or materials in an assessment elicit the intended behaviors, correspond to predicted difficulty or performance levels, and are not influenced unduly by construct-irrelevant factors or unfairness to differing populations;
- *consistency among measures*, using statistical analyses of scores to establish their reliability within an assessment or sections of it, over successive administrations and versions of the assessment, and over time, among raters or other (e.g., automated) scoring methods, and across other assessments of similar abilities; ensuring that the scores correspond to hypothesized abilities and difficulty levels and are not influenced unduly by construct-irrelevant factors;
- *criterion-related evidence*, comparing results of an assessment to relevant criteria such as other related tests, self-assessments, teacher or employer assessments; performance evaluated in courses, at work, or in relevant societal contexts; or in predicting individuals' long-term success; and
- *appropriate consequences*, determining the effects of using an assessment on institutional systems (e.g., schools, universities, or immigration policies) or the activities of stakeholders or materials related to the assessment (e.g., teachers, students, study or curriculum materials), ensuring that information from and about the assessment is used appropriately and that the impact of the assessment, if any, is desirable rather than undesirable in relation to the construct of the assessment.

Defining Language Abilities for Assessment Purposes

Despite agreement on the centrality of construct definition in validity research, the relations remain tenuous between language testing and theories of language acquisition (Bachman & Cohen, 1998). Early theorists of language testing, such as Lado (1961), assumed (with limited theoretical or empirical justification) that knowledge of grammar and vocabulary was a central construct to be assessed along with brief samples of students reading, listening to, speaking, and writing the language assessed. Subsequent efforts to design language assessments on the basis of more comprehensive theories of communicative competence produced more authentic or educationally relevant tasks, but were challenged to provide firm empirical evidence that their assessments could do justice to either the full scope or the integral essence of these theories of language proficiency (Harley, Allen, Cummins, & Swain, 1990). These challenges arise from the enormous range of individual, sociolinguistic, psychological, situational, and crosslinguistic factors that produce variability in the performance of communication tasks as well as the acquisition of core features of the numerous, interrelated micro-systems of L2s—as demonstrated in much systematic research into the development of L2 proficiency.

Indeed, the complexity of languages, communication, learning, and social contexts defies the straightforward specification of constructs of language abilities for assessment purposes. Nonetheless, any language assessment is obliged to adopt certain theoretical stances on the nature of language abilities. For instance, Read and Chapelle (2001) have demonstrated how tests of L2 vocabulary—just one aspect of language ability—may conceptualize vocabulary as either a trait (a characteristic possessed by a person), a behavior (specified by performance in a context), or an interaction (between a person's abilities and a context). Mislevy and Yin (2009) have likewise argued for an interactionist perspective to account for the complexity and adaptability of languages, human abilities, and social contexts, arguing that most conventional language assessments have been based on trait theories (which offer limited information on individual performance within the context internal

to a test rather than extending to abilities to communicate in other circumstances). These theoretical orientations shape the inferences that can be made from results of a language assessment, and consequently their validity (i.e., either internal to the conditions of the test or extending to other contexts). The validity of oral interviews as a method of language assessment, for instance, has been challenged for restricting opportunities for interpersonal communication or lacking bases in theories of communication or language acquisition (Johnson, 2001) as well as for lacking empirical verification of commonsense aspects of language performance such as "fluency" (Fulcher, 1996).

For these reasons, demands for the validation of a language assessment are shaped by the intended purposes for assessment as well as the conditions that are practically feasible for conducting it. Differing demands for validation arise depending on whether language assessments serve the interests of pedagogy, research, or institutional policies and whether they serve such functions as selecting (e.g., into programs, groups, or employment), monitoring (e.g., diagnosis to inform teaching and learning, evaluations of programs or institutional systems), or certifying abilities or achievement (e.g., professional licensure, program completion, course grades, or differences of interest within research studies).

For instance, portfolio assessments can provide considerable information about individuals' abilities to compose over multiple experiences in a broad variety of tasks, and so are useful for teachers (and students) to diagnose the needs of individual students, to monitor their long-term achievements, and to assign grades within a specific course or program. In effect, the context of the course and its learning and teaching opportunities implicitly set local, informal standards for validation. But the time and expense required to produce and then evaluate a whole portfolio of writing are not realistic for high-stakes tests involving large, diverse populations across a range of contexts, and the conditions for doing so could not be standardized or validated in a way that is efficient or fair for high-stakes purposes such as decisions about university admissions or immigration. In contrast, for research on language learning, metalinguistic judgment tasks may provide efficient standardized data about people's knowledge of the grammar of a language, but they require extensive theoretical justification, pilot development, and verification to ensure the validity of assessment instruments and procedures, and their scores are not intended to extend to inferences about abilities to communicate generally, and so are seldom used for pedagogical or policy purposes.

Validation for Language Education Practices

For educational practices, the widespread adoption of curriculum standards or frameworks around the world has led to new challenges for the validation of language assessments within and for educational programs. At the macrolevel of educational systems, most jurisdictions have produced or adopted policies, on the basis of professional consensus and related inquiry (Brindley, 1998; North, 2000; Fulcher, 2008; Cumming, 2009), that define progressive levels of language proficiency expected within educational programs. These initiatives follow principles of criterion-referenced assessment, aiming to link directly curriculum resources, teaching practices, and expected learning outcomes on a regional, national, or international basis.

As a consequence, assessments used for selection, placement, achievement, or program completion require validation in reference to the particular curriculum framework as well as the participating learner populations and the learning opportunities provided to them. Numerous initiatives with diverse approaches to validation have been undertaken in reference to the Common European Framework of Reference for Languages (CEFR). For instance, the Council of Europe (2009) describes a range of validation methods to benchmark new and existing language tests to the categories and levels of the CEFR. Alderson

(2005) advocates an approach to standard setting for the validation of diagnostic self-assessments with the DIALANG project, anticipating great situational, individual, and interpretive variability. Similar initiatives in other settings have also emphasized the importance of teacher development in assessment practices to ensure standardization on the local basis of pedagogical practices, for example, with the Certificates in Spoken and Written English in Australia (Brindley, 2000) or the Teachers of English to Speakers of Other Languages (TESOL) Standards in the USA (TESOL, 2001). From the micro-perspective of teaching practices, as well, innovative approaches have appeared for teachers to validate their ongoing assessments of students' learning and achievements systematically in classroom contexts and through collegial collaboration (Davison & Leung, 2009).

Prevailing Concerns

Theoretical and methodological frameworks for validation research are now well articulated, confirming the centrality of validation to language assessment. What remain to be addressed, however, are applications of these frameworks to a broad range of assessment practices. Four constraints prevail. First, extensive resources and expertise are required to validate language tests systematically and rigorously. Not only are long-term commitments to specialized research required, but also the outcomes of such research need to be incorporated meaningfully into ongoing refinements to assessment instruments, procedures, and uses. To date, just a few high-stakes tests of English such as TOEFL and IELTS or certain national or state exams have been able to afford the expense and employ the specialized technical expertise for rigorous validation research. Moreover, even for these few tests, once test formats, score scales, and methods of score reporting have been established as policies at institutions such as schools, universities, or governments, it is a challenge to alter them in a way that readily incorporates, on an ongoing basis, results from validation research. That is the second constraint: Institutional policies, testing practices, and stakeholder attitudes value consistency and resist change, making it difficult for validation research to be incorporated significantly into refining established language tests in ways that could alter their conventional uses.

The third constraint concerns applying principles of validity broadly and routinely to educational and other informal assessment practices. Many language assessments are made on a local or even individual basis, either as an ordinary part of teachers' monitoring of students' performance learning in classes or at a program level for placement into or to certify completion of a course or program. The introduction of curriculum standards over the past decade has certainly helped to make explicit and to standardize criteria, procedures, and reporting for informal language assessments (and self-assessments). But the validity is uncertain for language assessments developed and administered by individual teachers, in a strict or official sense, because these may involve implicit or unarticulated pedagogical purposes and are open to numerous sources of variance. Moreover, current programs for initial teacher education (or even ongoing professional development) seldom focus on language assessment in the depth required for practicing educators to learn how to conduct validation research systematically, and most teachers' working conditions do not permit the time to do it.

The fourth constraint, already described above, concerns the limited congruence between theories of second language acquisition (SLA) and practices of language assessment. All language assessments make assumptions about language development and performance, but these assumptions are seldom articulated systematically as constructs or evaluated rigorously in ways that really provide support for them. Generally, there is little agreement on theories of language acquisition for assessment purposes or, fundamentally, even

whether language abilities should be assessed as a trait, behavior, or interaction in any given situation. Moreover, it is unlikely that a single theory of language learning could emerge or be applied uniformly as a useful construct across different language assessments given the enormous variation in languages themselves and their status in different societies, the conditions under which languages are taught, learned, and practiced, and the many, divergent purposes and populations for which language assessments are made.

SEE ALSO: Assessment in the Classroom; Bias in Language Assessment; Discourse Analysis in Language Assessment; Ethics in Language Assessment; Fairness in Language Assessment; High-Stakes Language Testing; Language Testing and Accountability; Language Testing in the Government and Military; Language Testing and Immigration; Language Testing in Second Language Research; Modeling Language for Assessment; Qualitative Research in Language Assessment; Structural Equation Modeling in Language Assessment; Uses of Language Assessments; Values in Language Assessment

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Validity in Qualitative Research

ADRIAN HOLLIDAY

Qualitative research is a mainstream social science methodology which looks deeply at instances of social life which are difficult to see with more quantitative surveys and experiments. As in other areas of professional research, qualitative research has had to struggle for recognition in applied linguistics largely because of perceived issues with validity and also because there are other available methodologies connected with linguistic analysis. However, in the past 15 years it has become established in applied linguistics and has been put to use in a wide range of areas from classroom research to the social nature of language education and the broader social underpinnings of the use of language in society (Richards, 2009, pp. 155–7). This entry first looks at the context of the validity issue within qualitative research and then describes how validity is ensured.

Context of Validity in Qualitative Research

Qualitative research is not as "unstructured" and unscientific as it is often depicted to be. It follows the basic standards of validity which underpin all social science and perhaps science generally. These standards concern the management of variables in such a manner that subjectivity is reduced. In social research this concern is especially focused because of its human nature; and the task is considerable in qualitative research because of its necessary engagement with subjectivity. It is "a situated activity that locates the observer in the world" and "turn[s] the world into a series of representations" (Denzin & Lincoln, 2005, p. 3). It is therefore impossible to remove completely the influence of the researcher or to see what is being studied in any "pure" or "untouched" form. The task is therefore to find ways for describing the researcher's engagement with the world in such a way that it is made transparent and accountable. In more quantitative areas of social research the task of reducing subjectivity may be easier because statistical devices can be used to mediate between the researcher's bias and the data; but finally the researcher still has to interpret the data and the issue of subjectivity is still there. In qualitative research there are no such statistical devices and the relationship between researchers and what their subjects say and do is more direct. The management of subjectivity therefore becomes a major preoccupation in maintaining validity, and has to be engaged with at almost every stage of research design, the analysis of data and the writing of the research study. Hence, with a postmodern realization of the uncertain nature of knowledge, in qualitative research there is a new "crisis of representation" in which "issues such as validity, reliability, and objectivity, previously believed settled" are "once more problematic" (Denzin & Lincoln, 2005, p. 18).

The task is made more problematic because of the varied, creative, and complex nature of qualitative research. There is the potential to "deploy a wide range of interconnected interpretive practices, hoping always to get a better understanding of the subject matter at hand" (Denzin & Lincoln, 2005, p. 4). These might include a wide range of possible types of data. While what people say in interviews, conversations, or longer statements, is perhaps the most common, what they write, photograph, film, drive, paint, post, build

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and so on, where they go, what they wear, who they associate with, avoid or shun, the wide range of their nonverbal interaction, can also be of interest, and can be captured in visuals, documents, art forms, and other artifacts of social life, as well as descriptions written by the researcher (Holliday, 2007, pp. 62–3). These choices relate to the nature of the research setting as it is revealed. There are also many subdisciplines which cover this huge range of possibilities, such as ethnography, grounded theory, phenomenology, narrative enquiry, and auto/biography, which draw from a broad pool of common principles and practice but may also manage data in different ways.

It may indeed be said that qualitative researchers can, or indeed should, collect whatever evidence they need, in whatever manner they can, from the social world to get to the bottom of what they are investigating. While research questions can be very varied, they can be as simple or as complex as "what is going on in/when/where." Principles of validity therefore need to be sufficiently deep to apply to a wide range of possibilities.

Coming Out

A number of attempts at ensuring validity which have been copied from more predictable quantitative research methods have been unsuccessful. A common example of this is taking what has been termed a postpositivist approach and trying to apply the same principles of representativeness as might be employed in a survey. The outcome is often a superficial use of interview in which the same questions are asked to a large "sample" of people, the "responses" are reported as "results," and the subjectivity and intervention of the researcher is largely and naively ignored. Another example is trying to increase accountability by tying down research procedures to a prescribed step-by-step method. Action research, grounded theory, and phenomenology are common targets, as they succumb to the requirements of professional bodies, and, as a consequence, lose the broad depth of application for which they are designed. The result is that "qualitative analysis will only appear as bad quantitative research" (Miller, Nelson, & Moore, 1998, p. 401, citing Athanasas & Heath, and Nielsen).

To overcome this bad press, qualitative research therefore needs to engage fully with the inevitability of subjectivity and researcher intervention for its full power to be realized and for realistic principles for validity to be developed. Achieving this requires a change in research paradigm. A postpositivist adherence to the principles of quantitative research needs to be left behind in exchange for a full adoption of what has been variously termed an interpretivist or a postmodern approach (Clifford, 1986; Hammersley & Atkinson, 1995; Gubrium & Holstein, 1997; Denzin & Lincoln, 2005, p. 11). It is acknowledged that researchers cannot help but interact with the social worlds they study, and that they bring their own ideologies to this interaction. Scientific rigor therefore resides in the manner in which researchers manage their subjective engagement with the world around them.

Rather than claiming validity on the basis of objectivity, postmodern qualitative researchers thus need to provide detailed justification for how their choices of research design suit the specificities of the social setting and the researcher–subject relations which they generate. This does not mean that there is no room for the concept of objectivity. It must, however, be treated as an ideal which is unattainable, but which must nevertheless be sought after and aimed for. The key to validity therefore is in providing a close, and indeed, as far as is possible, objective account of the decisions made by the researcher to "show the workings" of every stage of the research process (Holliday, 2007), the procedures for which a description now follows.

Choice of Setting and People Involved

Researchers need to choose where or with which group of people to carry out their studies on the basis of the richness of the data which can be obtained with the purpose of finding deeper meanings. It has to be possible to form a thick description, which is the process of building complex pictures of what is going on from interconnected pieces of diverse data; and it is making these interconnections that form the basis of strong analysis (Geertz, 1993, p. 6; Holliday, 2007, pp. 74–87). Choices in this regard may be opportunistic, depending on where the researcher is able to obtain access. This opportunism must also be carefully cataloged and rationalized.

Researcher Influence and Bias

It is crucial that researchers assess the impact that they are likely to be having on the people involved in the study and what is therefore done to manage this. This will necessitate a high degree of reflexivity in looking into their own personal, academic, or professional prejudices so that they may account for, or "bracket" them (see Schutz, 1970). In this respect it is important to note that even interview data, which has often been considered to contain relatively reliable representations of what people think, is going to be more "symptomatic" of their particular "relationship to the topic and the interview context than about the topic being discussed" at a particular moment in time, as a result of co-construction with the researcher (Block, 2000, pp. 758–9). There is also discussion about the varied meaning making in the choice of something as seemingly technical as different transcript styles (Bucholtz, 2007). More generally, it needs to be acknowledged that all qualitative data, in the way in which it is selected, organized, and presented, is "something fashioned" by the researcher and will construct realities in different ways (Geertz, 1993, p. 15).

There will thus be particular issues with teachers researching teachers or teachers researching students, where there are professional relationships which will influence what happens and what is said. All researchers also need to appreciate that how they approach, see, and interpret what they are researching will be influenced by their own academic discourses and the academic politics which underpin them (Kuhn, 1970). The discipline of bracketing is associated with the further important discipline of making the familiar strange—to enable even the insider researcher to notice the workings of social life as though through the eyes of a stranger. Thus, the first thing a teacher must try hard to do, when researching classrooms or anything to do with students, other teachers, or pedagogy, is to stop thinking like a teacher and to think of students and teachers more basically as people. Qualitative researchers must therefore be highly disciplined in the manner in which they look at social life, and be able at least to understand the importance of standing outside familiar discourses.

Connected to this is using the first person as a device for showing a "more transparent relationship with her readers" by making it "very clear what her own opinions are" and not disguising "opinion" as "fact" (Clark & Ivanič, 1997, p. 169), thus acknowledging that it is the agency of the researcher as writer that makes the research (Richardson, 1994, p. 518).

Allowing the Unexpected

Given the irrevocable influence and bias of the researcher, the validity of any study will depend on the steps taken to allow the unexpected to emerge. This is why the tight post-positivist sequence of individual interviewees' answers to individual interview questions,

referred to above, must be broken. The classic way to do this is to employ a holistic analysis in which themes are allowed to emerge from across the data set, from the broad cultural nature of the social setting or the people being studied as represented by the thick description. The sign of good research is therefore when the data takes researchers to places they had not imagined.

Getting From Analysis to Writing

Because the reporting of qualitative research comprises a text which is constructed by the researcher, it is necessary to explain the origins of the structuring of this discussion. In the classic qualitative research design, the data is discussed under the thematic headings which emerge from the analysis. It is important to note here that in a qualitative study there is not normally a presentation of the data before the discussion as would be expected in a quantitative study. The reason for this is that the presentation of qualitative data is not possible without a discussion *because* of its subjective nature. The thematic headings are instrumental therefore in structuring the discussion which underpins the presentation of the data. Hence, validity depends on the transparency with which these thematic headings are determined through the process of analysis.

Appropriate Claims

The inherent subjectivity of qualitative research means that it can only be valid if it does not pretend to be something else. It would therefore be inappropriate for a qualitative study to claim any form of statistical significance. Because each study looks deep at a particular instance of social life, evidence of the spread of a social phenomena based on qualitative research can only be achieved through a large number of studies which, when put together, build a gradual picture of the world. At the same time, qualitative studies cannot be replicated, as the nature of the data they collect is very specific to the circumstances in which it is collected. A qualitative study must therefore be very cautious about the claims that it makes. A powerful contribution which it is able to make is to throw caution on established positions by means of a deep and highly detailed close reading of a particular case.

The Difficulty With Writing

It becomes clear that much has to be explained in a qualitative study if its validity is to be demonstrated. This, together with the need to present sufficient examples of data to demonstrate thick description, means that it is hard to fit all that is necessary into the average sized journal article (Richards, 2009, p. 161). A further difficulty with writing qualitative studies is that nothing is ever straightforward. The need for researchers to navigate sensitive pathways between their own subjectivity and the probability of certainty make not only the business of sense-making extremely difficult, but also require immense subtlety of expression in the writing of the study. A research student almost failed because he did not make it sufficiently clear that what he saw in his data was different to what his examiners saw. Readers cannot be left alone with data. They need to have things pointed out to them. Data left by itself in the text may not be sufficient to exemplify what the researcher perceived to be going on at the time when it was collected. The intricacies of the thick description have to be explained by pointing to what needs to be connected with what. "Moving from the field to the text to the reader" is central to the whole

qualitative research process in which "interpretation requires the telling of a story, or a narrative that states 'things happen this way because' or 'this happened, after this happened, because this happened first.'" Hence, "the problems of writing are not different from the problems of method or fieldwork" (Denzin, 1994, pp. 500–1, citing Clough).

Checklists for Validity

In summary, the validity of any particular qualitative research study can be assessed by the degree to which there is a reflexive acknowledgment of the issues surrounding, and an accountable strategy for managing (a) the choice of research setting or group of people upon which the study will be focused, with regard to the potential richness of data and thick description; (b) the subjectivity, presence, and influence of the researcher and the manner in which the study is therefore constructed; (c) space for the unexpected to emerge, for the data to speak beyond the initial structuring of the research questions; (d) the relationship between the analysis of the data and the presentation and construction of its discussion; and (e) claims which are appropriate to the scope and design of the study. Finally, the study should be written in such a way that (f) all of these issues are seen to be addressed and with (g) clear articulation of how the data speaks.

Much can be gained from the explicit management and expression of these areas in satisfying the more macro criteria for validity referred to by Richards (2009, p. 159, citing Lincoln & Guba). *Credibility* is achieved when the relationships between researchers, data, design, and appropriate claims are laid out for scrutiny and makes sense. *Transferability* becomes possible when other researcher can learn from how the issues of subjectivity are addressed in a particular study. The *dependability* of the study is based on knowledge of the professionalism applied by the researcher to address these issues. *Confirmability* "depends on making the data available to the reader, and this in turn depends on *transparency* of representation" (Richards, 2009, p. 160)—once again emphasizing the need for the researcher to show the detail of how specific extracts of data lead to specific claims.

It is helpful to consider three principles by which qualitative researchers can monitor the validity of their interpretation (Holliday, 2007, pp. 94, 109). *Submission* requires that researchers work hard to hear what the data says even if this goes against their initial agendas for the study. It *must* be a real outcome that even the ideology of the researcher is overturned. *Emergence* of the unexpected from the data is thus allowed. *Personal knowledge* enables the researcher to judge what makes sense or sounds right. This must not be confused with "insider knowledge"; and it can only result from working hard to recognize and put aside prejudice. It is knowledge based on, as far as is possible, a nonaligned experience of how social life operates, which can be applied to *any* set of circumstances. This is expressed well by Blackman (2007, p. 711), in his account, employing his broad "ethnographic experience" in his study of young women.

What Is Possible

A useful approach to validity in qualitative research has been to seek for higher level strategies which can be applied to a wide range of research practices and approaches. This enables massive potential in what researchers are able to do to get at the often hidden realities which they wish to investigate. It is therefore paramount that there should not be a narrow list of types of data and equally narrow guidelines for how to collect and analyze them. It needs to be possible for researchers to move into ever more adventurous and creative modes of collecting the evidence that they need. The use of fictionalized ethnographic reconstructions, to capture diverse experience which stands outside the possibility

of more traditional data forms, is a case in point (Holliday, 2004; Inckle, 2010), or using past professional experience as data (Holliday, 2005). The important point is that, however the individual researcher chooses to proceed, the choices made and the claims made must be governed by the same broad principles of validity.

SEE ALSO: Critical Ethnography; Ethics in Research; Institutional Ethnography; Researcher Reflexivity

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Validity: Mixed Methods

NANCY L. LEECH AND AMY DELLINGER

For applied linguistics researchers, validity is an important concept to consider and assess in all research studies. Unfortunately, there is currently limited guidance for assessing validity for applied linguistics researchers who conduct mixed methods research. In general, research validity can be defined as being

> not about singular truths, and it certainly is not limited to quantitative measurement; rather, by validity we mean that a research study, its parts, the conclusions drawn, and the applications based on it can be of high or low quality, or somewhere in between. (Onwuegbuzie & Johnson, 2006, p. 48)

It is important for applied linguistics researchers to consider research validity in all studies because the level of quality of the study directly relates to how well one can trust the conclusions and apply the information to other scenarios.

Early work in the area of validity in mixed methods research treated the qualitative and the quantitative components separately (e.g., Krathwohl, 1993; Newman & Benz, 1998). Because mixed methods research, when done well, integrates the qualitative and quantitative components of the study, validity for mixed methods research is in a class of its own and is still in its infancy (Onwuegbuzie & Johnson, 2006). Yet, in regard to validity in mixed methods research, "validity has become a catchall term that is increasingly losing its ability to connote anything. When a term is used with other words to connote so many meanings, it essentially has none" (Tashakkori & Teddlie, 2003, p. 36). Furthermore, Teddlie and Tashakkori (2009) believe "there is a dearth of systematic literature on the quality (and transferability) of inferences in [mixed methods] research" (p. 300). This scarcity of information regarding validity in mixed methods studies is exemplified in the second edition of the *Sage Handbook of Mixed Methods in Social and Behavioral Research* (Tashakkori & Teddlie, 2010) where only one chapter (O'Cathain, 2010) specifically addresses validity in mixed methods research. Thus, the purpose of this entry is to present the available frameworks for understanding validity in mixed methods research. Hopefully this information will assist researchers in better understanding and using the concept when conducting mixed methods studies.

Currently there are seven available conceptualizations/frameworks for applied linguistics researchers to increase their understanding of validity in mixed methods research studies. These include using concept mapping (Caracelli & Riggin, 1994), integrative framework for inference quality (Teddlie & Tashakkori, 2009), typology of mixed methods legitimation (Onwuegbuzie & Johnson, 2006), the validation framework (Dellinger & Leech, 2007), good reporting of a mixed methods study (GRAMMS; O'Cathain, Murphy, & Nicholl, 2008), identification of threats to validity and how to minimize these threats (Creswell & Plano Clark, 2010), and a quality framework (O'Cathain, 2010). Each of these conceptualizations/frameworks will be delineated in the order in which they were published. This is important to consider, as the field of mixed methods research is still evolving (O'Cathain, 2010; Teddlie & Tashakkori, 2009). Thus, many of these frameworks build upon the others, and therefore have components that are similar along with additional new views of assessing validity in mixed methods studies.

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Caracelli and Riggin's (1994) Model for Validity

The earliest approach to understanding validity in mixed methods research studies was published by Caracelli and Riggin in 1994. These authors hoped to "inform practice by depicting how social science researchers conceptualize a quality mixed-method evaluation, rather than to set forth standards" (Caracelli & Riggin, 1994, p. 140). First, these authors asked their colleagues to help them identify criteria for validity in mixed methods research studies. From this request, 94 items were identified, with 20 being specific to mixed methods research studies. Using concept mapping all 94 items were then sorted and mapped into clusters which represented domains: a total of four domains were identified. The domains included: (a) design (i.e., the adequacy of the sampling and measurement issues); (b) data quality and analysis (i.e., the appropriateness of the analysis, how missing data were handled, the response rates, and the reliability and validity of the data); (c) bias (i.e., actions the researcher takes to assess the effects of bias in the study); and (d) interpretation (i.e., the interpretation of the findings, including "weighting inferences based on the adequacy of measurement . . . and dependability of evidence") (Caracelli & Riggin, 1994, p. 148). Applied linguistics researchers should pay attention to these concepts, especially the concept of bias. For example, in an applied linguistics study researching whether all children should learn a foreign language, if the researcher learned to speak a foreign language as a child, then they may be biased toward children learning a foreign language. If this bias is not identified and the effects on the results assessed, then the findings of the study may not be trustworthy.

Integrative Framework for Inference Quality

Teddlie and Tashakkori's (2009) *integrative framework for inference quality* is regarded by many researchers as the most comprehensive approach to evaluating the validity of mixed methods research. These authors began developing their framework in 2003 (Tashakkori & Teddlie, 2003), and over the years have continued to expand it (Tashakkori & Teddlie, 2008). More recently, Teddlie and Tashakkori (2009) have begun using the term "inference quality," which can be defined as a combination of design quality (i.e., whether the study adheres to best practice) and interpretive rigor (i.e., how well the results can be trusted). According to these authors, specific criteria should be evaluated to assess the strength of the inference and should be used at each step of a mixed methods study. There are two elements to the framework: design quality and interpretive rigor. When assessing design quality the following should be included: (a) design suitability (i.e., the appropriateness of the design for the content being studied); (b) design adequacy/fidelity (i.e., the adequacy of the design for the content being studied); (c) internal design consistency (i.e., how well the qualitative and quantitative components of the design fit together); and (d) analytic adequacy (i.e., assessing the data analysis techniques and whether they can provide adequate results). When evaluating interpretive rigor, a researcher should assess the following: (a) interpretive consistency (i.e., the interpretations of the data should "closely follow the relevant findings in terms of type, scope, and intensity") (Tashakkori & Teddlie, 2009, p. 301); (b) theoretical consistency (i.e., interpretations should be consistent with theory); (c) interpretive agreement (i.e., how likely are other researchers to arrive at the same interpretations); (d) interpretive distinctiveness (i.e., interpretations that are arrived at are more credible than other possible interpretations); (e) integrative efficacy (i.e., how consistent are the interpretations between the qualitative and quantitative components); and (f) interpretative correspondence (i.e., how well the interpretations relate to the purposes and questions of the study). For the applied linguistics researcher, these concepts

are important to consider, as applied linguistics research studies should be well-designed and the findings should be trustworthy. For example, when investigating which languages should be used in courts, knowing whether the results of the study are trustworthy and if the study adhered to best practice would affect whether or not the results should be acted upon.

Typology of Mixed Methods Legitimation

In 2006, Onwuegbuzie and Johnson developed a new framework for understanding validity in mixed methods research. Building upon Tashakkori and Teddlie's (2006) treatment of validity in mixed methods research, these authors created what they titled the *typology of mixed methods legitimation*. These authors used the term "legitimation" instead of validity because they felt the term validity was too closely associated with the quantitative research paradigm, and legitimation was closely tied to the qualitative research paradigm. Legitimation is defined as "the difficulty in obtaining findings and/or making inferences that are credible, trustworthy, dependable, transferable, and/or confirmable" (Onwuegbuzie & Johnson, 2006, p. 52). Onwuegbuzie and Johnson's (2006) typology of mixed methods legitimation incorporates nine types of legitimation. First is *sample integration legitimation*, which is how well the qualitative and quantitative sampling increases the overall interpretation. *Inside-outside legitimation* can be defined as how well the researcher presents the participants' and the researcher's viewpoints. Inside-outside legitimation is an important concept to consider in applied linguistics research, especially for research studies with participants who speak languages other than the researcher's first language. *Weakness minimization legitimation* is the possible weaknesses of one component, either qualitative or quantitative, being minimized by the strengths of the other component. *Sequential legitimation* is where the inferences are affected by the sequence of the components, qualitative and quantitative, in the study. *Conversion legitimation* occurs after quantitizing or qualitizing data if the interpretations are affected. *Paradigmatic mixing legitimation* occurs when issues arise from "competing dualisms: epistemological (e.g., objectivist versus subjectivist), ontological (e.g., single reality versus multiple reality), axiological (e.g., value-free versus value-bound), methodological (e.g., deductive logic versus inductive logic), and rhetorical (e.g., formal versus informal writing style) beliefs" (Onwuegbuzie & Johnson, 2006, p. 59). *Commensurability legitimation* is the extent to which the researcher can switch back and forth from using a qualitative lens to the quantitative lens. *Multiple validities legitimation* is the extent to which the validity/legitimation of the different components is achieved. Finally, *political legitimation* includes the conflicts of ideological values from combining qualitative and quantitative components. Through utilizing the typology of mixed methods legitimation (Onwuegbuzie & Johnson, 2006) model, the researcher can better assess how well the mixed methods design and inferences are integrated.

Validation Framework (VF)

In 2007, Dellinger and Leech presented their validation framework (VF) for assessing validity in mixed methods research. Working from Messick's (1989, 1995) and Cherryholmes' (1988) ideas about construct validity, the VF is a holistic framework to guide evidence accrual necessary for assessing construct validity. Here, validity is defined as the meaning that accrues to data (whether qualitative or quantitative) through all aspects of the research process, including preparation activities (e.g., literature review, study planning), through use, and consequences of use. According to Dellinger and Leech (2007, p. 321):

> The application of construct validation to mixed methods research is appropriate because (a) construct validation is a pragmatic process (Cherryholmes, 1988); (b) construct validation requires mindfulness (Langer, 1989), recognition, and the constant integration of relevant available information, whether qualitative(ly) or quantitative(ly); (c) construct validation assumes that there are no criteria or rulers to measure research quality except as determined by discourse and language in a community of researchers (Cherryholmes, 1988) and the subsequent weight of the research in the negotiations of data meaning; and (d) construct validation is a non-ending, continuous, time- and context-specific, open process (Markus, 1998; Messick, 1995; 1998).

The VF incorporates five elements: (a) the foundational element; (b) the elements of construct validation for quantitative, qualitative, and mixed research; (c) inferential consistency; (d) the utilization/historical element; and (e) the consequential element. According to Dellinger and Leech (2007), the foundational element provides validity evidence through the evaluation of extant literature and/or acknowledgment of prior knowledge or perceptions. The foundational element has implications for the applied linguistics researcher; if the extant literature and/or the researchers' biases are not well-known and described in a research report, it is difficult to assess how the study adds to the literature and whether the results are meaningful. The separate elements of construct validation for quantitative, qualitative, and mixed research refers to the importance of considering the different types of validity evidence, including traditional qualitative and quantitative validity sources, as well as the more recent approaches mentioned in this entry to obtain validity evidence specific to mixed methods (e.g., legitimation). Inferential consistency provides validity evidence through logical consistency of the design, the research literature, types of measurement, and analytic choices. The utilization/historical element illustrates how validity evidence is provided by the use of inferences and data. Finally, the consequential element focuses on how data use and inferences have consequences that impact the validity or meaning accrued to data. Applied linguistics researchers can find examples of how to use the validation framework to evaluate mixed methods studies from a variety of research areas in Leech, Dellinger, Brannagan, and Tanaka (2010).

Good Reporting of a Mixed Methods Study (GRAMMS)

O'Cathain, Murphy, and Nicholl (2008) developed the *good reporting of a mixed methods study* (GRAMMS) based on Creswell's (2003) issues to consider when conducting a mixed research study. After identifying and analyzing 75 mixed research articles from the fields of health, social science, and education, these authors found a lack of transparency in the reports. Thus, GRAMMS was developed to assist researchers in their discussions of mixed research studies. GRAMMS includes the following guidelines: (a) justify why the research question(s) should be answered with a mixed research study; (b) include the "purpose, priority and sequence of methods" (O'Cathain, Murphy, & Nicholl, 2008, p. 6) when discussing the design; (c) include information on sampling, data collection, and analysis; (d) include where, how, and who participated in the integration; (e) discuss limitations of "one method associated with the presence of the other method" (O'Cathain, Murphy, & Nicholl, 2008, p. 6); and (f) report insights that stemmed from integrating methods. The first step in GRAMMS can impact the research of an applied linguistics researcher. For example, if the researcher were to investigate three types of language instruction to assess whether one was better than the others, it would be paramount for the researcher to address why this type of research question should be answered through a mixed methods study.

Creswell and Plano Clark's (2010) Model for Assessing Validity

More recently, Creswell and Plano Clark (2010) outlined a model for assessing validity in mixed methods research through evaluating threats to validity, and included methods of minimizing these threats. These authors chose to focus "on the strategies that researchers might use in all three of the phases of data collection, data analysis, and interpretation of research" (p. 239) and to include the importance of conceptualizing the validity issues in relationship to the research design. Thus, Creswell and Plano Clark (2010) present threats and methods of minimizing threats in two sections: one for merging data in concurrent/convergent/embedded/transformative/multiphase designs and one for connecting data in sequential/explanatory/exploratory/embedded/transformative/multiphase designs. Each section includes the three areas of data collection, data analysis, and interpretation. An example of a threat for data collection when merging data is sampling inappropriate participants for the qualitative or quantitative components. Their suggested method of minimizing this threat is to sample from the same population for both components. When merging data in the data analysis area, these authors present an example threat of conducting statistics with quantitized qualitative data that are not appropriate. Their suggestion for minimizing this threat is for researchers to be sure to analyze distributions of the data and to conduct nonparametric statistics if non-normal distributions appear in the data. We would add the importance of checking other assumptions (e.g., independence of data, linear relationships, etc.), as well. Finally, an example that Creswell and Plano Clark (2010) include for a threat when merging data in the interpretation area is finding divergent results and not resolving them. For example, in applied linguistics research on languages that are no longer being used anywhere in the world, if conflicting results from the data were identified, then this conflict would need to be addressed in order for the results to be trustworthy. When this threat occurs, these authors suggest that researchers could collect more data, reanalyze the present data, and/or check the procedures that were used to collect the data. According to Creswell and Plano Clark (2010), "Researchers should actively use strategies to minimize the validity threats in their studies and also discuss the limitations of the study's design as part of the larger interpretation of the study" (p. 243).

O'Cathain's (2010) Quality Framework

The last framework, and most recent, is O'Cathain's (2010) quality framework. Building upon Teddlie and Tashakkori's (2009) integrative framework for inference quality, and using Caracelli and Riggin's (1994) domains of quality, the quality framework incorporates the work of Creswell (2003), Creswell and Plano Clark (2007), Caracelli and Riggin (1994), Datta (1997), Dellinger and Leech (2007), Onwuegbuzie and Johnson (2006), O'Cathain, Murphy, and Nicholl (2008), Pluye, Gagnon, Griffiths, and Johnson-Lafleur (2009), Teddlie and Tashakkori (2009), and Tashakkori and Teddlie (2003, 2008, 2009). The quality framework is delineated by the stage of the study: (a) planning, (b) undertaking, (c) interpreting, (d) disseminating, and (e) application in the real world. The domains of quality (planning quality, design quality, data quality, interpretive rigor, inference transferability, reporting quality, synthesizability, and utility) are mapped onto the stages of the study. Within each domain are items, including definitions of the items and the source, which would be included in that domain. For example, under the planning stage of the study, the domain is planning quality. The items within the domain of planning quality include: (a) foundational element (Dellinger & Leech, 2007), (b) rationale transparency (Caracelli & Riggin, 1994; Creswell, 2003), (c) planning transparency (Creswell, 2003), and (d) feasibility (O'Cathain, Murphy, & Nicholl, 2008). Each of these items includes a brief definition. O'Cathain (2010)

acknowledges that there are many criteria in the quality framework, how to assess the individual parts is not clearly articulated, and there are competing criteria in the framework: thus, the author stresses that the framework is a work in progress and will evolve over time.

These seven frameworks/models represent early thinking about validity in mixed methods research studies and should be helpful for applied linguistics researchers. When conducting a mixed methods research study in applied linguistics, any of these frameworks can be utilized, as each brings different concepts and views to the fore. It should be noted that the field of mixed methods research is still evolving (O'Cathain, 2010; Teddlie &Tashakkori, 2009), and thus, as noted throughout this entry, many of these frameworks build upon the earlier frameworks. As with all other research, it is important to consider validity evidence when conducting mixed methods research so that studies are rigorous and results and inferences are defensible.

SEE ALSO: Mixed Methods

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Values in Language Assessment

TIM MCNAMARA

Language assessment can be understood from many different viewpoints. The conventional perspective focuses on the individual candidate—determining the level of skill and knowledge in each individual taking the test. The quality of the information about individuals that the test is capable of yielding is investigated using statistical (psychometric) and other procedures. This represents a cognitively based approach. An alternative perspective, in which there is growing interest, but which faces some resistance, involves asking, "Whose values are represented in the test, and whose interests are advanced through its existence and operation?" This perspective recognizes that testing is a social and political practice, and that disputes over the reasonableness of tests may act as sites of contestation of social values. Appropriate methodologies for considering the values embodied in language tests will include a range of qualitative methodologies, but also intellectual sources in which language-testing researchers are seldom trained, such as policy analysis, social theory, and so on. Moreover, from this point of view, even the relative technical quality of a test can be seen in a different light: technically sophisticated tests often make the values implicit in tests harder to recognize, as many people believe that a procedure which is "scientifically" developed, and whose validation makes use of the great conceptual and technical sophistication available from modern psychometric theory, must thereby be fair.

However, a more careful look at validity reveals a great deal more than a means for scientific development of tests. The most influential explanation of validity was articulated in the classic paper by Messick (1989). Messick sets out four broad areas of validity, in the form of a matrix, and in it he gives a special place to the values implicit in tests. The concepts contained in Messick's validity framework have been glossed by McNamara and Roever (2006) as shown in the matrix below.

	Test interpretation (*what test scores are assumed to mean*)	Test use (*when tests are actually used*)
Evidential basis (*using evidence in support of claims*)	Construct validity *What reasoning and empirical evidence support the claims we wish to make about candidates based on their test performance?*	Construct validity + relevance/utility *Are these interpretations meaningful and useful in particular contexts?*
Consequential basis (*the social context of testing*)	Value implications *What social and cultural values and assumptions underlie test constructs and hence the sense we make of scores?*	Social consequences *What happens in our education systems and the larger social context when we use tests?*

The top cell of the matrix addresses the technical quality of the test, and focuses on the meaningfulness of claims about individual test candidates based on their test scores. Messick defines two main threats to the meaningfulness of these inferences drawn from scores:

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construct underrepresentation and *construct-irrelevant variance*. The former refers to situations where the testing procedure does not do justice to the nature of the knowledge and skills targeted in the assessment—for example, a writing test that focuses only on grammar and vocabulary, and ignores other aspects of writing, or a speaking test that does not involve interaction with another speaker, as in computer-delivered tests of speaking. The latter refers to the situation where the score is influenced by factors external to the candidate, such as differences in severity or consistency among judges who are scoring writing or speaking assessments. Most research on language testing involves investigating such sources of weakness in the meaningfulness of score inferences, and elaborate and sophisticated technical means for exploring these issues have been developed.

The social context of testing is set out in the two lower cells of the matrix. Messick distinguishes between the *values*, which are embodied in test constructs, and the *consequences* of the actual implementation of tests. Research and discussion in language testing has increasingly focused on the latter; it has struggled to engage with the former. Exploration of the social context of language testing has been carried out in three main areas: discussion of the ethics of language testing (Davies, 1997, 2004); studies of test washback and impact (Cheng, Watanabe, & Curtis, 2004); and critical language testing (Shohamy, 2001, 2006).

Critical language testing is particularly relevant to the issue of values in language tests, as it focuses on exposing the ideologies embodied implicitly or explicitly in test use. Two test uses that have been better understood through critical investigation are the use of language tests in support of educational and employment policies whose aim is to foster the growth of globalization; and the use of language tests within migration and citizenship procedures.

On the first of these, the clearest example is the program of assessment of the reading skills of 15-year-olds sponsored by the Organization of Economic Cooperation and Development (OECD), an organization based in Paris currently with 33 member states, whose goal is "to help governments and society reap the full benefits of globalisation, while tackling the economic, social and governance challenges that can accompany it" (OECD, 2008, p. 10). The reading assessment is one component of the Programme for International Student Assessment (PISA) (the others are assessments of mathematics and scientific literacy). What is distinctive about the PISA literacy assessment is that it is not specific to the school curriculum of individual participating countries, as assessment of school-based achievement normally is. Instead, the same test is used in every country, to allow comparability of results, the test construct being defined as "important knowledge and skills needed in adult life" (OECD Programme for International Student Assessment, 2009) as understood within the ideology of the OECD. In order for the texts which students read within this single, universal test to work within the diverse national contexts in which the test is taken, they cannot be culturally specific; instead they tend to have a transnational, functional orientation. The impact of the test has been profound since it was first administered in 2000; for example, the results so shook up the German educational system that the term "PISA shock" was coined (Germany had not performed according to the expectations or image of its educational system). Research is now beginning to document and compare the impact of PISA in different national settings including Austria, the Spanish Basque Country, Belgium, Germany, and Israel (McNamara, 2010, 2011).

The second example is another domain of test use arising from globalization and specifically the movement of peoples with the resultant greater social and cultural diversity of industrial societies. Such movement has led to deep social anxiety about changes to the traditional cultural character of societies and a sense of threat, particularly in Europe. As a result, debates about the cultural character of society, and a desire to police the identity of newcomers, have led to the introduction of tests of language at all stages of the process of immigration and settlement in several countries, a policy which is spreading rapidly in

Europe and beyond. While such tests are often framed as being in the best interests of immigrants, in that competence in the national language will facilitate access to the resources and services of the new society for the individuals concerned, it is clear on closer examination of the debates accompanying their introduction (Blackledge, 2009; McNamara & Ryan, 2011) that they are directed at the mainstream politics of the society involved, and involve an attempt to articulate the social values which define the acceptable identity of a citizen in a particular society. A key assumption here will be that to be "Australian," "British," "Dutch," and so on will involve knowing the principal language of the community. Thus the use of tests of language in citizenship contexts is really an expression of social values. The test use has subsequently been extended to earlier stages of the process leading toward citizenship, so that now language tests are being used increasingly as a condition of granting permanent residency, or even entry to the country in the first place, in the case of foreign marriage partners of citizens who in the Netherlands and the UK are required to sit tests of Dutch or English respectively in their home countries before a visa can be issued (De Jong, Lennig, Kerkhoff, & Poelmans, 2009; Blackledge, 2009). Considerable research effort is currently going into documenting current developments, and to investigating the ideological meaning of the language testing procedures involved (Shohamy & McNamara, 2009; Hogan-Brun, Mar-Molinero, & Stevenson, 2009; Extra, Spotti, & Van Avermaet, 2009).

Language tests play a prominent role in another arena—employment—and here questions of values arise too. English is the language of international aviation, and in recent years the International Civil Aviation Organization (ICAO) has developed policies requiring non-native speakers of English working as pilots or air traffic controllers to pass tests of English language proficiency in order to remain in employment; in future all such employees will need to establish proficiency in English before certification is granted permitting them to practice in these professions. This policy raises the question of the use of English as a lingua franca in internationalized workplaces, and the responsibility for successful communication in such settings, particularly those such as aviation, where serious safety issues are in question. The ICAO policy rests on the assumption that responsibility for successful communication in such settings rests on the non-native speaker, who is required to reach a competence where their native-speaking colleagues will be able to communicate with them with relative ease. Recent research on communication in such settings has complicated this simple picture (Kim & Elder, 2009). While agreeing that some minimum level of English language proficiency is required for a person to be able to work safely in these contexts, the researchers have shown that professional competence is as or more important than language proficiency; and, most relevantly here, that the responsibility for successful communication is joint. Native speakers can jeopardize successful communication with non-native speakers by their refusal to adhere to conventions of routine communication involving the use of formulaic language required by ICAO and other agencies, and their incapacity to successfully negotiate meaning with their non-native-speaking interlocutors. What is at stake here is the "ownership of English." Native speakers of English dominate the policy-making committees of ICAO, and the professional English language standards as currently formulated (which make little concession to the fact that English as a lingua franca communication is involved) reflect the assumed privilege of the native speaker at the expense of non-native speakers. The construct underlying the test, in other words, is an expression of an assumed social value, native speaker privilege, which is increasingly under challenge in the broader research on English as a lingua franca communication (Seidlhofer, Breiteneder, & Pitzl, 2006; Jenkins, 2007; Canagarajah, 2007). This means that current proposals by agencies such as the International Language Testing Association (ILTA) to guarantee the quality of international tests used in the implementation of the ICAO policy are perhaps misguided, as they will perpetuate a testing regime which is enforcing the interests of one group (English native speakers in the international

aviation workplace) at the expense of their non-native English-speaking colleagues. Here is a clear case where the formidable technical competence which an organization like ILTA can make available only serves to distract attention from the value-laden questions of justice underlying the policy the tests are intended to serve.

The need to bring issues of values in testing to the fore, given that they usually remain implicit or are indeed obscured, has led to a proposal to distinguish *fairness* from *justice* in language testing (McNamara & Ryan, 2011), in the following terms: while *fairness* assumes that a testing procedure exists, and questions the meaningfulness of the results it yields in relation to its construct, *justice* questions the use of the test in the first place, not only in terms of its effects and consequences, but in terms of the social values it embodies. Simply speaking, then, fairness refers to the top two cells (the top line) of Messick's validity matrix above while justice refers to the bottom two cells. This means that tests may be *fair* (technically capable of making distinctions among individuals) but *unjust* (implementing an indefensible policy, as has been argued here about the ICAO proficiency requirements); or *just* (implementing a policy designed to protect patients in clinical contexts by requiring for example immigrant health practitioners to be able to demonstrate clinical communicative competence in the language of the clinic) but not *fair* (because the test lacks reliability or relevance to the workplace). Determining the fairness of tests has a long tradition of research, and is supported by the use of well-established technical procedures; determining the justice of tests takes us into much more uncertain waters, and will inevitably involve controversy. But the challenge of the justice of tests is arguably the most important issue currently facing the language testing field. There is a need for a changed education of language testing researchers, as the current strong cognitive and psychometric orientation may, in the worse case, act as a handicap in rising to this challenge.

SEE ALSO: Aviation English; Critical Discourse Analysis; Language Assessment Literacy; Language Ideology in the Discourse of Public Culture; Language Testing and Immigration; Qualitative Research in Language Assessment; Validation of Language Assessments

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Values in Language Teaching

TARA ZAHLER

Formal research and scholarship in applied linguistics directly focused on values in language teaching only began to surface at the turn of the 21st century. Yet, values underlie nearly every dimension of the field. In much of the scholarship, the word "values" and the word "morality" are used interchangeably. Buzzelli and Johnston (2002), in their work on the moral aspects of teaching as it relates to language, power, and culture, define morality as a set of beliefs that are "evaluative" (p. 3). In other words, they are beliefs that inform decisions about what is right and wrong. Buzzelli and Johnston explain that it is precisely at the intersection between the individual and the social where important questions about morality and values come into play. Researchers who work in this area have focused on both the macro and micro dimensions of values in language teaching. The micro dimension focuses on values in classroom teaching while the macro investigates how language teaching is situated in the broader educational and societal context. In both cases, scholarship about values in language teaching centers on making explicit the underlying values individuals or groups bring to teaching and learning that often remain hidden until examined.

Historical Foundations From General Education

Inspiration for current scholarship about values in language teaching began in general education. John Dewey's (1909) writings serve a foundational role for scholars interested in the moral nature of schools through the shaping of the individual to participate in social life in a democratic society. Nel Noddings (1984, 1992) has also been an influential figure for those interested in values in teaching. Her work in educational philosophy focuses on the teacher–student relation as one grounded in caring and responsiveness. Alan Tom's (1984) work replaces a traditional view of teaching as an applied science composed of a set of technical skills to be learned with the metaphor of teaching as a moral craft involving a reflective and skilled practitioner. A few years later, Jackson, Boostrom, and Hansen (1993) carried out a long-term ethnographic study where they identify not just overt moral instruction in schools, but also practices in classrooms that manifest the moral indirectly and oftentimes invisibly. Hansen (2001) goes on to argue that teaching itself is a moral activity. The moral is inescapably engrained in the very practice of teaching rather than existing as an invasion from some outside source or philosophy.

Contemporary Scholarship on Values in Language Teaching

The formal discussion on values officially entered the realm of language teaching when Julian Edge (1996) addressed the field of TESOL in an article expressing common central values that inform action in the field as well as the related paradoxes that surface because teachers are not automatons, but individuals guided by deeply held personal values. Edge explains that paradoxes of clashing values appear in the field when there are inconsistencies between the personal, the professional, the political, and the cultural. One example of such a paradox is when sociopolitical context informs classroom methods in such a way that teachers are thought to be passive technicians who deliver a predetermined, standardized

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product to homogeneous students. In reality, appropriate teaching and learning decisions are extremely context specific and require individual decision making. Another paradox lies in what Edge calls the "threat of certainty" (p. 21), which describes when people believe so strongly in their own view that they feel they have the right to impose it on others, even to the point of cruelty or violence. The paradox for Edge is how to exclude this extreme absolutism from being condoned despite the argument that respect for differences must be a core value in the field.

A second inaugural article addressing values in language teaching is a study by Johnston, Juhász, Marken, and Ruiz (1998) investigating the moral dimensions of teaching adult ESL students in a university setting. With the framework established by Jackson et al. (1993) as a foundation, Johnston et al. (1998) use classroom discourse and real examples to demonstrate how seemingly innocuous class workings such as attendance rules and teacher expectations for student participation are deeply moral and highly complex. Johnston et al. reason that this is even more profound due to the multilingual and multicultural classroom context. A follow-up study by Johnston, Ruiz, and Juhász (2002) examines students' own perceptions of key moral incidents in their English language class based on extensive interviews.

With two books and a number of articles published in the area, Bill Johnston has accomplished the most comprehensive and most current work related to values in language teaching. Johnston (2003) holds that language teaching is a "profoundly value-laden activity" (p. 1). He considers teaching a moral activity for three primary reasons. First, Johnston places the teacher–student relation (from Noddings, 1984) at the core of teaching. Since this relation involves human interaction, and because there are power dimensions involved, Johnston insists on the presence of the moral. Second, teaching is value-laden because its goal is to change people for the better. Finally, Johnston explains that many of the decisions teachers must make in the classroom and outside the classroom are not scientifically proven truths with clear, objective answers that can be applied in every situation. Rather, teachers must make personal decisions about how best to handle nearly every aspect of teaching based on their own beliefs and context.

One of the major points that Johnston (2003) makes is that the decisions language teachers must make about teaching can often be thought of as moral dilemmas. This is because of their complex, subjective, contextual, and personal nature. Johnston discusses examples of moral dilemmas real teachers face in three important areas: pedagogy, teacher–student relations, and beliefs and values (p. 145). Pedagogical dilemmas involve such questions as how to balance content and form, and how to evaluate students fairly. Relational questions ask how to use teacher authority, and how to negotiate personal beliefs with institutional requirements. Finally, moral dilemmas related to beliefs and values bring to light such questions as how (English) language learning is wrapped up in the politics of opportunity or hegemony, how religious beliefs should or should not inform one's decisions about teaching (Varghese & Johnston, 2007), and how one balances tolerance and intolerance.

Throughout his discussion of real moral dilemmas in language teaching contexts all over the world, Johnston explains that these questions are especially complex due to the layers of competing values involved. Above all, Johnston encourages teachers to examine the values that inform their teaching as well as reflect on the dilemmas that they face. He insists that because it is impossible to escape questions of morality and values in teaching, it is a teacher's responsibility to analyze her/his own work.

A second book published about the same time as Johnston's (2003) also addresses dilemmas in language teaching. Through the lens of social justice, Hafernik, Messerschmitt, and Vandrick (2002) focus on the complex ethical issues found in post-secondary English-language-teaching contexts. Plagiarism, evaluation, academic freedom, and counseling students are examples of some of the issues that these scholars investigate. In another

university setting, Kim Johnson's (2003) work in a language-teaching practicum investigates three critical incidents between a mentor teacher and a practicum student teacher. Values related to non-native speaker proficiency, cultural preferences, and religious beliefs are discussed. Johnson acknowledges how teachers' personal values and assumptions enter the realm of the social classroom. In a rare example of values-related scholarship focusing on a language other than English, Angela Scarino (2005) reports on foreign-language writing assessment practices used by three secondary teachers of French in Australia. Scarino finds that teachers position themselves dually while assessing students. An intellectual positioning focuses on academic performance while a social and ethical positioning is directed at the human dimension of how best to support students' learning.

Focused on more macro level issues, Graham Crookes (2009) discusses values in his work on "radical" teaching, a term he uses to encompass various types of teaching that are actively opposed to the oppressive social forces in mainstream education that reproduce the status quo. Crookes explains that critical and feminist pedagogies are both radical in that they are concerned with curricular decisions aligned with political aims such as those that support anti-imperialist, antiracist, and antipatriarchal values.

Though the area of values in language teaching is not one that is widely discussed and researched, especially in languages other than English, it does underlie all aspects of teaching and learning at both micro classroom levels and macro political levels. The overarching message by scholars in this area is that teaching is not a value-neutral activity. Therefore, because teaching decisions are essentially value-laden, teachers are encouraged to thoughtfully reflect on both the transparent and the more subtle moral dilemmas they face, as well as the values they promote in their personal teaching contexts.

SEE ALSO: Advocacy in Language Teaching; Critical Pedagogy in Language Teaching; Linguistic Imperialism

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van Dijk, Teun A.

ALEXANDRA JOHNSTON

Introduction

Teun A. van Dijk (1943–) is one of the leaders and shapers of the critical approach to discourse analysis, most commonly referred to as critical discourse analysis (CDA). He is most widely known for his sociocognitive approach to critical research on racism, ideology, knowledge, context, and cognitive approaches to discourse processing. His research has been published in over 30 books and edited volumes as well as over 250 scholarly articles. He was professor of discourse studies at the University of Amsterdam until 2004, and since 1999 has been a visiting professor at the Universitat Pompeu Fabra in Barcelona. He has founded six international journals, and still edits four of them. Many of his books, articles and project summaries can be found on his Web site: www.discourses.org

Academic Background

Born in Naaldwijk, the Netherlands, Teun van Dijk began his academic career in the 1960s studying French language and literature at the Free University of Amsterdam and in Strasbourg, France. His next degree in literary theory came from the University of Amsterdam, which was to be his institutional base for over 30 years. His first publications extended Chomskyan transformational-generative grammar (a set of rules that "generate" or structurally describe grammatically well-formed sentences) to formally describe the structure of literary texts. In addition to describing coherence relations among sentences, van Dijk turned his attention to the coherence of texts as a whole. He referred to the overarching structure of a text (its format or schema) as the superstructure, and to the global meaning of a discourse as its macrostructure. His attention to global coherence and how texts are mentally processed—then not a popular or fertile area of study in linguistics—led to his interdisciplinary work with psychologists.

Van Dijk's interest in the cognitive processing of discourse and in forging connections between his work and that of others outside his discipline informed his research for years to come. His interdisciplinary collaborations with the American psychologist Walter Kintsch produced several articles and the book *Strategies of Discourse Comprehension* (van Dijk & Kintsch, 1983), which laid the foundation for a cognitive theory of text processing and how people strategically understand texts. This theory attempted to model the mental processing of language users as they engage in online, moment-by-moment text production and comprehension. This model drew upon research into short- and long-term memory storage, the "scripts" (Schank and Abelson, 1977) upon which users rely to organize their knowledge about recurrent situations, and the idea that language users refer to mental models to interpret texts and make them intersubjectively coherent.

In the 1980s, following a teaching sojourn in Mexico City and travel to other parts of Latin America, van Dijk's work took a critical turn as he began to analyze sociopolitical issues, such as racism. As he wrote in his academic autobiography, "I finally decided it was time to do something serious" (van Dijk, 2004, p. 14). For the next thirty years, he

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studied how racism is expressed, reproduced, and legitimated in text and talk by social elites. He embarked upon several long-term projects that described how White majorities think, talk, and write about ethnic minorities, immigrants, and refugees.

Two books detailing how White North Americans and Dutch talk about non-White minorities in conversation (van Dijk, 1984, 1987) showed that the conversational topics of talk featuring minorities were largely limited to issues of cultural differences, deviance, and threat. In attempts to preserve a positive self-presentation (as "nonracist"), Whites would make use of semantic moves such as apparent denial ("I have nothing against Blacks, but . . .") and apparent concession ("not all Blacks are criminal, but . . .") (van Dijk, 2004, p. 15).

Van Dijk then widened his exploration to describe how racism is expressed and legitimated by societal elites, defined as those who have greater access to shaping and spreading discourse, such as journalists, politicians, and teachers. He undertook several long-term, comparative studies of racism in the press (van Dijk, 1991), academic textbooks (van Dijk, 1987), parliamentary debates (Wodak & van Dijk, 2000), and corporate discourse (van Dijk 1993). Following two books (1988a, 1988b) in which van Dijk led a comparative study of the discourse structure of news articles from several countries, he narrowed the focus of his analysis of the media in *Racism and the Press* (1991), a study of thousands of news reports in the British and Dutch press that demonstrated how racism is reflected and reproduced in the news. The results showed that many of the features of everyday conversations about non-White minorities are mirrored in the press, including a limited selection of topics that tended toward the stereotypical or negative such as difference, deviance, and threat. In addition, news articles often did not follow journalistic guidelines of "balance" in terms of quotation patterns. Articles about minority events or issues tended to quote White majority institutional representatives more often than minority voices. Quotes by minorities about topics such as racism or discrimination were often framed by quotation marks, as in "'racism'" or "'alleged' racism," as a way to undercut the authority of their assertions.

Major Contributions

Teun van Dijk has contributed to the study of text and talk through several long-term research projects. These longitudinal, interdisciplinary studies include foundational work in CDA, racism, knowledge, ideology, and context.

CDA, as van Dijk states (2001), is not a methodology, a field, or a school. It describes the perspective of the researcher as well as a "movement" of researchers from different fields who use a variety of methods, theories, and assumptions in engaging in research on social injustice. It is in part a reaction to previous research paradigms that claimed to be "neutral," "asocial," or value-free. CDA recognizes that researchers are never uninfluenced by the societies in which they work, and argues for analyzing how researchers are influenced by ongoing social and political processes. Also inherent in the critical approach to discourse analysis is examining the relationship between discourse and society with a specific interest in how power is reproduced in discourse and in shedding light on abuses of power. CDA holds that there are fundamental power inequities in society that are perpetuated by elites, such as journalists, lawmakers, academics, and others with access to shaping public discourse. CDA focuses on power, domination, and social inequality, and on the relevance of gender, race, and class in the study of text and talk (van Dijk, 2001).

In addition to his published research in CDA, van Dijk has played a role in bringing together scholars with an interest in CDA. In 1991, he organized a meeting in Amsterdam of critical scholars from several countries (mostly in Europe) that came to be regarded

as the "formal and institutionalised" beginning of CDA (Kendall, 2007, p. 3). This group then began to meet annually and remain connected through an online network started by van Dijk called CRITICS (Centers for Research Into Texts, Information and Communication in Society). Regular participants in these meetings included Norman Fairclough (University of Lancaster), Gunther Kress (University of London), Luisa Martín Rojo (Madrid), Ron Scollon (Georgetown University, Washington, DC), Teun van Dijk (Amsterdam and Barcelona), Theo van Leeuwen (London, Cardiff, and Sydney), and Ruth Wodak (Vienna and Lancaster) (van Dijk, 2004, p. 26).

In recent years, van Dijk and others have come to prefer the broader term "critical discourse studies" (CDS), in order to emphasize the institutional similarity to other interdisciplinary fields such as women's studies, cultural studies, gender studies, and others. To be more precise (and consistent with the idea that scholars engaged in CDA are part of a movement), van Dijk considers "discourse studies" an interdisciplinary field that ranges across the humanities and social sciences, within which CDA/CDS is a movement of critical scholars.

In addition to organizing meetings and networks, van Dijk founded the international journal *Discourse & Society* in 1990 as a forum for critical work in discourse analysis that focuses on social and political issues. This journal became at one time the most cited journal in communication (van Dijk, 2004, p. 27). In total, van Dijk has founded six international journals, including *POETICS* (1971–9), *TEXT* (1981–97; now *TEXT & TALK*), *Discourse & Society* (1990–), *Discourse Studies* (1999–), *Discourse and Communication* (2007–), and the Internet journal in Spanish *Discurso & Sociedad* (2005–), and still edits the latter four. His work as an editor as well as an organizer of scholars has helped to bring together communities of scholars in virtual and face-to-face networks, as well as to foster interdisciplinary collaborations.

Van Dijk has also contributed to CDA through his writing on ideology, knowledge, and discourse. His work on ideology (van Dijk, 1999) combines earlier ideas from the cognitive study of discourse (such as his work with Walter Kintsch) with later ideas on social cognition, power, racism, and the reproduction of power through discourse. In van Dijk's view, individual beliefs (that may be racist or sexist) are based on socially shared beliefs, such as the attitudes and ideologies of groups and the knowledge of a whole community. Individual ideological beliefs then influence discourse and other social practices. By linking ideology with discourse, van Dijk attempts to bridge the "micro–macro gap" between the individual and society. As he asserts:

> Ideologies control social representations of groups, and thus the social practices and discourses of their members. This happens through the ideological control of mental models which in turn . . . control[s] the meaning and the functions of discourses, interaction and communication. And conversely, ideologies may be "learned" (and taught) through the generalization of mental models, that is, the personal experiences of social members. (van Dijk, 2004, p. 28)

Van Dijk recently returned his attention to the theoretical definition of context that expanded his earlier consideration of the topic in his 1977 book *Text and Context*. His two books *Discourse and Context* (2008) and *Society and Discourse* (2009) provide a sociocognitive, multidisciplinary theory of context. Asserting that the use of the word "context" in the social sciences has too often been a "fuzzy notion denoting a situational, historical, geographical, social, or cultural environment of a phenomenon being studied" (van Dijk, 2007, p. 285), he provides "a sociocognitive approach to context that combines interactional, discursive and cognitive analysis" p. 312). Context is therefore defined as a subjective participant construct, not objective social conditions or constraints. "It is not the social

situation that influences (or is influenced by) discourse, but the way the participants *define* such a situation" (van Dijk, 2008, p. ix). Using the extended example of a parliamentary debate from the British House of Commons, van Dijk describes the types of mental models participants draw upon in creating and interpreting ongoing interaction.

After over 30 years at the University of Amsterdam, van Dijk emigrated to Spain in 1999 to teach and research at Universitat Pompeu Fabra in Barcelona. This move led to his pursuing the study of racism with a particular focus on Spain and Latin America. He wrote a book (van Dijk, 2003) on the topic (one of the many books in Spanish that he has published), and led an international project in Latin America with teams in seven countries to study discursive racism. Fluent in Spanish (as well as Portuguese, French, German, Dutch, and English), van Dijk has lectured widely throughout Latin America, held visiting professorships at the University of Campinas, Brazil, and the University of Valparaíso, Chile, and received honorary doctorates from the University of Buenos Aires and the National University of Tucumán, Argentina. Van Dijk has used his role as an editor, teacher, and researcher to cross language and disciplinary boundaries in order to strengthen a community of scholars with an interest in understanding text and talk and rectifying social injustice.

SEE ALSO: Critical Discourse Analysis; Fairclough, Norman; Wodak, Ruth

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van Leeuwen, Theo

EMILIA DJONOV

Overview

Theo van Leeuwen (1947–) is a cofounder, alongside Gunther Kress, of multimodality as a discipline within applied linguistics, education, and media and cultural studies. He is also a central figure in critical discourse analysis (CDA). Multimodality and CDA form intertwining streams in his research, which has made groundbreaking, rich, and influential contributions to semiotics and discourse analysis. Together they inform his model of social semiotics as a form of enquiry that crosses disciplinary boundaries in order to reveal how people make meaning using a variety of semiotic resources and technologies in and across changing social contexts. This model evidences what is at the heart of all of van Leeuwen's work—a strong connection between semiotic theory and semiotic practice.

Outline of Research Life, Influences, and Contributions

Van Leeuwen's interest in semiotics originated during his studies at the Dutch National Film Academy in Amsterdam. After working and teaching in the areas of film and television production in Australia for several years, he studied film semiotics under Christian Metz in 1980 at the Centre for Interdisciplinary Studies in Semiotics, Anthropology and Sociology in Paris. Van Leeuwen's first academic research was his MA honors thesis, *Professional Speech: Accentual and Junctural Style in Radio Announcing* (1982). It extended knowledge in linguistics and media studies by demonstrating that the intonation of radio announcers is governed by a professional code developed to uphold particular sociocultural values toward the content (e.g., immediacy and impartiality in newsreading, or companionship in easy listening programs) and relations between radio announcers, the institutions they represent, and their audiences. A sociolinguistic orientation characterizes his doctoral research (van Leeuwen, 1993), too, which offered a model for revealing how texts transform the social practices they represent in order to support various ideologies. This model was developed through analyses of texts about the first day at school, using Halliday's (1978) theory of language as a social semiotic (i.e., as a resource for making meaning) and systemic functional linguistics (SFL), which, alongside the work of Rudolf Arnheim, Roland Barthes, Basil Bernstein, Roman Jakobson, and R. Murray Shafer, has remained a key inspiration behind van Leeuwen's later research.

Another defining influence on van Leeuwen's work is his long-lasting collaboration with Gunther Kress. Inspired by Hodge and Kress's (1988) *Social Semiotics*, they presented the first systematic extension of social semiotic principles to a mode other than language in their seminal book *Reading Images* (1990, 2006 [1st ed., 1996]) and the first outline for a theory of multimodal communication in *Multimodal Discourse: The Modes and Media of Contemporary Communication* (Kress & van Leeuwen, 2001).

Van Leeuwen has continued actively contributing to and supporting advances in multimodality and CDA, by conducting independent and leading collaborative research projects as well as through his role as the founding coeditor (with Carey Jewitt) of the

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journal *Visual Communication* and his teaching in communication studies, in the UK as a professor at the London College of Printing (1993–9) and Cardiff University (1999–2005), and in Australia, first as a lecturer at Macquarie University (1981–93) and since 2005 as Dean of the Faculty of Arts and Social Sciences at the University of Technology, Sydney.

Key Ideas

Van Leeuwen (2005a, p. 3) proposes that to understand meaning making social semioticians

1. collect, document, and systematically catalogue semiotic resources—including their history;
2. investigate how these resources are used in specific historical, cultural, and institutional contexts, and how people talk about them in these contexts—plan them, teach them, justify them, critique them, and so forth;
3. contribute to the discovery and development of new semiotic resources and new uses of existing semiotic resources.

By pursuing these goals van Leeuwen's social semiotic research on multimodality and CDA has advanced semiotic theory as well as practice.

Multimodality

Van Leeuwen's work has been instrumental in establishing and contributing to the two main strands of research on multimodality that have emerged to date: (a) mapping the meaning potential of separate semiotics resources, and (b) theorizing and analyzing the interaction of these resources in multimodal communication.

The first strand is pioneered by Kress and van Leeuwen's (2006) *Reading Images: The Grammar of Visual Design*, which presents analyses of a rich variety of visual texts (advertising and news images, maps and technical diagrams, pages from magazines, picture books, and textbooks, and Web pages). While incorporating insights from structural semiotics, Gestalt psychology, iconography, film, and fine arts, it is based on two key tenets of systemic functional theory: (a) every act of communication simultaneously realizes three broad types of meaning: ideational (representing patterns of experience and the logical relations between them), interpersonal (enacting social relations and values), and compositional/textual (interweaving ideational and interpersonal meanings into cohesive and coherent exchanges of meaning, i.e., texts); and (b) the meaning potential of semiotic resources can be modeled paradigmatically and presented as systems of available choices for realizing these three types of meaning, or metafunctions. Kress and van Leeuwen (2006, p. 20) consider SFL "a good source for thinking about all modes of representation" (p. 20), yet seek to avoid imposing categories for describing language on other modes. This distinguishes their approach from other systemic functional frameworks for analyzing visual and multimodal texts.

Another major contribution to this research strand is van Leeuwen's (1999) unified theory of sound semiotics, which reflects his background in film production (where a soundtrack is viewed as a platform for the interaction of speech, music, and other sounds), experience as a jazz musician, and earlier research on intonation. Van Leeuwen models the meaning potential of sound starting from material qualities (e.g., timing, timbre) and then relating these to meaning before concluding that sound is better equipped for realizing interpersonal and textual rather than ideational meanings. This "bottom-up" direction is motivated by his view that sound is not yet a fully fledged mode like language

and visual design, which due to their more widespread and regulated use can be taught, debated, and modeled in more abstract ways. In the case of sound, "meaning is constructed quite differently, on the basis either of an *experiential meaning potential*, hence grounded . . . in our bodily experience of [its] materiality, and/or *provenance*, hence grounded in intertextuality" (p. 192).

Provenance and experiential meaning potential are also key to van Leeuwen's mapping of other material resources that have traditionally received marginal attention in semiotics and linguistics, including kinetic design (van Leeuwen & Caldas-Coulthard, 2004), color (van Leeuwen, 2011a), typography (van Leeuwen, 2006), voice quality (van Leeuwen, 2009), and texture (Djonov & van Leeuwen, 2011). For example, the provenance of cashmere—that is, knowing that it originates in the mountainous region of Kashmir and is a labor-intensive product first imported in 19th-century Europe by British colonialists—allows its texture to be seen as exotic, pristine, expensive, or as a symbol of colonial exploitation, or all of these, whereas bodily experience of its softness evokes associations with comfort, warmth, and elegance.

To model the experiential meaning potential of material resources van Leeuwen (2009) employs what he calls "parametric systems." A parametric system presents those physical qualities, or affordances, of a given resource which people have taken up in communication. These qualities are always gradable and together define the meaning potential of a given signifier such as a texture or a color. An object's color, for instance, can be described as a combination of degrees of each of ten parameters: value, saturation, purity, transparency, luminosity, luminescence, luster, temperature, modulation, and differentiation (van Leeuwen, 2011a, pp. 55–69). Parametric systems are inspired by Jakobson and Halle's (1956) distinctive features theory, according to which a phoneme can be defined in terms of the presence or absence of each of a small number of distinctive features so that one phoneme can be differentiated from another (e.g., the alveolar fricative consonants /s/ and /z/ are distinguished from each other through respectively the absence and presence of voice as a distinctive feature). Van Leeuwen's parameters, however, differ from distinctive features in that they are gradable (rather than binary choices) and not only allow one signifier to be differentiated from another but add layers of meaning to it. By articulating the meaning potential of marginalized semiotic resources, van Leeuwen enables it to be explicitly taught and more fully exploited, thereby expanding semiotic theory as well as practice. By highlighting the role that people's use of material resources (or media) in communication plays in the formation of modes, his work also problematizes the distinction between mode and media, which is a considerable challenge for multimodality research (see Bateman, 2011).

Echoing issues raised in van Leeuwen's earlier work, Kress and van Leeuwen's (2001) map for a theory of multimodality offers two significant proposals for the second strand of multimodality research. The first is that there are meaning-making principles which can be realized by different modes in ways reflecting each mode's unique characteristics, and that these principles can be used to develop tools for analyzing multimodal communication. Van Leeuwen has established several such principles—genre, style, framing, salience, rhythm, modality, and conjunctive, or logico-semantic, relations—and demonstrated their value for analyzing relations within and between modes in a wide variety of texts (e.g., magazines, textbooks, three-dimensional objects, film, architectural space, soundtracks, and hypermedia) (see van Leeuwen, 1985, 1991a, 2003, 2005a, 2005b, 2011b) and for creating meaning in new media design (Martinec & van Leeuwen, 2009).

Kress and van Leeuwen's (2001) second proposal is that multimodal communication is organized into four strata, which all bear meaning:

1. Discourse, "socially constructed knowledge(s) of (some aspects of) reality" (p. 4);
2. Design, the realization of discourses through various semiotic resources;
3. Production, the material articulation of a semiotic event or artifact;
4. Distribution, "the technical 're-coding' of semiotic products and events, for purposes of recording . . . and/or distribution" (p. 21).

As they are concerned with expression, the concepts of production and distribution highlight the contribution of materiality and technologies for producing/recording and distributing multimodal texts to the meaning of specific semiotic practices as well as over time to changes in these practices and the formation of new modes and social relations. Complementing his studies of technologies for sound design, production and distribution, and material semiotic resources, van Leeuwen's current research explores the interaction between the design and use of ubiquitous semiotic software, or software designed for making meaning, such as Microsoft's Office suite. This research shows, for example, that semiotic software contributes to changes in both speech and writing (see van Leeuwen, 2008b) and increases the dominance of visual over tactile resources (Djonov & van Leeuwen, 2011).

Critical Discourse Analysis

Van Leeuwen's major contribution to CDA is the theoretical and analytical framework presented in *Discourse and Practice: New Tools for Critical Discourse Analysis* (van Leeuwen, 2008a). Informed by perspectives from anthropology, sociology, and philosophy, its underlying idea is that there is a distinction between social practices and their representation in texts, or discourses. Van Leeuwen further argues that "all discourses recontextualize social practices" (2008a, p. vii), which is why the same social practice may be subject to different representations, or attract "a plurality of discourses" (p. 6). This argument extends to all discourses Basil Bernstein's (1990) theory that the recontextualization of knowledge from the contexts in which it is produced to those where it is reproduced and disseminated through pedagogic discourse involves semantic shifts that maintain the existing social order.

Van Leeuwen's theoretical argument is complemented by a method for relating social practices to discourses about them so as to achieve the defining goal of CDA—to reveal how discourses perpetuate social boundaries, oppression, and inequality. In this method, originating in van Leeuwen's PhD research, a social practice (i.e., a sequence of physical or semiotic activities, or both) is analyzed into its component elements: social actors, their activities and reactions to these activities or to other elements of the social practice; the location(s) and time(s) of the practice; and grooming, dress, tools, and materials required for it. The next step is to analyze how representations of the social practice transform it through the use of verbal or nonverbal resources, or both, by substituting, deleting, and rearranging its elements or by adding evaluations, purposes, or legitimations, or adding all of these. Van Leeuwen (2008a, pp. 17–18) demonstrates, for instance, how in a text about the first day of school a nominalization transforms the action of a teacher separating children from their parents by representing it as a phenomenon ("the separation from families"), deleting the teacher, who is a central actor in this activity, and substituting individual children and parents (e.g., Mary and her mother) with aggregate nouns ("families"). Van Leeuwen's linguistic analyses employ SFL, a framework with well-established usefulness in CDA (see Young & Harrison, 2004).

An influential distinguishing feature of van Leeuwen's CDA framework is the understanding that nonverbal and multimodal representations play a crucial role in (re)establishing dominant ideologies. To expose this role, van Leeuwen (2008a) argues, CDA needs to consider not only what is or is not represented nonverbally or multimodally (e.g., whether

there are images of black people in the media) but also how such representations are constructed, as illustrated in his early analyses of a TV news item and easy listening music (van Leeuwen, 1986, 1991b). Van Leeuwen (2008a), for instance, shows that an oblique horizontal angle can be used to depict a group of people as "other," creating a symbolic detachment between depicted social actors and viewers, and that the kinetic design of toys, too, can reflect racial and gender stereotypes. Machin and van Leeuwen (2007) see multimodal genres as instruments that women's magazines and war games employ to impose global formats and associated Western values on local content, while van Leeuwen (2005a) reveals how advertising discourses employ combinations of signifiers such as dress, color, smell, and so on to create and market new social identities, or lifestyles, which mask consumerist values and power relations. These studies forge a new direction in applied linguistics—the critical analysis of multimodal discourse—and demonstrate its value for semiotic and multimodal theory, education, and media and cultural studies.

Van Leeuwen's model of the relationship between discourse and social practice also advocates a holistic approach to social semiotics in general. This approach involves considering semiotic practices, that is, how people use semiotic resources and technologies in specific sociohistorical contexts, in relation to the ways in which they talk about and justify (aspects of) these practices. Analyzing both semiotic practices and discourses about them has allowed van Leeuwen (2005a, pp. 47–68) to develop an inventory of semiotic rules, or norms that govern people's use of semiotic resources and technologies. These include rules imposed by people in power (personal authority), by writing (the law, religion, etc.), tradition, and the design of objects (e.g., toys) and technologies (e.g., PowerPoint) used in communication (impersonal authority), and rules developed by observing and conforming to trends, emulating role models, and drawing on the opinion of experts. Awareness of such rules is key to both understanding and contributing to semiotic change.

SEE ALSO: Critical Analysis of Multimodal Discourse; Multimodality and Software; Multimodality and Systemic Functional Analysis

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van Lier, Leo

HEIDI BYRNES

Leo van Lier (1944–) contributes to the field of applied linguistics an encompassing, sustained, and critical scholarly engagement with language teaching and learning as it can be observed close-up in the L2 classroom. Reflecting the perspective of educational linguistics as an interdisciplinary field par excellence, his most expansive treatment of the topic occurs in three major monographs, *The Classroom and the Language Learner: Ethnography and Second-Language Classroom Research* (1988), *Interaction in the Language Curriculum: Awareness, Autonomy and Authenticity* (1996), and *The Ecology and Semiotics of Language Learning: A Sociocultural Perspective* (2004). These studies are flanked by articles in refereed journals, book chapters, handbook entries, published conference papers, and conference presentations around the world. They are extended by his past and ongoing work as a coeditor, general editor of the book series *Educational Linguistics* of Springer Publishers, as editor of the *Modern Language Journal*, and a member of the editorial team preparing textbooks in Quechua. Together, these contributions reveal a scholar who explicitly links insights from diverse fields in the humanities and social sciences (e.g., philosophy, psychology, sociology, anthropology), from the educational literature, and from educational practices and traditions. His scholarly goal is to help develop a well-grounded theory of practice; his praxis-oriented educational goal is to "increase understanding, generate new knowledge and provide guidance on how to improve the settings in which the research (and/or intervention) activity is carried out" (van Lier, 1997a, p. 103). For both goals, he sees theory, research, and practice as "inseparable ingredients in the professional conduct of a language educator" (van Lier, 1996, pp. 2–3). Since practice is "the chief impetus for the development of a theory of practice" (1996, p. 30), he prefers the microview even as macro-theoretical issues are always at issue. Reflecting the central role he assigns to careful observation of classrooms and of his strong preference for nondichotomous thinking, his most salient contribution to the field is an ecological-semiotic perspective on language teaching and learning.

Van Lier's work is anchored in a sociocultural stance that stands in pronounced opposition to the psycholinguistically oriented cognitive process view dominant in much theorizing and SLA research. Its outstanding construct is that of ecology, which assumes a mind–nature unity and perception–action–language development connections. On that basis, van Lier has questioned influential constructs in SLA research and practice (e.g., *input*, *output*, *access to a system*, *negotiation of meaning*, *agency*, *attention*), as well as diverse pedagogical and assessment approaches. In their place he advocates an ecological framework within which teaching is primarily about providing access to and promoting engagement in meaningful social activity. In the process he has positioned applied linguistics within linguistics as a form of inquiry that considers language as "a meaning-making activity that takes place in a complex network of complex systems that are interwoven among themselves as well as with all aspects of physical, social and symbolic worlds" (van Lier, 2004, p. 53).

Born in the Netherlands, van Lier considers himself an educator. After completing the Pedagogische Academie as a fully certified teacher in the Dutch system (1964) and after also completing a Certificate in Teaching English (1964–7), he joined the Longman Group

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in various positions in the United Kingdom (1970–3), in Scandinavia (1973–7), and in Latin America (1977–9). In 1980 he was awarded an MA in linguistics for language teaching and in 1983 a PhD in linguistics, both from the University of Lancaster, UK. After a two-year stay in Peru (1982–4), working as a foreign expert on a bilingual education project where he represented the Quechua side, he moved to the United States. There he has held permanent positions at the University of Northern Iowa and the Monterey Institute of International Studies, his current institutional home, and a range of positions as visiting scholar, visiting professor, and research fellow at institutions in the United States, Europe, and Asia.

Through formal training, intellectual habitus, and personal experience, van Lier has developed unusually broad knowledge in a variety of areas, particularly in philosophy, history, literature, and the history of ideas of both European and American provenance, and has repeatedly challenged himself to learning new languages (e.g., Danish, English, Finnish, French, German, Quechua, and Spanish). It is not unreasonable to suspect that this has fostered his ability and willingness to put forward lines of thinking independent of, at times even at odds with, canonical approaches in SLA research and language education. Looking across the spectrum of what has been thought, he seeks to recover traditions of intellectual activity and dynamism that a needlessly narrow interpretation of "scientific" work tends to obscure. Of particular import for his intellectual stance are the philosopher/philologist Bakhtin, the ecological anthropologist Bateson, the educational sociologist Bernstein, the sociologist-philosopher Bourdieu, the developmental psychologist Bronfenbrenner, the educational theorist Dewey, the ecological psychologist Gibson, the theoretical linguists Firth and Halliday, the semiotician-philosopher Peirce, the sociocultural developmental psychologist Rogoff, the social psychologist Vygotsky, and the philosopher of language Wittgenstein.

Beginning with the assumption that all education is in some form language education, van Lier sees as the issue at hand the need to extend the basic insights provided by sociocultural theory with the goal of understanding the language classroom in terms of "language, semiosis, activity, affordance, self and critical action" (van Lier, 2004, p. 20). To him, such an ecological linguistics is "primarily a matter of relationships, rather than objects" (2004, p. 53). Its basic understandings regarding language are: (a) it *emerges* from semiotic activity; (b) it arises "from *affordances* that are brought forth by active engagement, and which enable further action and interaction"; (c) it "arises from indicational processes occurring in *triadic interaction*," that is, as language users establish joint attention to objects and activities in a particular communicative setting. Importantly, linguistic activity "can be analyzed in terms of *quality*" (van Lier, 2002a, p. 146).

Building on the central construct in sociocultural theory of *mediation* (through tools and artifacts, interaction, and the use of signs), van Lier demonstrates that greater theoretical cohesion can be attained by drawing on insights from a number of related disciplines. First, in semiotics of the Peircean tradition, the sign has been explicated in terms of dynamic signifying processes grounded in iconicity, indexicality, and symbolicity. Applied to the language classroom this theory of the sign means that

> the most important key to becoming a member of a community is the indexing or deictic one, the one that allows for pointing, referring, and participating. It allows for the creation and use of relevant affordances and signs . . . and [ultimately] the construction of options for life. (2002a, p. 154)

Second, in order to capture the interdependence between learner and environment van Lier turns to approaches developed in Bateson's ecological anthropology, which regards *mind* as a social construct, as contrasted with the cognitivist notion prevalent in much

of SLA that locates individual consciousness in the thoughts, feelings, and minds of individual persons. He gains important insights as well from Gibson's study of visual perception with its central notion of *affordance*. Here, he highlights the fact that "language as well as other sources of meaning in the world are not ready-made or ready-given" (2004, p. 90) and that aspects of our environment become relevant to us "as a result of the interaction between perception/activity (through affordance) and agent/environment relationships" (2004, p. 96). A third supportive framework is Bronfenbrenner's notion of nested ecosystems, whereby classrooms can be studied with regard to their actors and artifacts, and patterns of interaction and operation at the four levels of the microsystem, mesosystem, macrosystem, and exosystem (van Lier, 2002b). In this fashion it is possible to understand the classroom as a complex adaptive system.

The constructs of *awareness*, *autonomy*, and *authenticity* offer yet other ways in which van Lier captures the reciprocal and relational quality between individual language users and their world as they make choices, take control, and exert ownership of their world in linguistic interactions. Closely connected to intrinsic forms of motivation, these personal qualities are flanked by interpersonal qualities of achievement, assessment, and accountability that shape language-learning experiences in the classroom. The interrelationship between them van Lier refers to as *contingency* (1996, p. 37), a construct that helps to elucidate the organic interaction between language learning and social interaction.

Van Lier's recent focus on agency is in line with his interpretation of an ecological approach as highlighting action/agency and intentionality. Importantly, "agency is situated in a particular context and . . . is something that learners *do*, rather than something that learners *possess*" (2008a, p. 171). It involves initiative or self-regulation, mediates and is being mediated by the sociocultural context, and includes awareness of the responsibilities one bears for one's actions (pp. 171–2). Agency can then be linked with notions of *voice* and *identity* because "every perception of the target language is simultaneously an act of self-perception" (2008a, p. 177) and every utterance is a way for learners to develop an active role in their linguistic, and that is their semiotic world. It can also be linked with intersubjectivity and *engagement* and *contingency*, inasmuch as every utterance is anchored in the world in four dimensions, backward, forward, and outward in the utterance and inward as a form of self-perception (van Lier, 2009). Van Lier strongly associates agency with the act of perceiving; in reverse, perceiving is a form of action: "affordances are actively picked up by the learner in the pursuit of some meaningful activity" (2008a, p. 176), a way of connecting the known to what is new in another culture and language. Such agency "requires that the learner invest physical, mental, and emotional energy in the language produced" (2008a, p. 178). Behind it lies the claim that "this agency enhances second language development in demonstrable and durable ways" (2008a, p. 178).

Van Lier acknowledges that he does not set out to prove the beneficial consequences of participation and initiative through (preferably longitudinal) learner data, but rather assumes them from the start. That makes his central task one of finding ways of describing what is done in classrooms as compared with what is said. While such a focus may appear to be too indirect and inconclusive for capturing essential qualities of language teaching and learning, much less for putting forth comprehensive theoretical claims, van Lier's approach is consonant with several recent trends in applied linguistics, among them emergentism, chaos and complexity theory, and a dynamic systems approach. Not surprisingly, among his major contributions are several theoretically well-grounded and detailed frameworks for classroom observation and educational activity in general. By respecting the classroom as a social institution he has shown a methodological pathway out of the unsatisfactory simple cause-and-effect relationships that continue to dominate the field. By using a multimodal, multisensory, multiscalar, and interventionist approach he can further bolster the argument for the ecological validity of his stance as it yields important

insights for all players—teachers, learners, educational policy makers, and researchers alike.

SEE ALSO: Agency in Second Language Acquisition; Bakhtin and Second Language Acquisition; Classroom Research; Classroom Research in Second Language Acquisition; Dialogic Inquiry and Teacher Talk in Second Language Classrooms; Ecological Approaches in Qualitative Research; Ecology and Multilingual Education; Teaching for Language Awareness

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VanPatten, Bill

JOE BARCROFT

Bill VanPatten's contributions have allowed the field of second language acquisition (SLA) to advance from very basic information-processing models of SLA that lacked details about how learners process second language (L2) input toward finer-grain models that account for why certain parts of input become intake during input processing. The basic tenets of VanPatten's theory of input processing are outlined in *Input Processing and Grammar Instruction: Theory and Research* (VanPatten, 1996). The theory continues to evolve as new psycholinguistic research yields pertinent findings with regard to how learners parse input. His research program is characterized by its inclusion of both linguistic and nonlinguistic approaches, examination of the interface between morphology and syntax, and the innovative manner in which it links SLA theory and research findings to language instruction. In the areas of language teaching methodology and language instruction, VanPatten's publications are world renowned. They include coauthored books with James Lee, such as *Making Communicative Language Teaching Happen* (1995) and *¿Sabías Que . . . ?: Beginning Spanish* (VanPatten, Lee, Ballman, & Dvorak, 1992); his books *Processing Instruction: Theory, Research, and Commentary* (VanPatten, 2004); *From Input to Output: A Teacher's Guide to Second Language Acquisition* (2003); and his innovative *telenovela*-style instructional video series *Destinos: An Introduction to Spanish* (1992) and *Sol y viento* (2007).

Born in San José, California on February 19, 1955, Bill VanPatten was raised in a Spanish–English bilingual and bicultural environment. His maternal grandparents were political and economic refugees, who had fled from Mexico because of the Mexican Revolution in the early 20th century. As Bill has often noted to friends in informal conversation, early exposure to multilingualism fueled his initial interest in language as a potential area of inquiry, but he would not fully embrace this interest until after substantial exploration of other areas during his early academic career. He earned a double major in political science and Spanish at the University of Santa Clara in 1976 before entering the University of Texas at Austin as a graduate student in Latin American studies. After one semester, he changed his primary field of study to Spanish literature. After realizing that Spanish literature was not the area in which he wished to continue, Bill was making plans to return to California shortly before a pivotal turning point in his life would occur. Professor Carlos A. Solé suggested that Bill try studying linguistics, believing that Bill had the mind for that particular area of study. Heeding his professor's advice, Bill decided to stay for at least one additional semester, took three courses in linguistics, and then he "never looked back" (personal communication, July 2010).

At the University of Texas at Austin, Bill's primary area of training was formal and historical linguistics, with key exceptions, such as a course that he took on child language acquisition with Professor Carlotta Smith. This course sparked Bill's interest in language acquisition. Bill also took courses in psycholinguistics and became interested in the issues of processing and comprehension. He completed his MA in Romance linguistics (1981) with a thesis titled *The Acquisition of* Ser *and* Estar *and the Preterit Tense in Two Learners of Spanish* and his PhD in Hispanic linguistics (1983) with a dissertation titled *Processing Strategies in Second Language Acquisition*. The dissertation focused on how first language (L1) processing strategies identified by Bever and Slobin (see Bever, 1970), in particular the first-noun strategy, could be applied in contexts of L2 acquisition.

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VanPatten's academic career includes positions at Michigan State University (assistant professor, 1983–5); University of Illinois at Urbana-Champaign (assistant professor, 1985–9; associate professor, 1989–95; and professor, 1995–2000); University of Illinois at Chicago (Professor, 2000–6); Texas Tech University (professor, 2007–11); and Michigan State University (professor, 2011–present). His career is marked by the extraordinary impact that he has had on program development and mentorship of students in second language acquisition. To date, he has directed 32 doctoral dissertations for students who continue to advance the field, making him the mentor for at least two generations of highly active SLA researchers.

An essential concept in VanPatten's theory of input processing is that learners (because of their limited processing capacity) allocate processing resources via identifiable processing strategies. One example is learners' tendency to process input for meaning before processing it for form. Another key concept is the *communicative value* of linguistic forms, which is determined by the inherent semantic value of a form (more inherent semantic value increases communicative value) and the extent to which the meaning conveyed by a form is redundant in a given context (less redundancy increases communicative value). As asserted by the theory, learners are more likely to process forms with higher communicative value (e.g., *-ed* for pastness in English when not redundant with other forms indicating the same) than forms of lower communicative value (e.g., *-ed* for pastness in English when temporal phrases such as *yesterday* also indicate pastness).

A prime example of VanPatten's innovative application of SLA theory and research to L2 instruction is his development of a type of focus on form, *processing instruction*, which includes *structured input* as its central feature. Given what research on input processing has revealed about learners' processing strategies, VanPatten proposed that input can be structured in a manner that requires learners, while they are attending to informational content (meaning), to process target grammatical forms more optimally. For example, learners are more likely to attend to the personal *a* in Spanish, which is used to mark direct objects, when they must rely on it to make correct referential inferences while attending to meaning (e.g., *Al elefante lo atacó la gacela. ¿Quién atacó? __ El elefante / __ La gacela . . . ¿Te parece lógico? □ Sí / □ No*: '[object marker *a*] the elephant (object) it (object) attacked the gazelle (subject)', meaning 'The gazelle attacked the elephant.' Who attacked? __ The elephant / __ The gazelle.). In processing instruction, students are provided with (a) explicit instruction, (b) strategies instruction (on how to attend to a given target structure more effectively), and (c) structured input activities. Some structured input activities are referential in nature, having one correct response only, and others are affective in nature, having more than one possible response depending on the learner completing the activity.

In addition to his work in input processing and processing instruction, VanPatten was instrumental in the 1980s in moving the field of foreign-language (FL) research closer to SLA research. Prior to that, FL research was concerned with pedagogy and teacher education, and SLA was dominated by data on learners of English. Because of VanPatten's work on the interlanguage of classroom learners of Spanish, he showed that context did not affect the linguistic and psycholinguistic underpinnings of language acquisition. His research encouraged others in the FL context to embrace SLA approaches to classroom FL learners.

SEE ALSO: Instructed Second Language Acquisition; Role of Instruction in Second Language Acquisition Theories; Teaching Grammar

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Variability in a Dynamic Systems Theory Approach to Second Language Acquisition

MARJOLIJN VERSPOOR AND MARIJN VAN DIJK

Introduction

The role of variability in human development was first pointed out by dynamic systems theorists Thelen and Smith (1994). They argue that development should not be seen as a teleological process—a process that is predetermined and guided by design (p. xv). Instead, they point out that development is an individual, rather erratic discovery process. The learner must discover, try out, and practice each part of the process him- or herself, and this is accompanied with a great deal of trial and error, referred to as "variability." (Note: we will use the term "variability" to refer to variation in performance within one individual and "variation" to refer to differences among learners.)

In this entry, we will first briefly discuss their findings so it may become clear why it is interesting to look at the everyday messy detail of development, in our case second language development, and why it is interesting to trace different variables over time. Then we will review several studies in both first and second language acquisition to show that variability can provide new insights in language development.

Variability in Motor Skills

Thelen and Smith focus on motor development. They argue that for a child to learn to walk, of course, some preconditions first have to be met before development can take place. The child must have a brain, a spinal cord, and peripheral neuromotor and sensory pathways. For walking specifically, the learner has to have bones, joints, muscles, a cardiovascular system, a respiratory apparatus, skin, and so on, each of which will have its own developmental path, and all of which will interact with one another and with the muscles and neurological pathways needed for walking. If we focus on the process of learning to walk from a bit of a distance, we can see that there are several distinct stages: kicking (first one leg, then both legs), pulling up, moving upright, standing still, finding balance, taking a few wobbly steps, until finally the child can walk. From afar it may seem that each stage follows neatly after the other, but when we look up close we see not only that there are no clear boundaries between each stage but that the transition from each stage is far from smooth and involves lots of variability. Thelen and Smith thus argue that there is not one direct cause for new behavior, but that it emerges from the confluence of different subsystems in muscle development, motor control and intentionality. Within this process, variability in some subsystems will occur because it is necessary to drive the developmental process, allowing the learner to explore and select.

According to dynamic systems theory (DST), variability is especially large during periods of rapid development because at that time the learner explores and tries out new strategies or modes of behavior that are not always successful and may therefore alternate

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with old strategies or modes of behavior (Thelen & Smith, 1994). From a more formal perspective, systems have to become "unstable" before they can change (Hosenfeld, Van der Maas, & Van den Boom, 1997). For instance, high intra-individual variability implies that qualitative developmental changes may be taking place (Lee & Karmiloff-Smith, 2002). The cause and effect relationship between variability and development is considered to be reciprocal. On the one hand, variability permits flexible and adaptive behavior and is a prerequisite to development. (Just as in evolution theory, there is no selection of new forms if there is no variation.) On the other hand, free exploration of performance generates variability. Trying out new tasks leads to instability of the system and consequently to an increase in variability. Therefore, the claim is that stability and variability are indispensable aspects of human development.

When we translate the DST insights from early motor development to language development, we may assume the following: A first or second language is a complex system consisting of many subsystems such as the sound system, the grammar system, the lexical system, and so on, all of which are interrelated and may influence each other. Many internal states (cognitive ability, motivation, attitude, emotions, and so on) and external states or events (the general context in which a language is learned, a particular teacher, an illness, and so on) at any given moment may have an effect on the developmental path. All these interrelated factors may cause any part of the learner's language system to fluctuate from one moment to the next. These fluctuations are rather normal for any (sub)system that has stabilized to any extent. However, strong fluctuations may indicate that a (sub)system is changing. Learning is not linear: in both first and second language development, some subsystems may take off slowly at first, then all of a sudden jump off, and level off at the end. Another subsystem may develop in a completely different way. However, when a (sub)system is moving from one stage to another, we may see a great deal of variability in the learner's language. Finally, each individual learner has to explore and try out his or her own individual developmental path. Moreover, because learners may have different starting points and learning contexts, there will be variation among learners. In the following sections we will mainly focus on what variability may tell us about L1 and L2 development.

Variability in L1 Development

In the early 1990s, Van Geert (1991) brought DST principles to the domain of early language development. His initial work concerned the application of a logistic growth model to the acquisition of the lexicon (a reinterpretation of data of Dromi, 1986). In later work, he also focused on the role of variability and how different subsystems may interact, for which several methods and techniques were developed.

For example, Van Geert and Van Dijk (2002) focused on the ways variability in individual time-serial data of repeated observations within learner's data can be made more visible by means of a moving min–max graph (see Figure 1), a graph that plots the lowest and highest values over a limited number of data points. For example, in Figure 1, the highest and lowest value of the first 18 data points (1–18) are plotted, and then move to the right one step at the time (2–19, then 3–20, then 4–21, and so on). The point of such a graph is to make the bandwidth of variability visible and thereby help in determining if there is a clear transitional phase or not. In their study in L1, the authors found that the increase in the mean length of utterances was rather gradual, but the use of prepositions showed the kind of variability Thelen and Smith (1994) had mentioned, one that showed a clear transitional phase, with a wide bandwidth in the degree of variability.

A further study by Van Dijk and Van Geert (2011) showed that also the qualitative use of prepositions can be interpreted in terms of different, albeit overlapping, stages. Initially

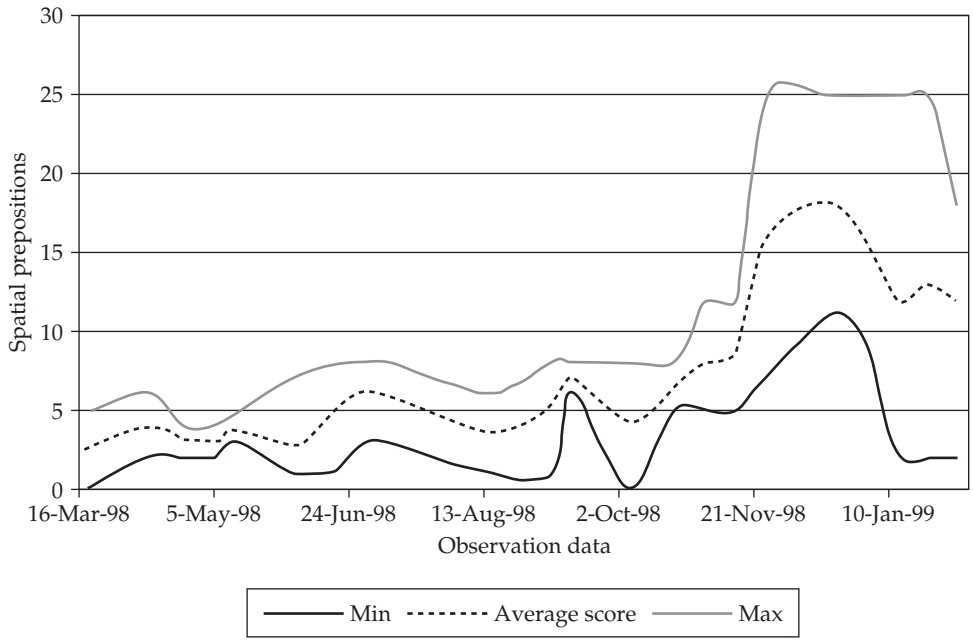

Figure 1 Moving min–max graph of development of spatial prepositions (time window of 18 days, last window 15 days). © Van Geert and Van Dijk (2002), p. 356

the children used prepositions quite incorrectly (compared to adult use of these forms), then there was a decrease in errors accompanied by the increased use of target forms, and finally, there was a stage where target forms were interspersed with nontarget forms. The learners also showed clear individual differences: In one child there was a fairly gradual emergence of the target grammatical strategy without statistically significant peaks, while for another there was a much more abrupt bulb in the pattern of variability and a statistically significant peak in the use of the target form.

Along similar lines, Behrens (2002) traced the acquisition of the highly complex plural marker with its eight different forms using a dense sampling technique in a case study of a German boy. She discovered that even though the boy's error rate decreased as his command of the language grew, some degree of nontarget forms remained, showing that the transition from one stage to the other is not sudden. For example, the little boy was obsessed with trains, but even after many correct plurals *Bahnen* he produced *Bahne* at a later point in development. Mariscal (2009) also showed that a mixture of target and nontarget forms is normal in development. She followed children under three years of age longitudinally on their development of a particular grammatical feature: gender agreement in the Spanish noun phrase. The analysis showed that there was a great deal of variability for each child and variation among the children in this complex acquisition process. The great amount of variability diminished when the children moved more toward adult-like use of these forms.

The idea that high degrees of variability point to transitional phases can be most clearly seen in the work by Bassano and Van Geert (2007). They looked at the development of one-word (W1), two- and three-word (W2–3), and four-and-more-word (W4) utterances from two French children during their second and third years. Because there were two striking peaks of variability and a temporary regression or period of rapid growth in the proportions of W1, W2–3, and W4, they concluded that such a period of great variability was a strong indicator of a major transition in early language development in that these

transitions corresponded to critical points in grammatical development, which they took to be indicative of the emergence of simple combinatorial and syntactic stages of language successively.

Moreover, they pointed out that one part of the subsystem (such as W1) needs to develop to a certain degree before the next one (W2) can develop, which is called a precursor relation. Other parts of subsystems may compete and these relations may change over time. According to Lewis, Lamey, and Douglas (1999) subsystems interact in such a way that temporarily stable states self-organize out of the repeated and reciprocal interactions.

To summarize, studies in L1 have shown that some subsystems such as sentence patterns (W1, W2–3, and W4) and prepositions show peaks in target or nontarget forms, pointing to a clear transition stage before they stabilize. Also, it is clear that "old strategies" like nontarget forms do not disappear suddenly. Finally there may be different types of interactions between the different parts of the subsystem.

Variability in L2 Development

In the field of second language learning, variability has long been acknowledged and was studied especially in the 1980s. However, inspired by variationist research in sociolinguistics (Labov, 1963), these studies focused mainly on explaining the causes of this variability, such as the task conditions. Tarone (1988) reviews many of these studies from different theoretical perspectives and concludes that not all causes of variability have been explained. She therefore calls for more longitudinal studies to "show the way in which variation at a single point in time is tied to longitudinal development of an interlanguage" (Tarone, 1988, p. 137). This is precisely what variability studies within a DST perspective intend to do, but rather than focusing on the possible extraneous causes of variability, they examine the patterns of variability in order to gain insight into the developmental process.

One of the first to mention the variability without apparent causes in the developmental process was Ellis (1994). He found that after eliminating all possible factors that could cause variability, there was still some degree of "free variability," variability that could not be attributed to any known linguistic, situational, or psychological factor. According to Ellis, an especially clear example of free variability is given by Cancino, Rosansky, and Schumann (1978), who found that their subjects made use of a variety of forms to express negation at each stage of their development. Ellis states that a general finding of these studies is that free variability occurs during an early stage of development and then disappears as learners develop a better-organized L2 system (Ellis, 1994, p. 137).

This type of "free variability" can also be observed in the following examples of Dutch 12-year-olds, from Verspoor, de Bot and Van Rein (2011), who are at the earliest stages of learning English. There is clear local variability in their ability to spell words. Within consecutive sentences they use different spellings for the same words:

Learner 1: We learn good English, but <u>ist's</u> very <u>difficelt</u>. I mean, <u>it's</u> a really <u>diffecelt</u> language.
Learner 2: <u>sometimes</u> a girlfrend rides with me, and <u>some times</u> I ride with her.
Learner 3: my new school ar <u>verry</u> fun. I have alot new friends maekt. the teachers are oke haha it was a joke she ar <u>verey</u> fun. you kan have fun with them.

These learners have probably heard the words and are not sure how to spell them, but as they become more exposed to the written language, they will probably recognize and remember the correct spelling. However, unlike Ellis we argue that variability can also be observed at later stages of the language-learning process, but then in different language subsystems. For example, once the learner has discovered how to form short simple

sentences, there may be a high degree of variability in the use of verb forms (e.g., subject–verb agreement). Once the learner can form short simple sentences, usually with a simple present tense, he or she may start experimenting with different verb tenses, and then a degree of free variability may occur in using these tenses correctly. For example, Learner 4 (a 14-year-old Dutch learner of English who is at a slightly higher level than the first three learners) is obviously attempting to use the past tense. Although there are errors in tense use, the learner uses a past tense form (*worked*) correctly at first, and then uses the present tense form (*laugh*) a bit further on in the same text.

Learner 4: Im my summer vacation I have met a boy that was so lovely. He worked in the supermarkt, and every time that I must bought something, He laugh to me. I am in love! I hope I see him every day!

So far, there are still few studies of L2 development that interpret patterns of variability from a dynamic systems perspective. Most studies that have been conducted so far are individually based illustrations. However, the findings they reveal are highly similar to the observations that were reported in the field of motor development and first language acquisition. Findings so far point to variability with peaks, regressions, critical moments, and different kinds of interactions among subsystems in a developing language system.

In a reanalysis of the Cancino et al. (1978) data, Verspoor, Lowie, and Van Dijk (2008) and Van Dijk, Verspoor, and Lowie (2011) showed that one of the learners, Jorge, displayed a classic developmental pattern of variability, which is rather similar to the patterns Bassano and Van Geert (2007) found. As Figure 2 illustrates, he used all four possible negative constructions (*No* verb, *don't* verb, aux verb and analyzed *do* verb) from the first time he was interviewed, but early on the more advanced ones occurred only a few times. The nontarget *No* verb construction as in "I no go" had a strong and significant peak in session 3, then dropped down quickly but did not disappear completely until session 12. The *don't* verb construction, which is a target form in "I don't go" but a nontarget one in "he don't go" was significantly overused between sessions 7 and 9. At that same time, the use of the more advanced aux verb construction as in "I am going, or I can't go" had reached a small peak and then reached another peak around session 15. Meanwhile, the use of the most advanced analyzed *do* verb construction is slowly increasing and peaks in our data set in session 20, around which time a more target-like distribution of the negative constructions seems to emerge.

To summarize, Jorge's negative constructions show a developmental hierarchy from less advanced constructions to more target-like ones (as Cancino et al. had predicted). It is also interesting to see that the strong fluctuations are almost like waves, with less advanced ones reaching high peaks that subside quickly but do not disappear immediately, and more advanced target ones emerging more slowly and reaching smaller peaks.

The Cancino et al. (1978) study followed six beginning learners of three different age groups over a period of about ten months. Visual inspection of the graphs in Van Dijk, Verspoor, and Lowie (2011) shows that the youngest learners (Martha and Cheo) like the teenagers (Juan and Jorge) showed clear peaks of nontarget forms before they were acquired, but the older learners used more different forms from the beginning. The two teenagers (Juan and Jorge) showed brief peaks of nontarget uses right before they started using the more target-like constructions, which point to the high degree of variability Thelen and Smith saw in kicking patterns at a transitional stage. The older learners (Alberto and Dolores), however, did not show any clear peaks, suggesting they had no "real" transitional phases. Moreover, unlike the teenagers, the older learners did not really change much over time and did not seem to have acquired target constructions. These findings together strongly suggest that the variability points to transitional stages and is indeed needed to progress.

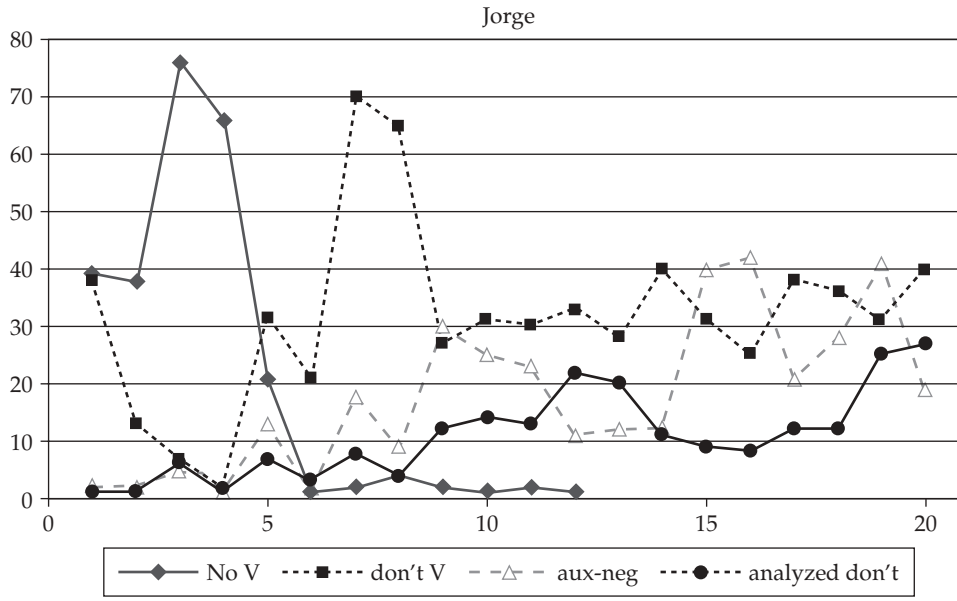

Figure 2 Jorge's development of negative constructions in the Cancino et al. (1978) study

Van Dijk et al. (2011) also show that even though all the L2 learners went through similar consecutive stages as L1 learners in learning to form negative constructions, each individual had a unique path of development, none of which even resembled the "average" path (see Figure 3).

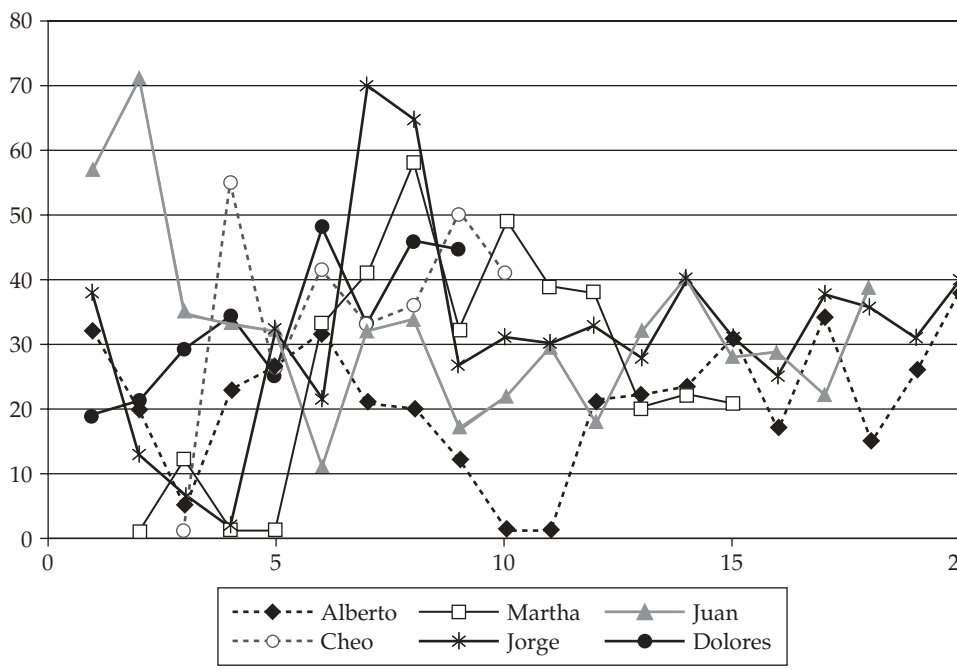

Figure 3 Individual pathways of the use of the Don't V strategy in the Cancino et al. (1978) study. Van Dijk et al. (2011)

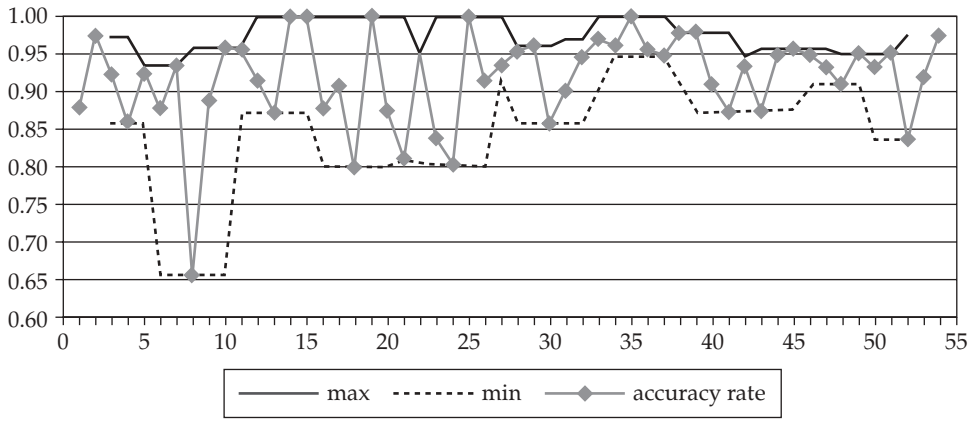

Figure 4 Moving min–max graph of the developmental pattern of case accuracy (window size of five data points). © Spoelman and Verspoor (2010), p. 10

It could be argued that the individual differences found by Cancino et al. (1978) could be partly explained by the fact that the learners were of different ages (two 5-year-olds, two teenagers and two adults) and of different socioeconomic backgrounds, but even when learners of similar ages, similar exposure to the language, and similar tasks are followed over a number of sessions, they show individual differences in their patterns of variability in the many different subsystems of the L2. For example, Larsen-Freeman (2006) showed individual differences in developmental patterns in Chinese learners of English, and Caspi (2010) showed such individual differences in advanced learners acquiring vocabulary.

Peaks and regressions can also be observed in more advanced learners but then in the use of other subsystems of the language. Verspoor, Lowie, and Van Dijk (2008) traced the development of different subsystems of the language of a Dutch learner of English. Even though this learner was quite advanced at the outset of the study, a variability analysis showed some surprising interactions. There was an unexpected competition between two complexity measures: sentence length and the ratio between finite verbs and number of words, suggesting that the learner first made sentences more complex by means of finite dependent clauses and later by means of longer noun phrases and nonfinite clauses.

Spoelman and Verspoor (2010) looked at a Dutch beginning learner of Finnish, a language that is typologically very different from Dutch and is known especially for its complex case system. The variability analysis (see Figure 4) showed two stages, the first with a very brief, strong dip of incorrect uses in the acquisition of case endings (about 3.5%) then a leveling off of the percentage of errors to about 2% and after text 25, leveling off to 1.5%, and this level remained mainly due to two notoriously difficult cases.

When the variability analyses of different subsystems were compared, the Spoelman and Verspoor study also showed that the syntactic subsystem—which in turn has subsystems at the word, noun phrase, and sentence levels—started with the simple structures first and was taken over by the more complex structures. Word complexity and the other two measures of complexity at the noun phrase and sentence level seemed to emerge rather synchronously as they correlated significantly with each other, but the noun phrase and sentence level complexity had a negative correlation, and a closer look revealed that they competed with each other for a while, suggesting that at one period during development the learner was focusing more on one syntactic subsystem than the other. Finally, the analysis revealed that the interaction between accuracy and complexity changed over time. For the most part they seemed to grow simultaneously, but there were also periods

when they competed with each other, showing that over time the interactions between accuracy and complexity will change.

Caspi (2010) studied four advanced learners of English and traced the variability patterns in their vocabulary knowledge over 10 months. Considering four hierarchically ordered levels of vocabulary knowledge—"recognition," "recall," "controlled production," and "free production"—as subsystems of the language, she showed that whereas recognition and recall supported each other, recall and controlled production competed with each other to some degree. However, there was strong competition between the two most productive levels: controlled and free production. These interpretations were then simulated successfully, which suggests that the interpretations of support and competition were supported by the data. In a writing study concerning the same four students, Caspi looked at four subsystems in L2 writing performance—lexical complexity, lexical accuracy, syntactic complexity, and syntactic accuracy—and showed that they were also hierarchically ordered in the sequence given (just like the negative constructions in Cancino et al.) and dynamically interconnected. So together, the two studies lend support to the idea that variability patterns are valuable and meaningful in indicating underlying systemic processes, in this case of interactions between codeveloping aspects of linguistic knowledge.

Conclusion

To conclude, the patterns of variability that Thelen and Smith found in the development of motor skills and those that were found in L1 are also found in L2 development. By looking at degrees of variability within one subsystem of the language we may discover transitional phases as with the L1 learning of prepositions and L2 learning of case endings. By comparing variability patterns in different subsystems in a learner's language system we can discover how they affect each other over time as with word growth and plural formation in L1 and different syntactic subsystems in L2. Finally, the variability studies in L2 development showed not only variability but also variation. Thus, although the results so far are preliminary, they are promising and give rise to research questions that are worthwhile to investigate in future studies.

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; de Bot, Kees; Dynamics of Multilingualism; Dynamic Systems Theory Approaches to Second Language Acquisition; Emergentism

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Variables

SUSAN M. GASS

Why are variables important? Variables identify ideas in research studies in terms of their roles, their definitions, and their measurement. In applied linguistics research, we often want to know the effect of one variable or even a combination of variables on another. For example, some might want to understand the effect of political stance on word choice. Others might wonder whether using captions on videos will help with comprehension—and, we might want to further investigate whether the effect of comprehension is the same depending on the closeness of the foreign language script to the native language script. In this second example, we have identified one variable as *video captions*, a second variable as *script relatedness*, and a third variable as *comprehension*.

Variables are not unique to applied linguistics research; indeed we encounter them in all aspects of our daily lives. We are dealing with variables when we have to decide which shade of blue sweater to buy, or what size of lettuce to purchase for dinner. Variables are qualities of someone/something that changes. In other words, they are characteristics that vary from object to object, from person to person, or—in the case of language research—from text to text. For example, individuals can be characterized by height, weight, eye-color, and native language. And texts can be characterized in terms of length, complexity of language, and mode of input (aural, written). All of these characteristics are variables, and each variable has a range of values by which it differs.

Roles of Variables

In the above example of video captioning, we wanted to determine the effect of video captioning on comprehension. In general research terms, we refer to these variables as *independent* and *dependent* variables respectively. The independent variable is the one that we believe may have an effect on the results; the dependent variable is the one we measure to see the effects of the independent variable; we are measuring the effect of captions (independent variable) on comprehension (dependent variable).

We can think of other research questions in applied linguistics that involve the effect of something on language learning. Some examples are given in Table 1:

When considering how to manipulate one variable to determine its effect on another, it is clear that we are dealing with different types of variables, those that are inherent traits of an individual (working memory capacity) or part of what a learner brings to the language learning context (anxiety induced by a testing situation). There is little that a researcher can do to manipulate these. On the other hand, a variable such as feedback type (implicit or explicit) can be manipulated in a research context.

There are many instances in which manipulation of the independent variable to understand its effect on a dependent variable may be influenced by yet another variable that is not a researcher's major interest. This leads us to the role of the *control* for variables. In applied linguistics research, obvious influences are proficiency and gender. With regard to gender, one can control for it by having an even number of males and females in a study; in the case of proficiency, one could have preestablished distinct proficiency levels.

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Table 1 Examples of independent and dependent variables

Research question	*Independent variable*	*Dependent variable*
Does working memory capacity have an effect on the ability to understand captioned video?	Working memory capacity	Comprehension of video
Does text anxiety affect performance on a listening test?	Measure of test anxiety	Performance on listening test
Do men or women learn more in a study-abroad context?	Gender	Amount of learning
Does implicit feedback result in better learning of relative clauses than explicit feedback?	Feedback type	Relative clause learning

Another way of controlling for these variables is to conduct a study only with males or only with females, or only with beginning level students or only with very proficient students. However, if one only deals with one level of variability, one loses power since results cannot easily be generalized.

The need to control for variables should be identified before one undertakes a study. This, of course, is not always easy, but there are certain aspects of language learning (such as proficiency) that will undoubtedly creep in. The significance (or lack thereof) of other variables can be determined from the extant literature, or even common sense. An example might be preferences such as whether an individual wears eye makeup or not. It is unlikely that wearing eye makeup would impact the results of a study that looks, for example, at the effect of feedback types on learning. However, one must carefully consider the literature relevant to the research area as well as completely understand the tools that are being used for measurement. While one might not consider eye makeup important, it can be a variable that has to be eliminated if one is doing research with eye-tracking machines. Controlling for variables is always a delicate matter.

A related role is played by *moderator variables*. This subclass of the independent variable may not be the main focus of the study, but may modify the relationship between the independent variable and the dependent variable in a way that is of interest to the researcher, such as script relatedness in our earlier example. As another example, consider the third research question listed above concerning the role of gender in a study-abroad context. A variable that might have an effect on learning in addition to gender could be the amount of language used during a study-abroad context. This could be planned for (moderator variable) or could become apparent to researchers as they begin to analyze their data. In applied linguistics, because one is dealing with humans in a social context, unplanned-for variables can come into play.

Unwanted variables that creep into a study are known as *intervening variables*. Whereas gender and proficiency can be regularly counted on as being variables to control for, there are others which one does not imagine are significant. An example was given above concerning eye-tracking experiments. In general, one would not consider makeup to be an important factor, but in fact, without a careful understanding of the equipment being used, one can imagine how this unplanned variable can intervene and influence the results, probably in ways unknown to the researcher. This would therefore compromise any interpretation of the results.

Operationalizing Variables

Any time one deals with variables, one has to appropriately operationalize those variables that cannot be directly measured. For example, if one is looking at onset of second language study, one can measure this variable using age (e.g., 6 years 2 months). However, there are many instances in which variables cannot be measured directly, and so they are *constructed* variables, or *constructs*. When we cannot measure something directly, we need to come up with a reasonable surrogate or working definition for the variable in question. This is known as an *operationalization*. As an example, proficiency is a construct that is not easily measurable. No two tests will give a precise measure and any test taken twice may have some fluctuation in test scores. So, how does one measure proficiency? One could give a test, but this is, of course, only an indirect measure. One could use years of study. This, too, is fraught with difficulty given differential performance by students. Because no measure is complete or perfect, a researcher needs to operationalize proficiency and convince the rest of the research community that this operational definition is valid. If one were to use years of study as an operational definition, we would probably want to make sure that the difference between two groups is sufficiently large (e.g., those who have studied for less than one year in a university context versus those who have studied for three years or more in a university context). Or, if a test is given, one would want to have enough of a separation between the scores of two groups. This latter could be done by doing a statistical analysis or by presenting scores on a standardized test that are unquestionably different (e.g., scores on the TOEFL iBT ranging from 60 to 70 in one group and from 100 to 110 in another group). As described below, operationalizations can use intervals, as with some test scores, or they can use categories that imply an ordering, as in the labels often used for proficiency (novice, intermediate, advanced, superior).

Types of Measurement

In quantitative research, the choice of statistical analysis depends on the types of measurement scales used for the variables in a study. There are three scales of measurement that are commonly used in applied linguistics research: *nominal*, *ordinal*, and *interval*.

Nominal scales are used for categorization and allow researchers to divide a variable into two or more groups. Often when dealing with nominal scales, researchers assign a numerical value for coding, and not for analytical purposes. If one were looking at individuals with different native languages, one could code each individual with (1) if her native language were Japanese, (2) if her native language were Italian, and (3) if her native language were Greek. These numbers only represent membership in one category or another, with no suggestion of ordering or magnitude of difference and no suggestion of any mathematical operation (e.g., averaging). When there are only two categories, such as male/female for the variable *gender*, this is called a *dichotomous* variable. Nominal scales are associated with *categorical* data.

The second type of scale, an ordinal scale, is one in which ordering is implied. Ranking of scores is an example. This is often the case with class rankings where one student is ranked number one, another two, another five, and so forth. Even though ranking within class is ordered, there is no implication of an equal distance between each rank order. Thus, the difference between student numbers 1 and 2 may not be the same as the difference between students 2 and 3.

Very often in language evaluation, judgments are holistic. When one rates oral tests, a score is given based on a particular scale, say from 30 to 60. If one student receives 30 and another 60, it does not mean that the student who received 60 is twice as good as the

student who received 30. We do know that the one who received 60 is better than the one who received 30. Thus, an ordinal scale only orders individuals, but does not indicate how much better one is than another. For this we need the third type of scale, an interval scale.

An interval scale also represents the order of a variable's values, but unlike an ordinal scale, it also implies an equal interval between points. Most language proficiency tests represent ordinal scales because there is not an equal distance between points on the scale. However, one could think of a discrete item test of 25 items, with each item being one point. In this example, the score (1 to 25) represents an interval scale because measurable units, such as number of correct answers, implies an equal distance between each point on the scale. Both ordinal and interval scales are associated with *continuous* data.

To review, in our earlier example, video captions is a dichotomous categorical variable. In other words, it has two possible values: (1) captions appear, and (2) captions don't appear. Of course, this is overly simplistic because other variables are embedded in this variable, such as where they appear on the screen and what color they are written in. The second variable, script relatedness, can be measured using an ordinal scale, and considered continuous ranging from almost identical (Spanish and English), to moderately similar (English and Russian), to quite/very dissimilar (English and Arabic, or English and Chinese). The third variable, comprehension, can be measured using an interval scale, also continuous, potentially ranging from scores of 0 (no comprehension) to 25 (total comprehension).

SEE ALSO: Describing and Illustrating Quantitative Data; Inference

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Varieties of English in Africa

RAJEND MESTHRIE

English is an important part of the linguistic landscape of Africa, and a binding force at the level of transnational communication, especially in the sub-Saharan region. The form and functions of English on the continent vary, depending on the particular colonial history of different regions and the nature of the original contacts with speakers of English, which began in the 16th century. Africa exhibits a range of English phenomena from pidgin to second language (L2) to creole and "transplanted" first language (L1). The earliest significant presence of English is in West Africa, then Southern Africa, next East and North Africa. The language is to be found in all inhabited parts of the continent, with areas that were under French, Portuguese, or German influence now all finding it hard to resist linguistic globalization via English.

The earliest contacts between English speakers and the locals were informal and sporadic, without an expectation of a permanent settlement or of colonization (and therefore formal education) until centuries later. In this early phase pidgins and "broken English" (i.e., early-fossilized interlanguages) were the outcomes of contact. These would not necessarily be ephemeral: West African Pidgin English, whose roots lie in the 17th and 18th centuries, is today more widespread (in the Cameroons, Ghana, and Nigeria) than is English as an L2. Pidgin English in West Africa fulfills a range of functions, including that of lingua franca when no other language is available for the purpose, in plantations and multilingual urban marketplaces. It is also an important medium when young people gather, especially in schools and now at universities (Huber, 2004, pp. 869–70), with Pidgin English often considered by its users to be an informal variety of English, rather than the autonomous system that linguists consider it to be.

Two varieties that gained significance in West Africa (from about 1787 onward) were the forms of creole English spoken by manumitted slaves who were repatriated from Britain, North America, and the Caribbean. Krio was the name given to the English creole of slaves freed from Britain who were returned to Sierra Leone, where they were joined by slaves released from Nova Scotia and Jamaica. Liberia was established in 1821 as an African homeland for freed slaves from the USA. American rather than British forms of English continue to dominate in Liberia (see Singler, 2004). Todd (1982) describes four types of English in West Africa today: pidgin; English as a second language (ESL); standard West African English (mostly oriented to the UK, with the exception of places like Liberia); and Francophone West African English.

English settlement in East Africa was different. Whereas in West Africa local people had very little exposure to native speakers of English, giving prominence to pidgin English, in East Africa "native speakers were present in considerable numbers, had great influence in government and filled a higher percentage of teaching posts" (Hancock & Angogo, 1982, p. 306).

North Africa was generally less Anglophone, with Arabic being the dominant language. However, given that places like Egypt had "protectorate" status in the British Empire, English was not entirely foreign even here, and with globalization continues to spread after the age of empire.

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South Africa provides the largest mother-tongue base for English in Africa, though even here the percentage has never been more than 10% since the earliest English civilian settlement of 1820. However, English continues to be a growing force in post-apartheid South Africa, and despite the constitutional avowal of 11 official languages, English has grown in significance at all levels.

It is as an L2 that English thrives best in Africa. Its role in governmental communication, formal education, writing, and international communication looms large in many countries (see Schmied, 1991, pp. 23–45). Linguistically the L2 varieties of English in sub-Saharan Africa are notable for the way in which they have become indigenized, showing significant influences at all levels of structure. Phonologically, for example, there is a tendency to avoid vowel lengthening, and to use a syllabic pattern that rarely reduces vowels to an unstressed form. Regarding syntax, there is large-scale agreement about the influence of the home languages and the effects of psycholinguistic processing in second language acquisition (SLA). There is another aspect to the ontology of English in Africa, namely its intertwining with local languages. Two types of contact effects are relevant here: (a) borrowing and (b) code switching and mixing. The use of English in "high" domains in colonial times over local languages has resulted in a new resource in many African contexts. Carol Myers-Scotton (1993) has shown how the marked versus unmarked use of different languages comes into play as speakers use their multilingual repertoires in resourceful ways. Code switching is done strategically to negotiate status versus solidarity and the rights versus obligations of interlocutors. English is often used in code-switched discourse to stress status and education over local solidarity.

Alamin Mazrui (2004) explores the impact of post-Cold War politics on language preferences in Africa. Post-Cold War politics have proven a setback for languages like French and Portuguese, with the influence of institutions like the International Monetary Fund (IMF) and World Bank exerting greater pressure for economic liberalization, which favors communication with the USA and the promotion of English. Furthermore, countries in which English was not a colonial language (Congo, Mozambique, Somalia, and Brurundi) face internal pressures to increase the use of English so as to maximize economic opportunities afforded by neighboring "Anglophone" countries like Nigeria, Kenya, and South Africa. As Mazrui (2004, p. 2) notes, this increased globalizing pressure goes beyond the usage of elites and governments in international communication: The language is becoming more widely spread across urban class lines.

Many postcolonial theorists argue that the hegemony of English should be contested and controverted in the interests of local communities (Alexander, 2000). Bilingual education with localized variations would seem the best choice for many countries. This desideratum has yet to be fulfilled, with parents' expectations, the intrusions of globalization, and governmental (elite) inertia often getting in the way. Chinua Achebe (1975, p. xiv) wrote vividly of the "fatalistic logic of the unassailable position" of English in West Africa. Other scholars add that if the forward march of English seems inexorable, for many of the less privileged, it is "unassailable but unattainable" too (Alexander, 2000). Herein lies a major linguistic paradox with immense educational and socioeconomic ramifications for the continent.

SEE ALSO: Language and Identity in Africa; Multilingual Education in Africa; Varieties of English in Nigeria

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Varieties of English in Asia

ANDY KIRKPATRICK

The earliest contacts between English speakers and Asians led to the emergence of pidgins, as in China (Bolton, 2003). Later, varieties of English in Asia matured and developed in British colonies and, in the case of the Philippine English, in an American colony. To give an idea of the timescale, the British established the Straits Settlement Colony of Penang, Malacca, and Singapore in 1848, while the Philippines became an American colony in 1898. These colonies were trade or exploitation colonies (Mufwene, 2001) and a major characteristic of such colonies was the amount of contact—and therefore language contact—between the indigenous populations and the colonizers. This language contact led to the development of Asian varieties of English, especially in places where English became institutionalized in some way, if not as an official language, then as a language of administration or education. The varieties of English in Asia can be distinguished from those that developed in the settler colonies of Australia and New Zealand, where the proportion of English speakers to speakers of indigenous languages was greater and where, generally speaking, there was less language contact.

The distinction between varieties has been captured in a "circles" classification proposed by Kachru (1992, p. 356), whereby the traditional Englishes and those of settler colonies are termed "inner circle" varieties and those that have developed in postcolonial settings are termed "outer circle" varieties. Countries in which English remains a "foreign" language are classified as being in an "expanding circle."

By this definition, Asian varieties of English can be seen as outer circle varieties of English. Examples include the Englishes of the Indian subcontinent and those of Southeast Asia, such as Malaysian, Singaporean, and Filipino.

These varieties of English tend to pass through similar and comparable stages of development (Schneider, 2007). At the early stages, linguistic norms are based on the original variety of English and the local variety is considered inferior. Gradually, however, locally derived linguistic norms become socially acceptable and eventually become the standard, although there often remains considerable local debate over the suitability of adopting the local variety as the official classroom model. The final stage of development occurs when the local variety itself develops a number of different varieties, as can perhaps be seen in India and Singapore.

Varieties of English contain distinctive linguistic features. For example, speakers of a particular variety of English can be most easily identified from their pronunciation. However, a variety of English will also have distinctive vocabulary. As speakers of these varieties need to be able to talk about local items and cultural phenomena, new words are created in a number of ways. Words are often borrowed from local languages, or the meaning of words from other varieties can be adapted to suit a new context, or new words can be invented. Examples of each from Singaporean English are *kiasu*, a Chinese word meaning fear of losing, but used in Singaporean English to describe someone who is frightened of losing *out*; *adat*, a Malay word referring to traditional custom; *alphabet*, which means a letter of the alphabet in Singaporean English; and *lessen terbang*, which combines the local representation of the English word "license" and the Malay word for "flying" to mean an illegally obtained driving license.

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Grammatical features can also be distinctive. Perhaps the most iconic features of Singaporean and Malaysian Englishes are the use of discourse particles, but it needs to be stressed that these are associated with colloquial rather than educated and written varieties (Platt & Weber, 1980; Low, 2010). The use of discourse particles is interesting as they represent influence from local languages, but it is not easy to determine precisely which local language provides which discourse particle. The influence of local languages and language contact is the subject of much current debate. While it seems clear that local languages influence the grammatical features of Asian varieties of English, there are a number of nonstandard forms that are shared across different varieties, but whose speakers speak different languages. Thus the relative influence of the typology of the speakers' L1s and possible universal motivations toward syntactic simplification and regularization (as in the simplification of the system of verbal inflections and the move toward a preference for regular past tense marking) are topics of great interest to linguists (see Mesthrie & Bhatt, 2008; Filppula, Klemola, & Paulasto, 2009; Kortmann, 2010).

Speakers of Asian varieties of English can also adopt local cultural norms. Thus they may prefer to approach a topic in what might appear, to speakers of American English for example, a roundabout way, as it is considered somewhat impolite to broach a topic directly.

While it is difficult to give precise figures, the number of Asian speakers of English has been estimated to be more than 800 million (Bolton, 2008) with more than 300 million learners of English in China alone. This is significant, as China was traditionally classified as an expanding circle country in which English played the role of a foreign language. However, as China emerges as an important economic and political power, this is changing. China's membership of international organizations such as the World Trade Organization and its hosting of the Olympic Games in 2008 and the World Expo in 2010 are examples of how the need for English is becoming increasingly apparent. English is now taught as a compulsory subject from primary school, and prestigious universities offer certain courses, especially at postgraduate level, through English. In Hong Kong, now a Special Administrative Region of China, six of the eight government-funded universities are English-medium. This increased use of English in China has led to recent attempts to codify the Chinese variety of English (see Xu, 2010), a variety that has developed, not from a colonial past, but through the need to participate in today's globalized world. Similar developments can be seen in Korea and Japan, countries traditionally classified as belonging to the expanding circle, but where English is now the most frequently learned foreign language.

The increasing use of English in Asia has led to its becoming the regional lingua franca (Kirkpatrick, 2010). The 10 Asian countries comprising the Association of Southeast Asian Nations (ASEAN) have made English the official and sole lingua franca of the Association. This means that all ASEAN official communication is conducted through English. This policy is likely to advantage those who speak a variety of Asian English (e.g., the Filipino and Malaysian delegates) and disadvantage those whose English may be less fluent (e.g., delegates from Laos and Cambodia). However, the official status now accorded to English in ASEAN and the development of a Chinese and other varieties of English is likely to add further impetus to the development of new Asian varieties of English and its use as a lingua franca throughout the region.

SEE ALSO: English as Lingua Franca; English and Multilingualism in Singapore; National Language and English in India

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Varieties of English in Cameroon

ERIC A. ANCHIMBE

In 1976 when Mbassi-Manga's paper "The State of Contemporary English in Cameroon" was published, there was no—or he made no—distinction between Cameroon English and Cameroon Pidgin English. Both were treated in a continuum stretching from Pidgin to educated English. Today, more than 34 years after, these two languages, initially treated as varieties of the same language, English, have not only expanded in terms of system-based consistency but have also evolved into many different varieties. Above all, their functions and number of speakers have increased tremendously—with both having native speakers (see Mbangwana, 1983; Schröder, 2003; Anchimbe, 2008). Later studies, especially Todd (1982) and Masanga (1983), focused more directly on Cameroon English, illustrating its features and delimiting its acceptable users. Other recent significant works on the variety include: phonology (Simo Bobda, 1994), syntax and morphosyntax (Sala, 2003; Mbangwana and Sala, 2009), lexical composition (Anchimbe, 2006a), intonation (Talla Sando, 2006), lexicography (Kouega, 2007), and ethnolects (Fonyuy, in press).

"Cameroon English" (CamE) is that variety typical of Cameroon, that is, English as it is spoken with a Cameroonian ecological flair both at the level of the system (grammatical norms) and at the level of social interaction (pragmatic norms). This entry focuses on system-based varieties of, and varieties within, CamE. By system-based varieties reference is made here to varieties identifiable especially through their grammars and domains of use. Varieties within CamE include ethnic and social variation, mostly at the level of accent and vocabulary. However, when we talk of CamE varieties, it is to be understood that most speakers speak more than one depending on the context of interaction and the goals to be achieved. For instance, speakers easily shift between their sociolects or ethnolects and the standard CamE accent.

System-Based Varieties

As far as standards of the language are concerned, two major varieties could be identified in Cameroon: the institutional variety (InsV) based on British English, and the communal variety (ComV). According to Sala (2003, pp. 140ff.) the institutional variety is the imposed (exonormative) variety acquired in school, "which hardly goes out of the classroom setting that engenders and regulates it." It is marked by formality and is used in formal contexts like education, media, administration, politics, and law. The communal variety is less subjected to the formal requirements of the classroom and is generally unaffected by the prescriptive corrections of teachers. For Sala (2003) it is the innovative (indigenized) variety —what he later terms "community English" (Sala, 2006, p. 61)—since it "is acquired in the greater English-using community showing a great deal of creativity and acculturation to local norms" (Sala, 2003, p. 75). It is, therefore, moving away from the exonormative norm and establishing an endonormative norm—what is referred to in the literature as Cameroon English. Here are some differences between the two.

At the level of conceptualization, the InsV sticks to denotational meanings and word order (1a) but the ComV reflects more pragmatic ways of communication (1b). Example

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(1) is said as an excuse for taking leave of someone. (1a) expresses the complete idea but (1b) rather captures the return, not normally supposed to take long.

(1a) I will be back soon.
(1b) I am coming.

The insertion of a subject pronoun in the object position as in (2b) is common in the ComV. For Mbangwana and Sala (2009) it signals obligation, that is, the subject is obliged to do the action. It shows that the ComV, influenced to some degree by the indigenous languages, fills the object position even when it is supposed to be empty in the InsV.

(2a) We are going home.
(2b) We are going *us* home.

The passive voice in the ComV is formed using a dummy "they." (3b) is indeed the ComV version of (3a), the InsV sentence. In this function, "they" has no antecedent, is nonreferential, and has no anaphoric referent.

(3a) My umbrella has been stolen.
(3b) *They* have stolen my umbrella.

Varieties within Cameroon English

Two types of varieties are of interest here: ethnic and social varieties. First, ethnic languages, generally acquired as L1, exert influences on their speakers' production of English. Certain vocalic and consonantal features stand out clearly when members of certain ethnolinguistic groups speak English. Some of these have been stigmatized given that they sound differently from the mainstream CamE accent. Below are examples of phonetic variation from three ethnolects.

Nso English (NsoE) accent, identified with speakers of Lamnso, produces the RP diphthong [əu] as the back vowel [u] as shown in (4a), making "bowl" and "bull" homophonous. It also monophthongizes the RP [eɪ] to [i] as in (4b); and reduces RP [i:] to [e] as in (4c). Wimbum English accent, like NsoE, also monophthongizes [eɪ] but rather to [ɛ] as in (5). For more see Tamfu (1989) and Yusimbom (1992).

	Word	RP	CamE	NsoE
(4a)	bowl	[bəul]	[bol]	[bul]
(4b)	name	[neɪm]	[nem]	[nim]
(4c)	meat	[mi:t]	[mit]	[met]
(5)	name	[neɪm]	[nem]	[nɛm] (Wimbum)

Bakossi English (BakE) accent, that is, speakers of Akoose, is noted for its consonantal features. BakE does not distinguish between the voiced and voiceless counterparts of the interdental affricate. Both are realized as voiceless, making "church" and "judge" homophonous (6a, b).

	Word	RP	CamE	BakE
(6a)	judge	[ʤʌʤ]	[ʤɔ:ʤ]	[ʧɔ:ʧ]
(6b)	church	[ʧɜ:ʧ]	[ʧɔ:ʧ]	[ʧɔ:ʧ]

Second, social varieties are normally adopted by choice, and often make use of special in-group vocabulary. Two varieties immediately come to mind here: status mother tongue (SMT; Alobwede, 1998) and prestige foreign tongue (PFT; Anchimbe, 2004) varieties. The former refers to children who are brought up with English as L1, and who are supposedly monolingual in it. They speak the language with a clear, nonethnic and sometimes slightly foreign accent, often not their own choice but rather their parents'. These are children from rich, upper-middle-class families whose parents can afford English-only (international) schools.

The latter group is made up of youths who intentionally adopt foreign accents for social esteem. The audiovisual media and the Internet have been instrumental in spreading American pop culture to this group (see Anchimbe, 2006b). They use American slang, swear words, and a rhotic accent to suggest they have been abroad. Expressions common to them are: "hey men/guys," "what's up," "you guys," "shit," "mother-fucker," "what the hell/fuck," "you know," and the use of "men" after every few words.

On Varieties and Standard

The standard of CamE is only strong enough if speakers can identify it and bounce off other standards—social, ethnic, foreign varieties—against it. The identification of the above varieties is a sign of the consistent evolution of the CamE, and as its communal features spread, the indigenization process gains more roots, hence representing the Cameroonian ecology even more bythe language. In the social varieties referred to above, while it is the parents of the SMT children who benefit from the pride attached to L1 English children, in the PFT case, it is the youths themselves who show off with their "superior foreign" identity.

SEE ALSO: Acculturation in World Englishes; Crosslinguistic Influence and Multilingualism; Varieties of English in Africa; Varieties of World Englishes

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Varieties of English in Nigeria

OLADIPO SALAMI

Introduction

Although opinions diverge as to whether or not there is a Nigerian English, it is generally agreed that it is possible to do a broad characterization of varieties of English in Nigeria. Jibril (1982), Awonusi (1986, 1988), Jowitt (1991), Bamiro (1994), Igboanusi (2002), and others have demonstrated also that Nigerian English is variable and that its variability is socially motivated.

Features of Nigerian English (NigE)

There are certain features that can be identified as common to speakers of this variety. They include the following.

Vowel and Consonant Features

vowel mergers: 'lip' and 'leap' are realized as /lip/; the vowels in 'cup' and 'pot' are realized as /ɔ/;
monothongization of diphthongs: 'day' is realized as /de/ while 'go' is pronounced /go/;
gliding of diphthongs: words as 'fire', 'liar', 'layer', 'iron', and so on are pronounced /faya/, /laya/, /leya/, and /ayon/ respectively;
loss of consonantal contrasts: the dental fricatives /θ/ and /ð/ are pronounced as alveolar stops /t/ and /d/ respectively as in 'thug' /tɔg/ and 'those' /dose/;
word-final consonant simplification and word-final voiced consonant devoicing as in: 'hand' /han/, 'post' /pos/, 'robe' /rop/, and 'leave' /lif/;
voicing of consonant clusters: /ks/ cluster is realized as /gz/ before vowels as in the words 'flexible' /flegzible/ and 'laxity' /lagziti/;
voiced alveopalatal fricative /ʒ/, absent in the NigE consonant subsystem, is realized as alveopalatal fricative /ʃ/ in words like 'pleasure' and 'seizure' which are pronounced as /plɛʃɔ/ and /siʃɔ/;
insertion of vowels before syllabic consonants and nasals, as in: 'cotton' /kɔtin/, 'bubble' /bɔbul/, and 'riddle' /ridul/.

Spelling Pronunciation

There is the tendency in NigE to pronounce words according to orthography as observed in the pronunciation of /-mb/ and /g/ in 'plumber' as /plɔmba/ and 'sing' as /siŋg/. Words which have the letters 'p', 't', and 'h' (e.g., cupboard, castle, honest) are in NigE pronounced as: /kɔpbɔd/; /kastul/, and /hɔnɛst/ respectively. The past tense morpheme /-ed/ is pronounced as /d/ in the NigE as in 'kissed' /kisd/ or /kizd/ and 'worked' /wɔkd/. The pronunciation of plural morpheme /s/ is also pronounced as /s/ in NigE as found in 'eyes' /ais/ and 'doors' /dɔs/.

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Stress and Intonation

Stress in NigE is largely syllable-timed and each syllable in a word has the same degree of prominence, thereby producing what can be termed "heavily accented speech." For example, there is no distinction between the following sentences where the center of information shifts from the subject to the object since all the syllables will receive the same prominence: "DEBO kicked the ball" and "Debo kicked the BALL."

Although in some of its disyllabic words NigE tends to assign stress to the penultimate syllable, this is not regular and thus there is little or no generalization that can be made in stress placement in this variety.

Intonation in NigE is also influenced by its peculiar stress patterns such that the grammatical information conveyed and attitudinal orientations of its speakers' utterances are either often misunderstood or fall short of their intentions, especially in interaction with non-NigE-speaking audience. Thus as a result of the unsystematic operation of intonation in NigE, grammatical and attitudinal distinctions are often confused or lost.

Variation within NigE

NigE is heterogeneous and its differentiation derives from the factors of regional/ethnolinguistic background and the level of education of its speakers. Two broad regional varieties exist. These are Basic Hausa English, spoken in the northern parts of the country, and Southern English, spoken in the south. There is also a variety which, though used by a large majority of the population, is marginalized. This is the English-based Nigerian Pidgin.

Northern Nigerian English is characterized by the absence of dental fricatives /ð/ and /θ/ which are replaced by the alveolar fricatives /z/ and /s/ as in 'though' /zo/ and 'that' /sat/. It also replaces voiceless labial stop /p/ with labiodental fricative /f/ in such words as 'people' /fiful/ and 'plus' /flɔs/. The variety is further characterized by vowel epenthesis as shown in the words: 'amendment' /amɛndimɛnt/ and 'legislator' /lɛʤisiletʌ/. It must be mentioned that the variety is not homogeneous as other ethnolinguistic groups in this region such as Kanuri, Idoma, and Tiv, among others, exhibit the influences of mother tongues which differ in structures from Hausa.

Southern Nigerian English exhibits vowel mergers (e.g., /au/ → /o/ as in /on/ from the word 'own'). Other features include the absence of alveopalatal affricate /tʃ/ and the voiced fricative /ʒ/ which are replaced by /ʃ/ as found in the following words: 'chicken' /ʃikin/ and 'seizure' /siʃɔ/. This variety is also not homogeneous, with Izon speakers replacing voiceless alveopalatal fricative /ʃ/ with voiceless alveolar fricative /s/ as in such words as 'ship' /sip/ and 'wash' /wɔs/, while Efik speakers also replace voiced velar stop /g/ with voiceless /k/ as in the words 'good' /kud/ and 'goat' /kot/. Yoruba-English speakers tend to nasalize all vowels before nasal consonants as in 'plumber' /plɔ̃mba/and 'can' /kãn/. Igbo English is particularly noted for the gliding of the diphthong /ɔi/ as in the word 'oil' which is realized as /ɔjɛl/.

Lexical and Syntactic Features

The lexical stock of NigE does not differ largely from Standard British English but it contains cultural forms that are peculiar to Nigeria. Examples include the words "oil-palm" (palm tree that produces fruits for the local cooking red oil), "yam-mound" (a heap of sand where yam is planted), "branch" (to call at a place), and "globe" (electric bulb).

The syntax of NigE exhibits form-class shift, as in the sentences "He offed the light" (switch off) where "off" is used as a verb, and "Please on the radio" (tune in) where "on"

is also used as a verb. The use of non-count nouns is also a feature of this English variety as noticed in the sentences "The Doctor bought some equipments" and "The government is not providing infrastructures." Other features are the use of stative verbs as event/dynamic verbs as in "I am hearing the music" and "I am smelling the odor."

Nigerian Pidgin English (NPE)

This is a widely used variety especially in the south-south (Niger Delta) region where it is developing into a creole. Its phonology patterns relatively after NigE while its syntax is simple but makes use of serial verbs. It has in its lexical stock items from English and Nigerian mother tongues. Examples are:

Me no get *wahala*: I don't have any problem (*wahala*—Hausa)
Una wan chop the fud: You (pl.) want to eat the food (*Una/unu*—Igbo)
O ya mek Mary kom go: Let Mary begin to leave (*O ya*—Yoruba)
I *dey go kari waka* for bodi: I am going to take it along with me (serial verbs)

Conclusion

This brief discussion of Nigerian English has not considered the fact that the level of education of a speaker in any of the regions has significant influence on the nature of Nigerian English or the variety spoken. However, spoken English among the educated shows a stratification range from what is referred to as "Sophisticated Speakers" whose variety of Nigerian English approaches the RP or British Standard English and those at the extreme end whose variety is just passable. It may be pertinent to note that Nigeria is also beginning to experience the influence of American English, with Americanisms creeping gradually into written and spoken varieties of English in Nigeria today.

SEE ALSO: English in the Nigerian Novel; Varieties of English in Africa; Varieties of World Englishes

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Varieties of English in South America

KANAVILLIL RAJAGOPALAN

Made up of 12 sovereign states and 3 major territories, the continent of South America belongs to the "expanding circle" insofar as the worldwide ascendancy of English as an international language is concerned. Or, in terms of the metaphor of four successive diasporas that Kachru, Kachru, and Nelson (2006) employ, the continent bears witness to the last diaspora. Contact with the Anglophone world is fairly recent, having been very sparse and sporadic up to the mid-20th century. In fact, this vast landmass was mostly isolated from the rest of the world, thus inviting the epithet of "a forgotten continent."

It was only after the end of World War II and the emergence of the United States as the free world's major superpower that the countries in the continent really turned to English. Until then French was the continent's number one language of international communication. French symbolized cultural finesse and sophistication and hence was a valued asset coveted by the well-to-do and parvenus, but accessible only to a select few.

But the postwar period saw a sea change. Over the past few decades, there has been a mad rush and scramble to learn the English language. This is amply attested to by the fact that language institutes offering courses in English are springing up in their hundreds across the continent. There is today a widespread awareness that the language affords people the vital passport to better job prospects and with it greater social mobility. The prevailing mood was picturesquely summed up by a taxicab driver in Peru when he said: "*El ingles en el mundo de hoy es un mal necessário, lo necessitamos sí o sí*" [English is a necessary evil in today's world, we need it, one way or another] (Niño-Murcia, 2003, p. 121, original italics).

The popularity as well as the spread of English is far from uniform across the continent. There are small pockets like the Falkland Islands where an estimated 3,000 or so strong population speak English as their first language. The Cooperative Republic of Guyana (formerly a British colony) has retained English as its official language, being the only member of the British Commonwealth in the region. Spanish is the predominant language on the continent, but Brazil, a country that occupies about half its landmass and population, speaks mainly Portuguese. In all these countries, English is as yet very much a *foreign* language.

Argentina stands out from the rest, thanks to its longer and closer contact with English than most other countries on the continent. Friedrich (2003, p. 178) describes the country as "probably the 'most British' of Latin American countries." At the other end of the continuum are countries like Venezuela and Ecuador where English is yet to make any significant inroads.

It is as yet too early to speak of clearly distinguishable regional varieties of English in the countries of South America. What one does notice though is the presence of regional accents, the result of transfer of phonological features from the mother tongue of the speakers—in most cases, either Spanish or Portuguese. The difficulty in distinguishing between /b/ and /v/ by many speakers of Spanish and that between /r/ and /h/ by many Portuguese speakers come to mind immediately.

But if it is difficult to pin down different varieties of speaking English in South America on a horizontal axis, it is certainly possible to speak of discernible varieties on a vertical axis. These varieties range from a fine command and fluent speech at the uppermost rungs

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of the social ladder to barely comprehensible and mostly monosyllabic speech at the lowest. Many members of the elite have had part of their higher education in the United States or the United Kingdom. For instance, Juan Manuel Santos, who was sworn in as Colombia's president in 2010, has studied at universities like Kansas, Harvard, and the London School of Economics. The same is true of many occupying the top echelons of bureaucracy in many other countries of South America. On the other hand, a street vendor in Bolivia or a taxicab driver in São Paulo can at best barely blurt out half-a-dozen stock phrases in English.

One complicating factor in the acceptance of English by the public at large in many countries of South America is the long-standing distrust they have entertained vis-à-vis the United States of America and its putative high-handedness in its dealings with its neighbors to the south (Horowitz, 1985). This often translates into stiff resistance to and often outright rejection of English (Rajagopalan, 2005, 2006, 2010). In many countries like Brazil, there are clear signs of ambivalence in the attitude of people toward English, occasionally leading to sudden outbursts of linguistic chauvinism and clamors for protecting national languages against outside influences (Rajagopalan, 2002, 2003).

Nevertheless, to be sure, these are passing phenomena and should be taken with a grain of salt when assessing the long- and medium-term prospects for English in South America. Judging by the demand for learning English amongst the youth that keeps growing exponentially right across the continent, there is every reason to believe that the language is destined to be a major influence in the years to come.

But it is misleading to conclude that this breath-taking spread of English necessarily implies the ultimate triumph of the language or the hegemony of Anglophone nations. The language that has been spreading all over the world in the last fifty years or so is arguably not English as it is spoken in the United Kingdom or the United States or any other English-speaking country. It is fast acquiring "local flavors" even as it serves as a means of wider communication. One striking example of this curious phenomenon is the use of *outdoor* in Brazil as a countable noun on its own to refer to a billboard ("hoarding" in British English)—presumably a shortening of "outdoor publicity." "World English" (McArthur, 2001; Rajagopalan, 2004) is nobody's mother tongue and belongs to everyone who speaks it in whatever capacity. Everyone is a stakeholder in it and has a vested interest in its future.

SEE ALSO: Acculturation in World Englishes; Varieties of World Englishes

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Varieties of English in the Caribbean

SHONDEL NERO

Origin and Definitions

The varieties of English spoken in the Anglophone Caribbean today reflect the linguistic contributions of the English-speaking explorers and settlers who exported the language from the British homeland to the region in the early 16th century, as well as the range of peoples that have inhabited the region for the past 400 years, either by birth (indigenous Amerindians) or forced transplantation through slavery, indentureship, or both (e.g., Africans from West Africa, Indians from India, etc.). Caribbean settlement and plantation life, which spawned the linguistic contact of British colonial masters with these various groups, became a major source of contribution to the lexicon of modern English. Thus, "within a century, Anglophone Creoles were to become its first distinct overseas by-products and joint ancestors of today's Caribbean English" (Allsopp, 1996, p. xli). Because slavery and indentureship largely eradicated the original ethnic languages of the exploited groups, the contact languages—creoles and creole English—that emerged in the Caribbean became the vernacular, evidenced in a continuum of usage between creole and English, known as a creole continuum, which became publicly labeled as English because of the stigmatization of creoles.

In *The Oxford Companion to the English Language*, Lawrence Carrington (1992) defines Caribbean English (CE) as "a general term for the English language used in the Caribbean archipelago and circum-Caribbean mainland. In a narrow sense, it covers English alone; in a broad sense, it covers English and Creole" (pp. 191–3). Today, among Caribbean natives, there is still debate about whether to consider English-based creoles dialects of English or separate languages. Linguists, however, have long recognized the integrity of English-based creoles as languages in their own right. As Roberts (1988) notes, "The wide spectrum in Jamaica challenges the definition of a language in that it calls into question the extent to which two speech varieties in a society can differ and still be treated as belonging to the same language" (p. 9). Still, there is no sharp cleavage between the basilect (creole), mesolect (mid-range variety), and acrolect (the standard variety) in everyday language use in the Caribbean. Consequently, many of the grammatical, phonological, and lexical features of all these varieties are subsumed under the umbrella of CE, as evidenced in Allsopp's (1996) *Dictionary of Caribbean English Usage*, the most comprehensive tome of CE to date.

Prototypical Features of Caribbean English

While there are obvious differences in the morphosyntactic, phonological, and especially lexical features of CE across the various Caribbean countries, there are prototypical features in everyday language use that span the region. Below are examples of general characteristics adapted from Allsopp (1996) and Roberts (1988):

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Morphosyntax

- Pronouns are treated as separate entities allowing them to function flexibly in many positions and capacities (subject, object, etc.), for example, "I tell **she** fuh come" or "**Him** say she live in New York."
- Questions asked by rising intonation rather than subject inversion with an auxiliary verb: "You going?"
- Avoidance of passive voice: "The food eat quick" (The food was eaten quickly).
- Front focusing (for emphasis): Introducing and stressing the main verb of a statement first, then repeating it in the normal position: "Is sell you wan' sell me the car?" (You really want to sell me the car?).

Zero inflection for:

- Plurals if plurality already indicated by number: "Five **dollar**." If plurality is not indicated, use of plural marker "dem," as in "**dem** girl" or "dih girl dem" (the girls).
- Possession: "**John** house."
- Subject–verb agreement: "She **call** every day."
- Tense: "He **wash** the clothes yesterday."
- Negatives: "She **na/don'/ain'/neva** tell me."

Zero copula if:

- The predicate is an adjective: "She tall."
- Locative: "Mary in the yard."
- Verb is in progressive form: "He crying."

Pronunciation

While no general homogeneity in sound can be claimed, there is a distinguishable "West Indian" accent that includes the following features:

- A leveling of standard English (SE) diphthongs, such that "fear" and "fare" or "tour" and "tore" are pronounced as homonyms.
- "Ar" for "or": "marning" (morning).
- Consonants are articulated with strong force.
- Preconsonantal "r" as in "card" or "word," and final "r" as in "bar" or "tear" are always pronounced except in Trinidad, St. Vincent, and most other Eastern Caribbean islands.
- Most final consonant clusters are reduced: "burs" or "buss" for "burst" or "tes" for "test."
- Palatalization after the word initial "g" and "k" sound: "gyirl" (girl) or "kyañ" (can't).
- Dropping/adding of word initial "h": "'ouse" (house) or "hegg" (egg).
- Voiceless "th" as "t": "ting" for "thing."
- Voiced "th" as "d": "dem" for "them."
- Separation of syllabic pitch and stress, which means that accent and highest pitch do not coincide. Using numbers to represent high–low pitch, CE would say "teach.er" as (1'2) while SE would be (2'1). CE would say "cóndemn" as opposed to SE "condémn."

Lexicon

The lexicon across the Anglophone Caribbean is extremely varied, reflecting the particular geography, ecology, ethnic populations, and different European colonizers that controlled the countries at various points. The bulk of CE is based on an English lexicon, but with

local meanings. For example, "waiter" in CE means a "tray" for serving food; "tea" can mean "any hot beverage" or "breakfast"; "hand" means "the part of the body from the shoulders to fingers"; "a next" means "another."

Caribbean English in Education

The use of CE in school, especially at the basilectal and mesolectal levels, has been a source of contention among educators for a long time. Because of the stigmatization of creoles, attitudes about its use in school vary from zero tolerance (eradication of the vernacular in school) to accommodation (selective use of the vernacular as a bridge to SE) to full bilingual education (use of both the vernacular and SE as a means of instruction). Linguists and educators have suggested a range of strategies for facilitating the literacy development of CE speakers in school (Nero, 2001; Craig, 2006; Devonish & Carpenter, 2007; Bryan, 2010). The continued poor performance of English-based creole speakers in school guarantees that this debate will continue, and that research and policy development are still needed to improve their academic performance.

SEE ALSO: Language Evolution: Pidgins and Creoles; Varieties of English in Africa; World Englishes and Teaching English to Speakers of Other Languages

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Varieties of World Englishes

KINGSLEY BOLTON

Introduction

Over the last thirty years, the term "World Englishes" has been widely used to refer to the localized forms of English found throughout the world, particularly with reference in the Caribbean, West and East Africa, and many parts of Asia. From the early 1980s onwards, in various branches of linguistics, research, and publications on World Englishes have contributed to a paradigm shift in English studies. Over this period, there has been a growing recognition of "Englishes" in the plural, as in "varieties of English," "international Englishes," "new Englishes," "English languages" and "World Englishes." Of all these designations, arguably the most popular term currently in the literature is that of "World Englishes," and the last three decades have seen the rise of this area as a site for scholarly research and publication, with three major academic journals—*English Today*, *English World-Wide*, and *World Englishes*—specializing in such studies, as well as numerous book-length studies dealing with research in this area.

Approaches to World Englishes

The notion "World Englishes" may be seen as having both a narrower and wider application. The narrower application of the term refers to schools of thought closely associated with the approach to the study of English worldwide pioneered by Professor Braj B. Kachru and a group of closely related scholars. The wider application of the concept subsumes many different approaches to the study of English worldwide (including varieties-based studies) ranging from the Celtic Englishes of Britain, through diverse varieties in the United States of America, Australia, New Zealand, and Africa to English in Europe and Asia, as well as the study of discourse and genre in those contexts where English is regarded as a second or foreign language. Elsewhere, it has been pointed out that research on World Englishes in the wider sense includes at least a dozen distinct approaches including those of English studies, corpus linguistics, the sociology of language, features-based and dialectological studies, pidgin and creole research, "Kachruvian" linguistics, lexicographical approaches, popular accounts, critical linguistics, and futurological approaches (Bolton, 2004, 2006). These approaches are illustrated in Table 1.

As early as the 1960s, the English studies approach was associated with such scholars as Randolph Quirk and others associated with the Survey of English Usage at University College London, including David Crystal and Sidney Greenbaum. The work of such UK-based scholars was complemented by the research and publications of a number of German scholars including Manfred Görlach and Edgar Schneider, as well as that of work in corpus linguistics, which again is closely associated with an English studies approach, as in the work of Greenbaum (1996), Nelson, Wallis, and Aarts (2002), and others.

Sociolinguistic approaches to World Englishes have included (a) "the sociology of language" (Fishman, Conrad, & Rubal-Lopez, 1996), (b) the "linguistic features" (and dialectological) approach (Trudgill & Hannah, 1982/1994), (c) pidgin and creole studies, and (d) "socially

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Table 1 Approaches to World Englishes

Approach	*Focus*	*Timeline*
English studies	The analysis of varieties of English from a synchronic and historical perspectives, against a tradition of English studies (*Anglistik*), dating from the late 19th century, for example, the work of Otto Jespersen, Daniel Jones, and Henry Sweet.	1960s–present
English corpus linguistics	The accurate and detailed linguistic descriptions of World Englishes from a features perspective.	1990–present
The sociology of language	Research on English in relation to such issues as language maintenance/shift, and ethnolinguistic identity.	1960s–present
"Features-based" approaches	The description of English through dialectological and variationist methodologies. Situated against the long tradition of British and European dialectology.	1980s–present
Kachruvian studies	The promotion of a pluricentric approach to World Englishes, highlighting both the "sociolinguistic realities" and "bilingual creativity" of outer circle (and expanding circle) societies.	1980s–present
Pidgin and creole studies	The description and analysis of "mixed" languages and the dynamics of linguistic hybridization (beginning with the early work of Hugo Schuchardt, 1842–1927).	1930s–present
Applied linguistics	The exploration of the implications of World Englishes for language learning and teaching.	1960s–present
Lexicography	The codification of vocabularies of English worldwide, linked to particular postcolonial societies and issues of linguistic autonomy.	1980s–present
Popularizers	The publication of books on English worldwide aimed at a mass reading public.	1980s–1990s
Critical linguistics	The expression of resistance to the linguistic imperialism and cultural hegemony of English, in tandem with resistance to Anglo-American political power.	1990s–present
Linguistic futurology	The discussion of future scenarios for the spread of English and English-language teaching worldwide.	1997–present

realistic" studies of World Englishes (B. B. Kachru, 1992). The use of the term "World Englishes" to refer to a distinct approach to this subject is most closely associated with the work of Braj Kachru. Indeed, the origin of the term "World Englishes" can be located in the two conferences on English as a world language that took place in 1978, one in April at the East-West Center in Hawaii, and the second in June–July at the University of Illinois at Urbana-Champaign, and Braj Kachru and Larry Smith played a major role in both conferences. Throughout the 1980s, other conferences were organized through the auspices of such organizations as IATEFL, TESOL, the Georgetown University Round Table, and the East-West Center, so that by the mid-1980s "World Englishes" had emerged as a distinct area of study.

By the mid-1980s, a number of popular works intended for a general reading audience began to appear, including publications by Crystal (1997, 2004). Critical approaches were particularly stimulated by Phillipson's landmark *Linguistic Imperialism* (1992), which

encouraged a strong interest in the politics of English, and has also informed the work of a generation of other critical scholars. The futurology perspective is best represented in research reports from Graddol (1997, 2006). Recent summaries of approaches to World Englishes include Bolton (2004, 2006), Y. Kachru and Nelson (2006), and Y. Kachru and Smith (2008).

The Kachruvian Approach

One construct in the Kachruvian paradigm that has been both influential and controversial has been the modeling of English worldwide in terms of the "three circles of English," the "inner," "outer," and "expanding" circles (B. B. Kachru, 1985). The circles model was intended to represent (a) the *types of spread* of English worldwide, (b) the *patterns of acquisition*, and (c) the *functional domains* in which English is used internationally. The *inner* circle of the model referred to those societies where English is the "primary language," that is, the United States of America, the United Kingdom, Canada, Australia, and New Zealand. The *outer* circle was conceived as representing postcolonial Anglophonic contexts, a numerically large and diverse speech community, including such African and Asian societies as Nigeria, Zambia, India, and Singapore. Despite such diversity, the outer circle communities share a number of characteristics, so that typically English is only one of the community languages in what are clearly multilingual societies, and English in such societies usually achieves some degree of official recognition as an official, co-official, legal, or educational language. At the functional level, English is utilized in "un-English cultural contexts," and is used in a very wide range of domains both as an intranational and an international language, and as a language of literary creativity and expression. The *expanding* circle is defined as comprising those areas where English is an "international language" and traditionally regarded as societies learning English as a foreign language (EFL). Nations in the expanding circle at this time thus include China, Greece, Indonesia, Israel, Japan, Korea, Saudi Arabia, Taiwan, and the USSR (i.e., the former Soviet Union).

One particular strength of the World Englishes paradigm (the WE approach) as established by Kachru and colleagues has been its avowed pluralism and inclusivity. On this, Kachru argues that "the pluralism of English must be reflected in the approaches, both theoretical and applied, we adopt for understanding this unprecedented linguistic phenomenon" (B. B. Kachru, 1997, p. 237). Despite this, the WE approach has not been without its critics. Bruthiaux (2003), for example, argues that the three circles model has contributed to an overemphasis on geographically delimited dialects of English, and other critics have suggested that the Kachruvian approach has been politically naive in its enthusiasm to valorize postcolonial varieties of English. On this first charge, it has to be said that scrutiny of the Kachruvian journal *World Englishes* indicates that, over recent years, only a minority of *World Englishes* papers have dealt with "areal" studies of Englishes, while many other articles covered topics such as discourse and text analysis, the sociology of language, applied linguistics, contact linguistics, "features-based" approaches, critical linguistics, bilingual creativity, corpus linguistics, lexicography, World Englishes theory, English studies, and pidgin and creole studies (Bolton & Davis, 2006). On the second count, that of political naïveté, it might be noted that the *WE* journal was one of the first journals in the 1990s to give space to Phillipson's linguistic imperialism thesis in the form of an early symposium on the topic, and that, crucially, one of the early founding texts for discussions of both "linguistic imperialism" and the "critical applied linguistics" was B. B. Kachru's (1986) paper entitled "The Power and Politics of English." This appeared some six years before Phillipson's *Linguistic Imperialism*, and specifically discussed the "lingocide" of minority languages worldwide.

New Directions in World Englishes

One important innovation or extension of the World Englishes perspective in recent years has been work on English as a lingua franca (ELF). In recent years, there has been much academic interest in the use of English as an international language in such contexts as European universities, and transnational communication in the Asian region. This in turn has yielded a good deal of interesting research on the use of English in such contexts, including, with reference to Europe, major studies by such researchers as Seidlhofer (2005), Jenkins (2007), and, in Asia, an important study by Kirkpatrick (2010).

Perhaps one socioeconomic explanation for the emergence and salience of ELF studies in very recent years has been the increasing globalization of universities across the world, particularly in North America and Europe. Current statistics indicate that the United States is still the world leader in attracting international students, with nearly 600,000 international students registered in 2010, with the United Kingdom coming in second place with around 350,000. Perhaps less well known is the fact that Germany now has around 260,000 students, and France approximately 250,000, and that other European nations such as Holland and the Scandinavian countries also attract significant minorities of overseas students (*Economist*, 2010, p. 55). Many of these European students are now studying international master's courses taught through English, are enrolled as PhD students (supervised by English-speaking professors), or are even following undergraduate courses taught in English. In contexts such as these, it is hardly surprising that the default language shared by both faculty and students is English, regularly used in non-UK and non-US institutions by teaching staff with a first language other than English. There has been a good deal of controversy concerning the definition of the term "English as a lingua franca" amongst linguists, but, at one level at least, the ELF project might be explained in part by the desire of some scholars to free the discourse of English-language learning in the European context away from its "English as a foreign language" (EFL) straitjacket, to liberate discussion along the lines of the World Englishes approach. As Pakir (2009, p. 28) points out, "WE and ELF are similar in that they have four common working axioms: emphasizing the pluricentricity of English, seeking variety recognition, accepting that language changes and adapts itself to new environments, and highlighting the discourse strategies of English-knowing bilinguals." Indeed, the ELF project also owes something to earlier attempts to theorize approaches to "Euro-English" (Mollin, 2006).

Following this, it is of key importance to recognize that the most important achievement of the World Englishes project over the last thirty years or so has not simply been to legitimize the study of "new" varieties of English in terms of their linguistic features in particular locations, but, more dramatically and more radically, to change the discourse of English studies in comprehensive and profound fashion, in ways scarcely imaginable in the early 1960s. As may be seen from the range of studies surveyed in this entry, the discourses of World Englishes are not narrowly sectarian, but also allow for dynamic new strands of analysis and discussion, as seen not only by theorizations of linguistic imperialism, but also in Saraceni's recent work on the "relocation" of English worldwide (Saraceni, 2010). At its heart, the WE project remains dynamically inclusive and pluralistic, inspired by the belief that "World Englishes represents certain linguistic, cultural and pragmatic realities and pluralism, and that pluralism is now an integral part of World Englishes and literatures written in Englishes" (B. B. Kachru, 1997, p. 237).

SEE ALSO: Varieties of English in Africa; Varieties of English in Asia; Varieties of English in Cameroon; Varieties of English in the Caribbean; Varieties of English in Nigeria; Varieties of English in South America

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Verbal Report

ANDREW D. COHEN

The performance of language ability (i.e., through listening, speaking, reading, or writing) involves cognitive processes that are not easily observable, nor are language learners' strategies for accomplishing these activities. Verbal report in its various forms has established itself as a useful means of obtaining sometimes one-of-a-kind data on the cognitive processes people use to perform first language (L1) and second language (L2) tasks (Cohen, 1991; Green, 1998; Gass & Mackey, 2000; Bowles, 2010). One especially productive field for verbal report applications has been language assessment. Green (1998) notes that "verbal protocols are increasingly playing a vital role in the validation of assessment instruments and methods [in that they] offer a means for more directly gathering evidence that supports judgments regarding validity than some of the other more quantitative methods" (p. 3). This author notes, in fact, that verbal reports are frequently used to address what she terms "one of the most fundamental questions" about language tests (p. 3): What is it that a test actually measures?

As rightly pointed out by Leow and Morgan-Short (2004), "all verbal reports are not equal" (p. 36). There are different types of verbal report data. One important variable is whether the verbal report reflects think-aloud data, introspection, or retrospection. In the case of think-aloud data, the subjects merely voice their thoughts without trying to analyze or explain what they are doing, while introspection implies that they report on what they think they are doing to accomplish a task. One way to distinguish these two is by describing think-aloud as *self-revelation*, while introspection in contrast constitutes *self-observation* (Cohen, 2000). In principle, self-revelation would more accurately reflect the actual thought processes.

So, while think-aloud and introspective verbal reports are collected as subjects perform a given task, retrospective verbal reports are obtained after the completion of a given task. The first two types of data collection are considered preferable since they do not tax the memory as much as do retrospective ones, which are more susceptible to reconstructive modifications. A caveat regarding think-aloud or introspective reports is that the process of collecting them may alter the task being undertaken because "the think-aloud data collection method itself acts as an additional task that must be considered carefully when examining learner performance" (Jourdenais, 2001, p. 373). Nonetheless, there is evidence that the way subjects approach tasks while thinking aloud is very much in keeping with how they approach tasks normally (see Ericsson & Simon, 1993). In corroboration of this view, Leow and Morgan-Short (2004) found that they were able to obtain introspective verbal reports in a study of L2 reading comprehension by adult readers without any detrimental effects.

Let us take a closer look at the three broad types of verbal report data (Cohen, 1987, 1991):

1. *Self-report*, where learners provide descriptions of what they do, characterized by generalized statements, for instance, about their language use strategies. For example: "When I read in an L2, I try to look for clues in the immediate context when I encounter words I don't know." Self-reports are retrospective and mentalistic in nature.
2. *Self-observation*, which is the inspection of specific, not generalized, language behavior, either introspectively (i.e., within 20 seconds of the mental event) or retrospectively.

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A further distinction would be between *immediate* retrospection (i.e., within an hour or so of the mental event) and *delayed* retrospection (say, up to a week or more after the event). Here is an example of immediate retrospection: "What I just did was to quickly skim the next several paragraphs to see if there were any clues as to the meaning of the word that I'm stumped on here. And sure enough, I found a handy synonym for that word, one that I did know."

3. *Self-revelation*, typically referred to as *think-aloud*, is characterized by the stream-of-consciousness disclosure of thought processes while the information is being attended to. For example: "Hmm . . . I wonder if these three words are actually a paraphrase of that word in the previous paragraph that I didn't recognize." Self-revelation is introspective and non-mentalistic in nature, and is seen as most accurately reflecting learners' cognitive processes (Ericsson & Simon, 1993; Cohen, 2000). Researchers need to be mindful of the fact that verbal reports may inadvertently comprise a combination of these different types (Radford, 1974; Cohen & Hosenfeld, 1981; Cohen, 1987), and so, if the intention is to use only one type, care must be taken in controlling for the type of data collected.

Oral interview or written questionnaire items that prompt respondents to describe the way that they usually learn language and perform what they have learned tend to elicit self-report data. Self-observation data would entail reference to some actual instance(s) of language behavior. For example, recollection of how L2 readers figure out what a word means in a given text would count as retrospective self-observation. Self-revelation or think-aloud data are only available at the time that the language event is taking place, and the assumption would be that the respondent is simply describing, say, the struggle to determine what a word means in context. Any thoughts that the respondent has that are immediately analyzed would constitute introspective self-observation. For example: "Now, does *sensible* in Spanish mean 'sensible' in English or does it have some other meaning? Let me see . . ."

Think-aloud and introspective protocols have the advantage of giving a more direct view of what language users do at the moment that they are doing it (Cohen, 1987). Retrospective interviews, in turn, provide an opportunity for investigators to ask directed questions to gain clarification of what was done. If data are also collected during the performance of the task as well, then the retrospective data can serve as a means for clarifying and amplifying the picture.

In the past there was a concern not to instruct respondents in verbal reporting so as not to bias the nature of the data. But anyone who has been faced with analyzing transcriptions of undirected verbal report protocols has seen how such data may well be too general and incomplete. So, even methodological hard-liners like Ericsson and Simon came out in favor of instructions to the respondents so as to make the verbal reports more complete (1993, p. 11). Not so surprisingly, then, many studies now do include instructions to elicit particular cognitive behaviors, with researchers cueing different processes depending on the study. Not only has it proven effective to have respondents receive specific prompts as to what to verbally report about, but it has also been seen that instruction in how to provide verbal report for a given task improves the quality of the data. Ericsson and Simon (1993) found that, to ensure that the verbal report does not interfere with the task at hand, there must be warm-up trials (after the instructions) with tasks that yield easy-to-analyze think-aloud, introspective, and retrospective reports.

Likewise, Green (1998; see also Cohen, 2000) underscored the need to ensure that "as much valid and complete data as possible are collected," and consequently highlighted the importance of orienting subjects to give quality verbal reports (p. 41). In her summary of key steps in collecting verbal report data, Green included the following:

- Prepare the subjects: Give "clear and unambiguous instructions" (p. 41).
- Brief the subjects: "Brief individuals on what is required of them and explain the procedure that is to be used" (p. 41).
- Practice the technique: "Give individuals some practice tasks to familiarize them with the technique" (p. 42).
- Practice the task: "Provide individuals with practice in the chosen procedure on the task . . . that will form the focus for the study" (p. 42).
- Give feedback: "Provide feedback on thinking aloud . . . performance" (p. 42).

The collection of verbal report data usually starts with an orientation session whereby respondents learn about verbal report and about how to provide it in the given context. They usually see or hear a model of someone performing the verbal report in the intended manner, and then ideally engage in a warm-up task (Bowles, 2010, chap. 4). The actual verbal report data can be elicited in a host of different ways, depending on the type of verbal report being elicited. For example, the data can be gathered by the subjects themselves, in the form of responses created as an audio file (say, while reading a text in a language lab), as written responses to a questionnaire (say, while engaged in writing an essay), or as journal entries (say, while strategizing about how to organize a talk to give in class). It may be advisable to have the verbal report in the subjects' L1.

More common than having respondents collect their own verbal report data is to have the verbal report prompted by an investigator, especially when there is value in prompting for specifics, in order to facilitate subsequent data analysis. After an extensive review of the verbal report literature, Pressley and Afflerbach (1995) concluded that prompting respondents to use particular processes may be necessary: "It is reasonable to prompt [processes] in order to assure that a sample of the target processes will, in fact, be observed" (p. 133). One specific type of prompted verbal report, popular in the research literature, is referred to as *stimulated recall*, and entails "a prompted interview, for example, watching a video of an event, listening to an audio recording of an event, or even seeing a piece of writing just completed" (Gass & Mackey, 2000, p. 13). In reading studies, verbal report often entails having researchers cue different processes, such as the way readers summarize, make inferences, or attend to stylistic differences.

With regard to analysis of the data from verbal report, it will depend on the type of verbal report involved, the quantity of data, the way that the data were collected, and the immediacy of the verbal report. There may be value in having subjects listen to their own verbal report in order to clarify unclear points in the data (see, for example, the study by Nyhus, 1994, described in Cohen, 2011, pp. 104–5). Bowles (2010, chap. 5) provides guidelines for data analysis issues, such as how to code the data. In addition, data analysis software packages such as ATLAS.ti provide a means for qualitative analysis of unstructured data, particularly when working with larger bodies of textual and audio or video data.

As to research results using verbal report, numerous studies have employed verbal report data to determine the strategies that students use in language performance (see White, Schramm, & Chamot, 2007). Perhaps the bulk of these studies have been conducted with L2 readers (see Singhal, 2001, for a review). Verbal report measures have helped determine, for example, how respondents actually take reading comprehension tests, as opposed to what they may be expected to be doing (Cohen, 1984, 1994, pp. 130–6). Studies calling on respondents to provide immediate or delayed retrospection as to their test-taking strategies regarding reading passages with multiple-choice items have, for example, yielded the following results:

- Whereas the instructions ask students to read the passage before answering the questions, students have reported either reading the questions first or reading just part of the article and then looking for the corresponding questions.

- Whereas advised to read all alternatives before choosing one, students stop reading the alternatives as soon as they have found one that they decide is correct.
- Students use a strategy of matching material from the passage with material in the item stem and in the alternatives, and prefer this surface-structure reading of the test items to one that calls for more in-depth reading and inferencing.
- Students rely on their prior knowledge of the topic and on their general vocabulary.

These findings from the study of test-taking strategies illustrate the unique perspectives on learners' performance that can be obtained through the use of verbal reports. Such qualitative findings are useful on their own or as a complement to quantitative results.

SEE ALSO: Interviews; Mixed Methods; Qualitative Research in Language Assessment; Validation of Language Assessments

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Video Documentation and Analysis in Literacy Research

JUDITH GREEN AND DAVID BLOOME

Understanding the use of video documentation and analysis in the study of literacy requires going beyond the procedures and practicalities of the techniques and equipment across disciplines. The challenge this diversity raises is reflected in the differences in epistemological and ontological perspectives that constitute the logics of inquiry for studying literacy. These differences are visible in theories used, questions asked, objects of study, the nature of video documentation/collection processes used, and ways of analyzing video records, as well as the tenets of evidence and ways of reporting findings from the analysis of the video records (see Strike, 1989).

We begin our discussion of video documentation and analysis by describing some of the directions taken by literacy researchers across disciplines. Our purpose in describing different directions is to emphasize the need for transparency in reporting the underlying ideological assumptions and decision processes involved in video documentation and analysis. This exploration is necessary in order to understand what counts as literacy within a particular program of research. After describing a range of epistemological and ontological issues involved in video documentation and analysis across disciplines, we explore four conceptualizations of literacy underlying different approaches to video-enabled literacy research.

Variation in the Use of Video Documentation and Analysis Across Disciplines

To examine variations in the logics of inquiry guiding literacy research, we begin by examining the historical roots of the use of film and audio recordings in anthropology, linguistics, sociology, and education. In this section, we present a brief discussion of these roots, highlighting directions currently being taken in the study of literacy across disciplines that make visible what types of investigations video facilitates that may not be possible without the use of video. Within anthropology, researchers have used visual media (film and video) to capture images and events of the everyday life of one cultural group for display to another cultural group (see Ball & Smith, 2001; Collier, 2001; Heider, 2006; Pink, 2007). These records have often become part of historical archives that are used by the original researcher or made available to others. Researchers, within anthropology, seek to examine how language and literacy processes are socially and linguistically constructed and function within a community, who has access to these practices, how use of particular language and literacy practices are consequential for members within and across social groups, among other social and cultural dimensions of everyday life. For these researchers, video is more than a means of documenting communicative practice of diverse groups of speakers; it affords a means of examining social, cultural, and linguistic processes and practices through which members of social groups construct, and embody, what counts as language and literacy.

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Video documentation provides a way of capturing how interlocutors materially respond to each other verbally and nonverbally, how they index various contexts of their interaction, and how they concertedly construct shared frameworks for the use of written language. From this perspective, literacy processes and practices are not decontextualized, autonomous skills visible on a video, but rather a conceptual and ideological system constructed in and through interactions among members of a sustaining social group (Street, 1995). Within linguistics, researchers have used video documentation to capture the subtleties of speech and speech events (including phonological variation, nonverbal behavior, and prosody) as well as the ways in which verbal, prosodic, and nonverbal behavior are layered and interact with each other. Some linguists have also used video documentation to study the use of language in naturally occurring settings (Schiffren, Tannen, & Hamilton, 2003) as well as looking at how phenomena such as identities are linguistically constructed and indexed through locally created labels, stances, styles, and linguistic structures and systems (Bucholtz & Hall, 2005).

Within sociology, researchers have used video as a basis for capturing and analyzing ways members socially accomplish everyday life. Although representing different traditions within sociology (e.g., microsociology, ethnomethodology, conversation analysis), these sociologists seek to understand and examine, for example, how children develop socially in and through language-in-use (Corsaro, 1985), what counts as literacy as socially constructed in and through the coordinated interactions among members of a social group (Heap, 1980), and how talk-in-interaction (or language-in-use) is constitutive of everyday life (Mehan, 1993).

Educational researchers have drawn on, adapted, and contributed to anthropological, linguistic, and sociological theories and approaches to video documentation and analysis by analyzing language and literacy practices and events of everyday life in educational settings. They have focused on how the moment-by-moment verbal and nonverbal spoken and written language creates and constrains opportunities for academic literacy learning and related processes such as identity formation, peer relations, and power relationships (Bloome, Carter, Christian, Otto, & Shuart-Faris, 2005). Educational researchers have also used video documentation and analysis to study how language is used to construct particular in situ definitions of literacy, that is, literate practices, within and across times and events. They have also explored how different theoretical perspectives guiding video analysis require different sources of evidence for warranting claims (Heap, 1995), supporting the call for epistemological transparency. Goldman takes this argument further by proposing the term "multiloguing" (1998, p. 32) to emphasize the importance of proactive efforts in obtaining multiple interpretations, (Green & Harker, 1988; Goldman, Pea, Barron, & Derry, 2007), thus providing a way of moving beyond recognition that any particular approach provides only a partial understanding of literacy.

Video Documentation: Issues of Transparency

In this section we examine issues and debates on transparency in the use of video as a resource for documenting and analyzing everyday life events. Central to these debates is the question of how to conceptualize what is recorded on a video record. The answer to this question is complex and is associated with conceptual shifts that have taken place across disciplines since the 1960s, including the interactional turn in education and the social sciences, the linguistic turn in philosophy, anthropology, and cognitive science (Clifford & Marcus, 1986), and the interactional turn in education (Erickson, 2006). Each of these conceptual turns has contributed to debates over how interpretations of what is recorded on video are conceptualized and warranted. Given the limitations of space, we

have elected to focus on one turn, the *interactional turn*, to construct an illustrative case of the theoretical and epistemological directions related to video documentation and analysis. Erickson argues that the "interactional turn" (2006, p. 177) in educational and social science research created a need to capture the complexities and nuances of social interaction in order to understand how knowledge, social identities, and educational processes, such as literacy instruction and learning, are accomplished. Replaying of video recordings provides researchers with opportunities to focus on the minute details and subtleties of social interactional work among participants, enabling the researcher to add layers of description and analysis warranted by what is seen or heard on the recording. It also provides a basis for making visible the chains of action members use to signal to each other what they have heard, interpreted, and understood as well as what is socially significant.

Examining chains of action and the evolution of interaction within and across events provides an alternative to traditional analytic approaches in qualitative research that focus on identifying themes, cultural models, patterns, and norms through the constant-comparative method and grounded theory. Rather than identifying a social phenomenon and locating its recurrence, the underlying assumption is that people act and react to each other and what they socially construct may continuously change and evolve (Bloome et al., 2005). Similarly, the interactional turn has created a need to trace links between and among events to explore how and what students (and other participants) take up, adopt, and adapt from one event to inform their actions, directions, and understandings of patterns of life in subsequent events (Baker, Green, & Skukauskaite, 2008).

The interactional turn raises questions about the use as well as usefulness, and conditions of use, of video documentation and the role of the analyst. Collier (2001) has argued that although video records have been used as a stand-alone source of data, the usefulness of video documentation depends on the degree to which it can be contextualized by reference to other sources of data simultaneously collected that can locate the video record within a longer sequence of events and in a broader understanding of the cultural life of the people involved. Van Leeuwen (2001) also contrasts warranting based on the video image itself with warranting that extends intertextually to other texts and images to warrant underlying ideological meanings. These arguments raise questions about what a video is a record of, and what sources and analyses are necessary for warranting claims about the bit of life captured on a video recording. From a sociological perspective, Atkinson (1990) raises questions about what it means to engage in video documentation and analysis. He argues that video documentation tends to position the researcher as witness to the recorded event and tends to misleadingly frame subsequent accounts as objective and realist, removed from the subjectivities of memory, note taking, and narrating. Across research traditions, therefore, researchers have argued that video documentation is not a transparent means of data collection and analysis (Griffin & Schwartz, 1997; Goldman, 2007). The researcher decides on what to record and what to overlook, how to compose the visual frame in the camera, what counts as a beginning, middle, and end of an event, how to contextualize a captured event by what came before and after (Collier, 2001), as well as how directionality and coverage of the microphone should be configured. As such, video documentation is not only a means of data collection; it is simultaneously a tool of data construction reflecting the goals of the researcher, his/her logic of inquiry, and also her/his cultural subjectivities (discussed below). As Goldman and McDermott (2007) note:

> Video records do not make analysis easier . . . [they] capture what individuals seemingly attend to, talk about, and do with what is at hand, and they allow, more crucially, an analysis of how all this is arranged with the most locally demanding and collectively constructed constraints of time and space. (p. 112)

Pink (2007) shifts the arguments to consider the impact of the researcher: "The ways in which individual ethnographers approach the visual in their research and representation are inevitably influenced by a range of factors, including theoretical beliefs, disciplinary agendas, personal experience, gendered identities and different visual cultures" (p. 39). To these subjectivities, we would add to Pink's list racial, ethnic, class, geographic, sexual orientation, and language identities, while also noting that such a list can never be comprehensive and is always evolving. We would also add issues focusing on the extent that use of video documentation was planned for use within the cultural group captured on the video, or for use with another cultural group (e.g., showing a video of classroom literacy lessons to participating teacher and students versus showing it to an audience of researchers who have no familiarity with that classroom). This decision raises questions about how the context of consumption (e.g., the audience to which the video will be shown) influences the context of production (the decisions of what to document, how, when, in what ways, for what purposes, with what means of production) (Tobin, Hsueh, & Karasawa, 2009). Each of these issues raises questions about the influence of the subjectivities of researchers and audience; recognition of subjectivities has led anthropologists and sociologists, among others, to call for a reflexive approach that makes transparent, not only how the researcher views the video as a record of visible literacy, but also how personal subjectivities influence the analysis and interpretation of literacy visible in the chain of actions among participants (see Atkinson, 1990; Pink, 2007). These arguments point to the need for researchers, and those who consume research, to consider how their views of what is recorded on video influence their representation and interpretation of "others" and how knowledge about others is constructed and validated in and through video documentation.

Video Documentation and Conceptual Approaches to the Study of Literacy

With specific regard to literacy research, for heuristic purposes we identify four conceptions of literacy as a "visible phenomenon." (Since researchers often incorporate multiple conceptions of literacy as visible phenomena in their studies, the examples here are merely illustrative.) The first derives from cognitive science. Literacy itself consists of various cognitive processes and although these processes are not visible themselves, the consequences of engagement in these cognitive processes are visible. Video documentation of literacy here focuses on analysis of the material actions in which participants engage, and the consequences of these actions, in order to gain insight into the nature of the invisible cognitive processes (Mercier & Frederiksen, 2008).

The second conception derives from cultural psychology. Literacy is viewed as a set of psychological processes that are realized both in the social/cultural world and in people's minds. Through participation in literacy activities, the individual acquires the shared mental processes and strategies represented in the cultural activity. Video documentation of literacy here focuses on the enacted psychological processes and their public representation inherent to, and visible in, the social and cultural activities in which people participate (Moll, 1992; John-Steiner, Panofsky, & Smith, 1994)

The third conception of literacy as visible derives from social and cultural anthropology, including ethnography of communication and microethnography. Literacy here is defined as any social event or social practice in which written language is more than a trivial aspect (Heath, 1980). Bloome et al. (2005) provide one approach to video documentation and analysis of literacy events that foregrounds how knowledge, meaning, social identities,

power relations, levels of social context, and cultural ideologies are constructed through how people act and react to each other. Although video documentation provides a mechanism for careful and reflexive analysis of the actions people take to each other and to previous actions and events, the analysis depends on logics of inquiry locating meaning in how any act (i.e., an utterance, nonverbal behavior, manipulation of an artifact, etc.) reflects, and refracts, the meaning(s) of previous acts (Volosinov, 1973). Key to the conceptualization of literacy here is that any literacy act and event is not a thing in and of itself, but rather is situated as part of an evolving and multilayered social and cultural context. Given this conceptualization of literacy, video recorders are more than a tool; they become a partner with the researcher, interacting with and supporting particular actions (Baker et al., 2008). Throughout the research process, decisions are made about how, when, and in what ways the video recorder enters the data collection process, who engages with it for what purposes, yielding what kinds of records, and how other forms of documentation are collected and linked to the video as a potential resource.

The fourth conception frames video documentation as both the means of capturing the literacy act, and as a literacy act itself. There are two different theoretical derivations within this fourth conception of literacy as visible. The first is phenomenological, with a focus on video documentation itself as a way of defining and interpreting the world. The second derives from social activist research in which video documentation is viewed as a means of witnessing, as providing counter narratives, and as acting on the world. The use of video documentation here provides a way for people involved in a social institution, such as teachers in a classroom, to reflect on and analyze what is happening in their social spaces and how those social spaces might be modified (Rex & Schiller, 2009). For example, Pappas (1997) describes how video documentation of classroom reading events (the reading of a poem) provided a way for a collaborative research team of teachers and university researchers to focus on the language of a classroom discussion. By focusing on what was said, by whom, how, and in response to what questions and previous statements, they were able to critically analyze the structure of classroom discourse and to problematize taken-for-granted routines.

Concluding Comments

The discussion in this entry goes beyond the practicalities and impositions of the technologies, determinations of framing and units of analysis, contextualization, detailed layers of description, and reflexivity involved in video documentation and analysis. The challenges presented in this entry frame issues that are ontological and epistemological: how language and literacy are to be defined, how the relationship of emic (insider) and etic (external) definitions of literacy are to be structured, how multiple perspectives and multiple layers of analysis are needed to define what counts as literacy, how literacy accounts are laminated, what differences the difference across perspectives on analysis make, and how all of this is to be warranted in a transparent manner. Viewed in this way, each approach to analysis constitutes a language with a particular expressive potential about what counts as literacy in video-enabled research.

We gratefully acknowledge the thoughtful comments and suggested revisions from an anonymous reviewer. Whatever flaws remain are solely our responsibility.

SEE ALSO: Classroom Discourse; Conversation Analysis and Education; Critical Analysis of Discourse in Educational Settings; Discourse Analysis in Literacy Research; Ethnographic Approaches to Literacy Research; Reading and Intertextuality

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Vocabulary Acquisition in Bilinguals

CRISTINA IZURA

Introduction

Ten years ago, at the age of 65, my father decided to learn English as a second language. He cautiously aimed at learning one word per day and began by writing English words on adhesive notes and sticking them to every single household item. At this learning rate his current vocabulary should comprise 3,650 words. This would be a considerable vocabulary size in view of the reported ability to understand 80 percent of English texts with vocabularies comprising between 2,000 and 3,000 of the most frequent English words (Nation, 1993; Meara, 1995). Whilst my father is still interested in learning English, his vocabulary knowledge has not reached his expectations and he often wonders, why? Learning method, age, lack of previous knowledge, and exhaustion of objects to label are likely contributors to his slow learning pace. These factors; age of acquisition, method of instruction, and characteristics of the vocabulary to be learned, have been commonly investigated as major determinants of vocabulary acquisition in bilingual speakers. Age of acquisition and the type of words to be learned will be discussed in the present review along with three of the best known models that account for bilingual development.

Age of Acquisition

The impact of age of acquisition in language development and overall attainment of first and second languages is a topic profusely investigated (for a review see DeKeyser & Larson-Hall, 2005). Lenneberg's (1967) proposal of a critical period for the acquisition of language is at the core of the modern debate. He suggested that learning a language from simple exposure, as observed in normal developing children, is severely limited in older adolescents and adults. The notion of a limited period of time for normal language development has received strong support from research in first language development. The evidence is often dramatic and fortunately limited to few cases of feral children such as "the wild boy of Aveyron" and "Genie" (Curtis, Fromkin, Krashen, Rigler, & Rigler, 1974; Lane, 1976) or deaf children of hearing parents such as "Chelsea" (Dronkers, Ludy, & Redfern, 1998). These types of studies are generally concentrated in ultimate language attainment and in this sense they consistently show that mastering the first language is jeopardized when young children are deprived of linguistic input (Mayberry & Eichen, 1991; Grimshaw, Adelstein, Bryden, & MacKinnon, 1998). The specific relationship between the acquisition of first language vocabulary and critical period has not received a high degree of attention. However, it is worth noting that no age limitations were described in relation to the vocabulary growth of Genie or Chelsea. Both vocabularies were reported as in continuous development albeit different in size and content than that of children at the same language developmental stage (Curtis et al., 1974; Dronkers et al., 1998).

The question of the existence of a "linguistic critical period" in relation to the acquisition of a second language has been inevitably posed and the observed differences have led to a distinction being established between the simultaneous or sequential learning of the two

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languages. Simultaneous exposure to two languages from birth is known as *bilingual first language acquisition* (BFLA), while the sequential introduction to two languages can be referred as *second language acquisition* (Ellis, 2005).

The study of the similarities and discrepancies in the language development of bilingual and monolingual children is at the heart of BFLA research. At the lexical level, no significant differences have been observed between the two groups of children in relation to the time at which they reach key language milestones such as the production of the first word/s, rate of vocabulary growth, and the acquisition of the syntactic properties of the newly learned words (Genesee & Nicoladis, 2007). However, differences in the vocabulary size and vocabulary repertoire of each language have been found in those cases in which the bilingual child has a different frequency and context of exposure for each language (Pearson, Fernández, Lewedag, & Oller, 1997).

The linguistic limitations imposed by age at the time of learning a second language (L2), before or after adolescence, seem to vary depending on the component of language under scrutiny (DeKeyser & Larson-Hall, 2005). A number of studies have shown that in general the acquisition of native-like competence for phonology and syntax is bounded by critical periods of varying durations (Asher & García, 1969; Fathman, 1975; Johnson & Newport, 1989). Therefore, acquisition may need to start before the age of six if native-like phonology is to be achieved and before the age of 15 for morphology and syntax (Izura, 2003). The acquisition of second language (L2) vocabulary, however, has not been shown to respond to the limitations of a critical period. Bahrick, Hall, Goggin, Bahrick, and Berger (1994) examined the "critical-age hypothesis" by looking at the passive and productive English vocabulary of over 800 Spanish native speakers. All participants were Cuban or Mexican immigrants whose time living in a bilingual environment varied in a steady continuum ranging from 4 months to 50 years. Vocabulary knowledge was measured using a word recognition task, a category generation task, and an oral comprehension task. Results showed a continuous improvement in word recognition and category generation for 30 years after immigration. Also, in another comparison using the same word recognition and category generation tasks, bilingual participants performed equal or better than monolingual speakers of English. Finally, better performance in English as an L2 was observed for those who were older at the time of immigration. Bahrick et al. (1994) concluded that the notion of a limited time interval to learn an L2 might only be applicable to those aspects of language that do not benefit from L1 transfer. In the same line Davis and Kelly (1997) investigated the second language vocabulary of non-native English speakers and found no significant correlation between age and vocabulary knowledge. They argue that the acquisition of vocabulary might be an open-ended process (even words in the first language continue to be acquired through life) detached from time constraints at least for those aspects of vocabulary knowledge that are independent from syntax and phonological constraints.

Type of Words

Selecting the appropriate vocabulary to teach and learn is of vital importance to develop lexical competence. The majority of researchers agree that such vocabulary selections should adhere to a criterion that will fulfill the speaker's language needs. Defining and operationalizing these "needs" is complicated even when individual differences, and therefore needs, are reduced by considering specific groups of L2 learners, for example, those learning English as an L2 for academic purposes.

It has been acknowledged that not all the words present in any given language (e.g., the vocabulary size of the English language has been estimated to comprise about 54,000

word families, Nation & Waring, 1997) are equally useful. One of the factors most commonly used to identify the most "useful" words in the language has been word frequency. Word sets containing high-frequency words are selected and then contrasted against the proportion of text comprehension they can provide. Following this method, albeit not strictly, the general service list comprising 2,000 headwords (West, 1953) and the Academic Word List comprising 570 word families (Coxhead, 2000) were created. Together these two lists account for more than the 85 percent of words present in academic texts and have been instrumental in the investigation of the words to teach and the words to test when assessing proficiency in second language learners (Nation, 2004). However, the impressive amount of text comprehension that can be accounted for by a relatively small subset of high-frequency words can be a misleading figure. It is hardly surprising that these "small" vocabularies cover the majority of the written text if we take into account that they are selected from corpuses based in similar written material. In addition, although frequency measures are good indexes of vocabulary in use they do not fully respond to the learner linguistic needs. This is because printed frequencies do not always match the vocabulary present in the spoken language. For example words such as *mum*, *dad*, *bye*, and *trousers*, regularly used in everyday conversations, are not present in the general service list but *resign* or *postpone*, encountered less often, are.

There are also other relevant factors, often ignored in the selection of vocabularies, in need of consideration when teaching and learning a second language. For example, some types of words might be easier to learn than others and therefore should perhaps, be more profusely present at the initial stages of second language learning. De Groot and her colleagues carried out a series of studies addressing the effects of word types in learning. For example, Lotto and de Groot (1998) reported that high-frequency words and cognates, those words that are similar in form and meaning across languages (e.g., *trumpet* in English and *trompeta* in Spanish), were easier to learn than low frequency and non-cognate words. Better learning has also been reported for concrete and high image-ability words (Ellis & Beaton, 1993; de Groot & Keijzer, 2000).

A further question is whether there is an optimal amount of words to be learned at different stages in the acquisition process. Meara (1995) highlighted the fact that size matters and that the difference between knowing 500 words and knowing 2,000 could determine the rate of language comprehension and consequently of language development. He proposed teaching large vocabularies early on in the teaching programs in order to maximize language development. In support of Meara's (1995) suggestion, a large number of studies have shown that words that are learned early in first and second languages are faster to be recognized and produced (Izura & Ellis, 2002, 2004). It has been called the age of acquisition effect and despite its name refers to the order rather than the age of word learning.

Models

Models of language representation, processing and acquisition provide the necessary framework against which empirical evidence can be assessed and theories formulated. The very few models of second language acquisition available focused on the development of an L2 once the L1 has already been acquired. All of them acknowledge a fundamental difference between L1 acquisition and L2 learning. This difference is rooted in the differences between the incidental or implicit learning of L1 and the explicit acquisition of L2.

The *extended competition model* (MacWhinney, 2007) consists of seven components: competition, arenas, cues, storage, chunking, codes, and resonance. The competition component is situated at the core of the model and is responsible for selection which is executed

depending on the relative strength of the target material. Arenas represent the four psycholinguistic processes (phonology, lexicon, morphosyntax, and conceptualization) at the comprehension and production level. Cues refer to the mappings between the form and function. Storage represents the short-term and long-term memory systems in which the acquired mappings are stored. Chunking refers to the relative size of particular mappings. Codes are responsible for transfer and code interactions that in turn refer to code selection, switching, and mixing. Resonance is directly related to learning processes and it refers to the influence and interaction between levels. One example is the resonant connections between inner speech and action, such as thinking "I am thirsty" and consequently drinking a glass of water.

The extended competition model has successfully explained, among other verbal behaviors, age-related constraints in L2 acquisition. In line with recent studies challenging the reality of these age constraints in L2 learning (Hakuta, Bialystok, & Wiley, 2003; Wiley, Bialystok, & Hakuta, 2005) the model suggests that the learning difficulties arise from the entrenched nature of L1 rather than age and makes useful predictions on how these difficulties might be overcome through effective teaching (MacWhinney, 2007).

The *revised hierarchical model* (Kroll & Stewart, 1994) emerged to account for the developmental changes that occur as the proficiency of the second language learner increases. At the early stages of second language learning L2 words are directly associated to their translation equivalents and meaning is accessed indirectly through the already created links between L1 word forms and meaning. L1 and L2 associations create a lexical pathway or link between the L2 and L1 word representations. This link is bidirectional, but as a result of the manner in which L2 is learned (L1 translation equivalents are often provided in order to understand L2 words and only occasionally the other way around), the link is stronger from the L2 to L1 lexical representations than from the L1 to the L2 lexical representations. As proficiency increases direct connections between the L2 words and their meanings are established and strengthened with time and L2 use. However, the conceptual links with L1 words remain stronger.

The revised hierarchical model is focused on L2 vocabulary development by individuals with a well-established knowledge of their L1. By contrast, the extended competition model described above, is a model concerned with all aspects and forms of language learning in L1 and L2 (i.e., lexical, phonological, and morphosyntactic learning in L1 and L2 by children and adults).

The *psycholinguistic model of vocabulary acquisition* (Jiang, 2000) divides the vocabulary acquisition in L2 in three stages: formal stage of lexical development, lemma mediation stage, and second language integration stage. At the formal stage of lexical development only the formal characteristics (spelling and pronunciation) are learned and therefore represented in memory. This is because the meaning of words is provided by the first language through translations or definitions rather than extracted from the context. Using L2 words at this stage requires the activation of the links between the L2 words and their L1 translation equivalents. The lemma mediation stage occurs after prolonged experience with the L2. Here the semantic and syntactic information of the L1 word is borrowed by the L2 word. The representation of L2 words at this stage involves the form of the L2 word and the meaning and syntax associated to its L1 translation equivalent. It is argued that despite the use of the meanings originally linked to the L1 words, the L1 lexical forms do not play a critical role in the L2 word use at this stage. The second language integration stage occurs when L2 lexical competence is fully developed. This is when meaning, syntax, morphology, and L2 form are used in an integrated manner. Here the representation and processing of the L2 word is similar to the L1 word.

The psycholinguistic model of vocabulary acquisition as the revised hierarchical model also explains L2 vocabulary development once the L1 lexicon has been established. However,

while the psycholinguistic model of vocabulary acquisition attends to the representation of the L2 words, the revised hierarchical model emphasizes the cognitive processes and changes underlying learning. The revised hierarchical model has also been one of the more inspiring models in bilingual research over the last 15 years generating over 200 studies testing hypotheses motivated by the model (Brysbaert, Verreyt, & Duyck, 2010; Kroll, van Hell, Tokowicz, & Green, 2010).

Conclusions

Three major determinants of bilingual vocabulary acquisition have been addressed in this review: the influence of age in the acquisition of foreign words, the effectiveness of different methods of instruction, and how the characteristics of the words to-be-learned have been used to select the vocabularies for instruction programs and how some characteristics might facilitate learning. However, some issues related to L2 word learning have been inevitably left out. Amongst them is the relative difficulty of learning a second language that does not have close proximity to the first language (e.g., German and English languages are closer and are therefore easier to learn as L1 and L2 than English and Japanese). A study carried out by the Foreign Service Institute of the US Department of State reported that out of the 63 languages analyzed the five languages more difficult to learn by English native speakers were Arabic, Cantonese, Mandarin, Japanese, and Korean (Jackson & Kaplan, 2001). This and other issues such as similarities and differences between learning written or auditory presented words and the rate of vocabulary acquisition in relation to second language proficiency also deserve further attention.

SEE ALSO: Approaches to Second Language Vocabulary Teaching; Bilingual/Immersion Teacher Education; Bilingualism and Age; Competition Model; Critical Period; Early Bilingualism; Formal Models of Bilingual Lexicons; Implicit Learning in Second Language Acquisition; Incidental Learning in Second Language Acquisition; Organization of the Second Language Lexicon; Second Language Word Difficulty; Vocabulary Acquisition in Second Language Acquisition

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Vocabulary Acquisition in Second Language Acquisition

PAUL NATION

A well-balanced vocabulary course provides opportunities for acquisition through meaning-focused input, meaning-focused output, language-focused learning, and fluency development. Three of these learning strands are communicative in that they involve learners focusing on the comprehension and production of messages. The strand of language-focused learning, as its name suggests, involves deliberately focusing on language features such as sounds, spelling rules, vocabulary, multiword units, grammar, and discourse. The language-focused learning strand also involves training learners in the use of learning and coping strategies (Nation, 2007). This review focuses on deliberate and analytical approaches to vocabulary learning.

In vocabulary studies, there is a very long history of deliberately focusing on vocabulary with the finding that the deliberate study of vocabulary is a very effective and efficient way of rapidly increasing a learner's vocabulary size (Thorndike, 1908; Webb, 1962; Crothers & Suppes, 1967; Griffin & Harley, 1996). A substantial proportion of this research was carried out in psychology departments and its main focus was on the investigation of learning and memory rather than second or foreign-language vocabulary development.

Such deliberate and largely decontextualized learning has been criticized for not resulting in the kind of knowledge that is needed for normal language use, namely implicit knowledge. Implicit knowledge is characterized by being subconscious, fluently available, and well integrated with the learner's lexical system. Recent research (Elgort, 2007, 2011), however, has shown that deliberate vocabulary learning directly results in both implicit and explicit knowledge. This research does not deny the value of message-focused incidental learning. Such learning is also likely to result in implicit knowledge and can help develop fluency of access to deliberately learned items as well as enrich knowledge of them. Let us look briefly at the very important set of studies by Elgort, before examining vocabulary-learning strategies in more detail.

Elgort conducted three different kinds of priming tasks involving meaning priming and form priming. Here is an example of one such task. A learner is sitting in front of a computer screen. A word briefly flashes up on the screen (this is the prime) and this is followed by another word (this is the test word) that stays there until the learner decides whether the test word is a real word or not. The learner indicates this by pushing one key if it is a real word or a different key if it is not.

If the prime word is related to the test word, for example *milk* priming the test word *cow*, the learner will respond more quickly than if the test word, for example *ladder*, is not related to the prime *milk*. The prime words appear for only a fraction of a second, and in one of the studies, four fifths of the learners when questioned later did not realize that they had been primed. Nevertheless, they consistently responded faster to test words related to the primes than to test words not related to the primes and to nonsense words.

The words which were used as primes in the three studies were deliberately learned words that had been studied using word cards in the week preceding the experiment. These were specially created words that followed the spelling patterns of English, but which represented previously unfamiliar concepts, such as "a shallow tub used for mixing small amounts of concrete or for washing tools on a building site." As these were words

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and meanings specially created for the experiments, learners could not have had any previous knowledge of them. The fact that these deliberately learned words successfully functioned as primes showed that they were subconsciously and fluently available (there was not enough time to retrieve them deliberately and many of the learners did not consciously know that they had briefly appeared as primes), and that they had been well integrated into the existing lexical system because they successfully primed related words.

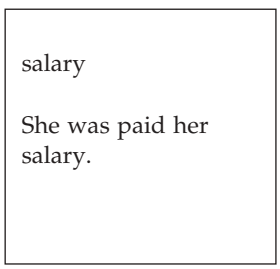
The findings of this research are important because they show that, unlike grammar, deliberately learned vocabulary can directly enter implicit knowledge. Thus the deliberate learning of vocabulary directly results in the kind of knowledge needed for normal language use. Presumably, this finding will also apply to multiword units learned as vocabulary items (Steinel, Hulstijn, & Steinel, 2007).

The strategy of learning words using word cards is well supported by other research as well. The findings of such research provide the following guidelines for the strategy.

The Word-Card Strategy

Learning words from cards involves writing a word on one side of a small card (about 4 cm × 2.5 cm) and writing its first language translation on the other side. Learners usually keep the cards in packs held together by rubber bands and, when they have a few free moments, go through the cards and try to recall the meanings. Here is an example of a word card for an Indonesian student:

Front (the word to learn)



Back (the L1 translation)

Although learning using word cards is very effective, word cards should only be seen as one of the first steps in learning a word. There are several reasons for this:

- There is more to knowing a word than knowing its translation.
- Learning a word is usually a cumulative process, not a one-off piece of learning.
- Learners should not only know words: the words also have to be readily available for use.

However, learning to recognize the form of a word and its translation is a very good step toward knowing that word. Research on vocabulary learning provides useful indications of how to learn from vocabulary cards most effectively (Nation, 2001, pp. 296–316).

1. Write the word on one side of the card and its translation on the other side. This forces retrieval of the item after the first meeting. Each retrieval strengthens the connection between the form of the word and its meaning (Baddeley, 1990). Seeing both forms together does not have this effect. Writing words in a notebook takes away the opportunity for retrieval because both the word form and the meaning can be seen together.
2. Initially start with small packs of cards, about 15 or 20 words. Learn difficult items in small groups to allow more repetition and more thoughtful processing. As the learning gets easier, increase the size of the pack (Crothers & Suppes, 1967). Anything more than 50 usually tends to be unmanageable.
3. Space the repetitions. The best spacing is to go through the cards a few minutes after first looking at them, and then an hour or so later, and then the next day, and then a week later, and then a couple of weeks later (Pimsleur, 1967). This spacing is much more effective than massing the repetitions together into an hour of study. The total time taken may be the same but the result is different. Spaced repetition results in longer-lasting learning.
4. For words that are difficult to learn, use depth of processing techniques like the key-word technique (Pressley, 1977). Think of the word in language contexts and situational contexts. Break the word into word parts if possible. A simple picture can also be very helpful. The more associations you can make with an item, the better it will be remembered.
5. Make sure that words of similar spelling or of related meaning are not together in the same pack of cards. This means days of the week should not all be learned at the same time. The same applies to months of the year, numbers, opposites, words with similar meanings, and words with the same superordinate such as items of clothing, names of fruit, parts of the body, and objects in the kitchen. These items interfere with each other and make learning much more difficult (Higa, 1963; Tinkham, 1997; Waring 1997).
6. Keep changing the order of the words in the pack. This will avoid serial learning where the meaning of one word reminds you of the meaning of the next word in the pack.
7. Say the word aloud to yourself. This helps the word form to enter long-term memory.
8. Write collocates of the words on the card too where this is helpful. This particularly applies to verbs. It is better to learn some words as part of a phrase.

As mentioned above, the key-word technique has proven to be a very useful way of helping words to stay in memory (Ellis & Beaton, 1993). Numerous experiments have shown that this technique increases the efficiency of vocabulary learning by around 25%. Except in a few predictable cases, the technique has no negative effects on the pronunciation or spelling of words learned by this technique.

There are four parts to the technique:

1	2	3	4
The foreign word	First language key word which sounds like the foreign word	Mental image of the meaning of the key word and foreign word	Meaning of the foreign word

Step 2 provides the link to the form of the word and Step 3 provides the meaning link.

Let us look at an example. Here, the four parts have numbers to match the four parts of the technique. When learning that the meaning of (1) *succumb* is (4) to give in, an Indonesian learner of English might use (2) the key word *suka* which means "to like," because this sounds like *succumb*. The (3) image could be someone being happy at having to give in to temptation.

1	2	3	4
succumb	suka	being happy at having to give in to temptation	to give in

The key-word technique works because it makes learners process more than one feature of a word and this processing is not superficial in the way that rote repetition is superficial. The only limit is the learner's imagination.

The key word does not have to sound exactly like the foreign word, and it does not have to be like all of the word. If the form of the key word is like the beginning of the foreign word, then that is usually enough. Initially, learners need to practice thinking of key words for many different foreign words under the guidance of the teacher. Explaining the technique to learners is not enough. The technique need not be used with every word, only those that prove difficult to remember.

Learning from word cards is one step on the way to learning a word, but it is not sufficient on its own. Learners also need to meet vocabulary in meaning-focused input, meaning-focused output, and fluency-development activities.

Learning Using Word Parts

About 60% of English words come from French, Latin, or Greek (Roberts, 1965), and many English words have prefixes, stems, and suffixes that may also occur in other words. Becoming familiar with the meanings and forms of common word parts can help learners remember words. This strategy is useful when learners come across a new word that contains parts they already know. First the learner needs to find the meaning of the word, by guessing from context, by consulting a dictionary, or by asking somebody. The learner then looks at the word to see if it contains parts which are familiar. If it does, then the third step is to relate the meaning of the known parts to the meaning of the word.

To use the word-part strategy, the learner needs to know the forms and meanings of the most common word parts which may be helpful for remembering the meanings of words (Stauffer, 1942). Surprisingly, the most useful parts tend to be prefixes. Word stems, for example the *cess* in *process*, are often not very helpful. Prefixes seem to have retained their meaning much better than stems have.

Here are some examples:

Exceptional: The prefix *ex* means out or away. Something exceptional is out or away from the usual.

Retain: The prefix *re* means back or again, and *tain* means to hold. When we retain something we hold it back. Note that *tain* occurs in other words, such as *attain*, *sustain*, *contain*.

Comprehensive: The prefix *com* means together. When something is comprehensive, it brings together all of the things involved.

These explanations may seem a little awkward, but relating unknown items to known items leads to deeper processing, which in turn makes learning more secure.

Learning From Dictionaries

In many ways dictionary use supports the other strategies we have looked at. It provides meanings for the word-card strategy, and it provides meanings for word-part analysis. In addition, dictionary use can also be a strategy in itself to help vocabulary learning.

There are three kinds of dictionaries that a second or foreign-language learner may use. The word definitions in monolingual dictionaries are all in the second language. The problem with monolingual dictionaries is that learners need a vocabulary of at least 2,000 words to be able to understand the definitions. However, they contain a large amount of very useful information about the meaning and use of words.

Bilingual dictionaries use the learners' first language to give the meanings of the words. This makes definitions easy to understand and thus bilingual dictionaries are very popular among learners who are in the early stages of language learning. Surprisingly, high-proficiency learners keep using bilingual dictionaries even though they could manage monolingual dictionaries. Bilingual dictionaries differ a lot in quality but they are a very important learning tool.

A less common but very useful dictionary is the bilingualized dictionary. Usually this is a monolingual dictionary that has the first language meanings of the words added to it. It combines the best features of bilingual dictionaries with those of monolingual dictionaries. Learners generally do better with bilingualized dictionaries because they allow learners easy access to the meaning as well as a lot of useful supporting information (Laufer & Hadar, 1997).

Research on dictionary use indicates that learners tend not to make the best use of the wide range of information available. Learners' dictionaries can become learning dictionaries if they are used strategically.

1. Before looking up an unknown word, try to guess what the word might mean from the context clues. This will help when having to choose a particular sense listed in the dictionary.
2. When looking up the meaning of a word, look at all the senses in the entry and see if there is a common underlying meaning running through the different senses. For example, *interpret* can mean (a) to explain the meaning of a difficult text, (b) to understand the purpose of something such as a gesture, (c) to translate from one language to another, (d) to convey the spirit of a work of art as in interpreting a dance. All of these share the sense of carrying the meaning of something from one form to another. Seeing this underlying meaning then makes the range of uses of the word accessible to the learner.
3. When you have found the right meaning, look at the example sentences containing the word in the dictionary and try to visualize the meaning of these sentences. Also think of a situation when you might use these sentences.
4. If you are using your own dictionary, use a pencil to put a small mark next to the word to show that you have looked it up. If you find that you look up the same word again, it is clearly a good idea to put this word on a word card and deliberately learn it.
5. Some dictionaries have frequency markers next to the most useful words. The *Longman Dictionary of Contemporary English* uses letters and numbers; S1 means the word is in the first 1,000 words of spoken English, while W3 means it is in the third 1,000 words of written English. The *COBUILD* dictionary uses diamonds; the more black diamonds

there are, the more frequent and useful the word is. Markers like these provide a very useful guide to the value of spending time deliberately learning a particular word. Teachers should help learners to become skillful at interpreting these markers and acting on the information they give.

Learners' dictionaries would be greatly improved as learning resources if they included word-part information that could be used for mnemonic purposes, and if they explicitly described the core meanings of words. Research by Boers and his colleagues (see for example Boers, Eyckmans, & Stengers, 2007) has shown the value of giving attention to the etymology of multiword units and learners' dictionaries could easily include references to this.

Evaluating Activities for Deliberately Learning Vocabulary

Analyzing teaching techniques is a very important area of research because its goal is to work out which techniques best help learning and which features of techniques best help learning. Because there is a reasonably large number of vocabulary-teaching techniques and activities, there is a real choice between which ones to use. Which ones are likely to work well? Why are they likely to work well? Can the features which make them work well be used in other techniques to improve them? Technique analysis thus has very useful practical goals, and finding effective systems of technique analysis can help improve teaching and learning.

The best-known and best-researched way of analyzing vocabulary teaching techniques is Laufer and Hulstijn's (2001) involvement-load hypothesis. Involvement load involves three factors: need, search, and evaluation. Each of these factors may be absent (0), present with moderate strength (1), or present with full strength (2).

Need considers if the unknown word is needed to complete the task. Search considers whether the learner has to search for or retrieve the meaning or form of a particular word. Evaluation examines whether the task involves having to compare the form or meaning with other possible words or meanings in order to choose the most suitable one for the context. The sum of the strengths of these three factors represents the involvement load of the task. The greater the involvement load, the better the learning.

The involvement-load hypothesis has been directly tested in at least four published experiments (Hulstijn & Laufer, 2001; Folse, 2006; Keating, 2008; Kim, 2008), and in one less explicitly (Webb, 2008). These studies have provided support for the testability of the hypothesis, though not always support for the hypothesis, and they have shown that other factors like time on task and repetition need to be considered. This analytical approach to investigating vocabulary-learning activities has a lot of potential and provides a useful starting point for experimental and observational research. Not only does it lead to a deeper understanding of how teaching activities work, it also allows for the adaptation and improvement of such activities.

Deliberate and analytical approaches to vocabulary learning speed up vocabulary learning, strengthen knowledge, and also provide the kind of knowledge that is needed for normal language use. It is important that such approaches are balanced by more communicative and fluency-focused activities so that deliberate learning is not the only or major means of learning. Although deliberate vocabulary learning is a highly effective way of increasing vocabulary size, it is only one of a range of complementary ways of developing proficiency.

SEE ALSO: Formulaic Language and Collocation; Formulaic Sequences; Teaching Vocabulary

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Vocabulary and Language for Specific Purposes

AVERIL COXHEAD

Language for specific purposes (LSP) can be defined as "the teaching and research of language in relation to the communicative needs of speakers of a second language in facing a particular workplace, academic, or professional context" (Basturkmen & Elder, 2004, p. 672). Vocabulary is a core topic in this research for many researchers (Robinson, 1991; Harding, 2007) and is important because learners need to "express concepts in their fields" (Basturkmen, 2006, p. 69). Ongoing research into vocabulary and LSP sheds light on lexis in both speaking and writing in a range of specialized contexts. This entry explores several key concepts in this research and looks at some examples from curriculum design.

Investigating Vocabulary and Language for Specific Purposes

It is important for teachers and learners to find out what vocabulary is encountered in different contexts, what company it keeps, and what might be the most efficient way of teaching and learning it. A key point related to specific purpose is technicality of vocabulary because it tends to "correlate with narrow distribution" (Ward, 2009, p. 674). Needs analyses are often a first step for LSP teachers as a way to narrow the possibilities of deciding the classroom focus. Unfortunately, not all teachers have ready access to corpora such as the Corpus of Professional English (www.perc21.org/corpus_project/index.html) with its 17 million words of academic journal articles divided into 22 fields, including agriculture, computer science, engineering, food science, medicine, and telecommunications. Another problem for teachers is the number of terms used to describe specialized vocabulary, including "specialized," "technical," and "semi-technical." Mudraya (2006, p. 242), for example, defines lexical items that have both nontechnical and technical senses as "sub-technical" vocabulary.

Scholars such as Hyland (2002) stress the need for specificity in ESP (English for specific purposes). Basturkmen and Elder (2004) state that there is complexity resulting from variations between different groups in ESP. An ESP teacher might face developing a course on aviation for Turkish learners (Sullivan & Girginer, 2002) or teaching a class of Thai civil engineering students (Kaewpet, 2009). Each situation brings its own set of unique variables, including the specialized vocabulary of a particular field, the learners' first language(s), proficiency in the second language, time available for studies, and goals of the learners. Kaewpet (2009), for example, analyzes the communicative needs of Thai civil engineering students by gathering data from a wide range of stakeholders. This researcher finds that students need to be able to talk about everyday tasks, read textbooks, read technical manuals, and write reports, and concludes that these needs are driven by occupational rather than educational reasons. This study finds that professional Thai conversations are likely to include technical terms in English when they are taking place in Thai. This finding suggests that students need to learn to recognize and use technical engineering terms in spoken language and not just written, even when working in their first language context.

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Read (2007, p. 116) states that when it comes to studying specialized vocabulary, "We have lacked systematic procedures for identifying technical words in particular texts." However, some research by Chung and Nation (2003, 2004) has begun to address this lack. In a study of the technical vocabulary occurring in specialized texts, Chung and Nation (2003) used a four-step scale to rate the words in two textbooks, one from applied linguistics and the other from anatomy. The scale begins at Step 1 with words with a meaning with no particular connection to the subject area, such as *between*, *amounts*, and *early*. Step 2 comprises words related to the subject area but only minimally, such as *supports*, *part*, and *protects* (in the case of anatomy). Step 3 comprises words closely connected to anatomy, such as *neck*, *heart*, and *breathing*. Step 4 contains words specific to anatomy and not generally known, such as *fascia* and *pedicle* (p. 105). Steps 3 and 4 are defined as the technical vocabulary.

This new definition of technical vocabulary resulted in categorizing one word in three in an anatomy text as technical in nature, compared to one in five in an applied linguistics text. The authors partially attribute this result to the higher degree of accessibility of applied linguistics. This finding is startling in two ways. First, previous estimates of technical vocabulary in texts placed the number much lower than 33%. Second, the study showed that the amount of technical vocabulary varied in different subject areas, meaning that specialists in one field might face a far bigger learning task than specialists in another field. In another study, Chung and Nation (2004) describe, compare, and evaluate three other ways of identifying technical vocabulary in texts. These methods are making decisions based on lexical items in a technical dictionary, looking at clues about the words in a text (such as definitions of technical terms), and using computer-based corpora.

Specialized vocabulary can include everyday words as well as highly specialized words. To use an example from Basturkmen (2006, pp. 63–4),

> We may find that in general usage the word "present" is very often used as a transitive verb – for example, "We presented the results" – and that this verb is rarely followed by the preposition "with." However, if we established a corpus of texts written or spoken by medical practitioners, we might find that "present" is often followed by "with" – for example, "She presented with severe weight loss" and "The patient presented with pain in the upper right molar." From this we might conclude that "present with" occurs regularly in medical texts and that it carries a specific meaning in this discipline. Doctors report this meaning as roughly synonymous with the phrase "having symptoms."

Sutarsyah, Nation, and Kennedy (1994) looked at the lexis of an economics textbook and found that a group of 34 words including *cost*, *supply*, and *average* occurred on average once every 10 words in the text. Approximately 20 of these words were clearly essential to the specialist discipline of economics but also occurred in the first 1,000 words of West's (1953) *General Service List of English words* (GSL), a well-known and widely used list. These 20 words occurred with higher frequency in the economics text than in a general academic corpus. Mudraya (2006) finds that words such as *solution* occur more frequently in their nontechnical than technical sense in a written engineering corpus. Pinna (2007) looks at single words, two-word clusters, and three-word clusters in dentistry and finds examples of key words such as *bone* linked to other words like *graft* and *cortical*. Such information can aid fluency and help second language speakers sound as though they belong to a community of language users who make meaning through using the same vocabulary in specific ways.

These studies and other recent corpus-based research endeavors are all essentially looking for an answer to the same question: At what point is it better for learners with special purposes to start focusing on learning the specialized vocabulary of their chosen field?

Basturkmen (2006) outlines two fundamental perspectives on the point of language for specific purposes. One is that "all language is specific purpose" (Basturkmen, 2006, p. 17). That is, "All English exists as some variety or another" (p. 18). Exponents of this perspective argue that specialization from early stages benefits the language learner and can start early on. One example is Ward's (2009, p. 172) English word list of basic engineering for lower-proficiency undergraduates. In another study, Ward (1999) examined engineering texts in order to determine the number of words students in this subject would need to know. His research suggested the case for early specialization and resulted in a targeted word list of 2,000 word families that returned 95% coverage of his engineering corpus.

The other perspective on language for specific purposes (Basturkmen, 2006) is that there is a "common core" language or a "general pool of language of high-frequency items that predominates all uses of language" (p. 16). Support for this point of view comes from corpus-based studies that illustrate the coverage of general service vocabulary over a range of texts (Nation, 2006). The Academic Word List (AWL) (Coxhead, 2000) looked beyond West's (1953) first 2,000 words in the GSL for lexical items that occurred across 28 academic subject areas in four disciplines. Various studies have examined the coverage of the AWL in different specialized corpora, such as medical research articles (Chen & Ge, 2007), agricultural science articles (Martínez, Beck, & Panza, 2009), and business English (Konstantakis, 2007). Coxhead and Hirsh (2007) developed a pilot science-specific word list using the GSL and AWL as baseline word lists.

Teaching Vocabulary and Language for Specific Purposes

Teachers need to be aware of the purposes and methods of any corpus study into LSP before bringing the research findings into the classroom (Harding, 2007). For example, the AWL (Coxhead, 2000) was developed from a written corpus of academic texts and the list was intended for use by EAP (English for academic purposes) teachers and students preparing for university study. Harding (2007, p. 53) also points out that vocabulary learning in specialized contexts is not just focused on technical words. He writes, "As well as building and practicing technical and semi-technical lexis, vocabulary teaching in LSP will involve a number of sub-skills: deducing meaning from context, word-building, understanding appropriate register and genre (including formal vs. informal, receptive vs. productive use)."

Harding (2007) provides a range of vocabulary learning activities for LSP, including *personal learning dictionaries* (pp. 54–5) whereby learners compile paper- or computer-based records of target words of their special field. Harding describes various approaches to compiling and using dictionaries for learning. This activity builds on concepts such as different aspects of word knowledge for all four skills, research into the effectiveness of word cards for fast learning (see Nation, 2001), and recognition that LSP learners are likely to be independent adults with their own priorities and principles for learning.

If teachers and learners do have ready access to computers and the Internet, they can conduct their own studies into the nature of the specialized vocabulary. Using Tom Cobb's Compleat Lexical Tutor (Cobb, *n.d.*), for example, students can search and compare the use of target words in several specialized corpora. Harding (2007, pp. 67–71) includes corpus-based investigations by learners, whereby learners follow relatively detailed instructions on conducting their own research using targeted corpora on line. Popescu (2007) looks at teaching business collocations through concordancing and has students building their own specialized dictionaries. Greaves and Warren (2007) use Concgram, a program which highlights "all of the associated words of a concgram in each concordance line" (p. 290). The following example sentence shows collocates close together, "Strong government is a prerequisite for *economic development*," while the next example sentence shows collocates

within several words of each other, "to study political, *economic* and social *development*" (2007, p. 299). These examples show how technical words can co-occur with more everyday words, and that learners and teachers need to also look beyond near collocates to see patterns in the specialized vocabulary in texts.

More examples of specialized vocabulary in online teaching and learning are appearing. Chujo, Oghigian, Nishigaki, Utiyama, and Nakamura (2007) describe the development of e-learning materials for Japanese students of business English using target words from an intermediate level business word list. Each unit contains target words that are presented and practiced in both meaning- and form-based tasks. A wide variety of activities are rapidly becoming available online through publishers and other sources, often as companion Web pages for books. Two readily found examples come from Cambridge University Press and Longman Pearson. Cambridge University Press's Web sites on professional English provide learning activities on topics such as international legal English. Students might match words and definitions, or teachers could use ready-made materials that focus on current terminology such as *corporate social responsibility* or *hedge funds* (www.cambridge.org). Pearson Longman provides materials on topics such as intelligent business. These units contain reading-based, vocabulary-focused tasks such as matching words and phrases with in-text meanings. The intelligent business example includes target words such as *pundit*, *the lion's share*, and *all things being equal* (www.intelligent-business.org).

LSP dictionaries are an important resource for teachers and learners. They are primarily designed for a variety of specialized audiences and are both online and paper-based. Some focus on the language of a particular academic discipline, such as linguistics, while others support an area of professional expertise, such as law. They are useful for interpreting in specialized contexts. It is vital to know how specialized dictionaries are compiled. Chung and Nation (2004) point out that it can be difficult to compare the results of one study using a technical dictionary with the results from using a different dictionary in the same field. Also, learners need to know which dictionary will best suit their needs.

In conclusion, vocabulary for specific purposes is an important and wide-ranging area of research and teaching. Some studies have looked into the nature of specialized vocabulary itself and used a variety of ways to locate these words. Other studies have focused on one particular discipline or area of professional endeavor. All of these studies argue that specialized vocabulary is important, none more cogently than Woodward-Kron (2008), who, in a longitudinal study of undergraduate students' academic writing in education, argues,

> The specialist language of a discipline is intrinsic to students' learning of disciplinary knowledge; students need to show their understanding of concepts, phenomena, relations between phenomena etc. by incorporating the specialist language and terminology of their discipline into their writing accurately. They also need to adopt the specialist language in order to make meaning and engage with disciplinary knowledge. (p. 246)

In a field where learner needs are so clearly driven by specific professional and academic contexts, many more questions on the nature of specialized vocabulary still remain.

SEE ALSO: Corpora in Language for Specific Purposes Research; Corpus Analysis of Written English for Academic Purposes; English for Business; English for Medical Purposes; English for Science and Technology

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Vocabulary and Reading

ANA PELLICER-SÁNCHEZ

Vocabulary and reading are characterized by a reciprocal and mutually supportive relationship. A common way of looking at this relationship has been to focus on the dual direction of its effect (Hu & Nation, 2000). On the one hand, vocabulary is one of the necessary elements for successful reading comprehension, and, on the other hand, reading contributes to vocabulary acquisition and growth. Vocabulary development should therefore be viewed as both a cause and a consequence of reading abilities (Stoller & Grabe, 1993). The two directions of this reciprocal relationship will now be discussed in turn.

Vocabulary for Reading

Looking at one of the directions of this relationship, vocabulary has been understood as one of the main predictors of reading success. "No text comprehension is possible, either in one's native language or in a foreign language, without understanding the text's vocabulary" (Laufer, 1997, p. 20). There are numerous research studies showing this strong relation between different measures of vocabulary and reading comprehension, both in the first language (L1) (Anderson & Freebody, 1981) and in the second language (L2) context (Laufer, 1991).

One of the most important issues in the examination of the role of vocabulary knowledge for reading is that of the amount of vocabulary needed for successful reading. Achieving successful comprehension will obviously depend on the purpose for reading, namely, whether reading for gist, reading for specific details, and so forth. In the L1 context we may assume that readers would already have the required vocabulary size, as long as the reading is grade-appropriate. However, since we cannot make such an assumption for L2 readers, the issue of vocabulary size for reading acquires particular importance in the L2 context. How many words, then, are needed for L2 reading? The answer to this question rests on two main points: first, the percentage of words in a given text that we need to know in order to achieve full, successful comprehension ("lexical coverage"); and, second, the vocabulary size—that is, the number of word families—we need to know for achieving such lexical coverage.

It was initially suggested that for achieving successful reading comprehension, students need to know around 95% of the words in a text (Laufer, 1989). A lexical coverage of 95% means that there would be one unknown word in every 20 running words in a text. This basic coverage figure was generalized to a range of learners and learning conditions and persisted for over a decade. However, more recent studies suggest that 95% coverage is not enough to ensure successful comprehension and that 98% is a better and more realistic figure for the lexical coverage required to understand a text (Hu & Nation, 2000). With 98% coverage, it will be easier for a reader not only to obtain a better understanding of the text, but also to guess any unfamiliar words. Nevertheless, other even more recent studies show that there is no clear threshold, but a linear progression with larger coverages leading to better comprehension (Schmitt, Jiang, & Grabe, 2011). Thus there is no one, unique percentage that is required for successful reading comprehension, but it appears to be somewhere between 95% and 98% coverage.

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This leads to the second key question: how many words do we need to reach high lexical coverage in texts? There have been many different attempts to determine the amount of vocabulary needed for successful reading comprehension, and all results seem to point toward the same conclusion: learners need to know a large number of word families (groups of words which share the same root and are semantically related, e.g., *vision*, *visualize*, *visual*, *visually*, *visualization*, etc.) in order to be able to independently read authentic texts in English without vocabulary impeding comprehension.

Based on the 95% coverage figure discussed above, Laufer (1989) calculated that learners need around 3,000 word families to begin to read authentic materials, generally texts written for L1 adult readers and not particularly designed for L2 learners, while 5,000 word families are necessary to read them independently. However, later studies showed that these figures were not sufficient to provide the preferred 98% coverage and that, therefore, for reaching such coverage a larger number of words is required. Nation (2006), for example, explored a variety of written texts and examined the vocabulary size requirements needed for reaching the 98% coverage in those texts and found that this lexical coverage was achieved by knowing 8,000–9,000 word families.

Despite the need and usefulness of these estimates of vocabulary size for successful reading, it is important to consider some of the limitations of such figures. Most research on vocabulary size estimates has been done with English but, due to its unusually large and complex vocabulary, it is important to be cautious when generalizing vocabulary size estimates to other languages, which might require smaller vocabulary sizes (Nation & Meara, 2002).

It is also important to note that vocabulary per se does not guarantee successful reading comprehension. Various factors exert an important influence in the reading comprehension process. Background or prior knowledge, for example, has been shown to be crucial in facilitating good reading comprehension (Bernhardt, 1991). The use of general reading strategies (e.g., guessing unknown words, inferencing, recognizing the type of text and text structure, and grasping the main idea of the paragraph) has also been highlighted as a key factor leading to successful reading comprehension (Laufer, 1997).

Reading for Vocabulary

Looking at the converse direction of the vocabulary–reading relationship, reading is an effective means for vocabulary growth, both in L1 and L2 environments. Although words are also learned from spoken discourse, learning from written discourse has been much more highly researched and has been shown to be a major source for new vocabulary learning.

L1 Vocabulary Acquisition From Reading

The role of reading for vocabulary acquisition has been particularly widely explored in L1 contexts. L1 children initially learn vocabulary from mainly verbal exposure (Ingram, 1989), but once they begin to read, learning incidentally from reading appears to account for most L1 vocabulary acquisition (Nation & Meara, 2002).

Numerous studies have provided empirical evidence to support the idea that new vocabulary can be learned incidentally from different reading tasks and that it constitutes a substantial proportion of children's vocabulary growth (Freebody & Anderson, 1983; Nagy, Herman, & Anderson, 1985; Stanovich, 1986). In one of the best illustrations of L1 incidental vocabulary acquisition, Saragi, Nation, and Meister (1978) showed that their English-speaking participants had learned a substantial number of the 90 Russian slang words (called "nadsat") which appeared in the book they had read (*A Clockwork Orange*,

by Burgess, 1972), demonstrating that considerable incidental vocabulary learning occurred from reading authentic materials.

L2 Vocabulary Acquisition From Reading

Although the majority of research studies show substantial amounts of vocabulary acquisition from reading in an L1 context, we cannot assume a similar state of affairs in an L2 learning environment. The clear and substantial differences between L1 and L2 reading processes make it impossible to directly transfer L1 reading research results to L2 contexts. These differences include linguistic and processing differences (e.g., different levels of language proficiency), individual and experiential differences (e.g., the age of learners), and sociocultural and institutional differences (see Carrell & Grabe, 2002 and Grabe & Stoller, 2002 for a more detailed discussion of L1 and L2 reading differences).

What is really referred to when discussing vocabulary acquisition and lexical gains from reading? The majority of studies in the area have traditionally focused on students' acquisition of new words' meaning, typically using multiple-choice or translation tasks (Pitts, White, & Krashen, 1989; Waring & Takaki, 2003; Brown, Waring, & Donkaewbua, 2008), and although still showing worthwhile incidental acquisition of new L2 words from reading, most suggest that the number of words learned is relatively modest.

However, it is important to consider that there is much more to know about a word than this form–meaning link, namely, grammatical information, spelling, written form, spoken form, associations, collocations, and so forth. Fortunately, researchers have started to call attention to this idea of the different components of vocabulary knowledge and, consequently, a number of more recent studies have looked at the acquisition of various lexical aspects from reading, including spelling ability (Day & Swan, 1998); spelling, meaning, and grammatical characteristics (Pigada & Schmitt, 2006); spelling recognition, recall of grammatical class, meaning recall, and meaning recognition (Pellicer-Sánchez & Schmitt, 2010); and orthography, association, syntax, grammatical functions, and form meaning (Webb, 2007). These multi-aspect studies have indicated that reading can enhance a variety of word knowledge aspects and have demonstrated that vocabulary acquisition from reading is more diverse than the previous meaning-only studies indicated. This supports the idea that although the uptake of *new* words from reading is generally low, an important benefit of reading is the *consolidation*, *enhancement*, and *strengthening* of the partially known vocabulary. Reading is therefore still considered "the primary way that L2 students can learn on their own beyond the classroom" (Carrell & Grabe, 2002, p. 233).

Moreover, when dealing with this idea of the multiple dimensions of vocabulary knowledge, it is worth considering that L2 reading does not equally affect all the different aspects of vocabulary knowledge. Research seems to suggest that incidental vocabulary acquisition from reading has a larger effect on the ability to recognize words' meanings than recalling them, and that recognition knowledge seems to have better retention over time (Waring & Takaki, 2003).

The beneficial role of reading for incidental vocabulary acquisition can always be further increased by any type of more specific, focused, explicit exposure. The combination of both approaches—reading plus explicit follow-up activities such as comprehension questions or matching definitions with words in the text—has in general produced better gains and has nearly always proved to be more effective for vocabulary learning, as compared to reading on its own (Paribakht & Wesche, 1997).

Facilitative Factors for Successful Vocabulary Acquisition From Reading

The relationship between reading and vocabulary acquisition is not straightforward and a number of conditions and factors will affect its efficiency. For example, the linguistic

properties of the words themselves (e.g., their frequency, saliency, or cognate status) play a crucial role in their potential learning. The more frequent the word in the language, the more salient, or the closer to the L1, the more chances of learning it.

Another condition affecting the opportunity to learn words from context is the frequency of repetition in the text. A single exposure to an unknown word while reading does not guarantee its subsequent acquisition. Saragi et al. (1978) explored this factor and found that the minimum number of repetitions needed for learning a word from context was somewhere around 10. Later research studies seem to confirm that new words need to be met around 8 to 10 times for considerable learning to occur. Providing several repetitions of words and ensuring enough opportunities for recycling are key conditions for successful vocabulary acquisition from reading and its subsequent retention.

Just as was the case for achieving successful reading comprehension, in order to acquire new vocabulary from reading a high percentage of the words in the text must be known by the reader (Nation & Meara, 2002). However, at the same time reading materials should not be too easy for the reader, otherwise they will meet very few unknown words (Carver, 1994). It is therefore important, in order to maximize the opportunities for learning vocabulary from reading, to keep a balance between understanding most of the vocabulary in a text, but without the text being too easy.

At the level of individual differences, the ability to guess the meaning of words from context has been considered one of the most, if not the most, useful skills that comes into play in the process of vocabulary learning from reading, used by both L1 and L2 readers. However, it cannot be assumed that all students will necessarily be successful in its use. Research has shown a wide variation in the ability of learners to guess from context. Skilled guessers are good at knowing which clues to look for and where to find them in the context, but even when the learner is good at guessing from context, readers often make erroneous guesses, impeding the possibility of learning the new word's meaning. In addition to this, guessing from context is not a strategy that is equally applicable to all situations. The quality of the context is one of the main conditions for successful guessing, since not all contexts are equally informative. The context must provide enough and adequate clues to be able to guess a word's meaning (see Schmitt, 2000, and Nation, 2001, for a more detailed review on the conditions for successful guessing and inferencing).

Beside these linguistic and individual factors, perhaps the most important requirement relates to the amount and frequency of input. It is obvious that for all the above factors to be met, and to maximize the possible gains in vocabulary, learners need to get large, consistent, and sustained amounts of exposure. As Schmitt (2000) points out, "Reading can provide a good context for incidental learning, although only large amounts of it are likely to lead to any significant vocabulary improvement" (p. 158).

Reading Materials for Vocabulary Learning

Among the different types of reading materials and programs, a common distinction has been that between "extensive reading," that is, wide reading for pleasure in which the focus is on understanding the text, and "intensive reading," that is, reading which involves the close deliberate study of short texts (Nation, 2001). When deciding on the reading materials and programs to use, it is important not only to think about what students do with each reading activity, but also what students can gain from each activity. Extensive reading appears to be more beneficial for enhancing and consolidating the knowledge of partially known words, because it entails many exposures, multiple encounters, and the opportunity to recycle words (Waring & Takaki, 2003). In contrast, intensive reading seems to be more effective for learning new vocabulary, particularly the form–meaning link, because of the more explicit attention given to the words. However, it will probably not

lead to much depth of knowledge, simply because there is usually not enough time to cover the various word knowledge aspects.

For lower-level students, "narrow reading," that is, the reading of numerous authentic texts but all on the same topic, might be an appropriate option (Schmitt & Carter, 2000), since it will ensure important conditions like repetition of the topic-specific vocabulary, recycling, and familiarity with the topic, something that would not be that easy to find in unrelated stories. Narrow reading on a topic which is of real interest to the students will also have a positive effect on their motivation.

The use of authentic texts might not be appropriate for beginner students, who will benefit more from materials like "graded readers," books written with a controlled vocabulary and a limited range of grammatical structures and typically graded into a number of levels. The characteristics of the design of these series ensure important conditions in vocabulary learning like repetition, recycling, opportunities for consolidation, ease of topics, amount of input, words frequency, and so forth. Nowadays a number of publishers have interesting series of graded readers. *Penguin Readers* from Pearson Longman publishers are a good example of graded readers, starting with the "Easystarts" level, which contains 200 headwords, going up to 3,000 headwords in level 6, and with topics such as fantasy and adventure stories, celebrities' biographies, and adapted classics. The small vocabularies with which graded readers start (e.g., 200 headwords for *Penguin Readers* or 400 headwords for *Oxford Bookworms* series) means that even beginner students can start reading from the early stages of learning.

The selection of the best reading program and materials will depend on the overall learning environment and the specific learners' characteristics and needs. Through teachers' careful consideration of all the different factors outlined above, and the adequate and appropriate selection of reading materials and activities, the possibilities of mutual support and reciprocality between vocabulary and reading will be maximized, and both reading comprehension and vocabulary learning from reading will therefore be more likely to occur.

SEE ALSO: Approaches to Second Language Vocabulary Teaching; First Language Vocabulary Acquisition; Graded Readers; Incidental Vocabulary Acquisition; Multimedia Digital Engagements by Readers and Learners; Vocabulary Acquisition in Second Language Acquisition; Vocabulary Size in the First Language; Vocabulary Size in the First Language

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Vocabulary Learning Strategies

YONGQI GU

Vocabulary learning strategies (VLS) are intuitively appealing to teachers and learners. This is partly due to the difficulty and conspicuousness associated with vocabulary in language learning. Learners of a foreign language are confronted with vocabulary learning right from the very beginning; and it is a never-ending task. It is, therefore, practically useful and theoretically interesting to study the ways students go about learning vocabulary and to find out the effectiveness of various strategies.

VLS represent learners' conscious efforts in managing their own learning of vocabulary in order to make it more effective and more efficient, in increasing the vocabulary size and in being able to use the words learned. Studies of VLS in applied linguistics started in the late 1980s (Ahmed, 1989). VLS has now become a popular research topic.

What VLS Do Students Use?

Considerable efforts have been invested into discovering the range of VLS students naturally use. Bottom-up procedures are normally first used to elicit as many VLS as possible (e.g., Gu, 2003a). Top-down and interactive procedures are then used to put these strategies into theoretically plausible categories (e.g., Schmitt, 1997). This has resulted in a few taxonomies (e.g., Gu & Johnson, 1996; Schmitt, 1997). Table 1 shows one of these taxonomies which tries to include the whole range of VLS (Gu, 2010).

Are VLS Useful?

Most research so far has demonstrated a meaningful relationship between vocabulary learning strategies and learning results either through a correlational approach (e.g., Gu & Johnson, 1996; Kojic-Sabo & Lightbown, 1999; Fan, 2003) or by establishing strategy similarities and differences among learners with different degrees of success (Moir & Nation, 2002).

Two types of learning outcome measures have been used: language proficiency and vocabulary. Those who use the general language proficiency measure tend to find positive and significant correlations between VLS and language proficiency. For example, Mizumoto and Takeuchi (2008) investigated the effect of VLS on TOEIC performance among a group of Japanese students and found that, among a group of variables, "vocabulary learning strategies as a whole had the greatest influence on TOEIC scores" (p. 17). Gu and Johnson (1996) used both a general proficiency measure and a vocabulary size measure. However, despite a general positive correlation between VLS and English proficiency and vocabulary size, Gu and Johnson reported that some strategies aimed at vocabulary retention correlated significantly with vocabulary size but not with general proficiency. This suggests a dynamic and prolonged nature of vocabulary development from initial linking and storage of form–meaning pairs (reflected to a certain extent in passive vocabulary size) to a gradual shift of these words to the active stock, and finally to an integration of words into the general language competence. A wide array of VLS, therefore, should be used at different stages

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Table 1 Categories of vocabulary learning strategies

	Dimensions	*Categories*	*Strategies*
Metacognitive	Beliefs	Beliefs about vocabulary learning	Words should be memorized Words should be learned through use
	Strategies	Metacognitive strategies	Selective attention Self-initiation
Cognitive	Initial handling	Contextual Guessing	Wider/global context Immediate/local context
		Dictionary strategies	Dictionary strategies for comprehension Extended dictionary strategies Looking-up strategies
		Note-taking strategies	Meaning-oriented note taking Usage-oriented note taking
	Reinforcement	Rehearsal strategies	Use word lists Oral repetition Visual repetition
		Encoding strategies	Association/elaboration Visual encoding Auditory encoding Use word structure Semantic encoding Contextual encoding
	Activation	Active use	Activation strategies

of learning to commit words to memory and to automate the use of these words in real language use contexts.

The overwhelming majority of vocabulary measures in VLS studies have been some type of passive vocabulary size measure, in other words the number of words a learner can recognize. Probably due to the difficulty in designing an active vocabulary size measure, very few studies have investigated the effect of VLS on the development of active vocabulary.

Person, Task, Context, and Strategies

Research suggests that the choice, use, and effectiveness of VLS hinge on who the learner is, what the task at hand demands, and under what conditions the learning is taking place (Gu, 2003b). When learners find it difficult to learn a certain aspect of vocabulary, they will initiate the use of VLS. As such, some strategies are more related to the learner than to the task of learning, while other strategies are triggered by the learning task and are therefore closer to the task than to the person. Even the same learner attempting the same task may change strategies when s/he perceives the different demands of varied contexts.

Learners and VLS

Learners have their preferred ways of learning. Individual differences such as personality, learning styles, motivation, age, and gender differences, together with their differences in learning background and current level of language proficiency, determine to a large extent how a learner approaches a vocabulary learning task. These person-dependent factors are

relatively stable, and are usually more related to the management and control of learning, for example, planning, monitoring, and evaluating.

A number of studies have shown different approaches to vocabulary learning that are related to learning styles. Sanaoui (1995) identified two approaches to vocabulary learning, a structured and an unstructured approach. The first group approached vocabulary learning in a systematic way, setting criteria for the selection of words, engaging in self-initiated learning activities, keeping a systematic note of vocabulary items being learned, and regularly reviewing their records. The other group, by contrast, did little independent learning, kept minimal records of new words being learned, and relied heavily on classroom instruction. Moreover, they did not know what words to focus on, often depending on what the teacher wrote on the board. Sanaoui suggested that the structured approach showed better learning results than the unstructured approach. She also noted that the two approaches should be two ends of a continuum, and that most learners might fall somewhere in between the two ends. Likewise, in Parry's (1997) case study, one learner employed a "holistic" approach, paying attention to overall understanding, and another learner used an "analytic" approach, spending considerably more time on guessing, analyzing, and intentional learning of each new word. Parry concluded that flexibility in strategy use is needed because "both approaches are necessary but . . . neither is appropriate at all times" (p. 18). This pattern was confirmed by Gu (2003a) who showed that two Chinese learners achieved success in different styles, one in a holistic approach that was likened to a "freehand" style in Chinese painting, and the other achieving a similar level of success in a methodical and detail-oriented manner that was labeled as "fine brush."

Other learner-oriented studies of VLS include learners' self-regulation in vocabulary learning and gender differences in strategy use. Tseng, Dörnyei, and Schmitt (2006) examined "the learner trait of self-regulatory capacity" (p. 85) in vocabulary learning, and studied the subjects' self-regulatory strategies in vocabulary learning in terms of five dimensions of self-regulatory control: commitment, metacognitive, satiation, emotion, and environmental control. Oxford, Lavine, Hollaway, Felkins, and Saleh (1996) discovered that females were significantly more willing than males to try out new vocabulary learning strategies.

The Vocabulary Learning Task and VLS

Learning would not be strategic if a learner tried to use the same strategy for all purposes. In fact, analysis of the learning task at hand and matching task demands with the learner's own strategic resources are crucial features for strategic learning. The vocabulary learning task can be examined from various perspectives: vocabulary breadth, depth, and automaticity; active versus passive vocabulary; types of vocabulary; as well as stages of vocabulary learning. Different aspects of vocabulary are best learned through different strategies.

The lion's share of attention has been on vocabulary size/breadth, that is, the number of words a learner knows. Most research focuses on how effective various VLS are for the retention of paired associates between the form and one meaning of a word. By far the most studied strategies are various mnemonic devices such as the keyword method, where a sound-alike word in the L1 is associated with the target word and a visual image showing the L2 target word and the L1 sound-alike doing something together serves as the meaning link between the two. Despite robust evidence showing the superiority of mnemonic devices over other strategies such as rote repetition, learners are warned not to over-rely on these memory tricks (Gu, 2003b), simply because real vocabulary learning in a foreign language is well beyond the retention of form–meaning pairs.

In addition to comparing the effects of various VLS provided by experts, many studies have looked at various self-selected uses of VLS in remembering paired associations (e.g., Barcroft, 2009). These studies tend to find that strategies such as repetition are not only

used widely by learners of various backgrounds, they are perceived to be useful strategies as well.

In general, however, when the retention of meaning is involved, the "depth of processing" theory (Craik & Lockhart, 1972) applies, in that the more learners deeply engage themselves in the learning process, the better the retention. This theory is developed further in the involvement load hypothesis (Hulstijn & Laufer, 2001), in which task-induced involvement is analyzed in terms of need, search, and evaluation.

Compared to the retention of meaning, VLS for the learning of different shades of meaning for each word (depth) and for the fast retrieval of it from long-term memory (automaticity in use) have received little research attention. What has been found both in applied linguistics (e.g., N. Segalowitz, Watson, & S. Segalowitz, 1995) and in experimental psychology point to the conclusion that the skill aspect of vocabulary is best learned through implicit learning and repeated exposures in textual and sociolinguistic contexts (Ellis, 1994), and as such, is governed by the power law of learning.

Another perspective to the vocabulary learning task is the existence of four different types of vocabulary (Nation, 2001) that are very unequally distributed: high-frequency words, academic vocabulary, technical vocabulary, and low frequency words. The first 2,000 most frequently used words appear in over 85 percent of all texts (Nation, 2001); 570 nonfiction, academic words (Coxhead, 2000) cover less than 10 percent of school-related texts. A small number of technical words are used only in specific domains and are only needed when learners engage themselves in these domains. The remaining overwhelming majority of words are not often used and represent only about two percent of ordinary texts. Clearly, knowledge of the uneven nature of vocabulary distribution will lead to strategic redirection of attention no matter who the learner is.

An advancement of knowledge in vocabulary studies within the last decade or so is the knowledge of chunks or formulaic sequences. As yet, however, there is no reported study of whether learners deploy strategies different from the learning of single words. Nonetheless, earlier studies (e.g., Ahmed, 1989; Sanaoui, 1995; Gu & Johnson, 1996) not designed for this purpose did find that successful learners pay special attention to idioms and set expressions.

Learning Context

In the chemistry of language learning, when researchers focus on learners, they see the power of the learning task; when they examine the task, the importance of the learner as an agent will immediately emerge. All this time, they see the importance of learning context in supporting or constraining the students' choice and use of strategies. One such example is the perceived Asian learner's preference for rote strategies in vocabulary learning. Explicit research focus on the context of learning in VLS, however, is only beginning to be seen. Gao's (2003) interviews among a group of Chinese students studying in the United Kingdom revealed vividly how contextual changes brought out dramatic changes in task demands and input/output opportunities in vocabulary learning, and how these students had to abandon their trialed and useful memorization of words. Similar results were found (Gu, 2010) among a group of students who moved from China to Singapore. In fact, even within the same country, Cortazzi and Jin (1996) were able to show that students adjusted their VLS after they moved from secondary school to university.

Conclusions

VLS are indispensable in describing and explaining the vocabulary development of a foreign language. VLS can also empower learners in making wise decisions as to what to

learn and how to learn it. Research on VLS has produced many insights for learners and teachers of a foreign language. Foremost among these would be the debunking of a widely held myth that vocabulary learning is a matter of increasing vocabulary size, and that VLS good for short-term retention of paired associates would be good enough. We now know that there are rarely absolute good or bad strategies for vocabulary learning. The appropriateness and effectiveness of VLS depend on the learner's own purpose, stage of learning, which aspect of vocabulary is being focused on, and the sociocultural supports or constraints. Successful vocabulary learners are active learners who take their own initiative and are selective; they analyze the vocabulary learning task at hand, and analyze themselves as learners before they plan in detail. Successful learners also monitor their learning process and make constant strategic adjustments along the way, evaluate the usefulness of strategies, and provide internal feedback to themselves. When we marvel at successful learners flexibly orchestrating their VLS, vocabulary learning becomes an art.

SEE ALSO: Approaches to Second Language Vocabulary Teaching; Depth of Vocabulary Knowledge; Formulaic Sequences; Mnemonics; Myths about Second Language Vocabulary Learning; Vocabulary Size in a Second Language

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Vocabulary Loss in the First Language

MIRELA CHERCIOV

Of all areas of linguistic knowledge which can be lost in language-contact situations, vocabulary is the linguistic domain in which change can be seen first (Andersen, 1982). The dynamics of the mental lexicon have been extensively studied within the field of second language acquisition (SLA). However, less attention has been devoted to date to vocabulary loss in the first language (L1). Other contexts in which vocabulary loss can occur are aging dementia (Goral, 2004) or neurological impairment, such as aphasia or cognitive-communication deficits (Ferguson, 1991). This entry focuses on L1 vocabulary loss (as evident mostly through lexical-retrieval difficulties in online production) in long-term bilinguals who live in an environment where a second language is dominant. The entry outlines the predictors that lead to vocabulary loss, the indicators of loss, and the research designs and findings in this area of L1 loss.

Predictors for Vocabulary Loss

The loss of the L1, which in the context of the present entry refers mainly to the loss of L1 vocabulary, occurs typically in two circumstances. One common context is in migration settings where the speakers live in a country in which their native language is not the dominant language and, as a result, the migrants experience L1 loss or attrition. The other setting in which vocabulary loss can happen is in the case of indigenous minority languages, where the language varieties are about to disappear. Although in both circumstances the final outcome is complete or partial loss of the first language, there are notable differences between the two situations. In the case of the transplanted migrant language, the loss is confined to the individual level and is considered to take place within one generation. In the case of minority-language shift, loss occurs on a community-wide level and usually spans several generations. Nonetheless, in both circumstances, language loss is ascribed to two main factors: the lack of L1 input coupled with the presence of another dominant language (the L2). First, for the migrant speaker, there is often a major reversal in the utility of the mother language: In the new environment, the migrant's use of the L1 is confined to interactions with the rather restricted circle of migrants from the home country. With respect to L2 dominance, the typological distance between the L1 and the L2 can also influence the rate of vocabulary loss. There is more crosslinguistic influence (including, among other related aspects, transfer, interference, semantic extensions, borrowings) between languages that belong to the same language family than between languages that are less closely related (Cenoz & Genesee, 1998). From a sociolinguistic point of view, loss also occurs where there is a difference in prestige and levels of official support for the two languages concerned (Dorian, 1982, p. 44). In addition, there are also individual factors, such as attitudes toward the L1 and the L1 culture, education profiles, or patterns of language choice and use. For example, empirical validations of the correlation between attitudinal and personal background factors and patterns of L1 loss were clearly established in qualitative analyses conducted at the individual (Prescher, 2007; Cherciov, 2011) as opposed to the group level (Yağmur, 1997; Hulsen, 2000).

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Increased Vulnerability of the Vocabulary

The increased vulnerability of the mental lexicon is not surprising. Schmid and Köpke (2009) list some of the aspects that cause vocabulary knowledge to be an especially "sensitive" part of the linguistic system in the context of loss. First, the lexicon is numerically larger than all the other areas of language knowledge. Unlike the grammatical and the phonological system, vocabulary is an "open class" system. Lexical development takes place across the life span in both bilingual and monolingual environments where new items are relatively easy to add (Schmid, 2011). The lexicon's greater flexibility implies that these items are less densely connected than the items in the inventories of other domains of language knowledge, which, in turn, allows for greater adaptability in the face of changes or loss. In other words, if relatively minor changes in the phonological and morphological systems can have far-reaching implications, the lexicon can adapt more easily and incorporate these changes without the restructuring of the whole system. Meara (2004), in an innovative approach involving computer simulations of lexical loss, shows how the loss of a certain amount of lexical knowledge could take place without dramatic consequences for the whole system (see the suggested readings below for other models of vocabulary loss).

In her work on language death, Dorian (1973, p. 414) has noted that lexical loss in Scottish Gaelic was the aspect most acutely experienced by the participant in her study: "Explicit comments on the decline in the quality of their Gaelic focus almost entirely on the lexicon." Dorian (1978, pp. 590–1) also notes that, in other studies of language death, the linguistic area most reduced and impoverished is the lexicon. In the context of L1 attrition, Romanian migrants in Canada also listed vocabulary loss as the most perceivable manifestation of L1 attrition (Cherciov, 2011). Other examples of reports on the perception of lexical/semantic loss include Hutz (2004), Ammerlaan (1996), and Pelc (2001).

Indicators of Vocabulary Loss

Seliger and Vago (1991) point out that there are generally two driving forces for language change: an external force and an internal force. First, the internal force refers to the inherent tendencies languages display when in the process of regression: increased internal simplicity, increased regularity, and increased efficiency for meeting immediate communicative needs (Yukawa, 1997, p. 9). According to Andersen's (1982, p. 94) hypotheses, the language attriter in comparison to a competent speaker will have: a smaller number and a smaller variety of lexical items, an impoverished lexicon in those areas with little or no recent experience, and a high number of gaps of less common, low-frequency, highly marked items. The second force shaping language change, the external force, is the equivalent of what Sharwood Smith (1983) labels "cross-linguistic effects" from the second language (L2), which include interference/transfer, borrowings, convergence, and avoidance.

Pavlenko (2004) presents a unified view of the internal and external triggers shaping L1 attrition and proposes the five indicators for L1 vocabulary loss presented below: borrowing, restructuring, convergence, shift, attrition (see also Schmid & Köpke, 2009).

1. *Borrowing*. This process refers to the morphological and phonological integration of L2 elements into the L1. This phenomenon is especially frequent in migrant speech when features that are different from those in the migrant's country of origin are being described. For example, research on vocabulary loss has pointed to an increase in borrowing frequency especially in language used to describe the public sphere of the L2 country, such as immigration, work- or school-related situations, economy, the health system, or the army (see Ben-Rafael & Schmid, 2007, for examples from the

spoken French of migrants who live in Israel). Arguably, borrowing can be viewed as an enrichment to the L1 system and not as a loss (Schmid & Köpke, 2009): The results of such phenomena are not an indication of the unavailability of previously existing elements, but of the expansion of the L1 vocabulary to incorporate new concepts and items. In one of the few longitudinal studies in the attrition literature, where the written correspondence of a long-time German migrant in the USA was analyzed, Hutz (2004) does not consider instances of strategic borrowing (where the loanword is used to fill the gap between the communicative intention and the actual L1 knowledge, as in *Ich benutze einen "Walker"*—'I use a walker now') and necessary loanwords (where the loanword is used when there is no equivalent to express the same concept in the L1, as in *Die Kinder sind in der "Junior High-School"*—'the children are in Junior High-School') as manifestations of vocabulary attrition. On the contrary, these are considered a form of language gain and a new communication strategy.

2. *Restructuring*. In this type of interference, the meaning of existing L1 words is overextended according to the semantic scope of the corresponding L2 item. Other terms used to refer to the process of restructuring include loanshifts or semantic transfers (see Hutz, 2004). Hutz, for example, cites the German verb *gehen* ('to walk'), whose meaning is restructured to correspond to that of English, which leads to overextended uses such as *Er *geht mit dem Flugzeug zurück* ('He goes back by plane').
3. *Convergence*. In this type of language change, the meanings of L1 and L2 concepts create one single form that is different from both the L1 and the L2 terms, the result being a greater similarity between the two languages in contact. One example of convergence is the appearance of *evidentials* in a language that did not have them previously, as described in relation to the Spanish of Quechua speakers (Sánchez, 2004). Note that noncontact Spanish marks evidentiality optionally through lexical means (with adverbials such as "apparently," "I heard that," etc.).
4. *Shift*. This process refers to the changes of L1 items toward the norms specified by the L2. The end result of this process is complete loss of the L1 or assimilation to the second language.
5. *Attrition*. This process is characterized not only by a change in the system, but by a reduction of the lexicon to a certain degree. It is this process that Andersen's hypotheses mentioned above attempt to model. When bilinguals encounter difficulties in retrieving specific L1 items, they often use hesitation phenomena to buy time, or resort to code switching as a last resort for overcoming lexical inaccessibility. Such strategies are used mostly with items that are rather infrequent in daily life or that refer to precise terms (for a variety of examples see Ben-Rafael & Schmid, 2007).

Quantifying Vocabulary Loss

The methods used to investigate vocabulary loss fall into two categories: those that investigate vocabulary reduction as apparent in samples from spontaneous production (lexical diversity, lexical richness, and lexical accessibility) and those that examine loss via formal data-collection instruments (the verbal-fluency test [VF] and the picture-naming and matching task [PNMT]). This section describes the tools applied in the context of spontaneous speech production (following Schmid, 2011) and reviews the VF task and the PNMT (following Schmid & Köpke, 2009).

Lexical Diversity

Decrease in lexical diversity in L1 naturalistic speech has been traditionally investigated by using the type–token ratio (TTR). TTRs are calculated based on a stretch of discourse

and they measure: (a) the total number of words contained in the discourse (tokens), (b) the number of different words or lemmata (types), and (c) the ratio between the two (types divided by tokens). A low TTR value indicates a decrease in vocabulary richness. TTRs are calculated based on streches of discourse of equal length from each data sample (1,000 words). Limiting the transcript is crucial since spoken language contains a high number of repetitive function words, which, in turn, cause the TTR value to decrease in longer texts. Given that the TTR is sensitive to data samples of varying length, a new tool, in the form of the lexical-diversity measure (D) has been developed by Malvern and Richards (2002). The D value uses a formula that is based on random sampling of repeated stretches of speech. Most recent research in lexical loss has used the D value to establish differences between a migrant group and a control group. Dostert (2009), in a study involving long-term British and Irish speakers living in Germany, found no difference between the two groups. In a similar study design (Cherciov, 2011), this time involving Romanian speakers living in Canada, the D measurement again revealed no statistically significant difference between the migrant and nonmigrant groups. These results suggest that measuring vocabulary loss only in terms of a "wholesale reduction of lexical diversity" (Schmid, 2011) is not sufficient. More in-depth measurements, such as lexical frequency and richness profiles, are necessary to shed light on indicators of L1 vocabulary loss.

Lexical Richness

Andersen (1982) indicates that attrition affects particularly those lexical items which occur with relatively low frequency. This could imply that even if two people obtain very similar TTRs or D values, one can still exhibit a sort of vocabulary loss by using more frequent lexical items rather than less frequent items to describe the same set of circumstances. Therefore in addition to "blind" measures of lexical diversity, such as TTRs and D values, other factors, such as the rarity of the lexical items used, should be considered. To this effect, Schmid (2002) found that the German migrants in her study differed in terms of lexical diversity and sophistication and that there was a positive correlation between TTR ratios and lexical richness.

Lexical Accessibility

While all speakers resort to various "time-buying" strategies to solve occasional word-finding difficulties, speakers for whom the L1 is in the process of attrition are expected to use an increased number of hesitation phenomena in their speech. Hesitation or disfluency markers have several functions, broadly ranging from semantic to cognitive.

In general, semantic disfluency markers—which include filled pauses—are used by the speaker to lend emphasis to a certain discourse element (Clark & Fox Tree, 2002; de Leeuw, 2007) and cognitive disfluency markers—which include empty pauses, repetitions, and reformulations—are typically employed as strategies associated with the resolution of lexical-retrieval problems (Clark & Fox Tree, 2002). Schmid and Beers Fägersten (2010), in an investigation of L1 German attriters living in a Dutch-speaking and an English-speaking environment, showed not only that the frequency of disfluency markers increases in the process of L1 attrition, but also that the analysis of the syntactic placement of disfluency markers (i.e., before nouns and verbs) indicated that hesitation strategies were mainly used in connection with a slowdown in the retrieval of lexical information.

Verbal Fluency (VF)

In a verbal-fluency test, the participant is asked to produce as many items as possible pertaining to a particular category in a given time period, ranging from 60 to 120 seconds. The most common categories are semantic, such as animals, or phonemic, such as words

that begin with the sound "p." The assumption behind VF is that a higher number of items named in a limited period of time is indicative of the subject's better lexical access and therefore his or her higher linguistic proficiency (Schmid, 2007). In general, the VF test appears to produce significant findings: L1 attriters obtain lower scores than the monolingual controls. Schmid and Köpke (2009), however, observe that, while intergroup differences with respect to VF performance are clear-cut, attempts to account for within-group differences have not been entirely successful (see Schmid & Köpke, 2009, for a review of the assumptions behind VF tasks and the various findings in attrition studies).

Picture-Naming and -Matching Tasks

In both picture-naming and -matching tests subjects are presented with a series of pictures. The picture-naming test is a retrieval test and requires the participants to say or to write down the name of a pictured object as quickly as possible. The picture-matching test is a recognition task and involves identifying the name of the item in the presence of four semantic stimuli (e.g., to match an "apple" from pictures of apple, pear, orchard, and glove). This type of test is designed to measure accuracy and response time (see Schmid & Köpke, 2009). The tasks can be used to shed light on specific instances of lexical transfer between the L1 and the L2, such as issues of *categorization*. Pavlenko and Malt (2011, cited by Schmid, 2011) showed that Russian American speakers changed the criteria on which they based their categorization of an object, for example, they tended to call the pictured object of a cup *chashka*, while Russian speakers living in Russia preferred *riumka*. This is an example of how such tests can capture the subtle changes in the lexicon of an attriter, changes which would not have been detectable by using other types of tasks (Schmid, 2011).

Final Remarks

Four important aspects have been discussed in this entry: the type of indicators associated with vocabulary loss, the circumstances and factors triggering vocabulary loss, the increased vulnerability of the lexicon in comparison with other types of linguistic knowledge, and the types of research designs used to investigate loss in the lexicon. According to the studies reviewed above, vocabulary loss refers to both internal changes, such as reduced lexical-retrieval capacity and attrition of lexical items, and external changes, such as various manifestations of crosslinguistic influence. The increased vulnerability of the lexicon appears to be due to its open-class characteristic, as well as to its overall capacity to absorb change. With respect to impacting factors, vocabulary loss in the L1 is the result of the reduced L1 input and increased dominance of the L2. Moreover, personal factors, such as *attitudes*, appear to strongly impact the rate of loss, especially at the individual level. As for research design, an approach using multiple data-collection methods is necessary to thoroughly investigate the nature of vocabulary loss in the L1 and, potentially, create a more uniform account of the processes involved in language loss.

SEE ALSO: First Language Vocabulary Acquisition; Formal Models of Bilingual Lexicons; Incidental Vocabulary Acquisition; Lexical Erosion; Lexical Gaps

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Vocabulary Size in the First Language

BEVERLY A. GOLDFIELD

As adults, we understand and use many words in our daily interactions with people, texts, and tasks. Most of us would be surprised at the size of our vocabulary. Educated, English-speaking adults, for example, estimate their own vocabulary at 1–10% of its actual size, which may average as many as 150,000 words that can be comprehended and potentially used (Seashore & Eckerson, 1940). These figures are based on research that initially defined "word" as a dictionary entry and included common, frequently used words (e.g., *song*, *sing*), compounds (*songbird*), and derivatives (*singer*) of these words, and words used less often or in specialized contexts (e.g., *cantata*). How do we come by such richness?

The origins of our lexical accomplishments begin very early in development. Although infancy is defined as the period of development when we are "without speech," our word-learning capacities are firmly rooted in the perceptual biases, cognitive mechanisms, and social interactions that characterize the first year of life. This entry will explore the beginnings of word learning, trace its developmental trajectory from infancy to adulthood, and examine factors related to the size and scope of our lexicon.

Segmenting Words

Words are acoustic signals that differ across speakers, embedded in the larger frame of connected speech. Word learning is, at the outset, a formidable task that involves segmenting a word form and mapping it to a concept or meaning. How do infants find words in the flow of speech? Word segmentation builds on the newborn's initial bias to tune into human speech (first heard in utero) and perceptual capacity to discriminate many kinds of phonetic contrasts. During the first year of life, infants make use of the stress patterns, phonotactic cues, and transitional probabilities of the input language to begin to segment words from speech. Caregivers assist by using shorter utterances, long pauses, single words, and slower, clearly articulated speech with their infants. Clearly articulated consonants in maternal speech have been correlated with infant speech perception (Liu, Kuhl, & Tsao, 2003) and both hyperarticulated vowels and slower speech have been found to enhance word comprehension (Song, Demuth, & Morgan, 2010).

First Words Comprehended and Produced

The earliest studies to observe vocabulary development were in the form of diary entries by scientists who used their training to systematically record the development of their offspring. Darwin (1877), for example, observed that his son understood the name of his nurse at the age of 7 months, five months before his first spoken word, *mum*, which he used to request food. Currently, researchers use multiple methods to investigate vocabulary development. At earlier ages, researchers rely on parental report, systematic observations, and laboratory procedures. For older children and adolescents, methods include analysis of interactive speech and of written texts and laboratory testing.

Word learning begins with comprehension as early as 6 months of age, when children demonstrate their understanding of *mommy* and *daddy* (Tincoff & Jusczyk, 1999). Most

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children begin to comprehend additional words between 8 and 10 months of age, with considerable variation in the number of words understood. For example, the receptive vocabulary norms of the MacArthur–Bates Communicative Development Inventories (CDIs), which are based on a vocabulary checklist completed by parents, indicate that the number of words comprehended at 8 months varies from 0 to 260 words, with a mean of 42.3. Word comprehension grows rapidly. At 12 months of age, the checklist data indicate that the average number of words comprehended has doubled to 84.4 (range = 7–262), and by 18 months that average has tripled (251.5; range = 30–395; Dale & Fenson, 1996). Longitudinal studies of individual children based on observational data supplemented by parental diaries or interviews report more conservative estimates, with comprehension of 0 to 50 words between 8 and 10 months of age, 0 to 100 words at 12 months, and 80 to 200 words at 15 months (Benedict, 1979; Harris, Yeeles, Chasin, & Oakley, 1995).

Most children begin to say words as they approach their first birthday, often many months after the onset of comprehension, and this gap between comprehension and production is a consistent feature of lexical development. For individual children, Harris et al. (1995) found a lag of between two weeks and five months for first word comprehended versus first word produced. Benedict (1979) reported that, on average, children understood 50 words before they could produce 10 words and achieved a productive lexicon of 50 words five months after reaching the same milestone in comprehension. Production continues to lag well behind comprehension into the second year. The CDI norms indicate an average productive vocabulary of 10.2 words (range = 0–66) at 12 months and 86.7 words (range = 4–327) at 18 months of age (Dale & Fenson, 1996). Longitudinal studies of individual children have noted an acceleration in word learning, or "vocabulary spurt," as children's productive vocabularies approach 50 words (Goldfield & Reznick, 1990). For both comprehension and production, there is a consistent sex difference favoring girls, but the difference is small, typically accounting for 1–2% of the variance.

There are other asymmetries in the relationship between comprehension and production during this early period of vocabulary growth. The correlations between total words comprehended and total words produced tend to be weak, most likely due to children who initially say very few of the many words they comprehend. Another asymmetry concerns the types of words in the two lexicons. Most studies of English-speaking children using varied methodologies report a large proportion of nominals, or words for objects, and very few verbs, or words for actions and events, among the first 100 words children say. This pattern for productive vocabulary has been replicated using parent checklist data in children learning Spanish, Dutch, French, Hebrew, Italian, and Korean (Bornstein et al., 2004). Vocabulary data based on speech samples, however, indicate that children learning Mandarin (Tardif, 1996), Korean (Choi, 1997), and Tzeltal (Brown, 1998) use verbs earlier and more frequently than English-speaking children. In these languages, sentence subjects are often omitted in conversation, leaving the verb in the more salient sentence-initial position. Spontaneous speech data for children learning German also demonstrate a weaker noun bias. At 13 months, German-speaking children used primarily relational terms (e.g., *weg*, 'allgone') and personal–social words (*danke*, 'thanks'). The proportion of nouns used in speech grew during the second year, but verbs constituted the largest word class used at 36 months (Kauschke & Hofmeister, 2002). Although children learning English produce few verbs, they appear to comprehend verbs much earlier. The tendency of English-speaking children to say more of the nouns and fewer of the verbs that they know may be related to pragmatic features of the speech used by parents, who encourage children to comprehend verbs (*throw the ball to mommy*) but produce nouns (*can you say "doggie"?*; Goldfield, 2000).

A number of factors predict vocabulary size in the first three years of life. Some factors may be related to biological advantage or maturation. For example, infants with advanced

ability to perceive vowel distinctions at 6 months have larger productive vocabularies at 24 months (Tsao, Liu, & Kuhl, 2004). There is mixed support for the relationship between family socioeconomic status (SES) and early language development, in part due to the varied ways in which SES is operationalized. More specific factors, such as maternal responsiveness to children's verbalizations and amount of input do correlate positively with vocabulary growth (Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991; Hart & Risley, 1995). Huttenlocher et al. also found that the relative frequency of specific words in parents' speech was highly correlated with the order in which those same words were learned by children.

Preschool Vocabulary

During the preschool years, productive vocabulary grows from about 200 words at age 2 to as many as 10,000 words at age 6, or more than five new words per day (Bloom & Markson, 1998). During this period, children expand their vocabulary in many ways. For example, children learn that things can have more than one name. Early word-learners assume that an object or entity has a single name, a bias called "mutual exclusivity" (Markman, 1992). This bias initially assists children to learn new words. When an adult uses an unfamiliar word, the child looks for an object for which she does not have a name. However, children must eventually overcome this bias to learn that the same entity can be referred to in many ways and at different levels of specificity, as in *poodle*, *dog*, and *animal*. Adults often help by pointing out the categorical relationship, as in *That's a poodle; it's a kind of dog*. Children's verb vocabularies also expand. First verbs tend to be general-purpose terms frequently used by parents, such as *get*, *go*, *put*, and *do*. Later verbs refer to more specific activities (*run*, *jump*) and accomplishments (*find*, *make*). Preschoolers also learn verbs that specify mental states, such as *think*, *know*, *remember*, *forget*, *feel*, and *pretend*.

Preschoolers also add words for size, shape, color, location, and number. At first, children make general size distinctions, as in *big* versus *small*; later they acquire the more specific contrasts, such as *tall–short* and *wide–narrow*. Although even 2-year-olds may occasionally produce a color term, words for color are not used accurately until age 4 or later. Similarly, some 2-year-olds may be able to count from 1 to 10, but they will not understand the relationship between word and quantity for another year or two. Preschoolers also create novel words (e.g., *sky-car* for airplane) when they forget a word or encounter a gap in their lexicon (Clark, 1993). Children learning English begin to sort out those words that are inflected in regular fashion (*cookie/cookies*; *talk/talked*) from those that are irregular (e.g., *mouse/mice*; *go/went/gone*), eventually dropping their initial "errors" (*mouses/mices*; *goed/wented*).

Although preschoolers can learn new words rapidly, by "fast-mapping" a word to its referent after brief exposure to the word, it is important to note that word meanings will be expanded, refined, and related to other words in the lexicon in the coming years. Several factors, perceptual, cognitive, and linguistic, make rapid vocabulary growth possible. First, children are now able to process speech information more quickly (Fernald, Perfors, & Marchman, 2006), more easily recognizing familiar words and distinguishing them from words that are not yet understood. Second, cognitive attainments make it possible for children to learn words that encode abstract concepts, such as quantity. Finally, children also begin to discover new word meanings by using linguistic cues, such as by observing how words are used in sentences, a process called syntactic bootstrapping (Gleitman, 1990). Thus, the child who hears *Big Bird tweezles Cookie Monster* will conclude that the novel word refers to an action because of its position in the sentence. Adults also assist word learning by using new words in different linguistic contexts (*This is a rubber ball; it's made out of rubber*).

School-Age Vocabulary

The most rapid period of vocabulary growth takes place during the school years. Beginning at about age 6, children learn as many as 20 new words each day, achieving a vocabulary of about 40,000 words by age 11. Although parents and teachers continue to use and explain new words (Weizman & Snow, 2001), a dramatic change begins at this time as the primary source of word learning shifts from spoken communication to the written word. If we consider that 21 minutes of daily independent reading provide 2 million words per year (Cunningham & Stanovich, 1998), it is clear that reading is a major source of new vocabulary. Words in written texts tend to be more varied, abstract, and less familiar than words occurring in other forms of communication. Many of these words can be learned from the contexts in which they occur, as in: *The apothecary, who mixed the different drugs, placed his jars on the counter* (Sinatra & Dowd, 1991). Moreover, reading provides more individualized input into word learning, as children choose books about dinosaurs or space travel or the ruins of Pompeii. Increasingly, individual differences in the size and content of the lexicon are related to how much reading children engage in and the type of reading materials they prefer.

During the school years children expand their lexicons in several ways. Many new words are less frequently used or encode abstract concepts, such as *enigma* or *adversary*. Children learn vocabulary which is more precise, as in *topple* and *plummet*, verbs which convey additional information about the manner in which an object might fall (Berman, 2007). Other words are added as children analyze the morphology or structure of words into components and use this information to infer meaning. Morphological analysis can be applied to compound words (*apple + sauce = applesauce*), and words created by inflectional (*stride + ing = striding*) and derivational (*mis + interpret = misinterpret*) morphology. Children typically master inflectional morphology by age 6 or 7, but derivational morphology continues to develop into adulthood. School-age children also increasingly appreciate that many of the words they use may have more than one meaning, such as *bank* and *strike*, and this awareness of multiple meanings contributes to their understanding and enjoyment of jokes, puns, idioms, and riddles. Double-function terms, which have both a physical and a psychological meaning (e.g., *sweet*, *cold*), are only gradually understood; 6-year-olds comprehend the physical meaning, 8–10-year-olds the psychological meaning, but the relationship between the two is not appreciated until around 14 years of age (Schechter & Broughton, 1991). As vocabulary expands, word meanings become linked in the mental lexicon in more complex ways. The growth of semantic networks is illustrated by the syntagmatic–paradigmatic shift between 5 and 9 years of age, when children's word associations change from sentence-like responses (*dog-barks*) to categorical responses (*dog-cat* or *dog-collie*). Thus, vocabulary continues to expand by adding new words, by refining and deepening the meanings of familiar words, and by expanding links between words in semantic networks that underlie word knowledge.

An important skill that underlies word learning during the school years is metalinguistic awareness, which is the ability to think about the language one uses. Metalinguistic awareness begins during the late preschool years when children begin to analyze words as sound units distinct from the objects and events these forms encode, a necessary foundation for reading. The school-age child becomes increasingly aware of new words and word meanings, and deliberately searches for meaning by examining how a word is used in context, by analyzing its structure, or by using the dictionary or thesaurus. To a large extent, the rapid pace of vocabulary development during the school years is supported by this ability to think about words old and new, combined with the quantity and quality of reading materials.

As adolescents encounter the demands of high school, vocabulary growth is advanced by classroom lectures and textbook reading in topics such as history, social studies, biology, and chemistry. Vocabulary development is also influenced by the ability of adolescents to engage in abstract thought and to apply their advanced metalinguistic competence to the analysis of spoken communication and written texts. High-school graduates typically achieve a vocabulary of 60,000 to 80,000 words, and prolific readers may understand and use twice this number (Aitchison, 2003). New words and advanced word knowledge continue to develop through direct instruction, contextual abstraction, and morphological analysis (Nippold, 2007). Students' encounters with various written genres produce familiarity with terms such as *interpretation*, *analogy*, *metaphor*, and *simile*. More of the words used by adolescents, especially in their expository writing, come from Latinate origins (e.g., *considerable*, *military*; Berman, 2007). Adolescents are also increasingly able to control language register, which is the level of language used in different social contexts. Thus, talking with peers evokes slang terms (*he is such a dude*) and colloquial forms (*no way*) whereas written school assignments require more formal vocabulary and carefully structured sentences. Written texts produced by adolescents incorporate vocabulary that is increasingly high in lexical diversity (the number of different words in the text), lexical density (the proportion of content words to total words), and lexical complexity (the proportion of polysyllabic words; Berman, 2007). Adolescents also continue to expand their use of familiar words, including metaphorical extensions of basic meanings, as in *eat your supper* versus *eat your words*.

Research shows that word learning continues throughout the life span, especially for those who are active readers. Moreover, the vocabulary of a language also evolves over time, with old words taking on new meanings and new words entering the lexicon. The word *text*, for example, has most recently come to mean something one does with print via a device originally developed for spoken communication (*I'll text her our new phone number*). Technological change is a major source of new words for all of us; consider *fax*, *byte*, *e-mail*, and *podcast*. As words are added and revised, our semantic networks reorganize to reflect new associations and connections. Technology, too, has taken a page from the human word-store with the creation of vocabulary databases such as WordNet. WordNet is a lexical database of English created by George A. Miller and colleagues. It currently includes approximately 118,000 nouns, 11,529 verbs, 21,479 adjectives, and 4,481 adverbs grouped in sets of cognitive synonyms (synsets), each expressing a different concept. Synsets are connected via conceptual-semantic and lexical relations. Thus, the size and scope of vocabulary in both humans and our computer-assisted technologies is a vast and formidable tool, with connections that extend and deepen with time and use.

SEE ALSO: Assessment of Vocabulary; Conversation Analysis and Language Acquisition; Corpus Analysis of Child Language; MacArthur–Bates Communicative Development Inventories; Teaching Vocabulary; Vocabulary and Reading; WordNet

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Vocabulary Size in a Second Language

PAUL NATION

Problems in Measuring Vocabulary Size

Of all areas in applied linguistics research, measurement of vocabulary size has been the one most significantly affected by faulty methodology. Many of the problems which are involved in measuring total vocabulary size were recognized by Thorndike (1924), but his description of these problems and their solutions was published in a very narrowly circulated collection of papers and so remained largely unknown, except to a few of his students (Lorge & Chall, 1963), for well over 60 years. As a result, during that period of time, research on the vocabulary size of native speakers of English suffered from severe methodological flaws, making its findings misleading at best.

The major methodological problems stemmed from the fact that most vocabulary-size measures were based on sampling from a dictionary (Seashore & Eckerson, 1940; Diller, 1978). In such a study, a large dictionary is chosen, the number of entries in the dictionary is calculated, and then a representative sample of these entries is made. For example, a 1-in-100 sample may be made with each word in the sample representing 100 words in the dictionary. This sample is then used to make the items in the vocabulary-size test. A learner's score on the representative sample is multiplied by its relationship to the total size of the dictionary (in our example, 100 times) to find the learner's total vocabulary size.

Two major sources of error, among others, occurred in (a) the estimation of the total number of entries in the dictionary and (b) the sampling method. In the very worst pieces of vocabulary-size research, the number of entries in the dictionary was not counted, but the claims of the publishers were used instead. These claims are often wildly overstated.

The most common sampling method used was regularly spaced sampling based on the pages of the dictionary. So, for example, the first word on every 10th page was chosen. Because high-frequency words have more entries in a dictionary than low-frequency words, and because each entry for a high-frequency word takes up a larger proportion of the space in the dictionary, this method resulted in an over-representation of high-frequency words in the sample. Because high-frequency words are much more likely to be known than low-frequency words, this meant that a large proportion of the words in the resulting vocabulary test were answered correctly by those taking the test. This overinflated figure was then multiplied by an overinflated proportion based on a miscalculation of the number of words in the dictionary, resulting in ridiculous figures like the following: High-school seniors have a vocabulary size of over 200,000 words, and college professors a vocabulary size of around 250,000 words, with grade-school children learning over 10,000 words a year, and junior high-school children learning over 20,000 words a year (see, e.g., Diller, 1978). These figures are clearly ridiculous, given that a very large non-historical dictionary like *Webster's Third International Dictionary* contains around 120,000 word families (Dupuy, 1974; Nation, 1993). At present, our best rule of thumb is that up to the age of 20 or so, a native speaker's vocabulary grows at the rate of around 1,000 word families per year. This means that a 12-year-old will have a vocabulary of around 10,000 words, and a 20-year-old university student around 18,000 or 19,000 words. The vocabulary-size research described

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above was conducted with native speakers of English. However, the methodological issues do not change when the vocabulary size of non-native speakers is measured.

Frequency-Based Tests of Vocabulary Size

Recent tests of vocabulary size intended largely for non-native speakers of English have used an alternative method of finding the words to test. Rather than using a dictionary, word-frequency lists are used. The methodology involves (a) deciding on the nature of the unit to be counted (word type, lemma, or word family); (b) choosing or creating an appropriate word-frequency list; and (c) making a stratified sample of words to test by sampling from each of the frequency levels in the word-frequency list (Meara & Jones, 1987; Nation & Beglar, 2007; Beglar, 2010).

Although this method of sampling largely solves the major problems described above, other problems remain. A major problem is that, although there is a reasonably strong relationship between word frequency and the likelihood of a word being known, the frequency of lower-frequency words is very much dependent on the nature of the corpus used to measure these frequencies. In addition, while frequency of occurrence is likely to work quite well in the first 10,000 words of a language like English, the learning of lower-frequency words is much more likely to be affected by specialist interests which can differ greatly from individual to individual. It is thus very difficult to design general-purpose vocabulary-size tests which are likely to give due credit for vocabulary knowledge in specialist areas.

Another major issue concerns what a vocabulary-size test measures. Does it measure vocabulary that has been learned, or does it measure vocabulary knowledge? For example, Daulton (2008) considers that at least half of the most frequent 3,000 words of English are present as loanwords in Japanese in some form or other, and that speakers of Japanese know these loanwords. This means that a Japanese speaker sitting a vocabulary-size test may get several answers correct not on the basis of their knowledge of English but on the basis of their knowledge of English loanwords in Japanese. It seems perfectly reasonable to give credit for this knowledge, but it does not represent knowledge that has been learned through the medium of English. Japanese is not unusual in this respect, as most languages contain many loanwords from English. This is also common with languages like Spanish and English, which share cognates from Latin. Cobb (2000) found that French speakers scored well on the cognates in the vocabulary-levels test but poorly on the non-cognates.

Vocabulary-Size Goals

There are several ways of setting vocabulary-size goals for learners of English. One way is to set all the words of English as a goal. This is clearly unreasonable as even native speakers of English do not know all the words in English. A more reasonable goal would be to see the vocabulary size of native speakers as a goal. This is a rather daunting goal given the different conditions under which English is learned as a foreign language. A third goal is to see what vocabulary knowledge is needed to perform certain tasks (Nation, 2006). Table 1 indicates the vocabulary sizes needed to gain 98% coverage of the running words in a variety of text types. The figure of 98% has been chosen for two reasons. First, there is a piece of research which supports this figure as the text coverage which is needed for most learners to gain reasonable comprehension of a text (Hu & Nation, 2000). Second, 98% coverage represents one unknown word in every 50, which is about one unknown word in every five lines and about six unknown words per page. Although this is still quite a heavy vocabulary load, it is probably manageable.

Table 1 Vocabulary sizes needed to get 98% coverage (including proper nouns) of various kinds of texts

Texts	*98% coverage*	*Proper nouns*
Novels	9,000 word families	1–2%
Newspapers	8,000 word families	5–6%
Children's movies	6,000 word families	1.5%
Spoken English	7,000 word families	1.3%

As Table 1 shows, a vocabulary size of between 6,000 and 9,000 word families is needed to gain 98% coverage of a variety of texts. These coverage figures assume that proper nouns and transparent compounds can be considered as words that do not need to be known before a text is read or heard, and thus the percentage coverage figures include coverage by proper nouns and transparent compounds.

The Vocabulary Sizes of Second and Foreign-Language Learners

Vocabulary-size measurement is dependent on the type of test items used. Milton (2009, pp. 82–3), using a yes/no test, presents evidence of EFL-vocabulary growth rates of around 500 word families per year for Greek learners of English. There is, however, considerable variation between individuals, with the best students approaching rates of around 1,000 words per year. When learning rate is standardized by working out words per class-contact hour, the rates for recent studies of vocabulary size come out at around 4–5 words per hour for European learners of English (Milton, 2009, p. 88). This means that learners who have been studying English for six or seven years will have vocabulary sizes of around 3,000 words.

Nurweni and Read (1999) looked at the vocabulary size of Indonesian university students. They used three tests: a recall translation test, which is a more demanding measure than a yes/no test, an interview test, and a word-associates test. They found vocabulary sizes of around 1,200 words.

Receptive and Productive Vocabulary Size

Learners' receptive vocabulary size is typically larger than their productive vocabulary size. There seems to be no regular relationship between receptive vocabulary size and productive vocabulary size (Waring, 1997). This relationship will depend on the conditions under which vocabulary is learned. In countries where English is learned as a foreign language, with little chance of using it outside the classroom and where much of the learning is deliberate, there is likely not to be a big gap between receptive and productive vocabulary sizes. Where English is learned as a second language, however, there is likely to be a large gap between receptive and productive vocabulary size (Laufer & Paribakht, 1998).

Now that many of the methodological issues are better understood, and tests are readily available, it is likely that there will be a growth in studies of vocabulary size. Some vocabulary-size measures are now available in bilingual formats. That is, the test words and their sentence contexts are presented in the second language, and the choices are given

in the first language of the subjects. Such bilingual tests are likely to be more valid measures of vocabulary size than their monolingual counterparts. This is because bilingual tests remove the difficulty of understanding the difficult grammar of L2 definitions. Unpublished research indicates that the scores of lower-proficiency learners will be about 10% higher on bilingual tests than on the corresponding monolingual version. For advanced learners of English, the scores on the two versions will be about the same.

SEE ALSO: Assessment of Vocabulary; Vocabulary Acquisition in Second Language Acquisition

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Voice Quality

JOHN H. ESLING

Voice quality refers to the long-term phonetic characteristics of a person's accent, although the term is also used in a narrower sense for the type of phonation produced in the larynx. In either case, the sound generated at the glottis, principally by the vocal folds, is considered the source or the first element that shapes a person's speech. When we recognize a person by the sound of their voice, voice quality in the broader sense is generally what we mean. We are responding to speech cues generated throughout the vocal tract that are the most persistent, habitual, or long lasting. They can be perceived in short portions of speech precisely because they are properties incorporated to varying degrees in all the rapidly changing short-term vowels and consonants that make up the segmental level of speech. Research on voice quality and discussions of second language teaching methods can be found in Acton (1984), Pennington and Richards (1986), Avery and Ehrlich (1987), Morley (1991), Murphy (1991), Dauer (1992), Esling (1994), Anderson-Hsieh (1995), Derwing and Munro (2005), and Levis (2005).

Narrow Definition

Voice quality in its narrower sense is taken to refer only to the laryngeal source. Usually this means the quality of phonation produced by the vocal folds at the glottis. However, the source should not be restricted to the glottal level alone. There are three sets of folds that can contribute to periodic vibration within the laryngeal mechanism: the vocal folds, the ventricular folds, and the aryepiglottic folds (Esling, 2005). These physiological mechanisms are reflected in Figure 1. The vocal folds are the most efficient source of voicing, but the ventricular folds can add to the aerodynamic/mechanical action of vocal-fold vibration, as in harsh types of phonation (Edmondson & Esling, 2006) or in some Tibetan chanting or throat-singing styles (Fuks, Hammarberg, & Sundberg, 1998). The third level of stricture in the larynx—the aryepiglottic folds—represents the sphincteric pursing of the top of the epilaryngeal tube. It is the place of articulation at which pharyngeals are produced. Sounds labeled as epiglottals are also appropriately localized to this place of articulation, since the aryepiglottic folds are the active articulators and the epiglottis is the passive articulator. Periodic signals are generated by the action of this "laryngeal constrictor" mechanism when the aryepiglottic folds trill (vibrate) against the epiglottis (Moisik, 2008). All three levels of laryngeal folds generate periodic signals that are often referred to as voice quality in the sense of source vibrations.

Broad Definition

In the broad sense of voice quality, the signal originating in the larynx constitutes the phonation type that is the background heard throughout most sounds that a speaker produces. The laryngeal source signal is then modified through the shapes created by the positions of the articulators through the larynx and in the upper vocal tract, producing characteristic resonances. These spectral resonances are more telling when the source is

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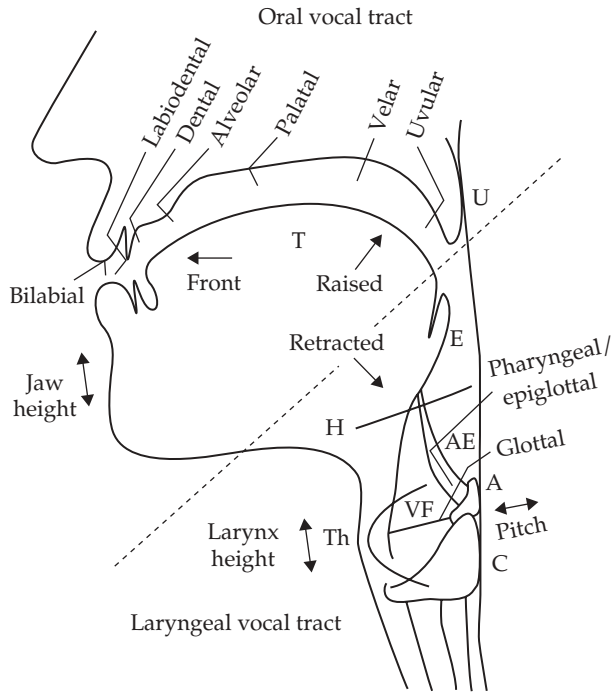

Figure 1 Schematic of the laryngeal and oral vocal tracts, with elaborated pharyngeal components. Reproduced by permission of the University of Toronto Press

Note. C, cricoid cartilage; Th, thyroid cartilage; VF, vocal folds; A, arytenoid cartilages; AE, aryepiglottic folds; H, hyoid bone; E, epiglottis; U, uvula; T, tongue. The ventricular folds are located within the epilaryngeal tube, just above the vocal folds and well beneath the aryepiglottic folds. The nasal tract (above the oral tract) is not depicted here.

voiced (periodic) rather than voiceless; but laryngeally voiceless sounds also have spectral energies associated with them as a result of turbulence (friction/noise) produced through the vocal tract.

Voice quality refers to the habitual, long-term background characteristics perceived as most constant or persistent over time in a person's speech. Perceptually, it is the longest-term strand of the aural medium for language. The other two strands—the voice dynamics strand and the segmental strand—are each progressively shorter term. Segments (vowels and consonants) last for only milliseconds; voice dynamics (e.g., intonation) features can occur over a stretch of syllables or words; while voice quality features persist quasi-permanently (Abercrombie, 1967) throughout the stream of speech. These features can be acquired characteristics shared as part of a person's regional or social upbringing, or they may be idiosyncratic traits. In assessing the voice quality common to a regional or social group, it is the identification of those voice quality features that are preponderant within a sociolinguistic sample of speakers that determines to what degree they are shared or idiosyncratic (Laver & Trudgill, 1979).

Henry Sweet at Oxford, one basis for Professor Higgins in G. Bernard Shaw's *Pygmalion* (see *My Fair Lady*), used the term "organic basis" (1890) to refer to the long-term quality specific to a given language. Paul Passy and Daniel Jones fostered this view of the indexical nature of accent, inspiring Honikman at University College London to explore "articulatory settings" in the accents of various language groups (1964). Popular "impressionistic" labels

for voice quality are distinguished from descriptive phonetic labels that have articulatory phonetic referents (Laver, 1980) and that can be used systematically and reliably because of the general phonetic principle that the normal human vocal tract generates predictable auditory and acoustic consequences when specific articulatory postures are assumed. The realizations of long-term phonation type and of long-term articulatory setting are referred to as an individual's "voice quality settings."

Voice Quality Features

Phonatory laryngeal features include the distinction between *breath*, which generates noise through friction, and *voice*, which generates a vibratory periodic signal. This fundamental distinction was described by Wilkins in the 17th century (1668), where *breath* was associated with *mute* consonants and voicing with *sonorous* consonants (cf. the French usage *sourde* vs. *sonore*). The terminology remains useful, because even 20th-century phonetic descriptions sometimes use the term *voicelessness* for *breath*—only one of a number of voiceless states of the glottis. Another voiceless state of the glottis—*whisper*—resembles *breath* at the level of the glottis but generates more friction due to laryngeal constriction of the epilaryngeal tube above the glottis. The only difference in the use of these terms for describing voice quality features rather than consonantal features is the longer cumulative time over which a voice quality feature persists.

If a speaker's voicing is phonetically neutral—with no otherwise distinguishing traits—it is described as *modal voice* (see Hollien, 1972; Laver, 1980). Adding increased laryngeal constriction to the voiced components of speech alters the quality of phonation in two ways. Either the voicing takes on the phonatory characteristics of *harsh voice* or the pitch of phonation lowers to what is termed *creaky voice*, or both could occur. Both effects can be termed "laryngealization." Voiced phonation can also take on breathy or whispery characteristics. *Breathy voice* is the state where voicing occurs at the anterior end of the glottis while air is escaping at the wider posterior end of the glottis. In laryngeally constricted mode, the parallel state of *whispery voice* would have the same glottal characteristics as *breathy voice* but with a narrowed epilaryngeal tube over the top of the glottis creating greater turbulent friction or noise. Thus, a voice might be encountered that realizes voiceless segments as *breath* and voiced segments as *breathy voice*—or voiceless segments as *whisper* and voiced segments as *whispery voice*. Varying amounts of *whisperiness*, *harshness*, and *creakiness* can be combined—to a slight, moderate, or extreme degree. All three elements of *harsh whispery creaky voice* are the product of constriction of the supraglottic laryngeal mechanism. By contrast, breathiness reflects an open laryngeal posture. Stretching the glottis in the antero-posterior plane (opposite to low-pitched *creaky voice*) alters the voice component toward the high-pitched *falsetto* end of the pitch continuum. The same auditory qualities that occur during constriction can also be realized (although not necessarily by the same articulatory mechanisms) at high pitch as degrees of *harsh whispery creaky falsetto*. This underlines the principle that voice quality features have auditory correlates whose use is learned through the consensual use of an agreed descriptive taxonomy.

Harshness is a complex quality that interacts with pitch in unique ways. As a function of the supraglottic laryngeal constrictor, a *harsh* voice quality is perceived when voicing becomes irregular or aperiodic ("jitter" in acoustic terms) as the vocal folds and ventricular folds are compressed in a narrowing supraglottic space by the overarching tightening of the aryepiglottic folds. When pitch is low (i.e., when there is antero-posterior shortening in the laryngeal system), the aryepiglottic folds themselves can be induced to vibrate. This quality occurs in growling, which has been referred to as *harsh voice (low pitch)*. *Harsh voice (mid pitch)* has less likelihood of aryepiglottic-fold trilling, as the laryngeal structures are

not as loose as when the glottal length is shortened. When the glottal length is increased, as for *falsetto*, but tight supraglottic laryngeal constriction is maintained, the stretching mechanism and the constriction mechanism create an isometric tension that is effective at keeping the glottis closed unless a more forceful airstream is used to drive phonation. This has been termed *harsh voice (high pitch)*. The quality is strained, often called *pressed voice* in speech-science contexts, and resembles articulatorily a glottal stop with air being forced through it. The quality is auditorily characteristic of phonating during heavy lifting. Although referred to as *ventricular voice* in Laver (1980), other more purely ventricular modes have been described (Fuks et al., 1998).

Aside from what can be called phonatory effects, the laryngeal constrictor mechanism generates resonances through changes in pharyngeal volumes that have distinctive auditory correlates. *Raised larynx voice* is the archetypal quality resulting from a shortened pharyngeal volume due to aryepiglottic constriction, tongue retraction, and larynx raising. This quality is the fundamental setting of "Kermit the Frog" voice. Pitch needs to be high in order for this auditory quality to be achieved. Otherwise, if pitch is low, the same constricted posture of the laryngeal/pharyngeal articulators generates what is termed *pharyngealized voice*. The muscles used to sustain both voice qualities—the suprahyoid group—are the same muscles used in swallowing, which involves lifting the hyoid bone and tongue up and forwards and then backwards as the aryepiglottic sphincter constricts (using intrinsic laryngeal muscles), the tongue retracts, and the larynx raises to protect the airway. To stretch and relax these muscles, the opposite set of infrahyoid muscles contract to lower the larynx. This is what happens in a yawn; and the quality generated is called *lowered larynx voice*. Pitch must be low in order for this auditory quality to be identified. Otherwise, if pitch is high, the same stretched/lowered posture of the laryngeal/pharyngeal articulators produces what is termed *faucalized voice* (Esling, Heap, Snell, & Dickson, 1994). The articulatory configurations that generate these resonances predispose different phonatory effects. The raised larynx setting predisposes narrowed-tube whisperiness or harshness effects such as aryepiglottic trilling. The lowered larynx setting predisposes opening of the airway and breathiness; hence its correlation with yawning.

At the right angle of the vocal tract (Figure 1), the laryngeal articulator ends, the oral articulator begins, and the nasal tract also branches off. Behind the uvula, an open velo-pharyngeal port couples the nasal tract to the other resonators, generating the quality *nasal voice*. Nasal resonance differs from laryngeal and oral articulatory adjustments since the shape of the nasal cavity does not change articulatorily; however, the degree of nasality is influenced by the size of the velo-pharyngeal opening. The quality of nasal resonance has been thought of forensically as a useful marker of individual identity—as more anatomically derived than other features that are the consequences of social accommodation; but the degree of acquired nasality (velo-pharyngeal opening) is under a speaker's control and remains a powerful indicator of social or regional background.

The tongue is the principal oral articulator. Its temporal interaction with the movements of the jaw and the lips defines most segmental sounds along the parameters of place and manner of articulation. The long-term postures of these articulators are the salient accompaniments to the segmental stream of speech that provide the background noise and resonances perceived as voice quality settings. While the tongue retracts as a reflexive complement to laryngeally constricted sounds, the tongue raises (upwards and posteriorly) to produce uvularized or velarized sounds. Persistent raising of the tongue where the lingual dorsum habitually approximates or returns to the soft palate yields *uvularized voice* or *velarized voice*. Such lingual postures play a role in *denasal voice* as well, which is an interesting combination of raising and nasality, juxtaposed with the denasalization of segments that are normally nasal. This is a good example of how long-term voice quality can be defined by its interaction with the segmental strand of speech.

Palatalized voice results from the fronting of the body of the tongue, with the tongue tip still depressed behind the lower teeth. *Palato-alveolarized voice* is the most extremely fronted quality with this type of lingual posture. When the tongue tip is extended to move forwards, *alveolarized voice* or *dentalized voice* results. These places of articulation are most efficiently employed to make segmental contrasts, precisely because of their rapid execution. But a persistent fronting of the tongue tip onto or through the teeth gives a distinct long-term percept of dentalization. The sustained orientation of the tongue tip has given rise to the categories *tongue tip articulation*, *tongue blade articulation*, and *retroflex articulation*, the latter being the most distinct articulatorily and auditorily. Tongue-fronted, tongue-raised, and tongue-retracted movements of the tongue body delineate salient extremes in their effect on consonants and vowels.

Jaw posture has a noticeable impact on voice quality perception. *Close jaw* contrasts with *open jaw*; and *labiodentalized voice* (mandibular retraction) contrasts with *protruded jaw voice* (mandibular protrusion). Labial postures are visually as well as auditorily salient in voice quality perception. *Close rounded voice*, *open rounded voice* (which also implies jaw opening), and *spread lip voice* are maximally distinctive. Articulatory rounding or protruding of the lips lengthens the vocal tract, and labial spreading shortens the vocal tract, with predictable acoustic/auditory effects. Saying a phrase or counting "one, two, three, four, five . . ." with close rounding versus spreading demonstrates the scale of the effect.

Voice Quality in a Second Language

Because voice quality is physiologically based, it can persist in a speaker's voice whatever language they are speaking. We can detect if a person has a cold or laryngitis from the long-term effects on their voice. Because voice quality is also socially indexical, multilingual speakers can switch settings between languages or exhibit combined features drawn from each language. Flemish–French bilinguals (Harmegnies & Landercy, 1985) and Catalan–Spanish bilinguals (Bruyninckx, Harmegnies, Llisterri, & Poch, 1994) demonstrate acquired long-term characteristics of the language they are speaking, due primarily to the cumulative weighting of language-specific phonological features over time as well as individually marked traits of their own voices. Within a linguistic community, particular voice quality settings (as well as dynamic and segmental features) are indexical of particular regions or social affiliations. Tongue raising (backing) as a habitual secondary articulation in many Yorkshire or Lancashire accents or nasal and breathy voice quality in Glasgow accents are salient examples (see Foulkes & Docherty, 1999). Social class is marked by preferences for particular settings, but a given feature, for example nasal voice, may occur in accents with more social prestige as well as in other accents with less social prestige.

Paralinguistically, "register shifts" in setting over short periods of time may reflect a speaker's personality or changing emotional states. Within a given culture, prototypes can be established by evaluating listeners' perceptual responses to character portrayals by professional voice actors (Teshigawara, 2003). Such long-term prototypical elements have been used as a guide in the teaching of pronunciation (Esling & Wong, 1983). The principle is that altering the long-term settings of the articulators to those of the target language can globally encompass a number of phonological tendencies, making it easier to "reach" the segmental features of the target language. Practical techniques for increasing student awareness of voice quality differences and for experimenting with the voice have been proposed (Jones & Evans, 1995). Language attitudes, and even the desire to modify one's own accent when learning a second language, may be dependent on identities and feelings of self-esteem signaled by differences in voice quality settings.

SEE ALSO: Abercrombie, David; Accent Reduction; Catford, J. C.; Pronunciation Assessment; Pronunciation Instruction; Pronunciation in World Englishes; Social Influences on Second Language Speech Acquisition

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Vygotsky and Second Language Acquisition

HOLBROOK MAHN

The far-reaching influence that the Russian psychologist Lev Vygotsky (1896–1934) has had on second language acquisition (SLA) research is reflected in studies which emphasize the important role played by semiotic mediation in social interaction within social, cultural, physical, and historical contexts. While Vygotsky did not write extensively about SLA per se, he did provide a foundation for SLA research through his analysis of the development of mental systems as humans acquire and develop the ability to communicate through language. His study of the interrelationship between *thinking processes*, those involved in perceiving, processing, organizing, and storing information from the environment and using it to guide action, and *language processes*, those involved in using signs/symbols to make and communicate meaning in social interaction, provides a foundation for understanding the interrelationship between thinking and language processes involved in communicating meaning in a second language.

The system of meaning created by the unification of thinking and language processes was at the center of Vygotsky's work and constitutes the foundation upon which rise the concepts for which he is best known, including the zone of proximal development, social interaction, sign/symbol use to mediate activity and the consequent development of higher psychological processes, inner and private speech, play, and the role of the social/cultural/historical situation of development. Many researchers use these concepts to guide their investigations into aspects of second language development. Not as well known is the fact that Vygotsky used the concept *system of meaning* to study the development of the human psyche by analyzing higher psychical processes such as logical memory, voluntary attention, and verbal perception in relationship to language use and development. Analyzing mental systems to reveal the origins and development of human consciousness was the central focus for Vygotsky's decade-long research. He conceived of consciousness as a system of systems, and began his investigation of consciousness by analyzing the system of meaning created through the unification of thinking and language processes. In spite of its centrality, the system of meaning has not been widely explored in second language research informed by sociocultural theory, or in sociocultural studies in general. This entry describes Vygotsky's analysis of the system that results from and in turn develops language use, and then describes how this analysis illuminates the processes involved in SLA and development.

Internal System of Meaning

A fundamental concept for sociocultural studies is the role signs/symbols play in the mediation of human activity. "Vygotsky's fundamental theoretical insight is that the higher forms of human mental activity are always and everywhere *mediated* by symbolic means" (Lantolf, 1994, p. 418). Vygotsky acknowledged that mediation was central to his theoretical analysis, but at a meeting with his closest collaborators near the end of his life, he reiterated that the focus of their work was not mediation in and of itself but rather the

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internal system of meaning created through mediated social interaction. He acknowledged their focus on sign and sign operations in earlier investigations, but added "we ignored that the sign has meaning" (Vygotsky, 1997a, p. 130) and consequently they did not study the development of meaning. "We proceeded from the principle of the constancy of meaning, we discounted meaning" (1997a, p. 133). He noted that linguistic and psychological theories of his time took the development of meaning for granted, viewing it as stable and unchanging. In those theories the constancy of meaning is "given as the starting point which terminates the process as well" (p. 132) and therefore the origins and the course of development of meaning are ignored. In that same meeting Vygotsky clarified his conception of *meaning*:

> Meaning is not the sum of all the psychological operations which stand behind the word. Meaning is something more specific—it is the internal structure of the sign operation. It is what is lying between the thought and the word. Meaning is not equal to the word, not equal to the thought. (Vygotsky, 1997a, p. 133)

Focusing on the systemic nature of consciousness, Vygotsky looked at the development of meaning as a process, one that is shaped by its relationship with other psychological functions, processes, structures, and systems. The system of meaning is part of larger systems—the human psyche and human consciousness—and therefore, "The structure of meaning is determined by the systemic structure of consciousness" (1997a, p. 137). Unlike other psychologists of his time who examined mental entities by isolating them in their external manifestations or by conceptualizing them separately from other mental entities, Vygotsky analyzed "the systemic relationships and connections between the child's separate mental functions in development" (1987, p. 323) and conceived of the relationships between functions as constituting "*a psychological system*" (1997a, p. 92).

In addition to conceptualizing the system of meaning created through the sign operation as a psychological system, Vygotsky recognized other systems of meaning based on mathematics, music, art, aesthetic response, and volition and affect, among others. Because his main focus was on the system that results from the unification of language and thinking processes, "system of meaning" in this entry refers to that particular system. In describing the system of meaning, rather than focusing on secondary sources, this entry draws on Vygotsky's writings, particularly those which explain: his methodological approach; his analysis of predominant theories about the relationship of thinking and speaking; his phylogenetic analysis of the development of thinking and speaking; his examination of the structure of generalization; his description of the development of a system of concepts; and his analysis of times of qualitative transformation in a child's development, including the development of higher psychological processes, periods of crisis, and the development of conceptual thinking.

In his use of the concept *mental system* Vygotsky emphasized that the relationships among mental functions determine the character of the system. The functions in and of themselves might not qualitatively change, but the relationships among them go through transformations leading to different stages of development. "Such functions as voluntary attention, logical memory, higher forms of perception and movement, which thus far have been studied in isolation, as separate psychological facts, now, in the light of our experiments, appear essentially as phenomena of one order—united in their genesis and in their psychological structure" (Vygotsky, 1999, p. 38). These functions are "internally connected with the development of the symbolic activity of the child" (p. 39).

Vygotsky saw a dialectical relationship between language and thinking processes, with each process shaping and being shaped by the other in an internal mental system that resulted from their unification. Vygotsky (1987) devoted most of his final work, *Thinking*

and Speech, to describing investigations into the origins and nature of this unification and the new entity, verbal thinking, created by thinking and language processes. In examining the processes through which both the human species and individuals create internal mental systems as they develop the ability to receive and produce signs to communicate meaning, he made the analysis of the origins and nature of verbal thinking the central focus of his investigations. He conceived of mental activity as a process that is organized as a system with other systems, in the development of which there are times of qualitative change during which fundamental, essential transformations in verbal thinking and its relationship to other mental functions occur. The stage that individuals have reached in the development of their systems of meaning will influence their SLA and development.

Methodological Approach

The methodological approach Vygotsky developed to study the relationships between thinking and speaking processes can also help inform investigations into the processes involved in acquiring and developing communicative capacity in a second language. To find the essence of the unification of thinking and language processes Vygotsky sought an aspect of this unification that was primary, basic, irreducible, essential, and yet still maintained the essence of verbal thinking, the whole being investigated. "What then is a unit that possesses the characteristics inherent to the integral phenomenon verbal thinking and that cannot be further decomposed? In our view, such a unit can be found in the inner aspect of the word, its meaning [*znachenie slova*]" (1987, p. 47). In his investigation of *znachenie slova,* Vygotsky examined the social origins of the ability for both the human species and individual to use language to communicate, as well as analyzing the origins and development of the internal mental systems that are necessary for and result from this communicative ability.

Because of the way *znachenie slova* has been translated into English, Vygotsky's investigation of it is often not addressed in interpretations of his work. The Russian *znachenie* translates as "meaning" and *slova* as "word," but Vygotsky made clear that he was using *slova* as a synecdoche (Kozulin, 1990, p. 151) to refer to language use as a whole, as in "in the beginning was the word" (Vygotsky, 1987, p. 284). Because *znachenie slova* is translated into English as *word meaning*, the focus in interpretations of Vygotsky's work has generally been on the meaning of words, on the external use and relationships of words, and on the role of words in semiotic mediation; this causes the role of thinking processes to be overlooked. Consequently, the concepts of the internal *system of meaning* and *znachenie slova* that Vygotsky held central to his theoretical framework, and that provided a focus for his research, have been neglected.

In *Thinking and Speech* Vygotsky analyzes *znachenie slova* from three perspectives: genetically—its origins; structurally—the development of and interconnection to psychological functions and processes related to it; and functionally—its psychological activity and motivating factors. Through this analysis, Vygotsky is able to "disclose the internal essence that lies behind the external appearance of the process, its nature, its genesis" (1997b, p. 70). This was an important part of Vygotsky's approach to second language studies as well. In his article "The Question of Multilingual Children" (1997b, pp. 253–9) Vygotsky writes that in setting up studies on the bilingual child a prerequisite is "to descend from the surface, from taking into account external traits and indicators, and to penetrate deeply, to take into account internal structures of the processes that are directly involved in the speech development of the child" (p. 257).

Vygotsky examined the origins of *znachenie slova* in an individual as a *process* that has its foundation in the infant's physical brain and in the elementary thinking processes with

which humans are born and which develop in infancy, such as mechanical memory, involuntary attention, and perception. These elementary mental functions are shaped by the sociocultural situation of development into which children are born and by their social interactions in those situations. An infant's developing perception, attention, and memory lead to communication between the child and caregivers, with the latter ascribing communicative intent to the infant's gestures and sounds. Through this early social interaction children develop communicative intentionality and the initial use of symbols to convey meaning—key elements in the acquisition of language. A qualitative transformation in social interaction takes place as communication of meaning is accomplished through signs and the development of language use, and through the ability to generalize in "the creation and the use of signs" (Vygotsky, 1997b, p. 55).

> It turns out that just as social interaction is impossible without signs, it is also impossible without meaning. To communicate an experience of some other content of consciousness to another person, it must be related to a class or group of phenomena. As we have pointed out, this requires *generalization. Social interaction presupposes generalization and the development of verbal meaning;* generalization becomes possible only with the development of social interaction. (Vygotsky, 1987, p. 48)

Two basic functions of speech, reflection of reality in a generalized way and communicative social interaction, are important components of the system of meaning and thus of verbal thinking. The ability to generalize, which is developed through play and communicative social interaction, is manifest internally in the structure of generalization that a child develops, a structure that provides the foundation for the system of meaning. In *Thinking and Speech*, Vygotsky (1987) describes the development of this structure of generalization as the child acquires language, focusing on the different modes of thinking that create "the formation of connections, the establishment of relationships among different concrete impressions, the unification and generalization of separate objects, and the ordering and the systematization of the whole of the child's experience" (p. 135). Vygotsky emphasizes the processes necessary to acquire these modes of thinking—voluntary attention, partitioning, comparison, analysis, abstraction, and synthesis—essential for the development of verbal thinking and the structure of generalization.

In his analysis of the development of conceptual thinking, Vygotsky focuses on the origins and development of the *pseudo-concept*, which occurs when a child and an adult both focus on an object designated by a word, and in that shared interactive contact they are able to communicate; however, they use different forms of thinking to arrive at the point where they are using the same word for an object. "The child thinks the same content differently, in another mode, and through different intellectual operations" (1987, p. 152). The child and the adult have different modes of thought as the foundation for their systems of meaning. "The child and adult understand each other with the pronunciation of the word 'dog' because they relate the word to the same object, because they have the same concrete content in mind. However, one thinks of the concrete complex 'dog' [the pseudo-concept] and the other of the abstract concept 'dog'" (p. 155).

Vygotsky claims that children develop their own *sense* of a word as it is internalized, with sense both developing and being developed by the system of meaning. Sense (*smysl*) is an important component in the system of meaning, with the more stable lexical meaning as an essential but subordinate part of sense. "In inner speech, we find a predominance of the word's sense over its meaning" (1987, p. 274). Vygotsky describes the process of social interaction through which meaning is internalized into an individual's sense with "the meaning of the word in inner speech as an individual meaning, a meaning understandable only in the plane of inner speech" (p. 279). There are always going to be degrees

of divergence among meanings that have developed in a particular social setting and the *sense* of words or concepts incorporated into an individual's system of meaning. Vygotsky explains that "[t]o some extent, [sense] is unique for each consciousness and for a single consciousness in varied circumstances" (p. 276). The sense of a word is never complete, but evolves with the system of meaning of which it is a part through activity in the social situation of development. Sense as "the aggregate of all the psychological facts that arise in our consciousness as the result of the word" (pp. 275–6) is a key component in the system of meaning. "Ultimately, the word's real sense is determined by everything in consciousness which is related to what the word expresses . . . [and] ultimately sense depends on one's understanding of the world as a whole and on the internal structure of personality" (p. 276).

Connected to an individual's system of meaning is an individual's *system of concepts*. The generalization and abstraction needed to acquire conceptual thinking can only be accomplished through the process of developing a *system of concepts*, concepts that are introduced externally, primarily through school, concepts that are organized into systems and interconnected with multiple other systems—what Vygotsky refers to as scientific concepts. These are internalized in a system of concepts, which becomes similar to the system of meaning during this transition from complexive to conceptual thinking. "[P]sychologically, the development of concepts and the development of *znachenie slova* are one and the same process" (1987, p. 180). Recognizing that the development of meaning and concepts takes place through the interrelationships of systems within systems, and understanding where a student is in that process, are important for teachers, whether working with school-aged or with adult second language learners. The recognition that an adult learner has developed a system of meaning in their native language as described above by Vygotsky is an important initial step when working with adults learning a second language.

Vygotsky, SLA, and Development

Vygotsky argues that learning a second language "must be studied in all its breadth and in all its depth as it affects the whole mental development of the child's personality taken as a whole" (1997b, p. 259). Studies of second language learners must take "into account the whole aggregate of social factors of the child's intellectual development," and must use the genetic method both to trace this development "with all of its multifaceted qualities" (p. 257) and to explore the complexity of this process, which depends "on the age of the children, on the nature of the meeting of the one language with the other and finally, what is most important, on the pedagogical effect on the development of the native and the foreign language" (p. 257). His aim was "to take into account internal structures of the processes that are directly involved in speech development of the child" (p. 257). Even though he laid out key criteria for studying SLA, he did not conduct research in this area himself.

Vygotsky does use the processes involved in learning a second or a foreign language to draw an analogy with the processes involved in the development of concepts in systems, what he called *scientific concepts*, as both are marked by a level of conscious awareness not present in learning one's native language or acquiring everyday, spontaneous concepts. "The development of scientific concepts begins in the domain of conscious awareness and volition. It grows downward into the domain of the concrete, into the domain of personal experience" (1987, p. 220). Everyday concepts develop in the opposite direction, from the concrete to the more abstract, toward conscious awareness and volition. "Scientific concepts restructure and raise spontaneous concepts to a higher level, forming their zone of

proximal development" (p. 220). Vygotsky compares the relationship between the paths of development of concepts in systems (scientific) and of spontaneous concepts with the relationship that exists between the acquisition of a native language and a second language:

> The child learns a foreign language in school differently than he learns his native language. He does not begin learning his native language with the study of the alphabet, with reading and writing, with the conscious and intentional construction of phrases, with the definition of words, or with the study of grammar. Generally, however, this is all characteristic of the child's first steps in learning a foreign language. The child learns his native language without conscious awareness or intention; he learns a foreign language with conscious awareness and intention. (1987, p. 221)

The level of conscious awareness that children have of their own thinking processes will affect their acquisition of a second language. In drawing a comparison between learning to write and learning a second language, Vygotsky argues that both processes involve a level of conscious awareness that is not present when children learn their native language. When they enter school, children begin to develop a conscious awareness of their attention and memory, but they do not have a conscious awareness of their own thinking processes, an ability that they acquire in adolescence. Where children are in the process of development of their internal systems of meaning is related to the level of conscious awareness they have developed.

Vygotsky outlines a number of other differences between the processes of learning a native language and learning a foreign language including affective and emotional concerns, and concludes by stating, "The child already possesses a system of meanings in the native language when he begins to learn a foreign language. This system of meanings is transferred to the foreign language" (1987, p. 221). He acknowledges that children who acquire two languages from infancy develop two relatively distinct systems of meaning through each language. Citing a study by Ronget, he states, "The result of the experiment showed that the child acquired both languages in parallel and almost completely independently of each other" (1997b, p. 255).

Vygotsky's writings on the development of the system of meaning, and the concomitant formation of concepts, are useful in looking at second language learners. In analyzing both, he examines ways in which changes in internal relationships between mental processes also affect children's experiences of their sociocultural environment and the meaning that they make of these experiences. He calls this experience of *meaning* "one of the most complex problems of contemporary psychology and psychopathology of the personality" (1998, p. 290). Understanding the nature of the structure of generalization is key to the development of meaning. "Thus, in concept development, the movement from the general to the specific or from the specific to the general is different for each stage in the development of meaning depending on the structure of generalization dominant at that stage" (1987, p. 226). Understanding where children are in their concept development can help in understanding their processes of acquiring a second language.

Conclusion

The fundamental concept that all mental activity is part of an interconnected system of systems is central to all of Vygotsky's work. In approaching second language research, he stressed the importance of studying the interconnectedness of the processes of SLA with processes involved with acquiring one's native language and with the processes at play in the development of the human brain/mind unity—the development of the human

psyche. Although he did not write about SLA extensively, he did provide a theoretical framework and a methodological approach to guide research into SLA. Unfortunately, an essential aspect of Vygotsky's theoretical framework—the system of meaning that is created through the unification of thinking processes and language processes—has often been overlooked by researchers who rely on his work.

Mahn (2008) gives an overview of this essential concept, *znachenie slova*, that provided the focus for Vygotsky's investigation of the relationships between thinking and language use in the development of human consciousness. Without exploring the essence of Vygotsky's work—meaning as a system within systems in the "thinking body"—there has been a tendency in SLA research to extrapolate a concept of Vygotsky's from his overall theoretical framework and use it to study some aspect of human development. This isolation is problematic because it leads to overlooking an essential aspect of his work: his investigation of human development as a system within dynamic, physical, social, cultural, natural, and historical systems at the center of which are the processes and interactions through which language is acquired and a system of meaning is created.

Vygotsky continually emphasized the need to go beyond appearance, beyond the surface manifestations of a phenomenon, and to look at its interconnectedness with other systems and its process of development from its beginnings to its end. That advice aptly applies to the study of his work. In critiquing Vygotsky's theoretical framework, sociocultural researchers have often relied more heavily on interpretations of his work than on his actual writings. Understanding his central concepts is essential if his theoretical framework is used to guide investigations of SLA, and can best be achieved by reading Vygotsky's major work, *Thinking and Speech*, in its most complete form (1987) (translation issues notwithstanding) rather than abridgments of that work (1962, 1986). His work is complex and challenging, but his theoretical framework and the methodological approach that constructs it can make a significant contribution to the analysis of language acquisition and its role in the development of the human mind/psyche.

SEE ALSO: Methodological Foundations of Sociocultural Theory

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Warschauer, Mark

SHANNON SAURO

Mark Warschauer (born 1954) is a US scholar and researcher, known for his work on technology in language and literacy education. His research explores the pedagogical applications of technology for second language (L2) learning, the social and educational dimensions and implications of digital literacy, and the use of technology to foster learning and empowerment. He has conducted research in the United States in elementary and secondary schools, and among adult learners in technology-enhanced learning contexts in several countries, including Egypt, the United States, and the Czech Republic.

Professional History and Influences

Warschauer completed his bachelor's degree in psychology in 1975 at the University of California at Santa Cruz, where his early interest in technology led him to take courses in information and computer science. He went on to earn California teaching certification in mathematics, social studies, English as a second language (ESL), and Spanish in 1979 as well as a master's degree in teaching ESL in 1991 at San Francisco State University. From 1977 to 1991, he held various teaching positions, primarily teaching ESL in elementary, middle, and high school contexts as well as in university and adult learner programs in California.

In 1993, Warschauer's initial interest in technology transformed into a passion and a primary research focus during a two-year Fulbright to the Czech Republic, where he first used the Internet at Charles University and began to envision its impact on language use, language learning, and language teacher education. In 1994, at the age of 40, he began his PhD in L2 acquisition at the University of Hawai'i at Manoa, where he also worked as a research assistant on issues related to language and technology through the National Foreign Language Research Center (NFLRC).

After completing his PhD in 1997, he continued working as a researcher in the College of Language, Linguistics, and Literature at the University of Hawai'i at Manoa until 1998, when he moved to Egypt to work as the director of educational technology for the American-Mideast Educational and Training Services/US Agency for International Development in Cairo for the next three years. In 2001, he returned to the United States to take up a faculty position at the University of California, Irvine. As of 2010, he is a professor in the Department of Education and the Department of Informatics at the University of California, Irvine, where he directs the graduate program for the PhD in education and serves as director of the Digital Learning Lab (http://dll.gse.uci.edu/Index.html).

Warschauer sees his early professional experience as a teacher and social activist, as well as the work he conducted while in Egypt from 1998 to 2001, as informing and broadening his perspective on electronic literacy to conceive of ways in which technology can be used to transform learners' lives. In particular, Warschauer credits Jim Cummings and James Gee with influencing his ability to make theoretical links between technology and language use, literacy practices, and social contexts.

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Major Contributions

Warschauer's contributions to the field of applied linguistics can be best divided into three main areas, which have informed work in computer-assisted language learning (CALL), literacy, and equity and social inclusion of culturally and linguistically diverse populations through technology.

While still a doctoral student at the University of Hawai'i at Manoa, he established *Language Learning & Technology* (http://llt.msu.edu), the first online peer-review journal dedicated to research on computer-assisted language learning (Smith & Lafford, 2009), in 1997. One of the motivating factors behind the creation of this freely available online journal was to provide access to emerging scholars around the world, particularly in developing countries, who might not have had access to commercial publications.

During this time, some of his earliest research, which examined the use of technology for L2 development, was published. This included classroom-based investigations which compared qualities of learner language during computer-assisted class discussions (CACD) using synchronous computer-mediated communication (SCMC) with language produced during spoken discussions (Warschauer, 1996), as well as guidelines for educators on the use of technology applications to support L2 learning (see, e.g., Warschauer, 1997, for the use of computer-mediated communication [CMC] in collaborative learning; Warschauer & Whittaker, 1997, for guidelines on Internet use for English-language instruction). This early work has proven foundational to the rapidly growing subfield of CALL that deals specifically with the use of networked-based SCMC for classroom language instruction (e.g., Warschauer & Kern, 2000) and for an increasing number of studies that incorporate SCMC to examine L2 acquisition processes.

The second major focus of Warschauer's research concerns the impact technology has on learners' literacy development and practices. In documenting the technology being used in networked classrooms and learners' own literacy practices and preferences outside the classroom, Warschauer has added to the field's understanding of how these new kinds of technology-driven literacy practices can have a positive or a detrimental impact on learning. For instance, in US public schools, Warschauer (2006) observed the type of instruction and writing generated in classrooms where children were given their own networked laptops for reading and writing instruction. In doing so, he found evidence of different computer-aided scaffolding techniques used by teachers to facilitate literacy development, a reliance on typed and not handwritten drafts of writing assignments, and students' use of shareware programs to foster writing collaboration and peer editing. In further case studies of individual learners and classrooms in laptop-supported schools, Warschauer and his colleagues have also documented learners' creation of hybrid or multimodal texts or multimedia projects, in which learners generated or transformed online texts, images, and other supporting material to summarize or reflect their understanding of course material (e.g., Warschauer, Grant, Del Real, & Rousseau, 2004; Ware & Warschauer, 2005).

However, Warschauer's work has also highlighted the trade-off in literacy development that can occur when minimally supervised or unstructured instructional technology is introduced into a community or educational context. This was evident in his exploration of the unanticipated literacy consequences of the "hole-in-the-wall" minimally invasive education experimental project in New Delhi, India, in 2000 (Warschauer, 2002). As part of this project, outdoor computer kiosks were set up in one of the poorest neighborhoods of New Delhi with the intention of fostering children's self-paced learning. While the children did indeed learn basic computer skills (e.g., copying and pasting, how to open common software applications), without teaching or adult guidance, or the availability of Hindi-language software, most of their computer time was spent playing games or painting

in Microsoft Paint. As an added unintended consequence, some parents perceived that the computer kiosks were distracting their children from spending time on actual schoolwork.

Recognizing the possibility for technology to serve as a tool for social and linguistic change, Warschauer has also been influential in examining the use and availability of technology to support social equity and inclusion among culturally and linguistically diverse populations. This is most evident in his work on the digital divide, including his 2003 book, *Technology and Social Inclusion: Rethinking the Digital Divide*, and case studies conducted on the digital divide in Egypt (Warschauer, 2003a) and among different populations within the United States (e.g., Warschauer, Knobel, & Stone, 2004). In this area, Warschauer has explored the physical, digital, and social resources necessary for successful access to information and communication technology (ICT) and how inequity of access compounds existing educational gaps among different learner populations (e.g., Warschauer, 2008; Warschauer & Matuchniak, 2010). His work, as a result, illustrates the significance of individual and social practices as well as the social and technical infrastructure necessary to transform education and literacy with technology.

In his work, Warschauer has been inspired by the commitment of those in the international community who have dedicated their time and resources to fostering learning and empowerment. He welcomes the opportunity to network with people around the world engaged in these issues and can be reached via e-mail (markw@uci.edu), or followed on his blog (http://papyrusnews.com) and on Twitter (http://twitter.com/markwarschauer).

SEE ALSO: Computer-Mediated Communication and Second Language Development; Cummins, Jim; Gee, James; Language and the Digital Divide

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Washback in Language Assessment

DIANNE WALL

"Washback" refers to the influence important tests have on classroom practices—in particular, the effects they have on teaching and learning. The term is commonly used in applied linguistics and language testing, though some researchers in these fields and most researchers in general educational research use the term "backwash" for the same phenomenon. "Impact" is sometimes used as a synonym to washback, but it also serves as a more general term, referring to "any of the effects a test may have on individuals, policies or practices, within the classroom, the school, the educational system, or society as a whole" (Wall, 1997, p. 291). Washback is the type of impact that appears in the classroom. The last 20 years have seen a growing awareness of the need to investigate washback, and to discover what factors affect its form and intensity.

Washback is said to be the result of "high-stakes tests." Madaus (1988, p. 87) defines these as tests "whose results are seen—rightly or wrongly—by students, teachers, administrators, parents, or the general public, as being used to make important decisions that immediately and directly affect them." High-stakes tests include tests that determine whether students can pass on to higher levels of education, graduate from university, or study abroad, and tests that are used for employment or migration purposes. Tests can be high-stakes for teachers and institutions as well as for test takers, especially if the teachers' pay or progression through the profession are determined by test results, or if the institutions' reputation or funding depends on their students' outcomes. According to Swain (1985, p. 43), "if (teachers) know the content of a test and/or the format of a test, they will teach their students accordingly." While it is natural that both students and teachers should aim for good results, focusing on test demands does not always lead to optimal teaching and learning. If the test accurately represents the aims of the curriculum, then teaching and studying for it may contribute to the achievement of these aims. This is known as "positive washback." "Negative washback" can occur if the test does not match the aims of the curriculum. In Bachman and Palmer's words "'teaching to the test' in this case implies doing something . . . that may not be compatible with teachers' own values and goals, or with the values and goals of the instruction program" (2010, p. 108).

The washback phenomenon (without this label) has been discussed in educational research for many years (e.g., Vernon, 1956). Madaus (1988) was especially critical of the negative results of high-stakes testing, which included not only "teaching to the test," but also the overuse of past exam papers, the adjustment of teaching methods to suit the form of test questions, and a general acceptance of test results "as the major goal of schooling rather than as a useful but fallible indicator of achievement." Perhaps his starkest prediction was that "a high-stakes test transfers control over the curriculum to the agency which sets or controls the exam" (pp. 88–97). Frederiksen (1984) warned against "the real test bias": that the use of cheap and easy-to-construct test methods such as multiple choice would lead to the teaching of factual knowledge rather than higher-level skills.

Popham (1987), in contrast, claimed that high-stakes testing could affect teaching and learning in a positive way, if the tests were "properly conceived and implemented" (p. 680). He argued that successful "measurement-driven instruction" depended not only on good test design but also on adequate support to teachers. Fredericksen and Collins

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(1989) introduced the notion of "systemic validity," where tests provoked changes in the educational system that would lead to the development of the higher-level skills the tests were meant to measure.

Serious discussions of washback did not occur in the applied linguistics or language testing literature until the early 1990s. The catalyst for such discussions was an article entitled "Does Washback Exist?," which claimed that earlier references to washback in language testing were mainly assertions about its existence or expressions of faith that it would occur in situations where new or revised tests were being introduced. The authors, Alderson and Wall (1993), analyzed the notion of washback more thoroughly than had been done hitherto, suggesting through a series of "washback hypotheses" the sorts of areas that could be influenced by tests—for example, what teachers teach, how they teach, what learners learn, how they learn, the rate and sequence of teaching and learning, the degree and depth of teaching and learning, and attitudes toward the content or methods of teaching and learning. They argued that test developers should think carefully about the specific washback they intend to produce, and that researchers should be precise about what they are looking for when they set out to investigate whether washback has been created. Alderson and Wall also commented on the need to use multiple research methods, including classroom observation, when researching washback, and on the desirability of using ideas from disciplines outside language testing (educational research, innovation theory, motivation theory) when building frameworks for the study of washback.

Three further publications helped to establish the foundations for washback research in language testing. Hughes (1994) specified that tests could affect participants, processes, and products in the language-teaching context, and gave examples of each of these. Bailey (1996) combined the Alderson and Wall hypotheses and Hughes's participants–processes–products distinction to produce a useful model of washback (p. 264). She also discussed methods of investigating the phenomenon, and proposed questions to help test producers and test users think about "the positive washback potential" of the tests they were dealing with. The questions covered areas such as the users' understanding of the purposes of the test and the intended use of its results, the manner in which results are reported, the users' perceptions of the fairness of the test, the correspondence between what the test measures and the goals of education, the theoretical underpinnings of the test, and the users' investment in the assessment processes (pp. 276–7). Wall's (1996, 2000) contribution lay in her use of innovation theory to explain why good test design is not a sufficient condition for producing positive test washback. Using data from a test reform project in Sri Lanka and building on ideas from educational innovation, she shows how factors such as the characteristics of the educational context before and after the launch of a new test, and the characteristics of the teachers and learners interact with the characteristics of the test and the curriculum it is based on. This interaction can produce washback that is quite different from what is intended by policy makers and test developers.

The first collection of washback studies was published in a special issue of *Language Testing* in 1996. The collection opened with Messick's (1996) explanation of how washback is a specific instance of the consequential aspect of construct validity, and his view that positive washback can be facilitated through improvements in test design, in particular the elimination of construct underrepresentation and construct-irrelevant difficulty. Messick's article was followed by Bailey's (1996) review of the washback literature and the washback model referred to above. There followed four empirical studies, which have since become fundamental reading for those interested in research on washback. Alderson and Hamp-Lyons (1996) investigated the influence of the Test of English as a Foreign Language (TOEFL) on test preparation classes in the USA, and Watanabe (1996) the influence of university entrance examinations in preparation schools in Japan. Shohamy, Donitsa-Schmidt, and Ferman (1996) reported how washback changed over time in Israel,

and Wall investigated the effects of a new secondary school examination in Sri Lanka. All of the studies showed how washback was much more complex than early language testing handbooks such as Heaton (1990, p. 17: "If it is a good examination, it will have a useful effect on teaching; if bad, then it will have a damaging effect on teaching") had implied.

Cheng and Watanabe published a second collection of washback studies in 2004, which contained comprehensive reviews of the concept of washback, the types of research methods that had been used in washback studies, and the relationship between washback and curricular innovation. It also presented eight studies of washback, dealing with the effects of national and regional tests in six different settings (the USA, Australia, Japan, Hong Kong, China, and Israel), and the influence of the International English Language Testing Service (IELTS) on teaching materials and on test preparation classes in New Zealand. The collection provides not only an excellent update on the state of the field since the late 1990s but also a good sense of how sophisticated research questions and methods for investigating washback and other forms of impact have become since that time.

Spratt published a comprehensive review of washback studies in 2005, which aimed "to provide teachers with a clearer idea of the roles they can play and the decisions they can make concerning washback." She divided her review into five themes, which dealt with washback on the curriculum (content, timetabling, and class size), materials (test-related textbooks and past test papers), teaching methods, feelings and attitudes, and learning. She also categorized the many factors that have now been found to affect the form and intensity of washback: teacher-related factors (beliefs, attitudes, education, experience, and personalities), resources, school factors (atmosphere, learning traditions, and internal pressures), and factors relating to the test itself (the proximity of the test, the stakes, the format, the weighting of different sections).

The most recent collection of washback studies was published in a special issue of *Assessment in Education* in 2007. The issue contains studies from six different testing contexts, and addresses concerns such as the fairness of applying assessment measures that have been validated on L1 learners to L2 learners, whether mandated tests in primary schools provide useful information to parents, whether it is possible for high-stakes tests to encourage communicative teaching, and whether dedicated test preparation classes give students an advantage in raising their test scores. There are also discussions of the importance of understanding the educational context into which a new test will be introduced and the effect that contextual features can have on facilitating or hindering beneficial washback, and of the powerful role that tests can play in the hands of policy makers.

There is now a substantial literature on test washback and impact; however, in the words of Cumming (2009, p. 93), "evidence for direct causal impacts from assessments remains diffuse given the complex range of interrelated variables associated with assessment in language education." It is well recognized that washback is shaped by many factors other than test design, but the challenge for test developers and washback researchers is to determine how much and which specific washback can be "evidentially linked" (Messick, 1989) to the test itself and the messages transmitted about the test by the test developers. A recent study by Wall and Horák (2006, 2008, in press) attempted to do this, investigating how changes in the new TOEFL iBT® affected specific teachers over a five-year period. The research started with a baseline study that documented how the teachers conducted their classes before they knew that a new test would be introduced. It then tracked the teachers' reactions as they learned about the new test requirements, grappled with new constructs, searched for appropriate materials, and eventually designed new test preparation courses.

Interestingly, much of the washback literature deals with the effect of tests on teachers and teaching, with fewer studies addressing the reactions of learners or other test takers. Recent work by Huhta and Pitkänen-Huhta (2006) attempts to redress the balance, using

data gathered from secondary school students preparing for a high-stakes national examination. The students were asked to keep an oral diary (using portable recording devices) of their perceptions and expectations of the test and of their own performance, and to participate in group interviews with fellow students to discuss these themes. The authors used a discourse analysis framework derived from social psychology to reveal the different ways in which the students were affected by the test. They hoped their findings would lead to ways of helping learners to cope with the pressures of high-stakes testing, including self-assessment instruments and more individualized test preparation materials and activities.

There are a number of challenges still facing those who are interested in creating or investigating washback. The first of these is understanding the crucial role that contextual factors play in washback research. The second is deciding when test preparation activities cross the line between developing the types of language and strategies test takers need in the real world and intensive cramming that may lead to higher test results but reveal little about the test takers' true mastery of the domain being assessed. Haladyna, Nolen, and Haas (1991) used the term "test score pollution" to describe the latter situation, while Hamp-Lyons (1998) questioned the ethicality of some preparation washback practices. The third challenge is agreeing whose responsibility it should be to ensure that tests have the washback policy makers and test producers intended, rather than unintended and detrimental consequences. The fourth is understanding that washback is but one of many possible consequences of high-stakes testing, which is a prominent theme in the literature on critical language testing (Shohamy, 2001). Perhaps the biggest challenge, however, is getting test developers to respond to the washback research that has been produced so far, and to analyze their own methods of communicating with test users and helping them to interpret and react appropriately to test demands.

SEE ALSO: Ethics in Language Assessment; High-Stakes Language Testing; Uses of Language Assessments; Validation of Language Assessments; Values in Language Assessment

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Web-Based Lexical Resources

TATSUYA NAKATA

The Internet offers numerous lexical resources that are useful for teaching, learning, and researching lexis. Useful resources for teachers and learners include online dictionaries, vocabulary support software for reading, word lists, vocabulary tests, vocabulary learning software, corpora, concordancers, vocabulary profilers, guides for teaching and learning vocabulary, and vocabulary quizzes. Researchers will benefit from bibliographies on vocabulary, online articles, and lexical databases. Most resources can be used free of charge, and knowing how to find and use these resources will be valuable for language teachers, students, and researchers.

Resources for Teachers and Students

Dictionaries

Numerous online dictionaries can be found on the Internet. Computer-based dictionaries, including Web-based ones, offer several benefits that paper-based ones do not (Rizo-Rodríguez, 2008). First, the former allow users to carry out more complex searches than the latter such as backward match (e.g., search all words that end with *-ment*) and wild cards search (e.g., search all words that start with *f-* and end with *-ment*). Second, most Web-based dictionaries can play audio recordings of foreign language words, which is a feature exclusive to computer-based dictionaries. Third, some Web-based dictionaries, although freely accessible, offer almost the same content as paid paper or CD-ROM dictionaries including definitions, parts of speech, example sentences, phrases, collocations, idioms, phonetic symbols, illustrations, and usage notes. Freely accessible online dictionaries include *Oxford Advanced Learner's Dictionary* (www.oxfordadvancedlearnersdictionary.com), *Cambridge Advanced Learner's Dictionary* (http://dictionary.cambridge.org/), *Collins COBUILD Student Dictionary* (www.collinslanguage.com/shop/english-cobuild.aspx), *Longman Dictionary of Contemporary English* (www.ldoceonline.com), *Merriam-Webster Dictionary* (www.merriam-webster.com), and *Roget's Thesaurus* (http://education.yahoo.com/reference/thesaurus/). OneLook Dictionary Search (www.onelook.com) is a very useful Web site because it enables users to search multiple dictionaries at once. Using this Web site, one can search 1,062 dictionaries including *Compact Oxford English Dictionary*, *Cambridge Dictionary of American English*, *Collins COBUILD Student Dictionary*, and *Merriam-Webster's Online Dictionary* with just a single click of the mouse.

Vocabulary Support Software for Reading

Although online dictionaries are very useful, looking up words in a dictionary during reading may sometimes interrupt the reading process and hinder comprehension. When reading texts, learners may want to have a less disruptive form of lexical support than dictionaries, such as glosses (Nation, 2001, p. 175). Glossing Authentic Language Texts (GALT; http://larc.sdsu.edu/professional-development/) and Comet (http://comet.cls.yale.edu/) allow teachers to create glosses using texts, images, audios, and videos. These programs are helpful because research shows that computer-based glosses increase both lexical learning and reading comprehension (Abraham, 2008).

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Pop-up dictionaries also offer vocabulary support during reading in a less disruptive manner than regular dictionaries. Pop-up dictionaries refer to programs that enable users to look up the meaning of words through single clicking, double clicking, or mouse hovering. WordChamp Web Reader (www.wordchamp.com/lingua2/Reader.do) and POPjisyo.com (www.popjisyo.com) are Web-based pop-up dictionaries and can be used with any Web site or text that is pasted into a box on their Web sites. These dictionaries are less time consuming than regular online dictionaries and may encourage more frequent lookups and potentially improve lexical learning.

Hypertext Builder (www.lextutor.ca/hypertext/; Cobb, 2007) is another useful program. The software allows users to get definitions and hear pronunciation of words used in a particular text with just one or two clicks of the mouse. The program also lets learners study concordance lines of words. Concordance lines refer to sentences derived from a corpus. Viewing concordances may help learners study collocations, grammatical patterns, or idioms of a word (see the section "Corpora and Concordancers" below for more details). Hypertext Builder also enables learners to set aside words that they have encountered during reading and practice them in various quizzes including dictation (www.lextutor.ca/spelling/dictator/), cloze (www.lextutor.ca/concordancers/multi/), and word identification exercises (www.lextutor.ca/id/).

Word Lists

Word lists compiled based on frequency are very useful because the frequency of a word gives learners a good indication of how useful the word is (Nation, 2001, pp. 6–22, 2008, pp. 7–15). In English, for instance, the most frequent 2,000 word families account for around 80 percent of the running words in most texts (Nation, 2008, p. 8), and acquiring these words is one of the most important goals in the initial stage of language learning. Word frequency lists help teachers and learners to determine which words are high frequency and need more attention than others. For instance, learners can go over frequency lists to see if there are any high-frequency but unfamiliar words, which need to be learned deliberately through flashcards or dictionaries (Nation, 2001, p. 16). In elementary classes, teachers can consult frequency lists to make sure that a considerable amount of time is spent on them.

A classic English frequency list is Michael West's (1953) General Service List (GSL), which consists of 1,986 word families (Nation, 2004). Because the GSL was compiled more than half a century ago, it does not contain modern words such as *television, computer,* or *online.* Yet, research suggests that the list is still useful even today (Nation, 2001, pp. 15–16, 2004). GSL can be found at Paul Nation's Web site (www.victoria.ac.nz/lals/resources/vocrefs/), Compleat Lexical Tutor (http://conc.lextutor.ca/list_learn/eng/), and James Dickins's Web site (www.languages.salford.ac.uk/staff/dickins.php).

If more up-to-date English frequency lists are needed, ones based on the British National Corpus (BNC) are very useful. In addition to being more up-to-date, BNC lists contain more items than GSL. Paul Nation's BNC lists, for instance, consist of 14,000 word families. BNC frequency lists can be downloaded from the Web sites of Paul Nation (www.victoria.ac.nz/lals/staff/paul-nation.aspx), Adam Kilgarriff (http://www.kilgarriff.co.uk/bnc-readme.html), and Geoffrey Leech and his colleagues (http://ucrel.lancs.ac.uk/bncfreq/).

After learning the most frequent 2,000 word families, it is recommended that learners acquire academic vocabulary (Nation, 2001, pp. 6–22). The Academic Word List (AWL; Coxhead, 2000) is the most widely used list of English academic vocabulary. The list consists of 570 word families that are outside the GSL and occur frequently in a wide range of academic disciplines such as arts, commerce, science, and law. The AWL words are very useful as they account for 8.5–10 percent of academic texts (Coxhead, 2000). Considering that the third 1,000 most frequent words account for only 4.3 percent of natural texts

(Coxhead, 2000), learning 570 AWL words is very efficient. The AWL can be found at Averil Coxhead's Web site (www.victoria.ac.nz/lals/resources/academicwordlist/default.aspx) and Compleat Lexical Tutor (http://conc.lextutor.ca/list_learn/eng/).

Vocabulary Tests

Vocabulary tests are very useful tools for determining what kinds of words students already know and should be focusing on next. The most widely used English vocabulary test is perhaps the Vocabulary Levels Test (VLT; e.g., Nation, 2001). VLT measures whether learners have acquired the most frequent 1,000, 2,000, 3,000, 5,000, and 10,000 word families as well as the AWL words. VLT can be found at Paul Nation's Web site (www.victoria.ac.nz/lals/resources/vocrefs/) and Compleat Lexical Tutor (www.lextutor.ca/tests/). The 1,000 and 2,000 word level tests are also available in bilingual versions for Chinese, Indonesian, Japanese, Korean, Russian, Samoan, Tagalog, Thai, Tongan, and Vietnamese (www.victoria.ac.nz/lals/resources/vocrefs/). The bilingual versions are appropriate for learners with limited proficiency (Nation, 2008, p. 158).

Although VLT is very useful, it covers only limited word levels (words in the 4,000, 6,000, 7,000, 8,000, and 9,000 levels are not tested in VLT) and is not designed to measure learners' overall vocabulary size. If teachers want to estimate the number of words that their students know, the Vocabulary Size Test (VST; Nation & Beglar, 2007) will be useful. VLT measures learners' vocabulary size from the first 1,000 to the fourteenth 1,000 word families and is more comprehensive than VLT. VST can be found at Paul Nation's Web site (www.victoria.ac.nz/lals/resources/vocrefs/), VocabularySize.com (http://vocabularysize.com), and Compleat Lexical Tutor (www.lextutor.ca/tests/). In addition to the English monolingual version, VST is also available in bilingual versions for Chinese, Korean, Japanese, and Vietnamese (www.victoria.ac.nz/lals/resources/vocrefs/ and http://vocabularysize.com).

In addition to VLT and VST, there are many other online vocabulary tests available. Paul Meara's _lognostics offers a wide range of lexical tests including V_Quint, X_Lex, Y_Lex, and LEX30 (http://www.lognostics.co.uk/tools/index.htm). Compleat Lexical Tutor (www.lextutor.ca/tests/) also offers Web-based versions of the Productive Vocabulary Levels Test (Laufer & Nation, 1999), the Word Associates Test (Read, 1998), and Eurocentres Vocabulary Size Test (Meara, 1992).

Vocabulary Learning Software

The Internet offers numerous vocabulary learning programs, most of which are computer-based flashcard software. In these programs, target items are presented outside meaning-focused tasks, and learners associate the second language word form with its meaning, usually in the form of a first language translation, second language synonym, or definition.

Examples of Web-based flashcard programs include iKnow (http://iknow.jp/), WordChamp (www.wordchamp.com), Quizlet (http://quizlet.com/), and FlashcardExchange (www.flashcardexchange.com/). Programs such as SuperMemo (www.supermemo.com), vTrain (www.vtrain.net), MemoryLifter (www.memorylifter.com), Anki (http://ichi2.net/anki/index.html), Mnemosyne (www.mnemosyne-proj.org/), Pauker (http://pauker.sourceforge.net/), and FullRecall (http://fullrecall.com/) are not Web-based, but are available for download on the Internet (Godwin-Jones, 2010).

Most computer-based flashcards are appropriate for learners of any language at any level because they allow users to create their own flashcards in any language. For instance, all the programs mentioned above can be used for learning any language as long as a Unicode-compatible font is available. These programs, moreover, provide a wide selection of readymade flashcards for various languages including English, French, German, Spanish,

Russian, and Arabic. By using these flashcards, learners can study many vocabulary items while avoiding the time-consuming task of flashcard creation. (However, note that the supporting documentation for flashcard programs is not always available in the learner's first language. For instance, Quizlet offers supporting documents only in English, and the software may not be suitable for non-English readers.)

Nakata (2011) surveyed nine commercially or freely available lexical learning programs and found that there are discrepancies in the way flashcard programs are designed. His study suggests that, unfortunately, some existing flashcard programs might not have been developed according to learning principles and may be less effective than others. Learners who want to study with computer-based flashcards, therefore, may need to exercise caution when deciding which software to use. Seventeen criteria for evaluating flashcard programs proposed by Nakata (2011) may serve as useful guidelines for choosing good flashcard software.

Software reviews may also be helpful for students who want to find flashcard programs that suit their needs. Reviews of vocabulary software can be found at *Language Learning & Technology* Archives: Multimedia Reviews (http://llt.msu.edu/archives/software.html), *CALICO Journal*: Software reviews (http://calico.org/page.php?id=169), an online article by Godwin-Jones (2010; http://llt.msu.edu/vol14num2/emerging.pdf), Memorization software review (www.quingle.com/softarea/flash.htm), and Fool's Flashcard Review: Flashcard Software Reviews for Language Learners (http://foolsworkshop.com/reviews/).

Corpora and Concordancers

Corpora (or *corpus* in its singular form) refer to a collection of electronic texts that are assembled for a particular purpose in a systematic manner (O'Keeffe, McCarthy, & Carter, 2007, p. 1). Although corpora have been used mainly by researchers and lexicographers, they can be useful for teachers and students as well. For instance, teachers can create example sentences or cloze exercises based on sentences extracted from corpora. Learners can search a particular word in corpora for studying collocations, idioms, grammatical patterns or *semantic prosody* (whether the word has a positive or negative connotation) of a word (O'Keeffe et al., 2007, p. 14).

The Internet offers numerous Web-based corpora. For instance, BNC (British National Corpus) and Bank of English, the two most widely known English corpora, are available online at BYU-BNC: British National Corpus (http://corpus.byu.edu/bnc/) and COBUILD Concordance and Collocations Sampler (www.collins.co.uk/Corpus/CorpusSearch.aspx), respectively. Compleat Lexical Tutor's Online Concordancers (www.lextutor.ca/concordancers/) allow users to examine English (e.g., Brown Corpus, BNC samplers and selected sub-corpora), French (e.g., Le Monde), German (Braun Corpus), and Spanish (Bruno) corpora. These Web sites are particularly useful for investigating how a particular word is used in context. For instance, if users search for *try* in Compleat Lexical Tutor's Corpus Concordance English (http://www.lextutor.ca/concordancers/concord_e.html), the Web site will display all the sentences containing the word from a selected corpus (Figure 1). By studying these concordance lines, learners can find out that *try* can be followed by both a *to-infinitive* and gerund although they have different meanings. (For instance, *tried to swim* does not necessarily imply that the speaker swam while *tried swimming* indicates that the speaker did swim.)

Corpora are also useful for extracting common collocations. Collocations refer to sets of words that often co-occur such as *take a break*, *make a decision*, or *a bitter disappointment* (Nesselhauf, 2003). Several Web-based programs can give a list of common collocations for a given word. Such programs include Just The Word (www.sle.sharp.co.uk/justtheword), BYU-BNC: British National Corpus (http://corpus.byu.edu/bnc/), and COBUILD Concordance

Figure 1 Concordance lines of *try* from the Brown Corpus using Compleat Lexical Tutor's Corpus Concordance English (www.lextutor.ca/concordancers/concord_e.html)

and Collocations Sampler (www.collins.co.uk/Corpus/CorpusSearch.aspx). These programs are useful because they may help learners find natural, appropriate expressions. Using these programs, for instance, students can discover that *drive* often collocates with *bus*, *car*, *truck*, *van*, or *taxi* (Figure 2, top) while *ride* tends to co-occur with *bicycle*, *bike*, *tricycle*, *horse*, or *camel* (Figure 2, bottom; Schmitt, 2000, p. 88).

Concordancers (also known as concordance software) refer to software for analyzing corpora and are also a very useful tool. These programs enable users to study concordance lines of words, create frequency word lists, examine collocations and multiword units, and identify keywords in texts (O'Keeffe et al., 2007). Concordancers can be used for hand-made corpora as well as preexisting corpora such as BNC.

Examples of concordancers include AntConc (http://www.antlab.sci.waseda.ac.jp/software.html), Wordsmith (www.lexically.net/wordsmith/), and MonoConc (www.michaelbarlow.com). AntConc is suitable for teachers and students because it is user-friendly freeware. Although freely available, the program is as versatile as most commercial concordancers (Schmitt, 2010, p. 336).

Figure 3 shows results of keyword analysis using AntConc. Keywords, in this context, refer to words that occur more frequently than expected at a statistically significant level. AntConc identifies keywords in a given corpus by comparing it against a reference corpus. In this example, a collection of applied linguistic articles on vocabulary acquisition is compared against a corpus of economic texts. Figure 3 indicates that keywords related to vocabulary learning may include *words*, *vocabulary*, *language*, *learning*, *learners*, *reading*, *students*, *knowledge*, *test*, and *lexical*. In other words, these words occur significantly more frequently in articles on vocabulary acquisition than in economic texts and may play an important role in the former. The identification of keywords may be useful for teaching and learning technical vocabulary.

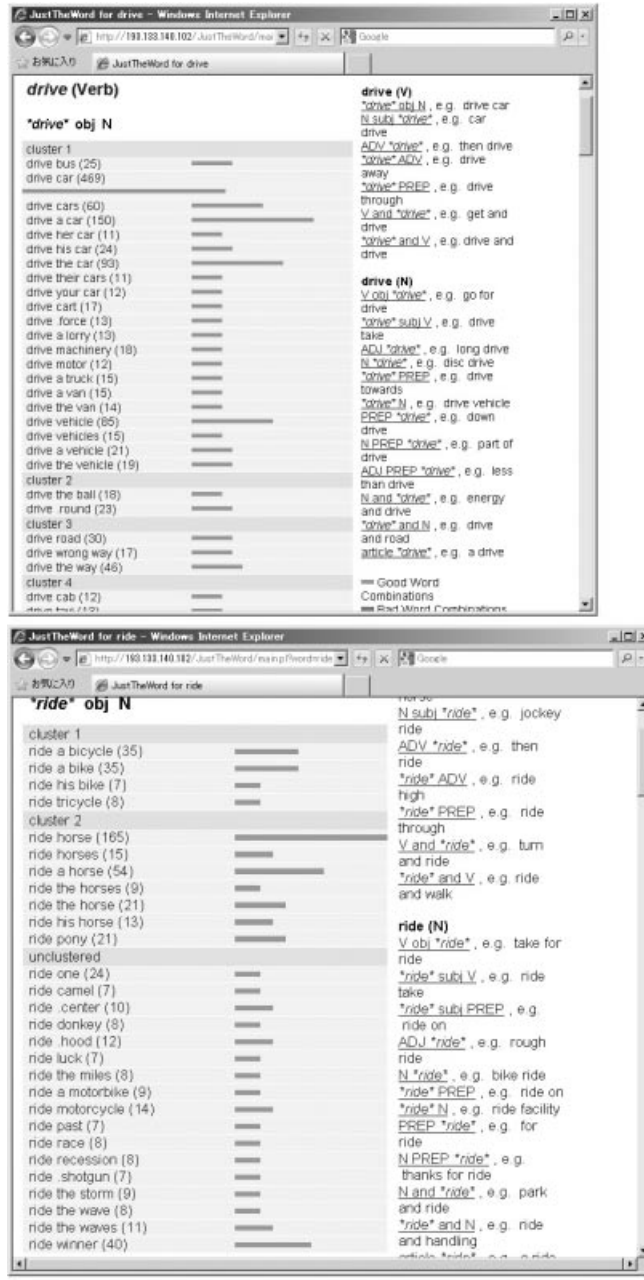

Figure 2 Common collocates of *drive* and *ride* extracted from Just The Word (Sharp Laboratories of Europe Limited; www.sle.sharp.co.uk/justtheword)

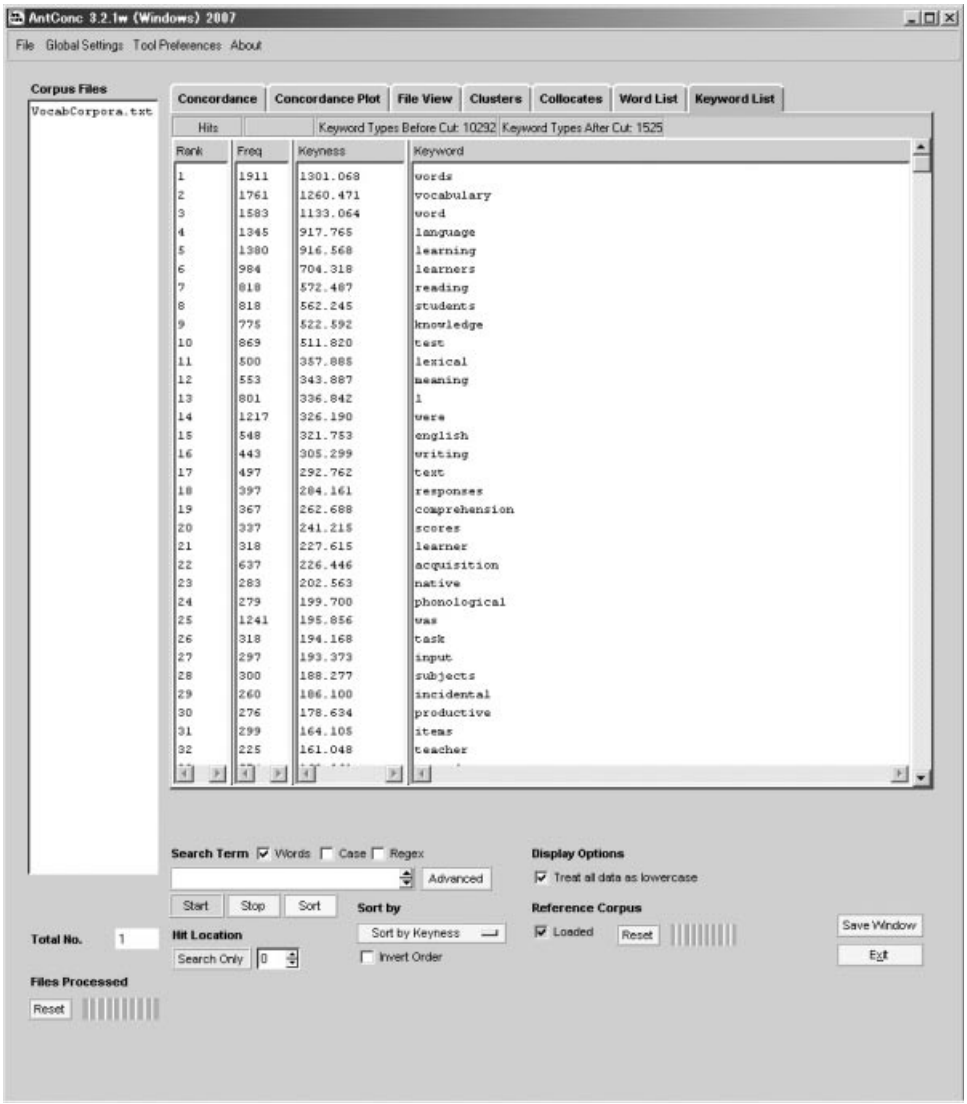

Figure 3 Results of keyword analysis using the AntConc concordancer (Laurence Anthony, Waseda University; www.antlab.sci.waseda.ac.jp/software.html)

On the Internet, one can also find corpora for languages other than English. The Web sites of David Lee (www.uow.edu.au/~dlee/corpora2.htm) and Richard Xiao (www.lancs.ac.uk/fass/projects/corpus/cbls/corpora.asp) provide extensive lists of such corpora (Schmitt, 2010, p. 308). Examples include European Corpus Initiative Multilingual Corpus (www.elsnet.org/resources/eciCorpus.html), The German National Corpus (www.dwds.de/cgi-bin/rest/loginstart), The Russian Reference Corpus (http://bokrcorpora.narod.ru/index-en.html), The Lancaster Corpus of Mandarin Chinese (www.lancs.ac.uk/fass/projects/corpus/LCMC/), and Kotonoha (Japanese; www.ninjal.ac.jp/kotonoha/).

Vocabulary Profilers

Vocabulary profilers refer to computer programs that compare a text against word lists specified by the user. These programs allow users to create their own frequency lists, identify words that are or are not shared by various texts, find words that are likely to be unknown to students of certain vocabulary knowledge, evaluate students' productive vocabulary knowledge, or estimate the vocabulary load of materials (Webb & Nation, 2008).

Examples of vocabulary profilers include the RANGE program (www.victoria.ac.nz/lals/staff/paul-nation.aspx) and AntWordProfiler (www.antlab.sci.waseda.ac.jp/software.html), both of which are freely downloadable. Compleat Lexical Tutor also provides RANGE (www.lextutor.ca/range/) and Vocabulary Profilers (www.lextutor.ca/vp/). The difference between RANGE and Vocabulary Profilers is that the former can analyze multiple text files simultaneously while the latter can process only one at a time.

Guides for Teaching and Learning Vocabulary

In recent years, numerous empirical studies have been conducted on vocabulary acquisition (e.g., Nation, 2001; Schmitt, 2007, 2008). These studies have contributed to our knowledge of how lexis should be taught and learned. However, teachers and learners tend to have misconceptions about what constitutes an effective vocabulary learning technique (Folse, 2004). On the Internet, there are many research-based guides for teaching and learning lexis that may help teachers and students who might have been misinformed about effective learning techniques.

For instance, works by Paul Nation (www.victoria.ac.nz/lals/staff/paul-nation-pubstopic.aspx) offer very valuable insights into how vocabulary should be taught and learned. Articles written by Norbert Schmitt (2007, 2008), which are freely accessible at his Web site (http://www.nottingham.ac.uk/~aezweb/research/cral/doku.php?id=people:schmitt), also offer helpful suggestions for vocabulary teaching and learning. Other useful guides can be found at Rob Waring's Web site (http://www.robwaring.org/vocab/principles/index.htm) and in an online article by Godwin-Jones (2010). The latter provides a list of Web-based resources on memorization techniques such as the keyword method, peg method, and semantic mapping (http://llt.msu.edu/vol14num2/emerging.pdf).

Vocabulary Quizzes

There are many Web sites that help teachers to create quizzes for vocabulary building. For instance, Compleat Lexical Tutor (www.lextutor.ca) allows users to create various exercises including dictation (www.lextutor.ca/spelling/dictator/), cloze (www.lextutor.ca/concordancers/multi/), and word recognition quizzes (www.lextutor.ca/id/). Puzzlemaker (http://puzzlemaker.discoveryeducation.com/) helps users to create quizzes such as word searches, crossword puzzles, and letter tiles. General purpose authoring tools including Hot Potatoes (http://hotpot.uvic.ca/), Moodle (http://moodle.org/), comet (http://comet.cls.yale.edu/), and SMILE (http://clear.msu.edu/teaching/online/mimea/smile/v2/index.php) can be used to create vocabulary exercises as well (Otto & Pusack, 2009).

Resources for Researchers

The Internet offers a wealth of valuable resources for researchers too. Paul Nation's Web site (www.victoria.ac.nz/lals/staff/paul-nation.aspx), Tom Cobb's Compleat Lexical Tutor (www.lextutor.ca/), and Paul Meara's _lognostics (www.lognostics.co.uk/) are perhaps the most comprehensive ones available. Paul Nation's Web site provides a bibliography on vocabulary, numerous articles on vocabulary, word lists, vocabulary tests, vocabulary

profilers, suggestions for research topics, and supplementary materials for his 2001 book (Nation, 2001). Compleat Lexical Tutor offers a wide range of vocabulary research tools such as online vocabulary tests (www.lextutor.ca/tests/); text analysis programs, for example, RANGE (www.lextutor.ca/range/), VocabProfilers (www.lextutor.ca/vp/), N-Gram (http://conc.lextutor.ca/tuples/eng/), KeyWords Extractor (www.lextutor.ca/keywords/); Web-based corpora (www.lextutor.ca/concordancers/); a reaction timer (www.lextutor.ca/rt/); statistical test calculators (www.lextutor.ca/stats/); and text processing utilities (www.lextutor.ca/tools/). Paul Meara's _lognostics provides a bibliography on vocabulary acquisition (http://www.lognostics.co.uk/varga/index.htm), a collection of articles on vocabulary (http://www.lognostics.co.uk/vlibrary/index.htm), computer-based vocabulary tests, and text analysis programs (http://www.lognostics.co.uk/tools/index.htm).

For lexicographers, the Web site of Euralex (www.euralex.org) provides a wealth of valuable resources. For Corpus and Computational Linguistics, the Web sites of David Lee (www.uow.edu.au/~dlee/CBLLinks.htm), Richard Xiao (http://www.lancs.ac.uk/fass/projects/corpus/cbls/corpora.asp), and Stanford Natural Language Processing Group (http://www-nlp.stanford.edu/links/statnlp.html) offer valuable information about a wide range of corpora and text analysis tools (Schmitt, 2010, pp. 308, 335).

Bibliographies on Vocabulary

There are several Web-based bibliographies that are valuable for vocabulary researchers. Vocabulary Acquisition Research Group Archive (VARGA; http://www.lognostics.co.uk/varga/index.htm), Paul Nation's Bibliography on Vocabulary (www.victoria.ac.nz/lals/resources/vocrefs/bibliography.aspx), and Rob Waring's Bibliography (http://www.robwaring.org/vocrefs/vocref.html) are among the most comprehensive ones available. VARGA is particularly noteworthy for two reasons. First, it is a searchable database and allows users to find vocabulary research according to keywords, publication years, or authors. Second, it is more up-to-date than the other two.

More specialized bibliographies include Euralex Bibliography of Lexicography (http://euralex.pbworks.com/), Learner Corpus Bibliography (http://cecl.fltr.ucl.ac.be/learner%20corpus%20bibliography.html), and ACL Anthology: A Digital Archive of Research Papers in Computational Linguistics (http://aclweb.org/anthology-new/).

Articles on Vocabulary

As well as bibliographies, articles on lexis are also freely accessible on the Web. *Reading in a Foreign Language* (http://nflrc.hawaii.edu/rfl/PastIssues/topic.html#Lex) and *Language Learning & Technology* (http://llt.msu.edu/archives/by_topic.html#Vocabulary), both of which are international refereed journals, have a collection of freely downloadable articles related to lexis.

Furthermore, numerous articles on lexis are available at the personal Web sites of researchers. Examples include the Web sites of Paul Nation (www.victoria.ac.nz/lals/staff/paul-nation-pubsdate.aspx), Paul Meara (http://www.lognostics.co.uk/vlibrary/index.htm), Norbert Schmitt (www.nottingham.ac.uk/~aezweb/research/cral/doku.php?id=people:Schmitt), and Tom Cobb (www.lextutor.ca/cv/#Publications).

Lexical Databases

One can find many lexical databases on the Internet. For example, MRC Psycholinguistic Database (http://www.psy.uwa.edu.au/mrcdatabase/uwa_mrc.htm) and CELEX (www.ldc.upenn.edu/Catalog/CatalogEntry.jsp?catalogId=LDC96L14, http://celex.mpi.nl/) have been used mainly by psycholinguists and are useful for controlling vocabulary related

variables in experiments. For instance, suppose you are looking for high-frequency, monosyllabic, abstract English nouns or seven-letter, polysyllabic, concrete nouns that have an irregular plural form. By specifying variables such as the frequency, number of syllables, number of letters, concreteness ratings, familiarity ratings, or the parts of speech, you can obtain a list of words that satisfy your criteria.

The Edinburgh Associative Thesaurus (www.eat.rl.ac.uk) and The University of South Florida Free Association Norms (http://web.usf.edu/FreeAssociation/) are very helpful for researchers investigating word associations. These databases allow users to investigate which words are strongly associated with a given word. According to The Edinburgh Associative Thesaurus, for instance, native speakers of English tend to associate *rain* with *snow*, *wet*, *sun*, *fall*, *umbrella*, *clouds*, *UK*, and *Spain*.

Other useful lexical databases include WordNet (http://wordnet.princeton.edu/), English Lexicon Project (http://elexicon.wustl.edu/default.asp), MCWord: An Orthographic Wordform Database (www.neuro.mcw.edu/mcword/), The Irvine Phonotactic Online Dictionary (www.iphod.com), and The Phonotactic Probability Calculator (http://www.people.ku.edu/~mvitevit/PhonoProbHome.html). More resources can be found at Behavior Research Methods Supplementary Material (http://brm.psychonomic-journals.org/content/supplemental).

Lexical databases for languages other than English are also accessible online. They include EuroWordNet (Dutch, Italian, Spanish, German, French, Czech, and Estonian; www.illc.uva.nl/EuroWordNet/), CELEX (English, German, and Dutch; www.ldc.upenn.edu/Catalog/CatalogEntry.jsp?catalogId=LDC96L14), Lexique (French: www.lexique.org), WordGen (English, French, German, and Dutch; http://users.ugent.be/~wduyck/Wouter_Duyck/wordgen.html), and Database of Japanese Vocabulary (http://www.lang.nagoya-u.ac.jp/~ktamaoka/down.htm). Behavior Research Methods Supplementary Material also includes lexical databases for various languages including English, French, German, Spanish, Dutch, Portuguese, and Japanese (http://brm.psychonomic-journals.org/content/supplemental).

In order to control for participants' prior knowledge, some researchers choose to use pseudowords in their research. Pseudowords, which are also referred to as nonsense words, nonwords, or artificial words, refer to strings of characters that do not really exist in a given language. For instance, *defermication, sepretennial,* and *fennerizer* are all pseudowords in English (Gathercole, 1995). The ARC Nonword Database (www.maccs.mq.edu.au/~nwdb/), Wuggy: A Multilingual Pseudoword Generator (http://crr.ugent.be/programs-data/wuggy), and Space Aliens and Nonwords (http://brm.psychonomic-journals.org/content/36/4/599/suppl/DC1) may help researchers to choose or create pseudowords that are suitable for their experiments. English Lexicon Project, MCWord: An Orthographic Wordform Database, The Irvine Phonotactic Online Dictionary, and WordGen, which are mentioned above, also contain some pseudowords.

Conclusions

As the above discussion has shown, the Internet offers a wide range of valuable lexical resources for language teachers, learners, and researchers. Resources such as online dictionaries, word lists, vocabulary tests, corpora, and concordancers may facilitate teaching and learning of vocabulary. Researchers will benefit from bibliographies on vocabulary, online articles, and lexical databases. With the advance in information technology and vocabulary research, more useful resources will continue to appear in the future.

SEE ALSO: Computer-Assisted Vocabulary Load Analysis; Concordancing; Conventional Methods for Assessing Vocabulary; Lexical Frequency Profiles; Technology and Learning Vocabulary; Term Banks; WordNet

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Webster and American Lexicography

SONJA LAUNSPACH

Noah Webster (October 16, 1758–May 28, 1843) was a patriot, a prolific writer, and an educational reformer. A pioneering educator, he wrote many influential textbooks, grammars, and readers. His blue-backed speller was used for 100 years after his death. His most important accomplishment, however, was *An American Dictionary of the English Language*, published in 1828, a work that shaped the course of American lexicography.

Webster, the fourth child of a Connecticut farmer, graduated from Yale in 1778. Unable to afford law school, he worked for several years as a teacher. He later graduated from law school in 1784, and although he worked as a lawyer for a short time, he spent most of his life involved in education and scholarship. In 1789, he married Rebecca Greenleaf; he and his wife had eight children.

As a patriot, Webster worked, along with others such as Alexander Hamilton, to shape the politics of the new nation (Jones, 1993). As part of his strong nationalistic feelings, Webster felt it was important to create an American English distinct from British English. As an educator and language reformer, Webster worked to promote a "correct" standard for the writing, spelling, and pronouncing of American English.

Webster's early experiences as a teacher led him to become an educational reformer. To fill the gaps in the educational materials available to students, he wrote textbooks that stressed American usage and pronunciation. His readers were the first to introduce secular material from American authors. In 1783, he published the blue-backed speller, Part 1 of his three-part *Grammatical Institute of the English Language*. Used until the early 1900s, the blue-backed speller would eventually sell approximately 80 million copies (Baugh as cited in Cannon, 1972).

While Webster continued to write textbooks for the rest of his career, in 1804 he turned his attention to compiling dictionaries, a task that would occupy the rest of his working life. In 1806, he published the *Compendious Dictionary of the English Language*, a revised and expanded version of Entick's *New Spelling Dictionary* (Micklethwait, 2000). Then, in 1807, he began work on his *American Dictionary of the English Language*, a project he would not complete until 1828.

Like all of his contemporaries, Webster drew heavily on earlier publications. For instance, his dictionary owes a great debt to Samuel Johnson's *Dictionary of the English Language*. Johnson's methodology and presentation format have influenced all subsequent English-language dictionaries. Webster used Todd's 1818 revision of Johnson's dictionary as his "working base" and approximately one third of Webster's definitions were copied from or influenced by Johnson (Landau, 2005). Despite his reliance on Johnson, Webster criticized him for the omission of words, an inadequate pronunciation system, problematic etymologies, and the use of too many quotations to illustrate a word's meaning.

Webster initiated many innovative practices that would become standard in modern dictionaries. For example, he used a minimum of examples to illustrate a word's usage, introduced the use of diacritical marks, and was noted for the conciseness and clarity of his definitions. However, his etymologies were unsound. Having a provincial mindset, he ignored European language scholarship, attempting instead to fit his etymologies into a biblically based theory of language origins (Moss, 1984).

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While Webster's intellectual interests lay in educating American readers, he approached publication from a practical perspective. Motivated by a need to protect and control the rights and profits of his work, Webster worked to establish the first copyright laws in the United States (Micklethwait, 2000).

Nor was Webster's the only dictionary published in early America. In 1816, John Pickering published *A Vocabulary, or Collection of Words and Phrases Which Have Been Supposed to Be Peculiar to the United States of America*. However, Webster's chief competitor was Joseph Worcester, another scholar and lexicographer, who published a series of dictionaries beginning in 1817 with his *Geographical Dictionary, or Universal Gazetteer, Ancient and Modern*. In 1830, his *Comprehensive Pronouncing and Explanatory English Dictionary* appeared. Worcester, like Webster, contributed features now found in modern dictionaries. Worcester's *Dictionary of the English Language*, published in 1860, was the first American dictionary to include illustrations and synonyms.

In 1834, the 30-year war of the dictionaries began when a newspaper article accused Joseph Worcester of plagiarizing Webster's work in his 1830 dictionary. Webster, fiercely competitive and easily offended, instigated a public exchange of letters with Worcester in which various charges and countercharges were made by both men (Kraus, 1986).

Although Webster died in 1843, the publishers of the two men took up the battle, and Worcester became caught between the rival publishers, who launched various campaigns, including pamphlets and testimonials against each other in an effort to sell their product. The death of Joseph Worcester in 1865 as well as changes in the way dictionaries were compiled effectively ended the dispute.

After Webster's death, George and Charles Merriam acquired the rights to Webster's dictionary from his heirs. They established an editorial board for the dictionary and commissioned several different revisions (Kraus, 1986). First, Webster's son-in-law, Chauncey A. Goodrich, revised the dictionary in 1847. Then philologist C. A. F. Mahn eliminated the earlier problematic etymologies and moralistic definitions in the 1864 Webster–Mahn edition.

As part of a market-driven approach, Merriam used slogans to revive Webster's reputation, ultimately making Webster's name synonymous with dictionaries. Eventually, Merriam lost exclusive rights to Webster's name and now other American dictionary publishers also use his name to sell their products.

Noah Webster had a lasting influence on the development of American English in the areas of spelling and lexicography. And although none of his original 1828 dictionary is still used, the association of his name with American dictionaries remains.

SEE ALSO: Johnson, Samuel and Lexicography

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Welsh Language Board and Bòrd na Gàidhlig

WILSON MCLEOD

Bwrdd yr Iaith Gymraeg (the Welsh Language Board) and Bòrd na Gàidhlig are the statutory bodies charged, respectively, with the promotion of the Welsh language in Wales and the Gaelic language in Scotland. Their formal roles are broadly similar, but the Welsh Language Board is a much larger organization than Bòrd na Gàidhlig and was initially established almost fifteen years earlier. Further, it appears likely that the board will shortly be abolished, and its functions taken over by a new Welsh language commissioner. Both bodies take an active role in the Network of European Language Planning Boards, a consortium which also includes the counterpart boards working on behalf of Basque, Catalan, Frisian, Galician, Irish, and Swedish (in Finland).

The Welsh Language Board was established in 1988 as a voluntary organization but gained formal statutory powers with the enactment of the Welsh Language Act 1993. The board plays a central role in a wide range of language planning activities in relation to the Welsh language, initiatives which gained new momentum following devolution and the creation of the Welsh Assembly in 1999. Among other things, the board has facilitated the development and overseen the implementation of Welsh-language schemes by public bodies in Wales, including branches of the United Kingdom government based in London. More than 650 of these schemes have now been put in place, with the aim of implementing the Act's principle that the Welsh and English languages should be treated on a "basis of equality." Many of these schemes closely track the board's formal guidance on their preparation (Welsh Language Board, 1996). The board has limited authority to conduct investigations concerning the implementation of schemes, but no direct enforcement powers. Along with extending the influence of the language schemes, other current priorities for the board include increasing the role of Welsh on the part of private businesses (which are not covered by the Welsh Language Act), in information technology, and among youth.

In recent years the status of the board has been controversial. In 2004 the Welsh Assembly Government proposed to abolish the board and merge it into the government itself, but this plan was eventually blocked by a majority in the Welsh Assembly. Following extensive discussions of possible improvements to the Welsh development infrastructure (see Williams, 2008), in March 2010 the Welsh Assembly Government introduced proposals for a new Welsh-language measure in the Welsh Assembly. Under the terms of this draft legislation, the board would be replaced by a new office of the Welsh language commissioner (a structure reflecting the influence of the Canadian model), whose powers would be significantly stronger than those of the board in several key respects, and a new mechanism of binding legal standards in relation to the Welsh language would come into effect in place of the language schemes.

The history and role of Bòrd na Gàidhlig mirror those of the Welsh Language Board to a considerable extent. (The organization does not have an English title, but the Gaelic form translates as "The Gaelic Board".) The Bòrd was established in 2003 as a "nondepartmental public body," but obtained statutory status with the enactment of the Gaelic Language (Scotland) Act 2005. The Act imposes a number of obligations upon the Bòrd. It must

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publish a national Gaelic-language plan every five years, setting out a strategy for promoting Gaelic language, education, and culture. The first of these plans was published in 2007 and lasts until 2012 (Bòrd na Gàidhlig, 2007a). The Bòrd also has principal responsibility in relation to the development of Gaelic-language plans on the part of public bodies in Scotland, which correspond to the language schemes in Wales. To this end, the Bòrd must decide which bodies should be required to produce plans and then agree the specific terms of each plan, using its formal guidance (Bòrd na Gàidhlig, 2007b) as a template. As of May 2010, only seven plans had been agreed by the Bòrd, but a further 44 are expected by the end of 2013. In the same manner as the Welsh Language Board, the Bòrd has principal responsibility for funding the various Gaelic organizations in Scotland (in the fields of education, arts, publishing, and so on, but not including broadcasting); it also runs a scheme for supporting smaller-scale promotional initiatives of different kinds. The Bòrd also manages the Gaelic Language Act Implementation Fund, which helps defray some of the costs incurred by public bodies when implementing their Gaelic-language plans.

Compared to the Welsh Language Board, Bòrd na Gàidhlig is a significantly smaller organization, with only 18 staff compared to some 75, and it has so far not developed a comparable level of experience and professionalism. The organization has suffered from turbulence in relation to its leadership: The current chief executive and chair are the third to hold those posts. It is hoped that these difficulties will turn out to have been no more than growing pains. A new action plan published in April 2010, with a renewed focus on increasing numbers of Gaelic speakers, represents the Bòrd's latest strategic initiative.

SEE ALSO: Linguistic Legislation; Minority Languages in Education; Status Planning

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Williams, Colin H.

DIARMAIT MAC GIOLLA CHRÍOST

Colin Williams is currently a research professor in the School of Welsh at Cardiff University (www.cardiff.ac.uk) and has, for many years, been internationally recognized for his expertise in language planning and policy and in the geography of language, in particular the Welsh language. He was born in south Wales in the popular coastal resort of Barry ('y Barri' in Welsh) where he attended Ysgol Gymraeg y Barri and was among the first cohort of pupils to attend Ysgol Uwchradd Rhydfelen (renamed Ysgol Gyfun Rhydfelen and now Ysgol Gyfun Garth Olwg), a school which pioneered the rapid and successful expansion of secondary level Welsh-medium education that occurred in Wales during the last quarter of the 20th century.

At that time pupils of Ysgol Uwchradd Rhydfelen were strongly encouraged to continue their higher level education at university in Wales, thus, upon leaving Rhydfelen Williams attended Swansea University where he graduated with an outstanding first (BSc Econ) in Geography and Politics in 1972. He immediately began his PhD research at Swansea on the subject of "Language Decline and Nationalist Resurgence," a comparison of the Welsh and Québécois situation. He was interested in also conducting research on the Biafran conflict which was afflicting Nigeria at that time (1967–70) but the region was deemed to be too dangerous for the purposes of fieldwork.

In 1973, during the course of his PhD research, he was awarded an English Speaking Union Scholarship, tenable at the Department of Geography, the University of Western Ontario, to conduct fieldwork on the French language in Quebec and Acadia. During his time there he developed an enduring intellectual interest in Canada, in the area of language policy and planning in particular. Upon his return to Wales he was appointed as an Open University tutor and a demonstrator at the Department of Geography, University College of Swansea, 1974–6. His first lectureship followed immediately at the Department of Geography at North Staffordshire Polytechnic (now Staffordshire University). He enjoyed an enormously successful career there as he was successively appointed lecturer, principal lecturer, and professor of Geography.

Williams was a youthful Head of Department at Staffordshire, and while the demands of teaching and administration were onerous his research interests matured. His article "Non-Violence and the Development of the Welsh Language Society, 1962–c.1974," published in 1977 in the journal *Welsh History Review* was largely responsible for introducing the language conflict in Wales to an English-language audience. His subsequent work in this area, in both English and Welsh, has substantially shaped the parameters of the scholarly study of the sociology of the Welsh language. This period of work, it could be argued, culminated in the publication of *Called Unto Liberty: On Language and Nationalism* (1994), a volume which remains well read amongst scholars of language and politics and has an enduring popular appeal.

International recognition of his work grew during his time at Staffordshire. In 1982–3 he was Fulbright Scholar in Residence and visiting professor at the Department of Geography, Pennsylvania State University. In 1988 he was a Swedish Institute Scholar (1988) at the Centre for the Study of International Conflicts in the Department of History at the University of Lund. In 1993 he was a Multicultural History Society of Ontario Fellow

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in Toronto. His appointment as research professor at the School of Welsh, Cardiff University, in 1993 was a significant development in his academic career.

His professional return to Wales enabled him to become much more directly involved in the affairs of the Welsh language at a scholarly and professional level while at the same time his work became more widely known to a popular audience. His most important publications in this period include the three volumes *Language Revitalization in Wales: Policy and Planning* (2000), *Language and Governance* (2007), and *Linguistic Minorities in Democratic Context* (2008). Also in this period his scholarly expertise has been in much demand. Governmental agencies in Canada, Northern Ireland, the Republic of Ireland, Catalonia, and South Africa, for example, have all sought out his expert professional advice on language planning and policy.

In 2000 he was appointed a member of the Welsh Language Board by the National Assembly for Wales. This followed a period of several years of providing advice to the Welsh Language Board. As a member of the Welsh Language Board he has been hugely influential in the shaping of public policy on the Welsh language. While it is the case that his period as a member of the Board came to an end in 2010 (under UK regulations he is not able to serve for a further period, although it is certain that the Welsh Language Board would have been very keen for him to have been able to do so), he continues to be called upon by the National Assembly for Wales to offer guidance. The regard of his peers is reflected in his election to fellow of the prestigious Royal Society of Arts in the UK and in the various honorary appointments he holds including to the University of Western Ontario (adjunct professor of geography), the University of Aberdeen (honorary professor of Celtic studies) and at the University of the Highlands and Islands (honorary professor of Celtic studies). He is a member of the Scientific Committee of Lingua Mon, Barcelona and a member of the Editorial Boards of academic journals in the fields of language, education and geography. Colin Williams has also been the sympathetic and supportive supervisor and examiner of numerous PhD students who have gone on to pursue their own successful academic and professional careers in language policy and planning. For more information, visit his personal Web page at the Cardiff University Web site (www.cf.ac.uk/welsh/contactsandpeople/academicstaff/williams-colin.html).

SEE ALSO: Canada's Office of the Commissioner of Official Languages; Language Planning and Multilingualism; Language Policy and Multilingualism; Language Policy and Planning: Overview; Language Rights in Language Policy and Planning; Minority Languages in Education; Multilingualism and Language Rights; Multilingualism and Minority Languages

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Wittgenstein and Language Games in Qualitative Research

JOHN SHOTTER

> I believe my originality (if that is the right word) is an originality belonging to the soil rather than to the seed . . . Sow a seed in my soil and it will grow differently than it would in any other soil. (Wittgenstein, 1980, p. 36)

> What is happening now has significance—in these surroundings. The surroundings give it its importance. (Wittgenstein, 1953, No. 583)

I am in conversation with a friend. She is trying to tell me something complicated, but she goes from one sentence to the next too quickly for me to "follow" her. I begin to lose my sense of her words as meaning something to me and ask her to repeat what she has just said more slowly: "Ah, now I get it," I say, "but could you go a little more slowly from now on?" My unfolding sense of my living, embodied relations to her talk, *and of its relations to our shared situation*, is crucial if I am to retain my grasp on her meaning and its development within me—for, although I cannot easily give a sequence of names to the emerging flow of events occurring within me, I can, nonetheless, have an acute discriminative sense of where she is "coming from," as well as "where she is going" with it, what her "point" is. It is this unique qualitative sense of the unfolding "shape" of the spontaneous responses to her talk occurring within me that can guide me in shaping the more explicit responses that I might make to her talk. And the difficulty I overcame by my request to her was to do with me once again being able to *relate myself* to my friend's talk.

It is the uniquely distinctive, qualitative character of these easily ignored feelings, these *situated sensings*—and their ineradicable importance in guiding and shaping our everyday talk together—that Wittgenstein wants to bring to our attention in his investigations. And it is the *relations* between our words and the surroundings within which we put them to *use* that he wants to draw to our attention, with his talk of them as occurring within the confines of one or another kind of language game.

In other words, Wittgenstein is interested in those *situations* that make it possible for us to use our words in teaching someone something, including, say, the teaching of scientific forms of inquiry. Indeed, as he puts it, he is concerned to inquire into "what is possible *before* all new discoveries and inventions" (Wittgenstein, 1953, No. 126). For, in his terms, scientific thinking arrives on the scene too late, and looks in the wrong direction, with the wrong aim in mind—*too late*, because as scientists we act as if the "basic elements" of our analyses are already "there" in existence as fixed, determinate, and nameable entities; *in the wrong direction*, because we look backward toward already existing actualities, rather than forward toward possibilities; and *with the wrong aim in mind*, because we seek a static picture, a theoretical representation, of a phenomenon, rather than a living sense of it as an active agency in our lives. Thus, as scientists, it is only too easy for us to think of "Language" as a self-contained thing or object that we need to inquire into if we are to understand its workings. But for Wittgenstein (1953), no such isolated thing as "language" exists. What we call the *linguistic* aspects of our everyday activities always occur within a particular situation, inextricably intertwined with a whole host of other activities. Thus,

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as he sees it, it is how a word is *used* in relation to its particular surroundings that gives it its meaning. To remind us of this, he says, "I shall also call the whole, consisting of language and the actions into which it is woven, the 'language-game'" (1953, No. 7)—where the idea of a game is meant to remind us that things occurring *within* a game have a quite different meaning or use to those occurring *outside* it.

When we consider certain words outside the surroundings of their actual everyday use, we can of course still give them a meaning—as we do, for instance, in compiling dictionaries. But what is lost is what uniquely a particular person in a particular situation meant in saying them. For the point of our uttering certain words (rather than others), and the circumstances in which they are voiced, and how they are voiced, is as much an aspect of their significance as what we are inclined, as theorists, to call their "meaning" or what they "represent."

Wittgenstein's Investigations and Scientific Research

This entry began in this way because—in trying to set out below the role that Wittgenstein's (1953) *descriptive* concept of "language games" can play in our conduct of qualitative research—we need to see his work as exerting its influence upon us in a context quite different from that which has become familiar to us as a result of our training as rational thinkers and scientific investigators.

At the moment, one whole strand of scientific research still takes it that there is only one universe, that it is made of separate parts in motion, and that it is the task of research to identify these parts and to specify the general laws governing their motion. Traditionally, this has been described as a search for the "hidden mechanisms behind appearances" that we suppose to be responsible for shaping or organizing what we observe. A version of this presupposition is carried over into social scientific research in the assumption that it is the task of our minds to produce *inner representations* of these outer states of affairs, and that it is these hidden inner representations that shape our expressive activities. No matter what people themselves might say about why they acted, these hidden influences are often said to be the *real* reasons or causes of our actions. These assumptions have shaped a whole research process which begins with what we call the collection and *analysis* of *data*—a step in which we continuously pick out certain identifiable events as separable from their context of occurrence. The events so selected are then surveyed with the aim of finding a pattern within them so that, once such a pattern has been identified, a causal mechanism can be suggested as being possibly responsible for that pattern, and further tests made to see whether or not its "workings" can be detected in other contexts.

But, to the extent that certain focal events have been divorced in this process from their original surroundings, people's utterances and other expressions need to be "given back" a *meaning* or *function* by being appropriately placed within a particular theoretical framework. The application of a large number of different *analytic perspectives* to linguistic materials and the different *interpretative roles* they can play in this kind of research process are explored in Silverman's (2004) classic text on methods in qualitative research. All the perspectives and methods explored within it function in the manner described above. Indeed, as Silverman himself remarks about his own teaching of these methods: "I approach taught courses as workshops in which students are given skills to analyse data and so to learn the craft of our trade" (2004, p. 1). It is such analyses of abstracted data in terms of idealized frameworks that Wittgenstein wants to speak against.

Rather than being interested in the supposed hidden mechanisms of our minds, Wittgenstein is much more interested in the *soil*—the different soils, the different surroundings—to which we as living embodied beings are spontaneously responsive, and

within which we continue to grow, as the first quote at the beginning of this entry indicates. Thus, rather than the hidden mechanisms working beyond our control by which we suppose our intentions come to be given bodily expression, Wittgenstein is interested in exploring the distinctive discriminations that we can (and must) make use of, both in making sense of other people's utterances and in giving a shape to our own expressions. As he sees it, "nothing is hidden" (1953, No. 435), for the fact is—although it is very difficult for us to become aware of doing it while doing it—we draw on features of events occurring both around us and within us, as we work to make our use of words fit the circumstances of their use.

This appropriate use of words is an everyday skill in which we have been (and are still being) informally trained, as we live out our lives together with those around us. It is what makes our learning of the techniques of scientific forms of inquiry possible. But if we then try to turn these techniques around, if we try to do this by pursuing already existing text-book methods of a science-like inquiry—with all the idealizations, selective abstractions, and reifications they involve—then we can get ourselves into trouble. For, although it is easy for us to "lay down rules, a technique, for a [language] game," we often find that "when we follow the rules, things do not turn out as we had assumed. That we are therefore as it were entangled in our own rules" (1953, No. 125)—and we can mislead ourselves into ignoring once again influences exerted by the actual surroundings of our meaningful expressions.

Difficulties of Orientation and Language Games in Qualitative Research

One of Wittgenstein's great achievements in his later philosophy is to have made it very clear to us that there are two kinds of difficulty we can face in situations that bewilder us, not just one. Given our training as rational thinkers and scientific investigators, we are inclined to think of all the difficulties we face as *problems* that can be *solved* by the application of a science-like methodology. As Wittgenstein sees it, however, besides such *difficulties of the intellect* we can also face a *difficulty of the will*, a difficulty that manifests itself in what, spontaneously, "we *want* to see" (Wittgenstein, 1980, p. 17) in each new situation we encounter. Such *relational* or *orientational* difficulties as these cannot be overcome by the application of any of our current methods of inquiry. These difficulties are to do with the expectations and anticipations that have come to be embodied within us, with which we "go out to meet" the detailed features of our surroundings, thus to find our "way about" (No. 123) and to "go on" (No. 154) with our practices within them without (mis)leading ourselves into taking inappropriate next steps. The difficulties we need to overcome are therefore not of an epistemological kind, but are ontological ones to do with our own way of being in the world—they involve "a working on oneself . . . On one's way of seeing things. (And what one expects of them.)" (1980, p. 16).

And this is how Wittgenstein proceeds to induce us to work on ourselves, on our ways of seeing things and what we expect of them: Prior to his remarks in which he introduces the term "language games," he "sets the scene," so to speak, by asking us to draw on or to do what is already familiar to us. He writes: "Now think of the following use of language" (1953, No. 1); "Conceive this as a complete primitive language" (No. 2); "Imagine a script" (No. 4); "We could imagine that the language of §2 was the *whole* language" (No. 6), and so on. Instead of giving us a definition of the term, he asks us to call to mind a whole host of concrete everyday situations and activities, so that we can respond to each of his remarks by turning our attention to a particular feature in our use of language. Once we attend to it, it becomes quite evident to us. Indeed (and this is central to Wittgenstein's whole

approach), we exhibit our knowledge of how to make use of language continually in our everyday practices—it is not hidden away "behind appearances", but the fact is, we no longer seem "to know [of it] when we are supposed to give an account of it" (No. 89).

Thus, straightaway, Wittgenstein engages us in a set of practices very different from those we normally undertake when faced with a bewildering or difficult situation. Instead of beginning with an *analysis* of it into its supposed elementary parts, he asks us to undertake a set of imaginative practices, or of different *ways* of seeing things, or other methodical ways of thinking, all aimed specifically *both* at overcoming our *intellectual way* of relating or orienting ourselves to our surroundings, *and* at our coming to know our "way about" (1953, No. 123) within the unique concrete situations that bewilder us. And as we explore the unique qualities of our initial bewilderments, we can come to feel so "at home" within them, he suggests, that we can come to see specific *possibilities*, previously unnoticed, for being able "to go on" (No. 151) within them, thus to guide our next steps in terms of the degree to which they satisfy the disquiets they initially aroused within us.

He thus describes the "turn," or the change in attitude he intends here, as being of the following kind:

> When philosophers use a word—"knowledge", "being", "object", "I", "proposition", "name"—and try to grasp the essence of the thing, one must always ask oneself: is the word ever actually used in this way in the language-game which is its original home?—What we do is to bring words back from their metaphysical to their everyday use. (1953, No. 116)

For, as Wittgenstein sees it, when used in metaphysical (or theoretical) statements, divorced from their everyday surroundings, words have no determinate sense whatsoever. They are like the meaningless terms in Lewis Carroll's poem, "Jabberwocky," in which what sense such words as *brillig*, *slithy*, *toves*, *wabe*, *mimsy*, and so on have is only given them by their *syntactical place within well-known sentence structures*.

Yet, within their everyday use, our words *can* in fact be given precisely determinate meanings. How do we do this? How can we give an account of the organized sequence of tasks that we undertake in achieving such precise meanings? This is where—after having asked us to remind ourselves of a number of simple activities within which words are actually used to bring off a number of particular practical achievements—Wittgenstein's introduction of the prospective, open, or descriptive concept of language games becomes so important. For it can give us a stable point of entry—a pivot point that "stands fast" (1969, No. 116) for us in our inquiries—to which we can return time and again, *and in relation to which* we can begin to differentiate and thus to organize the otherwise bewildering complexity of our first impressions.

Thus, rather than providing us with an alternative set of surroundings—a textbook framework or theoretical model into which to insert our data in making sense of them—Wittgenstein (1953) introduces different language games for very different reasons. He outlines them as follows:

> Our clear and simple language-games are not preparatory studies for a future regularization of language—as it were first approximations, or idealizations, ignoring friction and air-resistance. The language-games are rather set up as *objects of comparison* which are meant to throw light on the facts of our language by way not only of similarities, but also of dissimilarities. For we can avoid ineptness or emptiness in our assertions only by presenting the model as what it is, as an object of comparison—as, so to speak, a measuring-rod; not as a preconceived idea to which reality *must* correspond. (The dogmatism into which we fall so easily in doing philosophy.) We want to establish an

> order in our knowledge of the use of language: an order with a particular end in view; one out of many possible orders; not *the* order. To this end we shall constantly be giving prominence to distinctions which our ordinary forms of language easily make us overlook. (1953, Nos. 130–2, original emphasis)

They are thus orientational devices, aimed at reminding us of what to attend to in our inquiries. And one could almost say that Wittgenstein's main method of investigation is manifested here: In taking it that "every sentence in our language 'is in order as it is' . . . [and that] where there is sense there must be perfect order. So there must be perfect order even in the vaguest sentence" (1953, No. 98), he is asking us to look around within the everyday situations of actual language use, to notice why *this* or *that* utterance is structured as it *is*. For, as he sees it, the reasons for its structure, its "shape," are to be found out there, within its particular, moment-by-moment unfolding *relations* with its actual surroundings.

Conclusions

The results of Wittgenstein's (1953) investigations are, thus, not to be found on or in the pages of his writings, but in ourselves as readers of them. In our reading of them, we encounter dramatic vignettes aimed at re-orienting us, at changing us in the kind of investigators we can be. Their effects are manifested in the many different possibilities we can in fact see (and hear) being played out in the situations of our inquiries—they can *prepare* us to attend to *evidence* manifested in the *relations* between the events happening out in the world before us, evidence that we might not otherwise notice. His concern, then, is not to arrive at final, general answers for all time, but to help us to be clear about what we—as participants within *the situation of our current research inquiries*—are actually doing, and why we are doing it. And if a critic exclaims: "But in that case we never get to the end of our work!," he replies, "Of course not, for it has no end . . ." (1981, No. 447)—for our aim in his kind of qualitative research would be simply to achieve a particular practical result in a particular practical situation.

SEE ALSO: Epistemology and Ontology; Knowledge Claims; Qualitative Methods: Overview

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Wodak, Ruth

MIGUEL PÉREZ-MILANS

Ruth Wodak was born in London on July 12, 1950, with Austrian citizenship. She studied at the University of Vienna (BA in Slavic philology, Eastern European history and linguistics, 1970; PhD in linguistics *sub auspiciis praesidentis*, 1974; postdoctoral degree [habilitation] in applied linguistics, 1980), where she was assistant professor of linguistics (1975–83), associate professor of sociolinguistics and psycholinguistics (1983–91), and full professor of applied linguistics (1991–2004). She has been distinguished professor and chair in discourse studies at Lancaster University since 2004.

The significance and importance of Wodak's professional career is reflected in her various academic positions as well as in the number of prizes she has been awarded. Regarding her academic activities, she has been codirector of the Austrian National Focal Point (NFP) of the European Monitoring Centre for Racism, Xenophobia, and Anti-Semitism (now renamed European Union Agency for Fundamental Rights—FRA) as well as chair of the Panel of the Humanities and Social Sciences for the EURYI Award, European Science Foundation. She has also acted as a member of advisory boards of different institutions, including the Institute of Textbook Research (Vienna), Centre of Austrian Studies (New Orleans), Leo Baeck Institute (London), Simon Wiesenthal Institute (Vienna), Hanadiv Foundation (London), and ACCEPT Project (7th EU Framework).

In 2009, she was elected as president of the *Societas Linguistica Europea* followed by her nomination, in 2010, as honorary doctorate by University Örebro (Sweden) and as member of the *Academia Europea*. In addition to various other journals across different disciplines, she has been part of the editorial board of *Language and Education*, *Applied Linguistics*, *Language Policy*, *Language in Society*, *Journal of Language, Identity and Education*, *Journal of Linguistic Anthropology*, *Qualitative Research Quarterly*, and *Discourse and Communication*. She has also coedited various journals (*Discourse and Society*, *Journal of Language and Politics*, and *Critical Discourse Studies*, among others) and book series (*Language and Context*, *Discourse Approaches to Politics, Culture and Society*, and *Document Design*, among others).

With regard to the many prestigious prizes awarded to Wodak, these include the Prize of the Austrian Medical Society (1989), the Dr. Hertha Firnberg National Award (1990), the Wittgenstein Prize for Elite Researchers (1996), the Scientific-Prize of the City of Vienna (2001), and the Woman's Prize of the City of Vienna (2006).

Wodak's main contributions are mainly located in the discourse studies (DS). In particular, she was one of the founders of critical discourse analysis (CDA), a field influenced by the work previously done in the philosophy of language, the Frankfurt School, and by poststructuralist critics of social science. In this regard, Wodak's work needs to be framed within the shift in the structuralist conceptualization of language, from a decontextualized neutral system to a social practice. She has then focused on the importance of considering the context of language use, which means that describing discourse requires considering a reciprocal relationship between the communicative organization of a particular event and the situation(s), institution(s), and social structure(s) that frame it (Fairclough & Wodak, 1997).

According to this view, doing CDA implies an understanding of discourse as socially constitutive and socially conditioned in that it

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> constitutes situations, objects of knowledge, and the social identities of and relationships between people and groups of people. It is constitutive both in the sense that it helps to sustain and reproduce the social status quo, and in the sense that it contributes to transforming it. (Fairclough & Wodak, 1997, p. 258)

In this framework, Wodak has devoted herself to distinguish the meaning of "discourse" in linguistically inspired DA as opposed to Foucault's formulation of "power-knowledge." Thus, she has emphasized the need to understand "discourse" as structures of knowledge manifested in different kinds of (oral/written) genres and texts that have their own communicative conventions (i.e., linguistic features and organization) and ways of implying meanings. From this angle, texts are considered to create sense and shared knowledge and therefore are linked to each other, but also are connected to particular audiences; that is, there is a need for a dialectic relationship between producer and reader, so every text need to be contextualized and embedded in the sociopolitical context, the setting, and the genre (Wodak & Krzyzanowski, 2008). Indeed, she has explored a range of different settings and genres in context, which include her early analysis of courtroom interactions, therapy groups, news, and legal texts (see Wodak, 1976, 1981; Lutz & Wodak, 1987).

Apart from her elaboration of the notion of "discourse," Wodak's work has also played a fundamental role in the definitions of the scope, needs, and limits of CDA. She has stressed the necessity of considering CDA as a paradigm that, while being nonunified and multifaceted in terms of theoretical and methodological approaches, shares (a) the view on language as social practice, (b) the aim of producing both enlightenment and emancipation by creating awareness in social agents of their own needs and interests, (c) the understanding of "power" as a central condition in social life that is manifested and challenged in language, and (d) the interest in the intersections between power, history, and ideology so as to analyze processes of production, naturalization and challenging of unequal power relationships in the making and breaking of conventionalized, stable discursive practices (see Wodak, 1989).

Together with her former colleagues and PhD students in Vienna (Rudolf de Cillia, Gertraud Benke, Helmut Gruber, Florian Menz, Martin Reisigl, Usama Suleiman, Christine Anthonissen), Wodak has developed the so-called "Vienna School of CDA," which has elaborated the discourse historical approach (DHA) since the 1990s by implementing an interdisciplinary, problem-oriented analysis focused on the change of discursive practices over time and across various institutional settings and genres (see Wodak, 2001, for further details). In this sense, she has been strongly committed to the combination of theoretical research and empirical analysis of large data corpora. The DHA has been expanded by Wodak in a number of studies articulated around the main research areas of theoretical-methodological perspectives in DS, prejudice and discrimination, language and/in politics (national and transnational; individual and collective) identity politics, and gender studies.

Concerning the theoretical-methodological perspectives, she has combined ethnography, pragmatics, argumentation theory, rhetoric, multimodality, and systemic functional linguistics as a way to approach discourse (see Wodak & Meyer, 2001; Weiss & Wodak, 2003; Wodak, 2007a). In her own words:

> the concrete analysis should take into account historical developments of discursive practices (change), intertextuality, and interdiscursivity. This might explain why it is so difficult to provide "short, telling" examples in a paper: an example needs the deconstruction of the whole social-political and historical context in which the discursive practices are embedded. This approach . . . explains why interdisciplinarity is a necessity when undertaking CDA. (Wodak, 2002, p. 12)

In fact, her claims on interdisciplinary approaches, together with her use of ethnography and of large data samples as a consequence of her background in sociolinguistics, makes her definition of context a nonrestricted one, which allows it to overcome some of the criticism that has been made of other CDA researches.

In relation to prejudice and discrimination, Wodak has focused on the discursive construction and legitimization of old and new racism, xenophobia, and anti-Semitism in Europe. Particularly, her work has provided a great insight into how such exclusionary processes are built up and naturalized through the management of certain textual and visual elements (i.e., pictures, personal pronouns, lexical choice, argumentation and causalities, implicatures, syntactic embeddings) and in accordance with the changing historical conditions of given contexts (see van Leeuwen & Wodak, 1999; Wodak & van Dijk, 2000; Reisigl & Wodak, 2001; Wodak, 2007b). In this regard, her work has shown that, rather than disappearing, the traditional ways of social discrimination have changed into new and more subtle and ambivalent forms that need to be studied in the context of the local impact of new global migrations and neoliberal economic processes. The changing racialization of the subject, in which the skin color and physical signs of racial differences are less important than key symbols such as "the veil and the scarf," or the "denial of racism" as a frequent disclaimer introduced to justify social exclusion measures, need thus to be framed within such a context (Wodak, 2010).

As to the research area of language and/in politics, Wodak has done extensive work on parliamentary discourse in Europe by analyzing the daily discursive mechanisms by which politics are organized in transnational, national, and regional arenas (see Wodak, 2009, for a detailed critical ethnography of the orders and disorders of discourse in the European Parliament). Within this area of enquiry, she has paid special attention to the developments in the discursive construction of Austrian national identity under the influence of political processes inside and outside Austria. Particularly, her analysis has allowed an identification of how issues of common past, present, and future, as well as common culture and territory, are (re)constructed through discursive strategies of intertextuality and recontextualization (i.e., by considering discourses in different political/media publics and everyday discourses standing in reciprocal relation to one another), in connection with the sociopolitical changes that have taken place in contemporary Austria within the context of its EU membership (see Wodak, de Cillia, Reisigl, & Liebhart, 2009, for further analysis). This line of enquiry has then shed light on the extent to which there is no such thing as one essential/homogenized national identity in any context, but rather different identities being discursively constructed according to the local socioeconomic and political conditions, which in turn helps to reconcile the old agency/structure dichotomy by taking into account social change.

With reference to gender studies, Wodak has contributed to the existing literature on the understanding of gender as context-dependent. In the framework of the different claims made about women and men, in connection with the development of gender studies in social sciences (see Kotthoff & Wodak, 1997, pp. 1–20, for a critical overview of the different implicit ideologies about gender underlying the different traditions historically developed in gender studies), she has then focused on the study of the discursive processes of sociocultural construction and naturalization of differences assigned to gender/sex in everyday life and their influence on the production and legitimization of social inequality (Wodak & Schulz, 1986; Kotthoff & Wodak, 1997). In particular, her work has helped us rethink of gender/sex as a social construct that cannot be isolated from the relationships between social norms/evaluations, power structures, and processes of socialization:

> it is more coherent to talk of gender as the understanding of how what it means to be a woman or to be a man changes from one generation to the next and how this perception varies between different racialized, ethnic, and religious groups, as well as for members of different social classes. (Kotthoff & Wodak, 1997, p. 4)

Ruth Wodak is considered to be a leading scholar in the area of applied linguistics, more broadly, and in the field of DS, more specifically. She is also perceived as a public intellectual in Austria. In this regard, she has always stated that, rather than staying in the "ivory tower," she prefers to position herself with her research on anti-Semitism, racism, and right-wing populist rhetoric (see Kendall, 2007, for a detailed interview conducted with Wodak).

SEE ALSO: Context in the Analysis of Discourse and Interaction; "Critical" in Critical Discourse Analysis; Critical Discourse Analysis: History and New Developments; Fairclough, Norman; Institutional Ethnography; Kress, Gunther; Language Ideology and Public Discourse; van Dijk, Teun A.; van Leeuwen, Theo

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Word Associations

TESS FITZPATRICK

Probably the most pervasive metaphor used in relation to the mental lexicon is that of a network. The nodes of the network are seen as representing words, and the lines linking them are the connections between those words. Word association research is particularly consistent with this metaphor, and it is used in applied linguistics to investigate the nature of interlexical connections and the factors which might influence them.

Word-association data have two features which make them particularly valuable to lexical research. In a typical word-association task, an individual is presented with a series of cue words (also referred to as stimulus or prompt words), and is asked to respond with the first word that comes to mind. The resulting data have advantages both over naturally produced language in which the choice of lexical items is restricted by considerations of discourse, style, and syntax, and over many forms of experimentally elicited data, which are often limited to specific predetermined structures or words. By removing these confounding influences of text structure or test targets, the researcher is able to view more directly and more globally the structure of the individual's lexicon. The second feature stems from the spontaneous nature of the task; participants are asked to give an immediate, rather than a considered, response to each cue, the implication being that this spontaneous response will reflect the strongest, or most salient, or most automatic link from that cue word. Word-association tasks, then, have the potential to provide information about the mental lexicon by exposing lexical connections in a relatively unconstrained way.

Word-Association Research Design: Procedures, Cue Words, Response Categories

Word-association studies appear in the literature of psychological, sociocultural, and psycholinguistic as well as applied linguistic research, and approaches to word-association research are informed by paradigms from these various disciplines. In all these contexts, though, the design of a word-association study requires the researcher to make certain decisions regarding task instruction, selection of cue words, and categorization of responses. The classic word-association task originated in the field of psychology and requires the participant to provide a single-word response to each cue. The format for this might be spoken, written, or computer mediated. In order to address some more linguistically oriented research questions, though, variations on this task may be used. Some studies (e.g., Kruse, Pankhurst, & Sharwood Smith, 1987; Albrechtsen, Haastrup, & Henriksen, 2008) require subjects to provide multiple responses to each cue (12 and 2 respectively) and in their analyses differentiate between responses that are primary, secondary, tertiary, and so on. It is assumed in some cases that the primary response is more likely to be shared, whereas subsequent responses might be more idiosyncratic and therefore offer information about the lexical networks of an individual (it is easy to predict that most people's first response to *black* will be *white*, but less easy to predict subsequent responses). Others impose restrictions on the type of response to be given, for example by asking for interlingual responses (e.g., L2 responses to L1 cues), or responses in a certain grammatical class or with a specific

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sort of link to the cue, such as superordinate (*car* > *vehicle*), similar (*car* > *automobile*), location (*car* > *garage*), and so on. Riegel and Zivian (1972) describe a complex study with associations restricted in these ways. A small but important number of studies reverse the conventional task, asking learners to identify rather than provide appropriate associations to a cue (e.g., Read, 2000, pp. 180–6).

Specific characteristics of cue words can influence response behavior in a number of ways. Some cues elicit a greater range of responses than others; Lambert refers to these as "provocative" cues (1972). Some studies have found that the word class of the cue will affect the word class of the response, with nouns most likely to elicit nouns, for example (Sökmen, 1993). Meara (1983) observes that highly frequent cue words are more likely to elicit predictable responses (e.g., *black* > *white*; *cat* > *dog*) than less frequently occurring cues. A lot of L2 word-association studies have used cues from the Kent–Rosanoff lists (1910). The words in these lists are highly frequent, and so encounter Meara's problem of predictable responses, but the same characteristic makes them attractive for use with lower-level learners, who might not know less frequent words. The Kent–Rosanoff cues are also problematic because they were compiled in a linguistically unprincipled way, in order to elicit information about psychotic tendency rather than linguistic behavior. Several commentators have reviewed this problem and suggest alternative ways of compiling cue lists (e.g., Meara, 1983; Schmitt, 1998; Wolter, 2002; Fitzpatrick, 2006).

The third, and probably most challenging, decision to face the researcher is that of how to categorize, or measure, the response data. There are two basic approaches to this. The first approach assesses responses in terms of their stereotypy (or, conversely, their idiosyncrasy), and was traditionally used to investigate deviations from word-association norms in the L1 in relation to mental health and personality studies (e.g., Kent & Rosanoff, 1910). In L2 studies, learner responses have similarly been compared with responses on a list of norms, usually compiled from native-speaker data. Published norms lists include the Postman–Keppel lists (1970) and the Edinburgh Associative Thesaurus (Kiss, Armstrong, Milroy, & Piper, 1973), but researchers working with particular specifications or particular cue words often compile their own. In its most simple form, this sort of analysis entails learner data being awarded one point for every response which is also on a norms list (e.g., Randall, 1980). Some studies, though (Kruse et al., 1987; Schmitt, 1998; Wolter, 2002), have developed a more sophisticated, "weighted" scoring process which takes into consideration how high the response is on the norms list, and, in multiple-response tasks, whether the response was the learner's first, second, third, and so on. Most often, studies which use a stereotypy measure are interested in how "native like" their participants' response items are, and usually hypothesize that the more proficient a learner becomes, the more likely she or he is to give native-like responses. Although some findings indicate that this is, broadly, the case (e.g., Wolter, 2002), other studies are less conclusive, and consider the possibility that the relationships between words in the well-developed L2 lexicon will not necessarily be the same as in the L1.

The second approach to measuring response data stems from research into L1 lexical development. Early research into child-language development used a three-way categorization system for word-association responses, based on the Saussurian concepts of syntagmatic (horizontal) and paradigmatic (vertical) relations. Paradigmatic responses are those in the same word class as the cue, which could replace the cue in a structure without syntactic violation; syntagmatic responses are those which might be found in the same phrase as the cue and include, for example, collocations. The third category is clang responses, which share phonological or orthographic features with the cue, but are otherwise not related. This categorization system has been adopted by L2 researchers with varying degrees of success. Some studies (e.g., Söderman, 1993) suggest that as proficiency develops learners make fewer clang and syntagmatic associations, and more paradigmatic

Table 1 Three methods of scoring/categorizing responses to the cue word *window*

cue word	*responses*	*stereotypy*	*paradigmatic/ syntagmatic/clang*	*more detailed categorization system*
window	**glass**	1	P	quality
	door	1	P	lexical set
	sill	1	S	collocation/compound
	windows		?	word family/affix
	view	1	S	conceptual link
	close		S	phrasal collocation
	gap		P	near synonym
	wind		C	similar form

Table 2 Most common L1 responses (i.e., those given by at least two respondents) to the cue word *window* (from Edinburgh Associative Thesaurus database, www.eat.rl.ac.uk/)

response	*% respondents*
glass	17
pane	12
sill	11
cleaner	7
box	6
ledge	5
door	4
frame	4
open	3
see	3
house	2
light	2
view	2

ones (thus mirroring L1 development), but there is contradictory evidence too, of syntagmatic links remaining well represented in proficient-learner and native-speaker responses (e.g., Albrechtsen et al., 2008). A number of commentators (Meara, 1983; Wolter, 2001) have questioned the practical applicability of this three-way categorization, pointing out that the categories are difficult to define and are open to interpretation. Several studies have developed these traditional classifications into a system of more precisely defined categories, with the aim of analyzing data in a way which is both more accurate and more informative (e.g., Sökmen, 1993; Fitzpatrick, 2006; Albrechtsen et al., 2008).

In order to demonstrate how different classification systems might operate, Table 1 gives examples (in column 2) of responses to the cue word *window*. The three right-hand columns indicate how these responses might be categorized according to a stereotypy measure, the traditional paradigmatic/syntagmatic/clang classification, and a more detailed system, similar to those used by Fitzpatrick (2006), Sökmen (1993), and others. Table 2 lists the most common English native-speaker responses to the cue *window* according to the Edinburgh Associative Thesaurus database (www.eat.rl.ac.uk/). The stereotypy score in Table 1 is based on these data.

What Word-Association Behavior Can Tell Us About the Lexicon

Viewing the lexicon as a network encourages exploration of the three dimensions of lexical knowledge proposed by Meara (1996). These are vocabulary size (or "breadth"), which equates to the number of nodes in the network; quality (or "depth") of vocabulary knowledge, which equates to the quality or size of the nodes; and accessibility (or "structure") of lexical information, which relates to the connections between nodes. L2 word-association data have been used to investigate all three of these dimensions. Regarding vocabulary size, the number of response words produced in a word-association test has been found to correlate with more global measures of language proficiency (Lambert, 1972; Kruse et al., 1987). This finding can be interpreted as suggesting that more proficient learners will have larger lexicons, and that more words can be produced as association responses from larger lexicons. The assessment of depth of knowledge has been directly addressed in the Word Associates Tests of Read (2000) and others, which require learners to identify (rather than to produce) associates of a target word. Wolter (2001) concurs with these research strands by acknowledging that his word-association study findings reveal information about both breadth and depth of knowledge. However, he claims that they also suggest a complex difference in structure between L1 and L2 lexicons.

It is probably in its capacity to reveal the sort of structural or accessibility differences described by Meara (1996) and referred to by Wolter (2001) that word-association research is most informative. The methodology varies, and interpretation of findings is often challenging but, gradually and incrementally, word-association studies are informing our understanding of both group and individual word-association behavior.

In most applied linguistic (as opposed to psycholinguistic) work, the groups investigated have been native and non-native speakers, and proficiency-based divisions of the latter. Stereotypy measures work on the straightforward assumption that learners will produce more typically native-like responses as their proficiency improves. This has been supported and refuted to varying degrees, for example with Albrechtsen et al. (2008) finding that more advanced learners produce more predictable responses (which they refer to as "canonical" responses). Studies which look at categories of response have found that clang responses occur more frequently in less proficient non-native speakers (Meara, 1983). The inference here is that phonological, or form-based, links are used to integrate words into the lexicon when they are in the early stages of acquisition, and before meaning-based links are well developed. Adult native speakers make almost no clang associations, at least with words they are familiar with. There is also some agreement that non-native responses are less predictable than those of native speakers, implying that the structure of the learner lexicon is less stable than its L1 counterpart, and that the nature and strength of connections in the L2 shift in response to changes in L2 exposure or proficiency (Riegel & Zivian, 1972; Sökmen, 1993). However, the association behavior of these groups in relation to paradigmatic and syntagmatic responses is rather more complex. Early studies of L2 word associations evolved from the observed differences in L1 child and adult association behavior, which focus on a "syntagmatic–paradigmatic shift" at around the age of 6. L2 researchers such as Piper and Leicester (1980), Söderman (1993), and Zareva (2007) have tested the hypothesis that acquisition of a second language will follow the same developmental pattern, and indeed have found that paradigmatic responses seem to occur more frequently in the responses of more proficient learners. Other studies, though, hint at a more complicated pattern of development, with Nissen and Henriksen (2006), for example, finding that Danish learners of English produced more syntagmatic than paradigmatic first responses in both their L1 and their L2. These investigations of word-association behavior by group (learner vs. native speaker) have, in sum, produced inconclusive findings. Certainly some broad behavior patterns have been discerned, but still many individuals produce truly idiosyncratic responses; it is exactly this phenomenon, of course, which promotes

the use of word-association data in psychology and psychoanalysis.

Recently, researchers have begun to move away from the notion of word-association behavior as a measure of proficiency, and view it as a means of enhancing our understanding of lexical processing and storage on a broader level. Three examples of these new routes of inquiry are: investigating the type of language experience which gives rise to network links; investigating individuals' association behavior in different contexts; using graph theory to explore the density of association networks. The first of these has been explored by Zareva (2010), who proposes that, because the language experience of L2 learners is fundamentally different from their L1 experience, we cannot expect the features of these two networks to mirror each other, even at the highest levels of proficiency. She proposes that the "multicompetent" L2 user develops lexico-semantic links which are, in their salient characteristics, distinct from links in the monolingual lexicons of the L2 or the L1. This represents a potential sea change in the perception of the dynamic trajectory of the learner lexicon. Second, Fitzpatrick has attempted to reconcile idiosyncratic individual behavior with group trends, by tracking individuals' word-association behavior longitudinally (2007). She observes a surprising amount of variation between respondents' association behavior, but also found that any single individual's associative behavior was stable over different test times, over different tasks, and even between their L1 and L2 (2009). The inference here is that individuals' association behavior, and by implication the way they store and access lexical information, is influenced by factors other than whether they are operating in their L1 or L2. Third, Wilks and her colleagues (e.g., Wilks, Meara, & Wolter, 2005) have attempted to replace metaphorical references to "networks" and "webs" with a quantitative measure of network density based on graph theory and operationalized through a simulation model. This has revealed new patterns of L1 and L2 difference, but also, like Fitzpatrick's studies, highlights the influence of individual differences on association behavior.

Word-association research occupies an unusual place in the field of applied linguistics. The term "word association" refers to a method, or an observed phenomenon rather than a theoretical notion, and matching theoretical constructs to the data which emerge from these studies has proved problematic. Progress in this field in terms of absolute findings has been hesitant, with many researchers abandoning this route of investigation after only one or two studies, but often with enthusiastic reference to the "promise" and "potential" (Schmitt, 1998; Wolter, 2002) of the role of word-association data in applied linguistics research. Recent moves to challenge the assumptions (from the literature on L1 development and L2 assessment) which directed much of the early research in this area are clearing a route toward realizing this potential.

SEE ALSO: Assessment of Vocabulary; Connectionism; Organization of the Second Language Lexicon; Psycholinguistic Approaches to Vocabulary; Second Language Representation in the Brain

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WordNet

CHRISTIANE FELLBAUM

Introduction

WordNet (Miller, Beckwith, Fellbaum, Gross, & Miller 1990; Miller & Fellbaum, 1991; Miller, 1995; Fellbaum, 1998), a lexical database for English, can be thought of as a large electronic dictionary. It contains information about some 155,000 nouns, verbs, adjectives, and adverbs, including simplex words like *put*, phrasal verbs like *put up*, and idioms like *put out the dog*. Its digital format frees WordNet from the constraints of traditional paper dictionaries, whose entries have to be arranged according to their spelling (and thus, to some extent, their pronunciation). But since an important function of dictionaries is to inform users about word meanings, entries in WordNet are organized in terms of their semantics. Specifically, words in WordNet that are similar in meaning are interlinked by means of pointers that stand for a semantic relation. Formally, WordNet is a semantic network, an acyclic graph.

WordNet superficially resembles a thesaurus, in that it groups words together on the basis of their meanings. However, there are some important distinctions. First, WordNet interlinks not just word forms—strings of letters—but specific senses of words. As a result, words that are found in close proximity to one another in the network are semantically disambiguated. Second, WordNet labels the semantic relations among words, whereas the grouping of words in a thesaurus does not follow any explicit pattern other than meaning similarity.

Structure

The main relation among words in WordNet is synonymy, as between the words *shut* and *close* or *car* and *automobile*. Synonyms are grouped into unordered sets, dubbed "synsets." Members of a synset are interchangeable in many but not all contexts; the criterion for joint synset membership is merely that the words denote the same concept. Each of WordNet's 117,000 synsets is linked in turn to other synsets by means of a small number of "conceptual relations." Additionally, a synset contains a brief definition ("gloss") and, in most cases, one or more short sentences illustrating the use of the synset members.

Polysemy and Synonymy

Two features of the lexicons of all natural languages represent a challenge to human learners and automatic language processing systems alike. These are the one-to-many mappings of word forms and word meanings. A single word form expressing several meanings is a case of polysemy. Highly polysemous words in English are *check*, *case*, and *line*. Polysemy requires the reader or listener to identify the context-appropriate, intended sense of the word form.

When several different words all express (approximately) the same meaning, we have a case of synonymy (for example, {*car, automobile, auto*}). Synonymy poses a challenge for language generation: Which word expresses the intended concept most appropriately in

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a given context? For example, both the expressions *empty dish* and *vacant vessel* refer to the same concept, but only the former is well-formed and clearly understandable.

WordNet represents synonymy straightforwardly in terms of synset membership. Polysemy is reflected in the different synsets that a word form occurs in; membership in *n* synsets means that the word has *n* meanings, or is *n*-fold polysemous. In this way, each form–meaning pair in WordNet is unique.

Relations

The most important relation among synsets is the super–subordinate relation (also called hyperonymy, hyponymy, or ISA relation). It links more general synsets like {*furniture, piece_of_furniture*} to increasingly specific ones like {*bed*} and {*bunkbed*}. Thus, WordNet states that the category *furniture* includes *bed,* which in turn includes *bunkbed*; conversely, concepts like *bed* and *bunkbed* make up the category *furniture*. The user can navigate within and across the resulting hierarchies, or "trees," in either direction, from general to specific or from specific to general concepts. All noun hierarchies ultimately go up to the root node {*entity*}, as indicated in Figure 1. The hyponymy relation is transitive: If an *armchair* is a kind of *chair*, and if a *chair* is a kind of *furniture*, then an *armchair* is a kind of *furniture*.

WordNet distinguishes among types and instances. The latter include specific persons, countries, and geographic entities. Thus, while an *armchair* is a type of *chair*, *Barack Obama* is not a type but an instance of a president; similarly, *Zambia* is an instance of a country and the *Rhine* is an instance of a river. Instances are always leaf (terminal) nodes of WordNet hierarchies (Miller & Hristea, 2006).

Another important bidirectional relation is meronymy, the part–whole relation. It holds between synsets like {*chair*} and {*back, backrest*}, {*seat*} and {*leg*}. Parts are inherited from their superordinates: If a *chair* has *legs*, then an *armchair* has *legs* as well. Parts are not inherited "upward," as they may be characteristic only of specific kinds of things rather than the class as a whole. Thus, *chairs* and kinds of *chairs* have legs, but not all kinds of *furniture* have legs.

Verb synsets are arranged into hierarchies as well; verbs toward the bottom of the trees express increasingly specific manners characterizing an event. An example is {*communicate*} –{*talk*}–{*whisper*}. The specific manner expressed depends on the semantic field; volume (as in the example above) is just one dimension along which verbs can be elaborated. Others are speed (*move–jog–run*) or intensity of emotion (*like–love–idolize*). Additionally, verbs describing events that necessarily entail one another are linked. Examples are {*buy*} and {*pay*}, {*succeed*} and {*try*}, and {*show*} and {*see*}. In each case, the event expressed by the first verb necessarily entails that expressed by the second verb, but not vice versa (Fellbaum, 1990).

Adjectives are organized in terms of antonymy (Gross, Fischer, & Miller, 1989; Miller, 1998). Pairs of "direct" antonyms like *wet–dry* and *young–old* reflect the strong semantic

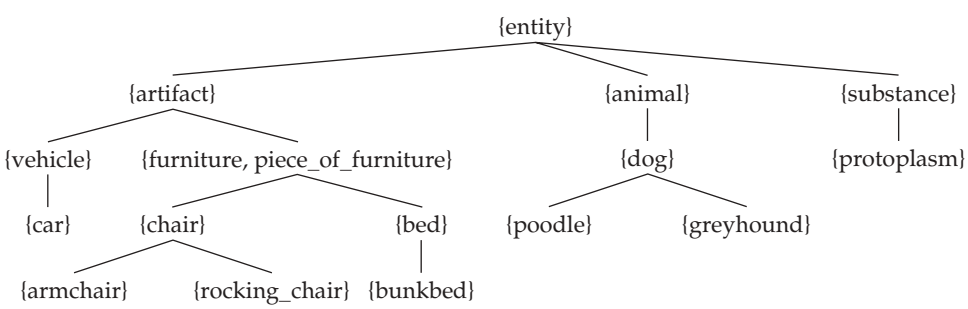

Figure 1 A "kind-of" noun hierarchy in WordNet (excerpt)

contract of their members. The intensity of this relation is shown in the fact that they bring each other to mind, as reflected in association norms (see below for further discussion of the psychological inspiration for WordNet's structure). Additionally, Justeson and Katz (1995) showed that direct antonyms co-occur in the same sentence with far greater frequency than chance. Each of these polar adjectives in turn is linked to a number of "semantically similar" ones. Thus, *dry* is linked to adjectives including *parched, arid, desiccated*, and *bone-dry*. These adjectives are dubbed "indirect antonyms," as their relation to both the polar adjectives (*wet*) and its similar adjectives (*soggy*, *waterlogged*, etc.) seems less strong. Note also that direct antonyms modify the greatest range of nouns (*soil*, *weather*, *dishes*, *clothes*, and *lips* can all be both *dry* and *wet*), while indirect antonyms are more specific in their meaning and hence more selective of their nouns (*soggy/*waterlogged bread*, *parched/*arid throats*).

There are only a few adverbs in WordNet (*hardly*, *mostly*, *really*, etc.), as the majority of English adverbs are straightforwardly derived from adjectives via morphological affixation (*surprisingly*, *strangely*, etc.)

Cross-Part-of-Speech Relations

The majority of WordNet's relations connect words from the same part of speech (POS). Thus, WordNet really consists of four sub-nets, one each for nouns, verbs, adjectives, and adverbs, with few cross-POS pointers. Cross-POS relations include the "morphosemantic" links that hold among semantically similar words sharing a stem with the same meaning. Examples are *observe* (verb), *observant* (adjective), *observation*, *observatory* (nouns). Note that different senses of the verb (perception vs. religious observation) link to the adjective and the nouns (Fellbaum & Miller, 2003). In addition, in many of the noun–verb pairs the semantic role of the noun with respect to the verb has been specified. Thus, {*sleeper*, *sleeping_car*} is the LOCATION for {*sleep*} and {*painter*} is the AGENT of {*paint*}, while {*painting*, *picture*} is its RESULT (Fellbaum, Osherson, & Clark, 2007).

Where Do Relations Come From?

WordNet was initially conceived as a model of human semantic memory, inspired by theories that tried to explain how people can store and retrieve information about tens of thousands of concepts. An economic model is one where concepts and the words expressing them are organized into hierarchies. A concept at a given level in the hierarchy inherits all the properties from its superordinate (more general) concept; only the properties that distinguish a concept from its superordinate are stored with the more specific concept. Thus, we know that a canary can fly because we know that a canary is a bird and that birds can fly; but our knowledge that a canary is yellow is linked to the concept "canary" itself rather than inherited.

Hyponymy is not only an efficient way to organize words, concepts, and knowledge about concepts, but word association norms show that people store general and specific members of a given category in close proximity in their mental lexicon. An inspection of association norms—showing which words come to mind in response to a stimulus word—suggested many of WordNet's semantic relations (Fellbaum & Chaffin, 1990). Antonymous adjective pairs, such as *hot* and *cold*, have similarly been shown to be strongly associated with one another (Gross et al., 1989), inspiring WordNet's organization for this POS.

Adding More Relations

WordNet's organization is predominantly paradigmatic; that is, words from the same POS class are interlinked. But many mental associations are syntagmatic, that is, among words representing different POS that speakers frequently use together, such as *blue* and

sky and *sweater* and *knit*. Presently, contextual information about words is represented only in WordNet's definitions and illustrative phrases. In an effort to increase the connections among synsets in WordNet with additional links, Boyd-Graber, Fellbaum, Osherson, and Schapire (2006) collected thousands of similarity judgments ("evocation") between members of synonym pairs from speakers, regardless of the POS and without specifying the nature of the relation that was to be judged. The results showed that, in addition to the semantic similarities already recorded in WordNet, words that tend to collocate strongly evoke one another. Ongoing work on augmenting WordNet collects similarity judgments via controlled "crowd-sourcing" from anonymous contributors (Nikolova, Boyd-Graber, & Fellbaum, 2011). Eliciting the participation of hundreds of collaborators in this way constitutes an alternative to the labor-intensive manual construction of WordNet, which was based on the introspection of just a handful of linguists and lexicographers.

Crosslingual Wordnets

After the Princeton WordNet (www.wordnet.princeton.edu) gained widespread popularity, especially in the natural language processing community, wordnets were built in a number of different languages. EuroWordNet (Vossen, 1998) has words from eight European languages, including Estonian and Basque, which are genetically and typologically unrelated to Indo-European languages. An important goal was to connect all wordnets to one another, so that equivalent words and meanings could easily be identified. EuroWordNet took the Princeton WordNet as its hub. In some cases, the wordnet developers simply translated the English synsets into their language; in other cases, wordnets were initially built up independently and later merged with the English version. Not all languages lexicalize the same concepts, and for words that have no English equivalent a simple record was added to the English WordNet pointing to and from the language-specific words. In this way, the English WordNet became the union of all concepts lexicalized in all wordnets, but not shared by all. Consequently, the structure of EuroWordNet permits one to find equivalent words and meanings in all eight languages by going via the English WordNet, making it a valuable tool for crosslingual study and applications.

Currently, over 60 wordnets have been or are being developed worldwide, including entire groups of languages such as those in BalkaNet (Tufis, 2004), IndoWordNet (Narayan Chakrabarti, Pande, & Bhattacharyya, 2002), and African WordNet (Le Roux, Moropa, Bosch, & Fellbaum, 2007). The Global WordNet Organization maintains a list of wordnets (www.globalwordnet.org).

A related effort is MultiWordNet (Pianta, Bentivogli, & Girardi, 2002), a lexical database for Italian aligned with the Princeton WordNet. The MultiWordNet browser allows users to compare corresponding entries in Spanish, Portuguese, Hebrew, Romanian, and Latin wordnets and to examine lexical similarities and divergences in these languages.

Ontology

EuroWordNet first highlighted the need for a language-independent representation of concepts to which the lexicons (wordnets) of specific languages could be mapped. Using an actual language (like English) as the central hub is not the best solution, as it reflects the idiosyncrasies inherent in each natural language; in particular, wordnets that are developed by translating the synsets may inherit such biases (Vossen & Fellbaum, 2009; Fellbaum & Vossen, in press).

Concepts and their relations to other concepts can be represented in formal structures known as ontologies, which are precise and unambiguous and lend themselves to reasoning

and inferencing operations. SUMO (Niles & Pease, 2003) is one such ontology, and it has been mapped to many wordnets, serving as its interlingua (Pease & Fellbaum, 2009). Another ontology for wordnets of seven languages covering numbers of domain-specific terms has been developed in the context of the KYOTO project (www.kyoto-project.eu).

Applications

Information retrieval, document summarization, and machine translation are among the many applications that require machines to process natural language. Human language is amazingly complex and making it "understandable" to computers is a significant challenge. While automatic systems can segment text into words (or tokens), strip them of their inflectional endings, identify their part of speech, and analyze their syntactic (grammatical) function fairly accurately, they cannot easily determine the context-appropriate meaning of a polysemous word. Somewhat perversely, the words we use most often also have the greatest number of different senses.

Word Sense Disambiguation

WordNet's organization of over 150,000 different English words into a huge, multidimensional semantic network makes it well suited for word sense disambiguation, as required by automatic applications. WordNet tells us, for example, that one sense of *check* is related to *chess*, another to *bank check*, and a third to *houndstooth*. On the assumption that words in a context are similar in meaning to one another, a system can simply navigate the paths connecting WordNet's words and measure how close or distant a given word is from another in a text. Thus, if *check* occurs in the context of *draft*, WordNet will suggest that the appropriate sense of *check* here *is bank check*, as there only a few intervening nodes connecting the financial sense of *check* with (the financial sense of) *draft*, while there is a much longer (or no) path connecting *draft* and the textile pattern senses of *check*. Patwardhan and Pedersen (2003) offer a survey of WordNet-based similarity measures. Both within a language and crosslingually, WordNet has become a major tool for word sense disambiguation in numerous natural language processing applications. Increasing the internal connectivity of the semantic network by collecting and encoding human ratings of semantic similarity among words, as described above, will further improve automatic sense discrimination, as each form–meaning pair will have a larger number of unique connections to others and thus be more distinct and more easily discriminable from others.

Semantically Annotated Corpora

Automatic systems can learn linguistic features after being trained on data that have been manually annotated by humans and that constitute the "gold standard." To improve sense disambiguation, selected words in the American National Corpus (www.americannationalcorpus.org), a text collection of modern American English (Ide & Suderman, 2006), are annotated with WordNet senses (Baker & Fellbaum, 2008; Fellbaum & Baker, in press). The annotated corpus illustrates the use of specific word meanings for study and applications by both human users and computers, who can "learn" from examples to better identify context-appropriate word meanings.

Inferencing

A particular challenge for artificial intelligence and automatic text understanding is reasoning, that is, the ability to extract information that is implied but not explicitly stated in a text. Humans do this on a regular basis and have no difficulty inferring what language,

being parsimonious, leaves unexpressed. WordNet can contribute significantly to this effort via its semantic relations; thus, WordNet "knows" that *kill* entails *die* and that a *killer* is the agent of a *killing* event (Fellbaum, Clark, & Hobbs, 2008).

Other Applications

WordNet serves as a general lexicon to which domain-specific and technical terms can be added for the creation of a terminological database. WordNet is also used in linguistic and psycholinguistic research, as well as for language pedagogy (English as a first and second language). WordNet is the basis for software designed to help people with certain language pathologies such as anomia, the inability to retrieve words that the speaker wants to communicate. Here, WordNet suggests paths along which an anomic can "navigate" to arrive at the intended concept (Ma, Fellbaum, & Cook, 2010). Finally, WordNet has been integrated into many online dictionaries, including Google's "define" function, that serve the broader public as a lexical resource. Being freely and publicly available, WordNet is queried tens of thousands of times daily and the database is downloaded some 6,000 times every month from the Princeton Web site.

Conclusion

WordNet offers multiple perspectives on the human lexicon—linguistic, psychological, and computational—and is a valuable tool for both theoretical and applied work.

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SEE ALSO: Bilingual Lexicography; Formal Models of Bilingual Lexicons; Lexical Gaps; Lexical Semantics; Term Banks; Traditional Approaches to Monolingual Lexicography; Web-Based Lexical Resources; Word Associations

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Working Memory in Second Language Acquisition

NURIA SAGARRA

Working memory (WM) is the temporary storage and processing of incoming information needed to execute complex cognitive actions (Baddeley, 2007), such as processing a foreign language (L2). Since the 1980s, the role of WM in first language (L1) processing has been investigated extensively, but only more recently has its role in L2 learning been examined keeping in mind that adult second language acquisition (SLA) requires additional computation and activation, which in turn imposes extra load on the already limited WM resources. In particular, two memory components have been considered to play a prominent role in SLA: phonological short-term memory and WM's central executive, which is responsible for information management during processing. Our goal is to describe the theoretical underpinnings of WM's central executive, discuss tests to measure WM's central executive for L2 research, and provide a critical review of studies examining its role in L2 processing and learning. This issue is crucial for explaining individual differences in L2 learning, creating language-aptitude tests that predict L2 abilities, and implementing pedagogical practices that enhance verbal WM through trainability and compensate for WM capacity (WMC) shortcomings.

Working Memory Models

Of the numerous WM models that have emerged since the term was coined in the 1960s, the following are particularly popular within SLA circles: Just and Carpenter's domain-specific single-resource model, Baddeley's and Waters and Caplan's domain-specific multiple-resource models, and the domain-free connectionist models. Domain-specific models claim that limitations in WMC constrain L2 learning, whereas domain-free models rely on limitations imposed by a domain-general attentional construct. In turn, single-resource models emphasize a trade-off between processing and storage, while multiple-resource models assume that processing and storage are independent from each other.

Just and Carpenter's (1992) capacity theory posits that processing and storage depend on and compete for a shared pool of resources with a limited capacity that varies among individuals. Tasks that deplete a person's WMC can result in less storage and slower processing. This model differs from Baddeley's (2007) model that depicts WM as a multiple-resource system formed by a central executive and three slave systems with independent limited capacities: two short-term storage systems (phonological loop, visuospatial sketchpad) dedicated to a content domain (verbal and visuospatial respectively) and an episodic buffer that relays information between long-term memory and the phonological loop and visuospatial sketchpad. The central executive coordinates the flow of information between its slave systems, binds information from a number of sources into coherent episodes, determines what information is selected and inhibited, and decides when to shift between tasks or retrieval strategies. This polifacetic nature has led some scholars to propose separate resources within the central executive. For example, Waters and Caplan (1996) divided the verbal portion of WM into resources used in assigning syntactic structure and resources

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employed in controlled verbally mediated tasks, and, unlike Just and Carpenter, assumed that WMC cannot affect syntactic processing efficiency.

Domain-free connectionist models do not differentiate between processing and storage and conceive WM as the general ability to control attention to maintain or suppress any type of information (verbal or not). Unlike domain-specific models, domain-free models do not see WM as a gateway to long-term memory, but as an activated part of long-term memory, involving short-term patterns of activation between domain-specific stores such as the phonological loop (e.g., Cowan, 2005). Also, WMC is not related to the number of items or chunks individuals can remember, but to their ability to control attention in the face of distraction. Therefore, the core of WM lies in activated long-term memory representations (capacity unlimited) and attentional control (capacity limited).

Working Memory Measures

To investigate the presumed relation between WMC and SLA, most L2 studies have employed a reading span test (RST), which combines processing with a concurrent storage task. In 1980, Daneman and Carpenter developed the first RST, which asked individuals to read increasingly longer sets of sentences aloud and recall the last word of each sentence in the set. Based on correct word recall, the results revealed that reading span significantly correlated with L1 comprehension. In 1996, Waters and Caplan modified Daneman and Carpenter's test to ensure semantic processing (it is uncertain how much semantic processing occurs while reading aloud) and to measure both processing and storage. In this test, participants read sentences silently, decided whether each sentence was plausible, and recalled the last word of each sentence in the set. The WM score was divided into mean RSTs for correct responses on plausibility judgments and word recall. The findings indicated that speed negatively correlated with both processing (sentence verification) and storage (word recall), but that processing and storage did not correlate highly. Scholars obtaining similar findings have claimed that processing and storage draw on different resource pools and should be scored separately (e.g., Logie & Duff, 2007). However, other scholars have reported a negative (Tosse et al., 2002) or positive (Barrouillet & Camos, 2007) correlation between processing time and word recall and defend the single shared attentional resource posture, thus, the single versus multiple resource pool is still an issue under debate.

Another controversy arises from how to measure verbal WM in low-proficiency L2 learners. Most SLA scholars have addressed this issue by conducting L1 linguistic span tests or nonlinguistic tests. On the one hand, L2 studies using L1 linguistic span tests assume that a cognitive system formed by as many "central executives" as languages spoken is unfeasible, and follow research showing a correlation between L1 and L2 RSTs within the same sample pool (e.g., Osaka & Osaka, 1992). The poorer performance in L2 than in L1 RSTs reported in some of these studies can be attributed to lack of L2 knowledge and is in line with both domain-specific models (WM effects are stronger in less developed processing systems) and domain-free models (lower-proficiency L2 representations are more susceptible to interference). On the other hand, there is considerable evidence that linguistic and nonlinguistic WM tests correlate with measures of verbal ability. Popular nonlinguistic WM tests involve reading a mixed sequence of numbers and letters and recalling first the numbers in numeric order and then the letters in alphabetic order (e.g., 7-c-3-a → 37ac; number–letter ordering test), solving a mathematical operation and remembering a word or a letter (e.g., (2*3)-6 = 5, dollar; operation span test [example of incorrect trial]), or listening to random digits and recalling them in reverse or forward order (backward/forward digit span test).

The next section shows that the use of various WM tests hinders a comparison between studies. This difficulty is accentuated by the small amount of studies reporting reliability measures and by methodological discrepancies. These include test administration (group vs. individual, entire test vs. partial test when word recall is insufficient to continue, computer vs. test taker), the processing task (reading aloud, sentence completion, grammaticality judgments, plausibility judgments), scoring (composite scores including processing and storage, separate scores for processing and storage, scores exclusively based on storage), grouping methods (median split, quartile split, all subjects), and statistical analyses (correlations, multiple regressions, ANCOVAs). Friedman and Miyake (2005) examined the use of the RST under different circumstances, and recommended that researchers score the test with continuous measures (total number of words recalled or proportion of words per set averaged across all sets) and avoid the creation of arbitrary groups (e.g., high vs. low span).

Working Memory and L2 Comprehension and Production

Understanding a foreign language is a cognitively demanding task involving L2 grammatical and lexical knowledge and controlled attention for constant updating of information. There is strong evidence that WM predicts L2 comprehension in adult learners (Alptekin & Erçetin, 2010). Harrington and Sawyer's (1992) seminal study with Japanese–English learners showed significant correlations between Daneman and Carpenter's RST in Japanese and the reading and grammar sections of the TOEFL (but no effects were obtained with an L2 reading, digit, or word span test). In another study employing Daneman and Carpenter's test with ESL learners, Abu-Rabia (2003) found that WM correlated with L2 reading and creative writing, and with the ability to process referents of distant pronouns. In contrast to these studies, Taguchi (2008) and Chun and Payne (2004) also used Daneman and Carpenter's test but found no WM effects on either L2 English comprehension of conversational implicatures or L2 German reading comprehension and vocabulary acquisition respectively. The lack of effects could be due to methodological variations of the original RST (e.g., Chun & Payne's participants checked which sentence-final words had appeared in the preceding set instead of recalling the words themselves) or to how Daneman and Carpenter measured processing (reading aloud does not ensure semantic processing).

Other studies that used Waters and Caplan's test provide further evidence of its association with L2 comprehension. For example, Leeser (2007) used this test in the L1 with beginning English–Spanish learners and found that high-span learners benefited from receiving a familiar passage and, when receiving an unfamiliar one, performed better on a form-recognition task than low-span learners. These findings indicate that, at low proficiency levels, topic familiarity affects L2 reading comprehension more than WM. In the same vein, Walter (2004) used the test in L1 and L2 and reported stronger correlations between the L2 RST and L2 summary-completion and anaphor-resolution tasks in lower- than upper-intermediate French learners of English. Although some researchers claim that span–comprehension correlations are due to the WM RST's similarity to comprehension itself, numerous studies have associated WM span tests with a myriad of cognitive tasks, as well as L2 production.

For example, Fortkamp (2007) investigated the relationship between WMC and L2 fluency. Results revealed that higher-span Portuguese–English learners were more fluent, accurate, and complex in L2 production, and that fluency, accuracy, and complexity of speech were achieved at the expense of weighted lexical density, suggesting a processing–storage trade-off. In the same line, Kormos and Safar (2008) reported a significant correlation between an L1 reverse-digit WM span test and the reading, listening, speaking, and

use of English sections of the Cambridge First Certificate exam. Similarly, Payne and Ross (2005) found a connection between an L1 RST, L2 oral proficiency development, and the frequency of repetition and other patterns of language use in chatroom discourse.

Finally, WM has also been associated with L2 writing performance. For example, Bergsleithner (2010) found a significant correlation between the operation span test and performance on an L2 written task, and Adams and Guillot (2008) reported an association between verbal WM and vocabulary and between spelling and phonological short-term memory. In contrast with these studies, Mizera (2006) did not find significant correlations between three WM tests (speaking span, math span, nonword repetition) and three measures of L2 oral fluency (speed of delivery, pause profiles, and morphosyntactic accuracy). He explains these findings by citing the complex nature of L2 speaking and personal and affective variables.

Working Memory and Processing of L2 Morphology and Syntax

Attention to meaning and form are necessary for SLA but attention to form is cognitively demanding. Just and Carpenter's single-resource model predicts that low WMC will reduce the resources available for sentence processing, whereas Waters and Caplan's multiple-resource model predicts no WM effects on sentence processing. Evidence of L2 studies using reading/listening span tests is mixed. For example, Miyake and Friedman (1998) reported that WM correlated with Japanese–English learners' comprehension and cue preference when processing L2 syntactically complex sentences. Similarly, Havik, Roberts, van Hout, Schreuder, and Haverkort (2009) found that WM predicted German–Dutch learners' L2 processing of short- and long-subject and object relative clauses (only the high-span learners preferred to process object as subject short clauses like native Dutch speakers). In another self-paced reading study, Dussias and Piñar (2010) concluded that Chinese–English learners and English native speakers showed subject–object parsing asymmetries when processing long-distance *wh*-questions, but that only the high-span learners resembled the English controls when using plausibility information to facilitate recovery from initial misparses.

While these L2 studies support a single-resource view, others point to a WM system comprised of separate resources. Juffs's self-paced reading studies (see Juffs & Harrington, 2011, for a review) revealed L1 transfer but no WM effects in how Chinese, Japanese, and Spanish native speakers processed garden-path, long-distance *wh*-movement, and temporarily ambiguous sentences in L2 English. Rodríguez (2008) also reported no relationship between WM and L2 processing of anaphoric reference, distance relative-clause resolution, and ambiguity resolution in Spanish and Chinese learners of English. Finally, Felser and Roberts's (2007) picture-priming study showed no WM constraints on how Greek–English learners processed *wh*-dependencies in the L2, even though WM modulated L1 processing in English native speakers. The lack of consensus on whether or not WM constrains L2 syntactic processing may be partially due to L2 proficiency, as studies showing WM effects had lower-proficiency learners than those claiming no effects (except Dussias & Piñar, but they only used an L2 RST and WM and L2 proficiency could be confounded). As shown below, L2 proficiency could also be one of the factors determining why WM has been found to modulate L2 morphological processing in some studies but not in others.

In a series of self-paced reading and eye-tracking studies that examine the relationship between WM and L2 processing of verbal (adverb–verb) and nominal (noun–adjective) agreement with English learners of Spanish, Sagarra (2008) and Sagarra and Herschensohn (2010) found that only higher-span beginning learners were sensitive to tense-agreement violations, and that higher-span low-intermediate learners were more sensitive to tense- and gender/number-agreement violations than lower-span ones, with the exception of the

number discord being less cognitively taxing than gender discord. While Foote (2011) reported no WM effects in L2 processing of subject–verb or noun–adjective agreement, her results could be due to her participants (advanced vs. Sagarra's beginning/intermediate learners), scoring (words recalled vs. Sagarra's composite score), statistical analyses (correlations vs. Sagarra's ANCOVAs), and manipulation of distance between the agreement source and the target (distance increases syntactic complexity and Waters & Caplan's claim that WM does not affect syntactic processing).

Working Memory and Attentional Control

As mentioned earlier, domain-free models consider the ability to control attention in the face of distraction as an integral part of verbal WM. Thus, WM has been associated with practices that encourage (a) simultaneous focus on meaning and form and a certain level of awareness (explicit instruction, intentional induction, recasts) and (b) intensive amounts of input (study abroad).

Explicit Instruction

Numerous studies show that explicit form-focused instruction is more effective than mere exposure to L2 input. Because explicit knowledge is subject to rule-based processing, which is conscious and controlled, some scholars (e.g., Roehr, 2008) suggest that it depends on the capacity limits of WM. Ando et al. (1992) reported that low-WMC learners benefited more from an instructional approach involving learner–learner interactions (implicit) than from form-focused production tasks (explicit). Also, Jaemyung (2010) found reactive effects of think-aloud protocols during rule learning among high- but not low-WMC learners. In contrast, Wright (2010) found no WM effects on processing explicitly taught knowledge and argued that WM may be a general "workspace" for both explicit and implicit knowledge.

Intentional Induction

Intentional generalization of morphosyntatic rules has also been linked to WM. For example, Robinson (2005) showed WM effects on grammaticality judgments produced by learners with high levels of awareness learning Samoan syntactic rules. Similarly, Kempe and Brooks (2008) found that high-WMC learners were superior at searching for nominal inflection regularities in known items in Russian than low-WMC learners.

Feedback on Error

WM constrains learners' ability to switch attention between meaning and form during interactional recasts and to compare their output with a recast. This is important because correction and modified output help notice "the gap" between one's own interlanguage and the target language. Mackey, Philp, Egi, Fujii, and Tatsumi's (2002) study on question forms in English revealed that only high-WMC learners were able to notice recasts in the long run and that high WM was also related to more prolonged and delayed accuracy gains. More recently, Mackey, Adams, Stafford, and Winke (2010) found that high-WMC learners modified their output following interactional feedback more frequently than their low-WMC counterparts. Similar findings have also been reported in computer-mediated contexts. Sagarra (2007) showed an association between WM and target-like production and learner repair as long as two months after receiving computer-mediated oral recasts. Trofimovich, Ammar, and Gatbonton (2007) found WM effects on linguistic accuracy, but not on the ability to notice recasts; however, these discrepant findings can be explained by methodological differences and the absence of a delayed posttest.

Study Abroad

WM also determines how learners benefit from naturalistic settings, which contain great amounts of input, lack simplified input, and require rapid processing. Several studies confirm the relationship between WM, studying abroad, and L2 lexical production. Tokowicz, Michael, and Kroll (2004) and Sunderman and Kroll (2009) found that high-WMC learners were more accurate in a word-translation and a picture-naming task than low-WMC learners, and those high-WMC learners with more study-abroad experience surpassed high-WMC learners with less. The authors concluded that higher WM allows learners to better process multiple factors simultaneously, such as suppressing the L1 while attending to the L2. WM also constrains L2 morphosyntactic processing in study-abroad contexts. LaBrozzi (2011) reported that high-WMC study-abroad learners paid more attention to verbal morphology than low-WMC study-abroad and non-study-abroad learners. It is also noteworthy that the proficiency level of the participants in these studies is high; low-proficiency learners, still dependent on controlled processing, may have difficulty benefiting from studying abroad.

Conclusion

There is extensive evidence that WM is linked to the ability to control information from the environment that can be selectively enhanced or ignored. If WMC controls attention and attention is necessary for learning novel L2 input, could WM be the holy grail of SLA? Existing research suggests a close relationship between WM and L2 learning. However, there is still a great need for dissemination of scholarly research to answer several key questions: What is the neuroanatomy of WM when performing L2 tasks (Xue, Dong, Jin, & Chen, 2004)? What is the precise role of attentional control in SLA (Rai, Loschky, Harris, Peck, & Cook, 2011)? How does bilingualism impact WM (Hernández, Costa, Fuentes, & Vivas, 2010)? And what cognitive training practices increase WM and facilitate L2 learning (Klingberg, 2010)? A more nuanced understanding of the relationship between verbal WM and L2 learning will be achieved when future research delves into these issues.

SEE ALSO: Aptitude in Second Language Acquisition; Inhibition and Control in Second Language Acquisition; Sentence and Discourse Processing in Second Language Comprehension; Working Memory in Second Language Acquisition: Phonological Short-Term

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Working Memory in Second Language Acquisition: Phonological Short-Term

ELISABET SERVICE

It is a common intuition that learning language is easier for some individuals than others. Empirical evidence from naturalistic and classroom learning contexts confirms that there is great variation in second language (L2) learning outcomes in both children and adults. Furthermore, such individual differences appear somewhat independent of general cognitive abilities. Individual personality and motivation as well as many environmental factors, such as type and intensity of input, are likely to be at play. A cognitively based theoretical construct that has shown promise for explaining a considerable portion of the variation in outcome is that of phonological memory. The first studies reporting a correlative relationship between memory for the spoken form of language and L2 acquisition were published at the end of the 1980s. The term *phonological short-term memory* (PSTM) is used to refer to the ability to form and maintain a mental representation of spoken material so that it can be immediately accessed and accurately repeated back aloud or silently rehearsed. In tests of phonological memory, accuracy is required at the phonemic level. Thus, in a repetition task, all speech sounds in a word, for instance, *cat* (/kæt/), have to be correctly reproduced. In contrast, phonetic features, such as the puff of air accompanying a word-initial /k/ sound produced by native speakers of English, need not be present. When material is presented in written form, PSTM refers to a representation specifying what its spoken form would be. The interest in PSTM in the context of language acquisition was born within the theory of working memory first put forward by Baddeley and Hitch (1974). This theory proposed that working memory, that is, the type of memory used for holding information needed in ongoing tasks, was composed of separable components. The researchers hypothesized one system for handling visuospatial material and another for verbal material. The two modality-specific systems were assumed to be controlled by a *central executive* component, supervising the information maintenance and manipulation functions of working memory. The verbal component, referred to as the *phonological loop* in later versions of the theory (Baddeley, 1986), is thought to consist of a *phonological store*, maintaining memory traces for phonological material, and an *articulatory rehearsal* process, actively refreshing these traces using a process based on inner speech. The term *phonological memory* is neutral to the distinction between ability to recall material immediately, that is, short-term memory, and ability to store language as permanent phonological representations of, for instance, words or word sequences. However, in the language-learning literature, "phonological memory," "phonological short-term memory," "phonological working memory," and "phonological loop" are often used as synonyms.

Two longitudinal studies in the 1980s studied the ability to repeat back made-up pseudowords that had the form of real words in a language but no meaning. Gathercole and her colleagues (Gathercole & Baddeley, 1989; Gathercole, Willis, Emslie, & Baddeley, 1992) found that pseudo-word repetition accuracy at four years of age predicted future first language (L1) vocabulary size in children up to the age of 8. Service and her colleagues (Service, 1992; Service & Kohonen, 1995) studied Finnish children from age 9 to 13 years. These researchers found that test performance over four academic years in English, taught

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as a foreign language at school, was highly correlated with repetition accuracy for English-sounding pseudo-words. These two studies were interpreted within the Baddeley and Hitch framework to suggest that the efficiency of the phonological store plays a crucial role in determining individual differences in vocabulary development, in both very young children's L1 and older children's second/foreign-language (L2/FL) learning in school. A later study (French, 2006) addressed the language-specificity of PSTM resources. French tested 11-year-old Francophone children in Quebec, Canada, acquiring English as an L2 over an immersion period. This investigation employed Arabic words along with English pseudo-words in the repetition task. The predictive value of repetition performance with the words in an unrelated language was practically identical to that with the English pseudo-words, both predicting as much as 86.5% of the variance between individuals in a test of English developed by the province of Quebec.

A number of experimental studies have used short-term memory for relatively meaningless sequences consisting of digits, pseudo-words, or unrelated words to predict L1 or L2 learning. These studies produced similar results to those of studies based on repetition accuracy for single pseudo-words. Other studies (Papagno & Vallar, 1992), used learning of associations between objects, or familiar words, and novel word forms as a laboratory task to simulate real-world vocabulary acquisition. These studies found that phonological variables, such as word length and the similarity of the sound structure of a set of items, play a role in memory for vocabulary, supporting the hypothesis that it is a phonological component of working memory that is involved in the process of learning new names or translations for words in L1.

Not all studies have found clear effects of PSTM on L2 acquisition measures. Several studies suggest that more advanced learners' progress in L2 is not correlated with measures of PSTM (e.g., Cheung, 1996). The study by French (2006) of Quebec children immersed in instruction in English reported that new L2 learning was correlated with PSTM only for the half of the sample that had lower L2 scores at the beginning of the immersion period. As the children in this study were all the same age, it strongly suggests that it is the level of proficiency that makes the difference rather than, or in addition to, age. Findings from L1 acquisition have revealed a similar picture, namely the relationship between learning and phonological memory skills decreasing with increasing language mastery (e.g., Gathercole et al., 1992). From the point of view of the struggling L2 learner, this may be good news. It appears that although poor PSTM can slow down initial L2 learning, it may not limit learners in the long run.

Some studies with adolescent and adult participants have also reported null correlations between measures of PSTM and L2 learning. There are a number of factors that make the study of the relationship harder in adults than children. First, the task mostly used with children, namely pseudo-word repetition accuracy, is too easy for most adults. Individual variation between adults in this task is more likely to be related to either the familiarity of the language stimuli in the PSTM task (for instance, L1-based stimuli are easier than L2-based stimuli), or hearing acuity, rather than PSTM capacity differences. Second, the tested adult groups have also mostly been more heterogeneous in their motivation and language backgrounds, introducing powerful intervening variables that are hard to control for. Third, adult participants are more efficient learners in general and often highly skilled in using strategies that help them with laboratory models of L2 learning tasks. So far, at least two studies have reported substantial positive relationships between PSTM and L2 learning in adults. Hummel (2009) found repetition accuracy for Arabic words to be correlated with Francophone participants' learning of English in a university program. Majerus and his colleagues (Majerus, Poncelet, Van der Linden, & Weekes, 2008) were able to predict learning of English–French word pairs by English-speaking university students from scores in a short-term memory task in which participants reconstructed the order of

an auditory list of digits by arranging digit cards. However, further longitudinal studies with sufficiently homogeneous samples of adult participants are needed to determine under what circumstances PSTM may still play a role in adult acquisition of second/foreign languages.

Already early on, factors were identified that appeared to compensate for variation in PSTM in laboratory tasks mimicking L2 vocabulary learning. One such factor was the ability to associate the novel forms presented for learning with already familiar vocabulary in L1 or some other previously acquired language. This was first encountered in a study of Russian word learning by Italian and English participants (Papagno, Valentine, & Baddeley, 1991). The researchers found that Italian participants' learning of L1–Russian word pairs was impaired when rehearsal in PSTM was disrupted by constant repetition of an irrelevant syllable. This result was at first not replicated for English participants. It was, however, discovered that the Russian words were more easily associated with L1 words by English than by Italian participants. A new set of L2 words, now Finnish rather than Russian, was introduced. In the new experiment, learning was found to be impaired in connection with irrelevant articulation also in an English sample. These results were interpreted to suggest that the availability of semantic associations mediated by familiar words can support memory trace formation so that dependence on PSTM is decreased. A similar explanation is available for the finding that laboratory learning of more familiar items (pseudo-words based on the L1) shows lower correlations with PSTM than learning of less familiar items (words in an unfamiliar L2) (Service & Craik, 1993). Further research suggests that also visual memory support can lower demands on PSTM in experimental word learning (Duyck, Szmalec, Kemps, & Vandierendonck, 2003).

Most studies so far have specifically investigated vocabulary acquisition or L2 tasks in which performance is sensitive to how familiar the participants are with the vocabulary included in them. Thus, it has been hard to reliably separate vocabulary accumulation from the acquisition of other aspects of language, such as morphology and grammar. French and O'Brien (2008) studied English grammar learning in Francophone children. They carefully minimized the need for lexical knowledge in their grammar test. Their results revealed that PSTM, as measured by English pseudo-word or Arabic word repetition, predicted command of English grammar even when English vocabulary size was partialed out of the correlation. Replication of these results would strongly suggest that PSTM is involved not only in vocabulary acquisition but also in learning of L2 sentence structure.

Explanations of the mechanism that lies behind the repeatedly observed correlations between performance in PSTM tasks and language learning fall into two major categories: those that postulate PSTM as a causal factor driving language acquisition, and those that suggest that performance in PSTM tasks as well as language acquisition are determined by some other factor. The former hypothesis has most explicitly been argued by Baddeleley and his colleagues (Baddeley, Gathercole, & Papagno, 1998), whereas Snowling, Chiat, and Hulme (1991) have pointed out that PSTM tasks, especially pseudo-word repetition, are likely to be affected by vocabulary size, thus turning around the direction of causality. A hypothesis describing a detailed mechanism (Metsala, 1999) involves a role for phonological processes in the analysis of novel word forms. According to this hypothesis, vocabulary growth forces finer tuning of phonological word representations, for instance in terms of phoneme rather than syllable units. This finer tuning helps pseudo-word repetition as well as memory for new word forms, which can be more easily encoded in phonemic detail. Recent studies suggest that the role of PSTM may be causal after all, in that a mechanism that supports memory for unfamiliar phonological sequences in PSTM tasks may also be involved in setting up representations of new word forms for later recall from long-term memory (Service, Maury, & Luotoniemi, 2007). Experimental data (Majerus et al., 2008), as well as computational modeling (Gupta & Tisdale, 2009), support

a theoretical position according to which learning of new language forms is aided by mechanisms involved in the creation of episodic representations of ordered phonological material (i.e., PSTM) as well as by preexisting phonological knowledge in the mental lexicon that is related to these new language forms.

SEE ALSO: Aptitude in Second Language Acquisition; Vocabulary Acquisition in Second Language Acquisition

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Suggested Readings

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World Englishes and Assessment

PETER LOWENBERG

In tests of English as an international language, the prevailing assumption has long been that the universal target for proficiency in English around the world is the set of norms for Standard English that are accepted and followed by highly educated native speakers of English in the countries of Braj Kachru's Inner Circle (B. Kachru, 1985), particularly Great Britain and the United States. However, over the past three decades, empirical research has demonstrated that in the countries of Kachru's Outer and Expanding Circles (B. Kachru, 1985), systematic and stable non-native norms for Standard English have been developing into *non-native varieties* of English (Lowenberg, 1986; Bamgbose, 1998; Y. Kachru & Smith, 2008). After providing a definition of Standard English that applies equally in the native-speaker and non-native varieties, this entry presents examples of non-native norms and then discusses implications of these norms for the assessment of English proficiency around the world. Due to limitations of space, this analysis will focus primarily on norms for Standard English at the levels of morphology and syntax.

Based on the work of Bautista (2000), McArthur (2002), Crystal (2003), Halliday (2006), and Jenkins (2009), Standard English from a World Englishes perspective is here operationally defined as the linguistic forms in a variety of English—native-speaker or non-native—that are regularly used in formal speaking and writing by speakers who have received the highest level of education in the country where that variety is used. These norms of Standard English are commonly used in what Sibayan (1994, in Gonzalez, 2004, p. 11) has termed the "controlling domains" of language use: official, legal, journalistic, and academic writing; public speaking before an audience or on radio or television; and as a medium or subject of instruction in education. (For a different position—that the British and American varieties still comprise the only internationally accepted and adequately codified norms for Standard English around the world—see Elder & Davies, 2006; Hamp-Lyons & Davies, 2008; Davies, 2009.)

At the levels of morphology and syntax, the many domains in which English is used with mutual comprehensibility in international communication among both native and non-native speakers indicate that Standard English differs only minimally across native-speaker and non-native varieties. Nevertheless, there are a few types of structures in which Standard English frequently does diverge across varieties, and these differences, as will be discussed below, can be very significant for the testing of English proficiency.

One such difference results from the conversion to countability of nouns that are not countable in all varieties, as in examples (1) through (4).

(1) *Inner Circle: Britain*
It's <u>a nonsense</u> to spend money on bed and breakfast when we could be buying homes.
(Algeo, 1988, p. 4)

(2) *Outer Circle: Philippines*
No. of <u>Luggages</u>
("Daily Service Report," Century Park Sheraton, Manila, 1996)

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(3) *Outer Circle: Malaysia*
Thank you for upkeeping the equipments and facilities provided on this train.
(Permanent metal sign riveted to the interior of railway passenger carriages, Malaysian National Railway, December, 1997)

(4) *Expanding Circle: Korea*
Although it is a hard work, I enjoy it.
(Shim, 1999, p. 252)

In Standard American English, all of the nouns in the underlined constructions in these examples would not be countable. (The noun *upkeep* used as a verb would most likely also be considered anomalous.)

Other differences occur in prepositional collocations and phrasal verbs, as in examples (5) through (8).

(5) *Inner Circle: Britain*
Man: I'm looking for the nearest post office.
Woman: There's one in St. Andrews Street.
(*Focus*, n.d., p. 17 [ESL course book prepared in collaboration with the Council of Europe], Zurich: Eurocentres)

(6) *Outer Circle: Singapore*
I live in an apartment at Belmont Road.
(The Straits Times Press, 1985, p. 177)

(7) *Outer Circle: Malaysia*
In conjunction of this, Hotel Lobby Decoration will be organized during the Floral Week.
(*Sunday Times*, Kuala Lumpur, Malaysia, n.d.; subsequently used in the 1997 General English Proficiency Examination at a leading Malaysian university)

(8) *Expanding Circle: Korea*
Gardens come on life again.
(Shim, 1999, p. 251)

In Standard American English, the correct prepositions would be *on* in (5) and (6) and *with* in (7). The correct particle in (8) would be *to*.

Awareness of these types of morphological and syntactic variation in normative features across the Three Circles is essential for evaluating non-native speakers' proficiency in English in the world context (Lowenberg, 2002). In order to assess this proficiency accurately, examiners must be able to distinguish *deficiencies* in the second language acquisition of English by Outer and Expanding Circle speakers from varietal *differences* in the speakers' usage resulting from their having learned such non-native norms as those discussed above (Lowenberg, 1993). An example of the importance of this distinction occurs in item (9), which is modeled on a test item in an ESL (English as a second language) placement test administered to international students at a major American university.

(9) Ms. Lee bought several new for her house.
(a) piece of furniture (c) pieces of furniture
(b) furnitures (d) furniture

Many educated speakers of Standard English in non-native varieties would have considerable difficulty in answering this question since they might find answer (b) quite acceptable. On the basis of "incorrect" answers on test items such as (9), international students in the United States who speak non-native varieties might receive scores underestimating their actual English proficiency and be erroneously forced to enroll in remedial ESL classes.

Speakers of Standard American English would probably encounter similar difficulties in attempting to choose the correct prepositions in items (10) through (12) from tests of Standard English proficiency in non-native varieties.

(10) *Outer Circle: Singapore*
The highest mark _____ the Mathematics test was 76 out of 100.
(a) on (c) in
(b) at (d) for
(Practice Test #5 for the Primary School Leaving Examination, Singapore; distributed by Bookland, n.d.)

(11) *Outer Circle: Philippines*
The XYZ Commission is found in San Miguel Avenue in Pasig.
[task is to identify the incorrect constituent]
(from an English examination of a leading Philippine university, n.d.)

(12) *Expanding Circle: China*
Karaoke is very popular _____ (with, among) young people.
(Ministry of Education, 2000, p. 110)

According to the answer keys, the correct answer to (10) is *in*. The incorrect constituent in (11) is *in Pasig* (a district of Manila), the correct preposition being *at*, while the phrase *in San Miguel Avenue* is correct. No answer key is supplied for (12), an item that would perplex many speakers of Standard American English who would consider both choices acceptable.

The implications of this analysis are that tests of English proficiency meant to be used across all of the native-speaker and non-native varieties, such as the Test of English for International Communication (TOEIC), will be globally valid to the degree that they can focus on norms that are shared in all native-speaker and non-native varieties of Standard English, such as subject–verb agreement and the comparative and superlative forms of adjectives, rather than on the highly variable norms described above.

As noted at the beginning of this entry, due to constraints of space, discussion thus far has been limited to assessment of proficiency in the morphology and syntax of Standard English in the world context. In recent years, several scholars, including Canagarajah (2006), have cogently argued that tests of English as used internationally should focus much more on pragmatic, discourse, and genre features of Standard English. A contrast at these levels between native-speaker and non-native varieties in the domain of professional correspondence is evident in examples (13) and (14), from the United States and India respectively (Lowenberg, 2000, p. 79). Each of these examples contains the greeting and introductory sentence of a letter written to the same American professional inviting the addressee's listing in a biographical reference volume. In contrast to American norms for this genre, the Indian letter exhibits a marked embellishment that occurs frequently in many non-native varieties.

(13) Dear Professional:
Our editors have identified you as a biographical candidate for the forthcoming 23rd edition of WHO'S WHO IN THE SOUTH AND SOUTHWEST.
(Marquis Who's Who, Wilmette, IL, 1991)

(14) Dear Sir/Madam:
We come back upon the correspondence resting with the inclusion of your biographical-note in the forthcoming volume of our "Biography International" and thank you much indeed for your esteemed cooperation in sending to us the same. (Biography International, Delhi, 1986)

To date, identification of norms at these levels that apply across native-speaker and non-native varieties is extremely limited, impeding the development of valid international tests of communicative competence. However, continuing studies of cross-varietal contrasts in pragmatics, discourse, and genre, as well as in the many other lines of research on World Englishes explored in these volumes, should lead to the development of more comprehensive assessment instruments for use in the world context.

SEE ALSO: High-Stakes Language Testing; History of World Englishes; Linguistic Creativity and World Englishes Literatures; Varieties of World Englishes

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World Englishes and Language Pedagogy

AYA MATSUDA

The implications of the linguistic, cultural, and functional diversity of English to English-language teaching (ELT) have attracted much attention from scholars and teachers, and World Englishes studies have been the primary source of information and insights for responding to this interest. Starting with Braj Kachru's work in the late 1970s and early 1980s (e.g., 1976), articles and books have explored this topic, especially in recent years (e.g., McKay, 2002; Matsuda, 2003; Jenkins, 2006; Sharifian, 2009). Although the discussion so far has tended to remain at the abstract level, some classroom issues and questions have been recognized as crucial in teaching English in a way consistent with the language's sociolinguistic landscape today.

Instructional Variety

In most ESL and EFL classrooms, the "standard" varieties of English associated with the United States and the United Kingdom have traditionally served as instructional models. Recognition of other national and regional varieties as legitimate—a key contribution of World Englishes studies—questions this status quo and calls for the model selection based on various contextual needs, particularly on learner goals.

For instance, in some classrooms, a local variety of English may be more appropriate than the US or UK model. It particularly makes sense in many outer circle (i.e., former British and US colonies) contexts where "an *external* model does not suit the linguistic and sociolinguistic ecology" (Kachru, 1992, p. 61) and a nativized model of English has developed to meet the local communicative needs better (e.g., Llamzon, 1969; Bamgbose, 1992; Kachru, 1992). In the expanding circle too, Hino (2009), for instance, has argued for allowing English users to express indigenous values through their own version of English, just as the English users of the outer circle have localized English from the inner circle to better serve their communication needs.

In other cases, a "well-established" variety of English, which is codified, used for a wide variety of communicative functions, and relatively well accepted in various contexts, may be selected over a local variety. Various factors, including the goal of students, the availability of teaching resources, and a limited functional range of the local variety, may lead to such a decision. While American and UK varieties are likely candidates, they are by no means the only options. Other inner circle varieties (e.g., Australian English) and possibly several outer circle varieties (e.g., Indian English) may serve well, and when other outer and even expanding circle varieties become more established, they also become potential candidates.

Furthermore, recognition of linguistic diversity within English calls for awareness-raising regarding English varieties other than the predominant instructional model. This is especially critical to those learning English for the purpose of international communication because their future interlocutors' English is likely to be different from their own. The lack

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of awareness and familiarity with diverse Englishes has been suggested to have potentially negative effects on students' attitudes toward other varieties of English and their confidence in successful communication involving multiple varieties of English (Matsuura, Chiba, & Fujieda, 1999), or even their ability to interpret interactions in various Englishes correctly (Smith & Nelson, 2006). Some of the ways to increase students' awareness of English varieties include exposing students to different varieties of English through teaching materials, providing opportunities for students to interact with English users from various backgrounds, and increasing students' meta-knowledge by making it a lesson focus (see Matsuda, 2006; Kirkpatrick, 2007; Matsuda & Friedrich, in press, for further discussion of the choice of model).

Communicative Strategies

Linguistic and discourse knowledge alone is not adequate for successful communication. Other necessary components of communicative competence include understanding of the *appropriate* use of the language and the effective use of strategies to sustain and enhance communication and to compensate for linguistic and other limiting factors (Canale & Swain, 1980). While this is true in any language, it is particularly so for English because English users today come from drastically different geographic, linguistic, and cultural backgrounds, and each participant brings his or her own frame of reference to the conversation. It is crucial that students are equipped with—and are aware of—both the linguistic and strategic repertoire they can draw on in situations where they use English to communicate with those who do not share their first language and culture.

Communication strategies that are particularly important given the linguistic and cultural diversity of English include the ability to derive meaning from context; to paraphrase, summarize, and engage in circumlocution; to ask for clarification of meaning; to aid verbal communication through nonverbal communication; and to display cultural sensitivity. Avoiding culturally specific expressions—or using use them effectively with proper glossing or explanation—is another important strategy in intercultural communication. In addition, knowing how to address miscommunication—preventively and responsively—is likely to contribute to successful communication.

Finally, students need to be reminded that communication is a two-way process. Making one's own message clear and trying to understand the other is not the sole responsibility of non-native speakers or speakers of "less standard" English varieties (however these are defined). Everyone is responsible for overall successful communication, whether it is international or not (see Matsuda & Friedrich, in press, for further discussion on communicative strategies).

Culture in English-Language Classrooms

Just like the instructional model, the cultural content of ESL and EFL courses typically focused on that of the Americans and British. However, recognition of the global spread of English significantly broadens the scope of "English-speaking culture." Even within the simplified concept of national culture alone, there are countries other than UK and US where English is used as the dominant language (e.g., Australia, New Zealand), multilingual countries where English has achieved official status and is used for limited but important functions domestically in tandem with indigenous languages (e.g., Singapore, Philippines), and those where English is learned for international communication and holds an important place in their formal education system. All contribute to the richness of English-speaking culture today.

Obviously, learning about all these countries in one course is not possible. One way to prioritize is to focus on the learners' use of English. For those learning English for domestic use, the focus may be the culture of the profession or speech community in which they will be using English. For those who need English for international communication, the course might touch on the countries of their interlocutors (if known), or several countries from each circle to help them understand the wide diversity and variation that exist among English-speaking countries. Global issues that cut across national boundaries, such as world peace and environment conservation, are also relevant for the function of English as an international lingua franca.

In addition, a learner's own culture is an important source of the cultural content (McKay, 2002; Matsuda, 2006). When English is used as the lingua franca, domestically and internationally, interaction will involve people from different linguistic backgrounds. In order to establish and maintain an equal, mutually respectful relationship through such interactions, the ability to express one's own values, opinions, and practices is crucial (Hino, 2009).

Teaching Materials

Few teachers have rich personal knowledge and experience with all the varieties and functions of Englishes that exist today. In order to effectively incorporate linguistic and cultural diversity into English classrooms, the availability of well-designed teaching materials is critical.

Traditional teaching materials, including textbooks, tended to focus on the UK and the USA because of the course's almost exclusive focus on varieties and cultures from these countries (Matsuda, 2002). However, more recent textbooks include explicit and implicit references to the kinds of diversity discussed above. For example, *Englishes of the World* (Yoneoka & Arimoto, 2000) and *Identity* (Shaules, Tsujioka, & Iida, 2004) feature people from different parts of the world and their varieties of English, and *Crown English Series II* (Shimozaki et al., 2004), a government-approved textbook for senior high school students in Japan, has a chapter entitled "Singlish Bad; English Good," which explicitly introduces the notion of World Englishes.

Teaching materials, of course, are not limited to published materials. Advancement in instructional media, including the Internet, is a great benefit for the development of teaching resources. For instance, English-language newspaper articles from the inner, outer, and expanding circles, easily accessed via the Internet, can be used as authentic reading material or as the base for a class discussion. Similarly, news clips available from broadcasting stations' Web sites or video clips from YouTube can expose students to audio samples of different varieties of English. Comparing and contrasting articles about the same topic or event published in different countries helps students understand the conflicting and competing perspectives that exist in the world. Analyzing different kinds of discourse from one country also exposes students to social, regional, and situational dialects —concepts that help them understand the complexity of the English language.

Assessment

The recognition of nativized varieties of English also challenges such notions as "standards" and "norms" and complicates proficiency assessment as well. For many English learners in the outer and expanding circles, complete convergence with the native speakers' norms is not necessary and sometimes even unwanted (e.g., Bamgbose, 1992). In such cases, the use of standardized tests based on the inner circle norm (e.g., TOEFL, Cambridge) may

not be appropriate because some legitimate and even standard usage in one variety may be considered incorrect in the variety on which these tests are based (Lowenberg, 2002).

One solution to this problem is to create a (standardized) exam locally, based on the local communicative reality, including the kind of English that is used, for what purpose, and with whom. In Indonesia, an English proficiency test for local English teachers was developed based on the local use of English, which predominantly involves interactions with speakers from outer and expanding circles in Southeast Asia (Hill, 1996). As Lowenberg (1993) points out, the assumption that native English speakers should determine the norms of English worldwide is neither possible nor appropriate; thus more tests similar to the Indonesian test need to be developed for different instructional contexts.

Another argument made in the area of assessment is to focus on effectiveness of use (e.g., Canagarajah, 2006). As stated above, English users are likely to find themselves in a communicative situation where multiple and conflicting expectations about what is appropriate and effective are found and negotiated. While grammatical accuracy certainly is helpful in such negotiations, and even highly expected in certain formal and professional contexts, that alone does not promise successful communication, as already explained. Assessment also needs to recognize this reality and address not only how *accurately* but also how *appropriately* and *effectively* one uses the language.

Critical Perspective

In addition to the inclusive representation of English varieties, speakers, and cultures, World Englishes research has provided further understanding of the politics of English, including such issues as language and power, the relationship between English and various indigenous languages, linguistic ecology, and the linguistic divide (e.g., Phillipson, 1992). While to what extent and how explicitly such topics should be addressed in the language classroom depends on each instructional context, it is important to empower all English learners with critical lenses that will allow them to use English effectively to meet their own needs and resist any oppression from the dominance of English, while respecting the needs of others (Canagarajah, 1999).

For example, students must understand that the variety they learn—or even English itself, for that matter—may not always be considered the most appropriate choice for a particular communicative situation. This is so because the appropriateness of language choice lies in the assumptions and expectations of members of the speech community and not in the language itself. In fact, it would be arrogant to think that whatever the language or a variety of language one knows is the most preferred choice by all, and English users need to approach the issue of language choice sensitively.

Advanced students can read, watch, discuss, and write about issues that are directly related to the politics of English or language in general. For example, in a classroom in Taiwan, topics related to local linguistic diversity and language policies or the possibility of Chinese becoming an international language would allow students to critically examine the relationship between language, culture, identity, and power in their own context, while gaining further understanding of their local culture.

Teacher Education

In spite of the increasing attention given to the implications for ELT, understanding of how World Englishes influence teacher preparation is fairly limited. This is unfortunate because changes in ELT cannot be implemented unless teachers themselves have a critical awareness of how English is used today. Because the language programs that pre-service

teachers have taken are typically inner circle-oriented, it is the responsibility of the teacher preparation curriculum to expose students to concepts such as World Englishes, linguistic imperialism, and language diversity.

Existing studies suggest that World Englishes research has much to offer to teacher preparation worldwide. Vavrus (1991) found that none of the 10 "reputable" MA programs in the USA he studied required a course that emphasized non-native varieties of English and that only two offer such a course as an elective. Matsuda (2009) found that, while many pre-service teachers in Japan were exposed to World Englishes at least to some extent and teacher educators often believe this is important, such exposure was still considered supplementary and secondary to Englishes, literatures, and cultures from the inner circle. Dogancay-Aktuna and Hardman (2007) also illustrated challenges in creating teacher education programs that are "re-imagined from a perspective that would no longer make narrow assumptions regarding the cultural/linguistic context of teaching, ESL-centric models of teaching, and the nature of the English language itself" (pp. 8–9).

An interesting development related to this area is the establishment of departments that are based on the World Englishes perspective (e.g., Chukyo University, Japan; Monash University, Australia). Although these programs are not exclusively about teaching, they often house a teacher preparation unit. Such an institutional set-up may facilitate more articulation between World Englishes and ELT than units with a more traditional approach to English studies.

Conclusion

Perhaps the most important insight that World Englishes studies provide to ELT is the understanding of linguistic, functional, and cultural diversity associated with the English language, and consequently the importance of context-based decision making. While the importance of context in language teaching has been recognized since the emergence of communicative language teaching and the concept of communicative competence in the 1970s (Berns, 1990), it is greater than ever in ELT today because of the global spread of the English language and the emergence and recognition of various forms and functions of English. People in different contexts learn different Englishes for different purposes and to different degrees, and thus the transferability of a curriculum and materials from one instructional context to another has decreased. This calls for a curriculum that is based on needs assessment, material development, and teacher preparation done locally. This approach to ELT may also foster an increased sense of local ownership of the language, which is a way to resist the dangers of the hegemony of English.

SEE ALSO: Intelligibility in World Englishes; Intercultural Competence; World Englishes and Assessment; World Englishes and Teaching English to Speakers of Other Languages

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World Englishes and Teaching English to Speakers of Other Languages

AYA MATSUDA

Teaching English to speakers of other languages (TESOL) and World Englishes (WE) have both established themselves as important areas of inquiry within applied linguistics, with their own professional organizations (Teachers of English to Speakers of Other Languages and International Association for World Englishes [IAWE]), annual conferences, and affiliated journals fully dedicated to the scholarship in their disciplines (*TESOL Quarterly* and *World Englishes*, respectively). The articulation between the two fields, however, began only in the last decade or so, except for the work of a few individuals who crossed over the two areas (e.g. Kachru, 1976, 1984; Sridhar, 1994). This entry traces the history of the (inter)disciplinary relationship between the two fields as evident from scholarly publications that attempted to bring them together. It also identifies future research areas where cross-fertilization is particularly needed.

TESOL in World Englishes: Early Years

It is interesting to note that, in a way, the field of World Englishes became institutionalized and flourished the way it did because an early attempt to collaborate with TESOL had failed.

The conceptualization of the notion of World Englishes dates back to as early as the 1960s, but 1978 is an agreed point in a history when an organized scholarly effort to explore the global spread of English and its linguistic and functional implications was initiated (Kachru, 1997). This was the year when two independently organized conferences—one at the East-West Center in Hawaii and the other at the University of Illinois at Urbana-Champaign—were held to explore respectively the international and intranational functions of English across the world. These two conferences shared similarities in their goals and ideas, and the publications resulting from these conferences served as the foundation for the World Englishes studies.

Language pedagogy was one of the well-explored foci of World Englishes studies until mid-1980s. World Englishes scholars actively organized sessions at such language pedagogy conferences as TESOL, International Association of Teachers of English as a Foreign Language, and Georgetown University Round Table on Languages and Linguistics, introducing the discussion of World Englishes to the field of English-language teaching (ELT). Some of the publications during this period challenged the status quo and assumptions in ELT that were based on a monolithic view of English (e.g., Kachru, 1976, 1984), while others contributed perspectives that broadened and enriched the understanding of ELT in general (e.g., Sridhar & Sridhar, 1992; Sridhar, 1994).

In 1984, however, the fate of the relationship between two disciplines took a turn. At the TESOL convention, the board of directors rejected the proposal to create an interest section devoted to varieties of English around the world, and this rejection encouraged early World Englishes scholars to create their own space to explore these issues (Smith, personal communication, April 16, 2010; Kachru, personal communication, August 8, 2010).

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While these scholars continued to participate in the above mentioned conferences, they also created an international committee for the study of World Englishes at the 1988 TESOL convention, and in 1992, the committee cosponsored a conference of "World Englishes Today" where the International Association for World Englishes was formally launched (Kachru, 1997).

From the mid-1980s through the 1990s, the primary focus of the newly established organization and the field it represented was the linguistic and functional description of English in different parts of the world. While language teaching remained a legitimate research focus, it seemed to have stayed in the back seat while an effort to establish the pluralistic nature of English drove the discipline. Among nine research areas of World Englishes identified at the conference "Language and Power: Cross-Cultural Dimensions of English in Media and Literature" in 1986, only one explicitly dealt with the issue of language teaching: "Comparison of contexts and methods of language teaching in diverse cultural and educational settings" (Kachru, 1997, p. 211). This positioning of language pedagogy topics was also evident in publication trends in *World Englishes*. When Braj B. Kachru and Larry E. Smith took over the editorship of the journal *World Language English* in 1985, they also changed the title to *World Englishes*, which signified the change in the focus of the journal. *World Language English*, with the title that recognized the use and status of English as a world language, focused on English-language teaching and learning in parts of the world and attempted to reach the broad range of English teachers and learners by publishing relatively short and accessible articles. The new title, *World Englishes*, suggested that the linguistic and functional variation and diversity of the language was going to be the focus and foundation of this journal. It was now a scholarly vigorous journal, featuring more full-length articles on sociolinguistics of Englishes in general. After this change, the number of pedagogy-related articles went down to one or two per volume, although many of them were now full-length articles.

In addition, among 20 issues identified in the survey of World Englishes research published in 1997, none specifically addressed English-language teaching (Kachru, 1997). It should be noted, however, that there was one category on teaching World Englishes and many others did mention their pedagogical implications in discussion. It seems fair to say that the last decade of the 20th century in World Englishes was devoted to the establishment of itself as a discipline, in which language pedagogy was considered a legitimate but not necessarily dominant focus of inquiry.

World Englishes in TESOL

As described above, the notion of World Englishes was present and visible in TESOL until the early 1980s. Furthermore, there were TESOL members, including James Alatis, the first executive director, who acknowledged the importance of the World Englishes perspective in ELT from the early days. However, what the story of the failed attempt to create a World Englishes interest section illustrates is that the global spread of English and the resulting diversity in forms and functions of English were not perceived as a critical issue in the field of TESOL as a whole then. The publication trend in *TESOL Quarterly*, established in 1967, suggests that it was probably the case until the end of the decade.

TESOL as an organization was established in 1966 out of the need for a professional group dedicated to teaching English to speakers of other languages. The organization and consequently its journal were meant to be international from their inception. The founding leaders were explicit about the needs for a global focus and deliberately chose not to include such terms as *American* or *National* as part of the title (Alatis, 1987). However, its focus in reality was American. Non-US contexts were positioned as foreign lands where

Americans would go and teach, rather than where a unique variety of English may be taught, learned, and used in a locally appropriate way. Consequently, articles from abroad published in *TESOL Quarterly* in the early days tended to be "state of the art" articles, introducing issues to be kept in mind when Americans teach there.

Topics covered in early issues of the journal mostly addressed classroom issues and teaching of "X," where X could be something very specific (e.g., pronunciation of the "th" sound) to broad (e.g., writing, academic skills), reflecting the trend in the entire field. There were also many articles about surveys of other disciplines and their implications for TESOL. TESOL then was "at a stage in its development when it must actively solicit contributions from a variety of disciplines" (Wardbaugh, 1972, p. 291), and publication trends reflected such needs.

Issues related to the global spread of English and "new" varieties of English appeared in the literature as early as 1969 but only sporadically for the first two decades of the journal. Quirk (1969), in the first such article, acknowledged the existence of new Englishes but considered them as something that was in conflict with "the English of orthodox law-enacting, culture-bearing, education-disseminating" (p. 24) and thus a problem. Kachru (1976) introduced the idea of new Englishes as legitimate varieties of English and argued for a pluralistic view of English in ELT. It should be noted, however, that there was a rich discussion of teaching standard English to speakers of "nonstandard" dialects (e.g., African American Vernacular English) in the United States, and many sociolinguistic concepts that serve as the foundation of WE studies were introduced to the TESOL community during this period.

The absence of an entry on World Englishes in the 25th anniversary issues of *TESOL Quarterly* in 1991 is probably an indication that the topic was not acknowledged as a critical or possibly even legitimate in the field of ELT throughout 1980s. However, Brown (1991) did point out such facts as that "English is increasingly *not* learned as a tool for interaction with just *native* speakers of the language" and it "is *not* always learned as a tool for understanding and teaching US or British cultural values" (p. 250). He also acknowledged the major role the non-native English speakers were playing in the field of TESOL. The linguistic and functional diversity of English that resulted from the global spread of English, as well as its implications for teaching, was also mentioned.

From the end of the 1980s throughout the 1990s, there was a sudden increase in the number of articles that address questions related to World Englishes, often in relation to such topics as language and politics (e.g., Pennycook, 1989). There were some special issues devoted to topics that were very relevant to WE studies (e.g., language planning and policy in 1996; identity in 1997), and articles from non-US contexts often went beyond the description of an exotic land where native English speakers would go and teach but represented local perspectives that sometimes challenged Western assumptions (e.g., Burnaby & Sun, 1989). At the 1994 TESOL Convention, Braj Kachru gave the annual James E. Alatis plenary titled "The Paradigms of Marginality," which critiqued the practices of linguists and language specialists that marginalized multilingualism and multilingual users, and argued for new views and attitudes toward World Englishes.

The increased awareness of the power politics in ELT, questions about the ownership of English, and the spread of English and its implications for variations and standards appeared not just in the TESOL organization but in ELT communities in both the United States and United Kingdom (Bowers, 1986). It seems that not only awareness and interest in globalization and World Englishes increased during this period but also the focus shifted in the discipline. The emergence of new topics and theoretical approaches (e.g., critical theory, language planning and policy) created a space for international perspectives and explorations of World Englishes to flourish within the discourse of ELT.

World Englishes and TESOL in the 21st Century

In the past decade or so, we have witnessed growing interest in bringing World Englishes and TESOL together, both in terms of scholarship and teaching practices.

In *World Englishes*, the number of articles with a pedagogical focus increased, especially in the early 2000s, including a symposium (a special theme section) devoted to the exploration of World Englishes and teaching English as a foreign language. In *The Handbook of World Englishes* (Kachru, Kachru, & Nelson, 2006), five out of six chapters in the section on "World Englishes and Applied Theory" directly addressed the implications of World Englishes to ELT around the world. Recent IAWE conference programs included numerous invited and peer-reviewed presentations related to pedagogy, including a half-day workshop devoted to this topic in 2008.

The presence of the World Englishes perspective in TESOL has also become significantly more visible since the turn of the century. The TESOL Board of Directors approved the position statement on English as a Global Language in March 2008, which recognizes and appreciates World Englishes (Teachers of English to Speakers of Other Languages, 2008). *TESOL Quarterly* regularly publish articles that explore the intersection of World Englishes and TESOL (e.g., Matsuda, 2003; Bruthiaux, 2010), although they may still "be the exception rather than the rule" (Jenkins, 2006, p. 158). The 40th anniversary issue of *TESOL Quarterly* included a chapter dedicated to World Englishes, which Suresh Canagarajah, the editor of the journal then, described as "risen to prominence after the [25th anniversary] issue, affecting almost all the other domains of language teaching" (Canagarajah, 2006b, p. 5). What is even more noteworthy is that references to World Englishes are made in articles with a focus on what are not typically considered "WE issues" (e.g., Murray, 2000, on computer-mediated communication). There seems to be an increased sensitivity toward linguistic diversity in English and a shared concern toward and increased awareness of such problems as the construct of native English speakers and the dominance of English, because of "[t]he growing interest in and increasing assertiveness on the part of proponents of native varieties of English" (Flowerdew, 2001, p. 140).

In addition to the number of articles and book chapters published in both fields, there have been book-length explorations that bring these two fields together, mostly focusing on the globalization and teaching of English for international communication (e.g., McKay, 2002).

One characteristic of recent work that draws from World Englishes and TESOL is that it goes beyond adding new knowledge within an existing framework for understanding these fields. While earlier contribution of World Englishes to ELT was mostly limited to the question of how (mostly linguistic) variations complicates (and enriches) ELT, recent studies call for a paradigm change in the way we think of ELT by updating our understanding of how English is used in today's global world. From the pedagogical perspective, such a shift calls for a reexamination of assumptions and the status quo in language teaching practices. In scholarship, the new positioning of World Englishes as the foundation, rather than supplemental information, of how we think of ELT opened up new research areas and ways of thinking about various aspects of language pedagogy.

Some examples of areas where cross-fertilization is already occurring and especially relevant include questions related to the notion of intelligibility (e.g., Kachru, Nelson, Kachru, Bhatia, & Berns, 2008), standards and assessment (e.g., Lowenberg, 2002; Canagarajah, 2006a), non-native English-speaking teachers and teacher identity (e.g., Brutt-Griffler & Samimy, 1999; Dogancay-Aktuna & Hardman, 2008), sociopolitical awareness and language ideology (e.g, Phillipson, 1992; Canagarajah, 1999), and methods and curriculum (e.g., McKay, 2002; Brown, 2006). Theoretical concepts in SLA and related fields are also revisited with the insights from World Englishes (e.g., Sridhar & Sridhar 1992; Berns, 2006).

Conclusion

It is clear that the fields of TESOL and World Englishes have something to contribute to each other, and cross-fertilization is needed to understand and situate the practice of ELT in the global context.

In TESOL, insights from WE studies serve as the foundation and context for all ELT practices to be situated. Although such issues as the global spread of English and its linguistic and social implications may be more directly relevant to teaching in some contexts than others, they are in fact part of the reality that ELT addresses. For example, in English-language learner (ELL) programs in US schools, the curricular focus is on US language and culture. It is rightly so because the mission of such programs is to prepare students for the "mainstream" US classrooms. However, it is important for teachers in such programs to be aware of different varieties of English that exist in the world today because those are the Englishes that ELL students may have been exposed to in the past or will be in future. Similarly, unaware teachers may uncritically present one variety of English as the only correct variety of English—rather than one variety of English that is preferred in that particular context—and unintentionally degrade other varieties of English and speakers of such varieties of English. In that sense, our understanding of today's English language should seep into every aspect of ELT, regardless of the geographic context, informing and influencing every aspect of TESOL research and practices.

In World Englishes, ELT continues to be one example of space where the notion of World Englishes is examined vis-à-vis the reality of English. Research that directly investigates the implications of World Englishes to ELT obviously addresses this interdisciplinary area of inquiry. But even with the cases of WE research projects that seem distanced from teaching—such as the linguistic analysis of Englishes or investigation of English use in advertisements and entertainment—information regarding the place of English in educational system provides great insights into the (socio)linguistic reality of English where the investigation takes place.

SEE ALSO: History of World Englishes; Non-Native-Speaker English Teachers; Teaching for Internationalization and Critical Citizenship; World Englishes and Language Pedagogy

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World Englishes and the Role of Media

ANJALI PANDEY

The link between World Englishes and media has gained in importance in the 21st century by the twin forces and effects of globalization. While media are inclusive of a plethora of written and broadcast formats, including but not limited to advertising, books and bestsellers, electronic games and software, fashion, the Internet, magazines, music, newspapers, radio, satellite television, tourism, video and DVD, the Web, and even sports (Miller, Govil, McMurria, Maxwell, & Tang 2005; McCrum, 2010), the primary focus of this entry is film, with some discussion of other media streams, with bestsellers increasingly emerging as filmic fodder in the era of media syncretization. To view media-making in the 21st century as neutral, entertainment-driven, and agenda-vacuous, as some researchers do, is to ignore the role and impact of the industry. In an era of globalization, media such as film are increasingly being viewed not as neutral tools of entertainment, but rather as "cultural commodities" (Miller et al., 2005, p. 42) produced for edutainment, while subverting a creative and aesthetic orientation eager to merge market interests with cultural and linguistic agendas (Bleichenbacher, 2008; McDonald & Wasko, 2008).

Why film? First, the role of film, particularly in the spread of inner circle World Englishes such as American English in the 20th century, has been pivotal, as is film's current "supranational momentum" (McCrum, 2010, p. 269) in disseminating English in expanding circle domains such as China. Film is increasingly becoming universally accessible. Over 800 English language films are produced annually in Hollywood (Miller et al., 2005), with more English language usage emerging in films produced in outer circle markets such as Bollywood, with its own annual output of approximately 1,000 films (McDonald & Wasko, 2008). China and India alone account for "over two-thirds of film screens around the world" (Miller et al., 2005, p. 20). Film is also a tool of multiplex entertainment with "tie-ins" (Block & Cameron, 2002, p. 3) to bestsellers, commercial paraphernalia, and fast food franchises—a few from a multitude of options. Second, film as a tool for English-language teaching and learning in both classroom contexts (Winke, Gass, & Syderenko, 2010) and naturalistic settings (Cintas & Anderman, 2009) is increasingly becoming prominent, as is its use as a pedagogical tool permitting recursive linguistic practice (Seferoglu, 2008). Finally, film's internal formal structure (narrative, textual, linguistic, aesthetic, and semiotic), as well as its external workings (the socioeconomics of production; McDonald & Wasko, 2008), are prototypical of the potential embedded in 21st-century media to utilize the sphere of pleasure to either preserve or quell the current linguistic diversity of World Englishes. To provide a coherent view of issues, we explore some key questions.

First, to what extent do current media represent the true diversity of World Englishes and to what extent do media include or privilege certain varieties of English while excluding or marginalizing others? In an era of globalization, an economic shift has given rise to the phenomenon of "runaway productions," defined as locally marketed media products made "in another country" (Miller et al., 2005, p. 7). Another case in point is the successful global media syncretization projects of adapting local bestsellers into runaway global blockbusters—an increasingly popular trend which may or may not privilege local World English varieties. For globalization celebrationists, these scenarios have the potential of representation and inclusion of a plethora of *other* inner, outer, and expanding World

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English varieties found in locales around the world. For skeptics, however, such outsourcing of "pleasure" has the potential to increase the "normalization" of "homogeneous values and practice" (Canagarajah, 2002, p. 136)—a privileging, so to speak, of a select number of inner circle varieties, in particular British and American English, often to the marginalization and exclusion of other outer and expanding circle varieties. McCrum, for instance, cites the "unipolar" world ensuing after the collapse of the Berlin Wall as a major factor in the media monopoly exerted by two varieties of World English, stating: "British and American English have now became the default position of the international media" (2010, p. 233). This linguistic exclusion is salient to some scholars who view such a linguistic monopoly as problematic, as reviving outmoded, "center–periphery" dichotomies in which the center as giver and the periphery as taker engage in an "unequal global ecumene of cultural interaction and exchange" (Hannerz, 1991, p. 66).

A related question: What effects in terms of status does such an asymmetrical screen rendering of different World Englishes have on global audiences? Put differently, what are the potential effects of such linguistic renditions in shaping viewers' tastes and dispositions —in short, their linguistic *habitus*—for particular English varieties over others? The cultural and educational implications of such a differential weighting of World English varieties in the media are immense. The emergence of language as linguistic capital (Duchêne & Heller, 2007) has prompted some to report how "the commodification of language affects both people's motivations for learning languages and their choices about which languages to learn" (Block & Cameron, 2002, p. 5), more specifically, which World English varieties to master and which to discard. Native speaker proficiency for some then becomes a "saleable product—a linguistic brand for export, like Burberry" (Holliday, 2009, p. 151). The short- and long-term linguistic effects of such media portrayals on World English teaching and learning preferences are in pressing need of careful and systematic analyses. Kuo (2006), for example, cites the case of her students who, while living in distant expanding circle domains remain eager to adopt target-like productions of inner circle norms—that is, British English. Where do such linguistic preferences come from? Can the media be implicated in such preferences? More large-scale research is needed in this area.

In Orwellian terms, are some inner circle varieties more equal than others? Which contextual factors determine how such World Englishes are rendered on the silver screen and in the media? The seeming global preference for inner circle varieties of World English over local varieties does not suggest that inner circle varieties are monolithically rendered in current media. More research is pointing to competition within economically powerful inner circle varieties for global media markets. Graddol (2006) cites numerous examples of media competition from other World English varieties, as well as media contests with rival national languages such as Arabic and Chinese. Growing competition is also emerging in media monopoly as China launches its own state-run English-medium channels. For some scholars, the massive rise of Internet-based media outlets, combined with rapidly spreading varieties of World English, are bound to render native speakers, and eventually native speaker pedagogical models, "irrelevant" (Saraceni, 2009, p. 177), since there are "now more non-native speakers of English than there are native speakers" (Kirkpatrick, 2009, p. 381). Consider India, purported to have "the largest English-speaking population in the world" with "350 million speakers"—"far more than the combined English-speaking populations of Britain and the USA" (Crystal, 2008, p. 173). In the face of such numbers, however, current media, like the sister industry of language teaching according to some, persist in exhibiting resistance to what Saraceni (2009) has labeled "the paradigm shift" (p. 176) currently at work in World English use—shifts from "purist positions" built on "monochromatic" (p. 175), exocentric models of native speaker proficiency to more "inclusive" (p. 176), polychromatic, endocentric-based models incorporating the dialect diversity inherent in World English use.

A related fourth question: How is such centering versus peripheralization of World Englishes actually construed in both filmic and linguistic terms within media such as film? In the face of the diverse global linguistic landscape, *how* World Englishes are linguistically and semiotically rendered via global media formats becomes an even more pressing issue (Bleichenbacher, 2008). Within the context of market controls of media, researchers such as Pandey (2010) contend that the global monopoly of endocentric varieties of English in media is a consequence of carefully orchestrated, semiotic, and discursive indexing on the part of media-making. Such approaches call for more nuanced, visual, and critical discourse analysis, with a concomitant cataloging of the discursive strategies currently embedded in textual filmic and media content in a bid to reveal *how* Hollywood in particular, and media in general, manage to privilege exonormative or native speaker models of English proficiency (Graddol, 2006; Kuo, 2006) to the detriment of endonormative or lingua franca World English models (Kirkpatrick, 2009).

Finally, to what extent will the factors of linguistic inter- and intra-intelligibility between World Englishes (Saraceni, 2009) shape linguistic renditions in the re-representation of World Englishes in the media of the future? McCrum (2010) calls for the use of a global English—Globish—which is simultaneously "neutral and intelligible" (p. 273) and devoid of local linguistic DNA. Recently, Singapore has embarked on a campaign of "clear, clean English," a brand of English devoid of the "vagaries of Singlish" (McCrum, 2010, pp. 272–3). Not all researchers view the choice of intelligible dialects of World English for global communication to be an objective decision, and instead view intelligibility as a means to justify the persistence of "a specific, Anglophone sociocultural milieu" (Block & Cameron, 2005, p. 9). Critics question whether the issue of intelligibility in the era of globalization is a ploy to privilege inner circle varieties of English in current media which, because of market interests (Miller et al., 2005), have increasingly to adopt more glocal linguistic and cultural content (McDonald & Wasko, 2008).

What does all this indicate for the future representation of World Englishes in other media arenas? The publishing industry presents some trends. McCrum (2010) views global World English inclusion as a top-down effort sustained via a worldwide award culture such as the Man Booker Prize (similar to the Academy Awards in film—another globally inclusive event). Others provide a bottom-up approach in which multinational publishing houses in pursuit of increased sales engage in the commercially lucrative strategies (Gray, 2002) of inclusivity and appropriateness—glocalization strategies—in which content aims to be both inclusive and culturally appropriate. The result, reports Gray (2002, p. 159), is the "sanitization of content" accomplished via a purging of culturally inappropriate or offensive content from books in a bid to increase sales. This marketing strategy, he argues, emerges alongside a "pernicious exclusivity" (p. 163)—a scenario in which the complexity of linguistic diversity in texts is often erased. Why should we care? Currently, "The world's English is intrinsic to the growth of contemporary India, which is now the world's third largest English-language book market after the UK and the United States" (McCrum, 2010, p. 261). How such linguistic erasure impacts the future of World Englishes is a concern to some. Not everyone views the glocalization of media as a neutral rendering of local linguistic varieties. While those who celebrate glocalization (McCrum, 2010) see the relationship between the local and the global in such media conflation attempts as complementary and emblematic of a utopian "flat world" (Friedman, 2005)—a marketplace of information flow and egalitarian exchange buttressing "a synergetic relationship between the global and the local" (Block & Cameron, 2002, p. 3)—skeptics see glocalization as essentially asymmetrical: a dominance of the global over the local with an eager use of media to exploit local linguistic heterogeneity in a bid to sell global linguistic homogeneity (Miller et al., 2005).

The implications of the nexus between media and World Englishes are thus many. Current media can choose to include, exclude, homogenize, diminish, or erase the diversity of World Englishes—choices that will be dictated by different market pressures and economic outcomes. Additionally, it remains to be seen if future media renditions will flatten or increase center–periphery asymmetries, and whether the monopoly of media will indeed shift to outer or expanding circle domains—an orientation made more urgent with the current technological revolution which permits media bombardment in digitized formats, offering free, faster, easier access to media content than ever before.

SEE ALSO: Native Speaker

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World Englishes: Overview

BRAJ B. KACHRU

Introduction

The global diffusion of the English language represents two dimensions of the language: one of *multicanonicity* and the other of *multiculturalism*. These two constructs of what is called a global language have yet to be seriously recognized by the English-language teaching (ELT) profession. The reasons for this attitude are essentially ideological, economic and, of course, attitudinal. This ominous indifference is sustained and encouraged within what Susan Butler has characterized as "the ESL Empire" (Butler, 1997).

The ELT Empire is concerned with political power, economic interest, and, above all, cultural domination. The mantra that is repeatedly emphasized is: "Britain's real black gold is not North Sea oil, but the English language." The empire is "selling English by the pound" (*The Times*, October 24, 1989, p. 14). The United States of America and Australia are not far behind in this commercialism.

The dichotomy between what is termed *native* and *non-native* speakers of the language is functionally uninsightful. And linguistically, it raises multiple questions, particularly in multilinguistic contexts. The terminological triad of English as a native language (ENL), English as a second language (ESL), and English as a foreign language (EFL) is rightly questionable; they are neither valid nor meaningful.

The above terms indicate the barriers that have been constructed to mark *us* and *other*. These concerns have been articulated by visionary specialists of the English language in all the English-using countries in the world. One might ask: have they succeeded? The answer is "yes" and "no." What was the epicenter of the English language has, over the years, branched into a repertoire of language pluralism.

The constructs of the new identities of the language are now evident at every linguistic level. It is rightly claimed that the language has acquired multiple functional conventions. It has acquired new meanings by its functions in diverse traditions in Asia, in Africa, and in other parts of the world (see e.g., McArthur, 1992; McCrum, Cran, & MacNeil, 1993; Crystal, 1995).

When we characterize the English language as *global*, *international*, or *universal*, we are focusing on what may be called a repository of diversity. It is in this sense that the term "Englishes" is used (see also McArthur, 1993). The term *international* refers to the medium that is shared as a code of communication. The medium crosses national borders for understanding other cultures: their ideologies, their mythologies, and their ways of life and living. In 1963, Gabriel Okara insightfully titled an article "African Speech . . . English Words." In his view, the English language is used "to express our own ideas, thinking and philosophy in our own way" (Okara, 1963, pp. 15–16). That is pragmatic reality.

What Okara characterized as his "own way" of using English has a long history among the users of World Englishes (WE). The same vision is articulated, for example, by Africa's Chinua Achebe, Buchi Emecheta, Nuruddin Farah, Wole Soyinka, and Ngugi wa Thiong'o; by the Caribbean's Roy Heath and Sam Salvon; by South Asia's Anita Desai, Robin Mistry, Mulk Raj Anand, Raja Rao, and Bapsi Sidhwa by East Asia's Shirley Lim and Edwin Thumboo; by New Zealand's Witi Ihimaera; by North America's Sandra Cisneros and

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Rolando Hinojosa; and by Scotland's James Kelman. The creativity of these writers provides an unparalleled worldview of the language. It constructs the dynamics of cross-cultural and localized creativity in World Englishes.

What WE represent is intercultural interlocutors with one shared language and one shared medium. One might ask: what is global about it? The answer is that WE have multiple localized voices. These voices articulate their own histories. They represent their own identities. They design their own constructs of creativity. As the late C. D. Narasimhaiah elegantly writes: "English has been an effective aid to thinking globally while choosing to live locally" (Narasimhaiah, 1991, p. viii).

In the global context, one might rightly claim that English is an *international* language. However, in form, such a claim is a misnomer. There is no international variety of English. Yet educators have made attempts to construct simplified varieties of English. They did not succeed. One thinks of, for example, Basic English, Nuclear English, and Utilitarian English.

The English language has an unparalleled global profile. That profile continues to increase as time passes. The following are indicative of the diffusion of the language: first, the number of what are termed the "non-native" speakers is substantially higher than the number of "native speakers"; second, in the outer circle, India is the largest English-using country with a long history; third, in the expanding circle, China has over 200 million people with varying competences in interacting in English; fourth, every major city in Anglophone Asia and Africa has at least one newspaper in English; fifth, in major cities of the world, there is transmission of news in English by radio and by television; sixth, in major English-using countries there are users of standard (educated) varieties (*acrolects*) as well as other varieties (*mesolects*) and mixed varieties (*basilects*) such as Nigerian Pidgin, Singlish, Tex-Mex, Babu (Baboo) English, Bazaar English, and so forth.

Pluralism and Creativity

The intercultural identities of WE manifest themselves at various linguistic levels. These levels include phonetics/phonology, grammar, lexis, discourse, and pragmatics. However, each variety of WE has its distinct acculturation and its own sociocultural contexts, for example, African, South Asian, East Asian.

In multilingual contexts, these identities are transcreated from one language to another and from one canon of creativity to another. This transcreation is evident in, for example, Raja Rao's *The Serpent and the Rope* (1960), in which Rao re-creates the metaphysical tradition of Sanskrit. Nigeria's Chinua Achebe is yet another example of a creative writer who crossed the traditional contextual borders of the English language. The credos for their creativity were constructed by Rao and Achebe on their own terms: Rao for *Indianization* of English and Achebe for its *Africanization*.

The pandits of the English language have defined such creativity—that of Rao and Achebe—as *translation*, *transfer*, *transcreation*, *relexification*, and *hybridization*. Whatever term is used, the result is that the English language goes through a creative process such as *Africanization*, *Indianization*, or *Singaporeanization*.

The visionary Nobel laureate (1986) of Nigeria, Wole Soyinka (1993, p. 88), refers to the "unaccustomed roles" of English in Africa. What Soyinka suggests is a "reincarnation" of the English language. In Soyinka's view, and rightly so, the English language has turned into "a new medium of communication." The *context of situation* in Africa, as the late British linguist John Rupert Firth (1890–1960) would say, has altered the functions of English. The result of such constructs is, Soyinka explains, "A new organic series of mores, social goals, relationships, universal awareness—all of which go into the creation of a new culture" (1993, p. 88).

Achebe explains his often-quoted pragmatic construct for African writers in these words: "Most African writers write out of an African experience and of commitment to an African destiny. For them that destiny does not include a future European identity for which the present is but an apprenticeship" (Achebe, 1992, p. 34).

Soyinka's explanation for linguistic creativity and resulting Africanization is somewhat different. The imagery is violent: "[b]lack people twisted the linguistic blade in the hands of the traditional cultural castrator and carved new concepts into the flesh of white supremacy." The result, Soyinka says, is "the conversion of the enslaving medium into an insurgent weapon" (1993, p. 88). Whichever view of indigenization of the language in the outer circle one prefers, it has resulted in legitimization of bilinguals' creativity and the underlying cultural contexts of the "loose canons" of World Englishes (Gates, 1992).

Identity Construction Without Mythology

Identity construction in the English language, in what is characterized as the third world, is not always accepted with open arms. This is evident in constructs of pedagogical resources such as curriculum content.

There is an articulate group who, as mentioned earlier, agonize over the recognition of multiculturalism and multiple identities of the language. Their concern is that the language is drifting from its exclusive Eurocentric, Judeo-Christian, and Western identity. Henry Louis Gates, Jr. is warning us about such people when he says that cultural pluralism "is not, of course, everyone's cup of tea" (Gates, 1992, p. xvi).

The mythology manifests itself in the *acquisition* of English, and in its *varieties* in distinct cultural contexts in the *Outer* and *Expanding* circles. The following myths about the English language are illustrative:

The interlocutor myth (see B. Kachru, 2005, pp. 1–20): The English language is primarily learned in order to communicate with what are termed the "native" speakers of the language (e.g., American, British, and Australian). However, the reality is that most interactions take place among those who use English as an *additional* language. In the world context, the possible interlocutors could be Indians with Nigerians, Germans with Chinese, Koreans with Singaporeans, or Pakistanis with Sri Lankans.

The monocultural myth: To study English is to imbibe the cultures of the English-speaking Westerners (e.g., Americans, British, Canadians, Australians). The reality is that the English language is used to cross language borders to communicate across states, as in India.

The model dependency myth: The learners of English across the world are educated in what is believed to be the *exocentric* model of the language. That entails imposing the American or British variety of the language. In reality it is the *endocentric* (local) model that the students learn, and that the teachers are familiar with.

The Cassandra myth: Variation at any linguistic level (e.g., phonetic, grammatical, lexical, discoursal) in a variety of English (e.g., African, Indian, Singaporean) is an indication of failure in language teaching, learning, or both.

World Englishes and Canonicity

The interculturalism of World Englishes is constructed with a restricted vision by the pedagogical pandits. The creativity in World Englishes (e.g., in Africa and Asia) is characterized as balkanization of the "Western Canon." The distinct identities in the creativity of Asian and African Englishes are represented as planned, managed, promulgated by

those who support a new tongue for new times (Bailey, 1990, p. 86). What Bailey says is almost identical to what defenders of the "Western Canon" have characterized as "liberation linguistics." This is a loaded term.

There is no paucity of constructs separating the "untouchables" of World Englishes. These include the varieties named as: *terra anglia*, *third world literatures*, *colonial literature*, *postcolonial literature*, and *Commonwealth literature*. These terms are like loaded weapons. These characterizations marginalize those who are not part of the inner circle.

A touching example is what an officer of the British Council told to a distinguished, internationally celebrated writer, Salman Rushdie: "[a]s a Commonwealth writer . . . you probably find, don't you, that there's a kind of liberty, certain advantages, in occupying, as you do, a position on the *periphery*" (Rushdie, 1991, p. 61; emphasis added). It was over ten years earlier that the "periphery" holder, Rushdie, had said:

> [The English] language needs to be decolonized to be made in other images, if those of us who use it from positions outside Anglo-Saxon cultures are to be more than artistic "Uncle Toms." And it is this endeavour that gives the new literatures of Africa, the Caribbean, and India much of their present vitality and excitement. (1982, p. 7)

Conclusion

A creative writer and critic, Wimal Dissanayake, characterizes the decolonization of World Englishes in these terms:

> There is a dialectical interplay between language and consciousness, and we do not have to be phenomenologists to subscribe to this view. What writers like [G. V.] Desani, [Raja] Rao, and [Salman] Rushdie are trying to do is to decolonize the English language . . . in the longer run, this decolonization of English will prove to be the language's greatest boon, emerging as it surely will, as a vehicle of communication expressing the deepest thoughts and feelings and imaginings not only of the Anglo-Saxon world, but also of the non-Anglo-Saxon world.

The optimistic Dissanayake emphasizes: "When that happens, English as a truly universal medium of creative expression will have arrived" (1985, p. 241).

In the construct of the creative writers the language was to be redeemed from its exhaustion: It had to be revived with fresh stylistic and contextual innovations to assure African, Asian, and Caribbean challenges. The linguistic "weapon" had to be redefined. In Bhabha's view (1994, p. 166):

> Salman Rushdie's *The Satanic Verses* attempts to redefine the boundaries of the Western nation, so that the "foreignness" of the language become the inescapable cultural condition for the enunciation of the mother tongue. In the "Rosa Diamond" section of *The Satanic Verses* Rushdie seems to suggest that it is only through the process of dissemi*Nation*—of meaning, time, peoples, cultural boundaries and historical traditions—that the radical alterity of the national culture will create new forms of living and writing.

In the new century it is evident that the contexts and constructs of World Englishes are changing. It seems that what was the *periphery* is now almost the center. The traditional sacred pedagogical and attitudinal cows of English studies are rightly being challenged.

SEE ALSO ON WORLD ENGLISHES: Acculturation in World Englishes; English(es) and Academic Publishing; English in Higher Education in the Postcolonial World; English as Lingua Franca; English and Multilingualism in Singapore; English in the Nigerian Novel; History of World Englishes; Intelligibility in World Englishes; Kachru, Braj B.; Kachru, Yamuna; Language Evolution: Pidgins and Creoles; Lingua Franca and Language of Wider Communication; Linguistic Creativity and World Englishes Literatures; Pacific Creoles; Research Methods and World Englishes; Varieties of English in Africa; Varieties of English in Asia; Varieties of English in Cameroon; Varieties of English in the Caribbean; Varieties of English in Nigeria; Varieties of English in South America; Varieties of World Englishes; World Englishes and Assessment; World Englishes and Language Pedagogy; World Englishes and the Role of Media; World Englishes and Teaching English to Speakers of Other Languages

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Writing and Content Area Learning

AGNIESZKA MAZUR AND SARAH WARSHAUER FREEDMAN

Introduction

Writing commonly helps students achieve disparate goals connected to school learning not just in English class but in all the disciplines. Writing functions to help us remember, imagine something new, communicate, and display what we have learned or what we think. Griffin and Cole (1984) point out that from the inception of literacy in the form of tokens in the Middle East, "writing and reading were embedded in activities which had a complex higher level goal" (p. 70). And so it is that writing is a tool that can help students achieve complex, higher-level goals in school settings too. School-related writing can take the form of notes on class discussions, copying of homework assignments, student journals for reflecting on reading, e-mail to friends and other social networking related to academic issues, marginal notes commenting on a piece of reading, laboratory notes, examinations, formal course papers, and so on. And each type of writing, in some way, has the potential to contribute to the most central goal of schooling: a student's learning. As Shanahan (2004) explains in his review of research on writing to learn, "there have been so many studies showing that writing improves learning that it appears to be a closed question" (p. 61).

Traditionally, writing has been framed as a general set of language skills that language arts teachers and English instructors have had the responsibility of teaching. However, both writing and thinking seem to be shaped by discipline-specific discourse conventions and discipline-specific constructs of what counts as knowledge (Bazerman, 1984, 1988). Thus, instead of defining writing as a generic set of transferable skills, writing appears to be a particularly useful tool for learning in kindergarten to 12th grade (K-12) and postsecondary settings when used across subject areas.

In K-12 settings writing-to-learn approaches, such as informal journal writing, have been shown to help students learn concepts, delve deeply into subject matter, and reflect on their learning (Langer & Applebee, 1987; Johnson, Jones, Thornton, Langrall, & Rouse, 1998; Prain & Hand, 1999; Freedman, Delp, & Crawford, 2005). However, more research is needed on the difficulties and possibilities of understanding how English learners (ELs) in K-12 settings use writing-to-learn as they grow as writers and thinkers.

In postsecondary settings, however, the focus of research shifts to what is involved in mastering disciplinary genres, to learning-to-write in the disciplines. Studies include how students learn to construct and display knowledge, use specific discourse structures, and respond to audience expectations for particular types of writing. For instance, a central concern of research on disciplinary writing in university settings is how students learn the favored conventions and modes of expressions of disciplinary discourse communities (Herrington, 1985; Swales, 1990; Beaufort, 2007). There is robust postsecondary research on ELs that highlights what is involved in learning these skills. After examining what we know about both writing-to-learn, with its K-12 focus, and learning-to-write, with its postsecondary focus, we conclude by discussing concerns about and recommendations for improving the quality and effectiveness of content area writing.

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Writing and Content Area Learning in K-12 Settings: A Focus on Writing-to-Learn

Native English Speakers

At the primary level, research shows that even native English speaker (NES) first graders increase agility with both scientific concepts and the conventions of science writing through family message journals. When first graders wrote daily to their families about what they learned during classroom science lessons and activities, they demonstrated growth over time in their ability to think and to express themselves in ways favored in science (Wollman-Bonilla, 1998). Similarly, when fifth graders used journal writing to describe their thinking and reasoning before completing probability problems, they showed increased ability to solve problems correctly and greater facility in describing the process they used in solving these problems (Johnson et al., 1998).

At the secondary level, any sort of writing activity, including note taking and short-answer questions as well as extended writing, has been found to lead to more learning than reading and studying alone. In a study of 18 science and social studies classrooms, "different kinds of writing activities led students to focus on different kinds of information, to think about that information in different ways, and in turn to take quantitatively and qualitatively different kinds of knowledge away from their writing experiences" (Langer & Applebee, 1987, p. 135). Extended analytical writing led students to focus a few ideas in complex ways, which allowed them to remember the topics they explored for a longer period of time than if they completed short-answer study questions. Conversely, short-answer study questions allowed them to recall more information, but only for the short term. In another study, writing in a biology classroom led to a variety of different learning and thinking functions depending on the occasion and on the ways that individual students employed writing (Prain & Hand, 1999).

High school students demonstrated greater understanding of biological concepts when they translated these concepts into simple language. When they wrote about these concepts to third-/fourth-grade students, they learned more than when they wrote to their teacher, parents, or peers (Gunel, Hand, & McDermott, 2009). The act of translating complex concepts into everyday, simple language seemed to push students toward this deeper understanding of subject matter.

In an eighth-grade English literature classroom, culturally and linguistically diverse students deepened their understanding of subject matter by incorporating each other's voices and ideas during classroom writing practices (Freedman et al., 2005). By reading and responding to each other's log writing about the ideas they encountered in their reading and discussion, students were able to incorporate the ideas of their peers in ways that transformed their own ideas and thereby deepened and expanded their understanding of the texts they studied. Students also gathered ideas from each other by writing down contributions made during whole-class discussion. This writing was structured so that students could organize their notes as ideas developed over the course of a literature unit. Similarly, in a comparative study of three social science classrooms, high school students engaged with history content particularly when discussion and writing were interrelated and when students were taught to incorporate each other's voices in their writing (Dysthe, 1996).

As is the focus of most research at the postsecondary level, a study of more advanced writing classes in high school—advanced placement history classes, equivalent to university-level classes—turned to examine learning-to-write in ways that helped students develop disciplinary discourse knowledge; the students were writing-to-learn by learning-to-write

(Young & Leinhardt, 1998). When students wrote from primary sources, they grew in their content knowledge through understanding history from multiple perspectives rather than seeing it as a series of unquestionable "facts." Concurrently, students developed greater ability to make arguments and include interpretations in their writing about the past instead of simply summarizing what they read.

English Learners

In US public school settings, understanding the connection between writing and content area learning for EL-designated students is complicated by the tendency, especially at the secondary level, for schools to isolate multilingual students in EL tracks where they are exposed to little writing or learning of any sort (Valdés, 2001; Callahan, 2005). While psycholinguistic research suggests that multilingual students may have greater cognitive and linguistic flexibility than students who know only one language (Romaine, 1989; Bialystok, 2001), multilingualism generally has been treated as a deficit to be overcome in public schools.

However, studies of ELs in elementary school classrooms designed to facilitate bilingual Spanish–English students' learning and literacy development provide a model of an environment where "children learned to use their bilingualism deliberately, consciously, to access and manipulate resources for intellectual and academic purposes" (Moll, Saez, & Dworin, 2001, p. 444). For example, one child read English texts on which she took notes in Spanish and then wrote a report on Sioux Native Americans in Spanish from these notes. She was thus able to use the many tools in her linguistic and cultural toolkit to engage in writing and learning activities. Additional studies are needed to help us better understand how ELs learn to write across the disciplines as well as how writing in their multiple languages might function to help them acquire disciplinary knowledge.

Writing and Content Area Learning in Postsecondary Settings: A Focus on Learning-to-Write

Native English Speakers

Much like their counterparts at the secondary level who focus on the transition to university for advanced placement students, most postsecondary research with NES populations focuses primarily on how students learn to write in the disciplines. Researchers are interested, however, in the relationship between acquiring the disciplinary writing conventions and learning the material of the discipline itself. In the end, the main focus at the postsecondary level, on learning-to-write, is centrally concerned with how learning-to-write in disciplinary courses teaches students ways of thinking and doing in those disciplines.

Charles Bazerman's (1984, 1988) rhetorical analyses across the disciplines have been particularly influential in providing a foundation for studying learning to write in the disciplines. Bazerman has examined the character and role of prominent articles in various disciplines, including biochemistry, sociology, and literary studies. He found that each discipline constructs its own specific understanding of audience, of authorial role, and of what counts as knowledge. Reflecting this emphasis on the specialized discourses of disciplines and professions is the name "writing in disciplines" (WID), which is widely applied to pedagogical approaches that focus on the unique language conventions, format, and structure for writing in particular disciplines. Indeed, "WID believes that to participate successfully in the academic discourse of their community, students must be taught discipline-specific conventions and should practice using these conventions" (Wells, 2010).

Learning the conventions for writing in a discipline does appear to help students participate in academic discourse communities (Herrington, 1985; Beaufort, 2007; Carter, Ferzli, & Wiebe, 2007). For instance, 10 undergraduate biology students were "apprenticed" into science writing and thinking through writing lab reports. These reports helped students make connections between lecture material and the experiments they performed in the lab and to communicate those connections in ways valued in the biological sciences (Carter et al., 2007).

However, because discourse communities are not explicitly discussed in college courses, students may have difficulty in understanding how and why ways of thinking and writing vary so much between disciplines and to a lesser degree between different courses in the same discipline. For instance, an undergraduate student struggled to write and think according to the requirements of two different discourse communities: history and engineering. Only after graduating and working as an engineer was he able to understand fully the functions of writing engineering reports and to master the genre for his purposes (Beaufort, 2007). Moreover, two college chemical engineering classes represented distinct communities where different issues were addressed, different lines of reasoning used, different writer and audience roles assumed, and different social purposes served by writing (Herrington, 1985). In college settings, the discourse community of the classroom may be removed from the professional discourse community, or even from that of other courses in the same discipline, making it difficult for students to understand the demands of the discipline.

A few postsecondary researchers have attended primarily to writing-to-learn. They have found that writing-to-learn through journaling and informal writing helps students find meaning in and personal connections to the material they encounter in their coursework, and also helps them work through ideas and professional identities (Geisler, 1994; Herrington & Curtis, 2000; Medway, 2002). The personal connections motivated students to pursue areas of study in ways that led to a greater understanding of themselves as thinkers and actors within a particular discipline or future profession. For instance, architecture students used writing to elaborate drawings in their sketchbooks; they used this informal and expressive writing to help them explore how to look at the world as an architect and to rehearse "both content and the rhetoric" of the discipline (Medway, 2002, p. 111).

However, some have questioned the effectiveness of some types of writing-to-learn pedagogical approaches. For instance, on the final exam in an undergraduate Chinese literature course, students who kept academic journals, as well as those who did not keep journals at all, outperformed students who kept personal response journals. The students using personal response journals seemed unable to perceive the issues that were pertinent to their professor and thus did not focus on what would have prepared them for the essay exam. Instead, they followed lines of inquiry that did not match the demands of the test (MacDonald & Cooper, 1992). Journaling in postsecondary settings has been found to be most effective when students and instructors shared an understanding of the specific purpose that the assigned writing served and when assessments aligned with the types of writing that students used throughout the course (Cannon, 1989; Hartman, 1989; Cowles, Strickland, & Rogers, 2001). In vocational courses in 10 colleges across the United Kingdom, students struggled to understand the meaning and purpose of reflective writing in which they were to report and reflect on what they were learning in workplace or practical training settings (Ivanic et al., 2009). According to the researchers, "'Learning logs' of various sorts have . . . become popular under the auspices of student-centered learning, but the genre of reflective writing for this purpose is not taught, and indeed seems to be thought of as a 'natural' form of self-expression. This is something students struggled with" (p. 184).

Adding English Learners to the Mix

Research and pedagogy in postsecondary, second language (L2) writing generally shares the writing-to-learn perspective. For instance, English for specific purposes (ESP) researchers have been especially interested in examining the linguistic and rhetorical purposes and audiences in fields such as business, engineering, and science in order to facilitate learning in these areas (Swales, 1990; Bhatia, 1993). Research on both first language (L1) and L2 writing has also focused on the concept of discourse communities, which L2 researcher John Swales (1990) defines as learning to be a member in a community of writers who write in specific ways for specific purposes. As Swales puts it, "Discourse communities are sociorhetorical networks that form in order to work towards sets of common goals. One of the characteristics that established members of these discourse communities possess is familiarity with the particular genres that are used in the communicative furtherance of these goals" (p. 9). Therefore, through learning how to use and manipulate disciplinary genres, students learn to act according to shared goals and understandings within a disciplinary discourse community. In studies of L2 writing, researchers have closely examined linguistic moves that students need to be able to use in their writing in order to participate effectively in the disciplinary discourse communities (Flowerdew, 1993).

Thus, writing socializes both L1 and L2 students into discipline-specific discourse communities, which have preferred ways of acting rhetorically, including using linguistic conventions to achieve specific goals. For example, L1 and L2 second-year graduate students in the biological sciences were apprenticed to the discourse community of National Institutes of Health grant writing. In their grant writing seminar, students were taught how to write stylistically and rhetorically effective grants and were made familiar with the process by which grants are evaluated (Ding, 2008). Moreover, through writing lab notes in informal settings, such as in laboratories and through writing in collaboration with experts and colleagues, students acquired disciplinary knowledge and expertise. Those who wrote the most sophisticated grants integrated both stylistic and disciplinary knowledge. Thus, "the usual separation between the rhetorical and stylistic aspect of writing and the scientific merit of the actual written product is artificial, unproductive, and counterintuitive to students" (Ding, 2008, p. 47).

National Concerns About Writing in US Schools

In recent years, there has been growing concern that writing in K-12 classrooms has become an ever-lower priority. This concern is especially acute for public schools that serve economically and linguistically nondominant students, including EL-designated students and those who speak African American Vernacular English (AAVE), since students in such schools have tended to perform poorly on standardized assessments. Faced with impending sanctions, the schools have been pressuring teachers to "teach to the test." Because writing generally is not featured in high-stakes assessments, it has not been a central concern.

According to the report of the National Commission on Writing for America's Families, Schools, and Colleges (2003), "the valuable tool of writing must be put back in the hands of schoolteachers . . . because writing (and all the conceptual skills it reflects and develops) opens up new and powerful means of learning for all students" (p. 16). The Commission argues that the need for reform is critical since many students are rarely writing-to-learn or learning-to-write. Moreover, the Commission stresses that the needs of students identified as EL must be a central concern of writing reform efforts since EL students are one of the fastest growing populations in US schools.

When students do write, they tend to perform at a basic level, which "demonstrates only a limited grasp of the importance of extended or complex thought" (National Commission on Writing, 2003, p. 55). For instance, the non-high-stakes National Assessment of Educational Progress, which does include a writing assessment, revealed that students today have a "basic" grasp of writing, but what they are producing is "relatively immature and unsophisticated" (p. 55). Even though the writing assessment does not test how students use writing as a tool either for learning or for participating in disciplinary discourse communities, it does show that students are struggling with clearly expressing complex ideas and arguments. The Commission concludes that students' performance falls far short of what they will need to succeed in our complex social and economic environment, in which the "demands for clear written communication are apparent in many arenas . . . including in technical fields of work such as engineering, which increasingly emphasize written materials such as proposals and interim and final reports" (National Commission on Writing, 2003, p. 49). In response to this problem, a central recommendation is to increase writing across the curriculum (WAC) pedagogy for all students. This instructional approach emphasizes the widespread use of writing as a tool for learning in K-12 and postsecondary settings across subject areas, from the humanities to mathematics and science.

Conclusion

Students use writing to achieve learning goals in various ways, depending on the learning context and activity in which they participate as they write. Research on writing and content area learning in K-12 settings focuses mostly on writing-to-learn pedagogical approaches for NESs. Findings show that there are many ways in which writing can lead to learning, from supporting students in understanding content material, to helping them explore and create ideas and identities. Different types of writing promote different types of learning. In K-12 settings most research focuses on NESs; more research is needed about ELs and how they might best use their multiple language resources in the service of their learning.

In postsecondary settings the research and perhaps even the pedagogic focus shift to learning-to-write for both NES and EL students. Findings show that writing is not a neutral tool, and that acquiring disciplinary writing conventions is interrelated with learning the material of the discipline itself. For instance, different types of writing differently construct what counts as knowledge, require specific discourse conventions, and carry particular audience expectations. This understanding is reflected in research in postsecondary settings to a greater degree than in K-12 studies, perhaps mirroring the increased demands on postsecondary students to become apprenticed in disciplinary discourse communities.

In practice and conceptually, a great deal of overlap exists between writing-to-learn and learning-to-write. A thoughtful integration of writing-to-learn and learning-to-write for all ages seems to hold promise for improving the teaching and learning of writing across content areas and grade levels, with attention to how different types of writing lead to different types of learning. We need to understand more about the complex relationships between writing-to-learn and learning-to-write and the processes that overlap and diverge for NES and EL students.

SEE ALSO: English for Academic Purposes; Genre-Based Language Teaching; Teaching Writing; Writing and Genre Studies; Writing and Language for Specific Purposes

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Writing and Genre Studies

JAMES R. MARTIN

Genre in Three Traditions

The term "genre" is used in so many different ways in applied linguistics in relation to writing that it has become customary to map out the field in relation to three traditions, introduced by Hyon (1996). These comprise the English for specific purposes tradition (ESP) (Swales, 1990), New Rhetoric (Miller, 1984), and the Sydney School (Cope & Kalantzis, 1993). As a useful reading path into this cartography, alongside Hyon, Christie (2008) or the introduction to Johns (2002) are recommended; next Hyland (2007), and then Yunick (1997); Grabe and Kaplan (1996) further contextualize this work. The ESP tradition has a strong focus on tertiary genres, especially in relation to the needs of non-native speakers of English learning academic discourse. It emphasizes the communicative purpose of genres for the people who use them, and correlates this with selected linguistic features. The New Rhetoric tradition grows out of a concern with how people use genres in achieving particular purposes in particular contexts. It emphasizes the social action people perform through genres, as well as the intersubjectivity of users, drawing on traditional and contemporary rhetoric, Bakhtin, and contemporary critical theory. The Sydney School begins with primary, later secondary, and then tertiary writing, focusing in particular on the needs of migrant, indigenous, and working-class students. It emphasizes the linguistic and semiotic structure of genres, as part of the model of language and social context developing as systemic functional linguistics (hereafter SFL). For a useful historical overview of the emergence of these genre studies out of earlier work on register and composition see Benesch (2001).

Key readings in the ESP tradition include Swales (1990) and Bhatia (1993); for New Rhetoric see Miller (1984), Bazerman (1988), Freedman and Medway (1994), Berkenkotter and Huckin (1995), Coe, Lingard, and Teslenko (2002); for the Sydney School see Cope and Kalantzis (1993), Christie and Martin (1997), Feez (1998), Martin (2000), Unsworth (2000), Martin and Rose (2008), Hood (2010). The best survey of the pedagogical implications of the three traditions is Johns (2002); Hyland (2004) is an accessible practical introduction focusing on second language writing.

Knowledge Structure

As cross-references reveal, over time there has been a fair amount of dialogue among these three traditions; and for many scholars the boundaries have arguably become blurred (e.g., Artemeva & Freedman, 2006). Accordingly what is developed here is an alternative perspective, drawing on Basil Bernstein's late work on knowledge structure. This should allow consumers to distinguish more clearly among different trajectories of research and practice in relation to their own disciplinary backgrounds and pedagogic needs.

Developing his earlier concern with common and uncommon sense discourse, Bernstein (2000) distinguishes between horizontal and vertical discourse, and within vertical discourse between hierarchical and horizontal knowledge structures (outlined in Figure 1). His characterizations of these discourses are as follows:

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> A *Horizontal discourse* entails a set of strategies which are local, segmentally organised, context specific and dependent, for maximising encounters with persons and habitats. . . . This form has a group of well-known features: it is likely to be oral, local, context dependent and specific, tacit, multi-layered and contradictory across but not within contexts. . . . a *Vertical discourse* takes the form of a coherent, explicit and systematically principled structure, hierarchically organised as in the sciences, or it takes the form of a series of specialised languages with specialised modes of interrogation and specialised criteria for the production and circulation of texts as in the social sciences and humanities. (Bernstein, 2000, p. 157)

A hierarchical knowledge structure is "a coherent, explicit and systematically principled structure, hierarchically organised," which "attempts to create very general propositions and theories, which integrate knowledge at lower levels, and in this way shows underlying uniformities across an expanding range of apparently different phenomena" (Bernstein, 1999, pp. 161–2). A horizontal knowledge structure is defined as "a series of specialised languages with specialised modes of interrogation and criteria for the construction and circulation of texts" (Bernstein, 1999, p. 162).

As we can see, Bernstein is making a distinction here between the everyday practical discourse that students bring to school and the academic discourse schools have evolved to teach. And within academic discourse he is distinguishing the kind of technically integrated knowledge constructed in science from the less technical, more segmental understandings built up in the social sciences and humanities.

Muller (2007) elaborates these ideas, proposing the term "verticality" to describe how theories progress, via ever more integrative or general propositions or via the introduction of a new language which constructs a "fresh perspective, a new set of questions, a new set of connections, and an apparently new problematic, and most importantly a new set of speakers" (Bernstein, 2000, p. 162). Borrowing Bernstein's image of the triangle for hierarchical knowledge structures and iterating languages for horizontal ones, Muller's conception of verticality is schematized in Figure 2.

In addition Muller proposes the term "grammaticality" to describe how theoretical statements deal with the phenomena they are modeling. The stronger the grammaticality of a language, the more stably it is able to generate empirical correlates and the more unambiguous it is because the field of referents is more restricted. Hierarchical knowledge

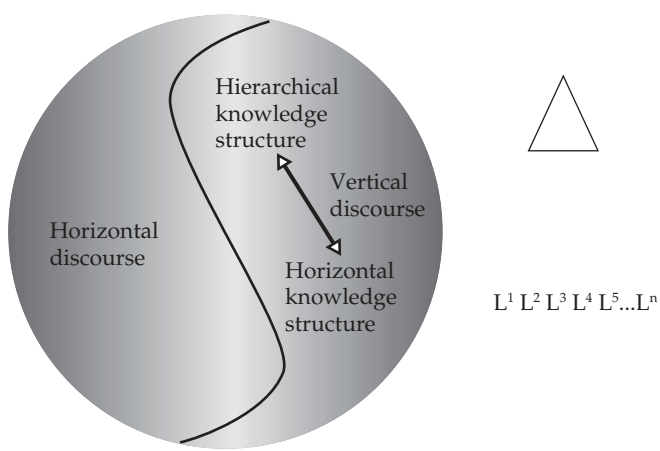

Figure 1 Bernstein's reformulation of common and uncommon sense

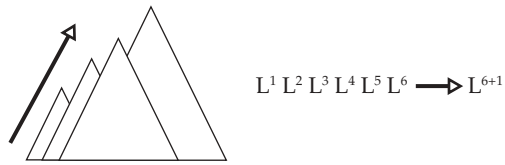

Figure 2 Verticality in relation to progress for hierarchical versus horizontal knowledge structures

Figure 3 Grammaticality in relation to empirical correlates for hierarchical versus horizontal knowledge structures (testing vs. interpreting)

structures in other words *test* theories against data; horizontal knowledge structures use theory to *interpret* texts (see Figure 3).

Wignell, in a 2004 presentation later published in Christie and Martin (2007, pp. 184–204), has suggested that the social sciences might best be conceived as warring triangles since they tend to model themselves on science rather than humanities (where the drive to integration via ever more general models and propositions is much less strong). Although the warring triangles battle institutionally and epistemologically for hegemony, and often single theories become dominant, successfully marginalizing rivals, no one theory ever manages to take over the whole discipline and reigning theories come and go. It appears that in social science verticality and grammaticality is simply not strong enough to enable theoretical integration in relation to the complex social phenomena being described. Rather the social sciences "progress" like the horizontal knowledge structures they are, by adding new triangles with new sets of speakers (e.g., various functional theories such as SFL, role and reference grammar, lexical functional grammar, functional grammar or functional discourse grammar in linguistics, or various gazes on the past we might denominate as traditional, Marxist, feminist, queer, or postcolonial in history). Wignell's construal of vertical discourse as more of a cline than an opposition or complementarity is outlined in Figure 4, filling in some exemplary singulars ranged along the scale.

We are now in a position to ask about different theories of genre in relation to the kind of knowledge involved: Which discipline or disciplines are involved, and how does this

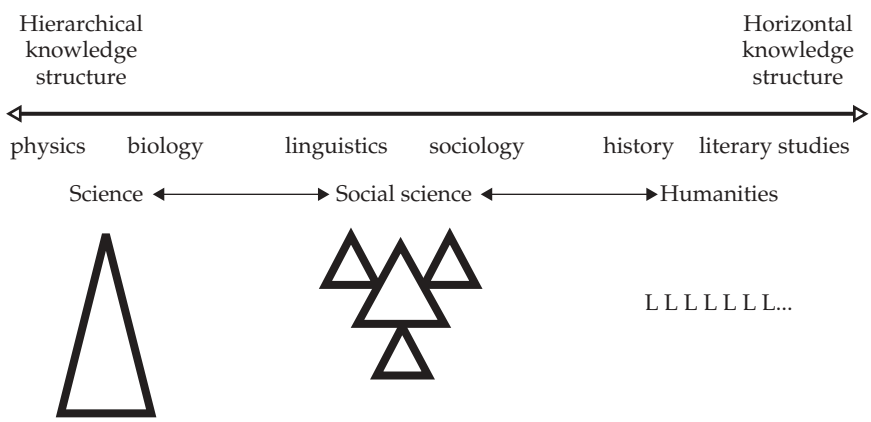

Figure 4 Vertical discourse as complementarities along a cline

affect verticality and grammaticality? How might we now position the ESP, New Rhetoric, and Sydney School traditions?

Starting from the left of the hierarchical–horizontal knowledge structure axis, we can place the Sydney School to the left of the social science region of the spectrum since it is informed by SFL and conceives of genre as part of this social semiotic model of language and social context. It thus has relatively strong verticality, striving to integrate propositions responsible for an ever-increasing set of multimodal data. And it has relatively strong grammaticality in a qualitative sense, since it is able to produce rich multidimensional readings of actual texts; because, however, these readings for the most part depend on time-consuming manual analysis, the Sydney School is still seriously compromised as far as quantitative testing of hypotheses is concerned.

ESP is next in line, in part because it is multidisciplinary and in part because of its linguistic focus on form (instead of meaning). Its multidisciplinarity weakens verticality, because carefully selected and recontextualized discourse from various knowledge structures is hard to assemble into an integrated whole. The tendency is thus for ESP to become more multidisciplinary over time; as new segments of knowledge are needed they are added on. ESP's focus on linguistic form (instead of meaning) weakens grammaticality, since formal analysis of texts, however quantitative (e.g., Hyland, 2000), is not rich enough to put its ideas about genre at risk. Genres are thus mainly described in relation to intuitions about speakers' intentions and "ethnographic" studies of the social function of texts in discourse communities, something which makes ESP more like New Rhetoric as far as definitions of genre are concerned. It is interesting in this regard at conferences, or in canonical papers and monographs, to see how very few examples of genres actually appear, and where they do appear how little linguistic analysis, if any, is offered—usually not much beyond a rough characterization of the main stages of the exemplar and their names, with terms for genres and their moves more often than not taken directly from the names used by practitioners in one or another field (their professional rhetoric in order words). The absence of analyzed exemplars compromises dialogue with traditions such as the Sydney School, where detailed text analysis and specialized linguistic labeling is paramount.

With New Rhetoric, we move from the social sciences to humanities, not surprisingly given its genesis in rhetoric and English studies. Verticality is very much weaker, with far fewer technical terms deployed, and where they are used with far fewer formally structured interconnections among them. Who you read becomes in a sense more important than what you know. Grammaticality involves the interpretation of texts, which are almost always absent (as in literary studies where the poem, short story, or novel under consideration is taken as given, and is in any case too long to reproduce). Weak grammaticality has the advantage of allowing New Rhetoricians to theorize about a large set of relatively long relevant texts, as in Bazerman's (1988) classic study of the genesis of Newton's discourse. As far as the interpretation of texts goes, the gaze is likely to be more critical, with reference to French masters, than in ESP.

At this point we should also note that horizontal discourse has a more privileged place in both ESP and New Rhetoric than for the Sydney School. As linguists, SFL genre analysts are trained not to rely on what native speakers say about their language (their folk-linguistics), but rather to look directly at the language they use and describe that. So folk theories of genre, from practitioners in any field, would be treated with suspicion (e.g., primary school teachers' notion that everything written by their students is a story). ESP on the other hand makes use of ethnography to examine the discourse communities in which genres function. Swales (1998) is the classic treatment, exemplifying as it does the use of participant observation, over many years, as canonized in anthropology by scholars such as Malinowski (see also Prior, 1999); similarly Bhatia (e.g., 1993, 2004) carefully situates genres in professional practice. New Rhetoric, given its critical stance, is arguably more

open than the Sydney School or ESP to the insertion of segments of horizontal discourse directly into its publications, and to foster such in student writing, especially where this involves stories by subjects argued to have been disempowered by vertical discourse. These two predispositions toward horizontal discourse come together in what is now referred to as autoethnography, which involves reflective personal narratives by humanities scholars studying themselves (see Nunan & Choi, 2010). The danger of using horizontal discourse uncritically to "triangulate" research is flagged by Bernstein (2000, p. 70) as the problem of "ethno-" without "-graphy," that is, taking what practitioners report about their practice in an interview or two at face value, or celebrating the insertion of confessional narratives in academic texts as a supposed means of valuing and empowering the voice of the "other."

Perhaps enough has been said at this point to illustrate the ways in which Bernstein's model, and its elaboration by Muller and Maton (Christie & Martin, 2007; Christie & Maton, 2011) can be used to position genre studies in ways that complement Hyon's three traditions. From the perspective of SFL, Berkenkotter and Huckin (1995), for example, have always sat uneasily in the New Rhetoric tradition because of the way they draw in part on linguistically informed discourse analysis. Benesch (2001) exemplifies the ESP tradition where informed by the kind of critical theory typically associated with New Rhetoric. Artemeva and Freedman (2006) combines New Rhetoric with activity theory inspired by Vygotsky and Leont'ev. And Macken-Horarik (1998) develops a critical perspective in relation to Sydney School initiatives.

What is important is not to argue where scholars fit, but rather to consider the consequences for verticality and grammaticality, and thus for positioning along the hierarchical–horizontal knowledge structure axis which a particular position affords. To put this in more mundane terms, speaking as a linguist, in taking up a position on genre you have to decide whether you want to do a linguistic analysis of texts or not, which model of language you choose to inform this analysis, how thorough you want to be, how much or how little hangs on such analysis, how many texts you want to analyze, how much analysis will be done manually and how much can be automated or semi-automated, how qualitative or quantitative you want to be, whether you will do multimodal analysis or not, what else counts as research above and beyond or instead of text analysis, whether you are going to do ethnography or not and how (e.g., through an interview or two or via long-term embedded participant observation), how intuitive you want to be about the social function of texts or the social action involved, how much history you take into account (including the personal history of writers and the cultural history of genres), how many genres you consider, how and whether you want to relate them to one another, how critical you want to be, and ultimately where you want to belong: in which journals, at which conferences, in which academic positions—which brings us to the question of pedagogy and what you are trying to do with genre analysis in the first place.

To proceed further, into practice, we need to draw on one more distinction of Bernstein's, between singulars and regions:

> A discourse as a singular is a discourse which has appropriated a space to give itself a unique name. So, for example physics, chemistry, sociology, psychology . . . these singulars produced a discourse which was about only themselves . . . had very few external references other than in terms of themselves . . . created the field of the production of knowledge . . . In the twentieth century, particularly in the last five decades . . . the very strong classification of singulars has undergone a change, and what we now have . . . is a *regionalisation of knowledge* . . . a recontextualising of singulars . . . for example, in medicine, architecture, engineering, information science . . . any regionalisation of knowledge implies a recontextualising principle: which singulars are to be selected, what knowledge within the singular is to be introduced and related? . . . Regions are the interface between the field of the production of knowledge and any field of practice . . . (Bernstein, 2000, p. 9)

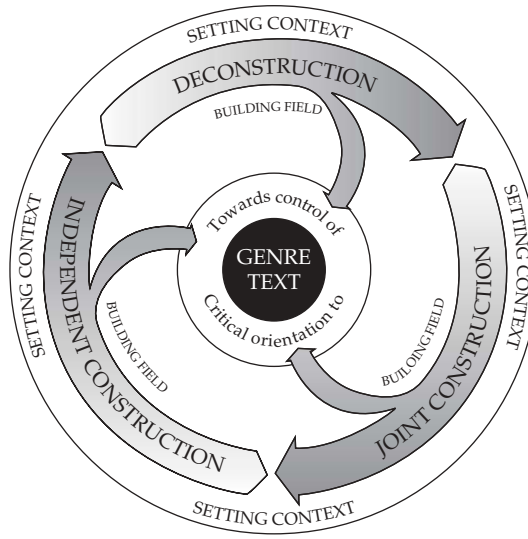

Figure 5 Sydney School teaching/learning cycle (from Martin, 1998) © J. R. Martin

In these terms education is clearly a region of practice, and of Hyon's traditions, SFL is the one that has used its theory of genre not just to describe texts but also to design teaching practice. This practice has drawn heavily on SFL studies of language development (e.g., Painter 1984), Bernstein's classification and framing analysis of pedagogic discourse, and Vygotskyan-inspired notions of scaffolding. One model of this evolving pedagogy is presented in Figure 5 (see Martin, 1998), and involves phases of deconstruction, joint construction, and independent construction and ongoing attention to setting genres in their social context and building up understanding of the field of each genre (its knowledge structure in other words). The basic idea is never to ask students to write on their own until you have shown them a model of what you are expecting and in addition written an exemplar together with them. All stages are informed by explicitly sharing knowledge about genres, their staging, and linguistic (and imagic) realization with students.

Pedagogy in the ESP and New Rhetoric traditions is much less developed. Implied ESP practice appears to involve a deconstruction stage where models of genres and knowledge about their move structure and realization is shared with students. Swales and Feak (2000) exemplifies this applied ESP approach. New Rhetoric scholars (e.g., several papers in Freedman & Medway, 1994) often express strong reservations about modeling (let alone joint construction) for fear of overidealization of genres and uncritical naturalization of hegemonic discourses. Some indeed (e.g., Freedman) have reservations about the possibility of teaching genres at all once they are decontextualized from genuine sites of practice into school (see Beaufort, 1999, for an illuminating study of how written genres are actually learned in the real world, and from the New Rhetoric perspective see Devitt, 2004, on situated workplace discourse and promoting genre awareness, contra Freedman, in institutionalized learning). Where teaching is countenanced, New Rhetoric would be generally disposed to an ideological deconstruction of genres as part of any program of apprenticeship.

We can thus see the influence of verticality and grammaticality on pedagogy. The less verticality, the less a theory will be interested in a cartography of genres (see Martin & Rose, 2008), the less able to map curriculum with such (see Feez, 1998), the less able to distinguish genres from genre complexes (Martin & Rose, 2008), and the less willing to

model genres as ideal types (see Christie & Martin, 1997); the less grammaticality, the less able to discuss the distinctive features of a genre and the more reluctant to establish explicit criteria for evaluation. And in general, the more one moves to the humanities end of the knowledge structure cline, the more emphasis is placed on a critical perspective and the less on giving students access to canonical genres of vertical discourse.

Envoi

As we have seen, genre theory offers something for pretty much everyone. How you access the field will depend theoretically on your own disciplinary predisposition and practically on the outcomes you envisage for your students. It is wise to guard against eclecticism, picking up bits and pieces of genre theory here and there and an array of teaching strategies that seem to work. It is more important to reason carefully about the knowledge structure you are engaging with and its repercussions for classroom practice. That way, understanding can progress and learning outcomes can improve.

I am indebted to Natasha Artemeva, Carol Berkenkotter, Sue Hood, and Ken Hyland for comments on this entry; shortcomings remain my responsibility alone.

SEE ALSO: Genre-Based Language Teaching; Genre and Discourse Analysis in Language for Specific Purposes; Grammar in Language Teaching and Education; Rhetorical Discourse Analysis; Systemic Functional Linguistics; Writing and Content Area Learning

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Writing and Language for Specific Purposes

CHRISTINE M. TARDY

While writing arguably occurs in most, if not all, language for specific purposes (LSP) settings, it is most prominent in business, academic, and professional domains, where it often is used to carry out tasks of relatively high importance. Both research and pedagogy in LSP writing are characterized by an increasing recognition of the social contexts which give rise to specialized writing forms. This entry examines writing in three key areas of LSP: writing needs within specific domains of language use, approaches to researching writing for specific purposes, and approaches to teaching writing for specific purposes.

Writing Needs Across LSP Domains

Needs analyses in business settings have tended to focus on oral tasks, such as meetings, phone calls, or negotiations. However, LSP scholarship that examines business writing gives some indication of the common written genres. Professional e-mails, for example, have been the focus of much research, including e-mails written for general external communication, negotiation, or replies to inquiry. One study of textile merchandisers in Hong Kong found faxing and e-mailing to be the most common channels of written communication (So-mui & Mead, 2000). Research has also studied a range of business letter types, including letters of negotiation, client letters, sales promotion letters, and job application letters. In a study of business reports in East Asian companies, Yeung (2009) identifies four common report types: review, problem-solving, market, and feasibility study.

Research into the writing carried out by business students indicates that the genres encountered in educational settings differ somewhat from those that hold importance in the workplace. One study of an English-medium business school in Lebanon found that both undergraduate students and faculty identified educational genres of in-class note taking and research papers as frequent writing tasks and the workplace genres of letters as fairly uncommon (Bacha & Bahous, 2008). Similarly, a study of writing among undergraduate and graduate students in a US-based business school identified the most common writing tasks as case analyses, article or book reports, and business reports, with letters and memos identified as relatively uncommon (Zhu, 2004).

LSP in medical and legal professions has similarly identified key written forms of communication. Although the study of the writing in these settings is not nearly as comprehensive as that of business settings, research indicates that medical research articles—and the written communication associated with the peer review system—are an important genre for medical professionals. Other common forms of writing include case histories, experimental research reports, editorials, and consensus statements (Mungra, 2007).

Within the legal profession, Bhatia (1993) has identified legal provisions or statements and legal cases as key written genres. As is the case with business students, law students interact with slightly different genres than law professionals, and it is within the context of law school that LSP is generally more relevant. In a needs analysis of law students at a university in Israel, Deutch (2003) identified the most important genres for law school

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to be articles, books, court decisions, legislation, and legal documents, in that order; in contrast, legal documents were identified as the most important genre for law practitioners. In both settings, reading was considered nearly twice as important as writing. One important academic legal writing context in which both students and professionals may write is law reviews—student-run journals which publish scholarly articles, book reviews, and student-produced "notes" (Feak, Reinhart, & Sinsheimer, 2000).

Writing plays an especially prominent role in academic settings, and LSP research has centered on some of the most common and important genres of written academic communication. The academic research article serves as a central genre for advanced academic writers, representing an important means of distributing scholarship to the academic community. In many disciplinary and institutional contexts, research articles also play a key role in the evaluation of academics' careers. Numerous other genres play a role in the network of texts that coordinate to plan, carry out, and disseminate research—for example, grant proposals, book reviews, submission correspondences, abstracts, conference papers, and scientific "short texts" that accompany research articles (Swales, 2004). Writing is also central to academics' service roles as journal editors and reviewers and to their institutional processes of evaluation and review. For novices, an introduction to many of these genres begins in graduate school, through the writing of a thesis or dissertation—a genre that is unique in and of itself yet echoes many of the discourse strategies found in the genres of academic publication. Students must also contend with gatekeeping genres such as the personal statements that are submitted as part of school applications.

Research in Writing and LSP

One can divide research into LSP writing into four general categories: descriptions of texts; descriptions of contexts of production; descriptions of learning; and critical analyses of text production and use.

Research that describes the target texts of learners has been central to LSP since its early inception, given the goal of understanding the unique characteristics of the language that students need to learn. Such research provides important insight for needs analysis and development of LSP materials, but it also contributes to the field's growing understanding of the ways in which language forms vary in relation to purpose and social context. Early studies of written text in LSP often examined single grammatical features in a target register, such as the use of passive voice or personal pronouns in scientific writing. With increased technology access, research in this area now tends to draw on corpus-based methodologies.

Corpus linguistics is essentially a methodology for storing and analyzing digital collections of text. Large-scale corpora, such as the British National Corpus, include tens of millions of words taken from a range of spoken and written text across registers (e.g., news, fiction, conversation, academic, business). Corpora are primarily analyzed in terms of frequency counts of target items, such as grammatical structures, lexicogrammatical features, single lexical items, or lexical bundles. Frequency counts are most often compared across registers, such as conversation versus academic writing, but can also be used to study language use diachronically.

Corpus-based research has been used in English for academic purposes (EAP) since the 1980s. Krishnamurthy and Kosem's (2007) list of academic corpora includes collections of written texts such as academic textbooks, university student writing, theses, and published research articles; while many corpora include texts from multiple academic disciplines, some are more focused. Academic-oriented corpora often include texts from areas such as law, medicine, science and technology, natural sciences, social sciences, and the humanities. Two important corpora in written business English are the Corpus of International Business

Writing (CIBW) and the Indianapolis Business Learner Corpus (IBLC) (Upton & Connor, 2001).

Although large-scale corpora are often available for public use, compiling a corpus which suits the needs within a local LSP setting is often preferable (particularly for research tied to identifying local pedagogical needs). Smaller, specialized corpora of written texts, which can be compiled by individual researchers and practitioners with relative ease, have the advantage of producing a more focused and targeted analysis. Such corpora often target a specific genre or context of use. For instance, studies have analyzed lexical features in written business English and comparisons of grammatical structures in published and student academic writing (see, e.g., Connor & Upton, 2004).

Another significant approach to LSP writing research uses genre analysis to describe the writing in LSP domains. While corpus-based research often analyzes texts across a range of genres—such as business letters, memos, e-mails, and company reports—genre analysis aims to understand the characteristics of a single genre or an interlinked genre set. Because genres are defined by their rhetorical purposes, genre analysis (in contrast to corpus-based analysis) studies text forms from a rhetorical perspective rather than from a purely linguistic one. Of particular influence in this area has been John Swales's research on the academic research article through the identification of rhetorical moves (Swales, 1990). Move structure analysis identifies text parts that are distinguished by their rhetorical function; for instance, Swales has described research article introductions as often following a three-part move structure, in which authors first identify a topic area (the "territory" of research), next establish a niche, and finally situate their present research within that niche. Move analysis has been an extremely popular descriptive method in researching academic writing, with numerous studies describing the rhetorical structures of research articles across languages and disciplines. Move analysis has been used to explore a wide range of other specialized genres, such as business reports, letters of application, and business letters of negotiation.

Bridging corpus and genre approaches to analysis, Ken Hyland's (2004) well-known research compares patterns in lexicogrammatical and discourse structures across disciplines in written genres such as research articles, abstracts, textbooks, and book reviews. Augmenting text analysis with interviews with expert writers of the genre, Hyland goes beyond descriptions of what texts look like to also consider *why* disciplinary writers make the choices that they do. This work has been significant in the study of LSP writing in bringing a sociorhetorical lens to a linguistic description of texts.

Research into intercultural rhetoric (also known as contrastive rhetoric) has also played an important role in LSP, investigating rhetorical distinctions across cultural-linguistic groups of users. Such comparative studies draw on both corpus-based and genre analysis methodologies. Studies in this vein have included, for example, comparisons of rhetorical moves or rhetorical acts (such as criticism) across genres in two or more languages. Upton and Connor (2001) blend contrastive rhetoric, corpus analysis, and move analysis in their study of politeness strategies used in 153 letters of application written in English by American, Finnish, and Belgian writers. The researchers identified common linguistic features of politeness strategies, then searched for those features within two of the rhetorical moves (indicating a desire for further communication and expressing pleasantries at the letter's conclusion). Their study offers one example of an approach that couples hand-tagged move analysis with computer-driven linguistic features analysis, while taking into account cultural-rhetorical issues.

While the bulk of LSP writing research has studied written text, a growing strand of inquiry has aimed to describe the contexts in which writing is produced (e.g., Bhatia, 2004). Such research can offer insights for needs analysis and for building more complex understandings of the factors that shape writing and the learning of writing for specific purposes.

Surveys are often used to learn more about the types of writing carried out in a local setting; this approach is commonly used in needs analysis and curriculum development research. Interviews with people in target settings help to gain a more nuanced understanding of how the writing is shaped by contextual factors, such as community values, material resources, and various stakeholders.

While survey and interview research may be sufficient for curriculum development, more in-depth ethnographic research is often used to gain richer insight into the sociocultural influences on text production. Ethnography may incorporate surveys, interviews, and text analysis, but it generally also includes field observations. Such observations allow researchers to trace processes and practices of writing and to identify the roles and relationships that influence a community's practices. Ethnographic studies in LSP, such as Starfield's (2002) study of undergraduate writing, have demonstrated the complexities of writing that go beyond the page or screen of a text, and have highlighted the power dynamics that permeate writing contexts. Ethnographies have studied classrooms, workplaces, legal contexts, and academic research. Studies adopting this method of research have contributed to the development of more sophisticated theoretical understandings of LSP.

A growing area of research into LSP writing contexts has investigated academic publishing practices, incorporating the research methods already described: surveys, interviews, ethnographies, and case studies. Research into publishing practices has most often examined the challenges faced by the growing number of non-native English writers publishing in English as a research lingua franca. Extensive research by Flowerdew (2000), Li (2006), and Lillis and Curry (2010), for example, has shed light on the advanced competencies and intricate social interactions required for publication.

A third strand of LSP writing research investigates the learning of specialized writing. This work has important implications for LSP pedagogy, revealing some of the strategies and processes involved in learning specific genres or discourses. Case studies of LSP learners have traced their writing development over time; these studies have been particularly prominent in postsecondary academic contexts and have included undergraduate writers and graduate writers. Outside of LSP, in the field of professional writing, case studies have followed the learning of student interns and novice professional writers. Such studies (e.g., Beaufort, 1999) have highlighted the ways in which second language learners draw on mentoring, feedback, other texts, and increased involvement in a community of practice as important resources for learning.

Studies of writing development in LSP have also explored learning within classroom environments to study the effects of pedagogical approaches and the transfer of learning between LSP classrooms and actual practice. Henry and Roseberry's (1998) study, for example, used a quasi-experimental design to compare writing in a single genre by students who received genre-based based instruction to that by those who did not. Drawing generalizations from such studies, however, is difficult as the studies themselves are usually limited by hours of instruction studied, when writing development is a long-term process. Other studies investigating learning transfer between LSP classrooms and "real-world" contexts have used interview methods to study student perceptions of transfer (James, 2010) and textual analysis combined with interviews to study changes in the learners' writing and beliefs about the writing (Parks, 2001). Cheng's (2008) study of learning within LSP contexts has focused on specific learners in richly described contexts and tasks, exploring the connections between their histories and goals and their analysis and production of target genres.

The three strands of research already outlined—descriptions of writing, writing contexts and practices, and learning—generally share a predominantly descriptive aim (with the exception, in many cases, of research on publishing practices). Pennycook (1997), for example, argued that the pragmatism underlying much EAP scholarship may serve to reinforce,

rather than question or challenge, the status quo, which nearly always privileges the dominance of English and the authority of the native speaker. Pennycook calls for LSP practitioners to take a more critical stance in both research and pedagogy, "think[ing] seriously about the broader implications of everything we do" (p. 266). Since the late 1990s, a growing strand of LSP research has adopted this kind of critical lens. Critical ethnographies interrogate issues such as language access and the dominance of particular languages or language varieties within a social setting. Critical discourse analysis studies how texts reflect and reinforce certain power structures; the majority of this work has examined texts that circulate in the public sphere (for example, in newspapers or other public documents), though some studies have examined LSP contexts. Sarah Benesch's pioneering work on critical needs analysis has also been influential in LSP research. Benesch (2009) demonstrates how needs analysis, a fundamental principle of LSP, can and should go beyond a conception of learner needs as deficits toward a conception of learner *rights*. This kind of analysis can identify opportunities for learners and teachers to effect change in their local setting.

Pedagogy in Writing and LSP

LSP writing instruction occurs in a broad range of academic and workplace settings. Academic writing classrooms are the most common and include general academic writing as well as writing for specific disciplines or in specific genres, such as theses or dissertations. LSP writing instruction draws on the same principles that guide LSP pedagogy in general; that is, it is needs-driven and learner-centered, engaging students in task-based uses and analysis of authentic target language.

Since the mid-1990s, genre-based pedagogy has been a prominent approach to teaching writing in LSP. Genre-based pedagogy engages students in analysis of target genres with the goal of understanding why "specific discourse-genres [are] written and used by the specialist communities the way they are" (Bhatia, 1993, p. 11). Through consciousness-raising tasks, students learn analytic techniques that they can carry to their writing tasks outside of the classroom, and they can develop rich, dynamic theories of genres and written communication. Ann Johns has written extensively on genre-based pedagogies in undergraduate-level writing classrooms (e.g., Johns, 1997), illustrating how students can engage in ethnographic research in order to learn more about the sociorhetorical dimensions of the genres that they encounter. However, genre-based pedagogy has tended to be most popular at the very advanced, discipline-specific levels of academic writing as well as in business and legal English writing courses. Genre-based teaching has been critiqued for reinforcing existing norms, and many have acknowledged the danger that genres may be presented as static, teachable forms if instructors are not themselves familiar with the theoretical underpinnings of a genre-based approach. Nevertheless, the approach continues to be attractive to LSP practitioners who are faced with aiding student writers in developing facility with socially situated forms of writing.

Like genre-based pedagogy, corpus-based approaches to teaching LSP writing are driven by the assumption that the process of discovery, through interaction with authentic language and genres in the target setting, is valuable for developing writers. Corpus-based pedagogy is often referred to as an example of data-driven learning (DDL); in some cases, it may be able to go even further than genre-based pedagogy in identifying unintuitive language patterns. Within EAP, corpora are often used to investigate and learn academic vocabulary, but they can also be used to help students develop a greater awareness of the specialized discourse they are learning. In a 2007 special issue of *Journal of English for Academic Purposes*, several authors offer examples of corpus-based pedagogy in EAP. One such example is Hafner and Candlin's (2007) study of law students in Hong Kong, who learned to use a corpus of legal texts as a resource for writing. The authors show that a

minority of students made use of the resource on their own, but that those who did tended to use it to examine full-length texts as models rather than analyzing the use patterns of specific lexical features. Lee and Swales (2006) describe a corpus-based course in which their doctoral students compiled corpora of their own academic writing and of published papers in their field. Throughout the course, the students learned to analyze these corpora along with the Hyland corpus. While the students reported finding the approach empowering and confidence-building, the authors concede that more studies on the effects of such an approach are needed.

Despite the potential benefits of corpus-based teaching in LSP writing classrooms, the approach is not without drawbacks. Unlike genre-based pedagogy, a corpus-based approach requires an electronic collection of texts and access to hardware and software. Both teachers and students need to learn to use the software comfortably, which itself can take some time; students may not always see the benefits as outweighing the time and effort invested in learning the technology. In some cases, teachers carry out the analyses themselves and then share findings with students. While such an approach saves time and potential frustration for students, the important element of learner-driven discovery is lost. In some cases, corpus-driven analysis may indeed be best suited for teachers, course developers, and textbook writers, rather than for students. One such example includes Robinson and Stoller's (2008) textbook *Write Like a Chemist*, which draws on extensive corpus-based analysis of chemistry writing to take students through a "read–analyze–write" sequence.

As consciousness-raising, analytic approaches, genre- and corpus-based pedagogy are easily adaptable to a range of LSP settings. In contrast, content-based pedagogy is primarily found in academic contexts. In content-based instruction (CBI), students simultaneously learn content and language, simulating the kind of learning that takes place in academic classrooms. Rather than the academic content taking on a peripheral role as a means for practicing the target language, content is front and center in a CBI classroom; language instruction helps students to access and process the content. Content-based classrooms are characterized by integration of language skills through scaffolded, content-driven tasks. For example, students in an environment-themed CBI classroom may read several articles and listen to a guest speaker talk on the topic of recycling, then synthesize the viewpoints into a graphic organizer, and finally locate an additional published source on the topic, situating its perspective within this conversation. CBI courses can go far in simulating (and therefore practicing) the kinds of writing tasks and demands that students face in their academic courses. Limitations of this approach are primarily related to the time that teachers must invest in designing such course materials (for which published textbooks are limited) and the content knowledge that teachers must bring to the subject.

As described in the previous section, LSP research has shown an increasing acceptance of critical perspectives; this trend is echoed in LSP pedagogy, with a greater interest in critical LSP pedagogy visible in the early 21st century. An early, and still significant, source on critical LSP is found in Benesch's (2001) book *Critical English for Academic Purposes*. Integrating theoretical underpinnings and practical applications, Benesch demonstrates how a critical approach can engage students in academic tasks while reflecting on and interrogating the social conditions that the tasks assume and reinforce. In the introduction to a 2009 special issue of *Journal of English for Academic Purposes* focusing on critical EAP, Benesch (2009) explains that "critical EAP considers hierarchical arrangements in the societies and institutions in which EAP takes place, examining power relations and their reciprocal relationship to the various players and materials involved" (p. 81). As issues such as learner identity, globalization, and the spread of English as a language of business, research, and education gain increased attention in language learning scholarship in general and in LSP in particular, critical pedagogy is likely to take on a growing presence in LSP writing.

SEE ALSO: Content-Based Instruction in Language for Specific Purposes; Critical English for Academic Purposes; English for Business; Genre and Discourse Analysis in Language for Specific Purposes; Intercultural Rhetoric in Language for Specific Purposes; Language for Specific Purposes Learner Corpora; Language for Specific Purposes: Overview; Language for Specific Purposes Research Methods; Methods for Language for Specific Purposes; Research Articles in English for Specific Purposes

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Suggested Readings

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Writing Development in Second Language Acquisition

ALISTER CUMMING

Three reasons may explain why research on second language acquisition has focused primarily on the development of oral rather than written language (as evidenced by contributions to the present volumes and most other related inquiries). One reason is that people develop their abilities to write primarily through education and other institutionalized activities such as work, religion, or commerce (Scribner & Cole, 1981). Consequently, writing development is highly variable and contingent on education, opportunities for learning, and needs for use. This is particularly so in second languages.

The second reason is that the fixed forms of written texts expose the complexity of discourse, making visible and requiring control over—as well as inviting analyses from—a multitude of aspects of communication that are seldom otherwise salient or needed. These include mechanical processes that learners must make automatic, such as spelling, punctuation, and word choice, as well as subtle indicators of intentionality, such as planning a message, gauging potential readers' responses, or crafting the implications of shifts in style. Indeed these concerns may be difficult to grasp or conceive, during either the rapid, fleeting exchanges of spoken conversation or the personal, interpretive processes of making sense while reading texts (Olson, 1994). Increasing recognition of the many different dimensions of writing, and the various ways it can be analyzed, makes it difficult to point toward uniform, integral dimensions of writing development, particularly in second languages. There are just so many dimensions along which writing abilities can develop. Oral interactions may be fundamental to language development from both a maturational and an evolutionary perspective, but for this reason, the wholly socially constructed nature of literacy implies that writing may be constituted, function as, and also be examined from an array of varied influences. Viewed another way, there cannot be a single, comprehensive theory of second language writing development because there are too many contradictory purposes, situations, and conceptual issues that it would have to serve.

Third, many learners of foreign languages as well as educational programs only aspire or need to develop a limited proficiency in writing, making mastery of writing less common an expectation in second language acquisition than, for example, abilities to converse or read fluently. Despite this tendency, recent decades have also seen an extraordinary growth in educational programs, research, and publications on writing in English (and to a lesser extent other international languages such as Chinese, French, and Spanish). This proliferation has arisen from increased international mobility and migration as well as emphasis on the significance of writing to display knowledge, for purposes of evaluation, and as a marker of cultural identity in education as well as for communications, both locally and globally, about specialized technologies and in various forms of work.

These basic characteristics have shaped but also complicated the approaches to research on writing development in second language acquisition. On the one hand, most research has focused on specific social contexts—often educational but also vocational or other institutional settings—within which writing development in second languages can be expected to occur (Leki, Cumming, & Silva, 2008). Such research tends necessarily to

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involve small-scale, holistic case studies, analyzing the performance of particular populations on a restricted set of writing tasks. On the other hand, this research has addressed an enormous range of different variables, all of which relate in some ways to writing development in second language acquisition. But the nature or strength of these relationships remains uncertain. Moreover, the relationships are inherently complex because of the many variable conditions and sequences under which both literacy and second language proficiency may develop in an individual. These relationships may differ for particular combinations of languages and print media and by their functions in societal contexts (Hornberger, 2003). For these reasons few assertions can be made about writing development in second language acquisition generally other than to acknowledge that it occurs, varies, and is multifaceted. But just as written texts encode and make visible features of discourse, the phenomenon of second language acquisition reveals aspects of the complexity and situated nature of writing, languages, human development, and societal communications that may not be obvious within the norms of a single language or cultural context. The remainder of this entry elaborates on these fundamental issues, explaining how the burgeoning inquiry into writing development in second languages has been synthesized, while highlighting notable studies and relevant findings.

Hornberger (2003) put forward a conceptually oriented framework that demonstrates the inherent complexity and variability of what she called biliteracy (i.e., literacy in two languages, involving both reading and writing), evident in the broad scope of inquiry and phenomena related to both bilingualism and literacy. Hornberger distinguished three interrelated sets of continua along which the development of biliteracy tends to vary, and within which additional sub-continua are nested. The first are social contexts of biliteracy, which have micro and macro dimensions in terms of social interaction and levels of analysis; oral as well as literate dimensions that vary in dominance across and within contexts; and differences between situations where either monolingual, bilingual, or multilingual norms operate. The second set of continua concerns the development (or loss) of biliteracy over the lifespan of individuals, during which three dichotomous tendencies may play out in various ways. These involve distinctions but also inherent dependencies between language reception (reading, listening) and production (writing, speaking), between the status and uses of oral and literate forms of communication, and through transfer between a person's literate skills, practices, and expectations developed in first, second, and additional languages. Interrelated with these two sets of continua is a third set of continua involving the media of two or more languages in communication. Individuals may experience bilingual uses of literacy either simultaneously or in successive phases during different points in their lives. Combinations of languages and of their scripts tend either to converge or diverge or to be similar or different, also influencing the relative ease or difficulty of the development of biliteracy. In sum, Hornberger shows how and why writing development in second languages should be expected to be variable and complex rather than uniform.

Addressing the voluminous research on writing in English as a second language appearing since 1975, Leki et al. (2008) took an emergent, grounded approach to categorize themes and findings evident in this inquiry. This analytic approach is akin to earlier syntheses such as Grabe and Kaplan (1996) or Kroll (2003) or a recent synthesis of research on writing in distinctly foreign-language settings in Manchon (2009). Leki et al. (2008) distinguished three perspectives from which second language writing development has been investigated. The first is defined by institutional contexts and categories of learner populations. Relatively distinct sets of inquiry have investigated either young writers in primary schools, adolescent writers in secondary schools, young adults in undergraduate or college programs, or mature adults either in graduate programs, adult literacy or resettlement programs, workplace settings, or scholarly or professional contexts. Findings about development in these

studies tend to show young writers accommodating biliteracy with apparent ease; adolescents doing so while struggling with issues of identity, relocation, and marginalization; and adults acculturating gradually into either adopting or resisting new educational, work, or community roles that involve writing.

Elaborating on the pragmatic, educational purposes of most research on second language writing development, Leki et al.'s (2008) second perspective highlights issues in curriculum, instruction, and assessment. Educational and developmental issues in second language writing have been informed, though eclectically, by conceptual foundations from linguistics, psychology, and rhetoric as well as analytic frameworks such as genre theory, discourse or text analysis, cognitive problem solving, language socialization, critical pedagogy, or multiliteracies. Instructional approaches that may influence second language writing development vary with curriculum contexts, organization, and purposes; teachers' knowledge and beliefs; and modes of classroom interaction. Approaches to assessment that may influence second language writing development serve either pedagogical or institutional purposes (but seldom both effectively at the same time). Pedagogical purposes tend to involve informal, locally determined modes of formative assessment within educational programs, for example, needs assessment to inform curriculum planning, teachers responding to certain aspects of students' written compositions in varied ways, or peer or self-assessment among students. Institutional purposes involve the use of formal tests of writing abilities for selection or placement into programs, certification of program completion or abilities for employment or immigration, or the monitoring of educational systems (for accountability or system-wide improvement).

The design and validation of high-stakes English proficiency tests has prompted considerable research into the qualities and characteristics of writing development among second language learners. This inquiry has adopted three different but complementary approaches. One approach has focused on defining needs for writing in educational settings either through surveys or analyses of corpora of written texts. From this viewpoint, development is conceived either as perceptions of what students need to be able to do with writing or of the formal text or genre features they need to acquire. The second and most prevalent approach has involved analyzing the discourse characteristics of written texts at different score points on a test (e.g., Jarvis, Grant, Bikowski, & Ferris, 2003). Development from this viewpoint is conceived as successive improvements in multiple dimensions of written texts, ranging from vocabulary to syntax to rhetoric. The third approach acknowledges the central role of assessors in judging the quality of written texts so has analyzed their mental and collaborative processes of decision-making while evaluating written compositions. Development from this third viewpoint is conceived in reference to the skilled interpretations and judgments of experienced evaluators of writing in second languages. Distinctions in these three research approaches, as well as their findings, again emphasize the variability and multifaceted complexity of writing development in second languages.

The third perspective that Leki et al. (2008) took up in their synthesis was to identify the many variables that published research has demonstrated to impact on writing performance in second languages. These variables group broadly as the characteristics of (a) second language writers, (b) their composing processes, and (c) their written texts. These characteristics involve an enormous array of variables, most of which may plausibly be interrelated. But the relations between writing performance and writing development have not been demarcated definitively in respect to second languages, so the status of the relations among these variables remains unclear.

From the perspective of individual characteristics, research shows writing performance in second languages to be influenced by abilities both in the first and second languages, as evidenced in Cumming's (1989) distinction between writing expertise and second

language proficiency. This primary distinction occurs in relation to a host of facilitating or constraining variables such as grammatical, vocabulary, or metalinguistic knowledge; various psychological constructs including motivation, affect, learning style, and identity; as well as task conditions, genres, prior education, and present educational contexts.

These same general variables obtain in studies of composing processes, but research on composing has focused on learners' cognitive and behavioral practices during phases of planning, drafting, revising, and editing written compositions as well as facilitating psycholinguistic subprocess of transfer, translation across languages, idea generation, planning, restructuring, goal setting, and self-monitoring. Likewise, from the perspective of written texts, research has identified diverse influences on multiple aspects of written discourse, including variable influences of first languages on second languages, text types or genres, communication functions, rhetorical patterns, as well as age, gender, and cultural differences. At a microlevel of language systems, considerable research has also investigated either the development of syntax or vocabulary in texts written in second languages or adopted a comprehensive perspective such as the rubric of fluency, complexity, and accuracy common to analyses of oral discourse in second languages.

Suffice it to say, in conclusion, that the multifaceted complexity and social dynamic of writing development in second languages are firmly established. The question to pose now is: What directions hold promise for explaining these relations further as well as for making practical use of their implications? For explanatory as well as pragmatic purposes, inquiry needs to continue to pursue theoretically informed analyses of the multiple dimensions of writing development in second languages, linking both the micro and macro aspects of social contexts with analyses of patterns in learners' development, effective teaching/learning interactions, and institutional policies. Notable examples, worthy of emulation and extension, have appeared in studies of the factors influencing individual choices to develop effective, biliterate identities in higher education (Gentil, 2005; Leki, 2007) as well as the routine processes that facilitate such development through literate classroom interactions (Perez, 2004), teacher–learner discourse (Nassaji & Cumming, 2000), or peer apprenticeship in workplaces (Parks & Maguire, 1999).

Educators, especially, also need to be mindful of educational policies or practices that can impact negatively on learning opportunities (e.g., teachers' excessive error correction), to evaluate the affordances for second language writing development and assessment provided by new technologies and multimedia, and to determine whether and how abilities taught in writing courses for language learners actually transfer to writing practices in other contexts (James, 2009). For instructional practices, educators should aim to prompt students' writing development in second languages by extensive writing, as well as purposeful, judicious responses to that writing (Hyland & Hyland, 2006), through extensive reading and vocabulary development in the second language (Albrechtsen, Haastrup, & Henriksen, 2008), by modeling relevant text types and discourse interactions (Schleppegrell & Colombi, 2002; Hyland, 2004), by enhancing students' self-control over their composing and learning processes (Cumming, 2006), and by organizing curricula and assessments appropriate to learners' abilities, purposes, and interests (Grabe & Kaplan, 1996).

SEE ALSO: Assessment of Writing; Bilingual Literacy; English for Academic Purposes; Literacy and Bilingualism; Multicompetence; Multimodality and Literacy; Psycholinguistic Studies of Literacy; Relations Between Oral Language and Literacy; Teaching Writing

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Young, Richard

HANH THI NGUYEN

Richard Frederick Young was born in London on October 15 in 1948. After graduating from Oxford with a degree in philosophy, politics, and economics, he taught at the University of Turin, then returned to England to earn a master's degree in applied linguistics from the University of Reading. He was with the British Council in Hong Kong as Materials and Methodology Officer before settling in the United States in 1983. Young earned his PhD in educational linguistics from the University of Pennsylvania in 1989, with a dissertation that was the first extension of quantitative variation theory to interlanguage. He then taught at Southern Illinois University at Carbondale until he joined the faculty at the University of Wisconsin-Madison in 1993, where he is currently Professor in English Linguistics and Second Language Acquisition. Young has also held visiting professorships at Pennsylvania State University, International Islamic University of Malaysia, and two universities in Germany.

Richard Young is known for his works on interactional modifications of input, variation in second language acquisition, social interaction in oral proficiency tests and, most recently, discursive practice theory. An overarching theme in Young's research is the dynamic relationship between the use of language and the social contexts that language reflects and creates. His research has focused on change—how newcomers learn to participate in the practices of a new community. Young's work crosses conventional boundaries between academic fields to bring interdisciplinary insights to issues of second language learning. His research has been published in three single-authored books, one edited volume, and over 50 journal articles and anthologies in applied linguistics.

Young's curiosity about social interaction and language learning began with his research on the role of interactionally modified input and negotiation of meaning. Working both collaboratively and independently (Pica, Young, & Doughty, 1987; Young, 1988), Young built on the concept that input is better comprehended when it is modified in interaction through negotiation of meaning than when it is premodified for learners. Pica, Young, and Doughty's coauthored article in *TESOL Quarterly* was reprinted a few years later, in 1994, and the study continues to inform researchers working on the nature and role of comprehensible input in second language acquisition.

Young's focus on contextual factors in second language acquisition then turned to the area of variation. His (1991) study of plural marking by Chinese learners of English pioneered the utilization of a multivariate model in order to simultaneously examine several linguistic and social factors that may lead to variation in interlanguage and to determine the relative weight of each of the factors being considered. This approach advanced the field by providing a richer and more adequate description of learners' interlanguage compared to previous studies, which sometimes had found conflicting results because of a more limited focus on one single factor at a time. Young discovered, for example, that interlanguage development, linguistic environment, and communicative redundancy were factors influencing the learners' plural marking, but the ethnicity of the interlocutor had little influence. In addition to studying the variation of plural marking, Young has also investigated variation in learners' production of other morphemes, including articles, copula, past-tense marking, progressive marking, and third person singular (Young, 1986,

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1996). Methodologically, Young's employment of the computer software VARBRUL (originally developed by Henrietta J. Cedergren and David Sankoff in 1974) also helped introduce applied linguists to a powerful tool to analyze systematic variation in learner language (e.g., Bayley & Preston, 1996). The lasting relevance of Young's research on the influence of contextual factors on interlanguage production can be seen in the fact that it is referenced in most current standard texts on second language acquisition.

Young's interest in variation extended to investigations of discourse variation in oral proficiency interviews, which was presented in an influential coedited volume with Agnes He (1998), *Talking and Testing: Discourse Approaches to the Assessment of Oral Proficiency*, and several articles (Young & Milanovic, 1992; Young, 1995, 2002). Young's approach combines discourse analysis and language assessment and results in some of the earliest empirical discourse analyses of interactions designed to assess spoken English proficiency. By looking at oral proficiency as both tests and texts, researchers were able to observe phenomena that are crucial for testing practice. For example, in an analysis of language proficiency interviews with Mexican and Japanese learners of English of different levels, Young and Halleck (1998) found that the learners' discourse patterns during the standardized interviews might have been influenced by their native languages, their personalities, and proficiency levels. Importantly, a learner may be rated below his proficiency level when his interlanguage discourse patterns are perceived negatively by the interviewer. A significant contribution of this volume is He and Young's (1998) outline of the slippery construct of *interactional competence*. They defined it as being co-constructed, practice-sensitive, and including the following components: rhetorical scripts, specific lexis and syntactic structures, strategies for managing turns, management of topics, and discourse devices for signaling boundaries. This conceptualization of interactional competence provides a useful framework for several studies on the development of interactional competence (e.g., Young & Miller, 2004; Hellermann, 2006, 2007, 2008; Nguyen, 2006, 2008) and later became an important part in Young's theorization of discursive practice.

Young's theory of discursive practice (2007, 2008, 2009) is a culmination of his empirical studies and theoretical reflections on language and context. In this theory, Young brought together insights from an eclectic range of fields—including the philosophy of language, linguistic anthropology, sociolinguistics, systemic functional grammar, conversation analysis, critical applied linguistics, and sociocultural theory—in order to provide a comprehensive and coherent description and discussion of the dynamic and reflexive relationship between language and context in social interaction, and how this understanding comes to bear on language learning and teaching. Young defined practices as episodes of social interaction that entail "the construction and reflection of social realities through actions that invoke identity, ideology, belief, and power" (2008, p. 1). Discursive practices, by extension, are practices that involve language. Resting on the notions that language reflects and creates context and context comes into being through language use, Young conceptualized discursive practice theory as aiming to "explain the ways in which the global context affects the local employment of resources and vice versa" (2008, p. 3). Drawing from his earlier studies of variation and oral proficiency tests as well as his more recent works on modes of meaning in a science class (Young & Nguyen, 2002), performance of listenership in social interaction (Young & Lee, 2007), and the role of affect in second language acquisition (Garrett & Young, 2009), Young vividly described the multiple aspects and layers of context from linguistic, ethnographic, emotional, and political perspectives as well as the specific verbal and nonverbal resources involved in discursive practices. What is particularly relevant for research on second language acquisition is Young's thought-provoking discussion about how the abilities to participate in a discursive practice may be learned, taught, and assessed.

In addition to his own research, Young was the editor of the interdisciplinary *Language Learning Monograph Series* from 1994 to 2006. During this time, he was the series editor of five volumes by leading authors in the field, covering the topics of language testing (Tim McNamara & Carsten Roever, 2006), classroom interaction (Paul Seedhouse, 2004), pragmatic development in a second language (Gabriele Kasper & Kenneth Rose, 2002), tense and aspect in second language acquisition (Kathleen Bardovi-Harlig, 2000), and affect in language learning (John Schumann, 1998). These volumes report on current theories and recent findings with forward-looking perspectives on future developments in the field. Young has also been on the editorial boards of three major journals, *Language Learning*, *Studies in Second Language Acquisition*, and the *Journal of Applied Linguistics*, and he recently became the editor of another book series, *Trends in Applied Linguistics*. During 2005–6, he served as President of the American Association for Applied Linguistics and chaired the 14th World Congress of Applied Linguistics in Madison, Wisconsin. Up until 2004, he served as a consultant to the Educational Testing Service during the major redesign of the TOEFL (Test of English as a Foreign Language).

SEE ALSO: Assessment of Speaking; Context in the Analysis of Discourse and Interaction; Discourse Analysis in Language Assessment; Variability in a Dynamic Systems Theory Approach to Second Language Acquisition

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Zarate, Geneviève

ALINE GOHARD-RADENKOVIC

From the early 1980s, Geneviève Zarate has researched an area of study that had hitherto been unexplored, namely the teaching of foreign cultures in language tuition. Up to that time, the main emphasis had been on the presentation of a thematic, often simplistic, if not stultified, vision of a "civilization." In her book *Enseigner une culture étrangère* (1986), Zarate formally positioned the teaching of culture within the didactic area of foreign languages. Furthermore, she elaborated a new area, presenting it as a theoretical structure within the domain of language teaching, characterized at the time by communicative trends.

The fundamental concept of this new area was the development of a cultural competence in a foreign culture. The basic principle was that the social actor's sense of "belonging to" evolves from the infinitely small aspects inherent in social facts, such as those implicit in everyday life, social codes, the shared givens within a society, all of which ground our relationships to self, to one's group, to the world, and to otherness. She highlights that this set of references is not only barely accessible to a foreigner, but to natives themselves, who are rarely aware of the rules that preside over their social practices. The question that arises from this principle is the following: How can one activate the learners' consciousness of those who consider a foreign culture from a naive perspective, through the prism of their primary grounding and their own sociological lenses? The author advocates a dialectical approach to a foreign culture, arising from a critical look at one's own culture and at the processes presiding over cultural acquisition, and suggests three main guiding principles: (a) *to become aware* of the impact of ethnocentrism; (b) *to identify the representation*s that contribute to one's identity development, both personal and collective—representations of time (e.g., national history in school manuals) and representations of space (e.g., images representing other places such as maps in an atlas); (c) *to initiate learners* to an anthropological reading of authentic documents so as to drive out stereotypes and underlying ideologies.

Throughout her writings, Zarate advocated that the contextualization of cultural facts under study is vital. The originality of her work is that she did not start from preconceived notions such as "tolerance," "respect," or "openness to otherness," deemed to be ideological traps that hypothesize in each learner a preexisting openness, but conceived a systematic questioning of learners' identities, values, and worldviews such as can be found in public discourse, schoolbooks, and pedagogical practices (see Zarate, 1993). The didactic approaches suggested by her seek to make the crossing from one culture to another explicit. They present a systematic approach to cultural analysis which consists in looking at one's viewpoint and experience as objectively as possible, in crossing the bridge between knowing and knowing how to interpret through speculative observations, and in learning to think the unthinkable in a distant culture. The overriding objective is to appropriate a rational, liberated approach, on the same methodological principles as ethnology and geopolitics, that intensify and confront the viewpoints of the participant observers and the effects of national socialization.

Zarate brought about a paradigmatic change in terms of the grammar of complexity that deeply transformed thinking in this area. Her positions were given further substance in her recent work (Zarate & Byram, 1998; Zarate, 2003; Zarate, Gohard-Radenkovic, Lussier,

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& Penz, 2004; Zarate, Lévy, & Kramsch, 2011). Contrary to present trends which favor the assessment of intercultural competences through an itemized grid, she advanced the concept of acknowledgment of these competences and their identification in a spatial and symbolic mapping of individual movements (Zarate & Gohard-Radenkovic, 2004), using as a basis of the analysis the biographical stories and data revealed by those who have experienced sociocultural otherness or unacknowledged multilingual competences.

SEE ALSO: Cultural Identity; Cultural Representation; Culture; Intercultural Learning

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Zipf's Law and Vocabulary

C. JOSEPH SORELL

In the 1930s, George Kingsley Zipf observed that a few very frequent words make up a very large portion of any text or collection of texts, while the large majority of words occur relatively rarely. The same observation had been made earlier by Estoup (1916), a stenographer at the French Parliament. However, the phenomenon is more often associated with Zipf because of his outspoken advocacy of the law's significance. Indeed, Zipf's law is of obvious importance to language learners, teachers, and researchers as they choose vocabulary items on which to focus.

Zipf (1949) proposed that if one arranged the words from a text in descending order of frequency, beginning with the most frequent and continuing to the least frequent word in the text, one would find that the second word occurred roughly half as many times as the first word, the third word occurred roughly one third as often as the first word, and so on. This would mean that if one multiplied the rank of a word r (rank 1 being the most frequent) by its frequency f (how many times the word occurred in the text), the product C would remain approximately the same for each word, as can be seen in Table 1.

$$r * f = C$$

Table 1 Ranks and frequencies for James Joyce's *Ulysses* (Zipf, 1949, p. 24)

Word type	*Rank* (r)	*Frequency* (f)	*Product* (C)
's	10	2826	28260
is	20	1435	28700
what	30	975	29250
one	40	739	29560
so	50	618	30900
has	100	289	28900
wife	200	140	28000
Ireland	300	90	27000
nose	400	65	26000
since	500	52	26000
college	1000	26	26000
allow	2000	12	24000
fever	3000	8	24000
instruction	4000	6	24000
morn	5000	5	25000
builder	10000	2	20000
gauntlets	20000	1	20000
Zurich	29055	1	29055

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Zipf's law, then, is that there is an inverse proportional relationship between the rank and frequency of words in a text. Therefore, Zipf also argued that the proportion of a text made up by words with a certain frequency should equal

$$\frac{1}{f(f+1)}$$

Starting from the low-frequency end of the list, approximately half the words (types) in a text should occur only once. About one sixth of the words in a text should occur twice, and around one twelfth would occur three times in a text. This second method is sometimes called Zipf's second law, but both methods create the same distribution.

A Double Logarithmic Transformation

Since word frequencies decline so rapidly, a graph of them would show an L-shaped line that hugs the *x*- and *y*-axes. In order to see the descending slope more clearly, frequencies are usually plotted on a double logarithmic graph (see Figure 1). By using the logarithm of each frequency, the line is bent upward and compressed into an almost straight line from the top left to the bottom right of the graph. The horizontal lines seen toward the bottom of the graph are places where many words are tied for the same rank.

A Zipfian distribution of words appears to be universal in natural language. It emerges in the speech of children less than 32 months old (Ninio, 2006, p. 131), and is also found in the specialized vocabulary of university textbooks. Coxhead (2000) found a group of 570 terms common to a wide range of academic subjects. These terms were arranged in 10 sublists according to the words' frequencies. The number of words in an academic

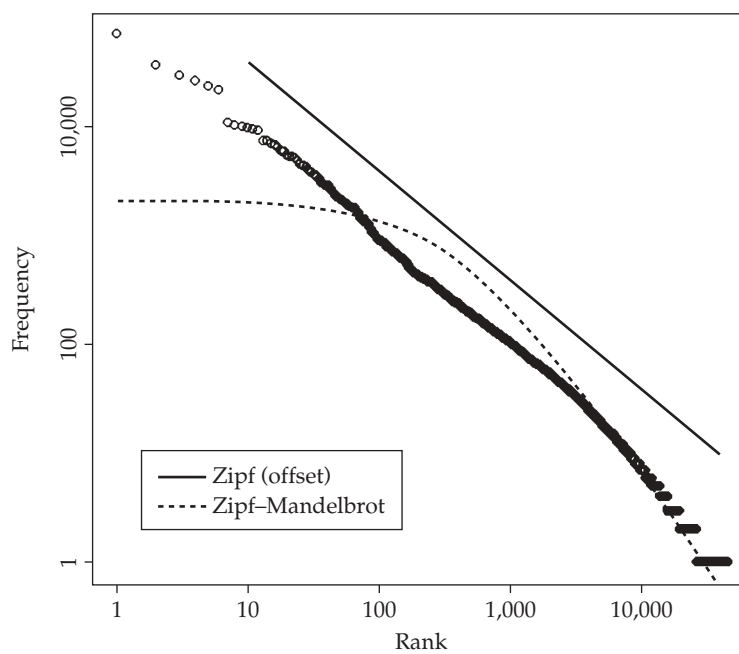

Figure 1 A double logarithmic graph of the word frequencies in the Brown Corpus (Kučera & Francis, 1967). Each type is represented by a circle. The solid line shows the angle predicted by Zipf's law. Zipf–Mandelbrot is explained below.

Table 2 Coverage of the Academic Word List (Nation, 2001, p. 190)

Sublist	*Number of words*	*% coverage*	*Number of tokens per 350-word page*
1	60	3.6	12.3
2	60	1.8	6.0
3	60	1.2	4.2
4	60	0.9	3.2
5	60	0.8	2.7
6	60	0.6	2.4
7	60	0.5	1.7
8	60	0.3	1.3
9	60	0.2	1.0
10	30	0.1	0.5
Total	570	10.0	35.1

text typically covered by each list shows a nearly perfect Zipfian distribution. The second list covers half as many as the first, the third covers one third that of the first, etc. (see Table 2).

Power Laws

Long before this proportional relationship had been noticed in language, Pareto (1896–7) observed a similar pattern in the wealth of individuals in a country. Approximately 20% of the people possess around 80% of the wealth. Auerbach (1913) found the same rank–size relationship in the populations of cities in a state or country. These highly skewed patterns are known as power law distributions. More recently, the size of moon craters, the magnitude of earthquakes, the number of hits received by Web sites on the Internet, and many other cases have all been found to follow power laws (Newman, 2005, p. 325).

Zipf–Mandelbrot

As was seen in Figure 1, the descent of word frequencies is not a perfect 45° slope. Natural language data usually deviate at both the high- and low-frequency end of the distribution. In 1951, Mandelbrot wrote a modified version of Zipf's formula. He added three parameters (adjustable values), which curve the originally straight line of Zipf's formula to better fit natural language data (Mandelbrot, 1982, pp. 341, 343–5). The parameters are shown here as the Greek letters α and β. The third parameter is an adjustment to *C* to compensate for adding α and β. Otherwise, the quantity on right side of the equation would no longer equal *f*, the sum of the word frequencies.

$$f = \frac{C}{(r + \beta)^{\alpha}}$$

In Table 1, if we multiply each word's rank by its frequency, we see that the constant *C* for Joyce's *Ulysses* should be approximately 26,000. Therefore, we would expect the word with rank 1 to have a frequency of around 26,000. However, the most frequent word, *the*,

was deliberately not shown in Table 1, because it actually occurs only 14,954 times. Mandelbrot's formula allows us to add a value β to the value for rank. In this case, if the value of β were 0.75, the Zipf–Mandelbrot formula would predict that *the* should occur only 14,857 times, since now we are dividing the constant by 1.75 instead of by 1.

While parameter β helps to lower the predicted curve for the most frequent words, it has little effect on less frequent words. "College" at rank 1,000 occurs 26 times, and Zipf–Mandelbrot with $\beta = 0.75$ would predict it should be 26.03. The exponent α shapes the angle of the slope. Of course, the parameter settings should be based on the entire distribution. In Figure 1, $\alpha = 0.58$ and $\beta = 0.002$. At first glance, this curve seems to deviate considerably from the observed data. Since the graph is logarithmic, the first increment on the x-axis (far left) represents only 10 words, while the last increment (far right) contains many thousands. Despite underestimating or overestimating the most frequent words, this curve is a good fit for most of the 45,215 word types in the Brown Corpus. (Credit goes to Baroni, 2009, p. 817, for a clear explanation of these parameters.)

Mechanisms

Since researchers became aware of power law distributions, a lively debate has raged over what causes them. Zipf (1949) saw communication as competition between speaker and listener. The speaker, he imagined, would want to expend the least possible effort by encoding all the meanings in a message into a single word, while the listener, wanting to expend the least possible effort in decoding the message, would want each meaning to have a separate word. Zipf saw the distribution of words we see in texts as an effective compromise between these two opposing positions. Though the mechanism he described is unrealistic in view of what is now understood about discourse, Zipf did correctly observe that the words in a language are part of an efficient communicative system.

Mandelbrot, whose work on Zipf's law started him on the path toward the discovery of fractal geometry and chaos theory, saw communication in terms of information theory (Shannon, 1948). Rather than the speaker and listener being viewed as in opposition, the lexicon of a language is seen as poised between the need to maximize information transfer and to minimize the cognitive cost of retrieving or recognizing a word. Mandelbrot (1953) argued that such an optimal code would result in a Zipfian distribution. In this context information should not be viewed strictly as "facts." From a linguistic perspective, signaling group identity or one's emotional state by selecting a particular word is also a kind of information.

Simon (1955), a pioneer in artificial intelligence and complex systems theory, created a competing model based on the principle of preferential attachment, often described as "the rich get richer." Popular Web sites attract even more hits. People with many friends tend to make even more. Function words that are part of frequent constructions, words related to the topic of a text, and other commonly used words will all have a better chance of being recycled in a text than other optional words.

Both Mandelbrot's and Simon's models included the assumption that word generation is random. Mandelbrot's "intermittent silence" model, for example, relies on the random generation of characters from an alphabet, one of which is a space character. The computer randomly emits characters until the character chosen is a space. The resulting string of letters then becomes a "word." If a random process produces a Zipfian distribution, one might conclude that it is not related to meaning or the structure of language. Therefore, many have judged Zipf's law to be "linguistically very shallow" (Miller, 1957; Mandelbrot, 1982, p. 346). However, Ferrer-i-Cancho and Elvevåg (2010) clearly show that the distributions in random texts are quite unlike those found in natural language.

While investigating the structure of the Internet, Barabasi (2003, p. 153) found that several "coexisting mechanisms delicately balance each other" and thus maintain a power law distribution of links. One of the most important, namely preferential attachment, builds a robust network with many well-connected hubs. Well-connected, high-frequency words in a Zipfian distribution have been described as lexical hubs (Ferrer-i-Cancho & Sole, 2001). However, words (like Web sites) do not stay on top forever. Conversation topics, speakers, and languages all change.

The optimum arrangement Mandelbrot's model envisioned can then be dynamically maintained by another phenomenon: self-organized criticality (Bak, 1996). Self-organized criticality describes systems that are neither too rigid nor too independent, like the sand at the bottom of an hourglass. As sand flows in from the top, it causes frequent small, but sometimes very large avalanches. Nonetheless, the angle of the pile remains roughly the same due to the friction between the grains.

Similarly, the elements of a network need to be balanced between complete independence and complete interdependence. If a network is too interdependent, the signal will spread too far and the response will be very costly. For example, a call to the Fire Department that a cat is stuck in a tree should not result in the mobilization of the city's entire fire brigade. On the other hand, if the elements of the system are too independent, the call might go unanswered. In conversation, a speaker selects the least costly (usually the most frequent) words to convey the desired information. Dropping down to more costly (less familiar) words may occasionally be necessary to fulfill certain communicative objectives, but they come at a cognitive cost to both speaker and listener, and the results may not always be predictable.

Implications

In the world of linguistics, Zipf's law is one of the most imposing topographical features. For language learners and teachers, this means that "a little bit goes a long way," which is a major motivation for the creation of learning materials with a controlled quantity of vocabulary (Nation, 2001). It also means that more advanced vocabulary learning will be more gradual. Researchers designing models and studies of first and second language acquisition will need to contend with the fact that exposure to many vocabulary items is highly infrequent. Lexicographers looking for examples of word usage, designers of natural language processing systems, and corpus linguists building parsers and taggers will all face this same challenge. Encouragingly, research into systems characterized by power laws is bringing together academic disciplines as never before. In applied linguistics, a unifying vision is now emerging of language as a complex adaptive system of which the lexicon is a central element (Larsen-Freeman & Cameron, 2008).

SEE ALSO: Chaos/Complexity Theory for Second Language Acquisition; Core Vocabulary; English for Academic Purposes; First Language Vocabulary Acquisition; Francis, Nelson; Graded Readers; Kučera, Henry

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Zone of Proximal Development in Second Language Acquisition

STEVEN G. MCCAFFERTY

What Is the Zone of Proximal Development (ZPD)?

At this date the popular educational zeitgeist has taken the ZPD to be the centerpiece of Vygotsky's theory of mediation with regard to teaching and learning. However, the ZPD was one of the last constructs Vygotsky worked on, only first appearing in the last year of his life, and there are only eight extant references to it in the totality of his writings (Chaiklin, 2003). This being said, its enormous appeal for researchers and educators is immediately recognizable in the quote that is most cited as definitional:

> What we call the Zone of Proximal Development . . . is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 86)

The potential for understanding learning and development immediately springs to life in this brief quotation. Indeed, it would appear to contain the seeds of a fully developed theory in and of itself, and its application to how people develop a second or other language is also readily apparent as an aspect of interaction. But it is of course left underspecified on many accounts. The incomplete nature of Vygotsky's writings on the concept has of course led to some confusion, but Glick (2004, pp. 352–4), also argues that the different translations of Vygotsky's works into English in the West have had a major impact on scholars as well, especially with regard to his two most popular works: *Thought and Language*, which first appeared in 1962, was reedited in 1986, and later translated as *Thinking and Speech* (1987), and a collection of his papers published together in one volume under the title of *Mind in Society* (1978).

Glick (2004) notes that there are only two pages that contain mention of the ZPD in *Thought and Language* (Vygotsky, 1962), and in this text the ZPD is largely treated as a refined diagnostic instrument, meant to materialize/measure the potential of the child in comparison to the actual level of development. It is also the last word Vygotsky had to say on the ZPD, as the work was published posthumously. Vygotsky and his colleagues were convinced that the standardized intelligence testing of the time (Binet's model) did not reveal what a learner was truly capable of, that two children with the same test score (independent level of development) might have different levels of potential. This discrepancy led to the ZPD, but the concept must also be seen as part of Vygotsky's profound understanding of the dialectic of learning and development (that the two are not dualistic) and, indeed, this is at the heart of the ZPD. Later, Vygotsky came to focus on the application of the ZPD to the learning/teaching situation as carried out in classroom activity, and largely as related to what we consider special education today. Vygotsky considered imitation in addition to instruction to be crucial to development in the ZPD as well, especially with regard to first language development:

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> In the child's development . . . imitation and instruction play a major role. They bring out the specifically human qualities of the mind and lead the child to new developmental levels. In learning to speak, as in learning school subjects, imitation is indispensable. What the child can do in cooperation today he can do alone tomorrow. Therefore, the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as at the ripening functions. (1986, p. 188)

Furthermore, Vygotsky did not include learning on its own; instead, the original Russian term he employed for classroom contexts was *obuchenie*, which is best translated, according to Cole (2009), as "learning/teaching," a term he himself employed in his own early translations. Within this context there also is a heavy concentration on concept development, particularly in relation to Vygotsky's seminal work in this area. However, Chaiklin (2003, p. 57) contends that such an interpretation is too narrow, that Vygotsky focused on development from a larger frame as related to the development according to "age periods."

One of the clear shortcomings of Vygotsky's writings on the ZPD is the fact that he did not indicate how the teaching and learning of concepts or other forms of development should be undertaken. In part, this circumstance explains why so much attention has focused on the concept of "scaffolding," which over the years has become heavily intertwined with discussions of the ZPD. Scaffolding as it is widely known today is credited to Wood, Bruner, and Ross (1976), who introduced a set of six guidelines for successful scaffolding on the part of a tutor: (a) recruiting the tutee's attention, (b) reducing degrees of freedom in the task in order to make it manageable, (c) keeping direction in terms of the goals, (d) marking critical features, (e) controlling frustrations, and (f) modeling solutions.

In *Mind in Society*, in contrast to *Thinking and Speech*, the ZPD is given its own heading. In this volume, which includes writings from different time periods in his career, Vygotsky not only contrasts what the child can do on his or her own to what s/he can do with the help of adults or more capable peers (the quote above), but includes peers as well, and expands the zone to have a more collective sense—people in interaction with others as an aspect of cultural historical development:

> We propose that an essential feature of learning is that it creates the zone of proximal development; that is, learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the child's independent developmental achievement. (Vygotsky, 1978, p. 90)

Holzman (2009) applies both these elements to the structure of the ZPD in examining Vygotsky's thinking in relation to play and work, her ideas stemming in part from the following quote from Vygotsky (1978, p. 102), "[P]lay creates a zone of proximal development of the child. In play a child always behaves beyond his average age, above his daily behavior; in play it is as though he were a head taller than himself." Vygotsky's "law of cultural development" also appears in the 1978 volume: "Every function in the child's cultural development appears twice: first, on the social level, and later on the individual level" (1978, p. 57). Moreover, it is the transformation of thinking through cultural practices and contexts, as illustrated by his central claim that psychological development is transformed by the process of moving from the intermental to the intramental plane, that pervades Vygotsky's overall theory. According to Newman and Holzman (1993, pp. 39–40), it is highly significant that Vygotsky in *Thought and Language* (1986, p. 3) chose to use an epigraph from Francis Bacon regarding the nature of both psychological and physical tools: "neither hand or mind alone suffice; the tools and devices they employ finally shape them." This is a decidedly revolutionary and transformational view of people in the world and

processes of mediation, and is completely compatible with his overall approach in *Thinking and Speech*, as well at that in *Mind in Society*. Vygotsky's view of development is also relevant here (1978, p. 73) as it is not linear or lockstep.

Glick (2004, p. 356) also makes it clear that the two translations under consideration are problematic beyond the different lights they shine on the interpretation of the ZPD, citing the translator's note for the 1962 volume, which suggests that Vygotsky's original manuscript was prepared in haste (he was dying) and the inner structure of the book (i.e., what holds it together) is not readily seen. Moreover, parts thought unnecessary for the contemporary reader (ca. 1934–5) were culled, and there was an overall attempt to keep the style of writing more direct, Vygotsky having had a tendency to provide convoluted explanations. The 1978 volume is problematic as well, being a collection of different pieces from Vygotsky's work that were combined on the basis of what the editors chose to include for their purposes. It is clear that both volumes were shaped by considerable influences apart from Vygotsky's own hand.

The Application of the ZPD to Second Language Development

Research on the ZPD in applied linguistics is basically an extrapolation of Vygotsky's work with children. Frawley and Lantolf (1985), in an effort to address this difference, argued for what they termed "the Principle of Continuous Access," finding that adults often return to ways of knowing developed in childhood, particularly in the forms of object-, other-, and self-regulation in their problem-solving pursuits. The ZPD was not a particular focus in this early work, however, and started to receive specific attention in the 1990s. Since that time there have been a fairly large number of studies specifically devoted to the topic, some of which are discussed below. The sections that follow are organized under the division explored above.

The first set of studies focuses on operationalizing the "proximal" component of the ZPD as an aspect of dynamic assessment through both microgenesis (tracking development over short periods of time—typically within one session of interaction) and macrogenesis (looking at development over days or weeks in a more longitudinal fashion, in accordance with the volume *Thought and Language / Thinking and Speech*). The second set of studies depicts a wider application of the ZPD as found in *Mind in Society*, and also employs micro/macrogenetic forms of investigation, although many focus exclusively on microgenesis, and by and large concentrate on interaction with peers or more capable others in connection with sociogenesis as a whole. Moreover, all the studies in both sections include a focus on metalinguistic awareness/knowledge (concept development) as a fundamental building block of second language development. The role of imitation, particularly with regard to play, is also brought out. Before turning to the studies, however, two L2 articles that are not studies but address the ZPD should be mentioned.

Kinginger (2002) argued that educational philosophy has had an influence on how the ZPD has been perceived in relation to foreign-language (FL) education. Overall, her perspective is that the ZPD belongs to progressive forms of education with its emphasis on emergent learning and varying pathways to the same goal dependent on individual differences in development and as pertains to potential development. However, she is also wary of what she believes are overextensions of the ZPD, particularly as related to learning on its own.

Over the years, unfortunately, a number of students and their instructors have conflated the ZPD with Krashen's (1982) input hypothesis. Dunn and Lantolf (1998) bring clarity to this issue. As should be established at this point, Vygotsky focused on the intermental as leading to the intramental as a basic grounding of the ZPD. As the authors point out,

Krashen's i + 1 theory, on the other hand, only addresses intramental processing as an aspect of Chomsky's universal grammar, which is not associated with interaction per se, but rather is a function of the brain with regard to input processing only.

L2 Dynamic Assessment

Dynamic assessment can be quantitative, qualitative, or both. The quantitative approach, as suggested above, stems from Vygotsky's work on intelligence testing and typically takes a pretest, intervention, posttest assessment, in which all participants receive the same intervention as a group. Kozulin and Garb (2002) conducted just such an assessment on FL reading comprehension, electing to provide a group intervention after a pretest that focused on learning how to access meaning through the use of strategies. A numerical score was identified for each student, and the researchers used these scores to divide students into three groups—low, moderate, and high performers—as well as to make instructional recommendations.

The other common form of dynamic assessment, the "interactionist" approach, is more "interpretive," not relying on numerical scores exclusively, but instead on the quality of interaction with the individual. Anton (2003) engaged this form of dynamic assessment for FL-program placement purposes. She analyzed student responses during an oral interview in which each student was given a chance to make corrections, the teacher providing prompts. As expected from the standpoint of the ZPD, some students appeared to be at the same level of oral proficiency until they interacted with the teacher, at which point their potential could be assessed, allowing a more informed decision as to which FL course would serve them best.

Aljaafreh and Lantolf (1994), in another study that follows this pattern, used a scripted set of hints leading from less to more explicit feedback while interacting with individual students within the confines of this meditational scale. The focus of the study was on a teacher working with students in correcting their writing across multiple meetings. This approach to assessment/instruction proved effective from the standpoint of determining ZPDs—some students only required minimal intervention (some actually were able to make corrections with mere proximity to the instructor while waiting their turn), while others needed a great deal more explicit assistance to effectively come to understand a specific problem. However, as Poehner (2008, p. 54) points out with regard to this study, without true reciprocation—by following a rubric of hints—mediation is limited because "the degree of explicitness of each mediating move they contain is not absolute [because] [t]he significance of reciprocating and mediating moves is tied to the context in which they appear."

Moreover, Poehner (2008, p. 52), working on grammatical concepts in relation to FL learning, suggests that a priori scripted mediation, and particularly the kind found in Kozulin and Garb (2002), ignores the interactive style and potential of the learner (this study did not include a microgenetic analysis). Poehner (2008) concentrates on "learner reciprocity," bringing attention to five different ways in which learners responded to his position as mediator in their efforts to talk about two movie clips they had seen, and how this has much to do with creating ZPDs. Students were found to (a) take somewhat of an active role in the mediation, but rely on the instructor to negotiate the process; (b) use the mediator when seeking help; (c) take a more proactive role, creating opportunities to engage in learning/development; (d) continually seek approval from the instructor; and (e) provide no opportunity for mediation from the instructor (no ZPD was allowed to develop).

There have been other studies that have taken an interactionist perspective as well. Ableeva (2008) focused on listening comprehension, in which cultural background came

into play as critical to comprehension. Also, although no mention of dynamic assessment is ever made, the parameters for Washburn's (1994) study are highly akin to the interactionist view of this form of assessment. Washburn examined fossilization, hypothesizing that use of the ZPD would allow her to test whether or not L2 speakers are in fact fossilized, her assumption being that, if potential development is still possible outside actual development, then fossilization might not be a stable feature of the person's L2 development. Fossilized learners were only able to improve with direct explicit modeling, and they were unable to modify their output on the basis of linguistic clues alone; nonetheless, this finding indicates that development was still possible.

L2 Studies of the ZPD as a Broader Aspect of Sociogenesis Within Vygotskyan Theory as a Whole

Nassaji and Swain (2000) drew on Aljaafreh and Lantolf (1994) in a study that followed an experimental design in which two intermediate-level ESL students were given different treatments with regard to working on article usage for written assignments. The 12 hints of the regulatory scale developed by Aljaafreh and Lantolf were used with each of the students, although one student was given feedback on the correct basis—moving from more implicit hints to more explicit ones if needed—and the other was given the hints in a random fashion without regard to where she was in the ZPD. Results showed a dramatic difference in improvement for the ZPD student as compared to the non-ZPD student across four 40-minute sessions for both qualitative and quantitative analyses (through the use of assessment instruments for the latter dimension).

Lantolf and Aljaafreh (1995, p. 621) extended their 1994 study, this time analyzing the protocols of two participants from the original study for regression, citing that "development does not proceed smoothly from state to state; rather it is conceptualized as a formation that 'contains a number of developmental layers' similar to the various strata preserved in the earth's geological record" (Vygotsky, 1987, p. 140). Moreover, they argue that regression plays a part in the revolutionary reorganization of functional systems that is part of learning and the ZPD. They suggest such an analysis has important implications for theories of second language acquisition (SLA) that view interlanguage development as a stage-by-stage process.

Another area of concentration has been the more collective function of the ZPD as noted by Vygotsky in *Mind in Society* (see above). This work has focused on how peers (not only those more capable) help each other co-construct ZPDs. Donato (1994) concentrated on peers helping peers with a collective sense of the ZPD with regard to the related concept of scaffolding. He criticized the conduit metaphor (that information is simply passed back and forth, obscuring the interpersonal dynamics [contexts] as part of the process of meaning making) as a commonly held position by a number of SLA theorists. The focus of the study was on how "social interactions in the classroom result in appropriation of linguistic knowledge by the individual" (1994, p. 39), and data were collected for a one-hour planning session for a group of FL students in a classroom. Results showed how the students in the group scaffolded each other in the L2 while co-constructing their planning, and that this led to the appropriation of each other's L2 language forms; 32 examples of linguistic help were documented, and of these 24 were later found to be used by individuals independently.

Also, following Aljaafreh and Lantolf (1994) in relation to the L2 developmental levels they suggest, Ohta (2000) conducted a study that focused on how a more capable peer was able in interactions with the teacher to scaffold his fellow student, who was at a lower level of proficiency, to provide effective assistance in the ZPD. Ohta paid close attention to how the two students interacted during three different tasks, transcribing prosody as well as other phonological features as a part of assistance, and providing an exact record

of the "before and after" mistakes that the less proficient student was able to correct, although it is also important to point out that the more advanced student benefited from the interaction as well. Ohta invokes Vygotsky's law of cultural development and the genetic law of development as well as the ZPD, finding that they go hand in hand, something she also claims in Ohta (2001). Additionally, Ohta (2001, p. 9) offers her own definition of the ZPD in relation to language learning: "For the L2 learner, the ZPD is the distance between the actual developmental level as determined by individual linguistic production, and the level of potential development as determined through language produced collaboratively with a teacher or peer."

Vygotsky (1978, p. 102) tied play directly to the ZPD (see above), and this element of investigation has also found its way into the L2 ZPD literature. Lantolf (1997) undertook a study focusing on the use of language play in the form of private speech, the author noting that this allowed FL learners to concentrate on language meaning and form as a significant aspect of their L2 development. Importantly, some of the evidence for this came from examples where a student was imitating others in the environment. Another take on play stems from Newman and Holzman (1993), who suggest that play in the form of performance (i.e., making new roles for ourselves through imitation, in much the same way as illustrated by Vygotsky when he talks of children putting on their parents' clothing and pretending to be them) is also critical to development as a whole. The concern of L2 studies in this domain has been learners taking on new aspects of being and becoming semiotically as related to identity when communicating in the L2 as a part of L2 development.

McCafferty (2002) undertook the study of an ESL college student interacting in a quasi-tutorial setting with an adult native speaker of American English, also a former EFL instructor, over two time periods for a total of 15 sessions. The study focused on the gestures that the two participants employed as an aspect of meaning making. It was found that gesture helped both participants with lexical comprehension, that the two participants often imitated each other's gestures, and that gestures operated as a focal point for organizing discourse. In another similar study, Haught and McCafferty (2008) examined the gestures of classroom participants in a volunteer drama ESL class for a semester in which the students read though scripts multiple times out loud, taking different parts at different times. The instructor also participated and inadvertently gestured while taking different parts. Over time the students began to mirror his gestures and only his gestures. In this study the participants performed themselves as insiders of the L2 languaculture, in a sense "trying on" a different and embodied semiotic identity through imitation.

Moreover, in what seems to be the only L2 child study within an applied linguistics frame, Da Silva Iddings and McCafferty (2005) also focused on play, and furthermore took a collective view of peer interaction as leading to learning and development within the ZPD. The authors found that two third-grade ESL students, one a Brazilian Portuguese speaker and the other a Spanish speaker, when asked to interact concerning a picture book on spiders, shifted to an imaginary plane of activity, calling the tarantula they were looking at "Snow White" (Vygotsky uses the term "pivot" in relation to an object that is taken for something it is not in play). Each used the other's L1 (no English was spoken), a form of language play. Also, the Brazilian student overlay her Portuguese with what she perceived as Spanish intonation patterns. The authors concluded that upon entering each other's linguistic world, the two children were both using and inventing sign at the same time and perhaps gaining insights into the very nature of sign/symbol relationships.

In conclusion, although I have followed the conventional treatment of the ZPD as a "place" (what is "in" the zone), I in fact agree with Newman and Holzman (1993) that the ZPD is not a container at all, but instead is manifested through activity, despite the spatial metaphor. Also, all of the literature depicted above for the L2 application of the ZPD as found in *Thinking and Speech* and *Mind in Society* has shone a light on various issues within

applied linguistics, including: L2 acquisition versus development, corrective feedback, regression, identity, gesture studies, assessment, drama (play), pragmatics, fossilization, imitation, metalinguistic knowledge/awareness, language play, and related pedagogical applications. There seem to be a host of conceivable studies that would further the understanding of these and other aspects of applied linguistics, and further study of the ZPD can only enhance our knowledge of L2 learning/teaching/assessment.

SEE ALSO: Dynamic Assessment in Second Language Acquisition; Internalization in Second Language Acquisition: Social Perspectives; Lantolf, James P.; Praxis and Second Language Acquisition; Research Methods and Sociocultural Approaches in Second Language Acquisition; Sociocultural Theory; van Lier, Leo

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